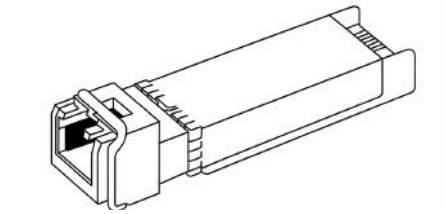
IRD-SFP-10G-LRM

Módulo SFP+ 10Gbps, Fibra Multimodo, LC Duplex, 1310nm, 220m

CARACTERÍSTICAS

- Transmissão de até 10,6 Gbps em fibras multimodo (OM1)
- Alcance de até 220 metros (10G-LRM Ethernet)
- Laser FP 1310 nm com fotodetector PIN
- Conector óptico duplex LC
- Hot-pluggable, fácil de instalar e substituir
- Carcaça metálica com excelente desempenho contra EMI
- Compatível com SFP+ MSA, SFF-8472 e IEEE802.3aq
- Diagnóstico digital (DDM) integrado: monitora temperatura, potência óptica, tensão e corrente de bias
- Disponível para operação comercial (-5°C a +70°C), estendida (-20°C a +80°C) e industrial (-40°C a +85°C)
- Livre de chumbo (RoHS6)



SFP+ | 1310nm | 220m | Multimodo

CE FC RoHS COMPLIANT

INTRODUÇÃO

O IRD-SFP-10G-LRM é um transceptor óptico SFP+ projetado para conexões Ethernet 10Gbps em fibras multimodo (OM1) com alcance de até 220 metros. Ele oferece compatibilidade com os padrões IEEE 802.3aq (10G-LRM), SFP+ MSA e SFF-8472, sendo ideal para aplicações em data centers, redes corporativas e ambientes que exigem alta largura de banda e flexibilidade.

Com design hot-pluggable, carcaça metálica para desempenho EMI superior e monitoramento digital (DDM), este módulo atende aplicações que incluem redes CPRI, LTE e links legados multimodo. O IRD-SFP-10G-LRM está disponível nas versões comercial, estendida e industrial, garantindo operação confiável mesmo em condições adversas.

ESPECIFICAÇÕES TÉCNICAS

Elétricas

- Alimentação: 3,13 a 3,46 V
- Corrente: até 300 mA
- Impedância diferencial de entrada: 90 a 110 ohms
- Swing diferencial (entrada): 180 a 700 mV
- Swing diferencial (saída): 300 a 850 mV
- Consumo de energia: máximo 1W

Ópticas

- Comprimento de onda: 1260 a 1355 nm (TX)
- Largura espectral RMS: <= 3 nm
- Potência óptica média: -6,5 a +0,5 dBm
- Potência com laser desligado: <= -30 dBm
- Sensibilidade do receptor: até -8,4 dBm
- Overload receptor: até +0,5 dBm
- Relação de extinção: >= 3,5 dB
- RIN: <= -128 dB/Hz
- Tempo de subida/queda óptico: <= 50 ps

Ambiente Operacional

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

Características de Interface

- Interface óptica: duplex LC
- Interface elétrica: compatível SFP+ MSA
- Inicialização: <= 300 ms
- Desativação/ativação do TX: <= 100 us / <= 2 ms
- Frequência do clock serial (I²C): até 400 kHz

Diagnóstico Digital (DDM)

- Temperatura: precisão +/−3°C
- Potência TX/RX: precisão +/−3 dB
- Tensão de alimentação: precisão +/−3%
- Corrente de bias: precisão +/−10%
- Protocolo de comunicação: I²C (SFF-8472)

Limites Absolutos

- Tensão máxima: 3,6 V
- Temperatura de armazenamento: -40°C a +85°C
- Umidade máxima: 85% (sem condensação)
- Potência máxima no receptor (dano): +1,5 dBm

Compatibilidade e Padrões

- IEEE 802.3aq (10G-LRM)
- SFP+ MSA
- SFF-8472 (diagnóstico digital)

Aplicações

- Redes Ethernet 10G-LRM
- CPRI e LTE (2.457 / 3.072 / 4.915 / 6.144 / 9.8304 Gbps)
- Links ópticos legados FDDI multimodo
- Ambientes corporativos, data centers e redes industriais
- Conexão de switches, roteadores e servidores

✅ **Termo de Garantia de Compatibilidade**

Desde que a aplicação e o equipamento de destino sejam previamente informados, a IRD.Net garante a compatibilidade dos módulos SFP com switches de todas as marcas e modelos disponíveis no mercado.

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Shatian Town, Dongguan City, Guangdong Province
www.junantest.com

CERTIFICATE OF CONFORMITY

No: JAT25040302947EC-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:

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**

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CE

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(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)**
   - Possible values: *100M*, *622M*, *1G*, *2.5G*, *10G*, *16G*, *25G*, *40G*, *50G*, or *100G*.
   - Indicates the supported data rate, covering anything from Fast Ethernet (100 Mbps) up to 100 Gbps.
2. **Y (Fiber Type)**
   - Possible values: *SM* (singlemode) or *MUM* (multimode).
   - Specifies the type of fiber optic cable for which the transceiver is designed.
3. **Z (Maximum Distance)**
   - Possible values: *0.1*, *0.3*, *0.5*, *2*, *10*, *20*, *40*, *60*, *80*, *100*, *120*, and *160*.
   - Typically expressed in kilometers (km), it refers to the approximate reach of the module according to its optical specification.
4. **Temperature/Operating Grade**
   - 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*.
   - Examples:
     - **IRD-SFP-X-Y-ZW** → "Commercial-grade" version
     - **IRD-SFP-X-Y-Z-IW** → "Industrial-grade" version
5. **W (Additional Type)**
   - Possible values: *NULL*, *A*, *B*, *C*, *D*, *E*, *F*, *G*, or *H*.
   - This suffix provides additional information about the product variant. It may indicate extra features, extended compatibility, special applications, and so on.

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SDoC's Compliance Information Statement

No: JAT25040302947FC-1

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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 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.

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(Manager)

March 31, 2025

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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**

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RoHS

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