



Multi Data Digital  
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# MDD Multi Data Digital Expansion Cards

## IDEAL USE

Expansion cards add abilities to an MDD S550, S530, S571 and S572 that allow for additional in-band or out-of-band connectivity methods, additional connectivity methods to local equipment, various I/O points, and other specialized abilities. MDD designed its product line with a scalable, flexible, modular approach that allows you to mix and match almost any combination of Expansion Cards.

For ordering, Expansion card options are appended to the end of the base catalog number, with the first expansion option being slot 1, the next being slot 2 and so on. While most configurations and combinations of Expansion cards in a given unit are allowed, there are some limitations. Please consult with MDD Sales to answer any questions.

Expansion cards can be ordered and installed in units that have already been deployed with open expansion slots. This allows adding functionality as needs arise after the initial deployment. Any individually ordered card will arrive with installation instructions.

## CONNECTIVITY CARDS

DESCRIPTION	CODE
Wireless (GSM) EDGE Modem	ME*
Wireless LTE CAT1 Verizon	ML1V**
Wireless LTE CAT1 PTCRB - AT&T & T-Mobile	ML1P**
Wireless LTE Modem - for EU with GPS, CAT3, Faster communication Expansion Card	ML3EF**
Wireless LTE Modem - for EU with GPS	MLEU**
Dial-Up Serial Modem	MD
4X RS232 Serial Port	4S
2X RS485 2X RS232 Serial Port	2DS2S
2X RS485 Serial, (1) 5v Power, (1) Voltage, (1) F - Fuel Resistive, and (2) Form C Relays	2DS5P1V1F2RC
4X 10/100 Ethernet Port	4E***
8X 10/100 Ethernet Port (occupies 2 slots)	8E***
4X EventSensor	4ES****
Secure Access Ethernet Card, 4E with a Coprocessor	SAEC*****
GPS Receiver	GPS
SFP (Small Form-factor Pluggable transceiver)	1SFP*****

\* ME modems not recommended for US

\*\* LTE modems do not include antennas. See options on page 34.

\*\*\* Only (1) 4E or 8E card supported in the S571 or S572.

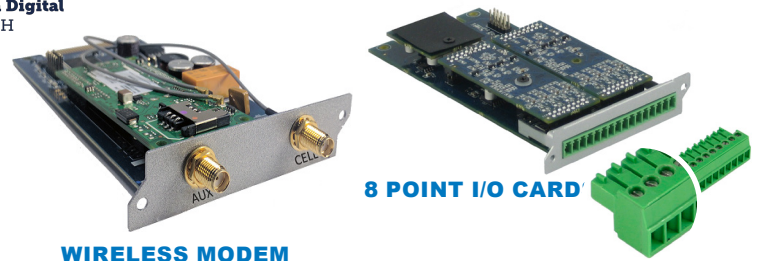
8E Occupies 2 contiguous vertical slots (slots 3/4 and/or 5/6 on S550 or S530).

\*\*\*\* 4ES cards not compatible for ESJ (1-wire) devices.

\*\*\*\*\* SAEC and 1SFP cards are functional on the S550 only

## HIGH-DENSITY I/O CARDS

DESCRIPTION	CODE
(64) Contact Inputs on SCSI Connector, cable not included	64C
(32) Contacts (8) Relay (8) Voltage, cable not included	32C8V8R
32C Exp Card - (32) Contact Closures	32C
Cable, SCSI to Dual Amphenol (for 64C, 32C8V8R) 10 ft.	2060-440
Cable, SCSI to Dual Amphenol (for 64C, 32C8V8R) 25 ft.	2060-405
66 Block, Dual Male Amphenol, wiring and silk screen for 64C	0661-200
66 Block, Dual Male Amphenol, wiring and silk screen for 32C8V8R	0661-205
512 Block, Dual Male Amphenol, wiring and silk screen for 64C	0661-202
512 Block, Dual Male Amphenol, wiring and silk screen for 32C8V8R	0661-203
Extension Cable, 10' M-F 25 Pair	2060-051
Extension Cable, 20' M-F 25 Pair	2060-055
Extension Cable, 30' M-F 25 Pair	2060-056
Extension Cable, 50' M-F 25 Pair	2060-057



WIRELESS MODEM

DESCRIPTION	CODE
(8) Contact Closure Inputs	8C
(8) Isolated Contact Closure Inputs	8CI
(4) Voltage Inputs plus (4) +/-15 VDC Power Outputs	4VP*
(4) Voltage Inputs plus (4) + 5 VDC Power Outputs	4VP5
(8) Voltage Inputs	8V
(8) Isolated Voltage Inputs	8VI
(8) Low-Current Relays	8R
(8) 4-20mA Current Inputs	8M
(8) Solid State Relays	8SR
(4) Contact Inputs and (4) Solid State Relays	4C4SR
(4) Contact and (4) Voltage Inputs	4C4V
(4) Contact and (4) Isolated Voltage Inputs	4VI4C
(4) Contact and (4) Low-Current Relay	4C4R
(2) Contact and (4) Low-Current Form C Relays	2C4RC
(4) Contact, (1) Wiegand interface with power, (1) Low-Current Relay	4C1W1R**
(2) Wiegand interface with power, (2) Low-Current Relay	2W2R**
(4) Voltage and (4) 4-20mA Sensor	4V4M
(4) Voltage inputs and (4) Low-Current Relay	4V4R
(4) Contact and (4) 4-20mA Sensor	4C4M
(4) Contact and (4) Isolated 4-20mA Sensor	4MI4C
(4) Contact, (1) 5 VDC Output, (1) Voltage Input, (1) Resistive Sensor, and (1) 4-20mA	4C5P1V1F1M
(4) Contact, (1) 5v Power+, (1) V [0 to 5V], (1) Resistive sensor, (1) Isolated 4-20mA	4C5PA1VA1F1M
(2) RS485 Serial, (1) 5v Pwr (1) Voltage (1) F - Fuel Resistive (2) Form C Relays	2DS5P1V1F2RC
(2) Channel HVAC Voltage Control Card(1 low voltage in and 7 switched outputs per channel)	2AC
(4) Contact and (4) AC Current Transformers	4C4CT
(8) AC Current Transformers Inputs	8CT
(4) Contact, (1) Voltage Sampling, (3) Voltage	4C1VS3V
16C Exp Card - 4 RJ45 Jack Contact Closure Inputs	16C

\* 4VP is not compatible with the battery backup power card options, BB or BB2

\*\* 3 Wiegand interfaces per SiteBoss max.



## HIGH-DENSITY EXPANSION CARD

This ultra-compact expansion card manages up to 64 inputs/outputs in a single card slot. Ideal for use in locations with large numbers of contact sensors:

IT centers, server rooms, equipment racks. A six-slot base unit can host up to 6 of these cards for extremely dense monitoring needs.

The high-density expansion cards are available: 64C with 64 dry contact-closure inputs; 32C card with 32 dry contact-closure inputs; 32C8V8R with 32 contact-closure, 8 voltage inputs, and 8 relay outputs.

Each card is to be used with a mating Y-interconnect cable terminated with two standard 50-pin Amphenol connectors, for easy drop-in replacement of legacy equipment in a prewired system. These connectors mate directly with many punchdown and wire-wrap blocks commonly found in telecom and building management systems



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# Expansion Cards



## CONNECTIVITY CARDS

MDD offers a variety of specialized Expansion cards for your application. We offer many types of options for communication to remote sites as well as for communication to remote equipment. The growing list of Connectivity Expansion cards are designed to suit your particular need. MDD base units must have an Expansion slot to accept MDD Expansion Cards. These would include the S550, S530, S571 and S572. Refer to the Product Matrix for more information on applicable units.

## WIRELESS EDGE (GSM) MODEM CARD - ME

- Frequencies: 850/900/1800/1900MHZ
- Compatible antennas: 4165-012, 4165-036, 4175-008, 4175-009, 4175-013, and 4175-014
- Not recommended for the US market

## WIRELESS LTE CAT M1 VERIZON - ML1V

- Frequencies 700(B13), AWS1700(B4)
- Category M1; Up to 300 Kbps downlink & up to 375 Kbps uplink
- Mini SIM size

## WIRELESS LTE CAT M1 PTCRB - AT&T AND T-MOBILE - ML1P

- Frequencies 700(B12), AWS1700(B4), 1900(B2)
- Category M1; Up to 300 Kbps downlink & up to 375 Kbps uplink
- Mini SIM size

## WIRELESS LTE MODEM CARD - FOR EU - ML3EF

- Faster communication, USB interfaced, Expansion Card
- Frequencies:  
GSM/GPRS/EDGE: Dual band, 900/1800MHz  
UMTS/HSPA+: Triple band, 900 (BdVIII) / 1800 (BdIII) / 2100MHz (BdI)  
LTE: Five band, 800 (Bd20) / 900 (Bd8) / 1800 (Bd3) / 2100 (Bd1) / 2600MHz (Bd7)
- Compatible antennas: 4175-013, 4175-008, and 4175-014

## WIRELESS LTE MODEM CARD - FOR EU - MLEU

- Frequencies:  
GSM/GPRS/EDGE: Dual band, 900/1800MHz  
UMTS/HSPA+: Triple band, 900 (BdVIII) / 1800 (BdIII) / 2100MHz (BdI)  
LTE: Five band, 800 (Bd20) / 900 (Bd8) / 1800 (Bd3) / 2100 (Bd1) / 2600MHz (Bd7)
- Compatible antennas: 4175-013, 4175-008, and 4175-014

## 4X RS232 SERIAL PORT CARD - 4S

Add 4 RS232 serial ports to a compatible MDD base unit. Card has (4) RJ45 type connectors.

- Baud rate: 300(Min) / 115200(Max)
- Includes (4) 6 ft. RJ45 serial cables and (4) RJ45/DB9M DTE Adapters

## 2X RS485 2X RS232 SERIAL PORT CARD - 2DS2S

Add 2 RS485 and 2 RS232 serial ports to a compatible MDD base unit. Card has (2) RJ45 type connectors and (2) Phoenix type connectors. Supports connections to MODBUS devices.



- Baud rate: 300(Min) / 115200(Max)
- Includes (2) 6 ft. RJ45 serial cables, (2) RJ45/DB9M DTE Adapters and 2 Screw terminal block plugs
- Card has (2) RJ45 type connectors and (2) Phoenix type connectors.

## 2X RS485 SERIAL, (1) 5V POWER, 1 VOLTAGE, 1 F - FUEL RESISTIVE, & 2 FORM C RELAYS - 2DS5P1V1F2RC

Add 2 RS485 serial ports, (1) 5v Power output, 1 non-isolated voltage input, 1 F - Fuel Resistive Sensor, & 2 Form C Relays to a compatible MDD base unit.

## 4X EVENTSSENSOR EXPANSION CARD - 4ES

Add 4 EventSensor ports to a compatible MDD base unit. Card has (4) RJ45 type connectors. The 4ES card is for EventSensor Devices Only.



- Not compatible for ESJ (1-wire) devices

## 4X 10/100 ETHERNET PORT CARD - 4E

Add (4) 10/100 Ethernet ports to a compatible MDD base unit. Card has (4) RJ45 type connectors. Up to (2) 4E cards can be installed per unit.



- Allows independent IP address from unit's other network interfaces
- Serves IP addresses via DHCP
- Simplifies site administration
- Integrates remote access
- Provides static routing and port forwarding
- Layer 2 switch

## 8X 10/100 ETHERNET PORT CARD - 8E

Add (8) 10/100 Ethernet ports to a compatible MDD base unit. Card has (8) RJ45 type connectors. Up to (2) 8E cards can be installed per unit.

- Allows independent IP address from unit's other network interfaces
- Serves IP addresses via DHCP
- Simplifies site administration
- Integrates remote access
- Provides static routing and port forwarding
- Layer 2 switch

## SECURE ACCESS ETHERNET CARD, 4E COPROCESSOR -SAEC

Add (4) 10/100 Ethernet ports to a SiteBoss 550 and provide secure web access to network devices connected to its ports. This option supplies all the features associated with a 4E expansion card but adds the ability to Remote Desktop to the SiteBoss. This adds a method to securely access the local devices from a remote location, even if the device itself does not support secure communication.

## GPS RECEIVER CARD - GPS

Allows the user to pinpoint the exact location of any unit that supports it. This is useful in applications where you wish to map the locations of many units.

## SMALL FORM-FACTOR PLUGGABLE TRANSCEIVER CARD - 1SFP

Add (1) Small Form-factor Pluggable port to an MDD SiteBoss 550 base unit for connectivity to optical fiber networks. Optical transceiver modules and 5 meter, LC to LC, Single-Mode Duplex fiber patch cable are available to order separately.





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# Expansion Cards

## INPUT/OUTPUT CARDS

MDD's Input/Output Sensor cards are the most common type of cards offered and provide the greatest amount of flexibility for your application. Featuring the ability to operate in a passive or active environment depending on the card.

MDD base units must have an Expansion slot to accept Expansion cards. The units that use this type of expansion slot are the S550, S530, S571 and S572. Refer to the Product Matrix for more information on applicable units.

### 8 CONTACT CLOSURE INPUT - 8C

Add 8 non-isolated contact closure inputs to any MDD base unit.

- Works with relay-based units and TTL-based outputs
- Common ground across all contacts

### 8 CONTACT CLOSURE (ISOLATED) INPUT -

**8CI** Add 8 isolated contact closure inputs to any MDD base unit.

- Works with relay-based units and TTL-based outputs
- Each ground is electrically isolated for maximum electrical protection

### 4 VOLTAGE INPUT & (4) ±15 VDC POWER OUTPUT - 4VP\*

Used in conjunction with up to four DC current transducers, this Expansion Card can be used to measure DC current levels flowing from battery banks or power rectifiers. MDD can also provide the solid core or split core DC current transducers from 50A to 500A configurations. Power Monitoring EventSensors section for available ESV-TCDC current monitors.

- Voltage Range: -60/+60V
- Resolution: 0.1 VDC

*\*The 4VP expansion card cannot be used in conjunction with the internal "battery back-up" option (BB or /BB2)*

### 4 VOLTAGE INPUT & (4) 5 VDC POWER OUTPUT - 4VP5

Add 4 voltage inputs and (4) 5VDC power outputs, for use in powering sensors which require a 5V power source and which output a variable voltage in return.

### 8 ANALOG VOLTAGE INPUT - 8V

Add 8 non-isolated analog voltage inputs to any MDD base unit.

- Voltage Range: -60/+60V
- Resolution: 0.1 VDC
- Accuracy: +/- 0.5 VDC
- Common ground for all sensors

### 8 ISOLATED ANALOG VOLTAGE INPUT - 8VI

Add 8 isolated analog voltage inputs to any MDD base unit.

- Voltage Range: -60/+60V
- Resolution: 0.1 VDC
- Accuracy: +/- 0.5 VDC

### 8 LOW-CURRENT RELAY OUTPUT - 8R

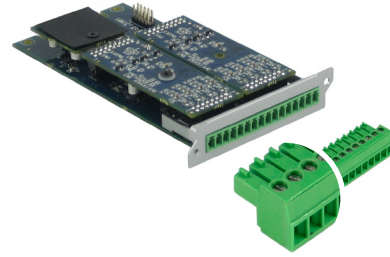
Add 8 relay outputs to any MDD base unit

- Max switched voltage: 60V Peak (AC or DC)
- Max switched power: 30W (DC)
- Max switched current: 0.6A

### 8 4-20mA CURRENT INPUT - 8M

Add 8 non-isolated 4-20mA current inputs to any MDD base unit.

- Resolution: 0.1mA
- Accuracy: 0.1mA



### 8 SOLID STATE RELAY OUTPUT - 8SR

Add 8 solid state relay outputs to any MDD base unit with an expansion slot or as a variant to any ES-I/O product. Solid state relays provide a higher current option than those on the 8R or ES-8R cards.

- Max switched voltage: 60VDC peak
- Max switched power: 90W
- Max switched current: 1.5A

### 4 CONTACT & 4 SOLID STATE RELAY OUTPUT - 4C4SR

Add 4 non-isolated dry contact closure inputs and 4 solid state relay outputs to any MDD base unit with an expansion slot or as a variant to any ES-I/O product. Solid state relays provide a higher current option than those on the 4C4R card.

- Max switched VDC: 60 peak (AC or DC)
- Max switched power: 90W
- Max switched current: 1.5A

### 4 CONTACT & 4 VOLTAGE INPUT - 4C4V

Add 4 non-isolated dry contact closure inputs and 4 non-isolated voltage inputs to any MDD base unit with an expansion slot.

- Voltage points: -60/+60 VDC
- Resolution: 0.1 VDC
- Accuracy: +/- 0.5 VDC

### 4 CONTACT & 4 ISOLATED VOLTAGE INPUTS - 4VI4C

Add 4 non-isolated dry contact closure inputs and 4 individually isolated voltage inputs to any MDD base unit with an expansion slot.

- Isolated voltage points: -60/+60 VDC
- Resolution: 0.1 VDC
- Accuracy: +/- 0.5 VDC

### 4 CONTACT INPUT & 4 LOW-CURRENT RELAY OUTPUT - 4C4R

Add 4 non-isolated dry contact inputs and 4 relay outputs to any MDD base unit with an expansion slot.

- Max switched VDC: 60
- Max switched power: 30W
- Max switched current: 0.6A

### 2 CONTACT & 4 LOW-CURRENT FORM C RELAYS (NO, NC) - 2C4RC

Add 2 non-isolated dry contact closure inputs and 4 Form C Relays to any MDD base unit.

- Mechanical relays retain state upon power cycle
- Mechanical relay current capacity: 0.6A



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