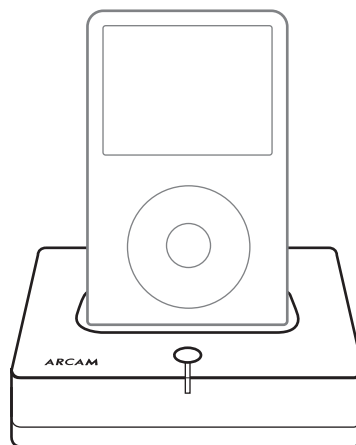


ARCAM

SERVICE MANUAL

rDock
iPod Dock



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SPECIFICATION

TEST CONDITIONS

- 1) Unless otherwise specified, the specification follow the testing method according to ANSI-IEEE STANDARD 185(1975), i.e. IHF-2-202 for audio section.
- 2) All measurements are taken at AC and room temperature 24 ± 4 °C.
- 3) Load resistance 47Kohm.

GENERAL ITEMS

- 1) Destination CE Europe 240V - 50 Hz +/-15%
UL USA 120V - 60Hz +/-15%
- 2 Operating voltage in range from AC voltage +15 / -15%
- 3) Dimensions width x height x depth : 100.4 x 80 x 28.8 mm
- 4) Operating Temperature : 0 to +45 °C.
- 5) Supported iPods

The design of the iPod dock must accommodate the following iPod variants that have the dock connector on the bottom of the product:

- 3G iPod May 2003, all memory sizes
- iPod Mini February 2004
- 4G iPod July 2004, all memory sizes
- iPod Photo November 2004, all memory sizes
- iPod Video October 2005, all memory sizes

Not supported iPods

1st and 2nd generation iPods (with fire-wire data port on top) and iPod shuffle will not be supported.

GENERAL SPECIFICATION

1.1 General Audio Specification

No	Item	Signal	Unit	Limit	Output Channel	Result
1.11	Output level	0dB 1KHz L&R	mV	870±80	FL	
					FR	
1.12	Channel Balance	0dB 1KHz L&R	dB	≤0.5	FL(Ref)	
					FL	
						FL FR
1.13	Frequency Response	0dB 100Hz, 1kHz, 10kHz L&R(0dB, 1kHz as ref)	dB	0±1	100	
				0±1	10K	
1.14	Total Harmonic Distortion (Audio Filter)	0dB 1KHz L&R	%	≤0.2	FL	
					FR	
1.15	Signal to Noise Ratio (A Filter)	0dB 1KHz L&R	dB	≥80	FL	
					FR	
1.16	Channel Separation (Audio Filter)	0dB 1KHz L&R	dB	≥75	FL(Ref)	0
					FR	

1.2 General Video Specification

Play the movie file at iPod and check whether there is video quality problem
--

1.3 Adaptor specification

No.	Item	Input Signal / Load	Unit	Limit	Result	
					Unload	23ohm
					DC OUT/V	
1.31	DC OUTPUT	90	V	15.0±5%		
		120				
		230				
		264				
1.32	Ripple and Noise	10uF electrolytic cap, 0.1uF ceramic cap load & 23 ohm load Measure by 20M bandwidth oscilloscope	mVp-p	100		

1.4. Charging

Blue LED is on when iPod is inserted, press button to initiate charging. The red LED is then on.

1.5. ESD

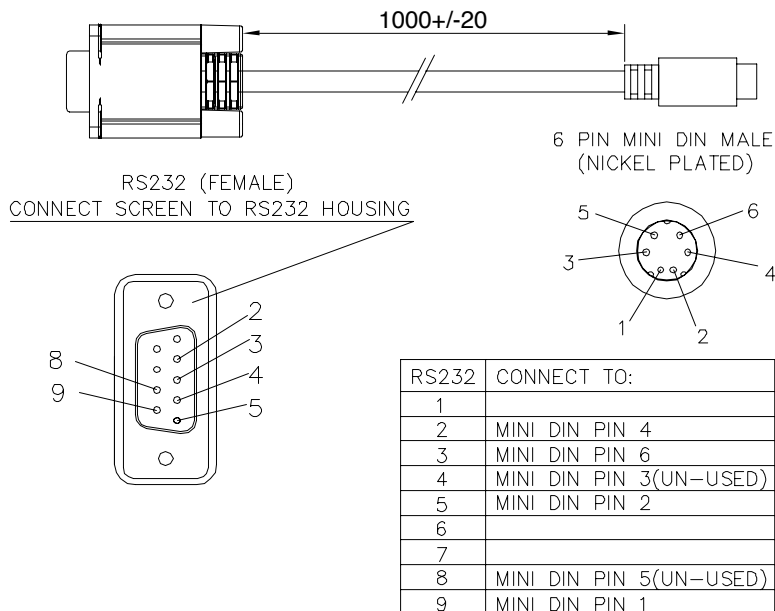
+ / - 4KV, 330 ohm, 150pF for direct contact
+ / - 8KV, 330 ohm, 150pF for air contact

1.6. RS232 connection with Solo One Box/Mini Solo

This cable is actually used for the communication of rDock (iPod is here) with all Arcam Solo models.

Test equipment:

a. Cable

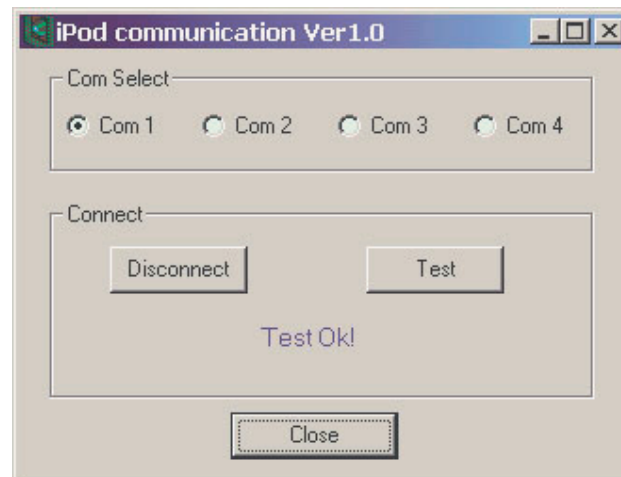


b. iPod Communication

- Connect the cable to rDock and PC
- Open the software "iPod Communication"



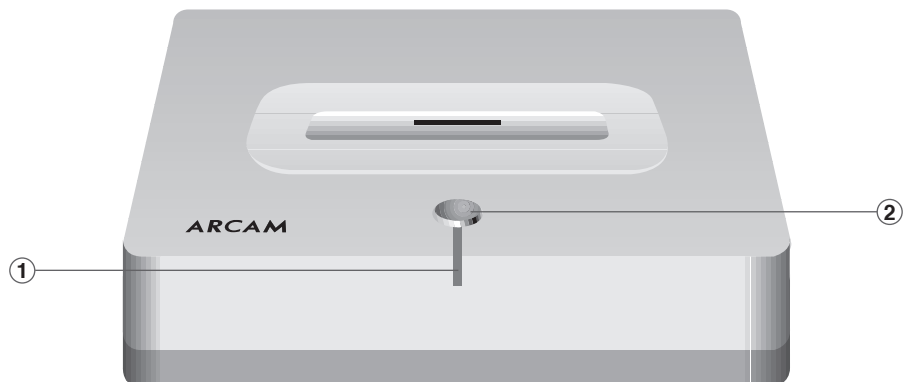
- Press "Connect"
- Press "Test"



- "Test Ok!" will be shown to indicate the success of the test
- Otherwise, nothing is shown.
- Disconnect the unit

FRONT PANEL & REAR PANEL

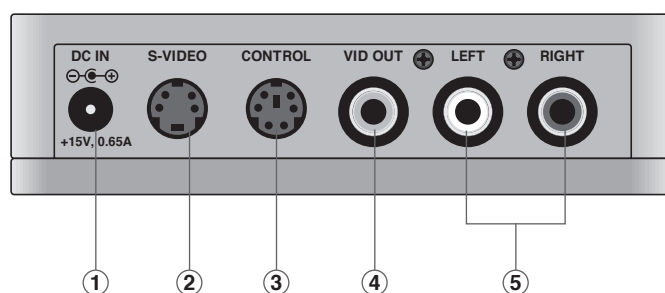
1. FRONT PANEL



1. CHARGING indicator

2. CHARGING switch

2. REAR PANEL



1. DC IN socket
2. S-VIDEO OUT socket
3. CONTROL connector

4. S-VIDEO OUT socket
5. AUDIO OUT socket

DISASSEMBLY INSTRUCTIONS

1. Remove screws (① to ④) from the bottom side.

Refer to **Figure No.1**.

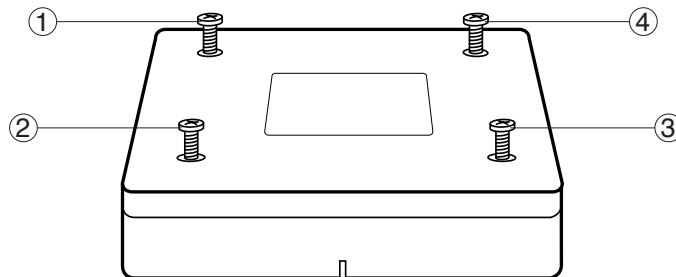


Figure No.1

2. Remove the BOTTOM COVER in the direction as indicated by the arrow. Refer to **Figure No.2**.

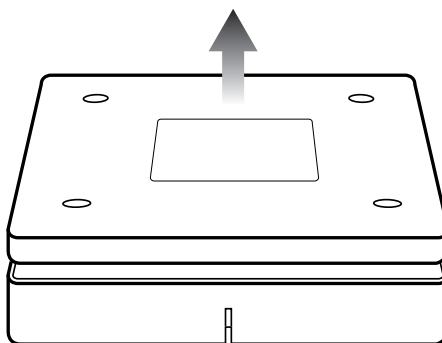
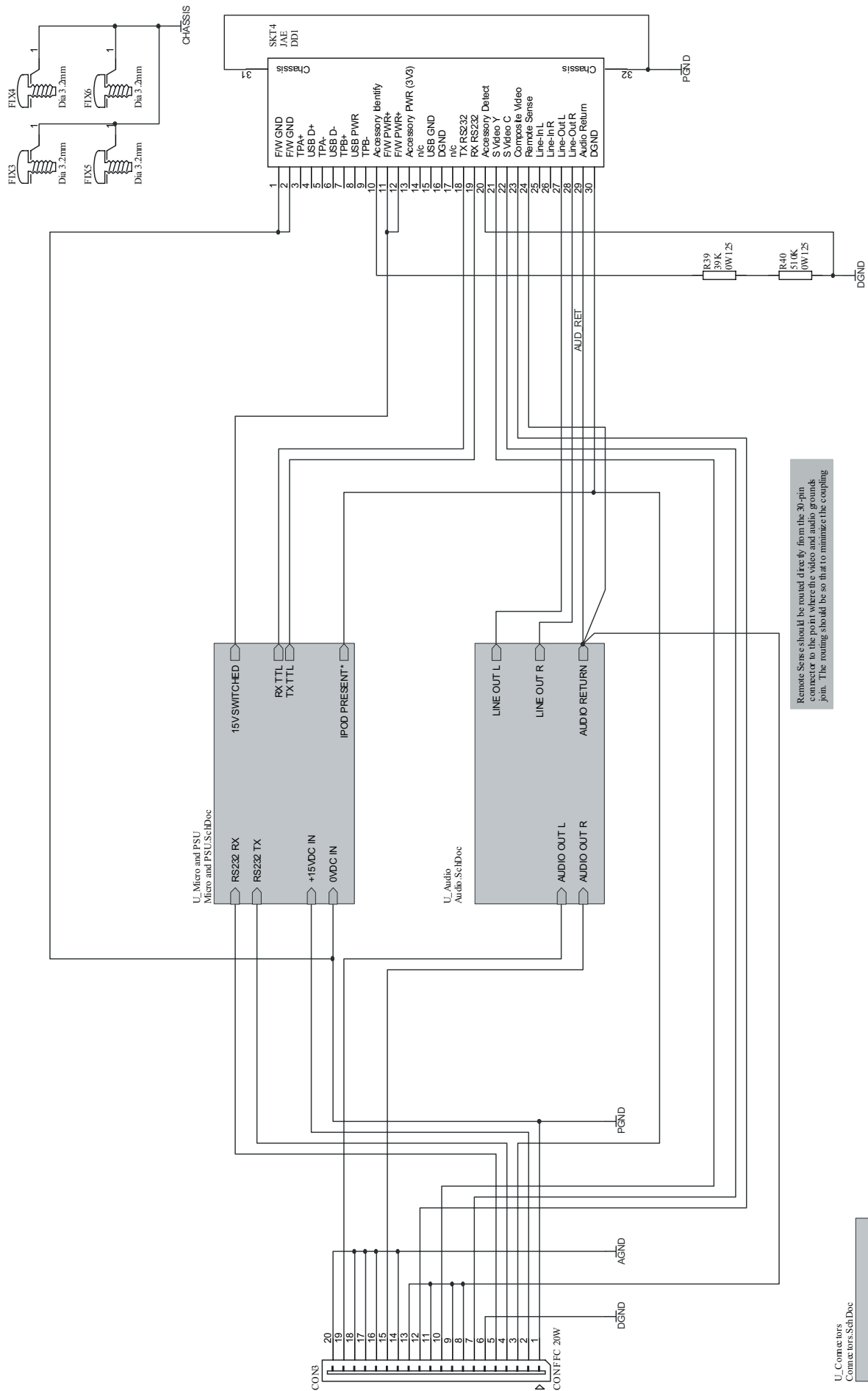


Figure No.2.

BLOCK DIAGRAM

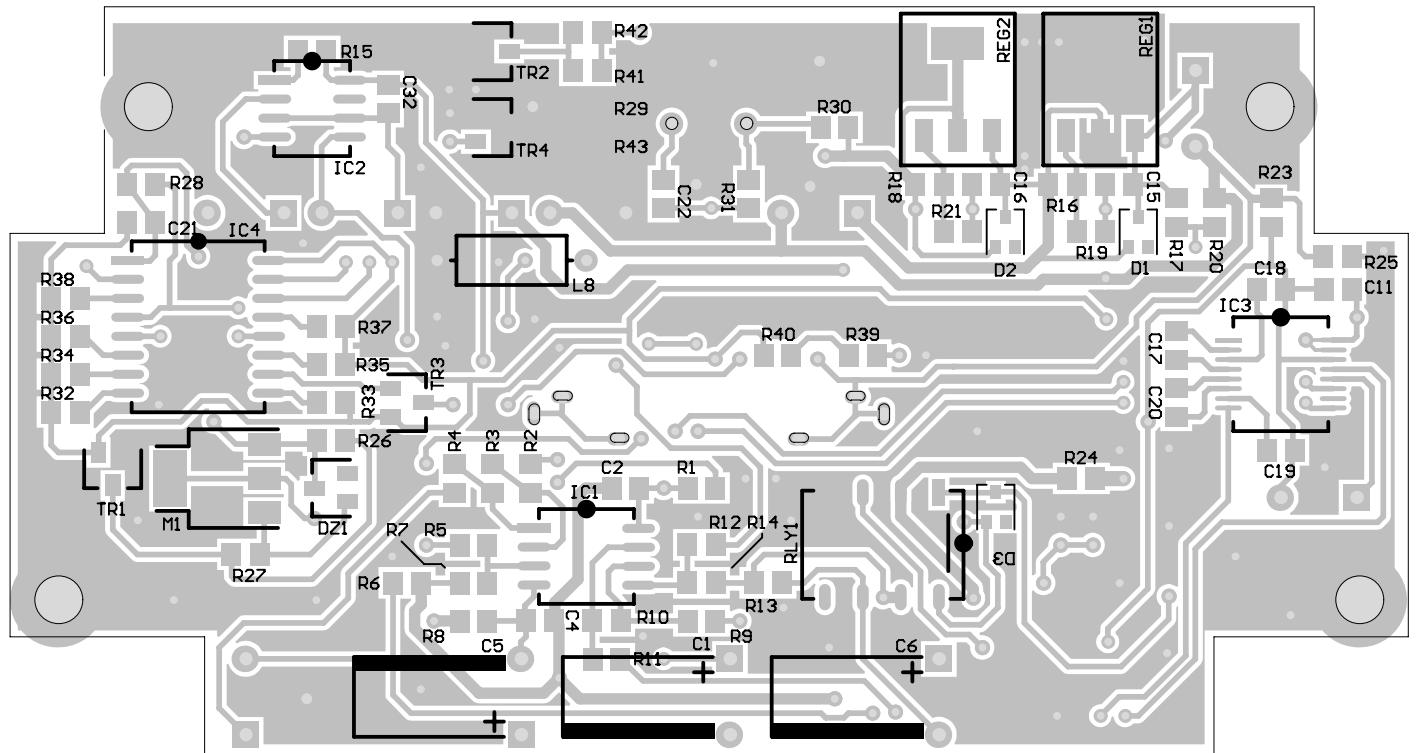
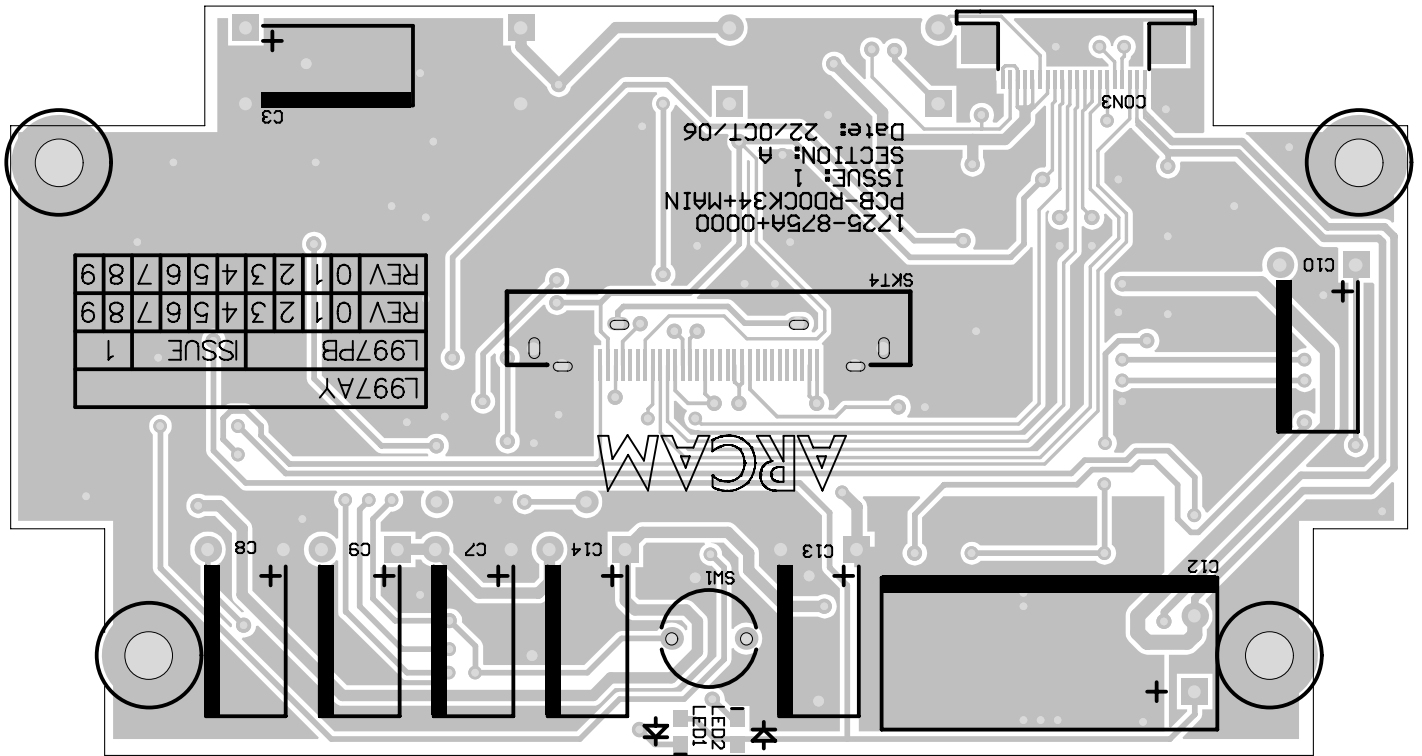


Remote Sense should be routed directly from the 30-pin connector to the point where the video and audio grounds join. The routing should be so that to minimize the coupling.

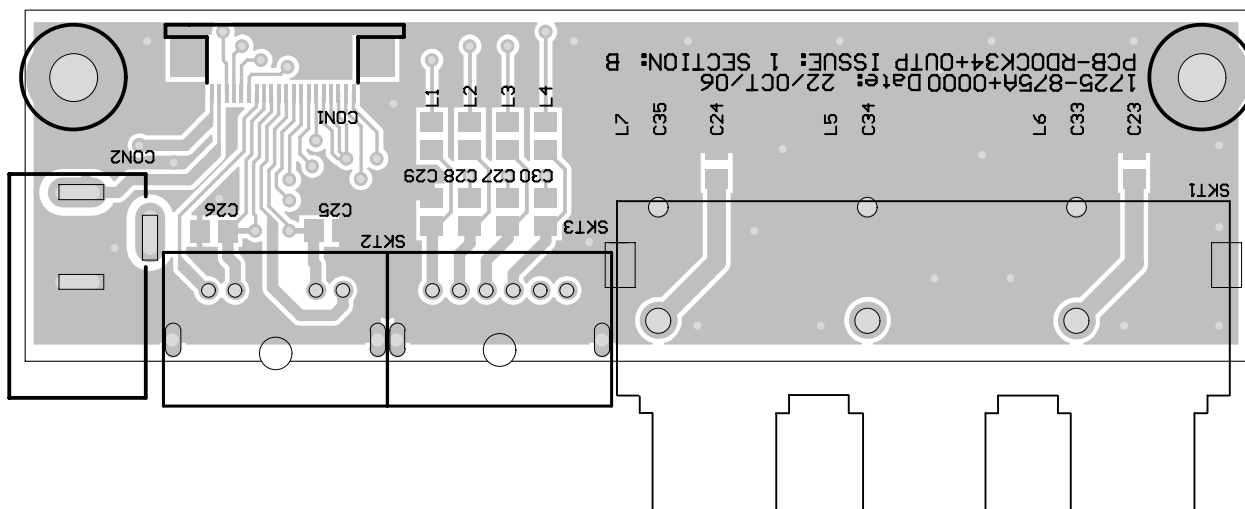
U_Compilers
Compilers (SchDoc)

PCB LAYOUT

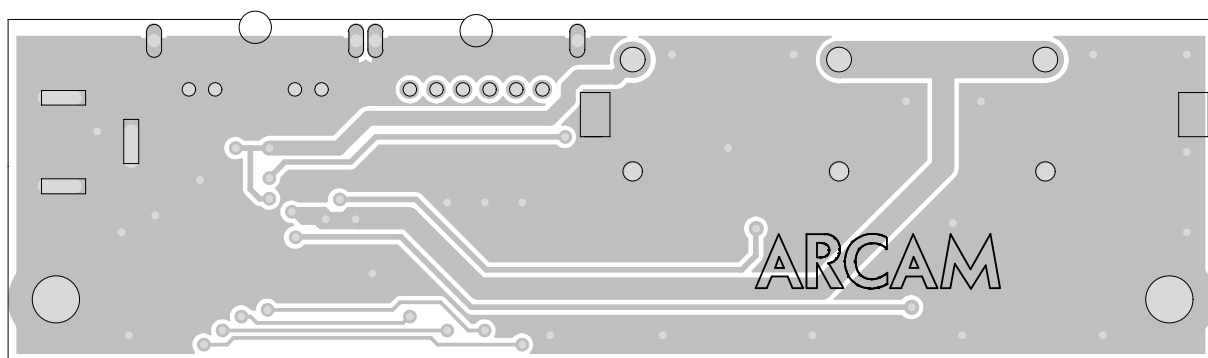
MAIN BOARD



OUTPUT BOARD



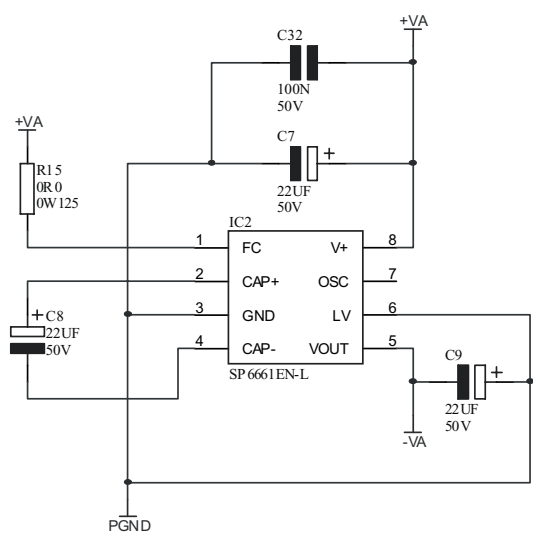
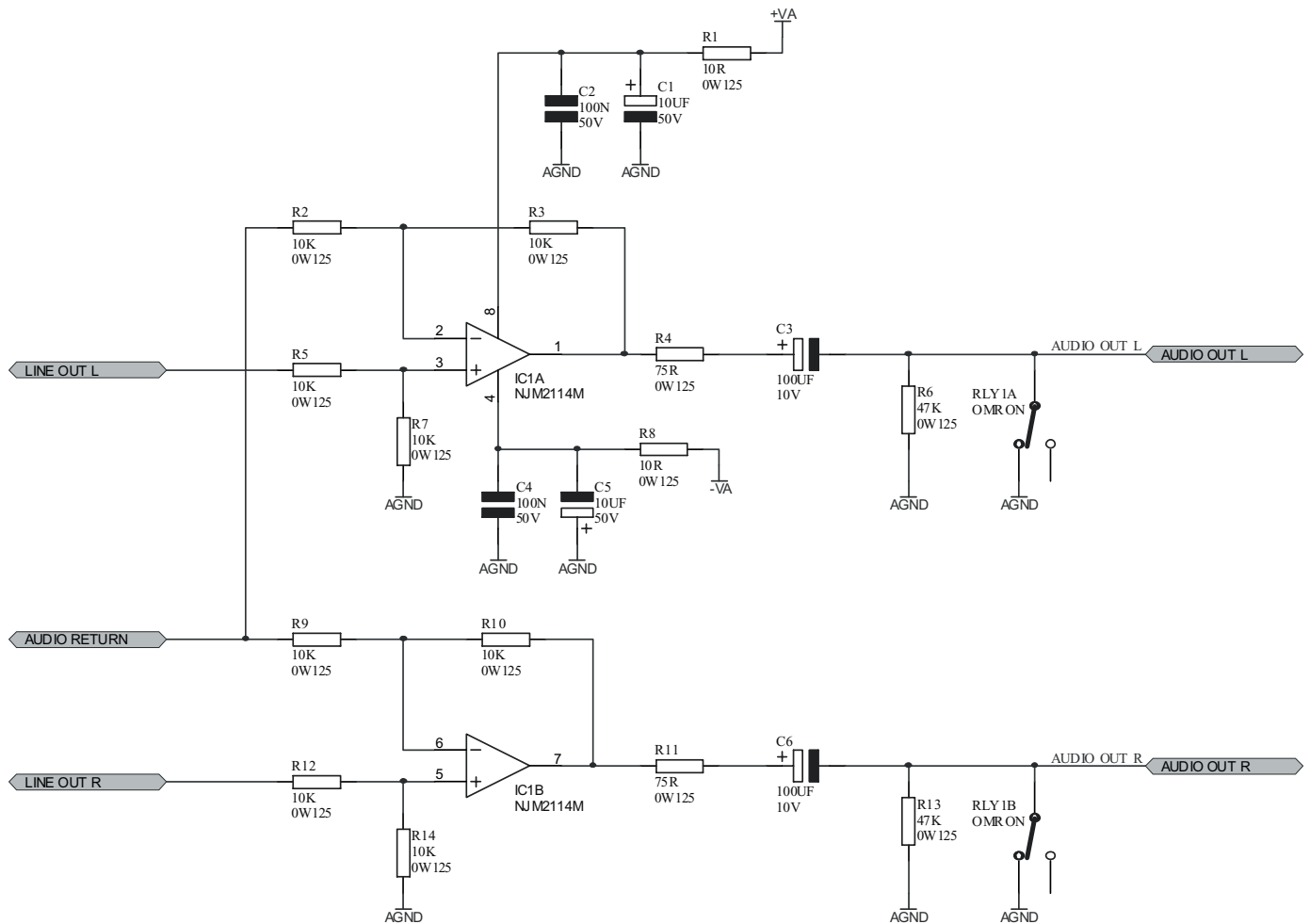
Component Side



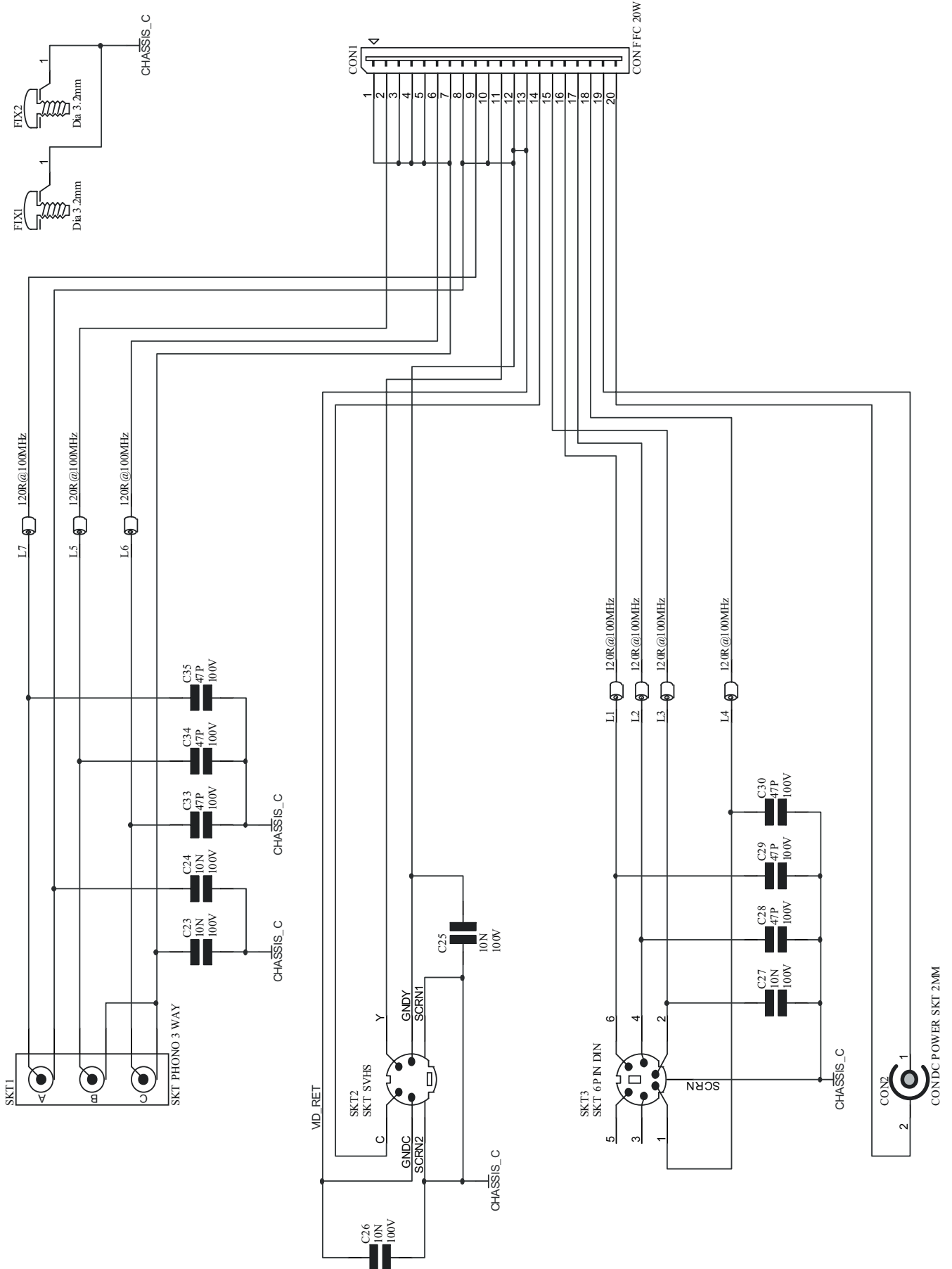
Copper Side

SCHEMATIC DIAGRAM

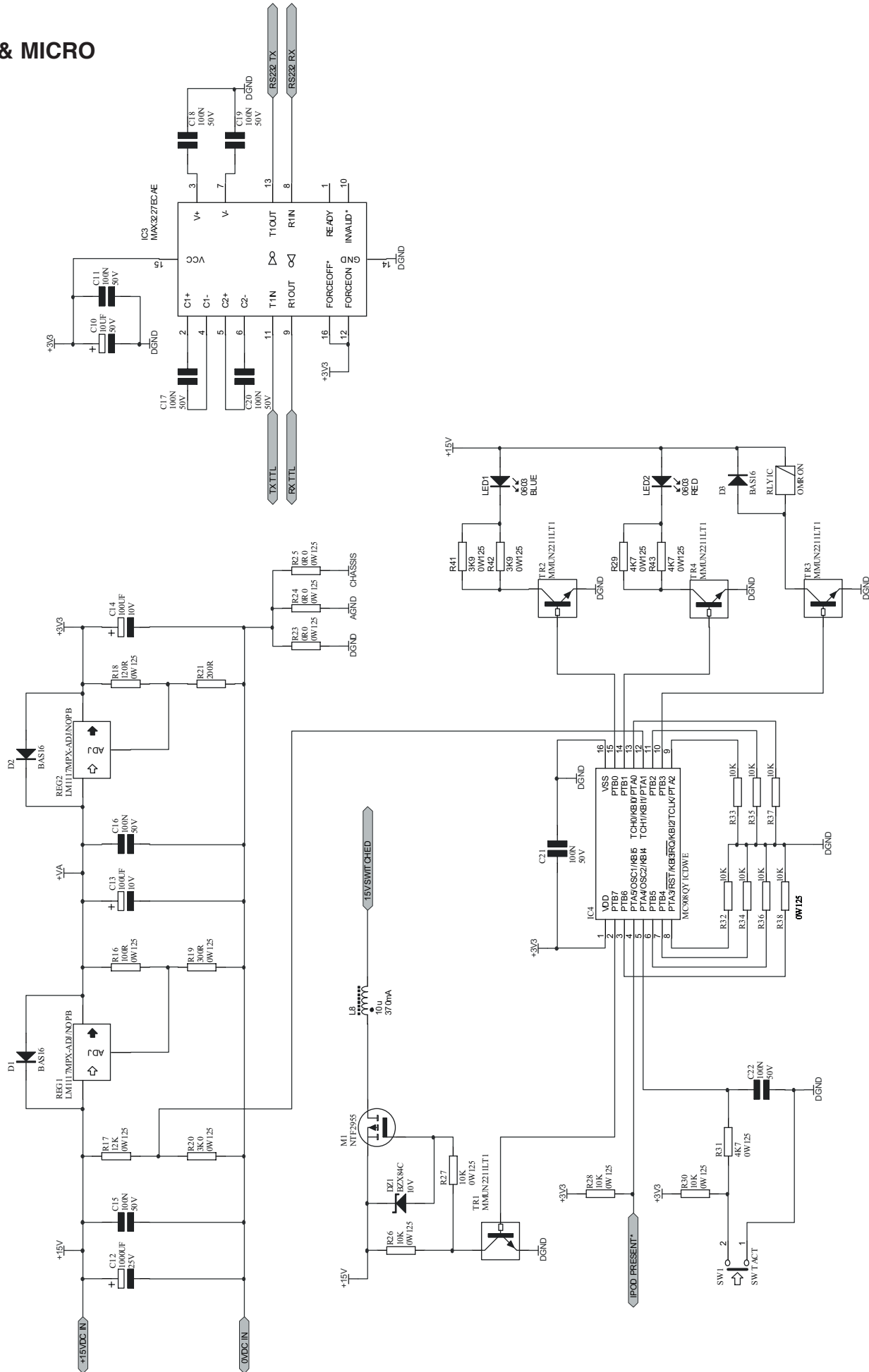
AUDIO BUFFERS



CONNECTORS



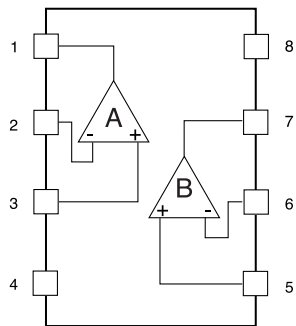
PSU & MICRO



IC BLOCK DIAGRAM

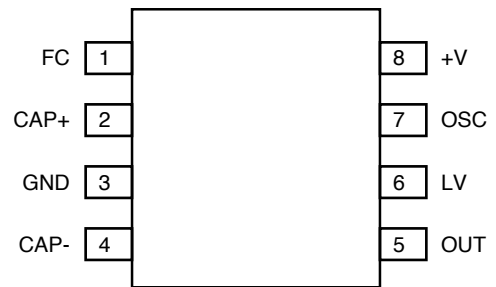
MAIN BOARD

IC1: NJM2114M



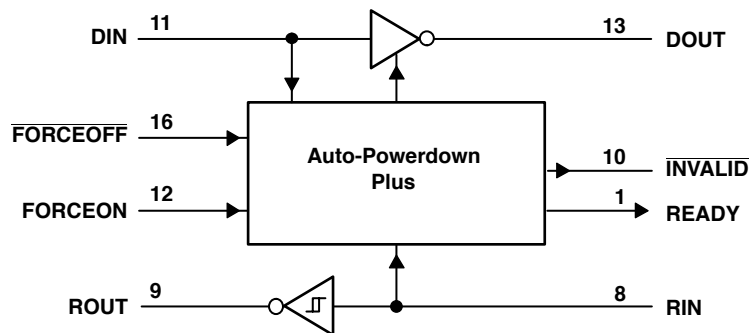
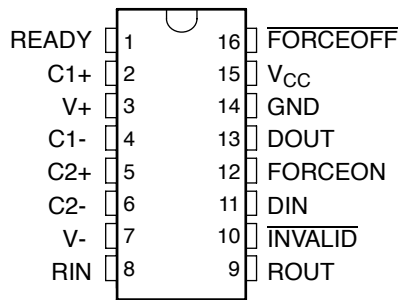
MAIN BOARD

IC2: VOLTAGE CONVERTER SP6661



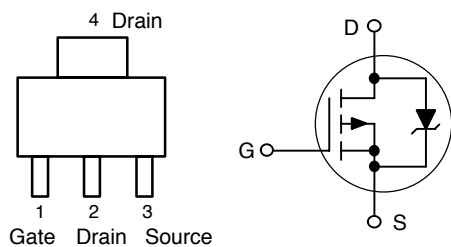
MAIN BOARD

IC3: MAX3227ECDBT



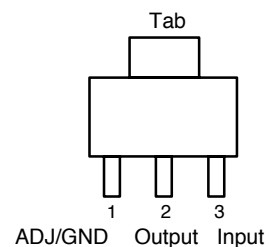
MAIN BOARD

M1: NTF2955T1G



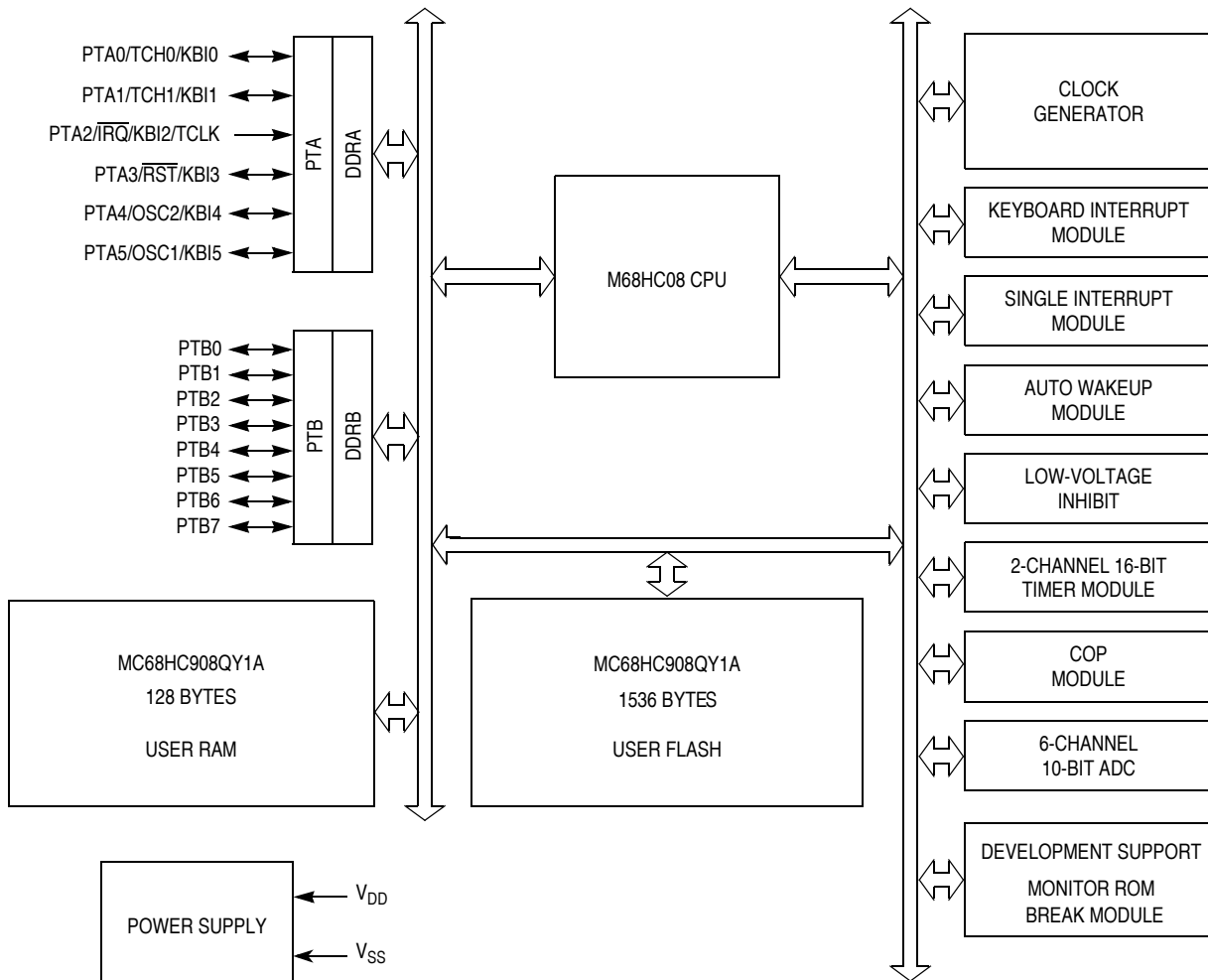
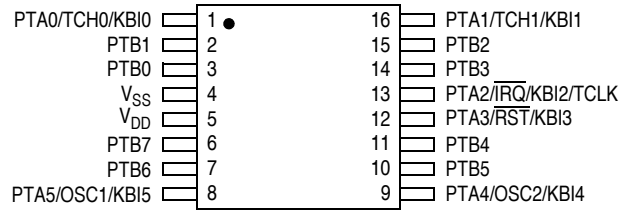
MAIN BOARD

REG1, REG2: LM1117MPX-ADJ



MAIN BOARD

IC4: MAX3227ECDBT



\overline{RST} , \overline{IRQ} : Pins have internal pull up device
 All port pins have programmable pull up device
 PTA[0:5]: Higher current sink and source capability
 PTB[0:7]: Not available on 8-pin devices

ELECTRICAL PARTS LIST

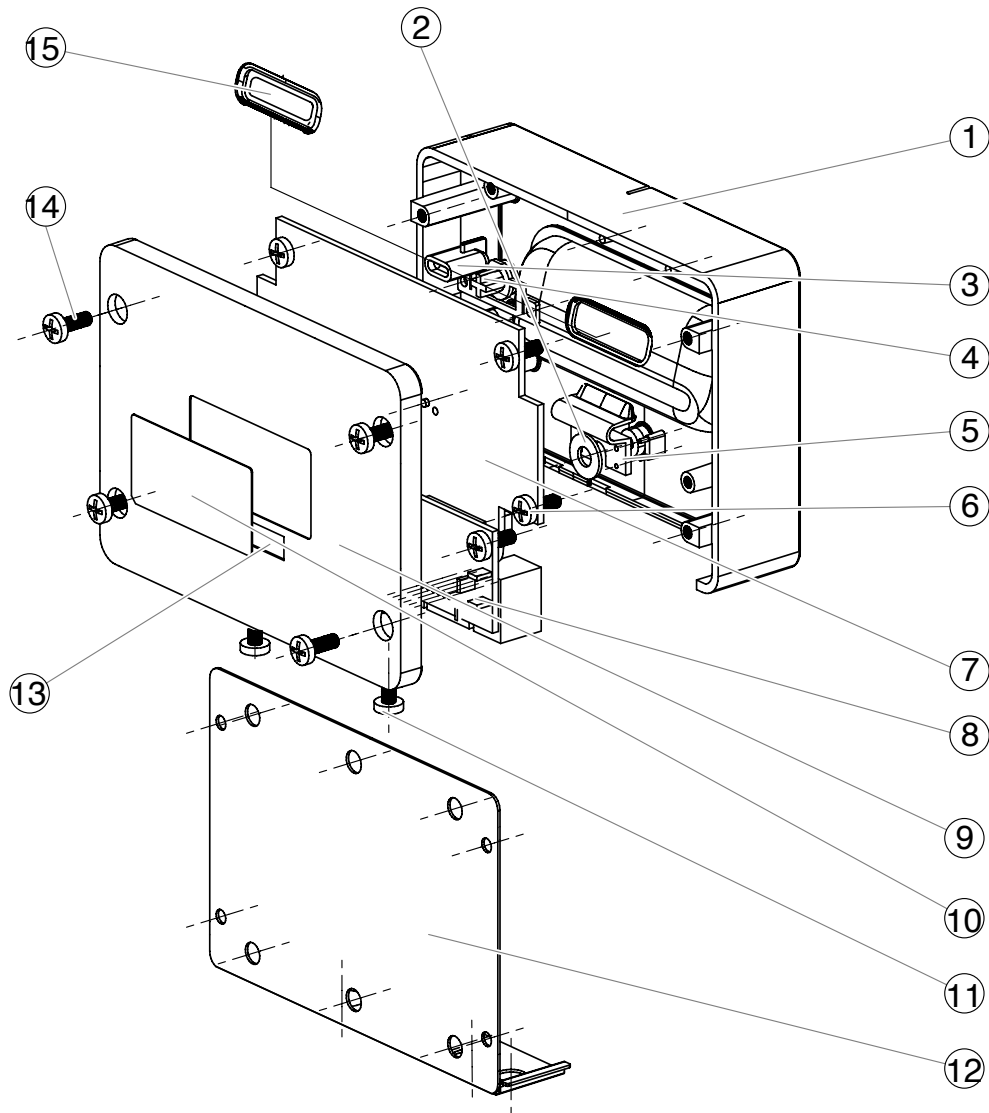
Reference No.	Part No.	Description
MAIN ASSY		
PC BOARD		
	PCB-RDOCK34+MAIN	PCB ASSY MAIN
PCB		
	1725-875A+0000	PCB MAIN
CAPACITOR		
C1, C5	157F-106M+5-IUK	CE 50V 10uF 20% RL 5x11
C2, C4	150F-104K+J-BD	CC 50V 0.1uF 10% 0805
C3, C6	157C-107M+K-IUTY	CE 10V 100U 20% RLT
C7, C8, C9	157F-226M+5-IU	CE 50V 22UF 20% RL 5X11
C10	157F-106M+5-IU	CE 50V 10uF 20% RL 5x11
C11	150F-104K+J-BD	CC 50V 0.1uF 10% 0805
C12	157E-108M+5-S9E	CE 25V 1000UF 20% RL 10X
C13, C14	157D-107M+5-IU	CE 16V 100uF 20% RL 5x11
C15, C16, C17, C18, C19, C20, C21, C22, C32	150F-104K+J-BD	CC 50V 0.1uF 10% 0805
DIODE		
D1, D2, D3	4840-9210+3	DIODE BAS16W SOT323 SMD
DZ1	4835-1003+3	DZ 1/4W 10V SOT-23
CONNECTOR		
CON3	2101-3143+0	CONNECTOR 20P P0.5
SKT4	2101-3144+1	CONNECTOR 30P P0.5 ANGLED
COIL		
L8	1801-100K+M-2	COIL 10UH 10% BL7.0 AT
RELAY		
RLY1	4500-0711+0	RELAY 12V 0.3A DPDT
TRANSISTOR		
TR1, TR2, TR3, TR4	4860-3400+3	TR MMUN2211LT1G NPN

Reference No.	Part No.	Description
RESISTOR		
R1, R8	4720-100J+J	RMG 1/10W 10R 5% 0805
R2, R3, R5, R7, R9	4720-103A+J	RMG 1/10W 10K 1% 0805
R4	4720-750J+J	RMG 1/10W 75R 5% 0805
R6	4720-473J+J	RMG 1/10W 47K 5% 0805
R10, R12, R14	4720-103A+J	RMG 1/10W 10K 1% 0805
R11	4720-750J+J	RMG 1/10W 75R 5% 0805
R13	4720-473J+J	RMG 1/10W 47K 5% 0805
R15	4720-0R0J+J	RMG 1/10W 0R 5% 0805
R16	4720-101J+J	RMG 1/10W 100R 5% 0805
R17	4721-123J+J	RMG 1/8W 12K 5% 0805
R18	4720-121A+J	RMG 1/10W 120R 1% 0805
R19	4720-301J+J	RMG 1/10W 300R 5% 0805
R20	4720-302A+J	RMG 1/10W 3K 1% 0805
R21	4720-201A+J	RMG 1/10W 200R 1% 0805
R23, R24	4720-0R0J+J	RMG 1/10W 0R 5% 0805
R26, R27, R28	4720-103A+J	RMG 1/10W 10K 1% 0805
R29	4720-472J+J	RMG 1/10W 4.7K 5% 0805
R30, R32, R33, R34, R35, R36, R37, R38	4720-103A+J	RMG 1/10W 10K 1% 0805
R31	4720-472A+J	RMG 1/10W 4.7K 1% 0805
R39	4720-393A+J	RMG 1/10W 39K 1% 0805
R40	4720-514A+J	RMG 1/10W 510K 1% 0805
R41, R42	4720-392J+J	RMG 1/10W 3.9K 5% 0805
R43	4720-472J+J	RMG 1/10W 4.7K 5% 0805
IC		
IC1	3132-2541+0	IC NJM2114M-#ZZZB
IC2	3132-5321+0	IC VOLTAGE CONVERTER
IC3	3132-4331+0	IC COMMUNICATIONS INTERF
IC4	3132-4350+0	IC MCU 10B MICROCONTROL
M1	3132-4341+0	IC POWER MOSFET NTF2955
REG1, REG2	3132-1791+0	IC LM1117MPX-ADJ REG
SWITCH		
SW1	5200-4861+0-01	SWITCH TACT 25035718T
LED		
LED1	3700-7830+B	LOW CURRENT SMD LED
LED2	3700-7829+R	LOW CURRENT SMD LED

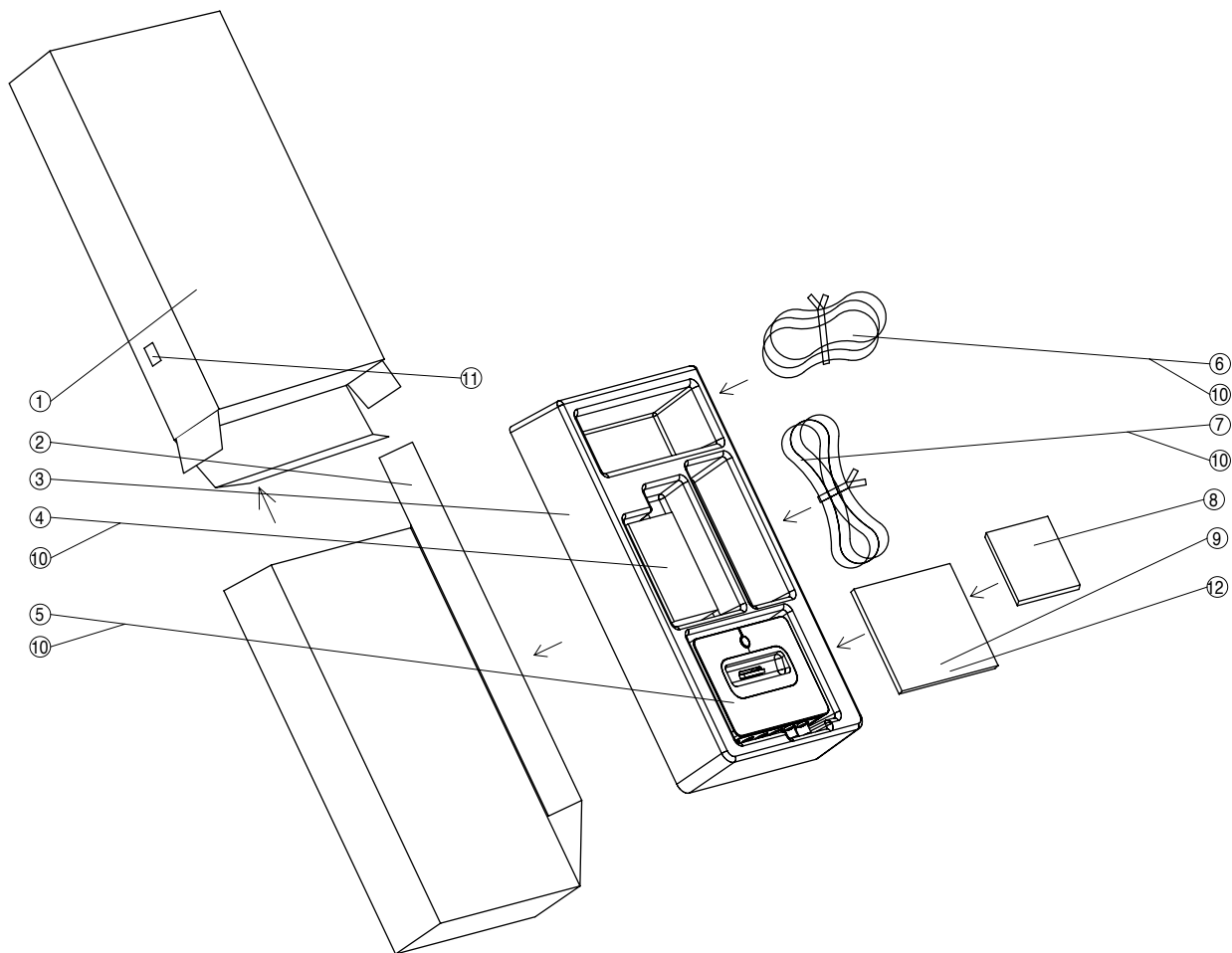
Reference No.	Part No.	Description
OUTPUT ASSY		
PC BOARD		
	PCB-RDOCK34+OUTP	PCB ASSY OUTPUT
PCB		
	1725-875A+0000	PCB MAIN
CAPACITOR		
C23, C24, C25, C26, C27	150H-103M+J-BD	CC 100V 0.01uF 20% 0805
C28, C29, C30, C33, C34, C35	15CH-470J+J-BD	CTC 0/60 47P 5% 0805
CONNECTOR		
CON1	2101-3143+0	CONNECTOR 20P P0.5
JACK		
CON2	2113-1136+0	DC JACK HEC0470-01-630
SKT1	2113-3198+0	JACK RCA 3P RCA-311
SKT2	2113-3196+0	JACK SPEAKER S-VIDEO 4P
SKT3	2113-3197+0	JACK SPEAKER 6P DIN-632
MISCELLANEOUS		
L1, L2, L3, L4, L5, L6, L7	1803-0087+0	EMI FILTER 120R 100MHZ

- NOTE:**
- The components identified by \triangle mark are critical for risk of fire and electrical shock. Replace only with part number specified.
 - Capacitors : CP-Polystyrene, CM-Mylar, CE-Electrolytic, CC-Ceramic, CTC-NPO.
 - Resistors : RMF-Metal Film, RCF-Carbon Film, RWR-Wirewound Metal Oxide.

EXPLODED VIEW • PARTS LIST



Item	Part No.	Description	Q'ty
1	4135-6631+0	TOP CABINET	1
2	2600-3008+1004	WASHER	1
3	3717-3611+0	LENS	1
4	2447-3801+0	BUTTON	1
5	4155-2202+0	BRACKET	1
6	2904-3006+0000	SCREW M3*6	7
7	MAIN PCB	MAIN PCB	1
8	OUTPUT PCB	OUTPUT PCB	1
9	4157-1131+0	RUBBER FOOT	1
10	3001-1514+0	LABEL	1
11	2950-3008+3000	SCREW	2
12	1406-0901+0	BOTTOM COVER	1
13	3000-9980+0	P.R.C LABEL	1
14	2904-3008+3000	SCREW	4
15	4155-2592+0	BRACKET	1



Item	Part No.	Description	Q'ty
1	1480-9601+0	COLORFUL BOX	1
2	1481-0101+0	WHITE BOX	1
3	1492-0911+0	PS COVER	1
4	1806-3959+0	ADAPTOR	1
5		R DOCK	1
6	7012-8270+0	CABLE	1
7	7012-9330+0	POWER CORD (US)	1
	1497-4302+0	P.BAG	1
	7012-6611+0	POWER CORD (UK)	1
	7012-9300+0	POWER CORD (EU)	1
	1497-4302+0	P.BAG	1
8	3050-2001+2	WARRANTY CARD	1
9	4301-7241+0	MANUAL	1
10	1497-4302+0	P.BAG	4
11	3001-1511+0	SERIAL LABEL	1
12	4301-7276+0	QUICK START GUIDE	1

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