CORTEX USERS GROUP

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CORTEX USER GROUP NEWSLETTER (MAR 1989)

Issue Number 20

CONTENTS

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 renual for 1989 is now due so please send in as soon as possible so that we can see the ammount 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 TMS9911 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 Yamahar 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.

S.J MASON

```
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,0CACDH,064H,0CACEH,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 Qbasic pgm,
EXTERNAL in the Qbasic 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]=0FFH 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]=0FFH 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]=0FFH 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]=0FFH 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]=0FFH 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]=0FFH 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]=0FFH 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]=0FFH 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]=0FFH 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]=0FFH 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]=0FFH THEN E=8
420    ELSE E=0
425  GOSUB 100■
427  IF X+L=0637FH THEN GOSUB 1■20
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]=0FFH 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
50■  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 300■
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]=0FFH THEN GOTO 500
605  X=X+1
610  GOTO 575
625  IF MEM[X-32]=0FFH THEN GOTO 500
630  X=X-32
635  GOTO 575
650  IF MEM[X-1]=0FFH THEN GOTO 50■
655  X=X-1
660  GOTO 575
675  IF MEM[X+32]=0FFH 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]=0FFH 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]=0FFH 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-
```

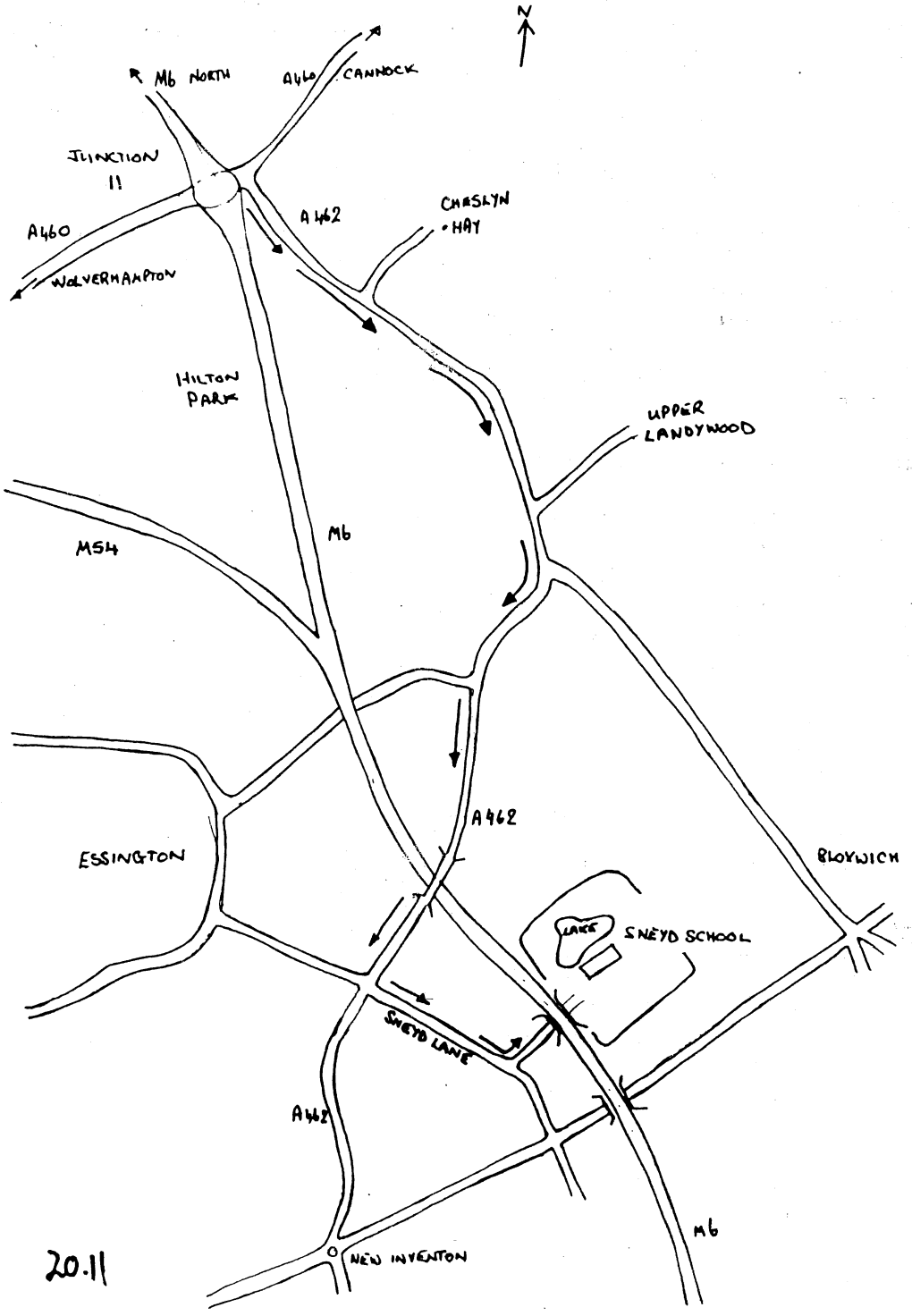
NEXT USER GROUP MEETING

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
Externel 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 generat ock	£10.00
Two pass assembler by R.M.Lee	£14.00
Two pass asembler by C.J.Young	£15.00
9938 VDP driver utilities C.J.Young	£10.00
Cdos utilites disk - copy charge onl	£2.00

Cdos programes 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/		

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