# QTG-X110

## 11 Gbps Broadband QSFP+ Clock/Trigger Recovery System


## Overview

The OPTELLENT QTG-X110 is a compact, cost-effective clock/trigger recovery system for testing QSFP+ components and systems in R&D and manufacturing environments. The QTG-X110 enables the recovery of a low frequency trigger from any wavelength out of the composite optical output of QSFP+ modules. This enables viewing the QSFP+ data signals on an oscilloscope for eye-diagram analysis and eye-mask testing. It operates between 9.5 and 11 Gb/s and submultiples of this frequency range. The equipment has LEDs to indicate the chosen wavelength and the clock lock status.

## Key Features

- **Broadband operation**
- **Built-in wavelength demultiplexer/switch**
- **Optical data output of chosen wavelength**
- **Ideal for eye-diagram/eye-mask analysis**

## Applications

- Testing of optical transceivers, transponders, linecards, and subsystems
- Testing of opto-electronic components and devices (TOSA, ROSA, lasers, etc…)
- Testing of Gb/s ICs, electronic modules, subsystems, and systems
- Serial high-speed backplane and board design

## Protocol Applications

| | |
|---|---|
| **SONET / SDH** | |
| 0C-192: STS-192 / STM-64 | 9.95328 Gbps |
| G.709 | 10.709 Gbps |
| **ETHERNET** | |
| 10GBASE-T | 10 Gbps |
| 10GBASE-R (LAN/PHY) | 10.3125 Gbps |
| 10GBASE-R OTU2 FEC | 11.096 Gbps |
| **FIBRE CHANNEL** | |
| 10 x FC (10GFC) | 10.519 Gbps |
| 10GFC with FEC | 11.317 Gbps |
| **INFINIBAND & HDMI** | |
| 4 x Infiniband | 10 Gbps |
| HDMI 1.3 | 10.2 Gbps |


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## Specifications

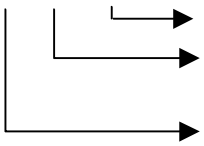
| Parameter | Min | Typ | Max | Units |
|---|---|---|---|---|
| Data rates | 9.5 | | 11 | Gb/s |
| Optical input wavelength | 1270 | | 1335 | nm |
| Optical input power | - 4 | | | dBm |
| Trigger Output Amplitude | | 300 | | $mV_{p-p}$ |
| Trigger frequency | Clock frequency/2 | | | |
| Electrical terminations/connectors | AC-coupled 50Ω SMA Female | | | |
| Optical input connector | LC | | | |
| Optical output connector | FC/PC | | | |

## System & General Specifications

| PARAMETER | MIN | MAX | UNIT |
|---|---|---|---|
| Chassis Electrical Voltage | 100 | 240 | VAC |
| Current Drain at Normal Voltage | | 2.5 | A |
| Operating Temperature Range | 5 | 45 | °C |
| Storage Temperature Range | -40 | 70 | °C |
| Standard Warranty | 2 years | | |

## Ordering information

QTGX110-X-X-X



**X**: other Custom Options

**LC**: LC output optical connector
**FC**: FC/PC output optical connector

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