mageco electronic

DISASSEMBLER

&

TOOLKIT

MAGECO ELECTRONIC

This toolkit is placed into RAM area at 12288 - 16383 decimal address space (3000 - 3FFF address space). This can not be used with only 16 KB of RAM extension. It was originally an add-on EPROM cartridge, so I placed the 4 KB of code in a BASIC REM line and created the loader program allowing to use the toolkit routines without the need of the cartridge. I've tested this solution on my true ZX81 with a 64 KB RAM extension and under the excellent last new implementation of the XTENDER ZX81 emulator.
The toolkit doesn't run properly on "first generation" XTENDER emulator because of keyboard routines / mapping used by the toolkit and not perfectly emulated by old XTENDER versions).

The original cartridge was developped by MAGECO ELECTRONIC (Paris -France) in the middle of ninety's.

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DISASSEMBLER

Monitor:

Type RAND USR 14330

At the C (consol) prompt :
- type in the first address in hexadecimal.
- Press « Z » or NEW/LINE to display next address.
- Press SPACE to exit the monitor to Basic prompt.

Real-time debugger:

Type RAND USR 15710

At the D (debug) prompt :
- type in the start address in hexadecimal.
- Press « Z » or NEW/LINE to display next jump address.

TOOLKIT

Display Z80 registers:

Type RAND USR 15698

Where :

HL = The HL register value. (16 bits)
DE = The DE register value. (16 bits)
BC = The BC register value. (16 bits)

A = The A register value. (8 bits)

F = The read-only F register value. (8 bits)
B7: « S » = Positive value if 1.
B6: « Z » = Value is equal 0 if 1..
B5: « ? » = Not Assigned.
B4: « H » = 4bits DCB carry.
B3: « ?» = Not Assigned.
B2: « P » = Parity or value overflow if 1.
B1: « N » = Negative value if 1.
B0: « C » = CARRY Flag.

(HL) = Indirect value pointed by the HL register value. (Return a 8 bits value)
(DE) = Indirect value pointed by the DE register value. (Return a 8 bits value)
(BC) = Indirect value pointed by the BC register value. (Return a 8 bits value)

Decimal to Hexadecimal:

Type RAND USR 15720

Type-in the decimal value « D » and press New/Line.
(Note: can't be use in a Basic line : LET A=USR 15720 , A result will be wrong.)

Display free memory:

Type PRINT USR 15731 or LET MEM=USR 15731

Generator (Auto-Type-in):

Type the line : 1 REM X
(a REM line with almost 1 character)

Now, type-in RAND USR 15805
At the D (decimal) prompt, enter the number of characters in your REM line.

Prefere using the RAND USR 15875 how is executed in the Fast mode.

Lines destroyer:

Type RAND USR 15641
At the D (decimal) prompt, enter the number of the first line to delete.
Next, enter the number of the last line.
All line between them will be destroyed.

1 REM
2 REM
3 REM
4 REM
5 REM

2 D
4 D

LIST
1 REM
5 REM

Decimal Poke (16bits):

Type RAND USR 15768
At the first D prompt, type in the target address in decimal.
Next, type in the decimal value.

Decimal Peek (16bits):

Type PRINT USR 15854
Type in the source address, it will return the decimal value located in Add and Add+1.
Result= Addpeek + 256*(Addpeek+1)

Modify the Ram-Top address:

Type PRINT USR 15742
And type in the new Ram-top address (Decimal value)

Reinit the Ram-Top address to 64k memory card:

Type PRINT USR 15856
Move the ramtop to get 32k instead of 16K.
Present Basic file will be preserved.

AY Driver:

(optional hardware)

Set POKE 16417,20 [0-255]
Type RAND USR 15793

Play several sound effect on son cards using the IORq $3F (Fuller compatibles cards)

```
15793  3A;21;40    LD A,($4021)      ; GET UNUSED-8
15796  D3;3F       OUT ($3F),A       ; 8 E-S CARD/Fuller Sound card
15798  DB;3F       IN A,($3F)        ; User port.
15800  CB;47       BIT 0,A
15802  28;FA       JR Z,-6           ; [$3DB6:15798]
15804  C9          RET
```

Screen scrolling:

UP : RAND USR 15269
RIGHT : RAND USR 15411
DOWN : RAND USR 15465
LEFT : RAND USR 15441

Left and right scrolls will copy the first (or the last) character to the opposite screen side.
In case of up and down scrolls, a blank line will be added.

Screen copy:

POKE 16417,2 [#lines:1-20]
RAND USR 15835

Display Basic variables:

RAND USR 16004

Program trimmer:

Type FAST
RAND USR 15921

The D_File will be collapsed and the basic variables deleted (like a CLEAR command).

Auto-repeat:

Type RAND USR 16235

Summary of commands:

Unless specified, all sub-routines are called by BASIC "RAND USR n" command
(where n is the decimal address of the routine to call).

Hex. address	Dec. address	Command name & description
37FA	**14330**	Z80 disassembler
3D52	**15698**	Display Z80 registers
3D5E	**15710**	Z80 step by step disassembler/debug facility
3D68	**15720**	Decimal / Hexadecimal converting
3D73	**15731**	Display free memory (call by PRINT USR)
3DBD	**15805**	Create BASIC "REM" lines of specified length (if in SLOW mode)
		(before that, please enter an empty BASIC REM line)
3E03	**15875**	Create BASIC "REM" lines of specified length (if in FAST mode)
		(before that, please enter an empty BASIC REM line)
3D19	**15641**	Delete BASIC lines
3D98	**15768**	DOKE
3DEE	**15854**	DEEK (call by PRINT USR)
3D7E	**15742**	Setup "RAMTOP" to specified address
3DFA	**15866**	Reset the 64 KB RAM extension
3DB1	**15793**	Vocal synthetizer (needs additional hardware !)
3BA5	**15269**	SCROLL UP
3C69	**15465**	SCROLL DOWN
3C33	**15411**	SCROLL RIGHT
3C51	**15441**	SCROLL LEFT

Hex. address	Dec. address	Command name & description
3DDB	**15835**	Print screen copy limited to a specified number of lines
		(before that, do a POKE 16417 , n)
3E84	**16004**	BASIC variables listing
3E31	**15921**	Modify "RAMTOP" value allowing shorter "SAVE"
		(doesn't include the screen buffer in "SAVE" procedure)
3F6B	**16235**	Setup the keyboard in "auto-repeat" : SUPER !!!
		(each BASIC line entry by "NEW-LINE" stops the auto-repeat...)