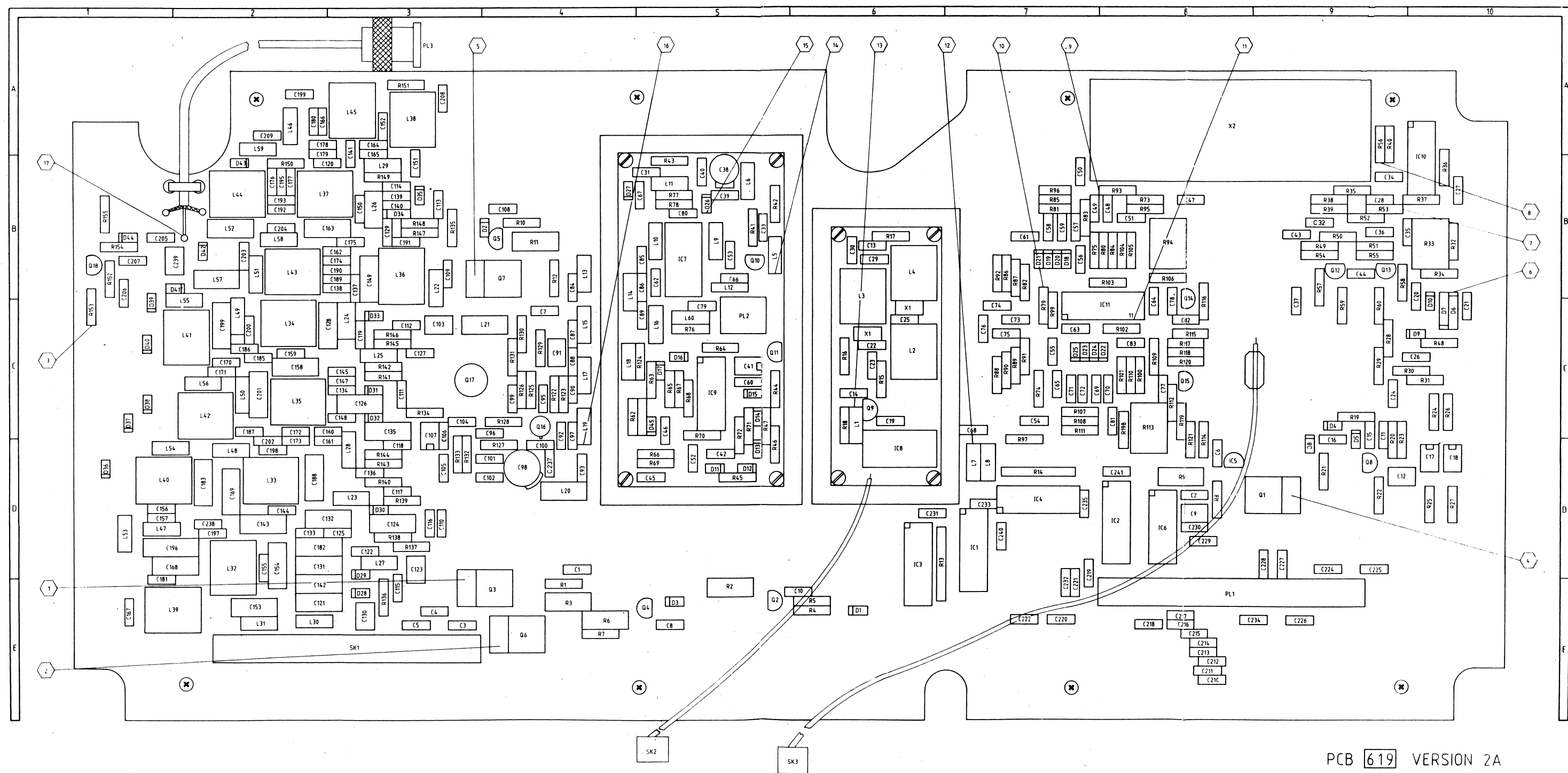


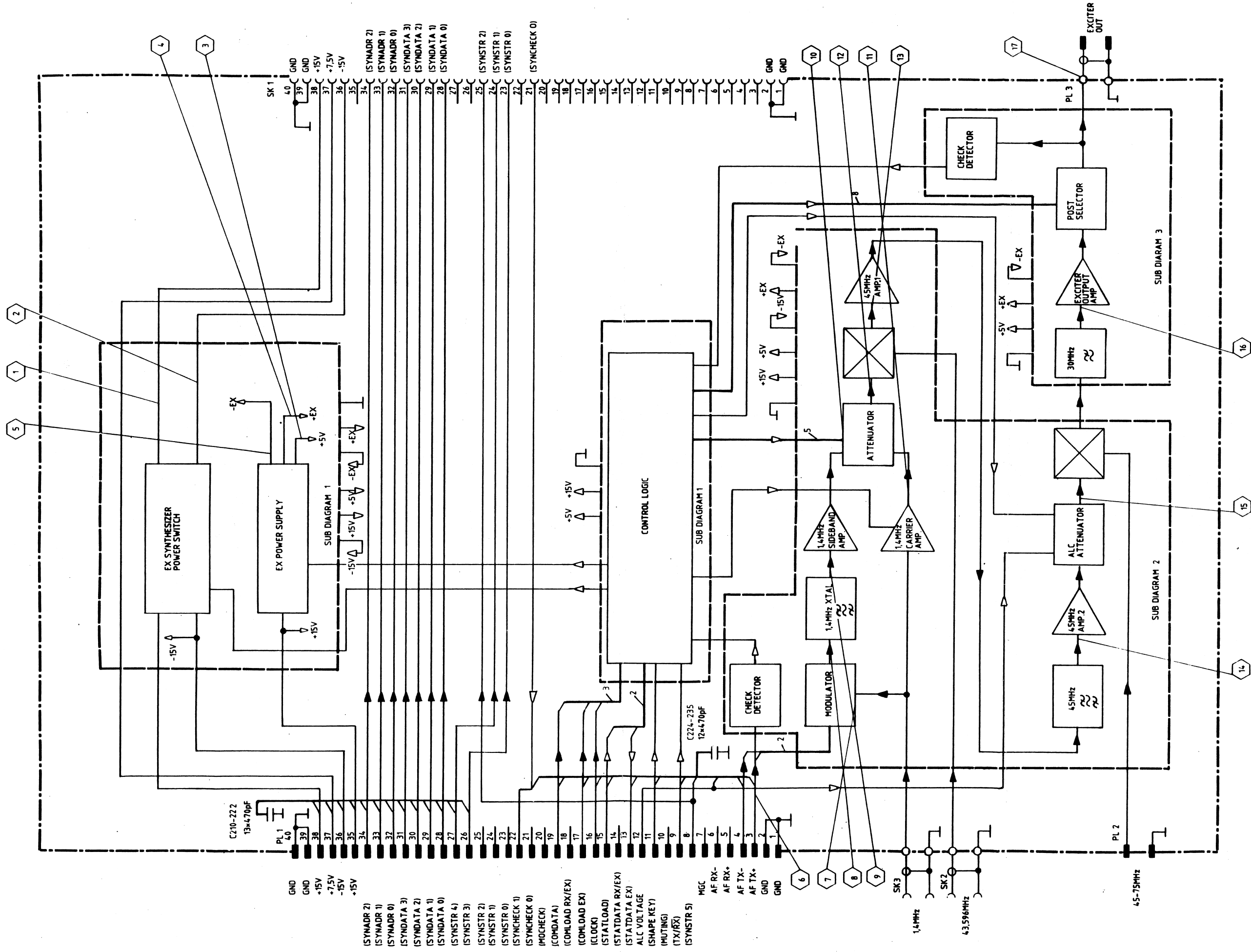
TECHNICAL DESCRIPTION

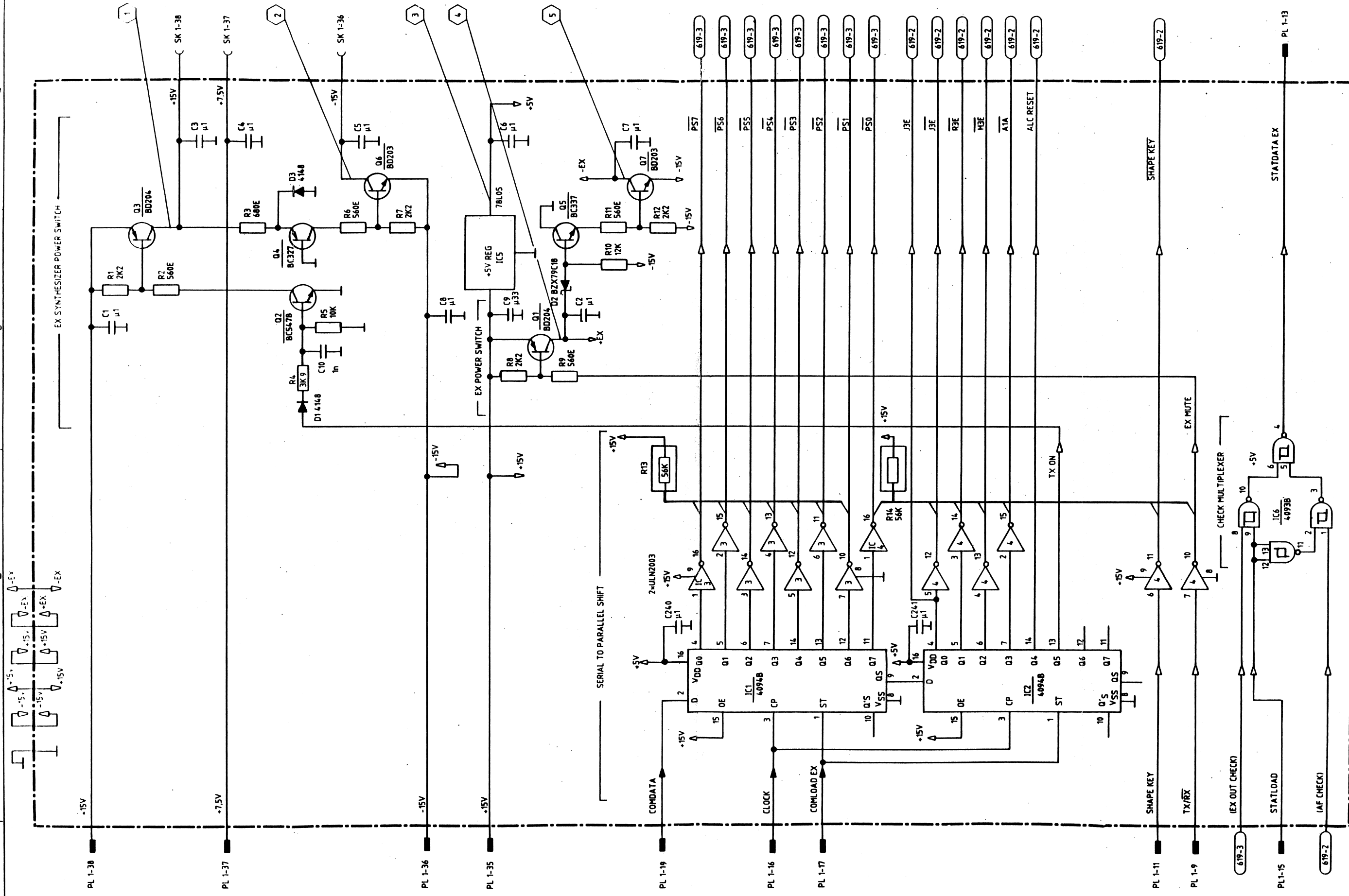
PCB [619] EXCITER SIGNAL PATH

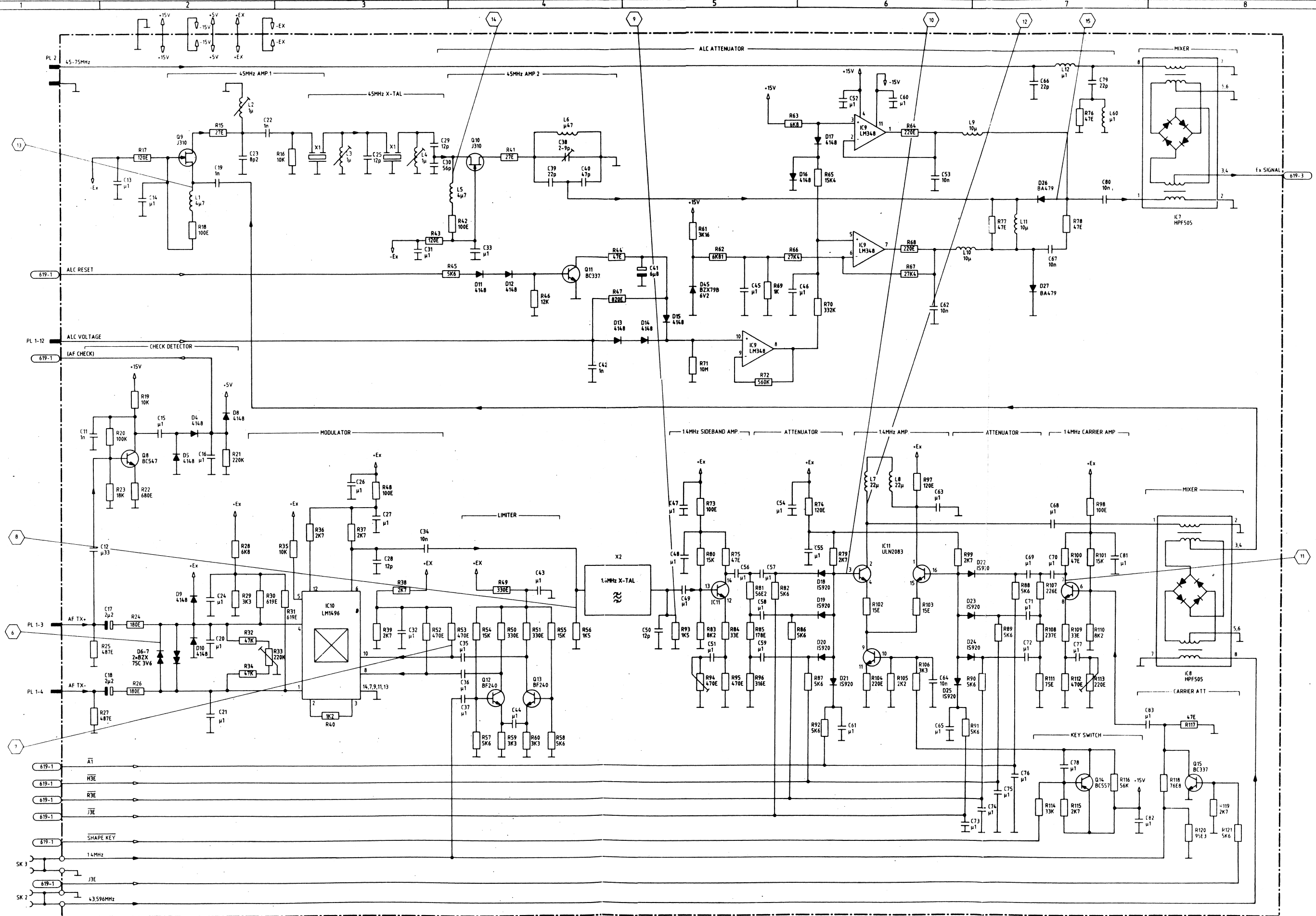
The exciter converts the AF signal to a RF signal of the right frequency, level and modulation. The frequency conversion is controlled by the exciter Synthesizer Board [611]. The balanced AF signal with a level of 0 dBm/600 ohm from Audio Processing Board [601] is led to the double balanced mixer IC10. The 1.4 MHz LO signal from the Synthesizer Board [611] is amplified in the limiter and applied to the mixer producing a 1.4 MHz double sideband suppressed carrier output signal which is filtered in the 1.4 MHz lower sideband crystal filter. The 1.4 MHz LO signal amplified in the 1.4 MHz Carrier Amp. and the output signal of the crystal filter amplified in the 1.4 MHz Sideband Amp. are adjusted by two attenuators and combined in the common 1.4 MHz Amp. The setting of the attenuators depends on the selected operation mode and is controlled by the Transceiver Control Board [624] via the serial-to-parallel converter IC1 and IC2. In this way the peak-to-peak voltage of the combined signal is held independent of the operation mode. The combined 1.4 MHz signal is applied to a passive double balanced mixer where it is mixed with a 43.596 MHz signal from the Synthesizer Board [611] producing a IF frequency of 44.996 MHz. The IF signal is amplified in the 45 MHz Amp. 1, filtered in the 45 MHz monolithic crystal filter and further amplification takes place in 45 MHz Amp. 2. The IF signal is then led to the ALC attenuator which is the amplitude controlling element of the ALC system. The attenuation is controlled by a DC voltage generated by the Transceiver Control Board [624]. The attenuated IF signal is mixed with a 45-75 MHz signal from the Synthesizer Board [611] in a passive double balanced mixer to form the final RF signal at the actual transmitting frequency. The RF signal is led through a 30 MHz lowpass filter and applied to the Exciter Output Amp. Finally the RF signal is filtered in the Post Selector which consists of one lowpass-, six bandpass- and one highpass filter. The filter selection is carried out by the Transceiver Control Board [624] via the serial-to-parallel converter. The output signal of the exciter is applied to the Power Amplifier. For use in the self test routines two check detectors are incorporated. One at the AF input and one at the RF output. The check detectors confirm the presence of the AF- and the RF signal.



PCB 619 VERSION 2A
EXCITER SIGNAL PATH
VIEWED FROM COMPONENT SIDE







PARTS LIST FOR EXCITER SIGNAL PATH BOARD 619 VERSION 2A

PARTS LIST FOR EXCITER SIGNAL PATH BOARD 619 VERSION 2A

Printed Circuit Board Complete 619		107 561 91				
IC1,2	4094B	850 409 40	R29,59,60,106	3.3 kohm	5%	1/4W Car.
IC3,4	ULN2003	850 200 30	R30,31	619 ohm	1%	1/4W MF
IC5	78L05ACP	850 780 52	R32,34,153	47 kohm	5%	1/4W Car.
IC6	4093B	850 409 30	R33	220 kohm		Pot.
IC7,8	HPF505	850 000 11	R36-39,79,99, 115,119	2.7 kohm	5%	1/4W Car.
IC9	LM348	850 034 80	R40,130	1.2 kohm	5%	1/4W Car.
IC10	LM1496	850 149 60	R44,75-78,100, 117,124,129	47 ohm	5%	1/4W Car.
IC11	ULN2083	850 208 30	R45,57,58,82, 86-92,121	5.6 kohm	5%	1/4W Car.
Q1,3	BD204	842 020 40	R47,137-150	820 ohm	5%	1/4W Car.
Q2,8,18	BC547B	840 054 70	R49-51,126	330 ohm	5%	1/4W Car.
Q4	BC327	840 032 70	R52,53,95,112, 125,131	470 ohm	5%	1/4W Car.
Q5,11,15	BC337	840 033 70	R54,55,80,101	15 kohm	5%	1/4W Car.
Q6,7	BD203	842 020 30	R56,93,123	1.5 kohm	5%	1/4W Car.
Q9,10	J310	840 031 03	R61	3.16 kohm	1%	1/4W MF
Q12,13	BF240	840 024 00	R62	6.81 kohm	1%	1/4W MF
Q14	BC557B	840 055 70	R64,68,104	220 ohm	5%	1/4W Car.
Q16	BFX89	840 089 00	R65	15.4 kohm	1%	1/4W MF
Q17	BFW17A	840 001 70	R66,67	27.4 kohm	1%	1/4W MF
D1,3-5,8-17,44	1N4148	830 414 80	R69	1 kohm	1%	1/4W MF
D2	BZX79C18V	832 791 80	R70	332 kohm	1%	1/4W MF
D6,7	BZX75C3V6	832 753 60	R71	10 Mohm	5%	1/4W Car.
D18-25	IS920	830 192 00	R72	560 kohm	5%	1/4W Car.
D26-28,36	BA479	833 047 90	R81	56.2 ohm	1%	1/4W MF
D29-35,37-43	BA423	830 042 30	R83,110	8.2 kohm	5%	1/4W Car.
D45	BZX79B6V2	832 796 20	R84,109	33 ohm	5%	1/4W Car.
X1	45 MHz	810 452 00	R85	178 ohm	1%	1/4W MF
X2	1.4 MHz	385 112 03	R94	470 ohm		Pot.
R1,7,8,12,105	2.2 kohm	501 322 00	R96	316 ohm	1%	1/4W MF
R2,6,9,11	560 ohm	502 256 00	R102,103	15 ohm	5%	1/4W Car.
R3	680 ohm	502 268 00	R107	226 ohm	1%	1/4W MF
R4,122	3.9 kohm	501 339 00	R108	237 ohm	1%	1/4W MF
R5,16,19,35,154	10 kohm	501 410 00	R111	75 ohm	1%	1/4W MF
R10,46	12 kohm	501 412 00	R113	220 ohm		Pot.
R13,14	56 kohm	530 000 13	R114	33 kohm	5%	1/4W Car.
R15,41,133	27 ohm	501 127 00	R116	56 kohm	5%	1/4W Car.
R17,43,74,97	120 ohm	501 212 00	R118	76.8 ohm	1%	1/4W MF
R18,42,48,73,98	100 ohm	501 210 00	R120	95.3 ohm	1%	1/4W MF
R20	100 kohm	501 510 00	R127	10 ohm	5%	1/4W Car.
R21	220 kohm	501 522 00	R128	270 ohm	5%	1/4W Car.
R22,135,151	680 ohm	501 268 00	R132	18 ohm	5%	1/4W Car.
R23	18 kohm	501 418 00				
R24,26	180 ohm	501 218 00				
R25,27	487 ohm	511 248 70				
R28,63	6.8 kohm	501 368 00				

Filter 45N20B (Matched)
LSB Filter

PARTS LIST FOR EXCITER SIGNAL PATH BOARD 619 VERSION 2A

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R134,136	56 ohm	5%	1/4W	Car.	501 156 00	C88,104,160, 187,192	120 pF	2%	63V	N150	602 212 00
R152	270 kohm	5%	1/4W	Car.	501 527 00						
R155	4.7 kohm	5%	1/4W	Car.	501 347 00						
C1-8,13-16,20,21, 24,26,27,31-33, 35-37,43-49,51, 52,54-61,63,65, 68-78,81-83,92, 95,102,105-106, 108-118,120,197, 198,205,206,208, 209,240,241	0.1 uF	10%	63V	Polys.	622 510 00	C91 C93,161 C96,101 C98	0.47 uF 18 pF 0.15 uF 4.5-26 pF	10% 2% 10%	63V 63V 63V	Polys. N150 Polys. Var.	622 547 01 602 118 00 622 515 00 683 126 00
C9,12,103,123, 130,239	0.33 uF	20%	63V	Polys.	622 533 01	C100,137,148, 157,162,165	82 pF	2%	63V	N150	602 182 00
C10,11,22,42	1 nF	10%	63V	Cer.	602 310 02	C107	2.2 uF		25V	Sol.al.	652 622 03
C17,18	2.2 uF		35V	Tan.	652 622 01	C119	15 nF	1%	160V	Polyst.	613 415 00
C23	8.2 pF	+0.25	63V	N150	602 082 00	C121,124	1 nF	1%	500V	Polyst.	615 310 01
C25,28,29,50, 171,174,193	12 pF	2%	63V	N150	602 112 00	C125,133,150,167	68 pF	2%	63V	N150	602 168 00
C30,89,155, 179,238	56 pF	2%	63V	N150	602 156 00	C126,154,182	560 pF	1%	500V	Polyst.	615 256 00
C34,53,62,67,80, 99	10 nF	-20+50%		Cer.	602 410 01	C127,136	33 nF	10%	63V	Polys.	622 433 00
C38	2-9 pF		100V	Var.	683 009 00	C128,135,158,201	330 pF	1%	500V	Polyst.	615 233 00
C39,66,79,87, 134	22 pF	2%	63V	N150	602 122 00	C131,142,153, 168,183	820 pF	1%	500V	Polyst.	615 282 00
C40,85,90,144, 147,181	47 pF	2%	63V	N150	602 147 00	C132,163,188	220 pF	1%	500V	Polyst.	615 222 00
C41	6.8 uF		25V	Tan.	652 668 00	C138,237	10 pF	2%	63V	N150	602 110 00
C64,129,141, 200,207	10 nF	10%	63V	Polys.	622 410 01	C143,199	470 pF	1%	500V	Polyst.	615 247 00
C84,122,139-140, 145,152,156,170, 172,175,178,185, 186,189,199	150 pF	2%	63V	N150	602 215 00	C149	180 pF	1%	500V	Polyst.	615 218 00
C86,97,176,191	39 pF	2%	63V	N150	602 139 01	C151,164,173, 177,190	100 pF	2%	63V	N150	602 210 00
						C159,166	33 pF	2%	63V	N150	602 133 01
						C169	390 pF	1%	500V	Polyst.	615 239 00
						C180,195	27 pF	2%	63V	N150	602 127 00
						C196	8.2 nF	1%	160V	Polyst.	613 382 00
						C202-204	4.7 nF	10%	100V	Cer.	602 347 02
						C210-222,224-235	470 pF	10%	63V	Cer.	602 247 00
						L1,5	4.7 uH	10%	RF Choke	IM2	740 047 02
						L2-4	1 uH				103 636 61
						L6	0.47 uH	10%	RF Choke	IM2	740 004 70
						L7,8,48,50	22 uH	10%	RF Choke	IM2	740 122 02
						L9,10,11,58	10 uH	10%	RF Choke	IM2	740 110 04
						L12,19,60	0.1 uH	10%	RF Choke	IM2	740 001 00
						L13	0.33 uH	10%	RF Choke	IM2	740 003 30
						L14,16	0.15 uH	10%	RF Choke	IM2	740 001 50
						L15	0.39 uH	10%	RF Choke	IM2	740 003 90
						L17	0.27 uH	10%	RF Choke	IM2	740 002 70
						L18	0.56 uH	10%	RF Choke	IM2	740 005 60
						L20	1.2 uH	10%	RF Choke	IM4	740 012 00
						L21	470 uH	10%	RF Choke	IM4	740 247 01
						L22	470 uH	10%	RF Choke	IM2	740 247 02

PARTS LIST FOR EXCITER SIGNAL PATH BOARD 619 VERSION 2A

L23	0.56 uH	5%	RF Choke	IM2	740 005 61
L24,29	0.22 uH	5%	RF Choke	IM2	740 002 23
L25	0.47 uH	5%	RF Choke	IM2	740 004 71
L26	0.15 uH	5%	RF Choke	IM2	740 001 52
L27,54	1.8 uH	5%	RF Choke	IM2	740 018 01
L28	0.33 uH	5%	RF Choke	IM2	740 003 32
L30	68 uH	10%	RF Choke	IM2	740 168 02
L31	1.5 uH	10%	RF Choke	IM2	740 015 00
L32	0.967 uH				103 636 7X
L33	0.716 uH				103 636 9X
L34	0.498 uH				103 637 1X
L35	0.362 uH				103 637 3X
L36	0.284 uH				103 637 5X
L37	0.16 uH				103 637 7X
L38	0.411 uH				103 637 9X
L39	12.2 uH				103 636 8X
L40	5.11 uH				103 637 0X
L41	3.8 uH				103 637 2X
L42	2.51 uH				103 637 4X
L43	1.57 uH				103 637 6X
L44	2.04 uH				103 637 8X
L45	0.895 uH	5%	RF Choke	IM2	103 638 0X
L46,52,57	0.68 uH				740 006 82
L47,49	33 uH				740 133 01
L51	15 uH	10%	RF Choke	IM2	740 115 00
L53,55	1.2 uH	5%	RF Choke	IM2	740 012 02
L56	0.82 uH	5%	RF Choke	IM2	740 008 21
L59	220 uH	10%	RF Choke	IM2	740 222 02
PL1	40-pole plug				756 040 04
PL2	2-pole connector				750 001 45
PL3	Coax cable				373 638 32
SK1	Flat ribbon cable				373 638 52
SK2	Coax cable				106 606 70
SK3	Coax cable				106 606 60