

# ZEUS MONITOR Mar. 2022

## 8-BIT HOBBY COMPUTER BOOTSTRAP CODE

### Bootup

At the bootup the Monitor

- copies memory block \$0000-\$3000 from bank F (EEPROM) to address \$8000 (highmem);
- counts number of memory banks in the system and enumerates them (address \$0007) then the number of banks is typed at bottom right display corner;
- jumps to \$8000, configures system, switches to bank E and initiates it (writes reboot jump command to address \$0000);
- enters HALT mode and awaits for interrupt.

### List of commands

>clr

Fills most of TFT screen (everything except command line) with background color.

>dump (source)

Dumps on TFT screen 0x70 bytes starting from specified source memory address.

>send (source) (bytes)

Sends to UART specified number of bytes starting from specified source memory address.

>load (dest) (byte1) (byte2)...

Writes specified byte set to specified destination memory address.

>move (dest) (source) (bytes)

Copies data block of specified number of bytes from source memory address to destination memory address.

>jump (dest)

Sets Program Counter register (jumps) to specified memory address.

>exec (dest)

Executes specified byte set ended with 0xC9 (RET instruction).

>sysl (nibble)

Sets system register low nibble value. Doesn't affect system register high nibble value. The command is intended for memory bank switching. Right after bank switch this new bank is initiated by writing corresponding jump instruction to address \$0000 (in order to keep RESET function operational).

Take it into consideration before closing EEPROM write enable jumper on the MEM module or else your EEPROM becomes unbootable after power off. So close the jumper ONLY after "sysl f" command or you have to fix the jump address with use of LOAD command before power off.

>sysh (nibble)

Sets system register high nibble value. Doesn't affect system register low nibble value. The command is intended for sys reg bits control with no impact on memory bank switching.

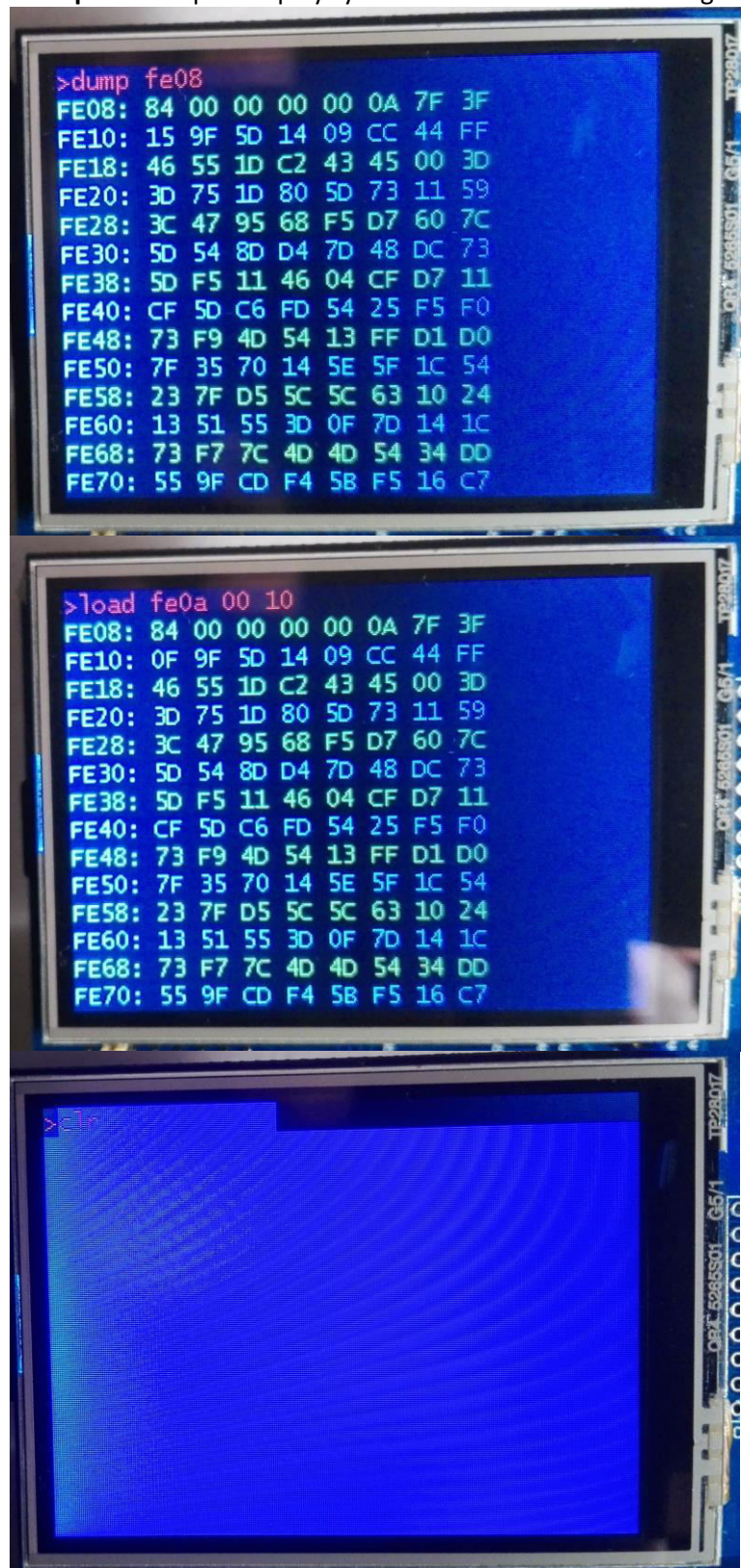
>out (port) (value)

Outputs specified byte value to specified IO port.

**>crc7 (byte1) (byte2)**

Calculates crc7 sum augmented with bit0 = 1 (check SD phys layer specs) for specified byte set.  
By default saves the byte set (the message) ended with calculated crc7 byte to \$0100.

**Example 1** Dump to display system variables block and change background color.



**Example 2** Load a data block to free memory address and output it to UART, then jump to bootup address.





**Example 3** Calculate crc7 sum of a message and dump it to display.

