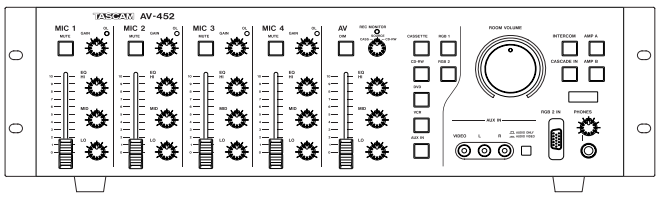


TASCAM
TEAC Professional Division

SERVICE MANUAL

AV-452

Powered Mixer

CONTENTS

INSTRUCTIONS FOR SERVICE PERSONNEL

BEFORE RETURNING APPLIANCE TO THE CUSTOMER, MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT.

Effective : November, 2005

S-0147

1. SAFETY INFORMATION

1 Read these instructions.

2 Keep these instructions.

3 Head all warnings.

4 Follow all instructions.

5 Do not use this apparatus near water.

6 Clean only with dry cloth.

7 Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8 Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9 Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. Grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10 Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11 Only use attachments/accessories specified by the manufacturer.

12 Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13 Unplug this apparatus during lightning storms or when unused for long periods of time.

14 Refer all serving to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

- Do not expose this apparatus to drips or splashes.
- Do not place any objects filled with liquids, such as vases, on the apparatus.
- Do not install this apparatus in a confined space such as a book case or similar unit.
- The apparatus draws nominal non-operating power from the AC outlet with its POWER switch in the off position.

2. Specifications

Video specifications

Composite inputs All composite inputs are through RCA jacks.

AUX IN	75Ω 1Vp-p
VCR IN	75Ω 1Vp-p
DVD IN	75Ω 1Vp-p

S-Video inputs All inputs are made through pin mini-DIN connectors.

VCR IN	75Ω 1Vp-p
DVD IN	75Ω 1Vp-p

Composite outputs All composite outputs are through RCA jacks.

VCR OUT	75Ω 1Vp-p
MONITOR OUT	75Ω 1Vp-p

S-Video outputs All S-Video outputs are through 4-pin mini-DIN connectors.

VCR OUT	75Ω 1Vp-p
MONITOR OUT	75Ω 1Vp-p

RGB 2 connections

RGB 2 IN	15-pin D-sub female
RGB 2 THRU	15-pin D-sub female

AV audio and microphone specifications

AV audio inputs All inputs are made through RCA pin jacks (unbalanced).

CASSETTE	Input impedance,47kΩ,Nominal input level -10dBV (–7.8dBu)
CD-RW	Input impedance,47kΩ,Nominal input level -10dBV (–7.8dBu)
VCR	Input impedance,47kΩ,Nominal input level -10dBV (–7.8dBu)
DVD	Input impedance,47kΩ,Nominal input level -10dBV (–7.8dBu)
AUX IN	Input impedance,47kΩ,Nominal input level -10dBV (–7.8dBu)

AV audio outputs All outputs are made through RCA pin jacks (unbalanced).

CASSETTE	Output impedance,100Ω,Output level -10dBV (–7.8dBu)(nominal),+10.8dBV(+13dBu) (maximum)
CD-RW	Output impedance,100Ω,Output level -10dBV (–7.8dBu)(nominal),+10.8dBV(+13dBu) (maximum)
VCR	Output impedance,100Ω,Output level -10dBV (–7.8dBu)(nominal),+10.8dBV(+13dBu) (maximum)

Microphone group insert Made through TRS 1/4" jack :

Send (tip)	Output impedance 100Ω,nominal level -10dBV (–7.8dBu),maximum level +15dBV(+17.2dBu)
Return (sleeve)	Input impedance 10kΩ,nominal level -10dBV (–7.8dBu),21dB headroom

Microphone inputs The following figures apply to connections made via the XLR connectors and the barrier strips.

Input impedance	2.2kΩ
Input level	–60dBu(**GAIN** ④ at maximum)to -27dBu (**GAIN** at minimum)
Phantom power	+48V(global for 4 channels)
OL indicator ③	Lights at 10dB above nominal level
HPF	Global for 4 channels,switchable @80Hz

Master section specifications

CASCADE INPUTS	Balanced (XLR -type connectors Input impedance 10kΩ,input level +4dBu
LINE OUTPUT	Balanced (XLR -type connectors Output impedance 100Ω,nominal output level +4dBu,maximum output level +23dBu
MEETING OUT	Unbalanced RCA connectors Output impedance 100Ω,nominal output level -10dBV(-7.8dBu) maximum output level +15dBV (+17.2dBu)
INTERCOM	Barrier strip 70V, 40kΩ,24V, 12kΩ or 12V 4.7kΩ
EMG IN	5V r.m.s.

Phones

Connector	1/4" stereo jack
Maximum output	100mW+100mW (68Ω) control at maximum power

Speaker outputs

Connector	Binding posts
Load impedance	8Ω
Rated output power	80W + 80W (1kHz,1%,8 Ω)
Maximum output power	100W + 100W (EIA,JAITA)

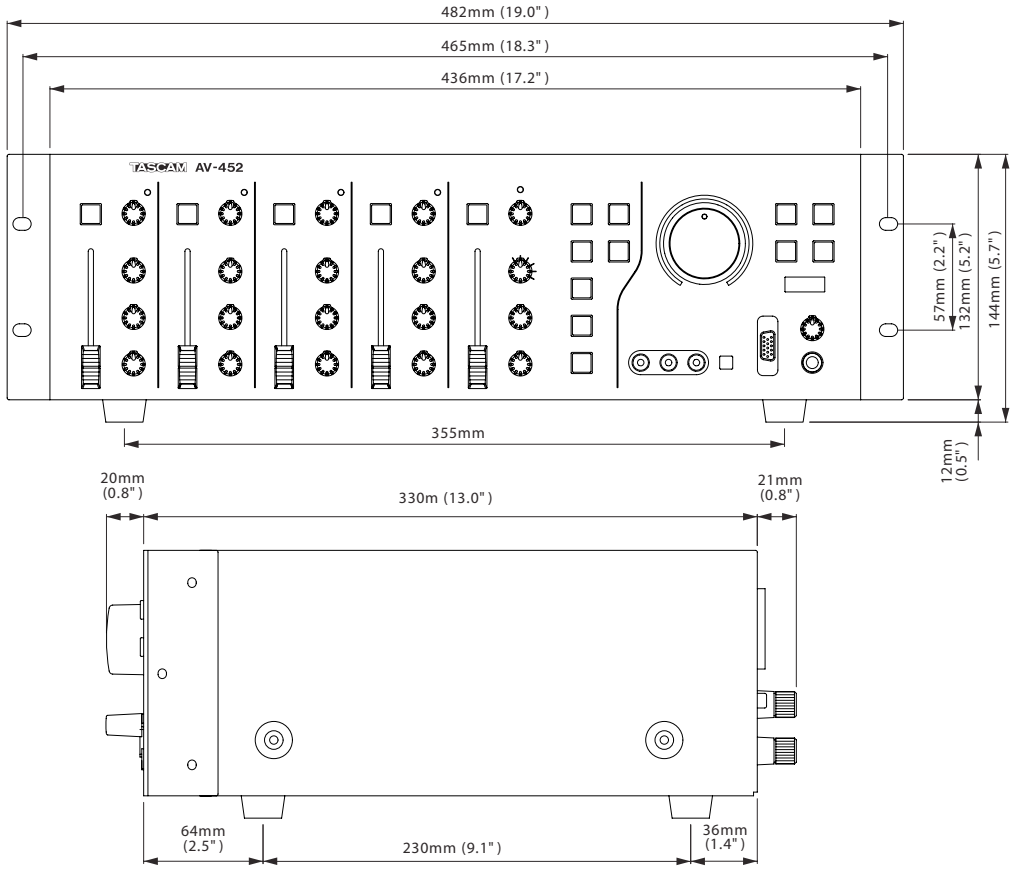
Audio performance

Frequency response	20Hz to 20kHz +1.0/-2.0dB, MIC IN to INSERT SEND	
	20Hz to 20kHz +1.0/-2.0dB, LINE IN to LINE OUT	
	20Hz to 20kHz +1.0/-2.0dB, LINE IN to MEETING OUT	
	20Hz to 20kHz +1.0/-2.0dB, LINE IN to OUTPUT (to LINE sources)	
	20Hz to 20kHz +1.0/-2.0dB, LINE IN to MEETING OUT	
THD (nominal level, 1kHz)	0.07%, MIC IN to LINE OUTPUT (GAIN: MIN, DIN AUDIO)	
	0.03%, LINE IN to LINE OUTPUT (DIN AUDIO)	
	0.03%, LINE IN to OUTPUT (to LINE source) (DIN AUDIO)	
	0.03%, LINE IN to MEETING OUTPUT (DIN AUDIO)	
Noise level (DIN Audio+A)	**MIC IN**	(GAIN: MAX,EIN, 150ohm terminated) -110dBu, MIC IN to INSTERT SEND
	LINE IN (DIN Audio+A)	–72 dBV(-70dBu), LINE IN to LINE OUTPUT
		–72 dBV(-70dBu), LINE IN to OUTPUT (to LINE sources)
		–72 dBV(-70dBu), LINE IN to MEETING OUTPUT
		–70 dBV(-68dBu), LINE IN to PHONES OUTPUT
Crosstalk	60dB,L/R at 1kHz	
	65dB,Input channels at 1kHz	
Speaker outputs	Noise level(DIN Audio+A):4mV(ROOM VOLUME at max,MIC faders at min,inputs shorted);1.2mV(ROOM VOLUME minimum	
	Signal-to-noise ratio (DIN Audio+A):70dB(output of 50W)	

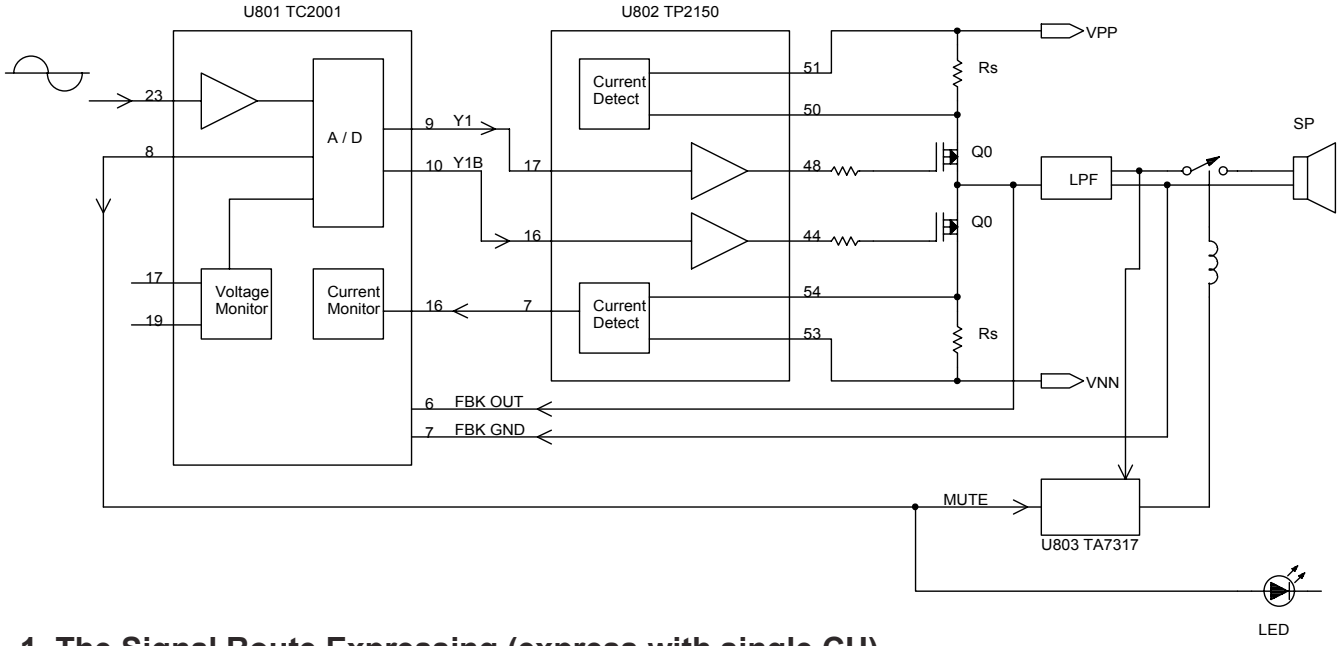
Power and physical specifications

Power requirement	100V AC,50-60Hz
	120V AC,60Hz
	230V AC,50Hz
	240V AC,50Hz
Power consumption	125W
Peak inrush current	16A
Applicable electromagnetic environment	E4
Dimension (W xHxD)	482 x 144 x 371 (mm) 19.0 x 5.7 x 14.6 (in)
Weight	11.3kg (24.9lbs)

Dimensional drawing



3.AMP CIRCUTE LOOP EXPLANATION



1. The Signal Route Expressing (express with single CH)

Audio signal input from U801 TC2001 23pin, makes as the conversion of Digital signal. Digitalized signal Y1 and Y1B are convey to MOSFET driver of U802 TP2150. MOSFET driver drives Q0, then Q0 makes switch of VPP, and VNN, which strengthens the intensity of signal.

2. Protection Loop Circuit

Protection circuit loop has 3 ways to monitor at any time. As long as abnormality happens and is confirmed, the output will be cut off in a protection state. The protecting state LED will be lit up.

(1.) The monitoring of the voltage of the power

The voltage of U801 17 pin, and 19pin make VPP VNN at any time is monitored. When the voltage Exceeds 20% of normal voltage, the signal will be examined and it will be considered as unusual state. Hi MUTE signal of U801 8pin will have Hi voltage output which goes to U803 TA7317, then Relay will be activated to cuts off the output. The protecting state LED will be lit up.

(2.) The monitoring of the current of the power

MOSFET Q0 connects a cascaded resistance Rs which the voltage of both ends are monitored. When monitor current exceeds the maximum current of 6A, Hi MUTE signal of U801 8pin will have Hi voltage output which goes to U803, then Relay will be activated to cuts off the output. The protecting state LED will be lit up.

(3.) The monitoring of the DC voltage of the power

By examining the DC voltage of the power of U803, when the output is above 1.5V, Relay will be activated to cuts off the output. The protecting state LED will be lit up.

3.CAUTION

CHIP capacitor: If they are touched directly, it will influence the life-time of the part. Therefore, please pay special attention, while working.

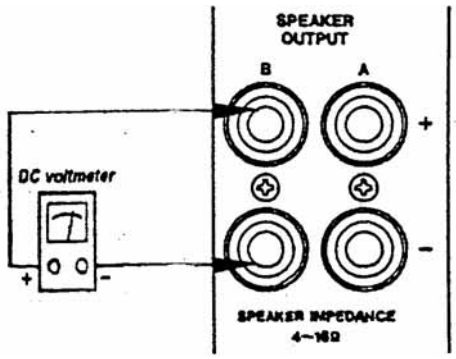
ADJUSTMENT PROCEDURE

DC OFFECT adjustment

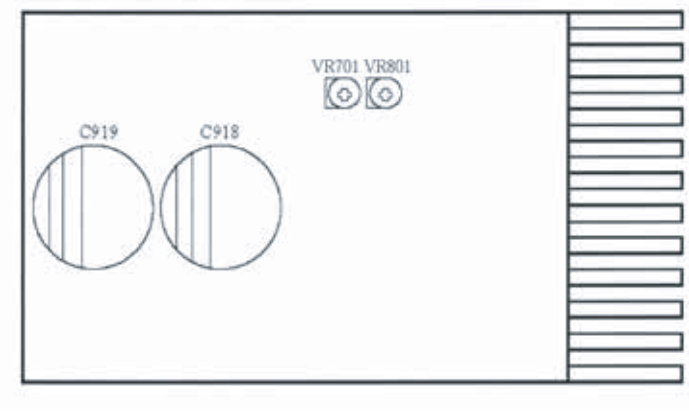
[SETUP]

Load impedance : 8 Ω
Input signal: No singal

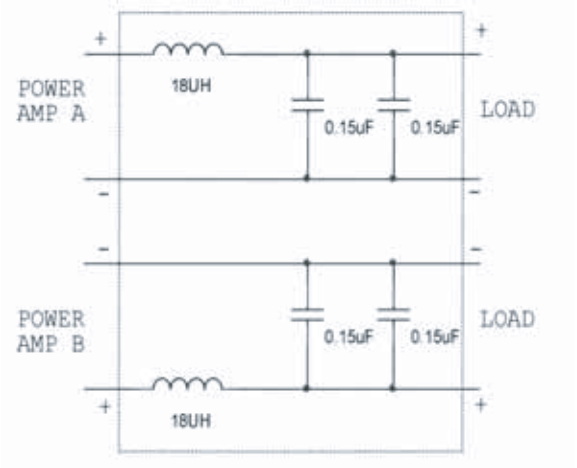
1. Turn the power ON and wait for about 5 minutes as a warming-up.
2. Measure the voltage across both ends of the SPEAKER with a DC voltmeter.



3. Adjust trimming resistors VR701(L-ch)/VR801(R-ch) until the voltage of 0V is obtain at each resistor.



Note: When characteristics test is performed, the following tools are necessary.



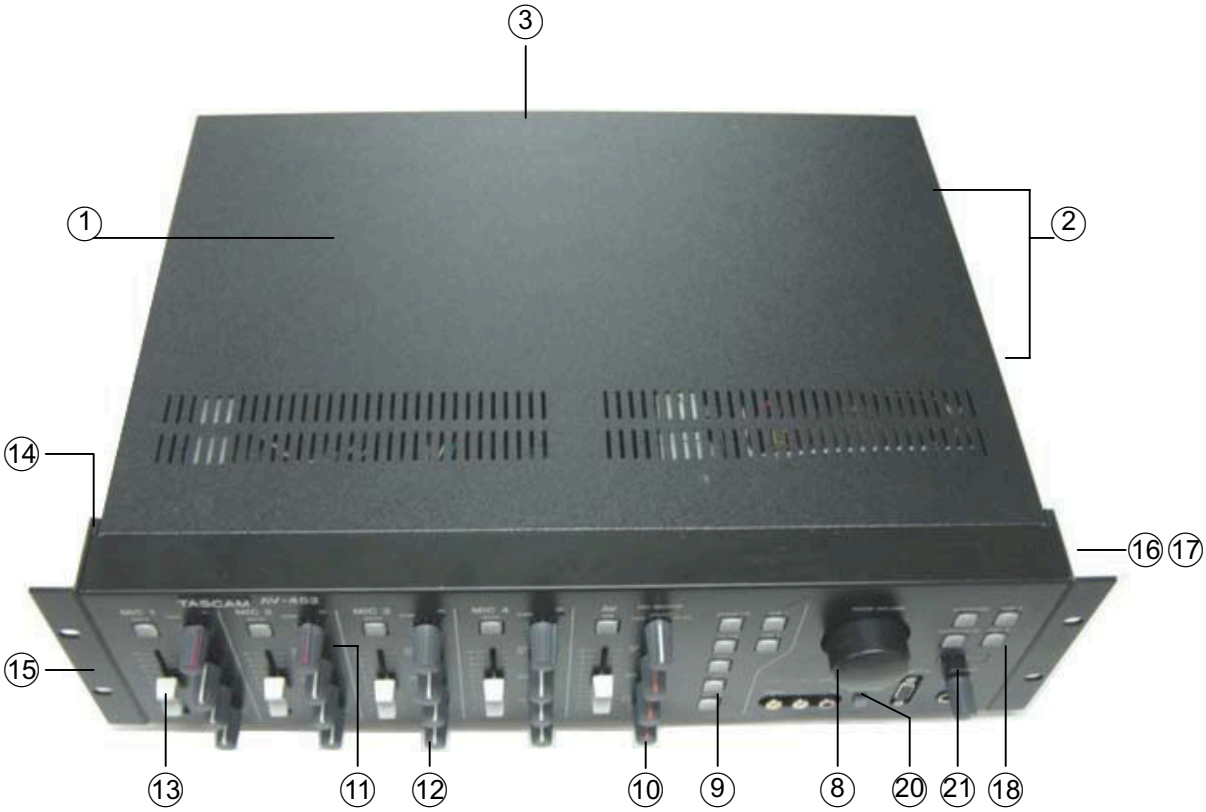
PARTS LIST SECTION

NOTES

- PC boards shown are viewed from parts side.
- Parts marked with * require longer delivery time.
- The parts with no reference number or no parts number in the exploded views are not supplied.
- As regards the resistors and capacitors, refer to the circuit diagrams contained in this manual.
- ⚠ Parts marked with this sign are safety critical components.They must be replaced with identical components - refer to the appropriate parts list and ensure exact replacement.
- Parts of [ ] mark can be used only with the version designated.
  [J] : JAPAN [US/C] : U.S.A./CANADA [K] : KOREA [E] : EUROPE
  [UK] : U.K. [A] : AUSTRALIA [TM]: TAIWAN

4. EXPLODED VIEWS AND PARTS LIST

EXPLODED VIEW1

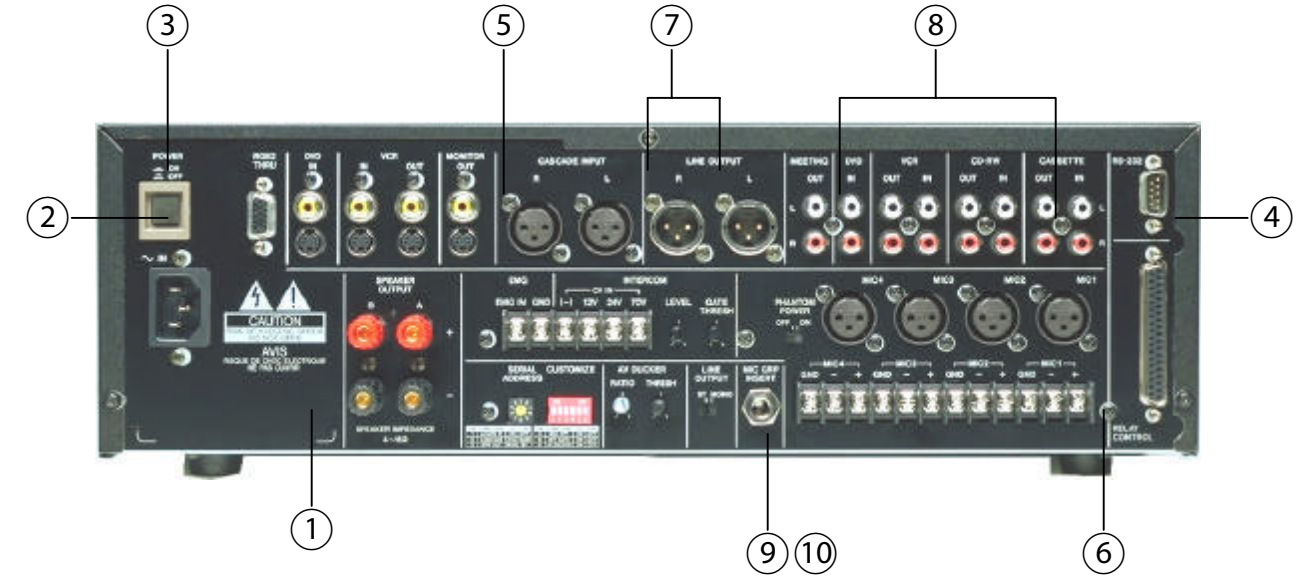


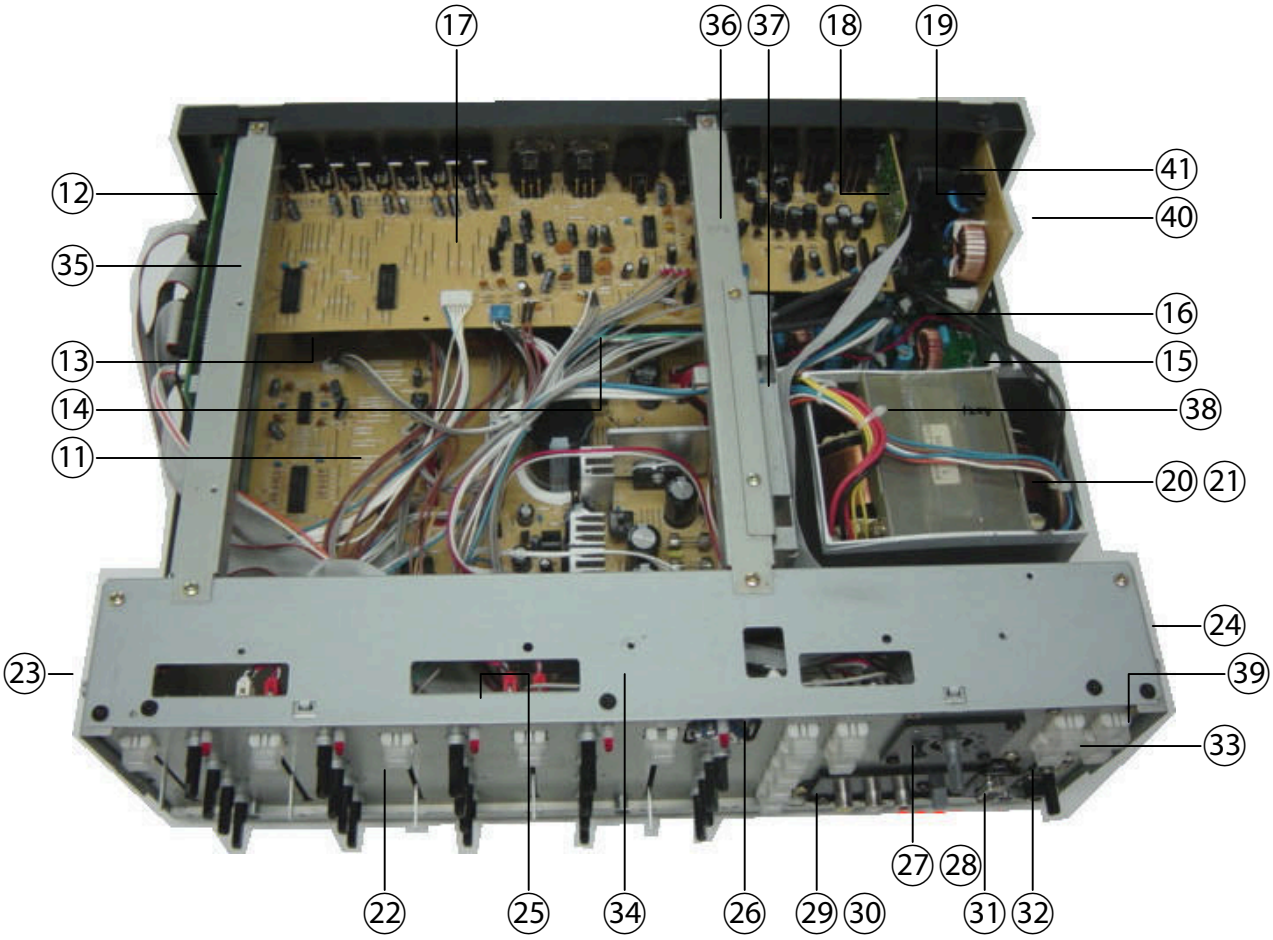
EXPLODED VIEW-1

REF. NO.	PARTS NO.	DESCRIPTION
1- 1	M01414700B	BONNET,AV-452
1- 2	3B0001806A	SCREW,J,S M3X6 BLK
1- 3	3B0004408A	SCREW,BPS M3X8 (BLK)
1- 4	M01707500D	CHASSIS,MAIN AV-452
1- 5	3B0001908A	SCREW,JS M4X8 BLK
1- 6	3M0211700A	FOOT(SF101)
1- 7	3B0703600A	SCREW,BPA M4X8
1- 8	M017 8100C	KNOB,38F AV-452
	M01708200B	LENS,LED AV-452
1- 9	M01830400A	BUTTON,BLT-IN LED
1-10	M01708706A	KNOB,12.5T(ORANGE)
1-11	M01708708A	KNOB,12.5T(RED)
1-12	M01708709A	KNOB,12.5T(WHITE)
1-13	M01819500A	KNOB,SLIDE(N63/N66)
1-14	M01707700A	SIDE PLATE,AV-452
1-15	M01765900A	ANGLE,RACK MOUNT
1-16	3M0215900A	PVC WASHER 4.2X10X1.0T BLK
1-17	3B0011410A	SCREW,BPA M4X10 BLK
1-18	M01707200A	FRONT PANEL,AV-452
1-19	3B0009207A	SCREW,FPS M3X7 BLK
1-20	M01443201A	BUTTON,6X6(P-N63-A)
1-21	3M0041800A	FLILTER V-1050

REF. NO.	PARTS NO.	DESCRIPTION
	M01708600A	CORR CDBD CS,AV-452

EXPLODED VIEW2





EXPLODED VIEW-2

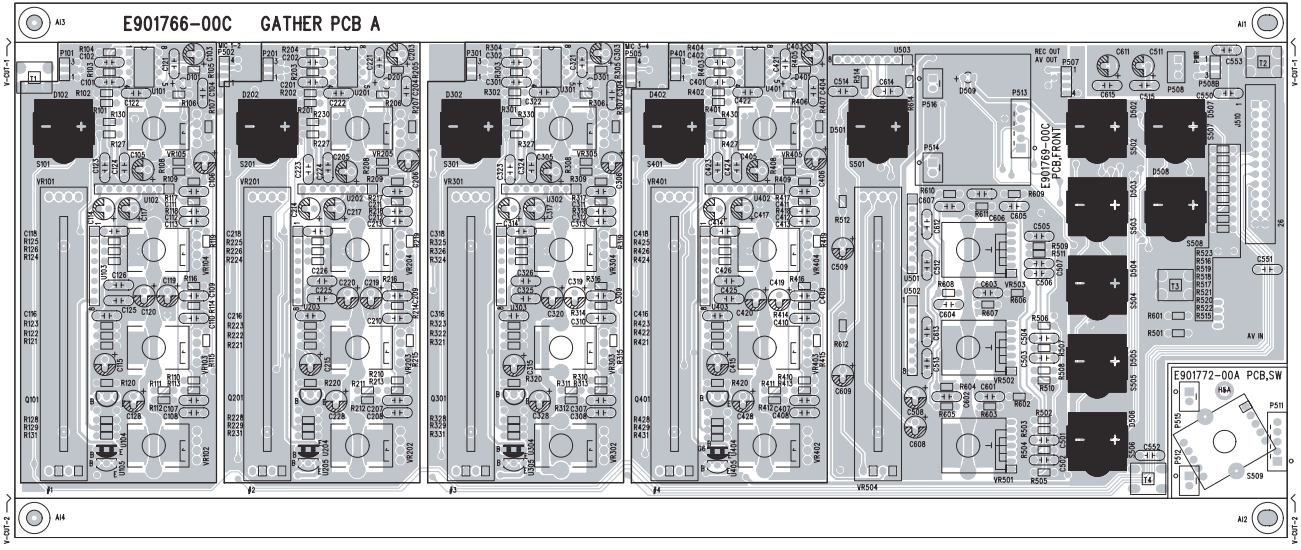
REF. NO.	PARTS NO.	DESCRIPTION
2- 1	M01707300E	REAR PANEL,AV-452
2- 2	M01509800A	BUTTON,POWER
2- 3	M01510000A	ESCUTCHEON,POWER
2- 4	3B0013000A	D-SUB SCREW 003-HEX
2- 5	3B0004808A	SCREW,BPP M3X8 (BLK)
2- 6	3B0004406A	SCREW,BPS M3X6 (BLK)
2- 7	3B0009506A	SCREW,BPB M2.6X6 BLK
2- 8	3B0005706A	SCREW,BPB M3X6 BLK
2- 9	3M0131000A	NUT,M12X2.3
2-10	3M0131100A	PLAIN WASHER M12 BLK
2-11	E90177300C	PCB,MAIN ASSY AV-452
		----------(Refer to page 15)
	3B0000106A	SCREW,BPS M3X6
2-12	E90181300B	PCB,DIG ASSY AV-452
		----------(Refer to page 17)
	3B0000106A	SCREW,BPS M3X6
2-13	E90177800C	PCB,MIC ASSY AV-452
		----------(Refer to page 16)
	3B0009506A	SCREW,BPB M2.6X6 BLK
	3B0004808A	SCREW,BPP M3X8 (BLK)
2-14	E90177900C	PCB,AICON ASSY AV-452
		----------(Refer to page 16)
	3B0000106A	SCREW,BPS M3X6
2-15	M01707600A	HEATSINK,AV-452
2-16	E90181400B	PCB,AMP ASSY AV-452
		----------(Refer to page 18)
	3B0000106A	SCREW,BPS M3X6
2-17	E90177700C	PCB,AIO ASSY AV-452
		----------(Refer to page 16)
	3B0004808A	SCREW,BPP M3X8 (BLK)
2-18	E90177500B	PCB,RGB ASSY AV-452
		----------(Refer to page 15)
	3B0013000A	D-SUB SCREW 003-HEX
2-19	E00854000C	PCB,AC FILTER ASSY AV-452
		----------(Refer to page 15)
	3B0004408A	SCREW,BPS M3X8 (BLK)
2-20	M01707900C	BRACKET,PT AV-452
2-21	E00848001A	TRANS POWER AV-452 JPN
	E00848020A	TRANS POWER AV-452 T/C
	E00848040A	TRANS POWER AV-452 AUS
	E00848050A	TRANS POWER AV-452 EUR-Y
	3B0001908A	SCREW,J,S M4X8 BLK
2-22	M01707400E	CHASSIS,FRONT AV-452
	3B0009207A	SCREW,FPS M3X7 BLK
2-23	M01413400A	BRACKET,ANGLE L
2-24	M01413500A	BRACKET,ANGLE R
	3B0005306A	SCREW,BPB M3X6
2-25	E90176900C	PCB,FRONT ASSY AV-452
		----------(Refer to page 13)
	3B0000108A	SCREW,BPS M3X8
	3B0009003A	SCREW,BP2X3 BLK
	3M001340	NUT,VR M9
	3M001350	PLAIN WSHR,VR M9.1

REF. NO.	PARTS NO.	DESCRIPTION
2-26	E90177200B	PCB,SW ASSY AV-452
		----------(Refer to page 13)
	3M001340	NUT,VR M9
	3M001350	PLAIN WSHR,VR M9.1
2-27	M01708000B	BRACKET,VOLUME AV-452
	3B0005708B	SCREW,BPB M3X8 BLK
	3B0004406A	SCREW,BPS M3X6 (BLK)
2-28	E90177600C	PCB,MV ASSY AV-452
		----------(Refer to page 15)
	3M001340	NUT,VR M9
	3M001350	PLAIN WSHR,VR M9.1
2-29	M01707800C	BRACKET,AUX AV-452
	3B0005706A	SCREW,BPB M3X6 BLK
2-30	E90178100B	PCB,AUX IN ASSY AV-452
		----------(Refer to page 16)
	3B0004808A	SCREW,BPP M3X8 (BLK)
2-31	E90183000A	PCB,RGB2 ASSY AV-452
		----------(Refer to page 15)
	3B0013000A	D-SUB SCREW 003-HEX
2-32	E90177400C	PCB,HPHA ASSY AV-452
		----------(Refer to page 15)
	3B0000106A	SCREW,BPS M3X6
	3M001340	NUT,VR M9
	3M001350	PLAIN WSHR,VR M9.1
2-33	E90178000B	PCB,SWIR ASSY AV-452
		----------(Refer to page 16)
	3B0000108A	SCREW,BPS M3X8
2-34	M01414300D	BRACKET,PANEL AV-452
	3B0009207A	SCREW,FPS M3X7 BLK
2-35	M01736800B	BRACKET,CONNECTOR
2-36	M01778700B	BRACKET,MC AV-452
2-37	M01852200A	BRACKET,REINFORCEMENT
	3B0005306A	SCREW,BPB M3X6
2-38	3M000870	CABLE BAND,100MM DS-8432
2-39	3M0206300A	BASE BLT IN LED
2-40	3M0220100A	SPACER SUPPORT RCD-11
2-41	3M0203300A	BARACKET,PWRSWDAX1000

Notice: *JPN is exported to JAPAN.
*KOR is exported to KOREA.
*T/C is exported to AMERICA.
*AUS is exported to AUSTRALIA.
*EUR-Y is exported to EUROPE.
*TM is exported to TAIWAN.
*UK-Y is exported to ENGLAND.

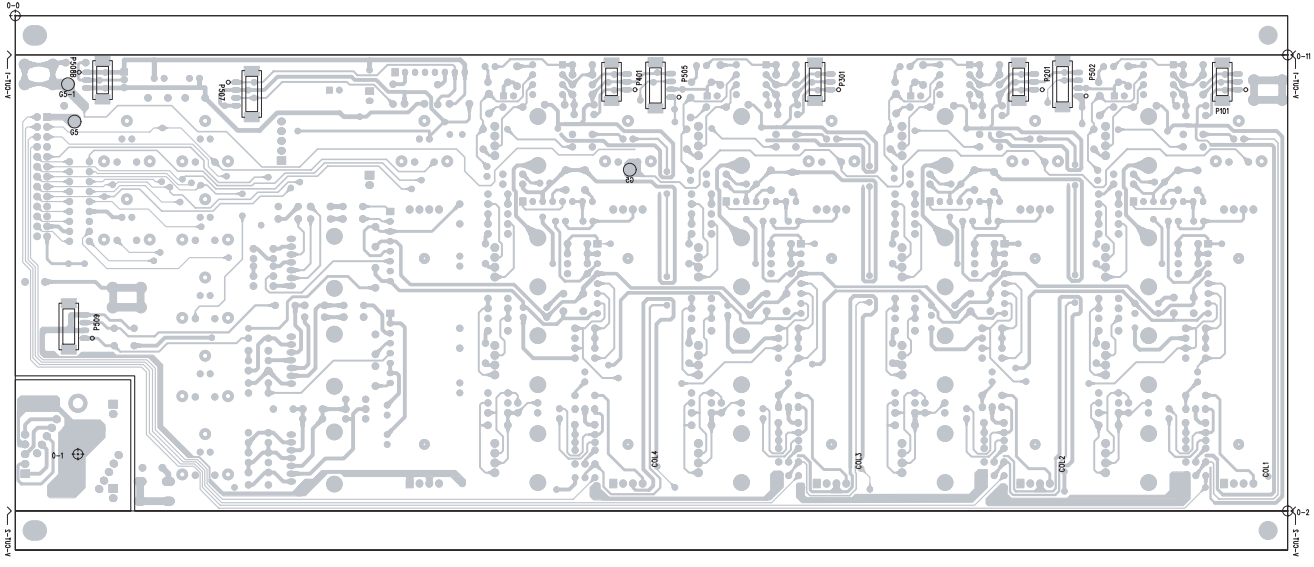
5. PCB BOARDS AND PARTS LIST

GATHER PCB A (PCB,FRONT ; PCB,SW) SIDE A



1 st Issue; November 2005

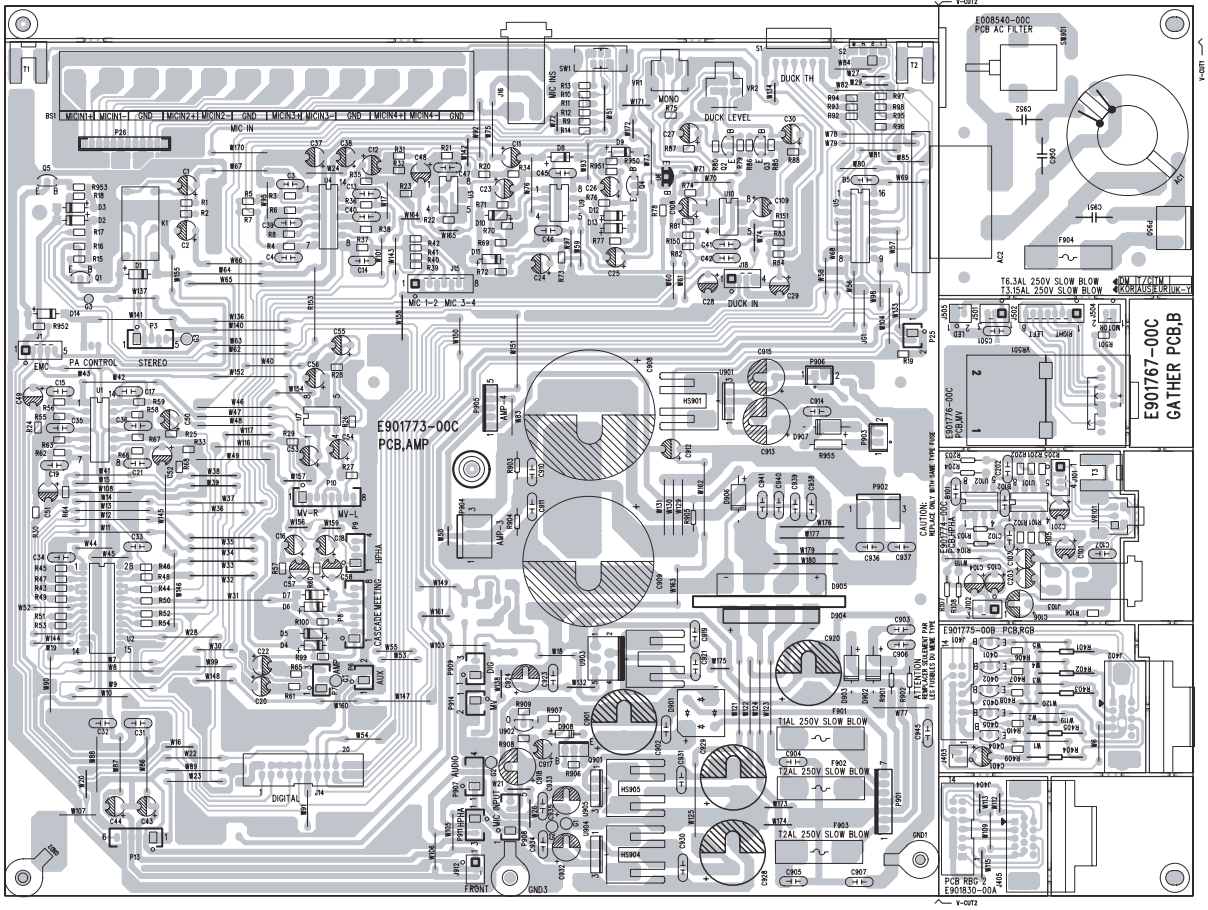
GATHER PCB A (PCB,FRONT ; PCB,SW) SIDE B



POWERED MIXER AV-452

1 st Issue; November 2005

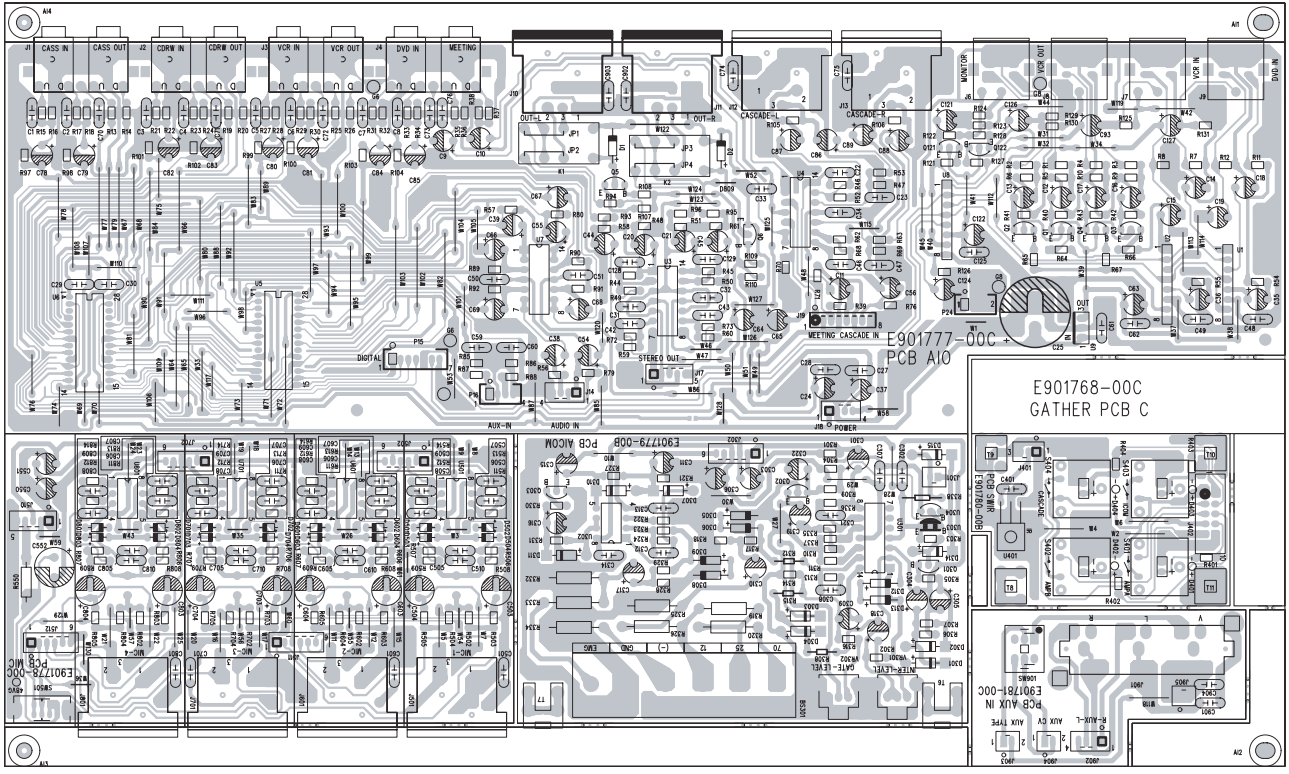
GATHER PCB B (PCB,MAIN ; PCB,HPHA ; PCB,RGB ; PCB,MV ; PCB,RGB2 ; PCB,AC FILTER)



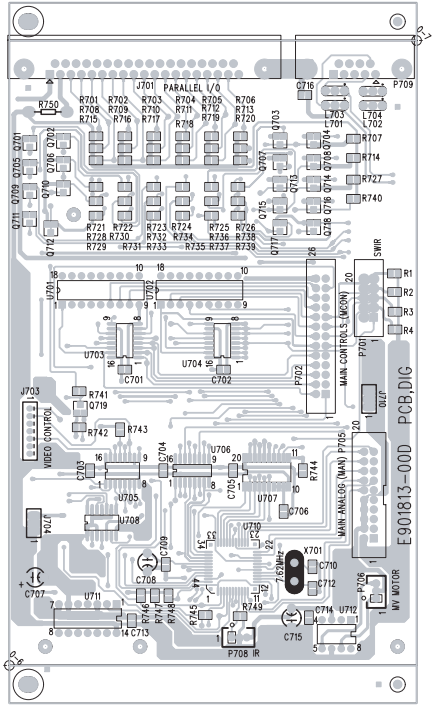
POWERED MIXER AV-452

1 st Issue; November 2005

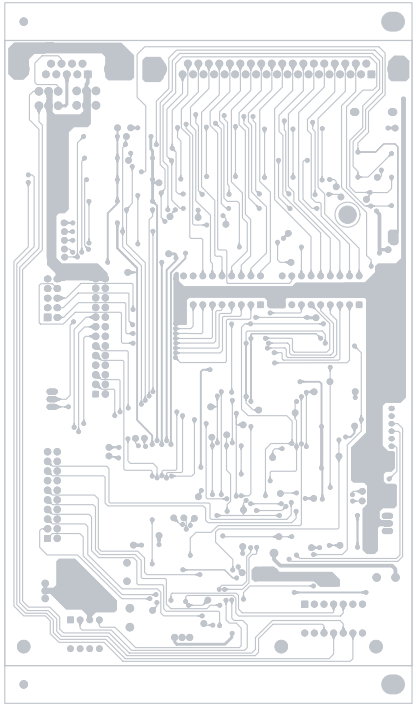
GATHER PCB C (PCB,AIO ; PCB,MIC ; PCB,AICOM ; PCB,SWIR ; PCB,AUX IN)



DIG PCB SIDE A



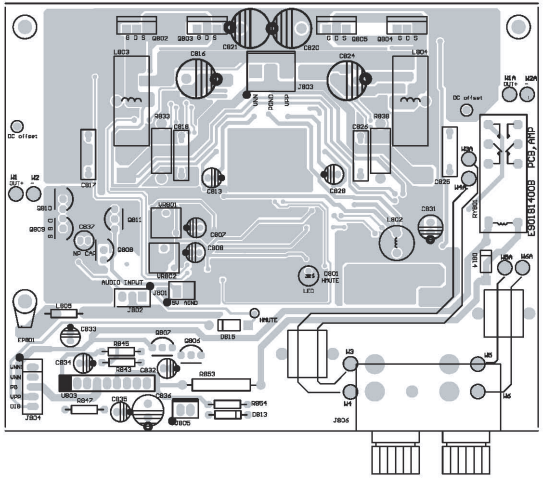
DIG PCB SIDE B



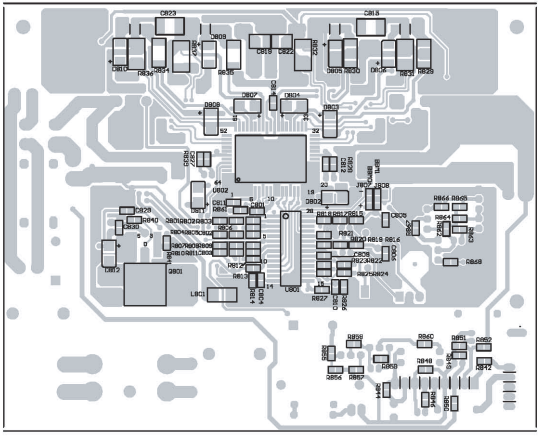
POWERED MIXER AV-452

1 st Issue; November 2005

AMP PCB SIDE A



AMP PCB SIDE B



GATHER PCB A

REF. NO.	PARTS NO.	DESCRIPTION
		PCB FRONT ASSY
	E901769-00C	PCB,FRONT AV-452
		CAPACITORS
C101,C201	3C022872	CC,50V 47PF K MONO P=5
C102,C202	3C022872	CC,50V 47PF K MONO P=5
C103,C203	3C017962	CE,SM5 25V 22UF TP
C104,C204	3C022882	CC,50V 100PF K MONO P=5
C105,C205	3C018462	CE,100U 16V(6.3*5) P=2.5
C106,C206	3C017962	CE,SM5 25V 22UF TP
C107,C207	3C022892	CC,50V 3300PF K MONO P=5
C108,C208	3C022892	CC,50V 3300PF K MONO P=5
C109,C209	3C022892	CC,50V 3300PF K MONO P=5
C110,C210	3C022902	CC,50V 4700PF K MONO P=5
C111,C211	3C022912	CC,50V 8200PF K MONO P=5
C112,C212	3C022912	CC,50V 8200PF K MONO P=5
C113,C213	3C022892	CC,50V 3300PF K MONO P=5
C114,C214	3C017962	CE,SM5 25V 22UF TP
C115,C215	3C017962	CE,SM5 25V 22UF TP
C116,C216	3C022862	CC,50V 22PF K MONO P=5
C117,C217	3C017962	CE,SM5 25V 22UF TP
C118,C218	3C022862	CC,50V 22PF K MONO P=5
C119,C219	3C017982	CE,SM5 25V 10UF TP
C120,C220	3C017982	CE,SM5 25V 10UF TP
C121,C221	3C022482	CC,50V 0.1UF K MONO P=5
C122,C222	3C022482	CC,50V 0.1UF K MONO P=5
C123,C223	3C022482	CC,50V 0.1UF K MONO P=5
C124,C224	3C022482	CC,50V 0.1UF K MONO P=5
C125,C225	3C022482	CC,50V 0.1UF K MONO P=5
C126,C226	3C022482	CC,50V 0.1UF K MONO P=5
C128,C228	3C017682	CE,SM5 25V 2.2UF NP P=2.5
C301,C401	3C022872	CC,50V 47PF K MONO P=5
C302,C402	3C022872	CC,50V 47PF K MONO P=5
C303,C403	3C017962	CE,SM5 25V 22UF TP
C304,C404	3C022882	CC,50V 100PF K MONO P=5
C305,C405	3C018462	CE,100U 16V(6.3*5) P=2.5
C306,C406	3C017962	CE,SM5 25V 22UF TP
C307,C407	3C022892	CC,50V 3300PF K MONO P=5
C308,C408	3C022892	CC,50V 3300PF K MONO P=5
C309,C409	3C022892	CC,50V 3300PF K MONO P=5
C310,C410	3C022902	CC,50V 4700PF K MONO P=5
C311,C411	3C022912	CC,50V 8200PF K MONO P=5
C312,C412	3C022912	CC,50V 8200PF K MONO P=5
C313,C413	3C022892	CC,50V 3300PF K MONO P=5
C314,C414	3C017962	CE,SM5 25V 22UF TP
C315,C415	3C017962	CE,SM5 25V 22UF TP

REF. NO.	PARTS NO.	DESCRIPTION
C316,C416	3C022862	CC,50V 22PF K MONO P=5
C317,C417	3C017962	CE,SM5 25V 22UF TP
C318,C418	3C022862	CC,50V 22PF K MONO P=5
C319,C419	3C017982	CE,SM5 25V 10UF TP
C320,C420	3C017982	CE,SM5 25V 10UF TP
C321,C421	3C022482	CC,50V 0.1UF K MONO P=5
C322,C422	3C022482	CC,50V 0.1UF K MONO P=5
C323,C423	3C022482	CC,50V 0.1UF K MONO P=5
C324,C424	3C022482	CC,50V 0.1UF K MONO P=5
C325,C425	3C022482	CC,50V 0.1UF K MONO P=5
C326,C426	3C022482	CC,50V 0.1UF K MONO P=5
C328,C428	3C017682	CE,SM5 25V 2.2UF NP P=2.5
C501,C601	3C023512	CC,50V 0.012UF K MONO P=5
C502,C602	3C023512	CC,50V 0.012UF K MONO P=5
C503,C603	3C022892	CC,50V 3300PF K MONO P=5
C504,C604	3C022892	CC,50V 3300PF K MONO P=5
C505,C605	3C022912	CC,50V 8200PF K MONO P=5
C506,C606	3C022912	CC,50V 8200PF K MONO P=5
C507,C607	3C023502	CC,50V 680PF K MONO P=5
C508,C608	3C017962	CE,SM5 25V 22UF TP
C509,C609	3C017962	CE,SM5 25V 22UF TP
C511,C611	3C017982	CE,SM5 25V 10UF TP
C512,C612	3C022482	CC,50V 0.1UF K MONO P=5
C513,C613	3C022482	CC,50V 0.1UF K MONO P=5
C514,C614	3C022482	CC,50V 0.1UF K MONO P=5
C515,C615	3C022482	CC,50V 0.1UF K MONO P=5
C550-C553	3C022482	CC,50V 0.1UF K MONO P=5
		RESISTORS
R101,R201	3R000721	RD, 1/8W 1.0K OHM J 26MM
R102,R202	3R000721	RD, 1/8W 1.0K OHM J 26MM
R103,R203	3R000721	RD, 1/8W 1.0K OHM J 26MM
R104,R204	3R000721	RD, 1/8W 1.0K OHM J 26MM
R105,R205	3R001201	RD, 1/8W 100K OHM J 26MM
R106,R206	3R000481	RD, 1/8W 100 OHM J 26MM
R107,R207	3R000481	RD, 1/8W 100 OHM J 26MM
R108,R208	3R000531	RD, 1/8W 160 OHM J 26MM
R109,R209	3R001201	RD, 1/8W 100K OHM J 26MM
R110,R210	3R001131	RD, 1/8W 51K OHM J 26MM
R111,R211	3R001321	RD, 1/8W 330K OHM J 26MM
R112,R212	3R001001	RD, 1/8W 15K OHM J 26MM
R113,R213	3R001131	RD, 1/8W 51K OHM J 26MM
R114,R214	3R000881	RD, 1/8W 4.7K OHM J 26MM
R115,R215	3R000831	RD, 1/8W 3.0K OHM J 26MM

REF. NO.	PARTS NO.	DESCRIPTION
R116,R216	3R000881	RD, 1/8W 4.7K OHM J 26MM
R117,R217	3R000791	RD, 1/8W 2.0K OHM J 26MM
R118,R218	3R000791	RD, 1/8W 2.0K OHM J 26MM
R119,R219	3R001001	RD, 1/8W 15K OHM J 26MM
R120,R220	3R001041	RD, 1/8W 22K OHM J 26MM
R121,R221	3R001081	RD, 1/8W 33K OHM J 26MM
R122,R222	3R000801	RD, 1/8W 2.2K OHM J 26MM
R123,R223	3R000721	RD, 1/8W 1.0K OHM J 26MM
R124,R224	3R001201	RD, 1/8W 100K OHM J 26MM
R125,R225	3R001001	RD, 1/8W 15K OHM J 26MM
R126,R226	3R000721	RD, 1/8W 1.0K OHM J 26MM
R127,R227	3R000881	RD, 1/8W 4.7K OHM J 26MM
R128,R228	3R000961	RD, 1/8W 10K OHM J 26MM
R129,R229	3R001201	RD, 1/8W 100K OHM J 26MM
R130,R230	3R000791	RD, 1/8W 2.0K OHM J 26MM
R131,R231	3R000961	RD, 1/8W 10K OHM J 26MM
R301,R401	3R000721	RD, 1/8W 1.0K OHM J 26MM
R302,R402	3R000721	RD, 1/8W 1.0K OHM J 26MM
R303,R403	3R000721	RD, 1/8W 1.0K OHM J 26MM
R304,R404	3R000721	RD, 1/8W 1.0K OHM J 26MM
R305,R405	3R001201	RD, 1/8W 100K OHM J 26MM
R306,R406	3R000481	RD, 1/8W 100 OHM J 26MM
R307,R407	3R000481	RD, 1/8W 100 OHM J 26MM
R308,R408	3R000531	RD, 1/8W 160 OHM J 26MM
R309,R409	3R001201	RD, 1/8W 100K OHM J 26MM
R310,R410	3R001131	RD, 1/8W 51K OHM J 26MM
R311,R411	3R001321	RD, 1/8W 330K OHM J 26MM
R312,R412	3R001001	RD, 1/8W 15K OHM J 26MM
R313,R413	3R001131	RD, 1/8W 51K OHM J 26MM
R314,R414	3R000881	RD, 1/8W 4.7K OHM J 26MM
R315,R415	3R000831	RD, 1/8W 3.0K OHM J 26MM
R316,R416	3R000881	RD, 1/8W 4.7K OHM J 26MM
R317,R417	3R000791	RD, 1/8W 2.0K OHM J 26MM
R318,R418	3R000791	RD, 1/8W 2.0K OHM J 26MM
R319,R419	3R001001	RD, 1/8W 15K OHM J 26MM
R320,R420	3R001041	RD, 1/8W 22K OHM J 26MM
R321,R421	3R001081	RD, 1/8W 33K OHM J 26MM
R322,R422	3R000801	RD, 1/8W 2.2K OHM J 26MM
R323,R423	3R000721	RD, 1/8W 1.0K OHM J 26MM
R324,R424	3R001201	RD, 1/8W 100K OHM J 26MM
R325,R425	3R001001	RD, 1/8W 15K OHM J 26MM
R326,R426	3R000721	RD, 1/8W 1.0K OHM J 26MM
R327,R427	3R000881	RD, 1/8W 4.7K OHM J 26MM
R328,R428	3R000961	RD, 1/8W 10K OHM J 26MM
R329,R429	3R001201	RD, 1/8W 100K OHM J 26MM
R330,R430	3R000791	RD, 1/8W 2.0K OHM J 26MM

REF. NO.	PARTS NO.	DESCRIPTION
R331,R431	3R000961	RD, 1/8W 10K OHM J 26MM
R501,R601	3R001201	RD, 1/8W 100K OHM J 26MM
R502,R602	3R001131	RD, 1/8W 51K OHM J 26MM
R503,R603	3R001361	RD, 1/8W 470K OHM J 26MM
R504,R604	3R001001	RD, 1/8W 15K OHM J 26MM
R505,R605	3R001131	RD, 1/8W 51K OHM J 26MM
R506,R606	3R000881	RD, 1/8W 4.7K OHM J 26MM
R507,R607	3R000831	RD, 1/8W 3.0K OHM J 26MM
R508,R608	3R000881	RD, 1/8W 4.7K OHM J 26MM
R509,R609	3R000721	RD, 1/8W 1.0K OHM J 26MM
R510,R610	3R000721	RD, 1/8W 1.0K OHM J 26MM
R511,R611	3R001001	RD, 1/8W 15K OHM J 26MM
R512,R612	3R001081	RD, 1/8W 33K OHM J 26MM
R514,R614	3R003421	JUMPER RES,5MM
R515-R521	3R000651	RD, 1/8W 510 OHM J 26MM
R522	3R000721	RD, 1/8W 1.0K OHM J 26MM
R523	3R000651	RD, 1/8W 510 OHM J 26MM
VR101	3R021690	VR,RF6011YP6113-TK 50KB
VR102	3R021750	VR,RK11K114A234-100KB C.C
VR103	3R021750	VR,RK11K114A234-100KB C.C
VR104	3R021750	VR,RK11K114A234-100KB C.C
VR105	3R021740	VR,RK11K1140654-TK 10K RD
VR201	3R021690	VR,RF6011YP6113-TK 50KB
VR202	3R021750	VR,RK11K114A234-100KB C.C
VR203	3R021750	VR,RK11K114A234-100KB C.C
VR204	3R021750	VR,RK11K114A234-100KB C.C
VR205	3R021740	VR,RK11K1140654-TK 10K RD
VR301	3R021690	VR,RF6011YP6113-TK 50KB
VR302	3R021750	VR,RK11K114A234-100KB C.C
VR303	3R021750	VR,RK11K114A234-100KB C.C
VR304	3R021750	VR,RK11K114A234-100KB C.C
VR305	3R021740	VR,RK11K1140654-TK 10K RD
VR401	3R021690	VR,RF6011YP6113-TK 50KB
VR402	3R021750	VR,RK11K114A234-100KB C.C
VR403	3R021750	VR,RK11K114A234-100KB C.C
VR404	3R021750	VR,RK11K114A234-100KB C.C
VR405	3R021740	VR,RK11K1140654-TK 10K RD
VR501	3R021760	VR,RK14K124A234-100KB*2
VR502	3R021760	VR,RK14K124A234-100KB*2
VR503	3R021760	VR,RK14K124A234-100KB*2
VR504	3R021700	VR,RF60112P6118-TK 50KB*2

REF. NO.	PARTS NO.	DESCRIPTION
		SEMICONDUCTORS
U101,U201	3S001700	IC,NJM4580D
U102,U202	3S000050	IC, NJM4558L
U103,U203	3S000050	IC, NJM4558L
U104,U204	3S000301	TR, DTA124ES TP
U105,U205	3S000291	TR, DTC124ES TP
U301,U401	3S001700	IC,NJM4580D
U302,U402	3S000050	IC, NJM4558L
U303,U403	3S000050	IC, NJM4558L
U304,U404	3S000301	TR, DTA124ES TP
U305,U405	3S000291	TR, DTC124ES TP
U501,U502	3S000050	IC, NJM4558L
U503	3S003700	IC NJM5532L (8P)
		MISCELLANEOUS
D102-D202	91740276-20	LED,SLR-332DU T32(ORG)
D302-D402	91740276-20	LED,SLR-332DU T32(ORG)
D501	91740276-20	LED,SLR-332DU T32(ORG)
D502-D508	91740277-20	LED,SLR-332MG T32(GRN)
D101,D201	3E016360	LED,SLR-342VR-3F (RED)
D301,D401	3E016360	LED,SLR-342VR-3F (RED)
D509	3E016360	LED,SLR-342VR-3F (RED)
D101,D201	3M01559-00A	HOLDER,LED LEDS-14
D301,D401	3M01559-00A	HOLDER,LED LEDS-14
D509	3M01559-00A	HOLDER,LED LEDS-14
G5-G5	E009172-00A	HARNESS ASSY,GND1
J510	E008509-00A	HARNESS ASSY,26P DIG4
P101,P301	3E007850	CONNECTOR ,B 3B-PH-SM3-TB
P201,P401	3E018480	CONNECT,PLUG B3BPH-SM3RED
P502,P507	3E007860	CONNECTOR ,B 4B-PH-SM3-TB
P505,P509	3E018790	CONNECTOR,B4B-PH-SM3RED
P508	3E018490	CONNECT,PLUG B3BPH-SM3BLK
P511-P513	3E029440	PIN,HEADER 2.54MM 1*5P
P512-P514	3E003780	HEADER,2PIN 87156-02
P515-P516	3E003780	HEADER,2PIN 87156-02
P513-P516	3M01818-00A	LED SUPPORT LEDS-1
T1-T4	E008518-00A	TERMINAL,PCB KY/PCB-11
PCB SW ASSY		
	E901772-00B	PCB,SW AV-452
S509	3E030550	SW,ROTARY SRBV131500

GATHER PCB B

REF. NO.	PARTS NO.	DESCRIPTION
PCB MAIN ASSY		
	E901773-00C	PCB,MAIN AV-452
		CAPACITORS
B5	3C022482	CC,50V 0.1UF K MONO P=5
C1,C2	3C000412	CE, 25V 22 UF M TP
C3,C4	3C010512	CC,CH 50V 47PF J TP
C11	3C009242	CE,35V 10UF BP TP
C12	3C000412	CE, 25V 22 UF M TP
C13	3C003282	CQ,100V 0.012UFJ MYLAR TP
C14,C15	3C010512	CC,CH 50V 47PF J TP
C16,C18	3C000412	CE, 25V 22 UF M TP
C17,C19	3C010512	CC,CH 50V 47PF J TP
C20,C22	3C000412	CE, 25V 22 UF M TP
C21	3C010512	CC,CH 50V 47PF J TP
C23,C25	3C000092	CE, 50V 0.47UF M TP
C24	3C000272	CE, 50V 4.7UF M TP
C26	3C000342	CE, 25V 10 UF M TP
C27-C30	3C000412	CE, 25V 22 UF M TP
C31-C36	3C022482	CC,50V 0.1UF K MONO P=5
C37,C38	3C000342	CE, 25V 10 UF M TP
C39-C42	3C022482	CC,50V 0.1UF K MONO P=5
C43,C44	3C000342	CE, 25V 10 UF M TP
C45,C46	3C022482	CC,50V 0.1UF K MONO P=5
C47	3C010512	CC,CH 50V 47PF J TP
C48-C52	3C000412	CE, 25V 22 UF M TP
C53-C56	3C000412	CE, 25V 22 UF M TP
C57,C58	3C000412	CE, 25V 22 UF M TP
C108,C109	3C000412	CE, 25V 22 UF M TP
C901 ⚠	3C022670	CE,100V 470UF
C902	3C010292	CQ, 100V 0.10UF MTLIZ TP
C903-C904	3C010232	CQ,100V 0.01UF J MTLIZ TP
C905	3C010232	CQ,100V 0.01UF J MTLIZ TP
C906	3C010232	CQ,100V 0.01UF J MTLIZ TP
C907	3C022482	CC,50V 0.1UF K MONO P=5
C908,C909 ⚠	3C022370	CE,80V 8200UF K 35*45
C910,C911 ⚠	3C010292	CQ, 100V 0.10UF MTLIZ TP
C912 ⚠	3C000182	CE, 50V 1.0UF M TP
C913 ⚠	3C001090	CE, 35V 1000UF M
C914	3C022482	CC,50V 0.1UF K MONO P=5
C915 ⚠	3C023180	CE,16V 1000UF M 8*20 P=5
C917 ⚠	3C000182	CE, 50V 1.0UF M TP
C918 ⚠	3C000722	CE, 63V 100UF M TP
C920 ⚠	3C001150	CE, 25V 2200UF M
C921,C923	3C022482	CC,50V 0.1UF K MONO P=5
C924 ⚠	3C000772	CE, 25V 220 UF M TP

REF. NO.	PARTS NO.	DESCRIPTION
C928,C929 ⚠	3C001210	CE, 25V 3300UF M
C932,C933 ⚠	3C000692	CE, 25V 100 UF M TP
C934,C935	3C022482	CC,50V 0.1UF K MONO P=5
C936-C941 ⚠	3C010292	CQ, 100V 0.10UF MTLIZ TP
C945 ⚠	3C010292	CQ, 100V 0.10UF MTLIZ TP
		RESISTORS
R1,R2	3R001201	RD, 1/8W 100K OHM J 26MM
R3,R4	3R001051	RD, 1/8W 24K OHM J 26MM
R5	3R000981	RD, 1/8W 12K OHM J 26MM
R6,R8	3R000721	RD, 1/8W 1.0K OHM J 26MM
R7	3R000981	RD, 1/8W 12K OHM J 26MM
R9	3R001051	RD, 1/8W 24K OHM J 26MM
R10,R11	3R001051	RD, 1/8W 24K OHM J 26MM
R12	3R001051	RD, 1/8W 24K OHM J 26MM
R13,R14	3R001051	RD, 1/8W 24K OHM J 26MM
R15	3R000721	RD, 1/8W 1.0K OHM J 26MM
R16	3R000641	RD, 1/8W 470 OHM J 26MM
R17,R18	3R000721	RD, 1/8W 1.0K OHM J 26MM
R19	3R001041	RD, 1/8W 22K OHM J 26MM
R20,R21	3R000961	RD, 1/8W 10K OHM J 26MM
R22	3R000721	RD, 1/8W 1.0K OHM J 26MM
R23-R25	3R001321	RD, 1/8W 330K OHM J 26MM
R26-R30	3R001201	RD, 1/8W 100K OHM J 26MM
R31	3R000481	RD, 1/8W 100 OHM J 26MM
R32,R34	3R001321	RD, 1/8W 330K OHM J 26MM
R33	3R001201	RD, 1/8W 100K OHM J 26MM
R35	3R001241	RD, 1/8W 150K OHM J 26MM
R37	3R001061	RD, 1/8W 27K OHM J 26MM
R38	3R000721	RD, 1/8W 1.0K OHM J 26MM
R39-R42	3R000961	RD, 1/8W 10K OHM J 26MM
R43-R46	3R000831	RD, 1/8W 3.0K OHM J 26MM
R47	3R001081	RD, 1/8W 33K OHM J 26MM
R48	3R001081	RD, 1/8W 33K OHM J 26MM
R49,R50	3R000791	RD, 1/8W 2.0K OHM J 26MM
R51-R54	3R000831	RD, 1/8W 3.0K OHM J 26MM
R55,R58	3R000721	RD, 1/8W 1.0K OHM J 26MM
R56,R59	3R000851	RD, 1/8W 3.6K OHM J 26MM
R57,R60	3R001321	RD, 1/8W 330K OHM J 26MM
R61,R65	3R001321	RD, 1/8W 330K OHM J 26MM
R62,R66	3R000961	RD, 1/8W 10K OHM J 26MM
R64	3R000831	RD, 1/8W 3.0K OHM J 26MM
R63,R67	3R000721	RD, 1/8W 1.0K OHM J 26MM
R68	3R000831	RD, 1/8W 3.0K OHM J 26MM
R69	3R000721	RD, 1/8W 1.0K OHM J 26MM
R70,R73	3R000961	RD, 1/8W 10K OHM J 26MM
R71,R72	3R001201	RD, 1/8W 100K OHM J 26MM

REF. NO.	PARTS NO.	DESCRIPTION
R74	3R000891	RD, 1/8W 5.1K OHM J 26MM
R75	3R000641	RD, 1/8W 470 OHM J 26MM
R76,R79	3R000961	RD, 1/8W 10K OHM J 26MM
R77,R78	3R001201	RD, 1/8W 100K OHM J 26MM
R80,R81	3R000561	RD, 1/8W 220 OHM J 26MM
R82,R83	3R001201	RD, 1/8W 100K OHM J 26MM
R84,R85	3R000561	RD, 1/8W 220 OHM J 26MM
R86	3R000961	RD, 1/8W 10K OHM J 26MM
R87,R88	3R001201	RD, 1/8W 100K OHM J 26MM
R92-R98	3R001041	RD, 1/8W 22K OHM J 26MM
R99,R100	3R000721	RD, 1/8W 1.0K OHM J 26MM
R150,R151	3R001321	RD, 1/8W 330K OHM J 26MM
R901,R902 ⚠	3R019790	RSN,1/4W 2.2 OHM J KIN
R903,R904 ⚠	3R002671	RD, 1/4W 10KOHM J 26MM
R905	3R001001	RD, 1/8W 15K OHM J 26MM
R906	3R000561	RD, 1/8W 220 OHM J 26MM
R907	3R000661	RD, 1/8W 560 OHM J 26MM
R908	3R017271	RN,METAL 1/8W120KOHM F TP
R909	3R010401	RN,METAL 1/8W3.3KOHM F TP
R950-R952	3R000961	RD, 1/8W 10K OHM J 26MM
R953 ⚠	3R000881	RD, 1/8W 4.7K OHM J 26MM
R955 ⚠	3R025020	RD,NON-F 1/4W 1 OHM JKIN
VR1 ⚠	3R021710	VR,RK09K1110466-TK 10KB
VR2 ⚠	3R021730	VR,RD09L12B0060-TK 2KB*2
		SEMICONDUCTORS
D1-D3 ⚠	3S000241	DI, 1SS133 T-77
D10-D13 ⚠	3S000241	DI, 1SS133 T-77
D14 ⚠	3S000241	DI, 1SS133 T-77
D901 ⚠	3S010070	BRIDGE DIODE S2VB60
D902,D903 ⚠	3S000031	DI, 1N4003 TAPING W= 52MM
D904 ⚠	3S007520	ZDI,BRIDGE 6A 600V D3SB60
D905 ⚠	3S008810	DIODE,BRIDGE D5SB60
D901-D905	3M01811-00A	HEAT SINK 3
D901-D905	3B07000-00A	SCREW,BH M3*14
D901-D905 ⚠	3B00131-00A	NUT M3
D906,D907 ⚠	3S000031	DI, 1N4003 TAPING W= 52MM
D908 ⚠	3S000091	ZDI MTZ J 39B
Q1	3S000002	TR, 2SC1815GR TP
Q2,Q3	3S001542	TR,2SC2878B TP
Q4,Q5	3S000002	TR, 2SC1815GR TP
Q901	3S008250	TR,2SB1018A-0
U1,U4	3S009950	IC,NJM2058D
U2	3S009960	IC,NJU7311AL
U3	3S000260	IC, NJM4558D
U5	3S010130	IC,TC74HC157AP

REF. NO.	PARTS NO.	DESCRIPTION
U6	3S000301	TR, DTA124ES TP
U7	3S000260	IC, NJM4558D
U9,U10	3S000260	IC, NJM4558D
U901 ⚠	3S000650	IC, NJM7805FA
U901	3M01558-00A	HEAT SINK,GA-07 H=50
U902 ⚠	3S009970	IC,M5237L(3P)
U903 ⚠	3S003720	IC L78MR05 (5P)
U903	M017133-00A	HEAT SINK,TR78MR05
U901,U903	3B00053-06A	SCREW,BPB M3*6
U904 ⚠	3S002170	IC,NJM7812FA
U905 ⚠	3S003030	IC,NJM7912FA
U904,U905	3B00053-06A	SCREW,BPB M3*6
		MISCELLANEOUS
BS1	3E030580	BARRIER BM14-04-12P
F901	91500450-10	FUSE 1A 250V 0218001
F902-F903	91500290-10	FUSE 2A 250V 0218002
F901-F903	3E006220	FUSE HOLDER 5.0 FUSE
G1-G1	E008989-00A	HARNESS ASSY,GND
G2-G2	E009173-00A	HARNESS ASSY,GND2
GND1	3E02152-00A	EARTH PLATE B GND-8
GND2	3E02152-00A	EARTH PLATE B GND-8
GND3	3E02152-00A	EARTH PLATE B GND-8
JG1	3R003481	JUMPER RES,10MM
J14	E008508-00B	HARNESS ASSY,20P DIG3
J15	E008499-00A	HARNESS ASSY,8P MICPRE
J16	3E030400	JACK,PHONE J6417-400
J18	E008493-00A	HARNESS ASSY ,4P AV-OUT
J912	E008491-00A	HARNESS ASSY ,3P POWER11
K1	3E020890	RELAY RSB-12-S
P3	3E010370	CONNECT PLUG B 5B-PH-K-S
P7	3E001150	CONNECT PLUG 3P B3B-EH-A
P6	3E003810	CONNECTOR,PLUG B2B-PH RED
P8	3E003870	CONNECTOR,PLUG B8B-PH RED
P9	3E006080	CONNECT PLUG B4B-PH-K BLK
P10	3E010400	CONNECT PLUG B 8B-PH-K-S
P13	3E010380	CONNECT PLUG B 6B-PH-K-S
P25	3E014830	CONNECT,PLG B2B-PH-K YEL
P26	3E010440	CONNECT PLUG B12B-PH-K-S
P901	3E002420	CONNECTOR,PLUG 7P B7B-EH
P902,P904	3E027110	CONNECT,B3P-VH 3P
P903	3E001140	CONNECT PLUG 2P B2B-EH-A
P905	3E001170	CONNECT PLUG 5P B5B-EH-A
P906	3E019820	PLUG,B2B-EH-A 2P RED
P907	3E003830	CONNECTOR,PLUG B4B-PH RED
P908	3E003840	CONNECTOR,PLUG B5B-PH RED
P909	3E019360	PLUG, B3B-PH 3P YELLOW

REF. NO.	PARTS NO.	DESCRIPTION
P907	3E003830	CONNECTOR,PLUG B4B-PH RED
P908	3E003840	CONNECTOR,PLUG B5B-PH RED
P909	3E019360	PLUG, B3B-PH 3P YELLOW
P911	3E006070	CONNECT PLUG B3B-PH-K BLK
P914	3E006060	CONNECT PLUG B2B-PH-K BLK
S1	3E030600	SW,DIP DA-06
S2	3E030610	ROTARY DIPSW PCS-101
SW1	3E030560	SW,SLIDE SSSF122NA3
T1-T3	M015101-00A	BRACKET,PCB-A
		PCB HPHA ASSY
	E901774-00C	PCB,HPHA AV-452
		CAPACITORS
C102,C202	3C010462	CC,CH 50V 22PF J TP
C103,C203	3R003421	JUMPER RES,5MM
C106	3R003421	JUMPER RES,5MM
C104,C105	3C000342	CE, 25V 10 UF M TP
C107	3C022482	CC,50V 0.1UF K MONO P=5
		RESISTORS
R101,R201	3R000851	RD, 1/8W 3.6K OHM J 26MM
R102,R202	3R001011	RD, 1/8W 16K OHM J 26MM
R103,R203	3R007690	RD,NON-F 1/4W 100 J P=10
R104,R204	3R007690	RD,NON-F 1/4W 100 J P=10
R105,R205	3R001201	RD, 1/8W 100K OHM J 26MM
R107,R108	3R009520	RD,NON-F 1/4W 47 OHM P=10
VR101	3R021720	VR,RD09K12AZ009-TK 10KA*2
		SEMICONDUCTORS
U101,U102	3S001700	IC,NJM4580D
		MISCELLANEOUS
J101	E008497-00A	HARNESS ASSY,4P HPHA1
J102	E008490-00A	HARNESS ASSY ,3P POWER10
J103	3E030400	JACK,PHONE J6417-400
		PCB RGB ASSY
	E901775-00B	PCB,RGB AV-452
C101,C201	3C000412	CE, 25V 22 UF M TP
Q401-Q403	3R003421	JUMPER RES,5MM
Q404-Q405	3R003421	JUMPER RES,5MM
J401-J404	E008517-00A	HRANESS ASSY,14P RGB
J402	3E030440	D-SUB 103A-15FSTBBA3
		PCB MV ASSY
	E901776-00C	PCB,MV AV-452

REF. NO.	PARTS NO.	DESCRIPTION
		CAPACITORS
C501	3C013912	CC, B 50V 0.01UF K TP
		RESISTORS
R501	3R000761	RD, 1/8W 1.5K OHM J 26MM
VR501	3E030540	MOTOR RK16812MGL 10KA
		MISCELLANEOUS
J501	E008514-00A	HARNESS ASSY,3P MOTOR1
J502	E008495-00A	HARNESS ASSY ,8P MV1
J504	E008486-00A	HARNESS ASSY ,2P POWER6
J505	E008507-00A	HARNESS ASSY,2P MOTOR2
PCB RGB 2 ASSY		
	E901830-00A	PCB,RGB2 AV-452
J405	3E030440	D-SUB 103A-15FSTBBA3
PCB AC FILTER ASSY (JPN、T/C、TM)		
	E008540-00C	PCB,AC FILTER AV-452
C950-C952	91200001-01	SPARK KILLER 0.0047M 250V
AC1 ⚠	3E032680	AC FILTER LFLH-102U-5A
AC2 ⚠	91444930-00	AC INLET M1908-B
F904 ⚠	91500627-00	FUSE VBS UTE 6.3A 250V
P950	3E025820	CONNECT,B2P3-VH 2P
SW901 ⚠	3E025810	SW,POWER SDKLA10200
PCB AC FILTER ASSY (KOR、AUS、EUR-Y、UK-Y)		
	E008540-00C	PCB,AC FILTER AV-452
C950-C952	91200001-01	SPARK KILLER 0.0047M 250V
AC1 ⚠	3E032680	AC FILTER LFLH-102U-5A
AC2 ⚠	91444930-00	AC INLET M1908-B
F904 ⚠	91500530-10	FUSE 3.15A 250V 02183.15
P950	3E025820	CONNECT,B2P3-VH 2P
SW901 ⚠	3E025810	SW,POWER SDKLA10200

GATHER PCB C

REF. NO.	PARTS NO.	DESCRIPTION
PCB AIO ASSY		
	E901777-00C	PCB,AIO AV-452
		CAPACITORS
C1-C8	3C011072	CC,B 50V 1000PF K TP
C9-C11	3C000412	CE, 25V 22 UF M TP
C12,C13	3C000912	CE, 10V 470 UF M TP
C14,C15	3C000912	CE, 10V 470 UF M TP
C16,C17	3C000912	CE, 10V 470 UF M TP
C18,C19	3C000912	CE, 10V 470 UF M TP
C20,C21	3C000412	CE, 25V 22 UF M TP
C22,C23	3C010512	CC,CH 50V 47PF J TP
C24,C37	3C000342	CE, 25V 10 UF M TP
C25	3C022840	CE 16V 3300UF 13*25 M
C27-C34	3C022482	CC,50V 0.1UF K MONO P=5
C35,C36	3C000912	CE, 10V 470 UF M TP
C38,C39	3C000412	CE, 25V 22 UF M TP
C42,C43	3C010610	CC,CH 50V 220PF J
C44,C45	3C000412	CE, 25V 22 UF M TP
C46,C47	3C010512	CC,CH 50V 47PF J TP
C48,C49	3C022482	CC,50V 0.1UF K MONO P=5
C50,C51	3C022482	CC,50V 0.1UF K MONO P=5
C54-C56	3C000412	CE, 25V 22 UF M TP
C59,C60	3C011072	CC,B 50V 1000PF K TP
C61,C62	3C022482	CC,50V 0.1UF K MONO P=5
C63-C65	3C000342	CE, 25V 10 UF M TP
C66-C69	3C000412	CE, 25V 22 UF M TP
C70-C73	3R003421	JUMPER RES,5MM
C76	3R003421	JUMPER RES,5MM
C78-C85	3C000412	CE, 25V 22 UF M TP
C86-C89	3C000412	CE, 25V 22 UF M TP
C93	3C000912	CE, 10V 470 UF M TP
C121,C124	3C000912	CE, 10V 470 UF M TP
C122	3C000342	CE, 25V 10 UF M TP
C125	3C022482	CC,50V 0.1UF K MONO P=5
C126,C127	3C000912	CE, 10V 470 UF M TP
C128,C129	3C010610	CC,CH 50V 220PF J
C902,C903	3R003421	JUMPER RES,5MM
		RESISTORS
R1-R4	3R000431	RD, 1/8W 62 OHM J 26MM
R5,R6	3R001121	RD, 1/8W 47K OHM J 26MM
R7,R8	3R000451	RD, 1/8W 75 OHM J 26MM
R9,R10	3R001121	RD, 1/8W 47K OHM J 26MM
R13,R14	3R000641	RD, 1/8W 470 OHM J 26MM

REF. NO.	PARTS NO.	DESCRIPTION
R15,R17	3R000641	RD, 1/8W 470 OHM J 26MM
R16,R18	3R001261	RD, 1/8W 180K OHM J 26MM
R19,R20	3R000641	RD, 1/8W 470 OHM J 26MM
R21,R23	3R000641	RD, 1/8W 470 OHM J 26MM
R22,R24	3R001261	RD, 1/8W 180K OHM J 26MM
R25,R26	3R000641	RD, 1/8W 470 OHM J 26MM
R27,R29	3R000641	RD, 1/8W 470 OHM J 26MM
R28,R30	3R001261	RD, 1/8W 180K OHM J 26MM
R31,R33	3R000641	RD, 1/8W 470 OHM J 26MM
R32,R34	3R001261	RD, 1/8W 180K OHM J 26MM
R35,R37	3R000481	RD, 1/8W 100 OHM J 26MM
R36,R38	3R001201	RD, 1/8W 100K OHM J 26MM
R39	3R001321	RD, 1/8W 330K OHM J 26MM
R40-R43	3R000531	RD, 1/8W 160 OHM J 26MM
R44,R45	3R000961	RD, 1/8W 10K OHM J 26MM
R46,R47	3R000811	RD, 1/8W 2.4K OHM J 26MM
R48,R51	3R001311	RD, 1/8W 300K OHM J 26MM
R49,R50	3R000961	RD, 1/8W 10K OHM J 26MM
R52,R53	3R000961	RD, 1/8W 10K OHM J 26MM
R54,R55	3R000451	RD, 1/8W 75 OHM J 26MM
R56,R57	3R001201	RD, 1/8W 100K OHM J 26MM
R58	3R001311	RD, 1/8W 300K OHM J 26MM
R59,R60	3R000961	RD, 1/8W 10K OHM J 26MM
R61	3R001311	RD, 1/8W 300K OHM J 26MM
R62,R63	3R000961	RD, 1/8W 10K OHM J 26MM
R64-R67	3R000431	RD, 1/8W 62 OHM J 26MM
R68,R69	3R000811	RD, 1/8W 2.4K OHM J 26MM
R70,R71	3R001201	RD, 1/8W 100K OHM J 26MM
R72,R73	3R000961	RD, 1/8W 10K OHM J 26MM
R76	3R001321	RD, 1/8W 330K OHM J 26MM
R79,R80	3R001201	RD, 1/8W 100K OHM J 26MM
R85,R86	3R001201	RD, 1/8W 100K OHM J 26MM
R87,R88	3R000641	RD, 1/8W 470 OHM J 26MM
R89,R90	3R001201	RD, 1/8W 100K OHM J 26MM
R91,R92	3R001201	RD, 1/8W 100K OHM J 26MM
R93-R96	3R000481	RD, 1/8W 100 OHM J 26MM
R97-R104	3R001261	RD, 1/8W 180K OHM J 26MM
R105,R106	3R001201	RD, 1/8W 100K OHM J 26MM
R121	3R000431	RD, 1/8W 62 OHM J 26MM
R122	3R000531	RD, 1/8W 160 OHM J 26MM
R123	3R001121	RD, 1/8W 47K OHM J 26MM
R124	3R000431	RD, 1/8W 62 OHM J 26MM
R125,R126	3R000451	RD, 1/8W 75 OHM J 26MM
R127	3R000431	RD, 1/8W 62 OHM J 26MM
R128	3R000531	RD, 1/8W 160 OHM J 26MM

REF. NO.	PARTS NO.	DESCRIPTION
R129	3R001121	RD, 1/8W 47K OHM J 26MM
R130	3R000431	RD, 1/8W 62 OHM J 26MM
R131	3R000451	RD, 1/8W 75 OHM J 26MM
		SEMICONDUCTORS
Q1-Q4	3S005572	TR,2SC2458(Y) TP
Q121,Q122	3S005572	TR,2SC2458(Y) TP
U1,U2	3S009940	IC,NJM2245L
U3,U4	3S009950	IC,NJM2058D
U5,U6	3S009960	IC,NJU7311AL
U7	3S009950	IC,NJM2058D
U8	3S009940	IC,NJM2245L
U9	3S010090	IC,NJM78M09FA(3P)
		MISCELLANEOUS
G6-G6	E009174-00B	HARNESS ASSY,GND3
G8-G8	E009175-00A	HARNESS ASSY,GND4
JP1-JP4	3R003481	JUMPER RES,10MM
J1-J4	91445257-00	JACK,RCA WSP-244V1-01
J6-J9	3E035860	JACK,PIN WT04017B-02
J10,J11	3E020900	MIC,JACK NC3MBH(XLR)
J12,J13	3E010320	JACK,XLR NC3FAH1
J14	E008510-00A	HARNESS ASSY,4P AUX-IN1
J17	E008494-00A	HARNESS ASSY ,5P STEREO
J18	E008484-00B	HARNESS ASSY ,4P POWER4
J19	E008496-00A	HARNESS ASSY ,8P CASCADE
P15	3E001330	CONNECT PLUG S 7B-PH-K-S
P16	3E033760	CONNECT S4B-PH-K-S(BLUE)
P24	3E001300	CONNECT PLUG S 4B-PH-K-S
		PCB MIC ASSY
	E901778-00C	PCB,MIC AV-452
		CAPACITORS
C501,C601	3R003421	JUMPER RES,5MM
C503,C603	3C000582	CE, 63V 47 UF M TP
C504,C604	3C000582	CE, 63V 47 UF M TP
C505,C605	3C013672	CC, B 50V 1000PF K TP
C506,C606	3C010462	CC,CH 50V 22PF J TP
C507,C607	3C022482	CC,50V 0.1UF K MONO P=5
C508,C608	3C022482	CC,50V 0.1UF K MONO P=5
C509,C609	3C010462	CC,CH 50V 22PF J TP
C510,C610	3C013672	CC, B 50V 1000PF K TP
C550,C551	3C000342	CE, 25V 10 UF M TP
C552	3C000722	CE, 63V 100UF M TP
C701,C801	3R003421	JUMPER RES,5MM
C703,C803	3C000582	CE, 63V 47 UF M TP
C704,C804	3C000582	CE, 63V 47 UF M TP

REF. NO.	PARTS NO.	DESCRIPTION
C705,C805	3C013672	CC, B 50V 1000PF K TP
C706,C806	3C010462	CC,CH 50V 22PF J TP
C707,C807	3C022482	CC,50V 0.1UF K MONO P=5
C708,C808	3C022482	CC,50V 0.1UF K MONO P=5
C709,C809	3C010462	CC,CH 50V 22PF J TP
C710,C810	3C013672	CC, B 50V 1000PF K TP
		RESISTORS
R502,R602	3R024850	RN,METAL1/4W3.3KOHM F TP
R503,R603	3R024850	RN,METAL1/4W3.3KOHM F TP
R504,R604	3R024850	RN,METAL1/4W3.3KOHM F TP
R505,R605	3R024850	RN,METAL1/4W3.3KOHM F TP
R506,R606	3R000721	RD, 1/8W 1.0K OHM J 26MM
R507,R607	3R000721	RD, 1/8W 1.0K OHM J 26MM
R508,R608	3R000761	RD, 1/8W 1.5K OHM J 26MM
R509,R609	3R000761	RD, 1/8W 1.5K OHM J 26MM
R511,R611	3R000871	RD, 1/8W 4.3K OHM J 26MM
R512,R612	3R000871	RD, 1/8W 4.3K OHM J 26MM
R513,R613	3R000961	RD, 1/8W 10K OHM J 26MM
R514,R614	3R000961	RD, 1/8W 10K OHM J 26MM
R550	3R007090	RDF,1/4W 22 OHM J NON-F H
R702,R802	3R024850	RN,METAL1/4W3.3KOHM F TP
R703,R803	3R024850	RN,METAL1/4W3.3KOHM F TP
R704,R804	3R024850	RN,METAL1/4W3.3KOHM F TP
R705,R805	3R024850	RN,METAL1/4W3.3KOHM F TP
R706,R806	3R000721	RD, 1/8W 1.0K OHM J 26MM
R707,R807	3R000721	RD, 1/8W 1.0K OHM J 26MM
R708,R808	3R000761	RD, 1/8W 1.5K OHM J 26MM
R709,R809	3R000761	RD, 1/8W 1.5K OHM J 26MM
R711,R811	3R000871	RD, 1/8W 4.3K OHM J 26MM
R712,R821	3R000871	RD, 1/8W 4.3K OHM J 26MM
R713,R813	3R000961	RD, 1/8W 10K OHM J 26MM
R714,R814	3R000961	RD, 1/8W 10K OHM J 26MM
		SEMICONDUCTORS
D501-D504	3S000241	DI, 1SS133 T-77
D601-D604	3S000241	DI, 1SS133 T-77
D701-D704	3S000241	DI, 1SS133 T-77
D801-D804	3S000241	DI, 1SS133 T-77
D809	3R003421	JUMPER RES,5MM
U501,U601	3S001700	IC,NJM4580D
U701,U801	3S001700	IC,NJM4580D

REF. NO.	PARTS NO.	DESCRIPTION
		MISCELLANEOUS
J501,J601	3E010320	JACK,XLR NC3FAH1
J502	E008501-00B	HARNESS ASSY,6P FRONT2
J510	E008487-00A	HARNESS ASSY ,5P POWER7
J511,J512	E008515-00A	HARNESS ASSY,12P MIC
J701,J801	3E010320	JACK,XLR NC3FAH1
J702	E008500-00C	HARNESS ASSY,6P FRONT1
SW501	3E030560	SW,SLIDE SSSF122NA3
		PCB AICOM ASSY
	E901779-00B	PCB,AICOM AV-452
		CAPACITORS
C301,C309	3C000412	CE, 25V 22 UF M TP
C302,C307	3C022482	CC,50V 0.1UF K MONO P=5
C303,C306	3C000342	CE, 25V 10 UF M TP
C304,C311	3C000092	CE, 50V 0.47UF M TP
C305,C316	3C000342	CE, 25V 10 UF M TP
C308,C312	3C010512	CC,CH 50V 47PF J TP
C310,C315	3C000342	CE, 25V 10 UF M TP
C313,C314	3C022482	CC,50V 0.1UF K MONO P=5
C317	3C000412	CE, 25V 22 UF M TP
C318,C319	3C000412	CE, 25V 22 UF M TP
C321	3C010512	CC,CH 50V 47PF J TP
C322	3C000212	CE, 50V 2.2UF M TP
		RESISTORS
R301	3R001321	RD, 1/8W 330K OHM J 26MM
R304	3R001201	RD, 1/8W 100K OHM J 26MM
R302	3R001241	RD, 1/8W 150K OHM J 26MM
R303	3R000961	RD, 1/8W 10K OHM J 26MM
R305	3R000881	RD, 1/8W 4.7K OHM J 26MM
R306	3R001201	RD, 1/8W 100K OHM J 26MM
R307	3R001441	RD, 1/8W 1.0M OHM J 26MM
R308	3R000481	RD, 1/8W 100 OHM J 26MM
R309	3R000961	RD, 1/8W 10K OHM J 26MM
R310	3R001121	RD, 1/8W 47K OHM J 26MM
R311	3R000721	RD, 1/8W 1.0K OHM J 26MM
R312,R313	3R000721	RD, 1/8W 1.0K OHM J 26MM
R314	3R001201	RD, 1/8W 100K OHM J 26MM
R315	3R003451	JUMPER RES,7.5MM
R316	3R001031	RD, 1/8W 20K OHM J 26MM
R317	3R000481	RD, 1/8W 100 OHM J 26MM
R318	3R000761	RD, 1/8W 1.5K OHM J 26MM
R319	3R022010	R,1/2W 7.34K NON-F KIN
R320	3R022020	R,1/2W 27.4K NON-F KIN
R321	3R001201	RD, 1/8W 100K OHM J 26MM

REF. NO.	PARTS NO.	DESCRIPTION
R322	3R000721	RD, 1/8W 1.0K OHM J 26MM
R323,R324	3R000961	RD, 1/8W 10K OHM J 26MM
R325	3R022030	R,1/2W 2.21K NON-F KIN
R326	3R022040	R,1/2W 4.75K NON-F KIN
R327	3R001441	RD, 1/8W 1.0M OHM J 26MM
R328	3R000761	RD, 1/8W 1.5K OHM J 26MM
R329	3R000481	RD, 1/8W 100 OHM J 26MM
R330	3R000881	RD, 1/8W 4.7K OHM J 26MM
R331	3R001441	RD, 1/8W 1.0M OHM J 26MM
R332-R334	3R022030	R,1/2W 2.21K NON-F KIN
R335	3R000961	RD, 1/8W 10K OHM J 26MM
R336	3R001041	RD, 1/8W 22K OHM J 26MM
R337	3R000721	RD, 1/8W 1.0K OHM J 26MM
R338	3R000961	RD, 1/8W 10K OHM J 26MM
VR301	3R021710	VR,RK09K1110466-TK 10KB
VR302	3R021710	VR,RK09K1110466-TK 10KB
		SEMICONDUCTORS
D301,D302	3S000241	DI, 1SS133 T-77
D305,D306	3S003201	ZDI, MTZJ12B T-77
D307	3S000241	DI, 1SS133 T-77
D308,D309	3S003201	ZDI, MTZJ12B T-77
D310,D311	3S000241	DI, 1SS133 T-77
D312,D313	3S003441	ZDI, MTZJ4.7B T-77
D314,D315	3S000241	DI, 1SS133 T-77
Q301,Q303	3S000002	TR, 2SC1815GR TP
Q302	3S001542	TR,2SC2878B TP
U301	3S009950	IC,NJM2058D
U302	3S010100	IC,NJM082D(8P)
U303	3S000301	TR, DTA124ES TP
U304	3S000291	TR, DTC124ES TP
		MISCELLANEOUS
BS301	3E030570	BARRIER BM14-04-06P
J301	E008505-00A	HARNESS ASSY,2P GATE
J302	E008502-00A	HARNESS ASSY,6P ICOM1
T6,T7	92602226-00	BRACKET,PCB A
PCB SWIR ASSY		
	E901780-00B	PCB,SWIR AV-452
		CAPACITORS
C401	3C022482	CC,50V 0.1UF K MONO P=5
		RESISTORS
R401-R404	3R000641	RD, 1/8W 470 OHM J 26MM

REF. NO.	PARTS NO.	DESCRIPTION
		SEMICONDUCTORS
U401	3S009610	REMOCON,SENSOR,RPM7138-H4
		MISCELLANEOUS
D401-D404	91740277-20	LED,SLR-332MG T32(GRN)
J401	E008512-00B	HARNESS ASSY,3P IR-IN1
J402	E008513-00A	HARNESS ASSY,10P IR-IN2
S401-S404	3E018680	SW,TACT SKQNAE D010
T8-T11	E008518-00A	TERMINAL,PCB KY/PCB-11
PCB AUX IN ASSY		
	E901781-00B	PCB,AUX IN AV-452
		CAPACITORS
C901	3C022482	CC,50V 0.1UF K MONO P=5
C904	3C022482	CC,50V 0.1UF K MONO P=5
		MISCELLANEOUS
J901	3E033360	JACK,RCA RJ-1105*15-0300B
J902	E008511-00B	HARNESS ASSY,4P AUX-IN2
J903,J905	E008504-00C	HARNESS ASSY,2P AUX2
J904	E008503-00B	HARNESS ASSY,2P AUX1
SW901	3E018600	SW,PUSH SPEA121800

PCB DIG ASSY

REF. NO.	PARTS NO.	DESCRIPTION
		PCB DIG ASSY
	E901813-00D	PCB,DIG AV-452
		CAPACITORS
C701-C706	3C015134	CC,F 25V 0.10UF Z 1608
C707,C708	3C017982	CE,SM5 25V 10UF TP
C709	3C015134	CC,F 25V 0.10UF Z 1608
C710,C712	3C014734	CC,CH 50V 22PF J 1608
C713,C714	3C015134	CC,F 25V 0.10UF Z 1608
C715	3C017982	CE,SM5 25V 10UF TP
C716	3C015134	CC,F 25V 0.10UF Z 1608
		RESISTORS
R1-R4	3R006624	RM,1/10W 22K OHM J 0603
R701-R706	3R006544	RM,1/10W 10K OHM J 0603
R707	3R010284	RM 1/10W 22K OHM F 0603
R708-R713	3R006544	RM,1/10W 10K OHM J 0603
R714	3R010284	RM 1/10W 22K OHM F 0603
R715-R720	3R006544	RM,1/10W 10K OHM J 0603
R721-R726	3R021824	R,CHIP 1K 0603 1%
R727	3R010284	RM 1/10W 22K OHM F 0603
R728-R739	3R021824	R,CHIP 1K 0603 1%
R740	3R010284	RM 1/10W 22K OHM F 0603
R741	3R007534	RM,1/10W 0 OHM J 0603
R742	3R021824	R,CHIP 1K 0603 1%
R743,R744	3R006544	RM,1/10W 10K OHM J 0603
R745	3R007534	RM,1/10W 0 OHM J 0603
R746-R749	3R006624	RM,1/10W 22K OHM J 0603
R750	3R019790	RSN,1/4W 2.2 OHM J KIN
		SEMICONDUCTORS
L701-L704	3E027222	FILTER,EXCEMT101BT TP
Q701-Q719	3S010034	TR,2SC2712-GR
U701,U702	3S007980	IC,ULN2803AP
U703-U705	3S010114	IC,TC74HC595AF
U706	3S010124	IC,TC74HC157AFN
U707	3S010144	IC,TC74HC573AF
U708	3S005794	IC,TC74HCU04AFN 14P
U710	S005610-00B	IC,CPU ASSY AV-452
U710	3S032204	IC,ATMEGA8515-TQFP 44P
U711	3S009980	IC,MAX489EPD
U712	3S009990	IC,MIC4427BN
X701	3S010020	X'TAL,HC49US-7.62MHZ

REF. NO.	PARTS NO.	DESCRIPTION
		MISCELLANEOUS
J701	3E030450	D-SUB 5504F1-37S-02-03
J704	E008485-00B	HARNESS ASSY ,3P POWER5
J703	E008506-00C	HARNESS ASSY,7P DIG1
P701	3E030470	CONNECTOR 2316S-10G
P702	91445461-10	CONNECTOR 2316S-26G
P705	3E030490	CONNECTOR 2316S-20G
P706	3E010350	CONNECT PLUG B 3B-PH-K-S
P708	3E006070	CONNECT PLUG B3B-PH-K BLK
P709	3E030430	D-SUB 205A-09MGPBB103

PCB AMP ASSY

REF. NO.	PARTS NO.	DESCRIPTION
		PCB AMP ASSY
	E901814-00B	PCB,AMP AV-452
		CAPACITORS
C801	3C020654	0805,50V 0.1UF K X7R
C802	3C022804	CC,50V 270P NPO 5% 0805
C803	3C022784	CC,50V 150P NPO 5% 0805
C804,C810	3C022794	CC,50V 220P NPO 5% 0805
C805,C806	3C020654	0805,50V 0.1UF K X7R
C807,C808	3C023260	CE,2.2UF/50V5*11P=2TP105C
C809	3C020654	0805,50V 0.1UF K X7R
C811,C812	3C020654	0805,50V 0.1UF K X7R
C813,C828	3C023270	CE,47UF/25V 5*11P=2TP105C
C814	3C020654	0805,50V 0.1UF K X7R
C815,C823	3C024334	CC,0.1U/630V X7R 10% 1812
C816,C824	3C022740	CE,33U/160V 105C 10*20
C817,C818	3C022650	CQ,0.15U250V J METAL
C819,C822	3C024294	CC,0.1U/100VX7R 10% 1210
C820,C821	3C022730	CE,220U/63V 105C 10*17 P5
C825,C826	3C022650	CQ,0.15U250V J METAL
C827	3C020654	0805,50V 0.1UF K X7R
C829,C830	3C020654	0805,50V 0.1UF K X7R
C831	3C023280	CE,100UF/25V6.3*11P=2.510
C832	3C023270	CE,47UF/25V 5*11P=2TP105C
C833	3C023290	CE,10UF/50V5*11P=2TP105C
C834	3C023290	CE,10UF/50V5*11P=2TP105C
C835	3C023300	CE,0.47UF/50V5*11P=2TP105
C836	3C023400	CE,330UF16V8*11.5P=3.5105
C837	3C022920	CE,50V 10UF NP P=2
		RESISTORS
R801,R804	3R021894	RM,1/8W 11.5K 0805 1%
R802,R805	3R011144	RM,1/8W 1.0KOHM F 0805
R803,R806	3R011154	RM,1/8W 1.1KOHM F 0805

REF. NO.	PARTS NO.	DESCRIPTION
R807,R810	3R021894	RM,1/8W 11.5K 0805 1%
R808,R811	3R011144	RM,1/8W 1.0KOHM F 0805
R809	3R011154	RM,1/8W 1.1KOHM F 0805
R812	3R011154	RM,1/8W 1.1KOHM F 0805
R813	3R008834	RM,1/8W 2.0K OHM J 0805
R814,R826	3R009114	RM,1/8W 33 K OHM J 0805
R815,R816	3R009474	RM,1/8W 1.0M OHM J 0805
R817,R819	3R011384	RM,1/8W 10K OHM F 0805
R818,R820	3R021904	RM,1/8W 13.7K 0805 1%
R821	3R011144	RM,1/8W 1.0KOHM F 0805
R822,R823	3R025064	RM,1/8W430K 0805 1%
R824	3R025074	RM,1/8W390K 0805 1%
R825	3R025084	RM,1/8W1.1M 0805 1%
R827	3R021874	RM,1/8W 8.25K 0805 1%
R828,R839	3R011004	RM,1/8W 240 OHM F 0805
R829,R830	3R024964	R,CHIP 33R 1% 2010
R831,R832	3R021974	R,CHIP 0.01R 5% 2512
R833,R838	3R022060	R,RWN3S 20R 2W KIN
R834,R835	3R024964	R,CHIP 33R 1% 2010
R836,R837	3R021974	R,CHIP 0.01R 5% 2512
R840	3R011144	RM,1/8W 1.0KOHM F 0805
R841	3R008284	RM,1/8W 10 OHM J 0805
R842,R849	3R009234	RM,1/8W 100K OHM J 0805
R843,R847	3R002711	RD, 1/4W 15KOHM J 26MM
R844	3R011454	RM,1/8W 20K OHM F 0805
R845	3R002831	RD, 1/4W 47KOHM J 26MM
R846	3R011564	RM,1/8W 56K OHM F 0805
R848	3R009114	RM,1/8W 33 K OHM J 0805
R850,R852	3R011564	RM,1/8W 56K OHM F 0805
R851	3R009234	RM,1/8W 100K OHM J 0805
R853	3R022050	R,RWN3S 680R 2W KIN
R855	3R008914	RM,1/8W 4.7K OHM J 0805
R856	3R008994	RM,1/8W 10 K OHM J 0805
R857	3R008524	RM,1/8W 100 OHM J 0805
R858	3R011564	RM,1/8W 56K OHM F 0805
R859	3R008824	RM,1/8W 1.8K OHM J 0805
R860	3R009154	RM,1/8W 47 K OHM J 0805
R861	3R009484	RM,1/8W 0.0 OHM J 0805
R862,R868	3R008764	RM,1/8W 1.0K OHM J 0805
R863	3R009404	RM,1/8W 510K OHM J 0805
R864,R865	3R008994	RM,1/8W 10 K OHM J 0805
R866,R867	3R008764	RM,1/8W 1.0K OHM J 0805
J807,J808	3R009484	RM,1/8W 0.0 OHM J 0805
VR801	3R021680	VR,RH0615CS4J7XA 47KB
VR802	3R021680	VR,RH0615CS4J7XA 47KB

REF. NO.	PARTS NO.	DESCRIPTION
		SEMICONDUCTORS
D802-D812	3S010064	DI,MURS120T3
D814,D815	3S000031	DI, 1N4003 TAPING W= 52MM
L801	3E030374	FBEAD,SMB-302540-H5B
L802	3E030360	COIL,PK0810-101K-SO 100UH
L803,L804	3E030380	COIL,J94020010 18UH/3.5A
L803,L804	3M02438-00A	CERAMIC PART WASHER CHS-3
L805	3E003711	COIL, 10UH EC24-100K-T2
Q801	3S010050	N-CH MOSFET,IRF9510S
Q802-Q805	3S034050	SMPS MOSFET IRFB23N20D
Q806,Q808	3S000002	TR, 2SC1815GR TP
Q807,Q811	3S000022	TR, 2SA1015GR TP
Q809	3S005612	FET,2SK246-GR (TE2,T)
Q810	3S000002	TR, 2SC1815GR TP
U801 ⚠	3S010004	IC,TC2001(28P-SOIC)
U802 ⚠	3S010014	IC,TP2150(64P-LQFP)
U803 ⚠	3S008900	IC,TA7317P 9P
		MISCELLANEOUS
⚠	3E035110	COIL,K5A T31*19*10
D801	3E016360	LED,SLR-342VR-3F (RED)
J801	E008483-00C	HARNESS ASSY ,2P POWER3
J802	E008492-00C	HARNESS ASSY ,3P AMP
J803	E008482-00B	HARNESS ASSY ,3P POWER2
J804	E008481-00C	HARNESS ASSY ,5P POWER1
J806 ⚠	3E030420	SPEAKER A419
RY801 ⚠	3E027070	RELAY,VB-24TBU-5
EP801	3E02152-00A	EARTH PLATE B GND-8
W2-W2A ⚠	E008990-00A	HARNESS ASSY,SP(BLK)
W1-W1A ⚠	E008991-00A	HARNESS ASSY,SP(RED)
W5-W5A ⚠	E008992-00A	HARNESS ASSY,SP A(RED)
W6-W6A ⚠	E008993-00A	HARNESS ASSY,SP A(BLK)
W3-W3A ⚠	E008994-00A	HARNESS ASSY,SP B(RED)
W4-W4A ⚠	E008995-00A	HARNESS ASSY,SP B(BLK)

6.INCLUDED ACCESSORIES

INCLUDED ACCESSORIES

REF.NO.	PARTS NO.	DESCRIPTION	REMARKS
	D00788400A	MAIN MANUAL JPN AV-452	
	D00788500A	MAIN MANUAL ENG AV-452	
	E00855200A	RMT CONT,RC-452	
	3E002220	BATTERY,UM-4(ENGLISH)	
	3E014140	POWER CORD,DM	
	3E014160	POWER CORD,EUR	
	3E014150	POWER CORD,UL	
	3E014180	POWER CORD,AUS	
	3E033790	POWER CORD,TM	
	3E014170	POWER CORD,UK	
	3Y0079200A	MOUNT SCREW KIT ASSY (SCREW,BPA M5X12 NI) (WASHER-FIBER BLK) (PLASTIC BAG)	
	3M02396-00A	BUSHING LGT-2	
		Notice: *JPN is Japanese *ENG is English	

TASCAM®

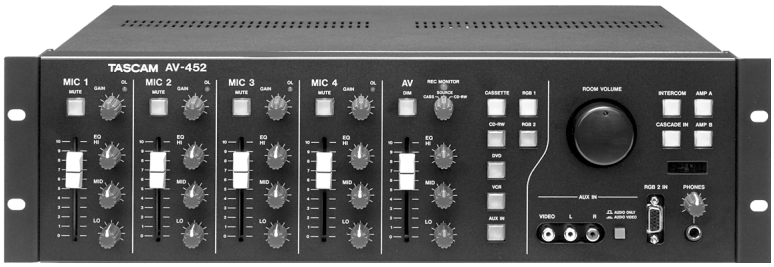
The *First* Choice in A/V for Systems Integrators™

AV-452

Serial Control Specification

SERIAL IMPLEMENTATION OVERVIEW

TASCAM's AV-452 has a serial port capable of operating in standard RS-232, RS-422 or RS-485 protocols which offers access to most switches and indicator status on the AV-452. The AV-452 saves resources on recursive scanning with a "query all" command and by generating status replies on status changes. An additional RS-232 command allows IR strings to be learned for projector control, outlined separately in: AV-452_IR_PRG.pdf.



- Channel Mute or Dim Command & Status
- Complete AV Routing Command & Status
- Amp A and B In/Out Command & Status
- Intercom and Cascade Command & Status
- Room Volume Up/Down Commands
- "Query All Status" Macro Command
- Dip Switch Setting and EMG Circuit Status
- Uses RS-232, RS-422, or RS-485 Protocol
- Assignable Address for RS-485
- Generates Status Commands on State Changes
- Command to Program Outbound IR Strings
  (For this feature, see AV-452_IR_PRG.pdf)

SERIAL ROTARY DIAL SETTING AND CABLE PIN-OUT

Settings and Voltages

Note: The rotary control and most dip switches are only scanned at power-up. You will need to turn the AV-452 off and back on for any changes to take effect.

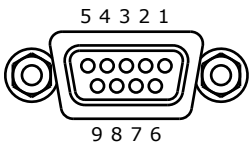
Under the security panel, there is a rotary dial that determines the machine ID (address). This allows multiple AV-452 machines to be connected to a single serial line and still be addressed individually. If you are not using multiple machines, this should probably be set to "1".

The RS-422 and RS-485 operation follows normal specifications. However, RS-232 operation is a modification of the RS-422 port. It operates at 0-4.5V, rather than ±9V. This will operate normally with most equipment, such as old control systems or PC computers. If you have trouble with RS-232, try switching to RS-422 if you can to see if that solves the problem.

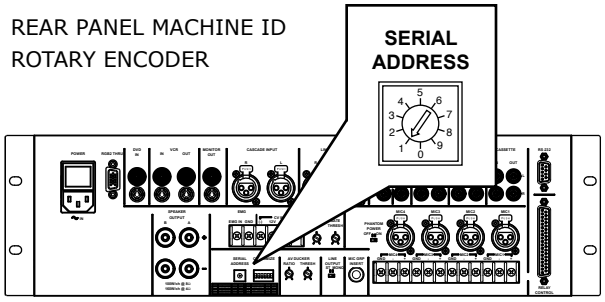
Cable Pin-Out, and Control System Settings

Connector shown from perspective of the rear panel female connector. The male connector for your cable will be the mirror image of this diagram.

Connector:	Female DB9
Port Speed:	9600 bps
Command Spacing:	>25msec
Character Length:	8 bit
Parity:	None

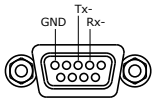


REAR PANEL MACHINE ID
ROTARY ENCODER



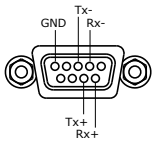
RS-232:

Pin 2: Rx-Data
Pin 3: Tx- Data
Pin 5: Ground



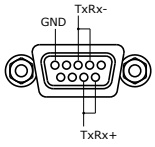
RS-422:

Pin 2: Rx-Data
Pin 3: Tx- Data
Pin 5: Ground
Pin 6: Rx+ Data
Pin 7: Tx+ Data



RS-485:

Pin 2: TxRx-Data
Pin 3: TxRx-Data
Pin 5: Ground
Pin 6: TxRx+ Data
Pin 7: TxRx+ Data



COMMAND STRUCTURE

Preamble	Address		String Type		Parameter			Value			Delimiter
LF	.	N	A	.	c	.	0	0	.	0	1	CR
0Ah	2Eh	50h	4Ch	2Eh	63h	2Eh	30h	30h	2Eh	30h	31h	0Dh

Example Command of Mute Channel 1, bypassing machine address.

Preamble - All command strings for the AV-452 begin with a line feed (0Ah).

Period Spacers - The four main data fields (Address, String Type, Parameter and Value) begin with a period (2Eh). This was mainly put in to make the string easier to read when coding. However, you can use the period to parse the string into the four major elements. Since the strings are always the same length, so you can also use byte position.

Address - Since the AV-452 can sit on an RS-485 line with other devices, the AV-452 is "addressable". This address corresponds to a rotary dial on the rear panel, underneath the security panel. If you send an address in the command, the AV-452 will only respond if the address matches the position of the rotary dial.

If there is only one AV-452 on the line, you can use "NA" (50h 4Ch) as an override on the machines. That tells the AV-452 to listen to the command regardless of its address.

It should be noted that status replies from the AV-452 will always include the machine's individual address. So, if you are using bidirectional communication from the AV-452, the programmer and installers should agree upon the address to be used.

String Type - This section indicates whether the string is a command, status query, or return status string. A lowercase "c" (63h) indicates a command for the AV-452, "q" (71h) indicates a query for the AV-452 to respond to, and "s" (73h) indicates a status return string from the AV-452. In the example string above, the lowercase "c" indicates it is a command.

Parameter - This determines which function on the AV-452 is being controlled, queried, or reported. In the example above, parameter "00" (57h 44h) refers to the mute control for mic channel 1. (The complete list of parameter numbers can be found below.)

Value - This is the desired the status of the parameter (or the current parameter status in a reply). For status queries, this should be set to "00" (30h 30h). In the example above, "01" (30h 31h) indicates Mute 1 on.

Delimiter - All command strings for the AV-452 end with a carriage return (0Dh).

PAGE #	PARAMETER NUMBER & FUNCTION	DEFINED VALUES
3	00 MUTE CH 1	00=OFF, 01=ON
3	01 MUTE CH 2	00=OFF, 01=ON
3	02 MUTE CH 3	00=OFF, 01=ON
3	03 MUTE CH 4	00=OFF, 01=ON
4, 5	04 DIM A/V	00=OFF, 01=ON
4, 5	05 SELECT RGB	00=NO RGB, 01=RGB1, 02=RGB2
--	06 - NO FUNCTION -	--
7	07 AMP A	00=OFF, 01=ON
7	08 AMP B	00=OFF, 01=ON
7	09 INTERCOM	00=OFF, 01=ON
7	10 CASCADE	00=OFF, 01=ON
4, 5	11 SELECT AV SOURCE	00=CASSETTE, 01=CDRW, 02=DVD, 03=VCR, 04=AUX
4, 6	12 SELECT RECORD MONITOR	00=SOURCE, 01=CASSETTE, 02=CDRW
8	13 100Hz HPF DIP SWITCH	(READ ONLY): 00=OFF, 01=ON
8	14 CASCADE MODE DIP SWITCH	(READ ONLY): 00=OFF, 01=ON
8	15 MONO OUTPUT DIP SWITCH	(READ ONLY): 00=OFF, 01=ON
8	16 EMG BREAK	(READ ONLY): 00=NORMAL, 01=EMG BREAK
4, 5	17 AUX INPUT TYPE	(READ ONLY): 00=AUDIO ONLY, 01=AUDIO+VIDEO
8	18 ROOM VOLUME	00=DOWN, 01=UP (rotates dial for 1/2 second)
8	AA REQUEST ALL STATUS	00 (DEFAULT)

MIC CHANNEL MUTE

The command structure for mute and mute status requests are listed below.

When the AV-452 receives a command for a channel mute, it will reply with a status command of the new status, indicating the change was made. Status commands are also generated whenever the function changes. For instance, if someone presses the MUTE button for channel 1, uses the IR command or relay control to toggle MUTE 1, or uses an RS-232 command to change MUTE 1, the AV-452 will generate a status command on its own. This reduces the need for recursive scanning routines.

MUTE CHANNEL 1 OFF	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	0 30h	0 30h	. 2Eh	0 30h	0 30h	CR 0Dh
MUTE CHANNEL 1 ON	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	0 30h	0 30h	. 2Eh	0 30h	1 31h	CR 0Dh
QUERY MUTE 1 STATUS	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	q 71h	. 2Eh	0 30h	0 30h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - MUTE 1 OFF (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	0 30h	0 30h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - MUTE 1 ON (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	0 30h	0 30h	. 2Eh	0 30h	1 31h	CR 0Dh
MUTE CHANNEL 2 OFF	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	0 30h	1 31h	. 2Eh	0 30h	0 30h	CR 0Dh
MUTE CHANNEL 2 ON	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	0 30h	1 31h	. 2Eh	0 30h	1 31h	CR 0Dh
QUERY MUTE 2 STATUS	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	q 71h	. 2Eh	0 30h	1 31h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - MUTE 2 OFF (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	0 30h	1 31h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - MUTE 2 ON (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	0 30h	1 31h	. 2Eh	0 30h	1 31h	CR 0Dh
MUTE CHANNEL 3 OFF	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	0 30h	2 32h	. 2Eh	0 30h	0 30h	CR 0Dh
MUTE CHANNEL 3 ON	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	0 30h	2 32h	. 2Eh	0 30h	1 31h	CR 0Dh
QUERY MUTE 3 STATUS	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	q 71h	. 2Eh	0 30h	2 32h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - MUTE 3 OFF (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	0 30h	2 32h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - MUTE 3 ON (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	0 30h	2 32h	. 2Eh	0 30h	1 31h	CR 0Dh
MUTE CHANNEL 4 OFF	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	0 30h	3 33h	. 2Eh	0 30h	0 30h	CR 0Dh
MUTE CHANNEL 4 ON	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	0 30h	3 33h	. 2Eh	0 30h	1 31h	CR 0Dh
QUERY MUTE 4 STATUS	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	q 71h	. 2Eh	0 30h	3 33h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - MUTE 4 OFF (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	0 30h	3 33h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - MUTE 4 ON (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	0 30h	3 33h	. 2Eh	0 30h	1 31h	CR 0Dh

AV CHANNEL

The AV channel of the AV-452 offers control and status on DIM A/V, the seven A/V source selection items and the REC MONITOR control. In a related item, there is also status information on the AUX IN source type.

As with the other commands, the AV-452 will generate status commands when these items are changed. Note that the AUX IN TYPE status is read only... you cannot control it from an external source.

A/V CHANNEL DIM

DIM AV significantly reduces the volume of the A/V channel. The command structure for this follows the same behavior as mic MUTE - the status strings will be generated any time the status changes, or when it is queried.

AV CHANNEL DIM OFF	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	0 30h	4 34h	. 2Eh	0 30h	0 30h	CR 0Dh
AV CHANNEL DIM ON	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	0 30h	4 34h	. 2Eh	0 30h	1 31h	CR 0Dh
QUERY AV CHANNEL DIM	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	q 71h	. 2Eh	0 30h	4 34h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - AV DIM OFF	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	0 30h	4 34h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - AV DIM ON	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	0 30h	4 34h	. 2Eh	0 30h	1 31h	CR 0Dh

A/V SOURCE SELECTION & REC MONITOR SELECTION, EXPLAINED

Parameter 11 - AV Sources w/ Routing:

This controls the five buttons on the AV channel strip that handle the routing of audio/video sources. This includes CASS, CD-RW, DVD, VCR, and AUX, shown at right.) These work like a home receiver; one of these five buttons will be active at all times. In the signal flow diagram, this switch is in the bottom center.

Parameter 12 - REC MONITOR Switch:

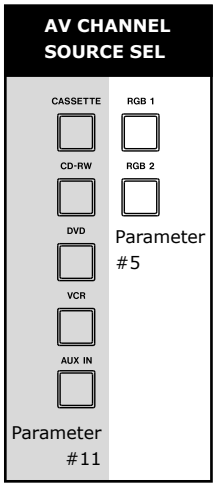
Under normal operations, the REC MONITOR switch would be set to SOURCE. That means the audio source selected in the AV channel will be sent to the CD-RW, CASS and VCR outputs on the AV-452. REC MONITOR also offers the ability to force the cassette or CD-RW to the record out, allowing you to monitor the return from the recorder. This is helpful when creating dubs from one unit to another to change formats, rearrange content on media, or create a back-up.

Parameter 5 - RGB 1 and RGB 2:

All of the sources with video content (DVD, VCR, AUX, RGB1 and RGB2) can learn IR commands for a projector. These codes will be emitted through a rear panel IR driver. This allows the AV-452 to control the projector source.

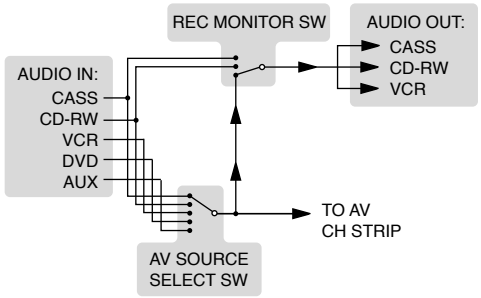
The RGB1 and RGB2 buttons ***do not*** route signal internally. These buttons are only intended to learn IR commands to be sent to a projector (or another external switcher).

These buttons illuminate when pressed. When another video source is selected - such as DVD, VCR, or AUX IN - the RGB buttons will turn off. This behavior allows the AV-452 front panel to show the current status of external video switching.



Parameter 17 - AUX IN Type:

This controls the logic of the AUX INPUT. If the AUX INPUT is set to be an audio only source, it will not change the video routing when AUX IN is selected. However, if AUX INPUT is set to be an A/V source, then the AUX IN video source is routed. This switch is a read only control.



AV CHANNEL

SELECT CASSETTE	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	1 31h	1 31h	. 2Eh	0 30h	0 30h	CR 0Dh
SELECT CDRW	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	1 31h	1 31h	. 2Eh	0 30h	1 31h	CR 0Dh
SELECT DVD	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	1 31h	1 31h	. 2Eh	0 30h	2 32h	CR 0Dh
SELECT VCR	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	1 31h	1 31h	. 2Eh	0 30h	3 33h	CR 0Dh
SELECT AUX IN	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	1 31h	1 31h	. 2Eh	0 30h	4 34h	CR 0Dh
QUERY AV CHANNEL	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	q 71h	. 2Eh	1 31h	1 31h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - CASSETTE (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	1 31h	1 31h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - CDRW (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	1 31h	1 31h	. 2Eh	0 30h	1 31h	CR 0Dh
STATUS - DVD (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	1 31h	1 31h	. 2Eh	0 30h	2 32h	CR 0Dh
STATUS - VCR (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	1 31h	1 31h	. 2Eh	0 30h	3 33h	CR 0Dh
STATUS - AUX IN (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	1 31h	1 31h	. 2Eh	0 30h	4 34h	CR 0Dh
SELECT RGB 1	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	0 30h	5 35h	. 2Eh	0 30h	1 31h	CR 0Dh
SELECT RGB 2	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	0 30h	5 36h	. 2Eh	0 30h	2 31h	CR 0Dh
QUERY RGB	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	q 71h	. 2Eh	0 30h	5 35h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - NO RGB ON (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	0 30h	5 35h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - RGB 1 (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	0 30h	5 35h	. 2Eh	0 30h	1 31h	CR 0Dh
STATUS - RGB 2 (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	0 30h	5 35h	. 2Eh	0 30h	2 32h	CR 0Dh
QUERY AUX IN TYPE	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	q 71h	. 2Eh	1 31h	7 37h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - AUX IN AUDIO (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	1 31h	7 37h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - AUX IN A/V (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	1 31h	7 37h	. 2Eh	0 30h	1 31h	CR 0Dh

CONTINUED ON NEXT PAGE...

AV CHANNEL

REC MON, SOURCE	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	1 31h	2 32h	. 2Eh	0 30h	0 30h	CR 0Dh
REC MON, CASSETTE	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	1 31h	2 32h	. 2Eh	0 30h	1 31h	CR 0Dh
REC MON, CD-RW	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	1 31h	2 32h	. 2Eh	0 30h	2 32h	CR 0Dh
QUERY, REC MON	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	q 71h	. 2Eh	1 31h	2 32h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS REC MON SOURCE (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	1 31h	2 32h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS REC MON CASS (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	1 31h	2 32h	. 2Eh	0 30h	1 31h	CR 0Dh
STATUS REC MON CD-RW (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	1 31h	2 32h	. 2Eh	0 30h	2 32h	CR 0Dh

AMP A, AMP B, INTERCOM & CASCADE

The AMP A, AMP B INTERCOM and CASCADE buttons work just like the MUTE buttons for the channels. These just have on and off states, and offer the same type of tally information. The examples are given below for AMP A, just change the parameters numbers for AMP B "08" (30h 38h), INTERCOM "09" (30h 39h) or CASCADE IN "10" (31h 30h).

It should be noted that AMP A and AMP B buttons do not power the amplifiers on and off... these buttons are mute controls feeding the amps. These amps do have a power switch in the rear separate from the main power, and there is no status information on that switch.

Also, the CASCADE functionality changes with dip switch settings on the rear panel of the AV-452. (One mode mixes the cascade input with the internal system, the other mode replaces the internal signal with the cascade port.) See the AV-452 Owner's Manual for more detailed information.

AMP A OFF	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	0 30h	7 37h	. 2Eh	0 30h	0 30h	CR 0Dh
AMP A ON	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	0 30h	7 37h	. 2Eh	0 30h	1 31h	CR 0Dh
QUERY AMP A	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	q 71h	. 2Eh	0 30h	7 37h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - AMP A OFF (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	0 30h	7 37h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - AMP A ON (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	0 30h	7 37h	. 2Eh	0 30h	1 31h	CR 0Dh
AMP B OFF	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	0 30h	8 38h	. 2Eh	0 30h	0 30h	CR 0Dh
AMP B ON	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	0 30h	8 38h	. 2Eh	0 30h	1 31h	CR 0Dh
QUERY AMP B	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	q 71h	. 2Eh	0 30h	8 38h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - AMP B OFF (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	0 30h	8 38h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - AMP B ON (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	0 30h	8 38h	. 2Eh	0 30h	1 31h	CR 0Dh
INTERCOM OFF	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	0 30h	9 39h	. 2Eh	0 30h	0 30h	CR 0Dh
INTERCOM ON	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	0 30h	9 39h	. 2Eh	0 30h	1 31h	CR 0Dh
QUERY INTERCOM	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	q 71h	. 2Eh	0 30h	9 39h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - INTERCOM OFF (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	0 30h	9 39h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - INTERCOM ON (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	0 30h	9 39h	. 2Eh	0 30h	1 31h	CR 0Dh
CASCADE OFF	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	1 31h	0 30h	. 2Eh	0 30h	0 30h	CR 0Dh
CASCADE ON	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	1 31h	0 30h	. 2Eh	0 30h	1 31h	CR 0Dh
QUERY CASCADE	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	q 71h	. 2Eh	1 31h	0 30h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - CASCADE OFF (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	1 31h	0 30h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - CASCADE ON (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	1 31h	0 30h	. 2Eh	0 30h	1 31h	CR 0Dh

ROOM VOLUME LEVEL (COMMAND ONLY)

The ROOM VOLUME control adjusts the level that comes out the SPEAKER OUTPUT and STEREO OUTPUT. The knob is motorized, and can be controlled externally. Commands are available for up or down; there is no status message for this command - it acts just like the infrared command. One volume command will turn the dial for 1/2 second.

ROOM VOLUME DOWN	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	1 31h	8 38h	. 2Eh	0 30h	0 30h	CR 0Dh
ROOM VOLUME UP	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	1 31h	8 38h	. 2Eh	0 30h	1 31h	CR 0Dh

EMG BREAK (READ ONLY)

When the AV-452 detects an emergency alarm is activated (by the relay activation on the EMG port), the AV-452 will shut down all local audio. All the LEDs flash on the front panel when in this status. For the control system, this status is the key to recognizing the situation. As with the other commands, these status messages are sent when the status changes.

QUERY EMG	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	q 71h	. 2Eh	1 31h	6 36h	. 2Eh	0 30h	1 31h	CR 0Dh
STATUS - NORMAL (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	1 31h	6 36h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - EMG BREAK (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	1 31h	6 36h	. 2Eh	0 30h	1 31h	CR 0Dh

DIP SWITCHES (READ ONLY)

Some of the dip switches on the rear panel are logic controlled, and will emit their status when the "request all" status is sent. These switches are only scanned when the unit first turns on. It may be desirable to have the control system alert an AV tech if these settings do not match the normal setting, in case someone tampered with them.

STATUS - HPF OFF (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	1 31h	3 33h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - HPF ON (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	1 31h	3 33h	. 2Eh	0 30h	1 31h	CR 0Dh
STATUS - CASCADE EXCL (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	1 31h	4 34h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - CASCADE MIX (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	1 31h	4 34h	. 2Eh	0 30h	1 31h	CR 0Dh
STATUS - MONO OFF (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	1 31h	5 35h	. 2Eh	0 30h	0 30h	CR 0Dh
STATUS - MONO ON (ID 1)	LF 0Ah	. 2Eh	0 30h	1 31h	. 2Eh	s 73h	. 2Eh	1 31h	5 35h	. 2Eh	0 30h	1 31h	CR 0Dh

QUERY ALL STATUS

This command triggers the AV-452 to send all status messages for a complete update on the system. This is great for control systems when the unit has not been monitored in a while, so all functions can become known.

QUERY ALL STATUS	LF 0Ah	. 2Eh	N 4Eh	A 41h	. 2Eh	c 63h	. 2Eh	A 41h	A 41h	. 2Eh	0 30h	0 30h	CR 0Dh

D00788800B

TASCAM
TEAC Professional Division

AV-452

Powered Mixer

OPERATION GUIDE

Note to system integrator/installer: Please fill in the table below, so that users of the equipment have an easy reference when they operate the AV-452

Connections

Microphone placement	
MIC 1	
MIC 2	
MIC 3	
MIC 4	
AV sources	
CASSETTE	
CD-RW	
DVD	
VCR	
AUX	
Video monitor connections	
RGB 1	
RGB 2	
Speaker connections	
AMP A	
AMP B	

Other system notes

AV-452 Operation Guide

GAIN controls (x 4)

Usually you do not need to touch these controls unless the **OL** indicator of the channel is lighting frequently.

OL indicators (x 4)

If these indicators light frequently, you should turn the **GAIN** control of the appropriate channel counterclockwise until the indicator only lights on very loud inputs.

REC MONITOR switch & indicator

In the **SOURCE** position, the output of the signal selected using the AV selector keys is fed to the inputs of all connected equipment (except the source unit, to avoid signal loops). For example, if the cassette is selected, the cassette output is fed to the CD-RW and VCR inputs. The indicator lights.

In the **CASS** position, the cassette output is fed to the CD-RW and VCR inputs, regardless of the AV selector keys.

In the **CD-RW** position, the CD-RW output is fed to the cassette and VCR inputs, regardless of the AV selector keys.

AV DIM key

Press this key to reduce the level of the AV signal. Press again to restore the original level.

RGB 1 & RGB 2 keys

These keys are used to select the RGB input source of an external monitor or projector. They do not affect the output or input from or to the AV-452.

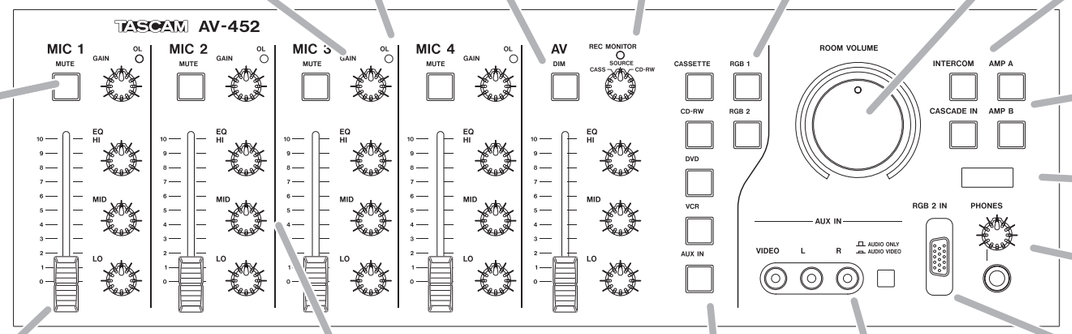
ROOM VOLUME

Remotely-controllable overall volume control.

INTERCOM and CASCADE IN keys

Press the **INTERCOM** key to enable playback of the internal building intercom system through the AV-452

Press the **CASCADE IN** key to add the cascaded input from another unit to your mix (or replace, depending on your setup).



AMP A and AMP B keys

Turn speakers A and B individually on and off.

IR SENSOR

Do not block this window if you are using the RC-452 remote control unit.

PHONES jack &level control

Use a standard pair of stereo headphones here.

RGB 2 IN

Plug in a standard VGA computer video cable here for use as the **RGB 2** input of the monitor/projector.

MUTE keys (x 4)

Press these keys to cut the appropriate microphone signal.

Microphone faders (x 4)

Move up to increase the volume, and down to decrease the volume of the microphone channel. The fader should usually be at about the "**7**" mark.

EQ controls (x 5)

Use these controls to adjust the tone of the microphone and AV inputs.

HI cuts or boosts the high frequencies (treble).

MID cuts or boosts the mid-range (where most of the vocal frequencies are concentrated).

Use **LO** to cut or boost the low (bass) parts of the signal.

AUX in jacks and switch

Connect an external device's audio outputs to the **L** and **R** input jacks. If the device has a video output (e.g. a camcorder), connect this to the **VIDEO** jack.

Use the switch to select **AUDIO ONLY** (out) or **AUDIO VIDEO** (in)

Select this AV source with the **AUX** selector key.

AV selector keys (CASSETTE, CD-RW, DVD, VCR, AUX IN)

Use these keys to select a single audio-video source for the AV channel. This selected source's level and tone are controlled by the AV fader and EQ controls.

The key of the selected source lights.

RC-452 remote control unit

SET key

This key (and the **LEARN** key by the **CASSETTE** section) are used for programming the RC-452, and are not used in normal operation.

ICOM and CASCADE IN keys

Press the **ICOM** key to enable playback of the internal building intercom system through the AV-452.

Press the **CASCADE** key to add the cascaded input from another unit to your mix (or replace, depending on your setup).

TV PROJECTOR ON/OFF keys

Use these to turn the external projector on and off

AV selector keys

Use these keys to select a single audio-video source for the AV channel.

AMP A and AMP B keys

Turn speakers A and B individually on and off.

MUTE keys (x 4)

Press these keys to cut the appropriate microphone signal.

CASSETTE keys

Use these programmable keys to control the cassette deck connected to the AV-452 (the **LEARN** key is used for programming purposes).

VOL + and – keys

Use these to adjust the output level (and move the **ROOM VOLUME** control).

VCR keys

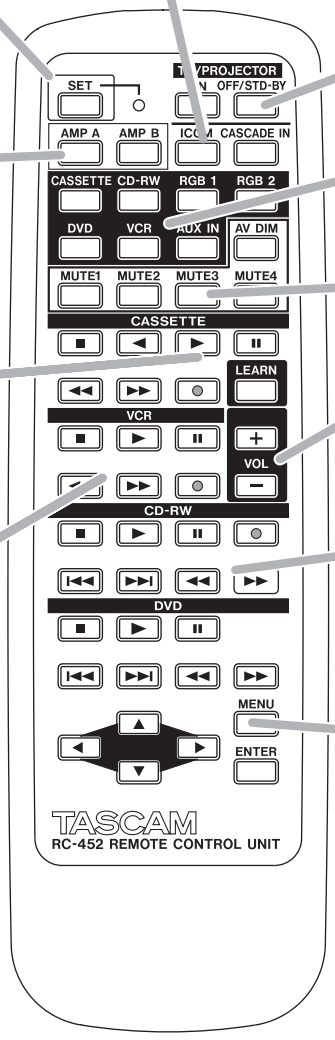
Use these programmable keys to control the VCR connected to the AV-452.

CD-RW keys

Use these programmable keys to control the CD player/recorder connected to the AV-452.

DVD keys

Use these programmable keys to control the DVD player connected to the AV-452.



Notes (support contact details, etc.)

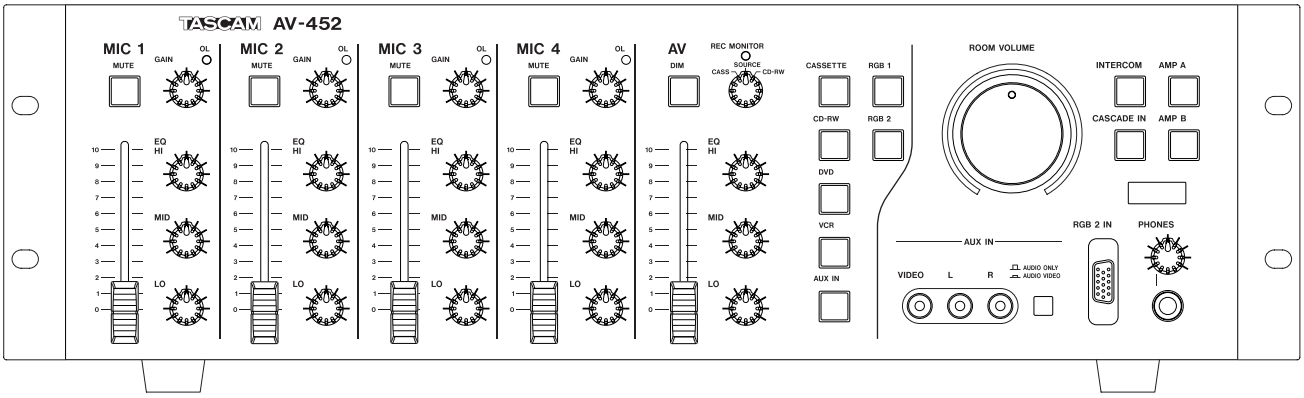
Printed in China

TASCAM
TEAC Professional Division

D00788500A

AV-452

Powered Mixer



INSTALLATION & SUPPORT GUIDE

CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

This appliance has a serial number located on the rear panel. Please record the model number and serial number and retain them for your records.

Model number _____

Serial number _____

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

IMPORTANT SAFETY INSTRUCTIONS

1 Read these instructions.

2 Keep these instructions.

3 Head all warnings.

4 Follow all instructions.

5 Do not use this apparatus near water.

6 Clean only with dry cloth.

7 Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8 Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9 Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. Grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10 Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11 Only use attachments/accessories specified by the manufacturer.

12 Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13 Unplug this apparatus during lightning storms or when unused for long periods of time.

14 Refer all serving to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

- Do not expose this apparatus to drips or splashes.
- Do not place any objects filled with liquids, such as vases, on the apparatus.
- Do not install this apparatus in a confined space such as a book case or similar unit.
- The apparatus draws nominal non-operating power from the AC outlet with its POWER switch in the off position.

IMPORTANT (for U.K. Customers)

DO NOT cut off the mains plug from this equipment.
If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or consult your dealer.

If nonetheless the mains plug is cut off, remove the fuse and dispose of the plug immediately, to avoid a possible shock hazard by inadvertent connection to the mains supply.

If this product is not provided with a mains plug, or one has to be fitted, then follow the instructions given below:

IMPORTANT: The wires in this mains lead are coloured in accordance with the following code:

GREEN-AND-YELLOW	: EARTH
BLUE	**:** NEUTRAL
BROWN	**:** LIVE

WARNING: This apparatus must be earthed.

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured GREEN-and-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured GREEN or GREEN-and-YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

When replacing the fuse only a correctly rated approved type should be used and be sure to re-fit the fuse cover.
IF IN DOUBT — CONSULT A COMPETENT ELECTRICIAN.

For U.S.A

TO THE USER

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.
Operation of this equipment in a residental area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CAUTION
Changes or modifications to this equipment not expressly approved by TEAC CORPORATION for compliance could void the user's authority to operate this equipment.

For the consumers in Europe

WARNING
This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

Pour les utilisateurs en Europe

AVERTISSEMENT
Il s'agit d'un produit de Classe A. Dans un environnement domestique, cet appareil peut provoquer des interférences radio, dans ce cas l'utilisateur peut être amené à prendre des mesures appropriées.

Für Kunden in Europa

Warnung
Dies is eine Einrichtung, welche die Funk-Entstörung nach Klasse A besitzt. Diese Einrichtung kann im Wohnbereich Funkstörungen versursachen ; in diesem Fall kann vom Betrieber verlang werden, angemessene Maßnahmen durchzuführen und dafür aufzukommen.

Table of Contents

The TASCAM AV-452 coordinates the audio/visual needs for presenters of all levels. Functionally, the AV-452 serves as a microphone mixer, A/V receiver, and power amplifier into one compact unit. The control surface is elegant and intuitive.

Audio: Four microphone inputs (with phantom power) offer plenty of inputs for multiple presenters, or multiple speaking positions. Up to two audio and three audio/visual components can be connected to the A/V channel, with simple switching control. A 3-band EQ is available on each channel to enhance the individual sounds as needed.

Video: The AV-452 will perform video switching between three A/V components, offering a single video feed for projectors or monitors with limited inputs. Switching is done in parallel, and video switching is handled for composite and S-Video inputs.

Control: The RC-452 universal learning remote is included with the AV-452, allowing the presenter to operate all the key equipment with a single remote. The RC-452 will control the AV-452, and can learn commands for projector power, and transport commands for up to four components.

The AV-452 itself also can learn IR commands, to integrate projector/monitor switching with the AV-452 internal switching. This IR command set can be transmitted with an IR “blaster” (not included) to the 37-pin ‘D’-sub **RELAY CONTROL** port (see "Relay control port" on page 19 for details).

“AV installation” features

Special additional features of the AV-452 relevant to fixed installation:

- Microphones can be connected using either XLR-type connectors or using a barrier strip and can be phantom powered, allowing the use of miniature condenser or PZM (boundary field) microphones.
- Switchable 80 Hz bass roll-off to eliminate low-frequency rumble.
- Microphone insert loop for parametric EQ, compresser/limiter/gate, etc.
- AV signal dimmer to allow manual voiceovers, etc.
- Automatic AV ducker with adjustable ratio and threshold settings.
- A CV (constant voltage) paging system can be connected (12V, 24V or 70V) to the rear panel. A level control and defeatable noise gate are provided for optimal settings.
- A building alarm system can be connected to the EMG input. When the alarm sounds, the AV-452 will mute local audio, and switch the CV paging input on.
- The speaker and line output have independent mono switches for use in single-zone or multi-zone systems.
- Cascade input can be configured to combine the input as a submixer, or operate as "room cascade", allowing the AV-452 to become a drone amp.
- Dedicated unbalanced **MEETING OUT** jacks, together with balanced **LINE OUT** jacks allow for connection with other equipment.
- Serial (RS-232) and relay (37-pin D-sub) connectors allow for control of the unit by other devices.

About this manual

This manual is intended for use by those designing, installing and supporting the AV system including the AV-452. It is not necessary for the everyday user of the equipment to read this manual.

The user should refer to the single-sheet *Operation Guide* for a quick reference on how to operate the unit. However, a brief guide to the front panel, and remote control unit is given here, and this also provides some information which can be used when introducing the operation of the unit to its users.

We suggest that the *Operation Guide* is kept close to the AV-452, and the spaces on this sheet are filled in, for a written record of the permanent connections made between the AV-452 and other equipment.

Note that controls and connectors on the unit and the remote control unit are written in this typeface: **LINE OUTPUT**. Sometimes a control or connector is referred to by a number, corresponding to the numbers in the diagrams "Front panel features" on page 8, "Remote control unit features" on page 10 and "Rear panel connections" on page 12. In these cases, a feature of the main unit is numbered like this: ①, and a feature of the remote control unit like this: ❷.

Controls and connectors on other units are written in this way: **REC IN**.

How the manual is organized

The different sections of the manual are as follows:

1, "Introduction" (page 5) This introduction to the AV-452.

2, "General installation notes" (page 7) As the title suggests, this includes general notes on the physical and electrical installation requirements for the AV-452.

3, "Front panel features" (page 8) As well as a list of the front panel controls and features, this section provides details on the operation of the AV-452. Read this section to obtain an overview of the way in which the AV-452 works.

4, "Remote control unit features" (page 10) This provides a list of the features and functions available using the RC-452 remote control unit, as well as details on how to program the RC-452 to learn and replay the command codes of other units.

5, "Rear panel connections" (page 12) This lists the connections to and from the AV-452.

6, "Customization and settings" (page 16) The AV-452 can be customized for the individual installations in a number of ways, using the rear panel switches, etc. This section describes the way in which this customization can be carried out, including the way in which the AV-452 can learn the IR codes necessary to control external devices.

7, "External control" (page 18) The AV-452 can be controlled by an external serial controller, and this section lists the control codes available for control, status, and query. Additionally, relay control and tally indicator connectors are provided. Details of these are given in this section.

8, "Specifications and block diagram" (page 20) Performance figures, dimensional drawings and a block diagram of the AV-452.

These notes provide you with information about the installation of the AV-452.

The packing should contain (in addition to this manual):

- The *User's Guide*—a single sheet containing operating instructions
- A power cord with a 3-pin plug suitable for your region
- A rack mounting kit consisting of four screws and four washers
- The RC-452 remote control unit
- Two AAA batteries for use in the RC-452 remote control unit
- Warranty card

Contact your TASCAM dealer or distributor if any of these items is missing.

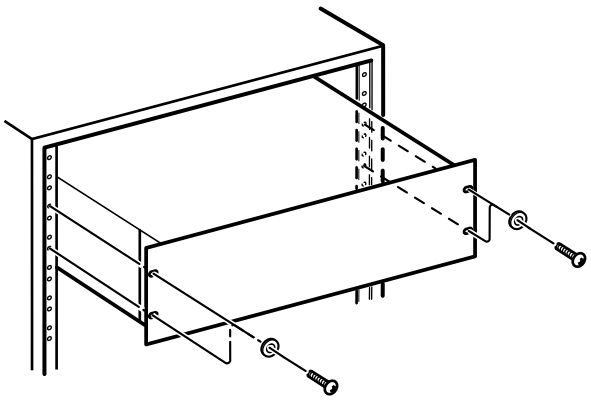
Physical installation

The unit can be fitted in any standard 19" rack, using the mounting kit (screws and washers) provided. No rear support is needed.

3U of rack space is required for the unit itself. Since the AV-452 incorporates power amplifiers, it is strongly recommended that at least 1U of space is left above the unit to avoid overheating.

NOTE

Do not install this apparatus in a confined space such as a book case or similar unit.



For the same reason, adequate space for ventilation should be left at the front and rear of the unit. In any case, the space at the rear of the unit should be sufficient to accommodate the audio and video connectors plugged into the AV-452.

Since many of the functions of the unit are set using small preset controls (trimmer pots, DIP switches, etc.) on the rear panel, we suggest that you ensure you have clear visual access to the rear panel, or that you make these settings before final installation in the rack.

Power supply

The AV-452 can use an AC power supply as marked on the rear panel. Do not use any other voltage of power supply, as this may result in damage.

The unit should be properly grounded (earthed).

The power switch is located on the rear panel to prevent the user from accidentally turning power off during a presentation. If you want to turn the system on and off routinely, you may consider using a power switch for the outlets, or using a centrally-switched power distribution system.

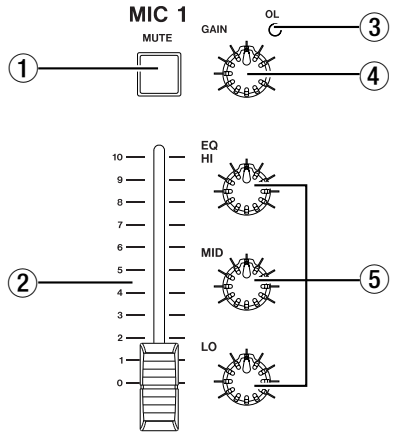
3 – Front panel features

A brief guide to the front panel features of the AV-452, with a little more technical detail than in the *Operation Guide*.

It can be used as a quick reference guide for everyday operation, or to form the basis for an introductory explanation to the users of the equipment.

Microphone channels

Each of the four microphone channels is identically equipped.



① **MUTE key** This latching key lights when the mic input channel is muted.

② **Fader** The unity gain for this fader is at the **7** mark.

③ **OL indicator** Lights at 10dB above the nominal clipping level.

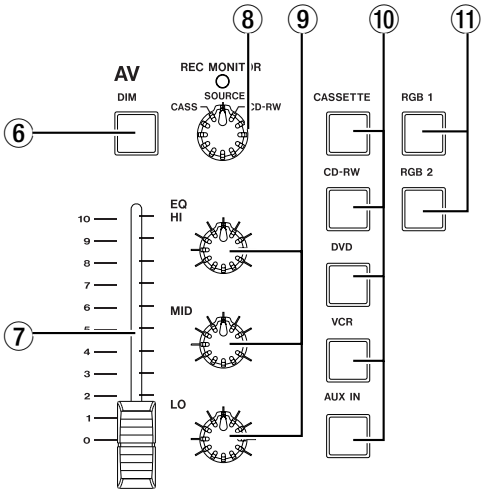
④ **GAIN control** Provides 33dB of control to adjust the mic level appropriately.

⑤ **EQ section** 3 bands, each providing ±10dB at the following frequencies (optimized for voice):

HI: 8kHz (shelving)
MID: 2.5kHz (peaking)
LO: 250Hz (shelving)

AV control and selection section

This section is used to select the appropriate AV source, and control the sound.



⑥ **DIM key** This latching key is used to attenuate the AV source signal by 20dB. It lights when dimming is active.

⑦ **Fader** The unity gain for this fader, which is used to control the level of the selected AV signal, is at the maximum level.

⑧ **REC MONITOR control/indicator** Despite the name, this control and indicator acts a record source selector.

- In the **SOURCE** position, the output of the signal selected using the AV selector keys is fed to the inputs of all connected equipment (except the source unit, to avoid signal loops). For example, if the cassette is selected, the cassette output is fed to the CD-RW and VCR inputs. The indicator lights.
- In the **CASS** position, the cassette output is fed to the CD-RW and VCR inputs, regardless of the AV selector keys.
- In the **CD-RW** position, the CD-RW output is fed to the cassette and VCR inputs, regardless of the AV selector keys.

⑨ **EQ section** 3 bands, each providing ±10dB at the following frequencies:

HI: 12kHz (shelving)
MID: 2.5kHz (peaking)
LO: 100Hz (shelving)

⑩ **AV source selector keys** Only one of these latching keys can be active (lit) at a time. Used to select the AV source.

NOTE

If the **REC MONITOR** *selection and the selection here are the same, the source output is muted, to avoid a feedback loop.*

*Also note that if an audio-only source has been selected (***CASSETTE, CD-RW** *or* **AUX IN** *on the* **AUDIO ONLY** *setting), the last-selected video source will be output through the video connectors.*

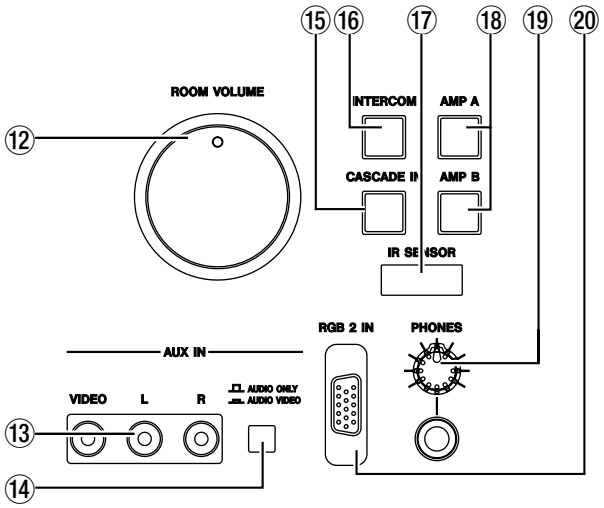
⑪ **Video input selector keys** Only one of these latching keys (**RGB 1** and **RGB 2**) can be active (lit) at a time. They are used to select the input source for an external projector.

NOTE

These **RGB 1** *and* **RGB 2** *keys do not affect the switching of the composite video or S-Video outputs connected to the AV-452. They allow centralized control of a projector or display forming part of the AV system containing the AV-452. See "LEARN IR (switch 1)" on page 16 for details.*

Main control section

This section contains controls related to the overall system.



⑫ **ROOM VOLUME control** This is used to adjust the levels from the speaker outputs as well as from the line level outputs. The indicator on this control lights when power is supplied to the AV-452.

It is motorized, meaning that it will reflect changes made from the RC-452 remote control unit (⓮).

⑬ **AUX inputs** This set of three RCA jacks is used to connect a composite video signal and/or the left and right components of a stereo audio signal.

⑭ **AUX selector switch** This determines whether audio and video are enabled together at the **AUX** jacks (switch pushed in), or audio only (switch in the out position).

⑮ **CASCADE key** When this key is active (lit), the input to the **CASCADE** inputs (rear panel) is fed to the stereo bus (pre-**ROOM VOLUME**). A rear panel switch determines whether this input replaces the input signals or is summed with them (see ("CASCADE (switch 2)" on page 17).

⑯ **INTERCOM key** When this key is lit, the signal received at the **INTERCOM** connection on the rear panel is fed to the stereo bus. This signal is not affected by the **ROOM VOLUME** control.

⑰ **IR SENSOR** This window is used to receive the commands from the supplied wireless remote control unit.

⑱ **AMP A and AMP B keys** The AV-452 can operate in mono mode, with each amplifier driving a separate speaker, in which case, these will act as room control keys.

Alternatively, it can be operated in stereo mode, in which case, these keys turn the stereo channels on and off individually.

NOTE

These keys do not turn the amplifiers on and off—they simply mute the signal to the speakers.

The mono/stereo setting for the line outputs is made using the dedicated switch on the rear panel ㊵ and for the speaker outputs using the DIP switches ㊹.

⑲ **PHONES level and jack** Connect a standard pair of stereo headphones to this 1/4" jack. Adjust the volume with the **PHONES** level control (pre-**ROOM CONTROL**).

NOTE

Remove the headphones from the jack when turning the AV-452 on or off, to avoid possible damage from "thumps".

⑳ **RGB 2 input** Connect one end of a VGA standard 15-pin D-sub (analog) cable to this connector and the other end to a personal computer. The signal is passed through to the **RGB 2 THRU** connector on the rear panel.

NOTE

The AV-452 is not provided with an "RGB 1" input or output. This numbering system refers to any projector or video display unit connected to the AV-452.

4 – Remote control unit features

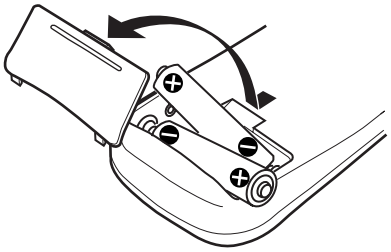
The RC-452 remote control unit is designed for control of not only the AV-452, but up to four additional connected units (marked as **CASSETTE**, **VCR**, **CD-RW** and **DVD**).

A total of 36 keys in total can be programmed (as described later in this section).

When using the RC-452 with the AV-452 or any other unit, make sure:

- There is a clear unobstructed path between the remote control unit and the remote sensor on the unit being controlled.
- The remote control unit is located within 5m (15ft.) of the unit being controlled, and is pointing at approximately right angles (±30°) to the front panel.

The RC-452 should be maintained in the same way as a consumer control unit. When changing the batteries:

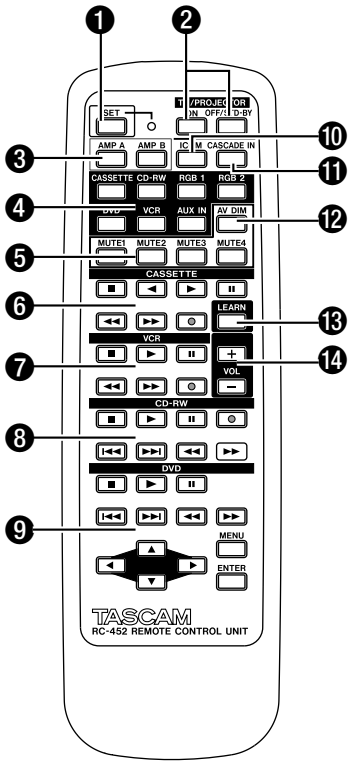


- Always make sure that both batteries are replaced together. Do not mix old and new batteries.
- Do not mix batteries of different types.
- Always make sure that the batteries are located with the correct polarity (the positive terminals of the batteries should match the **+** markings inside the battery compartment, and the negative terminals should match the **–** markings).
- If you are not going to use the remote control unit for an extended period of time, remove the batteries. Old batteries can leak, casing damage to the remote control unit.
- Always dispose of used batteries in the way recommended by your local garbage disposal authorities.

NOTE

The **CASSETTE** *and* **CD-RW** *keys of the RC-452 are programmed at the factory to control the TASCAM CC-222 unit. However, they may be programmed to control other units. The names of these keys and other keys which may be programmed are enclosed [in brackets] in the list below. See "Learning command codes" on page 11 for details of how to do learn other units' commands*

When the batteries are changed in the RC-452, the programmed codes are typically retained. However, you should note that if the batteries are removed for an extended period of time, data loss will occur, and the codes must then be re-learned.



❶ **SET key and indicator** Used when learning commands for other units (as described below)

❷ **[TV/PROJECTOR power keys]** One programmable key (**ON**) is used to put the TV or projector on, and the other (**OFF/STD-BY**) is used to put it into standby or off mode.

❸ **AMP A and AMB B keys** These keys duplicate the function of the **AMP** keys on the AV-452 (⑱).

❹ **AV selector keys** These keys duplicate the function of the audio and video keys on the AV-452 (⑩ and ⑪).

❺ **MUTE keys** These keys duplicate the function of the microphone **MUTE** keys on the AV-452 (①).

❻ **[CASSETTE keys]** Use these programmable keys to control a cassette deck (pre-programmed for the TASCAM CC-222 when the unit is shipped).

❼ **[VCR keys]** Use these programmable keys to control a videocassette recorder.

❽ **[CD-RW keys]** Use these programmable keys to control a CD recorder (pre-programmed to control the TASCAM CC-222 when the unit is shipped)

❾ **[DVD keys]** Use these programmable keys to control a DVD player.

❿ **ICOM key** This key duplicates the function of the **INTERCOM** key on the AV-452 (⑯).

⓫ **CASCADE IN key** This key duplicates the functions of the **CASCADE** key on the AV-452 (⑮).

⓬ **AV DIM key** This key duplicates the functions of the AV **DIM** key on the AV-452 (⑥).

⓭ **LEARN key** Use this key when learning the commands for other units (see below).

⓮ **VOL + and – keys** These keys operate the **ROOM VOLUME** control (⑫).

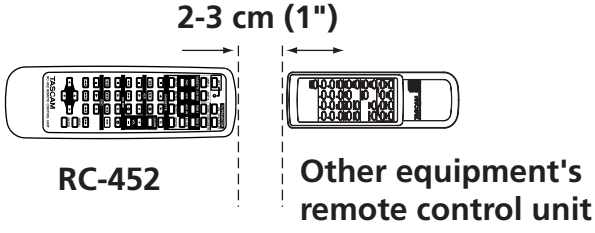
Learning command codes

The RC-452's design allows it to be used for the control of up to five devices in addition to the AV-452: projector or display (**TV/PROJECTOR**), audio cassette recorder (**CASSETTE**), videocassette recorder (**VCR**), CD recorder (**CD-RW**), and DVD player (**DVD**).

Of course, the devices and functions that you program for them do not have to match absolutely with those marked on the AV-452 and RC-452, but it makes sense to map the target units to the RC-452's labels.

To teach remote control commands from another remote control unit to the RC-452:

1 **Make sure that both the RC-452 and the other equipment's remote control unit have batteries installed, and place them on a flat surface, about 2–3 cm (about an inch) apart, facing each other.**



2 **On the RC-452, press and hold the SET key ❶ and then press the LEARN key ⓭. Release these keys. The SET indicator lights steadily.**

3 **Within 10 seconds of the previous step, press the ►► key of the RC-452's VCR section ❼ *three times*.**

The SET indicator ❶ of the RC-452 flashes as you press it and remains lit to show the unit is now in learning mode.

4 **On the RC-452, press the key which will be mapped to the other equipment's function.**

The SET indicator ❶ of the RC-452 starts flashing rapidly to show that learning is started.

5 **On the other equipment's remote control unit, press the key to be learned. The RC-452's SET indicator ❶ stops flashing rapidly and lights steadily for a short time, goes out briefly *once* and then lights steadily to show that the command has been learned.**

- **If the RC-452's SET indicator goes out briefly *three* times and then lights steadily, it means that the learning command has not been properly learned.**
- **If the RC-452's SET indicator goes out briefly *six* times and then lights steadily, it means that the RC-452's memory is full, and no more commands can be learned.**

6 **Repeat steps 4 and 5 until all appropriate commands have been learned.**

7 **To exit the learning mode, press the RC-452's LEARN key ⓭. The SET indicator goes out (it also goes out if no keys are pressed on the RC-452 for about 10 seconds).**

NOTE

The RC-452 can learn and store up to 36 different commands.

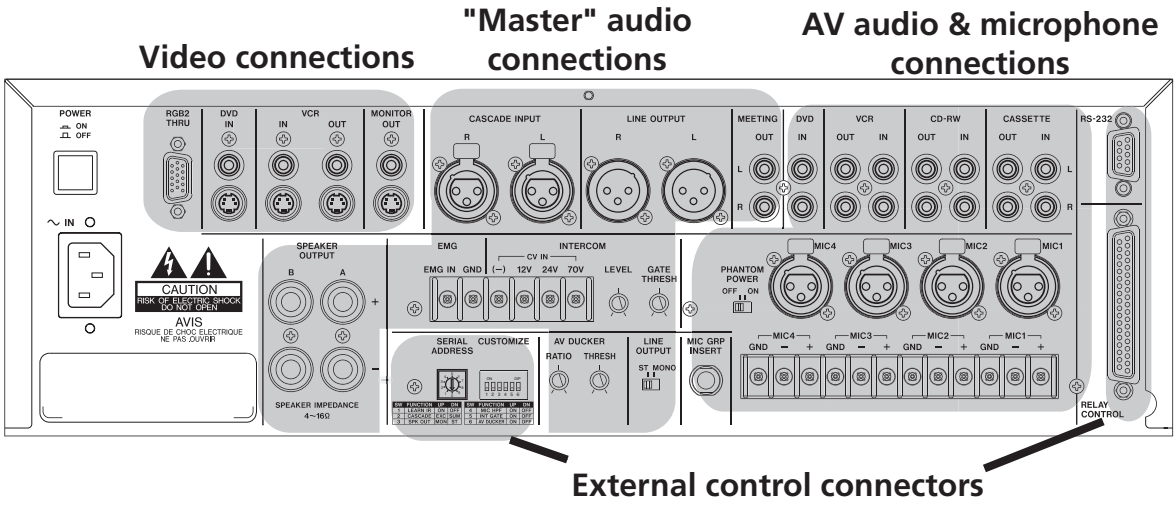
The angle and distance between the two remote control units affects the difficulty of the learning process.

The RC-452 may not be able to learn some units' commands which use long IR codes for transmission.

5 – Rear panel connections

This section provides detailed information on the rear panel connectors, as well as some notes on installation and connection of other units.

Basic specifications and performance figures are provided later in the manual.

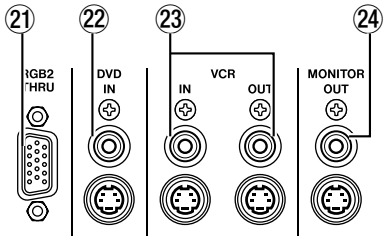


Video connections

All video connections on the AV-452 switch in parallel. There is no conversion between composite and S-Video signals. In some designs, you may need to connect both video formats to the source decks.

This also means that the AV-452 is standard-independent and can accept NTSC, PAL or SECAM format video with no configuration needed.

In addition to these connectors, remember that there is an additional **AUX** video connector on the front panel ⑬.



NOTE

All connectors on the rear panel are labeled relative to the AV-452. In other words, a connector labeled **IN** *on the AV-452 should be connected to one marked* ***OUT*** *on another piece of equipment.*

㉑ **RGB2 THRU connector** This 15-pin D-sub connector echoes the signal input at the front panel input ⑳.

㉒ **DVD IN connectors** This pair of connectors is used to connect the video output of a DVD player to the AV-452.

㉓ **VCR IN and OUT connectors** Connect the video output of a videocassette recorder to the **VCR IN**, and the video input of the VCR to the **VCR OUT**.

㉔ **MONITOR OUT connectors** Link these connectors to the appropriate input of a TV, monitor or projector.

AV audio and microphone connections

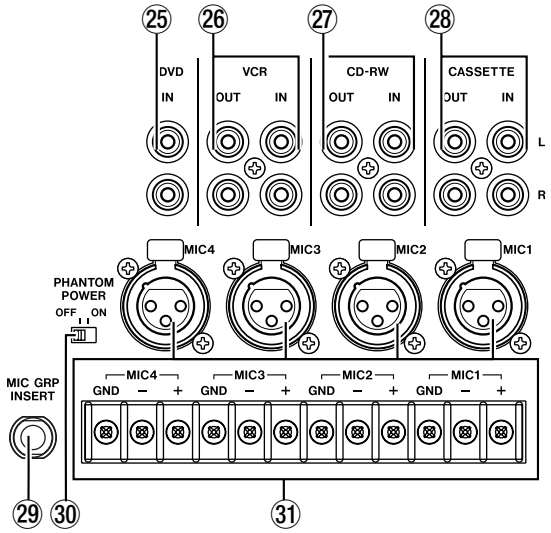
NOTE

The AV-452 is supplied with several sets of shorting plugs for the unused RCA input connectors. Remove these when making connections to these terminals, and leave them in place when these terminals are unused. This will help to improve the audio performance of the system.

In addition to the connections listed here, there is also a pair of **AUX** audio inputs ⑬ on the front panel.

NOTE

All XLR-type connectors are wired with pin 1 to ground, pin 2 hot, and pin 3 cold.



㉕ DVD IN connectors

This pair of connectors accepts the audio outputs of a DVD player.

㉖ VCR OUT and IN connectors

These pairs of connectors feed the audio inputs of a video-cassette recorder (**OUT**) and accept the output signals from the VCR (**IN**).

㉗ CD-RW OUT and IN connectors

These pairs of connectors feed the inputs of a CD recorder (**OUT**) and accept the output signals from the CD recorder (**IN**).

㉘ CASSETTE OUT and IN connectors

These pairs of connectors feed the inputs of a cassette recorder (**OUT**) and accept the output signals from the cassette recorder (**IN**).

㉙ MIC GRP INSERT connector

This TRS 1/4" connector is used to pass the summed microphone signals through a dynamics processor (limiter, gate, etc.) or a graphic or parametric EQ unit, etc. The connector is wired with tip = send, ring = return, sleeve = ground).

㉚ PHANTOM POWER switch

Use this switch to provide +48V phantom power to condenser microphones. All four microphone inputs are activated with the same switch.

Do not use dynamic microphones connected with an unbalanced connection or high-impedance microphones, with phantom power turned on.

NOTE

To avoid possible damage to microphones, always connect microphones, turn down the **ROOM VOLUME** *control, and turn the speakers off using the* **AMP A** *and* **AMP B** *keys, before switching the phantom power on or off.*

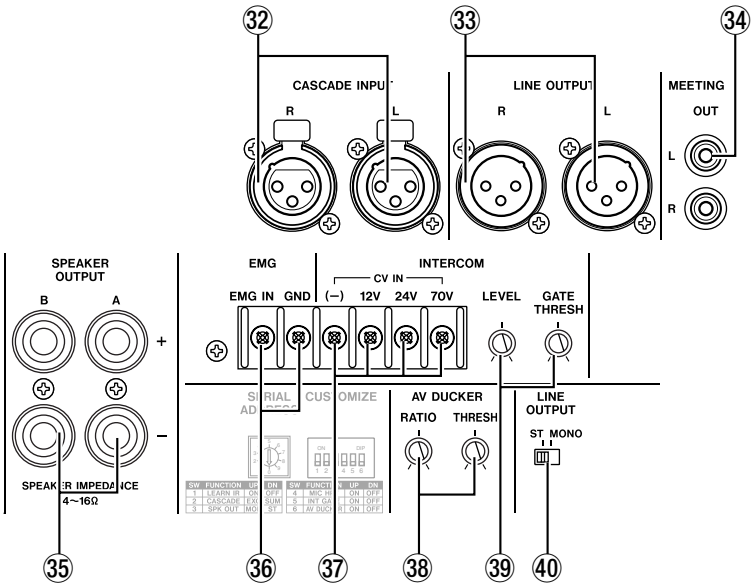
㉛ MIC 1 through 4 connections

Microphones can be connected using the XLR connectors. In permanent installations where wires are being run through walls, the bare wires can be connected to the barrier strip instead.

Do not connect microphones via the XLR and barrier strip connections of the same microphone channel (though it is possible to connect some microphones via the XLR connectors and some via the barrier strip).

Always make sure that polarity is observed consistently throughout the installation, in order to avoid phase reversal problems.

"Master" audio connections



These connections relate to the audio functions of the AV-452 which play a "master" role in the setup and operation of the unit.

㉜ CASCADE INPUT connectors These balanced XLR connectors accept balanced signals from another AV-452 (or similar unit). These input signals are selected using the front panel **CASCADE** key ⑮ and are pre-**ROOM VOLUME**.

Depending on the position of the rear panel DIP switch ("CASCADE (switch 2)" on page 17), the cascade input signal can sum with the AV-452 audio, or can replace it.

㉝ LINE OUTPUT connectors These balanced XLR connectors output the post-**ROOM VOLUME** mix (to another AV-452 unit or power amplifier).

㉞ MEETING OUT connectors These unbalanced RCA jacks outputs the pre-**ROOM VOLUME** mix.

One use for this facility is to connect a recorder to log the proceedings of meetings, etc.

㉟ SPEAKER OUTPUT A and B connectors Connect speakers to these binding post terminals. Take care to observe polarity to avoid out-of-phase problems.

The speakers attached to these terminals can be switched individually using the selector keys on the front panel ⑱.

The impedance of the speaker system connected to each channel should be between 4Ω and 16Ω.

WARNING

Use of speakers with impedances outside these limits may result in damage to the speakers and/or the AV-452.

Also note that the AV-452 should not be operated in bridged mono mode.

Depending on the DIP switch setting ("SPEAKER OUT (switch 3)" on page 17), and the **LINE OUTPUT** mode switch ㊵, the AV-452 may be configured as a dual mono amplifier, or as a stereo amplifier.

In the latter case, channel A corresponds to the left channel, and channel B to the right channel.

㊱ EMG IN and GND connectors Use these barrier strip connectors to attach a 5 Vrms emergency signal cable.

When this signal is activated, the AV-452 will cut the signals from the **LINE OUTPUT** ㉝ and **SPEAKER** ㉟ terminals and all front panel indicators flash.

㊲ INTERCOM connectors (CV IN) Use these connectors to attach the cables from a constant voltage (CV) intercom system.

Before connecting the AV-452 to such an intercom system, confirm the voltage used by the intercom system. The AV-452 can work with intercoms using 12, 24 or 70 volts. When the speaker signal arrives at the AV-452, it is converted by the AV-452 into a line level signal, where it is added to the line and speaker outputs (but not to the **MEETING OUT** or **PHONES**).

Note the following levels and input impedances, corresponding to the different connectors on the barrier strip:

Connector	Level, input impedance
70V	70V, 40kΩ
24V	24V, 12kΩ
12V	12V, 4.7kΩ

The level of the intercom signal is set as explained below, and a squelch circuit is also available ㊴. The intercom signal is enabled and disabled using the front panel **INTERCOM** key ⑯.

㊳ AV DUCKER RATIO and THRESH controls These trimmer pots are used if the AV ducking facility is enabled using the DIP switches (see "Customization and settings" on page 16). If this facility is not enabled, these controls have no effect.

If this is enabled, the amount by which the currently-selected AV signal is ducked is set between –6 and –20 dB, depending on the position of the **RATIO** trimmer pot. Turn this pot clockwise to increase the amount that the AV signal is dimmed.

The **THRESH** trimmer pot adjusts the threshold level of the microphone signal at which the ducking facility operates. Turn this pot clockwise to increase this trigger level.

㊴ LEVEL and GATE THRESH controls These two trimmer pots are used with the **INTERCOM** signals input at ㊲.

The **LEVEL** control adjusts the level of the intercom signal fed to the mix (post-**ROOM LEVEL**). Turn this clockwise to increase the level of the signal.

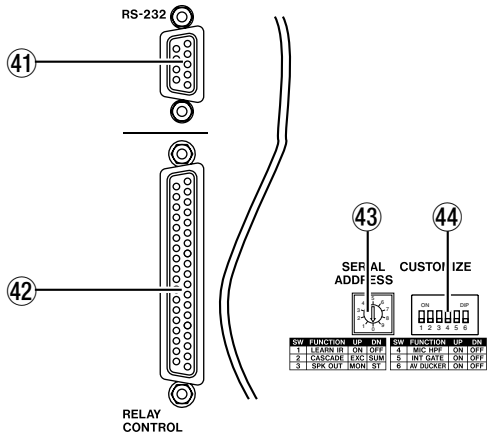
The **GATE THRESH** squelch control is used to control the threshold of a noise gate, which opens when the level of the intercom signal exceeds this level. This allows an otherwise slightly noisy intercom to be connected without interfering with the other signals.

㊵ LINE OUTPUT mode switch This switch allows the line output ㉝ of the AV-452 to act as two mono line sources, driving auxiliary amplifiers, etc. in two locations, or it allows it to act as a stereo amplifier, driving another stereo unit.

External control connectors

There are two D-sub connectors, used for external control of the AV-452.

The details relating to these connectors are described in "External control" on page 18.



㊶ RS-232 serial port This female 9-pin D-sub port accepts and receives serial signals, allowing the AV-452 to be controlled by a serial device. See the document *Serial Protocol Reference* (available on request from your TASCAM dealer or distributor) for full details of the format and content of the serial commands and messages.

NOTE

Although the connector is marked ***RS-232****, it can be used for RS-422 and RS-485 serial data interchange as well as for RS-232 format data.*

㊷ RELAY CONTROL connector This female 37-pin D-sub connector accepts commands and transmits tally signals. It also can be used to connect a wired IR "blaster " transmitter for the control of other devices, such as a video projector or monitor.

㊸ SERIAL ADDRESS selector Use this to select the serial address (**0** through **9**) of the AV-452 when controlling it using RS-485 commands.

㊹ CUSTOMIZE DIP switches See the following section for the meanings of these configuration switches.

The customization and settings of the AV-452 are made using a set of six DIP switches.

These switches are as follows:

Switch	Function	Up position	Down position
1	Learn IR codes(**LEARN IR**)	**ON**	**OFF**
2	Cascade mode (**CASCADE**)	Exclusive (**EXC**)	Summed (**SUM**)
3	Speaker outputs (**SPK OUT**)	Mono (**MON**)	Stereo (**ST**)
4	Microphone high-pass filter (**MIC HPF**)	**ON**	**OFF**
5	Intercom gate function (**INT GATE**)	**ON**	**OFF**
6	AV ducking facility (**AV DUCKER**)	**ON**	**OFF**

These are explained here:

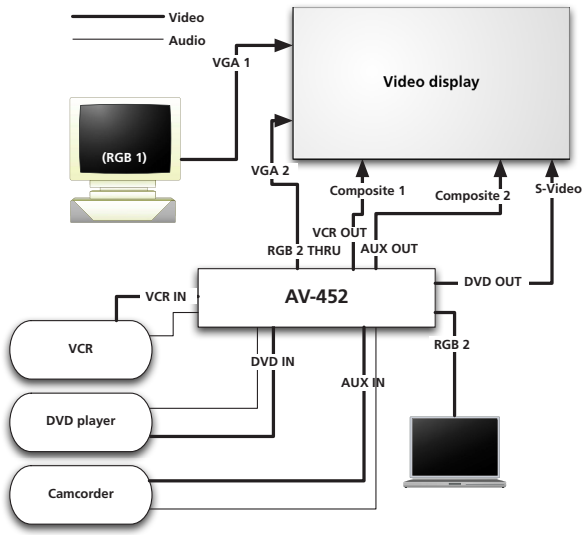
LEARN IR (switch 1)

This function allows the AV-452 to learn the IR codes for direct control of a monitor, video projector, etc. allowing the external video source for the video display unit to be selected using the AV selection keys as well as the **RGB 1** and **RGB 2** keys.

This allows the video signal of different devices to be hooked up directly to the monitor and switched together with the audio from one control surface (the AV-452 or the RC-452).

An external IR "blaster" (not supplied) must be connected to the AV-452 for control of the video display unit.

Learning the external IR commands In the following explanation, we assume that the AV equipment is hooked up to a multi-input video display device in the following way:



Not shown here is the IR blaster device, connected to the relay control ㊷ connector of the AV-452 and pointing at the video monitor's IR receiver.

Here we are programming the **DVD** key on the AV-452 to switch the video monitor to the **S-Video** input.

1. **Make sure the power to the AV-452 is OFF.**
2. **Set the LEARN IR switch (switch 1) to ON.**
3. **Turn ON the AV-452. The AMP A, AMP B, INTERCOM and CASCADE keys on the front panel flash to show the unit is in IR learn mode.**
4. **Press the DVD key on the AV-452 front panel. It starts to flash.**
5. **Point the video display device's remote control unit at the AV-452's IR SENSOR ⑰ and press the key which enables the S-Video input on the remote control unit of the video display device.**
   - **If a valid IR code is received and stored, the DVD key stops flashing.**
   - **If the IR code is not received and stored correctly, the DVD key continues to flash.**

NOTE

The AV-452 only supports the NEC type IR command specification. If the key continues to flash, and you are sure that the source change command has been transmitted, the video display device may not conform to the NEC ITR command specification.

6. **Press another AV selection key (for example, the RGB 1 key) and the corresponding input key on the video remote control unit of the video display device to learn this command.**
7. **When you have finished programming these commands, set the LEARN IR switch (switch 1) to OFF.**

   The AV-452 resets itself and starts normal operation.

CASCADE (switch 2)

This switch determines the use of the audio signals received at the **CASCADE IN** connectors ㉜ when the **CASCADE** key ⑮ is activated.

In the **EXC** (exclusive) setting, the input cascade signal replaces the direct input signals at both the **LINE OUTPUT** ㉝and **SPEAKER OUT** ㉟ terminals.

In the **SUM** setting, the cascaded signal is summed (pre **ROOM LEVEL**) with the direct input signals from the **LINE OUTPUT** ㉝and **SPEAKER OUT** ㉟ terminals (as well as the **MEETING OUT** ㉞ and **PHONES** ⑲).

NOTE

Remember that this only applies to audio signals. You cannot cascade video signals using the AV-452.

The cascade and intercom Note also that when the switch is set to the **EXC** (exclusive) setting, the CV intercom input is disabled. The front panel **INTERCOM** key ⑯ will not light if the switch is set to **EXC**. Also, when the switch is in this position, pressing the **INTERCOM** key will cause the key to flash briefly, indicating that the intercom input is disabled.

SPEAKER OUT (switch 3)

This switch determines whether the signal sent to the **SPEAKER OUT** ㉟ terminals is the same from both speakers (left and right summed) (**MON**) or whether it is a stereo signal (**ST**).

If the mono option is chosen, it is possible to use the AV-452 to control the sound fed to either or both of two rooms, switchable using the **AMP** keys on the front panel ⑱.

NOTE

This switch setting only affects the speaker outputs. It does not affect the **LINE** *outputs ㉝, which are switched between mono and stereo with a dedicated switch ㊵.*

MIC HPF (switch 4)

This switch enables or disables an 80Hz high-pass filter added to the summed microphone signals.

Use this filter to cut out wind noise, floor rumble, etc. from microphones which are located in less than acoustically perfect environments.

INTERCOM GATE (switch 5)

This switch enables or disables the intercom squelch circuit (noise gate).

When this switch is in the **OFF** position, the **GATE THRESH** trimmer pot ㊴ has no effect.

AV DUCKER (switch 6)

This switch enables or disables the AV ducking circuit.

When this switch is in the **OFF** position, neither of the **AV DUCKER** trimmer pots: the **RATIO** or **THRESH** ㊳ controls, has any effect.

The AV-452 can be controlled from other units in two ways.

The first is a serial protocol, as used by many AV controller vendors. This allows a number of AV-452 units to be controlled from a personal computer, as well as by these dedicated controllers.

The second is by using the relay connector, allowing a number of external relay controls and tally indicators to be connected to the AV-452.

AV-452 serial protocol

NOTE

A separate document "AV-452 Serial Control Protocol", providing details on the implementation of the serial control, is available on request from your TASCAM dealer or distributor. If you are implementing the serial protocol, you may choose to provide your "back-room" systems integration team with the separate document, and to keep a copy to hand for troubleshooting on site.

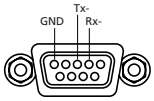
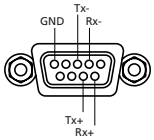
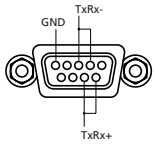
The serial port can operate as a RS-232, RS-422 or RS-485 port (as determined by the controller or PC).The AV-452 is fitted with a standard 9-pin D-sub serial port, as well as a rotary address selector switch ㊸, allowing it to take an ID from 0 through 9.

This allows a number of AV-452 units to be chained together and controlled from a single source.

NOTE

Only set the serial address with the power to the AV-452 turned off as the AV-452 will only recognize the setting at power-on.

Serial port pinouts

RS-232	RS-422	RS-485
		
Pin 2: Rx- Data Pin 3: TX- Data Pin 5: Ground	Pin 2: Rx- Data Pin 3: Tx- Data Pin 5: Ground Pin 6: Rx+ Data Pin 7: Tx+ Data	Pin 2: TxRx- Data Pin 3: TxRx- Data Pin 5: Ground Pin 6: TxRx+ Data Pin 7: TxRx + Data

The diagrams above show the AV-452 rear panel connector. Any cable connectors will accordingly be mirror images of the above.

The transmission speed is always 9,600bps, with a character length of 8 bits, and no parity. The command spacing is >25ms.

The RS-422 and RS-485 implementations follow standard specifications.

The RS-232 operation is a modification of the RS-422 port, operating at 0 to 4.5V, rather than ±9V. It should work with most older control systems and PCs, but if you have problems with using this protocol, try using the controller with RS-422, if possible, to remedy the situation.

Relay control port

There is also a 37-pin D-sub connector ㊷ which may be used for relay control of the AV-452 and connecting tally indicators.

The following should be taken into account when connecting external equipment to the AV-452 using this port:

The relay outputs are low when active, and must be low for at least 50 ms.

The maximum current is 20 mA, and the maximum voltage is 30 V.

The tally indicator outputs are open collector.

IR "blaster"

Note that pin 22 (and ground) may be connected to an IR "blaster" device, which can be used to relay command codes from the AV-452 to an external monitor or projector, etc.

The procedure for learning these command signals is described in "LEARN IR (switch 1)" on page 16.

An IR blaster that has been found to work well with the AV-452 is the Xantech 283M IR emitter. Please consult your TASCAM distributor for up-to-date details of other suitable units that can be used with your AV-452.

RELAY CONTROL pinouts

Pin #	Signal	Meaning	Pin #	Signal	Meaning
1	GND	GND	20	NC	
2	+5V	+5V (50 mA maximum)	21	IR OUTPUT	Connect the wired IR remote device
3	MIC 1 MUTE	Turns the MIC 1 MUTE on and off	22	MIC 1 MUTE Tally	
4	MIC 2 MUTE	Turns the MIC 2 MUTE on and off	23	MIC 2 MUTE Tally	
5	MIC 3 MUTE	Turns the MIC 3 MUTE on and off	24	MIC 3 MUTE Tally	
6	MIC 4 MUTE	Turns the MIC 4 MUTE on and off	25	MIC 4 MUTE Tally	
7	A/V DIM	Turns the AV DIM on and off	26	A/V DIM Tally	
8	CASSETTE	Selects Cassette as the AV source	27	CASSETTE Tally	
9	CD-RW	Selects CD-RW as the AV source	28	CD-RW Tally	
10	DVD	Selects DVD as the AV source	29	DVD Tally	
11	VCR	Selects VCR as the AV source	30	VCR Tally	
12	AUX IN	Selects AUX IN as the AV source	31	AUX IN Tally	
13	RGB 1	Selects RGB 1 as the Projector or RGB monitor source	32	RGB 1 Tally	
14	RGB 2	Selects RGB 2 as the Projector or RGB monitor source	33	RGB 2 Tally	
15	AMP A	Turns the AMP A output on and off	34	AMP A Tally	
16	AMP B	Turns the AMP B output on and off	35	AMP B Tally	
17	INTERCOM	Activates the INTERCOM input	36	INTERCOM Tally	
18	CASCADE	Activates the CASCADE input	37	VOLUME DOWN	Volume down
19	VOLUME UP	Volume up			

Video specifications

Composite inputs All composite inputs are through RCA jacks.

AUX IN	75Ω, 1 Vp-p
VCR IN	75Ω, 1 Vp-p
DVD IN	75Ω, 1 Vp-p

S-Video inputs All S-Video inputs are through 4-pin mini-DIN connectors.

VCR IN	75Ω, 1 Vp-p
DVD IN	75Ω, 1 Vp-p

Composite outputs All composite outputs are through RCA jacks.

VCR OUT	75Ω, 1 Vp-p
MONITOR OUT	75Ω, 1 Vp-p

S-Video outputs All S-Video outputs are through 4-pin mini-DIN connectors.

VCR OUT	75Ω, 1 Vp-p
MONITOR OUT	75Ω, 1 Vp-p

RGB 2 connections

RGB 2 IN	15-pin D-sub female
RGB 2 THRU	15-pin D-sub female

AV audio and microphone specifications

AV audio inputs All inputs are made through RCA pin jacks (unbalanced).

CASSETTE	Input impedance, 47kΩ, Nominal input level -10dBV (–7.8dBu)
CD-RW	Input impedance, 47kΩ, Nominal input level –10dBV (–7.8dBu)
VCR	Input impedance, 47kΩ, Nominal input level –10dBV (–7.8dBu)
DVD	Input impedance, 47kΩ, Nominal input level –10dBV (–7.8dBu)
AUX IN	Input impedance, 47kΩ, Nominal input level –10dBV (–7.8dBu)

AV audio outputs All outputs are made through RCA pin jacks (unbalanced).

CASSETTE	Output impedance, 100Ω, Output level –10dBV (–7.8dBu) (nominal), +10.8dBV (+13dBu) (maximum)
CD-RW	Output impedance, 100Ω, Output level –10dBV (–7.8dBu) (nominal), +10.8dBV (+13dBu) (maximum)
VCR	Output impedance, 100Ω, Output level –10dBV (–7.8dBu) (nominal), +10.8dBV (+13dBu) (maximum)

Microphone group insert Made through TRS 1/4" jack:

Send (tip)	Output impedance 100Ω, nominal level –10dBV (–7.8dBu), maximum level +15dBV (+17.2dBu)
Return (sleeve)	Input impedance 10kΩ, nominal level –10dBV (–7.8dBu), 21dB headroom

Microphone inputs The following figures apply to connections made via the XLR connectors and the barrier strips.

Input impedance	2.2kΩ
Input level	–60dBu (**GAIN** ④ at maximum) to –27dBu (**GAIN** at minimum)
Phantom power	+48V (global for 4 channels)
OL indicator ③	Lights at 10dB above nominal level
HPF	Global for 4 channels, switchable @ 80Hz

Master section specifications

CASCADE INPUTS	Balanced (XLR -type connectors Input impedance 10kΩ, input level +4dBu
LINE OUTPUT	Balanced XLR-type connectors Output impedance 100Ω, nominal output level +4dBu, maximum output level +23dBu
MEETING OUT	Unbalanced RCA connectors Output impedance 100Ω, nominal output level –10dBV (–7.8dBu), maximum output level +15dBV (+17.2dBu)
INTERCOM	Barrier strip 70V, 40kΩ, 24V, 12kΩ or 12V, 4.7kΩ
EMG IN	5V r.m.s.

Phones

Connector	1/4" stereo jack
Maximum output power	100mW + 100mW (68Ω) control at maximum

Speaker outputs

Connector	Binding posts
Load impedance	8Ω
Rated output power	80W + 80W (1kHz, 1%, 8Ω)
Maximum output power	100W +100W (EIA, JAITA)

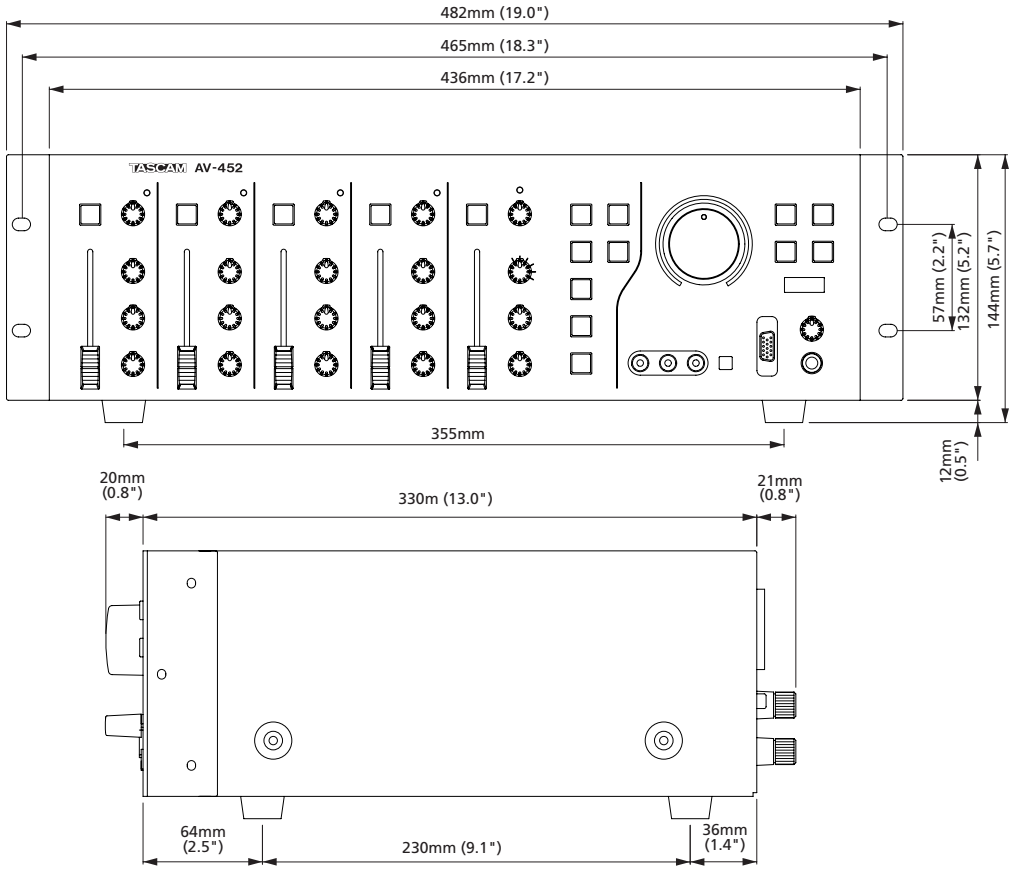
Audio performance

Frequency response	20Hz to 20kHz +1.0/–2.0dB, MIC IN to INSERT SEND	
	20Hz to 20kHz +1.0/–2.0dB, LINE IN to LINE OUTPUT	
	20Hz to 20kHz +1.0/–2.0dB, LINE IN to MEETING OUTPUT	
	20Hz to 20kHz +1.0/–2.0dB, LINE IN to OUTPUT (to LINE sources)	
	50Hz to 20kHz +1.0/–2.0dB, LINE IN to PHONES OUTPUT	
THD (nominal level, 1kHz)	0.07%, MIC IN to LINE OUTPUT (GAIN: MIN, DIN AUDIO)	
	0.03%, LINE IN to LINE OUTPUT (DIN AUDIO)	
	0.03%, LINE IN to OUTPUT (to LINE sources) (DIN AUDIO)	
	0.03%, LINE IN to MEETING OUTPUT (DIN AUDIO)	
Noise level (DIN Audio+A)	**MIC IN**	(GAIN: MAX, EIN, 150ohm terminated) –110dBu, MIC IN to INSERT SEND
	LINE IN (DIN Audio)	–72dBV (–70dBu), LINE IN to LINE OUTPUT
		–72dBV (–70dBu), LINE IN to OUTPUT (to LINE sources)
		–72dBV (–70dBu), LINE IN to MEETING OUTPUT
		–70dBV (–68dBu), LINE IN to PHONES OUTPUT
Crosstalk	60dB, L/R at 1kHz	
	65dB, Input channels at 1kHz	
Speaker outputs	Noise level (DIN Audio +A): 4mV (ROOM VOLUME at max, MIC faders at min, inputs shorted); 1.2mV (ROOM VOLUME minimum	
	Signal-to-noise ratio (DIN Audio+A):70dB (output of 50W)	

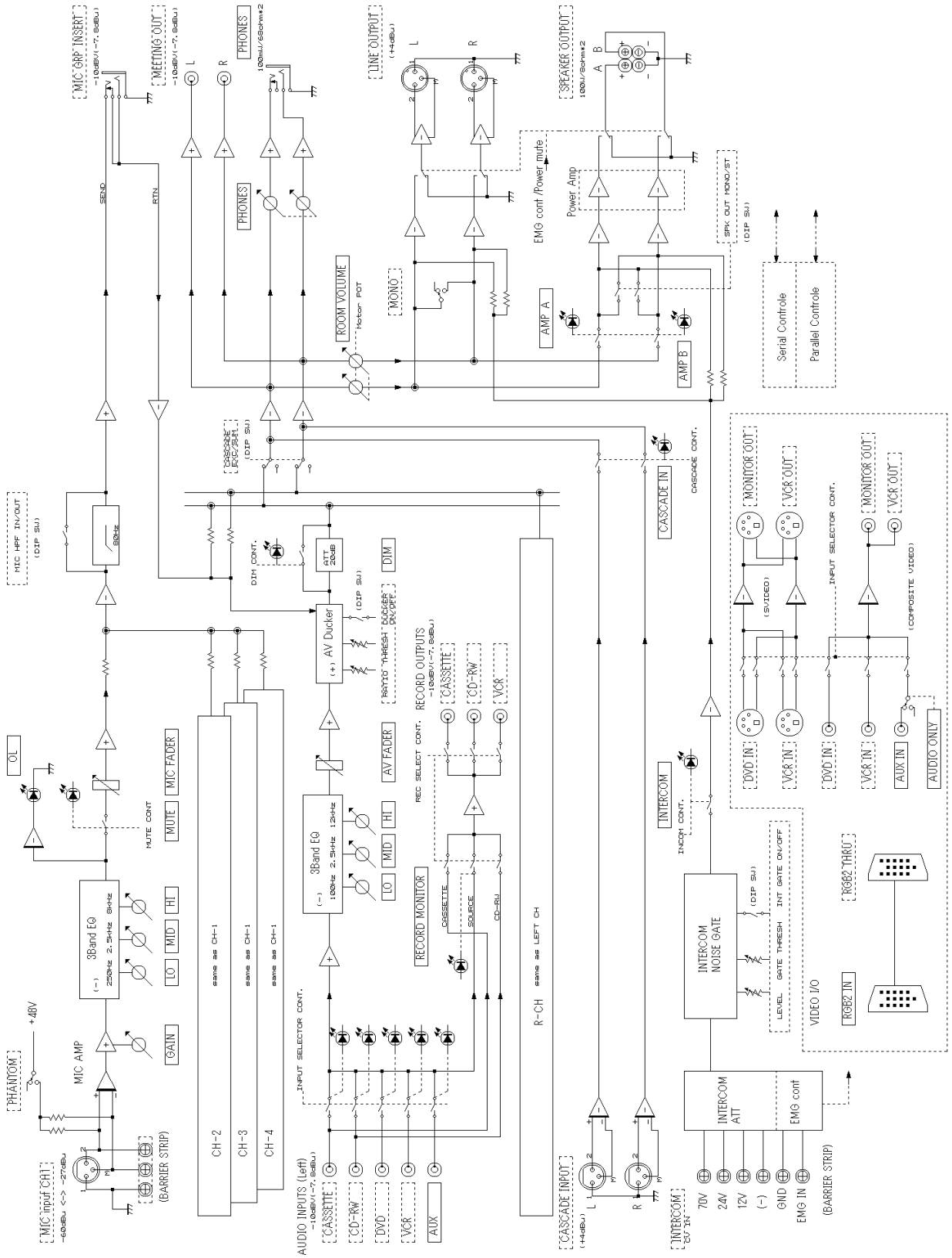
Power and physical specifications

Power requirement	100V AC, 50-60Hz
	120V AC, 60Hz
	230V AC, 50Hz
	240V AC, 50Hz
Power consumption	125W
Peak inrush current	16A
Applicable electromagnetic environment	E4
Dimensions (W xHxD)	482 x 144 x 371(mm) 19.0 x 5.7 x 14.6 (in)
Weight	11.3kg (24.9 lbs)
Supplied accessories	RC-452 remote control unit 2 x AAA dry cell batteries Power cord Rack mounting kit

Dimensional drawing



Block diagram



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AV-452

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Please replace pages 18 and 19 of the Installation & Support Guide with this sheet, which contains some additions and corrections to the description of the relay control port.

The AV-452 can be controlled from other units in two ways.

The first is a serial protocol, as used by many AV controller vendors. This allows a number of AV-452 units to be controlled from a personal computer, as well as by these dedicated controllers.

The second is by using the relay connector, allowing a number of external relay controls and tally indicators to be connected to the AV-452.

AV-452 serial protocol

NOTE

A separate document "AV-452 Serial Control Protocol", providing details on the implementation of the serial control, is available on request from your TASCAM dealer or distributor. If you are implementing the serial protocol, you may choose to provide your "back-room" systems integration team with the separate document, and to keep a copy to hand for troubleshooting on site.

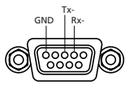
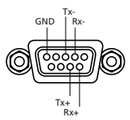
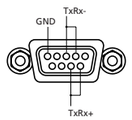
The serial port can operate as a RS-232, RS-422 or RS-485 port (as determined by the controller or PC).The AV-452 is fitted with a standard 9-pin D-sub serial port, as well as a rotary address selector switch ㊸, allowing it to take an ID from 0 through 9.

This allows a number of AV-452 units to be chained together and controlled from a single source.

NOTE

Only set the serial address with the power to the AV-452 turned off as the AV-452 will only recognize the setting at power-on.

Serial port pinouts

RS-232	RS-422	RS-485
		
Pin 2: Rx- Data Pin 3: TX- Data Pin 5: Ground	Pin 2: Rx- Data Pin 3: Tx- Data Pin 5: Ground Pin 6: Rx+ Data Pin 7: Tx+ Data	Pin 2: TxRx- Data Pin 3: TxRx- Data Pin 5: Ground Pin 6: TxRx+ Data Pin 7: TxRx + Data

The diagrams above show the AV-452 rear panel connector. Any cable connectors will accordingly be mirror images of the above.

The transmission speed is always 9,600bps, with a character length of 8 bits, and no parity. The command spacing is >25ms.

The RS-422 and RS-485 implementations follow standard specifications.

The RS-232 operation is a modification of the RS-422 port, operating at 0 to 4.5V, rather than ±9V. It should work with most older control systems and PCs, but if you have problems with using this protocol, try using the controller with RS-422, if possible, to remedy the situation.

Relay control port

There is also a 37-pin D-sub connector ㊷ which may be used for relay control of the AV-452 and connecting tally indicators.

The following should be taken into account when connecting external equipment to the AV-452 using this port:

The relay outputs are low when active, and must be low for at least 50ms.

The maximum current is 20mA, and the maximum voltage is 30V.

The tally indicator outputs are open collector.

IR "blaster"

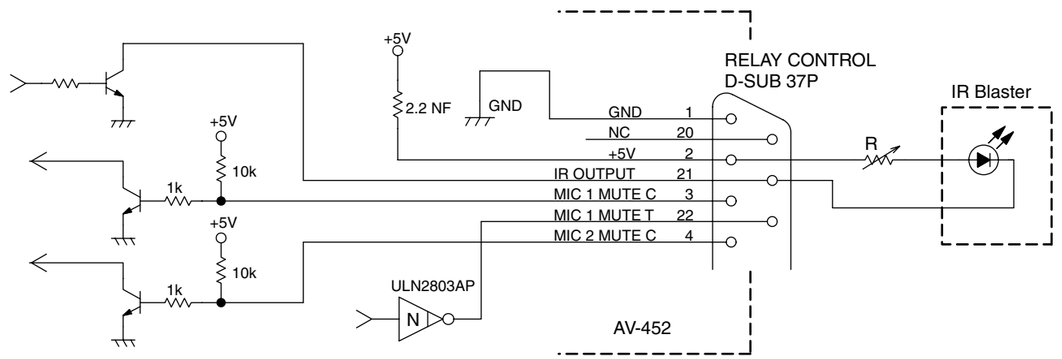
Note that pin 21 (and pin 2, +5V) may be connected to an IR "blaster" device, which can be used to relay command codes from the AV-452 to an external monitor or projector, etc.

The procedure for learning these command signals is described in "LEARN IR (switch 1)" on page 16.

An IR blaster that has been found to work well with the AV-452 is the Xantech 283M IR emitter. Please consult your TASCAM distributor for up-to-date details of other suitable units that can be used with your AV-452.

RELAY CONTROL pinouts

Pin #	Signal	Meaning	Pin #	Signal	Meaning
1	GND	GND	20	NC	
2	+5V	+5V (50mA maximum)	21	IR OUTPUT	Connect the wired IR remote device
3	MIC 1 MUTE	Turns the MIC 1 MUTE on and off	22	MIC 1 MUTE Tally	
4	MIC 2 MUTE	Turns the MIC 2 MUTE on and off	23	MIC 2 MUTE Tally	
5	MIC 3 MUTE	Turns the MIC 3 MUTE on and off	24	MIC 3 MUTE Tally	
6	MIC 4 MUTE	Turns the MIC 4 MUTE on and off	25	MIC 4 MUTE Tally	
7	A/V DIM	Turns the AV DIM on and off	26	A/V DIM Tally	
8	CASSETTE	Selects Cassette as the AV source	27	CASSETTE Tally	
9	RGB 1	Selects RGB 1 as the Projector or RGB monitor source	28	CD-RW Tally	
10	RGB 2	Selects RGB 2 as the Projector or RGB monitor source	29	DVD Tally	
11	CD-RW	Selects CD-RW as the AV source	30	VCR Tally	
12	DVD	Selects DVD as the AV source	31	AUX IN Tally	
13	VCR	Selects VCR as the AV source	32	RGB 1 Tally	
14	AUX IN	Selects AUX IN as the AV source	33	RGB 2 Tally	
15	AMP A	Turns the AMP A output on and off	34	AMP A Tally	
16	AMP B	Turns the AMP B output on and off	35	AMP B Tally	
17	INTERCOM	Activates the INTERCOM input	36	INTERCOM Tally	
18	CASCADE	Activates the CASCADE input	37	VOLUME DOWN	Volume down
19	VOLUME UP	Volume up			

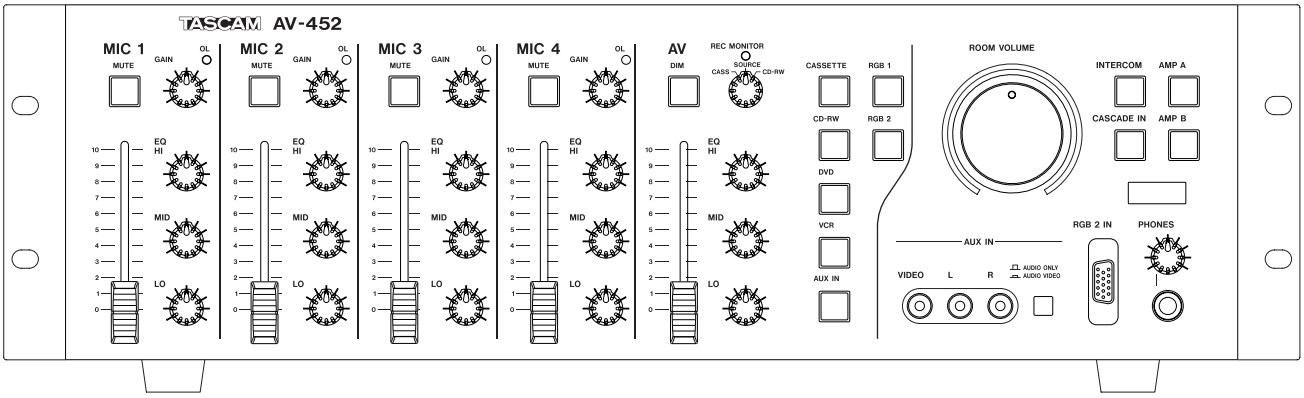


TASCAM
TEAC Professional Division

D00788500B

AV-452

Powered Mixer



INSTALLATION & SUPPORT GUIDE

CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

This appliance has a serial number located on the rear panel. Please record the model number and serial number and retain them for your records.

Model number _____

Serial number _____

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

IMPORTANT SAFETY INSTRUCTIONS

1 Read these instructions.

2 Keep these instructions.

3 Head all warnings.

4 Follow all instructions.

5 Do not use this apparatus near water.

6 Clean only with dry cloth.

7 Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8 Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9 Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. Grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10 Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11 Only use attachments/accessories specified by the manufacturer.

12 Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13 Unplug this apparatus during lightning storms or when unused for long periods of time.

14 Refer all serving to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

- Do not expose this apparatus to drips or splashes.
- Do not place any objects filled with liquids, such as vases, on the apparatus.
- Do not install this apparatus in a confined space such as a book case or similar unit.
- The apparatus draws nominal non-operating power from the AC outlet with its POWER switch in the off position.

IMPORTANT (for U.K. Customers)

DO NOT cut off the mains plug from this equipment.
If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or consult your dealer.

If nonetheless the mains plug is cut off, remove the fuse and dispose of the plug immediately, to avoid a possible shock hazard by inadvertent connection to the mains supply.

If this product is not provided with a mains plug, or one has to be fitted, then follow the instructions given below:

IMPORTANT: The wires in this mains lead are coloured in accordance with the following code:

GREEN-AND-YELLOW	: EARTH
BLUE	**:** NEUTRAL
BROWN	**:** LIVE

WARNING: This apparatus must be earthed.

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured GREEN-and-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured GREEN or GREEN-and-YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

When replacing the fuse only a correctly rated approved type should be used and be sure to re-fit the fuse cover.
IF IN DOUBT — CONSULT A COMPETENT ELECTRICIAN.

For U.S.A

TO THE USER

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.
Operation of this equipment in a residental area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CAUTION
Changes or modifications to this equipment not expressly approved by TEAC CORPORATION for compliance could void the user's authority to operate this equipment.

For the consumers in Europe

WARNING
This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

Pour les utilisateurs en Europe

AVERTISSEMENT
Il s'agit d'un produit de Classe A. Dans un environnement domestique, cet appareil peut provoquer des interférences radio, dans ce cas l'utilisateur peut être amené à prendre des mesures appropriées.

Für Kunden in Europa

Warnung
Dies is eine Einrichtung, welche die Funk-Entstörung nach Klasse A besitzt. Diese Einrichtung kann im Wohnbereich Funkstörungen versursachen ; in diesem Fall kann vom Betrieber verlang werden, angemessene Maßnahmen durchzuführen und dafür aufzukommen.

Table of Contents

The TASCAM AV-452 coordinates the audio/visual needs for presenters of all levels. Functionally, the AV-452 serves as a microphone mixer, A/V receiver, and power amplifier into one compact unit. The control surface is elegant and intuitive.

Audio: Four microphone inputs (with phantom power) offer plenty of inputs for multiple presenters, or multiple speaking positions. Up to two audio and three audio/visual components can be connected to the A/V channel, with simple switching control. A 3-band EQ is available on each channel to enhance the individual sounds as needed.

Video: The AV-452 will perform video switching between three A/V components, offering a single video feed for projectors or monitors with limited inputs. Switching is done in parallel, and video switching is handled for composite and S-Video inputs.

Control: The RC-452 universal learning remote is included with the AV-452, allowing the presenter to operate all the key equipment with a single remote. The RC-452 will control the AV-452, and can learn commands for projector power, and transport commands for up to four components.

The AV-452 itself also can learn IR commands, to integrate projector/monitor switching with the AV-452 internal switching. This IR command set can be transmitted with an IR “blaster” (not included) to the 37-pin ‘D’-sub **RELAY CONTROL** port (see "Relay control port" on page 18 for details).

“AV installation” features

Special additional features of the AV-452 relevant to fixed installation:

- Microphones can be connected using either XLR-type connectors or using a barrier strip and can be phantom powered, allowing the use of miniature condenser or PZM (boundary field) microphones.
- Switchable 80 Hz bass roll-off to eliminate low-frequency rumble.
- Microphone insert loop for parametric EQ, compresser/limiter/gate, etc.
- AV signal dimmer to allow manual voiceovers, etc.
- Automatic AV ducker with adjustable ratio and threshold settings.
- A CV (constant voltage) paging system can be connected (12V, 24V or 70V) to the rear panel. A level control and defeatable noise gate are provided for optimal settings.
- A building alarm system can be connected to the EMG input. When the alarm sounds, the AV-452 will mute local audio, and switch the CV paging input on.
- The speaker and line output have independent mono switches for use in single-zone or multi-zone systems.
- Cascade input can be configured to combine the input as a submixer, or operate as "room cascade", allowing the AV-452 to become a drone amp.
- Dedicated unbalanced **MEETING OUT** jacks, together with balanced **LINE OUT** jacks allow for connection with other equipment.
- Serial (RS-232) and relay (37-pin D-sub) connectors allow for control of the unit by other devices.

About this manual

This manual is intended for use by those designing, installing and supporting the AV system including the AV-452. It is not necessary for the everyday user of the equipment to read this manual.

The user should refer to the single-sheet *Operation Guide* for a quick reference on how to operate the unit. However, a brief guide to the front panel, and remote control unit is given here, and this also provides some information which can be used when introducing the operation of the unit to its users.

We suggest that the *Operation Guide* is kept close to the AV-452, and the spaces on this sheet are filled in, for a written record of the permanent connections made between the AV-452 and other equipment.

Note that controls and connectors on the unit and the remote control unit are written in this typeface: **LINE OUTPUT**. Sometimes a control or connector is referred to by a number, corresponding to the numbers in the diagrams "Front panel features" on page 8, "Remote control unit features" on page 10 and "Rear panel connections" on page 12. In these cases, a feature of the main unit is numbered like this: ①, and a feature of the remote control unit like this: ❷.

Controls and connectors on other units are written in this way: **REC IN**.

How the manual is organized

The different sections of the manual are as follows:

1, "Introduction" (page 5) This introduction to the AV-452.

2, "General installation notes" (page 7) As the title suggests, this includes general notes on the physical and electrical installation requirements for the AV-452.

3, "Front panel features" (page 8) As well as a list of the front panel controls and features, this section provides details on the operation of the AV-452. Read this section to obtain an overview of the way in which the AV-452 works.

4, "Remote control unit features" (page 10) This provides a list of the features and functions available using the RC-452 remote control unit, as well as details on how to program the RC-452 to learn and replay the command codes of other units.

5, "Rear panel connections" (page 12) This lists the connections to and from the AV-452.

6, "Customization and settings" (page 16) The AV-452 can be customized for the individual installations in a number of ways, using the rear panel switches, etc. This section describes the way in which this customization can be carried out, including the way in which the AV-452 can learn the IR codes necessary to control external devices.

7, "External control" (page 18) The AV-452 can be controlled by an external serial controller, and this section lists the control codes available for control, status, and query. Additionally, relay control and tally indicator connectors are provided. Details of these are given in this section.

8, "Specifications and block diagram" (page 20) Performance figures, dimensional drawings and a block diagram of the AV-452.

These notes provide you with information about the installation of the AV-452.

The packing should contain (in addition to this manual):

- The *User's Guide*—a single sheet containing operating instructions
- A power cord with a 3-pin plug suitable for your region
- A rack mounting kit consisting of four screws and four washers
- The RC-452 remote control unit
- Two AAA batteries for use in the RC-452 remote control unit
- Warranty card

Contact your TASCAM dealer or distributor if any of these items is missing.

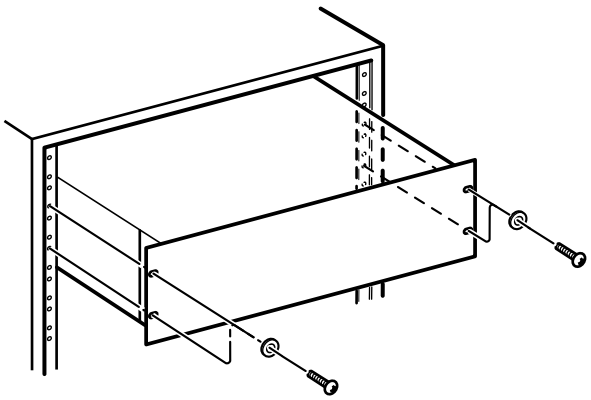
Physical installation

The unit can be fitted in any standard 19" rack, using the mounting kit (screws and washers) provided. No rear support is needed.

3U of rack space is required for the unit itself. Since the AV-452 incorporates power amplifiers, it is strongly recommended that at least 1U of space is left above the unit to avoid overheating.

NOTE

Do not install this apparatus in a confined space such as a book case or similar unit.



For the same reason, adequate space for ventilation should be left at the front and rear of the unit. In any case, the space at the rear of the unit should be sufficient to accommodate the audio and video connectors plugged into the AV-452.

Since many of the functions of the unit are set using small preset controls (trimmer pots, DIP switches, etc.) on the rear panel, we suggest that you ensure you have clear visual access to the rear panel, or that you make these settings before final installation in the rack.

Power supply

The AV-452 can use an AC power supply as marked on the rear panel. Do not use any other voltage of power supply, as this may result in damage.

The unit should be properly grounded (earthed).

The power switch is located on the rear panel to prevent the user from accidentally turning power off during a presentation. If you want to turn the system on and off routinely, you may consider using a power switch for the outlets, or using a centrally-switched power distribution system.

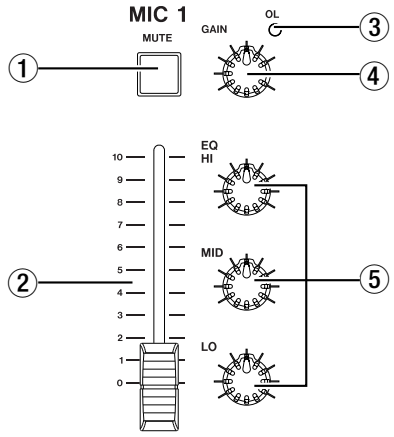
3 – Front panel features

A brief guide to the front panel features of the AV-452, with a little more technical detail than in the *Operation Guide*.

It can be used as a quick reference guide for everyday operation, or to form the basis for an introductory explanation to the users of the equipment.

Microphone channels

Each of the four microphone channels is identically equipped.



① **MUTE key** This latching key lights when the mic input channel is muted.

② **Fader** The unity gain for this fader is at the **7** mark.

③ **OL indicator** Lights at 10dB above the nominal clipping level.

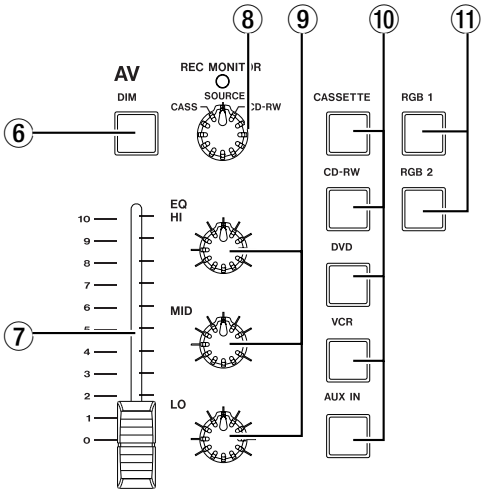
④ **GAIN control** Provides 33dB of control to adjust the mic level appropriately.

⑤ **EQ section** 3 bands, each providing ±10dB at the following frequencies (optimized for voice):

HI: 8kHz (shelving)
MID: 2.5kHz (peaking)
LO: 250Hz (shelving)

AV control and selection section

This section is used to select the appropriate AV source, and control the sound.



⑥ **DIM key** This latching key is used to attenuate the AV source signal by 20dB. It lights when dimming is active.

⑦ **Fader** The unity gain for this fader, which is used to control the level of the selected AV signal, is at the maximum level.

⑧ **REC MONITOR control/indicator** Despite the name, this control and indicator acts a record source selector.

- In the **SOURCE** position, the output of the signal selected using the AV selector keys is fed to the inputs of all connected equipment (except the source unit, to avoid signal loops). For example, if the cassette is selected, the cassette output is fed to the CD-RW and VCR inputs. The indicator lights.
- In the **CASS** position, the cassette output is fed to the CD-RW and VCR inputs, regardless of the AV selector keys.
- In the **CD-RW** position, the CD-RW output is fed to the cassette and VCR inputs, regardless of the AV selector keys.

⑨ **EQ section** 3 bands, each providing ±10dB at the following frequencies:

HI: 12kHz (shelving)
MID: 2.5kHz (peaking)
LO: 100Hz (shelving)

⑩ **AV source selector keys** Only one of these latching keys can be active (lit) at a time. Used to select the AV source.

NOTE

If the **REC MONITOR** *selection and the selection here are the same, the source output is muted, to avoid a feedback loop.*

*Also note that if an audio-only source has been selected (***CASSETTE, CD-RW** *or* **AUX IN** *on the* **AUDIO ONLY** *setting), the last-selected video source will be output through the video connectors.*

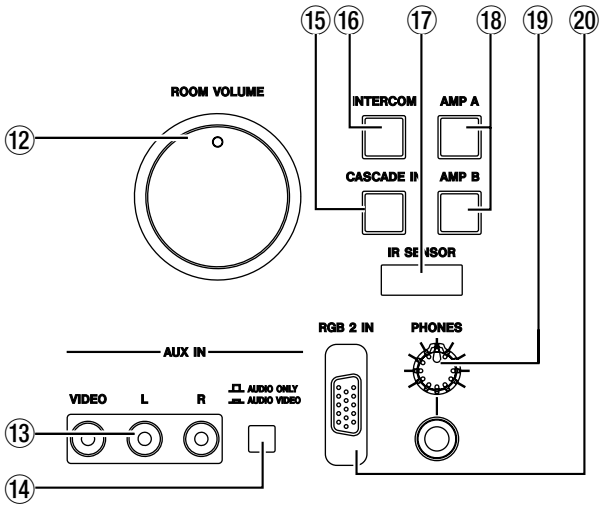
⑪ **Video input selector keys** Only one of these latching keys (**RGB 1** and **RGB 2**) can be active (lit) at a time. They are used to select the input source for an external projector.

NOTE

These **RGB 1** *and* **RGB 2** *keys do not affect the switching of the composite video or S-Video outputs connected to the AV-452. They allow centralized control of a projector or display forming part of the AV system containing the AV-452. See "LEARN IR (switch 1)" on page 16 for details.*

Main control section

This section contains controls related to the overall system.



⑫ **ROOM VOLUME control** This is used to adjust the levels from the speaker outputs as well as from the line level outputs. The indicator on this control lights when power is supplied to the AV-452.

It is motorized, meaning that it will reflect changes made from the RC-452 remote control unit (⓮).

⑬ **AUX inputs** This set of three RCA jacks is used to connect a composite video signal and/or the left and right components of a stereo audio signal.

⑭ **AUX selector switch** This determines whether audio and video are enabled together at the **AUX** jacks (switch pushed in), or audio only (switch in the out position).

⑮ **CASCADE key** When this key is active (lit), the input to the **CASCADE** inputs (rear panel) is fed to the stereo bus (pre-**ROOM VOLUME**). A rear panel switch determines whether this input replaces the input signals or is summed with them (see ("CASCADE (switch 2)" on page 17).

⑯ **INTERCOM key** When this key is lit, the signal received at the **INTERCOM** connection on the rear panel is fed to the stereo bus. This signal is not affected by the **ROOM VOLUME** control.

⑰ **IR SENSOR** This window is used to receive the commands from the supplied wireless remote control unit.

⑱ **AMP A and AMP B keys** The AV-452 can operate in mono mode, with each amplifier driving a separate speaker, in which case, these will act as room control keys.

Alternatively, it can be operated in stereo mode, in which case, these keys turn the stereo channels on and off individually.

NOTE

These keys do not turn the amplifiers on and off—they simply mute the signal to the speakers.

The mono/stereo setting for the line outputs is made using the dedicated switch on the rear panel ㊵ and for the speaker outputs using the DIP switches ㊹.

⑲ **PHONES level and jack** Connect a standard pair of stereo headphones to this 1/4" jack. Adjust the volume with the **PHONES** level control (pre-**ROOM CONTROL**).

NOTE

Remove the headphones from the jack when turning the AV-452 on or off, to avoid possible damage from "thumps".

⑳ **RGB 2 input** Connect one end of a VGA standard 15-pin D-sub (analog) cable to this connector and the other end to a personal computer. The signal is passed through to the **RGB 2 THRU** connector on the rear panel.

NOTE

The AV-452 is not provided with an "RGB 1" input or output. This numbering system refers to any projector or video display unit connected to the AV-452.

4 – Remote control unit features

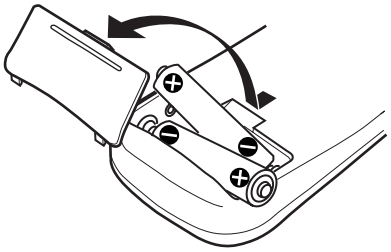
The RC-452 remote control unit is designed for control of not only the AV-452, but up to four additional connected units (marked as **CASSETTE**, **VCR**, **CD-RW** and **DVD**).

A total of 36 keys in total can be programmed (as described later in this section).

When using the RC-452 with the AV-452 or any other unit, make sure:

- There is a clear unobstructed path between the remote control unit and the remote sensor on the unit being controlled.
- The remote control unit is located within 5m (15ft.) of the unit being controlled, and is pointing at approximately right angles (±30°) to the front panel.

The RC-452 should be maintained in the same way as a consumer control unit. When changing the batteries:

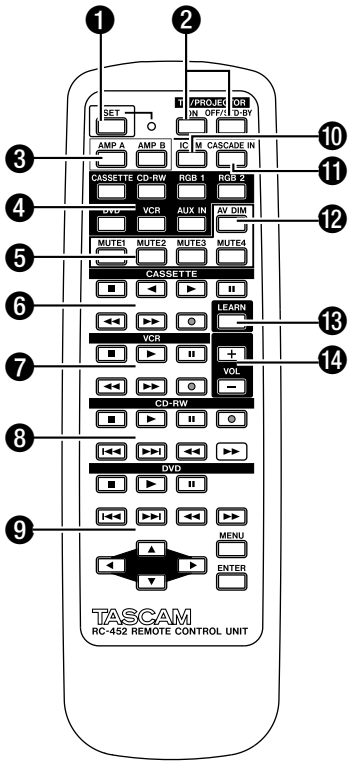


- Always make sure that both batteries are replaced together. Do not mix old and new batteries.
- Do not mix batteries of different types.
- Always make sure that the batteries are located with the correct polarity (the positive terminals of the batteries should match the **+** markings inside the battery compartment, and the negative terminals should match the **–** markings).
- If you are not going to use the remote control unit for an extended period of time, remove the batteries. Old batteries can leak, casing damage to the remote control unit.
- Always dispose of used batteries in the way recommended by your local garbage disposal authorities.

NOTE

The **CASSETTE** *and* **CD-RW** *keys of the RC-452 are programmed at the factory to control the TASCAM CC-222 unit. However, they may be programmed to control other units. The names of these keys and other keys which may be programmed are enclosed [in brackets] in the list below. See "Learning command codes" on page 11 for details of how to do learn other units' commands*

When the batteries are changed in the RC-452, the programmed codes are typically retained. However, you should note that if the batteries are removed for an extended period of time, data loss will occur, and the codes must then be re-learned.



❶ **SET key and indicator** Used when learning commands for other units (as described below)

❷ **[TV/PROJECTOR power keys]** One programmable key (**ON**) is used to put the TV or projector on, and the other (**OFF/STD-BY**) is used to put it into standby or off mode.

❸ **AMP A and AMB B keys** These keys duplicate the function of the **AMP** keys on the AV-452 (⑱).

❹ **AV selector keys** These keys duplicate the function of the audio and video keys on the AV-452 (⑩ and ⑪).

❺ **MUTE keys** These keys duplicate the function of the microphone **MUTE** keys on the AV-452 (①).

❻ **[CASSETTE keys]** Use these programmable keys to control a cassette deck (pre-programmed for the TASCAM CC-222 when the unit is shipped).

❼ **[VCR keys]** Use these programmable keys to control a videocassette recorder.

❽ **[CD-RW keys]** Use these programmable keys to control a CD recorder (pre-programmed to control the TASCAM CC-222 when the unit is shipped)

❾ **[DVD keys]** Use these programmable keys to control a DVD player.

❿ **ICOM key** This key duplicates the function of the **INTERCOM** key on the AV-452 (⑯).

⓫ **CASCADE IN key** This key duplicates the functions of the **CASCADE** key on the AV-452 (⑮).

⓬ **AV DIM key** This key duplicates the functions of the AV **DIM** key on the AV-452 (⑥).

⓭ **LEARN key** Use this key when learning the commands for other units (see below).

⓮ **VOL + and – keys** These keys operate the **ROOM VOLUME** control (⑫).

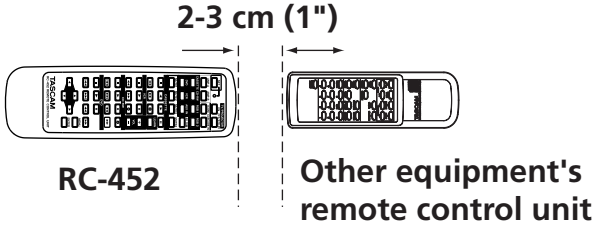
Learning command codes

The RC-452's design allows it to be used for the control of up to five devices in addition to the AV-452: projector or display (**TV/PROJECTOR**), audio cassette recorder (**CASSETTE**), videocassette recorder (**VCR**), CD recorder (**CD-RW**), and DVD player (**DVD**).

Of course, the devices and functions that you program for them do not have to match absolutely with those marked on the AV-452 and RC-452, but it makes sense to map the target units to the RC-452's labels.

To teach remote control commands from another remote control unit to the RC-452:

1 **Make sure that both the RC-452 and the other equipment's remote control unit have batteries installed, and place them on a flat surface, about 2–3 cm (about an inch) apart, facing each other.**



2 **On the RC-452, press and hold the SET key ❶ and then press the LEARN key ⓭. Release these keys. The SET indicator lights steadily.**

3 **Within 10 seconds of the previous step, press the ►► key of the RC-452's VCR section ❼ *three times*.**

The SET indicator ❶ of the RC-452 flashes as you press it and remains lit to show the unit is now in learning mode.

4 **On the RC-452, press the key which will be mapped to the other equipment's function.**

The SET indicator ❶ of the RC-452 starts flashing rapidly to show that learning is started.

5 **On the other equipment's remote control unit, press the key to be learned. The RC-452's SET indicator ❶ stops flashing rapidly and lights steadily for a short time, goes out briefly *once* and then lights steadily to show that the command has been learned.**

- **If the RC-452's SET indicator goes out briefly *three* times and then lights steadily, it means that the learning command has not been properly learned.**
- **If the RC-452's SET indicator goes out briefly *six* times and then lights steadily, it means that the RC-452's memory is full, and no more commands can be learned.**

6 **Repeat steps 4 and 5 until all appropriate commands have been learned.**

7 **To exit the learning mode, press the RC-452's LEARN key ⓭. The SET indicator goes out (it also goes out if no keys are pressed on the RC-452 for about 10 seconds).**

NOTE

The RC-452 can learn and store up to 36 different commands.

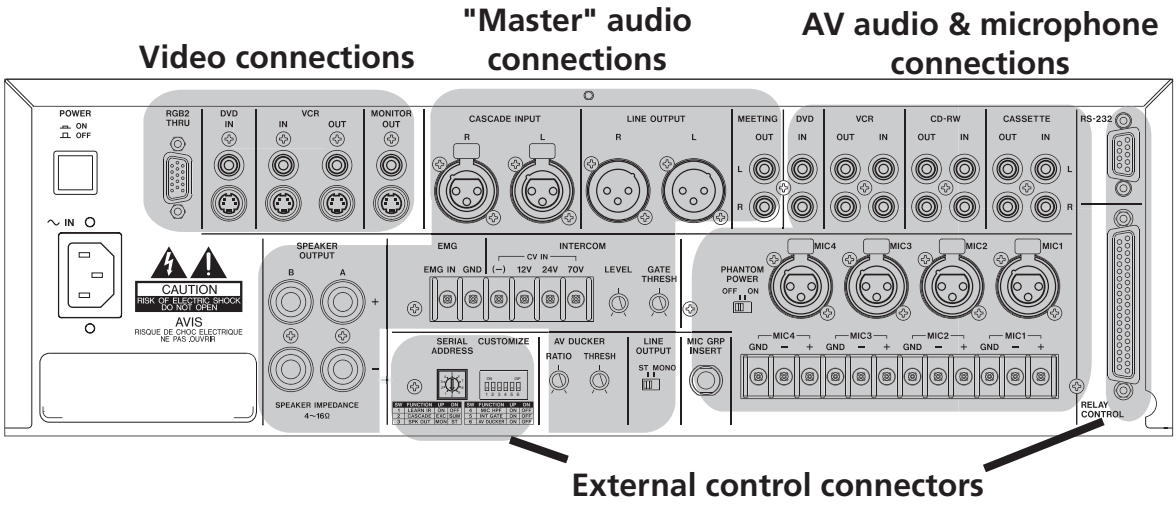
The angle and distance between the two remote control units affects the difficulty of the learning process.

The RC-452 may not be able to learn some units' commands which use long IR codes for transmission.

5 – Rear panel connections

This section provides detailed information on the rear panel connectors, as well as some notes on installation and connection of other units.

Basic specifications and performance figures are provided later in the manual.

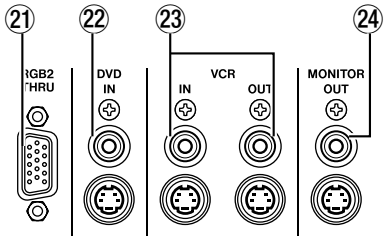


Video connections

All video connections on the AV-452 switch in parallel. There is no conversion between composite and S-Video signals. In some designs, you may need to connect both video formats to the source decks.

This also means that the AV-452 is standard-independent and can accept NTSC, PAL or SECAM format video with no configuration needed.

In addition to these connectors, remember that there is an additional **AUX** video connector on the front panel ⑬.



NOTE

All connectors on the rear panel are labeled relative to the AV-452. In other words, a connector labeled **IN** *on the AV-452 should be connected to one marked* ***OUT*** *on another piece of equipment.*

㉑ **RGB2 THRU connector** This 15-pin D-sub connector echoes the signal input at the front panel input ⑳.

㉒ **DVD IN connectors** This pair of connectors is used to connect the video output of a DVD player to the AV-452.

㉓ **VCR IN and OUT connectors** Connect the video output of a videocassette recorder to the **VCR IN**, and the video input of the VCR to the **VCR OUT**.

㉔ **MONITOR OUT connectors** Link these connectors to the appropriate input of a TV, monitor or projector.

AV audio and microphone connections

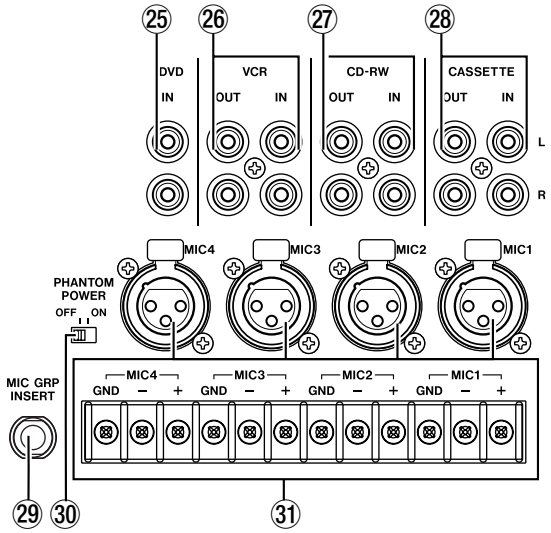
NOTE

The AV-452 is supplied with several sets of shorting plugs for the unused RCA input connectors. Remove these when making connections to these terminals, and leave them in place when these terminals are unused. This will help to improve the audio performance of the system.

In addition to the connections listed here, there is also a pair of **AUX** audio inputs ⑬ on the front panel.

NOTE

All XLR-type connectors are wired with pin 1 to ground, pin 2 hot, and pin 3 cold.



㉕ DVD IN connectors

This pair of connectors accepts the audio outputs of a DVD player.

㉖ VCR OUT and IN connectors

These pairs of connectors feed the audio inputs of a videocassette recorder (**OUT**) and accept the output signals from the VCR (**IN**).

㉗ CD-RW OUT and IN connectors

These pairs of connectors feed the inputs of a CD recorder (**OUT**) and accept the output signals from the CD recorder (**IN**).

㉘ CASSETTE OUT and IN connectors

These pairs of connectors feed the inputs of a cassette recorder (**OUT**) and accept the output signals from the cassette recorder (**IN**).

㉙ MIC GRP INSERT connector

This TRS 1/4" connector is used to pass the summed microphone signals through a dynamics processor (limiter, gate, etc.) or a graphic or parametric EQ unit, etc. The connector is wired with tip = send, ring = return, sleeve = ground).

㉚ PHANTOM POWER switch

Use this switch to provide +48V phantom power to condenser microphones. All four microphone inputs are activated with the same switch.

Do not use dynamic microphones connected with an unbalanced connection or high-impedance microphones, with phantom power turned on.

NOTE

To avoid possible damage to microphones, always connect microphones, turn down the **ROOM VOLUME** *control, and turn the speakers off using the* **AMP A** *and* **AMP B** *keys, before switching the phantom power on or off.*

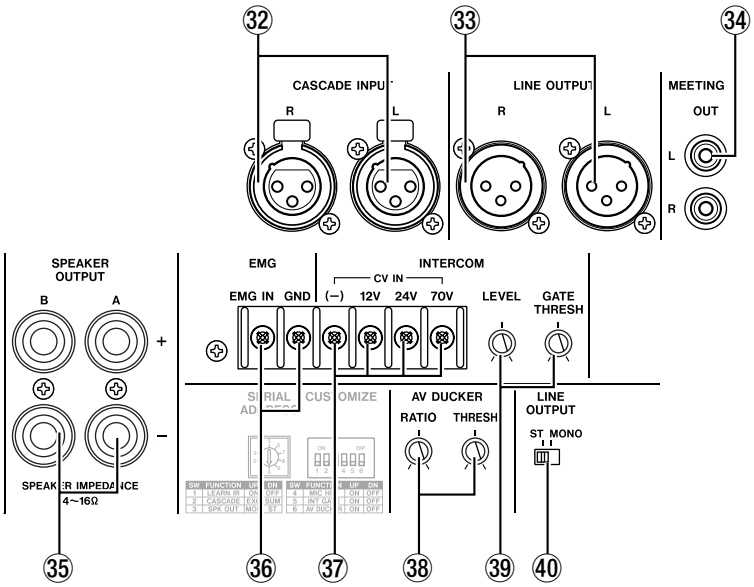
㉛ MIC 1 through 4 connections

Microphones can be connected using the XLR connectors. In permanent installations where wires are being run through walls, the bare wires can be connected to the barrier strip instead.

Do not connect microphones via the XLR and barrier strip connections of the same microphone channel (though it is possible to connect some microphones via the XLR connectors and some via the barrier strip).

Always make sure that polarity is observed consistently throughout the installation, in order to avoid phase reversal problems.

"Master" audio connections



These connections relate to the audio functions of the AV-452 which play a "master" role in the setup and operation of the unit.

㉜ **CASCADE INPUT connectors** These balanced XLR connectors accept balanced signals from another AV-452 (or similar unit). These input signals are selected using the front panel **CASCADE** key ⑮ and are pre-**ROOM VOLUME**.

Depending on the position of the rear panel DIP switch ("CASCADE (switch 2)" on page 17), the cascade input signal can sum with the AV-452 audio, or can replace it.

㉝ **LINE OUTPUT connectors** These balanced XLR connectors output the post-**ROOM VOLUME** mix (to another AV-452 unit or power amplifier).

㉞ **MEETING OUT connectors** These unbalanced RCA jacks outputs the pre-**ROOM VOLUME** mix.

One use for this facility is to connect a recorder to log the proceedings of meetings, etc.

㉟ **SPEAKER OUTPUT A and B connectors** Connect speakers to these binding post terminals. Take care to observe polarity to avoid out-of-phase problems.

The speakers attached to these terminals can be switched individually using the selector keys on the front panel ⑱.

The impedance of the speaker system connected to each channel should be between 4Ω and 16Ω.

WARNING

Use of speakers with impedances outside these limits may result in damage to the speakers and/or the AV-452.

Also note that the AV-452 should not be operated in bridged mono mode.

Depending on the DIP switch setting ("SPEAKER OUT (switch 3)" on page 17), and the **LINE OUTPUT** mode switch ㊵, the AV-452 may be configured as a dual mono amplifier, or as a stereo amplifier.

In the latter case, channel A corresponds to the left channel, and channel B to the right channel.

㊱ **EMG IN and GND connectors** Use these barrier strip connectors to attach a 5Vrms emergency signal cable.

When this signal is activated, the AV-452 will cut the signals from the **LINE OUTPUT** ㉝ and **SPEAKER** ㉟ terminals and all front panel indicators flash.

㊲ **INTERCOM connectors (CV IN)** Use these connectors to attach the cables from a constant voltage (CV) intercom system.

Before connecting the AV-452 to such an intercom system, confirm the voltage used by the intercom system. The AV-452 can work with intercoms using 12, 24 or 70 volts. When the speaker signal arrives at the AV-452, it is converted by the AV-452 into a line level signal, where it is added to the line and speaker outputs (but not to the **MEETING OUT** or **PHONES**).

Note the following levels and input impedances, corresponding to the different connectors on the barrier strip:

Connector	Level, input impedance
70V	70V, 40kΩ
24V	24V, 12kΩ
12V	12V, 4.7kΩ

The level of the intercom signal is set as explained below, and a squelch circuit is also available ㊴. The intercom signal is enabled and disabled using the front panel **INTERCOM** key ⑯.

㊳ AV DUCKER RATIO and THRESH controls These trimmer pots are used if the AV ducking facility is enabled using the DIP switches (see "Customization and settings" on page 16). If this facility is not enabled, these controls have no effect.

If this is enabled, the amount by which the currently-selected AV signal is ducked is set between –6 and –20 dB, depending on the position of the **RATIO** trimmer pot. Turn this pot clockwise to increase the amount that the AV signal is dimmed.

The **THRESH** trimmer pot adjusts the threshold level of the microphone signal at which the ducking facility operates. Turn this pot clockwise to increase this trigger level.

㊴ LEVEL and GATE THRESH controls These two trimmer pots are used with the **INTERCOM** signals input at ㊲.

The **LEVEL** control adjusts the level of the intercom signal fed to the mix (post-**ROOM LEVEL**). Turn this clockwise to increase the level of the signal.

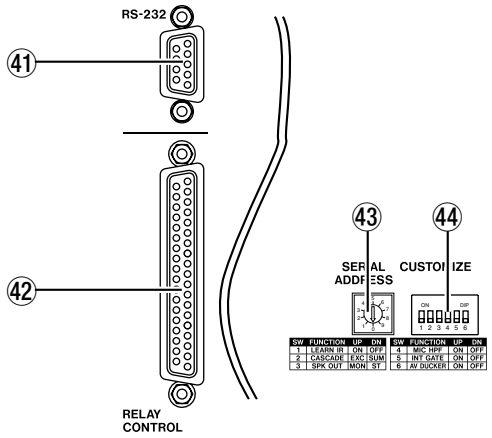
The **GATE THRESH** squelch control is used to control the threshold of a noise gate, which opens when the level of the intercom signal exceeds this level. This allows an otherwise slightly noisy intercom to be connected without interfering with the other signals.

㊵ LINE OUTPUT mode switch This switch allows the line output ㉝ of the AV-452 to act as two mono line sources, driving auxiliary amplifiers, etc. in two locations, or it allows it to act as a stereo amplifier, driving another stereo unit.

External control connectors

There are two D-sub connectors, used for external control of the AV-452.

The details relating to these connectors are described in "External control" on page 18.



㊶ RS-232 serial port This female 9-pin D-sub port accepts and receives serial signals, allowing the AV-452 to be controlled by a serial device. See the document *Serial Protocol Reference* (available on request from your TASCAM dealer or distributor) for full details of the format and content of the serial commands and messages.

NOTE

Although the connector is marked ***RS-232****, it can be used for RS-422 and RS-485 serial data interchange as well as for RS-232 format data.*

㊷ RELAY CONTROL connector This female 37-pin D-sub connector accepts commands and transmits tally signals. It also can be used to connect a wired IR "blaster " transmitter for the control of other devices, such as a video projector or monitor.

㊸ SERIAL ADDRESS selector Use this to select the serial address (**0** through **9**) of the AV-452 when controlling it using RS-485 commands.

㊹ CUSTOMIZE DIP switches See the following section for the meanings of these configuration switches.

The customization and settings of the AV-452 are made using a set of six DIP switches.

These switches are as follows:

Switch	Function	Up position	Down position
1	Learn IR codes(**LEARN IR**)	**ON**	**OFF**
2	Cascade mode (**CASCADE**)	Exclusive (**EXC**)	Summed (**SUM**)
3	Speaker outputs (**SPK OUT**)	Mono (**MON**)	Stereo (**ST**)
4	Microphone high-pass filter (**MIC HPF**)	**ON**	**OFF**
5	Intercom gate function (**INT GATE**)	**ON**	**OFF**
6	AV ducking facility (**AV DUCKER**)	**ON**	**OFF**

These are explained here:

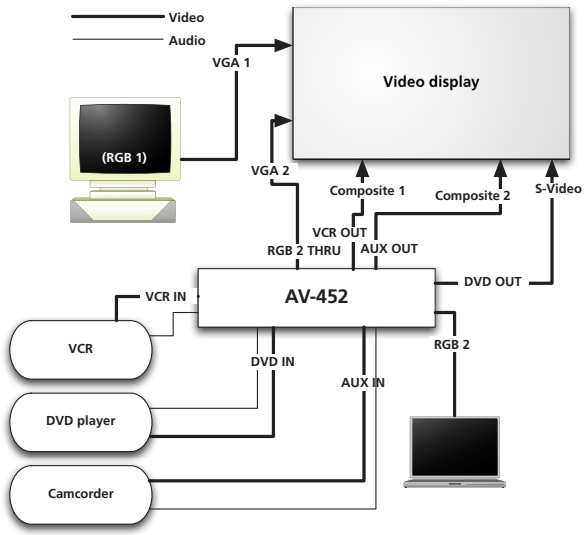
LEARN IR (switch 1)

This function allows the AV-452 to learn the IR codes for direct control of a monitor, video projector, etc. allowing the external video source for the video display unit to be selected using the AV selection keys as well as the **RGB 1** and **RGB 2** keys.

This allows the video signal of different devices to be hooked up directly to the monitor and switched together with the audio from one control surface (the AV-452 or the RC-452).

An external IR "blaster" (not supplied) must be connected to the AV-452 for control of the video display unit.

Learning the external IR commands In the following explanation, we assume that the AV equipment is hooked up to a multi-input video display device in the following way:



Not shown here is the IR blaster device, connected to the relay control ㊷ connector of the AV-452 and pointing at the video monitor's IR receiver.

Here we are programming the **DVD** key on the AV-452 to switch the video monitor to the **S-Video** input.

1. **Make sure the power to the AV-452 is OFF.**
2. **Set the LEARN IR switch (switch 1) to ON.**
3. **Turn ON the AV-452. The AMP A, AMP B, INTERCOM and CASCADE keys on the front panel flash to show the unit is in IR learn mode.**
4. **Press the DVD key on the AV-452 front panel. It starts to flash.**
5. **Point the video display device's remote control unit at the AV-452's IR SENSOR ⑰ and press the key which enables the S-Video input on the remote control unit of the video display device.**
   - **If a valid IR code is received and stored, the DVD key stops flashing.**
   - **If the IR code is not received and stored correctly, the DVD key continues to flash.**

NOTE

The AV-452 only supports the NEC type IR command specification. If the key continues to flash, and you are sure that the source change command has been transmitted, the video display device may not conform to the NEC ITR command specification.

6. **Press another AV selection key (for example, the RGB 1 key) and the corresponding input key on the video remote control unit of the video display device to learn this command.**
7. **When you have finished programming these commands, set the LEARN IR switch (switch 1) to OFF.**

   The AV-452 resets itself and starts normal operation.

CASCADE (switch 2)

This switch determines the use of the audio signals received at the **CASCADE IN** connectors ㉜ when the **CASCADE** key ⑮ is activated.

In the **EXC** (exclusive) setting, the input cascade signal replaces the direct input signals at both the **LINE OUTPUT** ㉝and **SPEAKER OUT** ㉟ terminals.

In the **SUM** setting, the cascaded signal is summed (pre **ROOM LEVEL**) with the direct input signals from the **LINE OUTPUT** ㉝and **SPEAKER OUT** ㉟ terminals (as well as the **MEETING OUT** ㉞ and **PHONES** ⑲).

NOTE

Remember that this only applies to audio signals. You cannot cascade video signals using the AV-452.

The cascade and intercom Note also that when the switch is set to the **EXC** (exclusive) setting, the CV intercom input is disabled. The front panel **INTERCOM** key ⑯ will not light if the switch is set to **EXC**. Also, when the switch is in this position, pressing the **INTERCOM** key will cause the key to flash briefly, indicating that the intercom input is disabled.

SPEAKER OUT (switch 3)

This switch determines whether the signal sent to the **SPEAKER OUT** ㉟ terminals is the same from both speakers (left and right summed) (**MON**) or whether it is a stereo signal (**ST**).

If the mono option is chosen, it is possible to use the AV-452 to control the sound fed to either or both of two rooms, switchable using the **AMP** keys on the front panel ⑱.

NOTE

This switch setting only affects the speaker outputs. It does not affect the **LINE** *outputs ㉝, which are switched between mono and stereo with a dedicated switch ㊵.*

MIC HPF (switch 4)

This switch enables or disables an 80Hz high-pass filter added to the summed microphone signals.

Use this filter to cut out wind noise, floor rumble, etc. from microphones which are located in less than acoustically perfect environments.

INTERCOM GATE (switch 5)

This switch enables or disables the intercom squelch circuit (noise gate).

When this switch is in the **OFF** position, the **GATE THRESH** trimmer pot ㊴ has no effect.

AV DUCKER (switch 6)

This switch enables or disables the AV ducking circuit.

When this switch is in the **OFF** position, neither of the **AV DUCKER** trimmer pots: the **RATIO** or **THRESH** ㊳ controls, has any effect.

The AV-452 can be controlled from other units in two ways.

The first is a serial protocol, as used by many AV controller vendors. This allows a number of AV-452 units to be controlled from a personal computer, as well as by these dedicated controllers.

The second is by using the relay connector, allowing a number of external relay controls and tally indicators to be connected to the AV-452.

AV-452 serial protocol

NOTE

A separate document "AV-452 Serial Control Protocol", providing details on the implementation of the serial control, is available on request from your TASCAM dealer or distributor. If you are implementing the serial protocol, you may choose to provide your "back-room" systems integration team with the separate document, and to keep a copy to hand for troubleshooting on site.

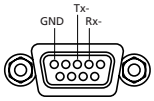
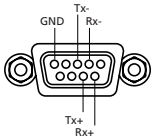
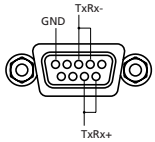
The serial port can operate as a RS-232, RS-422 or RS-485 port (as determined by the controller or PC).The AV-452 is fitted with a standard 9-pin D-sub serial port, as well as a rotary address selector switch ㊸, allowing it to take an ID from 0 through 9.

This allows a number of AV-452 units to be chained together and controlled from a single source.

NOTE

Only set the serial address with the power to the AV-452 turned off as the AV-452 will only recognize the setting at power-on.

Serial port pinouts

RS-232	RS-422	RS-485
		
Pin 2: Rx- Data Pin 3: TX- Data Pin 5: Ground	Pin 2: Rx- Data Pin 3: Tx- Data Pin 5: Ground Pin 6: Rx+ Data Pin 7: Tx+ Data	Pin 2: TxRx- Data Pin 3: TxRx- Data Pin 5: Ground Pin 6: TxRx+ Data Pin 7: TxRx + Data

The diagrams above show the AV-452 rear panel connector. Any cable connectors will accordingly be mirror images of the above.

The transmission speed is always 9,600bps, with a character length of 8 bits, and no parity. The command spacing is >25ms.

The RS-422 and RS-485 implementations follow standard specifications.

The RS-232 operation is a modification of the RS-422 port, operating at 0 to 4.5V, rather than ±9V. It should work with most older control systems and PCs, but if you have problems with using this protocol, try using the controller with RS-422, if possible, to remedy the situation.

Relay control port

There is also a 37-pin D-sub connector ㊷ which may be used for relay control of the AV-452 and connecting tally indicators.

The following should be taken into account when connecting external equipment to the AV-452 using this port:

The relay outputs are low when active, and must be low for at least 50ms.

The maximum current is 20mA, and the maximum voltage is 30V.

The tally indicator outputs are open collector.

IR "blaster"

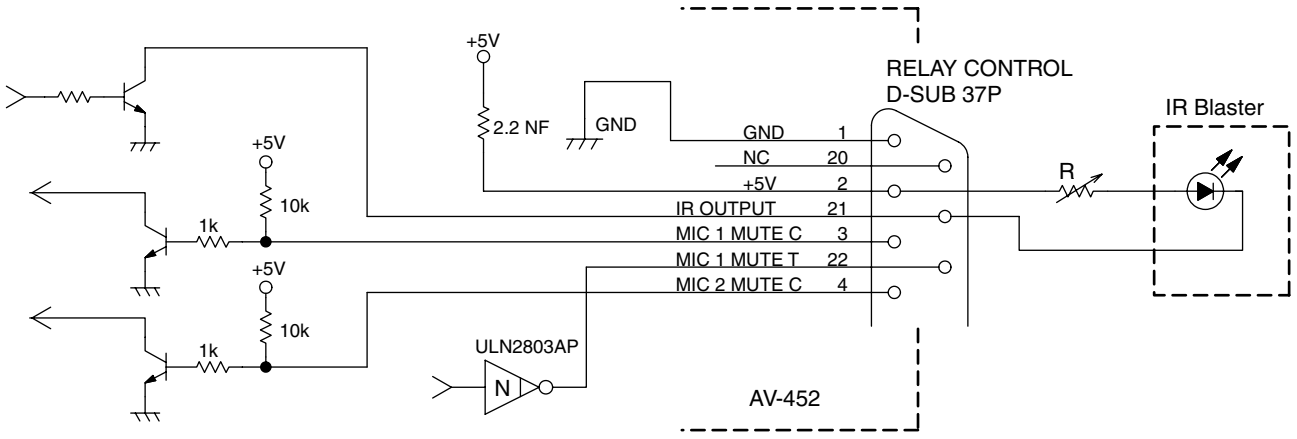
Note that pin 21 (and pin 2, +5V) may be connected to an IR "blaster" device, which can be used to relay command codes from the AV-452 to an external monitor or projector, etc.

The procedure for learning these command signals is described in "LEARN IR (switch 1)" on page 16.

An IR blaster that has been found to work well with the AV-452 is the Xantech 283M IR emitter. Please consult your TASCAM distributor for up-to-date details of other suitable units that can be used with your AV-452.

RELAY CONTROL pinouts

Pin #	Signal	Meaning	Pin #	Signal	Meaning
1	GND	GND	20	NC	
2	+5V	+5V (50mA maximum)	21	IR OUTPUT	Connect the wired IR remote device
3	MIC 1 MUTE	Turns the MIC 1 MUTE on and off	22	MIC 1 MUTE Tally	
4	MIC 2 MUTE	Turns the MIC 2 MUTE on and off	23	MIC 2 MUTE Tally	
5	MIC 3 MUTE	Turns the MIC 3 MUTE on and off	24	MIC 3 MUTE Tally	
6	MIC 4 MUTE	Turns the MIC 4 MUTE on and off	25	MIC 4 MUTE Tally	
7	A/V DIM	Turns the AV DIM on and off	26	A/V DIM Tally	
8	CASSETTE	Selects Cassette as the AV source	27	CASSETTE Tally	
9	RGB 1	Selects RGB 1 as the Projector or RGB monitor source	28	CD-RW Tally	
10	RGB 2	Selects RGB 2 as the Projector or RGB monitor source	29	DVD Tally	
11	CD-RW	Selects CD-RW as the AV source	30	VCR Tally	
12	DVD	Selects DVD as the AV source	31	AUX IN Tally	
13	VCR	Selects VCR as the AV source	32	RGB 1 Tally	
14	AUX IN	Selects AUX IN as the AV source	33	RGB 2 Tally	
15	AMP A	Turns the AMP A output on and off	34	AMP A Tally	
16	AMP B	Turns the AMP B output on and off	35	AMP B Tally	
17	INTERCOM	Activates the INTERCOM input	36	INTERCOM Tally	
18	CASCADE	Activates the CASCADE input	37	VOLUME DOWN	Volume down
19	VOLUME UP	Volume up			



8 – Specifications and block diagram

Video specifications

Composite inputs All composite inputs are through RCA jacks.

AUX IN	75Ω, 1 Vp-p
VCR IN	75Ω, 1 Vp-p
DVD IN	75Ω, 1 Vp-p

S-Video inputs All S-Video inputs are through 4-pin mini-DIN connectors.

VCR IN	75Ω, 1 Vp-p
DVD IN	75Ω, 1 Vp-p

Composite outputs All composite outputs are through RCA jacks.

VCR OUT	75Ω, 1 Vp-p
MONITOR OUT	75Ω, 1 Vp-p

S-Video outputs All S-Video outputs are through 4-pin mini-DIN connectors.

VCR OUT	75Ω, 1 Vp-p
MONITOR OUT	75Ω, 1 Vp-p

RGB 2 connections

RGB 2 IN	15-pin D-sub female
RGB 2 THRU	15-pin D-sub female

AV audio and microphone specifications

AV audio inputs All inputs are made through RCA pin jacks (unbalanced).

CASSETTE	Input impedance, 47kΩ, Nominal input level -10dBV (–7.8dBu)
CD-RW	Input impedance, 47kΩ, Nominal input level –10dBV (–7.8dBu)
VCR	Input impedance, 47kΩ, Nominal input level –10dBV (–7.8dBu)
DVD	Input impedance, 47kΩ, Nominal input level –10dBV (–7.8dBu)
AUX IN	Input impedance, 47kΩ, Nominal input level –10dBV (–7.8dBu)

AV audio outputs All outputs are made through RCA pin jacks (unbalanced).

CASSETTE	Output impedance, 100Ω, Output level –10dBV (–7.8dBu) (nominal), +10.8dBV (+13dBu) (maximum)
CD-RW	Output impedance, 100Ω, Output level –10dBV (–7.8dBu) (nominal), +10.8dBV (+13dBu) (maximum)
VCR	Output impedance, 100Ω, Output level –10dBV (–7.8dBu) (nominal), +10.8dBV (+13dBu) (maximum)

Microphone group insert Made through TRS 1/4" jack:

Send (tip)	Output impedance 100Ω, nominal level –10dBV (–7.8dBu), maximum level +15dBV (+17.2dBu)
Return (sleeve)	Input impedance 10kΩ, nominal level –10dBV (–7.8dBu), 21dB headroom

Microphone inputs The following figures apply to connections made via the XLR connectors and the barrier strips.

Input impedance	2.2kΩ
Input level	–60dBu (**GAIN** ④ at maximum) to –27dBu (**GAIN** at minimum)
Phantom power	+48V (global for 4 channels)
OL indicator ③	Lights at 10dB above nominal level
HPF	Global for 4 channels, switchable @ 80Hz

Master section specifications

CASCADE INPUTS	Balanced (XLR -type connectors Input impedance 10kΩ, input level +4dBu
LINE OUTPUT	Balanced XLR-type connectors Output impedance 100Ω, nominal output level +4dBu, maximum output level +23dBu
MEETING OUT	Unbalanced RCA connectors Output impedance 100Ω, nominal output level –10dBV (–7.8dBu), maximum output level +15dBV (+17.2dBu)
INTERCOM	Barrier strip 70V, 40kΩ, 24V, 12kΩ or 12V, 4.7kΩ
EMG IN	5V r.m.s.

Phones

Connector	1/4" stereo jack
Maximum output power	100mW + 100mW (68Ω) control at maximum

Speaker outputs

Connector	Binding posts
Load impedance	8Ω
Rated output power	80W + 80W (1kHz, 1%, 8Ω)
Maximum output power	100W +100W (EIA, JAITA)

Audio performance

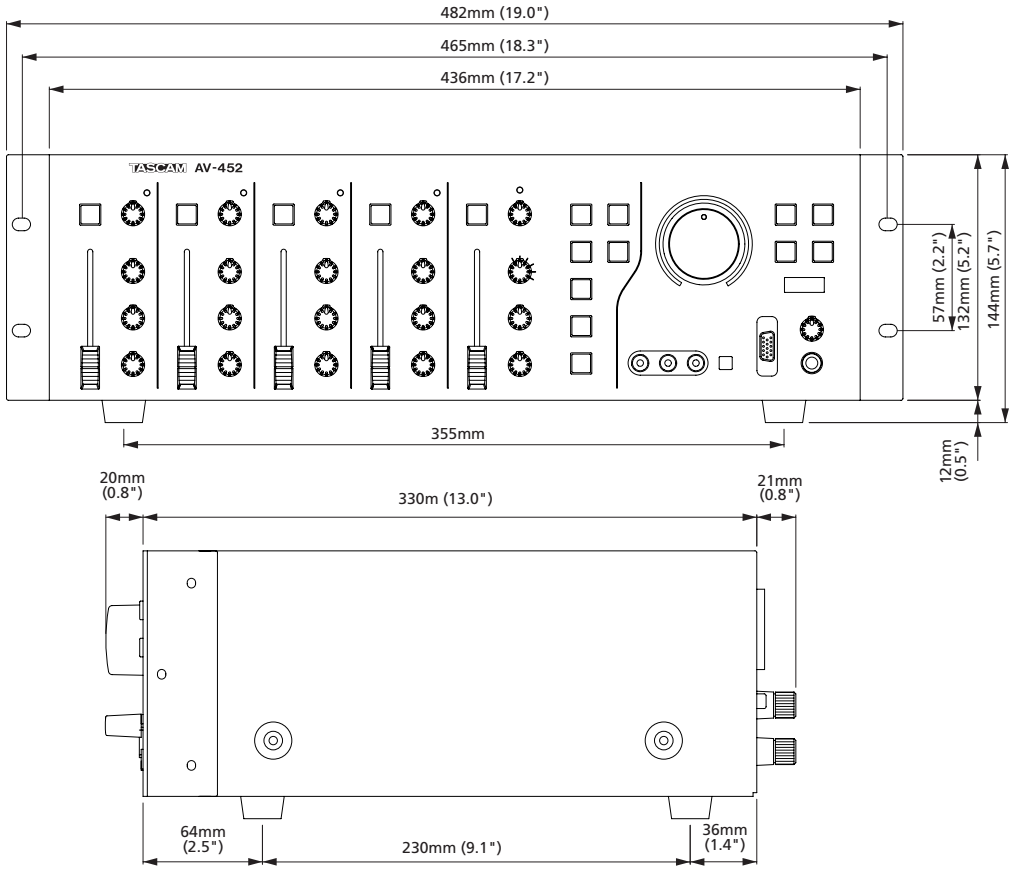
Frequency response	20Hz to 20kHz +1.0/–2.0dB, MIC IN to INSERT SEND	
	20Hz to 20kHz +1.0/–2.0dB, LINE IN to LINE OUTPUT	
	20Hz to 20kHz +1.0/–2.0dB, LINE IN to MEETING OUTPUT	
	20Hz to 20kHz +1.0/–2.0dB, LINE IN to OUTPUT (to LINE sources)	
	50Hz to 20kHz +1.0/–2.0dB, LINE IN to PHONES OUTPUT	
THD (nominal level, 1kHz)	0.07%, MIC IN to LINE OUTPUT (GAIN: MIN, DIN AUDIO)	
	0.03%, LINE IN to LINE OUTPUT (DIN AUDIO)	
	0.03%, LINE IN to OUTPUT (to LINE sources) (DIN AUDIO)	
	0.03%, LINE IN to MEETING OUTPUT (DIN AUDIO)	
Noise level (DIN Audio+A)	**MIC IN**	(GAIN: MAX, EIN, 150ohm terminated) –110dBu, MIC IN to INSERT SEND
	LINE IN (DIN Audio)	–72dBV (–70dBu), LINE IN to LINE OUTPUT
		–72dBV (–70dBu), LINE IN to OUTPUT (to LINE sources)
		–72dBV (–70dBu), LINE IN to MEETING OUTPUT
		–70dBV (–68dBu), LINE IN to PHONES OUTPUT
Crosstalk	60dB, L/R at 1kHz	
	65dB, Input channels at 1kHz	
Speaker outputs	Noise level (DIN Audio +A): 4mV (ROOM VOLUME at max, MIC faders at min, inputs shorted); 1.2mV (ROOM VOLUME minimum	
	Signal-to-noise ratio (DIN Audio+A):70dB (output of 50W)	

8 – Specifications and block diagram

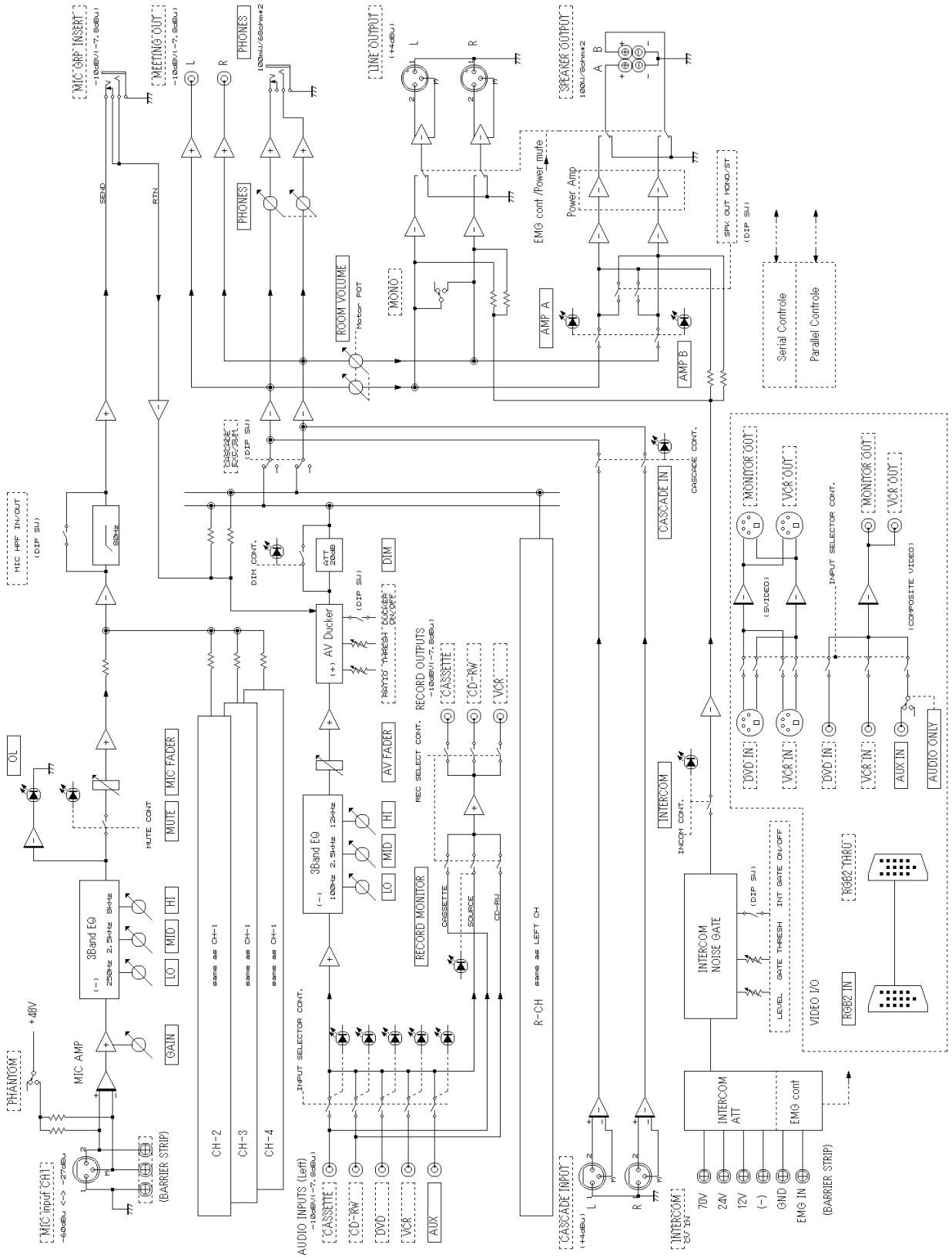
Power and physical specifications

Power requirement	100V AC, 50-60Hz
	120V AC, 60Hz
	230V AC, 50Hz
	240V AC, 50Hz
Power consumption	125W
Peak inrush current	16A
Applicable electromagnetic environment	E4
Dimensions (W xHxD)	482 x 144 x 371(mm) 19.0 x 5.7 x 14.6 (in)
Weight	11.3kg (24.9 lbs)
Supplied accessories	RC-452 remote control unit 2 x AAA dry cell batteries Power cord Rack mounting kit

Dimensional drawing



Block diagram



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TEAC Professional Division

AV-452

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TEAC Professional Division

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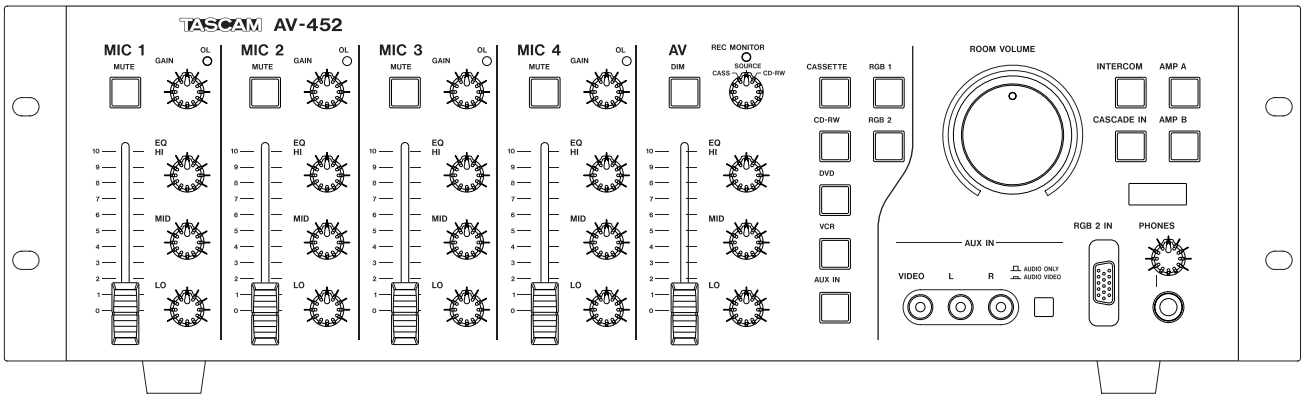
AV-452

Mesa de mezclas autoamplificada



MANUAL DE INSTALACION Y MANEJO

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

PRECAUCION: PARA REDUCIR EL RIESGO DE DESCARGAS ELECTRICAS, NO QUITE LA CARCASA (NI LA TAPA TRASERA). DENTRO DE LA UNIDAD NO HAY PIEZAS QUE PUEDAN SER REPARADAS POR EL USUARIO. CONSULTE CUALQUIER REPARACION SOLO CON PERSONAL TECNICO CUALIFICADO.

El símbolo de un rayo dentro de un triángulo equilátero se usa internacionalmente para alertar al usuario de la presencia de “voltajes peligrosos” no aislados dentro de la carcasa del aparato que pueden ser de magnitud suficiente para constituir un riesgo real de descarga eléctrica para las personas.

El símbolo de exclamación dentro de un triángulo equilátero se utiliza para advertir al usuario de la existencia de importantes instrucciones de uso y mantenimiento (reparaciones) en los documentos que acompañan a la unidad.

Este aparato tiene un nº de serie que está colocado en la parte trasera. Escriba aquí el nº de modelo y de serie de su unidad y consérvelo para cualquier consulta.

Número de modelo _____

Número de serie _____

CUIDADO: PARA EVITAR EL RIESGO DE INCENDIOS O DESCARGAS ELECTRICAS, NO EXPONGA ESTE APARATO A LA LLUVIA O LA HUMEDAD.

INSTRUCCIONES IMPORTANTES DE SEGURIDAD

1 Lea estas instrucciones.

2 Conserve este manual de instrucciones.

3 Observe todas las precauciones.

4 Siga todo lo indicado en las instrucciones.

5 No utilice este aparato cerca del agua.

6 Límpielo solo con un trapo suave y seco.

7 Nunca bloquee ninguna de las aberturas de ventilación. Instale el aparato de acuerdo a las instrucciones facilitadas por el fabricante.

8 No instale este aparato cerca de fuentes de calor como radiadores, hornos, calentadores u otros aparatos (incluyendo amplificadores) que produzcan calor.

9 Nunca anule el sistema de seguridad que le ofrece un enchufe de tipo polarizado o con toma de tierra. Un enchufe polarizado tiene dos bornes, uno más ancho que el otro. Uno con toma de tierra tiene dos bornes iguales y una lámina para la conexión a tierra. El borne ancho de los polarizados o la lámina que comentamos se incluyen por su seguridad. Si el enchufe no encaja en su salida de corriente, póngase en contacto con un electricista para que cambie esa salida anticuada por una que esté de acuerdo a la normativa eléctrica actual.

10 Coloque el cable de corriente de forma que no pueda ser pisado o quedar aplastado o muy retorcido, especialmente en la zona del enchufe, receptáculos de entrada o en el punto en que salgan del aparato.

11 Utilice solo accesorios / añadidos especificados por el fabricante.

12 Use este aparato solo con un trípode, soporte, bastidor o mesa especificado por el fabricante o que se venda con el propio aparrato. Cuando use un bastidor o un soporte con ruedas, tenga cuidado al mover la combinación soporte/ aparato para evitar posibles daños en caso de que vuelque.

13 Desconecte de la corriente este aparato durante las tormentas eléctricas o cuando no lo vaya a usar durante un periodo de tiempo largo.

14 Dirija cualquier posible reparación solo al servicio técnico oficial. Este aparato debería ser reparado si ha resultado dañado de alguna forma como por ejemplo si se ha dañado el cable de corriente o el enchufe, si se han derramado líquidos o han caído objetos dentro del aparato, si el aparato ha quedado expuesto a la lluvia o la humedad, si no funciona correctamente o si ha caído al suelo.

l No permita que este aparato pueda quedar expuesto a derramamientos de líquidos.

l Nunca coloque objetos que contengan líquidos, como por ejemplo jarrones, sobre el aparato.

l No instante este aparato encastrado en ningún sitio reducido como una librería o entorno similar.

l Este aparato sigue recibiendo una corriente nominal no operativa de la salida de corriente alterna aun cuando su interruptor POWER esté en la posición off.

IMPORTANTE (usuarios Reino Unido)

NUNCA corte el enchufe de conexión a red de este aparato.
Si el enchufe de este aparato no se adapta a las salidas de corriente de su casa o si el cable es demasiado corto, consiga una alargadera que cumpla las medidas de seguridad o consulte a su distribuidor.

Si a pesar de lo anterior corta el enchufe, saque el fusible y suelte el enchufe de inmediato, para evitar una posible descarga por una conexión accidental a la corriente.

Si el aparato no viene con un enchufe de red, o si ha de colocar otro, siga estas instrucciones:

IMPORTANTE: Los hilos del cable de alimentación de este aparato vienen codificados con los colores siguientes:

VERDE Y AMARILLO	: TOMA DE TIERRA
AZUL	**:** NEUTRAL
MARRON	**:** ACTIVO

PRECAUCION: Este aparato siempre debe estar conectado a una toma de tierra.

Dado que estos colores puede que no se correspondan con el código de colores identificativos de su enchufe o salida de corriente, haga lo siguiente:

El hilo de color VERDE Y AMARILLO debe ser conectado a la terminal del enchufe que esté marcada con la letra E o con el símbolo de tierra ⏚ o que sea de color VERDE o VERDE Y AMARILLO.

El filamento de color AZUL debe ser conectado a la terminal que esté marcada con la letra N o de color NEGRO.

El cable de color MARRON debe ser conectado con la terminal marcada con la letra L o de color ROJO.

Cuando esté sustituyendo el fusible, utilice solo uno del tipo y valor correcto y asegúrese de volver a colocar la tapa.
SI TIENE CUALQUIER TIPO DE DUDA — CONSULTE A UN ELECTRICISTA PROFESIONAL.

Para EE.UU.

PARA EL USUARIO

Se ha verificado que este aparato está dentro de los límites fijados para las unidades digitales de clase A, de acuerdo a lo expuesto en la sección 15 de las normas FCC. Estos límites han sido diseñados para ofrecer una protección razonable contra las interferencias molestas que se pueden producir cuando este aparato es usado en un entorno no profesiona. Este aparato genera, usa y puede irradiar energía de radiofrecuencias y si no es instalado y usado de acuerdo a este manual de instrucciones, puede producir interferencias molestas en la comunicaciones de radio.
El uso de este aparato en un entorno no profesional puede producir interferencias molestas, en cuyo caso el usuario será el responsable de tratar de corregir dichas interferencias a su costa.

PRECAUCION
Los cambios o modificaciones realizadas en este aparato sin autorización expresa por escrito de TEAC CORPORATION pueden anular la autorización del usuario a usar este aparato.

Para los usuarios de Europa

PRECAUCION
Este es un aparato de clase A. En un entorno no profesional, este aparatos puede producir interferencias en las comunicaciones de radio, en cuyo caso el usuario será el responsable de tratar de solucionarlas.

Pour les utilisateurs en Europe

AVERTISSEMENT
Il s'agit d'un produit de Classe A. Dans un environnement domestique, cet appareil peut provoquer des interférences radio, dans ce cas l'utilisateur peut être amené à prendre des mesures appropriées.

Für Kunden in Europa

Warnung
Dies is eine Einrichtung, welche die Funk-Entstörung nach Klasse A besitzt. Diese Einrichtung kann im Wohnbereich Funkstörungen versursachen ; in diesem Fall kann vom Betrieber verlang werden, angemessene Maßnahmen durchzuführen und dafür aufzukommen.

Indice

El TASCAM AV-452 se ocupa de coordinar las necesidades audiovisuales para presentadores de todos los niveles. Desde el punto de vista de sus funciones, el AV-452 es un mezclador de micrófonos, receptor A/V y una etapa de potencia en una única unidad compacta.Su superficie de control es elegante y muy intuitiva.

Audio: Cuatro entradas de micrófono (con alimentación fantasma) le ofrecen gran capacidad de entrada para varios presentadores o múltiples posiciones de emisión. Puede conectar hasta dos componentes audio y tres audiovisuales al canal A/V, con un simple control de conmutación. Dispone también de un EQ de 3 bandas en cada canal para intensificar los sonidos individuales como sea necesario.

Video: El AV-452 le permite conmutación de vídeo entre tres componentes de A/V, ofreciéndole una señal de vídeo sencilla para proyectores o monitores con entradas ilimitadas. La conmutación se realiza en paralelo, y la conmutación de vídeo es gestionada para entradas compuesta y S-vídeo.

Control: Con el AV-452 se incluye el mando a distancia programable universal RC-452, que permite al usuario gestionar todas las teclas de los aparatos con un único control remoto. El RC-452 controlará el AV-452 y podrá detectar y "aprender" órdenes para el encendido de los proyectores, así como órdenes de transporte hasta para cuatro equipos.

El propio AV-452 también puede detectar y "aprender" órdenes IR, para así poder integrar la conmutación de proyector/monitor con la activación interna del AV-452. Este grupo de órdenes IR puede ser transmitido con un "blaster" IR (no incluido) al puerto sub-D de 37 puntas **RELAY CONTROL** (para más detalles, vea "Puerto de control de relé" en pág. 18).

Características para "instalación AV"

Características especiales adicionales del AV-452 relativas a instalaciones fijas:

- Puede conectar los micrófonos usando tanto conectores de tipo XLR como de borne y pueden recibir alimentación fantasma, lo que le permite usar micros condensadores en miniatura o PZM (campo cercano).
- Supresión de graves a 80 Hz conmutable para eliminar los murmullos de bajas frecuencias.
- Bucle de inserción de micrófono para EQs paramétricos, compresor/limitador/puerta, etc.
- Dimmer de señal AV para que pueda realizar voiceovers manuales, etc.
- Ducker AV automático con valores de ratio y umbral ajustables.
- Puede conectar un sistema de megafonía o *paging* CV (voltaje constante) al panel trasero (12, 24 o 70 V). Para unos ajustes óptimos dispone de un control de nivel y una puerta de ruidos anulable.
- Puede conectar un sistema de alarma central a la entrada EMG. Cuando la alarma se dispare, el AV-452 anulará la señal audio local y activará la entrada del sistema de llamada CV.
- La salida de altavoces y de línea tienen interruptores independientes para su uso en sistemas multizonas o de zona única.
- La entrada de cascada puede ser configurada para combinar la entrada como un submezclador, o funcionar como una "cascada de salas", lo que permitirá que el AV-452 actúe como un amplificador teledirigido.
- Conexiones no balanceadas **MEETING OUT** específicas, junto con conexiones balanceadas **LINE OUT** para la conexión con otros equipos.
- Conectores en serie (RS-232) y relé (sub-D de 37 puntas) para el control de esta unidad desde otros dispositivos.

Acerca de este manual

Este manual ha sido diseñado para ser usado por las personas que diseñen, instalen y reparen el sistema AV en el que esté incluido el AV-452. No es necesario que el usuario final de este aparato lea este manual.

El usuario es suficiente que consulte el folleto de *Manual de instrucciones* en el que verá una referencia rápida acerca de cómo usar este aparato. No obstante, aquí puede ver una pequeña guía del panel frontal y del mando a distancia de esta unidad, así como otras informaciones que le servirán de ayuda cuando esté enseñando el manejo de este aparato a los usuarios finales.

Le recomendamos que conserve el *Manual de instrucciones* cerca del AV-452 y que cumplimente las casillas de este prospecto, para así tener un

registro escrito de las conexiones fijas que haya entre el AV-452 y el resto de aparatos.

Observe que los controles y conectores de la unidad y del mando a distancia están indicados en este tipo de letra: **LINE OUTPUT**. A veces haremos referencia a un control o conector por un número, que será el que aparezca en los diagramas de "Características del panel frontal" en pág. 8, "Características del mando a distancia" en pág. 10 y "Conexiones del panel trasero" en pág. 12. En estos casos, una función de la unidad principal vendrá indicada de esta forma: ①, mientras que si la función es del control remoto la indicación será: ❷.

Los controles e indicadores de otras funciones vendrán indicados de esta forma: **REC IN**.

Cómo está organizado este manual

Aquí tiene un resumen de las distintas secciones de este manual:

1, “Introducción” (pág. 5) Introducción al AV-452.

2, “Notas generales de instalación” (pág. 7) Como su propio nombre indica, aquí puede encontrar notas generales acerca de los requisitos tanto físicos como eléctricos para la instalación del AV-452.

3, “Características del panel frontal” (pág. 8) Así como una lista de los controles y funciones del panel frontal, esta sección le ofrece detalles sobre el manejo del AV-452. Lea esta sección para tener una visión global de la forma en que funciona el AV-452.

4, “Características del mando a distancia” (pág. 10) Aquí puede encontrar una lista de las funciones y características disponibles cuando use el mando a distancia RC-452, así como los detalles sobre cómo programar el RC-452 para detectar y reproducir los códigos de órdenes de otros aparatos.

5, “Conexiones del panel trasero” (pág. 12) Aquí puede encontrar una lista con las conexiones que salen y entran al AV-452.

6, “Personalización y ajustes” (pág. 16) El AV-452 puede ser personalizado para instalaciones concretas de varias fomas distintas, usando los interruptores del panel trasero, etc. Esta sección le describe cómo puede realizar esa personalización, incluyendo la forma en que el AV-452 puede detectar y “aprender” los códigos IR necesarios para controlar aparatos exteriores.

7, “Control exterior” (pág. 18) El AV-452 puede ser controlado desde un controlador en serie exterior, y en esta sección puede encontrar una lista con los códigos de control disponibles para el control, información de estado y solicitudes. Además, dispone de conectores de indicador tally y de control de relé. En esta sección también puede encontrar los detalles sobre los mismos.

8, “Especificaciones técnicas y diagrama de bloques” (pág. 20) Aquí puede encontrar las especificaciones técnicas, esquema de dimensiones y un diagrama de bloques del AV-452.

Estas notas le ofrecen información acerca de la instalación del AV-452.

Dentro del embalaje debería encontrar los siguientes elementos (además de este manual y del AV-452):

- El *Manual de instrucciones*—que es un prospecto que contiene las instrucciones de manejo
- Cable de corriente con un enchufe adecuado para su país
- Un kit de montaje en rack compuesto por cuatro tornillos y cuatro arandelas
- El mando a distancia RC-452
- Dos pilas de tipo AAA para el mando a distancia RC-452
- Tarjeta de garantía

En caso de que falte cualquiera de estos elementos, póngase en contacto con su distribuidor TASCAM.

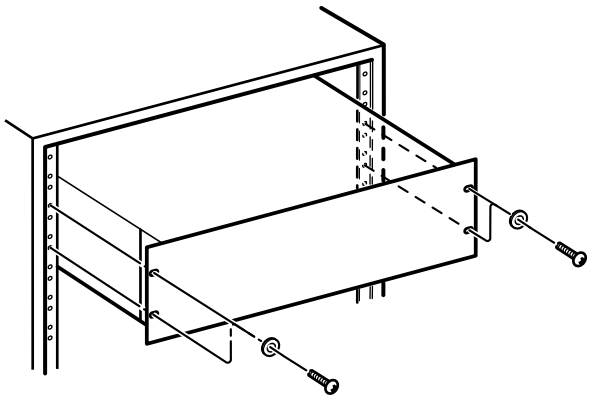
Instalación física

Puede instalar esta unidad en cualquier bastidor rack standard de 19", usando el kit de montaje (tornillos y arandelas) que se incluye. No es necesario ningún soporte trasero.

Necesitará 3U de espacio rack para la unidad. Dado que el AV-452 incorpora etapas de potencia, le recomendamos que deje como mínimo 1U de espacio encima de la unidad para evitar que se recaliente.

NOTA

No instale este aparato confinado en un espacio reducido como dentro de una librería o similares.



Por esa misma razón, debe debar un espacio para la correcta ventilación de la unidad delante y detrás de ella. En cualquier caso, el espacio en la parte trasera de la unidad debería ser suficiente como para que pueda enchufar sin problemas todos los conectores de vídeo y audio en el AV-452.

Dado que muchas de las funciones de la unidad son ajustadas por medio de pequeños controles fijos (mandos de retoque, interruptores de posición o DIP), en el panel trasero, le recomendamos que coloque la unidad de tal forma que siempre pueda acceder sin problemas a este panel, o que realice todos los ajustes definitivos antes de montar la unidad en el rack.

Fuente de alimentación

El AV-452 puede usar una fuente de alimentación de corriente alterna del tipo indicado en su panel trasero. No utilice ningún otro tipo de voltaje de alimentación, dado que esto podría dar lugar a averías.

Conecte siempre esta unidad a una toma de tierra.

El interruptor de encendido está situado en el panel trasero para evitar que el usuario pueda apagar el aparato de forma accidental durante una presentación. Si quiere encender y apagar el sistema cada cierto tiempo, le recomendamos que se plantee el usar una regleta de enchufes con interruptor, o usar un sistema de distribución de corriente central.

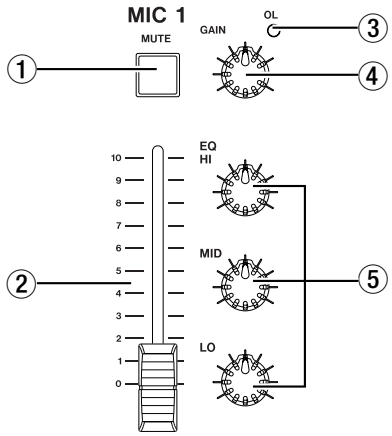
3 – Características del panel frontal

Aquí le vamos a ofrecer una pequeña guía de las características del panel frontal del AV-452, con algún detalle técnico más que en el *Manual de instrucciones*.

Puede usar esto como una guía de referencia rápida para el manejo diario, o como base para una explicación inicial para los usuarios finales de este aparato.

Canales de micrófono

Cada uno de los cuatro canales de micrófono está equipado de la misma forma.



① **Tecla MUTE** Esta tecla de tipo bloqueo se ilumina cuando el canal de entrada de micro está anulado.

② **Fader** La ganancia unitaria de este fader está en la marca **7**.

③ **Indicador OL** Se ilumina a 10 dB por encima del nivel de saturación nominal.

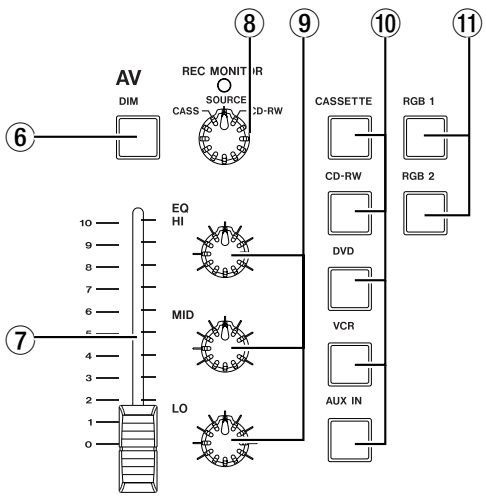
④ **Control GAIN** Le ofrece 33 dB de control para ajustar el nivel de micro de forma adecuada.

⑤ **Sección EQ** 3 bandas, cada una de las cuales le ofrece ±10 dB en las frecuencias siguientes (que han sido optimizadas para la voz):

HI: 8 kHz (estantería)
MID: 2.5 kHz (pico)
LO: 250 Hz (estantería)

Sección de selección y control AV

Esta sección se usa para elegir la fuente AV adecuada y para controlar el sonido.



⑥ **Tecla DIM** Esta tecla de tipo bloqueo se usa para atenuar la señal de la fuente AV en 20 dB. Cuando la amortiguación esté activada la tecla se iluminará.

⑦ **Fader** La ganancia unitaria de este fader, que se usa para controlar el nivel de la señal AV elegida, está en el nivel máximo.

⑧ **Control/indicador REC MONITOR**

Independientemente de su nombre, este control e indicador actúan como un selector de fuente de grabación.

- En la posición **SOURCE**, la salida de la señal elegida usando las teclas selectoras AV es pasada a las entradas de todos los aparatos conectados (excepto la unidad fuente, para evitar bucles de señal). Por ejemplo, si elige el cassette, la salida de este será pasada a las entradas de CD-RW y VCR. El indicador se iluminará.
- En la posición **CASS**, la salida del cassette es pasada a las entradas CD-RW y VCR, independientemente de las teclas selectoras AV.
- En la posición **CD-RW**, la salida del CD-RW es pasada a las entradas de cassette y VCR, independientemente de las teclas selectoras AV.

⑨ **Sección EQ** 3 bandas, cada una de las cuales le ofrece ±10 dB en las frecuencias siguientes:

HI: 12 kHz (estantería)
MID: 2.5 kHz (pico)
LO: 100 Hz (estantería)

⑩ **Teclas selectoras de fuente AV** Solo puede estar activa a la vez una de estas teclas de tipo bloqueo (iluminada). Se usan para elegir la fuente AV.

NOTA

Si la selección de **REC MONITOR** *y la de aquí son la misma, la salida de la fuente es anulada para evitar un posible bucle de realimentación.*

*Tenga en cuenta también que si ha elegido una fuente que solo sea audio (***CASSETTE***,* **CD-RW** *o* **AUX IN** *en el ajuste* **AUDIO ONLY***), la última fuente de vídeo seleccionada será emitida a través de los conectores de vídeo.*

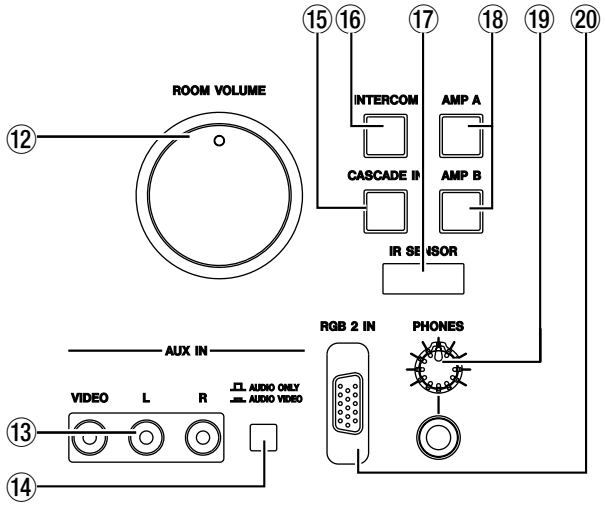
⑪ **Teclas selectoras de entrada de vídeo** Solo puede estar activa (encendida) a la vez una de estas teclas de tipo bloqueo (**RGB 1** y **RGB 2**). Se usan para elegir la fuente de entrada para un proyector exterior.

NOTA

Estas teclas **RGB 1** *y* **RGB 2** *no afectan a la activación de las salidas de vídeo compuesto o S-Video conectadas al AV-452. Le permiten un control centralizado de un proyector o pantalla que forme parte del sistema AV en el que esté incluido el AV-452. Para más detalles, vea "LEARN IR (interruptor 1)" en pág. 16.*

Sección de control principal

Esta sección contiene los controles relacionados con todo el sistema a nivel global.



⑫ **Control ROOM VOLUME** Se utiliza para ajustar los niveles de las salidas de altavoces, así como para las salidas de nivel de línea. El indicador de este control se ilumina cuando el AV-452 está encendido.

Este control está motorizado, lo que quiere decir que reflejará los cambios que realice a través del mando a distancia RC-452 (⑭).

⑬ **Entradas AUX** Este grupo de tres conectores RCA se usa para la entrada de una señal de vídeo compuesta y/o los componentes izquierdo y derecho de una señal audio stereo.

⑭ **Interruptor selector AUX** Determina si están activos el audio y el vídeo juntos en las clavijas **AUX** (pulsado), o solo el audio (sin pulsar).

⑮ **Tecla CASCADE** Cuando esta tecla está activa (encendida), la señal que va a las entradas **CASCADE** (panel trasero) será pasada al bus stereo (pre-**ROOM VOLUME**). Un interruptor en el panel trasero determina si esta entrada sustituye a las señales de entrada o si es sumada con ellas (vea ("CASCADE (interruptor 2)" en pág. 17).

⑯ **Tecla INTERCOM** Cuando esta tecla está encendida, la señal recibida en la conexión **INTERCOM** del panel trasero es pasada al bus stereo. Esta señal no se ve afectada por el control **ROOM VOLUME**.

⑰ **SENSOR IR** Esta ventana sirve para la recepción de órdenes desde el mando a distancia inalámbrico que se incluye con la unidad.

⑱ **Teclas AMP A y AMP B** El AV-452 puede funcionar en el modo mono, con cada amplificador dando señal a un altavoz independiente, en cuyo caso, estas teclas actuarán como teclas de control de sala.

Alternativamente, puede usar la unidad en el modo stereo, en cuyo caso estas teclas se activarán y desactivarán los canales stereo de forma individual.

NOTA

Estas teclas no activan y desactivan los amplificadores—simplemente anulan la señal enviada a los altavoces.

El ajuste mono/stereo para las salidas de línea se realiza por medio del interruptor específico que está en el panel trasero ㊵, mientras que para las salidas de los altavoces se usan los interruptores DIP ㊹.

⑲ **Conector y nivel PHONES** Conecte unos auriculares stereo standard a esta clavija de 6,3 mm. Ajuste el volumen con el control de nivel **PHONES** (pre-**ROOM CONTROL**).

NOTA

Quite los auriculares del conector cuando encienda y apague el AV-452 para evitar posibles daños a causa de los "chasquidos".

⑳ **Entrada RGB 2** Conecte un extremo de un cable VGA sub-D de 15 puntas standard (analógico) a este conector y el otro extremo a un ordenador. La señal es pasada a través del conector **RGB 2 THRU** del panel trasero.

NOTA

El AV-452 no dispone de ninguna entrada o salida "RGB 1". Este sistema de numeración hace referencia a cualquier proyector o pantalla de vídeo conectada al AV-452.

4 – Características del mando a distancia

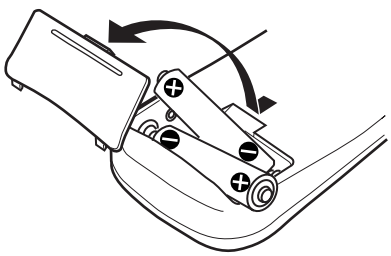
El mando a distancia RC-452 ha sido diseñado no solo para controlar el AV-452, sino también hasta cuatro unidades adicionales conectadas (marcadas como **CASSETTE**, **VCR**, **CD-RW** y **DVD**).

Puede programar un total de 36 teclas (tal como describimos en esta sección).

Cuando utilice el RC-452 con el AV-452 o con cualquier otra unidad, asegúrese que:

- Haya una ruta directa entre el mando a distancia y el sensor de control remoto de la unidad que vaya a controlar.
- Que el mando a distancia esté a una distancia máxima de 5m de la unidad que vaya a controlar y que esté apuntando aproximadamente en ángulo recto (±30°) con respecto al panel frontal.

Debe cuidar el mando a distancia RC-452 de la misma manera que haría con un mando a distancia no profesional. Cuando cambie las pilas:

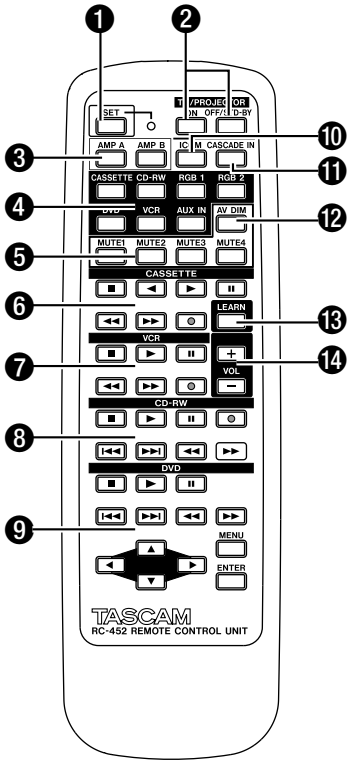


- Asegúrese de cambiar a la vez las dos pilas. Nunca mezcle pilas nuevas con viejas.
- Nunca mezcle pilas de distintos tipos.
- Asegúrese siempre de colocar las pilas con la polaridad correcta (los terminales positivos de las pilas deben coincidir con las marcas **+** del compartimento de las pilas y lo mismo con los terminales negativos y las marcas **–**).
- Si no va a usar el mando a distancia durante un tiempo largo, sáquele las pilas. Las pilas viejas pueden perder el electrolito, lo que produciría daños en el mando a distancia.
- Elimine las pilas gastadas de la forma indicada por las autoridades o empresa de reciclaje local.

NOTA

Las teclas **CASSETTE** *y* **CD-RW** *del RC-452 han sido programadas de fábrica para controlar la unidad TASCAM CC-222. No obstante, puede programarlas para controlar otras unidades. Los nombres de estas teclas y de otras que pueden ser programadas aparecen entre corchetes [ ] en la lista siguiente. Para más detalles acerca de cómo detectar y "registrar" órdenes de otras unidades, vea "Detección de códigos de órdenes" en pág. 11*

Cuando sustituya las pilas en el RC-452, los códigos programados seguirán memorizados. No obstante, tenga en cuenta que si quita las pilas del mando a distancia durante bastante tiempo los códigos de perderán, por lo que deberá reasignarlos.



❶ **Tecla e indicador SET** Se usan durante la asignación de órdenes para otras unidades (como se describe más adelante)

❷ **[Teclas de encendido TV/ PROJECTOR]** Una tecla programable (**ON**) se usa para encender el TV o proyector, y la otra (**OFF/STD-BY**) para apagarlo o dejarlo en stanby.

❸ **Teclas AMP A y AMB B** Realizan la misma función que las teclas **AMP** del AV-452 (⑱).

❹ **Teclas selectoras AV** Realizan la misma función que las teclas de audio y vídeo del AV-452 (⑩ y ⑪).

❺ **Teclas MUTE** Duplican la función de las teclas **MUTE** de micrófono del AV-452 (①).

❻ **[Teclas CASSETTE]** Utilice estas teclas programables para controlar una pletina de cassette (por defecto están preprogramadas para el TASCAM CC-222).

❼ **[Teclas VCR]** Use estas teclas programables para controlar un vídeo.

❽ **[Teclas CD-RW]** Utilice estas teclas programables para controlar una grabadora de CD

(por defecto están preprogramadas para controlar el TASCAM CC-222)

❾ **[Teclas DVD]** Use estas teclas programables para controlar un reproductor de DVD.

❿ **Tecla ICOM** Esta tecla duplica la función de la tecla **INTERCOM** del AV-452 (⑯).

⓫ **Tecla CASCADE IN** Realiza la misma función que la tecla **CASCADE** del AV-452 (⑮).

⓬ **Tecla AV DIM** Esta tecla duplica la función de la tecla **AV DIM** del AV-452 (⑥).

⓭ **Tecla LEARN** Use esta tecla durante el proceso de detección de órdenes de otras unidades (vea luego).

⓮ **Teclas VOL + y –** Estas teclas controlan el mando **ROOM VOLUME** (⑫).

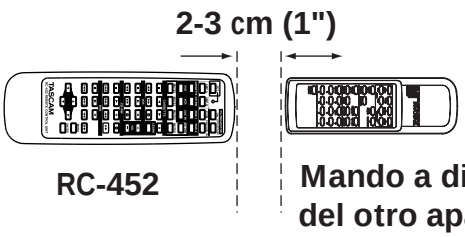
Detección de códigos de órdenes

El diseño del RC-452 le permite usarlo para el control de hasta cinco dispositivos además del AV-452: un proyector o pantalla (**TV/PROJECTOR**), grabadora de cassette (**CASSETTE**), vídeo (**VCR**), grabadora de CD (**CD-RW**) y reproductor de DVD (**DVD**).

Evidentemente, los dispositivos y funciones que programe para ellos no tiene por qué coincidir con lo que está indicado en el AV-452 y RC-452, pero es bastante sencillo conectar las unidades de destino con las etiquetas del RC-452.

Para que el RC-452 pueda detectar las órdenes de control de otro mando a distancia:

1 Asegúrese de que tanto el RC-452 como el mando a distancia de la otra unidad tengan pilas y colóquelos sobre una superficie plana, uno enfrente al otro y separados unos 2–3 cm.



2 En el RC-452, mantenga pulsada la tecla SET ❶ y pulse después la tecla LEARN ⓭. Suelte después ambas teclas. El indicador SET quedará iluminado.

3 En los 10 segundos posteriores al paso anterior, pulse *tres veces* la tecla ►► de la sección VCR del RC-452 ❼.

El indicador SET ❶ del RC-452 parpaderá al pulsarlo y quedará iluminado fijo para indicarle que la unidad está ahora en el modo de detección.

4 En el RC-452, pulse la tecla que quiera asignar a la función del otro aparato.

El indicador SET ❶ del RC-452 empezará a parpadear rápidamente para indicarle que el procedimiento de detección ha empezado.

5 En el mando a distancia del otro aparato, pulse la tecla cuya función quiera detectar. El indicador SET ❶ del RC-452 dejará de parpadear y quedará iluminado durante un momento, se apagará brevemente *una vez* y después volverá a quedar iluminado fijo para indicarle que la orden ha sido registrada.

- **Si el indicador SET del RC-452 se apaga brevemente *tres* veces y después queda iluminado fijo, eso querrá decir que la orden no ha sido registrada correctamente.**
- **Si el indicador SET del RC-452 se apaga brevemente *seis* veces y después queda iluminado fijo, eso querrá decir que la memoria del RC-452 está completa y que no pueden ser registradas más órdenes.**

6 Repita los pasos 4 y 5 hasta que haya registrado todas las órdenes que necesite.

7 Para salir del modo de detección, pulse la tecla LEARN ⓭ del RC-452. El indicador SET se apagará (también se apagará si no pulsa ninguna tecla en el RC-452 en los 10 segundos siguientes al paso 3 ó 4).

NOTA

El RC-452 puede detectar y registrar hasta 36 órdenes distintas.

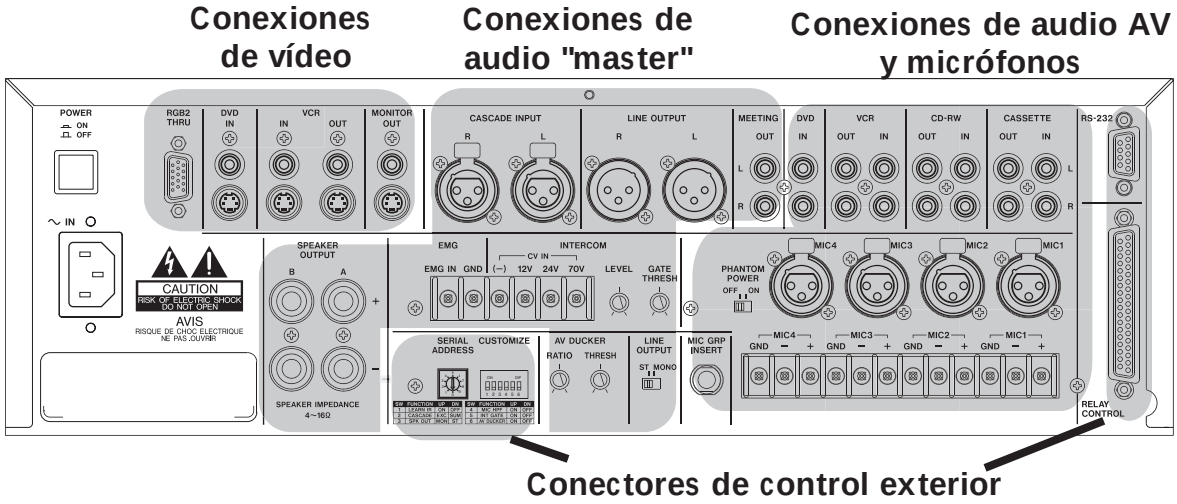
El ángulo y la distancia que haya entre los dos mandos a distancia afecta a la dificultad con la que se realice del proceso de detección.

El RC-452 puede que no sea capaz de detectar órdenes de algunos mandos a distancia que usen largos códigos IR para la transmisión.

5 – Conexiones del panel trasero

Esta sección le ofrece información detallada acerca de los conectores del panel trasero, así como algunas notas acerca de la instalación y conexión de otros aparatos.

Podrá encontrar las especificaciones y otros datos técnicos más adelante en este manual.

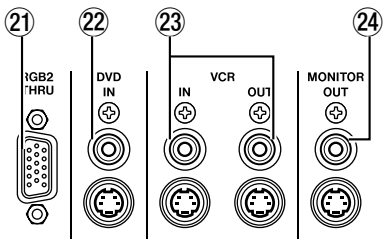


Conexiones de vídeo

Todas las conexiones de vídeo del AV-452 están en paralelo. No hay conversión entre las señales de vídeo compuesto y S-Video. En algunos montajes, puede que tenga que conectar ambos formatos de vídeo a las pletinas fuente.

Esto implica también que el AV-452 es independiente de los standards y que puede aceptar el formato de vídeo NTSC, PAL o SECAM sin ninguna configuración.

Además de estos conectores, recuerde que hay una clavija de vídeo **AUX** adicional en el panel frontal ⑬.



NOTA

Las indicaciones de todos los conectores del panel trasero hacen referencia al AV-452. En otras palabras, un conector marcado como **IN** *en el AV-452 debería ser conectado a uno marcado como* ***OUT*** *en el otro dispositivo.*

㉑ **Conector RGB2 THRU** Este conector sub-D de 15 puntas re-envía sin modificar la señal recibida a través de la entrada del panel frontal ⑳.

㉒ **Conectores DVD IN** Este par de conectores se usa para dar entrada a la salida de vídeo de un reproductor de DVD al AV-452.

㉓ **Conectores VCR IN y OUT** Conecte la salida de vídeo de una grabadora de vídeo a la toma **VCR IN** y la entrada del VCR a la toma **VCR OUT**.

㉔ **Conectores MONITOR OUT** Conecte estas tomas a la entrada adecuada de una televisión, monitor o proyector.

Conexiones de audio AV y micrófono

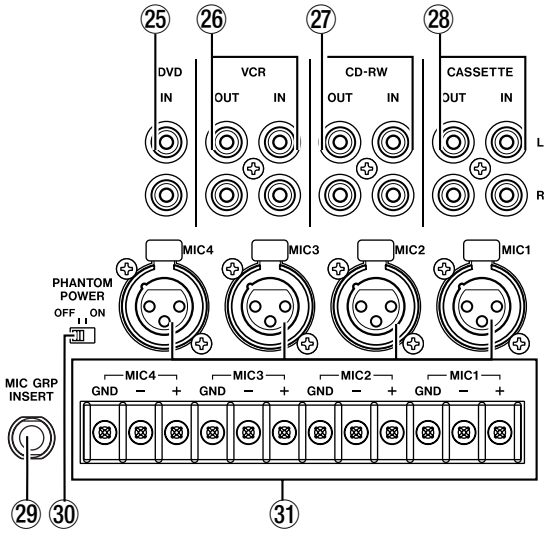
NOTA

El AV-452 viene con varios conectores de tope para las clavijas RCA de entrada que no use. Quite estos topes cuando realice conexiones a esos terminales y vuélvalos a colocar cuando deje de usar esas tomas. Eso le ayudará a mejorar la calidad audio del sistema.

Además de las conexiones que detallamos aquí, también hay un par de entradas audio **AUX** en el panel frontal ⑬.

NOTA

El cableado de todos los conectores de tipo XLR es punta 1 tierra, 2 activo y 3 pasivo.



㉕ **Conectores DVD IN** Este par de conectores aceptan las salidas audio de un reproductor DVD.

㉖ **Conectores VCR OUT e IN** Estos conectores dan señal a las entradas audio de una grabadora de vídeo (**OUT**) y aceptan las señales de salida del VCR (**IN**).

㉗ **Conectores CD-RW OUT e IN** Estos conectores dan señal a las entradas de una grabadora de CD (**OUT**) y aceptan las señales de salida de dicha unidad (**IN**).

㉘ **Conectores CASSETTE OUT e IN** Estos conectores dan señal a las entradas audio de una pletina de cassette (**OUT**) y aceptan las señales de salida de dicha unidad (**IN**).

㉙ **Conector MIC GRP INSERT** Esta clavija TRS de 6,3 mm se usa para pasar las señales de micro sumadas a través de un procesador dinámico (limitador, puerta de ruidos, etc.) o de un EQ gráfico o paramétrico, etc. El cableado de este conector es punta = envío, anillo = retorno, lateral = masa.

㉚ **Interruptor PHANTOM POWER** Use este interruptor para dar entrada a alimentación fantasma de +48V a micrófonos condensadores. Las cuatro entradas de micrófono son activadas con el mismo interruptor.

Cuando la alimentación fantasma esté activada, no utilice micros dinámicos conectados con una conexión no balanceada ni tampoco micros de alta impedancia.

NOTA

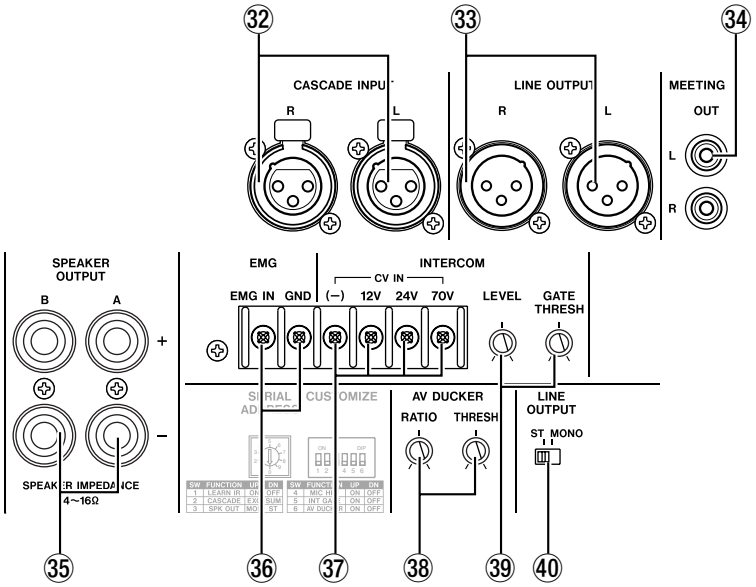
Para evitar posibles daños en los micrófonos, conecte los micros, baje el control **ROOM VOLUME** *y desactive los altavoces usando las teclas* **AMP A** *y* **AMP B** *siempre antes de activar o desactivar la alimentación fantasma.*

㉛ **Conexiones MIC 1 - 4** Puede conectar los micrófonos usando clavijas XLR. En instalaciones fijas en las que los cables vayan por las paredes, puede usar la conexión de cable pelado en la conexión de tipo borne.

No conecte en el mismo canal de micro micrófonos con la conexión XLR y la de tipo borne a la vez (aunque sí puede conectar algunos de los micros con conectores XLR y los otros en los conectores de tipo borne).

Asegúrese siempre de mantener la polaridad a lo largo de toda la instalación, de cara a evitar problemas de inversión de fase.

Conexiones audio “Master”



Estas conexiones hacen referencia a las funciones audio del AV-452 que juegan un papel “master” en la configuración y manejo de la unidad.

㉜ **Conectores CASCADE INPUT** Estos conectores XLR balanceados aceptan señales balanceadas de otro AV-452 (o unidad similar). Puede elegir estas señales de entrada usando la tecla **CASCADE** del panel frontal ⑮ y son pre-**ROOM VOLUME**.

Dependiendo de la posición del interruptor DIP trasero ("CASCADE (interruptor 2)" en pág. 17), la señal de entrada en cascada puede sumarse con la señal audio del AV-452 o puede sustituirla.

㉝ **Conectores LINE OUTPUT** Estos conectores XLR balanceados dan salida a la mezcla post-**ROOM VOLUME** (a otro AV-452 o una etapa de potencia).

㉞ **Conectores MEETING OUT** Estas clavijas RCA no balanceadas dan salida a la mezcla pre-**ROOM VOLUME**.

Un uso para esta función es para conectar una grabadora en la que registrar lo dicho en reuniones de trabajo, etc.

㉟ **Conectores SPEAKER OUTPUT A y B** Conecte unos altavoces a estos terminales de tipo tornillo. Tenga cuidado con la polaridad para evitar problemas de desfase de las señales.

Los altavoces que conecte a estos terminales pueden ser conmutados de forma individual usando las teclas selectoras del panel frontal ⑱.

La impedancia del sistema de altavoces conectado a cada canal debe estar entre los 4 y16 Ω.

PRECAUCION

El uso de altavoces con impedancias fuera de el rango citado puede dar lugar a daños en los altavoces y/o en el AV-452.

Tenga en cuenta también que no debería usar el AV-452 en el modo de puente mono.

Dependiendo del ajuste de los interruptores DIP ("SPEAKER OUT (interruptor 3)" en pág. 17) y del interruptor de modo **LINE OUTPUT** ㊵, el AV-452 puede ser configurado como un amplificador mono dual o como un amplificador stereo.

En este último caso, el canal A corresponderá al canal izquierdo y el B al canal derecho.

㊱ **Conectores EMG IN y GND** Use estos conectores de tipo borne para unir un cable de señal de emergencia de 5 Vrms.

Cuando esta señal se active, el AV-452 cortará las señales procedentes de los terminales **LINE OUTPUT** ㉝ y **SPEAKER** ㉟ y todos los indicadores del panel frontal empezarán a parpadear.

㊲ **Conectores INTERCOM (CV IN)** Use estas entradas para conectar los cables de un sistema de intercomunicación de voltaje constante (CV).

Antes de conectar el AV-452 a un sistema de este tipo, confirme el voltaje usado por el sistema de intercomunicación. El AV-452 puede funcionar con sistemas que usen 12, 24 o 70 voltios. Cuando la señal del altavoz llega al AV-452, es convertida por el

AV-452 en una señal de nivel de línea y la añade a las salidas de línea y de altavoces (pero no a **MEETING OUT** o **PHONES**).

Tenga en cuenta los siguientes niveles e impedancias de entradas, correspondientes a los distintos conectores en la clavija de tipo borne:

Conector	Nivel, impedancia de entrada
70V	70 V, 40kΩ
24V	24 V, 12kΩ
12V	12 V, 4.7kΩ

El nivel de la señal del intercomunicador es ajustado como le explicamos abajo, y dispone también de un circuito silenciador ㊴. Active y desactive la señal del intercomunicador con la tecla **INTERCOM** del panel frontal ⑯.

㊳ Controles AV DUCKER RATIO y THRESH

Estos mandos se usan si la función de duking AV ha sido activada usando los interruptores DIP (vea "Personalización y ajustes" en pág. 16). Si esta función no está activada, estos controles no tienen ningún efecto.

Si la función está activada, la cantidad del efecto ducker sobre la señal AV elegida será ajustada entre –6 y –20 dB, dependiendo de la posición del control **RATIO**. Gire este mando a la derecha para aumentar la cantidad de disminución sobre la señal AV.

El mando **THRESH** ajusta el nivel de umbral de la señal de micrófono con el que actúa la función ducker. Gire este mando a la derecha para aumentar este nivel de disparo.

㊴ Controles LEVEL y GATE THRESH

Estos dos mandos se usan junto con las señales **INTERCOM** introducidas en ㊲.

El control **LEVEL** ajusta el nivel de la señal de intercomunicación que es enviada a la mezcla (post-**ROOM LEVEL**). Gire el mando a la derecha para aumentar el nivel de la señal.

El control silenciador **GATE THRESH** se usa para controlar el umbral de una puerta de ruidos, que se abre cuando el nivel de la señal del intercomunicador sobrepasa dicho punto. Esto le permite conectar un sistema de intercomunicación con algo de ruido, pero que no interfiera con el resto de las señales.

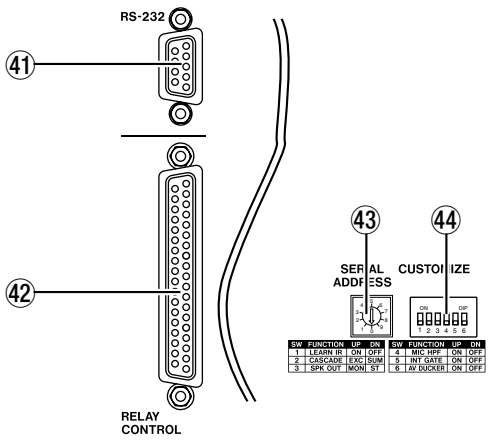
㊵ Interruptor de modo LINE OUTPUT

Este interruptor permite que la salida de línea ㉝ del AV-452 actúe como dos fuentes de línea mono, para dar señal a amplificadores auxiliares, etc. en dos posiciones, o actuar como un amplificador stereo, dando señal a otra unidad stereo.

Conectores de control exterior

Hay dos conectores de sub-D que se usan para el control exterior del AV-452.

Puede encontrar los detalles sobre estos conectores en "Control exterior" en pág. 18.



㊶ Puerto serie RS-232

Este puerto sub-D de 9 puntas hembra acepta y recibe señales de serie, con las que puede controlar el AV-452 por un dispositivo serie. Vea el documento *Referencia de protocolo en serie* (que puede conseguir bajo pedido a su distribuidor TASCAM) para más detalles sobre el formato y contenido de las órdenes y mensajes de conexión en serie.

NOTA

Aunque el conector está marcado como ***RS-232****, también puede usarlo para el intercambio de datos serie RS-422 y RS-485 además del formato RS-232.*

㊷ Conector RELAY CONTROL

Este conector sub-D de 37 puntas hembra acepta y transmite señales de referencia tally. Puede usarlo también para conectar un transmisor “blaster “ IR para el control de otros dispositivos, como un proyector de vídeo o monitor.

㊸ Selector SERIAL ADDRESS

Utilícelo para elegir el direccionamiento serie (**0** a **9**) del AV-452 cuando lo controle usando órdenes RS-485.

㊹ Interruptores CUSTOMIZE DIP

Vea en la sección siguiente el significado y los usos de estos interruptores de configuración.

La personalización y los ajustes del AV-452 se hace por medio de un grupo de 6 interruptores DIP.

Estos son los interruptores DIP o de posición:

Nº Int.	Función	Posición arriba	Posición abajo
1	Detección códigos IR (**LEARN IR**)	**ON**	**OFF**
2	Modo cascada (**CASCADE**)	Exclusivo (**EXC**)	Sumado (**SUM**)
3	Salidas de altavoces (**SPK OUT**)	Mono (**MON**)	Stereo (**ST**)
4	Filtro pasa-altos micrófono (**MIC HPF**)	**ON**	**OFF**
5	Función puerta intercomunicador (**INT GATE**)	**ON**	**OFF**
6	Función ducker AV (**AV DUCKER**)	**ON**	**OFF**

Aquí puede ver la explicación de cada uno de ellos:

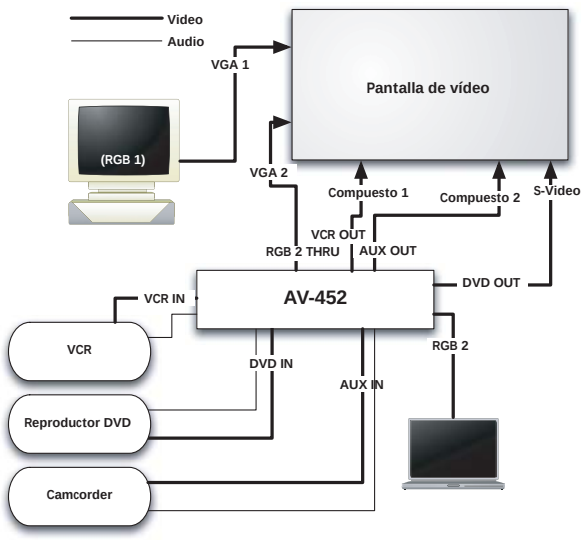
LEARN IR (interruptor 1)

Esta función permite que el AV-452 detecte y registre los códigos IR para el control directo de un monitor, proyector de vídeo, etc. lo que le permite elegir la fuente exterior de vídeo para una pantalla de vídeo usando las teclas selectoras AV así como las teclas **RGB 1** y **RGB 2**.

Esto permite que la señal de vídeo de distintos dispositivos sea conectada directamente al monitor y que la active junto con la señal audio de una de las superficies de control (el AV-452 o el RC-452).

Debe conectar al AV-452 un "blaster" IR exterior (no incluido) para el control de la pantalla de vídeo.

Registro de las órdenes IR exteriores Para la explicación siguiente vamos a suponer que el aparato AV está conectado a un dispositivo de vídeo multi-entrada de la siguiente forma:



Aquí no le mostramos el blaster IR, que debe estar conectado a la toma de control de relé ㊷ del AV-452 y apuntando al receptor IR del monitor de vídeo.

Ahora vamos a programar la tecla **DVD** del AV-452 para activar la entrada **S-Video** para el monitor de vídeo.

1. **Asegúrese que el AV-452 está apagado.**
2. **Coloque LEARN IR (interruptor 1) en ON.**
3. **Envienda el AV-452. Las teclas AMP A, AMP B, INTERCOM y CASCADE del panel frontal parpadearán para indicarle que la unidad está en el modo de registro de IR.**
4. **Pulse la tecla DVD en el panel frontal del AV-452; comenzará a parpadear.**
5. **Apunte el mando a distancia del monitor de vídeo hacia el SENSOR IR ⑰ del AV-452 y pulse la tecla que active la entrada S-Video en el mando a distancia del vídeo.**
   - **Si se recibe y registra un código IR válido, la tecla DVD dejará de parpadear.**
   - **Si el código IR no es recibido y registrado correctamente, la tecla DVD seguirá parpadeando.**

NOTA

El AV-452 solo acepta la especificación de formato IR de tipo NEC. Si la tecla sigue parpadeando y está seguro de que ha sido transmitido la orden de cambio desde la unidad fuente, es posible que dicha unidad no cumpla con la especificación de órdenes ITR NEC.

6. **Pulse otra tecla de selección AV (por ejemplo, la tecla RGB 1) y la tecla de entrada correspondiente en el mando a distancia del vídeo para registrar esa nueva orden.**
7. **Cuando haya finalizado el registro de órdenes, coloque el interruptor LEARN IR (interruptor 1) en OFF.**

   El AV-452 se reinicializará y volverá a su funcionamiento normal.

CASCADE (interruptor 2)

Este interruptor determina el uso de las señales audio recibidas en los conectores **CASCADE IN** ㉜ cuando la tecla **CASCADE** ⑮ es activada.

Con el valor **EXC** (exclusivo), la señal de cascada introducida sustituye a las señales de entrada directas en los terminales **LINE OUTPUT** y **SPEAKER OUT** ㉟.

Con el valor **SUM**, la señal de cascada es sumada (pre **ROOM LEVEL**) con las señales de entrada directa y enviada a las terminales **LINE OUTPUT** ㉝ y **SPEAKER OUT** ㉟ (así como a **MEETING OUT** ㉞ y **PHONES** ⑲).

NOTA

Recuerde que esto solo se aplica a las señales audio. No puede conectar en cascada señales de vídeo usando el AV-452.

Cascada e intercomunicación Tenga en cuenta también que cuando este interruptor esté ajustado a **EXC** (exclusivo), la entrada de intercomunicación CV quedará anulada y la tecla **INTERCOM** ⑯ del panel frontal no se iluminará. Además, cuando el interruptor esté en esta posición, el pulsar la tecla **INTERCOM** hará que se produzca un parpadeo rápido para indicarle que dicha entrada está anulada.

SPEAKER OUT (interruptor 3)

Este interruptor determina si la señal enviada a las terminales **SPEAKER OUT** ㉟ es la misma para ambos altavoces (izquierda y derecha sumadas) (**MON**) o si es una señal stereo (**ST**).

Si elige la opción mono, podrá usar el AV-452 para controlar el sonido que pase a dos salas, conmutable por medio de las teclas **AMP** ⑱ del panel frontal.

NOTA

El ajuste de este interruptor solo afecta a las salidas de altavoces. No afecta a las salidas **LINE** ㉝*, que son conmutadas entre mono y stereo con un interruptor específico* ㊵.

MIC HPF (interruptor 4)

Esto activa o desactiva un filtro pasa-altos de 80 Hz que es añadido a las señales sumadas de micrófono.

Use este filtro para eliminar el ruido de viento, murmullos de fondo, etc. de micrófonos que estén colocados en entornos acústicamente imperfectos.

INTERCOM GATE (interruptor 5)

Este interruptor activa o desactiva el circuito silenciador del intercomunicador (puerta de ruidos).

Cuando este interruptor esté en la posición **OFF**, el mando **GATE THRESH** ㊴ no tendrá efecto.

AV DUCKER (interruptor 6)

Este interruptor activa o desactiva el circuito ducker AV.

Cuando este interruptor esté en la posición **OFF**, ninguno de los mandos del **DUCKER AV**: **RATIO** o **THRESH** ㊳ tendrá ningún efecto.

El AV-452 puede ser controlado desde otras unidades de dos formas distintas.

La primera es el protocolo serie, como el usado por muchos controladores AV. Esto le permite controlar varias unidades AV-452 desde un ordenador, así como desde sus controladores específicos.

La segunda es usando el conector relé, que permite la conexión de varios indicadores tally y controles de relé exteriores al AV-452.

Protocolo serie del AV-452

NOTA

Existe un documento llamado "Protocolo de control serie del AV-452" donde puede encontrar detalles sobre la implementación del control serie y que puede conseguir bajo pedido a su distribuidor TASCAM. Si está implementando el protocolo serie, puede que quiera que el resto del personal de integración del sistema de la "retaguardia" guarde una copia de este documento para que pueda acudir a él en caso de problemas.

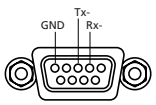
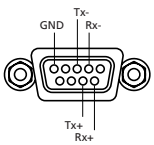
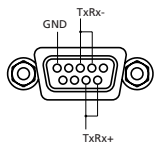
El puerto serie puede actuar como un puerto RS-232, RS-422 o RS-485 (según lo determine con el controlador o PC). El AV-452 dispone de un puerto serie sub-D de 9 puntas standard, así como un selector giratorio de identificador ㊸, que le permite asignar un ID de 0 a 9.

Esto permite conectar en cadena varios AV-452 y controlarlos desde una única fuente.

NOTA

Ajuste este número de identificación solo con los AV-452 apagados, ya que el AV-452 solo reconocerá su ajuste durante el proceso de encendido.

Distribución de puntas del puerto serie

RS-232	RS-422	RS-485
		
Punta 2: Rx- Datos Punta 3: TX- Datos Punta 5: Masa Rx = recepción Tx = transmisión	Punta 2: Rx- Datos Punta 3: Tx- Datos Punta 5: Masa Punta 6: Rx+ Datos Punta 7: Tx+ Datos	Punta 2: TxRx- Datos Punta 3: TxRx- Datos Punta 5: Masa Punta 6: TxRx+ Datos Punta 7: TxRx + Datos

Los diagramas anteriores le muestran el conector del panel trasero del AV-452. El conector de cualquiera de los cables deberá encajar en esta toma.

La velocidad de transmisión siempre es de 9.600 bps, con una longitud de caracteres de 8 bits y sin bit de paridad. El espaciado entre las órdenes es de >25 ms.

Las implementaciones RS-422 y RS-485 siguen las especificaciones standard.

El RS-232 es una modificación del puerto RS-422, funcionando de 0 a 4.5 V, en lugar de ±9 V. Debería funcionar con la mayoría de sistemas de control y PCs antiguos, pero si tiene problemas al usar este protocolo, pruebe a usar si es posible el controlador con RS-422, para solucionar la situación.

Puerto de control de relé

También hay un conector sub-D de 37 puntas ㊷ que puede usar para el control por relé del AV-452 y para la conexión de indicadores tally.

Debe tener en cuenta los aspectos siguientes cuando conecte unidades exteriores al AV-452 por medio de este puerto:

Las salidas de relé son bajas cuando están activas y deben seguir así durante al menos 50 ms.

La corriente máxima es de 20 mA, con un voltaje máximo de 30 V.

Las salidas de indicadores tally son de colector abierto.

“Blaster” IR

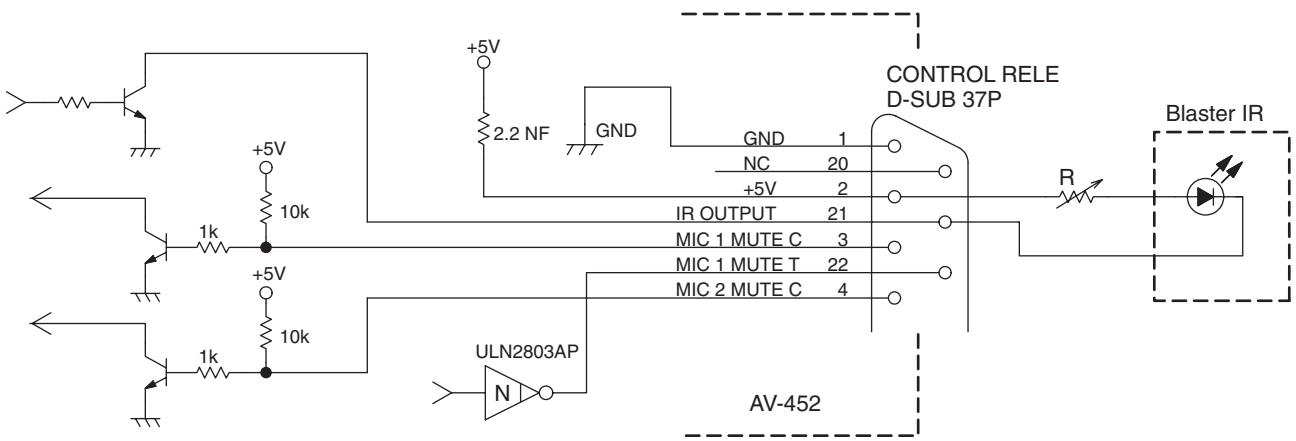
Tenga en cuenta que la punta 21 (y la punta 2, +5V) puede ser conectada a un dispositivo “blaster” IR, que puede usar para códigos de órdenes de relé enviados desde el AV-452 hacia un monitor o proyector exterior, etc.

El proceso para la detección y registro de esas señales de órdenes se decribe en "LEARN IR (interruptor 1)" en pág. 16.

Un blaster IR que se ha comprobado que funciona bien con el AV-452 es el emisor Xantech 283M IR. Consulte a su distribuidor TASCAM para que le facilite más información actualizada sobre otras unidades que pueda usar con el AV-452.

Distribución de puntas para el CONTROL POR RELE

Punta	Señal	Significado	Punta	Señal	Significado
1	GND	Toma de tierra	20	NC	
2	+5V	+5V (50 mA máximo)	21	IR OUTPUT	Conecta el mando a distancia IR
3	MIC 1 MUTE	Activa o desactiva el MUTE del MICRO 1	22	MIC 1 MUTE Tally	
4	MIC 2 MUTE	Activa o desactiva el MUTE del MICRO 2	23	MIC 2 MUTE Tally	
5	MIC 3 MUTE	Activa o desactiva el MUTE del MICRO 3	24	MIC 3 MUTE Tally	
6	MIC 4 MUTE	Activa o desactiva el MUTE del MICRO 4	25	MIC 4 MUTE Tally	
7	A/V DIM	Activa o desactiva AV DIM	26	A/V DIM Tally	
8	CASSETTE	Elige el cassette como fuente AV	27	CASSETTE Tally	
9	RGB 1	Elige RGB 1 como fuente del monitor RGB o proyector	28	CD-RW Tally	
10	RGB 2	Elige RGB 2 como fuente del monitor RGB o proyector	29	DVD Tally	
11	CD-RW	Elige el CD-RW como fuente AV	30	VCR Tally	
12	DVD	Elige el DVD como fuente AV	31	AUX IN Tally	
13	VCR	Elige el VCR como fuente AV	32	RGB 1 Tally	
14	AUX IN	Elige el AUX IN como fuente AV	33	RGB 2 Tally	
15	AMP A	Activa o desactiva la salida AMP A	34	AMP A Tally	
16	AMP B	Activa o desactiva la salida AMP B	35	AMP B Tally	
17	INTERCOM	Activa la entrada INTERCOM	36	INTERCOM Tally	
18	CASCADE	Activa la entrada CASCADE	37	VOLUME DOWN	Volumen abajo
19	VOLUME UP	Volumen arriba			



Especificaciones de vídeo

Entradas vídeo compuesto Todas las entradas de vídeo compuesto son a través de conectores RCA.

AUX IN	75Ω, 1 Vp-p
VCR IN	75Ω, 1 Vp-p
DVD IN	75Ω, 1 Vp-p

Entradas S-Video Todas las entradas S-Video son a través de conectores mini-DIN de 4 puntas.

VCR IN	75Ω, 1 Vp-p
DVD IN	75Ω, 1 Vp-p

Salidas de vídeo compuesto Todas las salidas de vídeo compuesto son a través de conectores RCA.

VCR OUT	75Ω, 1 Vp-p
MONITOR OUT	75Ω, 1 Vp-p

Salidas S-Video Todas las salidas S-Video son a través de conectores mini-DIN de 4 puntas.

VCR OUT	75Ω, 1 Vp-p
MONITOR OUT	75Ω, 1 Vp-p

Conexiones RGB 2

RGB 2 IN	sub-D de 15 puntas hembra
RGB 2 THRU	sub-D de 15 puntas hembra

Especificaciones de audio AV y micrófono

Entradas audio AV Todas las entradas se realizan a través de conectores RCA (no balanceados).

CASSETTE	Impedancia de entrada, 47kΩ, Nivel de entrada nominal -10dBV (–7.8dBu)
CD-RW	Impedancia de entrada, 47kΩ, Nivel de entrada nominal –10dBV (–7.8dBu)
VCR	Impedancia de entrada, 47kΩ, Nivel de entrada nominal –10dBV (–7.8dBu)
DVD	Impedancia de entrada, 47kΩ, Nivel de entrada nominal –10dBV (–7.8dBu)
AUX IN	Impedancia de entrada, 47kΩ, Nivel de entrada nominal –10dBV (–7.8dBu)

Salidas audio AV Todas las salidas se realizan a través de conectores RCA (no balanceados).

CASSETTE	Impedancia de salida, 100Ω, Nivel de salida –10dBV (–7.8dBu) (nominal), +10.8dBV (+13dBu) (máximo)
CD-RW	Impedancia de salida, 100Ω, Nivel de salida –10dBV (–7.8dBu) (nominal), +10.8dBV (+13dBu) (máximo)
VCR	Impedancia de salida, 100Ω, Nivel de salida –10dBV (–7.8dBu) (nominal), +10.8dBV (+13dBu) (máximo)

Inserción de grupo de micrófono Se realiza a través de un conector TRS de 6,3 mm:

Envío (punta)	Impedancia de salida 100Ω, nivel nominal –10dBV (–7.8dBu), nivel máximo +15dBV (+17.2dBu)
Retorno (lateral)	Impedancia de entrada 10kΩ, nivel nominal –10dBV (–7.8dBu), 21dB de margen o headroom

Entradas de micrófono Los valores siguientes se aplican a conexiones realizadas tanto vía los conectores XLR como los de tipo borne.

Impedancia de entrada	2.2kΩ
Nivel de entrada	–60dBu (**GAIN** ④ al máximo) a –27dBu (**GAIN** al mínimo)
Alimentación fantasma	+48V (global para los 4 canales)
Indicador **OL** ③	Se ilumina a 10 dB por encima del nivel nominal
HPF	Global para los 4 canales, conmutable @ 80Hz

Especificaciones de la sección master

ENTRADAS CASCADE	Balanceada, conectores tipo XLR Impedancia de entrada 10kΩ, nivel de entrada +4dBu
SALIDA LINE	Balanceada, conectores tipo XLR Impedancia de salida 100Ω, nivel de salida nominal +4dBu, nivel de salida máxima +23dBu
SALIDA MEETING	No balanceada, conectores RCA Impedancia de salida 100Ω, nivel de salida nominal –10dBV (–7.8dBu), nivel de salida máximo +15dBV (+17.2dBu)
INTERCOM	Tipo borne 70V, 40kΩ, 24V, 12kΩ o 12V, 4.7kΩ
ENTRADA EMG	5V r.m.s.

Auriculares

Conector	Clavija stereo de 6,3 mm
Potencia máxima de salida	100mW + 100mW (68Ω) control al máximo

Salidas de altavoces

Conector	Conectores de tipo borne
Impedancia de carga	8Ω
Potencia media de salida	80W + 80W (1kHz, 1%, 8Ω)
Potencia de salida máxima	100W +100W (EIA, JAITA)

Rendimiento audio

Respuesta de frecuencia	20Hz a 20kHz +1.0/–2.0dB, MIC IN a INSERT SEND	
	20Hz a 20kHz +1.0/–2.0dB, LINE IN a LINE OUTPUT	
	20Hz a 20kHz +1.0/–2.0dB, LINE IN a MEETING OUTPUT	
	20Hz a 20kHz +1.0/–2.0dB, LINE IN a OUTPUT (a fuentes LINE)	
	50Hz a 20kHz +1.0/–2.0dB, LINE IN a PHONES OUTPUT	
THD (nivel nominal, 1kHz)	0.07%, MIC IN a LINE OUTPUT (GAIN: MIN, DIN AUDIO)	
	0.03%, LINE IN a LINE OUTPUT (DIN AUDIO)	
	0.03%, LINE IN a OUTPUT (a fuentes LINE) (DIN AUDIO)	
	0.03%, LINE IN to MEETING OUTPUT (DIN AUDIO)	
Nivel de ruidos (DIN Audio+A)	**MIC IN**	(GAIN: MAX, EIN, terminación 150 ohmios) –110dBu, MIC IN a INSERT SEND
	LINE IN (DIN Audio)	–72dBV (–70dBu), LINE IN a LINE OUTPUT
		–72dBV (–70dBu), LINE IN a OUTPUT (a fuentes LINE)
		–72dBV (–70dBu), LINE IN a MEETING OUTPUT
		–70dBV (–68dBu), LINE IN a PHONES OUTPUT
Cruce de señal	60dB, L/R a 1kHz	
	65dB, Canales de entrada a 1kHz	
Salidas de altavoces	Nivel de ruido (DIN Audio +A): 4mV (ROOM VOLUME al máximo, faders MIC al mínimo, entradas cortadas); 1.2mV (ROOM VOLUME al mínimo)	
	Relación señal-ruido (DIN Audio+A):70dB (salida de 50 W)	

Especificaciones físicas y de voltajes

Alimentación	100 V CA, 50-60 Hz
	120 V CA, 60 Hz
	230 V CA, 50 Hz
	240 V CA, 50 Hz
Consumo	125 W
Corriente en picos	16 A
Entorno electromagnético aplicable	E4
Dimensiones (L x A x P)	482 x 144 x 371(mm) 19.0 x 5.7 x 14.6 (pulgadas)
Peso	11.3 kg (24.9 libras)
Accesorios incluidos	Mando a distancia RC-452 2 x pilas secas AAA Cable de conexión a la corriente Kit de montaje en rack

Esquema de dimensiones

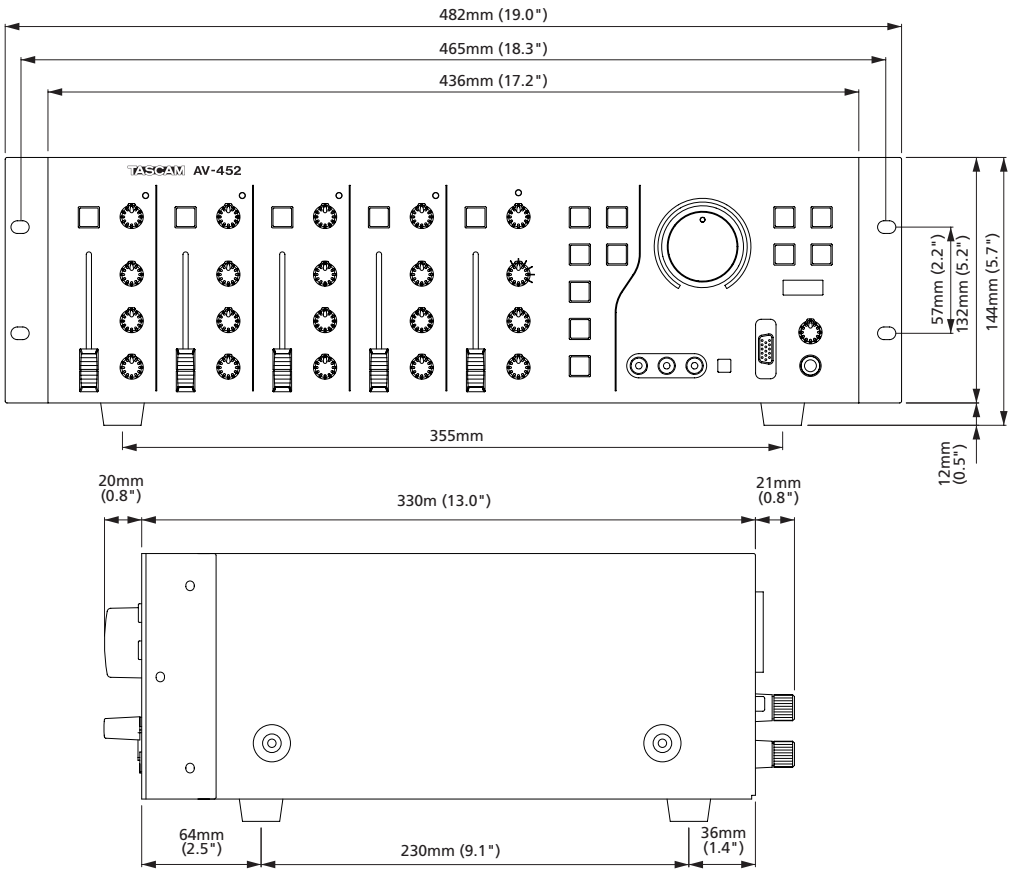
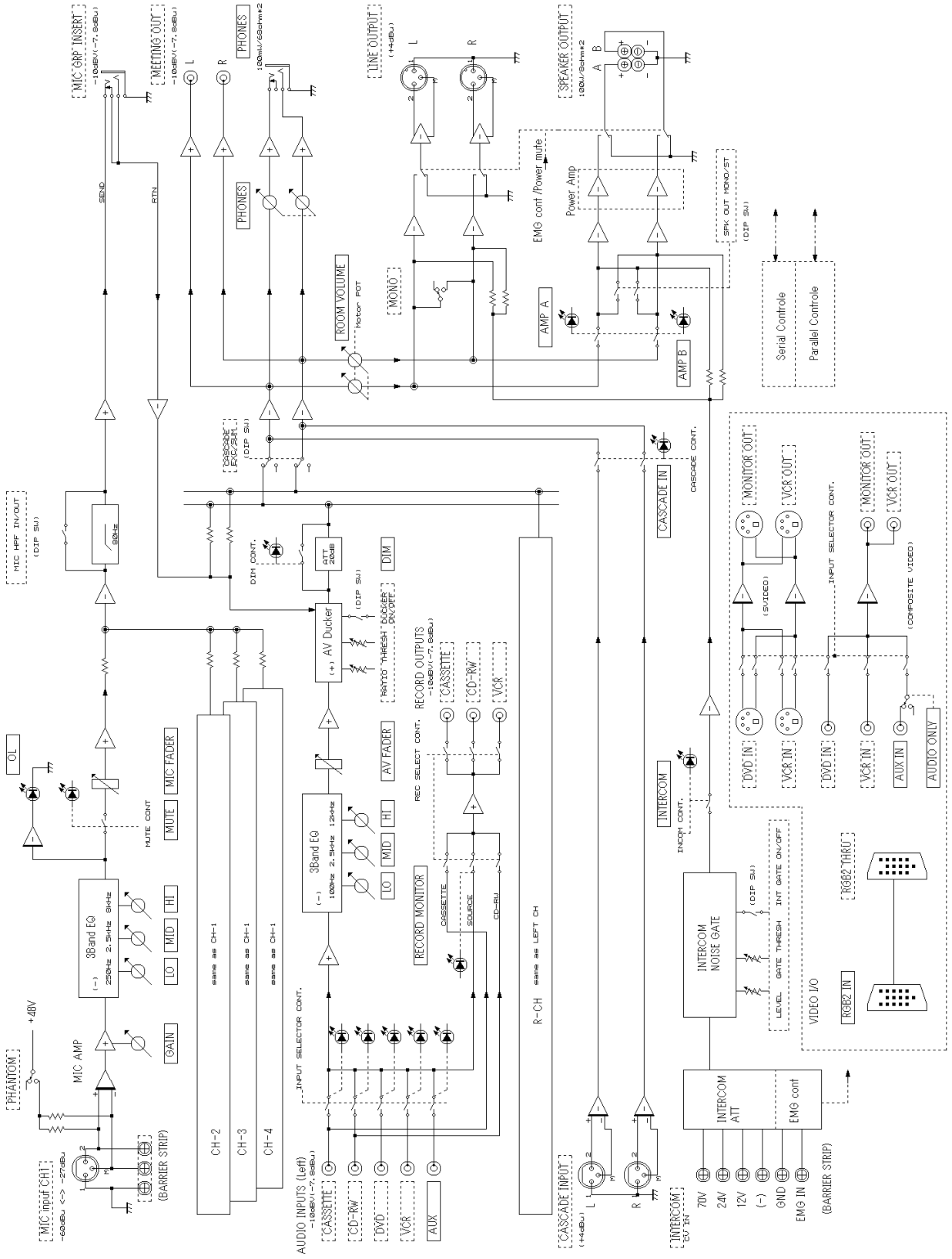


Diagrama de bloques



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AV-452

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Impreso en China

TASCAM
TEAC Professional Division

AV-452

Powered Mixer

OPERATION GUIDE

Note to system integrator/installer: Please fill in the table below, so that users of the equipment have an easy reference when they operate the AV-452.

Connections

Microphone placement
MIC 1
MIC 2
MIC 3
MIC 4
AV sources
CASSETTE
CD-RW
DVD
VCR
AUX
Video monitor connections
RGB 1
RGB 2
Speaker connections
AMP A
AMP B

Other system notes

REC MONITOR switch & indicator

In the **SOURCE** position, the output of the signal selected using the AV selector keys is fed to the inputs of all connected equipment (except the source unit, to avoid signal loops). For example, if the cassette is selected, the cassette output is fed to the CD-RW and VCR inputs. The indicator lights.

In the **CASS** position, the cassette output is fed to the CD-RW and VCR inputs, regardless of the AV selector keys.

In the **CD-RW** position, the CD-RW output is fed to the cassette and VCR inputs, regardless of the AV selector keys.

OL indicators (x 4)

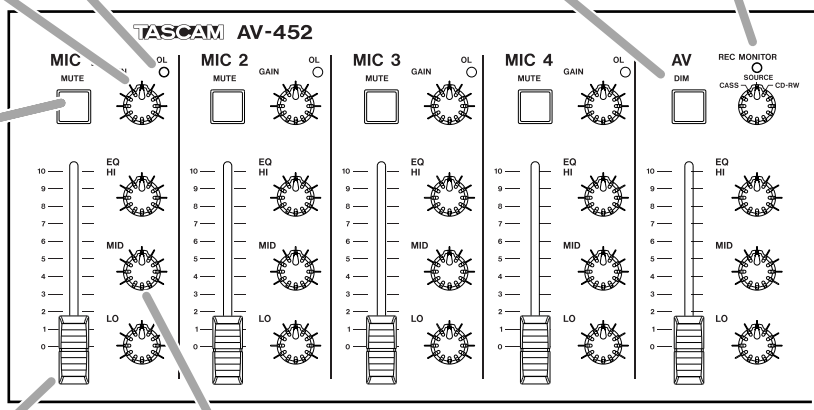
If these indicators light frequently, you should turn the **GAIN** control of the appropriate channel counterclockwise until the indicator only lights on very loud inputs.

AV DIM key

Press this key to reduce the level of the AV signal. Press again to restore the original level.

GAIN controls (x 4)

Usually you do not need to touch these controls unless the **OL** indicator of the channel is lighting frequently.



MUTE keys (x 4)

Press these keys to cut the appropriate microphone signal.

Microphone faders (x 4)

Move up to increase the volume, and down to decrease the volume of the microphone channel. The fader should usually be at about the "**7**" mark.

EQ controls (x 5)

Use these controls to adjust the tone of the microphone and AV inputs.

HI cuts or boosts the high frequencies (treble).

MID cuts or boosts the mid-range (where most of the vocal frequencies are concentrated).

Use **LO** to cut or boost the low (bass) parts of the signal.

RGB 1 & RGB 2 keys

These keys are used to select the RGB input source of an external monitor or projector. They do not affect the output or input from or to the AV-452.

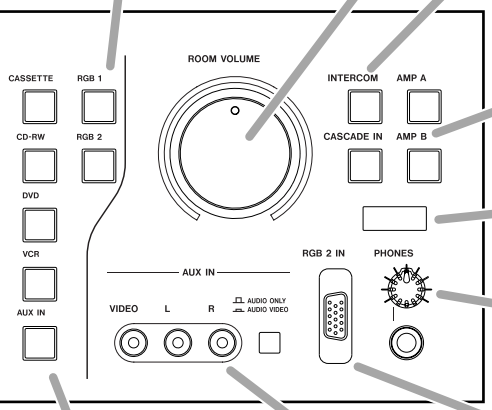
ROOM VOLUME

Remotely-controllable overall volume control.

INTERCOM and CASCADE IN keys

Press the **INTERCOM** key to enable playback of the internal building intercom system through the AV-452

Press the **CASCADE IN** key to add the cascaded input from another unit to your mix (or replace, depending on your setup).



AMP A and AMP B keys

Turn speakers A and B individually on and off.

IR SENSOR

Do not block this window if you are using the RC-452 remote control unit.

PHONES jack &level control

Use a standard pair of stereo headphones here.

RGB 2 IN

Plug in a standard VGA computer video cable here for use as the **RGB 2** input of the monitor/projector.

AV selector keys (CASSETTE, CD-RW, DVD, VCR, AUX IN)

Use these keys to select a single audio-video source for the AV channel. This selected source's level and tone are controlled by the AV fader and EQ controls.

The key of the selected source lights.

AUX in jacks and switch

Connect an external device's audio outputs to the **L** and **R** input jacks. If the device has a video output (e.g. a camcorder), connect this to the **VIDEO** jack.

Use the switch to select **AUDIO ONLY** (out) or **AUDIO VIDEO** (in)

Select this AV source with the **AUX** selector key.

RC-452 remote control unit

SET key

This key (and the **LEARN** key by the **CASSETTE** section) are used for programming the RC-452, and are not used in normal operation.

ICOM and CASCADE IN keys

Press the **ICOM** key to enable playback of the internal building intercom system through the AV-452.

Press the **CASCADE** key to add the cascaded input from another unit to your mix (or replace, depending on your setup).

TV PROJECTOR ON/OFF keys

Use these to turn the external projector on and off

AV selector keys

Use these keys to select a single audio-video source for the AV channel.

AMP A and AMP B keys

Turn speakers A and B individually on and off.

MUTE keys (x 4)

Press these keys to cut the appropriate microphone signal.

CASSETTE keys

Use these programmable keys to control the cassette deck connected to the AV-452 (the **LEARN** key is used for programming purposes).

VOL + and – keys

Use these to adjust the output level (and move the **ROOM VOLUME** control).

CD-RW keys

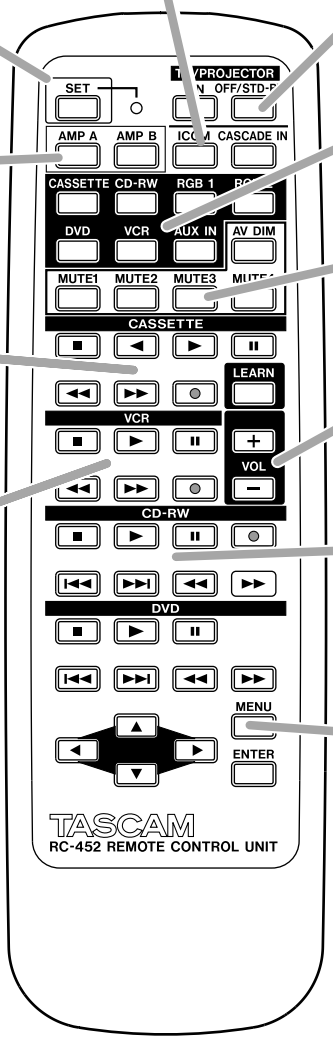
Use these programmable keys to control the CD player/recorder connected to the AV-452.

VCR keys

Use these programmable keys to control the VCR connected to the AV-452.

DVD keys

Use these programmable keys to control the DVD player connected to the AV-452.



Notes (support contact details, etc.)

TASCAM
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AV-452

Console amplifiée

GUIDE D'UTILISATION

Remarque à l'attention de l'installateur : prenez le temps de remplir le tableau ci-dessous afin de permettre ultérieurement à l'utilisateur de disposer d'un document de référence pour l'AV-452 correspondant à sa configuration.

Connexions

Positionnement des micros
MIC 1
MIC 2
MIC 3
MIC 4
Sources audio-vidéo
CASSETTE
CD-RW
DVD
MAGNÉTOSCOPE
AUXILIAIRES
Monitoring vidéo
RGB 1
RGB 2
Systèmes d'écoute
AMP A
AMP B

Remarques sur la configuration système

Sélecteur REC MONITOR et témoin associé

En position **SOURCE** le signal sélectionné par les touches de sélection AV est adressé aux entrées de tous les appareils reliés à la console (à l'exception de la source pour éviter un effet Larsen). Par exemple si le lecteur cassette est sélectionné, son signal est routé vers le graveur (CD-RW) et le magnétoscope (VCR). Le témoin s'allume.

En position **CASS** le signal du lecteur cassette est adressé aux entrées CD-RW et VCR indépendamment des sélections AV.

En position **CD-RW** le signal du CD-RW est adressé aux entrées cassette et VCR indépendamment des sélections AV.

Témoins d'écrêtage OL (x 4)

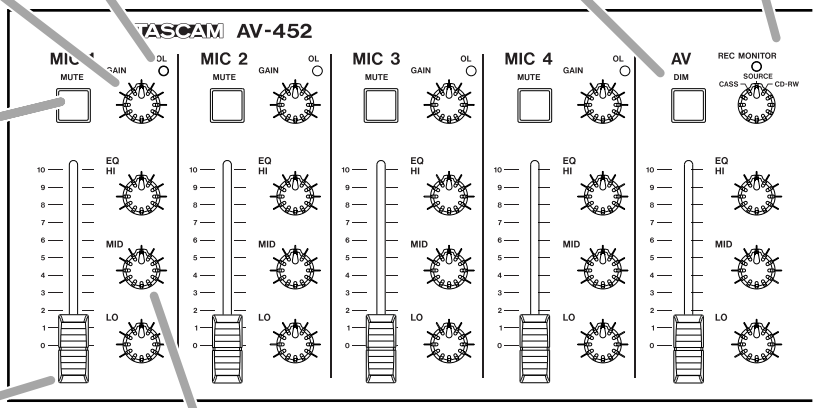
Si ces témoins s'allument trop souvent, utilisez les contrôles de **GAIN** associés (sens anti-horaire) pour faire en sorte qu'ils ne s'allument plus qu'occasionnellement.

Atténuation AV DIM

Permet de réduire le niveau du signal AV. Une seconde pression restitue le niveau original

Contrôles de GAIN (x 4)

Vous n'avez en principe à y toucher que si le témoin d'écrêtage **OL** de la voie s'allume souvent.



Touches de MUTE (x 4)

Utilisez-les pour couper temporairement le signal du canal correspondant.

Faders micros (x 4)

Ces atténuateurs permettent d'augmenter ou de réduire le niveau du canal micro correspondant. Ils doivent en principe être positionnés sur "**7**".

Boutons d'égalisation EQ (x 5)

Permettent d'ajuster la tonalité des signaux micro et AV.

HI renforcement ou coupure des aigus.

MID renforcement ou coupure des mediums (correspondant principalement aux fréquences vocales).

LO renforcement ou coupure des graves.

Touches RGB 1 & RGB 2

Permettent de sélectionner la source RGB d'un moniteur ou d'un projecteur externe. Elles n'affectent pas les entrées et sorties de l'AV-452.

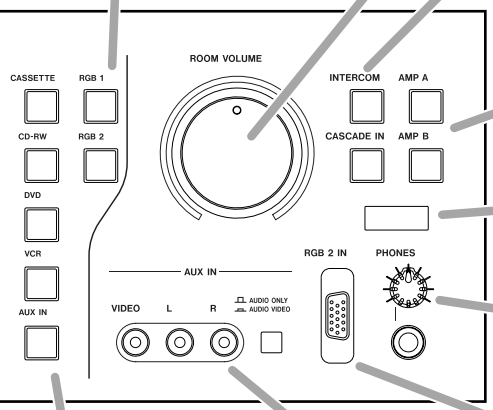
Volume d'écoute (ROOM)

Volume général pilotable par télécommande.

Touches INTERCOM et CASCADE IN

La touche **INTERCOM** permet d'activer l'écoute du système d'intercom via l'AV-452

La touche **CASCADE IN** permet d'activer l'ajout dans le mix d'un signal cascadé depuis un autre appareil (ou son remplacement selon votre configuration.



Touches AMP A et AMP B

Activent/désactivent séparément les écoutes A et B.

CAPTEUR INFRAROUGE

Veillez à ne pas obstruer ce capteur si vous utilisez la télécommande RC-452.

Connecteur et volume casque

Permet le branchement d'un casque stéréo standard.

RGB 2 IN

Permet le branchement d'un câble VGA d'ordinateur standard pour servir de source **RGB 2** au monitoring ou à la projection vidéo.

Touches de sélection AV (CASSETTE, CD-RW, DVD, VCR, AUX IN)

Permettent de sélectionner une source audiovidéo pour le canal AV. Le niveau sonore et l'égalisation en sont contrôlés par le fader et les boutons EQ de ce canal.

Connecteurs et sélecteur AUX IN

Branchez les sorties audio d'une unité externe sur les entrées **L** et**R** et sa sortie vidéo éventuelle (cas d'un camescope par ex.), sur l'entrée **VIDEO.**

Le sélecteur permet de choisir entre **AUDIO ONLY** (relevé) et **AUDIO VIDEO** (enfoncé).

Cette source correspond à la touche**AUX** dans les sélections AV.

Télécommande RC-452

Touche SET

Cette touche, associée à la touche **LEARN** de la section **CASSETTE** permet la programmation de la RC-452 et n'est pas utilisée en fonctionnement normal.

Touches ICOM et CASCADE IN

La touche **ICOM** permet d'activer l'écoute du circuit d'intercom dans l'AV-452.

La touche **CASCADE** permet l'ajout dans le mixd'un signal cascadé depuis un autre appareil (ou son remplacement selon votre configuration.

Touches TV PROJECTOR ON/OFF

Permettent d'activer/désactiver le projecteur externe

Touches AMP A et AMP B

Activent/désactivent séparément les écoutes A et B.

Sélecteurs de source AV

Permettent la sélection d'une source audiovidéo pour le canal AV.

Touches de MUTE (x 4)

Utilisez-les pour couper le signal du canal correspondant.

Touches CASSETTE

Ces touches programmables permettent le contrôle de la platine cassette branchée sur l'AV-452 (la touche **LEARN** permettant sa programmation).

Touches VOL + et –

Réglage du niveau de sortie (et déplacement du contrôle **ROOM VOLUME**).

Touches VCR

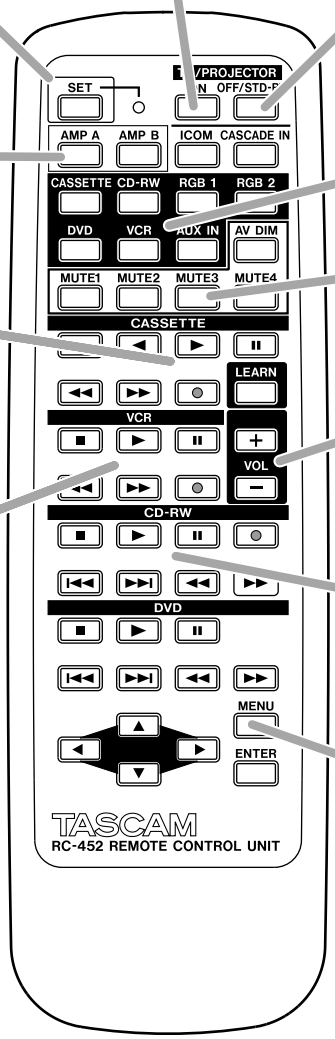
Ces touches programmables permettent le contrôle du magnétoscope branchée sur l'AV-452

Touches CD-RW

Ces touches programmables permettent le contrôle du lecteur/graveur CD branché sur l'AV-452.

Touches DVD

Ces touches programmables permettent le contrôle du lecteur DVD branché sur l'AV-452.



Remarques (contacts maintenance, etc.)

TASCAM
TEAC Professional Division

AV-452

Mischpult/Verstärker für Präsentationen

KURZANLEITUNG

Für Systemintegratoren und Installateure: Tragen Sie bitte in die Tabelle unten Informationen zu den einzelnen Komponenten ein (Standort, Verkabelung, Besonderheiten usw.), um Nutzern der Anlage die Bedienung zu vereinfachen.

Angeschlossene Komponenten

Mikrofone (Standort)
MIC 1
MIC 2
MIC 3
MIC 4
AV-Quellen
CASSETTE
CD-RW
DVD
VCR
AUX
Videomonitore
RGB 1
RGB 2
Lautsprecher
AMP A
AMP B

Weitere Systemhinweise

REC MONITOR-Schalter und -Anzeige

In der Stellung **SOURCE** wird das mit den AV-Tasten gewählte Signal den Eingängen aller angeschlossenen Geräte (mit Ausnahme des Quellgerätes) zugeführt. Wenn beispielsweise **CASSETTE** gewählt ist, wird das Signal des Kassettenrecorders an die Eingänge des CD-RW- und des Videorecorders geleitet. In dieser Stellung leuchtet die Anzeige.

In Stellung **CASS** wird immer das Signal des Kassttenrecorders an den CD-RW- und den Videorecorder geleitet, ganz gleich welche der AV-Tasten gedrückt ist.

In Stellung **CD-RW** wird immer das CD-RW-Signal an den Kassetten- und den Videorecorder geleitet.

Übersteuerungsanzeigen (4 x)

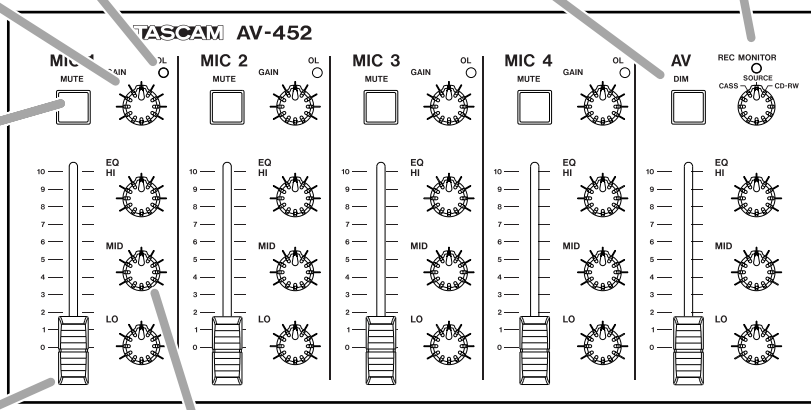
Wenn eine dieser Anzeigen häufig leuchtet, drehen Sie den entsprechenden **GAIN**-Regler so weit entgegen dem Uhrzeigersinn, bis die Anzeige nur bei sehr lauten Eingangssignalen aufleuchtet.

AV DIM-Taste

Drücken Sie diese Taste, um den Pegel des AV-Signals zu dämpfen. Drücken Sie sie noch einmal, um den ursprünglichen Pegel wieder herzustellen.

Eingangspegelregler (4 x)

Stellen Sie hiermit die Pegel der Mikrofone so ein, dass die **OL**-Anzeigen nicht dauerhaft leuchten (sie d¸rfen jedoch gelegentlich aufflackern).



Stummschaltung (4 x)

Verwenden Sie diese Tasten, um den entsprechenden Mikrofonkanal stummzuschalten.

Mikrofonpegel-Fader (4 x)

Schieben Sie diese Regler nach oben (lauter) oder nach unten (leiser), um die Lautstärke des jeweiligen Mikrofonkanals zu beeinflussen.

Die besten Übertragungseigenschaften erzielen Sie ungefähr in der Stellung **7**.

Klangregler (5 x)

Mit diesen Reglern beeinflussen Sie den Klang der Mikrofonsignale und des AV-Signals.

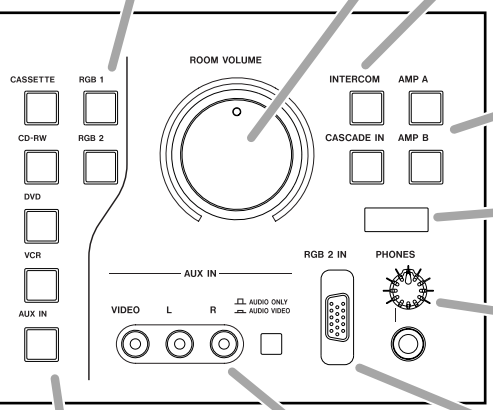
HI verstärkt oder dämpft die Höhen.

MID verstärkt oder dämpft die Mitten (hier konzentrieren sich die meisten Frequenzen der menschlichen Stimme).

LO verstärkt oder dämpft den Tieftonanteil (die Bässe) des Signals.

RGB-Tasten (1 und 2)

Hiermit wählen Sie eine RGB-Quelle für einen externen Monitor oder Projektor aus. Diese Tasten haben keinen Einfluss auf andere Signale vom oder zum AV-452.



AV-Wahltasten (CASSETTE, CD-RW, DVD, VCR, AUX IN)

Hiermit wählen Sie, welche einzelne Audio-/Video-Quelle dem AV-Kanal zugeführt wird. Pegel und Klang dieser Quelle beeinflussen Sie mit dem Fader (Schieberegler) und den EQ-Reglern des AV-Kanals.

Die Taste der gewählten Quelle leuchtet.

Gesamtlautstärke-Regler

Fernsteuerbarer Regler für die Gesamtlautstärke der Mischung.

Tasten INTERCOM und CASCADE IN

Drücken Sie die **INTERCOM**-Taste, um das Signal der Durchsageanlage des Gebäudes über den AV-452 zu übertragen.

Drücken Sie die **CASCADE IN**-Taste, um das Signal eines zusätzlichen Mischpults Ihrer Mischung hinzuzufügen (oder durch diese zu ersetzen, je nach Konfiguration).

Tasten für Verstärkerausgänge A/B

Hiermit schalten Sie die Lautsprecher A und B unabhängig voneinander ein oder aus.

Infrarot-Sensor

Versperren Sie nicht die Sicht auf dieses Fenster, wenn Sie die Fernbedienung nutzen.

Kopfhörerausgang und -Regler

Hier können Sie einen üblichen Stereokopfhörer anschließen.

Zweiter RGB-Eingang

Schließen Sie hier den Videoausgang eines Computers an (mittels üblichem VGA-Kabel), um dessen Bildsignal über die Taste **RGB 2** auf den Monitor/Projektor zu schalten.

Zusatzeingänge und Wahltaste

Verbinden Sie die Audioausgänge eines externen Geräts mit den Buchsen **L** und **R**. Falls das Gerät einen Videoausgang hat (z.B. Camcorder), verbinden Sie diesen mit der **VIDEO**-Buchse.

Mit dem Schalter wählen Sie zwischen **NUR AUDIO** (nicht gedr¸ckt) und **AUDIO/VIDEO** (gedrückt).

Um diese Quelle zu wählen, drücken Sie die **AUX**-Taste.

Fernbedienung RC-452

SET-Taste

Diese (und die **LEARN**-Taste neben dem Bereich **CASSETTE**) werden für die Programmierung der Fernbedienung benötigt und haben für den normalen Gebrauch keine Bedeutung.

Tasten ICOM und CASCADE IN

Drücken Sie die **ICOM**-Taste, um das Signal der Durchsageanlage des Gebäudes über den AV-452 zu übertragen.

Drücken Sie die **CASCADE IN**-Taste, um das Signal eines zusätzlichen Mischpults Ihrer Mischung hinzuzufügen (oder durch diese zu ersetzen, je nach Konfiguration).

TV/Projektor ein/aus

Hiermit schalten Sie den externen Projektor ein und aus.

Tasten für Verstärker-ausgänge A/B

Hiermit schalten Sie die Lautsprecher A und B unabhängig voneinander ein oder aus.

AV-Wahltasten

Hiermit wählen Sie, welche Audio-/Video-Quelle dem AV-Kanal zugeführt wird.

Tasten für Kassettendeck

Mit diesen programmierbaren Tasten steuern Sie ein fernbedienbares Kassettendeck (die **LEARN**-Taste dient zur Programmierung).

Stummschaltung (4 x)

Nutzen Sie diese Tasten, um den entsprechenden Mikrofonkanal stummzuschalten.

Lautstärke + und –

Hiermit steuern Sie den Regler **ROOM VOLUME** am AV-452 und damit die Gesamtlautstärke.

Tasten für Videorecorder

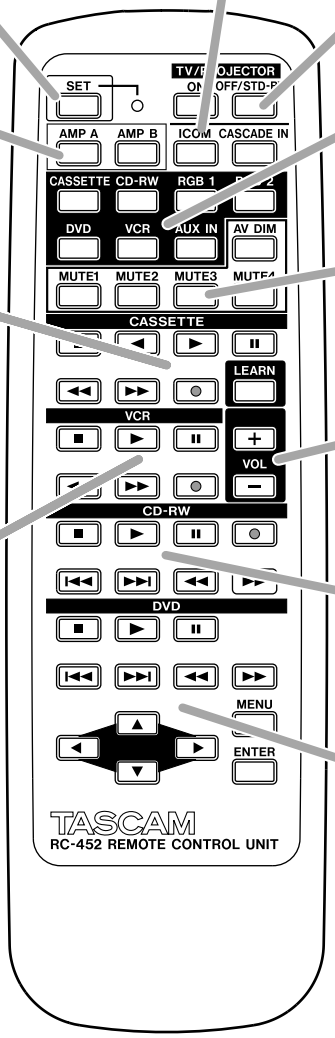
Mit diesen programmierbaren Tasten steuern Sie einen fernbedienbaren Videorecorder.

Tasten für CD-RW-Recorder

Mit diesen programmierbaren Tasten steuern Sie einen fernbedienbaren CD-RW-Recorder.

Tasten für DVD-Player

Mit diesen programmierbaren Tasten steuern Sie einen fernbedienbaren DVD-Player.



Anmerkungen (Kundendienst, Händleranschrift usw.)

TASCAM
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AV-452

Mixer Amplificato

GUIDA OPERATIVA

Nota per l'installatore: compilare la tabella seguente affinché gli utilizzatori dell'apparecchiatura abbiano dei precisi riferimenti quando operano con AV-452

Connessioni

Posizionamento Microfoni
MIC 1
MIC 2
MIC 3
MIC 4
Sorgenti AV
CASSETTE
CD-RW
DVD
VCR
AUX
Connessioni monitor video
RGB 1
RGB 2
Connessioni altoparlanti
AMP A
AMP B

Altre note

Indicatore e selettore REC MONITOR

Nella posizione **SOURCE,** l'uscita del segnale selezionato tramite il relativo selettore, è sommata agli ingressi di tutti i dispositivi collegati (ad eccezione dell'unità sorgente per evitare loop). Per esempio, se è selezionata la voce cassetta, il relativo segnale viene sommato ai segnali provenienti dal CD-RW e dal VCR. L'indicatore si illumina.

Nella posizione **CASS,** il segnale dell'uscita cassette viene sommato a quelli provenienti dal CD-RW e dal VCR.

Nella posizione **CD-RW** il segnale dell'uscita del CD-RW viene sommato a quelli provenienti dalla cassetta e dal VCR.

Indicatori OL (x 4)

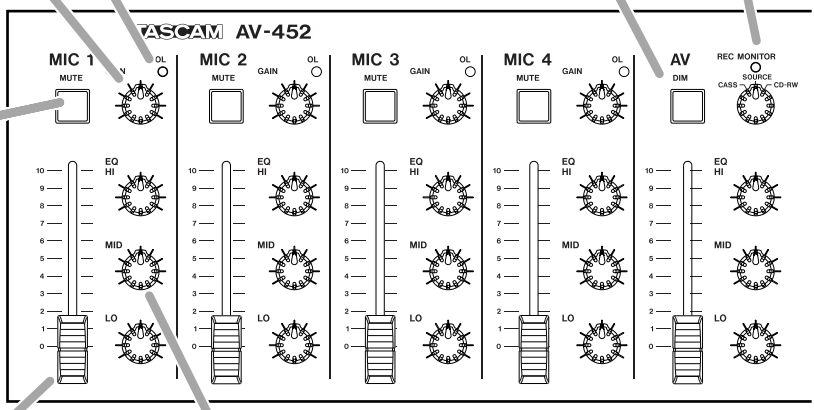
Se questi indicatori lampeggiano velocemente bisogna agire sul relativo controllo **GAIN** di canale fino a quando il lampeggio non rallenta.

Tasto AV DIM

La pressione di questo tasto riduce il livello del segnale **AV**. Premere di nuovo per ripristinare il livello originale.

Controlli GAIN (x 4)

Di solito non è necessario agire su questi controlli a meno che l'indicatore di canale **OL** non lampeggi velocemente.



Tasti MUTE (x 4)

Premere questi tasti per escludere i relativi segnali microfonici.

Fader Microfone (x 4)

Muovere il fader verso l'alto per aumentare il volume del microfono e verso il basso per diminuirlo. Il valore tipico del livello del fader dovrebbe essere attorno a "**7**".

Controlli EQ (x 5)

Utilizzare questi controlli per modulare i toni dei microfoni e dei segnali AV.

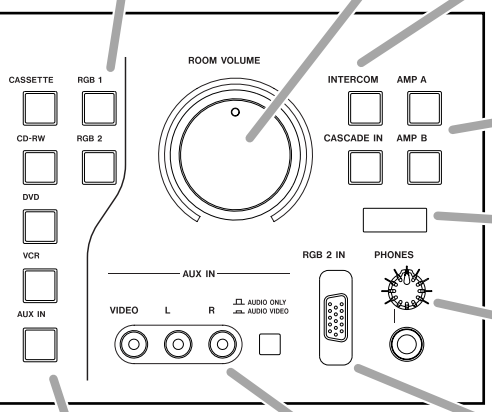
HI controlla le frequenze alte del segnale.

MID controlla le frequenze medie (dove sono concentrate le frequenze vocali).

LO controlla le frequenze basse del segnale.

Tasti RGB 1 e RGB 2

Questi tasti sono utilizzati per selezionare i segnali RGB di monitor e proiettori esterni. In alcun modo non influenzano gli ingressi e le uscite da e per AV-452.



Tasti di selezione AV (CASSETTE, CD-RW, DVD, VCR, AUX IN)

Utilizzare questi tasti per selezionare le singole sorgenti audio/video per il canale AV. I livelli e i toni della sorgente selezionata sono controllati dai fader AV e dai controlli EQ

Il tasto della sorgente selezionata si illumina.

ROOM VOLUME

Volume controllabile in remoto dal telecomando.

Tasti INTERCOM e CASCADE IN

Premere il tasto **INTERCOM** per abilitare la funzione di intercomunicazione di AV-452.

Premere il tasto **CASCADE IN** per aggiungere in cascata al mixaggio (o sostituire, in funzione delle impostazioni date), i segnali provenienti da un'altra unità.

Tasti AMP A e AMP B

Attiva/Disattiva individualmente gli altoparlanti A e B.

SENSORE IR

Non ostruire quest'area se si utilizza il telecomando RC-452.

Ingresso CUFFIA e controllo del volume di ascolto

Utilizzare qui un paio di cuffie stereo standard.

RGB 2 IN

Ingresso per un cavo video VGA standard per collegare la presa **RGB 2** con un monitor/proiettore.

Ingressi e tasto AUX IN

Collega un'uscita di un dispositivo audio esterno agli ingressi **L** e **R**. Se l'unità ha un'uscita video (per esempio una telecamera), connetterla anche all'ingresso **VIDEO**.

Utilizzare il tasto **AUX IN** per selezionare le opzioni **AUDIO ONLY** (out) o **AUDIO VIDEO** (in).

Premere il tasto **AUX** per selezionare questi ingressi per il canale AV.

Telecomando RC-452

Tasti INTERCOM e CASCADE IN

Premere il tasto **INTERCOM** per abilitare la funzione di intercomunicazione di AV-452.

Premere il tasto **CASCADE IN** per aggiungere in cascata al mixaggio (o sostituire, in funzione delle impostazioni date), i segnali provenienti da un'altra unità.

Tasto SET

Questo tasto (e quello **LEARN** nella sezione **CASSETTE**), sono utilizzati per programmare il telecomando RC-452 e non sono usati per altre operazioni.

Tasti TV PROJECTOR ON/OFF

Utilizzare questi tasti per attivare/disattivare un TV/proiettore esterno.

Tasti di selezione AV

Utilizzare questi tasti per selezionare una sorgente video esterna per il canale AV.

Tasti AMP A e AMP B

Attiva/Disattiva individualmente gli altoparlanti A e B.

Tasti MUTE (x 4)

Premere questi tasti per escludere i relativi segnali microfonici.

Tasti CASSETTE

Utilizzare questi tasti programmabili per controllare l'unita a cassette collegata con AV-452 (il tasto **LEARN** è utilizzato per funzioni di programmazione).

Tasti VOL + and VOL -

Utilizzare questi tasti per impostare il volume (e pilotare il controllo **ROOM VOLUME** su AV-452).

Tasti CD-RW

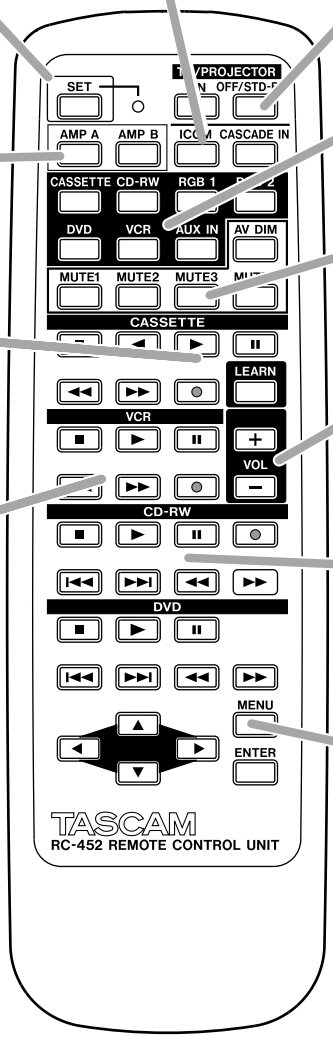
Utilizzare questi tasti programmabili per controllare il CD player/recorder collegato con AV-452.

Tasti VCR

Utilizzare questi tasti programmabili per controllare il videoregistratore collegato con AV-452.

Tasti DVD

Utilizzare questi tasti programmabili per controllare il lettore DVD collegato con AV-452.



Note

TASCAM
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AV-452

Mesa de mezclas autoamplificada

MANUAL DE INSTRUCCIONES

Nota para el instalador del sistema: Rellene el formulario siguiente para que los usuarios de este aparato dispongan de un esquema rápido de la configuración del AV-452.

Conexiones

Colocación de micrófonos
MIC 1
MIC 2
MIC 3
MIC 4
Fuentes AV
CASSETTE
CD-RW
DVD
VCR
AUX
Conexiones de monitores de vídeo
RGB 1
RGB 2
Conexiones de altavoces
AMP A
AMP B

Otras notas acerca del sistema

Interruptor e indicador REC MONITOR

En la posición **SOURCE**, la salida de la señal elegida por medio de las teclas selectoras AV será pasada a las entradas de todos los aparatos que tenga conectadas (excepto a la propia unidad fuente, para evitar bucles de señal). Por ejemplo, si ha elegido el cassette, la salida de este será pasada a las entradas de CD-RW y VCR. El indicador se encenderá.

En la posición **CASS**, la salida del cassette es pasada a las entradas de CD-RW y VCR, independientemente de la selección realizada con las teclas selectoras AV.

En la posición **CD-RW**, la salida del CD-RW será pasada a las entradas de cassette y VCR, independientemente de las teclas selectoras AV.

Indicadores OL (x 4)

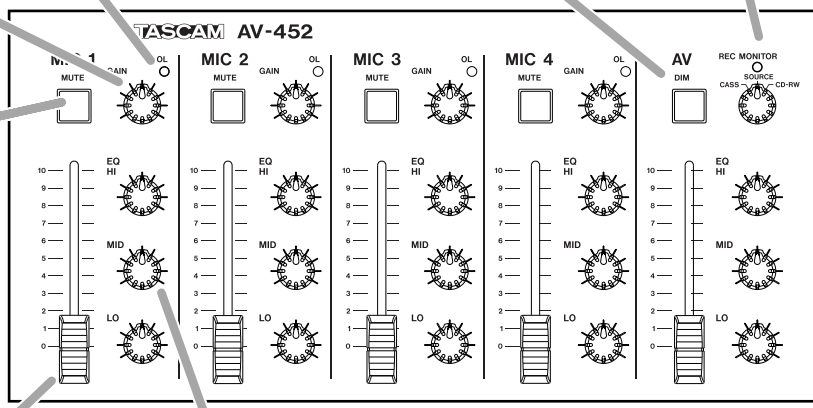
Si estos indicadores se iluminan con frecuencia, debería girar el control **GAIN** del canal adecuado hacia la izquierda hasta que este indicador solo se ilumine con las entradas con volumen más alto.

Tecla AV DIM

Pulse esta tecla para reducir el nivel de la señal AV. Púlselo de nuevo para restaurar el nivel original.

Controles GAIN (x 4)

Habitualmente no hará falta que toque estos controles salvo que el indicador **OL** del canal se ilumine con mucha frecuencia.



Teclas MUTE (x 4)

Pulse estas teclas para cortar la señal de micro correspondiente.

Faders de micrófono (x 4)

Muévalos hacia arriba para aumentar el volumen del canal de micrófono y hacia abajo para disminuirlo. Debería colocar habitualmente el fader sobre la marca "**7**".

Controles EQ (x 5)

Use estos controles para ajustar el tono del micrófono y las entradas AV.

HI realza o corta las altas frecuencias (agudos).

MID realza o corta el rango medio (en el que se concentran la mayoría de las frecuencias vocales).

Utilice el control **LO** para realzar o cortar las partes graves de la señal.

ROOM VOLUME

Control de volumen general, que también puede controlar a través del mando a distancia.

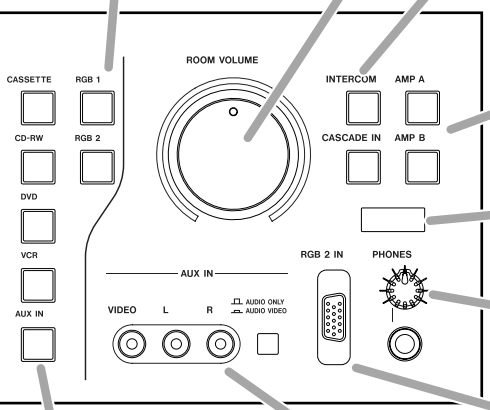
Teclas RGB 1 & RGB 2

Estas teclas se usan para elegir la fuente de entrada RGB de un monitor o proyector externo. No afectan a la salida o la entrada de o al AV-452.

Teclas INTERCOM y CASCADE IN

Pulse la tecla **INTERCOM** para que pueda escuchar a través del AV-452 la salida de cualquier sistema de intercomunicación que pueda tener disponible en la sala o edificio.

Pulse la tecla **CASCADE IN** para añadir la entrada de conexión en cascada de otra unidad a su mezcla (o sustituirla, dependiendo de su configuración).



Teclas AMP A y AMP B

Activa o desactiva de forma individual los altavoces A y B.

SENSOR DE IR (infrarrojos)

Nunca tape esta ventanita si está usando el mando a distancia RC-452.

Control de nivel y conector PHONES

Conecte aquí unos auriculares stereo standard.

Entrada RGB 2 IN

Conecte aquí un cable de vídeo VGA standard para usarlo como la entrada **RGB 2** del monitor/proyector.

Conectores e interruptor AUX in

Conecte las salidas audio de un dispositivo exterior a las tomas de entrada **L** y **R**. Si el dispositivo tiene una salida de vídeo (p.e. una camcorder), conéctela a la toma **VIDEO**.

Utilice el interruptor para elegir **SOLO AUDIO** (no pulsado) o **AUDIO VIDEO** (pulsado)

Select this AV source with the **AUX** selector key.

Teclas selectoras AV (CASSETTE, CD-RW, DVD, VCR, AUX IN)

Utilice estas teclas para elegir una única fuente audio-vídeo para el canal AV. El nivel y el tono de la fuente elegida son controlados por el fader AV y los controles EQ.

La tecla de la fuente elegida se iluminará.

Mando a distancia RC-452

Tecla SET

Esta tecla (y la tecla **LEARN** de la sección **CASSETTE**) se usa para programar el RC-452, no teniendo ningún uso en el funcionamiento normal.

Teclas ICOM y CASCADE IN

Pulse la tecla **INTERCOM** para que pueda escuchar a través del AV-452 la salida de cualquier sistema de intercomunicación que pueda tener disponible en la sala o edificio.

Pulse la tecla **CASCADE IN** para añadir la entrada de conexión en cascada de otra unidad a su mezcla (o sustituirla, dependiendo de su configuración).

Teclas TV PROJECTOR ON/OFF

Use estas teclas para activar o desactivar el proyector externo

Teclas AMP A y AMP B

Activan o desactivan de forma individual los altavoces A y B.

Teclas selectoras AV

Uselas para elegir una única fuente de audio-vídeo para el canal AV.

Teclas CASSETTE

Use estas teclas programables para controlar la pletina de cassette que esté conectada al AV-452 (la tecla **LEARN** se usa en las funciones de programación).

Teclas MUTE (x 4)

Pulse estas teclas para cortar la señal de micrófono correspondiente.

Teclas VOL + y –

Utilice estas teclas para ajustar el nivel de salida (y hacer que se mueva el control **ROOM VOLUME**).

Teclas VCR

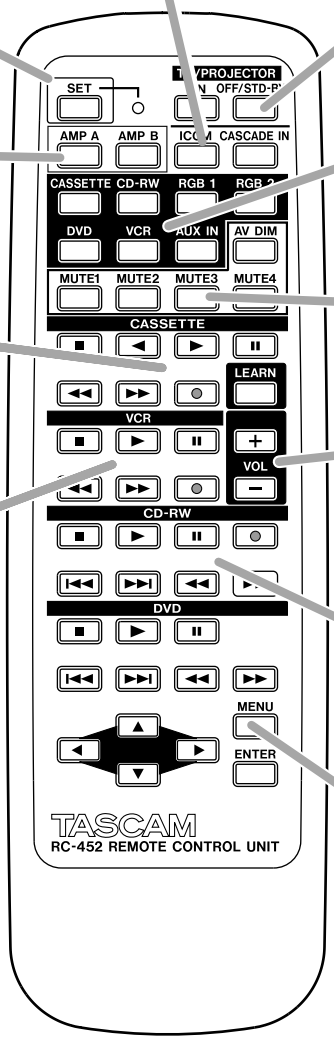
Use estas teclas programables para controlar el VCR que tenga conectado al AV-452.

Teclas CD-RW

Use estas teclas programables para controlar el reproductor / grabador de CD que tenga conectado al AV-452.

Teclas DVD

Use estas teclas programables para controlar el reproductor de DVD que tenga conectado al AV-452.



Notas (soporte técnico, etc.)

Printed in China

TASCAM
TEAC Professional Division

SCHEMATIC DIAGRAM AV-452

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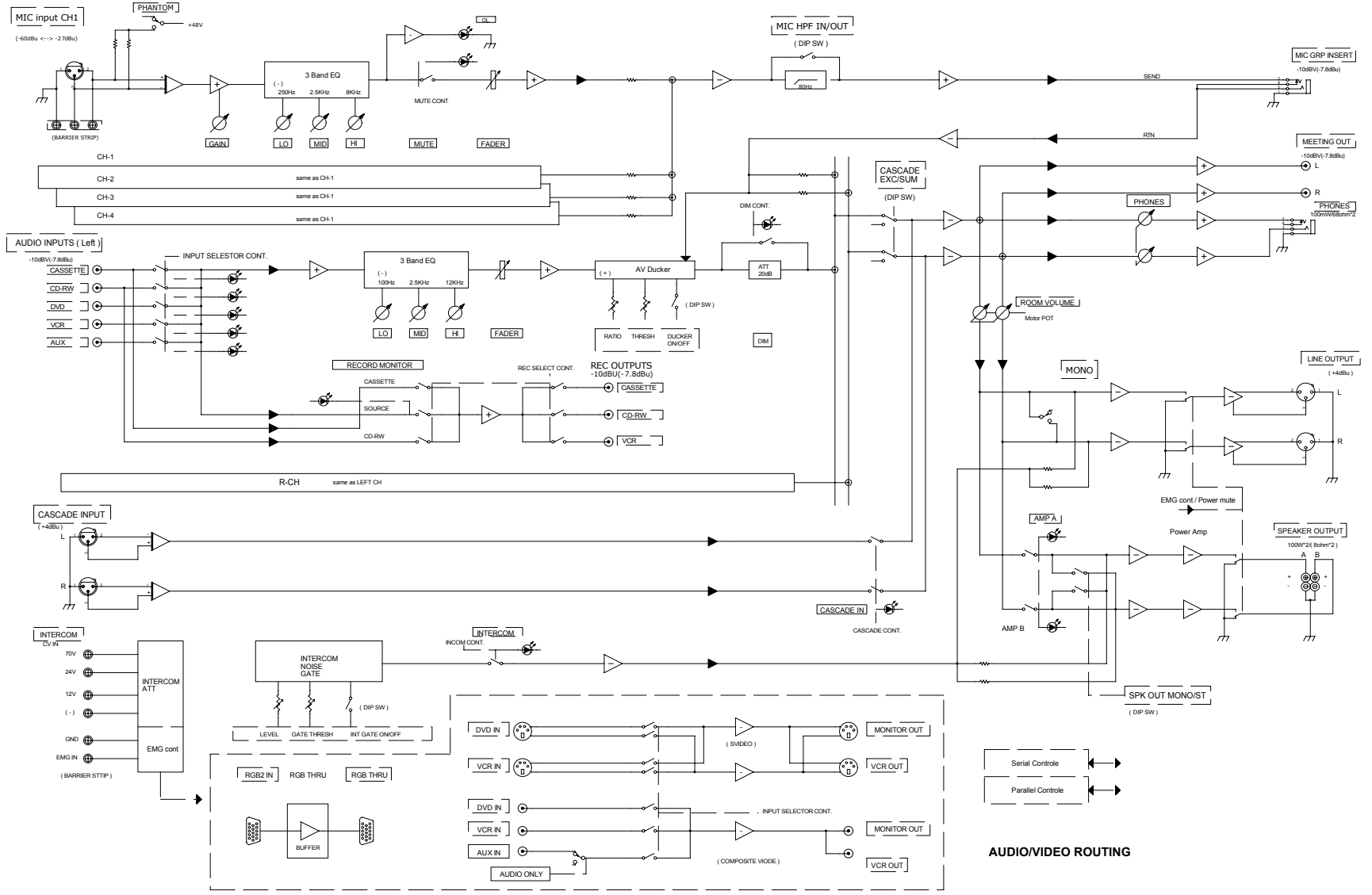
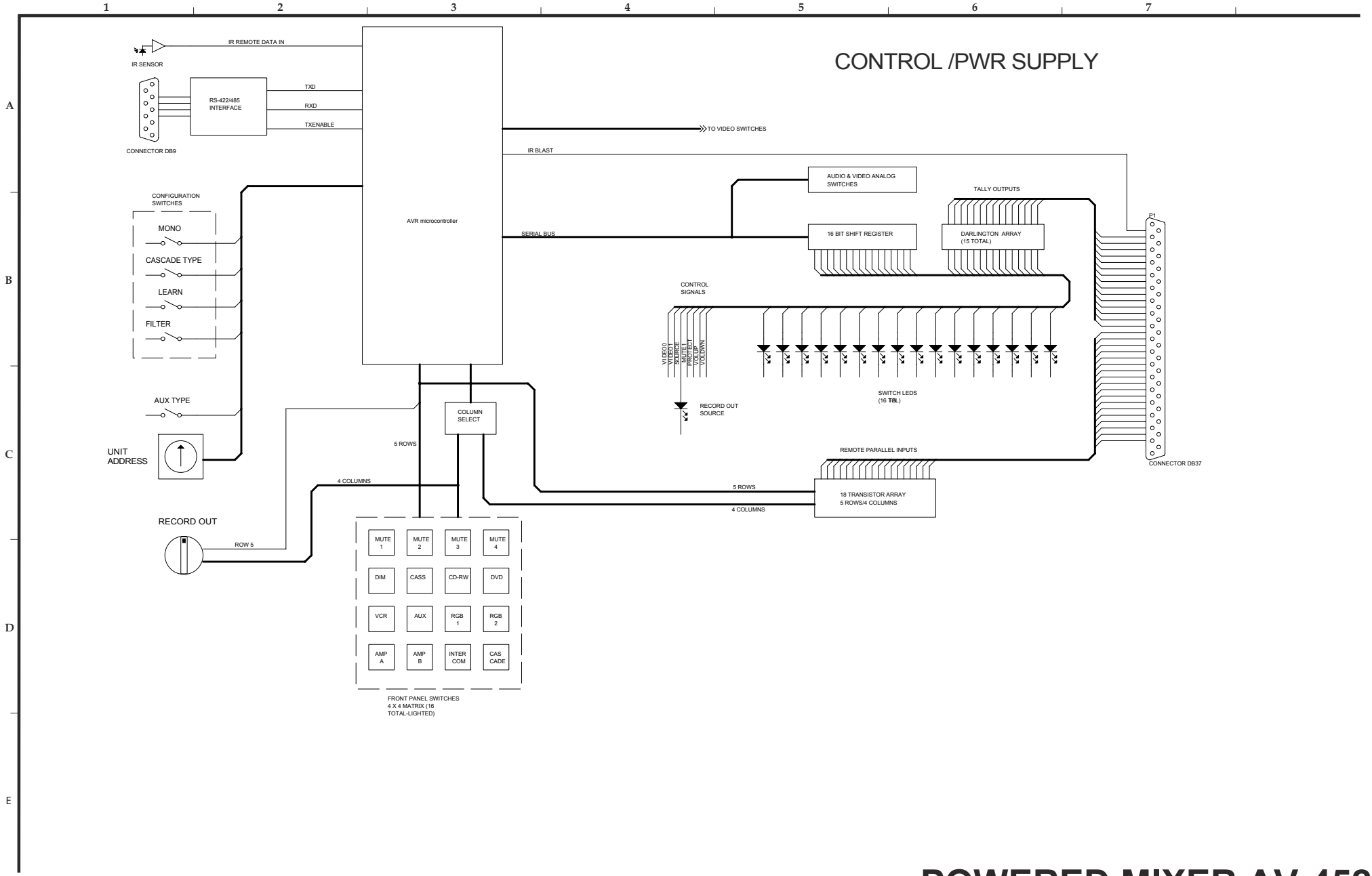


AUDIO/VIDEO ROUTING

POWERED MIXER AV-452

1 st Issue; November 2005



POWERED MIXER AV-452

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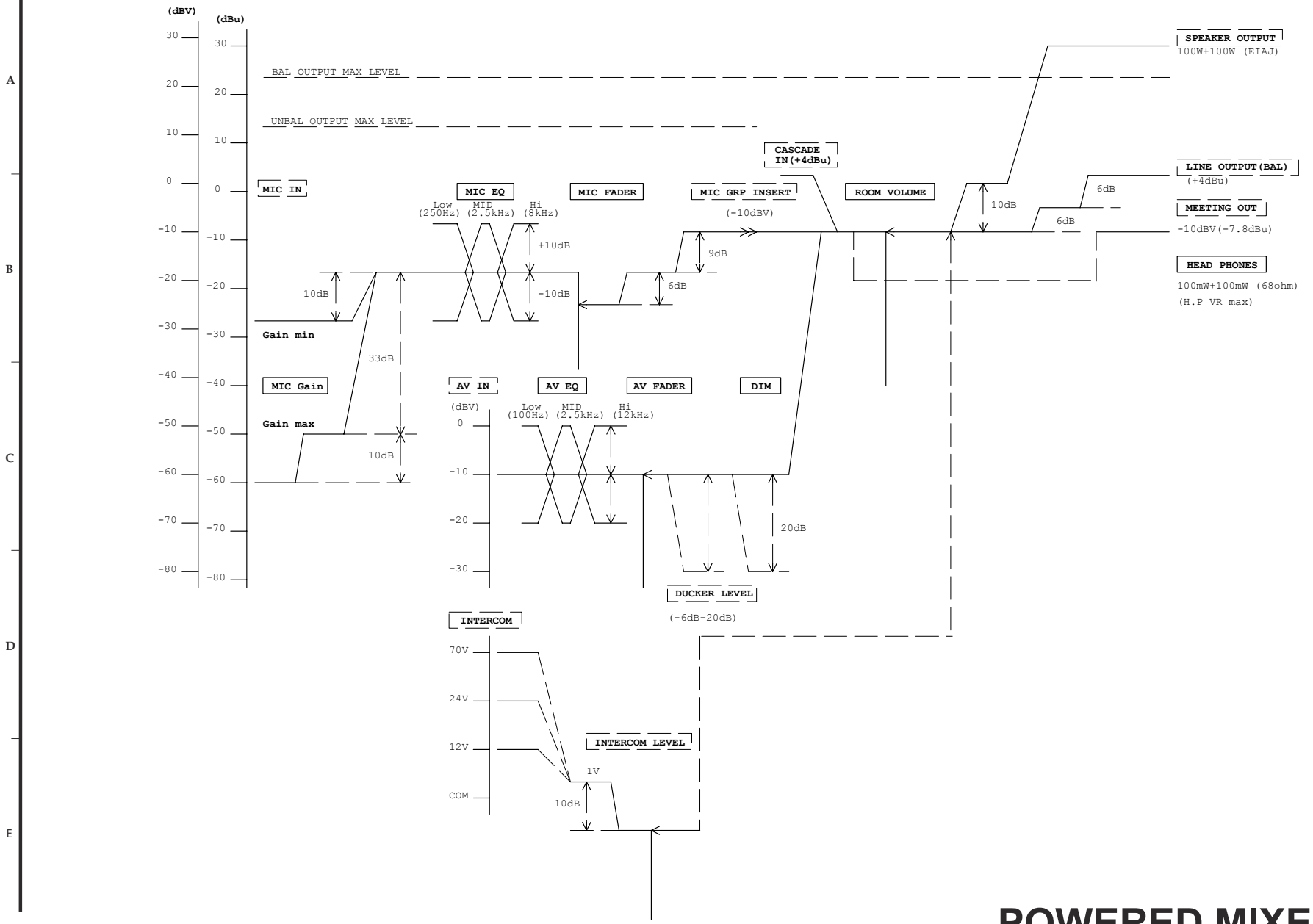

POWERED MIXER AV-452

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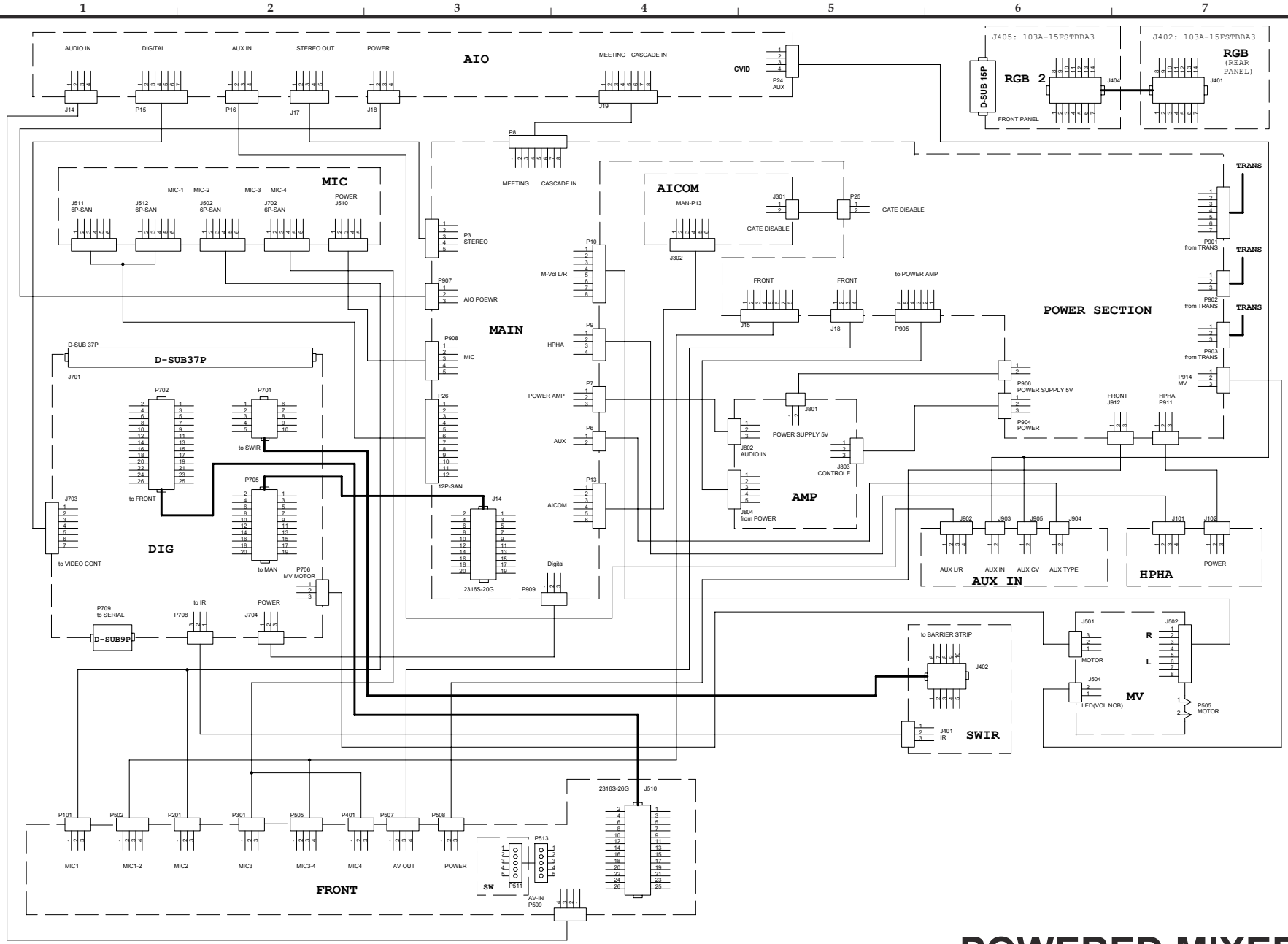
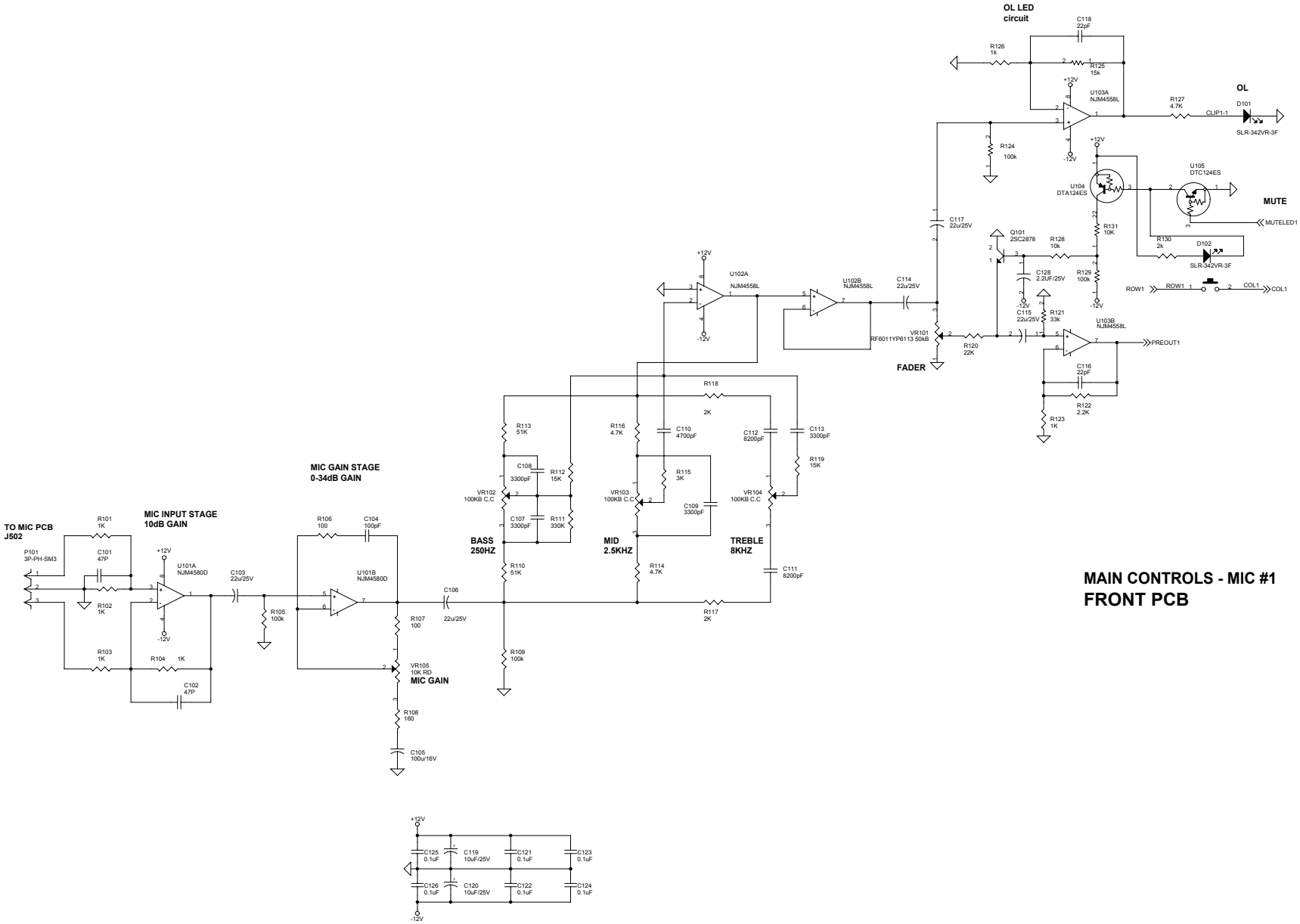


POWERED MIXER AV-452

1 st Issue; November 2005



MAIN CONTROLS - MIC #1
FRONT PCB

POWERED MIXER AV-452

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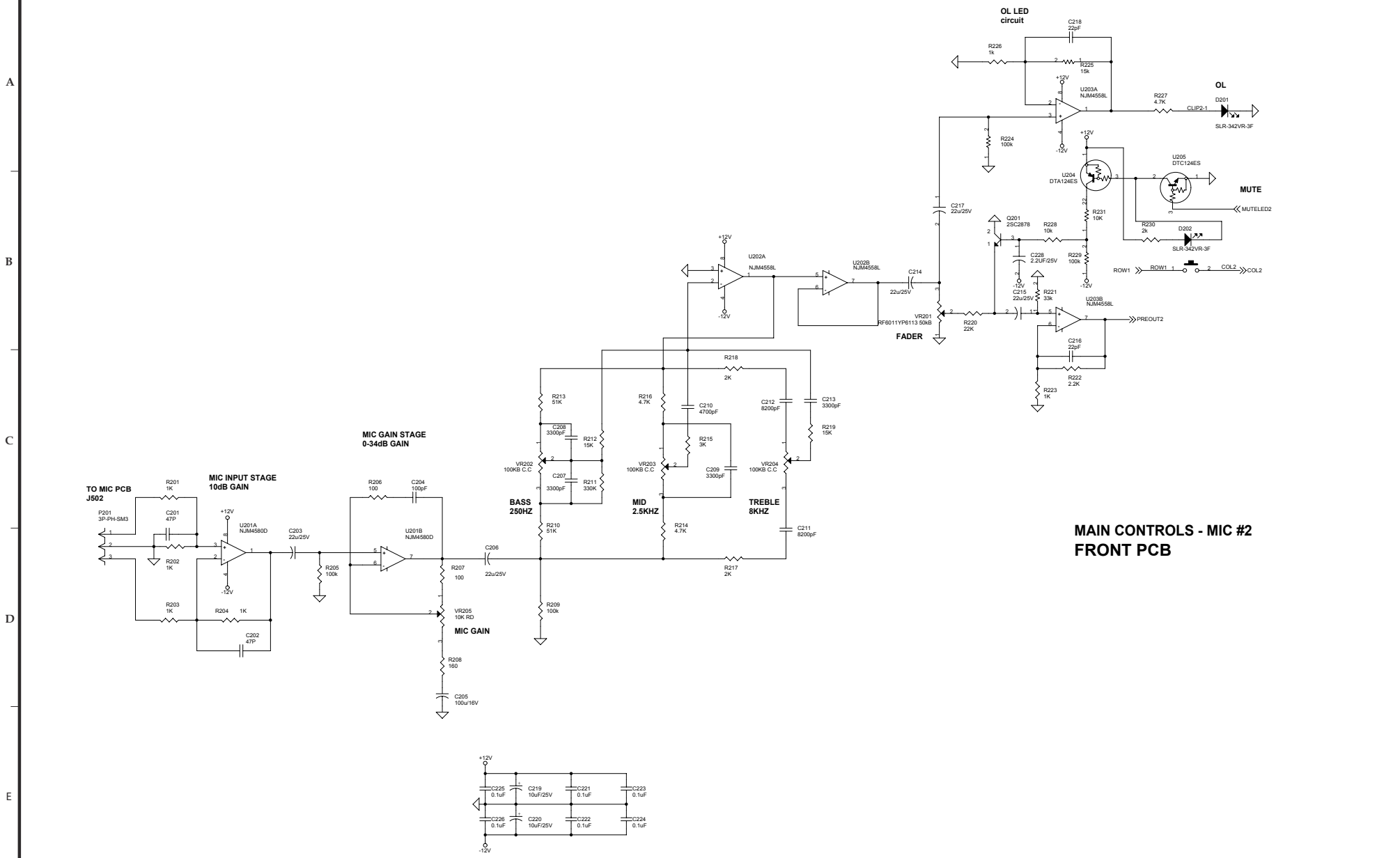
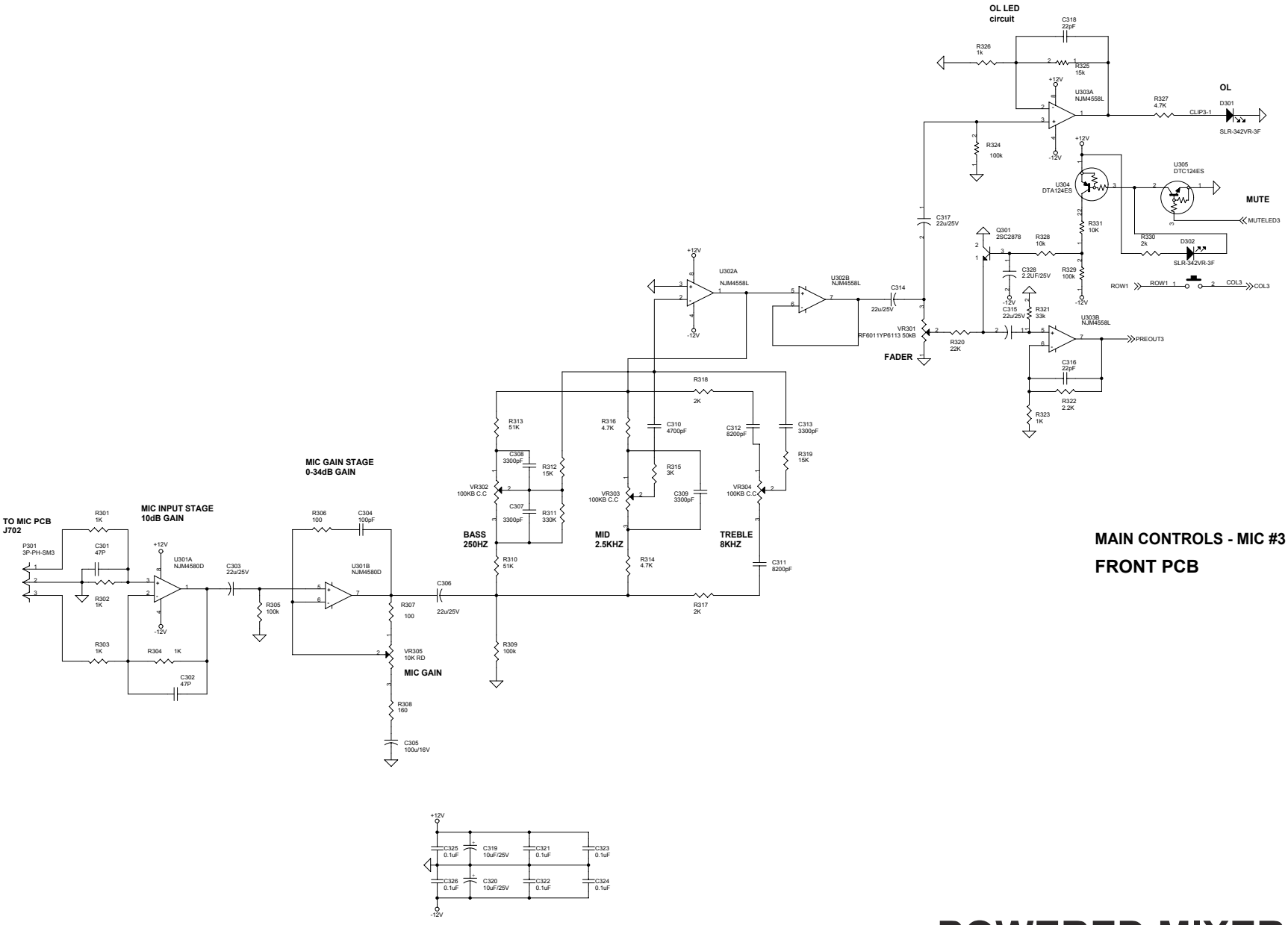


MAIN CONTROLS - MIC #2
FRONT PCB

POWERED MIXER AV-452

1 st Issue; November 2005

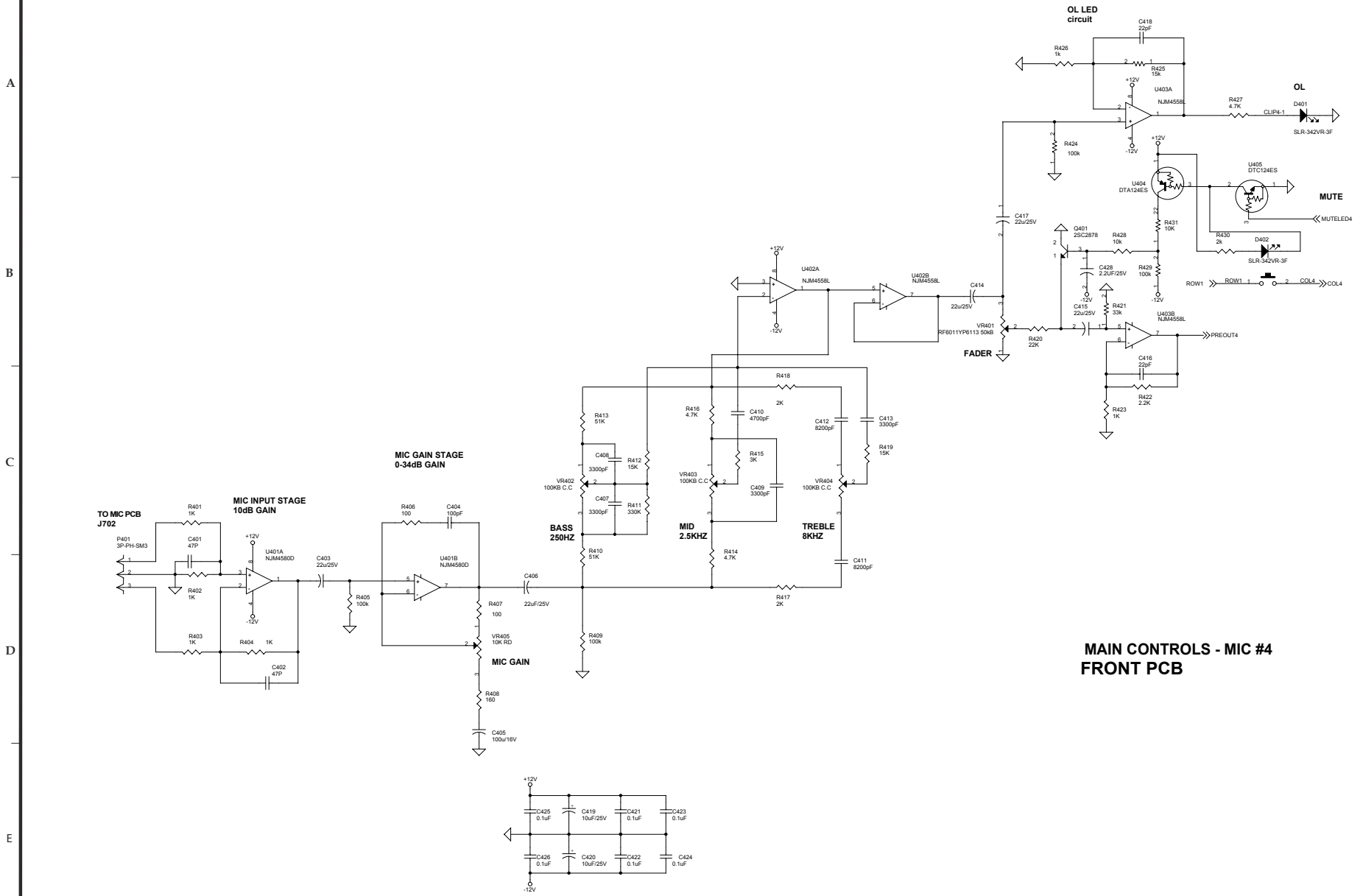


MAIN CONTROLS - MIC #3

FRONT PCB

POWERED MIXER AV-452

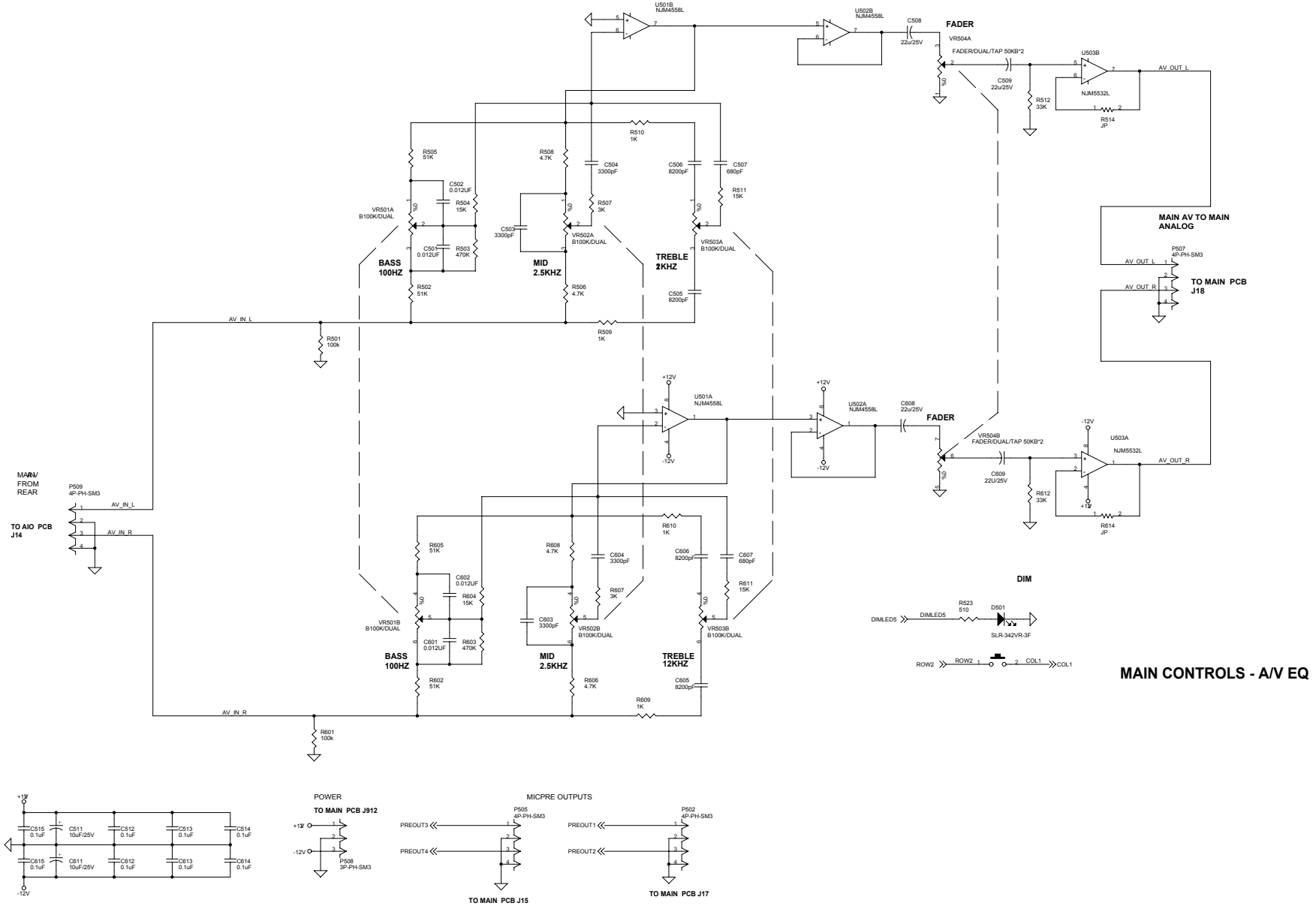
1 st Issue; November 2005



MAIN CONTROLS - MIC #4
FRONT PCB

POWERED MIXER AV-452

1 st Issue; November 2005



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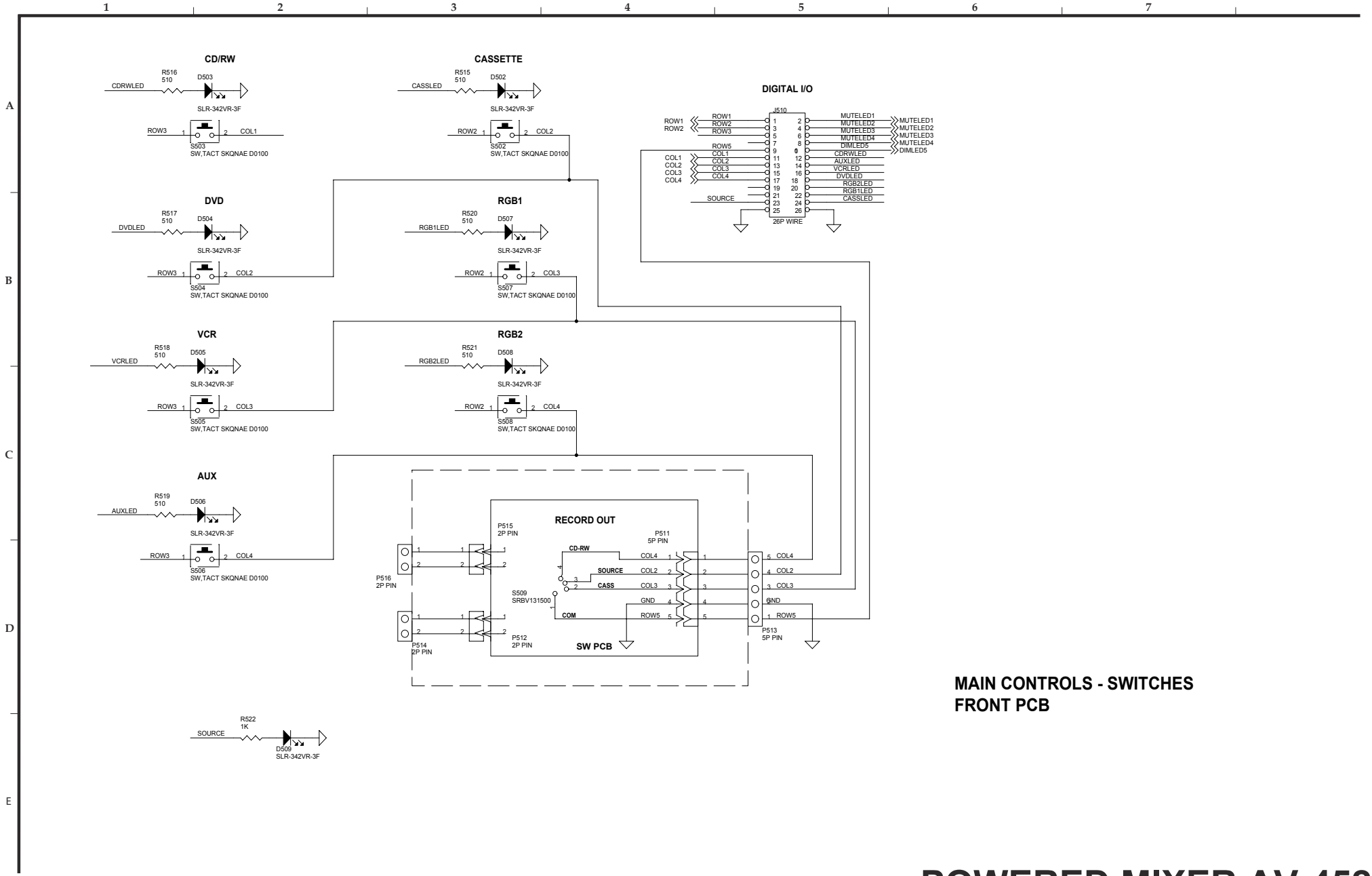

MAIN CONTROLS - SWITCHES
FRONT PCB

POWERED MIXER AV-452

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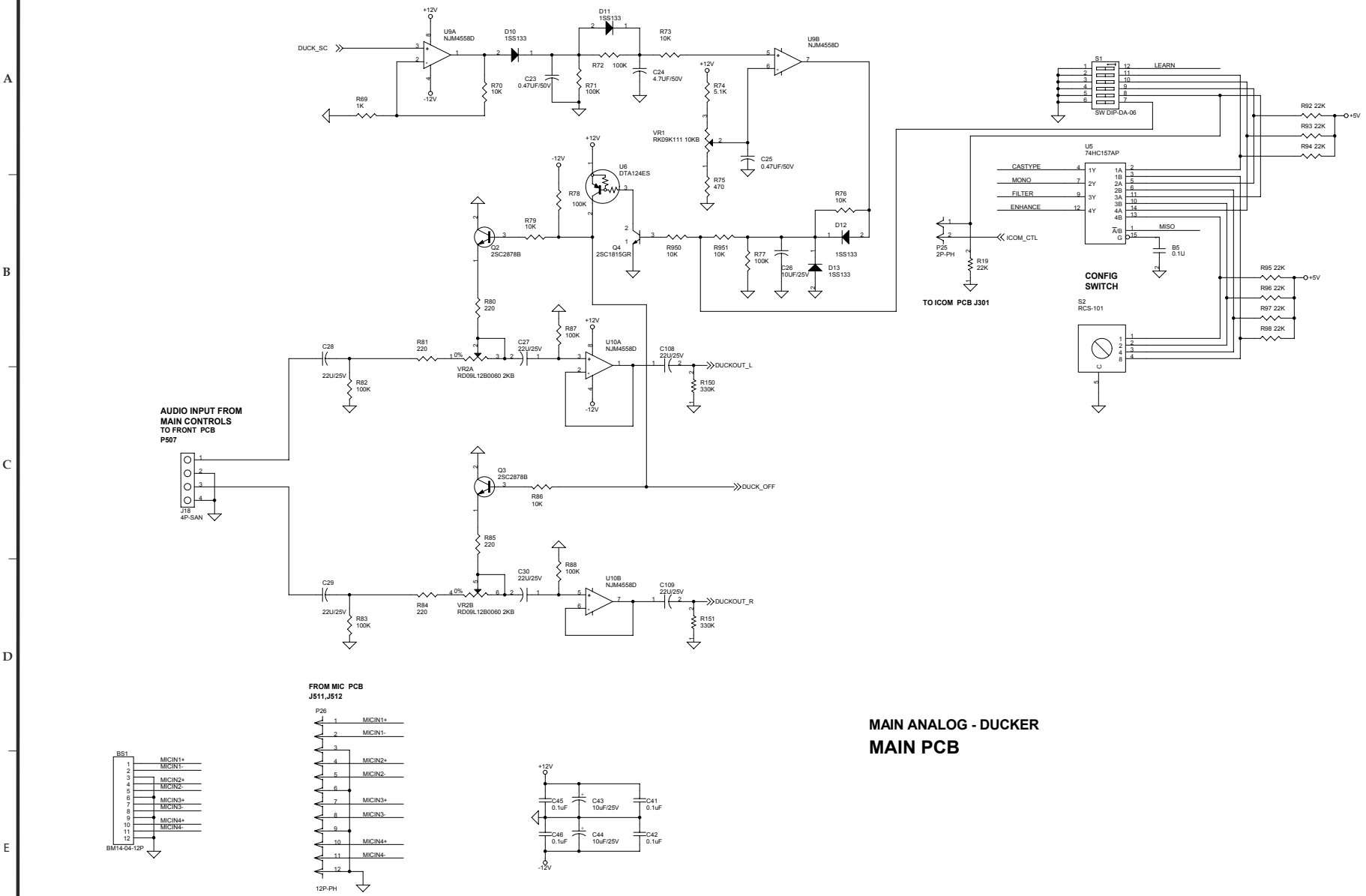

MAIN ANALOG - DUCKER

MAIN PCB

POWERED MIXER AV-452

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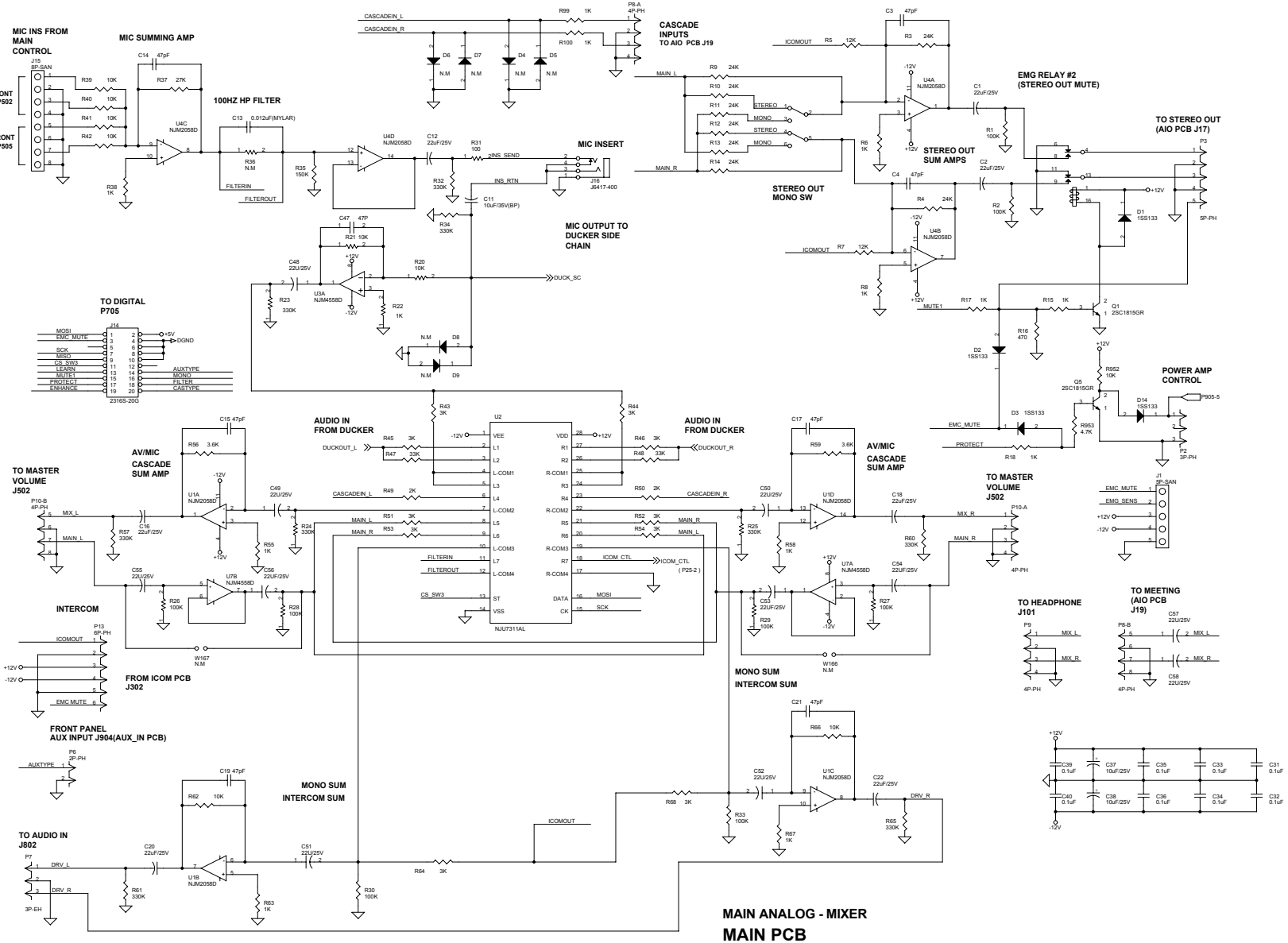

POWERED MIXER AV-452

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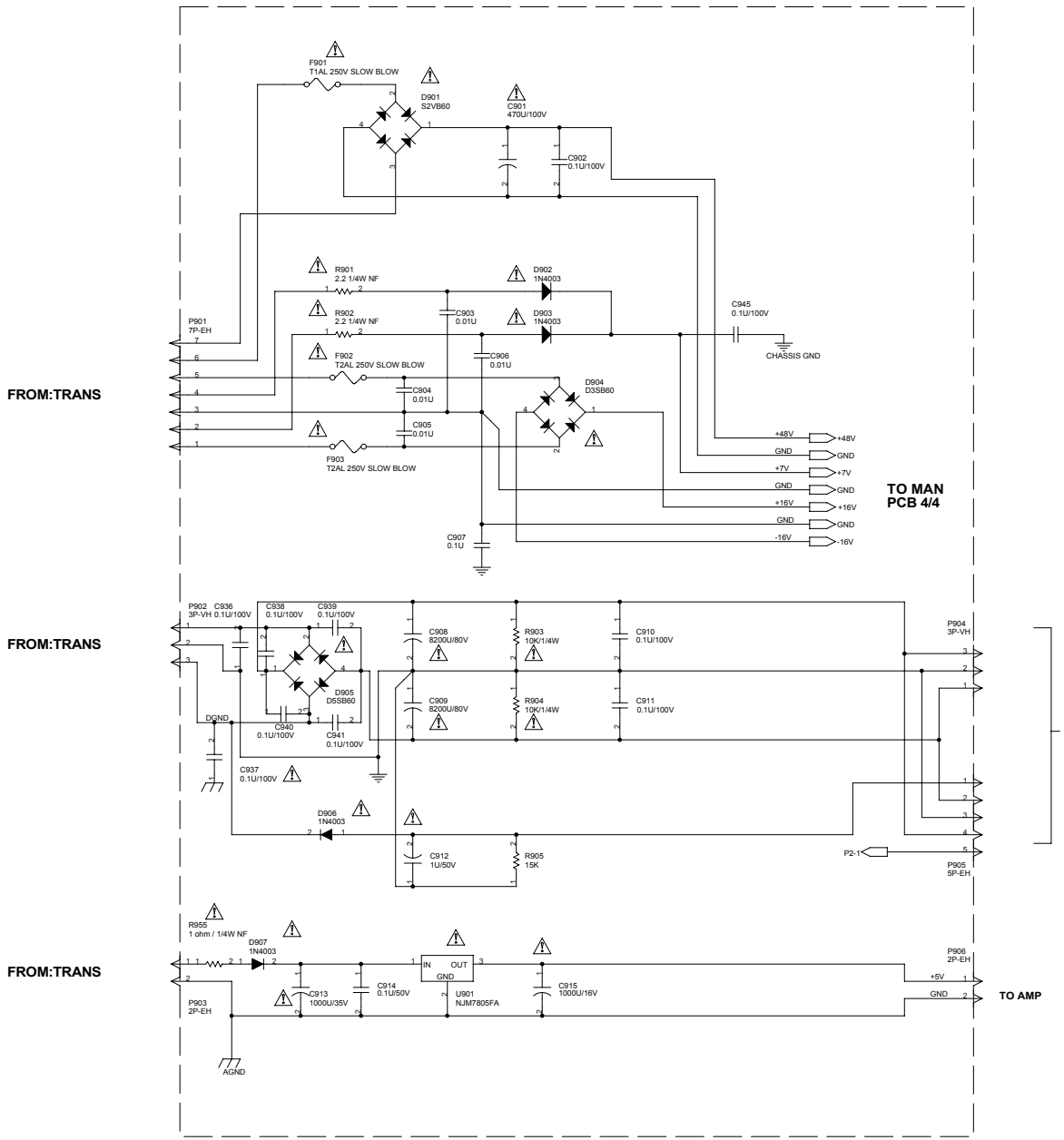

POWER SUPPLY 1/2
MAIN PCB

POWERED MIXER AV-452

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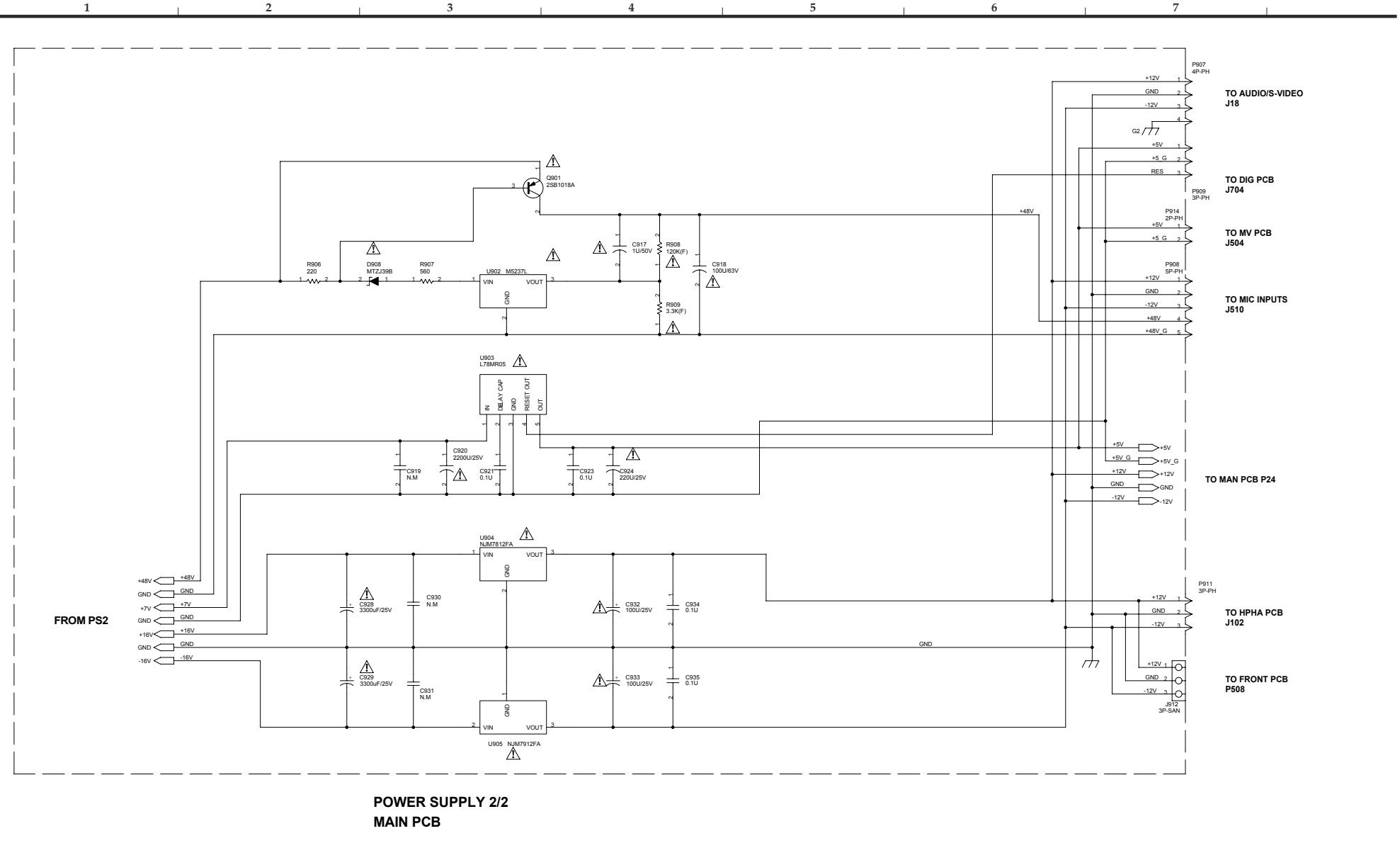

POWER SUPPLY 2/2
MAIN PCB

POWERED MIXER AV-452

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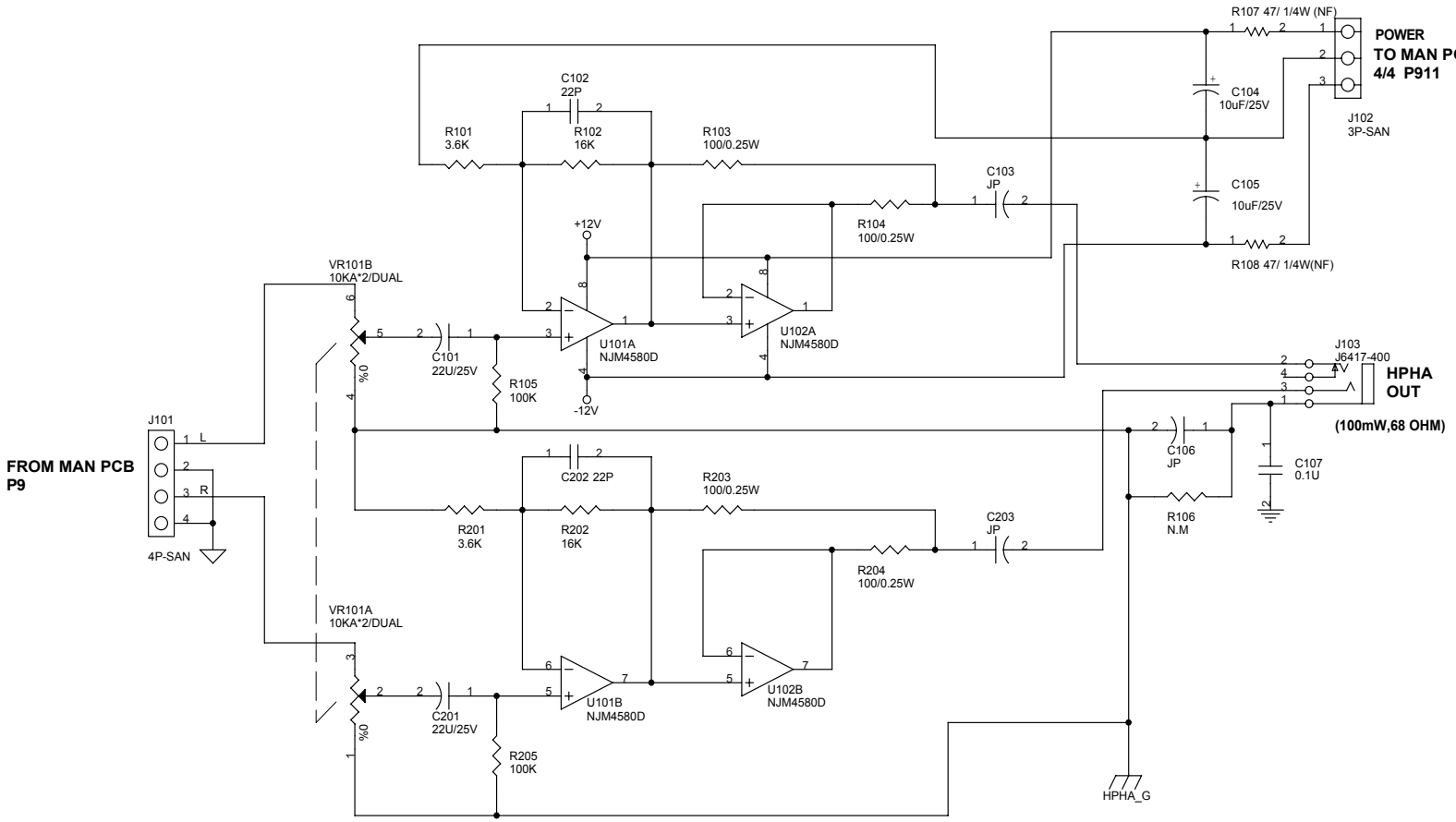

HEAD PHONES
HPHA PCB

POWERED MIXER AV-452

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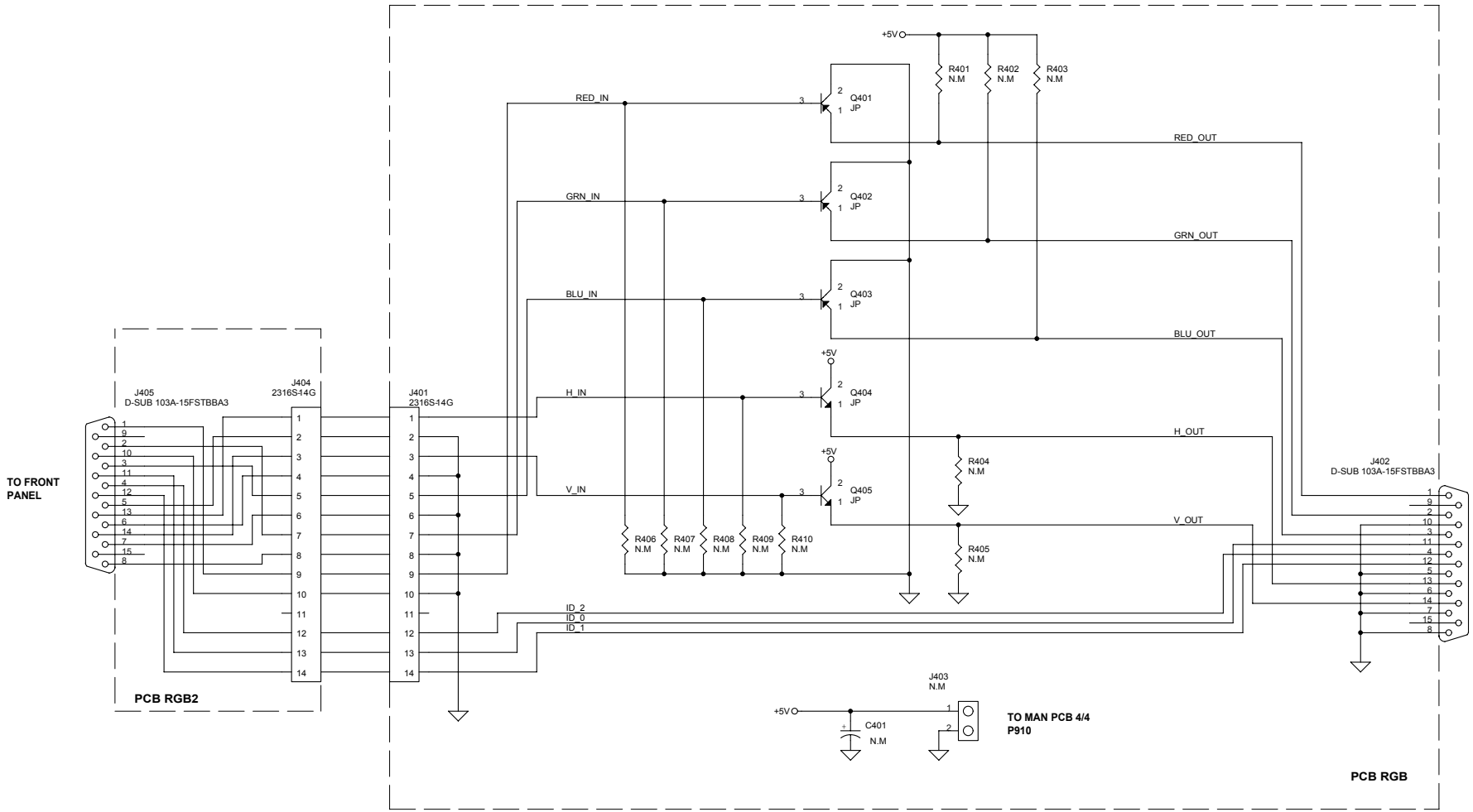

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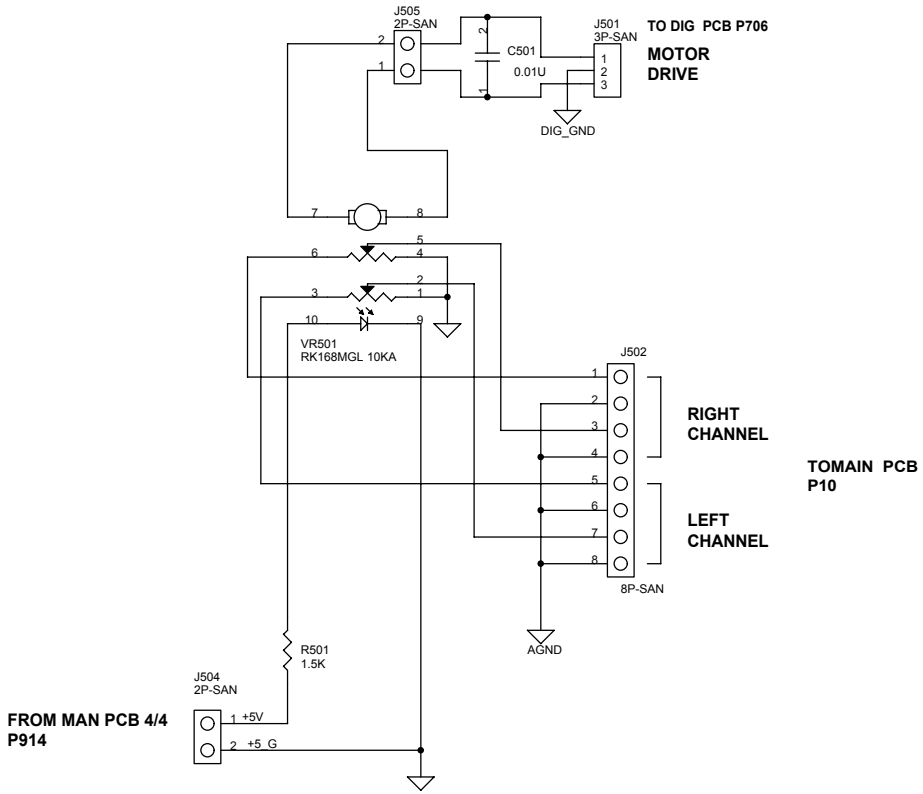

MASTER VOLLME

MV PCB

POWERED MIXER AV-452

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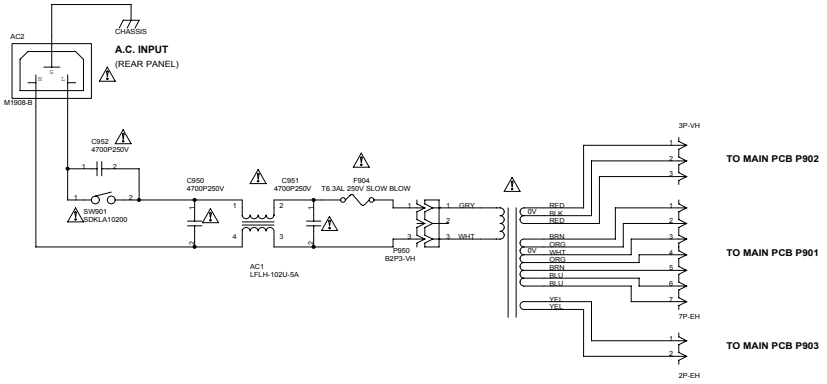
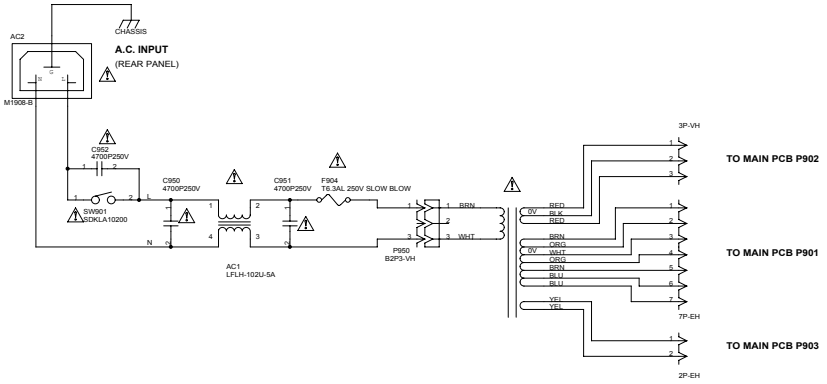
1 2 3 4 5 6 7

A B C D E

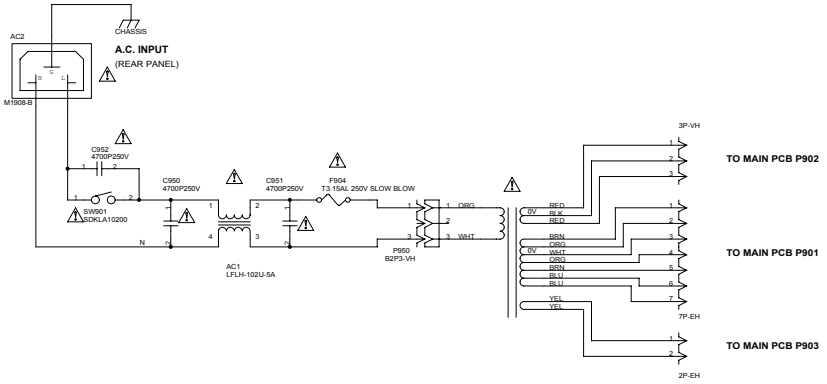
JPN



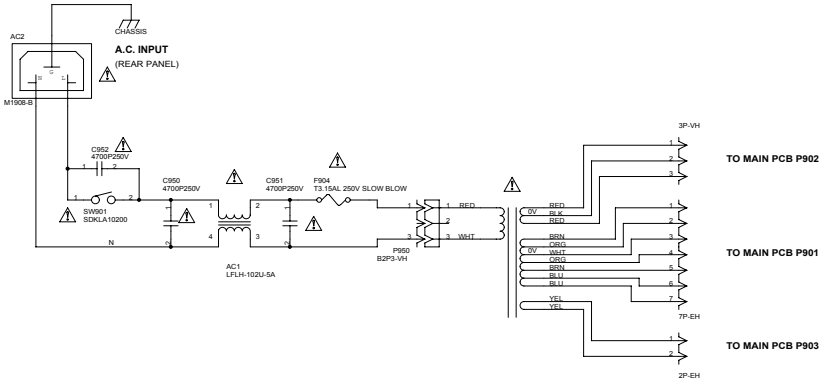
T/C / TM



KOR/EUR-Y/UK-Y



AUS



POWERED MIXER AV-452

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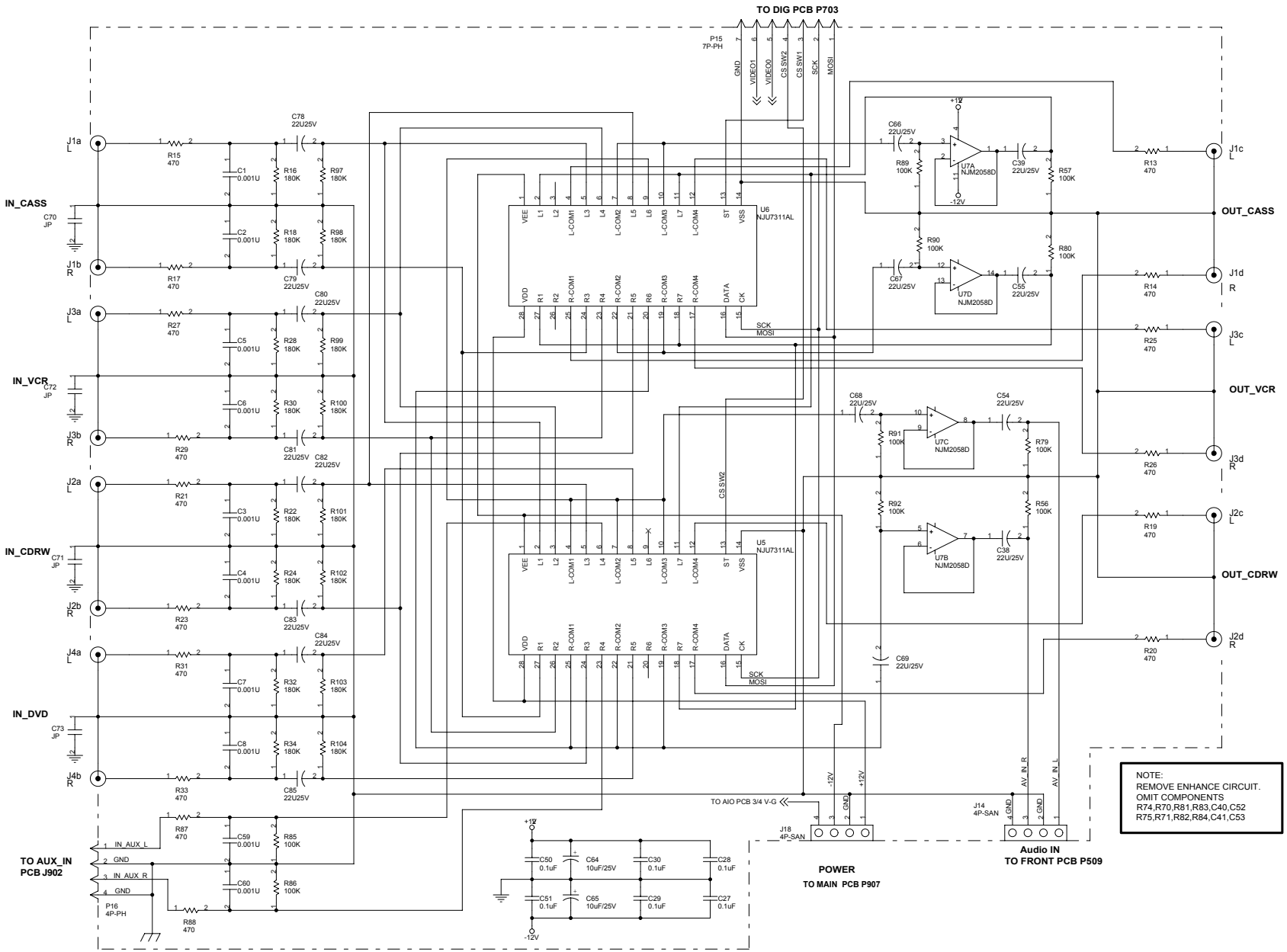
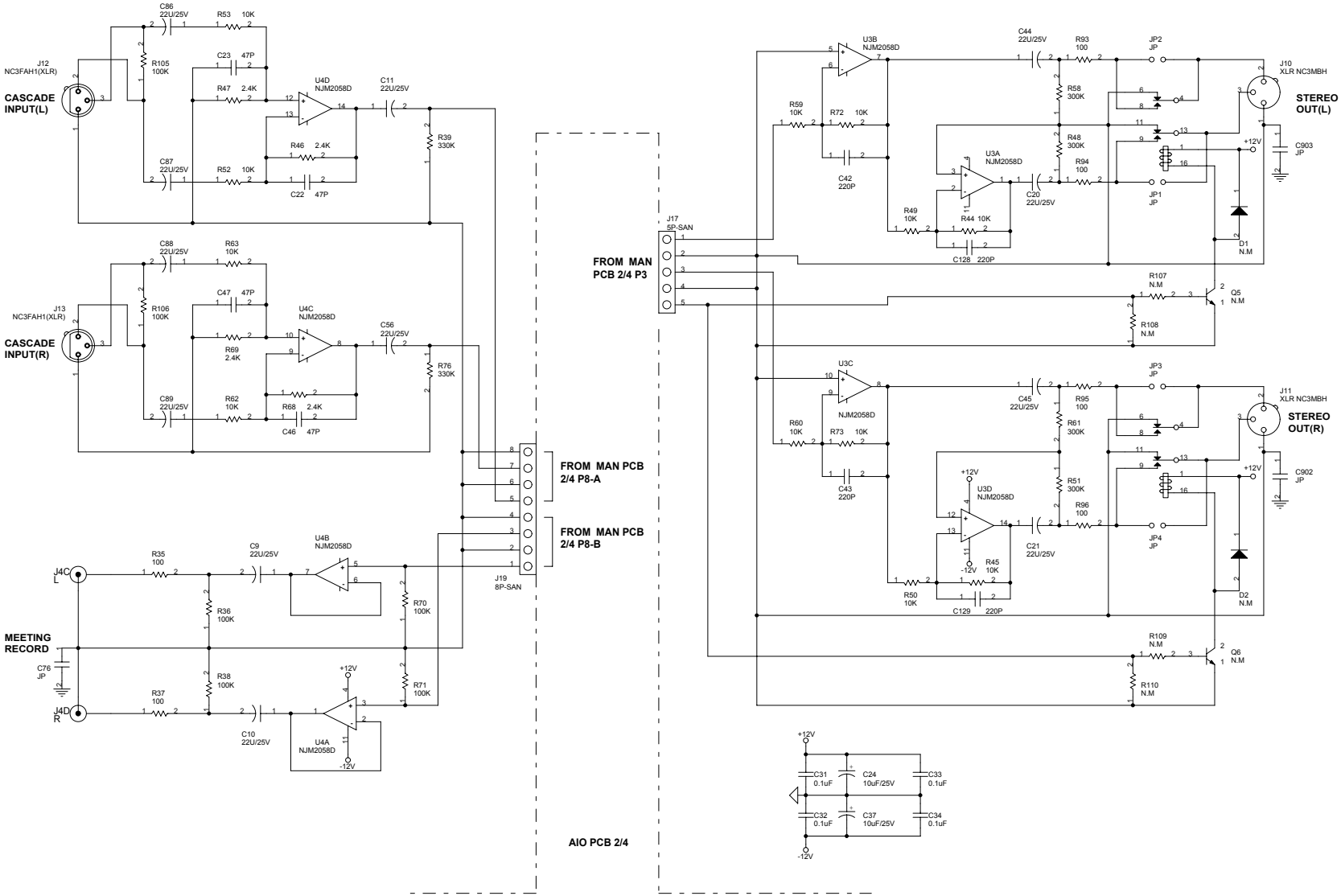


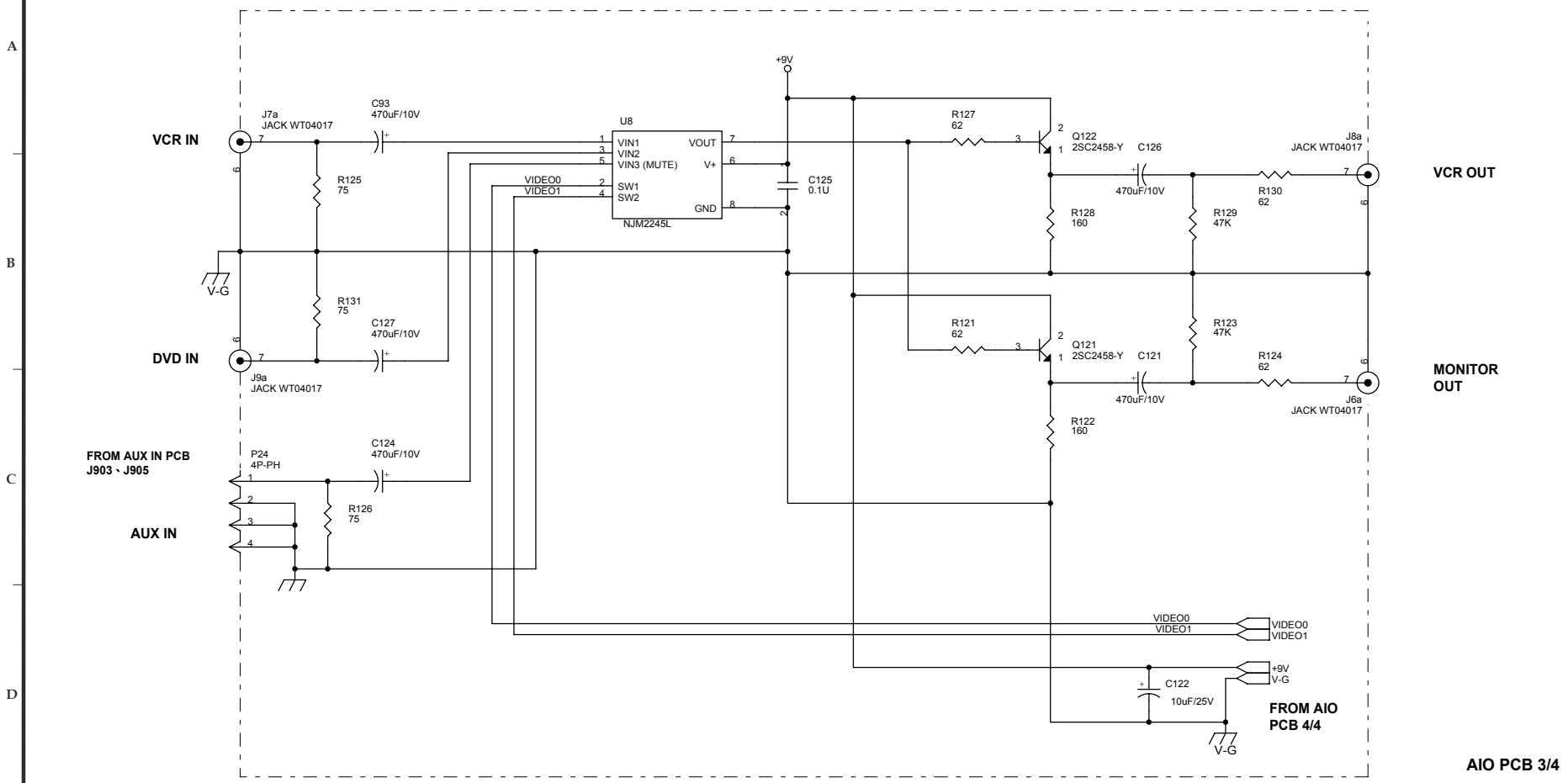
AIO PCB1/4

AUDIO I/O AND S-VIOEO - AUDIO SW
AIO PCB

POWERED MIXER AV-452

1 st Issue; November 2005


1
2
3
4
5
6
7
A
B
C
D
E
J12
NC3FAH1(XLR)
CASCADE INPUT(L)
J13
NC3FAH1(XLR)
CASCADE INPUT(R)
MEETING RECORD
J4C
L
J4D
R
J17
5P-SAN
FROM MAN PCB 2/4 P3
J19
8P-SAN
FROM MAN PCB 2/4 P8-A
FROM MAN PCB 2/4 P8-B
AIO PCB 2/4
J10
XLR NC3MBH
STEREO OUT(L)
J11
XLR NC3MBH
STEREO OUT(R)
U3A NJM2058D
U3B NJM2058D
U3C NJM2058D
U3D NJM2058D
U4A NJM2058D
U4B NJM2058D
U4C NJM2058D
U4D NJM2058D
+12V
-12V
D1 N.M
D2 N.M
Q5 N.M
Q6 N.M



COMPOSITE VIDEO

AIO PCB

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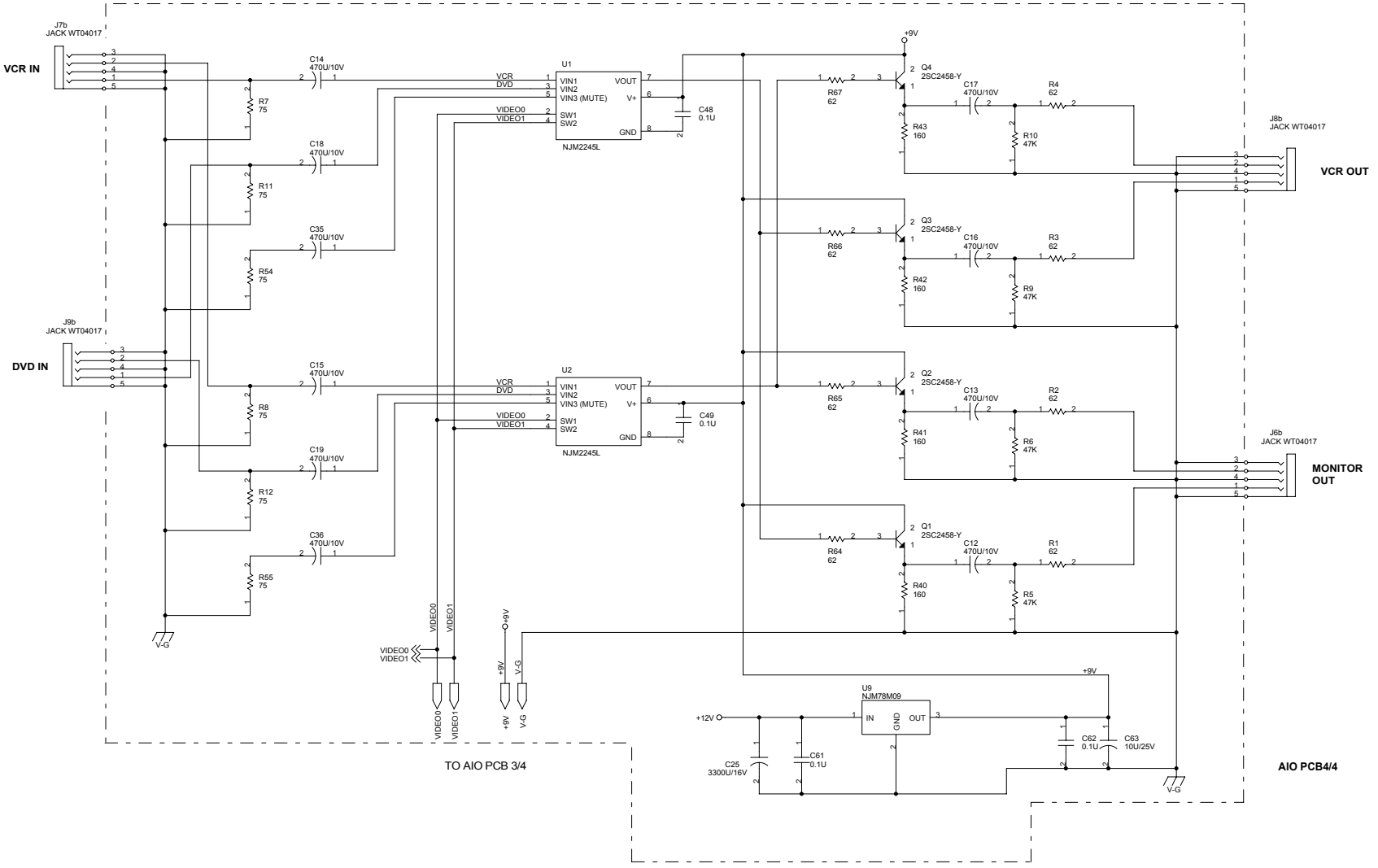

AUDIO I/O AND S-VIDEO - S-VIDEO
AIO PCB

POWERED MIXER AV-452

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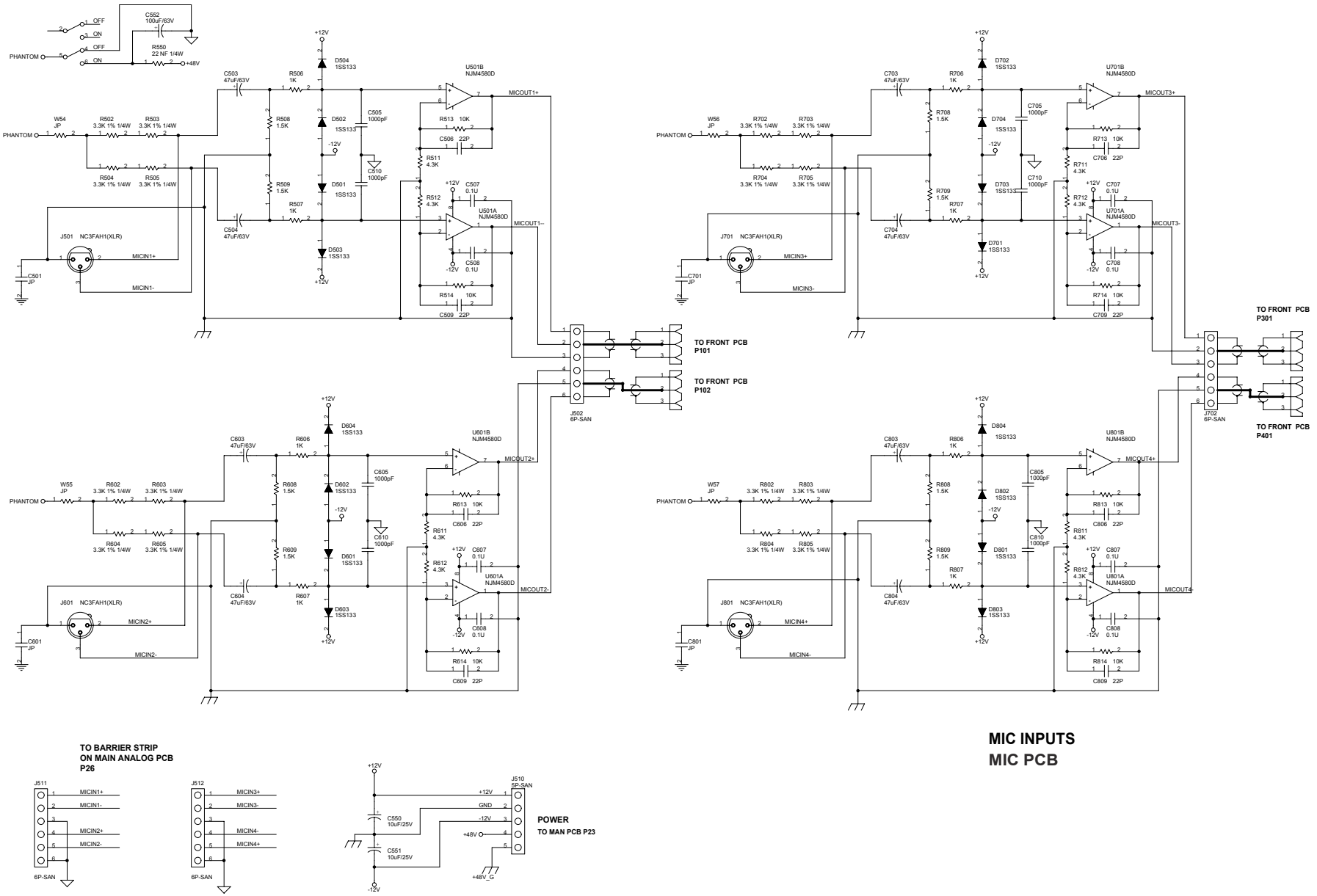

POWERED MIXER AV-452

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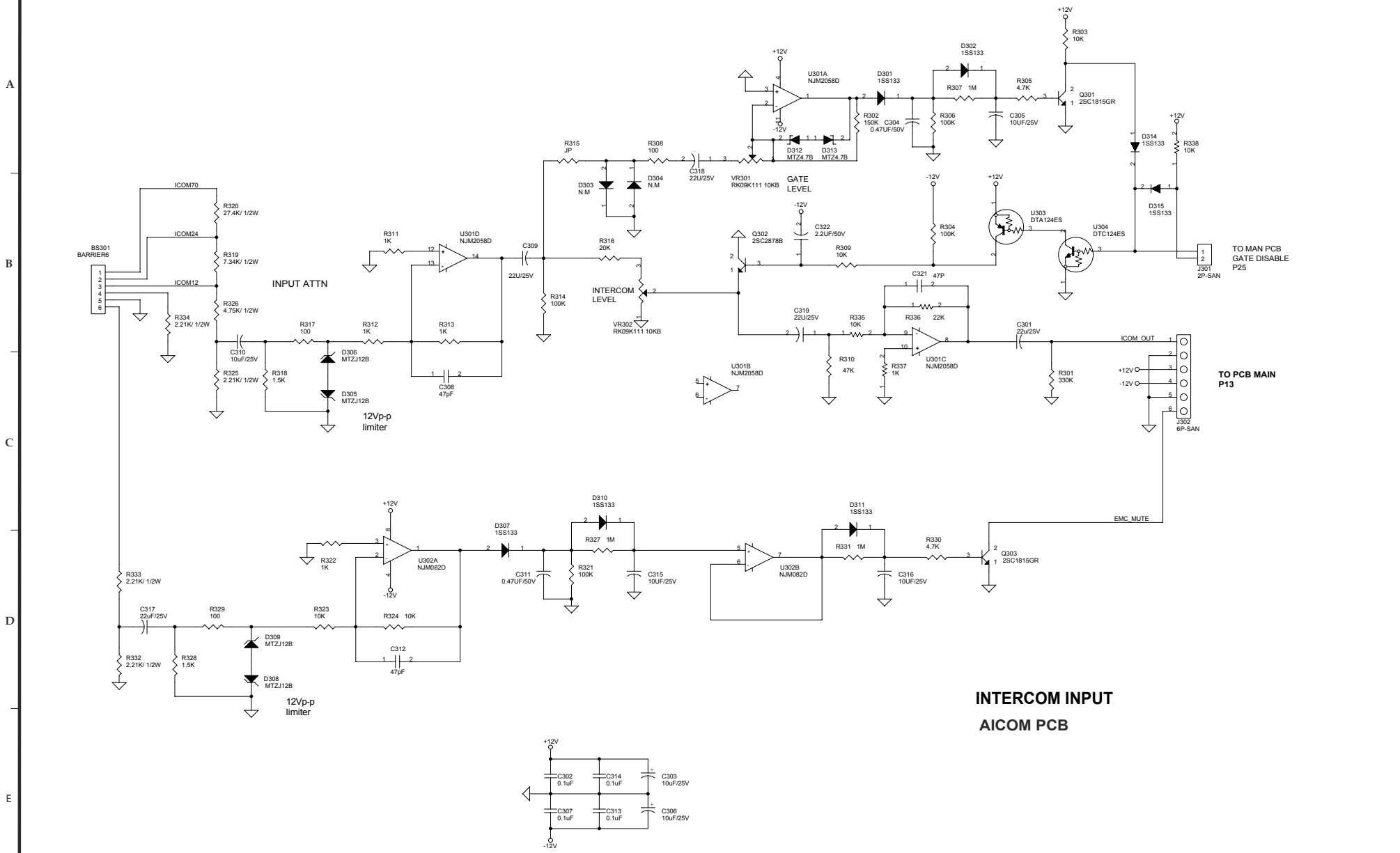

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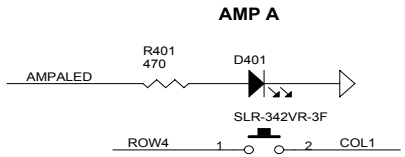
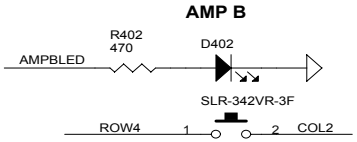
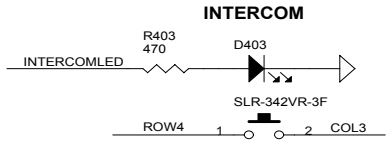
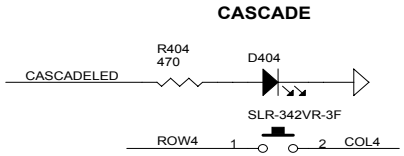
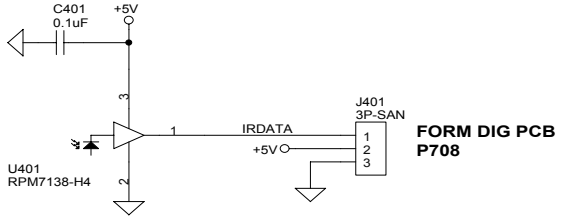
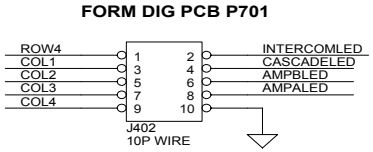






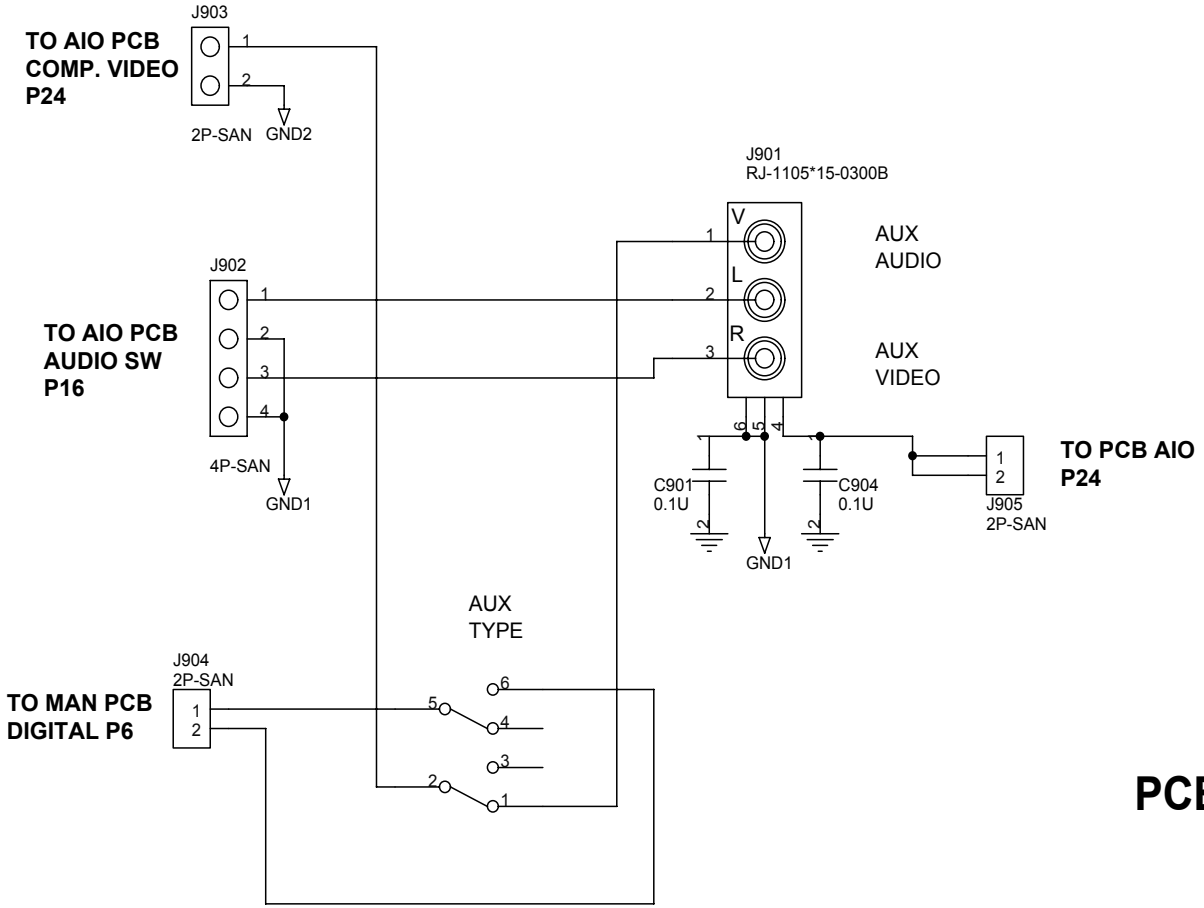




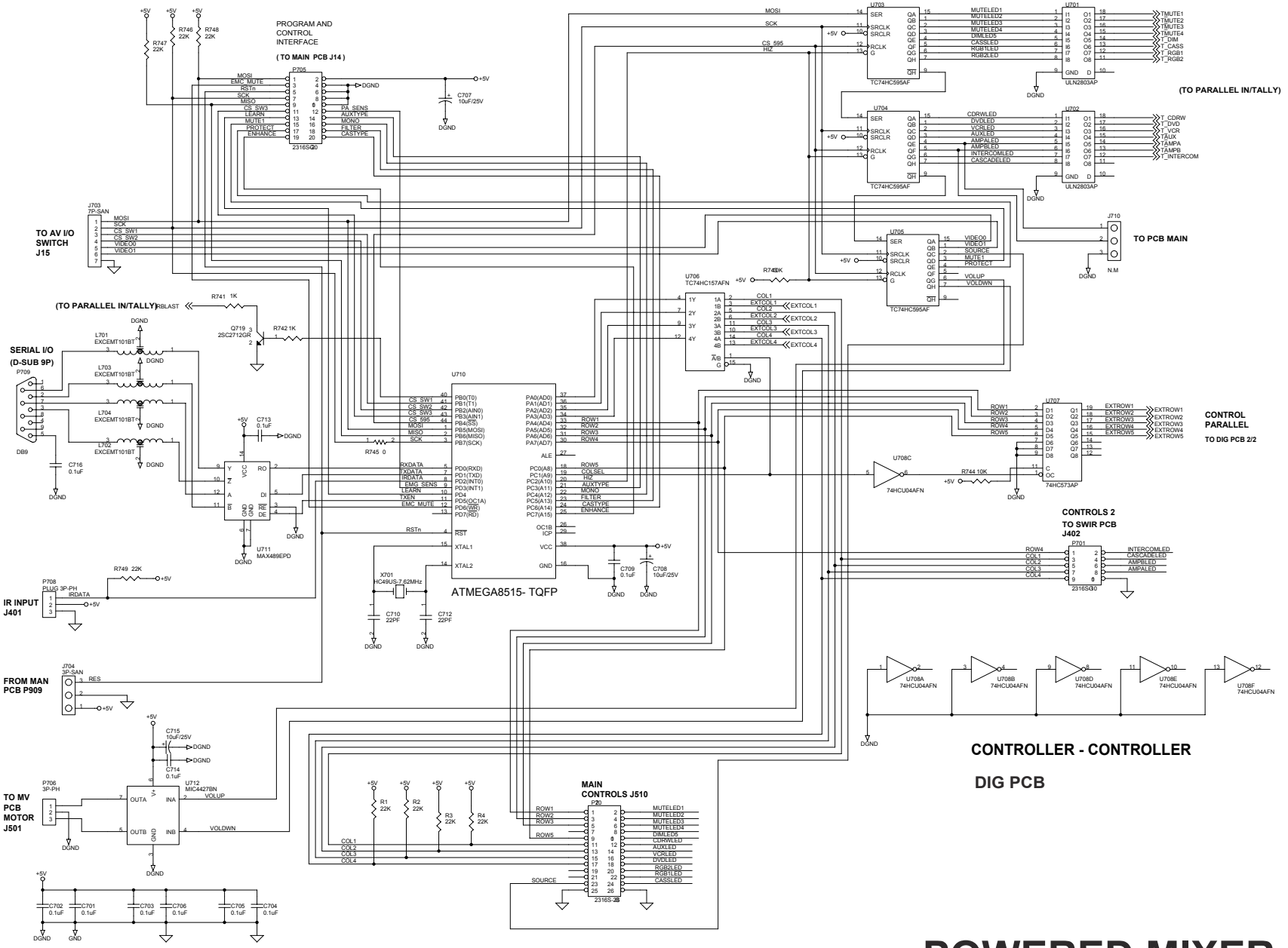


SWITCHES AND INFRA RES RX

SWIR PCB


J903
TO AIO PCB
COMP. VIDEO
P24
2P-SAN
GND2
J901
RJ-1105*15-0300B
V
L
R
AUX
AUDIO
AUX
VIDEO
J902
TO AIO PCB
AUDIO SW
P16
4P-SAN
GND1
C901
0.1U
C904
0.1U
GND1
J905
2P-SAN
TO PCB AIO
P24
AUX
TYPE
J904
2P-SAN
TO MAN PCB
DIGITAL P6

PCB AUX IN



POWERED MIXER AV-452

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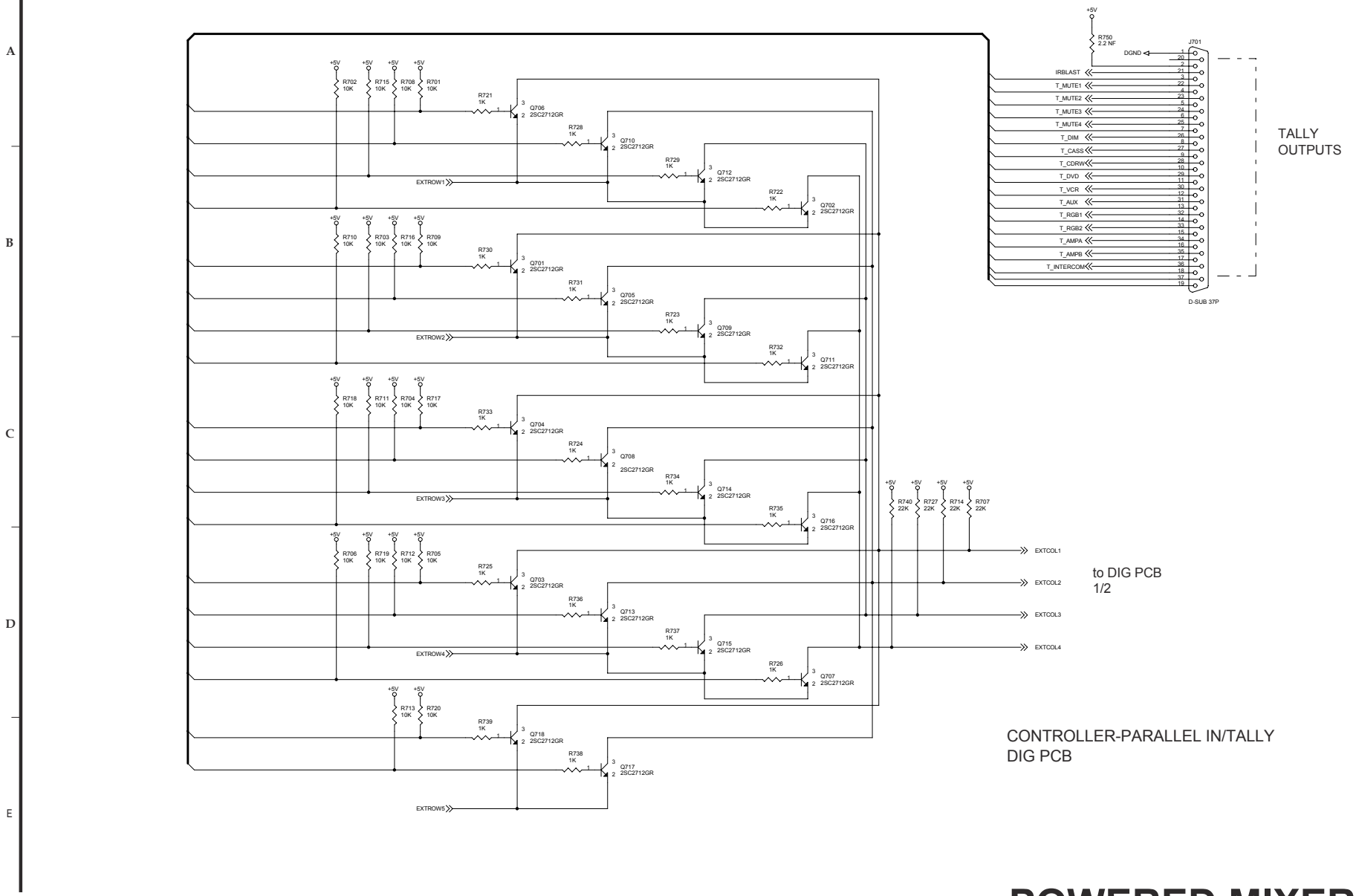
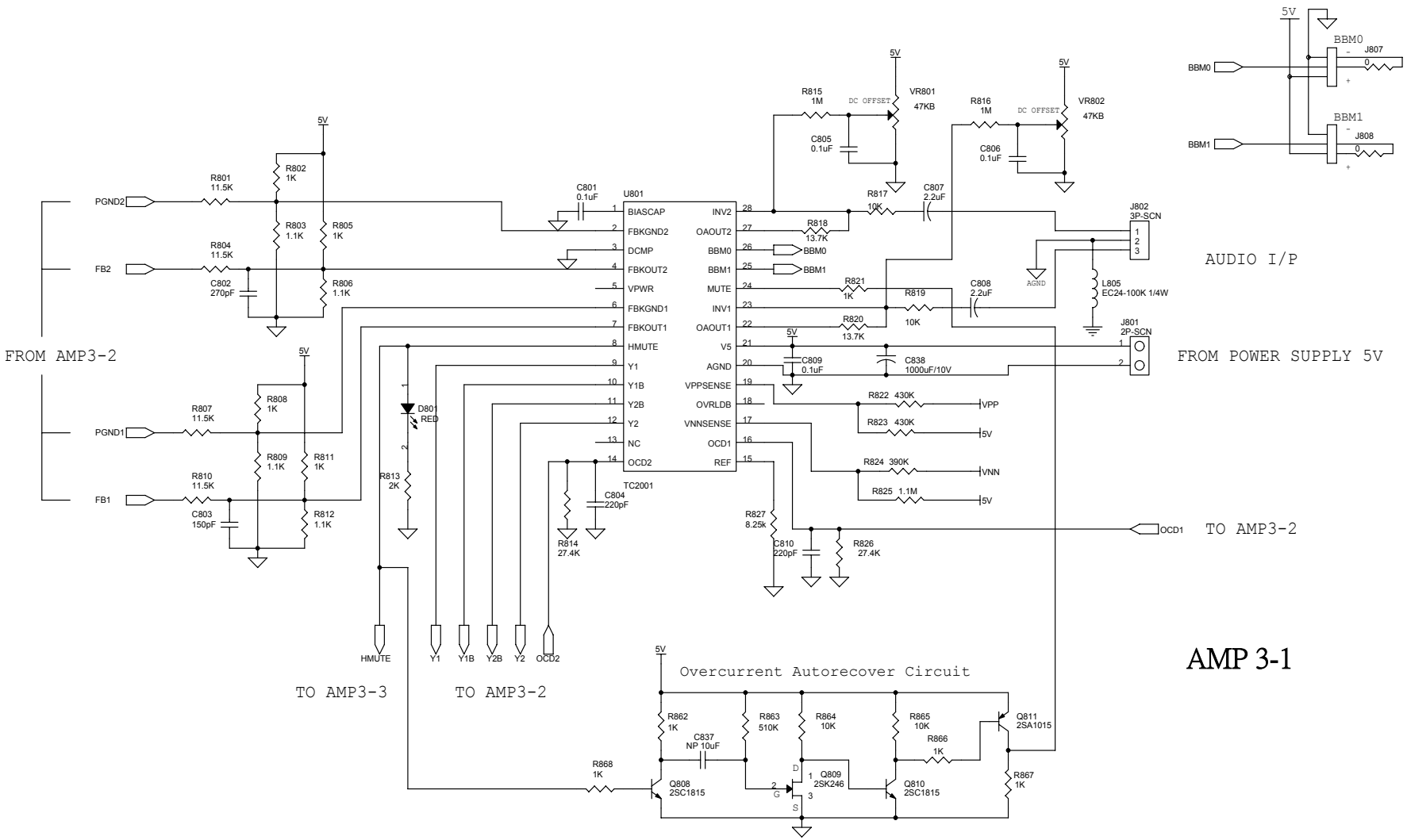


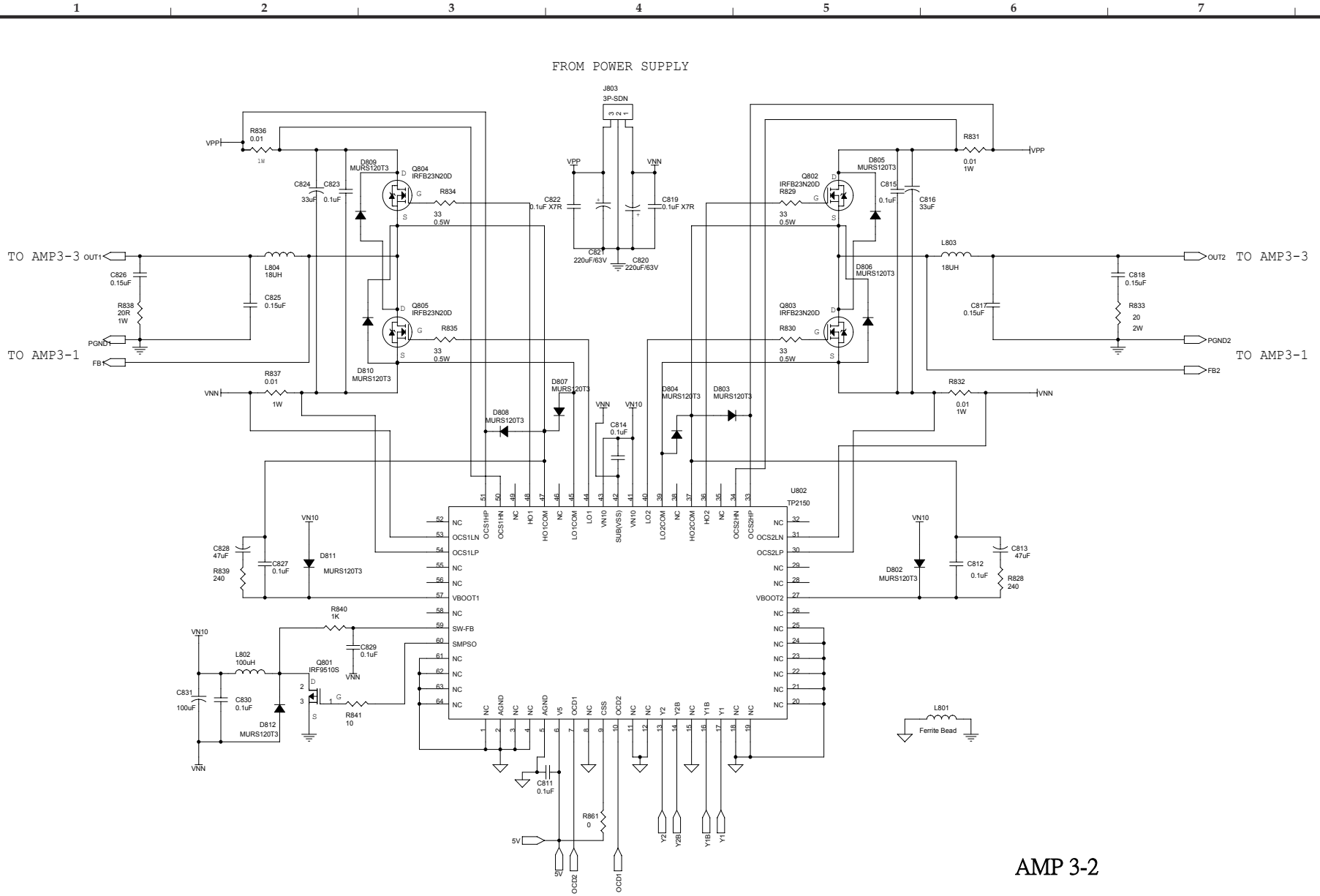
POWERED MIXER AV-452

1 st Issue; November 2005



POWERED MIXER AV-452

1 st Issue; November 2005



POWERED MIXER AV-452

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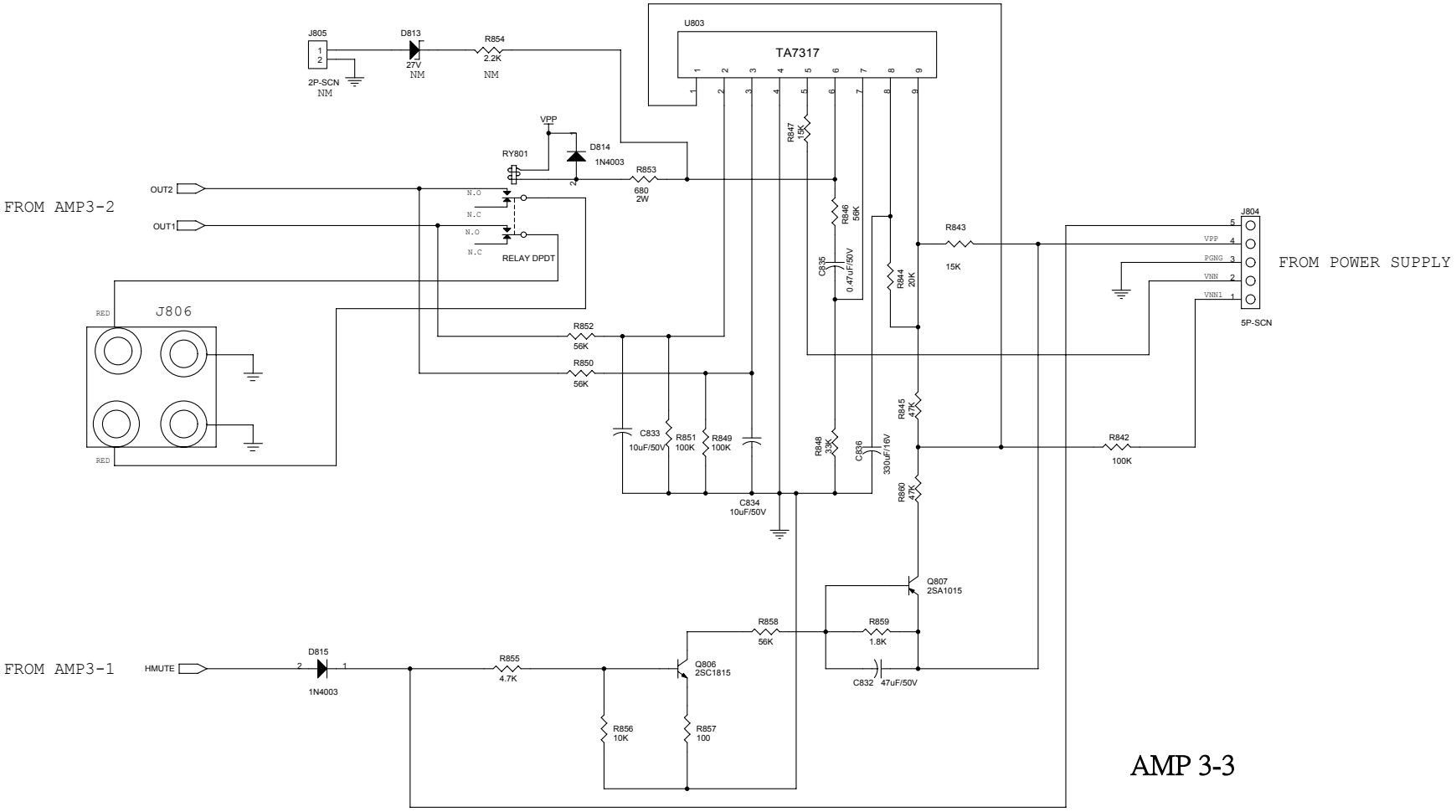

POWERED MIXER AV-452

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TASCAM
TEAC Professional Division

SCHEMATIC DIAGRAM

Powered Mixer **AV-452**

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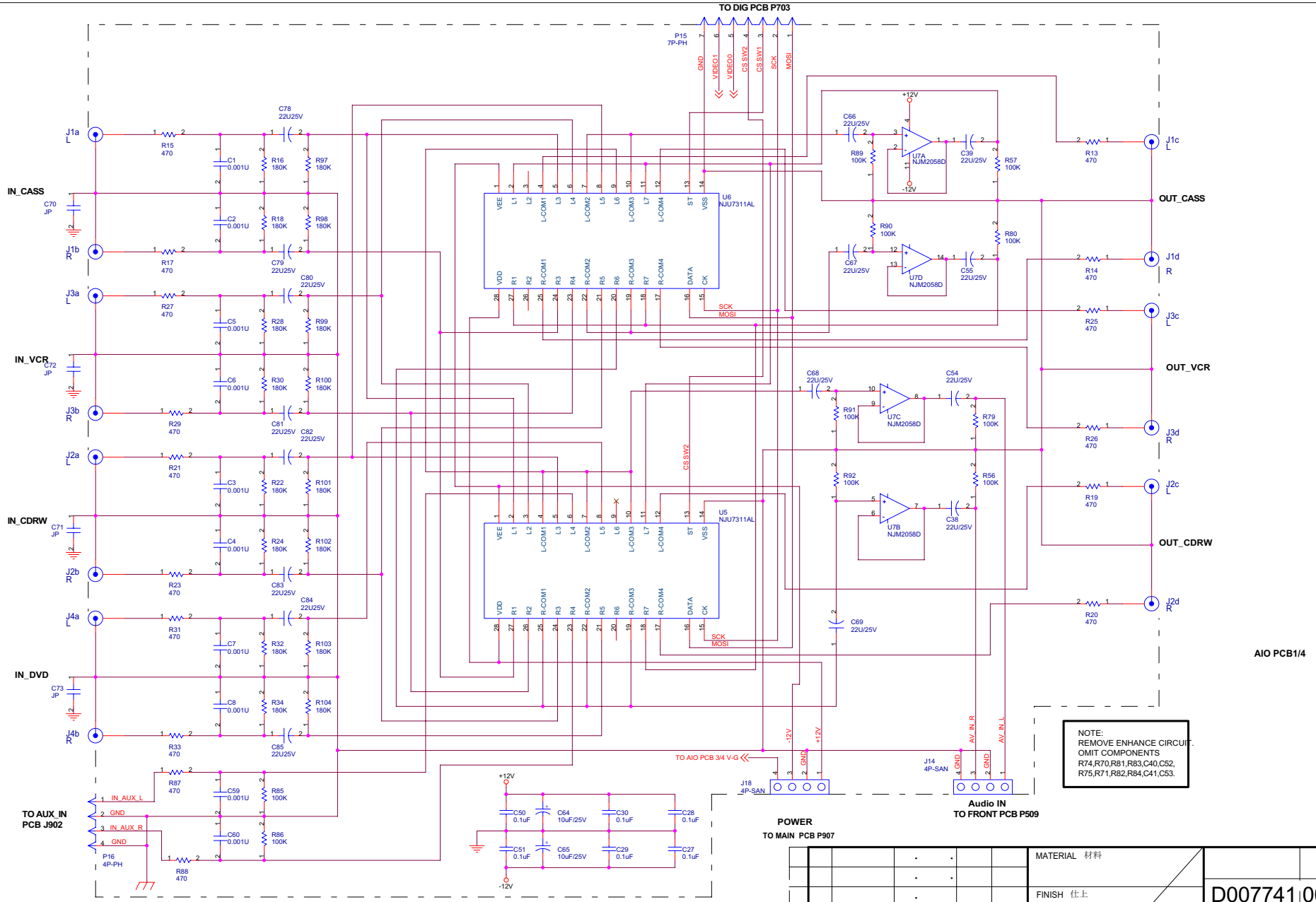


AUDIO I/O AND S-VIOEO - AUDIO SW

REV	E.C.N. NO.	DATE	PLANNED	APPROVED	
APPROVED			UNIT mm		
CHECKED			ANGLE		
PLANNED			SCALE	:	
DRAWN					

D002590-01A

MATERIAL 材料

FINISH 仕上

TREATMENT 処理

TOLERANCE 公差

TS-E

D007741 00B

PART NO. 品番

APPLICATION 適用

PART TITLE 品名

SCHEMATIC,AIO AV-452

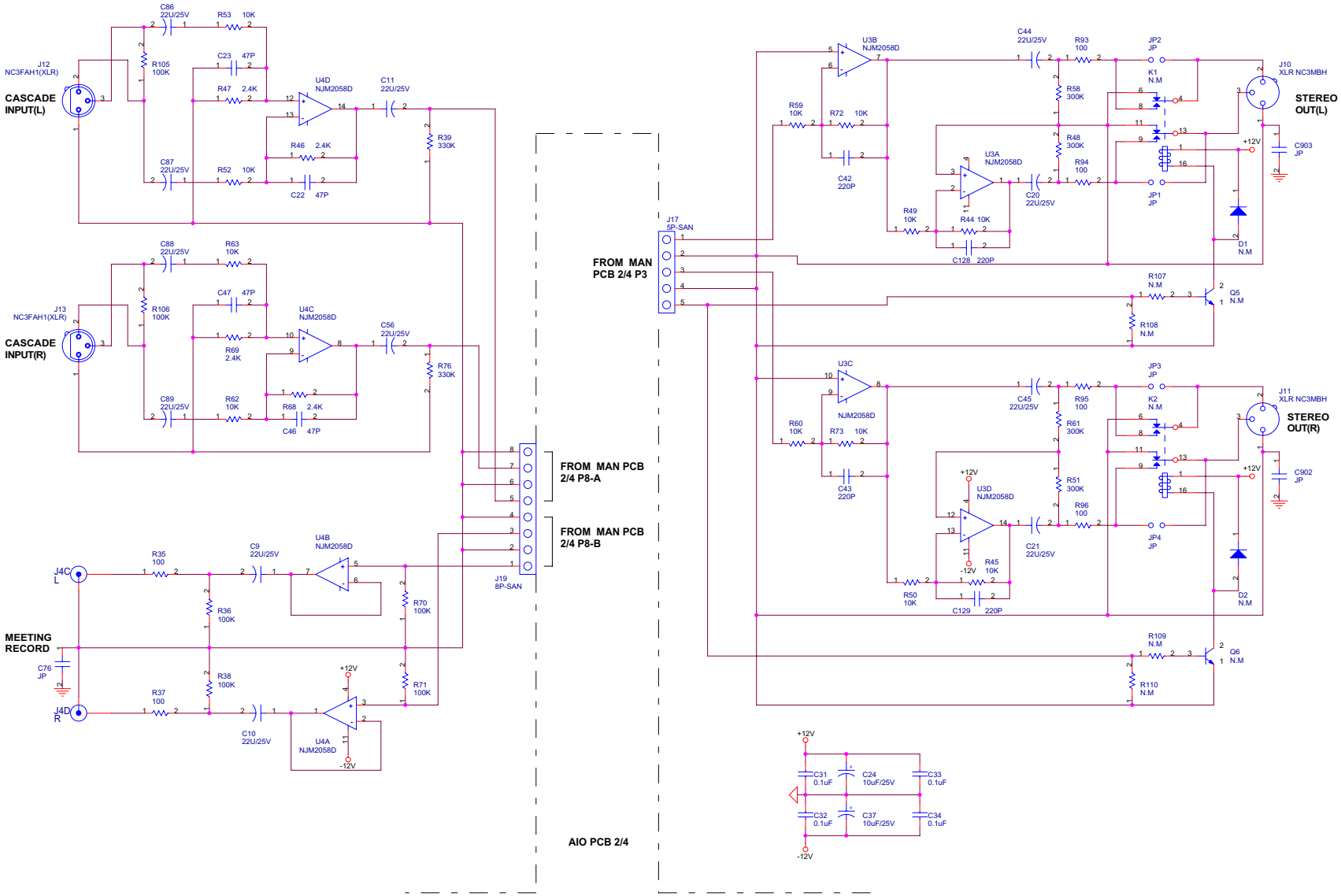
DWG TITLE 図名 SCHEMATIC CIRCUIT DIAGRAM

DWG NO. 図番

DWG CODE B

TEAC ティアック株式会社

SHEET 1 OF 4



AUDIO I/O AND S-VIOEO - MISC AUDIO

REV	E.C.N. NO.	DATE	PLANNED	APPROVED

APPROVED	
CHECKED	
PLANNED	
DRAWN	

UNIT mm
ANGLE
SCALE :

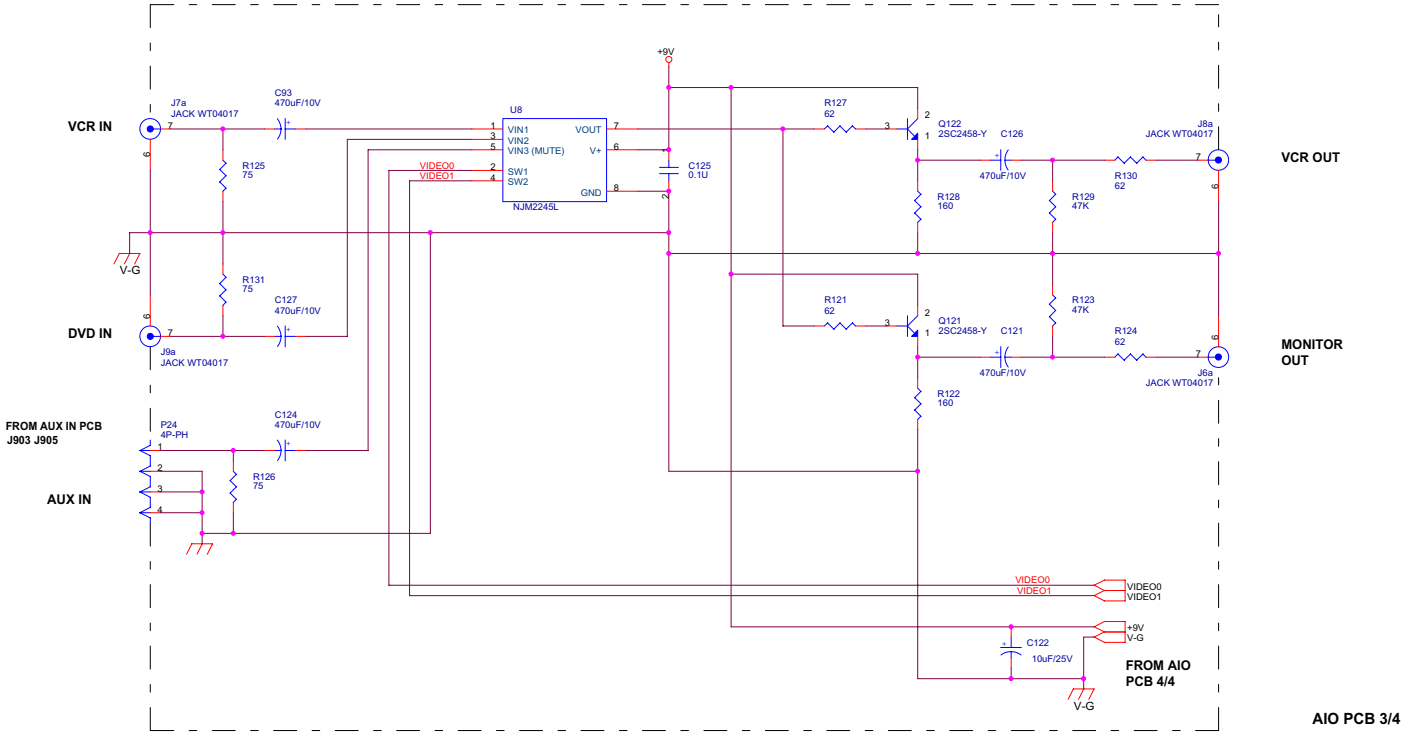
MATERIAL 材料
FINISH 仕上
TREATMENT 処理
TOLERANCE 公差
TS-E

D007741 00B
PART NO. 品番
APPLICATION 適用
PART TITLE 品名
SCHEMATIC,AIO AV-452
DWG TITLE 図名 SCHEMATIC CIRCUIT DIAGRAM
DWG NO. 図番
DWG CODE B

D002590-01A

TEAC ティアック株式会社

SHEET 2 OF 4



COMPOSITE VIDEO

REV	E.C.N. NO.	DATE	PLANNED	APPROVED

APPROVED		UNIT mm
CHECKED		ANGLE
PLANNED		SCALE :
DRAWN		

D002590-01A

MATERIAL 材料

FINISH 仕上

TREATMENT 処理

TOLERANCE 公差

TS-E

D007741 00B

PART NO. 品番

APPLICATION 適用

PART TITLE 品名

SCHEMATIC,AIO AV-452

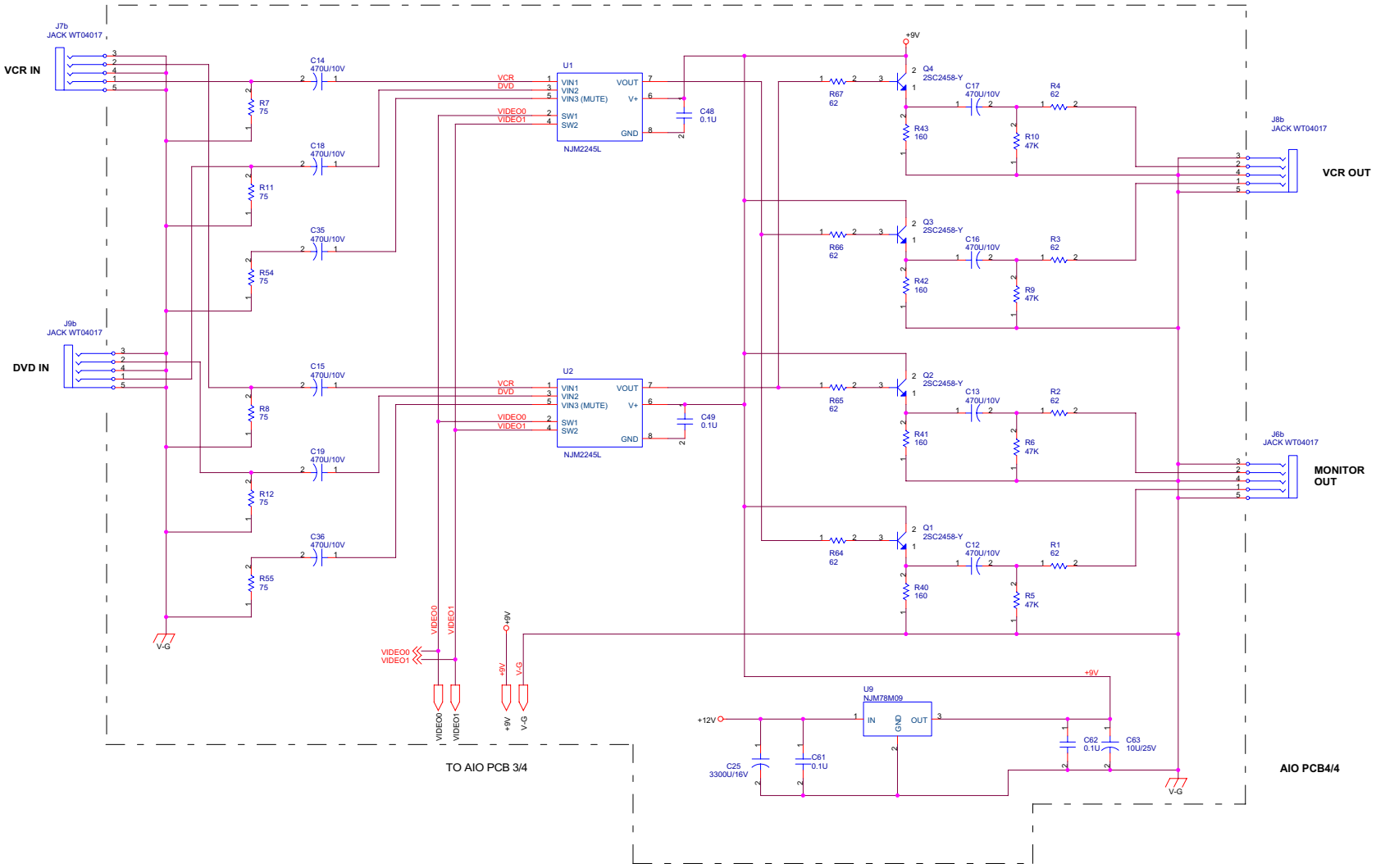
DWG TITLE 図名 SCHEMATIC CIRCUIT DIAGRAM

DWG NO. 図番

DWG CODE B

TEAC ティアック株式会社

SHEET 3 OF 4



AUDIO I/O AND S-VIDEO - S-VIDEO

REV	E.C.N. NO.	DATE	PLANNED	APPROVED

APPROVED	
CHECKED	
PLANNED	
DRAWN	

UNIT mm
ANGLE
SCALE :

D002590-01A

MATERIAL 材料
FINISH 仕上
TREATMENT 処理
TOLERANCE 公差
TS-E

D007741 00B

PART NO. 品番
APPLICATION 適用

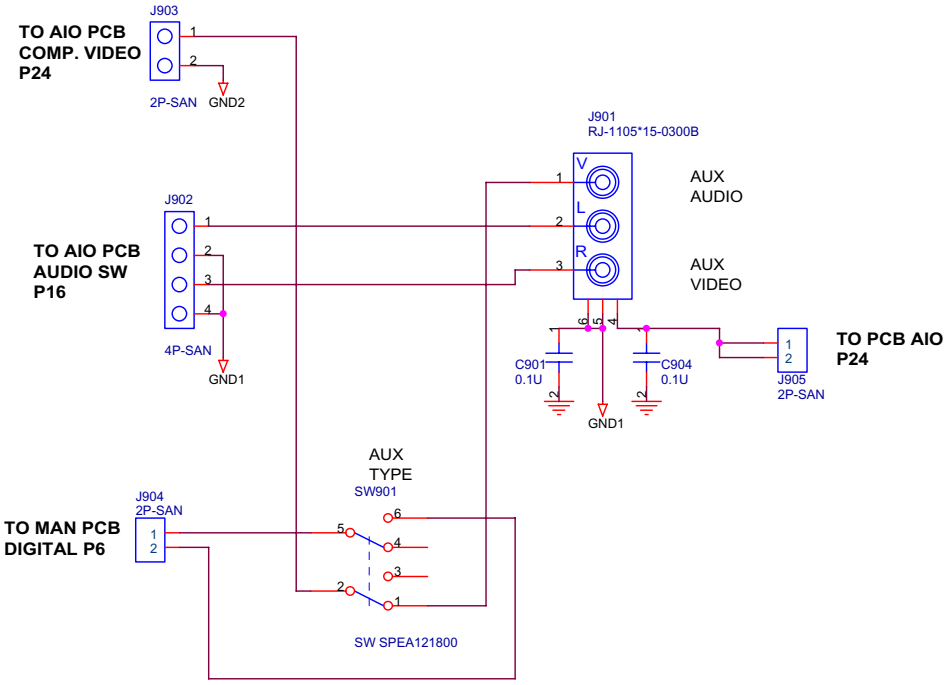
PART TITLE 品名
SCHEMATIC,AIO AV-452

DWG TITLE 図名
SCHEMATIC CIRCUIT DIAGRAM

DWG NO. 図番
DWG CODE B

TEAC ティアック株式会社

SHEET 4 OF 4



PCB AUX IN

REV	E.C.N. NO.	DATE	PLANNED	APPROVED

APPROVED		UNIT mm
CHECKED		ANGLE
PLANNED		SCALE :
DRAWN		

MATERIAL 材料

FINISH 仕上

TREATMENT 処理

TOLERANCE 公差

TS-E

D007745 00B

PART NO. 品 番

APPLICATION 適 用

PART TITLE 品名

SCHEMATIC,AUX IN AV-452

DWG TITLE 図名 SCHEMATIC CIRCUIT DIAGRAM

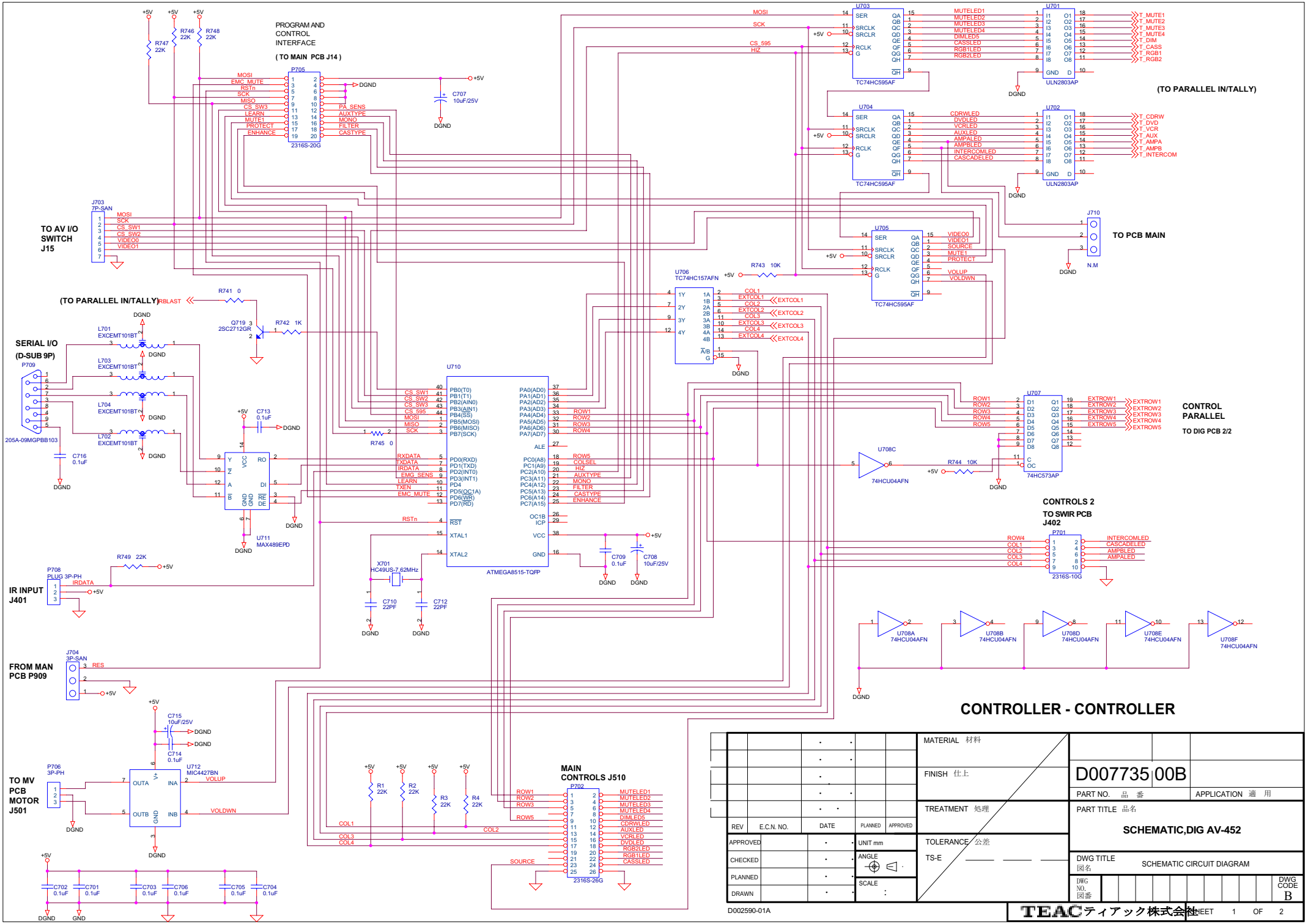
DWG NO. 図番

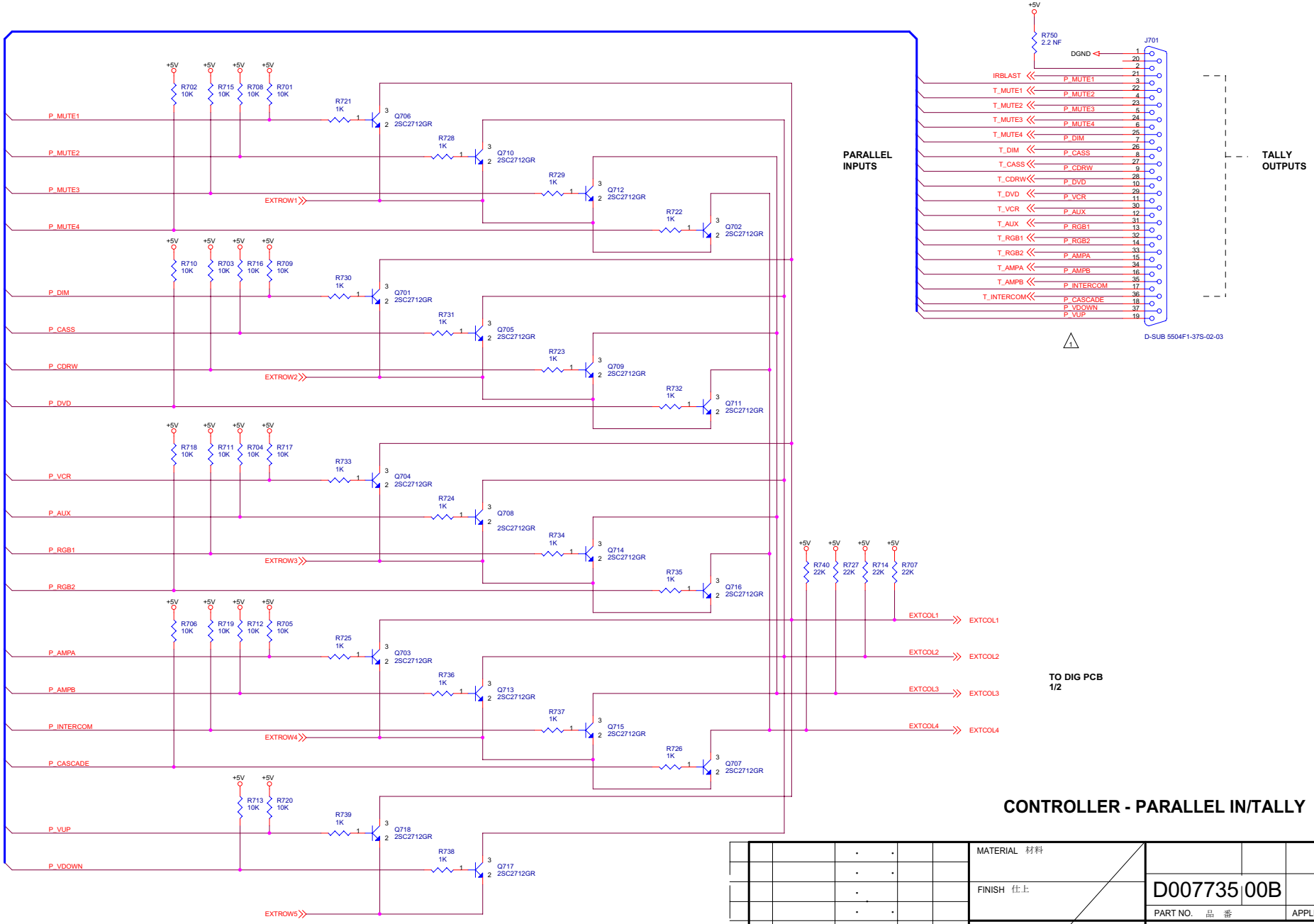
DWG CODE A

D002591-01A

TEAC ティアック株式会社

SHEET 1 OF 1


PROGRAM AND CONTROL INTERFACE
(TO MAIN PCB J14)
P705
2316S-20G
TO AV I/O SWITCH J15
J703
7P-SAN
(TO PARALLEL IN/TALLY)
SERIAL I/O (D-SUB 9P)
P709
205A-09MGPBB103
U710
ATMEGA8515-TQFP
U711
MAX489EPD
X701
HC49US-7.62MHz
IR INPUT J401
P708
PLUG 3P-PH
FROM MAN PCB P909
J704
3P-SAN
TO MV PCB MOTOR J501
P706
3P-PH
U712
MIC4427BN
MAIN CONTROLS J510
P702
2316S-26G
U703
U704
U705
U706
TC74HC157AFN
TC74HC595AF
U701
U702
ULN2803AP
TO PCB MAIN
J710
N.M
U707
74HC573AP
U708C
74HCU04AFN
CONTROL PARALLEL
TO DIG PCB 2/2
CONTROLS 2
TO SWIR PCB
J402
P701
2316S-10G
U708A
U708B
U708D
U708E
U708F
CONTROLLER - CONTROLLER
D007735 00B
SCHEMATIC,DIG AV-452
SCHEMATIC CIRCUIT DIAGRAM
TEAC ティアック株式会社
D002590-01A



CONTROLLER - PARALLEL IN/TALLY

REV	E.C.N. NO.	DATE	PLANNED	APPROVED
APPROVED			UNIT mm	
CHECKED			ANGLE	
PLANNED			SCALE	:
DRAWN				

MATERIAL 材料

FINISH 仕上

TREATMENT 処理

TOLERANCE 公差

TS-E

D007735 00B

PART NO. 品番

APPLICATION 適用

PART TITLE 品名

SCHEMATIC,DIG AV-452

DWG TITLE 図名 SCHEMATIC CIRCUIT DIAGRAM

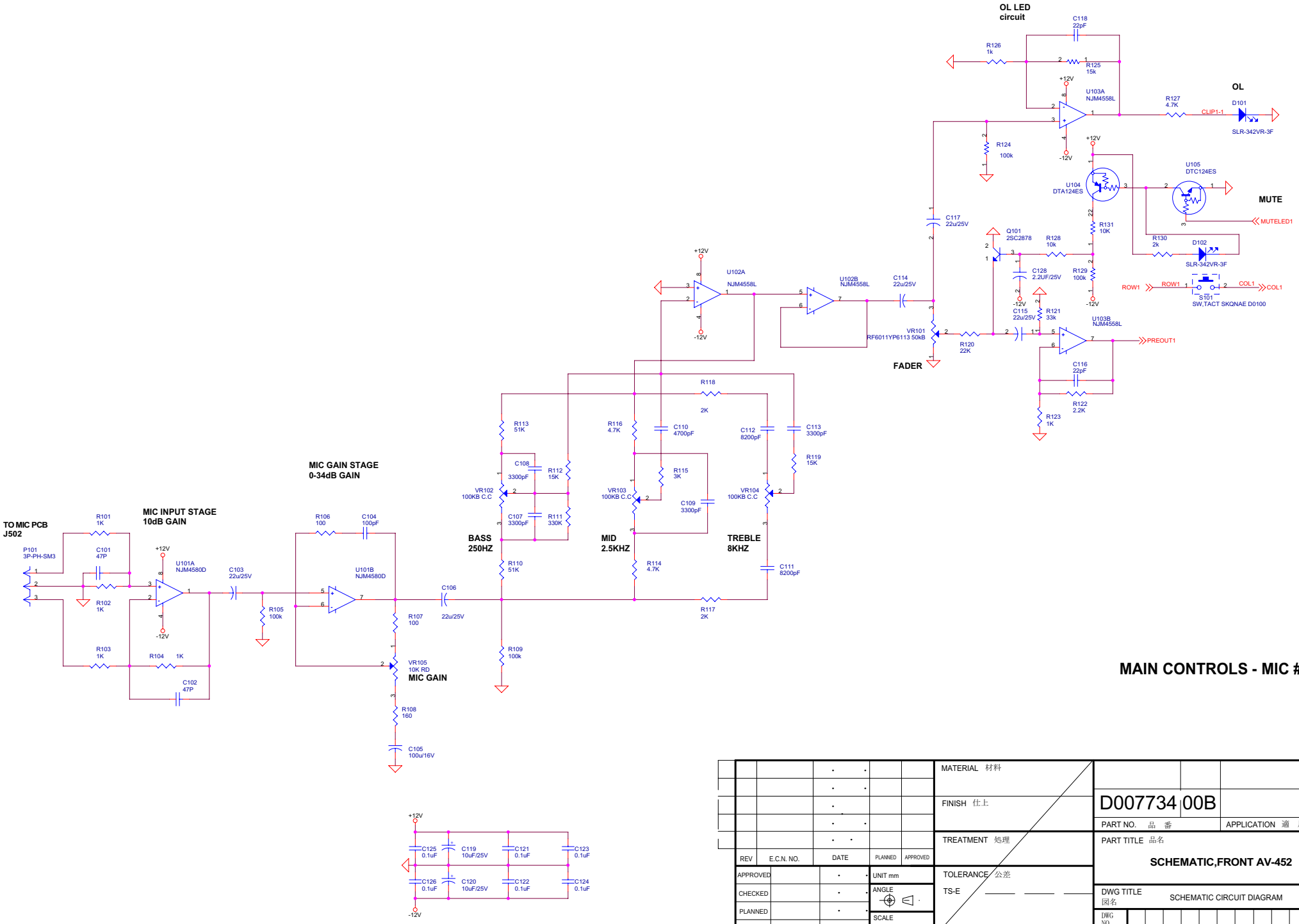
DWG NO. 図番

DWG CODE B

D002590-01A

TEAC ティアック株式会社

SHEET 2 OF 2



MAIN CONTROLS - MIC #1

REV	E.C.N. NO.	DATE	PLANNED	APPROVED

APPROVED	
CHECKED	
PLANNED	
DRAWN	

UNIT mm
ANGLE
SCALE :

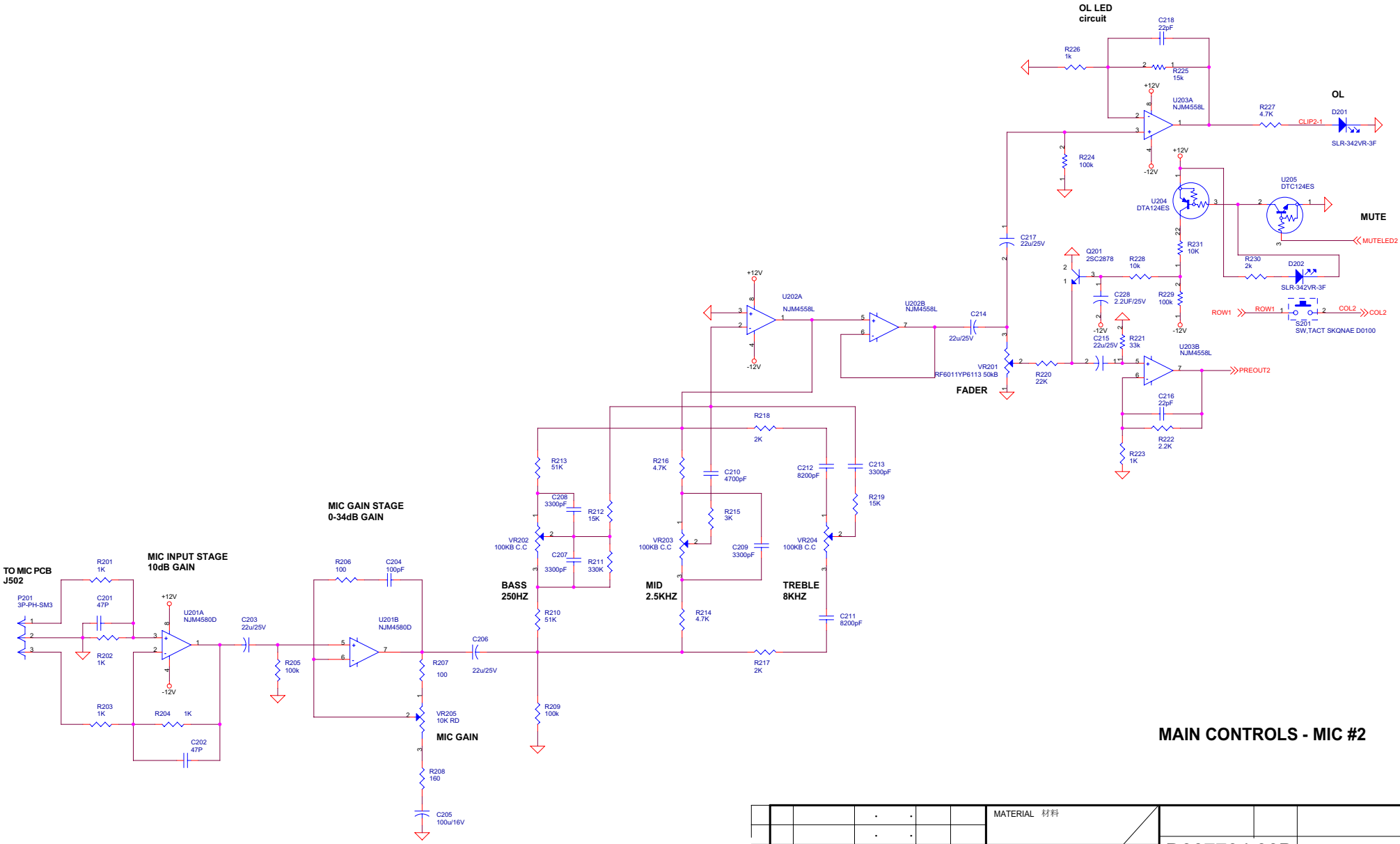
MATERIAL 材料
FINISH 仕上
TREATMENT 処理
TOLERANCE 公差
TS-E

D007734 00B
PART NO. 品番
APPLICATION 適用
PART TITLE 品名
SCHEMATIC,FRONT AV-452
DWG TITLE 図名
SCHEMATIC CIRCUIT DIAGRAM
DWG NO. 図番
DWG CODE B

D002590-01A

TEAC ティアック株式会社

SHEET 1 OF 6



MAIN CONTROLS - MIC #2

REV	E.C.N. NO.	DATE	PLANNED	APPROVED
APPROVED			UNIT mm	
CHECKED			ANGLE	
PLANNED			SCALE	
DRAWN				

D002590-01A

MATERIAL 材料

FINISH 仕上

TREATMENT 処理

TOLERANCE 公差

TS-E

D007734 00B

PART NO. 品番

APPLICATION 適用

PART TITLE 品名

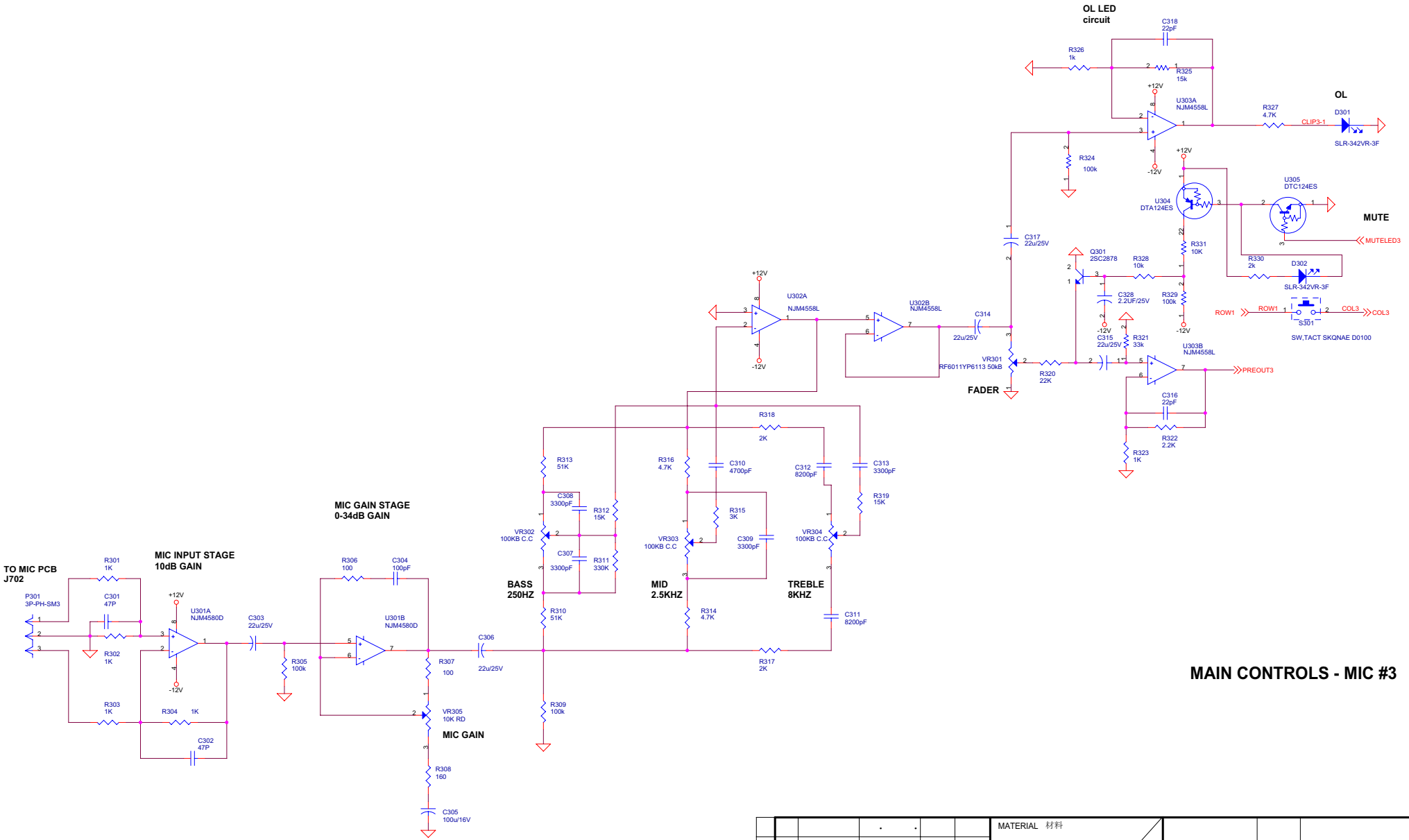
SCHEMATIC,FRONT AV-452

DWG TITLE 図名 SCHEMATIC CIRCUIT DIAGRAM

DWG NO. 図番

DWG CODE B

TEAC ティアック株式会社



MAIN CONTROLS - MIC #3

REV	E.C.N. NO.	DATE	PLANNED	APPROVED

APPROVED	
CHECKED	
PLANNED	
DRAWN	

UNIT mm
ANGLE
SCALE :

MATERIAL 材料
FINISH 仕上
TREATMENT 処理
TOLERANCE 公差
TS-E

D007734 00B

PART NO. 品番 | APPLICATION 適用

PART TITLE 品名
SCHEMATIC,FRONT AV-452

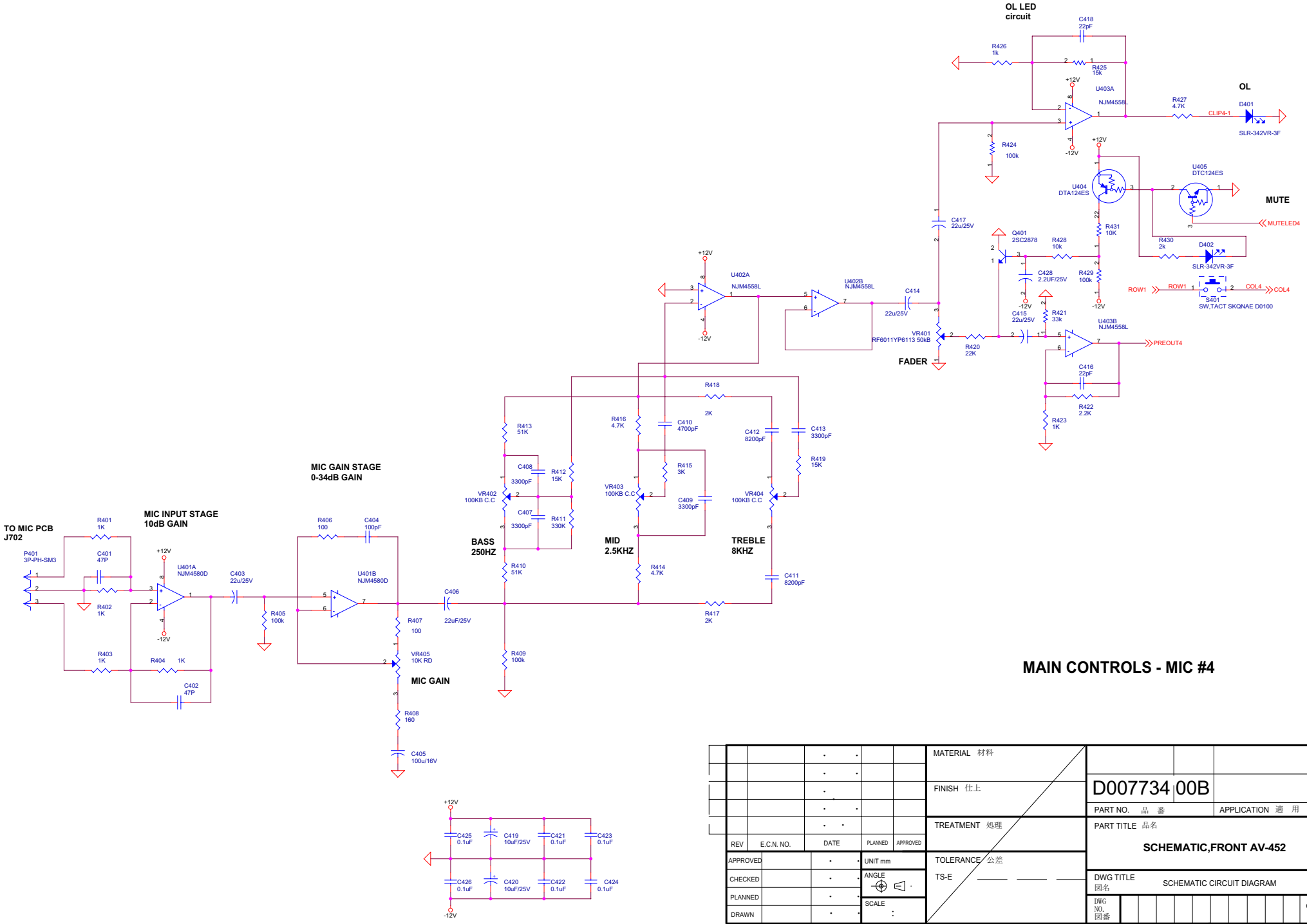
DWG TITLE 図名 SCHEMATIC CIRCUIT DIAGRAM

DWG NO. 図番 | DWG CODE B

D002590-01A

TEAC ティアック株式会社

SHEET 3 OF 6



MAIN CONTROLS - MIC #4

REV	E.C.N. NO.	DATE	PLANNED	APPROVED

APPROVED	
CHECKED	
PLANNED	
DRAWN	

UNIT mm
ANGLE
SCALE :

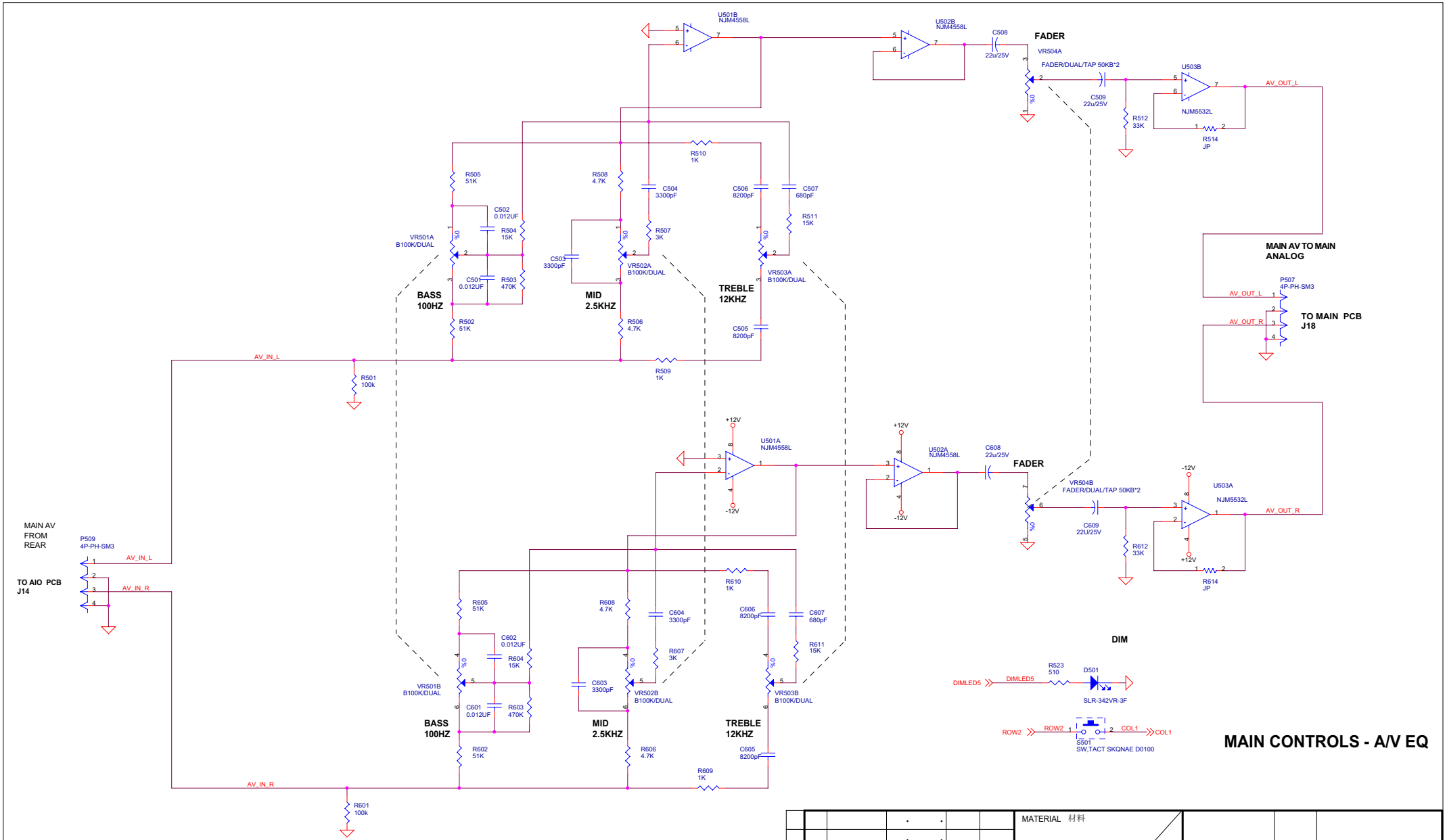
MATERIAL 材料
FINISH 仕上
TREATMENT 処理
TOLERANCE 公差
TS-E

D007734 00B
PART NO. 品番
APPLICATION 適用
PART TITLE 品名
SCHEMATIC,FRONT AV-452
DWG TITLE 図名
SCHEMATIC CIRCUIT DIAGRAM
DWG NO. 図番
DWG CODE B

D002590-01A

TEAC ティアック株式会社

SHEET 4 OF 6



REV	E.C.N. NO.	DATE	PLANNED	APPROVED
APPROVED				
CHECKED				
PLANNED				
DRAWN				

D002590-01A

MATERIAL 材料

FINISH 仕上

TREATMENT 処理

TOLERANCE 公差

TS-E

UNIT mm

ANGLE

SCALE :

D007734 00B

PART NO. 品番

APPLICATION 適用

PART TITLE 品名

SCHEMATIC,FRONT AV-452

DWG TITLE 図名

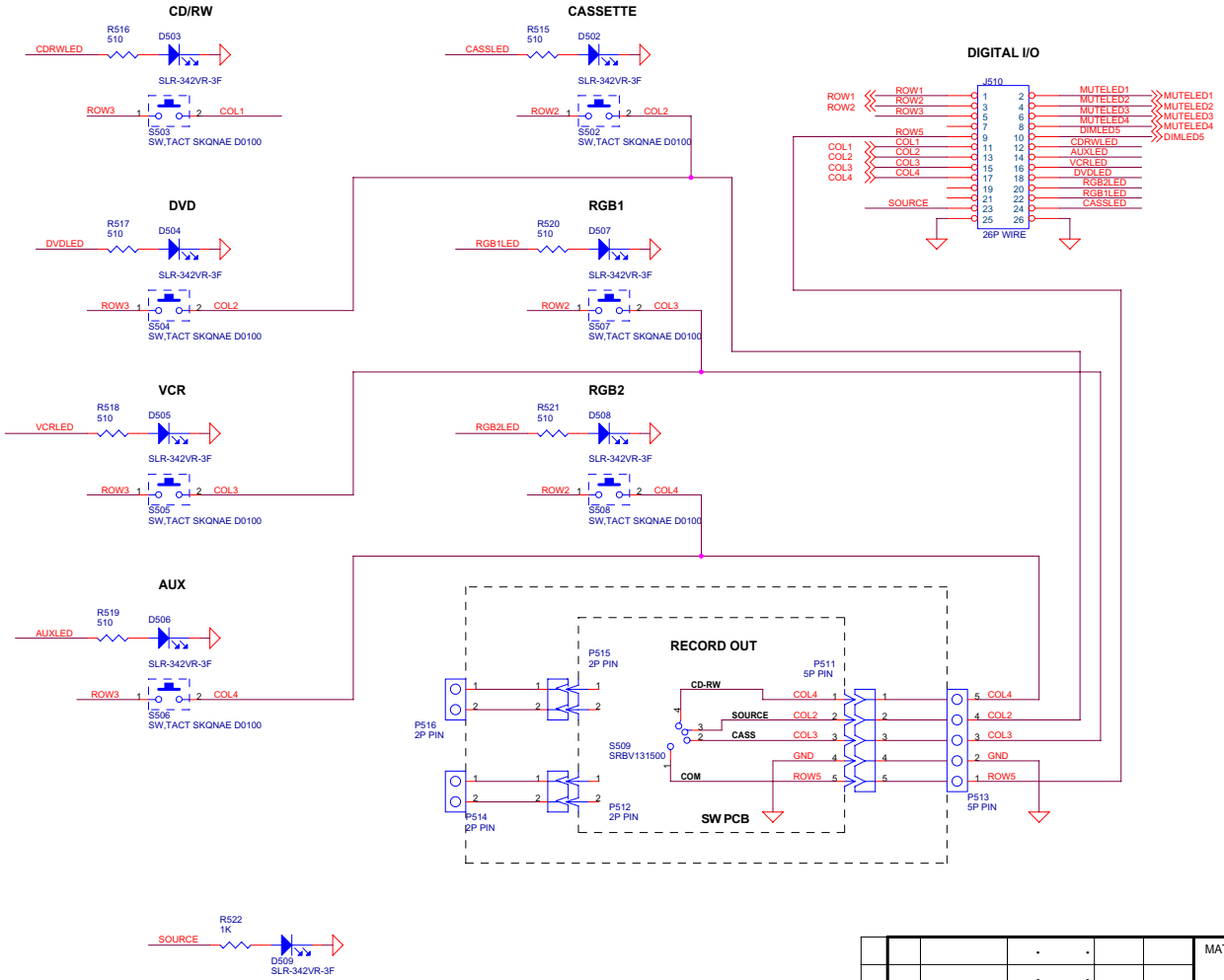
SCHEMATIC CIRCUIT DIAGRAM

DWG NO. 図番

DWG CODE B

TEAC ティアック株式会社

SHEET 5 OF 6



MAIN CONTROLS - SWITCHES

REV	E.C.N. NO.	DATE	PLANNED	APPROVED

APPROVED		UNIT mm
CHECKED		ANGLE
PLANNED		SCALE :
DRAWN		

D002590-01A

MATERIAL 材料

FINISH 仕上

TREATMENT 処理

TOLERANCE 公差

TS-E

D007734 00B

PART NO. 品番 | APPLICATION 適用

PART TITLE 品名

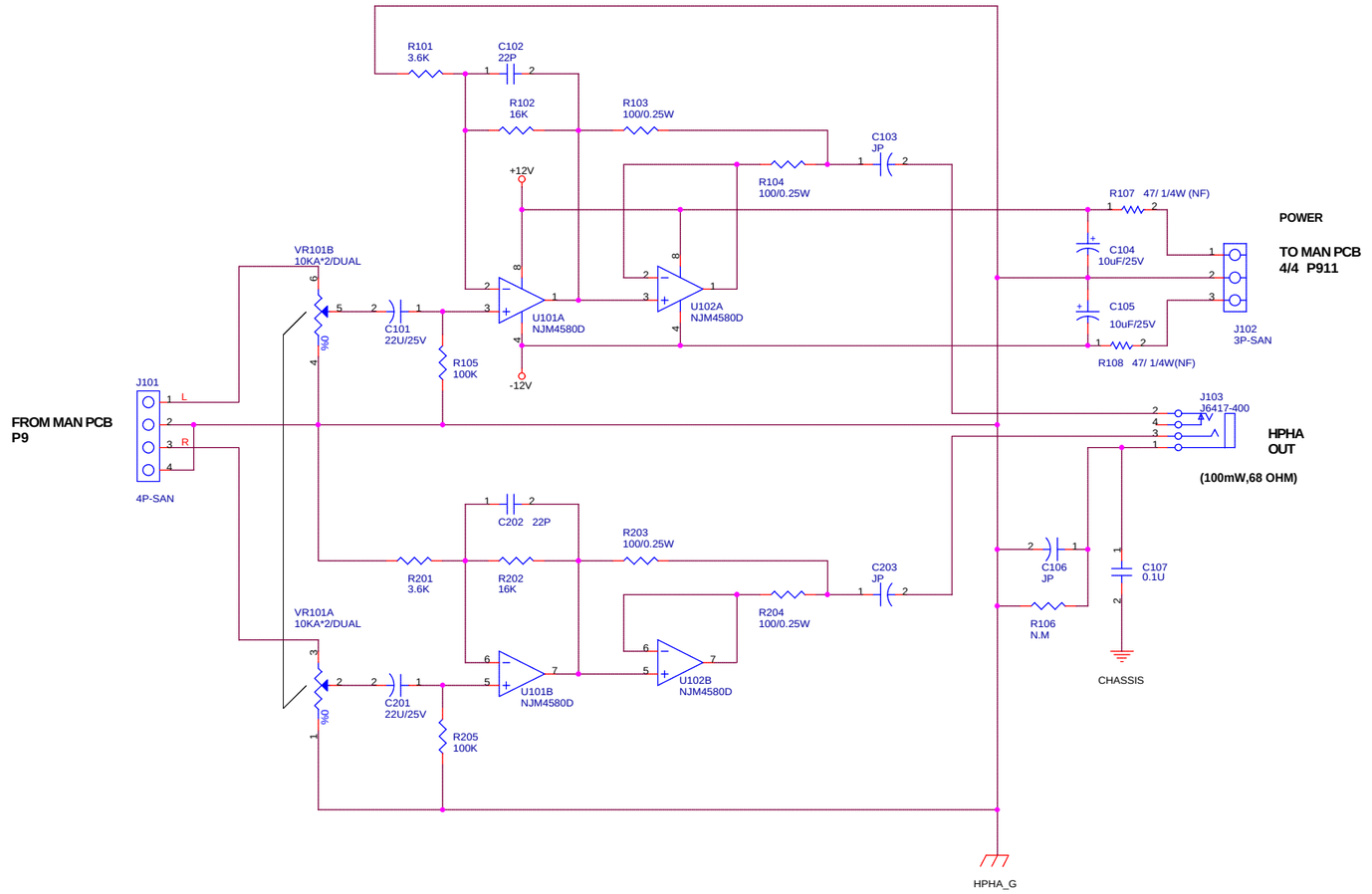
SCHEMATIC,FRONT AV-452

DWG TITLE 図名 SCHEMATIC CIRCUIT DIAGRAM

DWG NO. 図番 | DWG CODE B

TEAC ティアック株式会社

SHEET 6 OF 6



HEAD PHONES

REV	E.C.N. NO.	DATE	PLANNED	APPROVED
		. .		
		. .		
		.		
		. .		
		. .		

APPROVED		. .	UNIT mm
CHECKED		. .	ANGLE
PLANNED		. .	SCALE :
DRAWN		. .	

D002590-01A

MATERIAL ? ?

FINISH ? ?

TREATMENT ? ?

TOLERANCE ? ?

TS-E

D007738 00B

PART NO. ? ? APPLICATION ? ?

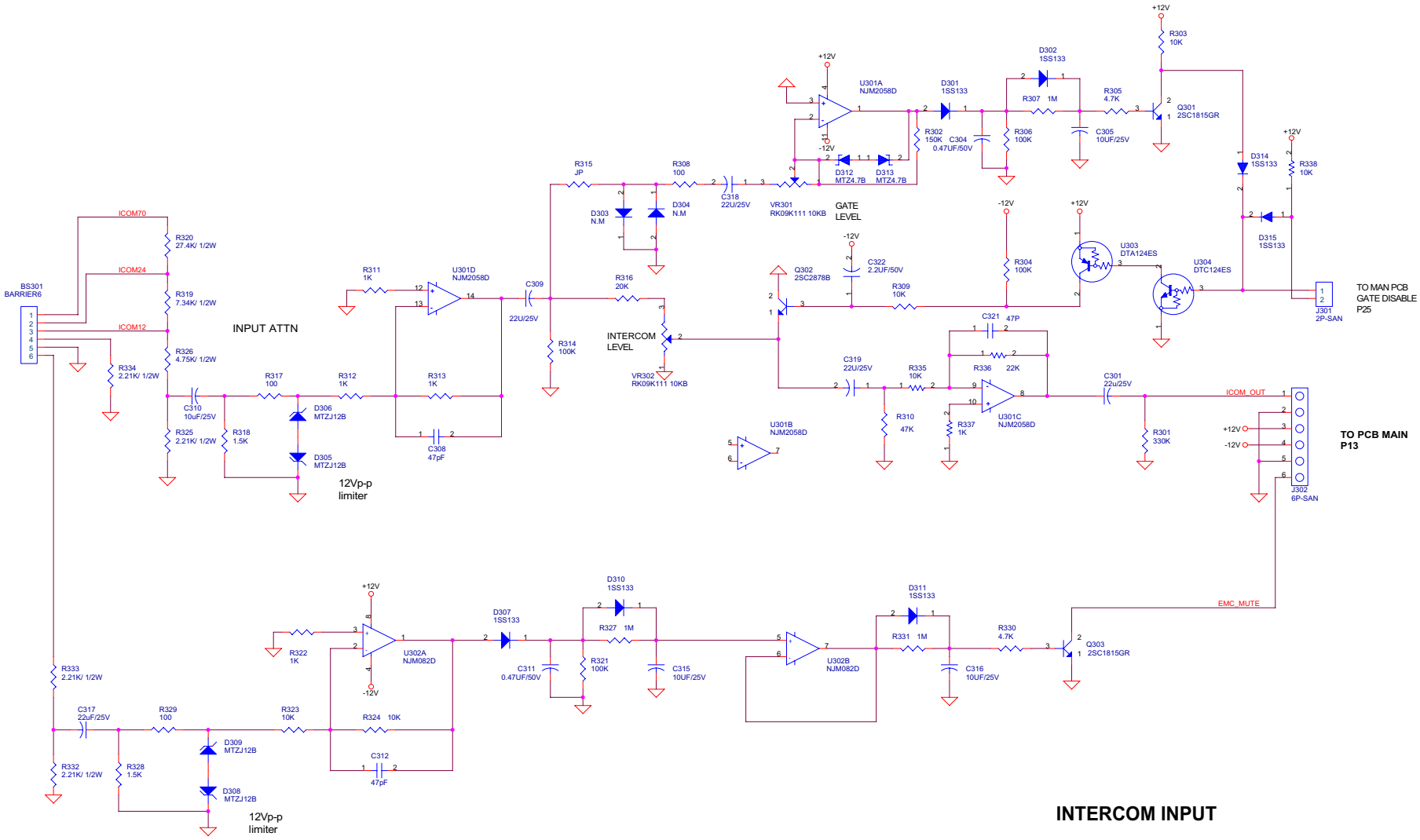
PART TITLE ? ?

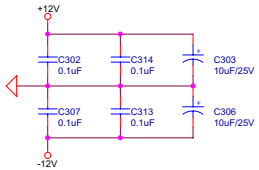
SCHEMATIC,HPHA AV-452

DWG TITLE ? ? SCHEMATIC CIRCUIT DIAGRAM

DWG NO. ? ? DWG CODE B

TEAC ? ? ? ? ? ? ? ? ? SHEET 1 OF 1





REV	E.C.N. NO.	DATE	PLANNED	APPROVED	
APPROVED			UNIT mm		
CHECKED			ANGLE		
PLANNED			SCALE		
DRAWN					

D002590-01A

MATERIAL 材料

FINISH 仕上

TREATMENT 処理

TOLERANCE 公差

TS-E

D007743 00B

PART NO. 品 番

APPLICATION 適 用

PART TITLE 品名

SCHEMATIC,ICOM AV-452

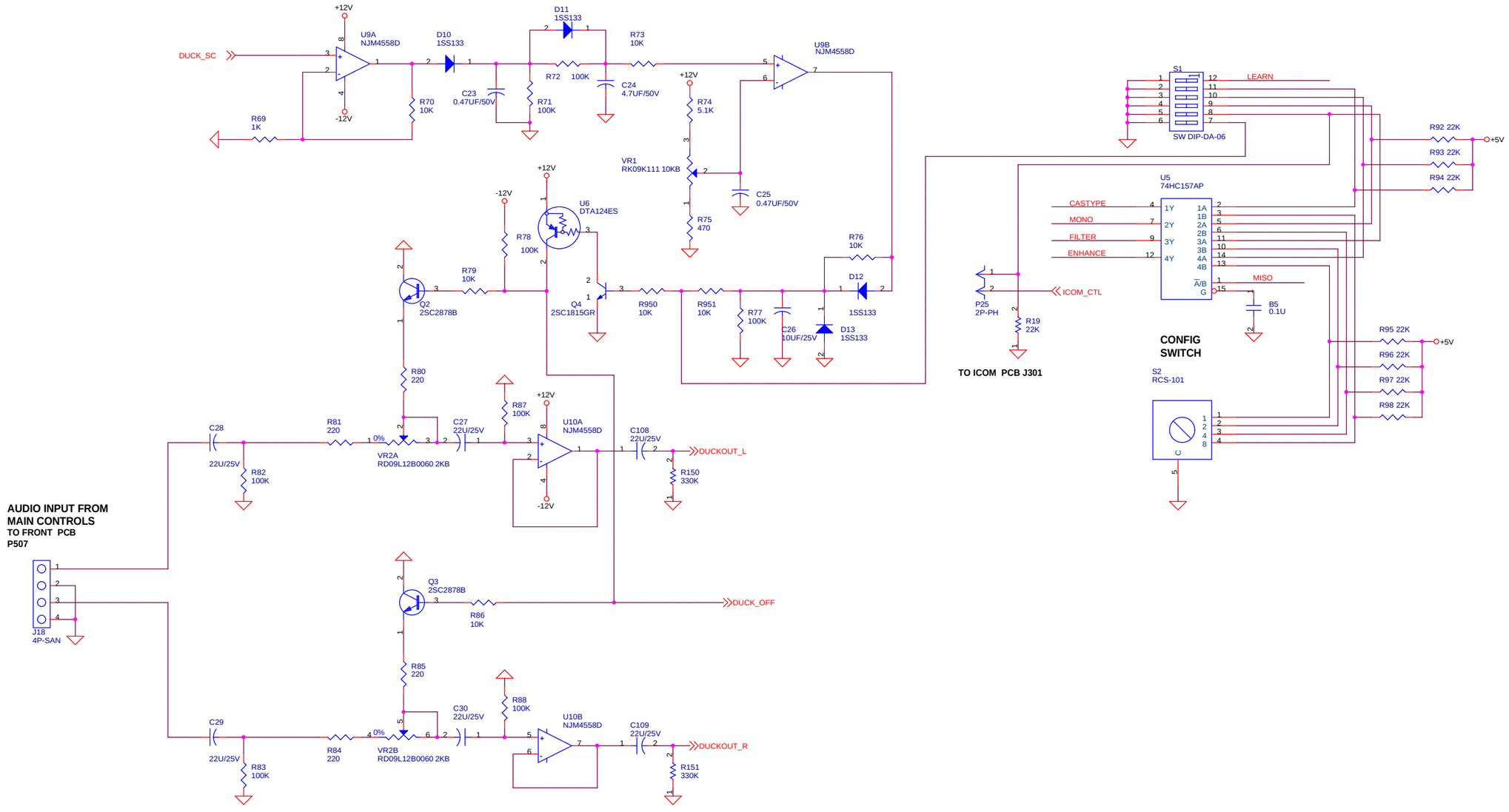
DWG TITLE 図名 SCHEMATIC CIRCUIT DIAGRAM

DWG NO. 図番

DWG CODE B

TEAC ティアック株式会社

SHEET 1 OF 1



MAIN ANALOG - DUCKER

REV	E.C.N. NO.	DATE	PLANNED	APPROVED
APPROVED		. .	UNIT mm	
CHECKED		. .	ANGLE	
PLANNED		. .	SCALE :	
DRAWN		. .		

MATERIAL ? ?

FINISH ? ?

TREATMENT ? ?

TOLERANCE ? ?

TS-E

D007737 00B

PART NO. ? ? APPLICATION ? ?

PART TITLE ? ?

SCHEMATIC,MAIN AV-452

DWG TITLE ? ? SCHEMATIC CIRCUIT DIAGRAM

DWG NO. ? ? DWG CODE B

D002590-01A

TEAC ? ? ? ? ? ? ? ? ? SHEET 1 OF 4

MIC INS FROM MAIN CONTROL

MIC SUMMING AMP

TOFRONT PCB P502

TO FRONT PCB P505

J15 8P-SAN

R39 10K

R40 10K

R41 10K

R42 10K

C14 47pF

R37 27K

U4C NJM2058D

R38 1K

100HZ HP FILTER

C13 0.012uF(MYLAR)

R36 NM

FILTERIN

FILTEROUT

R35 150K

U4D NJM2058D

C12 22uF/25V

R31 100

INS_SEND

INS_RTN

R32 330K

C11 10uF/35V(BP)

MIC INSERT

J16 J6417-400

MIC OUTPUT TO DUCKER SIDE CHAIN

R34 330K

DUCK_SC

C47 47P

R21 10K

C48 22U/25V

U3A NJM4558D

R20 10K

R23 330K

R22 1K

D8

D9

NM

TO DIGITAL P705

J14 2316S-20G

MOSI

EMC_MUTE

SCK

MISO

CS_SW3

LEARN

MUTE1

PROTECT

ENHANCE

+5V

DGND

AUXTYPE

MONO

FILTER

CASTYPE

CASCADEIN_L

CASCADEIN_R

R99 1K

R100 1K

P8-A 4P-PH

D6

D7

D4

D5

NM

CASCADE INPUTS TO AIO PCB J19

MAIN_L

MAIN_R

R9 24K

R10 24K

R11 24K

R12 24K

R13 24K

R14 24K

SW1

STEREO

MONO

SW,SSSF122NA3

ICOMOUT

R5 12K

C3 47pF

R3 24K

U4A NJM2058D

C1 22uF/25V

EMG RELAY #2 (STEREO OUT MUTE)

TO STEREO OUT (AIO PCB J17)

P3

5P-PH

K1 RSB-12-S

D1 1SS133

R1 100K

R6 1K

STEREO OUT SUM AMPS

C2 22uF/25V

R2 100K

C4 47pF

R4 24K

STEREO OUT MONO SW

U4B NJM2058D

ICOMOUT

R7 12K

R8 1K

MUTE1

R17 1K

R15 1K

Q1 2SC1815GR

D2 1SS133

R16 470

POWER AMP CONTROL

P905-5

Q5 2SC1815GR

R952 10K

D14 1SS133

D3 1SS133

R953 4.7K

EMC_MUTE

PROTECT

R18 1K

P2 3P-PH

J1 5P-SAN

EMC_MUTE

EMG_SENS

+12V

-12V

AUDIO IN FROM DUCKER

DUCKOUT_L

DUCKOUT_R

R43 3K

R44 3K

R45 3K

R46 3K

R47 33K

R48 33K

U2

NJU7311AL

VEE

L1

L2

L-COM1

L3

L4

L-COM2

L5

L6

L-COM3

L7

L-COM4

ST

VSS

VDD

R1

R2

R-COM1

R3

R4

R-COM2

R5

R6

R-COM3

R7

R-COM4

DATA

CK

CASCADEIN_L

CASCADEIN_R

R49 2K

R50 2K

MAIN_L

MAIN_R

R51 3K

R52 3K

R53 3K

R54 3K

FILTERIN

FILTEROUT

CS_SW3

ICOM_CTL

(P25-2)

MOSI

SCK

AV/MIC CASCADE SUM AMP

TO MASTER VOLUME J502

P10-B 4P-PH

MIX_L

MAIN_L

C15 47pF

R56 3.6K

U1A NJM2058D

C16 22uF/25V

R57 330K

C49 22U/25V

R24 330K

R55 1K

C55 22U/25V

U7B NJM4558D

C56 22UF/25V

R26 100K

R28 100K

INTERCOM

W167 NM

P13 6P-PH

ICOMOUT

+12V

-12V

FROM ICOM PCB J302

P6 2P-PH

AUXTYPE

FRONT PANEL AUX INPUT J904(AUX_IN PCB)

C19 47pF

R62 10K

MONO SUM INTERCOM SUM

TO AUDIO IN J802

P7

DRV_L

DRV_R

3P-EH

C20 22uF/25V

R61 330K

U1B NJM2058D

R63 1K

C51 22U/25V

R64 3K

R30 100K

ICOMOUT

AV/MIC CASCADE SUM AMP

C17 47pF

R59 3.6K

C50 22U/25V

U1D NJM2058D

C18 22uF/25V

MIX_R

MAIN_R

R25 330K

R58 1K

U7A NJM4558D

C54 22UF/25V

R60 330K

R27 100K

C53 22UF/25V

R29 100K

P10-A

4P-PH

TO MASTER VOLUME J502

W166 NM

MONO SUM INTERCOM SUM

C21 47pF

R66 10K

C52 22U/25V

U1C NJM2058D

C22 22UF/25V

DRV_R

R68 3K

R33 100K

R67 1K

R65 330K

TO HEADPHONE J101

P9

MIX_L

MIX_R

4P-PH

TO MEETING (AIO PCB J19)

P8-B

C57 22U/25V

C58 22U/25V

C39 0.1uF

C37 10uF/25V

C35 0.1uF

C33 0.1uF

C31 0.1uF

C40 0.1uF

C38 10uF/25V

C36 0.1uF

C34 0.1uF

C32 0.1uF

MAIN ANALOG - MIXER

D002590-01A

REV	E.C.N. NO.	DATE	PLANNED	APPROVED
APPROVED				
CHECKED				
PLANNED				
DRAWN				

UNIT mm

ANGLE

SCALE :

MATERIAL ? ?

FINISH ? ?

TREATMENT ? ?

TOLERANCE ? ?

TS-E

D007737 00B

PART NO. ? ?

APPLICATION ? ?

PART TITLE ? ?

SCHEMATIC,MAIN AV-452

DWG TITLE ? ?

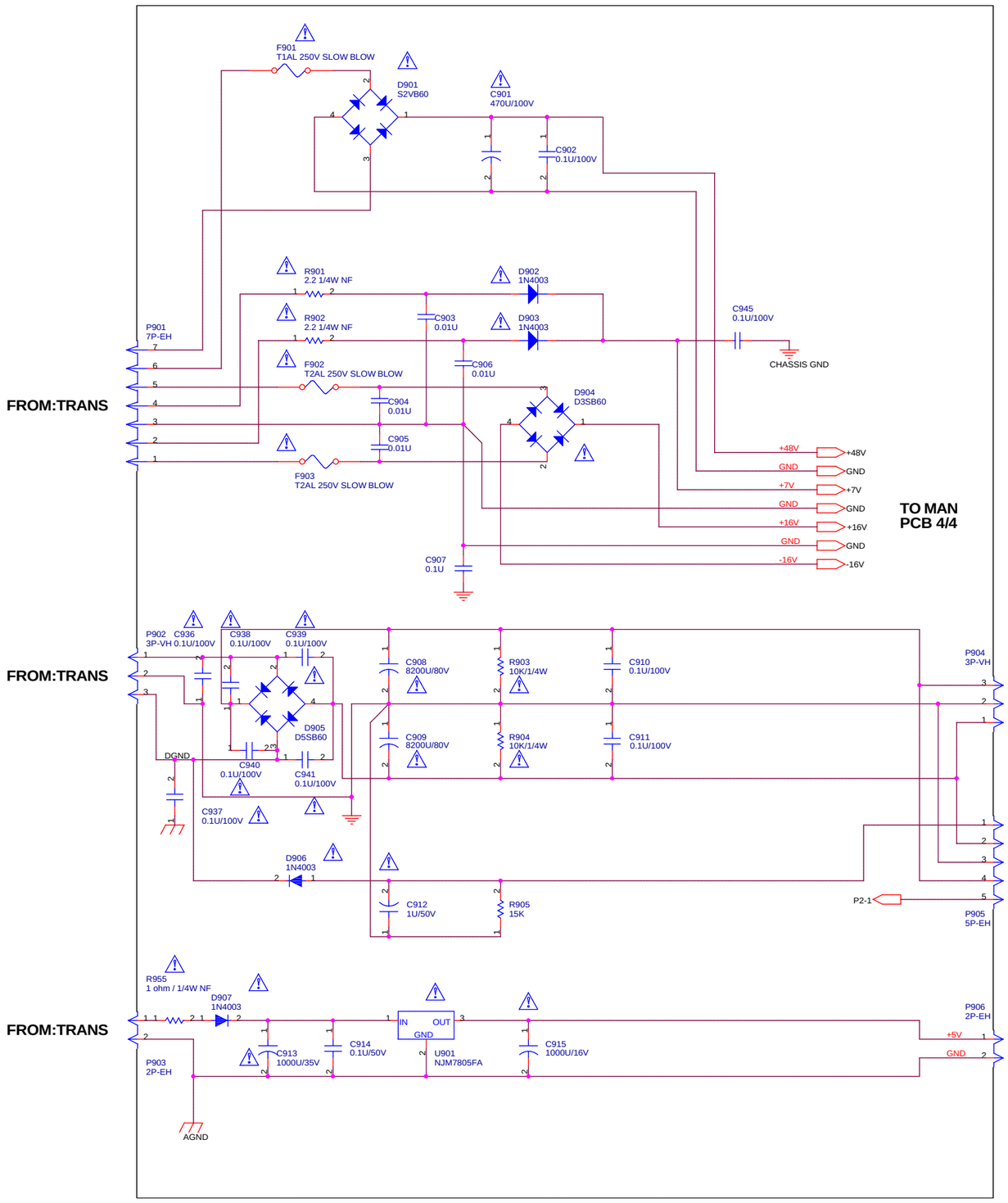
SCHEMATIC CIRCUIT DIAGRAM

DWG NO. ? ?

DWG CODE B

TEAC ? ? ? ? ? ? ? ? ?

SHEET 2 OF 4



POWER SUPPLY 1/2

REV	E.C.N. NO.	DATE	PLANNED	APPROVED
		. .		
		. .		
		.		
		. .		
		. .		

APPROVED		. .	UNIT mm
CHECKED		. .	ANGLE
PLANNED		. .	SCALE :
DRAWN		. .	

MATERIAL ? ?

FINISH ? ?

TREATMENT ? ?

TOLERANCE ? ?

TS-E

D007737	00B	
PART NO. ? ?		APPLICATION ? ?

PART TITLE ? ?

SCHEMATIC,MAIN AV-452

DWG TITLE ? ? SCHEMATIC CIRCUIT DIAGRAM

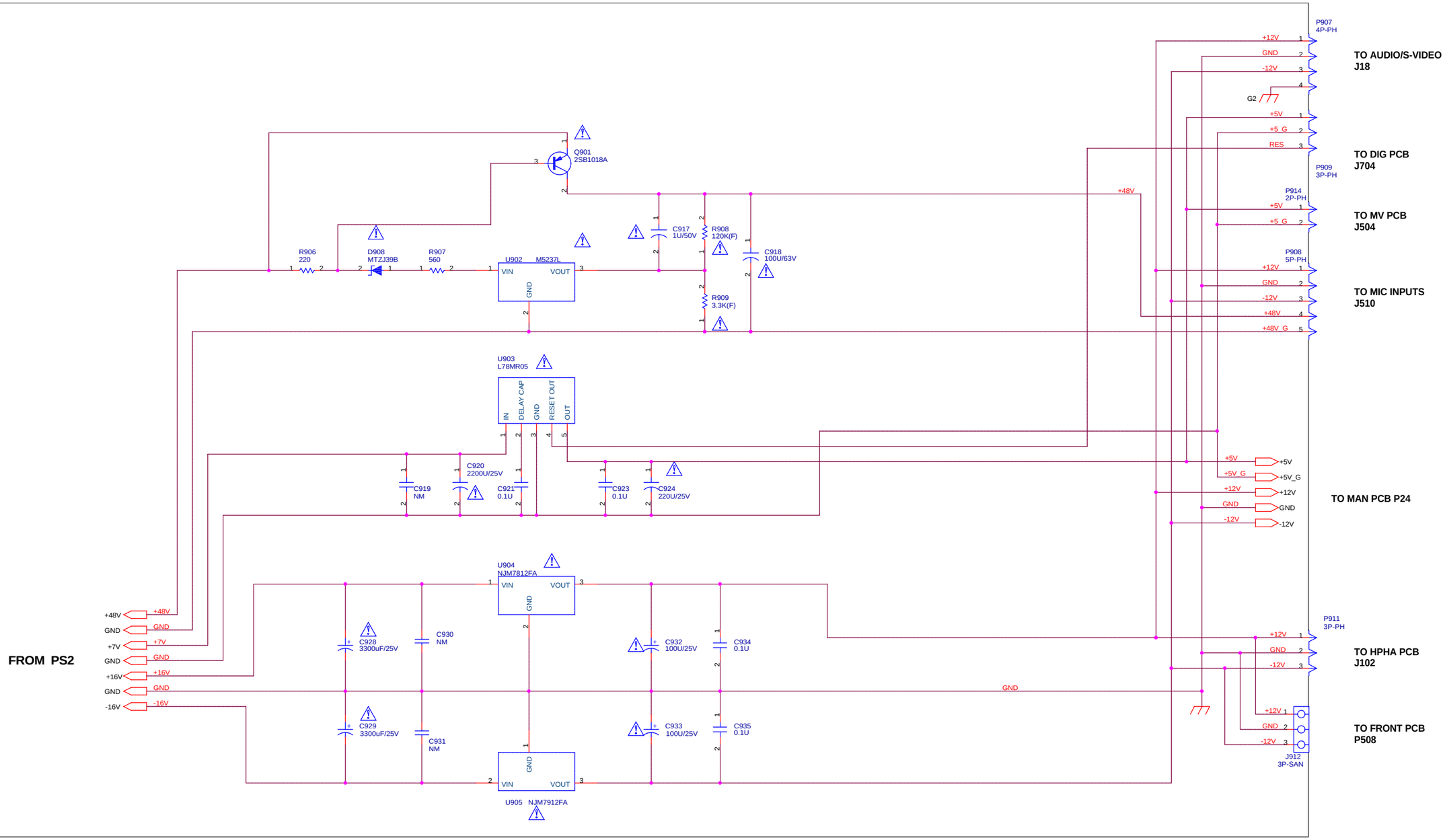
DWG NO. ? ?

DWG CODE B

D002590-01A

TEAC ? ? ? ? ? ? ? ? ?

SHEET 3 OF 4



POWER SUPPLY 2/2

REV	E.C.N. NO.	DATE	PLANNED	APPROVED
		. .		
		. .		
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		. .		

APPROVED		. .	UNIT mm
CHECKED		. .	ANGLE
PLANNED		. .	SCALE :
DRAWN		. .	

D002590-01A

MATERIAL ? ?

FINISH ? ?

TREATMENT ? ?

TOLERANCE ? ?

TS-E

D007737 00B

PART NO. ? ?

APPLICATION ? ?

PART TITLE ? ?

SCHEMATIC,MAIN AV-452

DWG TITLE ? ?

SCHEMATIC CIRCUIT DIAGRAM

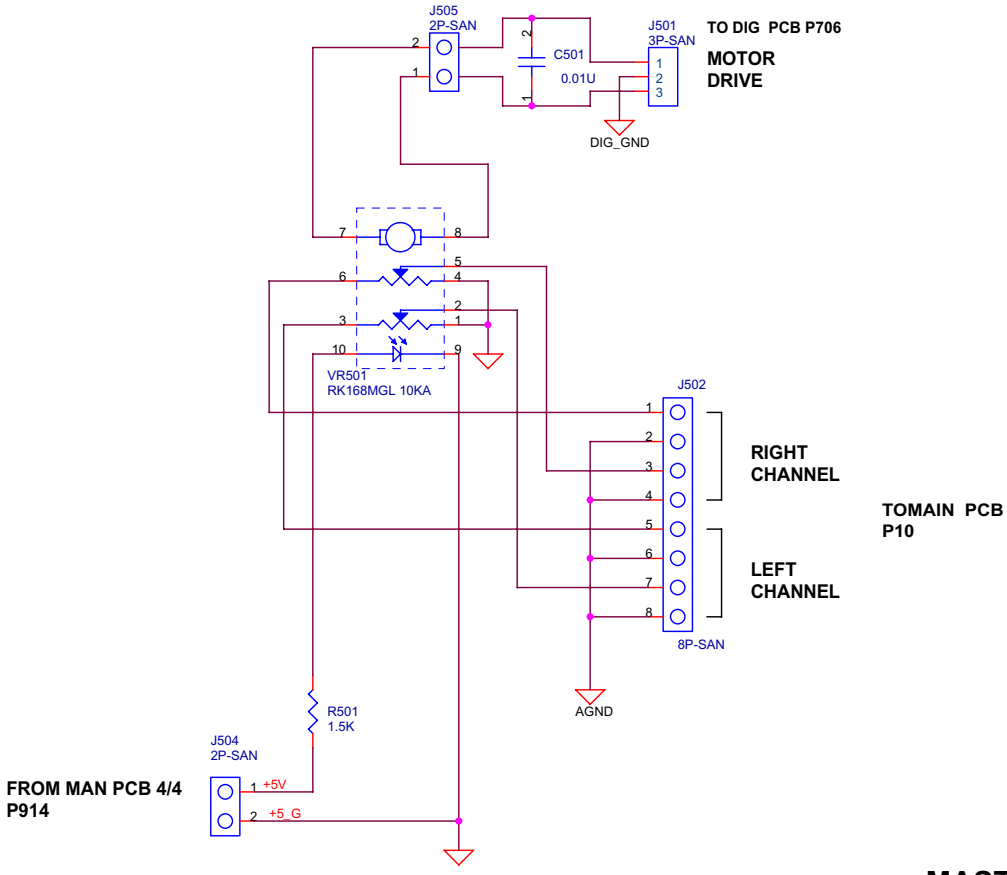
DWG NO. ? ?

DWG CODE B

TEAC ? ? ? ? ? ? ? ? ?

SHEET 4 OF 4

MIC INS FROM MAIN CONTROL
J15 8P-SAN
TOFRONT PCB P502
TO FRONT PCB P505
MIC SUMMING AMP
C14 47pF
R37 27K
R39 10K
R40 10K
R41 10K
R42 10K
U4C NJM2058D
R38 1K
100HZ HP FILTER
C13 0.012uF(MYLAR)
R36 NM
FILTERIN
FILTEROUT
R35 150K
U4D NJM2058D
C12 22uF/25V
R31 100
INS_SEND
INS_RTN
R32 330K
C11 10uF/35V(BP)
MIC INSERT
J16 J6417-400
R34 330K
MIC OUTPUT TO DUCKER SIDE CHAIN
DUCK_SC
CASCADEIN_L
CASCADEIN_R
R99 1K
R100 1K
P8-A 4P-PH
D6 NM
D7 NM
D4 NM
D5 NM
C47 47P
R21 10K
C48 22U/25V
U3A NJM4558D
R23 330K
R20 10K
R22 1K
D8 NM
D9 NM
TO DIGITAL P705
J14
MOSI
EMC_MUTE
SCK
MISO
CS_SW3
LEARN
MUTE1
PROTECT
ENHANCE
+5V
DGND
AUXTYPE
MONO
FILTER
CASTYPE
2316S-20G
CASCADE INPUTS TO AIO PCB J19
MAIN_L
MAIN_R
R9 24K
R10 24K
R11 24K
R12 24K
R13 24K
R14 24K
SW1
STEREO
MONO
STEREO
MONO
SW,SSSF122NA3
ICOMOUT
R5 12K
C3 47pF
R3 24K
U4A NJM2058D
C1 22uF/25V
R1 100K
R6 1K
EMG RELAY #2 (STEREO OUT MUTE)
STEREO OUT SUM AMPS
C2 22uF/25V
R2 100K
K1 RSB-12-S
TO STEREO OUT (AIO PCB J17)
P3
5P-PH
D1 1SS133
STEREO OUT MONO SW
C4 47pF
R4 24K
U4B NJM2058D
ICOMOUT
R7 12K
R8 1K
MUTE1
R17 1K
R15 1K
Q1 2SC1815GR
D2 1SS133
R16 470
POWER AMP CONTROL
+12V
R952 10K
D14 1SS133
P905-5
Q5 2SC1815GR
R953 4.7K
D3 1SS133
EMC_MUTE
PROTECT
R18 1K
AUDIO IN FROM DUCKER
DUCKOUT_L
DUCKOUT_R
R43 3K
R44 3K
R45 3K
R47 33K
R46 3K
R48 33K
U2
NJU7311AL
VEE
L1
L2
L-COM1
L3
L4
L-COM2
L5
L6
L-COM3
L7
L-COM4
ST
VSS
VDD
R1
R2
R-COM1
R3
R4
R-COM2
R5
R6
R-COM3
R7
R-COM4
DATA
CK
CASCADEIN_L
CASCADEIN_R
R49 2K
R50 2K
MAIN_L
MAIN_R
R51 3K
R53 3K
R52 3K
R54 3K
FILTERIN
FILTEROUT
CS_SW3
ICOM_CTL
(P25-2)
MOSI
SCK
AUDIO IN FROM DUCKER
AV/MIC CASCADE SUM AMP
C17 47pF
R59 3.6K
U1D NJM2058D
C50 22U/25V
R25 330K
R58 1K
U7A NJM4558D
C18 22uF/25V
R60 330K
C54 22UF/25V
R27 100K
R53 100K
C53 22UF/25V
R29 100K
MIX_R
MAIN_R
P10-A
4P-PH
TO MASTER VOLUME J502
W166 NM
TO MEETING (AIO PCB J19)
P8-B
4P-PH
C57 22U/25V
C58 22U/25V
MIX_L
MIX_R
TO HEADPHONE J101
P9
4P-PH
C39 0.1uF
C37 10uF/25V
C35 0.1uF
C33 0.1uF
C31 0.1uF
C40 0.1uF
C38 10uF/25V
C36 0.1uF
C34 0.1uF
C32 0.1uF
J1 NM
EMC_MUTE
EMG_SENS
+12V
-12V
TO MASTER VOLUME J502
P10-B 4P-PH
MIX_L
MAIN_L
C15 47pF
R56 3.6K
AV/MIC CASCADE SUM AMP
U1A NJM2058D
C49 22U/25V
R24 330K
C16 22uF/25V
R57 330K
R55 1K
C55 22U/25V
U7B NJM4558D
C56 22UF/25V
R26 100K
R28 100K
W167 NM
INTERCOM
P13 6P-PH
ICOMOUT
FROM ICOM PCB J302
MONO SUM INTERCOM SUM
C21 47pF
R66 10K
U1C NJM2058D
C52 22U/25V
C22 22uF/25V
R68 3K
R33 100K
R67 1K
DRV_R
R65 330K
P6 2P-PH
AUXTYPE
FRONT PANEL AUX INPUT J904(AUX_IN PCB)
C19 47pF
R62 10K
MONO SUM INTERCOM SUM
TO AUDIO IN J802
P7
3P-EH
DRV_L
DRV_R
C20 22uF/25V
R61 330K
U1B NJM2058D
R63 1K
C51 22U/25V
R64 3K
ICOMOUT
R30 100K
MAIN ANALOG - MIXER
D002590-01A
MATERIAL 材料
FINISH 仕上
TREATMENT 処理
TOLERANCE 公差
TS-E
UNIT mm
ANGLE
SCALE
REV E.C.N. NO. DATE PLANNED APPROVED
APPROVED
CHECKED
PLANNED
DRAWN
D007737 00B
PART NO. 品番
APPLICATION 適用
PART TITLE 品名
SCHEMATIC,MAIN AV-452
DWG TITLE 図名
SCHEMATIC CIRCUIT DIAGRAM
DWG NO. 図番
DWG CODE B
TEAC ティアック株式会社
SHEET 2 OF 4



MASTER VOLLME

REV	E.C.N. NO.	DATE	PLANNED	APPROVED

APPROVED			UNIT mm
CHECKED			ANGLE
PLANNED			SCALE :
DRAWN			

MATERIAL 材料

FINISH 仕上

TREATMENT 処理

TOLERANCE 公差

TS-E

D007740 00B

PART NO. 品 番

APPLICATION 適 用

PART TITLE 品名

SCHEMATIC,MV AV-452

DWG TITLE 図名 SCHEMATIC CIRCUIT DIAGRAM

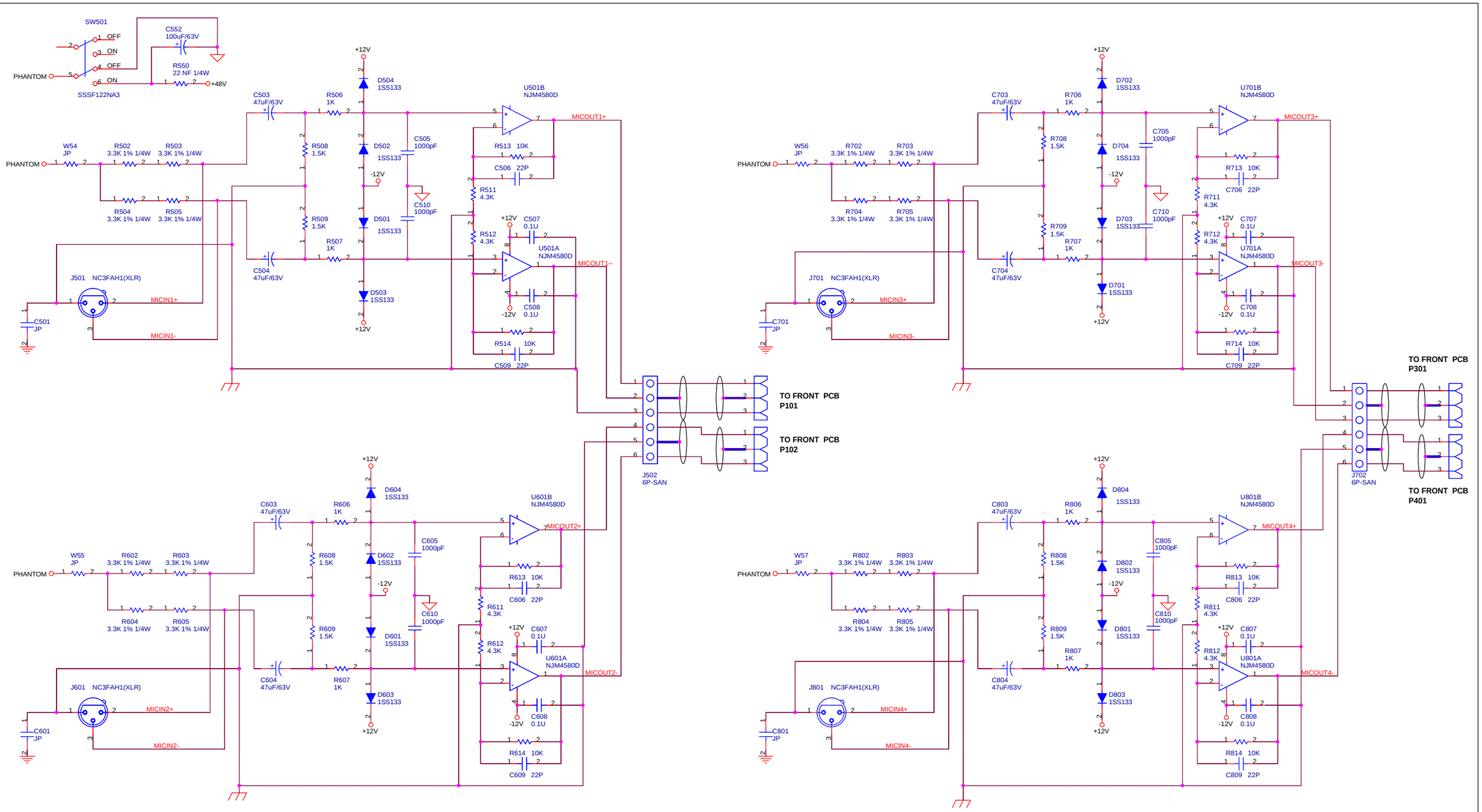
DWG NO. 図番

DWG CODE A

D002591-01A

TEAC ティアック株式会社

SHEET 1 OF 1



MIC INPUTS

REV	E.C.N. NO.	DATE	PLANNED	APPROVED
APPROVED		. .	UNIT mm	
CHECKED		. .	ANGLE	
PLANNED		. .	SCALE :	
DRAWN		. .		

MATERIAL ? ?

FINISH ? ?

TREATMENT ? ?

TOLERANCE ? ?

TS-E

D007742 00B

PART NO. ? ? APPLICATION ? ?

PART TITLE ? ?

SCHEMATIC,MIC AV-452

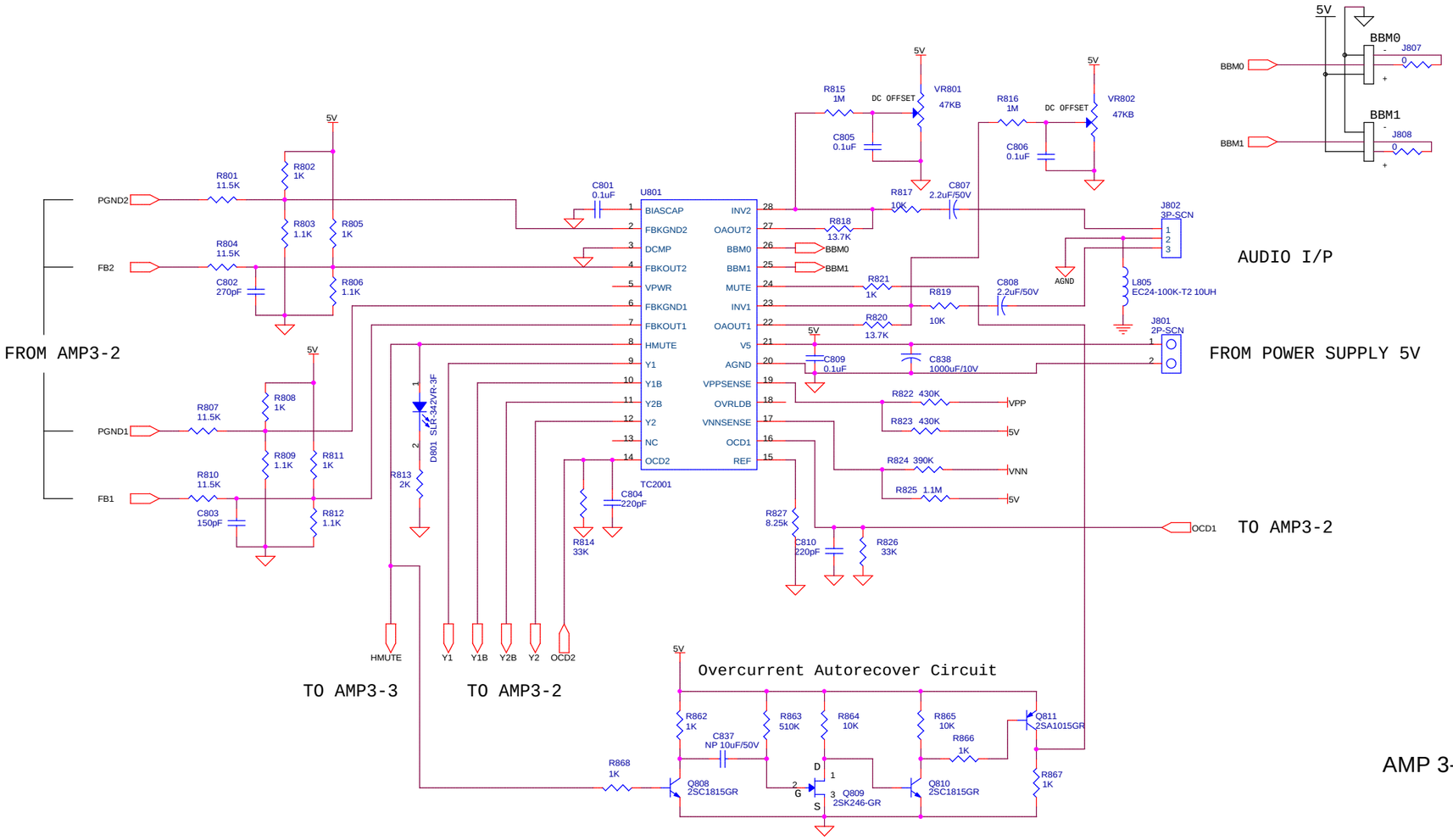
DWG TITLE ? ? SCHEMATIC CIRCUIT DIAGRAM

DWG NO. ? ? DWG CODE B

D002590-01A

TEAC ? ? ? ? ? ? ? ? ?

SHEET 1 OF 1



AMP 3-1

REV	E.C.N. NO.	DATE	PLANNED	APPROVED

APPROVED		
CHECKED		
PLANNED		
DRAWN		

UNIT mm

ANGLE

SCALE :

MATERIAL ? ?

FINISH ? ?

TREATMENT ? ?

TOLERANCE ? ?

TS-E

D007736 00B

PART NO. ? ? APPLICATION ? ?

PART TITLE ? ?

SCHEMATIC,POWER AMP AV-452

DWG TITLE ? ? SCHEMATIC CIRCUIT DIAGRAM

DWG NO. ? ? DWG CODE B

D002590-01A

TEAC ? ? ? ? ? ? ? ? ?

SHEET 1 OF 3

FROM POWER SUPPLY

TO AMP3-3

TO AMP3-1

FROM AMP3-1

AMP 3-2

REV	E.C.N. NO.	DATE		PLANNED	APPROVED
APPROVED				UNIT mm	
CHECKED				ANGLE	
PLANNED				SCALE	:
DRAWN					

MATERIAL ? ?

FINISH ? ?

TREATMENT ? ?

TOLERANCE ? ?

TS-E

D007736 00B

PART NO. ? ? APPLICATION ? ?

PART TITLE ? ?

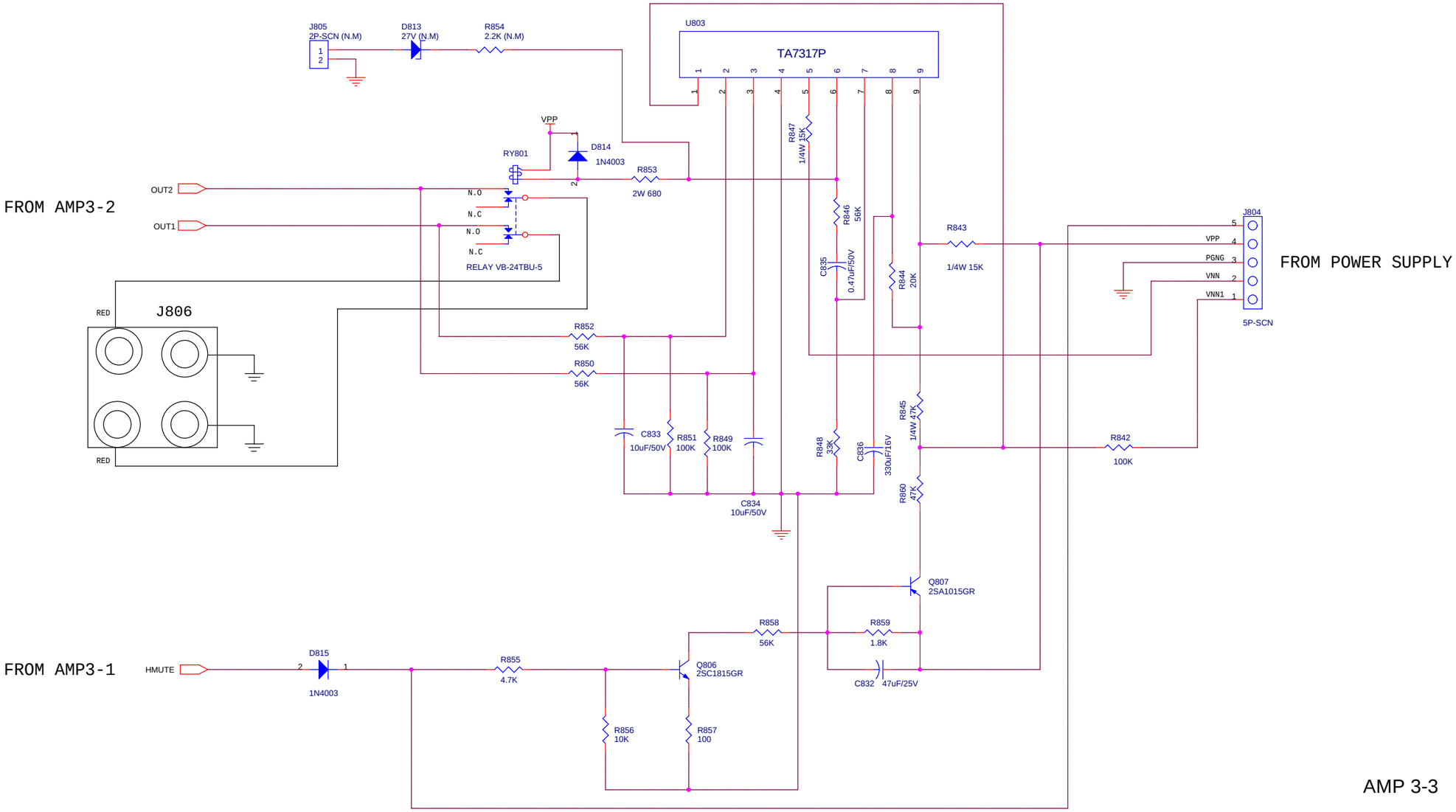
SCHEMATIC,POWER AMP AV-452

DWG TITLE ? ? SCHEMATIC CIRCUIT DIAGRAM

DWG NO. ? ? DWG CODE B

D002590-01A

TEAC ? ? ? ? ? ? ? ? ? SHEET 1 OF 2



REV	E.C.N. NO.	DATE	PLANNED	APPROVED

APPROVED			UNIT mm
CHECKED			ANGLE
PLANNED			SCALE :
DRAWN			

MATERIAL ? ?

FINISH ? ?

TREATMENT ? ?

TOLERANCE ? ?

TS-E

D007736 00B

PART NO. ? ? APPLICATION ? ?

PART TITLE ? ?

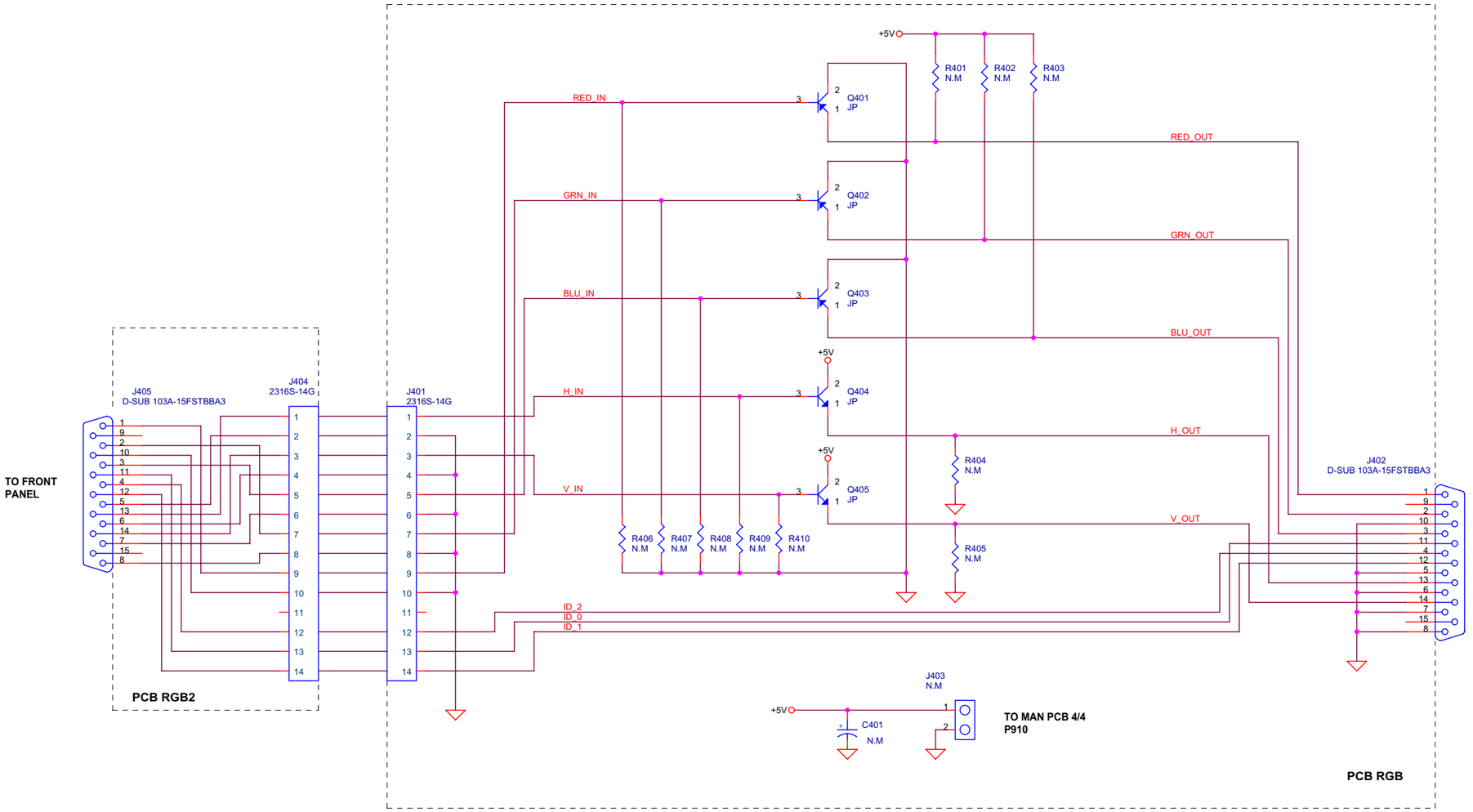
SCHEMATIC,POWER AMP AV-452

DWG TITLE ? ? SCHEMATIC CIRCUIT DIAGRAM

DWG NO. ? ? DWG CODE **B**

D002590-01A

TEAC ? ? ? ? ? ? ? ? ? SHEET 1 OF 3

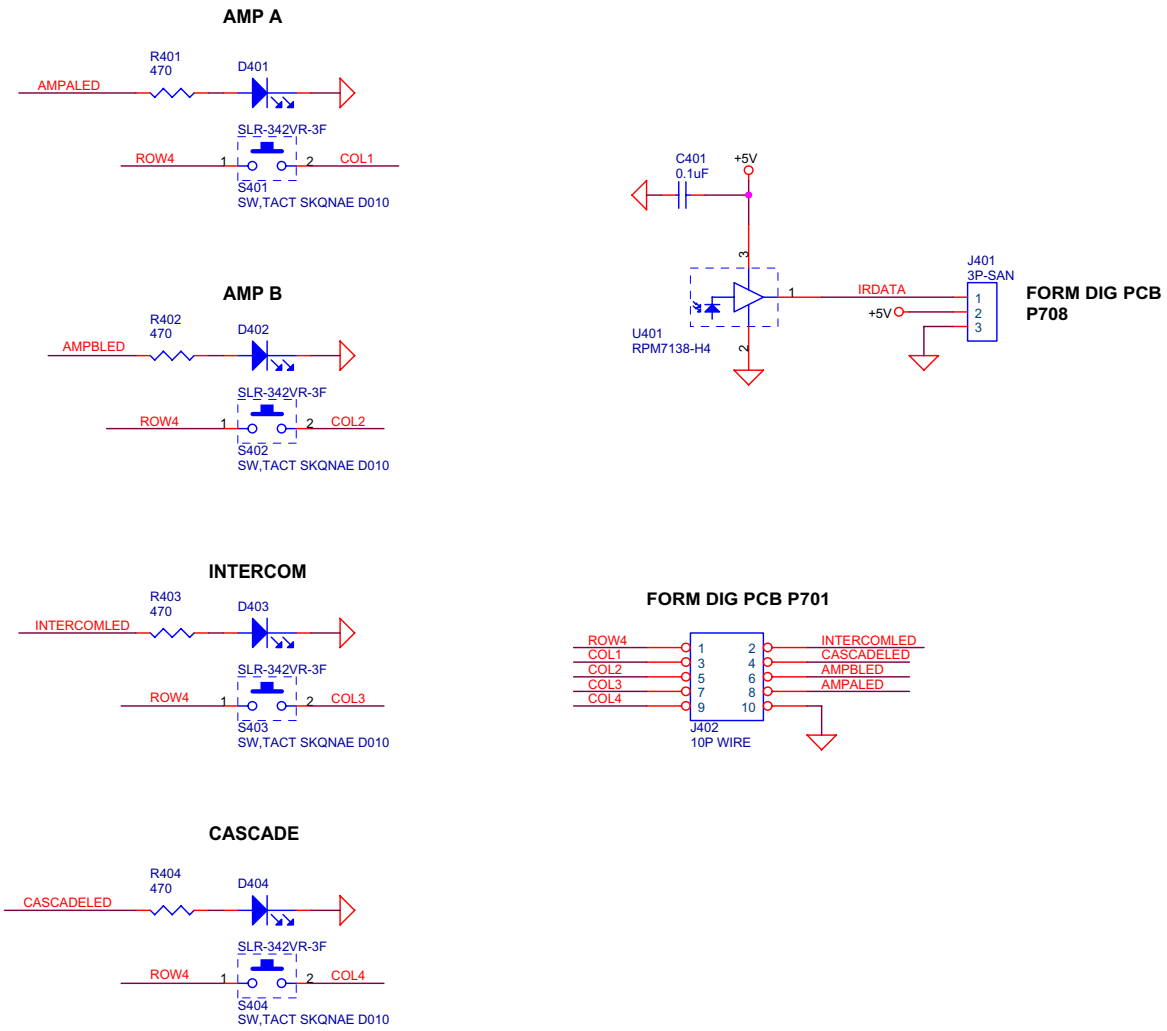


					MATERIAL 材料	D007739 00A
					FINISH 仕上	PART NO. 品 番 / APPLICATION 適 用
					TREATMENT 処理	PART TITLE 品名: SCHEMATIC,RGB AV-452
REV	E.C.N. NO.	DATE	PLANNED	APPROVED	TOLERANCE 公差 TS-E	DWG TITLE 図名: SCHEMATIC CIRCUIT DIAGRAM
APPROVED			UNIT mm			DWG NO. 図番 / DWG CODE B
CHECKED			ANGLE			
PLANNED			SCALE :			
DRAWN						

D002590-01A

TEACティアック株式会社

SHEET 1 OF 1



SWITCHES AND INFRA RES RX

REV	E.C.N. NO.	DATE	PLANNED	APPROVED

APPROVED			UNIT mm
CHECKED			ANGLE
PLANNED			SCALE :
DRAWN			

MATERIAL 材料

FINISH 仕上

TREATMENT 処理

TOLERANCE 公差

TS-E

D007744 00A

PART NO. 品 番

APPLICATION 適 用

PART TITLE 品名

SCHEMATIC,SWIR AV-452

DWG TITLE 図名 SCHEMATIC CIRCUIT DIAGRAM

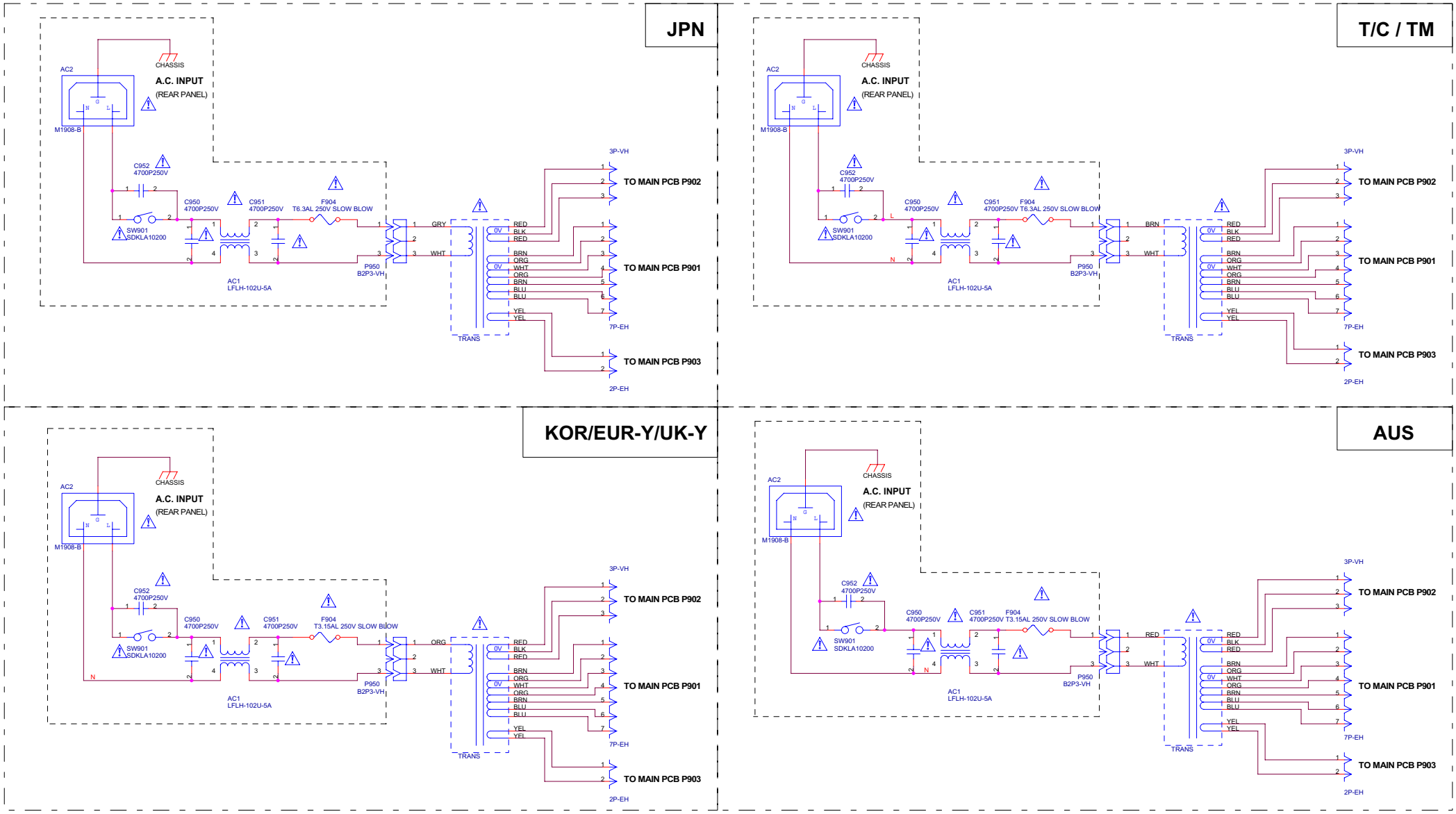
DWG NO. 図番

DWG CODE A

D002591-01A

TEAC ティアック株式会社

SHEET 1 OF 1



REV	E.C.N. NO.	DATE	PLANNED	APPROVED		
APPROVED			UNIT mm			
CHECKED			ANGLE			
PLANNED			SCALE	:		
DRAWN						

D002590-01A

MATERIAL 材料

FINISH 仕上

TREATMENT 処理

TOLERANCE 公差

TS-E

D007800 00B

PART NO. 品番

APPLICATION 適用

PART TITLE 品名

SCHEMATIC,CHASSIS AV-452

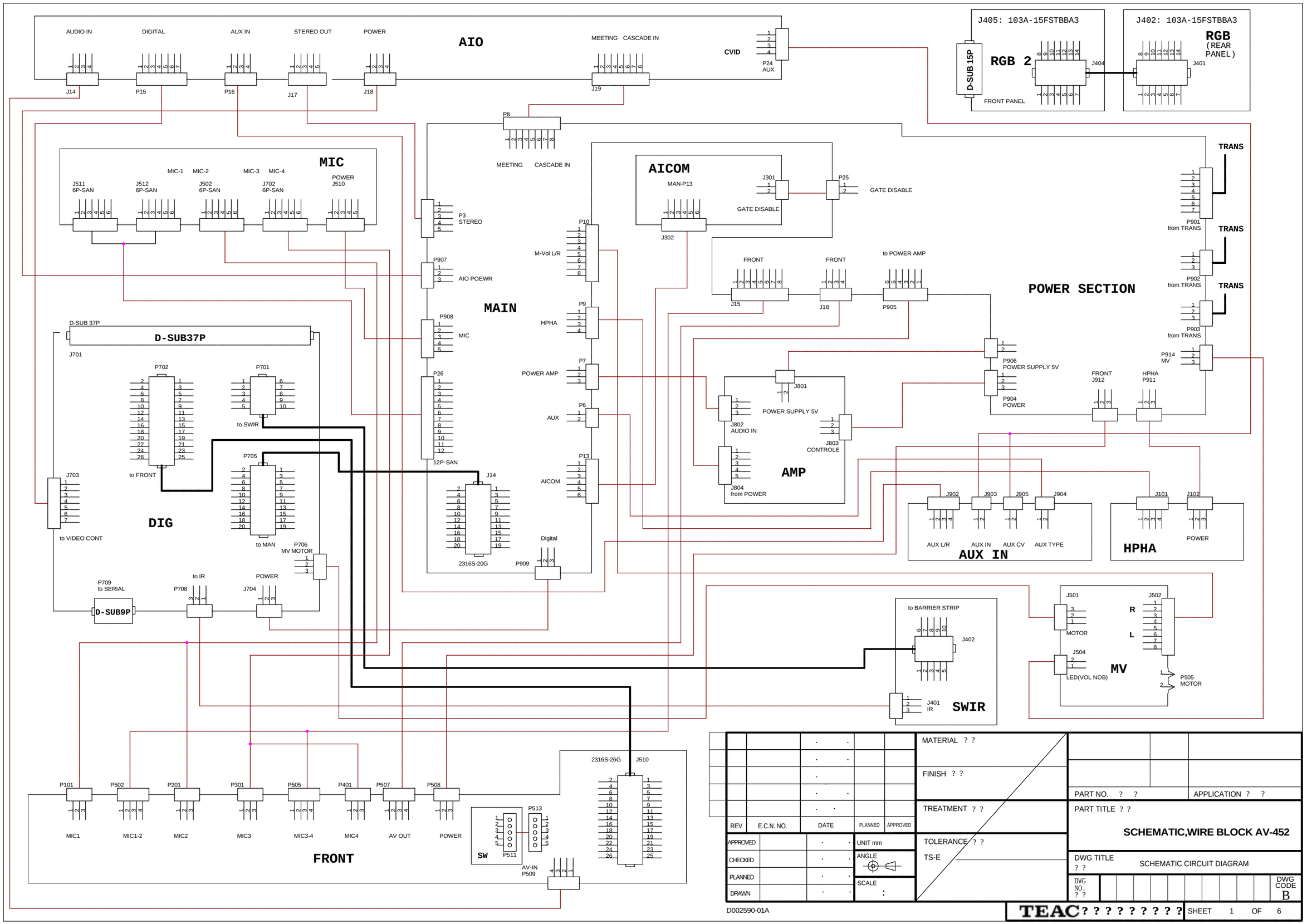
DWG TITLE 図名 SCHEMATIC CIRCUIT DIAGRAM

DWG NO. 図番

DWG CODE B

TEAC ティアック株式会社

SHEET 1 OF 1



REV	E.C.N. NO.	DATE	PLANNED	APPROVED
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APPROVED		. .
CHECKED		. .
PLANNED		. .
DRAWN		. .

UNIT mm
ANGLE
SCALE :

MATERIAL ? ?
FINISH ? ?
TREATMENT ? ?
TOLERANCE ? ?
TS-E

PART NO. ? ? APPLICATION ? ?

PART TITLE ? ?

SCHEMATIC,WIRE BLOCK AV-452

DWG TITLE ? ? SCHEMATIC CIRCUIT DIAGRAM

DWG NO. ? ? DWG CODE B

D002590-01A

TEAC ? ? ? ? ? ? ? ? ? SHEET 1 OF 6