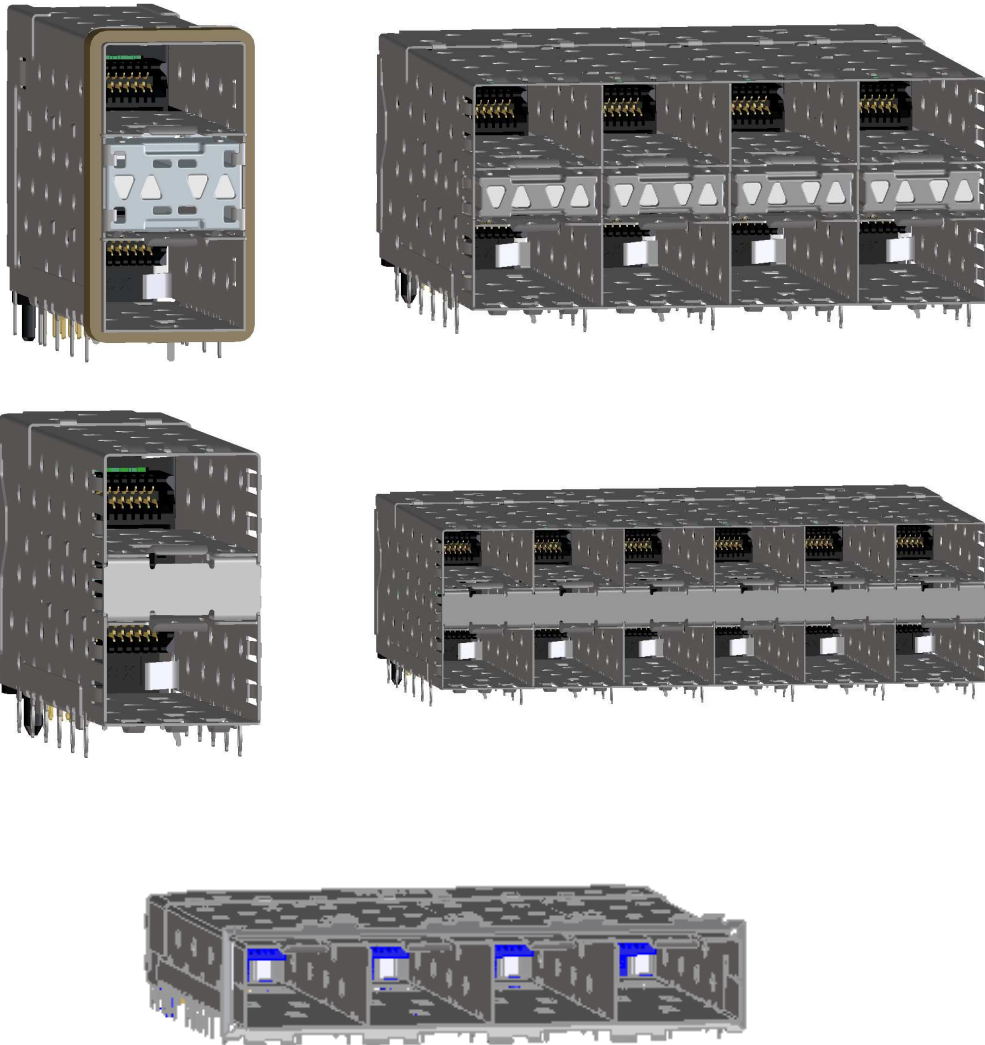




PRODUCT SPECIFICATION



SFP MULTI-PORT CONNECTORS

<u>REVISION:</u> I	<u>ECR/ECN INFORMATION:</u> EC No: UCP2012-1428 DATE: 2011/11/02	<u>TITLE:</u> PRODUCT SPECIFICATION FOR SFP AND SFP+ MULTI-PORT CONNECTORS	<u>SHEET No.:</u> 1 of 11
<u>DOCUMENT NUMBER:</u> PS-75310-001	<u>REVISED BY:</u> BOB BARKER	<u>CHECKED BY:</u> SCOTT DANIELLEY	<u>APPROVED BY:</u> STEVE MILLER



PRODUCT SPECIFICATION

TABLE OF CONTENTS

1.0	SCOPE
2.0	PRODUCT DESCRIPTION
2.1	PRODUCT NAME AND NUMBERS
2.2	DIMENSIONS, MATERIAL, PLATING AND MARKINGS
2.3	UL/CSA CERTIFICATION
3.0	APPLICABLE DOCUMENTS AND SPECIFICATIONS
4.0	RATINGS
4.1	VOLTAGE
4.2	CURRENT
4.3	TEMPERATURE
4.4	ELECTRICAL
4.5	DURABILITY
5.0	PERFORMANCE
5.1	TEST GROUP 1
5.2	TEST GROUP 2
5.3	TEST GROUP 3
5.4	TEST GROUP 4
5.5	TEST GROUP 5
6.0	INSERTION, EXTRACTION AND RETENTION FORCES
7.0	PRINTED CIRCUIT BOARD SPECIFICATIONS
8.0	EMI TEST DATA
8.1	METHOD
8.2	DATA
9.0	PACKAGING
9.1	METHOD
9.2	REQUIREMENTS

<u>REVISION:</u> I	<u>ECR/ECN INFORMATION:</u> EC No: UCP2012-1428 DATE: 2011/11/02	<u>TITLE:</u> PRODUCT SPECIFICATION FOR SFP AND SFP+ MULTI-PORT CONNECTORS	<u>SHEET No.:</u> 2 of 11
<u>DOCUMENT NUMBER:</u> PS-75310-001	<u>REVISED BY:</u> BOB BARKER	<u>CHECKED BY:</u> SCOTT DANNELLEY	<u>APPROVED BY:</u> STEVE MILLER



PRODUCT SPECIFICATION

1.0 SCOPE

This specification covers the 0.80 mm (.031 inch) centerline Small Form-factor pluggable (SSFP) and (SSFP+) Multi-port connectors with and without light pipes. The connectors have 20-contacts per port. The connector is a right angle thru-hole or a press-fit compliant mount connector.

2.0 PRODUCT DESCRIPTION

2.1.1 Stacked SFP (SSFP)

Height	With light pipes	Drawing Number
Tall	2x1 thru-hole connector with flange (40 ckt)	SD-75310-100
Tall	2x1 thru-hole connector w/extended flange (40 ckt)	SD-75460-001
Tall	2x1 press-fit connector with flange (40 ckt)	SD-75786-001
Tall	2x1 press-fit connector w/extended flange (40 ckt)	SD-75787-001
Medium	2x1 press-fit connector w/EMI fingers (40 ckt)	SD-75640-00*
Medium	2x2 press-fit connector w/EMI fingers (80 ckt)	SD-75714-00*
Medium	2x4 press-fit connector w/EMI fingers (160 ckt)	SD-75450-00*
Medium	2x5 press-fit connector w/EMI fingers (200 ckt)	SD-75734-00*
Medium	2x6 press-fit connector w/EMI fingers (240 ckt)	SD-75451-00*

Height	Without light pipes	Drawing Number
Medium	2x1 press-fit connector w/EMI fingers (40 ckt)	SD-75462-100
Medium	2x1 thru-hole connector w/EMI fingers (40 ckt)	SD-75462-200
Medium	2x2 press-fit connector w/EMI fingers (80 ckt)	SD-75759-00*
Medium	2x4 press-fit connector w/EMI fingers (160 ckt)	SD-75454-00*
Medium	2x5 press-fit connector w/EMI fingers (200 ckt)	SD-75733-00*
Medium	2x6 press-fit connector w/EMI fingers (240 ckt)	SD-75477-***

2.1.2 Stacked SFP+ (SSFP+)

Height	With Metal EMI straps & light pipes	Drawing Number
Medium	2x1 press-fit connector (40 ckt)	SD-76044-001
Medium	2x2 press-fit connector (80 ckt)	SD-76045-001
Medium	2x4 press-fit connector (160 ckt)	SD-76046-001
Medium	2x5 press-fit connector (200 ckt)	SD-76047-001
Medium	2x6 press-fit connector (240 ckt)	SD-76048-001
Medium	2x8 press-fit connector (320 ckt)	SD-76352-001

Height	With Metal EMI straps, no light pipes	Drawing Number
Medium	2x1 press-fit connector (40 ckt)	SD-76064-001
Medium	2x2 press-fit connector (80 ckt)	SD-76065-001
Medium	2x4 press-fit connector (160 ckt)	SD-76066-001
Medium	2x5 press-fit connector (200 ckt)	SD-76067-001
Medium	2x6 press-fit connector (240 ckt)	SD-76068-001
Medium	2x6 press-fit connector (240 ckt)	SD-76200-001

REVISION: I	ECR/ECN INFORMATION: EC No: UCP2012-1428 DATE: 2011/11/02	TITLE: PRODUCT SPECIFICATION FOR SFP AND SFP+ MULTI-PORT CONNECTORS	SHEET No. 3 of 11
DOCUMENT NUMBER: PS-75310-001	REVISED BY: BOB BARKER	CHECKED BY: SCOTT DANNELLEY	APPROVED BY: STEVE MILLER



PRODUCT SPECIFICATION

5.0 PERFORMANCE

5.1 TEST GROUP 1: TEMPERATURE LIFE

Test Description	Procedure	Requirement
Contact Resistance (Low Level)	EIA-364-23 Mated connectors	Baseline measurement
Durability (Preconditioning)	EIA-364-09 Mated pairs (Perform 20 cycles)	No evidence of physical damage
Temperature Life	EIA-364-17 Method A 105°C, for 300 hours. Mated connectors	None
Contact Resistance (Low Level)	EIA-364-23 Mated connectors	10 Milliohm max. increase
Reseating	Manually plug/unplug the connector. 3 cycles	No evidence of physical damage
Contact Resistance (Low Level)	EIA-364-23 Mated connectors	10 Milliohm max. increase

5.2 TEST GROUP 2: THERMAL SHOCK/CYCLIC HUMIDITY

Test Description	Procedure	Requirement
Contact Resistance (Low Level)	EIA-364-23 Mated connectors	Baseline measurement
Durability (Preconditioning)	EIA-364-09 (Perform 20 cycles)	No evidence of physical damage
Thermal Shock	EIA-364-32 Test Condition I (10 cycles with the exception of exposure times) Mated pairs	None
Contact Resistance (Low Level)	EIA-364-23 Mated connectors	10 Milliohm max. increase
Cyclic Temperature and Humidity	EIA-364-31 Cycle the connector at between 25°C+/-3°C at 80%+/-3% RH and 65°C+/-3°C at 50%+/-3% RH. Ramp times should be 0.5 hour and dwell should be 1.0 hour. Perform 24 cycles Mated connectors	None
Contact Resistance (Low Level)	EIA-364-23 Mated connectors	10 Milliohm max. increase
Reseating	Manually plug/unplug the connector. Perform 3 cycles	No evidence of physical damage
Contact Resistance (Low Level)	EIA-364-23 Mated connectors	10 Milliohm max. increase

REVISION: I	ECR/ECN INFORMATION: EC No: UCP2012-1428 DATE: 2011/11/02	TITLE: PRODUCT SPECIFICATION FOR SFP AND SFP+ MULTI-PORT CONNECTORS	SHEET No. 5 of 11
DOCUMENT NUMBER: PS-75310-001	REVISED BY: BOB BARKER	CHECKED BY: SCOTT DANNELLEY	APPROVED BY: STEVE MILLER



PRODUCT SPECIFICATION

5.3 TEST GROUP 3: VIBRATION

Test Description	Procedure	Requirement
Contact Resistance (Low Level)	EIA-364-23 Mated connectors	Baseline measurement
Durability (Preconditioning)	EIA-364-09 (Perform 20 cycles)	No evidence of physical damage
Temperature Life (Preconditioning)	EIA-364-17 Method A 105°C, for 336 hours. Mated connectors	None
Contact Resistance (Low Level)	EIA-364-23 Mated connectors	10 Milliohm max. increase
Vibration	EIA-364-28 Test condition VII, Test condition D 15 minutes in each of three mutually perpendicular directions. Mated connectors	No evidence of physical damage
Contact Resistance (Low Level)	EIA-364-23 Mated connectors	10 Milliohm max. increase

5.4 TEST GROUP 4: DURABILITY

Test Description	Procedure	Requirement
Dielectric Withstand Voltage	EIA-364-20 300 Volts AC applied between adjacent contacts for 1 minute Mated connectors	No breakdown or flashover
Contact Resistance (Low Level)	EIA-364-23 Mated connectors	Baseline measurement
Durability	EIA-364-09 (Perform 100 cycles)	No evidence of physical damage
Contact Resistance (Low Level)	EIA-364-23 Mated connectors	10 Milliohm max. increase
Dielectric Withstand Voltage	EIA-364-20 300 Volts AC applied between adjacent contacts for 1 minute Mated connectors	No breakdown or flashover

<u>REVISION:</u> I	<u>ECR/ECN INFORMATION:</u> EC No: UCP2012-1428 DATE: 2011/11/02	<u>TITLE:</u> PRODUCT SPECIFICATION FOR SFP AND SFP+ MULTI-PORT CONNECTORS	<u>SHEET No.:</u> 6 of 11
<u>DOCUMENT NUMBER:</u> PS-75310-001	<u>REVISED BY:</u> BOB BARKER	<u>CHECKED BY:</u> SCOTT DANNELLEY	<u>APPROVED BY:</u> STEVE MILLER



PRODUCT SPECIFICATION

5.5 TEST GROUP 5: SOLDERABILITY

Test Description	Procedure	Requirement
General Examination	Test (1) connector	No evidence of physical damage
Solderability	EIA-364-52 Category 1, no steam RMA class 1 flux Immerse in molten solder at 245°C at rate of 25.4 mm per second. Hold in solder for 5 sec.	Solderable area shall have a minimum of 95% solder coverage when testing 30 random loose contacts.
General Examination	Re-examine connector	No evidence of physical damage

6.0 INSERTION, EXTRACTION AND RETENTION FORCES

Test Description	Procedure	Requirement
SFP transceiver insertion	40 N maximum	
SFP transceiver extraction	11.5 N maximum	
SFP transceiver retention	90 N minimum 170 N maximum	No damage to transceiver below 90 N
Cage retention (Latch strength of cage)	180 N minimum	No damage to latch below 180 N
Cage kick-out spring force	8.0 N minimum 22 N maximum	
Insertion / removal cycles, transceiver into cage assembly	100 cycles	
Insertion / removal cycles, transceiver into connector	50 cycles	
Cage assembly insertion force into back panel	1X4	-
	2X1	-
	2X2	-
	2X4	8.0 lbs. min / 33.5 lbs max.
	2X5	-
	2X6	9.0 lbs. min / 38.0 lbs. max.

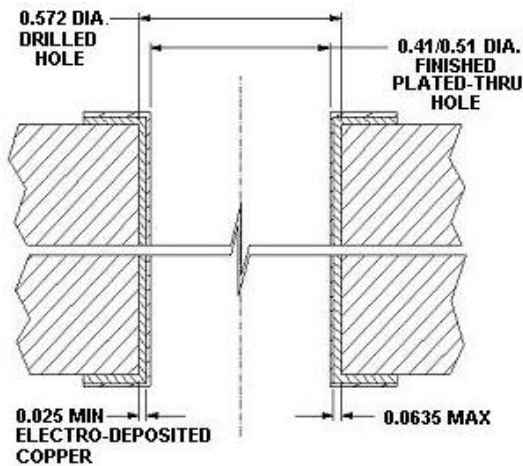
REVISION: I	ECR/ECN INFORMATION: EC No: UCP2012-1428 DATE: 2011/11/02	TITLE: PRODUCT SPECIFICATION FOR SFP AND SFP+ MULTI-PORT CONNECTORS	SHEET No. 7 of 11
DOCUMENT NUMBER: PS-75310-001	REVISED BY: BOB BARKER	CHECKED BY: SCOTT DANNELLEY	APPROVED BY: STEVE MILLER



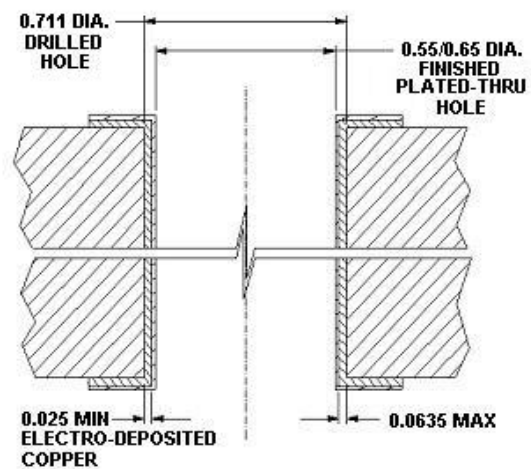
PRODUCT SPECIFICATION

7.0 Printed Circuit Board Specifications

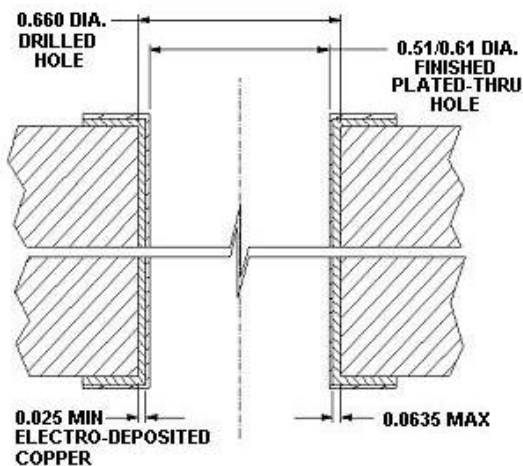
Recommended PCB Thickness:	2.36 mm (.093 INCH)
0.60 mm Compliant Pin Drilled Hole Size:	0.711 mm (# 70 Drill)
0.46 mm Compliant Pin Drilled Hole Size:	0.572 mm (# 74 Drill)
0.56 mm Solder Pin Drilled Hole Size:	0.660 mm (# 71 Drill)
Cage Tail Drilled Hole Size:	1.181 mm (# 56 Drill)



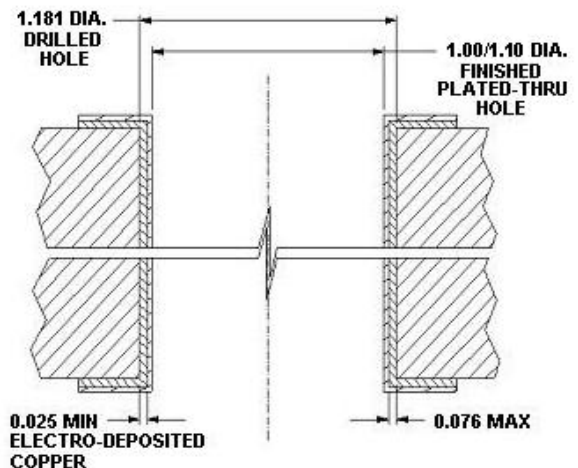
PLATING DETAIL FOR
0.46MM DIA. COMPLIANT PIN HOLE



PLATING DETAIL FOR
0.60MM DIA. COMPLIANT PIN HOLE



PLATING DETAIL FOR
0.56MM DIA. SOLDER PIN HOLE



PLATING DETAIL FOR
CAGE TAIL HOLE

REVISION: I	ECR/ECN INFORMATION: EC No: UCP2012-1428 DATE: 2011/11/02	TITLE: PRODUCT SPECIFICATION FOR SFP AND SFP+ MULTI-PORT CONNECTORS	SHEET No. 8 of 11
DOCUMENT NUMBER: PS-75310-001	REVISED BY: BOB BARKER	CHECKED BY: SCOTT DANIELLEY	APPROVED BY: STEVE MILLER



PRODUCT SPECIFICATION

8.0 EMI TEST DATA

8.1 METHOD

The method tests how well a shielded connector maintains the shielding effectiveness of an enclosure, when an opening is created in the enclosure for that connector.

The goal is to measure the leakage of radiated emissions from the inside through the device under test, DUT, to the outside of the enclosure. All measurements are made in dBm. The values should not be taken as absolute but viewed in the context of relative values, comparing one measurement to another.

Reference measurements: First measurement is made using two antennas facing one another and essentially without any impairment in the transmission path, open box. This open box measurement is referred to as the "ceiling". It represents the maximum power transfer or leakage. Second measurement is made of a totally sealed enclosure using a blank DUT plate. This measurement represents the lowest expected leakage performance. It is referred to as the "floor" in this report.

The connector DUT is measured and the data plotted relative to the ceiling and floor measurements. The closer the DUT data is to the "floor" the better. The reduction in power from the ceiling represents the combined "shielding effectiveness" of the stacked connector and the enclosure.

The DUTs are all 2x4 Multi-port Small Form-factor pluggable connectors with no modules installed in the ports. The installation of modules would provide additional shielding effectiveness. The amount of shielding effectiveness is dependent upon the manufacturer specific module design and its relationship with the connector cage.

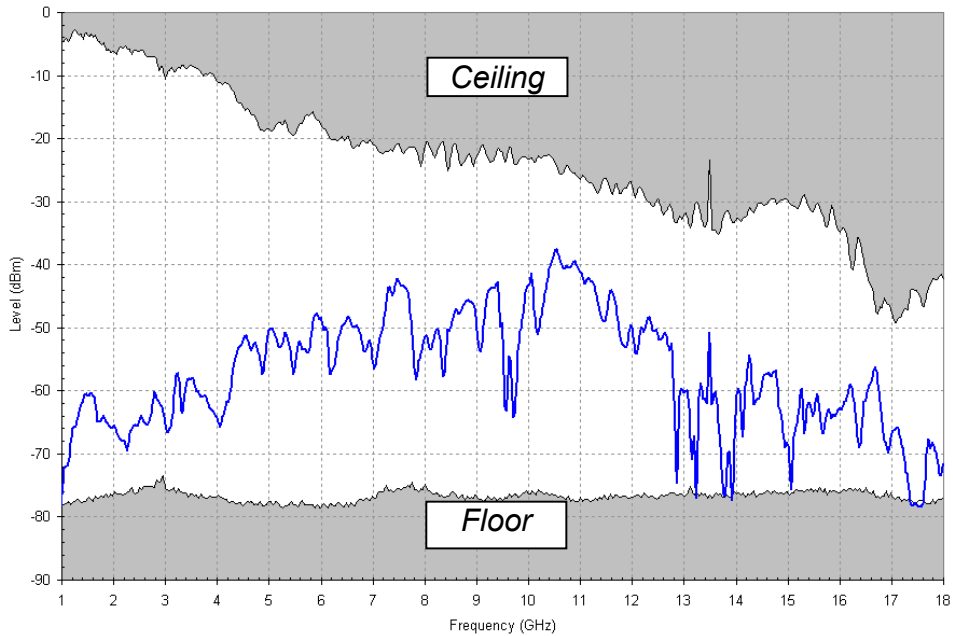
<u>REVISION:</u> I	<u>ECR/ECN INFORMATION:</u> EC No: UCP2012-1428 DATE: 2011/11/02	<u>TITLE:</u> PRODUCT SPECIFICATION FOR SFP AND SFP+ MULTI-PORT CONNECTORS	<u>SHEET No.:</u> 9 of 11
<u>DOCUMENT NUMBER:</u> PS-75310-001	<u>REVISED BY:</u> BOB BARKER	<u>CHECKED BY:</u> SCOTT DANIELLEY	<u>APPROVED BY:</u> STEVE MILLER



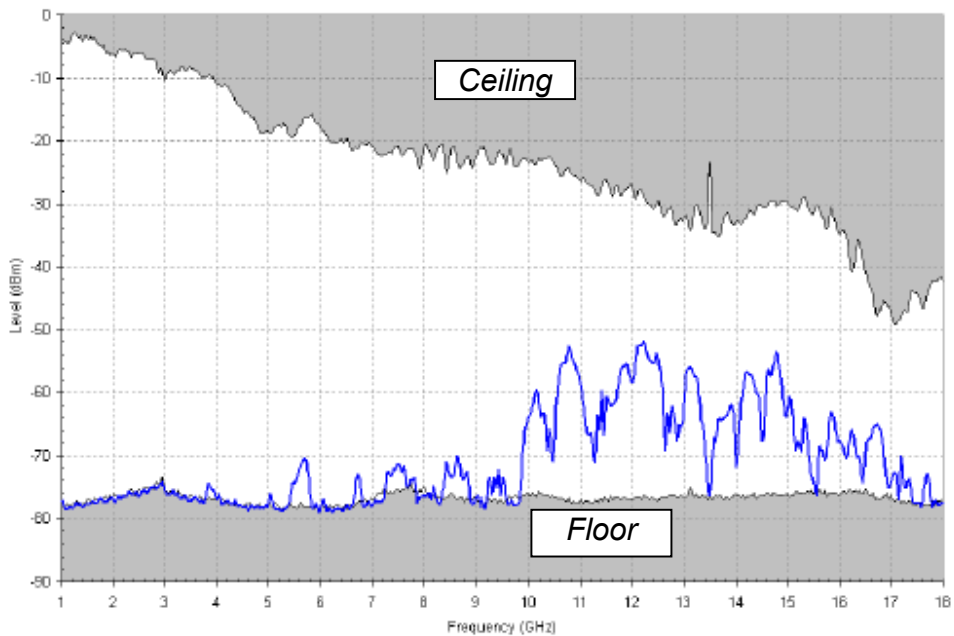
PRODUCT SPECIFICATION

8.2 DATA

8.2.1 SSFP



8.2.2 SSFP+ w/metal EMI straps

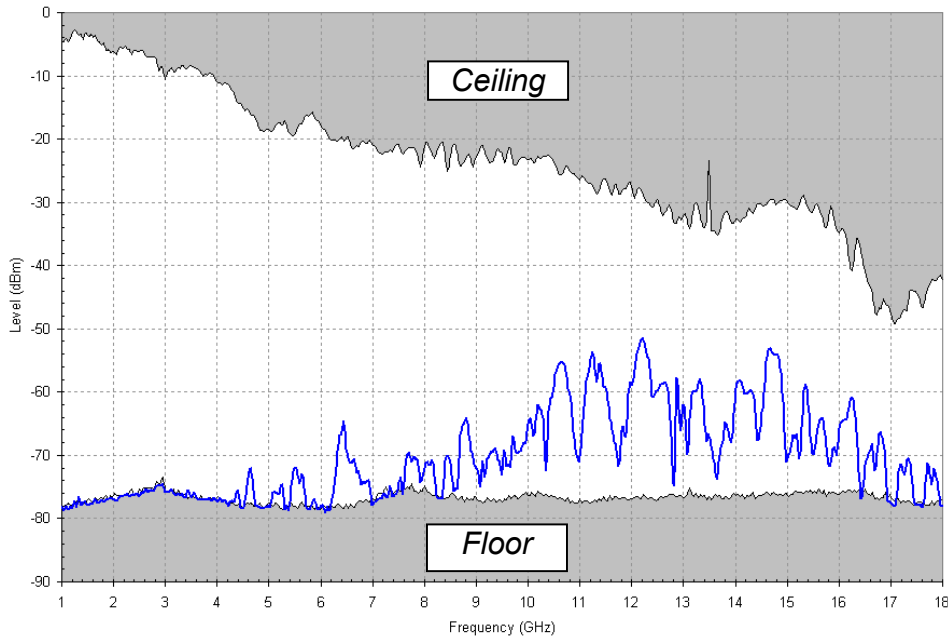


REVISION: I	ECR/ECN INFORMATION: EC No:UCP2012-1428 DATE: 2011/11/02	TITLE: PRODUCT SPECIFICATION FOR SFP AND SFP+ MULTI-PORT CONNECTORS	SHEET No. 10 of 11
DOCUMENT NUMBER: PS-75310-001	REVISED BY: BOB BARKER	CHECKED BY: SCOTT DANIELLEY	APPROVED BY: STEVE MILLER



PRODUCT SPECIFICATION

8.2.3 SSFP+ w/Elastomeric Gasket



9.0 PACKAGING

9.1 METHOD

9.1.1 Product shall be packaged in trays per the packaging specification called out on the applicable sales print.

9.2 REQUIREMENTS

9.2.1 Packaging shall meet the shipping requirements specified and be tested according to the Molex specification ES-40000-7001.

REVISION: I	ECR/ECN INFORMATION: EC No: UCP2012-1428 DATE: 2011/11/02	TITLE: PRODUCT SPECIFICATION FOR SFP AND SFP+ MULTI-PORT CONNECTORS	SHEET No. 11 of 11
DOCUMENT NUMBER: PS-75310-001	REVISED BY: BOB BARKER	CHECKED BY: SCOTT DANNELLEY	APPROVED BY: STEVE MILLER