

# 400G QSFP-DD Checker

## Features

- Supports 100Gbps, 200Gbps and 400Gbps Bit Error Rate Testing (BERT)
- QSFP28/QSFP56/QSFP-DD Status Checker
- Support QSFP/QSFP-DD Module (Power Consumption < 14W)
- Supports QSFP-DD CMIS V4.0 information monitoring
- Friendly Graphic User Interface (GUI)
- GUI Operating environment: Win XP, Win 7, Win8 and Win10
- Operating case temperature range from 0°C to 70°C
- 12V DC power supply
- RoHS compliant (lead free)



## Applications

- Bit Error Rate Testing (BERT)
- 100G QSFP28 (4x 25.78125GBd NRZ)
- 200G QSFP28-DD (8x 25.78125GBd NRZ)
- 200G QSFP56 (4x 26.5625GBd PAM4)
- 400G QSFP56-DD (8x 26.5625GBd PAM4)

## Description

The Gigalight 400G QSFP-DD checker is an instrument which can help you test QSFP28, QSFP56 and QSFP-DD modules. It can read the internal memory EEPROM of the modules and display the details of the EEPROM (such as the Part Number, Vendor Name, description and range), and monitor all DDM information. You can change the EEPROM if you know the module password. In addition, it can measure the power of the module.

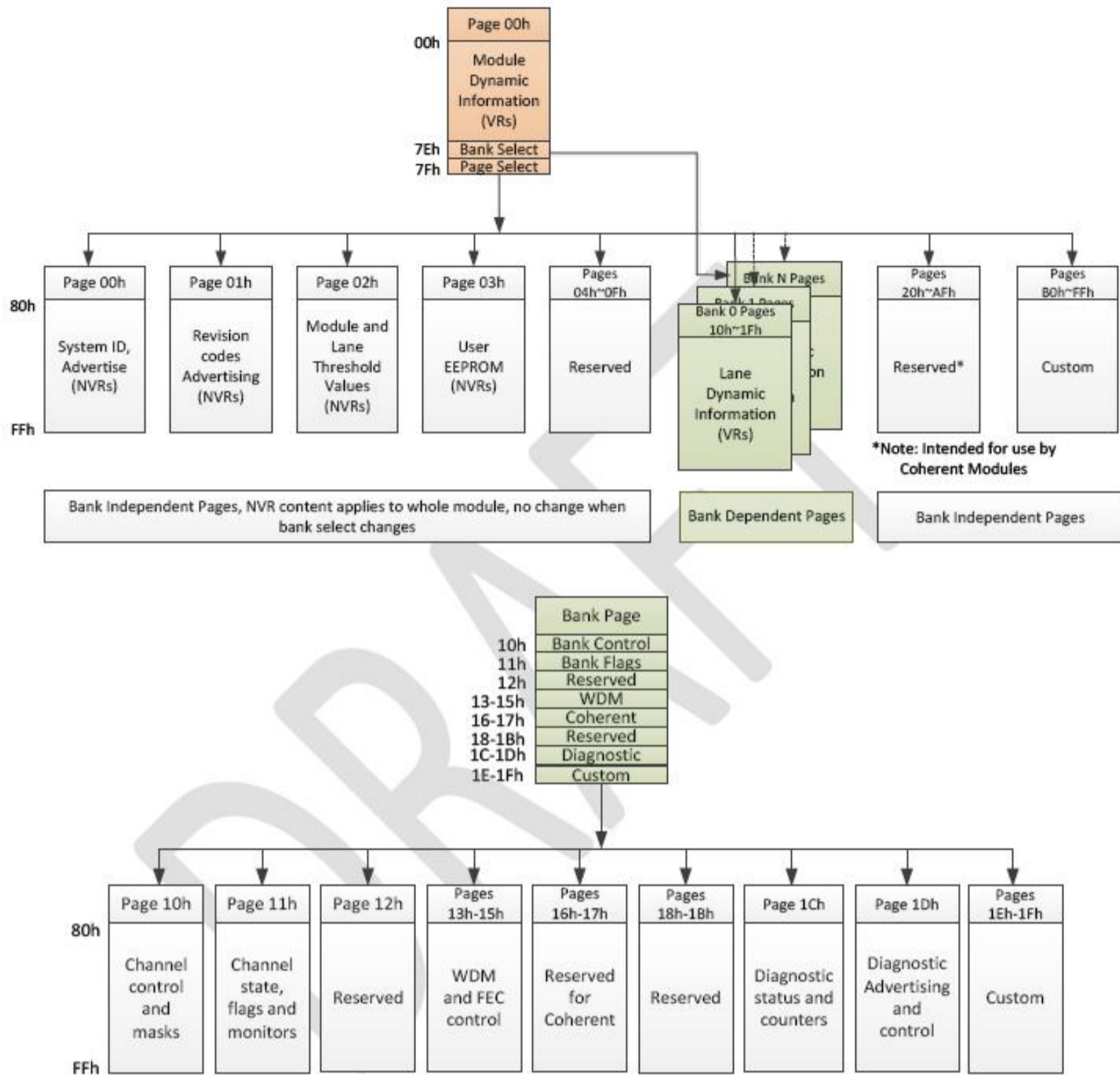
The QSFP-DD checker combines the Serial Pattern Generator and Bit Error Rate Analyzer. It provides common transmission rate for 8x 25GBd NRZ and 8x 26.5625GBd PAM4. The friendly Graphic User Interface (GUI) provides clear monitoring for bit error rate, bit error counter, time, status, power of the module, selection of data rate and PRBS pattern.

## Working Mode

NRZ mode: 100G QSFP28 and 200G QSFP28-DD module BER testing, DDM information monitoring, EEPROM Data reading, LOS and LOL Status monitoring and so on.

PAM4 mode: 200G QSFP56 and 400G QSFP56-DD module BER testing, DDM information monitoring, EEPROM Data reading, LOS and LOL Status monitoring and so on.

The QSFP-DD checker supports QSFP-DD CMIS V4.0 Register Mapping.


**QSPF-DD Memory Map**
**Absolute Maximum Ratings**

Parameter	Symbol	Min	Max	Unit
Supply Voltage	$V_{cc}$	-0.5	16	V
Storage Temperature	$T_s$	-20	85	°C
Case Operating Temperature	$T_c$	0	70	°C
Humidity (non-condensing)	Rh	5	95	%

**Recommended Operating Conditions**

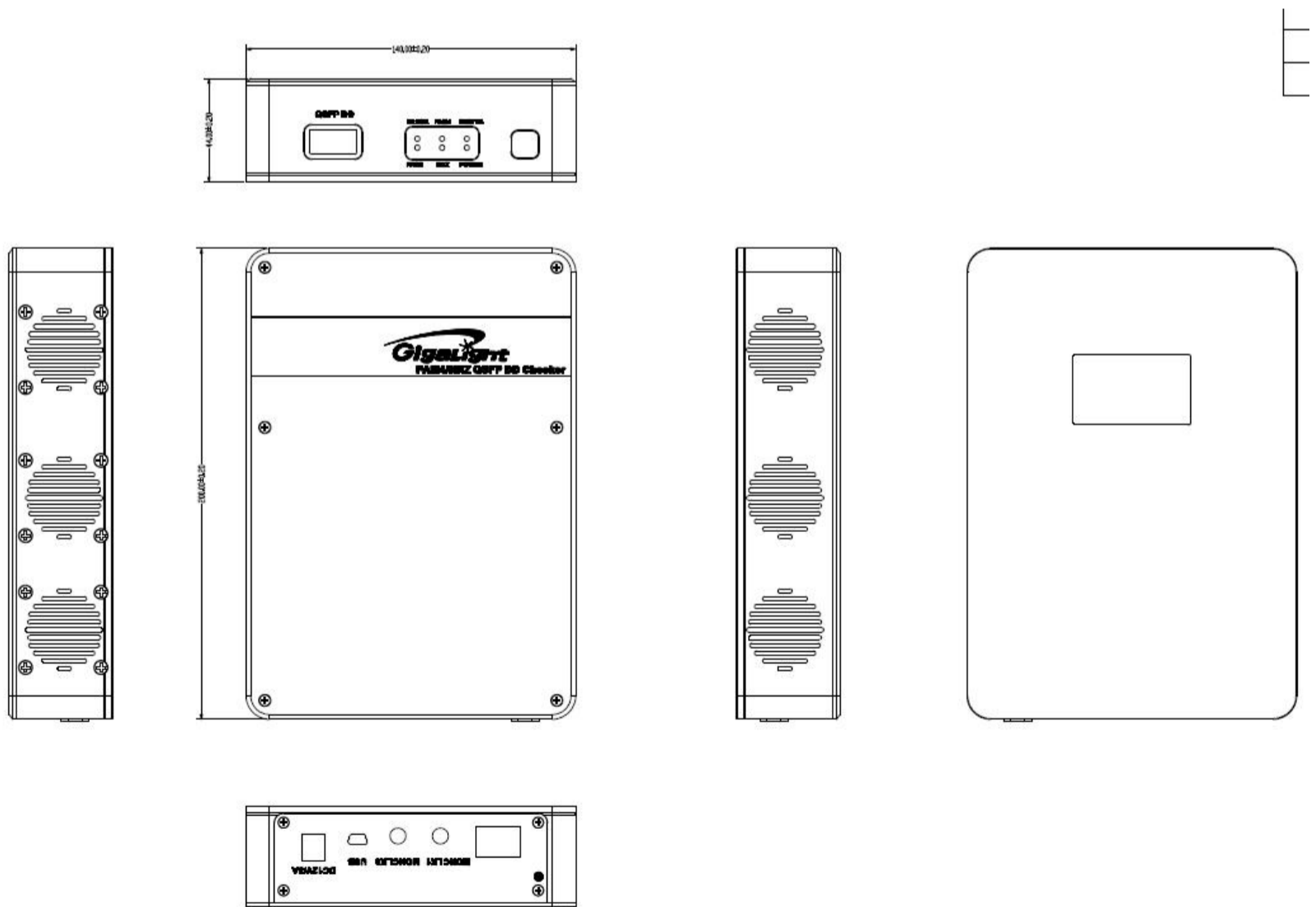
Parameter	Symbol	Min	Typical	Max	Unit
Supply Voltage	$V_{cc}$	9	12	19	V
Operating Case Temperature	$T_c$	0		70	°C
Data Rate Per Lane	fd		25.78125		Gbps
			26.5625		GBd
Humidity	Rh	5		85	%
Power Dissipation	$P_m$			25	W

### Electrical Specifications (OFI CEI-56G-VSR)

Parameter	Symbol	Min	Typical	Max	Unit
Differential input impedance	Zin	90	100	110	ohm
Differential Output impedance	Zout	90	100	110	ohm
Differential input voltage amplitude	$\Delta V_{in}$			900	mVp-p
Differential output voltage amplitude	$\Delta V_{out}$			900	mVp-p
Skew	Sw			300	ps
Near-end Eye Width at $10^{-6}$ probability (EW6)		0.265			UI
Near-end Eye Height at $10^{-6}$ probability (EH6)		70			mV
Far-end Eye Width at $10^{-6}$ probability (EW6)		0.20			UI
Far-end Eye Height at $10^{-6}$ probability (EH6)		30			mV
Near-end Eye Linearity		0.85			-

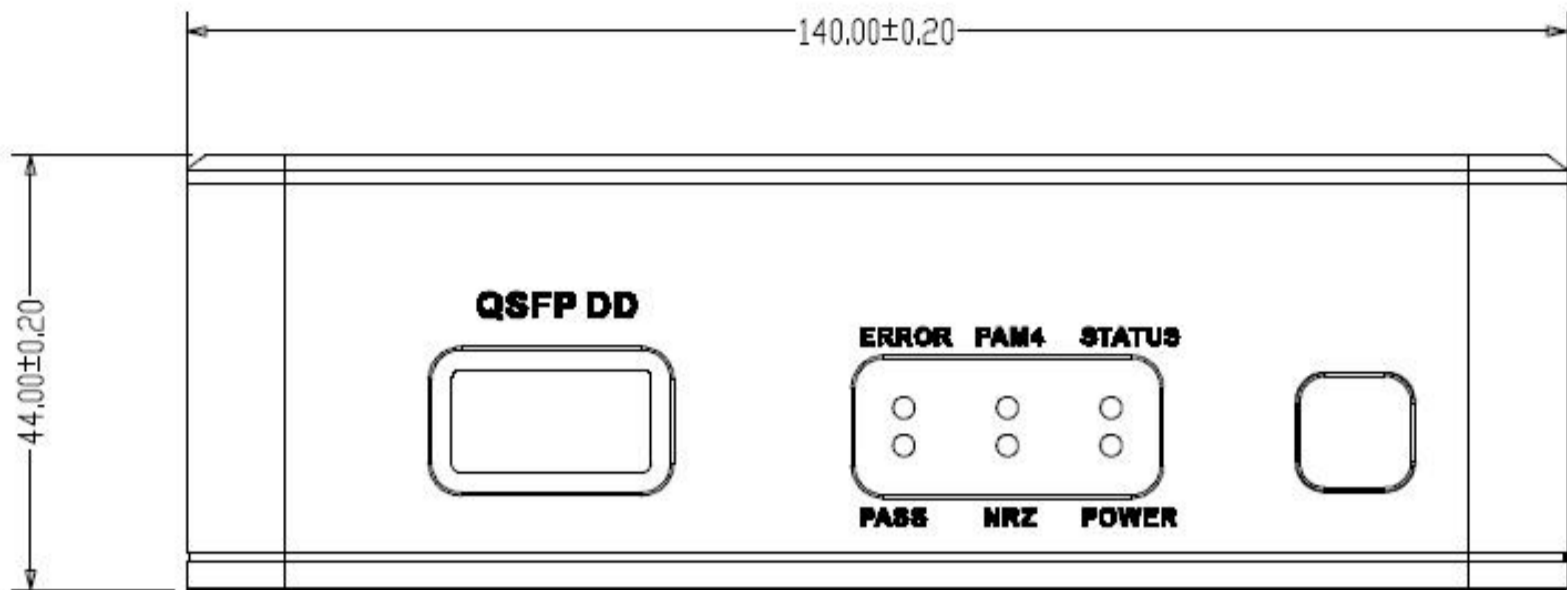
Main Frame	
QSFP-DD ports	QSFP or QSFP-DD
Transmission Rate	25.78125Gbps NRZ 26.5625GBd PAM4
Pattern Generator	NRZ (PRBS7, PRBS9, PRBS21, PRBS23, PRBS31) PAM4 (PRBSQ7, PRBSQ9, PRBSQ21, PRBSQ23, PRBSQ31)
Module Power measured	
Supply Current	0~4000mA
Accuracy	$\pm 15\%$

### Mechanical Dimensions

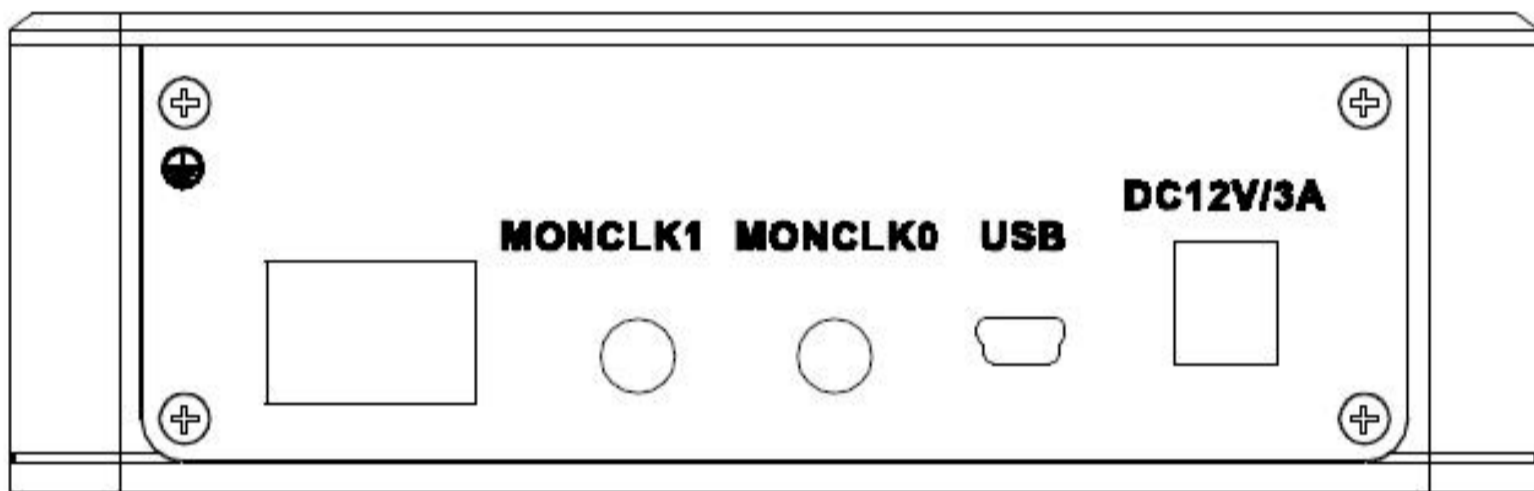


### Mechanical Specifications

## 1. QSFP-DD Ports and Work Status



## 2. Mini USB and DC Power



## Regulatory Compliance

Feature	Standard
Environmental protection	2011/65/EU
CE EMC	EN55032:2015 EN55035:2017 EN61000-3-2:2014 EN61000-3-3:2013
FCC	FCC Part 15, Subpart B; ANSI C63.4-2014

## References

1. QSFP28 / QSFP-DD MSA
2. Ethernet 100GBASE-SR4 IEEE 802.3bm and 200GBASE-SR4 IEEE 802.3cd

### **⚠ CAUTION:**

Use of controls or adjustment or performance of procedures other than those specified herein may result in hazardous radiation exposure.

### Ordering Information

Part Number	Product Description
400G QSFP-DD CHECKER	400G QSFP-DD Checker, 100G/200G/400G NRZ and PAM4 BERT

### Important Notice

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### Revision History

Revision	Date	Description
V0	Sep-24-2019	Advance Release.