

GeoDAS

Links to GeoSIG Instruments

User Manual Extension

Company:	GeoSIG Ltd Ahornweg 5A, 5504 Othmarsingen, Switzerland, Tel: +41 44 810 21 50, Fax: +41 44 810 23 50, E-mail: info@geosig.com
Author:	Oleg Razinkov
Checked:	Talhan Biro
Approved:	Johannes Grob
Distribution:	GeoSIG Ltd (1), Customer on request

Document Revision

Version Date	Comment
04.11.2005	First revision
07.08.2008	Minor format adjustments and useful name

Disclaimer

GeoSIG Ltd reserves the right to change the information contained in this document without notice. While the information contained herein is assumed to be accurate, GeoSIG Ltd assumes no responsibility for any errors or omissions.

Copyright Notice

No part of this document may be reproduced without the prior written consent of GeoSIG Ltd. The software described in this document is furnished under a license and may only be used or copied in accordance with the terms of such a license.

Trademark

All brand and product names are trademarks or registered trademarks of their respective holders.

All rights reserved GeoSIG Ltd Switzerland

Table of Content

1	INTRODUCTION	4
2	DIRECT LINK	5
3	DIRECT LINK TO SEVERAL INSTRUMENTS	6
4	DEDICATED DIAL-UP LINK	7
5	DIAL-UP LINK THROUGH THE SHARED MODEM	8
6	DIAL-UP LINKS USING MODEM POOLS	9
7	DIAL-UP LINK TO SEVERAL INSTRUMENTS	9
7	LINKS OVER VIRTUAL SERIAL CHANNELS	10

1 Introduction

This document describes the various links that can be established by the GeoDAS software and GeoSIG recorders (GSR).



GeoDAS maintains a stations list that is edited from the menu entry *SETTINGS / CONFIGURE STATIONS* and supports various configurations of communication channels with instruments. The communication parameters have to be defined for both sides of the link.

The parameters of these channels are specified in two configuration dialogs:

- Communication Channel Setup sets communication parameters of GeoDAS for each configured station
- **Communication** tab of the Instrument Setup Manager (ISM) assigns the corresponding communication settings to the instrument

The examples of most typical configurations are listed below and the corresponding communication parameters are shown. They will be explained in the next sections.

- Direct link
- Direct link to several instruments
- Dedicated Dial-up link
- Dial-up link through the shared modem
- Dial-up links using modem pools
- Dial-up link to several instruments

2 **Direct link**

The instruments are located near to the computer running GeoDAS and are connected to it via serial RS-232 cables. This is the simplest and most common case.

	COM1	RS-232	1 st GSR
PC	COM2	RS-232	2 nd GSR
	COMN	RS-232	N th GSR

Example of communication parameters for one link (assuming the cable is connected to the port COM1):

Communication Channel Setup for the station "G18"	×		
General Settings	Modem Specific Settings		
Direct permanent connection through the serial port COM1:	Station phone number P49783 Connect timeout, sec 60		
C Dial-up connection through a dedicated modern at	Initialization string AT&FE0V1X1S0=0+MS=132,1,9600,33600		
C Dial-up connection through a modem requested from the modem pool(s):	Hang up string		
Request a modem from the primary modem pool	GSM modem TC-35 Note: The PIN protection must be disabled		
🗖 Use also the secondary modem pool 🛛 🔽 🗖 Support for SMS Note: SMSC number must be set in the SIM card			
Default baud rate 38400 💌	Use separated modem pool for the SMS		
Try all the baud rates supported	Send SMS to the other phone number		
Timeout of the communication channel, ms 1000	Modem receives incoming phone calls from the instrument		
Configure Modern Pools Default Settings	OK Cancel		

Instrument Setup Manager for the station <g18></g18>	D
Errors and Warnings Interconnection Data Streams Printer Batch Mode Intensity Station Instrument Power and Batteries Date and Time Test LCD Display Sampling Event Trigger Alarms Channels Communication Time Triggers	
Communication Setup	Refresh
General Settings Baudrate 1920 Idle timeout to disconnect from a PC, minutes 10 Note: The baud rate cannot be changed if the option "Analog Modem" is selected Data block size for the file transfer is 16 times 256 bytes	Put Page Put All
Modem Settings Initialization String AT&FE0&D0S0=1&W0 AutoDial string ATD12345	Reset
Password to Access Remote Stations Old password LogOn Level O New password	Import Export
Confirm new password Change Password	Exit
Status Idle, not connected Connect	

× Important notes:

GeoDAS supports up to 127 COM ports: • COM1 – COM127

3 Direct link to several instruments

Several GSR recording modules can be combined into the one multi-channel GNC unit or several standalone recorders can form a synchronised network. In both cases more than one instrument are accessed via same serial channel:



In this case all recording modules should be configured with the same communication parameters as it is illustrated with the example given in the section <u>Direct link</u>. You have to make sure that the work option **Login to single instrument** is NOT enabled for all recording modules accessed through the same serial channel.

ork Options for the station "G18"	2
Data Stream Options Acquire data from the stream Request for the data packets Use PC clock for time tagging Data requester is at COM1: ▼ Data Simulation Simulate data stream from the simulator channel ▼ C output stream through the test loopback. Simulator Settings	Download Parameters Local Event directory: Standard Autodownload any new file recorded by instrument Always overwrite an existing file when downloading Delete file(s) after successful downloading
Periodical Check-Up of the Instrument C Check up the status of this instrument permanently C Login to instrument every 24 hours, starting at 00:15 C Login in 10 minutes after callback from any other station In case of connection failure during automatic check-up: C Retry to log in up to 2 times every 10 seconds C Do not try to login again	Miscellaneous Miscellaneous Login to single instrument Declare an error if no AC for more than 12 hours Synchronise instrument time with the computer time Connected to the annunciator, channel 1 Connected to the annunciator, channel 1 Request and log intensity information
Never login to this instrument automatically	Default OK Cancel

Important notes:

- You cannot use Quick Login to the GNC modules through the "Add a Station" wizard, i.e. do not select the option "I have the new instrument connected to a serial port of this computer"
- You have to add ALL recording modules of GNC to the configuration manually (Settings -> Configure Stations -> Adding New Station...)
- You have to enter the correct serial number of the main board for each GNC recording module being added manually

As a rule, the configuration file is supplied on the CD along with your GNC recorder. Therefore the simplest way of configuration is to start "Add a Station" wizard, select the 2nd option and to locate a configuration file provided with your instrument:

Adding the new s	tation using a configuration file	×
Select the serial po	ort where your instrument(s) will be connected to COM1:	•
Choose a configura	ation file of the station(s) to be added and press Next	
E:\TEMP\G	NC-CR_Unit.gsc	
	< Back Next > Cancel	
×	K Adding the new s Select the serial p Choose a configur E:\TEMP\G	Adding the new station using a configuration file Select the serial port where your instrument(s) will be connected to Choose a configuration file of the station(s) to be added and press Next E:\TEMP\GNC-CR_Unit.gsc Back Next > Cancel

4 Dedicated Dial-up link

The instruments are accessed via dial-up link. Each link utilises its own analog modem connected to a dedicated COM port of the computer



Example of communication parameters for one link (upper link):

- an external modem is connected to the PC serial port COM1
- telephone number in the centre is 123, pulse dial
- telephone number at the place where instrument is located is 321
- instrument makes a call to the centre in case of an event

Communication Channel Setup for the station "G18"	×				
General Settings	Modem Specific Settings				
C Direct permanent connection through the serial port	Station phone number P321 Connect timeout, sec 60				
Dial-up connection through a dedicated modem at COM1:	Initialization string AT&FE0V1X1S0=0+MS=132,1,9600,33600				
C Dial-up connection through a modem requested from the modem pool(s):	Hang up string ATH				
Request a modem from the primary modem pool	GSM modem TC-35 Note: The PIN protection must be disabled				
Use also the secondary modem pool	Support for SMS Note: SMSC number must be set in the SIM card				
Default baud rate 19200 🔽 🕼 Use separated modem pool for the SMS					
Try all the baud rates supported	Send SMS to the other phone number				
Timeout of the communication channel, ms 4000	Modem receives incoming phone calls from the instrument				
Configure Modem Pools Default Settings	OK Cancel				

strument Setup Manager for the station <g18></g18>	
Errors and Warnings Interconnection Data Streams Printer Batch Mode Intensity Station Instrument Power and Batteries Date and Time Test LCD Display Sampling Event Trigger Alarms Channels Communication Time Triggers	
	Refresh
General Settings Baudrate 19200 V Idle timeout to disconnect from a PC, minutes 10	Put Page
Note: The baud rate cannot be changed if the option "Analog Modem"	Put All
Data block size for the file transfer is 16 🔽 times 256 bytes Modem Settings Initialization String	
AT&FE0&D0S0=1&W0	Reset
AutoDial string ATDP123 C Enable AutoDial on event	
Password to Access Remote Stations	Import
Old password LogOn Level 0	Export
New password Change Password	
Confirm new password	Exit
Status Idle, not connected Connect	

Important notes for dial-up links:

- Make sure that you have set the option "Analog or GSM Modem" in the Instrument tab of ISM
- Baud rates must be the set to the same fixed value, 19200 baud is recommended for this type of link
- The letter 'P' placed before the phone number forces pulse dialling (supported by almost all modems)
- S0=1 in the initialisation string makes the remote modem answering automatically after the 1st ring
- In order to set the proper initialisation string, consult the user manual of your modem
- Timeout of the communication channel for dial-up links should be set to at least 3000 – 5000 ms

Configuration procedure for the dial-up link (applied when the instrument is first configured):

- Connect to the instrument using direct link (cable), launch ISM and set communication parameters required for the dial-up link
- After restart of the instrument configure GeoDAS for the dial-up link and connect once to the instrument to make sure it is accessible

5 Dial-up link through the shared modem

Several instruments are accessed sequentially via dial-up links using the same modem connected to a COM port of the computer



Configuration A: the same as above, except the only modem is used for all links **Configuration B**: using the modem pool with the only modem configured

Example of communication parameters for one link (upper link):

- an external modem is connected to the PC serial port COM1
- this modem is declared as a part of the modem pool TEST_Pool
- telephone number in the centre is 123, pulse dial
- telephone number at the place where instrument is located is 321
- instrument makes a call to the centre in case of an event

Communication Channel Setup for the station "G18"			×
General Settings	Modem Specific Settings		
O Direct permanent connection through the serial port	Station phone number	P321 Connec	t timeout, sec 60
C Dial-up connection through a dedicated modem at	 Initialization string 	AT&FE0V1X1S0=0+MS=132,	1,9600,33600
Dial-up connection through a modem requested from the modem pool((s): Hang up string	ATH	
Request a modem from the primary modem pool TEST_Pool	GSM modem TC-35 No	te: The PIN protection must be disa	abled
Use also the secondary modem pool	Support for SMS No	te: SMSC number must be set in th	e SIM card
Default baud rate 19200 💌	Use separated modem po	ol for the SMS	V
Try all the baud rates supported	Send SMS to the other	er phone number	
Timeout of the communication channel, ms 4000	Modem receives incoming	g phone calls from the instrument	
Modems Pools			×
Configured modem pools: TEST_Pool	<u>Bename</u> Ports as to the	signed pool	Free ports available
	Remove COM1	<- <u>A</u> dd	
		Remove ->	
New name of a modem pool:			COM5 COM6
New name of a modem pool:			COM5 COM6 COM7 COM8
New name of a modem pool: This pool consists of GSM modems Modems of the pool can send and receive SMS		Цр	COM5 COM6 COM7 COM8 COM9 COM9

Configuration of the instrument is identical to the one shown above for the dedicated dial-up link.

The same notes and the configuration procedure described above are applicable.

6 Dial-up links using modem pools



Several instruments are accessed via dial-up links using several modems forming a modem pool.

Modem pools may have (and in most cases they do) more than one modem as shown in the dialog below:

Modems Pools				×
Configured modem pools: TEST_Pool	<u>R</u> ename	Ports assigned to the pool		Free ports available
	R <u>e</u> move	COM1 COM2	<- <u>A</u> dd	COM3
New name of a modern pool:	Add <u>P</u> ool		Hemove ->	COM5 COM6 COM7
This pool consists of GSM modems	ок			COM9
\square Modems of the pool can send and receive SMS			Цр	COM10
Modems of the pool receive incoming calls	Cancel		Down	COM12 -

The pool consists of two modems and each of them can be used to connect to any of the remote instruments configured in GeoDAS to be accessible through this modem pool. The modem for outgoing call is selected from the list **Ports assigned to the pool** in the order as the ports are listed there. If a port is already used for communication with a remote instrument, the next one is taken. If all ports are busy, GeoDAS waits for some time until a port of the pool is released or until timeout is declared.

Unfortunately instruments cannot try to dial several numbers sequentially: callbacks from the instrument are always made through the same modem of a pool. Therefore, configuring instrument settings, try to distribute all telephone numbers of the pools evenly between all instruments or (better) assign the number of 1st modem to fewer instruments because this modem is used more frequently for outgoing calls made by GeoDAS.

7 Dial-up link to several instruments

This configuration is similar to the one described in the section <u>Direct link to several instruments</u> but the GNC unit or several interconnected instruments are accessed through the dial-up link:



In this case one has to make sure also that all units are configured with their correct unique serial numbers of the man boards. The above example is given for the dedicated dial-up link but the same would work also through the shared modem or with a modem pool.

7 Links over virtual serial channels

This case is similar to the direct link, except that the COM ports are introduced to the operating system by the drivers of corresponding TCP/IP to serial converters.



Configuration parameters of such links are the same as those for direct channels, except the communication timeout should be set to 3000 – 10000 ms, especially for the channels going through the slow TCP/IP links. Note that initialisation of such channels at GeoDAS startup may take quite long.

Please refer to the GeoDAS manual (especially the sections 4.8 and 5.9) for more information about communication channels and about their configuration.