Anritsu envision : ensure

High-Speed Serial Data Test Software MX183000A

Chapter 1. Installation

MX183000A software supports the Windows 7 OS; it does not run under Windows XP. Confirm OS version before installing.

[Case1]: Installing MX180000A and MX183000A in the MP1800A.



[Case2]: Installing MX180000A in the MP1800A, Installing MX183000A in a PC.



[Case3]: Installing MX180000A and MX183000A in a PC (using module simulator).

For the GUI demonstration purpose.



(1) Installing MX180000A

[Case1, Case2]. Install the MX180000A_VER_8_01_9x.exe file (hereafter Ver. 8.01.90) in the MP1800A [Case3] Install the MX180000A_VER_8_01_9x.exe file (hereafter Ver. 8.01.90) in a PC.

(2) Installing VISA

[Case1] Install the visa462full.exe (NI-VISA 4.6.2) in the MP1800A. [Case2, Case3] Install the visa462full.exe (NI-VISA 4.6.2) in a PC.

(3) Setting VISA

[Case1, Case2, Case3]



- 1. Start NI-Measurement&Automation Explorer.
- 2. Right-click Network Devices and click Create New VISA TCP/IP Resource... .



- 3. Select Manual Entry of Raw Socket and click Next.
- 4. Input the values for the MP1800A at Hostname or IP address and Port Number and click Next.

	IP address	Port
Case1	192.168.2.100* or 127.0.0.1	5001**
Case2	192.168.2.100*	5001**
Case3	127.0.0.1	5001**

*The MP1800A default is IP Address 192.168.2.100.

**The MX180000A default is Port Number 5001.



5. Check the IP Address and Port Number input at step 4 in Resource Name and click Finish.

(1) Installing MX183000A

[Case1] Install the MX183000A_VER_0_99_xx.exe in the MP1800A.

[Case2, Case3] Install the MX183000A_VER_0_99_xx.exe in a PC.

Chapter2. Demonstration of PCIe without DUT

Procedure for sending PCIe Link Sequence and measuring Jitter Tolerance without DUT

(1) Connecting Instruments

[Case1, Case2] Make a loopback connection between the instruments using the cable connections shown in the below diagram.



(2) Execute the module simulator before starting MX180000A.

[Case3] These processes are needed for only Case3.

1. Copy the Sim_xxxxx.zip into a PC and unzip it.

MX180000A_VER_8_01_90.exe	2015/12/11 18:43	アプリケーション	154,097 KB
🗾 MX183000A_quickguide_e.pdf	2015/12/15 17:55	Adobe Acrobat	1,543 KB
MX183000A_VER_0_99_00.exe	2015/12/14 16:16	アプリケーション	58,378 KB
🌗 sim_151215.zip	2015/12/15 9:01	圧縮 (zip 形式)	1,387 KB

2. Execute the start.bat.

名前	更新日時	種類	サイズ	
🐌 Unit1 32G_PPG-ED_03	2015/12/14 10:06	ファイル フォル		
퉬 Unit1 32G_PPG-ED_04	2015/12/14 10:06	ファイル フォル…		
퉬 Unit1 MU181000A	2015/12/14 9:58	ファイル フォル…		
퉬 Unit1 MU181500	2015/12/14 9:59	ファイル フォル…		
퉬 Unit1 PPG-ED	2015/12/14 9:59	ファイル フォル…		
🚳 start.bat	2015/09/04 9:54	Windows バッチ	1 KB	

(3) Start the MX180000A (hereafter Ver. 8.01.90) and set as follows:

• Link the MU181000B and MU181500B Clock Source.

						ч
	Synthesize	er 👘	Clock Source	Unit1:Slot6:MU1	181000B 🔻	Ŀ
U	Unit1:Slot6:MU181000B		Center Frequency	External	181000B	
	12 500 000 1	Hz	Offset	0	ppm	1
			Reference Clock	Internal	•	
			Calibrated Module S/N	1A0000002		1
gger	· · •	Q				

• Link the MU183020A and MU181500B Clock Source.

[1:3:1] 28G/32G PPG	Data1 💌
Output Pattern Er	ror Addition Pre-Code Misc1 Misc2
Clock Setting	
Clock Source	Unit1:Slot2:MU181500B 💌
Bit Rate	External Unit1:Slot6:MU181000B 12.500000 Gbit/s
Output Clock Rate	Unit1:Slot2:MU181500B

• Set the MU183020A Output Clock Rate to Fullrate.

Bit Rate	Variable	•	16.000000	•	Gbit/s
Output Clock Rate	Fullrate 💌		Offset 0	•	ppm
	Halfrate				
	Fullrate				
Reference Clock	Internal	τl			

• Link the MU183020A and MP1825B.

(4) Confirming Error Free

[1:3:1] 28G/32G PPG Data1 💌	[1:4:1] 28G/32G ED Data1 🔽 C 🕥 S 💭 E 🕥 🕨 Start 🔳 Stop
Output Pattern Error Addition Pre-Code Misc1 Misc2	Result Measurement Pattern Input Capture Miss1 Misc2
_Test PatternPRBSLogic-POSBit Shift1bit	Test Pattern PRBS -Logic POS -Bi 3 at -
Length 2^23-1 - Dis	Length 2^23-1 - Edit
Mark Ratio 1/2 - 1	Mark Ratio 1/2 1

- 1. Set the same Test Pattern and Length at the PPG and ED.
- 2. Set the MP1800A Data Output to ON and run the ED Auto Search.

Auto Search				×
Mode Coarse Item Threshold&Phase		Start 2	Stop Clo Set All Rese	et All
Slot/CH	Data Threshold	XData Threshou	Ciuck Delay(mUI)	Clock Delay(ps)
Slot4-1 ED				
Slot4-2 ED				

3. Use the ED screen to confirm the Error Free condition.

- (5) Start the MX183000A.
- (6) Selecting Application (PCIe)



- 1. Select PCIe Link Sequence at Application Selector.
- 2. Click Start.

(7) Setting Network Device (Equipment Search)

MX183000A - PCIe Link Sequence	×
File Setup Help	
Equipment Setup	
Connection Guide	P1800A
	TCP#0::127.0.0.1::5001::SOCKET
MUIS3020A	No.2
	No.3 TCPIP0::127.0.0.1::5001::SOCKET Search Start Connect

- 1. Select the network device created by setting the network device (in step 2 Setting VISA).
- 2. Click Search Start and then click Connect.
- MX183000A PCIe Link Sequence × 6 File Setup Help Ζ Flectrical Idle. Equipment Setup Sequence Run Test Graph Report 5 Loopback through Configuration.Linkwidth.Start All Parameter Default Sequence Start L Detect 1 Unlink Detect.Quite 1 1 Specification Rev Polling.Active 3.0/3.1(8.0 GT/s) -Polling 3 Loopback through Polling.Configuration 1 Configuration -Configuration 16 📜 Configuration.Linkwidth.Start Test Pattern 1000 🌲 µs Loopback.Entry(Electrial Idle) Compliance 4 - 1 Loopback.Entry 20 🌲 MCP Insert Delay Symbol Loopback.Active Send Test Pattern Continuously Disable -Loopback TS Option

(8) Sending PCIe Link Sequence

- 1. Specification Rev.: Set the Generation to measure.
- 2. Loopback through: Select Configuration/Recovery.
- 3. Test Pattern: Select MCP / CP.
- 4. Click Sequence Start to start sending the Training Sequence.
- 5. Sending of the sequence pattern is completed when Electrical Idle changes to Loopback Active.
- The ED Auto Search runs automatically after sending of the Training Sequence finishes.

After Auto Search finishes, the status is Error Free if field 6 (above) is green.

(9) Measuring Jitter Tolerance

quipment	Setup Se	equence	Run Test	Graph	Report			Loop	oback Active.
Check All Uncheck All								Run T	fest
No. Jitt	er Freq. [[Hz]	Mask [UI] Upper	Limit [UI]	Lower Limit [UI]	Meas. [UI]	Judge	-
✓ 1	100,000,	000	0.10)	0.500	0.010			
☑ 2	10,000,	000	0.10)	1.000	0.010			
₹ 3	1,000,	000	1.000)	10.000	0.100			
V 4	300,	000	1.000)	10.000	0.100			
Jitter Fr Mi Upper Li	eq.[Hz] ask [UI] mit [UI]	1	10 × .000 ×	Add Delete All Clear	Titl	Save Oper	1	Bit Rate 8.0000 Clock Selectio	0 Gbit/s
Lower Li	mit [UI]	0	.100 🌲	Detail	j –			Inconcisco	ioca -

- 1. Set the measurement frequency.
- 2. Click Run Test to start measurement.
- 3. The measurement result is displayed.

Chapter3. Demonstration of PCIe with using DUT

Procedure for sending PCIe Link Sequence and measuring Jitter Tolerance with using DUT

(1) Setting MX183000A

Set MX183000A referring Chapter2.

(2) Connecting Instruments



Connect the instruments and DUT as shown in the above diagram.



Reference: PCIe Compliance Test Connections

(3) Sending PCIe Link Sequence



- 1. 3. 4. Set the parameter to measure.
- 2. Press Power Reset once to restart the DUT. (Press the Power button on the Compliance Base Board.)



- 5. Click Sequence Start to start sending the Training Sequence.
- 6. Sending of the sequence pattern is completed when Electrical Idle changes to Loopback Active.
- The ED Auto Search runs automatically after sending of the Training Sequence finishes.

After Auto Search finishes, the status is Error Free if field 6 (above) is green.

(4) Measuring Jitter Tolerance



- 1. Set the measurement frequency.
- 2. Click Run Test to start measurement.
- 3. The measurement result is displayed.

Chapter4. Demonstration of USB-3.1 with using DUT

Procedure for sending USB-3.1 Link Sequence with using DUT

The USB connection method is shown below.





Reference: USB Compliance Test Connections

(1) Selecting Application (USB)



- 1. Select USB Link Sequence at Application Selector.
- 2. Click Start.
- (2) Run Search and Connect for the required equipment using the same procedure as described in step (8) of the page 4.
- (3) Run the following procedure at the Sequence tab.

File Setup Help Equipment Setup Sequence eSS.Inactive Warm Reset Rx.Detect Rx Term. Detected Polling.Configuration(TS2) Polling.Idle Loopback.Active Sequence Start Unlink Unlink Unlink Unlink Unlink Unlink Unlink Unlink UsB3.1 Specification Gen1(5.0 GT/s) Polling.configuration(TS2) Biolog	MX183000A - USB Link Sequence			×
Electrical Idle. Electrical Idle. All Parameter Default Sequence Start Marameter Default Sequence Start Warm Reset Default Sequence Start Warm Reset Marameter Default Sequence Start Polling.LFPS 560 ± µs Unlink Polling.RxEQ 65536 ± µs UsB3.1 Specification Polling.Active(TS1) 18000 ± 2 est Pattern Polling.Idle 1 ± µs Compliance Compliance Loopback.Active Send Test Pattern Compliance CP0 D0.0 CP0 D0.0	File Setup Help			
eSS.Inactive All Parameter Default Sequence Start Warm Reset 1 m μs Unlink Polling.LFPS 560 m μs 1 Polling.RxEQ 65536 m μs 1 Polling.Active(TS1) 18000 m 2 Polling.Configuration(TS2) 18000 m 2 Polling.Idle 1 m μs cmpliance Loopback.Active Send Test Pattern Continuously Compliance	Equipment Setup Sequence		Electrical	ldle.
Loopback TS Option	ess.inactive Warm Reset Rx.Detect Rx Term. Detected Directed Loopback	Rx.Detect.Active(Idle) Polling.LFPS Polling.RxEQ Polling.Active(TS1) Polling.Configuration(TS2) Polling.Idle Loopback.Active	All Parameter Default 1 μs 560 μs 1. 65536 μs 18000 2 18000 μs 1 μs Send Test Pattern Continuously	Sequence Start Unlink USB3.1 Specification Gen1(5.0 GT/s) • Test Pattern Compliance • CP0 D0.0 •

- 1. Set Specification.
- 2. Set Test Pattern.
- 3. Disconnect the DUT (HOST/DEVICE) from the USB Test Fixture.
- 4. Click Sequence Start.
- 5. When Sequence Start is clicked, the Sequence Start button changes to Stop.

While in this condition, connect the DUT to the USB Test Fixture. When the DUT is connected, the LFPS signal output from the DUT is detected by the MU183020A and sending of the training sequence starts.



6. Loopback Active is displayed when sending of the training sequence is completed.

	— ×
6	Loopback Active.
All Parameter	Default Sequence Start

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United States

Anritsu Company 1155 East Collins Blvd., Suite 100, Richardson, TX 75081, U.S.A. Toll Free: 1-800-267-4878 Phone: +1-972-644-1777 Fax: +1-972-671-1877

Canada Anritsu Electronics Ltd. 700 Silver Seven Road, Suite 120, Kanata, Ontario K2V 1C3 Canada Phone: +1-613-591-2003 Fax: +1-613-591-1006

• Brazil Anritsu Eletronica Ltda. Praça Amadeu Amaral, 27 - 1 Andar 01327-010 - Bela Vista - Sao Paulo - SP Brazil Phone: +55-11-3283-2511 Fax: +55-11-3288-6940

Mexico Anritsu Company, S.A. de C.V. Av. Ejército Nacional No. 579 Piso 9, Col. Granada 11520 México, D.F., México Phone: +52-55-1101-2370 Fax: +52-55-5254-3147

• United Kingdom Anritsu EMEA Ltd. 200 Capability Green, Luton, Bedfordshire, LU1 3LU, U.K. Phone: +44-1582-433200 Fax: +44-1582-731303

• France Anritsu S.A. 12 avenue du Québec, Bâtiment Iris 1- Silic 612, 91140 VILLEBON SUR YVETTE, France Phone: +33-1-60-92-15-50 Fax: +33-1-64-46-10-65

Germany Anritsu GmbH Nemetschek Haus, Konrad-Zuse-Platz 1 81829 München, Germany Phone: +49-89-442308-0 Fax: +49-89-442308-55

Italy

Anritsu S.r.l. Via Elio Vittorini 129, 00144 Roma, Italy Phone: +39-6-509-9711 Fax: +39-6-502-2425

Sweden Anritsu AB Kistagången 20B, 164 40 KISTA, Sweden Phone: +46-8-534-707-00 Fax: +46-8-534-707-30

• Finland Anritsu AB Teknobulevardi 3-5, FI-01530 VANTAA, Finland Phone: +358-20-741-8100 Fax: +358-20-741-8111

 Denmark Anritsu A/S Kay Fiskers Plads 9, 2300 Copenhagen S, Denmark Phone: +45-7211-2200 Fax: +45-7211-2210

• Russia Anritsu EMEA Ltd. **Representation Office in Russia** Tverskaya str. 16/2, bld. 1, 7th floor. Moscow, 125009, Russia Phone: +7-495-363-1694 Fax: +7-495-935-8962

• Spain Anritsu EMEA Ltd. Representation Office in Spain Edificio Cuzco IV, Po. de la Castellana, 141, Pta. 8 28046, Madrid, Spain Phone: +34-915-726-761 Fax: +34-915-726-621

 United Arab Emirates Anritsu EMEA Ltd. Dubai Liaison Office 902, Aurora Tower, P O Box: 500311- Dubai Internet City

Dubai, United Arab Emirates Phone: +971-4-3758479 Fax: +971-4-4249036

Specifications are subject to change without notice.

India Anritsu India Private Limited 2nd & 3rd Floor, #837/1, Binnamangla 1st Stage, Indiranagar, 100ft Road, Bangalore - 560038, India Phone: +91-80-4058-1300 Fax: +91-80-4058-1301

Singapore Anritsu Pte. Ltd. 11 Chang Charn Road, #04-01, Shriro House Singapore 159640 Phone: +65-6282-2400 Fax: +65-6282-2533

• P.R. China (Shanghai) Anritsu (China) Co., Ltd. Nom 2701-2705, Tower A, New Caohejing International Business Center No. 391 Gui Ping Road Shanghai, 200233, P.R. China Phone: +86-21-6237-0898 Fax: +86-21-6237-0899

• P.R. China (Hong Kong) Anritsu Company Ltd. Unit 1006-7, 10/F., Greenfield Tower, Concordia Plaza, No. 1 Science Museum Road, Tsim Sha Tsui East, Kowloon, Hong Kong, P.R. China Phone: +852-2301-4980 Fax: +852-2301-3545

• Japan Anritsu Corporation 8-5, Tamura-cho, Atsugi-shi, Kanagawa, 243-0016 Japan Phone: +81-46-296-6509 Fax: +81-46-225-8359

Korea Anritsu Corporation, Ltd. 5FL, 235 Pangyoyeok-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, 13494 Korea Phone: +82-31-696-7750 Fax: +82-31-696-7751

• Australia Anritsu Pty. Ltd. Unit 20, 21-35 Ricketts Road, Mount Waverley, Victoria 3149, Australia Phone: +61-3-9558-8177 Fax: +61-3-9558-8255

• Taiwan Anritsu Company Inc. 7F, No. 316, Sec. 1, NeiHu Rd., Taipei 114, Taiwan Phone: +886-2-8751-1816 Fax: +886-2-8751-1817

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