

GCR-16 with internal modem

GXR user manual appendix J

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1. Introduction

IF Dear Valued GeoSIG Customer, thank you for purchasing this product.

These Instruments have been optimised to meet the requirements of the majority of customers out of the box and may have even be delivered tailored to your needs. In any case, to be able to get the most out of our product, please carefully study this manual, its appendices and referenced manuals, as well as any other documents delivered with it.

This is a reliable and easy to use device, and at the same time a sophisticated product, which requires care, attention and know-how in configuring, installing, operating and maintenance.

This manual describes the setup of the GCR-16 with internal modem step by step. It is based on the standard GXR User manual. It is highly recommended to read the GXR user manual before starting with this appendix.

The GCR-16 with internal modem has the following two new options:

- Send text messages (SMS) on event to two different numbers.
- On/Off button from the outside of the GCR-16.

2. Preparations

Before you start to configure and install the GCR-16 please ensure that the following material is ready:

- Running GeoSIG instrument (GCR-16)
- GSM modem (SIEMENS TC-35) inside the GCR-16
- Valid SIM card with GSM Data mode activated (to be checked with provider)
- Latest GeoDAS software
- GeoSIG RS-232 cable
- Fully operational Analog or GSM modem for computer side (in- or external)

Now please ensure that the following points are done:

- SIM card pin code is disabled
- Antenna is connected to the instrument
- Sensor is connected to the instrument
- The GMS modem inside the GCR-16 has got three cables attached (power, antenna and RS-232)

2.1. On/Off switch

There are two on/off switches, one inside of the housing, another one outside of the housing. It is important to know that they are parallel to each other. This means that if the inside switch is turned on, you can not turn the instrument off from the outside. This a security so it can be avoided that the instrument is turned off from the outside by accident.

The following table shows the logic:

Switch inside	Switch outside	GCR
On	On	On
On	Off	On
Off	On	On
Off	Off	Off

2.2. Process overview

The following chart shows the process how to install a GCR-16 with an internal modem.



3. Configuration

3.1. GCR side configuration

Start the GCR	
Make sure the modem inside the GCR is powered, you can see this from the LED on the modem. There are the following different modes:	
After power on: LED is on for 2 s	
Power down: LED off	
Network search, no SIM card is inserted, PIN not disabled or no GSM network is available LED flashed fast	
Standby LED flashes slowly	
Active connection LED permanently on	
Login to the GCR station and open the Instrument Setup Manager window.	
Import the .ist file that was supplyed from GeoSIG.	Instrument Setup Manager for the station <st001> X Errors and Warnings Interconnection Data Streams Printer Batch Mode Sampling Event Trigger Alaros Channels Communication Time Triggers Station Instrument Power and Batteries Date and Time Test LCD Display Image: Communication Information Refresh Put Pane Put Pane Station Info Recorder GPS Put Pane Put All Location BURE Latitude Unknown Unknown Put All Restarts 0 Longitude Unknown Niknown Reset Check and Comments Date of Installation 23.02.2009 Checked by STT Import Comment GCR-16 GeoSIG Export Export Export Export</st001>

Go to COMMUNICATION tab.	Instrument Setup Manager for the station <st001></st001>
Baudrate must be set to 9600 bauds.	Errors and Warnings Interconnection Data Streams Printer Batch Mode Station Instrument Power and Batteries Date and Time Test LCD Display Sampling Event Trigger Alarms Channels Communication Time Triggers Communication Setup Communication Setup Refresh
Change the Initialization-string to. AT&FE0V1&D0S0=1+CSNS=4&W	Baudrate 9600 Image: Point Settings Note: The baud rate cannot be changed if the option "Analog Modem" is selected Put Page Data block size for the file transfer is Image: times 256 bytes
Enable Auto-Dial, for sending text messages at an event. Up to two numbers can be written in to the box. These two numbers will receive a text message in case of an event. This is the format: +410000000;+410000000	Modem Settings Initialization String IAT8FE0V18D050=1+CSNS=48W Heat93336795;+41798196547 VEX. Password to Access Remote Stations Old password LogOn Level 3 New password
Press the PUT PAGE button to save the change. – This must be done after every change; otherwise the changes will be discarded.	Confirm new password Exit Status Active connection Disconnect

Go to INSTRUMENT tab.	Instrument Setup Manager for the station <ech01></ech01>
Tick the ANALOG or GSM Modem	Errors and Warnings Interconnection Data Streams Printer Batch Mode Sampling Event Trigger Alarms Channels Communication Time Triggers Station Instrument Power and Batteries Date and Time Test LCD Display Instrument Setup
Press the PUT PAGE button to save the change.	General Info
This must be done after every change; otherwise [†] the changes will be discarded.	Instrument Type GSR-24 Main board S/N 108222 Put Page Firmware Version 04.02.16 (37629) Put All Put All
A message will come, notice and press "okay".	Manufacturer GeoSIG
I hen the instrument will restart	Memory Info
Check the LCD display of the GSR until it start	Memory Jyde ALA Flash Total Memory 62196 KByte, 8800 KByte is used by data
to operate normally (restart is finished). Then	RAM Structure 2 Block(s) (1 for prevent memory) x 64K, Chip size 128K
	Create dee-channel Data Files
	Peripherals CDPD Modern C Garmin CPS Serial Printer
If needed the settings can be exported to a .ist	
file to the hard drive by clicking on EXPORT and giving a suitable filename.	Status Normal operation Disconnect
Deview the estimate	
Review the settings.	
Logout by pressing the DISCONNECT button.	
Plug out the RS-232 cable	
Restart the GCR-16	
If the RS-232 cable is not unplugged the mo	odem will not be initialised at the restart, it won't send text

messages and it won't be able to communicate over the GSM network.

3.2. PC side configuration

Connect PC modem to T+T line	
Connect PC modem to the COM Port of your PC (if external)	
Please don't use USB external modems	s, they are mostly not working.
Start GeoDAS	
In menu, select SETTINGS / CONFIGURE STATIONS. In the list, select your station and do a right click on its name. Select COMM CHANNEL:	Configuring Stations X Configured Stations Station Instrument Channel Type Operation Mode Main Board S/N Station Instrument Channel Type Operation Mode Main Board S/N Station Instrument Channel Type Operation Mode Main Board S/N Vork Options Direct Link (COM1) Recorder 2313 Work Options Export to CSV Rename Remove P Adding New Station 1. Enter the unique station name (up to 5 characters) 2. Choose the type of instrument from the list Unknown V 3. Enter serial number of the main board (optional) 0 4. Type valid password to login to the instrument 5. Re-type the same password to confirm it 5. Configure communication channel Channel 7. Specify work options Options 8. Add new station to the list of existing ones Add Now

Select DIAL- CONNECTION through a dedicated modem	Select the COM where the mode attached to the F	port Up m is ini PC. be	odate the tializatior elow)	modem string. (see	Enter the p of the GCR without usin below)	hone number 8 station, ng a "+" (see	
Communication Channel Setup	for the station "ST001"						×
General Settings		M	odem Specific S	ettings			
O Direct permanent connection	through the serial port	1: 👻 St	tation phone n	mber 079X	XXXXXX Conne	ect timeout, sec 60	
Dial-up connection through a	dedicated modem at COM	3: 💌 In	nitialization strir	g AT&F	EOV1X1S0=1		
C Dial-up connection through a	modem requested from the mode	em pool(s): Hi	ang up string	ATHO)		
Request a modem from the p	rimary modem	_	GSM modem	TC-35 Note: The PIN	I protection must be a	disabled	
🔲 Use also the secondary n	nodem pool	- E	Support for :	iMS Note: SMSC n	umber must be set in	the SIM card	
Default baud rate	00 -		🛛 Use separate	d modem pool for the :	sms	v	
ry all the baud rates suppor	ted		🔲 Send SM	5 to the other phone nu	umber		
Timeout of the communication ch	iannel, ms 50	000	lodem recei	ves incoming phone cal	Is from the instrumen	t	
							
Configure Modem Pools	Default Settings		\sim			OK Cancel	
Disable TRY ALL	Select 9600 bauds	Enter 10'0	00 for	Disable auto-a	answer of the	modem.	
THE BAUDS		the timeou	ıt.				
RATE							

Initialization strings for GCR16: AT&FE0V1&D0S0=1

Phone number: Mostly it's not possible to type in a number beginning with "+", so please just leave the country code away, With some modems it's needed to use a "T" in front of the number for example: T0791112233.

Review the configuration.				
Press the OK button.	The window wil	l disappea	r.	
Press again OK in the station list window.	New Configurat	ion		
A warning message indicates you that the GeoDAS program will have to restart according to the change you	You have made Would you like	some chang to save them	and restart the p	program?
performed.	<u>LY</u>	es	No	Cancel
Press YES button.				
In the SERIAL COMMUNICATION	©";⊧ Serial Comm	nunication (Channels	
COM port should be visible	Port	Baud	Owner	C
	COM3	2400	<1833A>	
	LEDOLCOM1	38400	<ech01></ech01>	
	COM8	38400	<ech02></ech02>	
	COM6	38400	<ech03></ech03>	
	COM2	1200	<gcr></gcr>	



4. Connect to the instrument

In the station list, select the station you	🗱 GeoSIG Data Acquisition System
configured for modem operation.	File Edit View Analyse Settings Tools
Press the CONNECT button.	
	1 Stations: General Information
	Station Code Instrument Ch
	1833A 105 GSR-24 Modem at C(
	1833B 070 GSR-24 Modem at C(
	1833C 035 GSR-24 Modem at CC
	000 GSR-24 Modem at C(
	ECH01 EH1 GSR-24 Direc
Madam diala and CCD madam anawara the as	II Section 2 End 2
call progress.	in the senal communication channels window will show the
Wait until the modem link is established.	
Check communication works well. Check the m	odems LED's for activity.
Display the instrument setup manager window. and regularly updating.	Go to DATE AND TIME tab. Check that the time is correct
Go to the TEST tab.	Try to record a sensor test. Be sure that RECORD A TEST PULSE is enabled.
Close the window by pressing the EXIT button.	
Open the EVENT MANAGER window	Download the sensor test you created.
Press the disconnect button.	Modem hangs up automatically

5. Debugging

If there are any problems with the GSM communication, please check the following points;

- Modem is powered (LED blinks slowly)
- SIM card inserted
- SIM card pin is disabled
- GCR-16 has been restarted with the RS-232 plugged out after the configuration
- RS-232 cable is still plugged out
- GCR-16 is turned on
- T+T line on the PC works

5.1. Check PC side

To be sure that the T+T line and the modem at the PC are working, please follow the steps below:

Open the GeoDAS terminal TOOLS / TERMINAL.	
Select the serial port where the modem is connected by example COM3.	ASCII Communication Terminal Senal port COM1: F Hexadecimal display Connect Send Text Send Text Connect Send Text Connect Conn
Select the BAUD RATE 9600	
Enable the BUFFER MODE modus	
Press CONNECT	
To test the T+T line simply call any phone, for example your cell phone.	ASCII Communication Terminal Serial port COM1: F Hexadecimal display Disconnect Hexadecimal input Serial Text Close
To test the T+T line simply call any phone, for example your cell phone. Type atdtxxxxxxxx (where xx is your number).	ASCII Communication Terminal Serial port COM1: Hexadecimal display Disconnect Hexadecimal input Baudrate 9600 F Buffered mode Send Text Close a t dt + 417 REXERVANCE Image: A t dt + 417 REXERVANCE Image: A t dt + 417 REXERVANCE Image: A t dt + 417 REXERVANCE
To test the T+T line simply call any phone, for example your cell phone. Type atdtxxxxxxx (where xx is your number). Most modems will not work if you type a "+", so just write two "0" instead of a "+".	ASCII Communication Terminal Serial port COM1: Hexadecinal display Disconnect Baud rate 9600 F Buffered mode Send Text Close Clos
To test the T+T line simply call any phone, for example your cell phone. Type atdtxxxxxxx (where xx is your number). Most modems will not work if you type a "+", so just write two "0" instead of a "+". Then press ENTER.	ASCII Communication Terminal Serial port COMB Hexadecimal display Disconnect Baud rate 9000 For Buffered mode Send Text Close at dt+417xxxxxxxxxx A
To test the T+T line simply call any phone, for example your cell phone. Type atdtxxxxxxx (where xx is your number). Most modems will not work if you type a "+", so just write two "0" instead of a "+". Then press ENTER. This command will make the modem calling the number, if it doesn't work please check the line.	ASCII Communication Terminal Serial port COMS Hexadecimal display Disconnect Baud rate 9600 Serial port Close Stdt+117xxxxxxxxx *
To test the T+T line simply call any phone, for example your cell phone. Type atdtxxxxxxx (where xx is your number). Most modems will not work if you type a "+", so just write two "0" instead of a "+". Then press ENTER. This command will make the modem calling the number, if it doesn't work please check the line. To end the call type +++, wait a few second and type ATH and press ENTER.	ASCII Communication Terminal Serial port COMI: Hexadecinal display Disconnect Baudrate 9000 Buffered mode Send Text Close Image: Close Image: Close <t< td=""></t<>



If the modem at the GCR-16 is correctly initialized, it should pick up any incoming calls after the first "ring".	ASCII Communication Terminal Serial port COM1: Image: Communication Communicatio Communication
Please type atdtxxxxxxx (where xx is the number of the GCR-16 SIM card).	atdt+417xxxxxxxx
In the field below you should see the following: Connected 9600	<u>×</u>
If you get the response: No dial tone the T+T line is not working.	
If you get the response: Busy then the GSM modem connected to the GCR-16 has probably no connection (antenna gets no signal), in this case you will either need a	
stronger antenna, or you have to place the instrument to another location.	
If you get NO CARRIER detected, something is wrong with the modem configuration (on computer side or on GCR side).	

5.2. Check the GCR side

To check the line of the GCR please enable the ATD (auto dial on event) and type a valid number, as described above.	
Logout and plug out the RS-232 cable	
Shake the sensor to make an event	
The GCR-16 should now send a text message within about 30 seconds (depending on your post event time).	Note: This will only work if the ATD tick is enabled and a correct number is typed in.
If the GCR-16 doesn't send the text message please double check the points mentioned above.	
If it still doesn't work, please contact GeoSIG	