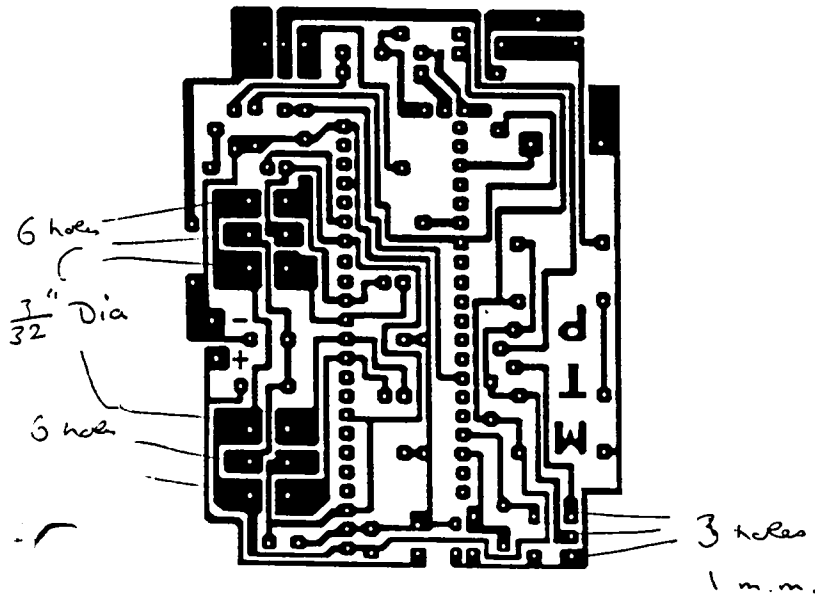
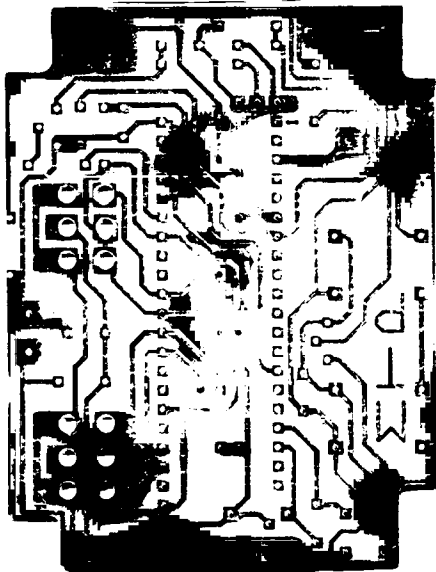




All other holes
0.8 m.m.

Board cut as close to tracks as possible



DB11

4227

9197

FF25 6E
FF26 20
FF27 4D
FF28 61
FF29 78
FF2A 77
FF2B 65
FF2C 6C
FF2D 6C
FF2E 20
FF2F 20

0246

TEXT ' 27/01/1991 '

FF30 20
FF31 20
FF32 20
FF33 32
FF34 37
FF35 2F
FF36 30
FF37 31
FF38 2F
FF39 31
FF3A 39
FF3B 39
FF3C 31
FF3D 20
FF3E 20
FF3F 20

0247 FF40
0248 FF40
0249 FFFA AORG >FFFA
0250 FFFA
0251 FFFA E3 BYTE >E3 TIMER1 vector
0252 FFFB 00 BYTE >00
0253 FFFC FF BYTE >FF TIMER2 vector
0254 FFFD FF BYTE >FF
0255 FFFE E8 BYTE >E8 RESET vector
0256 FFFF 00 BYTE >00

NO ERRORS, NO WARNINGS

8615

```

0001 0000
0002 *****
0003 *
0004 *
0005 *
0006 *
0007 *****
0008 *
0009 * PORT USAGE :
0010 * :
0011 * : PORT A BIT 0 OUTPUT
0012 * : BIT 1 PATIENT DETECT
0013 *
0014 * : PORT B BIT 0 SOUNDER
0015 *
0016 *
0017 * : PORT C BIT 0 SWITCH INPUT
0018 * : BIT 1 SWITCH INPUT
0019 * : BIT 2 SWITCH INPUT
0020 * : BIT 3 SWITCH INPUT
0021 * : BIT 7 LED OUTPUT
0022 *
0023 *
0024 *
0025 *
0026 * I/O CONTROL REGISTERS
0027 *
0028 0000 IOCNT0 EQU P0 INTERRUPTS 1,2,3 AND EXPANSION MODE

```

0029	0002	IOCNT1	EQU P2	INTERRUPTS 4,5
0030	0001	IOCNT2	EQU P1	INTERRUPT POLARITY AND LEVEL
0031	*			
0032	*			
0033	*			
0034	*	PORTS		
0035	*			
0036	0004	APORT	EQU P4	PORT A DATA REGISTER
0037	0006	BPORT	EQU P6	PORT B DATA REGISTER
0038	0008	CPORT	EQU P8	PORT C DATA REGISTER
0039	000A	DPORT	EQU P10	PORT D DATA REGISTER
0040	0005	ADDR	EQU P5	PORT A DATA DIRECTION REGISTER
0041	0009	CDDR	EQU P9	PORT C DATA DIRECTION REGISTER
0042	000B	DDDR	EQU P11	PORT D DATA DIRECTION REGISTER
0043	*			
0044	*			
0045	*			
0046	*	TIMER REGISTERS		
0047	*			
0048	000F	T1CTL0	EQU P15	TIMER 1 CONTROL REGISTER 0
0049	000E	T1CTL1	EQU P14	TIMER 1 CONTROL REGISTER 1
0050	000D	T1LSDA	EQU P13	TIMER 1 LSB RELOAD REGISTER
0051	000C	T1MSDA	EQU P12	TIMER 1 MSB RELOAD REGISTER
0052	0013	T2CTL0	EQU P19	TIMER 2 CONTROL REGISTER 0
0053	0012	T2CTL1	EQU P18	TIMER 2 CONTROL REGISTER 1
0054	0011	T2LSDA	EQU P17	TIMER 2 LSB RELOAD REGISTER
0055	0010	T2MSDA	EQU P16	TIMER 2 MSB RELOAD REGISTER
0056	*			
0057	*			

0058 *

0059 * UART REGISTERS

0060 *

0061	0017	T3DATA	EQU P23	TIMER 3 RELOAD REGISTER
0062	0014	SMODE	EQU P20	SERIAL PORT MODE CONTROL REGISTER
0063	0015	SCTLO	EQU P21	SERIAL PORT CONTROL REGISTER 0
0064	0016	SSTAT	EQU P22	SERIAL PORT STATUS REGISTER
0065	0018	SCTL1	EQU P24	SERIAL PORT CONTROL REGISTER 1
0066	0019	RXBUF	EQU P25	RECIEVER BUFFER
0067	001A	TXBUF	EQU P26	TRANSMITER BUFFER
0068	0000			
0069	0000			
0070	0000			
0071	0000			
0072	E300	INT	AORG >E300	
0073	E300			
0074	E300 A2		MOVP %?00000000,T1CTL0	stop timer1
	E301 00			
	E302 0F			
0075	E303 0B		RETI	
0076	E304			
0077	E304			
0078	E800	INIT	AORG >E800	
0079	E800			
0080	E800 06		DINT	prevent interrupts during set-up
0081	E801 A2		MOVP %?00000000,APORT	set-up port A to prevent any output pulse during power up.
	E802 00			
	E803 04			
0082	E804 A2		MOVP %?00000001,ADDR	

	E805	01		
	E806	05		
0083	E807	52	MOV %>C8,B	set stack pointer in upper RAM
	E808	C8		
0084	E809	0D	LDSP	
0085	E80A	A2	MOVP %?00101110,IOCNT0	set registers
	E80B	2E		
	E80C	00		
0086	E80D	A2	MOVP %?00000000,IOCNT1	
E80E	00			
	E80F	02		
0087	E810	A2	MOVP %?00000000,IOCNT2	
	E811	00		
	E812	01		
0088	E813	A2	MOVP %?10000000,CDDR	
	E814	80		
	E815	09		
0089	E816	A2	MOVP %?00000000,T1CTL1	
	E817	00		
	E818	0E		
0090	E819	A2	MOVP %?01000000,T2CTL1	
	E81A	40		
	E81B	12		
0091	E81C	A2	MOVP %?00000000,T2MSDA	
	E81D	00		
	E81E	10		
0092	E81F	A2	MOVP %?10110010,T2LSDA	
	E820	B2		
	E821	11		

983

786

0093	E822				
0094	E822	72		MOV %>80,R21	0.25 second delay
	E823	80			
	E824	15			
0095	E825	72	X2	MOV %>00,R20	to enable circuit to charge
	E826	00			
	E827	14			
0096	E828	DA	X1	DJNZ R20,X1	at switch on
	E829	14			
	E82A	FD			
0097	E82B	DA		DJNZ R21,X2	
	E82C	15			
	E82D	F7			
0098	E82E				
0099	E82E	05	EINT		ok. allow interrupts
0100	E82F				
0101	E82F	80	RDKEYS	MOVPCPORT,A	read key status
	E830	08			
0102	E831	23		AND %#?111110000,A	
	E832	0F			
0103	E833	2D		CMP %>04,A	check for TOF
	E834	04			
0104	E835	E6		JNE ON1	
	E836	03			
0105	E837	8E		CALL @TOF	
	E838	E851			
0106	E83A	2D	ON1	CMP %>08,A	
	E83B	08			
0107	E83C	E6		JNE ON2	check for DBS

5816

	E83D	03			
0108	E83E	8E		CALL @DB	
	E83F	E876			
0109	E841	2D	ON2	CMP %>01,A	
	E842	01			
0110	E843	E6		JNE ON3	check for TET
	E844	03			
0111	E845	8E		CALL @TET	
	E846	E8C7			
0112	E848	2D	ON3	CMP %>02,A	
	E849	02			
0113	E84A	E6		JNE ON4	check for 1 Hz
	E84B	03			
0114	E84C	8E		CALL @ONEHZ	
	E84D		E917		
0115	E84F	E0	ON4	JMP RDKEYS	repeat for ever
	E850	DE			
0116	E851				
0117	E85				
0118	E851	A2	TOF	MOVP%?11110100,T1MSDA	set timer 1
	E852	F4			
	E853	0C			
0119	E854	A2		MOVP%?00100100,T1LSDA	for a cycle of 1 second
	E855	24			
	E856	0D			
0120	E857	72		MOV %>04,R7	set TOF counter
	E858	04			

2186

	E859	07			
0121	E85A	A2	TOFL2	MOVP%?10001011,T1CTL0	
	E85B	8B			
	E85C	0F			
0122	E85D	8E		CALL @PULSE	
	E85E	E936			
0123	E860	72		MOV %>10,R6	set LED on time
	E861	10			
	E862	06			
0124	E863	8E	TOFL1	CALL @DELAY	
	E864	E954			
0125	E866	DA		DJNZ R6,TOFL1	
	E867	06			
	E868	FA			
0126	E869	A3		ANDP %?01111111,CPORT	set LED off
	E86A	7F			
	E86B	08			
0127	E86C	A2		MOVP%?00000000,T2CTL0	set SOUNDER off
	E86D	00			
	E86E	13			
0128	E86F	01		IDLE	wait for timer1
0129	E870	DA		DJNZ R7,TOFL2	do 4 pulses
	E871	07			
	E872	E7			
0130	E873	E0	TOFL3	JMP TOFL3	idle forever
	E874	FE			
0131	E875	0A		RETS	
0132	E876				
0133	E876				

78
16

0134	E876				
0135	E876	72	DB	MOV %>03,R17	set for 3 pulses
	E877	03			
	E878	11			
0136	E879	A2		MOVP%?01110101,T1MSDA	set up timer 1
	E87A	75			
	E87B	0C			
0137	E87C	A2		MOVP%?00110000,T1LSDA	for a cycle of 20ms
	E87D	30			
	E87E	0D			
0138	E87F	A2	DBL2	MOVP%?10000000,T1CTL0	start timer1
	E880	80			
	E881	0F			
0139	E882	8E		CALL @PULSE	
	E883	E936			
0140	E885	72		MOV %>02,R6	set delay for LED on
	E886	02			
	E887	06			
0141	E888	8E	DBL1	CALL @DELAY	
	E889	E954			
0142	E88B	DA		DJNZ R6,DBL1	
	E88C	06			
	E88D	FA			
0143	E88E	A3		ANDP %?01111111,CPORT	turn LED off
	E88F	7F			
	E890	08			
0144	E891	A2		MOVP%?00000000,T2CTL0	turn SOUNDER off
	E892	00			

8816

	E893	13		
0145	E894	01	IDLE	wait for timer1
0146	E895	DA	DJNZ R17,DBL2	repeat 3 times
	E896	11		
	E897	E7		
0147	E898	A2	MOVP%?10001110,T1MSDA	set timer 1
	E899	8E		
	E89A	0C		
0148	E89B	A2	MOVP%?11110110,T1LSDA	for delay of 1 second
	E89C	F6		
	E89D	0D		
0149	E89E	A2	MOVP%?10010111,T1CTL0	
	E89F	97		
	E8A0	0F		
0150	E8A1	01	IDLE	wait for timer 1
0151	E8A2	72	MOV %>02,R17	set for 2 pulses
	E8A3	02		
	E8A4	11		
0152	E8A5	A2	MOVP%?01110101,T1MSDA	and repeat as above
	E8A6	75		
	E8A7	0C		
0153	E8A8	A2	MOVP%?00110000,T1LSDA	
	E8A9	30		
	E8AA	0D		
0154	E8AB	A2	DBL4	MOVP%?10000000,T1CTL0
	E8AC	80		
	E8AD	0F		
0155	E8AE	8E	CALL @PULSE	
	E8AF	E936		

0156 E8B1 72 MOV %>02,R6
E8B2 02
E8B3 06
0157 E8B4 8E DBL3 CALL @DELAY
E8B5 E954
0158 E8B7 DA DJNZ R6,DBL3
E8B8 06
E8B9 FA
0159 E8BA A3 ANDP %?01111111,CPORT
E8BB 7F
E8BC 08
0160 E8BD A2 MOVP%?00000000,T2CTL0
E8BE 00
E8BF 13
0161 E8C0 01 IDLE
0162 E8C1 DA DJNZ R17,DBL4
E8C2 11
E8C3 E7
0163 E8C4 E0 DBL5 JMP DBL5 idle for ever
E8C5 FE
0164 E8C6 0A RETS
0165 E8C7
0166 E8C7
0167 E8C7
0168 E8C7
0169 E8C7 A2 TET MOVP%?01110101,T1MSDA set up timer 1
E8C8 75
E8C9 0C

9189

0170 E8CA A2 MOVP %?00110000,T1LSDA for a cycle of 20ms
 E8CB 30
 E8CC 0D
 0171 E8CD 72 MOV %>FA,R8
 E8CE FA
 E8CF 08
 0172 E8D0 A2 TETL2 MOVP %?10000000,T1CTL0 start timer
 E8D1 80
 E8D2 0F
 0173 E8D3 8E CALL @PULSE
 E8D4 E936
 0174 E8D6 72 MOV %>02,R6 set LED on time
 E8D7 02
 E8D8 06
 0175 E8D9 8E TETL1 CALL @DELAY
 E8DA E954
 0176 E8DC DA DJNZ R6,TETL1
 E8DD 06
 E8DE FA
 0177 E8DF A3 ANDP %?01111111,CPORT turn off LED
 E8E0 7F
 E8E1 08
 0178 E8E2 A2 MOVP %?00000000,T2CTL0 turn off SOUNDER
 E8E3 00
 E8E4 13
 0179 E8E5 01 IDLE wait for timer 1
 0180 E8E6 DA DJNZ R8,TETL2 dec counter & do again
 E8E7 08
 E8E8 E7

0181 E8E9 72 MOV %>0C,R7 delay of x seconds
E8EA 0C
E8EB 07
0182 E8EC 72 TETL4 MOV %>32,R6
E8ED 32
E8EE 06
0183 E8EF 8E TETL3 CALL @DELAY
E8F0 E954
0184 E8F2 DA DJNZ R6,TETL3
E8F3 06
E8F4 FA
0185 E8F5 DA DJNZ R7,TETL4
E8F6 07
E8F7 F4
0186 E8F8 A2 MOVP%?111111110,T1MSDA set up timer 1
E8F9 FE
E8FA 0C
0187 E8FB A2 MOVP%?11000001,T1LSDA for 1 HZ cycle
E8FC C1
E8FD 0D
0188 E8FE A2 TETL6 MOVP?10010110,T1CTL0
E8FF 96
E900 0F
0189 E901 8E CALL @PULSE
E902 E936
0190 E904 72 MOV %>10,R6 set up LED on time
E905 10
E906 06

1068

2692

0191	E907	8E	TETL5	CALL @DELAY	
	E908	E954			
0192	E90A	DA		DJNZ R6,TETL5	
	E90B	06			
	E90C	FA			
0193	E90D	A3		ANDP %?01111111,CPORT	turn LED off
	E90E	7F			
	E90F	08			
0194	E910	A2		MOVP %?00000000,T2CTL0	turn SOUNDER off
	E911	00			
	E912	13			
0195	E913	01		IDLE	wait for timer 1
0196	E914	E0		JMP TETL6	repeat cont. 1hz output
	E915	E8			
0197	E916	0A		RETS	
0198	E917				
0199	E917				
0200	E917				
0201	E917				
0202	E917	A2	ONEHZ	MOVP %?11111110,T1MSDA	set up timer 1
	E918	FE			
	E919	0C			
0203	E91A	A2		MOVP %?11000001,T1LSDA	for a cycle of 1 second
	E91B	C1			
	E91C	0D			
0204	E91D	A2	ONEL2	MOVP %?10010110,T1CTL0	
	E91E	96			
	E91F	0F			
0205	E920	8E		CALL @PULSE	

	E921	E936			
0206	E923	72		MOV %>10,R6	set up delay for LED on time
	E924	10			
	E925	06			
0207	E926	8E	ONEL1	CALL @DELAY	
	E927	E954			
0208	E929	DA		DJNZ R6,ONEL1	
	E92A	06			
	E92B	FA			
0209	E92C	A3		ANDP %?01111111,CPORT	turn off LED
	E92D	7F			
	E92E	08			
0210	E92F	A2		MOVP %?00000000,T2CTL0	turn off SOUNDER
	E930	00			
	E931	13			
0211	E932	01		IDLE	wait for timer 1
0212	E933	E0		JMP ONEL2	then repeat for ever
	E934	E8			
0213	E935	0A		RETS	
0214	E936				
0215	E936				
0216	E936				
0217	E936	A4	PULSE	ORP %?00000001,APORT	set OUTPUT hi
	E937	01			
	E938	04			
0218	E939	A4		ORP %?10000000,CPORT	set LED hi
	E93A	80			
	E93B	08			

5608

17616

0219	E93C	72		MOV %>2F,R3	delay for 200 us pulse
	E93D	2F			
	E93E	03			
0220	E93F	DA	PL1	DJNZ R3,PL1	
	E940	03			
	E941	FD			
0221	E942	80		MOVP APORT,A	read PORT A
	E943	04			
0222	E944	23		AND %?00000010,A	check PATIENT DETECT
	E945	02			
0223	E946	E2		JEQ PJ1	jump to JP1 if no patient
	E947	05			
0224	E948	A2		MOVP %?10000000,T2CTL0	turn on SOUNDER
	E949	80			
	E94A	13			
0225	E94B	E0		JMP PJ2	jump to PJ2
	E94C	03			
0226	E94D	A2	PJ1	MOVP %?00000000,T2CTL0	turn off SOUNDER
	E94E	00			
	E94F	13			
0227	E950	A3	PJ2	ANDP %?11111110,APORT	turn off OUTPUT
	E951	FE			
	E952	04			
0228	E953	0A		RETS	exit PULSE subroutine
0229	E954				
0230	E954				
0231	E954				
0232	E954				
0233	E954	72	DELAY	MOV %>06,R4	Use registers R4 & 5

	E955	06			
	E956	04			
0234	E957	72	DL2	MOV %>E1,R5	to create a delay of
	E958	E1			
	E959	05			
0235	E95A	DA	DL1	DJNZ R5,DL1	10 milliseconds
	E95B	05			
	E95C	FD			
0236	E95D	DA		DJNZ R4,DL2	
	E95E	04			
	E95F	F7			
0237	E960	0A	RETS		
0238	E961				
0239	E961				
0240	E961				
0241	E961				
0242	FF00		AORG >FF00		
0243			TEXT 'MICROSTIM-MSDB '		
	FF00	20			
	FF01	4D			
	FF02	49			
	FF03	43			
	FF04	52			
	FF05	4F			
	FF06	53			
	FF07	54			
	FF08	49			
	FF09	4D			

2195

96/6

	FF0A	2D	
	FF0B	4D	
	FF0C	53	
	FF0D	44	
	FF0E	42	
	FF0F	20	
0244			TEXT ' Version 1.0 '
	FF10	20	
	FF11	20	
	FF12	56	
	FF13	65	
	FF14	72	
	FF15	73	
	FF16	69	
	FF17	6F	
	FF18	6E	
	FF19	20	
	FF1A	31	
	FF1B	2E	
	FF1C	30	
	FF1D	20	
	FF1E	20	
	FF1F	20	
0245			TEXT ' Colin Maxwell'
	FF20	20	
	FF21	43	
	FF22	6F	
	FF23	6C	
	FF24	69	

Price List

Citadel Products Ltd.

April 1993

Device testing & programming

PC82 (Expro-60)	Universal Programmer (40 pin Textool)	£ 395
Expro-80	Universal Programmer (42 pin Textool)	£ 349
SAC101A	Extra interface card and cable for PC82	£ 49
PC86 (Picker 20)	Handy pocket I.C. tester, TTL, CMOS & DRAM/SRAM	£ 149

Adaptors for PC82 & Expro-80

Code	Make of Device	Description	No of Sockets	Price	[To special order 3-4 weeks #]
ADP-1210	Altera	EP1200/EP1210 Series	1	£ 129	
ADP-1810PGA	Altera/Texas	EP1800/1810 PGA	1	£ 149	#
ADP-1810PLCC	Altera/Texas/Intel	EP1800/1810, 5C180 PLCC	1	£ 139	
ADP-26CV12	Lattice/AMD	GAL 26CV12/B, PALCE26CV12, PALCE24CV10	1	£ 129	#
ADP-451	Signetics	87C451 PLCC	1	£ 139	
ADP-48F		8748 series MPU	1	£ 95	
ADP-51F		8751 series MPU	4	£ 95	
ADP-51GB	Intel	PLCC 87C51GB	1	£ 129	
ADP-552	Signetics	87C552 PLCC	1	£ 139	
ADP-552-QFP	Signetics	87C552	1	£ 139	
ADP-5AC324	Intel	5AC324	1	£ 129	
ADP-63705	Hitachi	HD63705V0/A05V0/B05V0	1	£ 95	#
ADP-68701	Motorola	68701U4	1	£ 129	
ADP-68705	Motorola	MC68705 Series:R3/R5,U3/U5,P3/P5	2	£ 129	
ADP-68HC705	Motorola	MC68HC705C8	1	£ 129	
ADP-68HC711	Motorola	MC68HC711K4	1	£ 129	
ADP-68HC711D3	Motorola	MC68HC711D3 40 pin DIP MPU	1	£ 129	
ADP-68HC711E9	Motorola	MC68HC711E9	1	£ 129	
ADP-751	Signetics	87C751/752	1	£ 95	
ADP-7C33X	Cypress	CY7C330/331/332. DIP & PLCC	2	£ 129	#
ADP-8796PGA	Intel	8796BH/8797BH PGA	1	£ 139	
ADP-8796PLCC	Intel	8795/96/97/196 MPU	2	£ 129	
ADP-87C96MC	Intel	87C96MC	1	£ 139	
ADP-87C196MC	Intel	87C196MC 64 pin SDIP	1	£ 139	
ADP-87C196MC-PLCC	Intel	87C196MC 84 pin PLCC	1	£ 139	
ADP-ATV 2500Y	Atmel	ATV2500	2	£ 139	#
ADP-ATV5000	Atmel	ATV5000 PLCC	1	£ 139	
ADP-CE16V8	AMD	PAL CE16V8/Q	4	£ 129	
ADP-CE20V8	AMD	PAL CE20V8H/Q	4	£ 129	
ADP-EP32		32-pin DIP 8 Bit Wide EPROM	4	£ 99	
ADP-EP32A-PLCC		PLCC EPROM 2764-27512	4	£ 139	
ADP-EP32B-PLCC		PLCC EPROM 1Mbit and over	4	£ 139	
ADP-EP40		40-pin DIP 16 Bit Wide EPROM	4	£ 129	
ADP-EP40-PLCC		PLCC EPROM Word Wide	4	£ 139	
ADP-EPM7032	Altera	44 pin PLCC EPM4032, EPS464	1	£ 129	
ADP-GAL16V8	Lattice/N.S./ST	GAL16V8/A	4	£ 129	
ADP-GAL20V8	Lattice/N.S./ST	GAL20V8/A	4	£ 129	
ADP-MACH	AMD	MACH110/210	1	£ 129	
ADP-MAPL128	N.S.	PLCC MAPL128 IC	1	£ 129	
ADP-MAPL44	N.S.	44 pin PLCC MAPL144/244 IC	1	£ 129	
ADP-MAX	Altera	EPM5016/5032	2	£ 139	
ADP-MAX50B	Altera	EPM5064 PLCC	1	£ 129	
ADP-MAX50C	Altera	EPM5128 PLCC	1	£ 139	
ADP-MB7100	Fujitsu	MB71 PROM Series	1	£ 105	#
ADP-N3001	Toshiba	EPROM N3001-008/016,THA16P0100, TC578200, KM23C4100	4	£ 185	
ADP-PALTEST		To test all popular PALs with JEDEC test vectors	1	£ 99	
ADP-PEEL18CV8	NS	D-type PAL	2	£ 99	
ADP-PEEL18CV8	AMI/Gould/ICT/Hymad	PEEL18CV8	4	£ 129	
ADP-PIC16	Microchip	PIC16C54/55/56/57 (not required for Expro-80)	2	£ 129	
ADP-PLCC-51		PLCC MPU 8741/48/49/51 Series	1	£ 129	#
ADP-PLCC-EP		All 8 bit wide PLCC EPROM	2	£ 95	
ADP-PLCC-PAL		All 20 & 28 pin PLCC PALS	3	£ 129	
ADP-PLHS473	Signetics	PLHS473	1	£ 129	#
ADP-PLS100	Signetics	PLS100, PLS101, & PLUS series	1	£ 129	#
ADP-PML2552	Signetics	PML2552 PLCC	1	£ 139	#
ADP-PSD301	Waferscale	PSD301,302,311,312	1	£ 129	
ADP-RM1A		DRAM module tester: SIP-SIMM		£ 139	
ADP-TICPAL	Texas	TICPAL 16L8-55/R4-55/R6-55/R8-55	1	£ 129	
ADP-TMS320E	Texas	TMS320E25	1	£ 139	
ADP-TMS320E1	Texas	TMS 320E15/E17	1	£ 95	#
ADP-UPD75P008	N.E.C.	UPD 75P008	2	£ 139	#
ADP-UPD75P108	N.E.C.	UPD75P108/75P116	1	£ 105	#
ADP-UPD75P3XX	N.E.C.	UPD75P308/75P316 80 pin QFP	1	£ 139	#
ADP-X2212	Xicor	X2212/1/M, X2210/1/M	1	£ 80	#
ADP-Z86E08	Zilog	Z86E08	1	£ 105	

21232

EXPRO-60

Product Introduction:

EXPRO-60 is an Universal Programmer and Tester. It performs parallel communication and control through PC-Bus. EXPRO-60's functions surpass most stand-alone programmers, because it shares all sources of a PC: CPU memory, I/O, key board, display, hard disk and power supply. Its low cost is a great benefit to design engineers. EXPRO-60's hardware circuits are composed of 40 set Pin-Driver circuits, each with TTL I/O control, D/A voltage output control, Ground control, Noise filter circuit control and OSC crystal frequency control. With such a compact circuit architecture and sound software design, EXPRO-60 can process as many as 1200 different ICs, including: EPROM, E/EPROM, Serial PROM, BPROM, MPU, PLD, EPLD, PEEL, GAL, EPL ...etc. with less than 40-Pin. Once you apply our expansion

adapters or PLCC socket converters, ICs can also be processed up to 68-Pin.

EXPRO-60's software is based on SUNSHINE's long-term experience in programming and our customers' precious suggestions. Its powerful and efficient function is exceedingly user friendly. The advanced software updates enable us to undertake custom design of new devices; meanwhile, we have sent EXPRO-60s to IC makers for approval. All these prove our sincere commitment to customer service and an extraordinary software update. EXPRO-60's software provides not only programming files but also multifunction IC test files. It can test digital ICs like TTL 74/54 series, CMOS 40/45 series, DRAM and SRAM. Furthermore, It has a PLD JEDEC VECTOR test program enabling you to set up test vectors of ICs you personally design.

This function to fully utilize the hardware circuits is superior to most other programmers.

UNIVERSAL PROGRAMMER AND TESTER

SUNSHINE

CP *citadel*

PC-82



71234

P. & M. SERVICES

(Rochdale) Ltd.

ESTABLISHED 1964

PRINTED CIRCUITS : PHOTO-MECHANICAL ENGINEERING

STONESWOOD MILL,
BACUP ROAD,
TODMORDEN,
LANCS., OL14 7HG
Tel: (0706) 815212
Fax: (0706) 818636
Modem: (0706) 819933

To: Viamed Ltd
15 Station Road
Cross Hills
Keighley

11th March 1994

FOR THE ATTENTION OF MR JOHN S LAMB

Quotation

We thank you for your enquiry and are pleased to quote for the production of printed circuit boards to your Ref. DB 11 as follows:-

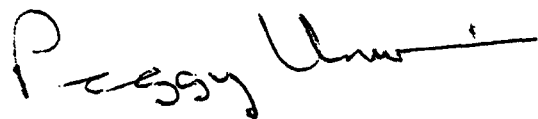
50 off @	£ 1.75 each
100 off @	£ 1.40 each
Preparation of Tooling	£50.00

We have assumed you have artworks available but if plotting is required the charge would be £15.00

Delivery - 4 weeks from receipt of order and Artworks or Disc.

Please let us know if you have any further queries.

Best Regards



M. Unwin
DIRECTOR

P. & M. SERVICES

(Rochdale) Ltd.

ESTABLISHED 1964

PRINTED CIRCUITS : PHOTO-MECHANICAL ENGINEERING

STONESWOOD MILL,
BACUP ROAD,
TODMORDEN,
LANCS., OL14 7HG
Tel: (0706) 815212
Fax: (0706) 818636
Modem: (0706) 819933

Viamed Ltd
15 Station Road
Cross Hills
Keighley
West Yorkshire
BD20 7DT

10th May 1994

For the attention of Mr John Lamb.

012 7385

Ref. DB 11 Printed Circuit Board

Following our telephone conversation earlier today, please find enclosed sample printed circuit boards for evaluation. Due to a design error on our part we do not feel these boards are suitable for assembly. However, we would appreciate your views on the enclosed boards, which should enable the circuit to be checked out and approved.

We look forward to your early reply.

Yours sincerely

SAMPLE ONCT.

Lesley Thompson

Lesley Thompson
SALES & PROGRESS MANAGER

Discussed 24/5/94