

ANALOG INPUT BOX

AI8

SERVICE MANUAL



MODEL	REFERENCE SERVICE MANUAL	
AI8-ML8	LMY2-ML	PA011502
AI8-AD8	LMY4-AD	PA011503
AI8-ML4AD4	LMY4-AD	PA011503
	LMY2-ML	PA011502
AI8-ML8AB	LMY2-MLAB	PA011736
AI8-ML8F	LMY4-MLF	PA011737

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IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

WARNING: Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

IMPORTANT: This presentation or sale of this manual to any individual or firm does not constitute authorization, certification, recognition of any applicable technical capabilities, or establish a principal-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and changes in specification are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING: Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground bus in the unit (heavy gauge black wires connect to this bus).

IMPORTANT: Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

WARNING: CHEMICAL CONTENT NOTICE!

The solder used in the production of this product contains LEAD. In addition, other electrical/electronic and/or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHAT SO EVER!

Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

IMPORTANT NOTICE FOR THE UNITED KINGDOM

Connecting the Plug and Cord

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

BLUE: NEUTRAL

BROWN: LIVE


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

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

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

Be certain that neither core is connected to the earth terminal of the three pin plug.

■ WARNING

Components having special characteristics are marked  and must be replaced with parts having specification equal to those originally installed.

■ SPECIFICATIONS

Sampling frequency (external sync)	39.69 kHz – 50.88 kHz
Power supply	USA and Canada: 120 V, 60 Hz
	Others: 230 V, 50 Hz
Power consumption	120 W
Dimensions (W x H x D)	480 mm x 141.5 mm x 466.8 mm
Weight	15.4 kg
Operating temperature	10 – 35 °C
Power cable length	2.1 m
Cooling fan speed	always fixed
Accessories	Connection cable (68-pin, D-sub, half-pitch) x 1, Length: 3 m

Digital I/Os

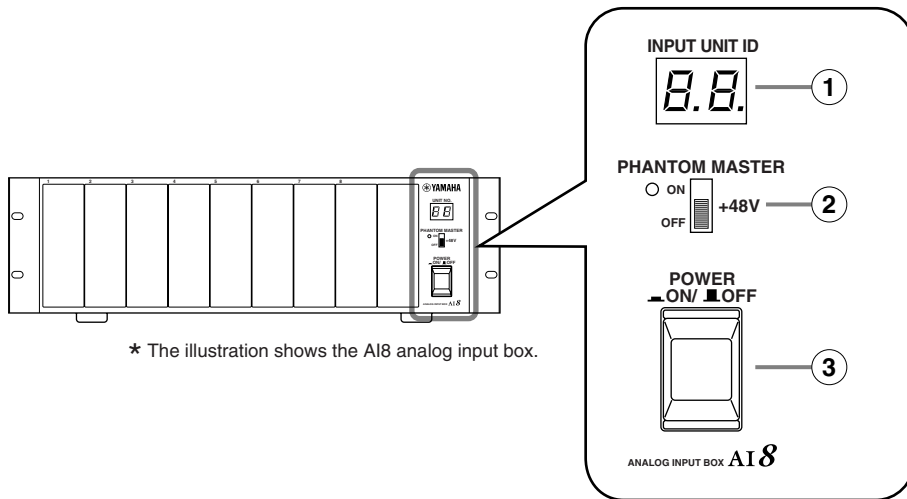
I/O connectors	Level	Type
OUTPUT A, B, C	RS-422	D-sub, half-pitch, 68-pin connector (female)
WORD CLOCK IN	TTL/75 Ω (ON/OFF)	BNC Connector
WORD CLOCK OUT	TTL/75 Ω	BNC Connector

Slots

Card	Input
LMY2-ML	Channel 1A or 1B, 2A or 2B
LMY4-AD	Channel 1 – 4

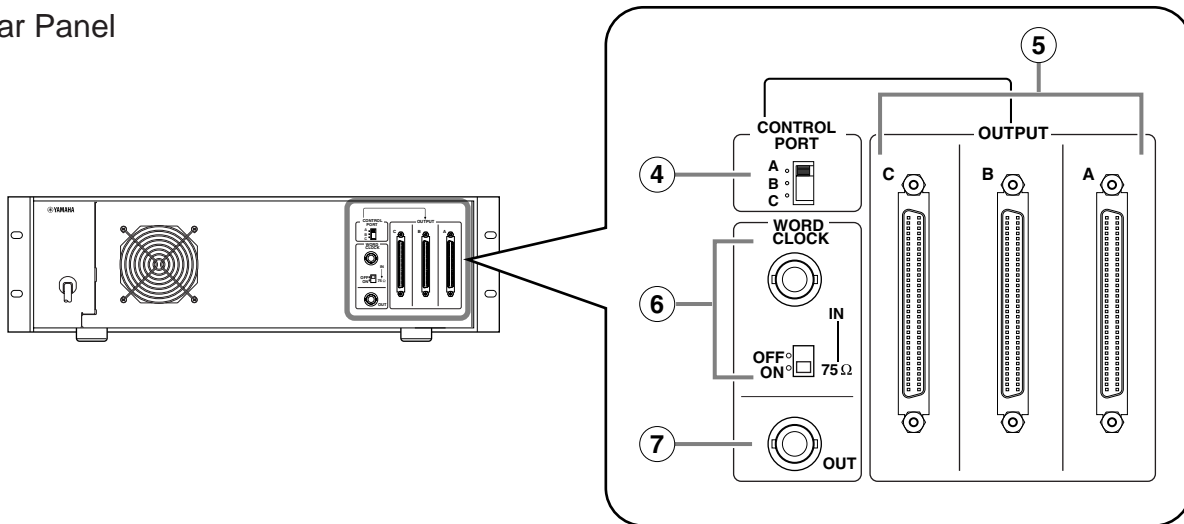
■ PANEL LAYOUT

● Front Panel



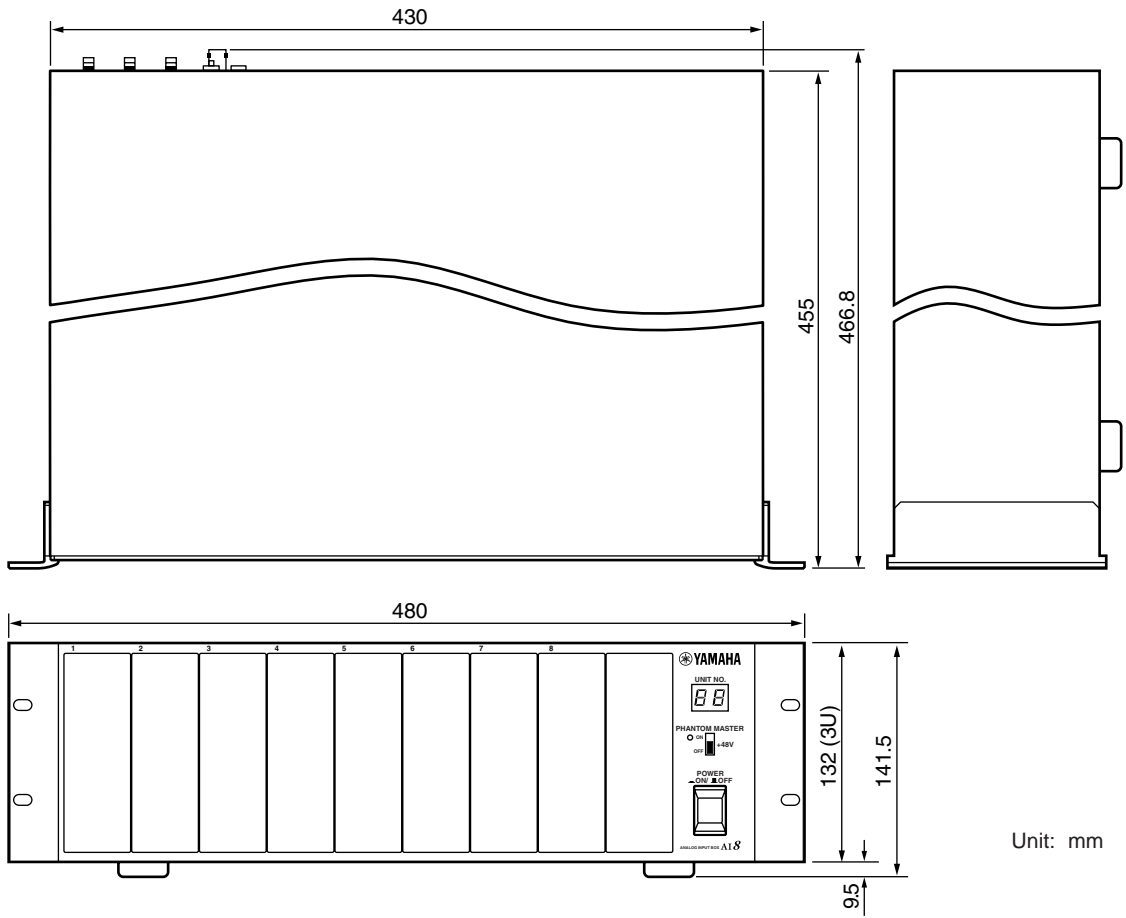
- ① INPUT UNIT ID indicator
- ② PHANTOM MASTER switch, indicator
- ③ POWER ON/OFF

● Rear Panel



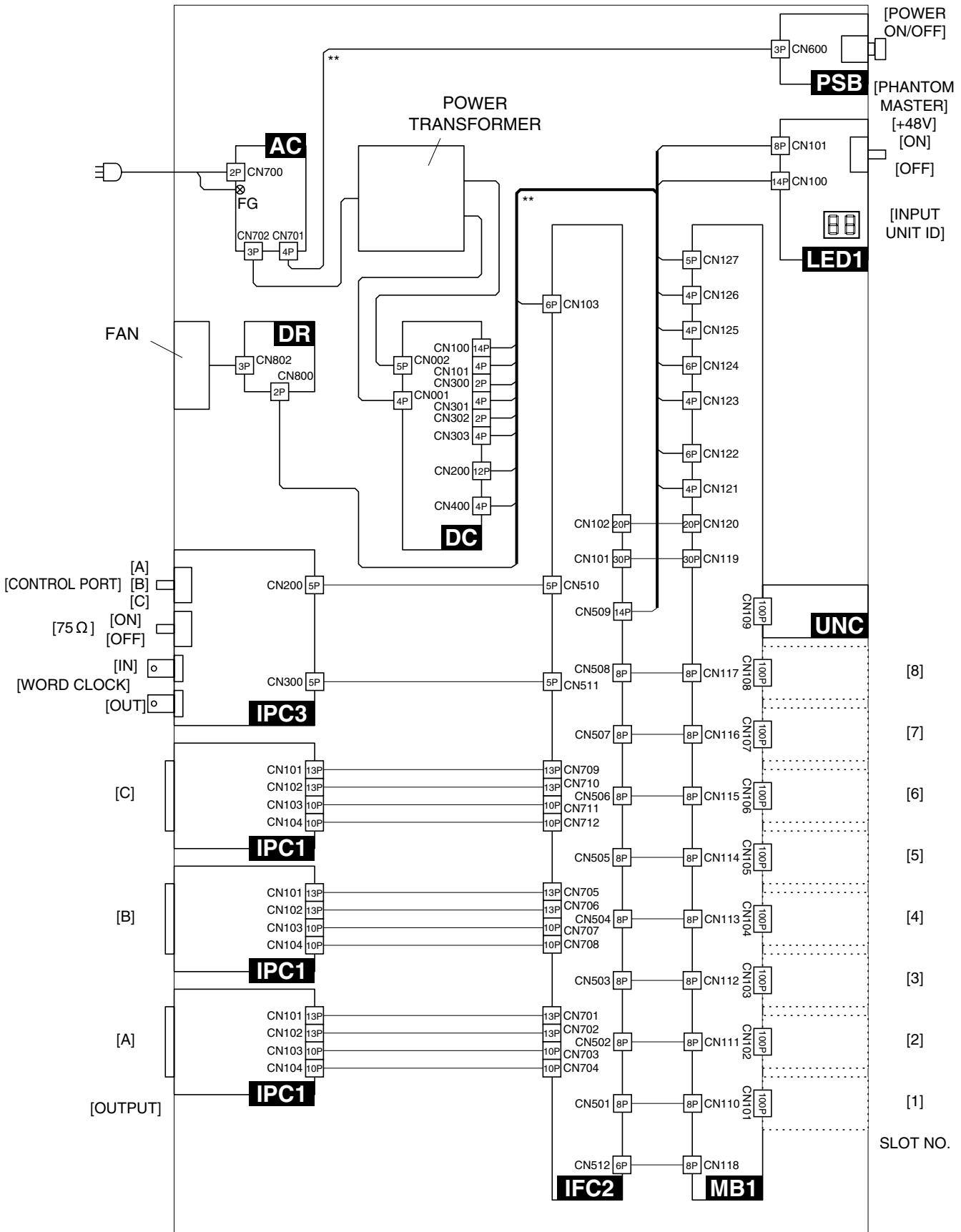
- ④ CONTROL PORT switch
- ⑤ OUTPUT connectors A, B, C
- ⑥ WORD CLOCK IN jack, ON/OFF switch
- ⑦ WORD CLOCK OUT jack

DIMENSIONS

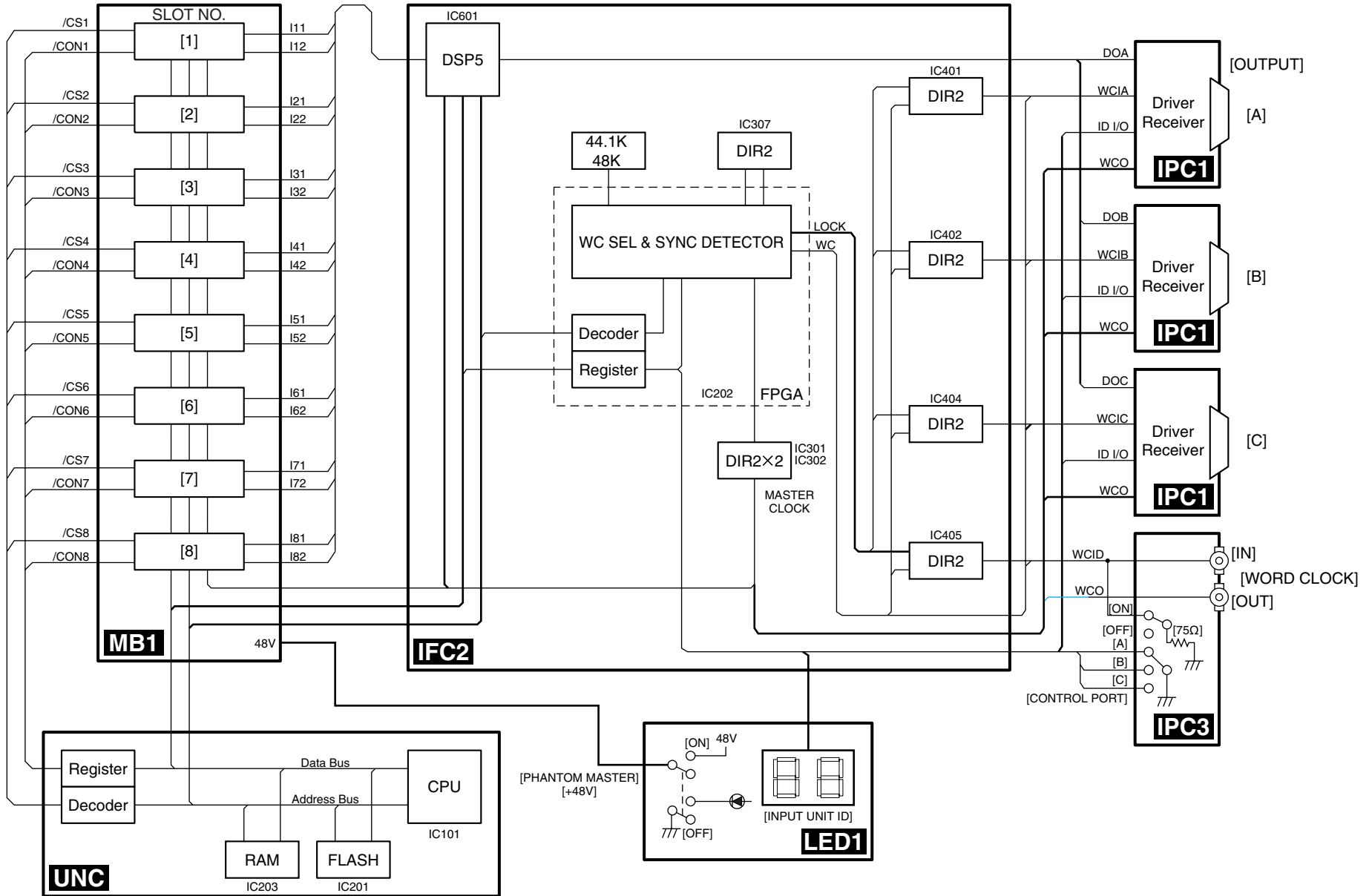


Unit: mm

CONNECTOR CIRCUIT DIAGRAM



■ BLOCK DIAGRAM



■ DISASSEMBLY PROCEDURE

1. UNC Card Assembly

- 1-1 Remove the four (4) screws marked [470]. The UNC card assembly can then be removed. (Fig. 1)

2. Front Panel Assembly

- 2-1 Remove the UNC card assembly. (See Procedure 1.)
 2-2 Remove the thirty-two (32) screws marked [500]. The blank panel can then be removed. (Fig. 1)
 2-3 Remove the eight (8) screws marked [450] and the two (2) screws marked [452]. Each mount bracket can then be removed. (Fig. 1)
 2-4 Remove the six (6) screws marked [400]. The front panel assembly can then be removed. (Fig. 1)

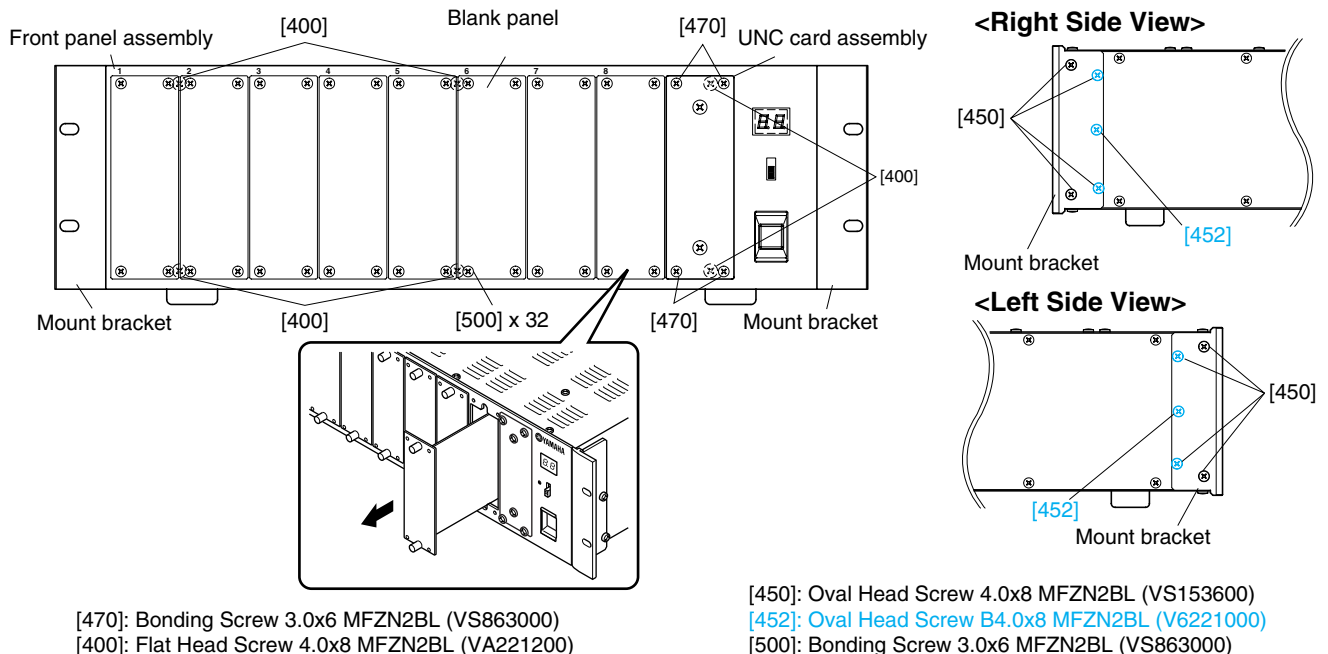


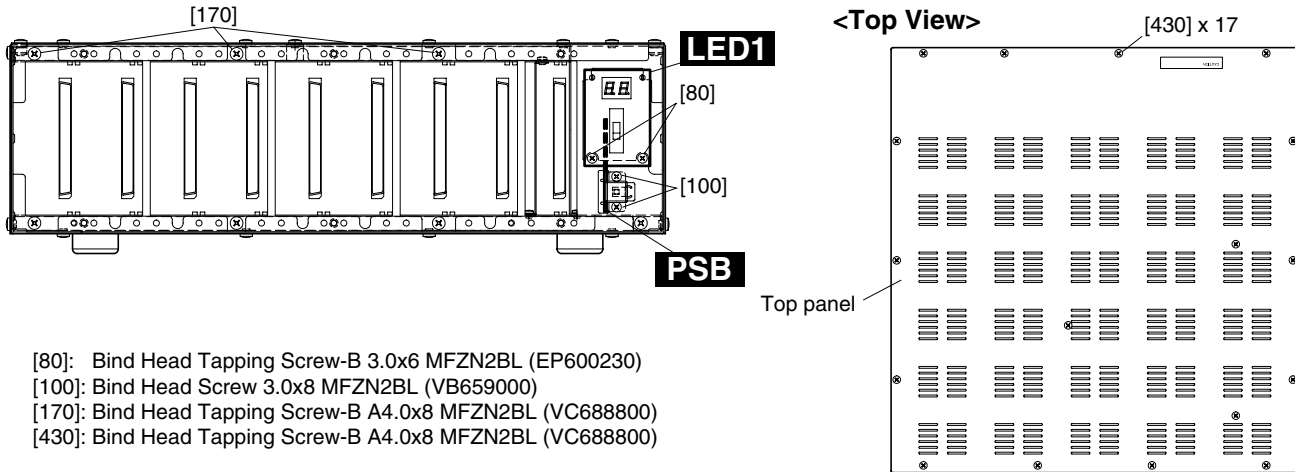
Fig. 1

3. LED1 Circuit Board

- 3-1 Remove the front panel assembly. (See Procedure 2.)
 3-2 Remove the two (2) screws marked [80]. The LED1 circuit board can then be removed. (Fig. 2)

4. PSB Circuit Board

- 4-1 Remove the UNC card assembly. (See Procedure 1.)
 4-2 Remove the front panel assembly. (See Procedure 2.)
 4-3 Remove the seventeen (17) screws marked [430]. The top panel can then be removed. (Fig. 2)
 4-4 Remove the two (2) screws marked [100]. The PSB circuit board can then be removed. (Fig. 2)



- [80]: Bind Head Tapping Screw-B 3.0x6 MFZN2BL (EP600230)
- [100]: Bind Head Screw 3.0x8 MFZN2BL (VB659000)
- [170]: Bind Head Tapping Screw-B A4.0x8 MFZN2BL (VC688800)
- [430]: Bind Head Tapping Screw-B A4.0x8 MFZN2BL (VC688800)

Fig. 2

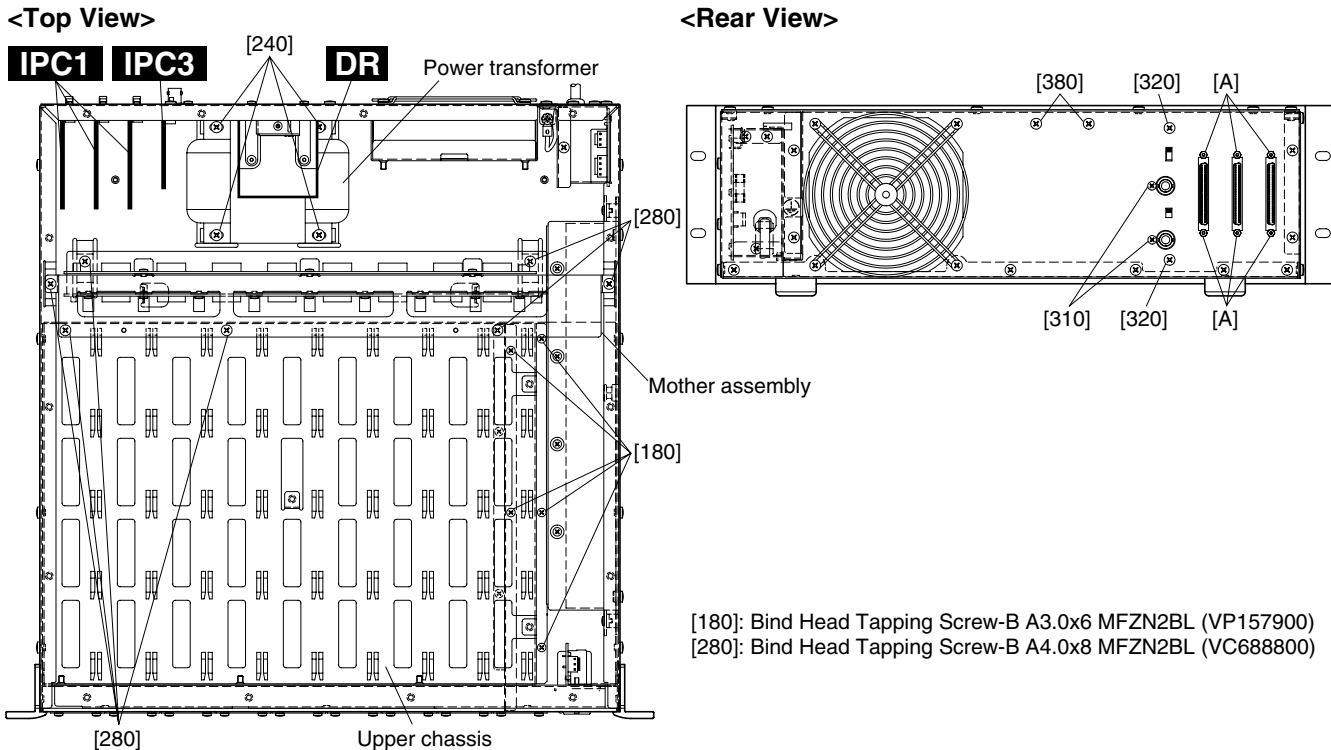
5. Circuit Boards and Units

Remove the top panel, each circuit board and unit can then be removed. (Fig. 3)

Circuit Board and Unit	Ref. No.	Screw	QTY
IPC1	A	Screw	2
IPC3	310	Bonding Screw 3.0x6 MFZN2BL (VS863000)	2
	320	Bind Head Screw A4.0x6 MFZN2BL (EG340290)	2
DR	380	Bonding Tapping Screw-B (VN413300)	2
Power Transformer	240	Bonding Tapping Screw-B (VC688800)	4

6. Mother Assembly

- 6-1 Remove the UNC card assembly. (See Procedure 1.)
- 6-2 Remove the front panel assembly. (See Procedure 2.)
- 6-3 Remove the top panel. (See Procedure 4-3.)
- 6-4 Remove the seven (7) screws marked [280]. The mother assembly can then be removed. (Fig. 3)



- [180]: Bind Head Tapping Screw-B A3.0x6 MFZN2BL (VP157900)
- [280]: Bind Head Tapping Screw-B A4.0x8 MFZN2BL (VC688800)

Fig. 3

7. MB1 Circuit Board

- 7-1 Remove the mother assembly. (See Procedure 6.)
 7-2 Remove the nine (9) screws marked [30] and the five (5) screws marked [50]. The MB1 circuit board can then be removed. (Fig. 4)

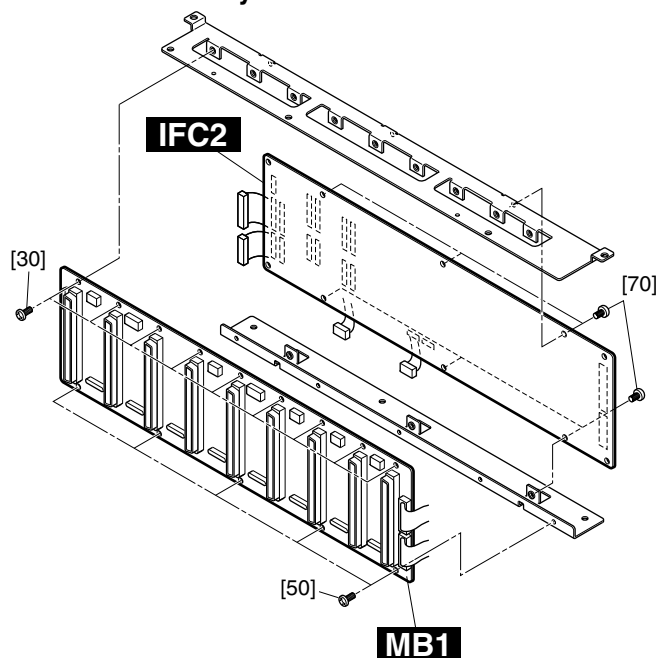
8. IFC2 Circuit Board

- 8-1 Remove the mother assembly. (See Procedure 6.)
 8-2 Remove the six (6) screws marked [70]. The IFC2 circuit board can then be removed. (Fig. 4)

9. Side Panel Assembly

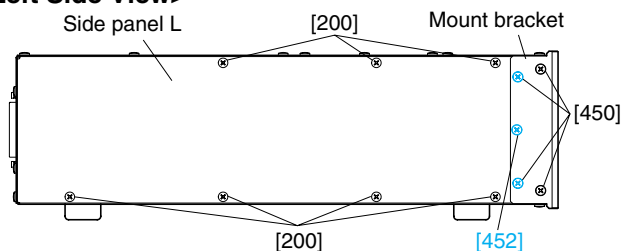
- 9-1 Remove the UNC card assembly. (See Procedure 1.)
 9-2 Remove the front panel assembly. (See Procedure 2.)
 9-3 Remove the top panel. (See Procedure 4-3.)
 9-4 Remove the mother assembly. (See Procedure 6.)
 9-5 Remove the eight (8) screws marked [450] and the two (2) screws marked [452]. Each mount bracket can then be removed. (Fig. 5)
 9-6 Remove the seven (7) screws marked [200]. The side panel (L) can then be removed. (Fig. 5)
 9-7 Remove the three (3) screws marked [170] and the five (5) screws marked [180]. The upper chassis can then be removed. (Fig. 2, Fig. 3)
 9-8 Remove the seven (7) screws marked [260]. The side panel assembly can then be removed. (Fig. 5)

• Mother Assembly

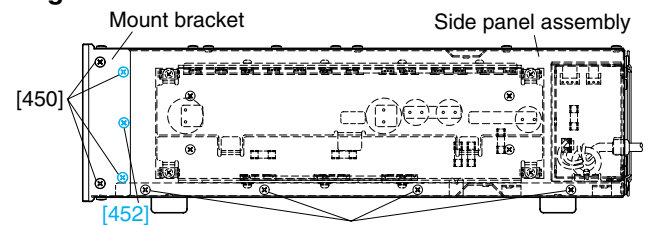


- [30]: Bind Head Tapping Screw-B 3.0x6 MFZN2BL (EP600230)
 [50]: Bind Head Tapping Screw-B 3.0x6 MFZN2BL (EP600230)
 [70]: Bind Head Tapping Screw-B 3.0x6 MFZN2BL (EP600230)

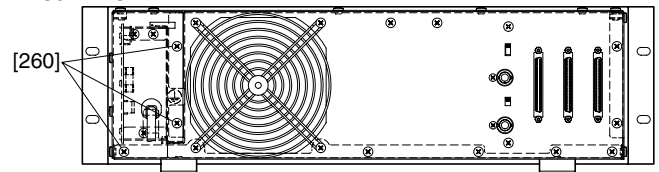
<Left Side View>



<Right Side View>



<Rear View>



- [200]: Bind Head Tapping Screw-B A4.0x8 MFZN2BL (VC688800)
 [260]: Bind Head Tapping Screw-B A4.0x8 MFZN2BL (VC688800)
 [450]: Oval Head Screw 4.0x8 MFZN2BL (VS153600)
 [452]: Oval Head Screw B4.0x10 MFZN2BL (V6221000)

Fig. 4

Fig. 5

10. AC Assembly

- 10-1 Remove the side panel assembly. (See Procedure 9.)
- 10-2 Remove the three (3) screws marked [90]. The AC assembly can then be removed. (Fig. 6)

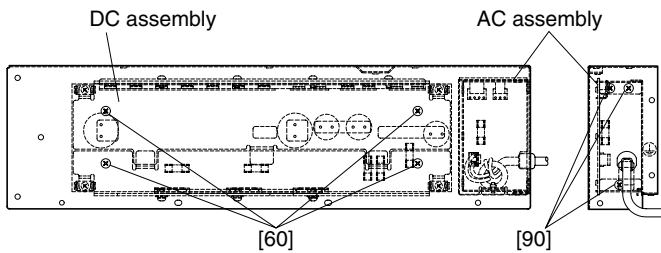
11. DC Assembly

- 11-1 Remove the side panel assembly. (See Procedure 9.)
- 11-2 Remove the four (4) screws marked [60]. The DC assembly can then be removed. (Fig. 6)

12. DC Circuit Board

- 12-1 Remove the side panel assembly. (See Procedure 9.)
- 12-2 Remove the DC assembly. (See Procedure 11.)
- 12-3 Remove the four (4) screws marked [D60]. The TR holder can then be removed. (Fig. 7)
- 12-4 Remove the three (3) screws marked [D80]. The BR holder can then be removed. (Fig. 7)
- 12-5 Remove the five (5) screws marked [D90]. The DC circuit board can then be removed. (Fig. 7)

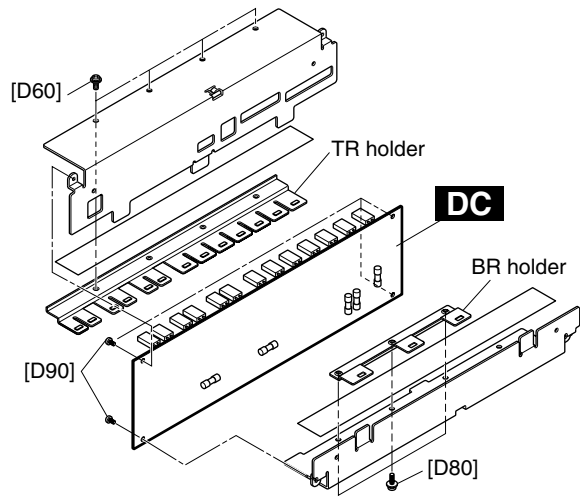
• Side Panel Assembly



- [60]: Bind Head Screw A4.0x6 MFZN2BL (EG340290)
- [90]: Bind Head Tapping Screw-B A4.0x8 MFZN2BL (VC688800)

Fig. 6

• DC Assembly



- [D60]: Pan Head Screw SP4.0x8 MFZN2Y (EL200020)
- [D80]: Pan Head Screw SP4.0x8 MFZN2Y (EL200020)
- [D90]: Bind Head Tapping Screw-B 3.0x6 MFZN2BL (EP600230)

Fig. 7

LSI PIN DESCRIPTION

YSS904-F (XV989A00) DSP5 (Digital Signal Processor)

IFC2: IC601

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION	
1	NC		} Not used	105	NC		} Not used	
2	NC							
3	NC							
4	NC		} Ground	106	NC			
5	Vdd							
6	Vss	I	Power supply	107	NC			
7	XI	O	System master clock input (60 MHz or 30 MHz)	108	NC			
8	XO	O	System master clock output (High or 30 MHz)	109	SIO28	I/O	} Serial data bus	
9	Vdd		Ground	110	SIO29	I/O		
10	/SYNCl	I	Sync. signal input	111	SIO30	I/O		
11	/SYNCO	O	Sync. signal output	112	SIO31	I/O		
12	Vdd		Ground	113	Vss		} Power supply	
13	CKI	I	System clock input (30 MHz)	114	Vdd			
14	CKO	O	System clock output (30 MHz)	115	SIO32	I/O	} Ground	
15	CKSEL	I	System master clock select	116	SIO33	I/O		
16	Vss		Power supply	117	SIO34	I/O	} Serial data bus	
17	MCKD	I	Serial clock input (256 fs)	118	SIO35	I/O		
18	/SSYNC	I	Serial signal input	119	SIO36	I/O		
19	/IC	I	Initial clear	120	SIO37	I/O	} Power supply	
20	/TEST	I	Test mode setting (0: TEST, 1: Normal)	121	SIO38	I/O		
21	NC		} Not used	122	SIO39	I/O		
22	NC							
23	NC							
24	Vdd		Ground	123	Vss		} Power supply	
25	Vss		Power supply	124	Vdd			
26	/CS	I	Chip select	125	SIO40	I/O	} Ground	
27	/WR	I	Write enable input	126	SIO41	I/O		
28	/RD	I	Read enable input	127	SIO42	I/O		} Serial data bus
29	CA7	I	} CPU address bus	128	SIO43	I/O		
30	CA6	I						
31	CA5	I						
32	CA4	I						
33	CA3	I						
34	CA2	I						
35	CA1	I						
36	Vss		Power supply	129	SIO44	I/O	} Power supply	
37	Vdd		Ground	130	SIO45	I/O		
38	CD15	I/O	} CPU data bus	131	SIO46	I/O		
39	CD14	I/O						
40	CD13	I/O						
41	CD12	I/O						
42	CD11	I/O						
43	CD10	I/O						
44	CD09	I/O						
45	CD08	I/O						
46	CD07	I/O						
47	CD06	I/O						
48	Vss		Power supply	132	SIO47	I/O		
49	NC		} Not used	133	Vss			
50	NC							
51	NC							
52	NC							
53	NC							
54	NC							
55	NC							
56	NC							
57	Vdd		Ground	134	SIO48	I/O	} Power supply	
58	Vdd		Ground	135	SIO49	I/O		
59	CD05	I/O	} CPU data bus	136	SIO50	I/O		
60	CD04	I/O						
61	CD03	I/O						
62	CD02	I/O						
63	CD01	I/O						
64	CD00	I/O						
65	/WAIT	O		Wait output	137	SIO51	I/O	} Serial data bus
66	Vss			Power supply	138	SIO52	I/O	
67	SIO00	I/O						
68	SIO01	I/O		} Serial data bus	139	SIO53	I/O	
69	SIO02	I/O						
70	SIO03	I/O						
71	SIO04	I/O						
72	SIO05	I/O						
73	SIO06	I/O						
74	SIO07	I/O						
75	Vss		Power supply	140	SIO54	I/O		
76	Vdd		Ground	141	SIO55	I/O		
77	SIO08	I/O	} Serial data bus	142	Vss			
78	SIO09	I/O						
79	SIO10	I/O						
80	SIO11	I/O						
81	SIO12	I/O						
82	SIO13	I/O						
83	SIO14	I/O						
84	SIO15	I/O						
85	Vss			Power supply	143	Vdd		} Power supply
86	Vdd			Ground	144	Vdd		
87	SIO16	I/O	} Serial data bus	145	SIO56	I/O		
88	SIO17	I/O						
89	SIO18	I/O						
90	SIO19	I/O						
91	SIO20	I/O						
92	SIO21	I/O						
93	SIO22	I/O						
94	SIO23	I/O						
95	Vss			Power supply	146	SIO57	I/O	
96	Vdd			Ground	147	SIO58	I/O	
97	SIO24	I/O	} Serial data bus	148	SIO59	I/O		
98	SIO25	I/O						
99	SIO26	I/O						
100	SIO27	I/O						
101	NC			} Not used	149	SIO60	I/O	
102	NC							
103	NC							
104	NC							
				Power supply	150	SIO61	I/O	
			Ground	151	SIO62	I/O		
				152	SIO63	I/O		
				153	NC			
				154	NC			
				155	NC			
				156	NC			
				157	NC			
				158	NC			
				159	NC			
				160	NC			
				161	Vss		} Power supply	
				162	/POE	I		Parallel data bus controll signal
				163	Vss		Power supply	
				164	PIO00	I/O	} Parallel data bus	
				165	PIO01	I/O		
				166	PIO02	I/O		
				167	PIO03	I/O		
				168	PIO04	I/O		
				169	PIO05	I/O		
				170	PIO06	I/O		
				171	PIO07	I/O		
				172	Vss		} Power supply	
				173	Vdd			
				174	Vdd		} Ground	
				175	PIO08	I/O		
				176	PIO09	I/O	} Parallel data bus	
				177	PIO10	I/O		
				178	PIO11	I/O		
				179	PIO12	I/O	} Parallel data bus	
				180	PIO13	I/O		
				181	PIO14	I/O		
				182	PIO15	I/O	} Power supply	
				183	Vss			
				184	NC		Not used	
				185	PIO16	I/O	} Parallel data bus	
				186	PIO17	I/O		
				187	PIO18	I/O		
				188	PIO19	I/O		
				189	PIO20	I/O		
				190	PIO21	I/O		
				191	PIO22	I/O		
				192	PIO23	I/O		
				193	Vss		} Power supply	
				194	Vdd			
				195	Vdd		} Ground	
				196	PIO24	I/O		
				197	PIO25	I/O	} Parallel data bus	
				198	PIO26	I/O		
				199	PIO27	I/O		
				200	PIO28	I/O	} Parallel data bus	
				201	PIO29	I/O		
				202	PIO30	I/O		
				203	PIO31	I/O	} Power supply	
				204	Vss			
				205	NC		} Not used	
				206	NC			
				207	NC			
				208	NC			

● HD6477042AF28 (XY715A00) CPU

UNC: IC101

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	PE14	O	Port E	57	D11	I/O	Data bus
2	PE15	O	Port E	58	D10	I/O	
3	VSS	I	Ground	59	D9	I/O	
4	A0	O	Address bus	60	D8	I/O	Data bus
5	A1	O					
6	A2	O		Ground	61	VSS	I
7	A3	O					
8	A4	O		Data bus	62	D7	I/O
9	A5	O					
10	A6	O		Power supply	63	D6	I/O
11	A7	O					
12	A8	O		Data bus	64	D5	I/O
13	A9	O					
14	A10	O		Ground	65	VCC	I
15	A11	O					
16	A12	O		Crystal oscillator	66	D4	I/O
17	A13	O					
18	A14	O		Mode control	67	D3	I/O
19	A15	O					
20	A16	O	Non-maskable interrupt request	68	D2	I/O	
21	VCC	I		Power supply	69	D1	I/O
22	A17	O	Address bus		70	D0	I/O
23	VSS	I		Ground	71	VSS	I
24	/RAS	O	Row address strobe		72	XTAL	I
25	/CASL	O		Column address strobe (low)	73	MD3	I
26	/CASH	O	Column address strobe (high)		74	EXTAL	I
27	VSS	O		Ground	75	MD2	I
28	RDWR / PB5	O	DRAM read/write / Port B		76	NMI	I
29	A18	O		Address bus	77	VCC	I
30	A19	O	Port B / Address bus		78	MD1	I
31	A20	O		Ground	79	MD0	I
32	PB9 / A21	O	Read		80	PLL VCC	I
33	VSS	I		Watch dog timer overflow	81	PLLCAP	I
34	/RD	O	High write		82	PLL VSS	I
35	/WDTOVF	O		Power supply	83	PA15 / CK	O
36	/WRH	O	Low write		84	/RES	I
37	VCC	I		Ground	85	PE0	I
38	/WRL	O	Ground		86	PE1	I
39	VSS	I		Analog input / Port F	87	PE2	I
40	/CS1	O	Chip select		88	PE3	I
41	/CS0	O		Chip select	89	PE4	I
42	PA9 / TCLKD	O	Port A / Timer clock		90	VSS	I
43	/IRQ2 / TCLKC	I		Interrupt request / Timer clock	91	AN0 / PF0	I
44	/CS3	O	Chip select		92	AN1 / PF1	I
45	/CS2	O		Chip select	93	AN2 / PF2	I
46	/IRQ1	I	Interrupt request		94	AN3 / PF3	I
47	TXD	O		Data transmission	95	AN4 / PF4	I
48	RXD	I	Data reception		96	AN5 / PF5	I
49	/IRQ0	I		Interrupt request	97	AVSS	I
50	PA1 / TXD0	O	Port A / Data transmission		98	AN6 / PF6	I
51	PA0 / RXD0	I		Port A / Data reception	99	AN7 / PF7	I
52	D15	I/O	Data bus		100	AVCC	I
53	D14	I/O		Ground	101	VSS	I
54	D13	I/O					
55	VSS	I	Ground	102	PE5	O	
56	D12	I/O		Data bus	103	VCC	I
					104	PE6	O
				105	PE7	O	
				106	PE8	O	
				107	PE9	O	
				108	PE10	O	
				109	VSS	I	
				110	PE11	O	
				111	PE12	O	
				112	PE13	O	

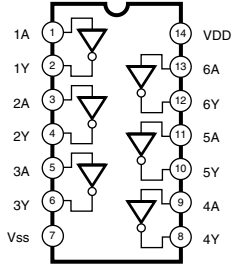
● **YM3436DK (XG948E0) DIR2 (Digital Format Interface Receiver)**

IFC2: IC301, 302, 307, 401,
402, 404, 405

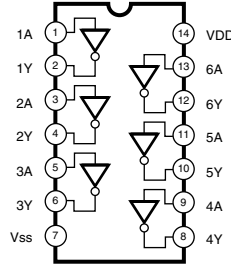
PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	DAUX	I	Auxiliary input for audio data	23	RSTN	I	System reset input
2	HDLT	O	Asynchronous buffer operation flag	24	Vdda		VCO section power (+5V)
3	DOUT	O	Audio data output	25	CTLN	I	VCO control input N
4	VFL	O	Parity flag output	26	PCO	O	PLL phase comparison output
5	OPT	O	Fs x 1 Synchronous output signal for DAC	27	(NC)		
6	SYNC	O	Fs x 1 Synchronous output signal for DSP	28	CTLP	I	VCO control input P
7	MCC	O	Fs x 64 Bit clock output	29	Vssa		VCO section power (GND)
8	WC	O	FS x 1 Word clock output	30	TSTN	I	Test terminal. Open for normal use
9	MCB	O	Fs x 128 Bit clock output	31	KM2	I	Clock mode switching input 2
10	MCA	O	Fs x 256 Bit clock output	32	KM0	I	Clock mode switching input 0
11	SKSY	I	Clock synchronization control input	33	FS1	O	Channel status sampling frequency display output 1
12	XI	I	Crystal oscillator connection or external clock input	34	FS0	O	Channel status sampling frequency display output 0
13	XO	O	Crystal oscillator connection	35	CSM	I	Channel status output method selection
14	P256	O	VCO oscillating clock connection	36	EXTW	I	External synchronous auxiliary input word clock
15	LOCK	O	PLL lock flag	37	DDIN	I	EIAJ (AES/EBU) data input
16	Vss		Logic section power (GND)	38	LR	O	PLL word clock output
17	TC	O	PLL time constant switching output	39	Vdd		Logic section power (+5 V)
18	DIM1	I	Data input mode selection	40	ERR	O	Data error flag output
19	DIM0	I	Data input mode selection	41	EMP	O	Channel status emphasis control code output
20	DOM1	I	Data output mode selection	42	CD0	O	3-wire type microcomputer interface data output
21	DOM0	I	Data output mode selection	43	CCK	I	3-wire type microcomputer interface clock input
22	KM1	I	Clock mode switching input 1	44	CLD	I	3-wire type microcomputer interface load input

IC BLOCK DIAGRAM

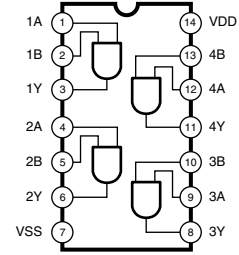
- **HD74LVU04AFPEL (XY102A00)**
Hex Inverter
IFC2: IC106



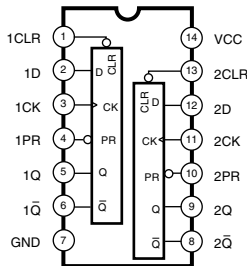
- **HD74LV04AFPEL (IS000400)**
Hex Inverter
IFC2: IC309, 411, 412
UNC: IC105



- **HD74LV08AFPEL (IS000800)**
Quad 2 Input AND
IFC2: IC107, 108, 410
UNC: IC104, 213

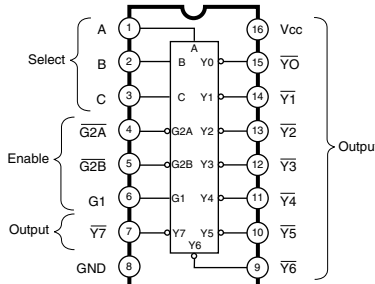


- **TC74VHCT74AF(EL) (XZ226A00)**
Dual D-Type Flip-Flop
IFC2: IC602

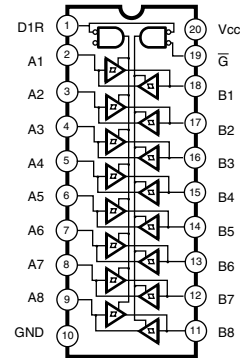


INPUTS				OUTPUTS	
PR	CLR	CLK	D	Q	Q̄
L	H	X	X	H	L
H	L	X	X	L	H
L	L	X	X	H	H
H	H	f	H	H	L
H	H	f	L	L	H
H	H	L	X	Q _o	Q _o

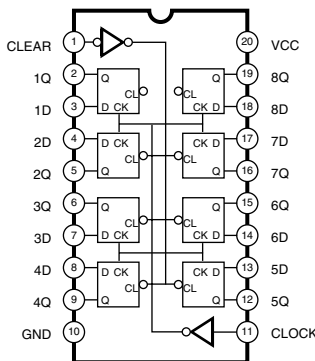
- **SN74LV138ANSR (IS013810)**
3 to 8 Demultiplexer
UNC: IC211, 212



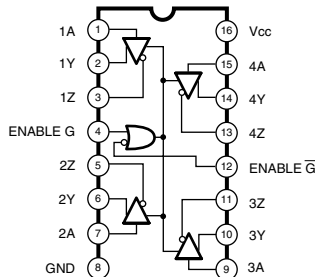
- **TC74VHCT245AF (XV242A00)**
TC74VHC245F (XT487A00)
Octal 3-State Bus Transceiver
IPC1: IC106
IFC2: IC101-105, 501-504, 701-712
UNC: IC102, 204-210



- **HD74LV273AFPEL (IS027300)**
Octal D-Type Flir Flop
IFC2: IC603, 604



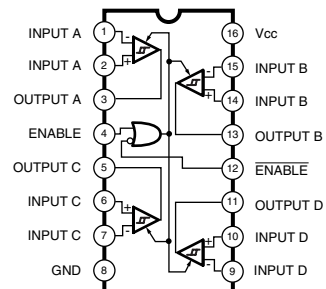
- **AM26LS31CNSR (XU996A00)**
Quad Line Driver
IPC1: IC100, 102-105



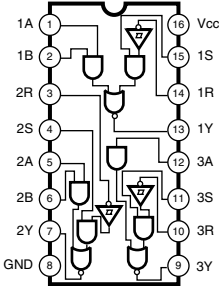
INPUT	ENABLES		OUTPUTS	
	A	G	Y	Z
H	H	X	H	L
L	H	X	L	H
H	X	L	H	L
L	X	L	L	H
X	L	H	Z	Z

H= high level X= irrelevant
L= low level Z= high impedance (off)

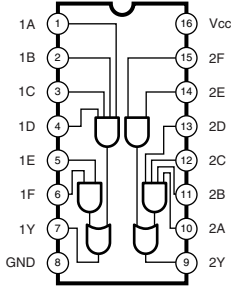
- **DS26C32ATMX (XU815A00)**
Quad Differential Line Receiver
IPC1: IC101



- **SN75124N (XE737A00)**
Triple Line Receiver
IPC3: IC300



- **SN75121 (XE638A00)**
Dual Line Driver
IPC3: IC301



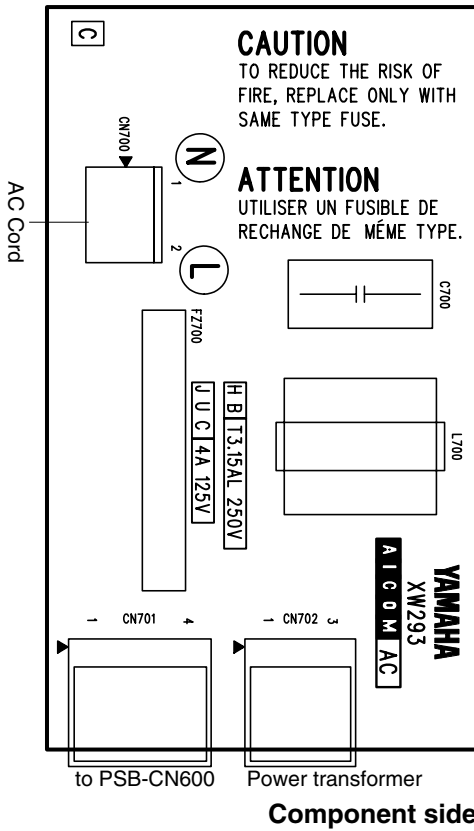
■ CIRCUIT BOARDS CONTENTS

AC Circuit Board (XW293B0)	16
DC Circuit Board (XW293B0)	19
DR Circuit Board (XW293B0)	16
IFC2 Circuit Board (XW283B0)	20
IPC1 Circuit Board (XW285A0)	17
IPC3 Circuit Board (XW286B0)	16
LED1 Circuit Board (XW286B0)	16
MB1 Circuit Board (XW282A0)	19
PSB Circuit Board (XW293B0)	16
UNC Circuit Board (XW281B0)	18

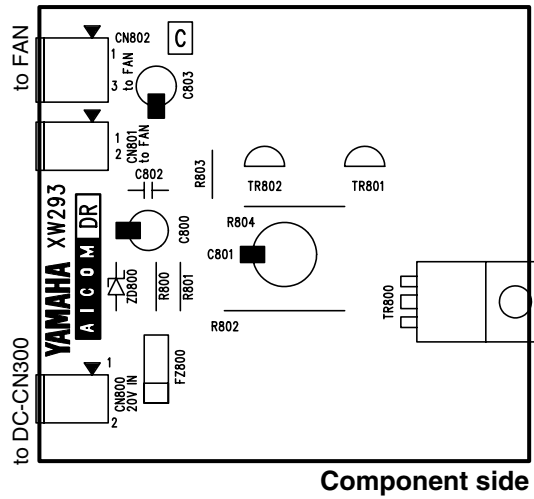
Note: See parts list for details of circuit board component parts.

CIRCUIT BOARDS

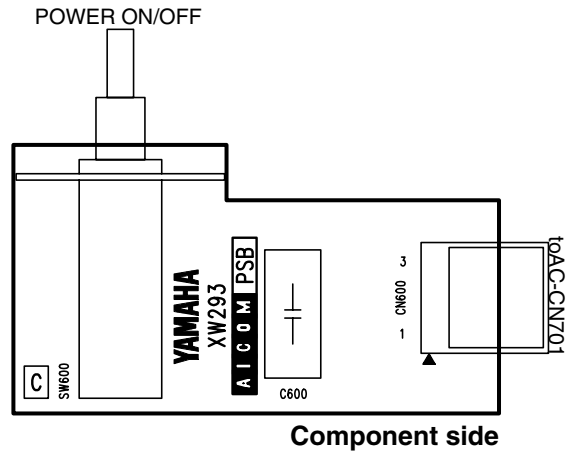
● AC Circuit Board



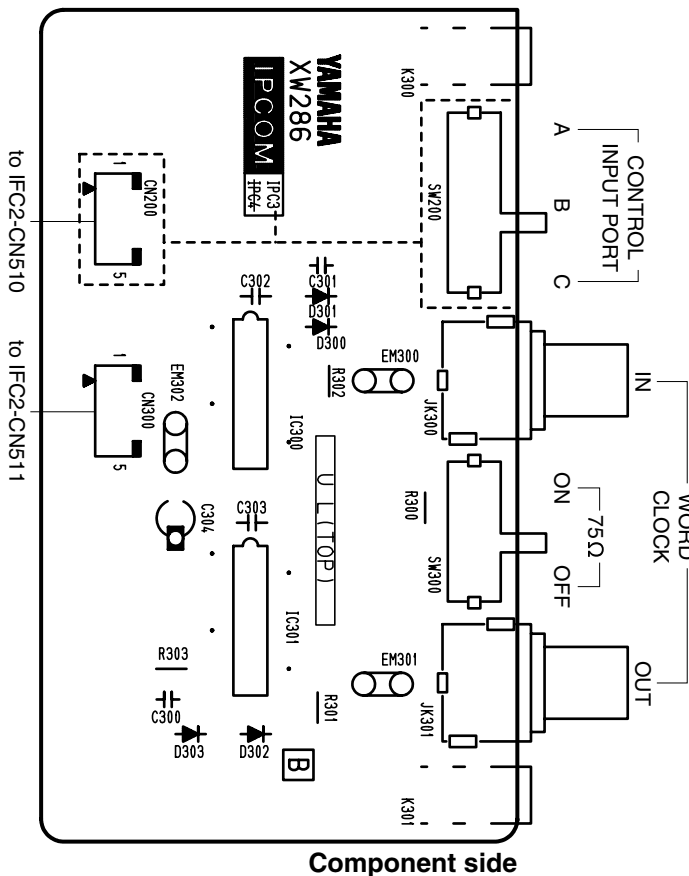
● DR Circuit Board



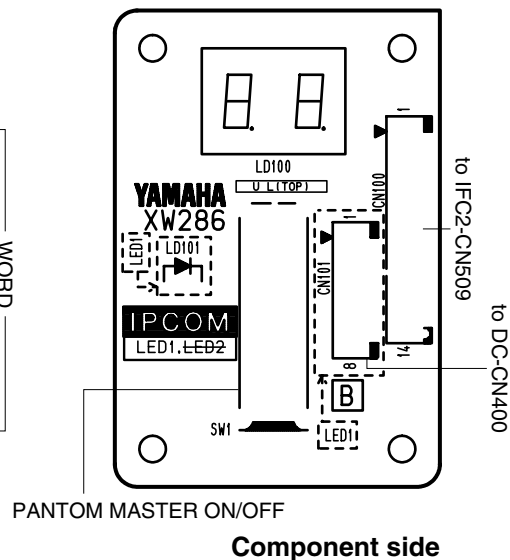
● PSB Circuit Board



● IPC3 Circuit Board



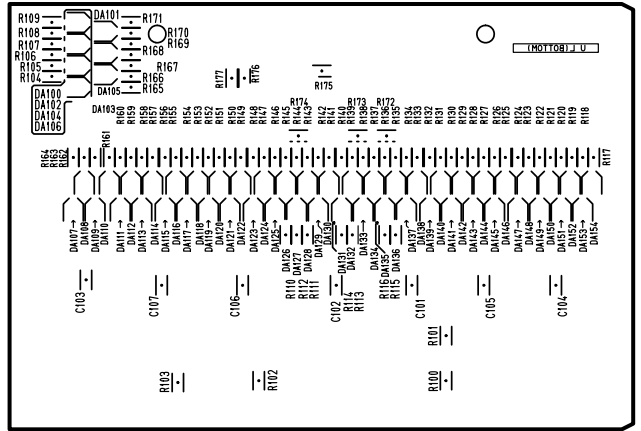
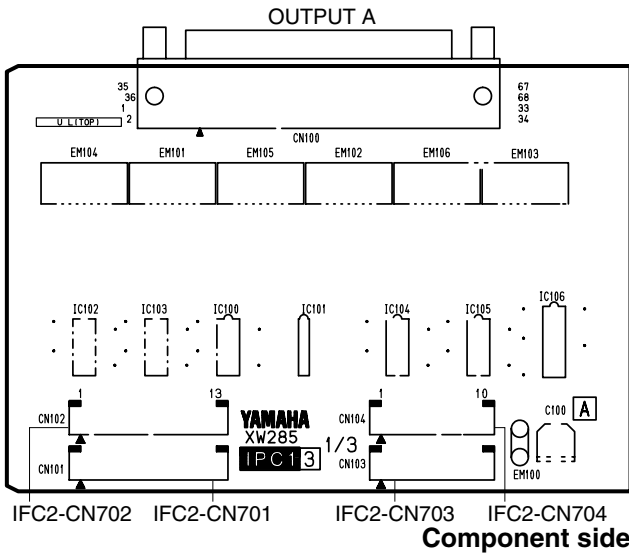
● LED1 Circuit Board



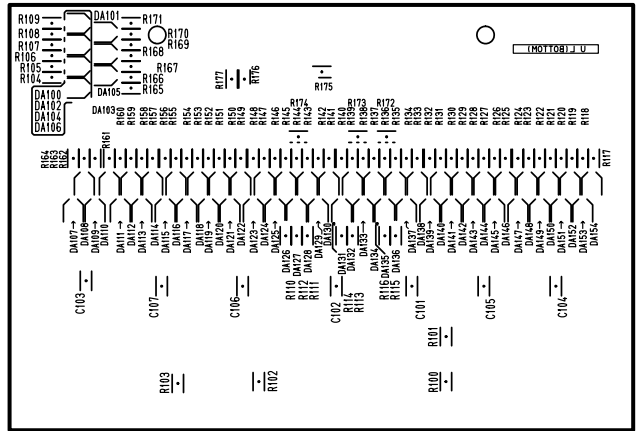
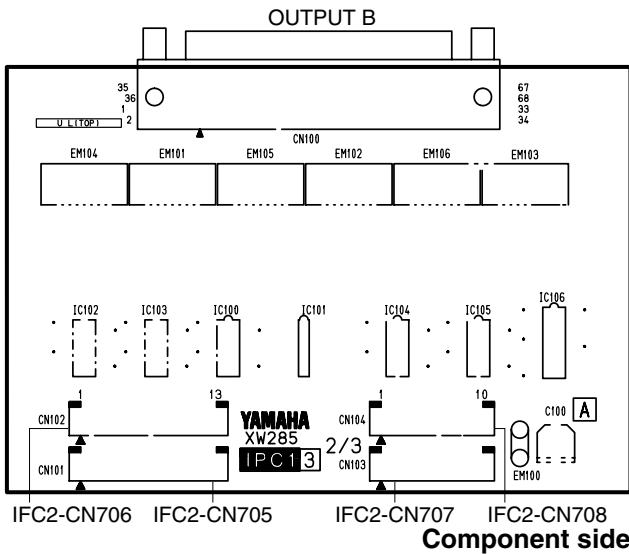
AC, DR, PSB: 3NA-V412850

IPC3, LED1: 3NA-V488230

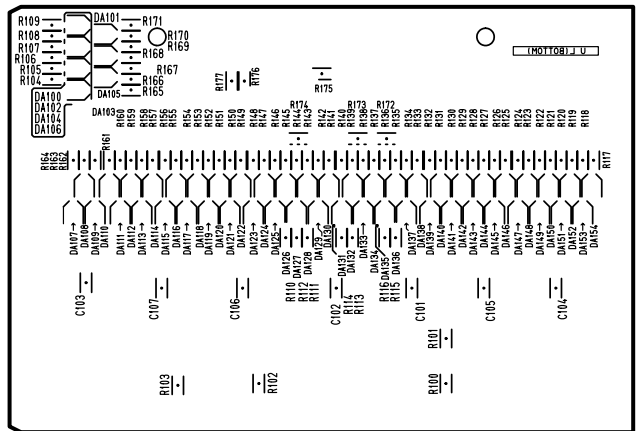
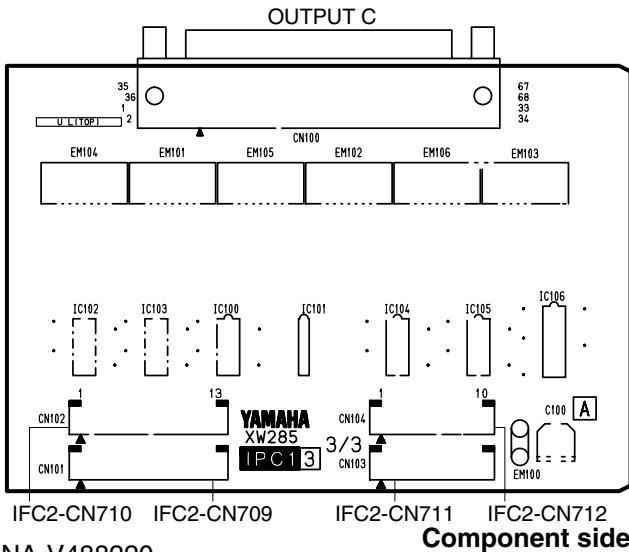
● IPC1 1/3 Circuit Board



● IPC1 2/3 Circuit Board

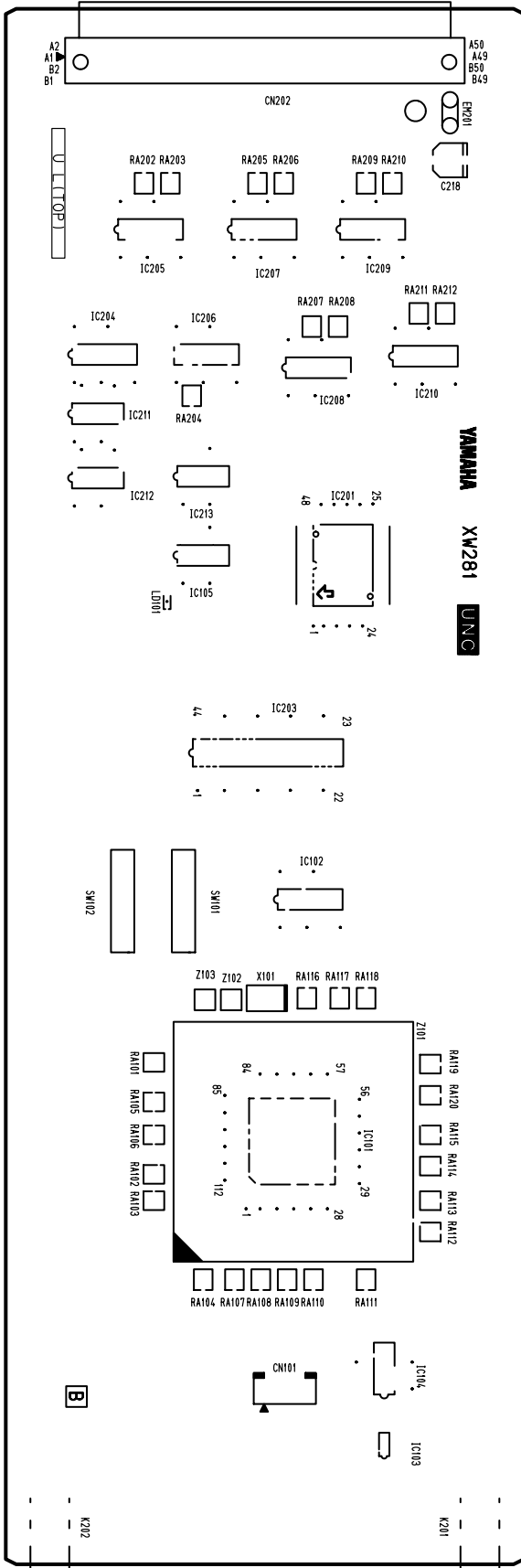


● IPC1 3/3 Circuit Board

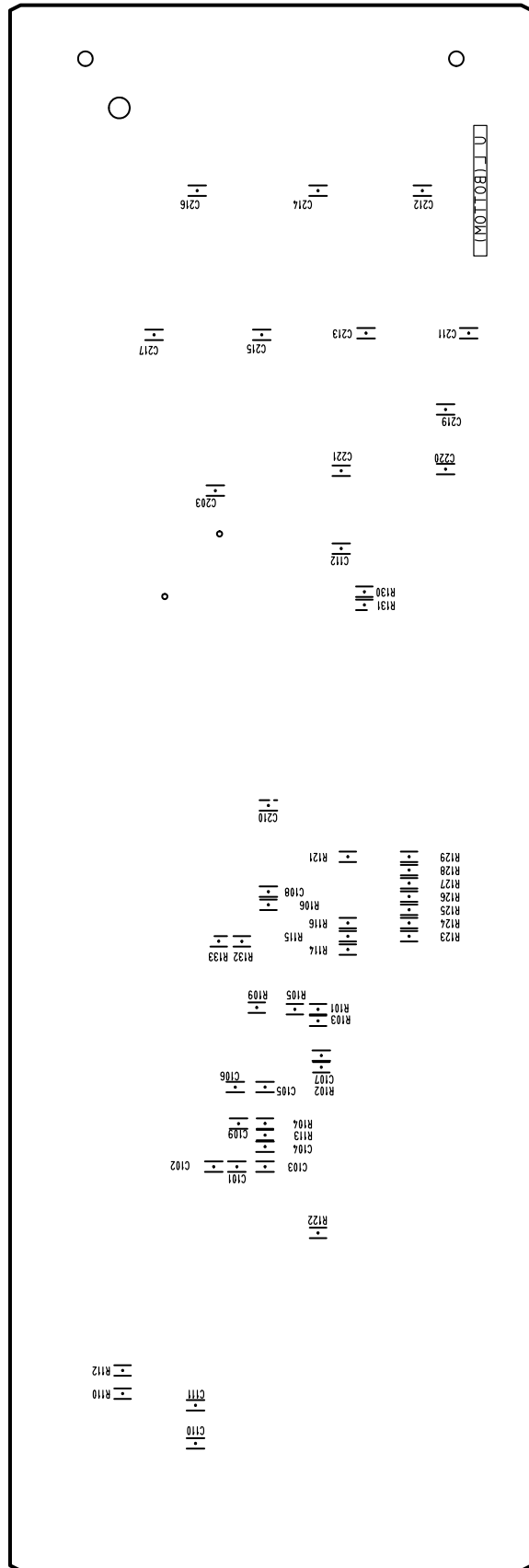


3NA-V488220

● UNC Circuit Board



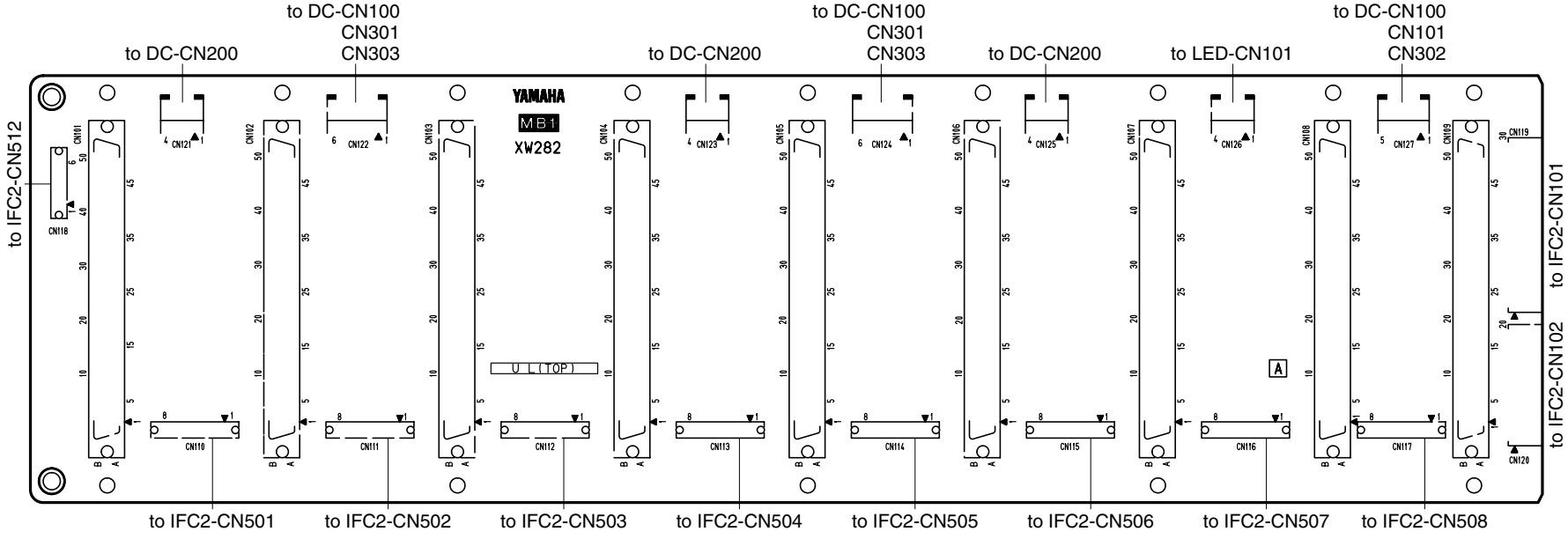
Component side



Pattern side

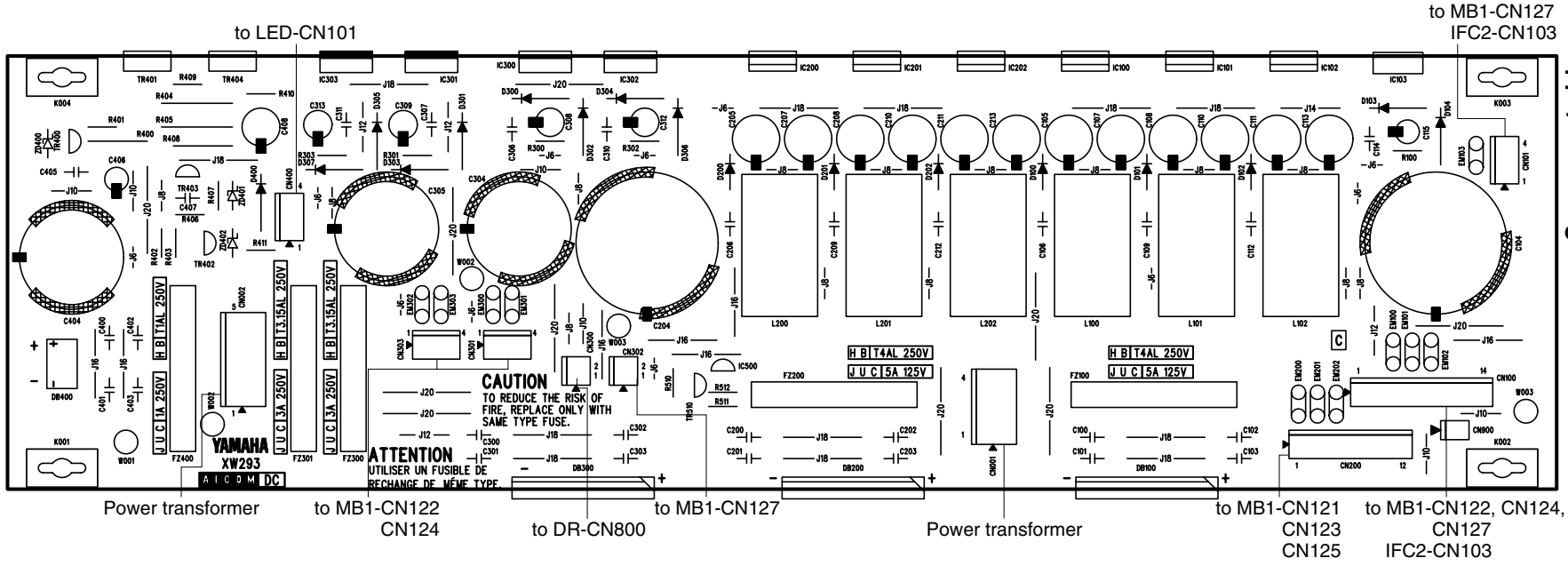
3NA-V412870

● MB1 Circuit Board



Component side

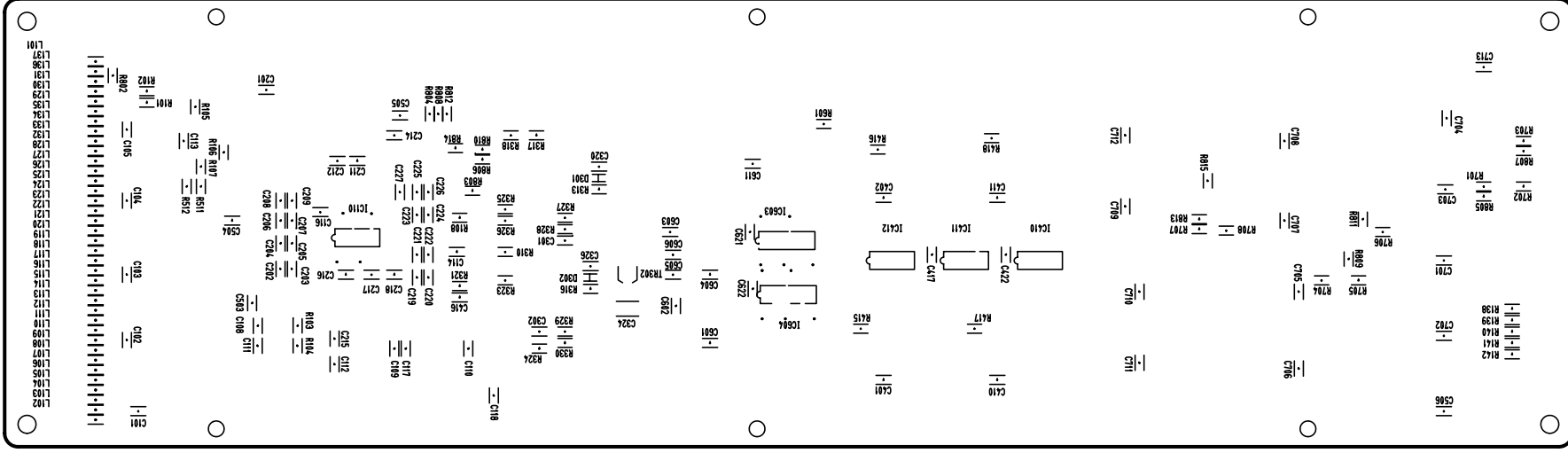
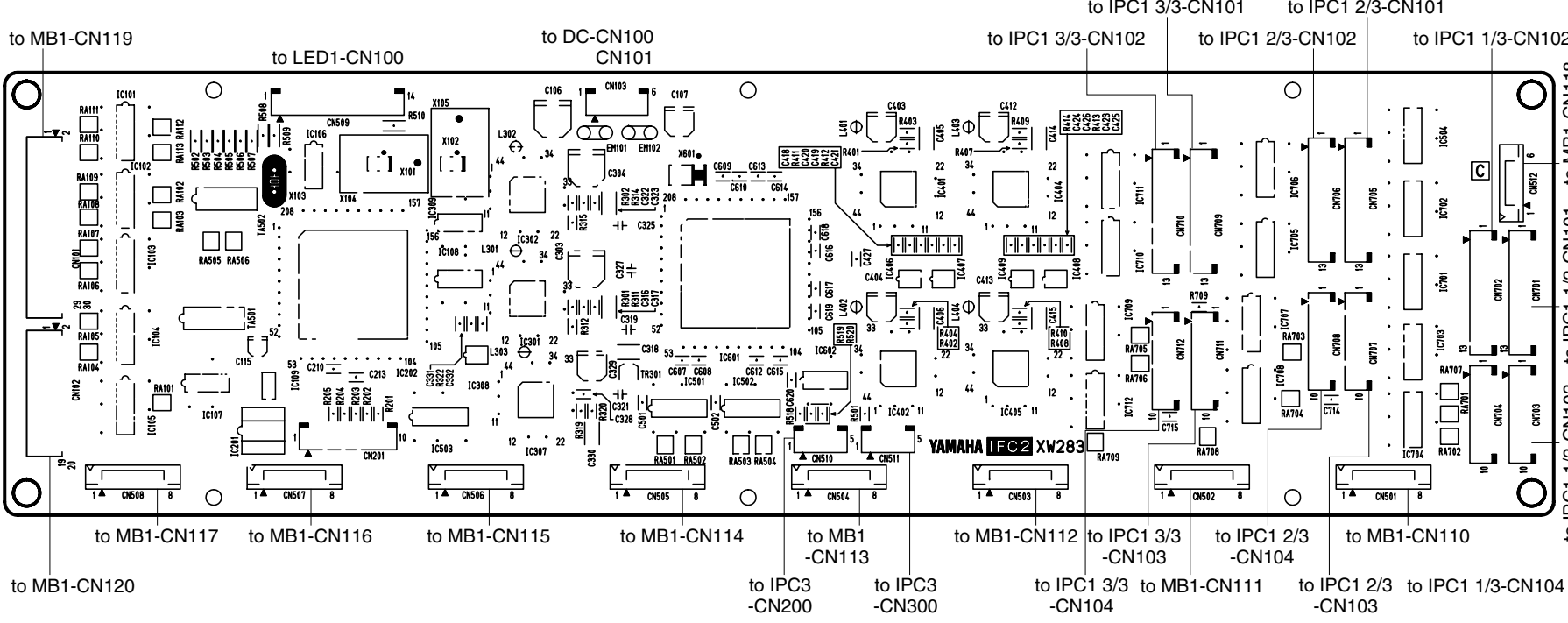
● DC Circuit Board



Component side

DC: 3NA-V412850
MB1: 3NA-V412880

● IFC2 Circuit Board



Pattern side

3NA-V412890

Component side

INSPECTION

1. Range of Applicability

These specifications apply to the AI8, AI8-ML8, AI8-AD8, and AI8-ML4AD4.

2. Preparations

2-1. Conditions

- ◇ For details on the connection method, refer to the Test Program Specifications KES-92652.
- ◇ Unless otherwise specified, the conditions are as follows.
 - Set the PHANTOM MASTER switch to On.
 - Set WORD CLOCK IN 75 Ω to ON.
 - Set the CONTROL INPUT PORT to A.

2-2. Loading the Firmware

The firmware used must be the “AI8/AO8 Firmware” (managed with the already drawn CD-R assembly drawing (3JL-XY714A0)) of the PM1D System Software with a version later than the version shown on the cover. For details on the firmware writing method, refer to the Test Program Specifications KES-92652.

2-3. Test Program

For details on the starting method etc., refer to the Test Program Specifications KES-92652.

3. Inspection

3-1. Inspection with Test Program

- Inspect based on the Test Program Specifications KES-92652.

3-2. Jitter Measurement

- Connect the LMY-slot inspection jig Canon terminal to DSA1.
- Set Fs to 48 kHz and 44.1 kHz with the test program and measure the jitter at DSA1.

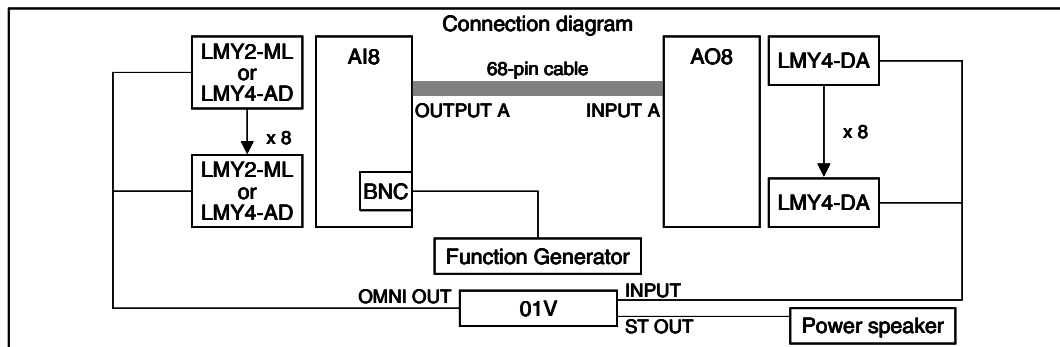
	Range of tolerance
48 kHz	5 nsec max.
44.1 kHz	5 nsec max.

3-3. Fan Operation Check

- Check that the fan rotates while the power is on.

3-4. Sound

- The connections are as in the diagram below.



- Set the AI8 and AO8 sheet UNC DIP switch as below. DIP Switch 8 is not used.

	DIP SW						
	1	2	3	4	5	6	7
AI8	OFF	ON	OFF	OFF	ON	ON	ON
AO8	OFF	OFF	OFF	ON	OFF	OFF	OFF

- For 01V, OSC1kHz is output from OMNI OUT and the signal input to INPUT is assigned to ST OUT.
- For AI8, insert the inspection LMY4-AD cards in Slot 1-8.
- For AI8-ML8, insert the shipping LMY2-ML cards in Slot 1-8.
- For AI8-AD8, insert the shipping LMY4-AD cards in Slot 1-8.
- For AI8-ML4AD4, insert the shipping LMY2-ML cards in Slot 1-4 and the shipping LMY4-AD cards in Slot 5-8.

(1) **Fs = 51.12 kHz (48 kHz + 6.5 %)**

- Set the function generator to 51.12 kHz.
- Test listen for 30 seconds at all the input terminals and verify that there is no noise. However, for the LMY2-ML, only the A terminal needs to be checked.

(2) **Fs = 39.69 kHz (44.1 kHz -10 %)**

- Set the function generator to 39.69 kHz.
- Test listen for 30 seconds at all the input terminals and verify that there is no noise. However, for the LMY2-ML, only the A terminal needs to be checked.

3-5. **Firmware Load Test**

Check that it is possible to load the firmware as in 2-2. using the Output C terminal.

4. Factory Settings

- Switch all the sheet UNC DIP switch settings On.

· Front panel

PHANTOM MASTER: OFF

· Rear panel

WORD CLOCK IN 75 Ω: On

CONTROL INPUT PORT: A

■ TEST PROGRAM

A. Preparations for Inspection

•Writing the firmware

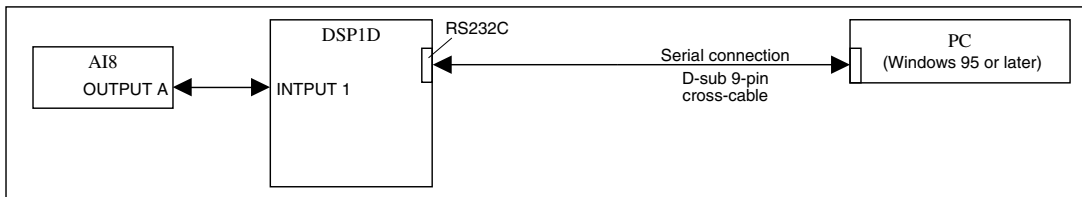
This equipment requires firmware. When there are changes to the program for this equipment and during manufacturing processes, it is necessary to download the new firmware to FlashRom from a PC. (If there is no firmware loaded or its checksum does not match the correct value, when the power is first switched on, the LED on UNC flashes at one second intervals.)

The only sheet for which the firmware must be downloaded is UNC. There are two methods for writing this firmware: to write it indirectly using the CS1D or DSP1D RS232C port or to write it directly to the AI8 UNC sheet. The detailed methods are given below.

•Method for writing firmware using the DSP1D RS232C port

* It is possible to write the AI8 (UNC) firmware from the PC via the CS1D or DSP1D RS232C port. This is the method normally used except for production processes for this equipment.

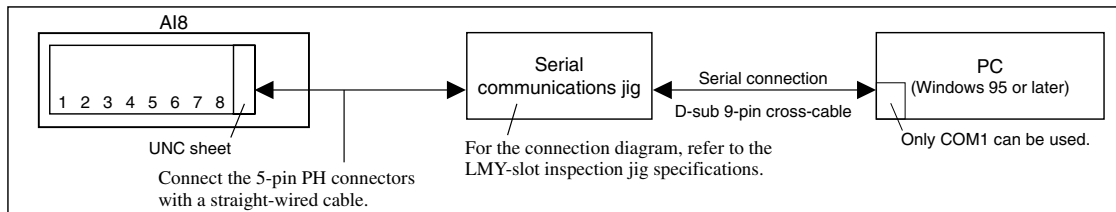
Software used: PM1DLOAD within PM1D system software
 Firmware used: AI8/AO8 firmware in PM1D system software
 Version used: **PM1DLOAD and the AI8/AO8 firmware are files composed using a PM1D SYSTEM SOFTWARE with a version later than the version shown on the cover.**
 (Managed with the already drawn CD-R assembly drawing (3JL-XY714A0).)
 * For the installation and setting methods, refer to the CS1D Test Program Specifications.



1. Install and set the above reference destination files.
2. At the very least, connect as shown in the figure above (when AI8). If it is not possible to avoid making signal connections other than these, turn off the power supply for all components other than those relevant to the write object and turn off the control power supply for the volume of other components such as speakers and amplifiers. Please note that at that time, if other AI8/AO8 are connected they may be written and because of this, there is no guaranteed that the writing has been properly performed even if the writing shows a successful completion.
3. Use the methods shown in the CS1D Test Program Specifications to write the firmware to the necessary units.
 After the firmware has been written, check that the versions for all the units are the desired versions.

•Method for writing firmware directly to the AI8 UNC

* When there is some kind of problem or the DSP1D is unavailable due to this equipment's production processes and the firmware can not be written with the method on the previous page, use the method below.



1. Connect the D-sub 9-pin serial cables (cross) and DSP-CHECK board between the 5-pin connector for the target board and the PC. At this time, do not connect other signal lines.
2. After PM1DLOAD starts up, select CardDirect with MODE SELECT, then press OK.
3. Use the setup menu to properly set the serial port to be used and then select AI8/AO8 from the pull-down menu.
4. Check on the items for INPUT 1 on the list and click the write button.
5. After writing ends, end PM1DLOAD.
6. Switch off the power for AI8 and remove the PH connector, then switch the power for AI8. DSP1D on again and check that it starts up normally. (Operation is normal if an "E3" is displayed in 7-segment display for AI8.)

•PM1D inspection PC software preparation

Inspection with this device uses special PC software for inspection.

The software used, version and installation methods as follows

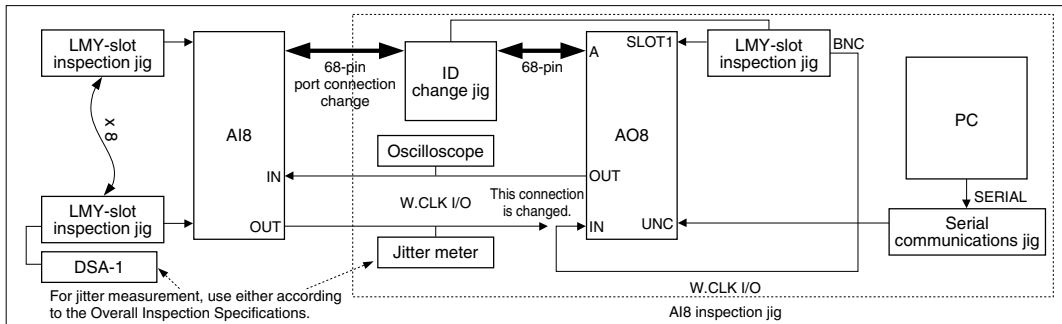
Software used:	PM1D inspection PC software in PM1D system software
Version used:	PM1D system software component files with the version number listed on the cover sheet. (Managed with the already drawn CD-R assembly drawing (3JL-XY714A0).)
Method of preparation:	Follow the instructions in the CS1D test program specifications (Drawing No: KES-92654) titled "Procedure for extracting software groups for production and customer service applications". Once the files have been extracted, refer to the Readme.txt in the FactoryDiag directory.

Before starting inspection, refer to version.txt in the same directory as the firmware shown on the previous page and input the version character string as instructed. (Please refer to page 24, 25)

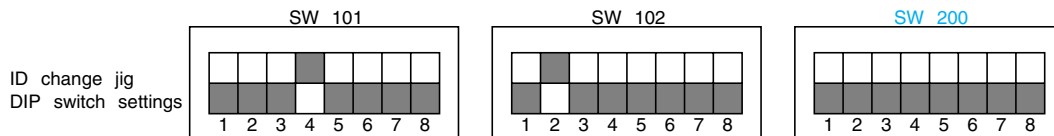
B. Inspection Method

The inspection configuration is shown in the diagram below.

Install the inspection jig to the A18 to be inspected as in the figure above. Send the inspection commands from the PC via the A18 to the LMY-slot inspection jig and take in at the PC the results returned from the LMY-slot inspection jig. Always switch on the Phantom switch before starting the inspection. (The pop-up box is displayed on the PM1D inspection PC software when the checks start.)



- * Turn on the power supply for AO8 before making the connection between the AO8 on the jig side and the jig for serial communication. **Warning: Do not connect until "E3" is displayed on the AO8 7-segment display.**
- * Use the LMY-slot inspection jigs inserted into the LMY-slots. For details, see the LMY-slot inspection jig specifications.
- * Serial communications jigs are boards that convert the serial interface from the PC. For details, see the LMY-slot inspection jig specifications.
- * Set the DIP switches on the ID change jig for A18 inspection as shown below. For details on the IC change jig, see the LMY-slot inspection jig specifications.

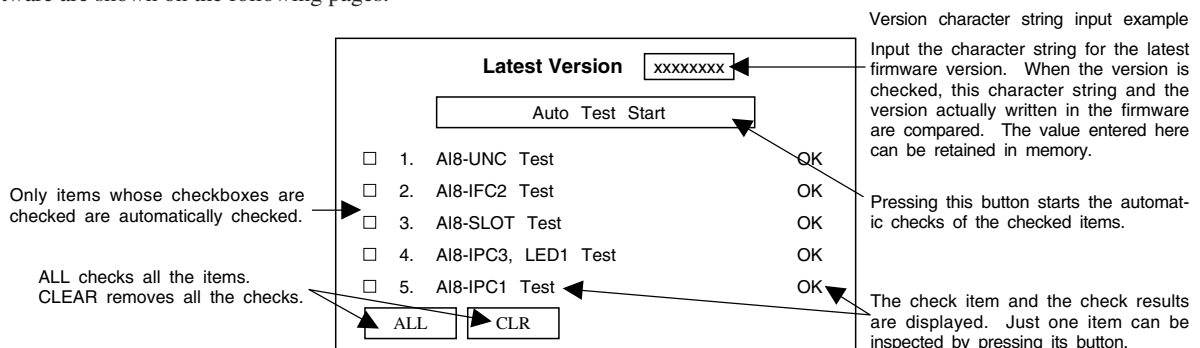


PM1D inspection PC software summary

The A18 is inspected using PC inspection software. This inspection software is common for A18/AI8/DSP1D/CS1D. For the basic operation methods, menu screen specifications, etc., see the CS1D Test Program Specifications.

Below is the menu for A18 inspection.

Input the latest version of A18 UNC before starting the inspection. (This is necessary for the version check.) For the character string to input, refer to version.txt in the same directory as the A18/AI8 firmware. Details of each check item and the corresponding PC software are shown on the following pages.



C. Inspection Items

The inspection items are as below. Details of the inspection items are shown on the following pages.

* However, 128 Fs Sync must be normal for the DSP to operate, so there is no special check item.

No.	Item
1	AI8 - UNC test
2	AI8 - IFC2 test
3	AI8 - SLOT test
4	AI8 - IPC3, LED1 test
5	AI8 - IPC1 test

1. AI8 - UNC Test

This test checks around the AI8-UNC.

OK/NG display for the page as a whole
Displayed when all the checks have been completed.

Received ID displayed as
board name and hexadecimal

1. AI8-UNC Test OK

* ID UNC [1Eh] OK

* RAM OK

 DataBus Sub-item OK

 AddressBus OK

* Flash OK

* Version Main item OK

Flash: VOK/NG display for individual items

Current status display

1. AI8-UNC Test

-----If.OK, sub-items are not displayed.-----

ID: unc[1Eh] OK

RAM: DBus[38-35,32-29,16-13,10-7 pin] OK

 00000000 00000000 OK

 ABus[18-21,24-27,42-44,1-5 pin] OK

 0 00000000 00000000 OK

Flash: VOK/NG display for individual items

Displays all the detailed results so far. This display can be scrolled.

Using the terminal status display and the corresponding pin numbers in the example below, it is possible to determine that the fifth one from left on the terminal status display is for pin 32.

Stopped the moment an actual ID NG appears; stopped at the end of the page for any other NG.

NG example

1. AI8-UNC Test

* ID xxx [xxh] NG

* RAM xxx [xxh] NG

 DataBus DBus[38-35,32-29,16-13,10-7 pin] NG

 AddressBus 11111111 11111111 NG

* Flash ABus[18-21,24-27,42-44,1-5 pin] NG

* Version 1 11111111 11111111 NG

Flash: CheckSum = xxxx[xxxx] NG

Version: Current = x.xx , Latest = x.xx NG

Abnormal port name

Previously read value.

[] gives the correct value.

4-digit hexadecimal notation

Terminal status display Delimited in units of 8 digits right justified in the order upper then lower.

0: Normal 1: Abnormal -: Ignored

Now Checking ...

Version

Gives the current version and the latest version

(SRAM OK: LED lit up
NG: LED flashes on (0.2 s) - Off (0.2 s) - On (0.2 s) - Off (0.1 s)
Flash OK: LED lit up
NG: LED flashes on (0.1 s) - Off (0.1 s) - On (0.1 s) - Off (0.1 s))

2. AI8 - IFC2 Test

This test checks around the AI8-IFC2.

2. AI8-IFC2 Test OK

* SICKB OK

* FPGA OK

* DIR2 OK

* DSP5 OK

 DataBus OK

 AddressBus OK

Please refer to the AI8-UNC Test for charts showing the same detailed result as those up until now.

NG sample

Please refer to the AI8-UNC Test for NG charts.

3-1. A18 - Slot [Initial] Test

Checks slot operation by checking the minimum necessary number of pins.

The results for each slot are displayed in order from the left. A mark is made for each check to show the progress of the checks.
(Blank: Not yet checked; 0: Normal; 1: Abnormal; N: No response)

Stopped the moment an actual Addr.BusTest or DataBusTest NG appears.

Displays which pin number is NG. The main part of the address bus is displayed. (1: NG; 0: OK)

3-1. A18-SLOT [Initial] Test OK	
* Address Bus Test	00000000 OK
* Data Bus Test	00000000 OK
* Voltage Check	00000000 OK
+48V	00000000
+15V	00000000
-15V	00000000
+5V	00000000
* /CON Line Test	00000000 OK

The +48V check assumes that the PHANTOM switch is On. It must be switched on at the start of the A18 inspection.

NG example

3-1. A18-SLOT [Initial] Test	
* Address Bus Test	00000100 NG
* Data Bus Test	00010100 NG
* Voltage Check	00010100 NG
+48V	00010000
+15V	00010000
-15V	00000000
+5V	00000100
* /CON Line Test	00010100 NG

3-1. A18-SLOT [Initial] Test	
Address Bus Test:	NG
SLOT6	111 1111111- NG
Data Bus Test:	NG
SLOT4	11111111 11111111 NG
SLOT6	11111111 11111111 NG
Voltage Check:	NG
SLOT4	NG
+48V =>	+xx.xxV (-xx.x%)
+15V =>	+xx.xxV (+xx.x%)
SLOT6	NG
+5V =>	+xx.xxV (-xx.x%)
/CON Line Test:	00010100 NG

First, all the voltages for one slot are checked, then this is repeated for the next slot. (The notation is each voltage [x 8 slots], but the check order is each slot [x all voltages].)

The detected voltage is displayed and the percentage deviation from the ideal state is displayed. This is shown for each slot.

3-2. A18 - Slot [Clock Line] Test

This test checks around the slot clock.

3-2. A18-SLOT [Clock Line] Test OK	
* FS Line Check	OK
Fs	00000000
64Fs	00000000
256Fs	00000000

Basically, the same as up till here

NG example

3-2. A18-SLOT [Clock Line] Test	
* FS Line Check	NG
Fs	00010000
64Fs	00010000
256Fs	00010100

3-2. A18-SLOT [Clock Line] Test	
FS Line Check:	NG
SLOT4	00010000 NG
Fs ->	xx.xxx kHz (-xx.x%)
64Fs ->	xx.xxx kHzX64 (+xx.x%)
256Fs ->	xx.xxx kHzX256 (-xx.x%)
SLOT6	NG
256Fs ->	xx.xxx kHzX256 (-xx.x%)

The detected FS frequency is displayed and the percentage deviation from the ideal state is displayed. The values for 64 Fs and 256 Fs are displayed in such a way that they can be easily grasped.

3-3. A18 - Slot [Data Line] Test

This test checks around the serial signals.

3-3. A18-SLOT [Data Line] Test OK	
* Digital Signal line Test	OK
SO	00000000

Basically, the same as up till here

The switching of Digital Line by the LMY-SLOT inspection jig and ID conversion jig will be inspected automatically.

NG sample

Please refer to page 25 for NG charts.

4. AI8 - IPC3, LED1 test

This test checks around the AI8 - IPC3 and LED1.

4. AI8-IPC3, LED1 Test OK		
* Control Input Port SW	OK	
* W.CLK 75ohm SW	OK	
* Phantom Master SW	OK	
* 7segments LED	OK	
* W.CLK	OK	
In 48 kHz + 6%		
In 44.1kHz - 10%		
Jitter 48 kHz		
Jitter 44.1kHz		
DIR2		
In/Out		

For the 75 Ω switch item, the pop-up box is displayed below and the inspector judges visually on the oscilloscope.

Please check [WordClock 75ohm SW].

Normal behavior on the oscilloscope for 75 Ω switch.

For the LED lighting order, see *1. If the LEDs light this way, they are OK.

For the jitter ** kHz item, the pop-up box is displayed with the system in the 48/44.1 kHz output state to ask the user to measure the jitter. The inspector judges the jitter.

Please check [Jitter (48kHz)].

When moving from the jitter measurement to the In/Out check, the pop-up box is displayed to ask the user to change the connections.

Connect [AI8 BNC Out] to [AO8 BNC In].

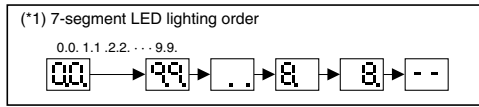
The current switch status is displayed in real time and the inspector looks at the behavior of the system and judges it OK/NG.

Please check [Control Input Port SW].

Control Input Port SW= xxx

Detects PLL for valid detection (IC301 of IFC3 sheet).

When other checks are necessary, the pop-up dialog box is displayed to ask the inspector to select OK or NG and the system stands by until the inspector makes a selection.



5. AI8 - IPC1 test

This test checks around the AI8 - IPC1. Ports A, B, and C are all checked, so the same procedure is carried out in 5-1 for Port A, in 5-2 for Port B, and in 5-3 for Port C.

5-1. AI8-IPC1 [PortA] Test OK		
* SO	00000000	OK
* RQ		OK
* AK		OK
* W.CLK		OK
* CONTROL		OK
* ID		OK
In		
Out		
* MSB/LSB		OK
* 2CH/4CH		OK

NG sample
Please refer to page 25 for NG charts.

Please refer to page 25 for charts showing the same detailed result as those up until now.

When changing to the next port, a pop-up box like that on the right is displayed. Change the connections and click the OK button.

Change to [B port] and push OK button.

■ ERROR MESSAGES

If an error occurs in the connection to the DSP1D, or if the unit does not lock to the wordclock signal, one of the following error indications appears.

ERROR MESSAGE	DESCRIPTION
<i>E 1</i>	The AI8 is connected to the OUTPUT connector of the DSP1D/DSP1D-EX. Connect the AI8 to the INPUT connector.
<i>E 3</i>	A cable is disconnected from the OUTPUT A, B, or C connector on the rear panel, or the connection is made incorrectly. If the connection is proper, replace the cable.
<i>UL</i>	The unit does not lock to the wordclock signal.
<i>UC</i>	The control signal is not being received correctly.
<i>“.X.”</i>	<p>(two dots and the ID number of the OUTPUT connector on the DSP1D/DSP1D-EX) Illuminating or flashing dots mean that the AI8 is connected in Mirror mode from the DSP1D/DSP1D-EX. If “.x.” lights up continuously during Mirror mode operation, the CONTROL PORT switch setting matches the setting controlled from the CS1D and the system is operating normally. If the control signal from the CS1D has changed the setting during Mirror mode operation and it does not match the CONTROL INPUT PORT switch setting any more, this indicator changes in the following order.</p> <div data-bbox="724 783 1089 874" data-label="Diagram"> <pre> graph TD A[“.x.”] --> B[“..”] B --> C[“_.R.” (or “_.b.”)] C --> D[“..”] D --> A </pre> </div> <p>“_.R.” means that the control signal from the CS1D has changed the setting to “A.” “_.b.” means that the control signal from the CS1D has changed the setting to “B.” During this time period, you can connect or disconnect the cable from the unselected output connector. If you set the CONTROL PORT switch so that it matches the setting made via the control signal from the CS1D, “.x.” lights up continuously.</p>

ANALOG INPUT BOX

AI 8

PARTS LIST


■ CONTENTS

OVERALL ASSEMBLY	2
SIDE PANEL ASSEMBLY	4
MOTHER ASSEMBLY	6
ELECTRICAL PARTS	7-12

Notes : DESTINATION ABBREVIATIONS

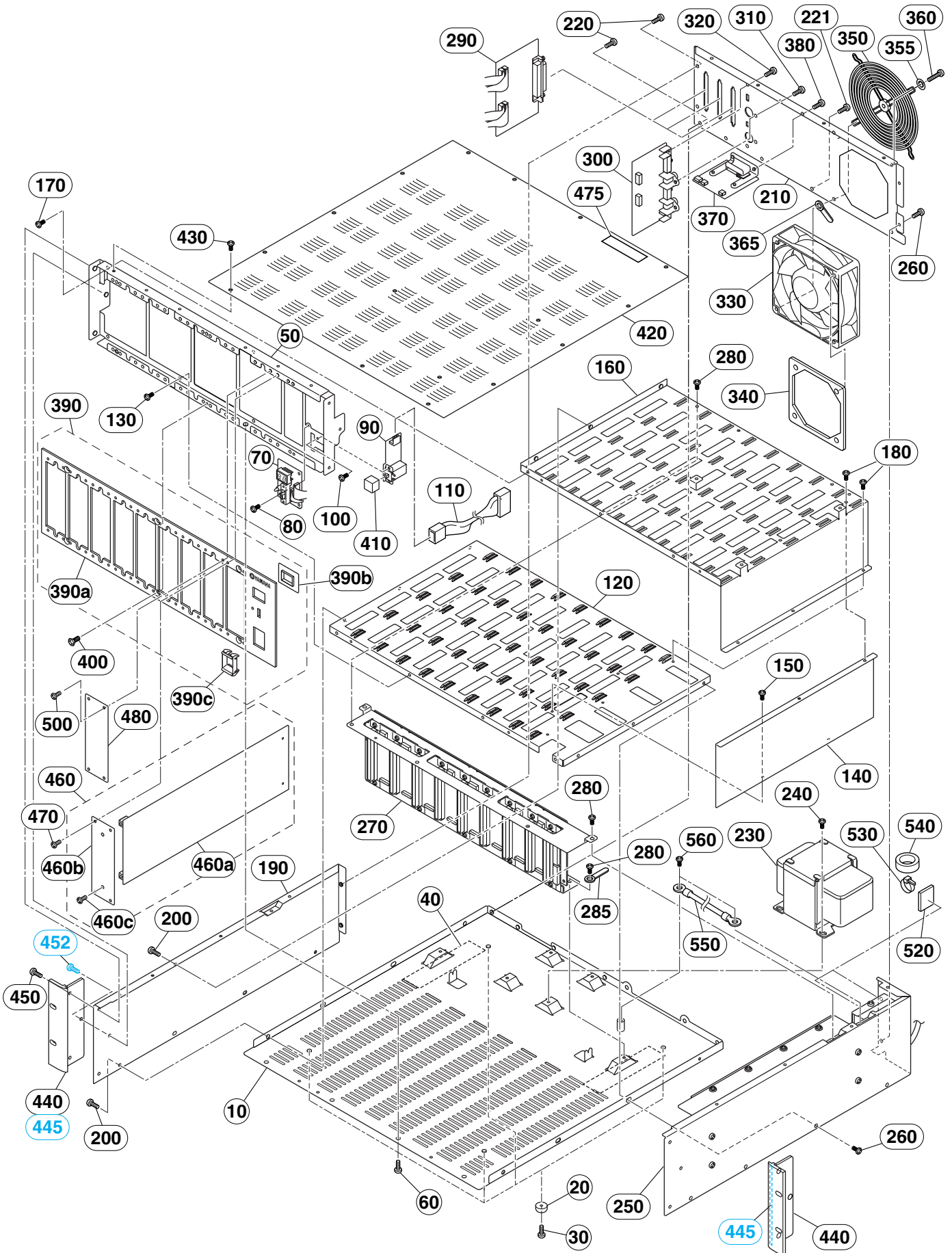
A: Australian model	M: South African model
B: British model	O: Chinese model
C: Canadian model	Q: South-east Asia model
D: German model	T: Taiwan model
E: European model	U: U.S.A. model
F: French model	V: General export model (110 V)
H: North European model	W: General export model (220 V)
I : Indonesian model	N,X: General export model
J: Japanese model	Y: Export model

■ WARNING

Components having special characteristics are marked  and must be replaced with parts having specification equal to those originally installed.

- The numbers in "QTY" show quantities for each unit.
- The parts with "--" in "PART NO." are not available as spare parts.
- The mark "}" in the remarks column indicates that these parts are interchangeable.
- The second letter of the shaded () part number is O, not zero.
- The second letter of the shaded () part number is I, not one.

OVERALL ASSEMBLY



REF.NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
		OVERALL ASSEMBLY		A18		
	--	Overall Assembly		J (V479510)		
	--	Overall Assembly		U,V (V479520)		
	--	Overall Assembly		H,W (V479530)		
	--	Overall Assembly		B (V479540)		
* 10	V4277100	Bottom Chassis				15
20	CB806590	Leg	BL		4	03
30	VR138400	Bind Head Tapping Screw-B	4.0X12 MFZN2BL		4	01
* 40	V4278900	PET Sheet			3	02
* 50	V4277800	Front Shassis				08
60	VC688800	Bind Head Tapping Screw-B	A4.0X8 MFZN2BL		4	01
* 70	V41295S0	Circuit Board	A18 LED1 (IPCOM)			
80	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL		2	01
* 90	V41294S0	Circuit Board	A18 PSB (AICOM)			
100	VB659000	Bind Head Screw	3.0X8 MFZN2BL		2	01
110	--	Connector Assembly	VH4P-VH3P #18	(V508720)		
* 120	V4277900	Chassis	LOWER			11
130	VC688800	Bind Head Tapping Screw-B	A4.0X8 MFZN2BL		4	01
* 140	V4914400	Shield				06
150	VP157900	Bind Head Tapping Screw-B	A3.0X6 MFZN2BL		2	01
* 160	V4278000	Chassis	UPPER			08
170	VC688800	Bind Head Tapping Screw-B	A4.0X8 MFZN2BL		3	01
180	VP157900	Bind Head Tapping Screw-B	A3.0X6 MFZN2BL		5	01
* 190	V4277200	Side Panel	LEFT			09
200	VC688800	Bind Head Tapping Screw-B	A4.0X8 MFZN2BL		7	01
* 210	V4277400	Rear Panel				10
220	VC688800	Bind Head Tapping Screw-B	A4.0X8 MFZN2BL		6	01
221	VC688800	Bind Head Tapping Screw-B	A4.0X8 MFZN2BL			01
△ 230	XW258B00	Power Transformer		J		17
△ 230	XW259B00	Power Transformer		U,V		18
△ 230	XW260B00	Power Transformer		H,B,W		17
240	VC688800	Bind Head Tapping Screw-B	A4.0X8 MFZN2BL		4	01
250	--	Side Panel Assembly	RIGHT	J (V479320)		
250	--	Side Panel Assembly	RIGHT	U,V (V479330)		
250	--	Side Panel Assembly	RIGHT	H,W (V479340)		
250	--	Side Panel Assembly	RIGHT	B (V479350)		
260	VC688800	Bind Head Tapping Screw-B	A4.0X8 MFZN2BL		7	01
270	--	Mother Assembly		(V479270)		
280	VC688800	Bind Head Tapping Screw-B	A4.0X8 MFZN2BL		8	01
285	CB817510	Cord Binder	S-14B			03
288	CB069250	Cord Holder	BK-1		2	01
* 290	V41291S0	Circuit Board	A18 IPC1		3	
* 300	V41292S0	Circuit Board	A18 IPC3 (IPCOM)			
310	VS863000	Bonding Screw	3.0X6 MFZN2BL		2	01
320	EG340290	Bind Head Screw	A4.0X6 MFZN2BL		2	01
* 330	V5789100	Motor	DC KDE1208PTS3-6	Fan		09
* 340	V6444900	Fan Guide				02
* 350	VK949100	Fan Guard	FG-08UL			06
355	ET800070	Toothed Lock Washer	A4.0 MFZN2BL		4	01
360	EG340110	Bind Head Screw	4.0X16 MFZN2BL		4	01
365	CB817510	Cord Binder	S-14B		2	03
* 370	V46485S0	Circuit Board	A18 DR (AICOM)			
380	VN413300	Bonding Tapping Screw-B	3.0X8 MFZN2BL		2	01
390	--	Front Panel Assembly		(V479180)		
* 390a	V4277700	Front Panel				16
* 390b	V4278800	LED Cover	7 SEG.			05
390c	VL813000	Escutcheon, Power Switch				03
400	VA221200	Flat Head Screw	4.0X8 MFZN2BL		6	01
410	VL812900	Power Switch Knob		POWER ON/OFF		03
* 420	V4278200	Top Panel				13
430	VC688800	Bind Head Tapping Screw-B	A4.0X8 MFZN2BL		17	01
* 440	V7447100	Mount Bracket	3U		2	09
* 445	V6676700	Soft Gasket			2	
450	VS153600	Oval Head Screw	4.0X8 MFZN2BL		6	01
452	V6221000	Oval Head Screw	B4.0X10 MFZN2BL		2	01
460	--	UNC Card Assembly		(V479500)		
* 460a	V41287S0	Circuit Board	A18 UNC			
* 460b	V4278600	UNC Plate				04
460c	VS154500	Bonding Screw	4.0X8 MFZN2BL		2	01
470	VS863000	Bonding Screw	3.0X6 MFZN2BL		4	01

*: New Parts

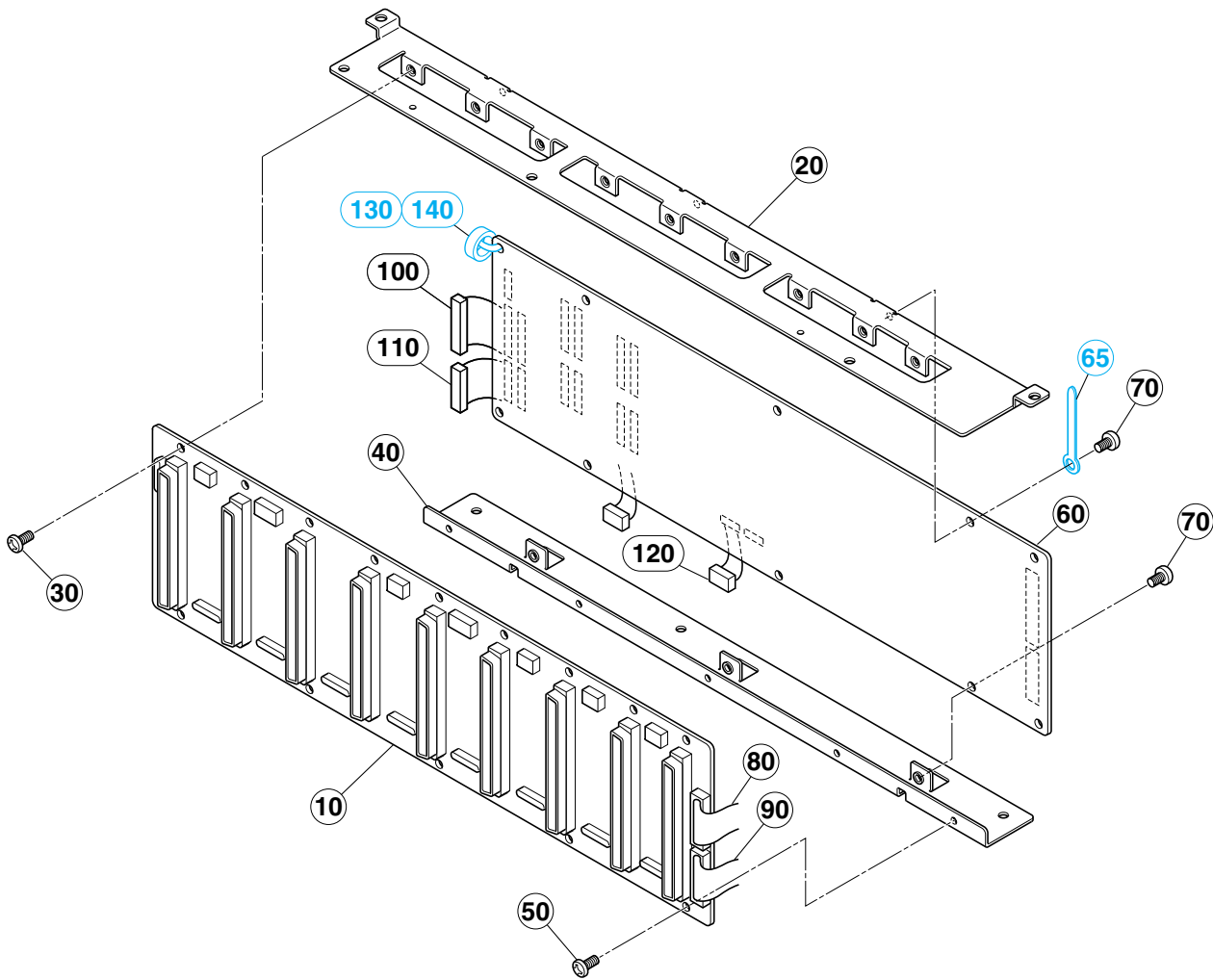
RANK: Japan only

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
	--	SIDE PANEL ASSEMBLY	RIGHT	A18		
	--	Side Panel Assembly	RIGHT	J (V479320)		
	--	Side Panel Assembly	RIGHT	U,V (V479330)		
	--	Side Panel Assembly	RIGHT	H,W (V479340)		
	--	Side Panel Assembly	RIGHT	B (V479350)		
* 10	V5074900	Side Panel	RIGHT	J		12
* 10	V5075000	Side Panel	RIGHT	U,V		12
* 10	V5075100	Side Panel	RIGHT	H,B,W		12
△ 20	VS228900	AC Cord Assembly	2P 15A	J		09
△ 20	VS229000	AC Cord Assembly	3P 10A	U,V		10
△ 20	VS229100	AC Cord Assembly	3P 6A	H,W		10
△ 20	VS229200	AC Cord Assembly	3P 10A	B		11
30	CB806850	Cord Strain Relief	SR-6N3-4	J		02
30	CB811230	Cord Strain Relief	SR-6N-4	U,V		02
30	CB032840	Cord Strain Relief	SR-5N-4	H,B,W		03
40	VP156800	Bind Head Tapping Screw-B	A4.0X8 MFZN2BL	U,H,B,V,W		01
△ * 50	V47941S0	DC Aaaembly		J,U,V		
△ * 50	V47942S0	DC Assembly		H,B,W		
60	EG340290	Bind Head Screw	A4.0X6 MFZN2BL		4	01
* 70	V5099100	Connector Assembly	PH-DC			17
△ 80	--	AC Assembly		J,U,V (V479450)		
△ 80	--	AC Assembly		H,B,W (V479460)		
* 80a	V46482S0	Circuit Board	A18 AC (AICOM)			
△ 80b	KB003620	Fuse	4.00A JU	J,U,V		01
△ 80b	KB003090	Fuse	3.15A S	H,B,W		01
90	VC688800	Bind Head Tapping Screw-B	A4.0X8 MFZN2BL		3	01
100	VC362700	Ferrite Core	FR25/15/12-1400L			04
105	CB835590	Holder	TMS-20			01
110	CB069250	Cord Holder	BK-1			01
* 120	V4914300	AC Shield cover				03
130	VC688800	Bind Head Tapping Screw-B	A4.0X8 MFZN2BL			01
△ * 140	V47941S0	DC Aaaembly		J,U,V		
△ * 140	V47942S0	DC Assembly		H,B,W		
* D10	V4914800	Heat Sink	DC LOW			07
* D20	V4914900	Heat Sink	DC UP			07
* D30	V4276400	Isolation Sheet	DC		2	05
* D40	V46483S0	Circuit Board	A18 DC (AICOM)			
* D50	V4276500	Holder	TR			08
D60	EL200020	Pan Head Screw	SP 4.0X8 MFZN2Y		4	01
* D70	V4914500	Holder	BR			03
D75	CB817510	Cord Binder	S-14B		3	03
D80	EL200020	Pan Head Screw	SP 4.0X8 MFZN2Y		3	01
D90	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL		4	01
D100	CB817510	Cord Binder	S-14B			03
D110	--	Insulation Sheet		(V558710)		
△ FZ100	KB003630	Fuse	5.00A JU	J,U,V		01
△ FZ100	KB003100	Fuse	4.00A S	H,B,W		01
△ FZ200	KB003630	Fuse	5.00A JU	J,U,V		01
△ FZ200	KB003100	Fuse	4.00A S	H,B,W		01
△ FZ300	KB003590	Fuse	3.00A JU	J,U,V		01
△ FZ300	KB003090	Fuse	3.15A S	H,B,W		01
△ FZ301	KB003590	Fuse	3.00A JU	J,U,V		01
△ FZ301	KB003090	Fuse	3.15A S	H,B,W		01
△ FZ400	KB003530	Fuse	1.00A JU	J,U,V		01
△ FZ400	KB003040	Fuse	1.00A S	H,B,W		01

*: New Parts

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MOTHER ASSEMBLY



REF.NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
	--	MOTHER ASSEMBLY		A18 (V479270)		
* 10	V41288S0	Circuit Board	A18 MB1			
* 20	V4278300	Support Metal	1			09
	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL		9	01
* 40	V4278100	Support Metal	2			07
	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL		5	01
* 60	V41289S0	Circuit Board	A18 IFC2			
	CB817510	Cord Binder	S-14B		2	03
	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL		6	01
	--	Cable, FFC	P=1.25-K-20-80	(V508550)		
	--	Cable, FFC	P=1.25-K-30-80	(V508560)		
	--	Connector Assembly	PH&PH 13P 80 #28	(V508800)	6	
	--	Connector Assembly	PH&PH 10P 80 #28	(V508810)	6	
	--	Connector Assembly	PH&PH 5P 200L #28	(VN38360)	2	
	VC362700	Ferrite Core	FR25/15/12-1400L			04
	CB069250	Cord Holder	BK-1			01

*: New Parts

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ELECTRICAL PARTS

REF NO.	PART NO.	DESCRIPTION	REMARKS	QTY	RANK
		ELECTRICAL PARTS	A18		
*	V46482S0	Circuit Board	A18 AC (AICOM)		
*	V46483S0	Circuit Board	A18 DC (AICOM)		
*	V46485S0	Circuit Board	A18 DR (AICOM)		
*	V41294S0	Circuit Board	A18 PSB (AICOM)		
*	V41291S0	Circuit Board	A18 IPC1		
*	V41292S0	Circuit Board	A18 IPC3 (IPCOM)		
*	V41295S0	Circuit Board	A18 LED1 (IPCOM)		
*	V41289S0	Circuit Board	A18 IFC2		
*	V41288S0	Circuit Board	A18 MB1		
*	V41287S0	Circuit Board	A18 UNC		
*	V46482S0	Circuit Board	A18 AC (AICOM)		
*	V46483S0	Circuit Board	A18 DC (AICOM)		
*	V46485S0	Circuit Board	A18 DR (AICOM)		
*	V41294S0	Circuit Board	A18 PSB (AICOM)		
	VH610100	Bind Head Screw	3.0X14 MFZN2BL		01
	VR144900	Bonding Tapping Screw-B	3.0X6 MFZN2BL	2	
	VA078900	Jumper Wire	0.55		
*	V4276300	AC Shield Metal			04
*	V4797200	Transistor Holder			07
*	VN057300	Heat Sink			08
*	V5101700	Insulation Sheet			01
C104	V4908300	Electrolytic Cap.	6800 63.0		05
C105	UR868470	Electrolytic Cap.	470.00 50.0V		01
C107	UR848470	Electrolytic Cap.	470.00 25.0V		01
C108	UR868470	Electrolytic Cap.	470.00 50.0V		01
C110	UR848470	Electrolytic Cap.	470.00 25.0V		01
C111	UR868470	Electrolytic Cap.	470.00 50.0V		01
C113	UR848470	Electrolytic Cap.	470.00 25.0V		01
C115	UR838100	Electrolytic Cap.	100.00 16.0V		01
C204	V4908300	Electrolytic Cap.	6800 63.0		05
C205	UR868470	Electrolytic Cap.	470.00 50.0V		01
C207	UR848470	Electrolytic Cap.	470.00 25.0V		01
C208	UR868470	Electrolytic Cap.	470.00 50.0V		01
C210	UR848470	Electrolytic Cap.	470.00 25.0V		01
C211	UR868470	Electrolytic Cap.	470.00 50.0V		01
C213	UR848470	Electrolytic Cap.	470.00 25.0V		01
C304	VJ802900	Electrolytic Cap.	3300 35.0V		04
C305	VJ802900	Electrolytic Cap.	3300 35.0V		04
C308	UR848100	Electrolytic Cap.	100.00 25.0V		01
C309	UR848100	Electrolytic Cap.	100.00 25.0V		01
C312	UR848100	Electrolytic Cap.	100.00 25.0V		01
C313	UR848100	Electrolytic Cap.	100.00 25.0V		01
C404	V4871200	Electrolytic Cap.	1000 100		04
C406	UR897100	Electrolytic Cap.	10.0 100.0V		01
C408	UR897470	Electrolytic Cap.	47.0 100.0V		01
C600	V3311600	Capacitor-KH	0.010 250V J.U.C.S		01
C700	V5170300	Capacitor	0.220 275V U.C.S		01
C800	UR838100	Electrolytic Cap.	100.00 16.0V		01
C801	UR868100	Electrolytic Cap.	100.00 50.0V		01
C803	UR838100	Electrolytic Cap.	100.00 16.0V		01
	VS589000	Ceramic Capacitor-E	4700P 500V M		01
	FG644100	Ceramic Capacitor-F	0.0100 50V Z		01
	UA355100	Mylar Capacitor	0.1000 50V J		01
CN001	LB932040	Base Post Connector	VH 4P TE		01
CN002	LB932050	Base Post Connector	VH 5P TE		01
CN100	VE352600	Connector Base Post	PH-14P TE		01
CN101	VB390000	Connector Base Post	PH 4P TE		01
CN200	VB390800	Connector Base Post	PH 12P TE		01
CN300	VB389800	Connector Base Post	PH 2P TE		01
CN301	VB390000	Connector Base Post	PH 4P TE		01
CN302	VB389800	Connector Base Post	PH 2P TE		01
CN303	VB390000	Connector Base Post	PH 4P TE		01
CN400	VB390000	Connector Base Post	PH 4P TE		01
CN600	LB933030	Base Post Connector	VH 3P SE		01
CN700	VG879900	Base Post Connector	VA 2P TE		01
CN701	LB933040	Base Post Connector	VH 4P SE		01
CN702	LB933030	Base Post Connector	VH 3P SE		01
CN800	VB858100	Connector Base Post	PH 2P SE		01

*: New Parts

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REF. NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
CN802	VB858200	Connector Base Post	PH 3P SE			01
D100	VP974300	Diode	D3S6M-4002			03
-102	VP974300	Diode	D3S6M-4002			03
D103	VB481900	Diode	11ES4			01
D104	VB481900	Diode	11ES4			01
D200	VP974300	Diode	D3S6M-4002			03
-202	VP974300	Diode	D3S6M-4002			03
D300	VB481900	Diode	11ES4			01
-307	VB481900	Diode	11ES4			01
D400	VB481900	Diode	11ES4			01
DB100	VM621400	Diode Stack	RBV-1506			05
DB200	VM621400	Diode Stack	RBV-1506			05
DB300	VT682400	Diode Stack	D6SB60L 6.0A 600V			04
DB400	VB845300	Diode Stack	S1WB(A)60 1.0A 60			02
EM100	FZ006970	LC Filter	LS MT Y223NB			02
-103	FZ006970	LC Filter	LS MT Y223NB			02
EM200	FZ006970	LC Filter	LS MT Y223NB			02
-202	FZ006970	LC Filter	LS MT Y223NB			02
EM300	FZ006920	LC Filter	LS MT B271KB			01
-303	FZ006920	LC Filter	LS MT B271KB			01
FZ100	VP206500	Fuse Holder	EYF-52BC			01
FZ200	VP206500	Fuse Holder	EYF-52BC			01
FZ300	VP206500	Fuse Holder	EYF-52BC			01
FZ301	VP206500	Fuse Holder	EYF-52BC			01
FZ400	VP206500	Fuse Holder	EYF-52BC			01
FZ700	VP206500	Fuse Holder	EYF-52BC			01
FZ800	VG297000	IC Protector	ICP-F20			02
IC100	XT442A00	IC	SI-8050S	REGULATOR +5V		05
-102	XT442A00	IC	SI-8050S	REGULATOR +5V		05
* IC103	XW196A00	IC	UPC2933HF	REGULATOR +3.3V		03
IC200	XT442A00	IC	SI-8050S	REGULATOR +5V		05
-202	XT442A00	IC	SI-8050S	REGULATOR +5V		05
IC300	XR608A00	IC	UPC2415AHF	REGULATOR +15V		04
IC301	XD854A00	IC	NJM7915FA	REGULATOR -15V		03
IC302	XR608A00	IC	UPC2415AHF	REGULATOR +15V		04
IC303	XD854A00	IC	NJM7915FA	REGULATOR -15V		03
IC500	XD631A00	IC	PST518B-TP	SYSTEM RESET		02
K001	BB069510	Land Terminal	A-8			01
-004	BB069510	Land Terminal	A-8			01
* L100	V2379700	Coil	HP-033JY 150			06
* -102	V2379700	Coil	HP-033JY 150			06
* L200	V2379700	Coil	HP-033JY 150			06
* -202	V2379700	Coil	HP-033JY 150			06
* L700	V4122100	Line Filter	PLH10A7003R6P02			02
R400	VC749400	Metal Oxide Film Resistor	5.6K 1W J			01
R404	VC757100	Metal Oxide Film Resistor	22.0 2W J			01
R405	VC757100	Metal Oxide Film Resistor	22.0 2W J			01
R408	VC750200	Metal Oxide Film Resistor	12.0K 1W J			01
R410	VC330400	Metal Film Resistor	47.0K 1/4 F			01
R411	VC328600	Metal Film Resistor	8.2K 1/4 F			01
* R510	VC327700	Metal Film Resistor	3.6K 1/4 F			01
R511	VC327200	Metal Film Resistor	2.2K 1/4 F			01
R802	VC757100	Metal Oxide Film Resistor	22.0 2W J			01
R804	VC740100	Metal Oxide Film Resistor	1.0 1W J			01
	HF756220	Carbon Resistor	2.2K 1/4 J			01
	HF756330	Carbon Resistor	3.3K 1/4 J			01
	HF756560	Carbon Resistor	5.6K 1/4 J			01
	HF757100	Carbon Resistor	10.0K 1/4 J			01
	HF757220	Carbon Resistor	22.0K 1/4 J			01
	HF758100	Carbon Resistor	100.0K 1/4 J			01
△ SW600	V3127000	Push Switch	ESB92S23B J.U.C.S	POWER ON/OFF		02
TR400	VS150800	Transistor	2SC2SC3200 GR			01
TR401	VM923000	Transistor	2SD2015			03
TR402	VS150800	Transistor	2SC2SC3200 GR			01
TR403	VS150800	Transistor	2SC2SC3200 GR			01
TR404	VM923000	Transistor	2SD2015			03
TR510	IC1815M0	Transistor	2SC1815 Y-GR			01
TR800	IB059600	Transistor	2SB596LBB O,Y			04
TR801	IC1815M0	Transistor	2SC1815 Y,GR			01
TR802	IC1815M0	Transistor	2SC1815 Y,GR			01

*: New Parts

RANK: Japan only

REF.NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
* ZD400	VQ554100	Zener Diode	MTZJ7.5A 7.5V			01
ZD401	VQ558500	Zener Diode	MTZJ33B 33.0V			01
ZD402	VQ557800	Zener Diode	MTZJ27B 27.0V			01
* ZD800	VQ554100	Zener Diode	MTZJ7.5A 7.5V			01
W0013	--	GND Wire	L=180	(V744560)		
W0023	--	Connector Assembly	L=90	(V746250)		
W0033	--	Connector Assembly	L=210	(V746260)		
W0043	--	Connector Assembly	SAN&PH2P 690	(V744550)		
* V41291S0		Circuit Board	A18 IPC1	(XW285A0)		
C100	UF038100	Electrolytic Cap. (chip)	100 16V			01
	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
* CN100	V4158600	Connector	230R (SCSI) 68P SE	OUTPUT A/B/C		06
CN101	VF283100	Connector Base Post	PH 13P TE			01
CN102	VF283100	Connector Base Post	PH 13P TE			01
CN103	VB390600	Connector Base Post	PH 10P TE			01
CN104	VB390600	Connector Base Post	PH 10P TE			01
DA100	VV556300	Diode Array	DAN217 0.3A X2			01
-154	VV556300	Diode Array	DAN217 0.3A X2			01
EM100	FZ006970	LC Filter	LS MT Y223NB			02
EM101	VL534100	LC Filter	NFA81R00C101			05
-106	VL534100	LC Filter	NFA81R00C101			05
IC100	XU996A00	IC	AM26LS31CNSR	LINE DRIVER		05
IC101	XU815A00	IC	DS26C32ATMX	LINE RECEIVER		06
IC102	XU996A00	IC	AM26LS31CNSR	LINE DRIVER		05
-105	XU996A00	IC	AM26LS31CNSR	LINE DRIVER		05
IC106	XT487A00	IC	TC74VHC245F	TRANSCEIVER		03
	RD254100	Carbon Resistor (chip)	10.0 0.1 J			01
	RD255150	Carbon Resistor (chip)	150.0 0.1 J			01
	RD256100	Carbon Resistor (chip)	1.0K 0.1 J			01
	RD257220	Carbon Resistor (chip)	22.0K 0.1 J			01
	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
	RD257470	Carbon Resistor (chip)	47.0K 0.1 J			01
* V41292S0		Circuit Board	A18 IPC3 (IPCOM)	(XW286B0)		
* V41295S0		Circuit Board	A18 LED1 (IPCOM)	(XW286B0)		
C304	UR838100	Electrolytic Cap.	100.00 16.0V			01
	FG651330	Ceramic Capacitor-SL	33P 50V J			01
	FG652100	Ceramic Capacitor-SL	100P 50V J			01
	VT439600	Monolithic Ceramic Cap.	0.100 50V Z			01
CN100	VE352600	Connector Base Post	PH-14P TE			01
CN101	VB390400	Connector Base Post	PH 8P TE			01
CN200	VB390100	Connector Base Post	PH 5P TE			01
CN300	VB390100	Connector Base Post	PH 5P TE			01
D300	VB941200	Diode	1SS133,1SS176			01
-303	VB941200	Diode	1SS133,1SS176			01
EM300	FZ006920	LC Filter	LS MT B271KB			01
EM301	FZ006920	LC Filter	LS MT B271KB			01
EM302	FZ006970	LC Filter	LS MT Y223NB			02
IC300	XE737A00	IC	SN75124N	LINE RECEIVER		05
IC301	XE683A00	IC	SN75121	LINE DRIVER		05
JK300	VI552200	BNC Connector	YKS11-0	WORD CLOCK IN		05
JK301	VI552200	BNC Connector	YKS11-0	WORD CLOCK OUT		05
K300	VI474400	Terminal Plate				01
K301	VI474400	Terminal Plate				01
* LD100	V4078200	LED Display	LNM423AS01	UNIT NO.		06
LD101	VR080200	LED	SLR-342VR3F	PHANTOM MASTER		01
* SP100	V4411600	Spacer	7 SEG. 2S			01
SP101	VB397800	LED Spacer				01
SW1	VG837400	Slide Switch	SSSB04	PHANTOM MASTER ON/OFF		03
SW200	VI575400	Slide Switch	SSSU12 2/3	CONTROL INPUT PORT		02
SW300	VQ907900	Slide Switch	SSSU112-S06N-1	WORD CLOCK 75ohm OFF/ON		01
	HF753470	Carbon Resistor	4.7 1/4 J			01
	HF754470	Carbon Resistor	47.0 1/4 J			01
	HF754750	Carbon Resistor	75.0 1/4 J			01
	HF756220	Carbon Resistor	2.2K 1/4 J			01
* V41289S0		Circuit Board	A18 IFC2	(XW283C0)		
C106	UF128470	Electrolytic Cap. (chip)	470 10V			02
C107	UF038100	Electrolytic Cap. (chip)	100 16V			01

*: New Parts

RANK: Japan only

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
C115	UF017220	Electrolytic Cap. (chip)	22 6.3V			01
C303	UF128470	Electrolytic Cap. (chip)	470 10V			02
C304	UF128470	Electrolytic Cap. (chip)	470 10V			02
C329	UF037470	Electrolytic Cap. (chip)	47 16V			01
C403	UF037470	Electrolytic Cap. (chip)	47 16V			01
C404	UF037470	Electrolytic Cap. (chip)	47 16V			01
C412	UF037470	Electrolytic Cap. (chip)	47 16V			01
C413	UF037470	Electrolytic Cap. (chip)	47 16V			01
	UB051220	Monolithic Ceramic Cap.	SL 22P 50V J			01
	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
	UB445330	Monolithic Ceramic Cap.	F 0.330 16V Z			01
	UA354820	Mylar Capacitor	0.0820 50V J			01
	VR327300	Mylar Capacitor (chip)	0.0820 16V J			01
CN101	VQ045900	Connector, FFC	52044 30P SE			02
CN102	VQ045000	Connector, FFC	52044 20P SE			01
CN103	VB390200	Connector Base Post	PH 6P TE			01
CN201	VB390600	Connector Base Post	PH 10P TE			01
CN501	VK025200	Wire Trap	52147 8P TE			01
-508	VK025200	Wire Trap	52147 8P TE			01
CN509	VE352600	Connector Base Post	PH-14P TE			01
CN510	VB390100	Connector Base Post	PH 5P TE			01
CN511	VB390100	Connector Base Post	PH 5P TE			01
CN512	VF728300	Wire Trap	52147 6P TE			01
CN701	VF283100	Connector Base Post	PH 13P TE			01
CN702	VF283100	Connector Base Post	PH 13P TE			01
CN703	VB390600	Connector Base Post	PH 10P TE			01
CN704	VB390600	Connector Base Post	PH 10P TE			01
CN705	VF283100	Connector Base Post	PH 13P TE			01
CN706	VF283100	Connector Base Post	PH 13P TE			01
CN707	VB390600	Connector Base Post	PH 10P TE			01
CN708	VB390600	Connector Base Post	PH 10P TE			01
CN709	VF283100	Connector Base Post	PH 13P TE			01
CN710	VF283100	Connector Base Post	PH 13P TE			01
CN711	VB390600	Connector Base Post	PH 10P TE			01
CN712	VB390600	Connector Base Post	PH 10P TE			01
EM101	FZ006970	LC Filter	LS MT Y223NB			02
EM102	FZ006970	LC Filter	LS MT Y223NB			02
IC101	XT487A00	IC	TC74VHC245F	TRANSCEIVER		03
-104	XT487A00	IC	TC74VHC245F	TRANSCEIVER		03
IC105	XV242A00	IC	TC74VHCT245AF	TRANSCEIVER		03
* IC106	XY102A00	IC	HD74LVU04AFPEL	INVERTER		01
* IC107	IS000800	IC	HD74LV08AFPEL	AND		01
* IC108	IS000800	IC	HD74LV08AFPEL	AND		01
* IC109	XY094A00	IC	LT1118CST-2.5	REGULATOR		08
* IC201	XW239A00	IC	EPC1PC8	EPROM 1M		09
* IC202	XY217A00	IC	EPF10K50EQC208	FPGA		25
IC301	XG948E00	IC	YM3436DK	DIR2		11
IC302	XG948E00	IC	YM3436DK	DIR2		11
IC307	XG948E00	IC	YM3436DK	DIR2		11
* IC308	XW422A00	IC	M51953AFP	SYSTEM RESET		01
* IC309	IS000400	IC	HD74LV04AFPEL	INVERTER		01
IC401	XG948E00	IC	YM3436DK	DIR2		11
IC402	XG948E00	IC	YM3436DK	DIR2		11
IC404	XG948E00	IC	YM3436DK	DIR2		11
IC405	XG948E00	IC	YM3436DK	DIR2		11
* IC406	XW422A00	IC	M51953AFP	SYSTEM RESET		01
* -409	XW422A00	IC	M51953AFP	SYSTEM RESET		01
* IC410	IS000800	IC	HD74LV08AFPEL	AND		01
* IC411	IS000400	IC	HD74LV04AFPEL	INVERTER		01
* IC412	IS000400	IC	HD74LV04AFPEL	INVERTER		01
IC501	XT487A00	IC	TC74VHC245F	TRANSCEIVER		03
-504	XT487A00	IC	TC74VHC245F	TRANSCEIVER		03
* IC601	XV989A00	IC	YSS904-F	DSP5		11
* IC602	XZ226A00	IC	TC74VHCT74AF(EL)	D-FF		
* IC603	XY772A00	IC	TC74HC273AFEL	D-FF		
* IC604	XY772A00	IC	TC74HC273AFEL	D-FF		
IC701	XT487A00	IC	TC74VHC245F	TRANSCEIVER		03
-711	XT487A00	IC	TC74VHC245F	TRANSCEIVER		03
IC712	XV242A00	IC	TC74VHCT245AF	TRANSCEIVER		03
L101	VS740100	Chip Inductance	BLM21B751S 2125			03

*: New Parts

RANK: Japan only

REF.NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
-137	VS740100	Chip Inductance	BLM21B751S 2125			03
L301	GE300610	Ferrite Bead	BL02RN1-R62T4			01
-303	GE300610	Ferrite Bead	BL02RN1-R62T4			01
L401	GE300610	Ferrite Bead	BL02RN1-R62T4			01
-404	GE300610	Ferrite Bead	BL02RN1-R62T4			01
RA101	RE047100	Resistor Array	10KX4			01
-103	RE047100	Resistor Array	10KX4			01
RA104	RE048100	Resistor Array	100KX4			01
-111	RE048100	Resistor Array	100KX4			01
RA112	RE047100	Resistor Array	10KX4			01
RA113	RE047100	Resistor Array	10KX4			01
RA501	RE047100	Resistor Array	10KX4			01
-506	RE047100	Resistor Array	10KX4			01
RA701	RE047100	Resistor Array	10KX4			01
-706	RE047100	Resistor Array	10KX4			01
* SC201	VV047100	IC Socket	DICF-8CS-E			01
TA501	VQ248400	Transistor Array	TD62783AF			04
TA502	VQ248500	Transistor Array	TD62381F			04
X103	VI927300	Quartz Crystal Unit	20.0000MHz AT-49			03
X104	VT641400	Quartz Crystal Unit	3119A-AQA8022.5792			08
X105	VQ248800	Quartz Crystal Unit	3119A-AQA8024.576			10
X601	VZ156100	Quartz Crystal Unit	60MHz DSO751S			06
	RD250000	Carbon Resistor (chip)	0.0 0.0 J			01
	RD154270	Carbon Resistor (chip)	27.0 1/4 J			01
	RD254470	Carbon Resistor (chip)	47.0 0.1 J			01
	RD254750	Carbon Resistor (chip)	75.0 0.1 J			01
	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
*	RD255130	Carbon Resistor (chip)	130.0 0.1 J			01
	RD155330	Carbon Resistor (chip)	330.0 1/4 J			01
	RD255470	Carbon Resistor (chip)	470.0 0.1 J			01
*	VV375100	Carbon Resistor (chip)	750.0 0.1 D			01
	RD256100	Carbon Resistor (chip)	1.0K 0.1 J			01
	RD256330	Carbon Resistor (chip)	3.3K 0.1 J			01
*	VV333200	Carbon Resistor (chip)	3.3K 0.1 D			01
	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
	RD259100	Carbon Resistor (chip)	1.0M 0.1 J			01
*	V41288S0	Circuit Board	A18 MB1	(XW282A0)		
CN101	VU328200	Plug	PHEC 100P TE	SLOT 1-8,UNC Card		05
-109	VU328200	Plug	PHEC 100P TE			05
CN110	VI878600	Cable Holder	51048 8P TE			01
-117	VI878600	Cable Holder	51048 8P TE			01
CN118	VI878400	Cable Holder	51048 6P TE			01
CN119	VQ045900	Connector, FFC	52044 30P SE			02
CN120	VQ045000	Connector, FFC	52044 20P SE			01
CN121	VB858300	Connector Base Post	PH 4P SE			01
CN122	VB858500	Connector Base Post	PH 6P SE			01
CN123	VB858300	Connector Base Post	PH 4P SE			01
CN124	VB858500	Connector Base Post	PH 6P SE			01
CN125	VB858300	Connector Base Post	PH 4P SE			01
CN126	VB858300	Connector Base Post	PH 4P SE			01
CN127	VB858400	Connector Base Post	PH 5P SE			01
W110	--	Ribbon Cable	P=2.0 #26 8P 140L	(V507960)		
-117	--	Ribbon Cable	P=2.0 #26 8P 140L	(V507960)		
W118	--	Ribbon Cable	P=2.0 #26 6P 140L	(V510880)		
*	V4128S00	Circuit Board	A18 UNC	(XW281B0)		
C218	UF038100	Electrolytic Cap. (chip)	100 16V			01
	FG652120	Ceramic Capacitor	120P 50V K			01
	FG612560	Ceramic Capacitor	560P 50V K			01
	UB012470	Monolithic Ceramic Cap.	B 470P 50V K			01
	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z			01
CN101	VB390100	Connector Base Post	PH 5P TE			01
CN202	VT640300	Receptacle	PHEC 100P SE			04
EM201	FZ006970	LC Filter	LS MT Y223NB			02
* IC101	XY715A00	IC	PM1D42 V1.01	MASK CPU		10
IC102	XT487A00	IC	TC74VHC245F	TRANSCEIVER		03
IC103	XP226A00	IC	IC-PST591DMT	SYSTEM RESET		03
* IC104	IS000800	IC	HD74LV08AFPEL	AND		01
* IC105	IS000400	IC	HD74LV04AFPEL	INVERTER		01

*: New Parts

RANK: Japan only

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
* IC201	XV685A00	IC	MBM29F400BC-70PFTN	FLASH ROM 4M		11
IC203	XV729A00	IC	IDT71016S15Y-TR	SRAM 1M		09
IC204	XT487A00	IC	TC74VHC245F	TRANSCEIVER		03
-210	XT487A00	IC	TC74VHC245F	TRANSCEIVER		03
* IC211	IS013810	IC	SN74LV138ANSR	DECODER		01
* IC212	IS013810	IC	SN74LV138ANSR	DECODER		01
* IC213	IS000800	IC	HD74LV08AFPEL	AND		01
K201	VI474400	Terminal Plate				01
K202	VI474400	Terminal Plate				01
* LD101	V3990300	LED (chip)	TLSU1008 RE	FOR TEST		01
RA101	RE047100	Resistor Array	10KX4			01
-120	RE047100	Resistor Array	10KX4			01
RA202	RE048100	Resistor Array	100KX4			01
-212	RE048100	Resistor Array	100KX4			01
SW102	VQ949900	Switch	SSGM18151A	FUNCTION		03
* X101	V3990700	Ceramic Resonator	CSTCC7.16MG0H6-TC			01
	RD250000	Carbon Resistor (chip)	0.0 0.0 J			01
	RD255220	Carbon Resistor (chip)	220.0 0.1 J			01
	RD256300	Carbon Resistor (chip)	3.0K 0.1 J			01
	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
△*	XW258B00	Power Transformer		J		17
△*	XW259B00	Power Transformer		U,V		18
△*	XW260B00	Power Transformer		H,B,W		17
*	V5789100	Motor	DC KDE1208PTS3-6	Fan		09
△	VS228900	AC Cord Assembly	2P 15A	J		09
△	VS229000	AC Cord Assembly	3P 10A	U,V		10
△	VS229100	AC Cord Assembly	3P 6A	H,W		10
△	VS229200	AC Cord Assembly	3P 10A	B		11
△*	FZ400	Fuse	8.00A JU	J,U,V		01
△	FZ400	Fuse	6.30A S	H,B,W		01
△	FZ100	Fuse	5.00A JU	J,U,V		01
△	FZ100	Fuse	4.00A S	H,B,W		01
△	FZ200	Fuse	5.00A JU	J,U,V		01
△	FZ200	Fuse	4.00A S	H,B,W		01
△	FZ300	Fuse	3.00A JU	J,U,V		01
△	FZ300	Fuse	3.15A S	H,B,W		01
△	FZ301	Fuse	3.00A JU	J,U,V		01
△	FZ301	Fuse	3.15A S	H,B,W		01
△	FZ400	Fuse	1.00A JU	J,U,V		01
△	FZ400	Fuse	1.00A S	H,B,W		01
△	FZ700	Fuse	4.00A JU	J,U,V		01
△	FZ700	Fuse	3.15A S	H,B,W		01

*: New Parts

RANK: Japan only

ANALOG INPUT BOX


AI8

CIRCUIT DIAGRAM

■ CONTENTS

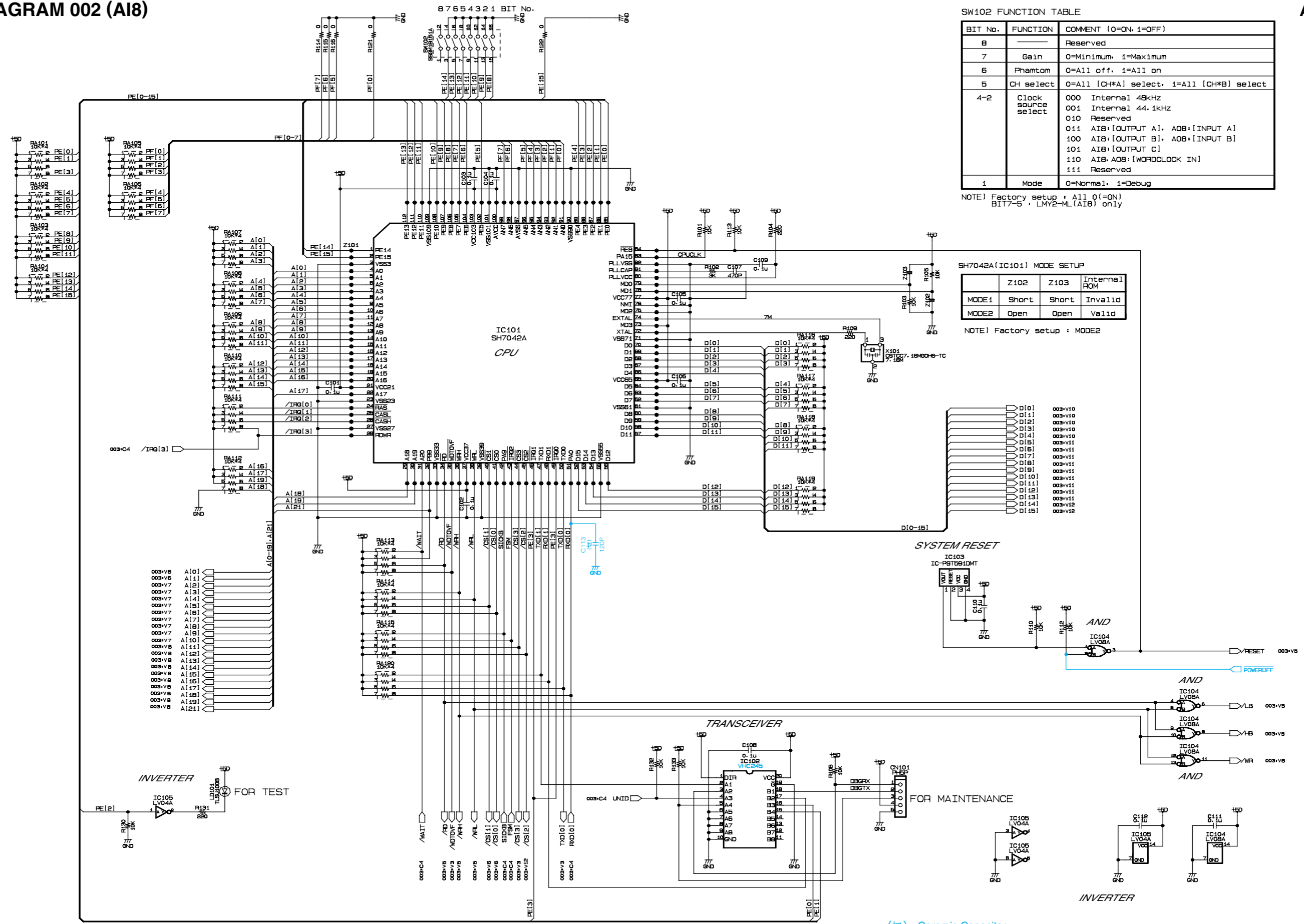
UNC	3
MB1	5
IFC2	9
IPC1	16
IPC3	17
AICOM	18
LED1	20

■ WARNING

Components having special characteristics are marked  and must be replaced with parts having specification equal to those originally installed.

■ UNC CIRCUIT DIAGRAM 002 (AI8)

AI8



SW102 FUNCTION TABLE

BIT No.	FUNCTION	COMMENT (0=ON, 1=OFF)
8	Reserved	
7	Gain	0=Minimum, 1=Maximum
6	Phantom	0=All off, 1=All on
5	CH select	0=All [CH*A] select, 1=All [CH*B] select
4-2	Clock source select	000 Internal 48kHz 001 Internal 44.1kHz 010 Reserved 011 A1B:[OUTPUT A], A0B:[INPUT A] 100 A1B:[OUTPUT B], A0B:[INPUT B] 101 A1B:[OUTPUT C] 110 A1B:A0B:[WORDCLOCK IN] 111 Reserved
1	Mode	0=Normal, 1=Debug

NOTE) Factory setup : All 0(=ON)
BIT7-5 : LMY2-ML(A18) only

SH7042A(IC101) MODE SETUP

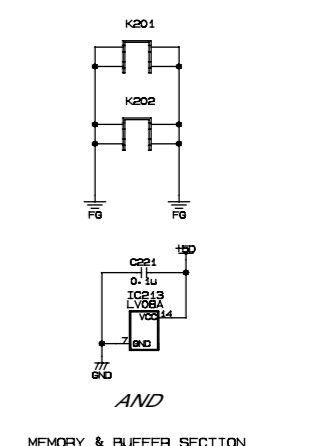
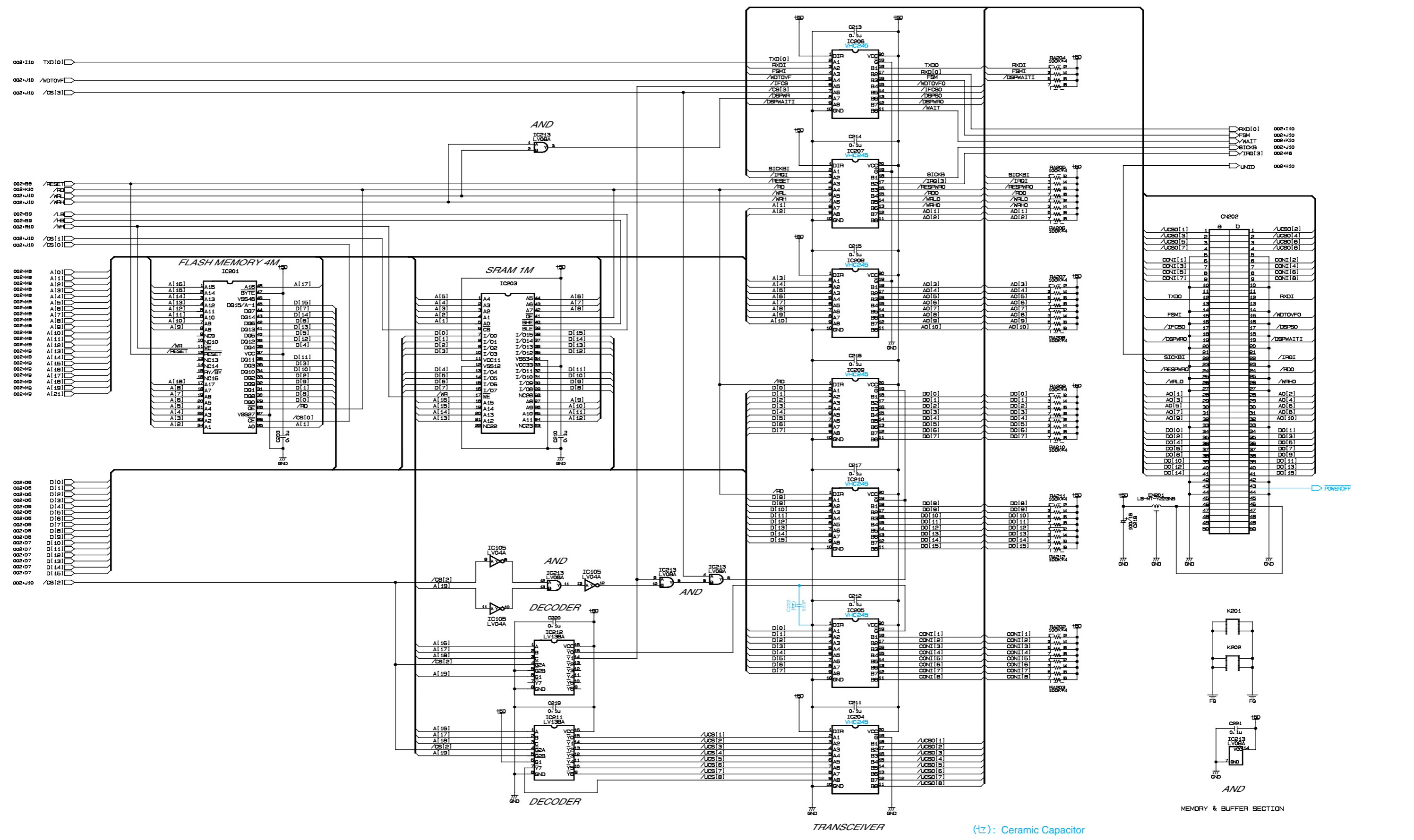
	Z102	Z103	Internal ROM
MODE1	Short	Short	Invalid
MODE2	Open	Open	Valid

NOTE) Factory setup : MODE2

(τ): Ceramic Capacitor

UNC CIRCUIT DIAGRAM 003 (A18)

A18

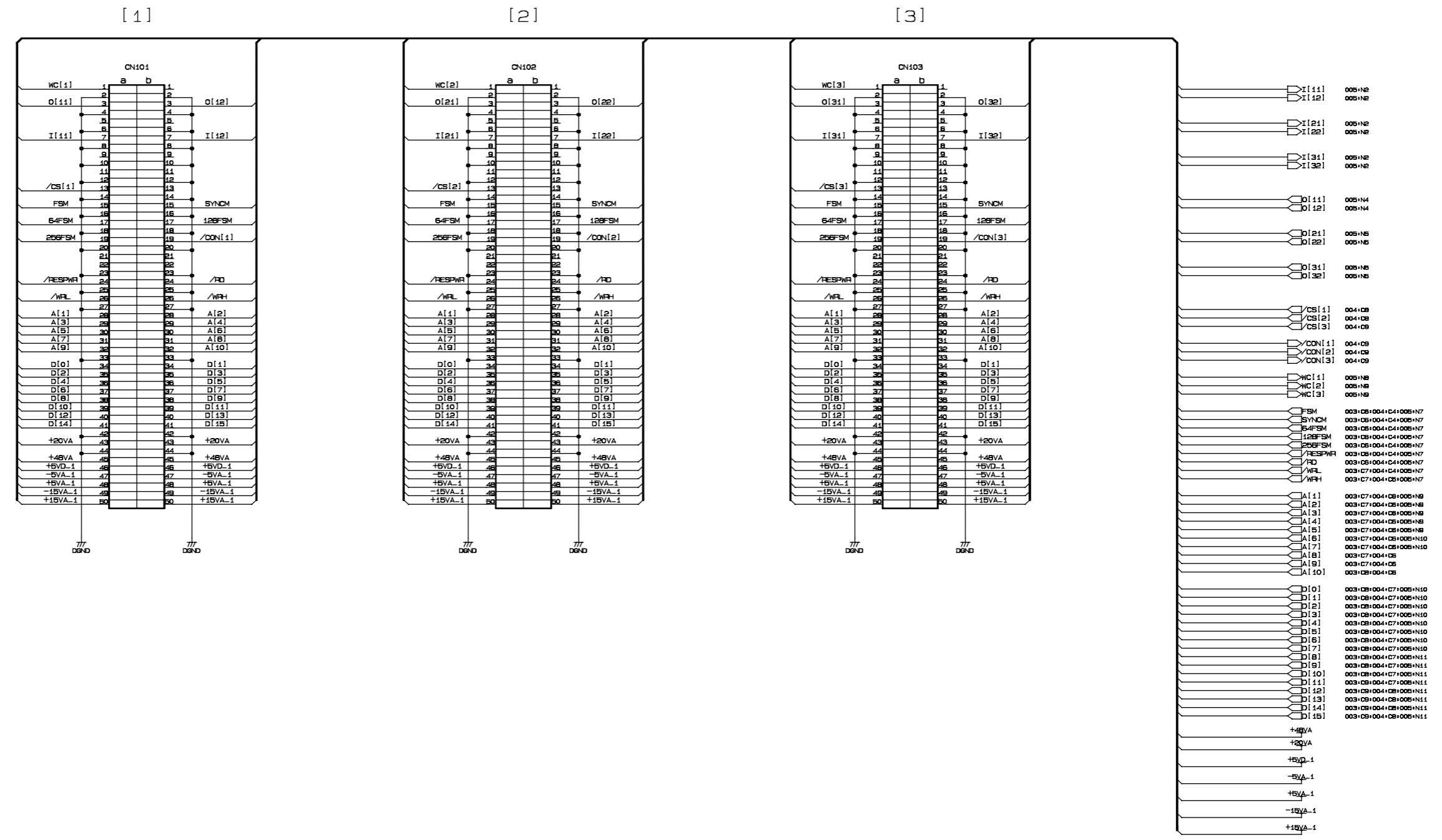


(tz): Ceramic Capacitor

MB1 CIRCUIT DIAGRAM 002 (AI8)

AI8

SLOT No.



MB1 CIRCUIT DIAGRAM 003 (A18)

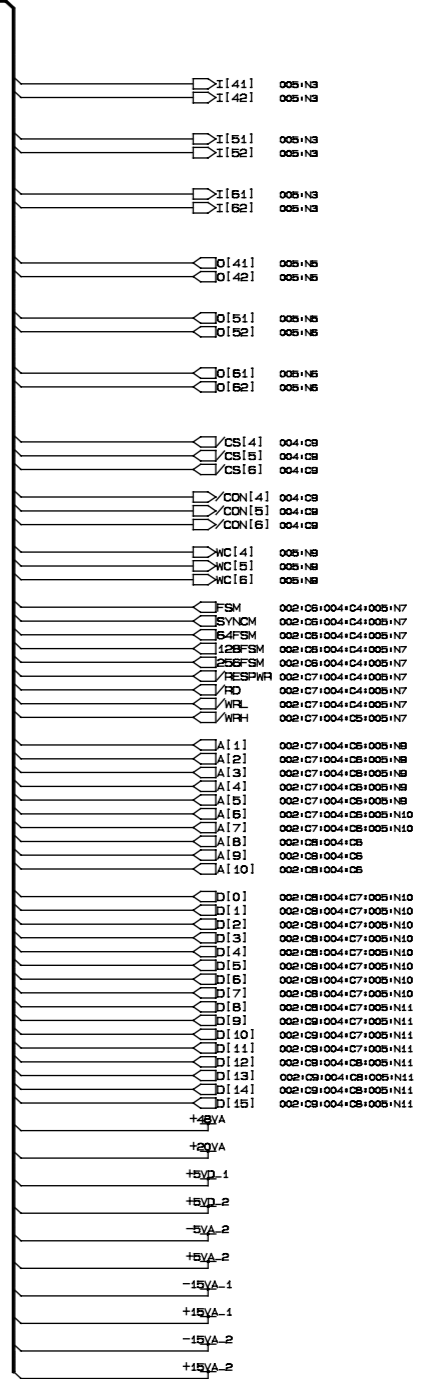
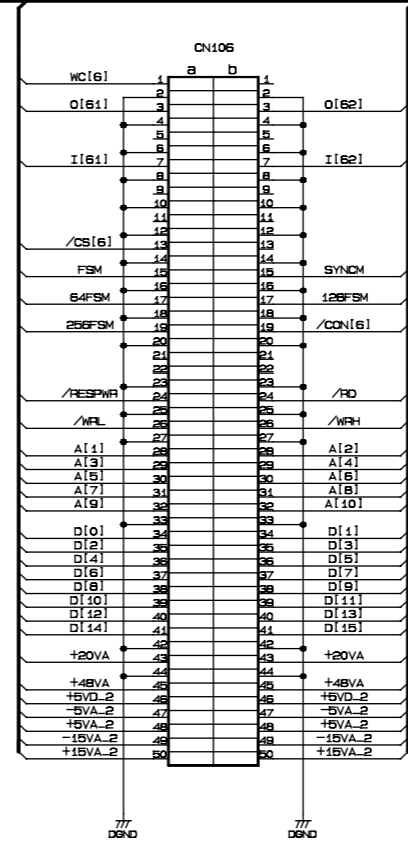
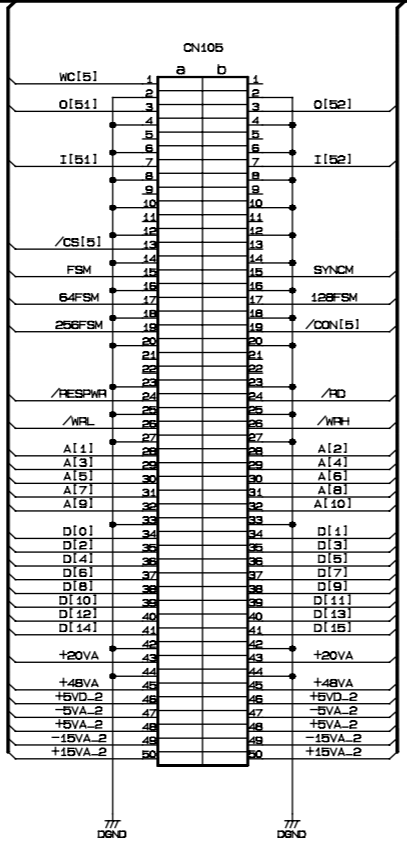
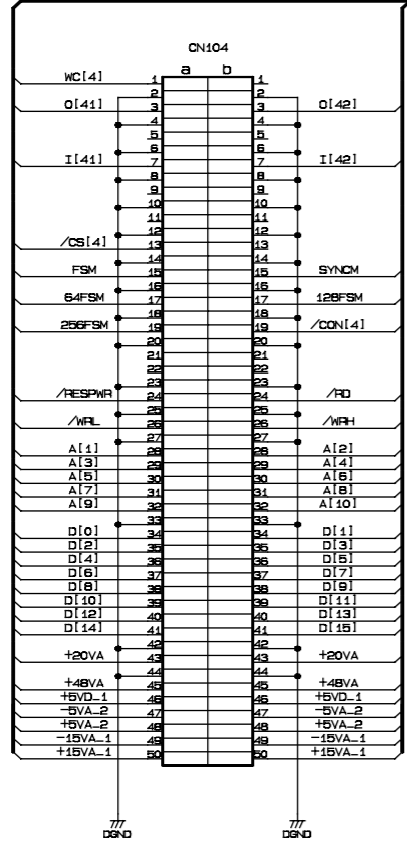
A18

SLOT No.

[4]

[5]

[6]



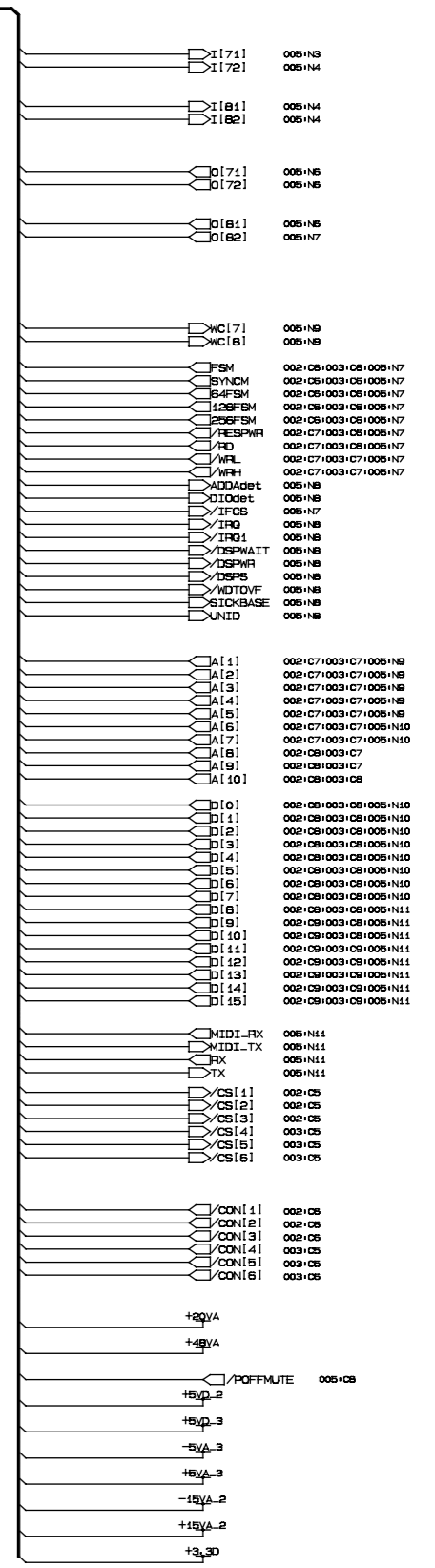
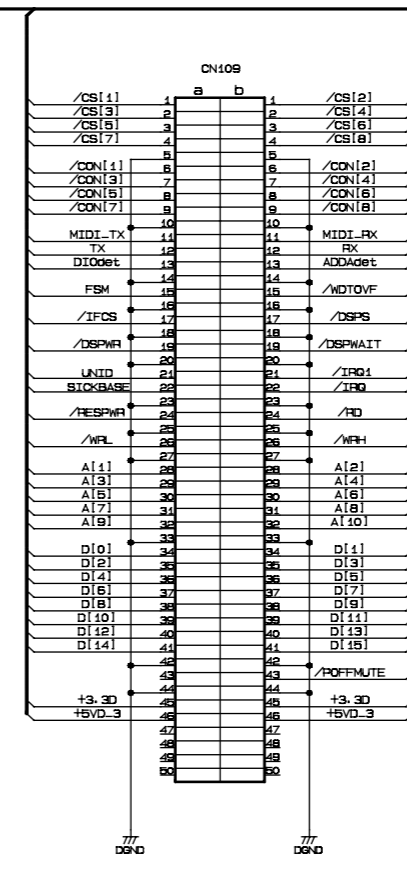
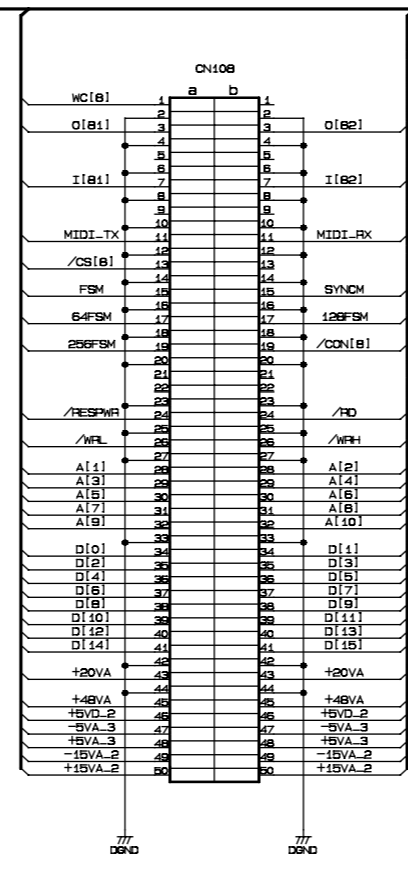
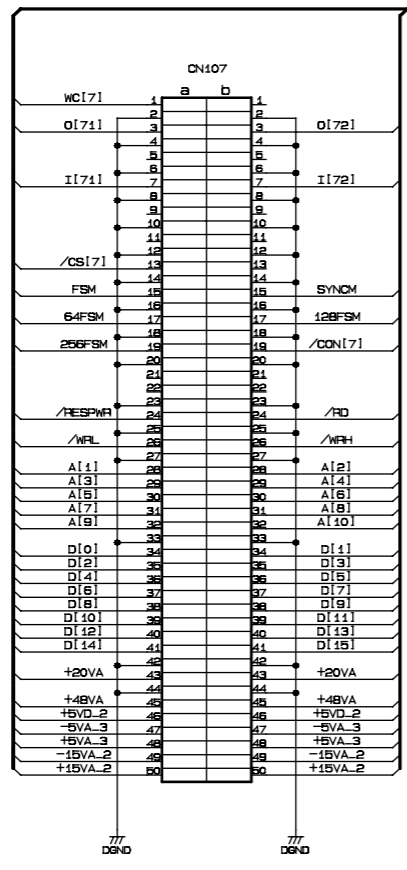
MB1 CIRCUIT DIAGRAM 004 (AI8)

AI8

SLOT No.

[7]

[8]



MB1 CIRCUIT DIAGRAM 005 (A18)

1

2

3

4

5

6

7

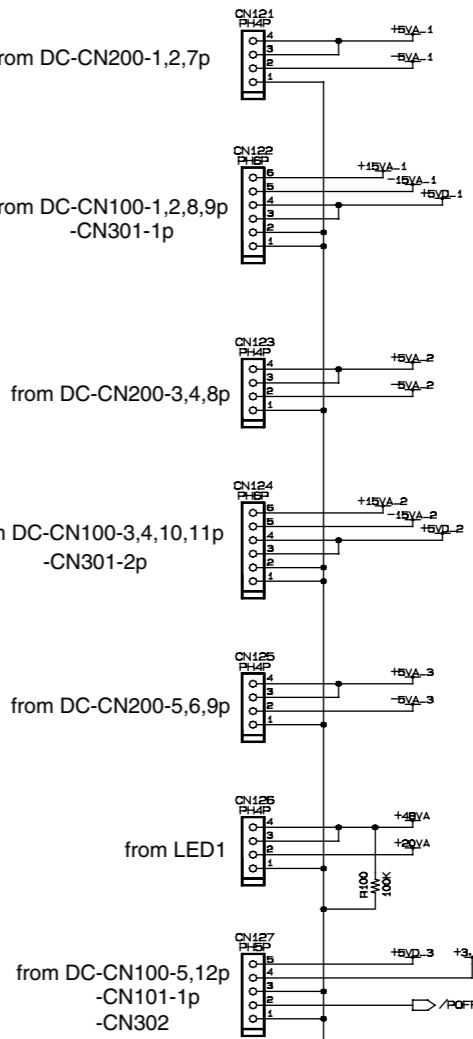
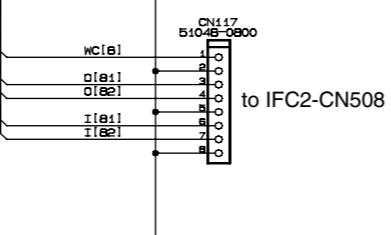
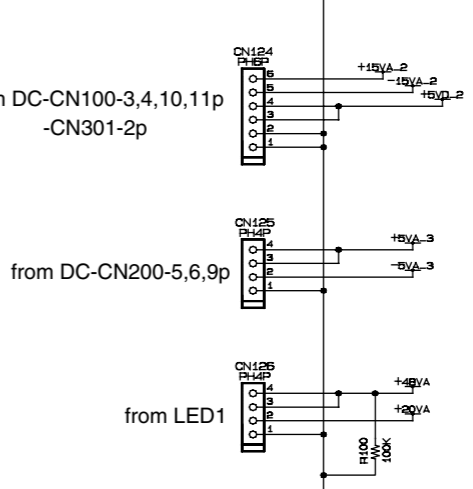
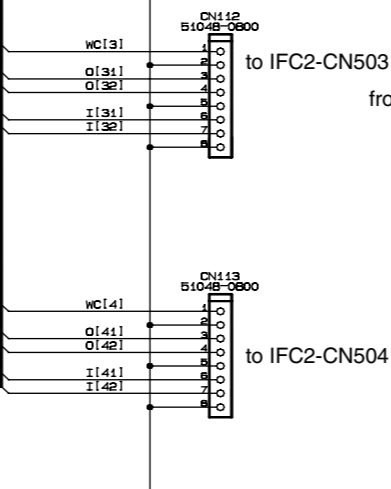
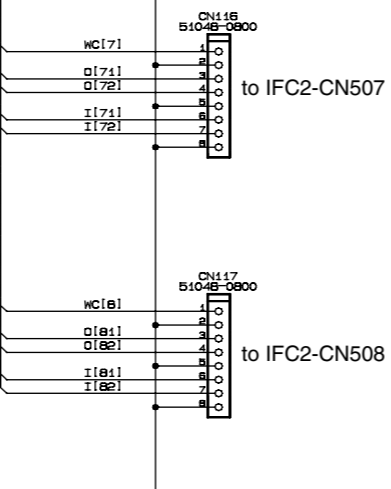
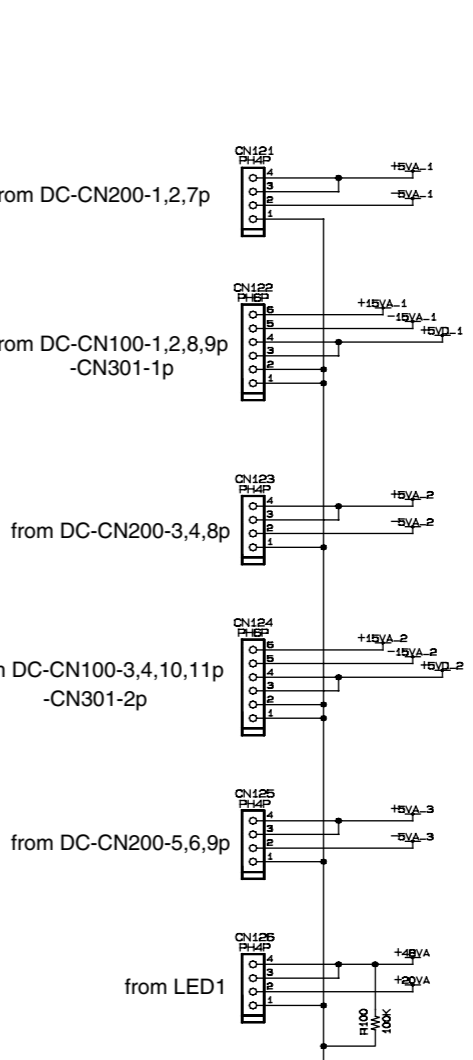
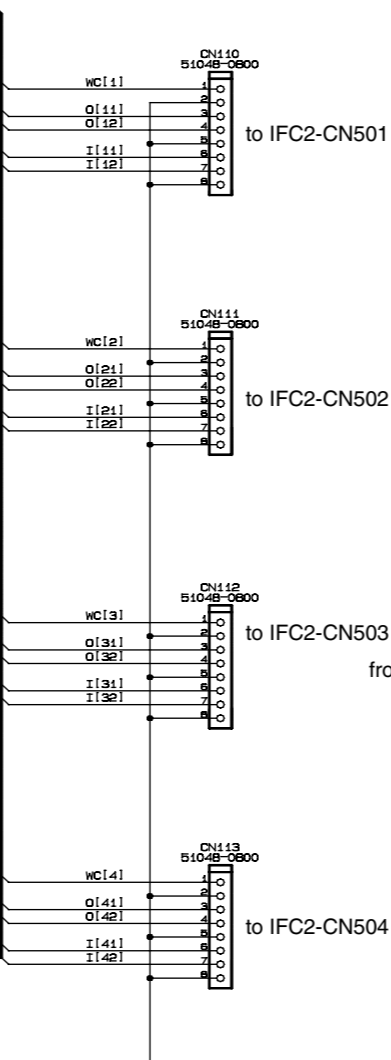
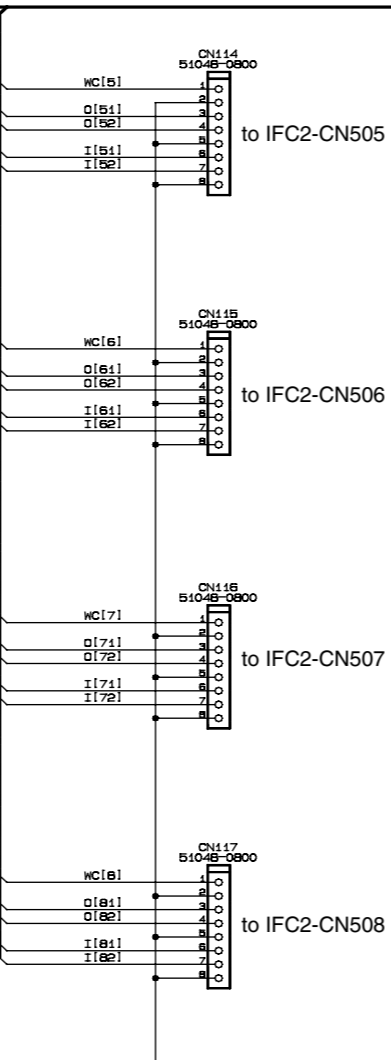
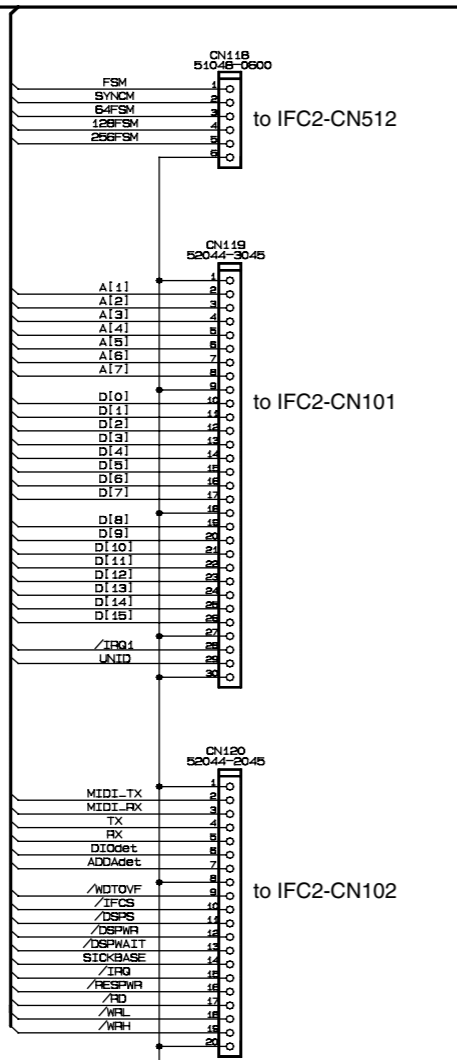
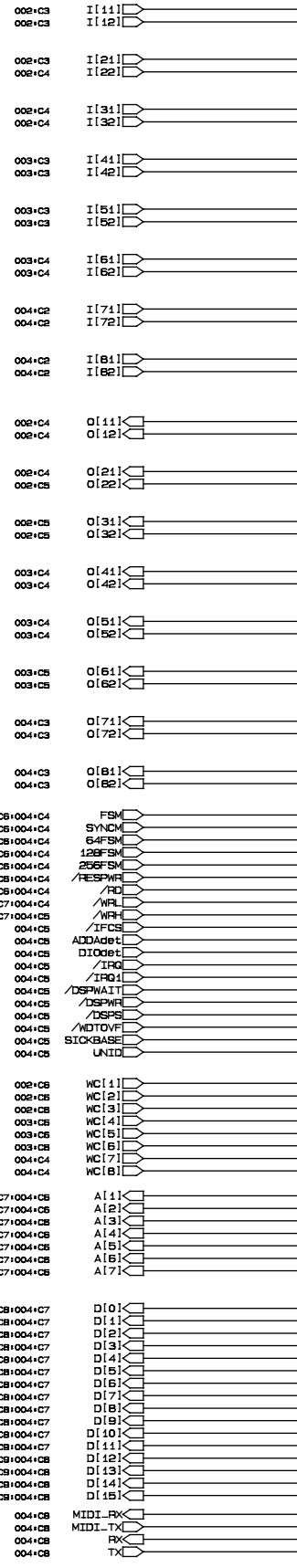
8

9

10

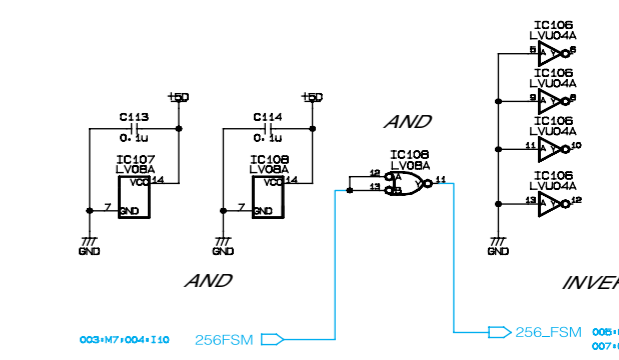
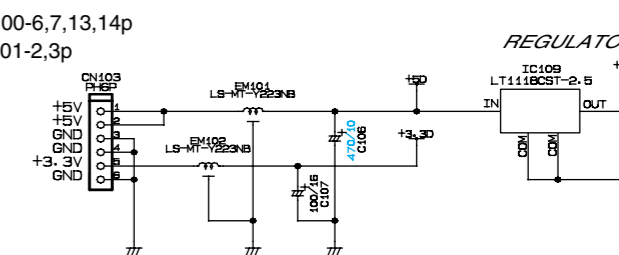
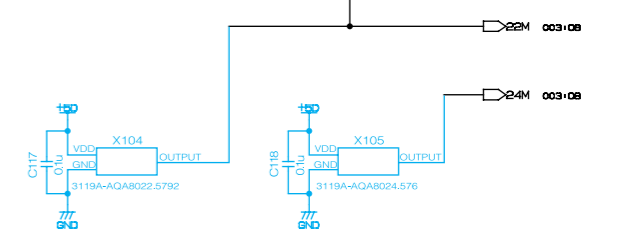
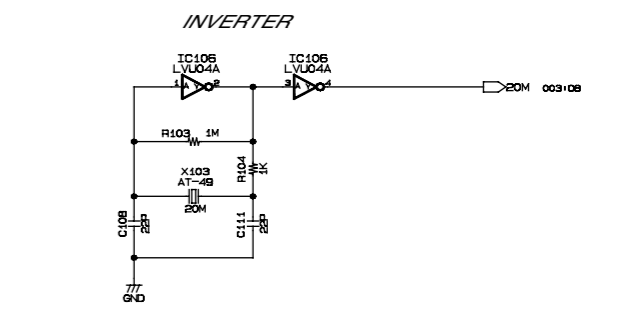
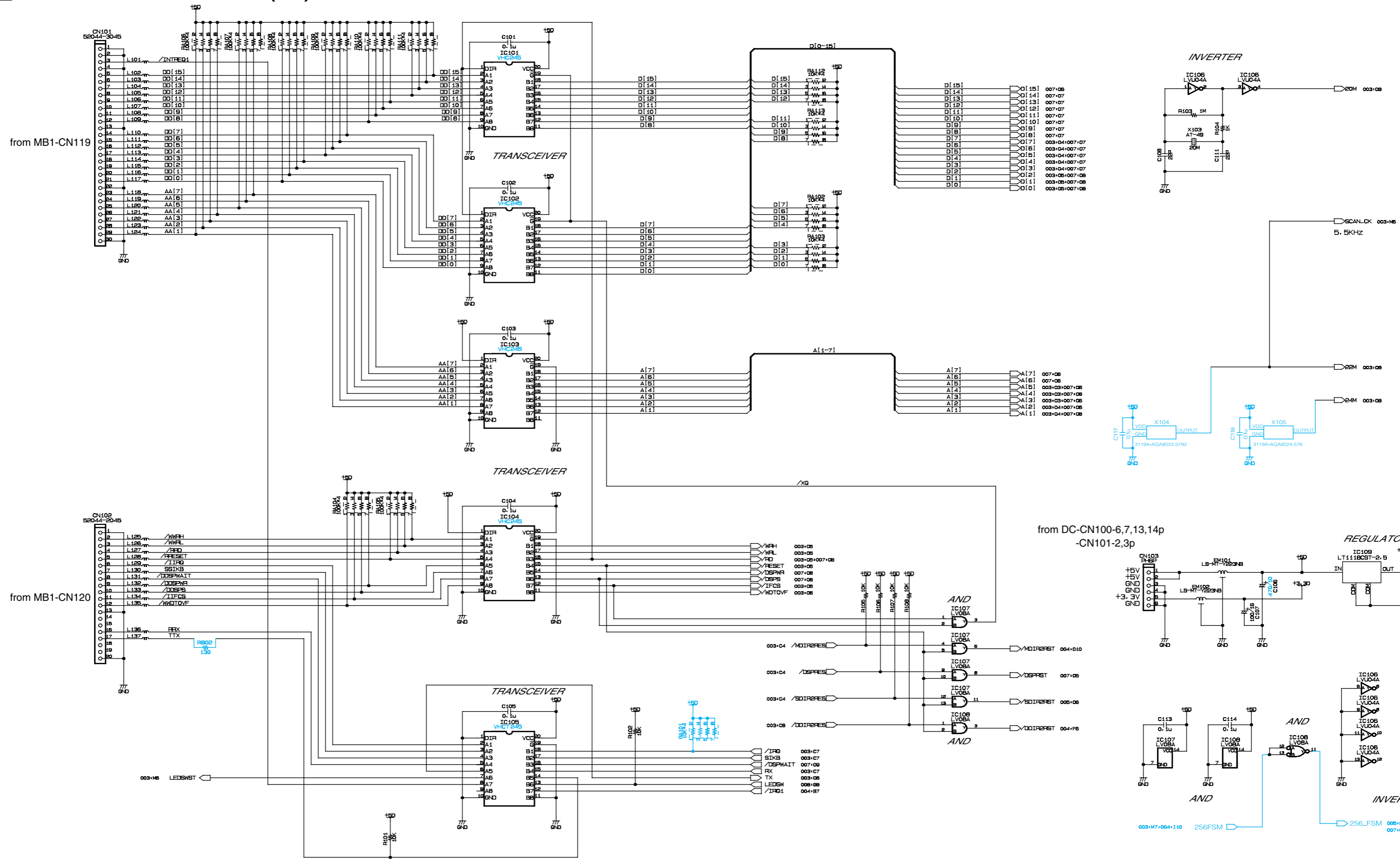
11

12

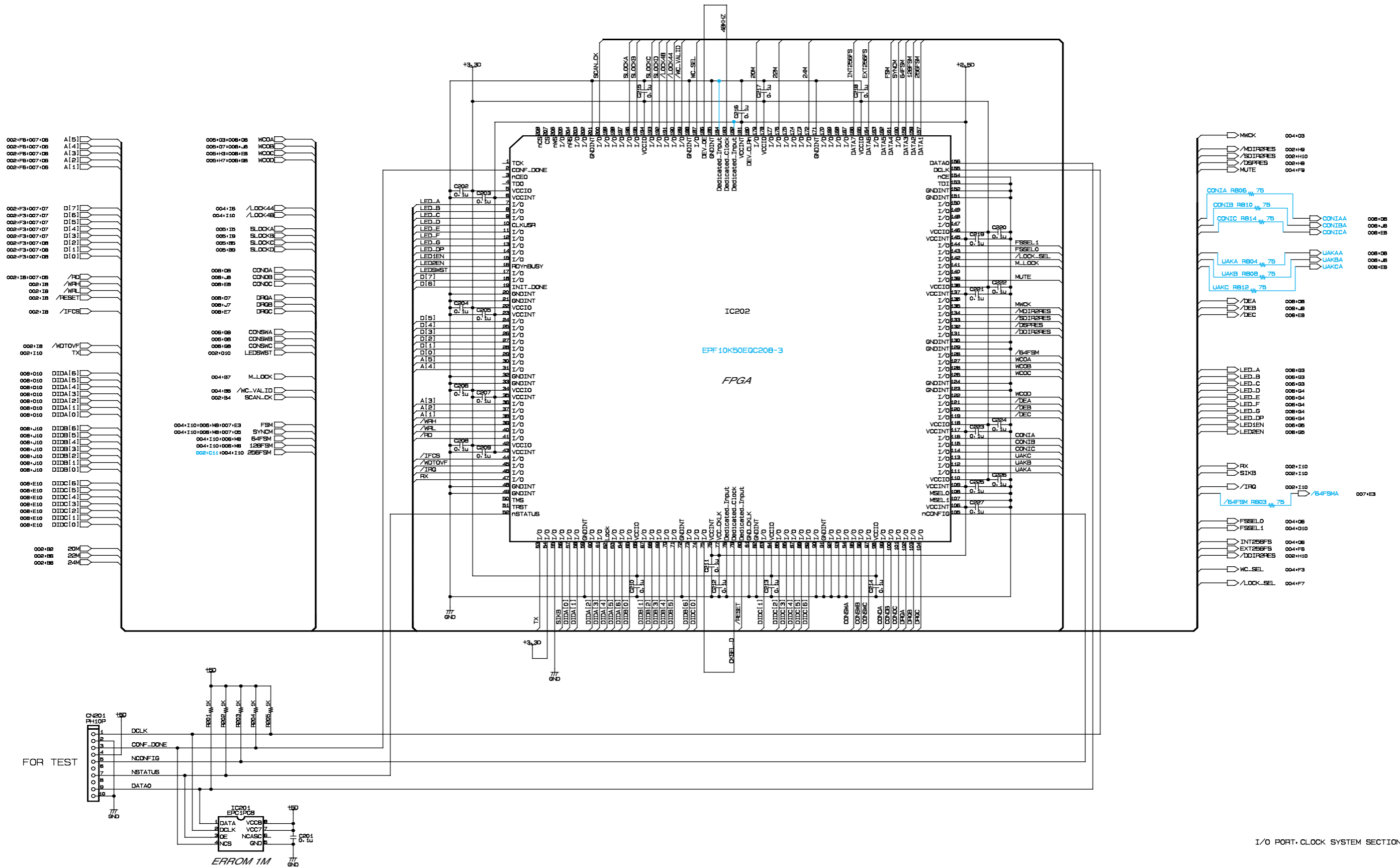


IFC2 CIRCUIT DIAGRAM 002 (AI8)

AI8



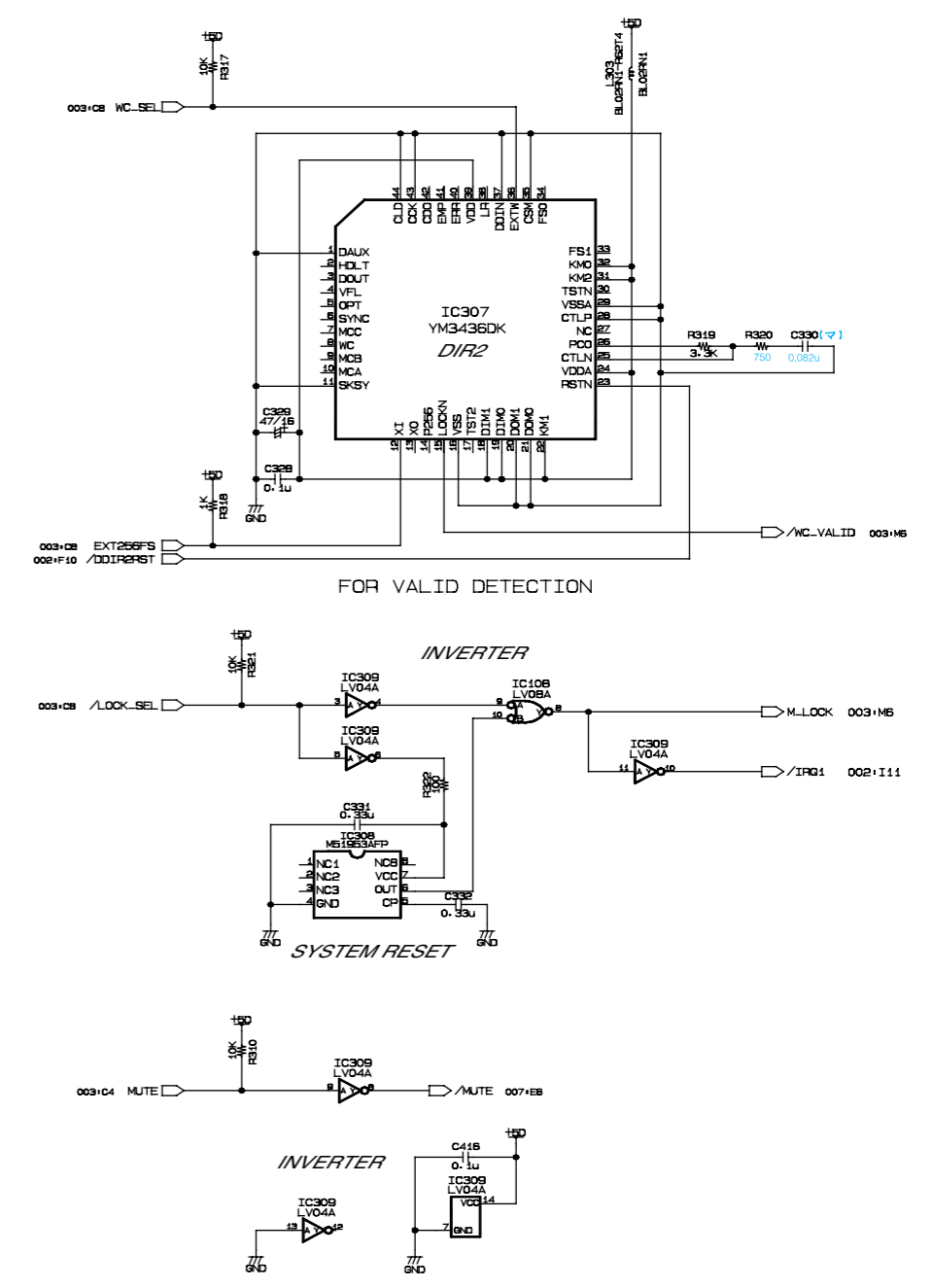
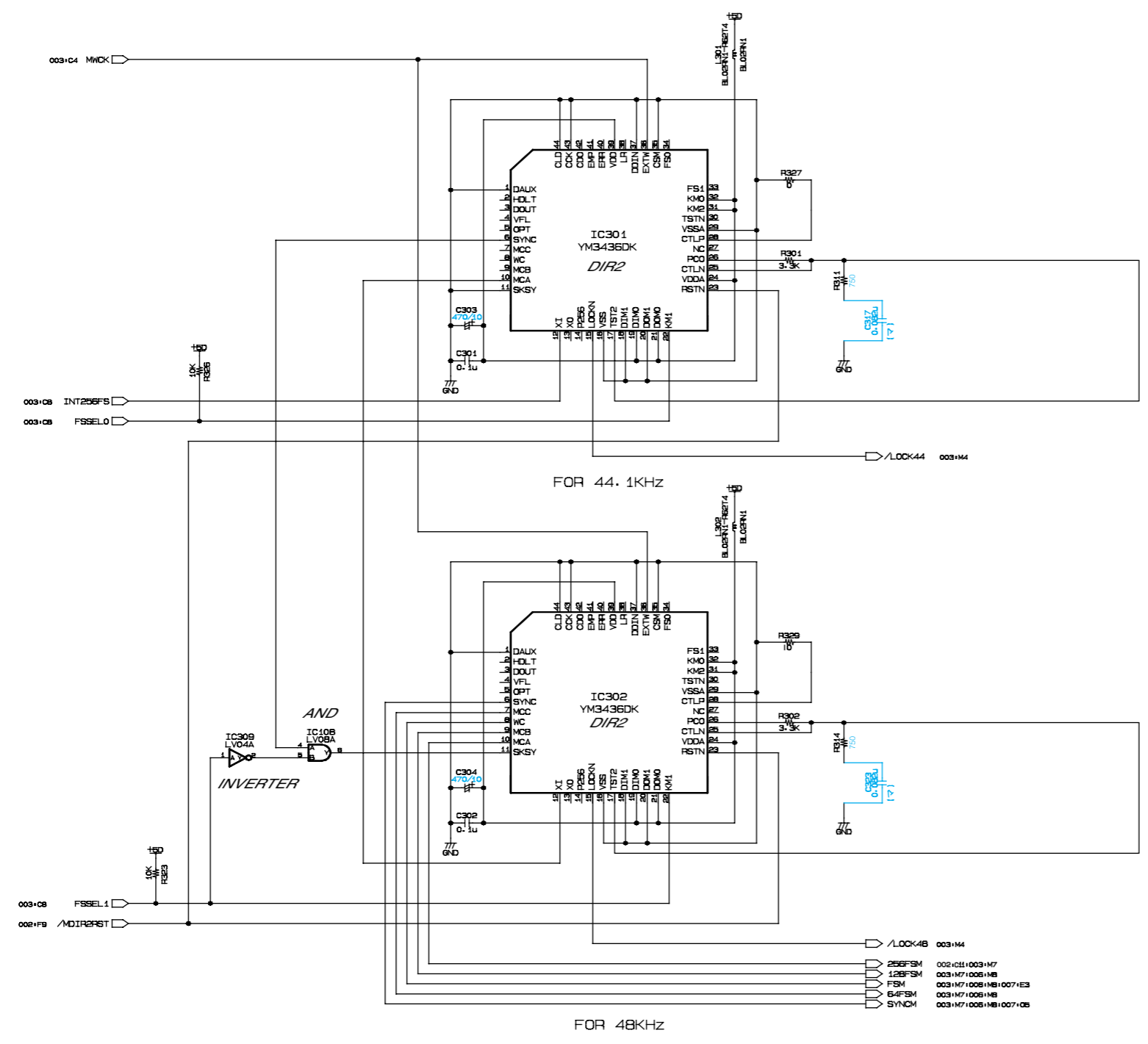
CPU I/F SECTION



I/O PORT, CLOCK SYSTEM SECTION

IFC2 CIRCUIT DIAGRAM 004 (A18)

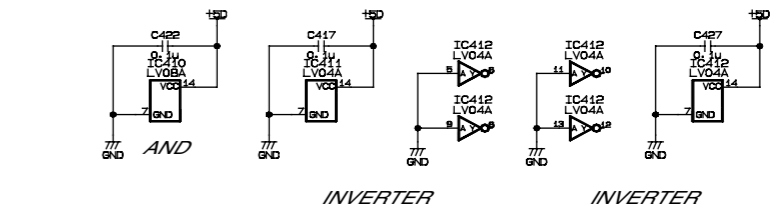
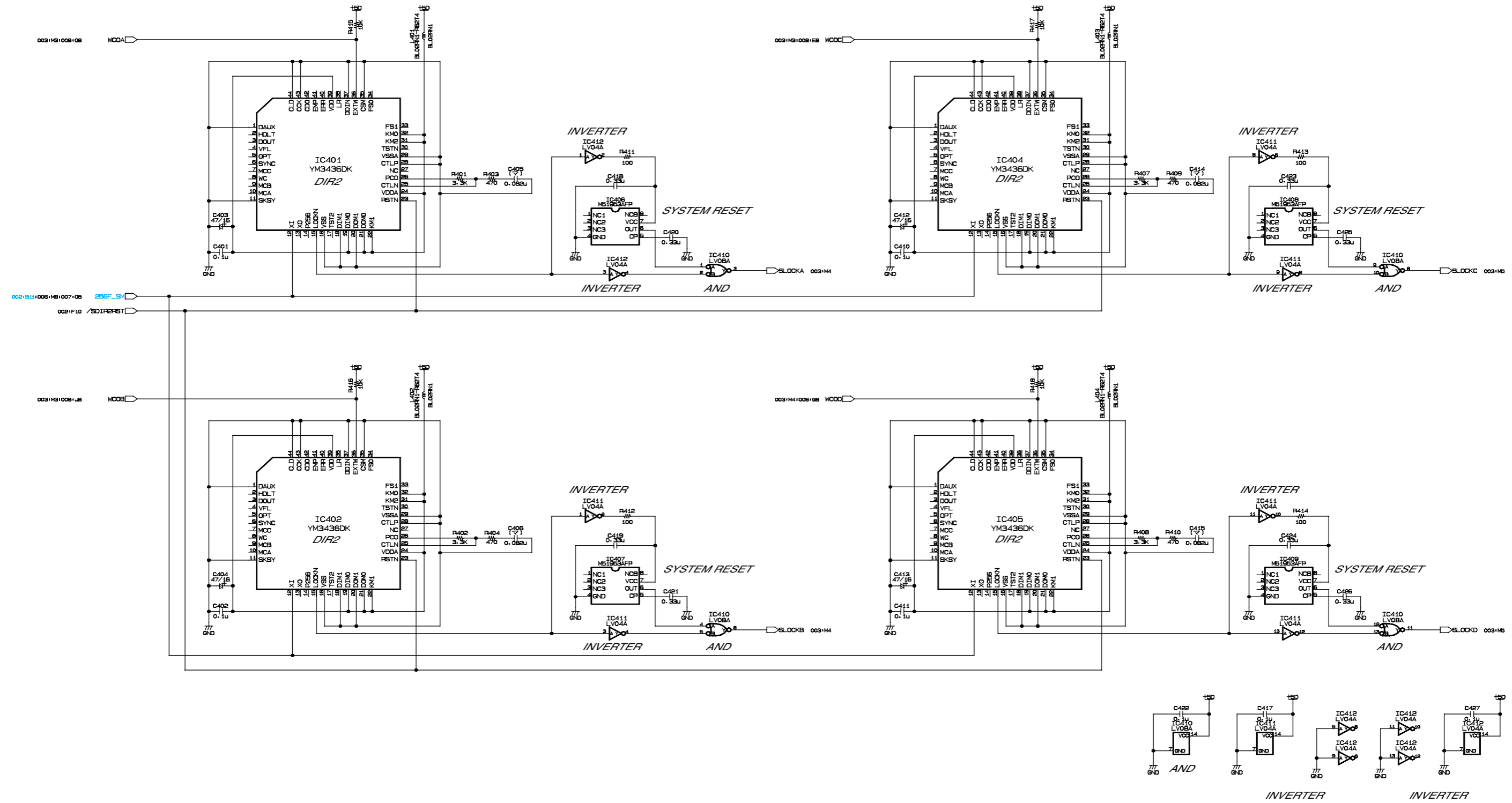
A18



(F) : Metal Film Resistor
 (M) : Mylar Capacitor

PLL SECTION

IFC2 CIRCUIT DIAGRAM 005 (A18)

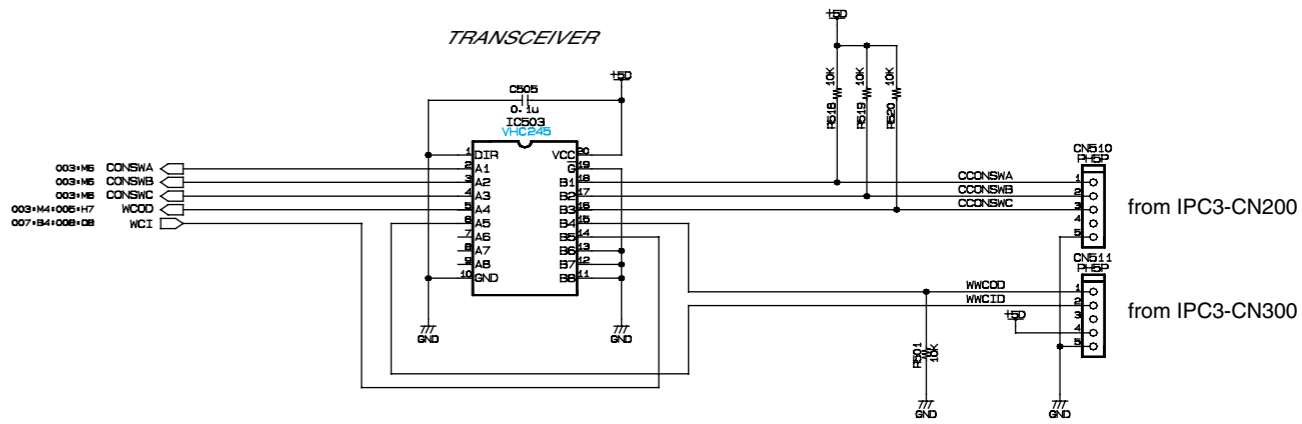
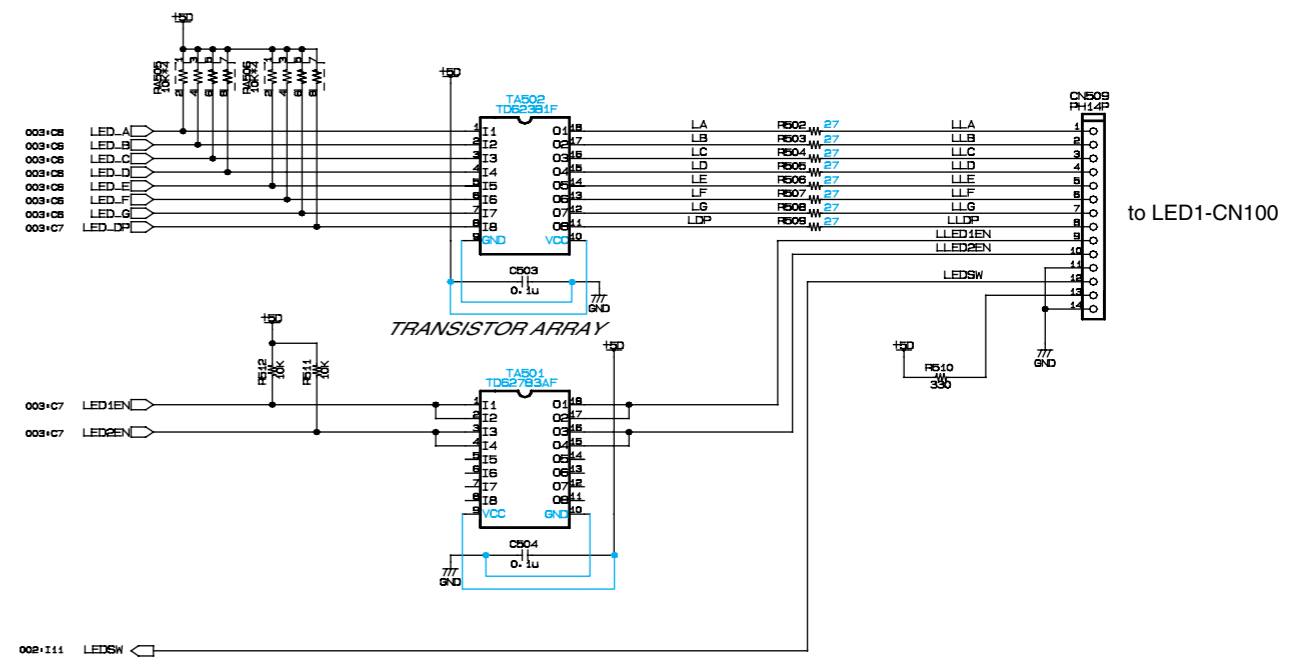
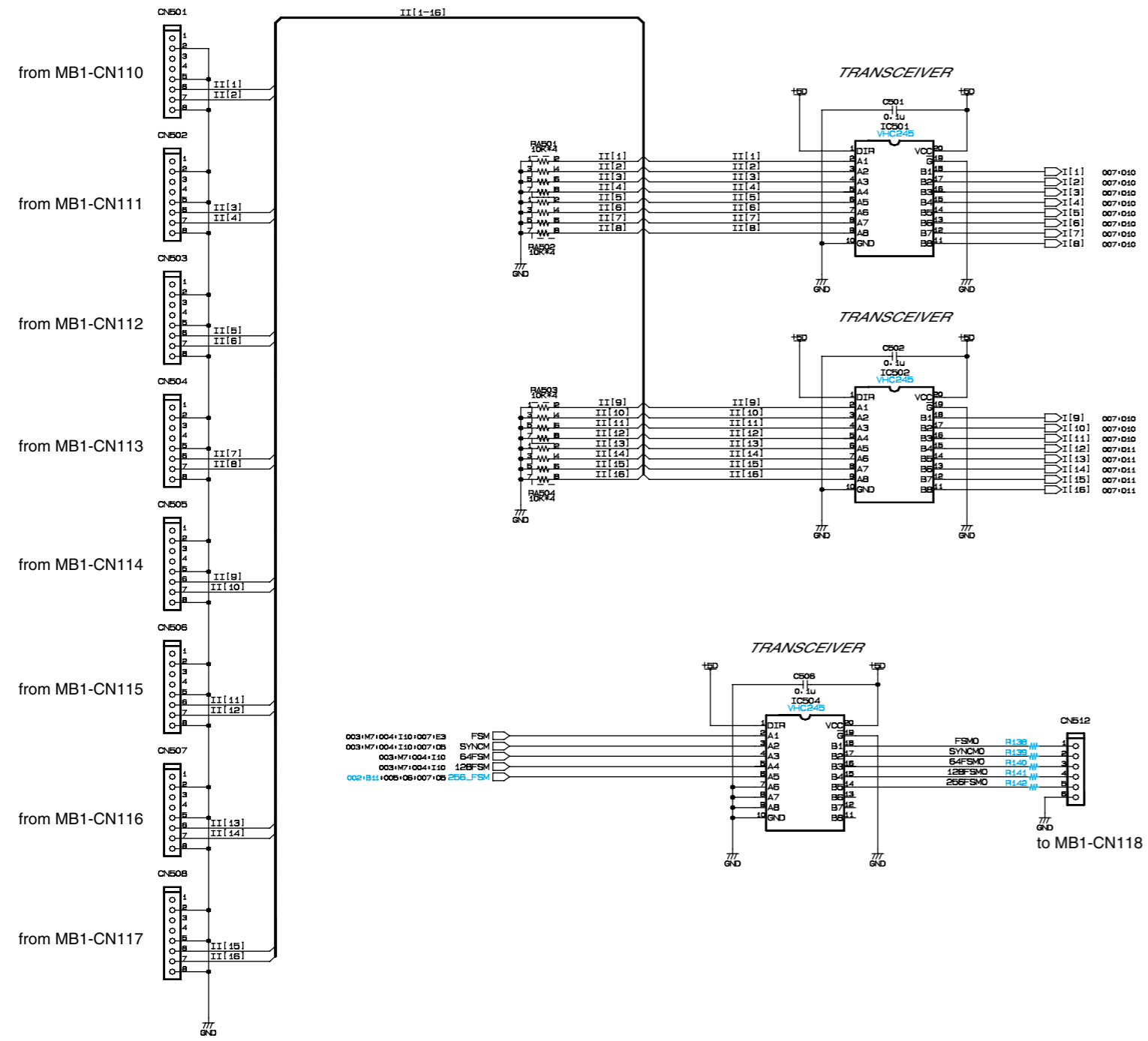


VALID DETECT SECTION

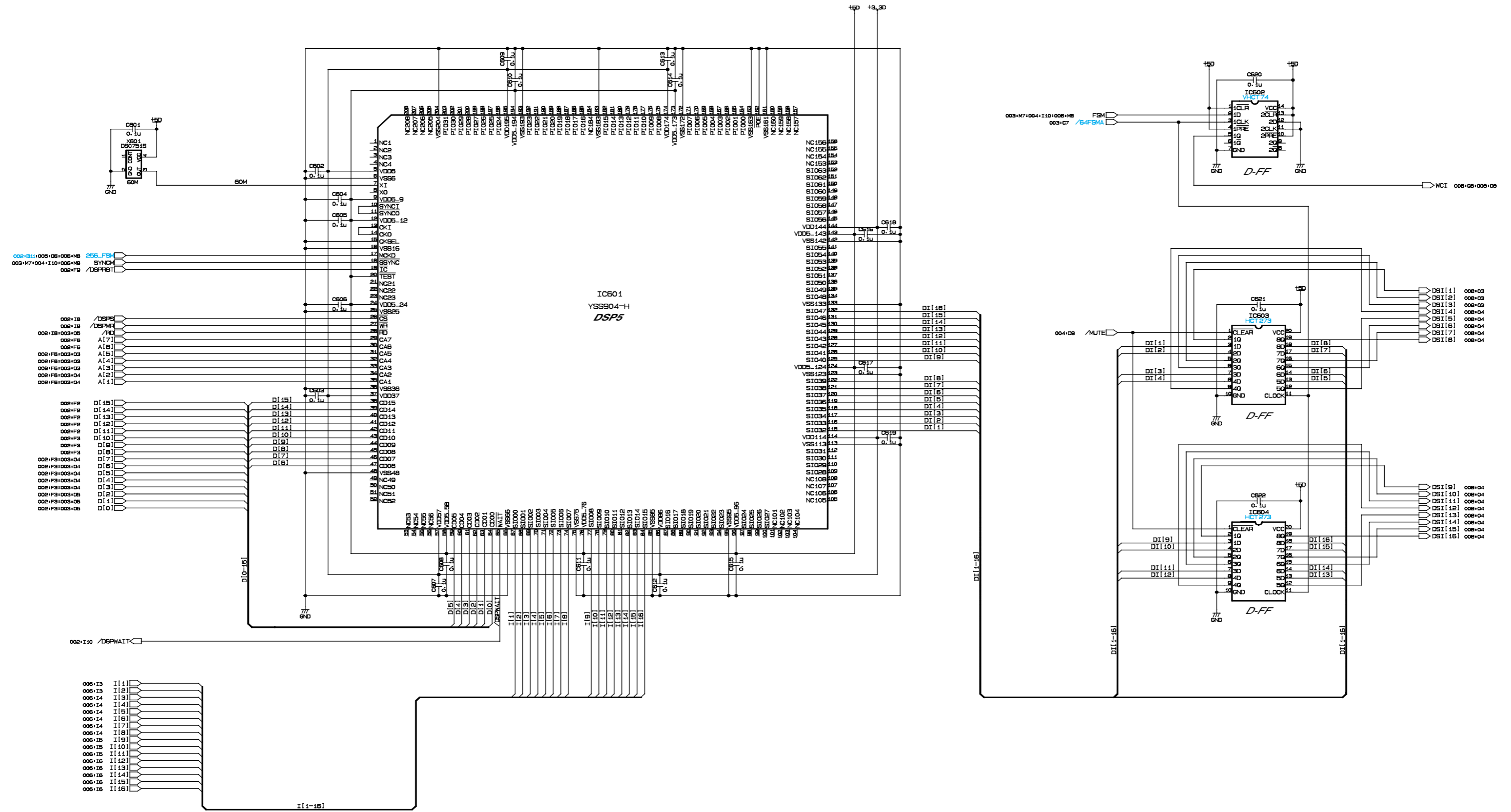
(M): Mylar Capacitor

IFC2 CIRCUIT DIAGRAM 006 (AI8)

AI8



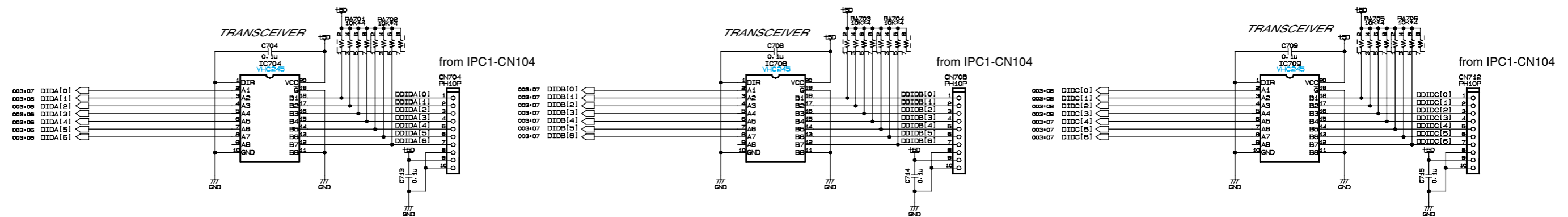
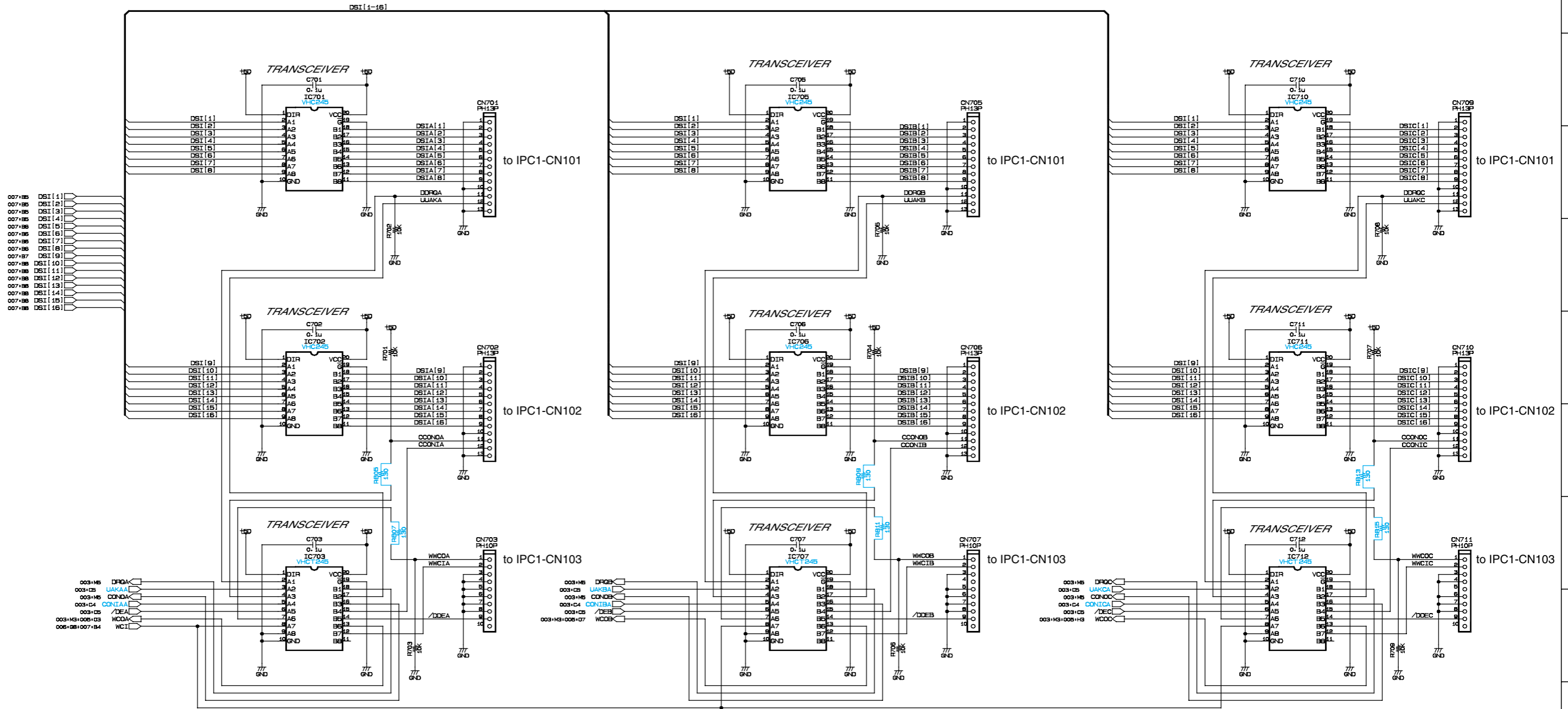
AUDIO I/F SECTION



DSP SECTION

IFC2 CIRCUIT DIAGRAM 008 (A18)

A18



BUFFER SECTION

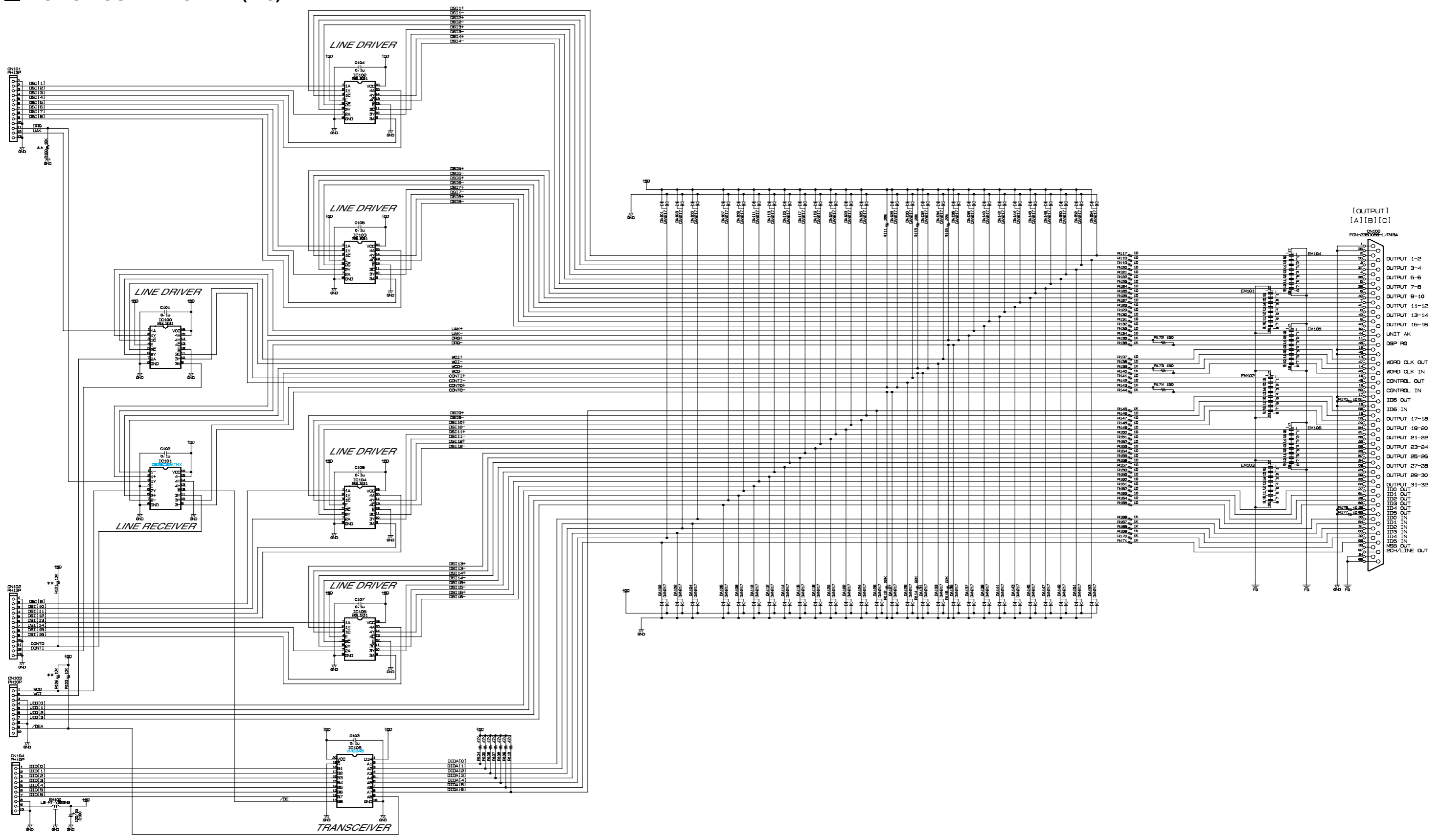
IPC1 CIRCUIT DIAGRAM (A18)

from IFC2-CN701,705,709

from IFC2 -CN702,706,710

from IFC2 -CN703,707,711

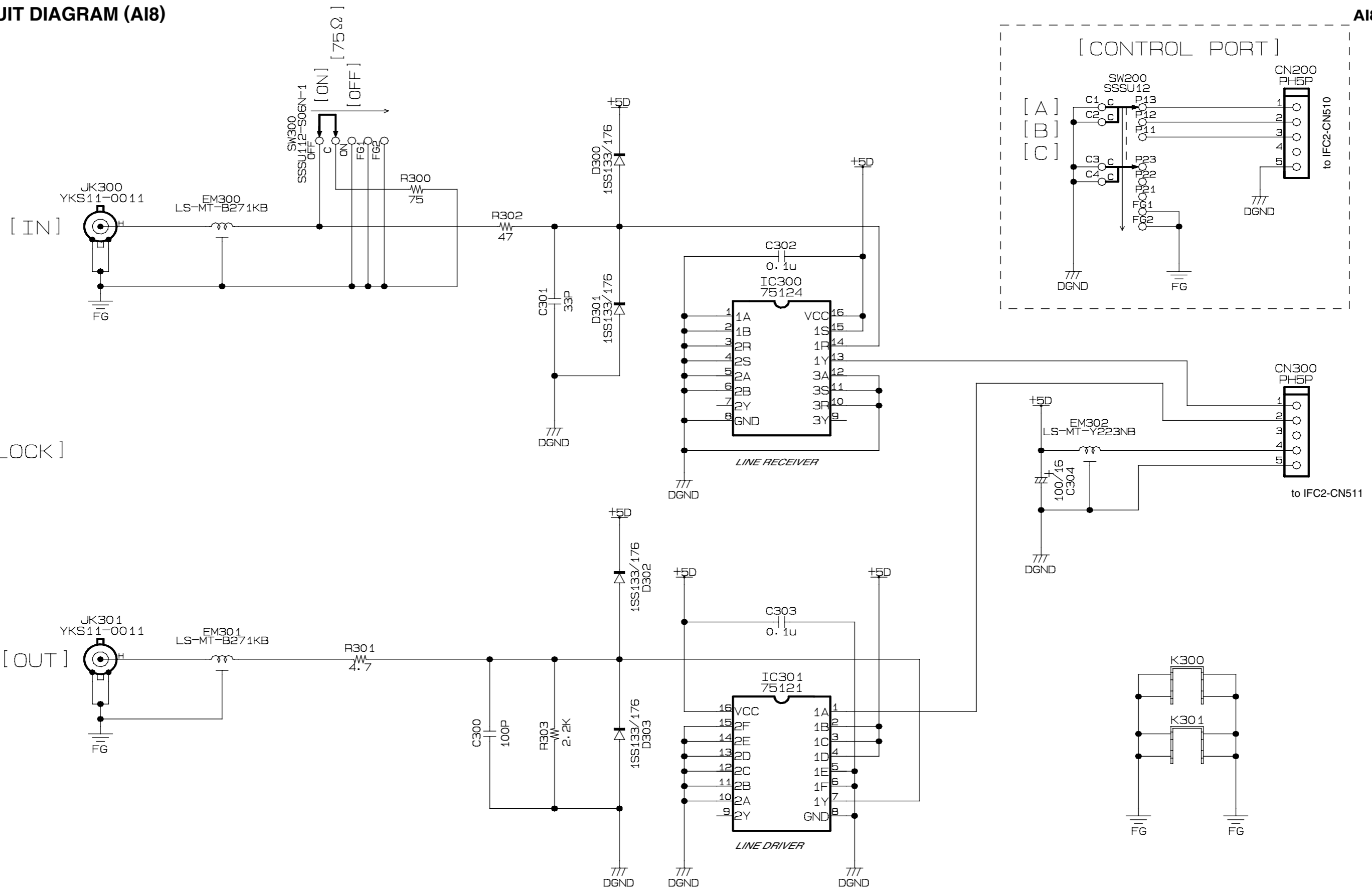
from IFC2 -CN704,708,712



** : Not Installed

■ IPC3 CIRCUIT DIAGRAM (AI8)

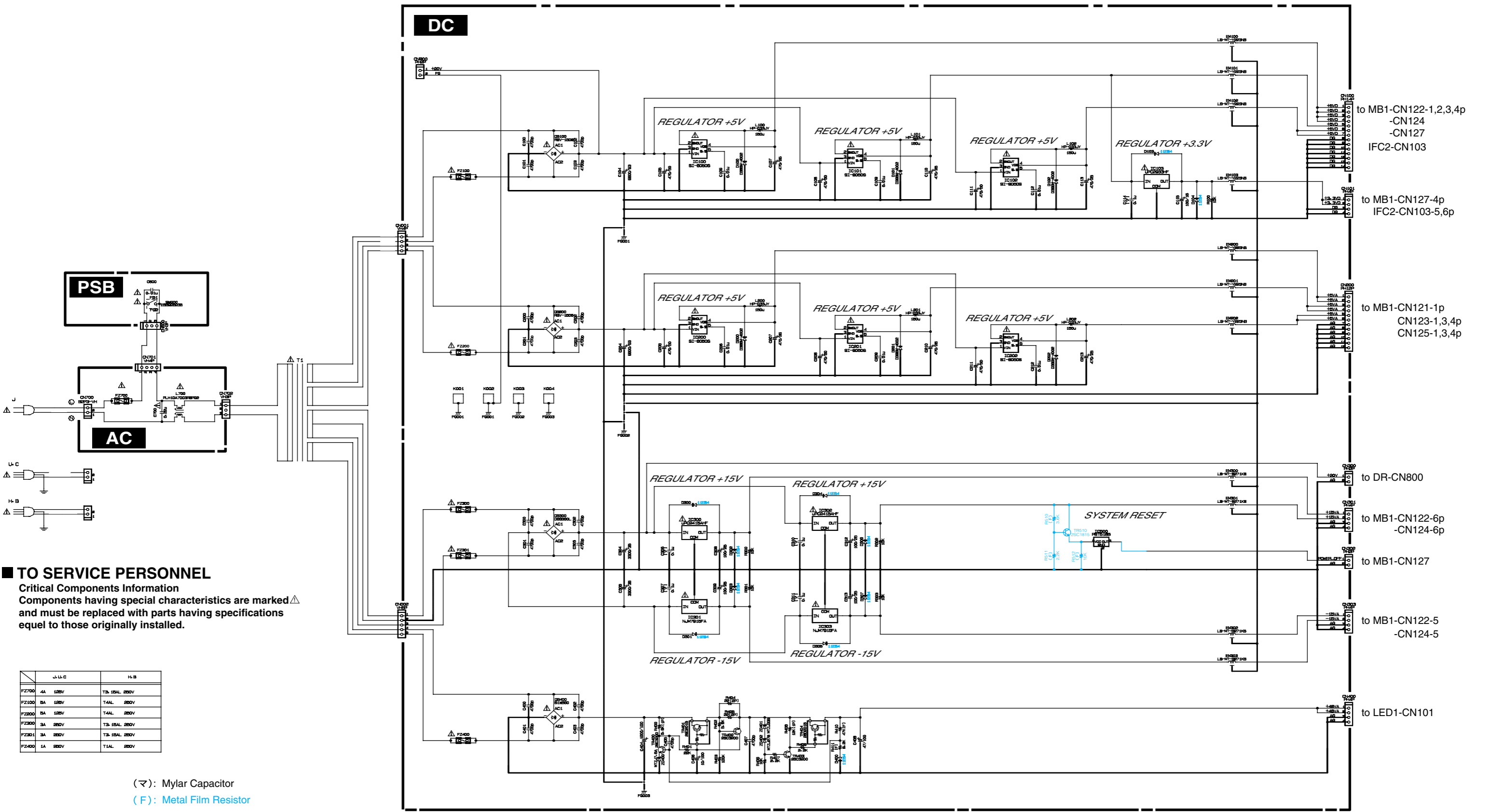
AI8



[WORD CLOCK]

AICOM CIRCUIT DIAGRAM 002 (AI8)

AI8



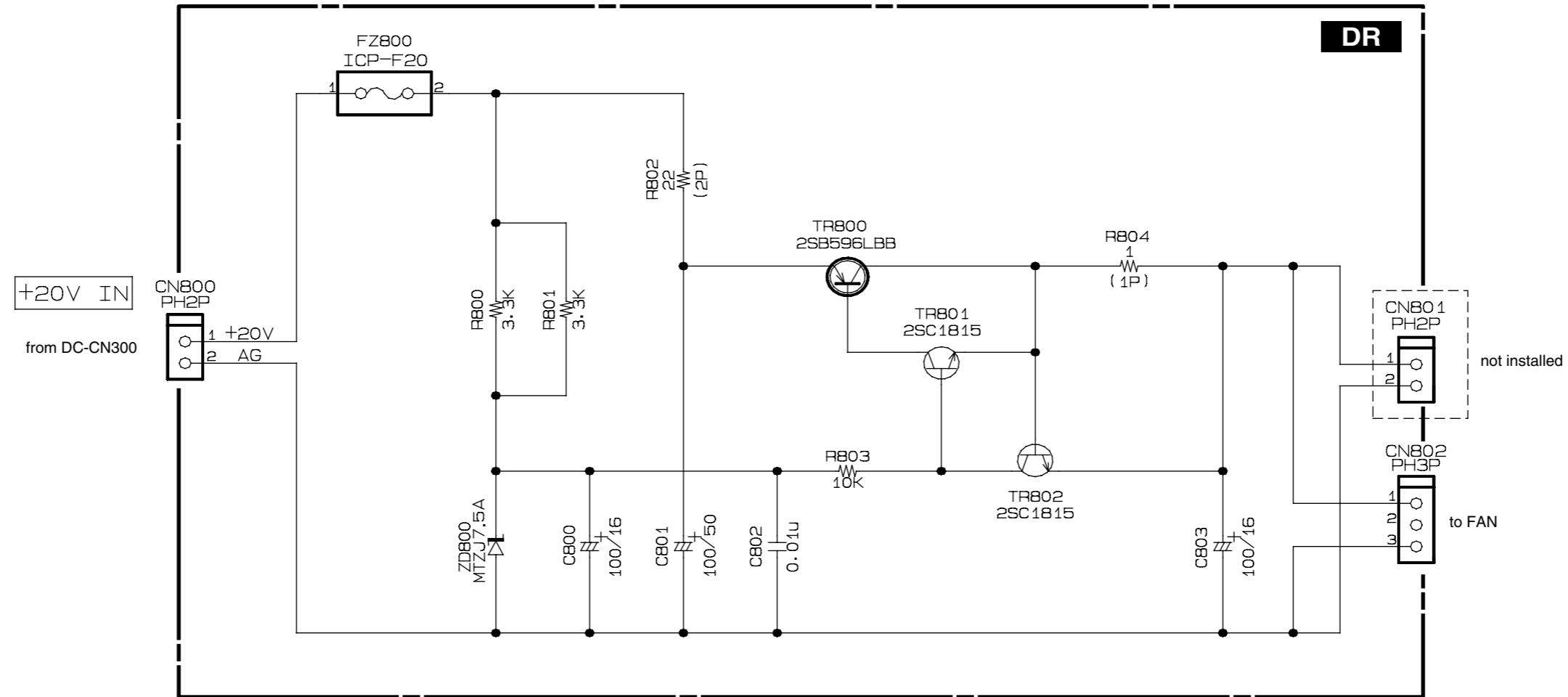
TO SERVICE PERSONNEL
 Critical Components Information
 Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.

	J, U, C	H, B
FZ700	4A 180V	T3-15AL 250V
FZ100	5A 180V	T4AL 250V
FZ300	5A 180V	T4AL 250V
FZ300	5A 250V	T3-15AL 250V
FZ301	5A 250V	T3-15AL 250V
FZ400	1A 250V	T4AL 250V

(マ): Mylar Capacitor
 (F): Metal Film Resistor

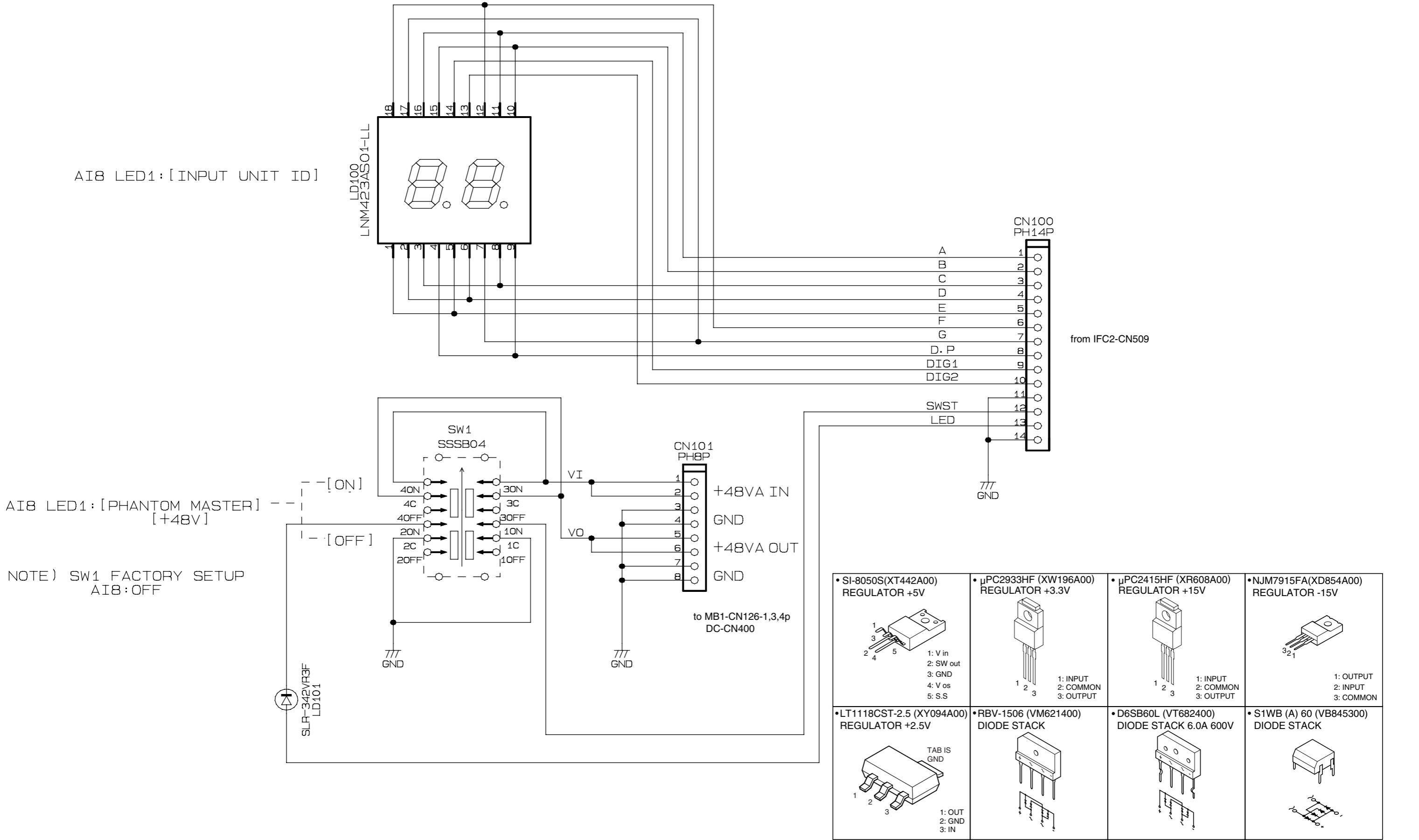
■ AICOM CIRCUIT DIAGRAM 003 (A18)

A18



LED1 CIRCUIT DIAGRAM (AI8)

AI8



LED1 CIRCUIT DIAGRAM (AI8)