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.

Guardian™

Technical Support

For assistance with this product, contact CalAmp technical support. Email wngsupport@calamp.com **Phone** 805-987-9000 Or visit the Support section of our website at http://www.calamp.com/support.

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.

CalAmp 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.calamp.com.





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.



1401 North Rice Avenue Oxnard, CA 93030 Tel: 1.805.987.9000 Fax: 1.805.987.8359 e mail: wngsupport@calamp.com

ABOUT CALAMP

CalAmp is a leading provider of wireless communications products that enable anytime/anywhere access to critical information, data and entertainment content. With comprehensive capabilities ranging from product design and development through volume production, CalAmp delivers costeffective high quality solutions to a broad array of customers and end markets. CalAmp is the leading supplier of Direct Broadcast Satellite (DBS) outdoor customer premise equipment to the U.S. satellite television market. The Company also provides wireless data communication solutions for the telemetry and asset tracking markets, private wireless networks, Interoperable Train Control (ITC) radio transceivers for use in railroad Positive Train Control (PTC) applications, public safety communications and critical infrastructure and process control applications. For additional information, please visit the Company's website at www.calamp.com.



Guardian™

© 2011-2014 CalAmp PN 004-5006-000 Rev A Revised October 2014

All specifications are typical and subject to change without notice.

Quick Start Guide

SERIAL RADIO MODEM FOR LICENSED SPECTRUM



SERIAL RADIO MODEM FOR LICENSED SPECTRUM



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 following diagram for the proper device connections for basic operation.



Field Programming 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 Next.



INSTALLING THE FPS (continued)

Step 2 Setup shows the destination location where the Guardian FPS files will be installed. Click Next to continue.



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 Next to continue.

🕫 Setup - Guardian Programmer
Select Start Menu Folder Where should Setup place the program's shortcuts?
Setup will create the program's shortcuts in the following Start Menu folder. To continue, click Next. If you would like to select a different folder, click Browse.
CalAmp Utils Browse
< <u>B</u> ack <u>N</u> ext > Cancel

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 Click Install to begin installation. Setup displays the progress as files are extracted

Completing the Guardian

Programmer Setup Wizard

Setup has finished installing Guardian Programmer on your computer. The application may be launched by selecting the

Einish

and installed and displays a window similar to the following when complete.

installed icons.

Click Finish to exit Setup.

🖶 Setup - Guardian Programmer

Step 3	Click Link
windov	v. Set the
when f	inished.



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) provided, or our online support library at www.calamp.com.

When finished, click Finish to exit Setup.

USING THE FPS

then power the Guardian.

Step 1 Locate the CalAmp 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.



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

nmer						
dow <u>H</u> elp						
		Firmware: 1.3 Long ID: 99	55751	Short ID: 359		
onfigurat	tion					
nt:						
: 9	odem 55751 59	▼ ☐ Default L	.ong ID	PTT W <u>a</u> tchdog	120 Sec	
: Enable CWID		Guardian Firmware: Guardian Config Versi Guardian Hardware Ve Radio Hardware Versi	ersion: 0.0			
stics					CSMA	
oly Voltag perature: vnth Ctrl 1		13 V 30 C 2.0 V	PA Supply: PA Current: PA Temperature	13 V 0.0 A 36 C	011	
ynth Ctrl V ard Powe erse Powe	ar: 0.	2.4 V .0 W .0 W	Last Tx Fwd Pov Last Tx Rev Pov Last Tx PA Curre	wer: 0.0 ₩ ent: 0.0 A	F5: Goto Tx Mode F6: Goto Rx Mode	
er				-83.0 dBm 0.0 ₩	F8: Toggle Diags On/Off F9: Read Guardian F10: Write Guardian	
Link figurat		User Port <u>C</u> onfigurati	Rea <u>d</u> F on <u>R</u> ead Gua		<u>A</u> dvanced	
ult.dat						

Configuration in the lower left corner of the User Configuration RF Link, COM Port, and Modem Setting as required. Click Save Changes

Configuration		×
Link 1 Link 2 Lin RF Link	k 3 Link 4 Link 5 Link 6 Link 7 Link 8	Modem Settings
Rx Frequency: Tx Frequency: Power Output: Bandwidth: <u>RF</u> Baud Rate: Data Bits: Parity: Stop Bits:	149.375000 MHz 143.375000 MHz 1.0 Wats 12.5 kHz 4800.2 level FSK 8 10 11	Online Diagnostics Output Online Diagnostic Data to Setup Port Repeater Mode (Extended T1_RTS-CTS) Extended Turnoff (T2) Bx-Only Radio Inverted Carrier Detect (CD) Dynamic Carrier Detect Off Thresholds On:
Data T <u>y</u> pe: Networ <u>k</u> Type:	Enhanced Only T-96SR/TSLM/Guardian	
OM Port		
ort Baud Rate: a <u>t</u> a Bits: arit <u>y</u> : top B <u>i</u> ts:	9600 v 8 v None v 1 v	Serial Standard TX Activation Mode © RS-322 © D0X © RS-482 © D0X © RS-485 © TS/S/CTS DOX Delay: 6
efault		Save Changes Cancel