Brochure

STANDARD SELECTION OF
OPTICAL TRANSCEIVERS

Worbis

ORBIS
HONEST TECHNOLOGY™

CONTENTS

400G QSFP56-DD TRANSCEIVER

The QSFP56-DD Optical Transceiver modules enable high 400GbE port densities due to their compact size and low power consumption. The QSFP-DD transceiver modules can support up to 8 electrical lanes on the host interface, which is double number of lanes supported by QSFP28 or QSFP+ transceiver modules. The QSFP-DD port is mechanically and electrically compatible with QSFP28 and QSFP+.

The electrical interface of QSFP56-DD is compliant with the 400GAUI-8 specified in the IEEE 802.3bs-2017 standard. 400GAUI-8 specifies the use of eight differential electrical lanes operating at 26.56Gbaud PAM4 per lane. The bit rate per lane is 53.125 Gbit/s, resulting in an aggregate data rate of 425Gbit/s that matches the optical line interface. An internal gear box, IC, converts between the eight lanes of the host interface and four lanes of the line interface.

FEATURES

- Hot Z-Pluggable to 76-Pad QSFP-DD electrical connector
- Up to 400Gb/s data rate
- 2km link on single mode fiber
- Single 3.3V power supply
- Low power consumption: 12W max
- Operating case temperature standard: 0°C...+70°C
- Compact size : 18.4 X 92.9 X 8.5 mm excluding pull tab
- I2C management interface

COMPLIANCE

- 53.125G PAM4 X 4 CWDM Wav. Optical Interface
- 26.562G PAM4 X 8 Lane 400GAUI-8 Electrical Interface
- QSFP-DD MSA Hardware Specification
- SNIA SFF-8636 Rev. 2.5
- OIF CEI-56G-VSR-PAM4
- IEEE 802.3cd and 802.3bs
- RoHS6

APPLICATIONS

- 400G Ethernet
- DATA Center Link

Ordering information

PN	Data Rate	Laser	Receiver	Distance	Interface	Temp.
FPQDDDR4-05D	400G	4 X EML	PIN	500m	MPO-12	0...+70
FPQDDFR4-2D	400G	4 X CWDM	PIN	2km	LC	0...+70
FPQDDLR4-10D	400G	4 X CWDM	PIN	10km	LC	0...+70

100G QSFP28 TRANSCEIVER

The QSFP28 transceiver modules are designed for use with 100 Gigabit Ethernet and 4X28G OTN interfaces up to 10 km in single mode fiber. Digital diagnostic functions are available via the I2C interface, as specified by the QSFP28 MSA. 100GBASE-ER4/ZR4 are available under Host FEC Function.

FEATURES

- Hot-pluggable QSFP28 form factor
- Supports 103.1Gb/s and 112Gb/s aggregate bit rate
- 4x25Gb/s DML LAN-WDM transmitter
- 4x25G retimed electrical interface
- Maximum link length of 10km on single mode fiber
- Duplex LC receptacles
- Single 3.3V power supply
- Power dissipation < 3.5W
- Operating case temperature standard: 0°C...+70°C
- I2C management interface


3008930

COMPLIANCE

- QSFP28 MSA
- IEEE 802.3ba 100GBASE-LR4
- OTU4 specified in ITU-T G.959.1 recommendation
- RoHS10

APPLICATIONS

- 100GBASE-SR4/LR4/ER4/ZR4
- 100G Ethernet and OTU4 Telecom
- Infiniband SDR,QDR,EDR

Ordering information

PN	Data Rate	Laser	Receiver	Distance	Interface	Temp.	Available from Worbis
FPQ28SR4-01D	100G	VCSEL	PIN	500m	MPO-12	0...+70	
FPQ28CLR4-2D	100G	CWDM	PIN	2km	LC	0...+70	
FPQ28PSM4-10D	100G	DML	PIN	10km	MPO-12	0...+70	
FPQ28LR4-10D	100G	DML	PIN	10km	LC	0...+70	
FPQ28DLR4-10D	100G/112G	DML	PIN	10km	LC	0...+70	3008930
FPQ28ER4L-40D	100G	EML	APD	40km	LC	0...+70	
FPQ28ZR4-80D	100G	EML	SOA+PIN	80km	LC	0...+70	
FPQ28AOC-XXM	100G	VCSEL	PIN	100m	AOC	0...+70	
FPQ28CU-XM	100G	Copper	Copper	5m	DAC	0...+70	
FPQ28T4BAOC-XXM	100G/4X25G	VCSEL	PIN	100m	AOC Break	0...+70	
FPQ28T4BCU-XM	100G/4X25G	Copper	Copper	5m	DAC Break	0...+70	

40G QSFP+ TRANSCEIVER

The QSFP+ transceiver modules are designed for use in 40 Gigabit Ethernet Links over multimode and single mode fiber. Digital diagnostics functions are available via an I2C interface.

FEATURES

- Hot-pluggable QSFP+ form factor
- Uncooled 4x10Gb/s CWDM transmitter
- Supports 39.8 Gb/s to 41.3 Gb/s aggregate bit rates
- XLPPI electrical interface
- Maximum link length of 40km on single mode fiber
- 18.5 dB link insertion loss
- Single 3.3V power supply
- Power dissipation < 3.5W
- Operating case temperature standard: 0°C...+70°C
- Built-in digital diagnostic functions, including Tx/Rx power monitoring

COMPLIANCE

- QSFP+ MSA
- IEEE-802.3ba/802.3bm, 40GBASE-SR4/LR4/ER4
- RoHS6

APPLICATIONS

- 40GBASE-SR4/LR4/ER4 Ethernet
- Infiniband interconnects
- Data center and enterprise networks

Ordering information

PN	Data Rate	Laser	Receiver	Distance	Interface	Temp.	Available from Worbis
FPQFP8540GP-01D	40G	VCSEL	PIN	100m	MPO-12	0...+70	
FPQFP8540GP-03D	40G	VCSEL	PIN	300m	MPO-12	0...+70	
FPQFP3140GL-2D	40G	CWDM	PIN	2km	LC	0...+70	
FPQFP3140GP-10D	40G	DML	PIN	10km	MPO-12	0...+70	
FPQFP3140GL-10D	40G	CWDM	PIN	10km	LC	0...+70	
FPQFP3140GL-40D	40G	CWDM	APD	40km	LC	0...+70	3008929
FPQFPAOC-XXM	40G	VCSEL	PIN	100m	AOC	0...+70	
FPQFPCU-XM	40G	Copper	Copper	5m	DAC	0...+70	
FPQFPT4BAOC-XXM	40G/4X10G	VCSEL	PIN	100m	AOC Break	0...+70	
FPQFPT4BCU-XM	40G/4X10G	Copper	Copper	5m	DAC Break	0...+70	

25G SFP28 TRANSCEIVER

The SFP28 transceiver modules are designed to transmit and receive 25G serial optical data over single mode optical fiber up to 15km. Digital diagnostics functions are available via a 2-wire serial I2C interface.

FEATURES

- SFP28 MSA Duplex LC connector
- VSCEL laser and PIN receiver
- 1310nm DFB transmitter, PIN photodiode and TIA
- OM3 up to 70m and OM4 up to 100m
- SM 9/125um up to 10km
- Single 3.3V power supply
- Power dissipation < 1.2 W
- Operating case temperature standard:
  -40°C...+85°C

COMPLIANCE

- IEEE 802.3cc standard
- SFF-8432
- SFF-8431
- SFF-8472

APPLICATIONS

- 25GBase-SR
- 25GBase-LR
- CPRI option 10/eCPRI

Ordering information

PN	Data Rate	Laser	Receiver	Distance	Interface	Temp.
FPSP2825GSR-01D	25.75G	VCSEL	PIN	100m	LC	0...+70
FPSP2825GLR-10DI	25.75G	DFB	PIN	10km	LC	-40...+85
FPCP2825GXX-10DE	25.75G	CWDM	PIN	10km	LC	-20...+75
FPCP2825GXX-15DE	25.75G	CWDM	APD	15km	LC	-20...+75
FPDP2825GXX-10DI	25.75G	DWDM	PIN	10km	LC	-40...+85
FPDP2825GXX-20DE	25.75G	CWDM	APD	20km	LC	-20...+75
FPMP28AOC-XXM	25.75G	VCSEL	PIN	100m	AOC	0...+70
FP28SFPCU-XM	25.75G	Copper	Copper	5m	DAC	0...+70

*XX For CWDM cover 1271/1291/1311/1331/1351/1371;
*XX For DWDM cover 100GHZ ITU-Grid C20-C61

25G SFP28 BIDI TRANSCEIVER

The SFP28 BIDI transceiver modules are designed to transmit and receive 25G serial optical data over bi-directional single fiber up to 40km. Digital diagnostics functions are available via a 2-wire serial I2C interface.

FEATURES

- SFP28 MSA Duplex LC connector
- SM 9/125um up to 40km
- Power dissipation < 1.2 W
- Single 3.3V power supply
- Operating case temperature standard: -20°C...+85°C

VARIATIONS

- A Side : Tx1270nm DFB transmitter, Rx1330nm PIN photodiode for 10km
- B Side : Tx1330nm DFB transmitter, Rx1270nm PIN photodiode for 10km
- A Side : Tx1270nm DFB transmitter, Rx1310nm PIN photodiode for 30km
- B Side : Tx1310nm DFB transmitter, Rx1270nm PIN photodiode for 30km

COMPLIANCE

- IEEE 802.3cc
- SFF-8402
- SFF-8432
- CEI-28G-VSR
- SFF-8431
- SFF-8472
- RoHS6

APPLICATIONS

- 25GBase-LR
- CPRI option 10/eCPRI

Ordering information

PN	Data Rate	Laser	Receiver	Distance	Interface	Temp.
FPBP2825GAT-10DI	25.75G	1270 DFB	1330 PIN	100m	LC	-20...+85
FPBP2825GBT-10DI	25.75G	1330 DFB	1270 PIN	10km	LC	-20...+85
FPBP2825GAT-30DI	25.75G	1270 DFB	1310 APD	30km	LC	-20...+85
FPBP2825GBT-30DI	25.75G	1310 DFB	1270 APD	30km	LC	-20...+85

10G SFP+ TRANSCEIVER

The SFP+ transceiver modules are designed for duplex data communication as 8G fiber channel according to the IEEE-802.3ae 10GBASE-SR/LR/ER/ZR up to 80km in single mode fiber. Digital diagnostics functions are available via a 2-wire serial I2C interface.

FEATURES

- VCSEL/DML/EML/CWDM/DWDM transmitter, PIN and APD optional
- SM 9/125um up to 80km
- Duplex LC connector
- Power dissipation < 1W
- Single 3.3V power supply
- All-metal housing for superior EMI performance
- Operating case temperature standard: 0°C...+70°C
- Built-in digital diagnostic monitoring functions

3008917

3008928

3008920

COMPLIANCE

- SFP+MSA
- SFF-8431
- SFF-8472
- ROHS6

APPLICATIONS

- 10G Base-SR/LR/ER/ZR
- 10G Ethernet
- 8G fiber channel

Ordering information

PN	Data Rate	Laser	Receiver	Distance	Interface	Temp.	Available from Worbis
FPCOPT-RJA-10G	10G	Copper	Copper	30m	RJ45	0...+70	
FPMPP8510GL-03D	10.3G	VCSEL	PIN	100m	LC	0...+70	
FPSPP3110GL-2D	10.3G	FP	PIN	2km	LC	0...+70	
FPSPP3110GL-10D	10.3G	DML	PIN	10km	LC	0...+70	3008917
FPSPP5510GL-40D	10.3G	EML	PIN	40km	LC	0...+70	3008928
FPSPP5510GL-80D	10.3G	EML	APD	80km	LC	0...+70	3008924
FPCPPXX10GL-40D	10.3G	EML	PIN	40km	LC	0...+70	3008920
FPCPPXX10GL-80D	10.3G	EML	APD	80km	LC	0...+70	
FPDPPXX10GL-40D	10.3G	EML	PIN	40km	LC	0...+70	
FPDPPXX10GL-80D	10.3G	EML	APD	80km	LC	0...+70	
FP-10GSFPOC-XXM	10.3G	VCSEL	PIN	300m	AOC	0...+70	
FP-10GSFPCU-XXM	10.3G	Copper	Copper	7m	DAC	0...+70	

*XX For CWDM cover 1471/1491/1511/1531/1551/1571/1591/1611;
*XX For DWDM cover 100GHZ ITU-Grid C20-C61

10G SFP+ BIDI TRANSCEIVER

The SFP+ BIDI transceiver modules are designed for duplex data communication as 8G fiber channel according to the IEEE-802.3ae 10G Base-LR/LW. It has an SFP+ 20-PIN connector that allows the hot plug capability. Digital diagnostic monitor functions are available via an I2C interface. This module is designed to operate with DFB Laser at wave lenghts 1270nm and 1330nm and with EML Laser at wave lenghts 1490nm and 1550nm. There are PIN and APD receiver options for different distance applications.

FEATURES

- 1490nm EML transmitter, APD photodiode and TIA
- Simplex LC connector bi-directional SFP+ optical transceiver
- SM 9/125um up to 80km
- Power dissipation < 1.65W
- Single 3.3V power supply
- All-metal housing for superior EMI performance
- Operating case temperature standard: 0°C...+70°C
- Built-in digital diagnostic monitoring functions


3008846


3008845


3009118


3008918

COMPLIANCE

- SFP+MSA
- SFF-8431
- SFF-8472
- IEEE 802.3ae 10GBASE-LR/LW
- ROHS6

APPLICATIONS

- 10G Ethernet
- 8G fiber channel
- 10G fiber channel

Ordering information

PN	Data Rate	Laser	Receiver	Distance	Interface	Temp.	Available from Worbis
FPBPP7310GL-10D	10.3G	1270 DFB	1330 PIN	10km	LC	0...+70	3008846
FPBPP3710GL-10D	10.3G	1330 DFB	1270 PIN	10km	LC	0...+70	3008845
FPBPP7310GL-40D	10.3G	1270 DFB	1330 PIN	10km	LC	0...+70	3009118
FPBPP3710GL-40D	10.3G	1330 DFB	1270 PIN	40km	LC	0...+70	3008918
FPBPP7310GL-60D	10.3G	1270 DFB	1330 APD	80km	LC	0...+70	
FPBPP3710GL-60D	10.3G	1330 DFB	1270 APD	40km	LC	0...+70	
FPBPP4510GL-80D	10.3G	1490 EML	1550 APD	80km	LC	0...+70	
FPBPP5410GL-80D	10.3G	1550 EML	1490 APD	80km	LC	0...+70	

10G XFP TRANSCEIVER

The XFP transceiver is a hot pluggable 3.3V and 5V small form-factor transceiver module designed expressly for high-speed communication applications that require rates up to 11.3Gbit/s. The module supports data link up to 80km in 9/125um single mode fiber. The optical output can be disabled by a LVTTL logic high-level input of Tx Disable. Loss of signal (LOS) output is provided to indicate the loss of an input optical signal of receiver or the link status.

FEATURES

- 30 PIN-hot pluggable
- Data rate from 9.95 Gbps to 11.3Gbps
- 1310nm DFB transmitter, PIN photodiode and TIA
- SM 9/125um up to 10km
- Duplex LC connector
- Power dissipation < 1.5W
- Single 3.3V power supply
- All-metal housing for superior EMI performance
- Operating case temperature standard: 0°C...+70°C
- Protocol-independent, XFI interface
- Built-in digital diagnostic monitoring functions

3008919

3008925

COMPLIANCE

- INF-8077-XFP MSA
- RoHS6

APPLICATIONS

- SONET OC-192 SR-1&SDH STM I-64.1
- 10GBASE-LR/LW 10Gigabit Ethernet
- 10G fiber channel

Ordering information

PN	Data Rate	Laser	Receiver	Distance	Interface	Temp.	Available from Worbis
FPMXP8510GL-03D	10.3G	VCSEL	PIN	100m	LC	0...+70	
FPSXP3110GL-10D	10.3G	DML	PIN	10km	LC	0...+70	3008919
FPSXP5510GL-40D	10.3G	EML	PIN	40km	LC	0...+70	3008925
FPSXP5510GL-80D	10.3G	EML	APD	80km	LC	0...+70	
FPCXPXX10GL-40D	10.3G	EML	PIN	40km	LC	0...+70	
FPCXPXX10GL-80D	10.3G	EML	APD	80km	LC	0...+70	
FPDXPXX10GL-40D	10.3G	EML	PIN	40km	LC	0...+70	
FPDXPXX10GL-80D	10.3G	EML	APD	80km	LC	0...+70	

*XX For CWDM cover 1471/1491/1511/1531/1551/1571/1591/1611;
*XX For DWDM cover 100GHZ ITU-Grid C20-C61

10G XFP BIDI TRANSCEIVER

The XFP BIDI transceiver is hot a pluggable 3.3V and 5V small form-factor transceiver module. It is designed expressly for high-speed communication applications that require rates up to 11.3Gbit/s. The module supports data link up to 80km in 9/125um single mode fiber. The optical output can be disabled by a LVTTL logic high-level input of Tx Disable. Loss of signal (LOS) output is provided to indicate the loss of an input optical signal of receiver or the link status.

FEATURES

- 30 PIN-hot pluggable
- Data rate from 9.95 Gbps to 11.3Gbps
- 1310nm DFB transmitter, PIN photodiode and TIA
- SM 9/125um up to 10km
- Duplex LC connector
- Power dissipation < 1.5W
- Single 3.3V power supply
- All-metal housing for superior EMI performance
- Operating case temperature standard: 0°C...+70°C
- Protocol-independent, XFI interface
- Built-in digital diagnostic monitoring functions

COMPLIANCE

- INF-8077-XFP MSA
- RoHS6

APPLICATIONS

- SONET OC-192 SR-1&SDH STM I-64.1
- 10GBASE-LR/LW 10Gigabit Ethernet
- 10G fiber channel


3008921


3008927


3008923


3008922

Ordering information

PN	Data Rate	Laser	Receiver	Distance	Interface	Temp.	Available from Worbis
FPBXP7310GL-10D	10.3G	1270 DFB	1330 PIN	10km	LC	0...+70	3008921
FPBXP3710GL-10D	10.3G	1330 DFB	1270 PIN	10km	LC	0...+70	3008927
FPBXP7310GL-40D	10.3G	1270 DFB	1330 PIN	40km	LC	0...+70	3008923
FPBXP3710GL-40D	10.3G	1330 DFB	1270 PIN	40km	LC	0...+70	3008922
FPBXP7310GL-60D	10.3G	1270 DFB	1330 APD	60km	LC	0...+70	
FPBXP3710GL-60D	10.3G	1330 DFB	1270 APD	60km	LC	0...+70	
FPBXP4510GL-80D	10.3G	1490 EML	1550 APD	80km	LC	0...+70	
FPBXP5410GL-80D	10.3G	1550 EML	1490 APD	80km	LC	0...+70	

1.25G SFP TRANSCEIVER

The SFP transceiver is a small form-factor pluggable module for bi-directional serial optical data communications such as Gigabit Ethernet 1000BASE-LX and fiber channel 1x SM-LC-L FC-PI. It has an SFP 20-pin connector that allows hot plug capability. This module is designed for single mode fiber and it operates at a nominal wavelength of 1310 nm.

The transmitter section uses a multiple quantum well laser and is a class 1 laser compliant. The receiver section uses an integrated InGaAs detector preamplifier (IDP) mounted in an optical header and a limiting post-amplifier IC.

FEATURES

- Hot pluggable
- Operating data rate up to 1.25/1.063Gbps
- Distance up to 120km
- Duplex LC connector interface
- Single 3.3V power supply and TTL logic interface
- Operating case temperature standard: 0°C...+70°C
- Also industrial versions for -40°C...+85°C available from our sales

3008912

3008913

COMPLIANCE

- Laser IEC-60825
- MSA+SFP
- SFF-8472

APPLICATIONS

- Gigabit Ethernet switches and routers
- Fiber channel switch infrastructure
- XDSL applications
- Metro edge switching

Ordering information

PN	Data Rate	Laser	Receiver	Distance	Interface	Temp.	Available from Worbis
FPMP851GL-05D	1.25G	VCSEL	PIN	550m	LC	0...+70	3008912
FPSP311GL-2D	1.25G	FP	PIN	2km	LC	0...+70	
FPSP311GL-10D	1.25G	FP	PIN	10km	LC	0...+70	
FPSP311GL-40D	1.25G	DFB	PIN	40km	LC	0...+70	
FPSP551GL-80D	1.25G	DFB	PIN	40km	LC	0...+70	
FPSP551GL-120D	1.25G	DFB	Super TIA	60km	LC	0...+70	
FPCPXX1GL-40D	1.25G	CWDM DFB	PIN	60km	LC	0...+70	
FPCPXX1GL-80D	1.25G	CWDM DFB	PIN	80km	LC	0...+70	
FPCPXX1GL-120D	1.25G	CWDM DFB	Super TIA	80km	LC	0...+70	
FPCOPT-RJA	1.25G	Copper	Copper	100m	RJ45	0...+70	3008913

OUR DATA CENTER SOLUTIONS

Regardless of the size of the data center, we help you ensure agile installation and stable function of the data center. We are more than just a supplier: Our experts provide professional support for wise anticipation and evaluation of product characteristics and upgradability.

READ MORE IN OUR PRODUCT CATALOG

- Telecommunication cables
- Cable management systems
- Fiber ducts
- Racks and accessories
- Soundproof server cabinets
- Cooling solutions
- Power distribution solutions
- Raised access floors
- Caging systems
- Cold aisle containment solutions
- Installation and design services

ORDER FROM OUR WEBSHOP

Worbis.shop is Orbis Oy's webshop, where you can quickly and easily buy components needed to build telecommunication networks. The fast availability of products ensures that your project will not be delayed, and you get the products when you need them – usually in a couple of days.

In our webshop, you will find the most commonly used components for telecommunication networks. Our product range is constantly evolving and expanding.

Orbis's product range also includes a wide range of products not in webshop, such as customized fiber optic cables and assemblies manufactured in our own production. If you did not find the product you are looking for in the webshop or you are unsure about choosing the right product, contact our customer service!

Our webshop is open every day round the clock at www.worbis.shop

When you concentrate your purchases to our webshop, you get access to Worbis Club benefits. Club benefits are linked to the amount of your purchases made from webshop and purchases are reviewed annually.
Read more on Worbis Club benefits

CONTACT

Heikki Saukko
Sales Director

heikki.saukko@orbis.eu
+358 400 502 217

***Orbis Oy**, founded in 1949, is a Finnish supplier of data transfer products.*
We specialize in RF technology for wireless networks as well as fiber optic technology.
Our own production complements our imported range and enables customized solutions
(e.g. cable assemblies) along with fast and flexible deliveries.

Vanha Kaarelantie 9, FI-01610 Vantaa, Finland

P.O. Box 15, FI-00421 Helsinki, Finland

+358 204 788 600

customerservice@orbis.eu

www.orbis.eu

www.worbis.shop