FLEX CPU09CMI Utilities

preliminary manual version 1.1

BLIST - Version 1

SYNTAX

BLIST,<file spec>

DESCRIPTION

The BLIST command is similar to the LIST command, in that it lists the contents of text files to the screen or printer. However, it uses a very large buffer to reduce wear and tear on the disk drives, especially valuable when a slow printer is being used. Pagination and line numbers are not supported in this version.

Where <file spec> is the name of the text type file to list {an extension of .OUT is assumed unless otherwise specified}.

BLIST may be preceded with the “P” command. The "escape character" feature of FLEX (refer to TTYSET) is active.

BLIST and its buffer occupy most of $0100-$7FFF of memory.

NOTE:
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BOOTON – Version 7.1

Show {change} floppy disk cable type.

SYNTAX

BOOTON

DESCRIPTION

If FLEX did boot from floppy drive:
it show the disk drive cable type.

1 = Straight FLEX cable
5 = PC cable (twisted)

If the disk driver can use the cable type flag then it show:
"Try a cable change."
And works the same as the boot from IDE drive.

If FLEX did boot from IDE drive:
it show the cable type and will ask if you want change it.
And if de cable type is not 1 or 5
it will ask to set the correct type.

```
+++BOOTON
No BOOT cable found
Set cable code 1/5 ?1
+++

+++BOOTON
BOOT on Straight cable (code=1)
Change cable code y/n ?y
+++BOOTON
BOOT on PC cable (code=5)
Change cable code y/n ?
+++
```

NOTE:
Version 7.1 will rebuild the "drvtab" in CMI version 7 drivers.
When FLEX boot from IDE and there is no floppy in drive 0
or no image loaded on GoTek 0,
the device will not give a ready signal the cable will be type 5.
Use BOOTON to check and change the cable type.

Manual change the cable type:

```
+++MON
cmi-bug 1.5 - 60k

>M F7EE
 - F7EE 05 01
 - F7EF 00
>
WARM start FLEX
```

CHECKSUM – Version 1

Reads the specified file, calculates a checksum on it.

SYNTAX

CHECKSUM <file spec>

DESCRIPTION

The CHECKSUM command reads any disk file and can put a checksum on it.
This is a quick way of determining whether or not two copies of a program or text file are identical versions.
Another way of using it is, every time you make changes to a program or other file, to calculate the checksum of the new version
and write it in a log.
Later, if you want to determine which version a particular copy is, calculate the checksum on it and look it up in the log.
(the extension defaults to .BIN}.

The 2 byte checksum is displayed as a four digit hexadecimal number.

Another possible use for this command is to read a file to see if any sectors in it have read errors.

NOTE:
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CMILINK - Version 1.0

Links FLEX to BOOT loader.

SYNTAX

CMILINK <file spec>

DESCRIPTION

Links FLEX on a IDE drive in the boot loader on sector 0.

Links FLEX on a Floppy drive in the boot loader on sector 1.

+++CMILINK 0.FLEXIDE.SYS

+++CMILINK 2.FLEXFLP.SYS

CMISTEP - Version 6.0

Change Floppy drive step rate.

SYNTAX

CMISTEP

DESCRIPTION

Depending on the FLEX disk driver:

cmi_io2
cmi_io4
cmi_io4x
cmi_io4A

It will set the disk step rate for all the floppy drives.

cmi_io4B
cmi_ide
cmi_ide2

It will set the disk step rate for each floppy drive separate.
And set double step for each floppy drive separate.

Note:

When using only Gotek drives, set the lowest step rate.

DIR-COPY - Version 0.1

JCP script to Copy/Update subdirectories.

SYNTAX

JCP DIR-COPY+'source'destination'subdirectory['C]

DESCRIPTION

JCP runs the script DIR-COPY to copy the new 'subdirectory from 'source to 'destination.

JCP DIR-COPY+'1'2'subdirname'C

Will copy the subdirectory "subdirname" from drive 1 to drive 2.

To update a subdirectory.

JCP DIR_COPY+'1'2'subdirname

Will transfer the files from "subdirname" on drive 1 missing in "subdirname" on drive 2.

SEE ALSO

SHOWDIR, GCOPY

FDRIVES - Version 6.1

Show all drives in FLEX.

SYNTAX

FDRIVES [<options>]

DESCRIPTION

FDRIVES will report current settings and can swap partitions.

Command line format:

```
                    report current settings
                          fdrives<cr>

                    hard drive parameters
                       fdrives n t d p    n = logical drive
                                          t = type W or F
                                          d = physical strapped drive
                                          p = partition on hard drive

                    floppy drive parameters
                       fdrives n t d      n = logical drive
                                          t = type W or F
                                          d = physical strapped drive
```

When VIRTUAL is loaded, FDRIVES has a message telling you what to do.

SEE ALSO

IDEFMT, PLIST

(Uni)FLEX – Version 1.5.1

NOTE: This is a WINDOWS program!

SYNTAX

(Uni)FLEX

DESCRIPTION

(Uni)FLEX.EXE will create a formatted Gotek IMA image
for the 6802 and 6809 FLEX.

```
It will ask for:     image name,
                     boot loader name,   < must contains 02 or 09 or UF
                                           in the filename and must be
                                            256  or 512 bytes long>
                   x volume name,
                   x volume number,
                   + sectors on track 0, <10 or 15>     (5” or 8”)
                   + sectors on track 1, 5” <10 or 18>  (SD or DD)
                                         8” <15 or 26>  (SD or DD)
                   + number tracks,      5” <35 or 40 or 80 or 81 … 255>
                                         8” <77 or 78 … 255>
                   + sides,              <1 or 2>
```

If the file size is not the calculated size the program stops with:
‘Build error’
‘File Size incorrect’.

After creating the image there will be a prompt
to optimize the interleave values on the CPU speed.

Then it will show the Gotek ‘IMG.CFG’ data.

OK – will ask save in an ‘image name.cfg’ file
and/or add it in an ‘IMG.CFG’ file.
EXIT – will leave the program.

The program has the options to just put a boot loader
it will skip the + and x prompts.

- Make a Shortcut and change the Target: (Uni)FLEX.exe "3"
  On an existing FLEX (Dens,SD,DD bytes are not set) / UniFLEX image.

- Make a Shortcut and change the Target: (Uni)FLEX.exe "5"
  It will read the FLEX SIR and put the correct bytes in the loader.

The program has the option to only generate the Gotek IMG.CFG data.

Make a Shortcut and change the Target: (Uni)FLEX.exe "4"
it will skip the x prompts.

Note:
- 5” image up to 255 tracks will work.
- 8” image Tracks > 77 only Single Sided !!!!

FORMAT5 – Version 5.2
FORMAT8 – Version 8.2

FLEX Floppy Disk formatter.

SYNTAX

FORMAT5,<drive>
FORMAT8,<drive>

DESCRIPTION

FORMAT5 will format a floppy disk or GoTek image and write a BOOT loader.
There are the following options:
35, 40, 80 tracks
Single/Double Sided
Single/Double Density

FORMAT8 will format a floppy disk or GoTek image and write a BOOT loader.
There are the following options:
77 tracks
Single/Double Sided
Single/Double Density

The formatter will give the message "Not a Floppy disk"
on an IDE or VIRTUAL disk number.

- If FLEX is booted on a version without the IDE drivers then all logical drive numbers can be formatted. Also if VIRTUAL is loaded and with SET the drives are swapped then there is no problem,
the formatter then uses both the logical and physical drive number.

- If FLEX is booted on the IDE driver then the formatter uses
both the logical and physical drive number.
Even if the drives are swapped with FRDIVES.

- If FLEX is booted on the IDE driver and VIRTUAL is loaded
the formatter works with logical and physical drive number.
Unless SET and/or FDRIVES is used to swap drives.
Then unload VIRTUAL with "SET <' then run FDRIVES and reload VIRTUAL.

Note:
FORMAT5 and FORMAT8 have been rewritten to work on the 16MHz CPU09CMI card and with the IDE/VIRTUAL driver and with PC/Straight cable.
But the PC cable is not an option because then only logical drive numbers 0 and 1 can be used.

SEE ALSO
FDRIVES, SET, (Uni)FLEX.EXE

IDEFMT – Version 6.1

FLEX IDE Disk formatter.

SYNTAX

IDEFMT,<drive>

DESCRIPTION

Format IDE logical drive.
Maximum track number = 255

When formatting logical drive 0 it will ask for writing the BOOT loader.
Formatting other partitions can be done
by swapping the partitions with FDRIVES.

Note:
IDE FMT does not format a floppy or virtual disk.

SEE ALSO
FDRIVES, PLIST

PDEL - Version 2

The PDEL command is a prompting delete utility. Either all files or only files matching a specified match list are displayed by name, one at a time, giving the option of deleting the file or keeping it. This command is very convenient for quickly removing a lot of no longer needed files from a disk.

SYNTAX

PDEL[,<drive list>][,<match list>]

DESCRIPTION

where drive list and match list are the same as described in the DIR command. Upon execution of PDEL, each file name will be printed at the terminal with the question of deleting it:

DELETE "FILE"?

At this time three responses are valid. If a 'N' is typed, the file will be left intact and the next name will be displayed. If a 'Y' 1s typed, that file will be deleted. This utility DOES NOT ask if you are sure you want the file deleted, so make sure the first time! A carriage return may also be typed in response to the prompt at which time control will return back to **FLEX**. An example follows:

+++**PDEL**, 1, .TXT

This command line would cause each file on drive 1 which has a TXT extension to be displayed and the delete option offered. Remember that once 'Y' has been typed to the prompt, that file is gone forever!

Note: Adapted from TSC FLEX1 Utilities.

SEE ALSO

DELETE

PLIST - Version 6.0

Show IDE drives information.

SYNTAX

PLIST

DESCRIPTION

It will show all the following data on the IDE device:

PART number VOL Name VOL Number Description

Then the program allows updating of this information.

"SPACE Bar - Exit, <CR> - Change Description, (M)ount, (K)ill, (U)ndo ? "

Note: A <CR> will leave the entry unchanged
Enter a single space to blank VOLNAM or Description

The program will check if de IDE driver is loaded.

RAMDSK

CPU09RAM memory page test.

SYNTAX

RAMDSK

DESCRIPTION

RAMDSK - Will show the switch setting.
Then the program will check if all pages are unique.
It will write and read each page full with a unique code.

```
+++RAMDSK
Switch setting: CB
Write chip: 01234567
Read  chip: 01234567
+++
```

Any RAMDSK Error looks like:

```
Read  chip: 012
Error at:
WRITE READ PAGE Chip
0803  0800 0003 U6
Read  chip: 34567
```

NOTE: It use FLEX calls and return to FLEX.

SEE ALSO

RAMDSK3, RDSKTST

RAMDSK3

CPU09RAM memory test.

SYNTAX

RAMDSK3

DESCRIPTION

RAMDSK - Will show the switch setting.
The first run will check if all pages are unique.
The second one will write all 0000 to the ram,
you can change the 0000 at $0142.
The third one will write all FFFF to the ram,
you can change the FFFF at $0157.

```
+++RAMDSK3
Switch setting: CB
   > Page select test <
Write chip: 01234567
Read  chip: 01234567
   > Write/read $0000 <
Write chip: 01234567
Read  chip: 01234567
   > Write/read $FFFF <
Write chip: 01234567
Read  chip: 01234567
+++
```

Any RAMDSK3 Error looks like:

```
  Read  chip: 012
  Error at:
  WRITE READ PAGE Chip
  0803  0800 0003 U6
  Read  chip: 34567
```

NOTE: It use FLEX calls and return to FLEX.

SEE ALSO

RAMDSK, RDSKTST

RBRDSK – Version 1.0

CPU09RAM disk memory test.

SYNTAX

RBRDSK

DESCRIPTION

This is a rotating bit memory test.
Each good test will print '+' on the screen.

Any RBRDSK Error looks like: Error at: 48CB ECAA

48CB is the address stored at $ED00 and $ED01.
ECAA is the address in the RAM space EC00-EDFF.

NOTE: It use FLEX calls and return to FLEX.

SEE ALSO

RBRDSKM

RBRDSKM – Version 1.0

CPU09RAM memory test.

SYNTAX

RBRDSKM

DESCRIPTION

This is a rotating bit memory test.
Each good test will print '+' on the screen.

Any RBRDSKM Error looks like: Error at: 48CB ECAA

48CB is the address stored at $ED00 and $ED01.
ECAA is the address in the RAM space EC00-EDFF.

NOTE: It use MONITOR calls and ends in the MONITOR.

SEE ALSO
RBRDSK

RDSKTST

CPU09RAM memory test.

SYNTAX

RDSKTST

DESCRIPTION

RDSKTST - Will show the switch setting.
The first run will check if all pages are unique.
The second one will write all 0000 to the ram,
you can change the 0000 at $0142.
The third one will write all FFFF to the ram,
you can change the FFFF at $0157.

```
+++RDSKTST
Switch setting: CB
   > Page select test <
Write chip: 01234567
Read  chip: 01234567
   > Write/read $0000 <
Write chip: 01234567
Read  chip: 01234567
   > Write/read $FFFF <
Write chip: 01234567
Read  chip: 01234567
cmi-bug 1.5 - 60k

>
```

Any RDSKTST Error looks like:

```
  Read  chip: 012
  Error at:
  WRITE READ PAGE Chip
  0803  0800 0003 U6
  Read  chip: 34567
```

NOTE: It use MONITOR calls and ends in the MONITOR.

SEE ALSO
RAMDSK, RAMDISK3

RWTST09

Floppy disk, GoTek image and VIRTUAL disk Read/Write test.

SYNTAX

RWTTST09

DESCRIPTION

Load the rwtst09.s1 file start $0100 or run it from FLEX.

Program prompts user for function (F?)
To witch the user can respond 'R' (READ)
or 'W' (WRITE).
Then it prompts for single digit drive number (D?),
Two digit HEX track number (T?)
And two digit HEX sector number (S?).

After performing the function,
test repeats the prompting for another function,
or a 'F' (Return to FLEX),
or a 'M' (Exit to monitor).

To read the boot loader from a GoTek images:

```
+++RWTST09
F?R
D?2
T?00
S?01

86 F1 20 09 61 00 00 00 0A 0A 0C 00 00 1F 8B 32
8D 03 2D A6 8C EE 85 20 26 06 A6 8C EC A7 8C E8
86 02 97 02 30 8D 00 D8 17 00 6A 26 48 EC 8C D5
10 27 00 DC 33 8D 02 C8 EF 8C D0 17 00 A3 81 02
27 12 81 16 26 F5 17 00 98 A7 E3 17 00 93 A7 61
4F 1F 8B 39 17 00 8A A7 E3 17 00 85 A7 61 35 20
17 00 7E 27 D6 1F 89 34 04 17 00 75 A7 A0 35 04
5A 26 F4 20 C6 30 8C 08 AD 9F F8 12 6E 9F F8 00
2D 20 43 61 6E 27 74 20 72 65 61 64 20 73 65 63
2E 32 0A 0A 04 86 8C 97 00 30 8D 01 63 20 04 96
03 A7 80 96 08 2B F8 27 FA D6 00 C5 9C 39 D7 02
E1 8D FF 54 34 01 E6 8D FF 4A 35 01 23 02 CA 10
D7 04 91 01 27 0A 97 03 86 1B 97 00 D6 08 27 FC
D6 00 C5 98 39 33 8D 01 27 EC C4 ED 8D FF 26 33
44 11 A3 8D FF 25 27 03 A6 C0 39 EC 8D FF 16 27
19 8D BB 17 FF 9F 27 DD 86 0B 97 00 8D CE 6A 8D

F?F
+++
```

NOTE:
This will not work on the IDE driver’s SD card, use DPACH.
FLEX must be loaded.

SET

Show - change floppy and virtual drives number and type.

SYNTAX

SET <options>

DESCRIPTION

Command is added by loading VIRTUAL driver.
Command for resetting drive type and local drive number
for each of the Floppy and Virtual drives.

```
 SET 0=V0 1=D0 2=D1 3=D2 ?
 NOTE ='S ,COMMAS, & SPACES ARE OPTIONAL AND IGNORED
 WILL EQUATE FLEX DRIVE 0 TO VIRTUAL DRIVE 0
                        1 TO REGULAR DISK DRIVE 0
                        3 TO REGULAR DISK DRIVE 1
                        4 TO REGULAR DISK DRIVE 2
 / - WILL SUPPRESS PRINT OF CURRENT STATUS

 < - WILL CLEAN UP THE VIRTUAL PROGRAM
      EG RESTORE MEMORY FOR FLEX.

 NOTE - SCAN STOPS AT FIRST ENCOUNTER OF <,/,<CR>

 "S" AND "W" WILL ASSIGN SYSTEM AND WORK DRIVES

 EG.
 IF S APPEARS BEFORE DISK ASSIGNMENT WILL SET SYS TO ALL
 IF S APPEARS AFTER DISK ASSIGNMENT WILL SET SYS TO THAT DRV
 SAME FOR W - WORK ASSIGNMENT

 +++SET S 0=V0
    WILL EQUATE THE SYSTEM DRIVE TO "ALL" AND
    EQUATE FLEX DRIVE 0 TO VIRTUAL DRIVE 0 AND PRINT

 +++SET 0=V0 S 3=W
    WILL EQUATE THE VIRTUAL DRIVE TO FLEX DRV0 AND
    EQUATE THE WORK DRIVE TO PREVIOUSLY DEFINED  FLEX #3 WITH NO PRINT

 +++SET
    WILL RESET THE PROCESSOR DP REGISTER TO 0 AND PRINT
```

NOTE:

```
     WHEN USING THE IDE DISK DRIVER, SET WILL SHOW A H0, H1 DRIVE
     DON'T USE SET TO CHANGE THE Hx DRIVES.
     THE VIRTUAL DISK WILL BE PUT ON THE HIGHEST LOGICAL NUMBER.
     DON'T USE FDRIVES TO CHANGE THE Dx AND OR V0 DRIVES AFTER
     THE VIRTUAL DRIVER IS LOADED.
```

SEE ALSO

VIRTUAL

SHOWDIR Version 2.0

Show Subdirectories.
Create script to copy subdirectories.

SYNTAX

SHOWDIR <drive>[[<dest>][<option>[-<start,end>][<prog>]]]

DESCRIPTION

Show numbered **.DIR** files on <drive> of 1 sector in size.

Option:
- A – Show all **.DIR** files on <drive>, no numbering.
- a – Show all **.DIR** files on <drive>, no numbering.
- E – Create EXEC script from <drive>, update existing subdirs.
- e – Create EXEC script from <drive>, copy subdirs.
  No error recovery, unlimited size.
- J – Create JCP script from <drive>, update existing subdirs.
- j – Create JCP script from <drive>, copy subdirs.
  Default destination drive=3,
  <dest> drive number will overrule.
  Some error traps, size limit for JCP ~15 subdirectories.

<start> – Number first subdirectory to put in script.
<end> – Number last subdirectory to put in script.

<prog> – Overrule both script copy commands put 8 character string.
'GCOPY ', 'N COPY ', 'Y COPY ', 'CP +DN '.
Defaults are: update = GCOPY, copy = COPY.

To make an EXEC script run:
O,<drive>DIR,SHOWDIR,<drive> <dest> e
Run then:
TTYSET PS=NO
EXEC <drive>DIR.OUT

To make a JCP script with first 5 subdirectories run:
O,<drive>DIR,SHOWDIR,<drive> <dest> j-1,5
Run then:
TTYSET PS=NO
JCP <drive>DIR.OUT

The script can be too big for JCP, default JCP buffer is ~1500 Kb.
Each .DIR entry is ~100 byte. Use option <start,end>.

Make sure the <dest> drive will fit all the subdirectories.
On a SD <source> the space N = (64770 – Free – Sectors + number DIR's).
So de <dest> must have N free sectors.

To delete a subdirectory,
first delete the files in the subdirectory itself, use PDEL.
This is to restore the freechain.
Only then delete the (1 sector) **.DIR** subdirectory.

SEE ALSO
COPY, ECHO, EXEC, GCOPY, JCP, PDEL

VDISK - Version 9.7

FLEX RAM disk formatter.

SYNTAX

VDISK

DESCRIPTION

When the virtual disk driver is loaded it can format the virtual disk(s).
If there is only one virtual drive it will format V0.
If there are 2 virtual drives it will ask the number to format:

0 = format V0
1 = format V1
A = format both

If the Format protection switch SW2-4 on the RAM card is on
VDISK will tell that, to overrule the protection type: Yes

If the Battery low switch SW1-1 is on or the 'UPS RAM' gives a low signal
VDISK will start automatically after loading the VIRTUAL driver.

NOTE:
The size of the Disk(s) will be set by VIRTUAL
depending on the RAM card DIP switch settings.

SEE ALSO
VIRTUAL

VIRTUAL – Version 9.7

FLEX Virtual Disk driver.

SYNTAX

VIRTUAL [,<drive>=W][,<drive>=S]

DESCRIPTION

VIRTUAL will scan the RAM card DIP switch settings
and set the data for VDISK.

+++VIRTUAL 3=W
Sets the virtual drive on FLEX drive 3 as work drive .

After first time loading VIRTUAL de drive(s) needs to be formatted,
when removing virtual with ‘SET <’ or a WARM FLEX boot only VIRTUAL has
to be loaded again.

Any COLD FLEX boot with the SYSTEM power on
or any COLD FLEX boot after a SYSTEM power off
but with a RAM card ‘UPS RAM’ needs only a VIRTUAL reload.

If the Battery low switch SW1-1 is on or the ‘UPS RAM’ gives a low signal
VDISK will start automatically after loading the VIRTUAL driver.

NOTE: On all non IDE disk drivers if SW2-2 = ON Virtual set:

Boot, 0=D0 1=D1 2=V0 3=V1

VIRTUAL will overrule the RAM DIP switch SW2-2 status
if the IDE disk driver is loaded:

Boot from IDE, 0=H0 1=H1 2=D2 3=V0
Boot from FLP, 0=D0 1=V0 2=H0 3=H1

SEE ALSO
SET, VDISK