

Service Manual



ST-C03



ST-C03K

FM/AM Stereo Tuner

ST-C03

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

ST-C03K

(EG)

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

Gratis schema's

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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	180 kHz
IF amplifier	1000 kHz
FM demodulator	300Ω (balanced)
Antenna terminals	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	1,9 µV (nutzbar nach IHF)
S/R 30 dB	2,0 µV (300 Ω), 1,3 µV (75 Ω)
S/R 26 dB	1,8 µV (300 Ω), 1,2 µV (75 Ω)
S/R 20 dB	1,6 µV (300 Ω), 0,9 µV (75 Ω)
Stereoumschaltswelle bei 46 dB nach IHF	20 µV/75 Ω
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	1,2 µV

Bandbreite

ZF-Verstärker 180 kHz

AntennenanschlußUKW-Demodulator 1000 kHz
300 Ω (symmetrisch)
75 Ω (unsymmetrisch)**AM-TUNERTEIL**

Wellenbereiche	522 ~ 1611 kHz
Eingangsempfindlichkeit (S/R 20 dB)	30 µV, 250 µV/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 244 mm
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	1,9 µV (IHF utilisable)
S/B 30 dB	2,0 µV (300 Ω), 1,3 µV (75 Ω)
S/B 26 dB	1,8 µV (300 Ω), 1,2 µV (75 Ω)
S/B 20 dB	1,6 µV (300 Ω), 0,9 µV (75 Ω)
Sensibilité stéréo au seuil de 46 dB, IHF	20 µV/75 Ω
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	1,2 µV

Largeur de bande

Amplificateur FI 180 kHz

Bornes d'antenneDémodulateur FM 1000 kHz
300 Ω (symétrique)
75 Ω (asymétrique)**SECTION SYNTONISATEUR AM**

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

DIVERS

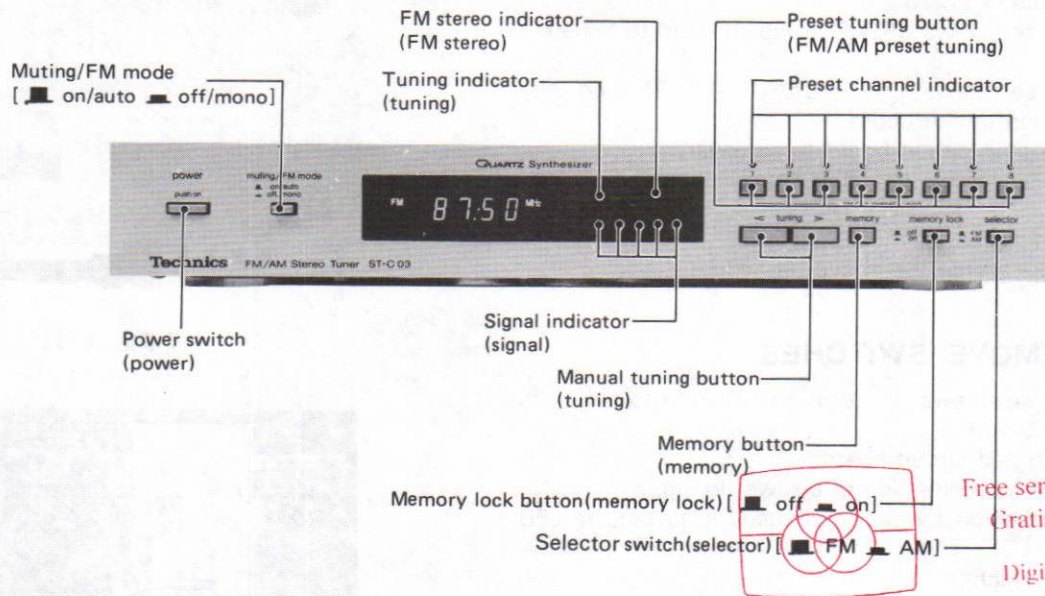
Tension de sortie	0,3V
	(0,6V IHF)
Consommation	12W
Alimentation	CA 50 Hz/60 Hz, 110V/120V/220V/240V
Piles pour préservation des mémoires (en option)	trois piles de type AA (C.C.: 4,5V)
Dimensions (L x H x Pr)	297 x 49 x 244 mm
Poids	2,8 kg

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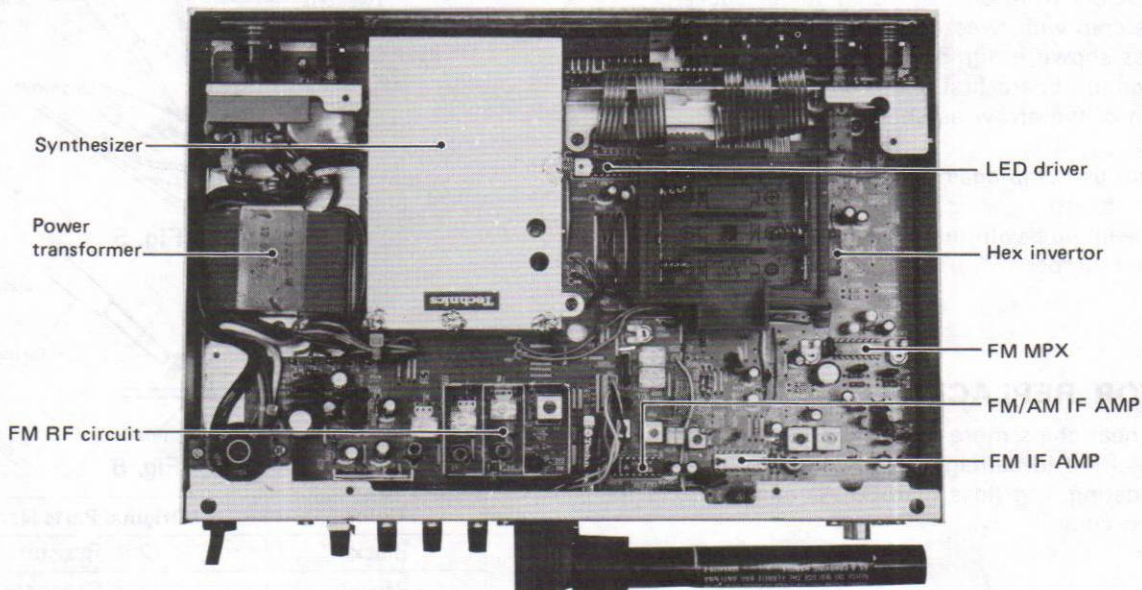
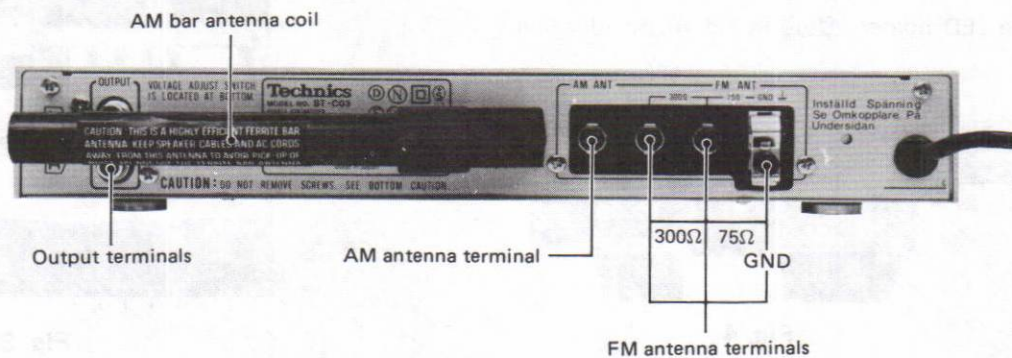
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■ LOCATION OF CONTROLS



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■ HOW TO REMOVE THE PRINTED CIRCUIT BOARD

1. Remove the 4 setscrews (①~④ in Fig. 1) used to fasten the bottom board.
2. Remove the bottom 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.

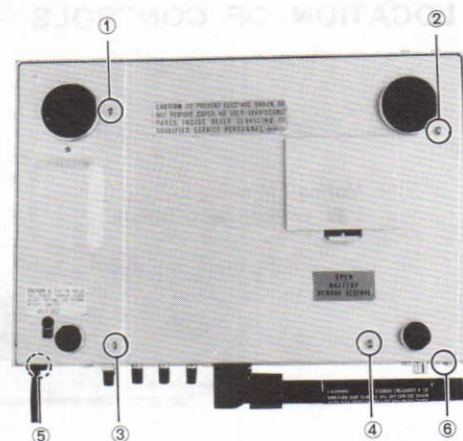


Fig. 1

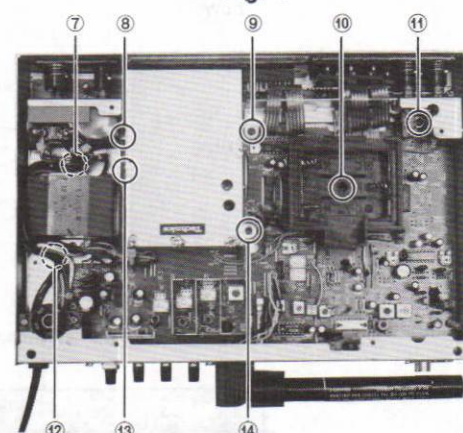


Fig. 2

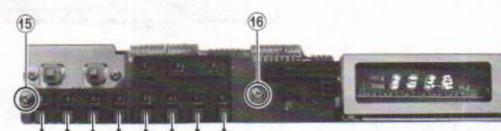


Fig. 3

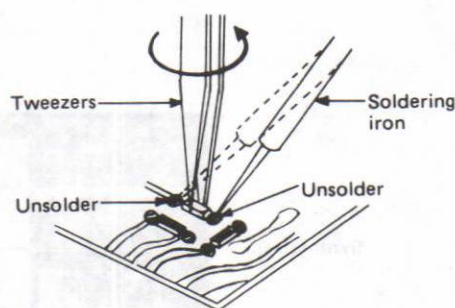


Fig. 5

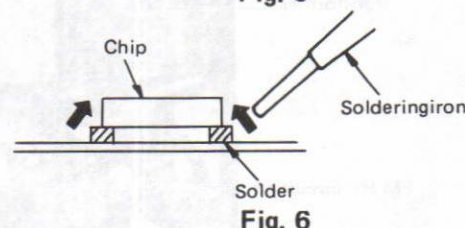


Fig. 6

■ 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 (⑰ 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.

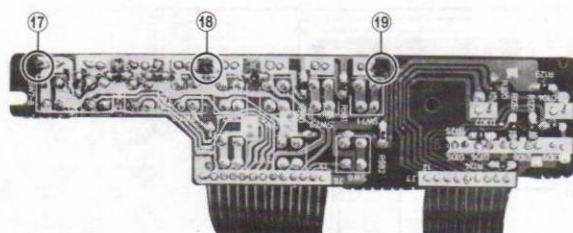


Fig. 4

■ 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:

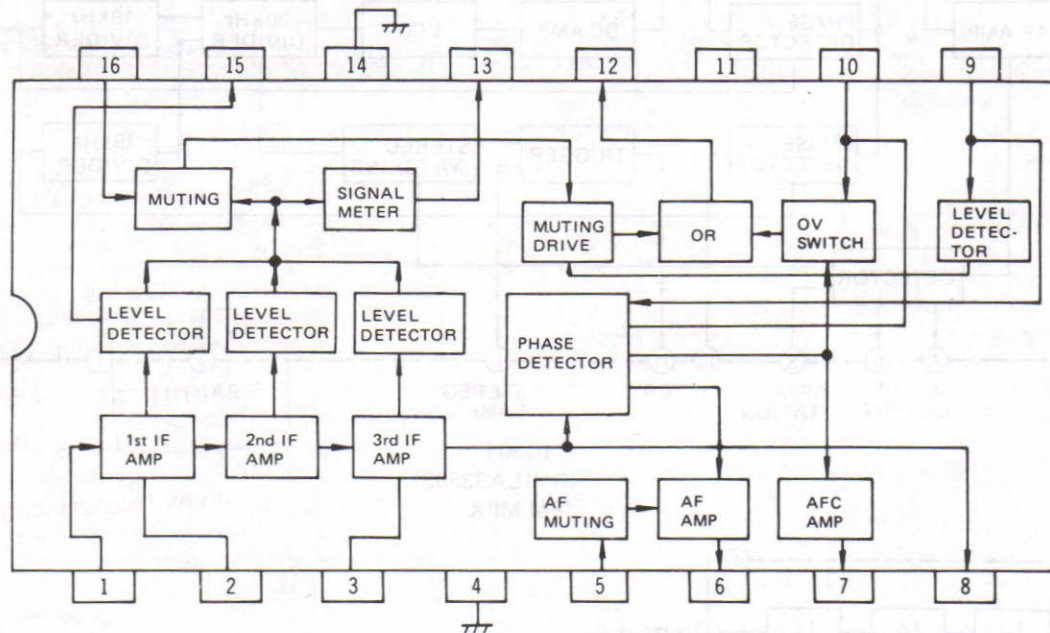
1. Do not use chip again which is removed from printed circuit board.
2. Use lead wire with insulator for replacement instead of chip jumper.

■ NOTE FOR REPLACING CHIPS

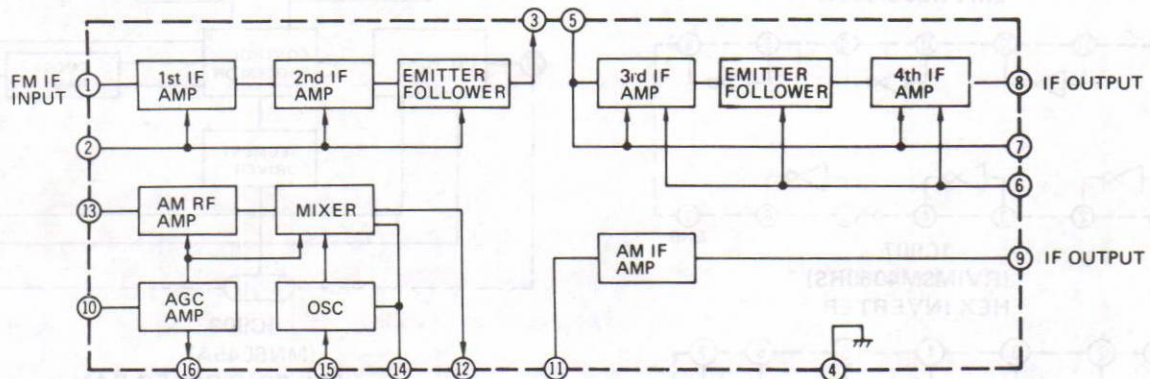
1. Do not heat chips more than three (3) seconds.
2. Be careful not to damage the electrode of chips.
3. Use soldering iron (less than 60 W) and tweezers for replacing chips.

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

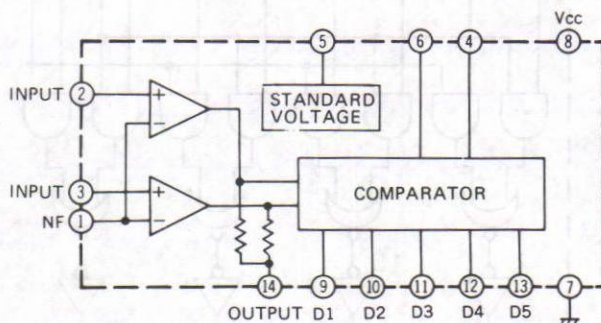
■ BLOCK DIAGRAM OF IC'S



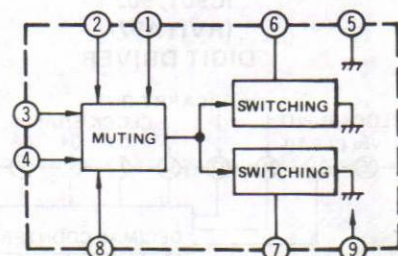
IC101
(RV1PC1167C)
FM IF AMP/DETECTOR



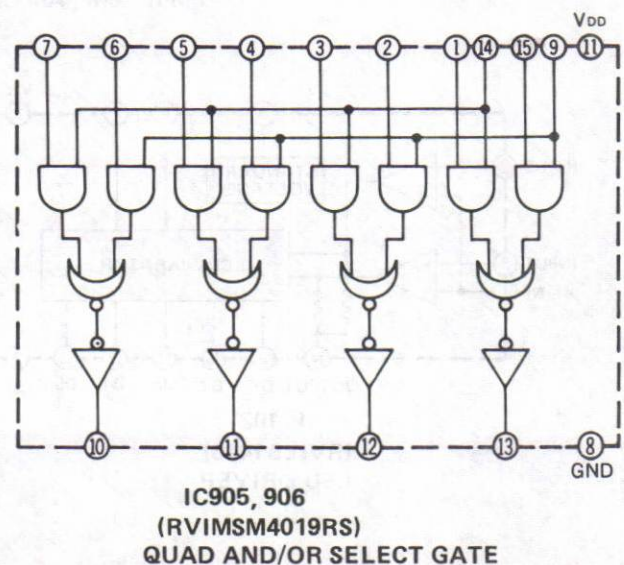
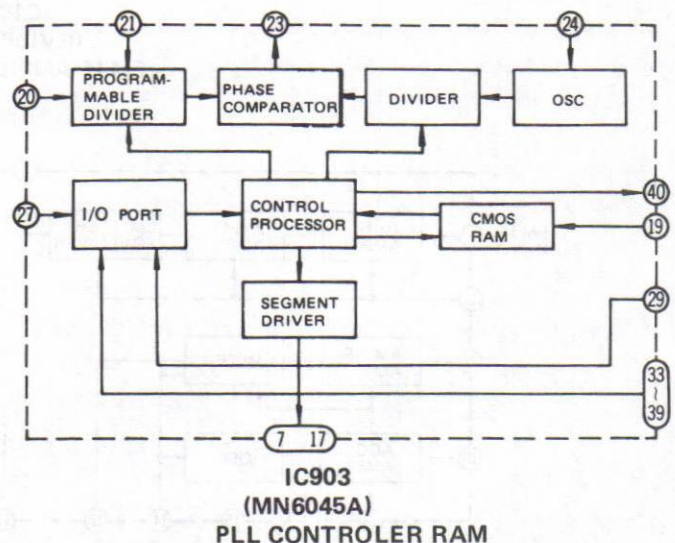
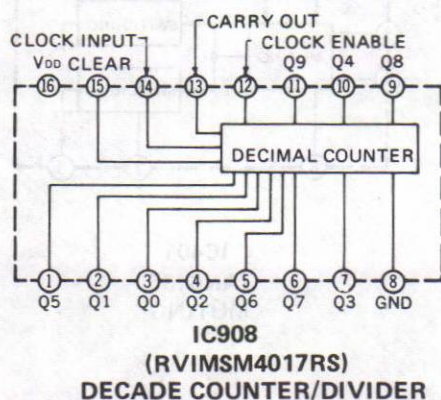
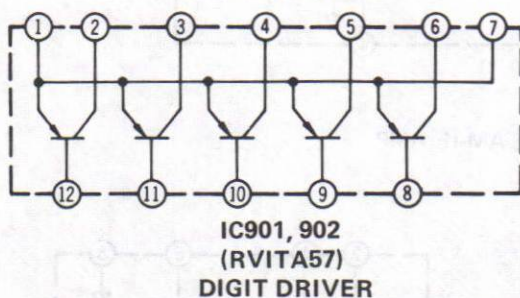
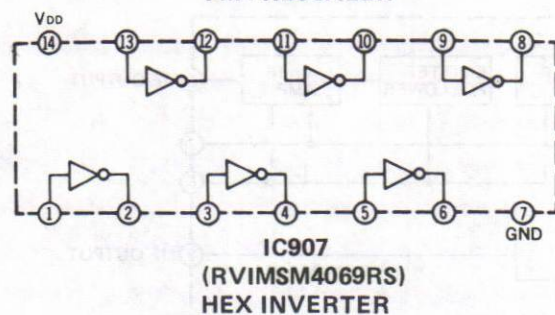
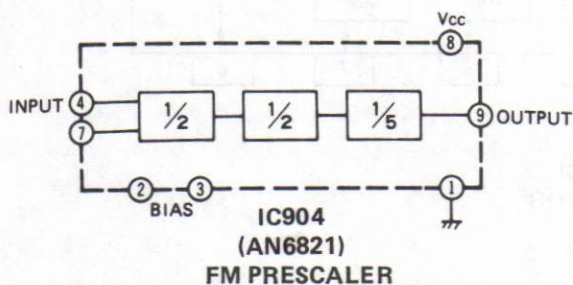
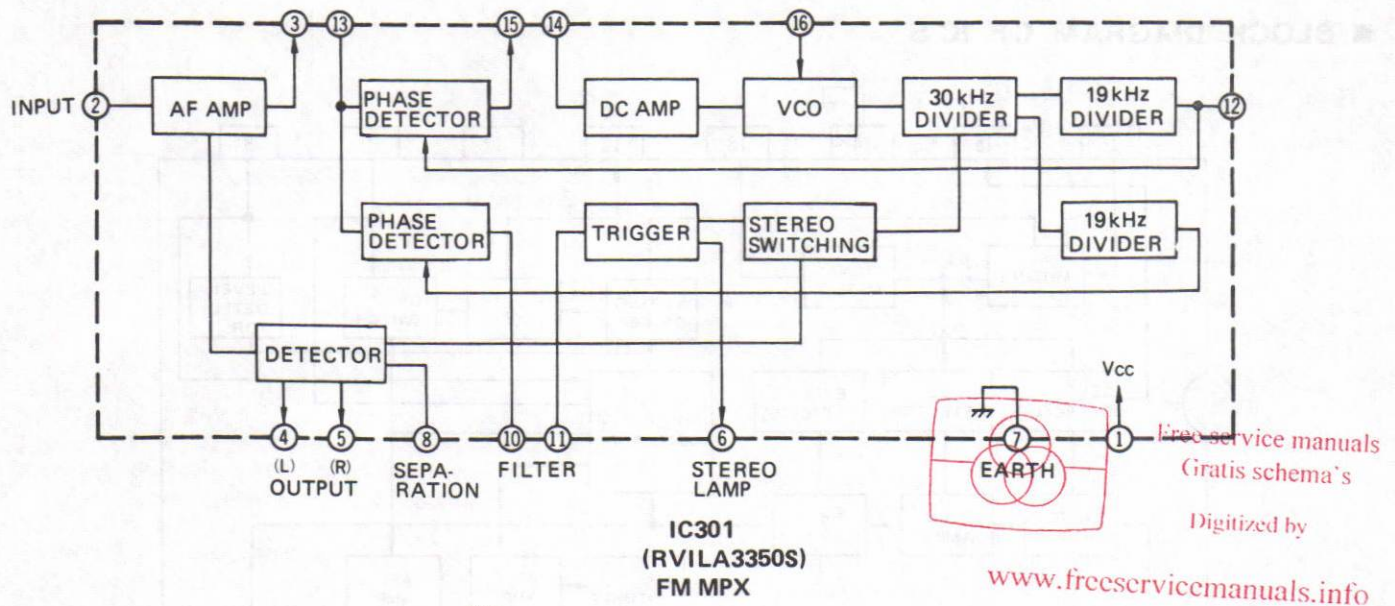
IC201
(AN217PBB)
FM-IF AMP, AM OSCILLATOR, AM-IF AMP



IC102
(RV1LB1416)
LED DRIVER



IC401
(AN6135)
MUTING



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

AM ALIGNMENT

SIGNAL GENERATOR		FREQUENCY DISPLAY SETTING	INDICATOR (VTVM or SCOPE) (DISTORTION METER)	ADJUSTMENT POINTS	REMARKS
CONNECTION	FREQUENCY				
1 Fashion loop of several turns of wire and radiate signal into loop of receiver.	450kHz (30% Mod. with 400Hz)	Point of non-interference.	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-interference.	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.
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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 OV 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-interference	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.
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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.
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Notes: 1. Stereo modulator • Connect stereo modulator output to EXT MOD terminal of signal generator. 2. FM signal generator • Pilot signal modulation to "10%". 3. Selector switch to "FM auto" • Frequency approximately 100MHz/Output level to "72dB (IHF)" • 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-Schalter . . ausgeschaltet/mono 3. Wahlschalter MW/UKW 4. 300 Ohm UKW-Kunstantenne Siehe Abbildung 7 5. Netzspannung auf 120 Volt halten.					
MW-ABGLEICH					
SIGNALGENERATOR (MESSENDER)		FREQUENZ-ANZEIGEEIN- STELLUNG	MEßGERÄT (VTVM oder OSZILLOSKOP) (VERZERRUNGSMESSER)	EINSTELLUNGS- PUNKTE	BEMERKUNGEN
ANSCHLUSS	FREQUENZ				
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.
—	Kein Signal	522kHz	Das Gleichstromröhrenvoltmeter zwischen TP1 (Testpunkt) und Erde verbinden.	L203 (MW-Schwingspule)	Auf 1.5V±0,05 auf dem Gleichstromröhrenvoltmeter einstellen.
—	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.
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.
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					
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-ANZEIGEEINSTELLUNG	MEßGERÄT (VTVM oder OSZILLOSKOP) (VERZERRUNGSMESSER)	EINSTELLUNGS-PUNKTE	BEMERKUNGEN
ANSCHLUSS	FREQUENZ				
UKW-HF-ABGLEICH					
—	Kein Signal	87.50MHz	Das Gleichstromröhrenvoltmeter zwischen TP1 und Erde verbinden.	L5 (UKW-Schwingspule)	Auf 26V±0.05 auf dem Gleichstromröhrenvoltmeter einstellen.
—	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.
Die UKW-Kunstantenne über den 300 Ohm UKW-Antennenanschluss verbinden.	90.0MHz (100% moduliert bei 1kHz)	90.00MHz	Das Wechselstromröhrenvoltmeter oder Oszilloskop mit den Ausgangsklemmen verbinden.	L3(UKW-Detektorspule L2(UKW-Antennen-spule L1(UKW-Antennen-spule	Auf maximalen Ausgang einstellen.
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					
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.
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					
—	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					
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 (WECHSELSTROMRÖHRENVOLTMETER)		EINSTELLUNGSPUNKTE	BEMERKUNGEN
UKW-STEREO-KANALTRENNUNGSABGLEICH					
Die UKW-Kunstantenne über den 300 Ohm UKW-Antennenanschluss verbinden.	(1kHz 30% moduliert) Betriebsart L (und R) Pilotsignalsignal "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 Modulation in den linken Kanal, der rechte Kanal minimalen Ausgang anzeigt. Und entsprechender Weise im Umgekehrten Fall.
UKW-STEREO-VERZERRUNGSABGLEICH					
Die UKW-Kunstantenne über den 300 Ohm UKW-Antennenanschluss verbinden. 98.0MHz 60dB	(1kHz 100% moduliert) Betriebsart R	Den Verzerrungsmesser mit den Ausgangsklemmen des Gerätes verbinden.		T1 (UKW ZFT)	Fuf minimalste Verzerrung des rechten Ausgangs einstellen.

INSTRUCTIONS D'ALIGNEMENT 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.

ALIGNEMENT AM

GENERATEUR DE SIGNAL		REGLAGE DE L'AFFICHAGE DE FREQUENCE	TEMOIN (VTVM or OSCILLOSCOPE) (COMPTEUR DE DISTORSION)	POINTS DE REGLAGE	REMARQUES
CONNEXION	FREQUENCE				
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
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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 CC ET DE LA 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

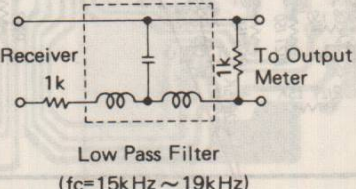
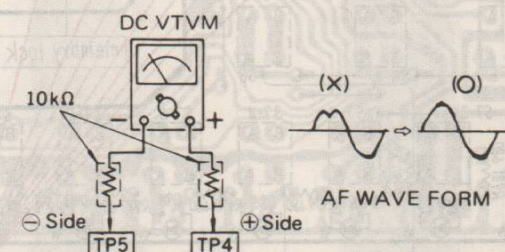
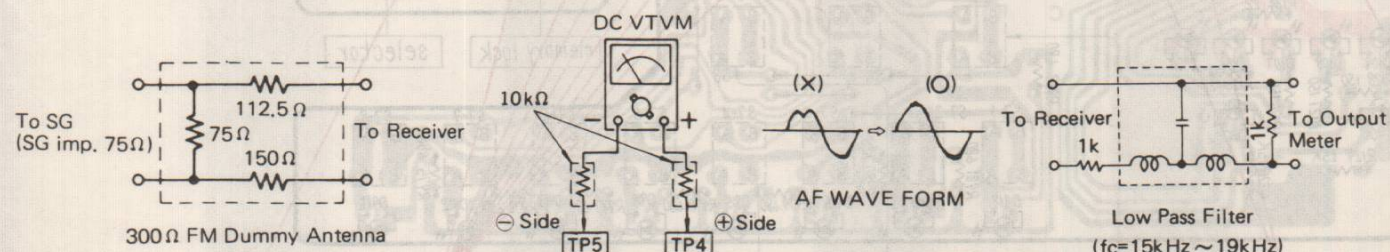
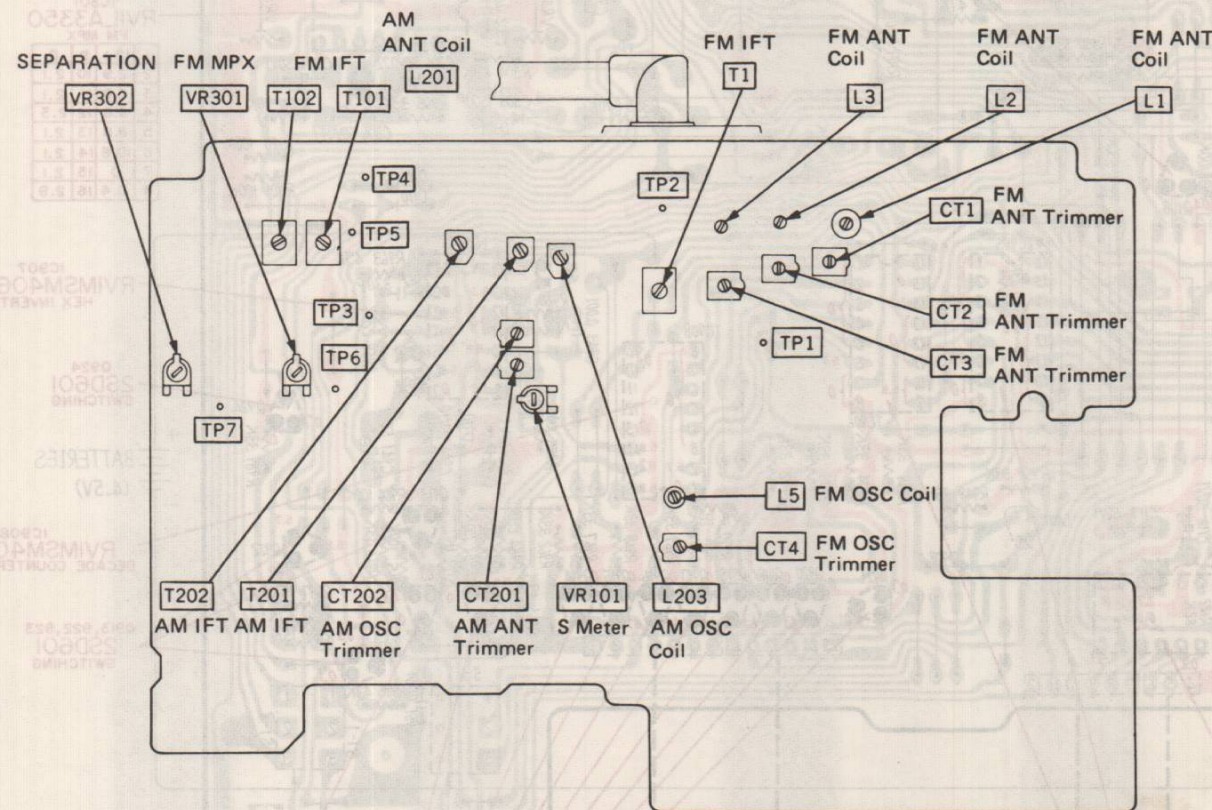
13 —	Non-signal	Point de non-interférence	Brancher le fréquencemètre à TP7 par la résistance (100kΩ)	VR301	1. Placer le commutateur de sélection sur "FM auto" 2. Régler la lecture du fréquencemètre sur 19kHz±30Hz
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ALIGNEMENT DU COMPTEUR D'ACCORD

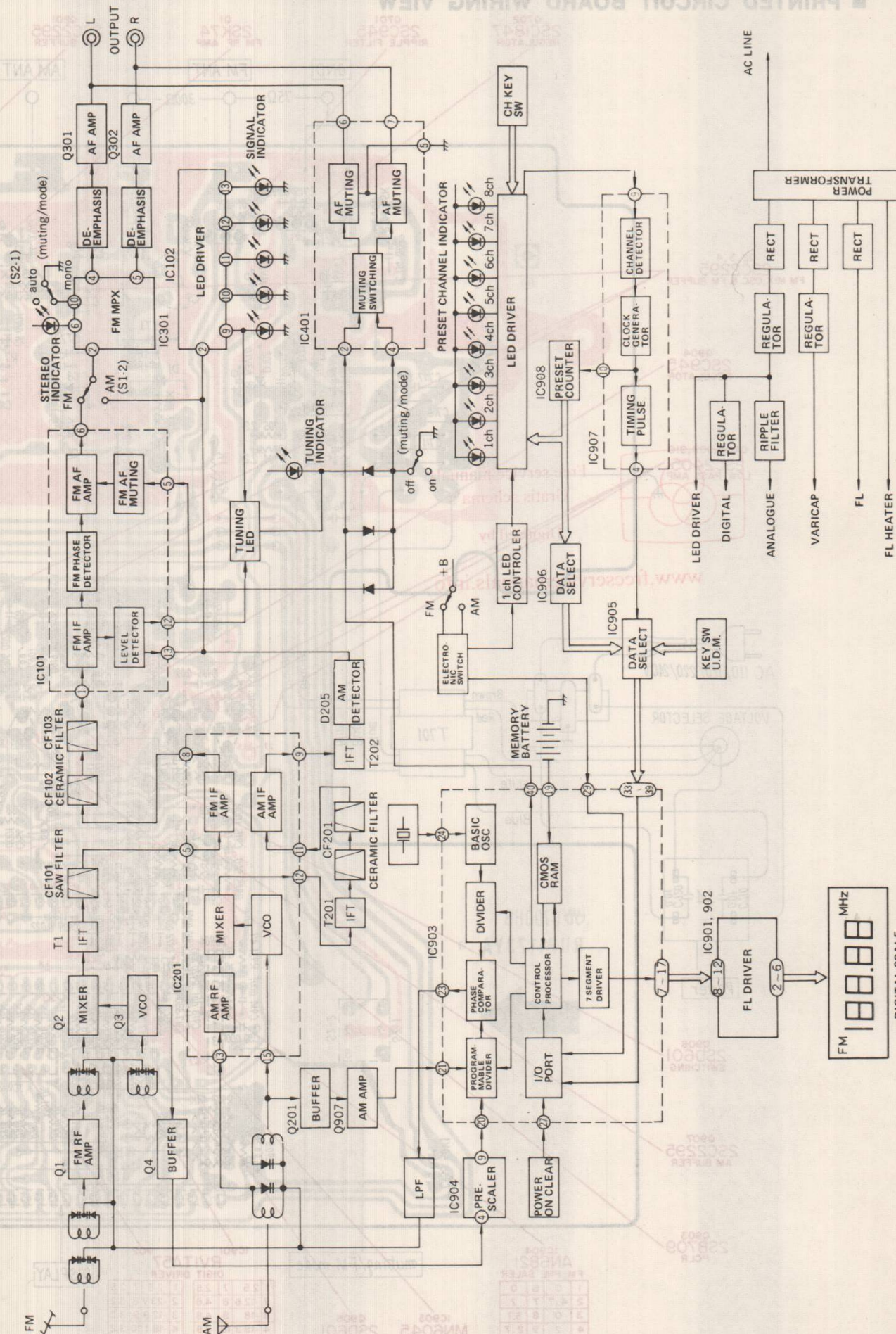
14 Brancher la borne de l'antenne FM de 300Ω par l'antenne fictive FM (60dB)	98,1MHz (100% de mod. avec 1kHz)	98,10MHz	—	VR101	Régler la VR101 de telle sorte que la 5ème LED s'allume.
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Notes: 1. Modulateur stéréo • Brancher la sortie du modulateur stéréo à la borne EXT MOD du générateur de signal. 2. Générateur de signal FM • Modulation du signal pilote à "10%" 3. Commutateur de sélection sur "FM auto" • Régler le niveau approximatif de fréquence 100MHz/sortie sur "72dB (IHF)" • Mode de modulation sur "FM"				
CONNEXION DU GÉNÉRATEUR 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



■ BLOCK DIAGRAM



■ 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:

- S1-1, S1-2: Selector switch in "FM" position.
- S2-1, S2-2: Muting/FM mode switch in "off/mono" position.
- S3: Memory lock switch in "off" position.
- S4: Power source switch in "off" position.
- S5: Tuning up switch.
- S6: Tuning down switch.
- S7-1 ~ S7-8: FM/AM preset tuning switch.
- S8: Memory switch.
- 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.

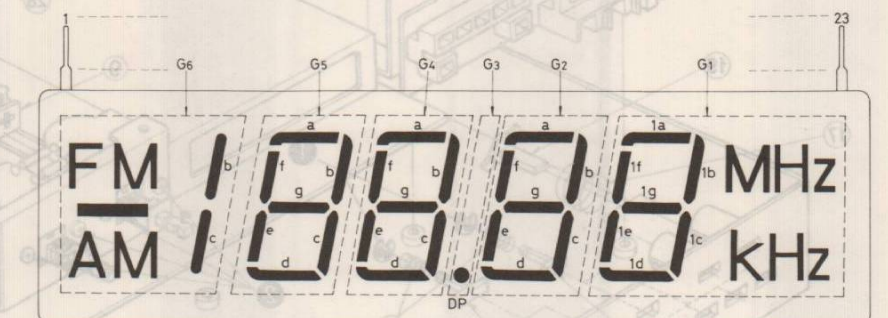
- Figures in stand for DC voltage in FM nosignal mode.
- Figures in stand for DC voltage in AM mode.
- Figures in stand for DC voltage in signal reception mode.

Signal lines → FM → AM → AF

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

■ TERMINAL GUIDE OF TRANSISTOR & IC

2SC1847 	2SC2295, 2SD601, 2SB709, 2SC2405 	RV16PC1167, 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	G ₆	—	FM MHz D _p	g	G ₆	f	G ₅	e	d	G ₄
Terminal No.	13	14	15	16	17	18	19	20	21	22	23	
Electrode	C	G ₃	G ₂	d	a	G ₁	1g	AM kHz	G ₁	1b 1e	F	

Free service manuals

Gratis schema's

- Notes
- G1 ~ G6: Grid
 - F: Filament

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A

B

C

D

E

F

IC903
MN6045A

1	5.8	21.2	8
2	0	22.5	8
3	0	23.1	4
4	0	24.2	8
5	0	25.2	8
6	0	26.0	0
7	4.8	28.0	0
8	4.8	29.7	0
9	3.8	30.5	8
10	3.8	31.0	7
11	3.8	31.0	7
12	3.8	32.5	8
13	3.8	33.3	8
14	4.8	34.5	8
15	4.8	35.0	0
16	4.8	36.5	8
17	4.8	37.0	0
18	0	38.0	0
19	0.1	39.0	0
20	2.8	40.0	0

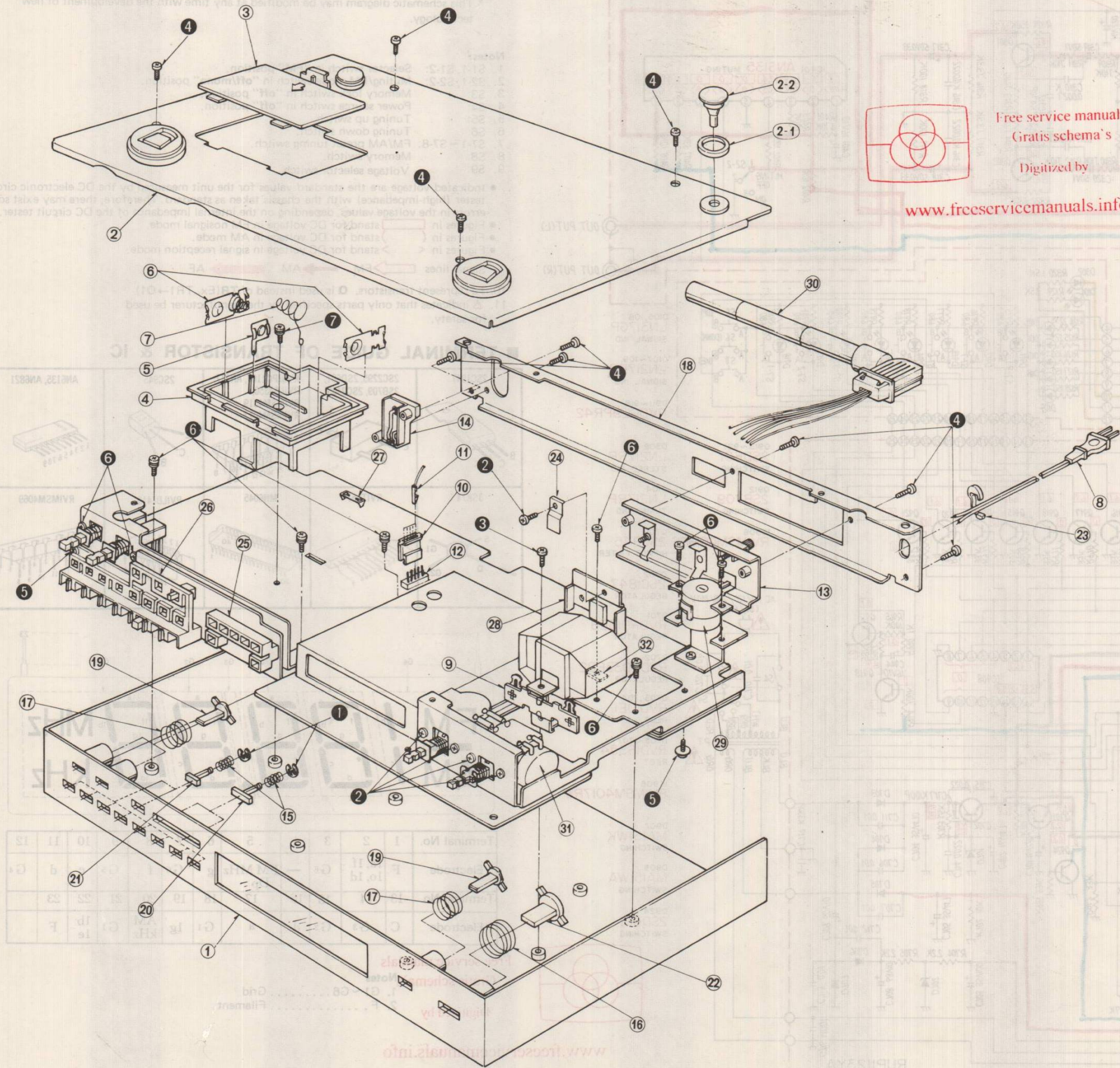
IC902
RVITA57

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	4
6	23.9	12.4	7

IC901
RVITA57

1	2.5	7.2	5
2	12.6	8.4	4
3	18.1	9.4	8
4	18.1	10.3	9
5	23.7	11.4	4
6	23.9	12.4	7

EXPLODED VIEW



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Gratis schema's
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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. Δ 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	Foot, Rear Side
3	RYMTC03N	Battery Cover Assembly
4	RJB3016Z	Battery Case
5	RJC314A	Terminal, Battery $\oplus$ Side
6	RJC730Z	Terminal, Battery $\ominus$ Side
7	RJC322Z	Spring, Battery $\ominus$ 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	RMCI171Y	Shield Cover, IC1
28	RMV62YS	Heat Sink, Q702
29	RVV387Z	Cover, Voltage Selector
30	SQXA4029-2	Caution Label
31	RHR325Z	Cover, Capacitor
32	RHM117Z	Spacer, Transformer
SCREWS and WASHERS		
1	XUC2FT	E Ring, Button M'tg
2	XSN3+6S	Screw, Switch M'tg
3	XTN3+6B	Screw, Terminal M'tg
4	XTB3+8BFN	Screw, Bottom Board M'tg
5	XTN3+6B	Screw, Chassis M'tg
6	XSN3+8BNS	Screw, Circuit Board M'tg
7	XSN3+8BNS	Screw, Circuit Board M'tg
ACCESSORIES		
A1	SSA267	Cord, FM Indoor Antenna
A2	SJP2241	Connection Cord
A3 [XA]	RJP16ZS	Plug, AC Cord
PACKING PARTS		
P1	XZB36X40A04	Polyethylene Bag
P2	XZB10X20A04	Polyethylene Bag
P3	SPS1769-1	Pad, Bottom
P4	SPS1771-2	Pad, Upper
P5 [except XGF]	RPK919Z	Carton Box
P6 [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. Δ 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 CONTROLLER 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	RVDKB265E	Diode, Operation Compensator
D104, 107~109	LN217RP-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	RVDDVD6R8EB1	Diode, Regulator
D907, 909	MA151WK	Diode, Switching
D911 ~ 918	RVDDL9PR42	Light Emitting Diode, Preset
COILS and TRANSFORMERS		
L1	SLA4N2-O	Coil, FM RF
L2, 3	RL04N128-O	Coil, FM RF
L4	RLQY15G5G-O	Coil, IF Trap
L5	RL04N126-O	Coil, FM Oscillator
L101	RLQX2701-K	Coil, Phase Shift
L201	RLF2D127	Coil, AM Antenna
L202, 901, 903	RLQX1014-Y	Coil, Choke
L203	RL02M25-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	RSH2B11Z	Switch, Muting & FM Mode
S4	RSH1B04Z	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	RVCA11520NZN	Crystal
RESISTORS		
R1	RRD18XK104	Chip, 100k Ω , 1/8W, $\pm 10\%$
R2	RRD18XK333	Chip, 33k Ω , 1/8W, $\pm 10\%$
R3	RRD18XK153	Chip, 15k Ω , 1/8W, $\pm 10\%$
R4	RRD18XK104	Chip, 100k Ω , 1/8W, $\pm 10\%$
R5	RRD18XK100	Chip, 10k Ω , 1/8W, $\pm 10\%$
R6	RRD18XK221	Chip, 22k Ω , 1/8W, $\pm 10\%$
R7, 8	RRD18XK104	Chip, 100k Ω , 1/8W, $\pm 10\%$
R9	RRD18XK153	Chip, 15k Ω , 1/8W, $\pm 10\%$
R10	RRD18XK823	Chip, 82k Ω , 1/8W, $\pm 10\%$
R11	RRD18XK102	Chip, 1k Ω , 1/8W, $\pm 10\%$
R12	RRD18XK221	Chip, 22k Ω , 1/8W, $\pm 10\%$
R13, 14, 15	RRD18XK102	Chip, 1k Ω , 1/8W, $\pm 10\%$
R16, 17	RRD18XK104	Chip, 100k Ω , 1/8W, $\pm 10\%$
R18	RRD18XK224	Chip, 22k Ω , 1/8W, $\pm 10\%$
R19	RRD18XK102	Chip, 1k Ω , 1/8W, $\pm 10\%$
R20	RRD18XK221	Chip, 22k Ω , 1/8W, $\pm 10\%$
R21	RRD18XK273	Chip, 27k Ω , 1/8W, $\pm 10\%$
R23	RRD18XK150	Chip, 15k Ω , 1/8W, $\pm 10\%$
R101	RRD18XK330	Chip, 33k Ω , 1/8W, $\pm 10\%$
R102	RRD18XK221	Chip, 22k Ω , 1/8W, $\pm 10\%$
R103	RRD18XK331	Chip, 33k Ω , 1/8W, $\pm 10\%$
R104	RRD18XK152	Chip, 15k Ω , 1/8W, $\pm 10\%$
R106	RRD18XK331	Chip, 33k Ω , 1/8W, $\pm 10\%$
R108	ERD25TJ104	Carbon, 100k Ω , 1/4W, $\pm 5\%$
R109	RRD18XK102	Chip, 1k Ω , 1/8W, $\pm 10\%$
R110	RRD18XK271	Chip, 27k Ω , 1/8W, $\pm 10\%$
R111	RRD18XK470	Chip, 47k Ω , 1/8W, $\pm 10\%$
R112	ERD25FJ103	Carbon, 10k Ω , 1/4W, $\pm 5\%$
R113	ERD25TJ183	Carbon, 18k Ω , 1/4W, $\pm 5\%$
R114	RRD18XK473	Chip, 47k Ω , 1/8W, $\pm 10\%$
R115	RRD18XK562	Chip, 5.6k Ω , 1/8W, $\pm 10\%$
R116	ERD25FJ392	Carbon, 3.9k Ω , 1/4W, $\pm 5\%$
R117	RRD18XK103	Chip, 10k Ω , 1/8W, $\pm 10\%$
R118	RRD18XK222	Chip, 2.2k Ω , 1/8W, $\pm 10\%$
R119	RRD18XK103	Chip, 10k Ω , 1/8W, $\pm 10\%$
R120	RRD18XK104	Chip, 100k Ω , 1/8W, $\pm 10\%$
R121	RRD18XK103	Chip, 10k Ω , 1/8W, $\pm 10\%$
R122	RRD18XK823	Chip, 82k Ω , 1/8W, $\pm 10\%$
R123	RRD18XK153	Chip, 15k Ω , 1/8W, $\pm 10\%$
R124, 125	RRD18XK220	Chip, 22k Ω , 1/8W, $\pm 10\%$
R126, 127	RRD18XK151	Chip, 15k Ω , 1/8W, $\pm 10\%$
R128	RRD18XK151	Chip, 15k Ω , 1/8W, $\pm 10\%$
R129	RRD18XK152	Chip, 1.5k Ω , 1/8W, $\pm 10\%$
R130	RRD18XK333	Chip, 33k Ω , 1/8W, $\pm 10\%$
R131	RRD18XK104	Chip, 100k Ω , 1/8W, $\pm 10\%$
R132	RRD18XK473	Chip, 47k Ω , 1/8W, $\pm 10\%$
R201	RRD18XK104	Chip, 100k Ω , 1/8W, $\pm 10\%$
R202	RRD18XK222	Chip, 2.2k Ω , 1/8W, $\pm 10\%$
R203	RRD18XK105	Chip, 1M Ω , 1/8W, $\pm 10\%$
R204	RRD18XK102	Chip, 1k Ω , 1/8W, $\pm 10\%$
R205	ERD25FJ102	Carbon, 1k Ω , 1/4W, $\pm 5\%$
R206	RRD18XK562	Chip, 5.6k Ω , 1/8W, $\pm 10\%$
R207	RRD18XK152	Chip, 1.5k Ω , 1/8W, $\pm 10\%$
R208	RRD18XK392	Chip, 3.9k Ω , 1/8W, $\pm 10\%$
R209	RRD18XK333	Chip, 33k Ω , 1/8W, $\pm 10\%$
R210	RRD18XK102	Chip, 1k Ω , 1/8W, $\pm 10\%$
R211	RRD18XK101	Chip, 100 Ω , 1/8W, $\pm 10\%$
R212	RRD18XK274	Chip, 27k Ω , 1/8W, $\pm 10\%$
R213	RRD18XK182	Chip, 1.8k Ω , 1/8W, $\pm 10\%$
R214	RRD18XK332	Chip, 3.3k Ω , 1/8W, $\pm 10\%$
R215	RRD18XK102	Chip, 1k Ω , 1/8W, $\pm 10\%$
R216	RRD18XK223	Chip, 22k Ω , 1/8W, $\pm 10\%$
R218	RRD18XK104	Chip, 100k Ω , 1/8W, $\pm 10\%$
R219	RRD18XK333	Chip, 33k Ω , 1/8W, $\pm 10\%$
R221	RRD18XK471	Chip, 47k Ω , 1/8W, $\pm 10\%$
R301	RRD18XK104	Chip, 100k Ω , 1/8W, $\pm 10\%$
R302	ERD25FJ103	Carbon, 10k Ω , 1/4W, $\pm 5\%$
R303	RRD18XK101	Chip, 100 Ω , 1/8W, $\pm 10\%$
R304	RRD18XK682	Chip, 6.8k Ω , 1/8W, $\pm 10\%$
R305	RRD18XK332	Chip, 3.3k Ω , 1/8W, $\pm 10\%$
R306	RRD18XK103	Chip, 10k Ω , 1/8W, $\pm 10\%$

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%

Ref. No.	Part No.	Part Name & Description
R993	RRD18XK682	Chip, 6.8kΩ, 1/8W, ±10%
R994	ERD25TJ104	Carbon, 100kΩ, 1/4W, ± 5%
CAPACITORS		
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, ±10%
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, ±10%
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, ±20%
C24	ECUX1H223ZF	Chip, 0.022μF, 50V, ±10%
C27	ECUX1H223ZF	Chip, 0.022μF, 50V, ±10%
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, 180pF, 50V, ±10%
C40, 41	ECCD1H331K	Ceramic, 330pF, 50V, ±10%
C42	ECUX1H223ZF	Chip, 0.022μF, 50V, ±10%
C101, 102	ECUX1H223ZF	Chip, 0.022μF, 50V, ±10%
C103	ECEA1HS100	Electrolytic, 10μF, 50V, ±20%
C104	ECUX1H223ZF	Chip, 0.022μF, 50V, ±10%
C105	ECKD1H223ZF	Ceramic, 0.022μF, 50V, ±10%
C106	ECUX1H101K	Chip, 100pF, 50V, ±10%
C107, 108	ECEA25Z4R7	Electrolytic, 4.7μF, 25V, ±20%
C109	ECUX1H223ZF	Chip, 0.022μF, 50V, ±10%
C111	ECUX1H223ZF	Chip, 0.022μF, 50V, ±10%
C112	ECEA1HS100	Electrolytic, 10μF, 50V, ±20%
C113	ECUX1H223ZF	Chip, 0.022μF, 50V, ±10%
C114	ECUX1H103ZF	Chip, 0.01μF, 50V, ±10%
C115	ECEA1HS100	Electrolytic, 10μF, 50V, ±20%
C116, 117	ECEA50Z1	Electrolytic, 1μF, 50V, ±20%
C118	ECUX1H223ZF	Chip, 0.022μF, 50V, ±10%
C119	ECEA1HS100	Electrolytic, 10μF, 50V, ±20%
C122	ECKD1H223ZF	Ceramic, 0.022μF, 50V, ±10%
C123	ECUX1H103MD	Chip, 0.01μF, 50V, ±20%
C201	ECUX1H030DC	Chip, 3pF, 50V, ±0.5pF
C202	ECUX1H223ZF	Chip, 0.022μF, 50V, ±10%
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, ±10%
C212	ECUX1H223ZF	Chip, 0.022μF, 50V, ±10%
C213	ECEA1HS100	Electrolytic, 10μF, 50V, ±20%
C214	ECUX1H223ZF	Chip, 0.022μF, 50V, ±10%
C215	ECUX1H560KC	Chip, 56pF, 50V, ±10%
C216	ECEA25Z4R7	Electrolytic, 4.7μF, 25V, ±20%
C217	ECUX1H330KC	Chip, 33pF, 50V, ±10%
C218	ECUX1H223ZF	Chip, 0.022μF, 50V, ±10%
C219, 220	ECUX1H103MD	Chip, 0.01μF, 50V, ±20%
C221	ECEA25Z4R7	Electrolytic, 4.7μF, 25V, ±20%
C222	ECEA50ZR1	Electrolytic, 0.1μF, 50V, ±20%
C224	ECEA50Z1	Electrolytic, 1μF, 50V, ±20%
C301	ECEA1HS100	Electrolytic, 10μF, 50V, ±20%
C302	ECQM1H473MZ	Polyester, 0.047μF, 50V, ±20%
C303	ECQS05152JZ	Styrol, 1500pF, 50V, ± 5%
C304	ECEA50ZR22	Electrolytic, 0.22μF, 50V, ±20%
C305	ECEA1CS221	Electrolytic, 220μF, 16V, ±20%
C306	ECEA50ZR47	Electrolytic, 0.47μF, 50V, ±20%
C307	ECEA50Z1	Electrolytic, 1μF, 50V, ±20%
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, ±20%
C319, 320	ECEA50Z1	Electrolytic, 1μF, 50V, ±20%
C401	ECEA1HS100	Electrolytic, 10μF, 50V, ±20%
C701	ECEA1CS221	Electrolytic, 220μF, 16V, ±20%
C702	ECEA1ES470	Electrolytic, 47μF, 25V, ±20%
C703	ECEA1VS101	Electrolytic, 100μF, 35V, ±20%

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

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

■ CHANGE OF PARTS LIST

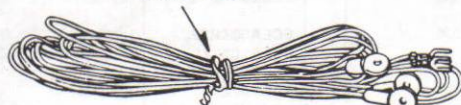
ST-C03K (EG)

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

Ref. No.	Change of Part No.		Part Name & Description	
	ST-C03	ST-C03K		
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				
④		XTB3+8BFN	XTB3+8BFZ	Screw, Bottom Board M'tg
PACKING PARTS				
		_____	RPK919Z	Gift Box

■ ACCESSORIES

A1(SSA267)



A2(SJP2241)



A3(RJP16ZS) [XA] only

