Revision **0**

1. Create a MIF file that will contain the memory contents you want programmed to the Flash ROM. This example is called "rom_1kx8_data.mif" and can be created with a text editor in Quartus or other text editiors (i.e., Notepad, emacs, etc.). This file is shown in Figure 1. Note that you can use any base you want (BIN, DEC, HEX or OCT) in the MIF file. The DEPTH is the number of addresses (memory words) in the ROM and the WIDTH is the size of the data bus (the number of data bits per word). This example has 16 locations with zeros, 7 different data values and then $FF for the remaining locations.

```
DEPTH = 1024;   % Memory depth and width are required %
WIDTH = 8;      %   Enter decimal numbers for each    %

ADDRESS_RADIX = HEX;   % Address and value radixes are optional   %
DATA_RADIX = HEX;      % Enter BIN, DEC, HEX, or OCT; unless       %
                       % otherwise specified, radixes = HEX        %

-- Specify values for addresses, which can be single address or range

CONTENT
BEGIN

[0..F]     :    0;    % First 16 values are zero %
10         :    33;   % Single address data %
11         :    5C;   % Addr[11] = 5C %
12         :    99;
13         :    A1;   % Addr[13] = A1 %
14         :    B2;
15         :    C3;
16         :    D4;   % Addr[16] = D4 %
[17..3FF] :    FF;   % remaining locations are FF %
END ;                 % You must have END statement! %
```

Figure 1: Example MIF file.

2. You can also create a MIF file by selecting "File | New | Memory Files | Memory Initialization File".

   a. Then you must supply the "Number of Words" and the "Word Size". These are 1024 and 8, respectively, in our example.

   b. A table will now appear. You can enter your data directly in this table. All data in this table must use base 10 (unsigned decimal).

   c. Figure 2 shows the results of using or creating the rom_1kx8_data.mif file with a text editor and then opening it in Quartus.

   d. I suggest that you open MIF files in the format shown in Figure 1, not Figure 2. To do this, in the select "Text" in the "Open as" box.

Addr	+0	+1	+2	+3	+4	+5	+6	+7	ASCII
0	0	0	0	0	0	0	0	0	....
8	0	0	0	0	0	0	0	0	....
16	0	0	0	0	0	0	0	0	....
24	0	0	0	0	0	0	0	0	....
32	0	0	0	0	0	0	0	0	....
40	0	0	0	0	0	0	0	0	....
48	0	0	0	0	0	0	0	0	....

Figure 2: Example MIF file.