

AIWA®

S/M Code No. 85-012W
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SERVICE MANUAL

STEREO TUNER

MODEL NO. TX-80



TYPE. HB, UB, EB, KB, ZB

SPECIFICATIONS

Frequency range	LW (E, Z, K model only): 150 kHz to 280 kHz		<LW section > (E, Z, K model only)
	AM (MW): 530 kHz to 1605 kHz		LW sensitivity
	FM: 88 MHz to 108.0 MHz		Loop antenna
< FM section >			Power requirements
Usable sensitivity	300 Ω (Except Z model)	75 Ω	TX-80 U
(IHF)	1.8 μV (MONO)	0.9 μV (MONO)	AC 120 V, 60 Hz
(DIN)	1.4 μV (MONO)	0.7 μV (MONO)	TX-80 E, Z
S/N 50 dB sensitivity	45 μV (STEREO)	22.5 μV (STEREO)	AC 220 V, 50/60 Hz
Signal-to-noise ratio (IHF)	74 dB (STEREO)	78 dB (MONO)	TX-80 K
Total harmonic distortion (1 kHz)	0.08% (MONO)		AC 240 V, 50/60 Hz
(40 kHz Z model only)	0.16% (STEREO)		TX-80 H
Capture ratio	1.5 dB		AC 120 V/220 V—240 V, 50/60 Hz
Alternate channel selectivity	70 dB		Power consumption
Stereo separation	50 dB at 1 kHz		Dimensions
Frequency response	+0.5, -1.5 dB from 30 Hz to 15 kHz		Weight
Image interference	75 dB		Accessories
AM suppression ratio	55 dB		FM feeder antenna (Except Z model)
Output level	180 mV		AM loop antenna
Harmonic spurious	90 dB		
< MW section >			
MW sensitivity	H, U,	E, Z, K	
Loop antenna	300 μV/m	400 μV/m	
Distortion	0.5%	0.7%	
Signal-to-noise ratio	53 dB (30%, 100 mV/m input)		
Image ratio	45 dB		
Selectivity (9 kHz)	30 dB		

● Design and specifications are subject to change without notice.

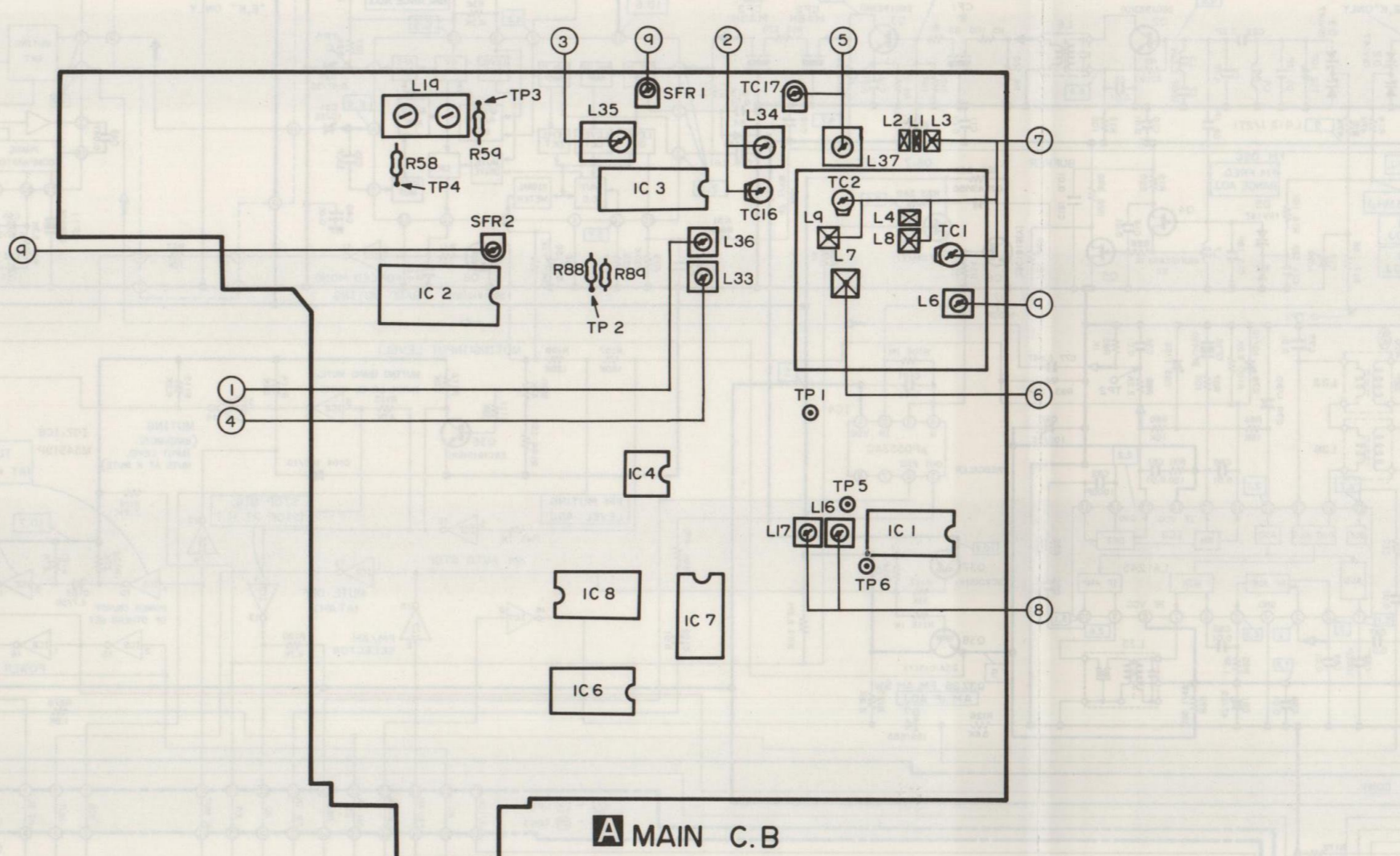
ELECTRICAL MAIN PARTS LIST (TX-80)

+++ mark denotes a component of assembled part which part code is represented by a previously stated component.
*-mark means less required items and availabilities may be limited.

CAPACITORS
No mark, U, UF: uF
P, PF : pF
COILS
MMH: mH
UH : uH
FUSE
MMA: mA

Table with 4 columns: Ref. No., Part No., Description, Ref. No., Part No., Description. It lists various electronic components like capacitors, coils, fuses, transistors, and ICs across different board sections.

ADJUSTMENT



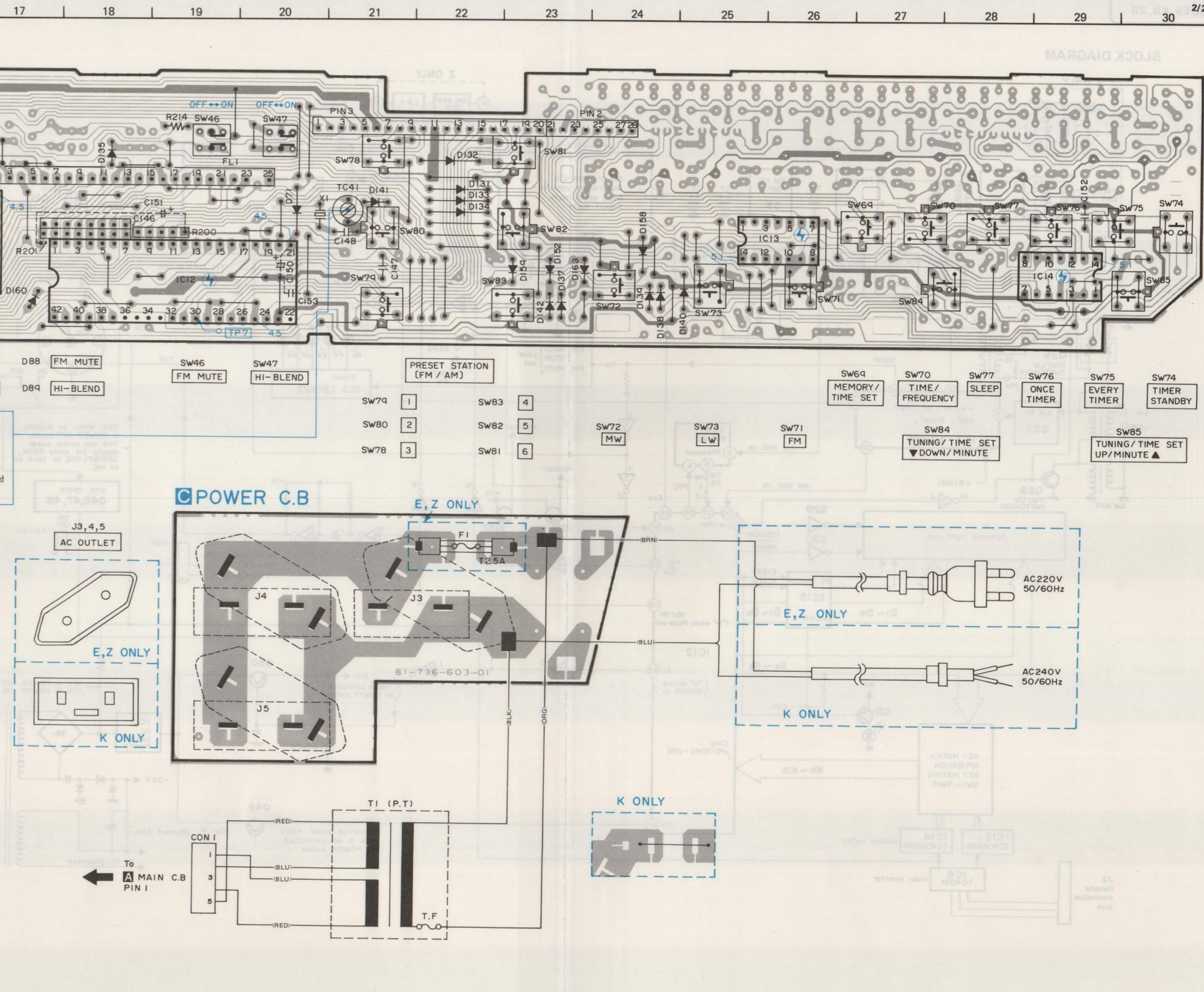
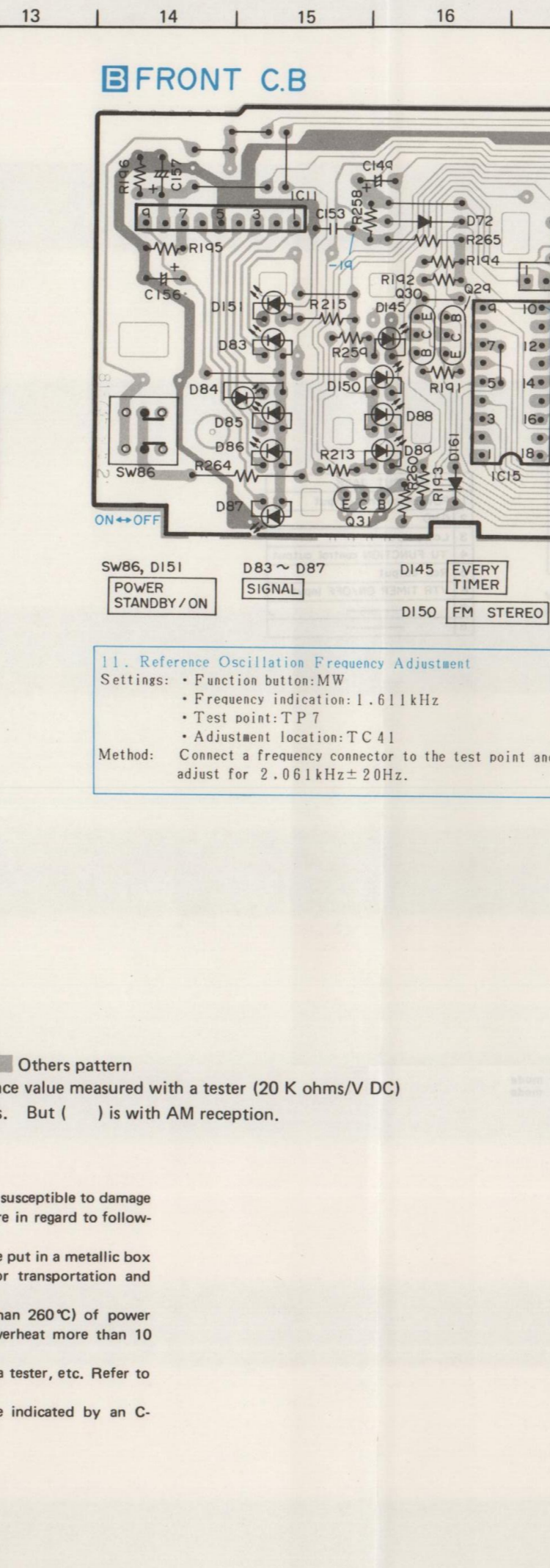
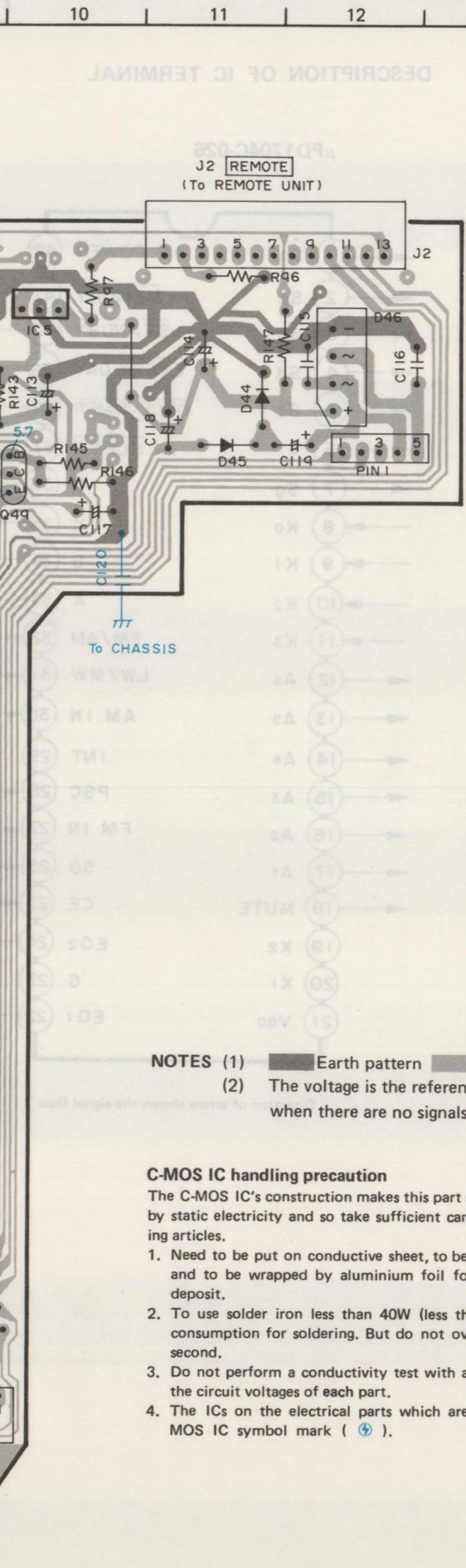
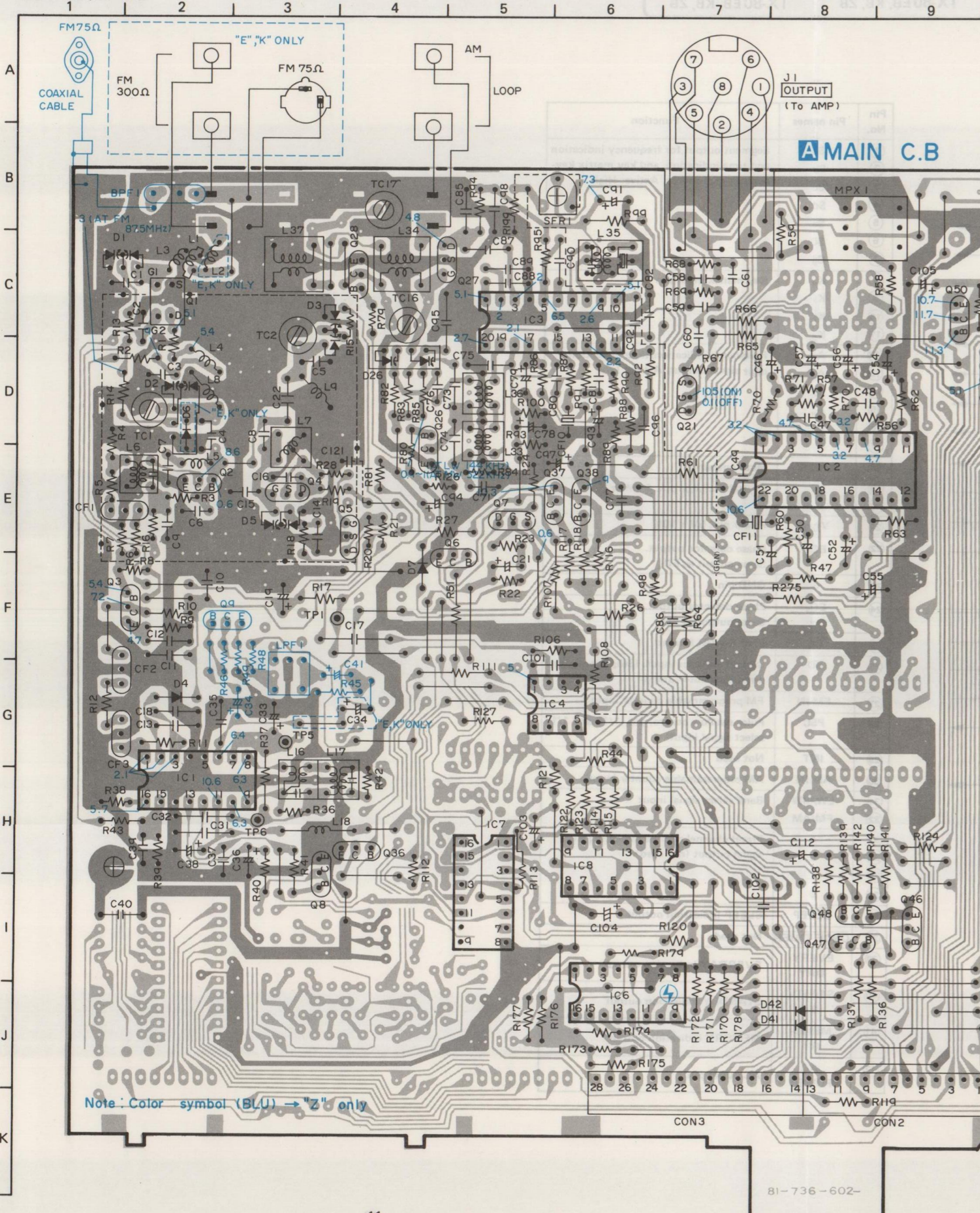
- 1. MW Band Width Adjustment
L 36. 522kHz
Method: Adjust for voltage of 0.9 ± 0.05 V at TP-1.
2. MW Tracking Adjustment
L 34. 603kHz
TC 16. 1.404kHz
3. AM IF Adjustment
L 35. 603kHz
4. LW Band Width Adjustment
L 33. 144kHz
Method: Adjust for voltage of 0.9 ± 0.05V. at TP-1.
5. LW Tracking Adjustment
L 37. 150kHz
TC 17. 350kHz
6. FM Band Width Adjustment
L 7. 87.5kHz
Method: Adjust for voltage of 3.0 ± 0.1 V at TP-1.
7. FM Tracking Adjustment
L 3, L 8, L 9. 87.5MHz
TC 1, TC 2. 108.0MHz
8. FM DC Balance Adjustment
Settings: • Input signal: 98MHz, 60dB, 75kHz div.
• Test point: TP- 5 & 6
• Adjustment location: L 16, L 17
Method: Adjustment L 16 for voltage of 0 ± 20mV at the test points, and also adjust L 17 for distortion of 0.25% or less. Repeat this procedure to satisfy the specs.
9. FM Stereo Distortion Adjustment
Settings: • Input signal: 98MHz, 60dB, Pilot 10kHz div.
• Test point: TP- 3 (Lch), TP- 4 (Rch)
• Adjustment location: L 6
Method: Adjust for distortion of 0.4% or less.
10. FM Muting Level Adjustment
Settings: • Input signal 283MHz, 25dB
• FM MUTE button: ON
• Adjustment location: SFR 2
Method: Adjust for muting level of 25 ± 2dB.
11. FM Muting Level Adjustment
Settings: • Input signal: 98MHz, 25dB
• FM MUTE button: ON
• Adjustment location: SFR 1
Method: Adjust for muting level of 25 ± 2dB.

Note; Combination Circuit Board
The parts on the electrical parts list which are indicated by an asterisk (*) are supplied as one single combined circuit board. Therefore, they will not be supplied separately. If this becomes necessary, please order the entire circuit board.

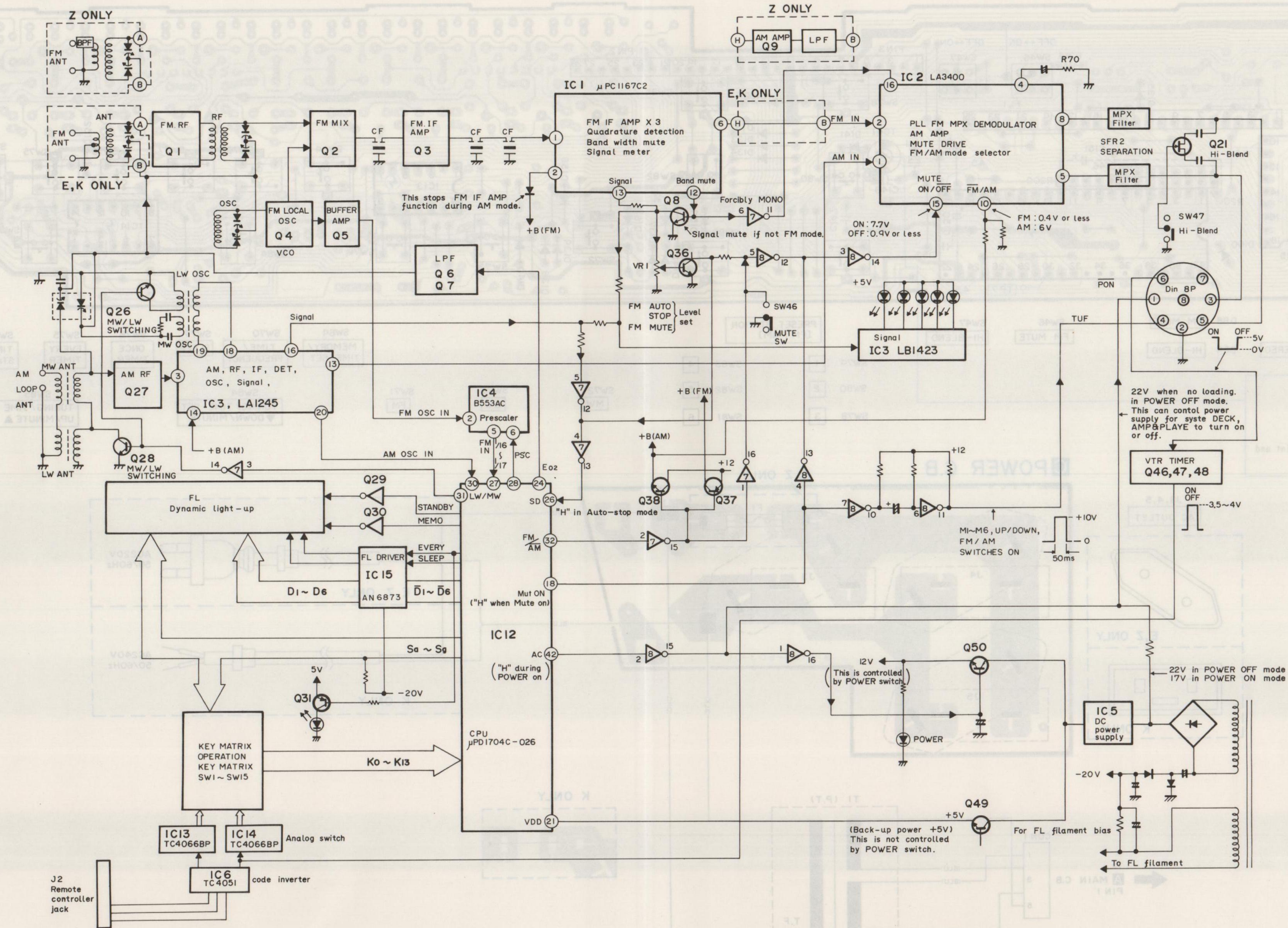
Combination Circuit Board 81-736-601
PCB-A 81-736-602
PCB-C 81-736-603

Safety component symbol
This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

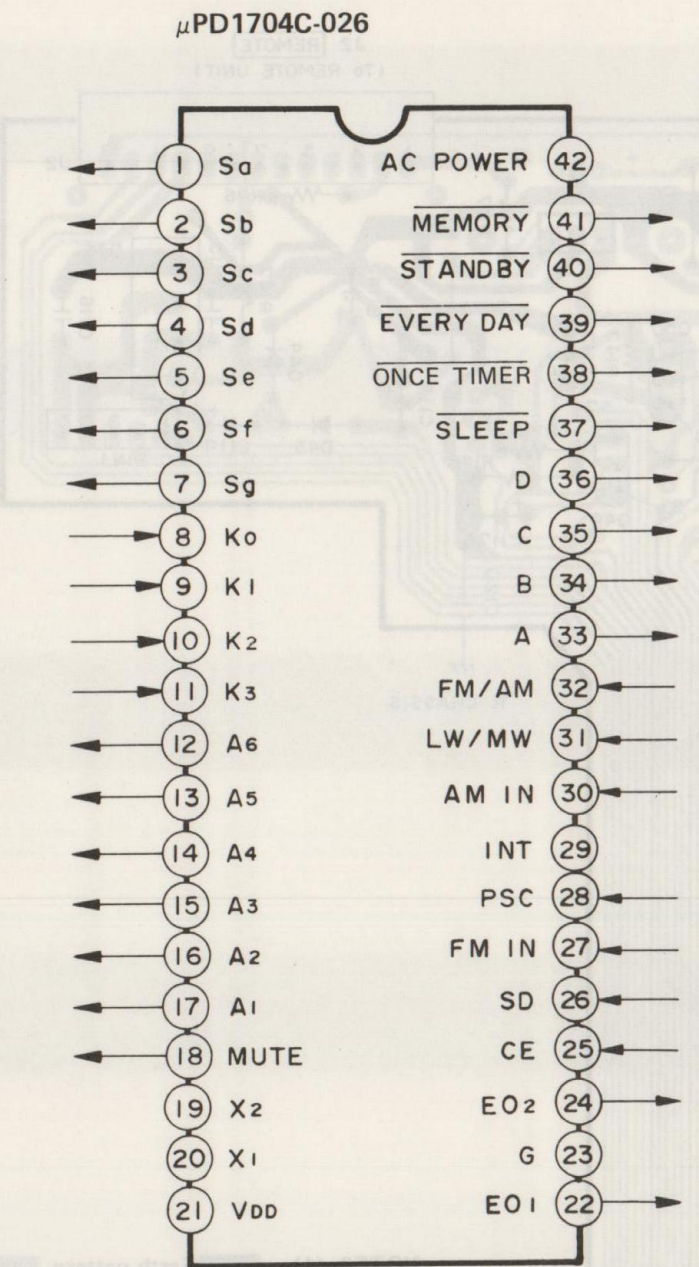
C-MOS IC handling precaution
The C-MOS IC's construction makes this part susceptible to damage by static electricity and so take sufficient care in regard to following articles.
1. Need to be put on conductive sheet, to be put in a metallic box and to be wrapped by aluminium foil for transportation and deposit.
2. To use solder iron less than 40W (less than 260°C) of power consumption for soldering. But do not overheat more than 10 second.
3. Do not perform a conductivity test with a tester, etc. Refer to the circuit voltages of each part.
4. The ICs on the electrical parts which are indicated by an C-MOS IC symbol mark (⊕).



BLOCK DIAGRAM



DESCRIPTION OF IC TERMINAL



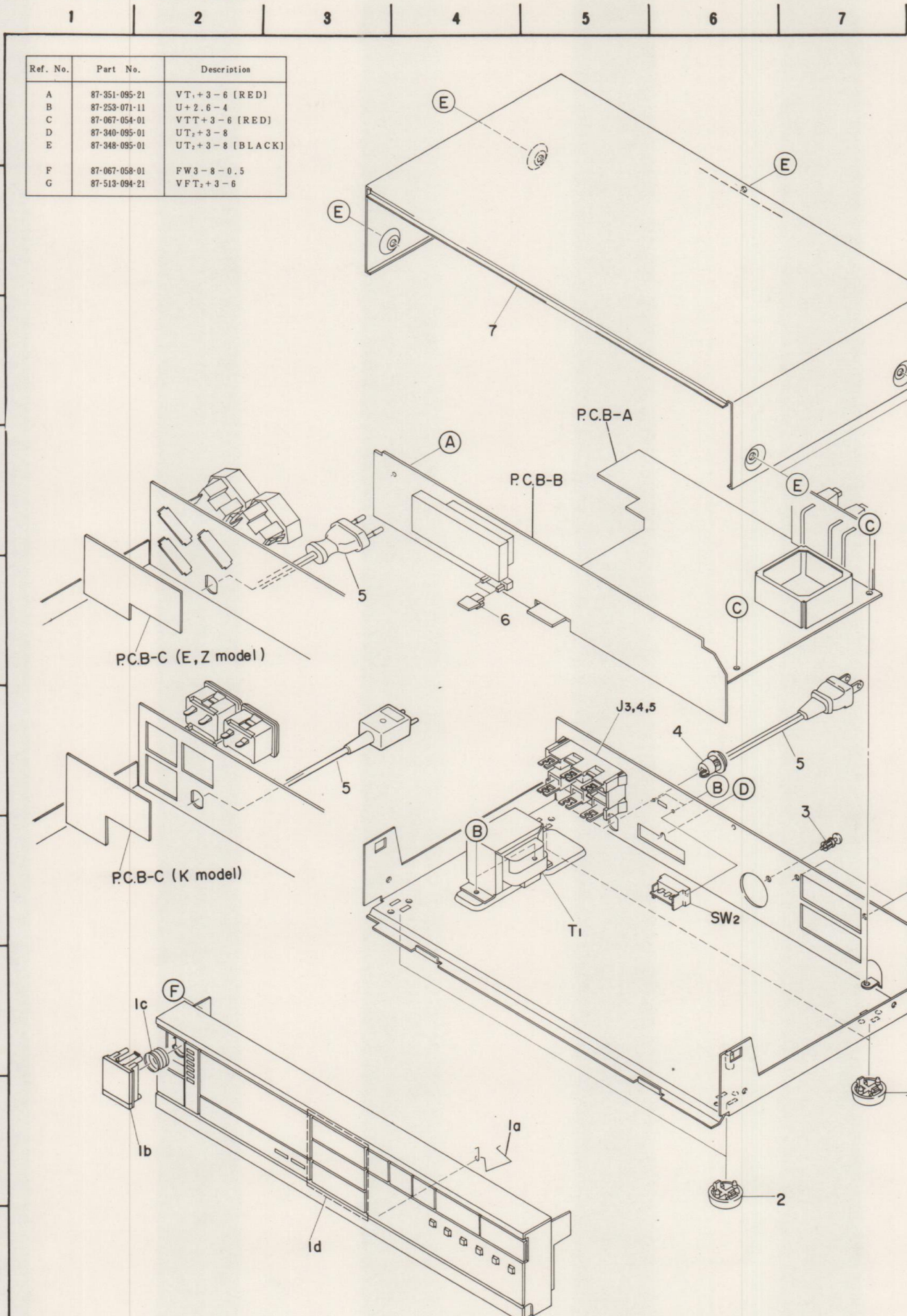
Direction of arrow shows the signal flow

OUTPUT JACK

1	POWER control output
2	GND
3	Lch output
4	TU FUNCTION control output
5	Rch output
6	VTR TIMER ON/OFF input
7	
8	

Pin No.	Pin names	Function
1	Sa	Segment output for frequency indication and time indication, and key matrix key-return signal source. Active: High
2	Sb	
3	Sc	
4	Sd	
5	Se	
6	Sf	
7	Sg	
8	K ₀	Key matrix input pin
9	K ₁	
10	K ₂	
11	K ₃	
12	A ₆	
13	A ₅	Frequency indication/time indication digit signal output. Active: Low
14	A ₄	
15	A ₃	
16	A ₂	
17	A ₁	
18	MUTE	Mute output
19	X ₂	Crystal oscillator pin. 4.5MHz
20	X ₁	
21	VDD	Power pin. 5V ± 10%
22	E0 ₁	Phase detector output. Same output as E0 ₂
23	G	GND pin
24	E0 ₂	Phase detector output. Same output as E0 ₁
25	CE	Chip ENABLE input
26	SD	Station detector input. (Stop input signal pin during auto-tuning)
27	FM IN	FM programmable counter input
28	PSC	Pulse swallow control pin (1/16 and 1/17 select signal input)
29	INT	Not used
30	AM IN	AM programmable counter input
31	LW/MW	Band select signal input
32	FM/AM	FM/AM
33	A	Preset channel address indicating BCD signal output (not used)
34	B	
35	C	
36	D	
37	SLEEP	SLEEP indication output
38	ONCE TIMER	Not used
39	EVERY DAY	EVERDAY indication output
40	STANDBY	STANDBY indication output
41	MEMORY	MEMORY indication output
42	AC POWER	AC outlet pin

EXPLODED VIEW



PARTS LIST

MECHANICAL PARTS

※ mark in this part list shows exclusive part.
 ★ mark means less required items availabilities may be limited.

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	1	★81-736-044	FRONT CABINET UB Ass'y (H, U only)	※	1
		★81-736-045	FRONT CABINET EB Ass'y (E, K, Z only)	※	1
	1a	★81-735-212	T-SPRING, C		1
	1b	★81-740-050	PUSH-KEY POWER B Ass'y		1
	1c	★81-740-208	C-SPRING, POWER		1
	1d	★81-735-043	PUSH-KEY PRE B Ass'y		1
	2	★87-055-057	FOOT B		4
	3	★87-085-102	NYLON RIVET 3.5-5.5		3
	4	★87-085-184	CORD BUSHING (H, U only)		1
		★87-085-185	CORD BUSHING (E, K, Z only)		1
	5	★87-034-958	AC POWER CORD (H only)		1
		★87-034-578	AC POWER CORD (U only)		1
		★87-034-877	AC POWER CORD (E, Z only)		1
		★87-034-711	AC POWER CORD (K only)		1
	6	★81-735-014	PUSH-BUTTON H		2
	7	★82-735-056	STEEL CABINET TB		1

ACCESSORIES/PACKAGE LIST

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	1	★81-736-904	INSTRUCTION BOOKLET	※	1
	2	★82-795-670	LOOP ANTENNA B (U) Ass'y		1
	3	★87-032-845	SIEMENS PLUG (HB only)		1
	4	★87-043-065	FM FEEDER ANTENNA (EXCEPT ZB)		1

