Features

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 MultiHop data radio networks are formed around a MultiHop client and one or more servers and extend the range of a Modbus or other serial communication network.



- Selectable transmit power levels of 250 mW or 1 W for 900 MHz models and 65 mW for 2.4 GHz models
- *Flex*Power® power options allow for 10 V DC to 30 V DC, solar, and battery power sources for low-power applications.
- Serial communication style (RS-232 or RS-485) is user selectable
- Multiple hops allow for an extended range
- Message routing improves link performance
- Self-healing, auto-routing radio frequency network with multiple hops extends the network's range and improves radio link performance
- DIP switches select operational modes: client, repeater, or server
- Built-in site survey mode enables rapid assessment of a location's RF transmission properties
- Frequency Hopping Spread Spectrum (FHSS) technology ensures reliable data delivery

Models

Models	Frequency	Transmit Power
DX80DR9M-H	900 MHz ISM Band	250 mW or 1 Watt (DIP switch selectable)
DX80DR2M-H	2.4 GHz ISM Band	65 mW (100 mW EIRP)

Configuration Instructions

Set Up Your MultiHop Network

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

1. If your radios have DIP switches, configure the DIP switches of all devices.
2. Connect the sensors to the MultiHop radios if applicable.
3. Apply power to all devices.
4. If your MultiHop radio has rotary dials, set the MultiHop Radio ID. If your MultiHop radio has no rotary dials, continue to the next step.
5. Form the wireless network by binding the server and repeater radios to the client radio. If the binding instructions are not included in this datasheet, refer to the quick start guide or product manual.
6. Observe the LED behavior to verify the devices are communicating with each other.
7. Configure any I/O points to use the sensors connected to the Sure Cross devices.
8. Conduct a site survey between the MultiHop radios. If the site survey instructions are not included in this datasheet, refer to the product manual.
9. Install your wireless sensor network components. If the installation instructions are not included in this datasheet, refer to the product manual.

For additional information, refer to one of the following documents:

- MultiHop Data Radio Quick Start Guide: 152653
- MultiHop Data Radio Instruction Manual: 151317
- MultiHop Register Guide: 155289

Configure the DIP Switches

Before changing DIP switch positions, disconnect the power.[1]

Any changes made to the DIP switches are not recognized until after power is cycled to the device. 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.

[1] 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.

Original Instructions
06-Nov-25

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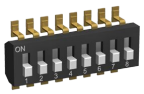
148345
p/n: 148345 Rev K

ПРОМЭЛЕКТРОНИКА/ sales@prom-elec.com

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 (for 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 (MultiHop 1W)

	Switches							
Device Settings	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Serial line baud rate 19200 OR User defined receiver slots (default setting)	OFF	OFF						
Serial line baud rate 38400 OR 32 receiver slots	OFF	ON						
Serial line baud rate 9600 OR 128 receiver slots	ON	OFF						
Serial line baud rate Custom OR 4 receiver slots (default setting for E housing models only)	ON	ON						
Parity: None (default setting)			OFF	OFF				
Parity: Even			OFF	ON				
Parity: Odd			ON	OFF				
Disable serial (low power mode) and enable the receiver slots select for switches 1-2 (default setting for E housing models only)			ON	ON				
Transmit power (default setting) 900 MHz radios: 1 W (30 dBm) 2.4 GHz radios: 65 mW (18 dBm) and 60 ms frame					OFF			
Transmit power 900 MHz radios: 250 mW (24 dBm) 2.4 GHz radios: 65 mW (18 dBm) and 40 ms frame					ON			
Application mode: Modbus (default setting)						OFF		
Application mode: Transparent						ON		
MultiHop radio setting: Repeater (default setting)							OFF	OFF
MultiHop radio setting: Client							OFF	ON
MultiHop radio setting: Server (default setting for E housing models only)							ON	OFF
MultiHop radio setting: Reserved							ON	ON

Transmit Power Levels/Frame Size. The 900 MHz data radios can be operated at 1 W (30 dBm) or 250 mW (24 dBm). For most models, the default transmit power is 1 W. For 2.4 GHz radios, the transmit power is fixed at 65 mW (18 dBm) and DIP switch 5 is used to set the frame timing. The default position (OFF) sets the frame timing to 60 milliseconds. To increase throughput, set the frame timing to 40 milliseconds. For battery-powered devices, increasing the throughput decreases battery life.

Application Mode

The MultiHop radio operates in either Modbus mode or transparent mode. Use the internal DIP switches to select the mode of operation. All MultiHop radios within a wireless network must be in the same mode.

Modbus mode uses the Modbus protocol for routing packets. In Modbus mode, a routing table is stored in each parent device to optimize the radio traffic. This allows for point-to-point communication in a multiple data radio network and acknowledgment/retry of radio packets. To access a radio's I/O, the radios must be running in Modbus mode.

In **transparent** application mode, all incoming packets are stored, then broadcast to all connected data radios. The data communication is packet-based and not specific to any protocol. The application layer is responsible for data integrity. For one-to-one data radios it is possible to enable broadcast acknowledgment of the data packets to provide better throughput. In transparent mode, there is no access to the radio's I/O.

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Baud Rate and Parity

The baud rate (bits per second) is the data transmission rate between the device and whatever it is physically wired to. Set the parity to match the parity of the device you are wired to.

Disable Serial

Disable an unused local serial connection to reduce the power consumption of a data radio powered from the solar assembly or from batteries. All radio communications remain operational.

Receiver Slots

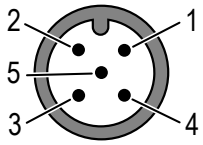
The number of receiver slots indicates the number of times out of 128 slots/frames the radio can transmit to its parent radio. Setting a server's receiver slots to four reduces the total power consumption by establishing that the server can only transmit to its parent four times per 128 slots.

Wire Your Sure Cross Device

Use the following wiring diagrams to first wire the sensors and then apply power to the Sure Cross® devices.

Apply Power to the MultiHop Radio

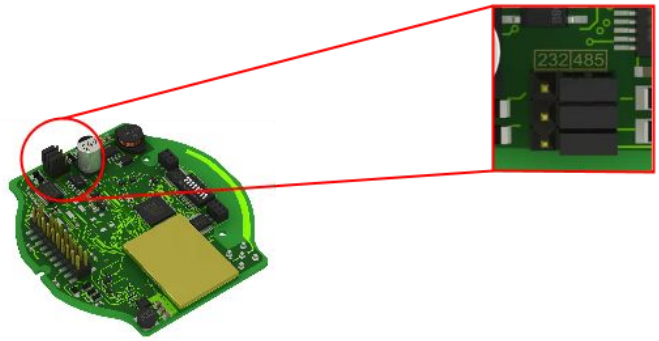
Connecting power to the communication pins will cause permanent damage. For *Flex*Power devices, do not apply more than 5.5 V to the gray wire. The FlexPower radios will operate equally well when powered from the brown or gray wire. It is not necessary to supply both. The power for the sensors can be supplied by the radio's SPx terminals or from the 10 V DC to 30 V DC used to power the radio.



Pin	Wire Color	Models powered by 10 to 30 V dc with RS-485	FlexPower models with RS-485	FlexPower models with RS-232
1	brown	10 V DC to 30 V DC	10 V DC to 30 V DC	10 V DC to 30 V DC
2	white	RS-485 / D1 / B / +	RS-485 / D1 / B / +	RS-232 Tx
3	blue	dc common (GND)	dc common (GND)	dc common (GND)
4	black	RS-485 / D0 / A / -	RS-485 / D0 / A / -	RS-232 Rx
5	gray	-	3.6 V DC to 5.5 V DC	3.6 V DC to 5.5 V DC

Serial Communication

Three jumpers control the communication mode. To change the communication mode, change all three jumper positions. The jumpers are shown configured for RS-485 communication (factory default position).



Set the MultiHop Radio ID

The Modbus ID is an identifying number used for devices within a Modbus system. When using more than one Modbus peripheral, assign each peripheral device a unique ID number.

For MultiHop radios with rotary dials, use the rotary dials to set the device's MultiHop Radio ID. The left dial sets the left digit and the right dial sets the right digit.

- Modbus IDs 01 through 10—Reserved for servers directly connected to the host (local I/O). Polling messages addressed to these devices are not relayed over the wireless link.
- Modbus IDs 11 through 60—Use for MultiHop client, repeater, and server radios. Up to 50 devices (local servers and remote servers) may be used in this system.

If your MultiHop radio does not have rotary dials, you must use the client radio to set the Modbus ID during the binding process.

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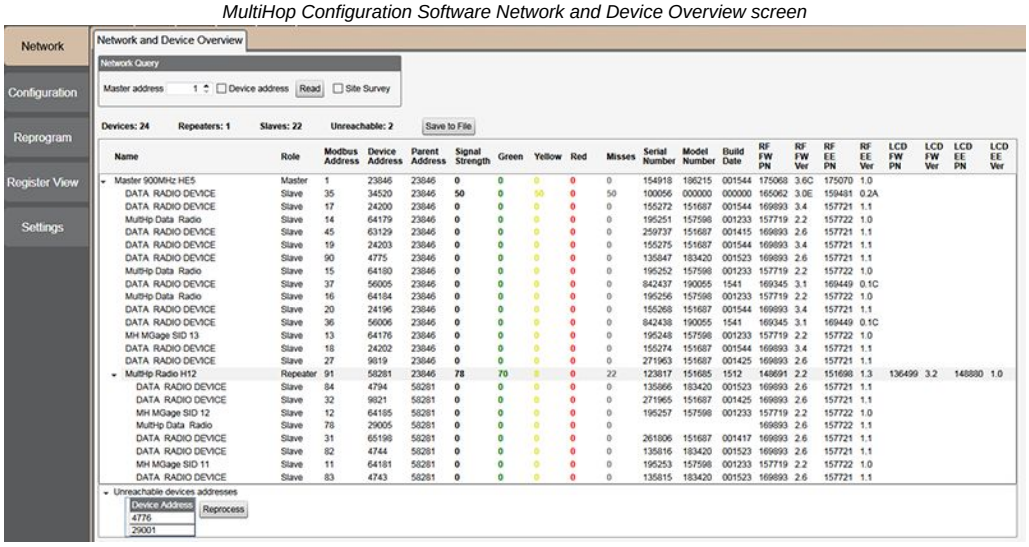
MultiHop Configuration Software

Use Banner's MultiHop Configuration Software to view your MultiHop radio network and configure the radio and its I/O.

MultiHop Configuration Software Network and Device Overview screen



The software connects to a MultiHop client radio using one of four methods.

- Serial; using a USB to RS-485 (for RS-485 radios) or a USB to RS-232 (for RS-232 radios) converter cable.
- Modbus TCP; using an Ethernet connection to an Ethernet radio client.
- Serial DXM; using a USB cable to a DXM Controller to access a MultiHop client radio.
- TCP DXM: using an Ethernet connection to a DXM Controller to access a MultiHop client radio.

Banner recommends using **BWA-UCT-900**, an RS-485 to USB adapter cable with a wall plug that can power your radio while you configure it. The adapter cable is not required when connecting to a DXM Controller.

Download the most recent software revision from the Wireless Reference Library on Banner Engineering's website: www.bannerengineering.com.

Installing Your Sure Cross® Radios

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

- DX80 Performance Wireless I/O Network Instruction Manual: 132607
- MultiHop Data Radio Instruction Manual: 151317

Manufacturer Parameter Registers

The following are the device-specific and manufacturer parameters for the MultiHop radio devices. These registers are all within the 4xxxx range.

Strings stored in ASCII format are read as two characters per Modbus register. The lower-numbered Modbus register contains the right-most characters in the string. Within a given Modbus register, the upper byte contains the ASCII character that goes to the right of the character in the lower byte.

04100s Manufacturing Information

Address (4xxxx)	Name	Format
4101–4104	Serial number, digits 1–8	ASCII, read only
4111–4113	Model number, digits 1–6	ASCII, read only
4121–4123	Production date, digits 1–6	ASCII, read only

04200s Device Name

Address (4xxxx)	Name	Format
4201–4209	Name characters 1-18	ASCII

04300s Software Information

Address (4xxxx)	Name	Format
4301–4303	RF firmware p/n	ASCII, read only

Continued on page 5

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Continued from page 4

Address (4xxxx)	Name	Format
4304–4305	RF firmware version	ASCII, read only
4306–4308	RF EEPROM part number, digits 1–6	ASCII, read only
4309–4310	RF EEPROM version number, characters 1–3	ASCII, read only
4311–4313	LCD firmware p/n	ASCII, read only
4314–4315	LCD firmware version	ASCII, read only
4316–4318	LCD EEPROM part number, digits 1–6	ASCII, read only
4319–4320	LCD EEPROM version number, characters 1–3	ASCII, read only

06400s Message Parameters

Address (4xxxx)	Name	Format
6401	Device address	Hex
6402	Parent address	Hex, read only

Example: Storing a Model Number

For example, the model number 148691 is stored as shown below.

Address (4xxxx)	Name	Modbus Register Value (in hex)	Character Representation
4111	Model number digits 6-5	0x3139	1 9
4112	Model number digits 4-3	0x3638	6 8
4113	Model number digits 2-1	0x3431	4 1

Example: Parameters Stored as Numbers

Parameters stored as number values (not ASCII) read out directly as 16-bit values. Examples of parameters of this type include the Parent Address or Device Address.

Address (4xxxx)	Name	Value (in hex)	Value (decimal)
6401	Device address	0x002A	42
6402	Parent address	0x0023	35

Specifications

Radio Range

A 2 dB antenna ships with this device.

Transmit power and range are subject to many factors, including antenna gain, installation methods, characteristics of the application, and environmental conditions.

Please refer to the following documents for installation instructions and high-gain antenna options.

Installing Your Sure Cross® Radios (151514)
Conducting a Site Survey (133602)
Sure Cross® Antenna Basics (132113)

Antenna Minimum Separation Distance

900 MHz radios transmitting at ≥ 500 mW: 4.57 m (15 ft) with the supplied antenna

2.4 GHz radios transmitting at 65 mW: 0.3 m (1 ft) with the supplied antenna

Radio Transmit Power (900 MHz, 1 W radios)

Conducted: 30 dBm (1 W)

EIRP with the supplied antenna: < 36 dBm

Radio Transmit Power (2.4 GHz radios)

Conducted: < 18 dBm (65 mW)

EIRP with the supplied antenna: < 20 dBm (100 mW)

Spread Spectrum Technology

FHSS (Frequency Hopping Spread Spectrum)

Antenna Connection

Ext. Reverse Polarity SMA, 50 Ohms

Max Tightening Torque: 0.45 N·m (4 lbf·in)

Radio Packet Size (MultiHop)

900 MHz: 175 bytes (85 Modbus registers)

2.4 GHz: 75 bytes (37 Modbus registers)

900 MHz Compliance (RM1809 Radio Module)

Radio module is indicated by the product label marking

Contains FCC ID: UE3RM1809

Contains IC: 7044A-RM1809

IFT: RCPBARM13-2283

2.4 GHz Compliance (DX80-2400 Radio Module)

Radio module is indicated by the product label marking

Contains FCC ID: UE300DX80-2400

Radio Equipment Directive (RED) 2014/53/EU

Contains IC: 7044A-DX8024

Supply Voltage

10 V DC to 30 V DC (Outside the USA: 12 V DC to 24 V DC, ±10%) on the brown wire, or 3.6 V DC to 5.5 V DC low power option on the gray wire [2]

Wiring Access

One 5-pin M12 male quick-disconnect connector

[2] For European applications, power this device from a Limited Power Source as defined in EN 60950-1.

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Consumption

Client radio consumption (900 MHz): Maximum current draw is < 100 mA and typical current draw is < 30 mA at 24 V DC. (2.4 GHz consumption is less.)

Repeater/server radio consumption (900 MHz): Maximum current draw is < 40 mA and typical current draw is < 20 mA at 24 V DC. (2.4 GHz consumption is less.)

Housing

Polycarbonate housing and rotary dial cover; polyester labels; EDPM rubber cover gasket; nitrile rubber, non-sulphur cured button covers

Weight: 0.26 kg (0.57 lbs)

Mounting: #10 or M5 (SS M5 hardware included)

Max. Tightening Torque: 0.56 N·m (5 lbf·in)

Interface

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

Certifications

CE/UKCA approval only applies to 2.4 GHz models

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

Turck Banner LTD Blenheim House
Blenheim Court
Wickford, Essex SS11 8YT
GREAT BRITAIN

FCC Part 15 Class A for Intentional Radiators

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

(Part 15.21) Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Industry Canada Statement for Intentional Radiators

This device contains licence-exempt transmitters(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil contient des émetteurs/récepteurs exemptés de licence conformes à la norme Innovation, Sciences, et Développement économique Canada. L'exploitation est autorisée aux deux conditions suivantes:

1. L'appareil ne doit pas produire de brouillage.
2. L'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

RS-485 Communication Specifications

Communication Hardware (MultiHop RS-485)

Interface: 2-wire half-duplex RS-485

Baud rates: 9.6k, 19.2k (default), or 38.4k via DIP switches; 1200 and 2400 via the MultiHop Configuration Software

Data format: 8 data bits, no parity, 1 stop bit

Environmental Specifications (IP67 Housing Models)

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

IEC IP67; NEMA 6

For installation and waterproofing instructions, go to www.bannerengineering.com and search for the complete instruction manual (p/n 151317)

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

Included with Low-Profile Housing Devices

The following items ship with the low-profile housings.

- **BWA-HW-001**: Mounting Hardware Kit, containing four M5-0.8 × 25 mm SS screws, four M5-0.8 × 16 mm SS screws, four M5-0.8 mm SS hex nuts, and four #8-32 × 3/4" SS bolts
- **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)
- Quick Start Guide (p/n 128185 for Performance Gateway models or p/n 152653 for MultiHop models)
- **BC-M12F5-22-2** (p/n 235936): 5-pin A-Code 2 m cordset with an M12 female (straight) connector on one end and flying leads on the other end (not included with FlexPower devices)

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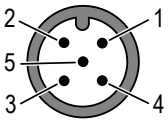
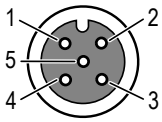
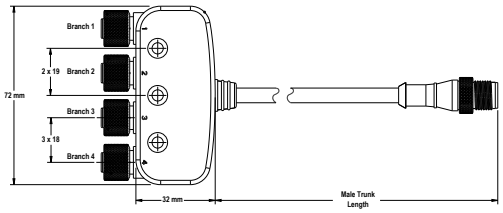
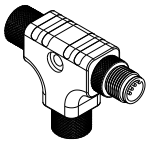
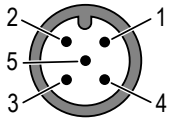
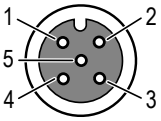
Accessories

Splitter Cordsets

5-Pin Double-Ended M12 Female to M12 Male Flat Junction Splitter Cordsets			
Model	**Description**	**Pinout (Male)**	**Pinout (Female)**
CSB4-M1251M1250	Four (no cable) 5-pin M12 female quick-disconnect connectors One 0.3 m (0.98 ft) cable with a 5-pin M12 male quick-disconnect connector Parallel wiring		
		1 = Brown 2 = White 3 = Blue 4 = Black 5 = Gray	1 = Brown 2 = White 3 = Blue 4 = Black 5 = Gray

5-Pin M12 Female to M12 Male Splitter Tee			
Model		**Pinout (Male)**	**Pinout (Female)**
CSB-M1250M1250-T • Two 5-pin M12 female quick-disconnect connectors • One 5-pin M12 male quick-disconnect connector • Parallel wiring		 1 = Brown 2 = White 3 = Blue 4 = Black 5 = Gray	 1 = Brown 2 = White 3 = Blue 4 = Black 5 = Gray

Warnings

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: Please download the complete MultiHop H Data Radio 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 MultiHop H Data Radio, 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 MultiHop H Data Radio sur notre site www.bannerengineering.com pour les détails sur leur utilisation correcte, les applications, les notes de sécurité et les instructions de montage.

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 than 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.

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IMPORTANT:

- **Never operate a radio without connecting an antenna**
- Operating 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 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.

THIS LIMITED WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES WHETHER EXPRESS OR IMPLIED (INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE), AND WHETHER ARISING UNDER COURSE OF PERFORMANCE, COURSE OF DEALING OR TRADE USAGE.

This Warranty is exclusive and limited to repair or, at the discretion of Banner Engineering Corp., replacement. **IN NO EVENT SHALL BANNER ENGINEERING CORP. BE LIABLE TO BUYER OR ANY OTHER PERSON OR ENTITY FOR ANY EXTRA COSTS, EXPENSES, LOSSES, LOSS OF PROFITS, OR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES RESULTING FROM ANY PRODUCT DEFECT OR FROM THE USE OR INABILITY TO USE THE PRODUCT, WHETHER ARISING IN CONTRACT OR WARRANTY, STATUTE, TORT, STRICT LIABILITY, NEGLIGENCE, OR OTHERWISE.**

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Notas Adicionales (con Antena)

Información México: La operación de este equipo está sujeta a las siguientes dos condiciones: 1) es posible que este equipo o dispositivo no cause interferencia perjudicial y 2) este equipo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.

Banner es una marca registrada de Banner Engineering Corp. y podrán ser utilizadas de manera indistinta para referirse al fabricante. "Este equipo ha sido diseñado para operar con las antenas tipo Omnidireccional para una ganancia máxima de antena de 6 dBd y Yagi para una ganancia máxima de antena 10 dBd que en seguida se enlistan. También se incluyen aquellas con aprobación ATEX tipo Omnidireccional siempre que no excedan una ganancia máxima de antena de 6dBd. El uso con este equipo de antenas no incluidas en esta lista o que tengan una ganancia mayor que 6 dBd en tipo omnidireccional y 10 dBd en tipo Yagi, quedan prohibidas. La impedancia requerida de la antena es de 50 ohms."

Approved Antennas

BWA-9O2-C--Antena, Omni 902-928 MHz, 2 dBd, junta de caucho, RP-SMA Macho
BWA-9O5-C--Antena, Omni 902-928 MHz, 5 dBd, junta de caucho, RP-SMA Macho
BWA-9O6-A--Antena, Omni 902-928 MHz, 6 dBd, fibra de vidrio, 1800mm, N Hembra
BWA-9Y10-A--Antena, Yagi, 900 MHz, 10 dBd, N Hembra

Mexican Importer

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