

Gage Wireless, Inc.
User's Installation Guide
Model # GRC - 24

FCC Warnings

This equipment has been tested and found to comply with the limits for a Class B Residential 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, 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 the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device is intended only for OEM integrators under the following conditions:

- 1) The antenna must be installed such that 20 cm is maintained between the antenna and users for all installations, and
- 2) The transmitter module may not be co-located with any other transmitter or antenna, and
- 3) The Module is approved using the FCC 'unlicensed modular transmitter approval' method. Therefore the module must only be used with the originally approved antennas.

As long as the 3 conditions above are met, further transmitter testing will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

IMPORTANT NOTE: In the event that any of these conditions can not be met (for example certain laptop configurations, co-location with another transmitter, or use of a different antenna), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

Suggested End Product Labeling

This transmitter module is authorized only for use in devices where the antenna may be installed such that 20 cm may be maintained between the antenna and users (for example access points, routers, wireless ASDL modems, and similar equipment). The final end product must be labeled in a visible area with the following:
"Contains TX Module FCC ID: TCX-GRC-24 ".

RF Exposure Statements That Must be Included in the Final Devices Users Manual

The users manual for end users must include the following information in a prominent location **"IMPORTANT NOTE:** To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. This device is approved for fixed or mobile applications. Portable conditions can NOT be allowed due to the RF exposure compliance requirements."

Additional Information to OEM Integrators

The end user should NOT be provided any instructions on how to remove or install the modular TX device.

NOTE: ANY CHANGES OR MODIFICATION NOT EXPRESSLY APPROVED BY THE MANUFACTURER COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

INTRODUCTION

The GRC-24 is a data transceiver which can be operated both indoors and outdoors. It transmits and receives data on frequencies in the license-free 2.4 GHz Industrial, Scientific, and Medical (ISM) frequency band. Data rates up to 115Kb/s can be supported. It is designed to be built into a wide variety of application devices requiring data communication up to several miles.

Several GRC-24 transceivers can be configured into a wireless network with some functioning as relays. The transceiver uses frequency hopping spread spectrum technology to mitigate interference.

OPERATION

The physical interface to the transceiver is through a 26-pin header. The transceiver is powered and data is sent to and from the transceiver through this header. The transceiver is powered from a 5-volt regulated supply capable of handling 1 amp supply current. The signals available at this connector are TTL level compatible signals. The signaling format is the same as RS-232 so only level conversion is required to connect the transceiver to a RS-232 compatible device. The signals and their corresponding actions are listed in TABLE 1.

TABLE 1. Interface Connector Pin Functions

Pin	Name	Designation	Signal Function	Direction
1	Ground		Power Supply	
2	Transmitted Data	TxD	Data	To DCE
3	Clear to Send	CTS	Control	From DCE
4	Data Set Ready	DSR	Control	From DCE
5	Data Carrier Detect	DCD	Control	From DCE
6	Ring Indicator	RI	Control	From DCE
7	Received Data	RxD	Data	From DCE
8	Request to Send	RTS	Control	To DCE
9	Data Terminal Ready	DTR	Control	To DCE
10	Datagram		Control	To DCE
11	Sig Status			
14	+5 volts dc		Power Supply	
15	+5 volts dc		Power Supply	
17	LED - Link		Indicator	Output
18	LED - Power		Indicator	Output
19	LED - Tx		Indicator	Output
20	LED - Rx		Indicator	Output
26	Ground		Power Supply	

APPROVED ANTENNAS

WARNING: The GRC-24 transceiver has been approved only for the specific omnidirectional antenna listed in TABLE 2. The FCC regulations mandate that third party antenna substitutions require FCC certification by the party making the substitution.

Manufacturer	Model #	Gain
Gage Wireless, Inc.	GAN-3-O	3dBi