

Overview

The RadioLink Enabler adds RF communication ability to the Vantage Main Controller. RadioLink products may be installed within 100 feet* of the RFE1000. The Enabler easily connects to the existing RS-232 and Power connections on the Main Terminal Board. Each RFE1000 enabler supports up to 60 RadioLink Stations. InFusion systems may have *two* RFE1000 enablers for each Controller. QLink systems may have *one* RFE1000 enabler for each Controller. Because no communication wire is needed this is a true retrofit solution allowing Vantage automation in existing structures.

RFE1000 Specifications

Description	Specification
Dimensions, HWD	7.8" x 2.4" x 0.9" 198mm x 61mm x 23mm
Weight	3oz -or- 85g
Wiring configuration	Dedicated run, 5 conductor, 22 gauge or larger, 30ft max.
LED Indicators	Data In (RX) • Data Out (TX)
Finish	Black
Ambient Operating Temperature	32-158°F -or- 0-70°C
Ambient Operating Humidity	5-95% non-condensing

RFE1000 Radio Specifications

Description	Specification
FCC ID#	P11-VSUB075-1 or P11-VSUB235
IC ID#	3505A-VSUB0751 or 3505A-VSUB235
Frequency Range	902-928 MHz ISM Band
Power Supply	12 VDC
Current while transmitting	180mA
Current while receiving	70mA
Antenna Connection	Permanent (Solder)
Antenna Gain	2dBi
Transmit Power	140mW
RF Technology	Frequency Hopping Spread Spectrum
Number of Hop Channels	25

System Requirements

- One RFE1000 RadioLink Enabler.
- One unused RS232 port on a Main Controller Terminal Board. *Do not connect to an RS232 Station.*
- **Only one RFE1000 may be powered from Controller's 12VDC power supply.**
- Five conductor Data wire (CAT5 recommended).
 - This must be a dedicated cable. **DO NOT SHARE UNUSED WIRES IN CABLE!**

Software/Firmware

This product is compatible with InFusion Design Center and QLink Systems. For QLink use version 3.1 and Controller Firmware 6.11 or higher. For new projects it is recommended that firmware and software be kept to the most current release.

Installation

Installation of Vantage products should be performed or supervised by a *Certified Vantage Installer*. For best performance, the RadioLink Enabler should be mounted a minimum 6 inches away from the Controller, **outside of the enclosure** or any other metal enclosures or devices. Normally the Enabler should be mounted as high up, as possible in the project.

Recommended maximum wire length from the RFE1000 to the Main Controller is 30 feet. If the Enabler is used with any Controller mounted in an A/V rack, the Enabler should be installed external to the rack. It may be mounted using Velcro or by hanging it on two screws using the keyhole slots on the back. It is also recommended to mount so the antenna is facing straight up or straight down.

Some installations may require *pre-testing* for radio reception using an RF Enabled Controller and a RadioLink keypad to test the transmission quality.

**Environmental conditions can affect radio transmission. "Line of site" Obstructions may reduce the range below 100 feet. Some*

common obstructions are: Plaster walls with wire mesh, walls filled with a large number of high voltage and low voltage wire runs, walls filled with water pipes, etc. Relocation of the RFE1000 often resolves transmission problems.

In larger systems additional Controllers are networked, thus expanding the RadioLink network by adding additional RFE1000 enablers*.

***NOTE:** Please contact Vantage Controls if specifying more than six (6) RFE1000 enables on the same project.

IMPORTANT: In order to comply with the FCC RF exposure requirements, this product must be installed and operated in such a way that a minimum separation distance of 20 cm (approximately 8 inches) is maintained from the antenna to any persons. Locations that do not meet this requirement *must* be avoided.

Wiring

A dedicated, 30 feet maximum, 5 conductor, 22 gauge wire or larger should be used between the Enabler and the Main Power Enclosure. Never share unused wires in the RFE1000 cable run with any other device or system. RFE1000 enabler wiring runs through one of the knock-out holes in the bottom center of the enclosure to keep the low-voltage wiring away from the high-voltage wiring in the Enclosure.

Connections (see NOTE: below)

Connections to the Enabler are all made to the 5-position removable screw terminal. The table below shows how the connections between the Main Enclosure Terminal Board RS232 port and the Enabler are made. Notice that wiring is straight through.

RadioLink Enabler	Main Power Enclosure Ports
+12V	+12V
GND	GND
TX	TX
RX	RX
RTS*	RTS

***NOTE:** If the installed enabler's label lists **FCC ID# P11-VSUB235** and it is connected to an InFusion Controller running application code 1.4.04 or higher:

- It is not necessary to connect the RTS wire,
- This allows a connection to Ports 3 through 5 as well as Ports 1 and 2 on the Main Enclosure Terminal Board,
- Only one RFE1000 may be powered from the Controller (See Wiring Two RFE1000 Enablers, next page).

RFE1000 LED Indicators

When the RFE1000 is first connected to a *programmed* system, the TX and RX lights will flash for a few seconds and then go off. This indicates that the RFE1000 is properly connected. Once the initial LED flashes have stopped the TX and RX lights will flash once about every 9 seconds during no RF activity. During RF activity, the RX and TX LEDs will flash as information is being transmitted. A large amount of flashing is also observed while RF stations are first logging on to the system. Note, if the system has not been programmed the TX light, on the enabler, is ON continuously.

Setup

When the connections have been made, re-insert the Main Controller into the Enclosure. In InFusion Design Center in the *Project Explorer* click on *Enclosure View* and highlight the Controller. In the *Object Editor* at the bottom of the window click on *Add RadioLink Bus*. Assign the RFE1000 to the correct serial port number, 1-5 for the Enclosure. In QLink, go to the *Properties* for the Main Controller that the Enabler is connected to and set the selected RS-232 port to *RadioLink*.

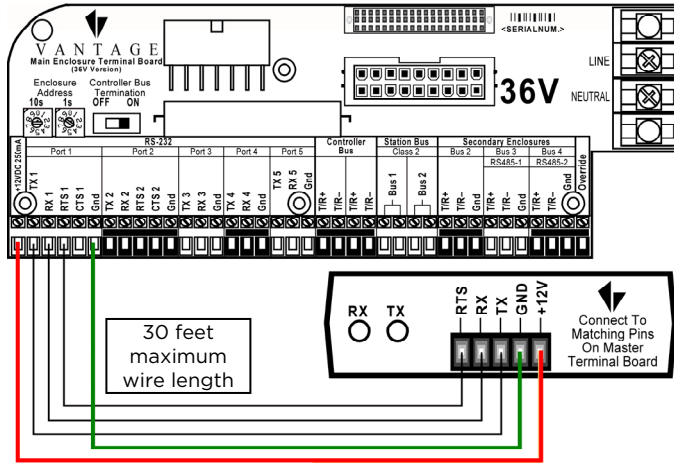
RadioLink Stations have unique serial numbers like wired keypads. RF Stations will automatically log onto the system *after* the serial

numbers have been entered into the software Project File and the Vantage System has been programmed. **Before** uploading the file to the Vantage system, do the following: From Design Center, click in the *Serial Number* section in the *Object Editor* and type in the serial number. In QLink to enter the serial numbers in the project file click on System | Configure Stations. In the Configure Station dialog box highlight the station, type the serial number in and press enter. Repeat for each station. Complete these numbers **before** programming the system.

NOTE: A new feature with Design Center 2.3 and up is the ability to configure RadioLink stations the same way WireLink stations are configured, (e.g., 3-button press).

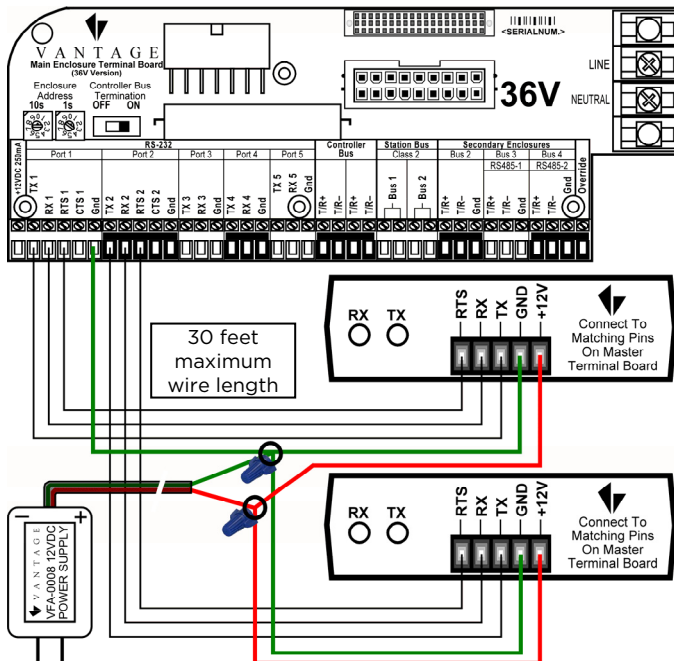
Wiring One RFE1000 Enabler

Follow the wiring example below to power the RFE1000 enabler from the Vantage System Controller.



Wiring Two RFE1000 Enablers

Vantage has a 12V power supply, Part Number: *VFA-0008*. Description: *12 Volt Plug-in Supply for use with RadioLink Products 12VDC 1.5A*. When connecting *two* RFE1000 enablers to an InFusion Controller, use this power supply to power both enablers. Follow the wiring diagram below.



Trouble Shooting

- Double check wiring using Table 1.
- Is the Controller plugged in?
- Make sure the Controller is not addressed to 0.
- Verify in Design Center and QLink that the correct port the Enabler is connected to is configured for RadioLink.

FCC ID: PII-VSUB075-1 or PII-VSUB235
 IC ID: 3505A-VSUB0751 or 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.

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

Line Drawing

