IRD-SFP-10G-MUM

Transceptor Óptico SFP+ 10Gbps Multimodo, 850nm, LC Duplex, 300m (10GBASE-SR)

CARACTERÍSTICAS

- Transceptor óptico SFP+ multimodo de 10Gbps (10GBASE-SR)
- Taxa de transmissão de até 10,3125 Gbps
- Comprimento de onda central: 850 nm (laser VCSEL)
- Alcance de até 300 m sobre fibra multimodo OM3 (até 400 m em OM4)
- Interface óptica LC duplex (conector padrão)
- **Compatível com HPE X130 10G SFP+ LC SR/PN JD092B SFP+ MSA, IEEE 802.3ae e SFF-8472**
- Suporte a hot-pluggable para fácil instalação
- Monitoramento Digital (DDM) integrado: temperatura, potência TX/RX, tensão e corrente
- Carcaça metálica com alta imunidade contra interferência eletromagnética (EMI)
- Compatível com RoHS6 (livre de chumbo)
- Operação garantida em faixa comercial: -5°C a +70°C

A imagem apresentada é apenas para fins ilustrativos

SFP+ **850nm** **400m (OM4)** **Duplex**

INTRODUÇÃO

O IRD-SFP-10G-MUM é um módulo transceptor óptico SFP+ de alto desempenho, projetado para conexões 10 Gigabit Ethernet em fibra multimodo. Com alcance de até 300 metros em OM3 e 400 metros em OM4, é ideal para aplicações em data centers, redes corporativas e backbones LAN. Foi projetado para completa compatibilidade com HPE X130m, padrão JD092B.

O módulo incorpora laser VCSEL a 850 nm e fotodetector PIN, garantindo desempenho confiável e baixo consumo. Com suporte a monitoramento digital (DDM) via protocolo I²C, permite que administradores de rede acompanhem em tempo real parâmetros como temperatura, potência óptica e tensão de alimentação.

Compatível com os principais fabricantes de switches e roteadores, o IRD-SFP-10G-MUM oferece flexibilidade, confiabilidade e custo-benefício para ambientes críticos de rede.

ESPECIFICAÇÕES TÉCNICAS

Funcionalidades

- Suporte a 10GBASE-SR/SW para links multimodo de curta distância
- Alcance:
  - 33 m em OM1
  - 82 m em OM2
  - 300 m em OM3
  - 400 m em OM4
- Taxa de dados: até 10,3125 Gbps (compatível até 10,6 Gbps)
- Laser VCSEL 850 nm com baixo consumo
- Interface óptica LC duplex
- Interface elétrica compatível com SFP+ MSA
- Hot-pluggable para inserção/remoção sem desligar o equipamento

Monitoramento Digital (DDM/SFF-8472):

- Temperatura
- Potência óptica TX/RX
- Tensão de alimentação
- Corrente de bias
- Compatível com os principais switches e roteadores do mercado
- Design robusto, blindagem metálica contra EMI

Ópticas

- Comprimento de onda central (λc): 840 – 860 nm (típico 850 nm)
- Largura espectral (RMS): 0,45 nm
- Potência óptica média de saída: -7 a -1 dBm
- Potência do laser desligado: <= -30 dBm
- Relação de extinção: >= 3,5 dB
- Sensibilidade do receptor: até -11,1 dBm
- Sobrecarga do receptor: até -1 dBm

- Reflexão óptica tolerada: -12 dB
- RIN (Relative Intensity Noise): <= -128 dB/Hz
- Tempo de subida/queda óptico: <= 50 ps
- Padrão de teste: PRBS 2^31 -1 a 10,3125 Gbps

Elétricas

- Alimentação: 3,13 a 3,46 V
- Corrente máxima: 300 mA
- Impedância diferencial de entrada: 90 – 110 ohms
- Swing diferencial de entrada: 180 – 700 mV
- Swing diferencial de saída: 300 – 850 mV
- Inicialização: <= 300 ms
- Frequência do clock serial (I²C): até 400 kHz

Tolerâncias do Diagnóstico Digital (DDM/SFF-8472)

- Temperatura: precisão +/- 3 °C
- Potência TX/RX: precisão +/- 3 dB
- Tensão de alimentação: precisão +/- 3 %
- Corrente de bias: precisão +/- 10 %
- Interface: I²C (conforme SFF-8472 Rev. 10.2)
- Alarmes configuráveis para monitoramento de rede

Ambiente Operacional

- Temperatura de operação (comercial): -5°C a +70°C
- Temperatura de armazenamento: -40°C a +85°C
- Umidade relativa: 0 a 85% (sem condensação)

Características Mecânicas

- Formato: SFP+ hot-pluggable
- Conector óptico: LC duplex
- Carcaça: blindada em metal para proteção EMI
- Pinagem: compatível com padrão SFP+ MSA

Conformidade e Padrões

- SFP+ MSA
- SFF-8472 (DDM)
- IEEE 802.3ae (10GBASE-SR)
- RoHS6 (livre de chumbo)

Room 303, Building 1, No.316, Renzhou Road,
Shatian Town, Dongguan City, Guangdong Province
www.junantest.com

CERTIFICATE OF CONFORMITY

No: JAT25040302947RC-1

Applicant	:	IRD Produtos de Informática Ltda
Address	:	RUA MARIA LOPES BORBA, 474, NAVEGANTES-SC, 88370340, BRAZIL
Manufacturer	:	IRD Produtos de Informática Ltda
Address	:	RUA MARIA LOPES BORBA, 474, NAVEGANTES-SC, 88370340, BRAZIL
EUT	:	Commercial and Industrial Grade SFP Modules (Optical Modules)
Trade Mark	:	IRD.Net
M/N	:	See model list

The submitted sample of the above equipment has been tested and found to comply with the
following European Directive:

RoHS Directive 2011/65/EU & (EU) 2015/863 & (EU) 2017/2102

The standard(s) used for showing compliance with the essential requirements:

Applicable Standard(s)	Test Report(s) Number
IEC 62321-1:2013, IEC 62321-2:2013 **IEC 62321-3-1:2013, IEC 62321-3-2:2020** **IEC 62321-4:2013, IEC 62321-5:2013** **IEC 62321-6:2015, IEC 62321-7-1: 2015** **IEC 62321-7-2:2017, IEC 62321-8:2017**	**JAT25040302947RR-1**

This certificate is part of the full test report(s) and should be read in conjunction with it. This
certificate is based on an evaluation of one sample of above mentioned product. It does not imply
assessment of the production of the product. Without the written approval of Dongguan Jun'an
Testing & Certification Co., Ltd., this certificate is not permitted to be reproduced, except in full. It
is not permitted to use the test lab's logo.

RoHS

(Manager)

March 31, 2025

Model list:

The IRD-SFP-T2.5G, IRD-SFP-T1G, IRD-SFP-T10G, IRD-SFP-X-Y-ZW and IRD-SFP-X-Y-Z-IW model families follow a naming convention where each part of the code corresponds to a specific characteristic of the module. Below is a detailed explanation of each field:

1. **X (Speed)**

   o Possible values: *100M*, *622M*, *1G*, *2.5G*, *10G*, *16G*, *25G*, *40G*, *50G*, or *100G*.

   o Indicates the supported data rate, covering anything from Fast Ethernet (100 Mbps) up to 100 Gbps.

2. **Y (Fiber Type)**

   o Possible values: *SM* (singlemode) or *MUM* (multimode).

   o Specifies the type of fiber optic cable for which the transceiver is designed.

3. **Z (Maximum Distance)**

   o Possible values: *0.1*, *0.3*, *0.5*, *2*, *10*, *20*, *40*, *60*, *80*, *100*, *120*, and *160*.

   o Typically expressed in kilometers (km), it refers to the approximate reach of the module according to its optical specification.

4. **Temperature/Operating Grade**

   o After the value **Z**, the presence of **I** indicates an *industrial-grade* product (extended operating temperature range), whereas the absence of I (NULL) means it is *commercial-grade*.

   o Examples:

      ▪ **IRD-SFP-X-Y-ZW** → "Commercial-grade" version

      ▪ **IRD-SFP-X-Y-Z-IW** → "Industrial-grade" version

5. **W (Additional Type)**

   o Possible values: *NULL, A, B, C, D, E, F, G,* or *H*.

   o This suffix provides additional information about the product variant. It may indicate extra features, extended compatibility, special applications, and so on.

CERTIFICATE OF CONFORMITY

No: JAT25040302947EC-1

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Address	:	RUA MARIA LOPES BORBA, 474, NAVEGANTES-SC, 88370340, BRAZIL
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Address	:	RUA MARIA LOPES BORBA, 474, NAVEGANTES-SC, 88370340, BRAZIL
EUT	:	Commercial and Industrial Grade SFP Modules (Optical Modules)
Trade Mark	:	IRD.Net
M/N	:	See model list

The submitted sample of the above equipment has been tested and found to comply with the following European Directive:

Electromagnetic Compatibility Directive 2014/30/EU

The standard(s) used for showing compliance with the essential requirements:

Applicable Standard(s)	Test Report(s) Number
EN 55032:2015+A11:2020 EN 55035:2017+A11:2020 EN IEC 61000-3-2:2019+A2:2024 EN 61000-3-3:2013+A2:2021+AC:2022-01	JAT25040302947ER-1

This certificate is part of the full test report(s) and should be read in conjunction with it. This certificate is based on an evaluation of one sample of above mentioned product. It does not imply assessment of the production of the product. Without the written approval of Dongguan Jun'an Testing & Certification Co., Ltd., this certificate is not permitted to be reproduced, except in full. It is not permitted to use the test lab's logo. The CE marking may only be used if all the relevant and effective European Directive are applicable.

CE

APPROVED

(Manager)

March 31, 2025

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SDoC's Compliance Information Statement

No: JAT25040302947FC-1

Applicant	:	IRD Produtos de Informática Ltda
Address	:	RUA MARIA LOPES BORBA, 474, NAVEGANTES-SC, 88370340, BRAZIL
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EUT	:	Commercial and Industrial Grade SFP Modules (Optical Modules)
Trade Mark	:	IRD.Net
M/N	:	See model list

The submitted sample of the above equipment has been tested and found to comply with the following requirement of 47 CFR of PART 15.

The assessment of compliance of the product with the requirements relating to FCC rules was based on the following standards and procedure:

Applicable Standard(s)	Test Report(s) Number
FCC Part 15, Subpart B:2017 **ANSI C63.4:2014**	**JAT25040302947FR-1**

This verification is part of the full test report(s) and should be read in conjunction with it. This verification is based on an evaluation of one sample of above mentioned product. It does not imply assessment of the production of the product. Without the written approval of Dongguan Jun'an Testing & Certification Co., Ltd., this verification is not permitted to be reproduced, except in full. It is not permitted to use the test lab's logo.

(Manager)

March 31, 2025

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