

# 排除Small Form-Factor Pluggable (SFP) /Cable问题故障

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## Introduction

本文描述应该验证如支持交换机/module/SFP和电缆的种类，当有点/词错误问题发生时。

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## Cisco多层数据交换(MD) 9000家族可插入的收发器数据表或宣传单页

[https://www.cisco.com/c/en/us/products/collateral/storage-networking/mds-9000-series-multilayer-switches/product\\_data\\_sheet09186a00801bc698.html?dtid=osscdc000283](https://www.cisco.com/c/en/us/products/collateral/storage-networking/mds-9000-series-multilayer-switches/product_data_sheet09186a00801bc698.html?dtid=osscdc000283)

主要，请确定确切的数量、长度和类型(OM2,OM3等等)的缚住介入，与跳线架一起的数量在它。

SFP实际上显示其功能：

## 短波SFP

```
F241-15-09-MDS9710# show interface fc1/4 transceiver details
fc1/4 sfp is present
  Name is CISCO-AVAGO
  Manufacturer's part number is AFBR-57F5PZ-CS1
  Revision is B2
  Serial number is AVA1551J9KF
  Cisco part number is 10-2666-01
  Cisco pid is DS-SFP-FC16G-SW
  FC Transmitter type is short wave laser w/o OFC (SN)
  FC Transmitter supports short distance link length
  Transmission medium is multimode laser with 62.5 um aperture (M6)
  Supported speeds are - Min speed: 4000 Mb/s, Max speed: 16000 Mb/s
  Nominal bit rate is 14000 Mb/s
  Link length supported for 50/125um OM2 fiber is 35 m
  Link length supported for 62.5/125um fiber is 15 m
```

Link length supported for 50/125um OM3 fiber is 100 m  
Cisco extended id is unknown (0x0)

No tx fault, no rx loss, in sync state, diagnostic monitoring type is 0x68  
SFP Diagnostics Information:

		Alarms		Warnings	
		High	Low	High	Low
Temperature	33.48 C	75.00 C	-5.00 C	70.00 C	0.00 C
Voltage	3.29 V	3.63 V	2.97 V	3.46 V	3.13 V
Current	7.46 mA	10.50 mA	2.50 mA	10.50 mA	2.50 mA
Tx Power	-2.54 dBm	1.70 dBm	-13.00 dBm	-1.30 dBm	-9.00 dBm
Rx Power	-2.32 dBm	3.00 dBm	-15.90 dBm	0.00 dBm	-11.90 dBm
Transmit Fault Count = 0					

Note: ++ high-alarm; + high-warning; -- low-alarm; - low-warning

F241-15-09-MDS9710#

以上指示SFP的种类是DS-SFP-FC16G-SW，并且最大长度是有50/125um (微米) OM3接线的100个集会人员。

## 长波SFP

F241-15-09-MDS9710# show interface fc9/1 transceiver details

fc9/1 sfp is present

Name is CISCO-FINISAR

Manufacturer's part number is FTLF1432P3BCV-C1

Revision is B

Serial number is FNS21190B7F

Cisco part number is 10-3207-01

Cisco pid is **DS-SFP-FC32G LW**

FC Transmitter type is long wave laser cost reduced

FC Transmitter supports long distance link length

Transmission medium is single mode (SM) laser

Supported speeds are - Min speed: 8000 Mb/s, Max speed: 32000 Mb/s

Nominal bit rate is 28000 Mb/s

**Link length supported for 9/125um fiber is 10 km**

Cisco extended id is unknown (0x0)

No tx fault, no rx loss, in sync state, diagnostic monitoring type is 0x68  
SFP Diagnostics Information:

		Alarms		Warnings	
		High	Low	High	Low
Temperature	32.52 C	75.00 C	-5.00 C	70.00 C	0.00 C
Voltage	3.37 V	3.63 V	2.97 V	3.46 V	3.13 V
Current	38.55 mA	70.00 mA	1.00 mA	68.00 mA	2.00 mA
Tx Power	0.49 dBm	5.00 dBm	-12.40 dBm	2.00 dBm	-8.40 dBm
Rx Power	-7.43 dBm	5.00 dBm	-18.01 dBm	2.00 dBm	-14.00 dBm
Transmit Fault Count = 0					

Note: ++ high-alarm; + high-warning; -- low-alarm; - low-warning

F241-15-09-MDS9710#

以上指示SFP的种类是DS-SFP-FC32G-LW，并且最大长度是10KM。

**Note:**显示的长度是最大长度在完善的情况下。跳线架和光纤的另外的长度在路径的有时显著地缩短距离。

跳线架和其他半成品连接频繁地是问题的来源。您应该总是尝试和排除这些作为一个诊断的步骤。保证这在一有条不紊的方法执行，并且结果描述与每更改。

注释Rx功率在上述输出中在可接受范围内：

```
F241-15-09-MDS9710# show interface fc9/1 transceiver details
fc9/1 sfp is present
  Name is CISCO-FINISAR
  Manufacturer's part number is FTLF1432P3BCV-C1
  Revision is B
  Serial number is FNS21190B7F
  Cisco part number is 10-3207-01
  Cisco pid is DS-SFP-FC32G LW
  FC Transmitter type is long wave laser cost reduced
  FC Transmitter supports long distance link length
  Transmission medium is single mode (SM) laser
  Supported speeds are - Min speed: 8000 Mb/s, Max speed: 32000 Mb/s
  Nominal bit rate is 28000 Mb/s
  Link length supported for 9/125um fiber is 10 km
  Cisco extended id is unknown (0x0)

  No tx fault, no rx loss, in sync state, diagnostic monitoring type is 0x68
  SFP Diagnostics Information:
```

		Alarms		Warnings	
		High	Low	High	Low
Temperature	32.52 C	75.00 C	-5.00 C	70.00 C	0.00 C
Voltage	3.37 V	3.63 V	2.97 V	3.46 V	3.13 V
Current	38.55 mA	70.00 mA	1.00 mA	68.00 mA	2.00 mA
Tx Power	0.49 dBm	5.00 dBm	-12.40 dBm	2.00 dBm	-8.40 dBm
Rx Power	-7.43 dBm	5.00 dBm	-18.01 dBm	2.00 dBm	-14.00 dBm
Transmit Fault Count = 0					

Note: ++ high-alarm; + high-warning; -- low-alarm; - low-warning

```
F241-15-09-MDS9710#
```

Rx功率在可接受范围不表明端对端光纤/跳线/patch面板连接是好的。您可能仍然需要绕过有些一次一个。

通常，额外的位/词错误的问题不是ASIC问题。然而，如果要移动电缆向在同一个模块的不同的端口然后您需要认识模块(端口layport的体系结构每个ASIC)。

例如：

MD 9500 (DS-X9248-256K9)有称为Thunderbirds的4个FC ASIC。

这些FC ASIC每把柄12端口：

- ASIC 0 - fc1/1-12
- ASIC 1 - fc1/13-24
- ASIC 2 - fc1/25-36
- ASIC 3 - fc1/37-48

MD在可以运行的ISL诊断构件。

## 测试的类型

这是您如何运行对链路的诊断测试。

### 潜伏期/电缆长度测试

这是将测量潜伏期并且确定电缆长度的短时长测试。这是您如何执行它：

端A -称此生成器边。它生成数据流。

旁边B -称此反射器边。它从生成器收到数据流并且送回它。

例如：

边A(generator) fc9/1----fc6/1边B(reflector)

1.1边B(reflector)

1.1.1 -请关闭将使用的接口

1.1.2 -诊断的isl反射器latency\_test回环接口fc6/1 enable (event)

1.2边A(generator)

1.2.1 -请关闭将使用的接口

1.2.2 -诊断的isl潜伏期TEST接口fc9/1

这是什么看起来象在实验室交换机：

```
F241-15-09-MDS9710# show interface fc9/1 transceiver details
```

```
fc9/1 sfp is present
```

```
Name is CISCO-FINISAR
```

```
Manufacturer's part number is FTLF1432P3BCV-C1
```

```
Revision is B
```

```
Serial number is FNS21190B7F
```

```
Cisco part number is 10-3207-01
```

```
Cisco pid is DS-SFP-FC32G LW
```

```
FC Transmitter type is long wave laser cost reduced
```

```
FC Transmitter supports long distance link length
```

```
Transmission medium is single mode (SM) laser
```

```
Supported speeds are - Min speed: 8000 Mb/s, Max speed: 32000 Mb/s
```

```
Nominal bit rate is 28000 Mb/s
```

```
Link length supported for 9/125um fiber is 10 km
```

```
Cisco extended id is unknown (0x0)
```

```
No tx fault, no rx loss, in sync state, diagnostic monitoring type is 0x68
```

```
SFP Diagnostics Information:
```

		Alarms		Warnings	
		High	Low	High	Low
Temperature	32.52 C	75.00 C	-5.00 C	70.00 C	0.00 C
Voltage	3.37 V	3.63 V	2.97 V	3.46 V	3.13 V
Current	38.55 mA	70.00 mA	1.00 mA	68.00 mA	2.00 mA

```
Tx Power      0.49 dBm      5.00 dBm -12.40 dBm   2.00 dBm    -8.40 dBm
Rx Power      -7.43 dBm     5.00 dBm -18.01 dBm   2.00 dBm    -14.00 dBm
Transmit Fault Count = 0
```

-----  
Note: ++ high-alarm; + high-warning; -- low-alarm; - low-warning

F241-15-09-MDS9710#

## 数据流生成器测试

这是一个长期轮廓鲜明的费率测试。3600秒(1小时)

### 2.1边B(reflector)

2.1.1 -请关闭将使用的接口

2.1.2 -诊断的isl反射器traffic\_test link\_speed 32G回环接口fc6/1 enable (event)

### 2.2边A(generator)

2.2.1 -请关闭将使用的接口

2.2.2 -诊断的isl生成器接口fc9/1启动期限3600费率100% frame\_size分钟16最大517第100步 link\_speed 32g

这运行1小时以32G轮廓鲜明的费率。

这是什么看起来象在实验室交换机：

```
F241-15-09-MDS9710# show interface fc9/1 transceiver details
```

```
fc9/1 sfp is present
```

```
Name is CISCO-FINISAR
```

```
Manufacturer's part number is FTLF1432P3BCV-C1
```

```
Revision is B
```

```
Serial number is FNS21190B7F
```

```
Cisco part number is 10-3207-01
```

```
Cisco pid is DS-SFP-FC32G LW
```

```
FC Transmitter type is long wave laser cost reduced
```

```
FC Transmitter supports long distance link length
```

```
Transmission medium is single mode (SM) laser
```

```
Supported speeds are - Min speed: 8000 Mb/s, Max speed: 32000 Mb/s
```

```
Nominal bit rate is 28000 Mb/s
```

```
Link length supported for 9/125um fiber is 10 km
```

```
Cisco extended id is unknown (0x0)
```

```
No tx fault, no rx loss, in sync state, diagnostic monitoring type is 0x68
```

```
SFP Diagnostics Information:
```

```
-----  
                Alarms                Warnings  
                High                   Low                   High                   Low  
-----  
Temperature    32.52 C                 75.00 C                -5.00 C                 70.00 C                 0.00 C  
Voltage         3.37 V                   3.63 V                  2.97 V                  3.46 V                  3.13 V  
Current         38.55 mA                  70.00 mA                1.00 mA                 68.00 mA                2.00 mA  
Tx Power        0.49 dBm                  5.00 dBm               -12.40 dBm              2.00 dBm                -8.40 dBm  
Rx Power        -7.43 dBm                 5.00 dBm               -18.01 dBm              2.00 dBm               -14.00 dBm  
Transmit Fault Count = 0
```

-----  
Note: ++ high-alarm; + high-warning; -- low-alarm; - low-warning

建议您在其中每一条清除接口计数器并且运行此链路1小时。然后请获得关于每边的上述CRC和FEC信息。

为了清除接口计数器发出，使用**clear counters**接口全部。

### 配置调度程序工作

最大数量的上述数据流生成器测验运行一小时。要运行它(类似24小时)您能长期配置调度程序工作：

需要配置了调度程序，那里是两部分：

- 调度程序工作
- 调度程序日程表

调度程序工作是您配置的地方什么您要执行，当调度程序日程表是时您配置的地方，当您希望工作运作。此日程表运行，直到您取消日程表。没有手工终止它的简单的方法。

您需要用那个替换接口在您的结构。

如果犯与工作的配置的一个错误，您必须删除它和再开始。它不允许您返回修改它。请注意:在生成器边，生成器终止在那里，当运行在首先次，您也许发现是好的错误。当下次它运行，应该是好。

这是脚本：

```
F241-15-09-MDS9710# show interface fc9/1 transceiver details
fc9/1 sfp is present
  Name is CISCO-FINISAR
  Manufacturer's part number is FTLF1432P3BCV-C1
  Revision is B
  Serial number is FNS21190B7F
  Cisco part number is 10-3207-01
  Cisco pid is DS-SFP-FC32G LW
  FC Transmitter type is long wave laser cost reduced
  FC Transmitter supports long distance link length
  Transmission medium is single mode (SM) laser
  Supported speeds are - Min speed: 8000 Mb/s, Max speed: 32000 Mb/s
  Nominal bit rate is 28000 Mb/s
  Link length supported for 9/125um fiber is 10 km
  Cisco extended id is unknown (0x0)

  No tx fault, no rx loss, in sync state, diagnostic monitoring type is 0x68
  SFP Diagnostics Information:
```

		Alarms		Warnings	
		High	Low	High	Low
Temperature	32.52 C	75.00 C	-5.00 C	70.00 C	0.00 C
Voltage	3.37 V	3.63 V	2.97 V	3.46 V	3.13 V
Current	38.55 mA	70.00 mA	1.00 mA	68.00 mA	2.00 mA
Tx Power	0.49 dBm	5.00 dBm	-12.40 dBm	2.00 dBm	-8.40 dBm
Rx Power	-7.43 dBm	5.00 dBm	-18.01 dBm	2.00 dBm	-14.00 dBm
Transmit Fault Count = 0					

-----  
Note: ++ high-alarm; + high-warning; -- low-alarm; - low-warning

F241-15-09-MDS9710#

其它命令：

- show logging内置状态
- show logging内置模块<module number>
- show logging内置堆栈跟踪
- show logging内置mem泄漏
- show logging内置错误stats
- show logging内置例外LOG
- show logging内置错误stats
- show logging内置环境历史记录