MIF File

Last updated 7/21/23

MIF File

- Setting ROM values using a MIF file
  - Only works for inferred ROM
  - Create a signal of your ROM type
  - Set 2 attributes

    ATTRIBUTE ram_init_file: string;

    ATTRIBUTE ram_init_file of your_signal: signal is “name_of_MIF_file”;
  - Place the MIF file in your project

MIF File

- MIF File Format
  - Saved as my_file.mif

```
--  comment line
--

WIDTH=8;        -- word width
DEPTH=256;      -- number of words

ADDRESS_RADIX=HEX;
DATA_RADIX=HEX;

CONTENT BEGIN
                000  :  0C;
                001  :  1E;
                [002..003]  :  33;
                004  :  3F;
                [005..006]  :  33;
                007  :  00;
                008  :  3F;
                [009..00A]  :  66;
                00B  :  3E;
                [00C..00D]  :  66;
                00E  :  3F;
                00F  :  00;
                010  :  3C;
```

Options are:
- BIN
- OCT
- HEX
- DEC (signed decimal)
- UNS (unsigned decimal)

Unspecified addresses are assigned the value 0

MIF File

- Addressing options

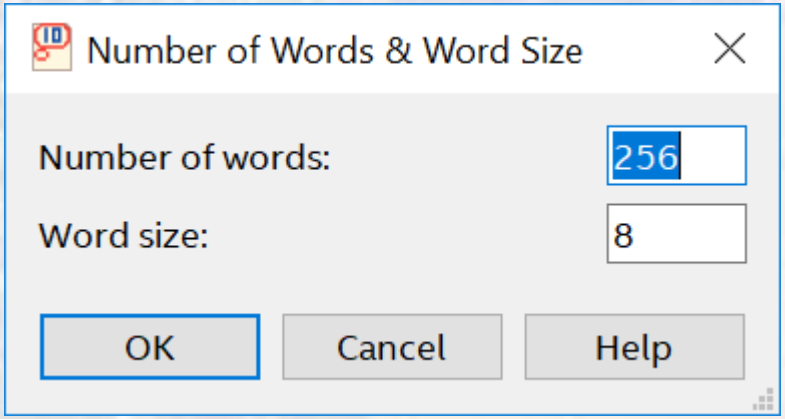
Address : Data Pairs Syntax Rules	Definition	Example
`A : D`	`Addr[A] = D`	`2 : 4` Address: `01234567` Data: `00400000`
`[A0..A1] : D`	`Addr[A0]` to `[A1]` contain data `D`	`[0..7] : 6` Address: `01234567` Data: `66666666`

`[A0..A1] : D0 D1`	`Addr[A0] = D0,`
	`Addr[A0+1] = D1,`
	`Add [A0+2] = D0,`
	`Addr[A0+3] = D1,`
	`until A0+n = A1`
		`[0..7] : 5 6`
		Address: `01234567`
		Data: `56565656`

`A : D0 D1 D2`	`Addr[A] = D0,`
	`Addr[A+1] = D1,`
	`Addr[A+2] = D2`
		`2 : 4 5 6`
		Address: `01234567`
		Data: `00456000`

MIF File

- Quartus created file
  - File → New → Memory Initialization File
  - Edit the values on the screen



Addı	+0	+1	+2	+3	+4	+5	+6	+7	ASCII
0	0	3	5	7	9	11	13	15	.....
8	17	19	21	23	25	27	29	31	.....
16	33	35	37	39	41	0	0	0	!#%')...
24	0	0	0	0	0	0	0	0	.....
32	0	25	0	0	23	0	0	0	.....
40	0	0	0	0	0	0	0	0	.....
48	0	0	0	0	0	0	0	0	.....
56	0	0	0	0	0	0	0	0	.....
64	0	0	0	0	0	0	0	0	.....
72	0	0	0	0	0	0	0	0	.....
80	0	0	0	0	0	0	0	0	.....
88	0	0	0	0	0	0	0	0	.....
96	0	0	0	0	0	0	0	0	.....
104	0	0	0	0	0	0	0	0	.....
112	0	0	0	0	0	0	0	0	.....
120	0	0	0	0	0	0	0	0	.....

MIF File

- Quartus created file
  - Right click in the memory table and select Custom Fill Cells