

ST-S215/S315

SERVICE MANUAL

AEP Model

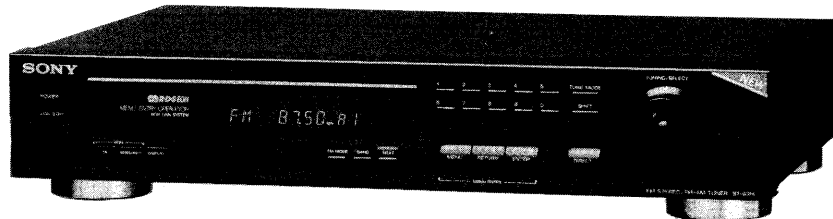


PHOTO : ST-S315

SPECIFICATIONS

FM tuner

Frequency range (AEP,G,IT model)	87.5 - 108 MHz (50 kHz step)
*Frequency range (EE,CIS model)	FM1:65-74MHz FM2:87.5-108MHz
Antenna terminals	75 Ω unbalanced
Intermediate frequency	10.7 MHz
Sensitivity	(mono S/N 26 dB) 10.3 dBf, 0.9 μ V/75 Ω (stereo S/N 46 dB) 38.5 dBf, 23 μ V/75 Ω
Usable sensitivity	10.3 dBf, 0.9 μ V/75 Ω (IHF)
Signal-to-noise ratio	(at 40 kHz deviation) 74 dB (mono) 69 dB (stereo)
Harmonic distortion	0.1% (mono); 0.2% (stereo) (at 1 kHz)
Frequency response	30 Hz - 15 kHz, (+0.5 dB, -2.0 dB)
Separation	45 dB (at 1 kHz)
Selectivity	60 dB (at 300 kHz) 80 dB (at 400 kHz)
Output/impedance	600 mV/470 Ω (at 40 kHz deviation)

AM tuner

Frequency range	531 - 1,602 kHz (9 kHz step)
Intermediate frequency	450 kHz
Usable sensitivity	(with AM loop antenna) 300 μ V/m (999 kHz)
Signal-to-noise ratio	54 dB
Harmonic distortion	0.5%
Selectivity	32 dB

General

Power requirements	220 - 230 V AC, 50/60 Hz
Power consumption	10 W
Dimensions	Approx. 430 mm (W) x 85 mm (H) x 295 mm (D) (17 x 3 ¹ / ₄ x 11 ¹ / ₈ inches)
Mass	Approx. 2.9 kg (6 lb. 3 oz.)
Accessories supplied	Connecting cord (1) AM loop antenna (1) FM wire antenna (1) EON connecting cord (1) (ST-S315 only)

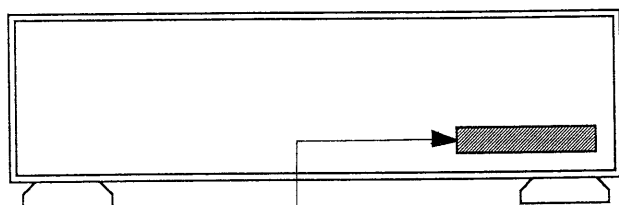
Design and specifications are subject to change without notice.

- * The specifications of FM tuner except the frequency range are measured in the FM 2 mode.

FM STEREO FM-AM TUNER
SONY®

MODEL IDENTIFICATION

— BACK PANEL —



4-965-470-0□ (S315 : Italian model)
 4-965-470-1□ (S315 : AEP model)
 4-965-470-2□ (S315 : German model)
 4-965-470-3□ (S215 : Italian, East European, CIS model)
 4-965-470-4□ (S215 : AEP model)
 4-965-470-5□ (S215 : German model)

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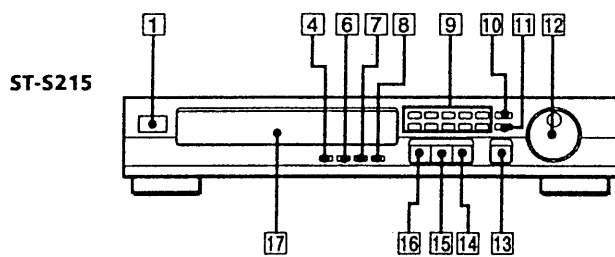
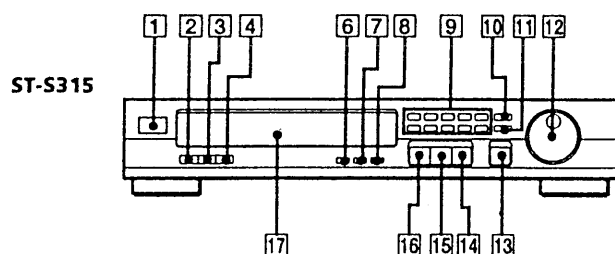
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SAFETY-RELATED COMPONENT WARNING !!

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

SECTION 1 GENERAL

This section is extracted from instruction manual.



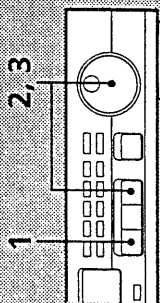
Front Panel

- 1** Power switch (10)
- 2** EON TA button (62) (ST-S315 only)
- 3** EON NEWS/INFO button (62) (ST-S315 only)
- 4** DISPLAY button (48, 60)
- 6** FM MODE button
- 7** BAND button (20, 22, 24)
- 8** MEMORY/NEXT button (40, 46)
- 9** Preset buttons (24, 40, 44)
- 10** TUNE MODE button (20, 22, 46)
- 11** SHIFT button (40, 44)
- 12** TUNING/SELECT knob (12, 16, 18, 20, 22, 28, 30, 32, 34, 36, 44, 46, 50, 66, 68)
- 13** DIRECT button (24)
- 14** ENTER button (12, 16, 18, 28, 30, 32, 34, 36, 38, 46, 50, 66, 68)
- 15** RETURN button (12, 34, 38)
- 16** MENU button (12, 16, 18, 28, 32, 34, 36, 38, 46, 50, 66, 68)
- 17** Display window

(The numbers in parentheses indicate the page(s) where the control is described.)

Preset Tuning

This section shows you how to store and automatically tune in your favorite stations. Each station stored for preset tuning is first assigned a two-character code, consisting of a letter (A-C for the ST-S315 and A-D for the ST-S215) followed by a one-digit number (0-9). To tune in a stored station, you simply enter the appropriate two-character code. You can store up to 30 stations (40 with the ST-S215).

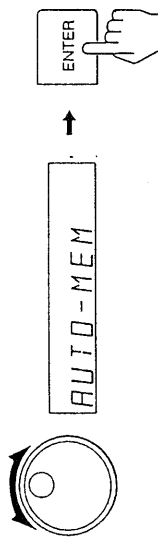


1



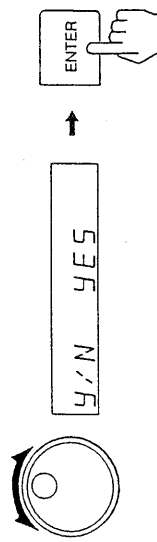
2

TUNING/SELECT



3

TUNING/SELECT



Storing Stations using "Auto-Memory" (ST-S215 only)

This is the easiest way to store all FM stations in your broadcast area. If you want to store FM and AM (MW) stations one by one, do the procedure on page 40.

1 Press MENU.

2 Rotate the TUNING/SELECT knob until "AUTO-MEM" appears and then press ENTER.

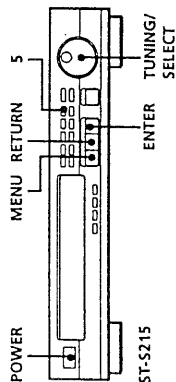
3 Rotate the TUNING/SELECT knob until "Y/N YES" appears and then press ENTER.

The tuner scans and stores all the FM stations in the broadcast area. Scanning starts from the lowest frequency. When the tuner receives a station, it automatically assigns the station a two-character code beginning with A1. Then it stores the station in memory.

After scanning, the station stored in A1 is received.

The setting of the FM MODE button will be stored along with the station.

Preset Tuning



(continued)

If you perform the scanning again

Some of the preset stations may be replaced with new ones depending on the reception quality.

To cancel the scanning

Perform one of the following procedures.

- Press RETURN. The scanning stops and the display returns to the "AUTO-MEM" menu.

If you press RETURN again, the display shows the currently received frequency.

- Press ENTER. The scanning stops and the display shows the currently received frequency.

To tune in stored stations

See page 44.

To erase stored stations one by one

1 Press MENU.

2 Rotate the TUNING/SELECT knob until "Clear" appears and then press ENTER.

3 Rotate the TUNING/SELECT knob until the preset station to be erased appears and then press ENTER.

The frequency stored in the specified code is erased and the digit of the preset code disappears.

4 Repeat steps 1 through 3 for other stored stations to be erased.

To erase all stored stations at a time

1 Turn off the power.

2 Hold down 5 and MENU, and press POWER to turn on the power again.

Note

If you move to another area, do this procedure again to store the stations for the new broadcast area.

Preset Tuning

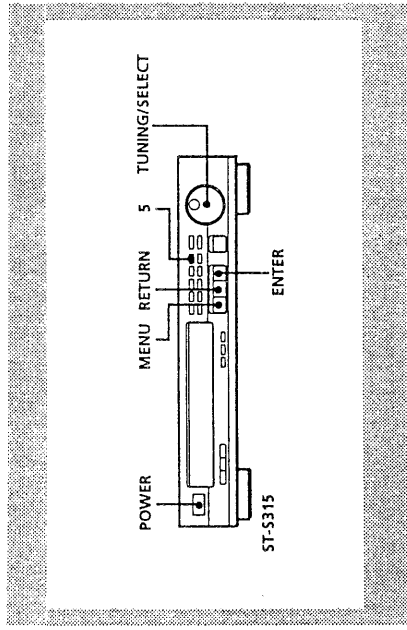
Storing Stations Using "Auto-betical select" (ST-S315 only)

"Auto-betical select" is the easiest way to automatically store all FM RDS and FM stations in your broadcast area. The tuner first selects FM RDS stations with the clearest RDS signal from among the FM RDS stations broadcasting the same program and stores them in alphabetical order without redundancy up to 30 stations. Then the tuner stores FM stations other than the FM RDS stations from low to high frequencies. If you want to store FM and AM stations one by one, do the procedure on page 40.

- 1 Press MENU.
- 2 Rotate the TUNING/SELECT knob until "AUTO-BET" (ST-S315) appears and then press ENTER.
- 3 Rotate the TUNING/SELECT knob until "Y/N YES" appears and then press ENTER.
The tuner scans and stores all FM RDS and FM stations in the broadcast area. For RDS stations, the tuner first checks for stations broadcasting the same program, then stores only the one with the clearest signal. The selected RDS stations are sorted alphabetically by their Program Service name, then assigned two-character codes. For more details on RDS, see page 54.

After scanning, the display shows the total number of the stored FM RDS stations and then the station stored in A1 is received.

The following settings will be stored along with the station.
ST-S315: FM MODE



Preset Tuning

(continued)

If you perform the scanning again

Some of the preset stations may be replaced with new ones depending on the reception quality.

To cancel the scanning

- Perform one of the following procedures.
- Press RETURN. The scanning stops and the display returns to the "Auto-betical" menu.
 - If you press RETURN again, the display shows the currently received frequency.
 - Press ENTER. The scanning stops and the display shows the currently received frequency.

To tune in stored stations

See page 44.

To erase stored stations one by one

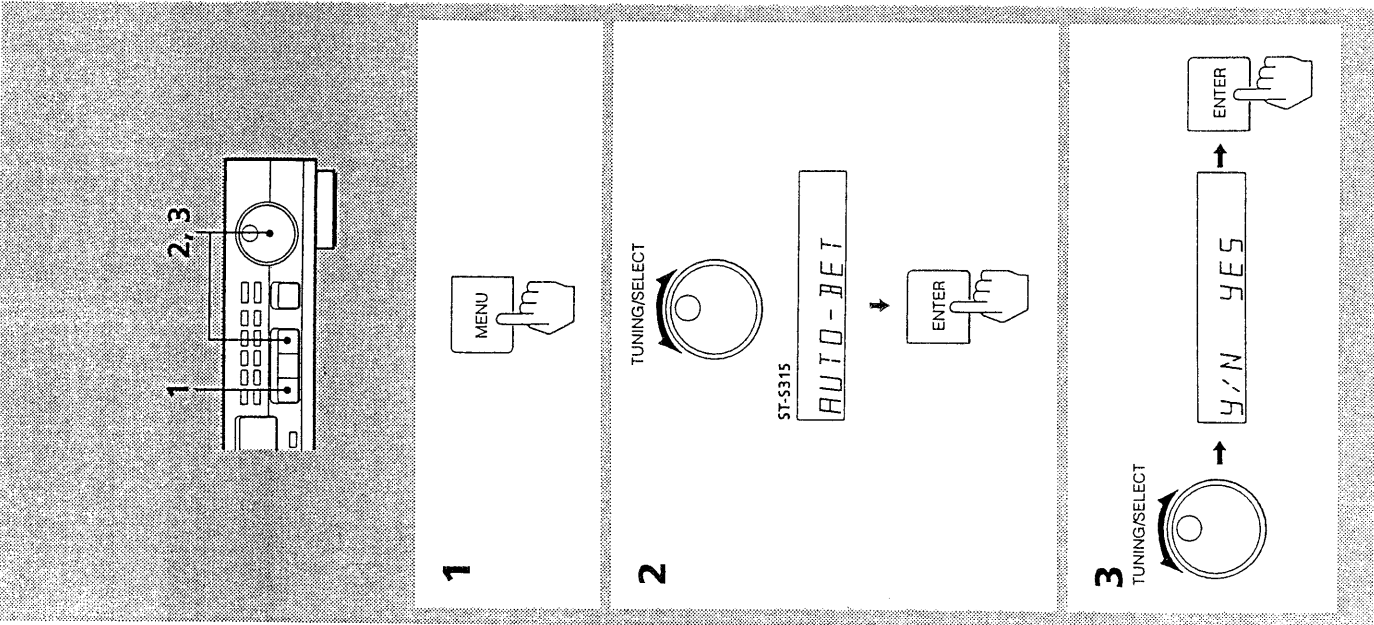
- 1 Press MENU.
- 2 Rotate the TUNING/SELECT knob until "Clear" appears and then press ENTER.
- 3 Rotate the TUNING/SELECT knob until the preset station to be erased appears and then press ENTER.
The frequency stored in the specified code is erased and the digit of the preset code disappears.
- 4 Repeat steps 1 through 3 for other stored stations to be erased.

To erase all stored stations at a time

- 1 Turn off the power.
- 2 Hold down 5 and MENU, and press POWER to turn on the power again.

Notes

- If you move to another area, do this procedure again to store the stations for the new broadcast area.
- If you move the antenna after storing stations using "Auto-betical" or "AUTO-BET", the stored settings will no longer be valid. If this happens, store the stations again.



Preset Tuning

Storing Stations Manually

This procedure shows you how to select and store FM and AM stations one by one. This procedure is useful if you want to select just which stations to store, and for storing FM stations or FM RDS stations (ST-S315 only) with a very weak signal that may not be stored using "Auto-betel select" (ST-S315). If you want to automatically store FM and/or FM RDS station in your broadcast area, do one of the procedures described on pages 32 or 36, depending on which tuner you have.

1 Tune in the desired station.

For details on tuning in stations, see pages 20-24 and 44.

2 Press MEMORY/NEXT.

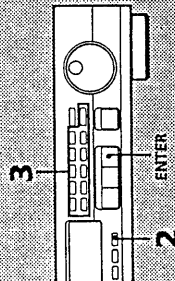
"MEMORY" appears to show that the tuner is ready to store a station. If the stations is tuned in with the automatic tuning, manual tuning or direct tuning: The lowest vacant code appears. If you want to store the station in that preset code, press ENTER. If you want to specify the other preset code, go to step 3.

If the station is tuned in with the preset tuning: The preset code of that station blinks. If you want to store the station in the same preset code, press ENTER. If you want to specify the other code, go to step 3.

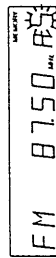
3 Enter the two-character code under which you want the station stored.

Press SHIFT to select A, B, or C (ST-S215: You can also select D). The letter you choose appears on the display. Each time you press SHIFT, the letter changes. Then, press a preset button 0-9. The tuner stores the station under the two-character code.

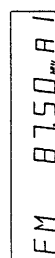
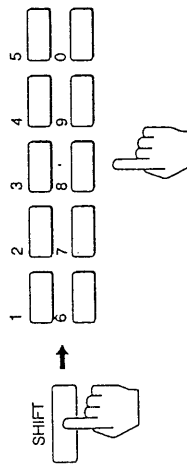
4 Perform steps 1 through 3 for other stations.



2



3



Preset Tuning

(continued)

If you make a mistake during entry

Perform steps 2 and 3 again.

To cancel the storing while the MEMORY indicator is lit

- Press RETURN or
- Press MEMORY/NEXT.

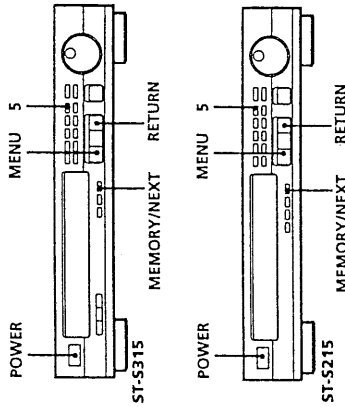
The following settings will be stored along with the station (FM MODE)

If you store a new station in the same code

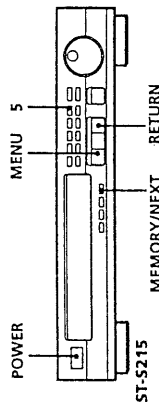
The previously stored station is erased. Each code can hold only one station.

To tune in stored stations

See page 44.



ST-S315



ST-S215

To erase stored stations one by one

- 1 Press MENU.
- 2 Rotate the TUNING/SELECT knob until "Clear" appears and then press ENTER.
- 3 Rotate the TUNING/SELECT knob until the preset station to be erased appears and then press ENTER. The frequency stored in the specified code is erased and the digit of the preset code disappears.
- 4 Repeat steps 1 through 3 for other stored stations to be erased.

To erase all stored stations at a time

- 1 Turn off the power.
- 2 Hold down 5 and MENU, and press POWER to turn on the power again.

Notes

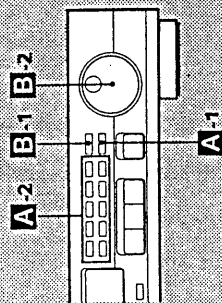
- If you move to another area, do this procedure again to store the stations for the new broadcast area.
- The stations remain stored in memory for up to one month after turning the power off.

Preset Tuning

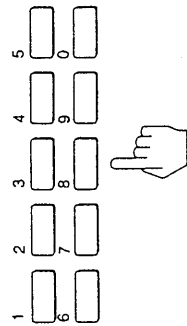
Tuning in Stored Stations A

Enter the two-character code of the station you want to listen to.

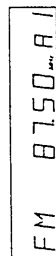
- 1 First, press **SHIFT** to select A, B, or C. (ST-S215: You can also select D.)
- 2 Press a preset button 0-9. The tuner automatically tunes in the station stored under that two-character code.



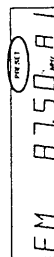
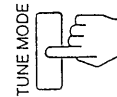
A 1



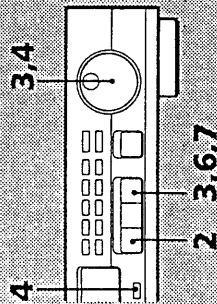
2



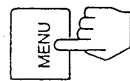
B 1



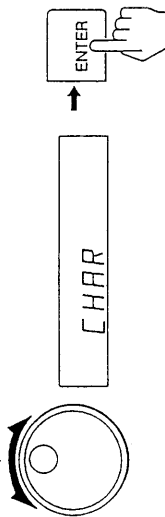
2



2

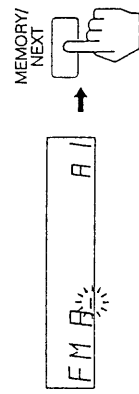


3 TUNING/SELECT

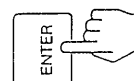


4

TUNING/SELECT



6, 7



Preset Tuning

Assigning Names to Stored Stations

This procedure shows you how to assign a name of up to 5 characters for each stored station except the FM RDS stations. When you tune in a stored station by using the procedure on page 44, the name appears on the display instead of the frequency.

- 1 Tune in a preset station except the FM RDS stations. See page 44.

- 2 Press **MENU**.

- 3 Rotate the **TUNING/SELECT** knob until "CHAR" appears and then press **ENTER**.

- 4 Rotate the **TUNING/SELECT** knob until the desired character appears and then press **MEMORY/NEXT**. The first character stops blinking and the cursor of the second position blinks.

The list of characters you can choose from is shown on the next page. To search forward through the list, turn the knob clockwise. To search backward through the list, turn the knob counterclockwise.

- 5 Repeat step 4 until you obtain the desired name.

- 6 Press **ENTER**.

The name you created is set and the preset code in which the name will be stored blinks.

- 7 Press **ENTER** again.

Preset Tuning

(continued)

To modify a name

Even after pressing the ENTER button, you can change the character. In step 4 or 5, press the MEMORY/NEXT button so that the character to be changed blinks and then perform steps 4 through 7.

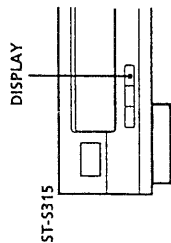
To store the station after assigning the name

In step 1 above, even if you tuned in a station other than a preset station, you can store it with the assigned name. After pressing ENTER in step 6, press the two-character code within 8 seconds and then press ENTER.

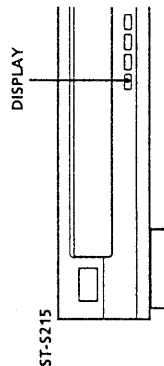
Character List

(space) 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, [, \,], ^, _ , ` , ~ , ! , " , # , \$, % , & , ' ,
* , + , , , / , 0 , 1 , 2 , 3 , 4 , 5 , 6 , 7 , 8 , 9 , < , = ,
> ,
(espacio)
(espaco)

A



ST-S315



ST-S215

Preset Tuning

Sorting the Preset Stations

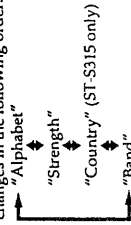
To easily search for a desired preset station, this unit has a preset station sorting function. You can sort the preset stations in alphabetical order ("Alphabet"), in order of signal strength ("Strength"), or according to the reception band ("Band"). In addition, you can sort the preset RDS stations in order of country code ("Country") (ST-S415/ST-S315 only).

1 Press MENU.

2 Rotate the TUNING/SELECT knob until "Sort" appears and then press ENTER. "Select" appears.

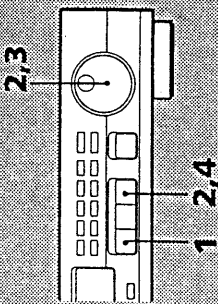
3 Rotate the TUNING/SELECT knob until the desired way of sorting appears.

By rotating the knob, the display changes in the following order:

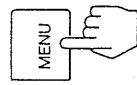


4 Press ENTER.

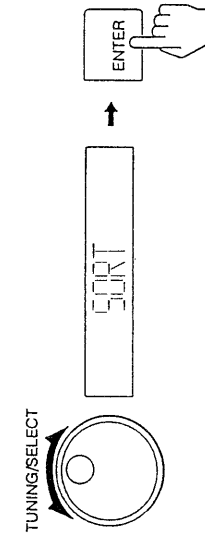
The unit sorts the preset stations in the order you selected and then receives the preset station stored in A1.



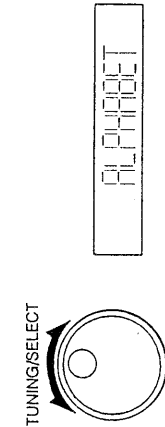
1



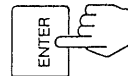
2



3

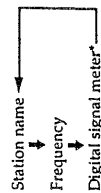


4



Displaying the Name A

You can assign names to stored stations by doing the procedure on page 46. To display the name of a stored station, press DISPLAY. Each time you press DISPLAY, the display alternates between the station frequency, name, and digital signal meter.



• For FM, the digital signal meter displays the strength of the received signal. For best reception, adjust the direction of the antenna until the digital signal meter indicates the signal at its peak strength. When you tune in an AM station, the digital signal meter shows "— dB" and it does not function.

Notes on the DISPLAY button of the ST-S315

When receiving an RDS station, see page 60 for use of the DISPLAY button.

Preset Tuning

(continued)

How the unit arranges the preset stations

"Alphabet":

The unit arranges the preset stations that have station names in alphabetical order.

Station names that have a space as the first character are selected first, followed by names starting with an alphabetic character, symbol or numerical digit, in that order.

Preset stations that have no station names are arranged by frequency, from low to high.

"Strength":

The unit sorts FM preset stations in order of signal strength, starting with stations that have names, followed by stations that have no names.

The rest of the stations are arranged by frequency, from low to high.

"Country" (ST-5315 only):

The unit arranges FM RDS stations that have a PI code (see page 58) in order of country code (1 - 9 and A - F). (Stations that have the same country code are arranged in alphabetical order.)

The rest of the stations are arranged by frequency, from low to high.

Note

Since some countries have the same country code (or a certain country has two country codes), stations in different countries may be arranged together.

"Band":

The unit sorts FM RDS stations that have names in alphabetical order, followed by FM RDS stations that have no names (ST-5315 only). After that, the unit arranges regular FM stations from low to high frequencies, and then arranges the remaining stations in the same manner.

SECTION 2

TEST MODE

NOTE : The preset data will be erased when this test mode is used. Therefore, take down the data before setting this mode and preset the data again after completing operations in this mode.

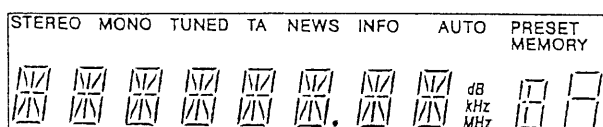
1. Display Tube and Key Check Mode

1-1. Display Tube Check

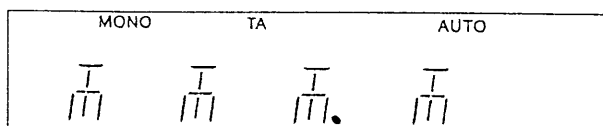
- 1-1-1. Turn OFF the power.
- 1-1-2. While pressing **[1]** and **[MENU]** together, turn ON **[POWER]**.
- 1-1-3. While continuously pressing **[1]** and **[MENU]** together, check the following.

Microcomputer version indication (1 sec) → All light up(1) → 8-digit test pattern(2) → 2-digit test pattern (3)

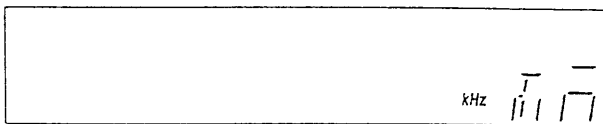
(1) All light up



(2) 8-digit test pattern



(3) 2-digit test pattern



The display changes every 500 msec.

1-2. Key Check

1-2-1. Release **[1]** and **[MENU]**. The KEY CHECK mode will be set.

1-2-2. All key numbers will be displayed.

	S215	S315
Key Number	20	22

1-2-3. Each time the key is pressed, the key number will be counted down.

Each key will be counted only once, at the first time.

1-2-4. When all keys have been pressed, the process will end and the factory preset will be entered.

2. Entering the Factory Preset

To skip “1. Display Tube Key Check Mode”, and factory preset:

- (1) Turn OFF the power.
- (2) While pressing [3] and [MENU] together, turn ON [POWER].

3. Circuit Check Mode

Set to the reception frequency that the circuit can receive (S215:FM:STEREO stations/S315:FM:STEREO, RDS stations). (Set the input level to above 70 dB.)

- (1) Turn OFF the power.
- (2) While pressing [4] and [MENU] together, turn ON [POWER].

• The items in the following table will be checked automatically in order every 2 seconds.

Display	Items	Display				NG
		S215		S315		
		FM STEREO	AM	FM RDS	AM	
TUNED	AST signal =LOW	OK or NG	OK or NG	OK or NG	OK or NG	TB 101 NG
IF	IF COUNT OK	OK or NG	OK or NG	OK or NG	OK or NG	TB 101 NG
SIG L	SI LEVEL $\geq$ 70dB	OK or NG	OK or NG	OK or NG	OK or NG	IC 201 NG RV201 adjustments
ST	ST signal=LOW	OK or NG		OK or NG		TB101 NG
RDS	RDS DATA OK			OK or NG		IC802 NG

4. Forced RESET

Clears all the RAMs and sets the initial state

- (1) Turn OFF the power.
- (2) While pressing [5] and [MENU] together, turn ON [POWER].

NOTE : ST-S215 EE, CIS models have PILOT/POLAR switching function. (Normally, do not use.)

- (1) Turn OFF the power.
- (2) While pressing [2], turn ON [POWER].

Switches between PILOT and POLARITY and displays the state.

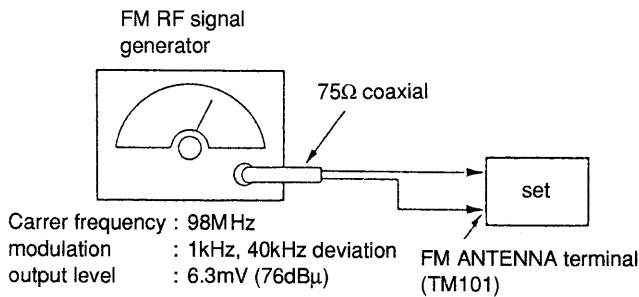
Switches between PILOT and POLARITY each time this mode is performed.

Return the original state after completing the process.

SECTION 3

ELECTRICAL ADJUSTMENTS

FM SIGNAL LEVEL ADJUSTMENT



Procedure :

1. Tune the set to 98 MHz.
2. Push the DISPLAY button for digital signal meter indication.
3. Adjust RV201 to the place where level and "76 dB" indication lights on fluorescent tube.

SUBCARRIER/VCO FREQUENCY ADJUSTMENT (East European, CIS Model only)

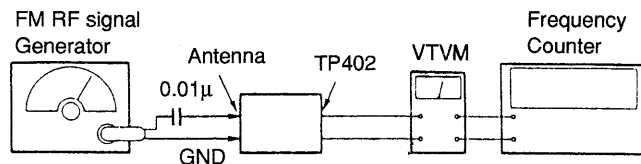


Fig. 1 SUBCARRIER

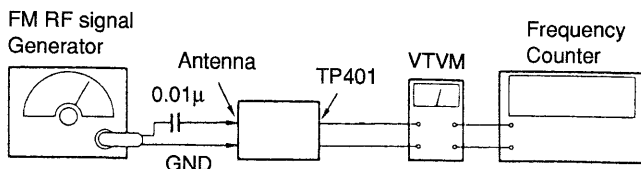


FIG. 2 VCO FREQUENCY

SUBCARRIER ADJUSTMENT (East European, CIS Model only)

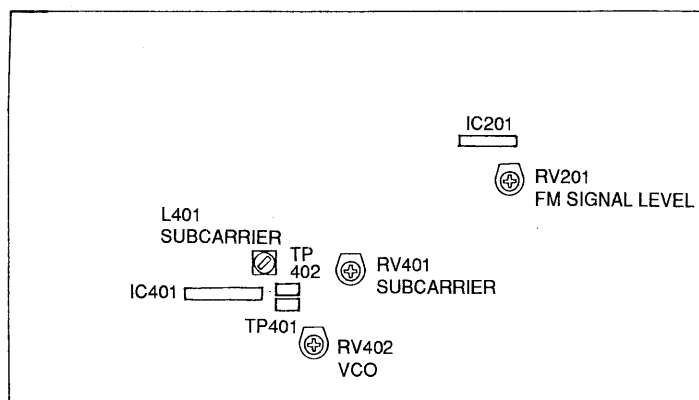
SWITCH POSITION		BAND : FM FM MODE : MONO			
SIGNAL GENERATOR		70 MHz, 76 dB, FM modulated (MONO SIGNAL)			
STEP	TEST STAGE	FM TUNING FREQUENCY	SIGNAL GENERATOR	ADJUSTMENT	REMARKS
1	fo	70 MHz	1 kHz (40 kHz dev.)	L401	The value in this state should be 0 dB (Vo).
2			31.25 kHz (10 kHz dev.)		Adjust for maximum output.
3	Q			RV401	Indication is +15 dB against Vo.

VCO FREQUENCY ADJUSTMENT

SWITCH POSITION		FM MODE : STEREO		
SIGNAL GENERATOR		70 MHz, 76 dB, FM modulated (MONO SIGNAL)		
	FM TUNING FREQUENCY	ADJUSTMENT	REMARKS	
	70 MHz	RV402	Adjust for 31.25 kHz ± 50 Hz.	

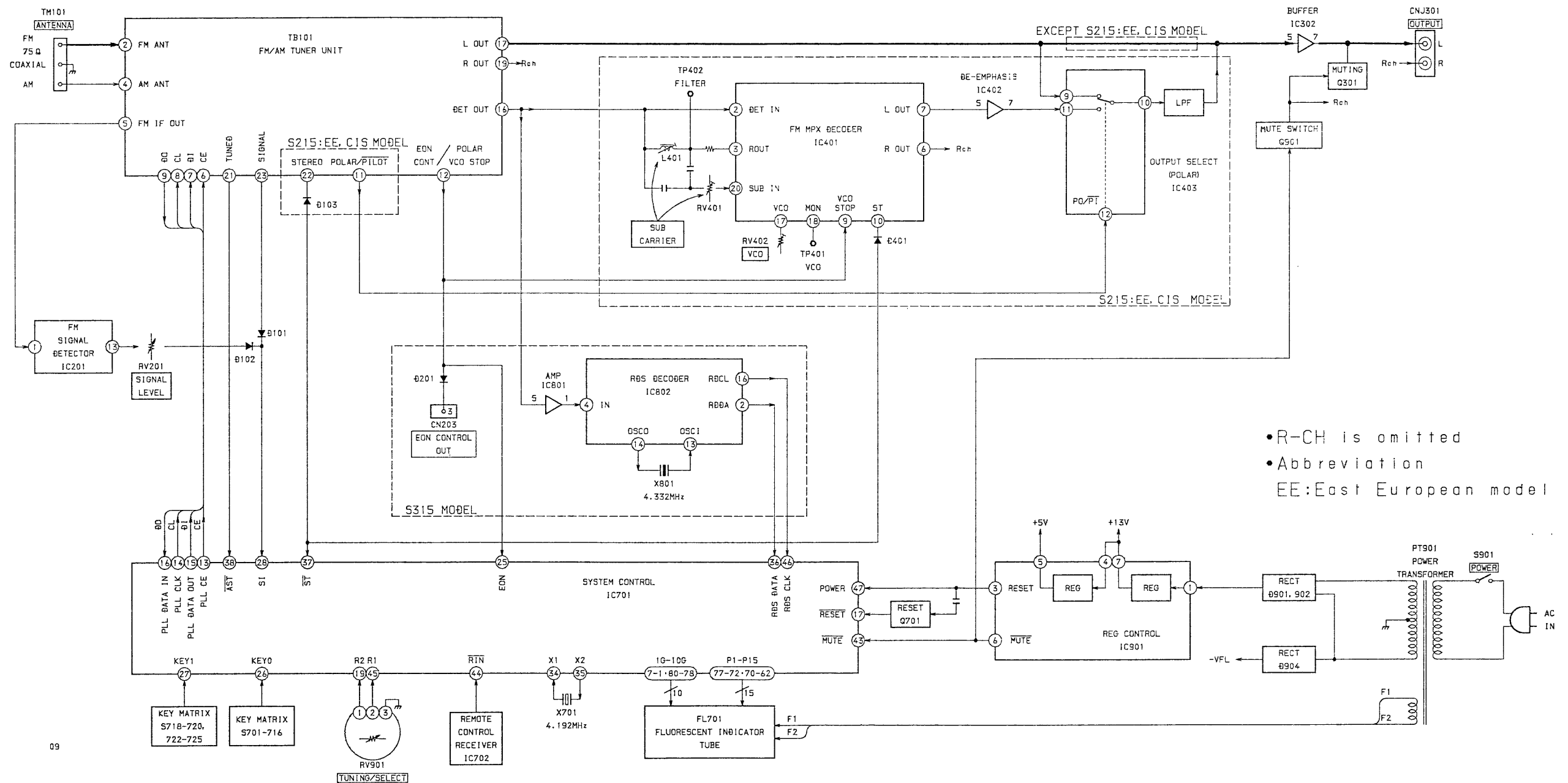
Adjustment Location :

[TUNER BOARD] — Component Side —



SECTION 4 DIAGRAMS

4-1. BLOCK DIAGRAM

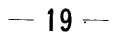
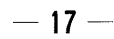


4-2. IC PIN FUNCTIONS

• IC701 SYSTEM CONTROL IC (μPD78044GF-084-3B9)

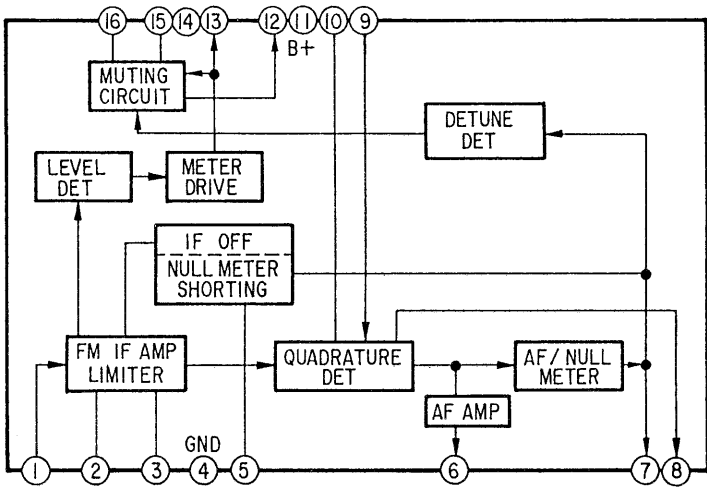
Pin No.	Pin Name	I/O	Function
1 to 7	7G to 1G	O	Drives indicator tube
8	VDD	—	Power supply (+5V)
9 to 12	GND	—	Not used (GND)
13	PLL CE	O	Latch to TB101
14	PLL CLK	O	Clock to TB101
15	PLL DATA OUT	O	Data to TB101
16	PLL DATA IN	I	Data from TB101
17	RESET	I	System reset input
18	GND	—	Not used (GND)
19	R2	O	Rotary encoder phase detection
20	GND	—	GND of the A/D converter
21 to 24	GND	—	Not used (GND)
25	EON	O	External control
26	KEY 0	I	Key input
27	KEY 1	I	Key input
28	SI	I	Signal input
29	AVDD	—	Analog power supply of the A/D converter (+5V)
30	AVREF	I	Reference voltage of the A/D converter (+5V)
31	GND	—	Not used (GND)
32	NC	—	Not used (open)
33	GND	—	System GND
34	X1	I	Oscillation signal input (4.19 MHz)
35	X2	O	Oscillation signal output (4.19 MHz)
36	RDS-DATA	I	RDS data input
37	ST	I	STEREO display detection
38	AST	I	AUTO STOP signal detection
39	RDS RESET	O	Not used (open)
40	START	O	Not used (open)
41	ERROR	O	Not used (open)
42	CORRECTION	O	Not used (open)
43	MUTE	O	Muting signal output
44	RIN	I	Remote controller input
45	R1	I	Rotary encoder number of rotations detection
46	RDS-CLK	I	RDS data clock input
47	POWER	I	Power supply on/off monitor
48	IC	I	Single chip mode detection (GND)
49 to 51	GND	—	Not used (GND)
52	VDD	—	Power supply (+5V)
53 to 56	GND	—	Not used (GND)

Pin No.	Pin Name	I/O	Function																				
57	IS4	I	Model detection H: S315 (with RDS) L: S215 (without RDS)																				
58	IS3	I	Model detection <table><tr><td></td><td>IS3</td><td>IS2</td><td>IS1</td></tr><tr><td>AEP, German model</td><td>L</td><td>L</td><td>L</td></tr><tr><td>Italian model</td><td>L</td><td>L</td><td>H</td></tr><tr><td>CIS</td><td>H</td><td>L</td><td>H</td></tr><tr><td>East European model</td><td>L</td><td>H</td><td>H</td></tr></table>		IS3	IS2	IS1	AEP, German model	L	L	L	Italian model	L	L	H	CIS	H	L	H	East European model	L	H	H
	IS3	IS2		IS1																			
AEP, German model	L	L		L																			
Italian model	L	L		H																			
CIS	H	L		H																			
East European model	L	H	H																				
59	IS2	I																					
60	IS1	I																					
61	GND	—	Not used (GND)																				
62 to 70	P15 to P7	O	Drives indicator tube																				
71	VFL	—	Power supply (−30V)																				
72 to 77	P6 to P1	O	Drives indicator tube																				
78 to 80	10G to 8G	O	Drives indicator tube																				

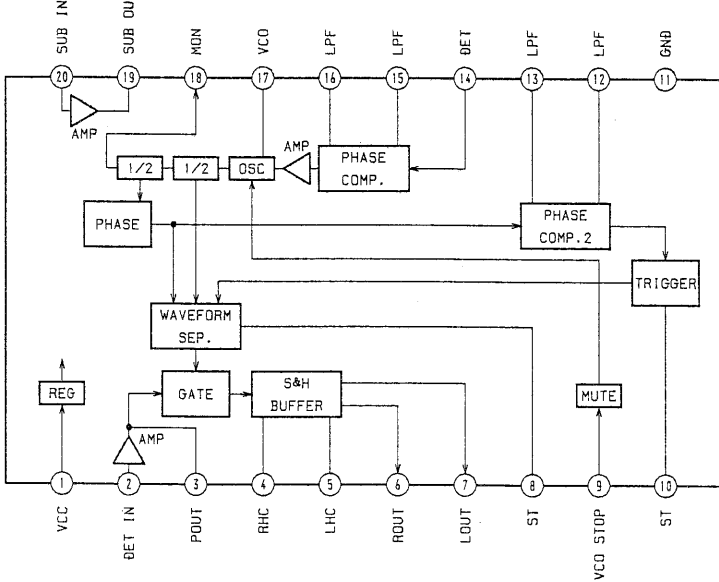


4-5. IC BLOCK DIAGRAMS

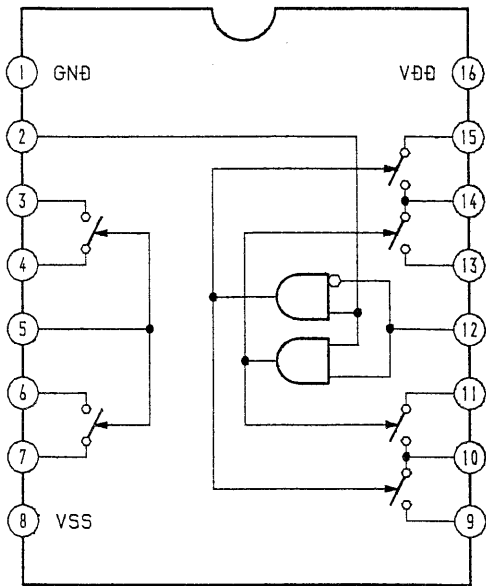
IC201 LA1235



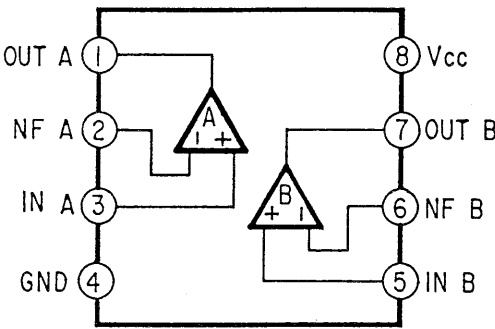
IC401 IR3R42



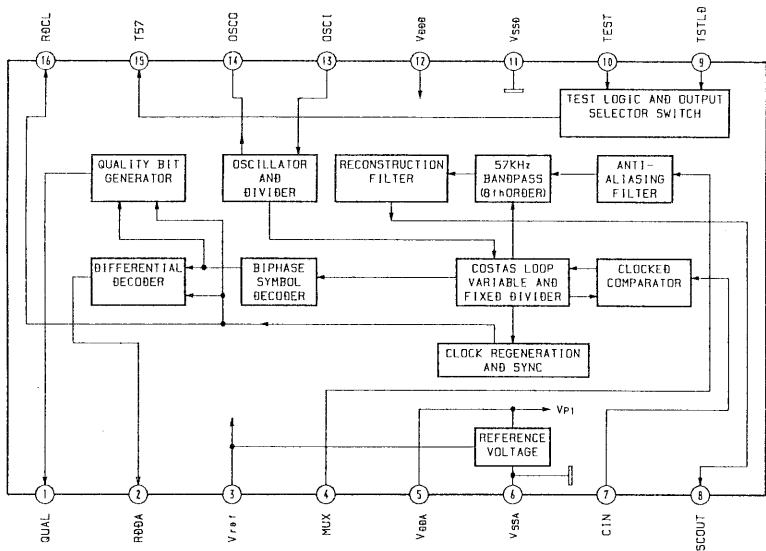
IC403 TC9215P



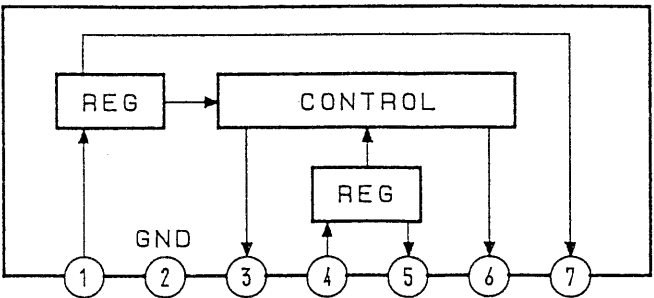
IC801 NJM4558D



IC802 SAA6579

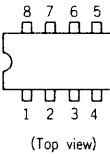


IC901 LA5667

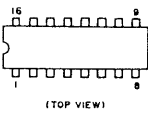


4-6. SEMICONDUCTOR LEAD LAYOUTS

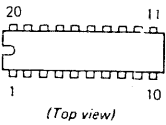
μPC4558C



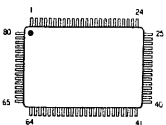
LA1235
SAA6579
TC9215P



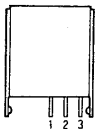
IR3R42



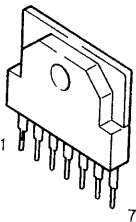
μPD78044GF-084-3B9



GP1U57XB



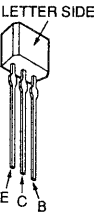
LA5667



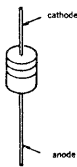
DTA144ES



2SC2785-HFE
2SC3623A-LK



MTZJ-22B
MTZJ-4.7C
1S5119
11ES2



SECTION 5

EXPLODED VIEWS

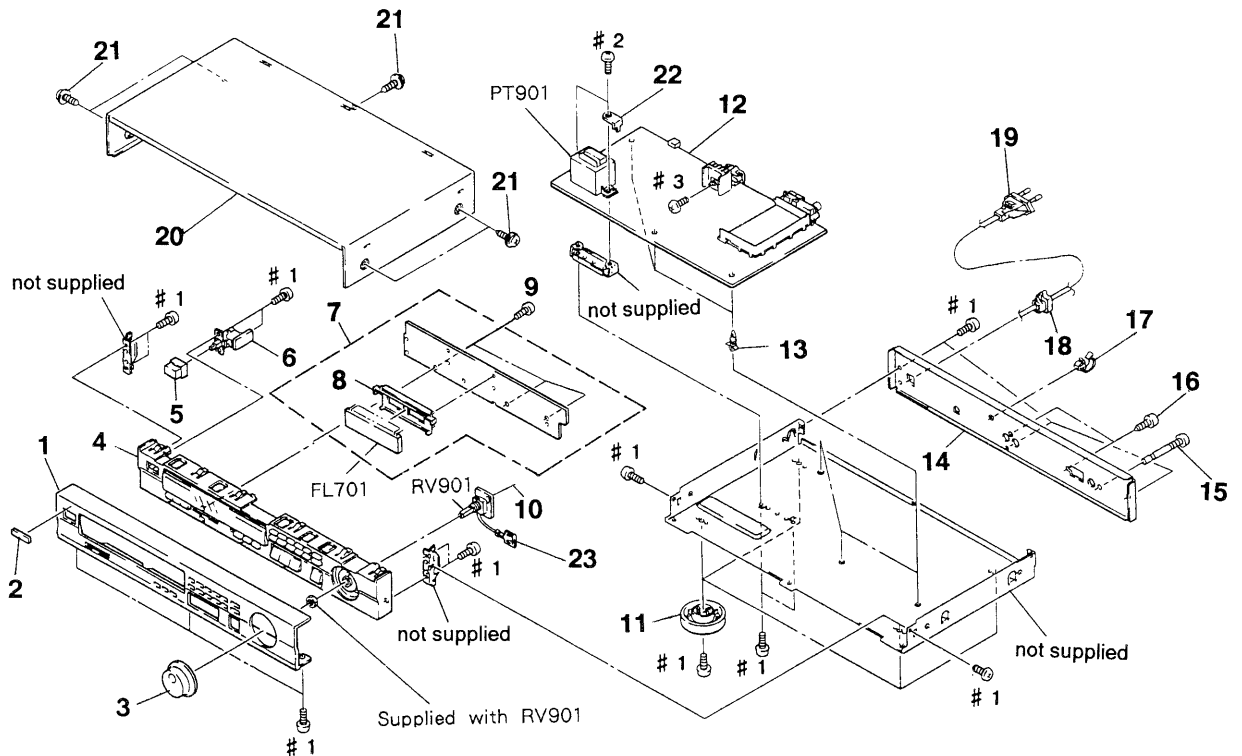
NOTE:

- Items marked “ * ” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts Example:
KNOB, BALANCE (WHITE) ... (RED)

↑ ↑
Parts color Cabinet's color

- 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.
- Abbreviation
G : German model
IT : Italian model
EE : East European model

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



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	4-957-873-41	PANEL, FRONT (S315)		* 12	A-4369-999-A	TUNER BOARD, COMPLETE (S315:G, IT)	
1	4-957-873-51	PANEL, FRONT (S215)		* 12	A-4371-000-A	TUNER BOARD, COMPLETE (S315:AEP)	
2	4-942-568-01	EMBLEM (NO. 5), SONY		* 13	3-346-265-31	HOLDER, PC BOARD	
3	4-965-471-01	KNOB (DIA. 48)		* 14	4-965-470-01	PANEL, BACK (S315:IT)	
4	X-4944-762-1	BASE ASSY, PANEL (S315)					
4	X-4944-763-1	BASE ASSY, PANEL (S215)		* 14	4-965-470-11	PANEL, BACK (S315:AEP)	
5	4-917-460-01	KNOB, POWER		* 14	4-965-470-21	PANEL, BACK (S315:G)	
* 6	1-652-369-11	AC SW BOARD		* 14	4-965-470-31	PANEL, BACK (S215:IT, EE, CIS)	
* 7	A-4369-990-A	DISPLAY BOARD, COMPLETE (S215:EE)		* 14	4-965-470-41	PANEL, BACK (S215:AEP)	
* 7	A-4369-992-A	DISPLAY BOARD, COMPLETE (S215:IT)		* 14	4-965-470-51	PANEL, BACK (S215:G)	
* 7	A-4369-995-A	DISPLAY BOARD, COMPLETE (S215:AEP, G)		15	3-704-242-01	SCREW, TERMINAL, + BVTP CLAW	
* 7	A-4369-998-A	DISPLAY BOARD, COMPLETE (S315:IT)		16	3-704-515-11	SCREW (BV/RING)	
* 7	A-4371-001-A	DISPLAY BOARD, COMPLETE (S315:AEP, G)		* 17	4-949-235-01	HOOK	
* 7	A-4371-407-A	DISPLAY BOARD, COMPLETE (S215:CIS)		18	3-703-244-00	BUSHING, CORD	
* 8	4-943-107-11	HOLDER (FL TUBE)		19	1-575-651-21	CORD, POWER	
9	4-951-620-01	SCREW (2.6X8), +BVTP		20	4-923-457-01	CASE	
* 10	1-652-370-11	ENCORDER BOARD		21	3-704-366-01	SCREW (CASE) (M3X8)	
11	4-956-885-11	FOOT (F58175S2W)		22	4-957-933-01	PLATE, GROUND (G, IT)	
* 12	A-4369-991-A	TUNER BOARD, COMPLETE (S215:EE, CIS)		23	1-690-880-11	LEAD (WITH CONNECTOR)	
* 12	A-4369-993-A	TUNER BOARD, COMPLETE (S215:G, IT)		FL701	1-517-141-31	INDICATOR TUBE, FLUORESCENT	
* 12	A-4369-994-A	TUNER BOARD, COMPLETE (S215:AEP)		PT901	1-423-525-11	TRANSFORMER, POWER	

AC SW

DISPLAY

SECTION 6
ELECTRICAL PARTS LIST

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.

• Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.

• Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

• -XX, -X mean standardized parts, so they may have some difference from the original one.

• Color Indication of Appearance Parts Example:
KNOB, BALANCE (WHITE) . . . (RED)

↑ ↑
Parts color Cabinet's color

• Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

• RESISTORS

All resistors are in ohms
METAL: Metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F : nonflammable

• SEMICONDUCTORS

In each case, u: μ , for example:
uA...: μ A..., uPA...: μ PA..., uPB...: μ PB...,
uPC...: μ PC..., uPD...: μ PD...

• CAPACITORS

uF : μ F

• COILS

uH : μ H

• Abbreviation

G : German model

IT : Italian model

EE : East European model

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
*	1-652-369-11	AC SW BOARD *****				< DIODE >	
		< SWITCH >		D701	8-719-911-19	DIODE 1SS119	
Δ S901	1-572-267-51	SWITCH, PUSH (AC POWER) (1 KEY) (POWER ON/OFF)		D702	8-719-911-19	DIODE 1SS119	
		*****		D703	8-719-911-19	DIODE 1SS119	
				D704	8-719-911-19	DIODE 1SS119	
						< FLUORESCENT INDICATOR >	
*	A-4369-990-A	DISPLAY BOARD, COMPLETE (S215:EE) *****		FL701	1-517-141-31	INDICATOR TUBE, FLUORESCENT	
*	A-4369-992-A	DISPLAY BOARD, COMPLETE (S215:IT) *****				< IC >	
*	A-4369-995-A	DISPLAY BOARD, COMPLETE (S215:AEP,G) *****		IC701	8-759-265-44	IC uPD78044GF-084-3B9	
*	A-4369-998-A	DISPLAY BOARD, COMPLETE (S315:IT) *****		IC702	8-749-923-43	IC GPU57XB	
						< TRANSISTOR >	
				Q701	8-729-119-78	TRANSISTOR 2SC2785-HFE	
						< RESISTOR >	
*	A-4371-001-A	DISPLAY BOARD, COMPLETE (S315:AEP,G) *****		R701	1-249-419-11	CARBON 1.5K 5% 1/4W F	
*	A-4371-407-A	DISPLAY BOARD, COMPLETE (S215:CIS) *****		R702	1-249-419-11	CARBON 1.5K 5% 1/4W F	
				R705	1-247-895-00	CARBON 470K 5% 1/4W	
				R706	1-249-433-11	CARBON 22K 5% 1/4W	
				R707	1-249-417-11	CARBON 1K 5% 1/4W F	
*	4-943-107-11	HOLDER (FL TUBE) < CAPACITOR >		Δ R708	1-249-401-11	CARBON 47 5% 1/4W F	
C701	1-161-379-00	CERAMIC 0.01uF 20% 25V		R709	1-249-441-11	CARBON 100K 5% 1/4W	
C702	1-124-465-00	ELECT 0.47uF 20% 50V		R710	1-249-441-11	CARBON 100K 5% 1/4W	
C703	1-161-379-00	CERAMIC 0.01uF 20% 25V		R711	1-247-807-31	CARBON 100 5% 1/4W	
C704	1-161-379-00	CERAMIC 0.01uF 20% 25V		R712	1-249-429-11	CARBON 10K 5% 1/4W	
C705	1-104-905-11	DOUBLE LAYERS 0.22F 5.5V				(S215:IT, EE, CIS/S315:IT)	
C706	1-161-379-00	CERAMIC 0.01uF 20% 25V		R713	1-249-429-11	CARBON 10K 5% 1/4W (S215:EE)	
C707	1-161-379-00	CERAMIC 0.01uF 20% 25V		R714	1-249-429-11	CARBON 10K 5% 1/4W (S215:CIS)	
C708	1-126-157-11	ELECT 10uF 20% 16V		R715	1-249-429-11	CARBON 10K 5% 1/4W (S315)	
C709	1-161-379-00	CERAMIC 0.01uF 20% 25V		R716	1-247-807-31	CARBON 100 5% 1/4W	
C710	1-162-209-31	CERAMIC 27PF 5% 50V		R717	1-247-807-31	CARBON 100 5% 1/4W	
C711	1-162-209-31	CERAMIC 27PF 5% 50V		R718	1-247-807-31	CARBON 100 5% 1/4W	
C712	1-124-477-11	ELECT 47uF 20% 25V		R719	1-247-807-31	CARBON 100 5% 1/4W	
C713	1-124-916-11	ELECT 22uF 20% 63V		R720	1-247-807-31	CARBON 100 5% 1/4W	
				R721	1-247-807-31	CARBON 100 5% 1/4W	
				R722	1-247-807-31	CARBON 100 5% 1/4W	
				R723	1-247-807-31	CARBON 100 5% 1/4W	
				R724	1-247-807-31	CARBON 100 5% 1/4W	

DISPLAY	ENCODER	TUNER
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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R725	1-247-807-31	CARBON	100 5% 1/4W	S724	1-554-303-21	SWITCH, TACTILE (MEMORY/NEXT)	
R726	1-247-807-31	CARBON	100 5% 1/4W	S725	1-554-303-21	SWITCH, TACTILE (MENU)	
R727	1-247-807-31	CARBON	100 5% 1/4W			< VIBRATOR >	
R750	1-247-807-31	CARBON	100 5% 1/4W	X701	1-760-422-11	VIBRATOR, CRYSTAL (4.192MHz)	
R751	1-249-406-11	CARBON	120 5% 1/4W F			*****	
R752	1-249-406-11	CARBON	120 5% 1/4W F	*	1-652-370-11	ENCODER BOARD	
R753	1-247-811-31	CARBON	150 5% 1/4W			*****	
R754	1-249-408-11	CARBON	180 5% 1/4W F		1-690-880-11	LEAD (WITH CONNECTOR)	
R755	1-249-409-11	CARBON	220 5% 1/4W F			< VARIABLE RESISTOR >	
R756	1-249-410-11	CARBON	270 5% 1/4W F	RV901	1-467-703-11	ENCODER, ROTARY (TUNING/SELECT)	
R757	1-249-411-11	CARBON	330 5% 1/4W			*****	
R758	1-249-413-11	CARBON	470 5% 1/4W F	*	A-4369-991-A	TUNER BOARD, COMPLETE (S215:EE, CIS)	
R759	1-249-414-11	CARBON	560 5% 1/4W F			*****	
R760	1-249-416-11	CARBON	820 5% 1/4W F	*	A-4369-993-A	TUNER BOARD, COMPLETE (S215:G, IT)	
R761	1-249-418-11	CARBON	1.2K 5% 1/4W F			*****	
R762	1-249-421-11	CARBON	2.2K 5% 1/4W F	*	A-4369-994-A	TUNER BOARD, COMPLETE (S215:AEP)	
R763	1-249-424-11	CARBON	3.9K 5% 1/4W F			*****	
R764	1-249-409-11	CARBON	220 5% 1/4W F	*	A-4369-999-A	TUNER BOARD, COMPLETE (S315:G, IT)	
R765	1-249-406-11	CARBON	120 5% 1/4W F			*****	
R766	1-247-811-31	CARBON	150 5% 1/4W	*	A-4371-000-A	TUNER BOARD, COMPLETE (S315:AEP)	
R767	1-249-408-11	CARBON	180 5% 1/4W F			*****	
R768	1-249-409-11	CARBON	220 5% 1/4W F		4-957-933-01	PLATE, GROUND (S215:G, IT/S315:G, IT)	
R769	1-249-410-11	CARBON	270 5% 1/4W F		7-685-646-81	SCREW +BVTP 3X8 TYPE2	
R770	1-249-411-11	CARBON	330 5% 1/4W			< CAPACITOR >	
R771	1-249-413-11	CARBON	470 5% 1/4W F	C101	1-161-379-00	CERAMIC	0.01uF 20% 25V
R772	1-249-414-11	CARBON	560 5% 1/4W F	C102	1-124-907-11	ELECT	10uF 20% 50V
R773	1-249-430-11	CARBON	12K 5% 1/4W	C103	1-161-379-00	CERAMIC	0.01uF 20% 25V
		< SWITCH >		C104	1-124-907-11	ELECT	10uF 20% 50V
S701	1-554-303-21	SWITCH, TACTILE (1)		C105	1-124-463-00	ELECT	0.1uF 20% 50V
S702	1-554-303-21	SWITCH, TACTILE (2)		C201	1-162-282-31	CERAMIC	100PF 10% 50V
S703	1-554-303-21	SWITCH, TACTILE (3)		C202	1-161-379-00	CERAMIC	0.01uF 20% 25V
S704	1-554-303-21	SWITCH, TACTILE (4)		C203	1-161-379-00	CERAMIC	0.01uF 20% 25V
S705	1-554-303-21	SWITCH, TACTILE (5)		C204	1-161-379-00	CERAMIC	0.01uF 20% 25V
S706	1-554-303-21	SWITCH, TACTILE (6)		C205	1-124-477-11	ELECT	47uF 20% 25V
S707	1-554-303-21	SWITCH, TACTILE (7)		C206	1-161-379-00	CERAMIC	0.01uF 20% 25V
S708	1-554-303-21	SWITCH, TACTILE (8)		C207	1-162-294-31	CERAMIC	0.001uF 10% 50V (S315)
S709	1-554-303-21	SWITCH, TACTILE (9)		C301	1-126-962-11	ELECT	3.3uF 20% 50V
S710	1-554-303-21	SWITCH, TACTILE (0)		C302	1-126-962-11	ELECT	3.3uF 20% 50V
S711	1-554-303-21	SWITCH, TACTILE (TUNING/PRESET)		C303	1-124-907-11	ELECT	10uF 20% 50V
S712	1-554-303-21	SWITCH, TACTILE (SHIFT)		C304	1-124-907-11	ELECT	10uF 20% 50V
S713	1-554-303-21	SWITCH, TACTILE (DIRECT)		C305	1-110-335-11	MYLAR	100PF 5% 50V
S714	1-554-303-21	SWITCH, TACTILE (ENTER)					
S715	1-554-303-21	SWITCH, TACTILE (RETURN)					
S718	1-554-303-21	SWITCH, TACTILE (TA) (S315)					
S719	1-554-303-21	SWITCH, TACTILE (NEWS/INFO) (S315)					
S720	1-554-303-21	SWITCH, TACTILE (DISPLAY) (S315)					
S721	1-554-303-21	SWITCH, TACTILE (DISPLAY) (S215)					
S722	1-554-303-21	SWITCH, TACTILE (AUTO TUNING/FM MODE)					
S723	1-554-303-21	SWITCH, TACTILE (BAND)					

TUNER

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C306	1-110-335-11	MYLAR	100PF 5% 50V	C801	1-124-477-11	ELECT	47uF 20% 25V (S315)
C308	1-126-962-11	ELECT	3. 3uF 20% 50V	C802	1-161-379-00	CERAMIC	0. 01uF 20% 25V (S315)
C309	1-126-962-11	ELECT	3. 3uF 20% 50V	C803	1-161-379-00	CERAMIC	0. 01uF 20% 25V (S315)
C319	1-124-477-11	ELECT	47uF 20% 25V	C804	1-124-907-11	ELECT	10uF 20% 50V (S315)
C352	1-130-471-00	MYLAR	0. 001uF 5% 50V (S215:G, IT/S315:G, IT)	C805	1-162-288-31	CERAMIC	330PF 10% 50V (S315)
C353	1-130-471-00	MYLAR	0. 001uF 5% 50V (S215:G, IT/S315:G, IT)	C806	1-102-527-11	CERAMIC	82PF 5% 50V (S315)
C401	1-162-294-31	CERAMIC	0. 001uF 10% 50V (S215:EE, CIS)	C807	1-101-880-00	CERAMIC	47PF 5% 50V (S315)
C402	1-130-014-00	FILM	470PF 5% 50V (S215:EE, CIS)	C808	1-161-379-00	CERAMIC	0. 01uF 20% 25V (S315)
C403	1-124-902-00	ELECT	0. 47uF 20% 50V (S215:EE, CIS)	C809	1-124-477-11	ELECT	47uF 20% 25V (S315)
C404	1-124-902-00	ELECT	0. 47uF 20% 50V (S215:EE, CIS)	C810	1-124-925-11	ELECT	2. 2uF 20% 100V(S315)
C405	1-136-161-00	FILM	0. 047uF 5% 50V (S215:EE, CIS)	C811	1-161-379-00	CERAMIC	0. 01uF 20% 25V (S315)
C406	1-124-903-11	ELECT	1uF 20% 50V (S215:EE, CIS)	C812	1-162-291-31	CERAMIC	560PF 10% 50V (S315)
C407	1-124-903-11	ELECT	1uF 20% 50V (S215:EE, CIS)	C901	1-101-004-00	CERAMIC	0. 01uF 50V
C408	1-124-477-11	ELECT	47uF 20% 25V (S215:EE, CIS)	C902	1-101-004-00	CERAMIC	0. 01uF 50V
C409	1-161-379-00	CERAMIC	0. 01uF 20% 25V (S215:EE, CIS)	C905	1-124-618-11	ELECT	2200uF 20% 35V
C410	1-130-736-11	FILM	0. 01uF 5% 50V (S215:EE, CIS)	C906	1-124-484-11	ELECT	220uF 20% 35V
C411	1-130-736-11	FILM	0. 01uF 5% 50V (S215:EE, CIS)	C908	1-124-907-11	ELECT	10uF 20% 50V
C412	1-130-471-00	MYLAR	0. 001uF 5% 50V (S215:EE, CIS)	C909	1-124-477-11	ELECT	47uF 20% 25V
C413	1-130-471-00	MYLAR	0. 001uF 5% 50V (S215:EE, CIS)	△C951	1-161-741-00	CERAMIC	0. 001uF 10% 400V
C414	1-162-288-31	CERAMIC	330PF 10% 50V (S215:EE, CIS)	C952	1-161-379-00	CERAMIC	0. 01uF 20% 25V
C417	1-124-477-11	ELECT	47uF 20% 25V (S215:EE, CIS)	< CONNECTOR >			
C418	1-130-483-00	MYLAR	0. 01uF 5% 50V (S215:EE, CIS)	CN203	1-566-212-11	PIN, CONNECTOR 3P (EON CONTROL) (S315)	
C419	1-130-483-00	MYLAR	0. 01uF 5% 50V (S215:EE, CIS)	* CN701	1-568-935-11	PIN, CONNECTOR 8P	
C420	1-124-907-11	ELECT	10uF 20% 50V (S215:EE, CIS)	* CN702	1-568-936-11	PIN, CONNECTOR 9P	
C421	1-124-907-11	ELECT	10uF 20% 50V (S215:EE, CIS)	CN901	1-580-230-11	PIN, CONNECTOR (PC BOARD) 3P	
C422	1-126-962-11	ELECT	3. 3uF 20% 50V (S215:EE, CIS)	CN951	1-564-321-00	PIN, CONNECTOR 2P	
C423	1-126-962-11	ELECT	3. 3uF 20% 50V (S215:EE, CIS)	CNJ301	1-568-250-11	JACK, PIN 2P (OUTPUT)	
C424	1-130-482-00	MYLAR	0. 0082uF 5% 50V (S215:EE, CIS)	< DIODE >			
C425	1-130-482-00	MYLAR	0. 0082uF 5% 50V (S215:EE, CIS)	D102	8-719-911-19	DIODE	1SS119
				D103	8-719-911-19	DIODE	1SS119 (S215:EE, CIS)
				D201	8-719-911-19	DIODE	1SS119 (S315)
				D401	8-719-911-19	DIODE	1SS119 (S215:EE, CIS)
				D901	8-719-200-82	DIODE	11ES2
				D902	8-719-200-82	DIODE	11ES2
				D904	8-719-200-82	DIODE	11ES2
				D905	8-719-924-13	DIODE	MTZJ-22B
				D906	8-719-921-40	DIODE	MTZJ-4. 7C
				< IC >			
				IC201	8-759-812-35	IC	LA1235
				IC302	8-759-145-58	IC	uPC4558C
				IC401	8-759-063-04	IC	IR3R42 (S215:EE, CIS)
				IC402	8-759-145-58	IC	uPC4558C (S215:EE, CIS)
				IC403	8-759-051-63	IC	TC9215P (S215:EE, CIS)
				IC801	8-759-145-58	IC	uPC4558C (S315)
				IC802	8-759-169-99	IC	SAA6579 (S315)
				IC901	8-759-820-09	IC	LA5667

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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
< COIL >				R404	1-247-858-11	CARBON 13K 5%	1/4W (S215:EE, CIS)
L351	1-410-971-11	INDUCTOR 10uH (S215:G, IT/S315:G, IT)		R405	1-249-417-11	CARBON 1K 5%	1/4W F (S215:EE, CIS)
L352	1-410-971-11	INDUCTOR 10uH (S215:G, IT/S315:G, IT)		R406	1-249-439-11	CARBON 68K 5%	1/4W (S215:EE, CIS)
L401	1-409-497-11	COIL (FILTER) 5.19uH (S215:EE, CIS)		R407	1-249-401-11	CARBON 47 5%	1/4W F (S215:EE, CIS)
< FILTER >				R408	1-249-440-11	CARBON 82K 5%	1/4W (S215:EE, CIS)
LPF301	1-239-871-11	FILTER, LOW PASS (S215:EE, CIS)		R409	1-249-441-11	CARBON 100K 5%	1/4W (S215:EE, CIS)
LPF302	1-239-871-11	FILTER, LOW PASS (S215:EE, CIS)		R410	1-249-417-11	CARBON 1K 5%	1/4W F (S215:EE, CIS)
< TRANSFORMER >				R411	1-247-848-00	CARBON 5.1K 5%	1/4W (S215:EE, CIS)
△PT901	1-423-525-11	TRANSFORMER, POWER		R412	1-247-848-00	CARBON 5.1K 5%	1/4W (S215:EE, CIS)
< TRANSISTOR >				R413	1-249-429-11	CARBON 10K 5%	1/4W (S215:EE, CIS)
Q301	8-729-141-30	TRANSISTOR 2SC3623A-LK		R414	1-249-429-11	CARBON 10K 5%	1/4W (S215:EE, CIS)
Q302	8-729-141-30	TRANSISTOR 2SC3623A-LK		R415	1-249-431-11	CARBON 15K 5%	1/4W (S215:EE, CIS)
Q901	8-729-900-65	TRANSISTOR DTA144ES		R416	1-249-431-11	CARBON 15K 5%	1/4W (S215:EE, CIS)
< RESISTOR >				R417	1-249-418-11	CARBON 1.2K 5%	1/4W F (S215:EE, CIS)
△R101	1-249-401-11	CARBON 47 5%	1/4W F	R418	1-249-418-11	CARBON 1.2K 5%	1/4W F (S215:EE, CIS)
△R102	1-249-393-11	CARBON 10 5%	1/4W F	R419	1-249-441-11	CARBON 100K 5%	1/4W (S215:EE, CIS)
R103	1-247-883-00	CARBON 150K 5%	1/4W	R420	1-249-441-11	CARBON 100K 5%	1/4W (S215:EE, CIS)
R104	1-249-417-11	CARBON 1K 5%	1/4W F	R421	1-249-441-11	CARBON 100K 5%	1/4W (S215:EE, CIS)
R105	1-249-429-11	CARBON 10K 5%	1/4W	R422	1-249-441-11	CARBON 100K 5%	1/4W (S215:EE, CIS)
R201	1-249-411-11	CARBON 330 5%	1/4W	R425	1-249-401-11	CARBON 47 5%	1/4W F (S215:EE, CIS)
△R202	1-249-405-11	CARBON 100 5%	1/4W F	R426	1-249-423-11	CARBON 3.3K 5%	1/4W F (S215:EE, CIS)
R203	1-249-393-11	CARBON 10 5%	1/4W F (S315)	R427	1-249-423-11	CARBON 3.3K 5%	1/4W F (S215:EE, CIS)
R301	1-249-441-11	CARBON 100K 5%	1/4W	△R801	1-249-401-11	CARBON 47 5%	1/4W F (S315)
R302	1-249-441-11	CARBON 100K 5%	1/4W	R802	1-249-441-11	CARBON 100K 5%	1/4W (S315)
R303	1-249-441-11	CARBON 100K 5%	1/4W	R803	1-249-441-11	CARBON 100K 5%	1/4W (S315)
R304	1-249-441-11	CARBON 100K 5%	1/4W	R804	1-249-433-11	CARBON 22K 5%	1/4W (S315)
R305	1-249-423-11	CARBON 3.3K 5%	1/4W F (S215:EE, CIS)	R805	1-249-426-11	CARBON 5.6K 5%	1/4W (S315)
R305	1-249-441-11	CARBON 100K 5%	1/4W (S215:AEP, G, IT/S315:AEP, G, IT)	R806	1-249-421-11	CARBON 2.2K 5%	1/4W F (S315)
R306	1-249-423-11	CARBON 3.3K 5%	1/4W F	△R807	1-249-401-11	CARBON 47 5%	1/4W F (S315)
R307	1-249-420-11	CARBON 1.8K 5%	1/4W F	R808	1-249-409-11	CARBON 220 5%	1/4W F (S315)
R308	1-249-420-11	CARBON 1.8K 5%	1/4W F	R809	1-247-807-31	CARBON 100 5%	1/4W (S315)
R309	1-249-413-11	CARBON 470 5%	1/4W F	△R901	1-249-389-11	CARBON 4.7 5%	1/4W F
R310	1-249-413-11	CARBON 470 5%	1/4W F				
△R316	1-249-401-11	CARBON 47 5%	1/4W F				
R317	1-249-414-11	CARBON 560 5%	1/4W F				
R318	1-249-414-11	CARBON 560 5%	1/4W F				
R361	1-249-437-11	CARBON 47K 5%	1/4W				
R362	1-249-437-11	CARBON 47K 5%	1/4W				
R401	1-249-429-11	CARBON 10K 5%	1/4W (S215:EE, CIS)				
R402	1-249-427-11	CARBON 6.8K 5%	1/4W F (S215:EE, CIS)				
R403	1-249-435-11	CARBON 33K 5%	1/4W (S215:EE, CIS)				

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TUNER

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
△R902	1-249-415-11	CARBON	680 5% 1/4W F		3-758-928-41	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN) (AEP, IT)	
R903	1-249-441-11	CARBON	100K 5% 1/4W		3-758-928-51	MANUAL, INSTRUCTION (GERMAN) (G)	
R904	1-249-437-11	CARBON	47K 5% 1/4W		3-758-928-71	MANUAL, INSTRUCTION (ENGLISH, POLISH, RUSSIAN) (CIS, EE)	
R905	1-249-437-11	CARBON	47K 5% 1/4W	*	4-966-660-11	INDIVIDUAL CARTON (S315)	
R906	1-249-437-11	CARBON	47K 5% 1/4W	*	4-966-660-21	INDIVIDUAL CARTON (S215)	
△R907	1-249-393-11	CARBON	10 5% 1/4W F				
< VARIABLE RESISTOR >				*	4-966-661-01	CUSHION	
RV201	1-241-765-11	RES, ADJ, CARBON 22K		*****			
RV401	1-241-765-11	RES, ADJ, CARBON 22K (S215:EE, CIS)					
RV402	1-241-763-11	RES, ADJ, CARBON 4.7K (S215:EE, CIS)		*****			
< TERMINAL >				*****			
TB101	1-239-562-11	ENCAPSULATED COMPONENT (S215:G, IT/S315:G, IT)		#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
TB101	1-239-611-21	ENCAPSULATED COMPONENT (S215:AEP/S315:AEP)		#2	7-682-548-04	SCREW +BVTT 3X8 (S)	
TB101	1-239-909-11	ENCAPSULATED COMPONENT (S215:EE, CIS)		#3	7-685-646-81	SCREW +BVTP 3X8 TYPE2	
< CONNECTOR >							
* TP401	1-568-378-11	PIN, CONNECTOR 3P (S215:EE, CIS)					
* TP402	1-568-378-11	PIN, CONNECTOR 3P (S215:EE, CIS)					
< TERMINAL >							
TM101	1-537-488-11	TERMINAL BOARD (ANT) (ANTENNA)					
< VIBRATOR >							
X801	1-579-900-21	VIBRATOR, CRYSTAL (4.332MHz) (S315)					

MISCELLANEOUS							

△19	1-575-651-21	CORD, POWER					
23	1-690-880-11	LEAD (WITH CONNECTOR)					
FL701	1-517-141-31	INDICATOR TUBE, FLUORESCENT					
△PT901	1-423-525-11	TRANSFORMER, POWER					

ACCESSORIES & PACKING MATERIALS							

1-501-374-11 ANTENNA, LOOP							
1-501-594-11 ANTENNA (FM) (EXCEPT G, IT)							
1-558-271-11 CORD, CONNECTION (AUDIO 108cm)							
1-765-383-11 CORD (WITH CONNECTOR) (EON) (S315)							
3-758-928-11 MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE) (AEP)							