Amphenol Canada Corp - Product Change Notice (PCN)

PCN Date	March 22, 2024
Supplier Name:	Amphenol HSIO
Amphenol Canada PCN Number	PCN-C1804
Description of Change	The plating process at the Tin plating area is changed from the dip plating to the spot plating.
Reason for Change	To improve the plating process quality, efficiency, and productivity to support the increasing demand.
Summary of changes between new and old part	See next page for detail change. Amphenol part numbers not changed.
Traceability guidelines (lot code / date code, markings, ship date…)	Date code
Last Time Buy Date	
Datasheet attached? & Filename(s)	N/A
Qual Test data attached? & Filename(s)	N/A

Customer Part Number	Amphenol Old Part Number	Amphenol New Part Number	PCN Effectivity Date	Samples Availability Date	Last Time Buy Date	Expected Supplier Qual Date
664-UE62A10123000TTR-N	UE62-A1012-3000T	No change	21-May-24	22-Mar-24		
664-UE62A10123100TTR-N	UE62-A1012-3100T	No change	21-May-24	22-Mar-24		

Amphenol

COMMUNICATIONS SOLUTIONS

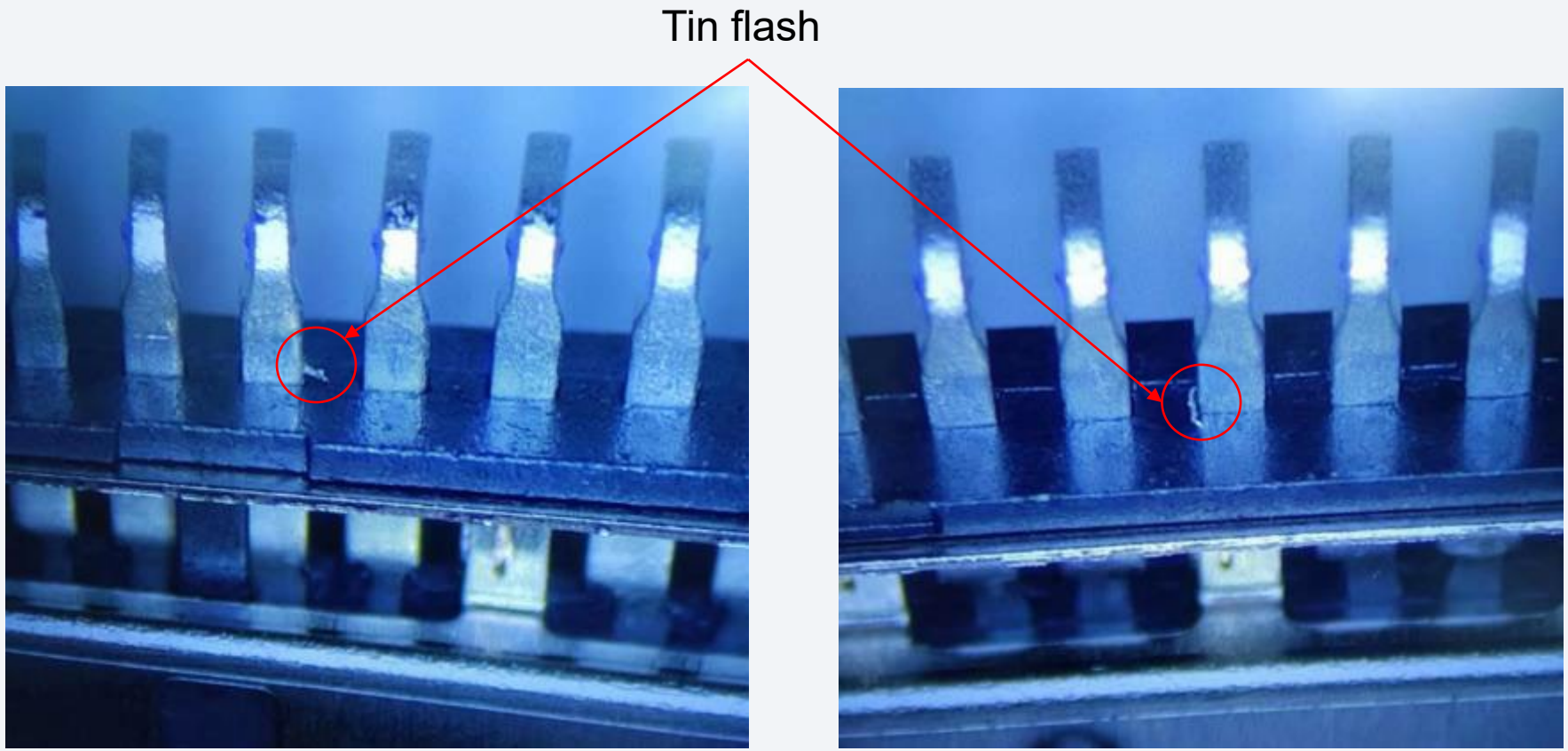
PCN-C1804 Change Description and Solderability Test

17-Nov-2023

High Speed IO

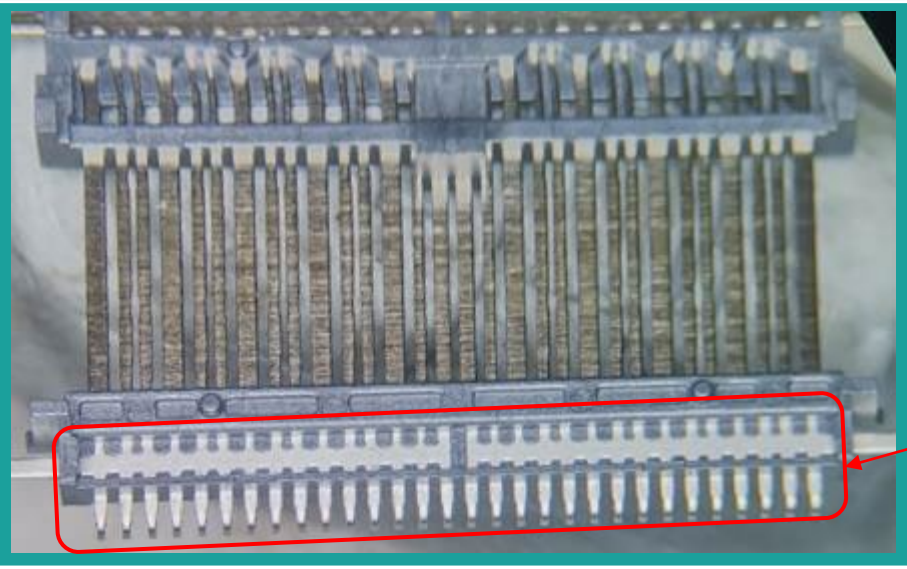
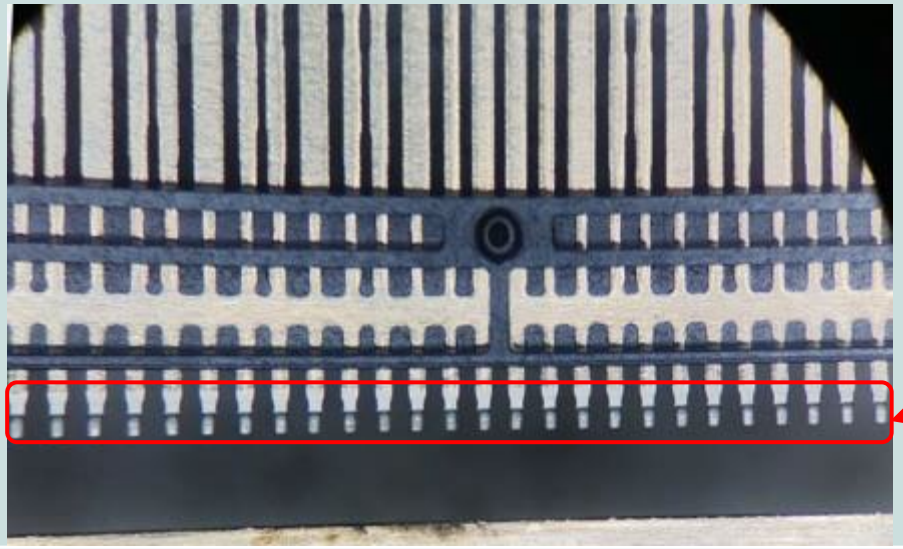
1、Reason for Change

Amphenol
COMMUNICATIONS SOLUTIONS



Current Tin plating area is large which is easy to cause Tin flash during molding process. It also caused too much time to clear it manually. To increase the capacity and improve the quality control, the plating process at Tin area needs to be changed from dip plating to spot plating.

2、Appearance comparison for wafer

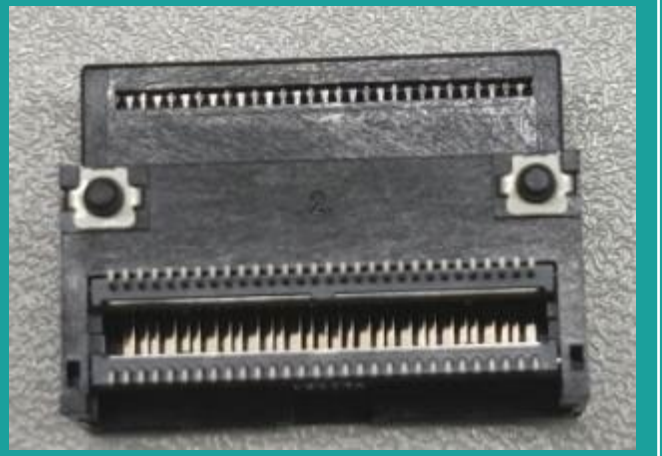
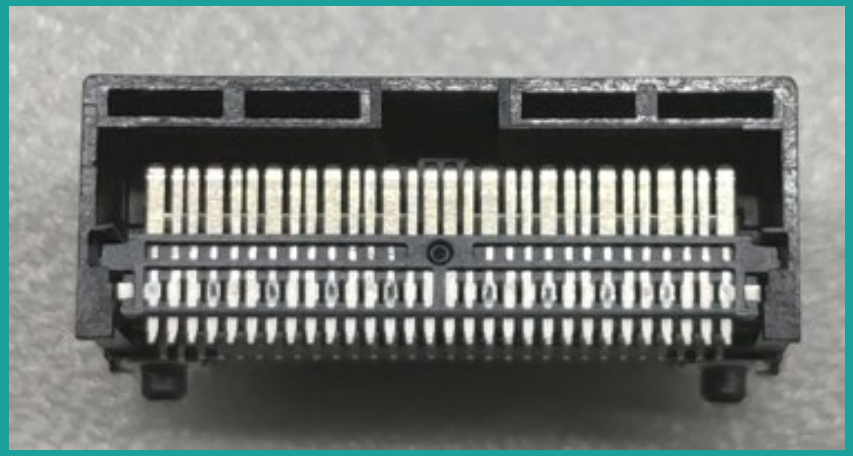
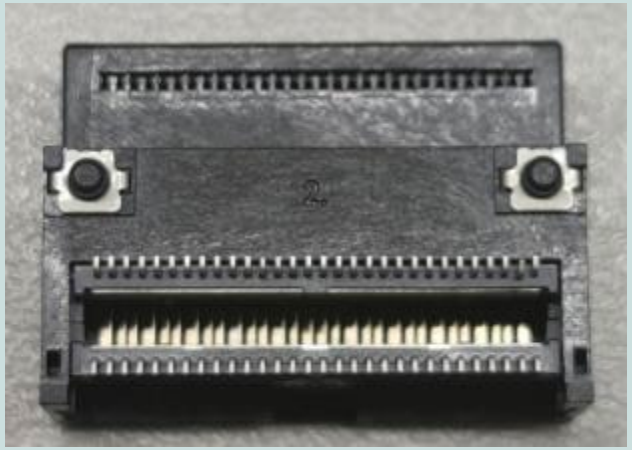
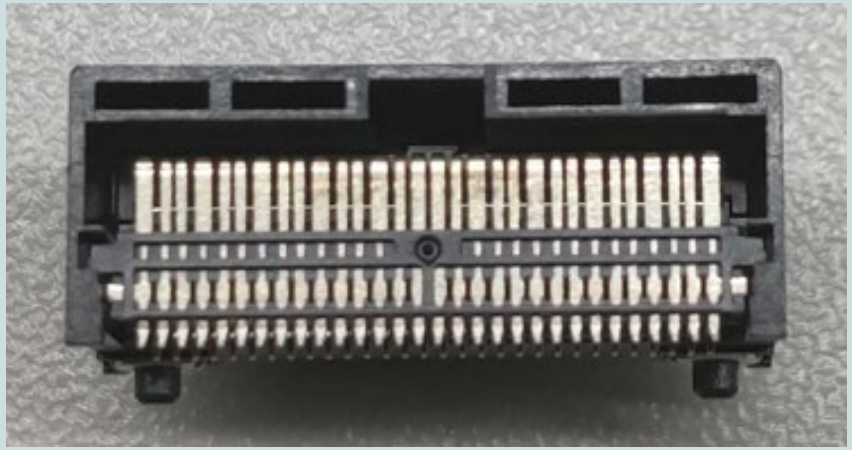
Before Change	
After Change	

Tin plating area
(Dip plating)

Tin plating area
(Spot plating)

3、Appearance comparison for connector

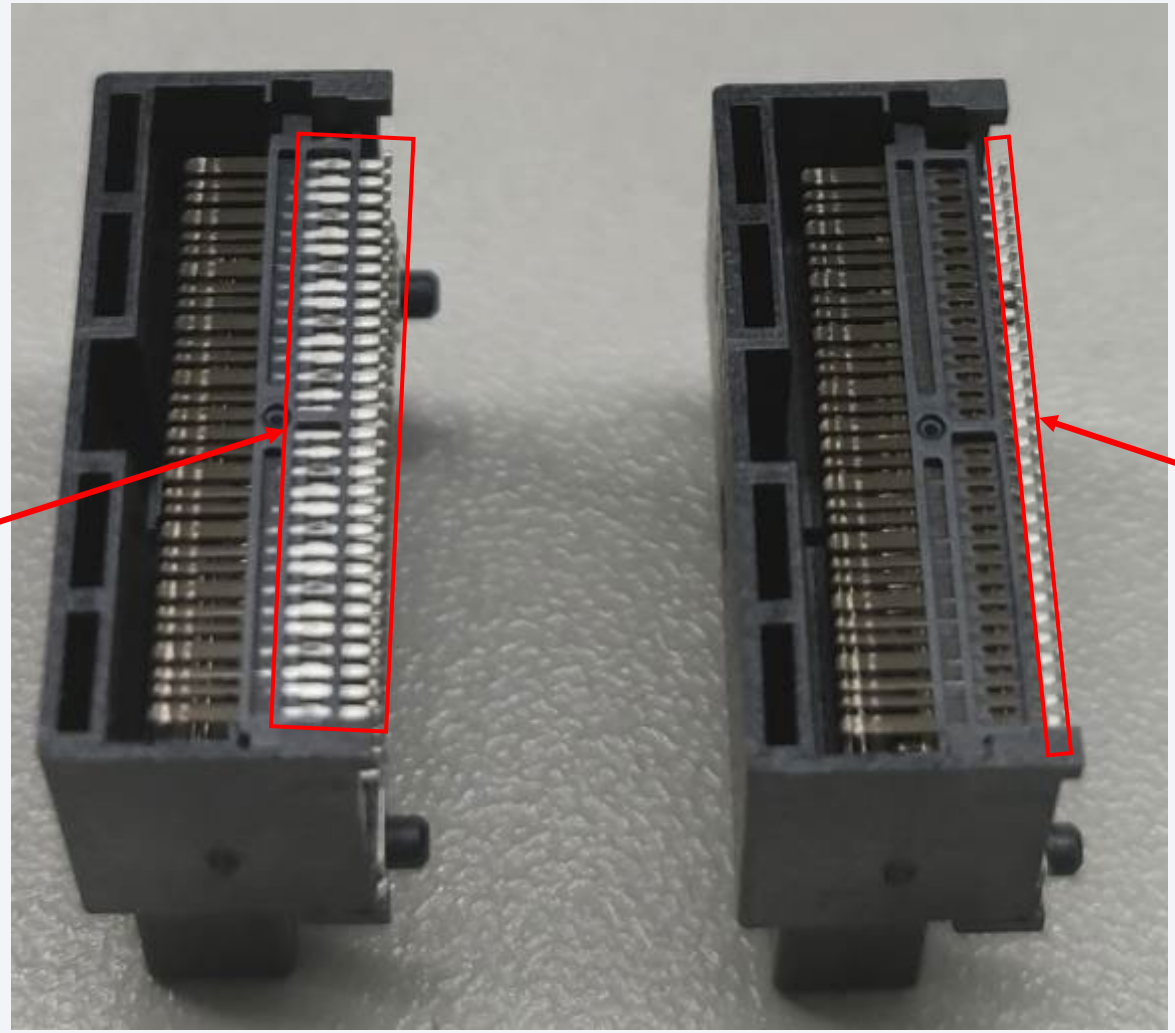
Amphenol
COMMUNICATIONS SOLUTIONS

Before Change		
After Change		

4、Appearance comparison for connector

Amphenol
COMMUNICATIONS SOLUTIONS

Tin plating area
Before change



Tin plating area
After change

5、Plating Inspection for Tin spot plating

Amphenol
COMMUNICATIONS SOLUTIONS

Amphenol HSIO

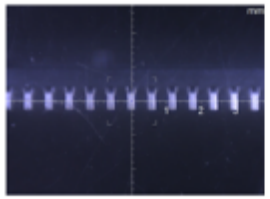
Measurement Report

Part No & Name	U62113123000C/U62112123000C	Date Performed	2023/6/23
Machine Model	膜厚仪	Performed By	Xiang Li
Drawing No.	U62113123000C/U62112123000C	Unit Measurement	MM

2.54-5.08 µm (100-250 µ") NO WHISKER OR LOW WHISKER MATTE TIN PLATING
1.27-2.54 µm (30-100 µ") NICKEL UNDER PLATING.

U62113123000C

Fischerscope XRAY XULM 240
Product: 4 / Sn/Ni/CuNi C7025 镀铜镀镍镀锡
Dir.: Fischer Block: 1766
Application: 4 / Sn/Ni/CuNi



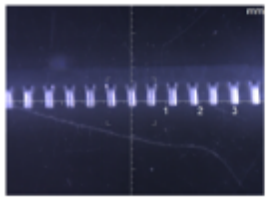
n=	1	Sn 1 =	157.1 µ"	Ni 2 =	66.2 µ"
n=	2	Sn 1 =	166.2 µ"	Ni 2 =	78.7 µ"
n=	3	Sn 1 =	155.7 µ"	Ni 2 =	82.5 µ"
n=	4	Sn 1 =	155.5 µ"	Ni 2 =	87.3 µ"
n=	5	Sn 1 =	153.5 µ"	Ni 2 =	85.6 µ"

Mean	157.6 µ"	80.1 µ"
Standard deviation	4.97 µ"	8.39 µ"
C.O.V. (%)	3.15	10.48
Range	12.7 µ"	21.0 µ"
Number of readings	5	5
Min. reading	153.5 µ"	66.2 µ"
Max. reading	166.2 µ"	87.3 µ"
Measuring time	5 sec	

Operator: 李翔
Date: 2023/6/23 Time: 19:36:57

U62112123000C

Fischerscope XRAY XULM 240
Product: 4 / Sn/Ni/CuNi C7025 镀铜镀镍镀锡
Dir.: Fischer Block: 1767
Application: 4 / Sn/Ni/CuNi



n=	1	Sn 1 =	167.3 µ"	Ni 2 =	62.2 µ"
n=	2	Sn 1 =	181.8 µ"	Ni 2 =	65.2 µ"
n=	3	Sn 1 =	162.8 µ"	Ni 2 =	69.3 µ"
n=	4	Sn 1 =	169.0 µ"	Ni 2 =	65.4 µ"
n=	5	Sn 1 =	163.1 µ"	Ni 2 =	62.5 µ"

Mean	168.8 µ"	64.9 µ"
Standard deviation	7.73 µ"	2.84 µ"
C.O.V. (%)	4.58	4.38
Range	19.0 µ"	7.04 µ"
Number of readings	5	5
Min. reading	162.8 µ"	62.2 µ"
Max. reading	181.8 µ"	69.3 µ"
Measuring time	5 sec	

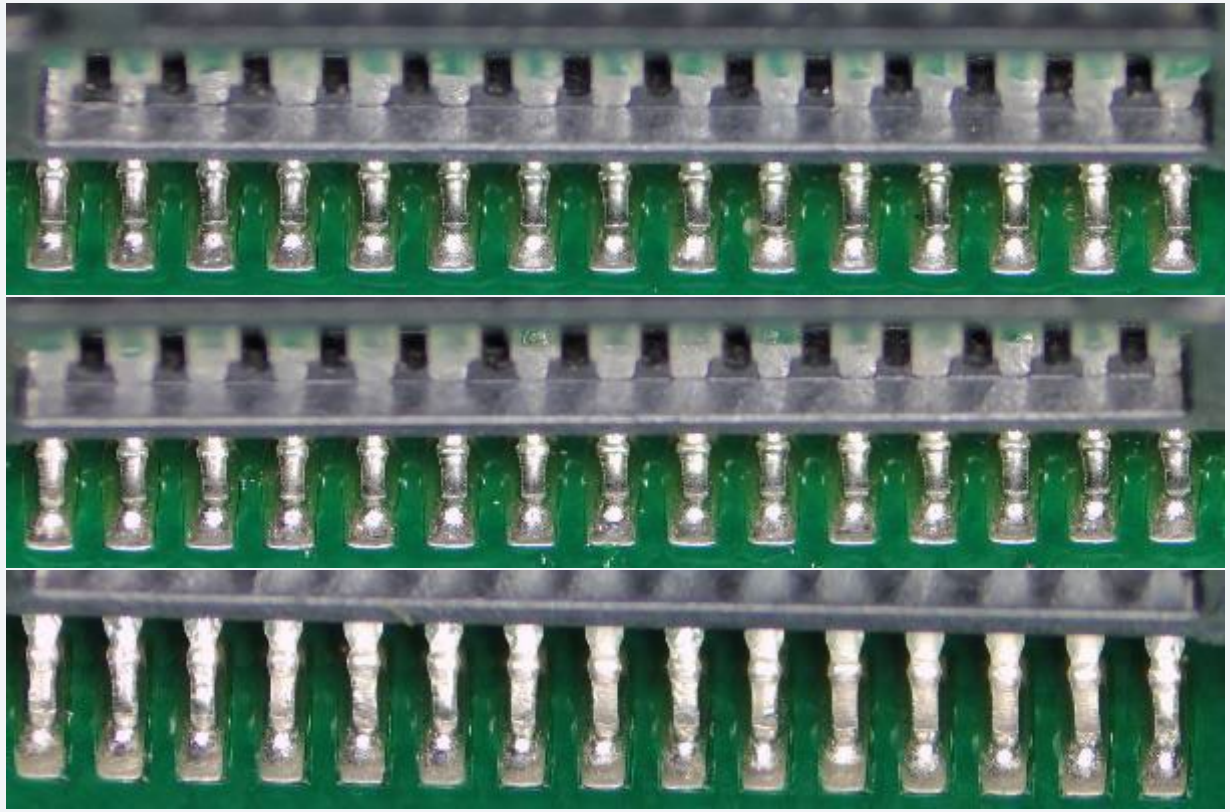
Operator: 李翔
Date: 2023/6/23 Time: 19:40:04

Result : 膜厚测试OK

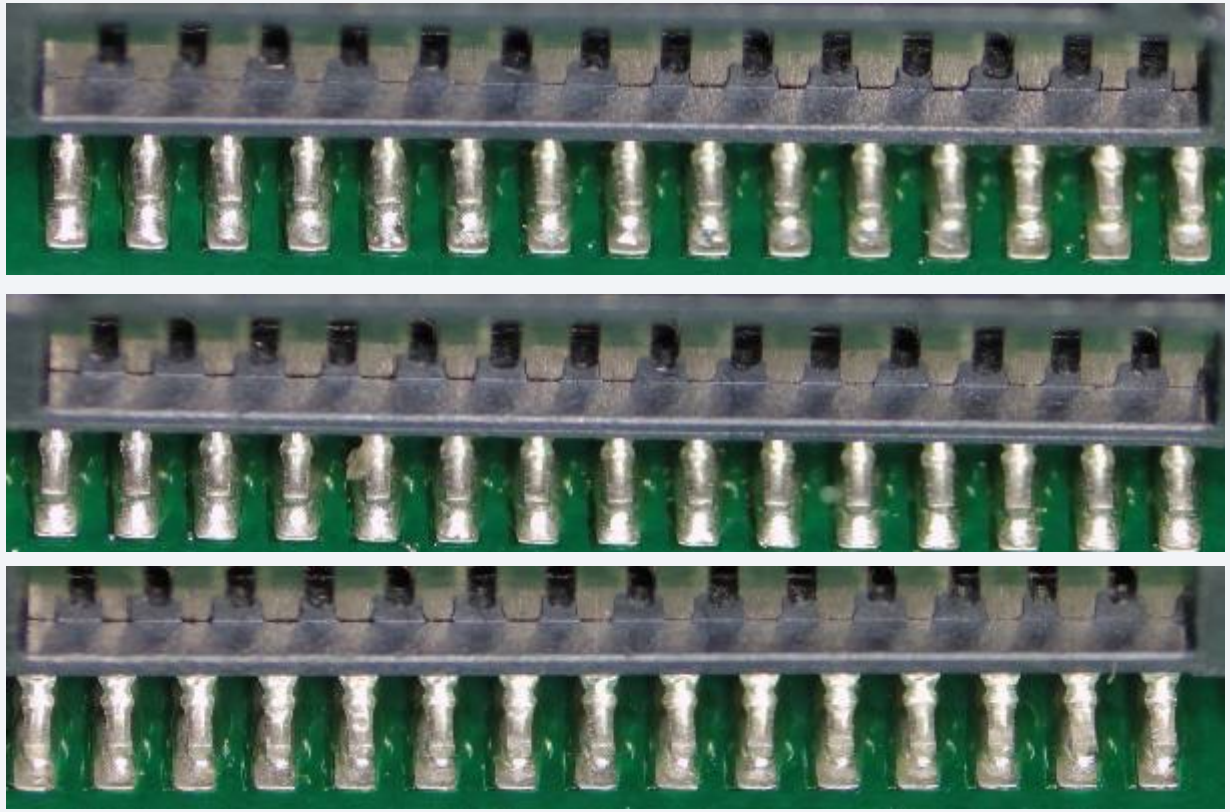
6、Solderability test

Amphenol
COMMUNICATIONS SOLUTIONS

Before change

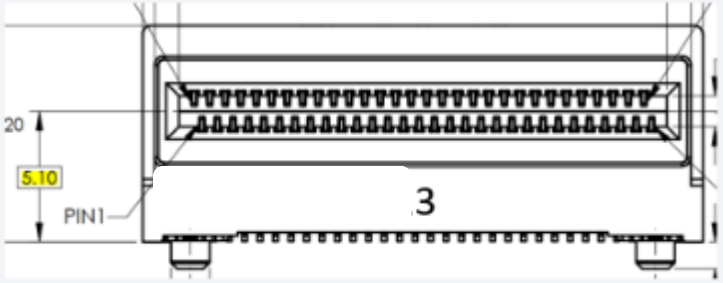


After change



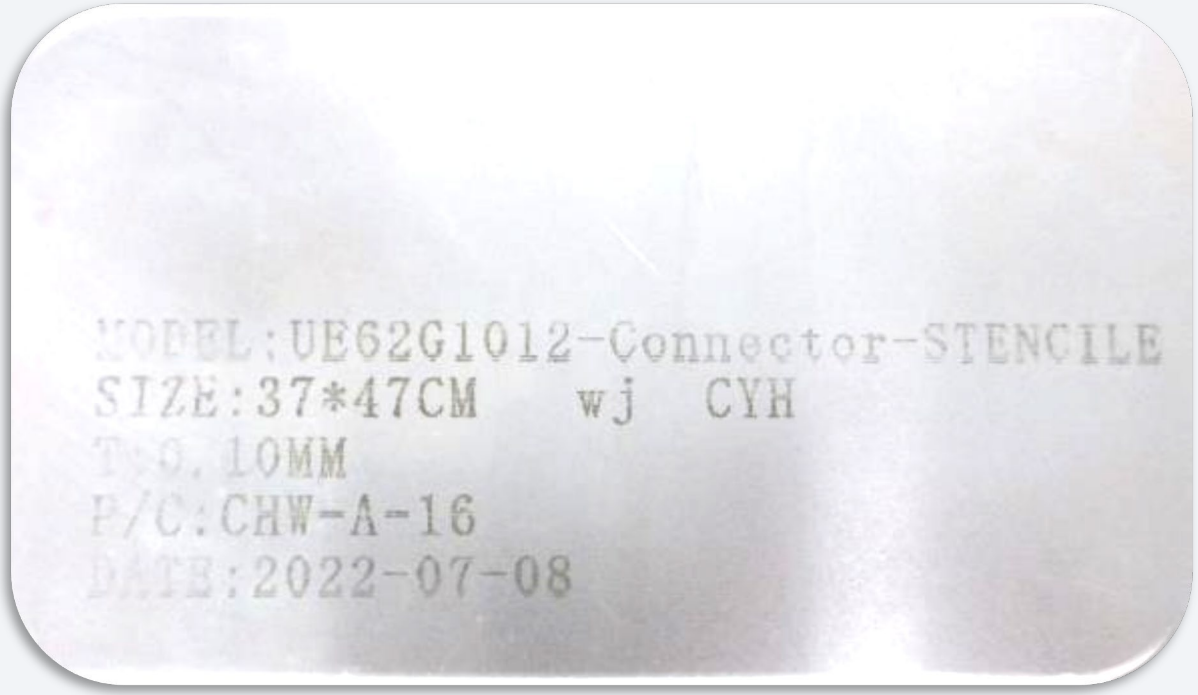
This change will not affect the solderability.

7. OSFP 56G 1X1 Re-flow test for belly to belly application



Before reflow									After reflow（twice）							
Iitem	SPEC	Remark	1	2	3	4	5	Result	Item	SPEC	Remark	1	2	3	4	5
1	5.10+/-0.13	Left	5.115	5.108	5.117	5.119	5.104	OK	1	5.10+/-0.13	Left	5.094	5.141	5.122	5.100	5.097
		Right	5.085	5.079	5.078	5.084	5.068				Right	5.075	5.099	5.072	5.073	5.073
Solder paste thickness		/	0.128	0.128	0.130	0.126	0.122	/	Solder paste thickness		/	0.143	0.142	0.145	0.143	0.145

1X1 OSFP 56G SMT stencil thickness is 0.10mm

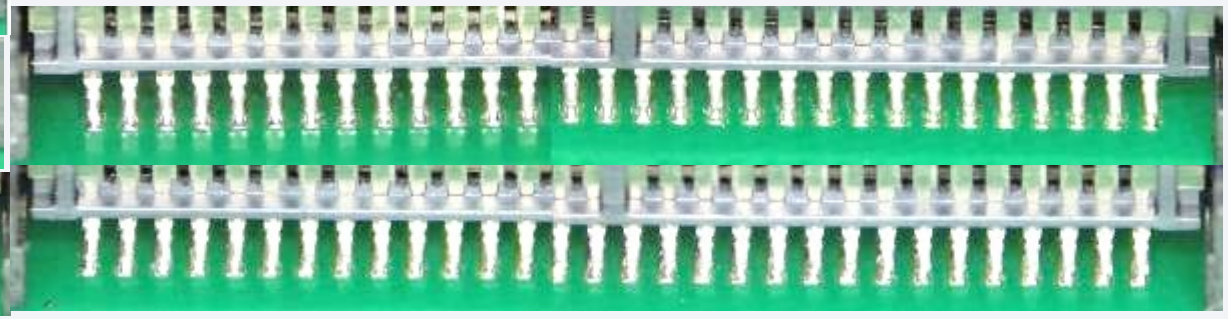


7. OSFP 56G 1X1 Re-flow test for belly to belly application

Amphenol
COMMUNICATIONS SOLUTIONS

Sample pictures for the first re-flow (260°C)

Sample pictures of solder tail after first re-flow (260°C)



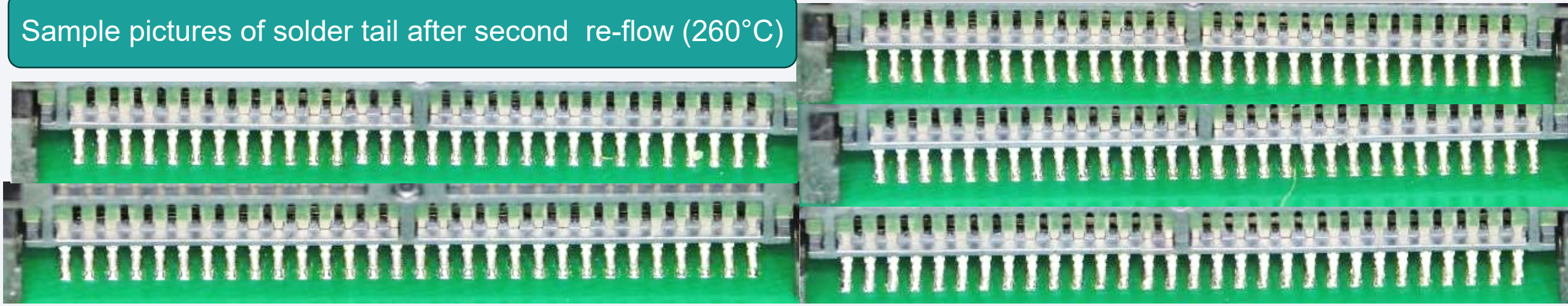
7. OSFP 56G 1X1 Re-flow test for belly to belly application

Amphenol
COMMUNICATIONS SOLUTIONS

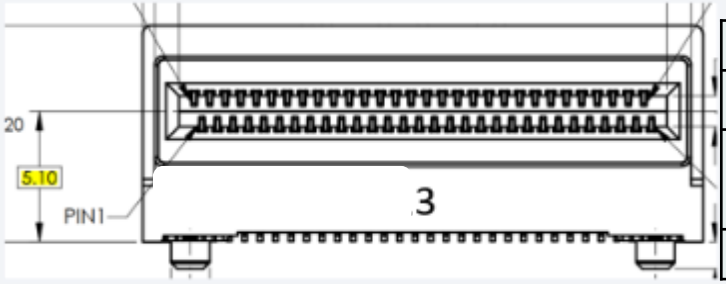
Connector side down did not fall off after second re-flow test.
Result: OK

Sample pictures for after the second re-flow crossing (260°C)

Sample pictures of solder tail after second re-flow (260°C)

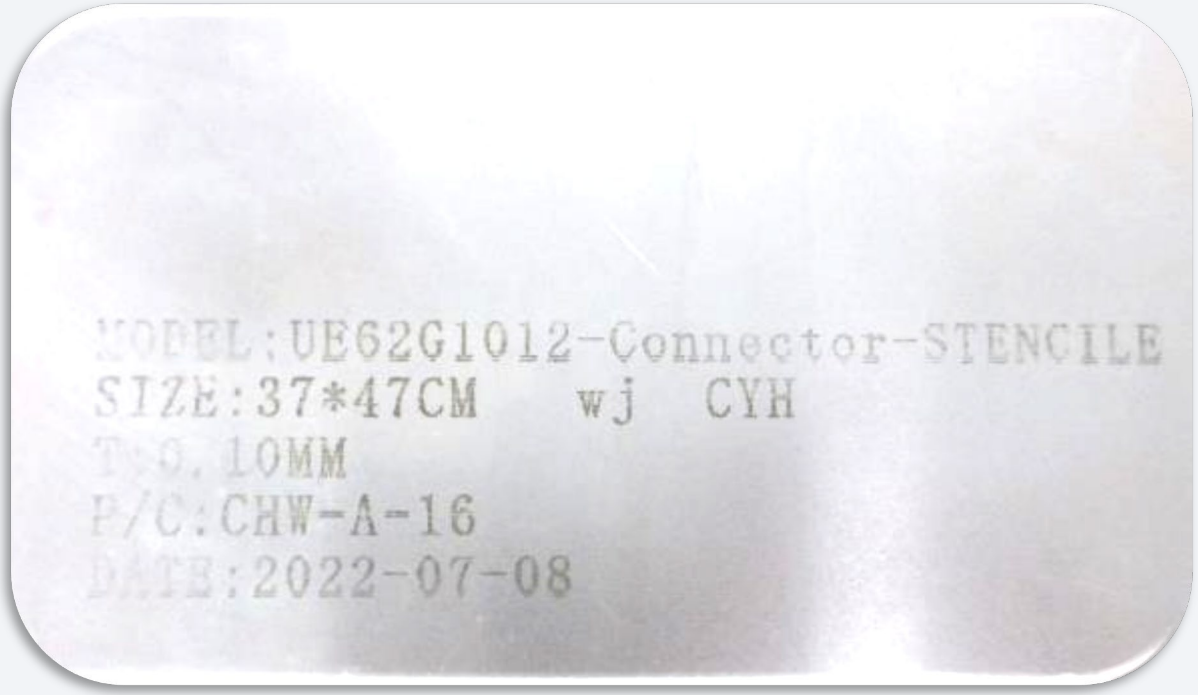


8. OSFP 112G 1X1 Re-flow test for belly to belly application



Before reflow									After reflow（twice）							
litem	SPEC	Remark	1	2	3	4	5	Result	Item	SPEC	Remark	1	2	3	4	5
1	5.10+/-0.10	Left	5.064	5.099	5.067	5.061	5.089	OK	1	5.10+/-0.13	Left	5.071	5.093	5.070	5.077	5.075
		Right	5.086	5.124	5.095	5.093	5.114				Right	5.112	5.113	5.109	5.083	5.124
Solder paste thickness		/	0.135	0.118	0.103	0.107	0.126	/	Solder paste thickness		/	0.136	0.133	0.143	0.145	0.143

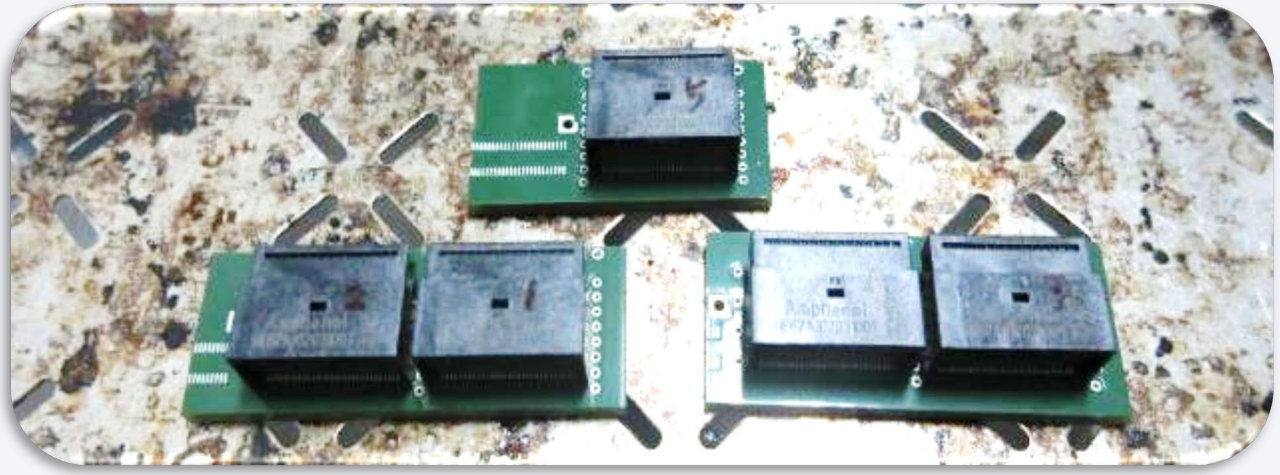
1X1 OSFP 112G SMT stencil thickness is 0.10mm



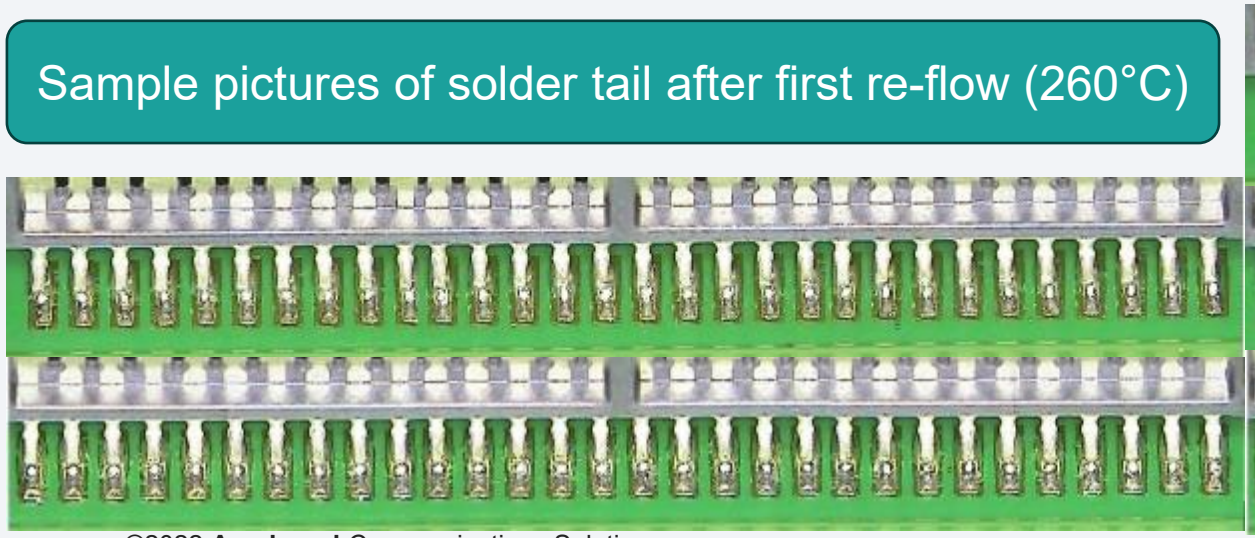
8. OSFP 112G 1X1 Re-flow test for belly to belly application

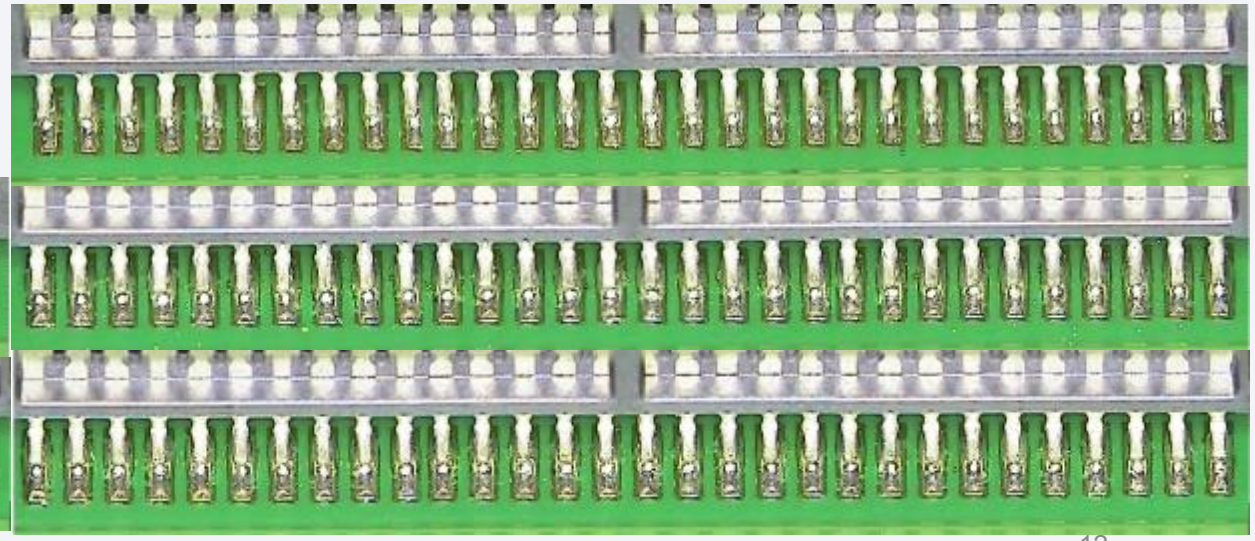
Amphenol
COMMUNICATIONS SOLUTIONS

Sample pictures for the first re-flow (260°C)



Sample pictures of solder tail after first re-flow (260°C)





8. OSFP 112G 1X1 Re-flow test for belly to belly application

Amphenol
COMMUNICATIONS SOLUTIONS

Connector side down did not fall off after second re-flow test.
Result: OK

Sample pictures for after the second re-flow crossing (260°C)

Sample pictures of solder tail after second re-flow (260°C)

Amphenol

COMMUNICATIONS SOLUTIONS

OSFP56 1x1 SI Comparison Report

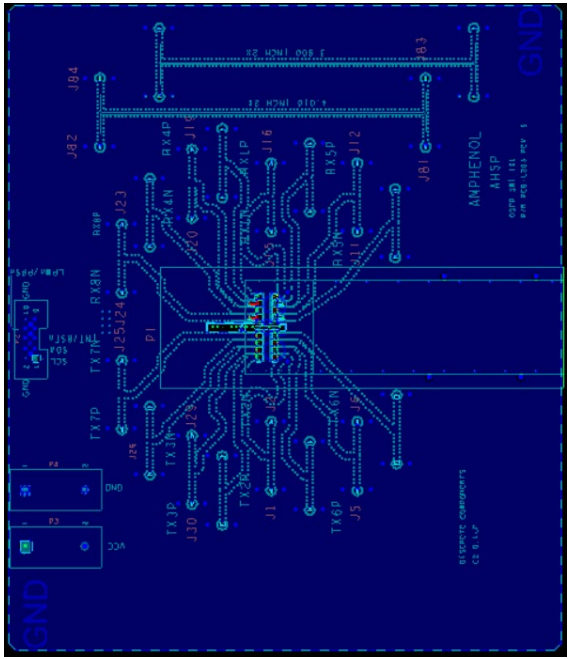
16-Nov-2023

High Speed IO

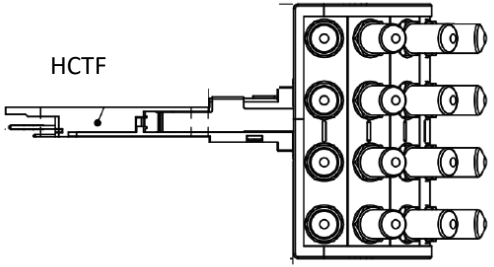
Test Setup

- S-Parameter Results
- Frequency: 10MHz TO 54GHz, 10MHz steps

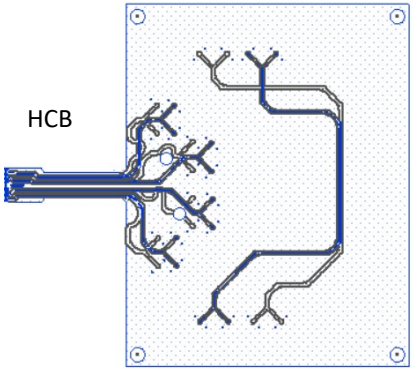
MCB



HCTF

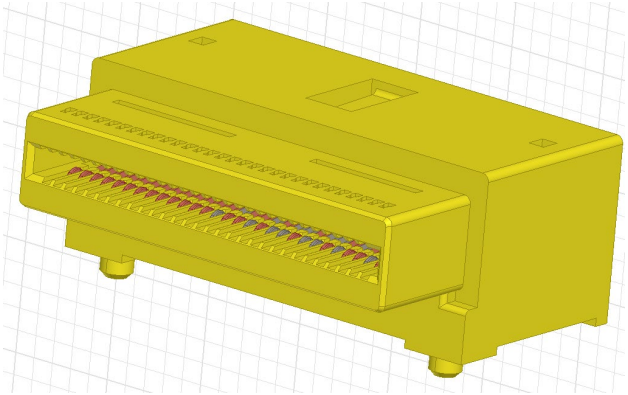


HCB

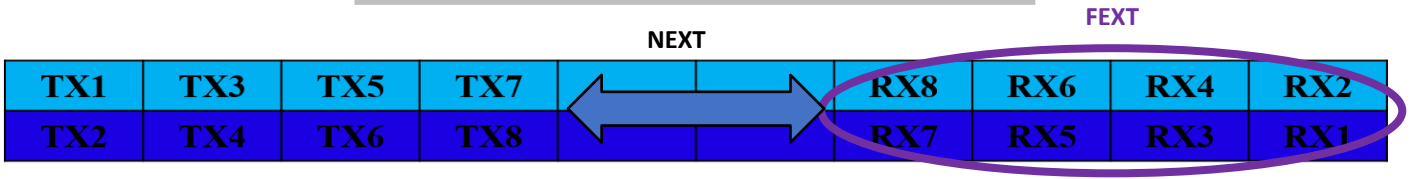


Crosstalk Configuration

- OSFP SMT1x1 Connector



PINOUT AND CROSSTALK CONFIGURATION



Report Setup

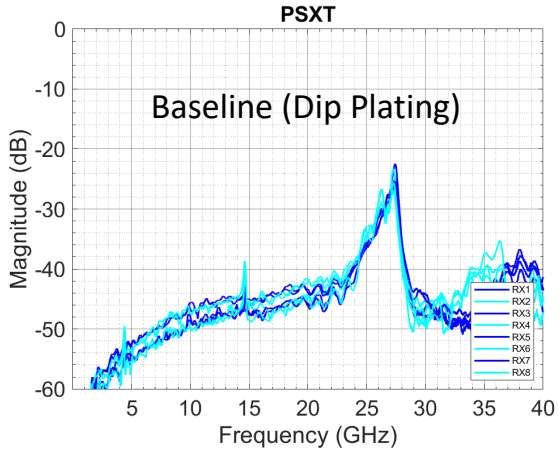
Amphenol
COMMUNICATIONS SOLUTIONS

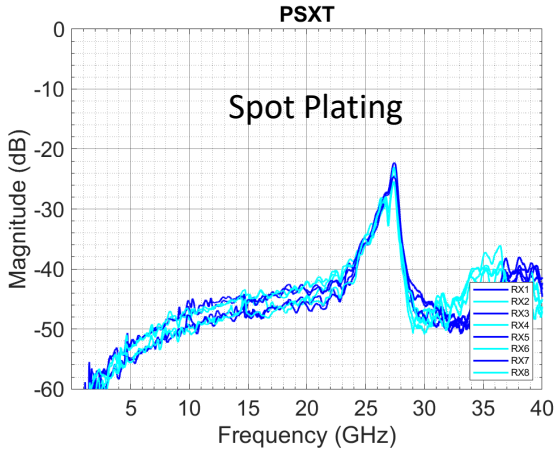
- \\ahsio-silab\Measurement_Data\connector\OSFP\202311\OSFP 1X1\MCB_L203r7_42_HCB_L354r2_29_dip plating sample\report\OSFP_1X1_MCB_L203r7_42_HCB_L354r2_29_dip plating sample_convert.s64p
- \\ahsio-silab\Measurement_Data\connector\OSFP\202311\OSFP 1X1\MCB_L203r7_43_HCB_L354r2_29_spot plating sample\report\OSFP_1X1_MCB_L203r7_43_HCB_L354r2_29_spot plating sample_convert.s64p

Conclusion

- Spot plating process have very little effect on SI performance of OSFP56 1x1 connector, comparing to the baseline connector with dip plating process.

ICN

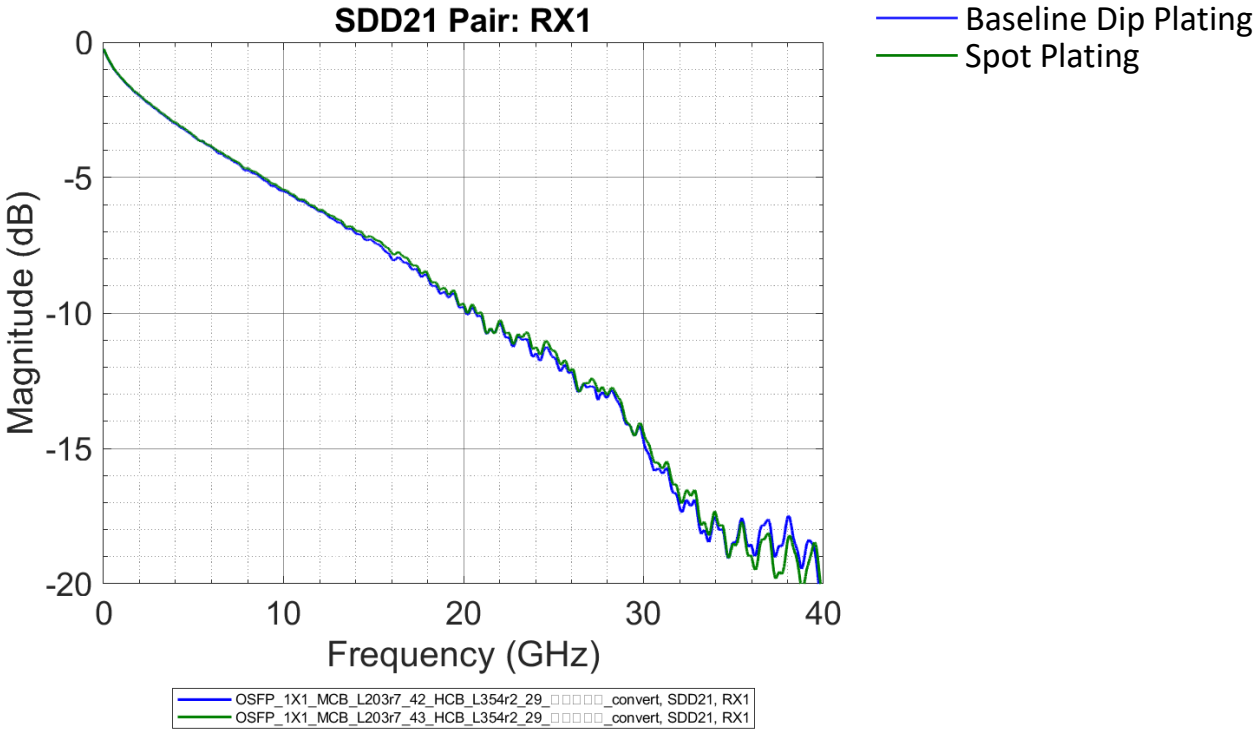




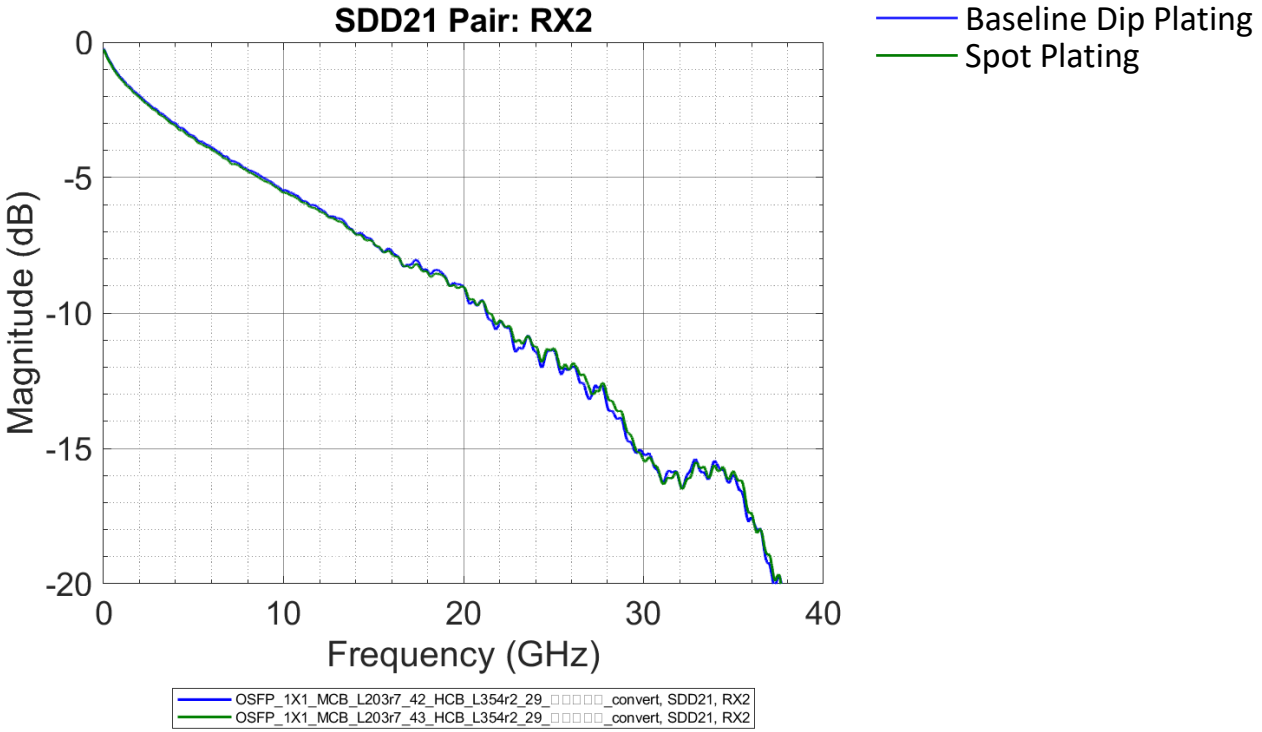
Pair	ICN NEXT	ICN FEXT	ICN Total
SPEC	1.5	4.2	4.4
RX1	0.118	1.75	1.754
RX2	0.129	1.739	1.744
RX3	0.075	2.277	2.278
RX4	0.101	2.278	2.28
RX5	0.118	2.3	2.303
RX6	0.137	2.279	2.284
RX7	0.2	1.727	1.738
RX8	0.218	1.672	1.687

Pair	ICN NEXT	ICN FEXT	ICN Total
SPEC	1.5	4.2	4.4
RX1	0.168	1.709	1.718
RX2	0.255	1.751	1.77
RX3	0.116	2.241	2.244
RX4	0.11	2.174	2.177
RX5	0.132	2.266	2.27
RX6	0.135	2.23	2.234
RX7	0.234	1.647	1.664
RX8	0.229	1.63	1.646

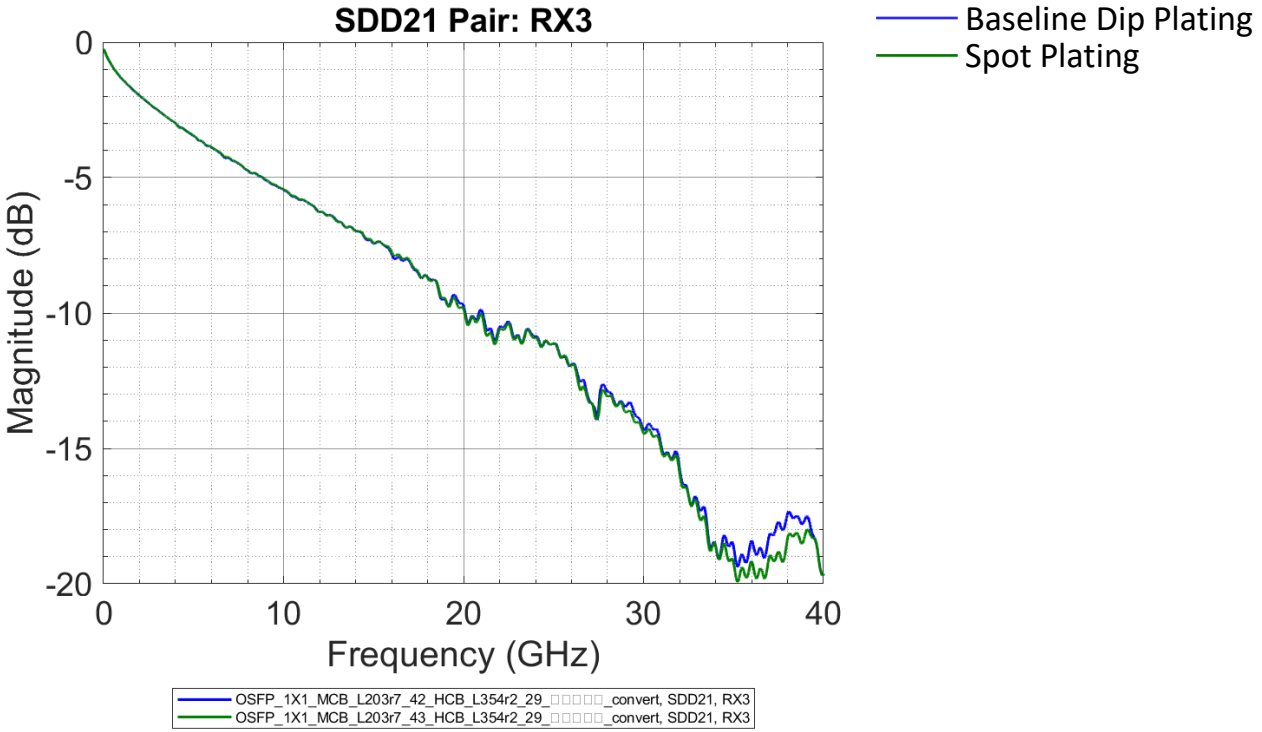
SDD21



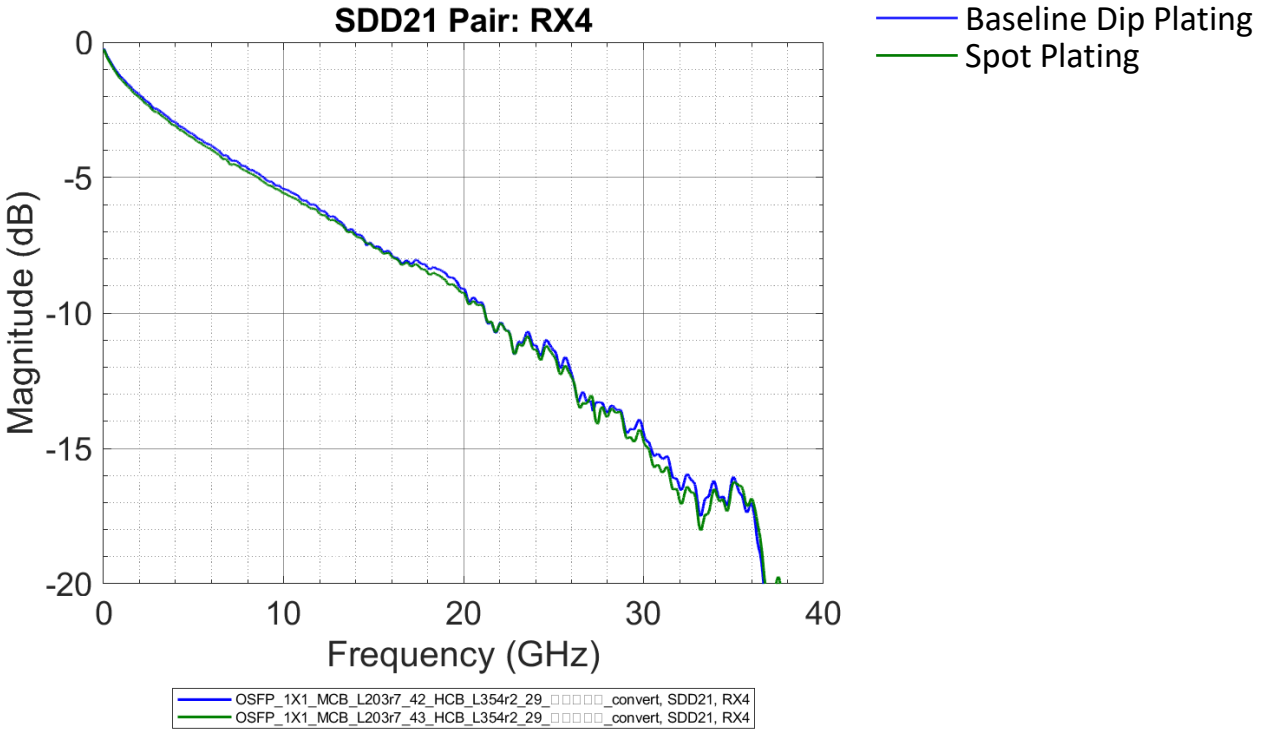
SDD21



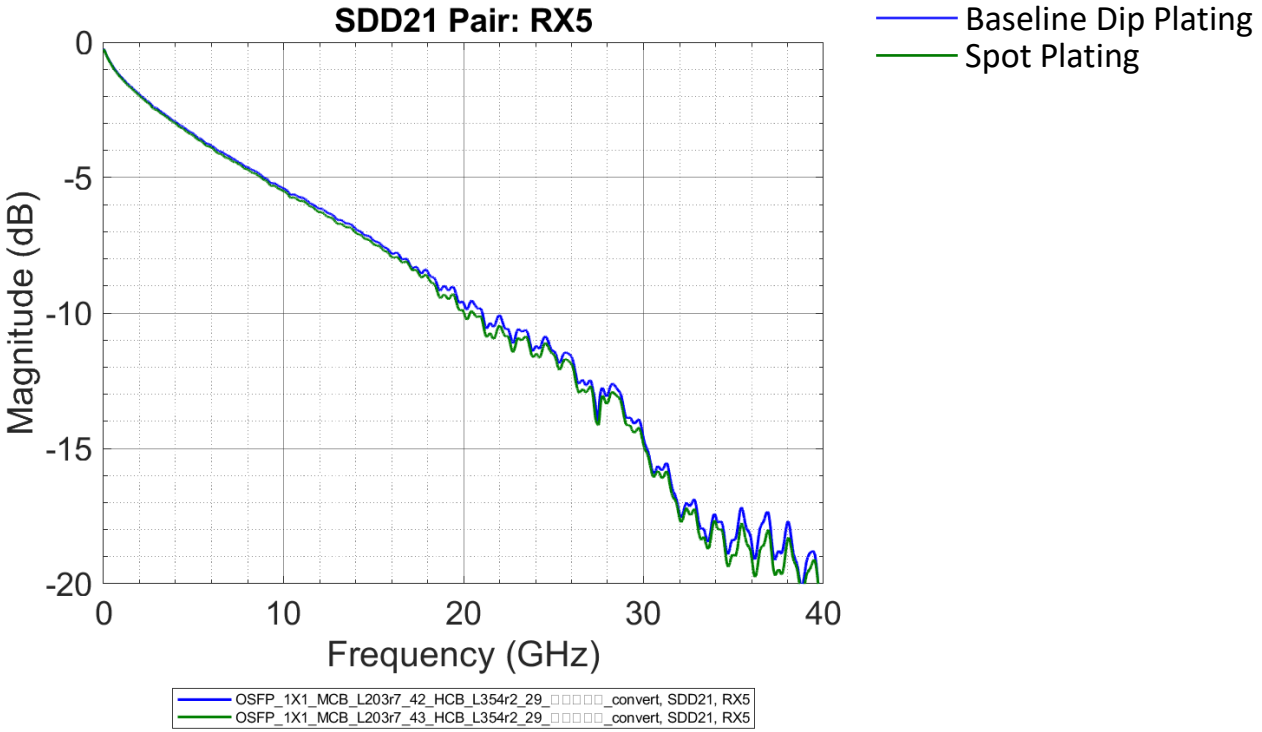
SDD21



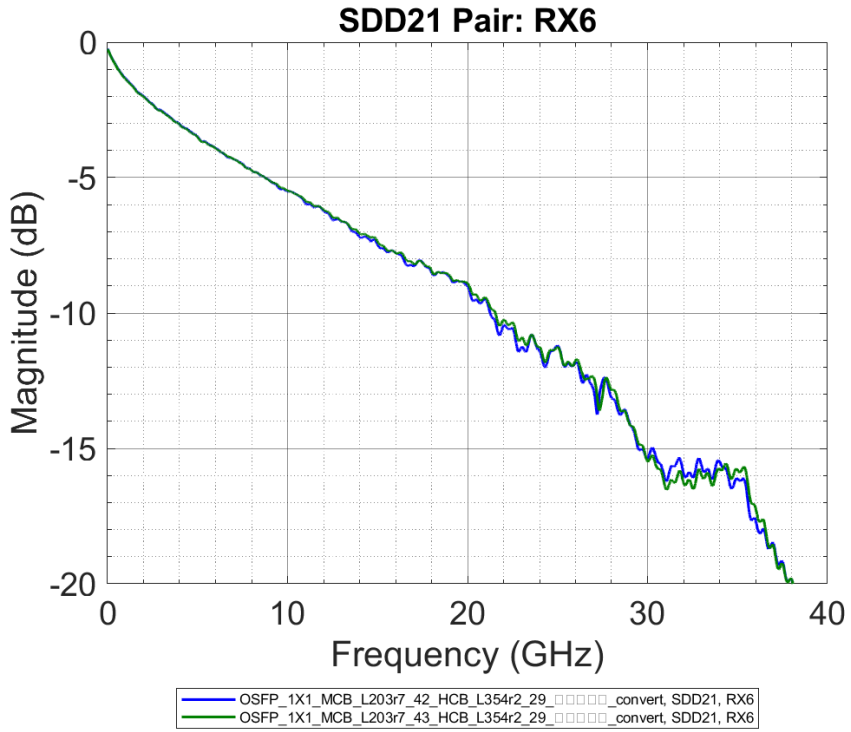
SDD21



SDD21

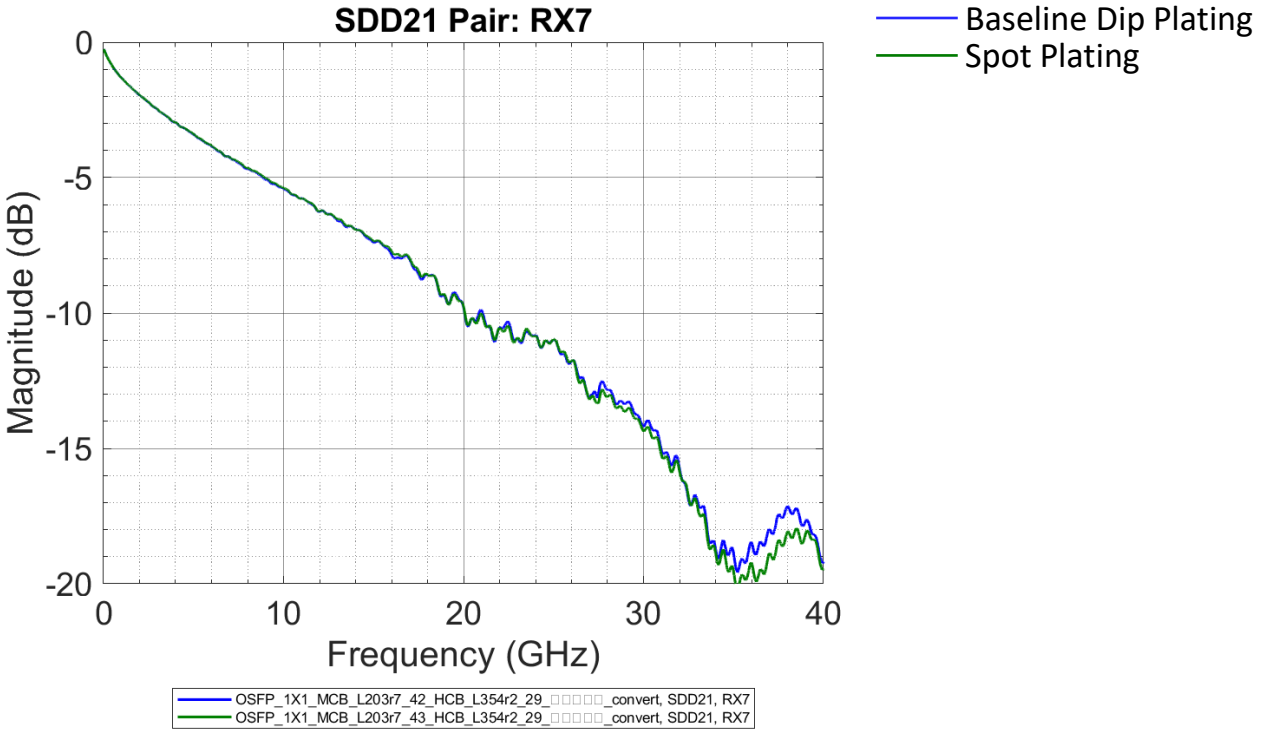


SDD21

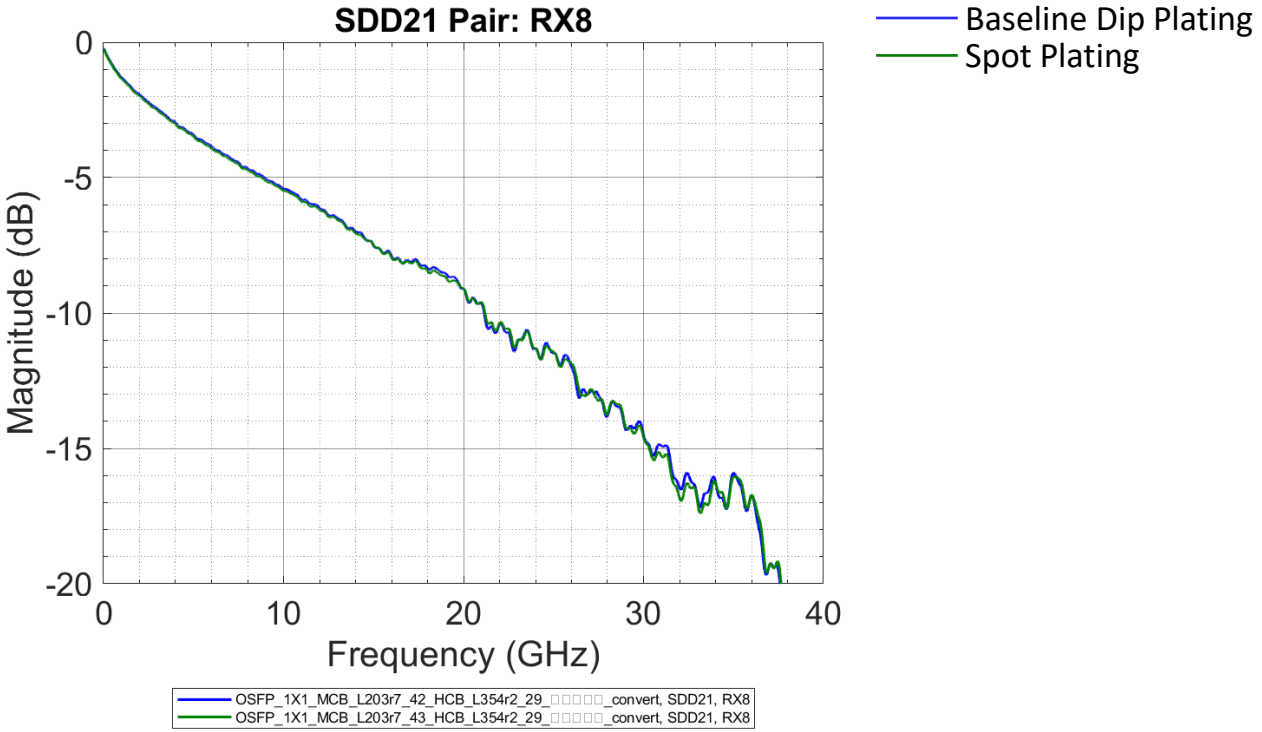


Baseline Dip Plating
Spot Plating

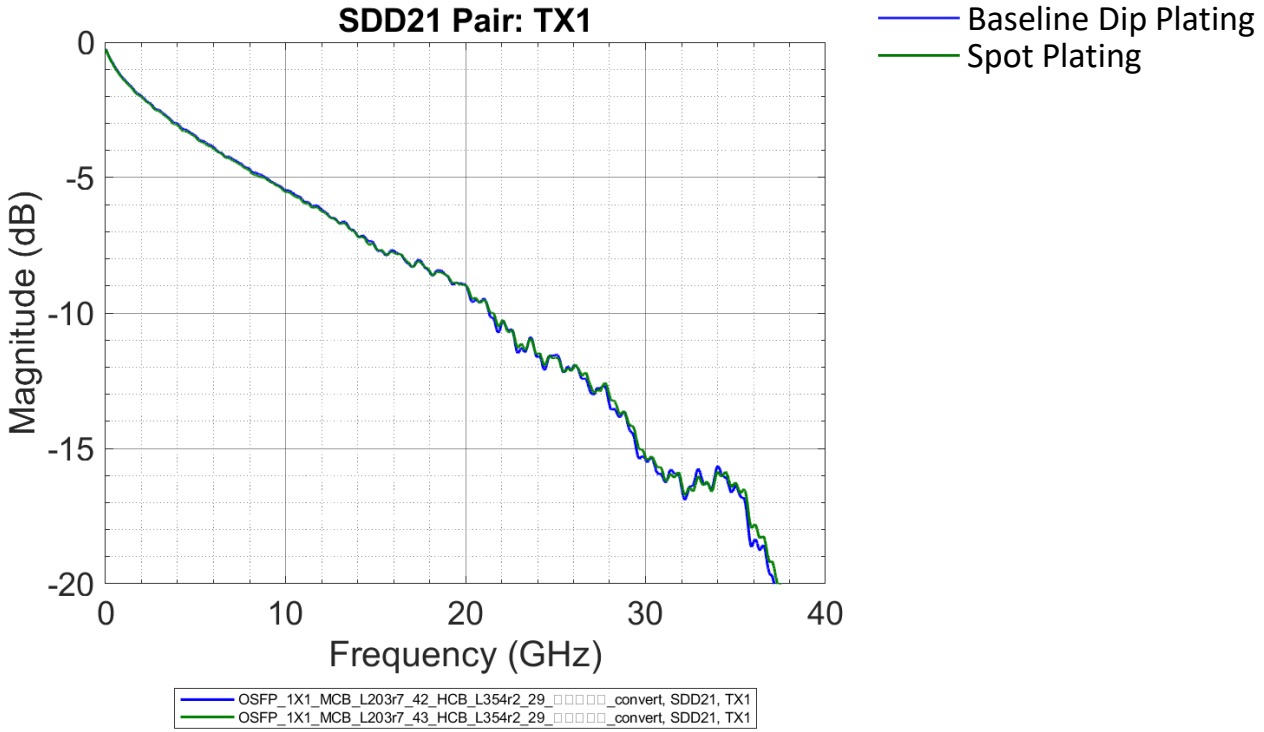
SDD21



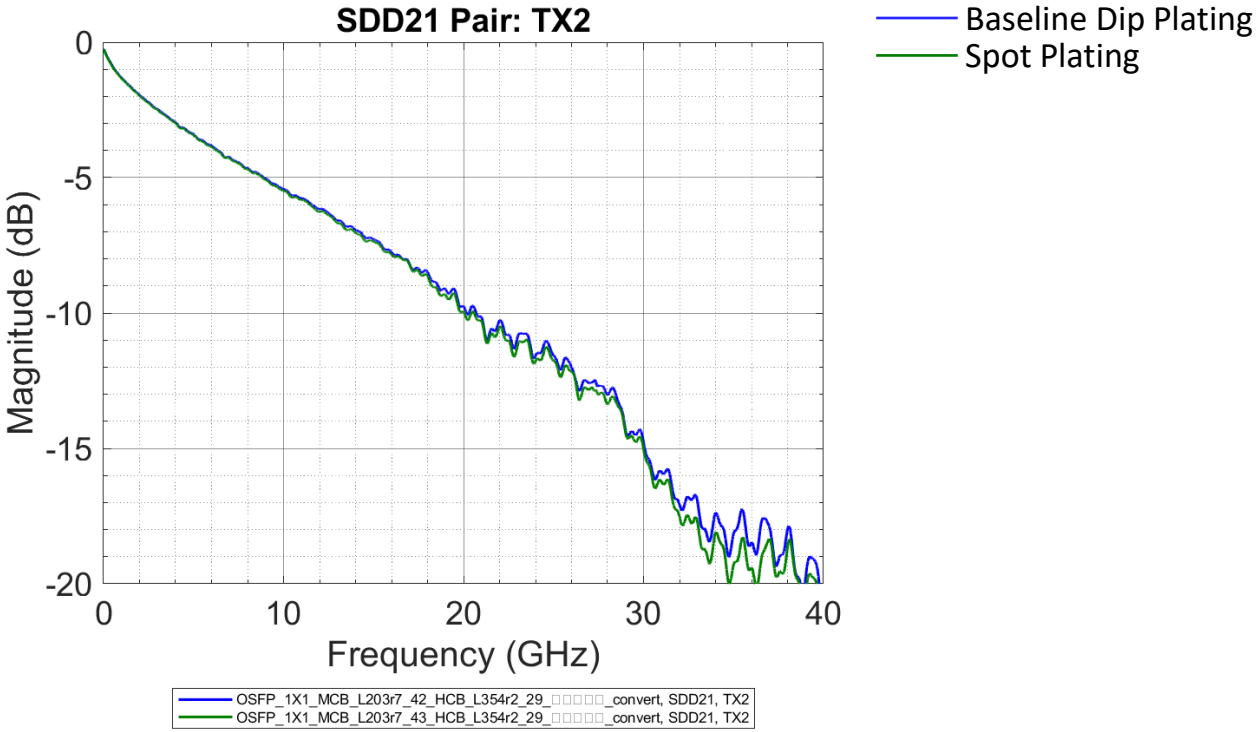
SDD21



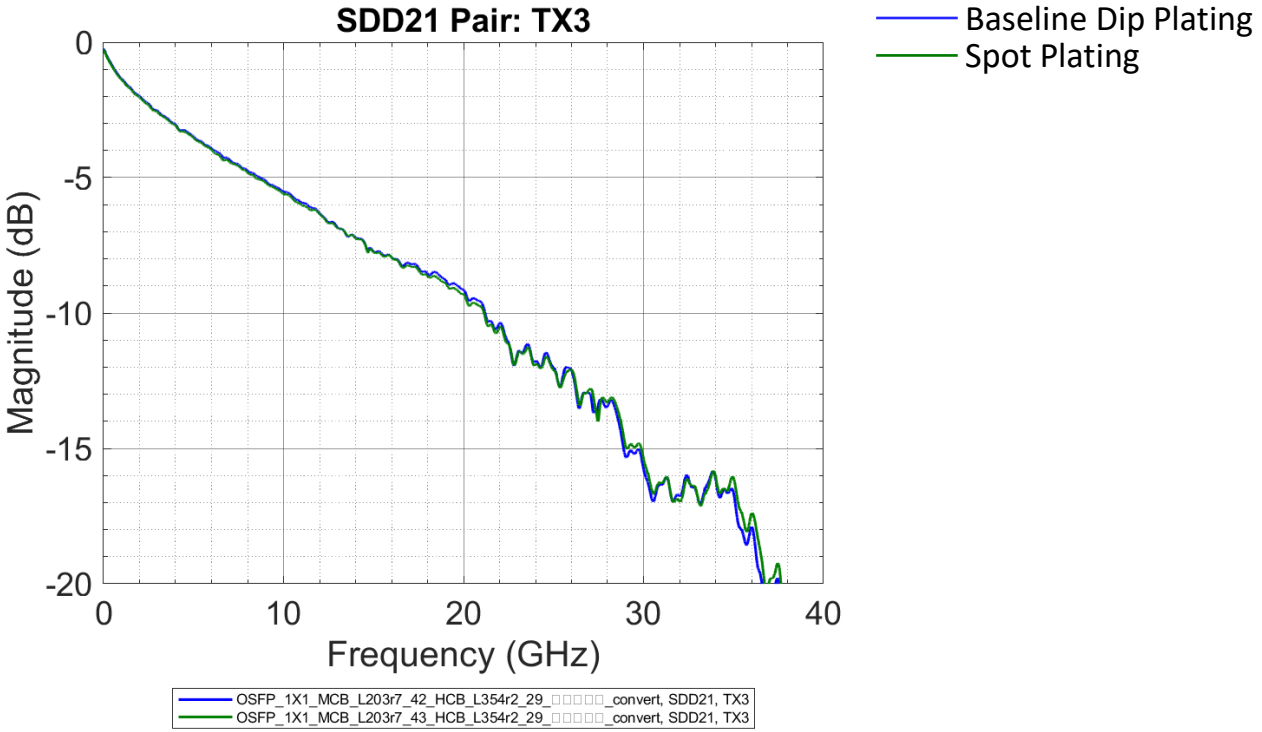
SDD21



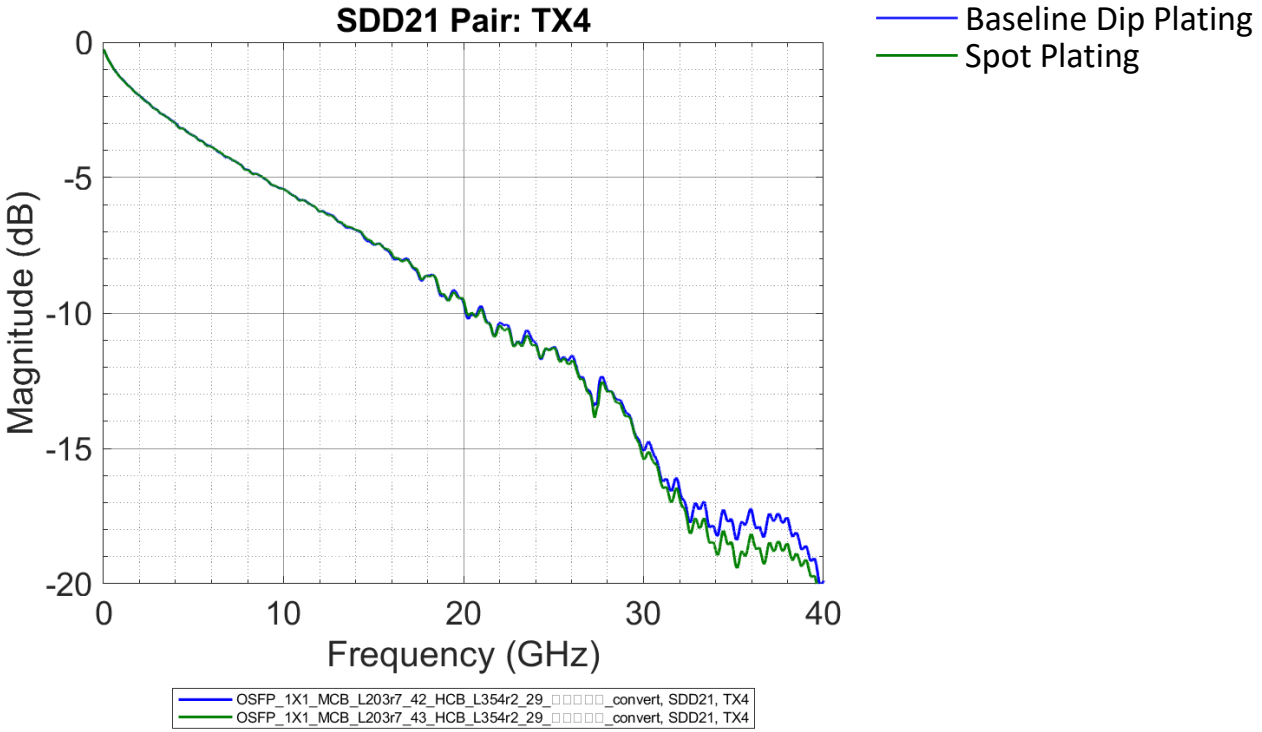
SDD21



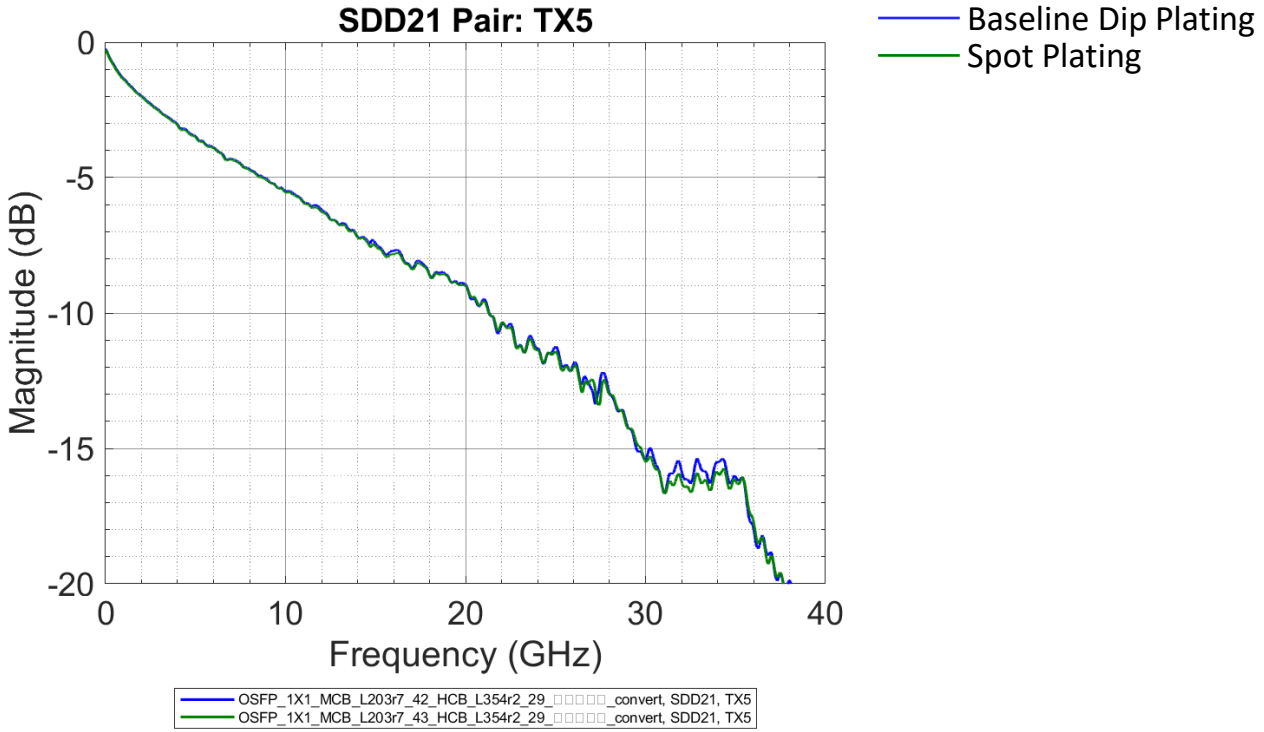
SDD21



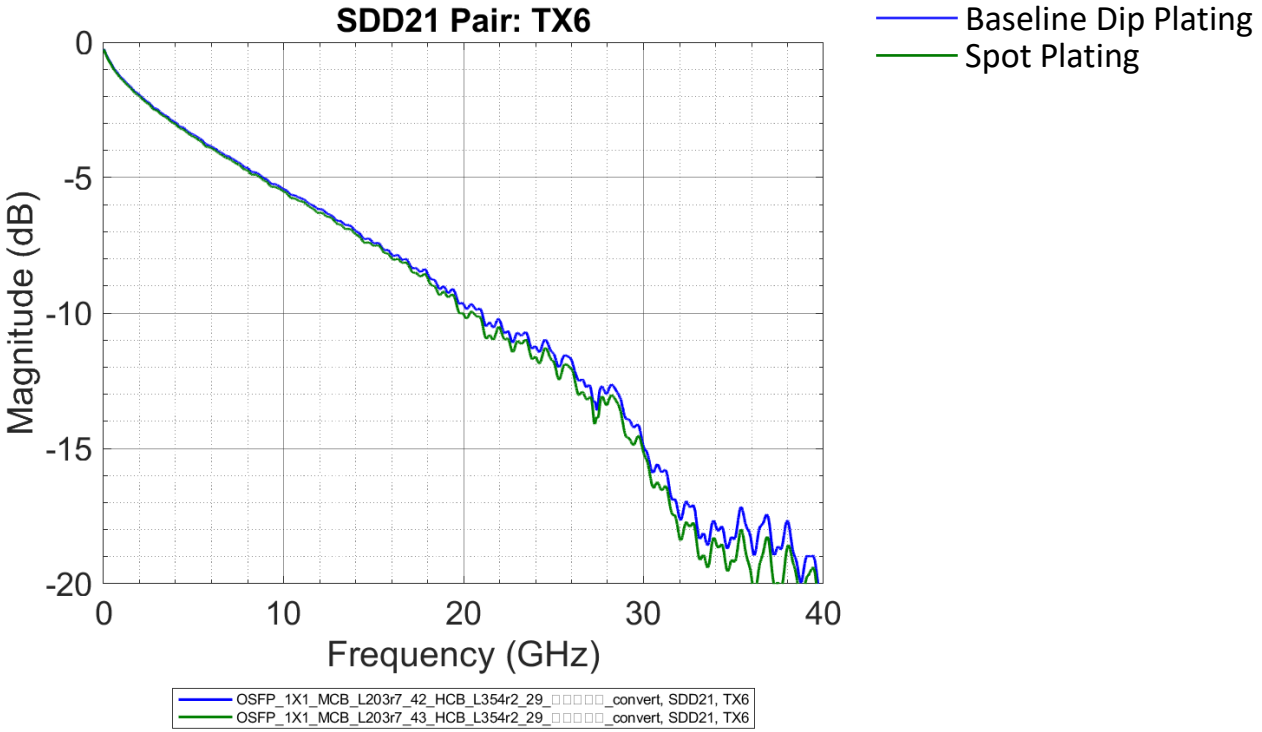
SDD21



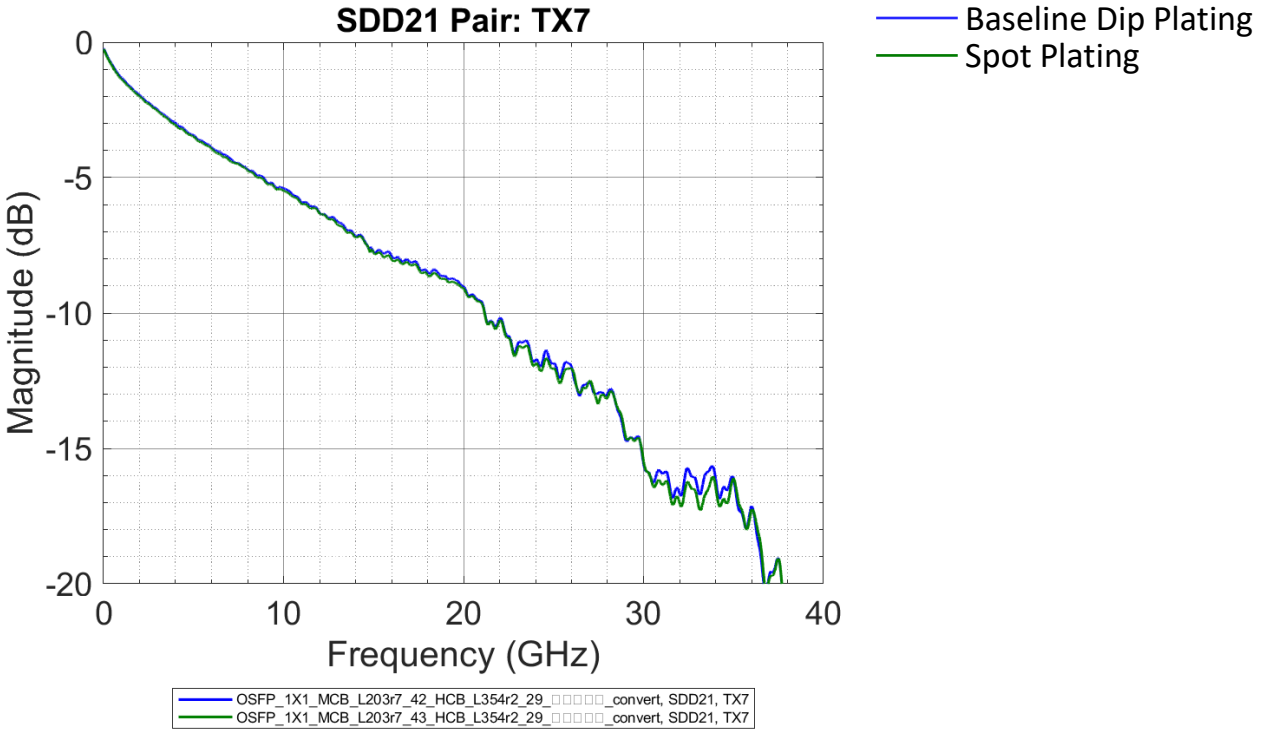
SDD21



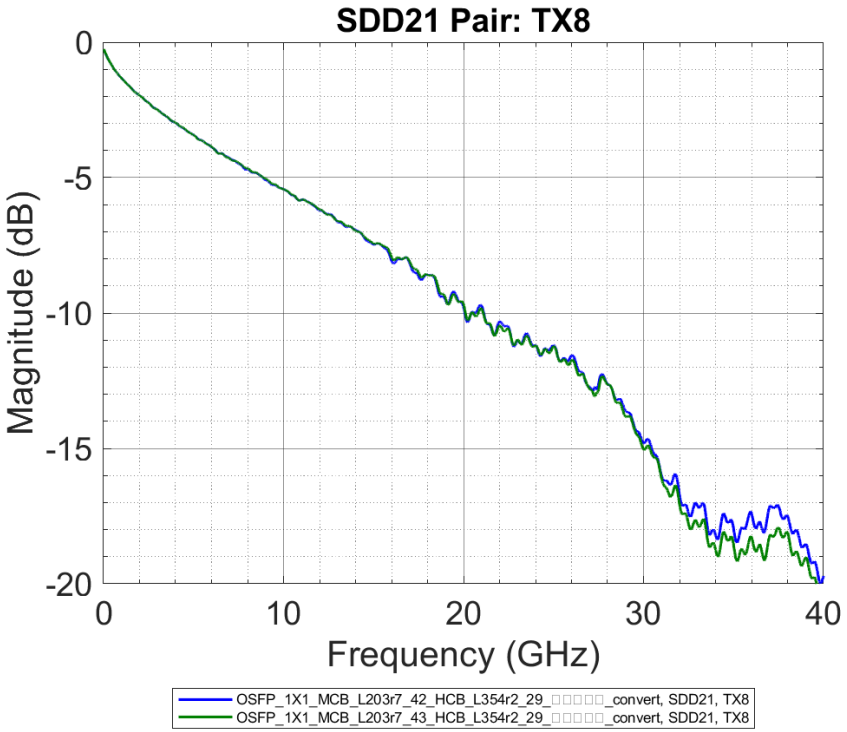
SDD21



SDD21

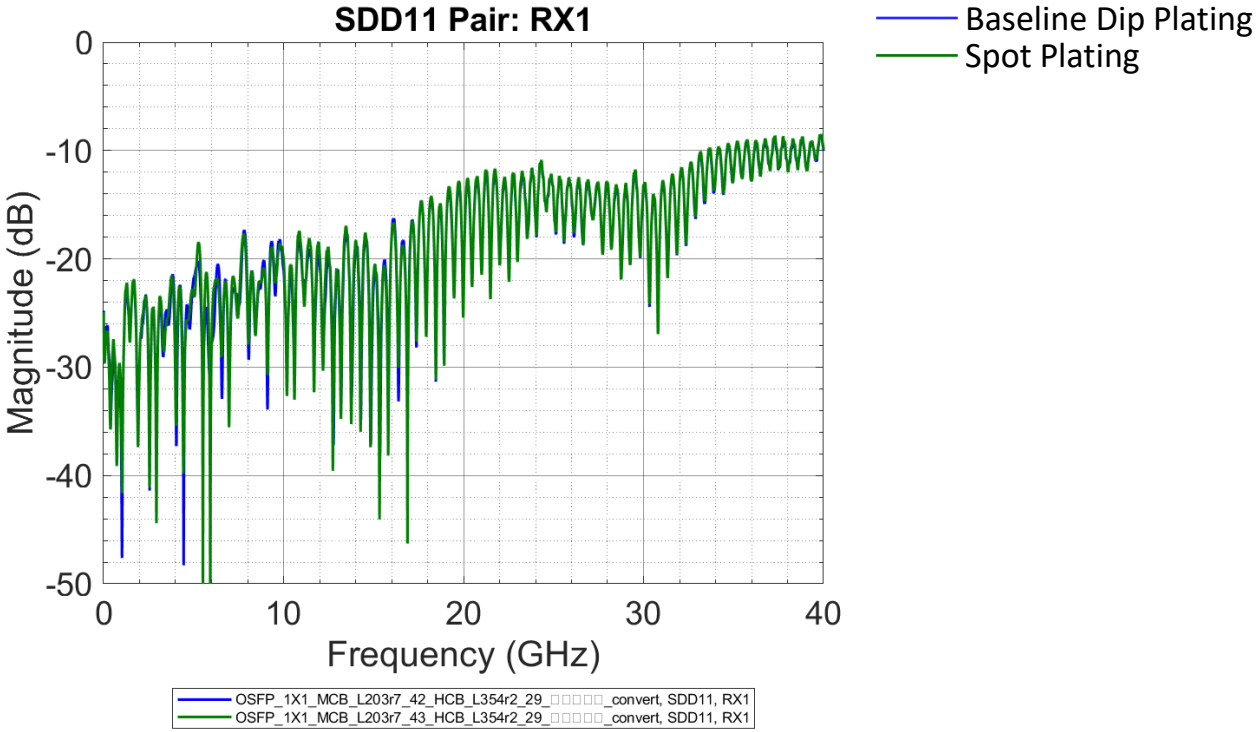


SDD21

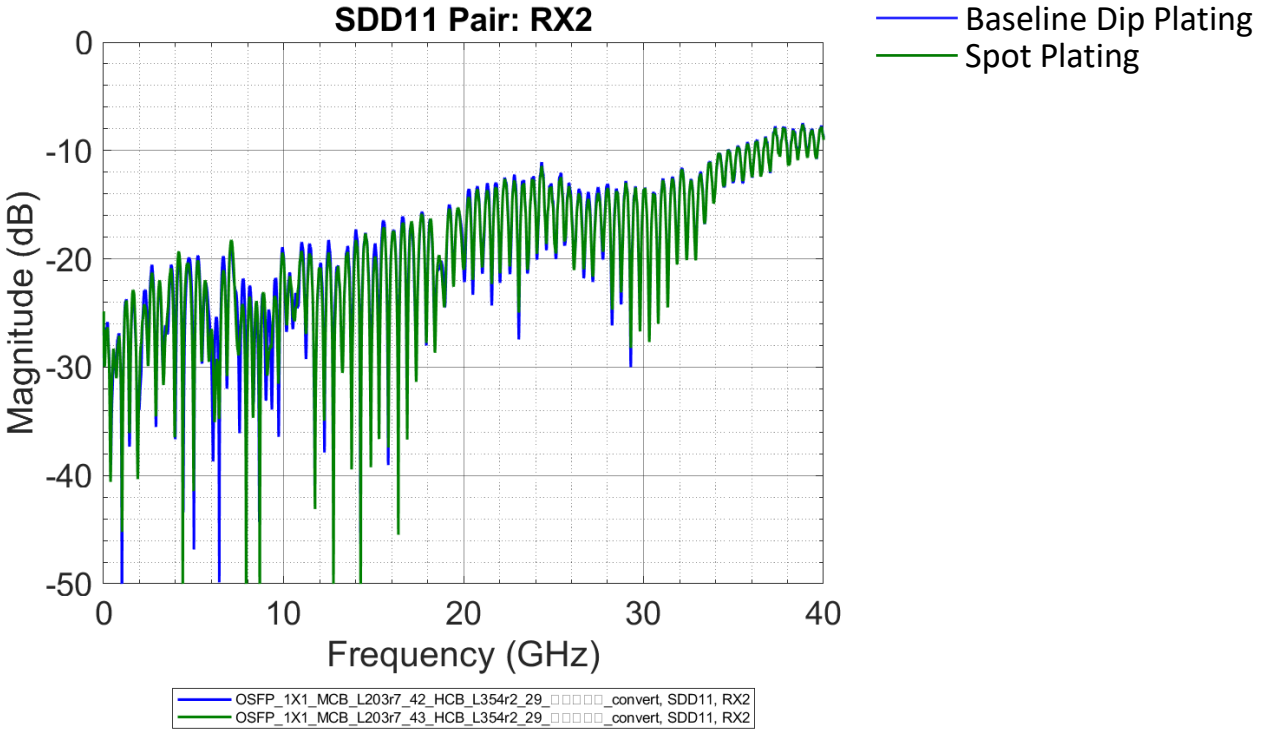


Baseline Dip Plating
Spot Plating

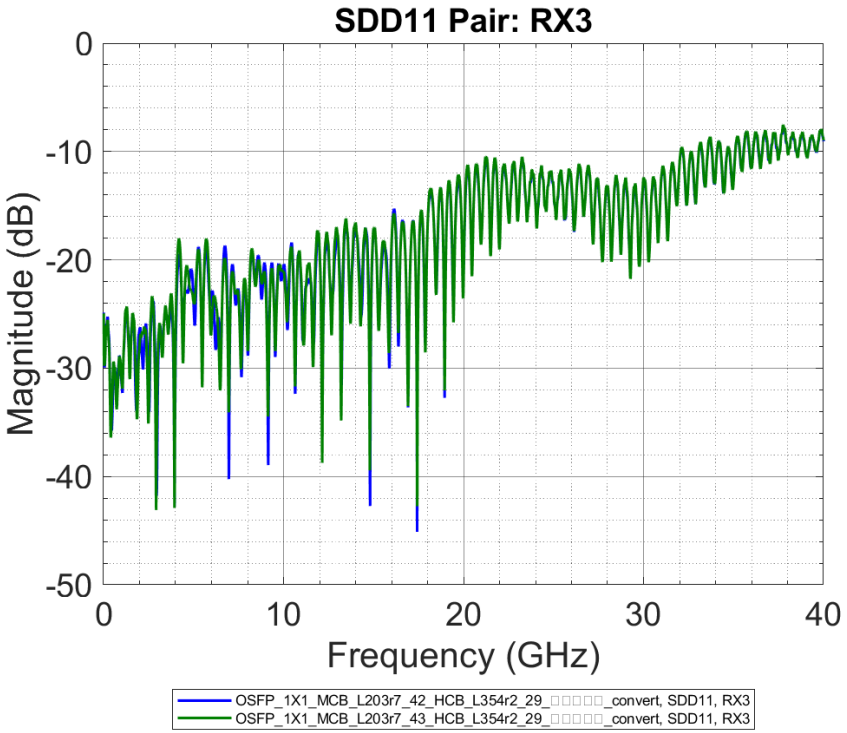
SDD11



SDD11

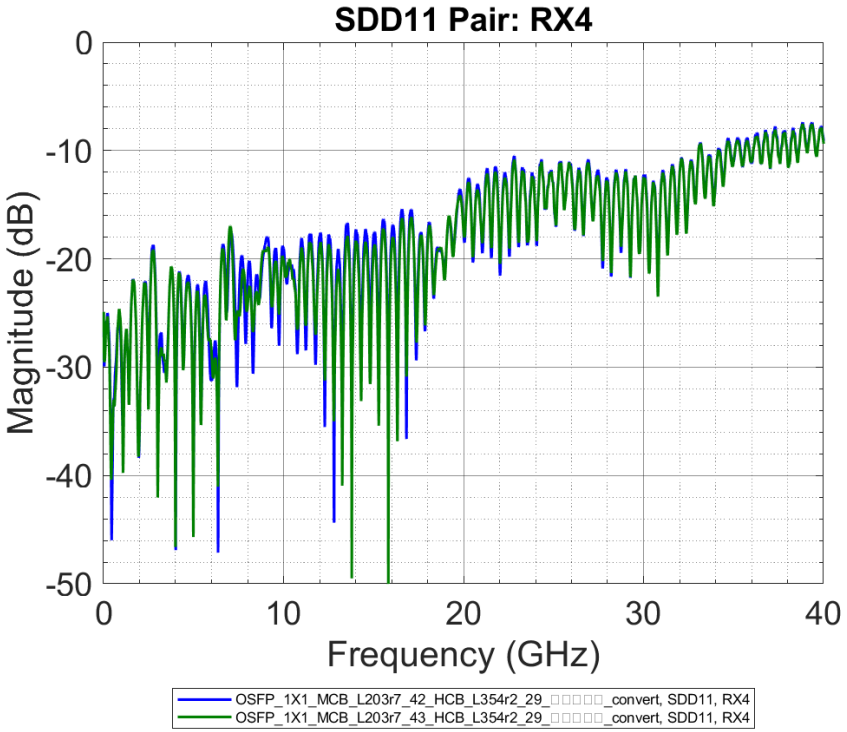


SDD11



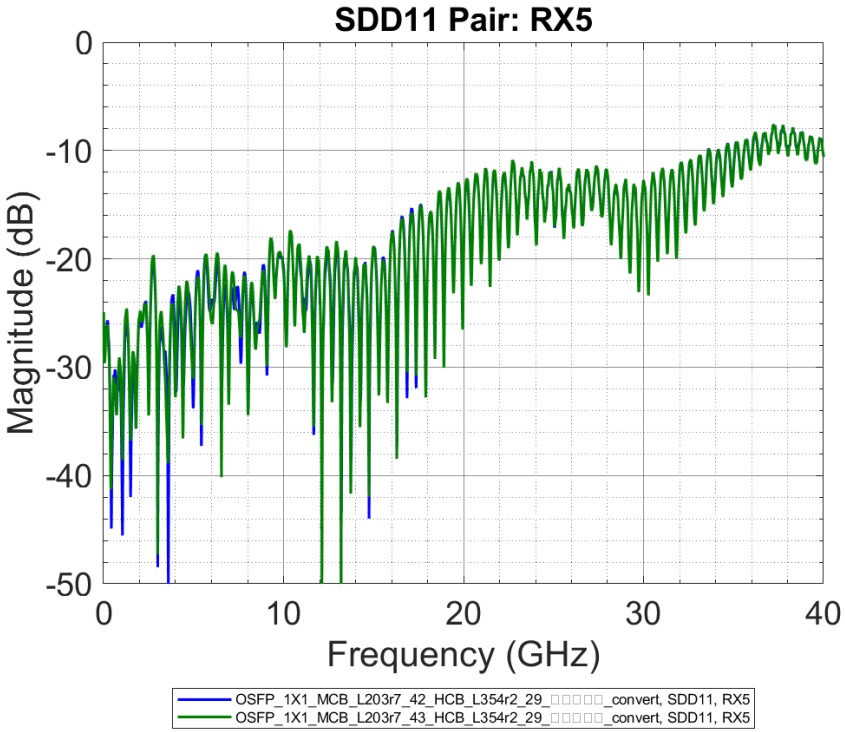
Baseline Dip Plating
Spot Plating

SDD11



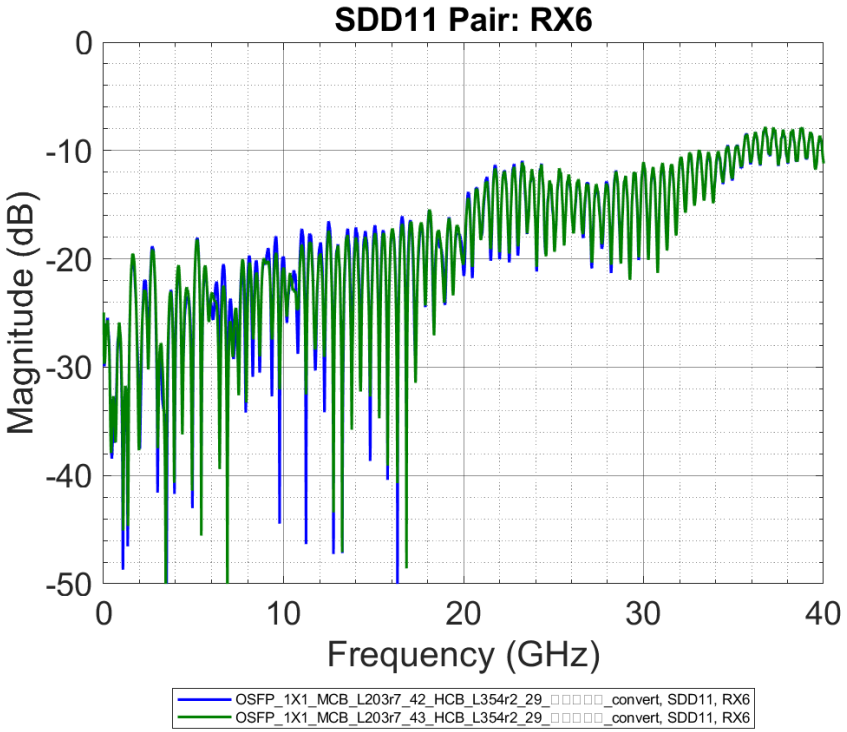
Baseline Dip Plating
Spot Plating

SDD11



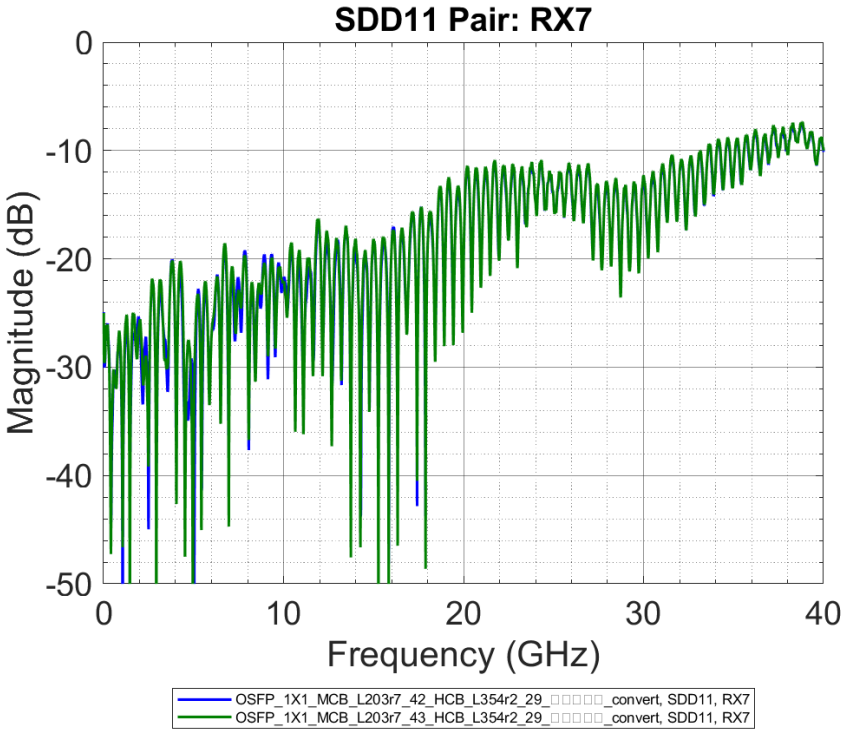
Baseline Dip Plating
Spot Plating

SDD11



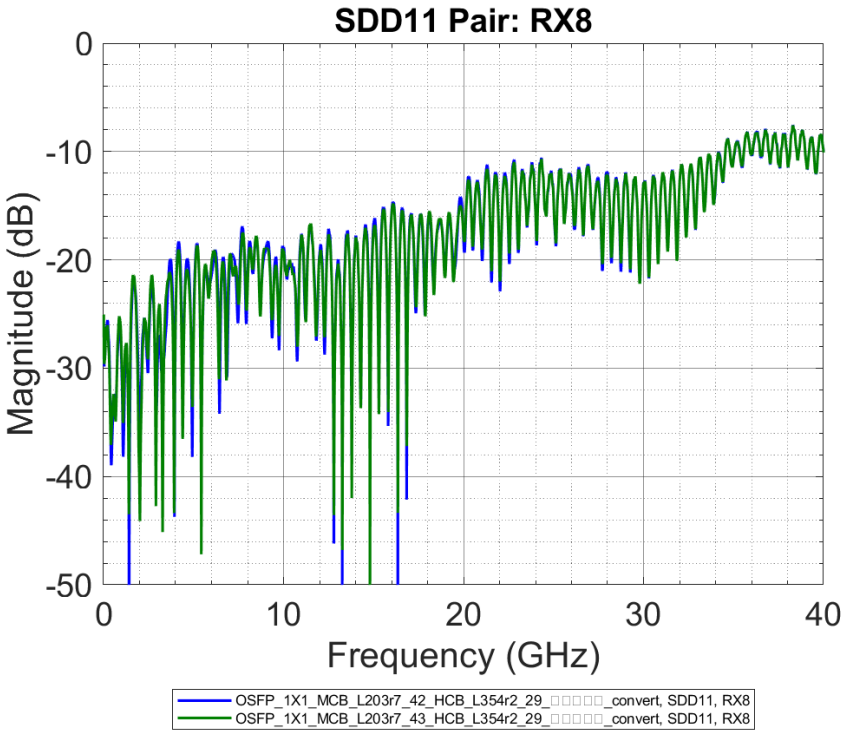
Baseline Dip Plating
Spot Plating

SDD11



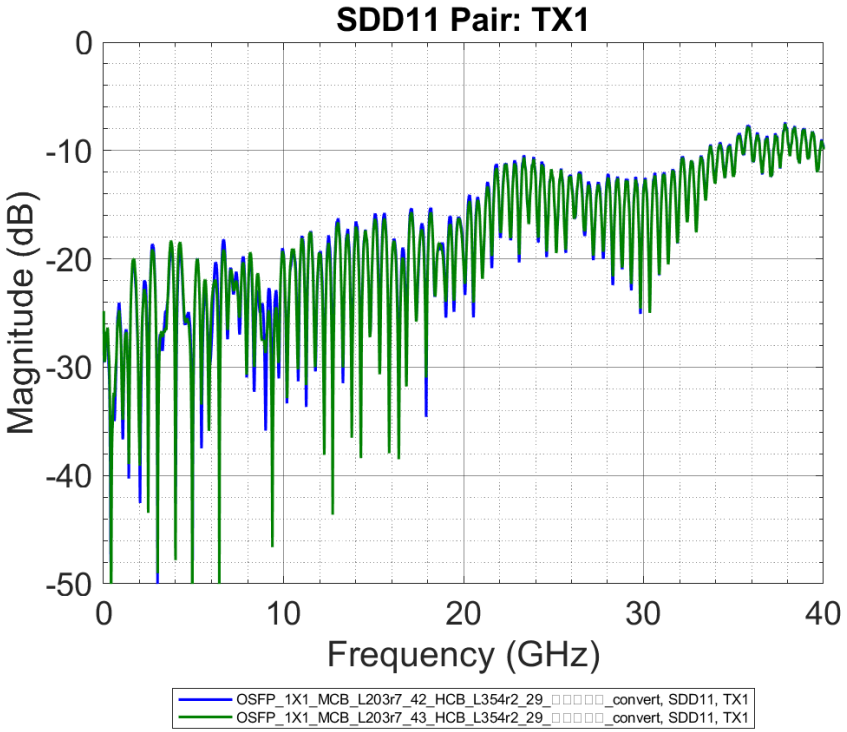
Baseline Dip Plating
Spot Plating

SDD11



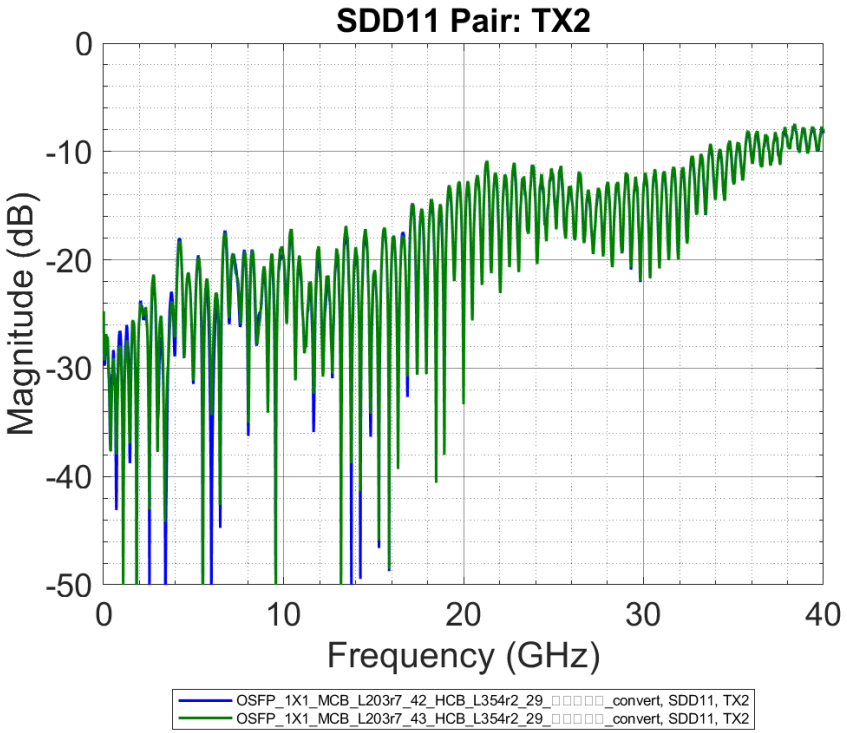
Baseline Dip Plating
Spot Plating

SDD11



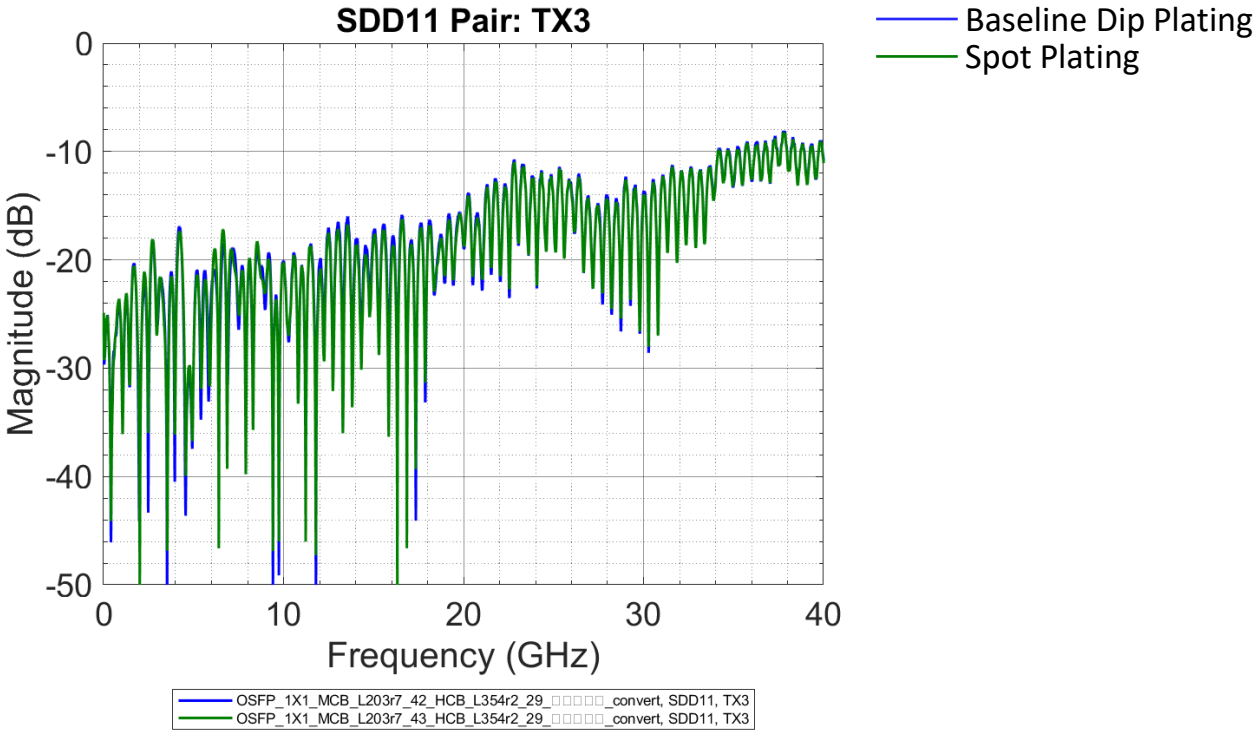
Baseline Dip Plating
Spot Plating

SDD11

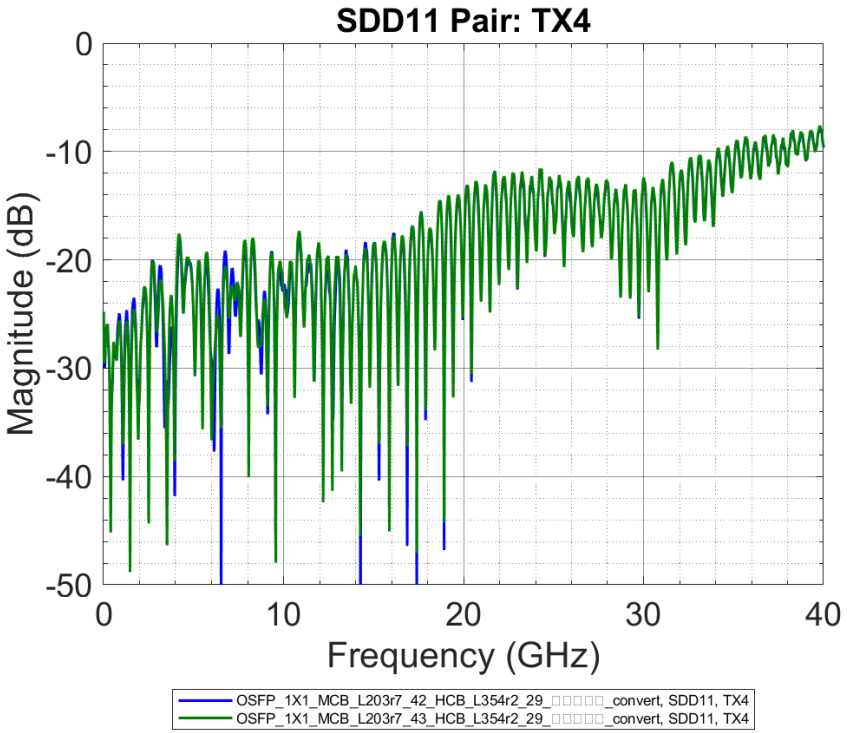


Baseline Dip Plating
Spot Plating

SDD11

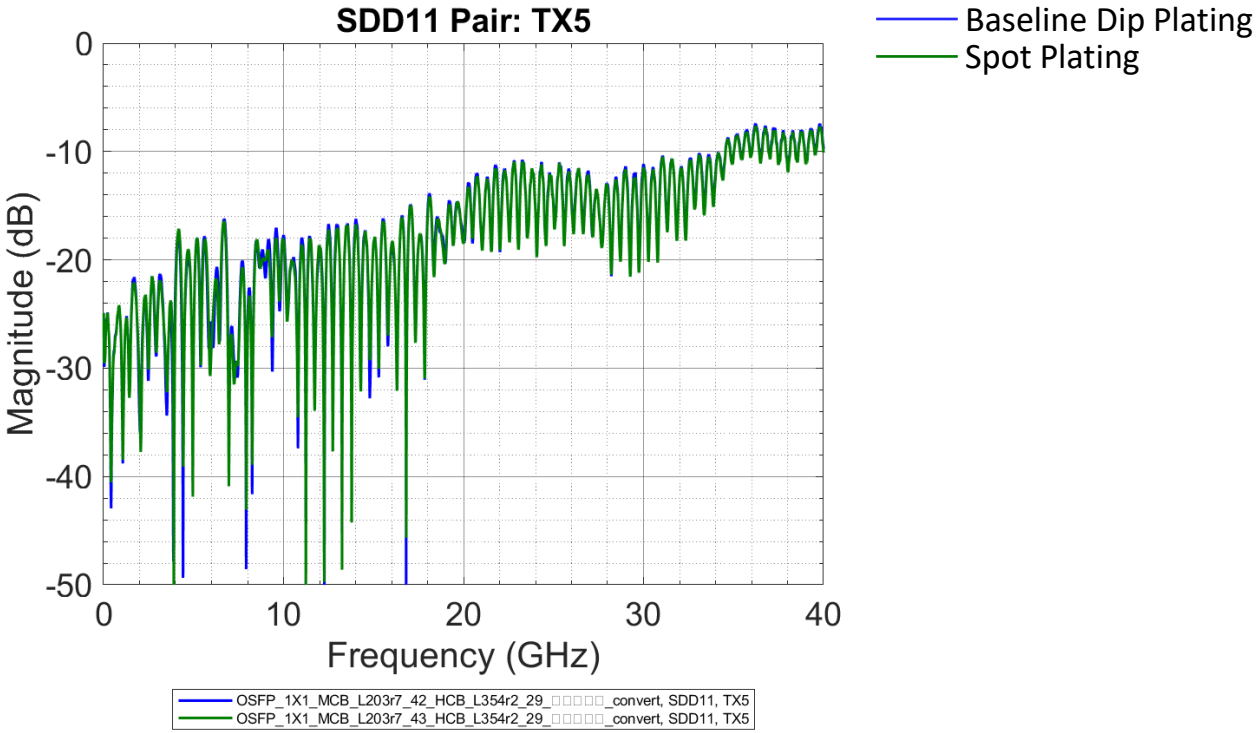


SDD11

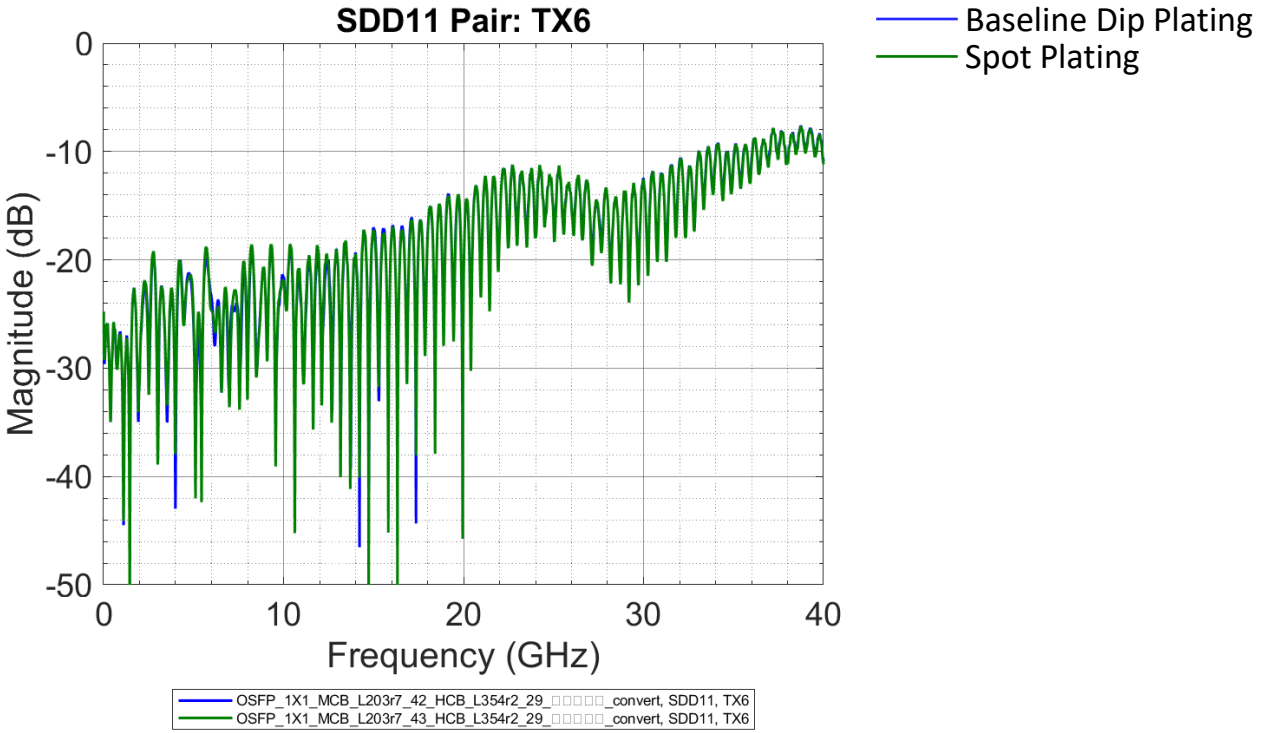


Baseline Dip Plating
Spot Plating

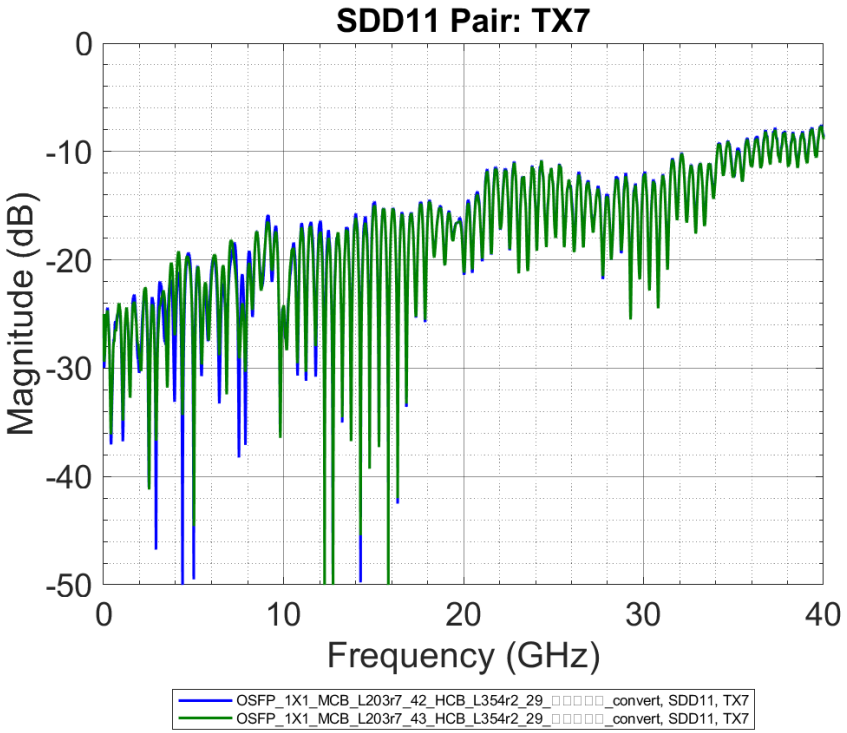
SDD11



SDD11

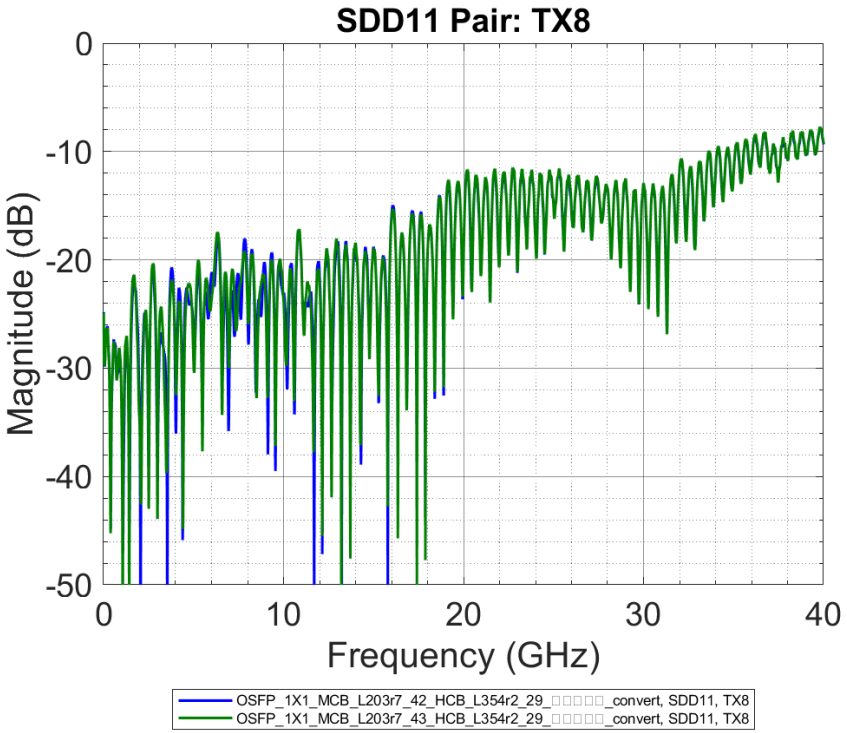


SDD11



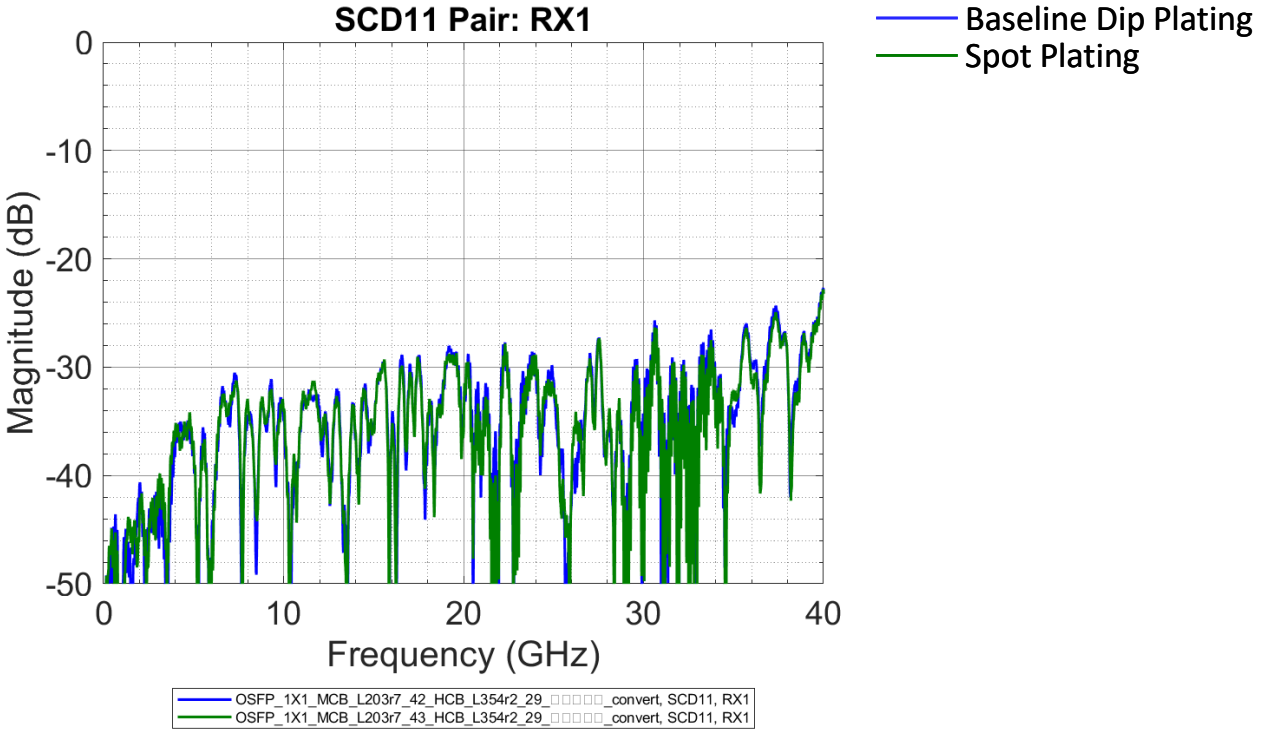
Baseline Dip Plating
Spot Plating

SDD11

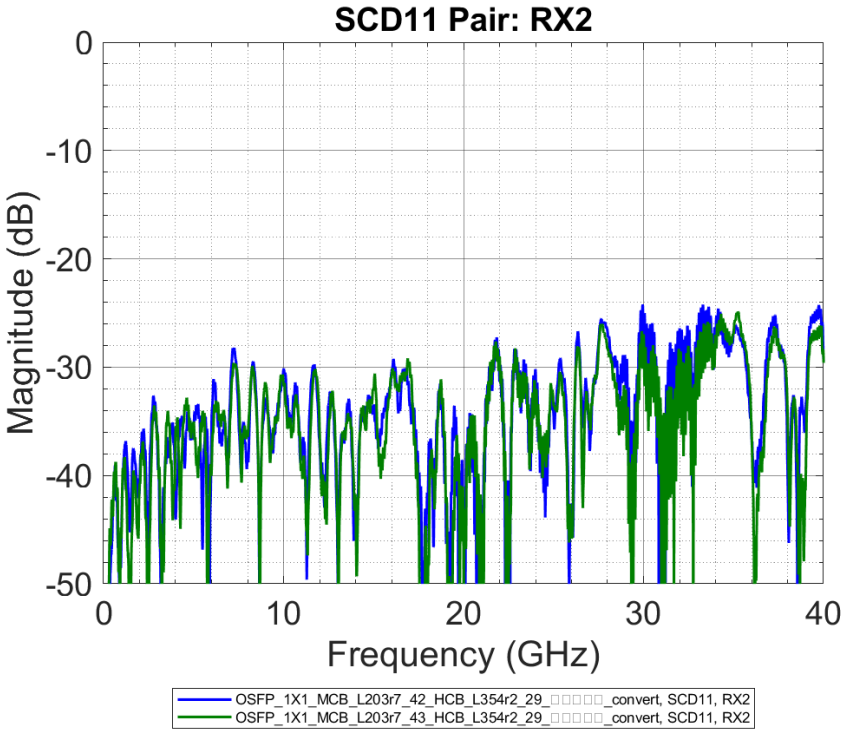


Baseline Dip Plating
Spot Plating

SCD11

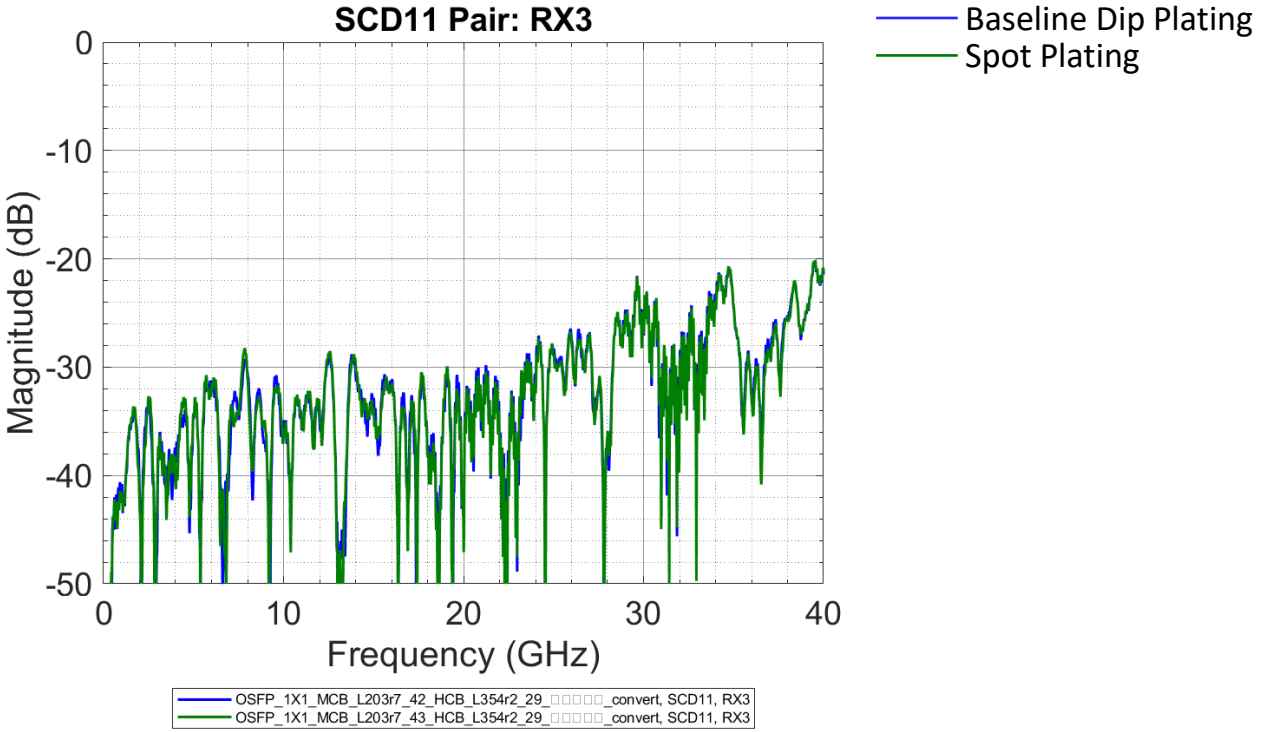


SCD11

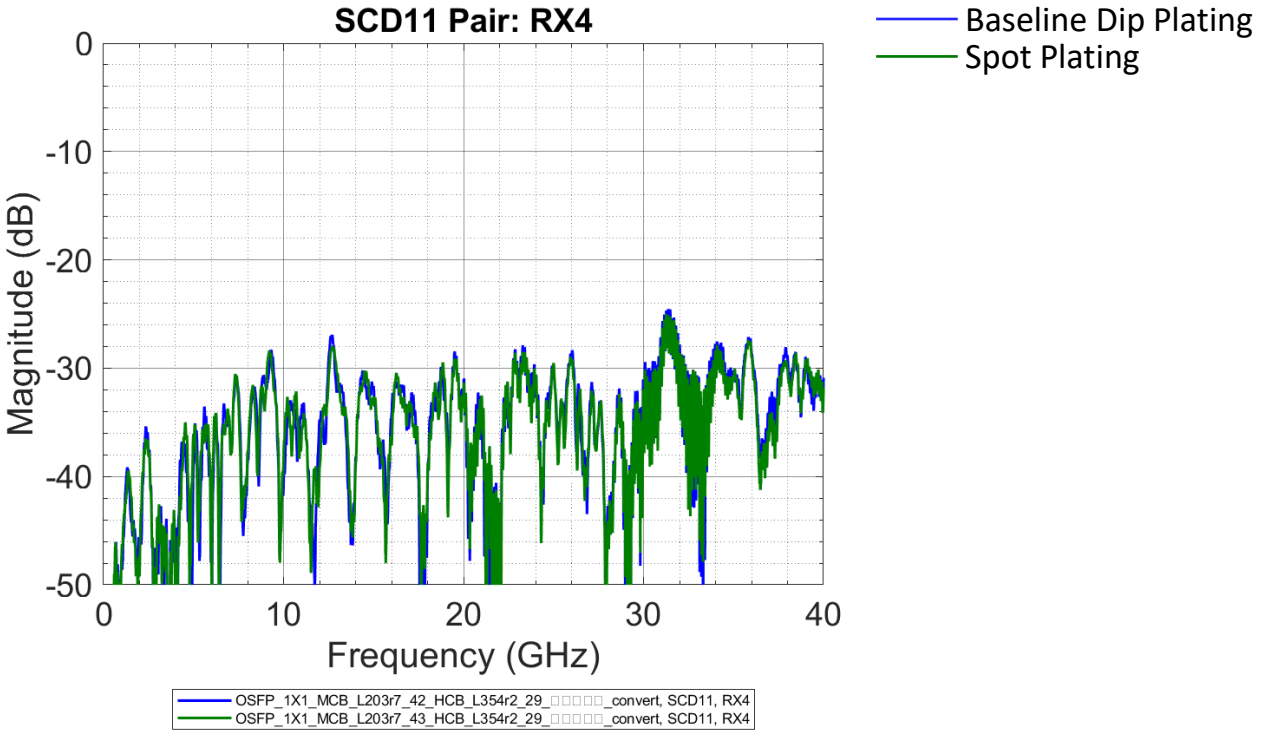


Baseline Dip Plating
Spot Plating

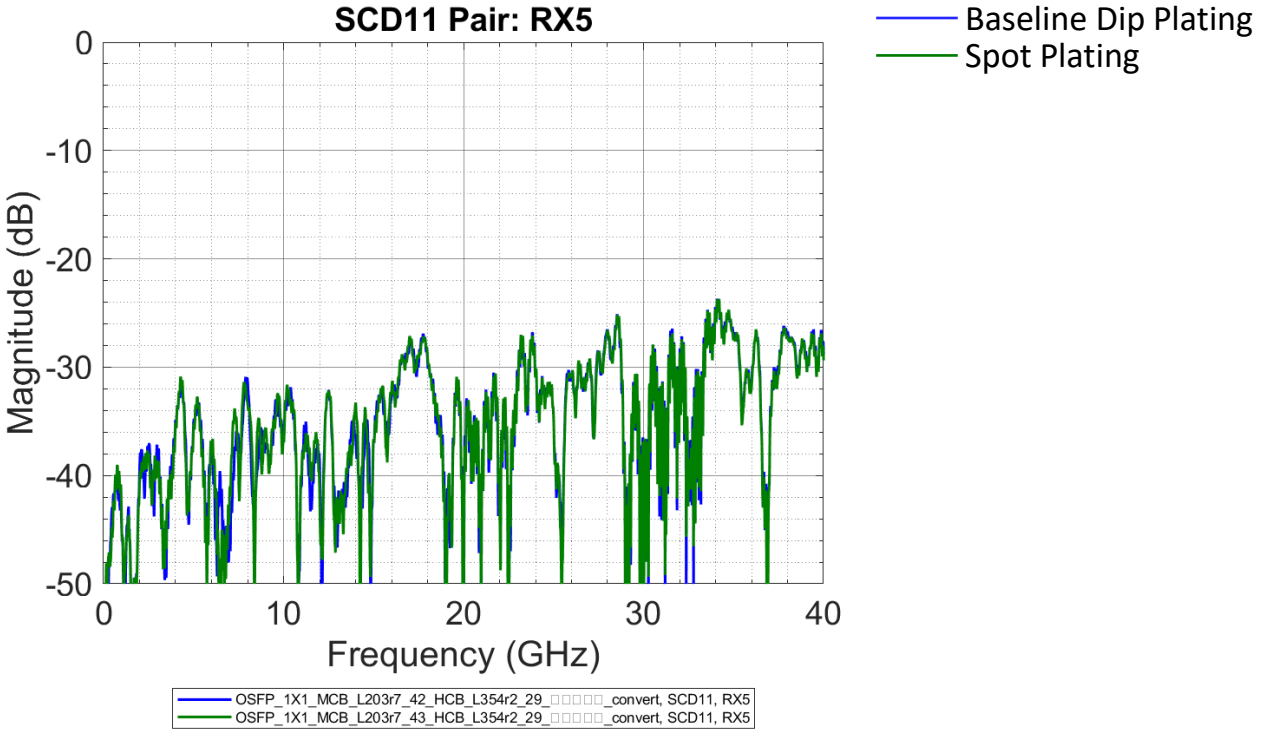
SCD11



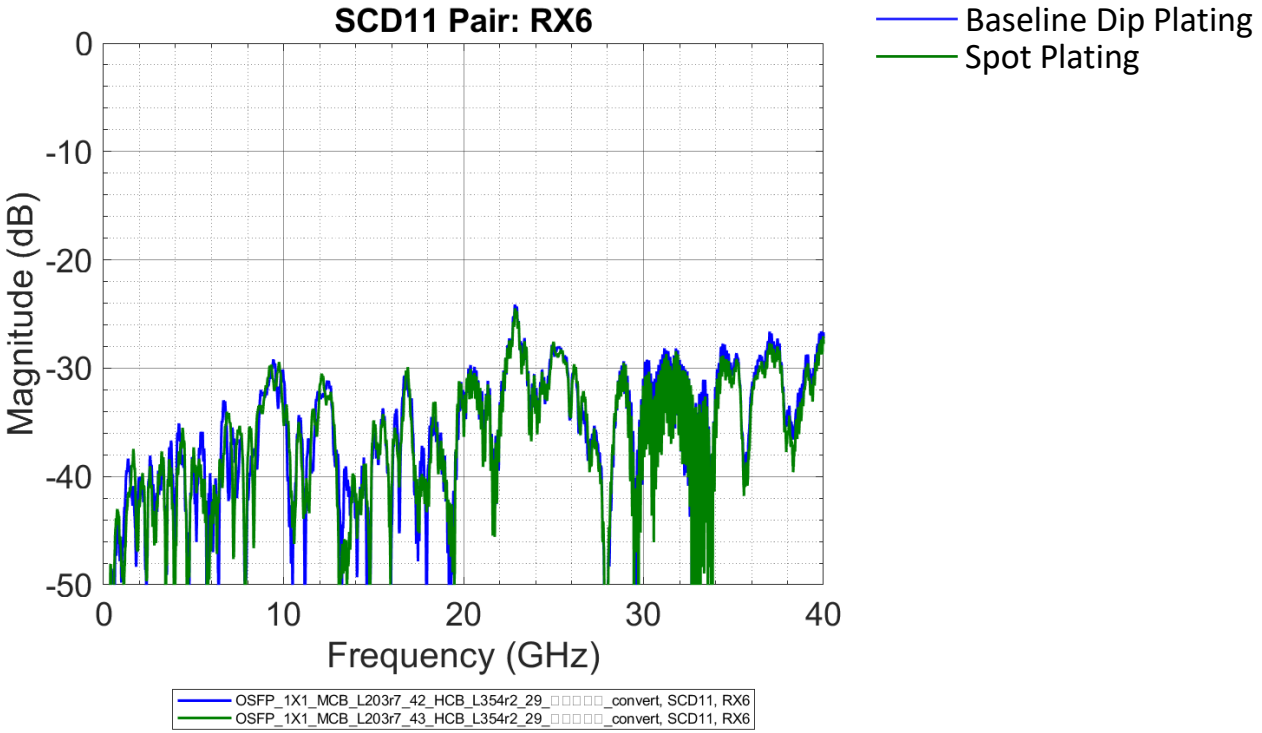
SCD11



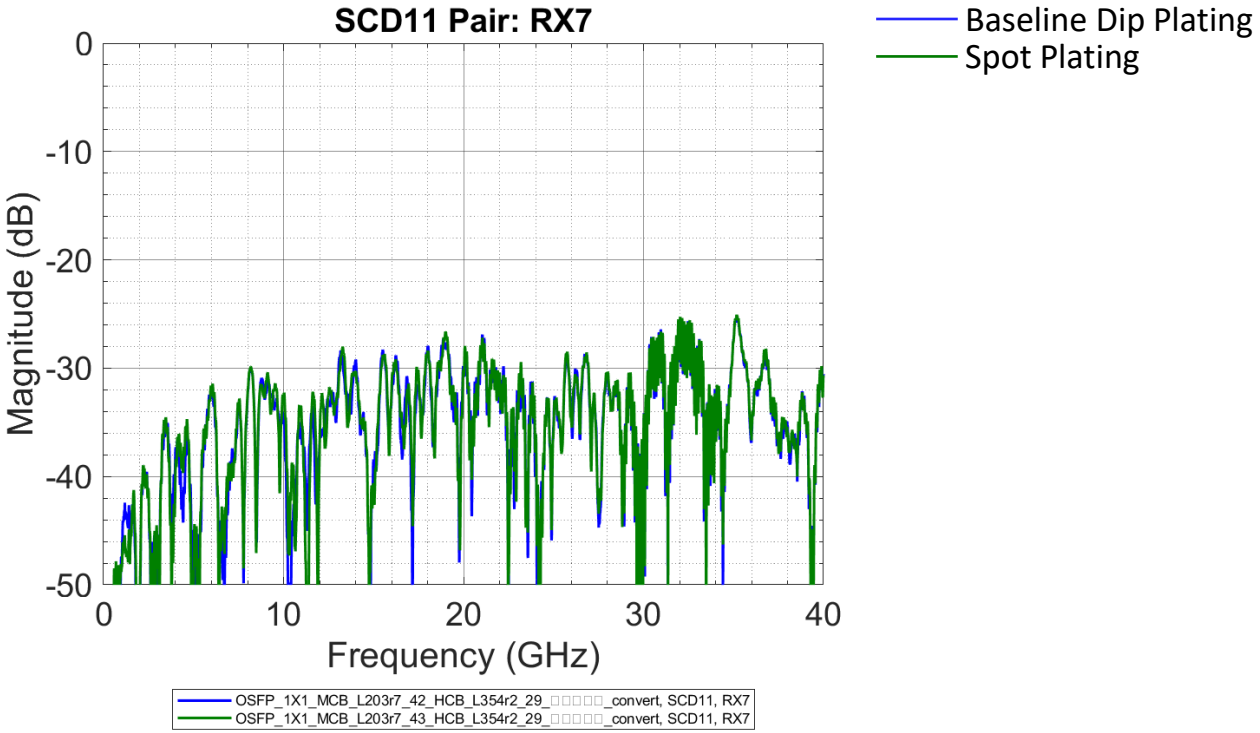
SCD11



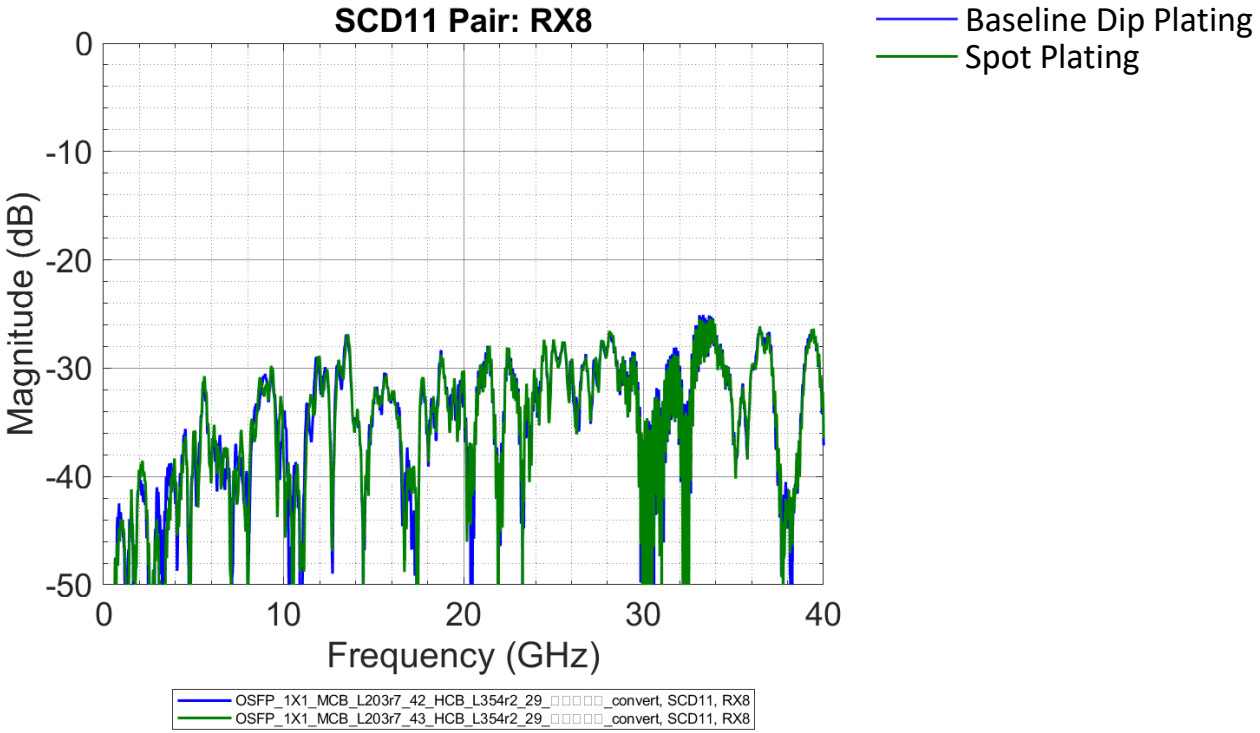
SCD11



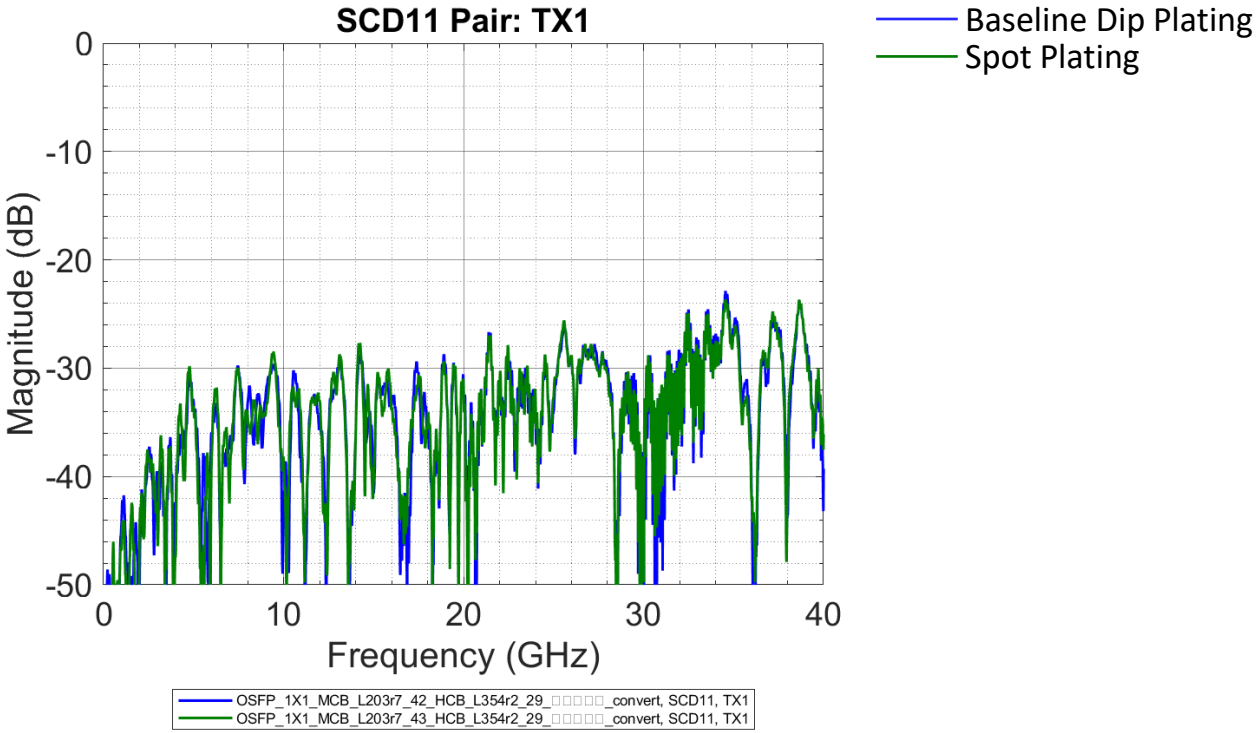
SCD11



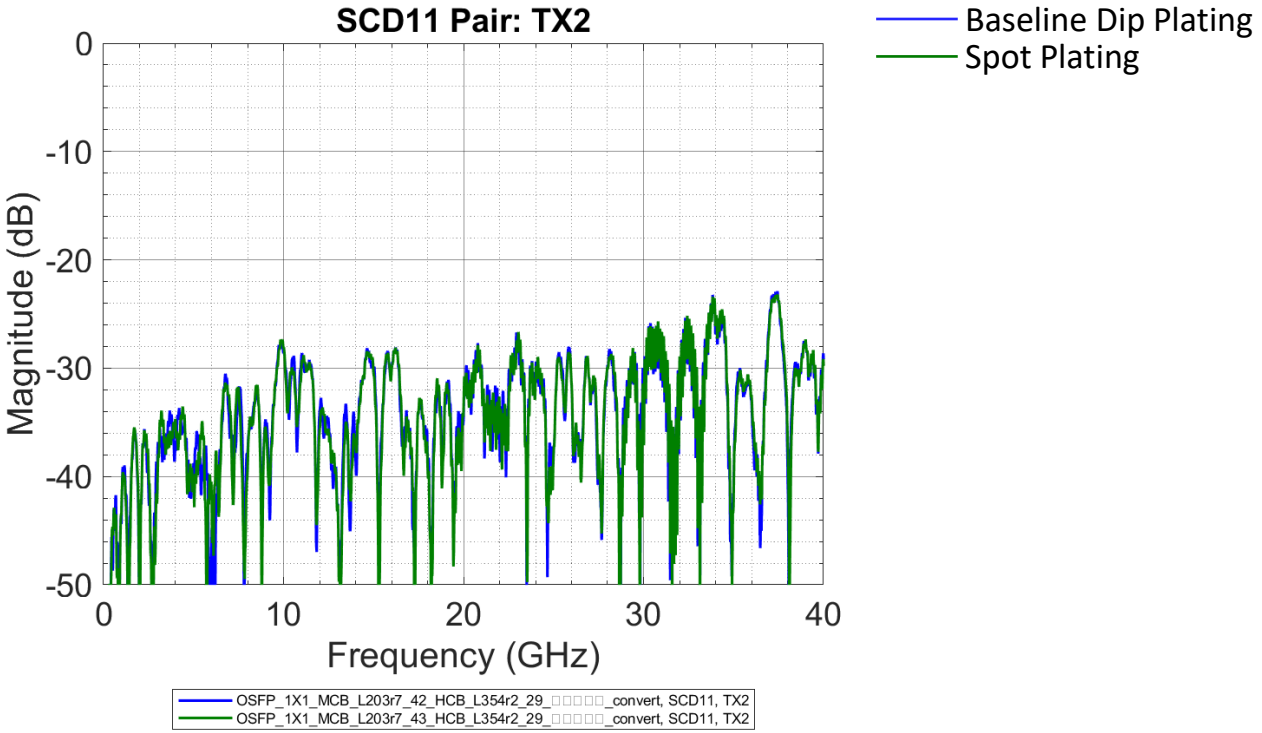
SCD11



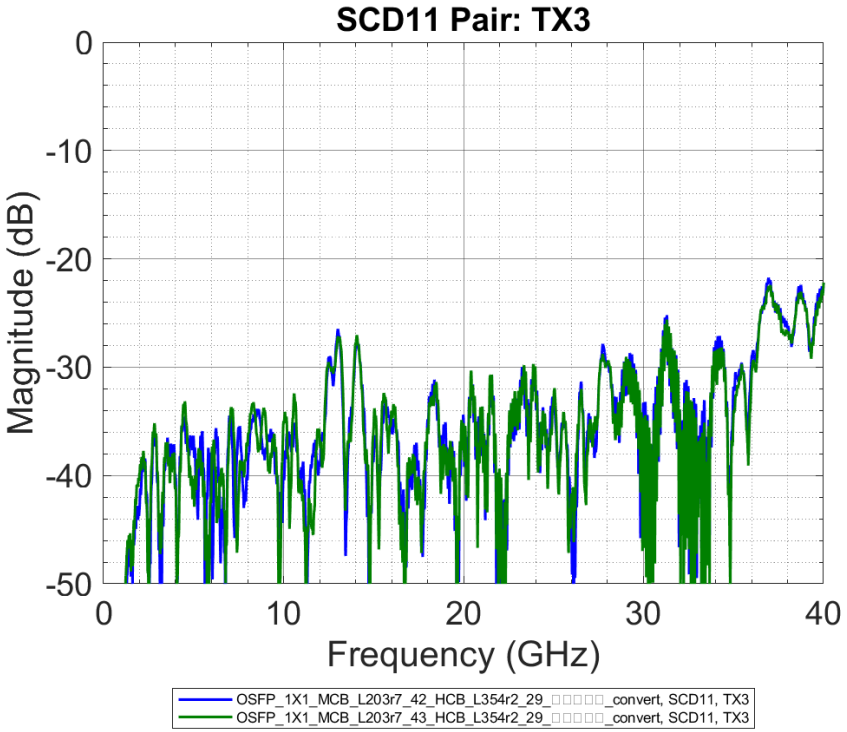
SCD11



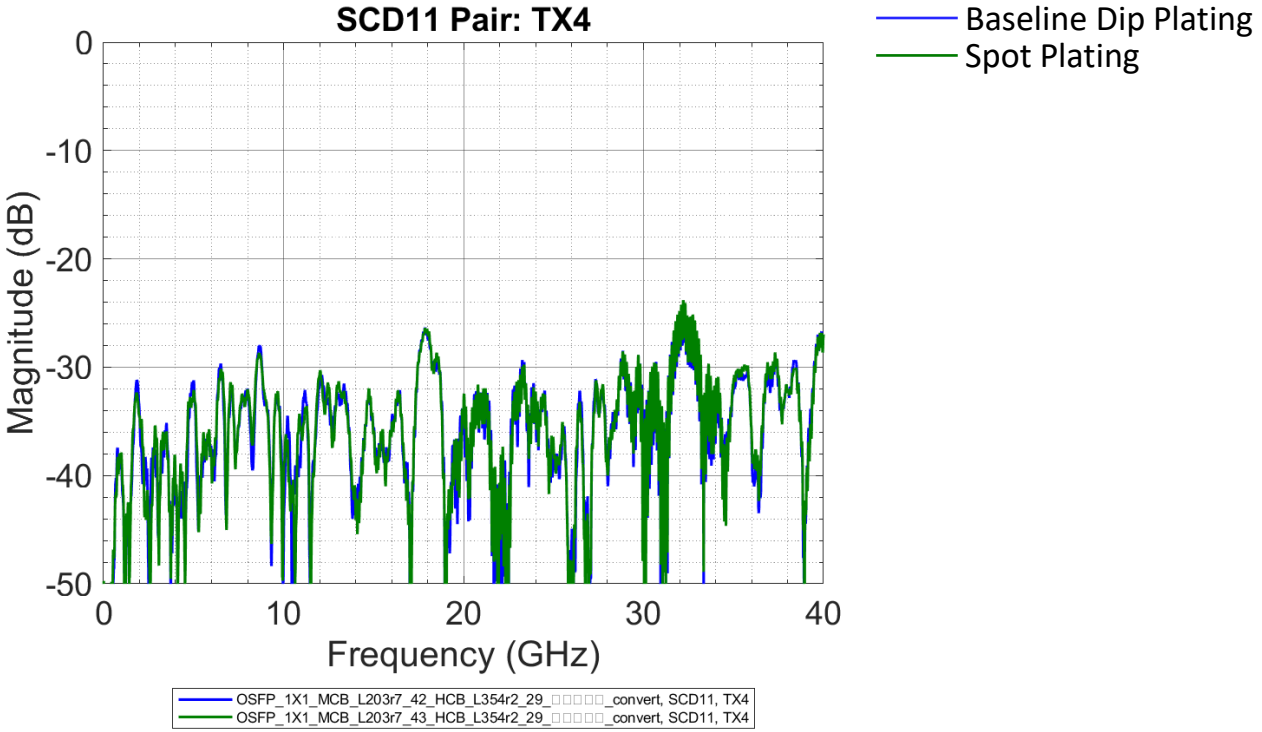
SCD11



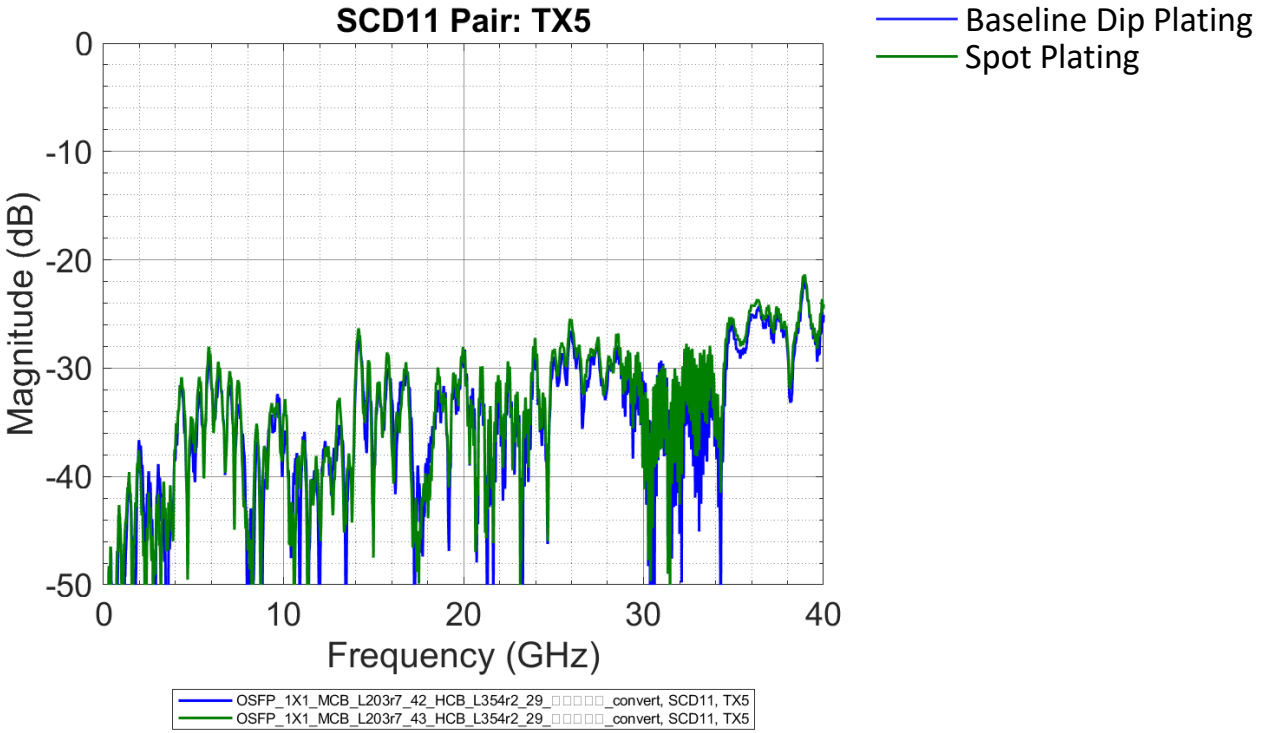
SCD11



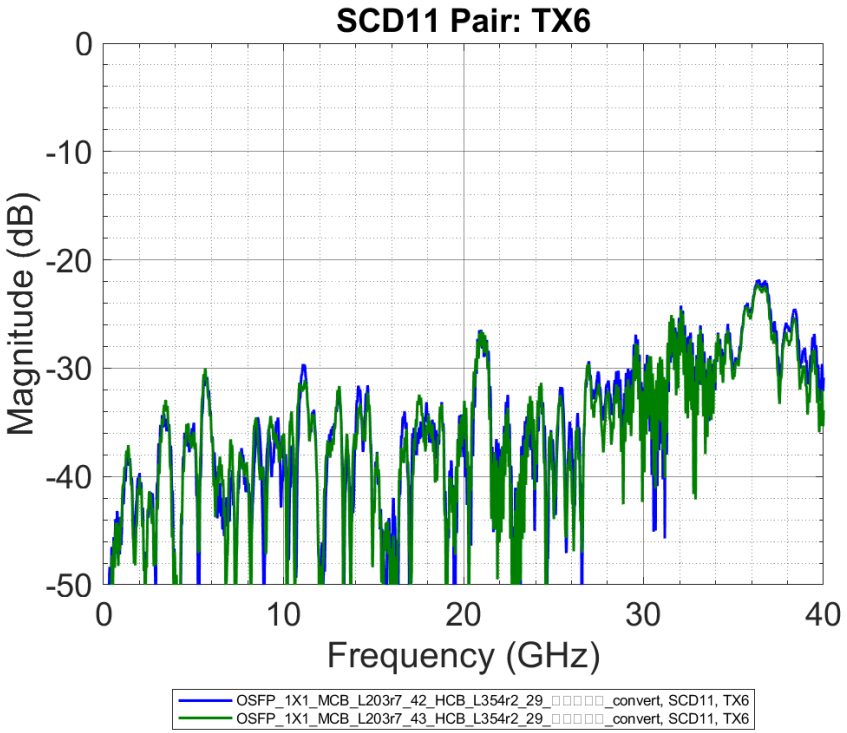
SCD11



SCD11

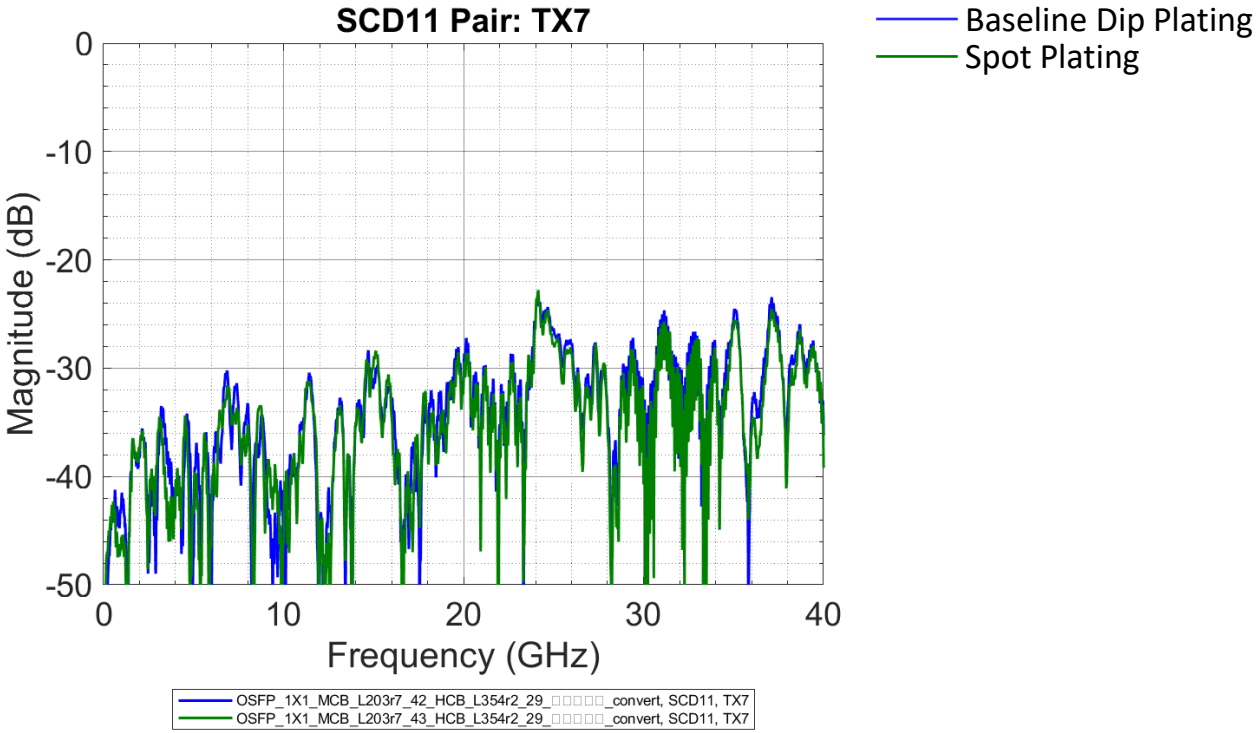


SCD11

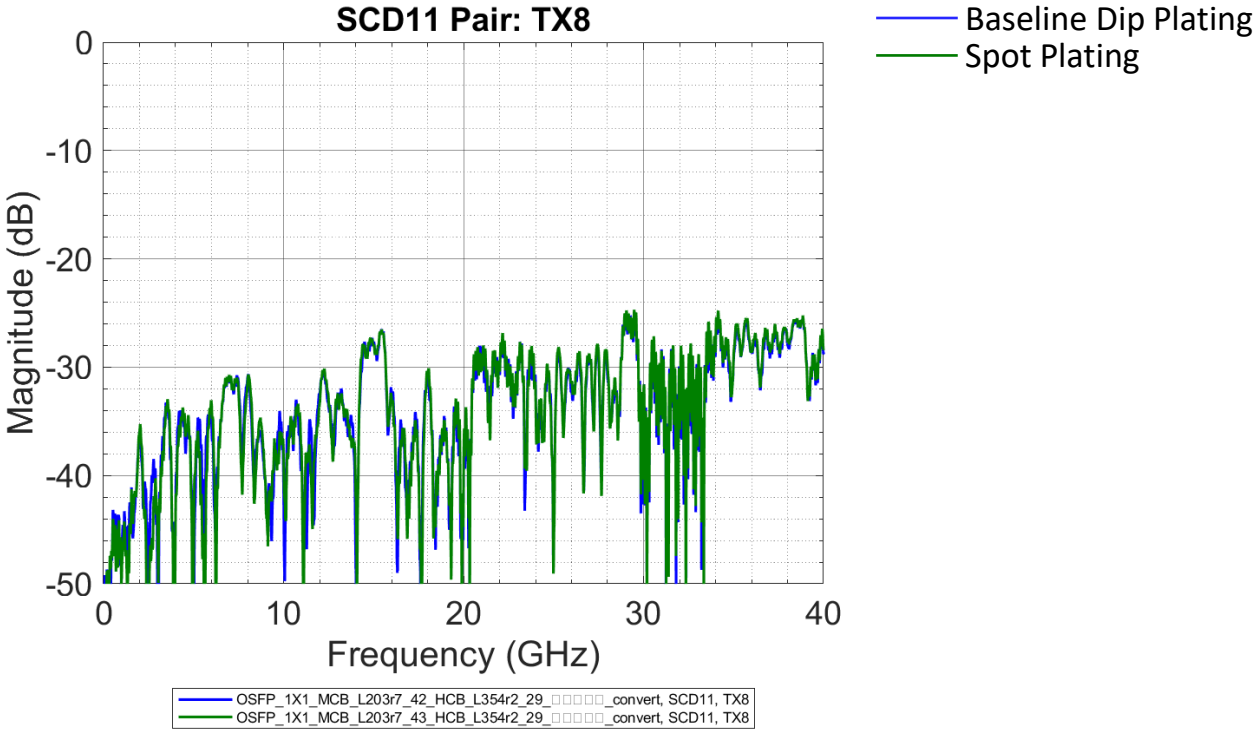


Baseline Dip Plating
Spot Plating

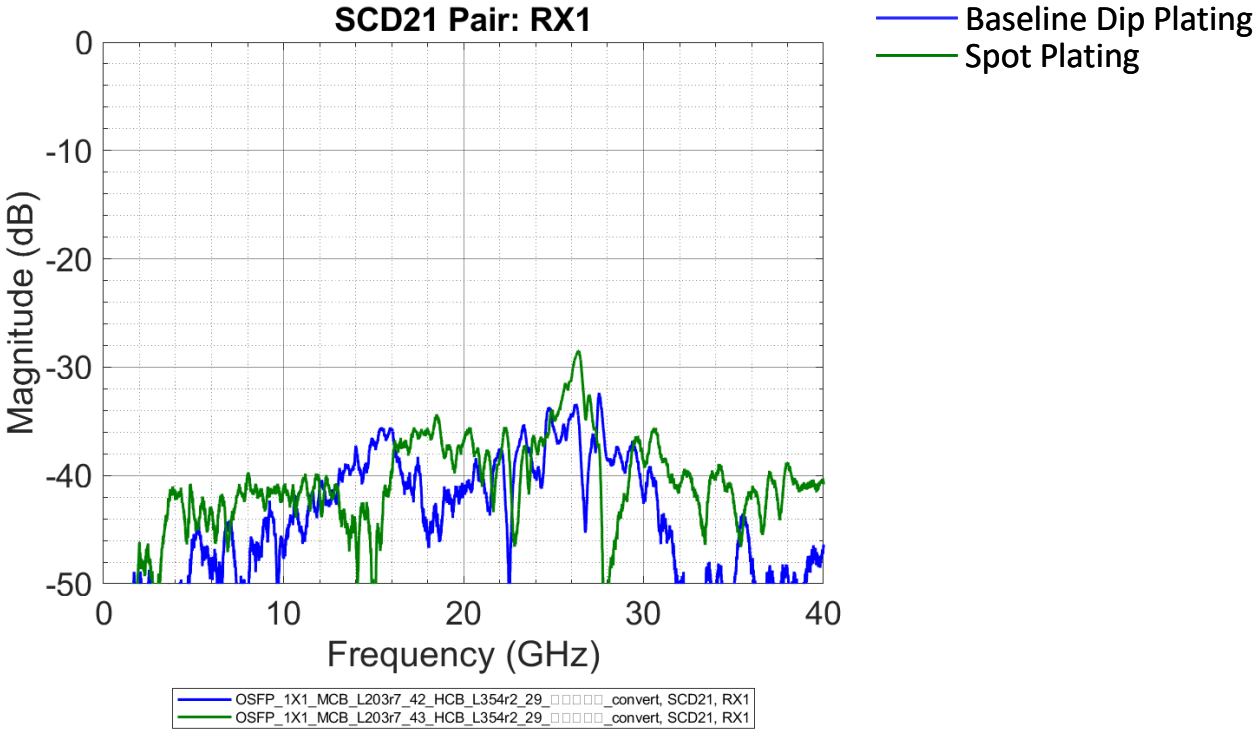
SCD11



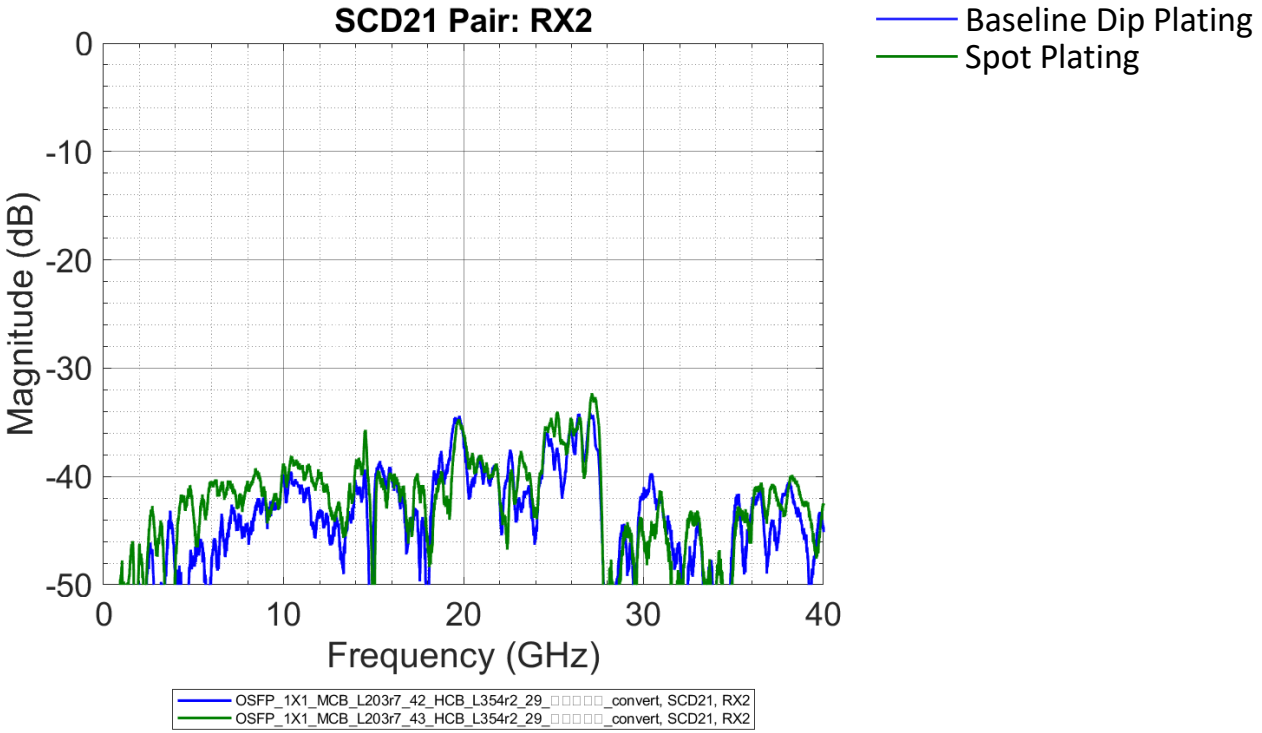
SCD11



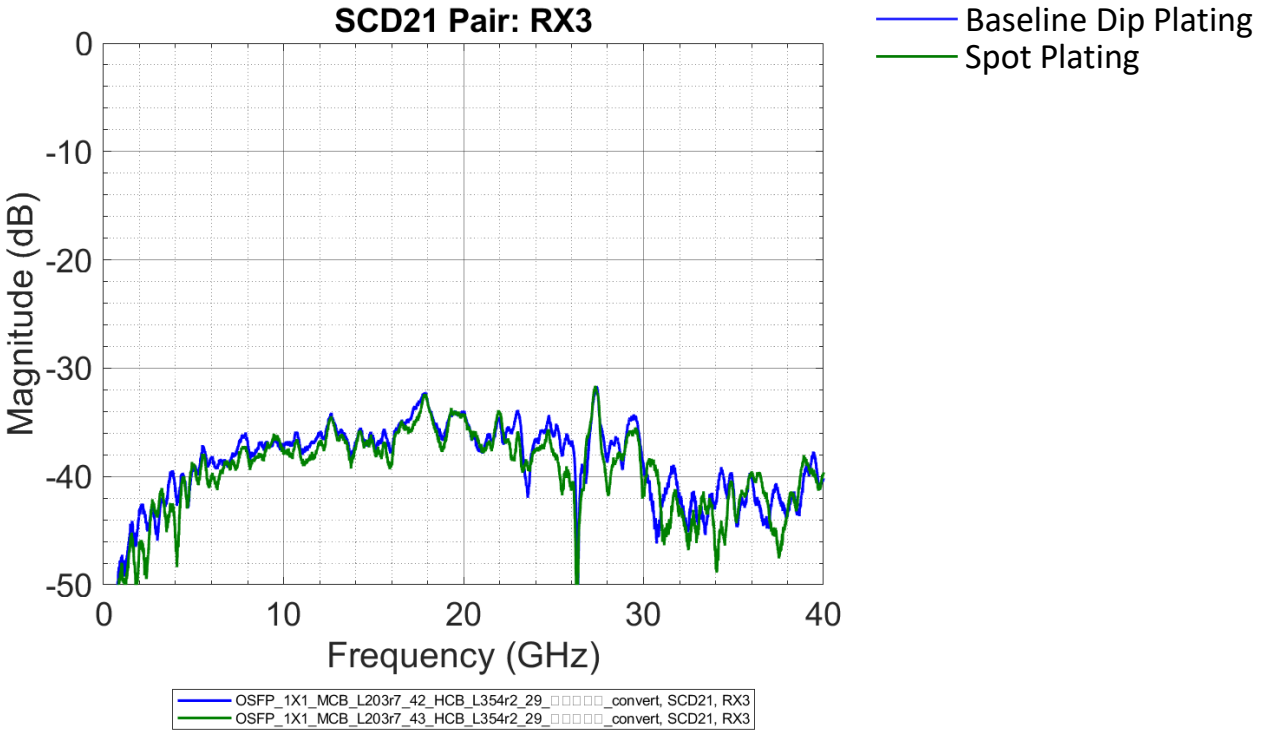
SCD21



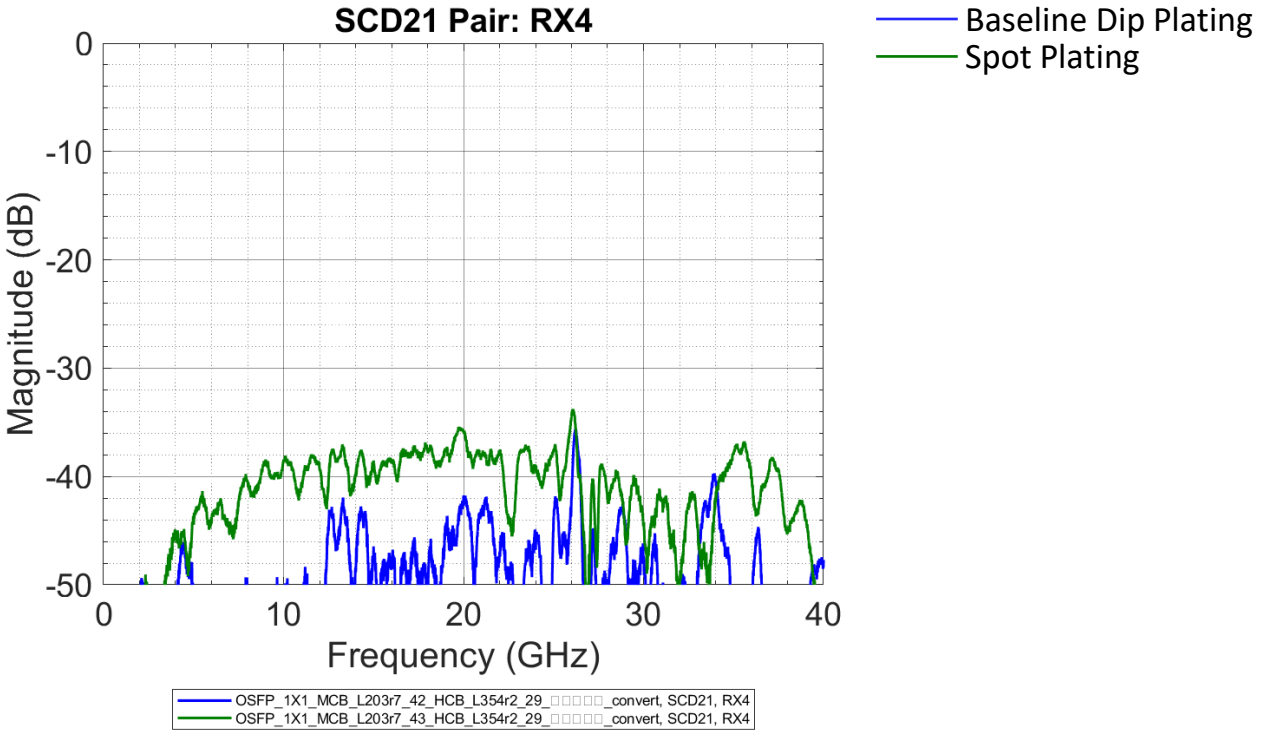
SCD21



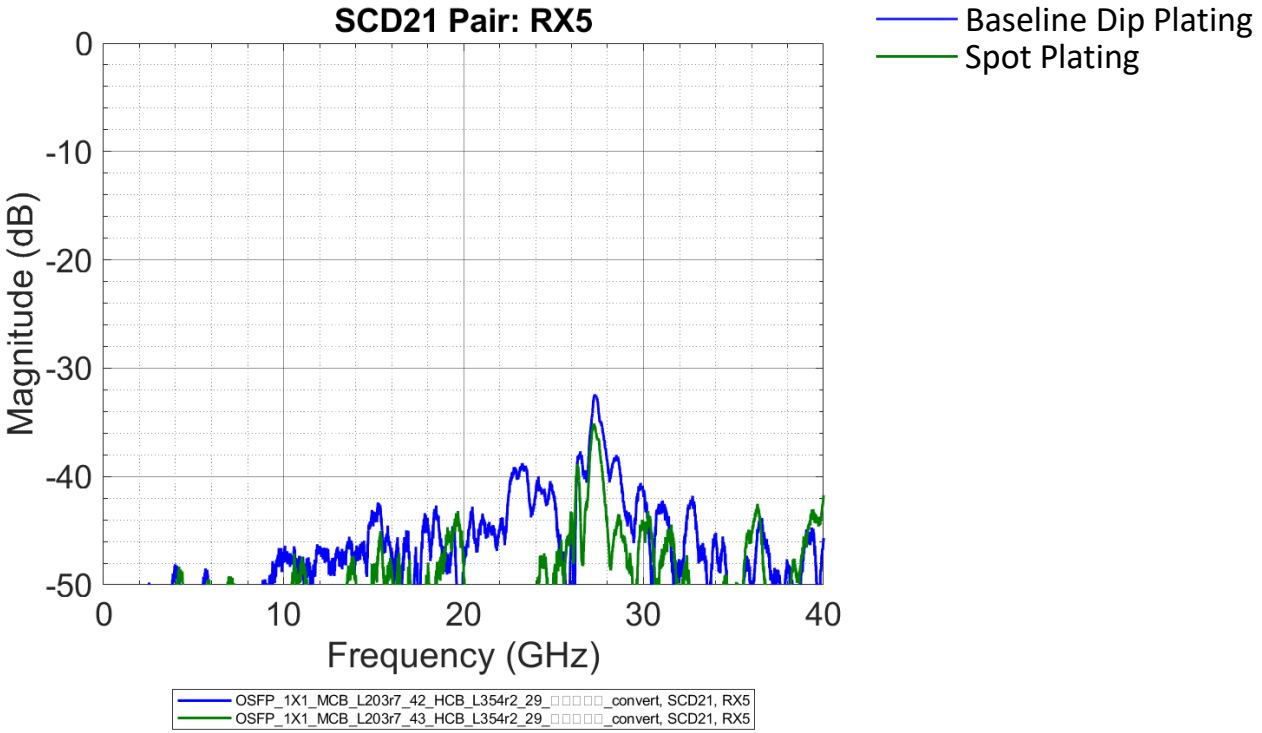
SCD21



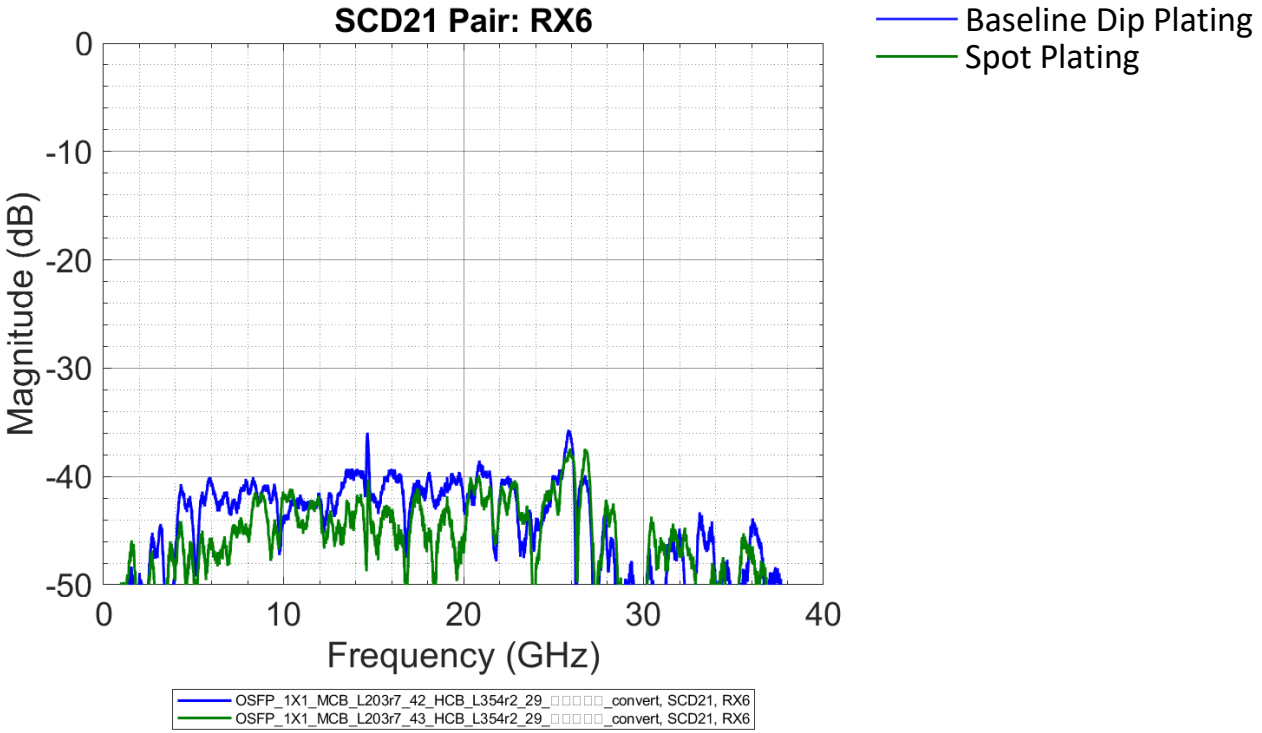
SCD21



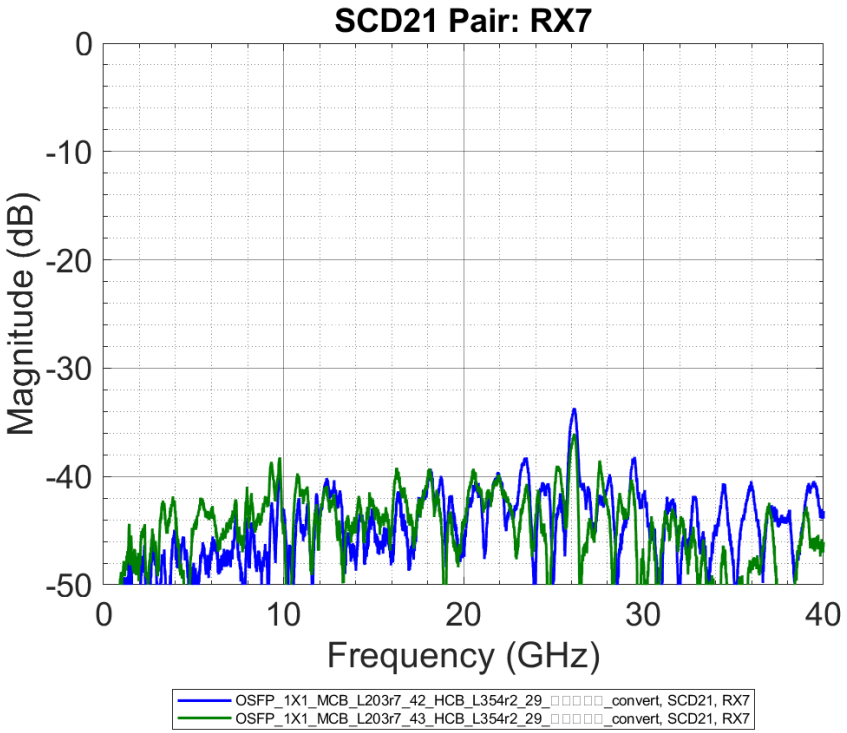
SCD21



SCD21

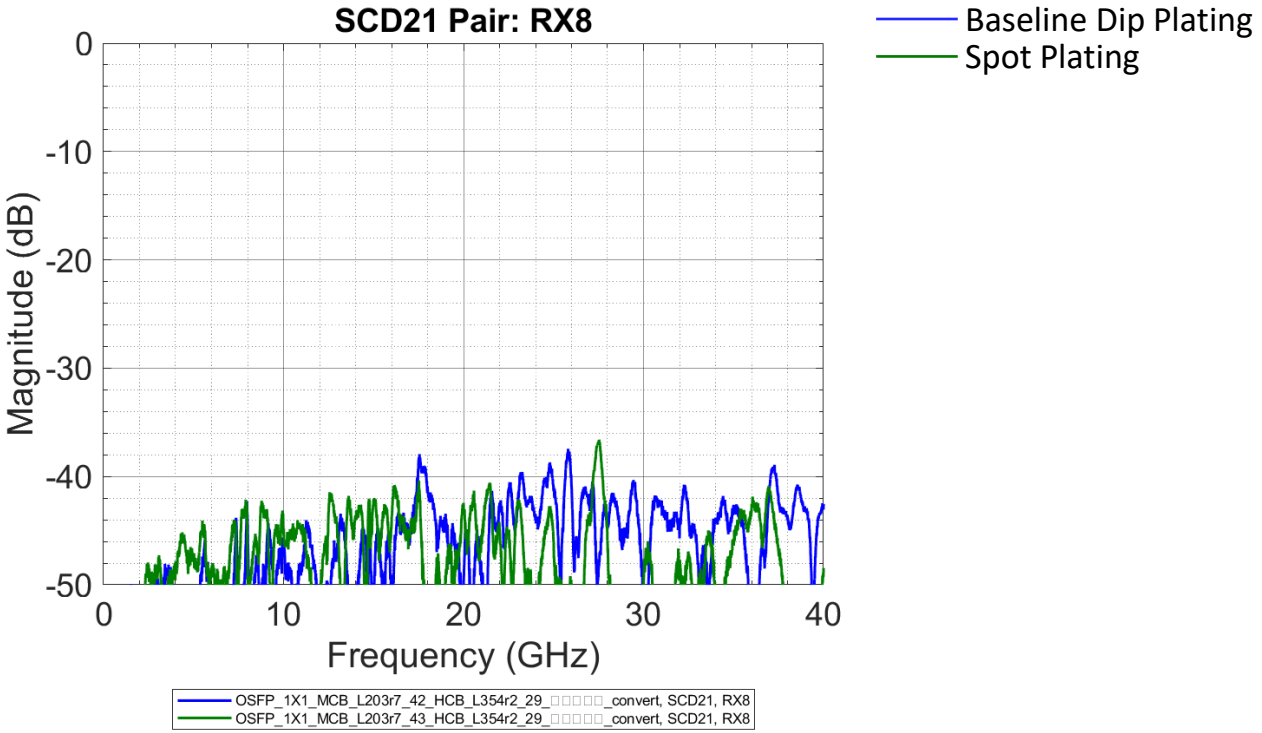


SCD21

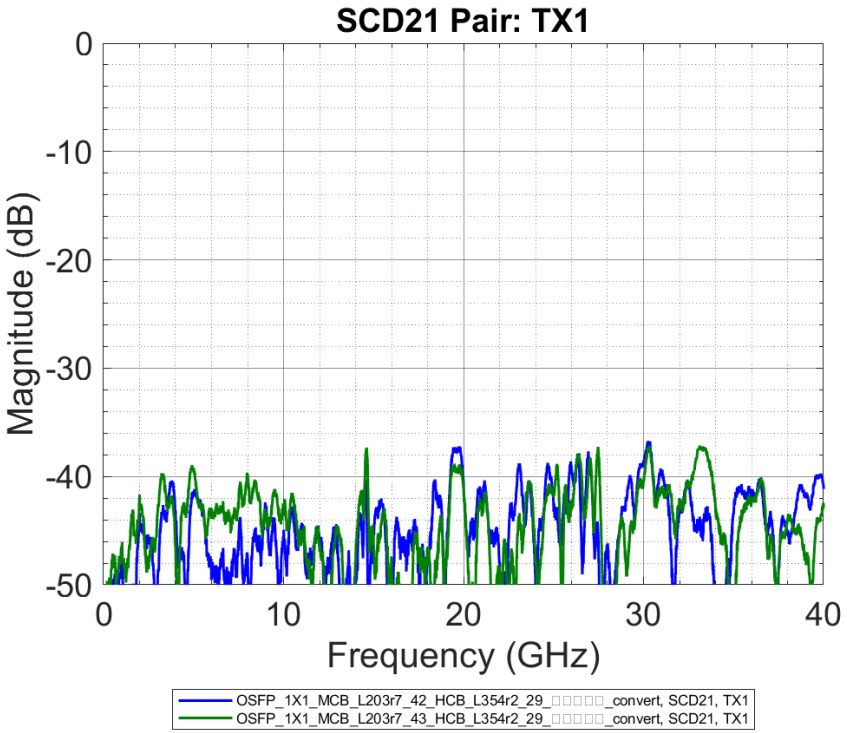


Baseline Dip Plating
Spot Plating

SCD21

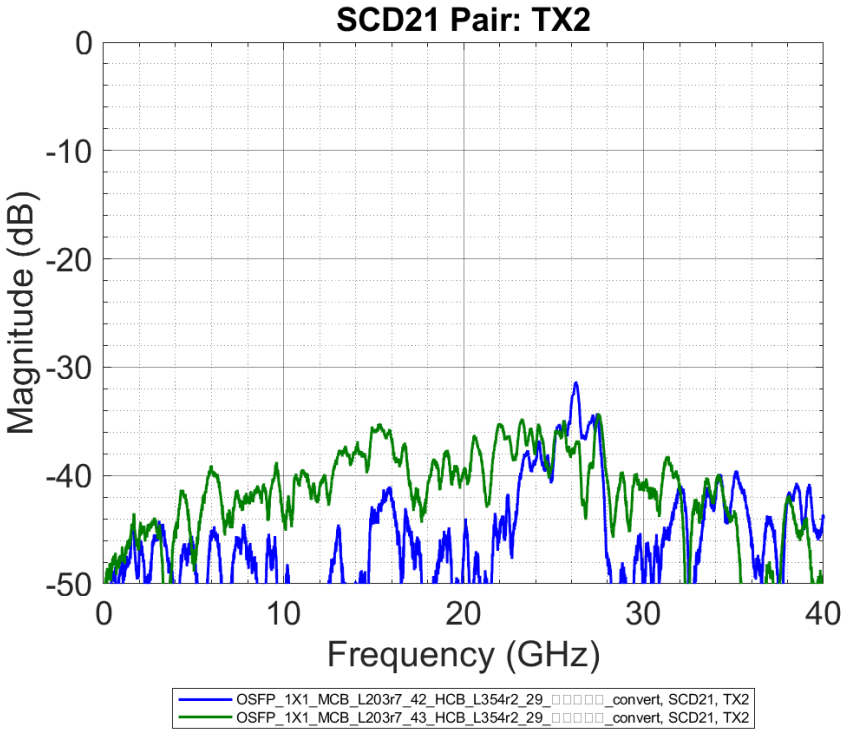


SCD21



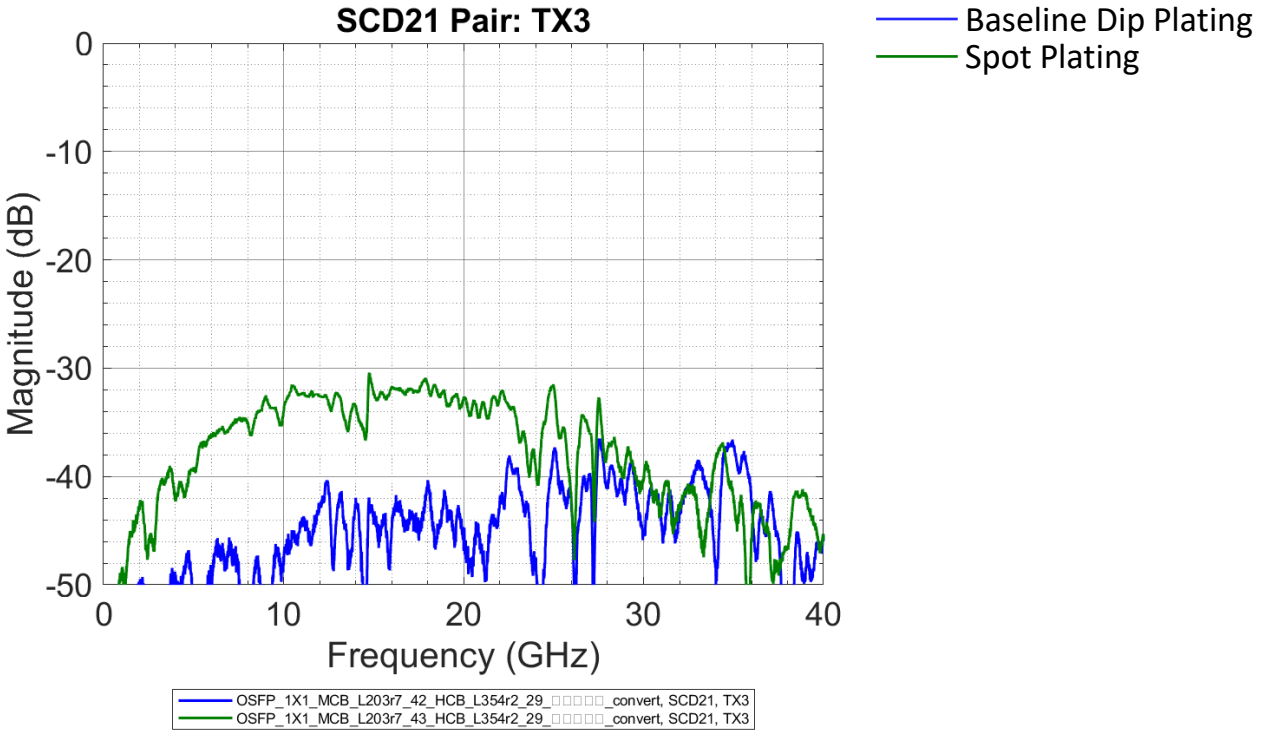
Baseline Dip Plating
Spot Plating

SCD21

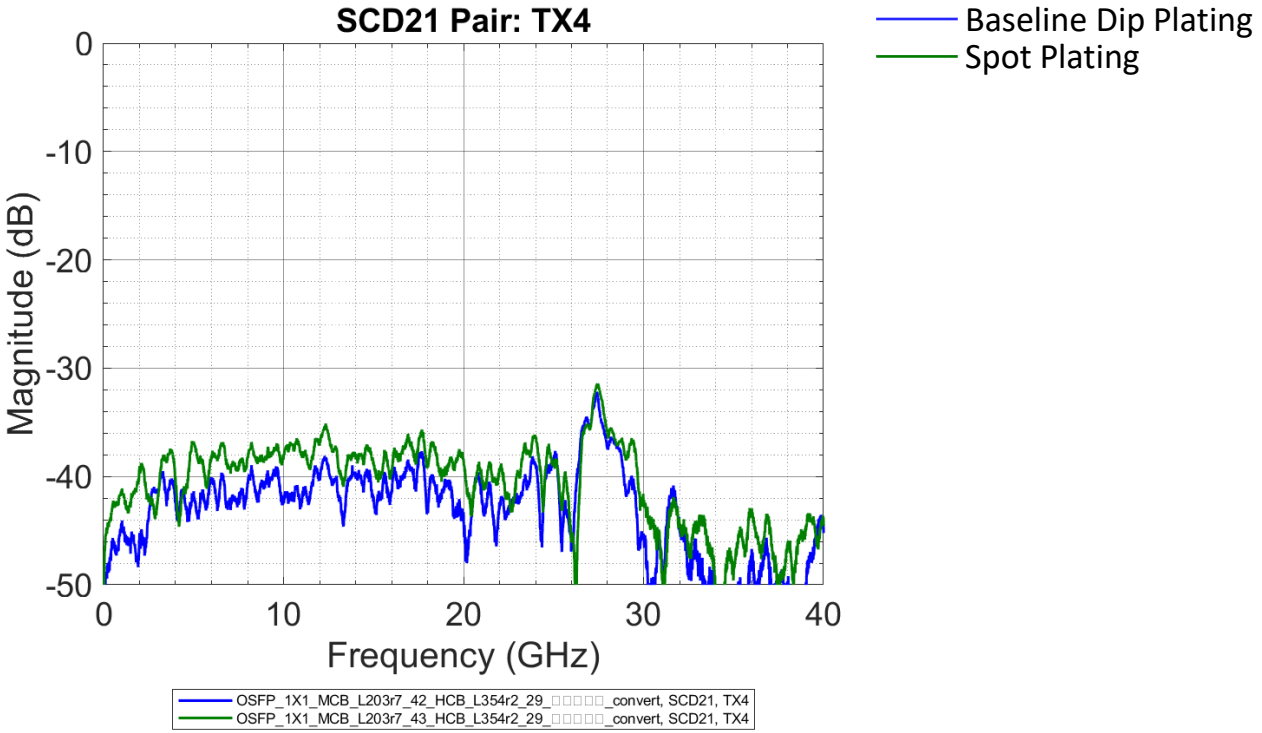


Baseline Dip Plating
Spot Plating

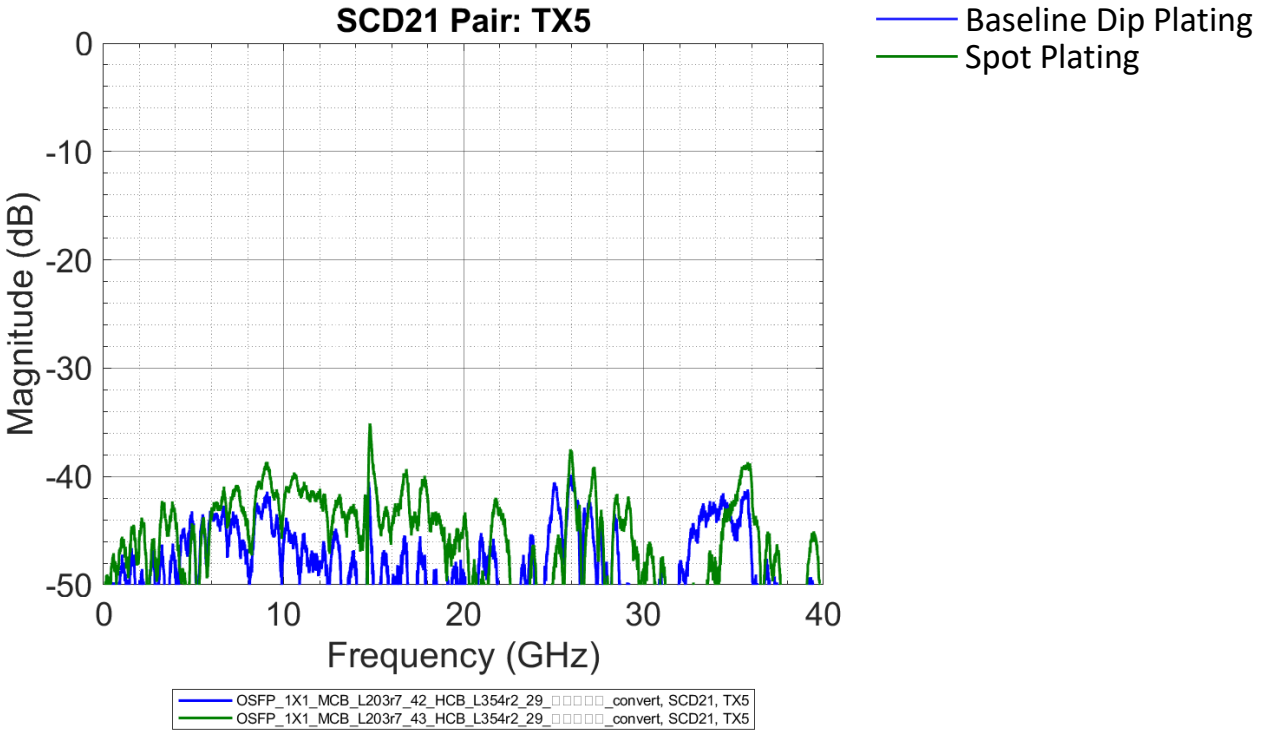
SCD21



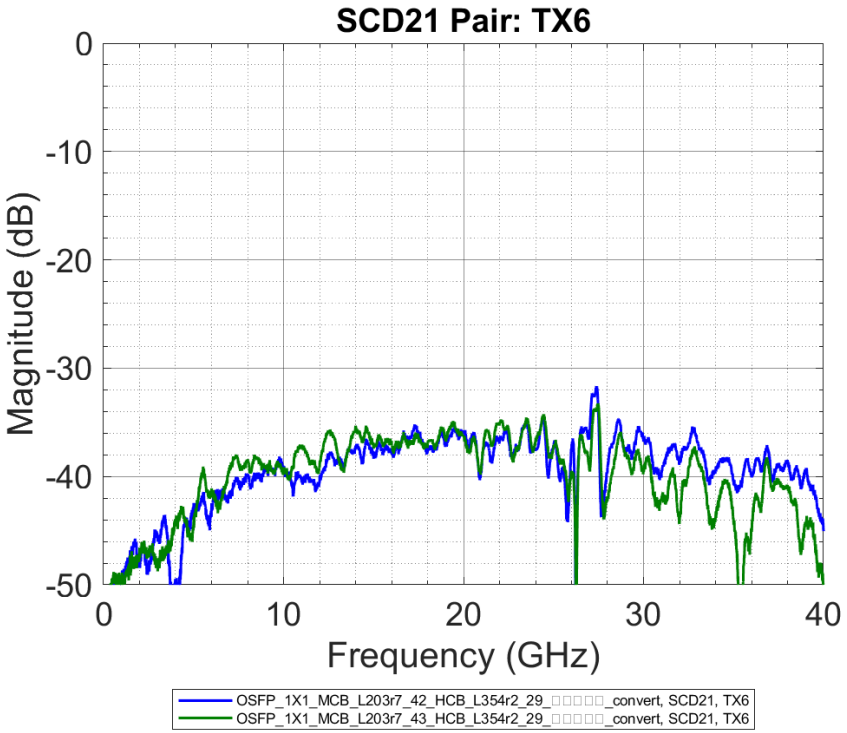
SCD21



SCD21

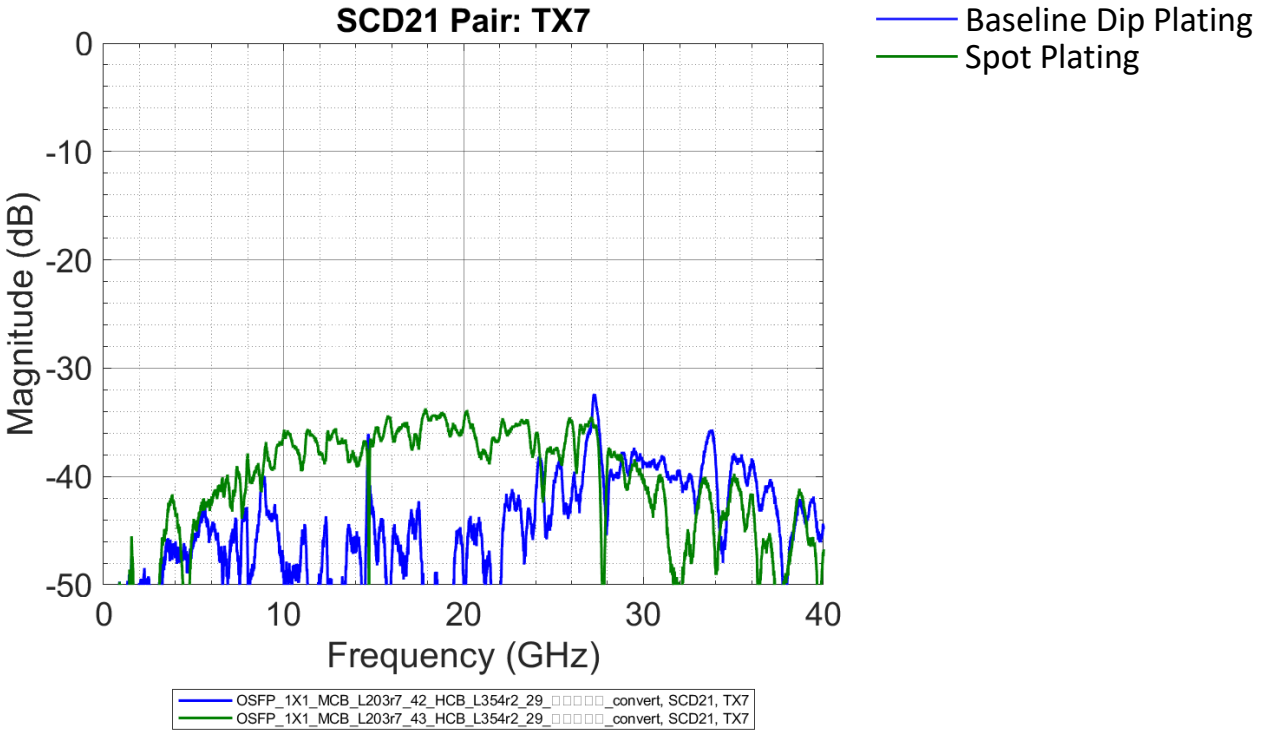


SCD21

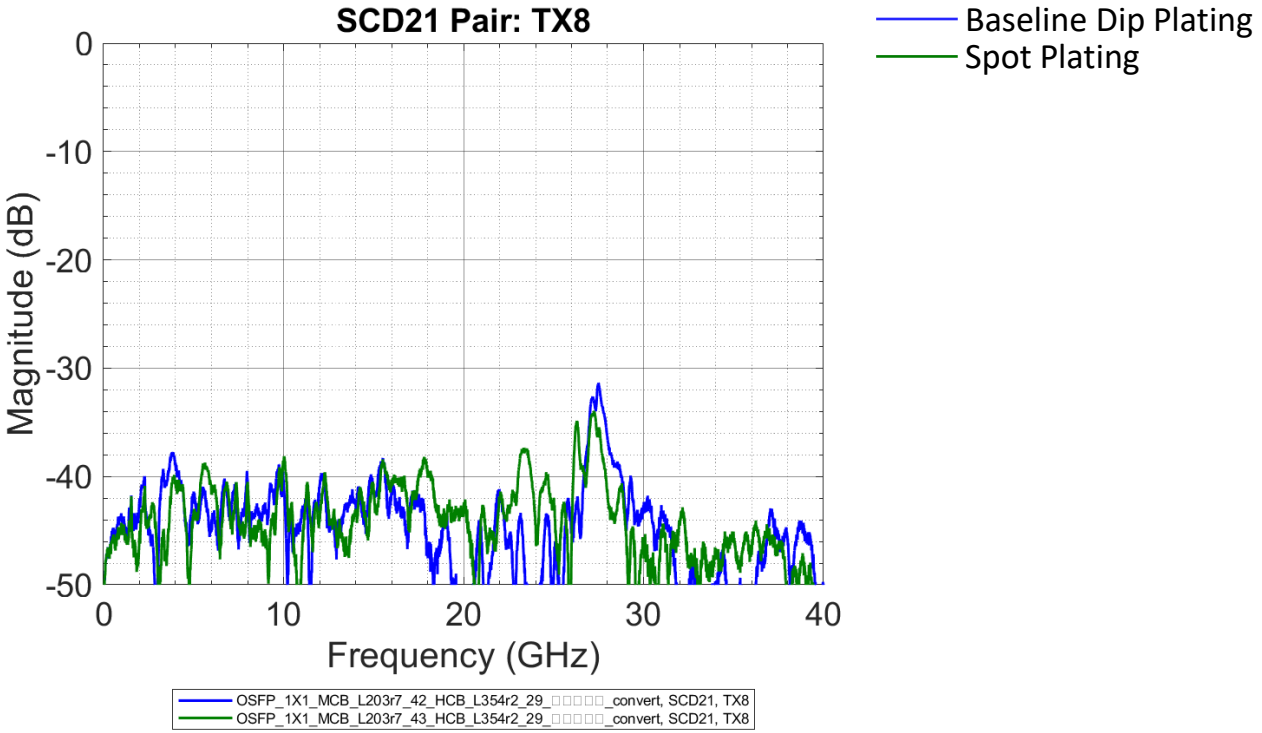


Baseline Dip Plating
Spot Plating

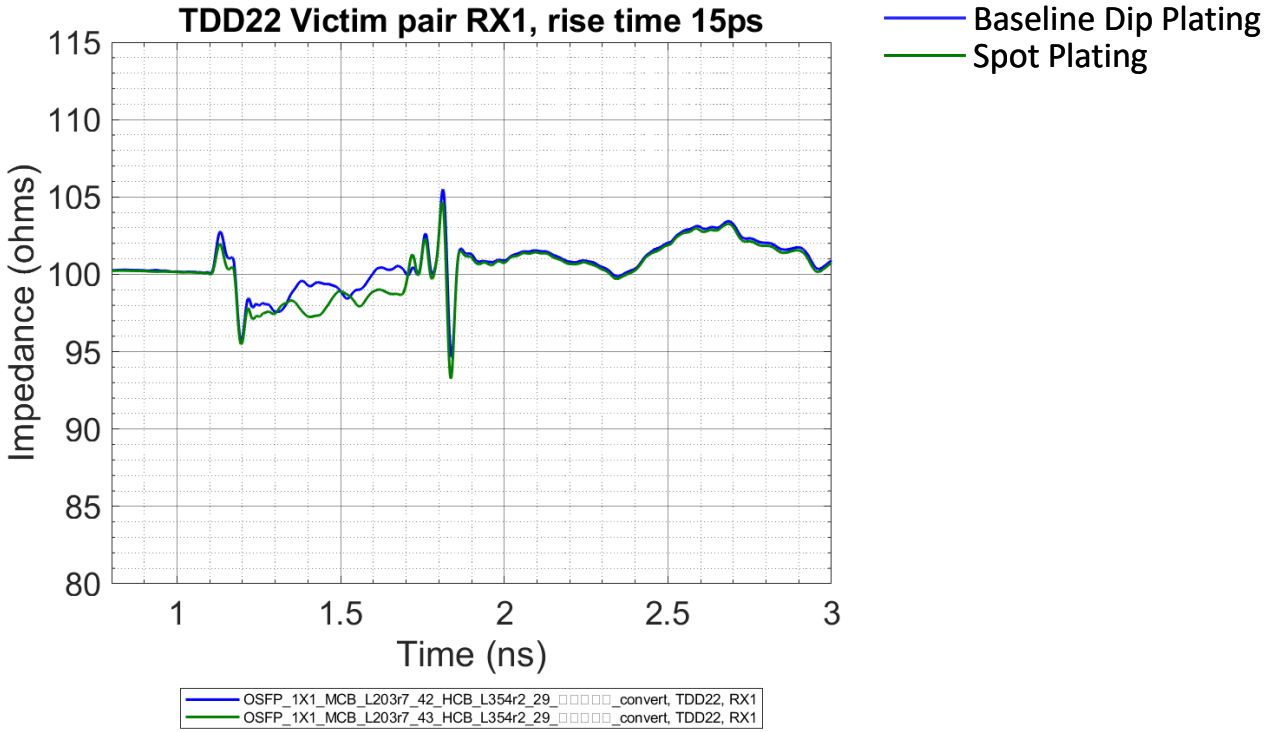
SCD21



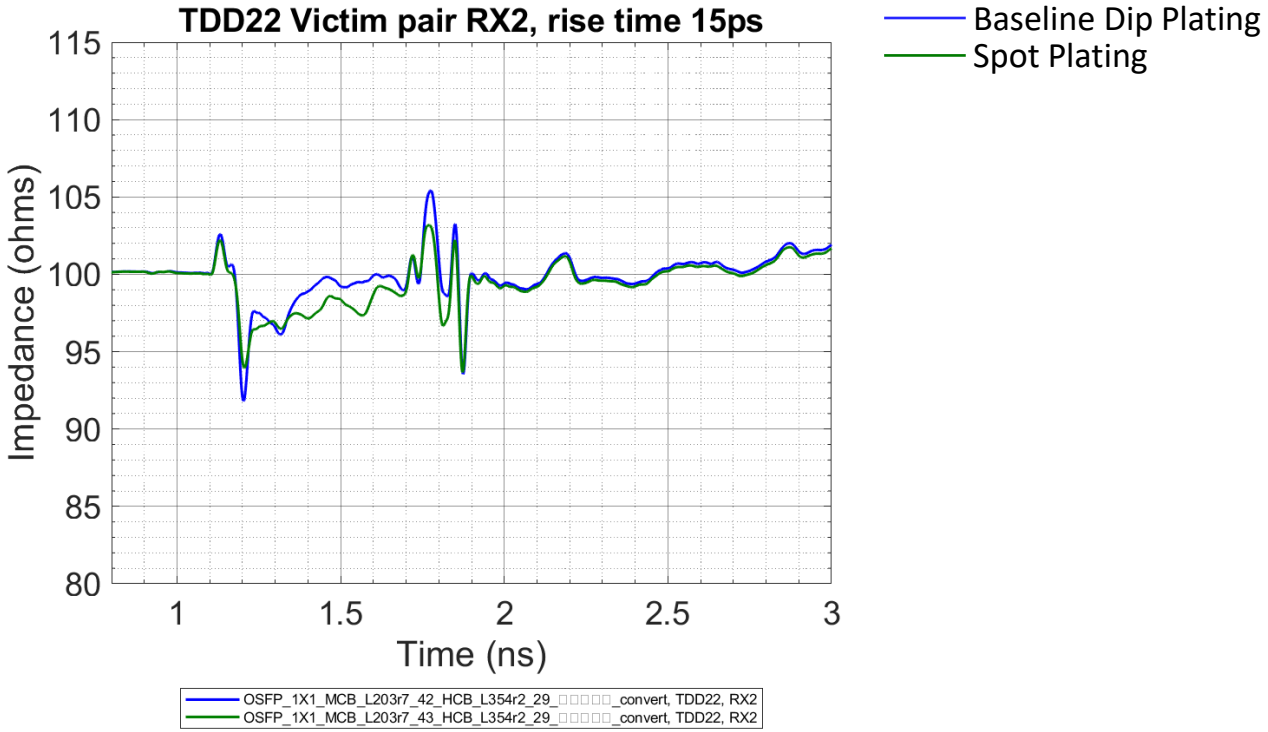
SCD21



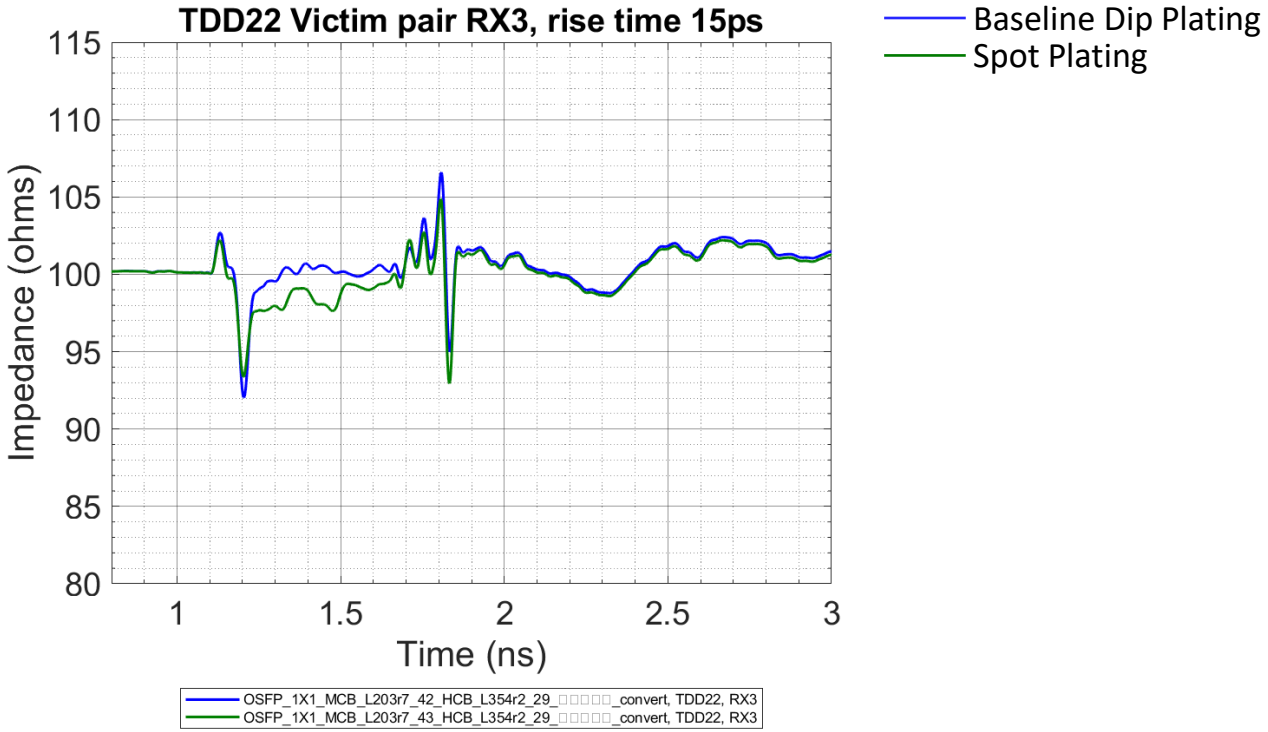
TDD22



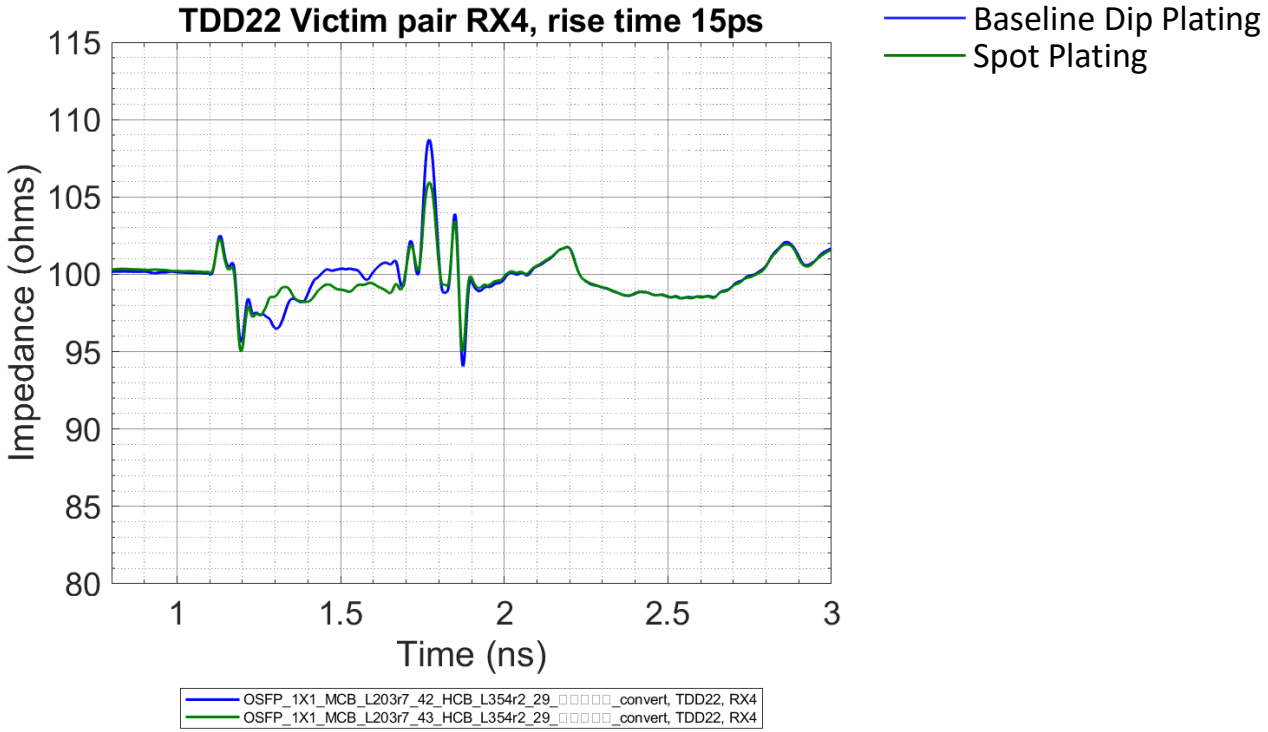
TDD22



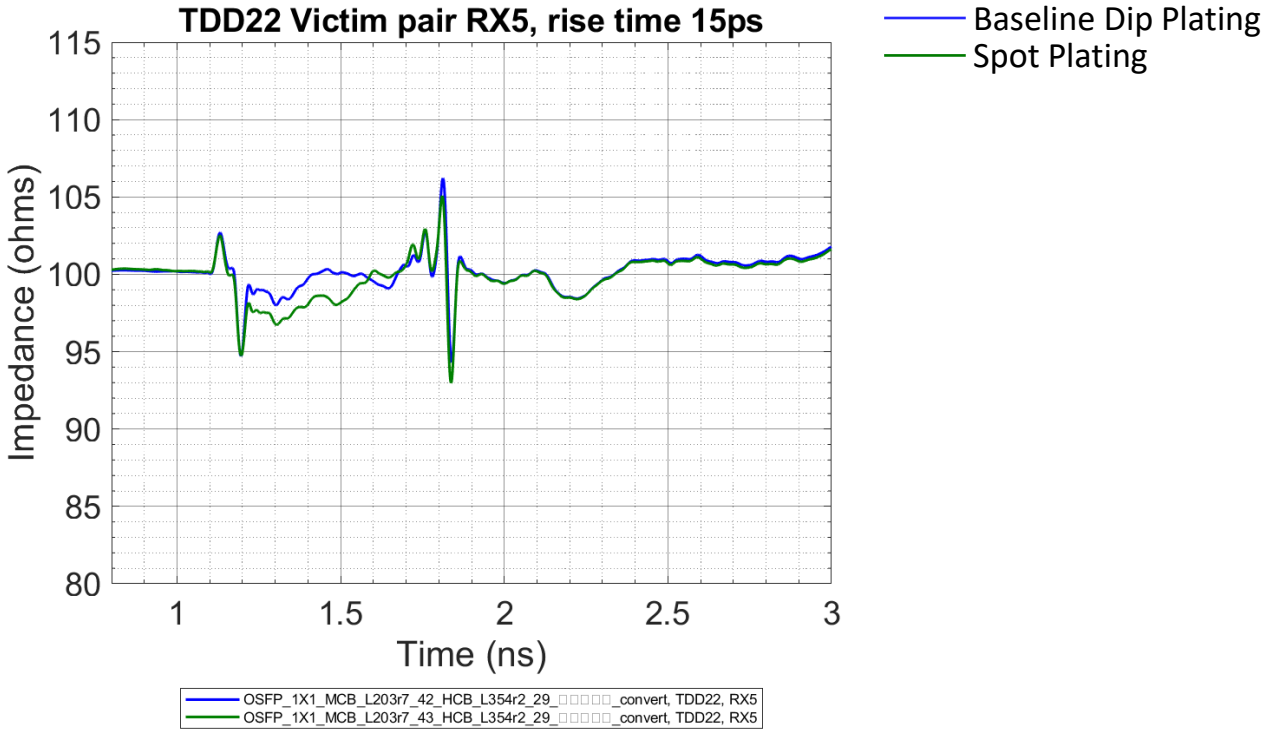
TDD22



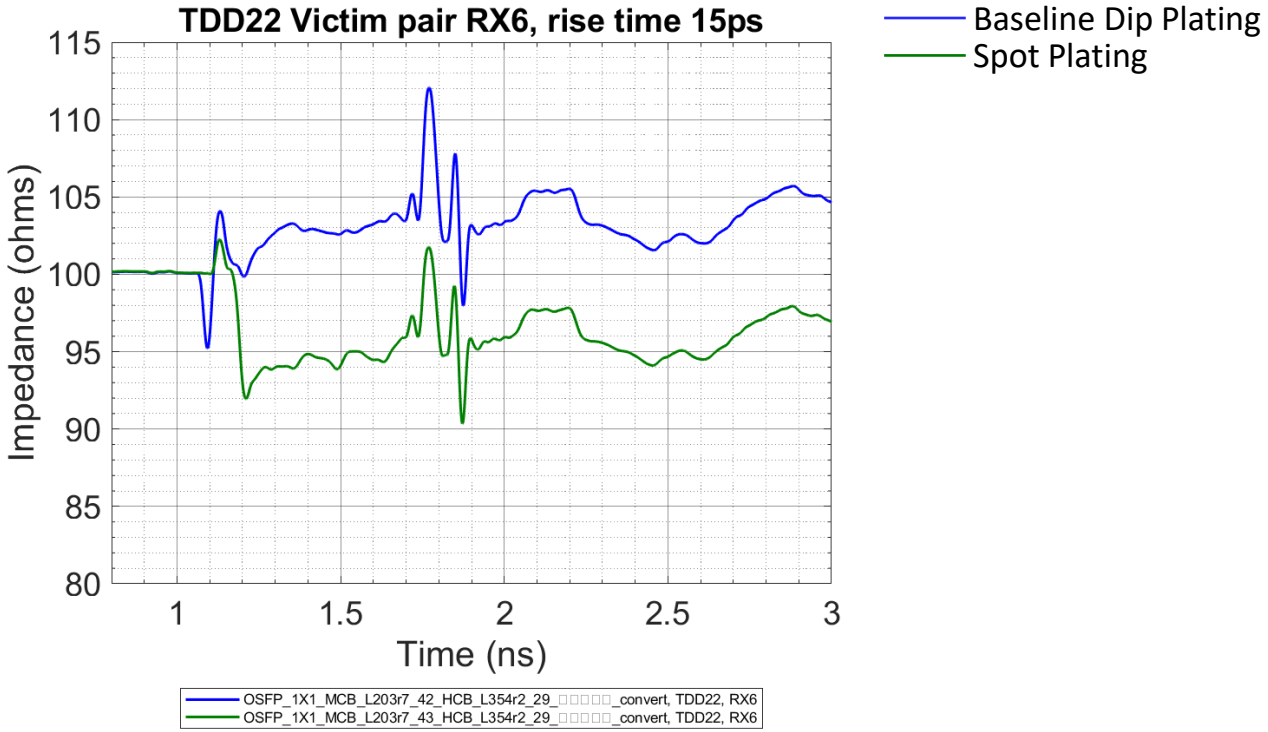
TDD22



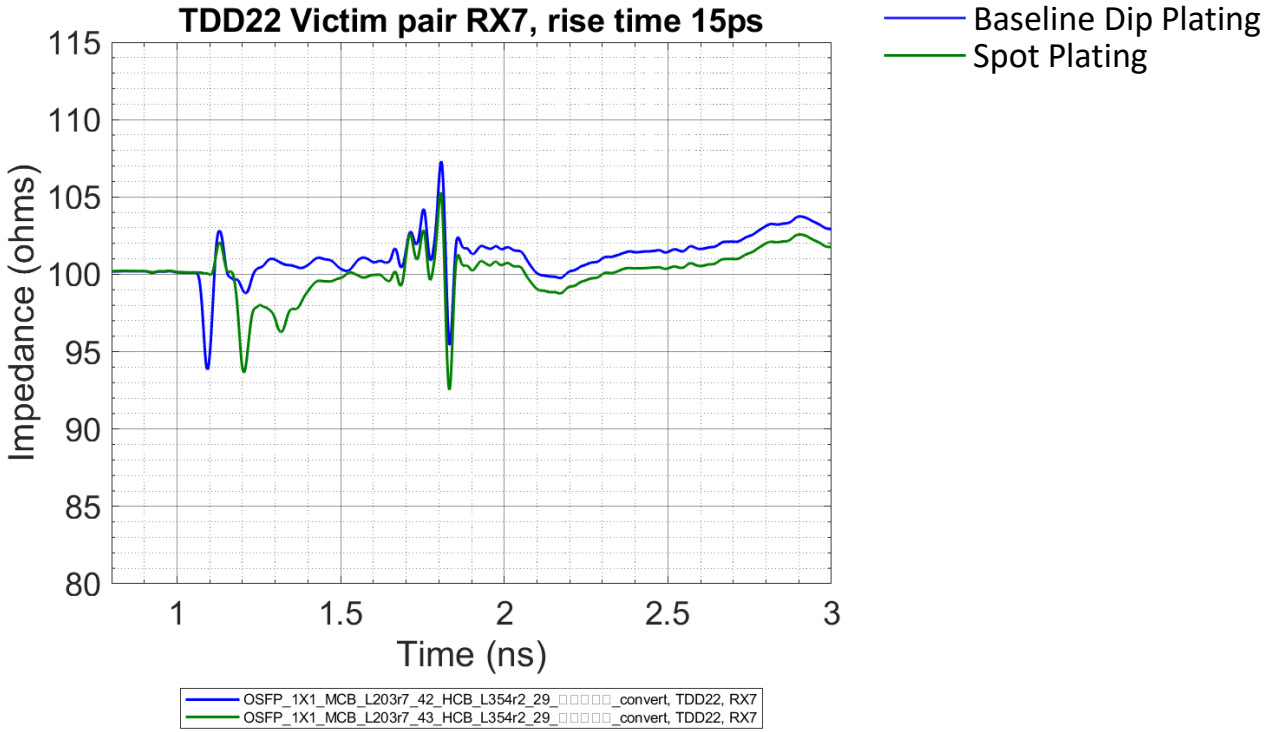
TDD22



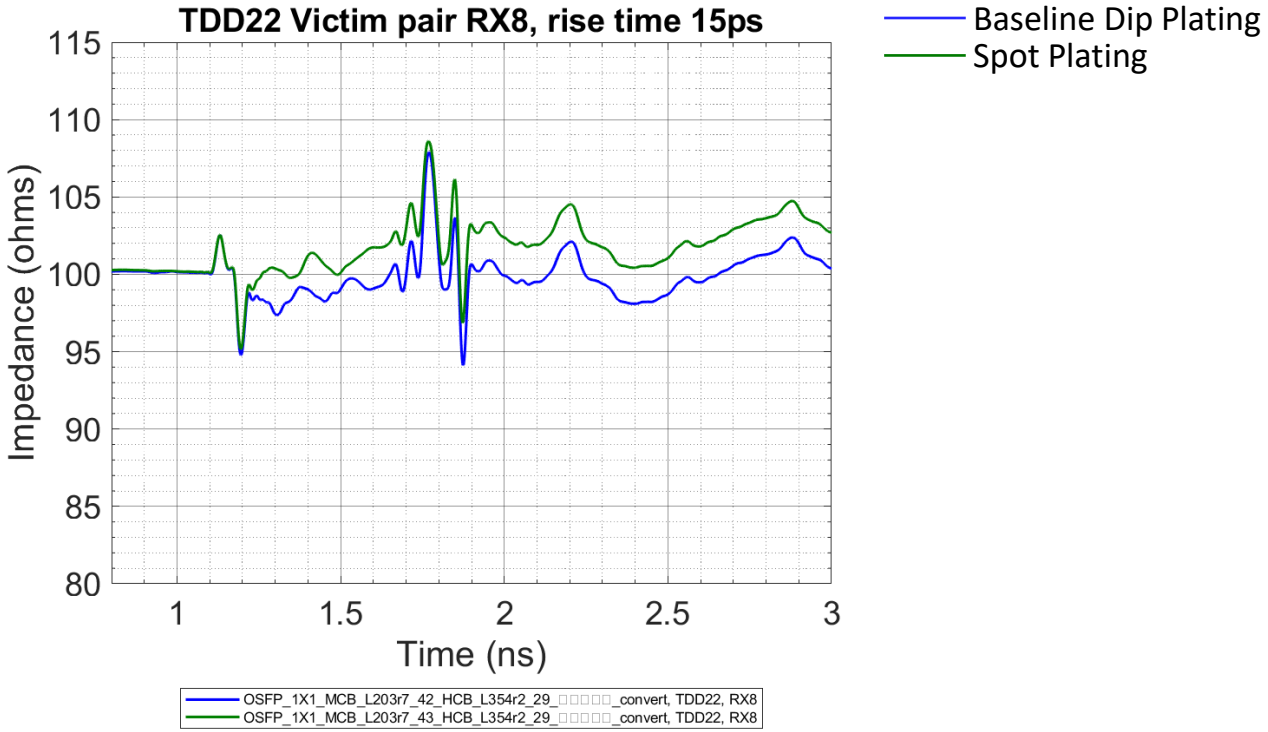
TDD22



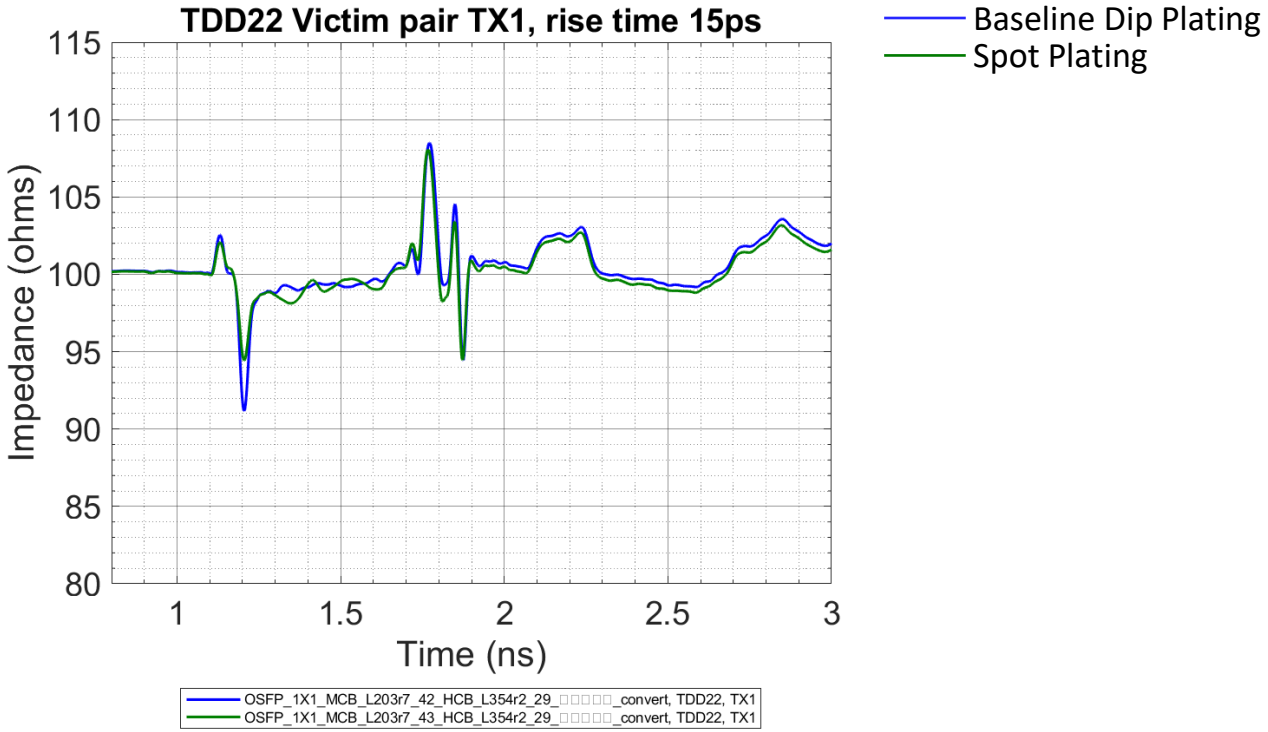
TDD22



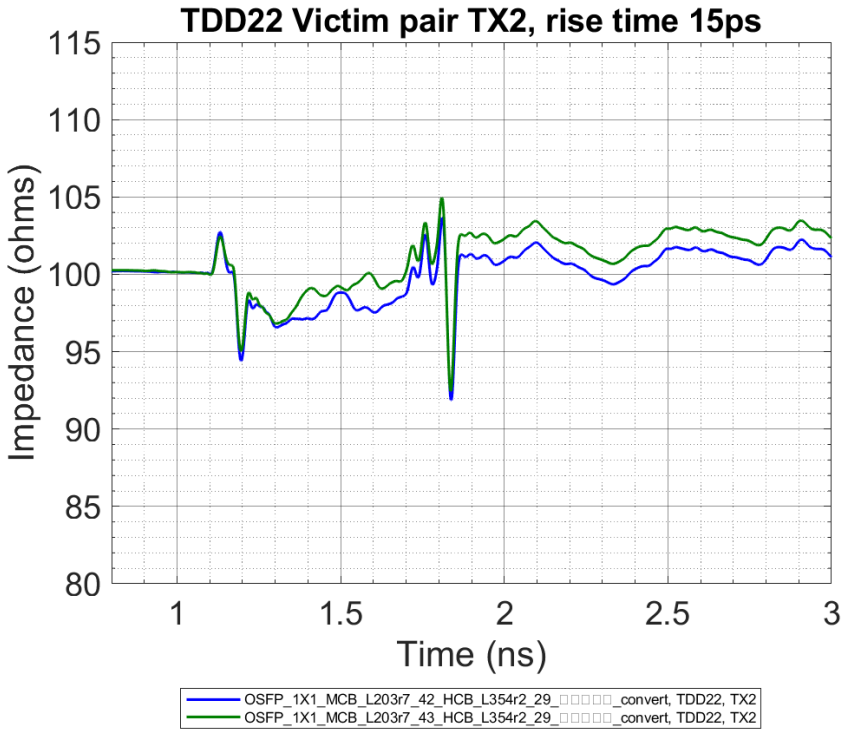
TDD22



TDD22

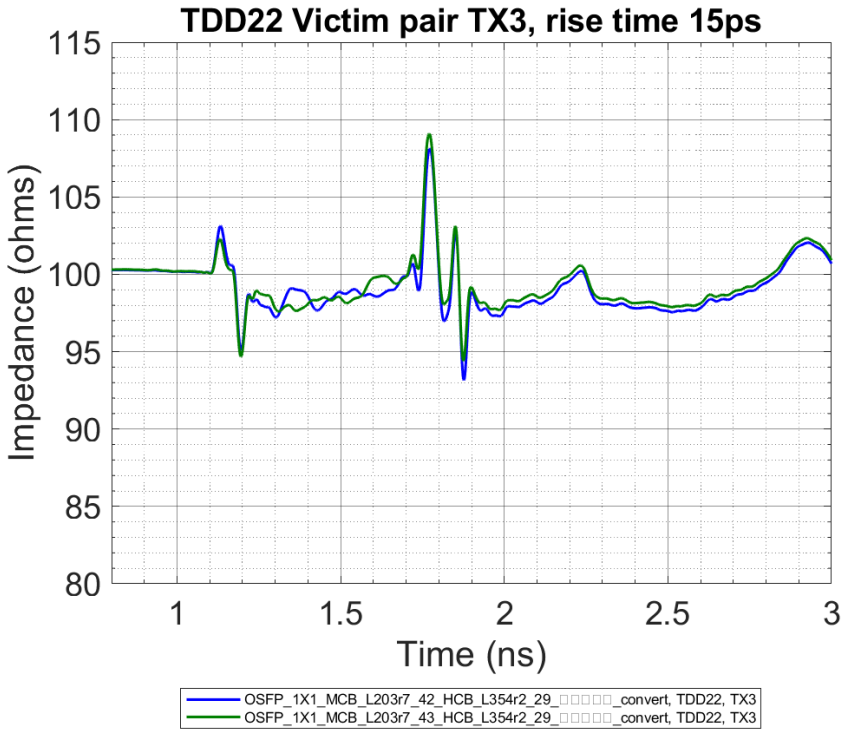


TDD22



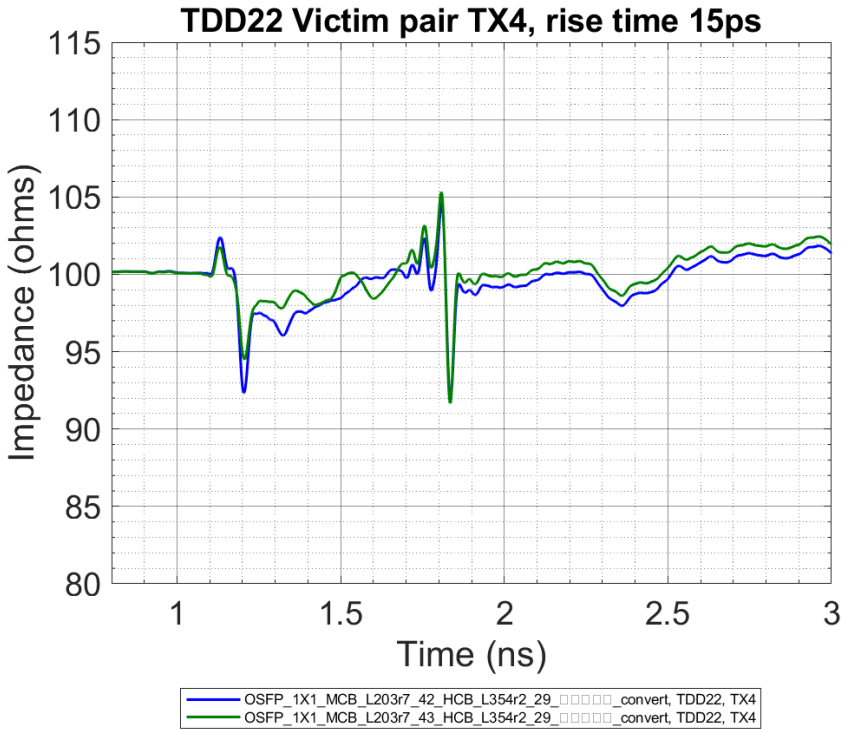
Baseline Dip Plating
Spot Plating

TDD22

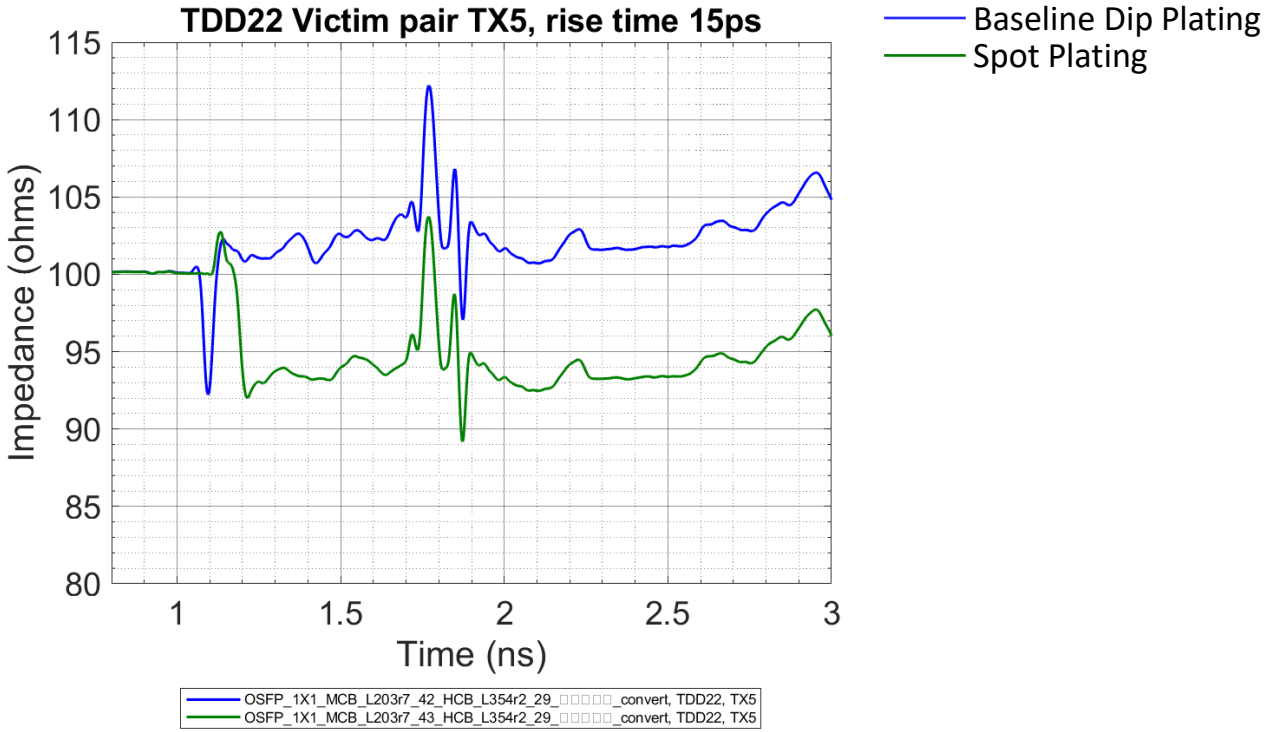


Baseline Dip Plating
Spot Plating

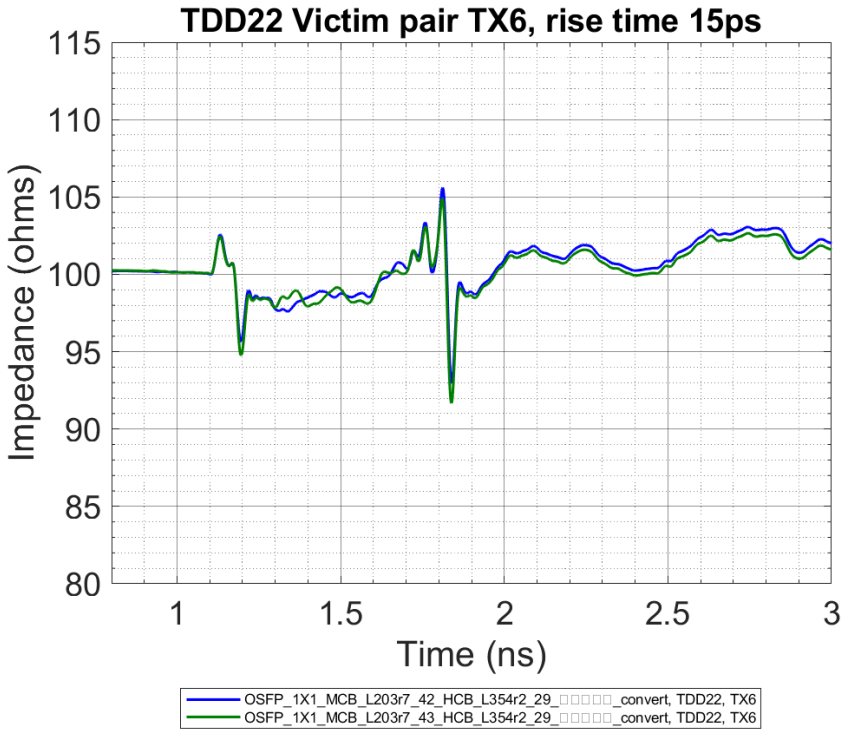
TDD22



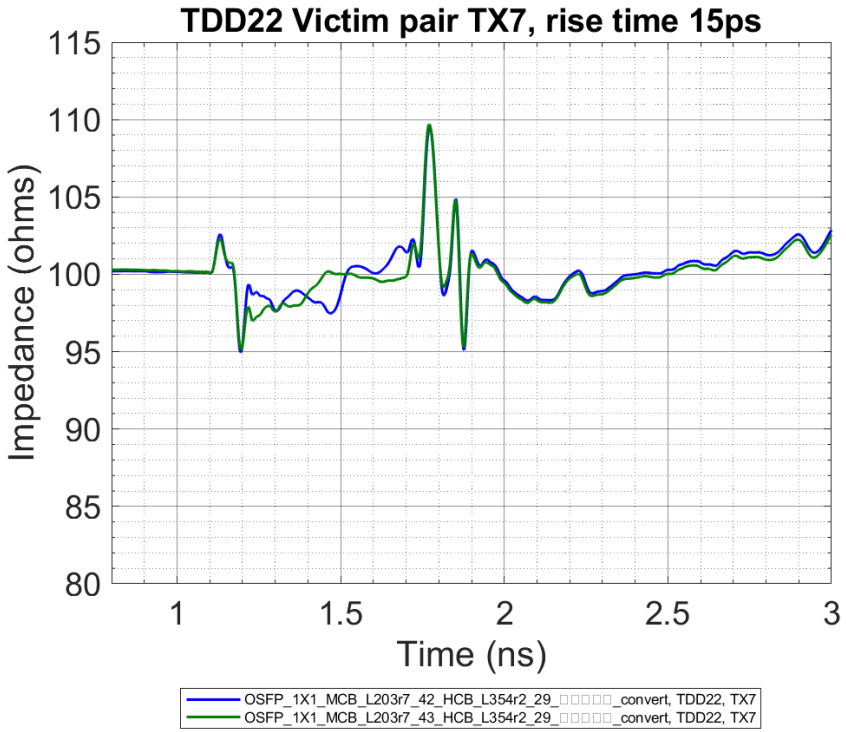
TDD22



TDD22



TDD22



TDD22