



## EM405D Ethernet M-Module Carrier

The EM405D easily interfaces a VITA 12-1996 standard M/MA Module to a typical Ethernet network. The carrier allows the numerous functions available in the M-Module mezzanine format to be remotely located near the unit-under-test, easing many system integration issues. Over 140 M/MA modules are available from numerous manufacturers.

The EM405D is available as either wired or wireless (Wi-Fi) Ethernet and with or without the enclosure.

### Overview:

The EM405D Ethernet M-Module carrier provides complete Ethernet connectivity to the many industry standard M-modules available. The EM405D supports two single-wide or one double-wide M-module. The unit is available with a rugged steel/aluminum enclosure suitable for the desktop or rack installation or without the enclosure for application specific mounting.

A simple Ethernet command protocol eases software integration and allows M-module reset, identification, and complete control and configuration of the module. The carrier provides full access to the M-module I/O space. A flexible block access command speeds sequential data access.

MA-module triggers are fully supported allowing inter-module triggering and external input or output triggers through the 9-pin DSUB connector.

+12VDC external power must be supplied by the user through either a standard 2.5mm power jack or through the 9-pin DSUB connector. All other voltage levels required by the internal logic and the installed M-modules are generated internally.

Variable speed forced air cooling helps maintain M-module and internal circuitry temperature. Unit's internal temperature can be monitored to ensure safe operating levels.

### Ordering Information

Part Numbers	
Wired w/encl.	11028850-0001
Wireless w/encl.	11028850-0002
Wired no encl.	11028850-1001
Wireless no encl.	11028850-1002

AC Power Adapter (+12V 30W)	
AM109	11028848-0001

### M Module Compliance

Complies with ANSI/VITA Std. 12-1996 for single or double-wide M or MA Modules

Data Transfers:	D16
Addressing:	A08
Triggers:	TRIGA & TRIGB

### Mechanical:

Size:	5.6"W x 8.5"D x 1.5"H
Weight:	1.7 lbs

### Environmental Specs:

Operating:	0°C to 60°C*
Storage:	-40°C to 70°C

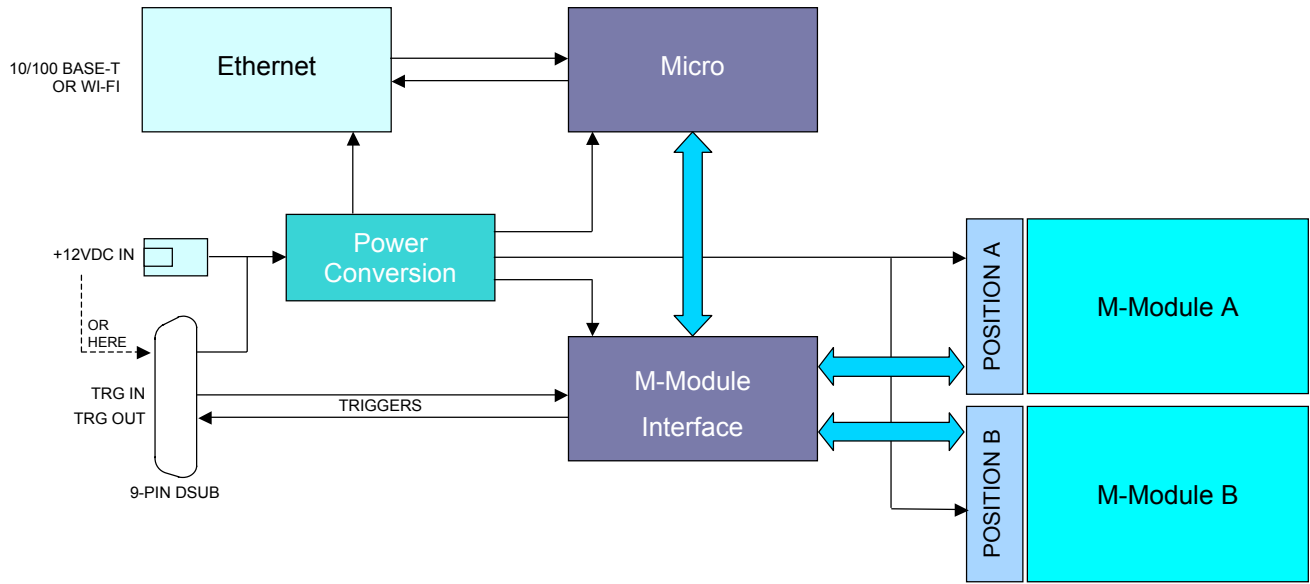
\* See User Manual for operational limitations

### Applications

- System integration
- Data Acquisition & Analysis
- Control Processing

### Additional Information

User Manuals for this carrier and other C&H modules can be found on our website at [www.chtech.com](http://www.chtech.com).



## Specifications:

### Ethernet:

- Easy network configuration through web based interface
- TCP/IP and UDP/IP supported for M-module communication
- Static IP, DHCP, and AutoIP addressing supported
- ARP, ICMP, SNMP, TFTP, Telnet, BOOTP, and HTTP protocols support for device administration

### Wired Ethernet (-x001):

- Ethernet 10Base-T or 100Base-TX (Auto-Sensing)
- RJ-45 Connector
- 10Base-T connection indicator
- 100Base-TX connection indicator
- Link & activity indicators

### Wireless (Wi-Fi) Ethernet (-x002):

- Wireless Ethernet 802.11b (2.4GHz)
- Data rates up to 11Mbps
- WPA security and WEP encryption
- Antenna included
- Link & activity indicators
- Transmit power: 16 dBm typical
- Receive sensitivity: -82 dBm @ 11 Mbps

### Triggers:

- M-module Trigger A and B supported
- External Trigger In can trigger one or both M-modules
- Any M-module trigger can be directed to external trigger out
- M-module A can trigger M-module B and vice-versa

### External Power:

- +12VDC
- 30W required for internal logic and two M-modules at maximum allowed power
- 470ma typical (-x001) and 510 ma typical (-x002) is required for internal carrier operation
- User may provide less power depending on M-modules installed
- Power may be supplied through the 2.5mm power jack or 9-pin DSUB (reverse polarity protected)
- ON/OFF switch
- AC power adapter available (order accessory AM109)

### M-Module Power (each M-module position):

- +5V 1A max.
- +12V 200ma max.
- -12V 200ma max.

### Software Command Protocol:

- Byte level command structure
- Initialization and reset commands
- Configuration (triggers)
- Identification (manufacture/model)
- Status (temperature)
- Register read/write
- Memory read/write
- Block Access read/write