

# SLV-M10HF

RMT-V249

## SERVICE MANUAL

*US Model  
Canadian Model*

Hi-Fi

VHS



- Refer to the **SERVICE MANUAL** of **VHS MECHANICAL ADJUSTMENT VI** for **MECHANICAL ADJUSTMENTS**.  
(9-921-647-11)

S MECHANISM

### SPECIFICATIONS

#### System

Format  
VHS NTSC standard

Video recording system  
Rotary head helical scanning FM system

Video heads  
Double azimuth four heads

Video signal  
NTSC color, EIA standards

Tape speed  
SP: 33.35 mm/s (1 3/8 inches/s)  
EP: 11.11 mm/s (7/16 inches/s)  
LP: 16.67 mm/s (11/16 inches/s),  
playback only

Maximum recording/playback time  
8 hrs. in EP mode (with T-160 tape)

Fast-forward and rewind time  
Approx. 3 min. (with T-120 tape)

#### Tuner section

Channel coverage  
VHF 2 to 13  
UHF 14 to 69  
CATV A-8 to A-1, A to W, W+1 to W+84

Antenna  
75-ohm antenna terminal for VHF/UHF

#### Inputs and outputs

LINE-1 IN and -2 IN  
VIDEO IN, phono jack (1 each)  
Input signal: 1 Vp-p, 75 ohms, unbalanced,  
sync negative  
AUDIO IN, phono jack (2 each)  
Input level: 327 mVrms  
Input impedance: more than 47 kilohms

LINE OUT  
VIDEO OUT, phono jack (1)  
Output signal: 1 Vp-p, 75 ohms, unbalanced,  
sync negative  
AUDIO OUT, phono jack (2)  
Standard output: 327 mVrms  
Load impedance: 47 kilohms  
Output impedance: less than 10 kilohms

S-LINK (CONTROL S IN)  
Mini jack (1)

CABLE BOX CONTROL (CONTROL S OUT)  
Stereo mini jack (plug in power) (1)

CPD IN  
Mini jack (1)

#### Timer section

Clock  
Quartz locked

Timer indication  
12-hours cycle

Timer setting  
8 programs per month (max.)

Power back-up  
Built-in self-charging capacitor  
Back-up duration: up to 1 hour at a time

#### General

Power requirements  
120 V AC, 60 Hz

Power consumption  
24 W

Operating temperature  
5 °C to 40 °C (41 °F to 104 °F)

Storage temperature  
-20 °C to 60 °C (-4 °F to 140 °F)

Dimensions  
Approx. 430 × 107 × 287 mm (w/h/d)  
Approx. (17 × 4 1/4 × 11 3/8 inches) including  
projecting parts and controls

Mass  
Approx. 4.5 kg (9 lb 15 oz)

#### Supplied accessories

Remote commander (1)  
Size AA (R6) batteries (2)  
75-ohm coaxial cable with F-type connectors (1)  
Audio/video cable (3 phono, 1 mini to 3 phono,  
1 mini) (1)  
Monaural cable (1-mini to 1-mini) (1)  
Cable Mouse (cable box controller) (1)  
Jack cover (1)  
SmartFile labels (5)

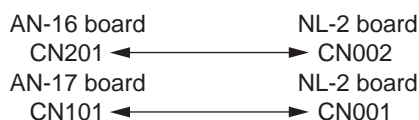
Design and specifications are subject to change  
without notice.

VIDEO CASSETTE RECORDER



SONY®

**[ NOTE ON REPAIRING HARNESSES BETWEEN AN-16/17  
BOARDS AND NL-2 BOARD ]**



Be sure to use the original one or equivalent (AWG, length).  
If not so, the resonance frequency will be changed.

## SAFETY CHECK-OUT

After correcting the original service problem, perform the following  
safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
6. Check the B+ voltage to see it is at the values specified.
7. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

### LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA TW-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75V, so analog meters must have an accurate low voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

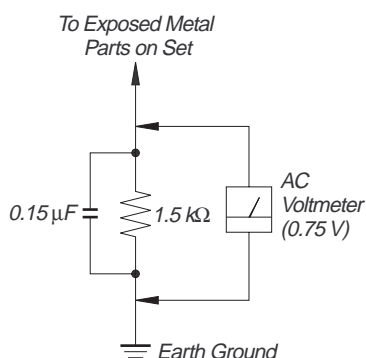


Fig. A. Using an AC voltmeter to check AC leakage.

### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  $\triangle$  OR DOTTED LINE WITH MARK  $\triangle$  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

### ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE  $\triangle$  SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

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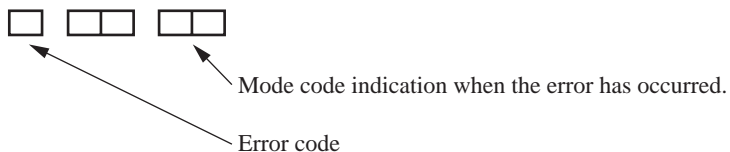
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## 1. ERROR CODE INDICATION

- Error codes are indicated using the lower 5 digits in the fluorescent display tube.  
“At this time, Colon “:” between character is not indicated.”



### ERROR CODE

0	No error
1	Cam encoder error Loading direction
2	Cam encoder error Unloading direction
3	T reel error
4	S reel error
5	Capstan error
6	Drum error
7	Error on initializing
8	Cassette loading error
9	Reserve

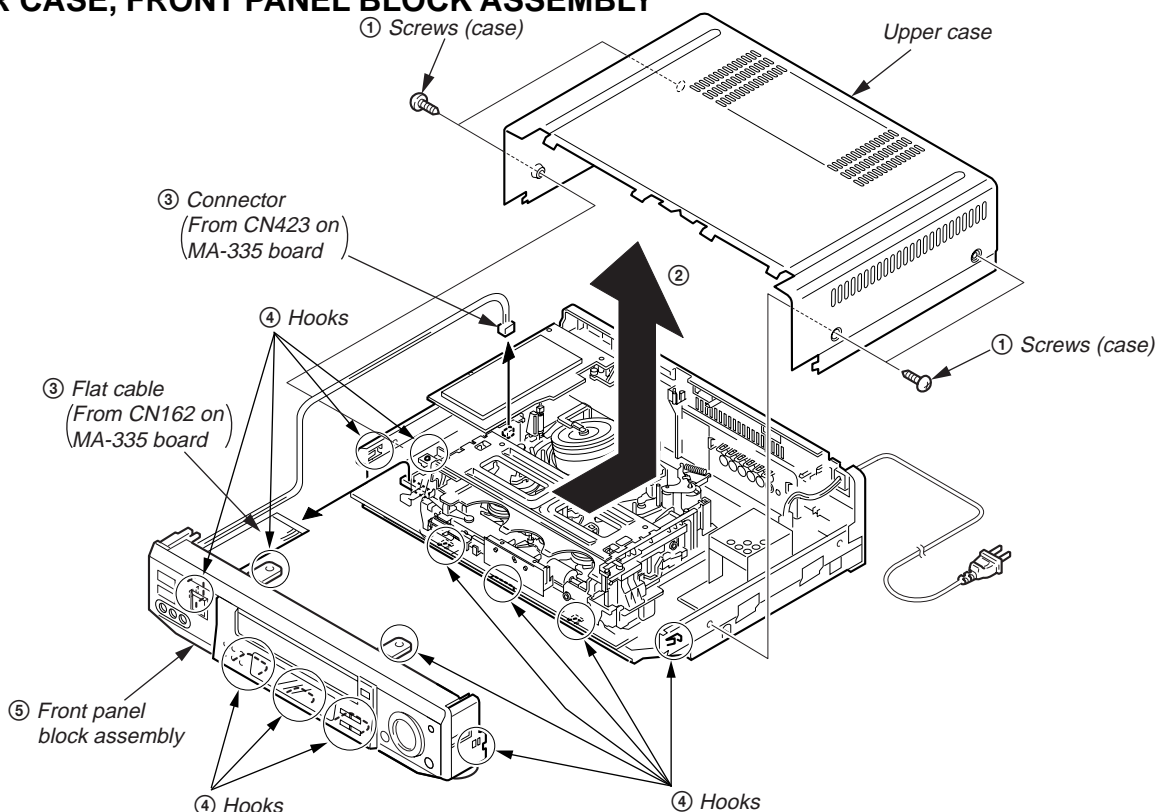
### MODE CODE

0	Power-on eject	10	FWD x1	20	REW play
1	Power-on initial	11	FWD x2	21	Cas. loading
2	Power-off eject	12	CUE	22	Tape loading
3	Power-off stop	13	PB-pause	23	Power-off loading
4	FF	14	RVS-pause	24	Mecha. error (Power on)
5	REW	15	RVS x1	25	Power-on eject initial
6	REC	16	RVS x2	26	Power-off eject initial
7	REC- pause	17	REV	27	APC REC
8	Power-on stop	18	Power-off initial	28	Cas. loading
9	PB	19	Mecha. error (Power off)		(No auto PB check)

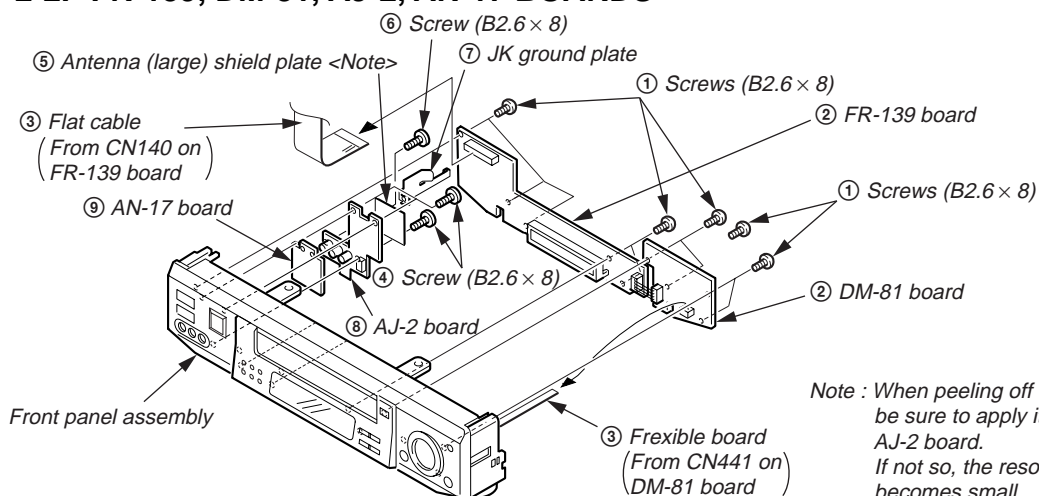
## SECTION 2 DISASSEMBLY

**NOTE:** Follow the disassembly procedure in the numerical order given.

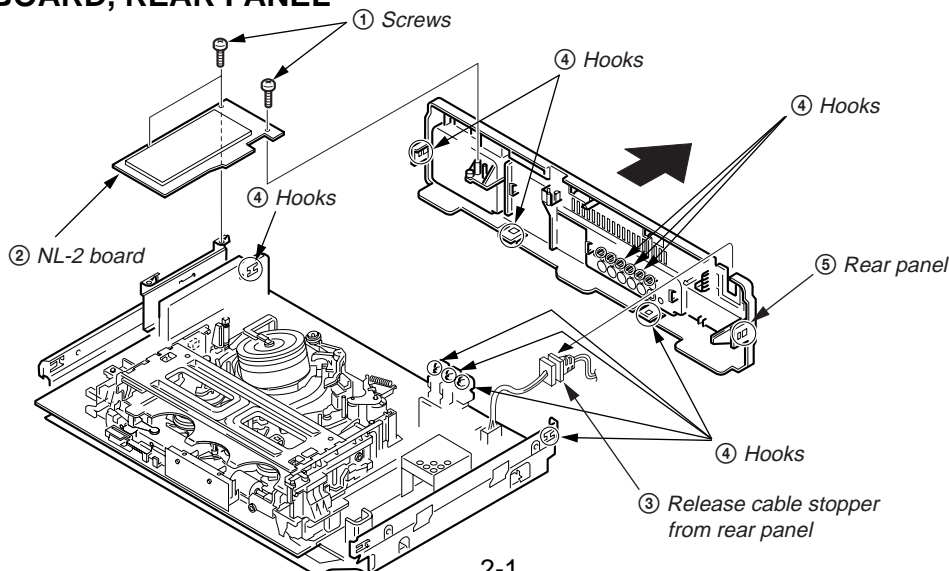
### 2-1. UPPER CASE, FRONT PANEL BLOCK ASSEMBLY



### 2-2. FR-139, DM-81, AJ-2, AN-17 BOARDS

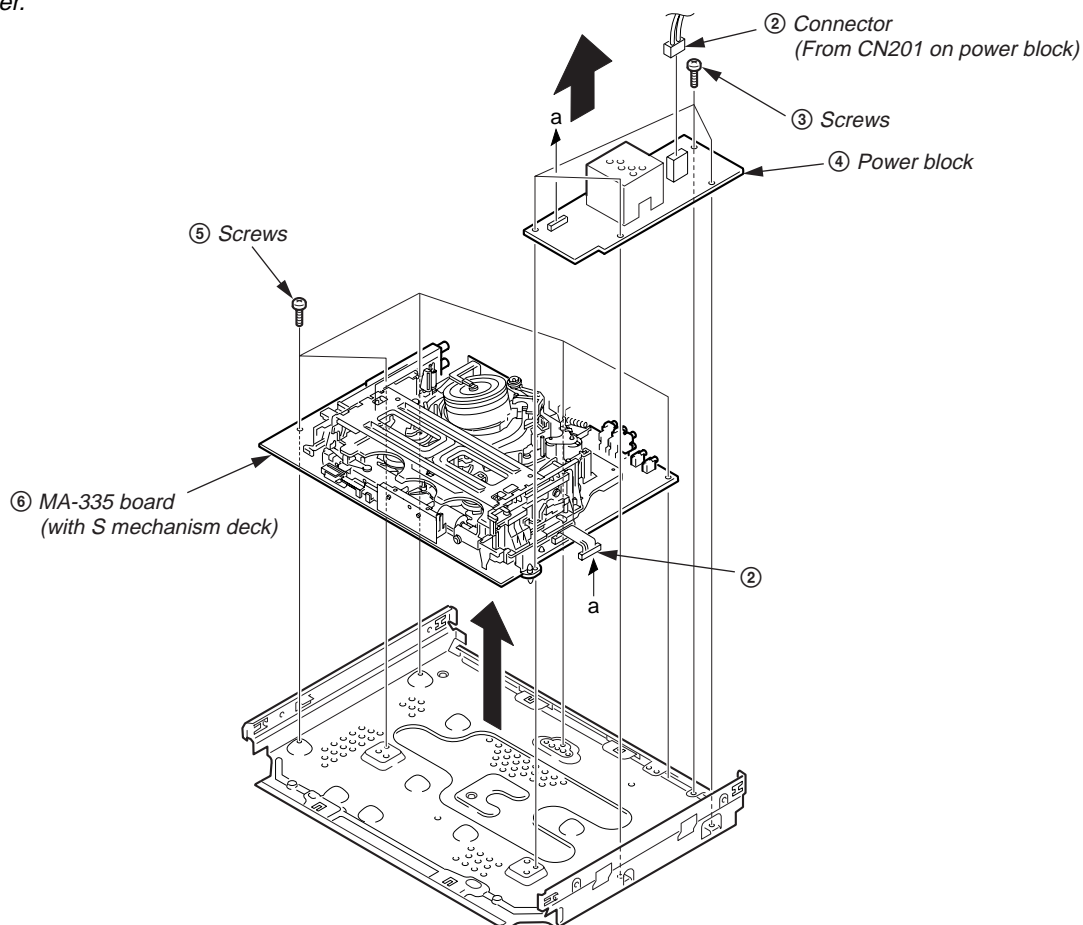


### 2-3. NL-2 BOARD, REAR PANEL

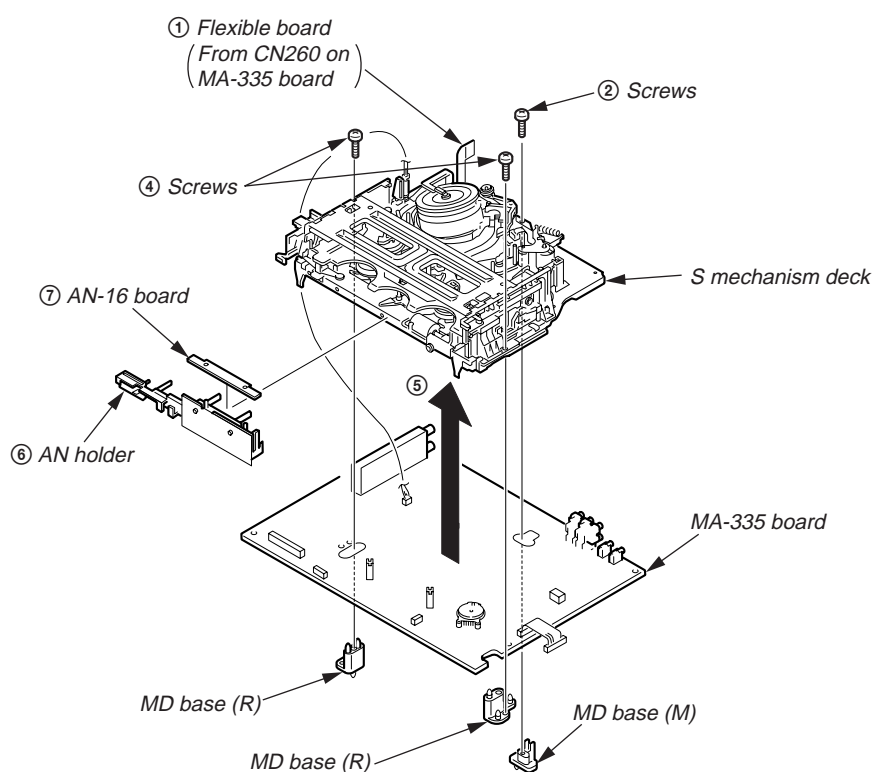


## 2-4. POWER BLOCK, MA-335 BOARD (WITH S MECHANISM DECK)

- ① Remove two screws securing NL holder and remove NL holder.

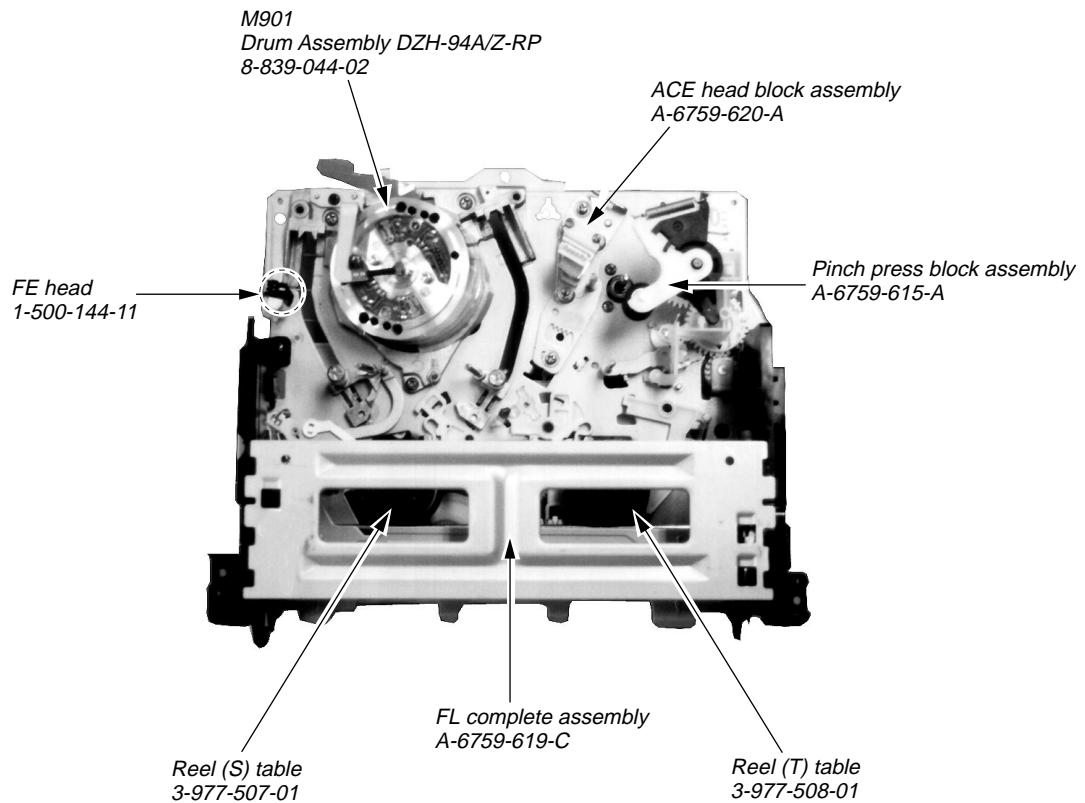


## 2-5. AN-16 BOARD, S MECHANISM DECK

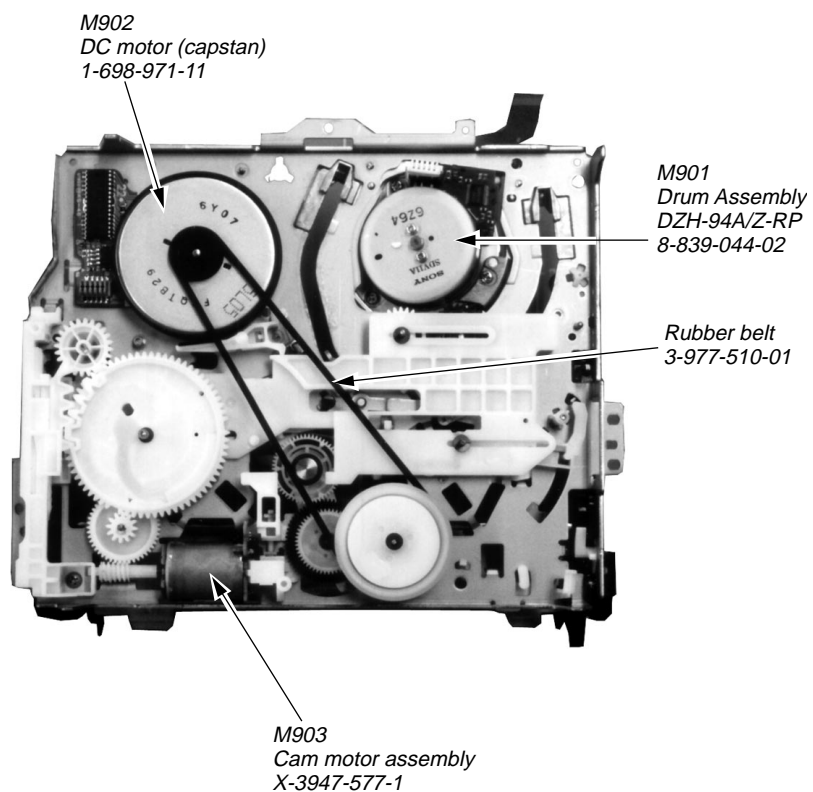


## 2-6. INTERNAL VIEWS

### — Top View —

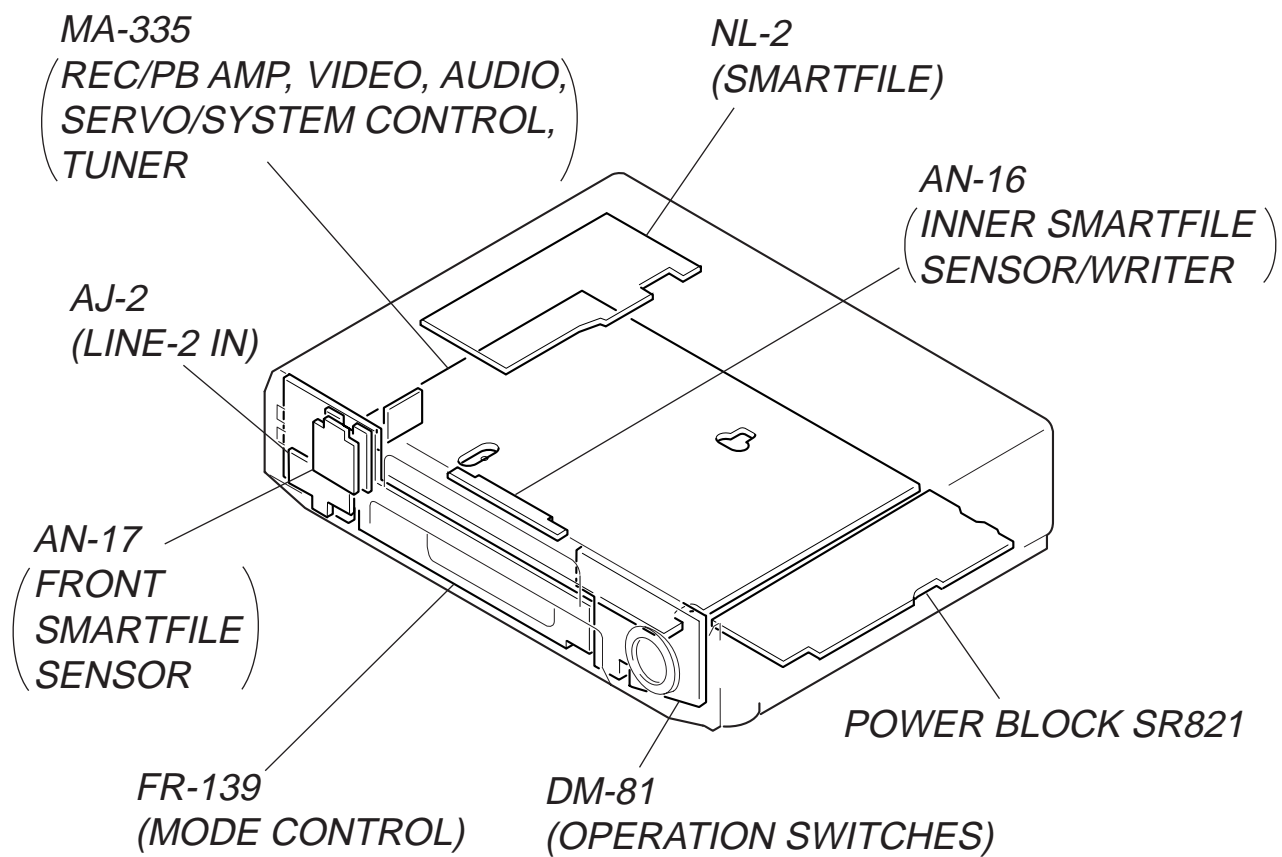


### — Bottom View —



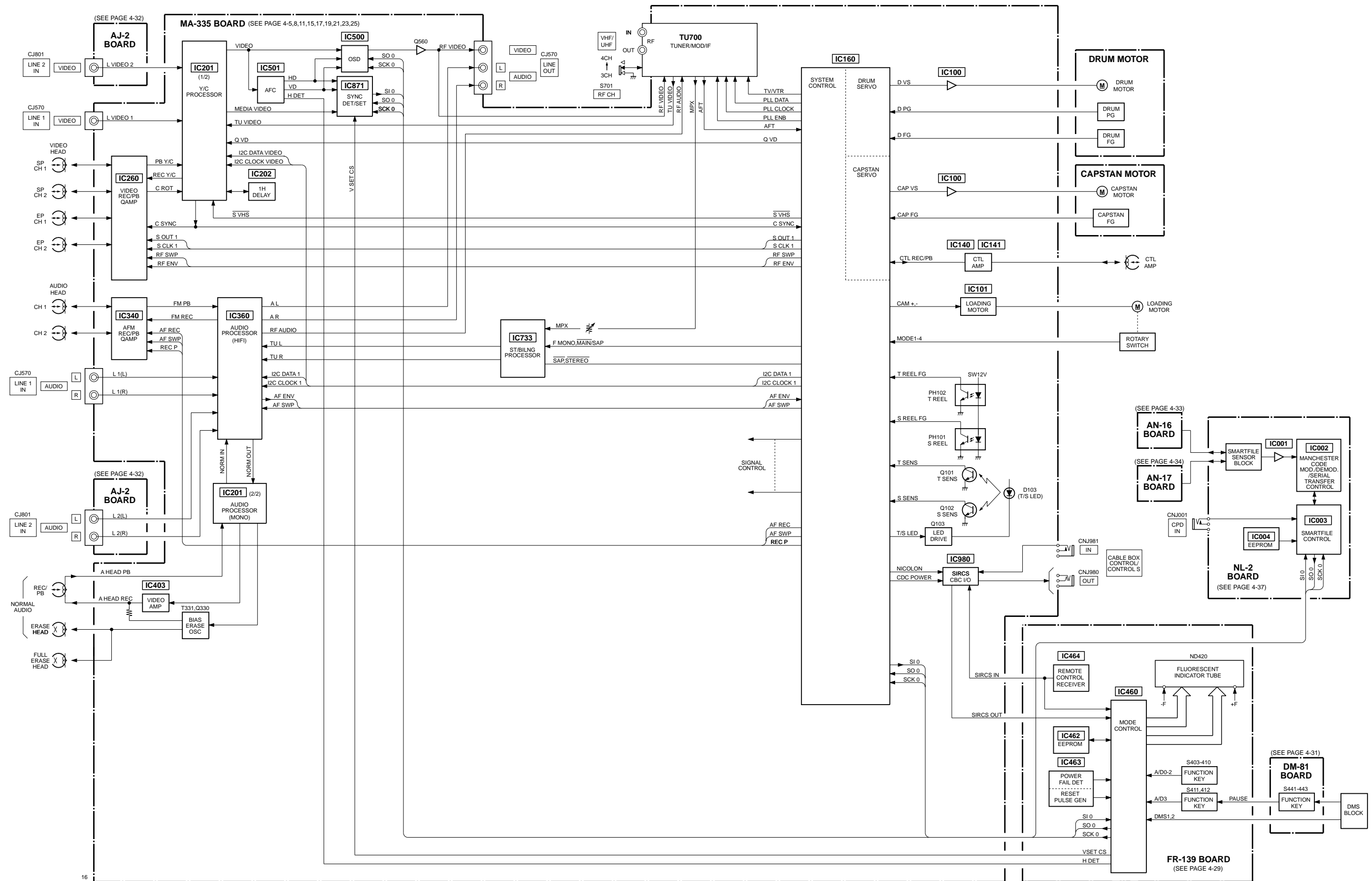


## 2-7. CIRCUIT BOARDS LOCATION



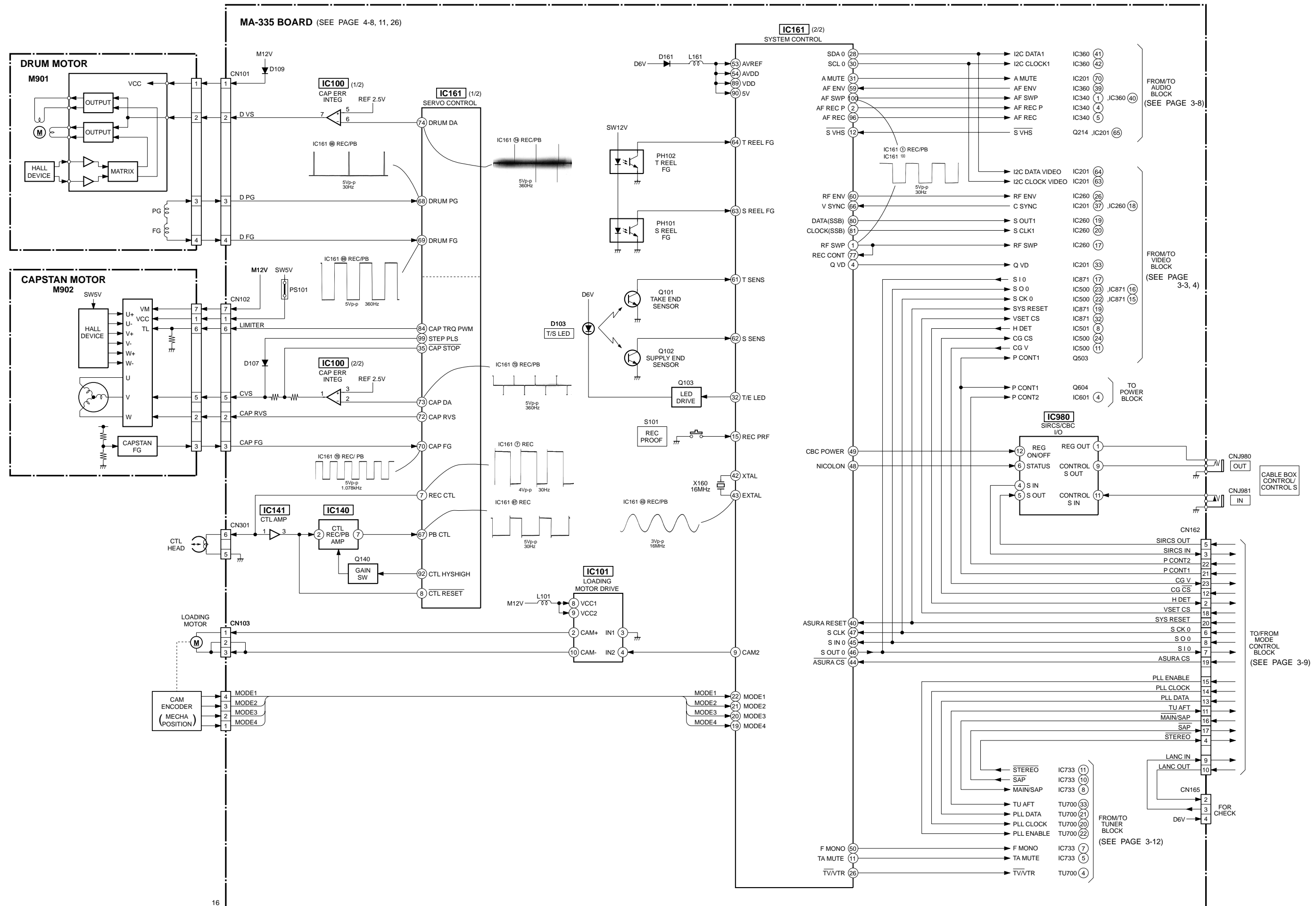
# SECTION 3 BLOCK DIAGRAMS

## 3-1. OVERALL BLOCK DIAGRAM





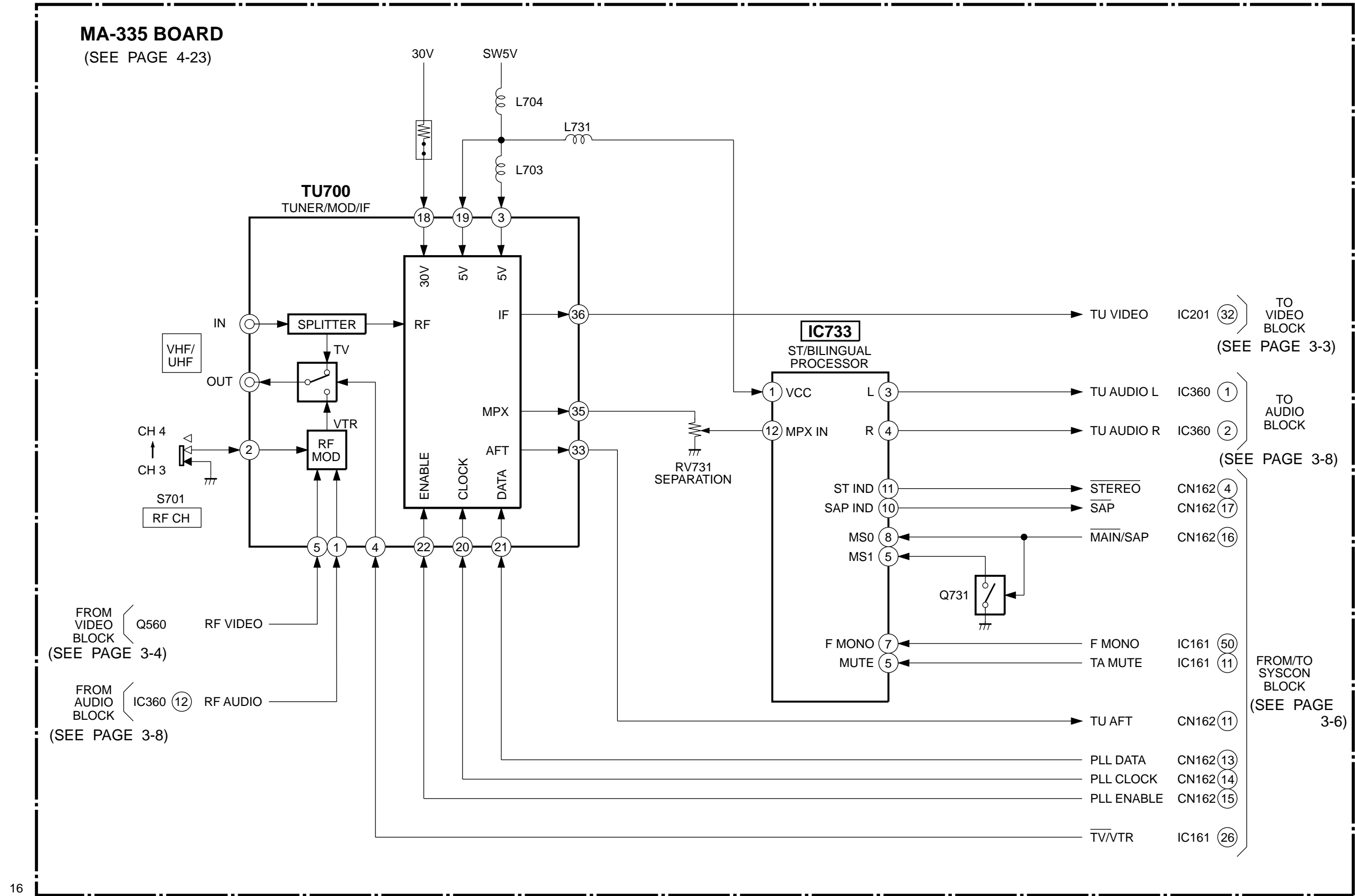
### 3-3. SERVO/SYSTEM CONTROL BLOCK DIAGRAM



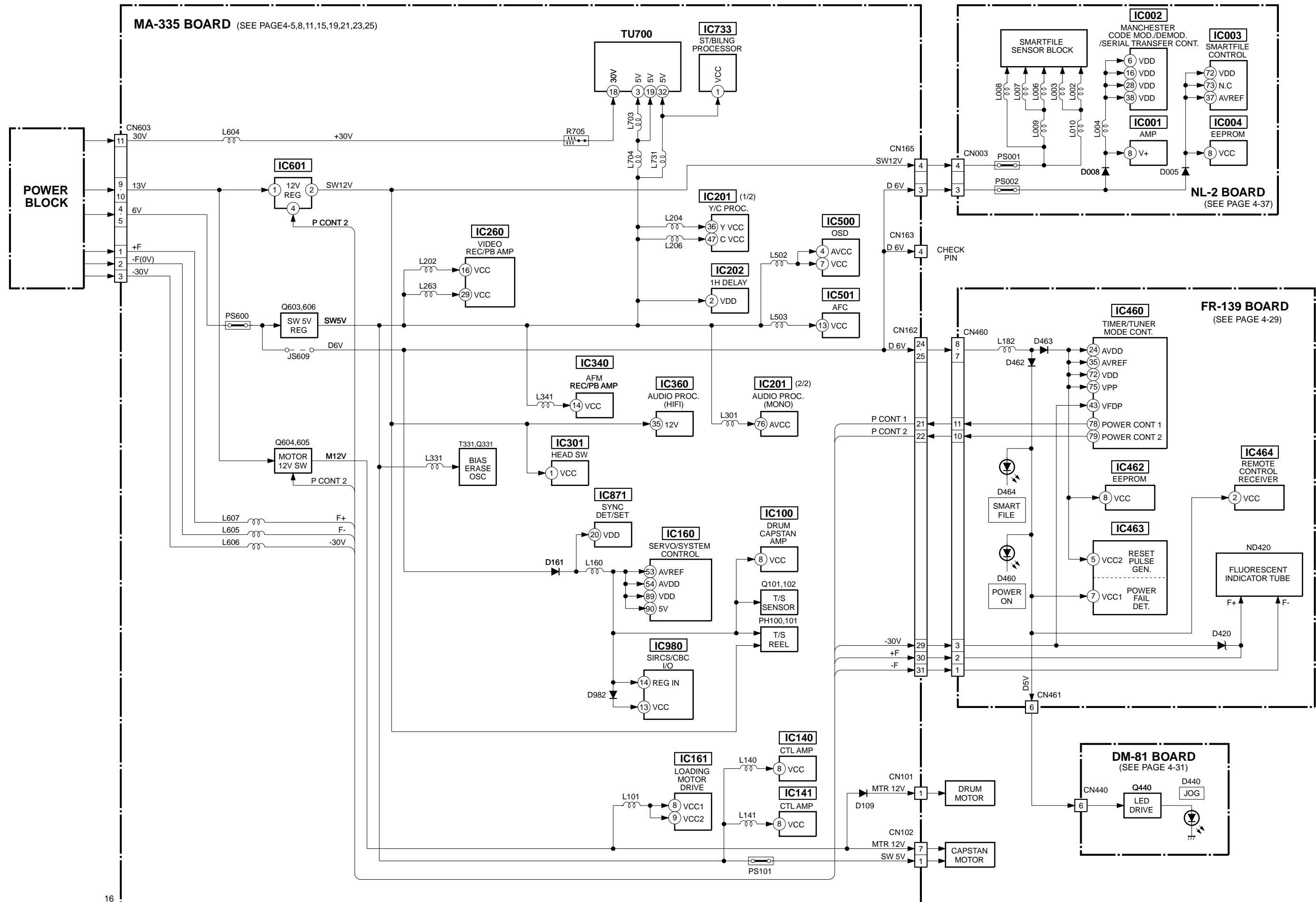




3-6. TUNER BLOCK DIAGRAM



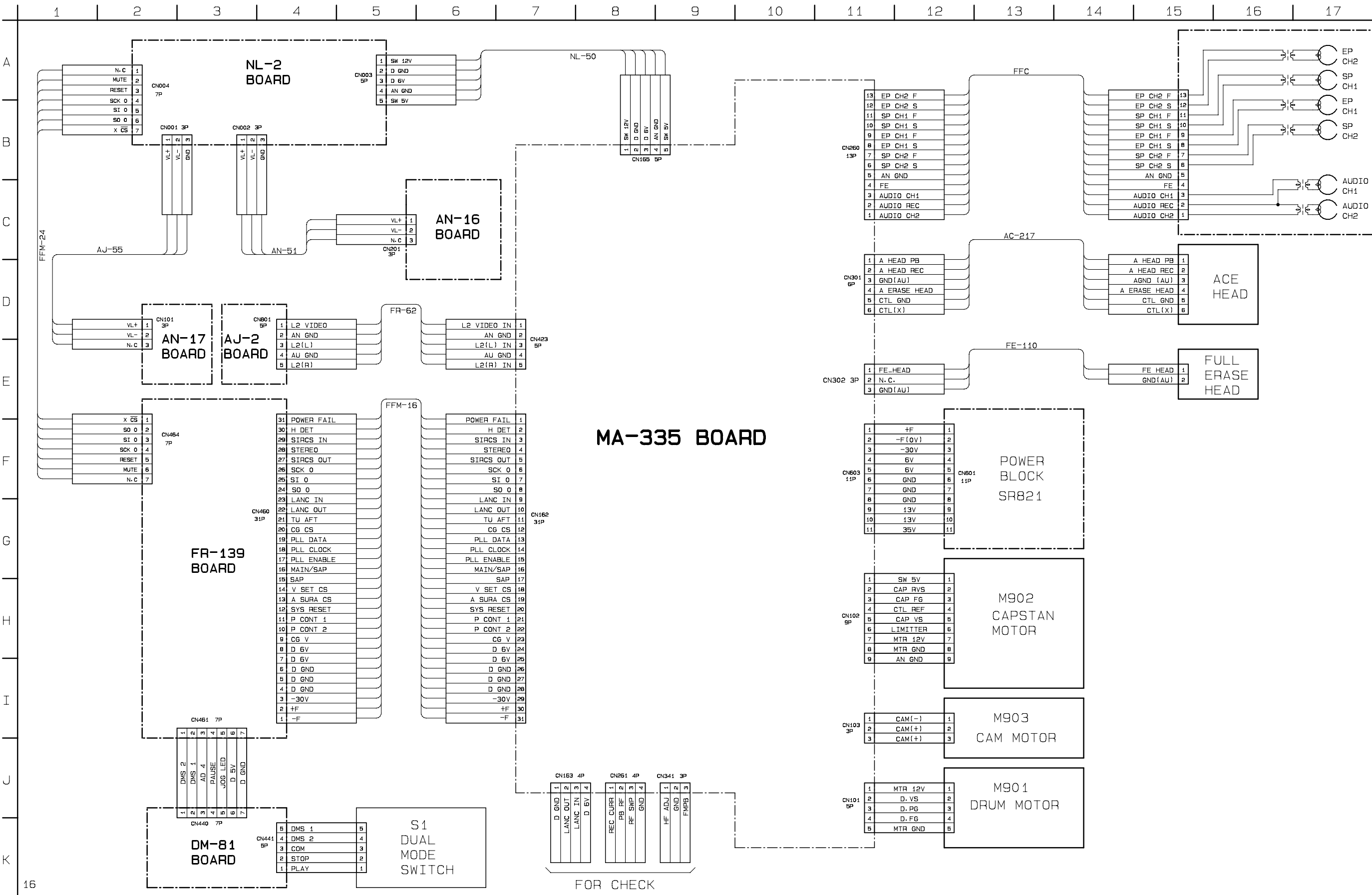
## 3-7. POWER SUPPLY BLOCK DIAGRAM





SECTION 4  
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM



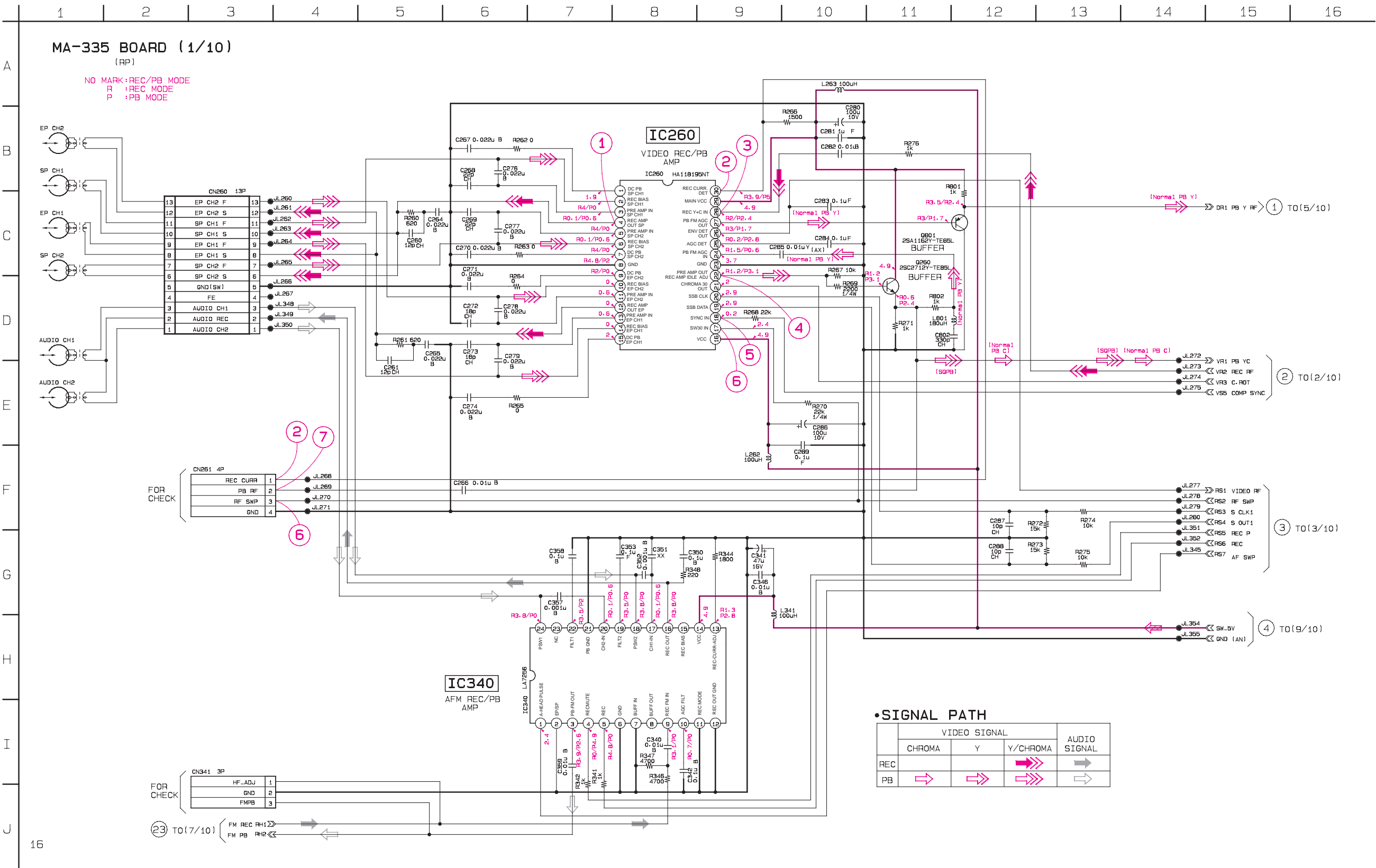
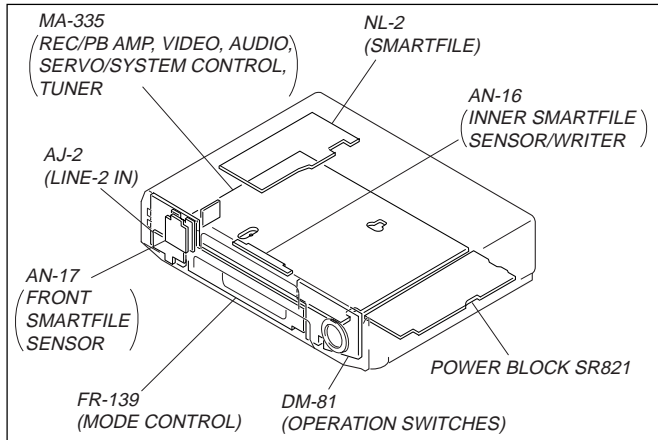
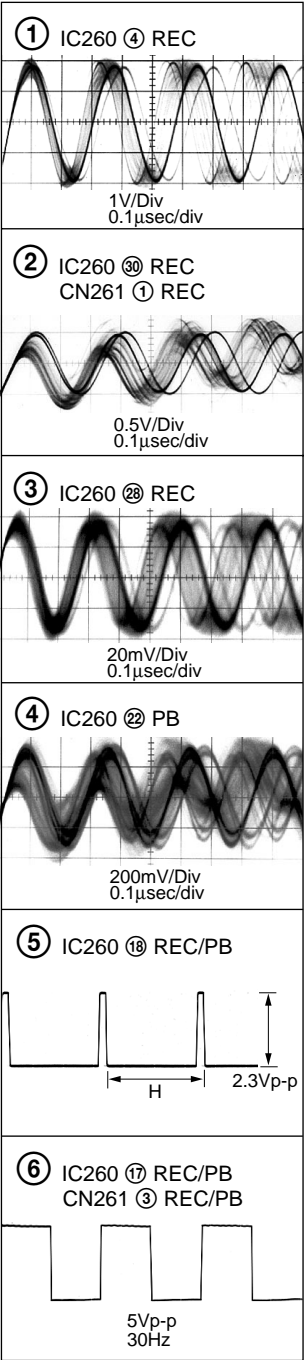
MA-335 (REC/PB AMP) SCHEMATIC DIAGRAM

— Ref. No.: MA-335 Board; 1,000 Series —

MA-335 BOARD

CJ570	A-3	D982	B-1	Q301	C-5
CN101	C-7	D983	A-1	Q331	C-6
CN102	E-2	D984	A-1	Q379	A-11
CN103	I-4	IC100	G-6	Q386	A-11
CN162	J-12	IC101	I-3	Q502	B-2
CN163	I-12	IC140	H-11	Q503	B-2
CN165	G-11	IC141	A-5	Q505	D-1
CN260	B-9	IC161	I-9	Q560	B-3
CN261	B-7	IC201	D-5	Q603	J-2
CN301	B-4	IC202	E-5	Q604	J-3
CN302	B-5	IC260	B-8	Q605	J-4
CN341	B-10	IC301	B-5	Q606	J-2
CN423	C-12	IC340	B-10	Q731	H-13
CN603	H-1	IC360	B-11	Q801	B-8
CNJ980	A-2	IC500	C-1	Q802	E-10
CNJ981	A-1	IC501	D-1	Q803	E-9
		IC601	E-12	Q804	E-9
		IC733	H-13	Q805	E-9
D103	F-6	IC871	I-6	Q806	E-8
D107	G-8	IC980	B-1	Q807	E-8
D109	F-4			Q808	E-8
D161	J-8	PH101	H-8	Q809	D-8
D370	C-10	PH102	H-4	Q810	E-8
D379	A-11			Q851	C-8
D502	C-1	Q101	F-1	Q852	C-8
D503	C-2	Q102	F-10	Q853	D-8
D504	C-2	Q103	F-5	Q854	D-8
D560	B-3	Q140	H-10	Q855	D-8
D561	A-10	Q201	C-3	Q856	D-8
D611	J-3	Q204	C-3	Q857	D-8
D612	J-3	Q205	C-3	Q871	I-5
D614	J-3	Q208	D-4	Q872	I-5
D702	F-12	Q209	E-4	Q873	I-5
D801	D-9	Q210	E-5	Q874	I-5
D802	D-9	Q211	D-6	Q875	H-5
D980	A-2	Q214	D-6		
D981	A-2	Q260	B-7		

MA-335 BOARD



	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	⇒	⇒	⇒	⇒
PB	⇒	⇒	⇒	⇒

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.  
(In addition to this, the necessary note is printed in each block.)

- For printed wiring boards.
- Pattern from the side which enables seeing.

**Caution :**  
Pattern face side: Parts on the pattern face side (Conductor Side) seen from the pattern face are indicated.  
Pattern face side: parts on the parts face side seen (Component Side) from the parts face are indicated.

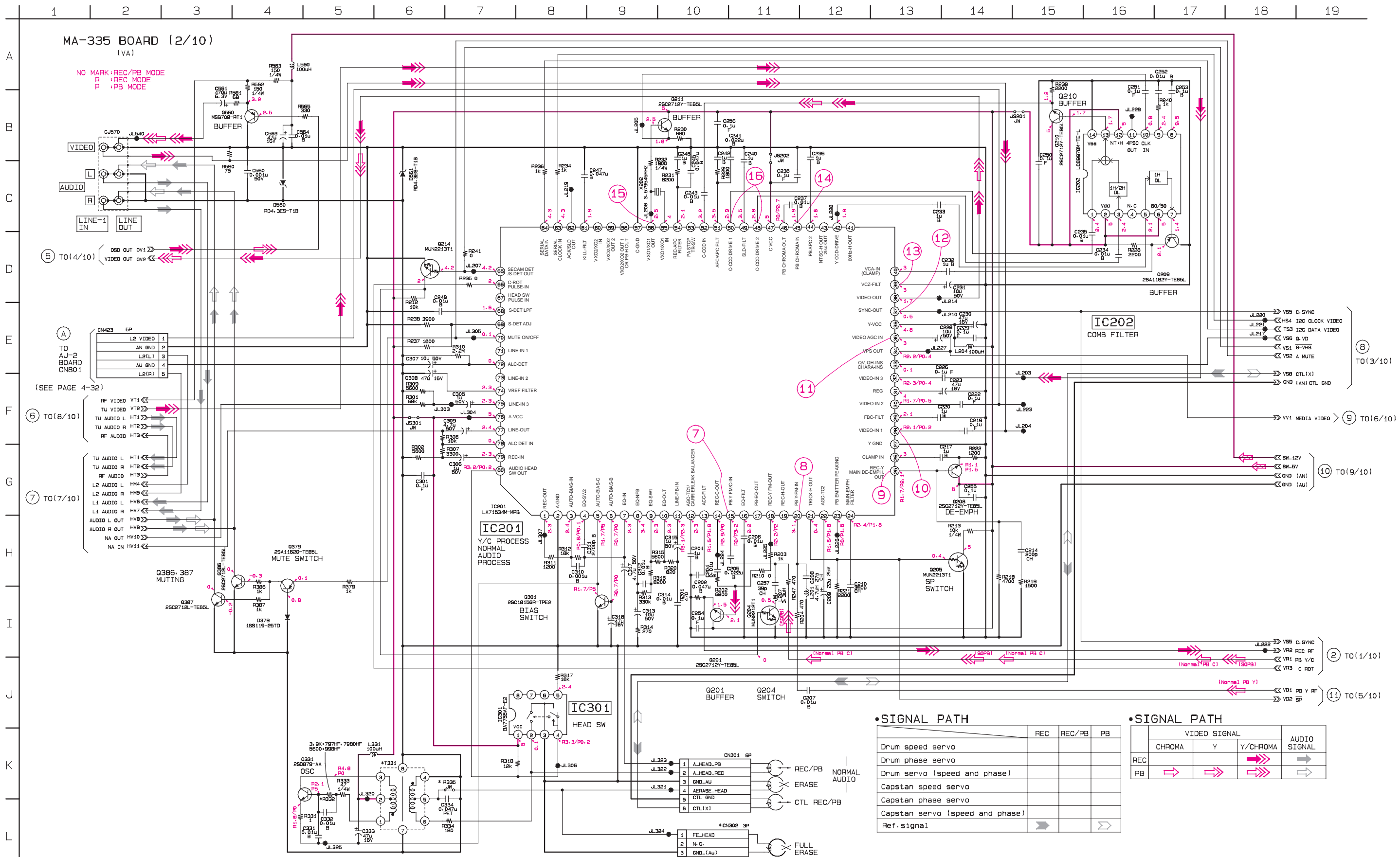
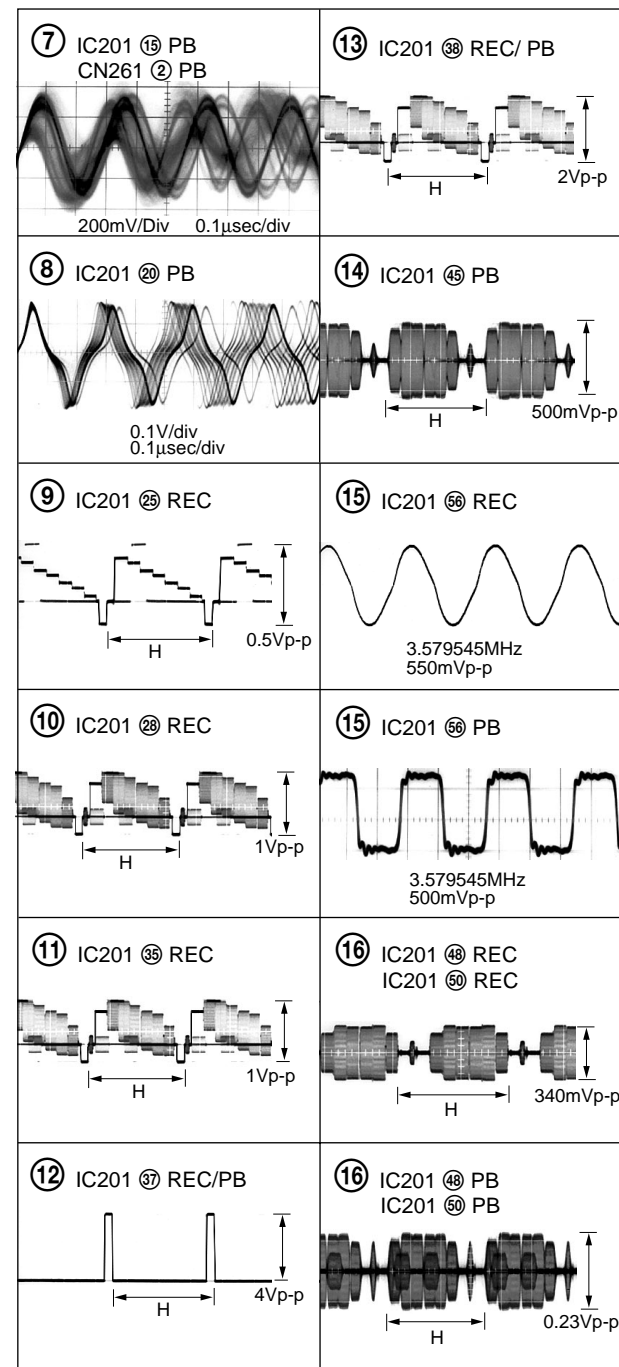
- For schematic diagrams.
- Caution when replacing chip parts.  
New parts must be attached after removal of chip.  
Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistor are in ohms, 1/4W unless otherwise noted.  
Chip resistor are 1/10W unless otherwise noted.  
kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF: μF. 50V or less are not indicated except for electrolytics and tantalums.
- Panel designation.
- △: internal component.
- B+ Line. \*
- B- Line. \*
- IN/OUT direction of (+,-) B LINE. \*
- Circled numbers refer to waveforms. \*
- Readings are taken with a color-bar signal input.
- Voltage are dc between ground and measurement points.\*
- Readings are taken with a digital multimeter (DC10MΩ).\*
- Voltage variations may be noted due to normal production tolerances.\*

When indicating parts by reference number, please include the board name.

- \*: indicated by the color red.

- See page 4-3 for MA-335 BOARD printed wiring board.







## MA-335 BOARD



## • SIGNAL PATH








	REC	REC/PB	PB
Drum speed servo			
Drum phase servo			
Drum servo (speed and phase)			
Capstan speed servo			
Capstan phase servo			
Capstan servo (speed and phase)			
Ref. signal	➡		➡

## •SIGNAL PATH



	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC				
PB				






	REC	REC/PB	PB
Drum speed servo			
Drum phase servo			
Drum servo (speed and phase)			
Capstan speed servo			
Capstan phase servo			
Capstan servo (speed and phase)			
Ref. signal			

Note:

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

Note:

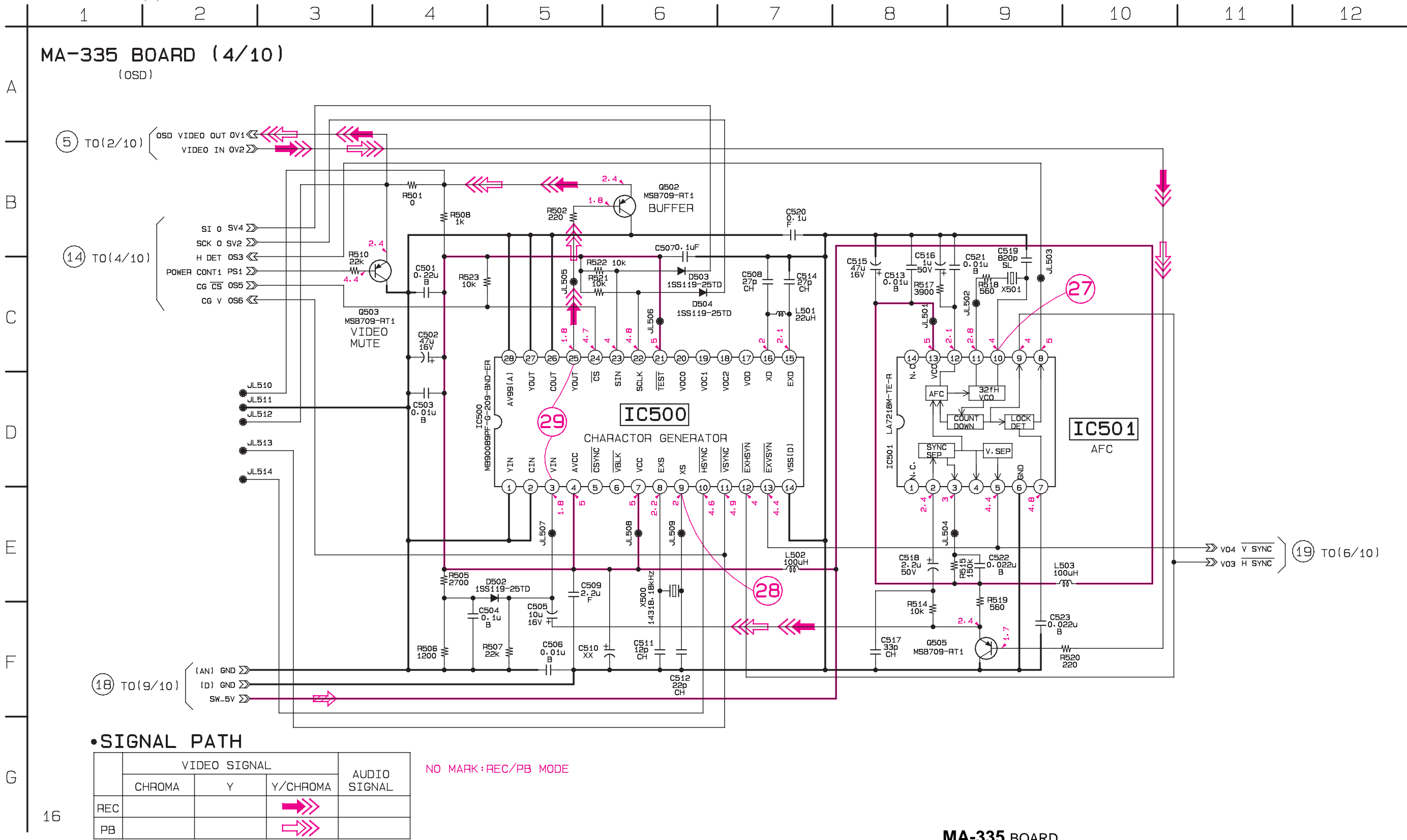
Les composants identifiés par une marque  sont critiques pour la sécurité.

Ne les remplacer que par une pièce portant le numéro spécifié.

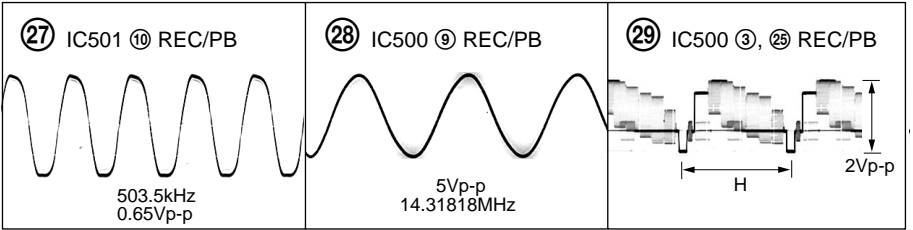
<p>17 IC161 ① REC/PB</p> <p>18 IC161 ⑩</p> <p>5Vp-p 30Hz</p>	<p>23 IC161 ⑥ REC/PB</p> <p>5Vp-p 30Hz</p>
<p>19 IC161 ④ REC/PB</p> <p>3Vp-p 16MHz</p>	<p>24 IC161 ⑥ REC/PB</p> <p>5Vp-p 360Hz</p>
<p>20 IC161 ⑦ REC/PB</p> <p>5Vp-p 1.078kHz</p>	<p>25 IC161 ⑦ REC</p> <p>4Vp-p 30Hz</p>
<p>21 IC161 ⑦ REC/PB</p> <p>5Vp-p 360Hz</p>	<p>26 IC161 ⑦ REC</p> <p>5Vp-p 30Hz</p>
<p>22 IC161 ⑦ REC/PB</p> <p>5Vp-p 360Hz</p>	

MA-335 (ON SCREEN DISPLAY) SCHEMATIC DIAGRAM  
— Ref. No.: MA-335 Board; 1,000 Series —

• See page 4-3 for MA-335 BOARD printed wiring board.



MA-335 BOARD



1      2      3      4      5      6      7      8      9      10

```

R      : REC  MODE
P      : PB   MODE

```




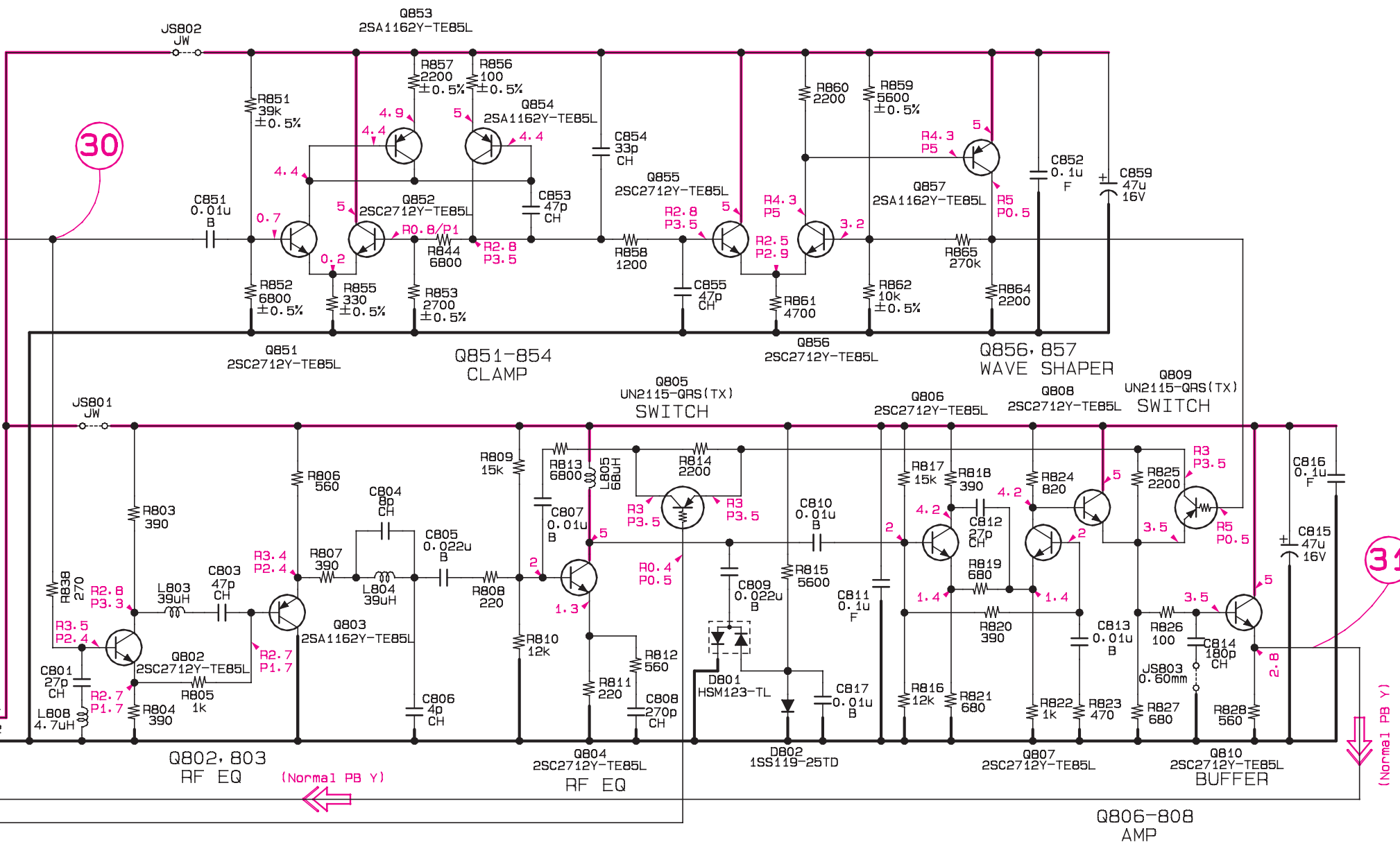
(Normal PB Y)

SW\_5V → JL801  
(AN) GND → JL802

Y RF VD1  $\Leftarrow$  JL803  
SP VD2  $\Rightarrow$  JL804

## 16

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC				
PB				

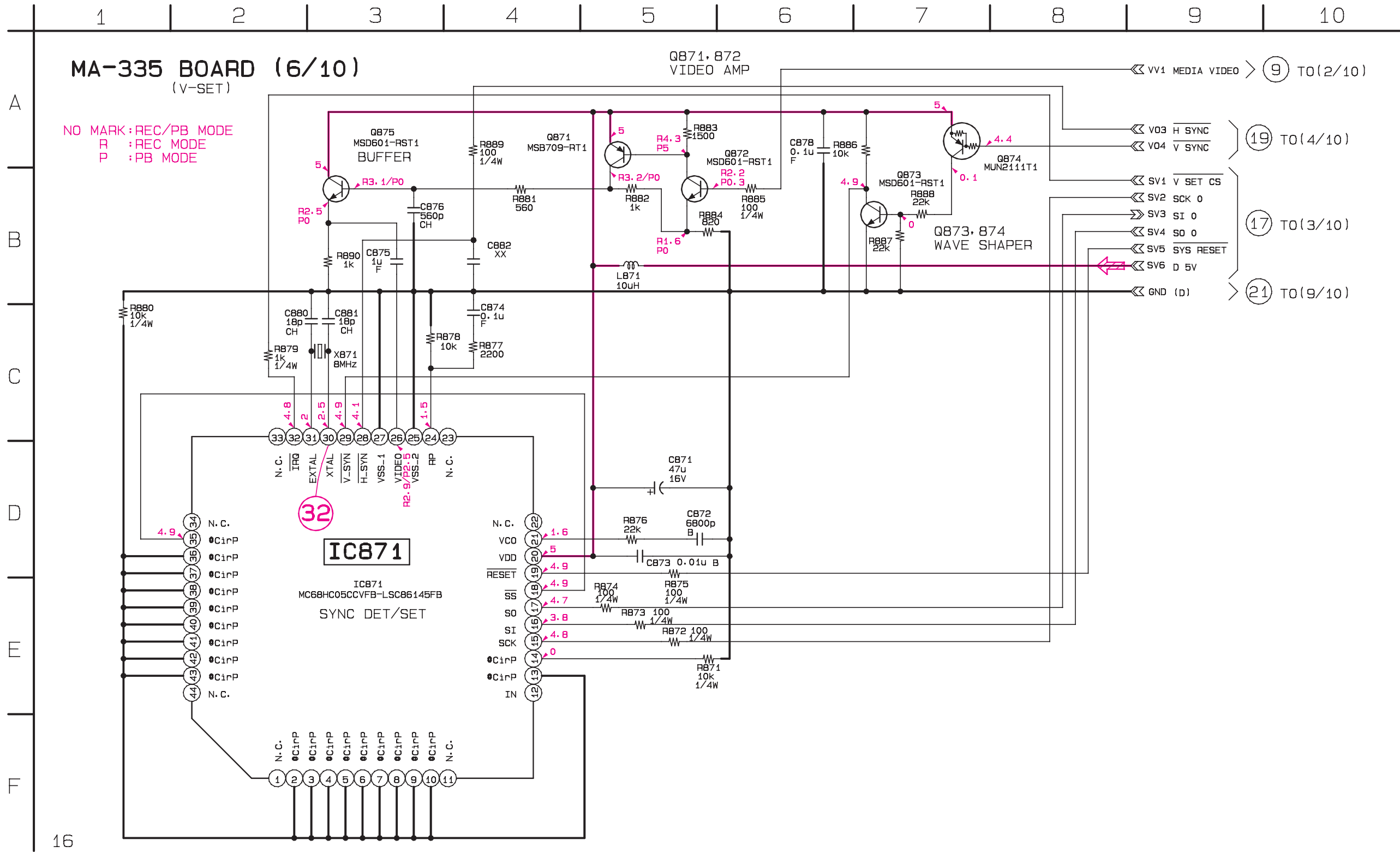


30 Q802 @ PB  
0.2V/div  
0.1μsec/div

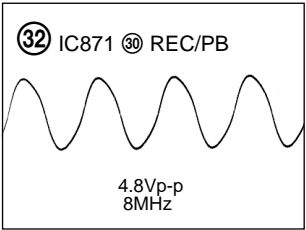
31 Q810 @ PB  
0.1V/div  
0.1μsec/div

MA-335 (V-SET) SCHEMATIC DIAGRAM  
— Ref. No.: MA-335 Board; 1,000 Series —

• See page 4-3 for MA-335 BOARD printed wiring board.



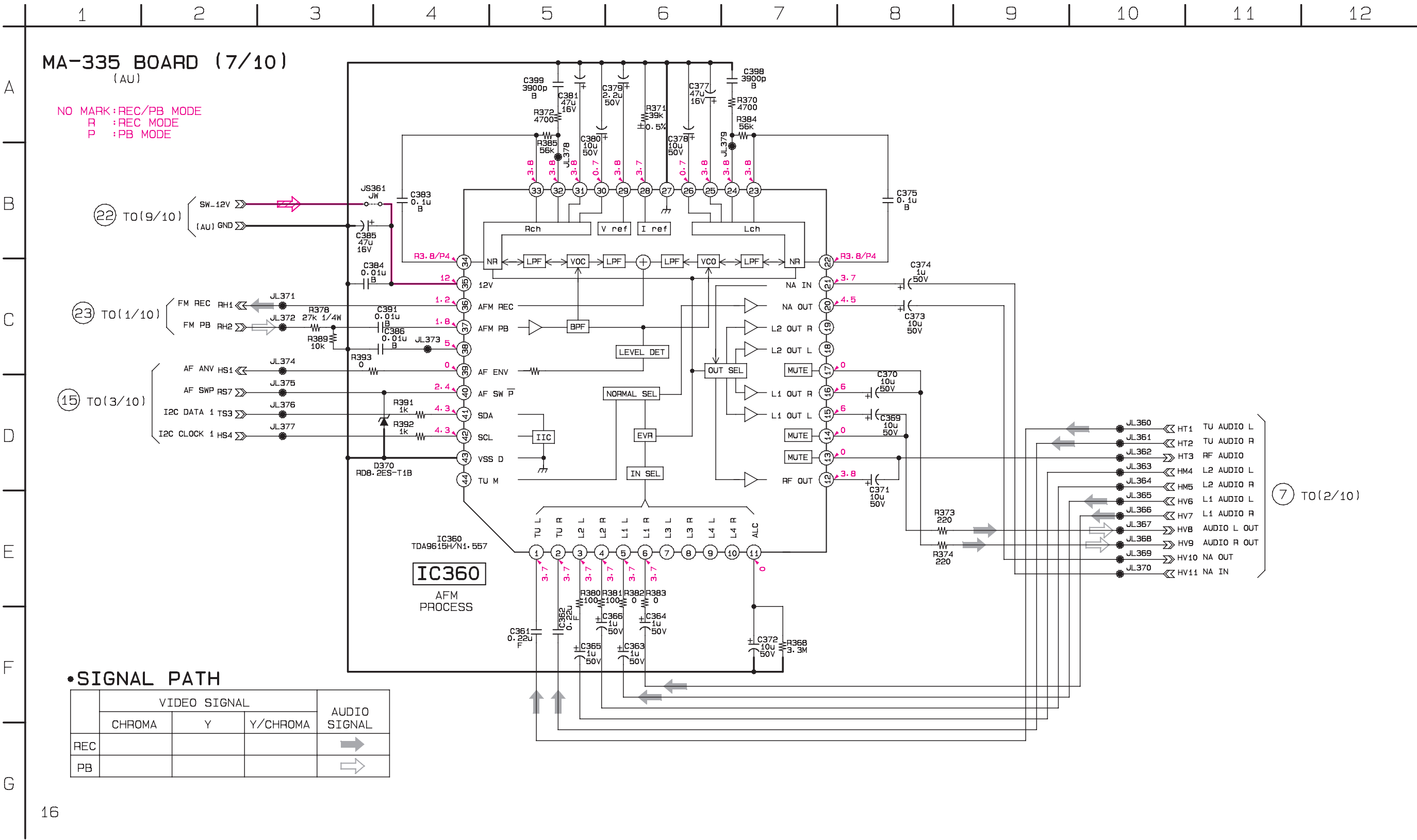
MA-335 BOARD



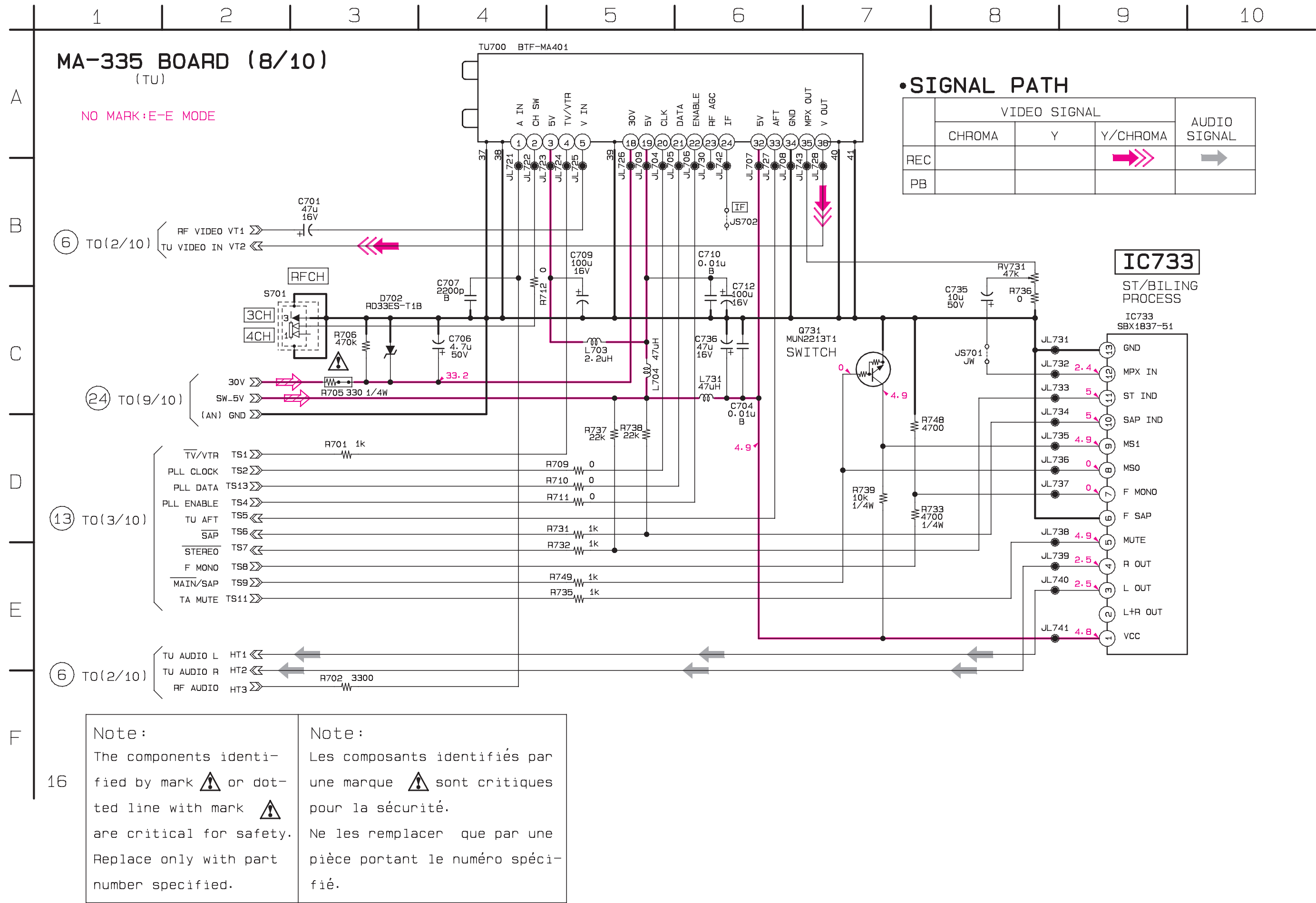
MA-335 (AFM AUDIO) SCHEMATIC DIAGRAM

— Ref. No.: MA-335 Board; 1,000 Series —

• See page 4-3 for MA-335 BOARD printed wiring board.



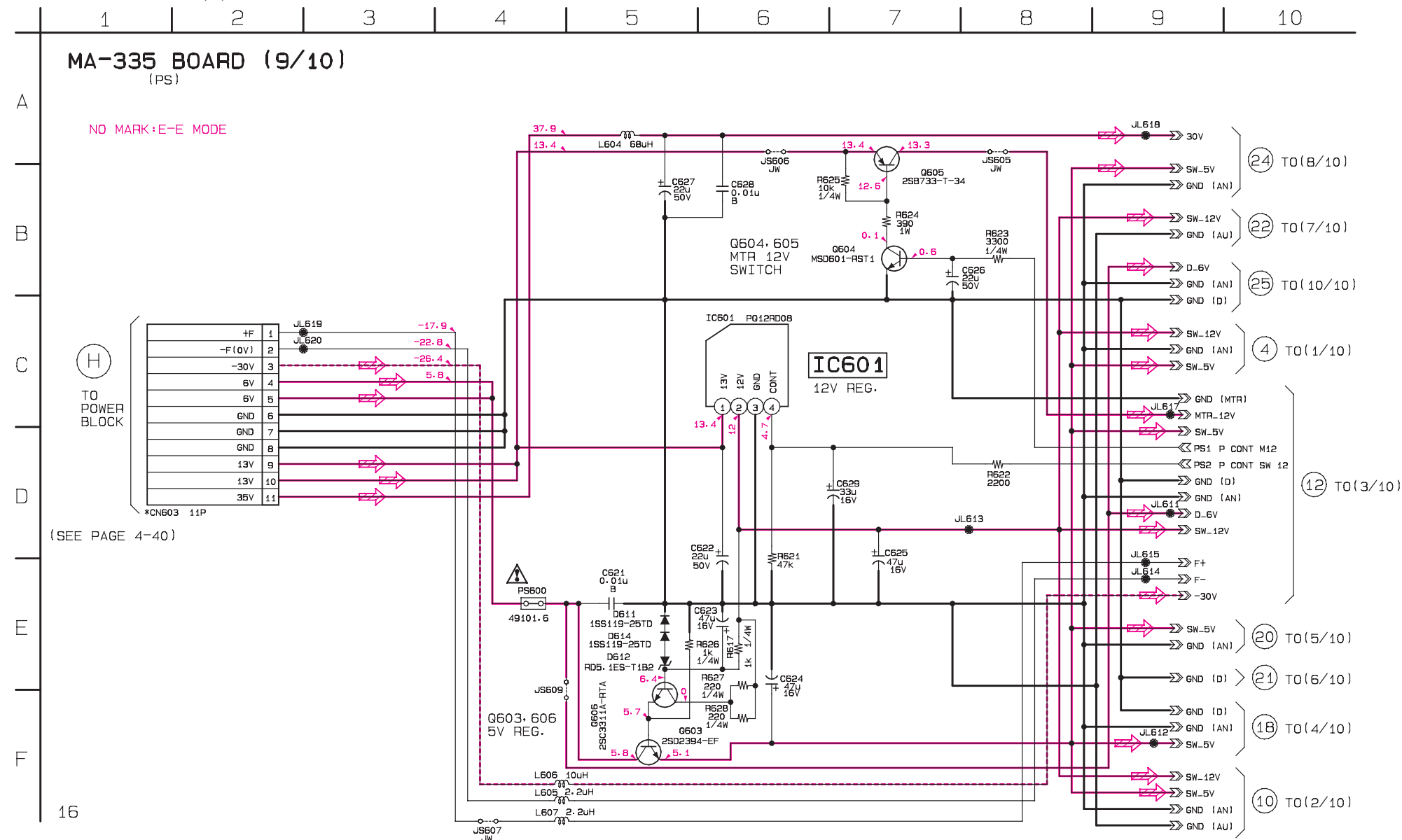






### MA-335 (POWER SUPPLY, AV-BUS) SCHEMATIC DIAGRAM


- See page 4-3 for MA-335 BOARD printed wiring board.

— Ref. No.: MA-335 Board; 1,000 Series —

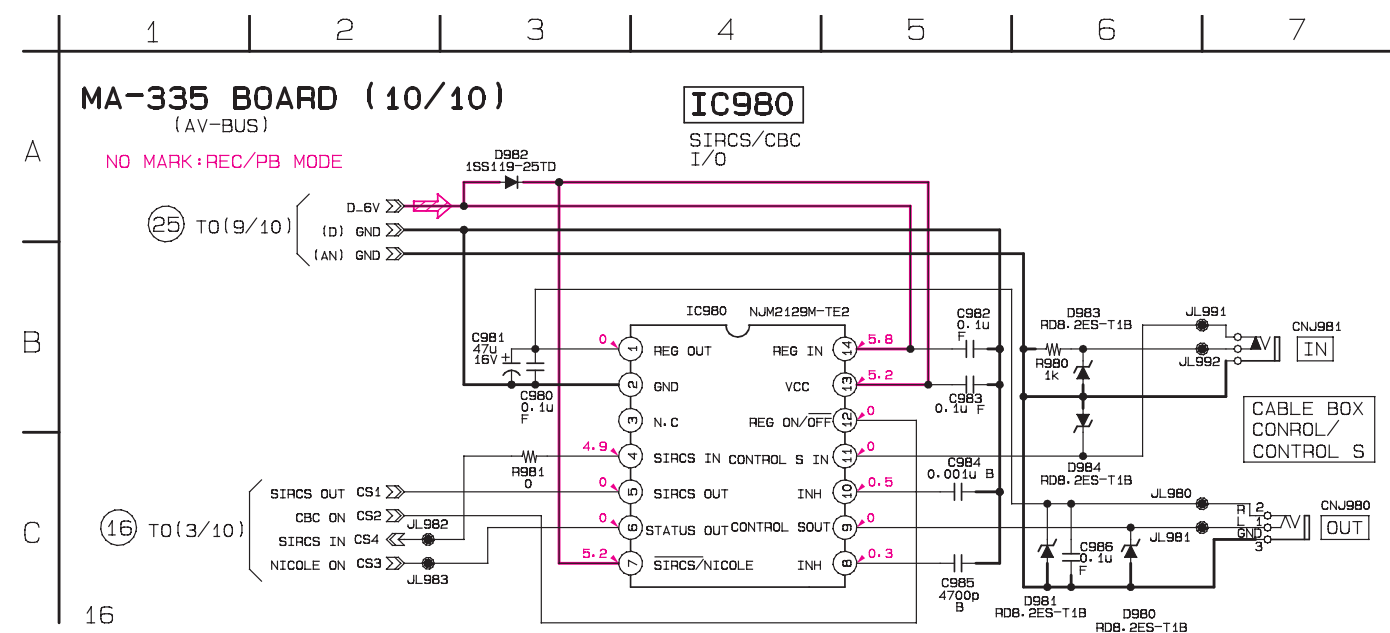


**Note:**  
The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

Note :

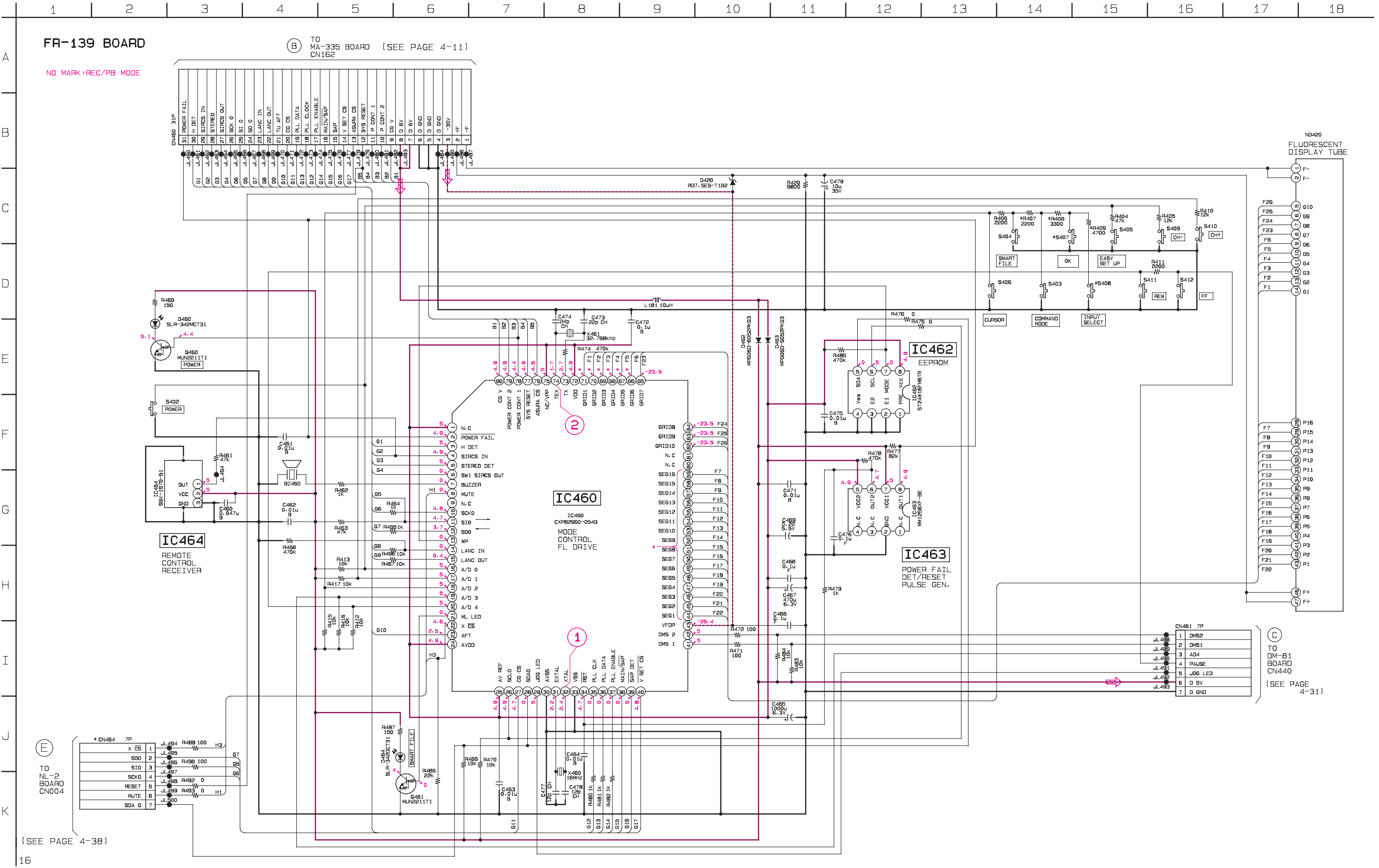
Les composants identifiés par une marque  sont critiques pour la sécurité.

Ne les remplacer que par une pièce portant le numéro spécifié.



FR-139 (MODE CONTROL) SCHEMATIC DIAGRAM

— Ref. No.: FR-139 Board; 2,000 Series —

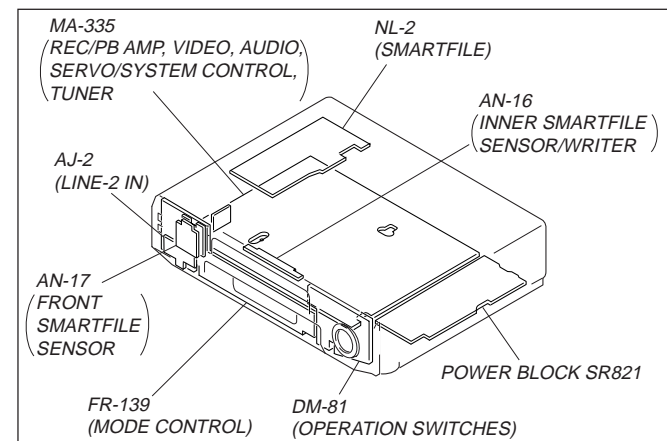
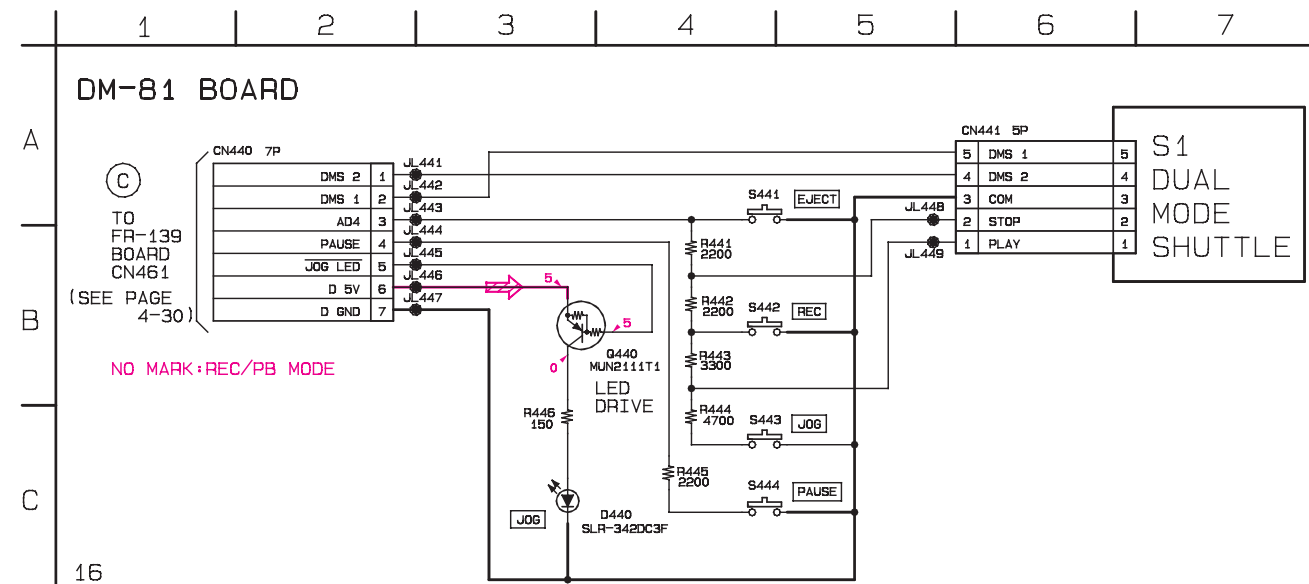
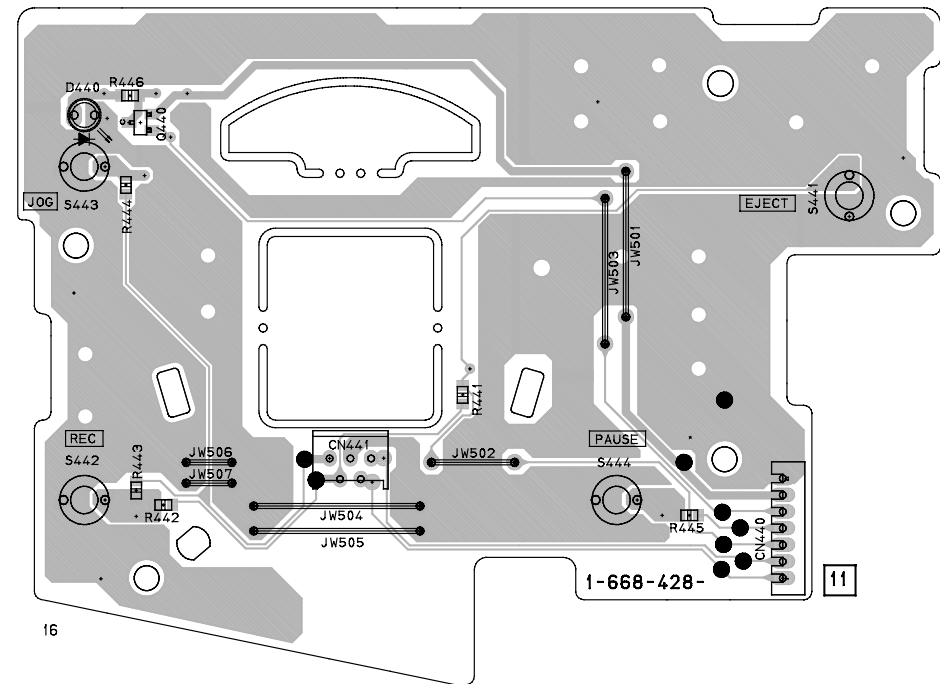


There are few cases that the part printed on this diagram isn't mounted in this model.

## DM-81 (OPERATION SWITCHES) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

— Ref. No.: DM-81 Board; 2,000 Series —

## DM-81 BOARD (CONDUCTOR SIDE)



## OPERATION SWITCHES

### DM-81

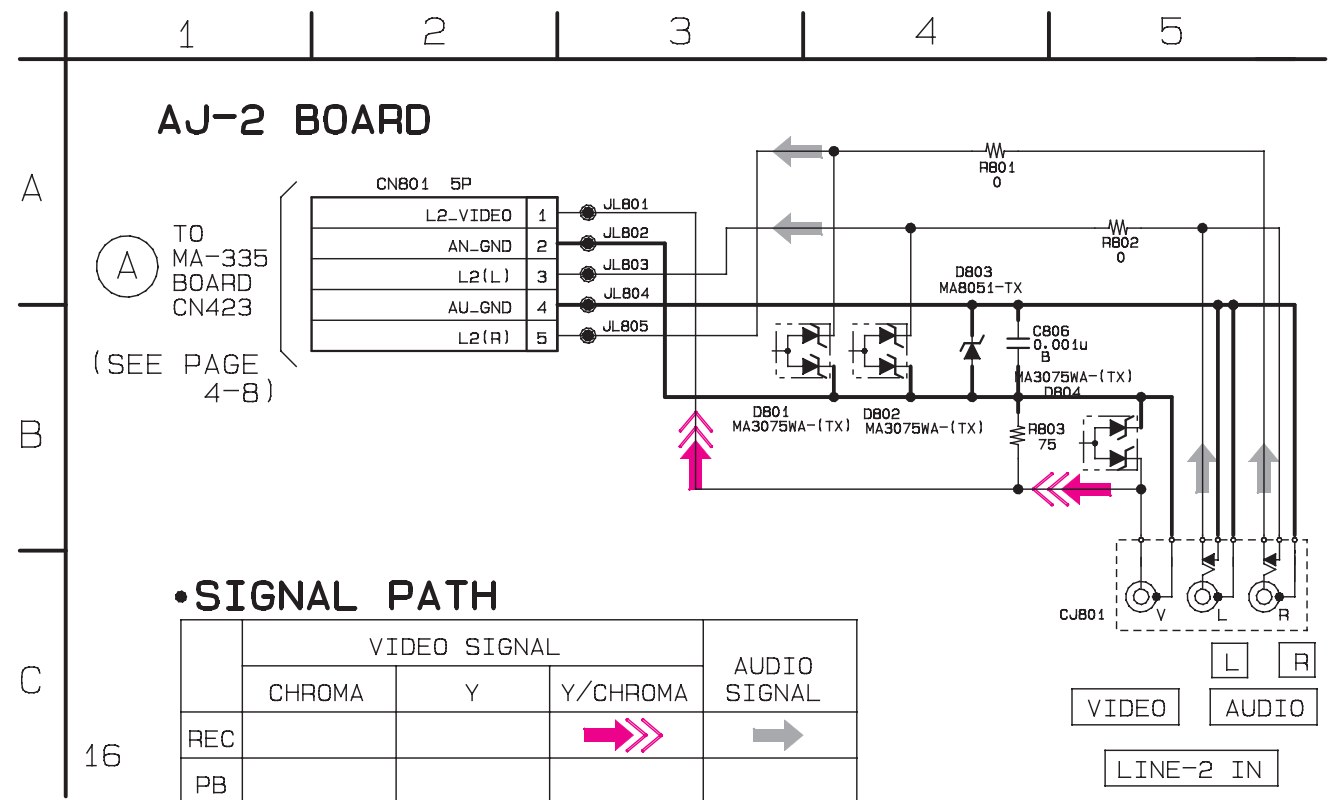
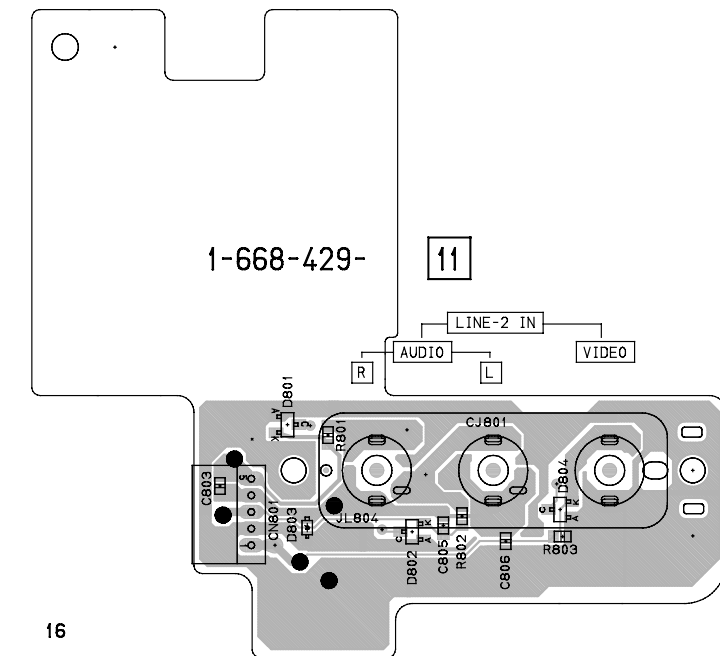
4-31

There are few cases that the part printed on this diagram isn't mounted in this model.

## AJ-2 (LINE-2 IN) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

— Ref. No.: AJ-2 Board; 3,000 Series —

AJ-2 BOARD (CONDUCTOR SIDE)



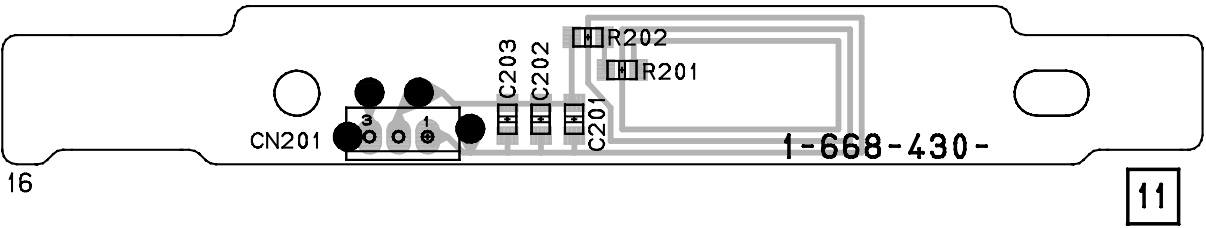
LINE-2 IN  
AJ-2

4-32

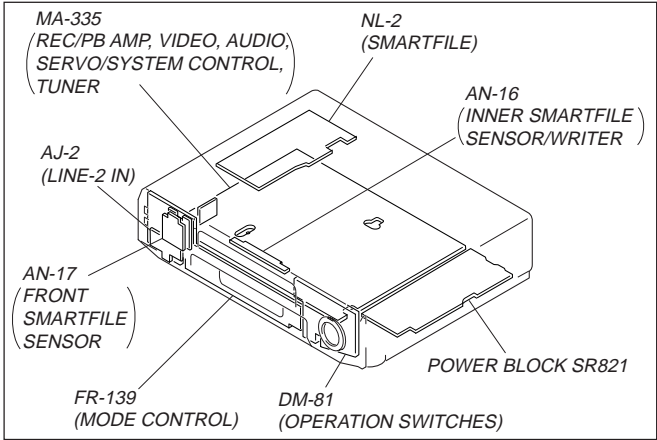
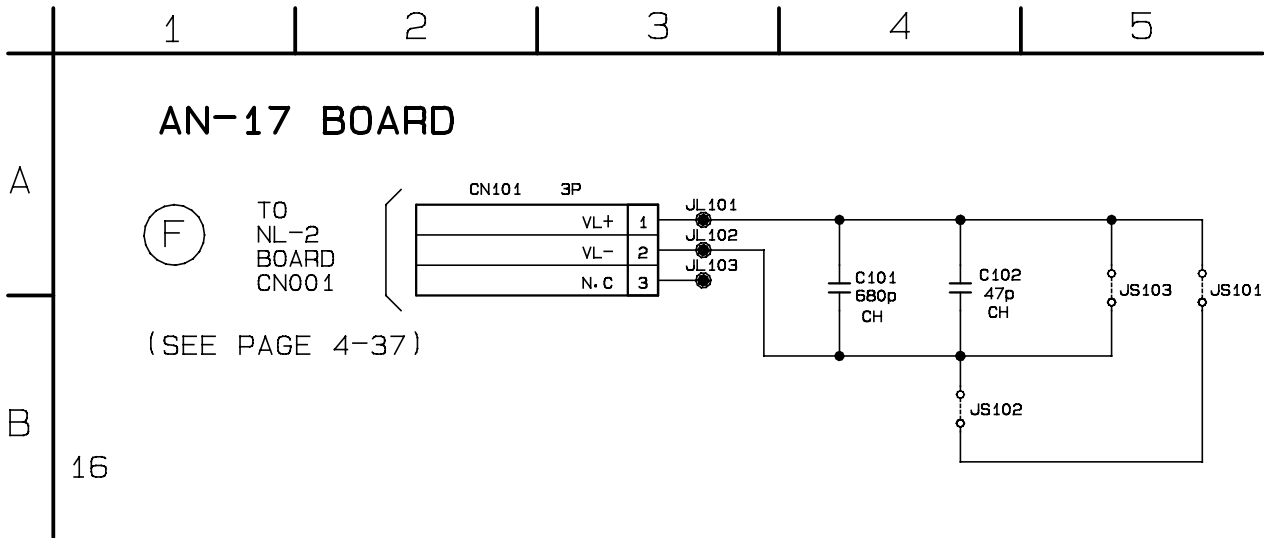
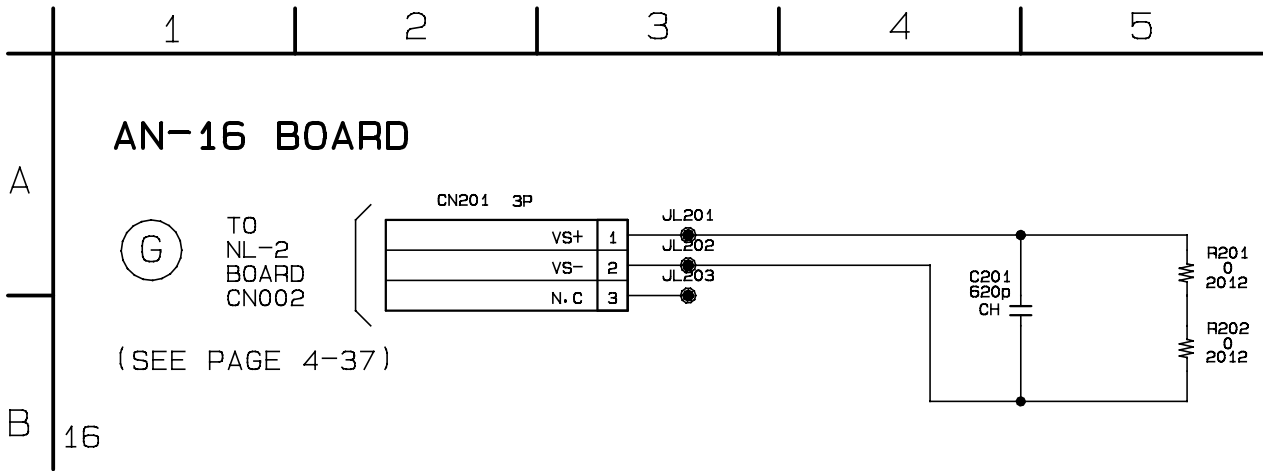
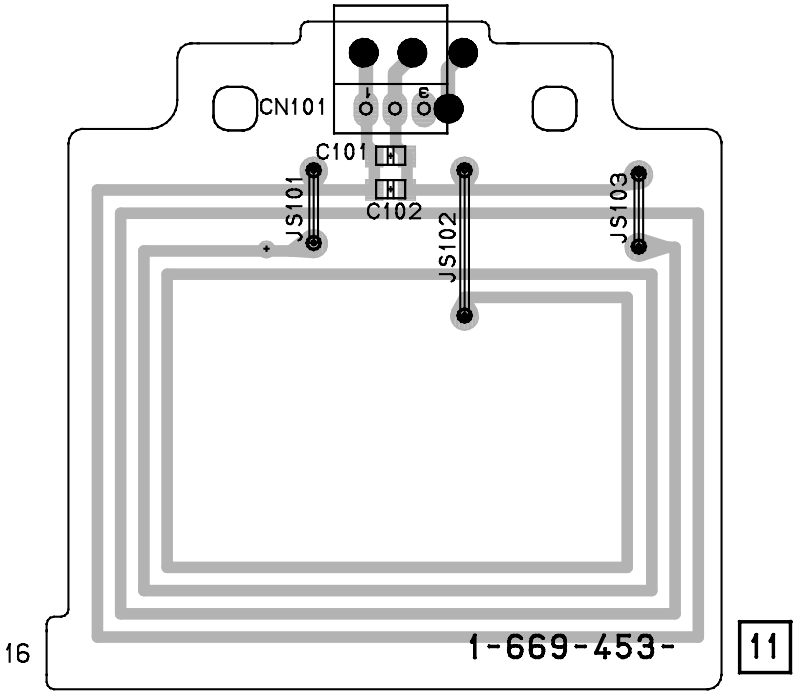
AN-16 (INNER SMARTFILE SENSOR/WRITER), AN-17 (FRONT SMARTFILE SENSOR) PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS  
— Ref. No.: AN-16, AN-17 Board; 3,000 Series —

There are few cases that the part printed on this diagram isn't mounted in this model.

AN-16 BOARD (CONDUCTOR SIDE)



AN-17 BOARD  
(CONDUCTOR SIDE)



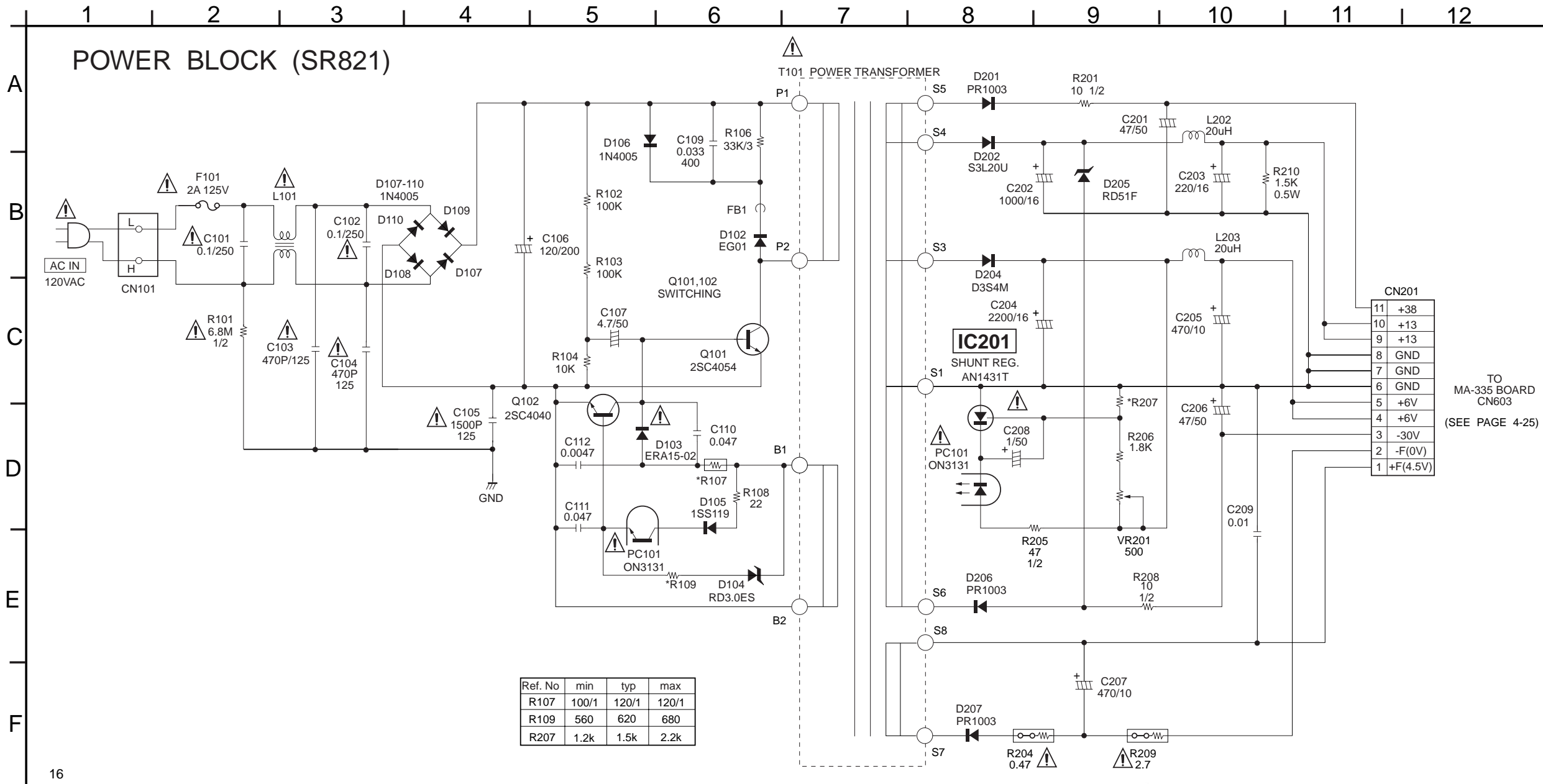
— Ref. No.: NL-2 Board; 3,000 Series —





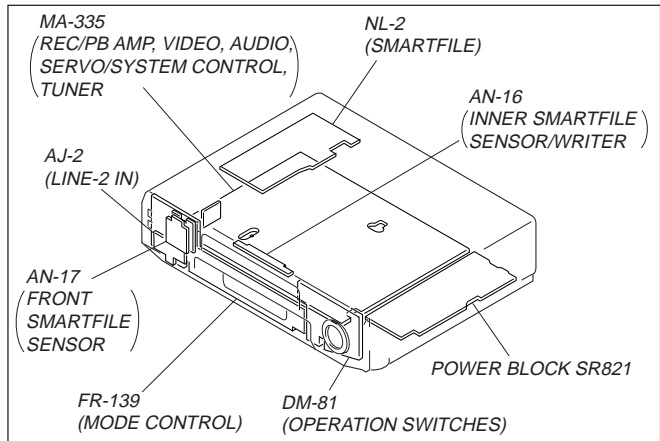
POWER BLOCK SR821 (SWITCHING REGULATOR) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM  
— Ref. No.: SR821 Board; 9,000 Series —

There are few cases that the part printed on this diagram isn't mounted in this model.

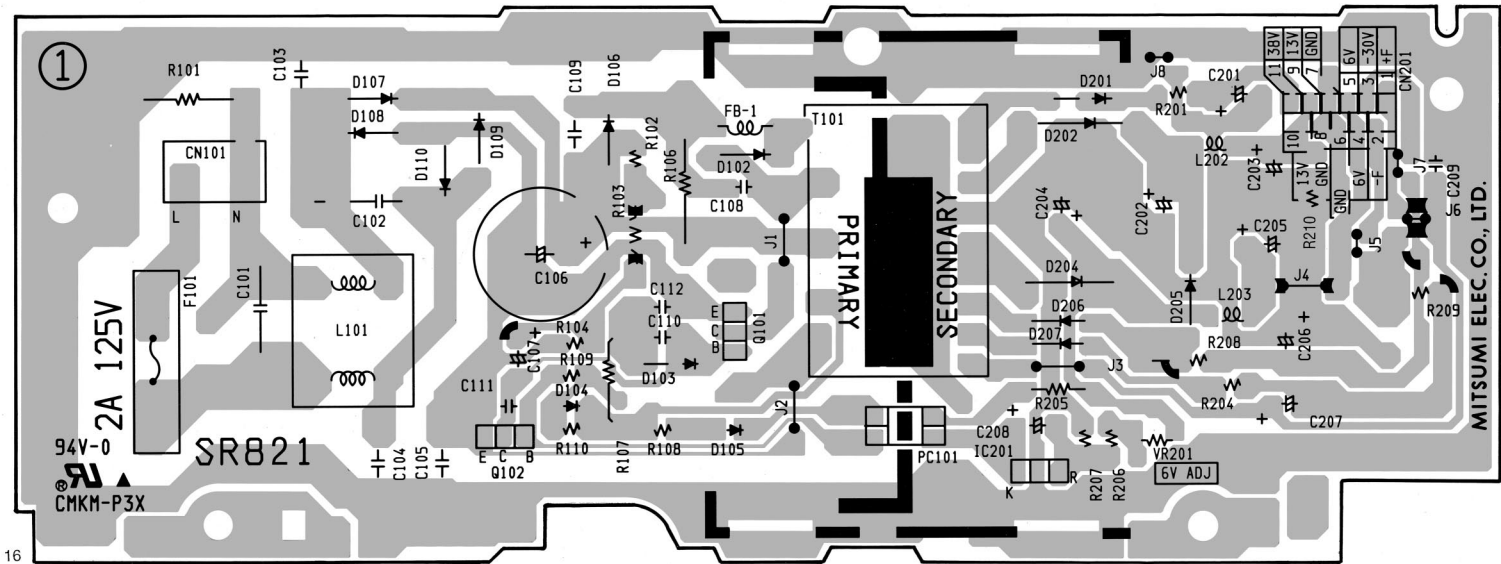


**Note :**  
The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety.  
Replace only with part number specified.

**Note :**  
Les composants identifiés par une marque  $\triangle$  sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.



SR821 (CONDUCTOR SIDE)



SECTION 5  
INTERFACE, IC PIN FUNCTION DESCRIPTION

5-1. SYSTEM CONTROL — VIDEO BLOCK INTERFACE (MA-335 BOARD IC161)

Signal	Pin No.	I/O	STOP FF/REW	TAPE THREADING	TAPE UNTHREADING	PB	PB PAUSE	SLOW	x 2	CUE	REVIEW	REC	REC PAUSE
RF SWP	①	O	*1	*1		*1	*1	*1	*1	*1	*1	*1	*1
QVD	④	O	L	L		*2	*3	*3	*3	*3	*3	L	L
V SYNC	⑥	I	*4	*5		*5	*5	*5	*5	*5	*5	*5	*5
NT JUDGE	⑬	O	L	L		L	L	L	L	L	L	L	L

- \*1 Synchronized with drum rotation. 30Hz 50% duty cycle.  
\*2 Normally "L". "H" when CTL signal is not generated.  
\*3 V period "H" pulse.  
\*4 Selected by REC mode. "H" in LP mode."  
\*5 Composite sync signal (positive).

5-2. SYSTEM CONTROL — SERVO PERIPHERAL CIRCUIT INTERFACE (MA-335 BOARD IC161)

Signal	Pin No.	I/O	STOP	FF	REW	TAPE THREADING	TAPE UNTHREADING	PB	PB PAUSE	SLOW	CUE	x 2	REVIEW	REC	REC PAUSE
REC CTL	⑦	O	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	*1	Hi-Z
CAP STOP	⑨	O(O.D)	L	Hi-Z(O.D)	Hi-Z(O.D)	Hi-Z(O.D)	Hi-Z(O.D)	Hi-Z(O.D)	L	*3	Hi-Z(O.D)	Hi-Z(O.D)	Hi-Z(O.D)	Hi-Z(O.D)	Hi-Z(O.D)
STEP PLS	⑩	O	L	L	L	L	L	L	L	*2	L	L	L	L	L
PB CTL	⑬	I	H	*6	*6			*1	H/L	*2	*6	*6	*6	*1	H
DRM PG	⑮	I	*4	*1	*1	*5	*5	*1	*1	*1	*1	*1	*1	*1	*1
DRM FG	⑮	I	*4	*7	*7	*5	*5	*7	*7	*7	*7	*7	*7	*7	*7
CAP FG	⑰	I	H/L	*6	*6	*5	*5	*6	H/L	*2	*6	*6	*6	*6	H/L
CAP DA	⑲	O	*8	*8	*8	*8	*8	*9	*8	*8	*9	*8	*9	*9	*8
DRM DA	⑲	O	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10
CTL RESET	⑳	I/O	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	*11	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z

- \*1. 30Hz pulse.  
\*2. Pulse at tape running.  
\*3. Reverse logic pulse of STEP PLS.  
\*4. "L" when drum rotation stops.  
\*5. Unstable period pulse.  
\*6. Pulse in period in proportional to tape speed.  
\*7. 360Hz pulse.  
\*8. Pulse at tape running.  
\*9. Approx. 2 msec period "H" or "L" pulse.  
\*10. Approx. 1.5 msec period "H" or "L" pulse.  
\*11. "L" when FWD SLOW, "H" when RVS SLOW.



5-3. SYSTEM CONTROL — MECHANISM INTERFACE (MA-335 BOARD IC161)

Signal	Pin No.	I/O	EJECTED	CASSETTE LOADING	CASSETTE UNLOADING	TAPE THREADING	TAPE UNTHREADING	STOP	FF	REW	PB	PB PAUSE	SLOW	x 2	CUE	REVIEW	REC	REC PAUSE
CAM2	①	Hi-Z	L	H	L	H	L	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7
MODE 1 (*8)	②	I	H	L	L	*1	*1	H	H	H	H	H	H	H	H	L	H	H
MODE 2 (*8)	③	I	H	L	L	*1	*1	H	H	H	L	L	L	L	L	L	L	L
MODE 3 (*8)	④	I	L	L	L	*1	*1	H	L	L	L	L	L	L	L	H	L	L
MODE 4 (*8)	⑤	I	L	H	H	*1	*1	L	H	H	H	L	L	L	L	L	L	L
(IN REC PRF)	⑥	I	H	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2
T REEL FG	⑦	I	H/L	H/L	H/L	H/L	H/L	H/L	*3	*3	*3	H/L	*3	*3	*3	*3	*3	H/L
S REEL FG	⑧	I	H/L	H/L	H/L	*3	*3	H/L	*3	*3	*3	H/L	*3	*3	*3	*3	*3	H/L
T/E LED	⑨	O (O.D)	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4
CAP STOP	⑩	O (O.D)	L	L	L	H	H	L	H	H	H	L	L	H	H	H	H	L
CAP RVS	⑪	O	H			L	H	H/L	L	H	L	L	L <sup>#5</sup>	L	L	H	L	L
T SENS	⑫	I	*4	*4	*4	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6
S SENS	⑬	I	*4	*4	*4	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6

- \*1. Uncertainly.

\*2. "L" when erasing protection tab is bent. "H" when not bent.

\*3. Pause of period in proportion to reel rotating speed.

\*4. Approx. 2 msec period "H" pulse.

\*5. Pulse at tape running.

\*6. Normally "L". 2 msec period "H" pulse when tape top or tape end is detected.
- \*7. When transition to UNLOADING direction : "L".  
When transition to LOADING direction : "H".  
When CAM MOTOR is stopped : Hi-Z.

\*8. When RVS slow : Mode 1="L"  
When RVS slow : Mode 2="L"  
When RVS slow : Mode 3="H"  
When RVS slow : Mode 4="L"

5-4. SYSTEM CONTROL — SYSTEM CONTROL PERIPHERAL CIRCUIT INTERFACE (MA-335 BOARD IC161)

Signal	Pin No.	I/O	I/O Level
ASURA RESET	⑭	I	Normally "H". "L" when service interruption is detected or restored.
ASURA CS	⑮	I	Chip select signal from timer microprocessor. V period "L" pulse.
S IN 0	⑯	I	Serial communication data from timer microprocessor. V period "L" pulse.
S OUT 0	⑰	O	Serial communication data to timer microprocessor. V period "L" pulse.
S CLK	⑱	I	Serial communication clock from timer microprocessor. V period "L" pulse.

5-5. SYSTEM CONTROL — AUDIO BLOCK INTERFACE (MA-335 BOARD IC161)

Signal	Pin No.	I/O	STOP/FF/ REW	TAPE LOADING	TAPE UNLOADING	PB	PB PAUSE	SLOW	x 2	CUE	REVIEW	REC	REC PAUSE
AF ENV	⑲	I											
A MUTE	⑳	O (O.D)	L	L	L	*1	H	H	H	H	H	L	L
AF REC P	㉑	O	L	L	L	L	L	L	L	L	L	H	L
AF SWP	㉒	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1
FULLERS	㉓	O (O.D)	H	H	H	H	H	H	H	H	H	L	H

- \*1. 30 Hz 50 % duty pulse approx. 5 msec delayed from RF SW P.

## 5-6. SERVO/SYSTEM CONTROL MICROPROCESSOR PIN FUNCTIONS (MA-335 BOARD IC161)

Pin No.	Pin Name	I/O	Function
1	RF SWP	O	RF switching pulse output.
2	AF REC $\overline{P}$	O	“H” when HiFi audio REC.
3	N.C.	—	Not used.
4	QVD	O	Quasi VD pulse output.
5	AUTO PRESET	O	“H” during auto preset.
6	FE ON	O	Flying erase ON/OFF
7	REC CTL	O	REC CTL signal output.
8	CTL RESET	O	Capstan current control. “H” during slow mode.
9	CAM 2	I	Cam motor control.
10	N.C.	—	Not used.
11	TA MUTE	O	Tuner audio mute. H: Mute
12	$\overline{S-VHS}$	I	S-VHS tape detection signal in.
13	NT JUDGE	I	Not used.
14	MESECAM DET	I	Not used.
15	CIN (REC PRF)	I	Erasing protection tab, cassette in detection signal input.
16	AV CONT	O	Not used.
17	$\overline{SECAM ON}$	—	Not used.
18	SW1	—	Not used.
19	MODE 4	I	Cam encoder signal input.
20	MODE 3	I	Cam encoder signal input.
21	MODE 2	I	Cam encoder signal input.
22	MODE 1	I	Cam encoder signal input.
23	POWER SAVE CONT 1	O	Not used.
24	POWER SAVE C+	O	Not used.
25	MOD CONT	O	Not used.
26	$\overline{TV/VTR}$	O	$\overline{TV/VTR}$ control signal output.
27	N.C.	—	Not used.
28	SDA 0	I/O	I <sup>2</sup> C data.
29	N.C.	—	Not used.
30	SCL 0	I/O	I <sup>2</sup> C clock.
31	A MUTE	O	“H” when audio mute.
32	T/E LED	O	Tape top/end sensors driver.
33	N.C.	—	Not used.
34	N.C.	—	Not used.
35	$\overline{CAP STOP}$	O	Capstan stop signal output.
36	FULL ERS	O	Full erase control.
37	N.C.	—	Not used.
38	N.C.	—	Not used.
39	MP	I	Fixed to “L”.
40	$\overline{ASURA RESET}$	I	System reset signal.
41	VSS	—	Ground.
42	XTAL	O	System clock 16MHz.
43	EXTAL	I	System clock 16MHz.
44	$\overline{ASURA CS}$	I	Servo/system control microcomputer chip select signal.
45	S IN 0	I	Serial communication signal.
46	S OUT 0	O	Serial communication signal.
47	$\overline{SCLK}$	I	Serial communication signal.
48	NICOL ON	O	NICOL control signal out.
49	CBC POWER	O	Cable box control signal out.
50	F. MONO	O	Forced mono.

Pin No.	Pin Name	I/O	Function
51	SW2	O	Not used.
52	AVSS	—	Unswitched ground.
53	AVREF	—	AD port reference input UNSW 5V.
54	AVDD	—	UNSW 5V.
55	NTPB SW	I	Not used.
56	AV ADJ	I	Adjustment mode.
57	$\overline{FOLLOW TV}$	I	Not used.
58	N.C.	—	Not used.
59	AF ENV	I	HiFi audio playback signal envelope.
60	RF ENV	I	Video playback signal envelope.
61	T SENS	I	Take-up end sensor.
62	S SENS	I	Supply end sensor.
63	S REEL FG	I	Supply reel FG input.
64	T REEL FG	I	Take-up reel FG input.
65	N.C.	—	Not used.
66	VSYNC	I	Composite sync. signal input.
67	$\overline{PB CTL}$	I	Playback CTL input.
68	DRM PG	I	Drum PG input.
69	DRM FG	I	Drum FG input.
70	CAP FG	I	Capstan FG input.
71	BLUE BACK ON	O	Not used.
72	CAP RVS	O	Capstan reverse control “H” when reverse.
73	CAP DA	O	Capstan error D/A output.
74	DRM DA	O	Drum PG output.
75	N.C.	—	Not used.
76	N.C.	—	Not used.
77	REC COUNT	I	Counter signal input when recording.
78	C PLUS DET	O	Not used.
79	N.C.	—	Not used.
80	DATA (SSB)	O	Serial communication data.
81	CLOCK (SSB)	O	Serial communication clock.
82	N.C.	—	Not used.
83	N.C.	—	Not used.
84	CAP TRQ PWM	O	PWM output for capstan torque control.
85	N.C.	—	Not used.
86	N.C.	—	Not used.
87	N.C.	—	Not used.
88	VSS	—	Ground.
89	VDD	—	5V.
90	5V	—	5V.
91	N.C.	—	Not used.
92	CTL HYS HIGH	O	CTL amp gain control.
93	N.C.	—	Not used.
94	N.C.	—	Not used.
95	N.C.	—	Not used.
96	AF REC	O	“H” output when hifi audio recording.
97	N.C.	—	Not used.
98	N.C.	—	Not used.
99	STEP PLS	O	Step pulse “H” when capstan step driving.
100	AF SWP	O	AF switching pulse output.

## 5-7. TUNER/TIMER MODE CONTROL PIN FUNCTIONS (FR-139 BOARD IC460)

Pin No.	Pin Name	I/O	Function
1	N.C.	I	Not used.
2	POWER FAIL	I	Power failure detect signal input.
3	H DET	I	H DET_(TUNER H SYNC detect input).
4	SIRCS IN	I	Remote control signal (SIRCS) input.
5	STEREO DET	I	Stereo judge input.
6	SW1 SIRCS OUT	O	Remote control signal (SIRCS) output.
7	BUZZER	O	Buzzer signal output.
8	MUTE	O	MUTE control.
9	RESET	O	Not used.
10	SCK 0	I	Serial communication signal (Serial clock).
11	SI 0	I	Serial communication signal (Data input).
12	SO 0	O	Serial communication signal (Data output).
13	EEP $\overline{WC}$	O	EEP mode control.
14	LANC IN	I	LANC input.
15	LANC OUT	O	LANC output.
16	A/D 0	I	Analog voltage (KEY) input.
17	A/D 1	I	Analog voltage (KEY) input.
18	A/D 2	I	Analog voltage (KEY) Input.
19	A/D 3	I	Analog voltage (KEY) Input.
20	A/D 4	I	Analog voltage (KEY) Input.
21	ML LED	O	ML LED ON/OFF control.
22	X $\overline{CS}$	O	NL-2 board IC003 chip select signal out.
23	AFT	I	AFT (Auto fine tuning signal input).
24	AVDD	I	A/D port reference input.
25	AV REF		UNSW 5V.
26	SCL 0	O	T BUS (clock) /IIC BUS (clock).
27	CG CS	O	Character generator chip select signal.
28	SDA 0	O	IIC BUS (data).
29	JOG LED	O	JOG LED control signal output.
30	AVSS	I	UNSW ground.
31	EXTAL		System clock terminal (16MHz).
32	XTAL		System clock terminal (16MHz).
33	VSS		Ground.
34	$\overline{RST}$	I	RESET input.
35	PLL CLK	O	TUNER PLL clock.
36	PLL DATA	O	TUNER PLL data.
37	PLL ENABLE	O	TUNER chip select.
38	MAIN/SAP $\overline{P}$	O	NO USE (MAIN/SAP judge signal output).
39	$\overline{SAP}$ DET	O	MAIN/SAP judge input.
40	V SET $\overline{CS}$	O	V SET IC chip select signal.
41	DMS 1	I	DMS forward/reverse signal input.
42	DMS 2	I	DMS forward/reverse signal input.
43	VFDP	I	VFDP.
44	SEG1	O	Segment terminal 1
45	SEG2	O	Segment terminal 2
46	SEG3	O	Segment terminal 3
47	SEG4	O	Segment terminal 4
48	SEG5	O	Segment terminal 5
49	SEG6	O	Segment terminal 6

Pin No.	Pin Name	I/O	Function
50	SEG7	O	Segment terminal 7
51	SEG8	O	Segment terminal 8.
52	SEG9	O	Segment terminal 9.
53	SEG10	O	Segment terminal 10.
54	SEG11	O	Segment terminal 11.
55	SEG12	O	Segment terminal 12.
56	SEG13	O	Segment terminal 13.
57	SEG14	O	Segment terminal 14.
58	SEG15	O	Segment terminal 15.
59	SEG16	O	Segment terminal 16.
60	NC		Non Connect.
61	NC		Non Connect.
62	GRID10	O	Grid terminal 10.
63	GRID9	O	Grid terminal 9.
64	GRID8	O	Grid terminal 8.
65	GRID7	O	Grid terminal 7.
66	GRID6	O	Grid terminal 6.
67	GRID5	O	Grid terminal 5.
68	GRID4	O	Grid terminal 4.
69	GRID3	O	Grid terminal 3.
70	GRID2	O	Grid terminal 2.
71	GRID1	O	Grid terminal 1.
72	VDD		D5V
73	TX		Timer clock terminal (32.768kHz).
74	TEX		Timer clock terminal (32.768kHz).
75	NC/VPP	O	D5V
76	ASURA $\overline{CS}$	O	S/S microcomputer chip select signal.
77	$\overline{SYS RESET}$	O	System reset output.
78	POWER CONT 1	O	Power supply control signal.
79	POWER CONT 2	O	Power supply control signal.
80	CG V	I	Composite sync input.

## SECTION 6 ADJUSTMENTS

### 6-1 MECHANICAL ADJUSTMENTS

For the mechanical adjustments, please refer to the "VHS MECHANICAL ADJUSTMENT MANUAL V (S MECHANISM)" (9-921-647-11).

### 6-2. ELECTRICAL ADJUSTMENTS

See the adjusting parts location diagram from on page 6-8 for the adjustment.

#### 2-1. PREPARATION BEFORE ADJUSTMENT

##### 2-1-1. Equipment Required

The measuring instruments used for this alignment include:

- 1) Monitor TV
  - 2) Oscilloscope, dual-trace, bandwidth of 30MHz or more, with delay mode (A probe 10:1 should be used unless otherwise specified.)
  - 3) Frequency counter
  - 4) Pattern generator
  - 5) Digital voltmeter
  - 6) Audio generator
  - 7) Audio level meter
  - 8) Audio distortion meter
  - 9) Audio attenuator
  - 10) Alignment tapes
- Part No.: 8-192-605-32

##### 2-1-2. Equipment Connection

Unless otherwise specified, connect and adjust the measuring instruments as shown in the following diagram.

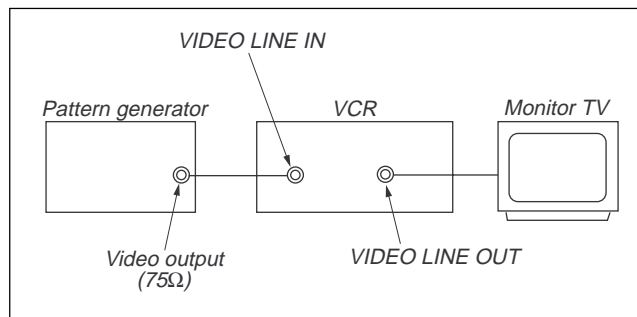


Fig. 6-2-1.

##### 2-1-3. Input Signal Check

Video signal produced by a pattern generator is used as an adjustment signal to perform electrical alignment for this unit. This video signal must satisfy the specification.

Unless otherwise specified, place the switches and controls of this unit in the following positions:

- **INPUT SELECT** switch ..... LINE or LINE 1 (Remote commander)

Connect an oscilloscope to the Video Input terminal. Check that the synchronizing signal of the Y signal has an amplitude of approximately 0.7V and that the burst signal has an amplitude of approximately 0.3V and its waveform is flat. And check that the level ratio of burst signal to "red" signal is 0.30 : 0.66. The video signal (color bar) used for electrical aligning this unit is shown in Fig. 6-2-2.

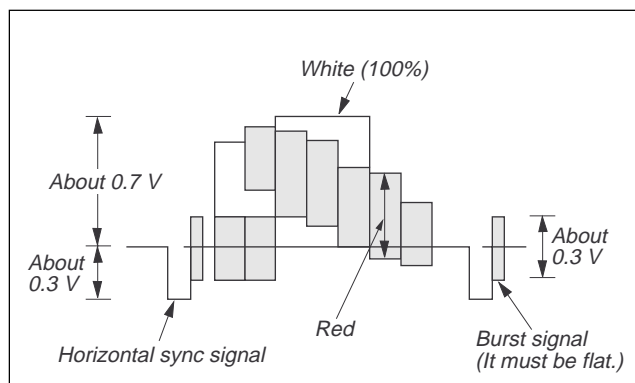


Fig. 6-2-2. Color Bar Signals of Pattern Generator

##### 2-1-4. Alignment Tape

- Contents of KRV-51N2

	Mode	Period	Video signal	Audio signal	
				Hi-Fi	Normal
1	SP	7 minutes	Color bar	400Hz	400Hz
2		3 minutes	Monoscope		
3	EP	7 minutes	Color bar		
4		3 minutes	Monoscope		

### 2-1-5. Input/Output Levels and Impedance

Video input: LINE IN  
Input signal: 1Vp-p, 75ohms, unbalanced, sync negative

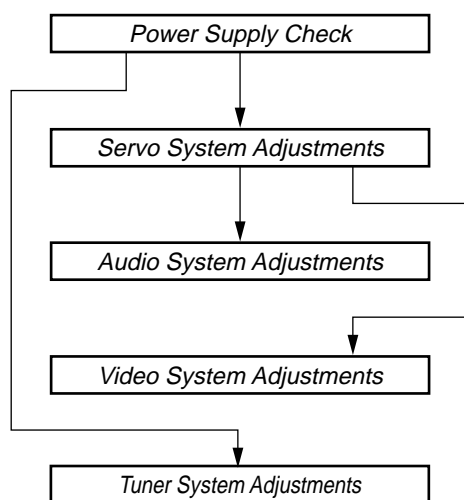
Video output: LINE OUT  
Output signal: 1Vp-p, 75ohms, unbalanced, sync negative

Audio input: LINE IN  
Input level: -7.5 dBs  
(0dBs= 0.775Vrms)  
Input impedance: more than 47 kilohms

Audio output: LINE OUT  
Standard level: -7.5dBs at load impedance 47 kilohms  
Output impedance: less than 10 kilohms

### 2-1-6. Adjustment Sequence

The adjustments should be performed in the following sequence.



## 2-2. POWER SUPPLY CHECK

### 2-2-1. Output Voltage Check (MA-335 Board)

Mode	E-E
Measuring Instrument	Digital voltmeter
SW 12V Check	
Measurement point	IC601 pin ②
Specified value	12.0 ± 0.3V
MTR12V Check	
Measurement point	Q605 ③
Specified value	13.2 ± 1.0V
SW5V Check	
Measurement point	Q603 ⑤
Specified value	5.1 ± 0.3V

#### [Check Method]

- 1) Each of these supply voltages must meet its specified value.

2-3. SERVO SYSTEM CHECK

Unless otherwise specified, set the switches to the following positions.

- **INPUT SELECT** switch ..... LINE 1
- **TAPE SPEED** switch ..... SP (Remote commander)

2-3-1. RF Switching Position/  
AF Switching Position Adjustments  
(MA-335 Board)

[Adjustment Purpose]

To adjust the link of the A-ch and B-ch of the tape playback outputs.  
To make the unit compatible with other tapes and units. If this specification is not satisfied, the link will appear on the screen and the screen will be disrupted, etc.

Mode	Playback
Signal	Alignment tape: SP color bar portion
Measurement point	CH1: Video LINE OUT (RF switching position) CN341 pin ① (HF ADJ) (AF switching position) CH2: CN261 pin ③ (RF SWP)
Measuring instrument	Oscilloscope
Specified value	$6.5 \pm 0.5H$ ( $410 \pm 32 \mu\text{sec}$ )

[Adjustment Method]

- 1) Short-circuit between JS161 and ground for about 1 second to activate the RF switching position adjustment mode.
- 2) Check that “AP” is indicated on FL display.
- 3) Using the channel + and – buttons, adjust to  $410 \pm 32 \mu\text{sec}$  ( $6.5 \pm 0.5H$ ).
- 4) Press the PAUSE button. (Adjustment is over for mono models.)
- 5) The set goes to the AF switching position adjustment mode.
- 6) Check that “AH” is indicated on FL display.
- 7) Using the channel + and – buttons, minimize a chipped portion. At this time, confirm that a noisy sound is not heard.
- 8) Press the PAUSE button.
- 9) Check that “AH” indication is disappeared. When it is not disappeared, repeat from the item 1).
- 10) Press the STOP button.
- 11) Press the EJECT button.

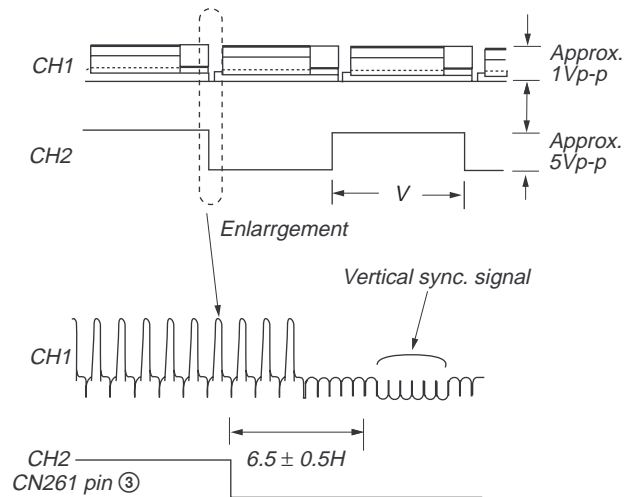


Fig. 6-2-3.

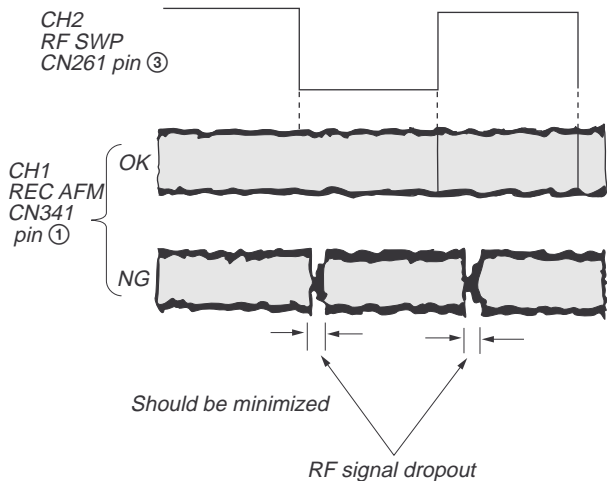


Fig. 6-2-4.

## 2-4. VIDEO SYSTEM CHECKS

For the video system checks, follow the checking procedures given below as a rule. The color bar video signal supplied from the pattern generator is used as the video input signal for the video system adjustment of the recording mode. Check that the signal satisfies the specified value designated in the "Check of input signal" (Fig. 6-2-2)

Unless otherwise specified, set the switches to the following positions.

- **INPUT SELECT** switch ..... LINE 1
- **TAPE SPEED** switch ..... SP (Remote commander)

### [Checking Sequence]

- 1) X'tal OSC Check
- 2) SYNC AGC Check
- 3) Recording Y Level Check
- 4) Recording Chroma Level Check
- 5) Playback Level Check

### 2-4-1. X'tal OSC Check (MA-335 Board)

Mode	Playback
Signal	Alignment tape: SP Color bar portion
Measurement point	IC201 pin ⑤⑥
Measuring instrument	Oscilloscope and Frequency counter
Specified value	3,579,545 $\pm$ 70Hz

**Note:** A frequency counter should be connected through a buffer amplifier (oscilloscope, etc.) having a high impedance and a low capacitance.

### [Check Method]

- 1) Check that the oscillation frequency satisfies the specified value and that the oscillation voltage is 500  $\pm$  200mVp-p.

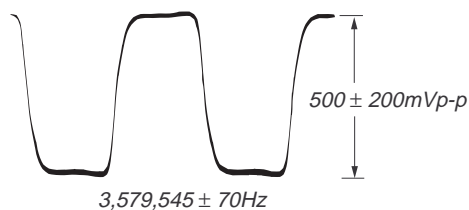


Fig. 6-2-5.

### 2-4-2. SYNC AGC Check (MA-335 Board)

Mode	E-E
Signal	Color bar
Measurement point	IC201 pin ③⑧
Measuring instrument	Oscilloscope
Specified value	A=2.10 $\pm$ 0.10Vp-p

### [Check Method]

- 1) Check that the Video signal level (A) satisfies the specified value.

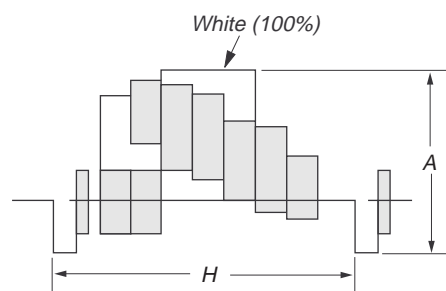


Fig. 6-2-6.

### 2-4-3. Recording Y Level Check (MA-335 Board)

Mode	E-E (SP)
Signal	No-signal
Measurement point	IC201 pin ⑮
Measuring instrument	Oscilloscope
Specified value	A=290 $\pm$ 70mVp-p

### [Check Method]

- 1) Check that the recording RF signal satisfies the specified value.

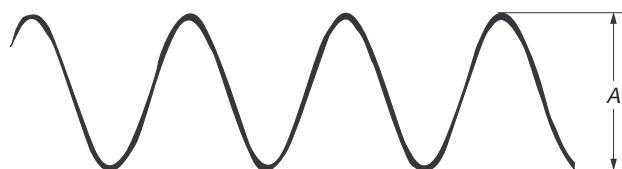


Fig. 6-2-8.

#### 2-4-4. Recording Chroma Level Check (MA-335 Board)

Mode	Recording (SP)
Signal	Color bar
Measurement point	IC201 pin ⑭
Measuring instrument	Oscilloscope
Specified value	$A=450 \pm 70\text{mVp-p}$

##### [Check Method]

- 1) Confirm the amplitude of recording chroma level becomes the specified value.

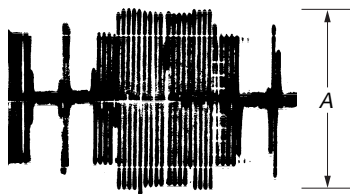


Fig. 6-2-9.

#### 2-4-5. Playback Level Check (MA-335 Board)

Mode	Playback
Signal Alignment	Alignment tape : SP mode color bar portion
Measurement point	Video LINE OUT terminal
Measuring instrument	Oscilloscope
Specified value	$A=1.0 \pm 0.1\text{Vp-p}$ (75Ω terminated)

##### [Check Method]

- 1) Check that the playback level satisfies the specified value.

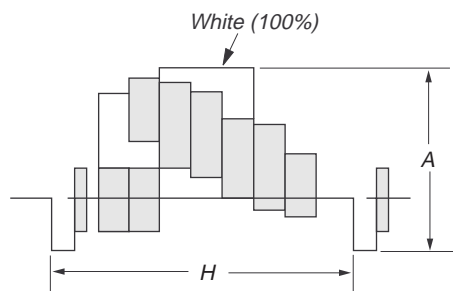


Fig. 6-2-10.

#### 2-5. AUDIO SYSTEM ADJUSTMENT

- For the adjustment of the audio system, perform in the SP mode if there is no special notes. Use the alignment tape.

##### [Connecting Instruments]

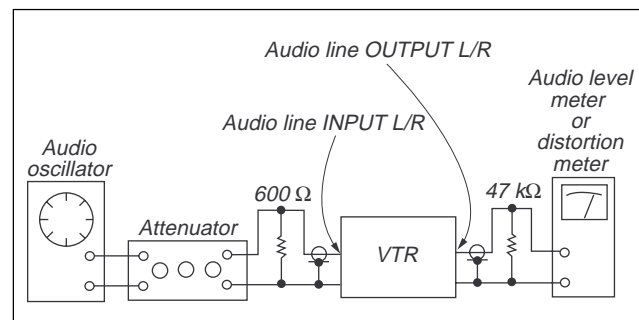


Fig. 6-2-11.

- Adjust in the SP mode if there is no special indications.
- Perform the adjustment setting the switch on the following positions.
- **INPUT SELECT** switch ..... LINE 1

##### [Adjustment Method]

1. ACE head adjustment....Refer to the VHS mechanical adjustment manual VI (S MECHANISM)(9-921-647-11).
2. E-E output level check
3. Overall Output level and distortion factor check
4. Overall noise level check.

#### 2-5-1. ACE Head Adjustment

Refer to the VHS mechanical adjustment manual VI (S MECHANISM)(9-921-647-11).

#### 2-5-2. E-E Output Level Check

Mode	E-E
Signal	400Hz, -7.5dBs : CJ570
Measurement point	CJ570
Measuring instrument	Audio level meter
Specified value	$-7.5 \pm 2\text{dBs}$

##### [Check Method]

- 1) Input signal of 400Hz and -7.5dBs to the CJ461 L/R.
- 2) Check that the audio output level is  $-7.5 \pm 3\text{dBs}$ .



### 2-5-3. Overall Output Level and Distortion Factor Check

Mode	Self-record playback
Signal	400Hz, $-7.5\text{dBs}$ : CJ570
Measurement point	CJ570
Measuring instrument	Audio level meter and Distortion meter
Specified value	Playback Level: $-7.5 \pm 3\text{dBs}$ Distortion: 4.0% or less

#### [Check Method]

- 1) Input signal of 400Hz and  $-7.5\text{dBs}$  to the audio input.
- 2) Record signal.
- 3) Playback the recorded portion.
- 4) Check that the output level is  $-7.5 \pm 3\text{dBs}$ .
- 5) Check that the distortion factor is 4.0% or less.

### 2-5-4. Overall Noise Level Check

Mode	Self-record playback
Signal	No signal (Insert a shorting plug into the Audio LINE IN terminal)
Measurement point	CJ570
Measuring instrument	Audio level meter
Specified value	$-45.5\text{dBs}$ or less

#### [Check Method]

- 1) Record.
- 2) Playback recorded portion.
- 3) Check that noise level is  $-45.5\text{dBs}$  or less.

## 2-6. TUNER SYSTEM ADJUSTMENT

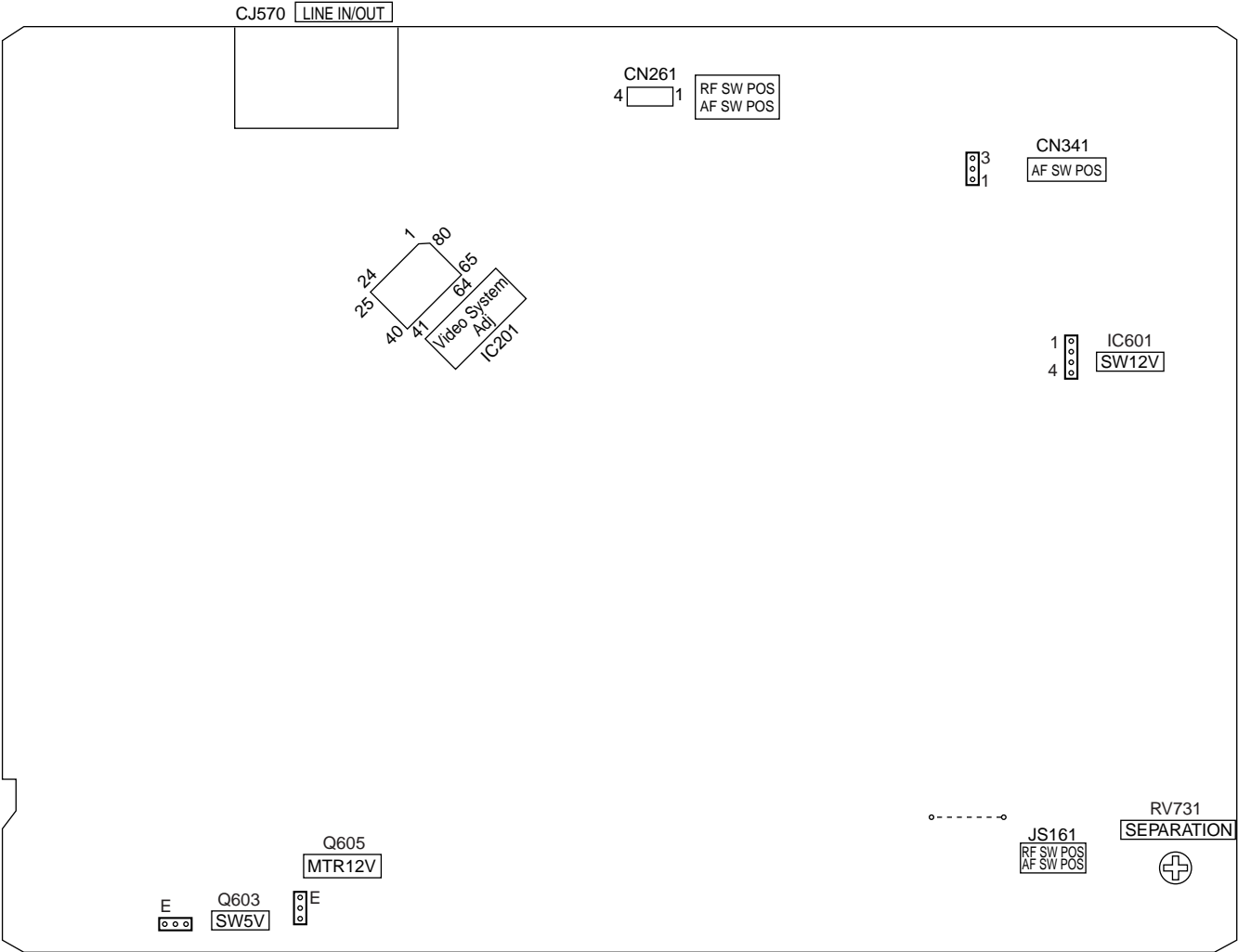
### 2-6-1. Separation Adjustment (MA-335 Board)

Mode	E-E
Signal	RF signal Video : Color bar white (100%) modulation Audio : L: 400Hz, R: 2kHz 30% modulation Electrical field: 60-80dBm/75 $\Omega$ terminated
Measuring instrument	Audio level meter
Measuring point	LINE OUT L
Adjusting element	RV731
Specified value	2kHz component minimum

#### [Adjustment Method]

- 1) Connect an audio level meter to LINE OUT L channel via HPF.
- 2) Feed the RF signal from RF IN terminal.
- 3) Adjust with RV731 so that the output level satisfies the specified value.

2-7. ADJUSTING PARTS LOCATION DIAGRAM  
MA-335 BOARD (CONDUCTOR SIDE)



## SECTION 7

### REPAIR PARTS LIST

#### 7-1. EXPLODED VIEWS

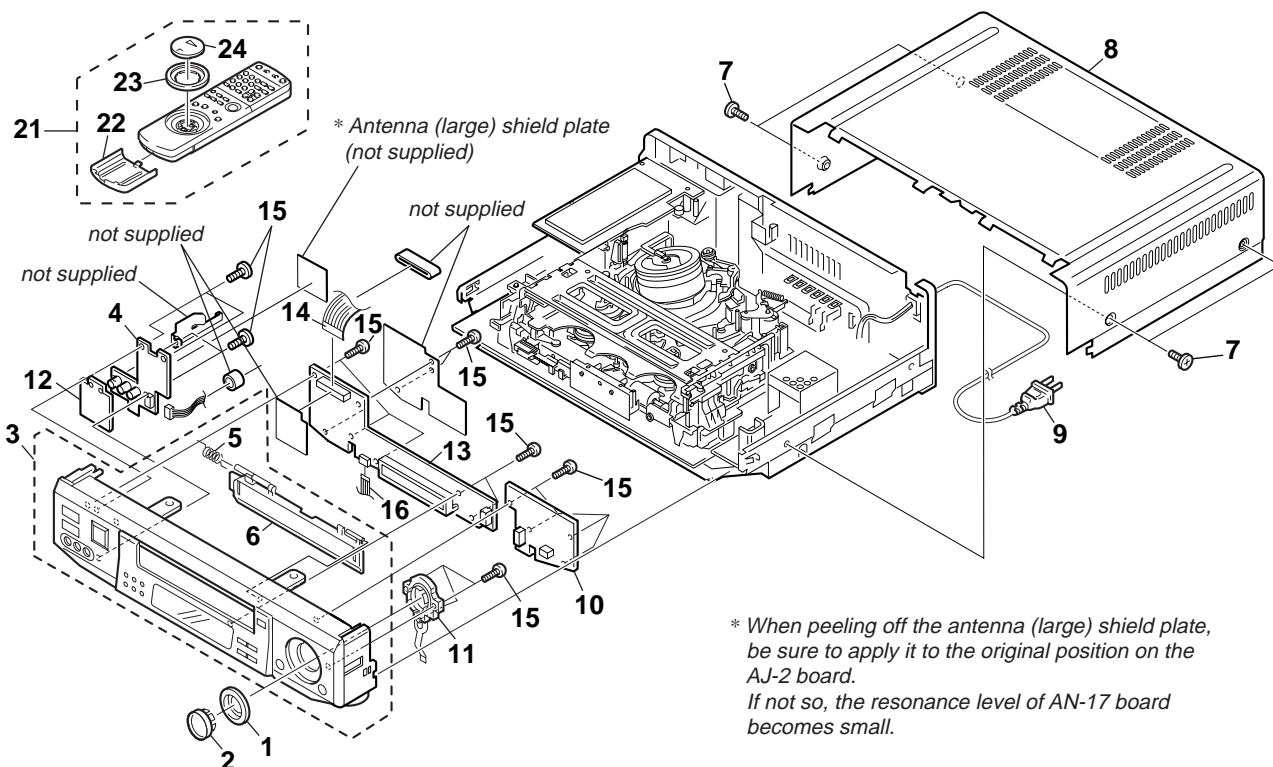
##### NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (#mark) list is given in the last of this parts list.

The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety. Replace only with part number specified.

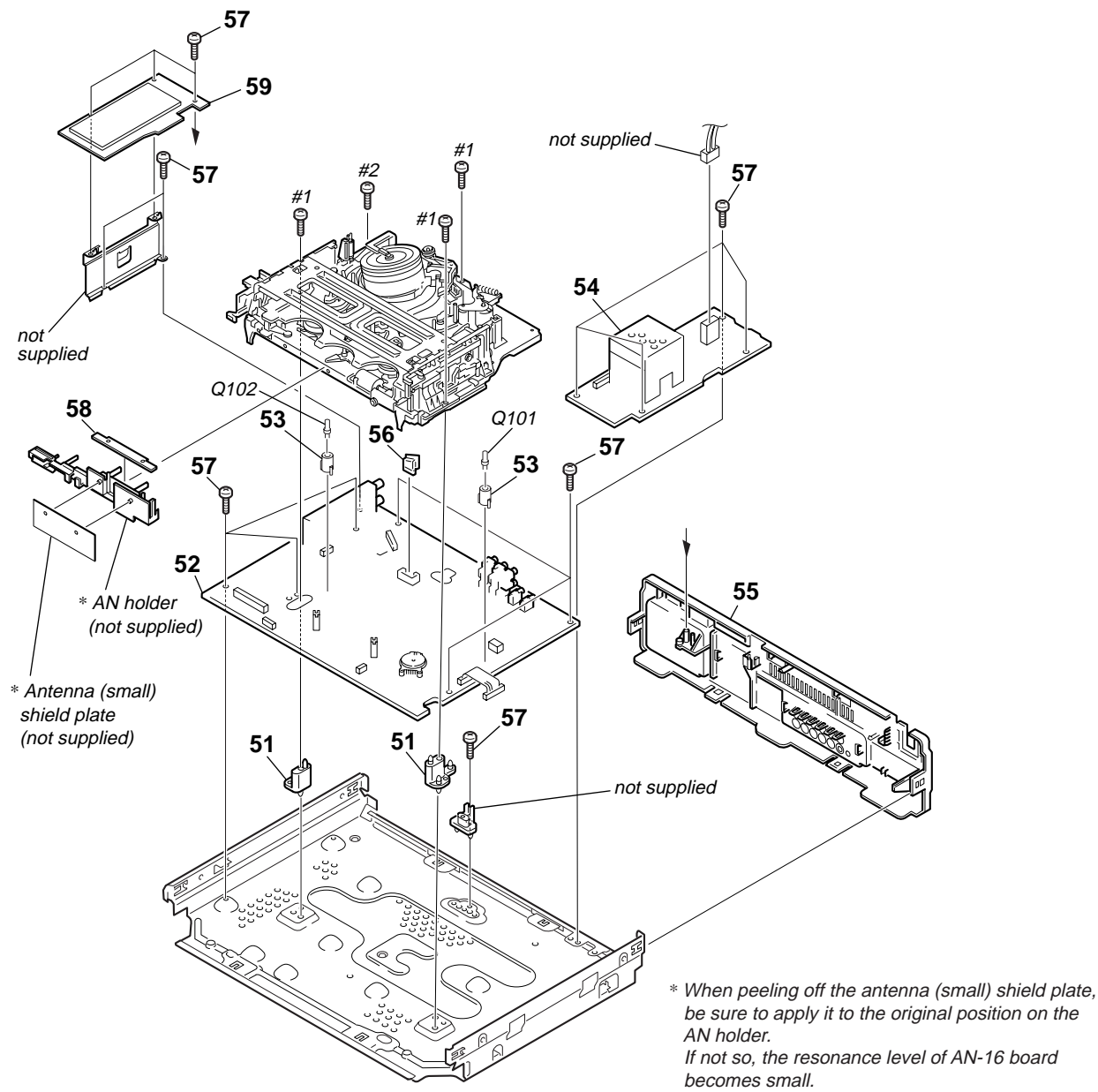
Les composants identifiés par une marque  $\triangle$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

#### 7-1-1. FRONT PANEL ASSEMBLY AND UPPER CASE SECTION



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
1	3-979-310-01	RING (AV), JOG		11	1-762-844-21	SWITCH, ROTARY	
2	3-979-309-01	BUTTON (AV), CENTER		* 12	A-6791-569-A	AN-17A BOARD, COMPLETE	
3	X-3948-110-1	PANEL ASSY, FRONT		* 13	A-6791-568-A	FR-139A BOARD, COMPLETE	
* 4	A-6791-566-A	AJ-2A COMPL BOARD, COMPLETE		14	1-783-546-11	CABLE, FLAT (FFM-24)	
5	3-953-432-01	SPRING (GE), FL		15	4-921-277-41	SCREW (B2.6X8), TAPPING, BIND	
6	3-979-302-51	DOOR (AV), CASSETTE		16	1-783-547-11	CABLE, FLAT (FFM-25)	
7	3-710-901-11	SCREW, TAPPING		21	1-475-749-11	COMMANDER, STANDARD (RMT-V249)	
8	3-979-313-01	CASE, UPPER		22	3-709-044-01	COVER, BATTERY	
$\triangle$ 9	1-783-605-11	CORD, POWER		23	3-973-077-31	RING, CHANGE SPEED	
* 10	A-6791-567-A	DM-81A BOARD, COMPLETE		24	3-972-850-01	BUTTON, FUNCTION	

7-1-2. CHASSIS SECTION

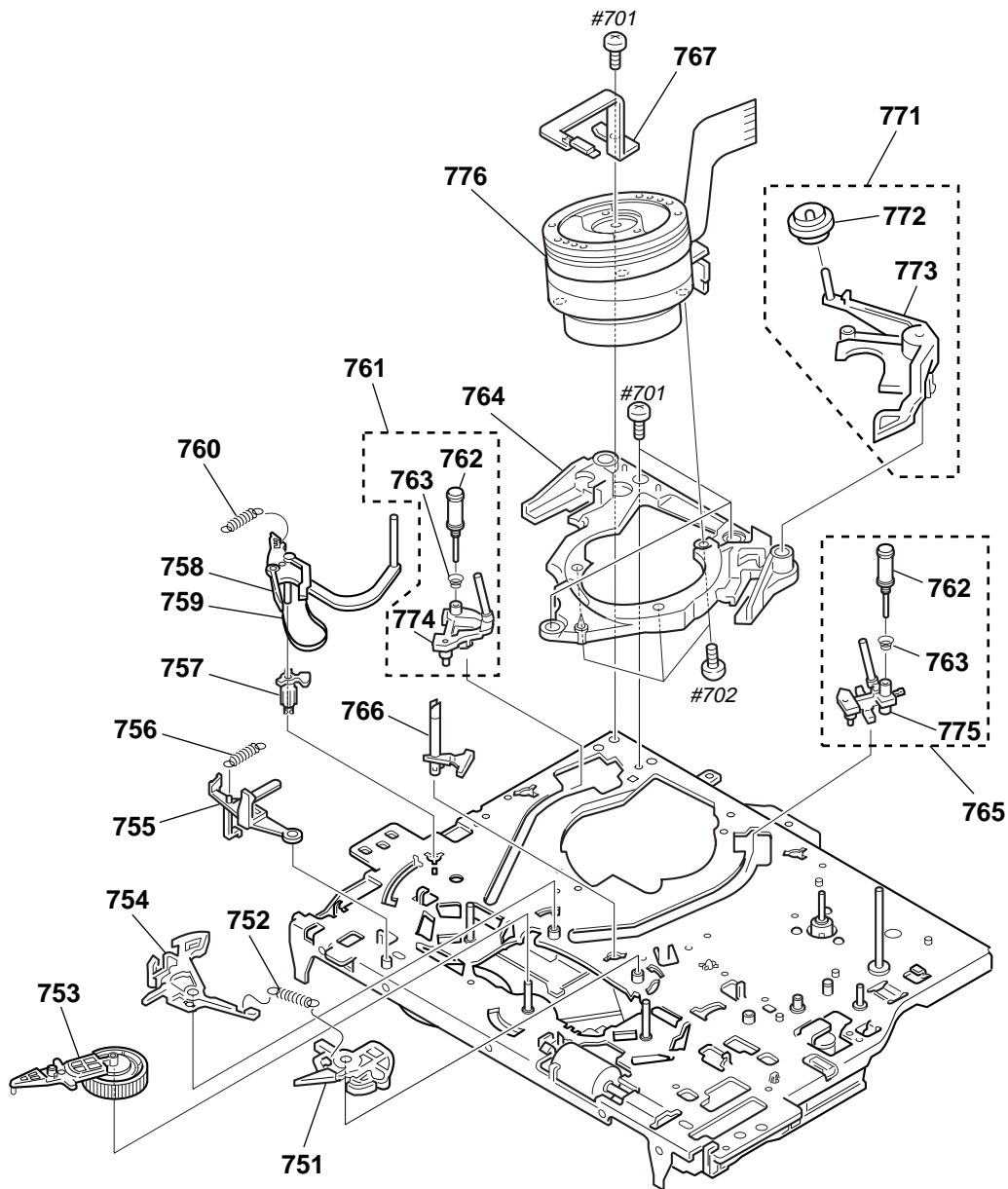


Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
51	3-979-314-01	BASE (R), MD		56	1-779-725-11	CONNECTOR, BOARD TO BOARD 5P	
* 52	A-6791-570-A	MA-335A COMPL BOARD, COMPLETE		57	3-970-608-21	SUMITITE (B3), +BV	
* 53	3-960-273-01	SPACER, TOP END		* 58	A-6791-571-A	AN-16A BOARD, COMPLETE	
△ 54	1-468-308-11	POWER BLOCK SR821		* 59	A-6791-572-A	NL-2A BOARD, COMPLETE	
* 55	3-979-564-21	PANEL, REAR		Q101	8-729-043-84	TRANSISTOR PT380F3	
				Q102	8-729-043-84	TRANSISTOR PT380F3	

<b>Note :</b> The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.	<b>Note :</b> Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
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<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>
701	3-977-509-01	WASHER, THRUST		713	3-977-447-01	GEAR, ELEVATOR	
702	3-977-507-01	TABLE, REEL (S) (GRAY)		714	3-977-514-01	OPENER, LID	
703	3-977-508-01	TABLE, REEL (T) (BLACK)		715	3-977-441-01	GEAR, PINCH PRESSING	
704	1-500-144-11	HEAD, FE		716	3-977-445-01	GEAR, TG8 ARM DRIVING	
705	3-977-495-01	SHAFT TG2		717	3-977-465-01	SPRING,EXTENSION(RVS BRAKE)	
706	3-977-494-01	HOLDER, FEH		718	X-3947-582-1	ARM ASSY, RVS BRAKE	
707	A-6759-619-C	FL COMPLETE ASSY		719	3-977-446-01	GEAR, TG8 ARM	
708	3-977-535-01	PLATE, LUMINOUS(END SENSOR)		720	X-3947-590-1	TG8 ASSY	
709	3-977-536-01	PLATE, LUMINOUS(TOP SENSOR)		721	A-6759-620-A	HEAD BLOCK ASSY, ACE (TDK)	
710	3-970-471-01	SPRING (DECK OPEN), TORSION		722	3-974-556-01	+ HEXA TT 2.6X9 (TAPER)	
711	A-6759-615-A	PRESS BLOCK ASSY, PINCH		723	3-979-508-01	SCREW	
712	3-958-455-01	SPRING (PINCH), TENSION		724	3-978-485-01	PLATE, GUIDE CASSETTE	

## 7-1-4. MECHANISM DECK-2



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
751	X-3947-581-1	BRAKE ASSY,MAIN(T)		763	3-965-178-01	SPRING	
752	3-977-462-01	SPRING,EXTENTION. (MAIN BRAKE)		764	3-969-632-04	BASE, DRUM	
753	X-3947-573-1	ARM ASSY, PENDULUM		765	A-6750-325-A	SHUTTLE (T) BLOCK ASSY	
754	X-3947-580-2	BRAKE ASSY, MAIN(S)		766	3-977-501-01	PLATE, LUMINOUS	
755	3-977-513-02	LEVER, REC. PROOF		767	X-3943-899-8	GROUND ASSY, SHAFT	
756	3-976-767-01	SPRING, TENS. (REC. PROOF)		771	A-6746-074-G	ROLLER BLOCK ASSY, HC	
757	3-977-487-01	BOSS, TG1 FULCRUM		772	X-3947-255-1	ROLLER ASSY, HC	
758	X-3947-587-1	TG1 ASSY		773	3-975-724-07	ARM, HC	
759	X-3947-589-1	BAND ASSY, TG1		774	X-3946-855-1	SHUTTLE (S) ASSY	
760	3-977-488-01	SPRING (POWER TENSION)		775	X-3946-856-1	SHUTTLE (T) ASSY	
761	A-6750-324-A	SHUTTLE (S) BLOCK ASSY		776	8-839-044-02	DRUM ASSY DZH-94A/Z-RP (M901)	
762	X-3944-378-1	ROLLER ASSY, GUIDE					

### 7-1-5. MECHANISM DECK-3

This exploded view diagram illustrates the assembly of the Mechanism Deck-3. The diagram shows the following components and their assembly sequence:

- Base Assembly:** The main base plate (825) is secured with screws #703. A bracket (829) is attached to the base.
- Internal Mechanism:** A complex internal mechanism is shown, including a gear (819) mounted on a shaft (820) with a pin (821). A lever (822) is connected to the gear via a pin (823) and a bracket (824). A spring (827) is attached to the lever.
- Top Components:** A top plate (818) is secured with a screw (803). A gear (817) is mounted on a shaft (816) with a pin (815). A lever (812) is attached to the top plate with a screw (#701).
- Other Components:** A bracket (811) is attached to the top plate. A spring (809) is attached to a bracket (810). A bracket (807) is attached to the base. A bracket (805) is attached to the base. A bracket (806) is attached to the base. A bracket (804) is attached to the base. A bracket (801) is attached to the base. A bracket (802) is attached to the base.

7-5

## 7-2. ELECTRICAL PARTS LIST

### NOTE:

When indicating parts by reference number, please include the board name.

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:  
uF:  $\mu$ F
- RESISTORS  
All resistors are in ohms.  
METAL: metal-film resistor  
METAL OXIDE: Metal Oxide-film resistor  
F: nonflammable
- COILS  
uH:  $\mu$ H
- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA...:  $\mu$ A..., uPA...,  $\mu$ PA...,  
uPB...,  $\mu$ PB..., uPC...,  $\mu$ PC...,  
uPD...,  $\mu$ PD...

Ref. No.	Part No.	Description	Remarks
*	A-6791-566-A	AJ-2A BOARD, COMPLETE ***** (Ref.No.: 3,000 Series)	
		< CAPACITOR >	
C806	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
		< PIN JACK >	
CJ801	1-774-509-11	JACK, PIN 3P (LINE-2 IN)	
		< CONNECTOR >	
CN801	1-506-484-11	PIN, CONNECTOR 5P	
		< DIODE >	
D801	8-719-421-59	DIODE MA3075WA-(TX)	
D802	8-719-421-59	DIODE MA3075WA-(TX)	
D803	8-719-422-37	DIODE MA8051	
D804	8-719-421-59	DIODE MA3075WA-(TX)	
		< RESISTOR >	
R801	1-216-295-00	METAL CHIP 0 5% 1/10W	
R802	1-216-295-00	METAL CHIP 0 5% 1/10W	
R803	1-216-022-00	METAL CHIP 75 5% 1/10W	
*	A-6791-571-A	AN-16A BOARD, COMPLETE ***** (Ref.No.: 3,000 Series)	
		< CAPACITOR >	
C201	1-163-136-00	CERAMIC CHIP 620PF 1% 50V	
		< CONNECTOR >	
CN201	1-506-468-11	PIN, CONNECTOR 3P	
		< RESISTOR >	
R201	1-216-295-00	METAL CHIP 0 5% 1/10W	
R202	1-216-295-00	METAL CHIP 0 5% 1/10W	
*	A-6791-569-A	AN-17A BOARD, COMPLETE ***** (Ref.No.: 3,000 Series)	
		< CAPACITOR >	
C101	1-125-830-11	CERAMIC CHIP 680PF 1% 50V	
C102	1-163-243-11	CERAMIC CHIP 47PF 5% 50V	

Ref. No.	Part No.	Description	Remarks
		< CONNECTOR >	
CN101	1-506-482-11	PIN, CONNECTOR 3P	
*	A-6791-567-A	DM-81A BOARD, COMPLETE ***** (Ref.No.: 2,000 Series)	
		< CONNECTOR >	
CN440	1-770-031-11	CONNECTOR, BOARD TO BOARD 7P	
CN441	1-770-514-41	CONNECTOR, FFC/FPC 5P	
		< DIODE >	
D440	8-719-056-06	DIODE SLR-342DCT31	
		< TRANSISTOR >	
Q440	8-729-424-08	TRANSISTOR UN2111	
		< RESISTOR >	
R441	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R442	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R443	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R444	1-216-065-91	RES,CHIP 4.7K 5% 1/10W	
R445	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R446	1-216-029-00	METAL CHIP 150 5% 1/10W	
		< SWITCH >	
S441	1-762-196-21	SWITCH, TACT (EJECT)	
S442	1-762-196-21	SWITCH, TACT (REC)	
S443	1-762-196-21	SWITCH, TACT (JOG)	
S444	1-762-196-21	SWITCH, TACT (PAUSE)	
*	A-6791-568-A	FR-139A BOARD, COMPLETE ***** (Ref.No.: 2,000 Series)	
		< BUZZER >	
BZ460	1-529-104-11	BUZZER, PIEZOELECTRIC	
		< CAPACITOR >	
C460	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V	
C461	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C462	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C463	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C464	1-164-232-11	CERAMIC CHIP 0.01uF 50V	



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
C465	1-126-916-11	ELECT 1000uF 20%	6.3V	< RESISTOR >			
C466	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R404	1-216-089-00	METAL CHIP 47K 5%	1/10W
C467	1-126-935-11	ELECT 470uF 20%	6.3V	R405	1-216-075-00	METAL CHIP 12K 5%	1/10W
C468	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R406	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
C469	1-104-905-11	CAPACITOR 0.22F	5.5V	R407	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
C471	1-164-232-11	CERAMIC CHIP 0.01uF	50V	R408	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
C472	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V	R409	1-216-065-91	RES,CHIP 4.7K 5%	1/10W
C473	1-163-235-11	CERAMIC CHIP 22PF 5%	50V	R410	1-216-075-00	METAL CHIP 12K 5%	1/10W
C474	1-163-102-00	CERAMIC CHIP 24PF 5%	50V	R411	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
C475	1-164-232-11	CERAMIC CHIP 0.01uF	50V	R412	1-216-073-00	METAL CHIP 10K 5%	1/10W
C476	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R413	1-216-073-00	METAL CHIP 10K 5%	1/10W
C477	1-163-229-11	CERAMIC CHIP 12PF 5%	50V	R415	1-216-073-00	METAL CHIP 10K 5%	1/10W
C478	1-163-229-11	CERAMIC CHIP 12PF 5%	50V	R416	1-216-073-00	METAL CHIP 10K 5%	1/10W
C479	1-126-096-11	ELECT 10uF 20%	35V	R417	1-216-073-00	METAL CHIP 10K 5%	1/10W
< CONNECTOR >				R420	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
CN460	1-695-392-31	PIN, CONNECTOR (PC BOARD) 31P		R460	1-216-029-00	METAL CHIP 150 5%	1/10W
* CN461	1-691-406-11	CONNECTOR, BOARD TO BOARD 7P		R461	1-216-089-00	METAL CHIP 47K 5%	1/10W
CN464	1-695-368-31	PIN, CONNECTOR (PC BOARD) 7P		R462	1-216-049-00	METAL CHIP 1K 5%	1/10W
< DIODE >				R463	1-216-089-00	METAL CHIP 47K 5%	1/10W
D420	8-719-110-03	DIODE RD7.5ES-B2		R464	1-216-295-00	METAL CHIP 0 5%	1/10W
D460	8-719-056-07	DIODE SLR-342MCT31		R465	1-216-295-00	METAL CHIP 0 5%	1/10W
D462	8-719-200-82	DIODE 11ES2		R466	1-216-073-00	METAL CHIP 10K 5%	1/10W
D463	8-719-200-82	DIODE 11ES2		R467	1-216-073-00	METAL CHIP 10K 5%	1/10W
D464	8-719-056-06	DIODE SLR-342DCT31		R468	1-216-113-00	METAL CHIP 470K 5%	1/10W
< IC >				R469	1-216-073-00	METAL CHIP 10K 5%	1/10W
IC460	8-752-891-11	IC CXP82960-054Q		R470	1-216-073-00	METAL CHIP 10K 5%	1/10W
IC462	8-759-432-34	IC ST24W16FM6TR		R471	1-216-025-91	RES,CHIP 100 5%	1/10W
IC462	8-759-454-79	IC 24LC16BT/SN		R472	1-216-025-91	RES,CHIP 100 5%	1/10W
IC463	8-759-248-87	IC MM1256XF-BE		R474	1-216-113-00	METAL CHIP 470K 5%	1/10W
IC464	8-742-012-11	HYB IC SBX1976-51		R475	1-216-295-00	METAL CHIP 0 5%	1/10W
< JUMPER RESISTOR >				R476	1-216-295-00	METAL CHIP 0 5%	1/10W
JR401	1-216-296-00	METAL CHIP 0 5%	1/8W	R477	1-216-095-00	METAL CHIP 82K 5%	1/10W
JR402	1-216-295-00	METAL CHIP 0 5%	1/10W	R478	1-216-113-00	METAL CHIP 470K 5%	1/10W
JR404	1-216-295-00	METAL CHIP 0 5%	1/10W	R479	1-216-049-00	METAL CHIP 1K 5%	1/10W
JR405	1-216-296-00	METAL CHIP 0 5%	1/8W	R480	1-216-049-00	METAL CHIP 1K 5%	1/10W
JR406	1-216-295-00	METAL CHIP 0 5%	1/10W	R481	1-216-049-00	METAL CHIP 1K 5%	1/10W
JR407	1-216-295-00	METAL CHIP 0 5%	1/10W	R482	1-216-049-00	METAL CHIP 1K 5%	1/10W
JR408	1-216-296-00	METAL CHIP 0 5%	1/8W	R483	1-216-073-00	METAL CHIP 10K 5%	1/10W
JR409	1-216-296-00	METAL CHIP 0 5%	1/8W	R484	1-216-073-00	METAL CHIP 10K 5%	1/10W
JR410	1-216-296-00	METAL CHIP 0 5%	1/8W	R485	1-216-113-00	METAL CHIP 470K 5%	1/10W
JR411	1-216-296-00	METAL CHIP 0 5%	1/8W	R486	1-216-081-00	METAL CHIP 22K 5%	1/10W
JR412	1-216-296-00	METAL CHIP 0 5%	1/8W	R487	1-216-029-00	METAL CHIP 150 5%	1/10W
JR413	1-216-296-00	METAL CHIP 0 5%	1/8W	R488	1-216-025-91	RES,CHIP 100 5%	1/10W
JR414	1-216-295-00	METAL CHIP 0 5%	1/10W	R490	1-216-025-91	RES,CHIP 100 5%	1/10W
JR415	1-216-295-00	METAL CHIP 0 5%	1/10W	R492	1-216-295-00	METAL CHIP 0 5%	1/10W
< COIL >				R493	1-216-295-00	METAL CHIP 0 5%	1/10W
L181	1-410-509-11	INDUCTOR 10uH		< SWITCH >			
< FLUORESCENT INDICATOR >				S402	1-762-196-21	SWITCH, TACT (POWER)	
ND420	1-517-733-11	TUBE, FLUORESCENT INDICATION		S403	1-762-196-21	SWITCH, TACT (COMMAND MODE)	
< TRANSISTOR >				S404	1-762-196-21	SWITCH, TACT (SMARTFILE)	
Q460	8-729-421-22	TRANSISTOR UN2211		S405	1-762-196-21	SWITCH, TACT (EASY SET UP)	
Q461	8-729-421-22	TRANSISTOR UN2211		S406	1-762-196-21	SWITCH, TACT (CURSOR)	
< TRANSISTOR >				S407	1-762-196-21	SWITCH, TACT (OK)	
< TRANSISTOR >				S408	1-762-196-21	SWITCH, TACT (INPUT SELECT)	
< TRANSISTOR >				S409	1-762-196-21	SWITCH, TACT (CHANNEL: -)	
< TRANSISTOR >				S410	1-762-196-21	SWITCH, TACT (CHANNEL: +)	
< TRANSISTOR >				S411	1-762-196-21	SWITCH, TACT (REW)	
< TRANSISTOR >				S412	1-762-196-21	SWITCH, TACT (FF)	

Ref. No.	Part No.	Description	Remarks			
< VIBRATOR >						
X460	1-760-494-11	VIBRATOR, CRYSTAL 16MHz				
X461	1-579-463-11	VIBRATOR, CRYSTAL 32.768kHz				
*	A-6791-570-A	MA-335A BOARD, COMPLETE				
*****						
(Ref.No.: 1,000 Series)						
*	3-960-273-01	SPACER, TOP END				
*	3-960-274-01	SPACER, LED				
< CAPACITOR >						
C101	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C102	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C103	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C104	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C105	1-128-057-11	ELECT	330uF	20%	6.3V	
C106	1-124-589-11	ELECT	47uF	20%	16V	
C108	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C109	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C118	1-137-441-11	FILM	0.027uF	5%	50V	
C119	1-126-157-11	ELECT	10uF	20%	16V	
C120	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C121	1-124-463-00	ELECT	0.1uF	20%	50V	
C122	1-126-154-11	ELECT	47uF	20%	6.3V	
C123	1-130-489-00	MYLAR	0.033uF	5%	50V	
C140	1-126-933-11	ELECT	100uF	20%	16V	
C142	1-126-933-11	ELECT	100uF	20%	16V	
C143	1-109-982-11	CERAMIC CHIP	1uF	10%	10V	
C144	1-163-018-00	CERAMIC CHIP	0.0056uF	5%	50V	
C145	1-126-967-11	ELECT	47uF	20%	16V	
C146	1-163-263-11	CERAMIC CHIP	330PF	5%	50V	
C147	1-109-982-11	CERAMIC CHIP	1uF	10%	10V	
C149	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C150	1-126-967-11	ELECT	47uF	20%	16V	
C151	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C152	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V	
C153	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V	
C160	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C161	1-163-229-11	CERAMIC CHIP	12PF	5%	50V	
C162	1-163-229-11	CERAMIC CHIP	12PF	5%	50V	
C163	1-126-154-11	ELECT	47uF	20%	6.3V	
C164	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C165	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C166	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C172	1-124-584-00	ELECT	100uF	20%	10V	
C201	1-109-982-11	CERAMIC CHIP	1uF	10%	10V	
C202	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	
C204	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C205	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C206	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C207	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C208	1-163-237-11	CERAMIC CHIP	27PF	5%	50V	
C209	1-124-248-00	ELECT	22uF	20%	35V	
C210	1-163-131-00	CERAMIC CHIP	390PF	5%	50V	
C214	1-163-124-00	CERAMIC CHIP	200PF	5%	50V	
C217	1-109-982-11	CERAMIC CHIP	1uF	10%	10V	

Ref. No.	Part No.	Description	Remarks			
C219	1-164-159-21	CERAMIC	0.1uF		50V	
C220	1-109-982-11	CERAMIC CHIP	1uF	10%	10V	
C222	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C223	1-124-589-11	ELECT	47uF	20%	16V	
C226	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C228	1-124-261-00	ELECT	10uF	20%	50V	
C229	1-164-159-21	CERAMIC	0.1uF		50V	
C230	1-124-589-11	ELECT	47uF	20%	16V	
C231	1-124-261-00	ELECT	10uF	20%	50V	
C232	1-109-982-11	CERAMIC CHIP	1uF	10%	10V	
C233	1-109-982-11	CERAMIC CHIP	1uF	10%	10V	
C234	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C235	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C236	1-109-982-11	CERAMIC CHIP	1uF	10%	10V	
C237	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C238	1-164-159-21	CERAMIC	0.1uF		50V	
C240	1-109-982-11	CERAMIC CHIP	1uF	10%	10V	
C241	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C242	1-109-982-11	CERAMIC CHIP	1uF	10%	10V	
C243	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C245	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	
C246	1-109-982-11	CERAMIC CHIP	1uF	10%	10V	
C247	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	
C248	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C250	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C251	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C252	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C253	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C254	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C255	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C256	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C257	1-163-241-11	CERAMIC CHIP	39PF	5%	50V	
C260	1-163-229-11	CERAMIC CHIP	12PF	5%	50V	
C261	1-163-229-11	CERAMIC CHIP	12PF	5%	50V	
C264	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C265	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C266	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C267	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C268	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	
C269	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	
C270	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C271	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C272	1-163-099-00	CERAMIC CHIP	18PF	5%	50V	
C273	1-163-099-00	CERAMIC CHIP	18PF	5%	50V	
C274	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C276	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C277	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C278	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C279	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C280	1-124-584-00	ELECT	100uF	20%	10V	
C281	1-164-346-11	CERAMIC CHIP	1uF		16V	
C282	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C283	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C284	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C285	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C286	1-124-584-00	ELECT	100uF	20%	10V	
C287	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V	
C288	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V	
C289	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C301	1-164-159-21	CERAMIC	0.1uF		50V	

Ref. No.	Part No.	Description				Remarks	Ref. No.	Part No.	Description				Remarks
C305	1-126-160-11	ELECT	1uF	20%	50V		C509	1-164-505-11	CERAMIC CHIP	2.2uF		16V	
C306	1-126-160-11	ELECT	1uF	20%	50V		C511	1-163-229-11	CERAMIC CHIP	12PF	5%	50V	
C307	1-126-964-11	ELECT	10uF	20%	50V		C512	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	
C308	1-126-967-11	ELECT	47uF	20%	16V		C513	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C309	1-126-963-11	ELECT	4.7uF	20%	50V		C514	1-163-237-11	CERAMIC CHIP	27PF	5%	50V	
C310	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V		C515	1-124-589-11	ELECT	47uF	20%	16V	
C311	1-163-014-00	CERAMIC CHIP	0.0027uF	10%	50V		C516	1-126-160-11	ELECT	1uF	20%	50V	
C312	1-164-232-11	CERAMIC CHIP	0.01uF		50V		C517	1-163-239-11	CERAMIC CHIP	33PF	5%	50V	
C313	1-124-261-00	ELECT	10uF	20%	50V		C518	1-124-257-00	ELECT	2.2uF	20%	50V	
C314	1-164-232-11	CERAMIC CHIP	0.01uF		50V		C519	1-163-139-00	CERAMIC CHIP	820PF	5%	50V	
C315	1-126-160-11	ELECT	1uF	20%	50V		C520	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C317	1-126-163-11	ELECT	4.7uF	20%	50V		C521	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C318	1-126-967-11	ELECT	47uF	20%	16V		C522	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C331	1-164-232-11	CERAMIC CHIP	0.01uF		50V		C523	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C332	1-164-232-11	CERAMIC CHIP	0.01uF		50V		C560	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C333	1-124-589-11	ELECT	47uF	20%	16V		C561	1-126-935-11	ELECT	470uF	20%	6.3V	
C334	1-137-374-11	FILM	0.047uF	5%	50V		C563	1-124-589-11	ELECT	47uF	20%	16V	
C340	1-164-232-11	CERAMIC CHIP	0.01uF		50V		C564	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C341	1-124-589-11	ELECT	47uF	20%	16V		C621	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C342	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V		C622	1-126-965-11	ELECT	22uF	20%	50V	
C346	1-164-232-11	CERAMIC CHIP	0.01uF		50V		C623	1-124-589-11	ELECT	47uF	20%	16V	
C350	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V		C624	1-124-589-11	ELECT	47uF	20%	16V	
C352	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V		C625	1-126-967-11	ELECT	47uF	20%	16V	
C353	1-163-038-00	CERAMIC CHIP	0.1uF		25V		C626	1-128-131-11	ELECT	22uF	20%	50V	
C357	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V		C627	1-128-131-11	ELECT	22uF	20%	50V	
C358	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V		C628	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C359	1-164-232-11	CERAMIC CHIP	0.01uF		50V		C629	1-126-966-11	ELECT	33uF	20%	16V	
C361	1-164-222-11	CERAMIC CHIP	0.22uF		25V		C701	1-126-967-11	ELECT	47uF	20%	16V	
C362	1-164-222-11	CERAMIC CHIP	0.22uF		25V		C704	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C363	1-126-960-11	ELECT	1uF	20%	50V		C706	1-126-963-11	ELECT	4.7uF	20%	50V	
C364	1-126-960-11	ELECT	1uF	20%	50V		C707	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V	
C365	1-126-960-11	ELECT	1uF	20%	50V		C709	1-126-933-11	ELECT	100uF	20%	16V	
C366	1-126-960-11	ELECT	1uF	20%	50V		C710	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C369	1-126-964-11	ELECT	10uF	20%	50V		C712	1-126-933-11	ELECT	100uF	20%	16V	
C370	1-126-964-11	ELECT	10uF	20%	50V		C735	1-126-964-11	ELECT	10uF	20%	50V	
C371	1-126-964-11	ELECT	10uF	20%	50V		C736	1-126-967-11	ELECT	47uF	20%	16V	
C372	1-126-964-11	ELECT	10uF	20%	50V		C801	1-163-237-11	CERAMIC CHIP	27PF	5%	50V	
C373	1-126-964-11	ELECT	10uF	20%	50V		C802	1-163-263-11	CERAMIC CHIP	330PF	5%	50V	
C374	1-126-960-11	ELECT	1uF	20%	50V		C803	1-163-243-11	CERAMIC CHIP	47PF	5%	50V	
C375	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V		C804	1-163-091-00	CERAMIC CHIP	8PF		50V	
C377	1-126-967-11	ELECT	47uF	20%	16V		C805	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C378	1-126-964-11	ELECT	10uF	20%	50V		C806	1-163-087-00	CERAMIC CHIP	4PF		50V	
C379	1-126-961-11	ELECT	2.2uF	20%	50V		C807	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C380	1-126-964-11	ELECT	10uF	20%	50V		C808	1-163-127-00	CERAMIC CHIP	270PF	5%	50V	
C381	1-126-967-11	ELECT	47uF	20%	16V		C809	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C383	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V		C810	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C384	1-164-232-11	CERAMIC CHIP	0.01uF		50V		C811	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C385	1-126-967-11	ELECT	47uF	20%	16V		C812	1-163-237-11	CERAMIC CHIP	27PF	5%	50V	
C386	1-164-232-11	CERAMIC CHIP	0.01uF		50V		C813	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C391	1-164-232-11	CERAMIC CHIP	0.01uF		50V		C814	1-163-257-11	CERAMIC CHIP	180PF	5%	50V	
C398	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V		C815	1-124-589-11	ELECT	47uF	20%	16V	
C399	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V		C816	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C501	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V		C817	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C502	1-124-589-11	ELECT	47uF	20%	16V		C851	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C503	1-164-232-11	CERAMIC CHIP	0.01uF		50V		C852	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C504	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V		C853	1-163-243-11	CERAMIC CHIP	47PF	5%	50V	
C505	1-126-157-11	ELECT	10uF	20%	16V		C854	1-163-239-11	CERAMIC CHIP	33PF	5%	50V	
C506	1-164-232-11	CERAMIC CHIP	0.01uF		50V		C855	1-163-243-11	CERAMIC CHIP	47PF	5%	50V	
C507	1-163-038-00	CERAMIC CHIP	0.1uF		25V		C859	1-124-589-11	ELECT	47uF	20%	16V	
C508	1-163-237-11	CERAMIC CHIP	27PF	5%	50V		C871	1-124-589-11	ELECT	47uF	20%	16V	

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Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
C872	1-163-019-00	CERAMIC CHIP 0.0068uF 10%	50V	D983	8-719-110-08	DIODE RD8.2ES-B2	
C873	1-164-232-11	CERAMIC CHIP 0.01uF	50V	D984	8-719-110-08	DIODE RD8.2ES-B2	
C874	1-163-038-00	CERAMIC CHIP 0.1uF	25V			< IC >	
C875	1-164-346-11	CERAMIC CHIP 1uF	16V				
C876	1-163-135-00	CERAMIC CHIP 560PF 5%	50V	IC100	8-759-702-02	IC NJM062M	
C878	1-163-038-00	CERAMIC CHIP 0.1uF	25V	IC101	8-759-481-46	IC LB1943	
C880	1-163-099-00	CERAMIC CHIP 18PF 5%	50V	IC140	8-759-100-93	IC uPC393G2	
C881	1-163-099-00	CERAMIC CHIP 18PF 5%	50V	IC141	8-759-438-83	IC BA6305F-E2	
C980	1-163-038-00	CERAMIC CHIP 0.1uF	25V	IC161	8-752-896-78	IC CXP87852-046Q	
C981	1-126-967-11	ELECT 47uF 20%	16V				
C982	1-163-038-00	CERAMIC CHIP 0.1uF	25V	IC201	8-759-488-74	IC LA71534M-MPB	
C983	1-163-038-00	CERAMIC CHIP 0.1uF	25V	IC202	8-759-439-51	IC LC89978M-TE-L	
C984	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V	IC260	8-759-352-17	IC HA118195NT	
C985	1-163-017-00	CERAMIC CHIP 0.0047uF 5%	50V	IC301	8-759-499-30	IC BA7755AF-E2	
C986	1-163-038-00	CERAMIC CHIP 0.1uF	25V	IC340	8-759-486-92	IC LA7256	
		< PIN JACK >		IC360	8-759-486-64	IC TDA9615H/N1,557	
CJ570	1-779-011-11	JACK, PIN 6P (LINE-1 IN/LINE OUT)		IC500	8-759-529-44	IC MB90089PF-G-209-BND-ER	
		< CONNECTOR >		IC501	8-759-164-09	IC LA7218M-TE-R	
CN101	1-779-724-11	CONNECTOR, BOARD TO BOARD 5P		IC601	8-759-438-18	IC PQ12RD08	
CN102	1-779-723-11	CONNECTOR, BOARD TO BOARD 9P		IC733	8-742-037-00	HY B IC SBX1837-51	
* CN103	1-766-716-11	CONNECTOR, BOARD TO BOARD 3P					
CN162	1-568-845-11	PIN, CONNECTOR (PC BOARD) 31P		IC871	8-759-430-84	IC MC68HC05CCVFB-LSC86145FB	
CN163	1-506-469-11	PIN, CONNECTOR 4P		IC980	8-759-356-27	IC NJM2129M-TE2	
CN165	1-506-470-11	PIN, CONNECTOR 5P				< JUMPER RESISTOR >	
CN260	1-766-986-11	CONNECTOR, FFC/FPC 13P		JR001	1-216-295-00	METAL CHIP 0 5%	1/10W
* CN261	1-560-892-00	PIN, CONNECTOR 4P		JR002	1-216-296-00	METAL CHIP 0 5%	1/8W
CN301	1-506-471-11	PIN, CONNECTOR 6P		JR004	1-216-295-00	METAL CHIP 0 5%	1/10W
CN302	1-506-468-11	PIN, CONNECTOR 3P		JR005	1-216-296-00	METAL CHIP 0 5%	1/8W
* CN341	1-560-891-00	PIN, CONNECTOR 3P		JR007	1-216-296-00	METAL CHIP 0 5%	1/8W
CN423	1-506-470-11	PIN, CONNECTOR 5P		JR008	1-216-296-00	METAL CHIP 0 5%	1/8W
CN603	1-569-337-11	CONNECTOR, BOARD TO BOARD 11P		JR009	1-216-296-00	METAL CHIP 0 5%	1/8W
		< JACK >		JR010	1-216-296-00	METAL CHIP 0 5%	1/8W
CNJ980	1-779-013-11	JACK, MINIATURE (CONTROL S IN)		JR011	1-216-296-00	METAL CHIP 0 5%	1/8W
CNJ981	1-784-598-11	JACK (CONTROL S OUT)		JR012	1-216-296-00	METAL CHIP 0 5%	1/8W
		< DIODE >		JR013	1-216-295-00	METAL CHIP 0 5%	1/10W
D103	8-719-048-26	DIODE GL528V1		JR014	1-216-296-00	METAL CHIP 0 5%	1/8W
D107	8-719-911-19	DIODE 1SS119		JR015	1-216-296-00	METAL CHIP 0 5%	1/8W
D109	8-719-200-82	DIODE 11ES2		JR016	1-216-295-00	METAL CHIP 0 5%	1/10W
D161	8-719-200-82	DIODE 11ES2		JR017	1-216-296-00	METAL CHIP 0 5%	1/8W
D370	8-719-110-08	DIODE RD8.2ES-B2		JR018	1-216-296-00	METAL CHIP 0 5%	1/8W
D379	8-719-911-19	DIODE 1SS119		JR019	1-216-295-00	METAL CHIP 0 5%	1/10W
D502	8-719-911-19	DIODE 1SS119		JR020	1-216-296-00	METAL CHIP 0 5%	1/8W
D503	8-719-911-19	DIODE 1SS119		JR021	1-216-295-00	METAL CHIP 0 5%	1/10W
D504	8-719-911-19	DIODE 1SS119		JR022	1-216-296-00	METAL CHIP 0 5%	1/8W
D560	8-719-109-74	DIODE RD4.3ES-B1		JR023	1-216-296-00	METAL CHIP 0 5%	1/8W
D561	8-719-109-74	DIODE RD4.3ES-B1		JR024	1-216-296-00	METAL CHIP 0 5%	1/8W
D611	8-719-911-19	DIODE 1SS119		JR025	1-216-295-00	METAL CHIP 0 5%	1/10W
D612	8-719-109-85	DIODE RD5.1ES-B2		JR026	1-216-295-00	METAL CHIP 0 5%	1/10W
D614	8-719-911-19	DIODE 1SS119		JR027	1-216-295-00	METAL CHIP 0 5%	1/10W
D702	8-719-150-92	DIODE RD33ES-T1B		JR028	1-216-295-00	METAL CHIP 0 5%	1/10W
D801	8-719-971-05	DIODE HSM123		JR029	1-216-295-00	METAL CHIP 0 5%	1/10W
D802	8-719-911-19	DIODE 1SS119		JR030	1-216-296-00	METAL CHIP 0 5%	1/8W
D980	8-719-110-08	DIODE RD8.2ES-B2		JR031	1-216-296-00	METAL CHIP 0 5%	1/8W
D981	8-719-110-08	DIODE RD8.2ES-B2		JR032	1-216-296-00	METAL CHIP 0 5%	1/8W
D982	8-719-911-19	DIODE 1SS119		JR033	1-216-295-00	METAL CHIP 0 5%	1/10W
				JR034	1-216-296-00	METAL CHIP 0 5%	1/8W
				JR035	1-216-295-00	METAL CHIP 0 5%	1/10W
				JR036	1-216-296-00	METAL CHIP 0 5%	1/8W
				JR037	1-216-296-00	METAL CHIP 0 5%	1/8W

Ref. No.	Part No.	Description	Remarks			Ref. No.	Part No.	Description	Remarks		
JR038	1-216-295-00	METAL CHIP	0	5%	1/10W	< TRANSISTOR >					
JR039	1-216-296-00	METAL CHIP	0	5%	1/8W						
JR040	1-216-296-00	METAL CHIP	0	5%	1/8W	Q101	8-729-043-84	TRANSISTOR	PT380F3		
JR041	1-216-296-00	METAL CHIP	0	5%	1/8W	Q102	8-729-043-84	TRANSISTOR	PT380F3		
JR043	1-216-296-00	METAL CHIP	0	5%	1/8W	Q103	8-729-281-53	TRANSISTOR	2SC1815-GR		
						Q140	8-729-901-06	TRANSISTOR	DTA144EK		
JR044	1-216-296-00	METAL CHIP	0	5%	1/8W	Q201	8-729-230-49	TRANSISTOR	2SC2712-G		
JR045	1-216-296-00	METAL CHIP	0	5%	1/8W						
JR046	1-216-295-00	METAL CHIP	0	5%	1/10W	Q204	8-729-024-88	TRANSISTOR	MUN2212T1		
JR047	1-216-296-00	METAL CHIP	0	5%	1/8W	Q205	8-729-421-19	TRANSISTOR	UN2213		
JR048	1-216-296-00	METAL CHIP	0	5%	1/8W	Q208	8-729-230-49	TRANSISTOR	2SC2712-G		
						Q209	8-729-216-21	TRANSISTOR	2SA1162Y-TE85L		
JR049	1-216-296-00	METAL CHIP	0	5%	1/8W	Q210	8-729-230-49	TRANSISTOR	2SC2712-G		
JR050	1-216-295-00	METAL CHIP	0	5%	1/10W						
< JUMPER RESISTOR >						Q211	8-729-230-49	TRANSISTOR	2SC2712-G		
						Q214	8-729-421-19	TRANSISTOR	UN2213		
						Q260	8-729-230-49	TRANSISTOR	2SC2712-G		
JS609	1-216-295-00	METAL CHIP	0	5%	1/10W	Q301	8-729-281-53	TRANSISTOR	2SC1815-GR		
< COIL >						Q331	8-729-802-91	TRANSISTOR	2SD879		
L101	1-414-936-21	INDUCTOR	22uH			Q379	8-729-216-22	TRANSISTOR	2SA1162		
L140	1-414-189-31	INDUCTOR	100uH			Q386	8-729-230-49	TRANSISTOR	2SC2712-G		
L141	1-414-189-31	INDUCTOR	100uH			Q387	8-729-230-49	TRANSISTOR	2SC2712-G		
L160	1-414-934-21	INDUCTOR	10uH			Q502	8-729-010-05	TRANSISTOR	MSB709-RT1		
L201	1-408-405-00	INDUCTOR	4.7uH			Q503	8-729-010-05	TRANSISTOR	MSB709-RT1		
L204	1-414-940-21	INDUCTOR	100uH			Q505	8-729-010-05	TRANSISTOR	MSB709-RT1		
L207	1-414-931-21	INDUCTOR	3.3uH			Q560	8-729-010-05	TRANSISTOR	MSB709-RT1		
L262	1-414-940-21	INDUCTOR	100uH			Q603	8-729-018-99	TRANSISTOR	2SD2394-F		
L263	1-414-940-21	INDUCTOR	100uH			Q604	8-729-010-29	TRANSISTOR	MSD601-RST1		
L331	1-414-940-21	INDUCTOR	100uH			Q605	8-729-140-93	TRANSISTOR	2SB733-34		
L341	1-414-940-21	INDUCTOR	100uH			Q606	8-729-119-78	TRANSISTOR	2SC2785-HFE		
L501	1-414-936-21	INDUCTOR	22uH			Q731	8-729-421-19	TRANSISTOR	UN2213		
L502	1-414-940-21	INDUCTOR	100uH			Q801	8-729-216-21	TRANSISTOR	2SA1162Y-TE85L		
L503	1-414-940-21	INDUCTOR	100uH			Q802	8-729-230-49	TRANSISTOR	2SC2712-G		
L560	1-414-940-21	INDUCTOR	100uH			Q803	8-729-216-21	TRANSISTOR	2SA1162Y-TE85L		
L604	1-410-519-11	INDUCTOR	68uH			Q804	8-729-230-49	TRANSISTOR	2SC2712-G		
L605	1-414-930-21	INDUCTOR	2.2uH			Q805	8-729-900-51	TRANSISTOR	DTA114TK		
L606	1-414-934-21	INDUCTOR	10uH			Q806	8-729-230-49	TRANSISTOR	2SC2712-G		
L607	1-414-930-21	INDUCTOR	2.2uH			Q807	8-729-230-49	TRANSISTOR	2SC2712-G		
L703	1-414-930-21	INDUCTOR	2.2uH			Q808	8-729-230-49	TRANSISTOR	2SC2712-G		
L704	1-414-938-21	INDUCTOR	47uH			Q809	8-729-900-51	TRANSISTOR	DTA114TK		
L731	1-414-938-21	INDUCTOR	47uH			Q810	8-729-230-49	TRANSISTOR	2SC2712-G		
L801	1-410-524-41	INDUCTOR	180uH			Q851	8-729-230-49	TRANSISTOR	2SC2712-G		
L803	1-414-946-21	INDUCTOR	39uH			Q852	8-729-230-49	TRANSISTOR	2SC2712-G		
L804	1-414-946-21	INDUCTOR	39uH			Q853	8-729-216-21	TRANSISTOR	2SA1162Y-TE85L		
L805	1-414-939-21	INDUCTOR	68uH			Q854	8-729-216-21	TRANSISTOR	2SA1162Y-TE85L		
L808	1-414-932-21	INDUCTOR	4.7uH			Q855	8-729-230-49	TRANSISTOR	2SC2712-G		
L871	1-414-934-21	INDUCTOR	10uH			Q856	8-729-230-49	TRANSISTOR	2SC2712-G		
< PHOTO INTERRUPTER >						Q857	8-729-216-21	TRANSISTOR	2SA1162Y-TE85L		
						Q871	8-729-010-05	TRANSISTOR	MSB709-RT1		
PH101	8-749-013-23	PHOTO INTERRUPTER GP3S120				Q872	8-729-010-29	TRANSISTOR	MSD601-RST1		
PH102	8-749-013-23	PHOTO INTERRUPTER GP3S120				Q873	8-729-010-29	TRANSISTOR	MSD601-RST1		
< IC LINK >						Q874	8-729-424-08	TRANSISTOR	UN2111		
						Q875	8-729-010-29	TRANSISTOR	MSD601-RST1		
< RESISTOR >											
△ PS101	1-533-586-11	LINK, IC	315mA			R101	1-249-413-11	CARBON	470	5%	1/4W F
△ PS600	1-533-592-11	LINK, IC	1.6A			R102	1-216-089-00	METAL CHIP	47K	5%	1/10W
						R103	1-249-437-11	CARBON	47K	5%	1/4W
						R104	1-216-085-00	METAL CHIP	33K	5%	1/10W
						R105	1-216-085-00	METAL CHIP	33K	5%	1/10W

**Note :**

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

**Note :**

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

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Ref. No.	Part No.	Description			Remarks	Ref. No.	Part No.	Description			Remarks
R106	1-249-400-11	CARBON	39	5%	1/4W F	R230	1-216-045-00	METAL CHIP	680	5%	1/10W
R107	1-249-400-11	CARBON	39	5%	1/4W F	R231	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R108	1-249-421-11	CARBON	2.2K	5%	1/4W F	R232	1-249-420-11	CARBON	1.8K	5%	1/4W F
R109	1-216-041-00	METAL CHIP	470	5%	1/10W	R234	1-216-049-00	METAL CHIP	1K	5%	1/10W
R110	1-216-041-00	METAL CHIP	470	5%	1/10W	R235	1-216-295-00	METAL CHIP	0	5%	1/10W
R111	1-216-041-00	METAL CHIP	470	5%	1/10W	R236	1-216-049-00	METAL CHIP	1K	5%	1/10W
R118	1-216-089-00	METAL CHIP	47K	5%	1/10W	R237	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R119	1-216-077-00	METAL CHIP	15K	5%	1/10W	R238	1-216-063-91	RES,CHIP	3.9K	5%	1/10W
R124	1-249-421-11	CARBON	2.2K	5%	1/4W F	R239	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R125	1-249-421-11	CARBON	2.2K	5%	1/4W F	R240	1-216-049-00	METAL CHIP	1K	5%	1/10W
R126	1-247-885-00	CARBON	180K	5%	1/4W	R241	1-216-295-00	METAL CHIP	0	5%	1/10W
R127	1-249-429-11	CARBON	10K	5%	1/4W	R247	1-216-041-00	METAL CHIP	470	5%	1/10W
R128	1-216-065-91	RES,CHIP	4.7K	5%	1/10W	R260	1-216-044-00	METAL CHIP	620	5%	1/10W
R129	1-216-073-00	METAL CHIP	10K	5%	1/10W	R261	1-216-044-00	METAL CHIP	620	5%	1/10W
R130	1-216-073-00	METAL CHIP	10K	5%	1/10W	R262	1-216-295-00	METAL CHIP	0	5%	1/10W
R131	1-208-806-11	RES,CHIP	10K	0.50%	1/10W	R263	1-216-295-00	METAL CHIP	0	5%	1/10W
R132	1-208-806-11	RES,CHIP	10K	0.50%	1/10W	R264	1-216-295-00	METAL CHIP	0	5%	1/10W
R133	1-249-436-11	CARBON	39K	5%	1/4W	R265	1-216-295-00	METAL CHIP	0	5%	1/10W
R134	1-216-089-00	METAL CHIP	47K	5%	1/10W	R266	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R135	1-216-089-00	METAL CHIP	47K	5%	1/10W	R267	1-216-073-00	METAL CHIP	10K	5%	1/10W
R136	1-216-089-00	METAL CHIP	47K	5%	1/10W	R268	1-216-081-00	METAL CHIP	22K	5%	1/10W
R137	1-216-089-00	METAL CHIP	47K	5%	1/10W	R269	1-249-421-11	CARBON	2.2K	5%	1/4W F
R140	1-208-830-11	RES,CHIP	100K	0.50%	1/10W	R270	1-247-863-91	CARBON	22K	5%	1/4W
R141	1-208-830-11	RES,CHIP	100K	0.50%	1/10W	R271	1-216-049-00	METAL CHIP	1K	5%	1/10W
R143	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	R272	1-216-077-00	METAL CHIP	15K	5%	1/10W
R144	1-216-065-91	RES,CHIP	4.7K	5%	1/10W	R273	1-216-077-00	METAL CHIP	15K	5%	1/10W
R145	1-208-830-11	RES,CHIP	100K	0.50%	1/10W	R274	1-216-073-00	METAL CHIP	10K	5%	1/10W
R146	1-208-830-11	RES,CHIP	100K	0.50%	1/10W	R275	1-216-073-00	METAL CHIP	10K	5%	1/10W
R148	1-249-414-11	CARBON	560	5%	1/4W F	R276	1-216-049-00	METAL CHIP	1K	5%	1/10W
R149	1-216-065-91	RES,CHIP	4.7K	5%	1/10W	R301	1-216-093-00	METAL CHIP	68K	5%	1/10W
R150	1-216-049-00	METAL CHIP	1K	5%	1/10W	R302	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R151	1-216-037-00	METAL CHIP	330	5%	1/10W	R306	1-216-073-00	METAL CHIP	10K	5%	1/10W
R152	1-216-117-00	METAL CHIP	680K	5%	1/10W	R307	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R153	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	R309	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R154	1-216-111-00	METAL CHIP	390K	5%	1/10W	R310	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R155	1-216-105-91	RES,CHIP	220K	5%	1/10W	R311	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R160	1-216-077-00	METAL CHIP	15K	5%	1/10W	R312	1-216-079-00	METAL CHIP	18K	5%	1/10W
R161	1-216-073-00	METAL CHIP	10K	5%	1/10W	R313	1-216-109-00	METAL CHIP	330K	5%	1/10W
R162	1-216-089-00	METAL CHIP	47K	5%	1/10W	R314	1-216-035-00	METAL CHIP	270	5%	1/10W
R163	1-216-073-00	METAL CHIP	10K	5%	1/10W	R315	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R164	1-216-073-00	METAL CHIP	10K	5%	1/10W	R316	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R165	1-216-295-00	METAL CHIP	0	5%	1/10W	R317	1-216-079-00	METAL CHIP	18K	5%	1/10W
R166	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	R318	1-216-075-00	METAL CHIP	12K	5%	1/10W
R167	1-216-097-91	RES,CHIP	100K	5%	1/10W	R320	1-216-047-91	RES,CHIP	820	5%	1/10W
R168	1-249-417-11	CARBON	1K	5%	1/4W F	R331	1-217-671-11	METAL CHIP	1	5%	1/10W
R169	1-216-073-00	METAL CHIP	10K	5%	1/10W	R332	1-216-063-91	RES,CHIP	3.9K	5%	1/10W
R170	1-216-073-00	METAL CHIP	10K	5%	1/10W	R333	1-249-401-11	CARBON	47	5%	1/4W F
R201	1-216-041-00	METAL CHIP	470	5%	1/10W	R334	1-216-031-00	METAL CHIP	180	5%	1/10W
R202	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	R341	1-216-049-00	METAL CHIP	1K	5%	1/10W
R203	1-216-049-00	METAL CHIP	1K	5%	1/10W	R342	1-216-049-00	METAL CHIP	1K	5%	1/10W
R204	1-249-413-11	CARBON	470	5%	1/4W F	R344	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R210	1-216-295-00	METAL CHIP	0	5%	1/10W	R346	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R212	1-216-073-00	METAL CHIP	10K	5%	1/10W	R347	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R213	1-249-429-11	CARBON	10K	5%	1/4W	R348	1-216-033-00	METAL CHIP	220	5%	1/10W
R218	1-208-798-11	RES,CHIP	4.7K	0.50%	1/10W	R368	1-216-133-00	METAL CHIP	3.3M	5%	1/10W
R219	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	R370	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R221	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	R371	1-208-820-11	RES,CHIP	39K	0.50%	1/10W
R222	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	R372	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R228	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	R373	1-216-033-00	METAL CHIP	220	5%	1/10W
R229	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	R374	1-216-033-00	METAL CHIP	220	5%	1/10W

Ref. No.	Part No.	Description			Remarks	Ref. No.	Part No.	Description			Remarks
R378	1-249-434-11	CARBON	27K	5%	1/4W	R748	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R379	1-216-049-00	METAL CHIP	1K	5%	1/10W	R749	1-216-049-00	METAL CHIP	1K	5%	1/10W
R380	1-216-025-91	RES,CHIP	100	5%	1/10W	R801	1-216-049-00	METAL CHIP	1K	5%	1/10W
R381	1-216-025-91	RES,CHIP	100	5%	1/10W	R802	1-216-049-00	METAL CHIP	1K	5%	1/10W
R382	1-216-295-00	METAL CHIP	0	5%	1/10W	R803	1-216-039-00	METAL CHIP	390	5%	1/10W
R383	1-216-295-00	METAL CHIP	0	5%	1/10W	R804	1-216-039-00	METAL CHIP	390	5%	1/10W
R384	1-216-091-00	METAL CHIP	56K	5%	1/10W	R805	1-216-049-00	METAL CHIP	1K	5%	1/10W
R385	1-216-091-00	METAL CHIP	56K	5%	1/10W	R806	1-216-043-91	RES,CHIP	560	5%	1/10W
R386	1-216-049-00	METAL CHIP	1K	5%	1/10W	R807	1-216-039-00	METAL CHIP	390	5%	1/10W
R387	1-216-049-00	METAL CHIP	1K	5%	1/10W	R808	1-216-033-00	METAL CHIP	220	5%	1/10W
R389	1-216-073-00	METAL CHIP	10K	5%	1/10W	R809	1-216-077-00	METAL CHIP	15K	5%	1/10W
R391	1-216-049-00	METAL CHIP	1K	5%	1/10W	R810	1-216-075-00	METAL CHIP	12K	5%	1/10W
R392	1-216-049-00	METAL CHIP	1K	5%	1/10W	R811	1-216-033-00	METAL CHIP	220	5%	1/10W
R393	1-216-295-00	METAL CHIP	0	5%	1/10W	R812	1-216-043-91	RES,CHIP	560	5%	1/10W
R501	1-216-295-00	METAL CHIP	0	5%	1/10W	R813	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R502	1-216-033-00	METAL CHIP	220	5%	1/10W	R814	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R505	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	R815	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R506	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	R816	1-216-075-00	METAL CHIP	12K	5%	1/10W
R507	1-216-081-00	METAL CHIP	22K	5%	1/10W	R817	1-216-077-00	METAL CHIP	15K	5%	1/10W
R508	1-216-049-00	METAL CHIP	1K	5%	1/10W	R818	1-216-039-00	METAL CHIP	390	5%	1/10W
R510	1-216-081-00	METAL CHIP	22K	5%	1/10W	R819	1-216-045-00	METAL CHIP	680	5%	1/10W
R514	1-216-073-00	METAL CHIP	10K	5%	1/10W	R820	1-216-039-00	METAL CHIP	390	5%	1/10W
R515	1-216-101-00	METAL CHIP	150K	5%	1/10W	R821	1-216-045-00	METAL CHIP	680	5%	1/10W
R517	1-216-063-91	RES,CHIP	3.9K	5%	1/10W	R822	1-216-049-00	METAL CHIP	1K	5%	1/10W
R518	1-216-043-91	RES,CHIP	560	5%	1/10W	R823	1-216-041-00	METAL CHIP	470	5%	1/10W
R519	1-216-043-91	RES,CHIP	560	5%	1/10W	R824	1-216-047-91	RES,CHIP	820	5%	1/10W
R520	1-216-033-00	METAL CHIP	220	5%	1/10W	R825	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R521	1-216-073-00	METAL CHIP	10K	5%	1/10W	R826	1-216-025-91	RES,CHIP	100	5%	1/10W
R522	1-216-073-00	METAL CHIP	10K	5%	1/10W	R827	1-216-045-00	METAL CHIP	680	5%	1/10W
R523	1-216-073-00	METAL CHIP	10K	5%	1/10W	R828	1-216-043-91	RES,CHIP	560	5%	1/10W
R560	1-216-022-00	METAL CHIP	75	5%	1/10W	R838	1-249-410-11	CARBON	270	5%	1/4W F
R561	1-216-021-00	METAL CHIP	68	5%	1/10W	R844	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R562	1-249-407-11	CARBON	150	5%	1/4W F	R851	1-208-820-11	RES,CHIP	39K	0.50%	1/10W
R563	1-249-407-11	CARBON	150	5%	1/4W F	R852	1-208-802-11	RES,CHIP	6.8K	0.50%	1/10W
R565	1-216-037-00	METAL CHIP	330	5%	1/10W	R853	1-208-792-11	RES,CHIP	2.7K	0.50%	1/10W
R617	1-249-417-11	CARBON	1K	5%	1/4W F	R855	1-208-770-11	RES,CHIP	330	0.50%	1/10W
R621	1-216-089-00	METAL CHIP	47K	5%	1/10W	R856	1-208-758-11	RES,CHIP	100	0.50%	1/10W
R622	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	R857	1-208-790-11	RES,CHIP	2.2K	0.50%	1/10W
R623	1-247-843-11	CARBON	3.3K	5%	1/4W	R858	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R624	1-216-430-11	METAL OXIDE	390	5%	1W F	R859	1-208-800-11	RES,CHIP	5.6K	0.50%	1/10W
R625	1-249-429-11	CARBON	10K	5%	1/4W	R860	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R626	1-249-417-11	CARBON	1K	5%	1/4W F	R861	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R627	1-247-815-91	CARBON	220	5%	1/4W	R862	1-208-806-11	RES,CHIP	10K	0.50%	1/10W
R628	1-247-815-91	CARBON	220	5%	1/4W	R864	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R701	1-216-049-00	METAL CHIP	1K	5%	1/10W	R865	1-216-107-00	METAL CHIP	270K	5%	1/10W
R702	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	R871	1-249-429-11	CARBON	10K	5%	1/4W
△ R705	1-212-893-00	FUSIBLE	330	5%	1/4W F	R872	1-247-807-31	CARBON	100	5%	1/4W
R706	1-216-113-00	METAL CHIP	470K	5%	1/10W	R873	1-247-807-31	CARBON	100	5%	1/4W
R709	1-216-295-00	METAL CHIP	0	5%	1/10W	R874	1-247-807-31	CARBON	100	5%	1/4W
R710	1-216-295-00	METAL CHIP	0	5%	1/10W	R875	1-247-807-31	CARBON	100	5%	1/4W
R711	1-216-295-00	METAL CHIP	0	5%	1/10W	R876	1-216-081-00	METAL CHIP	22K	5%	1/10W
R712	1-216-295-00	METAL CHIP	0	5%	1/10W	R877	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R731	1-216-049-00	METAL CHIP	1K	5%	1/10W	R878	1-216-073-00	METAL CHIP	10K	5%	1/10W
R732	1-216-049-00	METAL CHIP	1K	5%	1/10W	R879	1-249-417-11	CARBON	1K	5%	1/4W F
R733	1-249-425-11	CARBON	4.7K	5%	1/4W F	R880	1-249-429-11	CARBON	10K	5%	1/4W
R735	1-216-049-00	METAL CHIP	1K	5%	1/10W						
R736	1-216-295-00	METAL CHIP	0	5%	1/10W						
R737	1-216-081-00	METAL CHIP	22K	5%	1/10W						
R738	1-216-081-00	METAL CHIP	22K	5%	1/10W						
R739	1-249-429-11	CARBON	10K	5%	1/4W						

**Note :**  
The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

**Note :**  
Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remarks		
R881	1-216-043-91	RES,CHIP	560	5%	1/10W
R882	1-216-049-00	METAL CHIP	1K	5%	1/10W
R883	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R884	1-216-047-91	RES,CHIP	820	5%	1/10W
R885	1-247-807-31	CARBON	100	5%	1/4W
R886	1-216-073-00	METAL CHIP	10K	5%	1/10W
R887	1-216-081-00	METAL CHIP	22K	5%	1/10W
R888	1-216-081-00	METAL CHIP	22K	5%	1/10W
R889	1-247-807-31	CARBON	100	5%	1/4W
R890	1-216-049-00	METAL CHIP	1K	5%	1/10W
R980	1-216-049-00	METAL CHIP	1K	5%	1/10W
R981	1-216-295-00	METAL CHIP	0	5%	1/10W
< VARIABLE RESISTOR >					
RV731	1-241-766-11	RES, ADJ, CERMET 47K			
< SWITCH >					
S101	1-762-108-11	SWITCH, PUSH (1 KEY) (REC PROOF)			
S102	1-771-155-11	SWITCH, ROTARY (MECHANISM MODE)			
S701	1-571-588-11	SWITCH, SLIDE (RF UNIT CH3/CH4)			
< TRANSFORMER >					
T331	1-431-097-11	TRANSFORMER, BIAS OSCILLATION			
< TUNER >					
TU700	8-598-289-00	TUNER, FSS BTF-MA401			
< VIBRATOR >					
X160	1-760-494-11	VIBRATOR, CRYSTAL 16MHz			
X202	1-577-380-11	VIBRATOR, CRYSTAL 3.579545MHz			
X500	1-577-381-11	VIBRATOR, CRYSTAL 14.31818MHz			
X501	1-577-165-11	VIBLATOR, CERAMIC 503.5kHz			
X871	1-577-133-21	VIBRATOR, CRYSTAL 8MHz			
*	A-6791-572-A	NL-2A BOARD, COMPLETE			
*****					
(Ref.No.: 3,000 Series)					
< CAPACITOR >					
C002	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C006	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C007	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C008	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C009	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C010	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C011	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C012	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C013	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C015	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C016	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C017	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C018	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C020	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C021	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C022	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C023	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C024	1-124-234-00	ELECT	22uF	20%	16V
C026	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C027	1-124-589-11	ELECT	47uF	20%	16V

Ref. No.	Part No.	Description			Remarks
C029	1-124-234-00	ELECT	22uF	20%	16V
C030	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C032	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C034	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C035	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C036	1-124-234-00	ELECT	22uF	20%	16V
C037	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C038	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C039	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C041	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C045	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C046	1-124-234-00	ELECT	22uF	20%	16V
C047	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C048	1-124-234-00	ELECT	22uF	20%	16V
< CONNECTOR >					
CN001	1-506-468-11	PIN, CONNECTOR 3P			
CN002	1-506-468-11	PIN, CONNECTOR 3P			
CN003	1-506-470-11	PIN, CONNECTOR 5P			
CN004	1-695-330-31	PIN, CONNECTOR (PC BOARD) 7P			
< JACK >					
CNJ001	1-784-598-11	JACK (CPD IN)			
< DIODE >					
D001	8-719-911-19	DIODE 1SS119			
D002	8-719-911-19	DIODE 1SS119			
D003	8-719-911-19	DIODE 1SS119			
D004	8-719-911-19	DIODE 1SS119			
D005	8-719-911-19	DIODE 1SS119			
D007	8-719-110-08	DIODE RD8.2ES-B2			
D008	8-719-911-19	DIODE 1SS119			
< INDUCTOR CHIP >					
FB001	1-414-234-11	INDUCTOR CHIP	0UH		
FB002	1-414-234-11	INDUCTOR CHIP	0UH		
FB003	1-414-234-11	INDUCTOR CHIP	0UH		
FB004	1-414-233-21	INDUCTOR CHIP	0UH		
FB005	1-414-233-21	INDUCTOR CHIP	0UH		
FB006	1-414-233-21	INDUCTOR CHIP	0UH		
FB007	1-414-233-21	INDUCTOR CHIP	0UH		
FB008	1-414-234-11	INDUCTOR CHIP	0UH		
FB009	1-414-234-11	INDUCTOR CHIP	0UH		
FB010	1-414-234-11	INDUCTOR CHIP	0UH		
FB011	1-414-234-11	INDUCTOR CHIP	0UH		
FB012	1-414-234-11	INDUCTOR CHIP	0UH		
FB020	1-414-235-11	INDUCTOR CHIP	0UH		
FB021	1-414-235-11	INDUCTOR CHIP	0UH		
FB022	1-414-235-11	INDUCTOR CHIP	0UH		
FB023	1-414-235-11	INDUCTOR CHIP	0UH		
FB024	1-414-235-11	INDUCTOR CHIP	0UH		
< IC >					
IC001	8-759-100-93	IC	uPC393G2		
IC002	8-759-531-73	IC	CXD8753Q		
IC003	8-752-896-31	IC	CXP84632-030Q		
IC004	8-759-518-23	IC	X24C04S8		



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
< COIL >							
L002	1-414-934-21	INDUCTOR	10uH	R033	1-216-063-91	RES,CHIP	3.9K 5% 1/10W
L003	1-414-934-21	INDUCTOR	10uH	R035	1-249-398-11	CARBON	27 5% 1/4W F
L004	1-414-938-21	INDUCTOR	47uH	R036	1-216-065-91	RES,CHIP	4.7K 5% 1/10W
L006	1-414-934-21	INDUCTOR	10uH	R037	1-216-295-00	METAL CHIP	0 5% 1/10W
L007	1-414-934-21	INDUCTOR	10uH	R038	1-216-063-91	RES,CHIP	3.9K 5% 1/10W
L008	1-414-940-21	INDUCTOR	100uH	R039	1-216-065-91	RES,CHIP	4.7K 5% 1/10W
L009	1-414-936-21	INDUCTOR	22uH	R040	1-216-121-91	RES,CHIP	1M 5% 1/10W
L010	1-414-936-21	INDUCTOR	22uH	R041	1-216-073-00	METAL CHIP	10K 5% 1/10W
< IC LINK >				R042	1-216-073-00	METAL CHIP	10K 5% 1/10W
△ PS001	1-533-901-11	LINK, IC	125mA	R046	1-216-295-00	METAL CHIP	0 5% 1/10W
△ PS002	1-533-587-11	LINK, IC	400mA	R048	1-216-089-00	METAL CHIP	47K 5% 1/10W
< TRANSISTOR >				R051	1-216-045-00	METAL CHIP	680 5% 1/10W
Q001	8-729-044-60	TRANSISTOR	2SC3383-T-AA	R053	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
Q002	8-729-044-60	TRANSISTOR	2SC3383-T-AA	R054	1-216-025-91	RES,CHIP	100 5% 1/10W
Q003	8-729-421-19	TRANSISTOR	UN2213	R057	1-216-025-91	RES,CHIP	100 5% 1/10W
Q004	8-729-010-25	TRANSISTOR	MSD601-RT1	R058	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
Q005	8-729-010-25	TRANSISTOR	MSD601-RT1	R060	1-216-045-00	METAL CHIP	680 5% 1/10W
Q006	8-729-010-25	TRANSISTOR	MSD601-RT1	R061	1-216-045-00	METAL CHIP	680 5% 1/10W
Q007	8-729-010-25	TRANSISTOR	MSD601-RT1	R063	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
Q008	8-729-044-60	TRANSISTOR	2SC3383-T-AA	R064	1-216-025-91	RES,CHIP	100 5% 1/10W
Q009	8-729-421-19	TRANSISTOR	UN2213	R067	1-216-025-91	RES,CHIP	100 5% 1/10W
Q010	8-729-421-19	TRANSISTOR	UN2213	R068	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
Q011	8-729-044-60	TRANSISTOR	2SC3383-T-AA	R070	1-216-045-00	METAL CHIP	680 5% 1/10W
Q012	8-729-421-19	TRANSISTOR	UN2213	R071	1-216-041-00	METAL CHIP	470 5% 1/10W
Q015	8-729-421-19	TRANSISTOR	UN2213	R072	1-216-041-00	METAL CHIP	470 5% 1/10W
Q016	8-729-010-05	TRANSISTOR	MSB709-RT1	R073	1-216-041-00	METAL CHIP	470 5% 1/10W
Q017	8-729-010-05	TRANSISTOR	MSB709-RT1	R074	1-216-041-00	METAL CHIP	470 5% 1/10W
Q018	8-729-010-05	TRANSISTOR	MSB709-RT1	R081	1-216-089-00	METAL CHIP	47K 5% 1/10W
Q019	8-729-010-05	TRANSISTOR	MSB709-RT1	R082	1-216-089-00	METAL CHIP	47K 5% 1/10W
< RESISTOR >				R083	1-216-043-91	RES,CHIP	560 5% 1/10W
R002	1-249-402-11	CARBON	56 5% 1/4W F	< VIBRATOR >			
R004	1-216-049-00	METAL CHIP	1K 5% 1/10W	X001	1-767-914-21	VIBRATOR, CRYSTAL 13.56MHz	
R005	1-216-049-00	METAL CHIP	1K 5% 1/10W	X002	1-760-995-21	VIBRATOR, CRYSTAL 16MHz	
R007	1-249-398-11	CARBON	27 5% 1/4W F				
R008	1-216-049-00	METAL CHIP	1K 5% 1/10W	△	1-468-308-11	POWER BLOCK SR821	
R009	1-216-295-00	METAL CHIP	0 5% 1/10W	*****			
R010	1-216-049-00	METAL CHIP	1K 5% 1/10W	(Ref. No.: 9,000 Series)			
R011	1-216-065-91	RES,CHIP	4.7K 5% 1/10W	< CAPACITOR >			
R012	1-216-065-91	RES,CHIP	4.7K 5% 1/10W	△ C101	1-104-705-51	FILM	0.1uF 250V
R013	1-216-065-91	RES,CHIP	4.7K 5% 1/10W	△ C102	1-104-705-51	FILM	0.1uF 250V
R014	1-216-065-91	RES,CHIP	4.7K 5% 1/10W	C106	1-119-882-41	ELECT	120uF 200V
R015	1-216-025-91	RES,CHIP	100 5% 1/10W	C107	1-126-963-11	ELECT	4.7uF 50V
R016	1-216-089-00	METAL CHIP	47K 5% 1/10W	C110	1-130-491-51	FILM	0.047uF 50V
R017	1-216-081-00	METAL CHIP	22K 5% 1/10W	C111	1-130-491-51	FILM	0.047uF 50V
R018	1-216-025-91	RES,CHIP	100 5% 1/10W	C201	1-126-967-11	ELECT	47uF 50V
R019	1-216-089-00	METAL CHIP	47K 5% 1/10W	C202	1-126-183-11	ELECT	1000uF 16V
R020	1-216-081-00	METAL CHIP	22K 5% 1/10W	C203	1-126-934-11	ELECT	220uF 16V
R022	1-216-049-00	METAL CHIP	1K 5% 1/10W	C204	1-111-044-11	ELECT	2200uF 16V
R023	1-216-017-91	RES,CHIP	47 5% 1/10W	C205	1-126-925-11	ELECT	470uF 10V
R024	1-216-057-00	METAL CHIP	2.2K 5% 1/10W	C206	1-126-967-11	ELECT	47uF 50V
R025	1-216-049-00	METAL CHIP	1K 5% 1/10W	C207	1-126-925-11	ELECT	470uF 10V
R027	1-249-402-11	CARBON	56 5% 1/4W F	C208	1-126-960-11	ELECT	1uF 50V
R030	1-216-017-91	RES,CHIP	47 5% 1/10W				
R031	1-216-073-00	METAL CHIP	10K 5% 1/10W				
R032	1-216-065-91	RES,CHIP	4.7K 5% 1/10W				

## Note :

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

## Note :

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## POWER BLOCK SR821

Ref. No.	Part No.	Description	Remarks
< DIODE >			
D103	8-719-920-32	DIODE ERA15-02	
D104	8-719-109-61	DIODE RD3.0ES	
D105	8-719-911-19	DIODE 1SS119	
D106	8-719-904-05	DIODE 1N4005	
D107	8-719-904-05	DIODE 1N4005	
D108	8-719-904-05	DIODE 1N4005	
D109	8-719-904-05	DIODE 1N4005	
D110	8-719-904-05	DIODE 1N4005	
D201	8-719-061-02	DIODE PR1003	
D202	8-719-510-73	DIODE S3L20U	
D204	8-719-027-20	DIODE D3S4M	
D205	8-719-058-08	DIODE RD51F	
D206	8-719-061-02	DIODE PR1003	
D207	8-719-061-02	DIODE PR1003	
< FUSE >			
△ F101	1-533-296-11	FUSE 2A	125V
< FERRITE BEAD >			
FB1	9-902-053-01	FERRITE BEAD	
< IC >			
△ IC201	8-759-420-19	IC AN1431T	
< PHOTOCOUPLER >			
△ PC101	8-719-018-29	PHOTOCOUPLER ON3131	
< TRANSISTOR >			
Q101	8-729-904-98	TRANSISTOR 2SC4054	
Q102	8-729-012-31	TRANSISTOR 2SC4040	
< RESISTOR >			
△ R101	1-219-779-51	CARBON 6.8M 10% 1/2W	
MISCELLANEOUS			
*****			
△ 9	1-666-524-11	PWB, CA-55	
11	1-766-723-21	CONNECTOR, BOARD TO BOARD 3P	
14	1-783-605-11	CORD, POWER	
16	1-762-844-21	SWITCH, ROTARY	
21	1-783-546-11	CABLE, FLAT (FFM-24)	
△ 54	1-783-547-11	CABLE, FLAT (FFM-25)	
56	1-475-749-11	COMMANDER, STANDARD (RMT-V249)	
704	1-468-308-11	POWER BLOCK SR821	
776	1-779-725-11	CONNECTOR, BOARD TO BOARD 5P	
M902	1-500-144-11	HEAD, FE	
M903	8-839-044-02	DRUM ASSY DZH-94A/Z-RP (M901)	
	1-698-971-11	MOTOR, DC (SPINDLE)	
	X-3947-577-1	MOTOR ASSY, CAM	

Ref. No.	Part No.	Description	Remarks
ACCESSORIES & PACKING MATERIALS			
*****			
	1-475-749-11	COMMANDER, STANDARD (RMT-V249)	
	1-696-592-11	CORD, CONNECTION (NTSC) (FOR RF)	1.5m
	1-775-454-21	CORD, CONNECTION (MONAURAL CABLE)	1.5m
	1-776-258-11	CORD, AVC CONNECTION (FOR VIDEO/AUDIO)	1.5m
	1-783-325-11	CORD, CONNECTION (CABLE MOUSE)	
	3-861-573-11	MANUAL, INSTRUCTION (ENGLISH)	
	3-861-573-21	MANUAL, INSTRUCTION (FRENCH) (Canadian)	
	3-861-573-31	MANUAL, INSTRUCTION (CHINESE) (Canadian)	
	3-979-315-01	COVER, JACK	
*	3-979-317-01	CUSHION	
*	3-979-512-01	SPACER	
*	3-987-412-01	INDIVIDUAL CARTON	
*****			
HARDWARE LIST			
*****			
#1	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3	
#2	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
#701	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
#702	7-682-547-04	SCREW +P 3X6	
#703	7-685-133-19	SCREW (DIA. 2.6) (IT3B)	

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