

FM STEREO/FM-AM SIGNAL GENERATOR

SG-5110

FM-AM SIGNAL GENERATOR

SG-5115

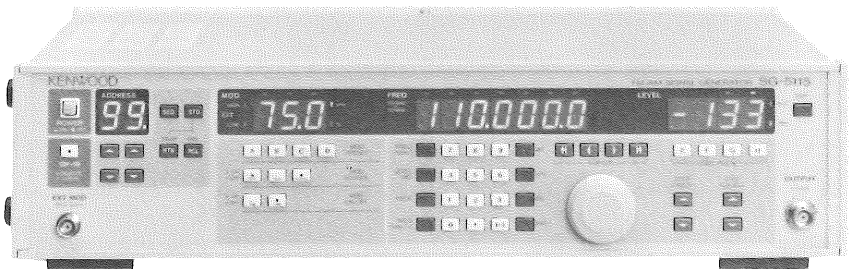
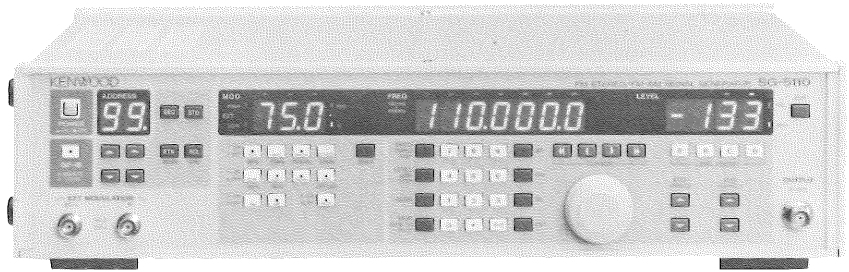
OPTION

REMOTE CONTROLLER

RT-110

SERVICE MANUAL

KENWOOD CORPORATION



WARNING

The following instructions are for use by qualified personnel only. To avoid electric shock, do not perform any servicing other than contained in the operating instructions unless you are qualified to do so.

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ADJUSTMENT

To obtain the best performance, periodically calibrate the unit. Sometimes, only one mode need be calibrated, while at other times, all modes should be calibrated. When one mode is calibrated, it must be noted that the other modes may be affected. When calibrating all modes, perform the calibration in the specified sequence.

The following calibration required an accurate measuring instrument and an insulated adjusting flat blade screwdriver. If they are not available, contact your dealer. For optimum adjustment, turn the power on and warm up the unit sufficiently (more than 30 minutes) before starting.

Before calibrating the scope, check the power supply voltage.

TEST EQUIPMENT REQUIRED

The following instrument or their equivalent should be used for making adjustment.

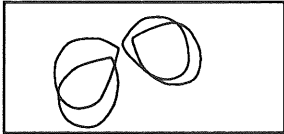
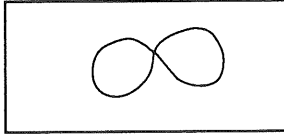
Test Equipment	Model	Maker
Audio Analyzer	8903B	H.P.
Measuring Receiver	8902A	H.P.
Sensor Module	11722A	H.P.
Oscilloscope	CS-8010	KENWOOD

1. MODULATOR Note: Parenthesized items are for SG-5115.

Item	Adjustment VR	P.C.B.	Procedure
INT OSC Level	VR5	SG-5110: W02-2118-08 SG-5115: W02-2123-08	Apply FM 50 kHz dev or AM 50% modulation and adjust VR5 so that the analog voltmeter indicates 1.5 V r.m.s. at pin 6 of U2.
AM Level	VR1 (VR4)		Adjust VR1 (VR4) so that the voltage at pin 14 of U9 is 0.34 V r.m.s. for 50% or 0.4 V r.m.s. for 60%. However, set the display level output in the device to 100 dB μ .
Level	VR4 (VR1)		Set the display level of the device to 100 dB μ . Then measure the voltage at pin 14 of U9 using a digital voltmeter, and adjust VR4 (VR1) so that the voltage is: <ul style="list-style-type: none"> ● 0.959 VDC for 100 dBμ, ● 0.864 VDC for 99 dBμ, ● 0.769 VDC for 98 dBμ or ● 0.690 VDC for 97 dBμ with 100 dB μ as standard.
FM Level	VR3 (VR2)		Adjust VR3 (VR2) so that the voltage at pin 1 of U9 is: <ul style="list-style-type: none"> 1.9 V r.m.s. when 99.5 kHz modulated, or 1 V r.m.s. when 50 kHz modulated with 99.5 kHz modulation case as standard.
H/L Level	VR2 (VR3)		Adjust VR2 (VR3) so that the voltage of R39 is 2.13 VDC.

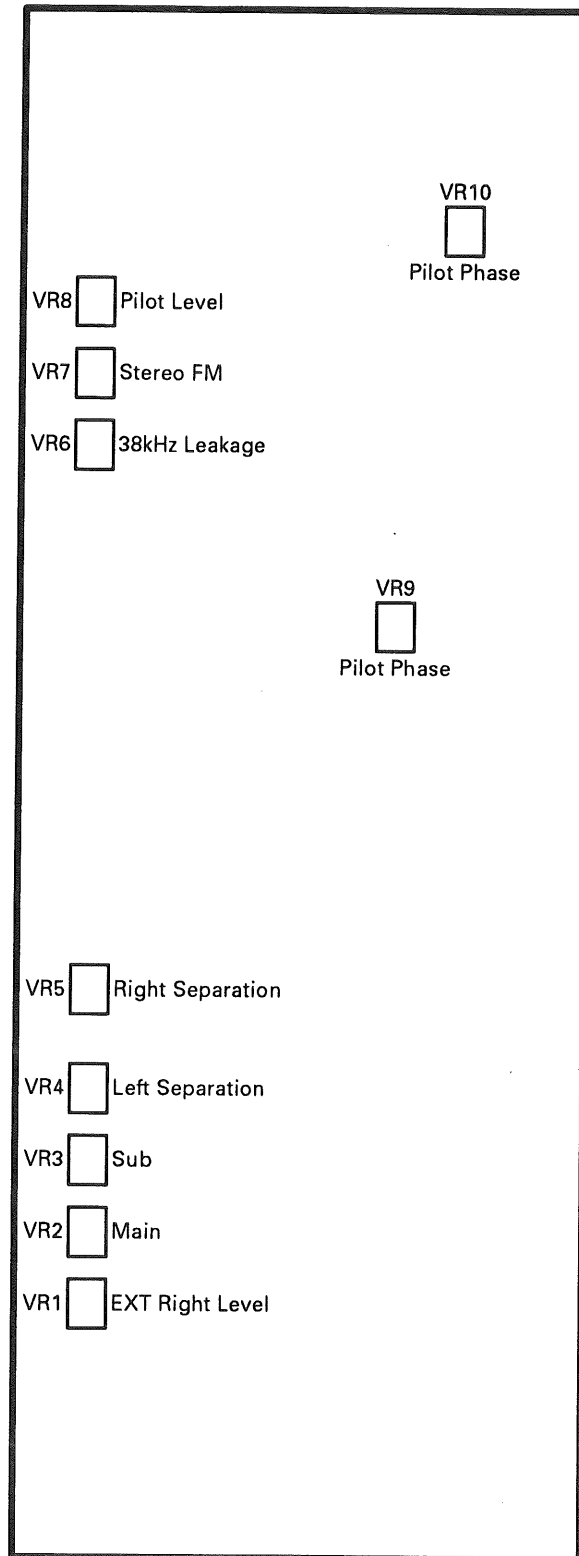
ADJUSTMENT

2. STEREO (only SG-5110)

Item	Adjustment VR (TC)	P.C.B.	Procedure
Negative carrier wave 38 kHz Balance	VR6	W02-2119-08	Stereo: ON, Mod: ON, EXT: ON, Pilot: ON ● Reduce the left and right input signals to 0, then reduce the input signal to 0 state with EXT ON. ● Set each mode in Main, Left, Right and Sub and turn Pilot OFF. ● Connect the oscilloscope to Composite out (TP3). ● Adjust VR6 so that the 38 kHz leakage component is minimized.
Main	VR2		Stereo: ON, Mod: ON, 1 kHz: ON, Main: ON, Pilot: ON ● Connect the oscilloscope to Composite out (TP3). ● Adjust VR2 using the waveforms on the oscilloscope so that the phases are the same.
Sub	VR3		Stereo: ON, Mod: ON, 1 kHz: ON, Sub: ON, Pilot: ON ● Connect the oscilloscope to Composite out (TP3). ● Adjust VR3 so that the wave heights on the oscilloscope (i.e. the levels) are the same.
Pilot signal phase	VR6		Stereo: ON, Mod: ON, Pilot: ON, EXT: ON ● Connect Composite out (TP3) to Y axis input of the oscilloscope, and Pilot out (TP4) to X axis of the oscilloscope respectively. ● Adjust VR so that the phases of the two signals are the same.
Phases of pilot signal and 38 kHz negative carrier wave	VR9 VR10		Stereo: ON, Mod: ON, Sub: ON, Pilot: ON, 1 kHz: ON ● Connect the measuring apparatus in the same way as for the pilot signal phases. ● If the phases are different, adjust VRs 9 and 10.
			<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>(a) Phases are different</p> </div> <div style="text-align: center;">  <p>(b) Phases are the same</p> </div> </div>
Pilot Level	VR8		● Turn Pilot ON, set the level to 10% and turn Mod OFF. ● If the modulation does not become 7.5 kHz, adjust VR8.
Main Level	VR7		● Turn Mod ON, set the level to 90% and turn Pilot OFF. ● If the modulation does not become 67.5 kHz, adjust VR7.
FM Stereo separation	VR5 VR4	FM Stereo: 100%, Pilot: OFF (90%) 100 dB μ , INT: 1 kHz, Frequency: 100 MHz ● Select Right, maximize the scope and adjust VR5 so that the waveform becomes flat. ● Select Left and adjust VR4 so that the waveform becomes flat.	

ADJUSTMENT

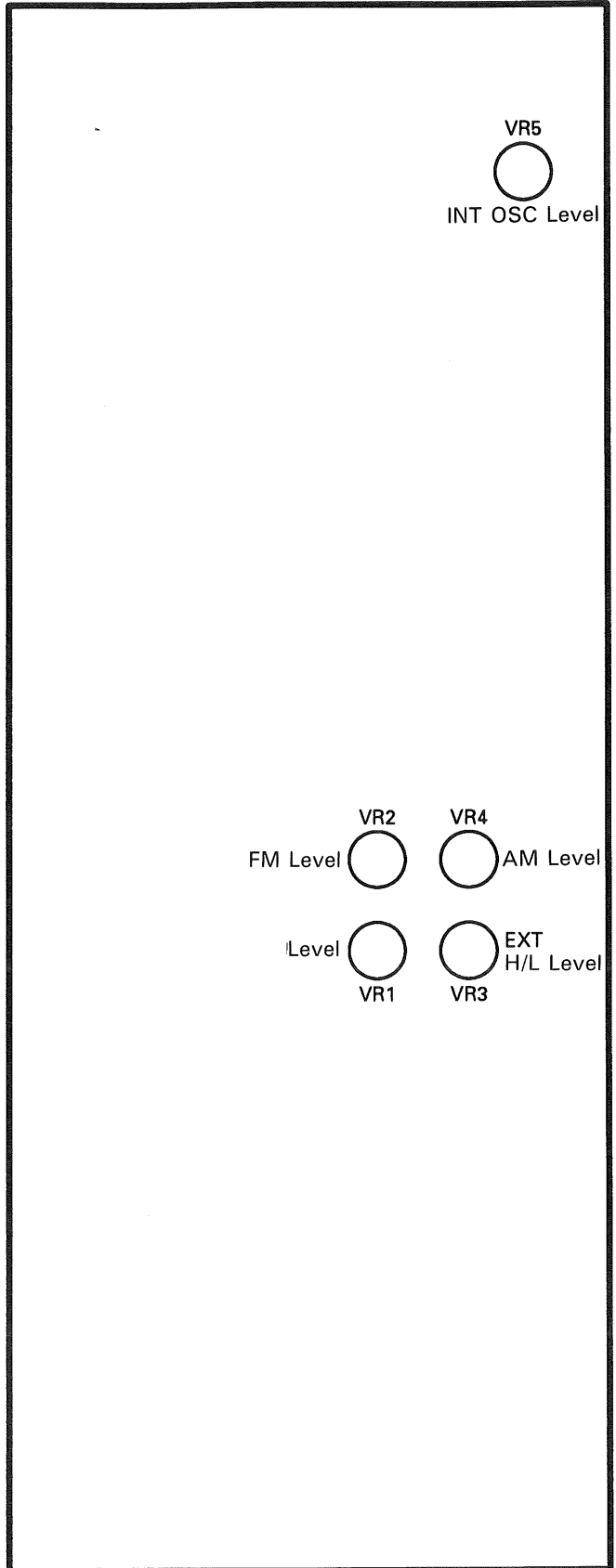
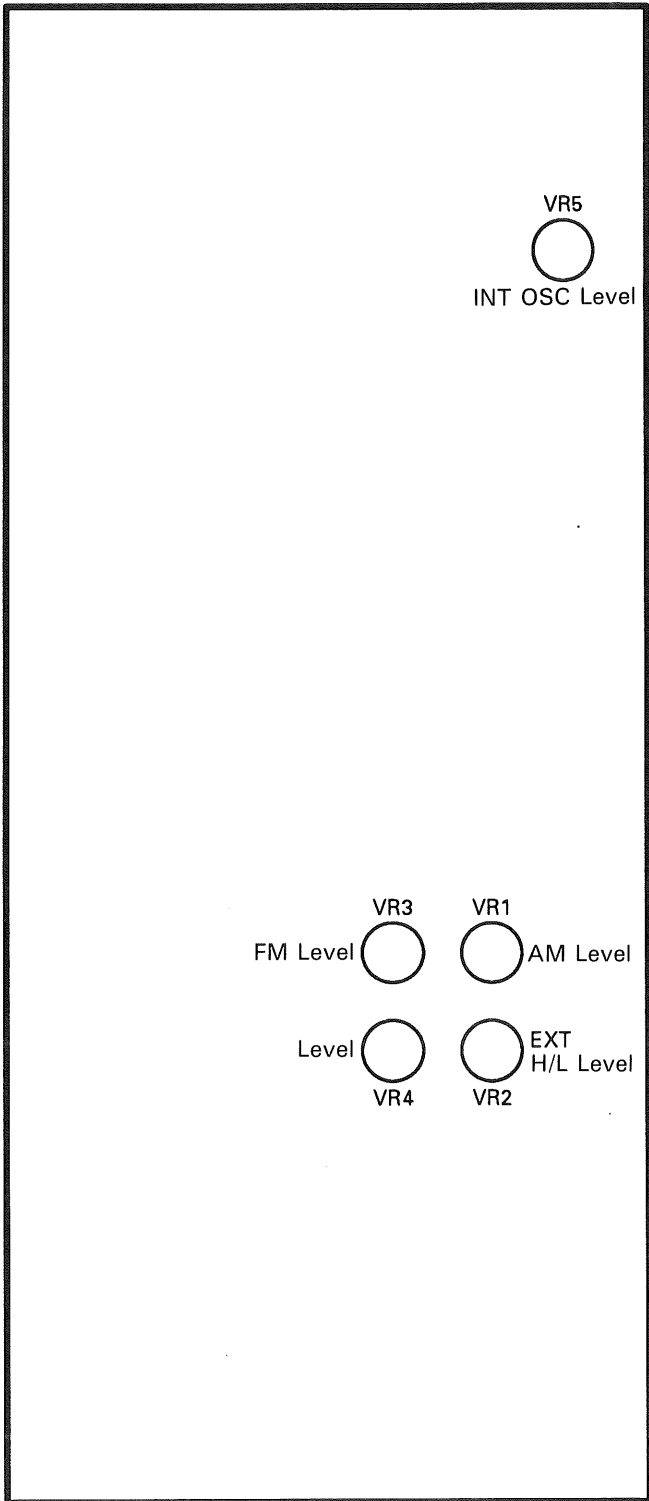
SG-5110 STEREO UNIT (W02-2119-08)



ADJUSTMENT

SG-5110 AF UNIT (W02-2118-08)

SG-5115 AF UNIT (W02-2123-08)



PARTS LIST

SG-5110 UNIT Y77-1330-00

REF. NO	PARTS NO	NAME & DESCRIPTION	REF. NO	PARTS NO	NAME & DESCRIPTION
	A01-1269-08	CASE, TOP		K29-0843-08	BUTTON;「LEFT」, WHITE/HOLE
	A01-1270-08	CASE, BOTTOM		K29-0844-08	BUTTON;「RIGHT」, WHITE/HOLE
	A13-0989-08	EXTRUDING, UP/DOWN		K29-0845-08	BUTTON;「SUBJ」, WHITE/HOLE
	A13-0990-08	DIE CASTING, LEFT/RIGHT		K29-0846-08	BUTTON;「FM」, WHITE/HOLE
	A13-0991-08	FRAME, RIGHT		K29-0847-08	BUTTON;「AM」, WHITE/HOLE
	A13-0992-08	FRAME, LEFT		K29-0848-08	BUTTON;「PILOT」, WHITE
	A63-0073-08	FRONT PANEL		K29-0849-08	BUTTON; WHITE/HOLE
	A83-0042-08	REAR PANEL		K29-0850-08	BUTTON; GRAY
	B09-0407-08	HANDLE CAP		K29-0851-08	BUTTON; GRAY/HOLE
	B42-3861-08	LABEL, SERIAL NO.		K29-0852-08	BUTTON;「SEQ」, GRAY
	B63-0079-00	INSTRUCTION MANUAL; JAPANESE		K29-0853-08	BUTTON;「STO」, GRAY
	B63-0080-00	INSTRUCTION MANUAL; ENGLISH		K29-0854-08	BUTTON;「RTN」, GRAY
	B63-0115-00	GP-1B MANUAL; JAPANESE		K29-0855-08	BUTTON;「RCL」, GRAY
	B63-0116-00	GP-1B MANUAL; ENGLISH		K29-0856-08	BUTTON;「J」, BLUE
	B73-0036-08	DECORATIVE PANEL		K29-0857-08	BUTTON;「<」, BLUE
	E04-0266-08	BNC CONNECTOR; OUTPUT		K29-0858-08	BUTTON;「>」, BLUE
	E04-0267-08	BNC CONNECTOR; EXT MODULATION		K29-0859-08	BUTTON; POWER SW, YELLOW
	E04-0268-08	RCA-JACK		L01-9983-08	POWER TRANSFORMER, TROIDAL
	E30-1644-15	BS POWER CORD		L01-9986-08	POWER TRANSFORMER, EI CORE
	E30-1818-05	JIS POWER CORD SET		N09-4503-08	SCREW, FLUSH HD M3X5
	E30-1819-05	CEE POWER CORD SET		N09-4505-08	SCREW, FLUSH HD, HANDLE M4X16
	E30-1820-05	UL/CSA POWER CORD SET		N10-2030-41	NUT, HEX M3
	E30-1821-05	SAA POWER CORD SET		N10-2040-41	NUT, HEX M4
	E30-1927-08	CONNECTOR, BNC-BNC/1M		N16-0030-41	SPRING WASHER
	E58-0612-08	REMOTE JACK		N19-0741-08	WASHER, EXTERNAL TOOTHED, M3
	E68-0608-08	VOLTAGE SELECTOR/FUSE HOLDER		N19-0742-08	WASHER, EXTERNAL TOOTHED, M4
	F05-3017-05	FUSE(6.3X32MM) 0.3A/250V		N30-3025-41	SCREW, PAN HD M3X25
	F05-5015-05	FUSE(6.3X32MM) 0.5A/250V		N30-4030-41	SCREW, PAN HD M4X30
	F07-0973-08	COVER PLATE; GP-1B		N34-4012-41	SCREW, TRUSS HD M4X12
	F07-0974-08	COVER, SHIELD CAN ROD		N35-2004-41	SCREW, BINDING M2X4
	F07-0975-08	COVER, REAR		N35-3005-41	SCREW, BINDING M3X5
	F09-0519-08	EDGING; 120MM		N35-3006-41	SCREW, BINDING M3X6
	F09-0520-08	EDGING, 150MM		N35-3008-41	SCREW, BINDING M3X8
	F10-1663-08	SHIELD CASE, REAR		N35-3012-41	SCREW, BINDING M3X12
	F11-1257-08	SHIELD CASE, FORNT		N35-4015-41	SCREW, BINDING M4X15
	F11-1258-08	SHIELD CASE, PLL		N52-3006-41	SCREW, PAN HD TAPPING 3X6
	F11-1259-08	SHIELD CASE, RF/CPU		N77-4008-41	SET SCREW, HEXAGON SOCKET HD
	F11-1260-08	SHIELD CASE, MOD		S68-0615-08	SWITCH POWER
	G13-0742-08	RUBBER CUSHION, T=0.8, BLACK		W02-2113-08	CPU UNIT
	H10-2866-08	FORMED STYRENE PAD		W02-2114-08	KEY/DISPLAY UNIT
	H25-0836-08	VINYL COVER		W02-2115-08	POWER UNIT
	H53-0083-04	CARTON BOX		W02-2116-08	RF UNIT
	J02-0531-08	RUBBER FOOT, SIDE		W02-2117-08	PLL UNIT
	J02-0532-08	RUBBER FOOT, BOTTON, BLACK		W02-2118-08	AF UNIT
	J02-0533-08	FRONT FOOT		W02-2119-08	STEREO UNIT
	J19-1678-08	CORD WRAP		W02-2120-08	ATT UNIT
	J21-4813-08	BRACKET, TRANS		W02-2121-08	MOTHER UNIT
	J21-4814-08	BRACKET, TRANS HOLDER		W02-2135-08	ATT ASS'Y
	J21-4815-08	BRACKET, MOTHER PCB			
	J31-0618-08	SPACER, CAN ROD/8PIE X L79.3			
	J31-0619-08	SPACER, CAN ROD/8PIE X L24.5			
	J31-0620-08	SPACER, CAN ROD/8PIE X L7.5			
	J31-0621-08	SPACER, CAN ROD/8PIE X L27.8			
	J31-0622-08	SPACER, MOTHER PCB			
	J32-1205-08	ROD, SHIELD CAN; 4PIE X L296			
	J32-1206-08	ROD, POWER SW			
	J90-0507-08	CAP; POWER SW, WHITE			
	K01-0553-08	HANDLE			
	K21-0922-03	KNOB, ROTARY SW			
	K29-0822-08	BUTTON;「A」, WHITE			
	K29-0823-08	BUTTON;「B」, WHITE			
	K29-0824-08	BUTTON;「C」, WHITE			
	K29-0825-08	BUTTON;「D」, WHITE			
	K29-0826-08	BUTTON;「1」, WHITE			
	K29-0827-08	BUTTON;「2」, WHITE			
	K29-0828-08	BUTTON;「3」, WHITE			
	K29-0829-08	BUTTON;「4」, WHITE			
	K29-0830-08	BUTTON;「5」, WHITE			
	K29-0831-08	BUTTON;「6」, WHITE			
	K29-0832-08	BUTTON;「7」, WHITE			
	K29-0833-08	BUTTON;「8」, WHITE			
	K29-0834-08	BUTTON;「9」, WHITE			
	K29-0835-08	BUTTON;「0」, WHITE			
	K29-0836-08	BUTTON;「.」, WHITE			
	K29-0837-08	BUTTON;「(-)」, WHITE			
	K29-0838-08	BUTTON;「EXT」, WHITE/HOLE			
	K29-0839-08	BUTTON;「1KHZ」, WHITE/HOLE			
	K29-0840-08	BUTTON;「400HZ」, WHITE/HOLE			
	K29-0841-08	BUTTON;「STEREO」, WHITE/HOLE			
	K29-0842-08	BUTTON;「MAIN」, WHITE/HOLE			

PARTS LIST

SG-5115 UNIT

Y77-1340-00

REF. NO	PARTS NO	NAME & DESCRIPTION
	A01-1269-08	CASE, TOP
	A01-1270-08	CASE, BOTTOM
	A13-0989-08	EXTRUDING, UP/DOWN
	A13-0990-08	DIE CASTING, LEFT/RIGHT
	A13-0991-08	FRAME, RIGHT
	A13-0992-08	FRAME, LEFT
	A63-0073-08	FRONT PANEL
	A83-0042-08	REAR PANEL
	B09-0407-08	HANDLE CAP
	B42-3861-08	LABEL, SERIAL NO.
	B63-0081-00	INSTRUCTION MANUAL; JAPANESE
	B63-0082-00	INSTRUCTION MANUAL; ENGLISH
	B63-0115-00	GP-1B MANUAL; JAPANESE
	B63-0116-00	GP-1B MANUAL; ENGLISH
	B73-0038-08	DECORATIVE PANEL
	E04-0266-08	BNC CONNECTOR; OUTPUT
	E04-0267-08	BNC CONNECTOR; EXT MODULATION
	E04-0268-08	RCA-JACK
	E30-1644-15	BS POWER CORD
	E30-1818-05	JIS POWER CORD SET
	E30-1819-05	CEE POWER CORD SET
	E30-1820-05	UL/CSA POWER CORD SET
	E30-1821-05	SAA POWER CORD SET
	E30-1927-08	CONNECTOR, BNC-BNC/1H
	E58-0612-08	REMOTE JACK
	E68-0608-08	VOLTAGE SELECTOR/FUSE HOLDER
	F05-3017-05	FUSE (6.3X32MM) 0.3A/250V
	F05-5015-05	FUSE (6.3X32MM) 0.5A/250V
	F07-0973-08	COVER PLATE; GP-1B
	F07-0974-08	COVER, SHIELD CAN ROD
	F07-0975-08	COVER, REAR
	F09-0519-08	EDGING; 120MM
	F09-0520-08	EDGING; 150MM
	F10-1663-08	SHIELD CASE, REAR
	F11-1257-08	SHIELD CASE, FRONT
	F11-1258-08	SHIELD CASE, PLL
	F11-1259-08	SHIELD CASE, RF/CPU
	F11-1260-08	SHIELD CASE, MOD
	G13-0742-08	RUBBER CUSHION, T=0.8, BLACK
	H10-2866-08	FORKED STYRENE PAD
	H25-0836-08	VINYL COVER
	H53-0084-04	CARTON BOX
	J02-0531-08	RUBBER FOOT, SIDE
	J02-0532-08	RUBBER FOOT, BOTTOM, BLACK
	J02-0533-08	FRONT FOOT
	J19-1678-08	CORD WRAP
	J21-4813-08	BRACKET, TRANS
	J21-4814-08	BRACKET, TRANS HOLDER
	J21-4815-08	BRACKET, MOTHER PCB
	J31-0619-08	SPACER, CAN ROD/8PIE X L24.5
	J31-0620-08	SPACER, CAN ROD/8PIE X L7.5
	J31-0621-08	SPACER, CAN ROD/8PIE X L27.8
	J31-0622-08	SPACER, MOTHER PCB
	J31-0623-08	SPACER, CAN ROD/8PIE X L88
	J32-1205-08	ROD, SHIELD CAN; 4PIE X L296
	J32-1206-08	ROD, POWER SW
	J90-0507-08	CAP: POWER SW, WHITE
	K01-0553-08	HANDLE
	K21-0922-03	KNOB, ROTARY SW
	K29-0822-08	BUTTON; 'A', WHITE
	K29-0823-08	BUTTON; 'B', WHITE
	K29-0824-08	BUTTON; 'C', WHITE
	K29-0825-08	BUTTON; 'D', WHITE
	K29-0826-08	BUTTON; '1', WHITE
	K29-0827-08	BUTTON; '2', WHITE
	K29-0829-08	BUTTON; '4', WHITE
	K29-0830-08	BUTTON; '5', WHITE
	K29-0831-08	BUTTON; '6', WHITE
	K29-0832-08	BUTTON; '7', WHITE
	K29-0833-08	BUTTON; '8', WHITE
	K29-0834-08	BUTTON; '9', WHITE
	K29-0835-08	BUTTON; '0', WHITE
	K29-0836-08	BUTTON; '.', WHITE
	K29-0837-08	BUTTON; '(-)', WHITE
	K29-0838-08	BUTTON; 'EXT', WHITE/HOLE
	K29-0839-08	BUTTON; '1KHZ', WHITE/HOLE
	K29-0840-08	BUTTON; '400HZ', WHITE/HOLE
	K29-0846-08	BUTTON; 'FM', WHITE/HOLE
	K29-0847-08	BUTTON; 'AM', WHITE/HOLE
	K29-0849-08	BUTTON; WHITE/HOLE

REF. NO	PARTS NO	NAME & DESCRIPTION
	K29-0850-08	BUTTON; GRAY
	K29-0851-08	BUTTON; GRAY/HOLE
	K29-0852-08	BUTTON; 'SEQ', GRAY
	K29-0853-08	BUTTON; 'STO', GRAY
	K29-0854-08	BUTTON; 'RTN', GRAY
	K29-0855-08	BUTTON; 'RCL', GRAY
	K29-0856-08	BUTTON; 'J', BLUE
	K29-0857-08	BUTTON; '<<', BLUE
	K29-0858-08	BUTTON; '<<<', BLUE
	K29-0859-08	BUTTON; POWER SW, YELLOW
	K29-0860-08	BUTTON; 'E', WHITE
	K29-0861-08	BUTTON; 'F', WHITE
	K29-0862-08	BUTTON; 'G', WHITE
	K29-0863-08	BUTTON; 'H', WHITE
	K29-2828-08	BUTTON; '3', WHITE
	L01-9983-08	POWER TRANSFORMER, TROIDAL
	L01-9986-08	POWER TRANSFORMER, EI CORE
	N09-4503-08	SCREW, FLUSH HD M3X5
	N09-4505-08	SCREW, FLUSH HD, HANDLE M4X16
	N10-2030-41	NUT, HEX M3
	N10-2040-41	NUT, HEX M4
	N16-0030-41	SPRING WASHER
	N19-0741-08	WASHER, EXTERNAL TOOTHED, M3
	N19-0742-08	WASHER, EXTERNAL TOOTHED, M4
	N30-3025-41	SCREW, PAN HD M3X25
	N30-4030-41	SCREW, PAN HD M4X30
	N34-4012-41	SCREW, TRUSS HD M4X12
	N35-2004-41	SCREW, BINDING M2X4
	N35-3005-41	SCREW, BINDING M3X5
	N35-3006-41	SCREW, BINDING M3X6
	N35-3008-41	SCREW, BINDING M3X8
	N35-3012-41	SCREW, BINDING M3X12
	N35-4015-41	SCREW, BINDING M4X15
	N52-3006-41	SCREW, PAN HD TAPPING 3X6
	N77-4008-41	SET SCREW, HEXAGON SOCKET HD
	S68-0615-08	SWITCH POWER
	W02-2114-08	KEY/DISPLAY UNIT
	W02-2115-08	POWER UNIT
	W02-2116-08	RF UNIT
	W02-2117-08	PLL UNIT
	W02-2120-08	ATT UNIT
	W02-2121-08	MOTHER UNIT
	W02-2122-08	CPU UNIT
	W02-2123-08	AF UNIT
	W02-2135-08	ATT ASS'Y

PARTS LIST

SG-5110 CPU UNIT

W02-2113-08

REF. NO	PARTS NO	NAME & DESCRIPTION
	F07-0969-08	CONTROL COVER
	J29-0522-08	BRACKET,PCB
	J73-0205-08	PCB (UNMOUNTED)
	N35-3005-41	SCREW, BINDING M3X5
AR1	R90-1131-08	RES. ARRAY 8X10K 5%
AR2	R90-1131-08	RES. ARRAY 8X10K 5%
C1	CK45F1E103Z	CAP. CERAMIC 0.01 25V
C4	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C5	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C6	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C7	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C8	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C9	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C10	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C11	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C12	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C13	NO USE	
C14	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C15	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C16	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C17	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C18	CE04EW1C101M	CAP. ELECTRO 100 20% 16V
C19	CE04EW1C470M	CAP. ELECTRO 47 20% 16V
D1	B30-3003-08	LED
JP2	E40-7260-08	RIBBON CABLE CONNECTOR 13X2
JP3	E40-7261-08	PIN CONNECTOR 12P
JP4	E40-7262-08	PIN CONNECTOR 11P
JP5	E40-7263-08	PIN CONNECTOR 2P
JP6	E40-7263-08	PIN CONNECTOR 2P
L1	L39-0541-08	COIL,TROIDAL 30UH
L2	L39-0541-08	COIL,TROIDAL 30UH
R1	RN14BK2E3300F	RES. METAL FILM 330 1% 1/4W
R2	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R3	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R4	RN14BK2E4701F	RES. METAL FILM 4.7K 1% 1/4W
R5	RN14BK2E1003F	RES. METAL FILM 100K 1% 1/4W
R6	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R7	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R8	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R9	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R10	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R11	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R12	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R13	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R14	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R15	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R16	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R17	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R18	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R19	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R20	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R21	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R22	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R23	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R24	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R25	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R26	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R27	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R28	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R29	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R30	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R31	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
U1	PST518A	IC,LEVEL DETECTOR
U4	M5L8255AP-5	IC,PROG.PERIPHERAL INTERFACE
U5	MC74HC139N	IC,DUAL 1-OF-4 DECODER/DE-MPX
U6	HD74LS08P	IC,QUAD 2 INPUT AND GATE
U7	Z80CPU	IC,CPU
U8	T93-0786-08	IC,PROGRAMMED ROM,FOR SG-5110
U9	MC74HC4078N	IC,8-INPUT NOR/OR GATE
U10	MC14028BCP	IC,BCD TO DECIMAL DECODER
U11	HD74HC32P	IC,QUAD 2 INPUT OR GATE
U12	HD74HC32P	IC,QUAD 2 INPUT OR GATE

REF. NO	PARTS NO	NAME & DESCRIPTION
U13	NO USE	
U14	DS1220Y-170	IC,SRAM
U15	HD74LS14P	IC,HEX SCHMITT TRIG.INVERTERS
XT1	L77-1077-08	CRYSTAL RESONATOR

PARTS LIST

SG-5115 CPU UNIT

W02-2122-08

REF. NO	PARTS NO	NAME & DESCRIPTION		
	F07-0969-08	CONTROL COVER		
	J29-0522-08	BRACKET,PCB		
	J73-0205-08	PCB (UNMOUNTED)		
	N35-3005-41	SCREW, BINDING M3X5		
AR1	R90-1131-08	RES. ARRAY 8X10K 5%		
AR2	R90-1131-08	RES. ARRAY 8X10K 5%		
C1	CK45F1E103Z	CAP. CERAMIC 0.01		25V
C4	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C5	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C6	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C7	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C8	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C9	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C10	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C11	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C12	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C13	NO USE			
C14	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C15	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C16	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C17	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C18	CE04EW1C101H	CAP. ELECTRO 100 20%		16V
C19	CE04EW1C470H	CAP. ELECTRO 47 20%		16V
D1	B30-3003-08	LED		
JP2	E40-7260-08	RIBBON CABLE CONNECTOR 13X2		
JP3	E40-7261-08	PIN CONNECTOR 12P		
JP4	E40-7262-08	PIN CONNECTOR 11P		
JP5	E40-7263-08	PIN CONNECTOR 2P		
JP6	E40-7263-08	PIN CONNECTOR 2P		
L1	L39-0541-08	COIL,TROIDAL 30UH		
L2	L39-0541-08	COIL,TROIDAL 30UH		
R1	RN14BK2E3300F	RES. METAL FILM 330 1%		1/4W
R2	RN14BK2E1002F	RES. METAL FILM 10K 1%		1/4W
R3	RN14BK2E1002F	RES. METAL FILM 10K 1%		1/4W
R4	RN14BK2E4701F	RES. METAL FILM 4.7K 1%		1/4W
R5	RN14BK2E1003F	RES. METAL FILM 100K 1%		1/4W
R6	RN14BK2E1002F	RES. METAL FILM 10K 1%		1/4W
R7	RN14BK2E1002F	RES. METAL FILM 10K 1%		1/4W
R8	RN14BK2E1002F	RES. METAL FILM 10K 1%		1/4W
R9	RN14BK2C3300F	RES. METAL FILM 330 1%		1/6W
R10	RN14BK2C3300F	RES. METAL FILM 330 1%		1/6W
R11	RN14BK2C3300F	RES. METAL FILM 330 1%		1/6W
R12	RN14BK2C3300F	RES. METAL FILM 330 1%		1/6W
R13	RN14BK2C3300F	RES. METAL FILM 330 1%		1/6W
R14	RN14BK2C3300F	RES. METAL FILM 330 1%		1/6W
R15	RN14BK2C3300F	RES. METAL FILM 330 1%		1/6W
R16	RN14BK2C3300F	RES. METAL FILM 330 1%		1/6W
R17	RN14BK2C3300F	RES. METAL FILM 330 1%		1/6W
R18	RN14BK2C3300F	RES. METAL FILM 330 1%		1/6W
R19	RN14BK2C3300F	RES. METAL FILM 330 1%		1/6W
R20	RN14BK2C3300F	RES. METAL FILM 330 1%		1/6W
R21	RN14BK2C3300F	RES. METAL FILM 330 1%		1/6W
R22	RN14BK2C3300F	RES. METAL FILM 330 1%		1/6W
R23	RN14BK2C3300F	RES. METAL FILM 330 1%		1/6W
R24	RN14BK2C3300F	RES. METAL FILM 330 1%		1/6W
R25	RN14BK2C3300F	RES. METAL FILM 330 1%		1/6W
R26	RN14BK2C3300F	RES. METAL FILM 330 1%		1/6W
R27	RN14BK2C3300F	RES. METAL FILM 330 1%		1/6W
R28	RN14BK2C3300F	RES. METAL FILM 330 1%		1/6W
R29	RN14BK2C3300F	RES. METAL FILM 330 1%		1/6W
R30	RN14BK2C3300F	RES. METAL FILM 330 1%		1/6W
R31	RN14BK2C3300F	RES. METAL FILM 330 1%		1/6W
R31	RN14BK2C3300F	RES. METAL FILM 330 1%		1/6W
U1	PST518A	IC,LEVEL DETECTOR		
U4	M5L8255AP-5	IC,PROG.PERIPHERAL INTERFACE		
U5	MC74HC139N	IC,DUAL 1-OF-4 DECODER/DE-MPX		
U6	HD74LS08P	IC,QUAD 2 INPUT AND GATE		
U7	Z80CPU	IC,CPU		
U8	T93-0787-08	IC,PROGRAMMED ROM, FOR SG-5115		
U9	MC74HC4078N	IC,8-INPUT NOR/OR GATE		
U10	MC14028BCP	IC,BCD TO DECIMAL DECODER		
U11	HD74HC32P	IC,QUAD 2 INPUT OR GATE		
U12	HD74HC32P	IC,QUAD 2 INPUT OR GATE		

REF. NO	PARTS NO	NAME & DESCRIPTION
U13	NO USE	
U14	DS1220Y-170	IC,SRAM
U15	HD74LS14P	IC,HEX SCHNITT TRIG.INVERTERS
XT1	L77-1077-08	CRYSTAL RESONATOR

PARTS LIST

OPTION

SG-5110 CPU-GPIB UNIT

W02-2107-05

REF. NO	PARTS NO	NAME & DESCRIPTION		
	E38-0621-08	FLAT CABLE, 26PIN		
	F07-0969-08	CONTROL COVER		
	J29-0522-08	BRACKET, PCB		
	J39-0540-08	GP-IB HOLDER SPACER		
	J73-0205-08	PCB (UNMOUNTED)		
	N35-3005-41	SCREW, BINDING M3X5		
AR1	R90-1131-08	RES. ARRAY 8X10K 5%		
AR2	R90-1131-08	RES. ARRAY 8X10K 5%		
C1	CK45F1E103Z	CAP. CERAMIC 0.01		25V
C2	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C3	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C4	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C5	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C6	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C7	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C8	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C9	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C10	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C11	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C12	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C13	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C14	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C15	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C16	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C17	CK45F1H104Z	CAP. CERAMIC 0.1		50V
C18	CE04EW1C101M	CAP. ELECTRO 100	20%	16V
C19	CE04EW1C470M	CAP. ELECTRO 47	20%	16V
D1	B30-3003-08	LED		
JP1	E40-7259-08	PIN CONNECTOR 2P		
JP2	E40-7260-08	RIBBON CABLE CONNECTOR 13X2		
JP3	E40-7261-08	PIN CONNECTOR 12P		
JP4	E40-7262-08	PIN CONNECTOR 11P		
JP5	E40-7263-08	PIN CONNECTOR 2P		
JP6	E40-7263-08	PIN CONNECTOR 2P		
L1	L39-0541-08	COIL, TROIDAL 30UH		
L2	L39-0541-08	COIL, TROIDAL 30UH		
R1	RN14BK2E3300F	RES. METAL FILM 330	1%	1/4W
R2	RN14BK2E1002F	RES. METAL FILM 10K	1%	1/4W
R3	RN14BK2E1002F	RES. METAL FILM 10K	1%	1/4W
R4	RN14BK2E4701F	RES. METAL FILM 4.7K	1%	1/4W
R5	RN14BK2E1002F	RES. METAL FILM 10K	1%	1/4W
R6	RN14BK2E1002F	RES. METAL FILM 10K	1%	1/4W
R7	RN14BK2E1002F	RES. METAL FILM 10K	1%	1/4W
R8	RN14BK2E1002F	RES. METAL FILM 10K	1%	1/4W
R9	RN14BK2C3300F	RES. METAL FILM 330	1%	1/6W
R10	RN14BK2C3300F	RES. METAL FILM 330	1%	1/6W
R11	RN14BK2C3300F	RES. METAL FILM 330	1%	1/6W
R12	RN14BK2C3300F	RES. METAL FILM 330	1%	1/6W
R13	RN14BK2C3300F	RES. METAL FILM 330	1%	1/6W
R14	RN14BK2C3300F	RES. METAL FILM 330	1%	1/6W
R15	RN14BK2C3300F	RES. METAL FILM 330	1%	1/6W
R16	RN14BK2C3300F	RES. METAL FILM 330	1%	1/6W
R17	RN14BK2C3300F	RES. METAL FILM 330	1%	1/6W
R18	RN14BK2C3300F	RES. METAL FILM 330	1%	1/6W
R19	RN14BK2C3300F	RES. METAL FILM 330	1%	1/6W
R20	RN14BK2C3300F	RES. METAL FILM 330	1%	1/6W
R21	RN14BK2C3300F	RES. METAL FILM 330	1%	1/6W
R22	RN14BK2C3300F	RES. METAL FILM 330	1%	1/6W
R23	RN14BK2C3300F	RES. METAL FILM 330	1%	1/6W
R24	RN14BK2C3300F	RES. METAL FILM 330	1%	1/6W
R25	RN14BK2C3300F	RES. METAL FILM 330	1%	1/6W
R26	RN14BK2C3300F	RES. METAL FILM 330	1%	1/6W
R27	RN14BK2C3300F	RES. METAL FILM 330	1%	1/6W
R28	RN14BK2C3300F	RES. METAL FILM 330	1%	1/6W
R29	RN14BK2C3300F	RES. METAL FILM 330	1%	1/6W
R30	RN14BK2C3300F	RES. METAL FILM 330	1%	1/6W
R31	RN14BK2C3300F	RES. METAL FILM 330	1%	1/6W
U1	PST518A	IC, LEVEL DETECTOR		
U2	SN75ALS160N	IC, SYNC. DECADE COUNTERS		
U3	SN75LS161N	IC, SYNC. 4-BIT BINARY COUNTERS		
U4	M5L8225AP-5	IC, PROG. PERIPHERAL INTERFACE		
U5	MC74HC139N	IC, DUAL 1-OF-4 DECODER/DE-MPX		
U6	HD74LS08P	IC, QUAD 2 INPUT AND GATE		
U7	Z80CPU	IC, CPU		

REF. NO	PARTS NO	NAME & DESCRIPTION
U8	T93-0788-08	IC, PROGRAMMED ROM
U9	MC74HC4078N	IC, 8-INPUT NOR/OR GATE
U10	MC14028BCP	IC, BCD TO DECIMAL DECODER
U11	HD74HC32P	IC, QUAD 2 INPUT OR GATE
U12	HD74HC32P	IC, QUAD 2 INPUT OR GATE
U13	TMS9914ANL	IC, CP-IB ADAPTOR
U14	DS1220Y-170	IC, SRAM
U15	HD74LS14P	IC, HEX SCHMITT TRIG. INVERTERS
XT1	L77-1077-08	CRYSTAL RESONATOR

PARTS LIST

OPTION

SG-5115 CPU-GPIB UNIT

W02-2108-05

REF. NO	PARTS NO	NAME & DESCRIPTION
	E38-0621-08	FLAT CABLE, 26PIN
	F07-0969-08	CONTROL COVER
	J29-0522-08	BRACKET, PCB
	J39-0540-08	GP-1B HOLDER SPACER
	J73-0205-08	PCB (UNMOUNTED)
	N35-3005-41	SCREW, BINDING N3X5
AR1	R90-1131-08	RES. ARRAY 8X10K 5%
AR2	R90-1131-08	RES. ARRAY 8X10K 5%
C1	CK45F1E103Z	CAP. CERAMIC 0.01 25V
C2	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C3	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C4	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C5	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C6	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C7	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C8	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C9	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C10	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C11	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C12	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C13	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C14	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C15	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C16	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C17	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C18	CE04EW1C101M	CAP. ELECTRO 100 20% 16V
C19	CE04EW1C470M	CAP. ELECTRO 47 20% 16V
D1	B30-3003-08	LED
JP1	E40-7259-08	PIN CONNECTOR 2P
JP2	E40-7260-08	RIBBON CABLE CONNECTOR 13X2
JP3	E40-7261-08	PIN CONNECTOR 12P
JP4	E40-7262-08	PIN CONNECTOR 11P
JP5	E40-7263-08	PIN CONNECTOR 2P
JP6	E40-7263-08	PIN CONNECTOR 2P
L1	L39-0541-08	COIL, TROIDAL 30UH
L2	L39-0541-08	COIL, TROIDAL 30UH
R1	RN14BK2E3300F	RES. METAL FILM 330 1% 1/4W
R2	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R3	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R4	RN14BK2E4701F	RES. METAL FILM 4.7K 1% 1/4W
R5	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R6	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R7	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R8	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R9	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R10	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R11	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R12	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R13	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R14	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R15	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R16	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R17	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R18	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R19	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R20	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R21	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R22	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R23	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R24	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R25	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R26	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R27	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R28	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R29	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R30	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
R31	RN14BK2C3300F	RES. METAL FILM 330 1% 1/6W
U1	PST518A	IC, LEVEL DETECTOR
U2	SN75ALS160N	IC, SYNC. DECADE COUNTERS
U3	SN75LS161N	IC, SYNC. 4-BIT BINARY COUNTERS
U4	M5L8225AP-5	IC, PROG. PERIPHERAL INTERFACE
U5	MC74HC139N	IC, DUAL 1-OF-4 DECODER/DE-MPX
U6	HD74LS08P	IC, QUAD 2 INPUT AND GATE
U7	Z80CPU	IC, CPU

REF. NO	PARTS NO	NAME & DESCRIPTION
U8	T93-0789-08	IC, PROGRAMMED ROM
U9	MC74HC4078N	IC, 8-INPUT NOR/OR GATE
U10	MC14028BCP	IC, BCD TO DECIMAL DECODER
U11	HD74HC32P	IC, QUAD 2 INPUT OR GATE
U12	HD74HC32P	IC, QUAD 2 INPUT OR GATE
U13	TMS9914ANL	IC, GP-1B ADAPTOR
U14	DS1220Y-170	IC, SRAM
U15	HD74LS14P	IC, HEX SCHMITT TRIG. INVERTERS
XT1	L77-1077-08	CRYSTAL RESONATOR

PARTS LIST

KEY/DISPLAY UNIT

W02-2114-08

REF. NO	PARTS NO	NAME & DESCRIPTION
	J73-0206-08	PCB (UNMOUNTED)
AR1	R90-1132-08	RES. ARRAY 8X10K 2%
AR2	R90-1132-08	RES. ARRAY 8X10K 2%
AR3	R90-1132-08	RES. ARRAY 8X10K 2%
C1	CK45F1E104K	CAP. CERAMIC 0.1 10% 25V
C2	CK45F1E104K	CAP. CERAMIC 0.1 10% 25V
C3	CK45F1E104K	CAP. CERAMIC 0.1 10% 25V
C4	CK45F1E104K	CAP. CERAMIC 0.1 10% 25V
C5	CK45F1E104K	CAP. CERAMIC 0.1 10% 25V
C6	CK45F1E104K	CAP. CERAMIC 0.1 10% 25V
C7	CK45F1E104K	CAP. CERAMIC 0.1 10% 25V
C8	CK45B1E102K	CAP. CERAMIC 1000P 10% 25V
C9	CK45F1E104K	CAP. CERAMIC 0.1 10% 25V
C10	CK45B1E102K	CAP. CERAMIC 1000P 10% 25V
C11	CK45F1E104K	CAP. CERAMIC 0.1 10% 25V
C12	CK45B1E102K	CAP. CERAMIC 1000P 10% 25V
C13	CK45F1E104K	CAP. CERAMIC 0.1 10% 25V
C14	CK45B1E102K	CAP. CERAMIC 1000P 10% 25V
C15	CK45F1E104K	CAP. CERAMIC 0.1 10% 25V
C16	CK45B1E102K	CAP. CERAMIC 1000P 10% 25V
C17	GE04EW1A101M	CAP. ELECTRO 100 20% 10V
C18	CK45F1E104K	CAP. CERAMIC 0.1 10% 25V
C19	CK45F1E104K	CAP. CERAMIC 0.1 10% 25V
C20	CK45F1E104K	CAP. CERAMIC 0.1 10% 25V
C21	GE04EW1A101M	CAP. ELECTRO 100 20% 10V
D1	B30-3004-08	LED
D2	B30-3004-08	LED
D3	B30-3004-08	LED
D4	B30-3004-08	LED
D5	B30-3004-08	LED
D25	B30-3004-08	LED
D26	B30-3004-08	LED
D27	B30-3004-08	LED
D28	B30-3004-08	LED
D29	B30-3004-08	LED
D30	B30-3004-08	LED
D31	NO USE	
D32	B30-3004-08	LED
D33	B30-3004-08	LED
D34	B30-3004-08	LED
D35	B30-3004-08	LED
D36	B30-3004-08	LED
D37	B30-3004-08	LED
D38	B30-3004-08	LED
D39	1N4148	DIODE
D40	1N4148	DIODE
DSP1	B38-0412-08	ONE DIGIT NUMERIC LEDS
DSP2	B38-0413-08	TWO DIGIT NUMERIC LEDS
DSP3	B38-0412-08	ONE DIGIT NUMERIC LEDS
DSP4	B38-0413-08	TWO DIGIT NUMERIC LEDS
DSP5	B38-0412-08	ONE DIGIT NUMERIC LEDS
DSP6	B38-0412-08	ONE DIGIT NUMERIC LEDS
DSP7	B38-0412-08	ONE DIGIT NUMERIC LEDS
DSP8	B38-0412-08	ONE DIGIT NUMERIC LEDS
DSP9	B38-0412-08	ONE DIGIT NUMERIC LEDS
J1	E40-7263-08	PIN CONNECTOR 2P
J2	E40-7265-08	RIBBON CABLE CONNECTOR 10X2
Q1	2SA1267	TR. SI, PNP
Q2	2SA1267	TR. SI, PNP
Q3	2SA1267	TR. SI, PNP
Q4	2SA1267	TR. SI, PNP
Q5	2SA1267	TR. SI, PNP
Q6	2SA1267	TR. SI, PNP
Q7	2SA1267	TR. SI, PNP
R1	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R2	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R3	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R4	RN14BK2E1001F	RES. METAL FILM 1K 1% 1/4W
R5	RN14BK2E1003F	RES. METAL FILM 100K 1% 1/4W
R6	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R7	RN14BK2E1001F	RES. METAL FILM 1K 1% 1/4W
R8	RN14BK2E1003F	RES. METAL FILM 100K 1% 1/4W
R9	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W

REF. NO	PARTS NO	NAME & DESCRIPTION
R10	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R11	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R12	RN14BK2E3300F	RES. METAL FILM 330 1% 1/4W
R13	RN14BK2E3300F	RES. METAL FILM 330 1% 1/4W
SW1	S68-0611-08	PUSH BUTTON SW, WITH LED
SW2	S68-0612-08	PUSH BUTTON SW
SW3	S68-0612-08	PUSH BUTTON SW
SW4	S68-0612-08	PUSH BUTTON SW
SW5	S68-0612-08	PUSH BUTTON SW
SW6	S68-0612-08	PUSH BUTTON SW
SW7	S68-0612-08	PUSH BUTTON SW
SW8	S68-0612-08	PUSH BUTTON SW
SW9	S68-0612-08	PUSH BUTTON SW
SW10	S68-0611-08	PUSH BUTTON SW, WITH LED
SW11	S68-0611-08	PUSH BUTTON SW, WITH LED
SW12	S68-0611-08	PUSH BUTTON SW, WITH LED
SW13	S68-0611-08	PUSH BUTTON SW, WITH LED
SW14	S68-0611-08	PUSH BUTTON SW, WITH LED
SW15	S68-0611-08	PUSH BUTTON SW, WITH LED
SW16	S68-0611-08	PUSH BUTTON SW, WITH LED
SW17	S68-0611-08	PUSH BUTTON SW, WITH LED
SW18	S68-0611-08	PUSH BUTTON SW, WITH LED
SW19	S68-0611-08	PUSH BUTTON SW, WITH LED
SW20	S68-0611-08	PUSH BUTTON SW, WITH LED
SW21	S68-0611-08	PUSH BUTTON SW, WITH LED
SW22	S68-0611-08	PUSH BUTTON SW, WITH LED
SW23	S68-0611-08	PUSH BUTTON SW, WITH LED
SW24	S68-0611-08	PUSH BUTTON SW, WITH LED
SW25	S68-0611-08	PUSH BUTTON SW, WITH LED
SW26	S68-0612-08	PUSH BUTTON SW
SW27	S68-0612-08	PUSH BUTTON SW
SW28	S68-0612-08	PUSH BUTTON SW
SW29	S68-0612-08	PUSH BUTTON SW
SW30	S68-0612-08	PUSH BUTTON SW
SW31	S68-0612-08	PUSH BUTTON SW
SW32	S68-0612-08	PUSH BUTTON SW
SW33	S68-0612-08	PUSH BUTTON SW
SW34	S68-0612-08	PUSH BUTTON SW
SW35	S68-0612-08	PUSH BUTTON SW
SW36	S68-0612-08	PUSH BUTTON SW
SW37	S68-0612-08	PUSH BUTTON SW
SW38	S68-0611-08	PUSH BUTTON SW, WITH LED
SW39	S68-0612-08	PUSH BUTTON SW
SW40	S68-0612-08	PUSH BUTTON SW
SW41	S68-0611-08	PUSH BUTTON SW, WITH LED
SW42	S68-0612-08	PUSH BUTTON SW
SW43	S68-0612-08	PUSH BUTTON SW
SW44	S68-0612-08	PUSH BUTTON SW
SW45	S68-0612-08	PUSH BUTTON SW
SW46	S68-0612-08	PUSH BUTTON SW
SW47	S68-0612-08	PUSH BUTTON SW
SW48	S68-0612-08	PUSH BUTTON SW
SW49	S68-0612-08	PUSH BUTTON SW
SW50	S68-0612-08	PUSH BUTTON SW
SW51	S68-0612-08	PUSH BUTTON SW
SW52	S68-0612-08	PUSH BUTTON SW
SW53	S68-0612-08	PUSH BUTTON SW
SW54	S68-0611-08	PUSH BUTTON SW, WITH LED
SW55	S68-0611-08	PUSH BUTTON SW, WITH LED
SW56	W02-2133-08	ROTARY SW
U1	MC14532BCP	IC, 8-BIT PRIORITY ENCODER
U2	MC14532BCP	IC, 8-BIT PRIORITY ENCODER
U3	SN74HC244P	IC, OCTAL 3-STATE BUS BUFFERS
U4	SN74HC138N	IC, 3 TO 8 DECODERS/DE-MPX
U5	MC14093BCP	IC, QUAD 2-INPUT NAND SCHMITT
U6	MC14013BCP	IC, DUAL D-FFS
U7	MH5450V	IC, LED DISPLAY DRIVERS
U8	MH5450V	IC, LED DISPLAY DRIVERS
U9	MH5450V	IC, LED DISPLAY DRIVERS
U10	MH5450V	IC, LED DISPLAY DRIVERS
U11	MH5450V	IC, LED DISPLAY DRIVERS

PARTS LIST

POWER UNIT

W02-2115-08

REF. NO	PARTS NO	NAME & DESCRIPTION			
	F01-0900-08	HEAT SINK			
	J29-0523-08	BRACKET,PCB			
	J29-0524-08	BRACKET,DIODE			
	J73-0207-08	PCB (UNMOUNTED)			
	N35-3005-41	SCREW, BINDING	M3X5		
	N35-3008-41	SCREW, BINDING	M3X8		
C1	CK45B1E222K	CAP. CERAMIC	2200P	10%	25V
C2	CK45B1E222K	CAP. CERAMIC	2200P	10%	25V
C3	CK45B1E222K	CAP. CERAMIC	2200P	10%	25V
C4	CE04EW1E101H	CAP. ELECTRO	100	20%	25V
C5	CE04EW1E101H	CAP. ELECTRO	100	20%	25V
C6	CE04EW1E101H	CAP. ELECTRO	100	20%	25V
C7	CE04EW1E101H	CAP. ELECTRO	100	20%	25V
C8	CE04EW1E472H	CAP. ELECTRO	4700	20%	25V
C9	CE04EW1E472H	CAP. ELECTRO	4700	20%	25V
C10	CE04EW1E472H	CAP. ELECTRO	4700	20%	25V
C11	CE04EW1E101H	CAP. ELECTRO	100	20%	25V
CN1	E40-7280-08	PIN CONNECTOR	6P		
CN2	E40-7263-08	PIN CONNECTOR	2P		
CN3	E40-7263-08	PIN CONNECTOR	2P		
D1	RS405L	DIODE,BRIDGE			
D2	RS405L	DIODE,BRIDGE			
D3	RS405L	DIODE,BRIDGE			
T1	L19-0432-08	TRANSFORMER CT			
TNR1	TNR12G821K	DIODE,VARISTOR			
U2	MC7915T	IC,VOLTAGE REGULATOR	-15V		
U3	MC7805T	IC,VOLTAGE REGULATOR	+5V		
U4	MC7805T	IC,VOLTAGE REGULATOR	+5V		
U5	MC7805T	IC,VOLTAGE REGULATOR	+5V		
U6	MC7805T	IC,VOLTAGE REGULATOR	+5V		

RF UNIT

W02-2116-08

REF. NO	PARTS NO	NAME & DESCRIPTION			
	E38-0609-08	SHIELD CABLE			
	F07-0970-08	FRONT COVER			
	J19-1677-08	CABLE HOLDER			
	J29-0522-08	BRACKET,PCB			
	J73-0208-08	PCB (UNMOUNTED)			
	J73-0209-08	SUB PCB (UNMOUNTED)			
	N08-0619-08	STUD			
	N35-3005-41	SCREW, BINDING	M3X5		
C1	CE04BW1H4R7M	CAP. ELECTRO	4.7	20%	50V
C2	CE04BW1H4R7M	CAP. ELECTRO	4.7	20%	50V
C3	CE04EW1E101H	CAP. ELECTRO	100	20%	25V
C4	CE04EW2E100M	CAP. ELECTRO	10	20%	250V
C5	CE04EW1H4R7M	CAP. ELECTRO	4.7	20%	50V
C6	CE04EW1E101H	CAP. ELECTRO	100	20%	25V
C7	CQ93M1J105K	CAP. NYLAR	1	10%	63V
C8	CC45CH1H050C	CAP. CERAMIC	5P	0.25P	50V
C9	CK45B1E222K	CAP. CERAMIC	2200P	10%	25V
C10	CK45F1E103Z	CAP. CERAMIC	0.01		25V
C11	CK45B1E222K	CAP. CERAMIC	2200P	10%	25V
C12	CK45F1H104Z	CAP. CERAMIC	0.1		50V
C13	CK45F1H104Z	CAP. CERAMIC	0.1		50V
C14	CC45CH1H150J	CAP. CERAMIC	15P	5%	50V
C15	CK45F1H104Z	CAP. CERAMIC	0.1		50V
C16	CK45F1E473Z	CAP. CERAMIC	0.047		25V
C17	CC45CH1H360J	CAP. CERAMIC	36P	5%	50V
C18	CK45F1H104Z	CAP. CERAMIC	0.1		50V
C19	CK45F1E223Z	CAP. CERAMIC	0.022		25V
C20	CC45CH1H030C	CAP. CERAMIC	3P	0.25P	50V
C21	CK45F1H104Z	CAP. CERAMIC	0.1		50V
C22	CK45F1H104Z	CAP. CERAMIC	0.1		50V
C23	CK45B1E224K	CAP. CERAMIC	0.22	10%	25V
C24	CC45CH1H150J	CAP. CERAMIC	15P	5%	50V
C25	CK45B1E224K	CAP. CERAMIC	0.22	10%	25V
C26	CC45CH1H470J	CAP. CERAMIC	47P	5%	50V
C27	CK45F1H104Z	CAP. CERAMIC	0.1		50V
C28	CK45F1E473Z	CAP. CERAMIC	0.047		25V
C29	CK45F1H104Z	CAP. CERAMIC	0.1		50V
C30	CK45F1E223Z	CAP. CERAMIC	0.022		25V
C31	CC45CH1H040C	CAP. CERAMIC	4P	0.25P	50V
C32	CK45F1H104Z	CAP. CERAMIC	0.1		50V
C33	CK45F1H104Z	CAP. CERAMIC	0.1		50V
C34	CK45F1H104Z	CAP. CERAMIC	0.1		50V
C35	CK45F1E103Z	CAP. CERAMIC	0.01		25V
C36	CQ93M1H102K	CAP. NYLAR	1000P	10%	50V
C37	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C38	CK45F1H104Z	CAP. CERAMIC	0.1		50V
C39	CK45F1E103Z	CAP. CERAMIC	0.01		25V
C40	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C41	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C42	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C43	CK45F1E473Z	CAP. CERAMIC	0.047		25V
C44	CK45F1E473Z	CAP. CERAMIC	0.047		25V
C45	CC45CH1H040C	CAP. CERAMIC	4P	0.25P	50V
C46	CK45F1E473Z	CAP. CERAMIC	0.047		25V
C47	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C48	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C49	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C50	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C51	CK45F1H104Z	CAP. CERAMIC	0.1		50V
C52	CC45CH1H470J	CAP. CERAMIC	47P	5%	50V
C53	CC45CH1H470J	CAP. CERAMIC	47P	5%	50V
C54	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C55	CK45F1E473Z	CAP. CERAMIC	0.047		25V
C56	CK45B1E222K	CAP. CERAMIC	2200P	10%	25V
C57	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C58	CK45F1E103Z	CAP. CERAMIC	0.01		25V
C59	CK45F1H104Z	CAP. CERAMIC	0.1		50V
C60	CK45F1H104Z	CAP. CERAMIC	0.1		50V
C61	CC45CH1H040C	CAP. CERAMIC	4P	0.25P	50V
C62	CC45CH1H040C	CAP. CERAMIC	4P	0.25P	50V
C63	CK45F1E473Z	CAP. CERAMIC	0.047		25V
C64	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C65	CK45F1E103Z	CAP. CERAMIC	0.01		25V
C66	CQ93M1J105K	CAP. NYLAR	1	10%	63V
C67	CK45F1E103Z	CAP. CERAMIC	0.01		25V
C68	CK45F1E473Z	CAP. CERAMIC	0.047		25V
C69	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C70	CC45CH1H020C	CAP. CERAMIC	2P	0.25P	50V
C71	CC45CH1H020C	CAP. CERAMIC	2P	0.25P	50V
C72	CK45F1E473Z	CAP. CERAMIC	0.047		25V

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION			REF. NO	PARTS NO	NAME & DESCRIPTION			
C73	CK45F1E103Z	CAP. CERAMIC	0.01	25V	Q30	2SC2498	TR. SI, NPN			
C74	CC45CH1H150J	CAP. CERAMIC	15P	5%	Q31	2SC2498	TR. SI, NPN			
C75	CK45F1H104Z	CAP. CERAMIC	0.1	50V	Q32	2SC1215	TR. SI, NPN			
C76	CG45CH1H470J	CAP. CERAMIC	47P	5%	Q33	2SC3195	TR. SI, NPN			
C77	CK45B1H102K	CAP. CERAMIC	1000P	10%	Q34	2SC407	TR. SI, NPN			
C78	CC45CH1H040C	CAP. CERAMIC	4P	0.25P	Q35	2SC3195	TR. SI, NPN			
C79	CG45CH1H040C	CAP. CERAMIC	4P	0.25P	Q36	2SC2498	TR. SI, NPN			
C80	CK45F1H104Z	CAP. CERAMIC	0.1	50V						
C95	C91-2509-08	CAP. FEED THROUGH	22P		R1	RN14BK2E1003F	RES. METAL FILM	100K	1%	1/4W
C96	NO USE				R2	RN14BK2E1002F	RES. METAL FILM	10K	1%	1/4W
C97	C91-2509-08	CAP. FEED THROUGH	22P		R3	RN14BK2E1003F	RES. METAL FILM	100K	1%	1/4W
D1	1N4148	DIODE			R4	RN14BK2E1002F	RES. METAL FILM	10K	1%	1/4W
D2	1SS97	DIODE			R5	RN14BK2E1003F	RES. METAL FILM	100K	1%	1/4W
D3	1SS97	DIODE			R6	RN14BK2E1002F	RES. METAL FILM	10K	1%	1/4W
D4	1SS97	DIODE			R7	RN14BK2E2210F	RES. METAL FILM	221	1%	1/4W
D5	1SV34	DIODE			R8	RN14BK2E2382F	RES. METAL FILM	23.8K	1%	1/4W
D6	V101	DIODE, VARICAP			R9	RN14BK2E2210F	RES. METAL FILM	221	1%	1/4W
D7	V101	DIODE, VARICAP			R10	RN14BK2E1211F	RES. METAL FILM	1.21K	1%	1/4W
D8	V101	DIODE, VARICAP			R11	RN14BK2E1001F	RES. METAL FILM	1K	1%	1/4W
D9	V101	DIODE, VARICAP			R12	RN14BK2E4872F	RES. METAL FILM	48.7K	1%	1/4W
D10	V101	DIODE, VARICAP			R13	RN14BK2E1601F	RES. METAL FILM	1.6K	1%	1/4W
D11	V101	DIODE, VARICAP			R14	RN14BK2E4872F	RES. METAL FILM	48.7K	1%	1/4W
D12	V101	DIODE, VARICAP			R15	RN14BK2E1001F	RES. METAL FILM	1K	1%	1/4W
D13	V101	DIODE, VARICAP			R16	RN14BK2E1001F	RES. METAL FILM	1K	1%	1/4W
D14	V101	DIODE, VARICAP			R17	RN14BK2E1001F	RES. METAL FILM	1K	1%	1/4W
D15	V101	DIODE, VARICAP			R18	RN14BK2E2202F	RES. METAL FILM	22K	1%	1/4W
D16	V101	DIODE, VARICAP			R19	RN14BK2E2202F	RES. METAL FILM	22K	1%	1/4W
D17	V101	DIODE, VARICAP			R20	RN14BK2E2202F	RES. METAL FILM	22K	1%	1/4W
D18	V101	DIODE, VARICAP			R21	RN14BK2E1001F	RES. METAL FILM	1K	1%	1/4W
D19	V101	DIODE, VARICAP			R22	RN14BK2E2202F	RES. METAL FILM	22K	1%	1/4W
D20	V101	DIODE, VARICAP			R23	RN14BK2E33R0F	RES. METAL FILM	33.0	1%	1/4W
D21	V101	DIODE, VARICAP			R24	RN14BK2E6800F	RES. METAL FILM	680	1%	1/4W
D22	1SV34	DIODE			R25	RN14BK2E3301F	RES. METAL FILM	3.3K	1%	1/4W
L1	L40-1015-13	FERRI INDUCTOR	100UH	5%	R26	RN14BK2E74R0F	RES. METAL FILM	74.0	1%	1/4W
L2	L40-1015-13	FERRI INDUCTOR	100UH	5%	R27	RN14BK2E7502F	RES. METAL FILM	75K	1%	1/4W
L3	L40-3305-13	FERRI INDUCTOR	33UH	5%	R28	RN14BK2E2001F	RES. METAL FILM	2K	1%	1/4W
L4	L40-3305-13	FERRI INDUCTOR	33UH	5%	R29	RN14BK2E47R0F	RES. METAL FILM	47.0	1%	1/4W
L5	L40-1595-13	FERRI INDUCTOR	1.5UH	5%	R30	RN14BK2E1002F	RES. METAL FILM	10K	1%	1/4W
L6	L40-4715-13	FERRI INDUCTOR	470UH	5%	R31	RN14BK2E1001F	RES. METAL FILM	1K	1%	1/4W
L7	L39-0543-08	COIL	3.9UH		R32	RN14BK2E1000F	RES. METAL FILM	100	1%	1/4W
L8	L39-0543-08	COIL	3.9UH		R33	RN14BK2E2201F	RES. METAL FILM	2.2K	1%	1/4W
L9	L39-0546-08	COIL	8.2UH		R34	RN14BK2E2001F	RES. METAL FILM	2K	1%	1/4W
L10	L39-0542-08	COIL	10UH		R35	RN14BK2E2001F	RES. METAL FILM	2K	1%	1/4W
L11	L39-0544-08	COIL	4.7UH		R36	RN14BK2E1501F	RES. METAL FILM	1.5K	1%	1/4W
L12	L39-0542-08	COIL	10UH		R37	RN14BK2E2201F	RES. METAL FILM	2.2K	1%	1/4W
L13	NO USE				R38	RN14BK2E2201F	RES. METAL FILM	2.2K	1%	1/4W
L14	L39-0542-08	COIL	10UH		R39	RN14BK2E1502F	RES. METAL FILM	15K	1%	1/4W
L15	L39-0545-08	COIL			R40	RN14BK2E5101F	RES. METAL FILM	5.1K	1%	1/4W
L16	L39-0545-08	COIL			R41	RN14BK2E1001F	RES. METAL FILM	1K	1%	1/4W
L17	L39-0545-08	COIL			R42	RN14BK2E1000F	RES. METAL FILM	100	1%	1/4W
L18	L40-1015-13	FERRI INDUCTOR	100UH	5%	R43	RN14BK2E33R0F	RES. METAL FILM	33.0	1%	1/4W
L19	L40-1015-13	FERRI INDUCTOR	100UH	5%	R44	RN14BK2E1000F	RES. METAL FILM	100	1%	1/4W
Q1	2SC3195	TR. SI, NPN			R45	RN14BK2E1500F	RES. METAL FILM	150	1%	1/4W
Q2	2SC3195	TR. SI, NPN			R46	RN14BK2E47R0F	RES. METAL FILM	47.0	1%	1/4W
Q3	2SC3195	TR. SI, NPN			R47	RN14BK2E5601F	RES. METAL FILM	5.6K	1%	1/4W
Q4	2SC3195	TR. SI, NPN			R48	RN14BK2E1501F	RES. METAL FILM	1.5K	1%	1/4W
Q5	2SA1346	TR. SI, PNP			R49	RN14BK2E2702F	RES. METAL FILM	27K	1%	1/4W
Q6	2SA1346	TR. SI, PNP			R50	RN14BK2E8200F	RES. METAL FILM	820	1%	1/4W
Q7	2SC3195	TR. SI, NPN			R51	RN14BK2E3300F	RES. METAL FILM	330	1%	1/4W
Q8	2SA1346	TR. SI, PNP			R52	RN14BK2E68R0F	RES. METAL FILM	68.0	1%	1/4W
Q9	2SC3402	TR. SI, NPN			R53	RN14BK2E6800F	RES. METAL FILM	680	1%	1/4W
Q10	2SA1346	TR. SI, PNP			R54	RN14BK2E1001F	RES. METAL FILM	1K	1%	1/4W
Q11	2SC3402	TR. SI, NPN			R55	RN14BK2E4701F	RES. METAL FILM	4.7K	1%	1/4W
Q12	2SC3195	TR. SI, NPN			R56	RN14BK2E1000F	RES. METAL FILM	100	1%	1/4W
Q13	2SC3195	TR. SI, NPN			R57	RN14BK2E2200F	RES. METAL FILM	220	1%	1/4W
Q14	2SC3195	TR. SI, NPN			R58	RN14BK2E1333F	RES. METAL FILM	133K	1%	1/4W
Q15	2SC3195	TR. SI, NPN			R59	RN14BK2E2201F	RES. METAL FILM	2.2K	1%	1/4W
Q16	2SC3195	TR. SI, NPN			R60	RN14BK2E1001F	RES. METAL FILM	1K	1%	1/4W
Q17	2SA1015 (GR)	TR. SI, PNP			R61	RN14BK2E1001F	RES. METAL FILM	1K	1%	1/4W
Q18	2SA1346	TR. SI, PNP			R62	RN14BK2E1001F	RES. METAL FILM	1K	1%	1/4W
Q19	2SC3402	TR. SI, NPN			R63	RN14BK2E1002F	RES. METAL FILM	10K	1%	1/4W
Q20	2SA1346	TR. SI, PNP			R64	RN14BK2E3301F	RES. METAL FILM	3.3K	1%	1/4W
Q21	2SC3402	TR. SI, NPN			R65	RN14BK2E2201F	RES. METAL FILM	2.2K	1%	1/4W
Q22	2SC1815 (GR)	TR. SI, NPN			R66	RN14BK2E1200F	RES. METAL FILM	120	1%	1/4W
Q23	2SC3402	TR. SI, NPN			R67	RN14BK2E10R0F	RES. METAL FILM			
Q24	2SA1346	TR. SI, PNP			R68	RN14BK2E1000F	RES. METAL FILM	100	1%	1/4W
Q25	2SC2498	TR. SI, NPN			R69	RN14BK2E1000F	RES. METAL FILM	100	1%	1/4W
Q26	2SC2498	TR. SI, NPN			R70	RN14BK2E1000F	RES. METAL FILM	100	1%	1/4W
Q27	2SC3195	TR. SI, NPN			R71	RN14BK2E1001F	RES. METAL FILM	1K	1%	1/4W
Q28	2SC2498	TR. SI, NPN			R72	RN14BK2E6801F	RES. METAL FILM	6.8K	1%	1/4W
Q29	2SC2498	TR. SI, NPN			R73	RN14BK2E1000F	RES. METAL FILM	100	1%	1/4W
					R74	RN14BK2E1002F	RES. METAL FILM	10K	1%	1/4W
					R75	RN14BK2E1002F	RES. METAL FILM	10K	1%	1/4W
					R76	RN14BK2E1000F	RES. METAL FILM	100	1%	1/4W
					R77	RN14BK2E2201F	RES. METAL FILM	2.2K	1%	1/4W

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION			
R78	RN14BK2E3301F	RES. METAL FILM 3.3K	1%	1/4W	
R79	RN14BK2E2201F	RES. METAL FILM 2.2K	1%	1/4W	
R80	RN14BK2E4700F	RES. METAL FILM 470	1%	1/4W	
R81	RN14BK2E6801F	RES. METAL FILM 6.8K	1%	1/4W	
R82	RN14BK2E1000F	RES. METAL FILM 100	1%	1/4W	
R83	RN14BK2E1002F	RES. METAL FILM 10K	1%	1/4W	
R84	RN14BK2E1002F	RES. METAL FILM 10K	1%	1/4W	
R85	RN14BK2E1000F	RES. METAL FILM 100	1%	1/4W	
R86	RN14BK2E2201F	RES. METAL FILM 2.2K	1%	1/4W	
R87	RN14BK2E3301F	RES. METAL FILM 3.3K	1%	1/4W	
R88	RN14BK2E6801F	RES. METAL FILM 6.8K	1%	1/4W	
R89	RN14BK2E1000F	RES. METAL FILM 100	1%	1/4W	
R90	RN14BK2E1002F	RES. METAL FILM 10K	1%	1/4W	
R91	RN14BK2E1002F	RES. METAL FILM 10K	1%	1/4W	
R92	RN14BK2E1000F	RES. METAL FILM 100	1%	1/4W	
R93	RN14BK2E1501F	RES. METAL FILM 1.5K	1%	1/4W	
R94	RN14BK2E3301F	RES. METAL FILM 3.3K	1%	1/4W	
R95	RN14BK2E4700F	RES. METAL FILM 47.0	1%	1/4W	
R96	RN14BK2E2201F	RES. METAL FILM 2.2K	1%	1/4W	
R97	RN14BK2E4700F	RES. METAL FILM 47.0	1%	1/4W	
R98	RN14BK2E2001F	RES. METAL FILM 2K	1%	1/4W	
R99	RN14BK2E3300F	RES. METAL FILM 33.0	1%	1/4W	
R100	RN14BK2E1001F	RES. METAL FILM 1K	1%	1/4W	
R101	RN14BK2E4302F	RES. METAL FILM 43K	1%	1/4W	
R102	RN14BK2E4302F	RES. METAL FILM 43K	1%	1/4W	
R103	RN14BK2E3300F	RES. METAL FILM 33.0	1%	1/4W	
R104	RN14BK2E2700F	RES. METAL FILM 270	1%	1/4W	
R105	RN14BK2E2201F	RES. METAL FILM 2.2K	1%	1/4W	
R106	RN14BK2E2001F	RES. METAL FILM 2K	1%	1/4W	
R107	RN14BK2E2200F	RES. METAL FILM 22.0	1%	1/4W	
R108	RN14BK2E4302F	RES. METAL FILM 43K	1%	1/4W	
R109	RN14BK2E8200F	RES. METAL FILM 820	1%	1/4W	
R110	RN14BK2E1001F	RES. METAL FILM 1K	1%	1/4W	
R111	RN14BK2E1502F	RES. METAL FILM 15K	1%	1/4W	
R112	RN14BK2E1301F	RES. METAL FILM 1.3K	1%	1/4W	
R113	RN14BK2E1001F	RES. METAL FILM 1K	1%	1/4W	
R114	RN14BK2E3300F	RES. METAL FILM 33.0	1%	1/4W	
R115	RN14BK2E3300F	RES. METAL FILM 33.0	1%	1/4W	
R116	RN14BK2E2200F	RES. METAL FILM 22.0	1%	1/4W	
R117	RN14BK2E7502F	RES. METAL FILM 75K	1%	1/4W	
R118	RN14BK2E4700F	RES. METAL FILM 47.0	1%	1/4W	
R119	RN14BK2E4700F	RES. METAL FILM 47.0	1%	1/4W	
R120	RN14BK2E0000F	RES. METAL FILM 000	1%	1/4W	
R121	RN14BK2E0000F	RES. METAL FILM 000	1%	1/4W	
R122	RN14BK2E0000F	RES. METAL FILM 000	1%	1/4W	
R123	RN14BK2E0000F	RES. METAL FILM 000	1%	1/4W	
R124	RN14BK2E1001F	RES. METAL FILM 1K	1%	1/4W	
R125	RN14BK2E3300F	RES. METAL FILM 33.0	1%	1/4W	
R126	RN14BK2E3300F	RES. METAL FILM 33.0	1%	1/4W	
R127	RN14BK2E0000F	RES. METAL FILM 000	1%	1/4W	
R128	RN14BK2E4703F	RES. METAL FILM 470K	1%	1/4W	
R129	RN14BK2E6800F	RES. METAL FILM 680	1%	1/4W	
R130	RN14BK2E1000F	RES. METAL FILM	1%	1/4W	
R131	RN14BK2E3300F	RES. METAL FILM 33.0	1%	1/4W	

S1	L19-0433-08	CONVERTER TRANSFORMER			
T1	C91-2507-08	CAP. FEED THROUGH 1000P			
T2	C91-2507-08	CAP. FEED THROUGH 1000P			
T3	C91-2507-08	CAP. FEED THROUGH 1000P			
T4	C91-2507-08	CAP. FEED THROUGH 1000P			
T5	C91-2507-08	CAP. FEED THROUGH 1000P			
T6	C91-2507-08	CAP. FEED THROUGH 1000P			
T7	C91-2507-08	CAP. FEED THROUGH 1000P			
T8	C91-2507-08	CAP. FEED THROUGH 1000P			
T9	C91-2507-08	CAP. FEED THROUGH 1000P			
T10	C91-2507-08	CAP. FEED THROUGH 1000P			
T11	C91-2507-08	CAP. FEED THROUGH 1000P			
T12	C91-2507-08	CAP. FEED THROUGH 1000P			
U1	HC14093BCP	IC,QUAD 2-INPUT NAND SCHMITT			
U2	HC14094BCP	IC,8-STAGE SHIFT/STORE REGISTE			
U3	SN76514N	IC,DOUBLE BALANCED MIXER			
U4	LM301AN	IC,OPERATIONAL AMPLIFIERS			
U5	NE5534A	IC,OP-AMP			
XTAL	L77-1078-08	CRYSTAL RESONATOR			

PLL UNIT

W02-2117-08

REF. NO	PARTS NO	NAME & DESCRIPTION			
	E38-0610-08	SHIELD CABLE			
	F07-0970-08	FRONT COVER			
	J19-1677-08	CABLE HOLDER			
	J29-0522-08	BRACKET,PCB			
	J73-0209-08	SUB PCB (UNMOUNTED)			
	J73-0210-08	PCB (UNMOUNTED)			
	N08-0619-08	STUD			
	N35-3005-41	SCREW, BINDING M3X5			
C1	CK45F1H104Z	CAP. CERAMIC	0.1		50V
C2	CK45F1H104Z	CAP. CERAMIC	0.1		50V
C3	CK45F1H104Z	CAP. CERAMIC	0.1		50V
C4	CK45F1H104Z	CAP. CERAMIC	0.1		50V
C5	CK45F1H104Z	CAP. CERAMIC	0.1		50V
C6	CK45F1H104Z	CAP. CERAMIC	0.1		50V
C7	CK45F1H104Z	CAP. CERAMIC	0.1		50V
C8	CK45F1H104Z	CAP. CERAMIC	0.1		50V
C9	C91-2532-08	CAP. CERAMIC	1	20%	
C10	CC45CH1H020C	CAP. CERAMIC	2P	0.25P	50V
C11	CE04EW1E101M	CAP. ELECTRO	100	20%	25V
C12	CK45B1E102K	CAP. CERAMIC	1000P	10%	25V
C13	CC45CH1H150J	CAP. CERAMIC	15P	5%	50V
C14	CK45B1E473K	CAP. CERAMIC	0.047	10%	25V
C15	CK45F1H104Z	CAP. CERAMIC	0.1		50V
C16	NO USE				
C17	CK45F1E103Z	CAP. CERAMIC	0.01		25V
C18	CE04EW1H010M	CAP. ELECTRO	1	20%	50V
C19	CE04EW1E101M	CAP. ELECTRO	100	20%	25V
C20	CE04EW1E101M	CAP. ELECTRO	100	20%	25V
C25	C91-2533-08	CAP. POLYESTER	4.7	10%	63V
C30	CK45F1H104Z	CAP. CERAMIC	0.1		50V
C31	CK45B1E473K	CAP. CERAMIC	0.047	10%	25V
C32	C91-2532-08	CAP. CERAMIC	1	20%	
C57	C91-2509-08	CAP. FEED THROUGH 22P			
C61	C91-2507-08	CAP. FEED THROUGH 1000P			
C62	C91-2507-08	CAP. FEED THROUGH 1000P			
C63	C91-2507-08	CAP. FEED THROUGH 1000P			
C64	C91-2507-08	CAP. FEED THROUGH 1000P			
C65	C91-2507-08	CAP. FEED THROUGH 1000P			
C66	C91-2507-08	CAP. FEED THROUGH 1000P			
C67	C91-2507-08	CAP. FEED THROUGH 1000P			
C68	C91-2507-08	CAP. FEED THROUGH 1000P			
C69	C91-2507-08	CAP. FEED THROUGH 1000P			
C70	NO USE				
C71	C91-2507-08	CAP. FEED THROUGH 1000P			
C670	C91-2507-08	CAP. FEED THROUGH 1000P			
D1	1N4148	DIODE			
D2	1N4148	DIODE			
L1	L39-0547-08	COIL,TROIDAL	15UH		
L2	L40-1015-13	FERRI INDUCTOR	100UH	5%	
L3	L40-0105-13	FERRI INDUCTOR	1UH	5%	
L4	L40-4705-13	FERRI INDUCTOR	47UH	5%	
Q1	2SC1215	TR. S1, NPN			
Q2	2SC1215	TR. S1, NPN			
Q3	2SC1215	TR. S1, NPN			
Q4	NO USE				
Q5	2SA1015(GR)	TR. S1, PNP			
Q6	2SA1015(GR)	TR. S1, PNP			
Q7	2SA1015(GR)	TR. S1, PNP			
Q8	2SC1815(GR)	TR. S1, NPN			
Q9	2SC1815(GR)	TR. S1, NPN			
R1	RN14BK2E1003F	RES. METAL FILM 100K	1%	1/4W	
R2	RN14BK2E1002F	RES. METAL FILM 10K	1%	1/4W	
R3	RN14BK2E1003F	RES. METAL FILM 100K	1%	1/4W	
R4	RN14BK2E1002F	RES. METAL FILM 10K	1%	1/4W	
R5	RN14BK2E1003F	RES. METAL FILM 100K	1%	1/4W	
R6	RN14BK2E1002F	RES. METAL FILM 10K	1%	1/4W	
R7	RN14BK2E1002F	RES. METAL FILM 10K	1%	1/4W	
R10	RN14BK2E1502F	RES. METAL FILM 15K	1%	1/4W	
R11	RN14BK2E7502F	RES. METAL FILM 75K	1%	1/4W	
R12	RN14BK2E1203F	RES. METAL FILM 120K	1%	1/4W	

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION			
R13	RN14BK2E4702F	RES. METAL FILM 47K	1%	1/4W	
R14	RN14BK2E6803F	RES. METAL FILM 680K	1%	1/4W	
R15	RN14BK2E4702F	RES. METAL FILM 47K	1%	1/4W	
R16	RN14BK2E4702F	RES. METAL FILM 47K	1%	1/4W	
R17	RN14BK2E2202F	RES. METAL FILM 22K	1%	1/4W	
R18	RN14BK2E3300F	RES. METAL FILM 330	1%	1/4W	
R19	RN14BK2E1001F	RES. METAL FILM 1K	1%	1/4W	
R20	RN14BK2E4701F	RES. METAL FILM 4.7K	1%	1/4W	
R21	RN14BK2E2201F	RES. METAL FILM 2.2K	1%	1/4W	
R22	RN14BK2E5103F	RES. METAL FILM 510K	1%	1/4W	
R23	RN14BK2E4701F	RES. METAL FILM 47.0	1%	1/4W	
R24	RN14BK2E3301F	RES. METAL FILM 3.3K	1%	1/4W	
R25	RN14BK2E1500F	RES. METAL FILM 150	1%	1/4W	
R26	NO USE				
R27	RN14BK2E3301F	RES. METAL FILM 3.3K	1%	1/4W	
R28	RN14BK2E6801F	RES. METAL FILM 6.8K	1%	1/4W	
R29	RN14BK2E1502F	RES. METAL FILM 15K	1%	1/4W	
R30	RN14BK2E4702F	RES. METAL FILM 47K	1%	1/4W	
R31	RN14BK2E1003F	RES. METAL FILM 100K	1%	1/4W	
R32	RN14BK2E5102F	RES. METAL FILM 51K	1%	1/4W	
R33	RN14BK2E1801F	RES. METAL FILM 1.8K	1%	1/4W	
R34	RN14BK2E1801F	RES. METAL FILM 1.8K	1%	1/4W	
R35	RN14BK2E0000F	RES. METAL FILM 000	1%	1/4W	
R36	RN14BK2E1003F	RES. METAL FILM 100K	1%	1/4W	
R39	RN14BK2E3902F	RES. METAL FILM 39K	1%	1/4W	
R40	RN14BK2E1001F	RES. METAL FILM 1K	1%	1/4W	
R41	RN14BK2E4701F	RES. METAL FILM 4.7K	1%	1/4W	
R42	RN14BK2E1002F	RES. METAL FILM 10K	1%	1/4W	
R43	RN14BK2E1002F	RES. METAL FILM 10K	1%	1/4W	
R44	RN14BK2E9101F	RES. METAL FILM 9.1K	1%	1/4W	
R45	RN14BK2E1002F	RES. METAL FILM 10K	1%	1/4W	
R46	RN14BK2E4701F	RES. METAL FILM 47.0	1%	1/4W	
T1	L77-1080-08	CRYSTAL RESONATOR			
U1	TC4094BP	IC,8-STAGE SHIFT/STORE REGISTE			
U2	TC4094BP	IC,8-STAGE SHIFT/STORE REGISTE			
U3	TC4094BP	IC,8-STAGE SHIFT/STORE REGISTE			
U4	MC14093BCP	IC,QUAD 2-INPUT NAND SCHMITT			
U5	SN74ALS193N	IC,SYNC. 4 BIT UP/DOWN COUNTER			
U6	SN74ALS193N	IC,SYNC. 4 BIT UP/DOWN COUNTER			
U7	SN74ALS193N	IC,SYNC. 4 BIT UP/DOWN COUNTER			
U8	SN74ALS193N	IC,SYNC. 4 BIT UP/DOWN COUNTER			
U9	SN74ALS193N	IC,SYNC. 4 BIT UP/DOWN COUNTER			
U10	SN74LS393N	IC,4-BIT DECADE & BINARY COUNT			
U11	MC14518BCP	IC,DUAL BCD UP COUNTER			
U12	MC14518BCP	IC,DUAL BCD UP COUNTER			
U13	SN74LS74AN	IC,D-FLIP FLOP			
U14	SN74ALS00AN	IC,QUAD 2 INPUT NAND GATE			
U15	SN74LS107N	IC,DUAL JK FLIP-FLOP			
U16	SN74ALS00AN	IC,QUAD 2 INPUT NAND GATE			
U17	SN74LS107N	IC,DUAL JK FLIP-FLOP			
U18	HD74HC00P	IC,QUAD 2 INPUT NAND GATE			
U19	NO USE				
U20	MC14075BCP	IC,TRIPLE 3-INPUT OR GATE			
U21	MC14051BCP	IC,ANALOG MULTIPLEXER			
U22	SN74ALS00AN	IC,QUAD 2 INPUT NAND GATE			
U23	UPB551C	IC,PRESALER			
U24	TL084CN	IC,QUAD JFET INPUT OP-AMP			

SG-5110 AF UNIT

W02-2118-08

REF. NO	PARTS NO	NAME & DESCRIPTION			
	F07-0970-08	FRONT COVER			
	J29-0522-08	BRACKET,PCB			
	J73-0212-08	PCB (UNMOUNTED)			
	N35-3004-41	SCREW, BINDING	M3X4		
	N35-3005-41	SCREW, BINDING	M3X5		
C1	CE04EW1E101M	CAP. ELECTRO	100	20%	25V
C2	CQ93HP2A222F	CAP. MYLAR	2200P	1%	100V
C3	CH93D2H101K	CAP. NICA	100P	10%	500V
C4	CQ93HP2A124F	CAP. MYLAR	0.12	1%	100V
C5	CQ93HP2A104F	CAP. MYLAR	0.1	1%	100V
C6	CE04EW1E101M	CAP. ELECTRO	100	20%	25V
C7	CQ93HP2A332F	CAP. MYLAR	3300P	1%	100V
C8	CQ93HP2A393F	CAP. MYLAR	0.039	1%	100V
C9	CE04EW1E101M	CAP. ELECTRO	100	20%	25V
C10	CE04EW1E101M	CAP. ELECTRO	100	20%	25V
C11	CE04EW1E220N	CAP. ELECTRO	22	20%	25V
C12	CQ92M1H473K	CAP. MYLAR	0.047	10%	50V
C13	CC45CH1H330J	CAP. CERAMIC	33P	5%	50V
C14	CE04EW1E101M	CAP. ELECTRO	100	20%	25V
C15	CE04EW1E101M	CAP. ELECTRO	100	20%	25V
C16	CK45FH1H04Z	CAP. CERAMIC	0.1		50V
C17	NO USE				
C18	CE04EW1E101M	CAP. ELECTRO	100	20%	25V
C19	CE04EW1E101M	CAP. ELECTRO	100	20%	25V
C20	CE04EW1H100N	CAP. ELECTRO	10	20%	50V
C21	CE04EW1E101M	CAP. ELECTRO	100	20%	25V
C22	CE04EW1E101M	CAP. ELECTRO	100	20%	25V
C23	CE04EW1E101M	CAP. ELECTRO	100	20%	25V
C24	CE04EW1E101M	CAP. ELECTRO	100	20%	25V
C25	CE04EW1E4R7M	CAP. ELECTRO	4.7	20%	25V
C26	CE04EW1E4R7M	CAP. ELECTRO	4.7	20%	25V
J1	E40-7263-08	PIN CONNECTOR	2P		
J2	E40-7266-08	PIN CONNECTOR	10P		
J3	NO USE				
J4	E40-7263-08	PIN CONNECTOR	2P		
Q1	2SC1815(GR)	TR. SI, NPN			
Q2	2SC1815(GR)	TR. SI, NPN			
Q3	2SA1015(GR)	TR. SI, PNP			
Q4	2SC1815(GR)	TR. SI, NPN			
Q5	2SC1815(GR)	TR. SI, NPN			
Q6	2SC1815(GR)	TR. SI, NPN			
R1	RN14BK2E4301F	RES. METAL FILM 4.3K	1%	1/4W	
R2	RN14BK2E6203F	RES. METAL FILM 620K	1%	1/4W	
R3	RN14BK2E1002F	RES. METAL FILM 10K	1%	1/4W	
R4	RN14BK2E7502F	RES. METAL FILM 75K	1%	1/4W	
R5	RN14BK2E8202F	RES. METAL FILM 82K	1%	1/4W	
R6	RN14BK2E2703F	RES. METAL FILM 270K	1%	1/4W	
R7	RN14BK2E1000F	RES. METAL FILM 100	1%	1/4W	
R8	RN14BK2E3000F	RES. METAL FILM 300	1%	1/4W	
R9	RN14BK2E1002F	RES. METAL FILM 10K	1%	1/4W	
R10	RN14BK2E1801F	RES. METAL FILM 1.8K	1%	1/4W	
R11	RN14BK2E1502F	RES. METAL FILM 15K	1%	1/4W	
R12	RN14BK2E1201F	RES. METAL FILM 1.2K	1%	1/4W	
R13	RN14BK2E1000F	RES. METAL FILM 100	1%	1/4W	
R14	RN14BK2E1502F	RES. METAL FILM 15K	1%	1/4W	
R15	RN14BK2E1002F	RES. METAL FILM 10K	1%	1/4W	
R16	RN14BK2E1002F	RES. METAL FILM 10K	1%	1/4W	
R17	RN14BK2E1002F	RES. METAL FILM 10K	1%	1/4W	
R18	RN14BK2E1201F	RES. METAL FILM 1.2K	1%	1/4W	
R19	RN14BK2E1002F	RES. METAL FILM 10K	1%	1/4W	
R20	RN14BK2E1000F	RES. METAL FILM 100	1%	1/4W	
R21	RN14BK2E1000F	RES. METAL FILM 100	1%	1/4W	
R22	RN14BK2E1000F	RES. METAL FILM 100	1%	1/4W	
R23	RN14BK2E1000F	RES. METAL FILM 100	1%	1/4W	
R24	RN14BK2E4702F	RES. METAL FILM 47K	1%	1/4W	
R25	RN14BK2E2702F	RES. METAL FILM 27K	1%	1/4W	
R26	RN14BK2E2703F	RES. METAL FILM 270K	1%	1/4W	
R27	RN14BK2E1003F	RES. METAL FILM 100K	1%	1/4W	
R28	RN14BK2E7502F	RES. METAL FILM 75K	1%	1/4W	
R29	RN14BK2E6202F	RES. METAL FILM 62K	1%	1/4W	
R30	RN14BK2E4702F	RES. METAL FILM 47K	1%	1/4W	
R31	RN14BK2E7501F	RES. METAL FILM 7.5K	1%	1/4W	
R32	RN14BK2E2001F	RES. METAL FILM 2K	1%	1/4W	
R33	RN14BK2E2703F	RES. METAL FILM 270K	1%	1/4W	
R34	RN14BK2E1000F	RES. METAL FILM 100	1%	1/4W	
R35	RN14BK2E1000F	RES. METAL FILM 100	1%	1/4W	
R36	RN14BK2E1000F	RES. METAL FILM 100	1%	1/4W	

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION
R37	RN14BK2E2401F	RES. METAL FILM 2.4K 1% 1/4W
R38	RN14BK2E4701F	RES. METAL FILM 4.7K 1% 1/4W
R39	RN14BK2E1000F	RES. METAL FILM 100 1% 1/4W
R40	RN14BK2E2201F	RES. METAL FILM 2.2K 1% 1/4W
R41	RN14BK2E1000F	RES. METAL FILM 100 1% 1/4W
R42	RN14BK2E1502F	RES. METAL FILM 15K 1% 1/4W
R43	RN14BK2E1502F	RES. METAL FILM 15K 1% 1/4W
R44	RN14BK2E1003F	RES. METAL FILM 100K 1% 1/4W
R45	RN14BK2E5101F	RES. METAL FILM 5.1K 1% 1/4W
R46	RN14BK2E5101F	RES. METAL FILM 5.1K 1% 1/4W
R47	RN14BK2E1003F	RES. METAL FILM 100K 1% 1/4W
R48	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R49	RN14BK2E1003F	RES. METAL FILM 100K 1% 1/4W

U1	TL081CN	IC,JFET INPUT OP-AMP
U2	TL081CN	IC,JFET INPUT OP-AMP
U3	MC14053BCP	IC,TRIPLE 2CH ANALOG MPX/DE-MP
U4	AD7533KN	IC,10 BIT D/A
U5	MC14094BCP	IC,8-STAGE SHIFT/STORE REGISTE
U6	MC14094BCP	IC,8-STAGE SHIFT/STORE REGISTE
U7	TL081CN	IC,JFET INPUT OP-AMP
U8	MC14053BCP	IC,TRIPLE 2CH ANALOG MPX/DE-MP
U9	TL084CN	IC,QUAD JFET INPUT OP-AMP
U10	LM393N	IC,DUAL COMPARATORS
U11	MC14528BCP	IC,DUAL MONOSTABLE MULTIVIRATO
U12	MC14081BCP	IC,QUAD 2-INPUT AND GATE

VR1	R12-5553-08	RES. SEMI FIXED 100K
VR2	R12-1571-08	RES. SEMI FIXED 2K
VR3	R12-4524-08	RES. SEMI FIXED 50K
VR4	R12-5553-08	RES. SEMI FIXED 100K
VR5	R12-2529-08	RES. SEMI FIXED 5K

ZD1	1N4372A	DIODE,ZENER
ZD2	1N751A	DIODE,ZENER

SG-5115 AF UNIT

W02-2123-08

REF. NO	PARTS NO	NAME & DESCRIPTION
	F07-0970-08	FRONT COVER
	J29-0522-08	BRACKET,PCB
	J73-0236-08	PCB (UNMOUNTED)
	N35-3004-41	SCREW, BINDING M3X4
	N35-3005-41	SCREW, BINDING M3X5
AR1	R90-1134-08	RES. ARRAY 4X10K
C1	CM93D2H100K	CAP. NICA 10P 10% 500V
C2	CE04EW1H4R7H	CAP. ELECTRO 4.7 20% 50V
C3	CE04EW1H4R7H	CAP. ELECTRO 4.7 20% 50V
C4	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C5	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C6	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C7	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C8	CE04EW1H100H	CAP. ELECTRO 10 20% 50V
C9	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C10	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C11	NO USE	
C12	CQ93HP2A104F	CAP. NYLAR 0.1 1% 100V
C13	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C14	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C15	NO USE	
C16	CQ92M1H473K	CAP. NYLAR 0.047 10% 50V
C17	CE04EW1E220M	CAP. ELECTRO 22 20% 25V
C18	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C19	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C20	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C21	CQ93HP2A222F	CAP. NYLAR 2200P 1% 100V
C22	CM93D2H101K	CAP. NICA 100P 10% 500V
C23	CQ93HP2A124F	CAP. NYLAR 0.12 1% 100V
C24	CQ93HP2A104F	CAP. NYLAR 0.1 1% 100V
C25	CQ93HP2A332F	CAP. NYLAR 3300P 1% 100V
C26	CQ93HP2A393F	CAP. NYLAR 0.039 1% 100V
C27	CE04EW1E101M	CAP. ELECTRO 100 20% 25V

J1	E40-7263-08	PIN CONNECTOR 2P
J2	E40-7266-08	PIN CONNECTOR 10P
J3	E40-7263-08	PIN CONNECTOR 2P

Q1	2SA1267(GR)	TR. SI, PNP
Q2	2SA1267(GR)	TR. SI, PNP
Q3	2SA1267(GR)	TR. SI, PNP
Q4	2SA1267(GR)	TR. SI, PNP
Q5	2SC1815(GR)	TR. SI, NPN
Q6	2SC1815(GR)	TR. SI, NPN
Q7	2SC1815(GR)	TR. SI, NPN
Q8	2SA1015(GR)	TR. SI, PNP
Q9	2SC1815(GR)	TR. SI, NPN
Q10	2SC1815(GR)	TR. SI, NPN

R1	RN14BK2E4702F	RES. METAL FILM 47K 1% 1/4W
R2	RN14BK2E4702F	RES. METAL FILM 47K 1% 1/4W
R3	RN14BK2E1302F	RES. METAL FILM 13K 1% 1/4W
R4	RN14BK2E1202F	RES. METAL FILM 12K 1% 1/4W
R5	RN14BK2E1201F	RES. METAL FILM 1.2K 1% 1/4W
R6	RN14BK2E2401F	RES. METAL FILM 2.4K 1% 1/4W
R7	RN14BK2E3000F	RES. METAL FILM 300 1% 1/4W
R8	RN14BK2E6200F	RES. METAL FILM 620 1% 1/4W
R9	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R10	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R11	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R12	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R13	RN14BK2E2401F	RES. METAL FILM 2.4K 1% 1/4W
R14	RN14BK2E1502F	RES. METAL FILM 15K 1% 1/4W
R15	RN14BK2E1502F	RES. METAL FILM 15K 1% 1/4W
R16	RN14BK2E1000F	RES. METAL FILM 100 1% 1/4W
R17	RN14BK2E1000F	RES. METAL FILM 100 1% 1/4W
R18	RN14BK2E4701F	RES. METAL FILM 4.7K 1% 1/4W
R19	RN14BK2E2201F	RES. METAL FILM 2.2K 1% 1/4W
R20	RN14BK2E1000F	RES. METAL FILM 100 1% 1/4W
R21	RN14BK2E5101F	RES. METAL FILM 5.1K 1% 1/4W
R22	RN14BK2E1003F	RES. METAL FILM 100K 1% 1/4W
R23	RN14BK2E5101F	RES. METAL FILM 5.1K 1% 1/4W
R24	RN14BK2E1003F	RES. METAL FILM 100K 1% 1/4W
R25	RN14BK2E1003F	RES. METAL FILM 100K 1% 1/4W
R26	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R27	RN14BK2E1000F	RES. METAL FILM 100 1% 1/4W
R28	RN14BK2E1000F	RES. METAL FILM 100 1% 1/4W
R29	RN14BK2E2700F	RES. METAL FILM 270 1% 1/4W
R30	RN14BK2E2001F	RES. METAL FILM 2K 1% 1/4W

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION
Q5	2SA1267	TR. SI, PNP
Q6	2SA1267	TR. SI, PNP
Q7	2SA1267	TR. SI, PNP
Q8	2SA1267	TR. SI, PNP
Q9	2SA1267	TR. SI, PNP
R1	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R2	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R3	RN14BK2E1003F	RES. METAL FILM 100K 1% 1/4W
R4	RN14BK2E1003F	RES. METAL FILM 100K 1% 1/4W
R5	RN14BK2E1003F	RES. METAL FILM 100K 1% 1/4W
R6	RN14BK2E4702F	RES. METAL FILM 47K 1% 1/4W
R7	RN14BK2E4702F	RES. METAL FILM 47K 1% 1/4W
R8	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R9	RN14BK2E1502F	RES. METAL FILM 15K 1% 1/4W
R10	RN14BK2E1801F	RES. METAL FILM 1.8K 1% 1/4W
R11	RN14BK2E1803F	RES. METAL FILM 180K 1% 1/4W
R12	RN14BK2E1502F	RES. METAL FILM 15K 1% 1/4W
R13	RN14BK2E1402F	RES. METAL FILM 14K 1% 1/4W
R14	RN14BK2E1803F	RES. METAL FILM 180K 1% 1/4W
R15	RN14BK2E7501F	RES. METAL FILM 7.5K 1% 1/4W
R16	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R17	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R18	RN14BK2E1502F	RES. METAL FILM 15K 1% 1/4W
R19	RN14BK2E1502F	RES. METAL FILM 15K 1% 1/4W
R20	RN14BK2E1501F	RES. METAL FILM 1.5K 1% 1/4W
R21	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R22	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R23	RN14BK2E4701F	RES. METAL FILM 4.7K 1% 1/4W
R24	RN14BK2E2201F	RES. METAL FILM 2.2K 1% 1/4W
R25	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R26	RN14BK2E1800F	RES. METAL FILM 180 1% 1/4W
R27	RN14BK2E6200F	RES. METAL FILM 620 1% 1/4W
R28	RN14BK2E6200F	RES. METAL FILM 620 1% 1/4W
R29	RN14BK2E1500F	RES. METAL FILM 150 1% 1/4W
R30	RN14BK2E9101F	RES. METAL FILM 9.1K 1% 1/4W
R31	RN14BK2E1500F	RES. METAL FILM 150 1% 1/4W
R32	RN14BK2E9101F	RES. METAL FILM 9.1K 1% 1/4W
R33	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R34	RN14BK2E4301F	RES. METAL FILM 4.3K 1% 1/4W
R35	RN14BK2E4301F	RES. METAL FILM 4.3K 1% 1/4W
R36	RN14BK2E3901F	RES. METAL FILM 3.9K 1% 1/4W
R37	RN14BK2E6803F	RES. METAL FILM 680K 1% 1/4W
R38	RN14BK2E6803F	RES. METAL FILM 680K 1% 1/4W
R39	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R40	RN14BK2E6201F	RES. METAL FILM 6.2K 1% 1/4W
R41	RN14BK2E1501F	RES. METAL FILM 1.5K 1% 1/4W
R42	RN14BK2E1501F	RES. METAL FILM 1.5K 1% 1/4W
R43	R90-1135-08	RES. SEMI FIXED 2K
R44	RN14BK2E5361F	RES. METAL FILM 5.36K 1% 1/4W
R45	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R46	RN14BK2E2701F	RES. METAL FILM 2.7K 1% 1/4W
R47	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R48	RN14BK2E9100F	RES. METAL FILM 910 1% 1/4W
R49	RN14BK2E1202F	RES. METAL FILM 12K 1% 1/4W
R50	RN14BK2E3901F	RES. METAL FILM 3.9K 1% 1/4W
R51	RN14BK2E4700F	RES. METAL FILM 470 1% 1/4W
R52	NO USE	
R53	RN14BK2E22R0F	RES. METAL FILM 22.0 1% 1/4W
R54	RN14BK2E1800F	RES. METAL FILM 180 1% 1/4W
R55	RN14BK2E6201F	RES. METAL FILM 6.2K 1% 1/4W
R56	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R57	RN14BK2E1000F	RES. METAL FILM 100 1% 1/4W
R58	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R59	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R60	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R61	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R62	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R63	RN14BK2E1602F	RES. METAL FILM 16K 1% 1/4W
R64	RN14BK2E9101F	RES. METAL FILM 9.1K 1% 1/4W
R65	RN14BK2E1001F	RES. METAL FILM 1K 1% 1/4W
R66	RN14BK2E1001F	RES. METAL FILM 1K 1% 1/4W
R67	RN14BK2E3901F	RES. METAL FILM 3.9K 1% 1/4W
R68	RN14BK2E8201F	RES. METAL FILM 8.2K 1% 1/4W
R69	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R70	RN14BK2E6200F	RES. METAL FILM 620 1% 1/4W
R71	NO USE	
R72	RN14BK2E1001F	RES. METAL FILM 1K 1% 1/4W
R73	RN14BK2E3000F	RES. METAL FILM 300 1% 1/4W
R74	RN14BK2E6200F	RES. METAL FILM 620 1% 1/4W
R75	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R76	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R77	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R78	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R79	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W

REF. NO	PARTS NO	NAME & DESCRIPTION
R80	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R81	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R82	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R83	RN14BK2E1201F	RES. METAL FILM 1.2K 1% 1/4W
R84	RN14BK2E2401F	RES. METAL FILM 2.4K 1% 1/4W
R85	RN14BK2E1302F	RES. METAL FILM 13K 1% 1/4W
R86	RN14BK2E4702F	RES. METAL FILM 47K 1% 1/4W
R87	NO USE	
R88	RN14BK2E1001F	RES. METAL FILM 1K 1% 1/4W
R89	RN14BK2E2401F	RES. METAL FILM 2.4K 1% 1/4W
R90	RN14BK2E1202F	RES. METAL FILM 12K 1% 1/4W
R91	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R92	RN14BK2E1801F	RES. METAL FILM 1.8K 1% 1/4W
U1	MC14053BCP	IC, TRIPLE 2CH ANALOG MPX/DE-NP
U2	MC14053BCP	IC, TRIPLE 2CH ANALOG MPX/DE-NP
U3	AD7533KN	IC, 10 BIT D/A
U4	MC14094BCP	IC, 8-STAGE SHIFT/STORE REGISTE
U5	MC14093BCP	IC, QUAD 2-INPUT NAND SCHMITT
U6	MC14094BCP	IC, 8-STAGE SHIFT/STORE REGISTE
U7	TL084CN	IC, QUAD JFET INPUT OP-AMP
U8	TL084CN	IC, QUAD JFET INPUT OP-AMP
U9	LM318N	IC, OP-AMP
U10	CA3054	IC, DIFFERENTIAL/CASCODE AMP
U11	SN74LS107N	IC, DUAL JK FLIP-FLOP
U12	SN74LS00N	IC, QUAD 2-INPUT NAND GATE
U13	SN74LS390N	IC, DUAL DECADE COUNTERS
U14	LM318N	IC, OP-AMP
U15	LM318N	IC, OP-AMP
U16	MC14053BCP	IC, TRIPLE 2CH ANALOG MPX/DE-NP
U17	TL081CN	IC, JFET INPUT OP-AMP
U18	MC14066BCP	IC, QUAD ANALOG SW/QUAD MPX
U19	MC14066BCP	IC, QUAD ANALOG SW/QUAD MPX
U20	MC14094BCP	IC, 8-STAGE SHIFT/STORE REGISTE
U21	TL084CN	IC, QUAD JFET INPUT OP-AMP
VR1	R12-2530-08	RES. SEMI FIXED 5K
VR2	R12-2530-08	RES. SEMI FIXED 5K
VR3	R12-3573-08	RES. SEMI FIXED 10K
VR4	R12-5554-08	RES. SEMI FIXED 100K
VR5	R12-5554-08	RES. SEMI FIXED 100K
VR6	R12-2530-08	RES. SEMI FIXED 5K
VR7	R12-2530-08	RES. SEMI FIXED 5K
VR8	R12-4525-08	RES. SEMI FIXED 50K
VR9	R12-3573-08	RES. SEMI FIXED 10K
VR10	R12-3573-08	RES. SEMI FIXED 10K
Y1	L77-1079-08	CRYSTAL RESONATOR

PARTS LIST

ATT UNIT

W02-2120-08

REF. NO	PARTS NO	NAME & DESCRIPTION
	F07-0971-08	COVER, ATT UPPER
	F07-0972-08	COVER, ATT LOWER
	J73-0214-08	PCB (UNMOUNTED)
	N35-2505-41	SCREW, BINDING M2X4
	N35-3005-41	SCREW, BINDING M3X5
C1	CK45B1E102K	CAP. CERAMIC 1000P 10% 25V
C2	CK45B1E102K	CAP. CERAMIC 1000P 10% 25V
C3	CK45B1E102K	CAP. CERAMIC 1000P 10% 25V
C4	CK45B1E102K	CAP. CERAMIC 1000P 10% 25V
C5	CK45B1E102K	CAP. CERAMIC 1000P 10% 25V
C6	CK45B1E102K	CAP. CERAMIC 1000P 10% 25V
D1	1N4148	DIODE
D2	1N4148	DIODE
D3	1N4148	DIODE
D4	1N4148	DIODE
D5	1N4148	DIODE
D6	1N4148	DIODE
J1	E40-7266-08	PIN CONNECTOR 10P
J2	NO USE	
J3	E40-7271-08	CONNECTOR 2P
J4	E04-0265-08	BNC CONNECTOR
K1	S76-0615-08	RELAY
K2	S76-0615-08	RELAY
K3	S76-0615-08	RELAY
K4	S76-0615-08	RELAY
K5	S76-0615-08	RELAY
K6	S76-0615-08	RELAY
L1	L40-3305-13	FERRI INDUCTOR 33UH 5%
L2	L40-3305-13	FERRI INDUCTOR 33UH 5%
L3	L40-3305-13	FERRI INDUCTOR 33UH 5%
L4	L40-3305-13	FERRI INDUCTOR 33UH 5%
L5	L40-3305-13	FERRI INDUCTOR 33UH 5%
L6	L40-3305-13	FERRI INDUCTOR 33UH 5%
Q1	2SA1015(GR)	TR. SI, PNP
Q2	2SA1015(GR)	TR. SI, PNP
Q3	2SA1015(GR)	TR. SI, PNP
Q4	2SA1015(GR)	TR. SI, PNP
Q5	2SA1015(GR)	TR. SI, PNP
Q6	2SA1015(GR)	TR. SI, PNP
R1	RN14BK2E1001F	RES. METAL FILM 1K 1% 1/4W
R2	RN14BK2E3901F	RES. METAL FILM 3.9K 1% 1/4W
R3	RN14BK2E1001F	RES. METAL FILM 1K 1% 1/4W
R4	RN14BK2E3901F	RES. METAL FILM 3.9K 1% 1/4W
R5	RN14BK2E1001F	RES. METAL FILM 1K 1% 1/4W
R6	RN14BK2E3901F	RES. METAL FILM 3.9K 1% 1/4W
R7	RN14BK2E1001F	RES. METAL FILM 1K 1% 1/4W
R8	RN14BK2E3901F	RES. METAL FILM 3.9K 1% 1/4W
R9	RN14BK2E1001F	RES. METAL FILM 1K 1% 1/4W
R10	RN14BK2E3901F	RES. METAL FILM 3.9K 1% 1/4W
R11	RN14BK2E5231F	RES. METAL FILM 5.23K 1% 1/4W
R12	RN14BK2E5231F	RES. METAL FILM 5.23K 1% 1/4W
R13	RN14BK2E9980F	RES. METAL FILM 998 1% 1/4W
R14	RN14BK2E6880F	RES. METAL FILM 68.0 1% 1/4W
R15	RN14BK2E6880F	RES. METAL FILM 68.0 1% 1/4W
R16	RN14BK2E6880F	RES. METAL FILM 68.0 1% 1/4W
R17	RN14BK2E1160F	RES. METAL FILM 116 1% 1/4W
R18	RN14BK2E1160F	RES. METAL FILM 116 1% 1/4W
R19	RN14BK2E5281F	RES. METAL FILM 5.28K 1% 1/4W
R20	RN14BK2E4360F	RES. METAL FILM 436 1% 1/4W
R21	RN14BK2E4360F	RES. METAL FILM 436 1% 1/4W
R22	RN14BK2E1161F	RES. METAL FILM 1.16K 1% 1/4W
R23	RN14BK2E2210F	RES. METAL FILM 221 1% 1/4W
R24	RN14BK2E2210F	RES. METAL FILM 221 1% 1/4W
R25	RN14BK2E2381F	RES. METAL FILM 2.38K 1% 1/4W
R26	RN14BK2E5231F	RES. METAL FILM 5.23K 1% 1/4W
R27	RN14BK2E5231F	RES. METAL FILM 5.23K 1% 1/4W
R28	RN14BK2E9980F	RES. METAL FILM 998 1% 1/4W
R29	NO USE	
R30	RN14BK2E1001F	RES. METAL FILM 1K 1% 1/4W
R31	RN14BK2E3901F	RES. METAL FILM 3.9K 1% 1/4W
R37	RN14BK2E1510F	RES. METAL FILM 151 1% 1/4W
R38	RN14BK2E1510F	RES. METAL FILM 151 1% 1/4W
R39	RN14BK2E3741F	RES. METAL FILM 3.74K 1% 1/4W

REF. NO	PARTS NO	NAME & DESCRIPTION
R40	RN14BK2E1001F	RES. METAL FILM 1K 1% 1/4W

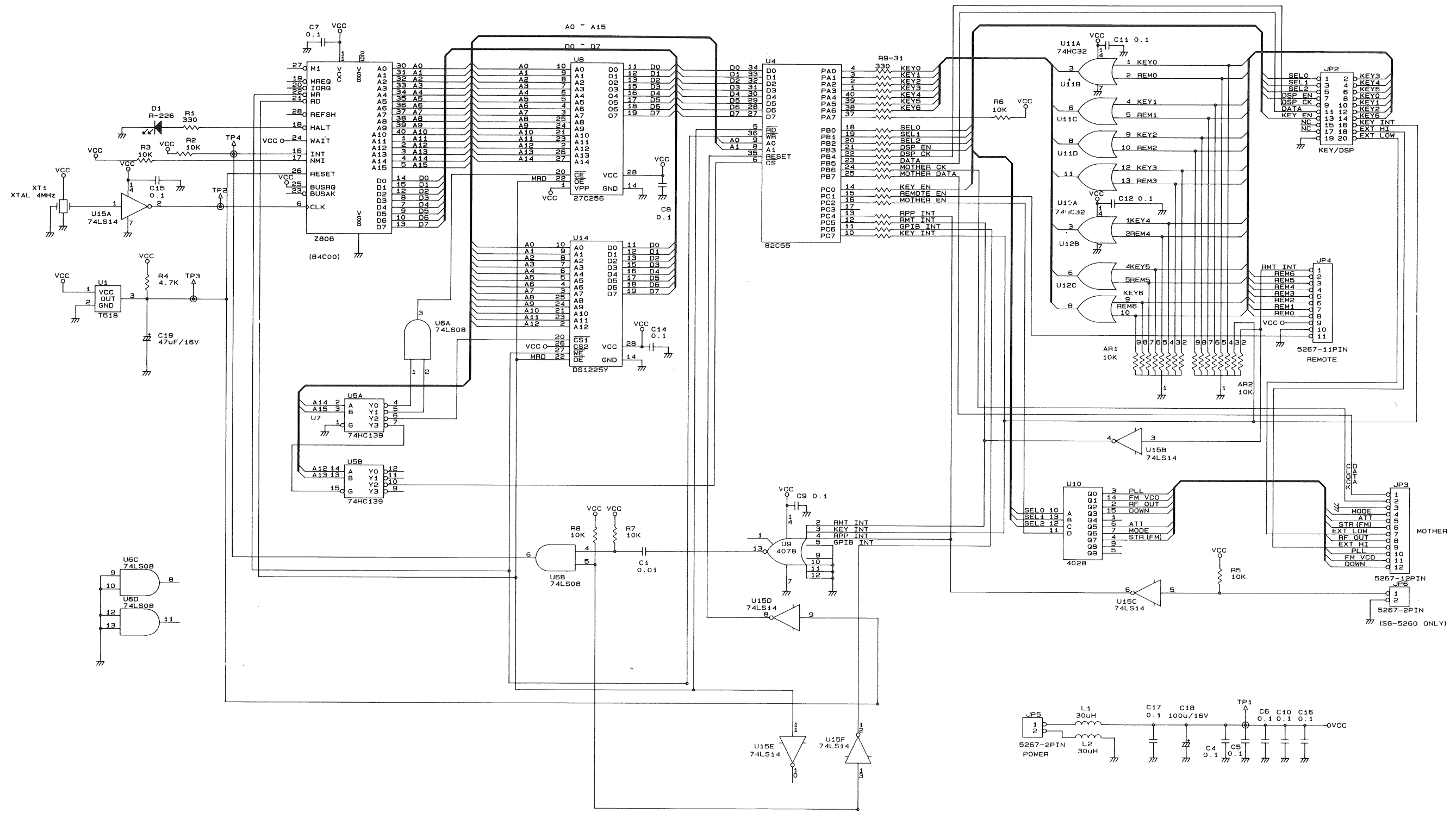
MOTHER UNIT

W02-2121-08

REF. NO	PARTS NO	NAME & DESCRIPTION
	J73-0215-08	PCB (UNMOUNTED)
J1	E40-7266-08	PIN CONNECTOR 10P
J2	E40-7266-08	PIN CONNECTOR 10P
J3	E40-7266-08	PIN CONNECTOR 10P
J4	E40-7266-08	PIN CONNECTOR 10P
J5	E40-7266-08	PIN CONNECTOR 10P
J6	E40-7266-08	PIN CONNECTOR 10P
J7	E40-7279-08	PIN CONNECTOR 2P
J8	E40-7263-08	PIN CONNECTOR 2P
Q1	2SA1015(GR)	TR. SI, PNP
Q2	TIP32C	TR. SI, PNP
R1	RN14BK2E1003F	RES. METAL FILM 100K 1% 1/4W
R2	RN14BK2E1003F	RES. METAL FILM 100K 1% 1/4W
R3	RN14BK2E1003F	RES. METAL FILM 100K 1% 1/4W
R4	RN14BK2E2701F	RES. METAL FILM 2.7K 1% 1/4W
R5	RN14BK2E1003F	RES. METAL FILM 100K 1% 1/4W
R6	RN14BK2E4701F	RES. METAL FILM 4.7K 1% 1/4W
R9	RN14BK2E1003F	RES. METAL FILM 100K 1% 1/4W
U1	HC14094BCP	IC, 8-STAGE SHIFT/STORE REGISTE

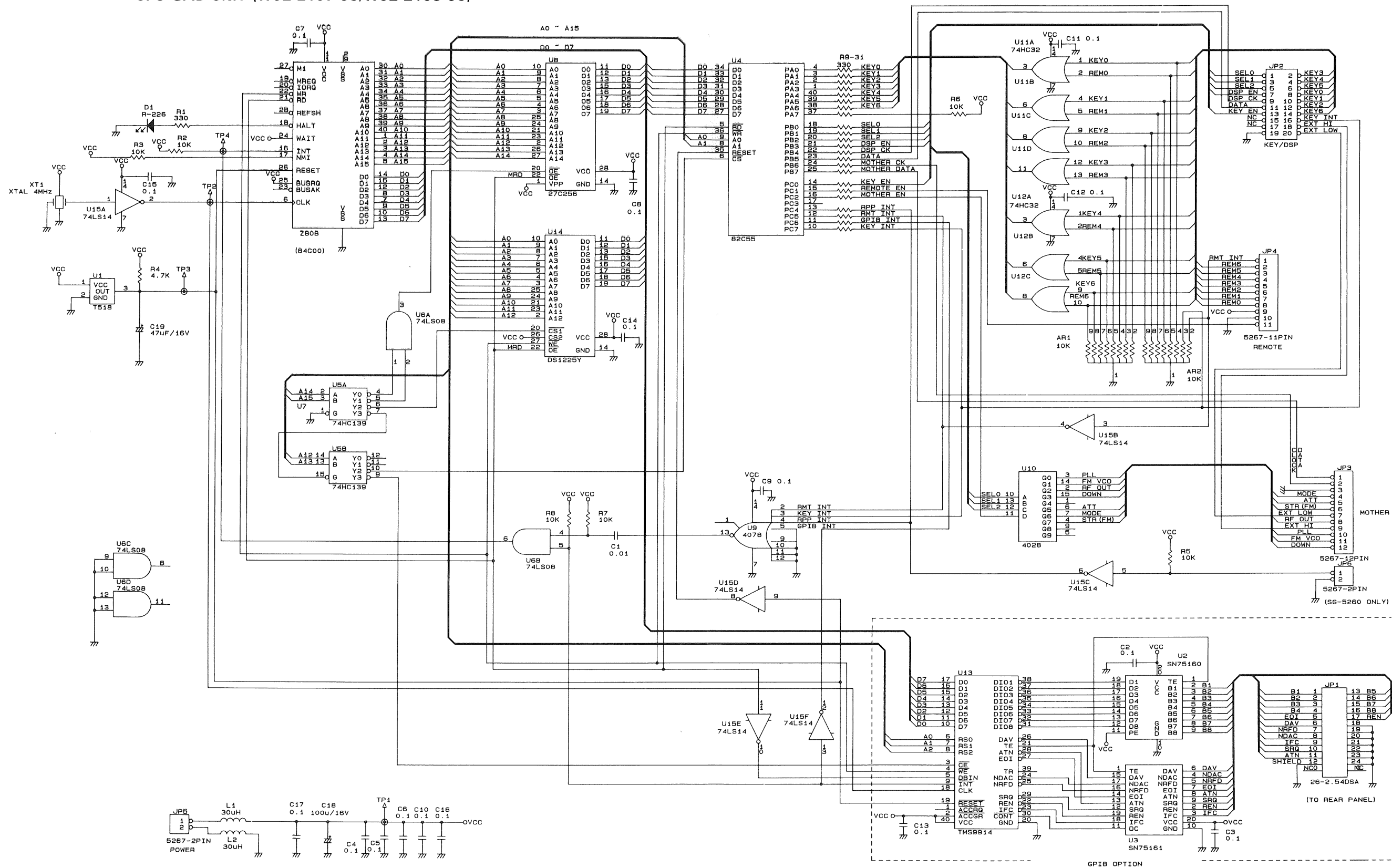
SCHEMATIC DIAGRAM

SG-5110/SG-5115 CPU UNIT (W02-2113-08/W02-2112-08)



SCHEMATIC DIAGRAM

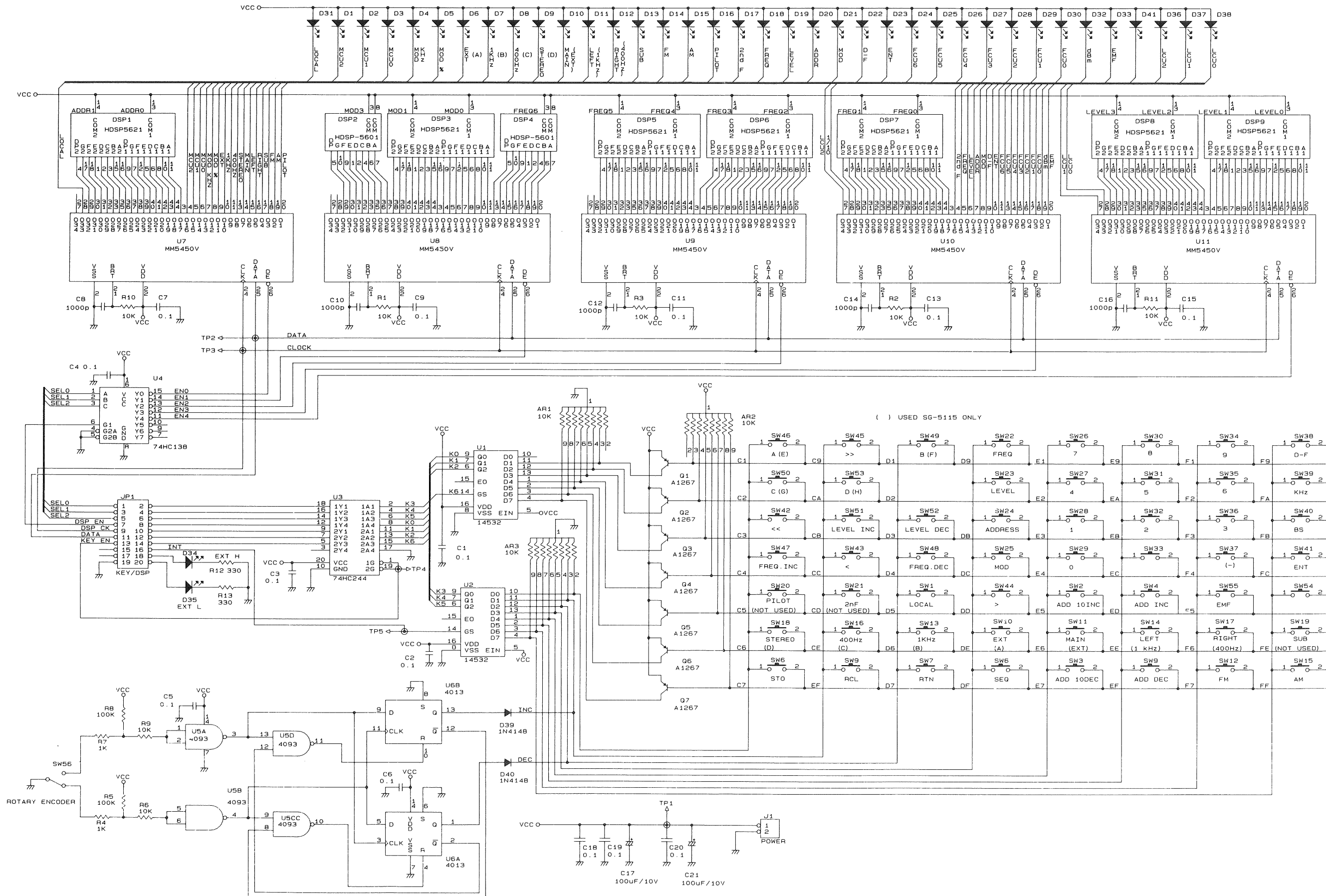
CPU-GPIB UNIT (W02-2107-05/W02-2108-05)



KEY/DISPLAY UNIT (W02-2114-08)

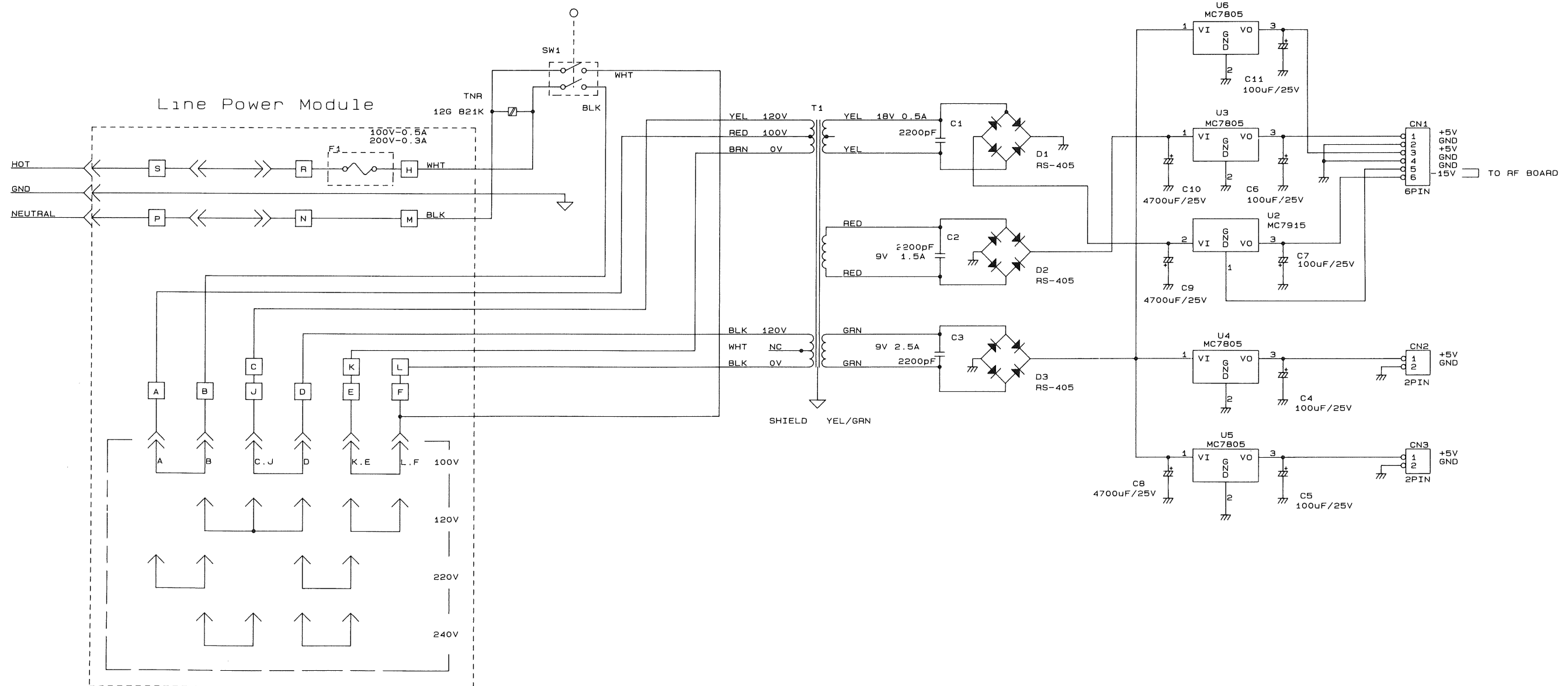
SCHEMATIC DIAGRAM

() USED SG-5115 ONLY



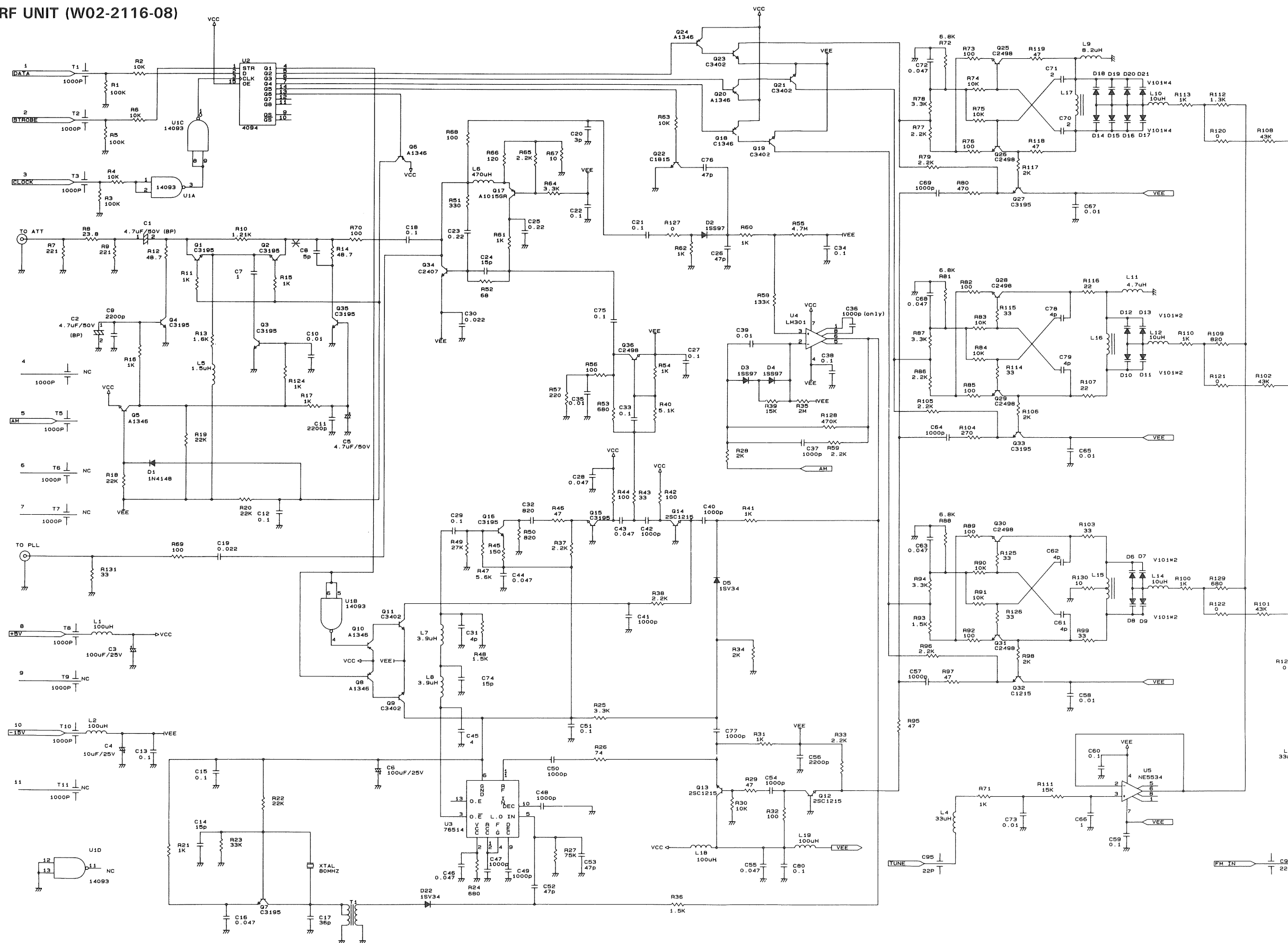
SCHEMATIC DIAGRAM

POWER UNIT (W02-2115-08)



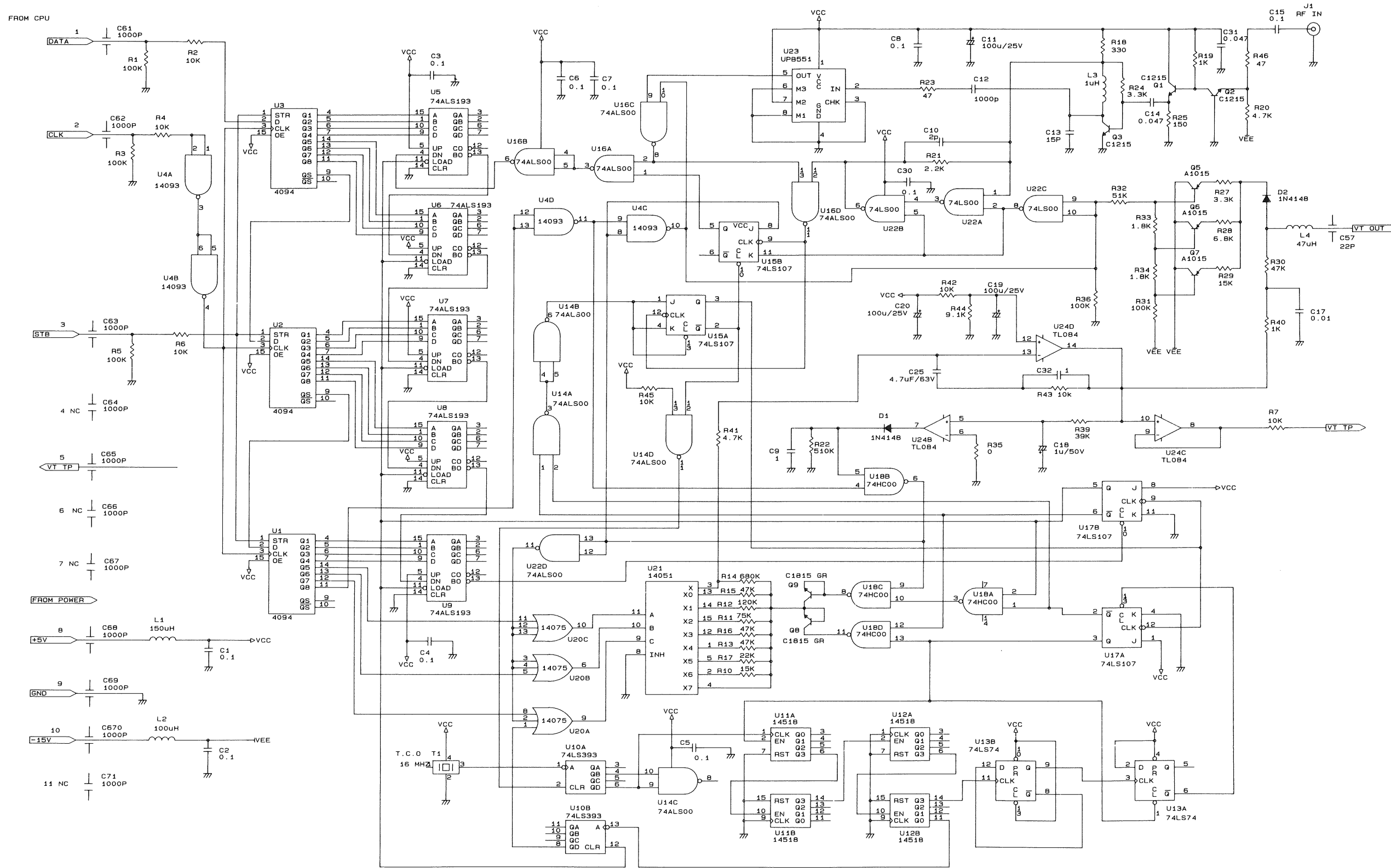
SCHEMATIC DIAGRAM

RF UNIT (W02-2116-08)

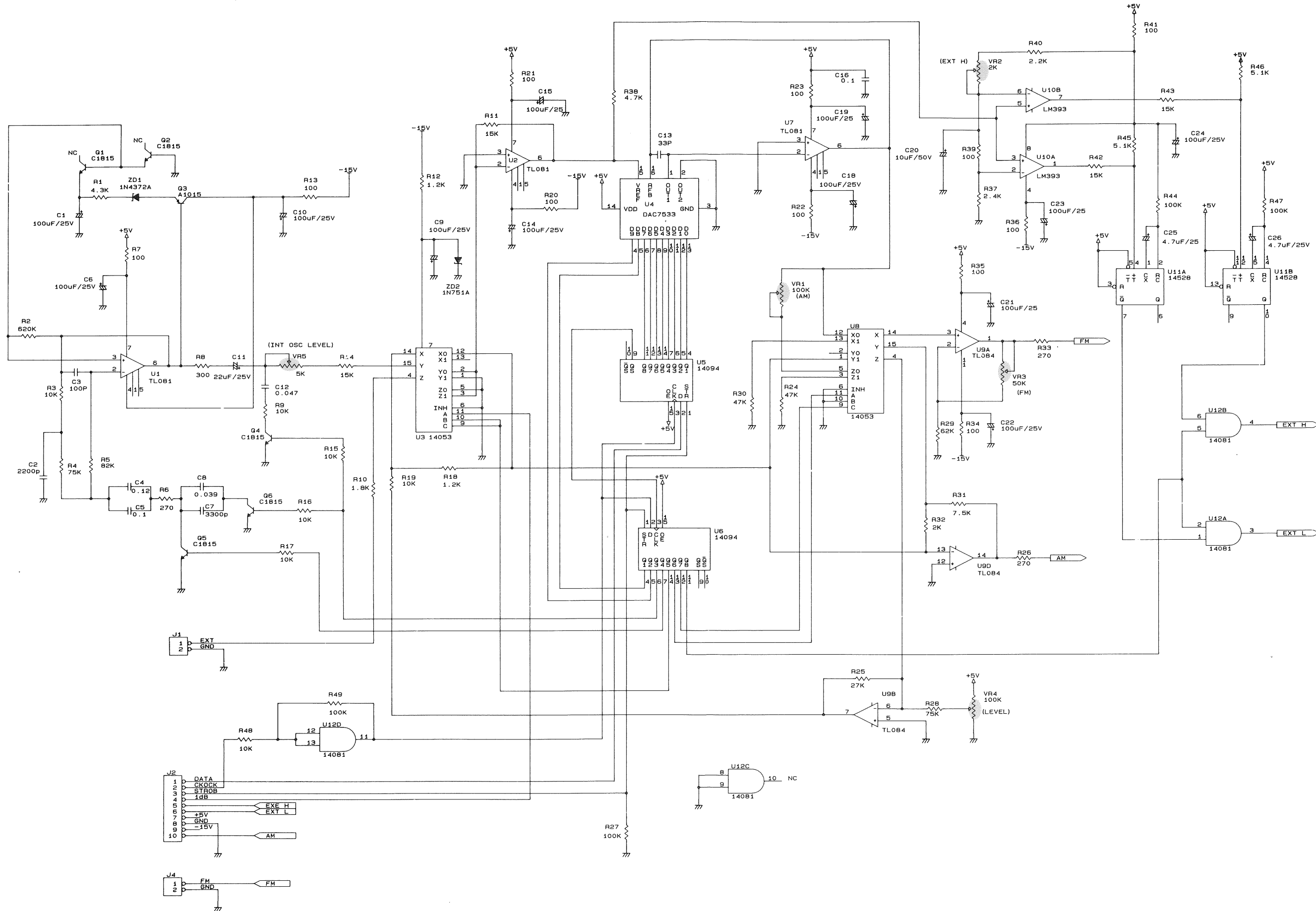


SCHEMATIC DIAGRAM

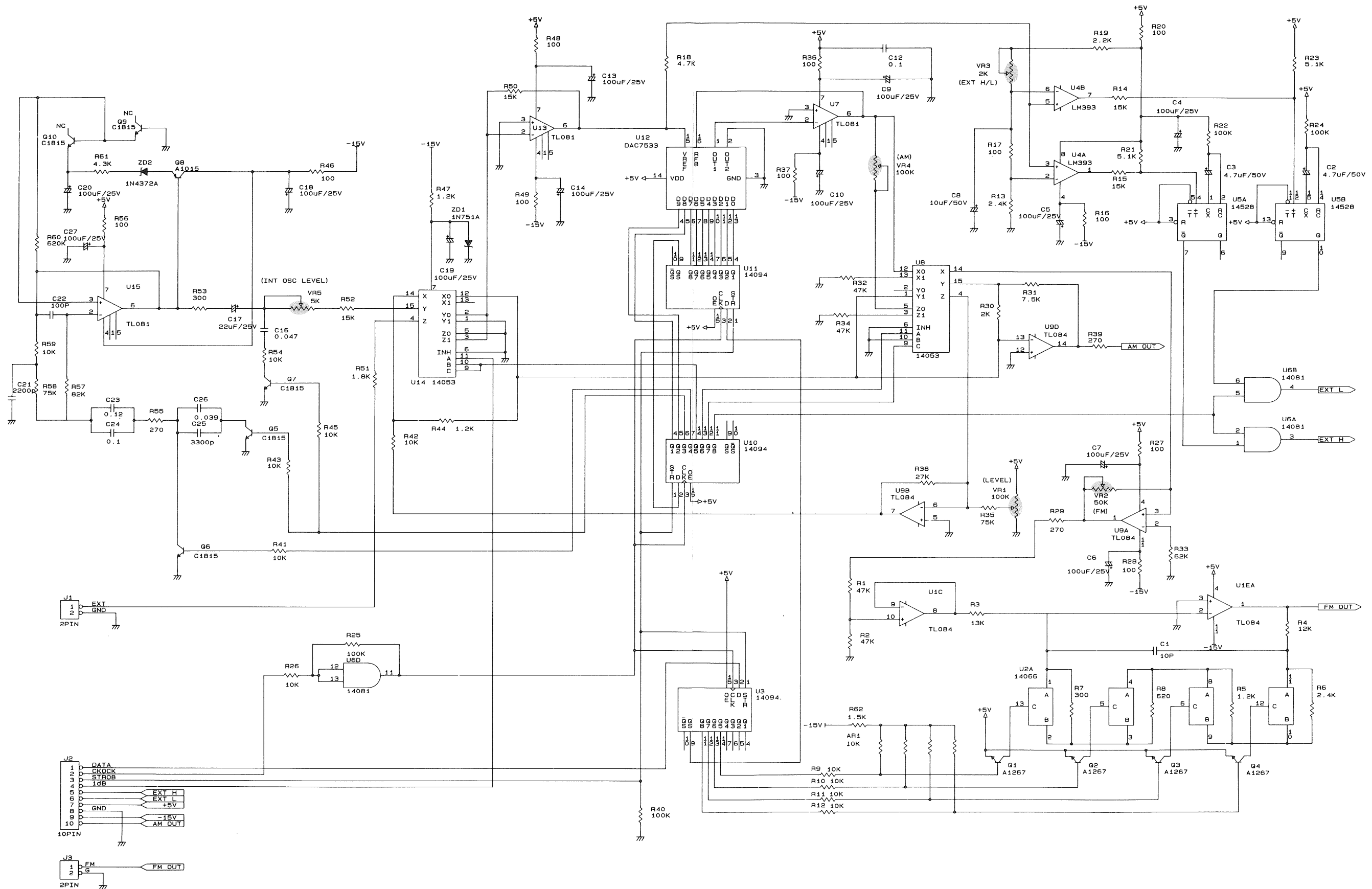
PLL UNIT (W02-2117-08)



SCHEMATIC DIAGRAM

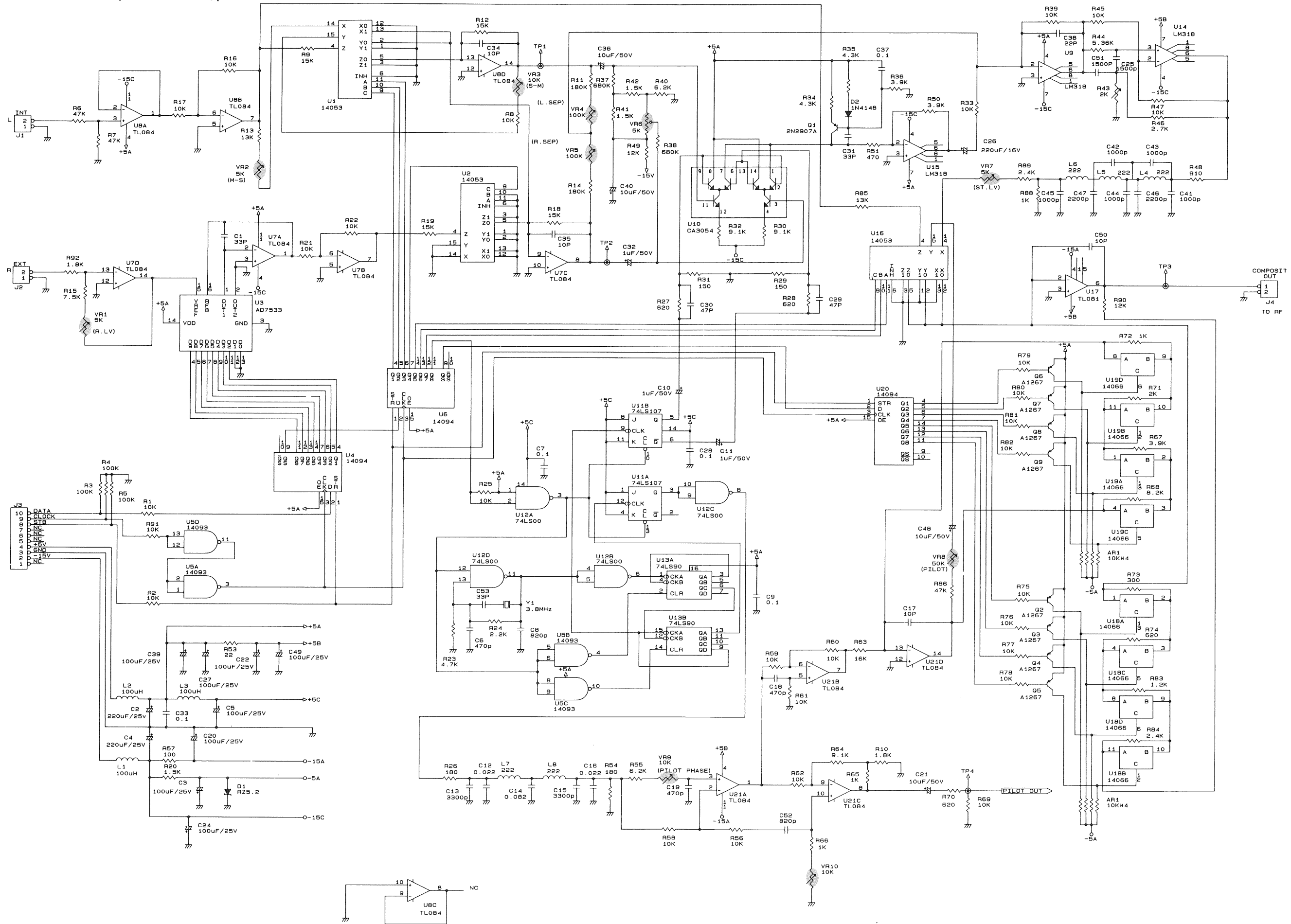


SCHEMATIC DIAGRAM



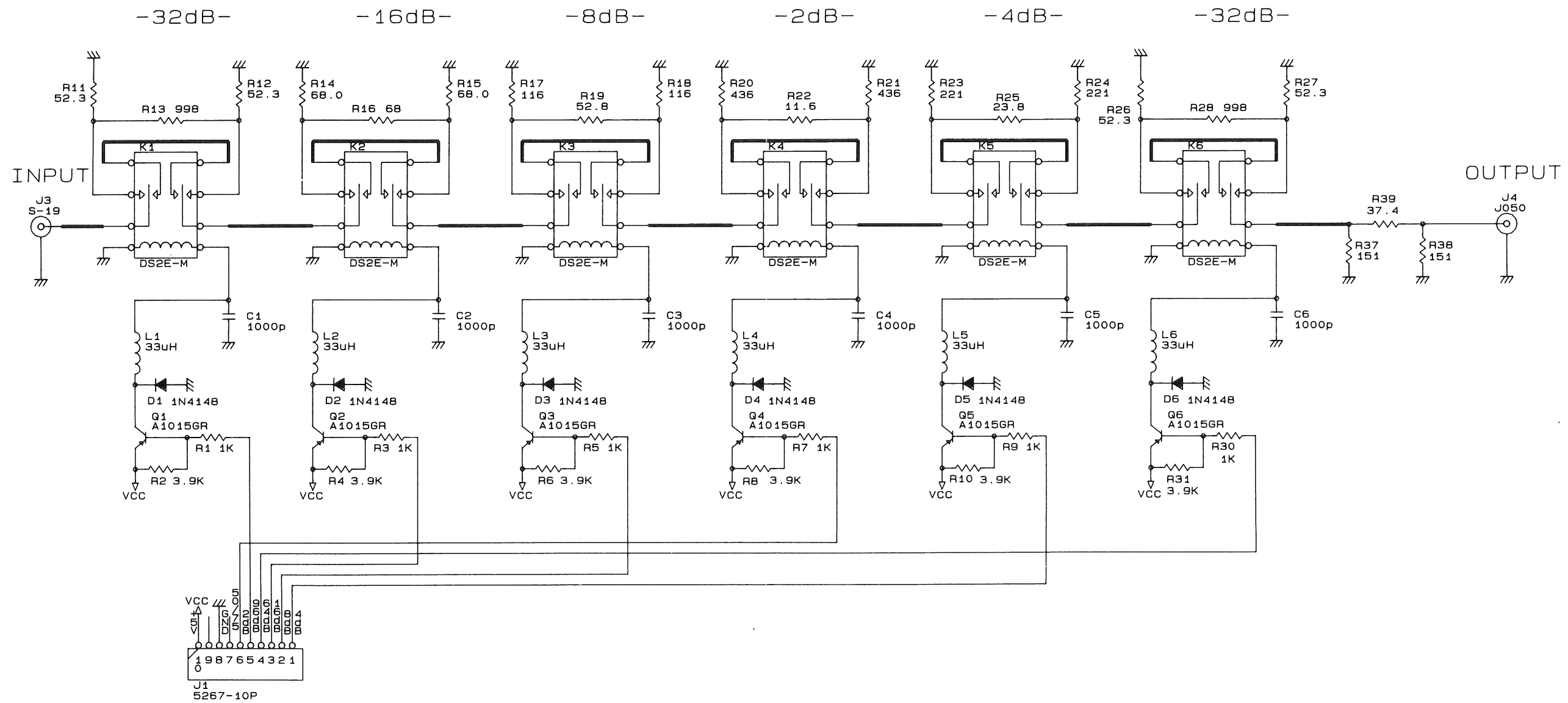
SCHEMATIC DIAGRAM

STEREO UNIT (W02-2119-08)



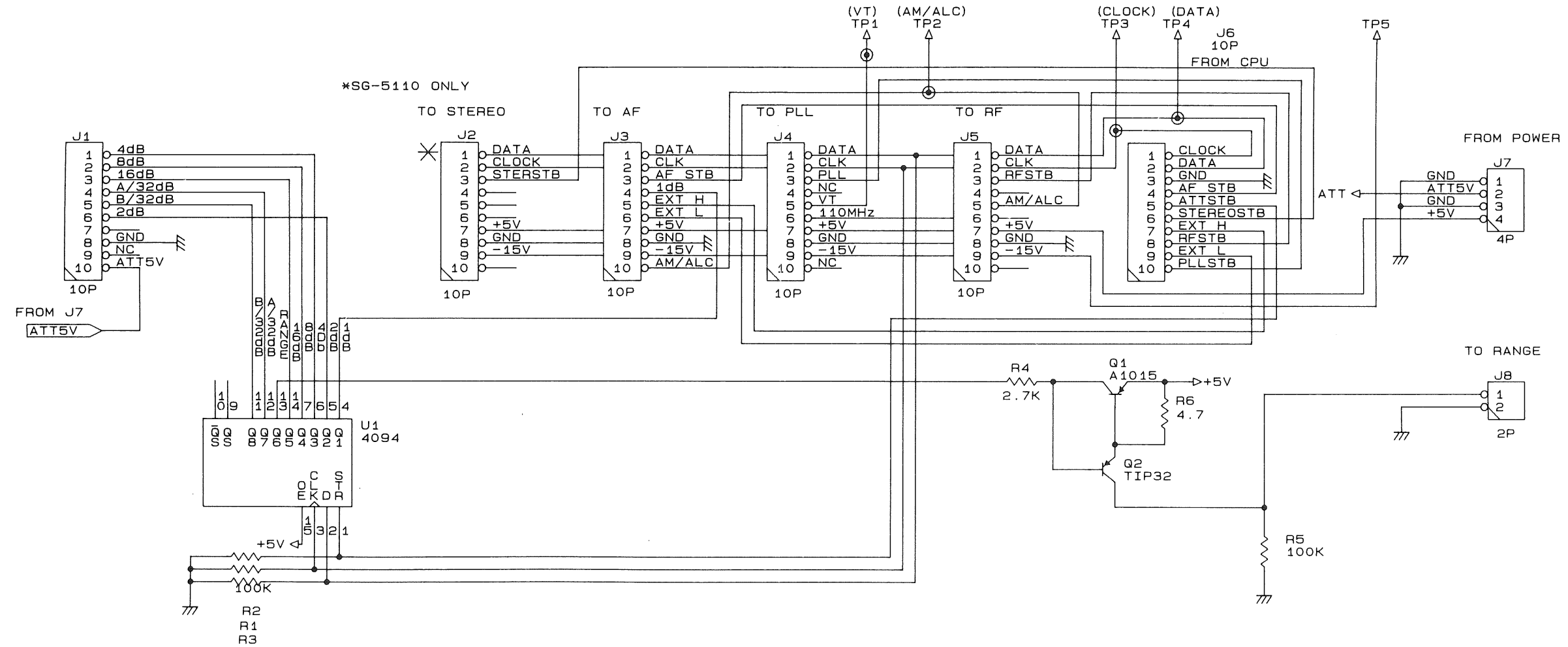
SCHEMATIC DIAGRAM

ATT UNIT (W02-2120-08)



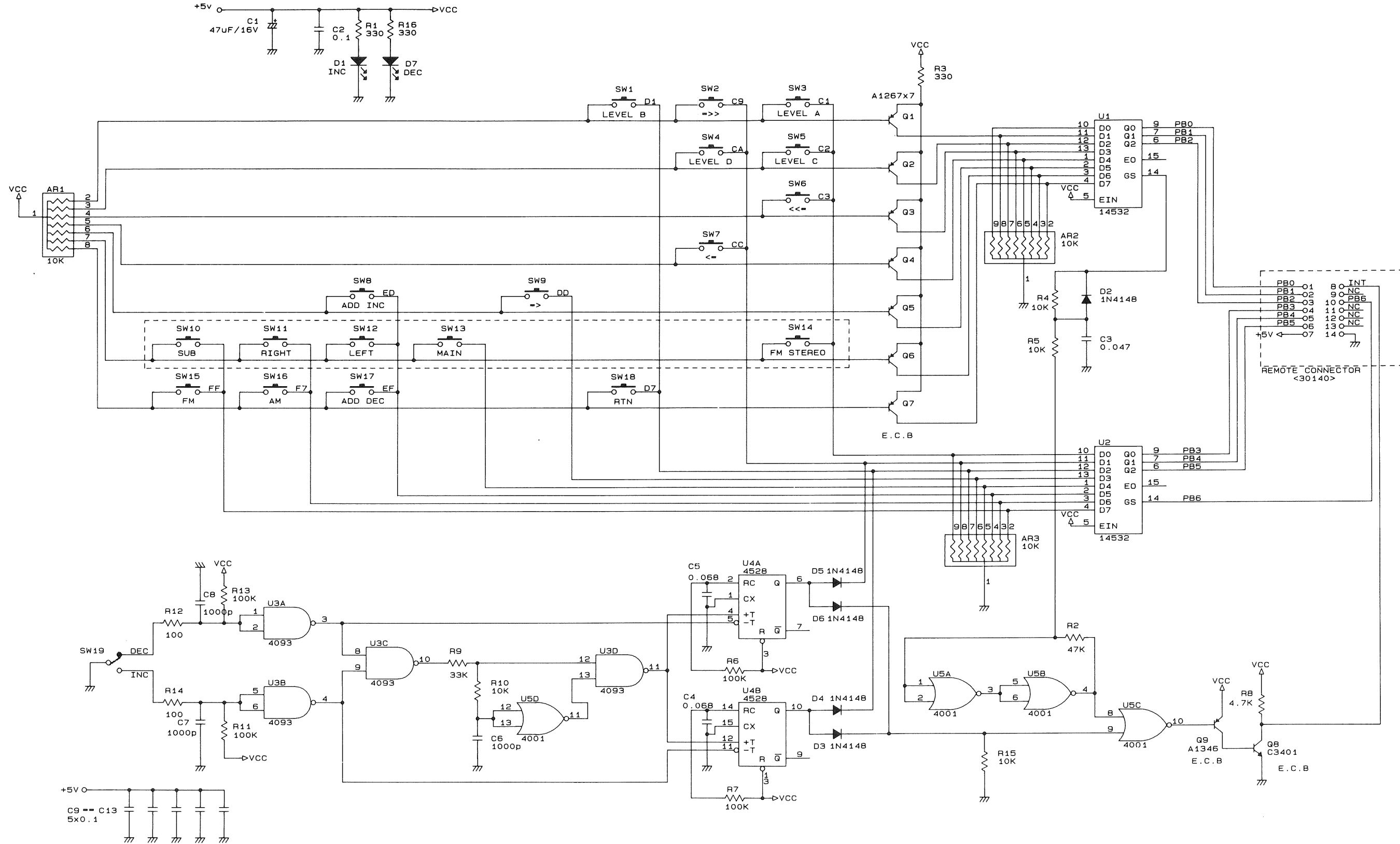
SCHEMATIC DIAGRAM

MOTHER UNIT (W02-2121-08)



SCHEMATIC DIAGRAM

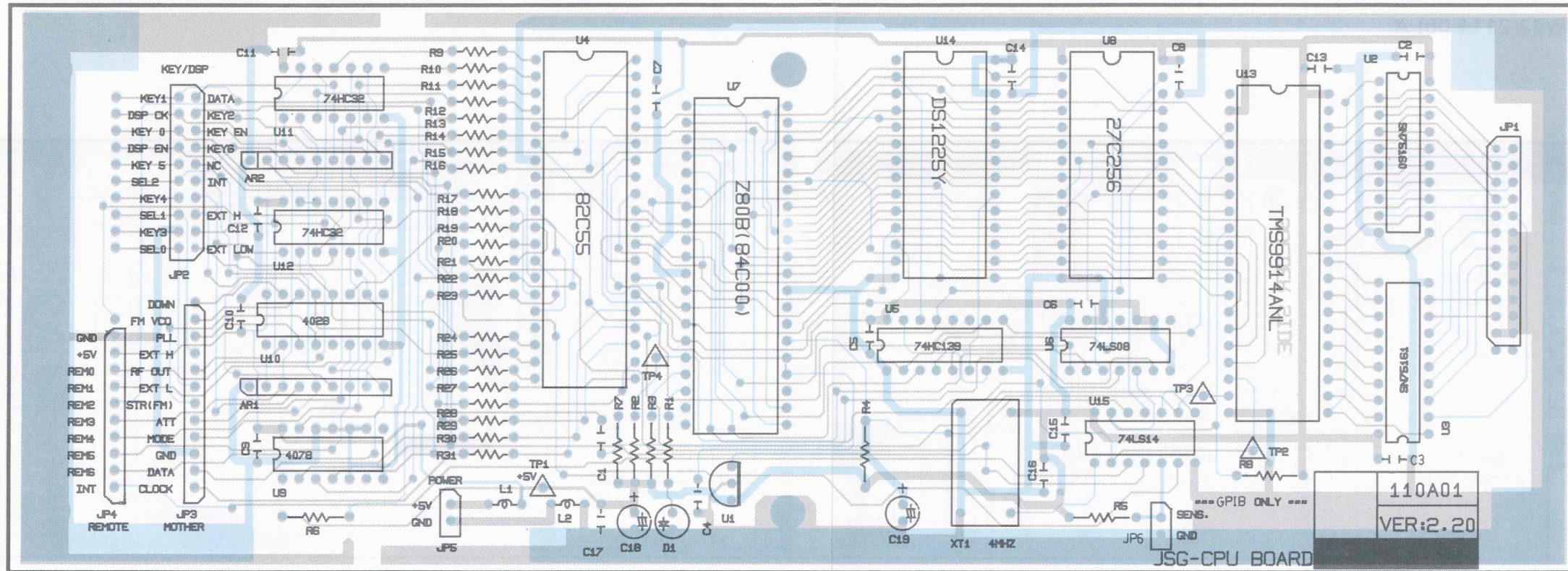
RT-100 REMOTE UNIT (W02-2127-08)



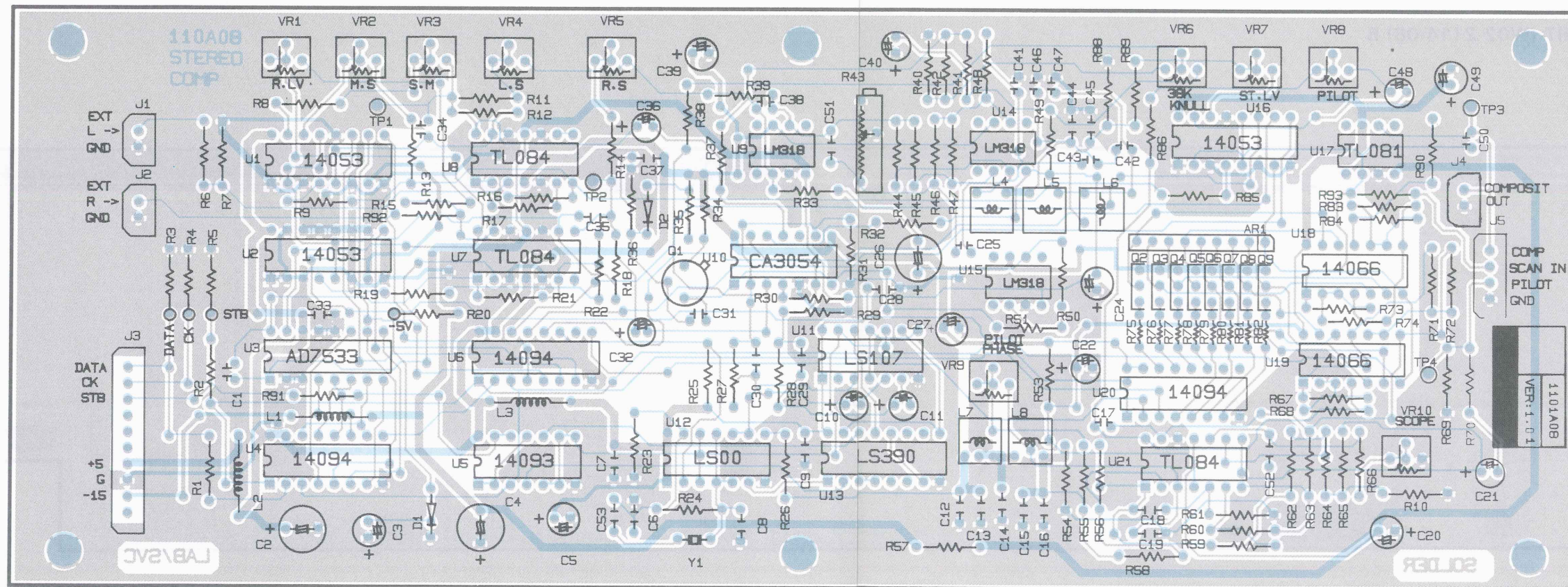
P.C. BOARD

SG-5110/5115 CPU UNIT (W02-2113-08/W02-2122-08)

CPU-GPIB UNIT (W02-2107-05/W02-2108-05)

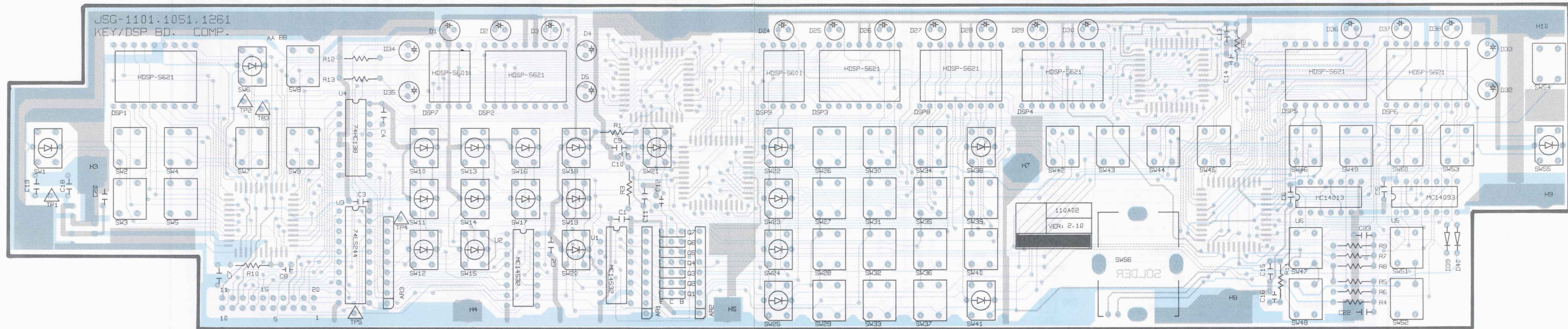


SG-5110 STEREO UNIT (W02-2119-08)

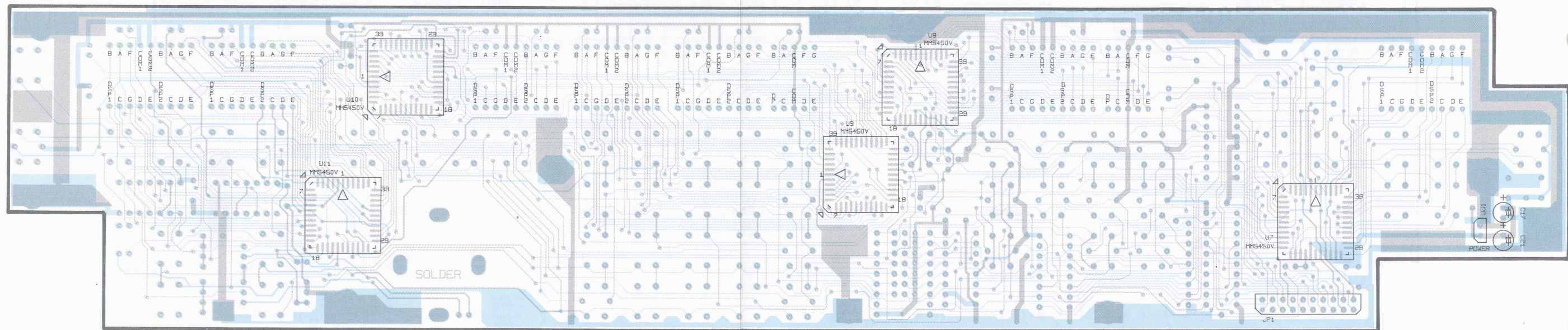


P.C. BOARD

KEY/DISPLAY UNIT (W02-2114-08) A

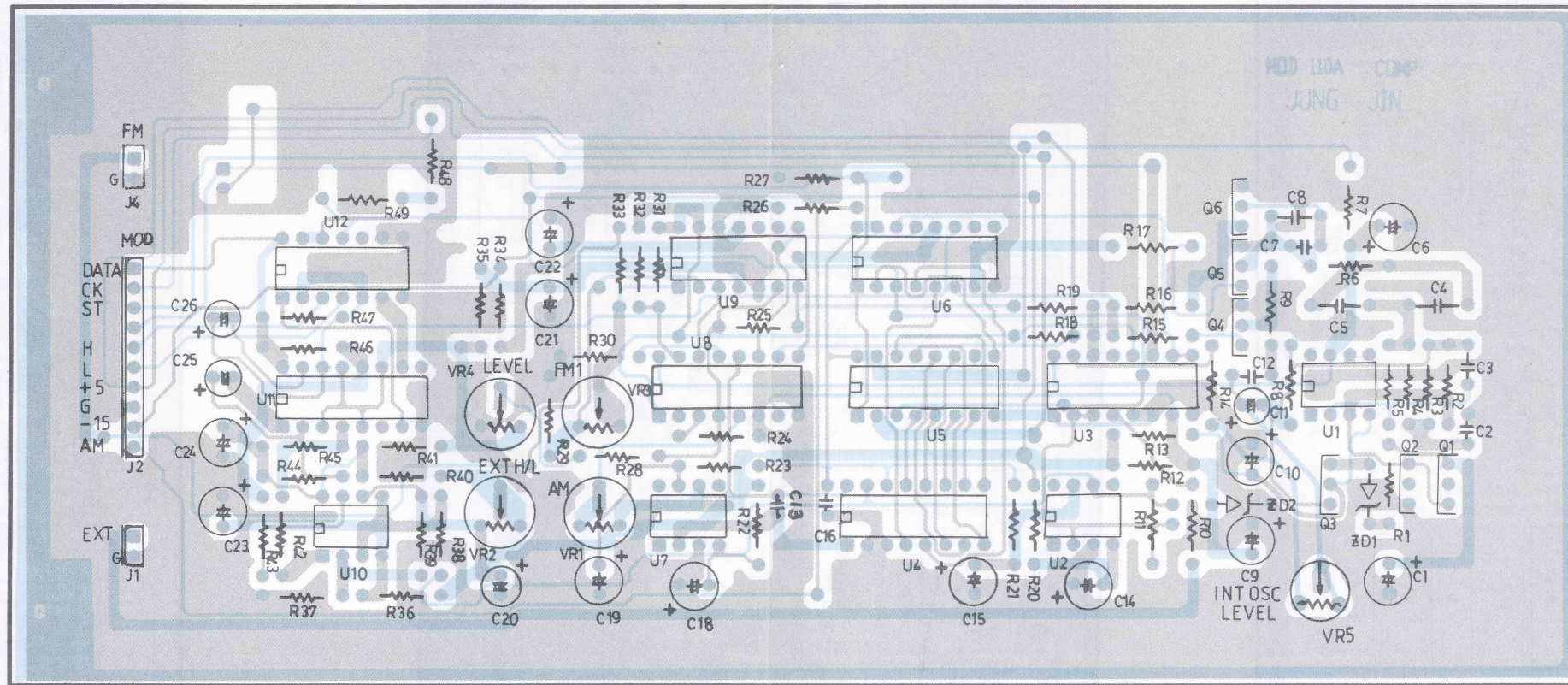


KEY/DISPLAY UNIT (W02-2114-08) B

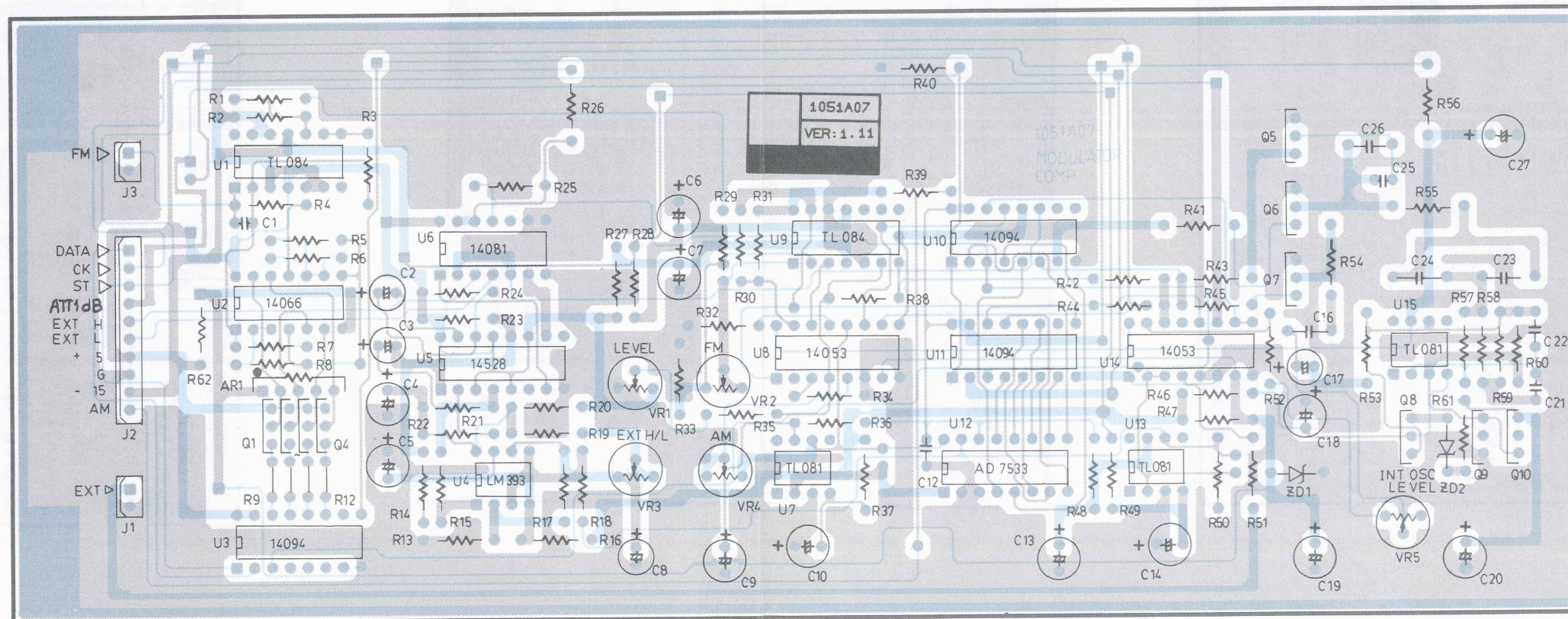


P.C. BOARD

SG-5110 AF UNIT (W02-2118-08)

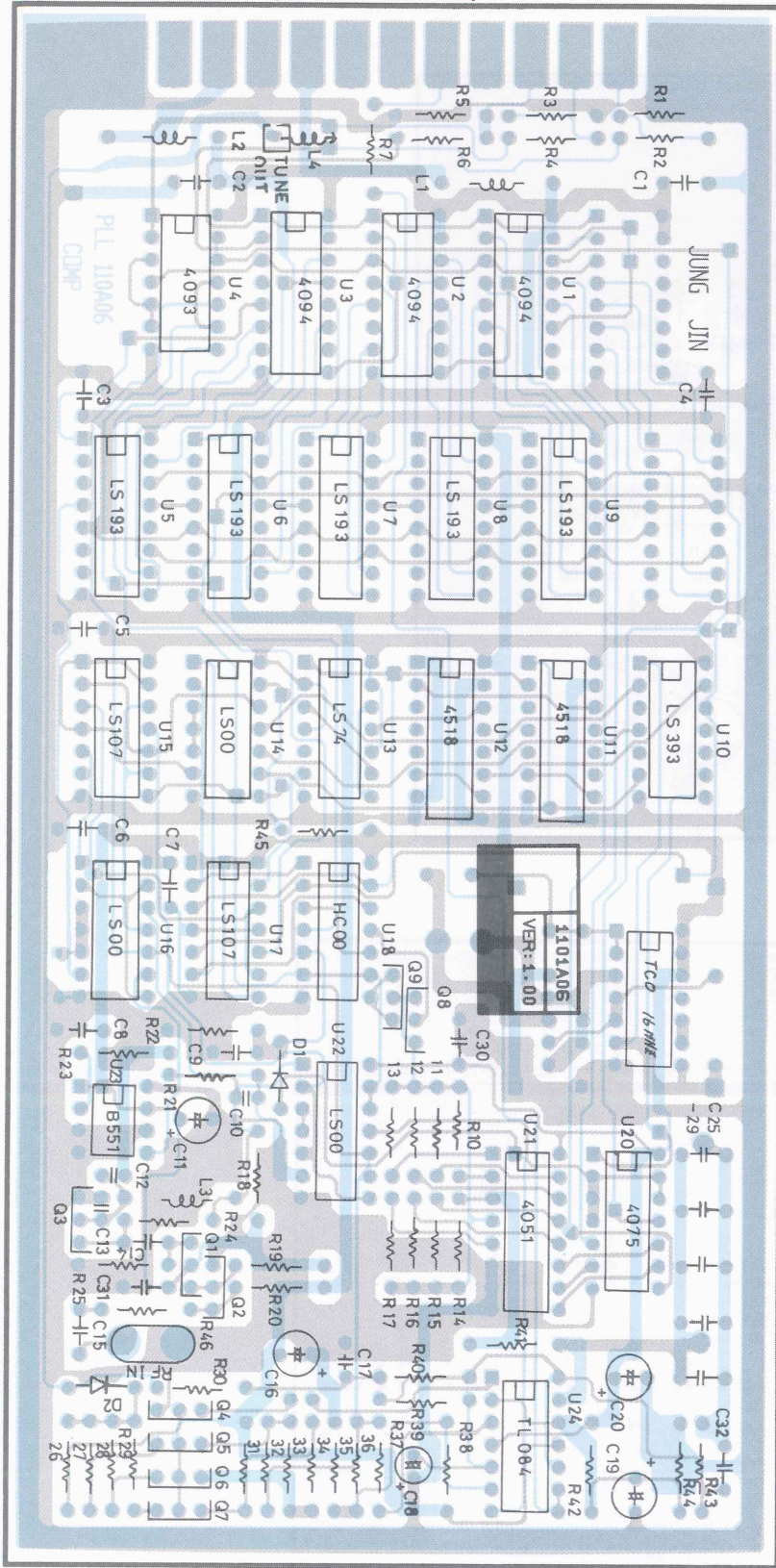


SG-5115 AF UNIT (W02-2123-08)

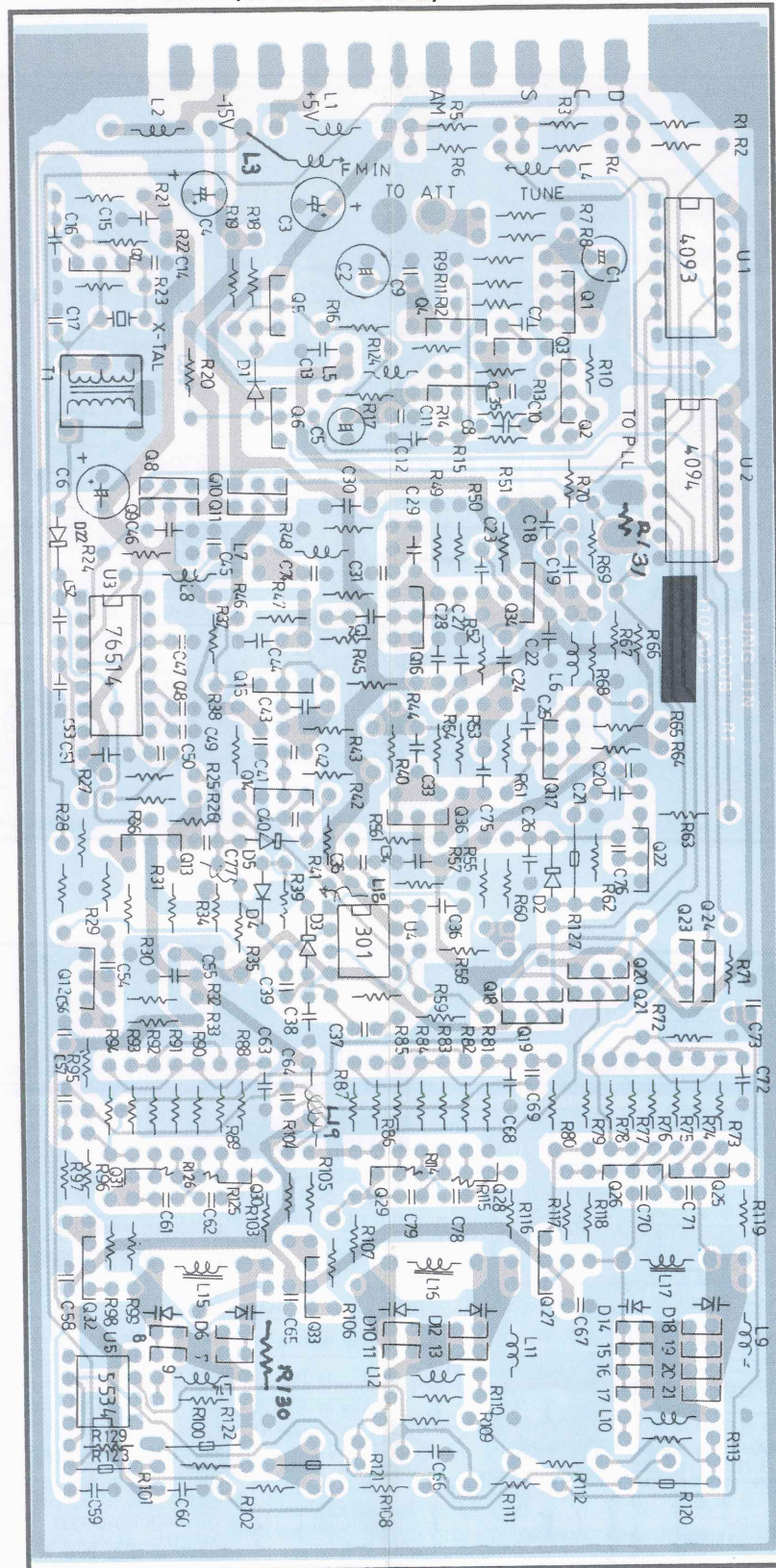


P.C. BOARD

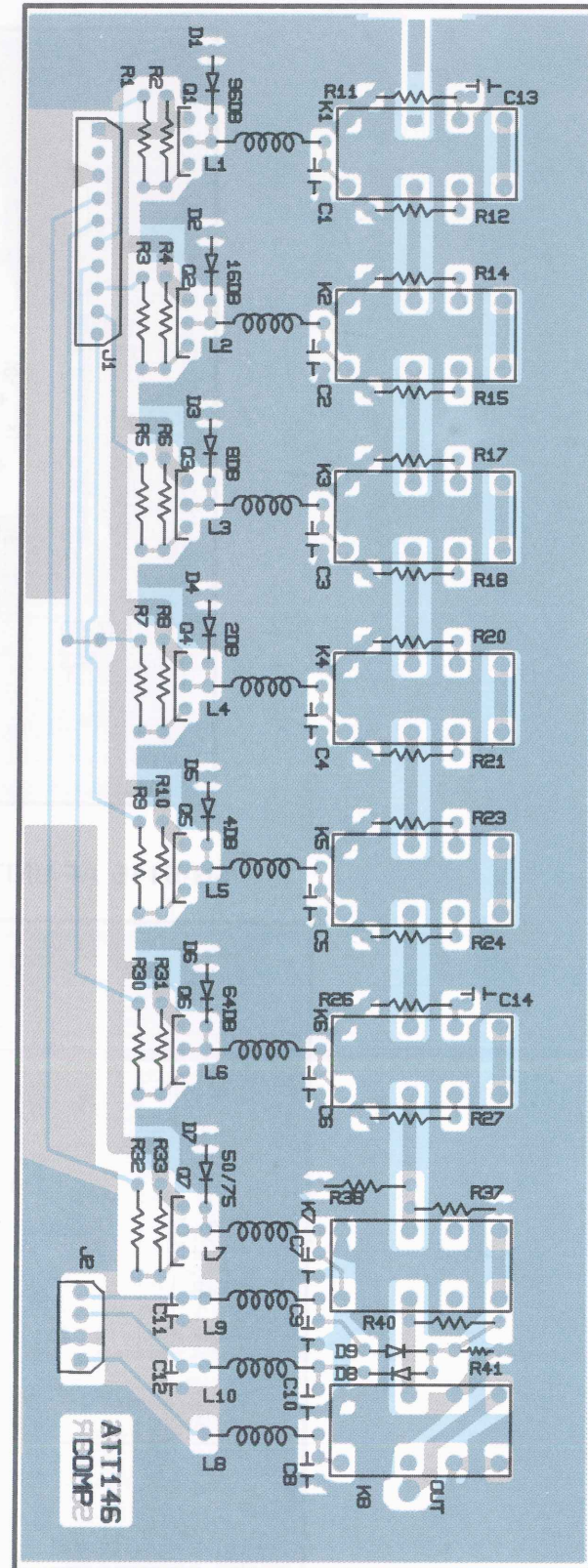
PLL UNIT (W02-2117-08)



RF UNIT (W02-2116-08)

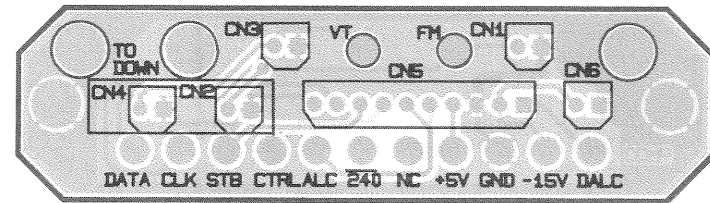


ATT UNIT (W02-2120-08)

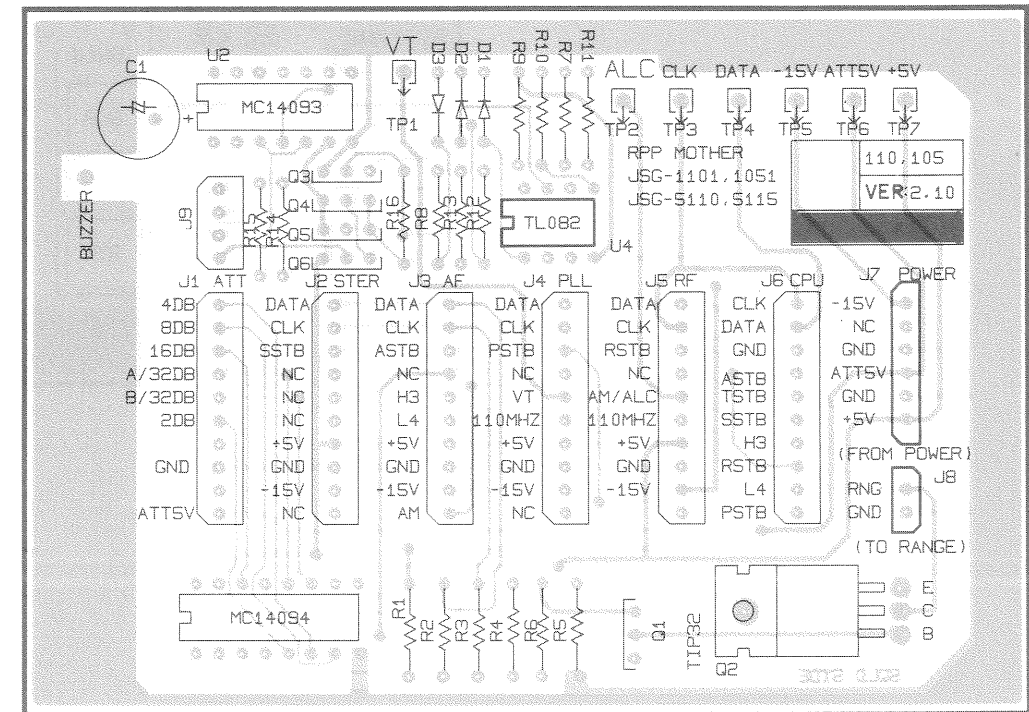


P.C. BOARD

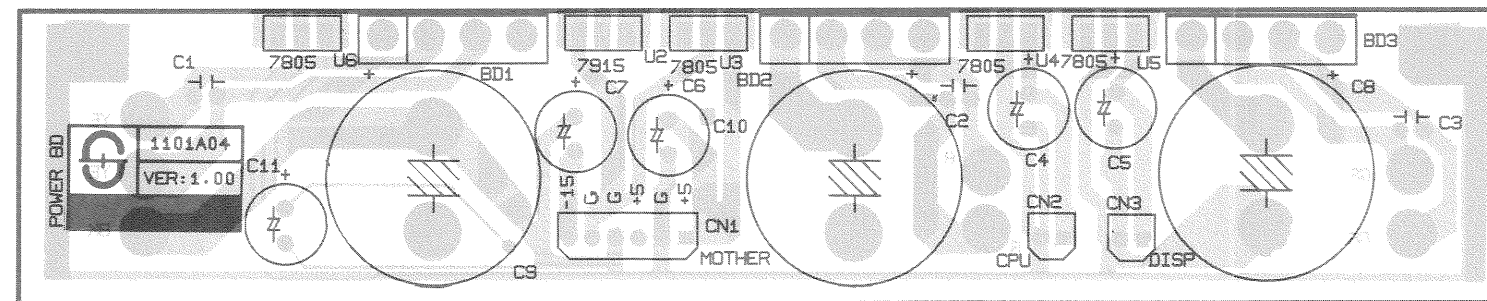
PLL/RF SUB UNIT



MOTHER UNIT (W02-2121-08)

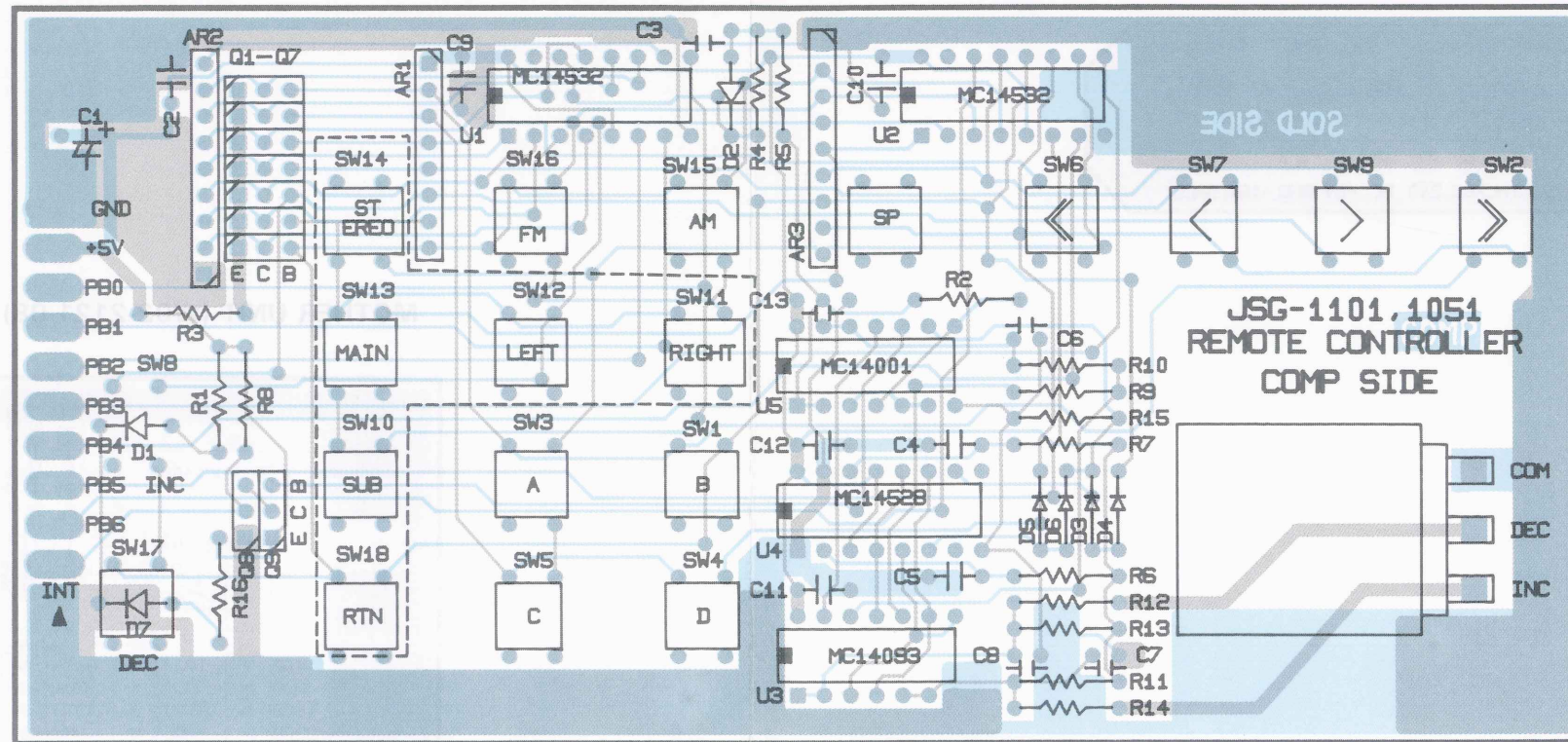


POWER UNIT (W02-2115-08)



P.C. BOARD

RT-100 REMOTE UNIT (W02-2127-08)



PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION
R31	RN14BK2E7501F	RES. METAL FILM 7.5K 1% 1/4W
R32	RN14BK2E4702F	RES. METAL FILM 47K 1% 1/4W
R33	RN14BK2E6202F	RES. METAL FILM 62K 1% 1/4W
R34	RN14BK2E4702F	RES. METAL FILM 47K 1% 1/4W
R35	RN14BK2E7502F	RES. METAL FILM 75K 1% 1/4W
R36	RN14BK2E1000F	RES. METAL FILM 100 1% 1/4W
R37	RN14BK2E1000F	RES. METAL FILM 100 1% 1/4W
R38	RN14BK2E2702F	RES. METAL FILM 27K 1% 1/4W
R39	RN14BK2E2700F	RES. METAL FILM 270 1% 1/4W
R40	RN14BK2E1003F	RES. METAL FILM 100K 1% 1/4W
R41	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R42	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R43	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R44	RN14BK2E1201F	RES. METAL FILM 1.2K 1% 1/4W
R45	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R46	RN14BK2E1000F	RES. METAL FILM 100 1% 1/4W
R47	RN14BK2E1201F	RES. METAL FILM 1.2K 1% 1/4W
R48	RN14BK2E1000F	RES. METAL FILM 100 1% 1/4W
R49	RN14BK2E1000F	RES. METAL FILM 100 1% 1/4W
R50	RN14BK2E1502F	RES. METAL FILM 15K 1% 1/4W
R51	RN14BK2E1801F	RES. METAL FILM 1.8K 1% 1/4W
R52	RN14BK2E1502F	RES. METAL FILM 15K 1% 1/4W
R53	RN14BK2E3000F	RES. METAL FILM 300 1% 1/4W
R54	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R55	RN14BK2E2700F	RES. METAL FILM 270 1% 1/4W
R56	RN14BK2E1000F	RES. METAL FILM 100 1% 1/4W
R57	RN14BK2E8202F	RES. METAL FILM 82K 1% 1/4W
R58	RN14BK2E7502F	RES. METAL FILM 75K 1% 1/4W
R59	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R60	RN14BK2E6203F	RES. METAL FILM 620K 1% 1/4W
R61	RN14BK2E4301F	RES. METAL FILM 4.3K 1% 1/4W
R62	RN14BK2E1501F	RES. METAL FILM 1.5K 1% 1/4W

U1	TL084CN	IC,QUAD JFET INPUT OP-AMP
U2	MC14066BCP	IC,QUAD ANALOG SW/QUAD MPX
U3	MC14094BCP	IC,8-STAGE SHIFT/STORE REGISTE
U4	LH393N	IC,DUAL COMPARATORS
U5	MC14528BCP	IC,DUAL MONOSTABLE MULTIVIRATO
U6	MC14081BCP	IC,QUAD 2-INPUT AND GATE
U7	TL081CP	IC,JFET INPUT OP-AMP
U8	NO USE	
U9	TL084CN	IC,QUAD JFET INPUT OP-AMP
U10	MC14094BCP	IC,8-STAGE SHIFT/STORE REGISTE
U11	MC14094BCP	IC,8-STAGE SHIFT/STORE REGISTE
U12	DAC7533	IC,10BIT D/A
U13	TL081CP	IC,JFET INPUT OP-AMP
U14	NO USE	
U15	TL081CP	IC,JFET INPUT OP-AMP

U15	TL084CN	IC,QUAD JFET INPUT OP-AMP
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VR1	R12-5553-08	RES. SEMI FIXED 100K
VR2	R12-4524-08	RES. SEMI FIXED 50K
VR3	R12-1571-08	RES. SEMI FIXED 2K
VR4	R12-5553-08	RES. SEMI FIXED 100K
VR5	R12-2529-08	RES. SEMI FIXED 5K

ZD1	1N751A	DIODE,ZENER
ZD2	1N4372A	DIODE,ZENER

SG-5110 STEREO UNIT

W02-2119-08

REF. NO	PARTS NO	NAME & DESCRIPTION
	J29-0526-08	BRACKET,PCB
	J73-0213-08	PCB (UNMOUNTED)
	N35-3005-41	SCREW, BINDING M3X5
AR1	R90-1133-08	RES. ARRAY 4X10K
C1	CC45CH1H330J	CAP. CERAMIC 33P 5% 50V
C2	CE04EW1E221M	CAP. ELECTRO 220 20% 25V
C3	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C4	CE04EW1E221M	CAP. ELECTRO 220 20% 25V
C5	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C6	CH92DH471J	CAP. NICA 470P 5% 50V
C7	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C8	CQ08S1H821J	CAP. NYLAR 820P 5% 50V
C9	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C10	CE04EW1H010M	CAP. ELECTRO 1 20% 50V
C11	CE04EW1H010M	CAP. ELECTRO 1 20% 50V
C12	CQ92M1H223K	CAP. NYLAR 0.022 10% 50V
C13	CQ92M1H332K	CAP. NYLAR 3300P 10% 50V
C14	CQ92M1H823K	CAP. NYLAR 0.082 10% 50V
C15	CQ92M1H332K	CAP. NYLAR 3300P 10% 50V
C16	CQ92M1H223K	CAP. NYLAR 0.022 10% 50V
C17	CC45CH1H100J	CAP. CERAMIC 10P 5% 50V
C18	CH93DH471J	CAP. NICA 470P 5% 50V
C19	CH92DH471J	CAP. NICA 470P 5% 50V
C20	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C21	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C22	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C23	NO USE	
C24	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C25	CQ92M1H152K	CAP. NYLAR 1500P 10% 50V
C26	CE04EW1E221M	CAP. ELECTRO 220 20% 25V
C27	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C28	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C29	CC45CH1H470J	CAP. CERAMIC 47P 5% 50V
C30	CC45CH1H470J	CAP. CERAMIC 47P 5% 50V
C31	CC45CH1H330J	CAP. CERAMIC 33P 5% 50V
C32	CE04EW1H010M	CAP. ELECTRO 1 20% 50V
C33	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C34	CC45CH1H100J	CAP. CERAMIC 10P 5% 50V
C35	CC45CH1H100J	CAP. CERAMIC 10P 5% 50V
C36	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C37	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C38	CC45CH1E220J	CAP. CERAMIC 22P 5% 25V
C39	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C40	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C41	CQ92M1H102K	CAP. NYLAR 1000P 10% 50V
C42	CQ92M1H102K	CAP. NYLAR 1000P 10% 50V
C43	CQ92M1H102K	CAP. NYLAR 1000P 10% 50V
C44	CQ92M1H102K	CAP. NYLAR 1000P 10% 50V
C45	CQ92M1H102K	CAP. NYLAR 1000P 10% 50V
C46	CQ92M1H222K	CAP. NYLAR 2200P 10% 50V
C47	CQ92M1H222K	CAP. NYLAR 2200P 10% 50V
C48	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C49	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C50	CC45CH1H100J	CAP. CERAMIC 10P 5% 50V
C51	CQ92M1H152K	CAP. NYLAR 1500P 10% 50V
C52	CQ08S1H821J	CAP. NYLAR 820P 5% 50V
C53	CC45CH1H330J	CAP. CERAMIC 33P 5% 50V

D1	1N751A	DIODE,ZENER
D2	1N4148	DIODE

J1	E40-7263-08	PIN CONNECTOR 2P
J2	E40-7263-08	PIN CONNECTOR 2P
J3	E40-7266-08	PIN CONNECTOR 10P
J4	E40-7263-08	PIN CONNECTOR 2P

L1	L40-1015-13	FERRI INDUCTOR 100UH 5%
L2	L40-1015-13	FERRI INDUCTOR 100UH 5%
L3	L40-1015-13	FERRI INDUCTOR 100UH 5%
L4	L39-0548-08	COIL 2.2MH
L5	L39-0548-08	COIL 2.2MH
L6	L39-0548-08	COIL 2.2MH
L7	L39-0548-08	COIL 2.2MH
L8	L39-0548-08	COIL 2.2MH

Q1	2N2907A	TR. SI, NPN
Q2	2SA1267	TR. SI, PNP
Q3	2SA1267	TR. SI, PNP
Q4	2SA1267	TR. SI, PNP

PARTS LIST

RT-100 UNIT

Y87-2670-00

REF. NO	PARTS NO	NAME & DESCRIPTION
	A01-1274-08	CASE
	A01-1275-08	CHASSIS
	B63-0119-00	INSTRUCTION MANUAL;ENG./JAP.
	E30-1928-08	SHIELD CABLE;200CM
	E59-0603-08	CONNECTOR
	G13-0748-08	RUBBER BUSHING
	J02-0531-08	RUBBER FOOT
	K21-0922-03	KNOB,ROTARY SW
	K29-0822-08	BUTTON;「A」,WHITE
	K29-0823-08	BUTTON;「B」,WHITE
	K29-0824-08	BUTTON;「C」,WHITE
	K29-0825-08	BUTTON;「D」,WHITE
	K29-0854-08	BUTTON;「RTN」,GRAY
	K29-0857-08	BUTTON;「<」,BLUE
	K29-0858-08	BUTTON;「<<」,BLUE
	K29-0865-08	BUTTON;TRANSLUSCENT
	K29-0866-08	BUTTON;「FM」,WHITE
	K29-0867-08	BUTTON;「AM」,WHITE
	K29-0868-08	BUTTON;「MAIN」,WHITE
	K29-0869-08	BUTTON;「SUB」,WHITE
	K29-0870-08	BUTTON;「FM ST」,WHITE
	K29-0871-08	BUTTON;「L」,WHITE
	K29-0872-08	BUTTON;「R」,WHITE
	N35-3005-41	SCREW, BINDING M3X5

REMOTE UNIT

W02-2127-08

REF. NO	PARTS NO	NAME & DESCRIPTION
	J73-0237-08	PCB (UNMOUNTED)
AR1	R90-1136-08	RES. ARRAY 7X10K
AR2	R90-1131-08	RES. ARRAY 8X10K 5%
AR3	R90-1131-08	RES. ARRAY 8X10K 5%
C1	CE04EW1C470M	CAP. ELECTRO 47 20% 16V
C2	CK45F1E104Z	CAP. CERAMIC 0.1 25V
C3	CK45B1E473K	CAP. CERAMIC 0.047 10% 25V
C4	C91-2534-08	CAP. POLYESTR 0.047 10% 100V
C5	C91-2534-08	CAP. POLYESTR 0.047 10% 100V
C6	CK45F1H102K	CAP. CERAMIC 1000P 10% 25V
C7	CK45B1E102K	CAP. CERAMIC 1000P 10% 25V
C8	CK45B1E102K	CAP. CERAMIC 1000P 10% 25V
C9	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C10	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C11	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C12	CK45F1H104Z	CAP. CERAMIC 0.1 50V
C13	CK45F1H104Z	CAP. CERAMIC 0.1 50V
D2	1N4148	DIODE
D3	1N4148	DIODE
D4	1N4148	DIODE
D5	1N4148	DIODE
D6	1N4148	DIODE
Q1	2SA1267	TR. SI, PNP
Q2	2SA1267	TR. SI, PNP
Q3	2SA1267	TR. SI, PNP
Q4	2SA1267	TR. SI, PNP
Q5	2SA1267	TR. SI, PNP
Q6	2SA1267	TR. SI, PNP
Q7	2SA1267	TR. SI, PNP
Q8	2SC3401	TR. SI, NPN
Q9	2SC1346	TR. SI, NPN
R1	RN14BK2E3300F	RES. METAL FILM 330 1% 1/4W
R2	RN14BK2E4702F	RES. METAL FILM 47K 1% 1/4W
R3	RN14BK2E3300F	RES. METAL FILM 330 1% 1/4W
R4	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R5	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R6	RN14BK2E1003F	RES. METAL FILM 100K 1% 1/4W
R7	RN14BK2E1003F	RES. METAL FILM 100K 1% 1/4W
R8	RN14BK2E4701F	RES. METAL FILM 4.7K 1% 1/4W
R9	RN14BK2E3302F	RES. METAL FILM 33K 1% 1/4W
R10	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R11	RN14BK2E1003F	RES. METAL FILM 100K 1% 1/4W
R12	RN14BK2E1000F	RES. METAL FILM 100 1% 1/4W
R13	RN14BK2E1003F	RES. METAL FILM 100K 1% 1/4W
R14	RN14BK2E1000F	RES. METAL FILM 100 1% 1/4W
R15	RN14BK2E1002F	RES. METAL FILM 10K 1% 1/4W
R16	RN14BK2E3300F	RES. METAL FILM 330 1% 1/4W
SW1	S68-0612-08	PUSH BUTTON SW
SW2	S68-0612-08	PUSH BUTTON SW
SW3	S68-0612-08	PUSH BUTTON SW
SW4	S68-0612-08	PUSH BUTTON SW
SW5	S68-0612-08	PUSH BUTTON SW
SW6	S68-0612-08	PUSH BUTTON SW
SW7	S68-0612-08	PUSH BUTTON SW
SW8	S68-0611-08	PUSH BUTTON SW, WITH LED
SW9	S68-0612-08	PUSH BUTTON SW
SW10	S68-0612-08	PUSH BUTTON SW
SW11	S68-0612-08	PUSH BUTTON SW
SW12	S68-0612-08	PUSH BUTTON SW
SW13	S68-0612-08	PUSH BUTTON SW
SW14	S68-0612-08	PUSH BUTTON SW
SW15	S68-0612-08	PUSH BUTTON SW
SW16	S68-0612-08	PUSH BUTTON SW
SW17	S68-0611-08	PUSH BUTTON SW, WITH LED
SW18	S68-0612-08	PUSH BUTTON SW
SW19	W02-2134-08	ROTARY ENCODER
U1	MC14532BCP	IC,8-BIT PRIORITY ENCODER
U2	MC14532BCP	IC,8-BIT PRIORITY ENCODER
U3	MC14093BCP	IC,QUAD 2-INPUT NAND SCHMITT
U4	MC14528BCP	IC,DUAL MONOSTABLE MULTIVIRATO
U5	MC14001BCP	IC,QUAD 2-INPUT NOR GATE