

MX183000A

High-Speed Serial Data Test Software

Release Notes

20th Edition

Thank you for choosing Anritsu products for your business.
This document provides the latest information about version 3.07.12 of the software for the Anritsu MX183000A and current known bugs.
We look forward to continuing business with you in the future.

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1. Released Version

Ver. 3.07.12

2. Peripheral Device

The peripheral device for the MX183000A is shown in the table.

Code	Name
MP1900A	Signal Quality Analyzer-R
MP1800A	Signal Quality Analyzer
MT1810A	4 Slot Chassis
MU181000A	12.5GHz Synthesizer
MU181000B	12.5GHz 4port Synthesizer
MU181500B	Jitter Modulation Source
MU195020A	21G/32G bit/s SI PPG
MU183020A	28G/32G bit/s PPG
MU183021A	28G/32G bit/s 4ch PPG
MU195040A	21G/32G bit/s SI ED
MU183040A	28G/32G bit/s ED
MU183041A	28G/32G bit/s 4ch ED
MU183040B	28G/32G bit/s High Sensitivity ED
MU183041B	28G/32G bit/s 4ch High Sensitivity ED
MU195050A	Noise Generator
MP1825B	4Tap Emphasis
MU196020A	PAM4 PPG
MU196040A	PAM4 ED

For the installation position of the mainframe, refer to the Anritsu website (<http://www.anritsu.com>).

3. Added Functions

Version	Item	Function
Ver. 3.07.12	Added MX183000A-PL031 DUT Error Counts Import Function.	The DUT Error Counts Import Function enables MX183000A to acquire measurement results from the DUT's internal counter. Also, this function enables jitter tolerance measurement using the DUT counter results when used in combination with the MX183000A-PL001 Jitter Tolerance Test.
	Added support for optimization of SJ setting sequence at JTOL measurement.	Optimized the set sequence to make it harder to unlock the CDR of the DUT during JTOL (Jitter Tolerance Test). Also, added a function that sets the number of steps to take in resetting the SJ value to zero.
	Added JTOL-related remote commands.	Added commands to query JTOL measurement results.
	Added a function to insert a waiting time during specific state transitions in USB Link Training.	Added a function that inserts a waiting time between Rx Detect and Polling State in USB Link Training.
	Added a function to automatically reset the power supply of CBB 4.0 in PCIe Link Training.	Added a function that automatically resets the power supply of CBB 4.0 in PCIe Link Training, and a jig for the function (ordering number: Z2025A). In order to use this function, you need to install the NI DAQmx software included with Z2025A.
Ver. 3.06.16	Added module for MX183000A control	The following equipment can be controlled by the Jitter Tolerance Test applications: MU196020A, MU196040A
Ver. 3.04.09	Added support to PAM4 Control for controlling four G0375A units	The maximum number of G0375A 32Gbaud Power PAM4 Converter units that can be controlled by PAM4 Control has been expanded to four. As a result, the GUI can be used to control 1 to 4 PAM4 signal channels.

Ver. 3.02.04	Added support for using numeric input using mouse operation	Switches to numeric input mode when right-clicking or clicking wheel on parameter to be changed. In this mode, any numeric value can be set using mouse.
	PAM4 Control Increased PAM4 Auto Search speed	Shortened PAM4 Auto Search time. The regular measurement time is shortened by up to 140 s.
Ver. 3.01.01	Added functions to MX183000A-PL021 PCIe Link Training	Added the ability to specify the cursor as the method for changing DUT Tx EQ at the PCIe LEQ Response test.
		Changing the time required for the MP1900A to change the bit rate during PCIe Link Training supports measurement of the DUT timeout tolerance. Although it is possible to measure a special DUT that does not meet the timeout specifications by setting the bit rate change to Fast, there are restrictions on the above function. Under normal conditions, set to Middle.
		The Full Swing, Low Frequency, Lane Number, and Link Number values received by the MP1900A from the DUT during PCIe Link Training can be displayed in the Result field. In addition, the Full Swing and Low Frequency values can be displayed in the LTSSM transition log. This function can be used to confirm Link Training results.

Version	Item	Function
Ver. 3.00.00	Added MX183000A-PL022 USB Link Training Function	This function supports Link Training and analysis of LTSSM transition logs for USB3.1 devices using the USB Link Training function. Use of this function requires the following models. MP1900A, MU195020A, MU195040A

	<p>Added PCIe Link Training LEQ Measurement Function</p>	<p>This function supports the Link Equalization Test (Preset only) in the PCI Express® Architecture PHY Test Specification. Depending on the test item, this function requires a real-time oscilloscope.</p>
	<p>Added support for PCIe Link Training Common Ref. Clock Architecture (System Board)</p>	<p>Adding this function for synchronizing with the 100 MHz Ref. Clock output from the DUT supports the Common Refclk architecture (System Board) test. MU181000B Opt-02 is required to use this function.</p>
	<p>Added PCIe Link Training LTSSM Trigger Function</p>	<p>This function outputs a trigger signal from the MU195020A when transitioning to the LTSSM State specified by the measuring instrument. Using this function supports confirmation of Data waveforms at any LTSSM state by using an oscilloscope.</p>
	<p>Added support for control using PAM4 Control application remote command</p>	<p>The function performs PAM4 Control using remote commands. For details of the remote command specifications, refer to Chapter 5 of the operation manual for the High-Speed Serial Data Test Software MX183000A.</p>

Version	Item	Function
Ver. 2.01.00	Added PAM4 Control function	This function controls the PAM4 output level when using the combined PPG and G0375A system. It also controls the G0376A CTLE Gain and input threshold voltage. In addition, it also has a function for automatically searching for the optimum value for CTLE Gain, input threshold voltage, PPG Delay, and ED Delay. PAM4 Control is a free application.
	Added foreground display function	This function adds foreground display of the MX183000A to support operation of the MX183000A while checking the MX180000A and MX190000A screens. The foreground display function can be switched ON/OFF from the Menu bar.
Ver. 2.00.00	Added MX183000A-PL021 PCIe Link Training function	Using the PCIe Link Training function supports Link Training for PCIe-compliant devices and display of LTSSM transition logs. The following equipment are required to use this function: MP1900A, MU195020A, MU195040A
	Added module for MX183000A control	The following equipment can be controlled by the PCIe Link Sequence and Jitter Tolerance Test applications: MP1900A, MU195020A, MU195040A
	Added 2ch Combination test mode to MX183000A-PL001 Jitter Tolerance Test	2ch Combination tests are supported at the MX183000A-PL001 Jitter Tolerance Test.

Version	Item	Function
Ver. 1.02.00	Added support for USB BER measurement using USB3.1 Receiver Test Adapter	The USB3.1 Receiver Test Adapter has been added to USB Link Sequence control devices. From this version, the USB Link Sequence operates with the connected USB3.1 Receiver Test Adapter as the basic configuration. For details of the USB3.1 Receiver Test Adapter G0373A, contact our business section.
	Added function for inserting errors into USB Compliance Pattern	A function has been added for inserting 1-bit errors into the Compliance Pattern used by the USB Link Sequence at BER measurement. The target Compliance Patterns are: Gen1 (5.0 GT/s), CP0 Gen2 (10.0 GT/s), CP9
	Added function for sending Compliance Pattern when connected DUT not detected	A function has been added for sending the Compliance Pattern to the USB Link Sequence. This function can send Compliance Pattern even when the connected DUT is not detected.
	Added support for Jitter Tolerance measurements of PAM4 signals	Support has been added for PAM4 signal measurements at the Jitter Tolerance test. This can perform total 3Eye (Upper/Middle/Lower) Jitter Tolerance tests for PAM4 signals.
Ver. 1.01.00	Added support for USB Test Adapter	Support for the USB Test Adapter has been added to the USB Test USB Link Sequence control function. Either the USB Test Adapter or the USB Measurement Kit can be selected as the connection setup. The USB Test Adapter is manufactured by ARTEK INC. and the model number is BSG4G.
	Added command to query Link status	The following command has been to query the Link status. :CALCulate:RESult:EMONitor?

4. Bug Fixes

Version	Item (Management Number)	Fault
Ver.3.07.12	JTOL measurement result did not become Sync Loss. (CM4547:0134)	When JTOL measurement result was Sync Loss, Error Count was occasionally displayed as 1000000 . In this version or later, it is displayed as Sync Loss .
	In PCIe Link Training, the Electrical Idle time occasionally exceeded 1 ms. (CM4547:0395)	In PCIe Link Training, the Electrical Idle time occasionally exceeded 1 ms.
	The Output Clock setting was changed unintentionally when connected from the Jitter Tolerance Test or PAM 4 Control application.(CM4547:0142)	The PPG's Output Clock setting was occasionally changed to a value not intended by the user when connected from the Jitter Tolerance Test or PAM 4 Control application. In this version or later, the Jitter Tolerance Test and PAM4 Control option do not control the PPG's Output Clock Rate setting from MX183000A.
Ver.3.05.00	MX183000A Screen does not display normally	When installing the MX183000A to the MP1800A, part of the screen is cut off and it does not display normally. This bug occurs in MX183000A Version 3.04.09.
Ver.3.04.09	Bugs in USB Link Training PAM4 Control remote commands (CM2424:20)	Fixed bug in following remote commands: USB Link Training Command :CALCulate:DATA:EALarm? Added following "CLOS" and "PSL" arguments PAM4 Control Command OUTPut:DATA:EAMPlitude? Fixed bug causing return of incorrect query when PERCent specified at second argument
	Delayed response at remote control (CM2424:07)	The remote operation response is delayed when repeatedly starting and stopping each application from Selector. When this occurs, the Query response is not returned within the normal Timeout time.

	Attempts to display unsupported patterns with MX183000A in non-linear mode (CM24:2365)	Unsupported patterns are wrongly displayed when MX183000A PAM4 Control is in the non-linear PAM4 mode. A non-linear PAM4 signal is not output when a selecting pattern the following Not supported patterns. JP03A, JP03B, SSPRQ, SSPRQ[D3_4], Transmitter_Linearity, PRBS13Q, PRBS31Q
Ver.3.03.01	Occasional application crash at remote (CM4024:2351)	At remote, sometimes the application crashes when switching alternately between Connect/Disconnect.
Ver.3.01.01	Sometimes, not Error Free at PCIe Link Training System measurement (CM4024:2080)	Sometimes, after the Link Training is established, the Loop.back Active state is not error free at the MX183000A PL-021 PCIe Link Training software. This bug has been fixed for V3.01.00 and later.
Ver.3.00.00	Sometimes, not Error Free at PCIe/USB Link Training (CM4024:1637)	Sometimes, Link Training fails either at PCIe Link Training or USB Link Training, or the status does become error-free after Link Training. This bug has been fixed by the Calibration function added at V3.00.00 and later. Refer to Chapter 6 Usage Precautions for more details.
	Improved PAM4 Control application Auto-search function (CM4177:0221)	Sometimes the function for searching for the optimum value for CTLE Gain, Input Threshold Voltage, PPG Delay, and ED Delay fails. This bug has been fixed for V3.00.00 and later.
	Link fails at USB Link Sequence (CM3794:0529)	The Link Sequence fails to start when starting the USB Link Sequence when using a combination of the MX183000A V2.01.04 and MX180000A V8.05.00 software. The workaround for this bug is to install MX183000A V3.00.00 and MX180000A V8.06.00.
Ver.2.01.04	MX183000A fails to start (CM4177: 0202)	When installing the MX183000A V2.01.02 software, an error message is displayed and the application fails to start. This problem is fixed by installing V2.01.04.

Ver.2.01.02	Sometimes, MX190000A not error-free at completion of PCIe Link Training (CM4024:1409)	Sometimes, when quitting the MX183000A after using the MX183000A PCIe Link Training, BER measurement using the MX190000A is not error-free. This bug occurs in MX183000A Version 2.01.00.
Ver.1.01.00	Application may terminate abnormally if Close (x) icon clicked during measurement (CM383604:17)	The application may terminate abnormally if the Close (x) icon is clicked either when the PCIe application is sending the Link Sequence or at JTOL measurement.

5. Remaining Known Bugs

None

6. Usage Notes

The precautions for using each version are described below.

6.1 About SI ED Calibration at PCIe/USB Link Training

The SI ED MU195040A requires calibration when using the PCIe Link Training or USB Link Training MX183000A application. Always perform calibration if the equipment configuration is changed or the software version is upgraded. Perform calibration by clicking the [Calibration] button at the Equipment setup tab after starting the above-described application (MX183000A V3.00.00 or later). For details of the procedure, refer to section 4.3.2 Connecting Measurement Equipment in the High-Speed Serial Data Test Software MX183000A operation manual.

If calibration is not performed correctly, linking with the DUT may not be performed normally or the status may not be error-free.

6.2 Ver. 1.00.01 and Newer

6.2.1 Operating Environment Precautions

NI-VISA must be installed to use the MX183000A. Refer to section 2.2 Operating Environment, and section 2.3 Installing/Uninstalling in the MX183000A Operation Manual for details about the operation environment for this software.

6.2.2 License Precautions

The paid MX183000A option uses a license key to enable functionality. Refer to the License_Install_E.pdf file stored on the USB memory stick standard accessory provided with this software.

6.2.3 Notes on Supported MX180000A Versions

Use the MP1800A/MT1810A software MX180000A Ver. 8.02.01 or later when using MX183000A. The MX183000A does not operate correctly with other software versions.

6.3 Ver. 1.01.00 and Later

6.3.1 Version Precautions when Download Installer

The Ver. 1.00.01 installer cannot be installed over MX183000A Ver. 1.01.00. To install Ver. 1.00.01, first uninstall the MX183000A software.

6.3.2 Notes on MX180000A Supported Versions

When using MX183000A Ver. 1.01.00, be sure to use Ver. 8.02.03 of the MX180000A for the MP1800A/MT1810A. Normal MX183000A operation is not assured if the wrong version of the MX180000A is used.

6.4 Ver. 1.02.00 and Later

6.4.1 Notes on MX180000A Supported Versions

When using MX183000A Ver. 1.02.00, be sure to use Ver. 8.04.00 of the MX180000A for the MP1800A/MT1810A. Normal MX183000A operation is not assured if the wrong version of the MX180000A is used.

6.5 Ver. 2.00.00 and Later

6.5.1 Notes on MX180000A Supported Versions

When using MX183000A Ver. 2.00.00 or later, be sure to use Ver. 8.05.00 of the MX180000A for the MP1800A/MT1810A. Normal MX183000A operation is not assured if the wrong version of the MX180000A is used.

6.5.2 Notes on MX190000A Supported Versions

When using MX183000A Ver. 2.00.00 or later, be sure to use Ver. 1.01.03 of the MX190000A for the MP1900A. Normal MX183000A operation is not assured if the wrong version of the MX190000A is used.

6.6 Ver. 3.00.00 and Later

6.6.1 Notes on MX180000A Supported Versions

When using MX183000A Ver. 3.00.00 or later, be sure to use Ver. 8.06.00 of the MX180000A for the MP1800A/MT1810A. Normal MX183000A operation is not assured if the wrong version of the MX180000A is used.

6.6.2 Notes on MX190000A Supported Versions

When using MX183000A Ver. 3.00.00 or later, be sure to use Ver. 2.00.00 of the MX190000A for the MP1900A. Normal MX183000A operation is not assured if the wrong version of the MX190000A is used.

6.7 Ver. 3.01.00 and Later

6.7.1 Notes on MX190000A Supported Versions

When using MX183000A Ver. 3.01.00 or later, be sure to use Ver. 2.02.00 of the MX190000A for the MP1900A. Normal MX183000A operation is not assured if the wrong version of the MX190000A is used.

6.8 Ver. 3.02.00 and Later

6.8.1 Notes on MX190000A Supported Versions

When using MX183000A Ver. 3.02.00 or later, be sure to use Ver. 2.03.00 of the MX190000A for the MP1900A. Normal MX183000A operation is not assured if the wrong version of the MX190000A is used.

6.9 Ver. 3.04.00 and Later

6.9.1 Notes on MX190000A Supported Versions

When using MX183000A Ver. 3.04.00 or later, be sure to use Ver. 2.05.00 of the MX190000A for the MP1900A. Normal MX183000A operation is not assured if the wrong version of the MX190000A is used.

6.10 Precautions When Recovering MP1900A

This software license key becomes invalid if a system recovery is performed on the MP1900A where the software is installed. For details on the system recovery, refer to 8.2 "System Recovery Function" in the MP1900A Signal Quality Analyzer-R Operation Manual.

Be sure to transfer the license on the MP1900A to a PC or another MP1900A refer to 2.4 "License Key Activation" in the MX183000A High-Speed Serial Data Test Software Operation Manual before performing the system recovery. If you perform the system recovery without transferring the license, contact an Anritsu Service and Sales office.

6.11 Ver. 3.06.00 and Later

6.11.1 Notes on MX190000A Supported Versions

When using MX183000A Ver. 3.06.00 or later, be sure to use Ver. 3.00.05 of the MX190000A for the MP1900A. Normal MX183000A operation is not assured if the wrong version of the MX190000A is used.

6.12 Ver. 3.07.12 and Later

6.12.1 Notes on MX190000A Supported Versions

When using MX183000A Ver. 3.07.12 or later, be sure to use Ver. 3.01.07 of the MX190000A for the MP1900A. Normal MX183000A operation is not assured if the wrong version of the MX190000A is used.

6.13 When Using Anritsu-GRL Test Application

6.13.1 Notes on the Software Versions Supported by Anritsu-GRL Test Application

When using Anritsu-GRL Test Application, it is necessary to use the specified version of software.

Refer to the following release notes for the versions of MX190000A, MX183000A and GRL's test application that have been verified by Anritsu to operate together with Anritsu-GRL Test Application.

Anritsu_GRL_PCIe3BASE_ReleaseNote_E_xx.pdf

Anritsu_GRL_PCIe3CEM_ReleaseNote_E_xx.pdf

Anritsu_GRL_PCIe4BASE_ReleaseNote_E_xx.pdf

Anritsu_GRL_PCIe4CEM_ReleaseNote_E_xx.pdf

Anritsu_GRL_TBT3_ReleaseNote_E_xx.pdf

Anritsu_GRL_USB31_ReleaseNote_E_xx.pdf

xx: Revision number