ORDER NO. SD8002-1674

Service Manual

FM/AM Stereo Tuner

ST-C03

(E),(EG),(EB),(XGH),
(XGF),(XE),(XA),(XAL)

ST-C03K

(EG)

ST-C03

ST-C03K

* The colors of this model include silver and black. The black type model is provided with (K) in the Service Manual.

Areas

* [E] and [EG] are available in European and Scandinavia.
* [EB] is available in Belgium.
* [XGH] is available in Holland.
* [XGF] is available in France.
* [XE] is available in United Kingdom.
* [XA] is available in Asia, Latin America, Middle East and Africa.
* [XAL] is available in Australia.

TECHNICAL SPECIFICATIONS

Specifications are subject to change without notice for further improvement.

[DIN 45 500]

FM TUNER SECTION

Frequency range		87.5 ~ 108.0 MHz
Sensitivity		1.9μV (IHF, usable)
S/N 30 dB		2.0μV (300Ω), 1.3μV (75Ω)
S/N 26 dB		1.8μV (300Ω), 1.2μV (75Ω)
S/N 20 dB		1.6μV (300Ω), 0.9μV (75Ω)
IHF 46 dB stereo quieting sensitivity		20μV/75Ω
Total harmonic distortion	MONO	0.08%
	STEREO	0.15%
S/N	MONO	68 dB (77 dB, IHF)
	STEREO	65 dB (72 dB, IHF)
Frequency response		20 Hz ~ 15 kHz, +0.5 dB ~ −1.5 dB
Alternate channel selectivity		75 dB
Capture ratio		1.0 dB
Image rejection at 98 MHz		65 dB
IF rejection at 98 MHz		85 dB
Spurious response rejection at 98 MHz		90 dB
AM suppression		52 dB
Stereo separation	1 kHz	45 dB
	10 kHz	35 dB
Carrier leak	19 kHz	−30 dB (−40 dB, IHF)
	38 kHz	−50 dB (−40 dB, IHF)
Channel balance (250 Hz ~ 6,300 Hz)		±1.0 dB
Limiting point		1.2μV
Power bandwidth	IF amplifier	180 kHz
	FM demodulator	1000 kHz
Antenna terminals		300Ω (balanced)
		75Ω (unbalanced)

AM TUNER SECTION

Frequency range	522 ~ 1611 kHz
Sensitivity (S/N 20 dB)	30μV, 250μV/m
Selectivity ±9 kHz	30 dB
Image rejection at 1,000 kHz	50 dB
IF rejection at 1,000 kHz	40 dB

GENERAL

Output voltage	0.3V
	0.6V (IHF)
Power consumption	12W
Power supply	AC 50 Hz/60 Hz, 110V/120V/220V/240V
Batteries for memory back-up (optional)	three "AA" size batteries
	DC 4.5V
Dimensions (WxHxD)	297 x 49 x 244mm
Weight	2.8 kg

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

TECHNISCHE DATEN

Spezifikationen können infolge von Verbesserungen ohne Ankündigung geändert werden.

[DIN 45 500]

UKW-TUNERTEIL

Wellenbereich		87,5 ~108,0 MHz
Eingangsempfindlichkeit		1,9µV (nutzbar nach IHF)
S/R 30 dB		2,0µV (300Ω), 1,3µV (75Ω)
S/R 26 dB		1,8µV (300Ω), 1,2µV (75Ω)
S/R 20 dB		1,6µV (300Ω), 0,9µV (75Ω)
Stereoumschaltschwelle bei 46 dB nach IHF		20µV/75Ω
Gesamtklirrfaktor	**Mono**	0,08%
	Stereo	0,15%
Geräuschabstand	**Mono**	68 dB (77 dB nach IHF)
	Stereo	65 dB (72 dB nach IHF)
Frequenzgang		20 Hz ~15 kHz (+0,5 dB ~1,5 dB)
Trennschärfe bei Störsender		75 dB
Einfangverhältnis		1,0 dB
Spiegelfrequenz-Dämpfung bei 98 MHz		65 dB
ZF-Dämpfung bei 98 MHz		85 dB
Ansprechdämpfung auf Nebenfrequenzen bei 98 MHz		90 dB
AM-Unterdrückung		52 dB
Übersprechdämpfung	**1 kHz**	45 dB
	10 kHz	35 dB
Trägerrest	**19 kHz**	–30 dB (–40 dB nach IHF)
	38 kHz	–50 dB (–40 dB nach IHF)
Kanalabweichung (250 Hz ~6300 Hz)		±1,0 dB
Begrenzereinsatz		1,2µV
Bandbreite	**ZF-Verstärker**	180 kHz
	UKW-Demodulator	1000 kHz
Antennenanschluß		300Ω (symmetrisch) 75Ω (unsymmetrisch)

AM-TUNERTEIL

Wellenbereiche	522 ~1611 kHz
Eingangsempfindlichkeit (S/R 20 dB)	30µV, 250µV/m
Trennschärfe ±9 kHz	30 dB
Spiegelfrequenz-Dämpfung bei 1000 kHz	50 dB
ZF-Dämpfung bei 1000 kHz	40 dB

ALLGEMEINE DATEN

Ausgangsspannung	0,3V 0,6V (IHF)
Leistungsaufnahme	12W
Netzspannung	Wechselstrom 50 Hz/60 Hz, 110V/120V/220V/240V
Batterien für den Speicher (Sonderzubehör)	drei Batterien "AA" (4,5V)
Abmessungen (B x H x T)	297 x 49 x 244mm
Gewicht	2,8 kg

CARACTERISTIQUES TECHNIQUES

Sujet à changement sans préavis.

[DIN 45 500]

SECTION SYNTONISATEUR FM

Gamme de fréquence		87,5 ~ 108,0 MHz
Sensibilité		1,9µV (IHF utilisable)
S/B 30 dB		2,0µV (300Ω), 1,3µV (75Ω)
S/B 26 dB		1,8µV (300Ω), 1,2µV (75Ω)
S/B 20 dB		1,6µV (300Ω), 0,9µV (75Ω)
Sensibilité stéréo au seuil de 46 dB, IHF		20µV/75Ω
Distorsion harmonique totale	**MONO**	0,08%
	STEREO	0,15%
Signal/Bruit	**MONO**	68 dB (77 dB, IHF)
	STEREO	65 dB (72 dB, IHF)
Réponse de fréquence		20 Hz ~ 15 kHz, +0,5 dB ~ –1,5 dB
Sélectivité alternée par canal		75 dB
Taux de capture		1,0 dB
Rejection d'image à 98 MHz		65 dB
Rejection FI à 98 MHz		85 dB
Rejection de réponse parasite à 98 MHz		90 dB
Suppression AM		52 dB
Séparation stéréophonique	**1 kHz**	45 dB
	10 kHz	35 dB
Fuite de porteuse	**19 kHz**	–30 dB (–40 dB, IHF)
	38 kHz	–50 dB (–40 dB, IHF)
Equilibrage de canaux (250 Hz ~ 6,300 Hz)		±1,0 dB
Point de limite		1,2µV
Largeur de bande	**Amplificateur FI**	180 kHz
	Démodulateur FM	1000 kHz
Bornes d'antenne		300Ω (symétrique) 75Ω (asymétrique)

SECTION SYNTONISATEUR AM

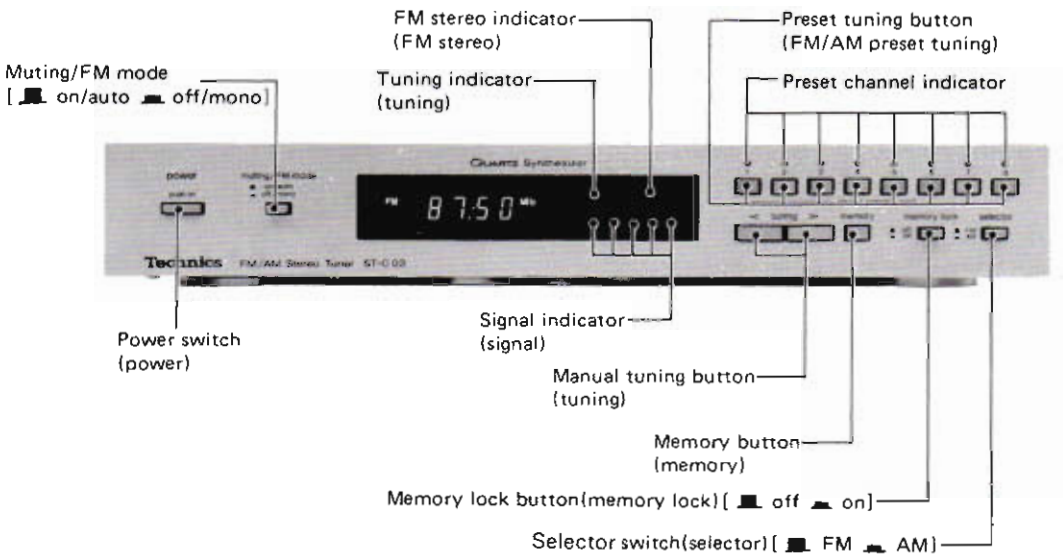
Gamme de fréquence	522 ~ 1611 kHz
Sensibilité (S/B 20 dB)	30µV, 250µV/m
Sélectivité ±9 kHz	30 dB
Réjection d'image à 1,000 kHz	50 dB
Réjection FI à 1,000 kHz	40 dB

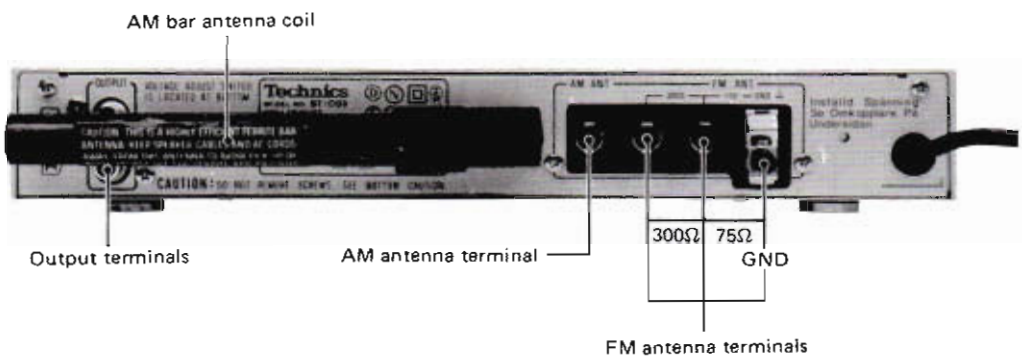
DIVERS

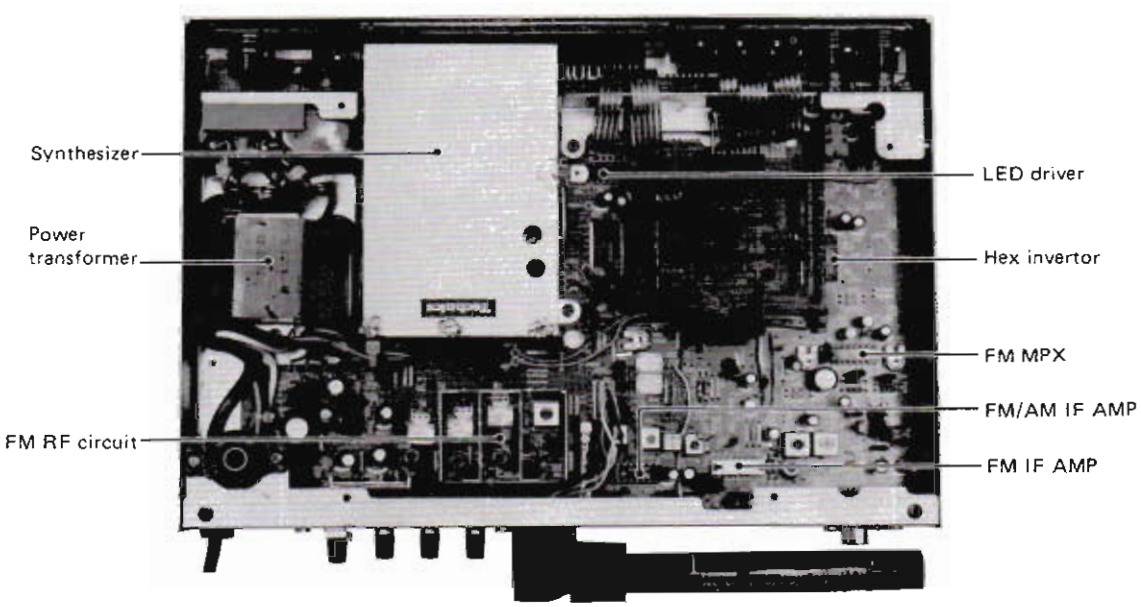
Tension de sortie	0,3V (0,6V IHF)
Consommation	12W
Alimentation	CA 50 Hz/60 Hz, 110V/120V/220V/240V
Piles pour préservation des mémoires (en option)	trois piles de type AA (C.C.: 4,5V)
Dimensions (L x H x Pr)	297 x 49 x 244mm
Poids	2,8 kg

■ CONTENTS

■ LOCATION OF CONTROLS







■ HOW TO REMOVE THE PRINTED CIRCUIT BOARD

1. Remove the 4 setscrews (①~④ in Fig. 1) used to fasten the buttom board.
2. Remove the buttom board.
3. Remove the 2 setscrews (⑤, ⑥ in Fig. 1) used to fasten the rear panel.
4. Remove the 6 setscrews (⑦,⑨~⑫,⑭ in Fig. 2) used to fasten the printed circuit board.
5. Remove the printed circuit board to backward.
6. Remove the 2 setscrews (⑧,⑬ in Fig. 2) used to fasten the shield cover.
7. Remove the shield cover.
8. To reassemble, reverse the above procedure.

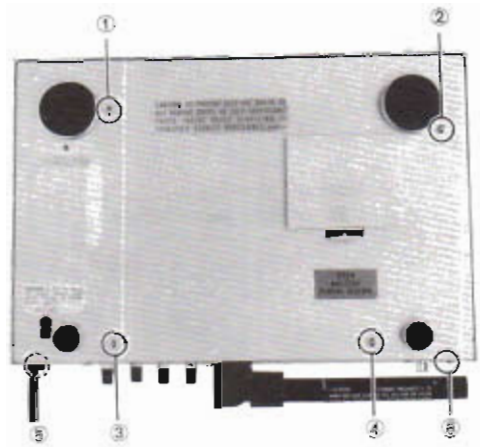


Fig. 1

■ HOW TO REMOVE SWITCHES

1. Remove the 2 setscrews (⑮,⑯ in Fig. 3) used to fasten the printed circuit board.
2. Remove the printed circuit board.
3. Push the LED in the direction of arrows (in Fig. 3).
4. Remove the adhesion (⑱ in Fig. 4) used to fasten the LED holder.
5. Unsolder the switch.
6. Remove the switch.
7. To reassemble, reverse the above procedure and note the following.
   (1) Fix the LED holder (⑰,⑲ in Fig. 4) by adhesion.

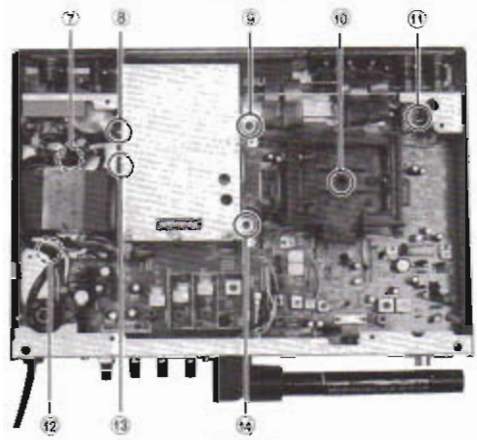


Fig. 2

Fig. 3

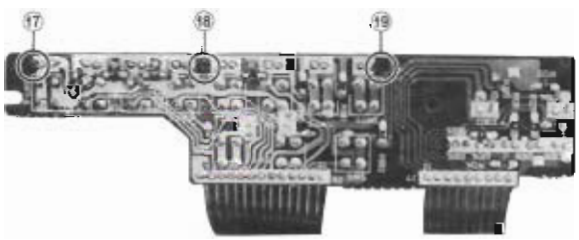


Fig. 4

■ HOW TO REPLACE CHIPS (RESISTOR, CAPACITOR, JUMPER)

1. Remove solder from chip by using solder sucker.
2. Remove chip with tweezers by rotating it while removing solder as shown in fig. 5.
3. Solder circuit board first and then solder chip in the direction of the arrow as shown in fig. 6.

Notes:

1. Do not use chip again which is removed from printed circuit board.
2. Use lead wire with insulator for replacement instead of chip jumper.

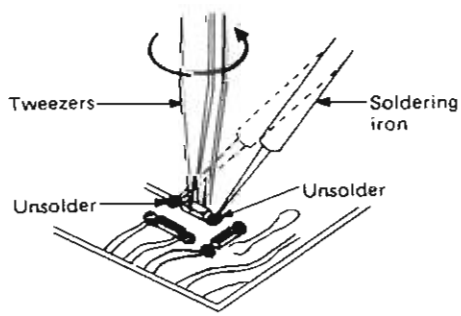


Fig. 5

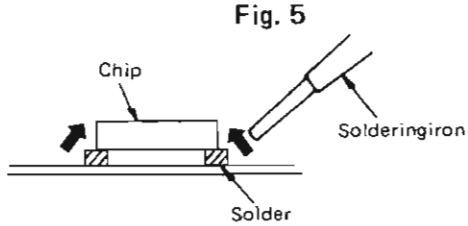


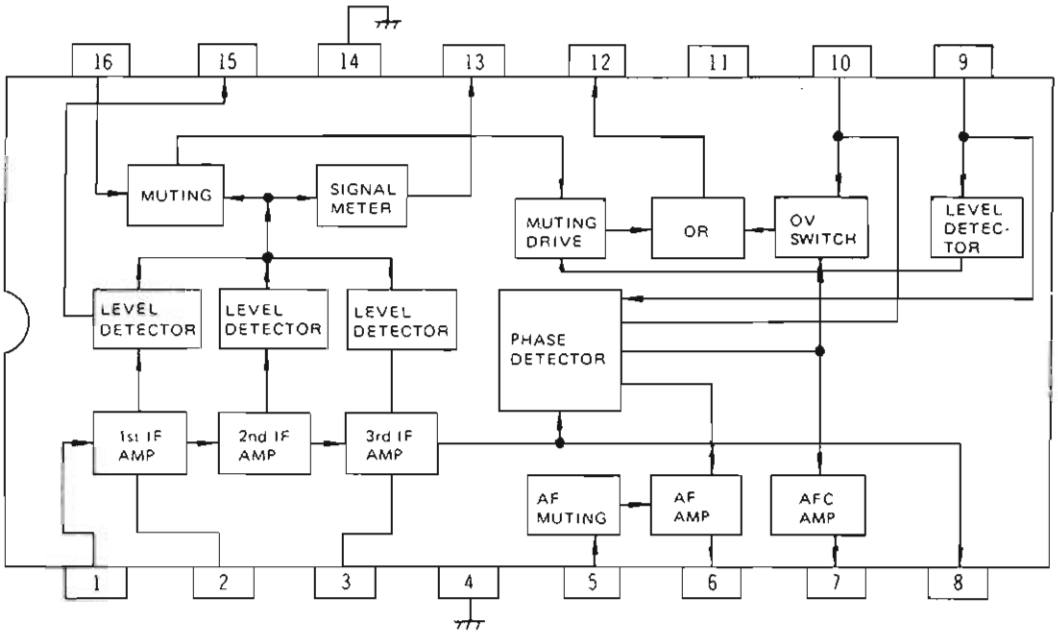
Fig. 6

■ NOTE FOR REPLACING CHIPS

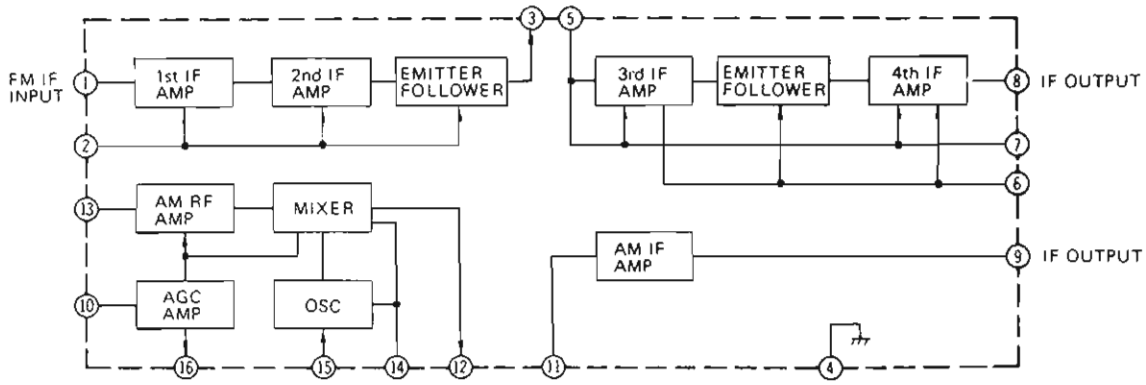
1. Do not heat chips more than three (3) seconds.
2. Be careful not to damage the electrode of chips.
3. Use soldering iron (less than 60 W) and tweezers for replacing chips.

Color	Original Parts Name
Black	Chip Resistor
Brown	Chip Capacitor
Black	Chip Jumper

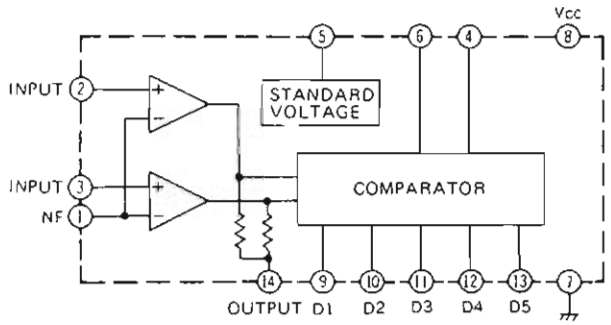
■ BLOCK DIAGRAM OF IC'S



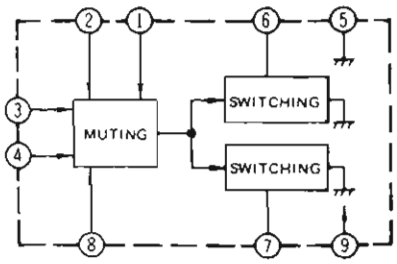
IC101
(RVIμPC1167C)
FM IF AMP/DETECTOR



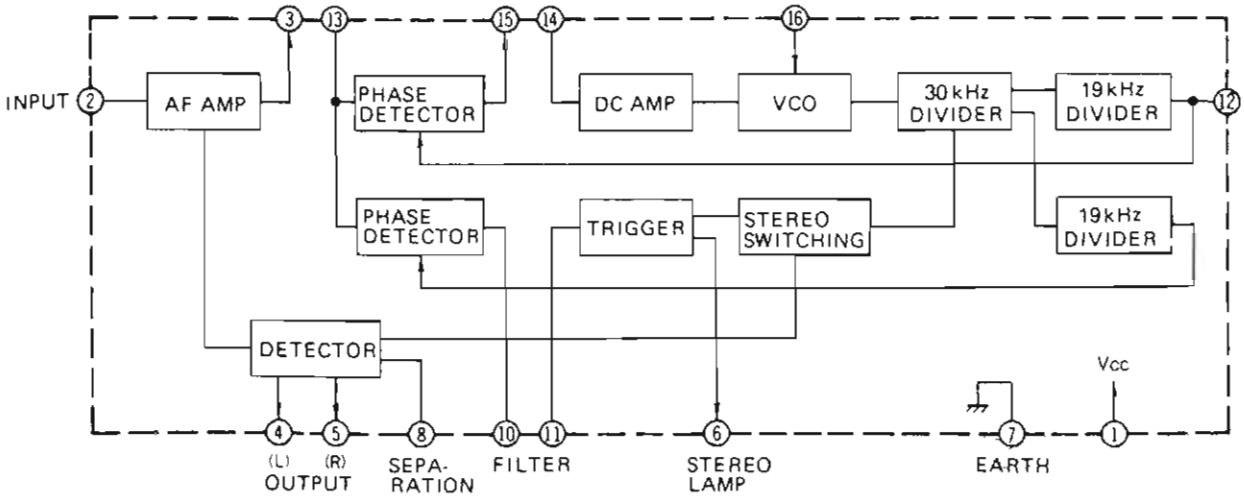
IC201
(AN217PBB)
FM-IF AMP, AM OSCILLATOR, AM-IF AMP



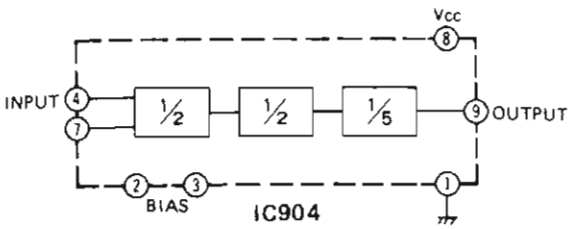
IC102
(RVILB1416)
LED DRIVER



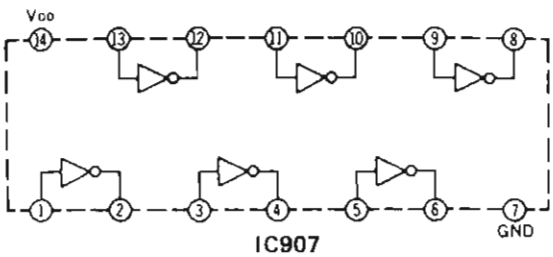
IC401
(AN6135)
MUTING



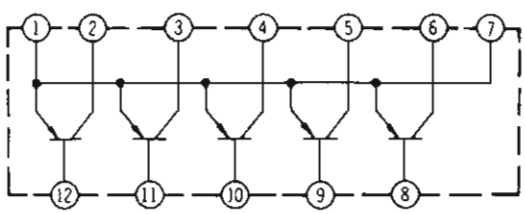
IC301
(RVILA3350S)
FM MPX



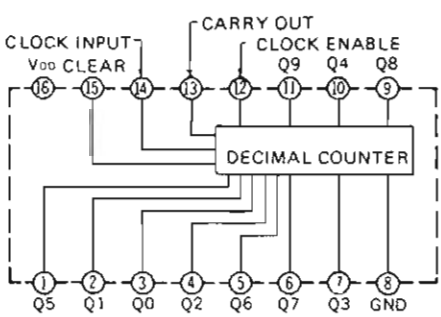
IC904
(AN6821)
FM PRESCALER



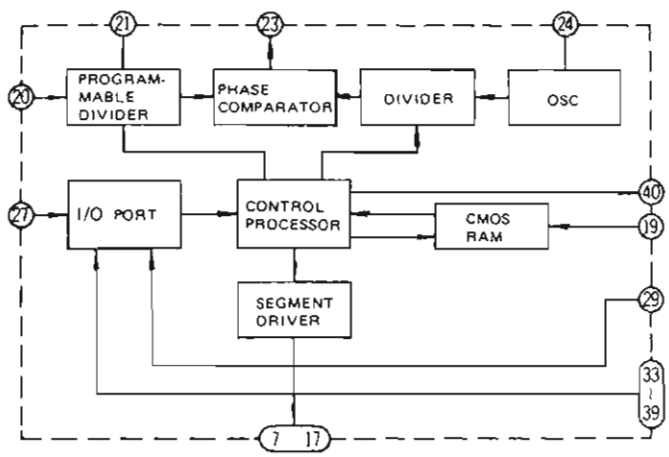
IC907
(RVIMSM4069RS)
HEX INVERTER



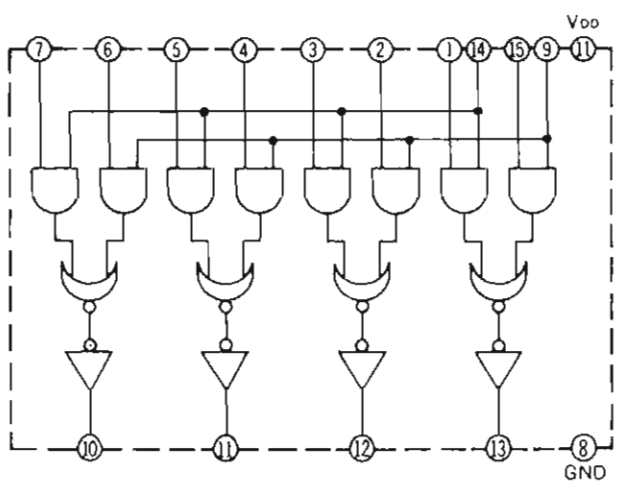
IC901, 902
(RVITA57)
DIGIT DRIVER



IC908
(RVIMSM4017RS)
DECADE COUNTER/DIVIDER



IC903
(MN6045A)
PLL CONTROLER RAM



IC905, 906
(RVIMSM4019RS)
QUAD AND/OR SELECT GATE

■ ALIGNMENT INSTRUCTIONS ENGLISH

Notes:
1. Power switch . . . . . on
2. Muting/FM mono switch . . . . . off/mono
3. Selector switch . . . . . AM/FM
4. 300Ω FM dummy antenna . . . . . Refer to fig. 7
5. Maintain line voltage at 120 volts

	SIGNAL GENERATOR		FREQUENCY DISPLAY SETTING	INDICATOR (VTVM or SCOPE) (DISTORTION METER)	ADJUSTMENT POINTS	REMARKS
	CONNECTION	FREQUENCY				
	AM ALIGNMENT					
1	Fashion loop of several turns of wire and radiate signal into loop of receiver.	450kHz (30% Mod. with 400Hz)	Point of non-inter-ference.	Connect AC VTVM or scope to TP3.	T201 (AM 1st IFT) T202 (AM 2nd IFT)	Adjust for maximum reading on VTVM.
2	–	no-signal	522kHz	Connect DC VTVM between TP1 and earth.	L203 (AM OSC Coil)	Adjust for 1.5±0.05V reading on DC VTVM.
3	–	no-signal	1611kHz	Connect DC VTVM between TP1 and earth.	CT202 (AM OSC Trimmer)	Adjust for 20±0.1V reading on DC VTVM. Repeat steps 3 and 4.
4	Fashion loop of several turns of wire and radiate signal into loop of receiver.	549kHz	549kHz	Connect AC VTVM or scope to output terminals.	L201 (AM ANT Coil)	Adjust for maximum output.
5	Fashion loop of several turns of wire and radiate signal into loop of receiver.	1503kHz	1503kHz	Connect AC VTVM or scope to output terminals.	CT201 (AM ANT Trimmer)	Adjust for maximum output. Repeat steps 4 and 5.
	FM IF ALIGNMENT					
6	Connect to TP2	10.7MHz	Point of non-inter-ference.	Connect scope to TP6.	T1 (FM IFT)	1. Pull out the core of T101. 2. Adjust for maximum amplitude and proper linearity between ±100kHz markers.
	FM RF ALIGNMENT					
7	–	no-signal	87.50MHz	Connect DC VTVM between TP1 and earth.	L5 (FM OSC Coil)	Adjust for 2.6±0.05V reading on DC VTVM.
8	–	no-signal	108.00MHz	Connect DC VTVM between TP1 and earth.	CT4 (FM OSC Trimmer)	Adjust for 16±0.1V reading on DC VTVM. Repeat steps 7 and 8.
9	Connect to FM 300Ω antenna terminal through FM dummy antenna.	90.0MHz (100% Mod. with 1kHz)	90.00MHz	Connect AC VTVM or scope to output terminals.	L3 (FM DET Coil) L2 (FM ANT Coil) L1 (FM ANT Coil)	Adjust for maximum output.
10	Connect to FM 300Ω antenna terminal through FM dummy antenna.	106.0MHz (100% Mod. with 1kHz)	106.00MHz	Connect AC VTVM or scope to output terminals.	CT3(FM DET Trimmer) CT2(FM ANT Trimmer) CT1(FM ANT Trimmer)	Adjust for maximum output.
	DC BALANCE AND FM MONO DISTORTION ALIGNMENT					
11	Connect to FM 300Ω antenna terminal through FM dummy antenna (60dB)	98.0MHz (100% Mod. with 1kHz)	98.00MHz	Connect DC VTVM between TP4 and TP5 through resistors. (fig. 8)	T101 (FM IFT)	Adjust for 0V reading on DC VTVM.
12	Connect to FM 300Ω antenna terminal through FM dummy antenna (60dB)	98.0MHz (100% Mod. with 1kHz)	98.00MHz	Connect distortion meter to output terminal	T102 (FM IFT)	Adjust for minimum distortion of left output.
	FM MPX VCO ALIGNMENT					
13	–	no-signal	Point of non-inter-ference	Connect frequency counter to TP7 through resistor (100kΩ).	VR301	1. Set selector switch to "FM auto". 2. Adjust for 19kHz ±30Hz reading on frequency counter.
	TUNING METER ALIGNMENT					
14	Connect to FM 300Ω antenna terminal through FM dummy antenna (60dB)	98.1MHz (100% Mod. with 1kHz)	98.10MHz	–	VR101	Adjust VR101 so that the 5th LED illuminate.

Notes: 1. Stereo modulator . . . . . • Connect stereo modulator output to EXT MOD terminal of signal generator.
• Pilot signal modulation to "10%".
2. FM signal generator . . . . . • Frequency approximately 100MHz/Output level to "72dB (IHF)"
3. Selector switch to "FM auto" • Modulation mode to "FM"

	FM SIGNAL GENERATOR CONNECTION	STEREO MODULATOR MODE & MODE RATE	INDICATOR (AC VTVM)	ADJUSTMENT POINT	REMARKS
	FM STEREO SEPARATION ALIGNMENT				
15	FM 300Ω antenna terminals through FM dummy antenna.	(1kHz 30% Modulation) MODE **L** (and **R**) Pilot signal to "ON".	Connect VTVM to output terminal through low pass filter. (Refer to fig. 9)	VR302	• Frequency display at 98.0MHz. • Make adjustment so that when the antenna input is subjected to **L** modulation (or **R** modulation), **R** channel output (or **L** channel output) becomes minimum.
	FM STEREO DISTORTION ALIGNMENT				
16	Connect to FM 300Ω antenna terminal through FM dummy antenna. 98.0MHz 60dB	(1 kHz 100% Modulation) MODE **R**	Connect distortion meter to output terminal of receiver.	T1 (FM IFT)	Adjust for minimum distortion of right output.

■ ABGLEICHANWEISUNGEN DEUTSCH

(Für Deutschland)

Anmerkungen:
1. Netzschalter . . . . . eingeschaltet
2. Tondämpfung/UKW-Mono-Schafter . . ausgeschaltet/mono
3. Wahlschalter . . . . . MW/UKW
4. 300 Ohm UKW-Kunstantenne . . . . . Siehe Abbildung 7
5. Netzspannung auf 120 Volt halten.

	SIGNALGENERATOR (MESSENDER) ANSCHLUSS	SIGNALGENERATOR (MESSENDER) FREQUENZ	FREQUENZ-ANZEIGEEIN-STELLUNG	MEßGERÄT (VTVM oder OSZILLOSKOP) (VERZERRUNGSMESSER)	EINSTELLUNGS-PUNKTE	BEMERKUNGEN
	MW-ABGLEICH					
1	Testschleife aus mehreren Windungen eines Drahtes fertigen, und Signal in die Empfangsschleife des Gerätes senden.	450kHz (30% moduliert bei 400Hz)	Störungsfreie Stelle	Das Röhrenvoltmeter (VTVM) oder Oszilloskop mit TP3 (Testpunkt) verbinden.	T201(MW erster ZFT) T202(MW zweiter ZFT)	Auf maximalen Anzeigewert des Röhrenvoltmeters (VTVM) einstellen.
2	—	Kein Signal	522kHz	Das Gleichstromröhrenvoltmeter zwischen TP1 (Testpunkt) und Erde verbinden.	L203 (MW-Schwingspule)	Auf 1.5V±0,05 auf dem Gleichstromröhrenvoltmeter einstellen.
3	—	Kein Signal	1611kHz	Das Gleichstromröhrenvoltmeter zwischen TP1 und Erde verbinden.	CT202 (MW-Schwingertrimmer)	Auf 20V±0.1 auf dem Gleichstromröhrenvoltmeter einstellen. Die Schritte 3 und 4 wiederholen.
4	Testschleife aus mehreren windungen eines Drahtes fertigen und Signal in die Eingangsschleife des Gerätes senden.	549kHz	549kHz	Das Wechselstromröhrenvoltmeter oder Oszilloskop mit den Ausgangsklemmen verbinden.	L201 (MW-Schwingertrimmer)	Auf maximalen Ausgang einstellen.
5	Testschleife aus mehreren Windungen eines Drahtes fertigen, und Signal in die Eingangsschleife des Gerätes senden.	1503kHz	1503kHz	Das Wechselstromröhrenvoltmeter oder Oszilloskop mit den Ausgangsklemmen verbinden.	CT201 (MW-Antennentrimmer)	Auf maximalen Ausgang einstellen. Die Schritte 4 und 5 wiederholen.
	UKW-ZF-ABGLEICH					
6	Mit TP2 (Testpunkt) verbinden	10.7MHz	Störungsfreie Stelle	Oszilloskop mit TP6 verbinden.	T1 (UKW-ZFT)	(1) Den Kern (Spule) von T101 herausziehen. (2) Auf maximale Amplitude und richtiger Linearität zwischen den 100kHz Markierung einstellen.

	SIGNALGENERATOR (MESSENDER)		FREQUENZ-ANZEIGEEIN-STELLUNG	MEßGERÄT (VTVM oder OSZILLOSKOP) (VERZERRUNGSMESSER)	EINSTELLUNGS-PUNKTE	BEMERKUNGEN
	ANSCHLUSS	FREQUENZ				
	UKW-HF-ABGLEICH					
7	–	Kein Signal	87.50MHz	Das Gleichstromröhrenvoltmeter zwischen TP1 und Erde verbinden.	L5 (UKW-Schwingspule)	Auf 26V±0.05 auf dem Gleichstromröhrenvoltmeter einstellen.
8	–	Kein Signal	108.00MHz	Das Gleichstromröhrenvoltmeter zwischen TP1 und Erde verbinden.	CT4 (UKW-Schwingertrimmer)	Auf 16V±0.1 auf dem Gleichstromröhrenvoltmeter einstellen. Die Schritte 7 und 8 wiederholen.
9	Die UKW-Kunstantenne über den 300 Ohm UKW-Antenneanschluss verbinden.	90.0MHz (100% moduliert bei 1kHz)	90.00MHz	Das Wechselstromröhrenvoltmeter oder Oszilloskop mit den Ausgangsklemmen verbinden.	L3(UKW-Detektor-spule L2(UKW-Antennen-spule L1(UKW-Antennen-spule	Auf maximalen Ausgang einstellen.
10	Die UKW-Kunstantenne über den 300 Ohm UKW-Antennenanschluss verbinden.	106.0MHz (100% moduliert bei 1kHz)	106.00MHz	Das Wechselstromröhrenvoltmeter oder Oszilloskop mit den Ausgangsklemmen verbinden.	CT3(UKW-Detektortrimmer) CT2(UKW-Antennentrimmer) CT1(UKW-Antennentrimmer)	Auf maximalen Ausgang einstellen.
	GLEICHSTROMBALANCE UND UKW-MONO-VERZERRUNGSABGLEICH					
11	Die UKW-Kunstantenne über den 300 Ohm UKW-Antennenanschluss verbinden.	98.0MHz (100% moduliert bei 1kHz)	98.00MHz	Das Gleichstromröhrenvoltmeter über Widerstände mit den Testpunkten TP4 und TP5 verbinden.(Siehe Abb.8)	T101 (UKW-ZFT)	Auf 0V auf dem Gleichstromröhrenvoltmeter einstellen.
12	Die UKW-Kunstantenne (60dB) über den 300 Ohm UKW-Antennenanschluss verbinden.	98.0MHz (100% moduliert bei 1kHz)	98.00MHz	Verzerrungsmesser mit den Ausgangsklemmen verbinden.	T102 (UKW-ZFT)	Auf minimalste Verzerrung des linken Ausgangs einstellen.
	UKW-MPX VCO-ABGLEICH					
13	–	Kein Signal	Störungsfreie Stelle	Den Frequenzzähler über Widerstand (100 kOhm) mit TP7 (Testpunkt) verbinden.	VR301	(1) Den Wahlschalter auf "FM auto" stellen. (2) Auf 19kHz±30Hz auf dem Frequenzzähler einstellen.
	ABSTIMMANZEIGEABGLEICH					
14	Die UKW-Kunstantenne (60dB) über den 300 Ohm UKW-Antennenanschluss verbinden.	98.1MHz (100% moduliert bei 1kHz)	98.10MHz	–	VR101	Den einstellbaren Widerstand VR101 so einstellen, daß die fünfte Leuchtdiode (LED) auf leuchtet.

Anmerkungen:
1. Stereo-Modulator . . . . . • Den Stereo-Modulatorausgang mit den EXT MOD Klemmen des Signalgenerators verbinden. Pilotsignalmodulation auf 10% bringen.
2. UKW-Signalgenerator . . . . . • Frequenzwert ungefähr 100MHz/Ausgangspegel auf 72dB (IHF)
3. Wahlschalter auf "FM auto" . . . . . • Modulationsart auf FM (UKW)

	UKW-SIGNAL-GENERATORVERBINDUNG	STEREO-MODULATORBETRIEBSART UND RATEN	MEßGERÄT (WECHSELSTROMRÖHREN-VOLTMETER)	EIN-STELLUNGSPUNKTE	BEMERKUNGEN
	UKW-STEREO-KANALTRENNUNGSABGLEICH				
15	Die UKW-Kunstantenne über den 300 Ohm UKW-Antennenanschluss verbinden.	(1kHz 30% moduliert) Betriebsart **L** (und **R**) Pilotsignal "ON" eingeschaltet.	Das Voltmeter über den "low pass" Filter mit den Ausgangsklemmen verbinden. (Siehe Abb. 9)	VR302	• Frequenzanzeige auf 98.0MHz. • Den Abgleich so vornehmen, daß bei Eingabe von Modullation in den linken Kanal, der rechte Kanal minimalen Ausgang anzeigt. Und entsprechender Weise im Umgekehrten Fall.
	UKW-STEREO-VERZERRUNGSABGLEICH				
16	Die UKW-Kunstantenne über den 300 Ohm UKW-Antennenanschluss verbinden. 98.0MHz 60dB	(1kHz 100% moduliert) Betriebs art **R**	Den Verzerrungsmesser mit den Ausgangsklemmen des Gerätes verbinden.	T1 (UKW ZFT)	Auf minimalste Verzerrung des rechten Ausgangs einstellen.

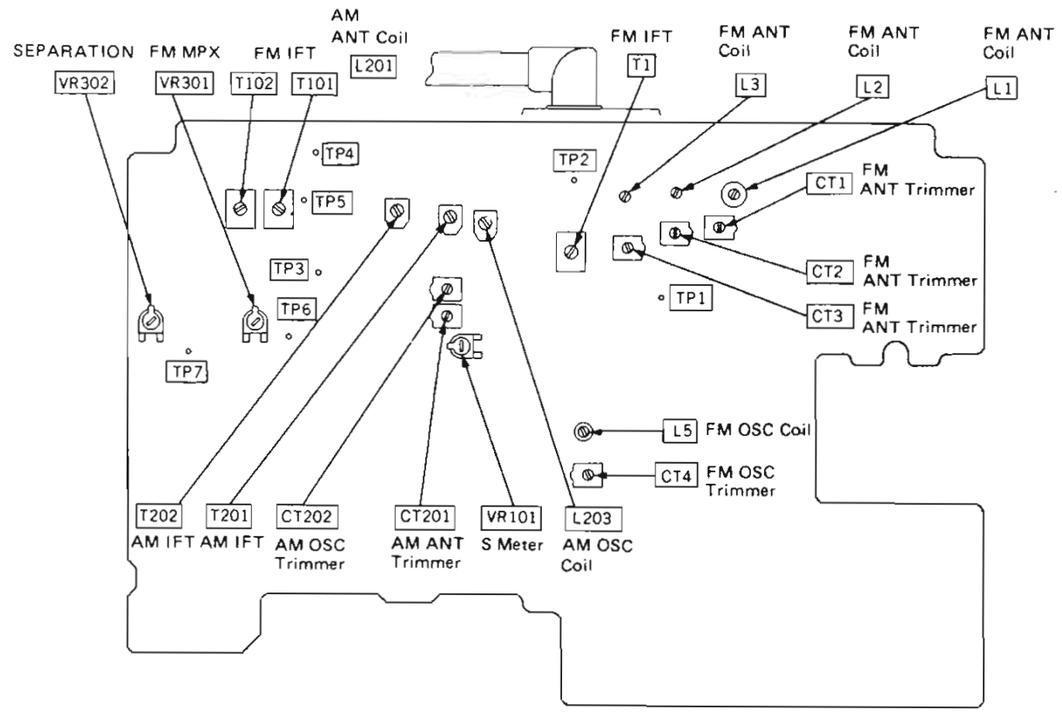
■ INSTRUCTIONS D'ALIGNMENT — FRANÇAIS

Notes:
1. Commutateur d'alimentation . . . . . Marche
2. Commutateur compensation physiologique/FM mono . . Arrêt/mono
3. Commutateur de sélection . . . . . AM/FM
4. Antenne fictive FM de 300Ω . . . . . Voir Fig. 7
5. Maintenir la ligne sous tension à 120 volts.

	GENERATEUR DE SIGNAL		REGLAGE DE L'AFFICHAGE DE FREQUENCE	TEMOIN (VTVM or OSCILLOSCOPE) (COMPTEUR DE DISTORSTION)	POINTS DE REGLAGE	REMARQUES
	CONNEXION	FREQUENCE				
	ALIGNEMENT AM					
1	Effectuer des boucles de plusieurs tours de fil et passer le signal dans la boucle du récepteur	450kHz (30% de mod. avec 400Hz)	Points de non-interférence	Brancher le VTVM CA ou l'oscilloscope à TP3	T201(AM 1er IFT) T202(AM 2eme IFT)	Régler sur la lecture maximale du VTVM
2	–	Non-signal	522kHz	Brancher le VTVM CC entre TP1 et la terre	L203(bobine AM OSC)	Régler la lecture du VTVM CC sur 1,5±0,05V
3	–	Non-signal	1611kHz	Brancher le VTVM CC entre TP1 et la terre	CT202 (Trimmer AM OSC)	Régler la lecture du VTVM CC sur 20±0,1V. Refaire les étapes 3 et 4
4	Effectuer des boucles de plusieurs tours de fil et passer le signal dans la boucle du récepteur.	549kHz	549kHz	Brancher le VTVM CA ou l'oscilloscope aux bornes de sortie.	L201 (bobine AM ANT)	Régler sur la sortie maximale.
5	Effectuer des boucles de plusieurs tours de fils et passer le signal dans la boucle du récepteur.	1503kHz	1503kHz	Brancher le VTVM CA ou l'oscilloscope aux bornes de sortie.	CT201 (Trimmer AM ANT)	Régler sur la sortie maximale. Refaire les étapes 4 et 5.
	ALIGNEMENT DE FM IF					
6	Brancher à TP2	10,7MHz	Point de non-interférence	Brancher l'oscilloscope à TP6	T1 (FM IFT)	1. Extraire le noyau de TP101. 2. Régler sur l'amplitude maximale et la linéarité appropriée entre les marqueurs de ±100kHz
	ALIGNEMENT DE FM RF					
7	–	Non-signal	87,50MHz	Brancher le VTVM CC entre TP1 et la terre	L5 (bobine FM OSC)	Régler la lecture du VTVM CC sur 26±0,05V
8	–	Non-signal	108,00MHz	Brancher la VTVM CC entre TP1 et la terre	CT4 (Trimmer FM OSC)	Régler la lecture du VTVM CC sur 26±0,05V. Refaire les étapes 7 et 8
9	Brancher la borne de l'antenne de 300Ω FM par l'antenne fictive FM.	90,0MHz (100% de mod. avec 1kHz)	90,00MHz	Brancher le VTVM CA ou l'oscilloscope aux bornes de sortie.	L3(Bobine FM DET) L2(Bobine FM ANT) L1(Bobine FM ANT)	Régler sur la sortie maximale.
10	Brancher la borne de l'antenne FM de 300Ω par l'antenne fictive FM.	106,0MHz (100% de mod. avec 1kHz)	106,00MHz	Brancher le VTVM CA ou l'oscilloscope aux bornes de sortie.	CT3(Trimmer FM DET) CT2(Trimmer FM ANT) CT1(Trimmer FM ANT)	Régler sur la sortie maximale.
	ALIGNEMENT DE L'EQUILIBRAGE DE CCET DELA DISTORSION DE FM MONO					
11	Brancher la borne de l'antenne FM de 300Ω par l'antenne fictive FM (60dB)	98,0MHz (100% de mod. avec 1kHz)	98,00MHz	Brancher le VTVM CC entre TP4 et TP5 par les résistances (Fig. 8)	T101 (FM IFT)	Régler la lecture du VTVM CC sur OV.
12	Brancher la borne de l'antenne FM de 300Ω par l'antenne fictive FM (60dB)	98,0MHz (100% de mod. avec 1kHz)	98,00MHz	Brancher le compteur de distorsion à la borne de sortie	T102 (FM IFT)	Régler sur la distorsion minimale de la sortie gauche
	ALIGNEMENT DU FM MPX VCO					
13	–	Non-signal	Point de non-interférence	Brancher le fréquencemètre à TP7 par la résistance (100kΩ)	VR301	1. Placer le commutateur de sélection sur "FM auto" 2. Régler la lecture du fréquencemètre sur 19kHz±30Hz
	ALIGNEMENT DU COMPTEUR D'ACCORD					
14	Brancher la borne de l'antenne FM de 300Ω par l'antenne fictive FM (60dB)	98,1MHz (100% de mod. avec 1kHz)	98,10MHz	–	VR101	Régler la VR101 de telle sorte que la 5ème LED s'allume.

Notes:	1. Modulateur stéréo		• Brancher la sortie du modulateur stéréo à la borne EXT MOD du générateur de signal. • Modulation du signal pilote à "10%"		
	2. Générateur de signal FM		• Régler le niveau approximatif de fréquence 100MHz/sortie sur "72dB (IHF)"		
	3. Commutateur de sélection sur "FM auto"		• Mode de modulation sur "FM"		
	CONNEXION DU GENERATEUR DE SIGNAL FM	MODE & TAUX DE MOD. DU MODULATEUR STEREO	TEMOIN (VTVM CA)	POINT DE REGLAGE	REMARQUES
	ALIGNEMENT DE LA SEPARATION DE FM STEREO				
15	Brancher les bornes d'antenne FM de 300Ω par l'antenne fictive FM	(1kHz modulation de 30%) signal pilote Mode **L** (et **R**) sur "ON".	Brancher le VTVM à la borne de sortie par le filtre passe bas (Voir la Fig. 9)	VR302	• Affichage de la fréquence de 98,0MHz. • Régler de telle sorte que l'entrée de l'antenne soit sujette à la modulation **L** (ou modulation **R**). La sortie du canal **R** (ou la sortie du canal **L**) devient minimale.
	ALIGNEMENT DE LA DISTORSION FM STEREO				
16	Brancher la borne de l'antenne FM de 300Ω par l'antenne fictive FM. 98,0MHz, 60dB	(1kHz, modulation de 30%) MODE **R**	Brancher le compteur de distorsion à la borne de sortie du récepteur.	T1 (FM IFT)	Régler sur la distorsion minimale de la sortie droite.

■ ALIGNMENT POINTS



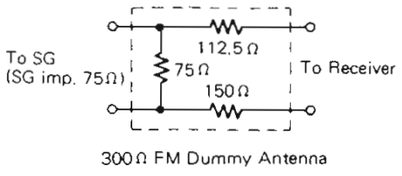


Fig. 7

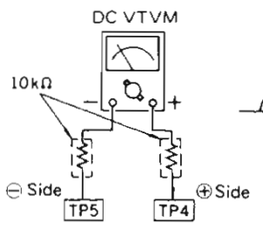
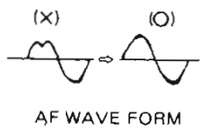


Fig. 8



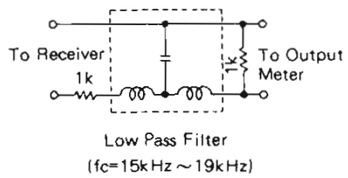
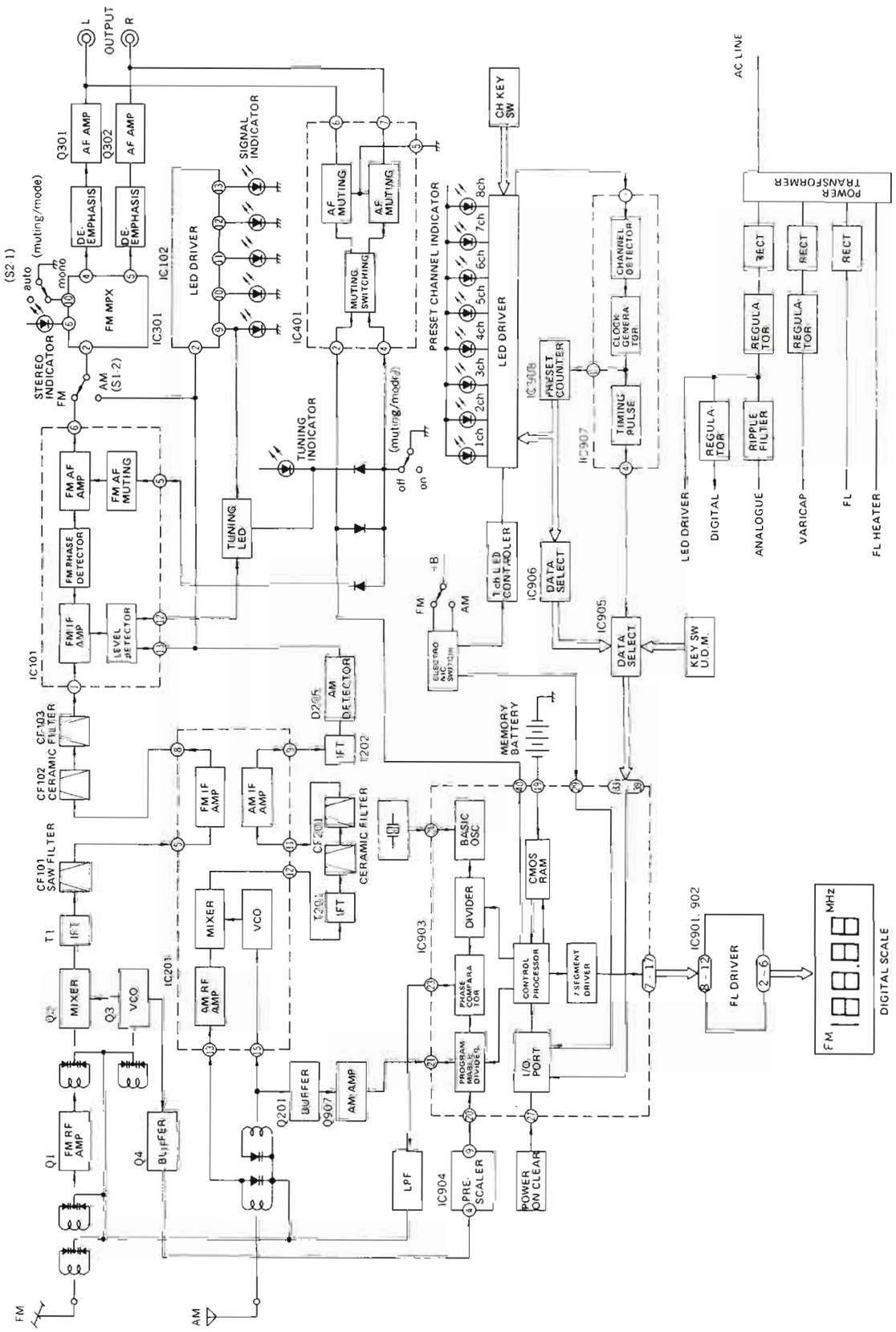


Fig. 9

■ BLOCK DIAGRAM



■ PRINTED CIRCUIT BOARD WIRING VIEW

Ground (Earth) Line

Q702 2SC1847 REGULATOR
Q701 2SC945 RIPPLE FILTER
Q1 2SK74 FM RF AMP
Q201 2SC2295 AM BUFFER
GND
FM ANT
75Ω
300Ω
AM ANT
AM ANTENNA COIL
Green
Red
White
Black
Yellow
OUTPUT
IC201 AN217 FM/AM IF, AM OSC

1	0	7	1.1	13	0.7
2	0	8	8.6	14	1.2
3	0	9	4.6	15	1.2
4	8.8	10	1.1	16	0.7
5	1.1	11	0.8		
6	0	12	4.5		

IC101 RVIUPC1167 FM IF, S DET

1	2.2	7	5	13	0.9
2	2.1	8	5.1	14	0
3	2.1	9	5.1	15	0
4	0	10	5.1	16	0
5	1.6	11	11		
6	5.2	12	2.6		

IC401 AN6135 MUTING
Q101,103 2SD601 SWITCHING
Q301,302 2SB709 AF AMP
Q102 2SD601 LED DRIVER
IC301 RVILA3350 FM MPX

1	12.1	9	0
2	2.9	10	2.1
3	5.8	11	2.1
4	8.8	12	2.3
5	8.8	13	2.1
6	10.6	14	2.1
7	0	15	2.1
8	0.4	16	2.9

Q2,3,4 2SC2295 FM MIX,OSC & FM BUFFER
Q904 2SC945 REGULATOR
Q908,909,910 2SC2405 LOW PASS AMP
AC 110/120/220/240V
VOLTAGE SELECTOR
Brown
Red
T701
Blue
Black
Blue
White
Blue
S4
Power
S6700HB
RUP1123YA
IC907 RVIMSM4069RS HEX INVERTER
Q924 2SD601 SWITCHING
BATTERIES (4.5V)
IC908 RVIMSM4017RS DECADE COUNTER/DIVIDER
Q913,922,923 2SD601 SWITCHING
Q906 2SD601 SWITCHING
Q907 2SC2295 AM BUFFER
Q903 2SB709 PCLR
IC904 AN6821 FM PRE SALER

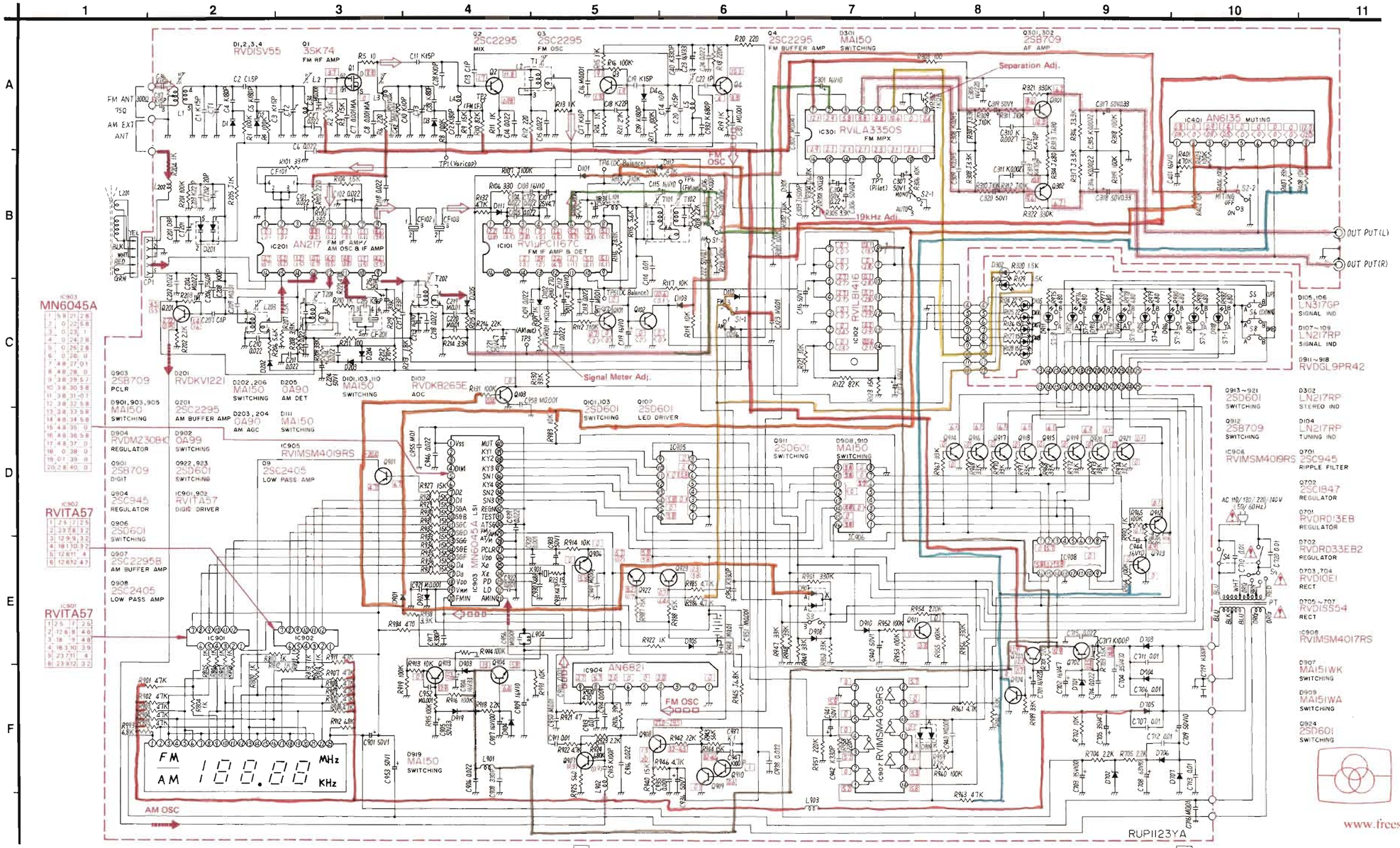
1	0	6	0
2	4.7	7	2
3	0	8	5.7
4	2	9	2.7
5	0		

muting/FM mode
IC903 MN6045 LSI
Q905 2SD601 SWITCHING
IC901 RVITA57 DIGIT DRIVER
902

1	2.5	7	2.5
2	12.8	8	4.8
3	18	9	4.8
4	18.3	10	3.9
5	23.7	11	4
6	23.9	12	3.2

1	2.5	7	2.5
2	23.7	8	3.2
3	12.9	9	3.2
4	18.1	10	3.2
5	12.6	11	4
6	12.6	12	4.7

DISPLAY
Q901 2SB709 DIGIT AMP
IC102 RVILB1416 LED DRIVER
IC905,906 RVIMSM4019RS QAUD AND/OR SWITCHING
memory
tuning
S7-1~S7-8 FM/AM preset tuning
memory lock
selector
Q911,914~921 2SD601 SWITCHING
Q912 2SB709 SWITCHING



■ SCHEMATIC DIAGRAM ····· MODEL ST-C03/K

- **Notes of schematic diagram**
  * This schematic diagram may be modified at any time with the development of new technology.

Notes:

1. S1-1, S1-2: Selector switch in "**FM**" position.
2. S2-1, S2-2: Muting/FM mode switch in "**off/mono**" position.
3. S3: Memory lock switch in "**off**" position.
4. S4: Power source switch in "**off**" position.
5. S5: Tuning up switch.
6. S6: Tuning down switch.
7. S7-1 ~ S7-8: FM/AM preset tuning switch.
8. S8: Memory switch.
9. S9: Voltage selector switch

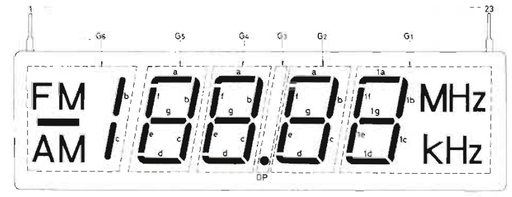
- Indicated voltage are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
- Figures in [ ] stand for DC voltage in FM nosignal mode.
- Figures in ( ) stand for DC voltage in AM mode.
- Figures in < > stand for DC voltage in signal reception mode.

Signal lines ⇨ FM ➡ AM ➡ AF

10. To represent transistors, **Q** is used instead of **TR**(Ex. TR1→Q1)
11. ⚠ indicates that only parts specified by the manufacturer be used for safety.

■ TERMINAL GUIDE OF TRANSISTOR & IC

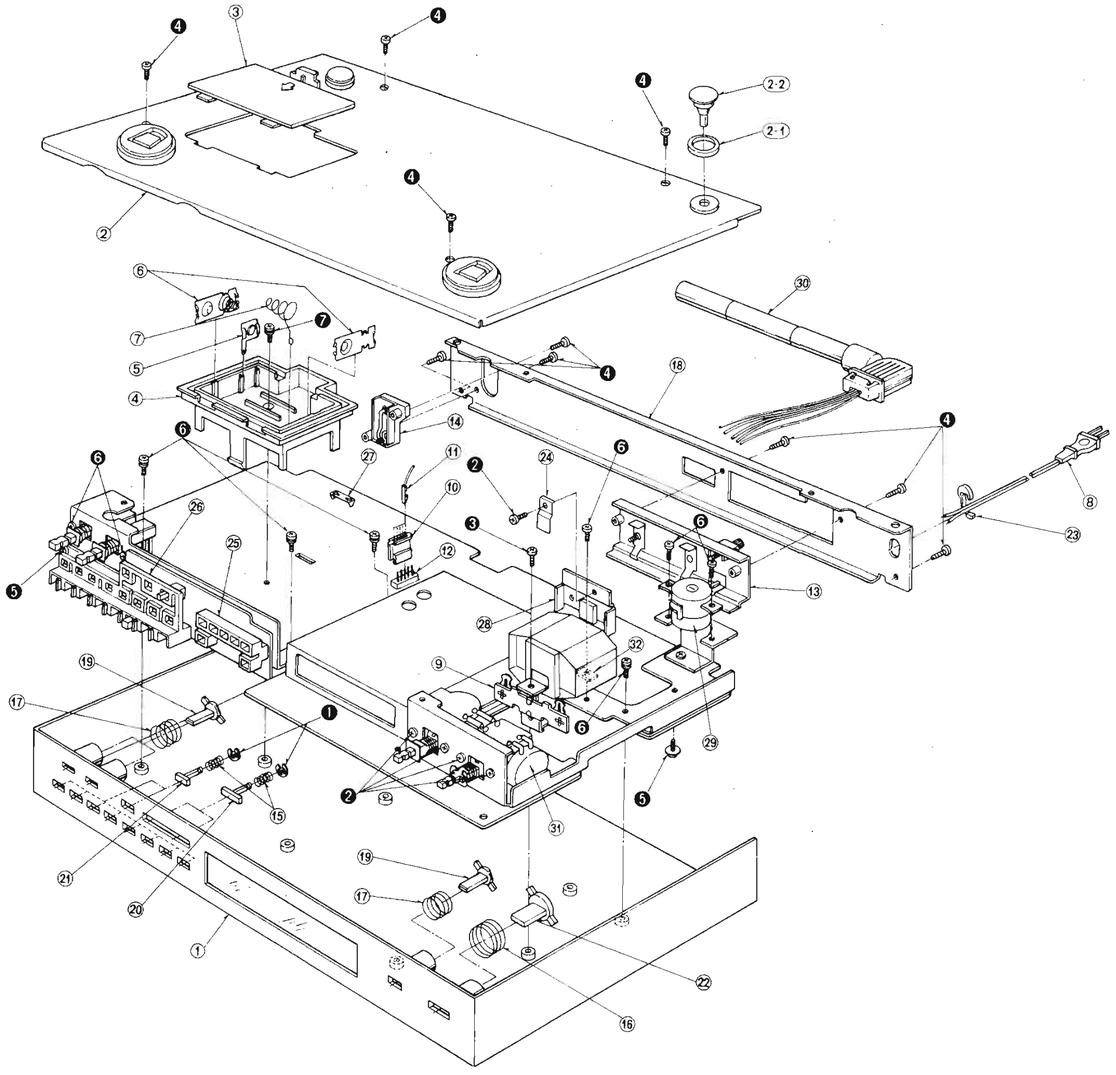
2SC1847	2SC2295, 2SD601, 2SB709, 2SC2405	RVIμPC1167, AN217, RVILA3350, RVIMSM4019, RVIMSM4017	2SC945	AN6135, AN6821
3SK74	RVITA57	MN6045	RVILB1416	RVIMSM4069



Terminal No.	1	2	3	4	5	6	7	8	9	10	11	12
Electrode	F	1a, 1f 1o, 1d	G6	—	FM MHz Dp	g	G5	f	G5	e	d	G4
Terminal No.	13	14	15	16	17	18	19	20	21	22	23	
Electrode	C	G3	G2	d	a	G1	1g	AM kHz	G1	1b 1e	F	

Notes
1. G1 ~ G6 ..... Grid
2. F ..... Filament

■ EXPLODED VIEW



■ REPLACEMENT PARTS LIST ····· Cabinet & Chassis Parts

NOTES: 1. Part numbers are indicated on most mechanical parts
Please use this part number for parts orders
2. △ indicates that only parts specified by the manufacturer be used for safety.

Ref. No.		Part No.	Part Name & Description
CABINET and CHASSIS			
1		RYMTC03N	Cabinet Assembly
2		RYUTC03E	Bottom Board Assembly
2-1		SGX803	Ring, Rear Side Feet
2-2		SHG1487	Feet, Rear Side
3		RYNTC03N	Battery Cover Assembly
4		RJB3016Z	Battery Case
5		RJC314A	Terminal, Battery + Side
6		RJC730Z	Terminal, Battery +, − Side
7		RJC322Z	Spring, Battery − Side
8 [except XE,XAL]	△	RJA23Z	AC Cord, Power Source
8 [XE]	△	RJA45Z	AC Cord, Power Source
8 [XAL]	△	RJA44Z	AC Cord, Power Source
9	△	RJR29Z	Terminal
10		RJS217Y	Socket, Core Antenna
11		RJT462Z	Terminal, Socket
12		RJP116Z	Plug, Socket
13		SJF4419-3	Terminal, Antenna
14		SJF3225A-1	Terminal, Output
15		RDS3052Z	Spring, Preset & Tuning Button
16		RDS5132Z	Spring, Power Source Button
17		SUS123-1	Spring, Switch Button
18 [except XA,XAL]		SGP1430-2C	Rear Panel
18 [XA]		SGP1430-2E	Rear Panel
18 [XAL]		SGP1430-2F	Rear Panel
19		SBC205-1	Button, Selector
20		RBC212Z	Button, Tuning
21		RBC213Z	Button, Preset
22		RBC220Z	Button, Power Source
23		RHR141Z	Bushing, AC Cord
24		RUS397Z	Spring, Q702
25		RMP125Z	Holder, LED
26		RMP126Z	Holder, LED
27		RMC171Y	Shield Cover, IC1
28		RMY62YS	Heat Sink, Q702
29		RUV387Z	Cover, Voltage Selector
30		SIQXA4029-2	Caution Label
31	△	RHR328Z	Cover, Capacitor
32		RHM117Z	Spacer, Transformer
SCREWS and WASHERS			
❶		XUC2FT	E Ring, Button M'tg
❷		XSN3+6S	Screw, Switch M'tg
❸		XTN3+6B	Screw, Terminal M'tg
❹		XTB3+8BFN	Screw, Bottom Board M'tg
❺		XTN3+6B	Screw, Chassis M'tg
❻		XSN3+8BNS	Screw, Circuit Board M'tg
❼		XSN3+8BNS	Screw, Circuit Board M'tg
ACCESSORIES			
A1		SSA287	Cord, FM indoor Antenna
A2		SJP2241	Connection Cord
A3 [XA]	△	RJP16ZS	Plug, AC Cord
PACKING PARTS			
P1		XFB36X40A04	Polyethylene Bag
P2		XJB10X20A04	Polyethylene Bag
P3		SPS1709-1	Pad, Bottom
P4		SPS1771-2	Pad, Upper
P5 [except XGF]		RPK919Z	Carton Box
P5 [XGF]		RPK919Y	Carton Box
P6		RQX6542Z	Instruction Book

■ REPLACEMENT PARTS LIST ·····Electric Parts

NOTES: 1. Part numbers are indicated on most mechanical parts
Please use this part number for parts orders
2. △ indicates that only parts specified by the manufacturer be used for safety.

Ref. No.		Part No.	Part Name & Description
INTEGRATED CIRCUITS			
IC101		SVIUPC1167C	IC, FM IF Amplifier & Detector
IC102		RVILB1416	IC, LED Driver
IC201		AN217P-BB	IC, FM/AM IF Amplifier & AM Oscillator
IC301		RVILA3350S	IC, FM Multiplex
IC401		AN6135	IC, Muting
IC901, 902		RVITA57	IC, Digit Driver
IC903		MN6045E	IC, PLL CONTROLER RAM
IC904		AN6821	IC, FM Pre-Scaler
IC905, 906		RVIMSM4019RS	IC, Quad And/Or Select Gate
IC907		RVIMSM4069RS	IC, Hex Inverter
IC908		RVIMSM4017RS	IC, Decade Counter/Divider
TRANSISTORS			
Q1		3SK74-L1	Transistor, FM RF Amplifier
Q2, 3, 4, 201, 907		2SC2295B	Transistor, FM Mixer, Oscillator, Buffer & AM Buffer
Q101~103, 911, 922~924		2SD601	Transistor, Switching, LED Driver
Q301, 302, 901		2SB709	Transistor, AM Amplifier, Digit Amplifier
Q701, 904		2SC945-P2	Transistor, Ripple Filter, Regulator
Q702		2SC1847-R	Transistor, Regulator
Q903, 912		2SB709R	Transistor, Regulator
Q906, 913~921		2SD601	Transistor, Switching
Q908, 909, 910		2SC2405-S	Transistor, Low Pass Amplifier
DIODES			
D1 ~ 4		RVDMV104	Diode, Variable Capacitance
D101, 103, 110, 111, 112, 202, 206, 301, 901, 903, 905, 908, 910, 919		**MA162A**	Diode, Switching
D102		RVDKB265F	Diode, Operation Compensator
D104, 107~109, 302		LN217RF-3	Light Emitting Diode, Tuning, Signal & Stereo
D105, 106		LN317GP-2	Light Emitting Diode, Signal
D201		RVDKV1221	Diode, Variable Capacitance
D203~205, 902		**20A90**	Diode, AM AGC, AM Detector & Switching
D701		RVDRD13EB	Diode, Regulator
D702		RVDRD33EB1	Diode, Regulator
D703, 704	△	**SM112**	Diode, Rectifier
D705, 706, 707	△	**SM112**	Diode, Rectifier
D904		RVDV06R8EB1	Diode, Regulator
D907, 909		MA151WK	Diode, Switching
D911 ~ 918		RVDGL9PR42	Light Emitting Diode, Preset
COILS and TRANSFORMERS			
L1		SLA4N2-O	Coil, FM RF
L2, 3		RLO4N126-O	Coil, FM RF
L4		RLQY15G5G-O	Coil, IF Trap
L5		RLO4N126-O	Coil, FM Oscillator
L101		RLQX2701-K	Coil, Phase Shift
L201		RLF20127	Coil, AM Antenna
L202, 901, 903		RLQX1014-Y	Coil, Choke
L203		RLO2M25-K	Coil, AM Oscillator
L902		RLQZ4701-D	Coil, Choke
L904		RLQZ1003-Y	Coil, Choke
T1		SLI4C109	Transformer, FM IF
T101		SLI4C511-K	Transformer, FM IF
T102		SLI4C513-K	Transformer, FM IF
T201		RLI2M213-K	Transformer, AM IF
T202		RLI2M401-M	Transformer, AM IF
T701	△	RLT5J265-W	Transformer, Power Source
CERAMIC FILTERS			
CF101		SVFF107MC1-A	Ceramic Filter, 10.7MHz
CF102, 103		RVFSFE107LKA	Ceramic Filter, 10.7MHz
CF201		RVFSFZ450B7	Ceramic Filter, 450kHz
VARIABLE RESISTORS			
VR101, 302		EVNK4AA00B13	Meter, Separation Adjustment
VR301		EVNM4AA00B53	PLL VCO 19kHz Adjustment
VARIABLE CAPACITORS			
CT1~4, 201		RCV1PX10AGS	Trimmer
CT202		RCV1PX20AGS	Trimmer
SWITCHES			
S1, 3		RSHX013Z	Switch, Memory Lock & Selector
S2		RSH2811Z	Switch, Muting & FM Mode
S4	△	RSH1804Z	Switch, Power Source
S5 ~ 8		EVQQ4R13K	Switch, Tuning, Preset & Memory
S9	△	RSR4A01V	Switch, Voltage Selector

Ref. No.		Part No.	Part Name & Description
DISPLAY TUBE			
		RAD7BT01S	Display, Frequency
CRYSTAL			
X901		RVCA11520N2N	Crystal
RESISTORS			
R1		RRD18KK104	Chip, 100kΩ, 1/8W, ±10%
R2		RRD18KK333	Chip, 33kΩ, 1/8W, ±10%
R3		RRD18KK153	Chip, 15kΩ, 1/8W, ±10%
R4		RRD18KK104	Chip, 100kΩ, 1/8W, ±10%
R5		RRD18KK100	Chip, 10Ω, 1/8W, ±10%
R6		RRD18KK221	Chip, 220Ω, 1/8W, ±10%
R7, 8		RRD18KK104	Chip, 100kΩ, 1/8W, ±10%
R9		RRD18KK153	Chip, 15kΩ, 1/8W, ±10%
R10		RRD18KK823	Chip, 82kΩ, 1/8W, ±10%
R11		RRD18KK102	Chip, 1kΩ, 1/8W, ±10%
R12		RRD18KK221	Chip, 220Ω, 1/8W, ±10%
R13, 14, 15		RRD18KK102	Chip, 1kΩ, 1/8W, ±10%
R16, 17		RRD18KK104	Chip, 100kΩ, 1/8W, ±10%
R18		RRD18KK224	Chip, 220kΩ, 1/8W, ±10%
R19		RRD18KK102	Chip, 1kΩ, 1/8W, ±10%
R20		RRD18KK221	Chip, 220Ω, 1/8W, ±10%
R21		RRD18KK273	Chip, 27kΩ, 1/8W, ±10%
R23		RRD18KK150	Chip, 15Ω, 1/8W, ±10%
R101		RRD18KK330	Chip, 33Ω, 1/8W, ±10%
R102		RRD18KK221	Chip, 220Ω, 1/8W, ±10%
R103		RRD18KK331	Chip, 330Ω, 1/8W, ±10%
R104		RRD18KK152	Chip, 1.5kΩ, 1/8W, ±10%
R106		RRD18KK331	Chip, 330Ω, 1/8W, ±10%
R108		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R109		RRD18KK102	Chip, 1kΩ, 1/8W, ±10%
R110		RRD18KK271	Chip, 270Ω, 1/8W, ±10%
R111		RRD18KK470	Chip, 47Ω, 1/8W, ±10%
R112		**ERD25FJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R113		**ERD25TJ183**	Carbon, 18kΩ, 1/4W, ± 5%
R114		RRD18KK473	Chip, 47kΩ, 1/8W, ±10%
R115		RRD18KK562	Chip, 5.6kΩ, 1/8W, ±10%
R116		**ERD25FJ392**	Carbon, 3.9kΩ, 1/4W, ± 5%
R117		RRD18KK103	Chip, 10kΩ, 1/8W, ±10%
R118		RRD18KK222	Chip, 2.2kΩ, 1/8W, ±10%
R119		RRD18KK103	Chip, 10kΩ, 1/8W, ±10%
R120		RRD18KK104	Chip, 100kΩ, 1/8W, ±10%
R121		RRD18KK103	Chip, 10kΩ, 1/8W, ±10%
R122		RRD18KK823	Chip, 82kΩ, 1/8W, ±10%
R123		RRD18KK153	Chip, 15kΩ, 1/8W, ±10%
R124, 125		RRD18KK220	Chip, 22Ω, 1/8W, ±10%
R126, 127		RRD18KK151	Chip, 150Ω, 1/8W, ±10%
R128		RRD18KK151	Chip, 150Ω, 1/8W, ±10%
R129		RRD18KK152	Chip, 1.5kΩ, 1/8W, ±10%
R130		RRD18KK333	Chip, 33kΩ, 1/8W, ±10%
R131		RRD18KK104	Chip, 100kΩ, 1/8W, ±10%
R132		RRD18KK473	Chip, 47kΩ, 1/8W, ±10%
R201		RRD18KK104	Chip, 100kΩ, 1/8W, ±10%
R202		RRD18KK222	Chip, 2.2kΩ, 1/8W, ±10%
R203		RRD18KK105	Chip, 1MΩ, 1/8W, ±10%
R204		RRD18KK102	Chip, 1kΩ, 1/8W, ±10%
R205		**ERD25FJ102**	Carbon, 1kΩ, 1/4W, ± 5%
R206		RRD18KK562	Chip, 5.6kΩ, 1/8W, ±10%
R207		RRD18KK152	Chip, 1.5kΩ, 1/8W, ±10%
R208		RRD18KK392	Chip, 3.9kΩ, 1/8W, ±10%
R209		RRD18KK333	Chip, 33kΩ, 1/8W, ±10%
R210		RRD18KK102	Chip, 1kΩ, 1/8W, ±10%
R211		RRD18KK101	Chip, 100Ω, 1/8W, ±10%
R212		RRD18KK274	Chip, 270kΩ, 1/8W, ±10%
R213		RRD18KK182	Chip, 1.8kΩ, 1/8W, ±10%
R214		RRD18KK332	Chip, 3.3kΩ, 1/8W, ±10%
R215		RRD18KK102	Chip, 1kΩ, 1/8W, ±10%
R216		RRD18KK223	Chip, 22kΩ, 1/8W, ±10%
R218		RRD18KK104	Chip, 100kΩ, 1/8W, ±10%
R219		RRD18KK333	Chip, 33kΩ, 1/8W, ±10%
R221		RRD18KK471	Chip, 470Ω, 1/8W, ±10%
R301		RRD18KK104	Chip, 100kΩ, 1/8W, ±10%
R302		**ERD25FJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R303		RRD18KK101	Chip, 100Ω, 1/8W, ±10%
R304		RRD18KK682	Chip, 6.8kΩ, 1/8W, ±10%
R305		RRD18KK332	Chip, 3.3kΩ, 1/8W, ±10%
R306		RRD18KK103	Chip, 10kΩ, 1/8W, ±10%

Ref. No.	Part No.	Part Name & Description
R307, 308	**ERD25FJ332**	Carbon, 3.3kΩ, 1/4W, ± 5%
R309, 310	RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R311, 312	RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R313, 314	**ERD25FJ681**	Carbon, 680Ω, 1/4W, ± 5%
R316, 317	**ERD25FJ332**	Carbon, 3.3kΩ, 1/4W, ± 5%
R318, 319	RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R320	RRD18XK152	Chip, 1.5kΩ, 1/8W, ±10%
R321, 322	RRD18XK334	Chip, 330kΩ, 1/8W, ±10%
R401	RRD18XK474	Chip, 470kΩ, 1/8W, ±10%
R402	RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R403	RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R406	RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R407	RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R408	RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R701	RRD18XK221	Chip, 220Ω, 1/8W, ±10%
R702	RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R703	RRD18XK152	Chip, 1.5kΩ, 1/8W, ±10%
R704, 705	RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R804	**ERD25FJ102**	Carbon, 1kΩ, 1/4W, ± 5%
R805, 806	RRD18XK102	Chip, 1kΩ, 1/8W, ±10%
R807, 808	**ERD25FJ102**	Carbon, 1kΩ, 1/4W, ± 5%
R809, 810	RRD18XK102	Chip, 1kΩ, 1/8W, ±10%
R811	**ERD25FJ102**	Carbon, 1kΩ, 1/4W, ± 5%
R812, 813	RRD18XK102	Chip, 1kΩ, 1/8W, ±10%
R814	RRD18XK102	Chip, 1kΩ, 1/8W, ±10%
R901, 902	RRD18XK473	Chip, 47kΩ, 1/8W, ±10%
R903, 904	RRD18XK473	Chip, 47kΩ, 1/8W, ±10%
R905, 906	RRD18XK473	Chip, 47kΩ, 1/8W, ±10%
R907, 908	RRD18XK473	Chip, 47kΩ, 1/8W, ±10%
R909, 910	RRD18XK473	Chip, 47kΩ, 1/8W, ±10%
R911	RRD18XK473	Chip, 47kΩ, 1/8W, ±10%
R912	RRD18XK682	Chip, 6.8kΩ, 1/8W, ±10%
R913, 914	RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R915, 916	RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R918	RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R919	RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R920	RRD18XK471	Chip, 470Ω, 1/8W, ±10%
R921	RRD18XK470	Chip, 47Ω, 1/8W, ±10%
R922	RRD18XK472	Chip, 4.7kΩ, 1/8W, ±10%
R923	RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R924	RRD18XK684	Chip, 680kΩ, 1/8W, ±10%
R925	RRD18XK561	Chip, 560Ω, 1/8W, ±10%
R926	RRD18XK393	Chip, 39kΩ, 1/8W, ±10%
R927, 928	RRD18XK153	Chip, 15kΩ, 1/8W, ±10%
R929, 930	RRD18XK153	Chip, 15kΩ, 1/8W, ±10%
R931, 932	RRD18XK153	Chip, 15kΩ, 1/8W, ±10%
R933, 934	RRD18XK153	Chip, 15kΩ, 1/8W, ±10%
R935, 936	RRD18XK153	Chip, 15kΩ, 1/8W, ±10%
R937	RRD18XK153	Chip, 15kΩ, 1/8W, ±10%
R938	RRD18XK332	Chip, 3.3kΩ, 1/8W, ±10%
R940	RRD18XK153	Chip, 15kΩ, 1/8W, ±10%
R942	RRD18XK223	Chip, 22kΩ, 1/8W, ±10%
R943	RRD18XK563	Chip, 56kΩ, 1/8W, ±10%
R944	RRD18XK153	Chip, 15kΩ, 1/8W, ±10%
R945	**ERD25FJ682**	Carbon, 33kΩ, 1/4W, ± 5%
R946	RRD18XK472	Chip, 4.7kΩ, 1/8W, ±10%
R947, 948	RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R949, 950	RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R951	RRD18XK334	Chip, 330kΩ, 1/8W, ±10%
R952, 953	RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R954	RRD18XK224	Chip, 330kΩ, 1/8W, ±10%
R955	RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R956	RRD18XK334	Chip, 220kΩ, 1/8W, ±10%
R957, 958	RRD18XK224	Chip, 220kΩ, 1/8W, ±10%
R959	RRD18XK223	Chip, 22kΩ, 1/8W, ±10%
R960	RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R961	RRD18XK472	Chip, 4.7kΩ, 1/8W, ±10%
R962	RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R963	RRD18XK473	Chip, 47kΩ, 1/8W, ±10%
R964, 965	RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R966, 967	RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R968, 969	RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R970, 971	RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R972, 973	RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R974	RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R975, 976	RRD18XK681	Chip, 680Ω, 1/8W, ±10%
R977, 978	RRD18XK681	Chip, 680Ω, 1/8W, ±10%
R979, 980	RRD18XK681	Chip, 680Ω, 1/8W, ±10%
R981, 982	RRD18XK681	Chip, 680Ω, 1/8W, ±10%
R983	RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R984	RRD18XK471	Chip, 470Ω, 1/8W, ±10%
R985, 986	RRD18XK472	Chip, 4.7kΩ, 1/8W, ±10%
R987, 988	RRD18XK153	Chip, 15kΩ, 1/8W, ±10%
R989	RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R990	RRD18XK102	Chip, 1kΩ, 1/8W, ±10%
R991	RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R992	RRD18XK102	Chip, 1kΩ, 1/8W, ±10%
R993	RRD18XK682	Chip, 6.8kΩ, 1/8W, ±10%
R994	**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%

CAPACITORS

Ref. No.	Part No.	Part Name & Description
C1	ECUX1H150KC	Chip, 15pF, 50V, ±10%
C2	ECUX1H1R5CC	Chip, 1.5pF, 50V, ±0.25pF
C3	ECUX1H150KC	Chip, 15pF, 50V, ±10%
C4, 5	ECUX1H181KC	Chip, 180pF, 50V, ±10%
C6	ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20 %
C7, 8	ECKD1H102MD	Ceramic, 0.001μF, 50V, ±20%
C10	ECUX1H100KC	Chip, 10pF, 50V, ±0.5pF
C11	ECUX1H150KC	Chip, 15pF, 50V, ±10%
C12	ECUX1H181K	Chip, 180pF, 50V, ±10%
C13	ECCD1H010C	Ceramic, 1pF, 50V, ±0.25pF
C14, 15	ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20 %
C16	ECUX1H102MD	Chip, 0.001μF, 50V, ±20%
C17	ECUX1H100KC	Chip, 10pF, 50V, ±10%
C18	ECUX1H220KC	Chip, 22pF, 50V, ±10%
C19	ECUX1H150KC	Chip, 15pF, 50V, ±10%
C20	ECUX1H150KC	Chip, 15pF, 50V, ±10%
C22	ECUX1H010CC	Chip, 1pF, 50V, ±0.25pF
C23	**ECEA1CS330**	Electrolytic, 33μF, 16V,
C24	ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20 %
C27	ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20 %
C28	ECUX1H100KC	Chip, 10pF, 50V, ±10%
C30	ECUX1H102MD	Chip, 0.001μF, 50V, ±20%
C34	ECUX1H102MD	Chip, 0.001μF, 50V, ±20%
C36, 37	ECUX1H150KC	Chip, 15pF, 50V, ±10%
C38, 39	ECUX1H181KC	Chip, 18pF, 50V, ±10%
C40, 41	ECCD1H331K	Ceramic, 330pF, 50V, ±10%
C42	ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20 %
C101, 102	ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20 %
C103	**ECEA1HS100**	Electrolytic, 10μF, 50V,
C104	ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20 %
C105	ECKD1H223ZF	Ceramic, 0.022μF, 50V, +80 −20 %
C106	ECUX1H101K	Chip, 100pF, 50V, ±10%
C107, 108	**ECEA25Z4R7**	Electrolytic, 4.7μF, 25V
C109	ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20 %
C111	ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20 %
C112	**ECEA1HS100**	Electrolytic, 10μF, 50V
C113	ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20 %
C114	ECUX1H103ZF	Chip, 0.01μF, 50V, +80 −20 %
C115	**ECEA1HS100**	Electrolytic, 10μF, 50V
C116, 117	**ECEA50Z1**	Electrolytic, 1μF, 50V
C118	ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20 %
C119	**ECEA1HS100**	Electrolytic, 10μF, 50V
C122	ECKD1H223ZF	Ceramic, 0.022μF, 50V, +80 −20 %
C123	ECUX1H103MD	Chip, 0.01μF, 50V, ±20%
C201	ECUX1H030DC	Chip, 3pF, 50V, ±0.5pF
C202	ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20 %
C203	ECUX1H220KC	Chip, 22pF, 50V, ±10%
C204	ECUX1H223MD	Chip, 0.022μF, 50V, ±20%
C206	ECQS05561JZ	Styrol, 560pF, 50V, ± 5%
C207	ECUX1H010CC	Chip, 1pF, 50V, ±0.25pF
C208	ECUX1H100KC	Chip, 10pF, 50V, ±10%
C209	ECUX1H103MD	Chip, 0.01μF, 50V, ±20%
C210, 211	ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20 %
C212	ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20 %
C213	**ECEA1HS100**	Electrolytic, 10μF, 50V
C214	ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20 %
C215	ECUX1H560KC	Chip, 56pF, 50V, ±10%
C216	**ECEA25Z4R7**	Electrolytic, 4.7μF, 25V
C217	ECUX1H330KC	Chip, 33pF, 50V, ±10%
C218	ECUX1H223ZF	Chip, 0.022μF, 50V, +80 −20 %
C219, 220	ECUX1H103MD	Chip, 0.01μF, 50V, ±20%
C221	**ECEA25Z4R7**	Electrolytic, 4.7μF, 25V
C222	**ECEA50ZR1**	Electrolytic, 0.1μF, 50V
C224	**ECEA50Z1**	Electrolytic, 1μF, 50V
C301	**ECEA1HS100**	Electrolytic, 10μF, 50V
C302	ECQM1H473MZ	Polyester, 0.047μF, 50V, ±20%
C303	ECQS05152JZ	Styrol, 1500pF, 50V, ± 5%
C304	**ECEA50ZR22**	Electrolytic, 0.22μF, 50V
C305	**ECEA1CS221**	Electrolytic, 220μF, 16V
C306	**ECEA50ZR47**	Electrolytic, 0.47μF, 50V
C307	**ECEA50Z1**	Electrolytic, 1μF, 50V
C308, 309	ECQM1H153KZ	Polyester, 0.015μF, 50V, ±10%
C310, 311	ECQM1H272KZ	Polyester, 2700pF, 50V, ±10%
C312, 313	ECKD1H471KB	Ceramic, 470pF, 50V, ±10%
C315, 316	ECQM1H222KZ	Polyester, 2200pF, 50V, ±10%
C317, 318	**ECEA50ZR33**	Electrolytic, 0.33μF, 50V
C319, 320	**ECEA50Z1**	Electrolytic, 1μF, 50V
C401	**ECEA1HS100**	Electrolytic, 10μF, 50V
C701	**ECEA1CS221**	Electrolytic, 220μF, 16V
C702	**ECEA1ES470**	Electrolytic, 47μF, 25V
C703	**ECEA1VS101**	Electrolytic, 100μF, 35V

Ref. No.		Part No.	Part Name & Description
C704		**ECEA1VS471**	Electrolytic, 470μF, 35V
C705		**ECEA1HS470**	Electrolytic, 47μF, 50V
C706, 707		ECKD2H103PE	Ceramic, 0.01μF, 500V, $\pm^{100}_{0}$%
C708		**ECEA1JS100**	Electrolytic, 10μF, 63V
C709		**ECEA1HS470**	Electrolytic, 47μF, 50V
C710		ECKDKC103PE	Ceramic, 0.01μF, $\pm^{100}_{20}$%
C711, 712		ECKD2H103PE	Ceramic, 0.01μF, 500V, $\pm^{100}_{0}$%
C713		ECKD2H103PE	Ceramic, 0.01μF, 500V, $\pm^{100}_{0}$%
C714, 715		ECUX1H223ZF	Chip, 0.022μF, 50V, $\pm^{80}_{20}$%
C716		ECUX1H103MD	Chip, 0.01μF, 50V, ±20%
C717		ECUX1H101K	Chip, 100pF, 50V, ±10%
C720	⚠	ECKDKC103PF	Ceramic, 0.01μF, 50V, $\pm^{10}_{10}$%
C901		**ECEA50Z1**	Electrolytic 1μF, 50V
C903		**ECEA50Z1**	Electrolytic, 1μF, 50V
C904		**ECEA1CS330**	Electrolytic, 33μF, 16V
C905		**ECEA50Z3R3**	Electrolytic, 3.3μF, 50V
C906		ECUX1H223ZF	Chip, 0.022μF, 50V, $\pm^{80}_{20}$%
C907		**ECEA1ES101**	Electrolytic, 100μF, 25V
C908		ECUX1H331KD	Chip, 330pF, 50V, ±10%
C909		**ECEA1HS100**	Electrolytic, 10μF, 50V
C910		ECUX1H102ZF	Chip, 0.001μF, 50V, $\pm^{80}_{20}$%
C911		ECUX1H103ZF	Chip, 0.01μF, 50V, $\pm^{80}_{20}$%
C913		ECUX1H103ZF	Chip, 0.01μF, 50V, $\pm^{80}_{20}$%
C914		ECUX1H102ZF	Chip, 0.001μF, 50V, $\pm^{80}_{20}$%
C915		ECUX1H101K	Chip, 100pF, 50V, ±10%
C916		ECKD1H223ZF	Ceramic, 0.022μF, 50V, $\pm^{80}_{20}$%
C917		ECUX1H331KD	Chip, 330pF, 50V ±10%

Ref. No.		Part No.	Part Name & Description
C920		ECUX1H102ZF	Chip, 0.001μF, 50V, $\pm^{80}_{20}$%
C921		ECUX1H102MD	Chip, 0.001μF, 50V, ±20%
C922		ECUX1H102ZF	Chip, 0.001μF, 50V, $\pm^{80}_{20}$%
C930		ECUX1H680KC	Chip, 68pF, 50V, ±10%
C931		ECUX1H470KC	Chip, 47pF, 50V, ±10%
C932		ECUX1H681K	Chip, 680pF, 50V, ±10%
C935		ECUX1H102ZF	Chip, 0.001μF, 50V, $\pm^{80}_{20}$%
C936		**ECEA50Z1**	Electrolytic, 1μF, 50V
C937		ECQE1105KZ	Polyester, 1μF, 50V ±10%
C938		ECKD1H223ZF	Ceramic, 0.022μF, 50V, ±20%
C939		ECUX1H223ZF	Chip, 0.022μF, 50V, $\pm^{80}_{20}$%
C940		**ECEA50ZR1**	Electrolyt. 0.1μF, 50V
C941		**ECEA50Z1**	Electrolytic, 1μF, 50V
C942		ECUX1H331KD	Chip, 330pF, 50V, ±10%
C943		ECUX1H102MD	Chip, 0.001μF, 50V, ±20%
C944		**ECEA1HS100**	Electrolytic, 10μF, 50V
C946		ECUX1H223ZF	Chip, 0.022μF, 50V, $\pm^{80}_{20}$%
C947		ECUX1H101K	Chip, 100pF, 50V, ±10%
C948		ECUX1H103MD	Chip, 0.01μF, 50V, ±20%
C949		ECUX1H102MD	Chip, 0.001μF, 50V, ±20%
C950		ECUX1H103MD	Chip, 0.01μF, 50V, ±20%
C951, 952		ECUX1H102MD	Chip, 0.001μF, 50V, ±20%
C953		**ECEA50Z1**	Electrolytic, 1μF, 50V
C954		ECCD1H331K	Ceramic, 330pF, 50V, ±10%
C955		ECFVD104MD	Semi-Conductor, 0.1μF, 25V, ±20%
C956		ECKD1H102MD	Ceramic, 0.001μF, 50V, ±20%
C957		ECFVD103MD	Semi-Conductor, 0.01μF, 25V, ±20%
C958		ECKD1H102MD	Ceramic, 0.001μF, 50V, ±20%

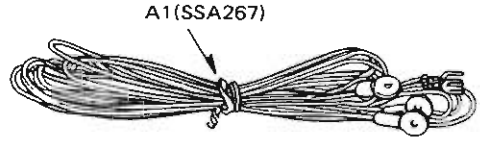
■ CHANGE OF PARTS LIST

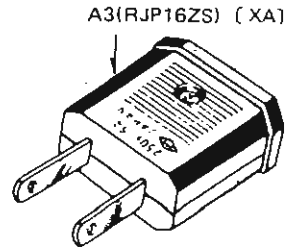
ST-C03K (EG)

Note: This parts list included only the changes of the model **ST-C03** parts list.

Ref. No.		Change of Part No. ST-C03 ➡ ST-C03K		Part Name & Description
CABINET				
1		RYMTC03N	RYMTC03KEG	Cabinet Assembly
2		RYUTC03E	RYUTC03KEG1	Bottom Board Assembly
2-1		SGX803	SGX803-1	Ring, Rear Side Feet
3		RYNTC03N	RYNTC03KEG	Battery Cover Assembly
8	⚠	———	RJA23Z	AC Cord
18		SGP1430-2C	SGP1430-2D	Rear Panel
19		SBC205-1	SBC205-2	Button, Selector
20		RBC212Z	RBC212Z1	Button, Tuning
21		RBC213Z	RBC213Z1	Button, Preset
22		RBC220Z	RBC220Z1	Button, Power Source
SCREWS				
❹		**XTB3+8BFN**	**XTB3+8BFZ**	Screw, Bottom Board M'tg
PACKING PARTS				
		———	RPK919Z	Gift Box

■ ACCESSORIES





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