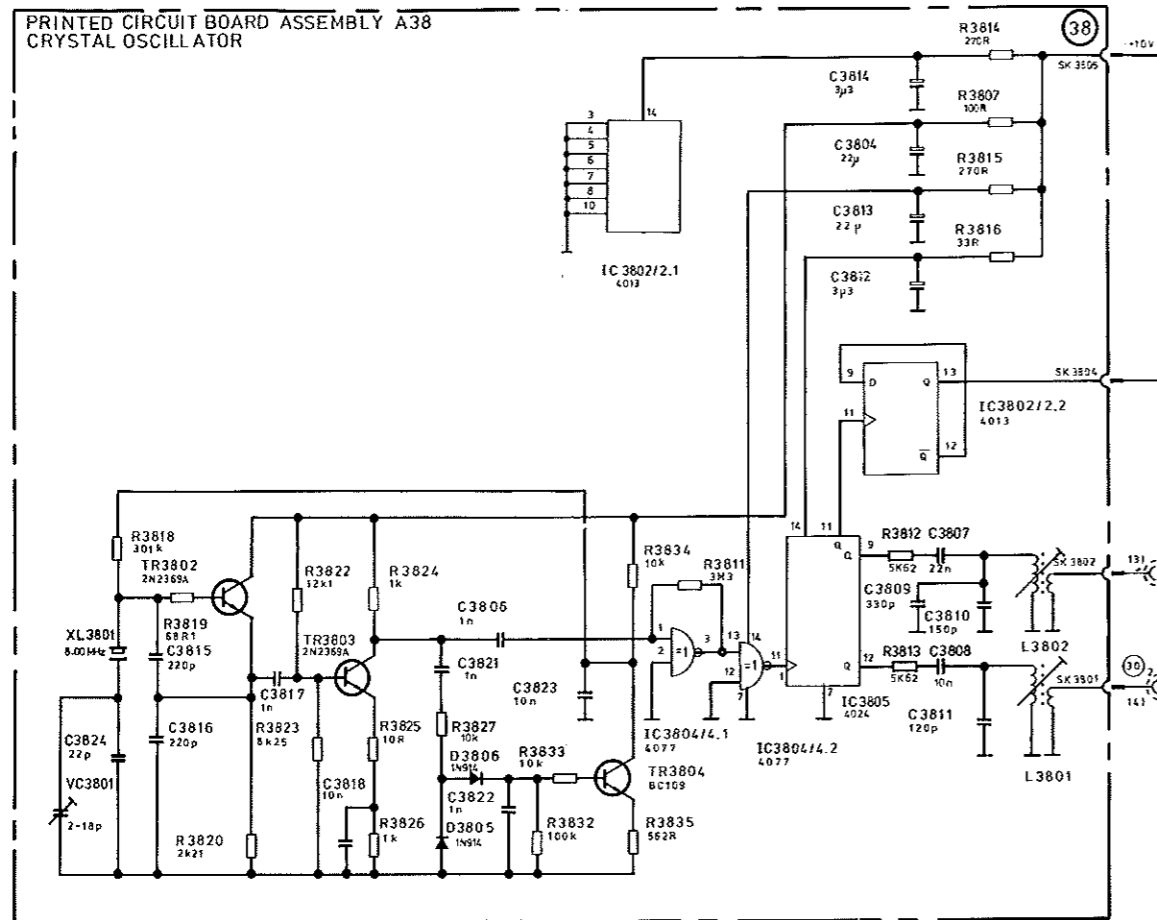
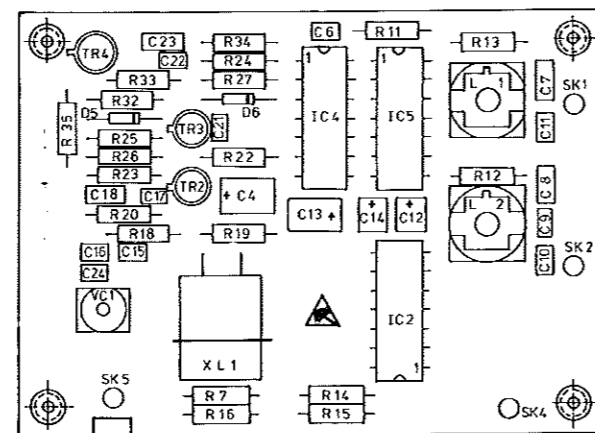


PRINTED CIRCUIT BOARD ASSEMBLY A38  
CRYSTAL OSCILLATOR



- 10) 1MHz Sync Not connected
- 13) 1MHz 75  $\mu$  to back panel
- 14) 4MHz 75  $\mu$
- 15) Compensation time pulse
- 16) 10 kHz to phase detector
- 17) 10 kHz to 4.01 MHz PLL



CIRCUIT REFERENCES TO BE  
PRECEDED BY BOARD ASSEMBLY  
NUMBER eg XL1 BECOMES XL3801  
C16 BECOMES C3816

Fig. 35 Component Layout, 8MHz Crystal Oscillator, (38)

PRINTED CIRCUIT BOARD ASSEMBLY  
A37 DIVIDER 3

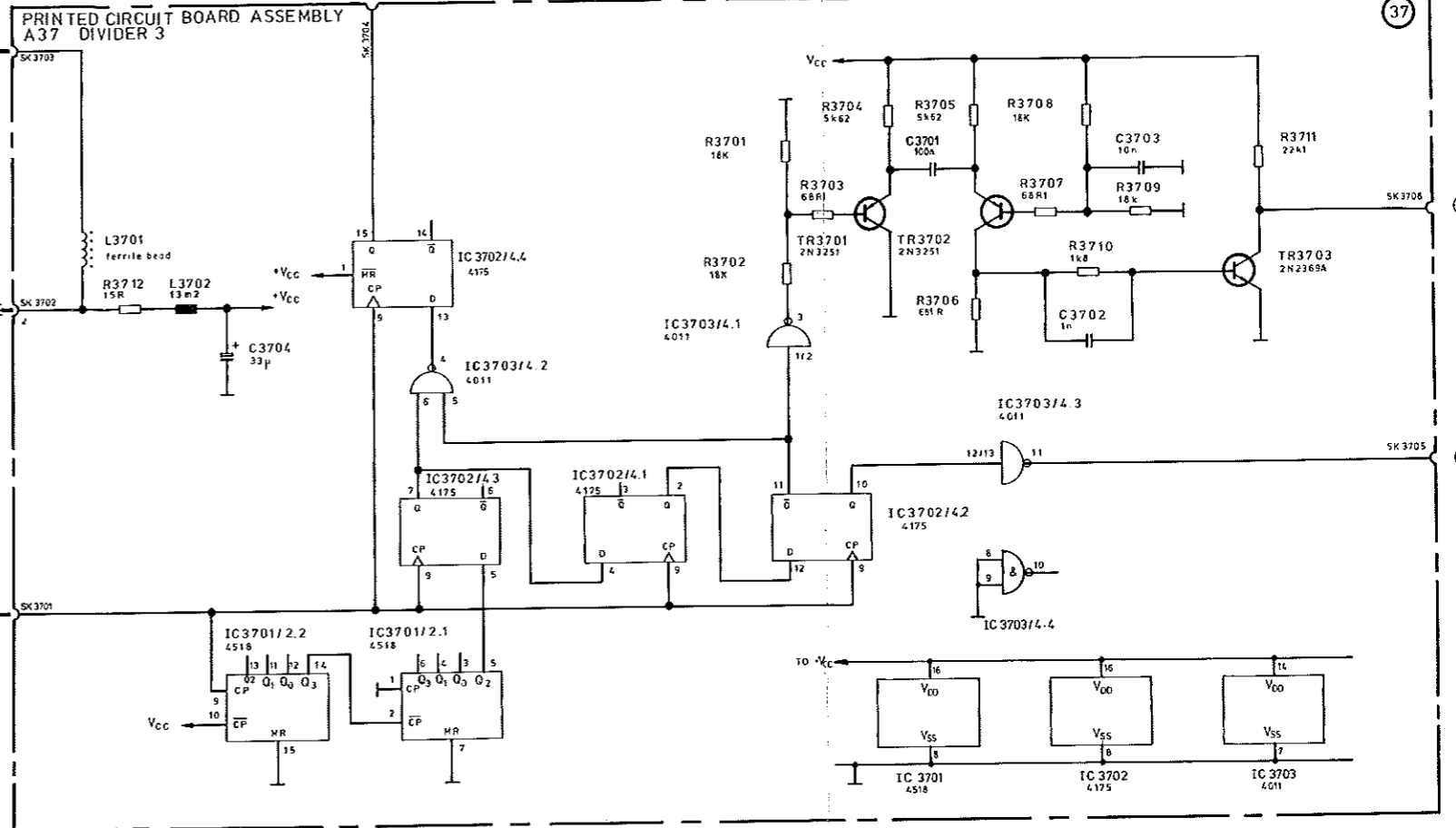
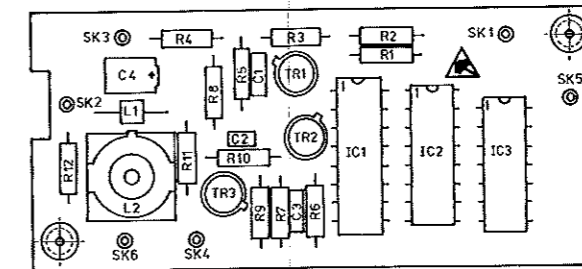


Fig. 34 Circuit Diagram,  
8MHz Crystal Oscillator, (38)  
and Divider 3, (37)



CIRCUIT REFERENCES TO BE PRECEDED BY BOARD ASSEMBLY  
NUMBER eg IC1 BECOMES IC3701 R10 BECOMES R3710.

Fig. 36 Component Layout, Divider 3, (37)

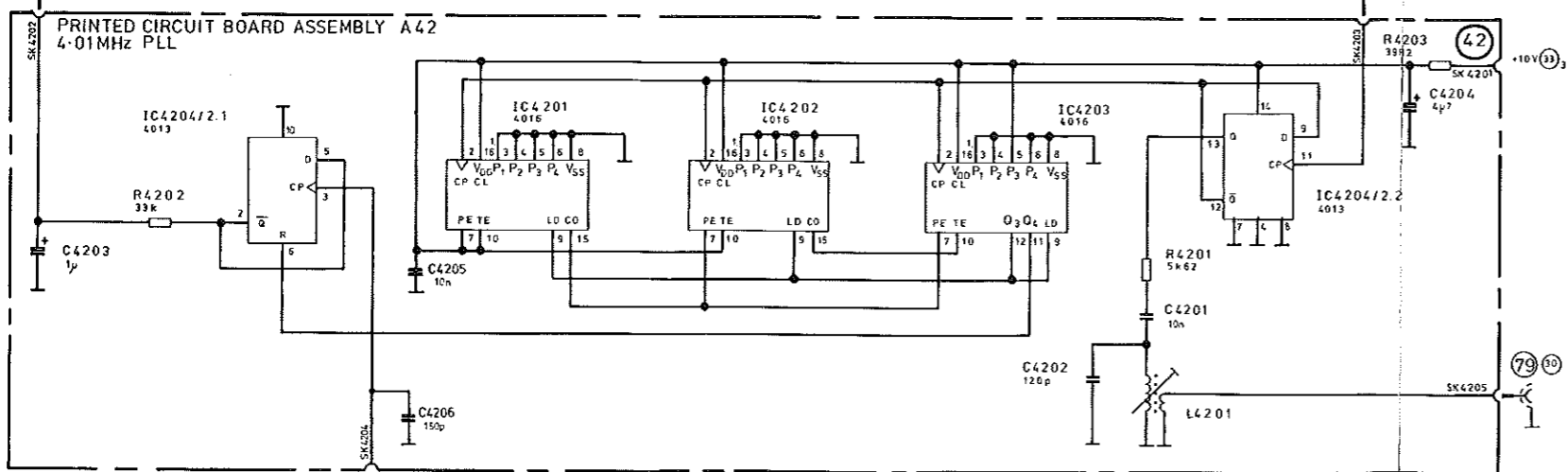
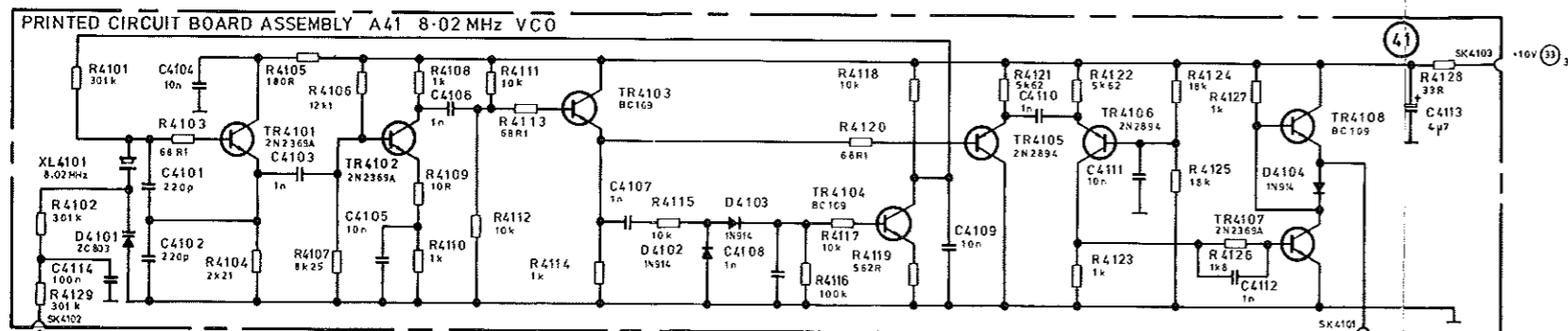
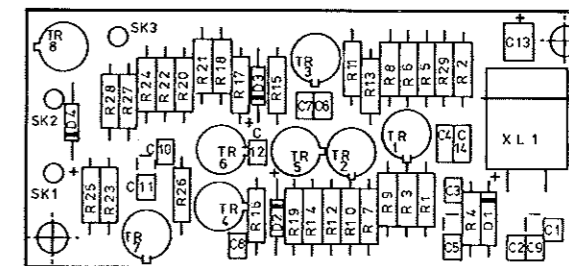
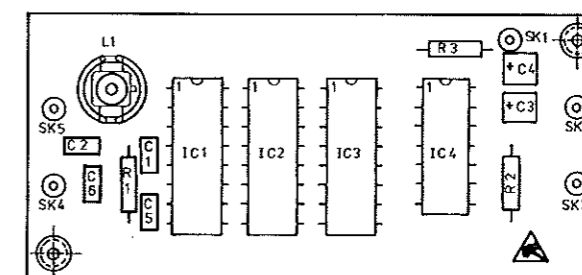


Fig. 37 Circuit Diagram, 8.02MHz V.C.O., (41) and 4.01MHz P.L.L., (42)



COMPONENT REFERENCES TO BE PRECEDED BY BOARD ASSEMBLY NUMBERS  
e.g. R 25 BECOMES R4125.  
C 8 BECOMES C4108.

Fig. 38 Component Layout, 8.02MHz V.C.O., (41)

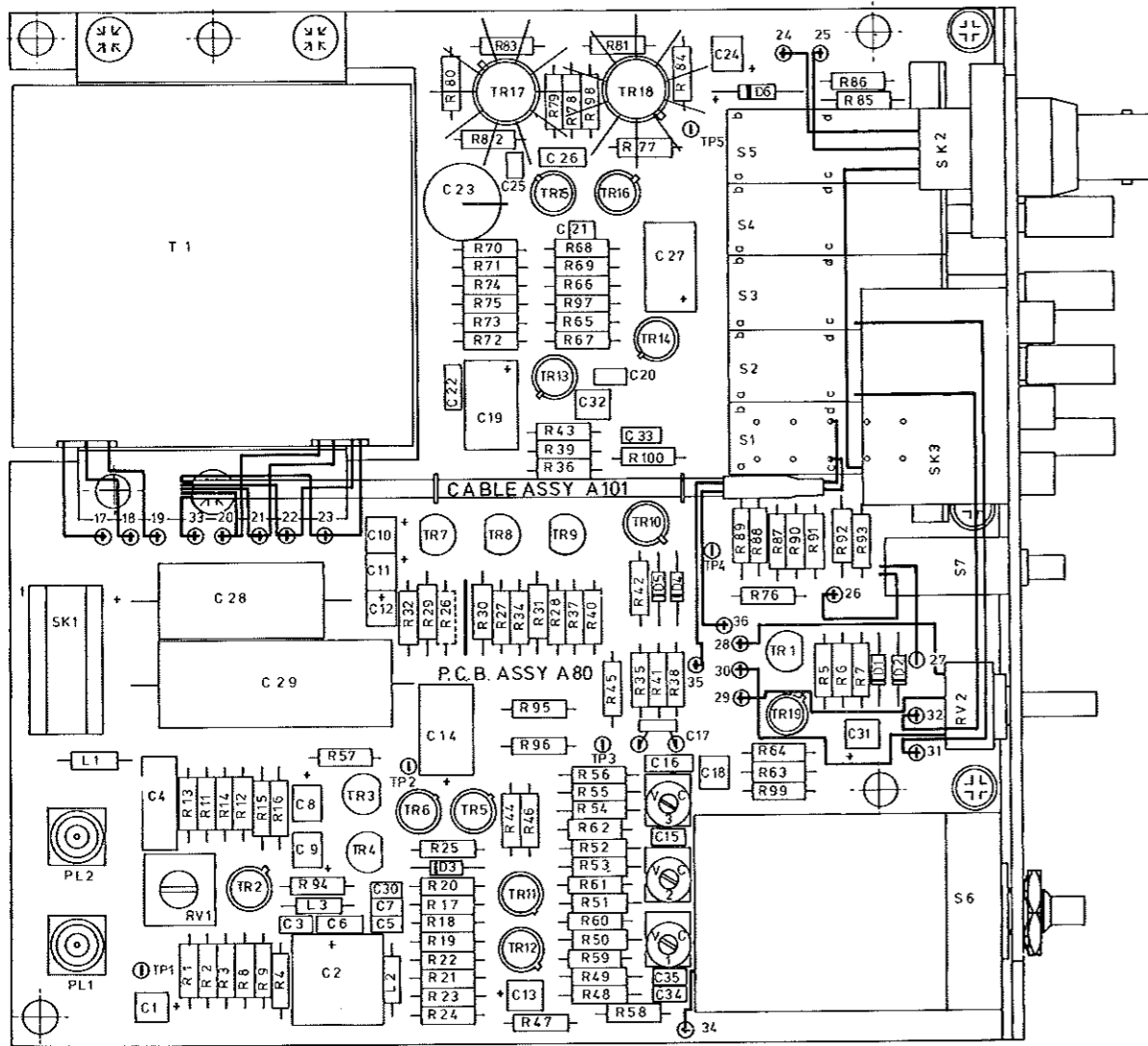


CIRCUIT REFERENCES TO BE PRECEDED BY BOARD ASSEMBLY NUMBER eg IC 2 BECOMES IC4202

Fig. 39 Component Layout, 4.01MHz P.L.L., (42)

ASSEMBLY P.C.B. A41 8.02MHz V.C.O.

REF.	VALUE	TOL. ± %	RATING	TYPE	PART NO.	REF.	VALUE	TOL. ± %	RATING	TYPE	PART NO.	REF.	VALUE	TOL. ± %	RATING	TYPE	PART NO.
R1	301k	1	0W35	MF	0001-0062.025/-	R26	1k8	2	0W25	MF	0001-0014.510/-	TR8				BC109	0000-7602.029/-
R2	301k	1	0W35	MF	0001-0062.025/-	R27	1k	1	0W35	MF	0001-0001.219/-	D1				ZC803	0000-7601.936/-
R3	68R1	1	0W35	MF	0001-0000.427/-	R28	33R	2	0W25	MF	0000-7601.347/-	D2				1N914 or 1N4448	0001-0018.493/-
R4	2k21	1	0W35	MF	0001-0001.497/-	R29	301k	1	0W35	MF	0001-0062.025/-	D3				1N914 or 1N4448	0001-0018.493/-
R5	180R	2	0W25	MF	0000-7558.403/-	C1	220p	2	63	Cer.	0001-0004.601/-	D4				1N914 or 1N4448	0001-0018.493/-
R6	12k1	1	0W35	MF	0001-0002.218/-	C2	220p	2	63	Cer.	0001-0004.601/-	XL1	8.02MHz				4502-9701.002/4
R7	8k25	1	0W35	MF	0001-0002.056/-	C3	1n	10	63	Cer.	0001-0004.698/-	A41				P.C.B. 8.02MHz V.C.O.	4502-0141.001/3
R8	1k	1	0W35	MF	0001-0001.219/-	C4	10n	20	40	Cer.	0001-0004.818/-	<b>ASSEMBLY P.C.B. A42 4.01MHz P.L.L.</b>					
R9	10R	1	0W35	MF	0001-0000.074/-	C5	10n	20	40	Cer.	0001-0004.818/-	REF.	VALUE	TOL. ± %	RATING	TYPE	PART NO.
R10	1k	1	0W35	MF	0001-0001.219/-	C6	1n	10	63	Cer.	0001-0004.698/-	R1	5k62	1	0W35	MF	0001-0001.895/-
R11	10k	1	0W35	MF	0001-0002.137/-	C7	1n	10	63	Cer.	0001-0004.698/-	R2	33k	2	0W25	MF	4980-0000.009/-
R12	10k	1	0W35	MF	0001-0002.137/-	C8	1n	10	63	Cer.	0001-0004.698/-	R3	39R2	1	0W35	MF	0001-0003.547/-
R13	68R1	1	0W35	MF	0001-0000.427/-	C9	10n	20	40	Cer.	0001-0004.818/-	C1	10n	20	100	Cer.	0001-0004.818/-
R14	1k	1	0W35	MF	0001-0001.219/-	C10	1n	10	63	Cer.	0001-0004.818/-	C2	120p	2	63	Cer.	0001-0004.562/-
R15	10k	1	0W35	MF	0001-0002.137/-	C11	10n	20	40	Cer.	0001-0004.818/-	C3	1μ	20	35	Tant.	0001-0040.704/-
R16	100k	1	0W35	MF	0001-0002.991/-	C12	1n	10	63	Cer.	0001-0004.698/-	C4	4μ7	20	10	Tant.	0001-0040.801/-
R17	10k	1	0W35	MF	0001-0002.137/-	C13	4μ7	20	10	Tant.	0001-0040.810/-	C5	10n	20	40	Cer.	0001-0004.818/-
R18	10k	1	0W35	MF	0001-0002.137/-	C14	100n	20	100	Cer.	0000-7598.450/-	C6	150p	2	63	Cer.	0001-0004.575/-
R19	562R	1	0W35	MF	0001-0001.015/-	TR1				2N2369A	0000-7542.066/-	IC1				40160	0000-7660.032/-
R20	68R1	1	0W35	MF	0001-0000.427/-	TR2				2N2369A	0000-7542.066/-	IC2				40160	0000-7660.032/-
R21	5k62	1	0W35	MF	0001-0001.895/-	TR3				BC109	0000-7602.029/-	IC3				40160	0000-7660.032/-
R22	5k62	1	0W35	MF	0001-0001.895/-	TR4				BC109	0000-7602.029/-	IC4				4013	0000-7565.315/-
R23	1k	1	0W35	MF	0001-0001.219/-	TR5				2N2894	0001-0016.929/-	L1	12.7μH			INDUCTOR	4502-1431.008/4
R24	18k	2	0W25	MF	0001-0027.484/-	TR6				2N2894	0001-0016.929/-	A42				P.C.B. 4.01MHz P.L.L.	4502-0142.000/3
R25	18k	2	0W25	MF	0001-0027.484/-	TR7				2N2369A	0000-7542.066/-						



CIRCUIT REFERENCES TO BE PRECEDED  
BY BOARD ASSEMBLY NUMBER  
e.g R87 BECOMES R80087  
C 3 BECOMES C80003

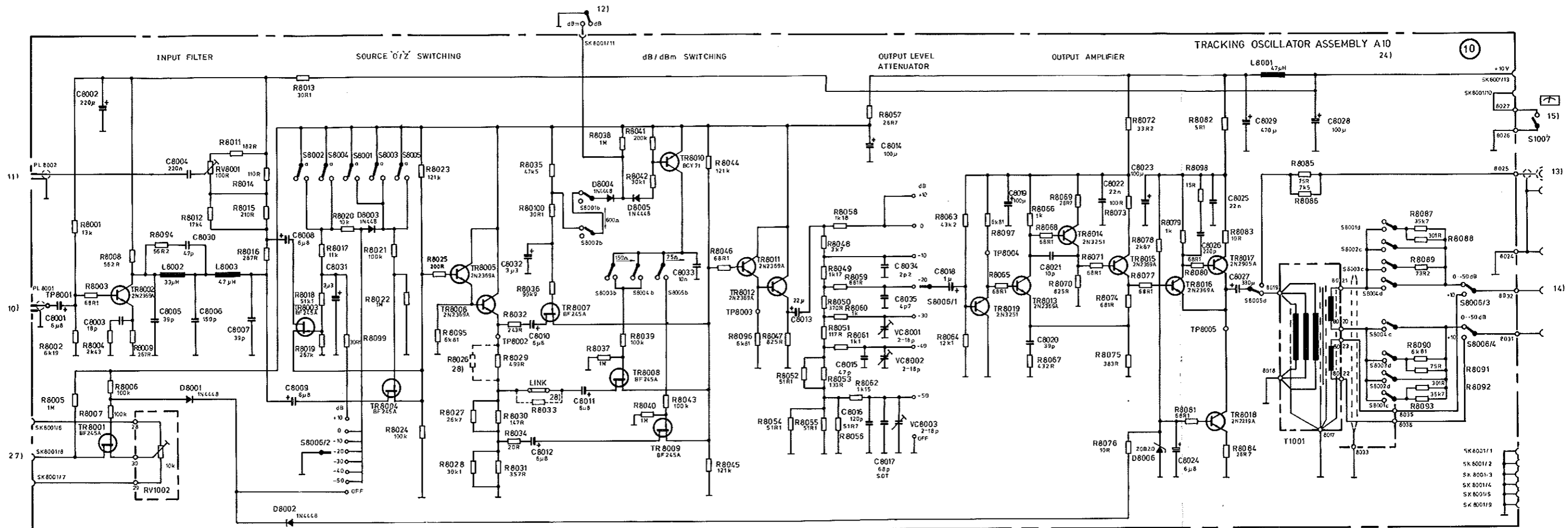
COMPONENTS SK2, SK3, S7, RV2, T1,  
PRECEDED BY 10 e.g. SK1002

Fig. 40 Component Layout, PSE-31 Tracking Oscillator, (10)

ASSEMBLY A10 PSE-31 TRACKING OSCILLATOR

REF.	VALUE	TOL. ±%	RATING	TYPE	PART NO.
RV2	10k	20	1W	Var.	0000-7545.270/-
S7				SWITCH MICRO <input checked="" type="checkbox"/>	0001-0034.176/-
				SWITCH BUTTON <input checked="" type="checkbox"/>	0000-3705.425/5
T1				TRANSFORMER	4502-1309.004/4
SK2				VERSACON BODY	0000-1681.004/5
				VERSACON LOCKING	
				RING	0000-1672.055/5
				VERSACON ADAPTOR	0000-1674.008/5
SK3				C.F. SOCKET 3-POLE	0000-3713.006/4
A80				P.C.B. PSE-31	
				Complete	4502-1080.006/2

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10) CALIBRATION 0dB 0.2 - 620 kHz  
 11) METER 20dB  
 12) ON FRONT PANEL dB/dBm SWITCH  
 13) UNBAL OUTPUT 0.2 - 620 kHz  
 14) BAL OUTPUT 0.2 - 620 kHz  
 15) OUTPUT LEVEL MONITOR FACULTY  
 27) FINE LEVEL CONTROL  
 28) RESISTOR NOT FITTED ON 'E' SERIES, REPLACED BY LINK.

Fig. 41 Circuit Diagram, PSE-31 Tracking Oscillator, 10

ASSEMBLY P.C.B. A80 used on PSE-31 TRACKING GENERATOR

REF.	VALUE	TOL. ± %	RATING	TYPE	PART NO.	REF.	VALUE	TOL. ± %	RATING	TYPE	PART NO.	REF.	VALUE	TOL. ± %	RATING	TYPE	PART NO.
R1	13k	1	0W35	MF	0001-0003.631/-	R30	147R	0.25	0W35	MF	0000-7598.311/-	R58	1k18	1	0W35	MF	0001-0001.264/-
R2	6k19	1	0W35	MF	0001-0001.934/-	R31	357R	0.25	0W35	MF	0000-7598.324/-	R59	681R	1	0W35	MF	0001-0001.086/-
R3	68R1	1	0W35	MF	0001-0000.427/-	R32	243R	1	0W35	MF	0001-0000.731/-	R60	1k	1	0W35	MF	0001-0001.219/-
R4	2k43	1	0W35	MF	0001-0001.536/-	R34	20R	1	0W35	MF	0001-0065.158/-	R61	1k1	1	0W35	MF	0001-0001.235/-
R5	1M	1	0W35	MF	0001-0027.507/-	R35	47k5	1	0W35	MF	0001-0002.739/-	R62	1k15	1	0W35	MF	0001-0001.251/-
R6	100k	1	0W35	MF	0001-0002.991/-	R36	90k9	1	0W35	MF	0001-0002.975/-	R63	43k2	1	0W35	MF	0001-0002.690/-
R7	100k	1	0W35	MF	0001-0002.991/-	R37	1M	5	0W35	MF	0001-0027.507/-	R64	12k1	1	0W35	MF	0001-0002.218/-
R8	562R	1	0W35	MF	0001-0001.015/-	R38	1M	5	0W35	MF	0001-0027.507/-	R65	68R1	1	0W35	MF	0001-0000.427/-
R9	267R	1	0W35	MF	0001-0003.576/-	R39	100k	1	0W35	MF	0001-0002.991/-	R66	1k	1	0W35	MF	0001-0001.219/-
R11	182R	1	0W35	MF	0001-0000.663/-	R40	1M	5	0W35	MF	0001-0027.507/-	R67	432R	1	0W35	MF	0001-0000.935/-
R12	17k4	1	0W35	MF	0001-0002.344/-	R41	200k	1	0W35	MF	0001-0003.181/-	R68	68R1	1	0W35	MF	0001-0000.427/-
R13	30R1	1	0W35	MF	0001-0000.236/-	R42	30k1	1	0W35	MF	0001-0002.564/-	R69	267R	1	0W35	MF	0001-0000.207/-
R14	110R	1	0W35	MF	0001-0000.553/-	R43	100k	1	0W35	MF	0001-0002.991/-	R70	825R	1	0W35	MF	0001-0001.154/-
R15	210R	0.25	0W35	MF	0000-7520.538/-	R44	121k	1	0W35	MF	0001-0003.042/-	R71	68R1	1	0W35	MF	0001-0000.427/-
R16	287R	0.25	0W35	MF	0000-7561.241/-	R45	121k	1	0W35	MF	0001-0003.042/-	R72	33R2	1	0W35	MF	0001-0000.265/-
R17	11k	1	0W35	MF	0001-0002.179/-	R46	68R1	1	0W35	MF	0001-0000.427/-	R73	100R	1	0W35	MF	0001-0000.537/-
R18	51k1	1	0W35	MF	0001-0002.768/-	R47	825R	1	0W35	MF	0001-0001.154/-	R74	681R	1	0W35	MF	0001-0001.086/-
R19	267k	1	0W35	MF	0001-0067.444/-	R48	3k7	0.25	0W35	MF	0000-7598.337/-	R75	383R	1	0W35	MF	0001-0000.888/-
R20	10k	1	0W35	MF	0001-0002.137/-	R49	1k17	0.25	0W35	MF	0000-7598.340/-	R76	10R	1	0W35	MF	0001-0000.074/-
R21	100k	1	0W35	MF	0001-0002.991/-	R50	370R	0.25	0W35	MF	0000-7598.353/-	R77	68R1	1	0W35	MF	0001-0000.427/-
R22	1M	5	0W25	MF	0001-0027.507/-	R51	117R	0.25	0W25	MF	0000-7598.366/-	R78	2k67	1	0W35	MF	0001-0001.578/-
R23	121k	1	0W35	MF	0001-0003.042/-	R52	51R1	0.25	0W35	MF	0000-7513.710/-	R79	1k	1	0W35	MF	0001-0001.219/-
R24	100k	1	0W35	MF	0001-0002.991/-	R53	133R	0.25	0W35	MF	0000-7598.379/-	R80	68R1	1	0W35	MF	0001-0000.427/-
R25	200R	1	0W35	MF	0001-0000.676/-	R54	51R1	0.25	0W35	MF	0000-7513.710/-	R81	68R1	1	0W35	MF	0001-0000.427/-
R27	26k7	1	0W35	MF	0001-0002.519/-	R55	51R1	0.25	0W35	MF	0000-7513.710/-	R82	5R1	1	0W35	MF	0001-0016.783/-
R28	30k1	1	0W35	MF	0001-0002.564/-	R56	51R7	0.25	0W35	MF	0000-7584.008/-	R83	10R	1	0W35	MF	0001-0000.074/-
R29	499R	0.25	0W35	MF	0000-7511.673/-	R57	267R	1	0W35	MF	0001-0000.207/-	R84	267R	1	0W35	MF	0001-0000.207/-

REF.	VALUE	TOL. ± %	RATING	TYPE	PART NO.	REF.	VALUE	TOL. ± %	RATING	TYPE	PART NO.
R85	75R	0.25	0W35	MF	0001-7562.538/-	TR1				BF245A	0001-0016.628/-
R86	7k5	1	0W35	MF	0001-0002.014/-	TR2				2N2369A	0000-7542.066/-
R87	35k7	1	0W35	MF	0001-0002.616/-	TR3				BF245A	0001-0016.628/-
R88	301R	0.25	0W35	MF	0000-7594.315/-	TR4				BF245A	0001-0016.628/-
R89	73R2	0.25	0W35	MF	0000-7576.867/-	TR5				2N2369A	0000-7542.066/-
R90	6k81	1	0W35	MF	0001-0001.976/-	TR6				2N2369A	0000-7542.066/-
R91	75R	0.25	0W35	MF	0001-7562.538/-	TR7				BF245A	0001-0016.628/-
R92	301R	0.25	0W35	MF	0000-7594.315/-	TR8				BF245A	0001-0016.628/-
R93	35k7	1	0W35	MF	0001-0002.616/-	TR9				BF245A	0001-0016.628/-
R94	56R2	1	0W35	MF	0001-0000.346/-	TR10				BCY71	0001-0016.534/-
R95	6k81	1	0W35	MF	0001-0001.976/-	TR11				2N2369A	0000-7542.066/-
R96	6k81	1	0W35	MF	0001-0001.976/-	TR12				2N2369A	0000-7542.066/-
R97	6k81	1	0W35	MF	0001-0001.976/-	TR13				2N2369A	0000-7542.066/-
R98	15R	1	0W35	MF	0001-0014.879/-	TR14				2N3251	0001-0017.342/-
R99	30R1	1	0W35	MF	0001-0000.236/-	TR15				2N2369A	0000-7542.066/-
R100	30R1	1	0W35	MF	0001-0000.236/-	TR16				2N2369A	0000-7542.066/-
C1	6μ8	20	6.3	Tant.	0001-0040.830/-	TR17				2N2905A	0001-0017.287/-
C2	220μ	20	10	Tant.	0001-0041.208/-	TR18				2N2219A	0000-7601.486/-
C3	18p	2	63	Cer.	0001-0004.258/-	TR19				2N3251	0001-0017.342/-
C4	220n	20	100	PE	0001-0010.404/-	D1				1N4448	0001-0018.493/-
C5	39p	2	63	Cer.	0001-0004.371/-	D2				1N4448	0001-0018.493/-
C6	150p	2	63	Cer.	0001-0004.575/-	D3				1N4448	0001-0018.493/-
C7	39p	2	63	Cer.	0001-0004.371/-	D4				1N4448	0001-0018.493/-
C8	6μ8	20	6.3	Tant.	0001-0040.830/-	D5				1N4448	0001-0018.493/-
C9	6μ8	20	6.3	Tant.	0001-0040.830/-	D6				ZOB 2.0	0001-0064.104/-
C10	6μ8	20	6.3	Tant.	0001-0040.830/-	RV1	100R	20	0.5		0000-7601.648/-
C11	6μ8	20	6.3	Tant.	0001-0040.830/-	VC1	2 - 18p		300	809 - 05003	0000-7598.463/-
C12	6μ8	20	6.3	Tant.	0001-0040.830/-	VC2	2 - 18p		300	809 - 05003	0000-7598.463/-
C13	22μ	20	16	Tant.	0001-0040.966/-	VC3	2 - 18p		300	809 - 05003	0000-7598.463/-
C14	100μ	20	10	Tant.	0001-0041.156/-	S1					
C15	47p	2	63	Cer.	0001-0004.397/-	S2				SWITCH PUSH BUTTON	
C16	120p	2	63	Cer.	0001-0004.562/-	S3				-(OUTPUT IMPEDANCE)	4502-1088.008/4
C17	68p	2	63	Cer.	0001-0004.452/-	S4					
C18	1μ	20	35	Tant.	0001-0040.704/-	S5					
C19	100μ	20	6.3	Tant.	0001-0041.156/-	S6				SWITCH, ROTARY	
C20	39p	2	63	Cer.	0001-0004.371/-					(OUTPUT LEVEL)	0000-7602.472/4
C21	10p	2	63	Cer.	0001-0004.177/-	T1				PSE-31 TRANSFORMER	4502-1309.004/4
C22	22n	20	40	Cer.	0001-0006.418/-	L1	47μH	10		INDUCTOR	0000-7556.256/-
C23	100μ	10	25	Elect.	0000-7568.202/-	L2	33μH	10		INDUCTOR	0000-7556.230/-
C24	6μ8	20	6.3	Tant.	0001-0040.830/-	L3	47μH	10		INDUCTOR	0000-7556.256/-
C25	22n	20	40	Cer.	0001-0006.418/-	SK1				SOCKET, D.I.L. 16-WAY	
C26	220p	2	63	Cer.	0001-0004.601/-					S83529 - 1	0000-7518.391/-
C27	330μ	20	6.3	Tant.	0001-0041.211/-	PL1				PLUG SUBMINAX	0000-2682.002/5
C28	100μ	10	25	Elect.	0000-7568.202/-	PL2				PLUG SUBMINAX	0000-2682.002/5
C29	470μ	10	16	Elect.	0001-0041.910/-	A80				P.C.B. PSE-31	
C30	47p	2	63	Cer.	0001-0004.397/-					TRACKING GENERATOR	4502-0249.000/2
C31	3μ3	20	16	Tant.	0001-0040.775/-						
C32	3μ3	20	16	Tant.	0001-0040.775/-						
C33	10n	20	40	Cer.	0001-0004.818/-						
C34	2p2	0.25p	63	Cer.	0001-0004.009/-						
C35	4p7	0.25p	63	Cer.	0001-0004.083/-						