

Application Note AN-0019

Installing Quartz Product Firmware

Introduction

Most Quartz products have internal software, often referred to as firmware, and this can take two forms:

- Microprocessor software
- Programmable Hardware

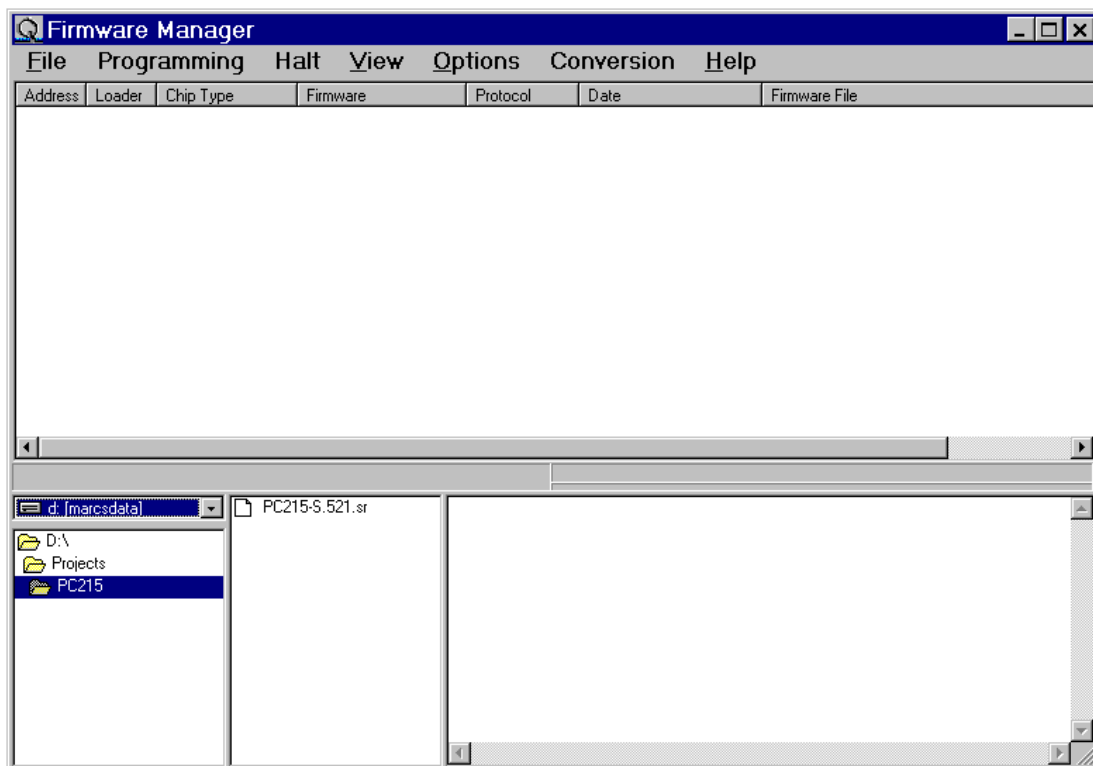
Microprocessor firmware is nearly always stored in a Flash memory chip. Flash memory can be erased electronically and then re-programmed, while installed in a product.

The programmable logic is normally a Field Programmable Gate Array (FPGA) and the firmware is stored directly into the FPGA or stored in a memory chip external to the FPGA.

Firmware Manager

From January 2000 all Quartz control panels used Flash memory to store the operational firmware, and from August 2000 all Quartz routers also used Flash memory. The use of Flash allows firmware updates to be made by transferring firmware from a PC to the master router and then on to all other routers and panels on the Q-Link. The PC based software that controls this process is called Firmware Manager.

The main Firmware Manager dialog is shown below.



Appendix A: Older Product with EPROM

To program downloaded firmware into an EPROM device, follow this sequence:

- 1) Purchase some EPROM devices. These should be the same parts are currently used in the product but check with the factory if you find can only find alternative parts.
- 2) Unzip the file, to get the Motorola S record or Intel hex format files.
- 3) Place a blank EPROM into your programmer.
- 4) Read in the blank EPROM. This stage is important as it fills the programmer memory with 0xFF, which is the simplest way to get the correct EPROM checksum at the end of the process.
- 5) Set the programmer for either Motorola S record or Intel Hex format. Motorola S record if using the FU-0003 or PU-0006 PCB's, Intel Hex for older NEC processor based products such as the FU-0001.
- 6) Read the required unzipped file into the EPROM programmer.
- 7) Program the EPROM.