

# CPU Module

For the MOSCAD RTU

The CPU module is the core of the MOSCAD RTU. The module contains the operating system code, provides RAM for run-time variables and historical data, and provides FLASH memory for the Application Program.



## FEATURES/BENEFITS

### CPU is a Computer

The CPU module as a computer: it has RAM and ROM memory, a fully-functional and fast processor, a real-time clock, and serial data I/O ports.

- ◆ It can be programmed to:
  - Accomplish the familiar Programmable Logic Controller (PLC) tasks.
  - Be an interface among existing data devices thereby constructing a single data system.
  - Use a multiplicity of communications media when constructing that single data system.
  - Perform many more functions.

### Ladder Logic

The MOSCAD CPU is programmed by using an advanced version of the familiar Ladder Logic language. The programming ToolBox is a collection of software programs that facilitates this task.

- ◆ The logic variables are defined according to the needs and wants of the system and programmer.
- ◆ The individual logic statements are coded by using the powerful coding icons.
- ◆ The I/O variables are linked to physical I/O points.
- ◆ The entire code structure is compiled into the exact same PROM code that would be created by a Pascal or C programming language compiler.

### C-language Programming

The C programming language may be used to code functions and routines which may be compiled and downloaded into the CPU module.

- ◆ Existing C-language functions may be reused in the MOSCAD CPU or new functions created.

Programming techniques supported by the C-language may be used in the MOSCAD CPU.

### Data I/O

The Application Program may take advantage of the two on-module RS-232 ports and the communication port. Smart sensors with RS-232 I/O may be connected directly. Data to/from other sites may be communicated via two-way radio or by traditional wireline modem technologies.

- ◆ These are additional ways to move data to/from the CPU and the resident Application.

### Communications Protocol

The communications protocol was specifically developed for two-way radio communications. It conforms to the ISO Open System of Interconnection recommendation (all seven layers) and permits remote-to-central and direct peer-to-peer communications.

- ◆ The packet-type protocol permits:
  - Operating data to be moved from any RTU to any other unit in the system.
  - The programming ToolBox at any RTU to download the appropriate Application Program to any other RTU in the system.
  - The programming ToolBox at any RTU to upload the diagnostic files from any other RTU in the system; and more.All this happens quickly and efficiently, by wirelines or by two-way radio.

### Third-Party Protocols

The CPU module may use some third-party protocol for its communication needs. These protocols include MODBUS, X 25, and others.

- ◆ Systems may be created by using products from a multiplicity of manufacturers.



**MOTOROLA**

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### SPECIFICATIONS

#### GENERAL SPECIFICATIONS

<b>Order</b>	Series 400: Plant installed: standard; Spare: F6936 Math Coprocessor: Plant installed: V445; field installed: FRN5670 1.2 MB RAM: Plant installed: V449; field installed: FRN5671 1.2 MB RAM and Math Coprocessor: Plant installed: V446; field installed: FRN5672
<b>Clock/Memory</b>	Series 400: RAM: 256k; FLASH: 1280k; Clock: 16.6 MHz @ 30 ppm
<b>Ports</b>	Port 1: RS-232 @ up to 19.2 kbps, or RS-485 @ up to 19.2 kbps Port 2: RS-232 @ up to 19.2 kbps with full DTE/DCE support Port 3: Radio: Direct-FM @ up to 4.8 kbps; or AFSK @ up to 2.4 kbps; or DPSK @ 1.2 kbps; or Intrac @ 0.6 kbps; or Wireline: Sync or Async; or RS-232 @ 0.6-19.2 kbps
<b>Power</b>	5 Vdc: Provides up to 2.0 amp to associated I/O modules 12 Vdc: Consumes 130 ma
<b>Environment</b>	Humidity: 0 to 90% @ +50°C Temperature: -30 to +60°C



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