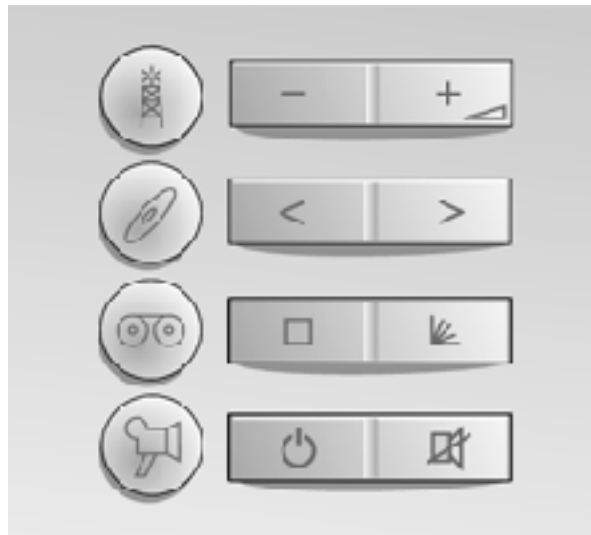


SERVICE MANUAL

for

Systemline KMS3A



Prepared by: PD Cheney

Authorised by: S Privett

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1.0 PREPARING UNIT FOR REPAIR

First remove the unit from its mounting frame before attempting any repairs to the PCB. The unit can be snapped out using a small flat bladed screwdriver to lever the clips up. Push the unit forward, and it should pop out fairly easily.

Next the rear frame will need to be removed from the front moulding. At either the top or the bottom, using a small flat bladed screwdriver, lever the moulding up over the protrusion, and repeat of the other side. The rear frame can now be removed.

Next, using a small pozi screwdriver, undo the four screws holding the PCB into the moulding. **DO NOT LOOSE THEM.**

The unit is now ready for repair.

2.0 CIRCUIT DESCRIPTION

The keypad is designed to transmit 5 bit ppm control commands via a single wire to the controller. A small uController U2 operates as a key scanner and IR code generator. When a button is depressed the Row connection is pulled low when the processor pulls the Column line low (sequentially) via the resistors R4, R5 & R7. The IR command is then generated by U1 via RA1 (pin20). The NOR gates of U1 are used to 1) Enable mixing or IR signals from the J1 input and 2) For the KMS to block these signals via U3:D when an IR transmission from a button depression is in progress. U4 is a hex buffer than ensures that the signal is transmitted cleanly along lengths of CAT-5 cable up to 100 metres.

Transistor Q1 forms a 'Brown Out' circuit which monitors the supply voltage to the uController U2, resetting it in the event of the voltage falling to a point where the software may run erratically.

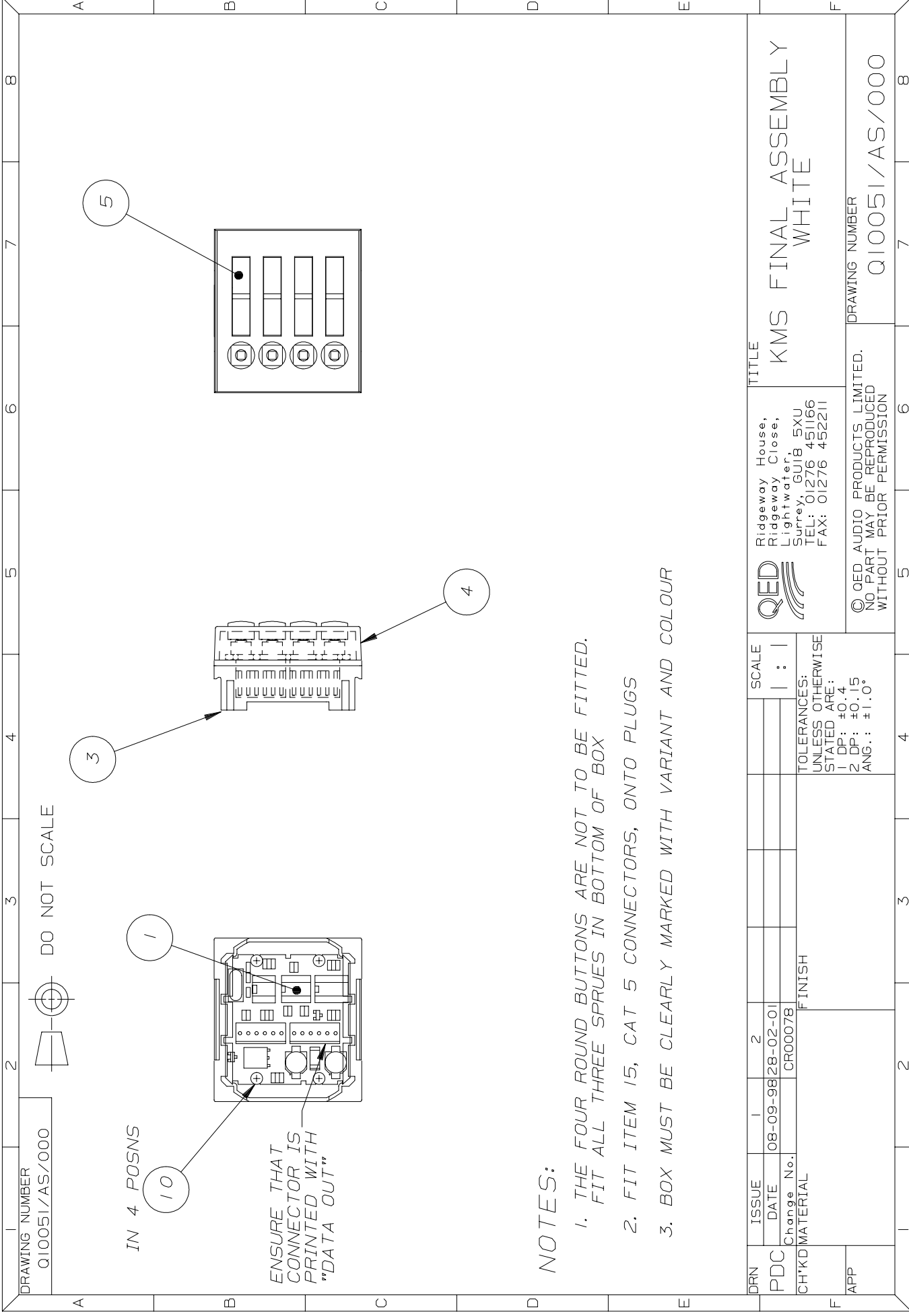
For details of the PCB, items list and circuit diagram please refer to Appendix B.

3.0 UNIT RE-ASSEMBLY

To re-assembly the unit, reverse the instructions in 1.0. Locate the PCB into position, and re-fit the screws. The rear frame clips in top and bottom, but is a slightly fiddly operation to complete.

APPENDIX A

KMS3A Main Assembly



DRAWING NUMBER
Q10051/AS/000

DO NOT SCALE

IN 4 POSNS

10

ENSURE THAT
CONNECTOR IS
PRINTED WITH
"DATA OUT"

NOTES:

1. THE FOUR ROUND BUTTONS ARE NOT TO BE FITTED.
FIT ALL THREE SPRUES IN BOTTOM OF BOX
2. FIT ITEM 15, CAT 5 CONNECTORS, ONTO PLUGS
3. BOX MUST BE CLEARLY MARKED WITH VARIANT AND COLOUR

DRN	ISSUE	1	2	SCALE	TITLE	
PDC	DATE	08-09-98	28-02-01	1 : 1	KMS FINAL ASSEMBLY	
CH'KD	Change No.	CR00078		Ridgeway House, Ridgeway Close, Surrey, GU18 5XU TEL: 01276 451166 FAX: 01276 452211		
APP	MATERIAL	FINISH		DRAWING NUMBER		
				Q10051/AS/000		
				© QED AUDIO PRODUCTS LIMITED. NO PART MAY BE REPRODUCED WITHOUT PRIOR PERMISSION		

TOLERANCES:
UNLESS OTHERWISE
STATED ARE:
1 DP: ±0.4
2 DP: ±0.15
ANG.: ±1.0°

Drawing Number: Q10051/IL/000

Items List for: Q10051/AS/000
KMS FINAL ASSY WHITE

Approved for Production: _____



Issue: 2

Date: 28/02/2001

Change Number: CR00078

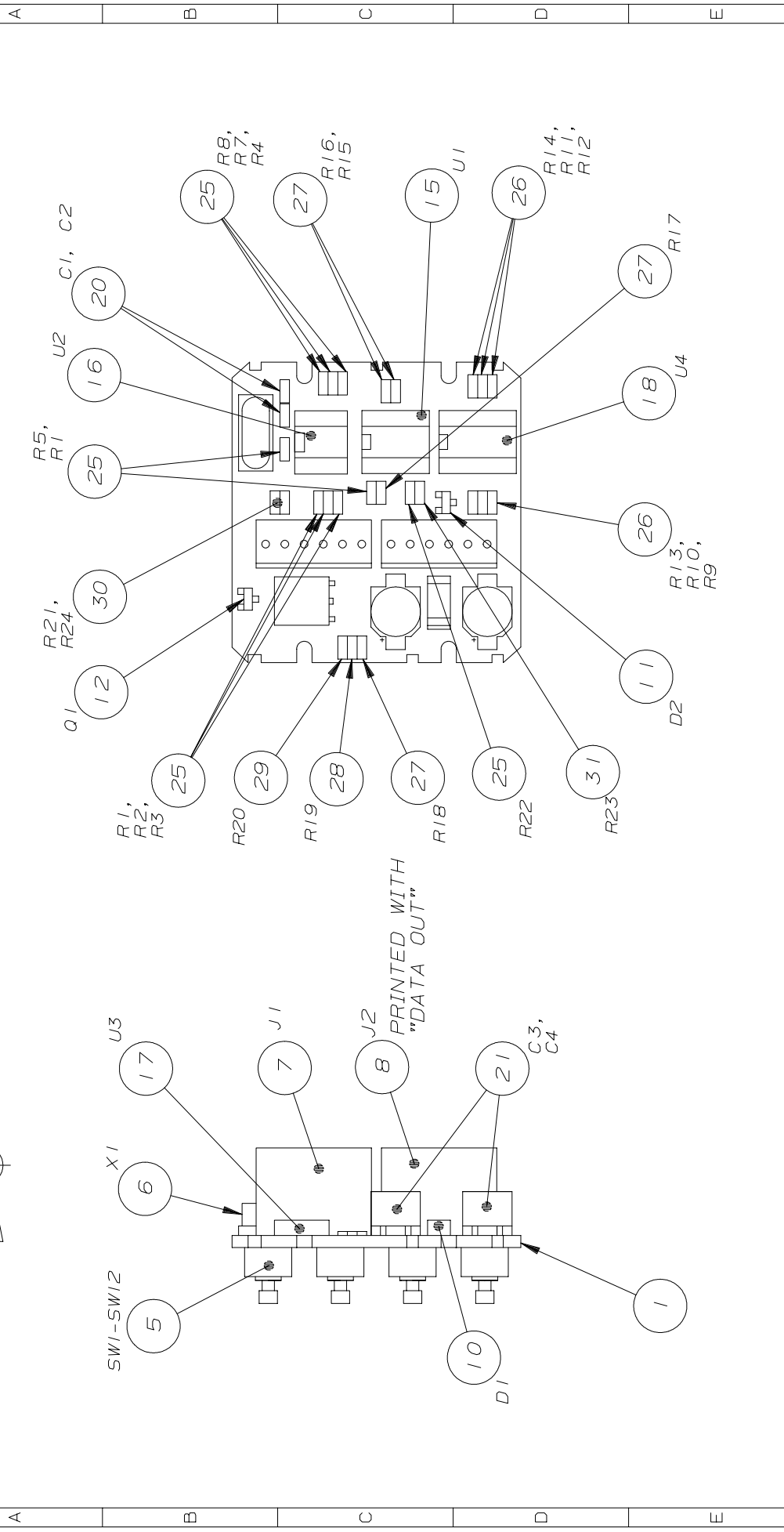
Item No.	Part No.	Description	Units	Manf. Part No.	Qty	Iss	Remarks
A							
1	WR110	KMS3A PCB3 ASSEMBLY		Q10025/AS	1	2	
2							
3	ZENC121	SHORT REAR MOULDING	EA	Q10067/DE	1	1	
4	ZMLD000	SYSTEMLINE KMS MOULDING WHITE	EA	Q10367/DE	1	1	
5	ZMLD220	RECTANGULAR BUTTON SET WHITE	EA	Q10390/DE	1	1	
6							
7	ZMLD100	ROUND BUTTON SET WHITE SYMBOLS 1	EA	Q10391/DE/000	1	1	
8	ZMLD101	ROUND BUTTON SET WHITE SYMBOLS 2	EA	Q10391/DE/003	1	1	
9	ZMLD104	ROUND BUTTON SET WHITE WORDS	EA	Q10391/DE/001	1	1	
10	ZSRW019	POZI PAN ZINC K18 X 6	EA		4		
11							
12							
13	ZCAR021	UNIVERSAL KEYPAD/EYE PACKAGING	EA		1		
14							
15							
16	ZPLA012	CAT 5 CONNECTOR	EA		2		PUSH ONTO CONNECTORS
17							
18							
19							
20							
21							
22							
23							
24							
25							

APPENDIX B

KMS3A PCB Assembly

DRAWING NUMBER
Q10025/AS

DO NOT SCALE



DRN	ISSUE	1	2	TITLE		KMS PCB ASSEMBLY	
PDC	DATE	19-05-98	21-03-01	Ridgeway House, Ridgeway Close, Lightwater, Surrey, GU18 5XU TEL: 01276 451166 FAX: 01276 452211		DRAWING NUMBER Q10025/AS	
CH'KD	Change No.	CRO0078	FINISH	SCALE		1 : 1	
APP	MATERIAL			TOLERANCES: UNLESS OTHERWISE STATED ARE: 1 DP: ±0.4 2 DP: ±0.15 ANG.: ±1.0°		© QED AUDIO PRODUCTS LIMITED. NO PART MAY BE REPRODUCED WITHOUT PRIOR PERMISSION	

Drawing Number: Q10025/IL

Items List for: Q10025/AS

KMS PCB ASSEMBLY

Approved for Production: _____



Issue: 3

Date: 21/03/2001

Change Number: CR00078

Item No.	Part No.	Description	Units	Manf. Part No.	Qty	Iss	Remarks
A	Q10025/TS	KMS TEST SPECIFICATION			REF	A	
B	Q10025/SW	KMS PIC SOFTWARE LISTING			REF	A	SOFTWARE ISSUE A
1	ZPCB108	KMS PCB			1	1	
2							
3							
4							
5	SWA-S-0001	SWITCH TACTILE 6MM 7.3 HIGH (SQU)	EA	Diptronics DTSM-644KB	12		SW1 - SW12
6	CRY-S-00001	CRYSTAL 4MHz HC49 SMT	EA	ANGLIA 607-009	1		X1
7	CON-T-0003	CONN PCB-CABLE VERT HDR 6WAY	EA	TOBY 110-28-106-01	1		J1
8	CON-T-0014	CONN PCB-CABLE VERT HDR 6WAY PRINTED	EA	TOBY 110-28-106-01	1		J2 PRINTED WITH "DATA OUT"
9							
10	DIO-S-0001	DIODE RECTIFIER GF1A SM DO214	EA	RS 422-242	1		D1
11	DIO-S-0010	DIODE ZENER BZX84C5V1LT1 SM SOT23	EA	RS 348-5971	1		D2
12	TRA-S-0001	TRANSISTOR BC856BLT1 SOT23 SMT	EA	RS112-6210	1		Q1
13							
14							
15	ICL-S-0003	LOGIC HEF4001BT SOIC14	EA	RS 355-8120	1		U1
16	ICP-S-0001	PIC16C54C-04/SS	EA	MICROCHIP	1		U2 SOFTWARE = S43KPM.ASM
17	ICR-S-0001	REGULATOR L78M05CDT DPAK-R	EA		1		U3
18	ICL-S-0004	LOGIC HEF4502BT SOIC16	EA	RS 355-9202	1		U4
19							
20	CAP-S-00181	CAP 22pF 5% 50V 0603	EA	RS 204-0498	2		C1, C2
21	CAP-S-00026	CAP ELEC SM 47uF 16V 85C CASE D	EA	RS 108-211	2		C3, C4
22							
23							
24							
25	RES-S-0266	RES 100R 1% 0.01W 0603	EA	RS 213-2143	9		R1 - R8, R22

Drawing Number: Q10025/IL

Items List for: Q10025/AS

KMS PCB ASSEMBLY

Approved for Production: _____

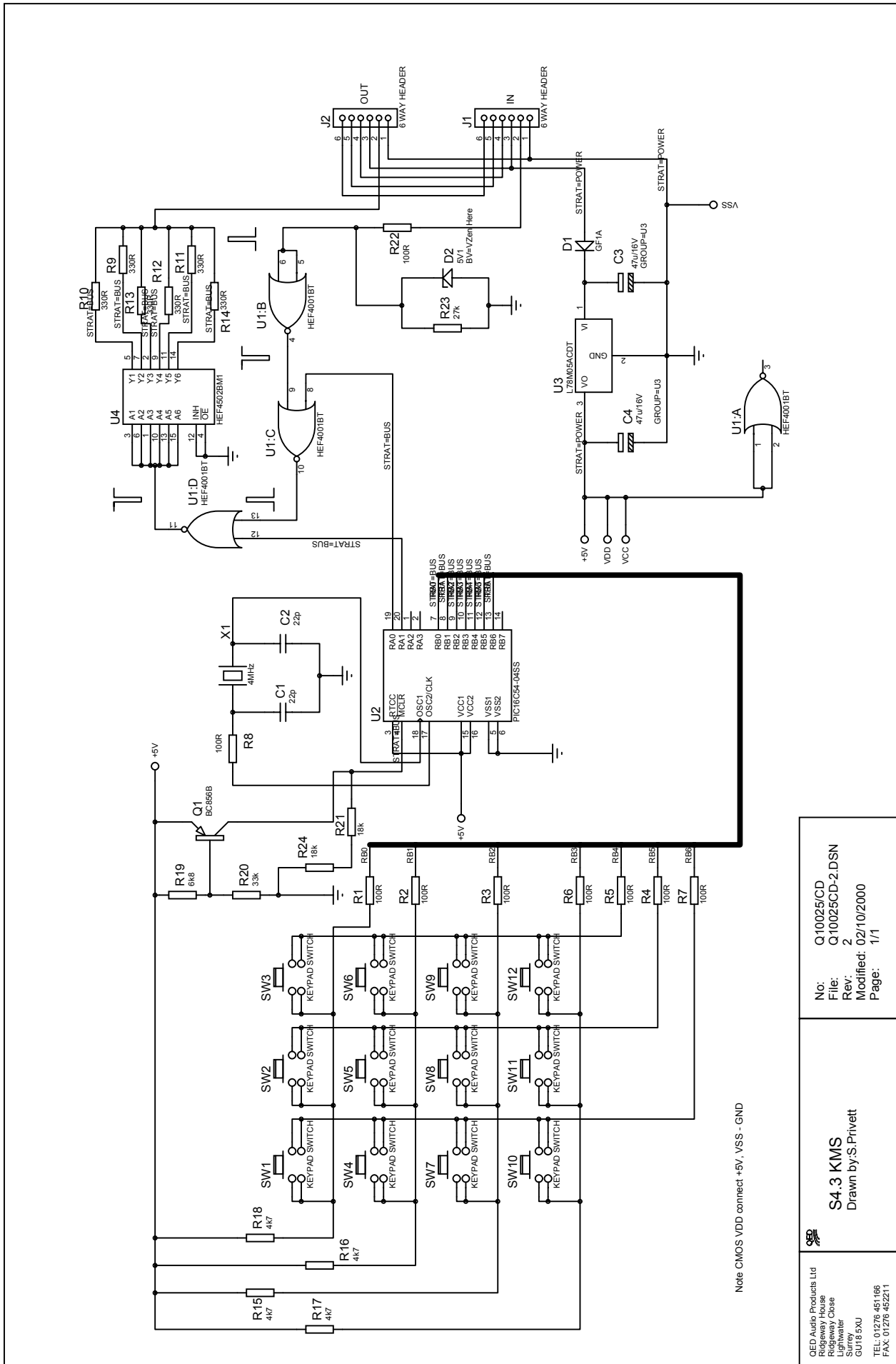


Issue: 3

Date: 21/03/2001

Change Number: CR00078

Item No.	Part No.	Description	Units	Manf. Part No.	Qty	Iss	Remarks
26	RES-S-0272	RES 330R 1% 0.01W 0603	EA	RS 213-2200	6		R9 - R14
27	RES-S-0286	RES 4K7 1% 0.01W 0603	EA	RS 213-2367	4		R15 - R18
28	RES-S-0288	RES 6K8 1% 0.01W 0603	EA	RS 213-2389	1		R19
29	RES-S-0296	RES 33K 1% 0.01W 0603	EA	RS 213-2474	1		R20
30	RES-S-0293	RES 18K 1% 0.01W 0603	EA	RS 213-2446	2		R21, R24
31	RES-S-0295	RES 27K 1% 0.01W 0603	EA	RS 213-2468	1		R23
32							
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34							
35							
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Note CMOS VDD connect +5V, VSS - GND

QED Audio Products Ltd
 The
 Ridgeway Cobas
 Lighthouse
 Surrey
 GU18 5XU
 TEL: 01276 451166
 FAX: 01276 452211

S4.3 KMS
 Drawn by: S.Privett

No: Q10025/CD
 File: Q10025CD-2.DSN
 Rev: 2
 Modified: 02/10/2000
 Page: 1/1