

Anritsu - GRL

PCIe 5.0 BASE Rx Test Application

Release Note

11th Edition

This software is released for PCIe 5.0 BASE Rx Test.

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1. Released Software

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

Edition	GRL Gen5 BASE Rx Test Application	Anritsu MX190000A	Scope	
			Keysight	Tektronix
11	V1.50.20	V10.03.02	DSAZ634A V06.60.00403	DPS77004SX V10.11.0.30
10	V1.50.10	V9.00.01	DSAZ634A V06.60.00403	DPS77004SX V10.11.0.30
09	V1.50.00	V9.00.00	DSAZ634A V06.60.00403	DPS77004SX V10.11.0.30
08	V1.08.00	V5.01.00	DSAZ634A V06.60.00403	DPS77004SX V10.11.0.30
07	V1.00.35	V5.01.00	DSAZ634A V06.60.00403	DPS77004SX V10.11.0.30
06	V1.00.33	V4.09.50	DSAZ634A V06.55.00702	DPS77004SX V10.1.0.34
05	V1.00.30	V4.09.41	DSAZ634A V06.55.00702	DPS77004SX V10.1.0.34
04	V1.00.25	V4.07.23	DSAZ634A V06.55.00702	DPS77004SX V10.1.0.34
03	V1.00.06	V4.03.12	DSAZ634A V06.40.00714	DPS75904SX V10.0.8.138
02	V1.00.00	V4.03.12	DSAZ634A V06.40.00714	DPO75902SX V10.0.8.138
01	V1.00.00	V4.02.10	DSAZ504A V06.40.00714	DPO75902SX V10.0.8.138

2. Peripheral Devices

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

Model	Name
MP1900A	Signal Quality Analyzer-R
MU181000B	12.5GHz 4port Synthesizer (Option-02 is required.)
MU181500B	Jitter Modulation Source
MU195020A or MU196020A	21G/32G bit/s SI PPG or PAM4 PPG
MU195040A or MU196040B	21G/32G bit/s SI ED or PAM4 ED
MU195050A	Noise Generator

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

3. Added Functions

Version	Description
V1.50.00	Supports MU196040B PAM4 ED
V1.00.35	Removes ISI calibrate function by Seasim
V1.00.33	Turns OFF PPG output after testing complete and when changing test configuration
V1.00.30	Supports Keysight UXR scope
V1.00.25	Supports Tektronix ATI configuration
V1.00.06	Supports MU196020A PAM4 PPG

4. Bug Fixes

Version	Description
V1.50.10	Changes trigger setting for calibration with Keysight UXR scope Fixes RJ calibration failure with Keysight UXR scope Fixes DM calibration failure with Keysight UXR scope

5. Remaining Known Bugs

None

6. Usage Notes

The precautions for using each version are described below.

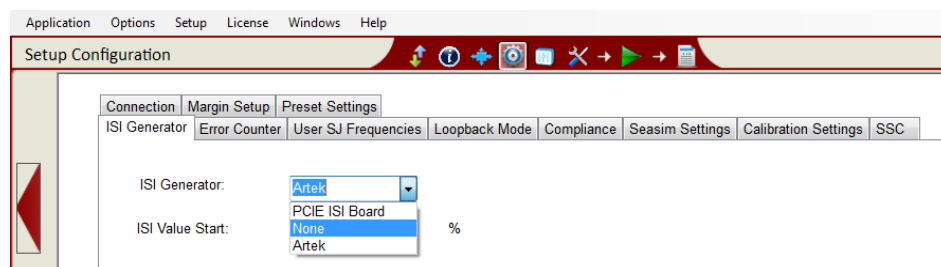
6.1 ISI Generator explanation

ISI Generator can be selected from the following three options:

- None
- PCIE ISI Board
- Artek

This section explains these three options.

*Please take note that this function has been removed in v1.00.35 or later.



6.1.1 None (Recommended):

This is the recommended method, which is used to provide 34 to 37 dB Insertion Loss for calibration and testing. It is required to define Insertion Loss by VNA in advance. A PCIe 5.0 Base Rx Calibration Test Fixture can be used in the setup for this method.

6.1.2 PCIE ISI Board (Optional):

This is an optional method to calibrate the Insertion Loss value (from 34 to 37 dB) using Step Response analysis by Seasim instead of VNA. If the Insertion Loss value of ISI Fixtures already calibrated by VNA, "None" must be selected and PCIE ISI Board should not be selected.

If using this method, please enter the lane number (numerical) printed on the ISI Board. Then, Repeatedly increase (or decrease) physical insertion loss channels until the calibration is complete.

6.1.3 Artek (Optional):

This is an optional method to automate calibration sequence. This method also calibrates the Insertion Loss using Step Response analysis by Seasim instead of VNA. Artek CLE1000-H2 and PCIe 5.0 Base Rx Calibration Test Fixture are required for this setting.

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** (9 dB for Root Complex (Downstream), 4 dB for Non-Root Complex (Upstream) on the scope) to **True**.

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 scope.

6.3 Note on Apply Stress Voltage Param

To set all calibrated values to MP1900A, select **Apply Stress Voltage Param** on the **Select Test** tab.

6.4 Other Information

If you need for more details on this software, please refer the user guide, which is included in the software package or Help menu.

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. It should be installed to the directory C:\Program Files (x86). Do not change the installation directory from the default setting.

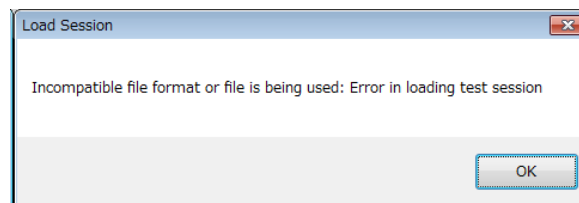
7.1.2 When Final Eye calibration cannot be succeeded

- 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.

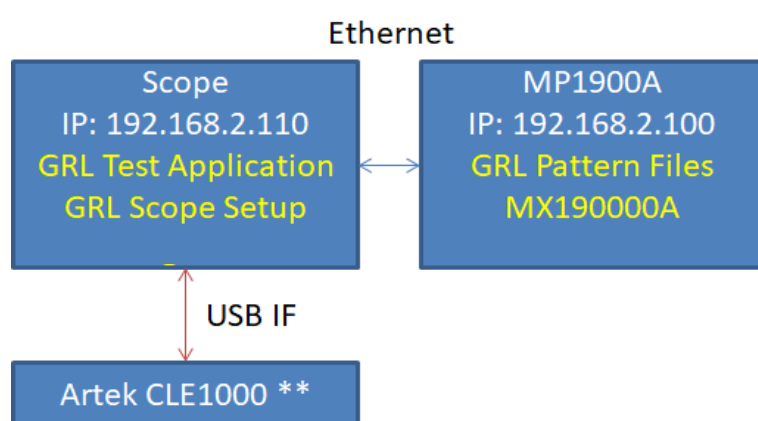


Appendix

A. Quick Startup Guide

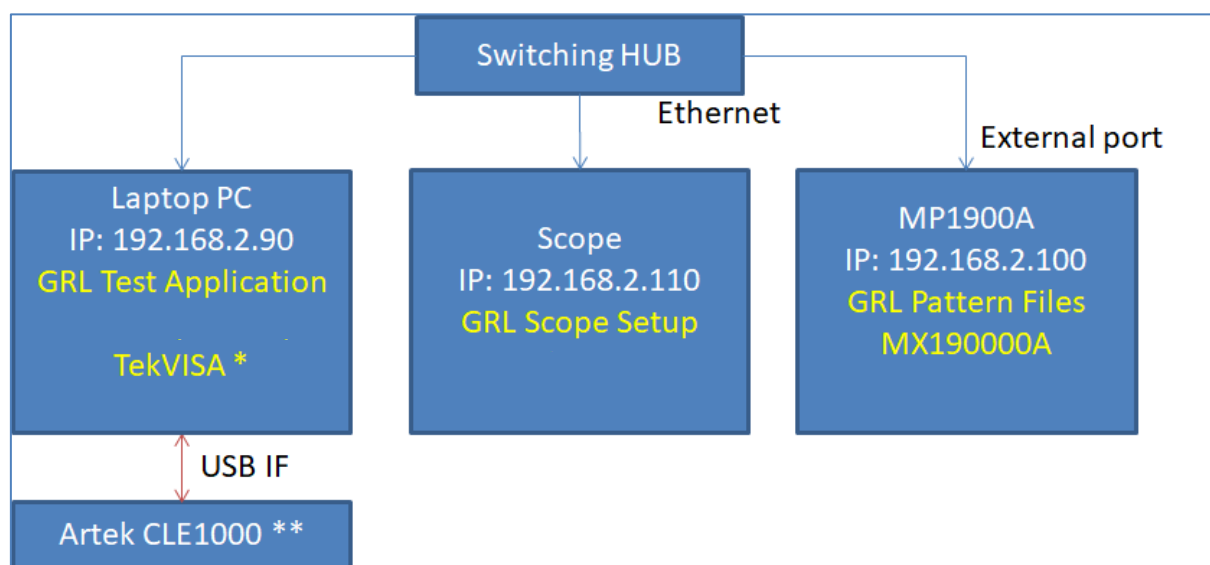
1. Connect instruments with Ethernet cables as shown below.
2. Set the IP addresses as shown below. These can be set in the Network and Sharing Center (Windows OS feature).
3. Install all applications as shown below (Yellow letters).

- Recommended connection



* Artek CEL1000 ISI Variable is not mandatory.

- Optional connection



* 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.

* Artek CEL1000 ISI Variable is not mandatory.

- 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.

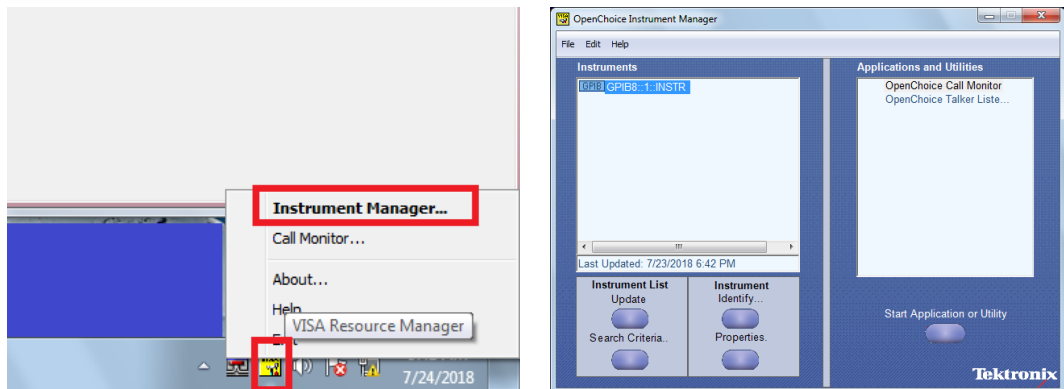
Tektronix Scope

When the GRL software is installed on the laptop:

TCPIP0::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:

TCPIP0::192.168.2.110::inst0::INSTR

When the GRL software is installed on the scope: TCPIP0::localhost::inst0::INSTR

MX190000A: TCPIP0::192.168.2.100::5001::SOCKET*

MX183000A: TCPIP0::192.168.2.100::5000::SOCKET*

- * Port numbers should be set for MX190000A and MX183000A.

ISI Generator: COM4*

- * Enter the COM number which can be checked by the CLE-1000 software.
- * The CLE1000 software must be closed when controlled by the GRL Software.

