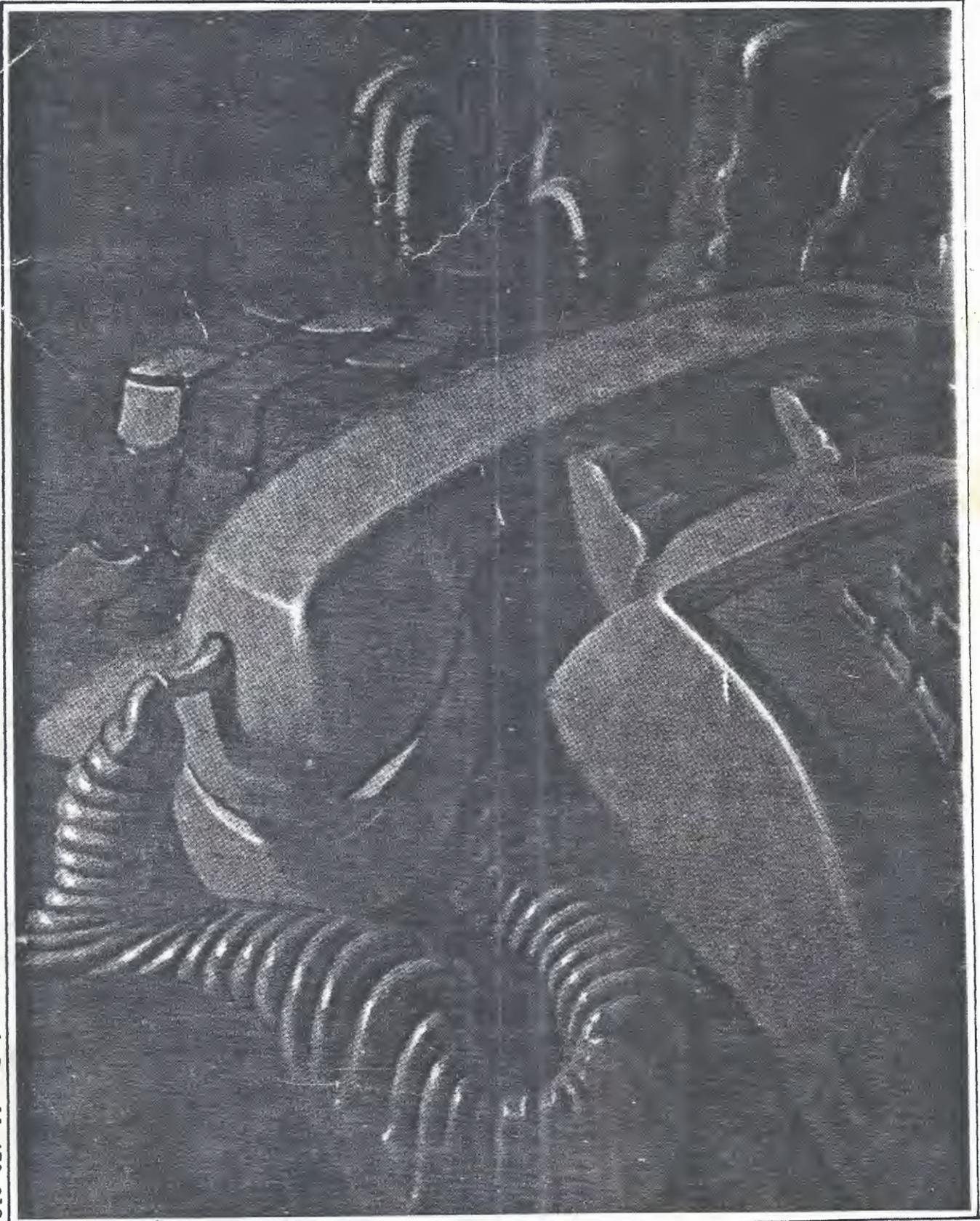


OSI-TEMS^{by}OSUNY

May 1982 Issue

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OSI-tems is a monthly publication produced by the Ohio Scientific Users Group of New York, OSUNY.

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OSI-tems is edited by Shel Sacks. all articles should be mailed to him at: 2 Eldorado Blvd. Plainview, NY 11803

OSI-tems is produced by Dale Jones.

This month's cover, courtesy of NEWSWEEK (5/3/82)

LATE NOTE: FOUND ON BBS---

A Bill Agreste from Norfolk Va is looking for osomeone with C3, C2-OEM, or C2-D who can help him. He has an OSI MODEL II 8" SSSD and want to get basic files off diskette. If anyone can help him call him collect 24 hrs a day number 804 - 623 -2032 and leave a number for him to get back to you with. He runs a Burgular Alarm Business, maybe we can get him to join. Tell him about our BBS

Dale

OSI Happenings

This will be a short column this month. I've been transferred to New Jersey which requires traveling 160 miles a day. Between traveling, looking for a new house and learning a new job I haven't had much time to write any articles.

I would like to welcome three new members to OSUNY. They are:

- Joe Santino
- Thomas Hark
- John Kula

In the June issue I will include the membership list, however, only 25 members have returned the questionnaire. If you have not returned it do so now so that your name will be on the list.

Many of our members purchased an OSI computer for their personal use and enjoyment. Some have even gone on to marketing an OSI related product(s). If you have something to sell, write about your product and send it to OSI-tems. The other members would be interested in it, you may even offer it at a discount to members.

Last month we had a problem, it seems that POLK's closed the computer area and we were without a meeting place. Arrangements are being made to have future meetings at Intechonology Service, 23 E. 20 Street New York, N.Y. 10003. This is an OSI (only) computer store that sells and services both small and large systems.

Now for some good news. OSUNY will have a computer bulletin board by June. One of our members, Allen Lipper, has a CBF DF system with a working program. He will shortly receive a modem (300/1200 baud) and a phone line. Testing will be conducted in May and we hope to have it fully operational by June. The cost will be much less than originally expected.

The BBS will start with a message service and then expand to what we would like it to contain (e.g. uploading and downloading of games, special privileges for members, etc.) What should we do in the future with the OSI BBS? Comments and suggestions can be sent to:

OSUNY-BBS
C/D Allen Lipper
P.O. Box 1205
White Plains, N.Y. 10602

See you all next month.

Ugo Re'

Notes from the Notebook

-Shel Sacks

Well, another month goes by. I hope you are all out there thinking of things to write for this rag, since this was a very lean month. Come on, all-- let's get writing!!! If you can't think of articles that need writing, how about a few suggestions from yours truly, par example:

-a nice simple RAM board using the new 2K Byte ram chips; they're down to about \$12 and it only takes 4 for 8K. The extra cost will be more than made up for by the ease of construction (4 chips instead of 16) and the decreased need for power.

-a nice simple RS232 interface; last meeting, 3 (Three!) different people told me that there were easier ways using chips than the one we recently republished. Now if only someone would write it down!!

-a compact, all-machine language WP., mine will be adequate, at best- with all you ML nuts out there, surely someone will do better. (in fact, that's my big hold-up now--ML!).

-anything else you find fascinating; hardware, or software. a simple plug-in music board any idiot can build, with the software to run it. (Klaus' board is neat, but I'm terrified to even start!)

So, come on. There's all kinds of hardware and software utilities that we could all use! Everybody seems to think that their particular gadgets/programs are too simple/too complex for the general public--BULLSHIT-- if one other person appreciates it, it was worth publishing. After all, the aim of OSUNY is to spread the wealth-- so let's get cracking!!!!

\$ \$ \$

GOOD NEWS! Our CBBS (computer bulletin board service?) will be under way mid-MAY. DO NOT CALL THIS # UNTIL MAY 15!!!: 914-725-4060. That is the PROJECTED operational date of the system. Feel free to call me at work, 212-353-4344, for further, current details.

We also now have an OSUNY BBS PO box:
write: OSUNY BBS, Box 1205, White Plains, NY 10602.

Let's all give Allan Lipper a big hand for pulling the above two items off!!!

\$ \$ \$

several people have inquired as to why I'm writing a WP at all, with so many good ones available; let me explain: I ordered a C-1toh Comet I printer by mailorder last week, and, barring a UPS strike, will have an operational printer for next month. I'm trying to write a WP that OSUNY can give to all members, for the price of a cassette (it will also be in print for those non-cassette members). Thus the output from everyone's systems will be formatted similarly; I would

He's not going to take it anymore

FRANKFURT, GERMANY—A German insurance-company bookkeeper has been acquitted of charges of malicious damage filed against him after he attacked his computer terminal with a chair and then set it on fire.

The judge in the case let the bookkeeper off after the latter explained that his patience had been exhausted after his computer system went down for the fifth time in five hours.

In acquitting the bookkeeper, the judge noted that the employee had been forced to work long hours of overtime to catch up on work that had been delayed by repeated system failures.—*The Guild Reporter*, January 29, 1982. ■

like to start receiving programs and articles on cassette, to then be outputted to my printer; For non-cassette members, I've purchased a modem; articles can be downloaded with the appropriate software directly onto my printer. Neither printer nor modem are currently operational, however: I'm still trying to find the time to hook up my RS232!

\$ \$ \$

Though this is not one of our thicker issues (ahem), "what there is, is cherce." Two articles by Kerry Lourash (one from last month); a nice mailing list program from Dale Jones (not entirely debugged, I'm told); an article from Ugo Ré on data separators that don't work with OSI equipment; and the great news about our BBS!

\$ \$ \$

IN CONCLUSION,
let's get some articles in, you-all. No matter how simple or complicated, someone will get something out of it. And don't forget--reviews of games, software, and hardware count too!

yours in keyboardness,

Shel Sacks

DATA TAPE MAILING LIST PROGRAM

by Dale Jones

Although this mailing list is programed for the C1P it can be easily changed to other OSI as well as other Microsoft machines by changing the poke statements as listed in lines 5 through 8 on page 5.

Be aware that this is a bare bones system without sophisticated error traps. I have used it and entered 135 names without loosing data but I advise all users to back up their data as they are entering it. There is nothing like the aggravation of loosing 100 or so items by hitting your break or discovering a bug in the program.

The program will eat up less than 3K when you remove the remarks. If you abbreviate and keep things compact, you should be able to keep your address data under 65 characters. If you do this you can then allow 15 addresses per k of free space. Subtract 3K from your total ram, and multiply the result by 15; this should give you an approximate of what you can handle on your system. You should get about 75 names on an 8K system or 435 on a 32K system. A WORD OF WARNING, YOU WILL NOT BE NOTIFIED OF OVER MEMORY UNTIL IT IS TOO LATE. DO NOT TRY TO RUN TO YOUR MAXIMUM.

This system is ZIP code dependent. If you skip a ZIP, it will bomb. You are allowed to intermingle four and five line addresses. See line 11 on page 5 for instructions.

A provision is made for inserting a code on each item. This may be one character or more. A provision is made for printing out by this code. Lets say that you have members and publicity mailings on the same list. You could assign the publicity mailings a code of 'P' and the members a code of 'M' as well as an alpha chacter to designate the month their dues are up.

In this way you could direct a mailing to all members who owe dues, and a mailing towards publicity and so on.

One more thing, you must know the item number to change or delete a list item. You get this number by looking at the number after the slash on the code in the print out or by going to (B), FIND AN ITEM, on the menu. Caution, when you delete an item and read the list back to tape and then reenter, the item numbers will change. You will be shown an item before you delete it anyway.

I did not want to publish this until I have tested it more extensively but Shel convinced me we needed a program in this issue. Please give me feedback on this program as I would like to fix any bugs you find. If you dispair at the thought of typing in all this code, then supply me with a cassette and I'll dump it for you. However, If you enter the program yourself, and try to understand what I have done, you just may pick up something useful for your next project.

LIST

```

1 REM***MAILING LIST FOR OHIO SCIENTIFIC CIP ***
5 REM***CHANGE POKES IN LINES 2050, 5020, 5110
6 REM***5520, 5999, 6090 FOR OTHER MACHINES***
7 REM***POKE 515,255 IS LOAD ON, 515,0 IS LOAD OFF***
8 REM***POKE 517,255 IS SAVE ON AND POKE 517,0 IS SAVE OFF ***
9 REM** AUTHOR IS DALE JONES, 1540 YORK AVE, APT 15P
10 REM** N.Y.,N.Y. 10028 - TEL (212) 737-3704
11 REM**AN ADDITIONAL LINE CAN BE INSERTED BY TYPING ##
12 REM** WHERE YOU WANT THE ADDRESS LINE TO BREAK***
13 REM**THIS WORKS ONLY ON THE ADDRESS LINE**
14 REM**YOU MUST ENTER A ZIP OR YOU WILL LOOSE DATA**
15 REM** YOU MUST KNOW ITEM NO. TO DELETE OR CHANGE
16 REM**USE FIND AN ITEM TO GET ITEM NO.
17 REM**PLEASE CONTACT ME WITH SUGGESTIONS OR REVISIONS
18 REM**ALLOW 4K FOR 50 NAMES, CHANGE DIM FOR OVER 200 NAMES
19 REM**PROGRAM WITHOUT REM IS LESS THAN 3K
20 DIMCD$(200):DIMNM$(200):DIMAD$(200):DIMCT$(200):DIMST$(200)
30 DIMZP(200)
40 GOSUB10000
45 PRINTTAB(10)"MENU":PRINT:PRINT:PRINT
50 PRINTTAB(2)"(1) ENTER NEW ITEM"
60 PRINTTAB(2)"(2) CHANGE ITEM"
70 PRINTTAB(2)"(3) DELETE OLD ITEM"
80 PRINTTAB(2)"(4) PRINT LIST"
90 PRINTTAB(2)"(5) READ TAPE"
100 PRINTTAB(2)"(6) WRITE TAPE"
110 PRINTTAB(2)"(7) PRINT BY CODE"
120 PRINTTAB(2)"(8) FIND AN ITEM"
185 PRINT:PRINT
190 INPUT"ENTER YOUR CHOICE";Q:PRINT:PRINT
195 ONQGOTO500,1000,1500,2000,5000,5500,6000,7000,8000
197 GOTO40
200 REM**INPUT SUBROUTINE***
205 INPUT"GIVE THE CODE";CD$(I)
210 INPUT"NAME";NM$(I)
220 INPUT"STREET ADDRESS";AD$(I)
230 PRINT"GIVE CITY, STATE"
240 INPUTCT$(I),ST$(I)
250 INPUT"ZIP CODE";ZP(I)
260 RETURN
300 REM***PRINT ROUTINE***
302 IFCD$(J)="DELETE"GOTO360
305 PRINTTAB(20+X);CD$(J);"/"J
310 PRINTTAB(X);NM$(J)
315 GOSUB15000
318 IFPL=1THENGOTO330
320 PRINTTAB(X);AD$(J)
330 PRINTTAB(X)CT$(J);", ";ST$(J);" "ZP$
335 GOSUB11000
340 PRINT
345 IFPL=1THENGOTO360
350 PRINT
360 RETURN
500 REM***ENTER NEW NUMBER**
510 REM**INITIALIZA(ION**
520 I=1
530 IFZP(I)=0THENGOTO550

```



```

5540 PRINTAD$(K)
5550 PRINTCT$(K)
5560 PRINTST$(K)
5570 PRINTZP(K)
5580 K=K+1
5590 IFZP(K) <> 0 THEN GOTO 5530
5595 PRINT"END":PRINT"OF":PRINT"THE":PRINT"MAIL":PRINT"LIST":PRINT;0
5999 POKE517,0:GOTO40
6000 REM***PRINT BY CODE***
6010 PRINT"THIS WILL ALLOW YOU TO PRINT ALL ITEMS WITH"
6015 PRINT"THE SAME CODE"
6020 PRINT:PRINT"TURN THE PRINTER AND SELECTOR SWITCH ON":PRINT
6025 INPUT"# SPACES INDENTED";X
6030 PRINT:INPUT"WHAT IS THE CODE";Q$
6040 J=1:POKE517,255
6050 IFCD$(J)=Q$ THEN GOSUB300
6060 IFZP(J)=0 THEN GOTO6090
6070 J=J+1
6080 GOTO6050
6090 POKE517,0:GOTO40
7000 REM***SEARCH FOR A NAME***
7010 INPUT"GIVE NAME EXACTLY AS ON LIST";SE$
7020 S=1
7025 IFZP(S)=0 THEN GOTO40
7030 IFNM$(S)=SE$ THEN GOTO7100
7040 S=S+1
7050 GOTO7030
7100 PRINTNM$(S);" ";CD$(S);"/";S
7110 PRINTAD$(S)
7120 PRINTCT$(S);ST$(S)
7125 IFNM$(S)="" THEN GOTO40
7130 PRINTZP(S)
7140 INPUT"PRESS 'C' TO CONTINUE";Q$
8000 GOTO40
10000 FORC=1 TO 12
10010 PRINT:PRINT
10020 NEXTC
10030 RETURN
11000 REM**REPLACE DROPPED ZERO ON ZIP***
11010 ZP$=STR$(ZP(J))
11020 L=LEN(ZP$):IFL>5 THEN GOTO11050
11030 ZP$=RIGHT$(ZP$,4):ZP$="0"+ZP$
11050 RETURN
15000 REM***FIND EXTRA LINE***
15005 PL=0
15010 FORZ=1 TO LEN(AD$(J))
15030 IFMID$(AD$(J),Z,2)="##" THEN GOTO15060
15040 NEXTZ
15050 RETURN
15060 PRINTLEFT$(AD$(J),Z-1)
15070 PRINTRIGHT$(AD$(J),LEN(AD$(J))-(Z+1))
15080 PL=PL+1
15090 RETURN

```

OK

OSI ASSEMBLER LABELS

byKerry Lourash

I am going to take a brief stab at explaining OSI Assembler label storage. For those of you not interested in machine language, now is the time to skip to the next article.

The Assem. stores its labels in a six-byte format, from the top of the Assem. workspace downward, similar to string storage in BASIC. The top two bytes contain the value of the label and the bottom four bytes contain the label itself. Two of the bytes contain the first three characters of the label and the other two bytes hold the remaining three characters.

```

SPRBD2=$FD translates to:  00  (Top of Assem. workspace.)
                          FD  $FD
                          --
                          0D
                          3D  BD2
                          --
                          79
                          52  SPR
  
```

Here are the values of the label characters:

```

0 = Space
1-26 = A-Z
27-36 = 0-9
37 = :
38 = .
39 = $
  
```

Three characters are stuffed into two bytes by converting them to a base 40 number. For example:

$$\text{SPR} = 19 \cdot 40^2 + 16 \cdot 40 + 18 = 31058_{\text{dec}} \text{ or } \$7952$$

$$\text{BD2} = 2 \cdot 40^2 + 4 \cdot 40 + 29 = 3389_{\text{dec}} \text{ or } \$0D3D$$

Numbers (0-9) are allotted larger values than letters so that an illegal label can be spotted easily.

Now you know how it's done, decoding the labels for a table at the end of an assembly is a possibility. My thanks to Alvin Tutas for making the preceding message possible.

Ugo V. Re'
167 Sprucewood Drive
Levittown, N.Y. 11756

I recently purchased the MPI B52 (5 1/4", dual sided) drives, however they did not have the data separator required for the OSI disk controller.

When data is written to a disk, the data (0's & 1's) are placed between the clock pulses. To read the data, a data separator is required to separate the clock and data pulses from the signal. The clock pulses are used to clock the ACIA (6850), while the data pulses are sent to the receive of the ACIA.

Standard Microsystems Corp. manufactures a Floppy Disk Data Separator (FDC 9216), see data sheet. This chip will not work with the OSI disk controller.

The data sheet states that the chip performs data and clock separation. The chip, however, does not separate the data from the recorded signal but passes the signal (data plus clock) to the floppy disk controller. This was confirmed by their Engineering Staff. What the chip does is monitor the recorded signal and adjusts the separate clock output as the signal shifts due to drive speed variations.

Western Digital also manufactures a similar chip (1691). This chip also may not work with the OSI disk controller (I didn't check out this chip to see if it will work).

While both chips appear to provide a simple solution to data separation they will not work with the OSI disk controller.

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We keep ahead of our competition so you can keep ahead of yours.

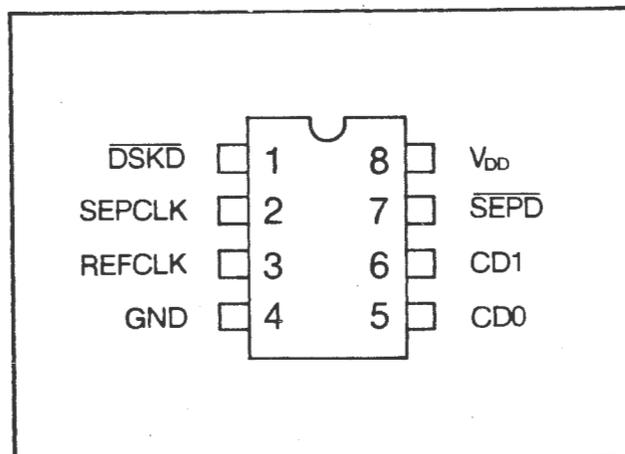
**FDC 9216
FDC 9216B
μPC FAMILY**

Floppy Disk Data Separator FDDS

FEATURES

- PERFORMS COMPLETE DATA SEPARATION FUNCTION FOR FLOPPY DISK DRIVES
- SEPARATES FM OR MFM ENCODED DATA FROM ANY MAGNETIC MEDIA
- ELIMINATES SEVERAL SSI AND MSI DEVICES NORMALLY USED FOR DATA SEPARATION
- NO CRITICAL ADJUSTMENTS REQUIRED
- COMPATIBLE WITH STANDARD MICROSYSTEMS' FDC 1791, FDC 1793 AND OTHER FLOPPY DISK CONTROLLERS
- SMALL 8-PIN DUAL-IN-LINE PACKAGE
- +5 VOLT ONLY POWER SUPPLY
- TTL COMPATIBLE INPUTS AND OUTPUTS

PIN CONFIGURATION

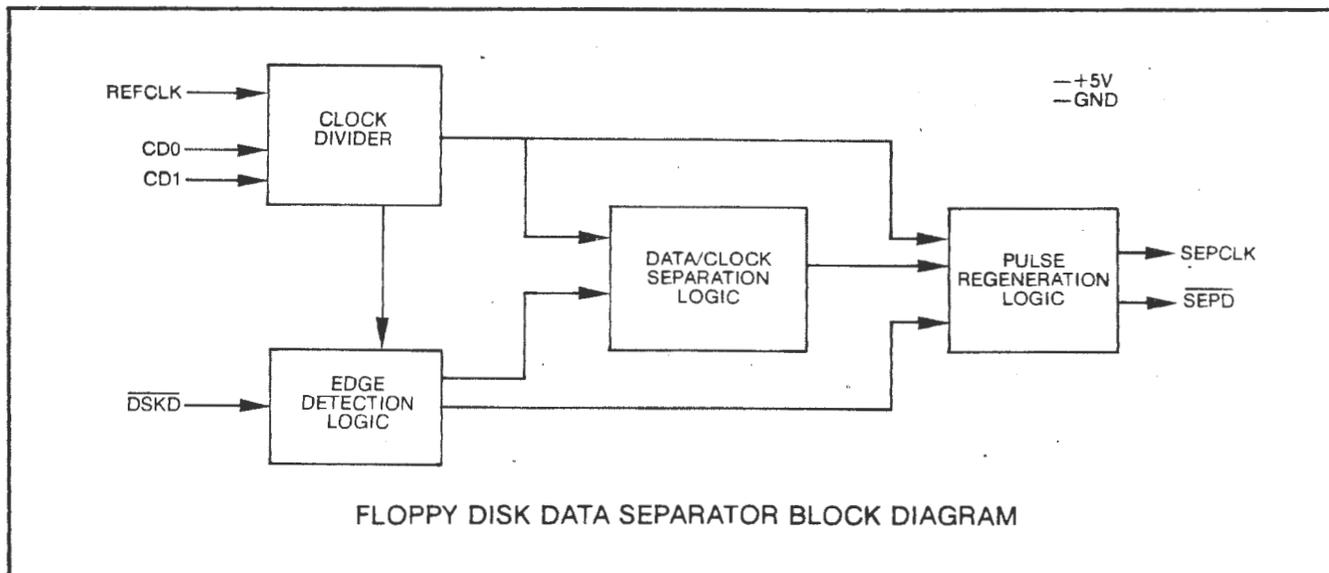


The Floppy Disk Data Separator provides a low cost solution to the problem of converting a single stream of pulses from a floppy disk drive into separate Clock and Data inputs for a Floppy Disk Controller.

The FDDS consists primarily of a clock divider, a long-term timing corrector, a short-term timing corrector, and reclocking circuitry. Supplied in an 8-pin Dual-In-Line

package to save board real estate, the FDDS operates on +5 volts only and is TTL compatible on all inputs and outputs.

The FDC 9216 is available in two versions; the FDC 9216, which is intended for 5¼" disks and the FDC 9216B for 5¼" and 8" disks.



OPERATION

A reference clock (REFCLK) of between 2 and 8 MHz is divided by the FDDS to provide an internal clock. The division ratio is selected by inputs CD0 and CD1. The reference clock and division ratio should be chosen per table 1.

The FDDS detects the leading edges of the disk data pulses and adjusts the phase of the internal clock to provide the SEPARATED CLOCK output.

Separate short and long term timing correctors assure accurate clock separation.

The internal clock frequency is nominally 16 times the SEPCLK frequency. Depending on the internal timing correction, the internal clock may be a minimum of 12 times to a maximum of 22 times the SEPCLK frequency.

The reference clock (REFCLK) is divided to provide the internal clock according to pins CD0 and CD1.

TABLE 1:
CLOCK DIVIDER SELECTION TABLE

DRIVE (8" or 5¼")	DENSITY (DD or SD)	REFCLK MHz	CD1	CD0	REMARKS
8	DD	8	0	0	} Select either one
8	SD	8	0	1	
8	SD	4	0	0	} Select either one
5¼	DD	8	0	1	
5¼	DD	4	0	0	} Select any one
5¼	SD	8	1	0	
5¼	SD	4	0	1	
5¼	SD	2	0	0	

Kerry Leurash

SCROLLIST III

The enclosed program was inspired by Colin Macauley's "LIST Scroller" article in the Jan. Micro. It is similar in that CTRL A and CTRL Z are used to scroll backward and forward through a program listing. Also, it is patched into the input routine with a POKE 536,34 : POKE 537,2.

There are three main differences, however. My program calls the LIST routine directly, and is therefore shorter and more versatile. The OK message is replaced by a solid white square (#\$A1), which doesn't scroll the screen and allows more information to be displayed.

Macauley's program is limited to displaying only lines with numbers less than 32000. My program displays all lines in memory (and one that isn't; sorry about that).

By eliminating the "JSR A86C" in the SETUP routine, you can eliminate blank lines between BASIC lines and pack more information on the screen. Users with a stock screen width may prefer the blank lines, but I have a 2K video mod and I like the denser display.

100 SCROLLIST III	300 CONT	PLA	600	STA \$A8	890	JMP \$A8F0
200 BY KERRY LEURASH	310	TAY	610	LDX \$A8	900	
300 #=40222	320	BEY	620	BNE D1	910	OK LDA #A1
400 PTR=400	330	BEQ DOWN	630	DEC \$A8	920	JMP \$A8C5
	340		640	DEC \$A8	930	
50 JSR \$FFDA	350 UP	LDY #0	650	LDX \$A8	940	EXIT LDA #FE
60 CNP #1	360	LDA (PTR),Y	660	CNP #2	950	TXS
70 BEQ LIST	370	TAX	670	BEQ EXIT	960	JMP \$A8FD
80 CNP #1A	380	INY	680	LDY #0		
90 BNE RTH	390	LDA (PTR),Y	690	LDA (\$A8),Y		
100	400	BEQ EXIT	700	BNE D0		
110 LIST	410	STX \$A8	710	INY		
120 LDA #13	420	STA \$A8	720	LDA (\$A8),Y		
130 CNP #199	430	BNE SETUP	730	CNP PTR		
140 BNE CONT	440		740	BNE D0		
150	450	LINE	750	INY		
160 IN12	460	LDA (\$A8),Y	760	LDA (\$A8),Y		
170 LDA #0K/256/256	470	STA \$11	770	CNP PTR+1		
180 STA #4	480	INY	780	BNE D0		
190 LDA #0K/256	490	LDA (\$A8),Y	790	INC \$A8		
200 STA #5	500	STA \$12	800	BNE SETUP		
210 LDA #13	510	STORE	810	INC \$A8		
220 STA #03	520	STA PTR	820			
230 LDA #0	530	LDA \$A8	830	SETUP	JSR \$A86C	
240 STA #04	540	STA PTR+1	840	JSR LINE		
250 JSR #0C	550	RTH	850	LDY #1		
260 JSR \$A77T	560		860	STY \$60		
270 JSR \$A432	570	DOWN	870	LDA #FE		
280 JSR STORE	580	STA \$A8	880	TXS		
290	590	LDA PTR+1				

SCREEN MAP FOR CIP 24x24

JONES

53384	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	53404
53413	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	53436
53445	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	53468
53477	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	53500
53509	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	53532
53541	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	53564
53573	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	53596
53605	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	53628
53637	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	53660
53669	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	53692
53701	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	53724
53733	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	53756
53765	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	53788
53797	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	53820
53829	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53852
53861	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	53884
53893	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	53916
53925	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	53948
53957	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	53980
53989	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	54012
54021	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	54044
54053	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	54076
54085	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	54108
54117	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	54140