ZEUS MONITOR Nov. 2021

8-BIT HOBBY COMPUTER BOOTSTRAP CODE

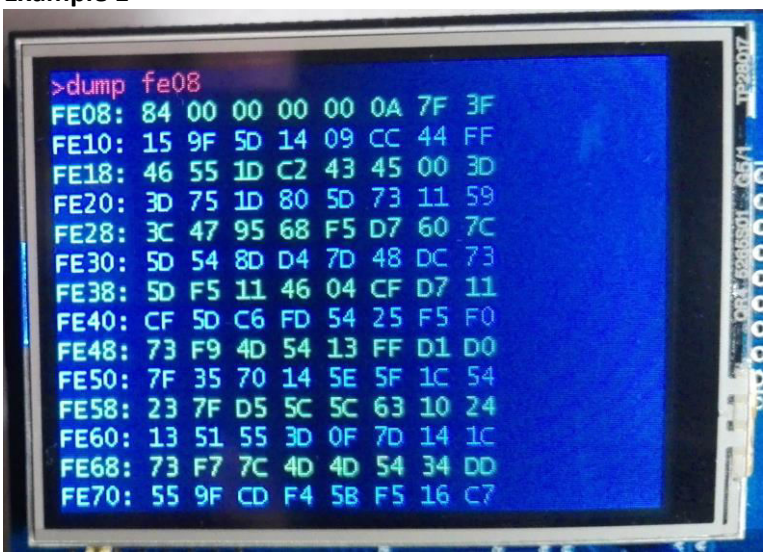
Bootup

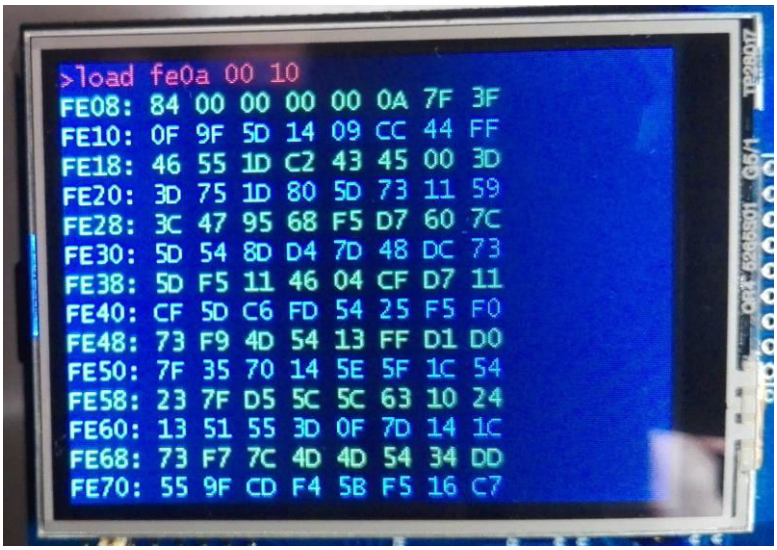
At the bootup the Monitor copies memory block $0000-$3000 from bank F (EEPROM) to address $8000 (highmem), than jumps to $8000 and switches to bank E.

List of commands

- >clr
  Fills most of TFT screen with background color.
- >dump
  Dumps on TFT screen 0x70 bytes starting from specified memory address.
- >send
  Sends to UART specified amount of bytes starting from specified memory address.
- >sysr
  Sets system register value. Low nibble of sys reg is used by mem128 module for bank switching.
- >load
  Writes specified byte set starting from specified memory address.
- >jump
  Sets Program Counter register (jumps) to specified memory address.
- >exec
  Executes specified byte set ended with 0xC9 (RET instruction).
- >crc7
  Calculates crc7 sum augmented with bit0 = 1 (check SD phys layer specs) for specified byte set.

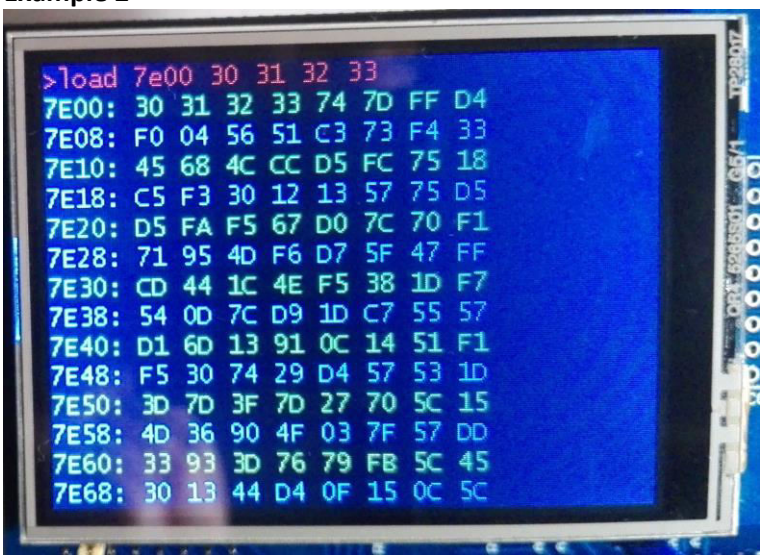
Example 1

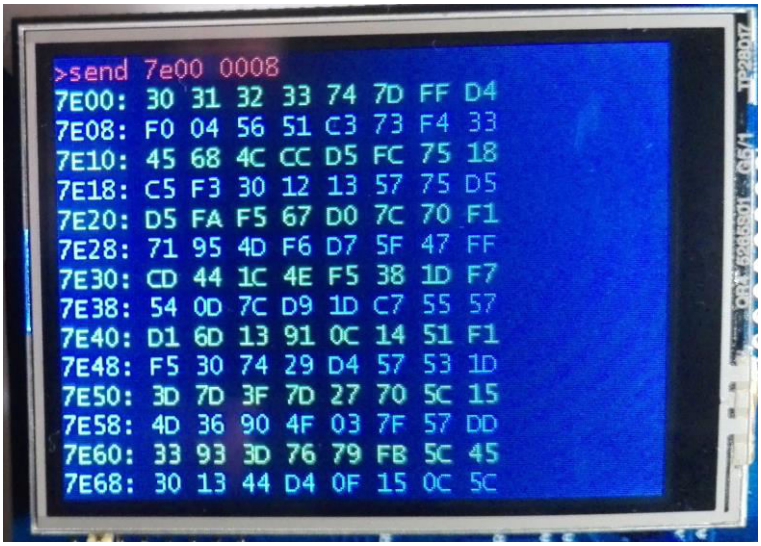

>dump fe08
FE08: 84 00 00 00 00 0A 7F 3F
FE10: 15 9F 5D 14 09 CC 44 FF
FE18: 46 55 1D C2 43 45 00 3D
FE20: 3D 75 1D 80 5D 73 11 59
FE28: 3C 47 95 68 F5 D7 60 7C
FE30: 5D 54 8D D4 7D 48 DC 73
FE38: 5D F5 11 46 04 CF D7 11
FE40: CF 5D C6 FD 54 25 F5 F0
FE48: 73 F9 4D 54 13 FF D1 D0
FE50: 7F 35 70 14 5E 5F 1C 54
FE58: 23 7F D5 5C 5C 63 10 24
FE60: 13 51 55 3D 0F 7D 14 1C
FE68: 73 F7 7C 4D 4D 54 34 DD
FE70: 55 9F CD F4 5B F5 16 C7


>load fe0a 00 10
FE08: 84 00 00 00 00 0A 7F 3F
FE10: 0F 9F 5D 14 09 CC 44 FF
FE18: 46 55 1D C2 43 45 00 3D
FE20: 3D 75 1D 80 5D 73 11 59
FE28: 3C 47 95 68 F5 D7 60 7C
FE30: 5D 54 8D D4 7D 48 DC 73
FE38: 5D F5 11 46 04 CF D7 11
FE40: CF 5D C6 FD 54 25 F5 F0
FE48: 73 F9 4D 54 13 FF D1 D0
FE50: 7F 35 70 14 5E 5F 1C 54
FE58: 23 7F D5 5C 5C 63 10 24
FE60: 13 51 55 3D 0F 7D 14 1C
FE68: 73 F7 7C 4D 4D 54 34 DD
FE70: 55 9F CD F4 5B F5 16 C7

>clr

Example 2

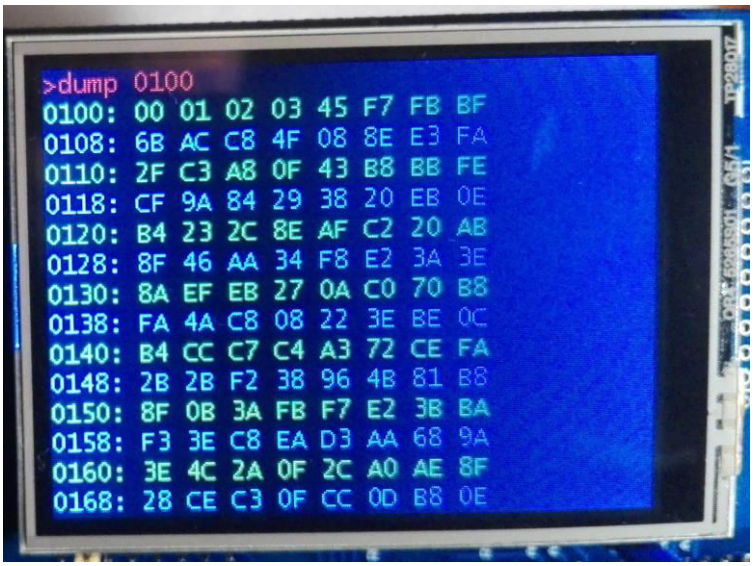

>load 7e00 30 31 32 33
7E00: 30 31 32 33 74 7D FF D4
7E08: F0 04 56 51 C3 73 F4 33
7E10: 45 68 4C CC D5 FC 75 18
7E18: C5 F3 30 12 13 57 75 D5
7E20: D5 FA F5 67 D0 7C 70 F1
7E28: 71 95 4D F6 D7 5F 47 FF
7E30: CD 44 1C 4E F5 38 1D F7
7E38: 54 0D 7C D9 1D C7 55 57
7E40: D1 6D 13 91 0C 14 51 F1
7E48: F5 30 74 29 D4 57 53 1D
7E50: 3D 7D 3F 7D 27 70 5C 15
7E58: 4D 36 90 4F 03 7F 57 DD
7E60: 33 93 3D 76 79 FB 5C 45
7E68: 30 13 44 D4 0F 15 0C 5C


>send 7e00 0008
7E00: 30 31 32 33 74 7D FF D4
7E08: F0 04 56 51 C3 73 F4 33
7E10: 45 68 4C CC D5 FC 75 18
7E18: C5 F3 30 12 13 57 75 D5
7E20: D5 FA F5 67 D0 7C 70 F1
7E28: 71 95 4D F6 D7 5F 47 FF
7E30: CD 44 1C 4E F5 38 1D F7
7E38: 54 0D 7C D9 1D C7 55 57
7E40: D1 6D 13 91 0C 14 51 F1
7E48: F5 30 74 29 D4 57 53 1D
7E50: 3D 7D 3F 7D 27 70 5C 15
7E58: 4D 36 90 4F 03 7F 57 DD
7E60: 33 93 3D 76 79 FB 5C 45
7E68: 30 13 44 D4 0F 15 0C 5C

>jump a000
7E00: 30 31 32 33 74 7D FF D4
7E08: F0 04 56 51 C3 73 F4 33
7E10: 45 68 4C CC D5 FC 75 18
7E18: C5 F3 30 12 13 57 75 D5
7E20: D5 FA F5 67 D0 7C 70 F1
7E28: 71 95 4D F6 D7 5F 47 FF
7E30: CD 44 1C 4E F5 38 1D F7
7E38: 54 0D 7C D9 1D C7 55 57
7E40: D1 6D 13 91 0C 14 51 F1
7E48: F5 30 74 29 D4 57 53 1D
7E50: 3D 7D 3F 7D 27 70 5C 15
7E58: 4D 36 90 4F 03 7F 57 DD
7E60: 33 93 3D 76 79 FB 5C 45
7E68: 30 13 44 D4 0F 15 0C 5C

Example 3

>crc7 00 01 02 03
45


>dump 0100
0100: 00 01 02 03 45 F7 FB BF
0108: 6B AC C8 4F 08 8E E3 FA
0110: 2F C3 A8 0F 43 B8 BB FE
0118: CF 9A 84 29 38 20 EB 0E
0120: B4 23 2C 8E AF C2 20 AB
0128: 8F 46 AA 34 F8 E2 3A 3E
0130: 8A EF EB 27 0A C0 70 B8
0138: FA 4A C8 08 22 3E BE 0C
0140: B4 CC C7 C4 A3 72 CE FA
0148: 2B 2B F2 38 96 4B 81 B8
0150: 8F 0B 3A FB F7 E2 3B BA
0158: F3 3E C8 EA D3 AA 68 9A
0160: 3E 4C 2A 0F 2C A0 AE 8F
0168: 28 CE C3 0F CC 0D B8 0E