

VSUB235

User's Manual

900 MHz RadioLink Daughter Board 2

**Vantage Controls
1061 South 800 East
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FCC Compliance Information

FCC ID: PII-VSUB235

IC: 3505A-VSUB235

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.

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 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.

FCC Compliance Warning:

Changes or modifications to this product not expressly approved by Vantage Controls could void the user's authority to operate this product.

*****All information on this page "FCC Compliance Information" shall be supplied to the end user of any product the VSUB235 is incorporated into.***

Introduction

The VSUB235 is an RF transceiver module. It interfaces with other equipment using standard serial asynchronous communications protocol at a rate between 9600 and 57600 baud. The transmitter has a peak output power of 123mW. It is designed to be incorporated into control devices developed by Vantage Controls. The module operates under FCC approval in the 902-928 MHz ISM frequency band.

Integrating the VSUB235 into Products

IMPORTANT: The VSUB235 radio has been certified by the FCC as a module for integration into products without further certification being necessary (as per FCC section 2.1091.) The following requirements must be satisfied in order to comply with FCC regulations:

- 1) The system integrator must ensure that the external label provided with this device is placed on the outside of the final product.
- 2) In order to comply with the FCC RF exposure requirements, the VSUB235 may be used only with the antennas it was certified with:

Manufacturer	Model #	Type	Gain(dBi)	Minimum Cable Length
Vantage Controls	VDA-0055	Quarter-Wave	2	N/A
Astron Wireless	PCD09A0V	Half-Wave	2.1	13 feet
Astron Wireless	AXH9	Half-Wave	2	N/A
Astron Wireless	AXH92	Half-Wave	2	N/A
Antenna Factor	ANT-916-PML	Half-Wave	2.1	N/A
Astron Wireless	918-2	2-element Yagi	6.1	N/A

A minimum separation distance of ?? cm must be maintained from the antenna to any near by persons.

- 3) The VSUB235 radio requires a 5-9V DC 200mA supply.

Wording for External Label

This device contains transmitter module:

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Interface Pins:

Pin #	Description
1	Power
2	RX (DATA_IN)
3	Ground
4	TX (DATA_OUT)
5	/Reset

PCB Footprint

The PCB footprint is located in the PADS corporate library under the name "SUB_RFDB_4"

Specifications

Model #: VSUB235
Frequency Range 902-928 MHz ISM Band
Power Supply 5-9 VDC
Current required while transmitting 150mA
Current required while receiving 70mA
Antenna Gain ~2dBi

Transmit Power 123mW (20.9dBm)
RF Communications Technology Frequency Hopping Spread Spectrum
Number of Hop Channels 25
RF Data Rate 19,200 bps
Interface Data Rates 9600-54600 bps

Size 1.70" x 1.47"
Operating Temperature Range -40-70°C