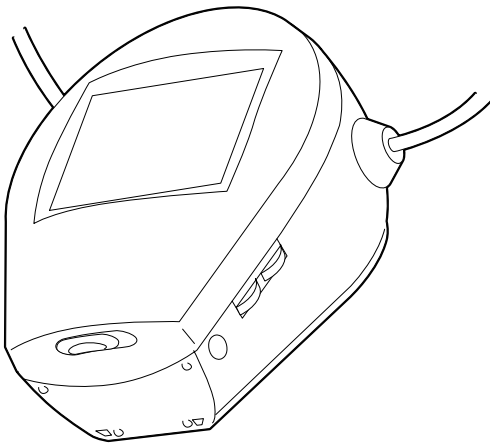


SERVICE MANUAL

<u>MODEL</u>	<u>COMMANDER</u>	<u>DEST.</u>	<u>CHASSIS NO.</u>	<u>MODEL</u>	<u>COMMANDER</u>	<u>DEST.</u>	<u>CHASSIS NO.</u>
<i>FDL-PT222</i>		<i>US</i>					



* Please file according to model size. ☐

2.2

LCD COLOR TV
SONY[®]

SPECIFICATIONS

TV standard	American TV standard/NTSC
Channel coverage	VHF: 2 - 13 UHF: 14 - 69
Antenna	VHF/UHF strap antenna
Display format	Transmission type TN liquid crystal panel
Drive format	Passive matrix
Picture	2.2 inches measured diagonally
Viewable image size	43.5 × 33 mm (w/h)
Input	Antenna: VHF/UHF 75Ω (minijack)
Output	Headphones: minijack (mono) Impedance 8 - 45 ohms
Power requirements	4.5 V DC AC power adaptor compatible (not supplied)
Power consumption	Approx. 2.9 W
Speaker	Ø28 mm (1 1/8 in.), 0.1 W
Temperature range	32 °F - 104 °F (0 °C - 40 °C)
Dimensions	Approx. 91 × 109 × 64 mm (3 5/8 × 4 3/8 × 2 5/8 in.)(w/h/d) excl. projecting parts and controls
Strap length	Approx. 1,750 mm (69 in.)
Mass	Approx. 260 g (9.2 oz), excl. batteries
Supplied accessory	This instruction manual
Optional accessories	AC power adaptor AC-E45HG Size AA (LR6) alkaline battery

Design and specifications are subject to change without notice.

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	Operation (see fig. B)	3
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(CAUTION)

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

WARNING!!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.

THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

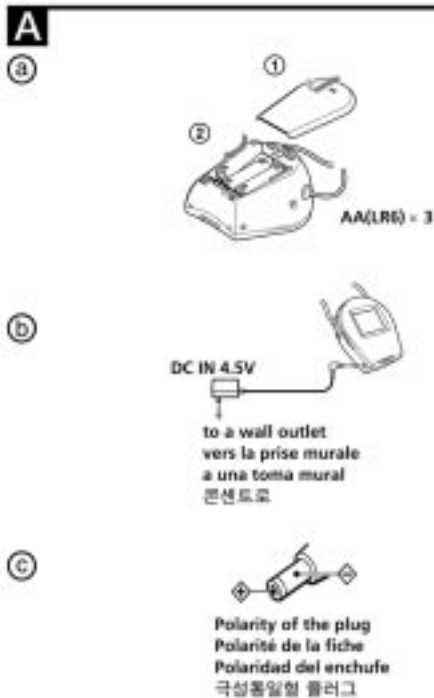
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK Δ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS 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. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

SECTION 1

GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instructions Manual. The page numbers of the Operating Instruction Manual remain as in the manual. (Part no : 4-083-376-11)



English

Power Sources (see fig. A)

Alkaline Batteries

Use Sony LR6 alkaline batteries (not supplied).

- 1 Push and slide the battery cover open.
- 2 Insert three batteries. Be sure to insert the (+) polarity of each battery first as illustrated.

Battery Life: With continuous use, Sony LR6 alkaline batteries will last about 3.0 hours.

Battery Type	Size	Battery Life
LR6	AA	Approx. 3.0 hours

Notes

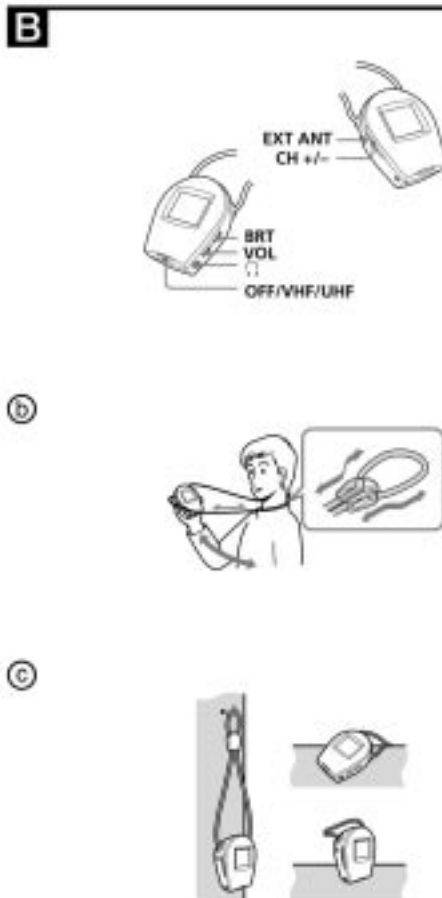
- When the picture becomes dim or the tuning does not lock onto a channel, replace all the batteries with new ones.
- Switch off the TV and remove the batteries from the unit if the TV will not be used for a long period of time to avoid battery leakage. Also, be sure to remove dead batteries from the unit.

House Current

See fig. A-①.

Note

Use only the recommended AC power adapter, AC-E4288G (not supplied). (For the polarity of the plug, see fig. A-②).



Operation (see fig. B)

- 1 Set the OFF/VHF/UHF switch to VHF or UHF whichever band you want to watch.
- 2 Press the CH +/- button to select a channel.
- 3 Adjust the volume with the VOL dial.
- 4 Adjust the brightness with the BRT dial.

To switch off the TV: Set the OFF/VHF/UHF switch to OFF.

To improve the broadcast reception: Extend the strap antenna and move the unit in every direction.

Notes

- If strong pressure or stress is applied to the antenna strap, it automatically disconnects from the TV for safety.
- Contact your nearest Sony dealer or authorized service center for its repair.

There may be poor broadcast reception in the following areas:

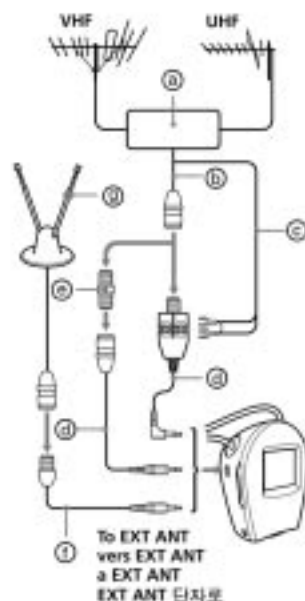
- Faraway from the broadcasting station, or behind a mountain or tall building.
- Inside a train or car, etc.
- Where there strong interference, such as near a high tension wire, neon sign, or radio station.
- Near a railway line or expressway, or under the air traffic routes.
- In the underground shopping centers, tunnels, or solid buildings.

Listening with headphones: Connect headphones (not supplied) to the (headphones) jack. The sound is heard from both sides of the headphones, but the sound is monaural.

How to use the TV

Wear the TV around your neck. You can adjust the length of the strap. (See fig. B-②). You can also suspend or place the TV on a flat surface. (See fig. B-③).

C



- ① 75Ω external antenna cable (not supplied), Câble d'antenne externe 75Ω (non fourni), Cable de antena externo de 75Ω (no suministrado), 75Ω 외부 안테나용 케이블(별매)
- ② Indoor antenna, Antenne intérieure, Antena de interior, 실내 안테나

External Antenna Connection (see fig. C)

Connect a 75Ω external antenna cable (not supplied) to the TV. This will improve the TV's reception.

English

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION

This device complies with part 15 of the FCC Rules.

Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Owner's Record

The model and serial numbers are located at the rear. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. FDL-PT222

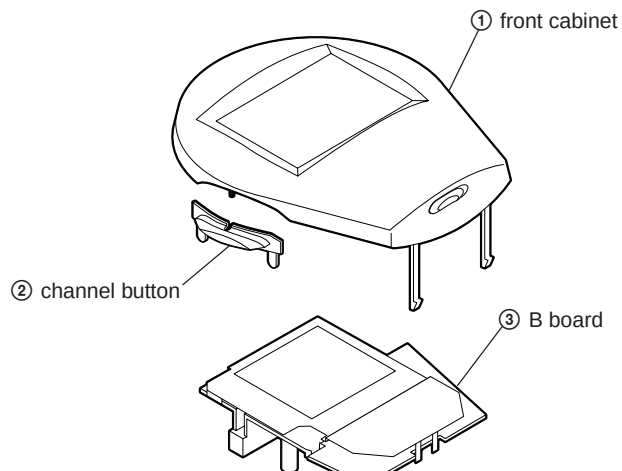
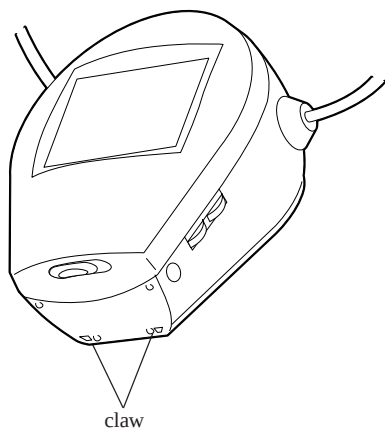
Serial No. _____

SECTION 2

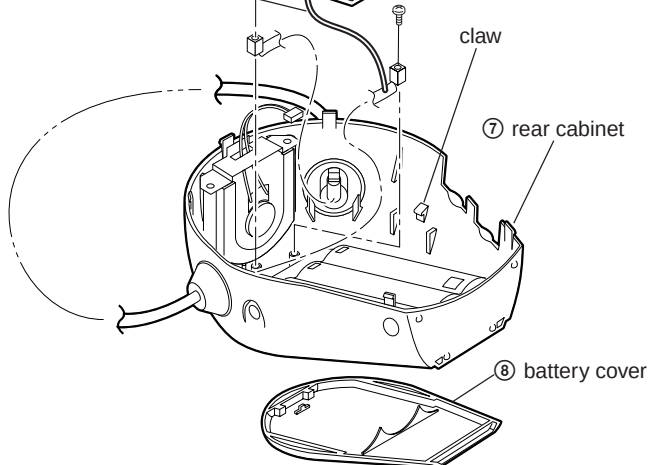
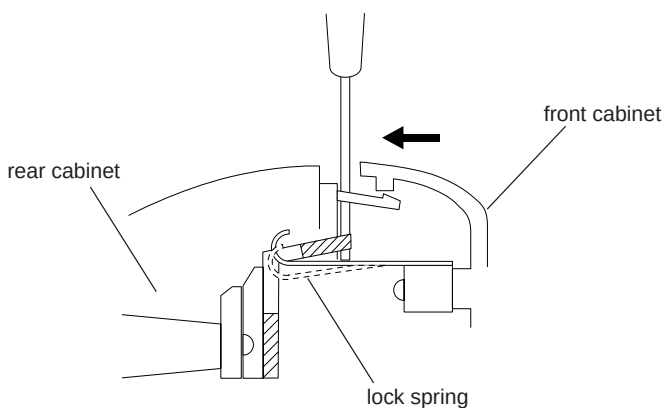
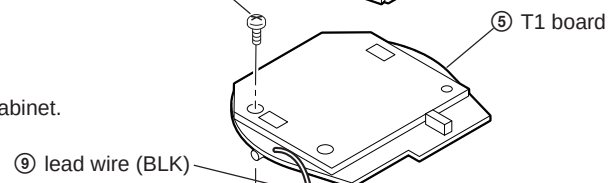
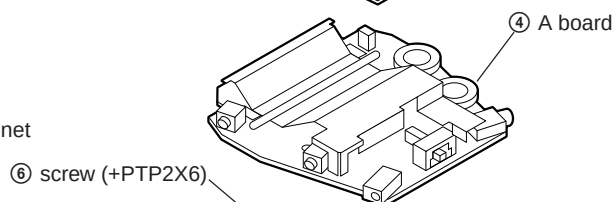
DISASSEMBLY

2-1. CABINETS

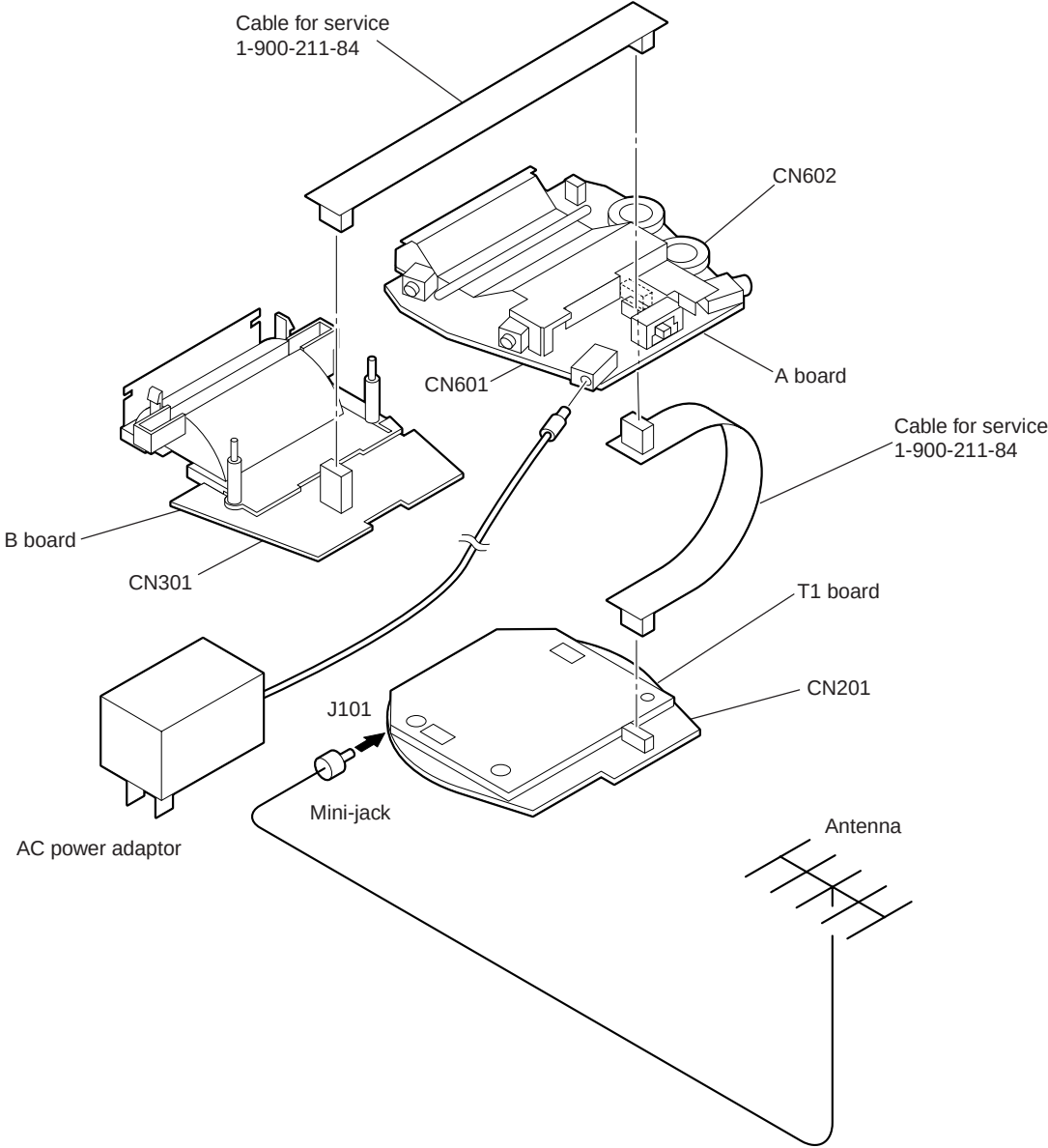
1. Remove the battery cover ⑧.
2. Push two claws with a screwdriver or equivalent on the bottom and remove them.



3. While pushing the rear cabinet, remove claws of joints with the front cabinet.
4. Insert a screwdriver or equivalent to the gap on the upper side of the cabinet, and while pushing the lock spring, put it down to the rear cabinet side.
5. Remove the channel button ②.
6. Disconnect CN501 (for speaker) on the A board.
7. Remove the B board ③ and the A board ④.
8. Remove solder for the lead wire (BLK) ⑨.
9. Remove a screw (+PTP2X6) ⑥ secured the T board ⑤.
10. Release the T1 board ⑤ from two claws (right and left) on the rear cabinet.



2-2. SERVICE POSITION



SECTION 3

CIRCUIT ADJUSTMENTS

3-1.A BOARD ADJUSTMENT

[+4.5V ALIGNMENT (RV601)]

Using a digital voltmeter measuring the voltage between JL32 (+4.5V) and JL33 (GND). Adjust RV601 to obtain the value shown below.

Standard Value = $4.45V \pm 0.05VDC$
S601 position = UHF position

[+30.0V CHECK]

Check the voltage across JL29 (+30.0V) and JL33 (GND) .

Standard Value = $30.5V \pm 1.5VDC$

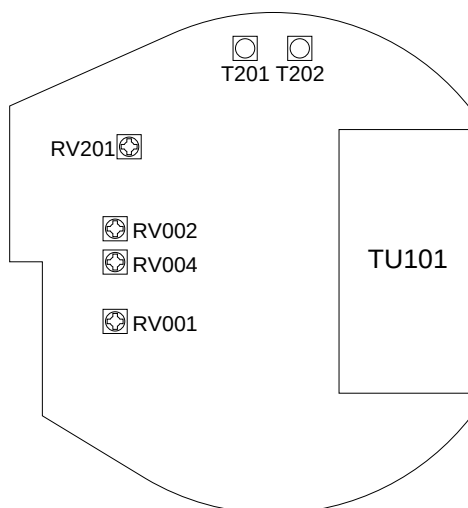
[AUDIO OUTPUT CHECK]

1. Feed the audio signal 1kHz 100% modulated.
2. Set RV501 to maximum.
3. Connect an oscilloscope between JL23 (SP) and JL15 (SP GND).
4. Check the waveform on the oscilloscope becomes the standard value.

Standard Value = $1.5V-2.8Vp-p$

3-2.T1 BOARD ADJUSTMENT

- T1 board - (Component side)



[VIF.AFT COARSE ADJUSTMNT (T201, T202)]

[SETUP]

1. Set S601 on the A board to VHF position.
2. Apply no signal to JL18 (RF).
3. Connect a 1 k Ω resistor between JL77 (+4.5V) and JL28 (RF AGC).
4. Apply a sweep signal across JL26 (IF) and JL27(IF GND). (Fig. 3-1)

Note : Set the sweep signal for JL26 to $-30 \pm 5dBm$. Keep the distance to the ATT output JL26 as short as possible.

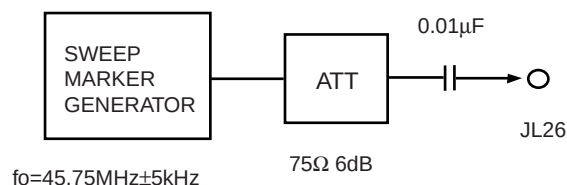


Fig. 3-1

[ADJUSTMNT]

1. Connect an oscilloscope between JL72 (VIDEO) and JL71 (A.GND) and apply an external voltage (MGC) to JL26 to obtain a waveform as shown in Fig. 3-2 (make sure not to clip the extremely short portion). Adjust T202 so that the position at 45.75 MHz is the lowest point.

Note : Align JL51 (MGC) external voltage for approximately a 1.0 Vp-p. Make sure that the JL51 (MGC) external voltage does not exceed 4.3VDC.

2. Remove the external voltage (MGC) from JL51.
3. Connect an oscilloscope between JL31 (AFT) and JL30 (D.GND) and make a coarse adjustment of T201 so that waveform is close to zero at the 45.75 MHz position.
4. Remove the 1 kilohm resistor connected between JL77 (+4.5V) and JL28 (RF AGC).

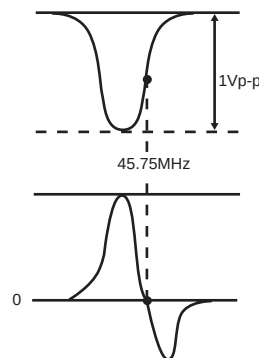


Fig. 3-2

[AFT FINE ADJUSTMENT(T201)]

1. Connect a 1 kilohm resistor between JL77 (+4.5V) and JL28 (RF AGC).

Note : Perform this adjustment as the last step in the process since drift may occur due to aging.

2. Switch the sweep signal to CW.

$f_o = 45.75 \text{ MHz} \pm 5 \text{ kHz}$, $-30 \pm 5 \text{ dBm}$

Apply the above signal between JL26 (IF) and JL27 (IF GND) and then make a fine adjustment of T201 so that the level between JL31 (AFT) and JL30 (D.GND) reaches $2.2 \text{ V} \pm 0.4 \text{ VDC}$.

3. Remove the 1 kilohm resistor connected between JL77 (+4.5V) and JL28 (RF AGC).

[RF. AGC ADJUSTMENT (RV201)]

1. Set S601 to VHF position and receive a VHF color bar signal issued from a signal generator.
2. Adjust RV201 and align the screen for the optimal point so that the snow noise disappears.

[CHANNEL DISPLAY POSITION ADJUSTMENT (RV001, RV002, RV004)]

1. Set S601 to VHF position, a potentiometer ($47 \text{ k}\Omega \pm 15 \text{ k}\Omega$) across JL25(CS) and JL77 (+4.5 V) as shown in Fig. 2-6 and short the points JL21(CH CAL) and JL30 (D.GND).
2. Receive channel 2 and align the channel display positions with RV002(VP).
3. Receive channel 13 and align the display bar with RV004(VA).
4. Align while performing tracking to mutual interference in the above steps 2 and 3.
5. Receive channels 3 & 4 and confirm that the display bar is within the standards.
6. Set S601 to UHF.
7. Receive channel 14 and align the display position with RV001(UP).
8. Receive channel 69 and confirm that the display bar is within the standards.

Once again receive channel 14 and confirm that the display bar is within the standards.

Note : Use caution since shifting channel 69 will also cause channel 14 to shift.

9. Remove the potentiometer ($47 \text{ k}\Omega \pm 15 \text{ k}\Omega$) you connected between JL25(CS) and JL77(+4.5V). Also remove the short you connected between points JL21 (CH CAL) and JL30(D.GND).

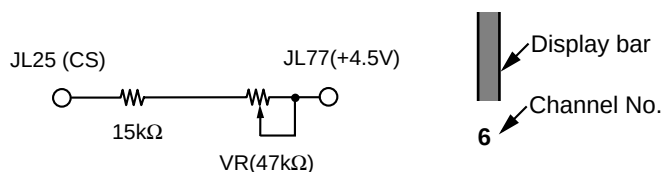


Fig. 3-3

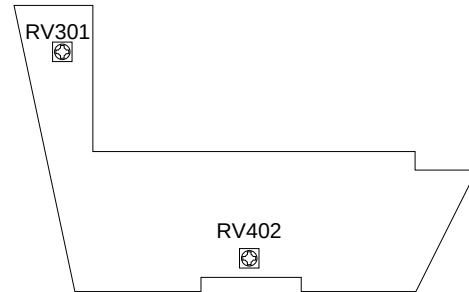
*Channel No. and display bar are to be in line.

Fig. 3-4

3-3.B BOARD ADJUSTMENT

- B board -

(Component side)

**[CONTRAST ADJUSTMENT (RV402)]**

1. Receive the stepped waveform signal in 10 steps.
2. Observe the waveform across JL83(G) and JL67(GND).
3. Check the contrast changes by turning RV402.
4. Connect an oscilloscope between JL84 (AUTO CB) and JL67 (D. GND) and adjust RV402 so that the voltage of A portion becomes $2.2 \pm 0.2 \text{ V}$.
5. Check the waveform as shown in Fig. 3-5.
6. At the same time, check the points C and D are within the period as shown in Fig. 3-5.

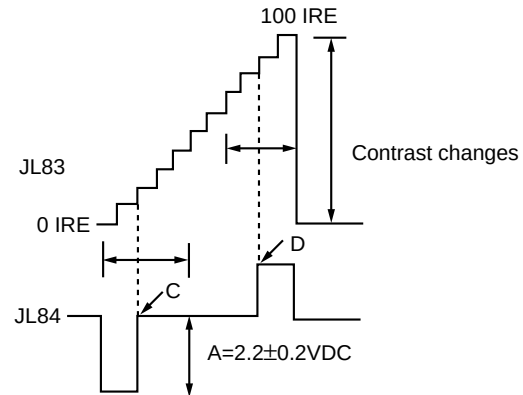


Fig. 3-5

[COLOR PHASE (TINT) ADJUSTMENT (RV301)]

1. Receive the color bar signal from the signal generator.
2. Observe the waveform across JL81(B) and JL67(D.GND).
3. Adjust RV301 (TINT) so that the waveform level becomes as shown in Fig. 3-6.

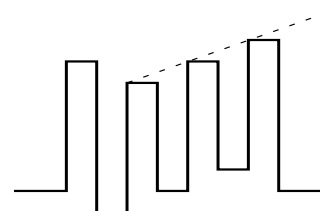
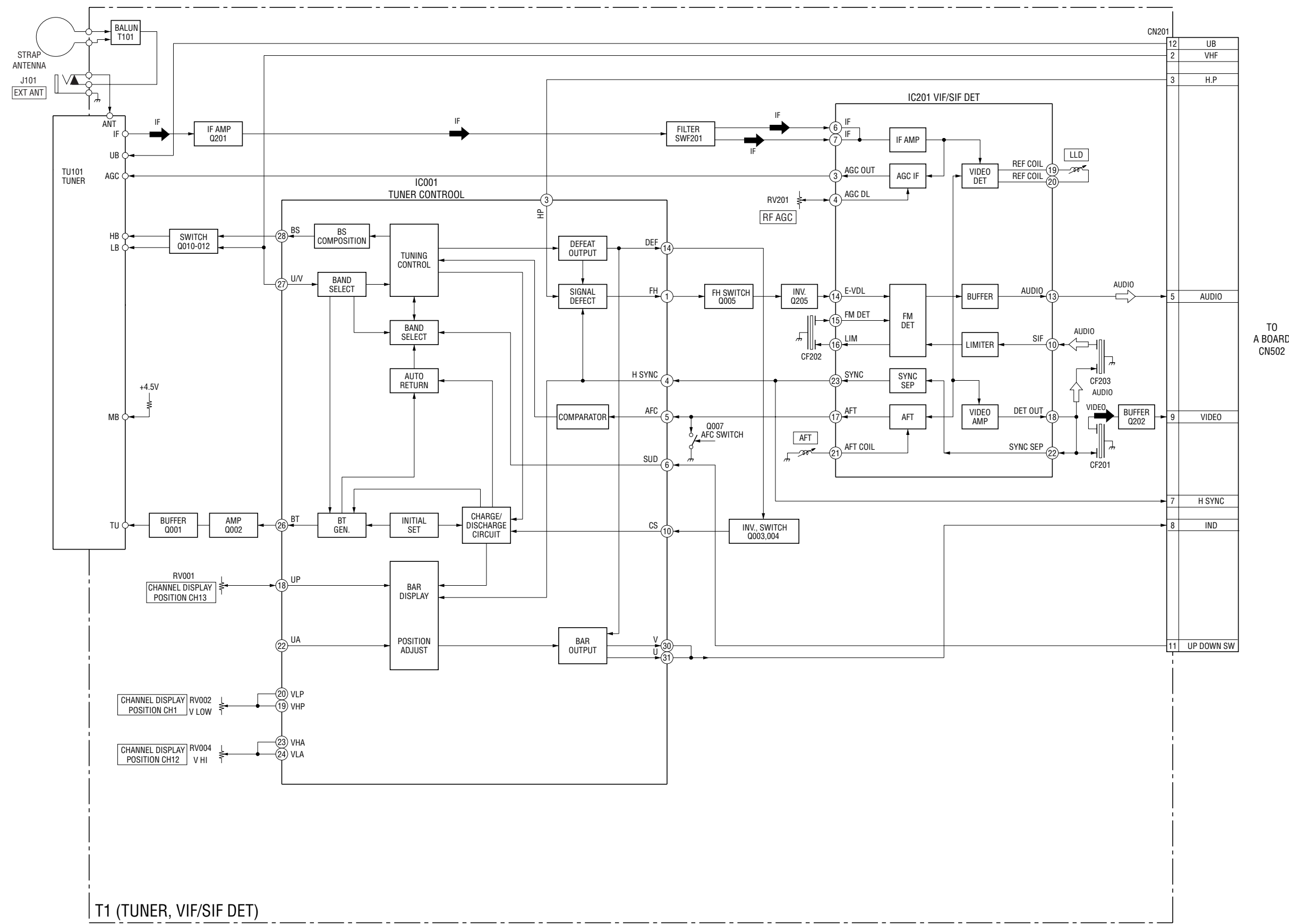


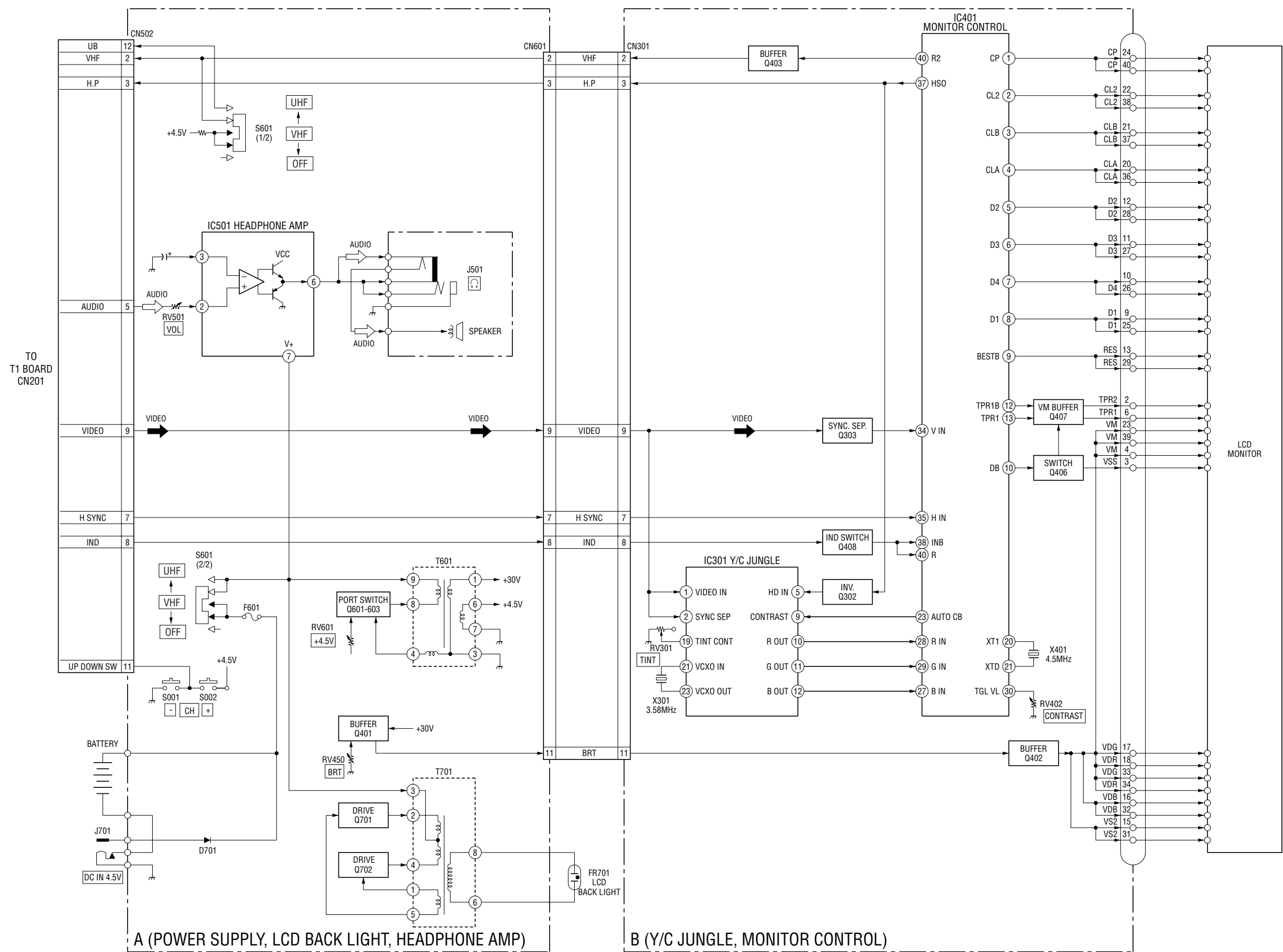
Fig. 3-6

SECTION 4
DIAGRAMS

4-1. BLOCK DIAGRAM (1)



4-2. BLOCK DIAGRAM (2)



[illegible]

A 3D perspective diagram of a multi-layered structure, likely a battery cell. The structure is shown in a cutaway view, revealing internal layers. The layers are labeled with letters: 'A' points to the bottom-most layer, 'B' points to the top-most layer, and 'T1' points to a middle layer. The structure is contained within a rounded, rectangular housing.

Note:

- Capacitors without voltage indication are all 50V.
- All resistors are in ohms.
 $k\Omega=1000\Omega$, $M\Omega=1000k\Omega$
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch : 5mm
 Rating electrical power : $\frac{1}{4}W$

- : nonflammable resistor.
- : fusible resistor.
- $\triangle$: internal component.
- : panel designation and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : earth-chassis.

- As to the voltage value shown by the semiconductors on the Schematic Diagram, see the another list
- Readings are taken with a color-bar signal input.
- Readings are taken with a 10M Ω digital multimeter.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- Circled numbers are waveform references.
- : B+ bus.
- : B- bus.
- : signal path.

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RW	NONFLAMMABLE WIREWOUND
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: X	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

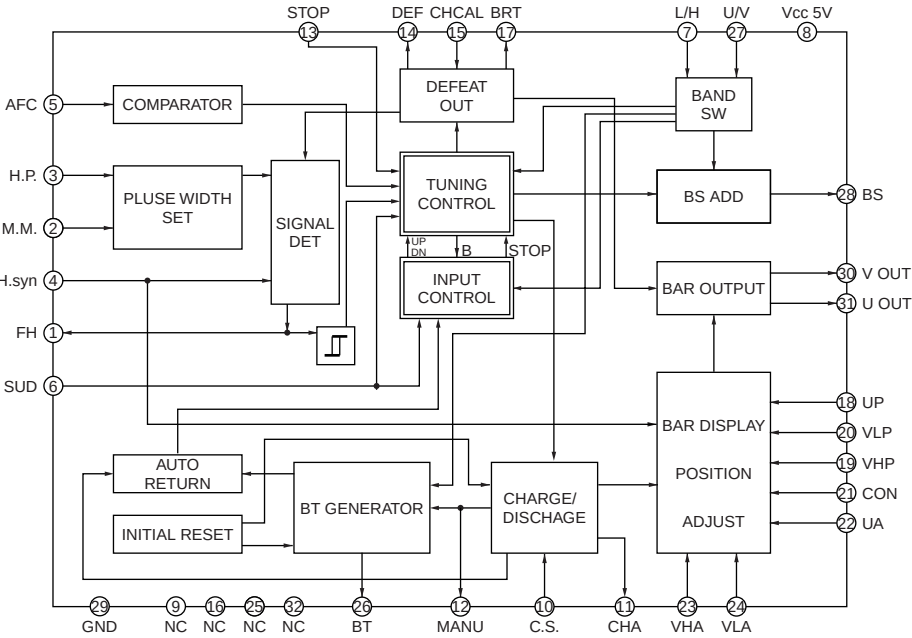
The components identified by shading and mark  are critical for safety. Replace only with part number specified.

Terminal name of semiconductors in silk screen
printed circuit (*)

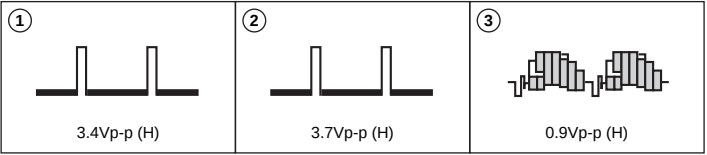
	Device	Printed symbol	Terminal name	Circuit
①	Transistor		Collector Base Emitter	
②	Transistor		Collector Base Emitter	
③	Diode		Cathode Anode	
④	Diode		Cathode Anode (NC)	
⑤	Diode		Cathode Anode (NC)	
⑥	Diode		Common Anode Cathode	
⑦	Diode		Common Anode Cathode	
⑧	Diode		Common Anode Anode	
⑨	Diode		Common Anode Anode	
⑩	Diode		Common Cathode Cathode	
⑪	Diode		Common Cathode Cathode	
⑫	Diode		Anode Cathode Anode Cathode	
⑬	Transistor (FET)		Drain Source Gate	
⑭	Transistor (FET)		Drain Source Gate	
⑮	Transistor (FET)		☐ Source ☐ Drain ☐ Gate	
⑯	Transistor		☐ Emitter ☐ Collector ☐ Base	
⑰	Transistor		C2 B1 E1 E2 B2 C1	
⑱	Transistor		C1 B2 E2 E1 B1 C2	
⑲	Transistor		C1 B2 E2 E1 B1 C2	
⑳	Transistor		C1 B2 E2 E1 B1 C2	
㉑	Transistor		E2 B1 E1 C2 C1(B2)	
㉒	Transistor		(B2) B1 E1 E2 C1 C2	
㉓	Transistor		(B2) E2 E1 B1 C2 C1	
—	Discrete semiconductor			

Ver.1.5

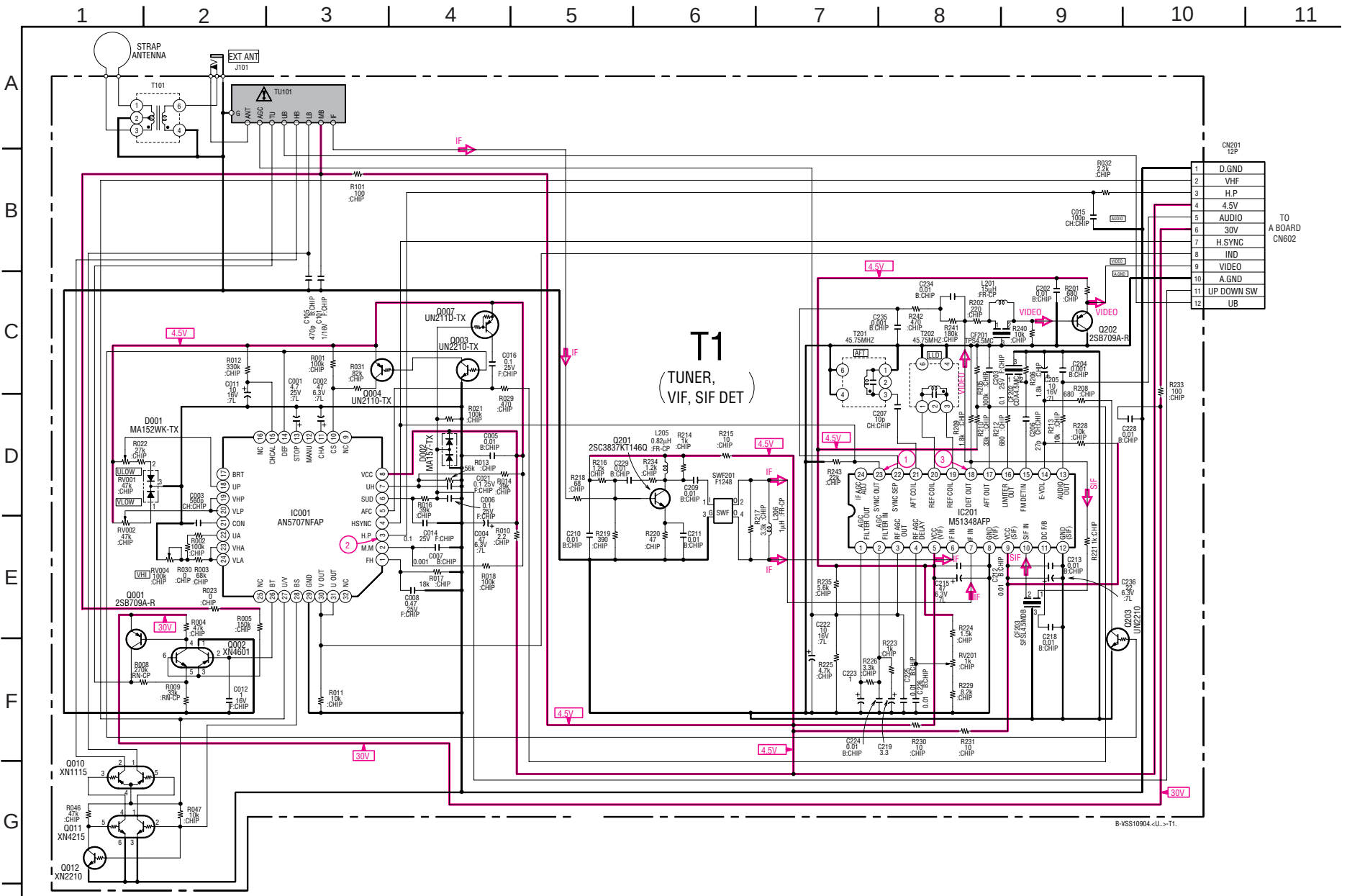
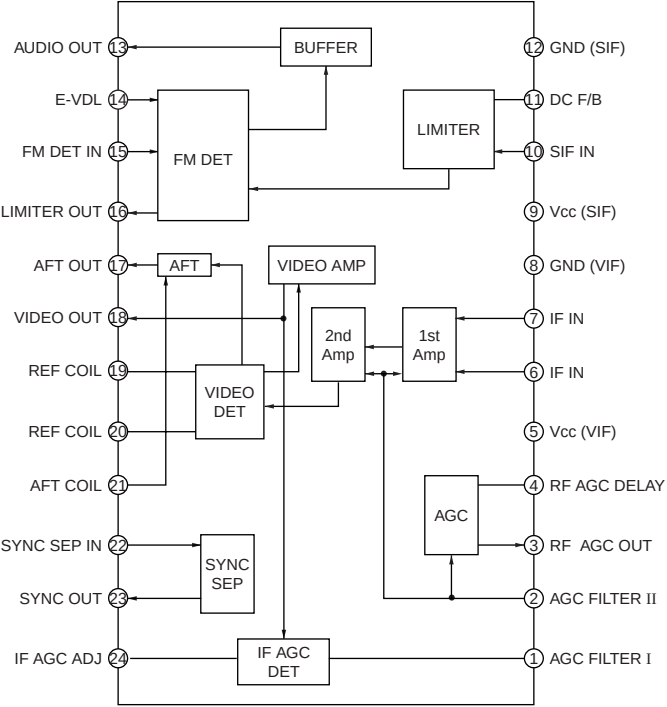
T1 BOARD : IC001 AN5707NFAP



• T1 BOARD WAVEFORMS



T1 BOARD : IC201 M51348AFP



T1 BOARD IC VOLTAGE LIST

IC001	Pin	Volt		Pin	Volt		Pin	Volt
IC001	1	2.7	IC201	20	2.2		7	3.4
	2	0		21	2.9		8	GND
	3	0.3		22	0.8		9	4.3
	4	0.5		23	2.1		10	1.6
	5	2.5		24	2.1		11	1.6
	6	2.5		25	-		12	GND
	7	2.5		26	1.7		13	1.8
	8	4.3		27	3.8		14	3.5
	9	-		28	0		15	2.1
	10	0.7		29	GND		16	1.5
	11	2.5		30	0		17	2.4
	12	0		31	0		18	2.0
	13	0.3		32	0		19	1.9
	14	0.0		1	3.4		20	1.9
	15	3.7		2	3.4		21	3.4
	16	-		3	1.6		22	3.4
	17	-		4	3.3		23	0.4
	18	0		5	4.2		24	1.7
	19	2.2		6	3.4			

T1 BOARD TRANSISTOR VOLTAGE LIST

	B	C	E			
Q003	0	3.7	GND			
Q004	3.7	0.7	4.3			
Q007	2.6	0.5	4.3			
Q201	1.0	4.2	0.3			
Q202	1.9	GND	2.6			
Q203	0	3.5	GND			
	1	2	3	4	5	6
Q002	0	1.7	2.2	29.5	1.7	2.2

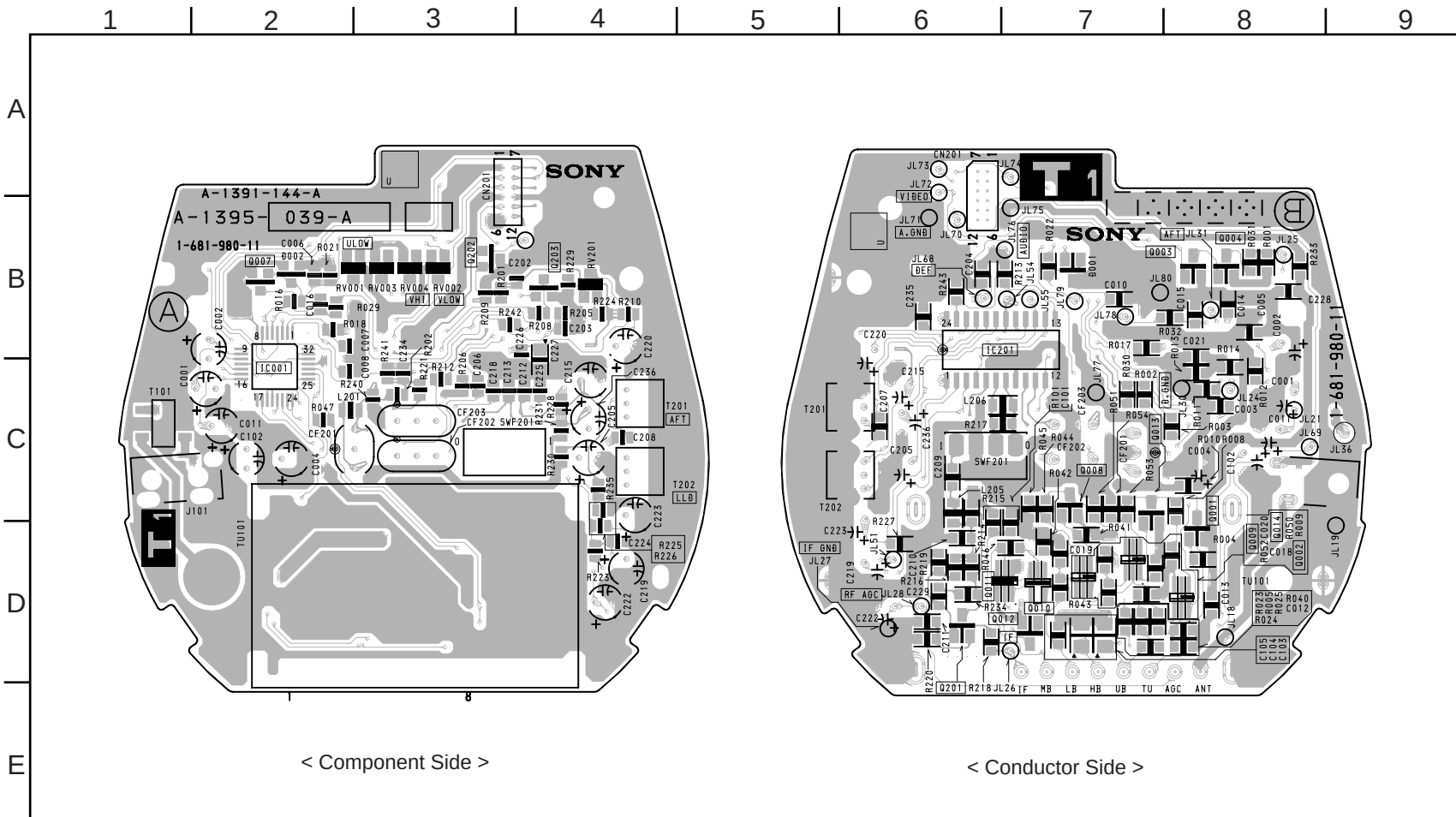
T1 BOARD

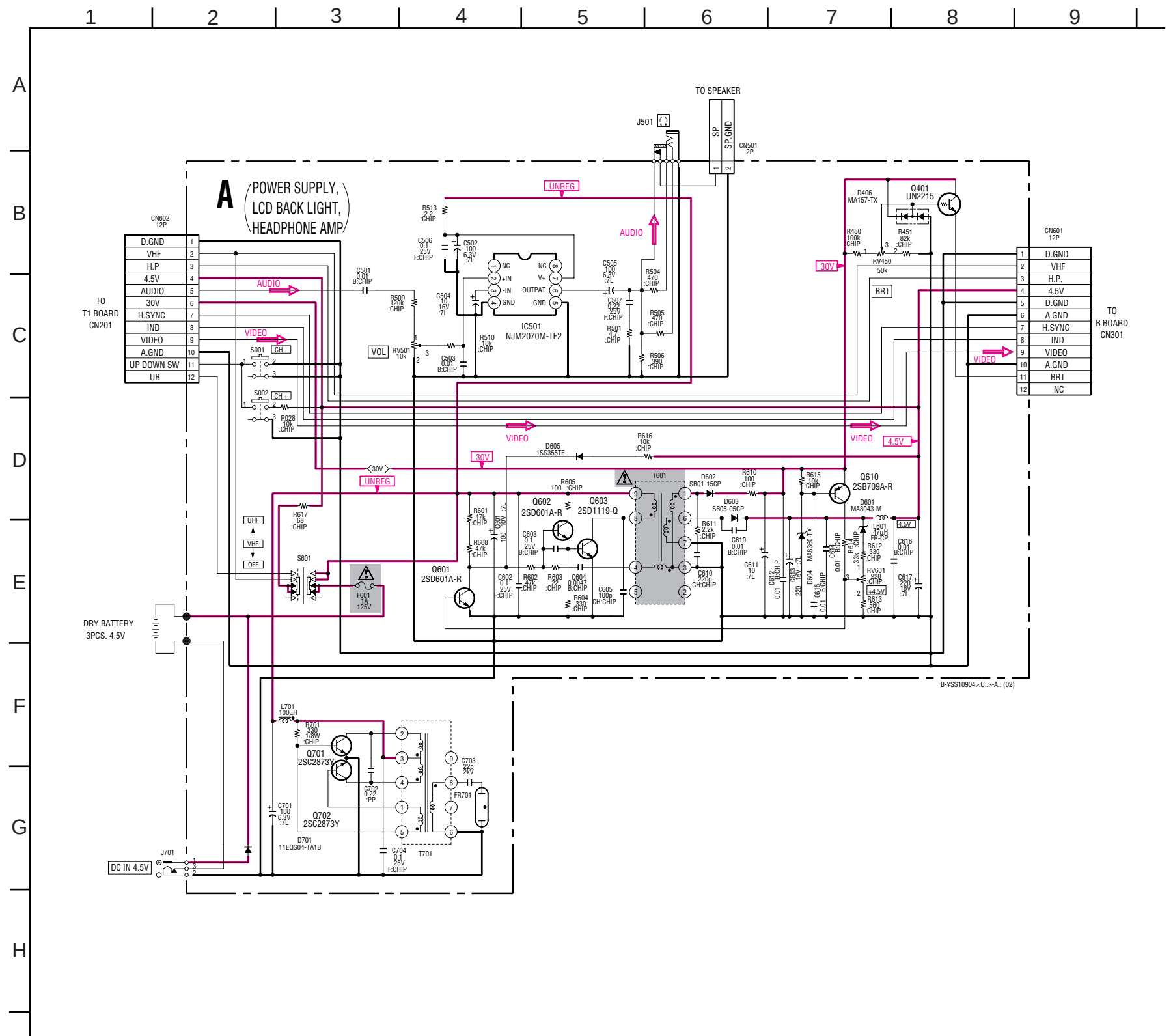
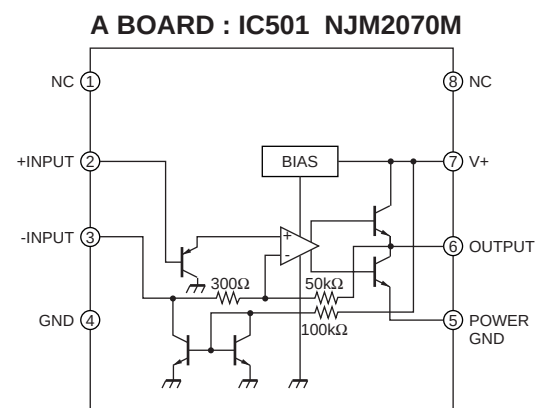
DIODE		*
D001	B-7	⑧
D002	B-2	⑦
IC		
IC001	C-2	
IC201	B-6	
TRANSISTOR *		
Q001	D-8	①
Q002	D-8	⑱
Q003	B-8	①
Q004	B-8	①
Q007	B-2	②
Q010	D-10	
Q011	D-7	⑰
Q012	D-7	①
Q201	D-6	②
Q202	B-3	①
Q203	D-4	①
VARIABLE RESISTOR		
RV001	B-3	
RV002	B-3	
RV004	B-3	
RV201	B-3	

T1

[ELECTRONIC TUNRTR, VIF, SIF]

- T1 Board -





A

[AUDIO AMP, PC IN, BACK LIGHT]

– A Board –

A BOARD

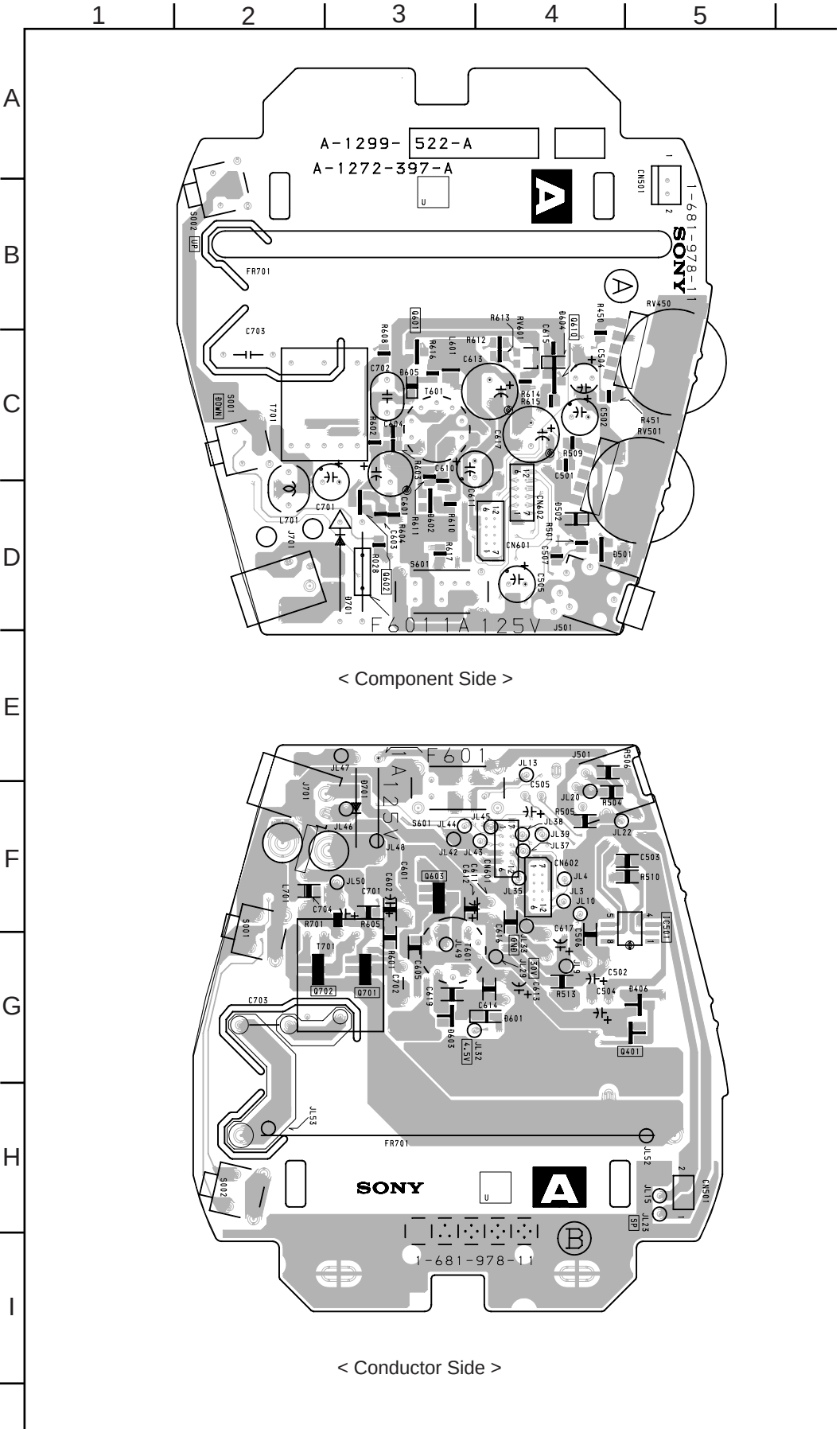
DIODE		*
D406	G-5	⑥
D601	G-4	③
D602	D-4	⑤
D603	G-4	④
D604	C-5	③
D605	C-4	③
D701	D-3	—
IC		
IC501	G-5	
TRANSISTOR *		
Q401	G-5	①
Q601	C-4	②
Q602	D-4	②
Q603	F-4	②
Q610	C-5	②
Q701	G-3	②
Q702	G-3	②
VARIABLE RESISTOR		
RV450	C-6	
RV501	D-5	
RV601	C-5	

A BOARD IC VOLTAGE LIST

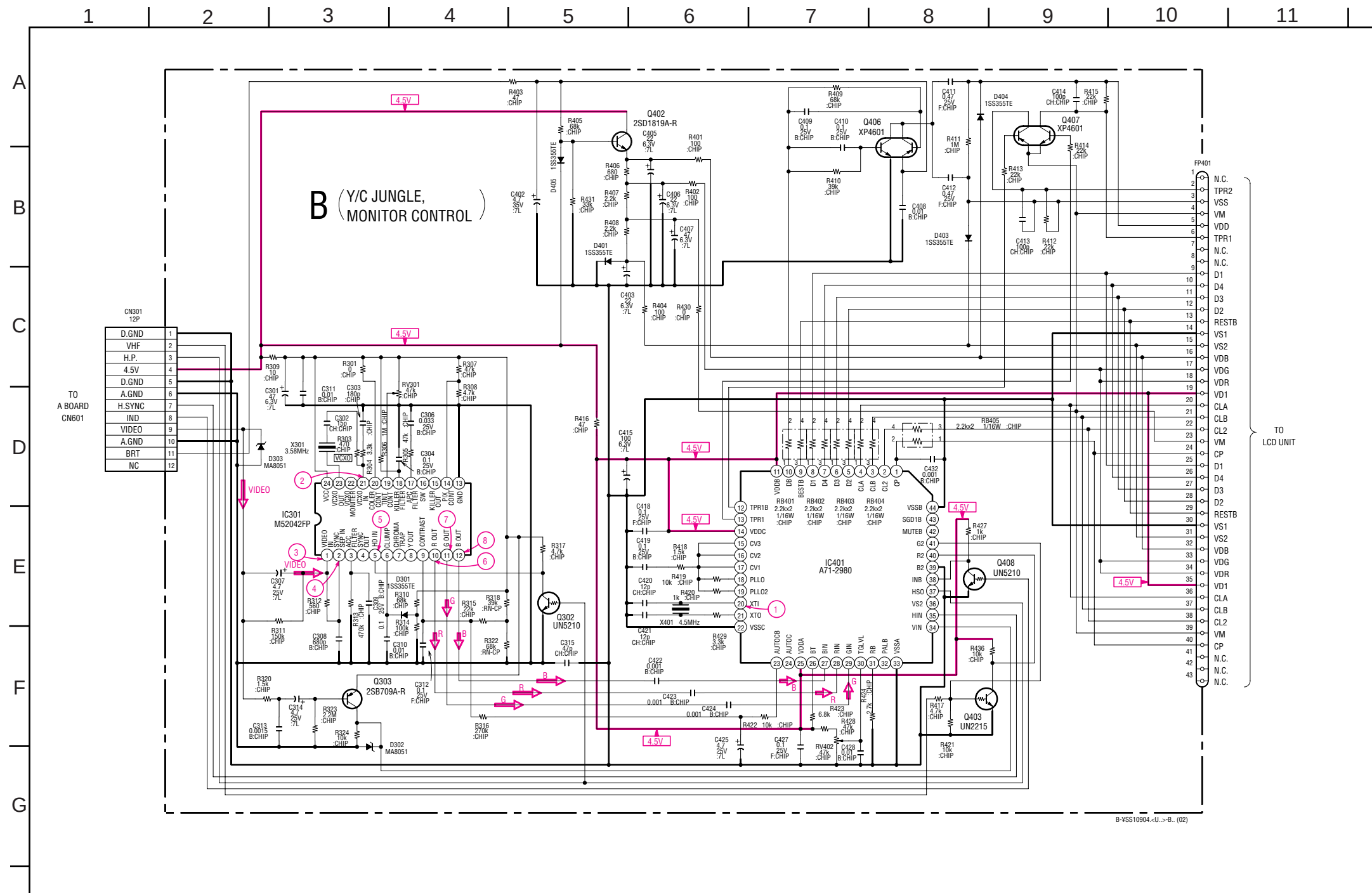
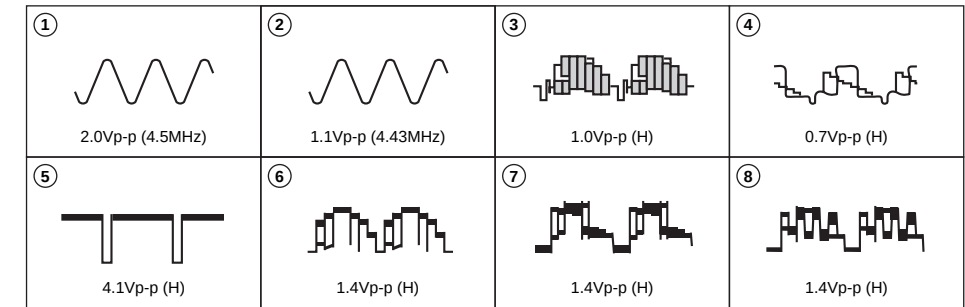
	Pin	Volt
IC501	1	-
	2	0
	3	0.6
	4	GND
	5	GND
	6	1.3
	7	3.4
	8	-

A BOARD TRANSISTOR VOLTAGE LIST

	B	C	E
Q401	13.9	30.5	13.4
Q601	0.5	1.2	GND
Q602	0.7	3.1	0.2
Q603	0.2	3.0	GND
Q610	30.7	0.5	30.7
Q701	0	3.0	GND
Q702	0	3.0	GND



• B BOARD WAVEFORMS



B BOARD IC VOLTAGE LIST

	Pin	Volt		Pin	Volt		Pin	Volt
IC301	1	3.0	IC401	24	4.2		23	3.4
	2	3.1		1	1.3		24	-
	3	0.6		2	0		25	3.8
	4	-		3	0.8		26	3.3
	5	3.5		4	0.8		27	0.9
	6	2.5		5	2.7		28	0.9
	7	-		6	2.7		29	0.9
	8	-		7	2.8		30	0.8
	9	2.8		8	2.8		31	0.3
	10	3.0		9	3.3		32	3.8
	11	2.9		10	1.9		33	GND
	12	3.1		11	3.9		34	1.8
	13	GND		12	3.9		35	1.1
	14	0.3		13	0		36	0
	15	-		14	3.9		37	0.3
	16	-		15	1.7		38	3.6
	17	1.5		16	1.7		39	GND
	18	3.7		17	1.7		40	0
	19	1.6		18	1.7		41	2.1
	20	2.0		19	1.7		42	0
	21	3.4		20	2.0		43	3.5
	22	-		21	2.0		44	GND
	23	2.0		22	GND			

B BOARD TRANSISTOR VOLTAGE LIST

	B	C	E			
Q302	0.3	3.5	GND			
Q303	3.6	1.8	4.1			
Q402	3.9	4.4	3.2			
Q403	2.1	0	GND			
Q408	0	3.8	GND			
	1	2	3	4	5	6
Q406	GND	-0.7	6.5	12.4	13.3	6.5
Q407	1.8	0	6.5	1.8	1.8	13.3

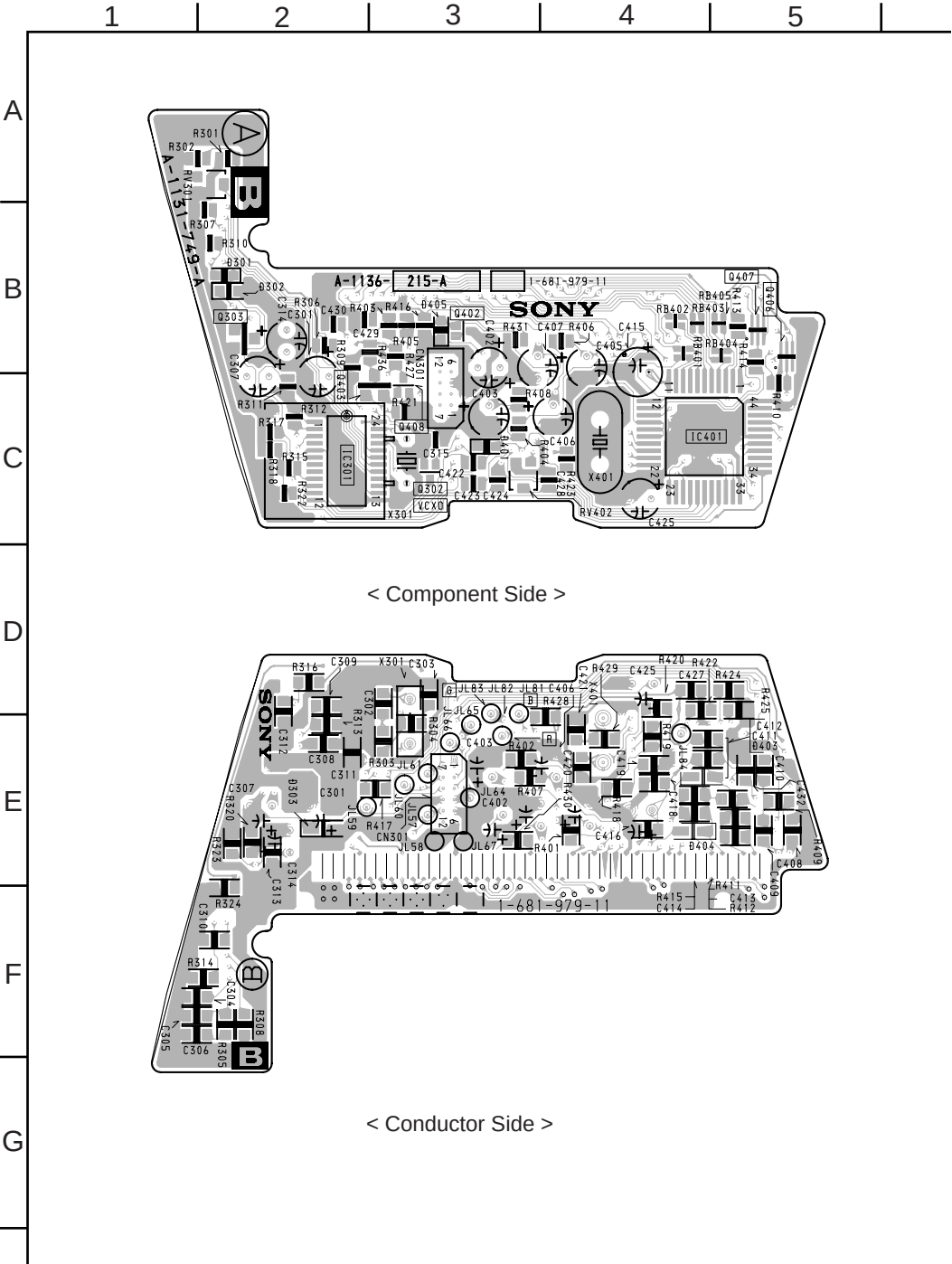
B BOARD

DIODE		*
D301	B-2	③
D302	B-2	③
D303	F-2	③
D401	C-3	③
D403	F-4	③
D404	F-4	③
D405	B-3	③
IC		
IC301	C-3	
IC401	C-4	
TRANSISTOR *		
Q302	C-3	②
Q303	B-2	②
Q402	B-3	②
Q403	C-3	②
Q406	C-5	②⑩
Q407	B-5	②⑩
Q408	C-3	②
VARIABLE RESISTOR		
RV301	B-2	
RV402	C-4	

B

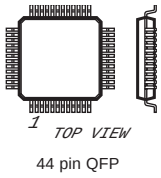
[CHROMA, LCD INTERFACE]

- B Board -

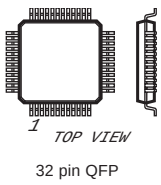


4-5. SEMICONDUCTORS

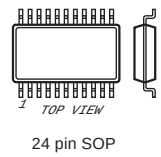
A71-2980



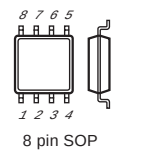
AN5707NFAP



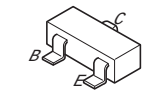
M51348AFP
M52042FP



NJM2070M

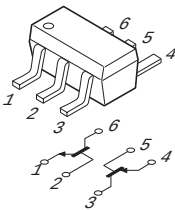


UN2110
UN211D
UN2210
UN2215
UN5210
2SB709A
2SC3837KQ
2SD601A

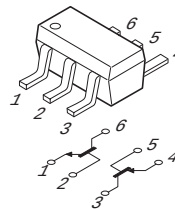


XN4215

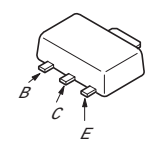
XN4601



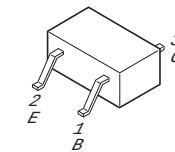
XP4601



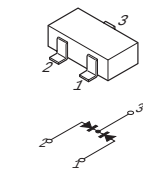
2SC2873Y
2SD1119-Q



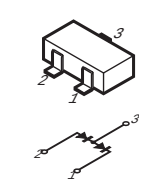
2SD1819A



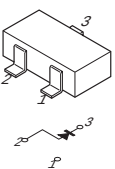
MA152WK



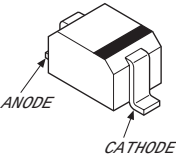
MA157



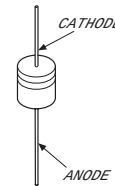
SB-01-15CP
SB05-05CP



MA8043
MA8051
MA8240
MA8360
1SS355



11EQS04



SECTION 5
EXPLODED VIEW

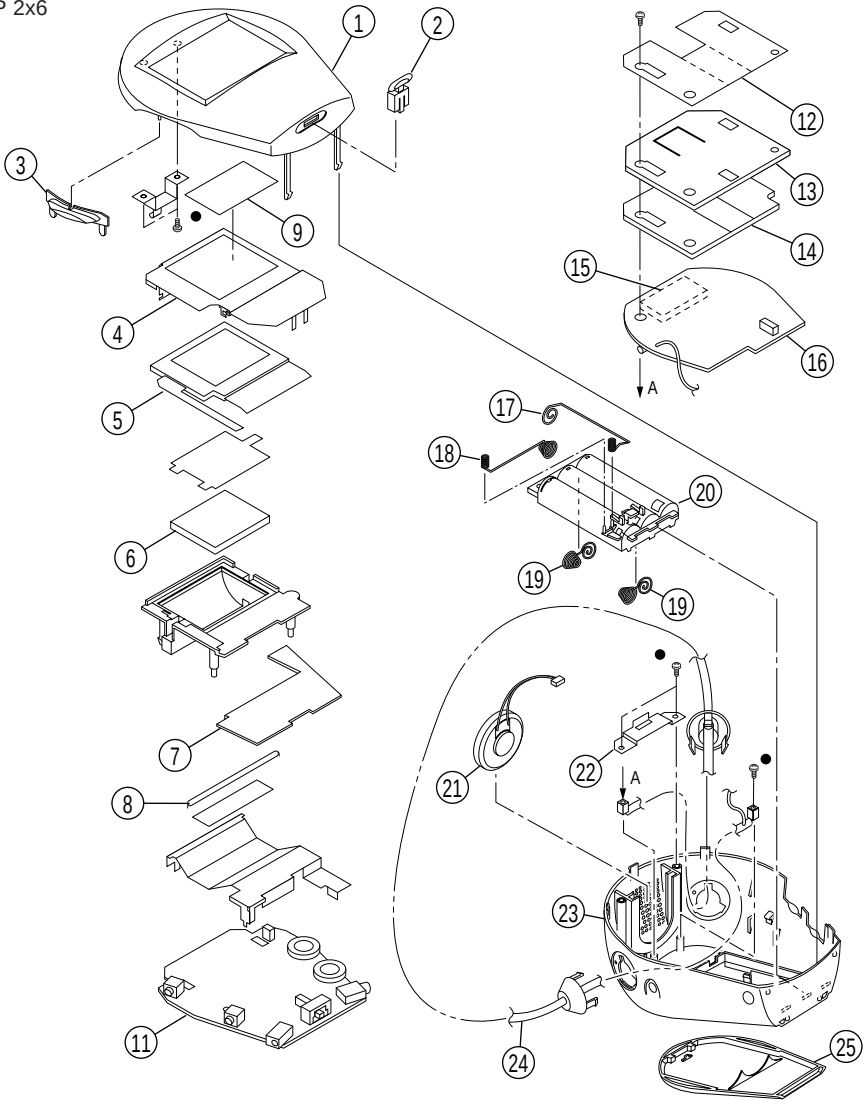
NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark  are critical for safety. Replace only with part number specified.

5-1. CHASSIS SECTION

● : 7-685-104-19 +P 2x6



REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
1	4-561-075-51	CABINET, FRONT		14	4-561-097-01	INSULATING SHEET (2)	
2	4-561-076-01	SWITCH, POWER		15	 1-693-467-11	TUNER UNITPLETE	
3	4-561-093-03	BUTTON, CHANNEL		16	* A-1395-039-AT1	BOARD, COMPLETE	
4	4-561-090-01	SHIELD, PANEL					
5	1-803-293-11	MODULE, INDICATOR (NTSC)		17	4-561-081-01	SPRING (C), BATTERY	
6	* 4-048-325-01	ILLUMINATOR		18	4-561-080-01	SPRING (B), BATTERY	
7	* A-1136-215-AB	BOARD, COMPLETE		19	4-561-079-01	SPRING (A), BATTERY	
8	1-517-702-11	LIGHT, BACK		20	4-561-078-02	CASE, BATTERY	
9	* 3-703-044-26	LABEL, CAUTION		21	1-504-847-11	SPEAKER (2.8cm)	
11	* A-1299-522-AA	BOARD, COMPLETE		22	4-561-130-01	PLATE, LOCK	
12	4-561-096-01	INSULATING SHEET		23	4-561-077-01	CABINET, REAR	
13	4-561-091-01	SHIELD, TU		24	1-754-205-11	ANTENNA, STRAP	

T1

SECTION 6

ELECTRICAL PARTS LIST

The components identified by shading and mark $\triangle$ are critical for safety.
Replace only with part number specified.

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

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS

- All resistors are in ohms
- F : nonflammable

- CAPACITORS
PF : $\mu\mu$ F

- There are some cases the reference number on one board overlaps on the other board. Therefore, when ordering parts by the reference number, please include the board name.

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
* A-1395-039-A T1 BOARD, COMPLETE *****							
	4-561-091-01	SHIELD, TU					
	4-561-096-01	INSULATING SHEET					
	4-561-097-01	INSULATING SHEET (2)					
<CAPACITOR>				<FILTER>			
C001	1-126-794-11	ELECT	4.7 μ F 20% 25V	CF201	1-527-943-00	CERAMIC TRAP	
C002	1-126-513-11	ELECT	47 μ F 20% 6.3V	CF202	1-760-642-11	DISCRIMINATOR, CERAMIC	
C003	1-163-135-00	CERAMIC CHIP	560pF 5% 50V	CF203	1-577-559-21	FILTER, CERAMIC	
C004	1-126-513-11	ELECT	47 μ F 20% 6.3V	<CONNECTOR>			
C005	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	CN201	1-785-361-11	CONNECTOR, BOARD TO BOARD	
C006	1-163-038-91	CERAMIC CHIP	0.1 μ F 25V	<DIODE>			
C007	1-163-009-91	CERAMIC CHIP	0.001 μ F 10% 50V	D001	8-719-801-78	DIODE MA152WK-TX	
C008	1-164-005-11	CERAMIC CHIP	0.47 μ F 25V	D002	8-719-800-76	DIODE MA157-TX	
C011	1-126-791-11	ELECT	10 μ F 20% 16V	<IC>			
C012	1-164-346-11	CERAMIC CHIP	1 μ F 16V	IC001	8-759-332-43	IC AN5707NFAP	
C014	1-163-038-91	CERAMIC CHIP	0.1 μ F 25V	IC201	8-759-176-91	IC M51348AFP-E1	
C015	1-163-251-11	CERAMIC CHIP	100pF 5% 50V	<JACK>			
C016	1-163-038-91	CERAMIC CHIP	0.1 μ F 25V	J101	1-568-027-21	JACK, SMALL TYPE (EXT ANT)	
C021	1-163-038-91	CERAMIC CHIP	0.1 μ F 25V	<COIL>			
C101	1-164-346-11	CERAMIC CHIP	1 μ F 16V	L201	1-412-953-11	INDUCTOR 15 μ H	
C105	1-163-005-91	CERAMIC CHIP	470pF 10% 50V	L205	1-412-938-11	INDUCTOR 0.82 μ H	
C202	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	L206	1-412-939-11	INDUCTOR 1 μ H	
C203	1-163-038-91	CERAMIC CHIP	0.1 μ F 25V	<TRANSISTOR>			
C204	1-163-009-91	CERAMIC CHIP	0.001 μ F 10% 50V	Q001	8-729-216-22	TRANSISTOR 2SB709A-R-TX	
C205	1-126-791-11	ELECT	10 μ F 20% 16V	Q002	8-729-402-84	TRANSISTOR XN4601-TW	
C206	1-163-237-11	CERAMIC CHIP	27pF 5% 50V	Q003	8-729-424-76	TRANSISTOR UN2210-TX	
C207	1-163-227-11	CERAMIC CHIP	10pF 0.50pF 50V	Q004	8-729-424-38	TRANSISTOR UN2110-TX	
C209	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	Q007	8-729-424-45	TRANSISTOR UN211D-TX	
C210	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	Q010	8-729-403-45	TRANSISTOR XN1115-TX	
C211	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	Q011	8-729-422-54	TRANSISTOR XN4215-TW	
C212	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	Q012	8-729-424-76	TRANSISTOR UN2210-TX	
C213	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	Q201	8-729-031-37	TRANSISTOR 2SC3837KT146Q	
C215	1-126-513-11	ELECT	47 μ F 20% 6.3V	Q202	8-729-216-22	TRANSISTOR 2SB709A-R-TX	
C218	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V				
C219	1-115-873-11	ELECT	3.3 μ F 20% 50V				
C222	1-126-791-11	ELECT	10 μ F 20% 16V				
C223	1-115-871-11	ELECT	1 μ F 20% 50V				
C224	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V				
C225	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V				
C226	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V				
C228	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V				
C229	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V				
C234	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V				
C235	1-163-009-91	CERAMIC CHIP	0.001 μ F 10% 50V				
C236	1-126-514-11	ELECT	22 μ F 20% 6.3V				

REF. NO.	PART NO.	DESCRIPTION				REMARK	REF. NO.	PART NO.	DESCRIPTION				REMARK
Q203	8-729-424-76	TRANSISTOR	UN2210-TX				R235	1-216-067-00	RES-CHIP	5.6K	5%	1/10W	
							R240	1-216-073-91	RES-CHIP	10K	5%	1/10W	
		<RESISTOR>					R241	1-216-103-00	RES-CHIP	180K	5%	1/10W	
							R242	1-216-041-00	RES-CHIP	470	5%	1/10W	
R001	1-216-097-11	RES-CHIP	100K	5%	1/10W		R243	1-216-081-00	RES-CHIP	22K	5%	1/10W	
R002	1-216-097-11	RES-CHIP	100K	5%	1/10W								
R003	1-216-093-91	RES-CHIP	68K	5%	1/10W								
R004	1-216-089-91	RES-CHIP	47K	5%	1/10W				<VARIABLE RESISTOR>				
R005	1-216-101-00	RES-CHIP	150K	5%	1/10W								
							RV001	1-223-588-11	RES, ADJ, CARBON 47K (CHANNEL				
R008	1-218-762-11	METAL CHIP	270K	0.5%	1/10W				DISPLAY POSITION 13ch)				
R009	1-216-687-11	METAL CHIP	33K	0.5%	1/10W		RV002	1-223-588-11	RES, ADJ, CARBON 47K (CHANNEL				
R010	1-216-298-00	RES-CHIP	2.2	5%	1/10W				DISPLAY POSITION 1ch)				
R011	1-216-073-91	RES-CHIP	10K	5%	1/10W		RV004	1-223-589-11	RES, ADJ, CARBON 100K (CHANNEL				
R012	1-216-109-00	RES-CHIP	330K	5%	1/10W				DISPLAY POSITION 12ch)				
							RV201	1-223-583-11	RES, ADJ, CARBON 1K (RF AGC)				
R013	1-216-091-00	RES-CHIP	56K	5%	1/10W								
R014	1-216-689-11	RES-CHIP	39K	5%	1/10W								
R016	1-216-689-11	RES-CHIP	39K	5%	1/10W				<SAW FILTER>				
R017	1-216-079-00	RES-CHIP	18K	5%	1/10W								
R018	1-216-097-11	RES-CHIP	100K	5%	1/10W		SWF201	1-767-766-12	FILTER, SAW				
R021	1-216-097-11	RES-CHIP	100K	5%	1/10W								
R022	1-216-083-00	RES-CHIP	27K	5%	1/10W				<TRANSFORMER>				
R023	1-216-295-91	SHORT	0										
R029	1-216-041-00	RES-CHIP	470	5%	1/10W		T101	1-437-418-21	TRANSFORMER, BALUN				
R030	1-216-295-91	SHORT	0				T201	1-411-278-11	COIL				
							T202	1-411-278-11	COIL				
R031	1-216-095-00	RES-CHIP	82K	5%	1/10W								
R032	1-216-057-00	RES-CHIP	2.2K	5%	1/10W								
R046	1-216-089-91	RES-CHIP	47K	5%	1/10W								
R047	1-216-073-91	RES-CHIP	10K	5%	1/10W				<TUNER>				
R101	1-216-025-11	RES-CHIP	100	5%	1/10W								
									TU101△ 1-693-467-11 TUNER UNIT				
R201	1-216-045-00	RES-CHIP	680	5%	1/10W								
R202	1-216-033-00	RES-CHIP	220	5%	1/10W								
R205	1-216-097-11	RES-CHIP	100K	5%	1/10W								
R206	1-216-055-00	RES-CHIP	1.8K	5%	1/10W								
R208	1-216-045-00	RES-CHIP	680	5%	1/10W				* A-1136-215-A B BOARD, COMPLETE				

R209	1-216-055-00	RES-CHIP	1.8K	5%	1/10W								
R210	1-216-085-91	RES-CHIP	33K	5%	1/10W								
R212	1-216-045-00	RES-CHIP	680	5%	1/10W								
R213	1-216-073-91	RES-CHIP	10K	5%	1/10W								
R214	1-216-049-11	RES-CHIP	1K	5%	1/10W				<CAPACITOR>				
R215	1-216-001-00	RES-CHIP	10	5%	1/10W		C301	1-126-513-11	ELECT	47μF	20%	6.3V	
R216	1-216-051-00	RES-CHIP	1.2K	5%	1/10W		C302	1-163-231-11	CERAMIC CHIP	15pF	5%	50V	
R217	1-216-061-91	RES-CHIP	3.3K	5%	1/10W		C303	1-163-257-11	CERAMIC CHIP	180pF	5%	50V	
R218	1-216-021-00	RES-CHIP	68	5%	1/10W		C304	1-164-004-11	CERAMIC CHIP	0.1μF	10%	25V	
R219	1-216-039-00	RES-CHIP	390	5%	1/10W		C306	1-163-989-11	CERAMIC CHIP	0.033μF	10%	25V	
R220	1-216-017-91	RES-CHIP	47	5%	1/10W		C307	1-126-794-11	ELECT	4.7μF	20%	25V	
R221	1-216-049-11	RES-CHIP	1K	5%	1/10W		C308	1-163-007-11	CERAMIC CHIP	680pF	10%	50V	
R223	1-216-049-11	RES-CHIP	1K	5%	1/10W		C309	1-164-004-11	CERAMIC CHIP	0.1μF	10%	25V	
R224	1-216-053-00	RES-CHIP	1.5K	5%	1/10W		C310	1-163-021-91	CERAMIC CHIP	0.01μF	10%	50V	
R225	1-216-065-91	RES-CHIP	4.7K	5%	1/10W		C311	1-163-021-91	CERAMIC CHIP	0.01μF	10%	50V	
R226	1-216-061-91	RES-CHIP	3.3K	5%	1/10W		C312	1-163-038-91	CERAMIC CHIP	0.1μF		25V	
R228	1-216-073-91	RES-CHIP	10K	5%	1/10W		C313	1-163-011-11	CERAMIC CHIP	0.0015μF	10%	50V	
R229	1-216-071-00	RES-CHIP	8.2K	5%	1/10W		C314	1-126-794-11	ELECT	4.7μF	20%	25V	
R230	1-216-001-00	RES-CHIP	10	5%	1/10W		C402	1-115-866-11	ELECT	4.7μF	20%	35V	
R231	1-216-001-00	RES-CHIP	10	5%	1/10W		C403	1-126-514-11	ELECT	22μF	20%	6.3V	
R233	1-216-025-11	RES-CHIP	100	5%	1/10W		C405	1-126-514-11	ELECT	22μF	20%	6.3V	
R234	1-216-051-00	RES-CHIP	1.2K	5%	1/10W		C406	1-126-514-11	ELECT	22μF	20%	6.3V	
							C407	1-126-513-11	ELECT	47μF	20%	6.3V	

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
C408	1-163-021-91	CERAMIC CHIP	0.01μF 10% 50V	R307	1-216-089-91	RES-CHIP	47K 5% 1/10W
C409	1-164-004-11	CERAMIC CHIP	0.1μF 10% 25V	R308	1-216-073-91	RES-CHIP	10K 5% 1/10W
C410	1-164-004-11	CERAMIC CHIP	0.1μF 10% 25V	R309	1-216-001-00	RES-CHIP	10 5% 1/10W
C411	1-164-005-11	CERAMIC CHIP	0.47μF 25V	R310	1-216-093-91	RES-CHIP	68K 5% 1/10W
C412	1-164-005-11	CERAMIC CHIP	0.47μF 25V	R311	1-216-101-00	RES-CHIP	150K 5% 1/10W
C413	1-163-251-11	CERAMIC CHIP	100pF 5% 50V	R312	1-216-043-91	RES-CHIP	560 5% 1/10W
C414	1-163-251-11	CERAMIC CHIP	100pF 5% 50V	R313	1-216-113-00	RES-CHIP	470K 5% 1/10W
C415	1-126-382-11	ELECT	100μF 20% 6.3V	R314	1-216-097-11	RES-CHIP	100K 5% 1/10W
C418	1-163-038-91	CERAMIC CHIP	0.1μF 25V	R315	1-216-081-00	RES-CHIP	22K 5% 1/10W
C419	1-164-004-11	CERAMIC CHIP	0.1μF 10% 25V	R316	1-216-107-00	RES-CHIP	270K 5% 1/10W
C420	1-163-229-11	CERAMIC CHIP	12pF 5% 50V	R317	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
C421	1-163-229-11	CERAMIC CHIP	12pF 5% 50V	R318	1-216-689-11	METAL CHIP	39K 0.5% 1/10W
C422	1-163-009-91	CERAMIC CHIP	0.001μF 10% 50V	R320	1-216-053-00	RES-CHIP	1.5K 5% 1/10W
C423	1-163-009-91	CERAMIC CHIP	0.001μF 10% 50V	R322	1-216-695-11	METAL CHIP	68K 0.5% 1/10W
C424	1-163-009-91	CERAMIC CHIP	0.001μF 10% 50V	R323	1-216-129-00	RES-CHIP	2.2M 5% 1/10W
C425	1-126-794-11	ELECT	4.7μF 20% 25V	R324	1-216-073-91	RES-CHIP	10K 5% 1/10W
C427	1-163-038-91	CERAMIC CHIP	0.1μF 25V	R401	1-216-025-11	RES-CHIP	100 5% 1/10W
C428	1-163-021-91	CERAMIC CHIP	0.01μF 10% 50V	R402	1-216-025-11	RES-CHIP	100 5% 1/10W
C432	1-163-009-91	CERAMIC CHIP	0.001μF 10% 50V	R403	1-216-017-91	RES-CHIP	47 5% 1/10W
<CONNECTOR>				R404	1-216-025-11	RES-CHIP	100 5% 1/10W
CN301 *	1-779-896-11	CONNECTOR, BOARD TO BOARD 12P		R405	1-216-093-91	RES-CHIP	68K 5% 1/10W
<DIODE>				R406	1-216-045-00	RES-CHIP	680 5% 1/10W
D301	8-719-988-61	DIODE 1SS355TE-17		R407	1-216-057-00	RES-CHIP	2.2K 5% 1/10W
D302	8-719-422-37	DIODE MA8051-TX		R408	1-216-057-00	RES-CHIP	2.2K 5% 1/10W
D303	8-719-422-37	DIODE MA8051-TX		R409	1-216-093-91	RES-CHIP	68K 5% 1/10W
D401	8-719-988-61	DIODE 1SS355TE-17		R410	1-216-689-11	RES-CHIP	39K 5% 1/10W
D403	8-719-988-61	DIODE 1SS355TE-17		R411	1-216-121-11	RES-CHIP	1M 5% 1/10W
D404	8-719-988-61	DIODE 1SS355TE-17		R412	1-216-081-00	RES-CHIP	22K 5% 1/10W
D405	8-719-988-61	DIODE 1SS355TE-17		R413	1-216-081-00	RES-CHIP	22K 5% 1/10W
<IC>				R414	1-216-081-00	RES-CHIP	22K 5% 1/10W
IC301	8-759-332-41	IC M52042FP-600C		R415	1-216-081-00	RES-CHIP	22K 5% 1/10W
IC401	8-759-368-68	IC A71-2980		R416	1-216-017-91	RES-CHIP	47 5% 1/10W
<TRANSISTOR>				R417	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
Q302	8-729-420-44	TRANSISTOR UN5210-TX		R418	1-216-053-00	RES-CHIP	1.5K 5% 1/10W
Q303	8-729-216-22	TRANSISTOR 2SB709A-R-TX		R419	1-216-073-91	RES-CHIP	10K 5% 1/10W
Q402	8-729-402-32	TRANSISTOR 2SD1819A-R-TX		R420	1-216-049-11	RES-CHIP	1K 5% 1/10W
Q403	8-729-902-99	TRANSISTOR UN2215-QRS(TX)		R421	1-216-073-91	RES-CHIP	10K 5% 1/10W
Q406	8-729-427-74	TRANSISTOR XP4601-TXE		R422	1-216-073-91	RES-CHIP	10K 5% 1/10W
Q407	8-729-427-74	TRANSISTOR XP4601-TXE		R423	1-216-069-00	RES-CHIP	6.8K 5% 1/10W
Q408	8-729-420-44	TRANSISTOR UN5210-TX		R424	1-216-059-00	RES-CHIP	2.7K 5% 1/10W
<RESISTOR>				R427	1-216-049-11	RES-CHIP	1K 5% 1/10W
R301	1-216-295-91	SHORT	0	R428	1-216-089-91	RES-CHIP	47K 5% 1/10W
R303	1-216-041-00	RES-CHIP	470 5% 1/10W	R429	1-216-061-91	RES-CHIP	3.3K 5% 1/10W
R304	1-216-061-91	RES-CHIP	3.3K 5% 1/10W	R430	1-216-295-91	SHORT	0
R305	1-216-089-91	RES-CHIP	47K 5% 1/10W	R431	1-216-085-91	RES-CHIP	33K 5% 1/10W
R306	1-216-121-11	RES-CHIP	1M 5% 1/10W	R436	1-216-073-91	RES-CHIP	10K 5% 1/10W
<NETWORK RESISTOR>				RB401	1-236-416-11	NETWORK, RES 2.2K	
RB402	1-236-416-11	NETWORK, RES 2.2K		RB403	1-236-416-11	NETWORK, RES 2.2K	
RB404	1-236-416-11	NETWORK, RES 2.2K		RB405	1-236-416-11	NETWORK, RES 2.2K	

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The components identified by shading and mark Δ are critical for safety.
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REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
<VARIABLE RESISTOR>				D603	8-719-938-75	DIODE SB05-05CP-TB	
RV301	1-223-588-11	RES, ADJ, CARBON 47K (TINT)		D604	8-719-018-15	DIODE MA8360-TX	
RV402	1-223-588-11	RES, ADJ, CARBON 47K (CONTRAST)		D605	8-719-988-61	DIODE 1SS355TE-17	
<CRYSTAL>				D701	8-719-210-21	DIODE 11EQS04-TA1B	
X301	1-567-505-11	OSCILLATOR, CRYSTAL 3.58MHz		<FUSE>			
X401	1-760-601-21	VIBRATOR, CRYSTAL 4.5MHZ		F601	Δ 1-533-631-31	FUSE, MICRO 1A 125V	
*****				<IC>			
* A-1299-522-A A BOARD, COMPLETE				IC501	8-759-046-84	IC NJM2070M-TE2	
*****				<JACK>			
<CAPACITOR>				J501	1-563-282-11	JACK, SMALL TYPE (♂)	
C501	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	J701	1-568-907-21	JACK, DC(POLARITY UNIFIED TYPE) (DC IN 4.5V)	
C502	1-126-382-11	ELECT	100 μ F 20% 6.3V	<COIL>			
C503	1-163-017-00	CERAMIC CHIP	0.0047 μ F 10% 50V	L601	1-412-031-11	INDUCTOR 47 μ H	
C504	1-126-791-11	ELECT	10 μ F 20% 16V	L701	1-408-615-31	INDUCTOR 100 μ H	
C505	1-126-382-11	ELECT	100 μ F 20% 6.3V	<TRANSISTOR>			
C506	1-163-038-91	CERAMIC CHIP	0.1 μ F 25V	Q401	8-729-902-99	TRANSISTOR UN2215-QRS(TX)	
C507	1-164-222-91	CERAMIC CHIP	0.22 μ F 25V	Q601	8-729-422-29	TRANSISTOR 2SD601A-R-TX	
C601	1-126-382-11	ELECT	100 μ F 20% 10V	Q602	8-729-422-29	TRANSISTOR 2SD601A-R-TX	
C602	1-163-038-91	CERAMIC CHIP	0.1 μ F 25V	Q603	8-729-421-15	TRANSISTOR 2SD1119-Q-TX	
C603	1-164-004-11	CERAMIC CHIP	0.1 μ F 10% 25V	Q610	8-729-216-22	TRANSISTOR 2SB709A-R-TX	
C604	1-163-017-00	CERAMIC CHIP	0.0047 μ F 10% 50V	Q701	8-729-807-51	TRANSISTOR 2SC2873Y-TE12L	
C605	1-163-251-11	CERAMIC CHIP	100pF 5% 50V	Q702	8-729-807-51	TRANSISTOR 2SC2873Y-TE12L	
C610	1-163-259-91	CERAMIC CHIP	220pF 5% 50V	<RESISTOR>			
C611	1-126-795-11	ELECT	10 μ F 20% 50V	R028	1-216-073-91	RES-CHIP 10K 5% 1/10W	
C612	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	R450	1-216-097-11	RES-CHIP 100K 5% 1/10W	
C613	1-128-499-11	ELECT	220 μ F 20% 16V	R451	1-216-095-00	RES-CHIP 82K 5% 1/10W	
C614	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	R501	1-216-308-00	RES-CHIP 4.7 5% 1/10W	
C615	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	R504	1-216-041-00	RES-CHIP 470 5% 1/10W	
C616	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	R505	1-216-041-00	RES-CHIP 470 5% 1/10W	
C617	1-128-499-11	ELECT	220 μ F 20% 16V	R506	1-216-039-00	RES-CHIP 390 5% 1/10W	
C619	1-163-021-91	CERAMIC CHIP	0.01 μ F 10% 50V	R509	1-216-099-00	RES-CHIP 120K 5% 1/10W	
C701	1-126-382-11	ELECT	100 μ F 20% 6.3V	R510	1-216-073-91	RES-CHIP 10K 5% 1/10W	
C702	1-136-169-00	FILM	0.22 μ F 5% 50V	R513	1-216-298-00	RES-CHIP 2.2 5% 1/10W	
C703	1-109-879-11	CERAMIC	22pF 5% 2KV	R601	1-216-089-91	RES-CHIP 47K 5% 1/10W	
C704	1-163-038-91	CERAMIC CHIP	0.1 μ F 25V	R602	1-216-089-91	RES-CHIP 47K 5% 1/10W	
<CONNECTOR>				R603	1-216-009-91	RES-CHIP 22 5% 1/10W	
CN501	1-568-951-11	PIN, CONNECTOR 2P		R604	1-216-037-00	RES-CHIP 330 5% 1/10W	
CN601 *	1-770-605-11	CONNECTOR, BOARD TO BOARD 12P		R605	1-216-025-11	RES-CHIP 100 5% 1/10W	
CN602 *	1-770-605-11	CONNECTOR, BOARD TO BOARD 12P		R608	1-216-089-91	RES-CHIP 47K 5% 1/10W	
<DIODE>				R610	1-216-025-11	RES-CHIP 100 5% 1/10W	
D406	8-719-800-76	DIODE MA157-TX		R611	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
D601	8-719-421-82	DIODE MA8043-M(TX)		R612	1-216-037-00	RES-CHIP 330 5% 1/10W	
D602	8-719-989-93	DIODE SB01-15CP-TB		R613	1-216-043-91	RES-CHIP 560 5% 1/10W	

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The components identified by shading and mark $\triangle$ are critical for safety.
Replace only with part number specified.

REF. NO.	PART NO.	DESCRIPTION	REMARK
R614	1-216-085-91	RES-CHIP	33K 5% 1/10W
R615	1-216-073-91	RES-CHIP	10K 5% 1/10W
R616	1-216-073-91	RES-CHIP	10K 5% 1/10W
R617	1-216-021-00	RES-CHIP	68 5% 1/10W
R701	1-216-186-00	RES-CHIP	330 5% 1/8W
<VARIABLE RESISTOR>			
RV450	1-223-901-21	RES, VAR 50K (BRT)	
RV501	1-223-900-21	RES, VAR 10K (VOL)	
RV601	1-223-581-11	RES, ADJ, CARBON 220 (+4.5V)	
<SWITCH>			
S001	1-571-532-21	SWITCH, TACTIL (CH -)	
S002	1-571-532-21	SWITCH, TACTIL (CH +)	
S601	1-762-368-11	SWITCH, SLIDE (OFF/VHF/UHF)	
<TRANSFORMER>			
T601	$\triangle$ 1-431-580-11	TRANSFORMER, DC-DC CONVERTER	
T701	1-427-918-11	TRANSFORMER, CONVERTER	

MISCELLANEOUS			

1-504-847-11	SPEAKER (2.8cm)		
1-517-702-11	LIGHT, BACK		
1-754-205-11	ANTENNA, STRAP		
1-803-293-11	MODULE, INDICATOR (NTSC)		

ACCESSORIES			

4-083-376-11	MANUAL, INSTRUCTION		

