DXM Controller Selection Guide

Product Overview

The Banner Sure Cross® DXM Wireless Controller product series provide simple communications gateway options that can be used to interface with local I/O, interface with Sure Cross Wireless I/O, transmit data wirelessly between traditional controllers, and/or facilitate Industrial Internet of Things (IIoT) through the Cloud.

Banner Wireless Value

- Low cost method for retrofits or IIoT connectivity (ability to monitor/control via the Cloud)
- High feature content allows flexibility to choose the features you need
- Small DIN-rail footprint eases panel constraints
- Standard protocol options simplify integration
- Simple menu-driven LCD display

Standard Features	DXM1200-B1	DXM1000-B1	DXM700-B1	DXM100-Bx	DXM150-B2	DXM150-B1
Performance or MultiHop Radio option	✓	✓	✓	✓	✓	✓
900 MHz or 2.4 GHz ISM Radio option	✓	✓	✓	✓	✓	✓
Cellular communications option	✓	✓	✓	✓	✓	✓
LCD User Interface and 4 LEDs	✓	✓	✓	✓	✓	✓
8GB Removable Micro SD Card	✓	✓	✓	✓	✓	✓
Environmental Rating	IP67	IP20	IP20	IP20	IP20	IP20
Battery backup option		✓		✓	✓	✓
Solar power option		✓		✓	✓	✓
Modbus/TCP and Ethernet/IP	✓	✓	✓	✓	✓	✓
Modbus RTU RS-485	✓	✓	✓	✓	✓	✓
RS-232		✓		✓ (B1 only)	✓	✓
CANBus		✓		✓ (B1 only)		
USB and Ethernet Configuration	✓	✓	✓	✓	✓	✓
Logic Controller (Action rule or ScriptBasic programmable)	✓	✓	✓	✓	✓	✓
SMS Capability				✓	✓	✓
Slave Option (IO Board and Radio Only)				✓	✓	✓
Processor Speed and Memory	300 MHz/16 MB	300 MHz/16 MB	300 MHz/16 MB	100 MHz/2 MB	100 MHz/2 MB	100 MHz, 2 MB
Sinking (NPN)/Sourcing (PNP) Outputs					8	
Sourcing (PNP) Outputs			4			
Sinking (NMOS) Outputs (up to 30 V DC at <1 A max)		4		4		4
Analog Outputs (0–20 mA or 0–10 V DC, 12-bit resolution)		2		2	2	2
Relay Outputs (SPDT Form C - 250 V AC 16 A)						2
Universal Inputs (NPN, PNP, 0–20mA, 0–10 V, 10K Thermistor, Potentiometer, NPN Raw Fast)		4		4	8	8
Optically Isolated Discrete Inputs (30 V AC or V DC up to 2.5 kV isolation)					2	2
Courtesy Power Out		1 (5 V, 500 mA max)		1 (5 V, 500 mA max)	4 (2.7 V up to device power)	2 (2.7 V up to device power)
Switched Power Out		2 (5 V, 400 mA max or 16 V, 125 mA max)		2 (5 V, 400 mA max or 16 V, 125 mA max)		
DIN Rail Width		105 mm	70 mm	105 mm	155 mm	155 mm

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DXM700- **B1** (Base) **R1** (Radio Configuration)

B1 = Modbus controller for data aggregation of sensors and wireless networks
Power: 12–30 V DC
Comms: RS-485, Secondary RS-485
Outputs: Four PNP

B2 = Same as B1, but with a barrel jack power connector

Blank = None
PTL = Pre-Programmed DXM700 for Pick-to-Light Integration
R1 = 900 MHz, 1 W PE5 Performance Radio (North America)
R2 = 900 MHz, 1 W HE5 MultiHop Data Radio (North America)
R3 = 2.4 GHz, 65 mW PE5 Performance Radio (Worldwide)
R4 = 2.4 GHz, 65 mW HE5 MultiHop Data Radio (Worldwide)
R5 = 900 MHz, 65 mW HE5L MultiHop Data Radio (Used for M-GAGE networks)

DXM1000- **B1** (Base) **R1** (Radio Configuration)

B1 = Modbus controller for data aggregation of sensors and wireless networks
Power: 12–30 V dc/ Solar/ Battery
Comms: RS-485, CAN, RS-232 w/flow or secondary RS-485
Inputs: (4) universal IN
Outputs: (4) NMOS OUT, (2) analog OUT (0–10 V or 4–20 mA)
Power Out: (2) Selected 5 V or 16 V switched power, (1) 5 V courtesy power

B2 = Smart valve control, SDI-12 data collection
Power: 12–30 V dc/Solar/Battery
Comms: RS-485, (1) SDI-12 sensor interface
Inputs: (4) universal IN
Outputs: (4) NMOS OUT, (2) 0-10 V analog, (2) DC Latching
Power Out: (2) Adjustable 5 V to 24 V switched power, (1) SDI switched power, and (1) 5 V courtesy power

Blank = None
R1 = 900 MHz, 1 W PE5 Performance Radio (North America)
R2 = 900 MHz, 1 W HE5 MultiHop Data Radio (North America)
R3 = 2.4 GHz, 65 mW PE5 Performance Radio (Worldwide)
R4 = 2.4 GHz, 65 mW HE5 MultiHop Data Radio (Worldwide)
R5 = 900 MHz, 65 mW HE5L MultiHop Data Radio (Used for M-GAGE networks)
R8 = 900 MHz, Performance Radios approved for Australia/New Zealand
R9 = 900 MHz, MultiHop Radio approved for Australia/New Zealand

DXM1200 [ ] (Base) – **B1** (Base) **R1** (Radio Configuration)

Blank = Internal antenna
One 4-pin M8/Pico-style Ethernet connector
One 5-pin M12/Euro-style power and RS-485 connector

E = External antenna
One 4-pin M12/Euro-style D Code Ethernet connector
One 5-pin M12/Euro-style power and RS-485 connector
Two 5-pin M12/Euro-style RS-485 connectors

B1 = Modbus controller for data aggregation of sensors and wireless networks
Power: 12–30 V DC
Comms: RS-485

Blank = None
R1 = 900 MHz, 1 W PE5 Performance Radio (North America)
R2 = 900 MHz, 1 W HE5 MultiHop Data Radio (North America)
R3 = 2.4 GHz, 65 mW PE5 Performance Radio (Worldwide)
R4 = 2.4 GHz, 65 mW HE5 MultiHop Data Radio (Worldwide)

Cellular Communication—Controllers accept Banner LTE (United States) and GSM (outside the United States) modems only. Cellular modems are ordered separately as accessories under the following part numbers:

- LTE-Verizon (United States only): SXI-LTE-001
- GSM/3G (HSPA) (International only): SXI-GSM-001
- CATM Verizon (US only): SXI_CATM_001
- CATM ATT (US only): SXI_CATM_002

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Base

DXM100- B1

B1 = Modbus controller for data aggregation of sensors and wireless networks
Power: 12−30 V DC/Solar/Battery
Comms: RS-485, CAN, RS-232 w/flow or secondary RS-485
Inputs: (4) universal IN
Outputs: (4) NMOS OUT, (2) analog OUT (0–10 V or 4–20 mA)
Power Out: (2) Selected 5 V or 16 V switched power, (1) 5 V courtesy power

Radio Configuration

R1

Blank = None
R1 = 900 MHz, 1 W PE5 Performance Radio (North America)
R2 = 900 MHz, 1 W HE5 MultiHop Data Radio (North America)
R3 = 2.4 GHz, 65 mW PE5 Performance Radio (Worldwide)
R4 = 2.4 GHz, 65 mW HE5 MultiHop Data Radio (Worldwide)
R5 = 900 MHz, 65 mW HE5L MultiHop Data Radio (Used for M-GAGE networks)
R8 = 900 MHz, Performance Radios approved for Australia/New Zealand
R9 = 900 MHz, MultiHop Radio approved for Australia/New Zealand

Base

DXM100- B2

B2 = Smart valve control, SDI-12 data collection
Power: 12−30 V DC/Solar/Battery
Comms: RS-485, (1) SDI-12 sensor interface
Inputs: (4) universal IN
Outputs: (4) NMOS OUT, (2) 0-10 V analog, (2) DC Latching
Power Out: (2) Adjustable 5 V to 24 V switched power, (1) SDI switched power, and (1) 5 V courtesy power

Radio Configuration

R1

Blank = None
R1 = 900 MHz, 1 W PE5 Performance Radio (North America)
R2 = 900 MHz, 1 W HE5 MultiHop Data Radio (North America)
R3 = 2.4 GHz, 65 mW PE5 Performance Radio (Worldwide)
R4 = 2.4 GHz, 65 mW HE5 MultiHop Data Radio (Worldwide)
R5 = 900 MHz, 65 mW HE5L MultiHop Data Radio (Used for M-GAGE networks)
R8 = 900 MHz, Performance Radios approved for Australia/New Zealand
R9 = 900 MHz, MultiHop Radio approved for Australia/New Zealand

Base

DXM100- S1

S1 = Modbus slave I/O device for MultiHop wireless networks or wired networks
Power: 12−30 V DC/Solar/Battery
Comms: RS-485
Inputs: (4) Universal IN
Outputs: (4) NMOS OUT, (2) Analog OUT (0–10 V or 4–20 mA)
Power Out: (2) Selectable 5 V or 16 V switched power, (1) 5 V courtesy power

Radio Configuration

R2

Blank = None
R2 = 900 MHz, 1 W HE5 MultiHop Data Radio (North America)
R4 = 2.4 GHz, 65 mW HE5 MultiHop Data Radio (Worldwide)
R5 = 900 MHz, 65 mW HE5L MultiHop Data Radio (Used for M-GAGE networks)
R9 = 900 MHz, MultiHop Radio approved for Australia/New Zealand

Base

DXM100- S2

S2 = Modbus slave device for valve control, SDI-12 data collection for MultiHop wireless networks or wired networks
Power: 12−30 V DC/Solar/Battery
Comms: RS-485, (1) SDI-12 sensor interface
Inputs: (4) universal IN
Outputs: (4) NMOS OUT, (2) 0–10 V analog, (2) DC Latching
Power Out: (2) Adjustable 5−24 V switched power, (1) SDI switched power, and (1) 5 V courtesy power

Radio Configuration

R2

Blank = None
R2 = 900 MHz, 1 W HE5 MultiHop Data Radio (North America)
R4 = 2.4 GHz, 65 mW HE5 MultiHop Data Radio (Worldwide)
R5 = 900 MHz, 65 mW HE5L MultiHop Data Radio (Used for M-GAGE networks)
R9 = 900 MHz, MultiHop Radio approved for Australia/New Zealand

Cellular Communication—Controllers accept Banner LTE (United States) and GSM (outside the United States) modems only. Cellular modems are ordered separately as accessories under the following part numbers:

- LTE-Verizon (United States only): SXI-LTE-001
- GSM/3G (HSPA) (International only): SXI-GSM-001
- CATM Verizon (US only): SXI_CATM_001
- CATM ATT (US only): SXI_CATM_002

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Base

DXM150- B1

B1 = Modbus controller designed for applications with high I/O count, isolated inputs or integrated relays
Power: 12−30 V DC/Solar/Battery
Comms: RS-485 and RS-232 or secondary RS-485
Inputs: (2) Isolated discrete, (8) Universal
Outputs: (2) Relay, (4) NMOS, (2) Analog
Power Out: (2) Jumper selectable between 2.7 V or battery, 4.2 V or incoming power

Radio Configuration

R1

Blank = None
R1 = 900 MHz, 1 W PE5 Performance Radio (North America)
R2 = 900 MHz, 1W HE5 MultiHop Data Radio (North America)
R3 = 2.4 GHz, 65 mW PE5 Performance Radio (Worldwide)
R4 = 2.4 GHz, 65 mW HE5 MultiHop Data Radio (Worldwide)
R5 = 900 MHz, 65 mW HE5L MultiHop Data Radio (Used for M-GAGE networks)
R8 = 900 MHz, Performance Radios approved for Australia/New Zealand
R9 = 900 MHz, MultiHop Radio approved for Australia/New Zealand

Base

DXM150- B2

B2 = Modbus controller for high I/O count applications
Power: 12-30 V DC/Solar/Battery
Comms: RS-485
Inputs: (2) Isolated discrete, (8) Universal
Outputs: (8) PNP/NPN Selectable, (2) Analog
Power Out: (2) Courtesy power out; (2) jumper selectable between 2.7 V or battery, 4.2 V or incoming power

Radio Configuration

R1

Blank = None
R1 = 900 MHz, 1 W PE5 Performance Radio (North America)
R2 = 900 MHz, 1W HE5 MultiHop Data Radio (North America)
R3 = 2.4 GHz, 65 mW PE5 Performance Radio (Worldwide)
R4 = 2.4 GHz, 65 mW HE5 MultiHop Data Radio (Worldwide)
R5 = 900 MHz, 65 mW HE5L MultiHop Data Radio (Used for M-GAGE networks)
R8 = 900 MHz, Performance Radios approved for Australia/New Zealand
R9 = 900 MHz, MultiHop Radio approved for Australia/New Zealand

Base

DXM150- S1

S1 = Modbus slave with high I/O count for MultiHop wireless networks or wired networks
Power: 12–30 V DC/Solar/Battery
Comms: RS-485
Inputs: (2) Isolated discrete, 8 Universal
Outputs: (2) Relay, (4) NMOS Discrete, (2) Analog
Power Out: (2) Jumper selectable between 2.7 V or battery, 4.2 V or incoming power

Radio Configuration

R2

Blank = None
R2 = 900 MHz, 1W HE5 MultiHop Data Radio (North America)
R4 = 2.4 GHz, 65 mW HE5 MultiHop Data Radio (Worldwide)
R5 = 900 MHz, 65 mW HE5L MultiHop Data Radio (Used for M-GAGE networks)
R9 = 900 MHz, MultiHop Radio approved for Australia/New Zealand

Base

DXM150- S2

S2 = Modbus slave with high I/O count for MultiHop wireless networks or wired networks
Power: 12–30 V DC/Solar/Battery
Comms: RS-485
Inputs: (2) Isolated discrete, (8) Universal
Outputs: (8) PNP/NPN Selectable, (2) Analog
Power Out: (2) Courtesy power out; (2) Jumper selectable between 2.7 V or battery, 4.2 V or incoming power

Radio Configuration

R2

Blank = None
R2 = 900 MHz, 1W HE5 MultiHop Data Radio (North America)
R4 = 2.4 GHz, 65 mW HE5 MultiHop Data Radio (Worldwide)
R5 = 900 MHz, 65 mW HE5L MultiHop Data Radio (Used for M-GAGE networks)
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- CATM ATT (US only): SXI_CATM_002

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