

Sure Cross® Radio Certifications

Banner's Sure Cross product line is certified by the FCC, European Union, and many other countries for operation within specific radio frequencies.

FCC Certification, 900MHz

The DX80 Module complies with Part 15 of the FCC rules and regulations.

FCC ID: TGUDX80 This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Notices

IMPORTANT: The DX80 Modules have been certified by the FCC for use with other products without any further certification (as per FCC section 2.1091). Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

IMPORTANT: The DX80 Modules have been certified for fixed base station and mobile applications. If modules will be used for portable applications, the device must undergo SAR testing.

IMPORTANT: If integrated into another product, the FCC ID label must be visible through a window on the final device or it must be visible when an access panel, door, or cover is easily removed. If not, a second label must be placed on the outside of the final device that contains the following text: Contains FCC ID: TGUDX80.

Note

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna,
- Increase the separation between the equipment and receiving module,
- Connect the equipment into an outlet on a circuit different from that to which the receiving module is connected, and/or
- Consult the dealer or an experienced radio/TV technician for help.

Antenna Warning: This device has been tested with Reverse Polarity SMA connectors with the antennas listed in [Table 1](#) on page 1. When integrated into OEM products, fixed antennas require installation preventing end-users from replacing them with non-approved antennas. Antennas not listed in the tables must be tested to comply with FCC Section 15.203 (unique antenna connectors) and Section 15.247 (emissions).

FCC Approved Antennas

WARNING: This equipment is approved only for mobile and base station transmitting devices. Antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter.

DX80 Module may be used only with Approved Antennas that have been tested with this module.

Table 1: Certified Antennas for 900 MHz

Model Number	Antenna Type	Maximum Gain
	Integral antenna	Unity gain
BWA-901-x	Omni, 1/4 wave dipole	≤2 dBi
BWA-902-C	Omni, 1/2 wave dipole, Swivel	≤2 dBi
BWA-906-A	Omni Wideband, Fiberglass Radome	≤8.2 dBi
BWA-905-B	Omni Base Whip	≤7.2 dBi
BWA-9Y10-A	Yagi	≤10 dBi

FCC Certification, 900 MHz, 1 Watt Radios

The DX80 Module complies with Part 15 of the FCC rules and regulations.

FCC ID: UE3RM1809 This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Notices

IMPORTANT: The radio modules have been certified by the FCC for use with other products without any further certification (as per FCC section 2.1091). Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

IMPORTANT: The radio modules have been certified for fixed base station and mobile applications. If modules will be used for portable applications, the device must undergo SAR testing.

IMPORTANT: If integrated into another product, the FCC ID label must be visible through a window on the final device or it must be visible when an access panel, door, or cover is easily removed. If not, a second label must be placed on the outside of the final device that contains the following text: Contains FCC ID: UE3RM1809.

Note

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna,
- Increase the separation between the equipment and receiving module,
- Connect the equipment into an outlet on a circuit different from that to which the receiving module is connected, and/or
- Consult the dealer or an experienced radio/TV technician for help.

Antenna WARNING: This device has been tested with Reverse Polarity SMA connectors with the antennas listed in [Table 2](#) on page 2. When integrated into OEM products, fixed antennas require installation preventing end-users from replacing them with non-approved antennas. Antennas not listed in the tables must be tested to comply with FCC Section 15.203 (unique antenna connectors) and Section 15.247 (emissions).

FCC Approved Antennas

WARNING: This equipment is approved only for mobile and base station transmitting devices. Antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter.

DX80 Module may be used only with Approved Antennas that have been tested with this module.

Table 2: Certified Antennas for 900 MHz 1 Watt

Model Number	Antenna Type	Maximum Gain	Minimum Required Cable/Connector Loss
-	Integral Antenna	Unity gain	0
BWA-901-x	Omni, 1/4 wave dipole	≤2 dBi	0
BWA-902-C	Omni, 1/2 wave dipole, Swivel	≤2 dBi	0
BWA-906-A	Omni Wideband, Fiberglass Radome	≤8.2 dBi	2.2 dB
BWA-905-B	Omni Base Whip	≤7.2 dBi	1.2 dB
BWA-9Y10-A	Yagi	≤10 dBi	4 dB

FCC Certification, 2.4GHz

The DX80 Module complies with Part 15 of the FCC rules and regulations.

FCC ID: UE300DX80-2400 This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Notices

IMPORTANT: The DX80 Modules have been certified by the FCC for use with other products without any further certification (as per FCC section 2.1091). Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

IMPORTANT: The DX80 Modules have been certified for fixed base station and mobile applications. If modules will be used for portable applications, the device must undergo SAR testing.

IMPORTANT: If integrated into another product, the FCC ID label must be visible through a window on the final device or it must be visible when an access panel, door, or cover is easily removed. If not, a second label must be placed on the outside of the final device that contains the following text: Contains FCC ID: UE300DX80-2400.

Note

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna,
- Increase the separation between the equipment and receiving module,
- Connect the equipment into an outlet on a circuit different from that to which the receiving module is connected, and/or
- Consult the dealer or an experienced radio/TV technician for help.

Antenna Warning: This device has been tested with Reverse Polarity SMA connectors with the antennas listed in [Table 3](#) on page 3. When integrated into OEM products, fixed antennas require installation preventing end-users from replacing them with non-approved antennas. Antennas not listed in the tables must be tested to comply with FCC Section 15.203 (unique antenna connectors) and Section 15.247 (emissions).

FCC Approved Antennas

WARNING: This equipment is approved only for mobile and base station transmitting devices. Antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter.

DX80 Module may be used only with Approved Antennas that have been tested with this module.

Table 3: Certified Antennas for 2.4 GHz

Model	Antenna Type	Maximum Gain
	Integral antenna	Unity gain
BWA-202-C	Omni, 1/2 wave dipole, Swivel	≤2 dBi
BWA-205-C	Omni, Collinear, Swivel	≤5 dBi
BWA-207-C	Omni, Coaxial Sleeve, Swivel	≤7 dBi

Certified For Use in the Following Countries

The Sure Cross® radio devices are approved for use in the following countries.

Country	Radio Modules		
	900 MHz (150 mW)	900 MHz (1 Watt)	2.4 GHz (65 mW)
Australia		x *	x
Austria			x
Bahamas, The	x		x
Bahrain, Kingdom of			x
Belgium			x
Brazil			x
Bulgaria			x
Canada	x	x	x
Chile			x

Country	Radio Modules		
	900 MHz (150 mW)	900 MHz (1 Watt)	2.4 GHz (65 mW)
China, People's Republic of			x
Colombia	x		x
Cyprus			x
Czech Republic			x
Denmark			x
Ecuador			x
El Salvador			x
Estonia			x
Egypt			x
Finland			x
France			x
Germany			x
Greece			x
Guatemala	x		x
Hungary			x
Iceland			x
India			x
Ireland			x
Israel			x *
Italy			x
Japan			x
Korea, Republic of (South)			x *
Latvia			x
Liechtenstein			x
Lithuania			x
Luxembourg			x
Malta			x
Mexico	x	x	x
Netherlands			x
New Zealand		x *	x
Norway			x
Oman, Sultanate of			x
Pakistan			x
Panama	x		x
Poland			x
Portugal			x
Romania			x
Russia			x
Saudi Arabia, Kingdom of			x
Singapore			x
Slovakia			x

Country	Radio Modules		
	900 MHz (150 mW)	900 MHz (1 Watt)	2.4 GHz (65 mW)
Slovenia			x
South Africa			x
Spain			x
Sweden			x
Switzerland			x
Taiwan (Republic of China)			x *
Thailand			x
Turkey			x
United Arab Emirates			x
United Kingdom			x
United States of America	x	x	x

* See country-specific notes below.

Australia and New Zealand—For the 900 MHz 1 Watt radios, only models ending in "-AN" are certified for use.

Bulgaria—Authorization required for outdoor and public service use.

Canada—This Class A digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouiller du Canada. Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Classe A prescrites dans le Règlement sur le brouillage radioélectrique édictés par le ministère des Communications du Canada.

France—In Guyane (French Guiana) and La Réunion (Reunion Island), outdoor use not allowed.

Israel—DX80 and DX99 models are certified for the external antenna models only.

Italy—If used outside of own premises, general authorization is required.

Korea—Only models ending in "-KR" are certified for use.

Luxembourg—General authorization is required for public service.

Taiwan—Taiwan is certified to operate specific DX70, DX80, and DX99 models. For a list of specific models, refer to the certificate.

Additional Statements—900 MHz

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.

Transmit Power Levels

The Sure Cross wireless products were certified for use in these countries using the standard antenna that ships with the product. When using other antennas, verify you are not exceeding the transmit power levels allowed by local governing agencies.

Exporting Sure Cross® Radios

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. A list of approved countries appears in the *Radio Certifications* section of the product manual. 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. Consult with Banner Engineering Corp. if the destination country is not on this list.