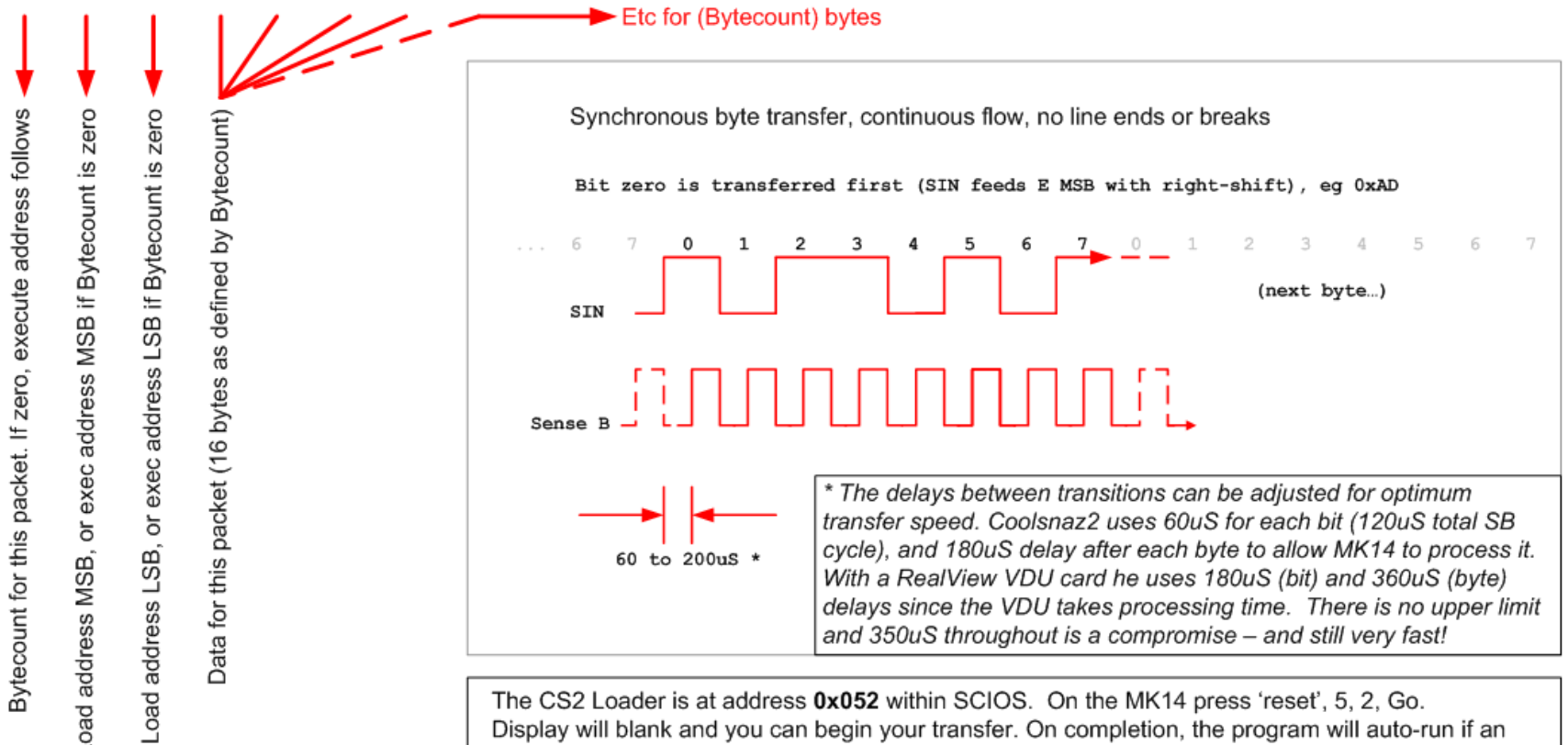
**CS2 Fast-Loader Protocol by Coolsnaz2, as used in SCIOSv3 on the Science of Cambridge MK14 computer.**

For every byte transferred, each bit (b0 to b7) is presented in sequence on the SC/MP SIN input and clocked with a rise on Sense B.
To allow SC/MP processing time, use delays of minimum 60uS between all bit transitions – no upper limit but speed will decrease (**see note below*)
Each packet is a number of bytes of data (typically 16) plus bytecount and addressing, and packets are contiguous, no line ends or formatting
The format is similar to Intel Hex, but omits the record-type and checksum fields. Note that CS2 is a binary stream of bytes, not ascii text.
Transmitted data sequence is:
Byte 1 - number of bytes in packet, typically up to 16 data bytes, or zero signals 'End of File' and that the execute address follows.
Byte 2 - High byte of load address, or, if number of bytes is zero, High byte of execute address
Byte 3 - Low byte of load address, or, if number of bytes is zero, Low byte of execute address
Byte 4 onwards - Packet data (say 1 to 16 bytes, as specified by bytecount)
Note the loader decrements the execution address before starting so you don't need to compensate for the SC/MP's PC

A typical file, loading at 0F20-0F3F & with an exec address of 0F20 looks like this (remember this is a binary stream, not text like Intel Hex):

```
0x10, 0x0F, 0x20, 0x00, 0x11, 0x22, 0x33, 0x44, 0x55, 0x66, 0x77, 0x88, 0x99, 0xaa, 0xbb, 0xcc, 0xdd, 0xee, 0xff
0x10, 0x0F, 0x30, 0x10, 0x11, 0x12, 0x13, 0x14, 0x15, 0x16, 0x17, 0x18, 0x19, 0x1a, 0x1b, 0x1c, 0x1d, 0x1e, 0x1f
0x00, 0x0F, 0x20
```




The CS2 Loader is at address **0x052** within SCIOS. On the MK14 press 'reset', 5, 2, Go.
Display will blank and you can begin your transfer. On completion, the program will auto-run if an address is provided by the sending device, otherwise press reset, enter start address and "Go".

Phil_G 20/Aug/2023