Anritsu

PCle 5.0 CEM Rx Test Application

Release Note

First Edition

This software is released for PCle 5.0 CEM Rx Test.

Table of Contents

<table>
<thead>
<tr>
<th>Item</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Release Software</td>
<td>Provides information for this release.</td>
</tr>
<tr>
<td>2. Peripheral Devices</td>
<td>Shows the list of devices that can be controlled by this software.</td>
</tr>
<tr>
<td>3. Added Functions</td>
<td>Describes functions added for this release.</td>
</tr>
<tr>
<td>5. Remaining Known Bugs</td>
<td>Describes known software bugs in this version to be fixed in future releases.</td>
</tr>
<tr>
<td>6. Usage Notes</td>
<td>Describes precautions for using this software.</td>
</tr>
<tr>
<td>7. Troubleshooting</td>
<td>Describes troubleshooting procedures for using this software.</td>
</tr>
</tbody>
</table>

Appendix

Describes Quick Startup Guide.
1. Released Software

The certificate software versions for Keysight / Tektronix Scope are shown in the table.

<table>
<thead>
<tr>
<th>Keysight Edition</th>
<th>GRL Gen5 CEM Rx Test Application</th>
<th>Anritsu MX190000A</th>
<th>Anritsu MX183000A</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>V1.00.00</td>
<td>V4.03.12</td>
<td>V4.03.15</td>
<td>DSAZ634A V06.40.00714</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tektronix Edition</th>
<th>GRL Gen5 CEM Rx Test Application</th>
<th>Anritsu MX190000A</th>
<th>Anritsu MX183000A</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>V1.00.00</td>
<td>V4.03.12</td>
<td>V4.03.15</td>
<td>DPO75902SX V10.0.8.138</td>
</tr>
</tbody>
</table>

2. Peripheral Devices

The peripheral devices of the application are shown in the table.

<table>
<thead>
<tr>
<th>Model</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>MP1900A</td>
<td>Signal Quality Analyzer-R</td>
</tr>
<tr>
<td>MU181000B</td>
<td>12.5GHz 4port Synthesizer (Option-02 is required.)</td>
</tr>
<tr>
<td>MU181500B</td>
<td>Jitter Modulation Source</td>
</tr>
<tr>
<td>MU195020A</td>
<td>21G/32G bit/s SI PPG</td>
</tr>
<tr>
<td>MU195040A</td>
<td>21G/32G bit/s SI ED</td>
</tr>
<tr>
<td>MU195050A</td>
<td>Noise Generator</td>
</tr>
</tbody>
</table>

If you need help for the installation position of the mainframe, refer to the Anritsu website. (https://www.anritsu.com)

3. Added Functions

None

4. Bug Fixes

None

5. Remaining Known Bugs

None
6. Usage Notes

The precautions for using each version are described below.

6.1 Functional restrictions on GRL software

The following tests cannot be performed with GRL Automation software, because SigTest V4.0.52, the latest release as of January 2020, does not support the features required for PCIe 5.0 Preset Test. When SigTest adds support for the features required for Preset Test, we will update the software so that these tests can be performed.

- Tx initial Link EQ
- Deempahsis / Preshoot Analysis of Tx EQ Response Time (Preset / Cursor)

SigTest may return zero when calibrating EH/EW, but the test specifications define that the processing should exclude zero.

SigTest that supports PCIe 5.0 has a higher probability of returning zero than SigTest that supports PCIe 4.0. Thus, it may not calibrate EH/EW properly if **Eye Width/Height SigTest N Acquisition** is only 7, although it is enough for PCIe 4.0. Therefore, set **Eye Width/Height SigTest N Acquisition** to 20 for PCIe 5.0.

The issue is expected to be improved by future upgrades of SigTest.

**Eye Width/Height SigTest N Acquisition**: 7 => 20

![Image of SigTest N Acquisition settings]
6.2 Note on Apply Embedding

Basically, in order to comply with the PCIe standard:

- Use a scope with the Embedded function installed.
- With the GRL software, set **Apply Embedding** (4 dB for AIC, 9 dB for System on the scope) to **True**.

This section explains an alternative (optional) procedure for performing calibration when using a scope without the Embedded function installed.

In order to use the Embed function, the InfiniiSim waveform transformation toolset (Option N5465A InfiniiSim or D9020ASIA InfiniiSimAdv) is required on the Keysight scope. If the option is not installed on the scope, set the parameter to **False**. Note that no option is required for Tektronix scopes.
7. Troubleshooting

If you encounter any errors during calibration or testing, check as follows.

7.1 Calibration

7.1.1 In case of an error when calibrating Amplitude, Preset, SJ and RJ

- Check the RF connections. Especially, the connection polarity (Pos/Neg) and the trigger connections (PPG Aux Out and Scope Aux In) are easy to mistake.

- Check the software version. A different version of software may cause an unexpected error.

- Check the SigTest version. SigTest version needs to be 4.0.51. Also, this should be installed to the directory C:\Program Files (x86). Do not change the installation directory from the default setting.

7.1.2 In case of a SigTest error when performing Long Channel Calibration

A SigTest error message is displayed and SigTest has stopped working when calibrating SJ, RJ and EH/EW. Since this message is no effect on calibration results, click Close the program to continue the calibration.

![SigTest error message](image)

To avoid this message:

- Close all applications except the GRL software, MX190000A, MX183000A and scope applications. Especially when VNC is running, SigTest may not work properly.

- If you see this message frequently despite not running other applications on the PC, use another PC with the GRL software installed.

7.1.3 When Final Eye calibration cannot be succeeded

- Use the ISI Trace properly calibrated to 34 to 37 dB. It is recommended to use the calibration fixture distributed by the PCI-SIG.

- If any components (DC block, Power Divider, Attenuator and Adaptor) are attached to the Noise module output, remove them. These components may affect the waveform.
7.2 Others

7.2.1 When a session file cannot be loaded

- Close the folder where you installed the GRL software and saved PDF report file(s) because the loaded session file accesses and edits the folder.

- While recalling the session file on CEM spec takes several minutes, it does not mean that the computer is frozen. Wait until the recalling is completed. This function recalls large waveform files which are acquired by Tx initial EQ and Tx LEQ Response time test.
Appendix

A. Quick Startup Guide

1. Connect instruments with Ethernet cables as shown below.
2. Set the IP and GPIB addresses as shown below. These can be set in the Network and Sharing Center (Windows OS feature).
3. Install all applications as shown below (Yellow letters).

- Recommended connection

- Optional connection

* TCP/IP cannot be used when the GRL software is installed on a Tektronix scope. Set the GPIB address as "GPIB8::1::INSTR".

* TekVISA is needed to control Tektronix scopes. But, the PC on which TekVISA is installed cannot control Keysight scopes. Also, this configuration makes the remote control speed slower than the recommended configuration.
4. Launch application and configure equipment settings. Enter the scope address as below, and click ![ ](). If the setting and connection are correct, the button will turn green.

**Tektronix Scope**

When the GRL software is installed on the laptop: TCPIPo::192.168.2.110::inst0::INSTR

When the GRL software is installed on the scope: GPIBX::1::INSTR*

* Tektronix scope cannot use TCP/IP when the GRL software is installed on it. In this case, GPIB VISA should be set. The address can be checked using the VISA instruments Manager.

**Keysight Scope**

When the GRL software is installed on the laptop: TCPIPo::192.168.2.110::inst0::INSTR

When the GRL software is installed on the scope: TCPIPo::localhost::inst0::INSTR

MX190000A: TCPIPo::192.168.2.100::5001::SOCKET*

MX183000A: TCPIPo::192.168.2.100::5000::SOCKET*

* Port numbers should be set for MX190000A and MX183000A.