
TN8000.23

Technical Note

***Converting an .axe binary file to a .bin, a
.hex or a .rom file for industrial
programmers***

Table of Contents

1	Introduction	3
2	axe2rom	3
3	Double speed products	3
4	axe2rom usage	4
5	Using Phyton ChipProg+	4
6	Converting an .axe file to a Standard/Extended Intel .hex file	4

1 INTRODUCTION

The development tools for XE8000 generate a binary file as output file for programming; the file extension is either *.axe for Raisonance RIDE or *.bin for Phytion Project-XE.

Note *.axe is equivalent to *.bin

As some industrial programmers such as BPMicro BP-XXX need a ROM file, this technical note explains how to do the conversion from binary format to ROM format.

Note: When you use Phytion ChipProg+ or RIDE and the XELoader to program with an XE8000MP this utility is not needed.

2 AXE2ROM

The utility axe2rom.exe performs the following gnu commands on the binary files:

```
c816-objcopy.exe <file>.axe -target = <file>.srec  
c816-srec2rom.exe <file>.srec -prog -o <file>.rom
```

3 DOUBLE SPEED PRODUCTS

For the products like the XE8807A and the XE8802A, in 4kInstruction mode, the useful memory is 4k instructions but physically the whole flash array is used, the instructions are read in parallel.

The axe2rom.exe utility performs one more action that consists of doubling the code. See the example below with a 3 instruction code:

```
0000 0033FFFB <- First line of your code  
0001 0033F82C  
0002 0033F82C  
0003 00000000  
...  
...  
0ffe 00000000  
0fff 00000000  
1000 0033FFFB <- First line of your code (copied)  
1001 0033F82C  
1002 0033F82C
```

The code of the line 0000h is copied to line 1000h (4096d).

Both lines are read at the same time when the microcontroller is used in double speed mode.

4 AXE2ROM USAGE

The utility `axe2rom.exe` is a command line executable see the usage instruction below:

```
C:\SEMTECH>axe2rom
Usage: axe2rom [-t target_name] | [input_file] |
Converts a binary file (*.axe or *.bin) to *.rom
-h                : Display this information.
-t target_name    : Specifies the target chip to be programmed
List of possible targets (please respect the syntax):
xe88LC01a, xe88LC02-4kI, xe88LC02-8kI, xe88LC03, xe88LC05a
xe88LC06a, xe88LC07a, xe1283-4kI, xe1283-8kI,
input_file       : Input file to convert in *.rom
                  Input file formats : *.axe, *.bin
***              axe2rom Version V 1.0 Release date Dec 20 2004              ***
Copyright (c) 1997-2004, XEMICS SA, Monruz 2, CH-2000 Neuchatel, Switzerland
C:\SEMTECH >
```

Converting an `*.axe` file to an `*.rom` file is as follow:

```
C:\SEMTECH >axe2rom -t xe88lc02-4ki file.axe
Generated file : file.rom (2305 instructions)
C:\SEMTECH >
```

5 USING PHYTON CHIPPROG+

The Phyton ChipProg+ uses binary images, in order to use a `*.axe` file the user can either change the file extension from `*.axe` to `*.bin` or select the axe file using the filter `*.*`

Note: To avoid errors during the checksum, set 2Mb buffer size in "Configure | Buffers | Edit" dialog of ChipProg+

6 CONVERTING AN .AXE FILE TO A STANDARD/EXTENDED INTEL .HEX FILE

As explained in section 1, development tools for XE8000 generate a Raisonance `.axe` binary file. To convert this `.axe` file into Standard/Extended Intel `.hex`, just call this Raisonance RIDE utility.

```
C:\RIDE\BIN>c816-objcopy file.axe --target=ihex file.hex
C:\RIDE\BIN>
```

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