



ModemVU

Software Manual

Version 2.2

Reflects Software Version 2.1.47

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PREFACE

Thank you for purchasing this product. The materials available in this Manual (the “Manual”) have been prepared by JAVAD GNSS, Inc. (“JAVAD GNSS”) for owners of JAVAD GNSS products. It is designed to assist owners with the use of the TRIUMPH-1 and its use is subject to these terms and conditions (the “Terms and Conditions”).

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Preface

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Manual Conventions

This manual uses the following conventions:

Example	Description
<i>File ► Exit</i>	Click the <i>File</i> menu and click <i>Exit</i>
<i>General</i>	This format represents titles of dialog windows/boxes, names of menu options, identifies program interface objects, such as checkboxes, edit boxes, radio buttons, etc.
Temp	This format is used to enter various string information (e.g., file and directory names) as well as operator commands.

Note: Supplementary information that can have an affect on system operation, system performance, measurements, or personal safety.

CAUTION: *Notification that an action has the potential to adversely affect system operation, system performance, data integrity, or personal health.*

Warning: *Notification that an action will result in system damage, loss of data, loss of warranty, or personal injury.*

DANGER: UNDER NO CIRCUMSTANCES SHOULD THIS ACTION BE PERFORMED.

Screen Captures

This manual includes sample screen captures. Your actual screen can look slightly different from the sample screen due to the receiver you have connected, operating system used and settings you have specified. This is normal and not a cause for concern.

Preface

Technical Assistance

Technical Assistance

If you have a problem and cannot find the information you need in the product documentation, contact your local dealer. Alternatively, request technical support using the QUESTIONS system at the JAVAD GNSS World Wide Web site: www.javad.com



GETTING STARTED

ModemVU is a comprehensive Windows software product designed for configuring embedded radio modems of the receivers developed by the JAVAD GNSS.

Before you start using ModemVU, you should become familiar with its functions and learn how to install, launch, exit and uninstall the program.

ModemVU provides the following functions:

- Connecting a PC to an internal (integrated) and external JAVAD GNSS radio modem via a serial port or Bluetooth[®] wireless technology.
- Displaying information about the JAVAD GNSS radio modems external and installed in the receiver.
- Programming different JAVAD GNSS radio modem's settings.

1. Setting up ModemVU

1.1. System requirements

Check that you have the following required (or recommended) items before installing and using ModemVU.

- PC-compatible with Intel[®] Pentium[®] 100 MHz or faster.
- 10 MB free disk space.
- 32 MB RAM or more (64 MB recommended).
- 32-bit operating system such as MS Windows 2000/XP.
- Color monitor at 800x600 screen resolution.
- An RS-232C port.

1.2. Installing ModemVU

ModemVU is available from the JAVAD GNSS website. If downloading the program from the website, extract the program files into a folder on your hard drive.

1. If downloading the program from the website, extract the program files into a folder on your hard drive.
2. Navigate to the location of the ModemVU program and double-click the Setup.exe icon.

Getting Started

Setting up ModemVU

3. Follow the on-screen installation instructions (Figure 1). Click *Next* to continue, *Back* to get back to previous step, or *Cancel* to quit the installation.

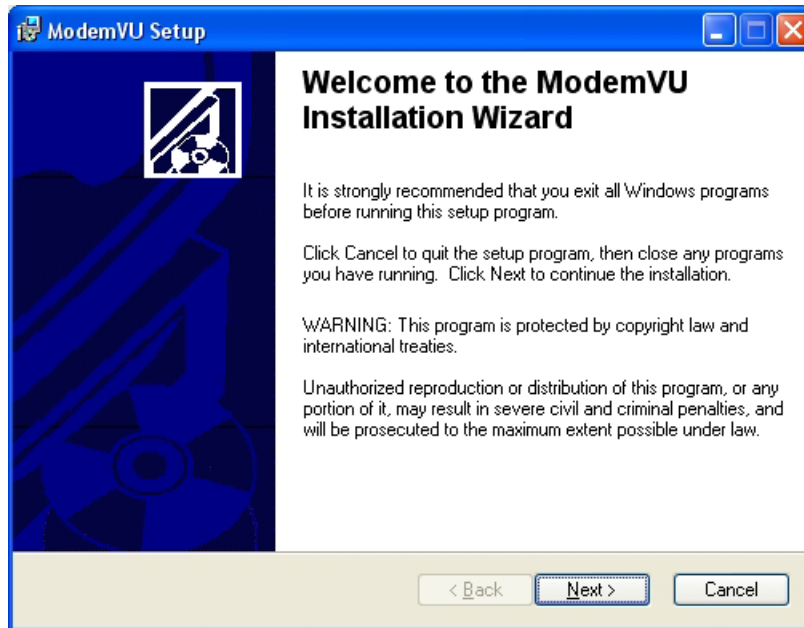


Figure 1. ModemVU Setup Wizard

4. Keep the default installation location or select a new location (Figure 2).

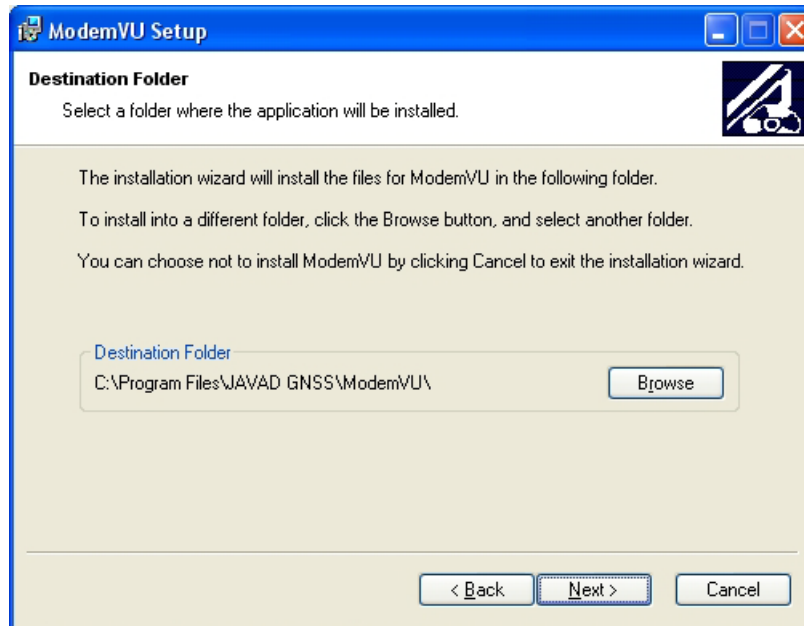


Figure 2. Select destination folder

5. Click *Finish* to complete the installation.
6. If desired, create a shortcut on the computer's desktop for quick access to ModemVU.

1.3. Uninstalling ModemVU

To uninstall ModemVU use the *Start* menu on your computer:

1. Open the *Control Panel*, then *Add or Remove Programs* tool. Find ModemVU, and click *Change/Remove*.
2. This will uninstall ModemVU.

Note: The previous version of the ModemVU software will be deleted by installing the newer.

2. Starting ModemVU

Note: For the Windows 7 OS the software should be started “As administrator” or in the ModemVU properties check the mark “Start as administrator”.

To run the software and connect with the ModemVU perform the following steps:

- Connect the serial port of the computer to the serial port of the receiver at the switched off power supply by using of a cable.
- Connect the power supply (if it is necessary) to the receiver and switch on it.
- Run the ModemVU software on PC.

You can start ModemVU just as you would any software application:

- Double-click on ModemVU’s shortcut on the desktop (if it has been created), or
- Press the *Start* button in the bottom-left corner of your computer’s screen and select *ModemVU* from the pull-up menu.

Getting Started

Starting ModemVU

After that the window will appear as shown in Figure 3:

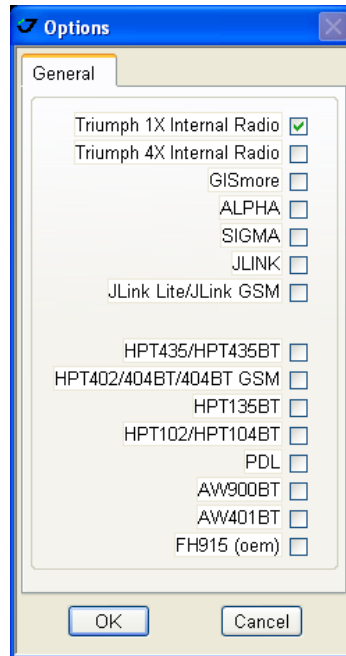


Figure 3. ModemVU Options

- Triumph-1 Internal Radio - for the internal UHF and/or GSM modem;
- Triumph-4 Internal Radio - for the internal UHF and/or GSM modem;
- Gismore for the internal GSM modem;
- ALPHA - for the internal GSM modem;
- SIGMA - for the internal UHF and/or GSM modem;
- JLINK - for the internal UHF and/or GSM modem;
- JLink Lite/JLink GSM - for the internal GSM modem;
- HPT435/435BT - for the external HPT435 or HPT435BT UHF modems.
- HPT402/404BT/404BT GSM - for the external HPT402 and HPT404BT UHF modems.
- HPT135BT - for the external HPT135BT UHF modems.
- HPT102/HPT104BT - for the external HPT102 and HPT104BT UHF modems.
- PDL - for the external PDL UHF modem.
- AW900BT - for the external AW900BT modem.
- AW401BT - for the external AW401BT modem.
- FH915 (OEM) - for the external FH915 modem

1. Type the COM port number the receiver / the external modem is connected to (Figure 4) or select the USB port ID if connection is via USB port. Click *Connect*.

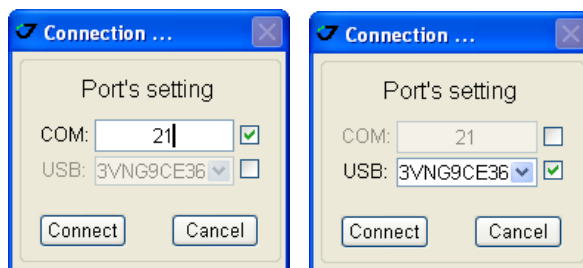


Figure 4. Connect to ModemVU

If the TRIUMPH-1 Internal Radio is selected...

In the *Connecting to device* dialog window select the following (Figure 7 on page 14):

- To set up the UHF modem, ensure the *GSM* is *OFF*, then select *ON* in the *Radio* drop-down list box, then click *Apply* ▶ *Connect Radio* (Figure 5).



Figure 5. Connect to Radio

- To set up the GSM module, ensure the *Radio* is *OFF* and then click *Connect GSM* (Figure 6).



Figure 6. Connect to GSM

- *Slave* for base receiver;
- *Master* for rover receiver;
- *GPRS* for set up General Packet Radio Services (GPRS) and connect receiver to Internet

Getting Started

Closing ModemVU

In the *Connecting to Radio Modem* window you will see the connecting progress bar (Figure 7 on page 14).

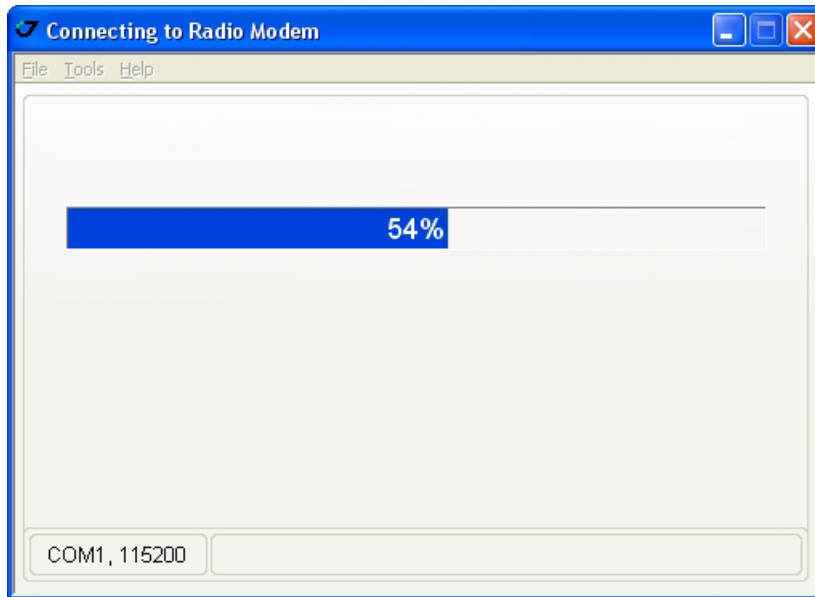


Figure 7. Connecting to Radio modem progress bar

3. Closing ModemVU

To quit ModemVU, select *Exit* from the menu or press *CTRL+Q* keys. If the receiver has not been disconnected by the time you turn the program off, the connection will be automatically broken before ModemVU is closed.

To disconnect from the receiver, select the *Disconnect* option from the *Tools* menu or press *CTRL+D* keys.

Warning: *It is strongly recommended to close the connection with the receiver and close ModemVU prior to switching the receiver OFF and disconnecting the cable.*

OPERATION

1. Understanding Elements of the Tabs Window

After ModemVU has established a connection between the computer and receiver, the *Tabs* window will be opened (Figure 1). This window can be split into three areas: the Menu bar, the Tabs control area, which is the largest part of the window, and the Status bar.

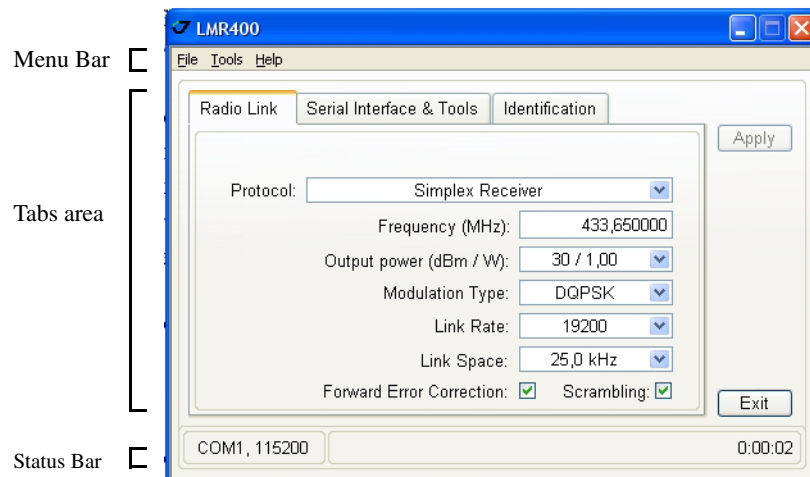


Figure 1. Tabs Window

1.1. Menu Bar

The Menu bar extends across the top of the *Tabs* window and contains three menu titles through which (or using the appropriate hot keys) the user can access the program functions. By hovering the mouse pointer over a menu title and then clicking the left mouse button will cause the menu to drop down, displaying a list of menu items. Position your pointing device on the desired menu item, then click and release the left mouse button and that function is invoked (Figure 2).

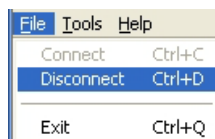


Figure 2. Menu Bar with the Disconnect Item Highlighted

Operation

The Tabs window's menu

1.2. Status Bar

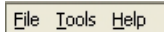
The Status bar provides auxiliary information while using ModemVU. This information includes the connection status, current communication settings, various types of messages (e.g., error messages).

1.3. Tabs Area

The Tabs area consists of tabs, varied for each modem type. You can use your mouse to position the cursor over the desired control and then click a mouse button or you can use the Tab key to move around the window.

2. The Tabs window's menu

The user can access any one of ModemVU's dialog windows by selecting the corresponding item from the *Tabs* window's menu (Figure 3).



File Tools Help

Figure 3. The Tabs window's menu

The following sections will describe all available menu items and the corresponding dialog windows in detail.

2.1. File Menu

The *File* menu (Figure 4) contains three menu items:



Figure 4. File menu

Connect – by clicking this item, you open the *Connection* window through which you establish the communication with a JAVAD GNSS receiver (see “Starting ModemVU” on page 12). If the JAVAD GNSS receiver is already connected, this item will not be available.

Disconnect – when you select this item, the connection with the JAVAD GNSS receiver will be closed. If the JAVAD GNSS receiver is already disconnected, this item will be grayed out.

Exit - selecting this item, you quit the program.

2.2. Tools Menu

The *Tools* menu contains one menu item:

Options - Opens the *Options* window, circumstantially described in “Starting ModemVU” on page 12.

2.3. Help Menu

The Help menu contains only one item:

About – Opens the *About ModemVU* window, which provides information about the current version of the program, including its version number, release and expiration dates (Figure 5).

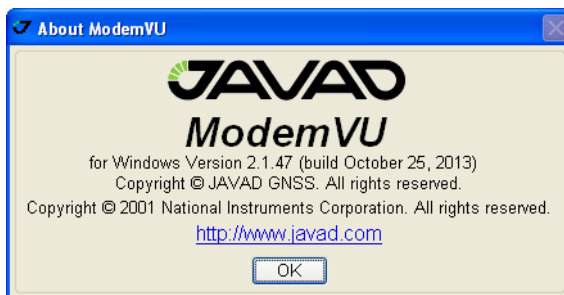


Figure 5. About ModemVU Window

OK – Closes the window.

Operation

ModemVU for UHF Modem

3. ModemVU for UHF Modem

After establishing communication with the modem, the user will be presented with the following tab controls:

Radio Link– As follows from its name, allows configuring and editing various settings related to the radio link between the modems. See “Radio Link Tab” on page 18.

Serial Interface & Tools– Allows loading the new version of modem firmware. See “Serial Interface & Tools Tab” on page 22.

Identification– Shows the modem type and other information relating to the modem. See “Identification Tab” on page 22.

Note: Use the *Apply* button to accept the changes you have made in each tab.

3.1. Radio Link Tab

The *Radio Link* tab is shown in Figure 6:

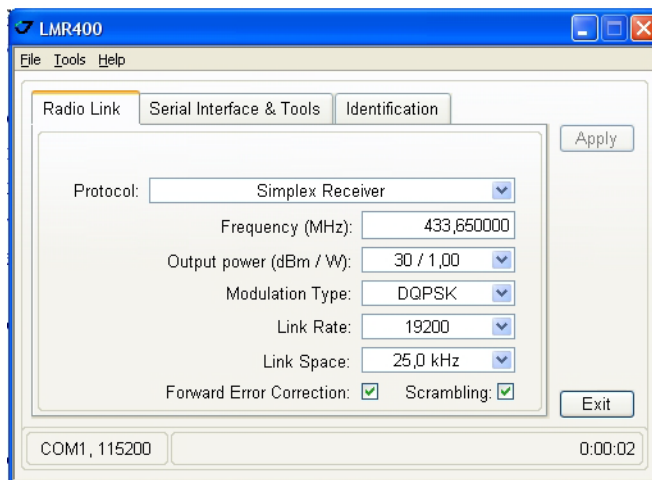


Figure 6. Radio Link tab

The *Protocol* drop-down list box (Figure 7) allows the user to select the protocol type:

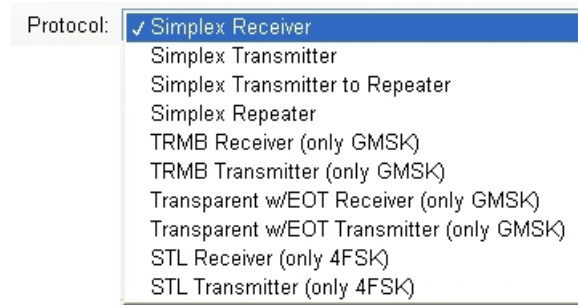


Figure 7. Protocol drop-down list box

- *Simplex Receiver* - This mode is used for JAVAD GNSS internal/external modem on rover side when the base receiver is equipped with JAVAD GNSS internal/external modem.
- *Simplex Transmitter* - This mode is used for JAVAD GNSS internal/external modem on base side when the rover receiver is equipped with JAVAD GNSS internal/external modem.
- *Simplex Transmitter to Repeater* - means the modem is enabled for transmission data from the base receiver equipped with JAVAD GNSS internal/external modem to the Repeater.
- *Simplex Repeater* - JAVAD GNSS internal/external modem enabled as repeater, with no data being passed to the local communications port.
- *TRMB Receiver (only GMSK)* - This mode is used for JAVAD GNSS internal/external modem on rover side when the base receiver is equipped with Trimble internal/external modem.
- *TRMB Transmitter (only GMSK)* - This mode is used for JAVAD GNSS internal/external modem on base side when the rover receiver is equipped with Trimble internal/external modem.
- *Transparent w/EOT Receiver (only GMSK)* - This mode is used for JAVAD GNSS internal/external modem on rover side when the base receiver is equipped with Pacific Crest PDL modem.
- *Transparent w/EOT Transmitter (only GMSK)* - This mode is used for JAVAD GNSS internal/external modem on base side when the rover is equipped with Pacific Crest PDL modem.
- *STL Receiver (only 4FSK)* - This mode is used for JAVAD GNSS internal/external modem on base side when the rover receiver is equipped with Satel modem (model SATELLINE-3AS).
- *STL Transmitter (only 4FSK)* - This mode is used for JAVAD GNSS internal/external modem on rover side when the base receiver is equipped with Satel modem (model SATELLINE-3AS).

In the *Frequency* edit box (Figure 8) the user can set the necessary frequency:

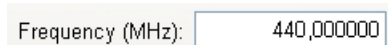


Figure 8. Current frequency box

Operation

ModemVU for UHF Modem

The *Output power* drop-down list box allows the user to set/query the output power value from 0.03W to 1W (Figure 9).

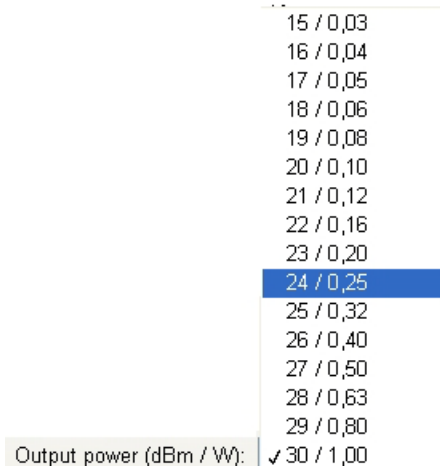


Figure 9. Output Power drop-down list box

Modulation Type - This setting specifies the type of modulation to be used: DBPSK, DQPSK, D8PSK, 16QAM, GMSK or 4 Level FSK (Frequency Shift Keying) (Figure 10).



Figure 10. Modulation type

The choice of modulation affects the possible Link Rate.

	6.25 kHz	12.5 kHz	20 kHz	25 kHz
DBPSK	2.4 kbps	4.8 kbps	7.5 kbps	9.6 kbps
DQPSK	4.8 kbps	9.6 kbps	15.0 kbps	19.2 kbps
D8PSK	7.2 kbps	14.4 kbps	22.5 kbps	28.8 kbps
D16QAM	9.6 kbps	19.2 kbps	30.0 kbps	38.4 kbps
GMSK	not available	4.8 kbps	7.5 kbps	9.6 kbps
4FSK	not available	9.6 kbps	15.0 kbps	19.2 kbps

- DBPSK - Differential Binary Phase Shift Keying
- DQPSK - Differential Quadrature Phase Shift Keying
- D8PSK - Eight Phase Shift Keying

- D16QAM - Sixteen Quadrature Amplitude Modulation
- GMSK - Minimal Shift Keying with Gaussian Filtering
- 4FSK - Four Level Frequency Shift Keying

Link Rate - This drop-down list box (Figure 11 on page 21) allows user to select the rate at which data is transmitted over the RF link. Whenever possible, it is recommended the use of 19.2 Kbps to minimize the power consumption and to maintain the radio transmitter at a low TX duty cycle. You may need to use 4800 bps in order to maintain reliability in difficult transmission circumstances (long range or heavy fade conditions).



Figure 11. Link Rate drop-down list box

Note that the choice of RF link rate affects the possible modulation types. 19.2 Kbps requires 4 Level FSK, and 4800 bps requires GMSK modulation. Either is possible with 9600 bps.

Link Space - user selectable channel spacing (Figure 12)

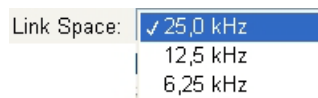


Figure 12. Link Space drop-down list box

Forward Error corrections - allows the receiving modem to correct burst and single bit errors in the incoming data stream. When enabled, an additional 4 bits per byte of data is transferred over the RF link. This effectively reduces the data throughput in proportion to the overhead bytes. Leave FEC enabled unless the data throughput requirements make the overhead unacceptable.

Scrambling - Enable or disable data scrambling. Select the *Scrambling* check box if you want data to be scrambled. Otherwise, keep it clear. For optimal operation of the GMSK modulation, data should be scrambled. When enabled, the radio modem scrambles and unscrambles the data on transmission or reception via an exclusive-OR operation with a pseudo-random bit stream. Do not disable scrambling unless the DTE performs data scrambling and produces a data stream with approximately the same number of 1's and 0's. Use the *Apply* button to accept the changes you have made in the tab.

Operation

ModemVU for UHF Modem

3.2. Serial Interface & Tools Tab

This tab is shown in Figure 13. With this tab the user can load the new modem firmware. Click the *Download FW* button, browse and select the file with new firmware. Click Ok to load the new firmware.

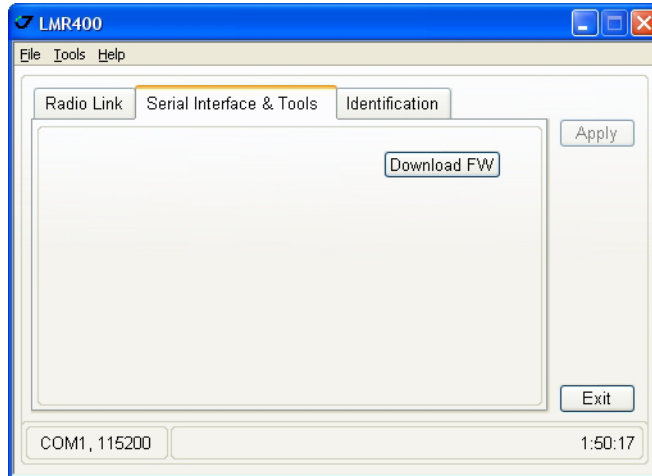


Figure 13. Serial Interface Tab

3.3. Identification Tab

The *Identification* tab provides you with information about modem type, Hardware and firmware versions, and serial number. Figure 14 shows an example of this window.

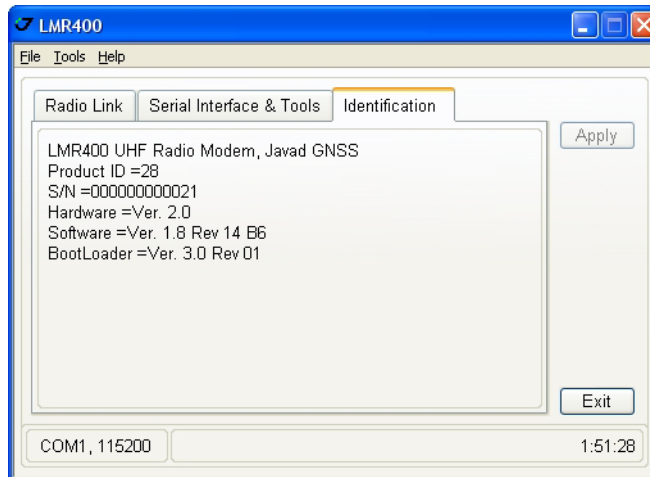


Figure 14. Identification Tab

4. ModemVU for GSM/GPRS Module

After establishing connection with the GSM Modem, the user will be presented with the following tab controls:

General - Allows configuring and editing the general settings. See “General Tab” on page 23 for details.

Master/Slave - As follows from its name, allows configuring and editing various settings related to the master or slave modem’s mode. See “Master/Slave Tab” on page 26 for details.

GPRS - Allows configuring and editing various settings related to the GPRS mode. See “GPRS Tab” on page 27 for detailed information.

Dialup - Allows configuring and editing various settings related to the dialup mode. See “Dialup Tab” on page 28 for details.

Service - Allows configuring and editing different parameters of service. For details see “Service Tab” on page 29.

Note: Use the *Apply* button to accept the changes you have made in each tab.

4.1. General Tab

The *General* tab is depicted in Figure 15.

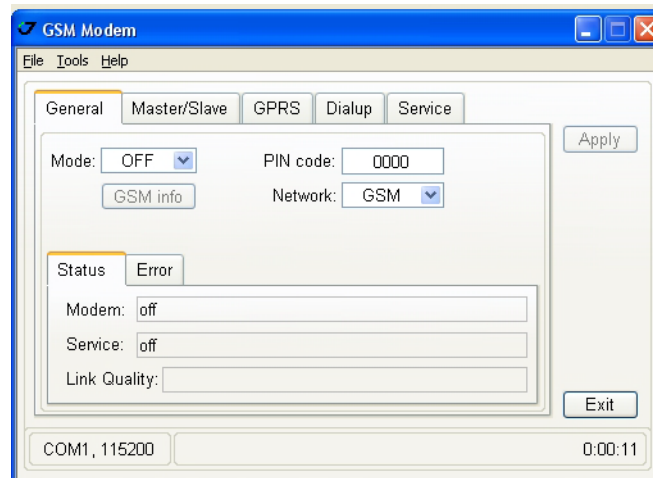


Figure 15. General Tab

This tab allows user to setup the modem mode, enter PIN code of SIM-card, see GSM information and select necessary network. In this tab modem and service status and possible errors are displayed.

Operation

ModemVU for GSM/GPRS Module

Mode drop-down list box allows user to select and setup the GSM modem mode:



Figure 16. Mode drop-down list box

- *OFF* means GSM modem is inactive. To change modem's modes user has to set modem's mode firstly to *OFF* and press *Apply* button, then select and setup the necessary mode from the list. *OFF* mode means modem's hardware reset.

Note: Modem's hardware reset is possible if the GSM modem is internal.

- *Slave* means registered in GSM network modem is waiting an incoming call to send a data. The *Slave* mode is required modem mode for the receiver configured as a base.
- *Master* means registered in GSM network modem is dialing up and establishing connection with other modem, using dial number set in "Master/Slave Tab". If the established connection is interrupted, modem dial up and connect anew. The *Master* mode is required mode for the receiver configured as a rover. To setup Slave or Master mode parameters see "Master/Slave Tab" on page 26.

Note: In the current firmware implementation, the master mode should be used for the rover receiver only, and the slave mode should be used for the base receiver only.

- *GPRS* means registered in GSM network and in GPRS network modem connects with Internet via GPRS. To setup GPRS parameters see "GPRS Tab" on page 27.
- *Dialup* means a form of Internet access using a modem connected to a receivers port and a telephone line to dial into an Internet service provider's (ISP) node to establish a modem-to-modem link, which is then routed to the Internet. To setup necessary dialup parameters see "Dialup Tab" on page 28.

PIN Code box allows the user to enter the Personal Identification Number (PIN) of its SIM-card.

If you have inserted the wrong PIN you will see the error message in modem status box (*Status* subtab) and "pin" message in modem error box (*Error* subtab). To enter correct PIN it is necessary to set modem in *OFF* mode, then enter PIN anew.

If you have entered more than 4 characters or illegal characters you will see the warning (Figure 17):

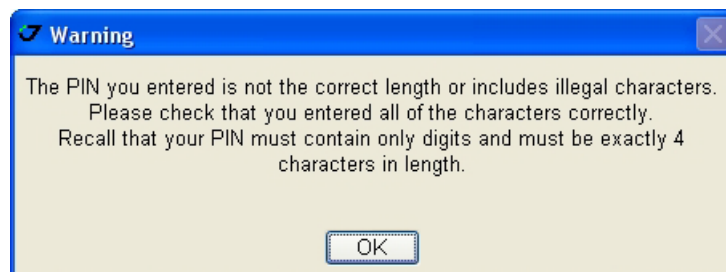


Figure 17. PIN Warning

GSM info button opens the window with information about cell operator, signal quality, model and serial number of your receiver's GSM modem (Figure 18).

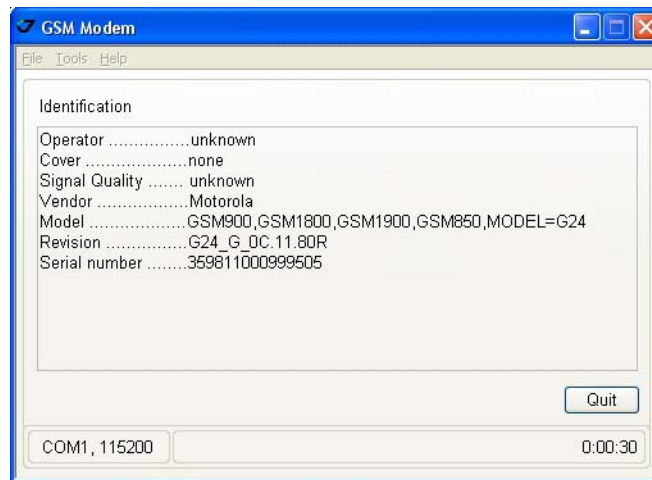


Figure 18. GSM info

Quit button closes the window.

Status and Error Subtabs

There are two subtabs in *General* Tab: *Status* and *Error*. These tabs show current modem status, service status, link quality (*Status* subtab Figure 20 on page 25) and possible modem or service errors (*Error* subtab Figure 19).

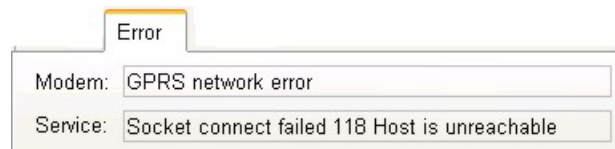


Figure 19. Error subtab

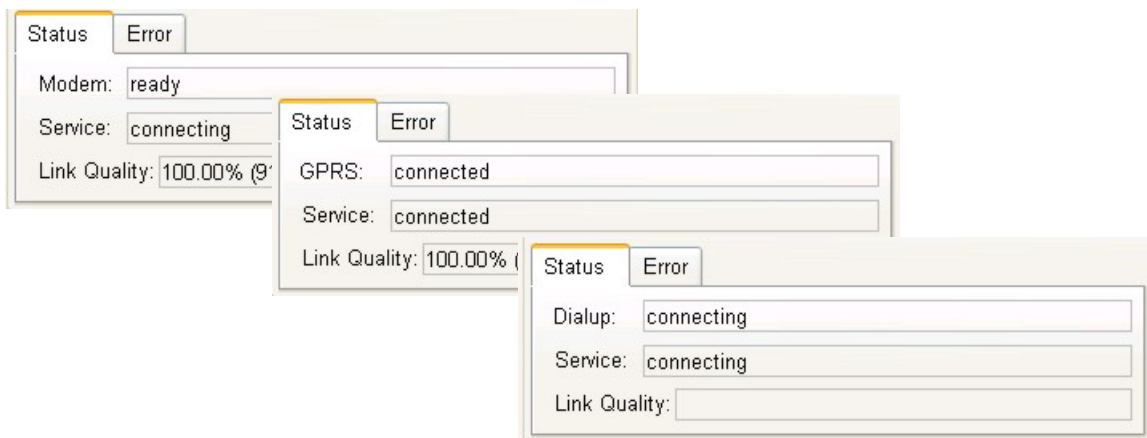


Figure 20. Status subtab

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- *Modem* - this box changes its name depending of the settings made in *Mode* drop-down list box (see Figure 16 on page 24). For OFF, Slave or Master (in *Mode* drop-down list box) it will be *Modem*, for *GPRS* or *Dialup* it will be *GPRS* or *Dialup* correspondingly.

This box displays the current status of modem, GPRS or Dialup connection (off, ready, detecting, connecting/disconnecting, connected/disconnected, etc.).

- *Service* box displays the current service status (connecting/disconnecting, disconnected/connected).
- *Link Quality* box displays the link quality of connection.

4.2. Master/Slave Tab

Master/Slave Tab is depicted in Figure 21. This tab allows user to setup the dial number, send and receive time out intervals.

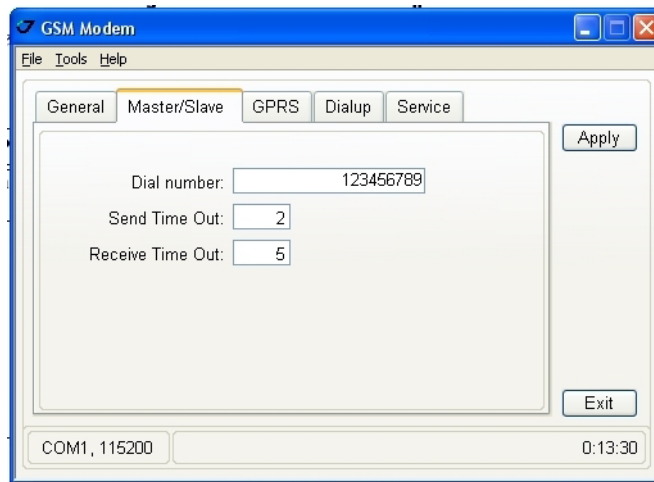


Figure 21. Master/Slave tab

The *Dial number* box allows the user to set/display a dial number, the phone number of the slave modem to be dialed in to. The number you can insert is a string comprising up to 14 a/n characters.

Note: Mandatory only when running the GSM modem in master mode.

The *Send Time Out* box allows the user to set/display a time interval of the service word. The transmit modem will send the service word to the receive modem in every N seconds, where N is a time interval in seconds from 0 to 255. 0 stands for disabled.

Note: If the receiver has not received any data from the modem for designated seconds, the modem will be disconnected and then re-initialized.

In the *Receive Time Out* box is possible to set/display a time interval of the service word. The receive modem will receive the service word from transmit modem in every N seconds, where N is a time interval in seconds from 0 to 255. 0 stands for disabled.

Note: To ensure reliable and secure modem communication, the *Receive Time Out* value must be always larger than the period of transmitting differential corrections. Also, care should be taken that the time interval in *Receive Time Out* box is greater than the service word repeat period by 2 to 3 seconds.

4.3. GPRS Tab

GPRS Tab is depicted in the Figure 22. This tab allows user to setup all necessary GPRS settings like dial number, user name and password, and to tune GPRS using AT commands.

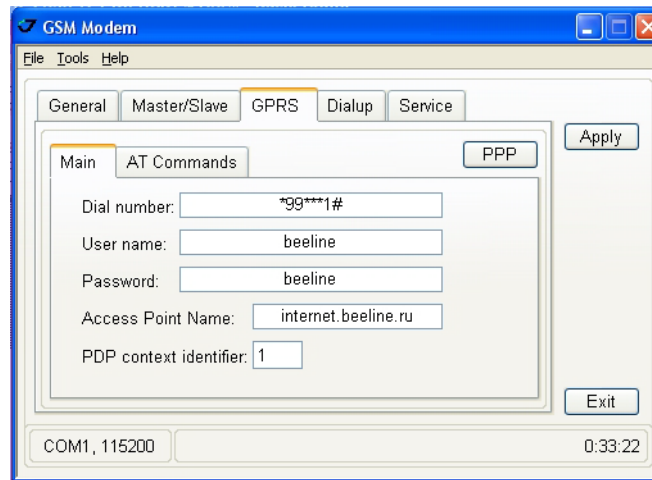


Figure 22. GPRS Tab

GPRS Tab consist of two subtabs: *Main* and *AT Commands*.

In the *Main* subtab (see Figure 22) it is necessary to set the dial number, user name and password, access point name and PDP context identifier to establish a GPRS connection. As usually, this information is given by cell provider.

AT Commands subtab (Figure 23) is designed for advanced users for finest GPRS tuning. By default, all the settings have the zero value.

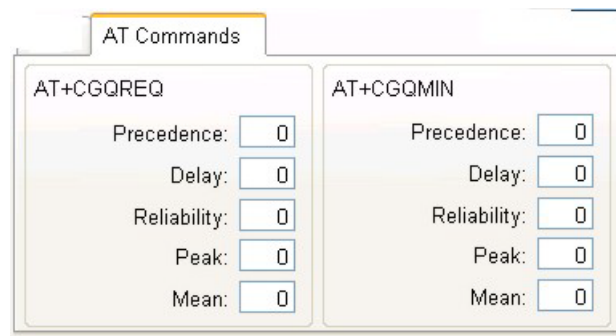


Figure 23. AT Commands subtab

Note: We recommend that you do not send any AT commands to the GSM modem from the *AT Commands* subtab before acquire good knowledge of the GPRS parameters.

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PPP button

This button opens the *PPP parameters* window, that allows user to set up the Point-to-Point protocol parameters (Figure 24):

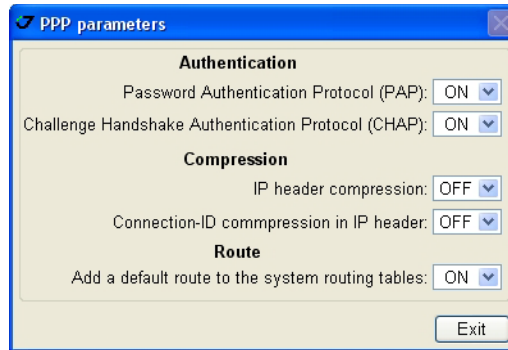


Figure 24. PPP parameters window

The Point-to-Point Protocol, or PPP, is commonly used to establish a direct connection between two nodes. As usually, information of PPP parameters is given by Internet service provider.

To close this window press *Exit*.

4.4. Dialup Tab

The *Dialup* Tab is depicted in Figure 25.

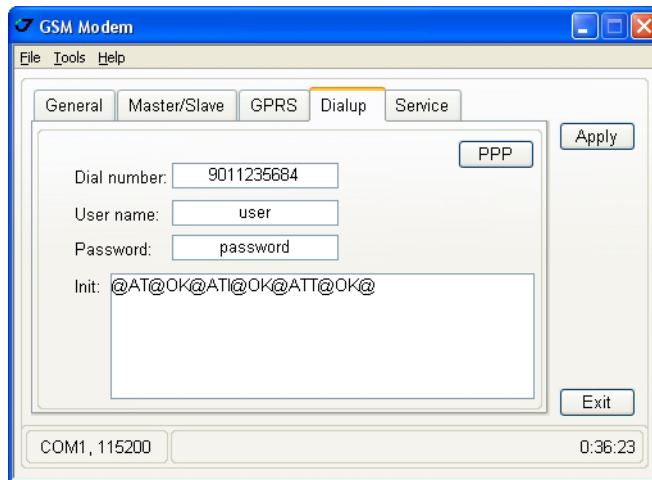


Figure 25. Dialup Tab

It is necessary to set the *dial number*, *user name* and *password* to establish a dialup connection. As usually, this information is given by Internet service provider.

Init - This field contains chat script to initialize dialup modem. The chat script defines a conversational exchange between the receiver and the modem. The syntax and semantics of the chat script used by the receiver matches those of the widely used “chat” program (see, e.g., <http://docs.freebsd.org/info/uucp/>)

uucp.info.Chat_Scripts.html for documentation), except the '@' character is used instead of carriage return to separate chat commands.

Note: We recommend that you do not type any commands to the GSM modem in the **Init** field before acquire good knowledge of the dialup parameters.

For information about PPP button see, please, “PPP button” on page 28.

4.5. Service Tab

This tab is depicted in Figure 26 and allows user to setup the service parameters. It consist from four subtabs: *Main*, *RCV*, *NTRIP*

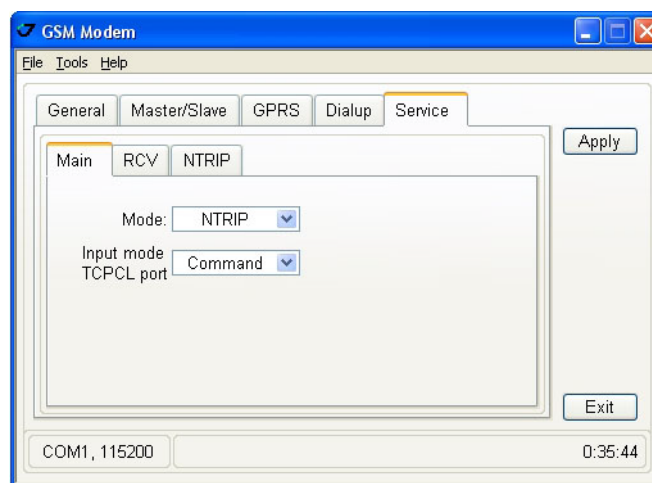


Figure 26. Service Tab

Main Subtab

The *Main* subtab is depicted in Figure 27. In this subtab the user can select and setup the necessary service mode like RCV, or NTRIP and different input modes.

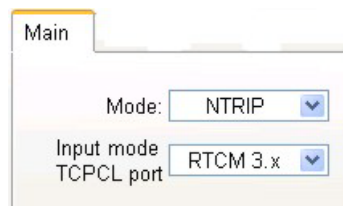


Figure 27. Main subtab

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Mode drop-down list box allows user to select and setup one of the following modes (Figure 28):



Figure 28. Mode drop-down list box

- *OFF* means service is disabled.
- *RCV* means that modem will receive data from another (remote) JAVAD GNSS receiver configured as a base station. This base station have to be connected with Internet via Ethernet or GPRS and have static IP address. To setup the RCV parameters see “RCV Subtab” on page 31.
- *NTRIP* is useful to provide a method to establish connection to an NTRIP caster, request data from particular mount point, and then receive and use the data as RTK/DGPS corrections. For detailed description of NTRIP settings see “NTRIP Subtab” on page 31.

In the *Input mode TCPCL port* drop-down list box (Figure 29) the user can setup different input modes. With this parameters it is possible to specify what type of incoming data to accept on the TCPCL receiver port.:

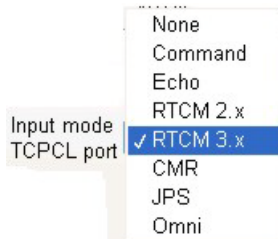
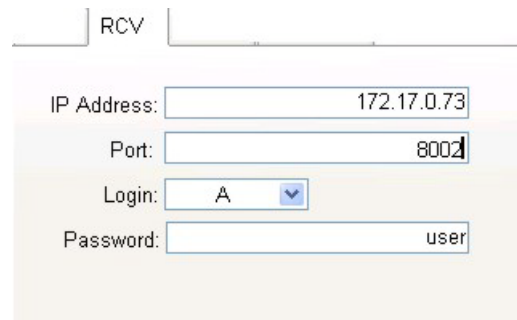


Figure 29. Input mode TCPCL port drop-down list box

- *None* means that the port will ignore any incoming data.
- *Command* - port is in command mode. Being in this mode, the receiver's port recognizes commands sent by the user.
- *Echo* - echo mode.
- *RTCM 2.x* - RTCM 2.x input mode.
- *RTCM 3.x* - RTCM 3.x input mode. In this mode the receiver recognizes and decodes the RTCM 3.x messages received through the port.
- *CMR* - CMR/CMR+ input mode. For more information on CMR format, please refer to <ftp://ftp.trimble.com/pub/survey/cmr>.
- *JPS* - JPS input mode. In this mode receiver is capable to recognize both standard and non-standard JPS messages.
- *Omni* - unsupported.

RCV Subtab

The RCV subtab is depicted in Figure 30. This tab allows user to setup the parameters for RCV service mode:.



The screenshot shows a window titled 'RCV' with the following fields:

- IP Address: 172.17.0.73
- Port: 8002
- Login: A (dropdown menu)
- Password: user

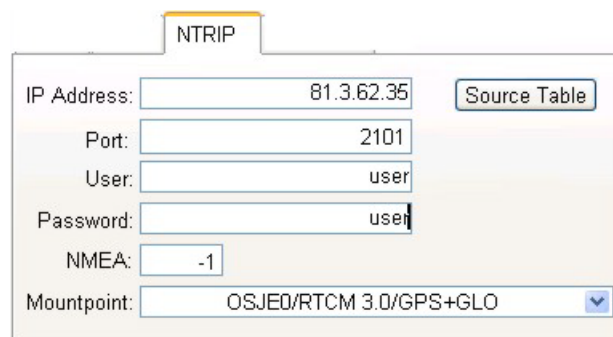
Figure 30. RCV subtab

- *IP address* - IP address of base station.
- *Port* - base station's port
- *Login* - designation of base station's TCP port (A, B, C, D, E or empty).
- *Password* - password of base station.
- *IP address, Port, Login, and Password* are the parameters of other receiver, configured as a base station and connected with Internet via Ethernet or GPRS.

Note: The description of these parameters exceeds the scope of this document, see TriVU Software Manual, available from <http://www.javad.com>, for detailed information of base station's configuration and Ethernet and TCP port settings.

NTRIP Subtab

The NTRIP subtab is depicted in Figure 31.



The screenshot shows a window titled 'NTRIP' with the following fields:

- IP Address: 81.3.62.35 (with a 'Source Table' button next to it)
- Port: 2101
- User: user
- Password: user
- NMEA: -1
- Mountpoint: OSJED/RTCM 3.0/GPS+GLO (dropdown menu)

Figure 31. NTRIP subtab

- *IP address* - The value of this field should match the IP address of the NTRIP caster to use.
- *Port* - The value of this field should match the IP port the NTRIP caster is listening on for connections.

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- *User* - This parameter specifies user ID for the protected space of the requested mount point. Only basic authentication scheme is supported. If empty, no user or password values will be sent to the NTRIP caster.
- *Password* - This field specifies the password for the protected space of the requested mount point. Only basic authentication scheme is supported.

Note: As usually, this information is given by NTRIP service provider.

- *NMEA* - this box allows using appropriate parameter to receive/no receive the GGA messages for NTRIP caster:
 - -1 – receiver will not send NMEA GGA messages to NTRIP caster.
 - 0 – receiver will send NMEA GGA message to NTRIP caster only once after connection to the caster is established.
 - [1...86400] – receiver will send NMEA GGA messages to the NTRIP caster periodically, every specified number of seconds.
- *Mountpoint* drop-down list box allows to select the necessary mount point from the list (Figure 32 on page 32). This drop-down list box specifies the mount point of the NTRIP caster to get data from. The detailed information about each mount point it is possible to obtain and view pressing the *Source Table* button.

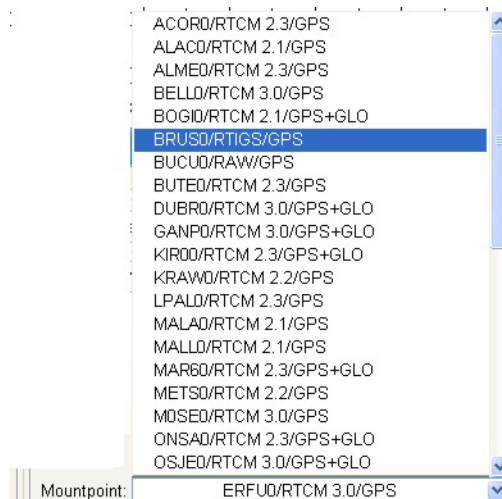


Figure 32. Mountpoint drop-down list box

Source table button

Source table button opens the *Stream Details* window, depicted in Figure 33.

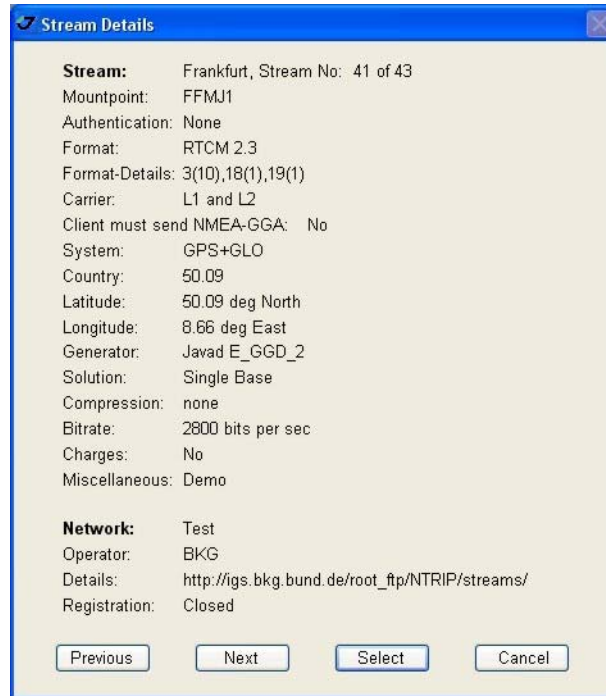


Figure 33. Stream Details window

This window presents stream information and allows to view and select the necessary mountpoint from the list. With buttons *Previous*, *Next*, and *Select* it is possible to view and select available streams. *Cancel* closes the window.

If in *Stream Details* window in the *Client must send NMEA-GGA* line stand *No*, the following warning will appear “*This Mountpoint does not require sending NMEA. Parameter NMEA can be -1*”:

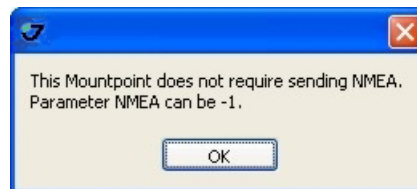


Figure 34. NMEA Warning

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If in *Stream Details* window in the *Client must send NMEA-GGA* line stand *Yes*, the following warning will appear “*This Mountpoint requires sending NMEA. Parameter NMEA should be from zero upward*”:



Figure 35. NMEA Warning

TROUBLESHOOTING

This chapter can help the user to solve some of the problems that may occur while using ModemVU.

1. Things to Check First

Before contacting JAVAD GNSS Customer support about any problems with the receiver, refer to the following list of basic suggestions that may help:

- Go through all external receiver connections carefully and make sure they are not wrong or loose.
- Double-check the cables. Cables became defective more often than the devices do.
- Check the sections below for available solutions.
- Reset the receiver using TriVU (*Tools* ▶ *Reset receiver*).
- Restore factory default settings using TriVU (click *Configuration* ▶ *Receiver*, then Set all parameters to defaults).
- Clear the NVRAM.
- Initialize the file system (click *Tools* ▶ *Initialize file system*; this will erase all files inside the receiver).

Warning: *Do not attempt to repair equipment yourself. Doing so will void your warranty and may damage the hardware.*

2. Troubleshooting Chart

The chart below covers most of the difficulties that the user might encounter. The first column contains the error messages that appear in the status bar.

Problem	
Can't find modem.	
Causes	Solutions
The receiver's is turned off.	Make sure that your receiver is getting power and is turned on.
The cable's connectors are not properly plugged in.	Check the connections to make sure they are not loose. Check the cables running from the receiver's port to the computer port to ensure they are tight as well.
The cable is damaged.	Use an undamaged cable. Contact your Dealer to replace the cable.
The receiver port used for connection is not in Command mode.	Restore Command mode for this port: Connect your receiver and a computer using a free port, such as port D, and start TriVU. Click <i>Configuration</i> ▶ <i>Receiver</i> ▶ <i>Ports</i> . Change the Input for the serial port used for connection to Command.
The computer port you have selected for connection is not the same as you specified in the PC Serial Port control.	Check that your receiver is connected to your PC using the proper RS232 cable for connection to a PC and make sure that the cable is exactly plugged into the same PC serial port as you specified in the Port's setting drop down list of the ModemVU software.
Problem	
Open COM# port failed: Access is denied.	
Causes	Solutions
The computer port dedicated for connection is in use by another application.	Close the application that uses this port or connect to the receiver via another free computer port.



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