

Intel Hex Record format

Data Record: ':nnaaattddddd...cc<cr><lf>'

<u>Field</u>	<u>Contents</u>
:	ASCII colon indicates start of data record
nn	Count of number of data bytes in record
aaaa	Load address of data record.
tt	Record type (00-Data, 01-End of file)
dd	Actual data bytes in record (two ASCII characters per data byte)

cc checksum of count, address, and data

<cr> ASCII carriage return character.

<lf> ASCII line feed character (0A hex, 10 decimal)

Note 1: The checksum is computed as the two's complement of the eight bit sum of all values from 'nn' to the end of data (last 'dd' byte).

Note 2: The end of file record contains a count of 00 and address of 0000h

Motorola S-Record format

Data Record: 'Snnraaaaddddddd...cc<cr><lf>'

<u>Field</u>	<u>Contents</u>
S	ASCII 'S' indicates start of data record
t	Record type, '1', '2', '3' = data, '9' = end of file
nn	Count of number of bytes in record.
aaaa	Load address of data record.
dd	Actual data bytes in record
cc	checksum of count, address and data
<cr>	ASCII carriage return character (0D hex)
<lf>	ASCII line feed character.

Note 1: The checksum is computed as the one's complement of the eight bit sum of all values from 'nn' to the end of data (last 'dd' byte).

Note 2: Count 'nn' is three greater than the number of data byte in the record, since two bytes of address and one byte of checksum are included in the count.

Note 3: The end of file record contains a count of 3 and address of 0000h.