

数据手册

MODULETEK: DAC-QSFP-2SFP-50G-P-xxAWG-aa.aaM-D1C1B

QSFP 转 2SFP 50G 无源直连线缆

产品简介

ModuleTek 的 QSFP 转 2SFP 50G 无源线缆是短距离数据传输的优选方案, 具有功耗低, 稳定性好, 性价比高等特点。QSFP 端的四通道关闭其中的两个通道, 实现 QSFP 两端口与 2 个 25G SFP 端口之间的数据传输, 为数据中心机架内和机架间的数据传输业务提供了一个低成本解决方案。该产品符合 QSFP28 MSA 以及 SFP28 MSA 标准。

产品特性

- QSFP 端: 符合 QSFP28 MSA 标准
- SFP 端: 符合 SFP28 MSA 标准
- 2 通道 25Gbps
- 交流耦合输入和输出
- 100 欧姆差分阻抗
- 全金属外壳, 具有出色的 EMI 性能
- 3.3V 单电源供电, 低功耗
- 符合 RoHS 标准
- 工作温度范围 (外壳温度):
商业温度等级: 0°C 至 70°C



应用

串行数据传输

数据存储

光纤通道

订购信息

| 型号 | 产品 ID | 描述 | 线规 | 长度 |
|--|---------|-------------------------------|-------|------|
| DAC-QSFP-2SFP-50G-P-30AWG-aa.aaM-D1C1B | M205804 | QSFP 转 2SFP 50G 无源线缆, aa.aa≤2 | 30AWG | ≤2 米 |
| DAC-QSFP-2SFP-50G-P-28AWG-aa.aaM-D1C1B | M205805 | QSFP 转 2SFP 50G 无源线缆, aa.aa≤3 | 28AWG | ≤3 米 |
| DAC-QSFP-2SFP-50G-P-26AWG-aa.aaM-D1C1B | M205806 | QSFP 转 2SFP 50G 无源线缆, aa.aa≤5 | 26AWG | ≤5 米 |

注:

- “P”表示无源线缆。
- “aa.aa”表示以米为单位的线缆长度。
- 该产品可实现写保护功能。
- 上表中产品的线径是不同长度下的默认值, 我们还可以为有特殊要求的客户提供其他线径产品。
- 产品 ID 为我司产品标准型号的简写订货号。

如需了解更多信息或订购上述产品, 请联系:

电子邮件: sales@moduletek.com
 摩泰光电官网: www.moduletek.com

产品一般规格

| 参数 | 符号 | 最小值 | 典型值 | 最大值 | 单位 | 备注 |
|------|-----------|------|------|------------|----|----|
| 误码率 | BER | | | 10^{-12} | | |
| 工作温度 | T_C | 0 | | 70 | °C | 1 |
| 储存温度 | T_{STO} | -40 | | 85 | °C | 2 |
| 工作电压 | V_{CC} | 3.14 | 3.30 | 3.46 | V | |

注:

- 外壳表面温度
- 环境温度

标准定义表格

QSFP 端

| Lower Memory Map (A0h) | | | | | |
|------------------------|------|------------|---|----------|----|
| IIC 地址 | 数据长度 | 寄存器名称 | 描述 | 取值 (HEX) | 备注 |
| 0 | 1 | Identifier | Description of Physical Device | 11 | |
| 1-2 | 2 | Status | bit0:Data Not Ready; bit1:IntL; bit2: Flat mem | 07 00 | |

| | | | | | |
|-------|---|--------------------------------|---|-------|---|
| 3 | 1 | Channel Status LOS Flag | Latched TX/RX LOS indicator | 00 | |
| 4 | 1 | Channel Status TxFault Flag | Latched TX fault indicator | 00 | |
| 5 | 1 | Channel Status Reserved5 | Reserved | 00 | |
| 6 | 1 | Module Monitor Temp AW Flag | Latched temperature alarm/warning and initialization complete | 00 | |
| 7 | 1 | Module Monitor Vcc AW Flag | Latched Vcc alarm/ warning | 00 | |
| 8 | 1 | Module Monitor Reserved8 | Reserved | 00 | |
| 9-10 | 2 | Channel Mon RxPower AW Flag | Latched Rx Power alarm/ warning | 00 00 | |
| 11-12 | 2 | Channel Mon TxBias AW Flag | Latched Tx Bias alarm/ warning | 00 00 | |
| 13-21 | 9 | Channel Mon Reserved13 | Reserved | 00 | |
| 22-23 | 2 | Module Monitor Temp | Internally measured module temperature | 00 00 | 1 |
| 24-25 | 2 | Module Monitor Reserved24 | Reserved | 0000 | |
| 26-27 | 2 | Module Monitor Voltage | Internally measured module supply voltage | 00 00 | 1 |
| 28-33 | 6 | Module Monitor Reserved28 | Reserved | 00 | |
| 34-35 | 2 | Channel Mon Rx1Power | Internally measured RX input power, channel 1 | 00 00 | |
| 36-37 | 2 | Channel Mon Rx2Power | Internally measured RX input power, channel 2 | 00 00 | |
| 38-39 | 2 | Channel Mon Rx3Power | Internally measured RX input power, channel 3 | 00 00 | |
| 40-41 | 2 | Channel Mon Rx4Power | Internally measured RX input power, channel 4 | 00 00 | |
| 42-43 | 2 | Channel Mon Tx1Bias | Internally measured TX bias, channel 1 | 00 00 | |
| 44-45 | 2 | Channel Mon Tx2Bias | Internally measured TX bias, channel 2 | 00 00 | |
| 46-47 | 2 | Channel Mon Tx3Bias | Internally measured TX bias, channel 3 | 00 00 | |
| 48-49 | 2 | Channel Mon Tx4Bias | Internally measured TX bias, channel 4 | 00 00 | |

| | | | | | |
|-------|----|------------------------|--|-------|--|
| 50-81 | 32 | Channel Mon Reserved50 | Reserved | 00 | |
| 82-85 | 4 | Reserved82 | Reserved | 00 | |
| 86 | 1 | Control TxDisable | Txn Read/write bit that allows software disable of transmitters | 00 | |
| 87 | 1 | Control Rx Rate Select | Rx channel Software Rate Select | 00 | |
| 88 | 1 | Control Tx Rate Select | Tx channel Software Rate Select | 00 | |
| 89 | 1 | Control Rx4 App Select | Software Application Select per SFF-8079, Rx Channel 4 (Optional) | 00 | |
| 90 | 1 | Control Rx3 App Select | Software Application Select per SFF-8079, Rx Channel 3 (Optional) | 00 | |
| 91 | 1 | Control Rx2 App Select | Software Application Select per SFF-8079, Rx Channel 2 (Optional) | 00 | |
| 92 | 1 | Control Rx1 App Select | Software Application Select per SFF-8079, Rx Channel 1 (Optional) | 00 | |
| 93 | 1 | Control Power | Power set to low power mode/Override of LPMode signal setting the power mode with software | 00 | |
| 94 | 1 | Control Tx4 App Select | Software Application Select per SFF-8079, Tx Channel 4 (Optional) | 00 | |
| 95 | 1 | Control Tx3 App Select | Software Application Select per SFF-8079, Tx Channel 3 (Optional) | 00 | |
| 96 | 1 | Control Tx2 App Select | Software Application Select per SFF-8079, Tx Channel 2 (Optional) | 00 | |
| 97 | 1 | Control Tx1 App Select | Software Application Select per SFF-8079, Tx Channel 1 (Optional) | 00 | |
| 98-99 | 2 | Control Reserved98 | Reserved | 00 00 | |
| 100 | 1 | Mask TxRx LOS | Masking bit for TX/RX LOS indicator | 00 | |
| 101 | 1 | Mask TxFault | Masking bit for TX fault indicator | 00 | |
| 102 | 1 | Mask Reserved102 | Reserved | 00 | |

| 103 | 1 | Mask Temp AW | Masking bit for Temperature alarm/warning and initialization complete | 00 | |
|----------------------------------|------|--------------------------------|---|----------------------------|----|
| 104 | 1 | Mask Vcc AW | Masking bit for Vcc alarm/warning | 00 | |
| 105-106 | 2 | Mask Reserved105 | Reserved | 00 00 | |
| 107-109 | 3 | Reserved107 | Reserved | 00 | |
| 110 | 1 | Power | Power Less Than 1W | 08 | |
| 111-112 | 2 | Reserved111 | Reserved | 00 | |
| 113 | 1 | Channel | Four Channel | 10 | |
| 114-118 | 5 | Reserved107 | Reserved | 00 | |
| 119-122 | 4 | Password Change Entry Area | Password Change Entry Area (optional) | 00 00 00 00 | |
| 123-126 | 4 | Password Entry Area | Password Entry Area (Optional) | 00 00 00 00 | 2 |
| 127 | 1 | Page Select | Page Select Byte | 00 | |
| Upper Memory Map Page 00h | | | | | |
| IIC 地址 | 数据长度 | 寄存器名称 | 描述 | 取值 (HEX) | 备注 |
| 128 | 1 | Identifier | QSFP28 | 11 | |
| 129 | 1 | Ext. Identifier | CLEI code present in Page 02h | 10 | |
| 130 | 1 | Connector | No separable connector | 23 | |
| 131-138 | 8 | Tranceiver | Code for electronic compatibility or optical compatibility | 80 00 00 00 00 00 00 00 | |
| 139 | 1 | Encoding | (64B66B) | 05 | |
| 140 | 1 | BR, nominal | Nominal Bit Rate 25.5GB/s | FF | |
| 141 | 1 | Extended RateSelect Compliance | Tags for Extended RateSelect compliance | 00 | |
| 142 | 1 | Length(SMF) | Link length supported for SMF fiber in km | 00 | |
| 143 | 1 | Length (E-50μm) | Link length supported for EBW 50/125 μm fiber, units of 2 m | 00 | |
| 144 | 1 | Length (50 μm) | Link length supported for 50/125 μm fiber, units of 1 m | 00 | |

| | | | | | |
|---------|----|----------------------------|--|--|--|
| 145 | 1 | Length (62.5 μm) | Link length supported for 62.5/125 μm fiber, units of 1 m | 00 | |
| 146 | 1 | Length (Copper) | Link length supported for copper, units of 1m | - | |
| 147 | 1 | Device Tech | Copper cable unequalized | A0 | |
| 148-163 | 16 | Vendor name | MODULETEK | 4D 4F 44 55 4C 45 54 45 4B 20 20 20 20 20 20 20 | |
| 164 | 1 | Extended Transceiver | Extended Transceiver Codes for InfiniBand | 00 | |
| 165-167 | 3 | Vendor OUI | QSFP vendor IEEE company ID | 00 00 00 | |
| 168-183 | 16 | Vendor PN | Part number in Order information | - | |
| 184-185 | 2 | Vendor rev | Revision level for part number provided by vendor (ASCII) | - | |
| 186-187 | 2 | Wavelength | Nominal laser wavelength (Wavelength = value / 20 in nm) | - | |
| 188-189 | 2 | Wavelength Tolerance | Guaranteed range of laser wavelength (+/- value) from Nominal wavelength. (Wavelength Tol. = value/ 200 in nm) | - | |
| 190 | 1 | Max Case Temp | Maximum Case Temperature in Degrees C. | 46 | |
| 191 | 1 | CC BASE | Check code for Base ID Fields (addresses 128-190) | - | |
| 192-195 | 4 | Options | Rate Select, TX Disable, TX Fault, LOS, Warning indicators for: Temperature, VCC, RX power, TX Bias | 0B 00 00 00 | |
| 196-211 | 16 | Vendor SN | Serial number provided by vendor | Programmed by Factory | |
| 212-219 | 8 | Date Code | Year,Month,Day | Programmed by Factory | |
| 220 | 1 | Diagnostic Monitoring Type | Indicates which types of diagnostic monitoring are implemented (if any) in the Module. Bit 1,0 Reserved | 00 | |

| 221 | 1 | Enhanced options | Indicates which optional enhanced features are implemented in the Module. | 00 | |
|----------------------------------|------|-----------------------------|---|-------------|----|
| 222 | 1 | Reserved | Reserved | - | |
| 223 | 1 | CC EXT | Check code for the Extended ID Fields (addresses 192-222) | - | |
| 224-255 | 32 | Vendor Specific | Vendor Specific EEPROM | - | |
| Upper Memory Map Page 02h | | | | | |
| IIC 地址 | 数据长度 | 寄存器名称 | 描述 | 取值 (HEX) | 备注 |
| 128-255 | 128 | Upper Memory Map | User Code Area | - | |
| Upper Memory Map Page 8Ah | | | | | |
| IIC 地址 | 数据长度 | 寄存器名称 | 描述 | 取值 (HEX) | 备注 |
| 128-131 | 4 | Firmware Version Number[4] | Firmware Version Number | - | |
| 132-135 | 4 | Datasheet Version Number[4] | Datasheet Version Number | - | |
| 136 | 1 | Security Level | Security Level: 00=Normal Mode; 01=User Mode (level 1); 02=Factory Mode (level 2); | - | |
| 137-138 | 2 | Vcc ADC | Vcc ADC | - | 1 |
| 139-140 | 2 | Temp ADC | Temp ADC | - | 1 |
| Upper Memory Map Page F0h | | | | | |
| IIC 地址 | 数据长度 | 寄存器名称 | 描述 | 取值 (HEX) | 备注 |
| 128-131 | 4 | Password1 long | Level 1 Password | 00 00 10 11 | |

注:

1. 模块自动更新数据
2. 缺省为 00000000, 读出为最后的写入值
3. 模块 A0H 的表 00、表 02 带有写保护功能, 进入安全等级 1 可写

SFP 端

| Address A0 | | | | | |
|------------|------|------------|-------------|----------|----|
| IIC 地址 | 数据长度 | 寄存器名称 | 描述 | 取值 (HEX) | 备注 |
| 0 | 1 | Identifier | SFP or SFP+ | 03 | |

| | | | | | |
|-------|----|------------------------------|---|--|--|
| 1 | 1 | Ext. Identifier | GBIC/SFP function is defined by two-wire interface ID only | 04 | |
| 2 | 1 | Connector | Copper pigtail | 21 | |
| 3-10 | 8 | Transceiver | Passive Cable | 00 00 00 00 00 04 00 00 | |
| 11 | 1 | Encoding | Code for high speed serial encoding algorithm | 00 | |
| 12 | 1 | BR, Nominal | Nominal Bit Rate 25.5GB/s | FF | |
| 13 | 1 | Rate Identifier | Type of rate select functionality | 00 | |
| 14 | 1 | Length(SMF,km) | Link length supported for single mode fiber, units of km | 00 | |
| 15 | 1 | Length (SMF) | Link length supported for single mode fiber, units of 100 m | 00 | |
| 16 | 1 | Length (50um) | Link length supported for 50 um OM2 fiber, units of 10 m | 00 | |
| 17 | 1 | Length (62.5um) | Link length supported for 62.5 um OM1 fiber, units of 10 m | 00 | |
| 18 | 1 | Length (OM4 or copper cable) | Link length supported for 50um OM4 fiber, units of 10m. Alternatively copper or direct attach cable, units of m | 01 | |
| 19 | 1 | Length (OM3) | Link length supported for 50 um OM3 fiber, units of 10 m | 00 | |
| 20-35 | 16 | Vendor name | MODULETEK | 4D 4F 44 55 4C 45 54 45 4B 20 20 20 20 20 20 20 | |
| 36 | 1 | Transceiver | Code for electro nic or optical compatibility | 0D | |
| 37-39 | 3 | Vendor OUI | SFP vendor IEEE company ID | 00 00 00 | |
| 40-55 | 16 | Vendor PN | Part number in Order information | - | |
| 56-59 | 4 | Vendor rev | Revision level for part number provided by vendor (ASCII) | - | |

| 60-61 | 2 | Wavelength | Laser wavelength (Passive/Active Cable Specification Compliance) | 00 00 | |
|-----------------------|----------|-------------------------------|---|--------------------------|----|
| 62 | 1 | Unallocated | | 00 | |
| 63 | 1 | CC BASE | Check code for Base ID Fields (addresses 0 to 62) | - | |
| 64-65 | 2 | Options | Indicates which optional transceiver signals are implemented | 00 00 | |
| 66 | 1 | BR, max | Upper bit rate margin | 64 | |
| 67 | 1 | BR, min | Lower bit rate margin | 00 | |
| 68-83 | 16 | Vendor SN | Serial number provided by vendor | Programmed by Factory | |
| 84-91 | 8 | Date code | Year,Month,Day | Programmed by Factory | |
| 92 | 1 | Diagnostic Monitoring Type | Indicates which type of diagnostic monitoring is implemented (if any) in the transceiver | 00 | |
| 93 | 1 | Enhanced Options | Indicates which optional enhanced features are implemented (if any) in the transceiver | 00 | |
| 94 | 1 | SFF-8472 Compliance | Indicates which revision of SFF-8472 the transceiver complies with. | 00 | |
| 95 | 1 | CC EXT | Check code for the Extended ID Fields (addresses 64 to 94) | - | |
| 96-127 | 32 | Vendor Specific | Vendor Specific EEPROM | - | |
| 128-255 | 128 | Vendor Specific | Vendor Specific EEPROM | - | |
| Address A2 Low | | | | | |
| IIC 地址 | 数据 长度 | 寄存器名称 | 描述 | 取值 (HEX) | 备注 |
| 0-94 | 95 | Reserved | Reserved | FF | |
| 95 | 1 | Checksum | 0-94 Byte Checksum | - | |
| 96-121 | 26 | Reserved | Reserved | 00 | |
| 122 | 1 | Security Level | Security Level: 00=Normal Mode; 01=User Mode (Level 1); 02=Factory mode (Level 2); | 00 | |
| 123-126 | 4 | Password Entry | Password Entry Area | 00 00 00 00 | 1 |
| 127 | 1 | Table Selection | Page Select Byte | 00 | |

| Address A2 Page 00h/01h | | | | | |
|-------------------------|------|------------------------------|--|-------------|----|
| IIC 地址 | 数据长度 | 寄存器名称 | 描述 | 取值 (HEX) | 备注 |
| 128-255 | 128 | Upper Memory Map | User Code Area | - | |
| Address A2 Page 8Ah | | | | | |
| IIC 地址 | 数据长度 | 寄存器名称 | 描述 | 取值 (HEX) | 备注 |
| 128-131 | 4 | Firmware Version Number[4] | Firmware Version Number | - | |
| 132-135 | 4 | Total Running Time In Second | Total Running Time In Second | - | |
| Address A2 Page F0h | | | | | |
| IIC 地址 | 数据长度 | 寄存器名称 | 描述 | 取值 (HEX) | 备注 |
| 128-131 | 4 | Password1 Long | Level 1 Password | 00 00 10 11 | |
| 132 | 1 | DisableA0WP | 00=A0 With Write Protection; 01=A0 Without Write Protection | 00 | |
| 133 | 1 | DisableA2T00T01WP | 00=A2 T00T01 With Write Protection; 01=A2 T00T01 Without Write Protection | 00 | |

注:

1. 缺省为 00000000, 读出为最后的写入值
2. 模块的 A0H 及 A2H 的表 00、表 01 带有写保护功能, 进入安全等级 1 可写

用户模式

| 模块 | 安全等级 1 缺省密码 | 密码是否可改 | 权限 |
|--------|-------------|------------|---------------------|
| QSFP 端 | 00 00 10 11 | 是 (A2 TF0) | 1、可读写 A0 T00/T02 |
| | | | 2、可读 A0 T8A |
| | | | 3、可读写 A0 TF0 |
| SFP 端 | 00 00 10 11 | 是 (A2 TF0) | 1、可读写 A0、A2 T00/T01 |
| | | | 2、可读 A2 T8A |
| | | | 3、可读写 A2 TF0 |

插损等级

| 型号 | 插损等级 |
|--------------------------------------|----------|
| DAC-QSFP-2SFP-50G-P-30AWG-1M-D1C1B | CA-25G-N |
| DAC-QSFP-2SFP-50G-P-30AWG-2M-D1C1B | CA-25G-N |
| DAC-QSFP-2SFP-50G-P-28AWG-2.5M-D1C1B | CA-25G-N |
| DAC-QSFP-2SFP-50G-P-28AWG-3M-D1C1B | CA-25G-S |
| DAC-QSFP-2SFP-50G-P-26AWG-5M-D1C1B | CA-25G-L |

注:

1. 线缆插损等级分类标准: IEEE 802.3by 110-10

线缆规格

| 参数 | 符号 | 最小值 | 典型值 | 最大值 | 单位 | 备注 |
|------|----|-----|-----|-----|-----|----|
| 线规 | | 30 | | 26 | AWG | |
| 线缆阻抗 | Z | 90 | 100 | 110 | Ohm | |

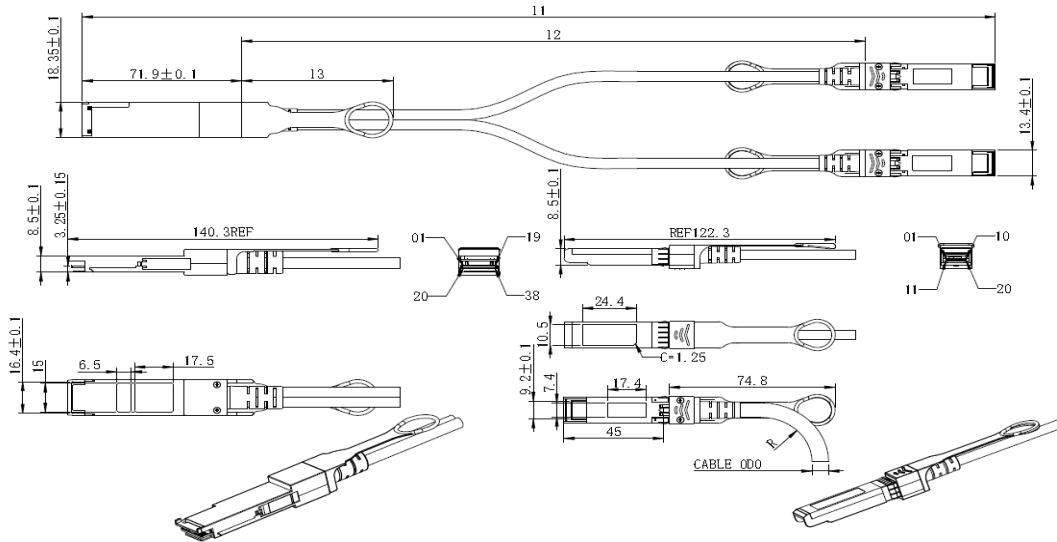
产品重量

| 参数 | 符号 | 典型值 | 单位 | 备注 |
|-------------|------------------|------|-------|----|
| 30AWG 产品重量 | G _{D30} | 150 | g/PCS | 1 |
| 28AWG 产品重量 | G _{D28} | 160 | g/PCS | 1 |
| 26AWG 产品重量 | G _{D26} | 170 | g/PCS | 1 |
| 30AWG 电缆重量 | G _{C30} | 64 | g/M | 2 |
| 28AWG 电缆重量 | G _{C28} | 76 | g/M | 2 |
| 26AWG 电缆重量 | G _{C26} | 86 | g/M | 2 |
| SFP 端防尘帽重量 | G _S | 0.80 | g/个 | |
| QSFP 端防尘帽重量 | G _Q | 1.40 | g/个 | |

注:

- DAC-QSFP-2SFP-50G-P-xxAWG-1M-D1C1B 产品的重量
- 单位长度电缆重量 (2 根)。例如: DAC-QSFP-2SFP-50G-P-26AWG-5M-D1C1B 产品的重量为: $170+86*(5-1)+0.80*2+1.40=517.0g$

外形尺寸



未注尺寸公差 ±0.2mm
单位: 毫米

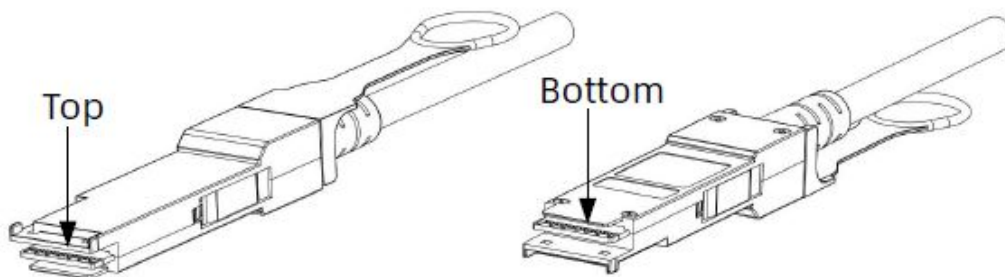
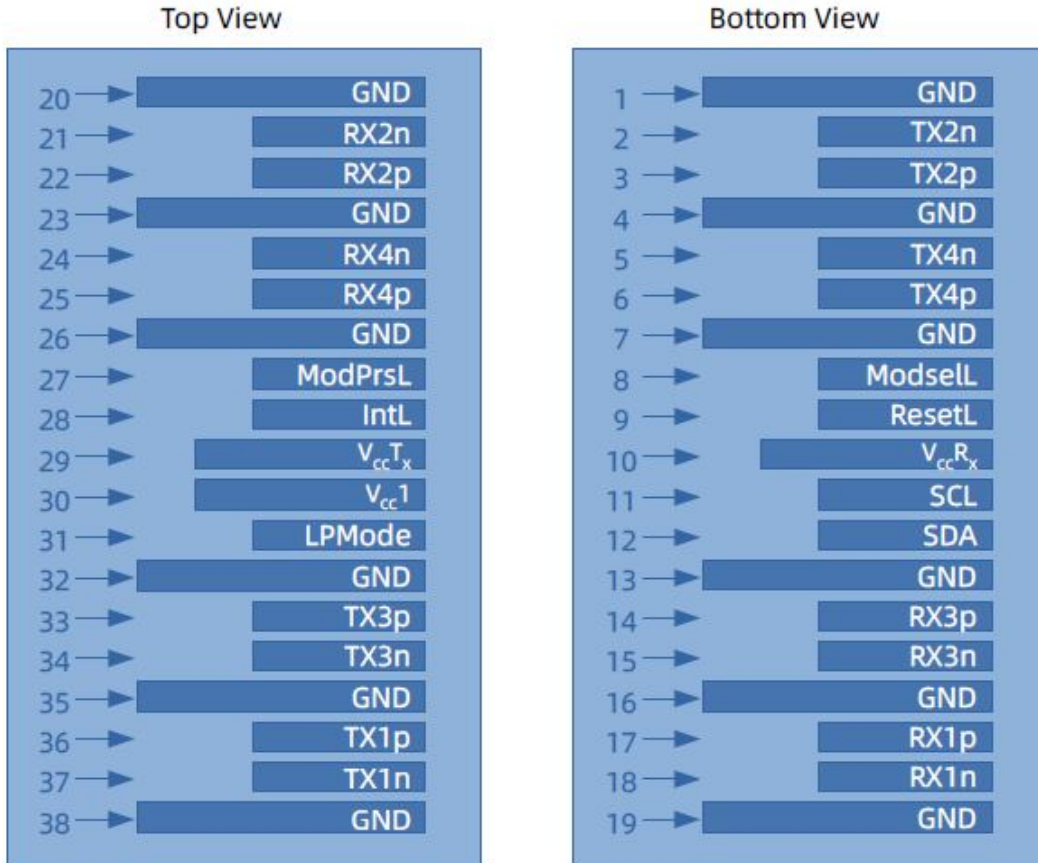
线径尺寸

| 序号 | 标准线规 AWG | 线缆直径 OD(毫米) | 最小弯曲半径 R(毫米) |
|----|----------|-------------|--------------|
| 1 | 30 | 4.6 | 26 |
| 2 | 28 | 5.0 | 28 |
| 3 | 26 | 5.6 | 30 |

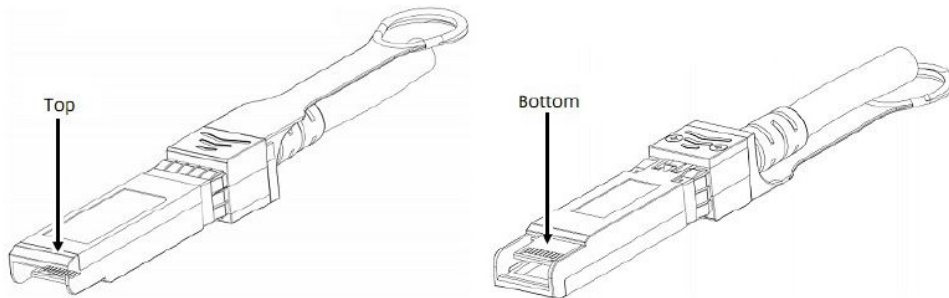
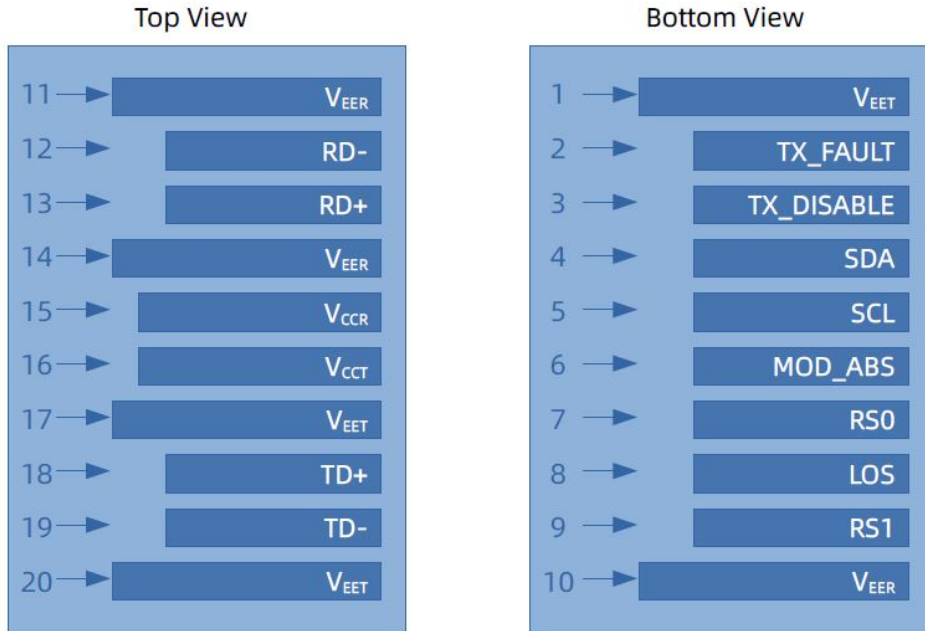
标称长度

| 序号 | 模块标称长度 L1 (厘米) | 公差范围 (厘米) |
|----|-----------------|-----------|
| 1 | $L1 \leq 2$ | 2 |
| 2 | $2 < L1 \leq 4$ | 4 |
| 3 | $4 < L1 \leq 5$ | 6 |

QSFP 引脚图



SFP 引脚图



QSFP 引脚定义

| PIN # | 符号 | 说明 | 备注 |
|-------|--------------------------------|------------------------|----|
| 1 | GND | 地 | 5 |
| 2 | TX2n | 发射端数据输入负, LAN2 | |
| 3 | TX2p | 发射端数据输入正, LAN2 | |
| 4 | GND | 地 | 5 |
| 5 | TX4n | 发射端数据输入负, LAN4 | |
| 6 | TX4p | 发射端数据输入正, LAN4 | |
| 7 | GND | 地 | 5 |
| 8 | ModSelL | 模块选择引脚, 低电平时模块响应两线串口通信 | 1 |
| 9 | ResetL | 模块重置 | 2 |
| 10 | V _{CC} R _X | +3.3V 接收端电源供电 | |
| 11 | SCL | 两线串行接口时钟线 | |
| 12 | SDA | 两线串行接口数据线 | |
| 13 | GND | 地 | 5 |
| 14 | RX3P | 接收端数据输出正, LAN3 | |
| 15 | RX3n | 接收端数据输出负, LAN3 | |
| 16 | GND | 地 | 5 |
| 17 | RX1P | 接收端数据输出正, LAN1 | |
| 18 | RX1n | 接收端数据输出负, LAN1 | |
| 19 | GND | 地 | 5 |
| 20 | GND | 地 | 5 |
| 21 | Rx2n | 接收端数据输出负, LAN2 | |
| 22 | Rx2p | 接收端数据输出正, LAN2 | |
| 23 | GND | 地 | 5 |
| 24 | Rx4n | 接收端数据输出负, LAN4 | |
| 25 | Rx4p | 接收端数据输出正, LAN4 | |
| 26 | GND | 地 | 5 |
| 27 | ModPrsL | 模块插入指示引脚, 在模块内接地 | 3 |
| 28 | IntL | 中断 | 4 |
| 29 | V _{CC} T _X | +3.3V 发射端电源供电 | |
| 30 | V _{CC} 1 | +3.3V 电源 | |
| 31 | LPMoDe | 低功耗模式 | 5 |
| 32 | GND | 地 | 5 |
| 33 | Tx3p | 发射端数据输入正, LAN3 | |

| | | | |
|----|------|----------------|---|
| 34 | Tx3n | 发射端数据输入负, LAN3 | |
| 35 | GND | 地 | 5 |
| 36 | Tx1p | 发射端数据输入正, LAN1 | |
| 37 | Tx1n | 发射端数据输入负, LAN1 | |
| 38 | GND | 地 | 5 |

注:

1. ModSelL 是输入引脚。当它通过主机保持低电平时, 模块响应 2 线串行通信命令。ModSelL 允许在单个 2 线接口总线上使用多个 QSFP 模块。如果 ModSelL 为“高”, 模块将不响应来自主机的任何 2 线接口通信。ModSelL 在模块中具有内部上拉电阻。
2. 模块重启引脚, 当 ResetL 引脚上低电平持续时间长于最小脉冲长度时会使模块复位, 并将所有用户模块恢复为它们的默认状态, 在执行复位器件, 主机应忽略所有状态位, 直到模块复位中断完成。
3. 该引脚高电平有效, 表示模块在低功耗模式下运行, 该信号对本产品功能无影响。
4. IntL 是输出引脚, 是开路集电极输出, 应在主机板上以 4.7kΩ-10kΩ 电阻上拉到 Vcc。当它是低电平时, 表示模块可能操作故障。主机使用 2 线串行接口识别中断源。
5. 电路接地与外壳接地内部隔离。

SFP 引脚定义

| PIN # | 符号 | 说明 | 备注 |
|-------|------------------|---------------------------|----|
| 1 | V _{EET} | 发射端地 (与接收端地共用) | 1 |
| 2 | TX_FAULT | 发射端故障告警, 未使用 | |
| 3 | TX_DISABLE | 该信号在高电平或开路时关闭模块发射端, 未使用 | |
| 4 | SDA | 两线串行接口数据线 | 2 |
| 5 | SCL | 两线串行接口时钟线 | 2 |
| 6 | MOD_ABS | 模块插入指示引脚, 在模块内接地 | 2 |
| 7 | RS0 | 未连接 | |
| 8 | LOS | 信号丢失指示, 低电平表示模块正常工作, 内部接地 | |
| 9 | RS1 | 未连接 | |
| 10 | V _{EER} | 接收端地 (与发射端地共用) | 1 |
| 11 | V _{EER} | 接收端地 (与发射端地共用) | 1 |
| 12 | RD- | 接收端数据输出负, 交流耦合 | |
| 13 | RD+ | 接收端数据输出正, 交流耦合 | |
| 14 | V _{EER} | 接收端地 (与发射端地共用) | 1 |
| 15 | V _{CCR} | 接收端电源 | |
| 16 | V _{CCT} | 发射端电源 | |
| 17 | V _{EET} | 发射端地 (与接收端地共用) | 1 |
| 18 | TD+ | 发射端数据输入正, 交流耦合 | |
| 19 | TD- | 发射端数据输入负, 交流耦合 | |
| 20 | V _{EET} | 发射端地 (与接收端地共用) | 1 |

注:

1. 电路地与模块外壳是绝缘的。
2. 应在主机板上以 4.7kΩ-10kΩ 的电阻上拉到 2V 至 3.6V 之间的电压。

参考文献

1. IEEE standard 802.3bj. IEEE Standard Department.
2. IEEE standard 802.3by. IEEE Standard Department.