/Inritsu

40G/43G Jitter and Wander Measurement Solution

MP1595A
40G SDH/SONET Analyzer

Key Features

All-in-one 40/43G Jitter and Wander measurement solution for network equipment development and optical module manufacturing.

- **All-in-one STM-256, OC768 and OTU3 optical interfaces**
- **Supports both SDH/SONET/OTN frame and jitter generation and analysis**
- **High-repeatability jitter testing**
- **Parallel jitter measurement with parallel filters**
- **Automatic measurement (jitter generation, jitter tolerance, jitter transfer)**
- **Easy upgrade to jitter configuration**
- **Useful functions**

1. Outline

Core networks are adopting 40G speeds to support cloud computing applications and faster mobile phone applications. In addition, plans are advancing for upgrading submarine fiber cables from 10 to 40G. The spread of 40G networks across many business sectors is driving the need for reliable jitter measurements to assure the interoperability of the various types of network equipment.

2. Features

➤ **All-in-one STM-256, OC768 and OTU3 optical interfaces**

One MP1595A supports STM-256, OC768 and OTU3 interfaces. There is no need to switch connectors because one connector supports all these optical interfaces, helping cut evaluation times.

➤ **Supports both SDH/SONET/OTN frame and jitter/wander generation and analysis**

Adding the MP1595A jitter modules support 40/43G jitter/wander generation and analysis as well as conventional SDH, SONET and OTN frame evaluation.

➤ **High-repeatability jitter testing**

The MP1595A jitter modules have less analog circuits than conventional designs and support jitter measurements with digital circuits, which improve measurement repeatability. Moreover, the expanded measurement dynamic range (up to 64 UI) eliminates range switching.

➤ **Parallel jitter measurement with parallel filters**

The MP1595A jitter modules with digital jitter analysis circuit support simultaneous jitter measurements using various bandwidth filters, cutting measurement times by 70%. Simultaneous display of measurement results for each filter is ideal for jitter generation analysis. Moreover, measurement in combination with the G.783- and G.8251-defined filters supports monitoring of the effect of jitter components between client and a line.
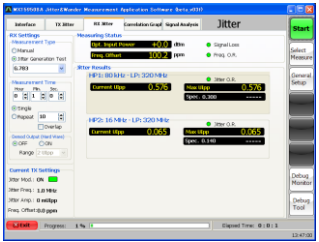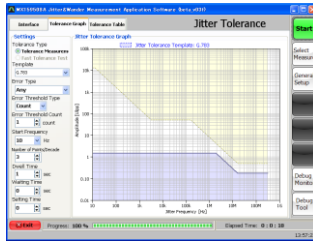

Parallel jitter measurement

➢ Automatic measurement

The MP1595A automatically measures ITU-T O.172-defined jitter generation, jitter tolerance, and jitter transfer. Moreover, reduced jitter measurement times compaired to conventional instruments help cut inspection workloads.

・ Jitter generation: Simultaneous measurements with multiple parallel filters
・ Jitter Tolerance: Fast tolerance tests with jitter tolerance mask OK/NG evaluation
・ Jitter Transfer: Fast test transfer test using Anritsu patented combined test signal. (Option 007)

Jitter generation measurement

Jitter tolerance measurement

Jitter transfer measurement

➢ Easy upgrade to jitter configuration

Adding the MP1595A new jitter modules support easy upgrading from frame test to jitter measurement configuration. The Plug-in modules are an easy customer upgrade. The wander is software option.

40/43 G w/o Jitter

1	
2	
3	
4	MU150141B
5	MU150140A
6	

40/43 G w/ Jitter

1	
2	MU150147A
3	
4	MU150149A
5	MU150140A
6	

Modules for Jitter/Wander measurement

MU150147A 40/43G Jitter Unit

MU150149A 40/43G Optical Unit(Tx)

➢ Useful Functions

The MP1595A jitter modules support new troubleshooting functions and extra inputs/outputs for various purposes.

・ Demod. Output (option) and Spectrum Analysis (option)
Outputs demodulated jitter analog waveform.
In addition, it displays spectrum analysis results on the MP1595A screen without a spectrum analyzer.
・ 1/4, 1/16 Clock Output
Outputs 1/4 and 1/16 clock synchronized with Tx clock.
This can be used with a sampling scope as a Tx waveform confirmation trigger because this clock is free of jitter modulation.
・ 1/64 Clock Output1, 1/64 Clock Output2
Outputs two 1/64 clocks synchronized with Tx clock.
This can be used as a clock source for a DUT requiring a reference clock because this clock is free of jitter modulation.
・ Wideband clock offset
±100 ppm Tx clock offset.
In addition, the Rx side supports jitter analysis up to ±100 ppm, supporting DUT frequency tolerance tests.

3. Ordering Information

	Model	Name
Main Frame	**MP1595A**	**40G SDH/SONET Analyzer**
	-001	**RS-232C**
	-002	**GPIB**
	-003	**LAN**
	-004	**Clock Source output for Jitter/Wander**
Modules	**MU150140A**	**40/43G Unit**
	-005	**OTU3**
	-006	**ODTU23**
	-010	**Frame memory/capture**
	MU150141A	**40G Optical Unit**
	MU150141B	**40G/43G Optical Unit**
	MU150147A	**40G/43G Jitter Unit**
	-001	**39.813Gbit/s**
	-002	**43.018Gbit/s**
	-007	**Fast Jitter Transfer Measurement.**
	-008	**Demod Signal Analysis**
	-009	**Demod. Output**
	-010	**Wander measurement**
	-011	**Wander generation**
	MU150149A	**40G/43G Optical Unit (Tx)**
Software	**MX159501A**	**40G SDH/SONET analyzer control SW**
	MX159508A	**Jitter/Wander meas. SW**