

### **GFU19 Multi-Tech CDMA Quick Guide**

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GFU19 Multi-Tech CDMA Modem This guide describes how to configure your GPS1200 sensor and Multi-Tech CDMA for connection to a network using a Verizon Wireless™ Internet data plan.

Topics

- (Over the air) OTA Activation Using Your Internet Data Plan
- Setting Up the Multi-Tech CDMA Modem
- Connecting to a Network Using the Multi-Tech CDMA Modem



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## GFU19 Multi-Tech CDMA Modem Introduction

About this Quick Guide	This Quick Guide is designed to provide a step by step guide to configuring the GPS1200 sensor and Multi-Tech CDMA for connection to a network using a Verizon Wireless™ Internet data plan.		
	This Quick Guide assumes that the user is familiar with general GPS surveying procedures and real time applications.		
	<b>Note:</b> Please setup an Internet Data plan from <b>Verizon Wireless</b> and have it activated before using this manual. <b>Also, be sure to obtain your MIN and MDM number</b> . If the two numbers are different, please refer to <b>Appendix 1</b> for activation.		
Firmware Version 2.00	This Quick Guide has been designed for GPS System 1200 – Firmware Version 2.00 or higher. If using a different firmware version, you may notice slight differences in the menu commands.		
User Manuals	A number of user manuals are available on the GPS System 1200 Software CD. These manuals are provided in Adobe Acrobat format and include Adobe Acrobat Reader. They contain a wealth of information about the GPS1200 System, including system specifications and operation procedures for real time as well as post- processed static, rapid static and kinematic surveys.		
	More detailed information relative to real time surveying is also available in the following Leica manuals:		
	<b>GPS Equipment User Manual</b> – provides a general system overview and contains information on technical specifications and care and usage of the equipment.		
	<b>Getting Started with Real Time Surveys</b> – contains instructions on equipment setup and procedures specific to real time surveying.		
	<b>Technical Reference Manual</b> – this comprehensive manual provides detailed information on nearly all aspects of the GPS System 1200, including many of the procedures mentioned in this quick guide.		

GPS1200 GFU19 MultiTech CDMA Modem Quick Guide

Activate your Internet plan Follow the steps below to configure and activate your Verizon Wireless™ Internet plan for use with the GPS1200 sensor and the Multi-Tech CDMA modem.

Step	Action	Display
1	Begin with the sensor turned off.	16:39         ▲         L1=8         ▲
	• Attach your CDMA module to <b>Port 1</b> or <b>3</b> on the sensor.	
	Press the <b>ON (PROG)</b> button to turn on the sensor.	1 Survey 2 Programs 3 Manage
	<ul> <li>Select 5 Config from the Main Menu.</li> </ul>	4 Convert 5 Config 6 Tools A ① CONT
	This takes you to the GPS1200 Configuration screen	
2	From the GPS1200 Configuration screen:	$\begin{array}{c c} 16:22 \\ \hline GPS1200 \\ \hline Configuration: PP Static(5 sec) \\ \hline 1 Survey Settings \\ \hline \end{array}$
	Select 4 Interfaces	2 Instrument Settings 3 General Settings 4 Interfaces
	This takes you to the CONFIGURE Interfaces screen.	
3	From the CONFIGURE Interfaces screen:	14:54 CONFIGURE Interfaces Interface Port Device
	Highlight <b>Real-Time</b> and press the <b>F3</b> ( <b>EDIT</b> ) button.	Real-Time1MultiTech CDMAASCII Input-NMEA Out 1-NMEA Out 2-Export Job-Hidden Pt-Tilt-Meteo-In the teco-
	This takes you to the CONFIGURE Real- Time Interface screen	CONT   EDIT CTRL

Step	Action	Display
4	<ul> <li>From the CONFIGURE Real-Time Mode screen:</li> <li>Ensure that the R-Time Mode and R-Time Data fields are set appropriately.</li> </ul>	14:20     Image: Construct of the second secon
	<ul> <li>Select the port to which your modem is attached in the <b>Port</b> field.</li> <li>Press the <b>F5 (DEVCE)</b> button.</li> </ul>	Ref Sensor : GX1230 (*) Ref Antenna : Unknown (*) a fr
	This takes you to the CONFIGURE Devices screen.	CONT   ROVER   DEVCE
5	From the CONFIGURE Devices screen:	14:29       CONFIGURE       Devices       Radios Modems/GSM Others
	<ul> <li>Press the F6 (PAGE) button once to access the "Modems/GSM" page.</li> </ul>	Name Type AirLink CDMA Modem ▲ CDMA CDMA GSM
	<ul> <li>Highlight the MultiTech CDMA modem and press the SHIFT – F5 (DEFLT) button to ensure that the modem's default settings are active.</li> </ul>	ModemModemMultiTech CDMACDMANokia 6230GSMSiemens M20GSM a 1
	<ul> <li>Press the F1 (CONT) button to accept this device configuration and return to the CONFIGURE Interfaces screen.</li> </ul>	HELP HOME END DEFLT QUIT
	<ul> <li>At this point a "Warning: This port is already configured to be used by the Internet interface. Do you wish to close the Internet interface?" message might appear. If it does, press the F6 (YES) button.</li> </ul>	R-T WARNING: 956 This port is already Por configured to be used by the p Dev Internet interface. Do you wish to close the Ref Ref
	This returns you to the CONFIGURE Interfaces screen.	A NO YES

Step	Action	Display
6	From the CONFIGURE Interfaces screen:	14:54     Image: Construction of the second se
	<ul> <li>Highlight Real-Time and press the F4 (CTRL) button.</li> </ul>	InterfacePortDeviceReal-Time1MultiTech CDMAASCII Input-NMEA Out1NMEA Out2ExportJobHidden Pt-
	This takes you to the CONFIGURE GPRS/Internet Connection screen.	Tilt Meteo▼ CONT EDIT CTRL
7	In the CONFIGURE GPRS/Internet Connection screen:	12:14     11:8     12:8       CONFIGURE     8     12:8       GPRS/Internet Connection     X       Device
	<ul> <li>Press the SHIFT button and the following screen appears.</li> <li>Press the F3 (REG) button</li> </ul>	
	This takes you to the CONFIGURE CDMA Registration screen.	A T HELP INFO REG CMND QUIT
8	From the CONFIGURE CDMA Registration screen:	12:19     II-8
	<ul> <li>Enter the Verizon number assigned to your modem in the My Phone No field.</li> </ul>	Prog Code : 000000 My Phone No :
	• Press the F1 (CONT) button.	
	This begins the modem activation process.	A ①   CONT       CLEAR

Step	Action	Display
9	During the modem activation process:	12:25     Image: Constigute     Image: Constigute
	• Press the <b>F4 (OK)</b> button when the Information box shown on the right appears. The activation might take up to a few minutes. The modem will be ready for use a few minutes after activation.	INFORMATION: 1867 Proj The attached CDMA device gets registered and My activated over the air. The modem is ready for use in a few minutes.
		А ОК
10	If the modem activation process fails:	12:30     Image: Configure     Image: Line 8     Image: Li
	<ul> <li>Re-enter your phone number and Retry.</li> </ul>	INFORMATION: 1868 Pro The entered phone number is not accepted by the device. My I Please enter correct number.
	<b>Note:</b> If modem activation still fails, refer to Appendix 1 for an alternative method of activation.	

Set up the<br/>Multi-TechFollow the steps below to setup the GPS1200 sensor to use the GFU19 Multi-Tech<br/>CDMA modem.CDMA ModemCDMA modem.

Step	Action	Display
1	<ul> <li>Begin with the sensor turned off.</li> <li>Attach your CDMA module to Port 1 or 3 on the sensor.</li> <li>Press the ON (PROG) button to turn on the sensor.</li> <li>Select 5 Config from the Main Menu.</li> <li>This takes you to the GPS1200 Configuration screen.</li> </ul>	Display         16:19       Image: Colspan="2">Solution: Solution: Solutin: Solutin: Solutin: Solutin: Solution: Solution: Solutin: Soluti
2	From the GPS1200 Configuration screen:  Select 4 Interfaces	16:22       Image: Sector of the
	This takes you to the CONFIGURE Interfaces screen.	CONT CONT
3	From the CONFIGURE Interfaces screen:	16:23         ▲         L1= 8         ▲
	<ul> <li>Highlight Internet and press the F3 (EDIT) button.</li> </ul>	InterfacesXInterfacePortDeviceASCII InputNMEA Out 1NMEA Out 2Export JobHidden PtTilt
	This takes you to the CONFIGURE Internet Interface screen.	Meteo Internet

Step	Action	Display
4	From the CONFIGURE Internet Interface screen:	16:25     II=8     IE=8     IE=8
	• Set Internet to Yes.	Internet : Yes 🖬 🔺
	• Set the <b>Port</b> to <b>1</b> or <b>3</b> as applicable.	Port : Port 1 <u>바</u> Device : MultiTech CDMA
	<ul> <li>Set the IP Address to Dynamic or Static, depending on your plan.</li> </ul>	IP Address: Dynamic∳ Set IP Adr: 192.168.1.3 User ID :
	<b>Note:</b> If you are using a Static IP Address, be sure to obtain it from Verizon Wireless and enter it in the <b>Set IP Adr</b> field.	(cont) : ····· • 富企 CONT DEVCE
	• Press the <b>F5 (DEVCE)</b> button.	
	This takes you to the CONFIGURE GPRS Internet Devices screen.	
5	From the CONFIGURE GPRS Internet Devices screen:	16:27     III:8     III:8     III:8       CONFIGURE     III:2:8     III:2:8     III:2:8       GPRS Internet Devices     III:2:8       Name     Type
	<ul> <li>Highlight MultiTech CDMA and press the F3 (EDIT) button.</li> </ul>	<port 1=""><port 1="">AirLink CDMAModemMultiTech CDMACDMANokia 6230GSMSiemens MC45GSMSiemens S65GSM</port></port>
	This takes you to the CONFIGURE Edit Device: Multitech CDMA screen.	口 (日本)   CONT   NEW   EDIT   DEL   MORE

Step	Action	Display
6	From the CONFIGURE Edit Device: MultiTech CDMA screen: • Ensure the settings are as shown: GPRS/Internet: Yes Baud Rate: 115200 Parity: None Data Bits: 8 Stop Bit: 1 Flow Control: RTS/CTS • Press the F4 (ATCMD) button.	16:28       11:8       12:8       1       1       AB         Edit Device: MultiTech CDMA       Mame       MultiTech CDMA       X         Name       :       MultiTech CDMA       X         Type       :       CDMA         GPRS/Internet:       Yes       Yes         Baud Rate       :       115200         Parity       :       None         Data Bits       :       8         Stop Bit       :       1         Flow Control       :       RTS/CTS         STORE       ATCMD DEFLT       a T
	This takes you to the CONFIGURE GSM/Modem AT Command Lines screen.	
7	<ul> <li>In the CONFIGURE GSM/Modem AT Command Lines screen:</li> <li>Press the F6 (PAGE) button to access the GPRS/Internet tab.</li> <li>Enter the AT commands as shown on the right.</li> <li>Note: These commands are correct for Verizon Wireless modems.</li> <li>Press the F1 (STORE) button to save the changes.</li> </ul>	11:39       I = 8       I = 8       I = 8       I = 8       I = 8       I = 8       I = 8       I = 8       I = 8       I = 8       I = 8       I = 8       I = 18       I =
	This returns you to the CONFIGURE Edit Device: MultiTech CDMA screen.	

Step	Action	Display
8	<ul> <li>In the CONFIGURE Edit Device: MultiTech CDMA screen:</li> <li>Press the F1 (STORE) button to save the changes.</li> <li>This returns you to the CONFIGURE GPRS Internet Devices screen.</li> <li>Highlight MultiTech CDMA and press the F1 (CONT) button.</li> </ul>	16:33       I1=8       I=8       I=8 <t< th=""></t<>
	This returns you to the CONFIGURE Internet Interfaces screen.	
9	In the CONFIGURE Internet Interfaces screen: • Press the <b>F1 (CONT)</b> button.	16:35       Image: State S
	This returns you to the CONFIGURE Interfaces screen.	IP Address:     Dynamic 小       Set IP Adr:     192.168.1.3       User ID :        (cont) :        A ↑       CONT     DEVCE
10	<ul> <li>In the CONFIGURE Interfaces screen:</li> <li>Press the F1 (CONT) button.</li> </ul>	16:37       Image: Construction of the second
	This concludes the Multi-Tech CDMA setup and returns you to the Main Menu.	Export Job Hidden Pt Tilt Meteo Internet 1 MultiTech CDMA - A ① CONT EDIT CTRL

Connect with the Multi-Tech CDMA modem Follow the steps below to connect the GPS1200 sensor to a network using the Multi-Tech CDMA modem.

Step	Action	Display
1	Continuing from the previous section:	16:45     II=8     II=8       CONFIGURE     II=8     II=8       Interfaces     II=8
	<ul> <li>In the Main Menu select 5 Config</li> <li>In the Configuration Menu select 4 Interfaces</li> <li>In the Interfaces Menu highlight Real-Time and press the F3 (EDIT) button.</li> </ul>	Interface     Port     Device       Real-Time     -     ▲       ASCII Input     -     -       NMEA Out 1     -     -       NMEA Out 2     -     -       Export Job     -     -       Hidden Pt     -     -       Tilt     -     -       Meteo     -     -
	This takes you to the Real-Time Mode screen.	CONT EDIT
2	In the Real-Time Mode screen:	16:52         €
	<ul> <li>In the R-Time Mode field, select Rover.</li> </ul>	R-Time Mode: Rover 4 R-Time Data: Leica 4
	<ul> <li>In the <b>Port</b> field, select <b>NET1-3</b> to define the port through which you wish to connect.</li> </ul>	Port     :     NET1       Device     :     Internet       Ref Sensor     :     :       Ref Antenna:     Unknown     •
	<ul> <li>Press the F1 (CONT) button to save your settings.</li> </ul>	CONT ROVER DEVCE
	This returns you to the Interfaces screen.	

Step	Action	Display
3	<ul> <li>In the Interfaces screen:</li> <li>Press the F4 (CTRL) button to set up your IP information.</li> </ul>	17:05       Image: Construct of the state o
	This takes you to the Set NET Port screen.	CONT EDIT CTRL
4	<ul> <li>In the Set NET Port screen:         <ul> <li>In the User field, select Client.</li> <li>Enter the IP address and Port number of the station you are connecting to in the IP Address and TCP/IP Port fields, respectively.</li> </ul> </li> <li>Note: Leave the Auto CONEC field set to No, as shown.         <ul> <li>Press the F1 (CONT) button to save your settings.</li> </ul> </li> </ul>	17:18       Ile 8       Ile 8 <td< th=""></td<>
	This returns you to the Interfaces screen.	
5	<ul> <li>In the Interfaces screen:</li> <li>Press the F1 (CONT) button to return to the Main Menu.</li> <li>In the Main Menu, select 1 Survey.</li> </ul>	17:23       Image: Life 8 mining         GPS1200       Image: Life 8 mining         Main Menu       Image: Life 8 mining         Image: Life 8 mining       Image: Life 8 mining         1 Survey       2 Programs       3 Manage         Image: Life 8 mining       Image: Life 8 mining       Image: Life 8 mining         1 Survey       2 Programs       3 Manage         Image: Life 8 mining       Image: Life 8 mining       Image: Life 8 mining         1 Survey       2 Programs       3 Manage         Image: Life 8 mining       Image: Life 8 mining       Image: Life 8 mining         4 Convert       5 Config       6 Tools         Image: Life 8 mining       Image: Life 8 mining       Image: Life 8 mining         Image: Life 8 mining       Image: Life 8 mining       Image: Life 8 mining         Image: Life 8 mining       Image: Life 8 mining       Image: Life 8 mining         4 Convert       5 Config       6 Tools
	This takes you to the Survey Begin screen.	

Step	Action	Display
6	In the Survey Begin screen:	17:31         SURVEY         Survey Begin         Survey Begin         Survey Begin           Job         :         Default ∳
	<ul> <li>Review the job information and make any changes needed.</li> </ul>	Coord System : WGS 1984 Codelist : <none>∳</none>
	<ul> <li>Press the F1 (CONT) button to begin the survey.</li> </ul>	Config Set : RTK Rover 아 Antenna : AX1202 Pole 아
	This takes you to the Survey: Default screen.	A ①   CONT   CONF         CSYS
7	<ul> <li>In the Survey: Default screen:</li> <li>Press the SHIFT -F3 (CONEC) button to establish a connection with the reference station.</li> </ul>	17:37       SURVEY         SURVEY       Survey: Default         Survey: Default       Survey: Code Annot Map         Point ID       00001         Antenna Ht       0.000 m
		GDOP : A T HELP CONF CONEC INIT INDIV QUIT
8	This will establish a connection with the reference station. You should see the <b>NET1: Successfully connected</b> message at the bottom of the screen	17:40     Image: Survey: Default     Image: Survey: Default       Survey: Default     Image: Survey: Default       Survey: Code Annot Map       Point ID     1
	<ul> <li>To disconnect, press the SHIFT - F3 (DISCO) button.</li> </ul>	AntennaHt : 0.000 ™
		GDOP : NET1: Successfully connected A Tr OCUPY       H PNT PAGE

Step	Action	Display
9	This disables the connection with the reference station. You should see the <b>NET1: Disconnected</b> message at the bottom of the screen	17:48       SURVEY       Survey:       Survey:
		Antenna Ht : 0.000 m
	This concludes the Connecting to a Network Using the Multi-Tech CDMA section.	GDOP : NET1: Disconnected

#### GFU19 Multi-Tech CDMA Modem Appendix 1: Alternative Method of Activation

# Alternative<br/>methodPlease verify all of your account information with Verizon<br/>Wireless.Ask for both your MIN and MDM number, it is possible that they are

Ask for both your **MIN** and **MDM** number, it is possible that they a different. **MDM Number -** Verizon phone number **MIN** - Mobile Identification Number

**Note:** If your **MIN** and **MDM** number are different please note the numbers and follow the alternative procedure below.

Step	Action	Display
1	This step continues from Section 1.1, <b>Step 6</b> . Make sure that you have selected the <b>Real-</b> <b>Time</b> interface and not the <b>Internet</b> . From the CONFIGURE GPRS/Internet Connection screen:	12:14     Ile 8     Ile 8
	<ul> <li>Press the SHIFT button and the following screen appears.</li> </ul>	
	• Press the F4 (CMND) button.	A 1 Help info reg cmnd quit
	This takes you to the CONFIGURE Send Command to Device screen	

#### GFU19 Multi-Tech CDMA Modem Appendix 1: Alternative Method of Activation

Step	Action	Display
2	From the CONFIGURE Send Command to Device screen:	13:03     II=8     II=8
	Activate you MDM number:	Command : (cont) :
	<ul> <li>Enter the following commands exactly as shown and press the F3 (SEND) button after each one has been entered. The response should be OK for each entry.</li> </ul>	
	<ul> <li>AT+WSPC=1,000000 (INCLUDE COMMA!)</li> </ul>	CONT SEND CLEAR
	• <b>AT+WMDN=n</b> Where n is your 10- digit Verizon phone number. This number may extend into the (cont) field.	
	• AT+WCMT=1 Wait 10 seconds while the number is stored.	
	Activate you MIN:	
	<ul> <li>AT+WSPC=1,000000 (INCLUDE COMMA!)</li> </ul>	
	<ul> <li>AT+WIMI=31000n Where n is your 10-digit Verizon MIN. This number may extend into the (CONT) field.</li> </ul>	
	• AT+WCMT=1 Wait 10 seconds while the number is stored.	
	ATD*22899; Starts OTA activation     (INCLUDE SEMICOLON!)	

#### GFU19 Multi-Tech CDMA Modem Appendix 1: Alternative Method of Activation

Step	Action	Display
3	During activation you may see the following messages displayed at the bottom of the screen:	
	+WOTS: "SPL unlocked"	
	+WOTP: "PRL download OK"	
	+WOTM: "MDM download OK"	
	+WOT2: "Programming Successful"	
	Your Modem is now ready for use!	