

CORTEX USERS GROUP

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Editorial.

Again we have to apologise for the late publication of this newsletter which was due to lack of articles sent in. Membership numbers have dropped quite a lot in the last year so it will be difficult to maintain a steady flow of newsletters in the future.

Membership renewal for 1989 is now due so please send in as soon as possible so that we can see the amount of interest for this year. Why not send in an article or programme listing as well.

Letters.

R. Andrews Ipswich

Can you please tell me if the WD2797 disc controller and CDOS 2 is still available. Also can you confirm that a TMS911 DMA controller is not required.

Yes the disk controller is available for £55.00 and CDOS 2 for £45.00. The controller does not require a TMS911 to be present. Please note however that MDEX is not available for the WD2797 controller card.

N D Osmond Glostershire

I have been told by Maplin that the Yamaha 9938 VDC has been discontinued, but they have supplies of the chip and kits for about a year. Can you confirm this. I am thinking of building a Weather Satalite receiver and decoder, then to interface it to the Cortex. I would like some help with the programming, I have writted programmes for the BBC and Amstrad Computers which will be of some help. Anyone interested please contact me at :-
THE BIRCHES. SYNWELL GREEN. WOTTON UNDER EDGE. GLOSTERSHIRE.

Yes it is true that Maplin will be discontinueing the 9938 when supplies run out, but we have another supplier available should anyone not be able to obtain the IC from Maplin. Good luck with the satalite receiver. Let us know when you get it working.

Stuart Mason Nottingham

I have recently installed a 9938 into my Cortex, is there a 80 Column version of MDEX Window available ?

No I am afraid I do not know of an 80 column version of Window I wonder if any one out there has one ?

Stuart also enclosed a simple Basic programme to save and load ASCII format basic programmes to disk. The programme relies heavily on articles in newsletter 19. In use the programme would occupy high line numbers above the main programme, and would be used to save the whole programme to disk or to chain another programme (in ASCII) into the main programme.

```

LIST
1000 REM *****
1010 REM *
1020 REM * ASCII SAVE AND LOAD ROUTINES
1030 REM *
1500 DIM $S1[16]
1510 DIM $S2[30]
1600 AA=ADR[$S2[0]]
1700 RESTOR 1800
1710 FOR X=0 TO 118 STEP 2
1720   READ ANS
1730   MWD[AA+X]=ANS
1740 NEXT X
1800 DATA 04C1H,0706H,0C220H,0EFBCH,0648H,08808H,0EFBAH,01206H
1810 DATA 0228H,0FFFCH,08601H,015F9H,04D0H,0380H,0710H,0380H
1820 DATA 020AH,045BH,068AH,0CAC0H,060H,0CAC1H,062H,0ACDh,064H,0ACEH,066H,0C
ACFH,068H
1830 DATA 08808H,0EFBAH,01A1AH,0C078H,08181H,01B17H,06A0H,03C80H,0228H
1840 DATA 0FFFAH,020AH,045BH,068AH,0C02BH,032H,0C06BH,034H,0C36BH,036H,0C3ABH,
038H,0C3EBH
1850 DATA 03AH,04D1H,0203H,0EB04H,0DC33H,016FEH,0380H,0711H,0380H
2000 TEXT
2010 COLOUR 1,15
2020 PRINT @(1,1);" 1 Save programme as ASCII text"
2030 PRINT @(1,2);" 2 Load programme from ASCII file"
2040 PRINT @(1,20);"Make your choice : <08>";
2050 INPUT %1;ANS
2060 IF ANS<1 OR ANS>2 THEN GOTO 2040
2070 ON ANS THEN GOTO 3000,5000
3000 TEXT
3010 PRINT @(1,1);"Drive : --<08>";
3020 INPUT %1;DNO
3030 IF DNO<0 OR DNO>1 THEN GOTO 3010
3040 PRINT @(1,2);"File Name : ";
3050 INPUT %8;$S1[0]
3060 OPEN DNO,$S1[0],F1,CRE
3980 FIN=0
3990 ERR=0
4000 CALL "Start",AA,ADR[ERR]
4005 IF ERR THEN GOTO 4100
4010 CALL "Continue",AA+020H,ADR[$S1[0]],ADR[FIN]
4020 IF FIN THEN GOTO 4100
4030 PUT F1,$S1[0]
4040 GOTO 4010
4100 CLOSE F1
4110 TEXT
4120 PRINT "<07>";
4130 STOP
5000 TEXT
5010 PRINT @(1,1);"Drive : <08>";
5020 INPUT %1;DNO
5030 IF DNO<0 OR DNO>1 THEN GOTO 5010
5040 PRINT @(1,2);"File Name : ";
5050 INPUT %8;$S1[0]
5060 OPEN DNO,$S1[0],F1
5070 IF EOF[F1] THEN GOTO 5910
5080 GET F1,$S1[0]
5091 ENTER $S1[0]
5100 GOTO 5070
5910 CLOSE F1
5920 TEXT
5930 PRINT "<07>";
5940 STOP

```

N D Osmond.
THE BIRCHES.
SYNWELL GRN,
WOTTON UNDER EDGE,
GLOS.
20 November 1988.

Dear Tim.

Please find enclosed pgm to change the RS232 port to an 8 bit port,
in MDEX O/S. Usefull for printer graphics.

. FILE PR.ASM

. -----
. This module changes the Rs232 port from
. a 7bit port to an 8bit port
. PORT8=FN.PORT8

.
. titl 'PORT8'
. idt 'PORT8.n'
. dstk r10

.
. PORT8*

mov r11,r1
bl @fentr\$ function entry
data 08000 terminator,no arguments

limi 0 mask all interupts
li r12,080 load 9902 base adder
li r0,023 data for control reg 00100011
swpb r0 23=msb
sbo 14 Ldctrl=1/write to Control reg on 9902
ldcr r0,8 8 bits to control reg
b @ret\$

.
. end

The above pgm would be linked to the @basic pgm,
EXTERNAL in the @basic pgm would be EXTERNAL=PORT8=FN.PORT8,to call D%=FN.PORT8

Tim via the newsletter could you ask Billy Bucknell to contact me please.

Yours faithfully
NIGEL.

O.W.Hulme, Hednesford.

CALLING ALL WD2797 CDOS USERS

It is a little bit disconcerting after fitting the WD2797 based disk operating system to discover that all those nice utilities in past GROUP NEWSLETTERS just will not work. In case you are still in trouble the following alterations to the listing should put you right. However I must confess defeat with C.M.GALES offering on page 5 NEWSLETTER 6, I have still failed to get it to run, but I promise you all the following will.

NEWSLETTER 5. Page 7

AUTO-RUN

```
220 DC=MWD(06388H+D*2)
245 BPS=MWD(06370H+D*2)
```

NEWSLETTER 8. Page 8

AUTOLOAD

```
140 DC=MWD(06388H+D*2)
170 BPS=MWD(06370H+D*2)
```

NEWSLETTER 9. Page 10

DIR STATEMENT

```
FEFA MOV @>6370(R1),R5
FEFE MOV @>6388(R1),R6
```

NEWSLETTER 12. Page 3

PRINT DIRECTORY

```
700 DP=MWD(06388H+D2)
750 BPS=MWD(06370H+D2)
```

NEWSLETTER 13. Page 4

SORTDIR

```
360 DP=MWD(06388H+D2)
410 BPS=MWD(06370H+D2)
```

NEWSLETTER 15. Page 10

DISK VERIFY

```
300 P1=MWD(06370H+DRV*2) !Pointer 1
310 P2=MWD(06380H+DRV*2) !Pointer 2
320 P3=MWD(06388H+DRV*2) !Pointer 3
370 SID=MWD(P2+2) !Sides
```

MAZE

DENNIS JOHNSON

Load in the Basic programme and then switch to monitor to load the machine code data "MAZED" before running

```
3 PRINT @ "C"
5 GOTO 5000
10 GRAPH
15 X=06321H: F=1
17 GOTO 580
20 N=1
25 ON F THEN GOTO 30,160,270,380
30 Z=X: N=1
35 Z=Z+1
40 IF MEM[Z]=OFFH THEN GOTO 50
45 N=N+1: Z=Z+1: GOTO 40
50 ON N THEN GOSUB 53,55,57,59,61,63,65,67
51 GOTO 70
53 PLOT 8,32 TO 248,32 TO 248,158 TO 8,158 TO 8,32
54 POP : GOTO 2000
55 PLOT 24,40 TO 232,40 TO 232,150 TO 24,150 TO 24,40
56 GOTO 68
57 PLOT 40,48 TO 216,48 TO 216,142 TO 40,142 TO 40,48
58 GOTO 68
59 PLOT 56,56 TO 200,56 TO 200,134 TO 56,134 TO 56,56
60 GOTO 68
61 PLOT 72,64 TO 184,64 TO 184,126 TO 72,126 TO 72,64
62 GOTO 68
63 PLOT 88,72 TO 168,72 TO 168,118 TO 88,118 TO 88,72
64 GOTO 68
65 PLOT 104,80 TO 152,80 TO 152,110 TO 104,110 TO 104,80
66 GOTO 68
67 PLOT 120,88 TO 136,88 TO 136,102 TO 120,102 TO 120,88
68 PLOT 255,28 TO 248,32 TO 248,158 TO 255,162
69 RETURN
70 M=N
75 L=31: R=33: A=8: B=40: C=24: D=150
80 IF MEM[X-L]=OFFH THEN E=8
85 ELSE E=0
90 GOSUB 1000
92 IF X-L=0637FH THEN GOSUB 1020
95 A=A+16: B=B+8: C=C+16: D=D-8
100 L=L-1: N=N-1
105 IF N<=1 THEN GOTO 115
110 GOTO 80
115 A=232: B=40: C=248: D=150
120 IF MEM[X+R]=OFFH THEN E=8
125 ELSE E=0
130 GOSUB 1010
132 IF X+R=0637FH THEN GOSUB 1020
135 A=A-16: B=B+8: C=C-16: D=D-8
140 R=R+1: M=M-1
145 IF M<=1 THEN GOTO 500
150 GOTO 120
```

```

160 Z=X: N=1
165 Z=Z-32
170 IF MEM[Z]=OFFH THEN GOTO 180
175 N=N+1: Z=Z-32: GOTO 170
180 ON N THEN GOSUB 53,55,57,59,61,63,65,67
185 M=N
190 L=33: R=31: A=8: B=40: C=24: D=150
195 IF MEM[X-L]=OFFH THEN E=8
200 ELSE E=0
205 GOSUB 1000
207 IF X-L=0637FH THEN GOSUB 1020
210 A=A+16: B=B+8: C=C+16: D=D-8
215 L=L+32: N=N-1
220 IF N<=1 THEN GOTO 230
225 GOTO 195
230 A=232: B=40: C=248: D=150
235 IF MEM[X-R]=OFFH THEN E=8
240 ELSE E=0
245 GOSUB 1010
247 IF X-R=0637FH THEN GOSUB 1020
250 A=A-16: B=B+8: C=C-16: D=D-8
255 R=R+32: M=M-1
260 IF M<=1 THEN GOTO 500
265 GOTO 235
270 Z=X: N=1
275 Z=Z-1
280 IF MEM[Z]=OFFH THEN GOTO 290
285 N=N+1: Z=Z-1: GOTO 280
290 ON N THEN GOSUB 53,55,57,59,61,63,65,67
295 M=N
300 L=31: R=33: A=8: B=40: C=24: D=150
305 IF MEM[X+L]=OFFH THEN E=8
310 ELSE E=0
315 GOSUB 1000
317 IF X+L=0637FH THEN GOSUB 1020
320 A=A+16: B=B+8: C=C+16: D=D-8
325 L=L-1: N=N-1
330 IF N<=1 THEN GOTO 340
335 GOTO 305
340 A=232: B=40: C=248: D=150
345 IF MEM[X-R]=OFFH THEN E=8
350 ELSE E=0
355 GOSUB 1010
357 IF X-R=0637FH THEN GOSUB 1020
360 A=A-16: B=B+8: C=C-16: D=D-8
365 R=R+1: M=M-1
370 IF M<=1 THEN GOTO 500
375 GOTO 345
380 Z=X: N=1
385 Z=Z+32
390 IF MEM[Z]=OFFH THEN GOTO 400
395 N=N+1: Z=Z+32: GOTO 390
400 ON N THEN GOSUB 53,55,57,59,61,63,65,67

```

```

405 M=N
410 L=33: R=31: A=8: B=40: C=24: D=150
415 IF MEM[X+L]=OFFH THEN E=8
420 ELSE E=0
425 GOSUB 1000
427 IF X+L=0637FH THEN GOSUB 1020
430 A=A+16: B=B+8: C=C+16: D=D-8
435 L=L+32: N=N-1
440 IF N<=1 THEN GOTO 450
445 GOTO 415
450 A=232: B=40: C=248: D=150
455 IF MEM[X+R]=OFFH THEN E=8
460 ELSE E=0
465 GOSUB 1010
467 IF X+R=0637FH THEN GOSUB 1020
470 A=A-16: B=B+8: C=C-16: D=D-8
475 R=R+32: M=M-1
480 IF M<=1 THEN GOTO 500
485 GOTO 455
500 G=KEY[0]
505 LM=0
510 IF G=09H THEN F=1: LM=1
520 IF G=0BH THEN F=2: LM=1
530 IF G=08H THEN F=3: LM=1
540 IF G=0AH THEN F=4: LM=1
542 IF G=01EH THEN GOTO 555
544 IF G=77 THEN GOTO 3000
545 IF LM=0 THEN GOTO 500
547 PRINT @"C"
550 GOTO 580
555 IF F=1 THEN GOTO 600
560 IF F=2 THEN GOTO 625
565 IF F=3 THEN GOTO 650
570 IF F=4 THEN GOTO 675
575 PRINT @"C"
580 IF F=1 THEN $K="EAST"
581 IF F=2 THEN $K="NORTH"
582 IF F=3 THEN $K="WEST"
583 IF F=4 THEN $K="SOUTH"
584 PRINT @(4,22);"FACING ";$K;"/POSITION = ";#;X
585 GOTO 20
600 IF MEM[X+1]=OFFH THEN GOTO 500
605 X=X+1
610 GOTO 575
625 IF MEM[X-32]=OFFH THEN GOTO 500
630 X=X-32
635 GOTO 575
650 IF MEM[X-1]=OFFH THEN GOTO 500
655 X=X-1
660 GOTO 575
675 IF MEM[X+32]=OFFH THEN GOTO 500
680 X=X+32
685 GOTO 575
865 GOTO 575

```



```

1000 PLOT A,B-E TO C,B TO C,D TO A,D+E TO A,B-E
1005 RETURN
1010 PLOT A,B TO C,B-E TO C,D+E TO A,D TO A,B
1015 RETURN
1020 PLOT A,B-E TO C,D: PLOT C,B TO A,D+E
1025 RETURN
2000 IF X+1=0637FH THEN GOTO 2010
2003 FOR S=06300H TO 0630FH
2005 GOTO 500
2010 PRINT @(8,12);"WELL DONE";
2015 PRINT @(8,14);"TRY AGAIN? Y OR N";
2020 INPUT $K
2025 IF $K="Y" THEN GOTO 10
2030 STOP
2035 IF MEM[S]=OFFH THEN SPUT K,1
2040 K=K+1
2045 NEXT S
3000 SHAPE 1,-1,-1,-1,-1
3001 SHAPE 2,08142H,02418H,01824H,04281H
3002 PRINT @"C"
3005 T=0
3010 FOR V=06200H TO 063FFH
3015 IF MEM[V]=OFFH THEN SPUT T,1
3017 IF V=X THEN SPUT T,2
3020 T=T+1
3025 NEXT V
3030 PRINT @"20D";"PRESS ANY KEY TO CONTINUE"
3035 J=KEY[0]
3040 IF J=0 THEN GOTO 3035
3045 PRINT @"C"
3050 GOTO 17
5000 PRINT @(3,5);"FIND YOUR WAY AROUND THE MAZE"
5010 PRINT "IF YOU END UP FACING THE WALL WITH THE CROSS YOU
WIN"
5015 PRINT "(by D.W.Johnson)"
5020 PRINT "To look in any direction you use the cursor keys"
5030 PRINT "    Left arrow  = west"
5040 PRINT "    Right arrow = east"
5050 PRINT "    Up arrow    = north"
5060 PRINT "    down arrow  = south"
5070 PRINT "The home key moves you one space at a time in
the direction you are looking"
5075 PRINT "Press the 'M' key at any time to look at a map
showing where you are"
5080 PRINT "Press any key to start"
5090 J=KEY[0]
5100 IF J=0 THEN GOTO 5090
5110 GOTO 10

```

MAZED Data for maze programme. Type in with the monitor M command and then save 6200 to 6400 as a code block with the Monitor D command

```
6200=FFFF FFFF FFFF FFFF FFFF FFFF FFFF FFFF
6210=FFFF FFFF FFFF FFFF FFFF FFFF FFFF FFFF
6220=FF00 FFFF 0000 00FF 0000 0000 0000 00FF
6230=0000 0000 0000 FF00 0000 0000 FF00 00FF
6240=FF00 0000 00FF 00FF 00FF 00FF 00FF 00FF
6250=0000 FFFF FF00 FF00 FFFF FF00 FF00 FFFF
6260=FF00 FF00 FFFF 00FF 00FF 0000 00FF FFFF
6270=0000 0000 FF00 FF00 0000 FF00 0000 FFFF
6280=FFFF FF00 FFFF 0000 00FF 00FF FF00 0000
6290=0000 FF00 FF00 FF00 FF00 FF00 FF00 FFFF
62A0=FF00 0000 00FF FFFF 00FF 0000 00FF 00FF
62B0=0000 FF00 0000 0000 FF00 0000 FF00 00FF
62C0=FF00 FFFF FFFF 0000 00FF 00FF 00FF 00FF
62D0=0000 FFFF 00FF 00FF FF00 FF00 FF00 00FF
62E0=FF00 FF00 00FF 00FF 00FF 00FF 0000 00FF
62F0=0000 0000 00FF 0000 0000 0000 00FF 00FF
6300=FF00 FF00 FFFF 00FF FFFF FFFF 00FF 00FF
6310=FFFF FFFF 00FF 00FF 00FF FF00 0000 00FF
6320=FF00 0000 0000 00FF 0000 00FF 00FF 0000
6330=00FF FF00 00FF 00FF 00FF FF00 FF00 00FF
6340=FFFF FF00 FFFF FFFF 00FF 00FF 00FF 00FF
6350=0000 FF00 FFFF 00FF 0000 00FF FFFF 00FF
6360=FF00 FF00 FFFF 00FF 00FF 0000 0000 00FF
6370=0000 0000 0000 00FF 00FF 0000 0000 00FF
6380=FF00 FF00 0000 00FF 00FF 00FF FFFF FFFF
6390=0000 FFFF 00FF FFFF 00FF FFFF 0000 00FF
63A0=FF00 FFFF 00FF 00FF 00FF 0000 00FF 00FF
63B0=0000 FFFF 00FF FF00 00FF FF00 0000 FFFF
63C0=FF00 0000 00FF 0000 0000 00FF 0000 00FF
63D0=0000 0000 0000 0000 FFFF 0000 FF00 FFFF
63E0=FFFF FFFF FFFF FFFF FFFF FFFF FFFF FFFF
63F0=FFFF FFFF FFFF FFFF FFFF FFFF FFFF FFFF
6400-
```

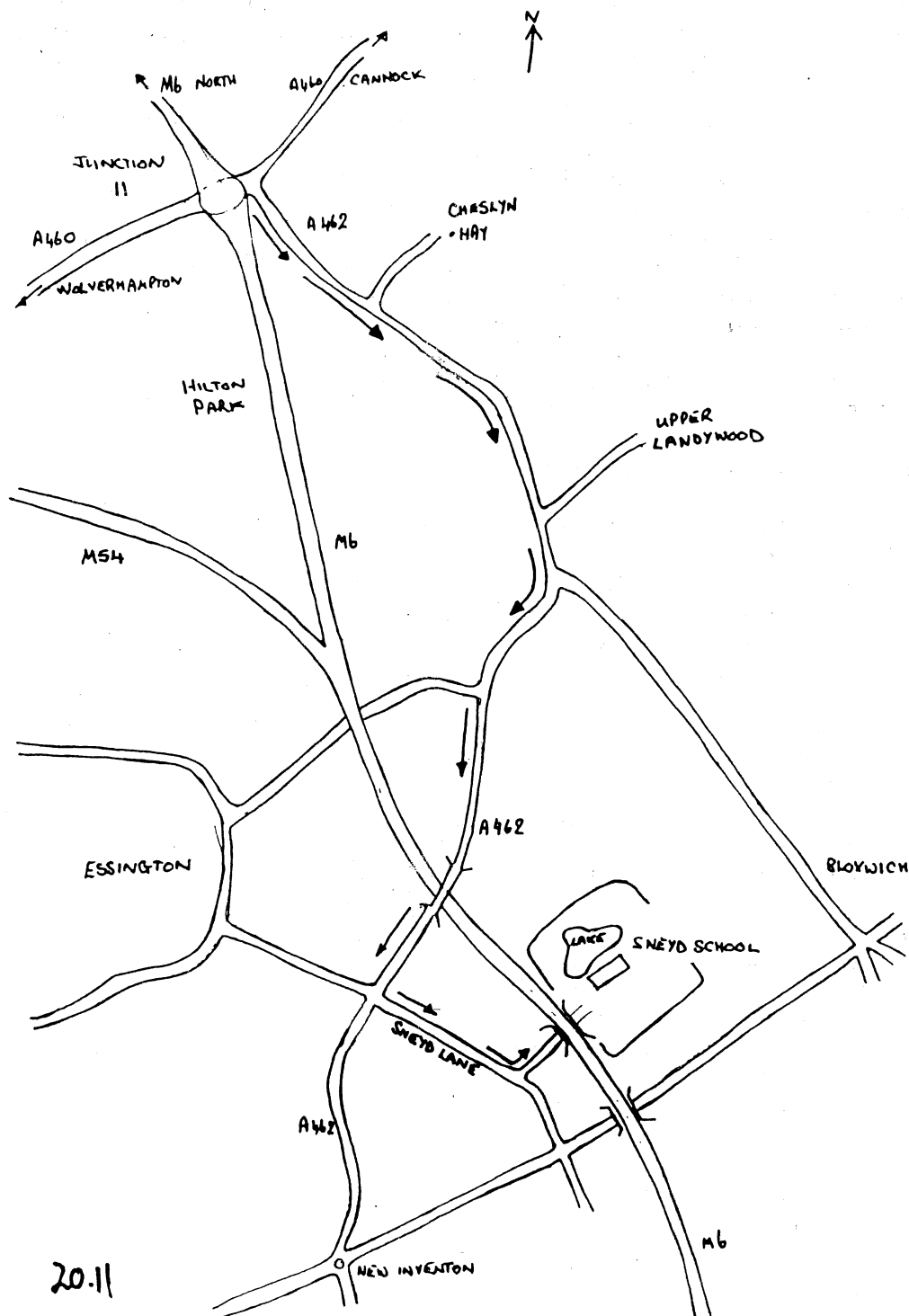
NEXT USER GROUP MEETING

The next combined TI-994A Users Group and Cortex Users Group Workshop meeting will be held on Saturday the 15th of April 1989 at Sneed school off sneed lane, Bloxwich. North of Walsall.

This meeting is an informal all day gathering offering an opportunity for Cortex users to meet us both and each other, and also to see some of the items of hardware and software for sale.

A number of us usually bring along thier Cortex computers to demonstrate various hardware modifications etc. This time we will be demonstrating. A Cortex fitted with a Yamaha 9938 VDP using Chris young's software interface.

MAP.



20.11

Cortex User Group Sale Items

Hardware

R.G.B. interface P.C.B	£8.00
Centronics P.C.B	£7.00
E.Bus 512K DRAM P.C.B plated through hole	£40.00
External Video interface P.C.B	£15.00
Disk controller WD2797 + P.C.B Cortex I	£55.00
Disk controller WD2797 + P.C.B Cortex II	£60.00
E.Bus interface complete Kit	£30.00
E.Bus 8 X 8K EPROM socket card built but no EPROMS	£30.00
E.Bus 8 X 32K EPROM socket card available soon	
E.Bus 4K RAM 8K EPROM socket 16 I/O lines ex equipment	£15.00
TMS9902 UART IC's	£2.00
74LS611 or 74LS613 Mapper IC's (req pull up R's)	£10.00
TMS9909 and TMS9911	£30.00 each or the pair for £50.00
Other IC's in stock please write in for quote	

Software all disk formats please specify when ordering

CDOS basic disk system 1.20 for TMS9909	£45.00
CDOS basic disk system 2.00 for WD2797	£45.00
Wortex word processor + spelling check by J.Makenzie	£10.00
Drawtech graphics drawing package by Tim Gray	£10.00
Menue generator by A.R.C.Badcock	£10.00
Two pass assembler by R.M.Lee	£14.00
Two pass assembler by C.J.Young	£15.00
9938 VDP driver utilities C.J.Young	£10.00
Cdos utilites disk - copy charge only	£2.00

Cdos programmes and games all £2.50 each :-

ARCHIE	ASTEROID	BREAKOUT	BURGLAR	CATERPIL	C-PEDE
CANYON	COTELLO	FIREBIRD	FROGGER	GDESIGN	GOLF
HUNCHBACK	INVADERS	MAZE	MAZE-3D	MBASE	MICROPED
MIS-COM	MUNCHER	NIBBLERS	N-ATTACK	OLYMPICS	P.BOAT
PENGO	PONTOON	RESCUE	S-ATTACK	SPACE-BU	THE-ZOO
TRAG	VADERS	WALL	X/O		

MDEX Software all formats please specify (9909 Disk I/F req)

MDEX CORE with debug monitor text editor and basic	£10.00
MDEX ASM & LINK assembler and linker	£10.00
MDEX SYSGEN system generation kit	£10.00
MDEX WORD word processor	£10.00
MDEX P.D.S. all the above in one package	£30.00
MDEX S.P.L. system programming language	£10.00
MDEX META compiler generator	£10.00
MDEX QBASIC basic compiler	£15.00
MDEX PASCAL sequential pascal	£10.00
MDEX WINDOW full screen editor	£15.00
MDEX SPELL spelling checker	£10.00
MDEX utilities copy charge only	£2.00