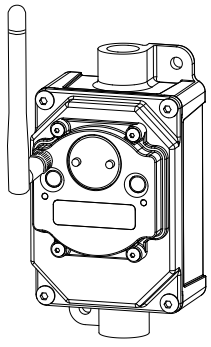
Sure Cross® Performance Universal Counter P16E Node

Datasheet

The Sure Cross® wireless system is a radio frequency network with integrated I/O that operates in most environments to eliminate the need for wiring runs.



- Wireless industrial I/O device with two configurable asynchronous counter inputs and four NMOS outputs
- Selectable transmit power levels of 250 mW or 1 Watt for 900 MHz models and 65 mW for 2.4 GHz models
- DIP switches for user configuration
- Frequency Hopping Spread Spectrum (FHSS) technology ensures reliable data delivery
- Transceivers provide bidirectional communication between the Gateway and Node, including fully acknowledged data transmission
- Lost RF links are detected and relevant outputs set to user-defined conditions
- Field-wireable terminals for wiring I/O

Models

Model	Frequency	Inputs and Outputs
DX80N9X1S-P16E	900 MHz ISM Band	**Inputs**: Two configurable asynchronous counters **Outputs**: Four NMOS
DX80N2X1S-P16E	2.4 GHz ISM Band	

To order an integrated battery model without the battery, add a **-NB** to the model number. If you purchase a model without the battery, Banner Engineering recommends lithium D cell battery **BWA-BATT-001**.

Storage and Sleep Modes

Storage Mode (applies to battery-powered models only)—While in **storage mode**, the radio does not operate. To put any integrated battery Sure Cross® radio into storage mode, press and hold button 1 for five seconds. To wake the device, press and hold button 1 for five seconds. The radio is in storage mode when the LEDs stop blinking, but in some models, the LCD remains on for an additional minute after the radio enters storage mode. After a device has entered storage mode, you must wait one minute before waking it.

Sleep Mode (applies to both battery and 10–30 V DC powered models)—During normal operation, the Sure Cross radio devices enter **sleep mode** after 15 minutes of operation. The radio continues to function, but the LCD goes blank. To wake the device, press any button.

Configuration Instructions

Setting Up Your Wireless Network

To set up and install your wireless network, follow these steps.

For complete instructions, including binding, configuration, installation, weatherproofing, device menu maps, troubleshooting, and a list of accessories, refer to Sure Cross® Wireless I/O Network Instruction Manual (p/n 132607)

1. Disconnect the power from your Sure Cross devices.
2. Configure the DIP switches of all devices. DIP switch configurations are always listed in the product's datasheet.
3. If your device has I/O, connect the sensors to the Sure Cross devices. Available I/O is always listed in the product's datasheet. If your device does not have I/O, skip this step.
4. Refer to the wiring diagrams to apply power to all devices.
   - For housed models, the Gateway's LED 1 is solid green and the Node's LED 2 flashes red to indicate there is no radio link to the Gateway.
   - For board-level models, the Gateway's LED is solid green and the Node's LED flashes red to indicate there is no radio link to the Gateway.
5. Form the wireless network by binding the Nodes to the Gateway.
6. Observe the LED behavior to verify the devices are communicating with each other.
   - For housed models, the Gateway's LED 1 is solid green and the Node's LED 1 flashes green to indicate it is communicating with the Gateway.
   - For board-level models, the Gateway's LED is solid green and the Node's LED flashes green to indicate it is communicating with the Gateway.
7. Configure any I/O points to use the sensors connected to the Sure Cross devices.
8. Conduct a site survey between the Gateway and Nodes.
9. Install your wireless sensor network components.

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ПРОМЭЛЕКТРОНИКА/ sales@prom-elec.com

Configure the DIP Switches

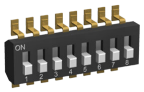
Before changing DIP switch positions, disconnect the power. Any changes made to the DIP switches are not recognized until after power is cycled to the device.

For devices powered by batteries integrated into the housing, triple-click button 2, then double-click button 2 to reset the device without removing the battery.

For parameters not set using the DIP switches, use the configuration software to make configuration changes. For parameters set using the DIP switches, the DIP switch positions override any changes made using the configuration software.

Access the Internal DIP Switches

Follow these steps to access the internal DIP switches.



1. Unscrew the four screws that mount the cover to the bottom housing.
2. Remove the cover from the housing without damaging the ribbon cable or the pins the cable plugs into.
3. Gently unplug the ribbon cable from the board mounted into the bottom housing. Skip this step if there is no ribbon cable (integrated battery models) or the ribbon cable is glued down (C housing models).
4. Remove the black cover plate from the bottom of the device's cover.
   The DIP switches are located behind the rotary dials.
5. Make the necessary changes to the DIP switches.
6. Place the black cover plate back into position and gently push into place.
7. If necessary, plug the ribbon cable in after verifying that the blocked hole lines up with the missing pin.
8. Mount the cover back onto the housing.

DIP Switch Settings

When DIP switch 2 is ON:

- DIP switches 3 through 8 are used; and
- DIP switches 5 and 6 may still be set to ON to use the User Configuration Tool (UCT) to define the sample and report rate.

Device Settings	DIP Switches							
	1	2	3	4	5	6	7	8
900 MHz transmit power level: 1 Watt (30 dBm)	OFF*							
900 MHz transmit power level: 250 mW (24 dBm), DX80 compatibility mode	ON							
Modbus or UCT Configured (overrides DIP Switches 3-8)		OFF*						
DIP Switch Configured		ON						
Counter Discrete Value Input Type: NPN			OFF*	OFF*				
Counter Discrete Value Input Type: PNP			OFF	ON				
Counter Discrete Value Input Type: Float, 1 V Threshold			ON	OFF				
Counter Discrete Value Input Type: Float, 300 mV Threshold			ON	ON				
Sample/Report Rate: 64 Seconds					OFF*	OFF*		
Sample/Report Rate: 16 Seconds					OFF	ON		
Sample/Report Rate: 4 Seconds					ON	OFF		
Sample/Report Rate: Modbus or UCT Configured					ON	ON		
Debounce Enabled							OFF*	
Debounce Disabled							ON	
Counter 2 Input Type: Event								OFF*
Counter 2 Input Type: Frequency								ON

* Default configuration

Counter Discrete Value Input Types

Type	Description
NPN	Switch to ground
PNP	Switch to a voltage greater than 10 V
Float, 1 V Threshold	Digital signal above 1 V
Float, 300 mW Threshold	Digital signal above 300 mV

Counter Input Type

Select from the two types of counters:

- **Frequency (rate) counter**—Calculates the frequency of the input signal, in Hz
- **Event counter**—Counts the total number of times an input signal changes to the OFF/0 state for NPN input type or ON/1 for PNP or Float input types

The counter values are saved in EEPROM every hour. After power up, the saved value is restored as the beginning count. Setting the counter using the preset or clear functions saves the preset value or zeroes in EEPROM. The counter increments on the falling edge of an input signal when the signal level crosses the threshold.

Debounce

When a signal changes state using a mechanical switch or relay, the signal can oscillate briefly before stabilizing to the new state. The debounce filter examines the signal's transitions to determine the signal's state.

Enable debounce to prevent switch noise. Disable debounce for high frequency signals.

Modbus/Software or DIP Switch Configured

In Modbus/Software Configured mode, use the DX80 Performance Configuration Software or a Modbus command to change the device parameters. DIP switch positions 3 through 8 are ignored. In DIP Switch Configured mode, use the DIP switches to configure the parameters listed in the table.

Sample and Report Rates

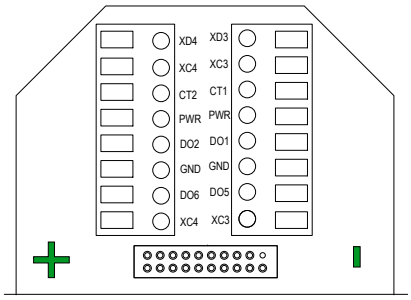
The sample interval, or rate, defines how often the Sure Cross device samples the input. For battery-powered applications, setting a slower rate extends the battery life.

The report rate defines how often the Node communicates the I/O status to the Gateway. For battery-powered applications, setting the report rate to a slower rate extends the battery life.

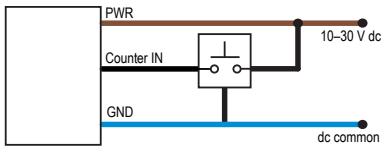
Transmit Power Levels

The 900 MHz radios transmit at 1 Watt (30 dBm) or 250 mW (24 dBm). The 250 mW mode reduces the radio's range but improves the battery life in short range applications. For 2.4 GHz models, this DIP switch is disabled. The transmit power for 2.4 GHz is fixed at about 65 mW EIRP (18 dBm).

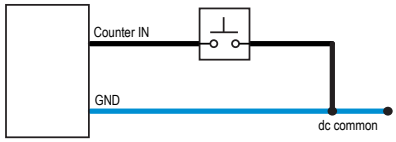
Wire for Power and I/O



Counter Input Wiring for PNP Sensors

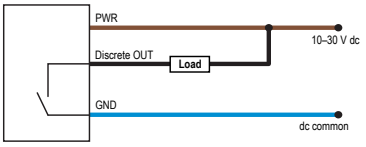


Counter Input Wiring for NPN Sensors



CT1. Counter input 1
CT2. Counter input 2
DO1. NMOS output 1
DO2. NMOS output 2
DO5. NMOS output 5
DO6. NMOS output 6
PWR. Power for sensors

Discrete Output Wiring (NPN or NMOS)



Wiring for DX80...E Radios

Connecting power to the communication pins will cause permanent damage. The integrated battery DX80...E radios may also be powered by 10 V DC to 30 V DC. The power for the sensors can be supplied by the radio's SPx terminals or from the 10 V DC to 30 V DC used to power the radio. The BAT connection is a low voltage connection to the internal battery. Remove the internal battery if a low voltage source is connected to the BAT terminal. When powering the device from the integrated battery, the BAT connection must remain open.

		Integrated battery (RS-485) for P1E, M-H1E, M-H12E, and P16E Models	Integrated battery (RS-232) for P3E, P4E, M-H3E, and M-H4E Models
	1	10 V DC to 30 V DC (optional)	10 V DC to 30 V DC (optional)
	2	RS-485 / D1 / B / +	RS-232 Tx
	3	dc common (GND)	dc common (GND)
	4	RS-485 / D0 / A / -	RS-232 Rx

LED Behavior for the Nodes

Nodes do not sample inputs until they are communicating with the Gateway.

The radios and antennas must be a minimum distance apart to function properly. Recommended minimum distances are:

900 MHz 150 mW and 250 mW radios: 6 feet
900 MHz 1 Watt radios: 15 feet
2.4 GHz 65 mW radios: 1 foot

Table 1: LED behavior for the Nodes

LED 1	LED 2	Node Status
Flashing green		Radio Link Ok
Flashing red	Flashing red	Device Error
	Flashing red, 1 per 3 sec	No Radio Link

Clearing the Event Counter

When using a host-controlled system, clear the counter by sending a control message on Node register 15. Control messages on Node register 15 are acknowledged with the same value echoed to Node register 7.

1. Write 5121 (0x1401) to clear counter 1.
2. Write 5122 (0x1402) to clear counter 2.
3. Write 5123 (0x1403) to clear counters 1 and 2.

When you are not using a host-controlled system, a transition from 0 to 1 on the Node's output registers is needed to clear the counter. Use this method on Gateway IO mapping to map inputs, such as a push button, to clear counter values.

1. Write output register 13 from 0 to 1 to clear counter 1.

2. Write output register 14 from 0 to 1 to clear counter 2.

Event Counter Presets from a Host-Controlled System

The event counter input can be preset from a host system using Advanced Control Messages. From the host system, each device has allocated Node registers 7, 15, and 16 that send preset data to the event counter. When power is applied to the Node, the counter value is reset to the last saved value. Setting the counter using the preset or clear functions saves the preset value or zeroes.

The event counter input is a 32-bit value that can be preset using the parameter control codes 143 (0x8F) and 144 (0x90). Parameter control code 143 writes the lower half [15:0] of the counter and code 144 writes the upper half [31:16] of the counter.

Defining the Counter Select Mask using the second bit position selects the counter. Set Modbus register 16 to the high or low data value. Read Modbus register 7 for the transfer acknowledgment.

Node Reg 15	143 or 144 (0x8F or 0x90)	Counter Select Mask
Node Reg 16	Low or High Value	
Node Reg 7	Acknowledge Code 143 or 144	Acknowledge Counter Select Mask

Preset the Counter to 20,567,001

To preset the counter to the value 20,567,001 (hex 0139 D3D9), follow these steps:

1. Write the upper word to the counter using control code 144 (0x90).

Node Reg 15	0x90	2
Node Reg 16	0139	
Node Reg 7	0x90	2

2. Write the lower word to the counter using control code 143 (0x8F).

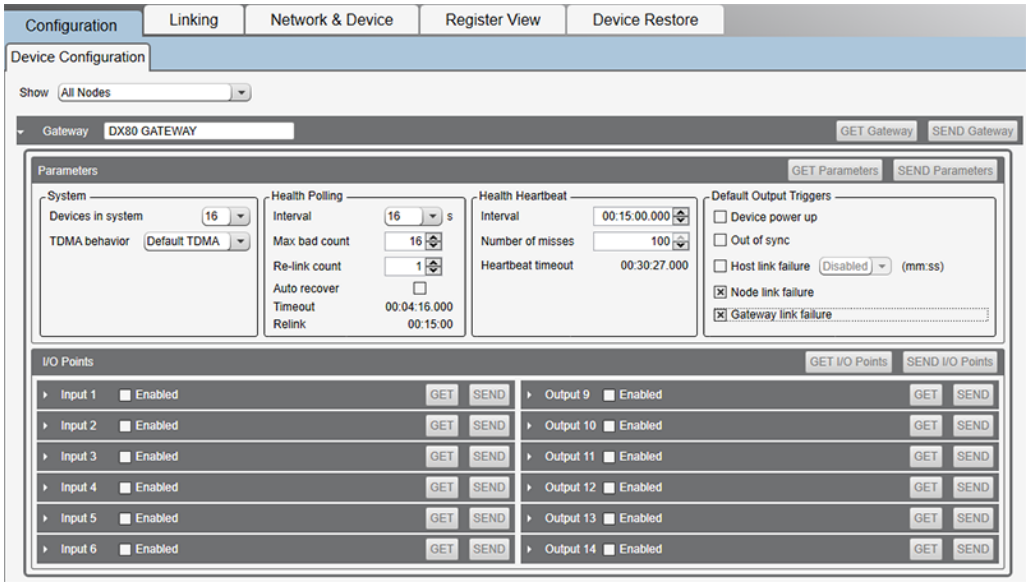
Node Reg 15	0x8F	2
Node Reg 16	D3D9	
Node Reg 7	0x8F	2

The counter has been preset to 20,567,001 (0x0139 D3D9).

Sure Cross® DX80 Performance Configuration Software

The configuration software offers an easy way to link I/O points in your wireless network, view I/O register values, and set system communication parameters when a host system is not part of the wireless network. The software runs on any computer with the Windows Vista, Windows 7, Windows 8, or Windows 10 operating system.

Figure 1. Device Configuration screen



Use a USB to RS-485 adapter cable to connect a standalone DX80 Gateway to the computer. For DXM Controllers with an internal DX80 radio, connect a computer to the DXM Controller using the supplied USB or Ethernet connection. Download the most recent revisions of the configuration software from Banner Engineering's website: https://www.bannerengineering.com/us/en/products/wireless-sensor-networks/reference-library/software.html.

The USB to RS-485 adapter cable is not required for the DXM Controller. For standalone DX80 Gateway devices use:

- USB to RS-485 adapter cable model **BWA-UCT-900** for 1 Watt radios
- USB to RS-485 adapter cable model **BWA-HW-006** for all other radios

Installing Your Sure Cross® Radios

Please refer to one of these instruction manuals to install your wireless network components.

- Performance Wireless I/O Network Instruction Manual: 132607
- MultiHop Data Radio Instruction Manual: 151317

Holding Registers

Counter 2 is DIP switch selectable between a rate or an event (default) counter. The rate counter uses I/O 5. The event counter uses I/O 5 and 6.

Modbus Registers		EIP Registers		I/O Type	I/O Range		Holding Register Representation (Dec)	
Gateway	Node	Node			Min.	Max.	Min.	Max.
1	1 + (Node# × 16)	0 + (Node# × 8)	Instance 100 / N7	Counter 1 Discrete Value	0	1	0	1
2	2 + (Node# × 16)	1 + (Node# × 8)		Counter 2 Discrete Value	0	1	0	1
3	3 + (Node# × 16)	2 + (Node# × 8)		Counter 1 High Word	0	65535	0	65535
4	4 + (Node# × 16)	3 + (Node# × 8)		Counter 1 Low Word	0	65535	0	65535
5	5 + (Node# × 16)	4 + (Node# × 8)		Counter 2 High Word / Frequency	0	65535	0	65535
6	6 + (Node# × 16)	5 + (Node# × 8)		Counter 2 Low Word	0	65535	0	65535
7	7 + (Node# × 16)	6 + (Node# × 8)		Reserved				
8	8 + (Node# × 16)	7 + (Node# × 8)		Device Message				
9	9 + (Node# × 16)	0 + (Node# × 8)	Instance 112 / N14	NMOS OUT 1	0	1	0	1
10	10 + (Node# × 16)	1 + (Node# × 8)		NMOS OUT 2	0	1	0	1
11	11 + (Node# × 16)	2 + (Node# × 8)		NMOS OUT 5	0	1	0	1
12	12 + (Node# × 16)	3 + (Node# × 8)		NMOS OUT 6	0	1	0	1
13	13 + (Node# × 16)	4 + (Node# × 8)		Clear Counter 1	0	1	0	1
14	14 + (Node# × 16)	5 + (Node# × 8)		Clear Counter 2	0	1	0	1
15	15 + (Node# × 16)	6 + (Node# × 8)		Control Message				
16	16 + (Node# × 16)	7 + (Node# × 8)		Reserved				

Install or Replace the Battery on a DX80E Model

To replace the lithium "D" cell battery or batteries in any DX80E model, follow these steps.

1. Remove the four screws mounting the face plate to the housing and remove the face plate. If there is a radio cover on the faceplate, do not remove the radio cover from the face plate.
2. If applicable, remove the discharged battery or batteries.
3. Install the new battery or batteries.
4. Verify the positive and negative terminals align to the positive and negative terminals of the battery holder mounted within the case.
5. Allow up to 60 seconds for the device to power up.
6. Properly dispose of used batteries according to local regulations by taking it to a hazardous waste collection site, an e-waste disposal center, or other facility qualified to accept lithium batteries.



CAUTION: There is a risk of explosion if the battery is replaced incorrectly.

For outside or high humidity environments, dielectric grease may be applied to the battery terminals to prevent moisture and corrosion buildup.

As with all batteries, these are a fire, explosion, and severe burn hazard. Do not burn or expose them to high temperatures. Do not recharge, crush, disassemble, or expose the contents to water.

For non-hazardous locations, the replacement battery is model **BWA-BATT-011**. For non-hazardous or hazardous locations, the replacement battery is Xeno model XL-205F, Banner model **BWA-BATT-001**. For pricing and availability, contact Banner Engineering.

Specifications

Performance Radio Specifications

Radio Range [1]
900 MHz, 1 Watt: Up to 9.6 km (6 miles)
2.4 GHz, 65 mW: Up to 3.2 km (2 miles)

Antenna Minimum Separation Distance
900 MHz, 1 Watt: 4.57 m (15 ft)
2.4 GHz, 65 mW: 0.3 m (1 ft)

Radio Transmit Power
900 MHz, 1 Watt: 30 dBm (1 W) conducted (up to 36 dBm EIRP)
2.4 GHz, 65 mW: 18 dBm (65 mW) conducted, less than or equal to 20 dBm (100 mW) EIRP

Spread Spectrum Technology
FHSS (Frequency Hopping Spread Spectrum)

Link Timeout (Performance)
Gateway: Configurable via User Configuration Software
Node: Defined by Gateway

Antenna Connection
Ext. Reverse Polarity SMA, 50 Ohms
Max Tightening Torque: 0.45 N·m (4 lbf·in)

900 MHz Compliance (1 Watt)
FCC ID UE3RM1809: FCC Part 15, Subpart C, 15.247
IC: 7044A-RM1809
IFT: RCPBARM13-2283

(NOM approval only applies to 900 MHz models)

2.4 GHz Compliance
FCC ID UE300DX80-2400: FCC Part 15, Subpart C, 15.247
Radio Equipment Directive (RED) 2014/53/EU
IC: 7044A-DX8024
ANATEL: 15966-21-04042 Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados. Para maiores informações, consulte o site da ANATEL www.gov.br/anatel/pt-br/

P16E Performance Node Specifications

Supply Voltage
10 V DC to 30 V DC (Outside the USA: 12 V DC to 24 V DC, ± 10%) with integrated battery backup

Discrete Input
Rating: 3 mA max current at 30 V DC
Sample / Report Rates: DIP switch configurable

Discrete Input ON Condition
PNP: Greater than 10 V
NPN: Less than 0.7 V

Discrete Input OFF Condition
PNP: Less than 5 V
NPN: Greater than 2 V or open

Counter Input
Event counter: Input rating 1 Hz to 10 kHz (For battery powered devices, the recommended input rating is less than 1 kHz)
Rate (frequency) counter: 1 Hz to 10 kHz
Debounce select will filter the higher frequencies
Thresholds:
PNP/NPN: See Discrete Input Conditions
Float: Selectable (1 V / 300 mV)

Wiring Access
Two 1/2-inch NPT

Current Draw at 3.6 V dc
900 MHz, 1 Watt: Average Runtime 320 µA
900 MHz, 250 mW: Average Runtime 270 µA
2.4 GHz, 65 mW: Average Runtime 250 µA

Housing
Polycarbonate housing and rotary dial cover; polyester labels; EDPM rubber cover gasket; nitrile rubber, non-sulphur cured button covers
Mounting: 1/4-inch or M7 (SS M7 hardware included)
Max. Tightening Torque: 0.56 N·m (5 lbf·in)

Interface
Two bi-color LED indicators
Two buttons
Six character LCD

Certifications

Banner Engineering Europe
Park Lane, Culliganlaan 2F bus 3, 1831 Diegem, BELGIUM

(CE approval only applies to 2.4 GHz models)

Turck Banner LTD Blenheim House, Blenheim Court, Wickford, Essex SS11 8YT, Great Britain

Environmental Specifications for the E Housing

Operating Conditions
–40 °C to +85 °C (–40 °F to +185 °F) (Electronics); –20 °C to +80 °C (–4 °F to +176 °F) (LCD)
95% maximum relative humidity (non-condensing)
Radiated Immunity: 10 V/m (EN 61000-4-3)

Shock and Vibration
All models meet IEC 60068-2-6 and IEC 60068-2-27 testing criteria
Shock: 30G 11 ms duration, half sine wave per IEC 60068-2-27
Vibration: 10 Hz to 55 Hz, 0.5 mm peak-to-peak amplitude per IEC 60068-2-6

Environmental Ratings
IP65
Refer to the Sure Cross® Wireless I/O Networks Instruction Manual (p/n 132607) for installation and waterproofing instructions.

Operating the devices at the maximum operating conditions for extended periods can shorten the life of the device.

Accessories

Included with the DX80..E Models

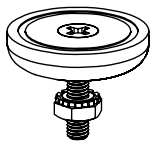
- Mounting hardware kit
- BWA-HW-003: PTFE tape
- BWA-9O2-C (900 MHz) or BWA-2O2-C (2.4 GHz): Antenna, 2 dBd Omni, Rubber Swivel RP-SMA Male. (Not included with Internal antenna models)
- BWA-BATT-001: Replacement battery, 3.6 Volt, "D" Lithium Cell
- BWA-HW-032: Access Hardware for "E" Housing (One each of 1/2-inch plug, 1/2-inch gland)
- Product datasheet and product family Quick Start Guide (128185 for DX80 Gateways or 152653 for MultiHop models)

[1] Radio range is with the 2 dB antenna that ships with the product. High-gain antennas are available, but the range depends on the environment and line of sight. Always verify your wireless network's range by performing a Site Survey.

Mounting Brackets

BWA-BK-020

- Includes two 80-lb pull rare-earth magnet mounts and two #10-32 × 1 inch screw mounts
- Used on multiple mounting brackets
- 31.75 mm (1.25 inch) diameter



Warnings

Install and properly ground a qualified surge suppressor when installing a remote antenna system. Remote antenna configurations installed without surge suppressors invalidate the manufacturer's warranty. Keep the ground wire as short as possible and make all ground connections to a single-point ground system to ensure no ground loops are created. No surge suppressor can absorb all lightning strikes; do not touch the Sure Cross® device or any equipment connected to the Sure Cross device during a thunderstorm.

Exporting Sure Cross® Radios. It is our intent to fully comply with all national and regional regulations regarding radio frequency emissions. **Customers who want to re-export this product to a country other than that to which it was sold must ensure the device is approved in the destination country.** The Sure Cross wireless products were certified for use in these countries using the antenna that ships with the product. When using other antennas, verify you are not exceeding the transmit power levels allowed by local governing agencies. This device has been designed to operate with the antennas listed on Banner Engineering's website and having a maximum gain of 9 dBm. Antennas not included in this list or having a gain greater that 9 dBm are strictly prohibited for use with this device. The required antenna impedance is 50 ohms. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen such that the equivalent isotropically radiated power (EIRP) is not more than that permitted for successful communication. Consult with Banner Engineering Corp. if the destination country is not on this list.

Important: Please download the complete Performance Gateway or Node technical documentation, available in multiple languages, from www.bannerengineering.com for details on the proper use, applications, Warnings, and installation instructions of this device.

Important: Por favor descargue desde www.bannerengineering.com toda la documentación técnica de los Performance Gateway or Node, disponibles en múltiples idiomas, para detalles del uso adecuado, aplicaciones, advertencias, y las instrucciones de instalación de estos dispositivos.

Important: Veuillez télécharger la documentation technique complète des Performance Gateway or Node sur notre site www.bannerengineering.com pour les détails sur leur utilisation correcte, les applications, les notes de sécurité et les instructions de montage.

WARNING:

- **Do not use this device for personnel protection**
- Using this device for personnel protection could result in serious injury or death.
- This device does not include the self-checking redundant circuitry necessary to allow its use in personnel safety applications. A device failure or malfunction can cause either an energized (on) or de-energized (off) output condition.

Important:

- **Never operate a 1 Watt radio without connecting an antenna**
- Operating 1 Watt radios without an antenna connected will damage the radio circuitry.
- To avoid damaging the radio circuitry, never apply power to a Sure Cross® Performance or Sure Cross MultiHop (1 Watt) radio without an antenna connected.

Important:

- **Electrostatic discharge (ESD) sensitive device**
- ESD can damage the device. Damage from inappropriate handling is not covered by warranty.
- Use proper handling procedures to prevent ESD damage. Proper handling procedures include leaving devices in their anti-static packaging until ready for use; wearing anti-static wrist straps; and assembling units on a grounded, static-dissipative surface.

Banner Engineering Corp. Limited Warranty

Banner Engineering Corp. warrants its products to be free from defects in material and workmanship for one year following the date of shipment. Banner Engineering Corp. will repair or replace, free of charge, any product of its manufacture which, at the time it is returned to the factory, is found to have been defective during the warranty period. This warranty does not cover damage or liability for misuse, abuse, or the improper application or installation of the Banner product.

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Antenas SMA	Modelo
Antena, Omni 902-928 MHz, 2 dBd, junta de caucho, RP-SMA Macho	**BWA-9O2-C**
Antena, Omni 902-928 MHz, 5 dBd, junta de caucho, RP-SMA Macho	**BWA-9O5-C**

Antenas Tipo-N	Modelo
Antena, Omni 902-928 MHz, 6 dBd, fibra de vidrio, 1800mm, N Hembra	**BWA-9O6-A**
Antena, Yagi, 900 MHz, 10 dBd, N Hembra	**BWA-9Y10-A**

Mexican Importer

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