Rio *LINK* ™ *

Industrial Wireless Modem – Model G306C
900MHz / 2.4GHz SS RF Modem – RS232 / RS485

The Model G306C wireless modem is an industrial grade high performance spread-spectrum (FHSS) radio with selectable RS232 or RS485 data interface.

The Rio-Link modem provides out-of-box wireless connectivity for serial data between RS232 and/or RS485 devices, and is transparent to the user's protocol. It provides an easy and reliable data link between points where wiring is impractical or impossible. Models are available for 900MHz or 2.4GHz ISM band frequencies, and either 9600 or 19.2K baud data rates.

The Rio-Link is also system-compatible with Wireless I/O units from G3 Technologies. It is used to interface the Master Controller's Modbus serial port to the Wireless I/O data communications network, and can also be used to connect third-party Modbus slave devices into the same wireless network.

By using Rio-Link, virtually any Modbus Master Controller (PC, PLC, Touch-screen Controller, RTU, & etc) or HMI package (G3's VUE, Wonderware, Citect, Intellution, Cygnet, Lookout, & etc) can communicate with G3's Wireless I/O units (models G303 RIO, G308 RioExpress, G309 RioLogic, & etc).

KEY FEATURES

- Long Range Performance:
  - Indoor/urban Range: up to 1500 ft.
  - Outdoor line-of-sight Range:
    - up to 7 miles w/ 2.1 dB gain dipole antenna
    - up to 20 miles w/ high-gain antenna
- Advanced Networking & Security:
  - 7 ea. Freq. Hopping Channels for system separation
  - Peer-to-peer radio network (no master/slave dependencies)
  - Point-to-point and point-to-multipoint topologies supported
  - Configurable for advanced Repeater function
  - Data interface; RS232, RS485 2-wire, RS485 4-wire
- Easy to use:
  - Transparent data communications
  - No configuration needed for out-of-the-box operation
  - Easy DIP Switch selection for RS232 or RS485 data interface
  - Power input on Sub-D (DB9) serial port connector, or separate 2-pos latching connector.
  - Advanced configuration via X-CTU (free download)
- Exceptional Price-to-Performance value

APPLICATIONS

- Use a pair of Rio-Link Wireless Modems for transparent plug-and-play wireless data communications between devices with RS232 or RS485 serial ports.
- Master Controller interface to G3 Wireless I/O slave modules
- Stand-alone Repeater for hard-to-reach Wireless I/O.
- Remote monitoring, Sensor data capture, general SCADA applications.

*Is cabling impractical or impossible?   Experience the reliability and security of **Wireless!***

G306C Wireless Modem – Specs: (See User's Guide for more detailed info)

RF PERFORMANCE:	Antenna connection: RP-SMA female, 50 ohms * Antennas sold seperate
Indoor/Urban Range (w/ 2 dB dipole antenna)	900 MHz, up to 1500 ft (450 m); 2.4 GHz, up to 600 ft (180 m)
Outdoor RF line-of-site Range (w/ 2 dB gain dipole antenna)	900 MHz, up to 7 miles (11 km); 2.4 GHz, up to 3 miles (5 km)
Outdoor RF line-of-site Range (w/ high gain antenna)	900 MHz, up to 20 miles (32 km); 2.4 MHz, up to 10 miles (16 km)
Tx Pwr / Rx Sensitivity	250mW / -109dBm (900MHz); 50mW / -107dBm (2.4GHz)
SERIAL COMMUNICATIONS:	Serial Port connection: Sub-D (DB9) female (see pin assignments below), surge protected
Data Rate (Interface and throughput baud rate)	9600 baud (standard), optional 19.2K baud (slightly degraded RF range)

Sub-D (DB9) pin assignments (RS232 DCE, RS485 2-wire, RS485 4-wire & Power Input)

	DCE	2-wire	4-wire			DCE	2-wire	4-wire	
Pin#	RS232	RS485	RS485		Pin#	RS232	RS485	RS485	
1 =	n/c	n/c	n/c		6 =	n/c	n/c	n/c	
2 =	RXD	T/R-	T-		7 =	n/c	n/c	R+	
3 =	TXD	n/c	R-		8 =	CTS	T/R+	T+	
4 =	n/c	n/c	n/c		9 =	+Vin	+Vin	+Vin	(Supply voltage pos.)
5 =	GND	GND	GND	(Supply voltage neg.)					

RS232 handshaking	None: TX data and RX data only (RTS is not used & CTS is fixed active)
NETWORKING & SECURITY:	
Frequency Range	ISM 902-928 MHz or 2.4000-2.4835 GHz
Spread Spectrum	FHSS (Frequency Hopping Spread Spectrum)
Supported Network Topologies	Peer-to-peer (no master/slave dependencies), Point-to-point, Point-to-multipoint and Multi-drop
Network Channels (software selectable)	7 Channels (selects RF hopping sequence). "Net Codes" 0-6. Default = "0" (see SOFTWARE CONFIGURATION below)
Network Filtration Layers	VID, Hopping Channel and Destination Address
Advanced Functions (optional)	Repeater & Power-save modes (see SOFTWARE CONFIGURATION below)
POWER:	Power connection: Sub-D (DB9) pins 9 & 5, or 2 position latching plug.
Supply Voltage (+Vin)	10-30 VDC, 100mA max, self-resetting 500mA fuse, over-voltage & reverse-voltage protected
Input Current (typical @ 12Vdc)	900 MHz: Standby/RX = 35mA, TX = 85mA 2.4 GHz: Standby/RX = 45mA, TX = 90mA
PHYSICAL:	
Mounting	Panel mount w/ 4 screws 1.0" x 3.5" rectangular pattern, or DIN rail w/ optional clip
Dimensions	3.0"W x 3.75"L x 1.3"H plus connectors & mounting ears (3.93"W x 4.25"L x 1.35"H overall)
Weight	6.8 oz. (200 g)
MISCELLANEOUS:	
Diagnostics	LEDs for PWR, RTS, TX data, RX data (RTS not used)
Operating temperature	-40 to 85 degrees C. with 5% to 95% non-condensing humidity
Certifications	FCC: Part 15.247, ID "OUR9XSTREAM" (900MHz), "OUR24XSTREAM" (2.4GHz) CSA C/US Class I, Div.2, Groups A,B,C,D hazardous locations, Temp. Code: T4
PART NUMBER DESCRIPTION:	
G306C-04	900 MHz, 100mW, 9600 baud (most popular model)
G306C-06	900 MHz, 100mW, 19.2K baud
G306C-08	2.4 GHz, 50mW, 9600 baud
G306C-10	2.4 GHz, 50mW, 19.2K baud
SOFTWARE CONFIGURATION:	The G306C Wireless Modem is fully functional right out-of-the-box, without any software configuration. Simple DIP Switch settings select RS232 (factory default) or RS485 data interface. To select a different Network Channel ("0" is default) or to configure advanced software features, refer to the G306C User's Guide for use of X-CTU configurator (free download).
USE LIMITATION	**WARNING…** this product is not to be used for personal protection or for any form of life support.

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