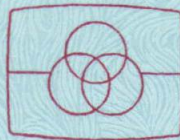


AKAI SERVICE MANUAL



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FM AM STEREO TUNER

MODEL **AT-K03**

FM AM STEREO DIGITAL SYNTHESIZER TUNER

MODEL **AT-V04/L**



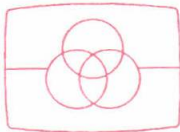
AT-K03



AT-V04



AT-V04L



Free service manuals

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FM AM STEREO TUNER**MODEL AT-K03****FM AM STEREO DIGITAL SYNTHESIZER TUNER****MODEL AT-V04/L****ALSO APPLICABLE TO BLACK PANEL MODEL**

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SECTION 1

**MODEL AT-K03
SERVICE MANUAL**

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	2. COMPOSITION OF VARIOUS P.C BOARDS	14

For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

I . TECHNICAL DATA

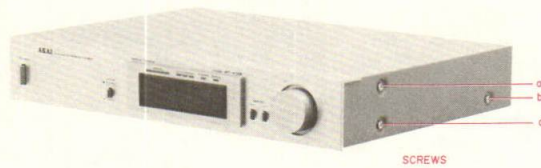
FM TUNER SECTION	
FREQUENCY RANGE	87.5 MHz to 108 MHz
SENSITIVITY (IHF)	1.9 μ V
CAPTURE RATIO	1.2 dB
SELECTIVITY	More than 65 dB
IMAGE REJECTION	More than 60 dB (98 MHz)
IF REJECTION	More than 85 dB (98 MHz)
SPURIOUS REJECTION	More than 85 dB (98 MHz)
AM SUPPRESSION	60 dB
SIGNAL TO NOISE RATIO	73 dB
HARMONIC DISTORTION	
MONO	Less than 0.09% (100% modulation)
STEREO	Less than 0.12% (100% modulation)
STEREO SEPARATION	More than 52 dB (1 kHz)
SUB CARRIER SUPPRESSION	More than 60 dB
OUTPUT VOLTAGE	Fixed 1 V (100% modulation)
ANTENNA INPUT IMPEDANCE	300 ohms balanced, 75 ohms unbalanced
AM TUNER SECTION	
FREQUENCY RANGE	520 kHz to 1,605 kHz
SENSITIVITY (IHF)	150 μ V/m (bar antenna) 10 μ V (external antenna)
SELECTIVITY (IHF)	More than 30 dB
IMAGE REJECTION	More than 55 dB (1,000 kHz)
IF REJECTION	More than 40 dB
SIGNAL TO NOISE RATIO	More than 55 dB
OUTPUT VOLTAGE	300 mV (30% modulation)
ANTENNA	Built-in ferrite bar antenna
POWER REQUIREMENTS	120 V, 60 Hz for USA and Canada 220 V, 50 Hz for Europe except UK 240 V, 50 Hz for UK and Australia 110 V/220 V/240 V, 50/60 Hz internally switchable for other countries.
DIMENSIONS	440 (W) x 78 (H) x 340 (D) mm (17.3 x 3.1 x 13.4) inches
WEIGHT	4.9 kg (10.8 lbs)
POWER CONSUMPTION	20 W

* For improvement purposes, specifications and design are subject to change without notice.

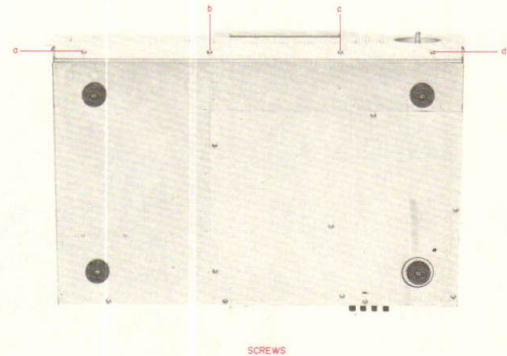
II. DISMANTLING OF UNIT

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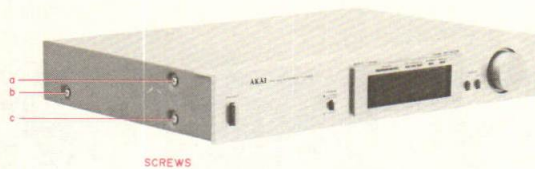
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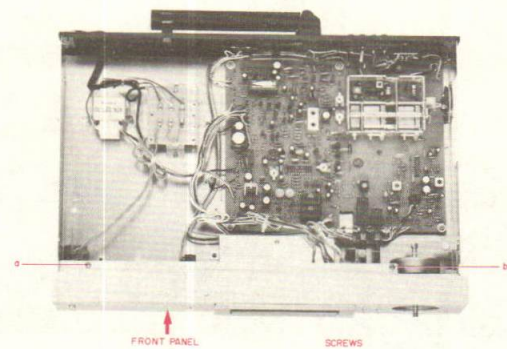
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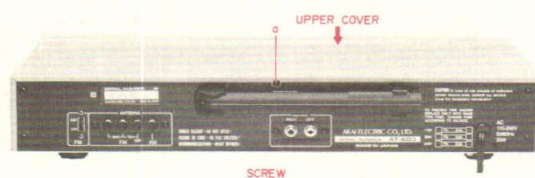
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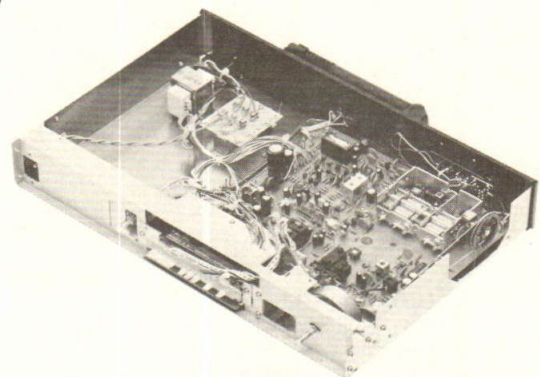
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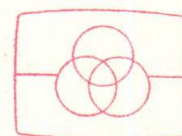
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III. CONTROLS

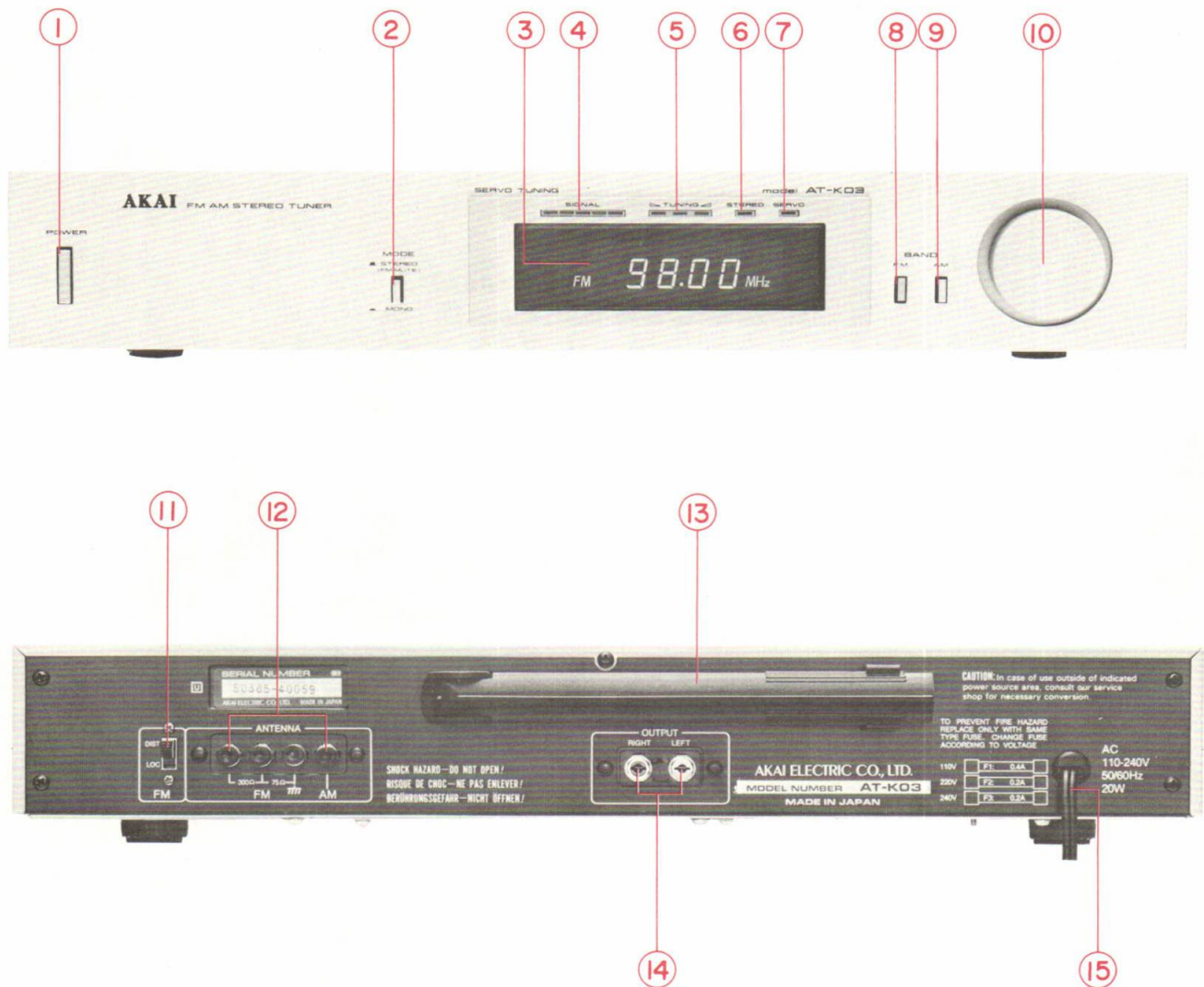


Fig. 1 Controls

- | | |
|-------------------------------|--|
| 1. POWER SWITCH | 10. TUNING KNOB |
| 2. FM MODE SWITCH | 11. FM LOC/DIST SWITCH |
| 3. DIGITAL FL DISPLAY | 12. FM and AM ANTENNA TERMINALS |
| 4. SIGNAL STRENGTH INDICATOR | 13. AM FERRITE BAR ANTENNA |
| 5. FM CENTER TUNING INDICATOR | 14. OUTPUT |
| 6. FM STEREO LAMP | 15. AC CORD (Some models are equipped with an AC Inlet instead of an AC cord. Connect with an appropriate power cord.) |
| 7. FM SERVO LAMP | |
| 8. FM SWITCH | |
| 9. AM SWITCH | |

IV. PRINCIPAL PARTS LOCATION

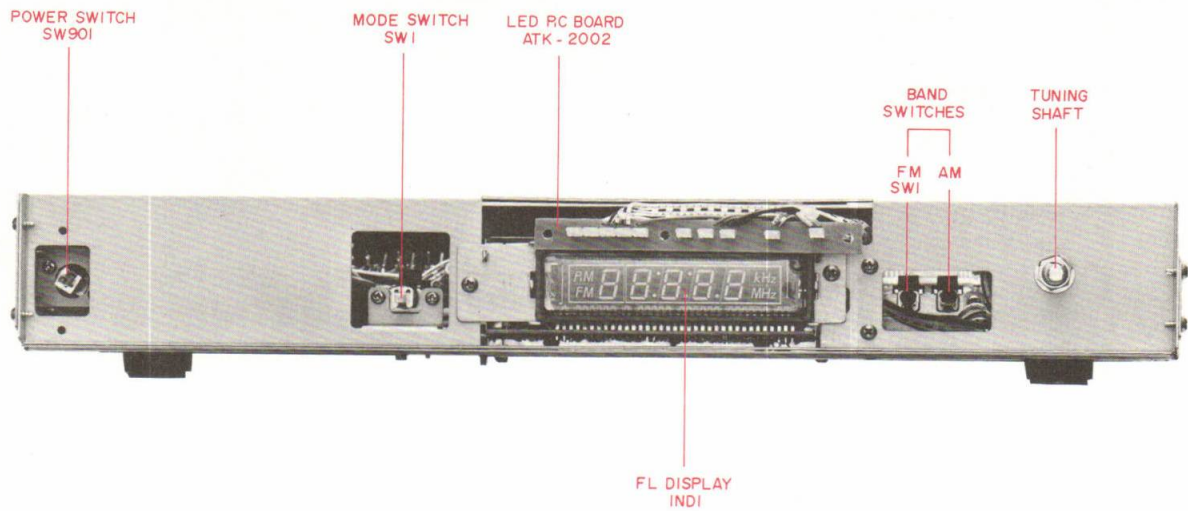


Fig. 2 Front View

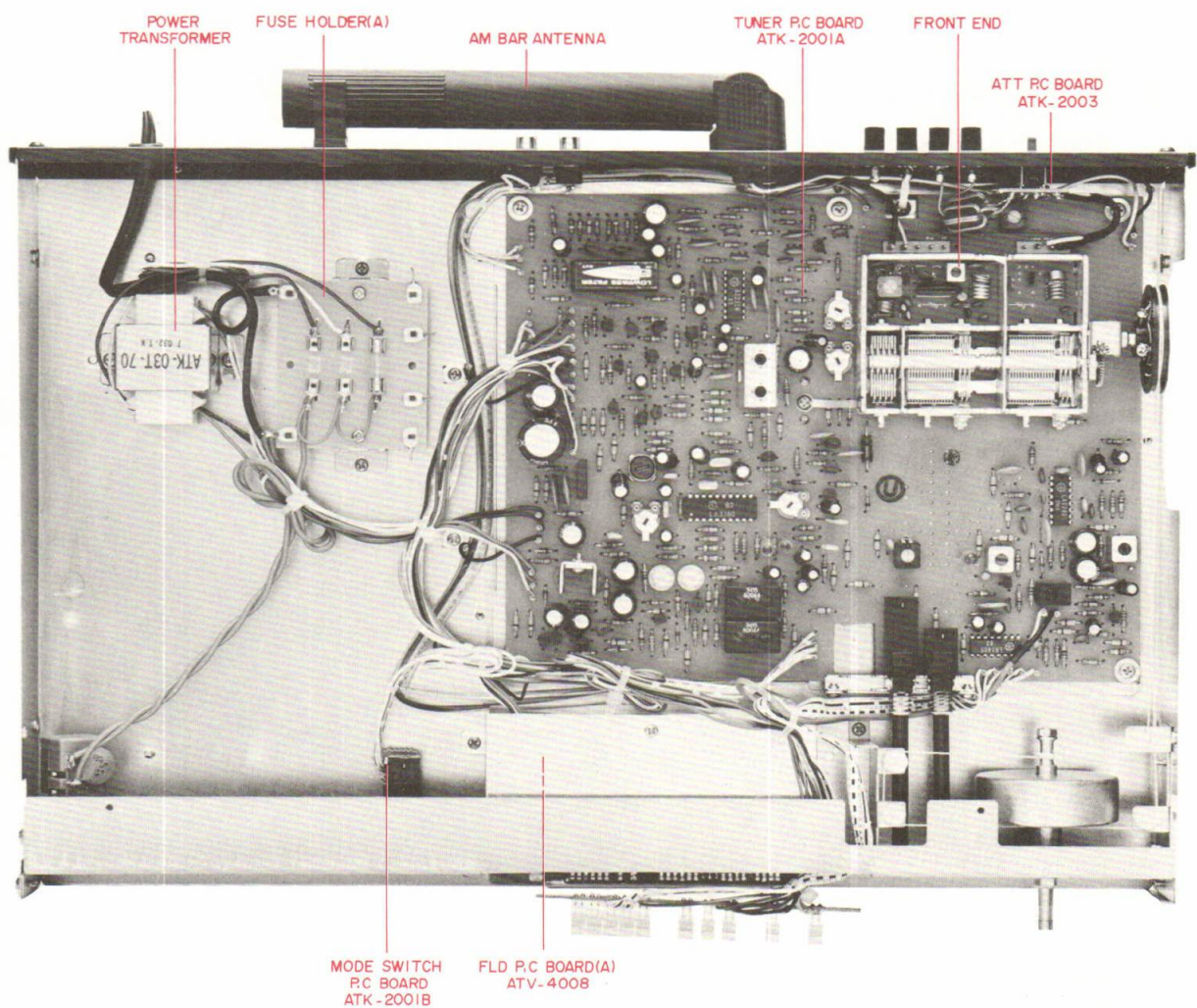


Fig. 3 Top View

V. VOLTAGE CONVERSION

110V AREAS : F1 400mA
220V AREAS : F2 200mA
240V AREAS : F3 200mA

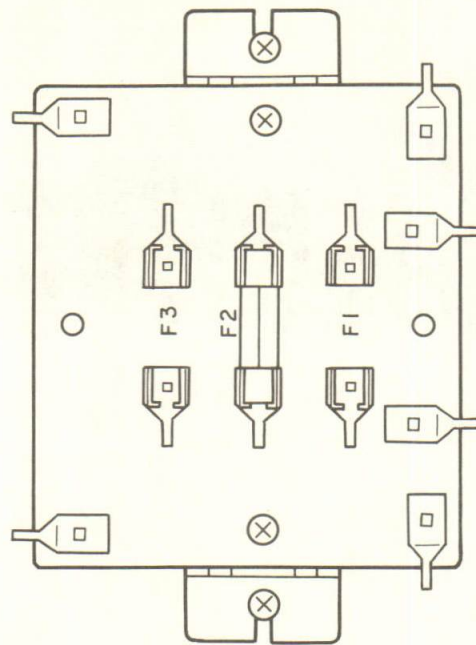
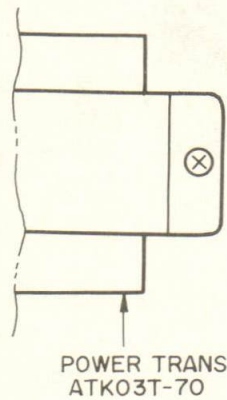


Fig. 4 Fuse Holder (A) (U/T Model)

Models for Canada, U.S.A., Europe, UK and Australia are not equipped with this facility.

Each machine is preset at the factory according to destination but some machines can be set to 110 V, 220 V or 240 V as required. If voltage change is necessary, this can be accomplished as follows.

- 1) Disconnect AC Power Cord.
- 2) Loosen holding screws and remove upper cover.
- 3) Remove existing line voltage fuse in proper fuse holder, explicitly following instructions printed on the rear panel.

VI. ADJUSTMENT

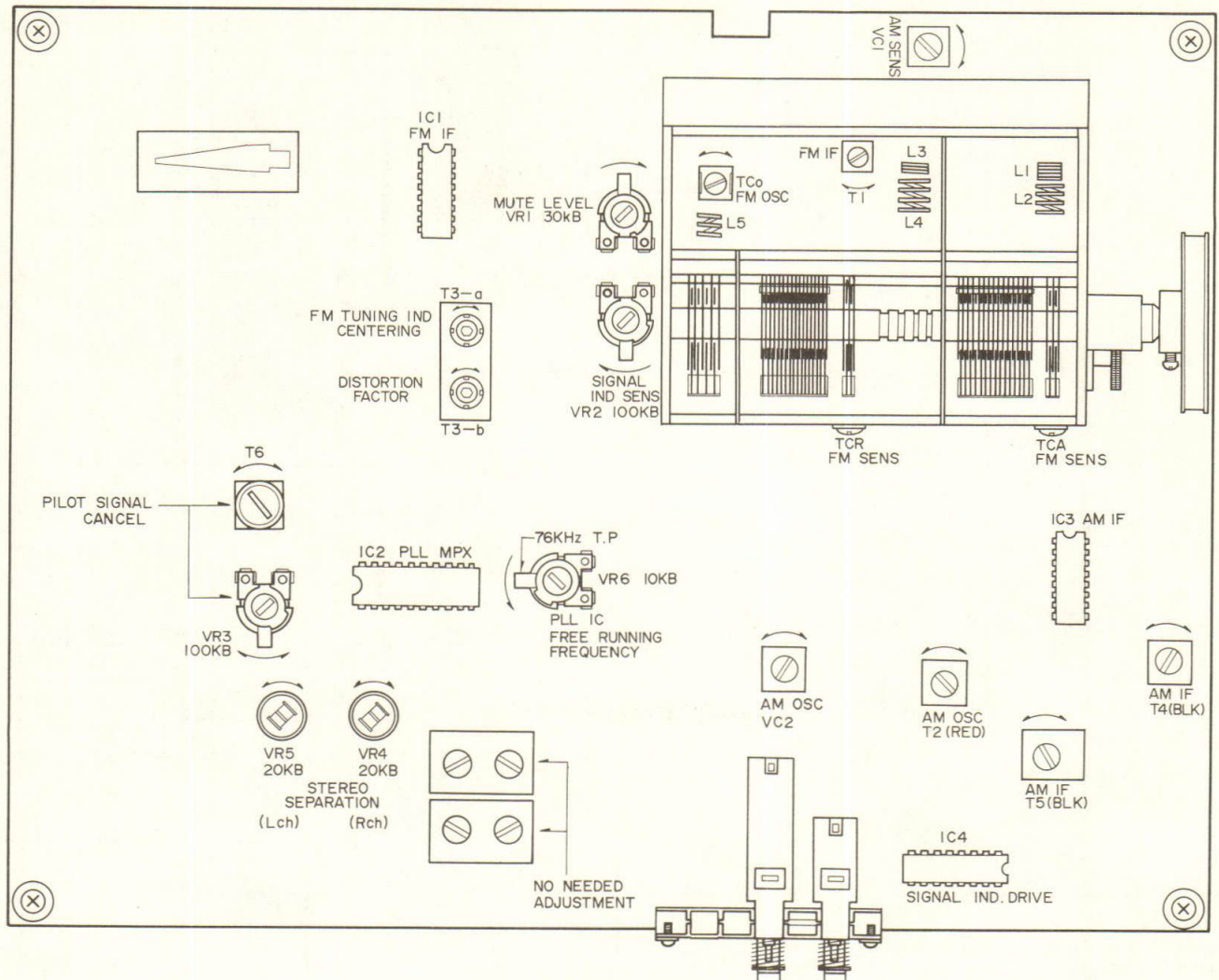


Fig. 5 Tuner P.C Board ATK-2001A

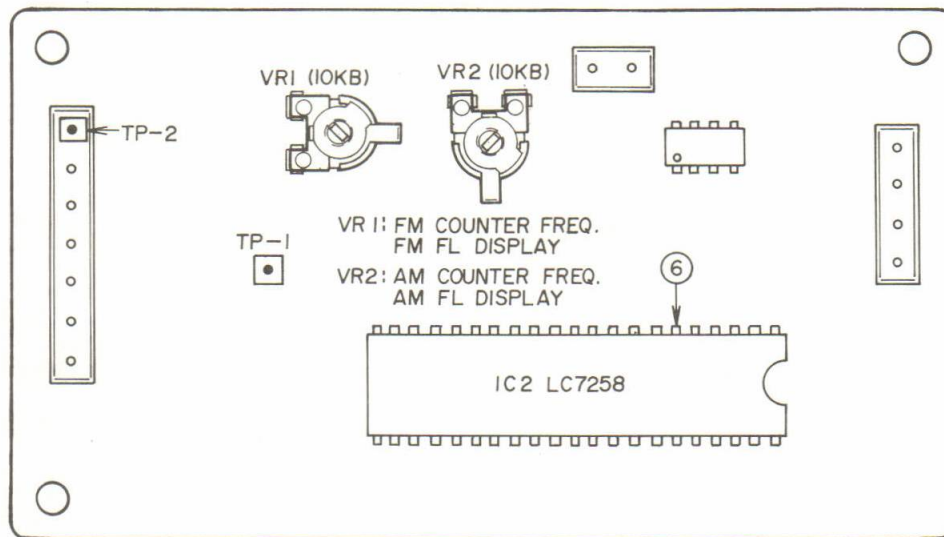


Fig. 6 FLD P.C Board (A) ATV-4008

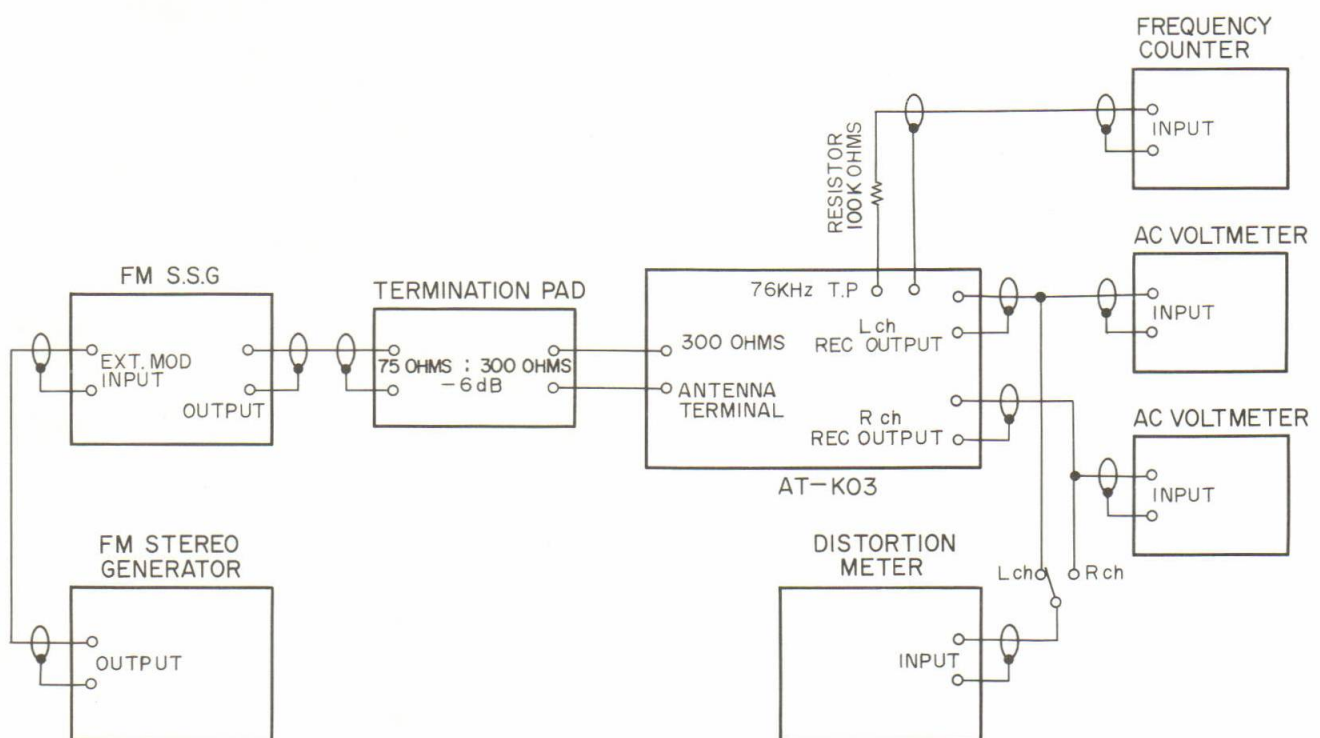


Fig. 7 Instrument Connections

1. FM SECTION ADJUSTMENT (Refer to Figs. 5, 6 and 7)

Step	Adjustment Item	Adjustment Point	Result	Remarks
1	Front End IF Coil	T1 Front End	Maximum noise level	BAND to "FM", and MODE to "MONO". Detune from broadcast and receive noise only.
2	Tuning Indicator Centering	T3-a	Center indication of tuning LEDs	98 MHz, 60 dB (mono) input.
3	Distortion Factor	T3-b	Distortion Factor: less than 0.09 %	98MHz, 60 dB (mono) input. Minimize distortion factor.
4	Confirmation of Tuning Indicator Centering			If tuning indicator is not centered, readjust Steps 2 and 3 described above.
5	FL Display Frequency	VR1 FLD P.C.B (A) ATV-4008	98.00 MHz Tune by centering LED and minimum distortion factor.	98MHz, 60 dB (mono) input. Ground TP2 on FL P.C. Board and adjust VR1 so that display shows 98.00 MHz and 4th numeral display must be stable. After completion, remove grounding.
6	High Range Display Indication	TC0 Front End	Maximum output Minimum distortion factor.	108.2 MHz, 60 dB (mono) input. Turn TUNING KNOB fully clockwise. Display to 108.20 MHz by adjusting TC0.
7	Confirmation of Low Range Display Indication		Maximum output Minimum distortion factor $88.0 \pm .25$ MHz	88 MHz, 60 dB (mono) input. Confirm whether display show 88.0 MHz. Error 250 kHz.
8	High Range Sensitivity	TCR, TCA Front End	Distortion Factor: less than 3 %	108 MHz, 6 dB or less (mono) input.
9	Confirmation of Low Range Sensitivity		Distortion Factor: less than 3 %	88 MHz, 6 dB or less (mono) input. Refer to NOTES 2 and 3.
10	Muting Level	VR1 30 kB ATK-2001A	No signal emitted from OUTPUT	MODE to "STEREO". 98 MHz, 22 dB (mono) input.
11	PLL IC Free Running Frequency	VR6 10 kB ATK-2001A	76.00 kHz	Frequency Counter to Test Point, Detuned condition. Refer to NOTES 4 and 5.
12	Confirmation of STEREO Indicator Lighting		Must be lighted	98 MHz, 60 dB (stereo) input. MODE to "STEREO".
13	Pilot Signal Cancel	VR3 100 kB L6 ATK-2001A	Minimum output	98 MHz, 60 dB (stereo) input. SSG modulated by only pilot signal, 19 kHz.

14	Stereo Separation (Left to Right)	VR5 20 kΩ ATK-2001A	More than 52 dB	98 MHz, 60 dB (stereo) input. SSG modulated 1 kHz, Rch, 100 %.
15	Stereo Separation (Right to Left)	VR4 20 kΩ ATK-2001A	More than 52 dB	98 MHz, 60 dB (stereo) input. SSG modulated 1 kHz, Lch, 100 %.
16	Signal Indicator Sensitivity	VR2 100 kΩ ATK-2001A	All LED light up.	98 MHz, 50 dB (mono) input. Adjust VR2 to a point where 5th LED of SIGNAL indicator lights up. Refer to NOTE 6.

Chart-1

- NOTES:
1. Set the FM ANTENNA ATT. switch to DIST.
 2. When the specified sensitivity of 6 dB cannot be obtained at the two frequency points, 88 MHz and 108 MHz repeat adjustment as in Step 7.
 3. When the distortion factor of the sensitivity still does not comply with the data specifications, adjust by turning the Front End FM IF coil (T1) core but not more than 1/2 turns.
 4. When connecting a frequency counter, connect from TP via a 100 Kohms resistor.
 5. The free Running Frequency of the PLL IC must be an exactly 76.00 kHz.
 6. The 5th LED lights up at 50 dB but when the attenuator is decreased 2 dB it is extinguished.

2. AM SECTION ADJUSTMENT (Refer to Figs. 5, 6, 7 and 8)

BAR ANTENNA CORE

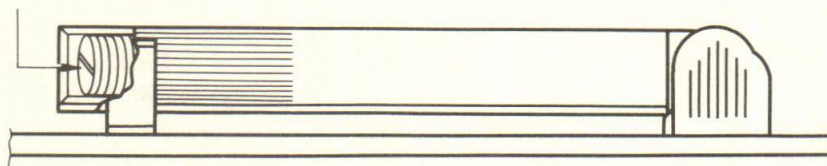


Fig. 8 Bar Antenna

Step	Adjustment Item	Adjustment Point	Result	Remarks
1	FL Display Frequency	VR2 FLD P.C.B. ATV-4008	Maximum output Minimum distortion	BAND to "AM" 1,000 kHz, 50 dB input. Ground TP2 and TP1 on FL P.C. Board, and adjust VR2 so that Display shows 1,000 and 4th numeral must be stable. After completion of adjustment disconnect grounding.
2	Low Range Display Indication	T2 (RED) ATK-2001A	Maximum output Minimum distortion	515 kHz, 50 dB input. Display to 515 kHz by adjusting T2.
3	Low Range Sensitivity	T4 (BLK) T5 (BLK) Bar Ant.	Maximum output Minimum distortion	530 kHz, 50 dB input. Distortion factor: 10% or less. Refer to Fig. 5.
4	High Range Display Indication	VC2 ATK-2001A	Maximum output	1620 kHz, 50 dB input. Display to 1620 kHz by adjusting VC2.
5	High Range Sensitivity	VC1 ATK-2001A	Maximum output Minimum distortion	1600 kHz, 50 dB input. Distortion factor: 10 % or less.

Chart-2

NOTE: For the best results, repeat Steps 2 through 5 two or three times.

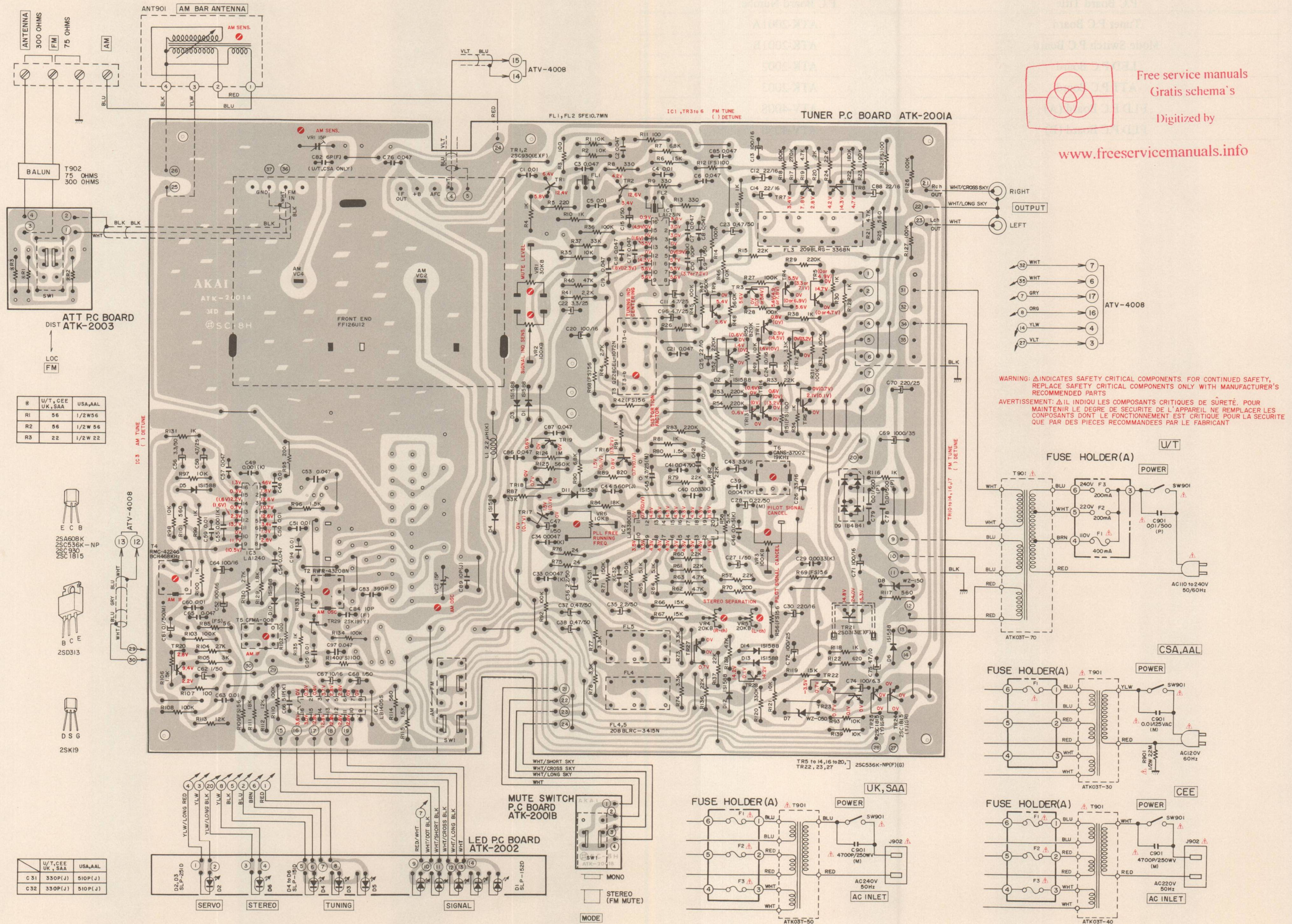
VII. CLASSIFICATION OF VARIOUS P.C BOARDS

1. P.C BOARD TITLES AND IDENTIFICATION NUMBERS

P.C Board Title	P.C Board Number
Tuner P.C Board	ATK-2001A
Mode Switch P.C Board	ATK-2001B
LED P.C Board	ATK-2002
ATT P.C Board	ATK-2003
FLD P.C Board (A)	ATV-4008
FLD P.C Board (B)	ATV-4050

Chart-3

1) Tuner P.C Board ATK-2001A (3ED), LED P.C Board ATK-2002 and ATT P.C Board ATK-2003



2SC536K-NP 2SD400 2SK19

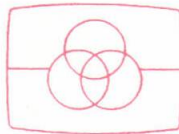
TR1 2SK19
TR2 2SD400(D)(E)
TR4 2SC536K-NP(E)(F)

ATK-2001A

VOLTAGE MEASURED AT FM POSITION

FLD P.C BOARD (A) ATV-4008(2ED)

FLD P.C BOARD (B) ATV-4050



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SECTION 2

**MODEL AT-V04/L
SERVICE MANUAL**

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	2. COMPOSITION OF VARIOUS P.C BOARDS	33

For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

I. TECHNICAL DATA

FM TUNER SECTION

FREQUENCY RANGE	87.5 MHz to 108 MHz
SENSITIVITY (IHF)	1.6 μ V
CAPTURE RATIO	1.2 dB
SELECTIVITY (IHF)	More than 75 dB
IMAGE REJECTION	More than 80 dB (98 MHz)
IF REJECTION	More than 95 dB (98 MHz)
SPURIOUS REJECTION	More than 95 dB (98 MHz)
AM SUPPRESSION	65 dB
SIGNAL TO NOISE RATIO	75 dB
HARMONIC DISTORTION	
MONO	Less than 0.08% (100% modulation)
STEREO	Less than 0.1% (100% modulation)
MUTING	OFF 1. 30 μ V 2. 10 μ V to 100 μ V
STEREO SEPARATION	More than 54 dB (1 kHz)
SUB CARRIER SUPPRESSION	More than 80 dB
OUTPUT VOLTAGE	Controllable from 0 to 1.5 V (100% modulation)
ANTENNA INPUT IMPEDANCE	300 ohms balanced, 75 ohms unbalanced

AM TUNER SECTION

MW

FREQUENCY RANGE	520 kHz to 1,605 kHz
SENSITIVITY (IHF)	150 μ V/m (bar antenna), 10 μ V (external antenna)
SELECTIVITY (IHF)	More than 30 dB
IMAGE REJECTION	More than 55 dB (1,000 kHz)
IF REJECTION	More than 40 dB
SIGNAL TO NOISE RATIO	More than 55 dB
OUTPUT VOLTAGE	Controllable from 0 mV to 500 mV (30% modulation)

LW (AT-V04L only)

FREQUENCY RANGE	135 kHz to 355 kHz
SENSITIVITY (IHF)	200 μ V/m (bar antenna), 17 μ V (external antenna)
SELECTIVITY (IHF)	More than 30 dB
IMAGE REJECTION	More than 50 dB (200 kHz)
IF REJECTION	More than 40 dB
SIGNAL TO NOISE RATIO	More than 55 dB
OUTPUT VOLTAGE	Controllable from 0 mV to 500 mV (30% modulation)

ANTENNA	Built-in ferrite bar antenna
POWER REQUIREMENTS	120 V, 60 Hz for USA and Canada 220 V, 50 Hz for Europe except UK 240 V, 50 Hz for UK and Australia 110 V/220 V/240 V, 50/60 Hz internally switchable for others.
POWER CONSUMPTION	20 W
DIMENSIONS	440 (W) $\times$ 78 (H) $\times$ 332 (D) mm (17.3 $\times$ 3.1 $\times$ 13.1) inches
WEIGHT	5.5 kg (12.1 lbs)

* For improvement purposes, specifications and design are subject to change without notice.

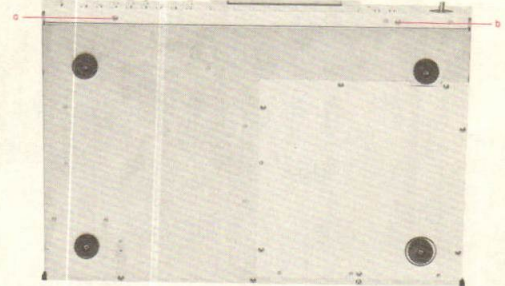
II. DISMANTLING OF UNIT

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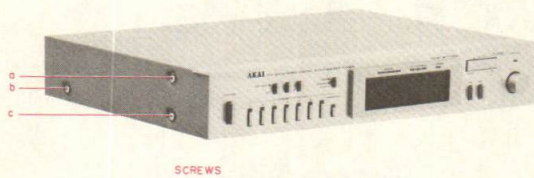
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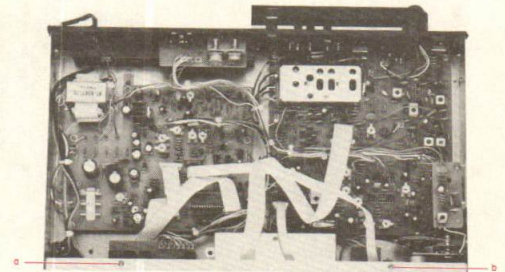
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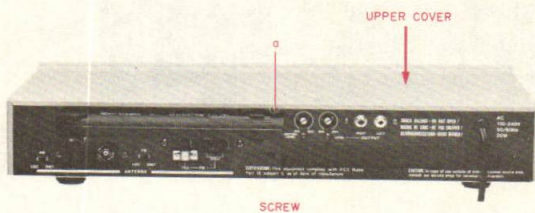
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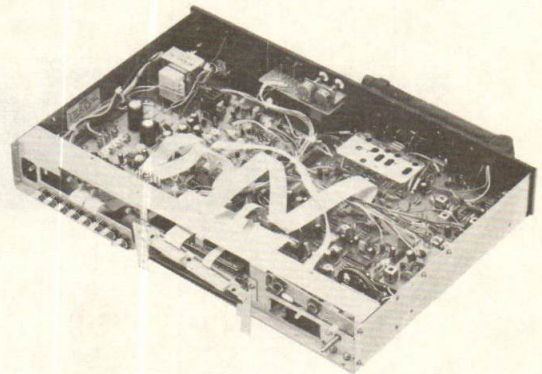
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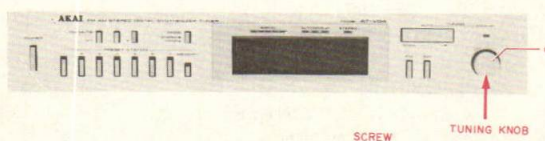
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4



III. CONTROLS

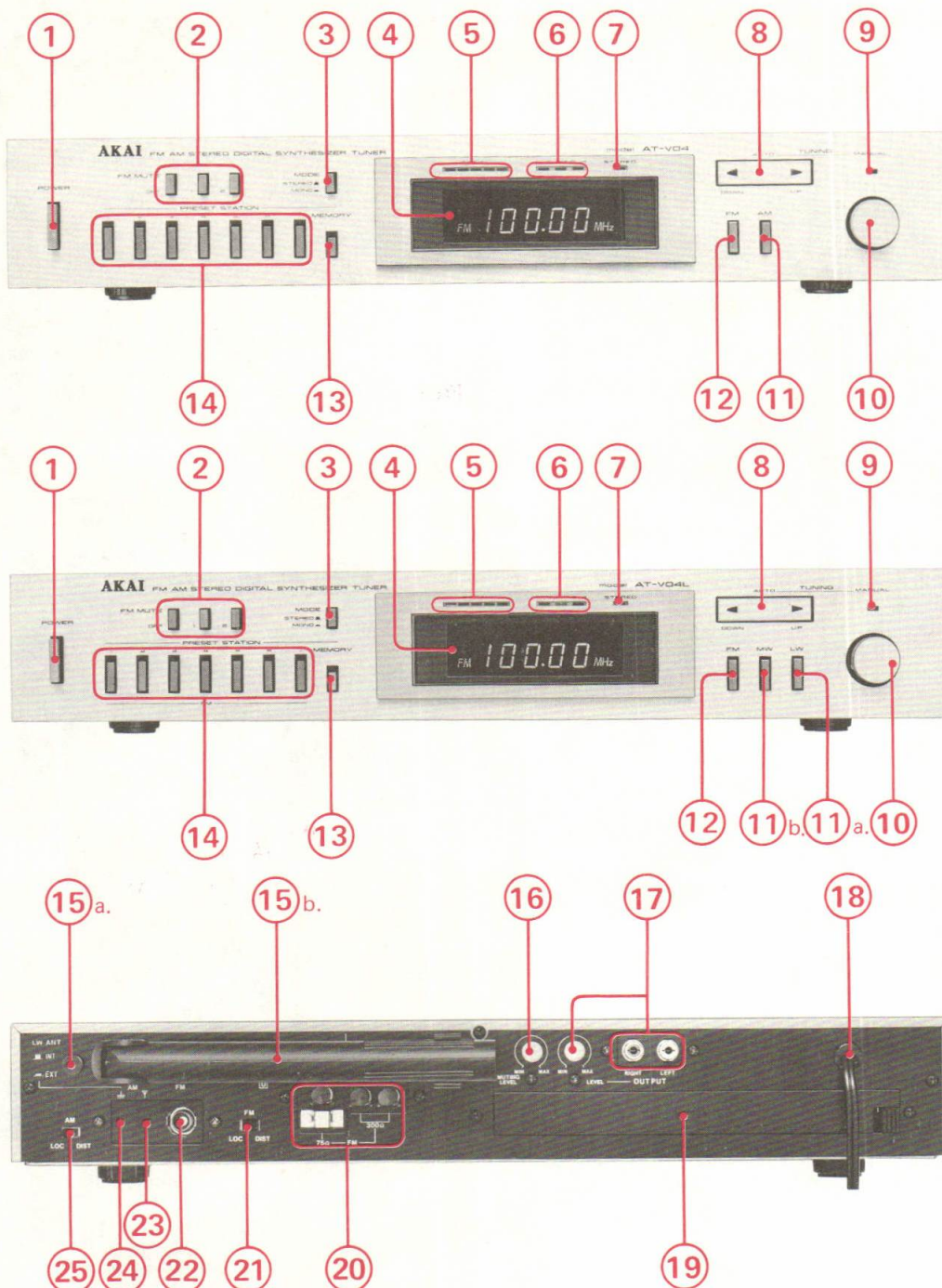


Fig. 1 Controls

1. POWER SWITCH
2. FM MUTE SWITCHES
3. MODE SWITCH
4. DIGITAL FL DISPLAY
5. LED SIGNAL STRENGTH METER
6. FM CENTER TUNING METER
7. STEREO INDICATOR
8. AUTO SCANNING
9. MANUAL TUNING INDICATOR
10. MANUAL TUNING KNOB
11. AM SWITCH
- 11a. LW SWITCH (AT-V04L only)
- 11b. MW SWITCH (AT-V04L only)
12. FM SWITCH
13. MEMORY AND MEMORY INDICATOR
14. PRESET STATION
- 15a. LW ANTENNA SELECTOR SWITCH (AT-V04L only)
- 15b. AM (MW, LW AT-V04L only) FERRITE BAR ANTENNA
16. FM MUTING LEVEL
17. OUTPUT TERMINALS
18. AC POWER CORD (AC INLET for some countries)
19. BATTERY BOX
20. FM ANTENNA TERMINALS
21. FM ANTENNA SWITCH
22. FM ANTENNA JACKS
23. AM (MW, LW AT-V04L only) EXTERNAL ANTENNA JACKS
24. GROUND ANTENNA JACKS
25. AM (MW, LW AT-V04L only) ANTENNA SWITCH

IV. PRINCIPAL PARTS LOCATION

AT-V04

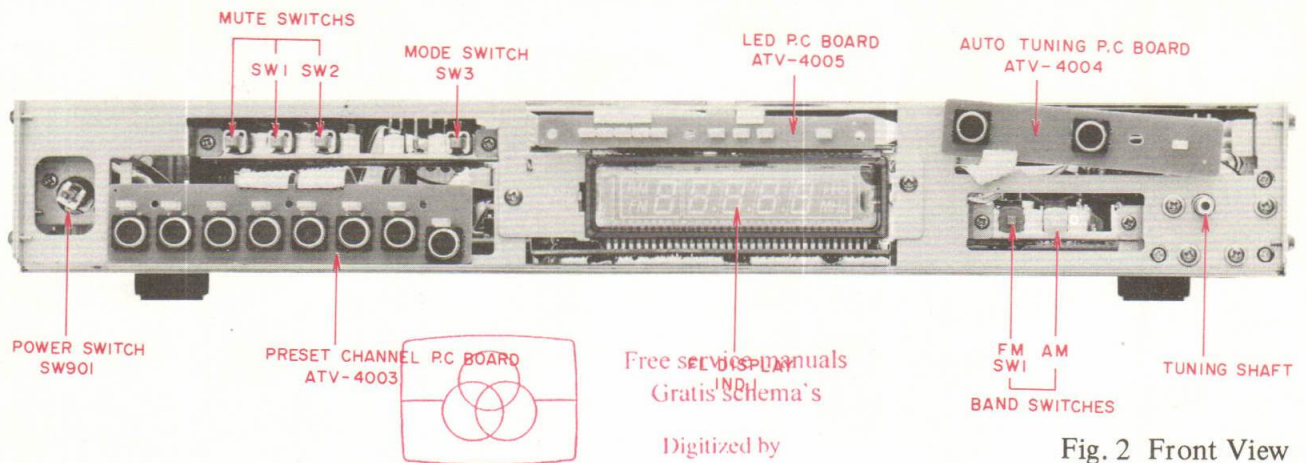


Fig. 2 Front View

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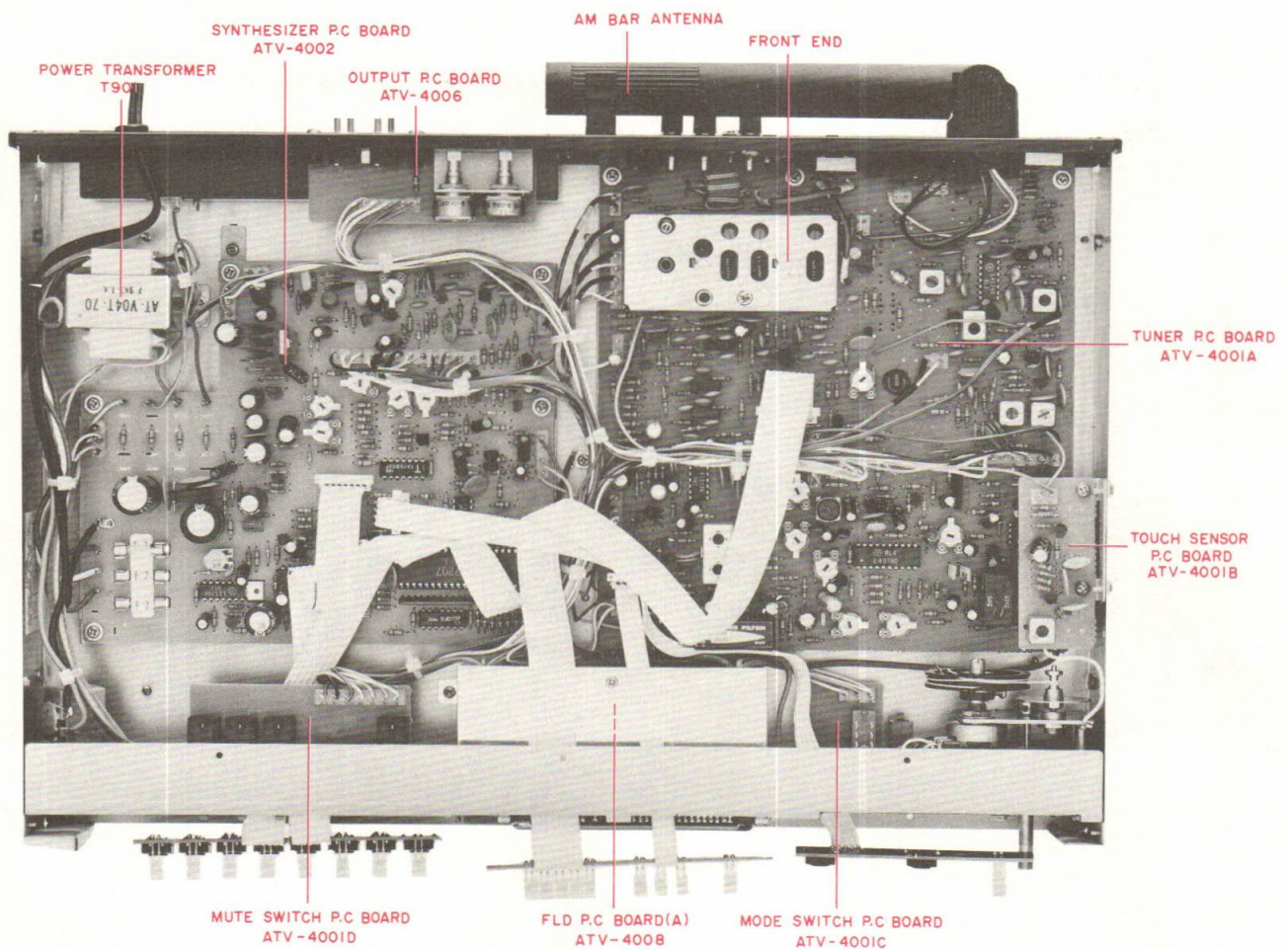


Fig. 3 Top View

AT-V04L

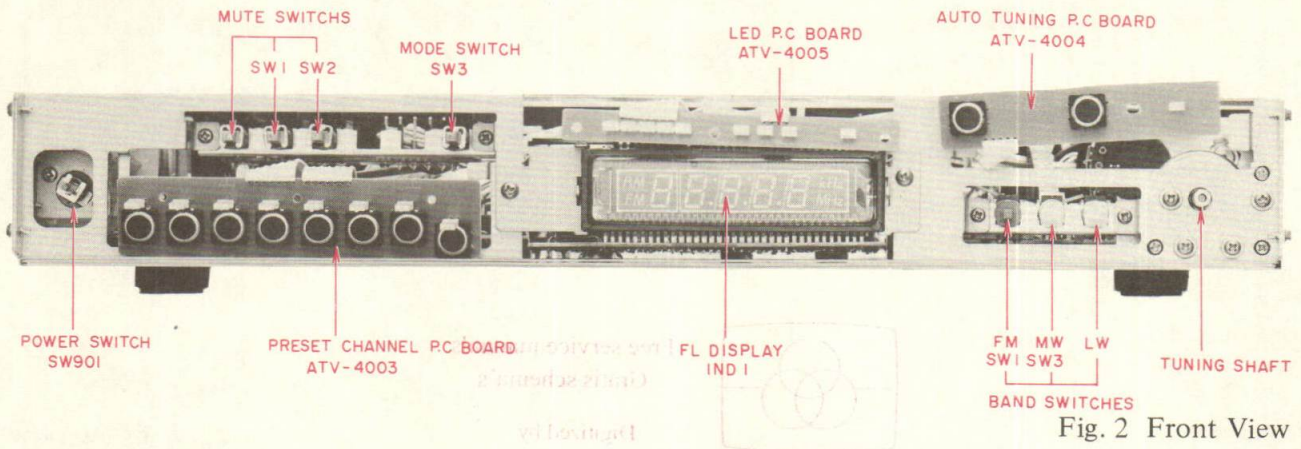


Fig. 2 Front View

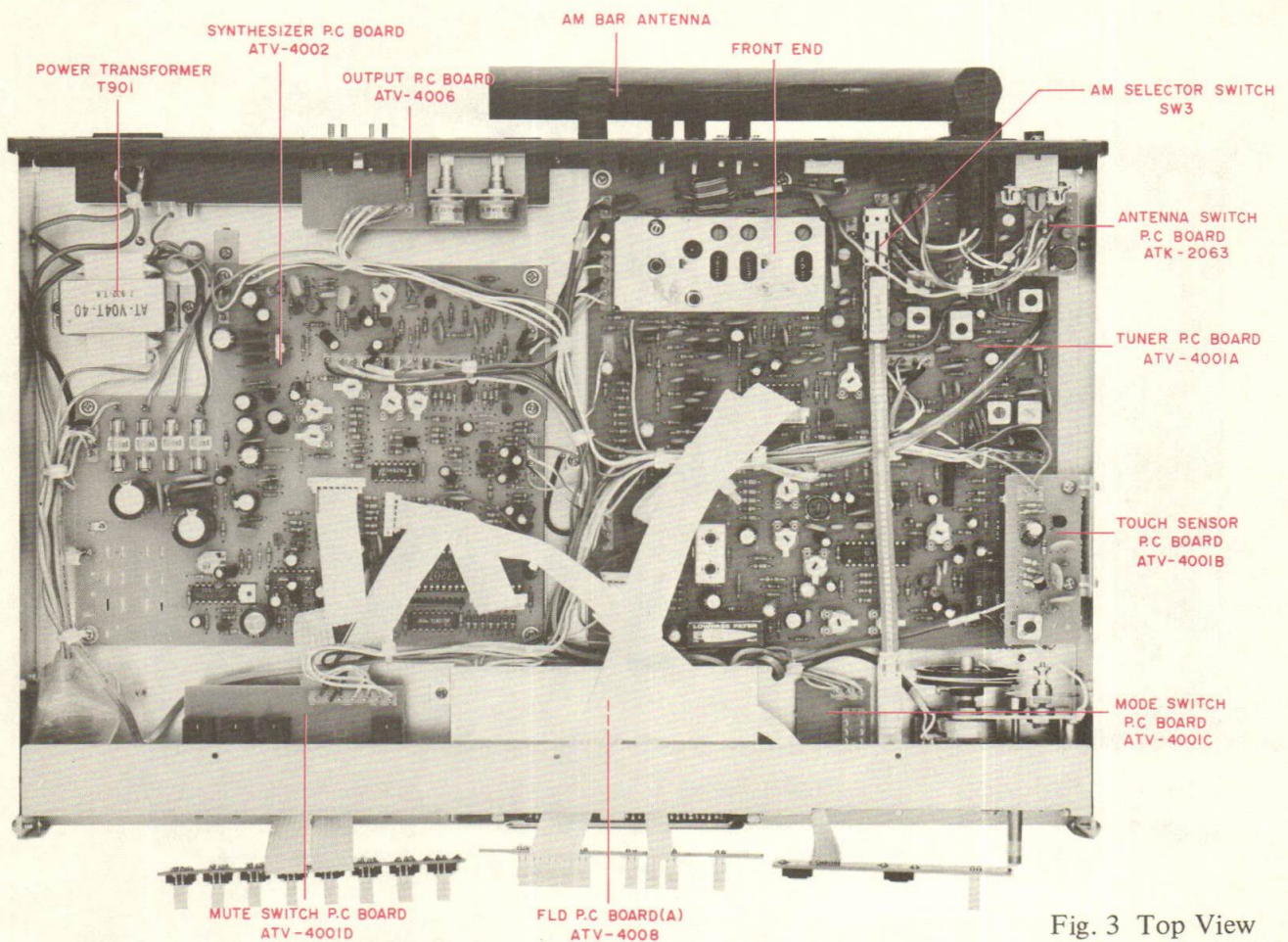


Fig. 3 Top View

V. VOLTAGE CONVERSION

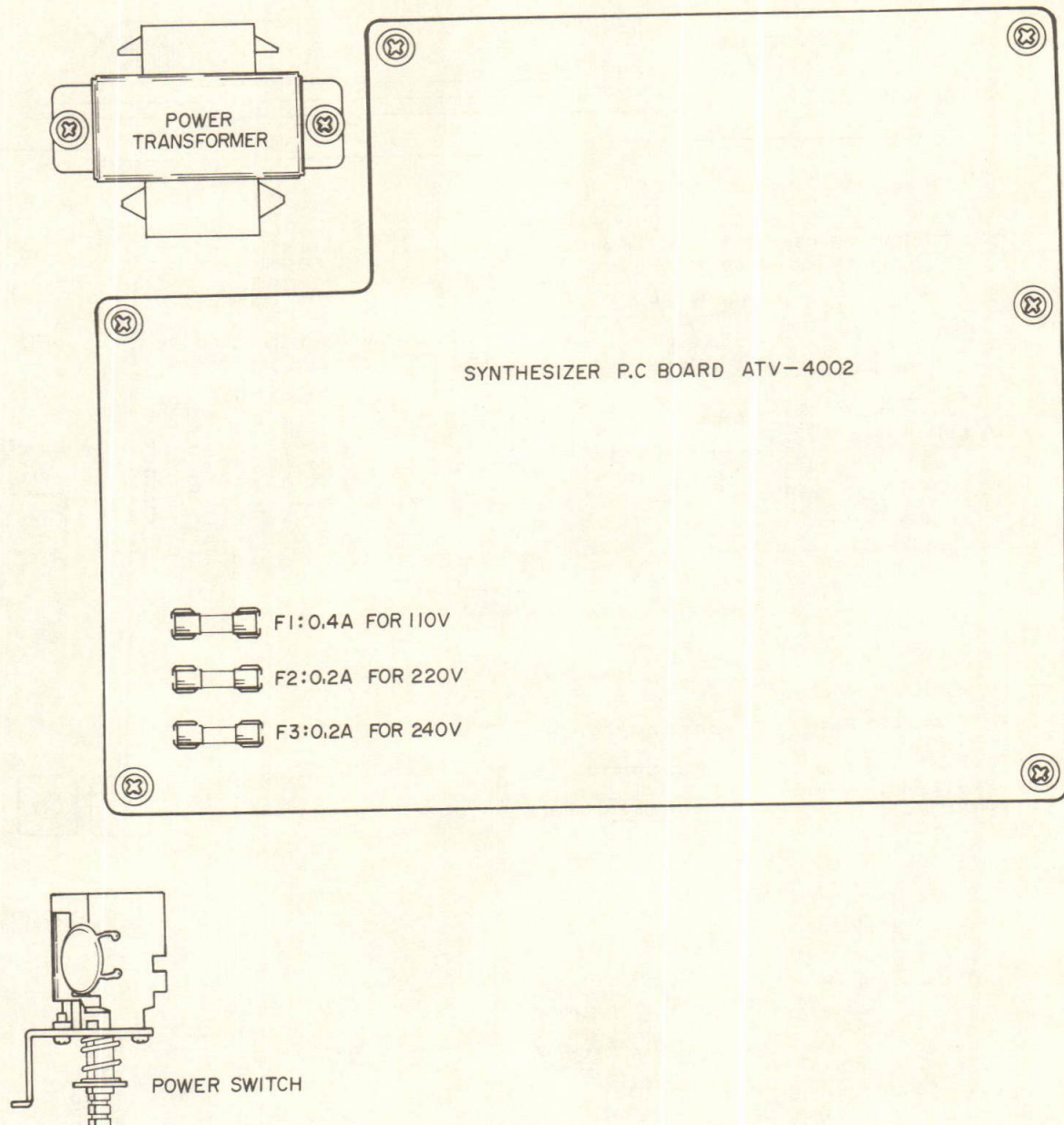


Fig. 4 Voltage Conversion (U/T Model)

Models for Canada, U.S.A., and Europe, UK and Australia are not equipped with this facility.

This machine can be set to 110 V, 220 V, or 240 V as required. Voltage conversion is located parallel to front panel. Each machine is preset at the factory according to destination. However, if a voltage change is necessary, this can be accomplished as follows.

1. Disconnect Power Cord.
2. Loosen holding screws and remove the upper cover.
3. Remove existing Line Voltage Fuse and insert required Line Voltage Fuse in proper fuse holder located behind the power switch explicitly following instructions printed inside the machine.

NOTE: U/T Model is only for model AT-V04.

VI. ADJUSTMENT

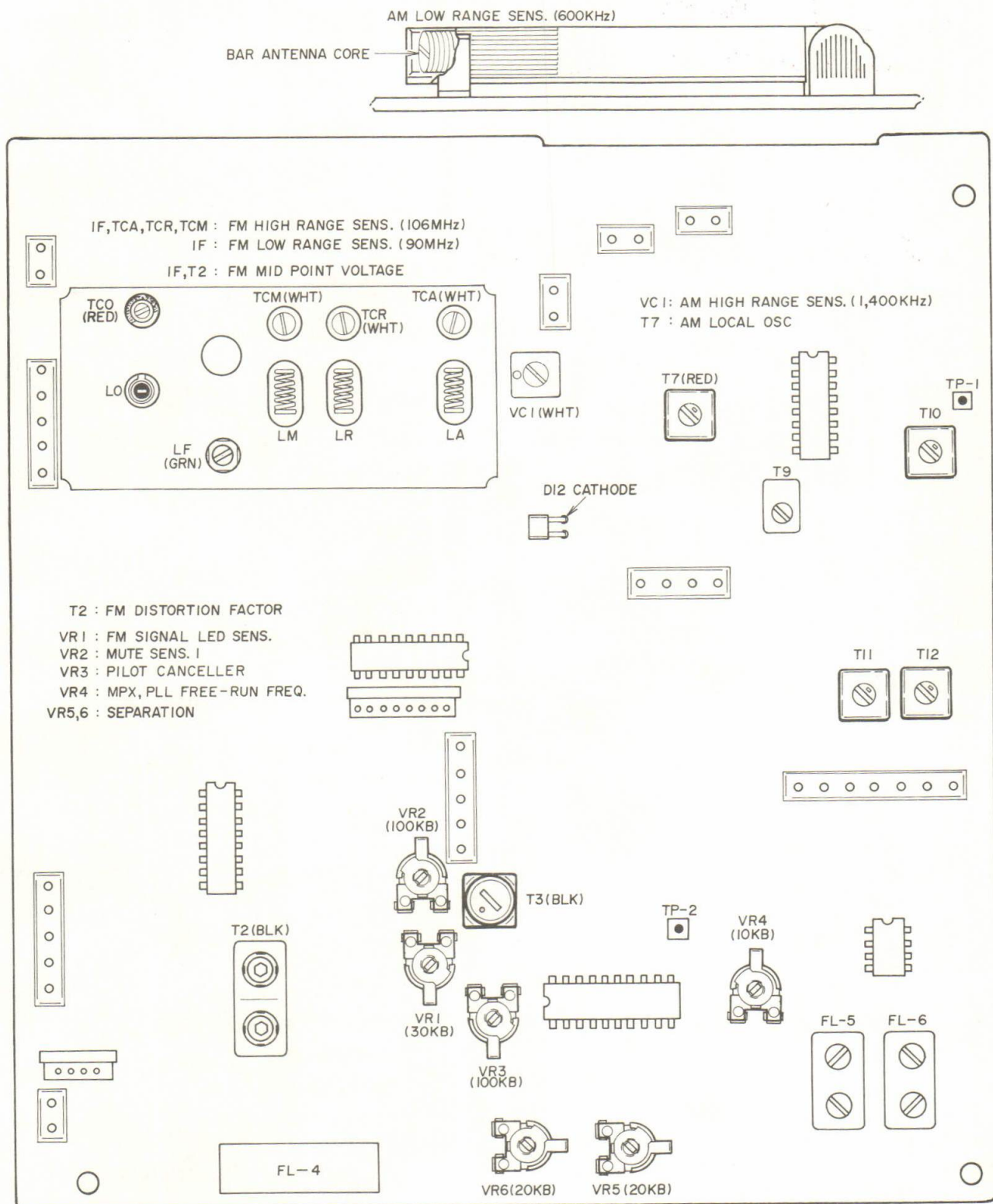


Fig. 5 Tuner P.C Board ATV-4001A (AT-V04)

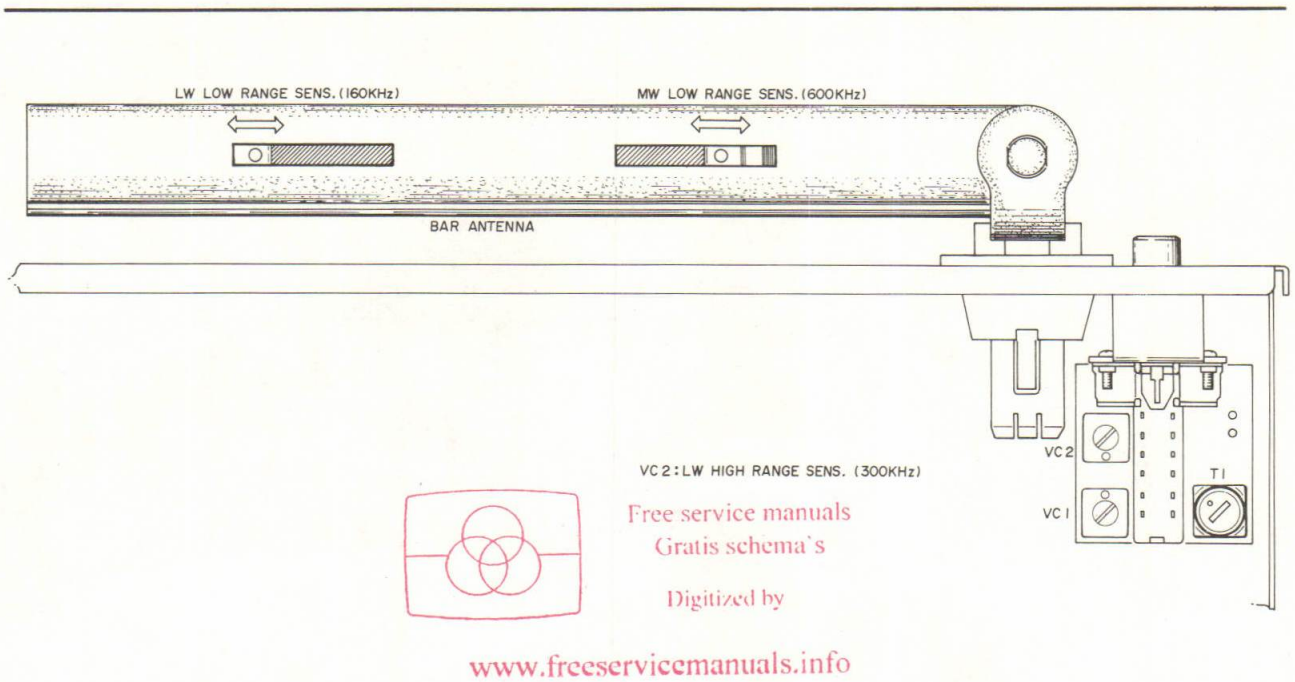


Fig. 6 Tuner P.C Board ATV-4001A and ANT Switch P.C Board ATV-2063 (AT-V04L)

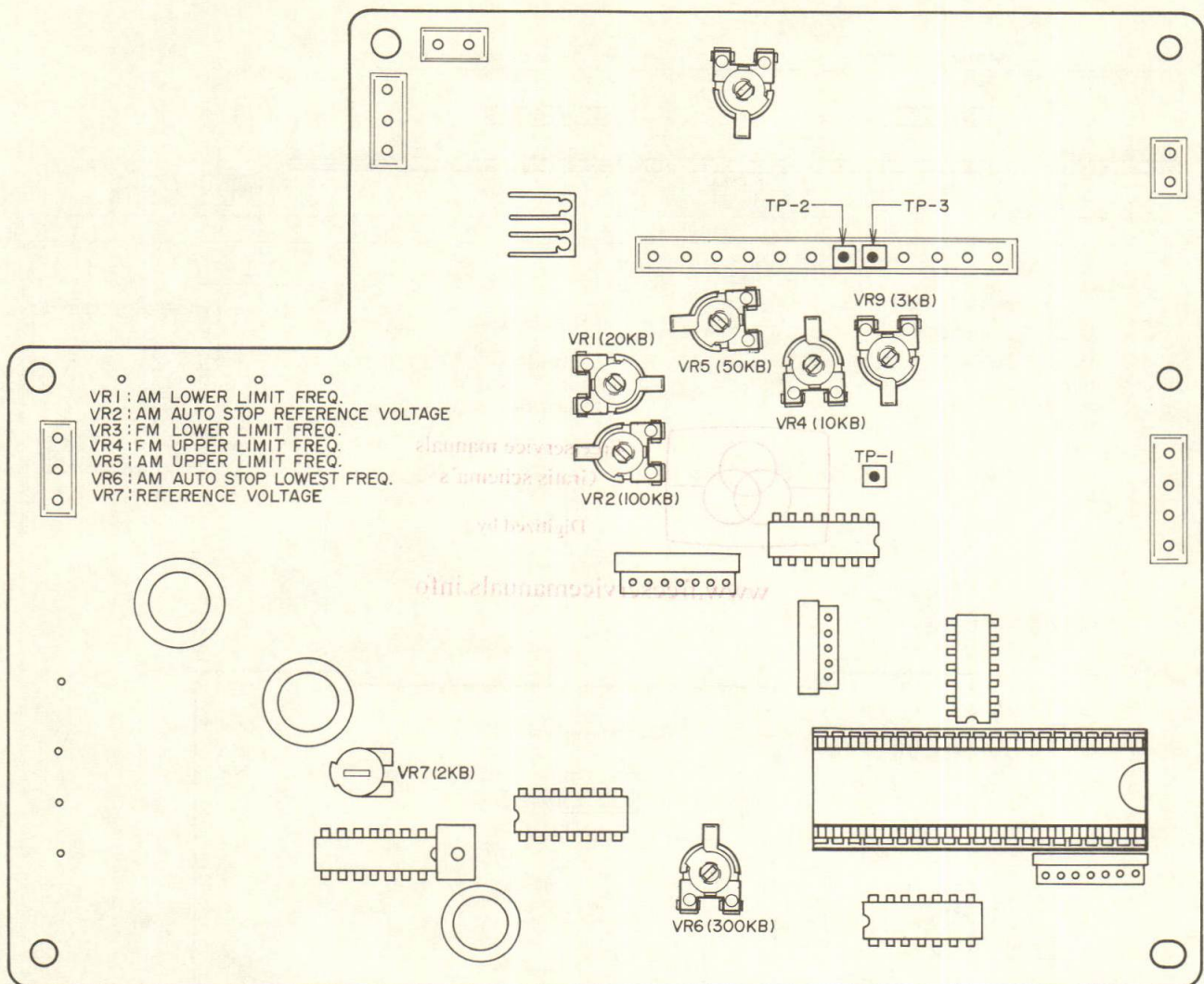


Fig. 7 Synthesizer P.C Board ATV-4002

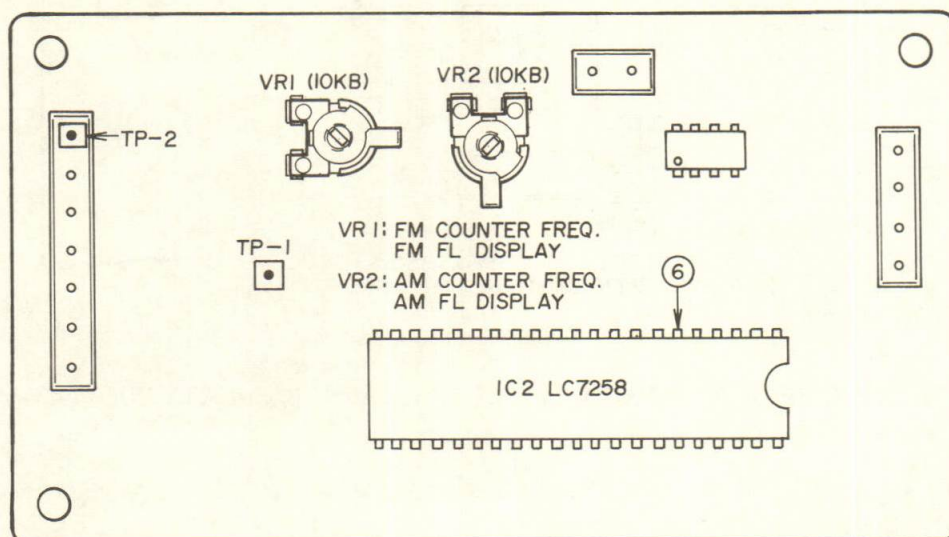


Fig. 8 FLD P.C Board ATV-4008

1. SYNTHESIZER SECTION ADJUSTMENT (Refer to Figs. 5, 7 and 8)

Step	Adjustment Item	Test Point	Adjustment Parts	Result and Remarks
1	Reference Voltage	TP-2 (ATV-4002)	VR7 (2 k Ω) (ATV-4002)	Adjust VR7 (2 k Ω) so that the voltage at TP-2 become 8.0 $\pm$ 0.2 V. (VTVM)
2	FM Upper Limit Frequency	⑥ Pin of IC2 (LC7258) (ATV-4008)	VR4 (10 k Ω) (ATV-4002)	1) Set Band Selector Switch to "FM". 2) Turn Tuning Knob fully clockwise. 3) Adjust VR4 (10 k Ω) so that the counter reads 1,189 kHz [108.2 MHz (FL Display) + 10.7 MHz] $\div$ 100 = 1.189 MHz (Freq. Counter)
3	FM Counter Frequency	FL Display	VR1 (10 k Ω) (ATV-4008)	1) Set Band Selector Switch to "FM". 2) Turn Tuning Knob fully clockwise. 3) Adjust VR1 (10 k Ω) so that FL Display shows 108.20 MHz.
4	AM Local OSC	⑥ Pin of IC2 (LC7258) (ATV-4008)	T7 (RED) (ATV-4001A)	1) Set Band Selector switch to "AM" ("MW" AT-K04L). 2) Short cathode side of D12 (ATV-4001A) to ground. 3) Adjust T7 (RED) so that the counter reads 710 $\pm$ 1 kHz. (Freq. Counter)
5	AM Counter Frequency	FL Display	VR2 (10 k Ω) (ATV-4008)	1) Set Band Selector Switch to "AM". 2) Short cathode side of D12 (ATV-4001A) to ground. 3) Adjust VR2 (10 k Ω) so that FL Display shows 240 kHz.
6	AM Upper Limit Frequency	FL Display	VR5 (50 k Ω) (ATV-4002)	1) Set Band Selector Switch to "AM" ("MW" AT-K04L). 2) Turn Tuning Knob fully clockwise. 3) Adjust VR5 (50 k Ω) so that FL Display shows 1,620 kHz.
7	AM Lower Limit Frequency	FL Display	VR1 (20 k Ω) (ATV-4002)	1) Set Band Selector Switch to "AM" ("MW" AT-K04L). 2) Turn Tuning Knob counter-clockwise fully. 3) Adjust VR1 (20 k Ω) so that FL Display shows 515 kHz.
8	FM Lower Limit Frequency	FL Display	VR9 (3 k Ω) (ATV-4002)	1) Set Band Selector Switch to "FM". 2) Turn Tuning Knob counter-clockwise fully. 3) Adjust VR9 (3 k Ω) so that FL Display shows 87.40 MHz.

Step	Adjustment Item	Test Point	Adjustment Parts	Result and Remarks
9	AM Auto Stop Lowest Frequency	FL Display	VR6 (300 kB) (ATV-4002)	1) Set Band Selector Switch to "AM" ("MW" AT-K04L). 2) Short TP-3 (ATV-4002) to ground. 3) FL Display will show approx. 400 kHz. 4) Memorise this display to a certain "PRESET SECTION". 5) Disconnect Step 3). 6) Adjust VR6 (300 kB) so that the FL Display which recalled from memory becomes 515 kHz.
10	AM Auto Stop Reference Voltage	TP-2 (ATV-4002)	VR2 (100 kB) (ATV-4002)	1) Set to Band Selector Switch to "AM" ("MW" AT-K04L). 2) No signal input. 3) Adjust VR2 (100 kB) so that voltage at TP-2 is 4.75 ± 0.5 V. (VTVM)

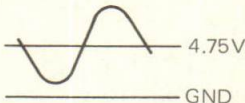
2. AM (MW AT-K04L) SECTION ADJUSTMENT (Refer to Figs. 5 to 8)

Step	Adjustment Item	Test Point	Adjustment Parts	Result and Remarks
1	Low Range Sensitivity (600 kHz)	Output	Bar Antenna Core	1) Set FL Display to 600 kHz. 2) Feed a signal of 600 kHz, 30% modulation, 20 dB from SSG to Ant Input. 3) Increase the ATT of SSG and adjust the core so that the sensitivity at 10 % distortion factor obtains 45 dBm or less. (Distortion meter, SSG)
2	High Range Sensitivity (1,400 kHz)	Output	VC1 (WHT) (ATV-4001A)	Adjust the sensitivity at 1,400 kHz by the same as step 1.
3	Mid Range Sensitivity (1,000 kHz)	Output	Confirm	Check the sensitivity at 1,000 kHz by the same as step 1.
4	Auto Stop Sensitivity	FL Display SSG's ATT	Confirm	1) Feed a 1,000 kHz, 65 dB from SSG to Ant Input. 2) Operate the Auto Scan and check auto stop position by the FL Display indicates 1,000 kHz. (SSG)
5	Output Level	Output	Confirm	1) Feed a 1,000 kHz, 64 dB from SSG to Ant Input. 2) Check the output level is within $-6.5 \text{ dBm} \pm 2 \text{ dB}$. (SSG, VTVM)
6	FL Display Frequency	FL Display	VR2 (10 kB) (ATV-4008)	1) Feed a 1 kHz to Ant Input and receive this signal. 2) Short TP-1, TP-2 (on ATV-4008) to ground. 3) Adjust VR2 (10 kB) until 4th numeral display become stable.

3. LW SECTION ADJUSTMENT (AT-V04L only)

Step	Adjustment Item	Test Point	Adjustment Parts	Result and Remarks
1	Upper Limit Freq.	FL Display	VC3 (ATK-4001A)	1) Turn Tuning Knob fully clockwise. 2) Adjust VC3 so that FL Display shows 350 kHz.
2	Lower Limit Freq.	FL Display	T8 (RED) (ATK-4001A)	1) Turn Tuning Knob fully counter-clockwise. 2) Adjust T8 so that FL Display shows 135 kHz.
3	Low Range Sensitivity (160 kHz)	Output	Bar Antenna Core	1) Set FL Display to 160 kHz. 2) Feed a signal of 160 kHz, 30 % modulation, 20 dB from SSG to Ant Input. 3) Increase the ATT of SSG and adjust the core so that the sensitivity at 10 % distortion factor obtains 50 dBm or less. (Distortion meter, SSG)
4	High Range Sensitivity (300 kHz)	Output	VC2 (ATK-2063)	Adjust the Sensitivity at 300 kHz by the same as step 3.
5	Mid range Sensitivity (200 kHz)	Output	Confirm	Check the Sensitivity at 200 kHz by the same as step 3.
6	Auto Stop Level (INT Ant.)	FL Display	Confirm	1) Set the LW ANT Switch to "INT". 2) Feed a 200 kHz, 65 dB from SSG to Ant Input. 3) Operate the Auto Scan and check auto stop position by the FL Display indicates 200 kHz. (SSG)
7	Auto Stop Level (EXT Ant.)	FL Display	Confirm	1) Set the LW ANT Switch to "EXT". 2) Feed a 200 kHz, 45 dB from SSG to Ant Input. 3) Operate the Auto Scan and check auto stop position by the FL Display indicates 200 kHz. (SSG)

4. FM SECTION ADJUSTMENT (Refer to Figs. 5, 7 and 8)

Step	Adjustment Item	Test Point	Adjustment Parts	Result and Remarks
1	Mid Point Voltage	TP-1 (ATV-4002)	IF (GRN) (Front End) T2 (BLK) (ATV-4001A)	1) Feed 90 MHz, 60 dB from SSG to Ant Input. 2) Obtain 2 maximum output by adjusting IF core. 3) Adjust T2 (BLK) until the voltage at TP-1 is 4.75 V when "S" curve waveform is symmetry. (SSG, VTVM, Oscilloscope) 
2	Distortion Factor	Output	T2 (BLK) (ATV-4001A)	Minimize the distortion factor (less than 0.1 %) under the condition is step 1.
3				Readjust in steps 1 and 2.
4	High Range Sensitivity (106 MHz)	Output	IF (GRN) TCA (WHT) TCR (WHT) TCM (WHT) (Front End)	1) Input the 106 MHz Signal from the SSG into Ant Input. 2) At the point where distortion factor is 3 %, adjust so that ATT of SSG is less than 6 dB. (SSG, Distortion meter)
5	Low Range Sensitivity (90 MHz)	Output	IF (GRN) (Front End)	Input the 90 MHz Signal from the SSG into Ant Input, and adjust by the same as step 4-2).
6	Mid Range Sensitivity (98 MHz)	Output	Confirm	Check the sensitivity at 98 MHz by the same as step 4, and re-adjust in steps 4 to 6.
7	Mute Sensitivity (FM MUTE 1)	Output	VR2 (100 k Ω) (ATV-4001A)	1) Set FM MUTE Switch to "1". 2) Input the 98 MHz Signal from SSG to Ant Input. 3) Adjust VR2 (100 k Ω) to the point where the Output Signal disappears at SSG's ATT 30 $\pm$ 3 dB. (SSG, VTVM)
8	Mute Sensitivity (FM MUTE 2)	Output	VR1 (20 k Ω) (ATV-4006, Rear Panel)	1) Set FM MUTE Switch to "2". 2) Adjust by the same as step 7, that input level is approx. 15 to 30 dB in VR1 (20 k Ω) min to max. (SSG, VTVM)
9	Signal LED Sensitivity	Signal LED	VR1 (30 k Ω) (ATV-4001A)	1) Feed 98 MHz, 45 $\pm$ 5 dB from SSG to Ant Input. 2) Adjust VR1 (30 k Ω) until the 5th LED is lighted. (SSG)
10	MPX, PLL Free-run Frequency	TP-2 (ATV-4001A)	VR4 (10 k Ω) (ATV-4001A)	1) No Signal input. 2) Set MODE Switch to "STEREO". 3) Adjust VR4 (10 k Ω) so that the counter reads 76 kHz $\pm$ 50 Hz. (Freq. Counter)

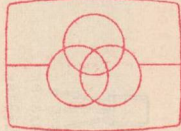
Step	Adjustment Item	Test Point	Adjustment Parts	Result and Remarks
11	Pilot Cancellor	Output	VR3 (100 kB) T3 (BLK) (ATV-4001A)	1) Feed a pilot signal (19 kHz, 10 %) from SSG to Ant Input. 2) Adjust VR3 (100 kB) first so that output is minimum. 3) Adjust T3 (BLK) so that the output level of L-ch and R-ch are balanced. 4) Repeat steps 2) and 3) until output levels become 64 dB or less. (SSG, Distortion meter, VTVM)
12	Separation	Output	VR5 (20 kB) VR6 (20 kB) (ATV-4001A)	1) Connect 98 MHz, 60 dB stereo R-ch signal from SSG to Ant input. 2) Adjust VR5 (20 kB) until R-ch output is maximum and L-ch output is minimum. 3) Similarly, proceed for L-ch using VR6 (20 kB) as steps 1) and 2). (SSG, VTVM)
13	Output Level	Output	VR2 (20 kBx2) (ATV-4006, Rear Panel)	1) Feed a 98 MHz, 60 dB from SSG to Ant Input, and VR2 (20 kB x2, ATV-4006) to maximum position. 2) Check the output level is 5.5 dBm $\pm$ 2 dB.
14	FL Display Frequency	FL Display	VR1 (10 kB) (ATV-4008)	1) Feed a 98 MHz to Ant Input and receive this signal. 2) Short TP-2 (ATV-4008) to ground. 3) Adjust VR1 (10 kB) until 3rd numeral display become stable.

VII. CLASSIFICATION OF VARIOUS P.C BOARDS

1. P.C BOARD TITLES AND IDENTIFICATION NUMBERS

P.C Board Title	P.C Board Number
Tuner P.C Board	ATV-4001A
Synthesizer P.C Board	ATV-4002
Preset Channel P.C Board	ATV-4003
Auto Tuning P.C Board	ATV-4004
LED P.C Board	ATV-4005
Output P.C Board	ATV-4006
Battery P.C Board	ATV-4007
Battery P.C Board	ATS-8039
FLD P.C Board (A)	ATV-4008
FLD P.C Board (B)	ATV-4050
Touch Sensor P.C Board	ATV-4001B
Mode Switch P.C Board	ATV-4001C
Mute Switch P.C Board	ATV-4001D
Antenna Switch P.C Board (AT-V04L only)	ATK-2063

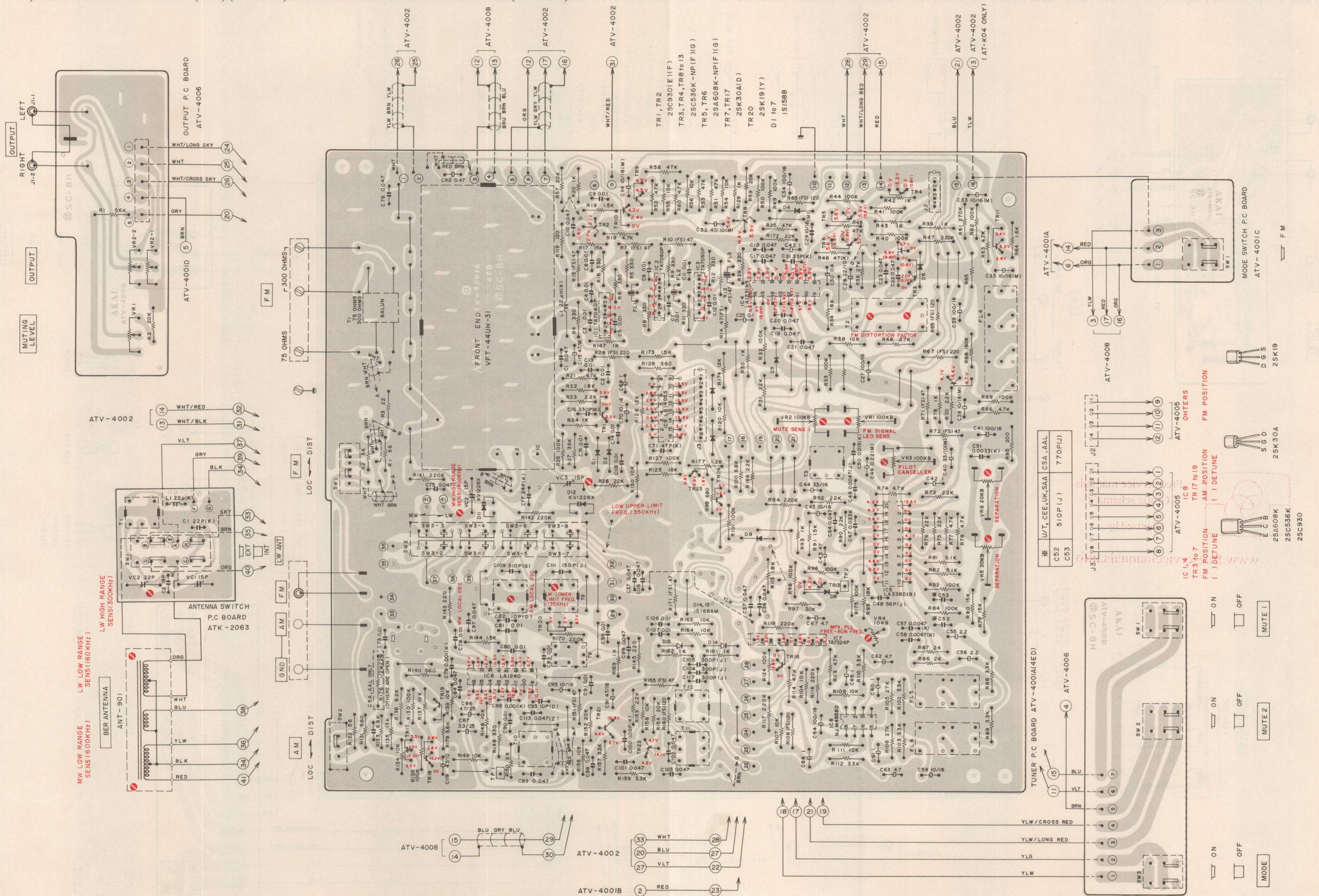
1) Tuner P.C Board ATV-4001A (4ED) (AT-V04), Mute Switch P.C Board ATV-4001D, Mode Switch P.C Board ATV-4001C and Output P.C Board ATV-4006



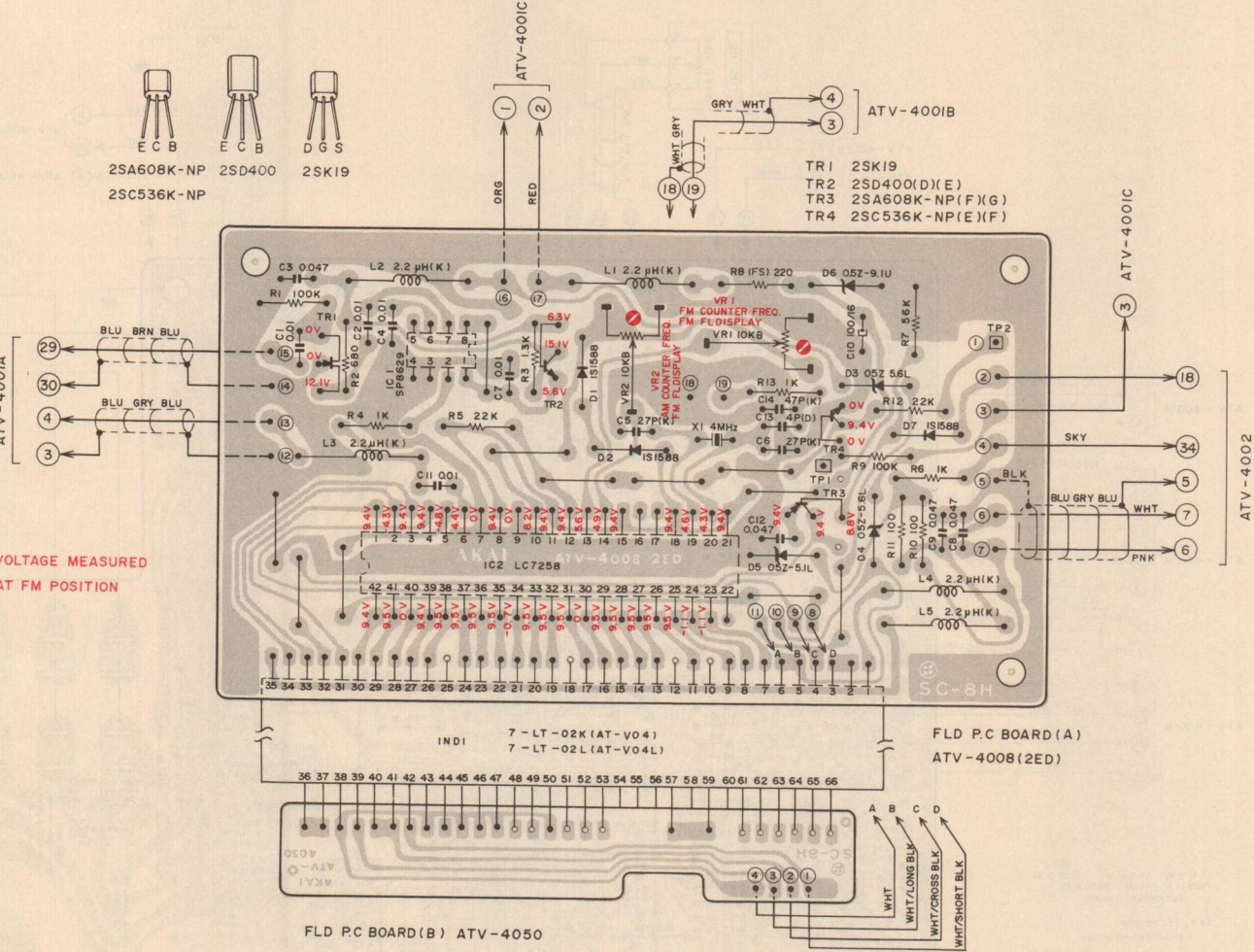
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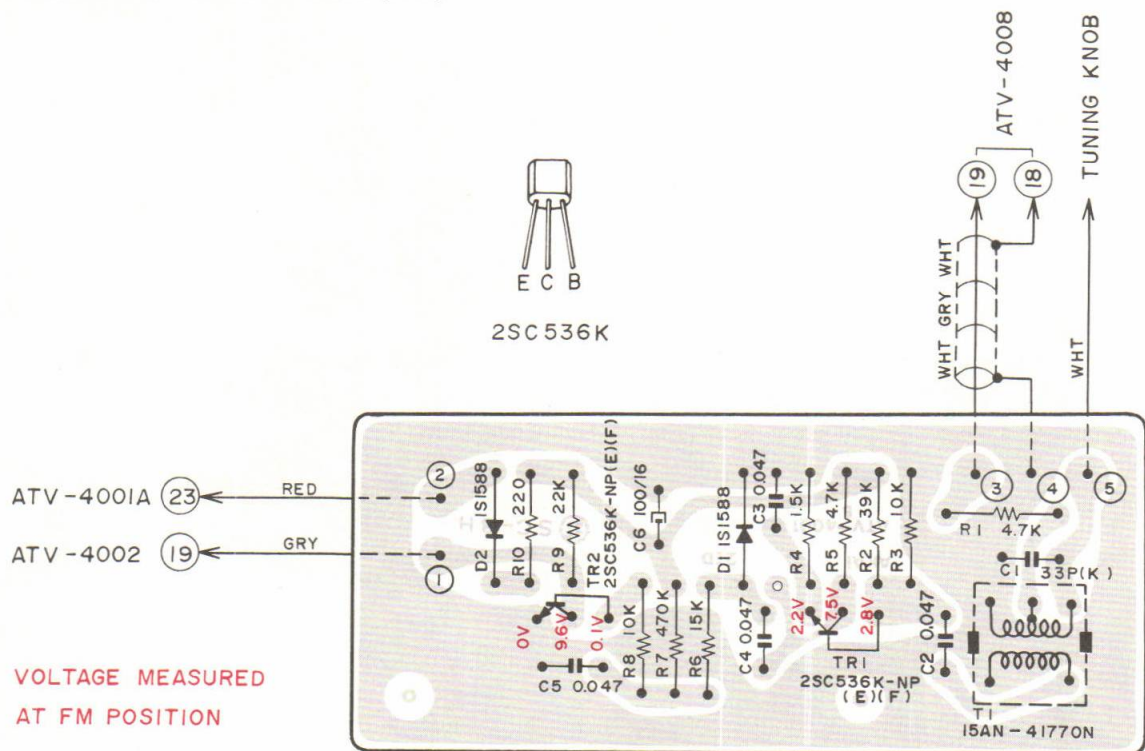
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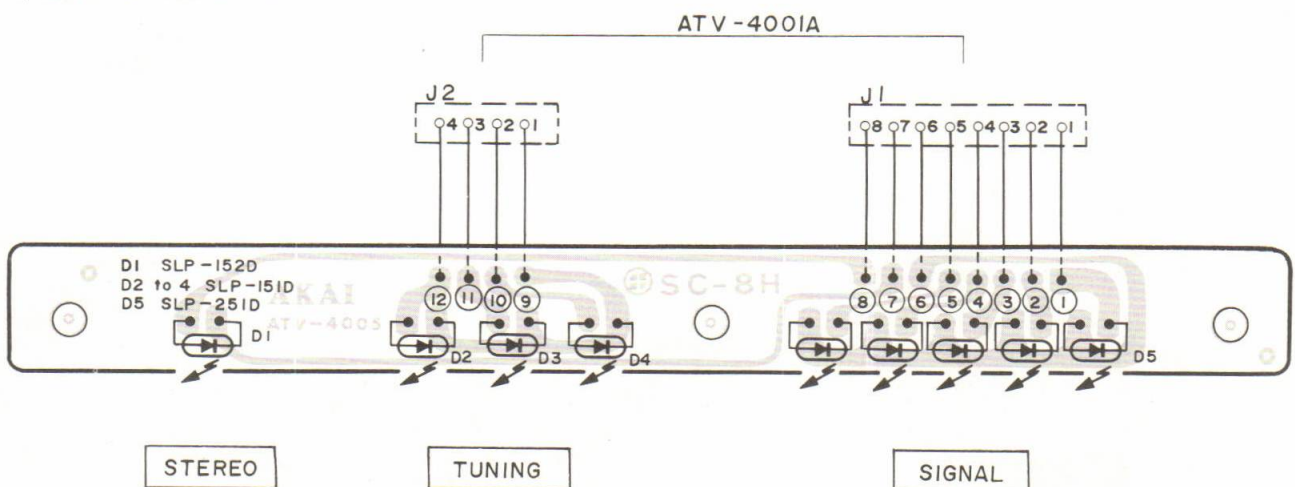
4) FLD P.C Board (A) ATV-4008 (2ED) and FLD P.C Board (B) ATV-4050



5) Touch Sensor P.C Board ATV-4001B (2ED)



6) LED P.C Board ATV-4005



SECTION 3

PARTS LIST

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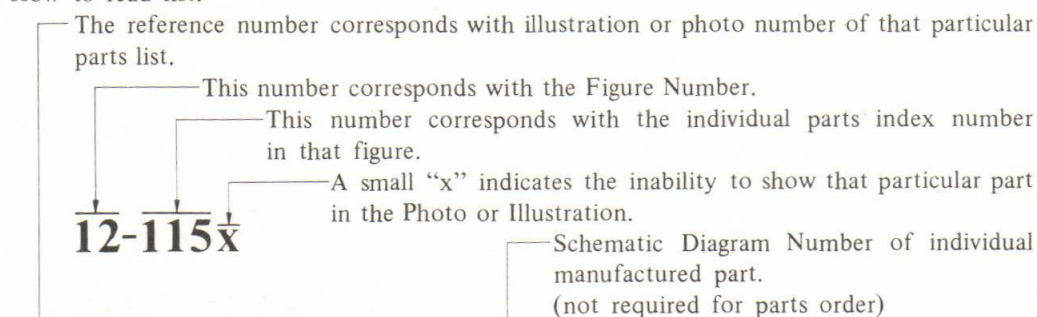
II. AT-V04/L

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Resistor and Capacitor which is not listed in this parts list, please refer to
COMMON LIST FOR SERVICE PARTS.

HOW TO USE THIS PARTS LIST

1. This parts list is compiled by various individual blocks based on assembly process.
2. When ordering parts, please describe parts number, serial number, and model number in detail.
3. How to read list.



Ref. No.	Parts No.	Description	Schematic No.
FLYWHEEL BLOCK #13			
12-115x	800425	Flywheel Block Assy. Comp.	RDG #13
12-116	244506	Flywheel Only	RD-233
12-117x	244754	Felt, Flywheel	RD-275
12-118	251324	Main Metal Case	RD-236
12-119	253080	Main Metal	RD-237

4. The symbol numbers shown on the P.C. Board list can be matched with the Composite Views of components of the Schematic Diagram or Service Manual.
5. The indications of Resistors and Capacitors in the photos of P.C. Board are being eliminated.
6. The shape of the parts and parts name, etc. can be confirmed by comparing them with the parts shown on the Electrical Parts Table of P.C. Board.
7. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List.
It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index. (meaning of ref. no. outlined in Item 3 above).
8. Utilize separate "Price List for Parts" to determine unit price. The most simple method of finding parts Price is to utilize the reference number.

CAUTION:

1. When placing an order for parts, be sure to list the parts no., model no., and description. There are instances in which if any of this information is omitted, parts cannot be shipped or the wrong parts will be delivered.
2. Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.
3. Because parts number and parts unit supply in the Preliminary Service Manual (Basic Parts List) may be partially changed, please use this parts list for all future reference.

WARNING: Δ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT: Δ IL INDIQU LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.

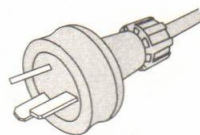
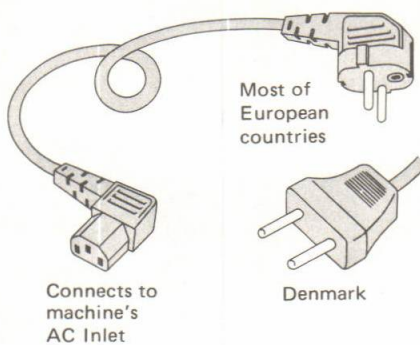
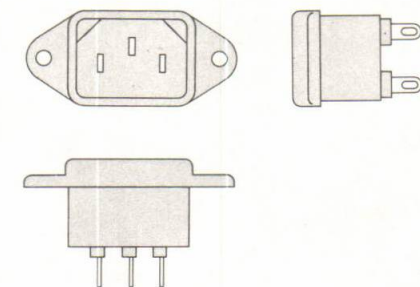
AC INLET SYSTEM

This model is equipped with an AC INLET SYSTEM. Please refer to the AC INLET SYSTEM CHART below for the specific type. By the AC INLET SYSTEM, AC (mains) cord can be connected to and disconnected from the model because the model is provided with socket exclusively for AC (mains) cord on its main body.

Please note, however, that certain models are not equipped with this system and has a built-in AC (mains) cord as before.

AC INLET SYSTEM CHART

CLASS I

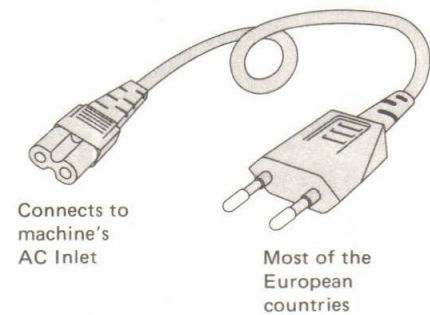
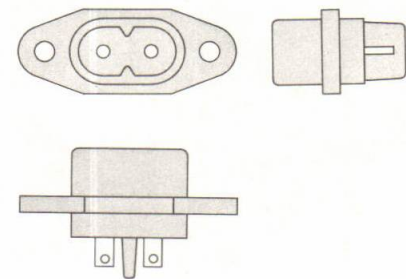


Australia differs according to wall socket

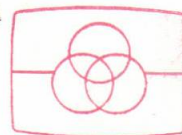
Picture 1
AC INLET
to be
installed
on machines

CLASS II

☐ This mark indicating double insulation will be attached to machine's rear panel



Australia differs according to wall socket



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Parts List for AC (mains) Cord Set

Standard		Description	Type of AC Inlet	Parts No.
Class I	CEE	Cord Set CEE (3 cores)	3P	EW302993
	BEAB	Cord Set BEAB (3 cores)	3P	EW302994
	SAA	Cord Set SAA (3 cores)	3P	EW302996
	U/T	Cord Set U/T (3 cores)	3P	EW302646
Class II	CEE	Cord Set CEE (2 cores)	2P	EW638144
	BEAB	Cord Set BEAB (2 cores)	2P	EW302995
	SAA	Cord Set SAA (2 cores)	2P	EW302991
	U/T	Cord Set U/T (2 cores)	2P	EW302899

I. MODEL AT-K03

1. RECOMMENDED SPARE PARTS LIST

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

Parts No.	Description	Notes
BA320661	Tuner PCB Comp. AT-K03 (CSA)	CSA, AAL
BA320660	Tuner PCB Comp. AT-K03 (U/T)	U/T, CEE, UK, SAA
BT325733	△ Power Trans. ATK-03T-30	CSA, AAL
BT325734	△ Power Trans. ATK-03T-40	CEE
BT325735	△ Power Trans. ATK-03T-50	UK, SAA
BT325732	△ Power Trans. ATK-03T-70	U/T
BT307204	AM-IF Trans. CFMA-008	
BT293398	AM-IF Trans. RMC-42246BCH	
BT328136	Balun Trans. 75-300 ohms	
EC616342	Trimmer/C. CTY122D33 15 PF	
ED322247	LED SLP-151D	
ED322184	LED SLP-152D	
ED322215	LED SLP-251D	
ED557447	Silicon Diode 1S1588	
ED316143	Silicon Diode 1S2473-HS	
ED322238	Silicon Stack 1B4B41	
ED315367	Zener Diode WZ-050	
ED237960	Zener Diode WZ-150	
ED303036	Zener Diode 05Z-5.6L	
ED323235	Zener Diode 05Z-9.1U	
EE322245	Bar Ant	
EE325737	Front End FF136U12	
EF308933	△ Fuse 200 mA 250V	U/T
EF306088	△ Fuse 315mA 125V	CSA, AAL
EF309389	△ Fuse 400mA 250V	U/T
EF695766	△ Fuse (SEMKO T) 315MAT	CEE, UK, SAA
EF300574	Fuse (EAWK) 125MAT	CEE, UK, SAA
EI293185	IC LA-1240	
EI322248	IC LA1231NS	
EI322185	IC LA3380 (B)	
EI315491	IC LB1405S	
EI323255	IC LC7258	
EI323230	IC SP8629	
EI323231	X'tal OSC HC-18U 4 MHz	
EJ301513	△ Inlet 2P	CEE, UK, SAA
EJ322246	Pin Jack 2P	
EM323229	FL Display 7-LT-02K	
EO322239	Det Coil Q228CEL-1072N	
EO322241	MPX Coil CANS-3700Z	
EO307186	OSC Coil RWR-43208N	

Parts No.	Description	Notes
ER307201	Ceramic Filter SFE 10.7 MM	
ER322181	Low Pass Filter 208BLRC-3415N	
ER322237	Low Pass Filter 209BLRG-3368N	
ES310839	⚠ Push SW. SDG1P-E 5A/80A 250V	U/T, CEE, UK, SAA
ES665875	⚠ Push SW. SDG1P-J TV-3 UL/CSA	CSA, AAL
ES324118	Push SW. J-K2105	
ES324238	Slide SW. SSB02204	
ES325736	2-throw Push SW. J-K2104	
ET323232	FET 2SK19(Y)	
ET322244	Transistor 2SA608K-NP (F) (G)	
ET307234	Transistor 2SC1815(Y) (GR)	
ET316171	Transistor 2SC536K-NP (E) (F)	
ET316643	Transistor 2SC536K-NP (F) (G)	
ET618873	Transistor 2SC930 (E) (F)	
ET452531	Transistor 2SD313 (E) (F)	
ET631877	Transistor 2SD400K (D) (E)	
EV604438	Semi-fixed/Vol. V10K8-4-2 B10K	
EV550023	Semi-fixed/Vol. V10K8-4-2 B100K	
EV593368	Semi-fixed/Vol. V10K8-4-2 B30K	
EV551452	Semi-fixed/Vol. (Solid Type) SR19R 22KB	
EW306428	⚠ AC Cord (U/T)	
EW305691	⚠ AC Cord CUL	CSA, AAL
EW322400	⚠ AC Cord Set Basec 2 cores	
EW315767	⚠ AC Cord Set CEE 2 cores	
EW322401	⚠ AC Cord Set SAA 2 cores	

2. TUNER P.C BOARD (ATK-2001A) BLOCK

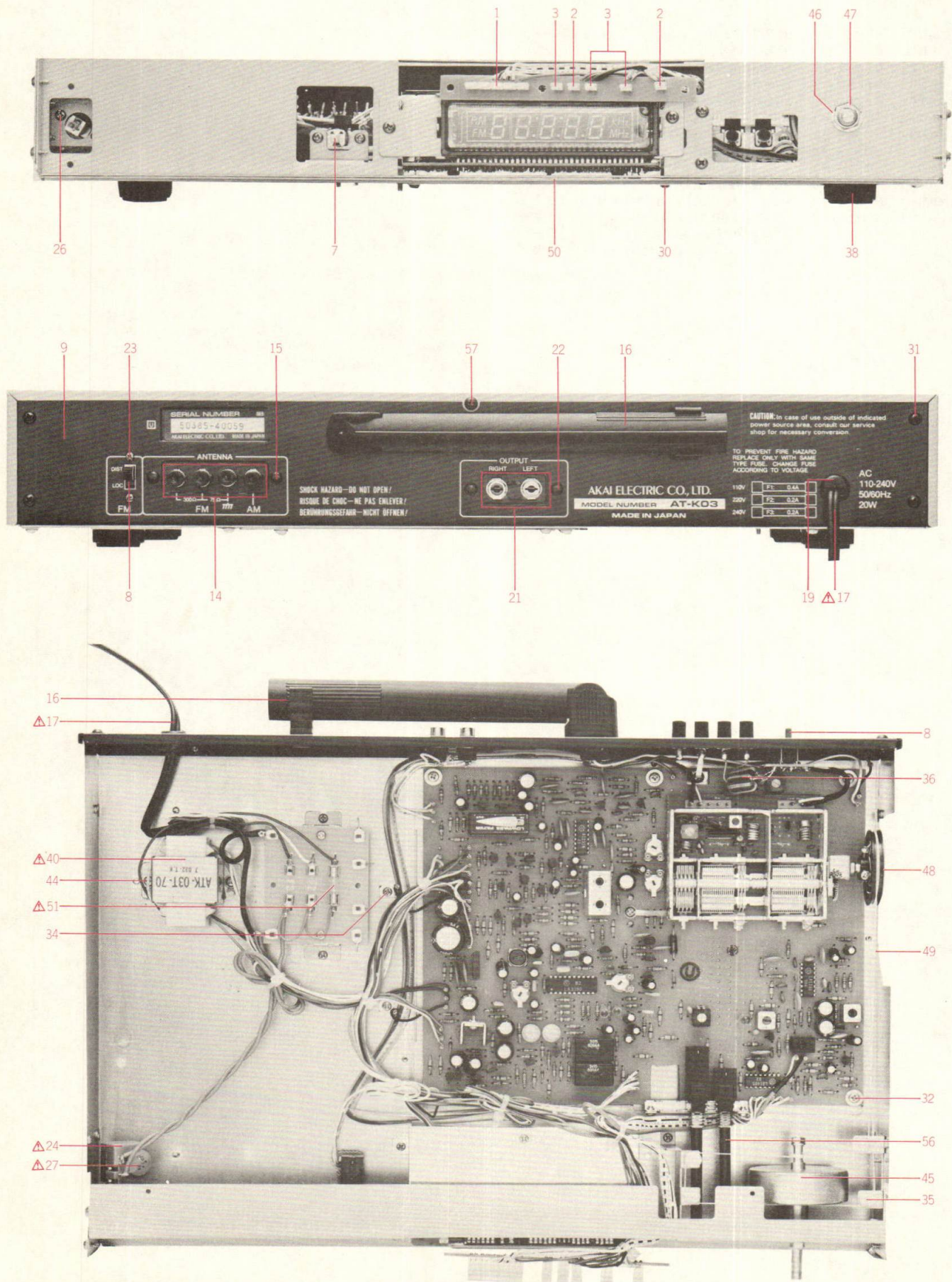
Symbol No.	Parts No.	Description	Schematic No.	Symbol No.	Parts No.	Description	Schematic No.
2-1	BA320660	Tuner PCB Comp. AT-K03(U/T) (U/T,CEE, UK,SA)	ATK-3018	2-C31,32	EC672287	Styrol/C. (Vert.) 510PF(J)50WV (CSA,AAL)	24-11-3
2-2	BA320661	Tuner PCB Comp. AT-K03(CSA) (CSA,AAL)	ATK-3018	2-C42	EC313534	NP/C. 10μF(M) 16WV	24-17-31
2-IC1	EI322248	IC LA1231NS	45-8-443	2-C44	EC435690	Styrol/C. (Vert.) 560PF (J) 50WV	24-11-3
2-IC2	EI322185	IC LA3380(B)	45-8-413	2-C45	EC315335	NP/C. 4.7μF (M) 25WV	24-17-31
2-IC3	EI293185	IC LA-1240	45-8-220	2-C69	EC432652	Elect./C. (Vert.) 1000μF35WV	24-12-9
2-IC4	EI315491	IC LB1405S	45-8-365	2-C83	EC514001	Styrol/C. (Vert.) 390PF (J) 50WV	24-11-3
2-TR1,2	ET618873	Transistor 2SC930 (E)(F)	45-1-185	2-3	EE325737	Front End FF136U12	57-2-55
2-TR3,4	ET322244	Transistor 2SA608K-NP (F) (G)	45-1-375	2-4	ZS-325495	Tapping Screw, #2 BR 3x6	
2-TR5TO14	ET316643	Transistor 2SC536K-NP (F) (G)	45-1-362				
2-TR16TO20	ET316643	Transistor 2SC536K-NP (F) (G)	45-1-362				
2-TR21	ET452531	Transistor 2SD313 (E)(F)	45-1-105				
2-TR22,23	ET316643	Transistor 2SC536K-NP (F) (G)	45-1-362				
2-TR24,25	ET307234	Transistor 2SC1815(Y)(GR)	45-1-299				
2-TR27	ET316643	Transistor 2SC536K-NP (F) (G)	45-1-362				
2-TR28	ET322244	Transistor 2SA608K-NP (F) (G)	45-1-375				
2-TR29	ET323232	FET 2SK19(Y)	45-12-3				
2-D1TO6	ED557447	Silicon Diode 1S1558	45-3-22				
2-D7	ED315367	Zener Diode WZ-050	45-6-67				
2-D8	ED237960	Zener Diode WZ-150	45-6-67				
2-D9	ED322238	Silicon Stack 1B4B41	45-2-97				
2-D10TO14	ED557447	Silicon Diode 1S1588	45-3-22				
2-VC1,2	EC616342	Trimmer/C. CTY122D33 15PF	24-2-32				
2-SW1	ES325736	2-Throw Push SW. J-K2104	25-5-380				
2-VR1	EV593368	Semi-Fixed/Vol. V10K8-4-2 B30K	36-10-250				
2-VR2,3	EV550023	Semi-Fixed/Vol. V10K8-4-2 B100K	36-10-250				
2-VR4,5	EV551452	Semi-Fixed/Vol. (Solid Type) SR19R 22KB	36-19-10				
2-VR6	EV604438	Semi-Fixed/Vol. V10K8-4-2 B10K	36-10-250				
2-L1	EO328137	Peaking Coil 2.2μH(K)	23-1-396				
2-T2	EO307186	OSC Coil RWR-43208N	23-4-47				
2-T3	EO322239	Det Coil Q228CEL-1072N	23-1-383				
2-T4	BT293398	AM-IF Trans. RMC-42246BCH	23-1-276				
2-T5	BT307204	AM-IF Trans. CFMA-008	53-1-131				
2-T6	EO322241	MPX Coil Cans-3700Z	23-1-386				
2-FL1,2	ER307201	Ceramic Filter SFE10.7MM	53-1-132				
2-FL3	ER322237	Low Pass Filter 209BLRG-3368N	23-1-384				
2-FL4,5	ER322181	Low Pass Filter 208BLRC-3415N	23-1-385				
2-R12	ER322591	Carbon/R. F 1/4WS 100 ohms (J)	35-11-30				
2-R42	ER324337	Carbon/R. F 1/4WS 56 ohms (J)	35-11-30				
2-R51	ER322591	Carbon/R. F 1/4WS 100 ohms (J)	35-11-30				
2-R56	ER324337	Carbon/R. F 1/4WS 56 ohms (J)	35-11-30				
2-R68,69	ER324337	Carbon/R. F 1/4WS 56 ohms (J)	35-11-30				
2-R85	ER324337	Carbon/R. F 1/4WS 56 ohms (J)	35-11-30				
2-R102	ER322591	Carbon/R. F 1/4WS 100 ohms (J)	35-11-30				
2-R109	ER324337	Carbon/R. F 1/4WS 56 ohms (J)	35-11-30				
2-R132	ER322591	Carbon/R. F 1/4WS 100 ohms (J)	35-11-30				
2-R140	ER322591	Carbon/R. F 1/4WS 100 ohms (J)	35-11-30				
2-C31,32	EC513990	Styrol/C. (Vert.) 330PF(J)50WV (U/T,CEE, UK,SA)	24-11-3				

When ordering parts, please quote Parts Number, Description and Model Number.

3. FLD (A) P.C BOARD (ATV-4008) BLOCK

Symbol No.	Parts No.	Description	Schematic No.
3-IC1	EI323230	IC SP8629	45-8-436
3-IC2	EI323255	IC LC7258	45-8-437
3-TR1	ET618873	Transistor 2SC930 (E)(F)	45-1-185
3-TR2	ET631877	Transistor 2SD400K (D) (E)	45-1-205
3-TR4	ET316171	Transistor 2SC536K-NP (E)(F)	45-1-362
3-D1,2	ED316143	Silicon Diode 1S2473-HS	45-3-53
3-D3,4	ED303036	Zener Diode 05Z-5.6L	45-6-76
3-D6	ED323235	Zener Diode 05Z-9.1U	45-6-76
3-D7	ED316143	Silicon Diode 1S2473-HS	45-3-53
3-IND1	EM323229	FL Display 7-LT-02K	59-1-3
3-VR1,2	EV604438	Semi-fixed/Vol. V10K8-4-2 B10K	36-10-250
3-L1T05	EO328137	Peaking Coil 2.2 μ H(K)	23-1-396
3-X1	EI323231	X'tal OSC HC-18U 4MHz	53-1-187
3-R8	ER324185	Carbon/R. F 1/4WS 220 ohms (J)	35-11-30

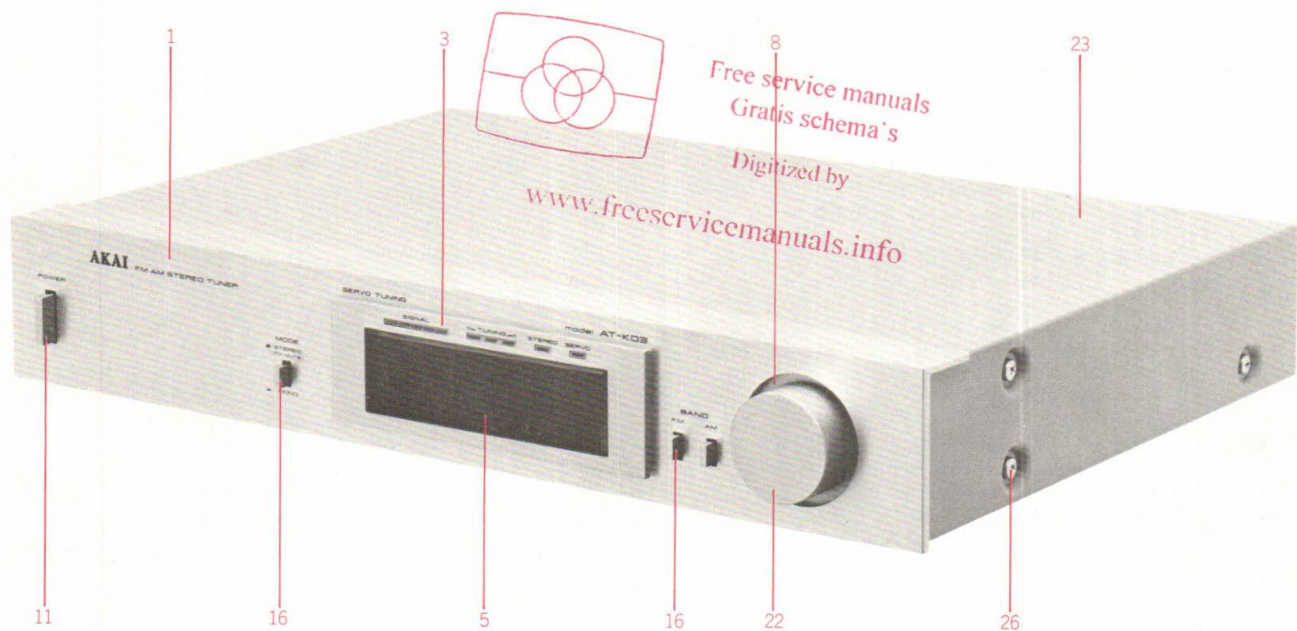
4. ASSEMBLY BLOCK



ASSEMBLY BLOCK

Symbol No.	Parts No.	Description	Schematic No.	Symbol No.	Parts No.	Description	Schematic No.
LED P.C BOARD BLOCK							
4-1	ED322184	LED SLP-152D	45-15-40	4-41X	BT325733	△ Power Trans. ATK-03T-30 (CSA,AAL)	38-4-833
4-2	ED322215	LED SLP-251D	45-15-39	4-42X	BT325734	△ Power Trans. ATK-03T-40 (CEE)	38-4-834
4-3	ED322247	LED SLP-151D	45-15-41	4-43X	BT325735	△ Power Trans. ATK-03T-50 (UK,SAA)	38-4-835
4-4X	SE325718	LED Escutcheon	ATK-3013	4-44	ZS315511	S-Tight Screw, PAN 3×6 Cup Point	7-1-72
4-5X	SE325719	LED Escutcheon (BL)	ATK-3013	4-45	BF325731	Flywheel ASSY	9-3-64
4-6X	ZS300436	Tapping Screw, #2 Bind 2.3×8		4-46	ZW436026	Washer (SPC) D9.2×15×0.5T	
TUNER P.C BOARD (B) BLOCK				4-47	ZW554624	E Jack Nut	7-1-56
4-7	ES324118	Push SW. J-K2105	25-5-367	4-48	TA322250	Dial Wheel ASSY	9-3-52
ATTENUATOR P.C BOARD BLOCK				4-49	TA307160	Dial String TK-1064 D0.5	8-2-1
4-8	ES324238	Slide SW. SSB02204	25-3-185	4-50	SP322202	Bottom Plate	ATK-2030
REAR PANEL BLOCK				4-51	EF308933	△ Fuse 200MA 250V (U/T)	39-1-64
4-9	SP325700	Rear Panel (A) (U/T)	ATK-3001	4-52X	EF309389	△ Fuse 400MA 250V (U/T)	39-1-64
4-10X	SP325702	Rear Panel (C) (CSA)	ATK-3001	4-53X	EF306088	△ Fuse 315MA 125V (CSA,AAL)	39-1-65
4-11X	SP325701	Rear Panel (B) (AAL)	ATK-3001	4-54X	EF695766	△ Fuse (Semko T) 315MAT (CEE,UK,SAA)	39-1-53
4-12X	SP325703	Rear Panel (D) (CEE)	ATK-3002	4-55X	EF300574	△ Fuse (EAWK) 125MAT (CEE,UK,SAA)	39-1-60
4-13X	SP325704	Rear Panel (E) (UK,SAA)	ATK-3002				
4-14	EJ603685	Antenna Terminal Plate 4P	32-1-52	4-56	SZ325722	Tube (A)	ATK-3016
4-15	ZW698308	Nylon Rivet (NRB) 3×5.5 (Black)	2-7-54	4-57	ZS308846	Tapping Screw, #2 BR 3×8 (Oval Neck) (Black)	7-1-69
4-16	EE322245	Bar ANT	55-1-62				
4-17	EW306428	△ AC Cord (U/T)	26-3-64				
4-18X	EW305691	△ AC Cord CUL	26-3-65				
4-19X	EZ631945	Strain Relief SR-4N-4 (U/T,CSA,AAL)	2-7-49				
4-20X	EJ301513	△ Inlet 2P (CEE,UK,SAA)	31-1-200				
4-21	EJ322246	Pin Jack 2P	32-1-108				
4-22	ZW281463	Nylon Rivet (NRB) 3×6.5 (Black)	2-7-54				
4-23	ZS608185	Screw, PAN 2.6×4 (Black)					
ASSEMBLY BLOCK							
4-24	ES310839	△ Push SW. SDG1P-E 5A/80A 250V (U/T,CEE,UK,SAA)	25-5-310				
4-25X	ES665875	△ Push SW. SDG1P-J TV-3 UL/CSA (CSA,AAL)	25-5-199				
4-26	ZS-417216	Screw, PAN 3×4					
4-27	EC204671	△ Ceramic/C. DD31-4E 0.01μF(P)500WV (U/T)	24-5-66				
4-28X	EC314688	△ Ceramic/C. DE7150 FZ 0.01μF(P) 125WV (CSA,AAL)	24-5-87				
4-29X	EC327382	△ MP/C. (Vert.) 0.0047μF(M) 250WV (CEE,UK,SAA)	24-9-134				
4-30	ZS325495	Tapping Screw, #2 BR 3×6					
4-31	ZS308846	Tapping Screw, #2 BR 3×8 (Oval Neck) (Black)	7-1-69				
4-32	ZS297641	Tapping Screw, #2 Bind 3×8 W=10					
4-33X	ZS462194	Tapping Screw, #2 PAN 3×8 W=8					
4-34	ZS306021	S-Tight Screw, PAN 3×6					
4-35	MR308836	Pulley	13-2-40				
4-36	BT328136	Balun Trans. 75-300 ohms	23-1-448				
4-37X	ZS379350	Screw, PAN 3×6					
4-38	SA311742	Circular Foot	PC-2032				
4-39X	ZS565942	Tapping Screw, #2 PAN 4×8					
4-40	BT325732	△ Power Trans. ATK-03T-70 (U/T)	38-4-832				

5. FINAL ASSEMBLY BLOCK



FINAL ASSEMBLY BLOCK

Symbol No.	Parts No.	Description	Schematic No.	Symbol No.	Parts No.	Description	Schematic No.
FRONT PANEL BLOCK				FINAL ASSEMBLY BLOCK			
5-1	BD320901	Front Panel BLK AT-K03	ATK-3021	5-19X	ZS300436	Tapping Screw, #2 Bind 2.3x8	
5-2X	BD320902	Front Panel BLK AT-K03-BL	ATK-3021	5-20X	ZS447840	Tapping Screw, #2 BR 3x8	
5-3	SE325720	FLD Escutcheon	ATK-3014,3015	FINAL ASSEMBLY BLOCK			
5-4X	SE325721	FLD Escutcheon (BL)	ATK-3014,3015	5-21	SK325714	Tuning Knob	ATK-3011
5-5	SZ323193	FLD Plate	ATV-4037	5-22X	SK325715	Tuning Knob (BL)	ATK-3011
5-6X	SZ323194	FLD Filter (A)	ATV-4038	5-23	BC322209	Upper Cover (A)	ATK-2034
5-7X	ZS310343	Special Tapping Screw, Pan 3x6	7-1-70	5-24X	BC322212	Upper Cover (B) (AAL)	ATK-2034
5-8	SZ325716	Tuning Knob Mask	ATK-3012	5-25X	BC322210	Upper Cover (A-BL)	ATK-2034
5-9X	SZ325717	Tuning Knob Mask (BL)	ATK-3012	5-26	ZS322570	S-tight Screw, Bind 4x8	
5-10X	SE322578	Escutcheon (A)	ATK-2013	5-27X	ZS322580	S-tight Screw, Bind 4x8 (Black)	
5-11	SB322576	Button (A)	ATK-2012			(AAL, BL)	
5-12X	SB322577	Button (A-BL)	ATK-2012	5-28X	ZW305013	Pop Rivet D3.2 (AAL)	7-6-9
5-13X	ZG322579	Spring (A)	ATK-2014	5-29X	EW315767	△ AC Cord Set CEE 2 cores (CEE)	26-3-72
5-14X	SE325712	Escutcheon (A)	ATK-3010	5-30X	EW322400	△ AC Cord Set BASEC 2 cores (UK)	26-3-73
5-15X	SE325713	Escutcheon (B)	ATK-3010	5-31X	EW322401	△ AC Cord Set SAA 2 cores (SAA)	26-3-77
5-16	SB325710	Button (A)	ATK-3009				
5-17X	SB325711	Button (A-BL)	ATK-3009				
5-18X	ZG322566	Spring	AMU-2050				

II. MODEL AT-V04/L

1. RECOMMENDED SPARE PARTS LIST

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

Parts No.	Description	Notes
BA322953	Synthesizer PCB Comp. AT-V04 (CEE)	CEE, UK, SAA
BA322952	Synthesizer PCB Comp. AT-V04 (CSA)	CSA, AAL
BA322951	Synthesizer PCB Comp. AT-V04 (U/T)	
BA320019	Synthesizer PCB Comp. AT-V04L	
BA323290	Tuner PCB Comp. AT-V04 (U/T)	U/T, CEE, UK, SAA
BA323291	Tuner PCB Comp. AT-V04 (CSA)	CSA, AAL
BA314029	Tuner PCB Comp. AT-V04L	
BT323266	△ Power Trans. AT-V04T-30	CSA, AAL
BT323268	△ Power Trans. AT-V04T-40	CEE
BT323269	△ Power Trans. AT-V04T-50	UK, SAA
BT323294	△ Power Trans. AT-V04T-70	U/T
BT323239	AM-IF Trans. CFMA-020	
BT293398	AM-IF Trans. RMC-42246BCH	
BT328136	Balun Trans. 75-300 ohms	
EC616342	Trimmer/C. CTY122D33 15PF	
ED562386	Germanium Diode 1S188AM	
ED562386	Germanium Diode 1S188AM	
ED322247	LED SLP-151D	
ED322184	LED SLP-152D	
ED322772	LED SLP-155D-01	
ED322215	LED SLP-251D	
ED322773	LED SLP-255D-01	
ED223547	Silicon Diode DS131A	
ED316143	Silicon Diode 1S2473-HS	
ED224526	Silicon Diode 10D1	
ED324197	Vari. Cap Diode (2 pair) KV1226X	
ED322810	Zener Diode WZ-040	
ED324195	Zener Diode 05Z-13U	
ED323216	Zener Diode 05Z-15U	
ED324194	Zener Diode 05Z-5.1L	
ED303155	Zener Diode 05Z-5.6U	
ED323235	Zener Diode 05Z-9.1U	
ED303036	Zener Diode 05Z-5.6L	
EE320330	Bar Ant	L
EE323295	Bar Ant	
EE323257	Front End VFT-44UH-31	
EF308933	△ Fuse 200mA 250V	U/T
EF315334	△ Fuse 250mA 125V	CSA, AAL
EF308848	△ Fuse 400mA 125V	CSA, AAL
EF309389	△ Fuse 400mA 250V	U/T

Parts No.	Description	Notes
EF300574	△ Fuse (EAWK) 125MAT	CEE, UK, SAA
EF300589	△ Fuse (EAWK) 315MAT	CEE, UK, SAA
EF300590	△ Fuse (EAWK) 400MAT	CEE, UK, SAA
EF322975	△ Fuse (EAWK) 160MAT	CEE, UK, SAA
EI293185	IC LA-1240	
EI322248	IC LA1231N	
EI322185	IC LA3380(B)	
EI323210	IC LA5700	
EI315491	IC LB1405S	
EI323208	IC LC7207	
EI323255	IC LC7258	
EI213390	IC NJM4558D	
EI323230	IC SP8629	
EI573838	IC TA7060P	
EI323247	IC TA7324P	
EI323207	IC TA75902P	
EI304657	IC TC4011BP	
EI304657	IC TC4011BP	
EI323209	IC TC4012BP	
EI323231	X'tal OSC HC-18U 4 MHz	
EJ301513	△ Inlet 2P	CEE, UK, SAA
EJ323227	Pin Jack 2P	
EM323229	FL Display 7-LT-02K	
EO325068	ANT Coil CAN4373N	
EO322239	Det Coil Q228CEL-1072N	
EO325770	Det Coil RZC44315L	
EO323244	Det Coil RZN-43968N	
EO322241	MPX Coil CANS-3700Z	
EO325070	OSC Coil RWR43933N	
EO325089	OSC Coil RWR44277N	
EO326186	Tuning Coil 154AN-41770N	
ER323217	Ceramic Filter SFE10.7MJ-A	
ER323258	Ceramic Filter SFE10.7MP3-A	
ER322181	Low Pass Filter 208BLRC-3415N	
ER322237	Low Pass Filter 209BLRG-3368N	
ES310839	△ Push SW. SDG1P-E 5A/80A 250V	U/T, CEE, UK, SAA
ES665875	△ Push SW. SDG1P-J TV-3 UL/CSA	CSA, AAL
ES315362	Push SW. AKC8S	
ES323228	Push SW. J-K2103	
ES319168	Push SW. SUF-12	

Parts No.	Description	Notes
ES323237	Push SW. SUFR32	
ES323236	Push SW. SUF22	
ES325076	Remote SW. SSR283	
ES323241	Slide SW. HSW0525-01-010	
ES323240	Slide SW. 12156	
ET323232	FET 2SK19(Y)	
ET323232	FET 2SK19(Y)	
ET645917	FET 2SK30A(D)	
ET322244	Transistor 2SA608K-NP (F) (G)	
ET322244	Transistor 2SA608K-NP (F) (G)	
ET322244	Transistor 2SA608K-NP (F) (G)	
ET316171	Transistor 2SC536K-NP (E) (F)	
ET316643	Transistor 2SC536K-NP (F) (G)	
ET618873	Transistor 2SC930 (E) (F)	
ET618873	Transistor 2SC930 (E) (F)	
ET618873	Transistor 2SC930 (E) (F)	
ET618873	Transistor 2SC930 (E) (F)	
ET452531	Transistor 2SD313 (E) (F)	
ET631877	Transistor 2SD400K (D) (E)	
ET307193	Transistor 2SD612K (D) (E) (F)	
EV604438	Semi-fixed/Vol. V10K8-4-2 B10K	
EV604438	Semi-fixed/Vol. V10K8-4-2 B10K	
EV604438	Semi-fixed/Vol. V10K8-4-2 B10K	
EV550023	Semi-fixed/Vol. V10K8-4-2 B100K	
EV550023	Semi-fixed/Vol. V10K8-4-2 B100K	
EV593368	Semi-fixed/Vol. V10K8-4-2 B30K	
EV560136	Semi-fixed/Vol. V10K8-4-2 20KB	
EV560136	Semi-fixed/Vol. V10K8-4-2 20KB	
EV323213	Semi-fixed/Vol. V10K8-4-2 3 KB	
EV499882	Semi-fixed/Vol. V10K8-4-2 300KB	
EV650891	Semi-fixed/Vol. V10K8-4-2 50K(B)	
EV317580	Semi-fixed/Vol. (Metallized Fil TM8K(PV) 2KB	
EV323226	Single-axial 2-throw/Vol. V16L4G3-IN-10KBx2	
EV324349	Vol. VJ30A551-100KV	
EV323225	Vol. V16L4N-20KB	
EW306428	△ AC Cord (U/T)	
EW305691	△ AC Cord CUL	CSA, AAL
EW322400	△ AC Cord Set BASEC 2 cores	UK
EW315767	△ AC Cord Set CEE 2 cores	CEE
EW322401	△ AC Cord Set SAA 2 cores	SAA

2. TUNER P.C BOARD (ATV-4001A) BLOCK

Symbol No.	Parts No.	Description	Schematic No.	Symbol No.	Parts No.	Description	Schematic No.
2-1	BA323290	Tuner PCB Comp. AT-V04 (U/T)	ATV-4058	2-R13TO15	ER324480	Carbon/R. F 1/4WS 47 ohms (J)	35-11-30
2-2	BA323291	Tuner PCB Comp. AT-V04 (CEE, UK, SAA)	ATV-4058	2-R28	ER324185	Carbon/R. F 1/4WS 220 ohms (J)	35-11-30
2-3	BA314029	Tuner PCB Comp. AT-V04L (CSA, AAL)	ATV-4058	2-R65	ER324184	Carbon/R. F 1/4WS 120 ohms (J)	35-11-30
2-4	EE323257	Front End VFT-44UH-31	57-2-54	2-R67	ER324185	Carbon/R. F 1/4WS 220 ohms (J)	35-11-30
2-IC1TO3	EI573838	IC TA7060P	45-8-97	2-R71,72	ER324480	Carbon/R. F 1/4WS 47 ohms (J)	35-11-30
2-IC4	EI322248	IC LA1231N	45-8-443	2-R108	ER324184	Carbon/R. F 1/4WS 120 ohms (J)	35-11-30
2-IC5	EI322185	IC LA3380(B)	45-8-413	2-R119	ER324184	Carbon/R. F 1/4WS 120 ohms (J)	35-11-30
2-IC6	EI213390	IC NJM4558D	45-8-191	2-R151	ER324480	Carbon/R. F 1/4WS 47 ohms (J)	35-11-30
2-IC7	EI323247	IC TA7324P	45-8-442	2-R155	ER324480	Carbon/R. F 1/4WS 47 ohms (J)	35-11-30
2-IC8	EI293185	IC LA-1240	45-8-220	2-R160	ER324184	Carbon/R. F 1/4WS 120 ohms (J)	35-11-30
2-IC9	EI315491	IC LB1405S	45-8-365	2-R165	ER324184	Carbon/R. F 1/4WS 120 ohms (J)	35-11-30
2-TR1,2	ET618873	Transistor 2SC930(E)(F)	45-1-185	2-R171	ER324480	Carbon/R. F 1/4WS 47 ohms (J)	35-11-30
2-TR3,4	ET316643	Transistor 2SC536K-NP (F) (G)	45-1-362	2-C29	EC323260	NP/C. 10μF(M) 16WV	24-17-36
2-TR5,6	ET322244	Transistor 2SA608K-NP (F) (G)	45-1-375	2-C48	EC435690	Styrol/C. (Vert.) 560PF (J) 50WV	24-11-3
2-TR7	ET645917	FET 2SK30A(D)	45-12-11	2-C52,53	EC672287	Styrol/C. (Vert.) 510PF (J) 50WV (U/T,CEE,UK,SAA)	24-11-3
2-TR8TO13	ET316643	Transistor 2SC536K-NP (F) (G)	45-1-362	2-C52,53	EC323252	Styrol/C. 770PF(J) 50WV (CSA,AAL)	24-11-18
2-TR16	ET316643	Transistor 2SC536K-NP (F) (G)	45-1-362	2-C109	EC324368	Styrol/C. 510PF(G) 50WV	24-11-18
2-TR17	ET645917	FET 2SK30A(D)	45-12-11				
2-TR18,19	ET316643	Transistor 2SC536K-NP (F) (G)	45-1-362				
2-TR20	ET323232	FET 2SK19(Y)	45-12-3				
2-TR21TO24	ET316643	Transistor 2SC536K-NP (F) (G)	45-1-362				
2-D1TO8	ED316143	Silicon Diode 1S2473-HS	45-3-53				
2-D11,12	ED324197	Vari. Cap Diode (2 pair) KV1226X	45-3-69				
2-D13	ED316143	Silicon Diode 1S2473-HS	45-3-53				
2-D14,15	ED562386	Germanium Diode 1S188AM	45-3-24				
2-SW1	ES323240	Slide SW. 12156	25-3-181				
2-SW2	ES323241	Slide SW. HSW0525-01-010	25-3-182				
2-SW3	ES325076	Remote SW. SSR283	25-14-501				
2-VR1	EV593368	Semi-Fixed/Vol. V10K8-4-2 B30K	36-10-250				
2-VR2,3	EV550023	Semi-Fixed/Vol. V10K8-4-2 B100K	36-10-250				
2-VR4	EV604438	Semi-Fixed/Vol. V10K8-4-2 B10K	36-10-250				
2-VR5,6	EV560136	Semi-Fixed/Vol. V10K8-4-2 20KB	36-10-250				
2-VC1	EC616342	Trimmer/C. CTY122D33 15PF (Except L)	24-2-32				
2-VC2,3	EC616342	Trimmer/C. CTY122D33 15PF (L)	24-2-32				
2-L1	EO328137	Peaking Coil 2.2μH(K)	23-1-396				
2-L2	EO350774	Ferri Inductor FL5H 22μH(K)	23-1-2				
2-T1	BT328136	Balun Trans. 75-300 OHMS	23-1-448				
2-T2	EO322239	DET Coil Q228CEL-1072N	23-1-383				
2-T3	EO322241	MPX Coil Can S-3700Z	23-1-386				
2-T7	EO325089	OSC Coil RWR44277N	23-1-420				
2-T8	EO325070	OSC Coil RWR43933N(L)	23-1-409				
2-T9	BT323239	AM-IF Trans. CFMA-020	53-1-189				
2-T10	BT293398	AM-IF Trans. RMC-42246 BCH	23-1-276				
2-T11	EO323244	DET Coil RZN-43968N	23-1-400				
2-T12	EO325770	DET Coil RZC44315L	23-1-423				
2-FL1TO3	ER323258	Ceramic Filter SFE10.7 MP3-A	53-1-188				
2-FL4	ER322237	Low Pass Filter 209BLRG-3368N	23-1-384				
2-FL5,6	ER322181	Low Pass Filter 208BLRC-3415N	23-1-385				
2-J1	EJ323243	ANT Terminal Plate	32-1-113				
2-TM1	EJ323242	ANT Terminal 3P	32-1-114				
2-R7	ER324480	Carbon/R. F 1/4WS 47 ohms (J)	35-11-30				
2-R10	ER324480	Carbon/R. F 1/4WS 47 ohms (J)	35-11-30				

When ordering parts, please quote Parts Number, Description and Model Number.

3. SYNTHESIZER P.C BOARD (ATV-4002) BLOCK

Symbol No.	Parts No.	Description	Schematic No.	Symbol No.	Parts No.	Description	Schematic No.
3-1	BA322951	Synthesizer PCB Comp. AT-V04 (U/T)	ATV-4002	3-D39	ED316143	Silicon Diode 1S2473-HS	45-3-53
3-2	BA322952	Synthesizer PCB Comp. AT-V04 (CSA) (CSA,AAL)	ATV-4002	3-D40TO43	ED316143	Silicon Diode 1S2473-HS	45-3-53
3-3	BA322953	Synthesizer PCB Comp. AT-V04(CEE) (CEE,UK,SAA)	ATV-4002	3-D44	ED316143	Silicon Diode 1S2473-HS (L)	45-3-53
3-4	BA320019	Synthesizer PCB Comp. AT-V04L	ATV-4007	3-VR1	EV560136	Semi-Fixed/Vol. V10K8-4-2 20KB	36-10-250
3-IC1	EI304657	IC TC4011BP	45-8-232	3-VR2	EV550023	Semi-Fixed/Vol. V10K8-4-2 B100K	36-10-250
3-IC2	EI323207	IC TA75902P	45-8-440	3-VR4	EV604438	Semi-Fixed/Vol. V10K8-4-2 B10K	36-10-250
3-IC3	EI323208	IC LC7207	45-8-438	3-VR5	EV650891	Semi-Fixed/Vol. V10K8-4-2 50K(B)	36-10-250
3-IC4	EI323209	IC TC4012BP	45-8-441	3-VR6	EV499882	Semi-Fixed/Vol. V10K8-4-2 300KB	36-10-250
3-IC5	EI304657	IC TC4011BP	45-8-232	3-VR7	EV317580	Semi-Fixed/Vol. (Metallized FIL TM8K(PV) 2KB	36-28-10
3-IC6	EI323210	IC LA5700	45-8-439	3-VR9	EV323213	Semi-Fixed/Vol. V10K8-4-2 3 KB	36-10-250
3-TR1	ET316171	Transistor 2SC536K-NP (E) (F)	45-1-362	3-L1	EO243977	Ferri Inductor EL7H 1MH(J)	23-1-3
3-TR2	ET316171	Transistor 2SC536K-NP (E) (F) (L)	45-1-362	3-FL1,2	ER323217	Ceramic Filter SFE10.7MJ-A	53-1-190
3-TR3,4	ET316171	Transistor 2SC536K-NP (E) (F)	45-1-362	3-R75	ER322591	Carbon/R. F 1/4WS 100 ohms (J)	35-11-30
3-TR5,6	ET316171	Transistor 2SC536K-NP (E) (F) (L)	45-1-362	3-R80	ER324184	Carbon/R. F 1/4WS 120 ohms (J)	35-11-30
3-TR7	ET322244	Transistor 2SA608K-NP (F) (G)	45-1-375	3-R89	ER324184	Carbon/R. F 1/4WS 120 ohms (J)	35-11-30
3-TR8TO12	ET316171	Transistor 2SC536K-NP (E) (F)	45-1-362	3-R105	ER324186	Carbon/R. F 1/4WS 680 ohms (J)	35-11-30
3-TR13	ET323232	FET 2SK19(Y)	45-12-3	3-R110	ER316802	Carbon/R. F 1/4WS 470 ohms (J)	35-11-30
3-TR14,15	ET618873	Transistor 2SC930 (E)(F)	45-1-185	3-R112	ER324185	Carbon/R. F 1/4WS 220 ohms (J)	35-11-30
3-TR16TO21	ET316171	Transistor 2SC536K-NP (E) (F)	45-1-362	3-R125	ER323214	Resistor Block LZ10B2	35-11-33
3-TR22	ET307193	Transistor 2SD612K (D) (E) (F)	45-1-308	3-C33	EC326588	Elect./C. (Vert.) 1000μF 10WV	24-12-49
3-TR23	ET452531	Transistor 2SD313 (E)(F)	45-1-105	3-C42	EC325109	Elect./C. (Vert.) 1000μF 50WV	24-12-49
3-TR24	ET322244	Transistor 2SA608K-NP (F) (G)	45-1-375	3-C44	EC323847	Elect./C. (Vert.) 1000μF 35WV	24-12-49
3-TR25TO27	ET316171	Transistor 2SC536K-NP (E) (F)	45-1-362	3-5	ZS421806	Screw, PAN 3x8	
3-TR28	ET322244	Transistor 2SA608K-NP (F) (G) (L)	45-1-375				
3-TR29	ET316171	Transistor 2SC536K-NP (E) (F) (L)	45-1-362				
3-TR30	ET322244	Transistor 2SA608K-NP (F) (G) (L)	45-1-375				
3-TR31	ET316171	Transistor 2SC536K-NP (E) (F) (L)	45-1-362				
3-TR32TO35	ET316171	Transistor 2SC536K-NP (E) (F)	45-1-362				
3-TR36	ET322244	Transistor 2SA608K-NP (F) (G)	45-1-375				
3-D1	ED316143	Silicon Diode 1S2473-HS	45-3-53				
3-D2	ED316143	Silicon Diode 1S2473-HS (L)	45-3-53				
3-D3	ED316143	Silicon Diode 1S2473-HS	45-3-53				
3-D4	ED316143	Silicon Diode 1S2473-HS (L)	45-3-53				
3-D5	ED316143	Silicon Diode 1S2473-HS	45-3-53				
3-D6	ED303155	Zener Diode 05Z-5.6U	45-6-76				
3-D7	ED322810	Zener Diode WZ-040	45-6-67				
3-8TO12	ED316143	Silicon Diode 1S2473-HS	45-3-53				
3-D13,14	ED316143	Silicon Diode 1S2473-HS (L)	45-3-53				
3-D15,16	ED316143	Silicon Diode 1S2473-HS	45-3-53				
3-D17TO20	ED562386	Germanium Diode 1S188AM	45-3-24				
3-D21TO26	ED316143	Silicon Diode 1S2473-HS	45-3-53				
3-D27	ED324195	Zener Diode 05Z-13U	45-6-76				
3-D28	ED323216	Zener Diode 05Z-15U	45-6-76				
3-D29	ED316143	Silicon Diode 1S2473-HS	45-3-53				
3-D30	ED224526	Silicon Diode 10D1	45-2-11				
3-D31	ED223547	Silicon Diode DS131A	45-2-67				
3-D32	ED316143	Silicon Diode 1S2473-HS	45-3-53				
3-D33,34	ED316143	Silicon Diode 1S2473-HS (L)	45-3-53				
3-D35,36	ED316143	Silicon Diode 1S2473-HS	45-3-53				
3-D37,38	ED316143	Silicon Diode 1S2473-HS (L)	45-3-53				

When ordering parts, please quote Parts Number, Description and Model Number.

4. FLD (A) P. C BOARD (ATV-4008) BLOCK

Symbol No.	Parts No.	Description	Schematic No.
4-IC1	EI323230	IC SP8629	45-8-436
4-IC2	EI323255	IC LC7258	45-8-437
4-TR1	ET618873	Transistor 2SC930 (E) (F)	45-1-185
4-TR2	ET631877	Transistor 2SD400K (D) (E)	45-1-205
4-TR3	ET322244	Transistor 2SA608K-NP (F)(G)	45-1-375
4-TR4	ET316171	Transistor 2SC536K-NP (E)(F)	45-1-362
4-D1,2	ED316143	Silicon Diode 1S2473-HS	45-3-53
4-D3,4	ED303036	Zener Diode 05Z-5.6L	45-6-76
4-D5	ED324194	Zener Diode 05Z-5.1L	45-6-76
4-D6	ED323235	Zener Diode 05Z-9.1U	45-6-76
4-D7	ED316143	Silicon Diode 1S2473-HS	45-3-53
4-IND1	EM323229	FL Display 7-LT-02K	59-1-3
4-VR1,2	EV-604438	Semi-Fixed/Vol. V10K8-4-2	36-10-250
B10K			
4-LIT05EO328137		Peaking Coil 2.2 μ H (K)	23-1-396
4-X1	EI323231	X TAL OSC HC-18U 4MHZ	53-1-187
4-R8	ER324185	Carbon/R. F 1/4WS 220	35-11-30
ohms (J)			

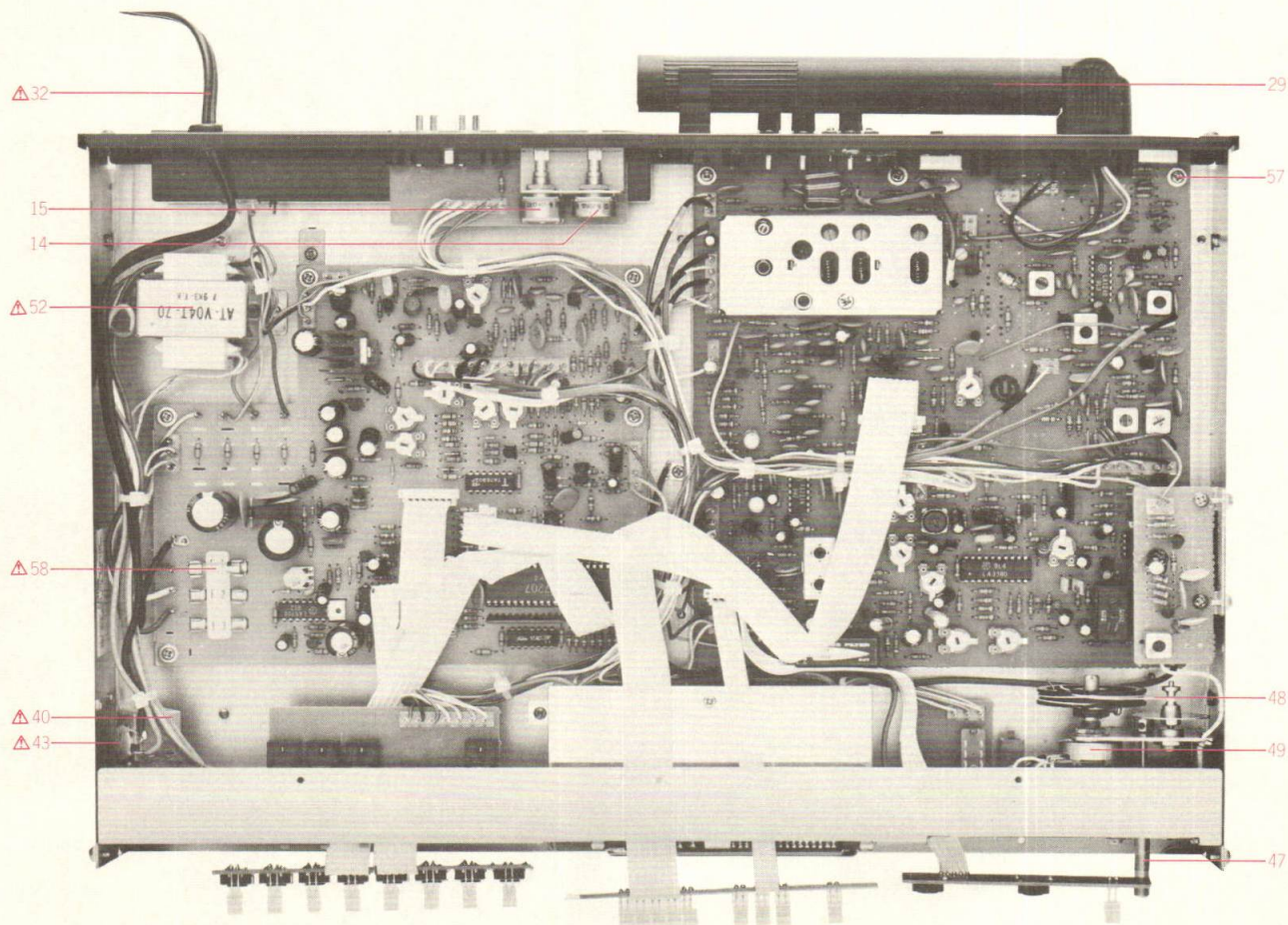
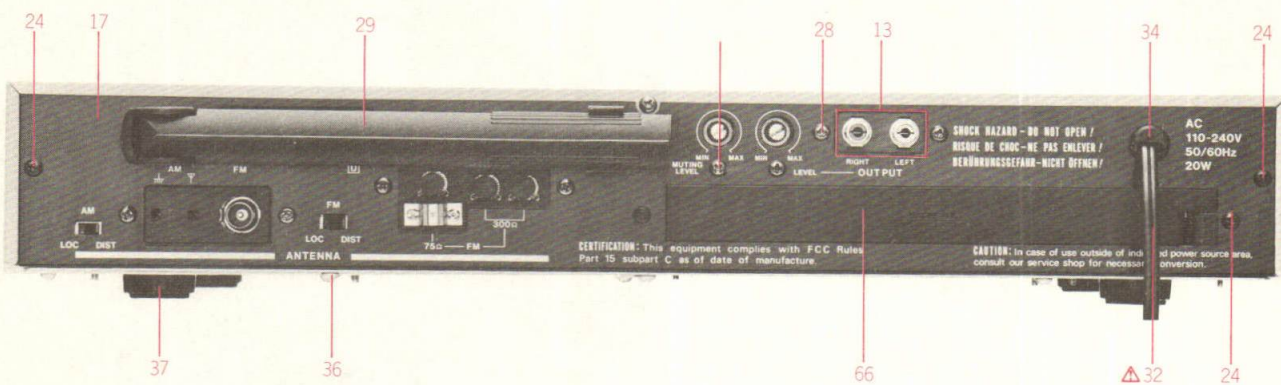
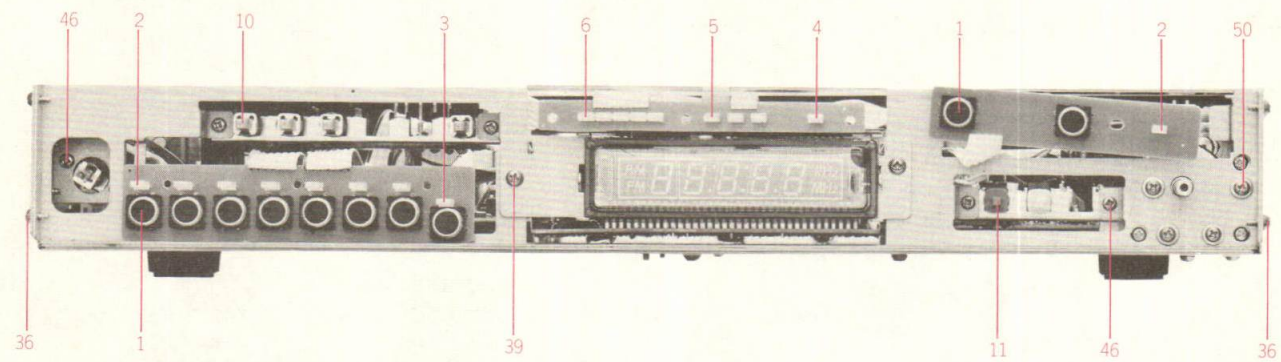
5. TOUCH SENSOR P.C BOARD (ATV-4001B)

Symbol No.	Parts No.	Description	Schematic No.
5-TR1	ET618873	Transistor 2SC930 (E) (F)	45-1-185
5-TR2	ET316171	Transistor 2SC536K-NP (E)(F)	45-1-362
5-D1,2	ED316143	Silicon Diode 1S2473-HS	45-3-53
5-T1	EO326186	Tuning Coil 154AN-41770N	23-1-436

6. ANT. SW. P.C BOARD (ATK-2063) BLOCK (AT-V04 L ONLY)

Symbol No.	Parts No.	Description	Schematic No.
6-SW1	ES319168	Push SW. SUF-12	25-5-385
6-VC1,2	EC616342	Trimmer/C. CTY122D33 15PF	24-2-32
6-L1	EO350774	Ferri Inductor FL5H 22 μ H(K)	23-1-2
6-T1	EO325068	ANT Coil CAN4373N	23-1-407
6-1	ZS417216	Screw, Pan 3x4	

7. ASSEMBLY BLOCK

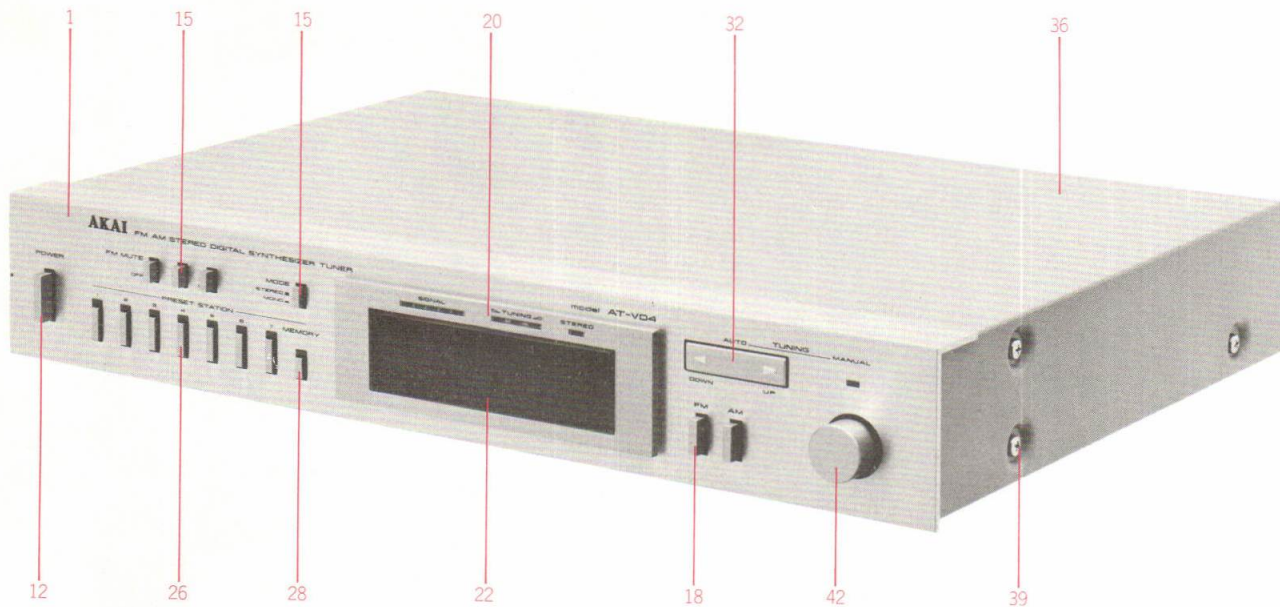


ASSEMBLY BLOCK

Symbol No.	Parts No.	Description	Schematic No.
PRESET CH P.C BOARD BLOCK			
7-1	ES315362	Push SW. AKC8S	25-5-317
7-2	ED322773	LED SLP-255D-01	45-15-37
7-3	ED322772	LED SLP-155D-01	45-15-38
LED P.C BOARD BLOCK			
7-4	ED322184	LED SLP-152D	45-15-40
7-5	ED322247	LED SLP-151D	45-15-41
7-6	ED322215	LED SLP-251D	45-15-39
7-7X	SE323195	LED Escutcheon	ATV-4039
7-8X	SE323196	LED Escutcheon (BL)	ATV-4039
7-9X	ZW698308	Nylon Rivet (NRB) 3x5.5 (Black)	2-7-54
MUTE SW. P.C BOARD BLOCK			
7-10	ES323228	Push SW. J-K2103	25-5-364
BAND SELECTOR P.C BOARD BLOCK			
7-11	ES323236	Push SW. SUF22	25-5-363
7-12X	ES323237	Push SW. SUFR32 (L)	24-14-101
OUTPUT P.C BOARD BLOCK			
7-13	EJ323227	Pin Jack 2P	31-5-160
7-14	EV323225	Vol. V16L4N-20KB	36-6-46
7-15	EV323226	Single-Axial 2-Throw/Vol. V16L4G3-IN-10 KBx2	36-22-61
BATTERY P.C BOARD BLOCK			
7-16X	EA315427	Battery P.C Board	ATS-8039
REAR PANEL BLOCK			
7-17	SP323166	Rear Panel (U/T-1)	ATV-4016
7-18X	SP323167	Rear Panel (CSA-1)	ATV-4016
7-19X	SP323168	Rear Panel (AAL-1)	ATV-4016
7-20X	SP323169	Rear Panel (CEE-1)	ATV-4017
7-21X	SP323170	Rear Panel (UK,SAA-1)	ATV-4017
7-22X	SP325063	Rear Panel (CEE-2) (L)	ATV-4048
7-23X	SP325064	Rear Panel (UK,SAA-2) (L)	ATV-4048
7-24	ZS308846	Tapping Screw, #2 BR 3x8 (Oval Neck) (Black)	7-1-69
7-25	ZS463353	Tapping Screw, #2 BR 3x8 (Black)	
7-27	ZS447761	Tapping Screw, #2 BR 3x6 (Black)	
7-28	ZS522865	Tapping Screw, #2 BR 3x12 (Black)	
7-29	EE323295	Bar ANT	55-1-61
7-30X	EE320330	Bar ANT (L)	55-1-66
7-31X	SK607127	Push Knob A (Black)	A5-5022
7-32	EW306428	△ AC Cord (U/T)	26-3-64
7-33X	EW305691	△ AC Cord CUL (CSA,AAL)	26-3-65
7-34	EZ631945	Strain Relief SR-4N-4 (U/T, CSA,AAL)	2-7-49
7-35X	EJ301513	△ Inlet 2P (CEE,UK,SAA)	31-1-200

Symbol No.	Parts No.	Description	Schematic No.
ASSEMBLY BLOCK			
7-36	ZS325495	Tapping Screw, #2 BR 3x6	
7-37	SA311742	Circular Foot	PC-2032
7-38X	ZS565942	Tapping Screw, #2 PAN 4x8	
7-39	ZS306021	S-Tight Screw, PAN 3x6	
7-40	ES310839	△ Push SW. SDG1P-E 5A/80A 250V (U/T)	25-5-310
7-41X	ES665875	△ Push SW. SDG1P-J TV-3 UL/CSA (CSA,AAL)	25-5-199
7-42X	ES310839	△ Push SW. SDG1P-E 5A/80A 250V (CEE,UK,SAA)	25-5-310
7-43	EC321302	△ Ceramic/C.E 0.01μF (Z) 250VAC (U/T)	24-5-90
7-44X	EC314688	△ Ceramic/C. DE7150 FZ 0.01μF (P) 125WV (CSA,AAL)	24-5-87
7-45X	EC327382	△ MP/C. (Vert.) 0.0047μF(M) 250WV (CEE,UK,SAA)	24-9-134
7-46	ZS417216	Screw, PAN 3x4	
7-47	TA322250	Dial Wheel ASSY	9-3-52
7-48	TA307160	Dial String TK-1064 D0.5	8-2-1
7-49	EV324349	Vol. VJ30A551-100KV	36-2-45
7-50	ZS324482	Screw, PAN 3x8 Cup	
7-51X	ZW259514	Washer (Nylon) D3.1x8x1T	
7-52	BT323294	△ Power Trans. AT-V04T-70 (U/T)	38-4-801
7-53X	BT323266	△ Power Trans. AT-V04T-30 (CSA,AAL)	38-4-798
7-54X	BT323268	△ Power Trans. AT-V04T-40 (CEE)	38-4-799
7-55X	BT323269	△ Power Trans. AT-V04T-50 (UK,SAA)	38-4-800
7-56X	ZS315511	S-Tight Screw, PAN 3x6 Cup Point	7-1-72
7-57	ZS462194	Tapping Screw, #2 PAN 3x8 W=8	
7-58	EF309389	△ Fuse 400MA 250V (U/T)	39-1-64
7-59X	EF308933	△ Fuse 200MA 250V (U/T)	39-1-64
7-60X	EF315334	△ Fuse 250MA 125V (CSA,AAL)	39-1-65
7-61X	EF308848	△ Fuse 400MA 125V (CSA,AAL)	39-1-65
7-62X	EF322975	△ Fuse(EAWK) 160MAT (CEE,UK,SAA)	39-1-60
7-63X	EF300574	△ Fuse (EAWK) 125MAT (CEE,UK,SAA)	39-1-60
7-64X	EF300589	△ Fuse (EAWK) 315MAT (CEE,UK,SAA)	39-1-60
7-65X	EF300590	△ Fuse (EAWK) 400MAT (CEE,UK,SAA)	39-1-60
7-66	TA314294	Battery Case ASSY PS-200T	13-2-64

8. FINAL ASSEMBLY BLOCK



FINAL ASSEMBLY BLOCK

Symbol No.	Parts No.	Description	Schematic No.
FRONT PANEL BLOCK			
8-1	BD322959	Front Panel BLK AT-V04	ATV-4062
8-2X	BD322960	Front Panel BLK AT-V04-BL	ATV-4062
8-3X	BD320023	Front Panel BLK AT-V04L	ATV-4062
8-4X	BD320024	Front Panel BLK AT-V04L-BL	ATV-4062
8-5X	SE322578	Escutcheon (A)	ATK-2013
8-6X	SE317512	Button Escutcheon (A)	CU-6006
8-7X	SE317513	Button Escutcheon (B)	CU-6007
8-8X	SE322559	Escutcheon	AMU-2045
8-9X	SE323182	Escutcheon (B)	ATV-4030
8-10X	SE323185	Escutcheon (C)	ATV-4032
8-11X	SE325061	Escutcheon (A)	ATV-4029
8-12	SB322576	Button (A)	ATK-2012
8-13X	SB322577	Button (A-BL)	ATK-2012
8-14X	ZG322579	Spring (A)	ATK-2014
8-15	SB316355	Button (A)	CU-6005
8-16X	SB321167	Button (A-BL-2)	CU-6005
8-17X	ZG322566	Spring	AMU-2050
8-18	SB322557	Button	AMU-2044
8-19X	SB322558	Button (BL)	AMU-2044
8-20	SE323191	FLD Escutcheon	ATV-4035,4036
8-21X	SE323192	FLD Escutcheon (BL)	ATV-4035,4036
8-22	SZ323193	FLD Plate	ATV-4037
8-23	SZ323194	FLD Filter (A)	ATV-4038
8-24	ZW616004	Washer (SPC) D3.1x8x1T	7-1-70
8-25	ZS322402	Special Tapping Screw, Pan 3x8	7-1-70
8-26	SB323183	Button (A)	ATV-4031
8-27X	SB323184	Button (A-BL)	ATV-4031
8-28	SB323189	Button (C)	ATV-4034

Symbol No.	Parts No.	Description	Schematic No.
8-29X	SB323190	Button (C-BL)	ATV-4034
8-30X	ZS296381	Tapping Screw #2, BR 2.3x8	
8-31X	ZW281463	Nylon Rivet (NRB) 3x6.5 (Black)	2-7-54
8-32	SB323186	Button (B)	ATV-4033
8-33X	SB323187	Button (B-BL)	ATV-4033
8-34X	ZS523664	Tapping Screw, #2 BR 3x10	
FINAL ASSEMBLY BLOCK			
8-35X	ZS447840	Tapping Screw, #2 BR 3x8	
8-36	BC322209	Upper Cover (A)	ATK-2034
8-37X	BC322212	Upper Cover (B) (AAL)	ATK-2034
8-38X	BC322210	Upper Cover (A-BL)	ATK-2034
8-39	ZS322570	S-tight Screw, Bind 4x8	
8-40X	ZS322580	S-tight Screw, Bind 4x8 (Black) (AAL, BL)	
8-41X	ZS308846	Tapping Screw, #2 BR 3x8 (Oval Neck) (Black)	7-1-69
8-42	SK323197	Knob (A)	ATV-4041
8-43X	SK323198	Knob (A-BL)	ATV-4041
8-44X	ZW305013	Pop Rivet D3.2 (AAL)	7-6-9
8-45X	EW315767	△ AC Cord Set CEE 2 cores (CEE)	26-3-72
8-46X	EW322400	△ AC Cord Set BASEC 2 cores (UK)	26-3-73
8-47X	EW322401	△ AC Cord Set SAA 2 cores (SAA)	26-3-77

INDEX

1. MODEL AT-K03

Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.
BA320660	2-1	EF300574	4-55X	ER324337	2-R42	EW315767	5-29X	TA307160	4-49
BA320661	2-2	EF306088	4-53X	ER324337	2-R56	EW322400	5-30X	TA322250	4-48
BC322209	5-23	EF308933	4-51	ER324337	2-R68,69	EW322401	5-31X	ZG322566	5-18X
BC322210	5-25X	EF309389	4-52X	ER324337	2-R85	EZ631945	4-19X	ZG322579	5-13X
BC322212	5-24X	EF695766	4-54X	ER324337	2-R109	MR308836	4-35	ZS297641	4-32
BD320901	5-1	EI293185	2-IC3	ES310839	4-24	SA311742	4-38	ZS300436	4-6X
BD320902	5-2X	EI315491	2-IC4	ES324118	4-7	SB322576	5-11	ZS300436	5-19X
BF325731	4-45	EI322185	2-IC2	ES324238	4-8	SB322577	5-12X	ZS306021	4-34
BT293398	2-T4	EI322248	2-IC1	ES325736	2-SW1	SB325710	5-16	ZS308846	4-31
BT307204	2-T5	EI323230	3-IC1	ES665875	4-25X	SB325711	5-17X	ZS308846	4-57
BT325732	4-40	EI323231	3-X1	ET307234	2-TR24,25	SE322578	5-10X	ZS310343	5-7X
BT325733	4-41X	EI323255	3-IC2	ET316171	3-TR4	SE325712	5-14X	ZS315511	4-44
BT325734	4-42X	EJ301513	4-20X	ET316643	2-TR5TO14	SE325713	5-15X	ZS322570	5-26
BT325735	4-43X	EJ322246	4-21	ET316643	2-TR16TO20	SE325718	4-4X	ZS322580	5-27X
BT328136	4-36	EJ603685	4-14	ET316643	2-TR22,23	SE325719	4-5X	ZS325495	2-4
EC204671	4-27	EM323229	3-IND1	ET316643	2-TR27	SE325720	5-3	ZS325495	4-30
EC313534	2-C42	EO307186	2-T2	ET322244	2-TR3,4	SE325721	5-4X	ZS379350	4-37X
EC314688	4-28X	EO322239	2-T3	ET322244	2-TR28	SK325714	5-21	ZS417216	4-26
EC315335	2-C45	EO322241	2-T6	ET323232	2-TR29	SK325715	5-22X	ZS447840	5-20X
EC327382	4-29X	EO328137	2-L1	ET452531	2-TR21	SP322202	4-50	ZS462194	4-33X
EC432652	2-C69	EO328137	3-L1TO5	ET618873	2-TR1,2	SP325700	4-9	ZS565942	4-39X
EC435690	2-C44	ER307201	2-FL1,2	ET618873	3-TR1	SP325701	4-11X	ZS608185	4-23
EC513990	2-C31, 32	ER322181	2-FL4,5	ET631877	3-TR2	SP325702	4-10X	ZW281463	4-22
EC514001	2-C83	ER322237	2-FL3	EV-550023	2-VR2,3	SP325703	4-12X	ZW305013	5-28X
EC616342	2-VC1,2	ER322591	2-R12	EV551452	2-VR4,5	SP325704	4-13X	ZW436026	4-46
EC672287	2-C31,32	ER322591	2-R51	EV593368	2-VR1	SZ323193	5-5	ZW554624	4-47
ED237960	2-D8	ER322591	2-R102	EV604438	2-VR6	SZ323194	5-6X	ZW698308	4-15
ED303036	3-D3,4	ER322591	2-R132	EV604438	3-VR1,2	SZ325716	5-8		
ED315367	2-D7	ER322591	2-R140	EW305691	4-18X	SZ325717	5-9X		
ED316143	3-D1,2	ER324185	3-R8	EW306428	4-17	SZ325722	4-56		
ED316143	3-D7								
ED322184	4-1								
ED322215	4-2								
ED322238	2-D9								
ED322247	4-3								
ED323235	3-D6								
ED557447	2-D1TO6								
ED557447	2-D10TO14								
EE322245	4-16								
EE325737	2-3								

2. MODEL AT-V04/L

Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.
BA314029	2-3	ED316143	4-D7	ER316802	3-R110	ET322244	3-TR36	SP323166	7-17
BA320019	3-4	ED316143	5-D1,2	ER322181	2-FL5,6	ET322244	4-TR3	SP323167	7-18X
BA322951	3-1	ED322184	7-4	ER322237	2-FL4	ET323232	2-TR20	SP323168	7-19X
BA322952	3-2	ED322215	7-6	ER322591	3-R75	ET323232	3-TR13	SP323169	7-20X
BA322953	3-3	ED322247	7-5	ER323214	3-R125	ET452531	3-TR23	SP323170	7-21X
BA323290	2-1	ED322772	7-3	ER323217	3-FL1,2	ET618873	2-TR1,2	SP325063	7-22X
BA323291	2-2	ED322773	7-2	ER323258	2-FL1TO3	ET618873	3-TR14,15	SP325064	7-23X
BC322209	8-36	ED322810	3-D7	ER324184	2-R65	ET618873	4-TR1	SZ323193	8-22
BC322210	8-38X	ED323216	3-D28	ER324184	2-R108	ET618873	5-TR1	SZ323194	8-23
BC322212	8-37X	ED323235	4-D6	ER324184	2-R119	ET631877	4-TR2	TA307160	7-48
BD320023	8-3X	ED324194	4-D5	ER324184	2-R160	ET645917	2-TR7	TA314294	7-66
BD320024	8-4X	ED324195	3-D27	ER324184	2-R165	ET645917	2-TR17	TA322250	7-47
BD322959	8-1	ED324197	2-D11,12	ER324184	3-R80	EV317580	3-VR7	ZG322566	8-17X
BD322960	8-2X	ED562386	2-D14,15	ER324184	3-R89	EV323213	3-VR9	ZG322579	8-14X
BT293398	2-T10	ED562386	3-D17TO20	ER324185	2-R28	EV323225	7-14	ZS296381	8-30X
BT323239	2-T9	EE320330	7-30X	ER324185	2-R67	EV323226	7-15	ZS306021	7-39
BT323266	7-53X	EE323257	2-4	ER324185	3-R112	EV324349	7-49	ZS308846	7-24
BT323268	7-54X	EE323295	7-29	ER324185	4-R8	EV499882	3-VR6	ZS308846	8-41X
BT323269	7-55X	EF300574	7-63X	ER324186	3-R105	EV550023	2-VR2,3	ZS315511	7-56X
BT323294	7-52	EF300589	7-64X	ER324480	2-R7	EV550023	3-VR2	ZS322402	8-25
BT328136	2-T1	EF300590	7-65X	ER324480	2-R10	EV560136	2-VR5,6	ZS322570	8-39
EA315427	7-16X	EF308848	7-61X	ER324480	2-R13TO15	EV560136	3-VR1	ZS322580	8-40X
EC314688	7-44X	EF308933	7-59X	ER324480	2-R71,72	EV593368	2-VR1	ZS324482	7-50
EC321302	7-43	EF309389	7-58	ER324480	2-R151	EV604438	2-VR4	ZS325495	7-36
EC323252	2-C52,53	EF315334	7-60X	ER324480	2-R155	EV604438	3-VR4	ZS417216	6-1
EC323260	2-C29	EF322975	7-62X	ER324480	2-R171	EV604438	4-VR1,2	ZS417216	7-46
EC323847	3-C44	EI213390	2-IC6	ES310839	7-40	EV650891	3-VR5	ZS421806	3-5
EC324368	2-C109	EI293185	2-IC8	ES310839	7-42X	EW305691	7-33X	ZS447761	7-27
EC325109	3-C42	EI304657	3-IC1	ES315362	7-1	EW306428	7-32	ZS447840	8-35X
EC326588	3-C33	EI304657	3-IC5	ES319168	6-SW1	EW315767	8-45X	ZS462194	7-57
EC327382	7-45X	EI315491	2-IC9	ES323228	7-10	EW322400	8-46X	ZS463353	7-25
EC435690	2-C48	EI322185	2-IC5	ES323236	7-11	EW322401	8-47X	ZS522865	7-28
EC616342	2-VC1	EI322248	2-IC4	ES323237	7-12X	EZ631945	7-34	ZS523664	8-34X
EC616342	2-VC2,3	EI323207	3-IC2	ES323240	2-SW1	SA311742	7-37	ZS565942	7-38X
EC616342	6-VC1,2	EI323208	3-IC3	ES323241	2-SW2	SB316355	8-15	ZW259514	7-51X
EC672287	2-C52,53	EI323209	3-IC4	ES325076	2-SW3	SB321167	8-16X	ZW281463	8-31X
ED223547	3-D31	EI323210	3-IC6	ES665875	7-41X	SB322557	8-18	ZW305013	8-44X
ED224526	3-D30	EI323230	4-IC1	ET307193	3-TR22	SB322558	8-19X	ZW616004	8-24
ED303036	4-D3,4	EI323231	4-X1	ET316171	3-TR1	SB322576	8-12	ZW698308	7-9X
ED303155	3-D6	EI323247	2-IC7	ET316171	3-TR2	SB322577	8-13X		
ED316143	2-D1TO8	EI323255	4-IC2	ET316171	3-TR3,4	SB-323183	8-26		
ED316143	2-D13	EI573838	2-IC1TO3	ET316171	3-TR5,6	SB323184	8-27X		
ED316143	3-D1	EJ301513	7-35X	ET316171	3-TR8TO12	SB323186	8-32		
ED316143	3-D2	EJ323227	7-13	ET316171	3-TR16TO21	SB323187	8-33X		
ED316143	3-D3	EJ323242	2-TM1	ET316171	3-TR25TO27	SB323189	8-28		
ED316143	3-D4	EJ323243	2-J1	ET316171	3-TR29	SB323190	8-29X		
ED316143	3-D5	EM323229	4-IND1	ET316171	3-TR31	SE317512	8-6X		
ED316143	3-8TO12	EO243977	3-L1	ET316171	3-TR32TO35	SE317513	8-7X		
ED316143	3-D13,14	EO322239	2-T2	ET316171	4-TR4	SE322559	8-8X		
ED316143	3-D15,16	EO322241	2-T3	ET316171	5-TR2	SE322578	8-5X		
ED316143	3-D21TO26	EO323244	2-T11	ET316643	2-TR3,4	SE323182	8-9X		
ED316143	3-D29	EO325068	6-T1	ET316643	2-TR8TO13	SE323185	8-10X		
ED316143	3-D32	EO325070	2-T8	ET316643	2-TR16	SE323191	8-20		
ED316143	3-D33,34	EO325089	2-T7	ET316643	2-TR18,19	SE323192	8-21X		
ED316143	3-D35,36	EO325770	2-T12	ET316643	2-TR21TO24	SE323195	7-7X		
ED316143	3-D37,38	EO326186	5-T1	ET322244	2-TR5,6	SE323196	7-8X		
ED316143	3-D39	EO328137	2-L1	ET322244	3-TR7	SE325061	8-11X		
ED316143	3-D40TO43	EO328137	4-L1TO5	ET322244	3-TR24	SK323197	8-42		
ED316143	3-D44	EO350774	2-L2	ET322244	3-TR28	SK323198	8-43X		
ED316143	4-D1,2	EO350774	6-L1	ET322244	3-TR30	SK607127	7-31X		

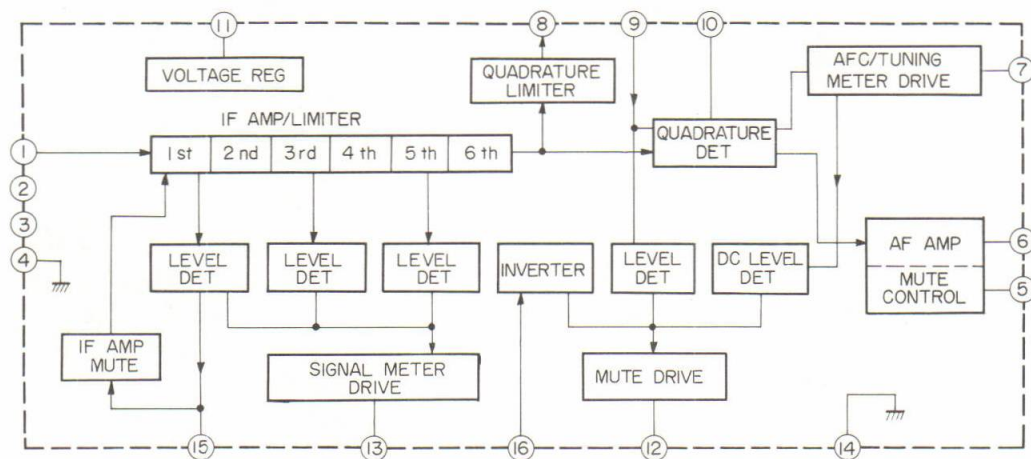
SECTION 4

SCHEMATIC DIAGRAM

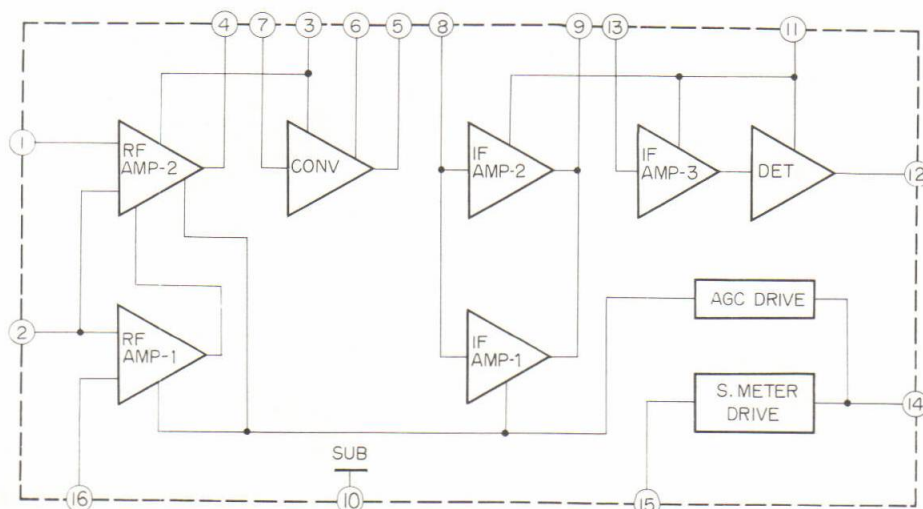
1. SCHEMATIC DIAGRAM OF ICs
2. AT-K03 NO. 1601226A SCHEMATIC DIAGRAM
3. AT-V04, AT-V04L NO. 2-1 1601218A TUNER SCHEMATIC DIAGRAM
4. AT-V04, AT-V04L NO. 2-2 1601219A SYNTHESIZER SCHEMATIC DIAGRAM

MODEL AT-K03, AT-V04/L

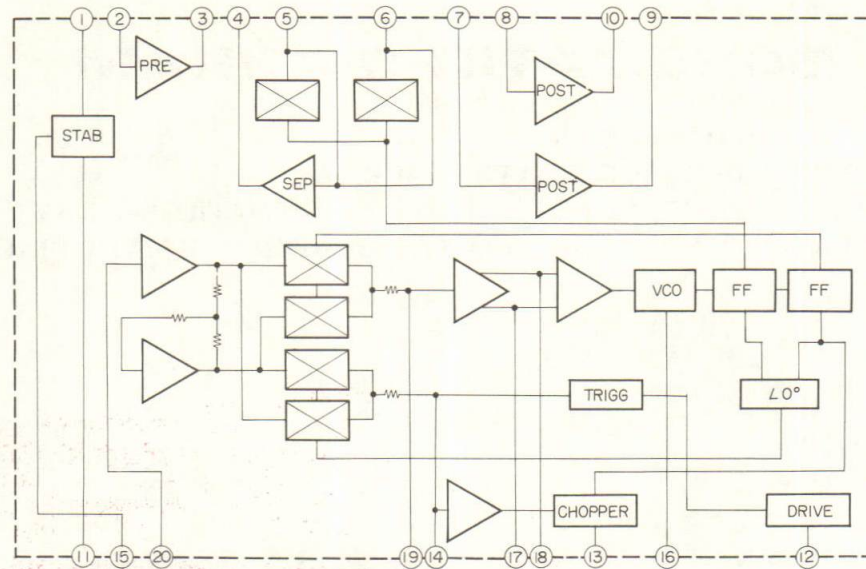
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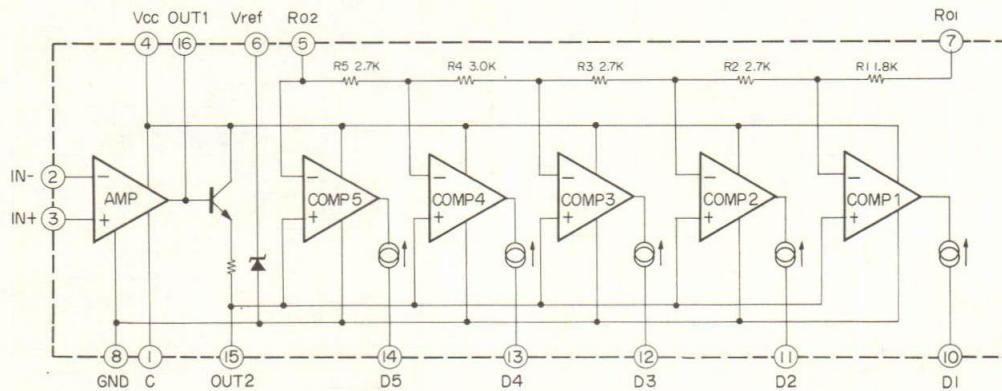
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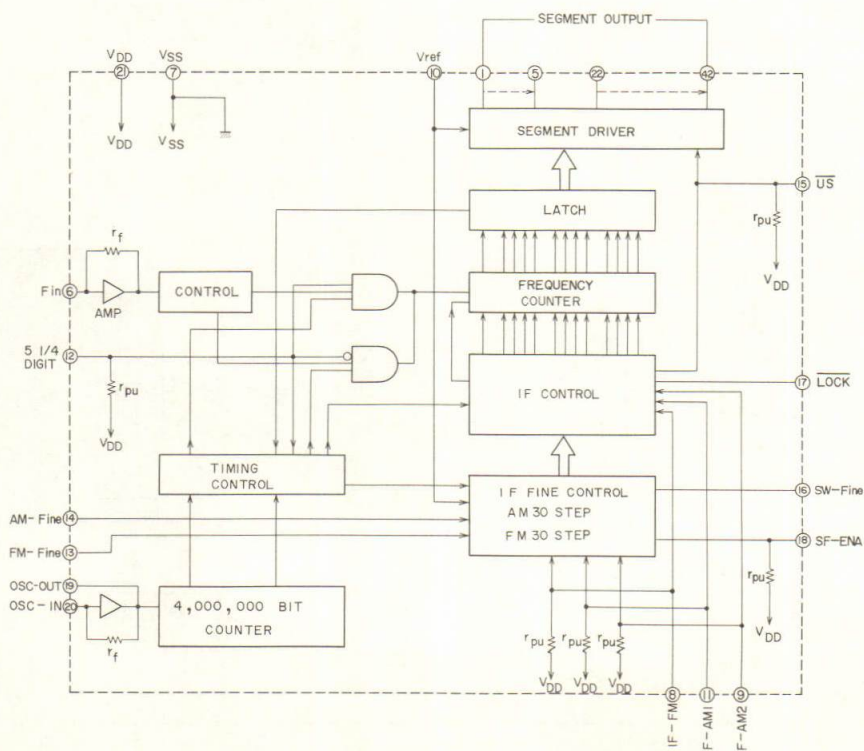
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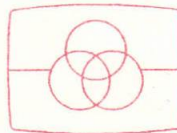
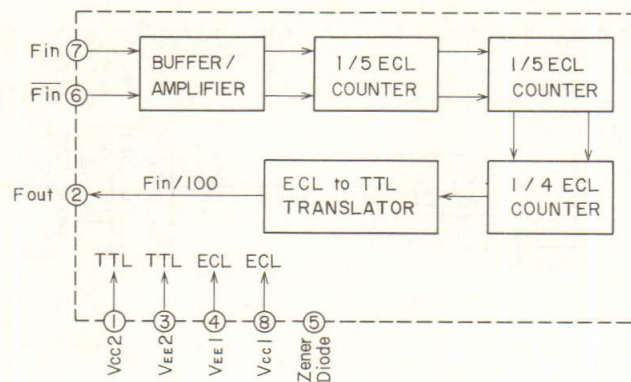
LB1405S



LC7258



SP8629



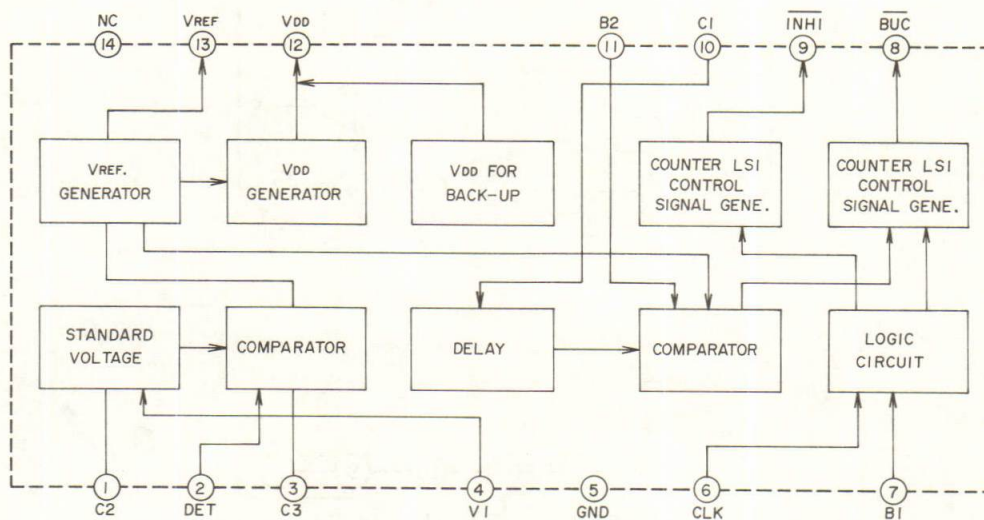
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MODEL AT-V04/L

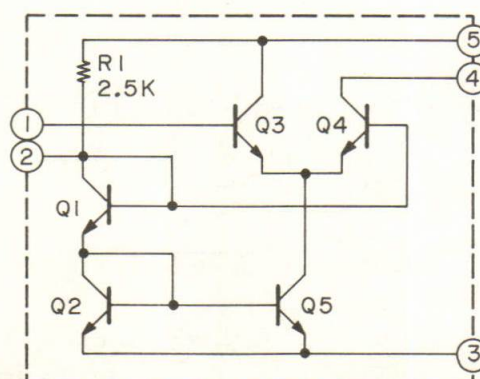
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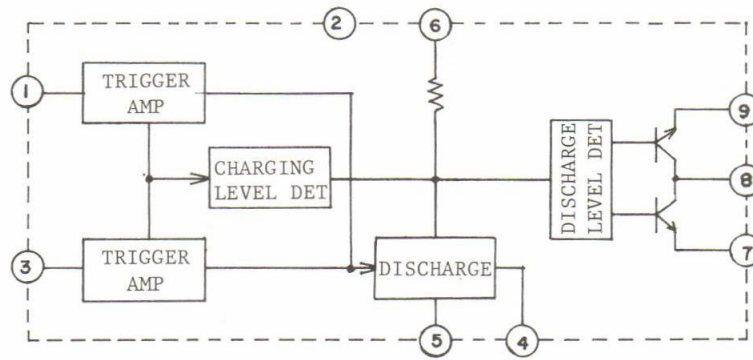
LOGIC CHART

BI	B2	CLK	VDD	VREF	BUC	INHI	REMARK
L	H	L	≈5V	0V	L	L	AT BUCK-UP
H	H	L	≈9V	8V	H	H	RADIO "ON"
L	H	H	≈9V	8V	L	H	START THE TIME READING AT RADIO "OFF"
H	H	H	≈9V	8V	H	H	START THE TIME READING AT RADIO "ON"

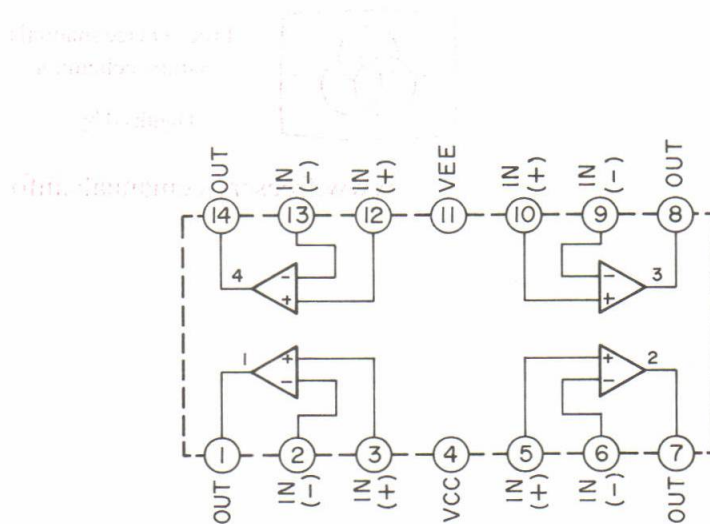
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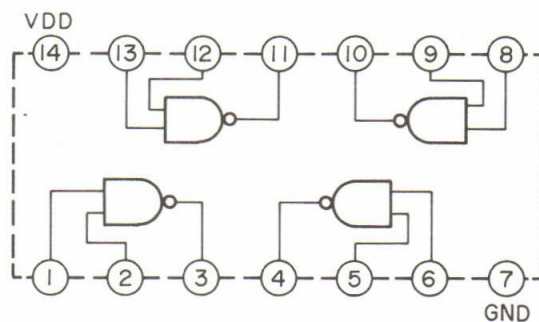
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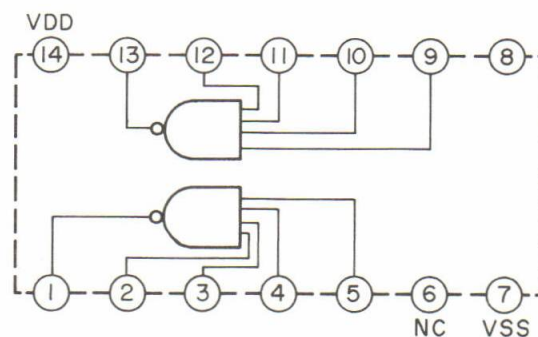
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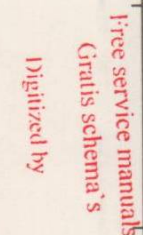
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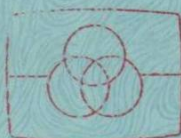
TC4012BP







AT-K03
SCHEMATIC DIAGRAM
NO. 1601226A



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