EEPROM-Programmer Instructions:

OPCODE Byte:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 7 Bit | 6 Bit | 5 Bit | 4 Bit | 3Bit | 2 Bit | 1 Bit | 0 Bit |
| OPCODE | 0 | 0 | 0 | 0 | 0 | L/H | R | W |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| MODE | L/H | R | W | Description |
| 1 | 0 | 0 | 1 | Enable write mode |
| 2 | 0 | 1 | 0 | Set lower read address |
| 4 | 1 | 0 | 0 | Start read operation |
| 6 | 1 | 1 | 0 | Set top read address |

ACK Byte (hex 0x55)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 7 Bit | 6 Bit | 5 Bit | 4 Bit | 3Bit | 2 Bit | 1 Bit | 0 Bit |
| ACK | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |

XON Byte (hex 0x11)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 7 Bit | 6 Bit | 5 Bit | 4 Bit | 3Bit | 2 Bit | 1 Bit | 0 Bit |
| XON | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |

XOFF Byte (hex 0x13)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 7 Bit | 6 Bit | 5 Bit | 4 Bit | 3Bit | 2 Bit | 1 Bit | 0 Bit |
| XOFF | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |

ESCAPE Byte (hex 0x0F)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 7 Bit | 6 Bit | 5 Bit | 4 Bit | 3Bit | 2 Bit | 1 Bit | 0 Bit |
| ESC | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 |

**Special Byte usage:**

ACK – confirms successfull command excecution

XON/XOF – serial flow control

ESC – escape special byte -> next received byte is inverted

**Command Structure**

3 bytes form a valid command:

* Read settings: 1 Byte OPCODE + 2 address bytes (HIGHBYTE first)
* Start read/write: OPCODE + null bytes for padding
* Write value: 2 address bytes (first highbyte) + 1 data byte (8 bit value)
* End write: 0xFF + 2 bytes padding