



# 100G EPON Application Software MX180014A

Signal Quality Analyzer  
MP1800A Series

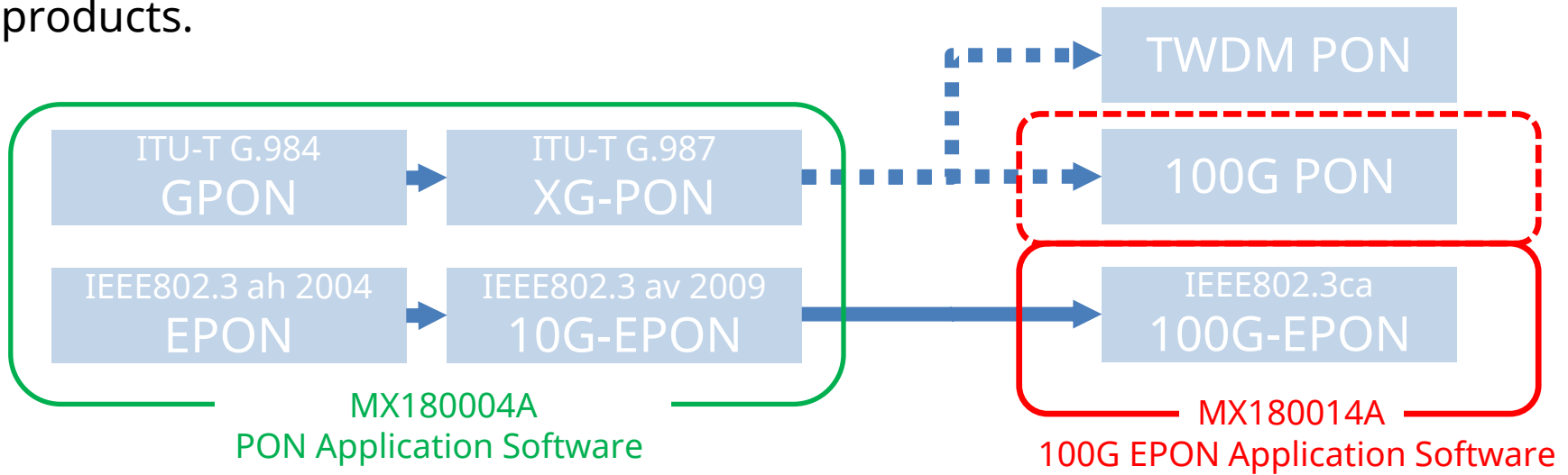
# Introduction

Optical Access networks are transitioning to 10 Gbit/s Passive Optical Network (PON) technology to support recent rapid increases in data traffic. However, standardization of specifications for next-generation PON has started and implementation of wavelength multiplexing and higher bit rates is still under discussion.

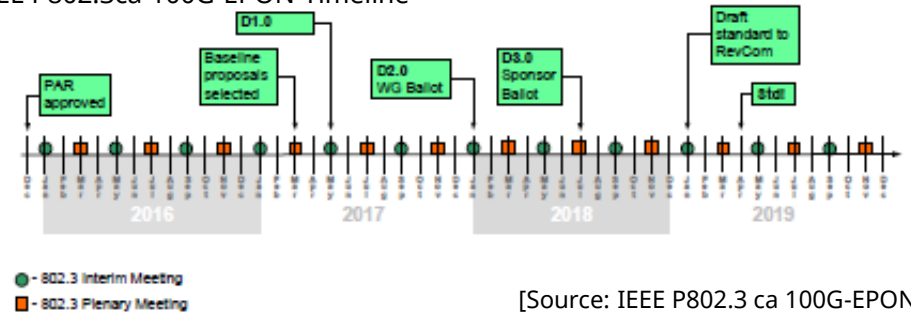
The Signal Quality Analyzer MP1800A series has supported ONU/OLT test solutions for PON at speeds up to 10 Gbit/s, but adding this 100G EPON application software MX180014A supporting both 25 Gbit/s Upstream Burst tests and multi-channel BER measurements now helps the MP1800A series play a key role in shortening development and production times for next-generation 25/100G PON solutions.

# PON Standard Trends and MP1800A PON Solution

Anritsu has application software for every PON standard to support R&D of PON products.



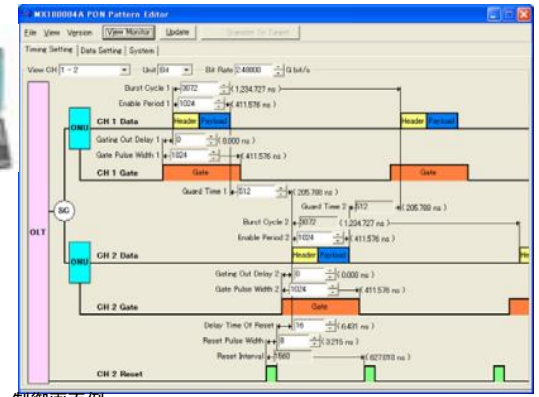
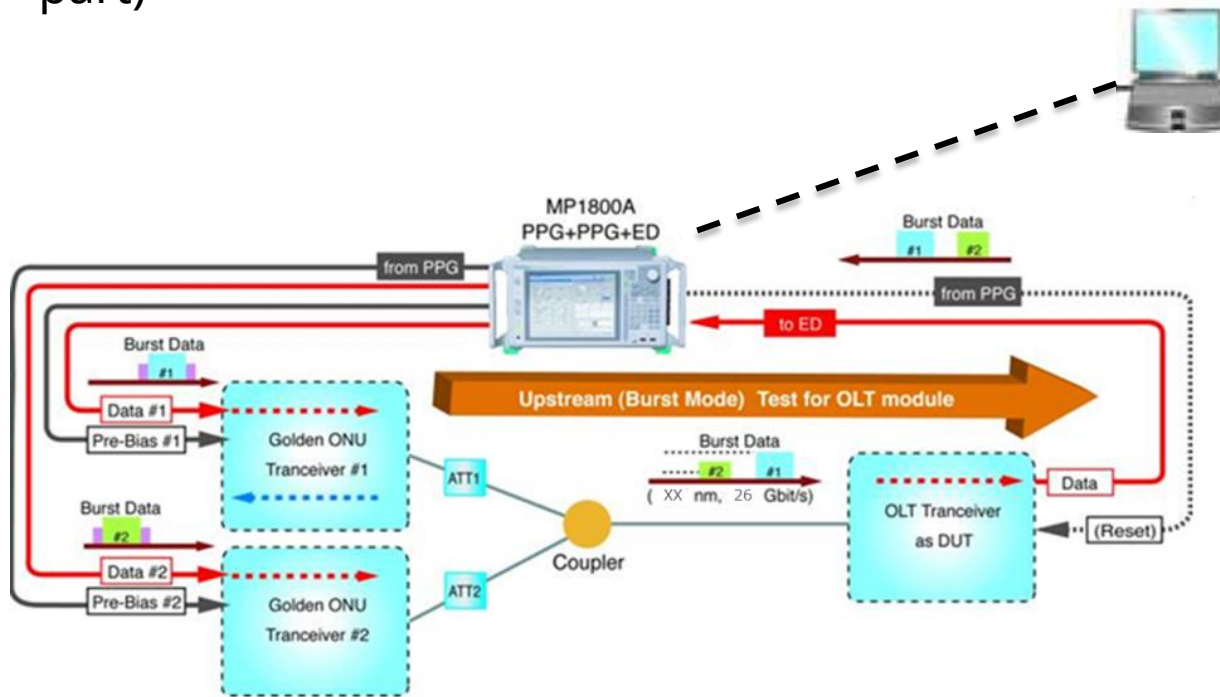
IEEE P802.3ca 100G-EPON Timeline



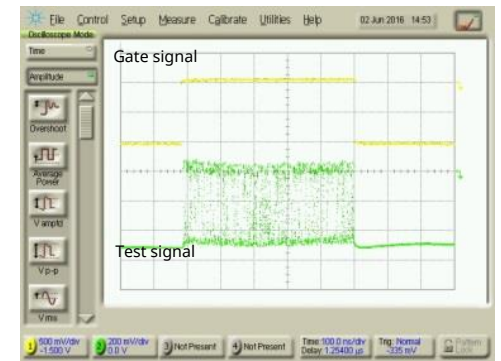
The 100G-EPON standard is under discussion for standardization in April 2019 as IEEE802.3 ca; the MX180014A supports the Upstream Burst tests and multi-channel BER measurements in this standard.

# 100G-EPON Application Software MX180014A Features

- Supports 100G-EPON
- All-in-one Upstream and Downstream testing
- Easy multi-channel sync and timing/skew adjustment
- High reproducibility BER measurement using high-quality output waveform and high input sensitivity (10 mV (typ.))
- Background pattern insertion function (inserts pattern into non-Burst signal part)



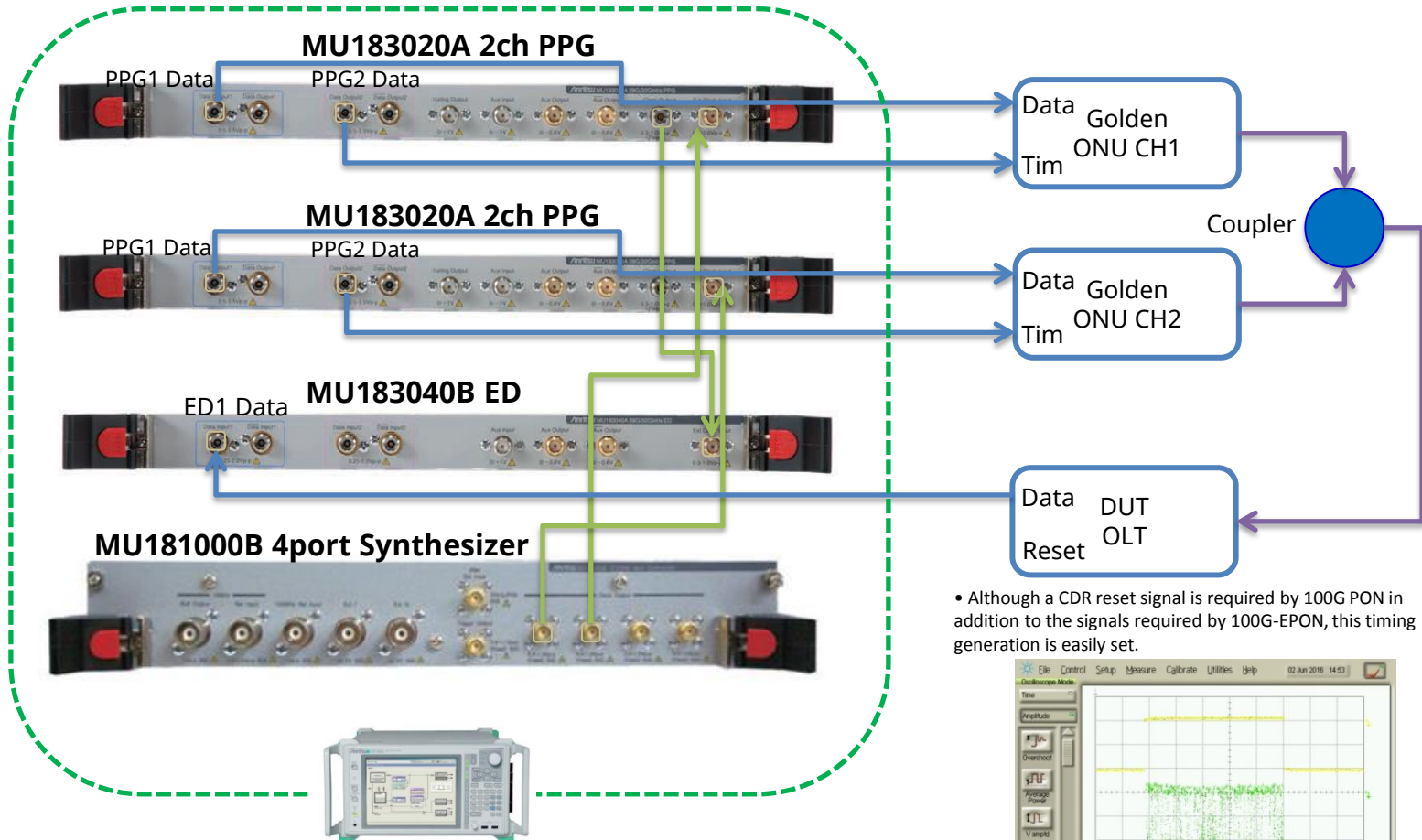
制御画面例



Reference burst signal

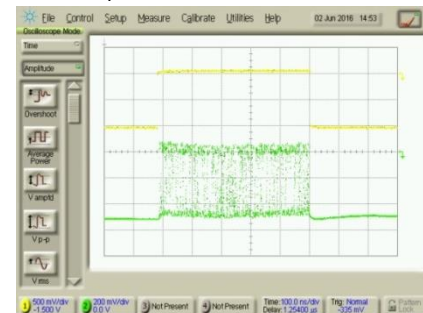
# All-in-One 100G-EPON Tests

- All-in-one Upstream and Downstream tests
  - ▣ Shortens test procedure since one unit can perform both upstream and downstream tests
- Multi-channel Sync and Skew Adjustment Function
  - ▣ Multi-channel function and high-quality BERT function shorten measurement time and increase test efficiency



Signal Quality Analyzer MP1800A

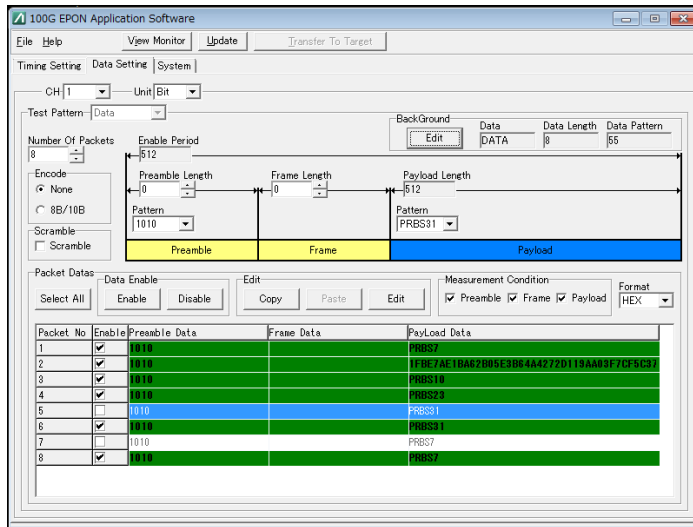
- Although a CDR reset signal is required by 100G PON in addition to the signals required by 100G-EPON, this timing generation is easily set.



# Setting Patterns using MX180014A

- Background Pattern Insertion Function (inserts pattern into non-burst signal part)
  - ❑ Used at clock recovery unit tolerance test
  - ❑ Helps assure accurate DUT margin tests at replay under actual usage conditions
  - ❑ Supports fast fault troubleshooting in combination with ED

Item	Setting Range
Number of Packets	1 to 32,768      1 packet steps
Preamble	ALL0, ALL1, 1010, DATA      Length: 0 to 20,000      1 bit steps
Frame	Length: 0 to 20,000      1 bit steps
Payload	PRBS7, 9, 10, 11, 15, 20, 23, 31      ALL0, ALL1, DATA, User File
Function	Scramble, 8B/10B Encode



[Upper and lower limits for usable functions change with settings]

--Data Setting Tab--

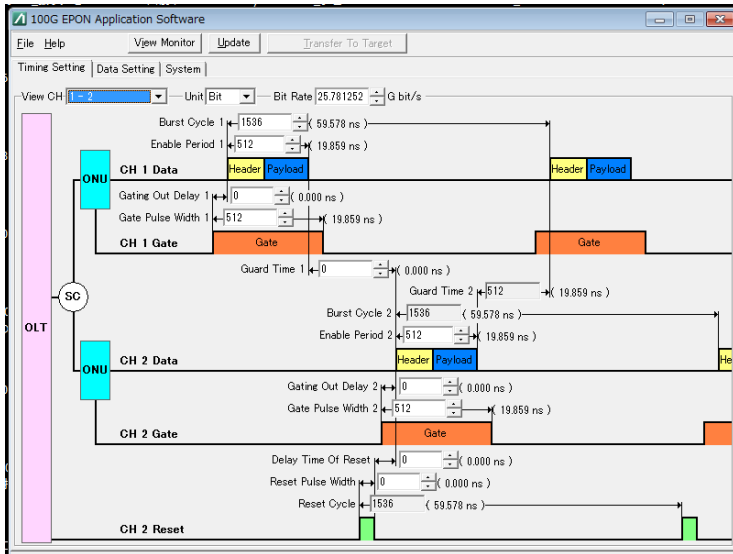
The Data signal structure and pattern are set at this screen.

The set pattern 8B/10B Encode and Scramble ON/OFF are also set at this screen.

# Burst Signal Test Pattern Length and Timing Control

- 2ch Test Signal Pattern Length and Timing Setting
  - ❑ Easy operation using intuitive interface
  - ❑ Quick settings for PON measurement shorten evaluation time and assure high test efficiency

Item	Setting Range	
Burst Cycle	1,536 to 268,435,456	256 bit steps
Enable Period	512 to 16,777,216	1 bit steps
Gating Out Delay	-8,192 to 8,192	8-bit steps
Gate Pulse Width	0 to 268,435,328	1 bit steps
Guard Time	0 to 8,192	1 bit steps
Reset Delay Time	-8,192 to 8,192	1 bit steps
Reset Pulse Width	0 to 8,192	1 bit steps



[Upper and lower limits change with settings]

--Timing Setting Tab--

The timing of the Data and Gate signals output from the PPG is set at this screen.

# Typical 100G-EPON Measurement Configuration

Model	Name	Options	Qty
MP1800A	Signal Quality Analyzer	002, 007, 015, 032	1
MU181000B	12.5GHz 4port Synthesizer	-	1
MU183020A	28G/32G bit/s PPG	022, 031	2
MU183040B	28G/32G bit/s High Sensitivity ED	010	1
MX180014A	100G EPON Application Software		1

## <Other Controlled Instruments>

Model	Name
MU183021A	28G/32G bit/s 4ch PPG
MU183041B	28G/32G bit/s 4ch High Sensitivity ED



# Assured Operation Environment

In addition to using the MX180014A application software with the MP1800A, it can be installed in a PC to implement remote control over Ethernet.

Item	Specification
OS	Windows 7 Professional/Enterprise/Ultimate English or Japanese version
CPU	1 GHz or faster (32 bit version) 2 GHz or faster (64 bit version)
Memory	1 GB minimum
Hard Disk	2 GB or more of free space
Remote Interface	Ethernet (10BASE-T, 100BASE-TX)
Display	800 × 600 or better resolution, 32 bit color

