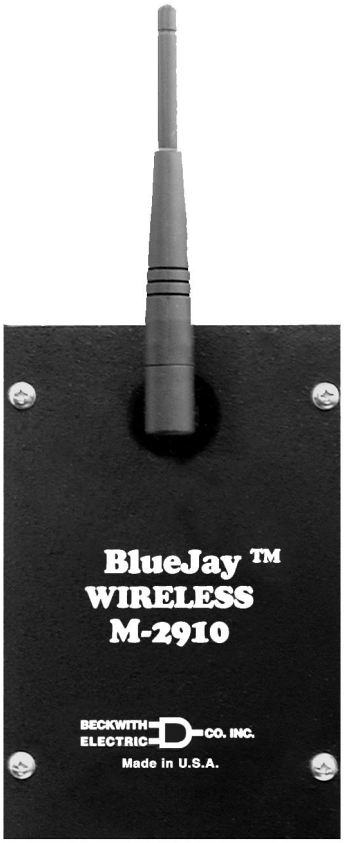
BlueJay™ Wireless Data Transceiver M-2910



- **Provides direct sequence spread spectrum peer-to-peer, point-to-point, point-to-multipoint and master/slave high speed (1 Mbps) data transmission rates at ranges up to 1500 feet**
- **Interfaces using high-speed Synchronous Peripheral Interface (SPI). Baud rates up to 500 kbps**
- **Substation hardened to withstand temperatures from -40 to +80 degrees C and humidity up to 95%**
- **No user license required, interfaces with SPI-interface equipped IEDs**

WARNING

This equipment has been tested and found to comply with the limit requirements, pursuant to Part 15.247 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.

Only the antenna provided is authorized for use with the M-2910. If the antenna is lost or damaged, please contact Beckwith Electric Co., Inc. to secure a replacement antenna.

This product generates, uses, and can radiate radio frequency (RF). If it is not installed and used in accordance with the operating instructions, it can cause harmful interference to communications. If this equipment causes harmful interference to radio or television reception, the user should try and correct the interference by:

- Reorienting or relocating the receiving/transmitting antenna
- Increasing the separation between the equipment and the M-2910
- Connecting the equipment into an outlet on a different circuit from the M-2910.

If these do not correct the interference, consult an experienced radio/television technician for assistance. Correcting such interference is the responsibility of the user, not the manufacturer.

Changes or modifications not expressly approved by Beckwith Electric Co., Inc. may void the user's authority to operate the equipment.

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for uncontrolled equipment. This equipment should be installed and operated with a minimum distance of at least 20 cm between the radiator and person's body (excluding extremities) and must not be located or operated with any other antenna or transmitter.

The M-2910 BlueJay™ Wireless Data Transceiver is a self-contained short-range wireless communication device (SRD) that is used for transferring serial communication data between Intelligent Electrical Device's (IED's) and computers hosting control software in an industrial environment. The M-2910 is based on an Intersil direct sequence spread spectrum chip set that operates in the 2.4 GHz ISM band. The M-2910 design meets the category for low power devices (LPDs) standard requirement for license-free operation.

Interface

The M-2910 is equipped with a dual-row, ten-pin (2 x 5) header connector utilizing a Serial Peripheral Interface (SPI) link capable of up to 500 Kbps communication speed.

Data Transmission:

- Error Detection – 16 bit CRC (10^{-5} BER at –70dBm)
- Maximum throughput – 1 Mbps RF, 2400 to 115.2 Kbps interface baud rate

Communication

The M-2910 conditions the data and transmits it over a half-duplex direct sequence spread spectrum radio operating in the 2.4 GHz ISM band. The over-the-air data rate is 1 Mbps.

Transmit:

- Frequency Range – 2400 MHz to 2483.5 MHz
- Output Power – 30 mW
- Modulation – DBPSK
- Occupied Bandwidth – 20 MHz
- Spurious Emissions – 50 mV/meter
- Harmonic Emissions – 500 uV/meter
- Spreading Method – Direct Sequence 11 bit code
- Center Band – Carrier 2.450 GHz

Receive:

- Sensitivity – -93 dBm
- Selectivity – 25 MHz

The M-2910 BlueJay Wireless Data Transceiver must be used with a cable extension when the M-2910 is mounted inside a metal enclosure. Antennas must be oriented in the same plane and located in view of the corresponding BlueJay transceiver. Beckwith Electric cable extensions are available in 18", 6' and 13' lengths (See Accessories).

■ **NOTE**: For maximum range, all antennae must be oriented in the same plane.

Accessories

18" Cable Extension – Beckwith Electric Part No. 420-00395

6' Cable Extension – Beckwith Electric Part No. 420-00391

13' Cable Extension – Beckwith Electric Part No. 420-00392

Power

The M-2910 is powered by 5 V dc, supplied by the SPI interface connector. Maximum power draw is 1.75 W (350 mA).

Power Requirements:

- Operating Voltage – +5 V dc ± 10%
- Transmit Current – 350 mA (1.75 W)
- Receive Current – 350 mA (1.75 W)
- Idle Current – 200 mA (1.00 W)
- Sleep Current – 30 mA (0.15 W)

Configuration

The M-2910 is configurable using parameters set into the M-2600A/M-2667A, using SlimCom®: The following parameters can be set:

- Wireless Source (unit) Address (1–250)
- Wireless Destination (Transmit) Address (1–255)
- Wireless Multicast (Receive) Address (251–254)
- Peer-to-Peer Unit Addresses (1–250)

Configuring the M-2910

To configure the M-2910, the unit must be installed on an M-2600A/M-2667A control, and the control connected to a PC running SlimCom, using a RS-232 cable. The unit may be configured through the SlimCom menus

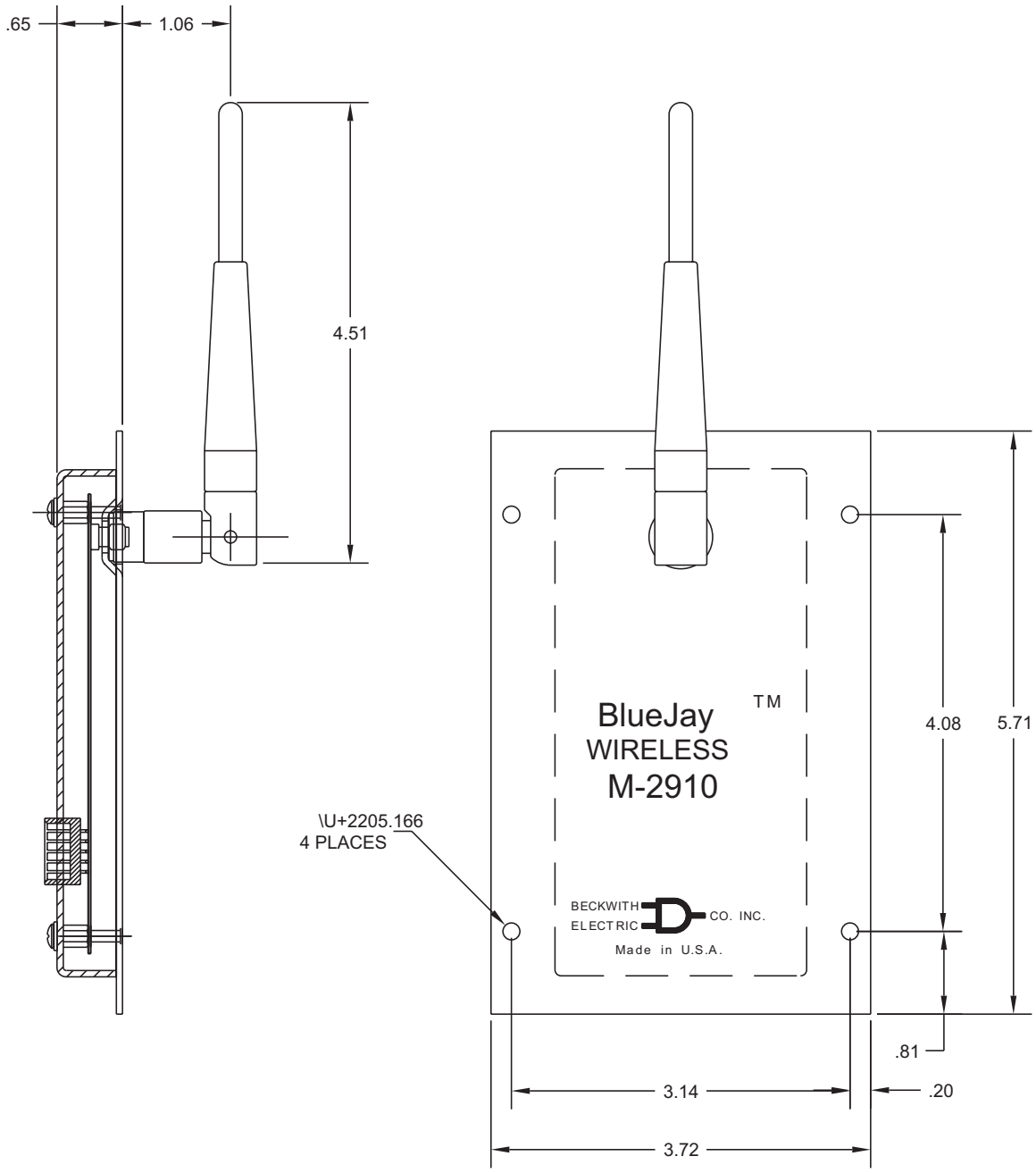


Figure 7 M-2910 Outline Dimensions

Environmental

Temperature: Proper operation maintained from –40°C to +80°C.

Humidity: Proper operation is maintained up to 95% relative humidity (non-condensing).

Environmental Protection: The power supply printed circuit board is conformally coated to inhibit fungus growth.

Enclosure: 1/16" Aluminum.

Physical

Size: 5.71" high (with antenna 8.88") x 3.72" wide x 2.06" deep (14.5 cm (22.6) x 9.5 cm x 5.23 cm). See Figure 7 for dimensional drawing.

Weight: 5.1 oz (145.35 grams)

Enclosure meets requirements of IP30.

Safety and Cautions

WARNING: **The installation, maintenance, and/or operation of this equipment could present potentially unsafe conditions, including, but not limited to, electrical shock or improper voltage to components. Improper operation could cause personal injury, death, or damage to property.**

Read all safety instructions before operating the M-2910, and retain them for further reference. Follow all operating and usage instructions, and make special note of the following safety symbols:

– This sign warns that the area is connected to a dangerous high voltage, and you must never touch it.

– This sign means that you should refer to the corresponding section of the operation manual for important information before proceeding.

Do not attempt to perform maintenance or service functions that are not described in the operating instructions. Instead, refer all such service requirements to Beckwith Electric Co., Inc. Unit must be returned for service in secure (preferably original) packaging. Shipping cost must be paid by user.

Only the antenna provided is authorized for use with the M-2910. If the antenna is lost or damaged, please contact Beckwith Electric Co., Inc. to secure a replacement antenna.

This product generates, uses, and can radiate radio frequency (RF). If it is not installed and used in accordance with the operating instructions, it can cause harmful interference to communications. If this equipment causes harmful interference to radio or television reception, the user should try and correct the interference by:

- Reorienting or relocating the receiving/transmitting antenna
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If these do not correct the interference, consult an experienced radio/television technician for assistance. Correcting such interference is the responsibility of the user, not the manufacturer.

Compliance

This device has been designed to operate with an antenna having a maximum gain of 2 dB. Antenna having a higher gain are strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

This equipment has been tested and found to comply with the limit requirements, pursuant to Part 15.247 of the FCC Rules and Industry Canada RSS-210 and ICES-003. 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.

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.

Patent & Warranty

■ **NOTE**: Changes or modifications to the unit not expressly approved by Beckwith Electric Co. may void the user's authority to operate the equipment.

U.S. Patent for the M-2910 BlueJay™ Wireless Data Transceiver is pending.

The M-2910 BlueJay™ Wireless Data Transceiver is covered by a five year warranty from the date of shipment.

Specification is subject to change without notice.

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