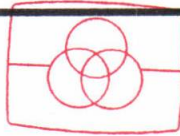


DAR-DA5ES

SERVICE MANUAL



Free service manuals

Gratis schema's

Digitized by

AEP Model

www.freeservicemanuals.info



SPECIFICATIONS

DSR tuner section		Sampling frequency	32 kHz
Tuning range	50 to 470 MHz (cable:100 kHz step) 950 to 2,050 MHz (satellite:500 kHz step)	D/A converter	Advanced pulse D/A
Input level	50 to 470MHz: 45 dB μ V to 95dB μ V 950 to 2,050 MHz: 45 dB μ V to 95dB μ V	SPEECH/MUSIC control	20 dB max. in 20 step
LNC power supply voltage	OFF/14 V/18 V, DC	FM tuner section	
LNC power supply current	300 mA max.	Tuning range	87.5 - 108.0 MHz (50 kHz step)
Digital outputs	COAXIAL OPTICAL	Sensitivity	Mono: 1.1 μ V Stereo: 35 μ V
Distortion	0.006 % at 1 kHz	S/N ("A" weighted)	Mono: 78 dB Stereo: 74 dB
S/N ("A" weighted)	110 dB	Harmonic distortion at 1 kHz	Mono: 0.2 % Stereo: 0.4 %
Separation	102 dB at 1 kHz	Separation	45 dB at 1 kHz
Frequency response	15 Hz to 15 kHz \pm 0.2 dB	Frequency response	30 Hz - 15 kHz \pm 0.5 dB
		Selectivity	70 dB (Narrow) 45 dB (Wide) at 300 kHz

— Continued on next page —

DSR/FM/AM TUNER
SONY[®]



TABLE OF CONTENTS

	<u>Section</u>	<u>Title</u>	<u>Page</u>
AM tuner section	SECTION 1. GENERAL		
Tuning range	With 9 kHz step: 531 - 1,602 kHz	Front Panel	3
Aerial	Loop aerial	Getting Started	4
General		Basic Tuner Operations	5
Power requirements	220-230 V, AC 50/60 Hz	Advanced Tuner Operations	7
Power consumption	35 W	Additional Information	9
Input impedance	75 ohms (except AM ANTENNA)	Remote Button Descriptions	10
Input connector	CABLE: IEC-male SATELLITE 1 ST IF: F-female FM ANTENNA: IEC-male	SECTION 2. DISASSEMBLY	
Dimensions	430 x 98 x 340 mm (17 x 3 ⁷ / ₈ x 13 ³ / ₈ inch)	2-1. Front Panel Assembly	11
Weight	5.6 kg (12 lbs 6 oz)	2-2. Front Panel	11
Supplied accessories	Audio cord (1) AM loop aerial (1) FM wire aerial (1) Remote commander (remote) (1) Size AA (R6) batteries (2)	2-3. Display and PGM Board	11
		SECTION 3. TEST MODE	
		SECTION 4. ELECTRICAL ADJUSTMENT	
		SECTION 5. DIAGRAMS	
		5-1. IC Pin Functions	
		• IC701 μ PD78058GC (System Control)	19
		5-2. Circuit Boards Location	22
		5-3. Block Diagram	23
		5-4. Printed Wiring Board — Tuner/Power Section —	27
		5-5. Schematic Diagram — Tuner/Power Section —	31
		5-6. IC Block Diagrams	36
		5-7. Schematic Diagram — Display Section —	38
		5-8. Printed Wiring Board — Display Section —	41
		SECTION 6. EXPLODED VIEWS	
		6-1. Main Section	44
		6-2. Front Panel Section	45
		SECTION 7. ELECTRICAL PARTS LIST	
			46

Design and specifications are subject to change without notice.

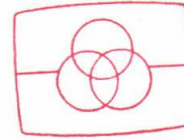
Note

Preset stations and other items stored in the tuner's memory may be cleared if the power is left off for more than 2 weeks in a row. If this happens, make the settings again.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY MARK Δ OR DOTTED LINE WITH MARK Δ 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.

SECTION 1 GENERAL

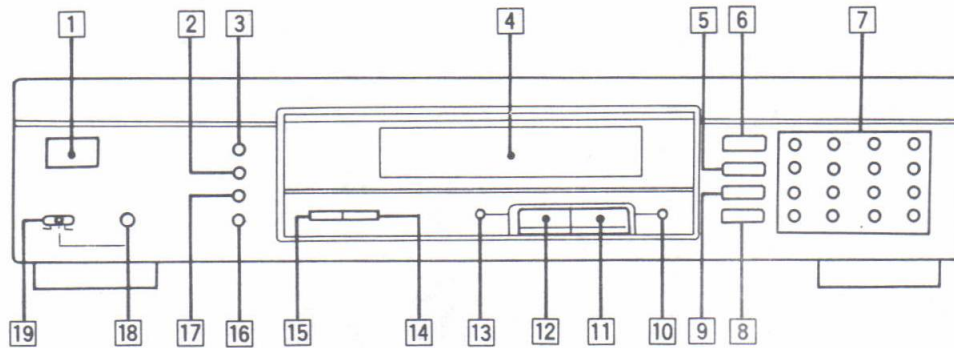


Free service manuals
Gratis schema's

Digitized by

www.freeservicemanuals.info

Front Panel



- | | |
|-----------------------|-------------------------------------|
| 1 POWER switch | 11 TUNING/SELECT (+, SPEECH) button |
| 2 MONO button | 12 TUNING/SELECT (-, MUSIC) button |
| 3 DISPLAY MODE button | 13 MENU button |
| 4 Display window | 14 FM INPUT button |
| 5 PTY button | 15 BAND (DSR/FM/AM) button |
| 6 SHIFT button | 16 DISPLAY button |
| 7 Preset buttons | 17 EON button |
| 8 MEMORY button | 18 CHECK button |
| 9 DIRECT button | 19 PROGRAM (OFF/SET/ON) switch |
| 10 CHARACTER button | |

www.freeservicemanuals.info

Digitized by

www.freeservicemanuals.info

www.freeservicemanuals.info

www.freeservicemanuals.info



This section is extracted from instruction manual.

No News	Kein NEWS
No Info	Kein INFO
Weak Signal	Sign. schwach
Returning	Serv. gestbrt
Memory OK	Gespeichert
No Programme*	Kein Programm*
No audio	Nicht Audio
CT Wait	Warte auf CT
Command Mode	Fernbedienung
LNC Overload	Kurzschluss
No TIME data	Keine Zeit

* When no programme is broadcast.

Storing FM Stations Automatically in Alphabetical Order ("Auto-betical")

With "Auto-betical select" you can automatically store up to 32 FM stations in alphabetical order without redundancy. For Radio Data System (RDS) stations, the tuner first checks for stations broadcasting the same programme, then stores only the one with the clearest signal. The selected RDS stations are sorted alphabetically by their Programme Service name, then assigned a two-character preset code (For more details on RDS, see page 17.)

Regular FM stations are assigned two-character preset codes and stored after the RDS stations. If you want to store FM, AM, or DSR stations one by one, follow the procedures on pages 15 and 16.

- 1 Turn the power off.
- 2 Press POWER while holding down MEMORY. The tuner scans and stores all the FM and FM RDS stations in the broadcast area.

NOTES

- If you move to another area, do this procedure again to store stations in your new area.
- The following settings are stored along with the station:
INPUT ATT: OFF
IF BAND: WIDE
MONO/STEREO: STEREO
- If you move the aerial after storing stations using "auto-betical select," the stored settings may no longer be valid. If this happens, store the stations again.

Changing the Display Language

You can choose either an English or a German language display. The factory preset language is English. To change the display language, follow the steps below.

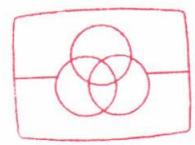
- 1 Turn the power off.
- 2 Press POWER while holding down MENU. The power comes on and either "English" or "German" appears in the display, for about 2 seconds, to indicate the current setting.

See the following chart for differences between the English and German display messages. See page 18 for differences between the English and German programme type displays.

(continued)

Getting Started

English	German
INPUT ATT: ON	Dämpfung: EIN
INPUT ATT: OFF	Dämpfung: AUS
IF: NARROW	ZF: SCHMAL
IF: WIDE	ZF: BREIT
No PTY Data	Kein PTY Sign
No Text Data	Kein Text
Text Waiting	Warte auf RT
PTY Search	PTY Suchlauf
PTY Change	Geändert PTY
not found	nicht vorh.
PTY Alarm	PTY Alarm
Now TA	VF-TA
Now NEWS	VF-NEWS
Now INFO	VF-INFO
No TA service	Kein TA

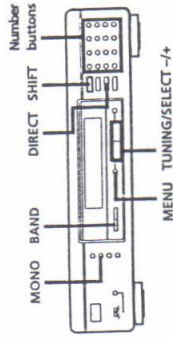


Free service manuals
Gratis schema's
Digitized by

www.freeservicemanuals.info

Receiving Digital Satellite Radio (DSR) Broadcasts

You can choose from three different tuning methods to receive DSR broadcasts: factory presets, direct tuning, or manual tuning. Before you begin, make sure you have connected a satellite (parabola) aerial and/or cable outlet as indicated on pages 6 and 7.



Receiving DSR broadcasts using the factory preset frequencies

You can receive DSR broadcasts via satellite or cable hookups simply by using the factory preset frequencies.

- 1 Press **SHIFT** to select a preset frequency*.
- | to receive | select |
|--|--------|
| CABLE 118 MHz | a |
| CABLE 132 MHz | b |
| CABLE 3 MHz | c |
| SATELLITE (Kopernikus) 1,150 MHz (LNC off) | d |

* Receivable frequencies may vary depending on your location. See page 16 for available DSR cable and satellite frequencies.

- 2 Use the number buttons (1 to 16) to select one of the 16 stations broadcast at the preset frequency. See the table on page 22.

- 3 If you selected "d" in step 1, press **MENU** to display the Low Noise Converter (LNC) setting: "LNC: A (14V)," "LNC: B (18V)," or "LNC: OFF (0V)," and then use **TUNING/SELECT +/-** to select the voltage supply appropriate for your aerial. The display changes as follows:

OFF (0V) ← A (14 V) → B (18 V)

Select **NARROW** to sharpen the reception quality and discern a specific frequency when two broadcast frequencies are located close together.

To adjust the FM input level
You can lower the input level of the signal being received for better reception. To determine the appropriate level, adjust the antenna while listening to an FM broadcast and choose the level you prefer.

- 1 Press **"MENU"** repeatedly until **"INPUT ATT: ON"** or **"INPUT ATT: OFF"** appears in the display.
- 2 Use **TUNING/SELECT -** or **+** to select either **"ON"** or **"OFF"**. (Factory preset is **"OFF"**.)
Select **"ON"** to decrease the input level.
Select **"OFF"** to receive at the normal input level.

To improve reception by adjusting the signal meter
You can use the digital signal meter to check the signal strength of the radio frequencies. The display range of the digital meter is from 16 to 70 dB (μV of radio frequency voltage = 0 dB). To obtain a signal to noise ratio sufficient for receiving a stereo broadcast, we recommend a reading greater than 50 dB. (You can also press **MONO** to change the reception quality while using the signal meter to determine the best reception.)

- 1 Tune in an FM station.
- 2 Press **DISPLAY** repeatedly to display the digital signal meter.
- 3 Repeat steps 1 and 2 until you find a frequency with good reception.

Understanding Digital Satellite Radio (DSR)

Digital Satellite Radio (DSR) is a completely new radio broadcasting system that uses a satellite to transmit digital broadcast signals. Unlike conventional (AM and FM) radio broadcasts, which transmit only one analog station per frequency, DSR broadcasts can digitally transmit up to 16 stereo (or 32 monaural) stations per frequency along with information regarding the type of programmes being broadcast. DSR broadcasts also include station name information, which is displayed automatically.

Your tuner is factory preset with the broadcast frequency of the satellite currently transmitting DSR broadcasts ("Kopernikus"), as well as the predominant cable DSR broadcast frequencies, to make DSR tuning more convenient.

Manual tuning

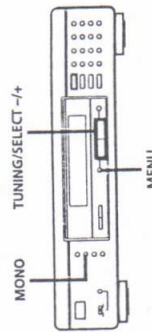
Manual tuning lets you search through all the stations broadcasting on each frequency band and tune in stations with extremely weak signals.

- 1 Press **BAND** to select either **AM** or **FM**.
- 2 Press **TUNING/SELECT -** or **+** repeatedly to tune in the frequency you desire.
Press **TUNING/SELECT -** for a lower frequency.
Press **TUNING/SELECT +** for a higher frequency.
Press and hold to tune at a higher speed.

For stations that are difficult to receive
Try repositioning the loop aerial while tuning. Placing the supplied AM loop aerial near a window will also improve reception quality.

Features for FM receiving

You can alter the reception quality in FM mode to obtain the clearest possible signal under a variety of circumstances. The tuner stores the following adjustments together with the frequency when you make tuning presets. See "Presetting AM and FM stations" (page 15) for details regarding station presets.



If an FM programme is distorted
Press **MONO** to select **"MONO"**. You will not have the stereo effect but the distortion will be reduced. To return to the stereo mode press **MONO** again. (The **MUTING** indicator also lights in when you choose **STEREO** tuning.)

Note
Keep volume low when tuning in **MONO** to avoid speaker damage caused by inter-station noise.

If interference occurs during FM reception
Use the **IF** band function to eliminate interference from adjacent stations.

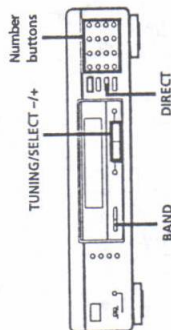
- 1 Press **MENU** repeatedly until **"IF: WIDE"** or **"IF: NARROW"** is displayed.
- 2 Use **TUNING/SELECT -** or **+** to select either **"WIDE"** or **"NARROW"**. (Factory preset is **"WIDE"**.)
Select **WIDE** for distortion-free sound when the broadcast signal is strong and there is no interference.

(continued)

Receiving AM and FM Broadcasts

You can tune in both AM and FM broadcasts by using either direct or manual tuning.

Before you begin, make sure that you connected the supplied AM aerial and either an FM aerial and/or a cable hookup as indicated on pages 5 and 6. Also, be sure to select the proper FM input (see page 9). Also, be sure the **STEREO** indicator is on when you receive an FM stereo broadcast.



Direct tuning

Direct tuning lets you tune in broadcasts by entering the frequency of the station.

- 1 Press **BAND** to select either **AM** or **FM**.
- 2 Press **DIRECT**.
- 3 Use number buttons 1 through 10 to enter the number of the frequency you want to tune.

Example 1: FM 102.50 MHz



Example 2: AM 1350 kHz



The tuner tunes directly to the station you entered.

Notes

- If you enter a frequency not covered by the tuning interval, it is automatically rounded to the closest value covered by the tuning interval.
- If the numbers you entered flash in the display, make sure you've entered the right frequency. If not, re-enter the frequency. If the numbers still flash and the station is not received, that frequency is not used in your area.

Basic Tuner Operations

Notes

- See the instruction manual for your parabola aerial for voltage information.
- If a current greater than 300 mA is supplied to the aerial, the tuner stops functioning and "LNC Overload" appears on the display. If this happens, turn off the power to this unit and take care of the overload. The tuner will function normally when you turn it back on if the overload (short circuited aerial, etc.) has been eliminated.
- When tuning a satellite broadcast, it may take 10 seconds or more to receive the frequency.
- To insure stable LNC operation, the last selected voltage output to the LNC must be maintained when you switch to other bands. Therefore, its indicator also remains lit.
- The LNC power supply settings remain stored in the memory with each preset DSR satellite frequency unless you re-store the preset (page 16).

 When "**◀ TUNED**" or "**TUNED ▶**" appears in the display

The frequency's reception is slightly off. We recommend following the procedure in "Presetting Other DSR Frequencies" on page 16 to re-store the frequency.

Tuning directly to a specific DSR frequency

You can use direct tuning to receive DSR broadcasts from frequencies not stored in the preset memory. See "Presetting Other DSR Frequencies" on page 16 to make a preset for a new frequency.

- 1 Press **BAND** to select either DSR SATELLITE or DSR CABLE.

- 2 Press **MENU** repeatedly to display the LNC setting and use **TUNING/SELECT -/+** to set the power supply voltage if you selected DSR SATELLITE in step 1.

Press **MENU** repeatedly to return to the normal display.

- 3 Press **DIRECT**.

- 4 Use number buttons 1 through 10 to enter the frequency you want to tune.

Example: to enter frequency 1460.0 MHz (on the DSR SATELLITE band).



If "**◀ TUNED**" or "**TUNED ▶**" appears in the display Press **TUNING/SELECT -/+** until only "TUNED" appears.

- 5 Use the number buttons (1-16) to select one of the 16 stations broadcast on that frequency.

Notes

- If you enter a frequency not covered by the tuning interval, it is automatically rounded to the closest value covered by the tuning interval.
- If the numbers you entered flash in the display, make sure you've entered the right frequency. If not, re-enter the frequency. If the numbers still flash and the station is not received, that frequency is not used in your area.

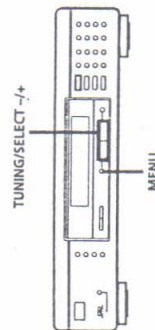
Tuning manually to a DSR frequency

- 1 Press **BAND** to select either DSR SATELLITE or DSR CABLE.
- 2 Press **MENU** repeatedly to display the LNC setting and use **TUNING/SELECT -/+** to set the power supply voltage if you selected DSR SATELLITE in step 1.
Press **MENU** repeatedly to return to the normal display.
- 3 Press **TUNING/SELECT -** or **+** repeatedly until you reach the frequency you desire.
To tune at a higher speed, hold down the **TUNING/SELECT -** or **+** buttons.
If "**◀ TUNED**" or "**TUNED ▶**" appears in the display Press **TUNING/SELECT -/+** until only "TUNED" appears.

- 4 Use the number buttons (1 to 16) to select one of the 16 stations broadcast on that frequency.

Features for DSR receiving

In addition to the several DSR tuning features, this tuner also incorporates a MUSIC/SPEECH balance function to help you get the most out of DSR broadcasts.



Selecting MONO 1 or MONO 2

When the broadcast is monaural, two broadcast stations can be broadcast on one channel. Press **MONO** to select the station you desire, **MONO 1** or **MONO 2**. The **MONO** setting is set for the entire DSR band and only changes when you press **MONO**.

(continued)

You cannot receive DSR stereo broadcasts in monaural. Likewise, the muting function is always active and cannot be canceled.

Adjusting the music/speech balance

Once you have tuned in a DSR station, you can adjust the balance of loudness between the music and speech while listening to a programme. The factory setting is an equal balance of **MUSIC** and **SPEECH**.

- 1 Press **MENU** repeatedly to display "BALANCE MU/SP."
- 2 Use **TUNING/SELECT -/+** to adjust the balance ratio to the level you prefer.
The display changes to "MU | SP" when you press **TUNING/SELECT -** or **+** (or if you wait 4 seconds).
Pressing **TUNING/SELECT -** shifts the balance toward "SP" (speech).
Pressing **TUNING/SELECT -** shifts the balance toward "MU" (music).
- 3 Press **MENU** repeatedly to return to the normal display after adjusting the music/speech balance.

Note

The music/speech balance function does not effect the DSR DIGITAL OUT.

Using the digital signal meter with the DSR CABLE and DSR SATELLITE bands

You can use the digital signal meter to check the signal strength of the radio frequencies. The signal meter range for the DSR band is 35 to 90 relative units.

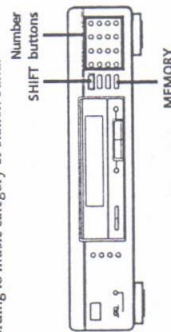
- 1 Tune in an DSR frequency.
- 2 Press **DISPLAY** repeatedly to display the signal meter.

Notes

- With the FM band, the numerical value displayed on the signal meter is proportionate to the signal-to-noise ratio. With the DSR bands, however, the signal to noise ratio increases and decreases without relation to the numerical value displayed on the signal meter.
- With the DSR SATELLITE band, noise from the satellite aerial may cause a numerical value to be displayed on the signal meter even though there is no signal.

Presetting AM and FM Stations

This section shows you how to store up to 32 of your favorite AM, FM, and FM RDS stations on preset codes combined of characters (A or B) and numbers (1-16), such as A5. You can use the letters to classify stations according to music category or station band.



- 1 Tune in the AM or FM station you wish to store. If you are not familiar with how to tune in a station, see "Receiving AM and FM broadcasts" on page 11.
- 2 Press MEMORY.
- 3 Press SHIFT to choose either A or B. The letter you choose appears in the display.
- 4 Press a number button (1-16) and the tuner stores the station under the preset code you specified. If you've made a mistake Press MEMORY before completing the preset code.
- 5 Repeat steps 1 through 4 to store other stations.

IF BAND, FM INPUT, INPUT ATT, and MONO settings are stored automatically
When you preset a station, the current settings are stored together with the station. The tuner switches to those settings whenever you choose that preset code.

If you want to label the stations
Follow the procedure described in "Naming AM and FM Preset Stations" after you preset the station. When you preset an RDS station broadcasting station name information, the station name is automatically stored at the station preset.

Tuning preset AM and FM stations

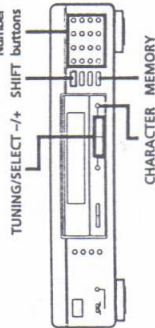
You can tune directly to a preset station by entering its preset code.

- 1 Press SHIFT to select A or B.
- 2 Press a number button (1-16). The tuner automatically tunes in the station stored under that two character code.

Naming AM and FM Preset Stations

This section shows you how to name preset AM and FM stations (except for FM RDS stations). Once you store a name for a preset station, the name appears in the display instead of the frequency when you tune to that preset station. The current frequency, FM INPUT, MONO, INPUT ATT, and IF BAND information are stored in addition to the station name.

If you want to create a name for a previously stored preset station, be sure to tune to that preset code before proceeding to the following steps. Otherwise, all previously preset information will be changed.



- 1 Tune in a station you want to name.
- 2 Press CHARACTER.
- 3 Press TUNING/SELECT - or + repeatedly to obtain the character you desire. See the following character list for the characters you can use when creating a name.
- 4 Press CHARACTER to move the cursor into position for the next character.
- 5 Repeat steps 3 and 4 until you have entered all the characters for your station name.
- 6 Press MEMORY after completing the station name to make a preset.
- 7 Press SHIFT to select A or B and press a number button (1-16) to complete the two character preset code. When you've already preset the station, make sure to select the same preset code as before.

If the display changes before you specify the preset code Press CHARACTER and the name reappears in the display.

(continued)

Character list (the first character is a space)

(space)	A	B	C	D	E	F	G	H	I	J	K	L	M	H	O	P	Q
R	S	T	U	V	W	X	Y	Z	[\	^	_	`	a	b	c	d
e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v
w	x	y	z	{		}	~	!	"	#	\$	%	&	'	()	*
+	=	-	.	:	;	<	>	?@	^	_	`	a	b	c	d	e	

www.freeservicemanuals.info

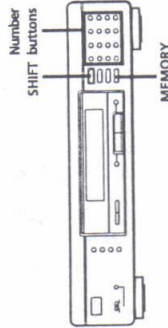
Presetting Other DSR Frequencies

Why you need to preset DSR frequencies

Since DSR is an especially wide frequency band, you'll probably find it easiest to use preset frequencies when tuning. This tuner comes with some currently available DSR frequencies preset in the tuner's memory (see "Receiving DSR broadcasts using the factory preset frequencies" on page 12), but you can change them and make your own presets as the DSR network expands. If some of the factory preset frequencies are not receivable in your area, use the letters those frequencies are stored at first when storing a new frequency.

Presetting DSR frequencies

This section shows you how to store and tune up to 4 different DSR frequencies. DSR frequencies can be stored at preset letters a, b, c, and d. Although it is necessary to press one of the number buttons (1-16) to store a DSR frequency, the number button does not determine the location of the frequency. All channels (1-16) on the stored frequency are automatically available for selection after you choose a preset letter (a, b, c, or d) by pressing SHIFT.



- 1 Tune in the DSR frequency you wish to store. Currently available frequencies are listed on the table below.

Reception area	Frequency	Origin
Germany	CABLE 118 MHz	Germany
Switzerland	CABLE 118 MHz	Switzerland
Austria	CABLE 310 MHz (or 132 MHz)	Germany
Germany and surrounding areas	CABLE 118 MHz	Germany
	SATELLITE (1st IF) 1,150 ±2 MHz (Kopernikus)	Germany

As of December 1994

If * ◀ TUNED or * TUNED ▶ appears in the display Press TUNING/SELECT -/+ until only * TUNED appears.

- 2 Press MEMORY.
- 3 Press SHIFT to choose a preset letter (a, b, c, or d). The letter you choose appears in the display.
- 4 Press a number button (1-16). The tuner stores the frequency at the letter you specified (a, b, c, or d).

Tuning preset DSR frequencies and stations

You can tune directly to a preset frequency simply by choosing its preset letter (a, b, c, or d).

- 1 Press SHIFT to select the preset (a, b, c, or d). Each time you press SHIFT, a letter (a, b, c, or d) appears in the display.
- 2 Press any one of the number buttons (1-16). The preset frequency appears. The station name of the channel broadcast at the number you pressed is displayed and you can hear the broadcast.
- 3 If the broadcast is monaural, press MONO to select the station you desire, MONO 1 or MONO 2 (the factory setting is MONO 1).

To select another channel from the same frequency Press a different number button (1-16).

Advanced Tuner Operations

Using the Radio Data System (RDS)

What you can do with the Radio Data System

Radio Data System (RDS) is a broadcasting service that allows radio stations to send additional information along with the regular radio programme signal. This tuner offers you three convenient RDS features: RDS information display; Monitoring of traffic, news, or information programmes; and locating stations by programme type. Although RDS refers specifically to programme services for FM stations*, you can also monitor the stations on the selected DSR preset frequency for news and information or choose to locate stations by programme type.

Note

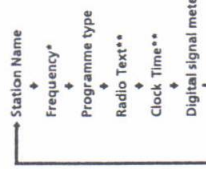
RDS may not work properly if the station you are tuned to is not transmitting the RDS signal properly or if signal strength is weak.

- * Not all FM stations provide RDS service, nor do they provide the same types of services. If you are not familiar with the RDS system, check with your local radio stations for details on RDS services in your area.

Receiving RDS broadcasts

Simply select a station from the FM or DSR band. When you tune in a station that provides RDS services, the station name appears in the display. With the FM band, you can only use the RDS service when the RDS indicator is lit.

To check the display for RDS information, press DISPLAY. The display advances one step at a time through the following information.



- * This information also appears for non-RDS FM stations.
- ** Unlike FM-RDS, radio text and clock time information cannot be obtained from DSR broadcasts.

the station you were listening to.

To stop monitoring the programme

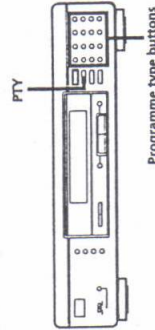
Press EON repeatedly until "TA," "NEWS," and "INFO" are no longer displayed.

Notes

- * "Weak-Signal" appears when the selected station has a weak signal. "Returning" appears when the tuner is trying to retune a station with a weak signal.
- * Turn off the EON feature when you want to record a programme without interruptions, especially when you want to do timer recording.
- * "No TA service," "No News," or "No Info" appears in the display if you select an EON programme before tuning to an FM RDS or DSR station.
- * You cannot monitor programmes on the FM band if the "EON" indicator does not appear in the display, even if you select TA, NEWS, or INFO.

Locating a station by programme type (PTY search)

You can locate a station you want from the FM or DSR bands by selecting a programme type. The tuner tunes in the type of programmes currently being broadcast from the FM RDS or DSR stations stored in the tuner's preset memory.



1 Press PTY.

2 Press the programme type button that corresponds to the programme type you want. See the following table for programme type information.

The tuner starts searching the preset FM RDS stations and the preset DSR frequency for the programme.

When the tuner finds the programme you are looking for, it stops searching and tunes in the station broadcasting the programme.

To tune another station by programme type

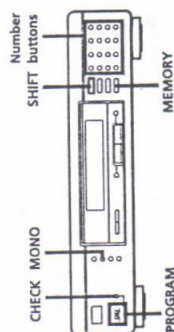
Repeat steps 1 and 2.

Programme type button (German display)	What you hear (English display)
NEWS	News programmes (Nachrichten)
AFFAIRS	Topical programmes that expand on current news (Zeitgeschehen)
INFO	Programmes about consumer affairs, medical advice, and weather (Spez./Wortprog)
SPORT	Sports programmes (Sport)
EDUCATE	Educational programmes, such as a "how-to" programme and advice (Weiterbildung)
DRAMA	Radio plays and serials (Hörsp./Literat)
CULTURE	Programmes about national or regional culture, such as religion, language, and societal concerns (Kultur)
SCIENCE	Programmes about the natural sciences and technology (Wissenschaft)
VARIED	Programmes containing celebrity interviews, panel games, and comedy (Unterhaltung)
POP M	Popular music programmes (Popmusik)
ROCK M	Rock music programmes (Rockmusik)
M.O.R.M	Easy Listening (middle of the road music) (U-Musik)
LIGHT M	Classical music, such as instrumental, vocal, and choral (L-Klassik)
CLASSICS	Performances of major orchestras, chamber music, opera, etc. (S-Klassik (E-Klassik))
OTHER M	Music that does not fit into any of the above categories, such as jazz and rhythm and blues (Spez. Musik)
UNDEFINED	Any programmes not defined above (keine Kennung)

- * When two programme types are displayed simultaneously, only 6 characters (maximum) from each programme type are displayed.

Making a Timer Programme

With the PROGRAM selector you can store up to 3 different programmes for timer operation. By connecting an optional audio timer, you can specify times to receive up to three programmes. To use this function, make sure your audio timer can control at least three on-off operations.



- 1 Set PROGRAM to SET.
- 2 Press MEMORY. The MEMORY indicator lights in the display.
- 3 Use SHIFT and number buttons to select a preset station.
- 4 If you selected a DSR station, use MONO to select the MONO 1 or MONO 2 if necessary.
- 5 Press MEMORY again. The MEMORY indicator goes out when you've finished one programme.
- 6 Repeat steps 2 to 5 for programmes 2 and 3.

7 Set PROGRAM to "ON".

8 Set your audio timer. The tuner's power goes off.

Note

When the audio timer turns on the tuner, reception starts with the programme number following the last programme number displayed before turning off the unit. The tuner advances in order to the next programme each time the audio timer turns the power on. If nothing is programmed at the next number, the tuner returns to [1].

⚠ If you don't plan on using the programme right away

Set PROGRAM to "OFF" in step 7. Then, when you want to use the programme, all you have to do is set PROGRAM to "ON" and set your timer.

Note

The display momentarily returns to the full display/full brightness mode when an operation button is pressed.

Checking the programme contents

- 1 Set PROGRAM to SET.
- 2 Press CHECK repeatedly to display each of the memorized programmes.

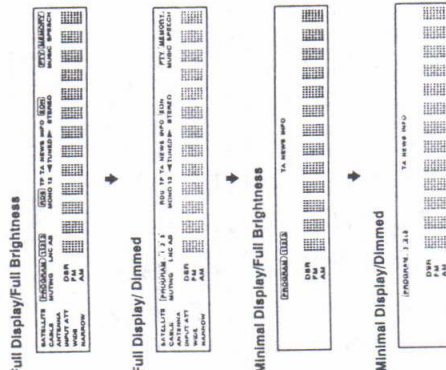
If you want to check the actual reception of the programmed stations, turn PROGRAM on and turn POWER off and on. The preset stations will be received in the programmed order.

Notes

- If the setting of a programme is changed, the settings of the other programmes are all cleared. In this case, store the programmes again.
- When PROGRAM is set to SET, the display window changes to full display/full brightness automatically.
- The programmes remain until you change them. So, you can use the same programmes again.

Changing the Display Mode

You can change the appearance of the display by pressing the DISPLAY MODE button. Each time you press DISPLAY MODE, the display mode switches as follows:



Note

The display momentarily returns to the full display/full brightness mode when an operation button is pressed.

Station Names Broadcasting DSR Programmes

German programmes

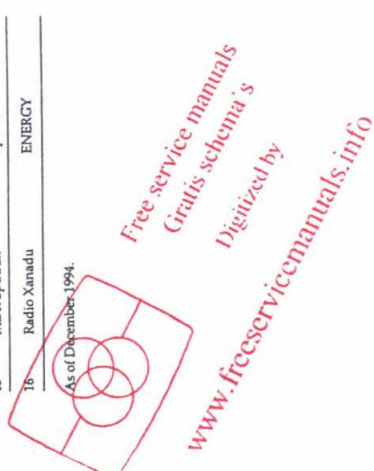
Channel	Station name	Display
1	Bayern 4	BAYERN 4
2	S2 kultur	S2 Kultur-SWF/SDR (alternating)
3	Radio Bremen 2/3	BREMEN 2 [3]
4	Hessischer Rundfunk 2	SR 2/hr 2
5	Norddeutscher Rundfunk 3	NDR 3
6	StarSat	STAR-SAT
7	Deutschlandradio Köln	DLF or D-RADIO (alternating)
8	Westdeutscher Rundfunk 3	WDR3 or KOELN (alternating)
9	Deutschlandradio Berlin	D-RADIO or BERLIN (alternating)
10	SR 1 Europawelle Saar	SR1 SAAR
11	RPR 2	RPR 2
12	Klassik Radio	KLASSIK
13	Radio fn	fn
14	RadioRopa Info	RAD. ROPA
15	MDR Sputnik	Sputnik
16	Radio Xamadu	ENERGY

DIGit Super Radio in Switzerland (Cable 118 MHz)*

Channel	Station name	Display
1	Classic	Classic
2	Light	Light
3	International	Inter-CH
4	RSR 1 'La Première'	RSR-1ere
5	DRS 1	DRS 1
6	RSI 1 'Rete uno'	CH-Rete 1
7	RSR 3 'Couleur 3'	Couleur 3
8	DRS 3	DRS 3
9	RSI 3 'Rete tre'	CH-Rete 3
10	Radio Eviva	Eviva-CH
11	Blue Danube Radio	Danube-A
12	Hector Radio France	Hector-F
13	Euro Jazz	Eurojazz
14	Radio RAI Italia	Rai
15	BBC World Service BBC Multilingual Service	BBC W/S BBC M/S
16	Voice of America Europe	VOA EUR

As of December 1994.

* In Switzerland, "DSR" means "Digital Super Radio."



Remote Button Descriptions

Remote Button Descriptions

Remote Button	Band	Function
FM INPUT	FM	Selects either the CABLE or FM ANTENNA input
DSR (SATELLITE/CABLE)		Selects DSR satellite or DSR cable band tuning
FM		Selects FM band tuning
AM		Selects AM band tuning
SHIFT (+/-)		Switches presets (a, b, c, and d) and preset pages (A and B).
0-16	AM/FM	Used with SHIFT to select preset stations
	DSR	Used to access the stations available on a given DSR frequency
DISPLAY MODE		Changes display brightness (full/dimmed) and information (full/minimal)
MONO	FM	Selects FM STEREO or MONO
	DSR	Selects DSR MONO 1 or MONO 2
DISPLAY	AM	Switches between preset name* and frequency displays
	FM	Switches between preset name* or station name**, frequency, programme type**, radio text**, clock time**, and digital signal meter displays
	DSR	Switches between station name, frequency, programme type, and digital signal meter displays
NEWS		Selects the NEWS programme types for PTY search
AFFAIRS		Selects the AFFAIRS programme types for PTY search
INFO		Selects the INFO programme types for PTY search
SPORT		Selects the SPORT programme types for PTY search
EDUCATE		Selects the EDUCATE programme types for PTY search
DRAMA		Selects the DRAMA programme types for PTY search
CULTURE		Selects the CULTURE programme types for PTY search
SCIENCE		Selects the SCIENCE programme types for PTY search
VARIED		Selects the VARIED programme types for PTY search
POP M		Selects the POP M programme types for PTY search
ROCK M		Selects the ROCK M programme types for PTY search
M. O. R. M.		Selects the M. O. R. M. programme types for PTY search
LIGHT M		Selects the LIGHT M programme types for PTY search
CLASSICS		Selects the CLASSICS programme types for PTY search
OTHER M		Selects the OTHER M programme types for PTY search
UNDEFINED		Selects the UNDEFINED programme types for PTY search
CH/PRESET (+/-)	AM/FM	Selects preset stations.
	DSR	Selects stations available on a given DSR frequency
EON (TA/NEWS/INFO)	FM/DSR	Chooses programme types for EON standby
BALANCE (SPEECH/MUSIC)	DSR	Adjusts the speech/music balance of DSR broadcasts
TUNING (+/-)		Changes frequencies for manual tuning

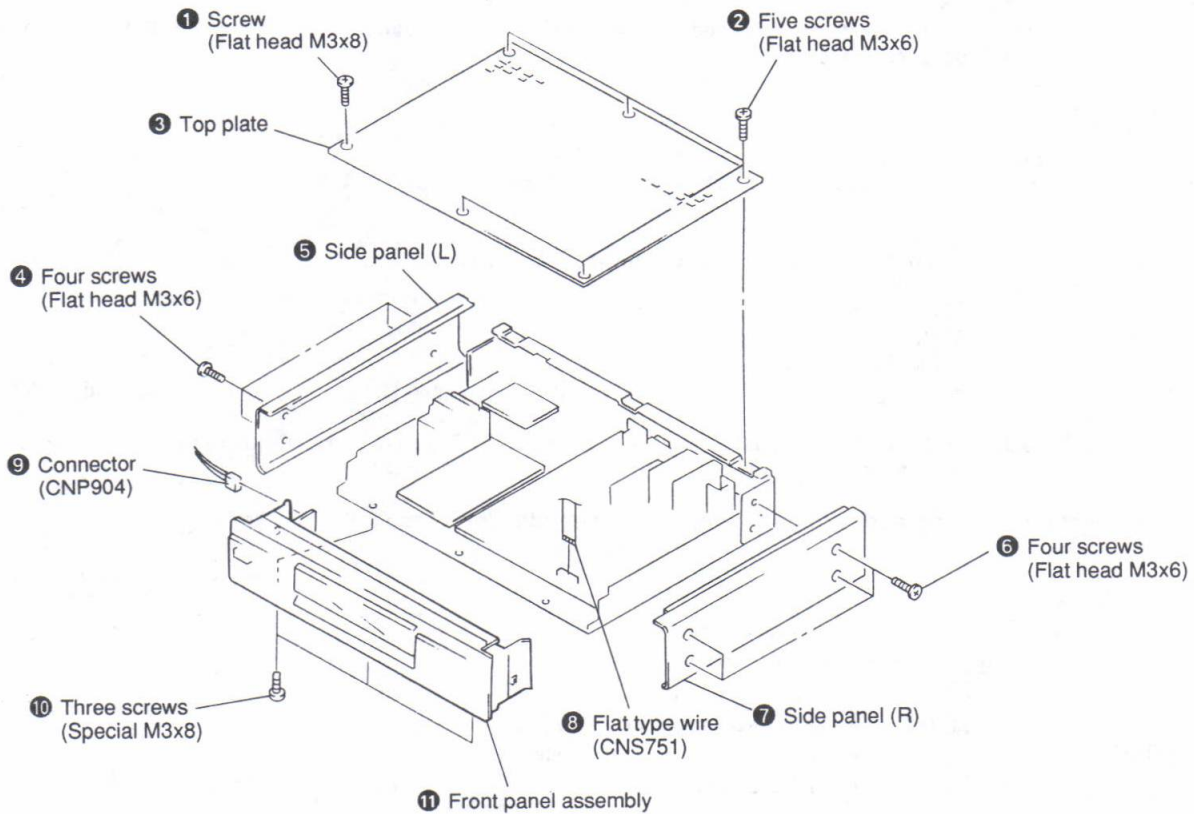
* Only for presets that have names.

** Only for FM RDS stations

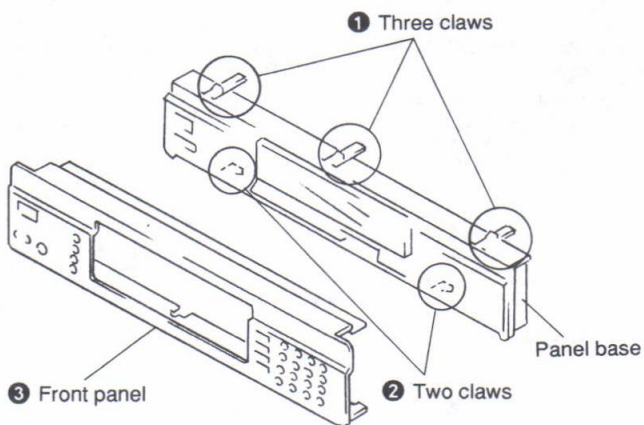
SECTION 2 DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

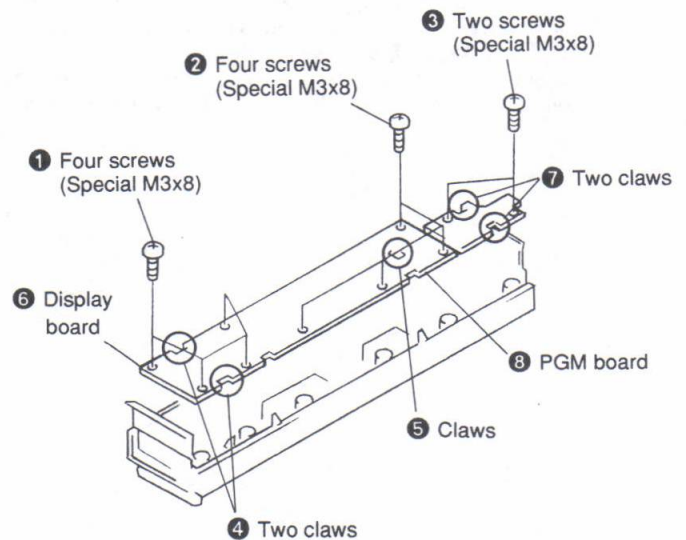
2-1. FRONT PANEL ASSEMBLY



2-2. FRONT PANEL



2-3. DISPLAY AND PGM BOARD



SECTION 3

TEST MODE

Storing FM Stations Automatically in Alphabetical Order ("Auto-betical")

With "Auto-betical select" you can automatically store up to 32 FM stations in alphabetical order without redundancy. For Radio Data System (RDS) stations, the tuner first checks for stations broadcasting the same programme, then stores only the one with the clearest signal. The selected RDS stations are sorted alphabetically by their Programme Service name, then assigned a two-character preset code (For more details on RDS, see page 8.)

Regular FM stations are assigned two-character preset codes and stored after the RDS stations. If you want to store FM, AM, or DSR stations one by one, follow the procedures on pages 7.

1. Turn the power off.
2. Press **POWER** while holding down **MEMORY**.
The tuner scans and stores all the FM and FM RDS stations in the broadcast area.

Notes

- If you move to another area, do this procedure again to store stations in you new area.
- The following settings are stored along with the station :
 - INPUT ATT : OFF
 - IF BAND : WIDE
 - MONO/STEREO : STEREO
- If you move the aerial after storing stations using "auto-betical select," the stored settings may no longer be valid. If this happens, store the stations again.
- Preset stations and other items stored in the tuner's memory may be cleared if the power is left off for more than 2 weeks in a row. If this happens, make the settings again.

The basic operation of check modes is performed by the combination of the following keys.

• Combination of keys

- [4], [5], [6] + **POWER** ON → Key check mode
- [7], [8], [9] + **POWER** ON → FL check mode
- [10], [11], [12] + **POWER** ON → Electrical adjustment frequency mode
- [13], [14], [15] + **POWER** ON → RAM clear mode (Set at shipment)
- MEMORY** + **POWER** ON → Auto-betical select start mode
- MENU** + **POWER** ON → Language select mode

• Mode operations :

• Key check mode

- ① "31" appears on the display at the beginning. (The number decreases by one each time the key is pressed. The number does not decrease even if one key is pressed two times or more.)
- ② When all keys are pressed, the display disappears once and the most recent updated time (month, day, hour) of the software appears for two seconds. (This date is used for checking the version of software at shipment. This is not necessary for usual operations.) After that, the electrical adjustment frequency is automatically preset.

• **FL check mode**

① All displays light up.

All light up

SATELLITE	PROGRAM	1	2	3	RDS	TP	TA	NEWS	INFO	EON	PTY	MEMORY
CABLE	MUTING	LNC	A	B	MONO	12	<	TUNED	>	STEREO	MUSIC	SPEECH
ANTENNA	DSR	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□
ANT ATT	FM	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□
WIDE	AM	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□
NARROW		□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□	□□□□

② When any of numerical keys 1 to 16 are pressed, bridge check pattern 1 appears.

Check pattern 1

PROGRAM	1	2	3
MUTING	LNC	A	B
DSR			
FM			
AM			

③ When any of numerical keys 1 to 16 are pressed, bridge check pattern 2 appears.

Check pattern 2

PROGRAM	1	2	3
MUTING	LNC	A	B
DSR			
FM			
AM			

④ When any of numerical keys 1 to 16 are pressed, the display disappears once and the part No. of the microcomputer (IC701) appears for two seconds. After that, the electrical adjustment frequency is automatically preset. If a pin of the display tube is not soldered correctly, a part of the display does not light up. If there is a bridge, a different bridge check pattern appears.

• **Electrical adjustment preset**

- A1 FM 87.5MHz
- A2 FM 88.0MHz
- A3 FM 90.0MHz
- A4 FM 94.0MHz
- A5 FM 96.0MHz
- A6 FM 97.0MHz
- A7 FM 98.0MHz
- A8 FM 99.0MHz
- A9 FM 100.0MHz
- A10 FM 106.0MHz
- A11 FM 108.0MHz
- A12 AM 531kHz
- A13 AM 603kHz
- A14 AM 999kHz
- A15 AM 1404kHz
- A16 AM 1602kHz
- B1 } FM 87.5MHz
- B16
- a DSR CABLE 118.0MHz
- b DSR CABLE 132.0MHz
- c DSR CABLE 310.0MHz
- d DSR SATELLITE 1150.0MHz

• **RAM CLEAR (Set at shipment)**

- A1 FM 87.5MHz
- } B16
- a DSR CABLE 118.0MHz
- b DSR CABLE 132.0MHz
- c DSR CABLE 310.0MHz
- d DSR SATELLITE 1150.0MHz

SECTION 4 ELECTRICAL ADJUSTMENTS

- Adjustment should be performed after setting the electrical adjustment frequency set mode of the test mode.
- Refer to Adjustment Location on page 18.

FM SECTION

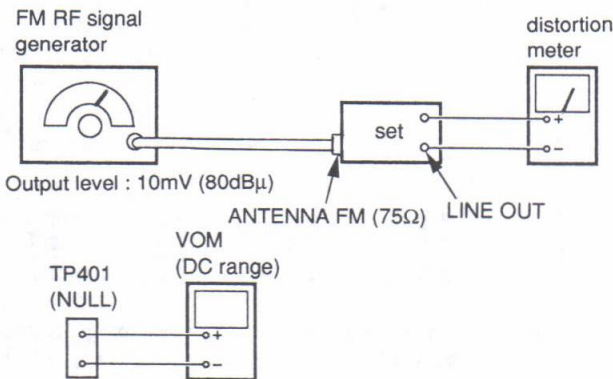
- Standard Setting of FM Stereo RF Signal Generator.

STANDARD SIGNAL

Carrier frequency : 98 MHz

Modulation : Audio 1kHz, 75 kHz deviation

FM Discriminator Adjustment (NULL and Distortion)

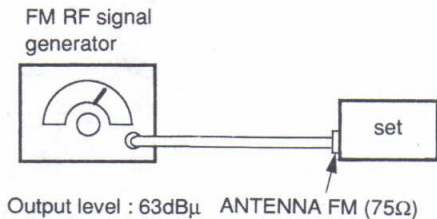


Procedure :

1. Press [7] button to display FM 98.00 MHz A7.
2. Adjust T403 for 0V reading on the VOM. NULL
3. Adjust T404 for a minimum reading on the distortion meter. Distortion
4. Repeat the adjustments of 2 and 3 several times.

Note : When replacing the ceramic filter, perform this alignment.

FM Signal Level Adjustment

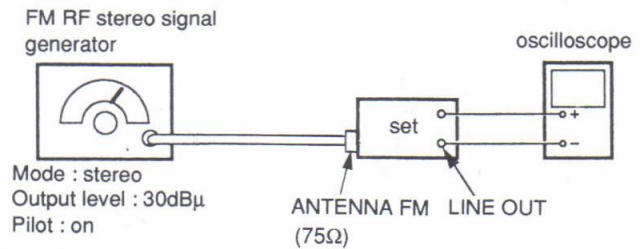


Procedure :

1. Press [DISPLAY] button to display SIG []dB A7.
2. Adjust RV401 to display 60dBμ.

Note : [] means a display before adjustment.

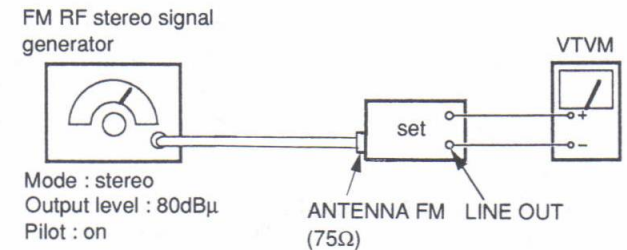
FM Muting Level Adjustment



Procedure :

1. Press [7] button to display FM 98.00 MHz A7.
2. Adjust RV402 to the place where TUNED and STEREO of the display tube light and the frequency shows.

FM Stereo Separation Adjustment



Procedure :

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV801 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV801 for minimum reading.

L-CH Stereo separation : Ⓐ—Ⓑ

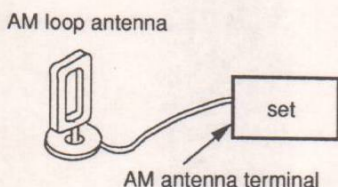
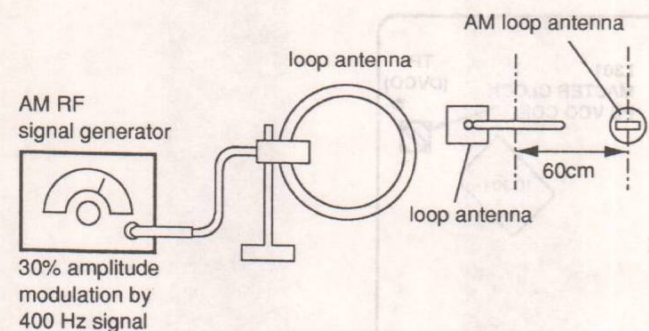
(A and B should be more than 40dB)

R-CH Stereo separation : Ⓒ—Ⓓ

(C and D should be more than 40dB)

The separations of both channels should be equal.

AM SECTION



AM Signal Level Adjustment

- Procedure :**
1. Set SSG output level so that antenna input level of the set becomes 60dBμ/m.
 2. Press [14] button to display AM 999 kHz A14.
 3. Adjust RV501 to the place where TUNED of the display tube lights.

DSR SECTION

Note : Switch the memory to the preset for electrical adjustments in advance before adjustment. Perform the FL check mode (see the page 12) or in the way below. (As the past data of the memory is written over, the contents of the memory should be noted down and preset them again after the end of adjustments.)

Preset mode for electrical adjustments
Press [10], [11], [12] and [POWER] at once.

Master Clock PB VCO coil Adjustment

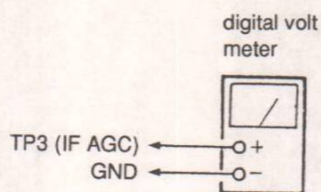
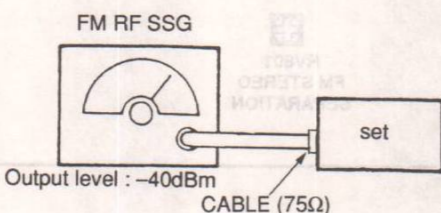
Input signal : No input

Procedures :

1. Press [SHIFT] button to display "a" at the left most display tube.
2. Press [1] button to display "DSR 118.0 MHz a 1".
3. Connect the digital volt meter to TP8 (D VCO) of the main board.
4. Adjust L301 so that DC voltage becomes 2.5 ± 0.2 Vdc.

QPSK AGC Adjustment

Carrier frequency : 118 MHz
Modulation : no modulation

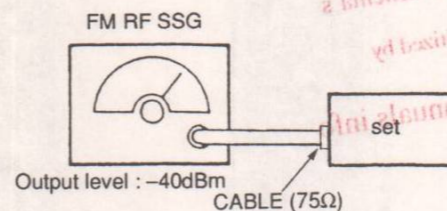


Procedures :

1. Press [SHIFT] button to display "a" at the left most display.
2. Press [1] button to display "DSR 118.0 MHz a 1".
3. Connect the digital volt meter to TP3 (IF AGC) of the main board.
4. Adjust RV101 so that DC voltage becomes 2.3 ± 0.1 Vdc.

DSR Signal Adjustment

Carrier frequency : 118 MHz
Modulation : no modulation



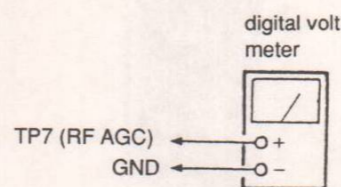
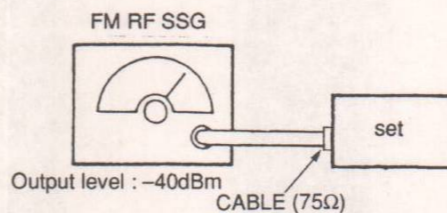
Procedure :

1. Press [DISPLAY] button to display "SIG: a 1".
2. Adjust RV102 so that "69" appears.

Note : a stands for the value before adjustment.

DSR RF AGC Check

Carrier frequency : 118 MHz
Modulation : no modulation

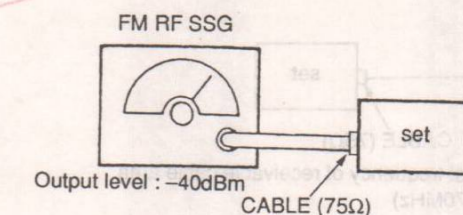


Procedures :

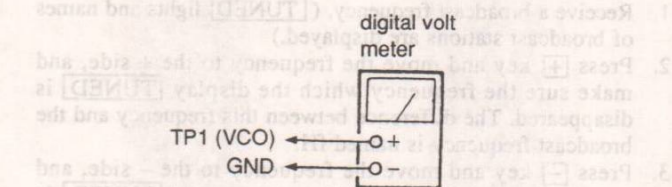
1. Press [SHIFT] button to display "a" at the left most display.
2. Press [1] button to display "DSR 118.0 MHz a 1".
3. Connect the digital volt meter to TP7 (RF AGC) of the main board.
4. Make sure that the voltage value when input signal is less than in the condition of no signal.

QPSK 40 MHz VCO coil Adjustment

Carrier frequency : 118 MHz
Modulation : no modulation



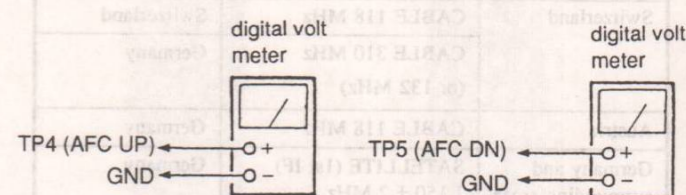
Step 1.



Procedure :

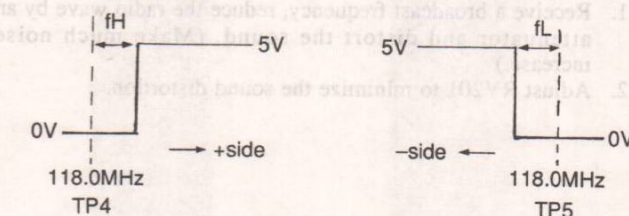
1. Set RV103 of the main board to the mechanical center.
2. Connect the digital volt meter to TP1(VCO) of the main board.
3. Adjust L104 so that DC voltage becomes 6.0 ± 0.2 Vdc.

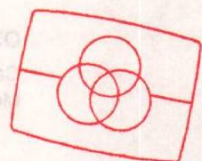
Step 2.



Procedure :

1. Adjust the receiving frequency to 118.0MHz.
2. Connect the digital voltmeter to TP4 (AFC UP) of the main board.
3. Press [+] key and move the frequency to the + side until the value of the digital voltmeter becomes approx. 5V, make sure the frequency then. The difference between this frequency and 118.0 MHz is named fH.
4. Connect the digital voltmeter to TP5 (AFC DN) of the main board.
5. Press [-] key and move the frequency to the - side until the value of the digital voltmeter becomes approx. 5V, make sure the frequency then. The difference between this frequency and 118.0MHz is named fL.
6. Adjust L104, repeat procedures 1 to 5 until the fH will be equal to fL (fH = fL).





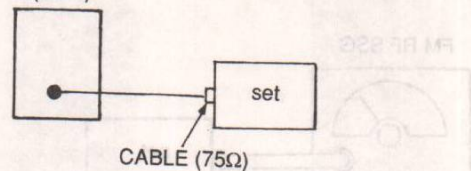
Free service manuals
Gratis schema's

Digitized by

www.freeservicemanuals.info

QPSK Offset Adjustment

CABLE SYSTEM (DSR)



Input signal : broadcast frequency of receivable cable area (50 — 470MHz)

Procedure :

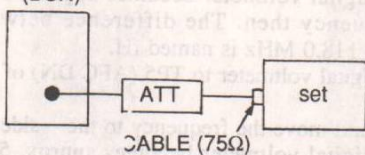
1. Receive a broadcast frequency. (**TUNED** lights and names of broadcast stations are displayed.)
2. Press **+** key and move the frequency to the + side, and make sure the frequency which the display **TUNED** is disappeared. The difference between this frequency and the broadcast frequency is named fH.
3. Press **-** key and move the frequency to the - side, and make sure the frequency which the display **TUNED** is disappeared. The difference between this frequency and the broadcast frequency is named fL.
4. Adjust RV103, repeat procedures 1 to 3 until the fH will be equal to fL (fH = fL).

Reception area	Frequency	Origin
Germany	CABLE 118 MHz	Germany
Switzerland	CABLE 118 MHz	Switzerland
	CABLE 310 MHz (or 132 MHz)	Germany
Austria	CABLE 118 MHz	Germany
Germany and surrounding areas	SATELLITE (1st IF) 1,150 ± 2 MHz (Kopernikus)	Germany

As of December 1994

Decoder Bit Clock Adjustment

CABLE SYSTEM (DSR)



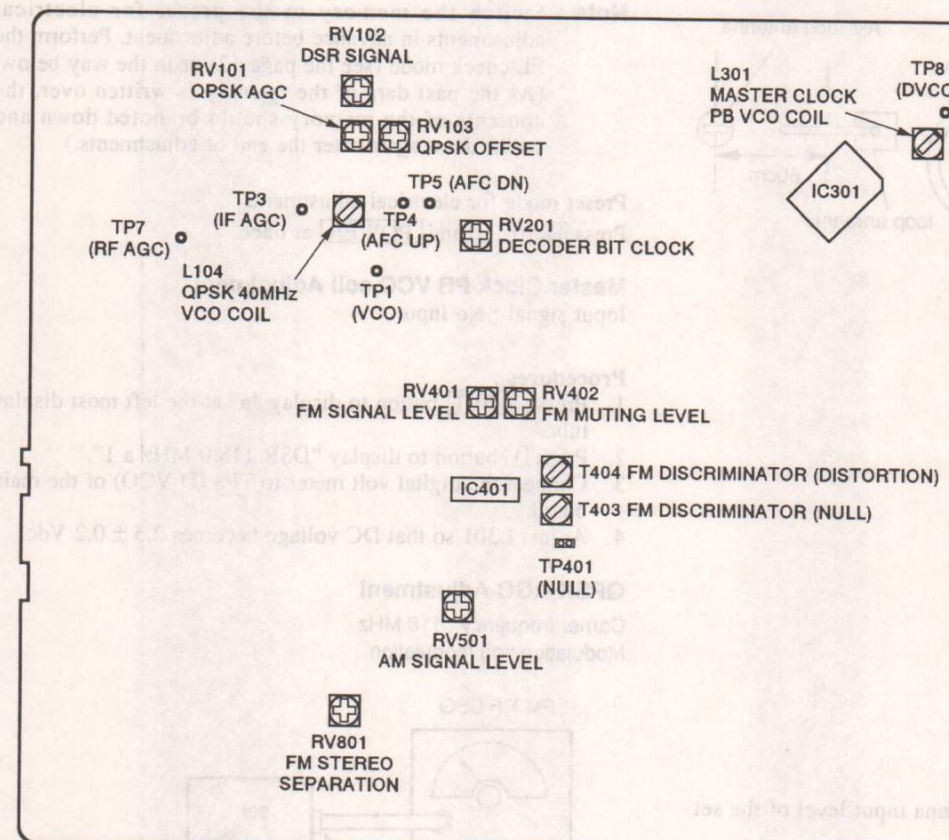
Input signal : broadcast frequency of receivable cable area (50 — 470MHz)

Procedure :

1. Receive a broadcast frequency, reduce the radio wave by an attenuator and distort the sound. (Make much noise increase.)
2. Adjust RV201 to minimize the sound distortion.

Adjustment Location

[MAIN BOARD] COMPONENT SIDE



SECTION 5 DIAGRAMS

5-1. IC PIN FUNCTIONS

• IC701 μ PD78058GC (SYSTEM CONTROL)

Pin No.	Pin Name	I/O	Function
1	A. S	I	FM/AM signal level meter input (A/D)
2	TUNED	I	Tuned detection (L: tuned)
3	IF BAND	O	FM IF band (H: narrow)
4	AVss	—	GND of D/A converter
5	STEREO	I	FM stereo detection (L: stereo)
6	FL. RESET	O	FL tube reset. Reset when low.
7	AVREF	I	D/A converter reference voltage
8	S. DATA	I	DSR special service bit data
9	—	O	Not used.
10	S. CLK	I	DSR special service bit clock
11	OVER LOAD	I	LNC over load detection (H: overload)
12	FL. DATA	O	FL tube output data
13	FL. CLK	O	FL tube output clock
14	—	I	Not used. (GND)
15	FL. LAT	O	FL tube latch
16	DI	I	PLL input data
17	DATA	O	PLL output data
18	CLK	O	PLL output clock
19	ANT	O	FM/CAB input switching (H: cable)
20	ATT	O	FM ATT (H: att)
21	F/A LAT	O	FM/AM PLL latch
22	SAT LAT	O	SAT PLL latch
23	CABLE LAT	O	CAB PLL latch
24	LNC 14/18V	O	LNK 14/18V (L: 14V)
25	—	O	Not used.
26	LOOP CUT	O	Loop cut
27	AFC UP	I	AFC up
28	AFC DOWN	I	AFC down
29	—	O	Not used.
30	$\overline{\text{SYLN}}$	I	DSR decoder sync detection
31	MODE0	O	} DSR mode select *1 (Refer to page 21)
32	MODE1	O	
33	VSS	—	System ground
34	$\overline{\text{UPMU}}$	O	Decoder muting (H: mute)
35	RESET	O	Decoder reset (H: reset)
36	—	—	Not used. (GND)
37	LNC ON/OFF	O	LNC on/off (L: on)
38	—	O	} Not used. (GND)
39	—	O	
40	AF MUTE	O	AF muting (L: on)

Pin No.	Pin Name	I/O	Function
41	PA	O	} DSR channel select *2 (Refer to page 21)
42	PB	O	
43	PC	O	
44	PD	O	
45	—	—	Not used.
46	INT	O	DAC sync reset (Sync again at rising.)
47	DF LAT	O	DAC latch
48	INAF	I	DAC async detection
49	D. MUTE	O	Digital muting
50	ATT	O	DAC data
51	SHIFT	O	DAC clock
52	—	—	} Not used.
53	—	—	
54	—	—	
55	—	—	
56	—	—	
57	—	—	
58	—	—	
59	$\overline{\text{DSR/FM}}$	O	DSR/FM power switching (H: DSR)
60	RES	O	Microcomputer reset
61	SWND	O	DSR special service window
62	POWER	I	Power
63	—	—	} Not used.
64	—	—	
65	REMOCON	I	Remote control input
66	RD CLK	I	RDS clock input
67	RD. DATA	I	RDS data
68	VDD	—	+5V (VDD)
69	X2	I	} Oscillator input/output
70	X1	O	
71	IC	—	GND
72	XT2	—	Not used.
73	XT1	—	Not used. (GND)
74	AVDD	—	A/D power supply
75	AVREFO	—	A/D reference voltage
76	KEY0	I	} Key input (A/D)
77	KEY1	I	
78	KEY2	I	
79	PGM	I	Program switch (A/D)
80	D. S	I	DSR signal level (A/D)

*1 DSR MODE SELECT

MODE 0	MODE 1	OPERATION
0	0	STEREO
1	0	MONO (R-CH)
0	1	MONO (L-CH)

0: LOW LEVEL

1: HIGH LEVEL

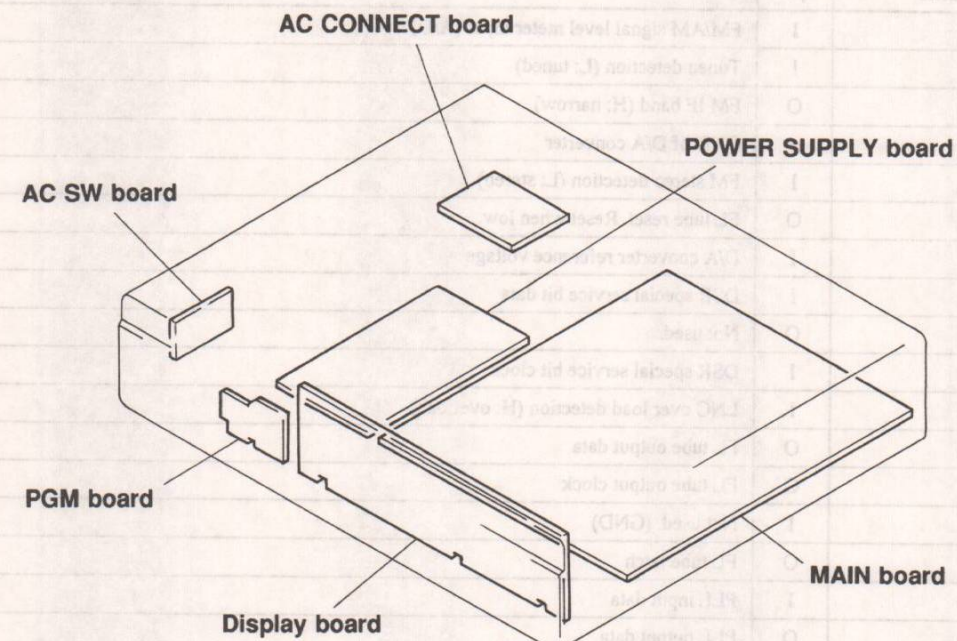
*2 DSR CHANNEL SELECT

PA	PB	PC	PD	CHANNEL
0	0	0	0	1
1	0	0	0	2
0	1	0	0	3
1	1	0	0	4
⋮	⋮	⋮	⋮	⋮
0	0	1	1	13
1	0	1	1	14
0	1	1	1	15
1	1	1	1	16

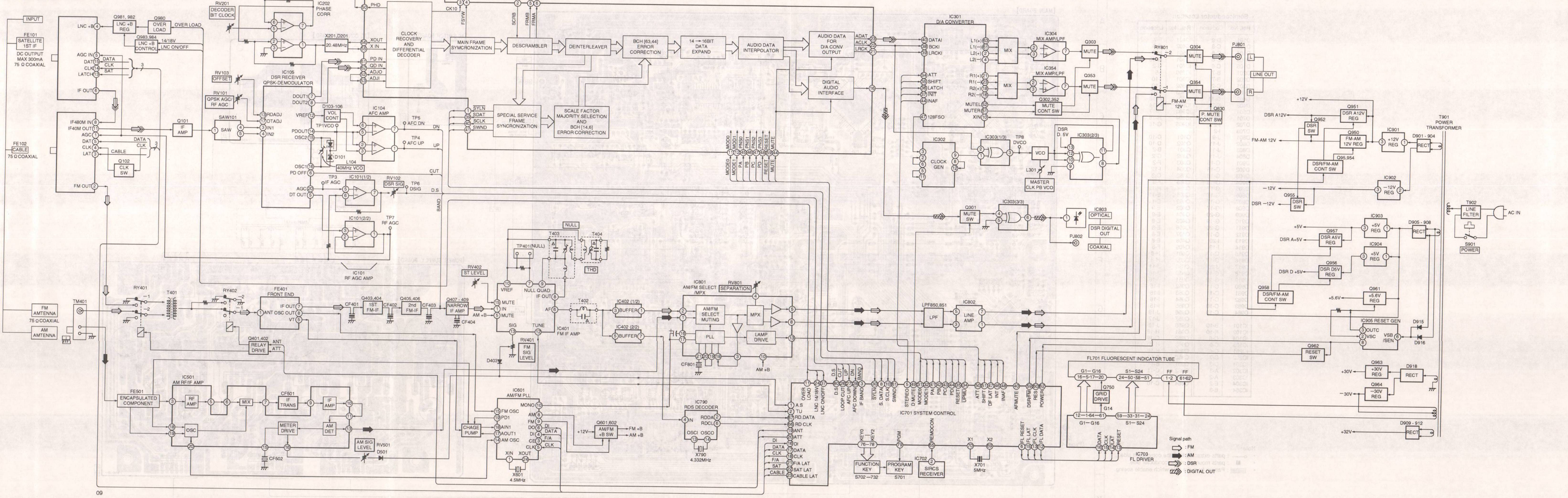
0: LOW LEVEL

1: HIGH LEVEL

5-2. CIRCUIT BOARDS LOCATION



5-3. BLOCK DIAGRAM



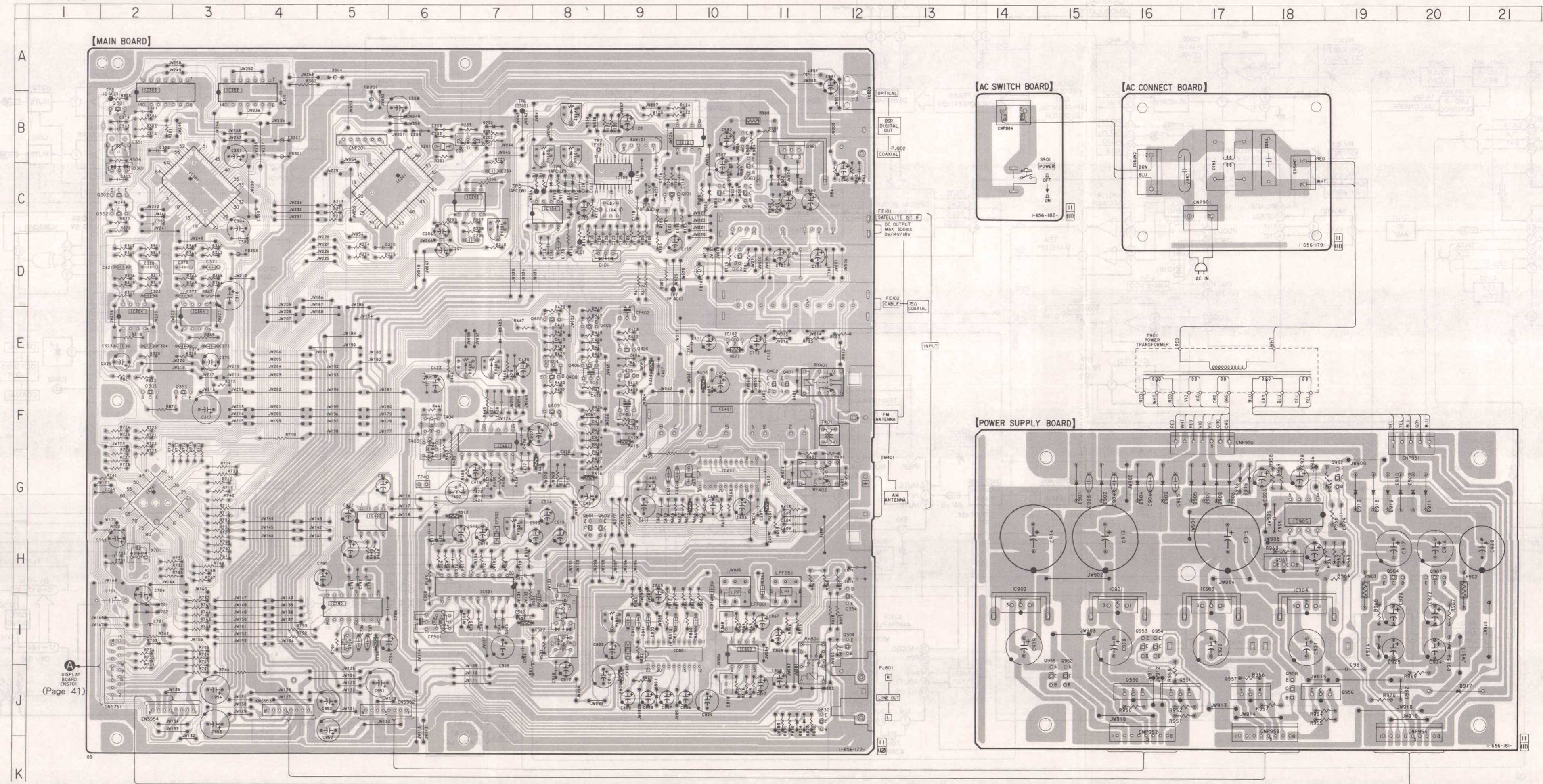
5-4. PRINTED WIRING BOARD — TUNER/POWER SECTION —
• See page 22 for Circuit Boards Location.

• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D101	D-9	IC401	F-7
D103	C-8	IC402	G-5
D104	C-8	IC501	H-7
D105	C-8	IC601	G-10
D106	C-8	IC701	G-2
D201	B-7	IC790	I-5
D202	B-7	IC801	I-10
D301	C-2	IC802	I-10
D401	F-11	IC803	A-12
D402	G-11	IC901	H-16
D403	E-7	IC902	H-14
D501	G-7	IC903	H-17
D701	I-2	IC904	H-18
D702	I-2	IC905	G-18
D703	I-2		
D801	J-9	Q101	C-10
D802	J-11	Q102	D-10
D803	J-11	Q301	B-2
D804	J-11	Q302	C-2
D901	G-15	Q303	F-2
D902	G-15	Q304	I-12
D903	G-16	Q352	C-2
D904	G-16	Q353	F-3
D905	G-17	Q354	H-12
D906	G-17	Q401	E-11
D907	G-17	Q402	E-11
D908	G-17	Q403	E-9
D909	G-20	Q404	E-9
D910	G-19	Q405	E-8
D911	G-20	Q406	E-8
D912	G-19	Q407	E-8
D913	I-20	Q408	E-8
D914	I-19	Q409	F-8
D915	G-17	Q601	H-8
D916	G-17	Q602	H-8
D917	J-20	Q830	J-11
D918	G-19	Q950	J-16
D919	G-19	Q951	J-16
D980	C-11	Q952	I-15
D981	C-11	Q953	I-16
D982	C-11	Q954	I-16
D983	C-10	Q955	I-15
D984	C-10	Q956	J-19
		Q957	J-17
IC101	B-10	Q958	J-18
IC102	E-10	Q961	H-18
IC104	C-8	Q962	G-19
IC105	C-9	Q963	H-20
IC201	C-6	Q964	H-19
IC202	C-7	Q980	B-10
IC301	C-3	Q981	B-11
IC302	A-3	Q982	C-11
IC303	A-2	Q983	C-10
IC304	E-2	Q984	C-10
IC354	E-3		

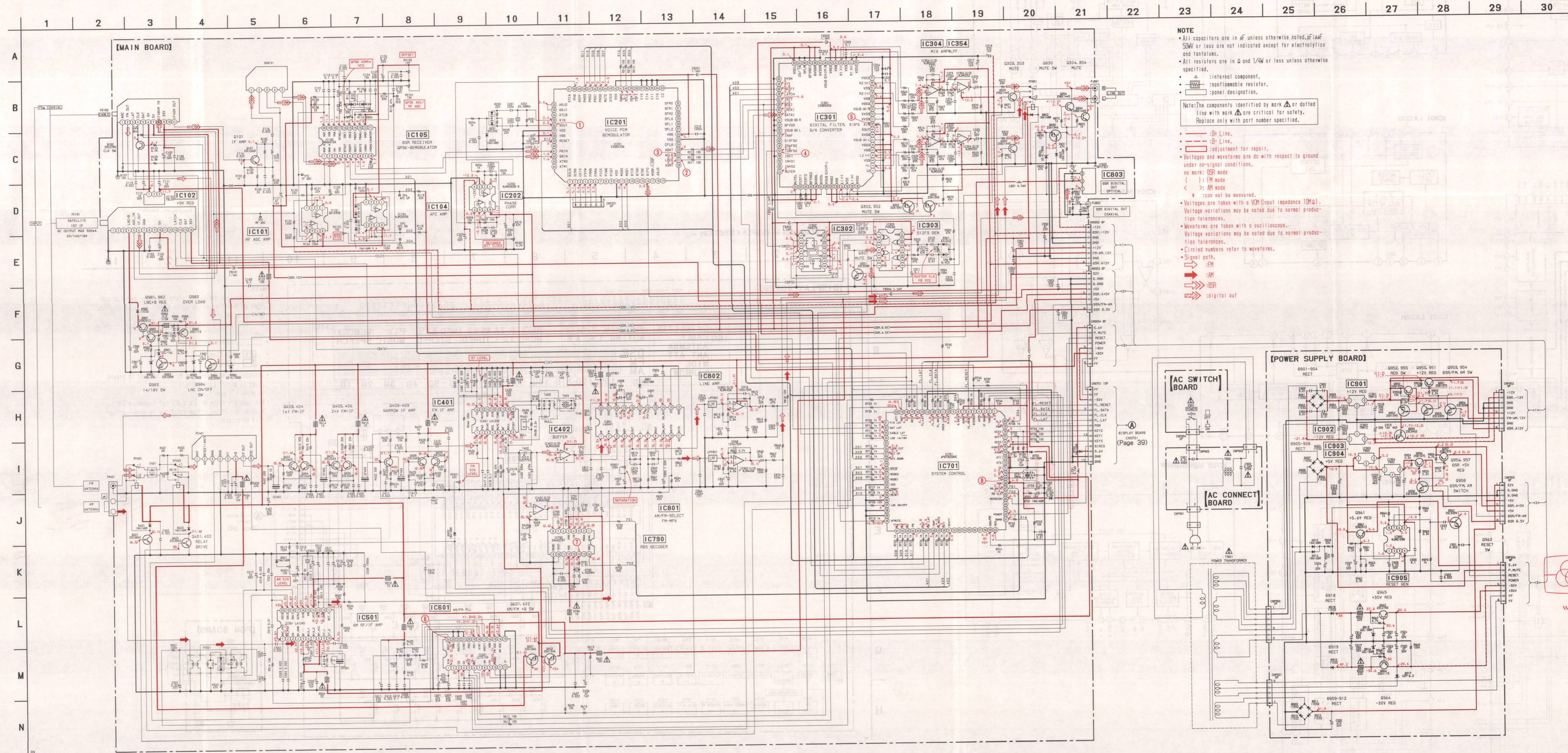
Note:

- : parts extracted from the component side.
- : parts mounted on the conductor side.
- ▒ : Pattern from the side which enable seeing.

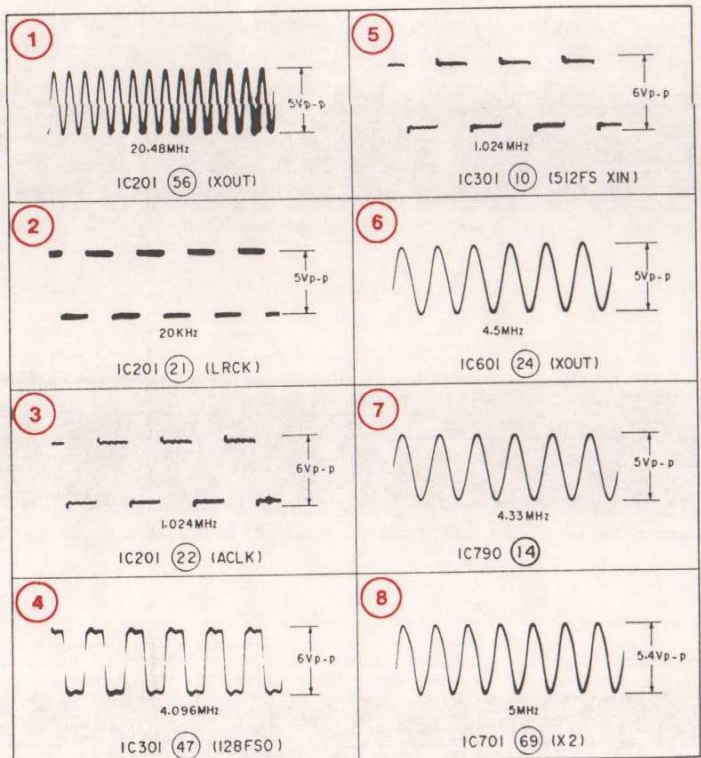


5-5. SCHEMATIC DIAGRAM — TUNER/POWER SECTION —

- See page 19 for IC Pin Function. (IC701)
- See page 36 for IC Block Diagrams.



• Waveforms



NOTE

- All capacitors are in μ F unless otherwise noted, pF=10⁻⁶F
 - 50W or less are not indicated except for electrolytics and tantalums.
 - All resistors are in Ω and 1/ Ω W or less unless otherwise specified.
 - Δ : internal component.
 - \square : nonflammable resistor.
 - \square : panel designation.
- Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

- --- : Bt Line.
- --- : B Line.
- --- : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
- no mark: DSR mode
- --- : FM mode
- --- : AM mode
- --- : can not be measured.
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
- --- : FM
- --- : AM
- --- : DSR
- --- : digital out

5-8. PRINTED WIRING BOARD — DISPLAY SECTION —
• See page 22 for Circuit Boards Location.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

A

B

C

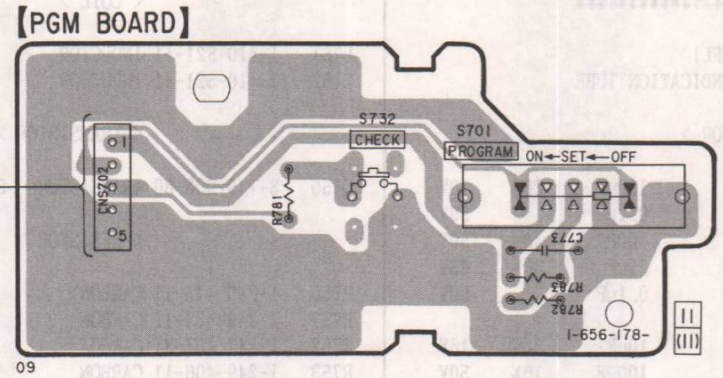
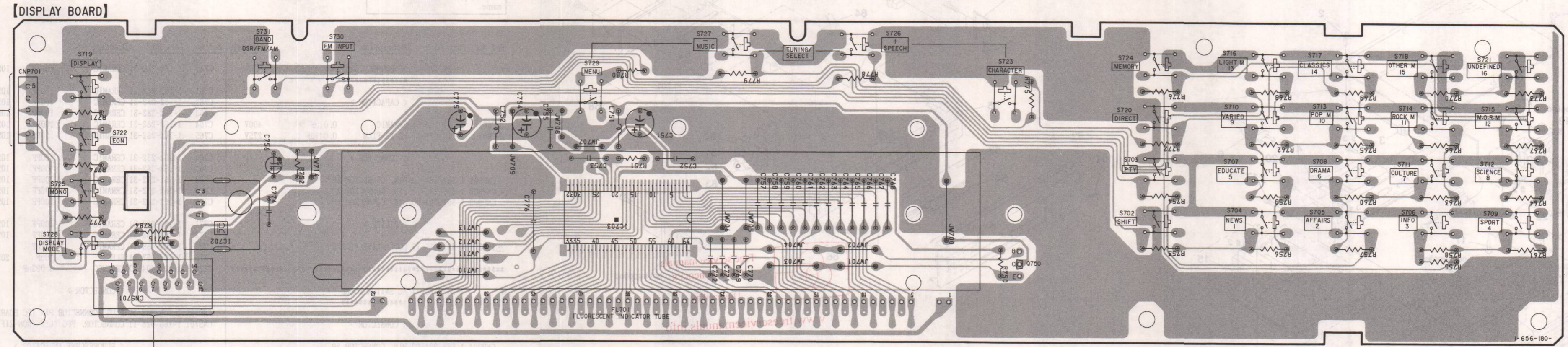
D

E

F

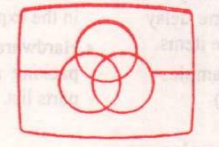
G

H



MAIN BOARD
CNS751
(Page 28)

- Note:**
- : parts extracted from the component side.
 - : parts mounted on the conductor side.
 - : Pattern from the side which enable seeing.



Free service manuals
Gratis schema's
Digitized by
www.freeservicemanuals.info

SECTION 6 EXPLODED VIEWS

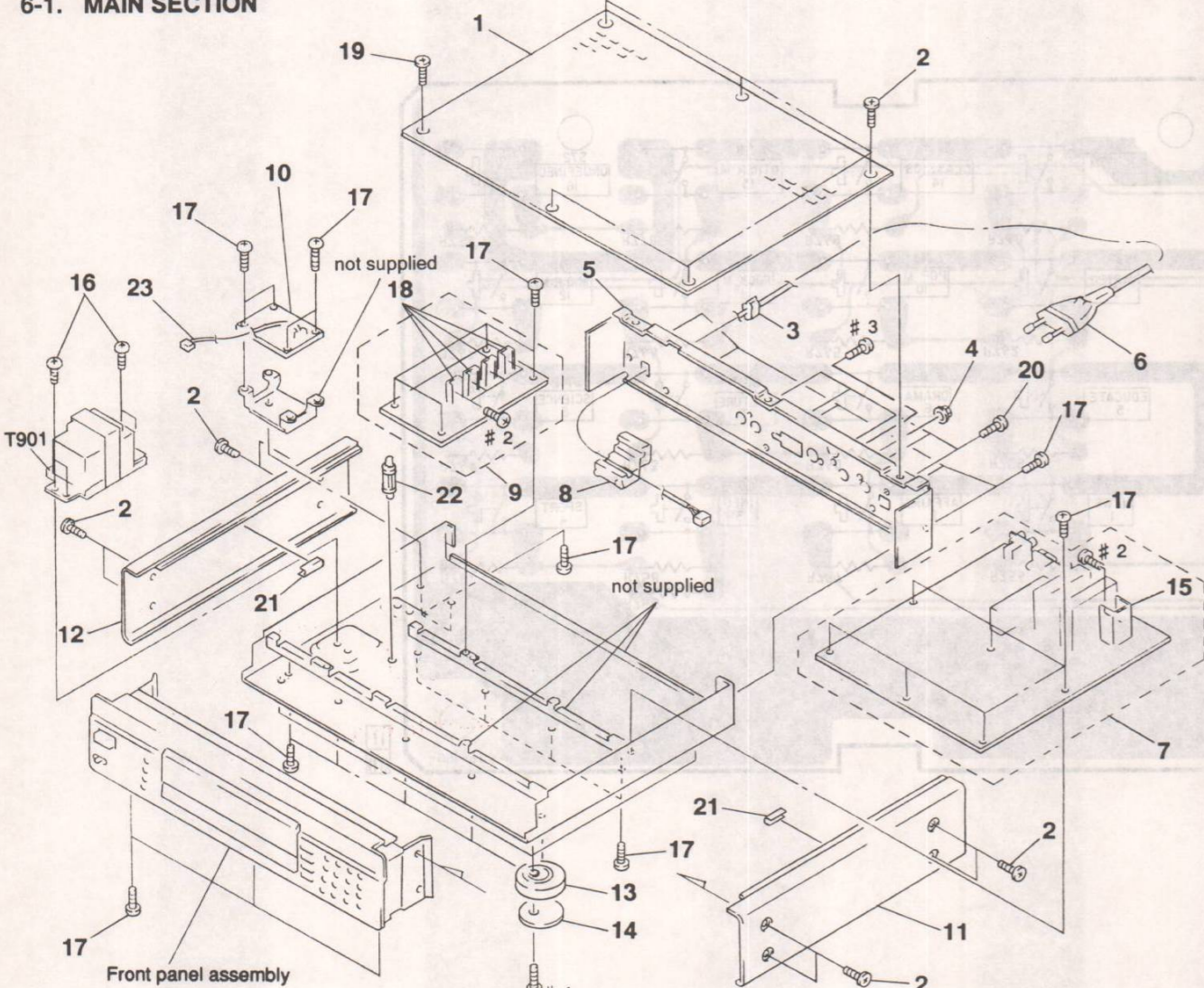
NOTE:

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Color Indication of Appearance Parts Example: KNOB, BALANCE (WHITE) ... (RED)
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

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

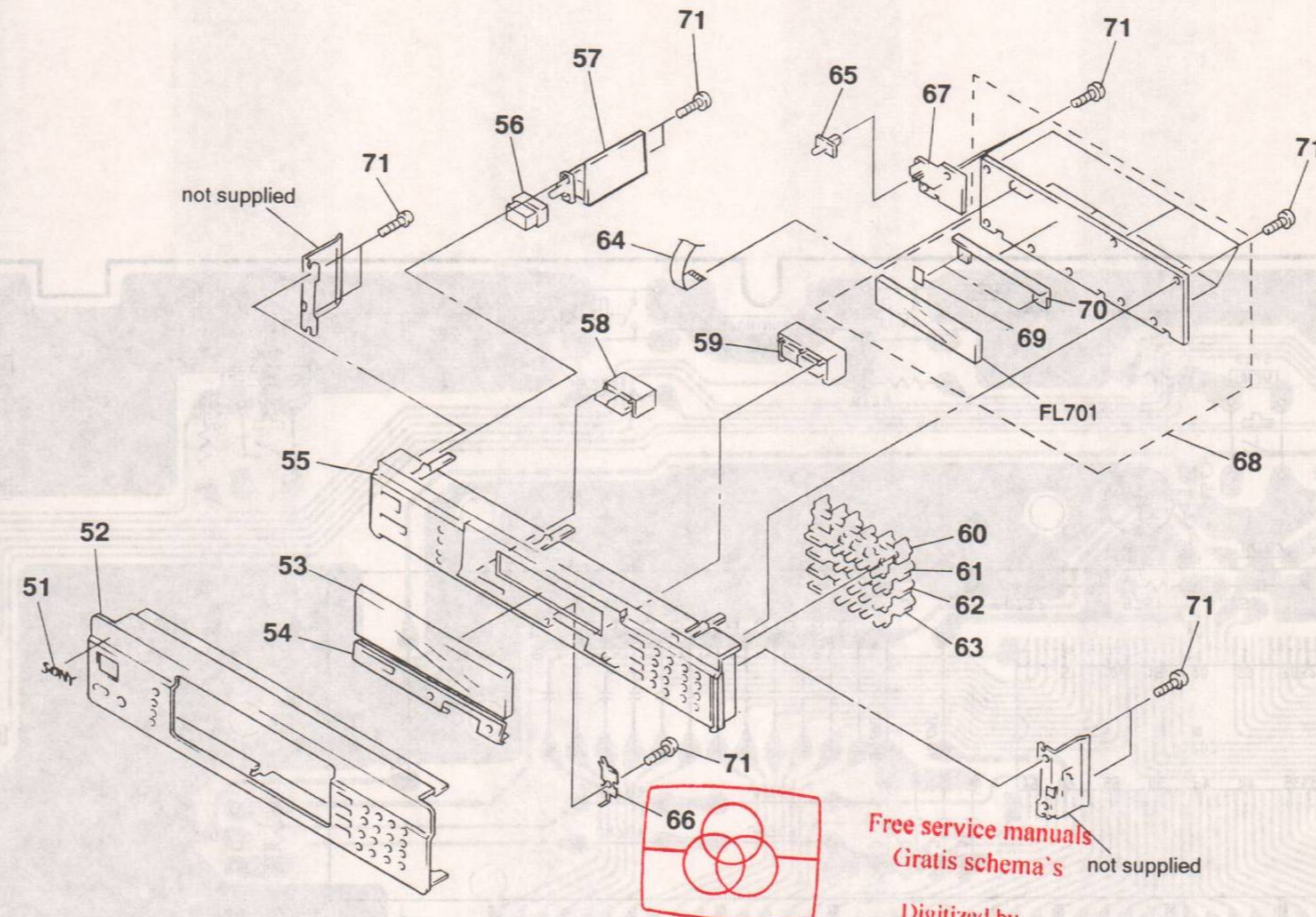
Parts color Cabinet's color

6-1. MAIN SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	4-970-687-01	PLATE, TOP (BLACK)		12	4-970-686-11	PANEL (R), SIDE (for LEFT)(GOLD)	
1	4-970-687-11	PLATE, TOP (GOLD)		13	4-970-123-01	FOOT (F50180S)	
2	4-924-242-11	SCREW (M3X6), FLAT HEAD (BLACK)..(BLACK)		14	4-970-124-01	CUSHION (F50180S)	
2	4-924-242-61	SCREW (M3X6), FLAT HEAD (SILVER)..(GOLD)		* 15	4-880-403-11	HEAT SINK	
* 3	3-703-244-00	BUSHING (2104), CORD		16	4-967-959-01	SCREW (3X6)	
4	3-682-691-00	NUT, WASHER HEXAGON		17	4-967-961-01	SCREW (3X8) (SPECIAL)	
* 5	4-973-152-01	PANEL, BACK		* 18	3-309-144-21	HEAT SINK	
Δ 6	1-574-383-11	CORD, POWER		19	4-921-439-11	SCREW (M3X8), FLAT HEAD (SILVER)..(GOLD)	
* 7	A-4377-737-A	MAIN BOARD, COMPLETE		19	4-921-439-21	SCREW (M3X8), FLAT HEAD (BLACK)..(BLACK)	
8	1-543-827-11	CLAMP, SLEEVE FERRITE		20	3-704-515-41	SCREW (BV/RING)	
* 9	A-4377-736-A	POWER SUPPLY BOARD, COMPLETE		21	3-849-226-01	CLOTH, UNWEAVED (25X6X0.5)	
* 10	1-656-179-11	AC CONNECT BOARD		* 22	3-349-025-31	HOLDER, PC BOARD	
11	4-970-685-01	PANEL (L), SIDE (for RIGHT)(BLACK)		23	1-769-078-51	LEAD (WITH CONNECTOR) (2 CORE)	
11	4-970-685-11	PANEL (L), SIDE (for RIGHT)(GOLD)		Δ T901	1-427-914-11	TRANSFORMER, POWER	
12	4-970-686-01	PANEL (R), SIDE (for LEFT)(BLACK)					

6-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	4-942-568-01	EMBLEM (NO. 5), SONY (SILVER)..(BLACK)		60	4-973-150-41	BUTTON (5 GANG)(GOLD)	
51	4-942-568-21	EMBLEM (NO. 5), SONY (GOLD)..(GOLD)		61	4-973-150-11	BUTTON (5 GANG)(BLACK)	
52	4-973-151-01	PANEL, FRONT (BLACK)		61	4-973-150-51	BUTTON (5 GANG)(GOLD)	
52	4-973-151-11	PANEL, FRONT (GOLD)		62	4-973-150-21	BUTTON (5 GANG)(BLACK)	
53	4-973-146-01	WINDOW, INDICATION		62	4-973-150-61	BUTTON (5 GANG)(GOLD)	
54	4-973-227-01	PLATE, ORNAMENTAL (BLACK)		63	4-973-150-31	BUTTON (5 GANG)(BLACK)	
54	4-973-227-11	PLATE, ORNAMENTAL (GOLD)		63	4-973-150-71	BUTTON (5 GANG)(GOLD)	
55	4-973-145-01	BASE, PANEL (BLACK)		64	1-773-601-11	WIRE (FLAT TYPE) (15 CORE)	
55	4-973-145-11	BASE, PANEL (GOLD)		65	3-919-257-01	KNOB (TIMER)(BLACK)..(BLACK)	
56	4-917-460-01	KNOB, POWER (BLACK)		65	3-919-257-11	KNOB (TIMER)(SILVER)..(GOLD)	
56	4-917-460-51	KNOB, POWER (GOLD)		66	4-973-153-01	PLATE, GROUND	
* 57	1-656-182-11	AC SWITCH BOARD		* 67	1-656-178-11	PGM BOARD	
58	4-973-149-01	BUTTON (BAND)(BLACK)		* 68	A-4377-734-A	DISPLAY BOARD, COMPLETE	
58	4-973-149-11	BUTTON (BAND)(GOLD)		* 69	4-921-941-71	CUSHION (FL)	
59	4-973-148-01	BUTTON (TUNE)(BLACK)		* 70	4-945-292-01	HOLDER, INDICATION TUBE	
59	4-973-148-11	BUTTON (TUNE)(GOLD)		71	4-967-961-01	SCREW (3X8) (SPECIAL)	
59	4-973-148-11	BUTTON (TUNE)(GOLD)		FL701	1-517-408-11	INDICATOR TUBE, FLUORESCENT	
60	4-973-150-01	BUTTON (5 GANG)(BLACK)					

AC CONNECT

AC SWITCH

DISPLAY

NOTE:

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

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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 1-656-179-11	AC CONNECT BOARD			C760	1-162-282-31	CERAMIC 100PF	10% 50V
*****				C761	1-162-282-31	CERAMIC 100PF	10% 50V
< CAPACITOR >				C762	1-162-282-31	CERAMIC 100PF	10% 50V
Δ C901	1-161-744-51	CERAMIC 0.01uF	400V	C763	1-162-282-31	CERAMIC 100PF	10% 50V
Δ C902	1-110-677-11	PE TE FILM 0.047uF	275V	C764	1-162-282-31	CERAMIC 100PF	10% 50V
*****				C765	1-162-282-31	CERAMIC 100PF	10% 50V
< CONNECTOR >				C766	1-162-282-31	CERAMIC 100PF	10% 50V
CNP901	1-564-321-00	PIN, CONNECTOR 2P		C767	1-162-282-31	CERAMIC 100PF	10% 50V
* CNP902	1-565-792-11	PIN, CONNECTOR 2P		C768	1-162-282-31	CERAMIC 100PF	10% 50V
CNP903	1-564-321-00	PIN, CONNECTOR 2P		C769	1-162-282-31	CERAMIC 100PF	10% 50V
*****				C770	1-162-282-31	CERAMIC 100PF	10% 50V
< FILTER >				C771	1-162-282-31	CERAMIC 100PF	10% 50V
Δ T902	1-421-915-11	COIL, LINE FILTER		C772	1-162-282-31	CERAMIC 100PF	10% 50V
*****				C774	1-164-159-11	CERAMIC 0.1uF	50V
< CONNECTOR >				C775	1-126-157-11	ELECT 10uF	20% 16V
* 1-656-182-11	AC SWITCH BOARD			C776	1-161-494-00	CERAMIC 0.022uF	25V
*****				< CONNECTOR >			
CNP701	1-766-203-11	PLUG, CONNECTOR PIN (PC BOARD) 5P		< FLUORESCENT INDICATOR >			
CNS701	1-766-028-11	CONNECTOR, FFC (LIF (NON-ZIF)) 15P		FL701	1-517-408-11	INDICATOR TUBE, FLUORESCENT	
*****				< SWITCH >			
Δ S901	1-572-267-51	SWITCH, PUSH (AC POWER) (1 KEY) (POWER)		< IC >			
*****				IC702	8-741-810-59	IC SBX1610-59	
*****				IC703	8-759-261-63	IC M66004M6FP	
* A-4377-734-A	DISPLAY BOARD, COMPLETE			< COIL >			
*****				L751	1-410-521-11	INDUCTOR 100uH	
* 4-921-941-71	CUSHION (FL)			L752	1-410-521-11	INDUCTOR 100uH	
* 4-945-292-01	HOLDER, INDICATION TUBE			< TRANSISTOR >			
*****				Q750	8-729-900-80	TRANSISTOR DTC114ES	
*****				< RESISTOR >			
C751	1-126-177-11	ELECT 100uF	20% 10V	R750	1-249-441-11	CARBON 100K 5% 1/4W	
C752	1-164-159-11	CERAMIC 0.1uF	50V	R751	1-249-434-11	CARBON 27K 5% 1/4W	
C753	1-162-282-31	CERAMIC 100PF	10% 50V	R752	1-247-807-31	CARBON 100 5% 1/4W	
C754	1-124-916-11	ELECT 22uF	20% 63V	R753	1-249-406-11	CARBON 120 5% 1/4W F	
C755	1-164-159-11	CERAMIC 0.1uF	50V	R754	1-249-406-11	CARBON 120 5% 1/4W F	
C756	1-126-157-11	ELECT 10uF	20% 16V				
C757	1-162-282-31	CERAMIC 100PF	10% 50V				
C758	1-162-282-31	CERAMIC 100PF	10% 50V				
C759	1-162-282-31	CERAMIC 100PF	10% 50V				

DISPLAY	MAIN
---------	------

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R755	1-249-406-11	CARBON	120 5% 1/4W F	S723	1-554-303-21	SWITCH, TACTILE (CHARACTER)	
R756	1-249-406-11	CARBON	120 5% 1/4W F	S724	1-554-303-21	SWITCH, TACTILE (MEMORY)	
R757	1-249-406-11	CARBON	120 5% 1/4W F	S725	1-554-303-21	SWITCH, TACTILE (MONO)	
R758	1-249-406-11	CARBON	120 5% 1/4W F	S726	1-554-303-21	SWITCH, TACTILE (+, SPEECH, TUNING/SELECT)	
R759	1-247-811-31	CARBON	150 5% 1/4W	S727	1-554-303-21	SWITCH, TACTILE (-, MUSIC, TUNING/SELECT)	
R760	1-247-811-31	CARBON	150 5% 1/4W	S728	1-554-303-21	SWITCH, TACTILE (DISPLAY MODE)	
R761	1-247-811-31	CARBON	150 5% 1/4W	S729	1-554-303-21	SWITCH, TACTILE (MENU)	
R762	1-249-408-11	CARBON	180 5% 1/4W F	S730	1-554-303-21	SWITCH, TACTILE (FM INPUT)	
R763	1-249-408-11	CARBON	180 5% 1/4W F	S731	1-554-303-21	SWITCH, TACTILE (BAND, DSR/FM/AM)	
R764	1-249-408-11	CARBON	180 5% 1/4W F	*****			
R765	1-249-409-11	CARBON	220 5% 1/4W F	*	A-4377-737-A	MAIN BOARD, COMPLETE	
R766	1-249-409-11	CARBON	220 5% 1/4W F			*****	
R767	1-249-409-11	CARBON	220 5% 1/4W F				
R768	1-249-410-11	CARBON	270 5% 1/4W F	*	4-880-403-11	HEAT SINK	
R769	1-249-410-11	CARBON	270 5% 1/4W F		7-682-548-04	SCREW +BVTT 3X8 (S)	
R770	1-249-410-11	CARBON	270 5% 1/4W F			< CAPACITOR >	
R771	1-249-411-11	CARBON	330 5% 1/4W	C101	1-124-907-11	ELECT	10uF 20% 50V
R772	1-249-411-11	CARBON	330 5% 1/4W	C102	1-161-494-00	CERAMIC	0.022uF 25V
R773	1-249-411-11	CARBON	330 5% 1/4W	C103	1-164-159-11	CERAMIC	0.1uF 50V
R774	1-249-413-11	CARBON	470 5% 1/4W F	C107	1-124-907-11	ELECT	10uF 20% 50V
R775	1-249-413-11	CARBON	470 5% 1/4W F	C108	1-161-494-00	CERAMIC	0.022uF 25V
R776	1-249-413-11	CARBON	470 5% 1/4W F	C111	1-124-907-11	ELECT	10uF 20% 50V
R777	1-249-414-11	CARBON	560 5% 1/4W F	C112	1-124-907-11	ELECT	10uF 20% 50V
R778	1-249-414-11	CARBON	560 5% 1/4W F	C113	1-161-494-00	CERAMIC	0.022uF 25V
R779	1-249-414-11	CARBON	560 5% 1/4W F	C114	1-161-494-00	CERAMIC	0.022uF 25V
R780	1-249-416-11	CARBON	820 5% 1/4W F	C115	1-161-494-00	CERAMIC	0.022uF 25V
R784	1-249-423-11	CARBON	3.3K 5% 1/4W F	C116	1-161-494-00	CERAMIC	0.022uF 25V
		< SWITCH >		C117	1-124-477-11	ELECT	47uF 20% 25V
S702	1-554-303-21	SWITCH, TACTILE (SHIFT)		C118	1-164-159-11	CERAMIC	0.1uF 50V
S703	1-554-303-21	SWITCH, TACTILE (PTY)		C119	1-164-159-11	CERAMIC	0.1uF 50V
S704	1-554-303-21	SWITCH, TACTILE (NEWS, 1)		C120	1-124-907-11	ELECT	10uF 20% 50V
S705	1-554-303-21	SWITCH, TACTILE (AFFAIRS, 2)					
S706	1-554-303-21	SWITCH, TACTILE (INFO, 3)		C121	1-164-159-11	CERAMIC	0.1uF 50V
S707	1-554-303-21	SWITCH, TACTILE (EDUCATE, 5)		C122	1-161-494-00	CERAMIC	0.022uF 25V
S708	1-554-303-21	SWITCH, TACTILE (DRAMA, 6)		C123	1-162-203-31	CERAMIC	15PF 5% 50V
S709	1-554-303-21	SWITCH, TACTILE (SPORT, 4)		C124	1-162-203-31	CERAMIC	15PF 5% 50V
S710	1-554-303-21	SWITCH, TACTILE (VARIED, 9)		C125	1-162-203-31	CERAMIC	15PF 5% 50V
S711	1-554-303-21	SWITCH, TACTILE (CULTURE, 7)		C126	1-162-203-31	CERAMIC	15PF 5% 50V
S712	1-554-303-21	SWITCH, TACTILE (SCIENCE, 8)		C127	1-162-203-31	CERAMIC	15PF 5% 50V
S713	1-554-303-21	SWITCH, TACTILE (POP M, 10)		C128	1-161-494-00	CERAMIC	0.022uF 25V
S714	1-554-303-21	SWITCH, TACTILE (ROCK M, 11)		C129	1-124-902-00	ELECT	0.47uF 20% 50V
S715	1-554-303-21	SWITCH, TACTILE (M. O. R. M, 12)		C130	1-136-153-00	FILM	0.01uF 5% 50V
S716	1-554-303-21	SWITCH, TACTILE (LIGHT M, 13)		C131	1-161-494-00	CERAMIC	0.022uF 25V
S717	1-554-303-21	SWITCH, TACTILE (CLASSICS, 14)		C201	1-162-286-31	CERAMIC	220PF 10% 50V
S718	1-554-303-21	SWITCH, TACTILE (OTHER M, 15)		C202	1-162-286-31	CERAMIC	220PF 10% 50V
S719	1-554-303-21	SWITCH, TACTILE (DISPLAY)		C203	1-161-494-00	CERAMIC	0.022uF 25V
S720	1-554-303-21	SWITCH, TACTILE (DIRECT)		C204	1-106-343-00	MYLAR	1000PF 5% 200V
S721	1-554-303-21	SWITCH, TACTILE (UNDEFINED, 16)		C205	1-136-173-00	FILM	0.47uF 5% 50V
S722	1-554-303-21	SWITCH, TACTILE (EON)		C206	1-124-907-11	ELECT	10uF 20% 50V
				C207	1-124-907-11	ELECT	10uF 20% 50V

MAIN

Ref. No.	Part No.	Description		Remark	Ref. No.	Part No.	Description		Remark
C208	1-126-024-11	ELECT	220uF	20%	16V	C422	1-124-477-11	ELECT	47uF 20% 25V
C209	1-164-159-11	CERAMIC	0.1uF		50V	C423	1-124-477-11	ELECT	47uF 20% 25V
C210	1-162-294-31	CERAMIC	0.001uF	10%	50V	C424	1-161-494-00	CERAMIC	0.022uF 25V
C301	1-126-024-11	ELECT	220uF	20%	16V	C425	1-126-024-11	ELECT	220uF 20% 16V
C302	1-164-159-11	CERAMIC	0.1uF		50V	C426	1-161-494-00	CERAMIC	0.022uF 25V
C303	1-164-159-11	CERAMIC	0.1uF		50V	C427	1-161-494-00	CERAMIC	0.022uF 25V
C304	1-126-024-11	ELECT	220uF	20%	16V	C428	1-161-494-00	CERAMIC	0.022uF 25V
C305	1-164-159-11	CERAMIC	0.1uF		50V	C429	1-162-306-11	CERAMIC	0.01uF 20% 16V
C309	1-164-159-11	CERAMIC	0.1uF		50V	C430	1-124-902-00	ELECT	0.47uF 20% 50V
C310	1-164-159-11	CERAMIC	0.1uF		50V	C431	1-124-907-11	ELECT	10uF 20% 50V
C311	1-164-159-11	CERAMIC	0.1uF		50V	C501	1-136-157-00	FILM	0.022uF 5% 50V
C312	1-162-203-31	CERAMIC	15PF	5%	50V	C502	1-161-494-00	CERAMIC	0.022uF 25V
C313	1-162-306-11	CERAMIC	0.01uF	20%	16V	C503	1-161-494-00	CERAMIC	0.022uF 25V
C314	1-162-306-11	CERAMIC	0.01uF	20%	16V	C504	1-161-494-00	CERAMIC	0.022uF 25V
C315	1-162-294-31	CERAMIC	0.001uF	10%	50V	C505	1-126-024-11	ELECT	220uF 20% 16V
C317	1-126-024-11	ELECT	220uF	20%	16V	C506	1-161-494-00	CERAMIC	0.022uF 25V
C318	1-126-024-11	ELECT	220uF	20%	16V	C507	1-161-494-00	CERAMIC	0.022uF 25V
C320	1-136-808-11	FILM	100PF	5%	100V	C508	1-161-494-00	CERAMIC	0.022uF 25V
C321	1-107-601-11	MICA	33PF	5%	500V	C509	1-126-962-11	ELECT	3.3uF 20% 50V
C322	1-107-601-11	MICA	33PF	5%	500V	C510	1-124-927-11	ELECT	4.7uF 20% 100V
C323	1-106-359-00	MYLAR	4700PF	5%	200V	C511	1-162-294-31	CERAMIC	0.001uF 10% 50V
C324	1-106-343-00	MYLAR	1000PF	5%	200V	C512	1-126-023-11	ELECT	100uF 20% 16V
C325	1-124-927-11	ELECT	4.7uF	20%	100V	C513	1-124-903-11	ELECT	1uF 20% 50V
C370	1-136-808-11	FILM	100PF	5%	100V	C514	1-124-903-11	ELECT	1uF 20% 50V
C371	1-107-601-11	MICA	33PF	5%	500V	C515	1-164-159-11	CERAMIC	0.1uF 50V
C372	1-107-601-11	MICA	33PF	5%	500V	C516	1-161-494-00	CERAMIC	0.022uF 25V
C373	1-106-359-00	MYLAR	4700PF	5%	200V	C517	1-124-907-11	ELECT	10uF 20% 50V
C374	1-106-343-00	MYLAR	1000PF	5%	200V	C518	1-161-494-00	CERAMIC	0.022uF 25V
C375	1-124-927-11	ELECT	4.7uF	20%	100V	C519	1-162-306-11	CERAMIC	0.01uF 20% 16V
C401	1-126-104-11	ELECT	470uF	20%	35V	C520	1-162-294-31	CERAMIC	0.001uF 10% 50V
C402	1-161-494-00	CERAMIC	0.022uF		25V	C521	1-162-211-31	CERAMIC	33PF 5% 50V
C403	1-161-494-00	CERAMIC	0.022uF		25V	C522	1-162-211-31	CERAMIC	33PF 5% 50V
C404	1-124-477-11	ELECT	47uF	20%	25V	C601	1-164-027-11	CERAMIC	22PF 5% 50V
C405	1-161-494-00	CERAMIC	0.022uF		25V	C602	1-164-031-11	CERAMIC	33PF 5% 50V
C406	1-161-494-00	CERAMIC	0.022uF		25V	C603	1-162-282-31	CERAMIC	100PF 10% 50V
C407	1-161-494-00	CERAMIC	0.022uF		25V	C604	1-162-282-31	CERAMIC	100PF 10% 50V
C408	1-161-494-00	CERAMIC	0.022uF		25V	C605	1-162-282-31	CERAMIC	100PF 10% 50V
C409	1-161-494-00	CERAMIC	0.022uF		25V	C606	1-124-477-11	ELECT	47uF 20% 25V
C410	1-161-494-00	CERAMIC	0.022uF		25V	C607	1-161-494-00	CERAMIC	0.022uF 25V
C411	1-161-494-00	CERAMIC	0.022uF		25V	C608	1-124-767-00	ELECT	2.2uF 20% 50V
C412	1-161-494-00	CERAMIC	0.022uF		25V	C609	1-161-494-00	CERAMIC	0.022uF 25V
C413	1-164-159-11	CERAMIC	0.1uF		50V	C610	1-164-159-11	CERAMIC	0.1uF 50V
C414	1-161-494-00	CERAMIC	0.022uF		25V	C611	1-124-120-11	ELECT	220uF 20% 25V
C415	1-162-294-31	CERAMIC	0.001uF	10%	50V	C612	1-161-494-00	CERAMIC	0.022uF 25V
C416	1-161-494-00	CERAMIC	0.022uF		25V	C613	1-162-282-31	CERAMIC	100PF 10% 50V
C417	1-164-159-11	CERAMIC	0.1uF		50V	C701	1-104-905-11	DOUBLE LAYERS	0.22F 5.5V
C418	1-164-159-11	CERAMIC	0.1uF		50V	C702	1-124-477-11	ELECT	47uF 20% 25V
C419	1-124-903-11	ELECT	1uF	20%	50V	C703	1-162-306-11	CERAMIC	0.01uF 20% 16V
C420	1-162-288-31	CERAMIC	330PF	10%	50V	C704	1-124-477-11	ELECT	47uF 20% 25V
C421	1-162-290-31	CERAMIC	470PF	10%	50V	C705	1-162-306-11	CERAMIC	0.01uF 20% 16V

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description	Remark
C790	1-124-925-11	ELECT	2. 2uF	20%	100V	CF501	1-404-713-11	TRANSFORMER, IF	
C791	1-162-288-31	CERAMIC	330PF	10%	50V	CF502	1-527-981-00	FILTER, CERAMIC	
C792	1-161-494-00	CERAMIC	0. 022uF		25V	CF801	1-567-250-11	OSCILLATOR, CERAMIC	
C793	1-162-291-31	CERAMIC	560PF	10%	50V			< CONNECTOR >	
C794	1-124-477-11	ELECT	47uF	20%	25V				
C795	1-161-494-00	CERAMIC	0. 022uF		25V				
C796	1-101-880-00	CERAMIC	47PF	5%	50V	* CNP201	1-564-509-11	PLUG, CONNECTOR 6P	
C797	1-102-527-11	CERAMIC	82PF	5%	50V	CNS751	1-764-920-11	CONNECTOR, FFC(LIF(NON-ZIF)) 15P	
C801	1-124-927-11	ELECT	4. 7uF	20%	100V	CNS952	1-766-739-11	CONNECTOR, BOARD TO BOARD 8P	
C802	1-136-161-00	FILM	0. 047uF	5%	50V	CNS953	1-766-739-11	CONNECTOR, BOARD TO BOARD 8P	
C803	1-124-477-11	ELECT	47uF	20%	25V	CNS954	1-766-739-11	CONNECTOR, BOARD TO BOARD 8P	
C804	1-126-011-11	ELECT	330uF	20%	16V			< DIODE >	
C805	1-124-903-11	ELECT	1uF	20%	50V	D101	8-719-918-45	DIODE KV1310	
C806	1-124-903-11	ELECT	1uF	20%	50V	D103	8-719-987-63	DIODE IN4148M	
C807	1-124-903-11	ELECT	1uF	20%	50V	D104	8-719-987-63	DIODE IN4148M	
C808	1-124-903-11	ELECT	1uF	20%	50V	D105	8-719-987-63	DIODE IN4148M	
C809	1-124-902-00	ELECT	0. 47uF	20%	50V	D106	8-719-987-63	DIODE IN4148M	
C810	1-126-011-11	ELECT	330uF	20%	16V	D201	8-719-919-88	DIODE SVC202SP	
C811	1-164-098-11	CERAMIC	0. 047uF		12V	D202	8-719-987-63	DIODE IN4148M	
C812	1-164-079-11	CERAMIC	330PF	10%	50V	D301	8-719-918-45	DIODE KV1310	
C815	1-130-468-00	MYLAR	560PF	5%	50V	D401	8-719-987-63	DIODE IN4148M	
C816	1-106-351-00	MYLAR	2200PF	5%	200V	D402	8-719-987-63	DIODE IN4148M	
C817	1-126-059-11	ELECT	10uF	20%	50V	D403	8-719-987-63	DIODE IN4148M	
C818	1-164-070-11	CERAMIC	100PF	5%	50V	D501	8-719-987-63	DIODE IN4148M	
C819	1-124-927-11	ELECT	4. 7uF	20%	100V	D701	8-719-987-63	DIODE IN4148M	
C820	1-162-286-31	CERAMIC	220PF	10%	50V	D702	8-719-987-63	DIODE IN4148M	
C840	1-124-589-11	ELECT	47uF	20%	16V	D703	8-719-987-63	DIODE IN4148M	
C841	1-126-154-11	ELECT	47uF	20%	6. 3V	D801	8-719-987-63	DIODE IN4148M	
C842	1-162-219-31	CERAMIC	68PF	5%	50V	D802	8-719-987-63	DIODE IN4148M	
C865	1-130-468-00	MYLAR	560PF	5%	50V	D803	8-719-987-63	DIODE IN4148M	
C866	1-106-351-00	MYLAR	2200PF	5%	200V	D804	8-719-010-32	DIODE UZ-4. 7BSA	
C867	1-126-059-11	ELECT	10uF	20%	50V	D980	8-719-200-82	DIODE 11ES2	
C868	1-164-070-11	CERAMIC	100PF	5%	50V	D981	8-719-933-88	DIODE HZS16-2L	
C869	1-124-927-11	ELECT	4. 7uF	20%	100V	D982	8-719-002-17	DIODE UZL-20L-TP	
C870	1-162-286-31	CERAMIC	220PF	10%	50V	D983	8-719-010-33	DIODE UZ-4. 7BSB	
C950	1-104-664-11	ELECT	47uF	20%	25V	D984	8-719-010-33	DIODE UZ-4. 7BSB	
C951	1-126-541-11	ELECT	330uF	20%	16V			< FERRITE BEAD >	
C952	1-126-024-11	ELECT	220uF	20%	16V	FB101	1-410-397-21	FERRITE BEAD INDUCTOR	
C953	1-126-541-11	ELECT	330uF	20%	16V	FB201	1-410-397-21	FERRITE BEAD INDUCTOR	
C954	1-126-541-11	ELECT	330uF	20%	16V	FB301	1-410-397-21	FERRITE BEAD INDUCTOR	
C980	1-124-907-11	ELECT	10uF	20%	50V	FB302	1-410-397-21	FERRITE BEAD INDUCTOR	
C981	1-124-907-11	ELECT	10uF	20%	50V	FB303	1-410-397-21	FERRITE BEAD INDUCTOR	
C982	1-124-907-11	ELECT	10uF	20%	50V	FB304	1-410-397-21	FERRITE BEAD INDUCTOR	
C987	1-124-927-11	ELECT	4. 7uF	20%	100V			< FRONTEND >	
		< FILTER >				FE101	1-693-284-11	FRONT END (DSR)(INPUT SATELLITE 1ST IF)	
CF401	1-567-389-11	FILTER, CERAMIC				FE102	8-598-328-00	TUNER, PLL BTP-AC701 (INPUT CABLE)	
CF402	1-567-389-11	FILTER, CERAMIC				FE401	1-693-212-11	FRONT END (FTZ)	
CF403	1-567-389-11	FILTER, CERAMIC				FE501	1-233-290-11	ENCAPSULATED COMPONENT	
CF404	1-567-107-71	FILTER, CERAMIC							

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
< IC >							
IC101	8-759-991-16	IC LM358N		Q402	8-729-904-39	TRANSISTOR DTC114TS	
IC102	8-759-168-20	IC TA78L09S		Q403	8-729-230-99	TRANSISTOR 2SC26690Y-E4	
IC104	8-759-729-03	IC NJM2903D		Q404	8-729-230-99	TRANSISTOR 2SC26690Y-E4	
IC105	8-759-332-95	IC SDA6310X		Q405	8-729-230-99	TRANSISTOR 2SC26690Y-E4	
IC201	8-759-086-02	IC CXD8423Q		Q406	8-729-230-99	TRANSISTOR 2SC26690Y-E4	
IC202	8-759-745-61	IC NJM4560D-D		Q407	8-729-230-99	TRANSISTOR 2SC26690Y-E4	
IC301	8-759-287-70	IC CXD8505Q		Q408	8-729-230-99	TRANSISTOR 2SC26690Y-E4	
IC302	8-759-032-81	IC MC74HC74AN		Q409	8-729-230-99	TRANSISTOR 2SC26690Y-E4	
IC303	8-759-921-10	IC SN74HC86AN		Q601	8-729-900-63	TRANSISTOR DTA124ES	
IC304	8-759-982-03	IC RC5532D-D		Q602	8-729-900-63	TRANSISTOR DTA124ES	
IC354	8-759-982-03	IC RC5532D-D		Q830	8-729-900-63	TRANSISTOR DTA124ES	
IC401	8-759-812-35	IC LA1235		Q980	8-729-119-76	TRANSISTOR 2SA1175-HFE	
IC402	8-759-634-51	IC M5218AP		Q981	8-729-209-15	TRANSISTOR 2SD2012	
IC501	8-759-812-45	IC LA1245		Q982	8-729-620-05	TRANSISTOR 2SC2603-EF	
IC601	8-759-288-54	IC LC72130		Q983	8-729-900-89	TRANSISTOR DTC144ES	
IC701	8-759-335-87	IC uPD78058-GC051-3B9		Q984	8-729-900-89	TRANSISTOR DTC144ES	
IC790	8-759-169-99	IC SAA6579		< RESISTOR >			
IC801	8-759-801-80	IC LA3401		R101	1-249-421-11	CARBON 2.2K 5% 1/4W F	
IC802	8-759-634-51	IC M5218AP		R102	1-249-417-11	CARBON 1K 5% 1/4W F	
IC803	8-749-921-12	IC GP1F32T (DSR DIGITAL OUT OPTICAL)		R103	1-249-427-11	CARBON 6.8K 5% 1/4W F	
< COIL >				R104	1-249-397-11	CARBON 22 5% 1/4W F	
L101	1-410-499-41	INDUCTOR 1.5uH		R105	1-249-409-11	CARBON 220 5% 1/4W F	
L104	1-411-212-11	COIL (OSC)		R106	1-249-411-11	CARBON 330 5% 1/4W	
L301	1-460-098-11	COIL		R107	1-249-429-11	CARBON 10K 5% 1/4W	
L501	1-414-142-11	INDUCTOR 1uH		R108	1-249-397-11	CARBON 22 5% 1/4W F	
L701	1-410-324-11	INDUCTOR 4.7uH		R109	1-249-397-11	CARBON 22 5% 1/4W F	
L801	1-410-324-11	INDUCTOR 4.7uH		R110	1-249-417-11	CARBON 1K 5% 1/4W F	
< FILTER >				R111	1-249-417-11	CARBON 1K 5% 1/4W F	
LPF801	1-235-164-00	FILTER, LOW PASS		R112	1-247-891-00	CARBON 330K 5% 1/4W	
LPF851	1-235-164-00	FILTER, LOW PASS		R113	1-249-437-11	CARBON 47K 5% 1/4W	
< JACK >				R114	1-249-411-11	CARBON 330 5% 1/4W	
PJ801	1-568-751-61	JACK, PIN (2P SHIELD TYPE) (LINE OUT)		R115	1-249-425-11	CARBON 4.7K 5% 1/4W F	
PJ802	1-568-750-21	JACK, PIN (1P SHIELD TYPE) (DSR DIGITAL OUT COAXIAL)		R116	1-249-441-11	CARBON 100K 5% 1/4W	
< TRANSISTOR >				R117	1-249-441-11	CARBON 100K 5% 1/4W	
Q101	8-729-232-26	TRANSISTOR 2SC2668-OY		R118	1-249-433-11	CARBON 22K 5% 1/4W	
Q102	8-729-119-79	TRANSISTOR 2SC2785-FEK		R119	1-249-433-11	CARBON 22K 5% 1/4W	
Q301	8-729-900-89	TRANSISTOR DTC144ES		R120	1-249-433-11	CARBON 22K 5% 1/4W	
Q302	8-729-900-65	TRANSISTOR DTA144ES		R121	1-249-433-11	CARBON 22K 5% 1/4W	
Q303	8-729-922-37	TRANSISTOR 2SD2144S-UVW		R122	1-249-441-11	CARBON 100K 5% 1/4W	
Q304	8-729-922-37	TRANSISTOR 2SD2144S-UVW		R123	1-247-891-00	CARBON 330K 5% 1/4W	
Q352	8-729-900-65	TRANSISTOR DTA144ES		R124	1-249-441-11	CARBON 100K 5% 1/4W	
Q353	8-729-922-37	TRANSISTOR 2SD2144S-UVW		R125	1-249-427-11	CARBON 6.8K 5% 1/4W F	
Q354	8-729-922-37	TRANSISTOR 2SD2144S-UVW		△R127	1-249-405-11	CARBON 100 5% 1/4W F	
Q401	8-729-904-39	TRANSISTOR DTC114TS		R201	1-247-903-00	CARBON 1M 5% 1/4W	
				R202	1-249-433-11	CARBON 22K 5% 1/4W	
				R203	1-249-433-11	CARBON 22K 5% 1/4W	
				R204	1-249-417-11	CARBON 1K 5% 1/4W F	
				R205	1-249-429-11	CARBON 10K 5% 1/4W	
				R206	1-249-417-11	CARBON 1K 5% 1/4W F	

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

MAIN

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
R207	1-249-429-11	CARBON	10K 5% 1/4W	R412	1-249-411-11	CARBON	330 5% 1/4W
R208	1-249-419-11	CARBON	1.5K 5% 1/4W F	R413	1-249-433-11	CARBON	22K 5% 1/4W
R209	1-249-429-11	CARBON	10K 5% 1/4W	△R414	1-249-393-11	CARBON	10 5% 1/4W F
R210	1-249-437-11	CARBON	47K 5% 1/4W	△R415	1-249-393-11	CARBON	10 5% 1/4W F
R211	1-247-807-31	CARBON	100 5% 1/4W	△R416	1-249-393-11	CARBON	10 5% 1/4W F
R212	1-247-807-31	CARBON	100 5% 1/4W	R417	1-249-411-11	CARBON	330 5% 1/4W
R213	1-247-807-31	CARBON	100 5% 1/4W	R418	1-249-431-11	CARBON	15K 5% 1/4W
R214	1-247-807-31	CARBON	100 5% 1/4W	R419	1-249-411-11	CARBON	330 5% 1/4W
R215	1-247-807-31	CARBON	100 5% 1/4W	R420	1-249-411-11	CARBON	330 5% 1/4W
R216	1-247-807-31	CARBON	100 5% 1/4W	R421	1-249-433-11	CARBON	22K 5% 1/4W
R217	1-249-417-11	CARBON	1K 5% 1/4W F	R422	1-249-411-11	CARBON	330 5% 1/4W
R301	1-249-409-11	CARBON	220 5% 1/4W F	R423	1-247-804-11	CARBON	75 5% 1/4W
R302	1-249-421-11	CARBON	2.2K 5% 1/4W F	R424	1-249-417-11	CARBON	1K 5% 1/4W F
R303	1-247-903-00	CARBON	1M 5% 1/4W	R425	1-249-411-11	CARBON	330 5% 1/4W
R304	1-249-441-11	CARBON	100K 5% 1/4W	R426	1-249-431-11	CARBON	15K 5% 1/4W
R305	1-249-437-11	CARBON	47K 5% 1/4W	R427	1-249-417-11	CARBON	1K 5% 1/4W F
R306	1-249-413-11	CARBON	470 5% 1/4W F	R428	1-249-413-11	CARBON	470 5% 1/4W F
R310	1-249-435-11	CARBON	33K 5% 1/4W	R429	1-249-411-11	CARBON	330 5% 1/4W
R311	1-249-435-11	CARBON	33K 5% 1/4W	R430	1-247-807-31	CARBON	100 5% 1/4W
R312	1-249-435-11	CARBON	33K 5% 1/4W	R431	1-249-413-11	CARBON	470 5% 1/4W F
R313	1-249-435-11	CARBON	33K 5% 1/4W	R432	1-247-807-31	CARBON	100 5% 1/4W
R314	1-249-433-11	CARBON	22K 5% 1/4W	R433	1-249-429-11	CARBON	10K 5% 1/4W
R315	1-249-433-11	CARBON	22K 5% 1/4W	R434	1-249-413-11	CARBON	470 5% 1/4W F
R316	1-249-437-11	CARBON	47K 5% 1/4W	R435	1-249-437-11	CARBON	47K 5% 1/4W
R317	1-249-437-11	CARBON	47K 5% 1/4W	R436	1-249-439-11	CARBON	68K 5% 1/4W
R318	1-249-419-11	CARBON	1.5K 5% 1/4W F	R437	1-249-421-11	CARBON	2.2K 5% 1/4W F
R319	1-249-419-11	CARBON	1.5K 5% 1/4W F	R438	1-249-421-11	CARBON	2.2K 5% 1/4W F
R320	1-247-887-00	CARBON	220K 5% 1/4W	R439	1-249-432-11	CARBON	18K 5% 1/4W
R322	1-249-411-11	CARBON	330 5% 1/4W	R440	1-249-424-11	CARBON	3.9K 5% 1/4W F
R360	1-249-435-11	CARBON	33K 5% 1/4W	R441	1-249-422-11	CARBON	2.7K 5% 1/4W F
R361	1-249-435-11	CARBON	33K 5% 1/4W	△R443	1-249-393-11	CARBON	10 5% 1/4W F
R362	1-249-435-11	CARBON	33K 5% 1/4W	R444	1-249-439-11	CARBON	68K 5% 1/4W
R363	1-249-435-11	CARBON	33K 5% 1/4W	R445	1-249-437-11	CARBON	47K 5% 1/4W
R364	1-249-433-11	CARBON	22K 5% 1/4W	R446	1-249-441-11	CARBON	100K 5% 1/4W
R365	1-249-433-11	CARBON	22K 5% 1/4W	R447	1-249-419-11	CARBON	1.5K 5% 1/4W F
R366	1-249-437-11	CARBON	47K 5% 1/4W	R448	1-249-433-11	CARBON	22K 5% 1/4W
R367	1-249-437-11	CARBON	47K 5% 1/4W	R449	1-249-426-11	CARBON	5.6K 5% 1/4W
R368	1-249-419-11	CARBON	1.5K 5% 1/4W F	R450	1-249-409-11	CARBON	220 5% 1/4W F
R369	1-249-419-11	CARBON	1.5K 5% 1/4W F	R501	1-249-441-11	CARBON	100K 5% 1/4W
R370	1-247-887-00	CARBON	220K 5% 1/4W	R502	1-249-437-11	CARBON	47K 5% 1/4W
R372	1-249-411-11	CARBON	330 5% 1/4W	R503	1-249-421-11	CARBON	2.2K 5% 1/4W F
R401	1-249-403-11	CARBON	68 5% 1/4W F	△R504	1-249-397-11	CARBON	22 5% 1/4W F
R402	1-249-403-11	CARBON	68 5% 1/4W F	R505	1-249-413-11	CARBON	470 5% 1/4W F
R403	1-249-395-11	CARBON	15 5% 1/4W F	R506	1-249-429-11	CARBON	10K 5% 1/4W
△R406	1-249-393-11	CARBON	10 5% 1/4W F	R507	1-249-429-11	CARBON	10K 5% 1/4W
R407	1-249-411-11	CARBON	330 5% 1/4W	R508	1-249-429-11	CARBON	10K 5% 1/4W
R408	1-249-393-11	CARBON	10 5% 1/4W F	△R510	1-249-393-11	CARBON	10 5% 1/4W F
R409	1-249-411-11	CARBON	330 5% 1/4W	R511	1-247-807-31	CARBON	100 5% 1/4W
R410	1-249-431-11	CARBON	15K 5% 1/4W	R512	1-249-404-00	CARBON	82 5% 1/4W F
R411	1-249-411-11	CARBON	330 5% 1/4W	R513	1-247-883-00	CARBON	150K 5% 1/4W

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

MAIN

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark	
R514	1-249-429-11	CARBON	10K	5%	1/4W	R737	1-249-429-11	CARBON	10K	5%	1/4W	
<u>△</u> R601	1-249-405-11	CARBON	100	5%	1/4W	F	R738	1-249-417-11	CARBON	1K	5%	1/4W
<u>△</u> R602	1-249-393-11	CARBON	10	5%	1/4W	F	R739	1-247-807-31	CARBON	100	5%	1/4W
R603	1-249-423-11	CARBON	3.3K	5%	1/4W	F	R740	1-249-417-11	CARBON	1K	5%	1/4W
R604	1-249-425-11	CARBON	4.7K	5%	1/4W	F	R741	1-249-417-11	CARBON	1K	5%	1/4W
R605	1-249-425-11	CARBON	4.7K	5%	1/4W	F	R742	1-247-807-31	CARBON	100	5%	1/4W
R606	1-249-425-11	CARBON	4.7K	5%	1/4W	F	R743	1-249-421-11	CARBON	2.2K	5%	1/4W
R607	1-249-425-11	CARBON	4.7K	5%	1/4W	F	R744	1-249-429-11	CARBON	10K	5%	1/4W
R608	1-247-807-31	CARBON	100	5%	1/4W		R745	1-249-415-11	CARBON	680	5%	1/4W
R609	1-249-429-11	CARBON	10K	5%	1/4W		R746	1-249-417-11	CARBON	1K	5%	1/4W
R610	1-249-417-11	CARBON	1K	5%	1/4W	F	R747	1-247-807-31	CARBON	100	5%	1/4W
R611	1-247-807-31	CARBON	100	5%	1/4W		R748	1-247-807-31	CARBON	100	5%	1/4W
R612	1-247-807-31	CARBON	100	5%	1/4W		R749	1-249-417-11	CARBON	1K	5%	1/4W
R613	1-249-429-11	CARBON	10K	5%	1/4W		<u>△</u> R790	1-249-393-11	CARBON	10	5%	1/4W
R701	1-247-807-31	CARBON	100	5%	1/4W		R791	1-249-421-11	CARBON	2.2K	5%	1/4W
R702	1-249-429-11	CARBON	10K	5%	1/4W		R792	1-249-411-11	CARBON	330	5%	1/4W
R703	1-249-417-11	CARBON	1K	5%	1/4W	F	R793	1-249-411-11	CARBON	330	5%	1/4W
R704	1-249-417-11	CARBON	1K	5%	1/4W	F	<u>△</u> R801	1-249-393-11	CARBON	10	5%	1/4W
R705	1-249-417-11	CARBON	1K	5%	1/4W	F	R802	1-249-421-11	CARBON	2.2K	5%	1/4W
R706	1-249-417-11	CARBON	1K	5%	1/4W	F	R803	1-249-437-11	CARBON	47K	5%	1/4W
R707	1-249-417-11	CARBON	1K	5%	1/4W	F	R804	1-249-437-11	CARBON	47K	5%	1/4W
R708	1-249-417-11	CARBON	1K	5%	1/4W	F	R805	1-249-427-11	CARBON	6.8K	5%	1/4W
R709	1-249-417-11	CARBON	1K	5%	1/4W	F	R810	1-247-878-00	CARBON	91K	5%	1/4W
R710	1-249-417-11	CARBON	1K	5%	1/4W	F	R811	1-247-883-00	CARBON	150K	5%	1/4W
R711	1-249-417-11	CARBON	1K	5%	1/4W	F	R812	1-249-421-11	CARBON	2.2K	5%	1/4W
R712	1-249-417-11	CARBON	1K	5%	1/4W	F	R813	1-249-427-11	CARBON	6.8K	5%	1/4W
R713	1-249-417-11	CARBON	1K	5%	1/4W	F	R814	1-249-427-11	CARBON	6.8K	5%	1/4W
R714	1-249-417-11	CARBON	1K	5%	1/4W	F	R815	1-249-425-11	CARBON	4.7K	5%	1/4W
R715	1-249-417-11	CARBON	1K	5%	1/4W	F	R816	1-249-441-11	CARBON	100K	5%	1/4W
R716	1-249-417-11	CARBON	1K	5%	1/4W	F	R817	1-249-413-11	CARBON	470	5%	1/4W
R717	1-249-417-11	CARBON	1K	5%	1/4W	F	R818	1-247-807-31	CARBON	100	5%	1/4W
R718	1-249-417-11	CARBON	1K	5%	1/4W	F	R820	1-249-437-11	CARBON	47K	5%	1/4W
R719	1-249-417-11	CARBON	1K	5%	1/4W	F	R821	1-249-425-11	CARBON	4.7K	5%	1/4W
R720	1-249-417-11	CARBON	1K	5%	1/4W	F	R822	1-249-417-11	CARBON	1K	5%	1/4W
R721	1-249-417-11	CARBON	1K	5%	1/4W	F	R830	1-249-417-11	CARBON	1K	5%	1/4W
R722	1-249-417-11	CARBON	1K	5%	1/4W	F	R831	1-249-437-11	CARBON	47K	5%	1/4W
R723	1-249-417-11	CARBON	1K	5%	1/4W	F	R832	1-249-437-11	CARBON	47K	5%	1/4W
R724	1-249-417-11	CARBON	1K	5%	1/4W	F	R840	1-247-807-31	CARBON	100	5%	1/4W
R725	1-249-417-11	CARBON	1K	5%	1/4W	F	R841	1-249-411-11	CARBON	330	5%	1/4W
R726	1-249-417-11	CARBON	1K	5%	1/4W	F	R860	1-247-878-00	CARBON	91K	5%	1/4W
R727	1-249-417-11	CARBON	1K	5%	1/4W	F	R861	1-247-883-00	CARBON	150K	5%	1/4W
R728	1-249-417-11	CARBON	1K	5%	1/4W	F	R862	1-249-421-11	CARBON	2.2K	5%	1/4W
R729	1-249-417-11	CARBON	1K	5%	1/4W	F	R863	1-249-427-11	CARBON	6.8K	5%	1/4W
R730	1-249-417-11	CARBON	1K	5%	1/4W	F	R864	1-249-427-11	CARBON	6.8K	5%	1/4W
R731	1-249-419-11	CARBON	1.5K	5%	1/4W	F	R865	1-249-425-11	CARBON	4.7K	5%	1/4W
R732	1-249-419-11	CARBON	1.5K	5%	1/4W	F	R866	1-249-441-11	CARBON	100K	5%	1/4W
R733	1-249-419-11	CARBON	1.5K	5%	1/4W	F	R867	1-249-413-11	CARBON	470	5%	1/4W
R734	1-247-807-31	CARBON	100	5%	1/4W		R868	1-247-807-31	CARBON	100	5%	1/4W
R735	1-247-807-31	CARBON	100	5%	1/4W		R870	1-249-437-11	CARBON	47K	5%	1/4W
R736	1-247-807-31	CARBON	100	5%	1/4W		R871	1-249-425-11	CARBON	4.7K	5%	1/4W

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

MAIN

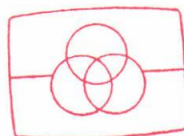
PGM

POWER SUPPLY

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R872	1-249-417-11	CARBON	1K 5% 1/4W F	*	1-656-178-11	PGM BOARD	
△R980	1-260-070-11	CARBON	3.3 5% 1/2W F			*****	
R981	1-249-430-11	CARBON	12K 5% 1/4W			< CAPACITOR >	
R982	1-249-425-11	CARBON	4.7K 5% 1/4W F				
R983	1-249-413-11	CARBON	470 5% 1/4W F	C773	1-164-159-11	CERAMIC 0.1uF	50V
R984	1-249-425-11	CARBON	4.7K 5% 1/4W F			< CONNECTOR >	
R985	1-249-437-11	CARBON	47K 5% 1/4W	CNS702	1-766-200-11	SOCKET, CONNECTOR PIN 5P	
R986	1-249-429-11	CARBON	10K 5% 1/4W			< RESISTOR >	
R987	1-249-435-11	CARBON	33K 5% 1/4W	R781	1-249-416-11	CARBON 820 5% 1/4W F	
R988	1-249-399-11	CARBON	33 5% 1/4W F	R782	1-249-423-11	CARBON 3.3K 5% 1/4W F	
		< VARIABLE RESISTOR >		R783	1-249-423-11	CARBON 3.3K 5% 1/4W F	
RV101	1-241-630-11	RES, ADJ, CARBON 10K				< SWITCH >	
RV102	1-241-630-11	RES, ADJ, CARBON 10K		S701	1-572-268-11	SWITCH, SLIDE (PROGRAM)	
RV103	1-241-630-11	RES, ADJ, CARBON 10K		S732	1-572-184-11	SWITCH, KEYBOARD (CHECK)	
RV201	1-241-763-11	RES, ADJ, CARBON 4.7K				*****	
RV401	1-241-765-11	RES, ADJ, CARBON 22K		*	A-4377-736-A	POWER SUPPLY BOARD, COMPLETE	
RV402	1-241-630-11	RES, ADJ, CARBON 10K				*****	
RV501	1-241-630-11	RES, ADJ, CARBON 10K		*	3-309-144-21	HEAT SINK	
RV801	1-241-767-21	RES, ADJ, CARBON 100K			7-682-548-04	SCREW +BVT 3X8 (S)	
		< RELAY >				< CAPACITOR >	
RY401	1-515-614-11	RELAY		C903	1-164-096-11	CERAMIC 0.01uF	50V
RY402	1-515-614-11	RELAY		C904	1-164-096-11	CERAMIC 0.01uF	50V
RY801	1-515-614-11	RELAY		C905	1-164-096-11	CERAMIC 0.01uF	50V
		< FILTER >		C906	1-164-096-11	CERAMIC 0.01uF	50V
SAW101	1-760-600-11	FILTER		C913	1-124-636-00	ELECT 3300uF	20% 25V
		< TRANSFORMER >		C914	1-124-636-00	ELECT 3300uF	20% 25V
T401	1-411-213-11	BALUN		C915	1-124-636-00	ELECT 3300uF	20% 25V
T402	1-235-126-00	ENCAPSULATED COMPONENT		C916	1-124-920-11	ELECT 330uF	20% 50V
T403	1-404-845-11	COIL, DISCRI (PRIMARY)		C917	1-124-920-11	ELECT 330uF	20% 50V
T404	1-404-846-11	COIL, DISCRI (SECONDARY)		C918	1-126-541-11	ELECT 330uF	20% 16V
		< TERMINAL >		C919	1-126-541-11	ELECT 330uF	20% 16V
TM401	1-537-488-11	TERMINAL BOARD (ANT) (FM/AM ANTENNA)		C920	1-126-541-11	ELECT 330uF	20% 16V
		< TEST PIN >		C921	1-126-541-11	ELECT 330uF	20% 16V
* TP401	1-565-513-11	PIN, CONNECTOR 2P		C922	1-124-910-11	ELECT 47uF	20% 50V
		< VIBRATOR >		C923	1-124-910-11	ELECT 47uF	20% 50V
X201	1-579-736-11	VIBRATOR, CRYSTAL (20.48MHz)		C924	1-124-910-11	ELECT 47uF	20% 50V
X601	1-760-549-11	VIBRATOR, CRYSTAL (4.5MHz)		C925	1-124-910-11	ELECT 47uF	20% 50V
X701	1-579-233-11	VIBRATOR, CERAMIC (5MHz)		C926	1-124-903-11	ELECT 1uF	20% 50V
X790	1-579-900-21	VIBRATOR, CRYSTAL (4.332MHz)		C927	1-124-907-11	ELECT 10uF	20% 50V
		*****		C928	1-124-464-11	ELECT 0.22uF	20% 50V
				C929	1-164-159-11	CERAMIC 0.1uF	50V
				C930	1-124-913-11	ELECT 470uF	20% 50V
				C931	1-161-494-00	CERAMIC 0.022uF	25V
				C932	1-161-494-00	CERAMIC 0.022uF	25V

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

<u>Ref.No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
		***** HARDWARE LIST *****	
#1	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3	
#2	7-682-548-04	SCREW +BVTT 3X8 (S)	
#3	7-682-547-09	SCREW +BVTT 3X6 (S)	



Free service manuals
Gratis schema's

Digitized by

www.freeservicemanuals.info