R&S® CLG
Cable Load Generator
Release Notes
Version 01.04

Broadcasting

Release Notes

The following abbreviations are used throughout this document:

R&S®CLG is abbreviated as R&S CLG.

Table of Contents

1 Information on the Current Version and History

1.1 Version 01.04

Firmware package contents

- Software version (SVN) 1544

New Functionality

- Ability to use encrypted wave files added. For details see chapter 4.

Modified Functionality

- Hum frequency upper limit changed to 200 Hz.

Fixed Issues

- Occasionally, upon start up, the unit does not initialize the on-board frequency reference properly.

Known Issues

- On rare occasions, R&S CLG crashes when uploading ARB or configuration files. If it crashes, power cycle the R&S CLG and redo the upload.

- Web GUI is very slow under IE8 and old versions of Firefox (3.x and earlier). Recommend browsers are IE9, Firefox 8.x or newer, or Chrome.

- TX mode changes can cause timeout errors on SNMP.

- If using the Web GUI to monitor and control the R&S CLG: The only way to clear an amber status LED that has been activated by an error logged in the system error queue is to issue a SCPI command to clear the error queue or to issue SNMP reads on the error number OID.

- Setting a static IP address using the GUI may report an error regarding the base port number.

1.2   Version 01.03

Firmware package contents

● Software version (SVN) 1498

New Functionality

● Modulation according to ITU J.83 Annex C provided.

● Windows updater support added.

● Mechanism to reset the IP address to factory default added.

Modified Functionality

● Data network base port is now only available on the network page.

● Drag to select function disabled on channel page of Web GUI if Firefox is used as a browser.

Known Issues

● On rare occasions, R&S CLG crashes when uploading ARB or configuration files. If it crashes, power cycle the R&S CLG and redo the upload.

● Web GUI is very slow under IE8 and old versions of Firefox (3.x and earlier). Recommend browsers are IE9, Firefox 8.x or newer, or Chrome.

● TX mode changes can cause timeout errors on SNMP.

● If using the Web GUI to monitor and control the R&S CLG: The only way to clear an amber status LED that has been activated by an error logged in the system error queue is to issue a SCPI command to clear the error queue or to issue SNMP reads on the error number OID.

● Setting a static IP address using the GUI may report an error regarding the base port number.

1.3   Version 01.02

Firmware package contents

● Software version (SVN) 1425

New Functionality

● Support for remote control (SCPI and SNMP).

Modified Functionality

● None

Fixed Issues

- When in DHCP mode, the gateway field on the Network Settings page indicates 'Unknown' and may display an error message 'Invalid IP address'.
  Note: R&S CLG functions properly in DHCP mode.

- Could not access user manuals using Internet Explorer 8.

Known Issues

- On rare occasions, R&S CLG crashes when uploading ARB or configuration files. If it crashes, power cycle the R&S CLG and redo the upload.

- Web GUI is very slow under IE8 and old versions of Firefox (3.x and earlier). Recommend browsers are IE9, Firefox 8.x or newer, or Chrome.

- TX mode changes can cause timeout errors on SNMP.

- If using the Web GUI to monitor and control the R&S CLG: The only way to clear an amber status LED that has been activated by an error logged in the system error queue is to issue a SCPI command to clear the error queue or to issue SNMP reads on the error number OID.

2 Modifications to the Documentation

Upper limit of hum frequency changed.

Screenshots of the status page show licensing information.

3 Firmware Update

3.1 Update Information

Two different methods of updating the R&S CLG firmware are used depending on the version of firmware installed on the R&S CLG. The revision level of the R&S CLG can be determined by using the web GUI and clicking on the status menu item. For more information see the Getting Started Document.

If the SVN version is less that 1498, the standalone updater must be used. The standalone updater will install version 1498. For details see chapter 3.2.

One of the main features added to the 1498 version is the ability to use the win-updater. Once version 1498 is installed, the win-updater can be used to bring the R&S CLG up to date. For details see chapter 3.3.

3.2 Standalone Update

The standalone update consists of an update application and a compressed firmware image. The standalone updater is a complete update package that runs on a 32 bit Windows XP computer. It may run on other versions of Windows but has not been tested with them. Once the update application has been started, do not remove power from the R&S CLG or close the update application window or the R&S CLG may be rendered unresponsive.

1. Power cycle the R&S CLG and ensure that there are no web GUI clients connected. Wait 120 seconds to ensure the R&S CLG is fully powered up and ready to accept the upgrade.

2. It is recommended that a cross over cable be connected directly between the R&S CLG and the computer running the upgrade application. However, as long as the computer can access the R&S CLG over the network, this upgrade application can be used. If only the R&S CLG hostname is known, then use the 'ping' command to determine the IP address.

3. Ensure the update application files are in the same folder (*clg_upgrade_1498.exe* and *upgrade.RS_CLG.tar*).

4. It is recommended that all firewall applications be closed before beginning the upgrade. The upgrade application uses a randomly selected TCP port to upload the firmware to the R&S CLG. If a firewall exception pop-up is generated when the upgrade application is executed, select 'Unblock' to allow the upgrade to proceed.

5. Execute *clg_upgrade_1498.exe*. Windows will likely not recognize the application publisher (a similar warning is shown below) – this is normal, select 'Run' to begin the upgrade.

This will create a terminal window requesting the IP address of the R&S CLG. If the IP address is entered correctly, the application will begin the upgrade. The following graphic shows the initial portion of the upgrade application's output.

The following graphic shows the last portion of the upgrade applications output. Note that the number of *upgrade_segment.tar-XXX* may be different. This shows the installation is complete, and pressing enter at this point will terminate the application.

```
192.168.175.253 - - [11/Jun/2012 12:06:32] "GET //upgrade_segment.tar-157 HTTP/1
.1" 200 -
192.168.175.253 - - [11/Jun/2012 12:06:40] "GET //upgrade_segment.tar-158 HTTP/1
.1" 200 -
192.168.175.253 - - [11/Jun/2012 12:06:49] "GET //upgrade_segment.tar-159 HTTP/1
.1" 200 -
192.168.175.253 - - [11/Jun/2012 12:06:56] "GET //upgrade_segment.tar-160 HTTP/1
.1" 200 -
192.168.175.253 - - [11/Jun/2012 12:07:03] "GET //upgrade_segment.tar-161 HTTP/1
.1" 200 -
 []
---------------------------------------------------
192.168.175.253 - - [11/Jun/2012 12:07:08] "GET /post_install.sh HTTP/1.1" 200 -

File post_install.sh uploaded successfully
Making post_install.sh executable...

Output:
 Error:
---------------------------------------------------
Running post_install.sh...

Output:
 Error:
---------------------------------------------------
Removing post_install.sh...

Output:
 Error:
---------------------------------------------------
Installation complete!
... Press Enter to end ..._
```

3.3 Updating the Firmware

The firmware update consists of one file. The version number in the file name varies with each update (symbolized by placeholder x).

● *CLG_Setup_FW_xxxx.exe*

Perform the update on a computer under control of the Windows operating system.

1. Make sure that the computer and the R&S CLG are connected by LAN.

2. Switch on the R&S CLG.

3. Wait until the R&S CLG firmware has booted and the application has started.

4. On the computer, execute *CLG_Setup_FW_xxxx.exe*.
   The "R&S Software Distributor" is displayed. Only "Remote Installation" is
   available.

5. Click "Next>".
   By default, "Step 8" is selected. Do not change the selection.

6. Click "Next>".
   All detected R&S CLGs are displayed.

7. Select the R&S CLG(s) you want to update.
   Note: You can update several R&S CLGs simultaneously.
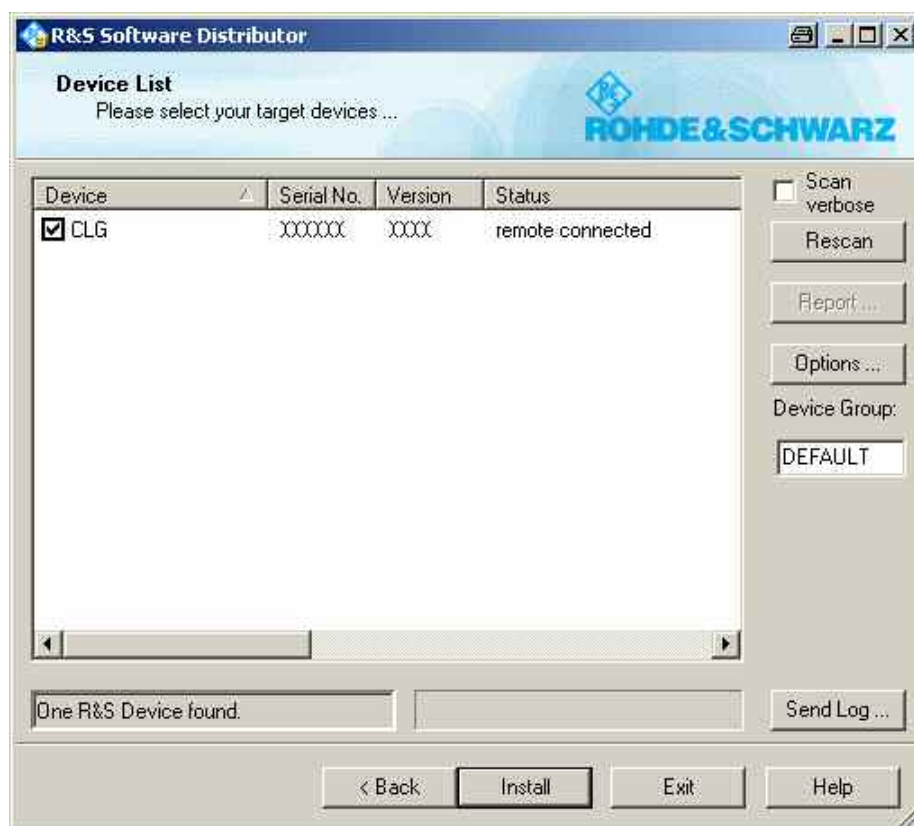
8. If no R&S CLG is automatically detected, expand the search:

   a. Click "Options".
   b. Click "Add URL".
   c. Enter one or several R&S CLG URL(s), e.g. 192.168.10.1, to be included in the search.
   d. To save the search address(es), click "Save Options". If you do not save the options, the added search addresses are only used for the current installation.

9. Click "Install".
   The installation process itself is self-explanatory.
   After the installation, the "Status" is changed to "Ready".
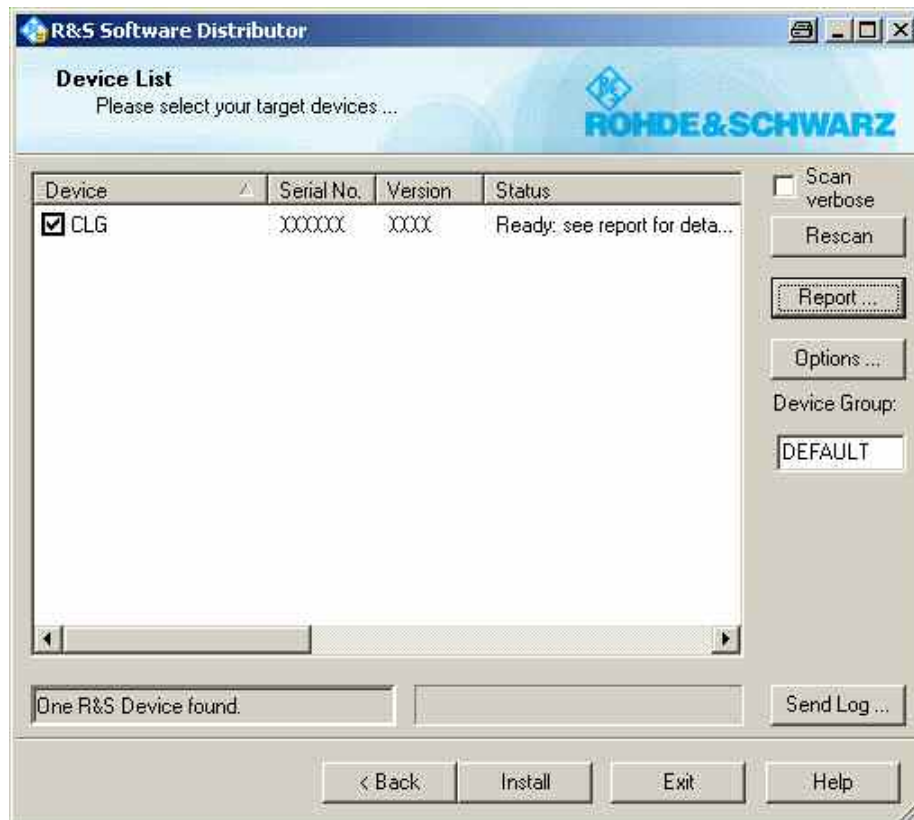
10. Click "Report" to view the installation report. If the installation was successful, no errors are displayed (see example below).
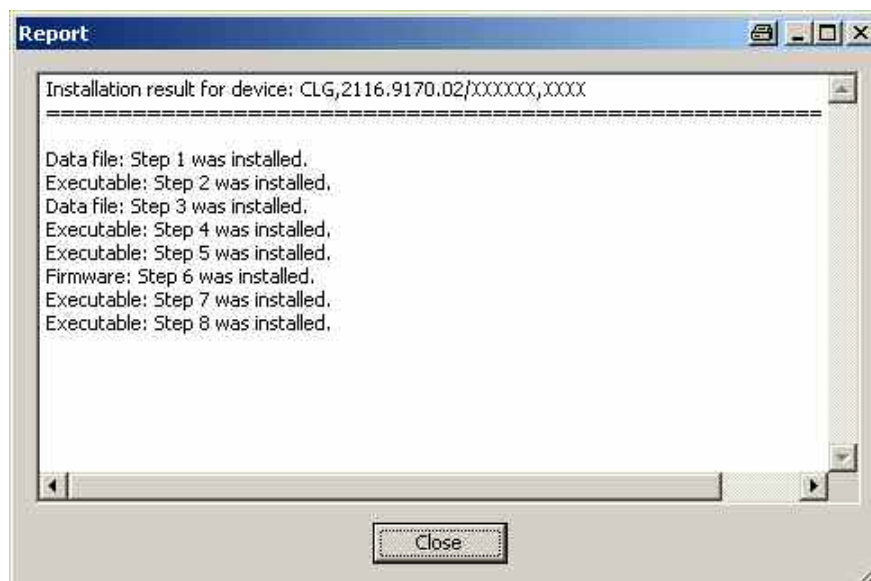
11. Close the report and click "Exit".

4 License Installation for Encrypted Waveforms

The encrypted waveform functionality provides the ability to play waveform files that are encrypted. Libraries of these files are available for purchase. To use these files, a license file is provided. This license file must be uploaded to the R&S CLG (see "Uploading a New License File").

Unencrypted waveforms are not affected by the encrypted waveform functionality. They look and function unchanged.

Under "Files on device" in the Configurations/ARB screen of the Web GUI, icons indicate if waveforms are a encrypted.

The locked icon indicates that the waveform is encrypted, and the R&S CLG does not have the license file necessary to decrypt it.
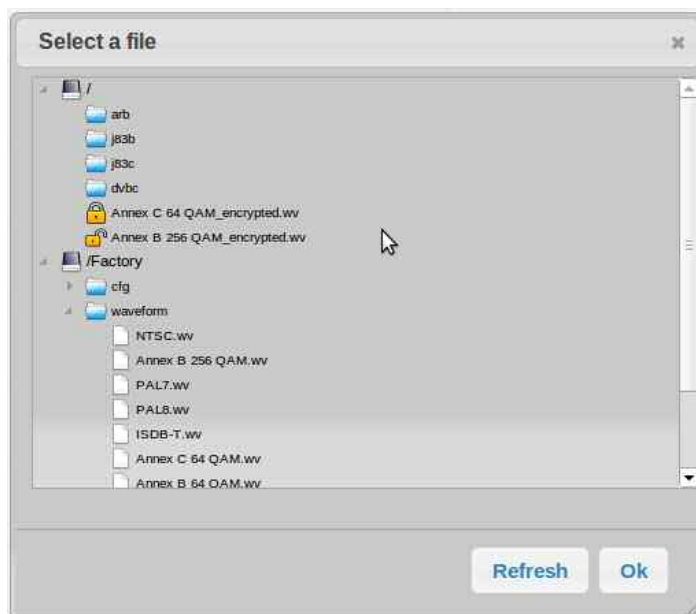
The unlocked icon indicates that the waveform is encrypted but the R&S CLG does have the license file necessary to decrypt it.

The locked/unlocked icons are also displayed in the "Select a file" pop-up window on the Block Settings screen if the AWG file field is selected. If the file is unlocked, you can select it to be loaded. If it is locked, it cannot be loaded.

A license file is required in order to decrypt the encrypted waveforms. Once a license file is supplied, it can be uploaded on the Unit Status screen of the Web GUI.

At the bottom of the Unit Status screen is a field called "Licence Options" and a file upload box called "Licence Upload". The "Licence Options" field shows the current licensing options that are available on the R&S CLG. If no licenses are uploaded, it displays "No Licence Files Uploaded".
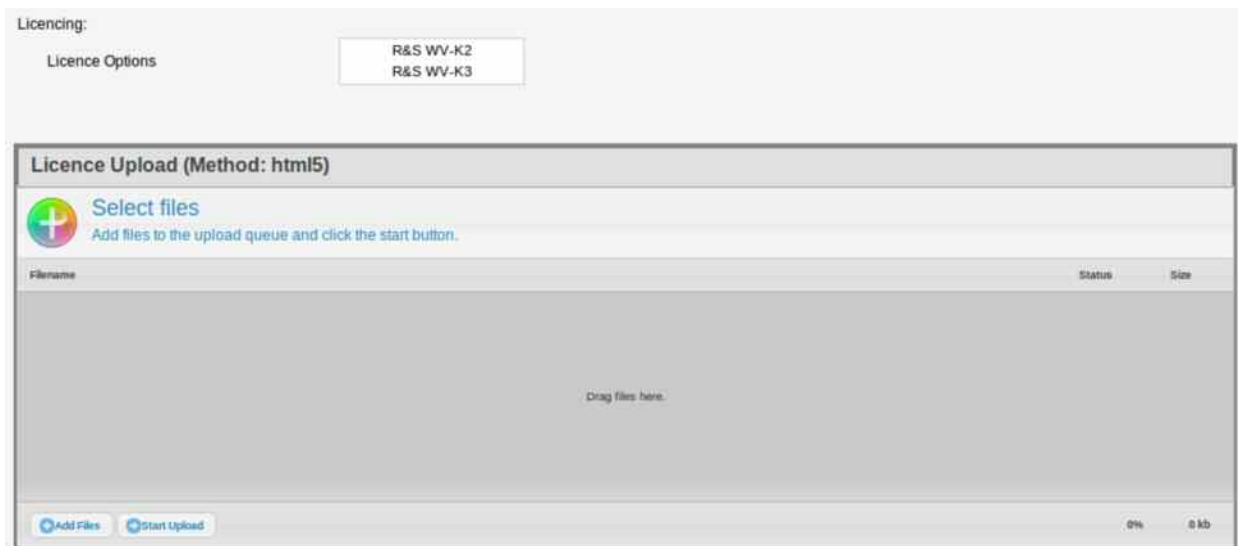
Uploading a New License File

1. Take control of the R&S CLG in the Web GUI.

2. Navigate to the Unit Status screen.

3. At the bottom of the "Licence Upload" box, click "Add Files", or drag the license file into the "Licence Upload" box.

4. At the bottom of the "Licence Upload" box, click "Start Upload".

    The file is uploaded to the R&S CLG. When the upload is completed, the new license option is added to the "Licence Options" field. All encrypted waveforms corresponding to the license option are available to be used.

5 Open Source Acknowledgement

This instrument firmware makes use of valuable open source software packages. The most important of them are listed below together with their corresponding open source license. The verbatim license texts are provided in the following chapters.

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u-boot	http://www.denx.de/wiki/U-Boot/WebHome	GPL Version 2
OpenSSL	http://www.openssl.org	OpenSSL License

This product includes cryptographic software written by Eric Young (eay@cryptsoft.com) and software written by Tim Hudson (tjh@cryptsoft.com).

Rohde & Schwarz would like to thank the open source community for their valuable contribution to embedded computing. The source code of the open source packages is available on request.

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6 Customer Support

Technical support – where and when you need it

For quick, expert help with any Rohde & Schwarz equipment, contact one of our Customer Support Centers. A team of highly qualified engineers provides telephone support and will work with you to find a solution to your query on any aspect of the operation, programming or applications of Rohde & Schwarz equipment.

Up-to-date information and upgrades

To keep your instrument up-to-date and to be informed about new application notes related to your instrument, please send an e-mail to the Customer Support Center stating your instrument and your wish. We will take care that you will get the right information.

Europe, Africa, Middle East

Phone +49 89 4129 12345
customersupport@rohde-schwarz.com

North America

Phone 1-888-TEST-RSA (1-888-837-8772)
customer.support@rsa.rohde-schwarz.com

Latin America

Phone +1-410-910-7988
customersupport.la@rohde-schwarz.com

Asia/Pacific

Phone +65 65 13 04 88
customersupport.asia@rohde-schwarz.com