

Fig. 1 Block Diagram of Complete Instrument, SPM-31/PSE-31

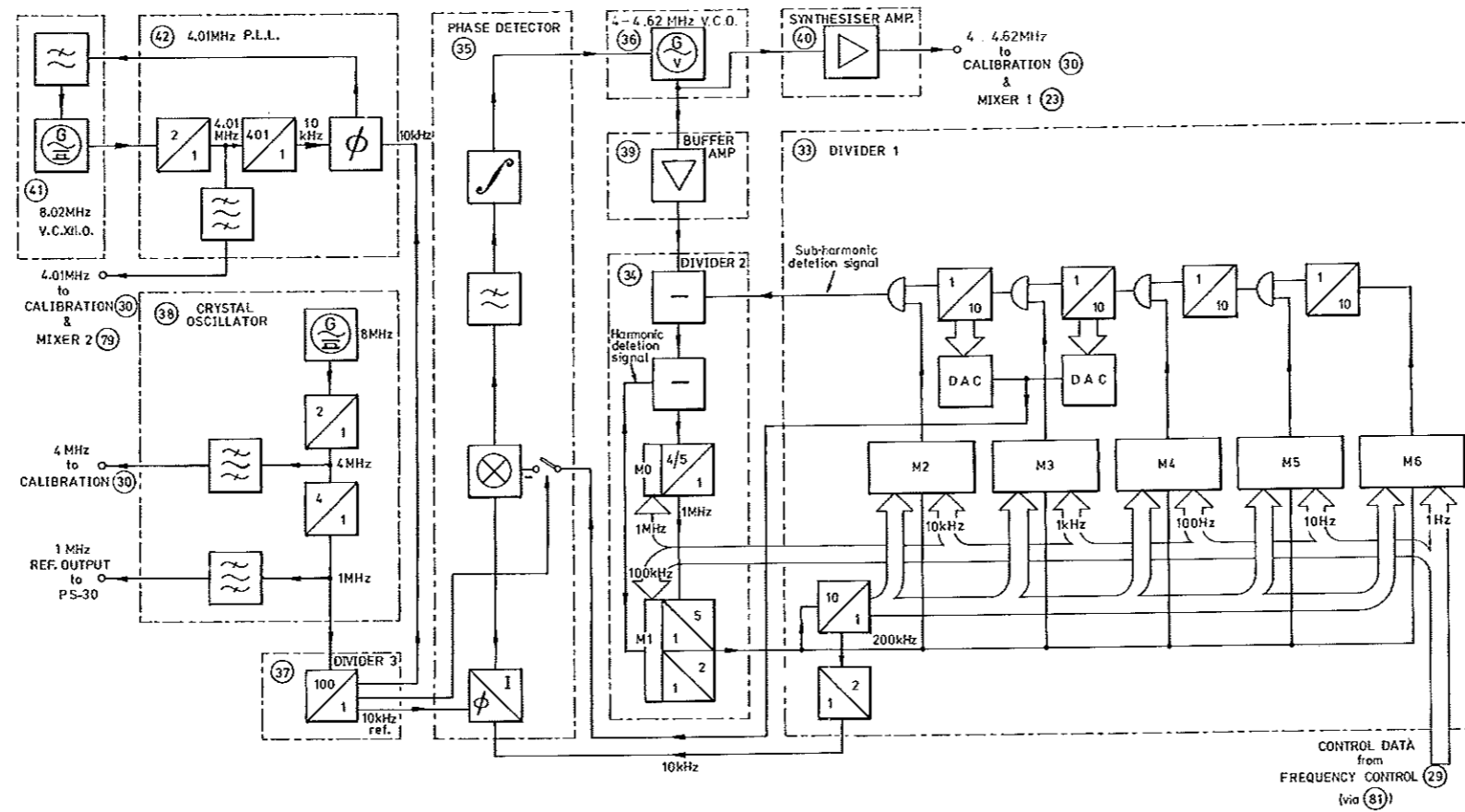


Fig. 2 Block Diagram of Synthesiser Assembly, (12)

(Used on the Parts Lists throughout this Appendix)

MF	Metal Film
Tant.	Tantalum
Cer.	Ceramic
PE	Polyester
PF	Polystyrene Film
CF	Carbon Film
W/W	Wirewound
Elec.	Electrolytic
Var.	Variable
Al. Ox.	Aluminium Oxide

Key to Component Type Abbreviations

**PARTS MOUNTED ON OR FORMING PART OF FRONT PANEL**

TYPE	PART NO.
METER, DS 48 SIFAM (with VOLTAGE SCALE)	4502-8103.009/4
C.F. SOCKET, 3-pole (BALANCED INPUTS)	0000-3713.006/4
SWITCH, SLIDE D.P.S.T. (dB/dBm SWITCH)	0001-7604.409/-
VERSACON BODY	0000-1681.004/5
VERSACON LOCKING RING (UNBALANCED INPUT)	0000-1672.055/5
RESISTOR, VARIABLE (CAL. ▽/WIDE) 10k, 1W	0000-7545.270/-
RESISTOR, VARIABLE (CAL. ▽/SELECTIVE) 10k, 1W	0000-7545.270/-
SWITCH, ROTARY (MEAS. RANGE)	0000-7602.469/4
SOCKET, EARTHING	0000-3004.045/4
SWITCH BUTTON (CHECK BATT. and <input checked="" type="checkbox"/> )	
PSE-31 O/P LEVEL	0000-3705.425/5
SWITCH, MICRO (CHECK BATT. and <input checked="" type="checkbox"/> )	
PSE-31 O/P LEVEL	0001-0034.176/-
L.E.D., RED (MAINS ON)	0001-0064.036/-
TACHO. GENERATOR (TUNING CONTROL)	0829-7036.821/5
SWITCH, SLIDE D.P.D.T. (MEAS./CHARGE/OFF)	0001-0069.439/-
VERSACON BNC ADAPTOR	0000-1674.008/5
KNOB (O/P LEVEL)	0000-7500.383/-
CAP, KNOB (O/P LEVEL)	0000-7500.396/-
KNOB (FINE)	0001-0063.396/-
CAP, KNOB (FINE)	0001-0063.707/-
KNOB (FREQUENCY CONTROL)	0001-0063.422/-
CAP, KNOB (FREQUENCY CONTROL)	0001-0063.710/-
KNOB (MEAS. RANGE)	0001-0063.493/-
CAP, KNOB (MEAS. RANGE)	0001-0063.749/-
KNOB (CAL. ▽ WIDE and SELECTIVE)	0001-0063.354/-
CAP, KNOB (CAL. ▽ WIDE and SELECTIVE)	0001-0063.684/-
SWITCH, SLIDE, D.P.D.T.(USB/OFF/LSB)	0001-0069.439/-

**REAR PANEL**

VALUE	RATING	TYPE	PART NO.
		SWITCH, (BATT CHARGER ON/OFF)	0001-7604.409/-
		SOCKET, BNC	0000-7598.696/-
T315mA	250V	FUSELINK, BELLING-LEE 2080A/0.315A	0001-0020.601/-
		OR	
T630mA	115V	FUSELINK, BELLING-LEE 2080A/0.63A	
		FUSEHOLDER, BELLING-LEE L2006A (20m x 5mm)	0000-7602.236/-
		BATTERIES, BEREC NCC400 SIZE D (12 used)	0000-7594.849/-
T1A	BATT.	FUSELINK, ANTI-SURGE	0001-0020.711/-

**COMPLETE CHASSIS ASSEMBLY**

REF.	TYPE	PART NO.
A10	ASSEMBLY, TRACKING OSCILLATOR PSE-31 Includes ASSEMBLY, P.C.B. A80, PSE-31	4502-1110.002/2 4502-1080.006/2
A104	ASSEMBLY, POWER UNIT Includes ASSEMBLY, P.C.B. A84, POWER SUPPLY	4502-1189.004/2 4502-1084.002/3
A22	ASSEMBLY, PRE-AMPLIFIER	4502-1122.006/3
A23	ASSEMBLY, MIXER 1	4505-1023.004/3
A27	ASSEMBLY, I.F. AMPLIFIER & PROM	4502-1027.001/3
A29	ASSEMBLY, FREQUENCY CONTROL	4505-1029.008/3
A30	ASSEMBLY, CALIBRATION	4502-1030.001/3
A32	ASSEMBLY, DISPLAY	4502-1032.009/3
A33	ASSEMBLY, DIVIDER 1	4502-1033.008/3
A34	ASSEMBLY, DIVIDER 2	4502-1034.007/3
A35	ASSEMBLY, PHASE DETECTOR	4502-1035.006/3
A36	ASSEMBLY, 4...4.62MHz V.C.O.	4502-1036.005/3
A37	ASSEMBLY, DIVIDER 3	4502-1037.004/3
A38	ASSEMBLY, 8MHz CRYSTAL OSC	4502-1038.003/3
A39	ASSEMBLY, BUFFER AMP.	4502-1039.002/3
A40	ASSEMBLY, SYNTHESISER AMPLIFIER	4502-1040.004/3
A41	ASSEMBLY, 8.02MHz V.C.O.	4502-1041.003/3
A42	ASSEMBLY, 4.01MHz P.L.L.	4502-1042.002/3
A66	ASSEMBLY, 4MHz B/P FILTER UNIT Includes ASSEMBLY, P.C.B. A24	4502-1166.000/3 4502-1024.004/3
A77	ASSEMBLY, 24Hz FILTER	4502-1077.006/3
A79	ASSEMBLY, MIXER 2	4502-1079.004/3
A81	ASSEMBLY, INTERCONNECTION	4502-1081.005/3
A82	ASSEMBLY, MATCHING UNIT	4502-1082.004/3
A83	ASSEMBLY, METER AND DEMODULATOR	4502-1083.003/3

**A81 INTERCONNECTION BOARD**

REF.	VALUE	TOL.±%	RATING	TYPE	PART NO.
SK1				SOCKET, DIL 16-WAY	0000-7518.391/-
SK2				SOCKET, EDGE	
				CONNECTOR 10-WAY	0000-7602.317/-
SK3				SOCKET, EDGE CONNECTOR	
				10 + 10-WAY	0000-7602.304/-
SK4				SOCKET, EDGE CONNECTOR	
				36-WAY	0000-7602.333/-
SK5				SOCKET, EDGE CONNECTOR	
				36-WAY	0000-7602-294/-
SK6				SOCKET, EDGE CONNECTOR	
				20-WAY	0000-7602.320/-
SK7				SOCKET, DIL 16-WAY	0000-7518.391/-
SK8				SOCKET, DIL 16-WAY	0000-7518.391/-
SK10				SOCKET, DIL 16-WAY	0000-7518.391/-
S1				SWITCH, 4-PUSHBUTTON (MODE)	4502-1074.009/4
S2				SWITCH, 3-PUSHBUTTON (BANDWIDTH)	4502-1075.008/4
S3				SWITCH, 3-PUSHBUTTON (FREQUENCY CONTROL)	4502-1076.007/4
				CAPS FOR SWITCHES ABOVE	0000-7602.744/-
A81				P.C.B., INTERCONNECTION	4502-1081.005/3
R1	12k1	1	0W35	MF	0001-0002.218/-
C1	220µ		10V		0001-0041.842/-
C2	22n		10V		0001-0006.416/-

**CABLE ASSEMBLIES**

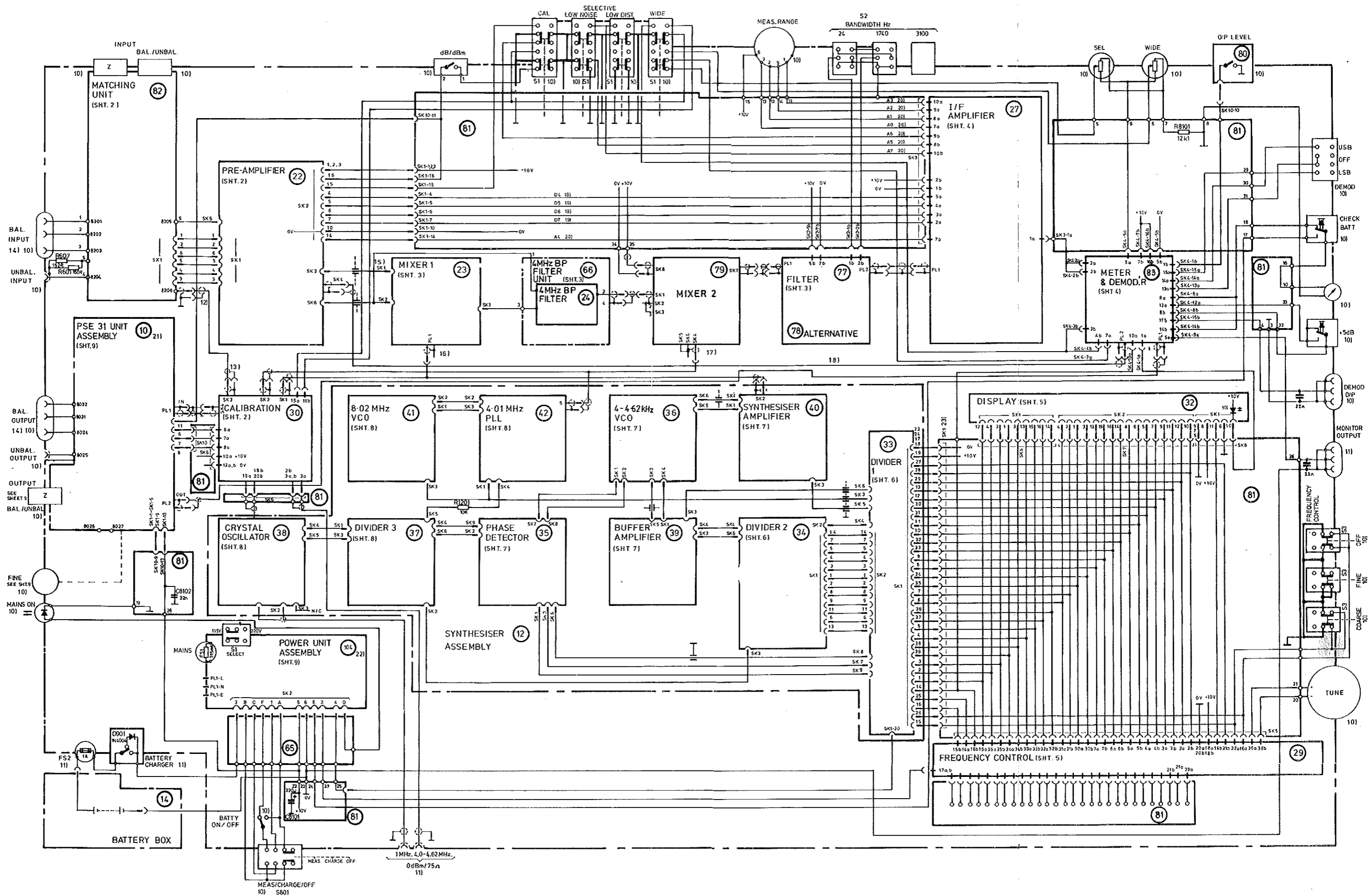
TYPE	PART NO.
CABLE ASSEMBLY, INTERCONNECTION TO DISPLAY 75mm Long	4502-1060.013/4
CABLE ASSEMBLY, INTERCONNECTION TO DISPLAY 90mm Long	4502-1060.026/4
CABLE ASSEMBLY, PRE-AMPLIFIER TO INTERCONNECTION	4502-1062.008/4
CABLE ASSEMBLY, PSE-31 TO INTERCONNECTION	4502-1063.007/4
CABLE ASSEMBLY, PART OF INTERCONNECTION, 40-way	4502-1064.006/4
CABLE ASSEMBLY, DIVIDER 1 TO DIVIDER 2, 14-way	4502-1067.016/4
CABLE ASSEMBLY, MATCHING UNIT TO PRE-AMPLIFIER, 14-way	4502-1067.029/4
CABLE ASSEMBLY, CONNECTING CALIBRATION TO MIXER 1 and SYN. AMP., and CALIBRATION TO MIXER 2 and 4.01MHz P.L.L., COAXIAL	4502-1069.001/3
CABLE ASSEMBLY, from SOCKET <input type="checkbox"/> 22 on REAR PANEL TO INTERCONNECTION, COAXIAL	4502-1071.001/4
CABLE ASSEMBLY, from SOCKET <input type="checkbox"/> 20 on REAR PANEL TO CRYSTAL OSCILLATOR, COAXIAL	4502-1072.001/4
CABLE ASSEMBLY, 24Hz FILTER TO I/F AMPLIFIER, COAXIAL	4502-1051.019/4
CABLE ASSEMBLY, PSE-31 TO METER, COAXIAL	4502-1051.022/4
CABLE ASSEMBLY, CALIBRATION TO MATCHING UNIT, COAXIAL with Fe BEADS	4502-1053.004/4
CABLE ASSEMBLY, 24Hz FILTER TO MIXER 2, COAXIAL	4502-1054.016/4
CABLE ASSEMBLY, MIXER 1 TO MIXER 2, COAXIAL	4502-1054.029/4
CABLE ASSEMBLY, PSE-31 TO CALIBRATION, COAXIAL with Fe BEADS	4502-1056.001/4
CABLE ASSEMBLY, METER TO PRE-AMPLIFIER, COAXIAL	4502-1057.000/4
CABLE ASSEMBLY, 4MHz FILTER TO INTERCONNECTION, COAXIAL	4502-1058.009/4
CABLE ASSEMBLY, POWER SUPPLY TO MIXER 2 (+10V)	4502-1073.000/4
CABLE ASSEMBLY, POWER SUPPLY TO REST OF INSTRUMENT includes P.C.B. A46	4502-1065.005/1 4502-0146.006/3

**SPARES**

VALUE	RATING	TYPE	PART NO.
TO.315A	250V	FUSELINK, BELLING-LEE 2080A/0.315A ANTI-SURGE	0001-0020.601/-
T1A	BATT.	FUSE LINK, ANTI-SURGE	0001-0020.711/-
		BATTERIES, BEREC NCC400 SIZE D (12 used)	0000-7594.849/-

**ACCESSORIES**

CABLE ASSEMBLY, MAINS  
2 metres long, 3-core  
L1949 BELLING-LEE



- 10) ON FRONT PANEL
- 11) ON REAR PANEL
- 12) -40dB
- 13) SEL: 200Hz - 620 kHz  
WIDE BAND: 10kHz.
- 14) 200 Hz - 620 kHz
- 15) -20dB
- 16) 4 - 4.62 MHz
- 17) 4.01 MHz
- 18) 200 Hz - 620 kHz
- 19) DATA LINES D4-D7.
- 20) ADDRESS LINES A0-A7.
- 21) INCORPORATING ASSEMBLY A80
- 22) INCORPORATING ASSEMBLY A44
- 23) SK9 REPRESENTED BY PLATED THRO' HOLES ONLY.

Fig. 3 Interconnections Diagram

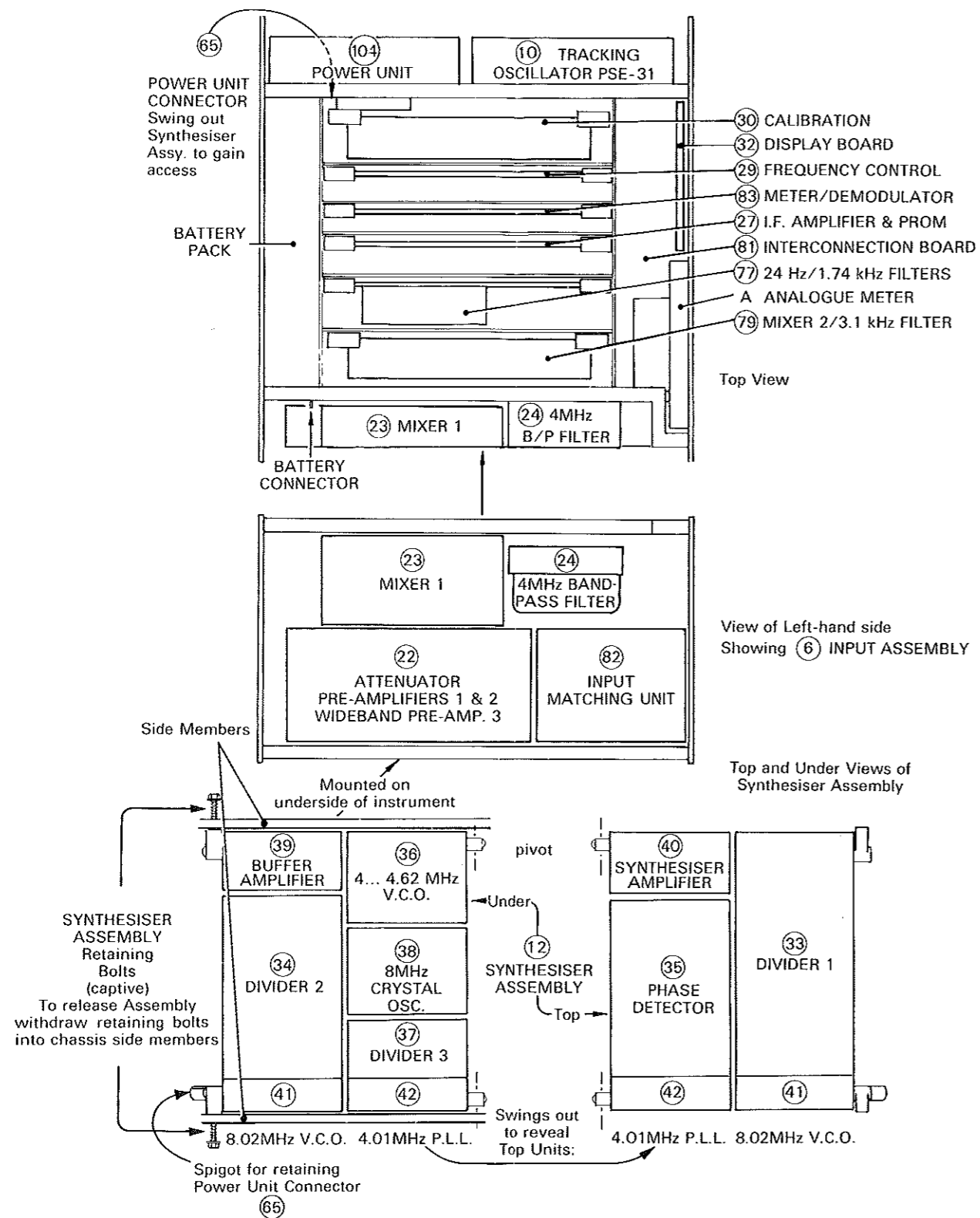
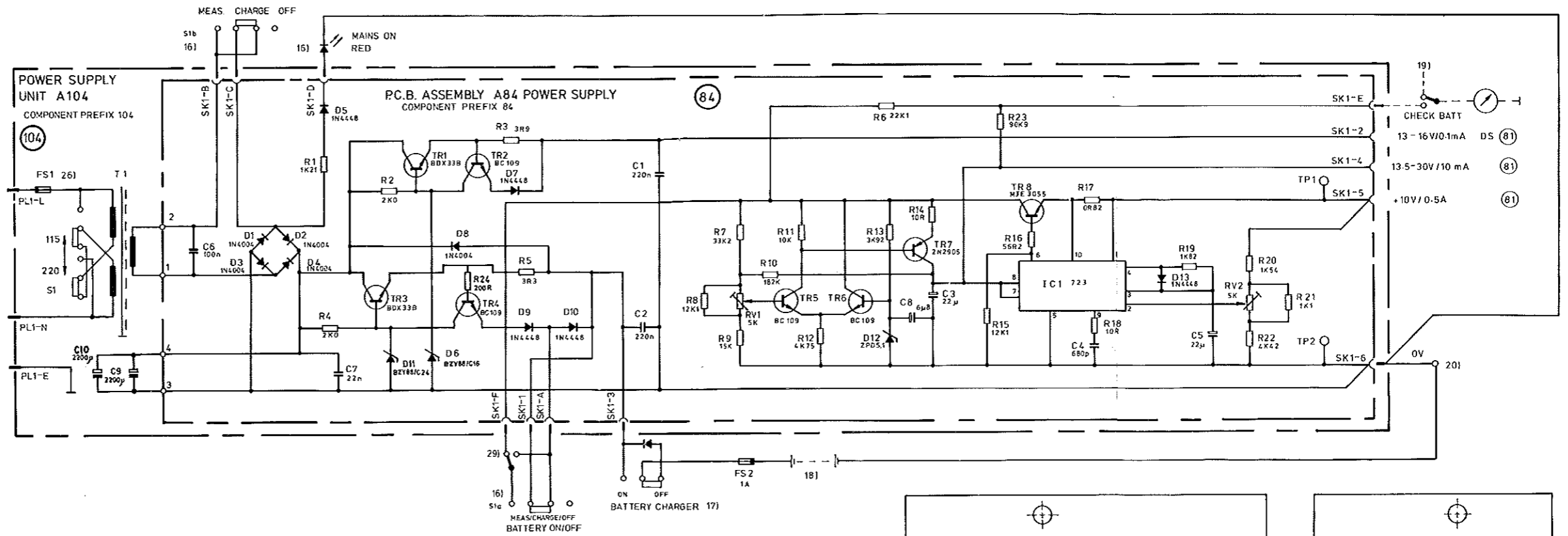


Fig. 4 Location of units within Instrument

Fig. 5 Circuit Diagram, Power Supply (104)



- 15) OUTPUT LEVEL MONITOR FACILITY
- 16) ON FRONT PANEL MAINS ON
- 17) ON BACK PANEL
- 18) BATTERY BOX
- 19) FROM METER BOARD VIA INTERCONNECTION BOARD.
- 20) TO INTERCONNECTION BOARD PIN 23
- 26) 220V - 315mA 115V - 630mA
- 27) FINE LEVEL CONTROL
- 28) RESISTORS NOT FITTED ON STD SERIES
- 29) COVER OPERATED OFF SWITCH

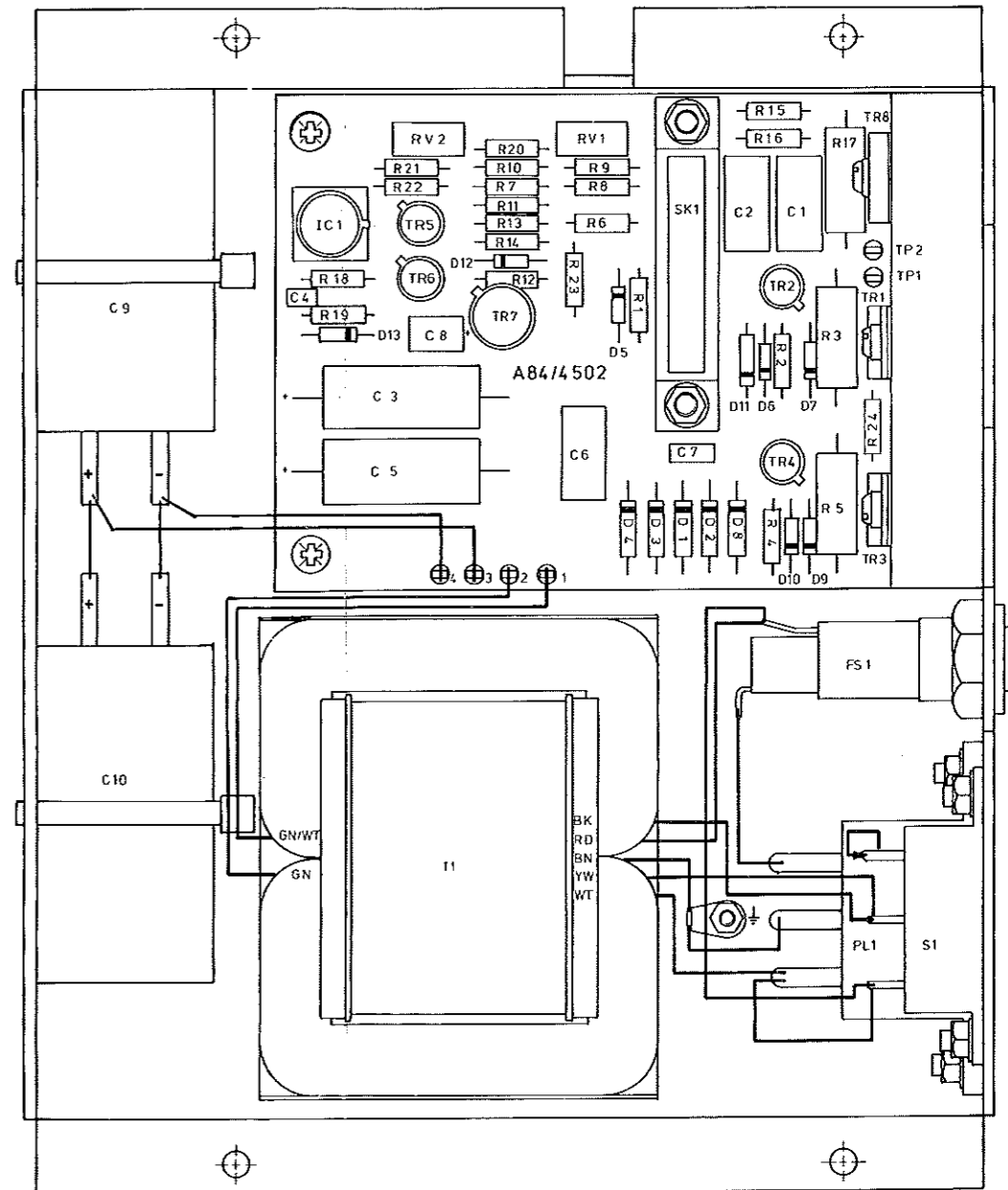
ASSEMBLY A104 POWER SUPPLY

REF.	VALUE	TOL. ± %	RATING	TYPE	PART NO.
C9	2200µ		40V	ELEC.	0000-7646.289/-
C10	2200µ		40V	ELEC.	0000-7646.289/-
S1				SELECTOR SWITCH	
			115V/220V		0000-7598.706/-
T1				MAINS TRANSFORMER	4502-1308.005/4
PL1				PLUG, MAINS INPUT	0001-0033.261/-
FS1			250V	FUSELINK, T 315mA	0001-0020.601/-
			115V	FUSELINK, T 630mA	
FS2			Batt.	FUSELINK, T 1A	0001-0020.711/-
A84				P.C.B. POWER SUPPLY UNIT	4502-1084.002/3

ASSEMBLY P.C.B. A84, used on A104 POWER SUPPLY

REF.	VALUE	TOL. ± %	RATING	TYPE	PART NO.
R1	1k21	1	0W35	MF	0001-0001.277/-
R2	2k	1	0W35	MF	0001-0001.455/-
R3	3R9	5	1W6	W/W	0000-7601.583/-
R4	2k	1	0W35	MF	0001-0001.455/-
R5	3R3	5	1W6	W/W	0000-7601.570/-
R6	22k1	1	0W35	MF	0001-0002.441/-
R7	33k2	1	0W35	MF	0001-0002.603/-
R8	12k1	1	0W35	MF	0001-0002.218/-
R9	15k	1	0W35	MF	0001-0002.289/-
R10	182k	1	0W35	MF	0001-0003.165/-
R11	10k	1	0W35	MF	0001-0002.137/-
R12	4k75	1	0W35	MF	0001-0001.824/-
R13	3k92	1	0W35	MF	0001-0001.730/-
R14	10R	1	0W35	MF	0001-0000.074/-
R15	12k1	1	0W35	MF	0001-0002.218/-
R16	56R2	1	0W35	MF	0001-0000.346/-
R17	0R82	5	2W	W/W	0000-7601.596/-
R18	10R	1	0W35	MF	0001-0000.074/-
R19	1k82	1	0W35	MF	0001-0001.413/-
R20	1k54	1	0W35	MF	0001-0001.361/-
R21	1k1	1	0W35	MF	0001-0001.235/-
R22	4k42	1	0W35	MF	0001-0001.785/-

REF.	VALUE	TOL. ± %	RATING	TYPE	PART NO.
R23	90k9	1	0W35	MF	0001-0002.975/-
R24	200R	1	0W35	MF	0001-0000.676/-
RV1	5k	20	0W5 Lin.	Variable	0000-7574.283/-
RV2	5k	20	0W5 Lin.	Variable	0000-7574.283/-
C1	220n		100V		0001-0010.404/-
C2	220n		100V		0001-0010.404/-
C3	22µ		40V	Elec.	0001-0041.716/-
C4	680p	10	63V	Cer.	0001-0004.685/-
C5	22µ		40V	Elec.	0001-0041.716/-
C6	100n	10	100V		0001-0010.365/-
C7	22n	10	40V		0001-0006.418/-
C8	6µ8		35V	Elec.	0001-0040.856/-
TR1				BDX 33B	0000-7591.059/-
TR2				BC109	0000-7602.029/-
TR3				BDX 33B	0000-7591.059/-
TR4				BC109	0000-7602.029/-
TR5				BC109	0000-7602.029/-
TR6				BC109	0000-7602.029/-
TR7				2N2905	0001-0017.287/-
TR8				MJE 3055	0001-0017.148/-
D1				1N4004	0000-7605.026/-
D2				1N4004	0000-7605.026/-
D3				1N4004	0000-7605.026/-
D4				1N4004	0000-7605.026/-
D5				1N4448	0001-0018.493/-
D6				BZY88/C16	0001-0019.159/-
D7				1N4448	0001-0018.493/-
D8				1N4004	0000-7605.026/-
D9				1N4448	0001-0018.493/-
D10				1N4448	0001-0018.493/-
D11				BZY88/C24	0001-0019.201/-
D12				ZPD 5.1	0001-0018.833/-
D13				1N4448	0001-0018.493/-
IC1				µA 723	0001-0015.852/-
SK1				EDGE CONNECTOR, 12-WAY	0000-7606.054/-
A84				P.C.B. POWER SUPPLY UNIT (less components)	4502-0284.007/3



CIRCUIT REFERENCES TO BE PRECEDED BY BOARD ASSEMBLY NUMBER e.g. IC1 BECOMES IC8401 T1 " " T10401

Fig. 6 Component Layout, Power Supply (104)

ASSEMBLY FOR P.C.B. A82 MATCHING UNIT

REF.	VALUE	TOL. ±%	RATING	TYPE	PART NO.	REF.	VALUE	TOL. ±%	RATING	TYPE	PART NO.	REF.	VALUE	TOL. ±%	RATING	TYPE	PART NO.
R1*	150R	0.25	1W	MF	0000-7549.603/-	R35	324R	1	0W35	MF	0001-0000.825/-	R114	22k1	1	0W35	MF	0001-0002.441/-
R2	150R	0.25	1W	MF	0000-7549.603/-	R36	301R	1	0W35	MF	0001-0000.799/-	R115	56k2	1	0W35	MF	0001-0002.797/-
R3	604R	0.25	1W	MF	0000-7511.262/-	R37	71R5	1	0W35	MF	0001-0000.443/-	R116	56k2	1	0W35	MF	0001-0002.797/-
R4	523R	1	0W35	MF	0001-0000.993/-	R38	150R	1	0W35	MF	0001-0000.618/-	R117	22k1	1	0W35	MF	0001-0002.441/-
R5	75R5	0.1	0W125	MF	0000-7601.567/-	R39	619R	1	0W35	MF	0001-0001.044/-	R118	56k2	1	0W35	MF	0001-0002.797/-
R6	8k25	2	0W35	MF	0001-0002.056/-	R40	5k62	1	0W35	MF	0001-0001.895/-	R119	22k1	1	0W35	MF	0001-0002.441/-
R7*	152R	0.25	1W	MF	0000-7549.616/-	R41	4k7	2	0W25	MF	0001-0001.811/-	R120	56k2	1	0W35	MF	0001-0002.797/-
R8	432R	1	0W35	MF	0001-0000.935/-	R42	22k1	1	0W35	MF	0001-0002.441/-	R121	22k1	1	0W35	MF	0001-0002.441/-
R109	10k	1	0W35	MF	0001-0002.137/-	R43	100R	1	0W35	MF	0001-0000.537/-	R122	9 x 100k	2	0W2	RESISTOR PACK	0000-7604.441/-
R110	56k2	2	0W35	MF	0001-0002.797/-	R50	22k1	1	0W35	MF	0001-0002.441/-	R123	1k5	1	0W35	MF	0001-0001.358/-
RV1	500R	20	0W5	Var.	0000-7601.651/-	R51	33k	2	0W25	MF	4980-0000.009/-	C5	4p7	0p25	63	Cer.	0001-0004.083/-
C1	47u	+50-10%		B42190-C8476-T	0001-7520.460/-	R52	68R1	1	0W35	MF	0001-0000.427/-	C6	15p	2	63	Cer.	0001-0004.229/-
C3	100p	2			0001-0004.517/-	R53	3k16	1	0W35	MF	0001-0001.646/-	C7	4p7	0p25	63	Cer.	0001-0004.083/-
C80	10n	10	40V	Cer.	0001-0004.818/-	R54	1k65	1	0W35	MF	0001-0059.232/-	C8	22p	2	63	Cer.	0001-0004.290/-
C81	1u	20	35V	Tant.	0001-0040.704/-	R55	330R	2	0W25	MF	0000-7601.389/-	C10	220n	10	100	PE	0001-0010.404/-
TR20				BCY71	0001-0016.534/-	R56	68R1	1	0W35	MF	0001-0000.427/-	C11	33p	2	63	Cer.	0001-0004.342/-
D22				1N914 or 1N4448	0001-0018.493/-	R57	100R	1	0W35	MF	0001-0000.537/-	C12	33u	20	10	Tant.	0001-0040.995/-
D31				1N914 or 1N4448	0001-0018.493/-	R58	845R	1	0W35	MF	0001-0018.587/-	C13	22p	2	63	Cer.	0001-0004.290/-
VC1	2 - 18p			809-05003	0000-7598.463/-	R59	1k1	1	0W35	MF	0001-0001.235/-	C14	33p	2	63	Cer.	0001-0004.342/-
S1 to S6				INPUT IMPEDANCE		R60	68R1	1	0W35	MF	0001-0000.427/-	C15	220u	20	10	Tant.	0001-0041.208/-
				SWITCHING	4502-1089-007/4	R61	2k67	1	0W35	MF	0001-0001.578/-	C16	330u	20	6.3	Tant.	0001-0041.211/-
L1	470uH			INDUCTOR	0000-7598.683/-	R62	681R	1	0W35	MF	0001-0001.086/-	C17	68p	2	63	Cer.	0001-0004.452/-
T1				TRANSFORMER	4502-1304.009/4	R63	4k7	2	0W25	MF	0001-0001.811/-	C18	220p	2	63	Cer.	0001-0004.601/-
SK1				SOCKET, D.I.L. 14-WAY	0000-7518.388/-	R64	68R1	1	0W35	MF	0001-0000.427/-	C19	10n	20	100	Cer.	0001-0004.818/-
RL1				RSD - 12V	0001-0069.620/-	R65	1k0	1	0W35	MF	0001-0001.219/-	C20	1u	20	35	Tant.	0001-0040.704/-
RL2				RSD - 12V	0001-0069.620/-	R66	750R	1	0W35	MF	0001-0001.125/-	C30	1u	20	35	Tant.	0001-0040.704/-
A82				P.C.B., MATCHING UNIT	4502-0260.005/3	R67	100R	1	0W35	MF	0001-0000.537/-	C31	33p	2	63	Cer.	0001-0004.342/-
						R68	470R	2	0W25	MF	0000-7560.608/-	C32	33u	20	10	Tant.	0001-0040.995/-
						R69	732R	1	0W35	MF	0001-0001.112/-	C33	22p	2	63	Cer.	0001-0004.290/-
						R70	402R	1	0W35	MF	0001-0000.906/-	C34	33p	2	63	Cer.	0001-0004.342/-
						R71	243R	2	0W25	MF	0001-0000.731/-	C35	100u	20	10	Tant.	0001-0041.156/-
						R72	68R1	1	0W35	MF	0001-0000.427/-	C36	330u	20	6.3	Tant.	0001-0041.211/-
						R73	2k21	1	0W35	MF	0001-0001.497/-	C37	47p	2	63	Cer.	0001-0004.397/-
						R75	2k0	1	0W35	MF	0001-0001.455/-	C38	82p	2	63	Cer.	0001-0004.481/-
						R80	22k1	1	0W35	MF	0001-0002.441/-	C40	47p	2	63	Cer.	0001-0004.397/-
						R81	15k	1	0W35	MF	0001-0002.289/-	C41	47p	2	63	Cer.	0001-0004.397/-
						R82	15k	1	0W35	MF	0001-0002.289/-	C42	100n	20	100	Cer.	0000-7598.450/-
						R83	68R1	1	0W35	MF	0001-0000.427/-	C43	100n	20	100	Cer.	0000-7598.450/-
						R84	68R1	1	0W35	MF	0001-0000.427/-	C44	100n	20	100	Cer.	0000-7598.450/-
						R85	698R	1	0W35	MF	0001-0001.099/-	C45	100n	20	100	Cer.	0000-7598.450/-
						R86	75R	1	0W35	MF	0001-0000.456/-	C46	100n	20	100	Cer.	0000-7598.450/-
						R87	330R	2	0W25	MF	0000-7601.389/-	C47	100n	20	100	Cer.	0000-7598.450/-
						R88	68R1	1	0W35	MF	0001-0000.427/-	C50	6u8	20	6.3	Tant.	0001-0040.830/-
						R89	18k	2	0W25	MF	0001-0027.484/-	C51	1u	20	35	Tant.	0001-0040.704/-
						R90	47k	2	0W25	MF	0000-7558.393/-	C52	220u	20	10	Tant.	0001-0041.208/-
						R91	47R	2	0W25	MF	0000-7601.321/-	C53	1u	20	35	Tant.	0001-0040.704/-
						R92	432R	1	0W35	MF	0001-0000.935/-	C54	1u	20	35	Tant.	0001-0040.704/-
						R94	33k	2	0W25	MF	4980-0000.009/-	C55	220u	20	10	Tant.	0001-0041.208/-
						R95	22k1	1	0W35	MF	0001-0002.441/-	C60	100n	20	100	Cer.	0000-7598.450/-
						R96	68R1	1	0W35	MF	0001-0000.427/-	C82	10n	20	100	Cer.	0001-0004.818/-
						R97	1k5	1	0W35	MF	0001-0001.358/-	C83	10n	20	100	Cer.	0001-0004.818/-
						R98	75R	1	0W35	MF	0001-0000.456/-	C84	10n	20	100	Cer.	0001-0004.818/-
						R99	4k7	2	0W25	MF	0001-0001.811/-	C85	10n	20	100	Cer.	0001-0004.818/-
						R100	22R1	1	0W35	MF	0001-0000.184/-	C86	10n	20	100	Cer.	0001-0004.818/-
						R102	33R	2	0W25	MF	0000-7601.347/-	C87	10p	2	63	Cer.	0001-0004.177/-
						R112	22k1	1	0W35	MF	0001-0002.441/-	C88	1u	20	35	Tant.	0001-0040.704/-
						R113	56k2	1	0W35	MF	0001-0002.797/-	TR1				2N2369A	4975-0000.007/-

\* Shown as R0601 and R0607 respectively on the circuit diagram.

ASSEMBLY P.C.B. A22 PRE-AMPLIFIER & ATTENUATOR

REF.	VALUE	TOL. ±%	RATING	TYPE	PART NO.
R7	9k	0.1	0W125	MF	0000-7601.512/-
R8	1k11	0.1	0W125	MF	0000-7601.402/-
R9	9k	0.1	0W125	MF	0000-7601.512/-
R10	1k11	0.1	0W125	MF	0000-7601.402/-
R11	11k	0.1	0W125	MF	0000-7598.277/-
R15	100k	1	0W35	MF	0001-0002.991/-
R16	22k1	1	0W35	MF	0001-0002.441/-
R17	33k	2	0W25	MF	4980-0000.009/-
R18	68R1	1	0W35	MF	0001-0000.427/-
R19	162R	1	0W35	MF	0001-0003.958/-
R20	3k16	1	0W35	MF	0001-0001.646/-
R21	1k65	1	0W35	MF	0001-0059.232/-
R22	68R1	1	0W35	MF	0001-0000.427/-
R23	100R	1	0W35	MF	0001-0000.537/-
R24	845R	1	0W35	MF	0001-0017.587/-
R25	1k1	1	0W35	MF	0001-0001.235/-
R26	68R1	1	0W35	MF	0001-0000.427/-
R27	2k67	1	0W35	MF	0001-0001.578/-
R28	681R	1	0W35	MF	0001-0001.086/-
R29	4k7	2	0W25	MF	0001-0000.811/-
R30	68R1	1	0W35	MF	0001-0000.427/-
R31	619R	1	0W35	MF	0001-0001.044/-
R32	750R	1	0W35	MF	0001-0001.125/-
R33	221R	1	0W35	MF	0001-0000.715/-
R34	2k67	1	0W35	MF	0001-0001.578/-