

RV50(X)

Sierra Wireless Airlink® 4G LTE Cellular Module For Private Dynamic IP Addresses



Part Number: 35782 Revision: 04/2024 www.campbellsci.com/rv50x 4



1. Introduction

NOTE:

This Quick Deploy Guide is a general reference to give the installer an overview of the steps required to make this system operational. The Product Manual is the definitive source for detailed installation instructions and information.

For best results, update to the latest data logger operating system and version of *Device Configuration Utility*.

You should have received two Quick Deploy Guides with your RV50(X) module. The one you follow will depend on whether your module was configured with a private dynamic or public static IP address.

The Provisioning Report received with your Cellular Data Service shows whether the module was configured with a private dynamic or public static IP address. See the following figure for an example of a Campbell Scientific Provisioning Report. Other cellular providers should provide similar information.

USE THIS GUIDE if your module has a private dynamic IP address.

	Provis	sioning Report	
т	ne following device has been provis	ioned for Campbell Scientific	Cellular Data Service.
Sales Order #	329081	Sales Order Due Date	03/23/2018
Sales Order Date	C1118 2018	Date Provisioned	092225148
Company	Campbel Scientific Inc Marketing	Customer ID	10044
Address	Taxa and on case of	Contact	2018-03-23
Address	College and the college of	Phone	435-227-0734
City	Logan	Email	speterson@campbellsc.com
State	UT		
Country	United States		
Postal Code	84321-1784		
Hardware	31986-10		1
Model #	CR086-CELL286-718	Datalogger (-40 to +70C) -0	ELL200 w/3G GSM -IT1B International 1B
Serial #			1
Provision Code	11000.0	CELLPROV-IT1B	Cellular Data Modem Provisioning for User Supplied modem -IT1B International 1B
Data Plan	33802.6	CELLDATA-IT1B-A25	Campbell Scientific Cellular Data Service Subscription -IT1B International 1B -A25 25MB/Mon for 1 Yr
Data Limit	25.449	Network	International 1B
ICCID	AD4453251-0-193226680	PAddress	Private Dynamic
MSISDN	MUTHORO/720725	Konect PakBus Ro	
IMEI		Redemption Code IP	Address Private Dy
enewal Due Date		Service Period	04/01/2018 to 03/31/2019
			0-00 020 10 10 000 0/2010

Figure 1-1. Private dynamic IP provisioning report

Additionally, Campbell Scientific cellular modules configured with a private dynamic IP address will have one sticker on the module, as shown in the following figure. It will show the module phone number and data plan. **USE THIS GUIDE**.

Campbell Scientific cellular modules configured with a public static IP address will have two stickers on the module. One sticker will show the module phone number and data plan. The second sticker will show the static IP address. **USE THE OTHER GUIDE.**

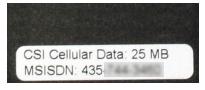


Figure 1-2. Module with private dynamic IP address

2. Campbell Scientific cellular data service

Campbell Scientific can provide subscriptions to cellular service through Verizon, AT&T, T-Mobile, Vodafone, Telstra, and over 600 other providers worldwide. When this cellular service is purchased with the module, the module will come preprovisioned with the required SIM card and APN. If you have already purchased the RV50(X), call Campbell Scientific to set up service.

3. Install the SIM card

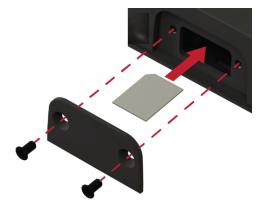
NOTE:

If you purchased cellular service from Campbell Scientific with the module, it will come with the SIM (Subscriber Identity Module) card already installed. .

NOTE:

Some SIM cards, particularly those purchased in Germany, come with an active personal identification number (PIN). The PIN must be deactivated before proceeding. Often, an easy way to deactivate the PIN is to install the SIM card in a mobile phone and use the device settings.

- 1. Remove the SIM card cover.
- Note the location of the notched corner for correct alignment. The gold contact points of the SIM face down when inserting the SIM card as shown in the following figure. Gently slide the card into the slot until it stops and locks into place. To eject the SIM card, press it in slightly and release.
- 3. Replace the SIM card cover.



4. Konect PakBus Router setup

NOTE:

If you are not using Konect PakBus Router, skip this section.

4.1 Get started

You will need the Konect PakBus Router redemption code that came on a card with the RV50(X).



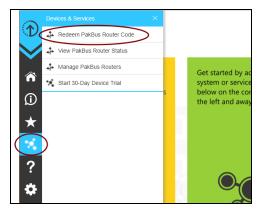
Open a web browser and go to www.konectgds.com \square .

First-time users need to create a **free account**. After you submit your information, you will receive two emails up to five minutes apart. One email will contain a Passport ID and the other your Password. If emails are not received, check your email junk folder.



4.2 Set up Konect PakBus Router

- 1. Sign in to www.konectgds.com ☐ using your Passport ID and Password found in the two received emails. Once logged in, you will be at the Welcome page.
- 2. Click **Devices and services** on the command bar to the left and select **Redeem PakBus Router Code**. Enter your complimentary Router Code found on the included card with your cellular-enabled device and click **Submit**.



3. The next screen shows the assigned **DNS** address and **Port** for the router. Enter a **TCP Password** and select a unique **PakBus Address** for your data logger.

TIP:

Make note of this information; it will be required for data logger configuration as well as *LoggerNet* setup. Please note your DNS, Port, TCP Password and PakBus address; you will need them later.

ONS:	axanali.konectgds.com
Port:	8040
Enter a TCP F	ssword or leave blank if not required
FCP Passw	rd:
Maintained I	odes (PakBus Addresses in use)
	(no addresses currently in use)
You ca	n select a PakBus address to use between 1 - 399 excluding any addresses already in use.

5. Configure RV50(X)

- Download the collection of RV50(X) configuration templates from www.campbellsci.com/downloads and run the executable downloaded.
- 2. Connect the Cellular antenna.
- Connect the Diversity antenna, if used. Use of a diversity antenna is recommended, it can improve system performance. It is required in 4G networks, but not 2G or 3G. Note: If a Diversity antenna is not used on a 2G or 3G cellular network, use ACEmanager to disable WAN/Cellular > Network Credentials > RX Diversity.
- 4. Connect the power cable wires to a power supply.

Wire Color	Function	Connect To
Black	Ground	G
White	Enable (On/Off)	12V or SW12V or control port
Red	Power (7 to 36 V)	12V

 Connect the power cable to the RV50(X) DC Power input. When the RV50(X) is properly set up and powered, the status LEDs will turn on. The RV50(X) will begin the activation/provisioning process and attempt to connect to the mobile network. This process typically takes 5 to 10 minutes. A successful connection is indicated by a solid green or solid amber Network LED.

NOTE:

If Campbell Scientific did not provision the RV50(X) or it does not automatically connect to the network, you may need to to confirm or enter your APN information. Follow steps 6 through 8 to WAN/Cellular > SIM Slot 1 Configuration > Network Credentials > User Entered APN.

6. Connect your Windows® computer to the RV50(X) using the supplied Ethernet cable.

CAUTION:

Your computer may use the RV50(X) as a network interface while connected resulting in cellular data usage. Campbell Scientific recommends disconnecting the computer from the RV50(X) as soon as configuration is complete.

 Launch a web browser, and enter https://192.168.13.31:9443 into the address bar. The *ACEmanager* login screen should appear in your browser.

NOTE:

RV50(X)s running OS version 4.13 and older had both HTTP port 9191 and HTTPS port 9443 enabled by default. When using HTTP (not HTTPS) with these older OS versions, enter the IP address using port number 9191, for example, http://192.168.13.31:9191.

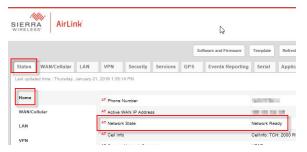
8. Look for a sticker on the bottom of your modem with the manufacturer-generated default password. Log in using **User Name** = user and that **Password**. If there is no sticker try 12345 for the password. Make note of the password used so it can be easily referenced when off site. Remote access to the modem interface will require the password.

TIP:

We strongly recommend changing the default password to prevent unauthorized access and the potential of malware infection. The password can be changed from the **Admin** tab.

WARNING:

Failure to set a strong password in the RV50(X) may result in misuse of the modem by malware or hackers. Significant data overage charges may apply. Once logged in, check the Status > Home > Network State field. It should read Network Ready, indicating the RV50(X) is connected to the cellular network. You can easily test the RV50(X) connection to the Internet by selecting the Admin > Advanced tab and using the PING tool to ping an Internet server, such as www.campbellsci.com.



10. Click the Template button in the *ACEmanager* toolbar. A template application window will appear. Browse to and upload one of the configuration templates downloaded from Campbell Scientific.

Template Files				
Template File Description				
RV50_115200.xml	Default configuration with RS-232 at 115200 baud and Ethernet communication enabled. ¹			
RV50_9600.xml	Default configuration with RS-232 at 9600 baud and Ethernet communication enabled. ²			
¹ GRANITE series, CR6 series, CR3000, CR1000X series, CR300 series, CR1000, CR800 series, and CR5000				
² CR10X, CR10X-PB, CR510, CR510-PB, CR23X, CR23X-PB, and CR200(X) series data loggers				

 Reboot the RV50(X) after successfully applying the configuration template. You can do this by clicking the Reboot button on the *ACEmanager* toolbar, by momentarily pressing the Reset button (2 sec), or by temporarily removing power from the RV50(X).

6. Enabling PPP mode

Launch the *Device Configuration Utility* ⁽²⁾. All tabs are within the **Deployment** category.

On the **Datalogger** tab, change the data logger **PakBus Address** and **PakBus/TCP Password** to match the values entered in the Set up Konect PakBus Router (p. 2) step.

Deployment Logger Control Data Monitor Data Collection File Control Send OS	Settings Editor Terminal
Datalogger Com Ports Settings Ethernet CS I/O IP PPP Network Services	Advanced
Serial Number: 1007	PakBus Security
OS Version: CR 1000.Std. 32.02	Security Code 1: 0
Station Name: 1007	Security Code 2: 0
PakBus Address: 101	Security Code 3: 0
	PakBus Encryption Key:
	PakBus Encryption Key Confirm:
	PakBus/TCP Password:
	Confirm PakBus/TCP Password:

On the **Com Ports Settings** tab, select the **COMPort** where the module is connected; this is generally RS-232. Change the **Baud Rate** to **115200 Fixed**.

De	eployment					
	Dataloggel Com Port	ts Settings Ethernet	C	S I/O	IP	PPP
	Select the ComPort:	RS-232 ~		Γ	Neig	ghbors
	Baud Rate:	115200 Fixed V			Be	gin
	Configuration:		~	r		
	Beacon Interval:	0				
	Verify Interval:	0				

On the **PPP** tab, select the **Config/Port Used** where the modem is connected. This is the same as was selected on the **Com Ports Settings** tab. Set **Modem Dial String** to ATH;AT\APPP.

Deplo	yment	
Da	talogger Com Ports	Settings Ethernet CS I/O PPP GOES Network Services
	Config/Port Used:	RS-232 V PPP Network Status
	IP Address:	0.0.0.0 No default network. PPP is not configured.
	User Name:	
	Password:	
	Modem Dial String:	ATH;AT\APPP
M	Iodem Dial Response:	CONNECT

On the **Network Services** tab, in the **PakBus/TCP Clients** box, type the DNS address and Port number noted during the Set up Konect PakBus Router (p. 2) step.

File Control Send OS Settings Editor Terminal	
Advanced	
PakBus/TCP Clients Address	Port
konectgds.com	8 🗯 🗘
	6785
	6785 🔺
	6785

Apply to save your changes.

Disconnect the Ethernet cable between the RV50(X) and computer.

7. Set up LoggerNet

The *LoggerNet* Network Map is configured from the LoggerNet Setup screen.

NOTE:

Setup has two options, EZ (simplified) and Standard. Click on the **View** menu at the top of the **Setup** screen, and select **Standard** view.

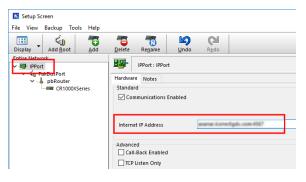
From the *LoggerNet* toolbar, click **Main** > **Setup** and configure the Network Map as described in the following steps:

- 1. Select Add Root > IPPort.
- Select PakBusPort and pbRouter for PakBus data loggers such as the CR6 or CR1000X.
 - ✓ ₽. IPPort
 ✓ √ PakBusPort
 ✓ ↓ pbRouter

NOTE:

PakBus data loggers include the following models: GRANITE-series, CR6, CR3000, CR1000X, CR800-series, CR300-series, CR1000, and CR200(X)series.

- 3. Add a data logger to the **pbRouter**.
- 4. From the Entire Network, on the left side, select the IPPort. Enter the Konect PakBus Router DNS address and port number as noted in the Konect PakBus Router setup (Set up Konect PakBus Router [p. 2]). Enter them into the Internet IP Address field in the format DNS:Port with a colon separating DNS and Port. For example, axanar.konectgds.com:pppp where pppp is the port number.



 Leave the default settings for the PakBusPort. PakBus Port Always Open should not be checked. In the TCP Password field enter the TCP Password; this must match the value entered in the Konect PakBus Router setup and LoggerNet setup.

Advanced Extra Response Time PakBus Address Delay Hangup	00 s 4016 00 s 000 ms	\$
Extra Response Time	1	÷
	00 s	÷
Advanced		
PakBus Verify Interval	00 h 00 m 00 s	* *
Beacon Interval	00 h 01 m 00 s	÷
Maximum Time On-Line	00 h 00 m 00 s	* *
Standard Communications Enabled PakBus Port Always Open]	
1		
Add Delete Rename	Undo Redo	
	Add Delete Rename PakBusPort : PakBusPo Hardware New PakBus Nodes Standard Communications Enabled PakBus Port Always Open Maximum Time On-Line Beacon Interval	Add Delete Regame Undo Redo PakBusPort: PakBusPort: PakBusPort: PakBusPort: Hardware New PakBus Nodes Notes Standard Communications Enabled PakBusPort Always Open Maximum Time On-Line 00 h 00 m 00 s Beacon Interval 00 h 01 m 00 s Standard Standard Standard

6. Select the pbRouter in the Network Map and set the **PakBus Address** to **4070**.

Display Add Boot	Pelete Regame Undo Redo	
Entire Network	pbRouter : pbRouter	
CR1000X5erfes	Hardware Notes Standard Communications Enabled	
	PakBus Address 4070	
	PakBus Address 4070 Advanced	

 Select the data logger in the Network Map and set the PakBus Address to match that of the data logger (default address in the data logger is 1). If a PakBus Encryption Key was entered during data logger setup, also enter it here. Click Apply to save the changes.

File View Backup Tools Help	7 T 🖉 🖓	*
Display Add Boot Add	Delete Rename Undo Rgdo	EZ View
Entire Network	CR1000XSeries : CR1000XSeries	
	Hardminne Schedule Data Fries Clock Program File Retrieval Notes Standard Communications Enabled Call-Back Enabled	
	PakBus Address 1 Advanced	
	Maximum Packet Size 998 Security Code 0	
	Delay Hangup 00 s 000 ms 🗢	
	PakBus Encryption Key	
	No final storage tables are defined in the station's program. Scheduled Data Collection is disabled.	

8. Test the connection

Use the **Connect** screen to test the connection. Click on the appropriate station and click **Connect** to initiate a call to the data logger. The data logger must have 12 V power.

TIP:

The connection time is subject to many external factors. It is often less than 30 seconds but could be up to 15 minutes. Be patient.

If the connection is successful, the connectors icon at the bottom of the screen will come together and clock information from the data logger will be displayed in the **Station Date/Time** field.

