Chapter 1 - INTRODUCTION

This user's manual describes the operation of the RTD EFM104HR embedded modem module designed for industrial, telemetry and security applications.

Features

Some of the key features of the EFM104HR include:

- Low power MT5634SMI-ITP 56K Data/Fax modem
- UL 1950, FCC part 68, CS03 and EN60950 approved
- 14.4K Class 1 and 2 fax services
- Industry standard AT-style commands
- 16C550 UART interface to host computer
- Supports COM1,COM2,COM3,COM4 or COMx
- Available IRQ's 2,5,6,7,10,11,12,14,15
- Status LED's for DTR,CTS, TXD and RXD
- 16 TTL I/O's 8 outputs, 8 inputs with 10K pull down
- +5V only operation, 1W power consumption
- Wide operating temperature range –40 to + 85C
- Fully PC/104 compliant, IDAN versions available

The following paragraphs briefly describe the major features of the EFM104HR. A more detailed discussion is included in Chapter 4 (Hardware description). The board's installation is described in Chapter 2 (Board Installation).

Data/Fax modem

The Real Time Devices EFM104HR embedded data and fax modem provides a direct and reliable connection to proprietary or public wired telephone systems for data and/or data communication. The MT ModemModule complies with telecom requirements in the areas of US, Canada and the EU.

The EFM104HR uses the Multi-Tech MT5635SMI-ITP industrial temperature range modem module. This includes a Lucent Venus controller + DSP and the Lucent 1034CSP codec. It also includes a 4M Flash and 32Kx16 SRAM for V.90/K56flex modem operation and V.17 Class 1 and Class 2 Fax.

16C550 compatible UART

Communication to the ModemModule is performed through a standard UART channel. This onboard serial port leaves the other system serial ports free for the user. All operating systems will recognize and support this 16C550 standard UART, and therefore no special communication drivers are needed to receive data from your modem. Commercial K56flex modem drivers will work correctly. The address and interrupt of your serial channel can be changed with the onboard jumpers.

I/O interfaces

The EFM104HR can be controlled and monitored from the software through two dedicated I/O registers. A special I/O connector is available for the user to connect to the general-purpose TTL level digital I/O. The control registers are located in the I/O area of BASE+400h.

Mechanical description

The EFM104HR is designed on a PC/104 form factor. An easy mechanical interface to both PC/104 and RTD IDAN systems can be achieved. Stack your EFM104HR directly on a PC/104 compatible CPU module using the onboard mounting holes and standoffs.

Connector description

The Line interface uses a RJ11 standard modem jack interface. Connect your phone cable directly to this connector, or use a short cable inside your enclosure to connect to a feed through connector to allow connection of the antenna to the wall of your enclosure. All general digital I/O connections are made using header type terminals.

What comes with your board

Your EFM104HR package contains the following items:

- EFM104HR board
- Companion CD with Manual and Drivers

Note: Device drivers and example software available on the internet

If any item is missing or damaged, please contact RTD Embedded Technologies.