

R&S® CLG

Cable Load Generator

Release Notes

Firmware Version 01.09

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The following abbreviations are used throughout this document:
R&S® Cable Load Generator is abbreviated as R&S CLG.

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1 Information on the Current Version and History

1.1 Version 1.09

Firmware package contents

- Software version (SVN) 1810

New Functionality

- None.

Modified Functionality

- None.

Fixed Issues

- Downloading of user manual no longer causes the unit to crash.
- SCPI command DM:TRAN now responds with upper case string when querying the device operating mode.

Known Issues

- 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.

1.2 Version 1.08

Firmware package contents

- Software version (SVN) 1801

New Functionality

- Added a restart button on the network settings page. This button was added to simplify reboot after making changes to the network settings.

Modified Functionality

- None.

Fixed Issues

- A mean filter was added on all sensor readings to prevent corrupt or invalid sensor readings from generating an alarm.
- Added tilt operation to SNMP interface

Known Issues

- 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.
- Downloading the user manual may intermittently fail and require a reset.

1.3 Version 1.07

Firmware package contents

- Software version (SVN) 1753

New Functionality

- Added 3 new modes, SCTE-40 J83B, SCTE-40 J83C and SCTE-40 DVBC. These modes have 1 FEC block and 9 ARB blocks.
- Added AWGN on up to 16 FEC channels in SCTE-40 J83B, SCTE-40 J83C and SCTE-40 DVBC modes.
- Added 3 new waveforms to Factory: Annex B 256 QAM (128x1), Annex B 256 QAM (128x4), and Annex B 64 QAM (128x1).

Modified Functionality

- Web GUI Table Sorter has been updated to a new version on the Block and Channel Pages.

Fixed Issues

- The Preset noise floor was higher than the noise floor when several channels are enabled.
- Occasionally the unit would start clipping during block and channel configuration.
- Using SCPI it was possible to enter an invalid interleaver command which could crash the GUI.
- Using SCPI if the current directory was deleted while the user was inside it the unit would crash.
- Was not possible to set J83C blocks to a symbol rate of 5.325 Msps.
- *SAV command could not handle a number as a filename.
- When changing directory to root in SCPI the current directory wouldn't display "/".
- Error in configuration file for J83C tried to assign FEC Channel 158 to a file.
- Using SCPI to Copy or Move a file to a filename without an extension caused the file to disappear.

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.

1.4 Version 1.06A

Firmware package contents

- Software version (SVN) 1624

New Functionality

- None.

Modified Functionality

- None.

Fixed Issues

- The Web GUI would crash when some encrypted waveforms failed to decrypt successfully.

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

1.5 Version 1.06

Firmware package contents

- Software version (SVN) 1620

New Functionality

- None.

Modified Functionality

- RF power control algorithm has been modified to improve RF performance in some circumstances.

Fixed Issues

- When applying relative power changes to the R&S CLG output, some conditions resulted in unequal change in power depending upon the carrier levels.
- Version 1590 generated an excessive noise floor when all carriers were muted.
- When operated from the GUI, certain conditions result in warning messages in the SCPI error queue. These are now reported on the GUI and the user has the option to clear them.
- A small percentage of existing R&S CLGs are susceptible to a boot-up error, this release contains a new boot loader to correct the issue.

Known Issues

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

1.6 Version 1.05A

Firmware package contents

- Software version (SVN) 1590

New Functionality

- None.

Modified Functionality

- None.

Fixed Issues

- Some units with version 1498 or later did not include support for Windows updater. 1.05A of the release note adds instructions on how to run standalone updater.

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.

1.7 Version 1.05

Firmware package contents

- Software version (SVN) 1590

New Functionality

- AWG files now accept samples up to +/-32767 was +/-30000.

Modified Functionality

- Increased checking of arbitrary waveform file headers and indication of errors.
- Configuration / ARB pane now shows files sizes and unit free space.
- Configuration / ARB pane marks corrupted files with an icon and allows the files to be deleted.

Fixed Issues

- Certain arbitrary waveform files, under certain conditions, would generate hardware parity errors.
- Corrupted waveform files could not be deleted by the web GUI.
- No indication of a full file system was given.

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.

1.8 Version 01.04A

Firmware package contents

- Software version (SVN) 1570

New Functionality

- K2 encrypted wave files can be used on all R&S CLGs without an additional License.

Modified Functionality

- Incomplete configuration files no longer produce errors. Incomplete configuration files may be configuration files left on the R&S CLG during a firmware upgrade.

Fixed Issues

- PAL7 waveform was a duplicate of the PAL8 waveform, the two waveforms are now correct and visible different when viewed on a spectrum analyzer.

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.

1.9 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.

1.10 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.

1.11 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

None.

3 Firmware Update

NOTICE

This update contains a bootloader update. Do not power the unit off or unplug it while this upgrade is in progress. This upgrade will not perform the bootloader update unless required. The upgrade is complete when the CLG front panel Status LED turns Green and the RF LED is off.

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 than 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 Windows updater. Once version 1498 is installed, the Windows updater can be used to bring the R&S CLG up to date. For details see chapter 3.3.



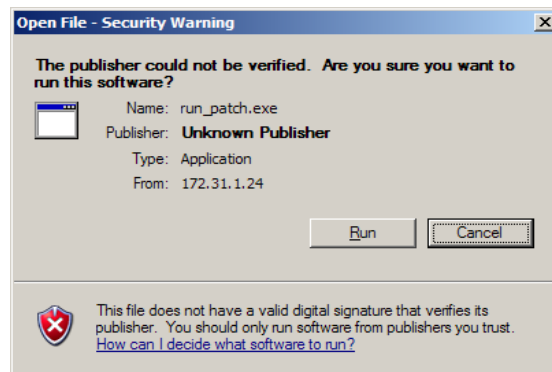
Due to a programming error, the listed serial numbers running software 1498 or later may not update with the Windows updater. If the Windows updater does not run, these units can be updated using the standalone updater. Once these units have been updated with the standalone updater, the Windows updater can be used for future updates.

- 100114, 100115
- 100118 to 101130
- 101149 to 101156

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_1590.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_1590.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.

```

Please enter the IP address or hostname of the R&S CLG: 192.168.175.253
-----
Is 192.168.175.253 correct (y/N): y
Target = 192.168.175.253
Extracting \\192.31.1.24\sedcom\USERS\GALEM\hd_gam\upgrade_RS_CLG.tar to c:\docu
me\1\pare\locals\1\temp\tmpglw1iy
rm -rf /extract_archive.sh
-----
Extraction script uploaded successfully...
Making the extraction script executable...
Extraction script is now executable...
-----
Tar found...
-----
Releasing memory...
-----
Uploading Ramdisk file...
192.168.175.253 - - [11/Jun/2012 11:41:02] "GET /uRamdisk HTTP/1.1" 200 -
File uRamdisk uploaded successfully
Output:
Error: Connecting to 192.107.131.47:1903 (192.107.131.47:1903)
-----
Installing Ramdisk 1...
-- Output --
Erasing 128 Kibyte @ 900000 -- 100 % complete.
-----
Installing Ramdisk 2...
-- Output --
Erasing 128 Kibyte @ 900000 -- 100 % complete.
-----
Removing uRamdisk...
-----
Uploading uImage...
192.168.175.253 - - [11/Jun/2012 11:41:14] "GET /uImage HTTP/1.1" 200 -
File uImage uploaded successfully
Output:
Error: Connecting to 192.107.131.47:1903 (192.107.131.47:1903)
-----
Installing Kernel 1...
-- Output --
Erasing 128 Kibyte @ 300000 -- 100 % complete.

```

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).

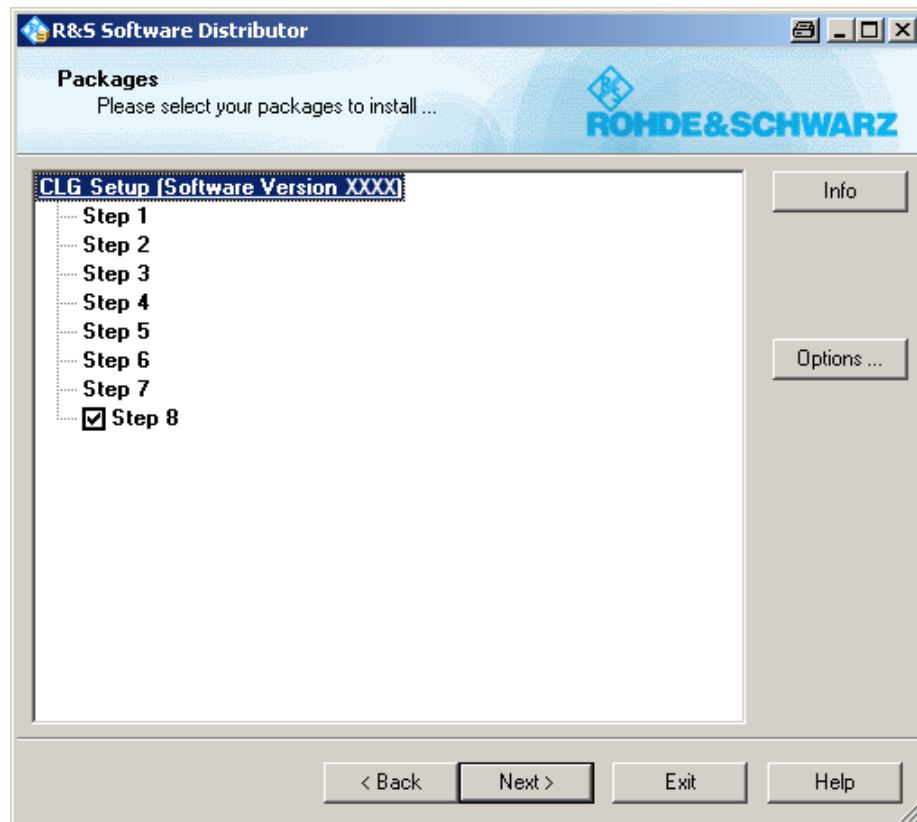
- *CLG_Setup_FW_xxxx.exe*

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.

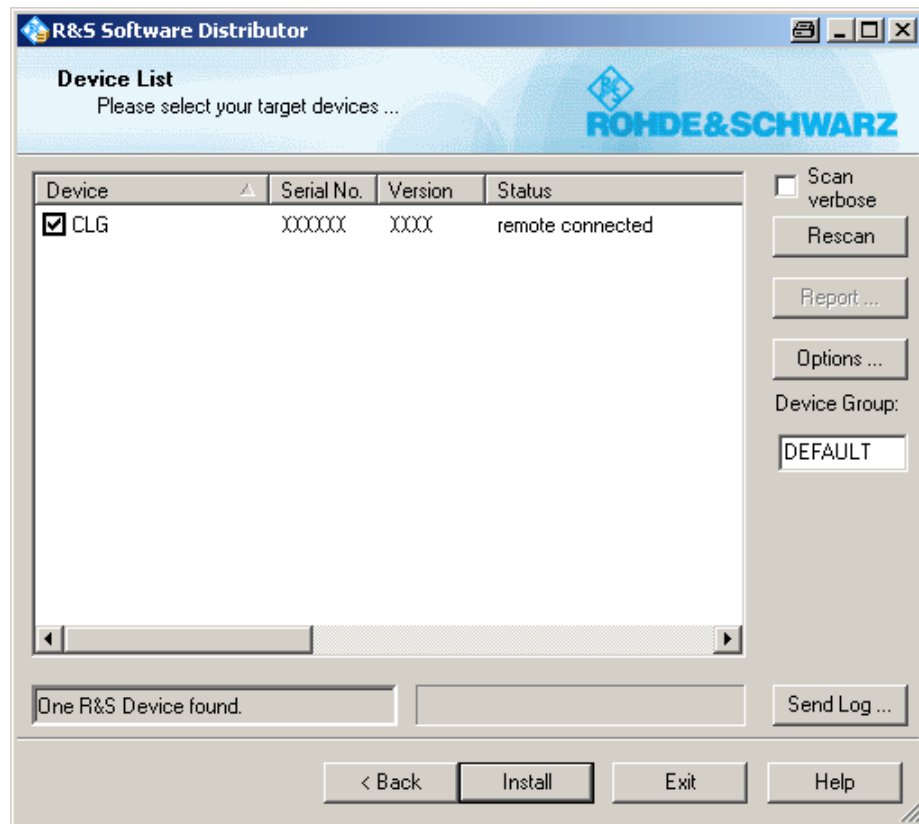


- Click "Next>".
By default, "Step 8" is selected. Do not change the selection.



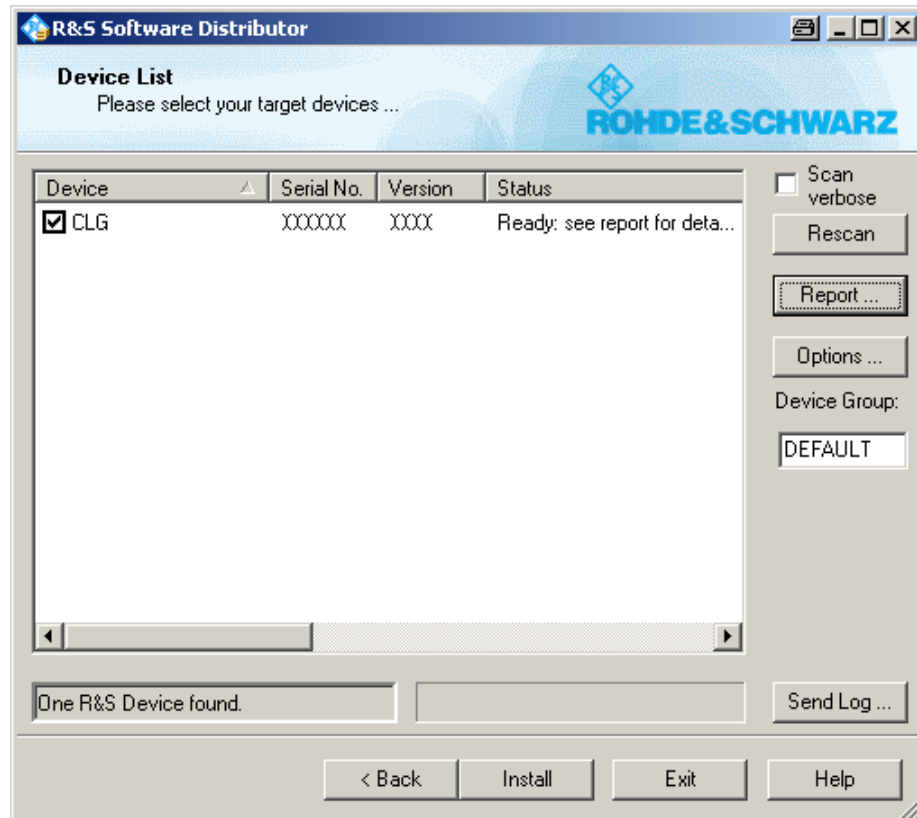
- Click "Next>".
All detected R&S CLGs are displayed.

7. Select the R&S CLG(s) you want to update.
Note: You can update several R&S CLGs simultaneously.

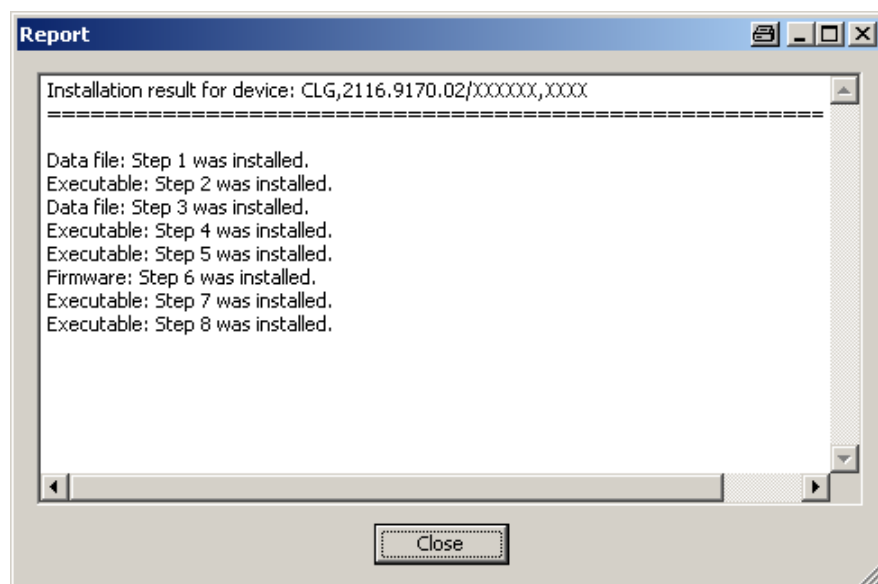


8. If no R&S CLG is automatically detected, expand the search:
- Click "Options".
 - Click "Add URL".
 - Enter one or several R&S CLG URL(s), e.g. 192.168.10.1, to be included in the search.
 - To save the search address(es), click "Save Options". If you do not save the options, the added search addresses are only used for the current installation.

- Click "Install".
The installation process itself is self-explanatory.
After the installation, the "Status" is changed to "Ready".



- Click "Report" to view the installation report. If the installation was successful, no errors are displayed (see example below).



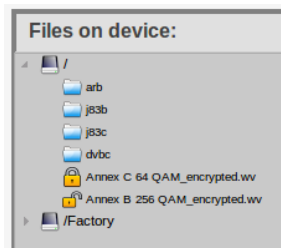
- Close the report and click "Exit".

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 encrypted.

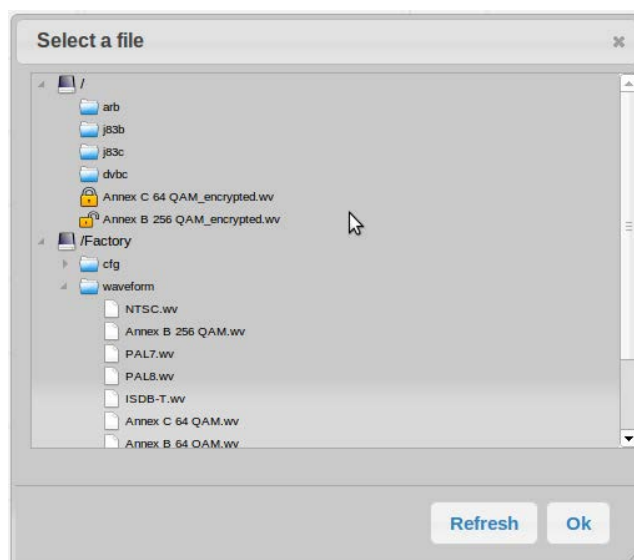


The locked icon indicates that the waveform is encrypted, and the R&S CLG does not have the license file necessary to decrypt it.



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".

Licencing:

Licence Options: R&S WV-K2
R&S WV-K3

Licence Upload (Method: html5)

Select files
Add files to the upload queue and click the start button.

Filename	Status	Size
Drag files here.		

Add Files Start Upload

0% 0 kb

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

The firmware used in this instrument makes use of open source software packages. Please refer to the CLG Open Source Acknowledgements document (2118.7346.02) included with the shipped product or downloadable online from the R&S website.

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.

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