V23870-A1317-K500

Optiport™-iSFP BiDi®-TRX
Intelligent SFP Pluggable Bi-Directional Transceiver
155Mbit/s 1550nm Tx / 1310nm Rx LC™ Connector

Preliminary Data

The Optiport™-iSFP BiDi®-TRX is an Intelligent Small Form Factor Pluggable (SFP) transceiver designed for full-duplex communication over a single fiber. The single fiber concept saves overall system costs by eliminating one fiber, allowing for doubling of capacity without installing new fibers, and simplifying fiber management.

Features

- Small Form-factor Pluggable (SFP) MSA compliant transceiver[1)]
- Fully SFF-8472 MSA compliant[1)]
- Incorporating Intelligent – Digital Diagnostic Monitoring Interface
  - Internal calibration implementation
- Advanced release mechanisms
  - Easy access, even in belly to belly applications
  - Wire handle release for simplicity
- PCI height compliant
- Excellent EMI performance
- RJ-45 style LC™ connector system
- Single power supply (3.3 V)
- Low power consumption
- UL-94 V-0 certified
- ESD Class 1 per MIL-STD 883D Method 3015.7
- Compliant with FCC (Class B) and EN 55022
- For distances of up to 10 km
- Class 1 FDA and IEC laser safety compliant
- Recommendation: Infineon Cage one-piece design V23838-S5-N1 for press fit and/or solderable
- SFP evaluation kit V23848-S5-V4 available upon request

1) Current MSA documentation can be found at www.infineon.com/fiberoptics.

For ordering information see next page.

Ordering Information

Part Number	Temperature Range
V23870-A1317-K500	0°C to +70°C Ambeint

Pin Configuration

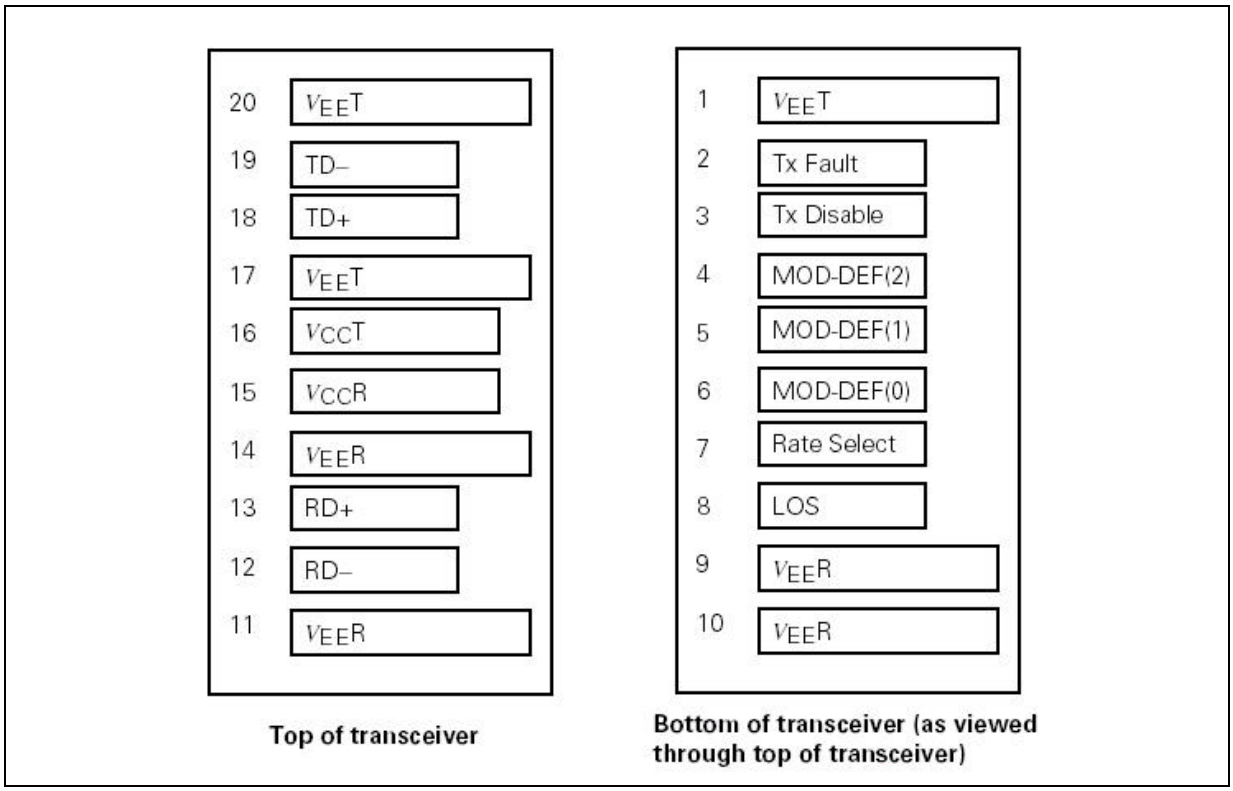

Figure 1 iSFP Transceiver Electrical Pad Layout

Pin Description

Pin No.	Symbol	Level/ Logic	Function	Description
1	$V_{EE}T$	N/A	Transmitter Ground	
2	Tx Fault	LVTTL	Transmitter Fault Indication	Logical 1 indicates that laser shut-down is active. Should be pulled up on host board to V_{CC} by 4.7-9.8kΩ.

Pin Description (cont'd)

Pin No.	Symbol	Level/ Logic	Function	Description
3	Tx Disable	LVTTL	Transmitter Disable	A low signal switches the laser on. A high signal switches the laser off. If not connected the Tx is disabled.
4	MOD-DEF(2)	LVTTL	Module Definition 2	MOD-DEF(2) is the data line of two wire serial interface for serial ID.
5	MOD-DEF(1)	LVTTL	Module Definition 1	MOD-DEF(1) is the clock line of two wire serial interface for serial ID.
6	MOD-DEF(0)	N/A	Module Definition 0	MOD-DEF(0) is grounded by the module to indicate that the module is present.
7	Rate Select	N/A	Not connected	
8	LOS	LVTTL	Loss Of Signal	Logic 0 output represents normal operation - light is present at receiver input. Logic 1 output indicates a loss of signal.
9	V_{EE}R	N/A	Receiver Ground	
10	V_{EE}R	N/A	Receiver Ground	
11	V_{EE}R	N/A	Receiver Ground	
12	RD–	LVPECL	Inv. Received Data Out	AC Coupled inside the transceiver.
13	RD+	LVPECL	Received Data Out	
14	V_{EE}R	N/A	Receiver Ground	
15	V_{CC}R	N/A	Receiver Power	
16	V_{CC}T	N/A	Transmitter Power	
17	V_{EE}T	N/A	Transmitter Ground	
18	TD+	LVPECL	Transmit Data In	AC Coupled inside the transceiver and 100 Ω differential terminated.
19	TD–	LVPECL	Inv. Transmit Data In	
20	V_{EE}T	N/A	Transmitter Ground	

Description

The Infineon single mode transceiver – part of Infineon iSFP family – is based on the Physical Medium Depend (PMD) sublayer and baseband medium, type 100 Base-BX as specified in IEEE Std 802.3ah for 155 Mbit/s.

The appropriate fiber optic cable is 9 µm single mode fiber with LC™ connector.

Operating Range

Fiber Type	Limit Values			Unit
	min.	typ.	max.	
at 155 Mbit/s				
9 micron SMF	2	2,000	10,000	meters

The Infineon iSFP single mode transceiver is a single unit comprised of a transmitter, a receiver, and an LC™ receptacle.

This transceiver supports the LC™ connectorization concept. It is compatible with RJ-45 style backpanels for high end DataCom and Telecom applications while providing the advantages of fiber optic technology.

This transceiver operates at 155 Mbit/s from a single power supply (+3.3 V). The full differential data inputs and outputs are LVPECL compatible.

The module is designed for the following applications:

- Access Networks, e.g. media converters for Fiber-In-The-Loop (FITL), Point-to-Point (P2P), and Passive Optical Networks (PON)
- Inter-system communication between Servers, Switches, Routers, Add-Drop-Multiplexers, Cross Connects, etc. in Central Offices, Data Storage Networks, High Speed Server Farms, etc.
- Digital Video and Closed Circuit Television (CCTV) applications for Transport, Traffic, and Security

Functional Description of iSFP Transceiver

This transceiver is designed to transmit serial data via single mode cable.

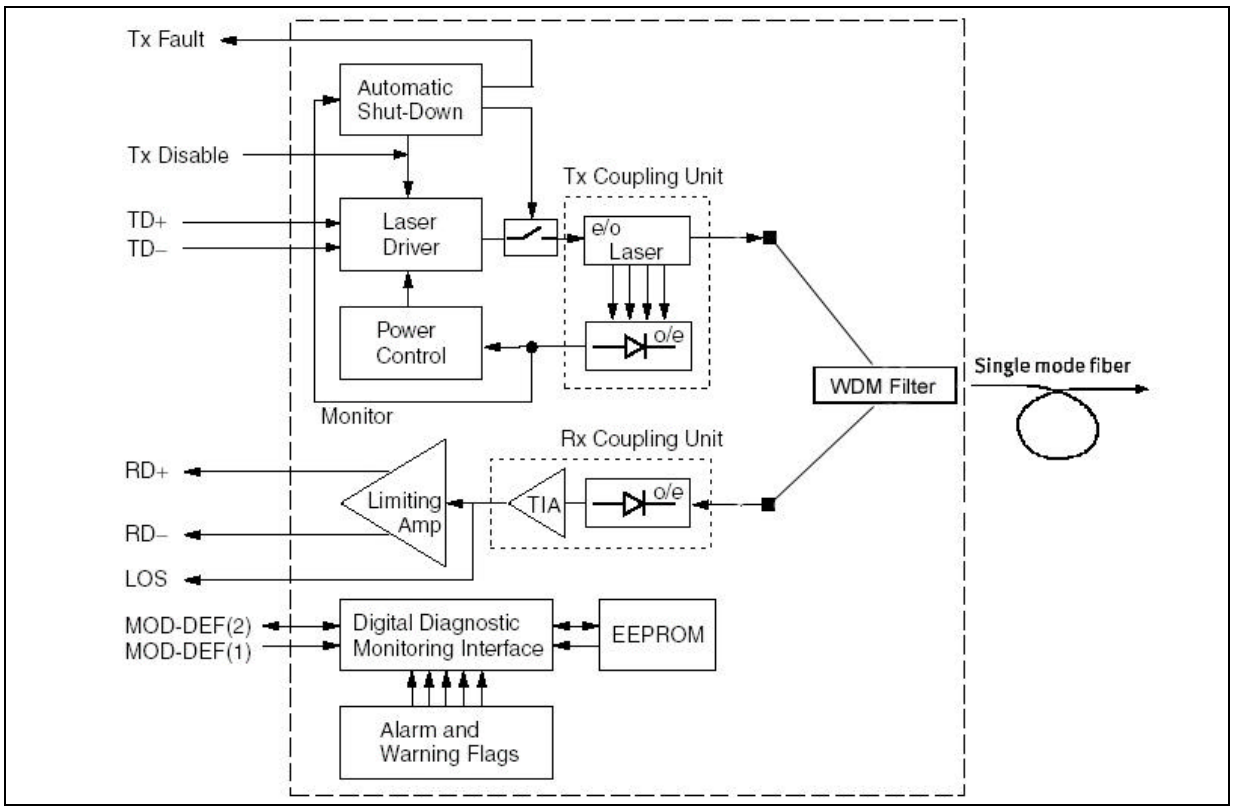

Figure 2 Functional Diagram

The receiver component converts the optical serial data into LVPECL compatible electrical data (RD+ and RD–). The Loss Of Signal (LOS) shows whether an optical signal is present.

The transmitter converts LVPECL compatible electrical serial data (TD+ and TD–) into optical serial data. Data lines are differentially 100 Ω terminated.

The transmitter contains a laser driver circuit that drives the modulation and bias current of the laser diode. The currents are controlled by a power control circuit to guarantee constant output power of the laser over temperature and aging. The power control uses the output of the monitor PIN diode (mechanically built into the laser coupling unit) as a controlling signal, to prevent the laser power from exceeding the operating limits.

Single fault condition is ensured by means of an integrated automatic shutdown circuit that disables the laser when it detects laser fault to guarantee the laser Eye Safety.

The transceiver contains a supervisory circuit to control the power supply. This circuit makes an internal reset signal whenever the supply voltage drops below the reset threshold. It keeps the reset signal active for at least 140 milliseconds after the voltage has risen above the reset threshold. During this time the laser is inactive.

A low signal on TxDis enables transmitter. If TxDis is high or not connected the transmitter is disabled.

An enhanced Digital Diagnostic Monitoring Interface (Intelligent) has been incorporated into the Infineon Small Form-factor Pluggable (SFP) transceiver. This allows real time access to transceiver operating parameters, based on the SFF-8472.

This transceiver features Internal Calibration. Measurements are calibrated over operating temperature and voltage and must be interpreted as defined in SFF-8472.

The transceiver generates this diagnostic data by digitization of internal analog signals monitored by a new diagnostic Integrated Circuit (IC).

This diagnostic IC has inbuilt sensors to include alarm and warning thresholds. These threshold values are set during device manufacture and therefore allow the user to determine when a particular value is outside of its operating range.

Alarm and Warning Flags are given. Alarm Flags indicate conditions likely to be associated with an inoperational link and cause for immediate action. Warning Flags indicate conditions outside the normally guaranteed bounds but not necessarily causes of immediate link failures.

These enhanced features are in addition to the existing SFP features provided by the manufacturer i.e. serial number and other vendor specific data.

The serial ID interface defines a 256 byte memory map in EEPROM, accessible over a 2 wire, serial interface at the 8 bit address 1010000X (A0h).

The Digital Diagnostic Monitoring Interface makes use of the 8 bit address 1010001X (A2h), so the originally defined serial ID memory map remains unchanged and is therefore backward compatible.

The following parameters are accessible via the MOD-DEF interface:
Tx Optical Power, Rx Optical Power, Bias Current, Power Supply Voltage and Transceiver Temperature.

Regulatory Compliance

Feature	Standard	Comments
ESD: Electrostatic Discharge to the Electrical Pins	EIA/JESD22-A114-B (MIL-STD 883D method 3015.7)	Class 1C
Immunity: Against Electrostatic Discharge (ESD) to the Duplex LC Receptacle	EN 61000-4-2 IEC 61000-4-2	Discharges ranging from ±2 kV to ±15kV on the receptacle cause no damage to transceiver (under recommended conditions).
Immunity: Against Radio Frequency Electromagnetic Field	EN 61000-4-3 IEC 61000-4-3	With a field strength of 3 V/m, noise frequency ranges from 10MHz to 2 GHz. No effect on transceiver performance between the specification limits.
Emission: Electromagnetic Interference (EMI)	FCC 47 CFR Part 15, Class B EN 55022 Class B CISPR 22	Noise frequency range: 30MHz to 18 GHz

Technical Data

Absolute Maximum Ratings

Parameter	Symbol	Limit Values		Unit
		min.	max.	
Package Power Dissipation			1.0	W
Data Input Levels			V_{CC}+0.5	V
Differential Data Input Voltage Swing	V_{ID}pk-pk		5	V
Storage Ambient Temperature		–40	85	°C
Storage Ambient Humidity		5	95	%
V_{CC} max			5.6	V
ECL-Output Current Data			50	mA

Exceeding any one of these values may destroy the device immediately.

Recommended Operating Conditions

Parameter	Symbol	Limit Values			Unit
		min.	typ.	max.	
Operating Temperature Range at Ambient[1)]	T_{AMB}	0		70	°C
Operating Ambient Humidity (non-condensing)		5		85	%
Power Supply Voltage	V_{CC}–V_{EE}	3.1	3.3	3.6	V
Transmitter					
Differential Data Input Voltage Swing	V_{ID}pk-pk	500		3200	mV

1) For V23870-A1317-K500

The electro-optical characteristics described in the following tables are valid only for use under the recommended operating conditions.

Transmitter Electro-Optical Characteristics

Transmitter	Symbol	Limit Values			Unit
		min.	typ.	max.	
Launched Power (Average)[1]	P_O	–14		-8	dBm
Optical Modulation Amplitude[2]	OMA	51			µW
Emission Wavelength Range[2]	λ_C	1480		1580	nm
Spectral Width (RMS)[2]	σ_I			3.0	nm
Relative Intensity Noise	RIN			–110	dB/Hz
Extinction Ratio (Dynamic)	ER	8.5			dB
Total Tx Jitter	TJ			720	ps
Optical Rise/Fall Time[3]	t_R, t_F			2500	ps
Reset Threshold [4]	V_{TH}	2.5	2.75	2.99	V
Reset Time Out [5]	t_{RES}	140	240	300	ms
Supply Current[6]	I_{tx}			135	mA

1) Into single mode fiber, 9 µm diameter.
2) FC-PI Rev. 13 defines triple trade off curves.
3) Measured with OC3 filter (20% - 80%).
4) Laser power is shut down if power supply is below V_{TH} and switched on if power supply is above V_{TH} after t_{RES}.
5) Time delay for laser fault detected to laser disable
6) For V23870-A1317-K500

Receiver Electro-Optical Characteristics

Receiver	Symbol	Limit Values			Unit
		min.	typ.	max.	
Receiving Wavelength Range	λ_R	1260		1360	
Sensitivity (Average Power)[1]	P_{IN}			–28.2	dBm
Saturation (Average Power)	P_{SAT}	–8			dBm
Min. Optical Modulation Amplitude[2]	OMA			1.55	µW
Loss Of Signal (LOS) Assert Level[3]	P_{LOSA}			-31.5	dBm
Loss Of Signal (LOS) Deassert Level[4]	P_{LOSD}	–41			dBm
Loss Of Signal (LOS) Hysteresis	$P_{LOSA} - P_{LOSD}$	1	2	6	dB
Loss Of Signal (LOS) Assert Time	t_{ASS}			100	µs
Loss Of Signal (LOS) Deassert Time	t_{DAS}			350	µs
Return Loss of Receiver	ORL	12			dB
Differential Data Output Voltage Swing[5]	V_{OD}pk-pk	500		930	mV
Output Data Rise/Fall Time[6]	t_R, t_F			1500	ps
Supply Current[7]			100	130	mA

1) Minimum average optical power at which the BER is less than $1x10^{-12}$. Measured with a 2^{23}–1 NRZ PRBS and an Extinction Ratio of 6.6dB.

2) IEEE 802.3ah Standard.

3) An increase in optical power above the specified level will cause the LOS output to switch from a high state to a low state.

4) A decrease in optical power below the specified level will cause the LOS to change from a low state to a high state.

5) AC/AC for data. Load 50 Ω to GND or 100 Ω differential. For dynamic measurement a tolerance of 50 mV should be added.

6) Measured at 20%-80%

7) Supply current excluding Rx output load.

Timing of Control and Status I/O

Parameter	Symbol	Limit Values		Unit	Condition
		min.	max.		
Tx Disable Assert Time	t_off		10	µs	Time from rising edge of Tx Disable to when the optical output falls below 10% of nominal.
Tx Disable Negate Time	t_on		1	ms	Time from falling edge of Tx Disable to when the modulated optical output rises above 90% of nominal.
Time to Initialize, Including Reset of Tx Fault	t_init		300		From power on or negation of Tx Fault using Tx Disable.
Tx Fault Assert Time	t_fault		100	µs	Time from fault to Tx Fault on.
Tx Disable to Reset	t_reset	10			Time Tx Disable must be held high to reset Tx Fault.
LOS Assert Time	t_loss_on		100		Time from LOS state to Rx LOS assert.
LOS Deassert Time	t_loss_off		100		Time from non-LOS state to Rx LOS deassert.
I2C Bus Clock Rate	f_i2c_ clock		100	kHz	

Eye Safety

This laser based single mode transceiver is a Class 1 product.
It complies with IEC 60825-1 and FDA 21 CFR 1040.10 and 1040.11.

To meet laser safety requirements the transceiver shall be operated within the Absolute Maximum Ratings.

Attention: All adjustments have been made at the factory prior to shipment of the devices. No maintenance or alteration to the device is required. Tampering with or modifying the performance of the device will result in voided product warranty.

Note: Failure to adhere to the above restrictions could result in a modification that is considered an act of "manufacturing", and will require, under law, recertification of the modified product with the U.S. Food and Drug Administration (ref. 21 CFR 1040.10 (i)).

Laser Data

Wavelength	1300 nm
Total Output Power (as defined by IEC: 7mm aperture at 14mm distance)	< 2 mW
Total Output Power (as defined by FDA: 7 mm aperture at 20 cm distance)	< 195 µW
Beam Divergence	6°

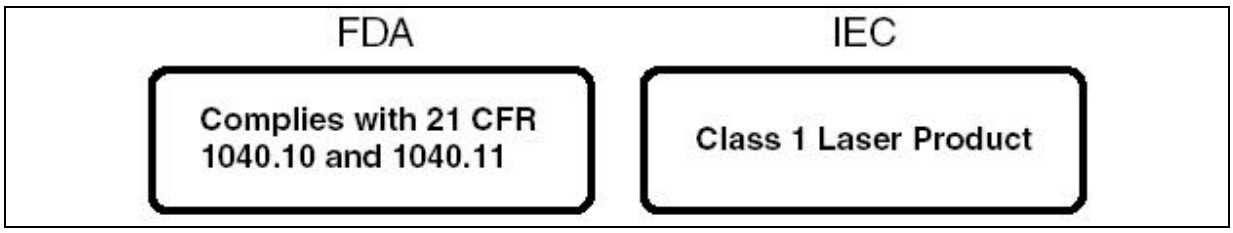

Figure 3 Required Labels

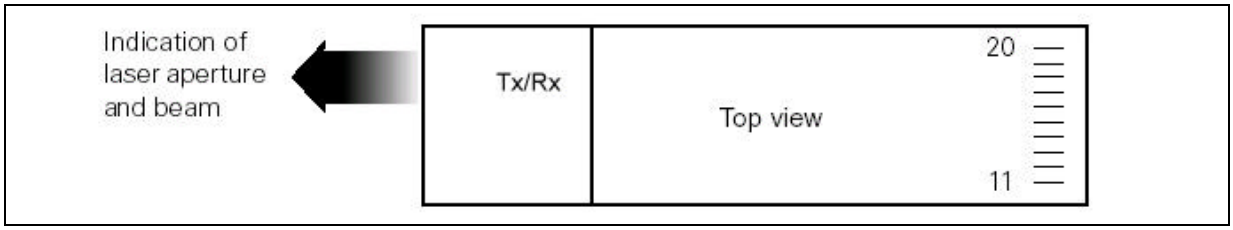

Figure 4 Laser Emission

Application Notes

EMI-Recommendations

To avoid electromagnetic radiation exceeding the required limits please take note of the following recommendations.

When Gigabit switching components are found on a PCB (multiplexers, clock recoveries etc.) any opening of the chassis may produce radiation also at chassis slots other than that of the device itself. Thus every mechanical opening or aperture should be as small as possible.

On the board itself every data connection should be an impedance matched line (e.g. strip line, coplanar strip line). Data, Datanot should be routed symmetrically, vias should be avoided. A terminating resistor of 100 Ω should be placed at the end of each matched line. An alternative termination can be provided with a 50 Ω resistor at each (D, Dn). In DC coupled systems a thevenin equivalent 50 Ω resistance can be achieved as follows: for 3.3 V: 125 Ω to V_{CC} and 82 Ω to V_{EE}, for 5 V: 82 Ω to V_{CC} and 125 Ω to V_{EE} at Data and Datanot. Please consider whether there is an internal termination inside an IC or a transceiver.

In certain cases signal GND is the most harmful source of radiation. Connecting chassis GND and signal GND at the plate/bezel/chassis rear e.g. by means of a fiber optic transceiver/cage may result in a large amount of radiation. Even a capacitive coupling between signal GND and chassis may be harmful if it is too close to an opening or an aperture.

If a separation of signal GND and chassis GND is not planned, it is strongly recommended to provide a proper contact between signal GND and chassis GND at every location where possible. This concept is designed to avoid hotspots. Hotspots are places of highest radiation which could be generated if only a few connections between signal and chassis GND exist. Compensation currents would concentrate at these connections, causing radiation.

By use of Gigabit switching components in a design, the return path of the RF current must also be considered. Thus a split GND plane of Tx and Rx portion may result in severe EMI problems.

The cutout should be sized so that all contact springs of the cage make good contact with the face plate.

For the iSFP transceiver a connection of the SFP cage pins to chassis GND is recommended. If no separate chassis GND is available on the users PCB the pins should be connected to signal GND. In this case take care of the notes above.

Please consider that the PCB may behave like a waveguide. With an ε_r of 4, the wavelength of the harmonics inside the PCB will be half of that in free space. In this scenario even the smallest PCBs may have unexpected resonances.

The iSFP transceiver can be assembled onto the host board together with all cages and host board connectors complying with the SFP multi source agreement.

Infineon Proposes

Cage:
Infineon Technologies
Part Number: V23838-S5-N1

Host board connector:
Tyco Electronics
Part Number: 1367073-1

The data can be read using the 2-wire serial CMOS E2PROM protocol of the Atmel AT24C01A or equivalent.

Addr.	Hex	ASCII	Addr.	Hex	ASCII	Addr.	Hex	ASCII	Addr.	Hex	ASCII
0	03		32	20		64	00		96	31[8)]	1
1	04		33	20		65	1A		97	33[8)]	5
2	07		34	20		66	69	i	98	31[8)]	5
3	00		35	20		67	2D	-	99	30[8)]	0
4	00		36	00		68[3)]			100	54[8)]	T
5	00		37	00		69[3)]			101	78[8)]	x
6	02		38	03		70[3)]			102	2F	/
7	12		39	19		71[3)]			103	31[9)]	1
8	00		40	56	V	72[3)]			104	35[9)]	3
9	01		41	32	2	73[3)]			105	35[9)]	1
10	05		42	33	3	74[3)]			106	30[9)]	0
11	01		43	38	8	75[3)]			107	52[9)]	R
12	15		44	37	7	76[3)]			108	78[9)]	x
13	00		45	30	0	77[3)]			109	20	
14	0A		46	2D	-	78[3)]			110	20	
15	64		47	43	A	79[3)]			111	20	
16	1E		48	33	1	80[3)]			112	20	
17	0F		49	31	1	81[3)]			113	20	
18	00		50	33	3	82[3)]			114	20	
19	00		51[1)]	35	below	83[3)]			115	20	

Addr.	Hex	ASCII
20	49	I
21	6E	n
22	66	f
23	69	i
24	6E	n
25	65	e
26	6F	o
27	6E	n
28	20	
29	41	A
30	47	G
31	20	

Addr.	Hex	ASCII
52	2D	-
53	4B	K
54	31	1
55	30	0
56	30	0
57	20	
58	20	
59	20	
60	20	
61	1E	
62	00	
63[2]		

Addr.	Hex	ASCII
84[4]		
85[4]		
86[4]		
87[4]		
88[4]		
89[4]		
90[4]		
91[4]		
92[5]	68	
93[6]	80	
94	01	
95[7]		

Addr.	Hex	ASCII
116	20	
117	20	
118	20	
119	20	
120	20	
121	20	
122	20	
123	20	
124	20	
125	20	
126	20	
127	20	

[1] 5 for V23870-A1317-K500
[2] Address 63 is check sum of bytes 0 - 62.
[3] Address 68 - 83 Vendor Serial Number.
[4] Date code.
[5] Diagnostic Monitoring Type, if and how implemented.
[6] Enhanced Options, if any implemented.
[7] Address 95 is check sum of bytes 64 - 94.
[8] Tx Wavelength
[9] Rx Wavelength

Digital Diagnostic Monitoring Interface – Intelligent

Alarm and Warning Thresholds (2-Wire Address A2h)

Address	# Bytes	Name	Description
00 - 01	2	Temp High Alarm	MSB at low address.
02 - 03	2	Temp Low Alarm	MSB at low address.
04 - 05	2	Temp High Warning	MSB at low address.
06 - 07	2	Temp Low Warning	MSB at low address.
08 - 09	2	Voltage High Alarm	MSB at low address.
10 - 11	2	Voltage Low Alarm	MSB at low address.
12 - 13	2	Voltage High Warning	MSB at low address.
14 - 15	2	Voltage Low Warning	MSB at low address.
16 - 17	2	Bias High Alarm	MSB at low address.
18 - 19	2	Bias Low Alarm	MSB at low address.
20 - 21	2	Bias High Warning	MSB at low address.
22 - 23	2	Bias Low Warning	MSB at low address.

Alarm and Warning Thresholds (2-Wire Address A2h)

Address	# Bytes	Name	Description
24 - 25	2	Tx Power High Alarm	MSB at low address.
26 - 27	2	Tx Power Low Alarm	MSB at low address.
28 - 29	2	Tx Power High Warning	MSB at low address.
30 - 31	2	Tx Power Low Warning	MSB at low address.
32 - 33	2	Rx Power High Alarm	MSB at low address.
34 - 35	2	Rx Power Low Alarm	MSB at low address.
36 - 37	2	Rx Power High Warning	MSB at low address.
38 - 39	2	Rx Power Low Warning	MSB at low address.
40 - 55	16	Reserved	Reserved for future monitored quantities.

Alarm and Warning Flags (2-Wire Address A2h)

Byte	Bit	Name	Description
112	7	Temp High Alarm	Set when internal temperature exceeds high alarm level.
112	6	Temp Low Alarm	Set when internal temperature is below low alarm level.
112	5	V_{CC} High Alarm	Set when internal supply voltage exceeds high alarm level.
112	4	V_{CC} Low Alarm	Set when internal supply voltage is below low alarm level.
112	3	Tx Bias High Alarm	Set when Tx Bias current exceeds high alarm level.
112	2	Tx Bias Low Alarm	Set when Tx Bias current is below low alarm level.
112	1	Tx Power High Alarm	Set when Tx output power exceeds high alarm level.
112	0	Tx Power Low Alarm	Set when Tx output power is below low alarm level.
113	7	Rx Power High Alarm	Set when received power exceeds high alarm level.
113	6	Rx Power Low Alarm	Set when received power is below low alarm level.
113	5	Reserved Alarm	
113	4	Reserved Alarm	
113	3	Reserved Alarm	
113	2	Reserved Alarm	
113	1	Reserved Alarm	
113	0	Reserved Alarm	
114	All	Reserved	
115	All	Reserved	
116	7	Temp High Warning	Set when internal temperature exceeds high warning level.
116	6	Temp Low Warning	Set when internal temperature is below low warning level.
116	5	V_{CC} High Warning	Set when internal supply voltage exceeds high warning level.

Alarm and Warning Flags (2-Wire Address A2h) (cont'd)

Byte	Bit	Name	Description
116	4	V_{CC} Low Warning	Set when internal supply voltage is below low warning level.
116	3	Tx Bias High Warning	Set when Tx bias current exceeds high warning level.
116	2	Tx Bias Low Warning	Set when Tx bias current is below low warning level.
116	1	Tx Power High Warning	Set when Tx output power exceeds high warning level.
116	0	Tx Power Low Warning	Set when Tx output power is below low warning level.
117	7	Rx Power High Warning	Set when received power exceeds high warning level.
117	6	Rx Power Low Warning	Set when received power is below low warning level.
117	5	Reserved Warning	
117	4	Reserved Warning	
117	3	Reserved Warning	
117	2	Reserved Warning	
117	1	Reserved Warning	
117	0	Reserved Warning	
118	All	Reserved	
119	All	Reserved	

A/D Values and Status Bits (2-Wire Address A2h)

Byte	Bit	Name	Description
Converted analog values. Calibrated 16 bit data.			
96	All	Temperature MSB	Internally measured module temperature.[1)]
97	All	Temperature LSB	
98	All	V_{CC} MSB	Internally measured supply voltage in transceiver.[2)]
99	All	V_{CC} LSB	
100	All	Tx Bias MSB	Internally measured Tx Bias Current.[3)]
101	All	Tx Bias LSB	
102	All	Tx Power MSB	Measured Tx output power.[4)]
103	All	Tx Power LSB	
104	All	Rx Power MSB	Measured Rx input power.[5)]
105	All	Rx Power LSB	
106	All	Reserved MSB	Reserved for 1st future definition of digitized analog input.
107	All	Reserved LSB	Reserved for 1st future definition of digitized analog input.
108	All	Reserved MSB	Reserved for 2nd future definition of digitized analog input.
109	All	Reserved LSB	Reserved for 2nd future definition of digitized analog input.

1) Temperature measurement is performed on an IC located on the underside of the iSFP PCB. The accuracy is ±3C°.

2) The Tx V_{CC} voltage is monitored, with accuracy of ±3%.

3) The accuracy of bias measurement is ±10%.

4) The accuracy of the Tx optical power measurement is ±1 dB.

5) The accuracy of the Rx optical power measurement is ±3 dB.

Single Mode iSFP Transceiver, AC/AC TTL

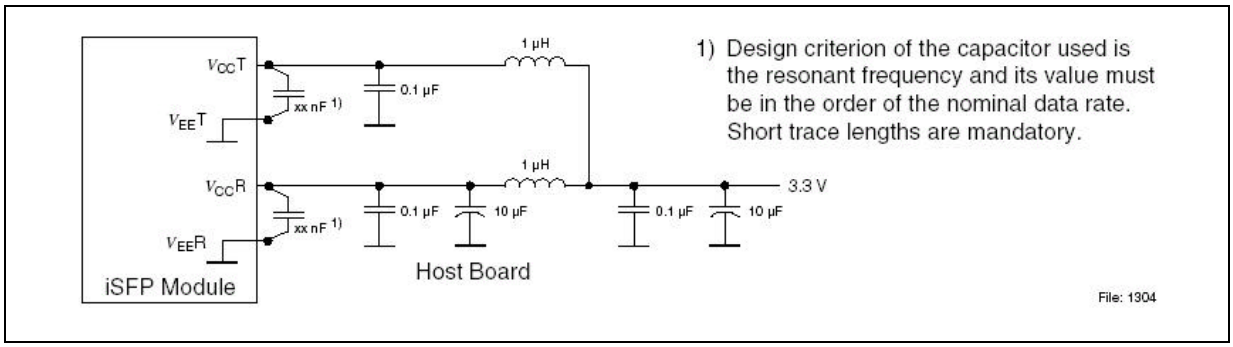

Figure 5 Recommended Host Board Supply Filtering Network

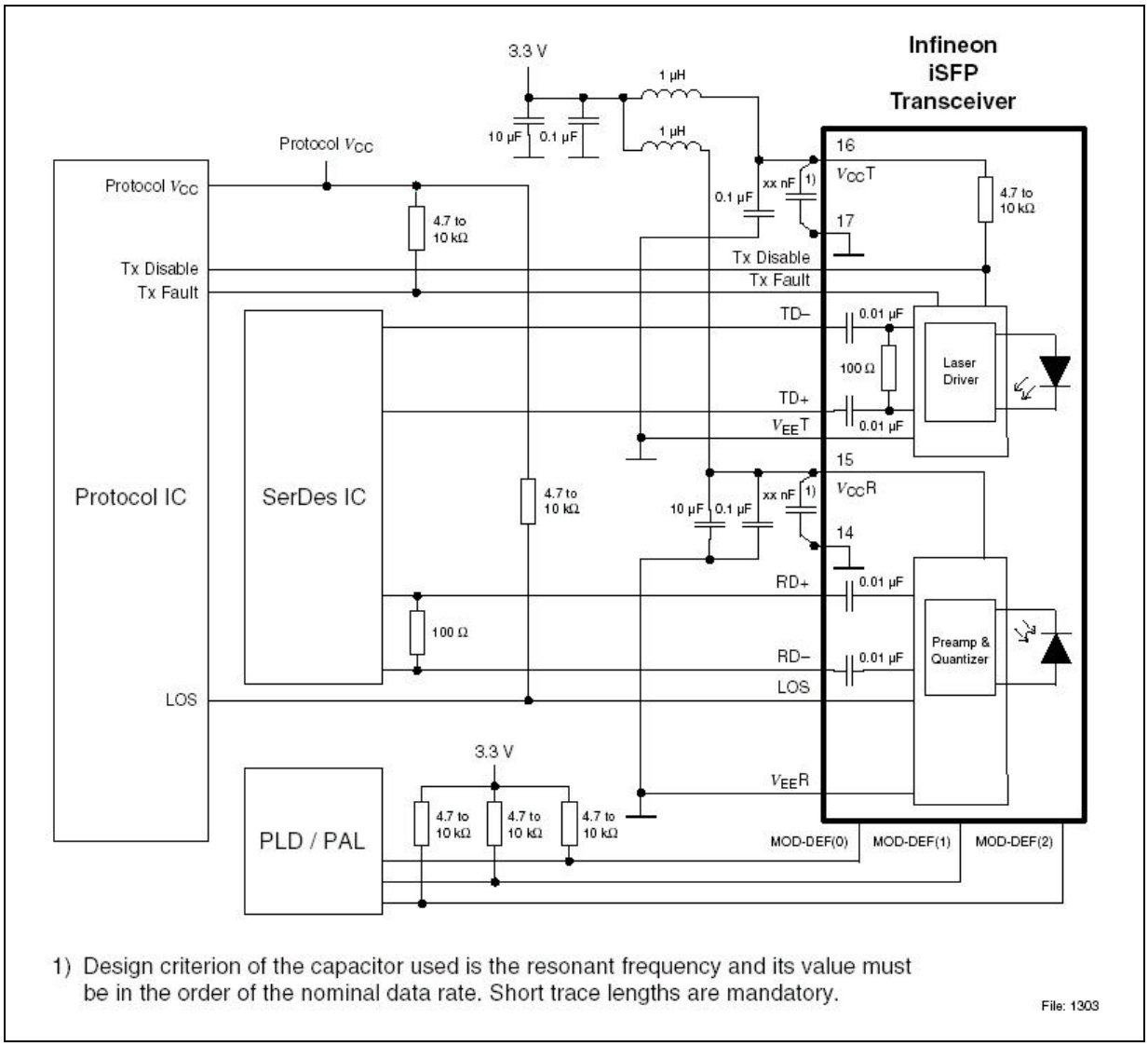

Figure 6 Example iSFP Host Board Schematic

Package Outlines

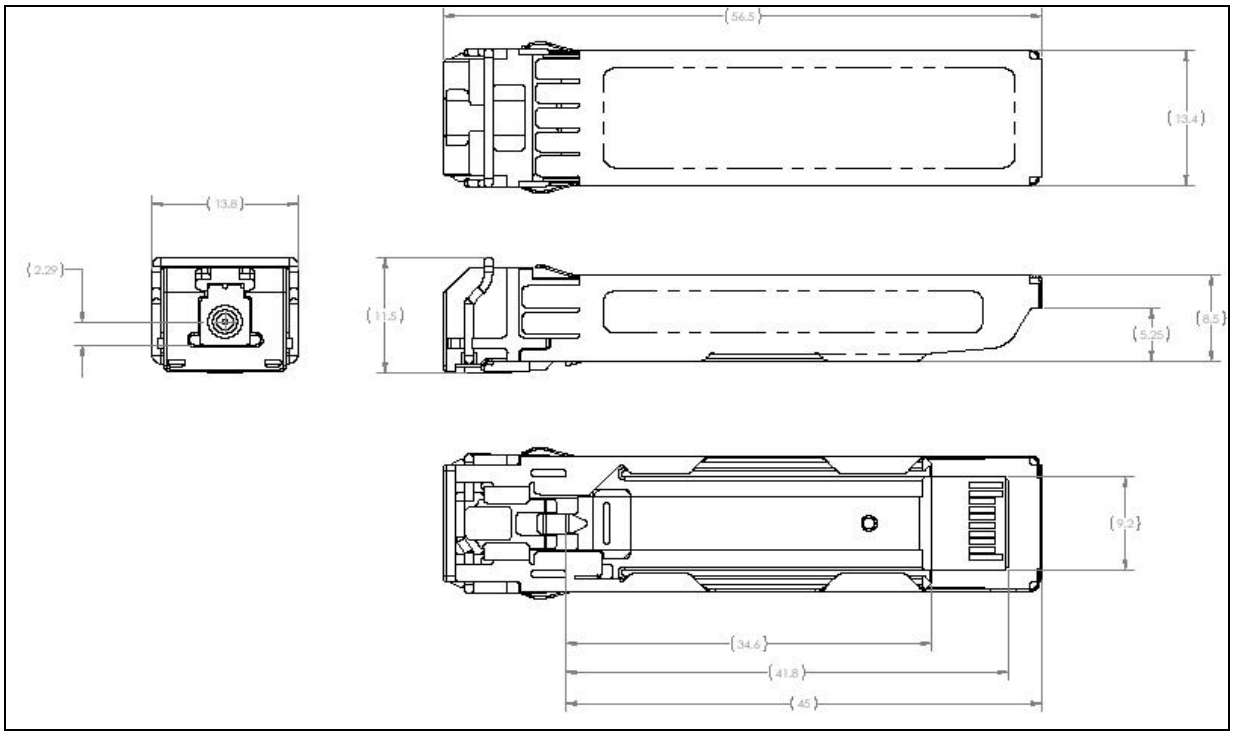

Figure 7 V23870-A131x-K500

V23870-A1317-K500
V23870-A1316-K500

Revision History: **2004-05-17** DS0

Previous Version:

Page	Subjects (major changes since last revision)

For questions on technology, delivery and prices please contact the Infineon Technologies Offices in Germany or the Infineon Technologies Companies and Representatives worldwide: see our webpage at http://www.infineon.com.

Edition 2004-05-17

Published by Infineon Technologies AG,
St.-Martin-Strasse 53,
D-81541 München, Germany

Attention please!

The information herein is given to describe certain components and shall not be considered as warranted characteristics.

Terms of delivery and rights to technical change reserved.

We hereby disclaim any and all warranties, including but not limited to warranties of non-infringement, regarding circuits, descriptions and charts stated herein.

Infineon Technologies is an approved CECC manufacturer.

Information

For further information on technology, delivery terms and conditions and prices please contact your nearest Infineon Technologies Office in Germany or our Infineon Technologies Representatives worldwide.

Warnings

Due to technical requirements components may contain dangerous substances. For information on the types in question please contact your nearest Infineon Technologies Office.

Infineon Technologies Components may only be used in life-support devices or systems with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system, or to affect the safety or effectiveness of that device or system. Life-support devices or systems are intended to be implanted in the human body, or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.