



# CM1746 RFID Module

## Features

- Two Read/Write RFID Antenna Ports
- 25 MHz i386 Processor
- 512KB Flash Memory
- 512KB RAM
- DOS Compatible Operating System
- Two General Purpose Serial Ports for CM1746
- Two Industrial-Level Inputs/Outputs
- LED Status Indicators
- NEMA 1 (IP30) Enclosure

## Applications

- Material Handling
- Sortation Systems
- Work-in-Progress Monitoring
- Quality Control

## Use With

- EMS Passive Read/Write
- EMS Passive Read Only
- EMS Active Read/Write
- RS232 and RS422 Serial Devices

**EMS**, a Datalogic Group Company, is the field-proven leader in the development and application of Radio Frequency Identification (RFID) Tags/Labels/PCBs, Antennas, Controllers and network interface modules for tough industrial environments. With over a dozen years of RFID successes in the automotive, electronics, material handling and food processing industries, EMS has built a global reputation in providing customers with complete supply chain solutions – from production to retail EMS has the complete solution!

The CM1746 RFID Module is specifically designed to integrate EMS products with Allen-Bradley's 1746 I/O backplane and SLC 500™ PLC's. The CM1746 is mounted on a standard 1746 Module enclosure that plugs directly into the 1746 backplane. The CM1746's 386 microprocessor and a real-time operating system runs EMS' high speed Read/Write RFID Controller and built-in Mux32 RS485 multidrop protocol for connection to Read Only RFID. Provided with a standard program, the Module can also be custom programmed in the C language. In short, the CM1746 brings all the power of Escort Memory Systems' RFID to your Allen-Bradley system in a simple, easy-to-use package.

## Technical Description

The CM1746 is an optically isolated communications interface designed to pass information between a complete RFID system and the Allen-Bradley SLC 500 PLC. The CM1746 communicates data between the RFID Tags or

serial port and the host PLC via a simple ladder logic program in the PLC. The standard program supplied with each module offers normal operations such as Reading and Writing to a Tag and returning status of operations to the PLC. The module's real-time operating system permits the simultaneous execution of up to five commands. The DOS compatible processor makes it possible to create custom C-based

application programs. EMS provides the standard program with the necessary libraries and download tools. One RS232 serial port is available for programming and debugging the module.

Two RFID ports are dedicated to direct connection to Read/Write Antennas. They support the same electrical and communications interface as all of EMS' Active Read/Write Antennas. The second serial port is configurable as RS232, RS422 or RS485 communications for connection to EMS' Read Only Readers, Passive Reader/Writers and for general use. The CM1746 supports the same EMS Mux32 multidrop protocol used by our Read Only systems and other devices. The Mux32 protocol supports up to 32 networked Read Only Readers for flexible solutions to complex applications.

**DIRECT ACCESS  
TO RFID  
WITH ALLEN-  
BRADLEY'S  
SLC 500™  
PLC**

# CM1746 RFID Module

## Electrical

### Backplane—Supplied by PLC

Supply Voltage	5VDC ±5%
Maximum Current	600mA

### Front End—External Supply Required

Supply Voltage	24VDC ±15%
Current	125mA avg., 250mA peak
Maximum Ripple	2.0% of DC Voltage

## Internal Memory

Memory	512KB DRAM
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## Communication

Compatibility Interface	SLC 5/03™ or SLC 5/04™ 1746 Series Bus
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## Compatible RFID Devices

Read/Write	HS/HL500-Series Antennas and HMS800-Series Reader/Writers
Read Only (1-32)	RS427, RS400 and RD3000 via Mux32 Multidrop

## Interface to Serial Devices

COM1	RS232 (For Programming and Debugging)
COM2	RS232, RS422, RS485 (Mux32)
Baud Rate	300, 600, 1200, 2400, 4800, 9600, 19200
Parity	Even, Odd, None
Data Bits	7 or 8
Stop Bits	1 or 2
Max. Throughput	12000 Characters Per Second Total

## Interface to PLC

A-B SPIOGA2 Registers	32 Input Image Registers, 32 Output Image Registers
Shared RAM	32KB
M0 Space	5760 Words
M1 Space	5755 Words
PLC Module Driver	Class 3
I/O Mix Code	8 (32 Input Words, 32 Output Words)
I/O Type Code	35 (Third Party Module)

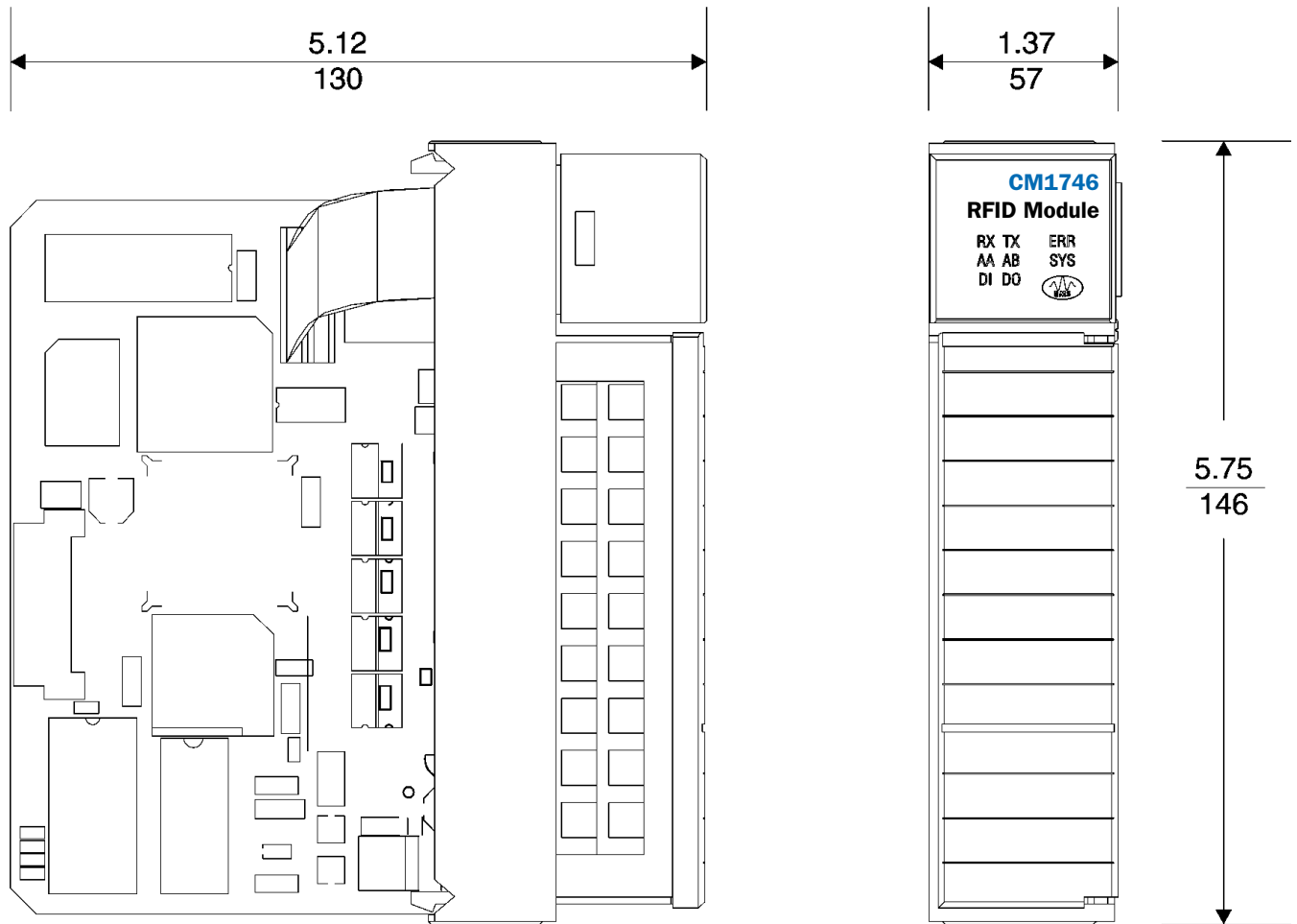
## Mechanical Specifications

Dimensions (W x H x D)	5.75 x 1.37 x 5.12in. (146 x 57 x 130mm)
Weight	1.5lbs. (0.70kg)

## Environment

Operating Temperature	32° to 120°F (0° to 49°C)
Storage Temperature	-40° to 185°F (-40° to 85°C)
Humidity	95% Non-Condensing
Shock Resistance	30G for 11ms
Vibration Resistance	1G at 3-500 Hz for 23 Minutes per Plane, 1Octave/Minute in All Three Planes
Altitude	15000ft. (5540m), per MIL-STD-810, Method 500.2, Low Pressure
Protection Class	NEMA1 (IP30)

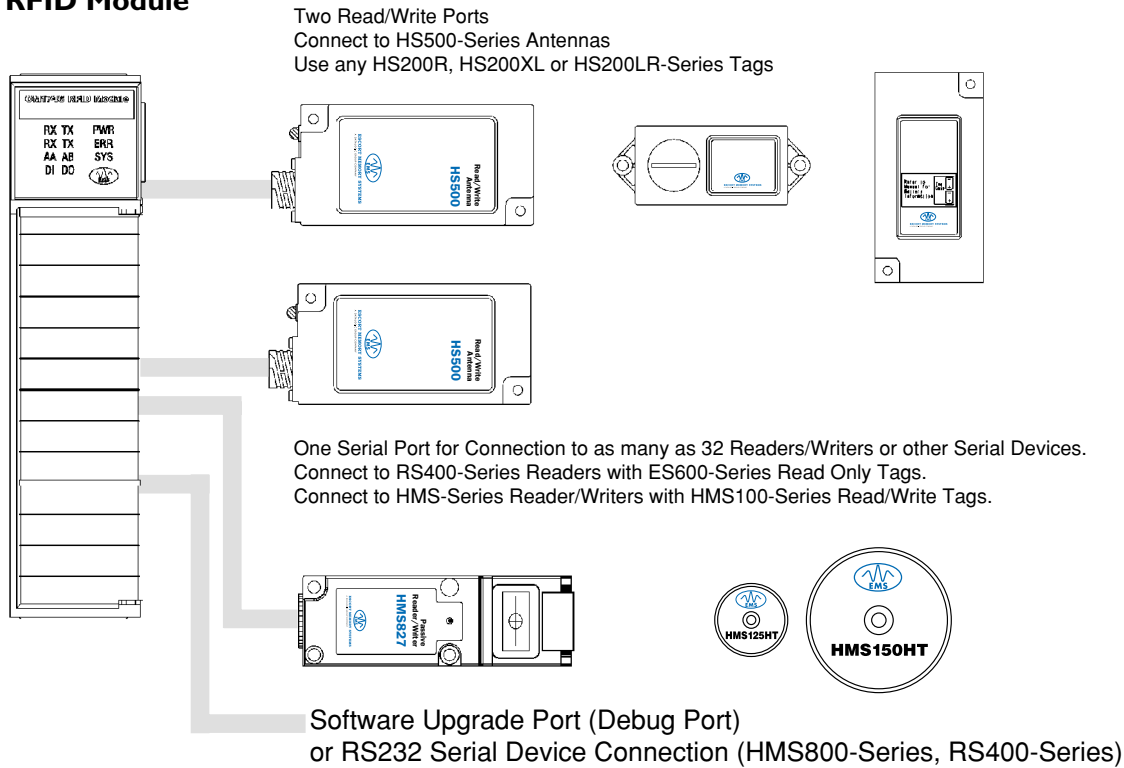
## Mechanical Dimensions



# CM1746 RFID Module

## Connections

### CM1746 RFID Module



### Available Models

Model	Description
CM1746	RFID Module for Allen-Bradley SLC 500TM PLC and 1746 I/O Chassis
00-1067	CM1746 Demo Kit, includes: RS427 Passive Read Only Reader, ES620 Read Only Tag, HS500 Active Read/Write Antenna, HS208R Active Read/Write Tag, CM1746 RFID Module, Allen-Bradley SLC 500 PLC, Demo Case and Ladder Logic Program