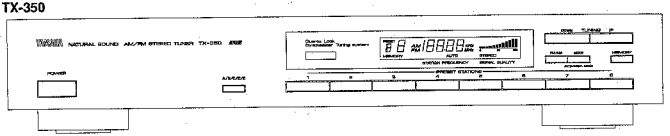
AM/FM STEREO TUNER

TX-350/TX-350L

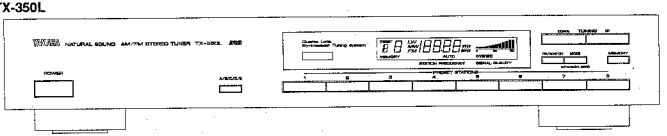
SERVICE MANUAL

■ FRONT PANEL

TX-350



TX-350L



IMPORTANT NOTICE

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

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

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

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

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

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

■ CONTENTS

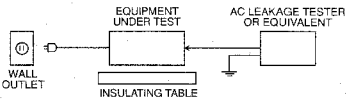
100387

YAMAHA
YAMAHA CORPORATION
3.1K-632 Ⓝ Ⓐ Printed in Japan '91

■ TO SERVICE PERSONNEL

1. Critical Components Information.
   Components having special characteristics are ⚠ marked and must be replaced with parts having specifications equal to those originally installed.

2. Leakage Current Measurement (For 120 V Model Only). When service has been completed, it is imperative that you verify that all exposed conductive surfaces are properly insulated from supply circuits.



- Meter impedance should be equivalent to 1500 ohm shunted by 0.15 μF.
- Leakage current must not exceed 0.5 mA.
- Be sure to test for leakage with the AC plug in both polarities.

- **POLARIZATION**
  This product is equipped with a polarized alternating current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. **(U.C model only)**

■ WARNING: CHEMICAL CONTENT NOTICE!

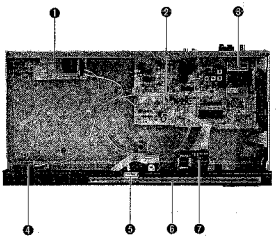
The solder used in the production of this product contains LEAD. In addition, other electrical/electronic and/or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects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

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

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

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

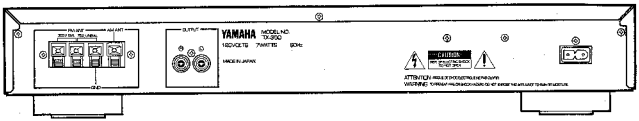
■ INTERNAL VIEW



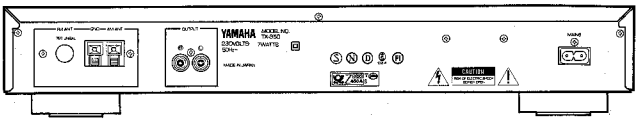
① Tuner circuit Board (2)
② Tuner circuit Board (1)
③ FM Front-end pack
④ Tuner circut Board (4)
⑤ Tuner circut Board (3)
⑥ OPERATION Circuit Board (1)
⑦ OPERATION Circuit Board (2)

■ REAR PANELS

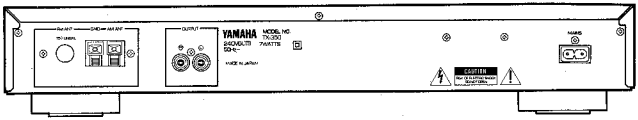
• **U.S.A. & Canadian Models of TX-350**



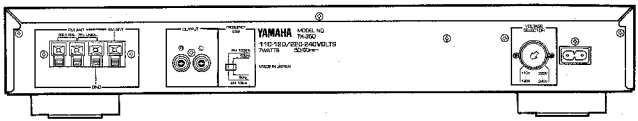
• **North European Models of TX-350**



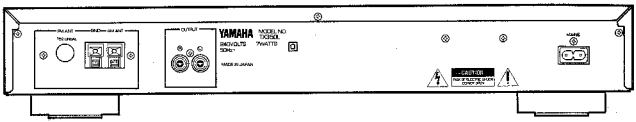
• **Australian Model of TX-350**



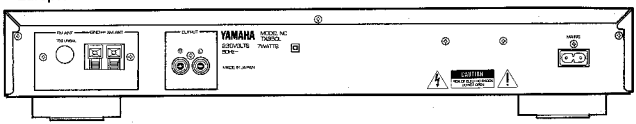
• **General Model of TX-350**



• **British Model of TX-350L**



• **European Model of TX-350L**



■ SPECIFICATIONS

FM SECTION

Tuning Range
[U.S.A., Canada and General models] ..... 87.5 to 107.9 MHz
[U.K., Australia, Europe and General models] ..... 87.5 to 108 MHz
50 dB Quieting Sensitivity (IHF) [Except Europe model]
75 ohms Mono ..... 1.6 µV (15.3 dBf)
75 ohms Stereo ..... 21 µV (37.7 dBf)
Usable Sensitivity
[Except Europe model]
75 ohms, 1 kHz, 100% mod. (30 dB S/N Quieting) ..... 0.8 µV (9.3 dBf)
[Europe model] (DIN)
75 ohms Mono (S/N 26 dB) ..... 0.9 µV
75 ohms Stereo (S/N 46 dB) ..... 24 µV
Image Response Ratio
[Except Europe model] ..... 40 dB
[Europe model] ..... 75 dB
IF Response Ratio
[Except Europe model] ..... 90 dB
[Europe model] ..... 75 dB
Spurious Response Ratio ..... 70 dB
AM Suppression Ratio ..... 55 dB
Capture Ratio ..... 1.5 dB
Alternate Channel Selectivity
[Except Europe model] ..... 85 dB
Selectivity (two signals, 40 kHz Dev., ±300 kHz)
[Europe model] ..... 70 dB
Signal-to-Noise Ratio
[Except Europe model] (IHF)
Mono ..... 82 dB
Stereo ..... 76 dB
[Europe model] (DIN-Weighted)
Mono (40 kHz Dev.) ..... 75 dB
Stereo (40 kHz Dev.) ..... 70 dB
Harmonic Distortion (1 kHz)
[Except Europe model]
Mono/Stereo 0.1%/0.2%
[Europe model (40 kHz Dev.)]
Mono/Stereo 0.1%/0.2%
Stereo Separation ..... 1 kHz 40 dB
Frequency Response
[Except Europe model]
30 Hz to 15 kHz ..... 0±0.5 dB
[Europe model]
30 Hz to 13 kHz ..... 0±0.5 dB
20 Hz to 15 kHz ..... 0±1.5 dB

AM (MW) SECTION

Tuning Range
[U.S.A., Canada and General models] ..... 530 to 1,710 kHz
[U.K., Australia and Europe models] ..... 531 to 1,611 kHz
Usable Sensitivity ..... 200 µV/m
Selectivity ..... 32 dB
Signal-to-Noise Ratio ..... 50 dB
Image Response Ratio ..... 40 dB
Spurious Response Ratio ..... 50 dB
Harmonic Distortion; 400Hz 0.3%

AM (LW) SECTION (TX-350L only)

Tuning Range ..... 153 to 288 kHz
Usable Sensitivity ..... 400 µV/m
Selectivity ..... 32 dB
Signal-to-Noise Ratio ..... 50 dB
Image Response Ratio ..... 30 dB
Spurious Response Ratio ..... 45 dB
Harmonic Distortion; 400 Hz 0.3%

AUDIO SECTION

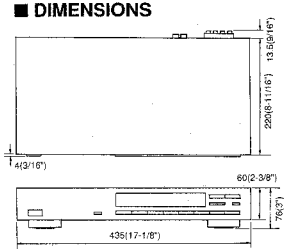
Output Level/Impedance
FM (100 % mod., 1 kHz)
[Except Europe model] ..... 500 mV/2.2 k-ohms
[Europe model (40 kHz Dev.)] ..... 400 mV/2.2 k-ohms
AM (MW) (30% mod. 400 Hz) ..... 150 mV/2.2 k-ohms
AM (LW) (30% mod. 400 Hz)
[TX-350L only] ..... 150 mV/2 k-ohms

GENERAL

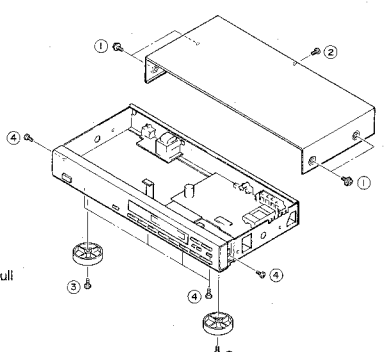
Power Supply
U.S.A. and Canada models ..... 120V, 60 Hz
Europe model ..... 230V, 50 Hz
U.K. and Australia models ..... 240V, 50 Hz
General model ..... 110-120/220-240V, 50/60 Hz
Power Consumption 7W
Dimensions (W x H x D) ..... 435 x 76 x 237.5 mm (17-1/8" x 3" x 9-3/8")
Weight ..... 2.2 kg (4 lbs. 13 oz.)
Accessories ..... AM loop antenna
Indoor FM antenna
Connection cords

Specifications subject to change without notice.

■ DIMENSIONS



■ DISASSEMBLY PROCEDURES



1. **Remo of Top Cover**
   Remove 4 screws ① and 1 screw ②, and slide the Top cover back.

2. **Removal of Front Panel**
   a. Remove the log by removing the 2 screws ③.
   b. Remove 6 screws ④ and 2 connectors, and pull the Front Panel forward.

■ ADJUSTMENTS

1. Before adjustment

1) After the power switch is pushed on, wait for 5 minutes befor measuring to be sure of the most stable operation.
2) Adjust the OSC coil and IFT with supplied screw driver.
3) Set the switches to the following positions.
   TUNING MODE AUTO
4) Make the AM section adjustments the FM section adjustment.
5) 0dBμ = 1μV Ex: 60dBμ = 1mV
   XdBμ = (X + 11.2)dBf Ex: 70dBμ = 81.2dBf

2. Measuring instruments abbreviation

FM SG : FM signal generator
SSG : Stereo signal generator
AM SG : AM signal generator
DIST. M : Distortion meter
FC : Frequency counter
ACVM : AC voltage meter
DCVM : DC voltage meter

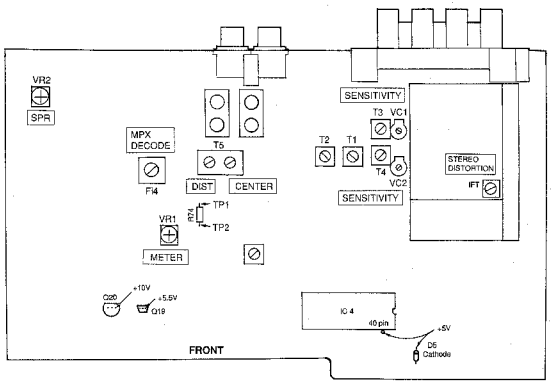
⟨POWER SUPPLY CHECK⟩

Check that the following voltages are obtained respectively across each test point and ground on tuner circuit.

Test Point	Rating or standard	Remark
+10V (Q20 Emitter)	+10V ±0.5V	Make sure that AC line voltage comes within:
+5.5V (Q19 Emitter)	+5.5V ±0.5V	
+5V (D5 Cathode)	+5V ±0.25V	

Models	AC line voltage
U, C	120V ±10%
G, E	230V ±10%
A, B	240V ±10%
R	110/120/220/240V ±10%

• TEST POINTS



⟨Confirmation of preset⟩

- Turn the POWER switch on while pressing the preset keys "1", "2" and "3" simultaneously. Confirm that the frequencies described below is changed to the preset values. (Press P4 to reset the test mode. To preset, leave the keys as they are.)
- Total of 40 stations, P1 to P8 for each A to E are reset to the preset value.
- Only for B and E models, LW frequency band is reset to the preset value. (See pages 1 to 8.)
- For the R model, AM frequency step 9 kHz to (from) 10 kHz, and FM frequency step 100 kHz to (from) 50 kHz can be switched.
- Setting of the Function
  The mode is changed to "AUTO".

		P1	P2	P3	P4	P5	P6	P7	P8
A	U, C, R	87.5M	95.1	98.1	101.5	107.9	88.1	106.1	107.9
	A, B, G, E, R	87.5k	95.1	98.1	101.5	108.0	88.1	106.1	107.9
B	U, C, R	630k	1080	1440	530	1710	900	1350	1400
	A, B, G, E, R	630k	1080	1440	531	1611	900	1350	1404
C	U, C, R, A, G	87.5M	90.1	95.1	98.1	101.5	107.9	88.1	106.1
	B, E	153k	171	225	270	288	180	207	252
D	U, C, R, A, G	630k	1080	1440	530	1710	900	1350	1400
	B, E	87.5M	90.1	95.1	98.1	101.5	108.0	88.1	106.1
E	U, C, R, A, G	87.5M	90.1	95.1	98.1	101.5	107.9	88.1	106.1
	B, E	630k	1080	1440	531	1611	900	1350	1404

CAUTION :
Using a table as shown below, write down the content of the memory preset in the tuner before setting to the test signal program mode.
(This is because setting to the test signal program mode sets the tuner memory content in the state preset by the manufacturer and erases all the memory preset by the user.)
Upon completion of the test signal program, set to the tuner mode again and enter the preset memory as written in the table.

Preset Group	P1	P2	P3	P4	P5	P6	P7	P8
A								
B								
C								
D								
E								

⟨Confirmation of LCD unit⟩

Confirmation of the display

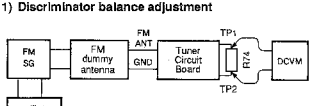
1 The test mode is entered and all the segments of the LCD light when the POWER switch is turned on while pressing "P1", "P2" and "P3" simultaneously.
2 After 1, the display mode is changed by pressing the following keys.
  1 P1 All lit mode (All the segments are lit)
  2 P2 All turned off mode (All the segments are turned off)
  3 P3 "8" is lit at the third position from the right.
  4 P4 The test mode is switched to normal mode.

⟨FM TUNER SECTION⟩

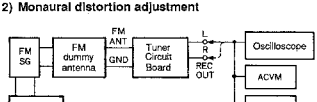
- Use 19 kHz L.P.F. to measure the output.
- 100 % modulation means that the Frequency Deviation is 75 kHz. (R, U, C, A, B)
- For the G model, Frequency Deviation is 40 kHz.
- For the G, B models, install the Matching Transformer and connect FM SG.

● Connection diagram (Measuring instruments)

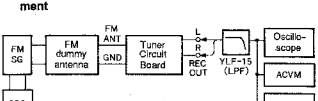
1) Discriminator balance adjustment



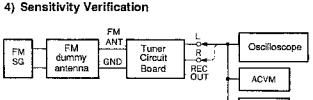
2) Monaural distortion adjustment



3) Stereo distortion adjustment/separation adjustment



4) Sensitivity Verification

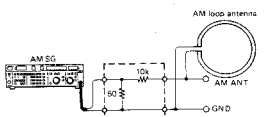


Step	Adjustment item	Signal (ANT IN)	Reception frequency	Adjusted point	Test point	Rating
1	Rough adjustment of discriminator balance	FM ANT (75Ω) 98.1MHz 70dBμ MONO 100Hz 100% modulation	98.1MHz (A-P3)	T5 (SENTER)	Both ends of R74 (TP1-TP2)	DC 0V±100mV
2	Rough adjustment of monaural distortion	Same as Step 1.	98.1MHz (A-P3)	T5 (MONO)	OUT PUT L, R	Minimize the distortion.
3	Fine adjustment of discriminator balance	Same as Step 1.	98.1MHz (A-P3)	T5 (SENTER)	Both ends of R74 (TP1-TP2)	DC 0V±10mV
4	Fine adjustment of monaural distortion	Same as Step 1.	98.1MHz (A-P3)	T5 (MONO)	OUT PUT L, R	Minimize the distortion (to 41dB or less).
5	Verification of discriminator balance	Same as Step 1.	98.1MHz (A-P3)	T5 (MONO)	Both ends of R74 (TP1-TP2)	DC 0V±10mV
6	Stereo distortion	FM ANT (75Ω) 98.1MHz 70dBμ Stereo L or R 1kHz, 100% modulation	98.1MHz (A-P3) *Tuning mode should be AUTO.	Front end IFT	OUT PUT L, R	Distortion should be minimized (-33dB or less) *STEREO indicator should light. * Note that over-turning IFT will reduce sensitivity.
7	Verification of monaural distortion	FM ANT (75Ω) 98.1MHz 70dBμ MONO 1kHz, 100% modulation	98.1MHz (A-P3)		OUT PUT L, R	41dB or less
8	Verification of sensitivity	FM ANT (75Ω) 88.1MHz 98.1MHz 106.1MHz MONO 1kHz, 100% modulation	88.1MHz (A-P6) 98.1MHz (A-P3 106.1MHz (A-P7)		ANT (75Ω)	Set the tuning mode to MAN'L MONO. S/N should be 30dB at each frequency of 88.1MHz,98.1MHz, and 106.1MHz. Check to ensure that the voltage at the ANT terminal is 3dBμ or less.
9	Separation	FM ANT (75Ω) 98.1MHz 70dBμ Stereo L or R 1kHz, 100% modulation	98.1MHz (A-P3)	VR2	OUT PUT L, R	With SSG output at L or R, the signal leakage level at the other channel should be minimized. 28dB or more
10	Signal meter	FM ANT (75Ω) 98.1MHz 45dBμ MONO 1kHz 30% modulation	98.1MHz (A-P3)	VR1		Adjust so that all signal meters light.
		-10dBμ or less				Check to ensure that singal meters turn OFF.
11	Verification of auto tuning	FM AMT (75Ω) 98.1MHz 26dBμ STEREO L or R 1kHz 30% modulation	98.1MHz (A-P3)			• Automatic reception should be available when the tuning key is moved UP and DOWN. • The stereo indicator should light. • Voice muting should be applied during tuning.

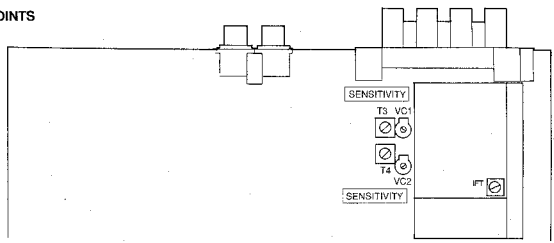
〈AM TUNER SECTION〉

- Connect the AM loop antenna to the AM ANT terminal.
- Connect the AM dummy antenna for adjustment to AM AG.
- Check that the AM SG precision is within ±0.1kHz.

AM DUMMY ANTENNA CONNECTION



• TEST POINTS



Step	Item to be adjusted	Connection terminal	Instrument required	Adjustment locations	Adjustment method	Rating or standard
1	Sensitivity		AM dummy antenna AM SG 630kHz (MW) 1440kHz (MW) 171kHz (LW) 270kHz (LW) 50dBμ MONO 400Hz 30% MOD.	T3 VC1 T4 VC2	Adjust T3 at 630kHz and VC1 at 1440kHz to make the output reading maximum when the preset CH B-1, B-3, C-2, and C-4 are received accordingly. (Adjust T4 at 171kHz and VC2 at 270kHz.)	Adjust 630kHz and 1440kHz for U, C, R, A and G model.
		OUTPUT	ACVM			
2	Verification of sensitivity	AM ANT	AM dummy antenna AM SG 630kHz 1080kHz 1440kHz 171kHz 225kHz 270kHz 60dBμ 400Hz, 30% MOD.		Find the AM loop antenna to the AM ANT terminal. Verify that the each frequencies is received with sensitibity of under 60dBμ when the preset CH B-1, B-2, B-3, C-2, C-3, C-4 are received accordingly.	60dBμ or less
		OUTPUT	ACVM			
3	Verification of Signal meter	AM ANT	AM dummy antenna AM SG 1080kHz 225kHz 100dBμ 400Hz, 30% MOD.		All signal quality indicators lights up.	
4		AM ANT	AM dummy antenna AM SG 1080kHz 225kHz −10dBμ 400Hz, 30% MOD.		Check that all the signal meters are turned off.	
5	Verification of auto-search	AM ANT	AM dummy antenna AM SG 1080kHz 225kHz 65dBμ 400Hz, 30% MOD.		Check that auto search reception is possible with the UP/DOWN switch.	Tuning MODE → AUTO

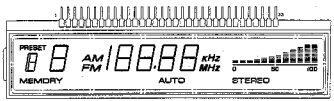
⟨DIGITAL CONTROL SECTION⟩

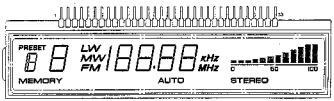
Step	Confirmation item	Connection terminal	Instrument required	Operation key	Confirmation method
0	Power mute			POWER SW	Confirm that the mute circuit is in operation when the POWER switch is turned ON/OFF.
1	Preset memory	300Ω/75Ω FM ANT	FM SG, SSG 98.1MHz ± 1kHz 70dBμ STEREO, L, R 1kHz, 100% MOD.	FM, AM TUNING MODE TUNING (UP or DOWN) MEMORY PRESET STATION P1–P8 A/B/C/D/E	1. Receive FM 98.1MHz by means of auto search. 2. press MEMORY key → MEMORY indicator flashes about 5 seconds. 3. Select A with A/B/C/D/E SW. → "A" lights. 4. Press P1 → "1" lights and MEMORY indicator goes off. MEMORY indicator goes OFF A1 indicator lights.
		AM ANT	AM SG AM dummy antenna 1080kHz ± 0.1kHz 80dBμ 400Hz, 30% MOD.		5. Receive AM 1080kHz 6. Press MEMORY key → MEMORY indicator flashes about 5 seconds. 7. Select B with A/B/C/D/E SW. → "B" lights. 8. Press P1 → "1" lights and MEMORY indicator goes off. MEMORY indicator goes OFF B1 indicator lights.
					9. Press A1 and B1 and check that Content is read out properly. → A1 anb B1 light.
2	Tuning modes	Same as step 1	Same as step 1	FM TUNING MODE TUNING (UP or DOWN)	Tune to FM 98.1MHz and check that during MAN'L/MONO reception FM is forced monaural. → AUTO indicator goes off. STEREO indicator goes off.
					Check that auto search stop when tuned. → AUTO indicator lights. STEREO indicator lights.
3	Last station memory			PRESET STATION P1 A/B/C/D/E	1. Press A1 → FM 98.1MHz is shown. 2. Turn POWER key OFF. 3. After 5 seconds, turn POWER key on. 4. Check that A1 content is read out. → A1 indicator lights. FM 98.1MHz is displayed.
4	Reception frequency band confirmation				Check that the standard frequency band is searched when auto tuning in each band ⟨FM/MW/LW⟩ is performed.
5	Frequency step confirmation				Check that frequency step in each band confirms the standard when the frequency is changed one step at the time during manual tuning.

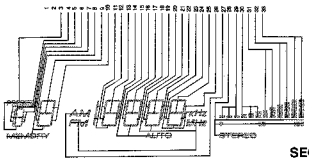
FM	87.5~107.9 MHz	U, C, R
	87.50~108.00 MHz	A, B, G, E, R
AM (MW)	530~1710 kHz	U, C, R
	531~1611 kHz	A, B, G, E, R
LW	153~288 kHz	B, E only

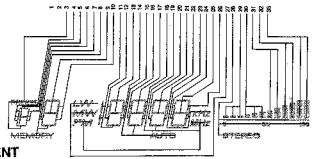
FM	200 kHz	U, C
	100 kHz	R
	50 kHz	A, B, G, E, R
AM (MW)	10 kHz	U, C, R
	9 kHz	A, B, G, E, R
LW	1 kHz	B, E only

- LCD-8169B1JP(TX-350)/LCD81701BJP(TX-350L)

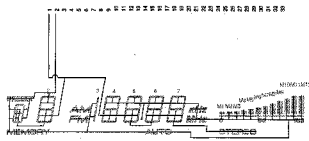


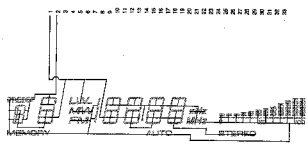






SEGMENT





COMMON

NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
COM1	—	COM	PRESET	1ef	1a	1bc	MEMORY	2f	2a	2b	3bc	4f	4a	4b	AUTO	5f	5a	5b	FM,DP MHZ
COM2	COM	—	1d	1g	1ij	1h	2d	2e	2g	2c	4d	4e	4g	4c	5d	5e	5g	5c	5d

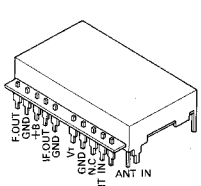
NO	20	21	22	23	24	25	26	27	28	29	30	31	32	33
COM1	6f	6a	6b	KHZ	7f	7a	7b	MW	1)	M1,M2 M3	M4,M5 M6	M7,M8	M9,M10	M11,M12
COM2	6e	6g	6c	7d	7e	7g	7c	LW	STEREO	—	—	—	—	—

1) 0 50 100

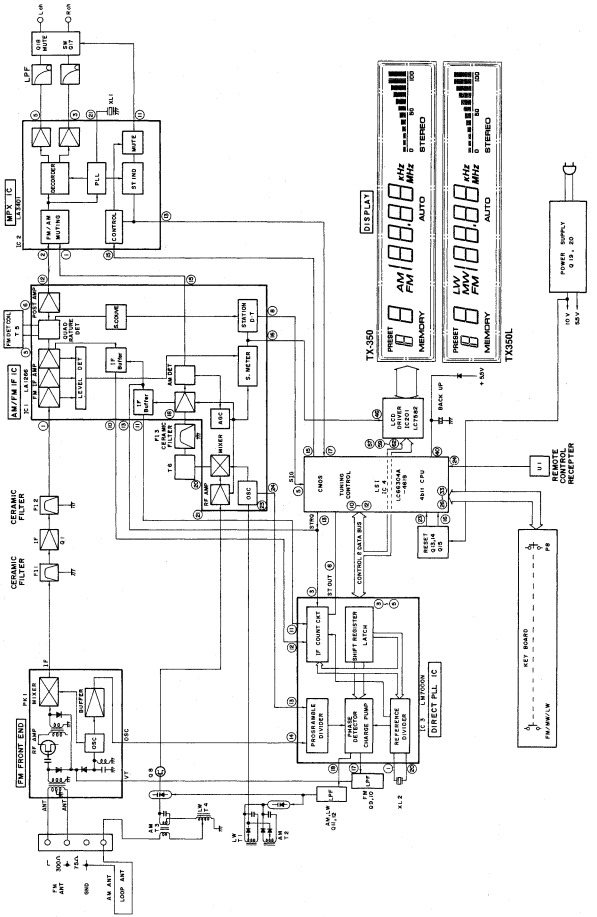
TX-350L only

TX-350 : AM, TX-350L : MW

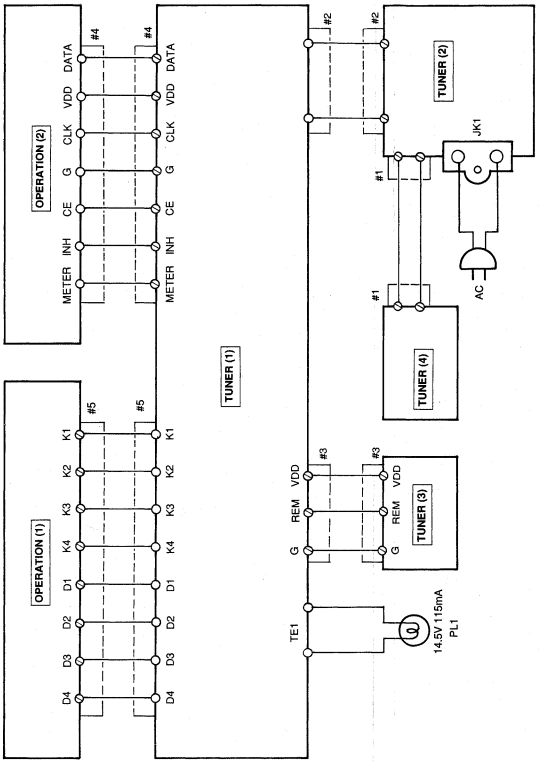
- **PK : VC21930 (FRONT END PACK)**
  [U, C, R, A, B, E models]
- **PK : VE155800 (FRONT END PACK)**
  [G models]



■ BLOCK DIAGRAM

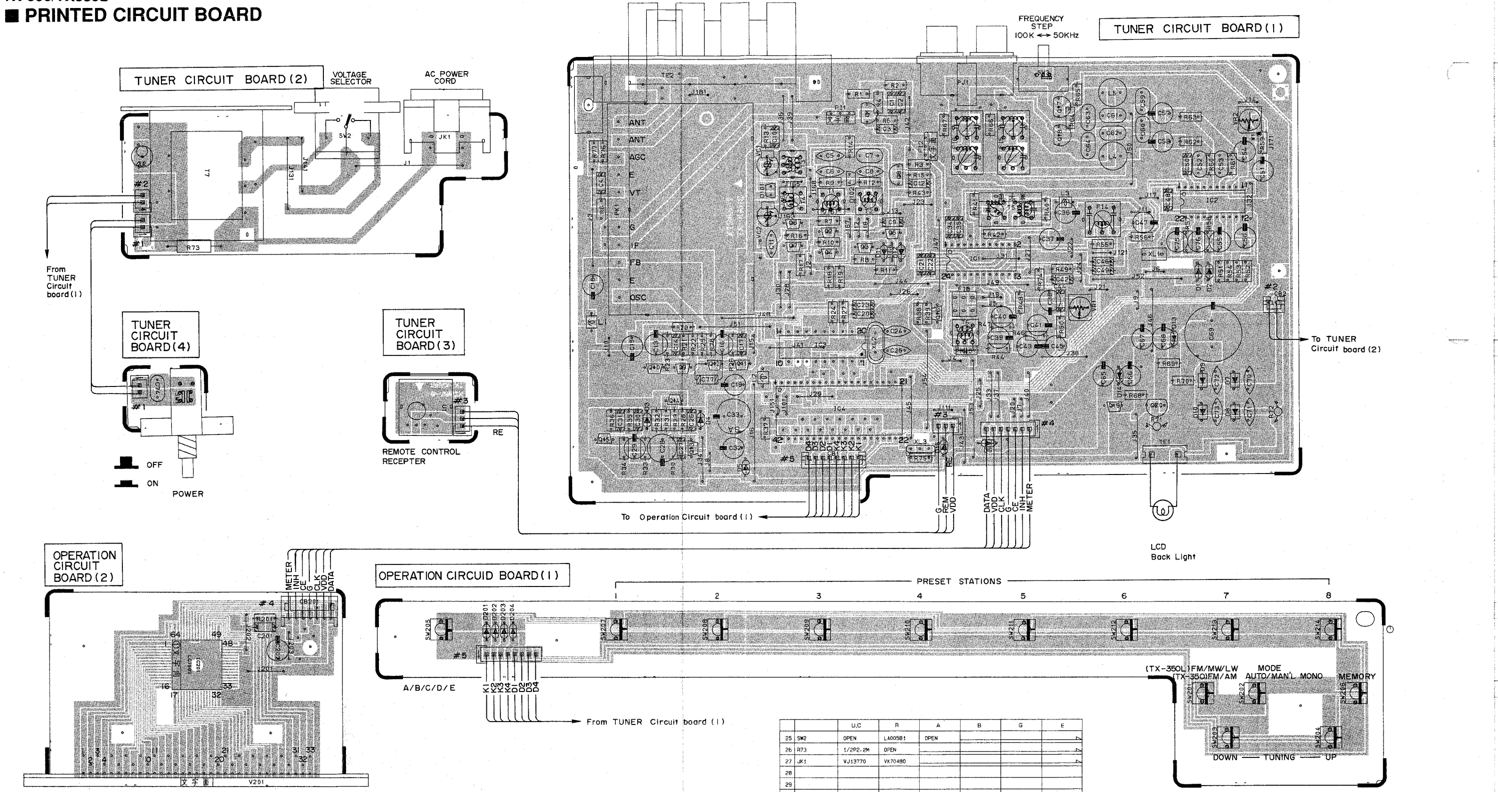


■ WIRING



TX-350/TX350L

■ PRINTED CIRCUIT BOARD



*		U·C	R	A	B	G	E
1	TE2	VE36520		VE36500			
2	PK1	VC21930				VE15580	VC21930
3	R76	OPEN				470K	OPEN
4	R77	OPEN				390K	OPEN
5	J101	SHORT	OPEN				
6	J111	OPEN		SHORT			
7	SW3	OPEN	VF54120	OPEN			
8	C46	100P				OPEN	100P
9	J121	SHORT				OPEN	SHORT
10	R55	OPEN				4.7K	OPEN
11	FI4	OPEN				GE20053	OPEN
12	R56	10K				22K	10K

*		U·C	R	A	B	G	E
13	R59	22K				SHORT	22K
14	C52·53	© 910P		© 620P		Ⓟ 390P/100	© 620P
15	R60·61	82K				120K	82K
16	C59·60	2700P			OPEN	2700P	OPEN
17	L4·5	39mH			OPEN	39mH	OPEN
18	C61·62	1000P			OPEN	1000P	OPEN
19	C63·64	3900P			OPEN	3900P	OPEN
20	FI5·6	OPEN			VJ12310	OPEN	VJ12310
21							
22	T7	X0676	X0677				
23	J131	OPEN	SHORT	OPEN			
24	J141	SHORT	OPEN	SHORT			

		U,C	R	A	B	G	E
25	SW2	OPEN	LA00581	OPEN			
26	R73	1/2P2.2M	OPEN				
27	JK1	VJ13770	VK70480				
28							
29							
30	J151	OPEN			SHORT	OPEN	SHORT
31	R25	OPEN			3.3K	OPEN	3.3K
32	R16	OPEN			4.7K	OPEN	4.7K
33	R10·11·18·19 26·27	OPEN			10K	OPEN	10K
34	R7·8	OPEN			33K	OPEN	33K
35	R9·17	OPEN			47K	OPEN	47K
36							
37	C17	OPEN			0.047/16	OPEN	0.047/16
38	C16	OPEN			1/50	OPEN	1/50
39	C11	OPEN			47P	OPEN	47P
40	C6	OPEN			120P	OPEN	120P
41	C5	OPEN			180P	OPEN	180P
42	D11·12	OPEN			1SS133	OPEN	1SS133
43	Q6·11·12	OPEN			C3330(R·S·T)	OPEN	C3330(R·S·T)
44	Q2~5·7	OPEN			A1317(R·S·T)	OPEN	A1317(R·S·T)
45	VC2	OPEN			VC93730	OPEN	VC93730

		U,C	R	A	B	G	E
46	T1	OPEN			VC86740	OPEN	VC86740
47	T4	OPEN			VC86760	OPEN	VC86760
48	J161,163~168	SHORT			OPEN	SHORT	OPEN
49							
50	T2	VK64640			VC86750	VK64640	VC86750
51	T3	VK64650			VC86770	VK64650	VC86770
52	C8	15P			5P	15P	5P
53	J181	OPEN		SHORT	OPEN	SHORT	
54	R78	10K			OPEN	10K	OPEN
55	C77	0.01/16			OPEN	0.01/16	OPEN
56	R15	1K			2.2K	1K	2.2K

PARTS LIST

■ ELECTRICAL PARTS

■ WARNING

Components having special chracteristics are maked ⚠ and must be replaced with parts having specifications equal to those originally instaed.

- Carbon resistors (1/6W or 1/4W) are not included in the ELECTRICAL PARTS list. For the parts No. of the carbon resistor, refer to last page.

Ref. NO.	PART NO.	Description		部品名	Remarks	Markets	ランク	
*	VK646800	TUNER CIRCUIT BOARD		チューナーシート	TX-350	UC		
*	VK646900	TUNER CIRCUIT BOARD		チューナーシート	TX-350	R		
*	VK647000	TUNER CIRCUIT BOARD		チューナーシート	TX-350	A		
*	VK647100	TUNER CIRCUIT BOARD		チューナーシート	TX-350L	B		
*	VK647200	TUNER CIRCUIT BOARD		チューナーシート	TX-350	G		
*	VK647300	TUNER CIRCUIT BOARD		チューナーシート	TX-350L	E		
	FA153100	MYLAR FILM CAP	1000pF 50V	マイラーコン	C61,62	UCRAG		
	FA153270	MYLAR FILM CAP	2700pF 50V	マイラーコン	C59,60	UCRAG		
	FA153390	MYLAR FILM CAP	3900pF 50V	マイラーコン	C63,64	UCRAG		
	FA154220	MYLAR FILM CAP	0.022uF 50V	マイラーコン	C74			
	UA652910	MYLAR FILM CAP	910pF 50V	マイラーコン	C52,53	UCR		
	UA652620	MYLAR FILM CAP	620pF 100V	マイラーコン	C52,53	ABE		
	UT452390	POLYPROPYLENE FILM CAP	390pF 100V	PPコン	C52,53	G		
	UT452390	POLYPROPYLENE FILM CAP	390pF 100V	PPコン	C7			
	FI544100	CERAMIC CAP	0.01uF 50V	セラコン	C70-73			
	VA760200	CERAMIC CAP	5pF 50V (CH)	セラコン	C8	BE		
	VA760800	CERAMIC CAP	15pF 50V (CH)	セラコン	C8	UCRAG		
	VA761200	CERAMIC CAP	33pF 50V (CH)	セラコン	C24,25			
	VA761400	CERAMIC CAP	47pF 50V (CH)	セラコン	C11	BE		
	VA777400	CERAMIC CAP	120pF 50V (CH)	セラコン	C6	BE		
	VA777600	CERAMIC CAP	180pF 50V (CH)	セラコン	C5	BE		
	VF466700	CERAMIC CAP	47pF 50V	円筒セラコン	C20			
	VF466800	CERAMIC CAP	100pF 50V	円筒セラコン	C23			
	VF466800	CERAMIC CAP	100pF 50V	円筒セラコン	C46	UCRABE		
	VF466900	CERAMIC CAP	470pF 50V	円筒セラコン	C50			
	VF467000	CERAMIC CAP	1000pF 50V	円筒セラコン	C21,22			
	VF467300	CERAMIC CAP	0.01uF 16V	円筒セラコン	C1-4,9,10,12,26,27,30, 31,34,35,42,44			
	VF467300	CERAMIC CAP	0.01uF 16V	円筒セラコン	C77	UCRAG		
	VJ599000	CERAMIC CAP	0.047uF 16V	円筒セラコン	C14,48,49			
	VJ599000	CERAMIC CAP	0.047uF 16V	円筒セラコン	C17	BE		
	UJ817470	ELECTROLYTIC CAP	47uF 6.3V	ケミコン	C32			
	UJ837100	ELECTROLYTIC CAP	10uF 16V	ケミコン	C15,18,19,36,38,39,41, 47,51,54,65-67			
	UJ837330	ELECTROLYTIC CAP	33uF 16V	ケミコン	C29			
	UJ838100	ELECTROLYTIC CAP	100uF 16V	ケミコン	C68			
	UJ838220	ELECTROLYTIC CAP	220uF 16V	ケミコン	C28			
	UJ865470	ELECTROLYTIC CAP	0.47uF 50V	ケミコン	C45,76			
	UJ866100	ELECTROLYTIC CAP	1uF 50V	ケミコン	C13,55-58,75			
	UJ866100	ELECTROLYTIC CAP	1uF 50V	ケミコン	C16	BE		
	UJ866220	ELECTROLYTIC CAP	2.2uF 50V	ケミコン	C37			
	UJ866330	ELECTROLYTIC CAP	3.3uF 50V	ケミコン	C43			
	UJ866470	ELECTROLYTIC CAP	4.7uF 50V	ケミコン	C40			
*	UH149220	ELECTROLYTIC CAP	2200uF 25V	ケミコン	C69			
	VB170100	ELECTROLYTIC CAP	4700uF 5.5V	バックアップケミコン	C33			
	VC463300	TRIMMER CAP	7pF ECR-HA007A11	トリマーコン	VC1			
	VC937300	TRIMMER CAP	20pF ECR-HA020D11	トリマーコン	VC2	BE		
	XD676001	POWER TRANSFORMER		電源トランス	T7	UC		⚠
	XD677001	POWER TRANSFORMER		電源トランス	T7	RABGE		⚠
	GE901850	COIL,INDUCTOR	39mH	固定インダクター	L4,5	UCRAG		

＊：New Parts （新規部品）

ランク：Japan only

Ref. NO.	PART NO.	Description		部品名	Remarks	Markets	ランク
	GE100470	AM COIL	450KHz	AM IFTコイル	T6		
	VC218600	COIL,FM DETECT	10.7MHz	FM検波コイル	T5		
	VC867400	COIL,OSC.	LW,520uH	OSCコイル	T1	BE	
*	VK646400	COIL,OSC.	MW,118uH	OSCコイル	T2	UCRAG	
	VC867500	COIL,OSC.	MW,132uH	OSCコイル	T2	BE	
	VC867600	COIL,ANTENNA	LW,3.5MHz	ANTコイル	T4	BE	
*	VK646500	COIL,ANTENNA	MW,340uH	ANTコイル	T3	UCRAG	
	VC867700	COIL,ANTENNA	MW,3.5MHz	ANTコイル	T3	BE	
	V1546100	COIL	220uH	固定コイル	L1-3		
	HV454150	FLAME PROOF CARBON RESISTOR	15Ω 1/4W	不燃化カーボン抵抗	R72		⚠
	HV455120	FLAME PROOF CARBON RESISTOR	120Ω 1/4W	不燃化カーボン抵抗	R71		⚠
	HZ005110	CARBON RESISTOR	2.2MΩ 1/2W	カーボン抵抗	R73	UC	⚠
	IG158100	IC	LA3401	IC	IC2		
	X8760001	IC	LA1266	IC	IC1		
*	X1583A00	IC	LC66304A-4619	IC	IC4		
	X8818001	IC	LM7000N	IC	IC3		
	VF928500	LIGHT DETECTING MODULE	GP1U501X	リモコン受光ユニット	U1		
	LA005810	VOLTAGE SELECTOR	HXW0206	電圧切替器	SW2	R	
	VF541200	SLIDE SWITCH	SSSF11	スライドSW	SW3	R	
	VC277200	PUSH SWITCH	2-2	プッシュSW	SW1		
	LA002000	LAPPING TERMINAL	2P i-TYPE P=7.5	ラッピング端子	TE1		
	VE365200	ANTENNA TERMINAL	4P	アンテナ端子	TE2	UCR	
	VE385000	ANTENNA TERMINAL/DIN	3P	アンテナ端子	TE2	ABGE	
	VE366700	PIN JACK	2P	ピンジャック	PJ1		
	VJ137700	AC INLET		ACインレット	JK1	UC	
*	VK704800	AC INLET		ACインレット	JK1	RABGE	
	VD004500	BASE PIN	PH 2P TE	ベースピン	CB2		
	VD005100	BASE PIN	PH 8P TE	ベースピン	CB1		
	VC219300	FRONT-END PACK,FM	TPFG10U117A	FMフロントエンドパック	PK1	UCRABE	
	VE155800	FRONT-END PACK,FM	TPFG3E132A	FMフロントエンドパック	PK1	G	
	GE200530	FILTER	114KHz	LCフィルター	FI4	G	
	VJ123100	FILTER,MPX	TFB-2D	MPXフィルター	FI5,6	BE	
	GG000560	CERAMIC FILTER	SFE10.7MS3GHY-A	セラミックフィルタ	FI1,2		
	VC219000	CERAMIC FILTER	SFZ450JL3	セラミックフィルター	FI3		
	QU003800	QUARTZ CRYSTAL UNIT	7.2MHz	水晶振動子	XL2		
	GG000750	CERAMIC RESONATUR	18.95MHz CSB456F11	セラミック振動子	XL1		
	VE906000	CERAMIC RESONATOR	4MHz CST4.00MGW	セラミック振動子	XL3		
	VJ694000	PRE-SET POTENTIOMETER	B47KΩ	半固定VR	VR1,2		
	VC218700	TRANSISTOR	2SA1317 R,S,T	トランジスタ	Q14,16		
	VC218700	TRANSISTOR	2SA1317 R,S,T	トランジスタ	Q2-5,7	BE	
	1C206000	TRANSISTOR	2SC2060	トランジスタ	Q20		⚠
	1C287820	TRANSISTOR	2SC2878 A,B	トランジスタ	Q17,18		
	VB433300	TRANSISTOR	2SC1809 M,N,P	トランジスタ	Q1		
	VC218900	TRANSISTOR	2SC3330 R,S,T	トランジスタ	Q9,10,13,15,19		
	VC218900	TRANSISTOR	2SC3330 R,S,T	トランジスタ	Q6,11,12	BE	
	IE104100	FET	2SK161 O,Y,GR	FET	Q8		
	IF004600	DIODE	1SS133	ダイオード	D1-6,15		
	IF004600	DIODE	1SS133	ダイオード	D11,12	BE	
	VH770800	DIODE	1SR139-100 T-32	ダイオード	D7-10		
	VG438100	ZENER DIODE	MTZJ6.2C	ツェナーダイオード	D14		

＊：New Parts（新規部品）　　ランク：Japan only

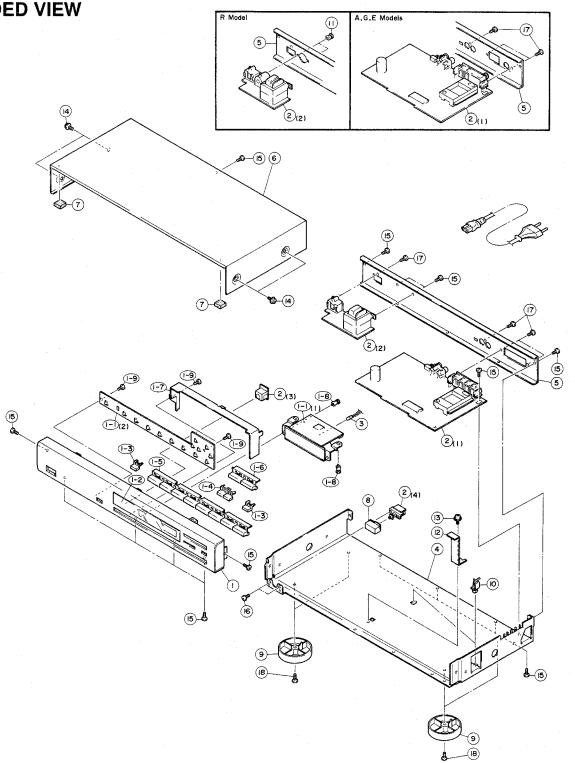
Ref. NO.	PART NO.	Description		部品名	Remarks	Markets	ランク
	VG439600	ZENER DIODE	WTZJ10C	ツェナーダイオード	D13		
	IF002200	AM VARACTOR DIODE	SVC321	AMバラクターダイオード	D101,102		
	BB009510	GROUND METAL		ランド金具			
*	VK628900	OPERATION CIRCUIT BOARD		オペレーションシート		UCRAG	
*	VK629000	OPERATION CIRCUIT BOARD		オペレーションシート		BE	
	UA252680	MYLAR FILM CAP	680pF 50V	マイラーコン	C201		
	UJ837100	ELECTROLYTIC CAP	10uF 16V	ケミコン	C202		
	XB417001	IC	LC7582	IC	IC201		
*	VK276700	LCD	LCD8169B1JP	LCD表示器	V201	UCRAG	
*	VK317300	LCD	LCD8170B1JP	LCD表示器	V201	BE	
	VG392900	TACT SWITCH	SKHVAA	タクトSW	SW201-214		
	VD005900	BASE PIN	PH 7P SE	ベースピン	CB201		
	IF004600	DIODE	1SS133	ダイオード	D201-204		
	VE299800	REFLECTOR		リフレクタ			
	CB605620	PLASTIC RIVET	NO.1057	プラリベット			
	VH272800	SHEET,DIFFUSION		シート			
	VF444500	CAP,LAMP		ランプキャップ			

*：New Parts （新規部品）

ランク：Japan only

TX-350/TX350L

■ EXPRODED VIEW

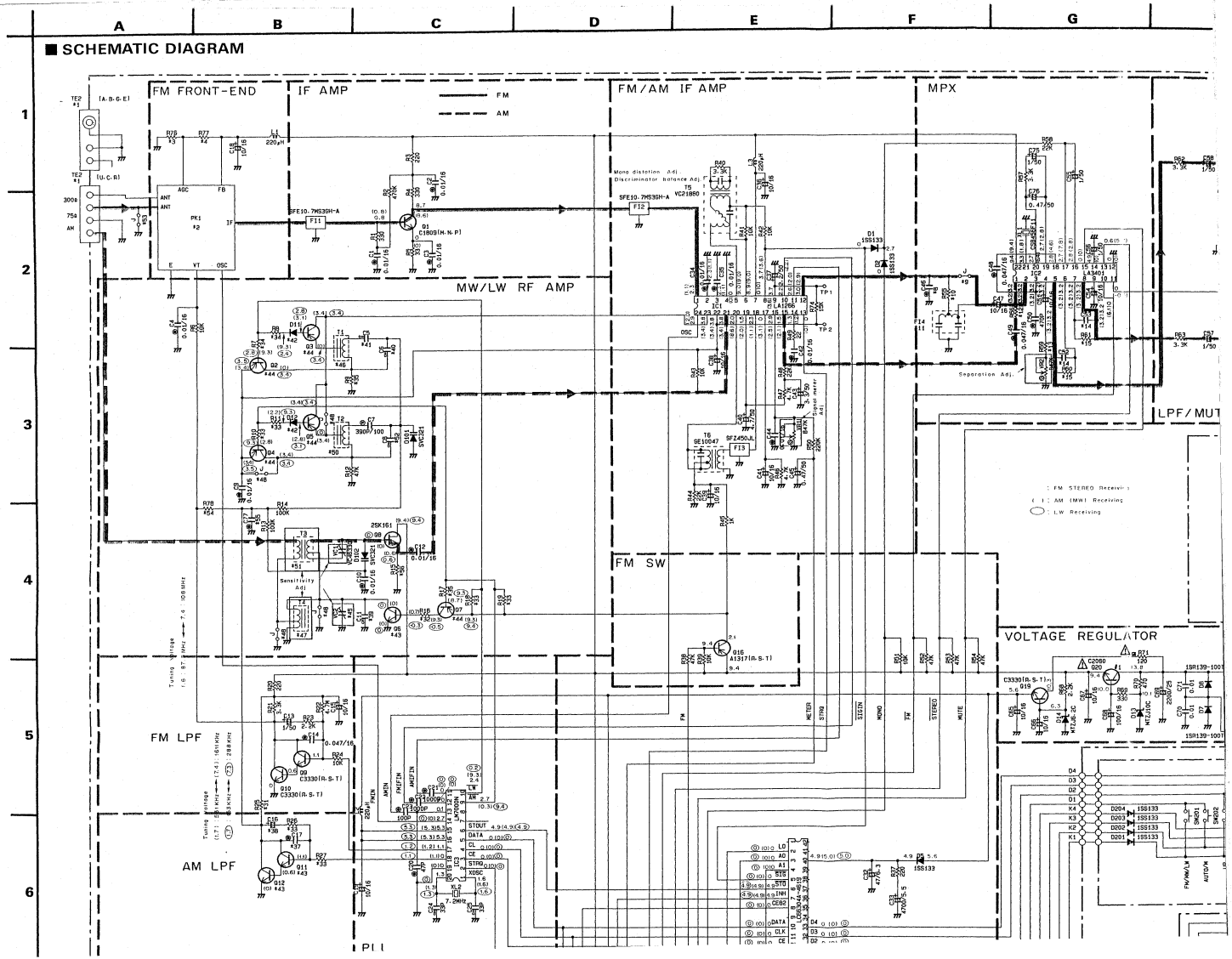


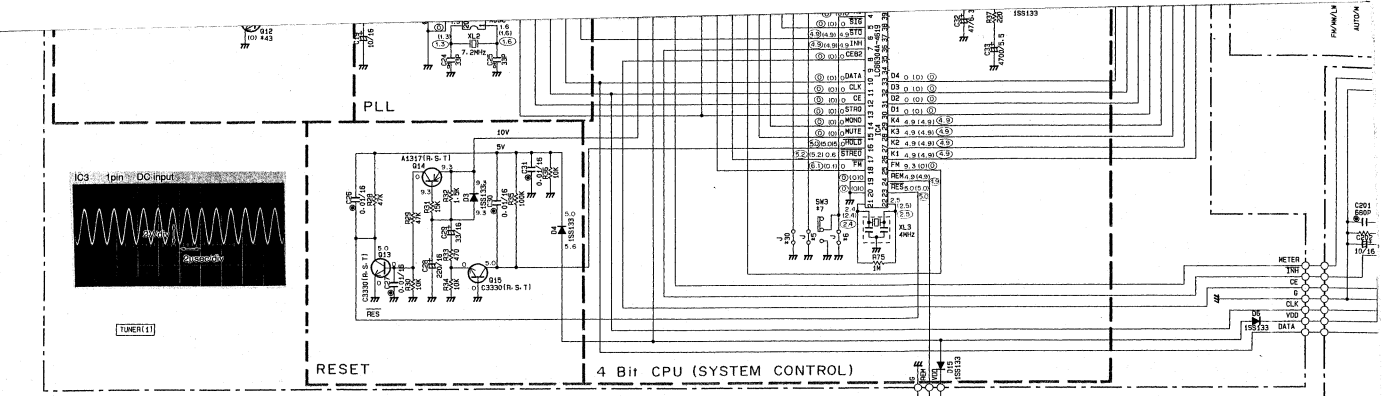
Ref. NO.	PART NO.	Description		部品名	Remarks	Markets	ランク
		ACCESSORIES		付属品			
	VG718700	PIN PLUG CORD	1.0m	ピンピンコード			
	VC421100	POWER CORD	7A 125V 2.0m	電源コード		UC	
	VE368800	POWER CORD	6A 250V 1.8m	電源コード		R	
	MG002160	POWER CORD	2.5A 250V 1.8m	電源コード		A	
	MG002150	POWER CORD	2.5A 250V 1.8m	電源コード		GE	
*	VK815800	POWER CORD	2.5A 250V 1.8m	電源コード		B	
	VG804900	ANTENNA,FM	75Ω	FMアンテナコード		UCR	
	VG805000	ANTENNA,FM	PAL	FMアンテナコード		BAGE	
	VE366200	LOOP ANTENNA	AM	ループアンテナ			

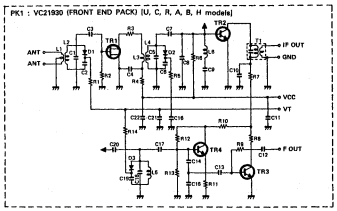
※：New Parts （新規部品）

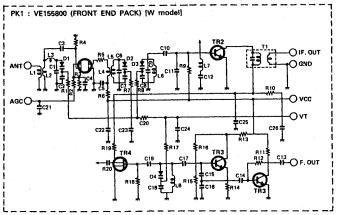
ランク：Japan only

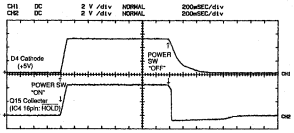
■ SCHEMATIC DIAGRAM

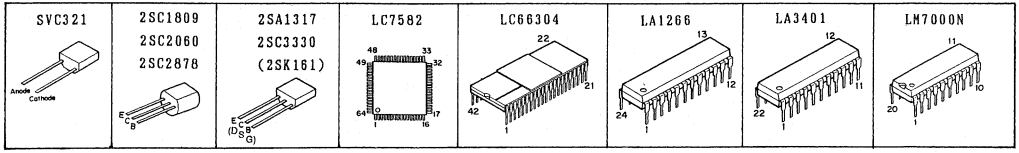










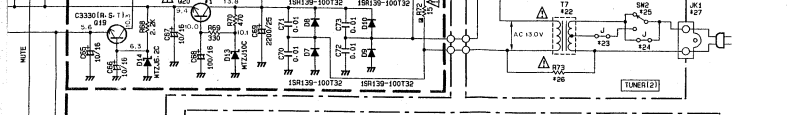


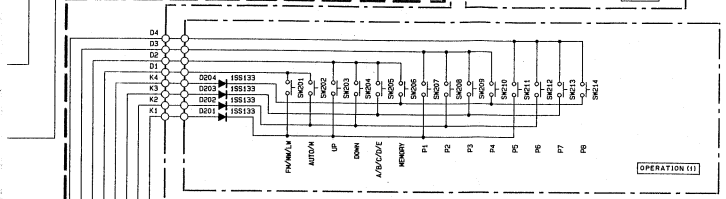
CAPACITOR

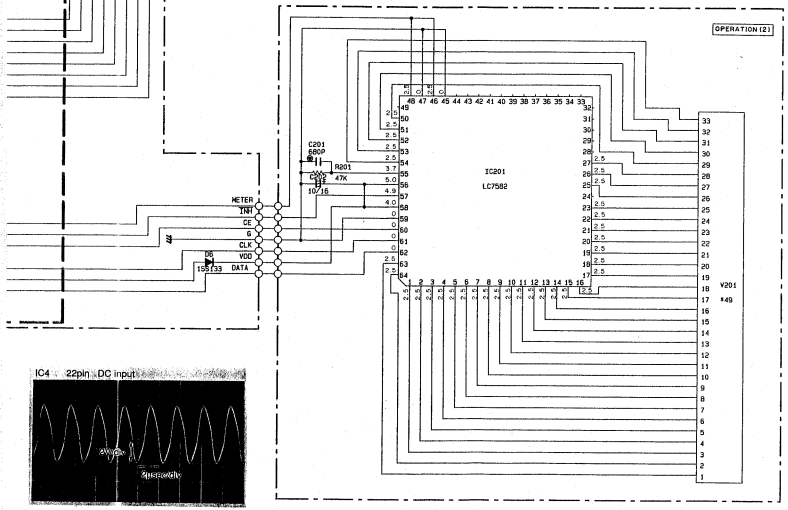
REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	
◎	TANTALUM CAPACITOR		
NO MARK	CERAMIC CAPACITOR	
⊕	AXIAL LEAD CERAMIC CAPACITOR	
⊖	POLYESTER FILM CAPACITOR	
○	POLYSTYRENE FILM CAPACITOR	‖
◎	MICA CAPACITOR	
◎	POLYPROPYLENE FILM CAPACITOR	
●	SEMICONDUCTIVE CERAMIC CAPACITOR	

RESISTOR

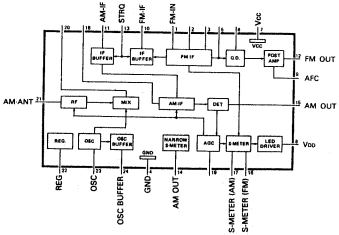
REMARKS	PARTS NA
NO MARK	CARBON FILM RESIS
◇	CARBON FILM RESIS
△	METAL OXIDE FILM
△	METAL FILM RESIS
⊠	METAL PLATE RESIS
◪	FIRE PROOF CARBON
□	CEMENT MOLDED RES
⊘	SEMI VARIABLE RES
■	CHIP RESISTOR

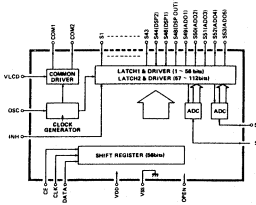




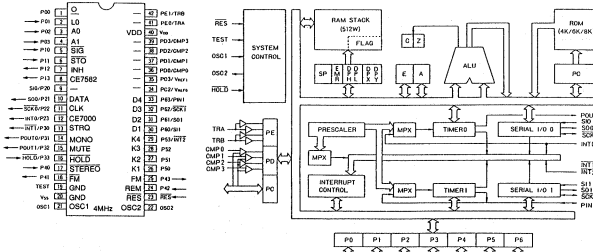


IC4 : 22pin DC input





- **IC4 : LC66304A-4619 (4 bit μ-com)**



Pin No.	Pin Name	I/O	Function	
1	P00	–	NC	
2	P01	I	L0	Model selection
3	P02	I	A0	
4	P03	I	A1	
5	P10	I	SIG	Receiving mode: L
6	P11	I	STO	IF count and given level reached: L
7	P12	O	INH	LC7582 reset mode
8	P13	O	CE7582	Chip selection for LC7582
9	S/10P20	–	NC	
10	SO0/P21	O	DATA	Control data output
11	SCK0/P22	O	CLK	Clock output synchronously to data
12	INT0/P23	O	CE7000	Chip selection for LM7000N
13	INT1/P30	O	STRQ	Output H set duration when SIG: L
14	POUT0/P31	O	MONO	Monaural control output
15	POUT1/P32	O	MUTE	Muting output
16	HOLD/P33	I	HOLD	Backup mode: L
17	P40	I	STEREO	Stereo input mode: L
18	P41	O	FM	When FM selected: L
19	TEST	I		GND
20	Vss	I		GND
21	OSC1	I		Clock input

Pin No.	Pin Name	I/O	Function	
22	OSC2	O		Clock output
23	RES	I		Reset mode: L
24	P42	I	REM	Remote control input
25	P43	O	FM	When FM selected: H
26	P50	O	K1	Key scan digit output
27	P51	O	K2	
28	P52	O	K3	
29	INT2/P53	O	K4	
30	SI1/P60	I	D1	Key scan digit input
31	SO1/P61	I	D2	
32	SCK1/P62	I	D3	
33	PIN1/P63	I	D4	
34	VREF0/PC2	–	NC	
35	VREF1/PC2	–	NC	
36	CMP0/PD0	–	NC	
37	CMP1/PD1	–	NC	
38	CMP2/PD2	–	NC	
39	CMP3/PD3	–	NC	
40	VDD	I	VDD	+5 V power input
41	TRA/PE0	–	NC	
42	TRB/PE1	–	NC	

CAUTION

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

* All voltages are measured with a 10MΩ/V DC electric volt meter.

* Schematic diagram is subject to change without notice.

CITOR

MARKS	PARTS NAME	
MARK	ELECTROLYTIC CAPACITOR	⚠
◇	TANTALUM CAPACITOR	
MARK	CERAMIC CAPACITOR	
◎	AXIAL LEAD CERAMIC CAPACITOR	
○	POLYESTEL FILM CAPACITOR	‖
○	POLYSTYRENE FILM CAPACITOR	
○	MICA CAPACITOR	
○	POLYPROPILENE FILM CAPACITOR	
▶	SEMICONDUCTIVE CERAMIC CAPACITOR	

RESISTOR

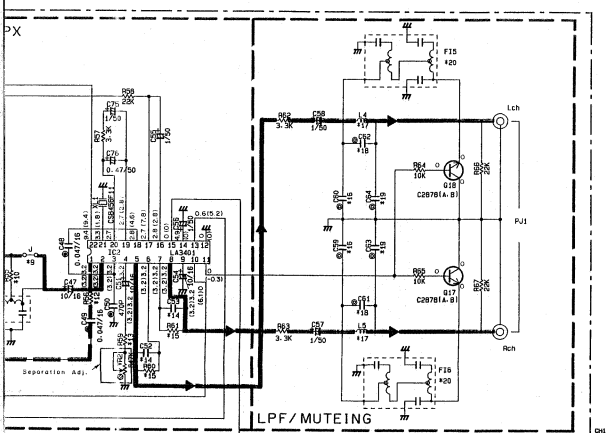
REMARKS	PARTS NAME	
NO MARK	CARBON FILM RESISTOR (1/6W)	
☑	CARBON FILM RESISTOR (1/4W)	
△	METAL OXIDE FILM RESISTOR	
▲	METAL FILM RESISTOR	
⊠	METAL PLATE RESISTOR	
◪	FINE PROOF CARBON FILM RESISTOR	
□	CEMENT MOLDED RESISTOR	
⊘	SEMI VARIABLE RESISTOR	
■	CHIP RESISTOR	

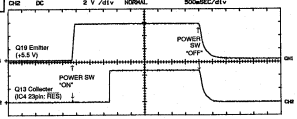
NOTICE

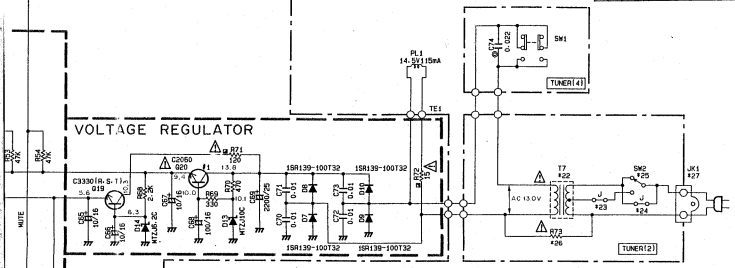
(J)..... Japanese model
(U)..... U.S.A model
(C)..... Canadian model
(A)..... Australian model
(E)..... European model
(B)..... British model
(R)..... General model
(P)..... PP model

Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
⚠	Q20	2SC2060
		2SD400





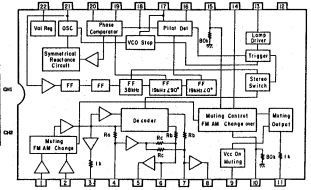


#	D-C	R	A	B	G	E
1	TE2	VE36500		VE36500		
2	PK1	VC21930			VE15580	VC21930
3	R76	OPEN			470K	OPEN
4	R77	OPEN			390K	OPEN
5	J101	SHORT	OPEN			
6	J111	OPEN		SHORT		
7	SK3	OPEN	VF54120	OPEN		
8	C49	100P			OPEN	100P
9	J181	SHORT			OPEN	SHORT
10	R65	OPEN			4.7K	OPEN
11	F14	OPEN			SE26059	OPEN
12	R56	10K			22K	10K
13	R59	22K			SHORT	22K
14	C50-53	Ⓑ B1CP		Ⓑ B2CP	Ⓑ 3900/100	Ⓑ B2CP
15	R50-51	B2K			120K	B2K
16	C59-60	2700P		OPEN	2700P	OPEN
17	L4-5	39mH		OPEN	39mH	OPEN
18	C61-62	1000P		OPEN	1000P	OPEN
19	C63-64	3900P		OPEN	3900P	OPEN
20	F15-6	OPEN		VJ12310	OPEN	VJ12310
21						
22	T7	X0676	X0677			
23	J191	OPEN	SHORT	OPEN		
24	J141	SHORT	OPEN	SHORT		
25	SK2	OPEN	LA09561	OPEN		
26	R57	1/2W2.2K	OPEN			
27	JK1	VJ13770	VK70480			
28						

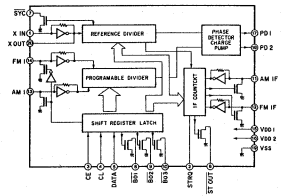
#	U.C	R	A	B	G	E
29						
30	J151	OPEN		SHORT	OPEN	SHORT
31	R25	OPEN		3.3K	OPEN	3.3K
32	R16	OPEN		4.7K	OPEN	4.7K
33	R20 11-10-12	OPEN		10K	OPEN	10K
34	R7-8	OPEN		33K	OPEN	33K
35	R9-17	OPEN		47K	OPEN	47K
36						
37	C17	OPEN		0.047/16	OPEN	0.047/16
38	C18	OPEN		1/50	OPEN	1/50
39	C11	OPEN		47P	OPEN	47P
40	C6	OPEN		120P	OPEN	120P
41	C5	OPEN		180P	OPEN	180P
42	D11-12	OPEN		1SS133	OPEN	1SS133
43	D8-11-12	OPEN		C33301R-S-T1	OPEN	C33301R-S-T1
44	D7-9-7	OPEN		A13171R-S-T1	OPEN	A13171R-S-T1
45	VC2	OPEN		VC03730	OPEN	VC03730
46	T1	OPEN		VC66740	OPEN	VC66740
47	T4	OPEN		VC66760	OPEN	VC66760
48						
49	VD21	VK27670		VK31730	VK27670	VK31730
50	T2	VK64540		VC66750	VK64540	VC66750
51	T3	VK64550		VC66770	VK64550	VC66770
52	C8	15P		5P	15P	5P
53	J181	OPEN		SHORT	OPEN	SHORT
54	R78	10K		OPEN	10K	OPEN
55	C77	0.01/16		OPEN	0.01/16	OPEN
56	R15	1K		2.2K	1K	2.2K

■ IC BLOCK

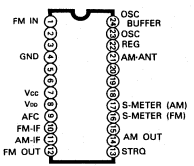
• IC2 : LA3401 (MPX)



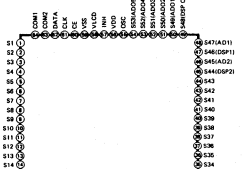
• IC3 : LM7000N (PLL)



• IC1 : LA1266 (AM/FM IF)



• IC201 : LC7582 (LCD Driver)



■ MECHANISM PARTS

Ref. NO.	PART NO.	Description		部品名	Remarks	Markets	ランク
※ 1	VK688700	PANEL UNIT		パネルユニット	TX-350 BL	UCRAG	
※ 1	VK688900	PANEL UNIT		パネルユニット	TX-350 T	UCRAG	
※ 1	VK688800	PANEL UNIT		パネルユニット	TX-350L BL	BE	
※ 1	VK689000	PANEL UNIT		パネルユニット	TX-350L T	BE	
※ 1-1	VK628900	OPERATION CIRCUIT BOARD		オペレーションシート	TX-350	UCRAG	
※ 1-1	VK629000	OPERATION CIRCUIT BOARD		オペレーションシート	TX-350L	BE	
※ 1-2	VK431000	WINDOW		ウインドウ			
1-3	VI771700	BUTTON	A/B/C/D/E,MEMO	ボタン	BL		
1-3	VI772100	BUTTON	A/B/C/D/E,MEMO	ボタン	T		
1-4	VI771800	BUTTON	FM/AM,MODE	ボタン	BL		
1-4	VI772200	BUTTON	FM,AM,MODE	ボタン	T		
1-5	VI435700	BUTTON	1-8	ボタン	BL		
1-5	VI437600	BUTTON	1-8	ボタン	T		
1-6	VI435800	BUTTON	UP/DOWN	ボタン	BL		
1-6	VI437700	BUTTON	UP/DOWN	ボタン	T		
1-7	VJ292000	FLAME		フレーム			
1-8	CB605620	PLASTIC RIVET	HO.1057	プラリベット			
1-9	EI130080	BIND HEAD P-TITE SCREW	3x8 ZMC2-Y	バインドPタイトネジ			
※ 2	VK646800	TUNER CIRCUIT BOARD		チューナーシート		UC	
※ 2	VK646900	TUNER CIRCUIT BOARD		チューナーシート		R	
※ 2	VK647000	TUNER CIRCUIT BOARD		チューナーシート		A	
※ 2	VK647100	TUNER CIRCUIT BOARD		チューナーシート		B	
※ 2	VK647200	TUNER CIRCUIT BOARD		チューナーシート		G	
※ 2	VK647300	TUNER CIRCUIT BOARD		チューナーシート		E	
3	VE628900	LAMP	115mA 14.5V	ランプ			
4	VE300100	CHASSIS		シャーシ			
※ 5	VK640900	REAR PANEL		リヤパネル		UC	
※ 5	VK641000	REAR PANEL		リヤパネル		R	
※ 5	VK641100	REAR PANEL		リヤパネル		A	
※ 5	VK641200	REAR PANEL		リヤパネル		G	
※ 5	VK641300	REAR PANEL		リヤパネル		B	
※ 5	VK641400	REAR PANEL		リヤパネル		E	
6	VE300000	TOP COVER		トップカバー	BL		
6	VF342400	TOP COVER		トップカバー	T		
7	VP274900	DAMPER	15x15x8	ダンパー			
8	VH841900	BUTTON	POWER	ボタン	BL		
8	VH842000	BUTTON	POWER	ボタン	T		
9	VP639400	LEG		レッグ	BL		
9	VI031600	LEG		レッグ	T		
10	VA772900	P.C.B SUPPORT		基板サポート			
11	CB609260	PLASTIC RIVET		プラスチックリベット		E	
12	VJ083400	SPACER		スペーサ			
13	EK335010	BW HEAD SCREW	3x6-8 FCRM3-BL	BWヘッドタッピングネジ			
14	EK355090	BW HEAD SCREW	4x8-10 FCRM3-BL	BWヘッドSタイトネジ	BL		
14	EW501150	BW HEAD S-TITE SCREW	4x8-10 FNM3-BL	BWヘッドSタイトネジ	T		
15	EI330086	BIND HEAD TAPPING SCREW	3x8 FCRM3-BL	バインドタッピングネジ	PACK		
16	ED330086	BIND HEAD SCREW	3x6 FCRM3-BL	バインド小ネジ	PACK		
17	EW501900	BIND HEAD BONDING TAP. SCREW	3x8 FCRM3-BL	ボンディングBタイトネジ			
18	EI330086	BIND HEAD B-TITE SCREW	3x6 FCRM3-BL	バインドBタイトネジ	PACK		

※ : New Parts (新規部品)　　ランク : Japan only

Parts List for Carbon Resistors

Value	1/4W Type Part No.	1/6W Type Part No.	Value	1/4W Type Part No.	1/6W Type Part No.
1.0 Ω	HJ35 3100	HF85 3100	12 KΩ	HJ35 7120	HF85 7120
1.8 Ω	HJ35 3180	*	15 KΩ	HJ35 7150	HF85 7150
2.2 Ω	HJ35 3220	HF85 3220	18 KΩ	HJ35 7180	HF85 7180
3.3 Ω	HJ35 3330	HF85 3330	22 KΩ	HJ35 7220	HF85 7220
4.7 Ω	HJ35 3470	HF85 3470	27 KΩ	HJ35 7270	HF85 7270
5.6 Ω	HJ35 3560	HF85 3560	33 KΩ	HJ35 7330	HF85 7330
10 Ω	HJ35 4100	HF85 4100	39 KΩ	HJ35 7390	HF85 7390
15 Ω	HJ35 4150	HF85 4150	47 KΩ	HJ35 7470	HF85 7470
22 Ω	HJ35 4220	HF85 4220	56 KΩ	HJ35 7560	HF85 7560
27 Ω	HJ35 4270	HF85 4270	68 KΩ	HJ35 7680	HF85 7680
33 Ω	HJ35 4330	HF85 4330	82 KΩ	HJ35 7820	HF85 7820
39 Ω	HJ35 4390	HF85 4390	91 KΩ	HJ35 7910	HF85 7910
47 Ω	HJ35 4470	HF85 4470	100 KΩ	HJ35 8100	HF85 8100
56 Ω	HJ35 4560	HF85 4560	120 KΩ	HJ35 8120	HF85 8120
68 Ω	HJ35 4680	HF85 4680	150 KΩ	HJ35 8150	HF85 8150
82 Ω	HJ35 4820	HF85 4820	180 KΩ	HJ35 8180	HF85 8180
100 Ω	HJ35 5100	HF85 5100	220 KΩ	HJ35 8220	HF85 8220
110 Ω	HJ35 5110	HF85 5110	270 KΩ	HJ35 8270	HF85 8270
120 Ω	HJ35 5120	HF85 5120	330 KΩ	HJ35 8330	HF85 8330
150 Ω	HJ35 5150	HF85 5150	390 KΩ	HJ35 8390	HF85 8390
160 Ω	HJ35 5160	*	470 KΩ	HJ35 8470	HF85 8470
180 Ω	HJ35 5180	HF85 5180	560 KΩ	HJ35 8560	HF85 8560
220 Ω	HJ35 5220	HF85 5220	680 KΩ	HJ35 8680	HF85 8680
270 Ω	HJ35 5270	HF85 5270	820 KΩ	HJ35 8820	HF85 8820
330 Ω	HJ35 5330	HF85 5330	1.0 MΩ	HJ35 9100	HF85 9100
390 Ω	HJ35 5390	HF85 5390	1.2 MΩ	HJ35 9120	*
470 Ω	HJ35 5470	HF85 5470	1.5 MΩ	HJ35 9150	HF85 9150
510 Ω	*	HF85 5510	1.8 MΩ	HJ35 9180	HF85 9180
560 Ω	HJ35 5560	HF85 5560	2.2 MΩ	HJ35 9220	HF85 9220
680 Ω	HJ35 5680	HF85 5680	3.3 MΩ	HJ35 9330	HF85 9330
820 Ω	HJ35 5820	HF85 5820	3.9 MΩ	HJ35 9390	*
910 Ω	HJ35 5910	HF85 5910	4.7 MΩ	HJ35 9470	HF85 9470
1.0 KΩ	HJ35 6100	HF85 6100			
1.2 KΩ	HJ35 6120	HF85 6120			
1.5 KΩ	HJ35 6150	HF85 6150			
1.8 KΩ	HJ35 6180	HF85 6180			
2.0 KΩ	HJ35 6200	HF85 6200			
2.2 KΩ	HJ35 6220	HF85 6220			
2.4 KΩ	HJ35 6240	HF85 6240			
2.7 KΩ	HJ35 6270	HF85 6270			
3.0 KΩ	HJ35 6300	HF85 6300			
3.3 KΩ	HJ35 6330	HF85 6330			
3.6 KΩ	HJ35 6360	HF85 6360			
3.9 KΩ	HJ35 6390	HF85 6390			
4.7 KΩ	HJ35 6470	HF85 6470			
5.1 KΩ	HJ35 6510	HF85 6510			
5.6 KΩ	HJ35 6560	HF85 6560			
6.8 KΩ	HJ35 6680	HF85 6680			
8.2 KΩ	HJ35 6820	HF85 6820			
9.1 KΩ	HJ35 6910	HF85 6910			
10 KΩ	HJ35 7100	HF85 7100			

1/4W Type	1/6W Type
HJ35○○○○	HF85○○○○
← 10mm →	← 5mm →