# Package Contents - Basic or Full-Duplex Unit

### If you ordered Guardian part number:

Part Number	Description
140-5016-500	VHF 136-174 MHz Guardian Basic Unit
140-5016-501	VHF 136-174 MHz Guardian Full-Duplex Unit
140-5026-500	VHF 215-240 MHz Guardian Basic Unit
140-5026-501	VHF 215-240 MHz Guardian Full-Duplex Unit
140-5046-300	UHF 406.1-470 MHz Guardian Basic Unit
140-5046-301	UHF 406.1-470 MHz Guardian Full-Duplex Unit
140-5046-501	UHF 450-512 MHz Guardian Basic Unit
140-5046-501	UHF 450-512 MHz Guardian Full-Duplex Unit
140-5096-500	MAS 928-960 MHz Guardian Basic Unit
140-5096-501	MAS 928-960 MHz Guardian Full-Duplex Unit

### Your package contains:

(1) Guardian Serial Modem

(1) Power Cable

(1) 8-Pole Socket Connector



# **Package Contents - Two-Piece Kit**

If you ordered Guardian as part of a kit number:

Part Number	Description
250-5016-500	VHF 136-174 MHz Guardian Demo Kit
250-5026-500	VHF 215-240 MHz Guardian Demo Kit
250-5046-300	UHF 406-470 MHz Guardian Demo Kit
250-5046-500	UHF 450-512 MHz Guardian Demo Kit
250-5096-500	MAS 928-960 MHz Guardian Demo Kit

### Your package contains:

- (2) Guardian Basic or Full-Duplex Serial Modems
- (2) SMA-Male to BNC-Female Connectors
- (2) SMA-Female to BNC-Male Connectors
- (2) TNC-Male to BNC-Female Connectors
- (2) Mini Circuits 5 W 20 dB Attenuators
- (2) Flex Rubber Duck Antennas (VHF, UHF, or 900 MHz)
- (2) 120 VAC to 12 VDC Power Supply
- (1) 72 in. Serial Programming Cable
- (1) Start Up CD-ROM and Product Information Card



# **Minimum Requirements**

Interface and configuration of this device requires a user PC with an available serial COM port interface, Microsoft Windows 98 or newer, and a web browser.

## **Technical Support**

For assistance with this product, contact NextGen RF technical support. Email support@nextgenrf.com Phone 507.514.6246

Or visit our website at www.nextgenrf.com.

Any changes or modifications not expressly approved by the party responsible for compliance (in the country where used) could void the user's authority to operate the equipment. NextGen RF reserves the right to update its products, software, or documentation without obligation to notify any individual or entity. Product updates may result in differences between the information provided and the product shipped. For access to the most current product documentation and application notes, visit www.nextgenrf.com

### UL Listed models only



When operating at elevated temperature extremes, the surface may exceed +70 Celsius. For user safety, the Fusion should be installed in a restricted access location.



WARNING — EXPLOSION HAZARD, do not connect while circuit is live unless area is known to be non-hazardous.





### ABOUT NEXTGEN RF

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High Speed Serial Connectivity for Remote Monitoring and Control

# QUICK START GUIDE

The quick start guide provides basic installation and configuration for the Guardian<sup>™</sup> Series. For advanced configuration and more detailed information, please refer to the manual.

NextGen RF is a USA owned and operated engineering services company providing valuable wireless design expertise on a variety of products, ranging from design consultation to fully turnkey product development. Because we know design, NextGen RF has become the chosen partner for companies worldwide who require a high level of design expertise and responsiveness for their product development. We understand the difficulties of implementing RF solutions in designs and have a proven track record of helping clients efficiently meet their design objectives and requirements. We focus on process-oriented engineering from discovery and idea generation, definition of product requirements and specifications to design, verification and ultimately factory introduction. For more information visit www.nextgenrf.com

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NEXTGENRF.COM

### **INSTALLING THE FPS (continued)**

# SETUP AND CONFIGURATION

It is easy to set up a Guardian network to verify basic unit operation and experiment with network designs and configurations. An Rx/Tx antenna is required for basic operation.

Important: Use attenuation between all demo units to reduce the amount of signal strength in the test environment.



### **Device Connections**

Refer to the diagram below for proper device connections.



### Field Programing Software

The Guardian Field Programming Software (FPS) is the programming and diagnostic software for the Guardian serial radio modem. The FPS allows the user to edit and program user programmable settings, interactively tune modem and RF parameters, and monitor diagnostic data from the Guardian.

#### **INSTALLING THE FPS**

To use the FPS, you will need a PC with Windows 98 or later and at least one operational COM port available.

Step 1 Open the .zip file and open the setup.exe application. After the application is extracted from the .zip file, the Guardian Programmer Setup window opens. Click OK.

8	Guardian S	etup	×
	2	Welcome to the Guardian installation program.	
	Setup cann Before proc be running.	not install system files or update shared files if they are in use. ceeding, we recommend that you close any applications you ma	у
_		OK Exit Setup	

Step 2 Setup shows the destination location where the Guardian FPS files will be installed. Click the icon button to accept the default location to continue.

	Click this button to install Guardian software directory.	to the specified destination
Directory:		

Step 3 Setup shows the program group in the Start Menu that will be created or to which the Guardian FPS will be added. Click Continue to continue.

🛃 Guardian - Choose Program Group	×
Setup will add items to the group shown in the Program Group box. You can enter a new group name or select one from the Existing Groups list.	
Program Group: Cuardian	
Accessories Administrative Tools	
FTP Commander Guardian HyperTerminal Private Edition Maintenance Micro-CARP	
NextGen RF Design Startup	
Continue	

#### **USING THE FPS**

the Guardian.

Note: Accept the default installation location and program group unless there is reason to change them.

Setup displays the destination and program group and provides the opportunity to go back to change either if necessary.

### Step 4

During install it checks for certain files that need to be udated and ask if you want to keep the files. It is recommended to click Yes.

Version Conflict	×
A file being copied is not newer than the file currently a system. It is recommended that you keep your existing	on your g file.
File name: 'C:\Windows\System32\MSCOMCTL.OCX'	
Description: 'Windows Common Controls ActiveX Cont	rol DLL
Your version: '6.1.98.46'	
Do you want to keep this file?	
<u>Y</u> es <u>N</u> o	No to <u>A</u> ll





Guardian Setup	×
Guardian Setup was completed successfu	ılly.
0	(

When finished, click OK to exit Setup.

Make sure all connections are made as shown in the Device Connections diagram and then power

**Step 1** Locate the **NextGen RG Utils** program group (or if you named it differently during installation) and select the Guardian application.

Step 2 From the Guardian Programmer window, click Config in the upper left corner. This will open the User Configuration window and read configuration information from the device, auto populating the Diagnostics section, and the RSSI bar will indicate received signal strength.

🚔 Guardian Programmer	
Elle Edit Utilites Window Help	
Config Cone Version Finance 1.3 Long ID: 955751 Short ID: 359	
User Configuration	
Comment:	
Mode: Modem V PTT Watchdog	
Long ID: 955751 Default Long ID	
Short ID: 359	
CWID	
CWID: Enable CWID Guardian Firmware: 1.3	
Guardian Config Version: 0.8 Guardian Hardware Version: 0.0	
Radio Hardware Version: 0.10	
Pierce de la constante de la const	
Diagnostics LSMA Supply Veltage: 12 V PA Supply 12 V	
Temperature: 30 C PA Current: 0.0 A	
Tx Synth Ctrl V: -2.4 V Last Tx Fwd Power: 0.0 W	
Forward Power: 0.0 W Last Tx Rev Power: 0.0 W F5: Goto Tx Mode Reverse Power: 0.0 W Last Tx PA Current: 0.0 A F5: Goto Tx Mode	
RSSI -83.0 dBm F8: Toggle Diags On/Off	
Power 0.0 W F9: Read Guardian	
Read File Wile File Advanced	
Link User Port Configuration Bead Guardian Write Guardian Concel	
Configuration	
	_

Step 3 Click Link Configuration in the lower left corner of the User Configuration window. Set the RF Link, COM Port, and Modem Setting as required. Click Save Changes when finished.

Link Configuration		×
efoul Link 1 Link 2 Lin RF Link Rx Frequency: Tx Frequency: Power Dutput: Bandwidth: <u>BF</u> Baud Rate: Data Bis: Parity: Stop Bits: Data Type: Network, Type:	k 3 Link 4 Link 5 Link 6 Lin 149.375000 MHz 149.375000 MHz 1.0 Watts 12.5 Hz ¥ 4800.2 level FSK ¥ 8 ¥ None ¥ 1 ¥ Enhanced Only ¥ 1-96SR/TSLM/Guardian	k7 Link 8 Modem Settings Online Diagnostics Output Online Diagnostic Data to Setup Port Repeater Mode (Extended T1_RTS-CTS) Extended Turnoff (T2) Bx-Only Radio Jnverted Carrier Detect (C0) Ø Dynamic Carrier Detect Off Thresholds On:
COM Port Port Baud Rate: Data Bits: Parity: Stop Bits:	9600 v 8 v None v 1 v	Serial Standard G RS-232 G RS-422 G RS-485 Full Duplex (4-Wire) TX Activation Mode G D0X G D0X G RS-65 D0X Delay: 6
<u>D</u> efault		Save Changes Cancel

Your Guardian modem is now ready for use. For advanced network settings, please refer to the Guardian Serial Radio Modem User Manual (PN 001-5006-000).