

ALIGNMENT INSTRUCTION

I. PLEASE READ BEFORE ATTEMPTING SERVICE

1. Never disconnect any leads while receiver is in operation.
2. Disconnect all power before attempting any repairs.
3. Do not short any portion of the circuit while power is on.
4. For safety reasons, all parts replaced should be identical, (for parts and part numbers see parts list).
5. Before alignment the set must be pre-heated for 30 minutes or more and erase magnetism thoroughly from CRT front chassis frame by erase coil.

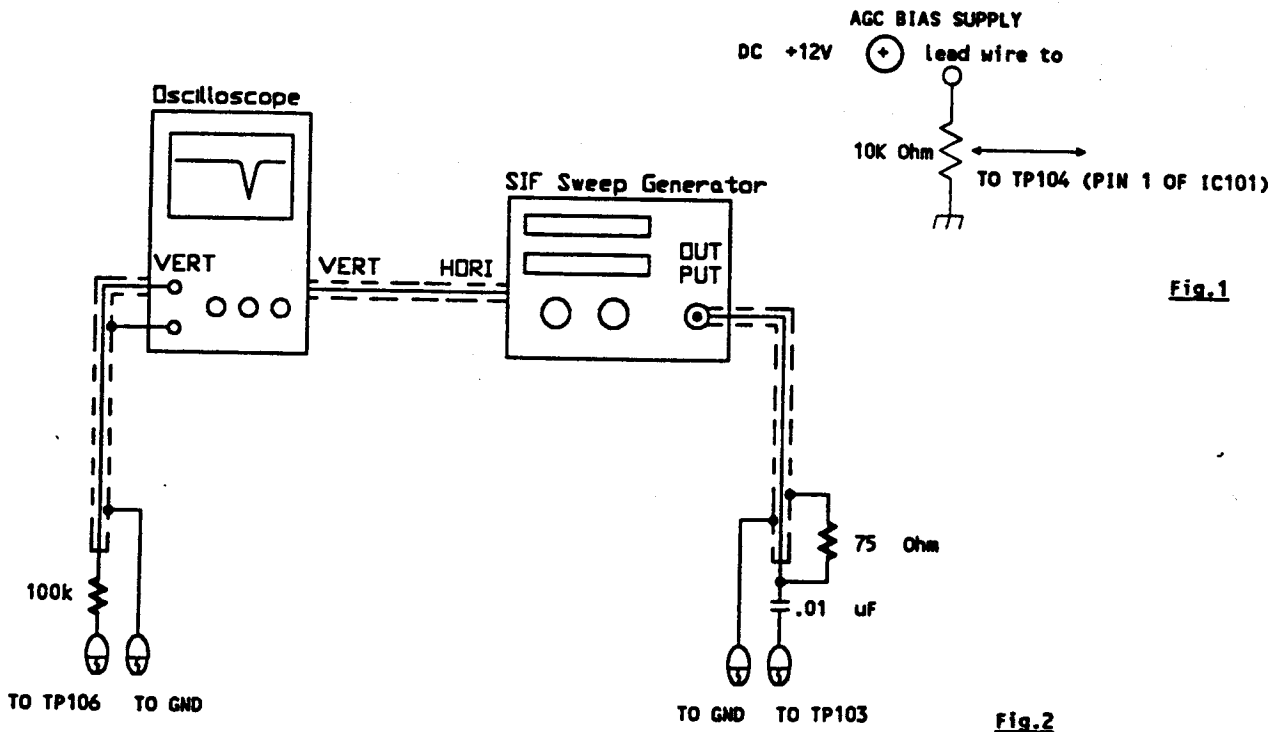
II. TEST EQUIPMENT

- | | |
|---|---|
| 1. VIF Sweep Generator | 8. High Voltage Meter |
| 2. SIF Sweep Generator | 9. Ampere Meter (0.5 Class, DC 3mA Max) |
| 3. Colour/Bar/Dot/Cross Hatch Generator | 10. Demagnetizing Coil |
| 5. Oscilloscope | 11. Philips Pattern Generator |
| 6. Vacuum Tube Voltmeter | 12. Frequency Counter |
| 7. Volt Ohmmeter | 13. Continuous Waveform Generator |

III. TANK COIL ALIGNMENT

A. PREPARATION STEP (SEE FIG.2)

1. Connect OUTPUT lead of VIF Sweep Generator between TP103 (Pin 4 of IC101) and ground.
2. Connect lead of FROM DET between TP106 (Pin 19 of IC101) and ground.
3. Apply a +14V DC across C423 (+).
4. Apply a +5.2V DC dummy AGC bias to TP104 (Pin 1 of IC101). (See Fig.1).



013-688310-82	FLAME PROOF FUSING RESISTOR
013-750005-12H	CARBON FILM RESISTOR 75 OHM 1/16W 5%
013-820005-12H	CARBON FILM RESISTOR 82 OHM 1/16W 5%
013-822005-12	CARBON FILM RESISTOR 8.2K OHM 1/16W 5%
013-822105-12	CARBON FILM RESISTOR 8.2K OHM 1/4W 5%
013-822605-75	FIXED METAL OXIDE FILM RESISTOR 8.2K
013-823005-12H	CARBON FILM RESISTOR 82K OHM 1/16W 5%
013-825305-92	HIGH VOLTAGE RESISTOR 8.2M OHM 1W 5%
014-210200-01	P.T.C. THERMISTOR "POSI-R" ZPB53BL200C
022-300101-03	TRIMMER CAPACITOR 30PF ECR-WA030E11 MAT
026-102111-01	MYLAR CAPACITOR .001 MFD 100V 10%
026-103071-11	POLY. FILM CAP ECO-81H103KF 0.01 MFD
026-104061-71	MULTILAYER METALLIZED POLYESTER FILM CAP
026-104111-01	MYLAR CAPACITOR .1MFD 100V 10%
026-122071-11	POLY. FILM CAP ECQ-B1H122KF 0.0012MFD
026-153111-01	MYLAR CAPACITOR 0.015 MFD 100V 10%
026-154111-01	MYLAR CAPACITOR 0.15 MFD 100V 10%
026-222111-01	MYLAR CAPACITOR .0022 MFD 100V 10%
026-223071-11	POLY. FILE CAP ECG-B1H223KF 0.022MFD
026-223111-01	MYLAR CAPACITOR 0.022 MFD 100V 10%
026-224111-01	MYLAR CAPACITOR 0.22 MFD 100V 10%
026-273071-11	POLY. FILM CAR ECQ-B1H273KF 0.027MFD
026-332160-41	METALLIZED POLYPROPYLENE CAP 0.0033 MFD
026-333111-01	MYLAR CAPACITOR .033 MFD 100V 10%
026-472111-01	MYLAR CAPACITOR 0.0047 MFD 100V 10%
026-473201-31	POLYPROPYLENE CAPACITOR .047MFD 200V 10%
029-473212-41	METALLIZED POLY CAP ECQU3A473MN 0.047MFD
026-474111-01	MYLAR CAPACITOR 0.47MFD 100V 10%
026-474200-31	POLYPROPYLENE CAPACITOR 0.47 MFD 200V 5%
026-474211-41	METALLIZED POLYESTER CAP 0.47MFD 250V
026-562071-11	POLY. FILE CAP ECQ-91H562KF 0.0056MFD
026-563201-31	POLYPROPYLENE CAP 0.056MFD 200V 10%
026-682111-01	MYLAR CAPACITOR 0.0056 MFD 100V 10%
030-512110-00	LED 'RED' SEL211OR
031-211015-00	TRANSISTOR 2SA 1015 TOSHIBA
031-220774-20	TRANSISTOR 2SB774T MATSUSHITA
031-230388-00	TRANSISTOR 2SC 388ATM TOSHIBA
031-231815-26	TRANSISTOR 2SC 1815 Y TOSHIBA
031-232001-00	TRANSISTOR 2SC2001K/L
031-232482-00	TRANSISTOR 2SC 2482 TOSHIBA
031-240400-06	TRANSISTOR 2SD400F SANYO
031-241545-00	TRANSISTOR 2SD1545
031-241555-05	TRANSISTOR 2SD1555(E) TOSHIBA
031-380020-00	TRANSISTOR BSX20 S.G.S.
033-105601-11	IC AN5601K MATSUSHITA
033-108701-14	I.C TA8701AN TOSHIBA
033-201904-31	IC TDA1904 S.G.S.
033-207830-16	IC LA7830 SANYO
033-307347-22	I/C TMS73C47 TEXAS
033-809012-14	IC TC9012F TOSHIBA
033-809346-42	I.C. XLS93LC46P EXEL
036-600781-00	OPTICAL RECEIVER MODULE GP1U781R SHARP
037-886724-20	CRYSTAL 8.867238MHZ KD0284FFB DAIWA
045-022411-11	SLIDE SWITCH 2P2T SS22F12G11 PIC

046-100001-14	POWER SWITCH ESB 99957S MATSUSHITA
046-100001-39	TACT SWITCH 1P SKHHLQ044A ALPS
061-540013-01	20" CRT SOCKET 0330 550043 METALLO
065-983023-09	SPEAKERS 8 OHM 3W MAX 5W 2" X 3.5"
071-400056-20	AC LINE CORD 9S6500 86" W/STOPPER
079-403500-00	SHRINKABLE TUBE 3.5 MM DIA
079-501000-00	SPAGHETTI TUBE 1MM DIA.
082-223150-03	FUSE T3. 15A 250V 5 X 20MM SEMKO APPROVED
090-390205-00	P.C. BOARD (050392) PHENOLIC T=1.6MM
090-922010-05	P.C. BOARD (170892) PHENOLIC T=1.6MM
090-922020-02	P.C. BOARD (201092) PHENOLIC T=1.6MM
090-922050-01	P.C. BOARD (300592) PHENOLIC T=1.6MM
101-220005-03A	FLYBACK 20" CF0341 LIEN CHANG
102-320001-19	20" COLOR CRT ITC 51OUFB22-TC09 (DPY)
103-113108-92	TUNER UHF PAL-1 LEC SOCKET
105-100101-02	FIXED INDUCTOR COIL 100H EL0606SKI-100K
105-150101-02	FIXED INDUCTOR COIL 15 UH 10%
105-161101-01	CHOKER COIL 160 UH
105-181101-02	FIXED INDUCTOR COIL 180 UH 10%
105-220101-02	FIXED INDUCTOR COIL 22 UH 10%
105-570101-01	FIXED INDUCTOR COIL 57 UH 10%
105-689101-02	FIXED INDUCTOR COIL 6.8UH
108-890201-02	DEGAUSSING COIL 89T 20" L-1250MM
112-102541-06	SEMI-FIXED RESISTOR B-1K OHM
112-103541-06	SEMI-FIXED RESISTOR B-10K OHM
112-204541-06	SEMI-FIXED RESISTOR B-200K OHM
112-301531-08	SEMI-FIXED RESISTOR B-300 OHM 3 PINS
112-501541-06	SEMI-FIXED RESISTOR B-500 OHM
112-502531-08	SEMI-FIXED RESISTOR B-5K OHM 3 PIN
112-502541-06	SEMI-FIXED RESISTOR B-5K OHM
113-100001-01	DELAY LINE RDL-644KIP SANETRONIC
113-200001-00	DELAY LINE ELT10Z216 MATSUSHITA
123-020300-13	CERAMIC CAPACITOR 2PF 50V 0.25PF
123-070300-13	CERAMIC CAPACITOR 7PF 50V 0.25PF CH TYPE
123-101340-13	CERAMIC CAPACITOR 100 PF 50V 5% CH TYPE
123-101350-10	CERAMIC CAPACITOR 100PF 50V 10% SL TYPE
123-102370-30	CERAMIC CAPACITOR .001MFD 50V +80-20%
123-103370-30	CERAMIC CAPACITOR 0.01MFD 50V +80-20%
123-104270-30	CERAMIC CAPACITOR 0.1 MFD 25V +80-20%
123-122550-40	CERAMIC CAPACITOR 1200PF 500V 10%
123-181350-10	CERAMIC CAPACITOR 180 PF 50V 10% SL TYPE
123-220350-10	CERAMIC CAPACITOR 22PF 50V 10% SL TYPE
123-221350-10	CERAMIC CAPACITOR 220PF 50V 10% SL TYPE
123-222467-41	CERAMIC CAPACITOR 0.0022 MFD 400V + 20%
123-222580-42	CERAMIC CAPACITOR 0.0022 MFD 500V +100-0%
123-222840-40	CERAMIC CAPACITOR 0.0022 MFD 2KV 5%
123-270350-40	CERAMIC CAPACITOR 27 PF 50V 10% SL TYPE
123-271340-40	CERAMIC CAPACITOR 270 PF 50V 5% SL TYPE
123-272640-10	CERAMIC CAP 0.0027 MFD 2KV 5%
123-300340-13	CERAMIC CAPACITOR 30 PF 50V 5% CH TYPE
123-331340-10	CERAMIC CAPACITOR 330 PF 50V 5% SL TYPE
123-360350-10	CERAMIC CAPACITOR 36 PF 50V 10% SL TYPE
123-390340-13	CERAMIC CAPACITOR 39 PF 50V 5% CH TYPE
123-470350-10	CERAMIC CAPACITOR 47PF 50V 10% SL TYPE

123-471350-10	CERAMIC CAPACITOR 470PF 50V 10% SL TYPE
123-472580-42	CER CAP ECKD2H472PU 0.0047 MFD 500V +100
001-190010-96	HORI. DRIVE TRANSFORMER AT-19E RO710
001-190013-95	CHOKE TRANSFORMER LS-13107 LI SHIN
001-419220-94	SWITCHING TRANSFORMER HL4025B
002-370000-02	TANK IFT COIL 51M7-M /R12-L242A MITSUMI
002-770004-03	CHROMA IFT COIL BF199CN-A1545HF TOKO
002-970000-02	IFT TV COIL 31M7-M /R12-L240A
006-210012-02	RELAY 12V VS 12MB 12VDC TV-5
007-106000-16	TRAP FILTER 6.0 MHZ TRS6.OMB MURATA
007-300455-46	CERAMIC RESONATOR 455KHZ CSB455EB MURATA
007-304000-06	CERAMIC RESONATOR 4MHZ CSA4.00MG MURATA
007-306000-06	CERAMIC FILTER 6.0 MHZ SFE6.OMB MURATA
007-739500-39	SAW FILTER 39.5MHZ OFWJ1953M SEIMENS
013-100105-12	CARBON FILM RESISTOR 10 OHM 1/4W 5%
013-100405-75	FIXED METAL OXIDE RESISTOR 10 OHM 2W 5%
013-101005-12	CARBON FILM RESISTOR 100 OHM 1/16W 5%
013-101005-12H	CARBON FILM RESISTOR 100 OHM 1/16W 5%
013-101105-12	CARBON FILM RESISTOR 100 OHM 1/4W 5%
013-101205-12	CARBON FILM RESISTOR 100 OHM 1/2W 5%
013-102005-12	CARBON FILM RESISTOR 1K OHM 1/16W 5%
013-102005-12H	CARBON FILM RESISTOR 1K OHM 1/16W 5%
013-103005-12	CARBON FILM RESISTOR 10K OHM 1/16W 5%
013-103005-12H	CARBON FILM RESISTOR 10K OHM 1/16W 5%
013-103101-72	FIXED METAL OXIDE FILM RESISTOR 10K OHM
013-103105-12	CARBON FILM RESISTOR 10K OHM 1/4W 5%
013-103305-75	FIXED METAL OXIDE FILM RESISTOR
013-103405-75	FIXED METAL OXIDE FILM RESISTOR
013-104005-12H	CARBON FILM RESISTOR 100K OHM 1/16W 5%
013-104205-12	CARBON FILM RESISTOR 100K OHM 1/2W 5%
013-105005-12H	CARBON FILM RESISTOR 1M OHM 1/16W 5%
013-109105-12	CARBON FILM RESISTOR 1 OHM 1/4W 5%
013-120305-75	FIXED METAL OXIDE FILM RESISTOR 12 OHM
013-120405-75	FIXED METAL OXIDE FILM RES 12 OHM 2W
013-122005-12	CARBON FILM RESISTOR 1.2K OHM 1/16W 5%
013-122005-12H	CARBON FILM RESISTOR 1.2K OHM 1/16W 5%
013-122305-75	FIXED METAL OXIDE FILM RES. 1.2K OHM 1W
013-123005-12	CARBON FILM RESISTOR 12K OHM 1/16W 5%
013-123405-75	FIXED METAL OXIDE FILM RESISTOR 12K OHM
013-131105-12	CARBON FILM RESISTOR 150 OHM 1/4W 5%
013-152005-12H	CARBON FILM RESISTOR 1.5K OHM 1/16W 5%
013-152105-12	CARBON FILM RESISTOR 1.5K OHM 1/4W 5%
013-154005-12H	CARBON FILM RESISTOR 150K OHM 1/16W 5%
013-154205-22	FLAME PROOF CAR FILM RES KOARDF50ST52
013-180105-12	CARBON FILM RESISTOR 18 OHM 1/4W 5%
013-182005-12H	CARBON FILM RESISTOR 1.8K OHM 1/16W 5%
013-182105-12	CARBON FILM RESISTOR 1.8K OHM 1/4W 5%
013-183005-12H	CARBON FILM RESISTOR 18K OHM 1/16W 5%
013-184005-12H	CARBON FILM RESISTOR 180K OHM 1/16W 5%
013-220205-12	CARBON FILM RESISTOR 22 OHM 1/2W 5%
013-221005-12	CARBON FILM RESISTOR 220 OHM 1/16W 5%
013-221005-12H	CARBON FILM RESISTOR 220 OHM 1/16W 5%
013-222005-12	CARBON FILM RESISTOR 2.2K OHM 1/16W 5%
013-222005-12H	CARBON FILM RESISTOR 2.2K OHM 1.16W 5%

013-223005-12H	CARBON FILM RESISTOR 22K OHM 1/16W 5%
013-223105-12	CARBON FILM RESISTOR 22K OHM 1/4W 5%
013-225005-12	CARBON FILM RESISTOR 2.2M OHM 1/16W 5%
013-229105-12	CARBON FILM RESISTOR 2.2 OHM 1/4W 5%
013-229305-82	FLAME PROOF FUSING RESISTOR 2.2 OHM
013-229405-75	FIXED METAL OXIDE FILM RES 2.2 OHM 2W
013-229405-82	FLAME PROOF FUSING RESISTOR 2.2 OHM 2W
013-263101-72	FIXED METAL OXIDE FILM RESISTOR
013-270005-12H	CARBON FILM RESISTOR 27 OHM 1/16W 5%
013-270405-75	FIXED METAL OXIDE FILM RES 27 OHM 2W
013-271305-75	FIXED METAL OXIDE FILM RESISTOR 270OHM
013-272205-22	FLAME PROOF CAR FILM RES KOARDF5OST52
013-273005-12H	CARBON FILM RESISTOR 27K OHM 1/16W 5%
013-274101-72	FIXED METAL OXIDE FILM RESISTOR
013-302105-12	CARBON FILM RESISTOR 3K OHM 1/4W 5%
013-331005-12H	CARBON FILM RESISTOR 330 OHM 1/16W 5%
013-331105-12	CARBON FILM RESISTOR 330 OHM 1/4W 5%
013-332005-12	CARBON FILM RESISTOR 3.3K OHM 1/16W 5%
013-332005-12H	CARBON FILM RESISTOR 3.3K OHM 1/16W 5%
013-332105-12	CARBON FILM RESISTOR 3.3K OHM 1/4W 5%
013-332605-75	FIXED METAL OXIDE FILM RESISTOR 3.3K OHM
013-333005-12H	CARBON FILM RESISTOR 33K OHM 1/16W 5%
013-334305-75	FIXED METAL OXIDE FILM RESISTOR 330K OHM
013-338410-82	FLAME PROOF FUSING RESISTOR 0.33 OHM 2W
013-390805-75	FIXED METAL OXIDE FILM RES 39 OHM 7W
013-391005-12	CARBON FILM RESISTOR 390 OHM 1/16 5%
013-391005-12H	CARBON FILM RESISTOR 390 OHM 1/16W 5%
013-392005-12	CARBON FILM RESISTOR 3.9K OHM 1/16W 5%
013-392005-12H	CARBON FILM RESISTOR 3.9K OHM 1/16W 5%
013-393005-12H	CARBON FILM RESISTOR 39K OHM 1/16W 5%
013-470205-12	CARBON FILM RESISTOR 47 OHM 1/2W 5%
013-471005-12	CARBON FILM RESISTOR 470 OHM 1/16W 5%
013-471005-12H	CARBON FILM RESISTOR 470 OHM 1/16W 5%
013-471105-12	CARBON FILM RESISTOR 470 OHM 1/4W 5%
013-471205-22	FLAME PROOF CAR. FILM RES. 470 OHM 1/2W
013-472005-12H	CARBON FILM RESISTOR 4.7K OHM 1/16W 5%
013-472105-12	CARBON FILM RESISTOR 4.7K OHM 1/4W 5%
013-473005-12	CARBON FILM RESISTOR 47K OHM 1/16W 5%
013-473005-12H	CARBON FILM RESISTOR 47K OHM 1/16W 5%
013-479605-54	CEMENT RES. 4.7 OHM 5W 5% ERF-5ZXJ4R7
013-561005-12H	CARBON FILM RESISTOR 560 OHM 1/16W 5%
013-562005-12H	CARBON FILM RESISTOR 5.6K OHM 1/16W 5%
013-562105-12	CARBON FILM RESISTOR 5.6K OHM 1/4W 5%
013-563005-12H	CARBON FILM RESISTOR 56K OHM 1/16W 5%
013-569105-12	CARBON FILM RESISTOR 5.6 OHM 1/4W 5%
013-569505-76	FIXED METAL OXIDE FILM RESISTOR 5.6OHM
013-682005-12	CARBON FILM RESISTOR 6.8K OHM 1/16W 5%
013-682005-12H	CARBON FILM RESISTOR 6.8K OHM 1/16W 5%
013-682105-12	CARBON FILM RESISTOR 6.8K OHM 1/4W 5%
013-683005-12	CARBON FILM RESISTOR 68K OHM 1/16W 5%
013-388205-82	FLAME PROOF FUSING RESISTOR
013-688310-82	FLAME PROOF FUSING RESISTOR
013-750005-12H	CARBON FILM RESISTOR 75 OHM 1/16W 5%
013-820005-12H	CARBON FILM RESISTOR 82 OHM 1/16W 5%

013-822005-12	CARBON FILM RESISTOR 8.2K OHM 1/16W 5%
013-822105-12	CARBON FILM RESISTOR 8.2K OHM 1/4W 5%
013-822605-75	FIXED METAL OXIDE FILM RESISTOR 8.2K
013-823005-12H	CARBON FILM RESISTOR 82K OHM 1/16W 5%
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031-231815-26	TRANSISTOR 2SC 1815 Y TOSHIBA
031-232001-00	TRANSISTOR 2SC2001K/L
031-232482-00	TRANSISTOR 2SC 2482 TOSHIBA
031-240400-06	TRANSISTOR 2SD400F SANYO
031-241545-00	TRANSISTOR 2SD1545
031-241555-05	TRANSISTOR 2SD1555(E) TOSHIBA
031-380020-00	TRANSISTOR BSX20 S.G.S.
033-105601-11	IC AN5601K MATSUSHITA
033-108701-14	I.C TA8701AN TOSHIBA
033-201904-31	IC TDA1904 S.G.S.
033-207830-16	IC LA7830 SANYO
033-307347-22	IC TMS73C47 TEXAS
033-809012-14	IC TC9012F TOSHIBA
033-809346-42	I.C. XLS93LC46P EXEL
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061-540013-01	20" CRT SOCKET 0330 550043 METALLO

065-983023-09	SPEAKERS 8 OHM 3W MAX 5W 2" X 3.5"
071-400056-20	AC LINE CORD 9S6500 86" W/STOPPER
079-403500-00	SHRINKABLE TUBE 3.5 MM DIA
079-501000-00	SPAGHETTI TUBE 1MM DIA.
082-223150-03	FUSE T3. 15A 250V 5 X 20MM SEMKO APPROVED
090-390205-00	P.C. BOARD (050392) PHENOLIC T=1.6MM
090-922010-05	P.C. BOARD (170892) PHENOLIC T=1.6MM
090-922020-02	P.C. BOARD (201092) PHENOLIC T=1.6MM
090-922050-01	P.C. BOARD (300592) PHENOLIC T=1.6MM
101-220005-03A	FLYBACK 20" CF0341 LIEN CHANG
102-320001-19	20" COLOR CRT ITC 51OUFB22-TC09 (DPY)
103-113108-92	TUNER UHF PAL-1 LEC SOCKET
105-100101-02	FIXED INDUCTOR COIL 100H EL0606SKI-100K
105-150101-02	FIXED INDUCTOR COIL 15 UH 10%
105-161101-01	CHOKO COIL 160 UH
105-181101-02	FIXED INDUCTOR COIL 180 UH 10%
105-220101-02	FIXED INDUCTOR COIL 22 UH 10%
105-570101-01	FIXED INDUCTOR COIL 57 UH 10%
105-689101-02	FIXED INDUCTOR COIL 6.8UH
108-890201-02	DEGAUSSING COIL 89T 20" L-1250MM
112-102541-06	SEMI-FIXED RESISTOR B-1K OHM
112-103541-06	SEMI-FIXED RESISTOR B-10K OHM
112-204541-06	SEMI-FIXED RESISTOR B-200K OHM
112-301531-08	SEMI-FIXED RESISTOR B-300 OHM 3 PINS
112-501541-06	SEMI-FIXED RESISTOR B-500 OHM
112-502531-08	SEMI-FIXED RESISTOR B-5K OHM 3 PIN
112-502541-06	SEMI-FIXED RESISTOR B-5K OHM
113-100001-01	DELAY LINE RDL-644KIP SANETRONIC
113-200001-00	DELAY LINE ELT10Z216 MATSUSHITA
123-020300-13	CERAMIC CAPACITOR 2PF 50V 0.25PF
123-070300-13	CERAMIC CAPACITOR 7PF 50V 0.25PF CH TYPE
123-101340-13	CERAMIC CAPACITOR 100 PF 50V 5% CH TYPE
123-101350-10	CERAMIC CAPACITOR 100PF 50V 10% SL TYPE
123-102370-30	CERAMIC CAPACITOR .001MFD 50V +80-20%
123-103370-30	CERAMIC CAPACITOR 0.01MFD 50V +80-20%
123-104270-30	CERAMIC CAPACITOR 0.1 MFD 25V +80-20%
123-122550-40	CERAMIC CAPACITOR 1200PF 500V 10%
123-181350-10	CERAMIC CAPACITOR 180 PF 50V 10% SL TYPE
123-220350-10	CERAMIC CAPACITOR 22PF 50V 10% SL TYPE
123-221350-10	CERAMIC CAPACITOR 220PF 50V 10% SL TYPE
123-222467-41	CERAMIC CAPACITOR 0.0022 MFD 400V + 20%
123-222580-42	CERAMIC CAPACITOR 0.0022 MFD 500V +100-0%
123-222840-40	CERAMIC CAPACITOR 0.0022 MFD 2KV 5%
123-270350-40	CERAMIC CAPACITOR 27 PF 50V 10% SL TYPE
123-271340-40	CERAMIC CAPACITOR 270 PF 50V 5% SL TYPE
123-272640-10	CERAMIC CAP 0.0027 MFD 2KV 5%
123-300340-13	CERAMIC CAPACITOR 30 PF 50V 5% CH TYPE
123-331340-10	CERAMIC CAPACITOR 330 PF 50V 5% SL TYPE
123-360350-10	CERAMIC CAPACITOR 36 PF 50V 10% SL TYPE
123-390340-13	CERAMIC CAPACITOR 39 PF 50V 5% CH TYPE
123-470350-10	CERAMIC CAPACITOR 47PF 50V 10% SL TYPE
123-471350-10	CERAMIC CAPACITOR 470PF 50V 10% SL TYPE
123-472580-42	CER CAP ECKD2H472PU 0.0047 MFD 500V +100
123-500350-10	CERAMIC CAPACITOR 50PF 50V 10% SL TYPE

123-561350-10	CERAMIC CAPACITOR 560PF 50V 10% SL TYPE
123-681550-40	CERAMIC CAPACITOR 680PF 500V 10%
123-820350-10	CERAMIC CAPACITOR 82PF 50V 10% SL TYPE
123-821350-10	CERAMIC CAPACITOR 820PF 50V 10%
123-821840-40	CERAMIC CAPACITOR 820PF 2KV 5%
124-105061-01	TAN CAP ECSF1VE105K 1MFD 35V 10%
124-106041-01	TAN CAP ECSF1CE106K 10MFD 16V 10%
124-225051-01	TAN CAP ECSF1EE225K 2.2MFD 25V 10%
124-474061-01	TAN CAP ECSF1VE474K 0.47MFD 35V 10%
127-105077-01	ELECTROLYTIC CAPACITOR 1MFD 50V 20%
127-105077-21	NON POLARIZED ELECTROLYTIC CAPACITOR
127-105135-01	ELECTROLYTIC CAPACITOR 1MFD 160V
127-106047-01	ELECTROLYTIC CAPACITOR 10MFD 16V 20%
127-106077-01	ELECTROLYTIC CAPACITOR 10 MFD 50V 20%
127-106215-81	ELECTROLYTIC CAPACITOR 10MFD 250V +20%
127-107047-01	ELECTROLYTIC CAPACITOR 100MFD 16V 20%
127-107067-01	ELECTROLYTIC CAPACITOR 100MFD 35V 20%
127-107135-81	ELECTROLYTIC CAPACITOR 100MFD 160V
127-107401-01	ELECT COND 100MFD 400 ECES2GU1010 10%
127-108047-01	E. CAP 100MFD 16V 20% 10 X 21MM
127-108057-01	ELECTROLYTIC CAPACITOR 100MFD 25V 20%
127-108067-01	ELECTROLYTIC CAPACITOR 1000MFD 35V 20%
127-224077-01	ELECTROLYTIC CAPACITOR 0.22 MFD 50V 20%
127-225077-01	ELECTROLYTIC CAPACITOR 2.2 MFD 50V 20%
127-226047-01	ELECTROLYTIC CAPACITOR 22 MFD 16V 20%
127-227047-01	ELECTROLYTIC CAPACITOR 220 MFD 16V 20%
127-227057-01	ELECTROLYTIC CAPACITOR 220MFD 25V 20%
127-335077-01	ELECTROLYTIC CAPACITOR 3.3 MFD 50V 20%
127-335077-21	NON POLARIZED ELECTROLYTIC CAP 3.3 MFD
127-335215-01	ELECTROLYTIC CAPACITOR 3.3 MFD 250V +20%
127-335047-01	ELECTROLYTIC CAPACITOR 3300 MFD 16V 20%
127-474077-01	ELECTROLYTIC CAPACITOR 0.47 MFD 50V 20%
127-475057-01	ELECTROLYTIC CAPACITOR 4.7 MFD 25V 20%
127-476047-01	ELECTROLYTIC CAPACITOR 47 MFD 16V 20%
127-476057-01	ELECTROLYTIC CAPACITOR 47MFD 25V 20%
127-476077-01	ELECTROLYTIC CAPACITOR 47 MFD 50V 20%
127-477057-01	ELECTROLYTIC CAPACITOR 470 MFD 25V 20%
130-134148-01	SILICON DIODE 1N4148 AXIAL MOUNT
130-310060-00	RECTIFIER D2SBA S60 6B
130-310858-00	DIODE MA858 MATSUSHITA
130-315295-00	RECTIFIER DIODE 852956/J BYT 52K/J/G
130-410033-00	ZENER DIODE KA33V SAM SUNG
130-410039-00	ZENER DIODE 3.9V
130-410051-01	ZENER DIODE 5.1V
130-410056-01	ZENER DIODE 5.6V AXIAL MOUNT
130-410082-01	ZENER DIODE 8.2V
130-411091-00	ZENER DIODE 9.1V MA1091 M MATSUSHITA
130-422120-00	ZENER DIODE 12V MA2120 MATSUSHITA
130-600101-00	INFRARED EMITTING DIODE EL 1L1
200-922001-02	CAB FRONT BLACK W/CHAP GREY SPRAY HI-PS
201-390202-02	CABINET TOP BLACK W/SILK'S OFF-WHITE
202-922001-01B	CABINET BACK BLACK WI-PS DOW 470
203-390202-01	CABINET BOTTOM BLACK ABS
210-390401-01C	BATTERY COVER BLACK ABS

219-922001-02
239-391201-01
250-922102-01
263-390201-01
263-922001-01
292-922001-01
403-922001-01

PANEL DOOR BLACK W/CHAR GREY SPRAY ABS
ADAPTOR FOR POWER SWITCH BLACK ABS
LED HOLDER BLACK ABS
FRONT LENS 920 RED 20784 ABS
FRONT LENS RED ABS
POWER KNOB BLACK ABS
SPEAKER GRILLE DULL BLACK

B. ALIGNMENT STEP (SEE FIG.3)

1. Set output level to 6Vp-p.
2. Adjust T104 (TANK COIL) to obtain maximum amplitude of response at 38.9MHz as in Fig.3.

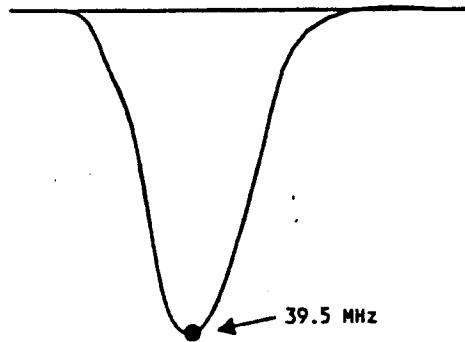


Fig. 3

IV. VIF ALIGNMENT

A. PREPARATION STEP (SEE FIG. 4)

1. Connect output lead of VIF Sweep Generator between tuner test point TP and tuner case.
2. Connect resistor (100 Ohm) between TP109 and TP120.
3. Connect lead of FROM DET between TP106 (Pin 19 of IC101) and ground.
4. Apply a +14V DC across C423 (+).
5. Apply a +5.2C DC dummy AGC bias to TP104 (Pin 1 of IC101).

B. ALIGNMENT

1. Adjust AGC bias voltage for maximum amplitude of waveform.
2. Adjust the level of Sweep Generaotr to achieve 2Vp-p output.
3. Increase the output level of Sweep Generator in 30dBuV.
4. Adjust AGC bias voltage to achieve 5Vp-p output (on Oscilloscope).
5. Adjust tuner convertor coil to obtain the waveform as shown below.

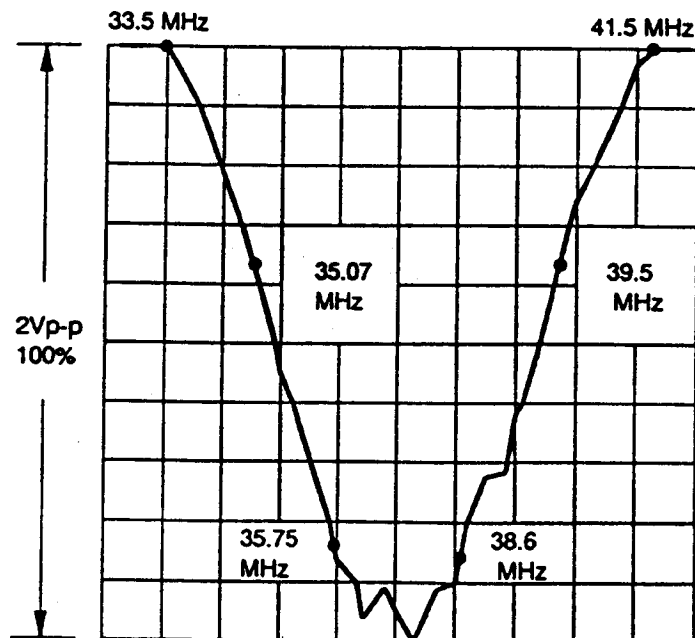


Fig. 4