General

Specifications

GS 810518801-01E

AQ2200-601

10 Gbit/s BERT MODULE

■ Outline

The AQ2200-601 10 Gbit/s Modular BERT is a compact and powerful. It offers high quality features such as built-in internal Signal Generator (SG) and Clock Data Recovery (CDR), EO/OE interfaces, and several variable signal output functions.

The AQ2200 series MultiApplication Test System is designed for universal purposes; therefore various modules for various applications can be accommodated. (i.e. Optical Power Meter, Light Source and Optical Attenuator modules).

■ Features

1) Bit rate: 9.95 Gbit/s to 11.32 Gbit/s
2) Output level range: 0.5 to 2.0 Vp-p
3) Offset range: -2.0 V to +3.0 V
4) Cross-point adjustment range: 30 to 70%
5) Input threshold level adjustment
6) Built-in CDR (Clock Data Recovery)

■ Specifications 1

PPG/ED Common				
	Clock Mode	Modes	Internal, External sync, External Clock in	
	Internal Clock	Internal Variable Clock	Frequency Range : from 9.95 to 11.32 GHz	
			Frequency Step : 1 kHz	
			Frequency accuracy : +/- 3 ppm	
	REFERENCE CLOCK IN	Frequency	1/16 or 1/64 clock of bit rate	
		Input level	0.4 Vp-p to 1.0 Vp-p	
		Duty	50 % (Typ) Square clock	
		Connector	SMA-Female	
		Coupling	50 Ω (AC coupling)	
	10G CLOCK IN for PPG	Frequency	1/1 clock of bit rate	
		Input level	0.4 Vp-p to 1.0 Vp-p	
		Duty	50 % (Typ)	
		Connector	SMA-Female	
		Coupling	50 Ω (AC coupling)	
	TRIGGER OUT	Clock Trigger	Frequency	1/16 or 1/64 of Clock out Frequency
		Pattern Trigger	PRBS	Outputs 128 bits positive pulse every 128 times of PRBS pattern
			PROGRAM (1) (from 16 to 256bit)	Outputs 128 bits positive pulse every 128 times of pattern length
			PROGRAM (2) (from 128 to 67,108,864bit)	Outputs 128 bits positive pulse every times of pattern length
		Output Level		0.6 Vp-p +/- 0.3 V
		Connector		SMA-Female
		Coupling		50 Ω (AC/DC)
PPG				
	Interface			
	DATA OUT & $\overline{\text{DATA OUT}}$	Bit rate	9.95 Gbit/s to 11.32 Gbit/s	
		Data Format	NRZ	
		Output Level	0.50 Vp-p to 2.0 Vp-p (10 mV step)	
		TR/TF(20-80 %)	<25ps	
		Offset	-2 V to +3 V (10 mV step)	
		Cross Point	30 % to 70 % (1 % step)	
		Number of ports	2 (invert, non-invert)	
		Connector	3.5mm-Female	
		Coupling	50 Ω (AC/ DC)	
		Invert control	Invert / non-invert function	
		Output control	ON/OFF function	
	DATA OUT for Optical Modulator	Output Level	0.50 ± 0.1 Vp-p	
		Offset	0 V fixed	
		Cross Point	50 % (Typ)	
		Number of ports	1	
		Connector	3.5mm-Female	
		Coupling	50 Ω (AC)	
		Invert control	Invert / non-invert function	
		Output control	ON/OFF function	
	CLOCK OUT & $\overline{\text{CLOCK OUT}}$	Output Level	0.6 Vp-p (AC Coupling) (Typ.)	
		Duty	50 % ± 10 %	
		TR/TF (20-80%)	<25 ps	
		Offset	-2 V to +3 V (10 mV step)	
		Number of ports	2 (invert, non-invert)	
		Connector	SMA-Female	
		Coupling	50 Ω (AC/ DC)	
		Output control	ON/OFF function	
	Data			
	Output Pattern	PRBS	2^7-1、2^9-1、2^{10}-1、2^{11}-1、2^{15}-1、2^{23}-1、2^{31}-1	
		PROGRAM	Standard: 16 to 256 bit (1 bit step), Option: 128 bit to 67,108,864 bit (128 bit step)	
	Error Add	SINGLE	1 bit when user specifies	
		RATE	10-n (n= 3 to 12 by 1 step)	

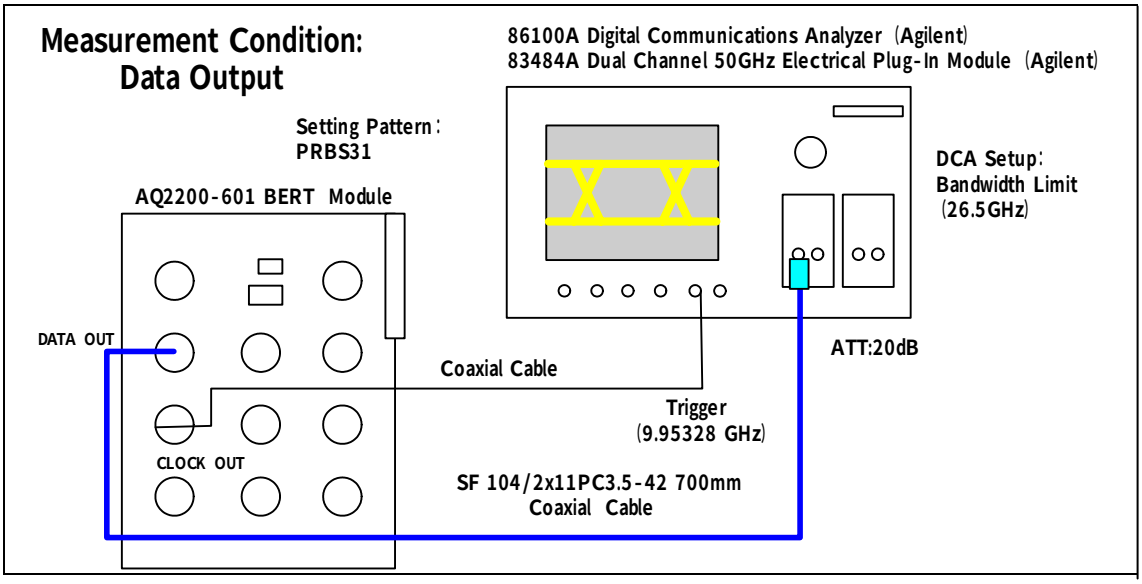
■ Specifications 2

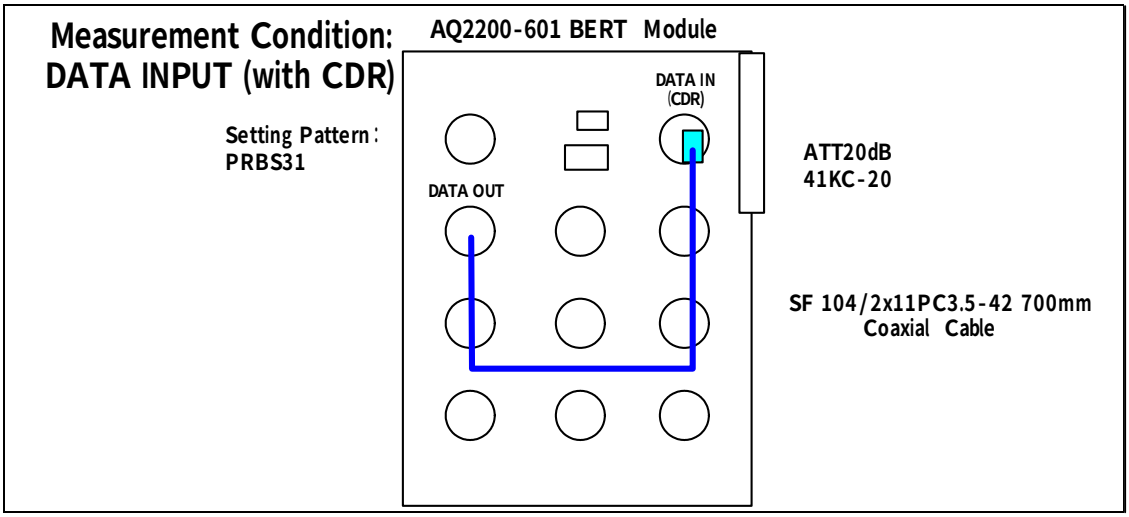
ED			
	Interface		
	DATA IN with CDR	Bit rate	9.95 Gbit/s to 11.32 Gbit/s
		Synchronization range	± 100 ppm of PPG clock
		Input level	Minimum: 0.1 Vp-p, Maximum: 0.7 Vp-p
		Minimum Input Sensitivity	100 mVp-p or less
		Threshold level adjustment	± 0.35 V (1 mV step)
		Data Format	NRZ
		Invert control	Invert / non-invert function
		Connector	3.5mm-Female
		Coupling	50 Ω (AC)
	DATA IN without CDR	Bit rate	9.95 Gbit/s to 10.71 Gbit/s
		Input level	Minimum: 0.1Vp-p, Maximum: 0.6 Vp-p
		Minimum Input Sensitivity	100 mVp-p or less
		Threshold level adjustment	± 0.3 V (1 mV step)
		Invert control	Invert / non-invert function
		Connector	3.5mm-Female
		Coupling	50 Ω (AC)
	10G CLOCK IN for ED	Frequency	The synchronized and same bit rate of frequency with DATA INPUT
		Input level	from 0.2 to 0.6 Vp-p
		Connector	SMA-Female
		Coupling	50 Ω (AC)
	Data		
	Pattern	PRBS	2^7-1、2^9-1、2^{10}-1、2^{11}-1、2^{15}-1、2^{23}-1、2^{31}-1
		PROGRAM	Standard: 16 to 256 bit (1 bit step), Option: 128 bit to 67,108,864 bit (128 bit step)
	Measurement functions	Manual	from START function to STOP function
		Single	One time measurement in setting period
		Period	Maximum 10day
		Results	CURRENT, 100ms, 1s, 10s / BIT ERROR COUNT , ERROR RATE , SYNC LOSS
		Error Log	Available

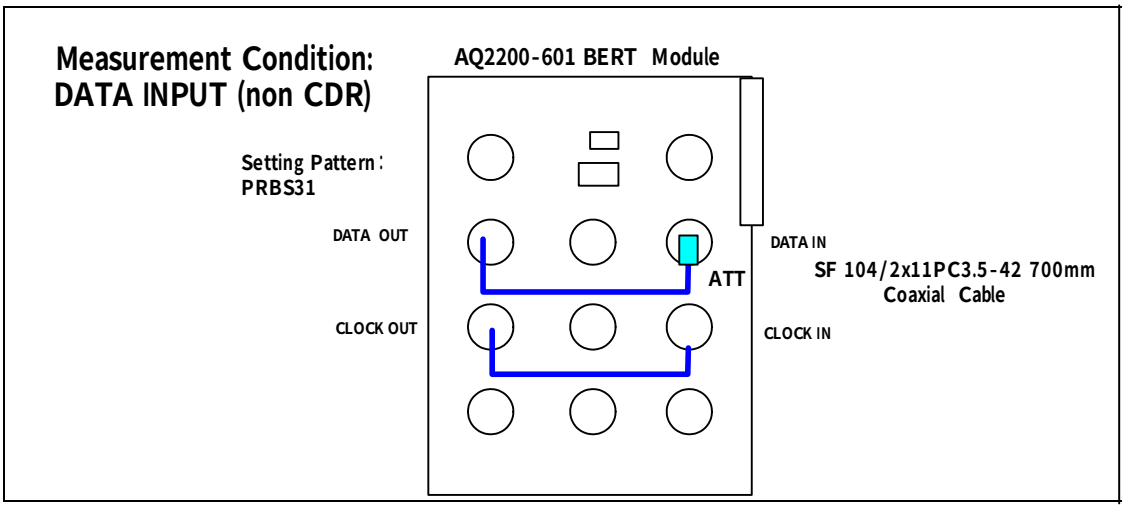
■ Specifications 3

Item		Specifications	
	common		
	Environmental conditions	Operating temperature	+5 to +40 °C
		Operating humidity	20 to 80 %RH
	Dimensions and mass	Dimensions	94 (W) × 117 (H) ×321.6 (D) mm
		Mass	Approx 2.6 kg
	Accessories		Terminator (6)

■ Measurement Conditions

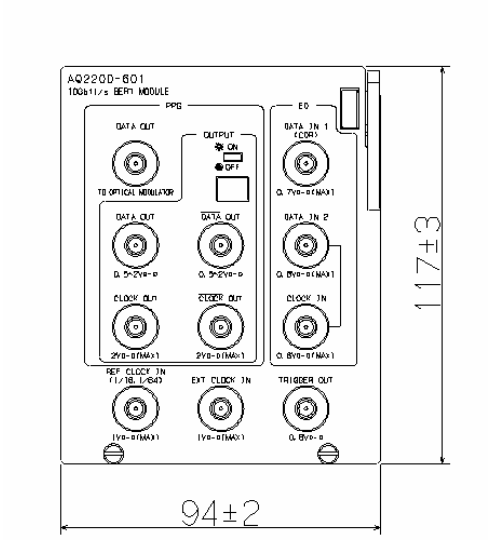




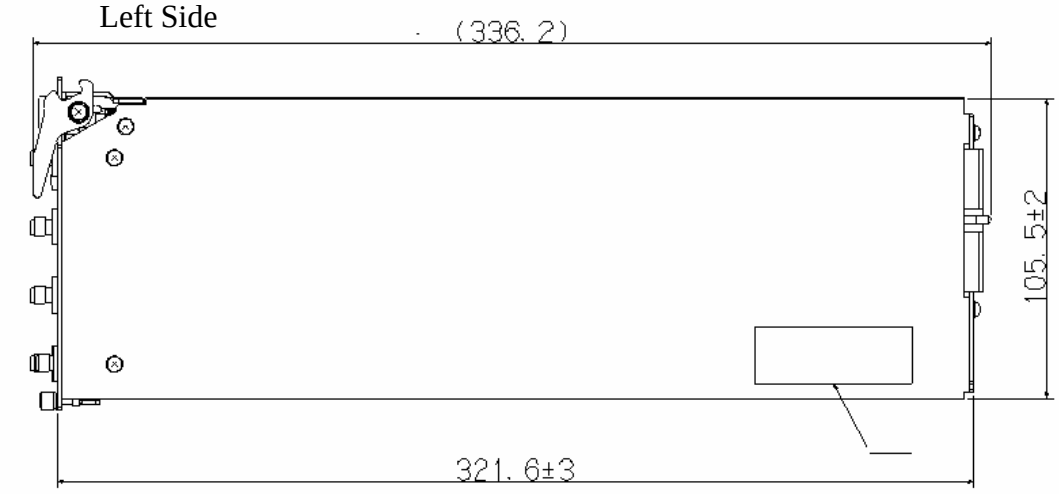


■ Dimensions

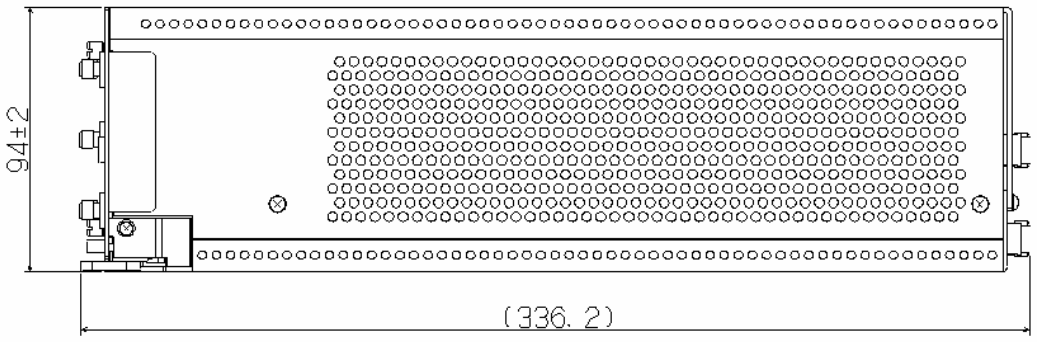
Front



Left Side



Up side



■ Order Code

	Code
AQ2200-601 10 Gbit/sBERT Module	810518801
	/M : 64Mbit Program pattern

Caution: This module needs AQ2200 Main Frame