ISSUE B
R79 WAS 100K
C/R 21985
1-6-87

ISSUE C
L17 WAS 0u22
C32 WAS 82p
C34 WAS 180p
C36 WAS 100p
C125 WAS 4u7
C/R 22062
6-7-87

ISSUE D
C160 WAS 33n
C/R 22119
30-8-87

ISSUE E
D57 WAS D47
D60 WAS 33n
C142 WAS 68p
C/R 22181
15-11-89

ISSUE F
C/R 22284
R62 DELETED
TP8 VOLTAGE
WAS 2-5
31-1-90

ISSUE 4
D58 ADDED
C/R 22538
27-8-90

ISSUE 5
R113 WAS 22K
C/R 23151
7-12-91

ISSUE 6
R27 WAS 150
C/R 23558
15-2-93

ISSUE 7
IC5b pin 13
WAS pin 5
C/R 23787
2-12-93

04-02450

Rx IN J1 C1 33n D57 BA423 C170 180p C171 220p D48 BA423

18-24 MHz BAND: L54 1µ L55 1µ L56 1µ; C172 270p C173 180p C174 1n; R126 4K7 R127 2K2; D1 D2 BA423; L1 L2 44-70361; C2 220p C3 220p; C4 1n C5 470p C6 3n3; R1 1K R2 2K2

11-6-18MHz BAND: D3 D4 BA423; L4 L5 1µ5 L6 1µ5 44-70360; C7 330p C8 330p C9 1n5 C10 680p C11 4n7; R3 1K R4 2K2

7·5-11·6MHz BAND: D5 D6 BA423; L7 L8 2µ2 L9 2µ2 44-70359; C12 330p C13 330p C14 220p C15 220p C16 2n2 C17 1n C18a 4n7 C18b 4n7; R5 1K R6 2K2

4·8-7·5MHz BAND: D7 D8 BA423; L10 L11 L12 3µ3 44-70358; 3x 270p C19 C20 C22 C23 C24; C21 3n3 C25 1n8 C26a 4n7 C26b 27p; R7 1K R8 2K2

3·1-4·8MHz BAND: D9 D10 BA423; C28 33n; R9 2K2 R10 2K2

2·0-3·1MHz BAND: L13 100µH L14 100µH; D11 BA423; R11 1K; C29 33n

EXCITER O/P 250mV Tx O 0·75 J2 (1 2 3 4 5 6; D B C)

D12 BA423; C31 33n C30 33n TP1 C32 68p

C39 12p L15 0u47 C35 27p L16 0u47 C36 150p L17 0u47 C34 150p R14 4K7 C37 47p U8 Rx (2·0µV)

T1 44-80204; D14 D15 D13 D16 HPS082-2830; T2 44-80204; L23 44-80203

R18 330 R13 4K7 V1 BC548 C38 220µ C39 4u7

45MHz I.F. 07-01026 P.C.B. 08-03097 ASSY.

C54 3n3 R27 39 Rx (1·0µV) 45MHz (2·5); V7 V8 2×J310; L26; D24 2× BA423; L29 44-70357; R30 82K2; C59 100p C60 100p; C164 100p C165 100p Z1 45F-10A; L32 44-70356; D26 2× BA423 D27; L36; V3 J310 (45MHz 5·0µV 1·8); C68 3n3 R35 150

C55 3n3 R28 100K C56 3n3 C57 3n3; D22 D23 2× BA423 C58 3-11p; C61 3n3 C63 3n3; D28 D29 2× BA423 CG4 3-11p; C65 3n3 C67 3n3 R32 100K; C66 3n3 R31 82K2

L27 L28 L31 L33 L35 L37

C69 1n C70 1n C71 4u7 C72 1n C73 1n C74 1n C75 4u7 C76 1n

L30 10µH L34 10µH TP2 TP3 TP4

T5 44-80204; D32 D33 D31 D34 HPS082-2830; T6 44-80204; L44 44-80203

1650KHz (200mV Tx 3·0V Rx 2·0); C100 33n R58 150 L45 1mH C101 1n R53 10K; V16 V17 2×J310; L46; C104 33n R60 10K C105 33n R54 6K8 C106 33n C107 33n; R61 10K D36 2×BA423 D37 D38 BA423; C108 33n L49 1mH C109 82p; C115 33n R67 1K2 R63 10K C116 33n

1650KHz (300mV Tx 12µV Rx 3·2) V23 BSD213 V24 BSD213 TO 1650KHz FILTER REF. 04-02093 P1

TP5 GATING PULSES 10V

V.C.O. 1 07-01027 PCB 08-03098 ASSY

L22 C46 1n L24 C49 1n L25 C53 1n C166 C77 2µ2; C45 1n C48 1n R17 270 R19 220 C51 1n T3 44-80202; C42 3-11p C43 68p L21 44-70355 C47 1n R16 470 V4 PN4258 V3 BF410C C50 1n R22 2K7 R23 2K2 V5 PH2369 (6·0); L19 10µH 4× BB609 D17 D18 D19 D20; C44 1n V2 J310 R18 100K R21 270 C52 1n R20 220 V6 PH2369 (3·5 3·0); R15 100K D21 BA481 R24 2K7 R25 330 R26 1K (3·0 2·0); L20 C40 1n C41 1n

V.C.O. 2 07-01028 P.C.B. 08-03099 ASSY.

L41 C85 1n L42 C88 1n L43 C90 1n C93 1n; C84 1n C87 1n R36 220 R38 270 T4 44-80202; C91 1n V12 PN4258 V13 PH2369 (6·0); C78 39p C79 3-11p C80 10p L40 44-70355 C86 1n R35 470 R42 2K2 R41 2K7 R45 1K; L36 10µH 4× BB609 D47 C83 1n V10 J310 C92 1n R40 270 V14 PH2369 (4·0 3·0); C81 1n D30 BA481 R34 100K R37 100K C89 1n R39 220 R43 4K7 R44 330 (3·5 2·0); C82 1n

NOISE LIMITER

L48 100µH; R50 100; C94 33n R46 1K5 R48 1K; C96 33n R57 100; L47 44-70357 C97 0u22; V19 BC338 C111 4u7 R32 1K R44 1K; C110 1n R23 1K R24 1K; C117 33n BC558 V25; C167 33n; V21 BF450 V20 BF494 R66 39K V22 BC548; C99 33n R55 1K C102 1n R58 22K; V15 BF494 V18 BF494 C97 1n; C95 33n C98 68p R49 2K2 R47 10K; R56 1K C101 33n R59 10K; C112 33n R65 10K C113 33n C118 100n; R63 180 C114 33n R71 1M2 C119 47µ; R73 47K C120 1n C121 1n; D39 R77 10K; R74 47K C116 1n R75 47K V26 BC548; R76 47K SEE NOTE 3

TP6 N'L (≈2·0 NO SIG)

+5V; IC4 78L05; L51 100µH L53 100µH; C158 33n C160 1µ

SYNTHESISER 1

+5V C62 33n C149 47µ C136 33n; L52 100µH C144 1n (45·25-75MHz 2KHz STEPS)

IC5 NJ 8822: F IN 4; MOD 14; LD 3; DATA 10; ENABLE 12; CLOCK 11; OSC IN 7; OSC 8; CAP 13; CH 16; RB 15; PDB 9; PDA 1

C135 1n IC6 MC12017 (7 8 5 2 1 6 4); (3·3 706-1170KHz) C140 1n ÷64/65

R32 100; L50 100µH; C125 47µ C126 4u7 D40 C124 4u7; D41 D49 D50; C128 4u7 C175 4u7 C176 4u7 C130 10µ; C122 3n3 R78 82K ≈5KHz; IC1 IC2 40106; TP7 26V TP8 1-23V; D42 D43 D53 D54 D55 D56; R79 390K R85 15K R86 180K R88 50K R31 100 R80 680K R87 15K C134 220n; D51 D52 +5V; R81 10K R83 47K R84 47K C129 10µ R89 100K R90 1K C123 100n R91 1K R92 1K; C131 C132 C133 C138 C141 C139 C137 10µ; IC2a

TP9 2·7V; R107 100 C146 100n; R102 4K7 C147 1µ; R108 470 H2 UNLOCK 2 D46 V29 BC548; R111 10K R113 4K7 R112 4K7 V30 BC548; R103 470 H1 UNLOCK 1 D45 V28 BC548; R114 4K7 C148 2µ2 R115 22K; R97 10K R96 4K7 R99 4K7 C137 10µ; R110 4K7 R116 22K

IC7 MC145159: Ø 19; F IN 5; FREQ 6; MOD 8; RR 20; CR 15; CH 18; RO 1; DATA 12; SR OUT 14; ENABLE 13; CLOCK 11; OSC IN 2; OSC 3; 7; 16

C142 56p C143 56p R101 1K; Z2 6600 KHz C139 33p R100 t·60°C OR; R98 1K C140 33n; C145 33n R102 1K; R104 1K R105 1K R106 1K; R125 47K

SYNTHESISER 2

C168 33n C150 10µ C155 1n (43·352 MHz TO 43·350MHz IN 10Hz STEPS); C151 1n IC8 MC12017 (7 8 3 2 1 6 4); (3·3 676·5KHz) C154 1n ÷64/65

C158 33n C160 1µ; R123 10K (5·0) (1650/1647KHz TO IF & AUDIO PCB 04-02093 P2)

IC9a 74HC74 (CLR D CK Q SET); IC9b 74HC74; IC10a IC10b IC10c 74HC02; R122 82K R121 1M 1647KHz LSB ONLY Z3; C159 100p C161 27p C162 2-22p; R124 4K7 C163 47p

R.F. I.F. & DUAL SYNTHESISER 07-01240 P.C.B. 08-03740 ASSY.

R33 10K R30 10K C156 1n C157 1n

J3 (A 1 6 7 3 5 4 8 9 11 10 12 10 B): ENABLE 1, UNLOCK, ENABLE 2, CLOCK, DATA, LSB, TUNE, +5V Rx

ALL DEVICES VIEWED FROM BASE, UNLESS SHOWN OTHERWISE

J310 G S D; BF410C D G S; BC548 BC558 PH2369 E C B; PN4258 C B E; BF494 BF450 E B C; BSD213 G S D; ALL IC'S TOP PIN 1; K A BAW62 BB609 BA481 BA423

NOTES
1. ALL DIODES ARE BAW62 OR EQUIVALENT UNLESS OTHERWISE STATED.
2. ALL UNMARKED INDUCTORS ARE FERRITE BEADS.
3. DELETE R76 FOR 8528S
4. COMPONENTS NOT PRESENT :- R94 IC3 R95

MEASUREMENT NOTES:

1. ALL AC AND DC VOLTAGES ARE MEASURED WITH RESPECT TO THE NEGATIVE RAIL. VOLTAGES ARE TYPICAL AND MAY VARY BETWEEN UNITS. SOME VOLTAGES WILL VARY WITH CHANNEL FREQUENCY.
2. DC VOLTAGES MEASURED WITH 20KΩ/V METER UNDER NO SIGNAL CONDITIONS :-
   (3·4) RECEIVE AND TRANSMIT MODES.
   (O) RECEIVE MODE.
   (3·4) TRANSMIT MODE.
3. AC VOLTAGES MEASURED WITH AN OSCILLOSCOPE PROBE 10 M.Ω AND 12pF OR LOWER, IN THE SSB USB MODE EXCEPT WHERE INDICATED OTHERWISE :-
   (650mV) Tx TRANSMIT VOLTAGES IN PEAK-PEAK UNITS, WITH A SINGLE TONE APPROX 1KHz 20mVrms APPLIED TO THE MICROPHONE INPUT. THIS CORRESPONDS TO APPROX 10 dB OF COMPRESSION IN THE MICROPHONE AMP. A TWO TWO TONE SOURCE WILL GIVE THE SAME PEAK-PEAK MEASUREMENTS.
   (250µV) Rx RECEIVE VOLTAGES EXPRESSED AS EMF FROM A 50Ω SOURCE APPLIED VIA AC COUPLING TO THE POINT INDICATED, WHICH WILL CAUSE THE AGC VOLTAGE AT TP1 ON THE AUDIO & 1650 IF. P.C.B TO DECREASE BY 500mV FROM ITS NO SIGNAL VALUE IN THE RECEIVE MODE.
   (140mV) VOLTAGES IN PEAK-PEAK UNITS IN THE RECEIVE AND TRANSMIT MODES.

CODAN	SCALE	COPYRIGHT © CODAN 1990	
MATERIAL	DRN. CF DATE 6.10.88	TITLE RF MIXER & DUAL SYNTHESISER	
	CHKD. 19-9-89		
FINISH	APPD. 19-9-89	DRAWING/DOC NO. 04-02450	B
	TOLERANCES UNLESS OTHERWISE STATED: 2 PLACES DEC ±, 1 PLACE DEC ±, ANGULAR ±	ISS 1 2 3 4 5 6 7	SHT OF