



Features

Compliant with IEEE802.3bj (100GBASE-CR4)
 Compliant with IEEE802.3by (25 Ethernet)
 Data rates : 25 Gbps
 Maximum aggregate data rate: 100Gb/s (4 x 25Gb/s)
 I/O Connector designed for high speed differential signal
 Connector Compliant with QSFP28 MSA
 Low Power Consumption < 0.5W
 Wire AWG : 32/ 30 / 28 / 26
 EEPROM signature can be customized

Applications

- Storage, Switch, & RAID Systems
- High-Performance Computing (HPC)
- Network Interface Cards (NIC's)
- Telecommunication equipment
- Data center and enterprise storage systems

RATINGS

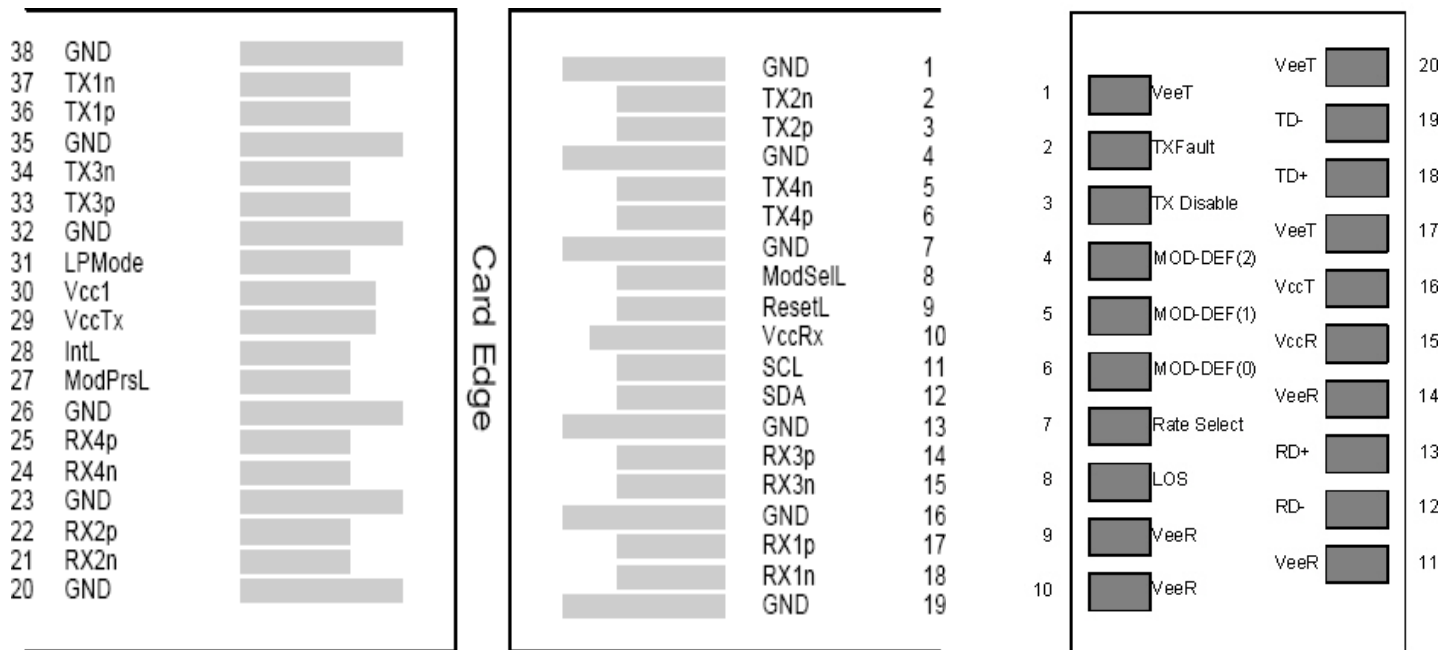
Item	Specification
Voltage	30VAC
Current	0.5A/Contact
Operating Temperature	-40℃ to 80 ℃

ELECTRICAL

Item	Specification
Low Level Contact Resistance	Initial: Baseline, with 75mm cable from the backshell edge. Change : 20 milliohms maximum
Insulation Resistance (Raw cable)	100VDC , 1000Mohm(Min.)
Dielectric Withstanding Voltage	AC 300V 1min, no breakdown or flash

Mechanical Features

- Back shell
Zinc alloy. Nickel plated over all 100u" Min.
- PCB Contact Configure (SFF-MSA Compliance) QSFP to 4xSFP



MSA Compliant connector

- PCB Contact Plating
100 u" min. nickel under plate over all
15 u" min. gold over nickel at contact area by electron plating
100u" min tin over nickel at soldering area
- Raw cable
High Speed cable, 8 pairs, 100 +/- 5 ohms, cover with shielded braid 85% Min. PVC material Jacket are available for option.

All materials are RoHS and RoHS6 compliance.

PERFORMANCE AND TEST DESCRIPTION

A	Time domain parameter	Test condition	SPEC		Equipment
1	Diff.impedance	Tr:25ps	100+/-10ohms		N5071C or DSA8300
2	Intra-skew		L*15+20	L:length(m)	
				SPEC:ps	
B	Frequency domain parameter	Test condition	Test spec(dB)	f(GHz)	
1	SDD11/SD D22	Freq:50MHz ~20GHz Points:1601 IF: 1KHz	-15+1.5 f	0.05≤f<4.6	N5071C
			-10.66+14*log10(f/5.5)	4.6≤f≤19	
2	SCC11/SC C22	Freq:50MHz ~20GHz Points:1601 IF: 1KHz	≤-2dB	0.2≤f≤19	
3	SDC11/SD C22	Freq:50MHz ~20GHz Points:1601 IF: 1KHz	-16+2*f/3	0.05≤f≤19	
5	SCD21-SDD21	Freq:50MHz ~20GHz Points:1601 IF: 1KHz	$\geq \begin{matrix} 10 & 0.01 \leq f < 12.89 \\ 27-(29/22)f & 12.89 \leq f < 15.7 \end{matrix}$	0.01≤f≤19	
6	MDNEXT	Freq:50MHz ~20GHz Points:1601 IF: 1KHz	≤-26dB@12.89GHz	0.01≤f≤19	

MECHANICAL

Item	Specification
Mating Force	40N Max. With retention latch disengaged.
Un-mating Force	30N Max. With retention latch disengaged.
Latch retention force	90N Min.
Durability	250 cycles

ENVIRONMENTAL

Item	Specification
Physical shock	Subject mated specimens to 30G's half-sine shock pulses of 11 milliseconds duration. 3 shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks
Vibration (random)	Subject mated specimens to 3.10G's rms between 20-500 Hz for 15 minutes in each of 3 mutually perpendicular planes
Thermal shock	100 cycles of: a) -55°C for 30 minutes b) +85°C for 30 minutes
Temperature Life	Subject mated Specimens to +105°C for 500 hours
Humidity and Temperature cycling	Subject unmated specimens to 10 cycles (10 days) between 25 and 65°C at 80% to 100% RH
Visual Examination.	Connectors & contacts shall have no evidence of physical defects or otherwise unfit for testing.

Summary Result

TX1----> RX1							
Type		Value(dB)	Freq(GHz)	Spec	ΔValue	Results	Fail@(GHz)
SCC11	MAX	-3.944	5.05	802.3bj	1.944	PASS	
SCC22	MAX	-4.298	4.96	802.3bj	2.298	PASS	
SCD11	MAX	-17.691	15.69	802.3bj	6.34	PASS	
SCD22	MAX	-21.325	13.57	802.3bj	9.481	PASS	
SDD11	MAX	-6.871	15.13	User	2.36	PASS	
SDD22	MAX	-5.955	18.52	User	2.674	PASS	
SDD12	MIN	-8.469	11.53	User	14.011	PASS	
SDD21	MIN	-8.446	11.54	User	14.034	PASS	
SCD21-SDD21	MAX	-15.139	10.13	User	10.139	PASS	
ILD	MAX	1.791	18.99	Infiniband	1.689	PASS	
TX2----> RX2							
Type		Value(dB)	Freq(GHz)	Spec	ΔValue	Results	Fail@(GHz)
SCC11	MAX	-4.567	1.8	802.3bj	2.567	PASS	
SCC22	MAX	-3.843	5.16	802.3bj	1.843	PASS	
SCD11	MAX	-17.104	8.94	802.3bj	2.032	PASS	
SCD22	MAX	-20.555	18.28	802.3bj	9.807	PASS	
SDD11	MAX	-8.14	16.59	User	4.188	PASS	
SDD22	MAX	-8.143	11.74	User	2.086	PASS	
SDD12	MIN	-9.033	11.96	User	13.447	PASS	
SDD21	MIN	-9.005	11.96	User	13.475	PASS	
SCD21-SDD21	MAX	-10.205	9.05	User	5.205	PASS	
ILD	MAX	0.831	9.98	Infiniband	1.211	PASS	
TX3----> RX3							
Type		Value(dB)	Freq(GHz)	Spec	ΔValue	Results	Fail@(GHz)
SCC11	MAX	-4.084	1.7	802.3bj	2.084	PASS	
SCC22	MAX	-4.11	5.34	802.3bj	2.11	PASS	
SCD11	MAX	-17.383	14.7	802.3bj	5.801	PASS	
SCD22	MAX	-23.594	8.1	802.3bj	7.871	PASS	
SDD11	MAX	-7.099	15.21	User	2.619	PASS	
SDD22	MAX	-9.104	18.21	User	5.72	PASS	
SDD12	MIN	-8.659	12.71	User	13.821	PASS	
SDD21	MIN	-8.649	12.72	User	13.831	PASS	
SCD21-SDD21	MAX	-15.296	10.7	User	10.296	PASS	
ILD	MAX	1.48	15.18	Infiniband	1.914	PASS	
TX4----> RX4							
Type		Value(dB)	Freq(GHz)	Spec	ΔValue	Results	Fail@(GHz)
SCC11	MAX	-4.591	5.16	802.3bj	2.591	PASS	
SCC22	MAX	-3.5	5.35	802.3bj	1.5	PASS	
SCD11	MAX	-18.055	11.39	802.3bj	4.883	PASS	
SCD22	MAX	-17.224	18.81	802.3bj	6.599	PASS	
SDD11	MAX	-7.764	16.46	User	3.765	PASS	
SDD22	MAX	-8.057	18.21	User	4.672	PASS	
SDD12	MIN	-8.97	12.32	User	13.51	PASS	
SDD21	MIN	-8.899	12.32	User	13.581	PASS	
SCD21-SDD21	MAX	-16.566	18.97	User	11.566	PASS	
ILD	MAX	0.929	18.96	Infiniband	2.551	PASS	

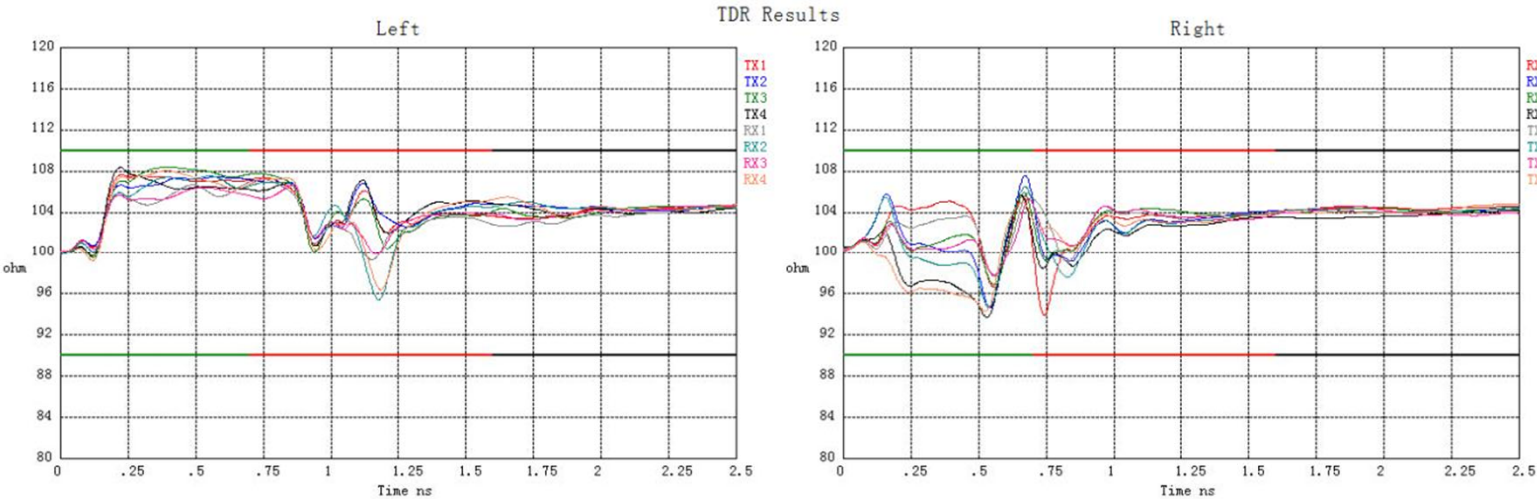
RX1----> TX1							
Type		Value(dB)	Freq(GHz)	Spec	ΔValue	Results	Fail@(GHz)
SCC11	MAX	-3.782	5.35	802.3bj	1.782	PASS	
SCC22	MAX	-4.253	5.26	802.3bj	2.253	PASS	
SCD11	MAX	-14.628	15.78	802.3bj	3.298	PASS	
SCD22	MAX	-19.677	17.95	802.3bj	8.852	PASS	
SDD11	MAX	-9.228	15.51	User	4.867	PASS	
SDD22	MAX	-7.648	18.99	User	4.519	PASS	
SDD12	MIN	-9.037	12.23	User	13.443	PASS	
SDD21	MIN	-9.049	12.23	User	13.431	PASS	
SCD21-SDD21	MAX	-16.044	17.98	User	11.044	PASS	
ILD	MAX	0.813	15.89	Infiniband	2.667	PASS	
RX2----> TX2							
Type		Value(dB)	Freq(GHz)	Spec	ΔValue	Results	Fail@(GHz)
SCC11	MAX	-3.541	5.17	802.3bj	1.541	PASS	
SCC22	MAX	-4.025	1.61	802.3bj	2.025	PASS	
SCD11	MAX	-17.436	12.63	802.3bj	5.226	PASS	
SCD22	MAX	-15.867	16.69	802.3bj	4.749	PASS	
SDD11	MAX	-7.792	11.56	User	1.64	PASS	
SDD22	MAX	-7.724	15.05	User	3.179	PASS	
SDD12	MIN	-9.066	12.87	User	13.414	PASS	
SDD21	MIN	-9.073	12.87	User	13.407	PASS	
SCD21-SDD21	MAX	-12.373	14.71	User	7.373	PASS	
ILD	MAX	1.47	15.04	Infiniband	1.888	PASS	
RX3----> TX3							
Type		Value(dB)	Freq(GHz)	Spec	ΔValue	Results	Fail@(GHz)
SCC11	MAX	-3.906	5.35	802.3bj	1.906	PASS	
SCC22	MAX	-4.923	1.7	802.3bj	2.923	PASS	
SCD11	MAX	-11.868	15.71	802.3bj	0.522	PASS	
SCD22	MAX	-23.395	18.46	802.3bj	12.689	PASS	
SDD11	MAX	-7.697	11.57	User	1.551	PASS	
SDD22	MAX	-8.069	19	User	4.943	PASS	
SDD12	MIN	-9.172	12.14	User	13.308	PASS	
SDD21	MIN	-9.185	12.89	User	13.295	PASS	
SCD21-SDD21	MAX	-14.83	17.23	User	9.83	PASS	
ILD	MAX	-0.76	18.59	Infiniband	2.72	PASS	
RX4----> TX4							
Type		Value(dB)	Freq(GHz)	Spec	ΔValue	Results	Fail@(GHz)
SCC11	MAX	-3.528	5.17	802.3bj	1.528	PASS	
SCC22	MAX	-3.978	1.8	802.3bj	1.978	PASS	
SCD11	MAX	-19.02	15.07	802.3bj	7.525	PASS	
SCD22	MAX	-23.601	16.84	802.3bj	12.518	PASS	
SDD11	MAX	-8.234	11.64	User	2.125	PASS	
SDD22	MAX	-7.472	15.14	User	2.964	PASS	
SDD12	MIN	-9.199	12.75	User	13.281	PASS	
SDD21	MIN	-9.197	12.76	User	13.283	PASS	
SCD21-SDD21	MAX	-15.629	18.31	User	10.629	PASS	
ILD	MAX	1.442	15.23	Infiniband	1.965	PASS	

Differential Mode Impedance

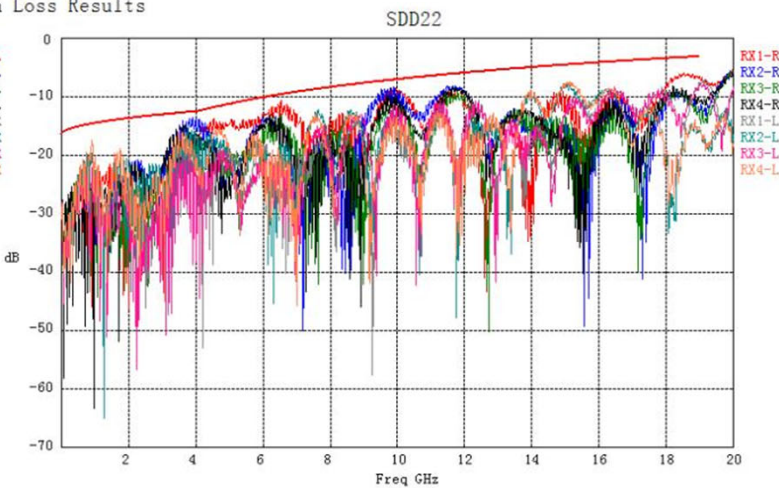
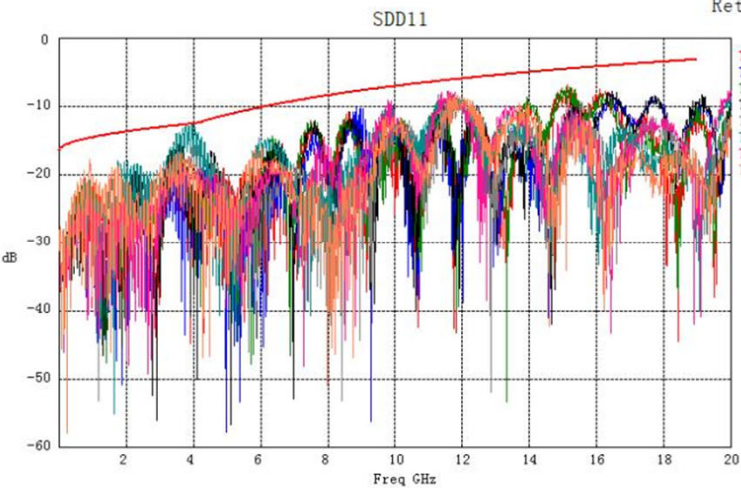
TDR Results @25ps (20-80%)											
TX1---> RX1						RX1---> TX1					
Type		Value(ohm)	Spec	ΔValue	Results	Type		Value(ohm)	Spec	ΔValue	Results
TDD11	MAX	107.7	110-110-110	2.3	PASS	TDD11	MAX	105.9	110-110-110	4.1	PASS
	MIN	99.9	90-90-90	9.9			MIN	97.7	90-90-90	7.7	
TDD22	MAX	105.7	110-110-110	4.3	PASS	TDD22	MAX	107.2	110-110-110	2.8	PASS
	MIN	93.9	90-90-90	3.9			MIN	99.3	90-90-90	9.3	
TX2---> RX2						RX2---> TX2					
Type		Value(ohm)	Spec	ΔValue	Results	Type		Value(ohm)	Spec	ΔValue	Results
TDD11	MAX	107.4	110-110-110	2.6	PASS	TDD11	MAX	106.5	110-110-110	3.5	PASS
	MIN	100	90-90-90	10			MIN	94.7	90-90-90	4.7	
TDD22	MAX	107.6	110-110-110	2.4	PASS	TDD22	MAX	107.5	110-110-110	2.5	PASS
	MIN	94.7	90-90-90	4.7			MIN	95.4	90-90-90	5.4	
TX3---> RX3						RX3---> TX3					
Type		Value(ohm)	Spec	ΔValue	Results	Type		Value(ohm)	Spec	ΔValue	Results
TDD11	MAX	108.4	110-110-110	1.6	PASS	TDD11	MIN	105.3	110-110-110	4.7	PASS
	MIN	99.5	90-90-90	9.5			MAX	97.8	90-90-90	7.8	
TDD22	MAX	105.9	110-110-110	4.1	PASS	TDD22	MIN	106.6	110-110-110	3.4	PASS
	MIN	96.9	90-90-90	6.9			MAX	99.9	90-90-90	9.9	
TX4---> RX4						RX4--->TX4					
Type		Value(ohm)	Spec	ΔValue	Results	Type		Value(ohm)	Spec	ΔValue	Results
TDD11	MAX	108.4	110-110-110	1.6	PASS	TDD11	MAX	105	110-110-110	5	PASS
	MIN	99.7	90-90-90	9.7			MIN	94.3	90-90-90	4.3	
TDD22	MAX	105.6	110-110-110	4.4	PASS	TDD22	MAX	108.1	110-110-110	1.9	PASS
	MIN	93.7	90-90-90	3.7			MIN	96.4	90-90-90	6.4	

Intra-pair Skew

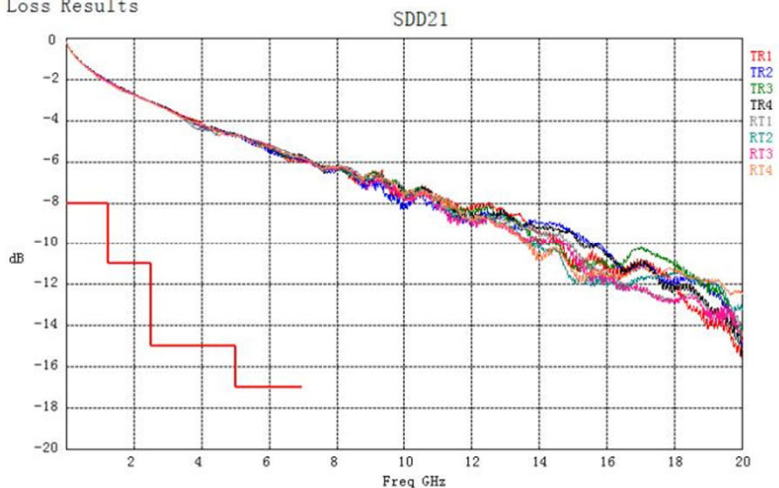
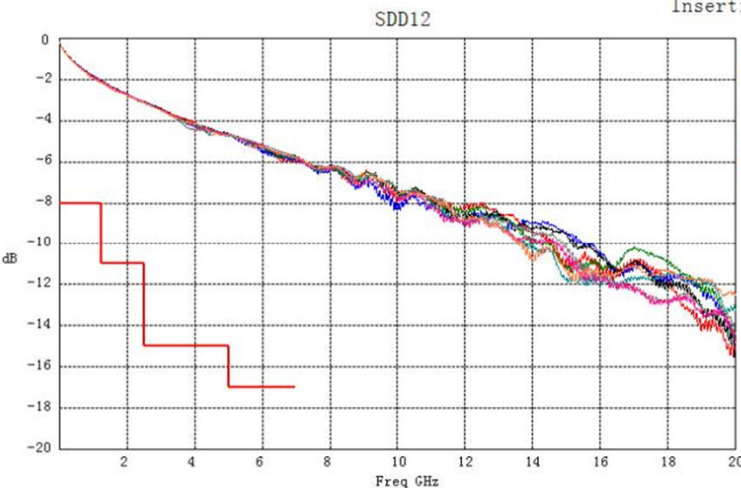
Channel	Type	Value(ps)	Spec	ΔValue	Results
TR1	MAX	6.54	45ps	38.46	PASS
TR2		9.68	45ps	35.32	PASS
TR3		5.42	45ps	39.58	PASS
TR4		3.55	45ps	41.45	PASS
RT1		0.98	45ps	44.02	PASS
RT2		4.01	45ps	40.99	PASS
RT3		0.83	45ps	44.17	PASS
RT4		0.13	45ps	44.87	PASS



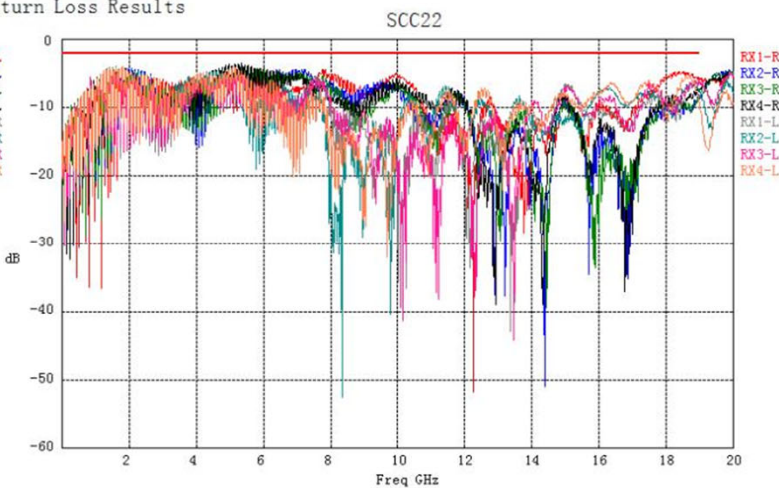
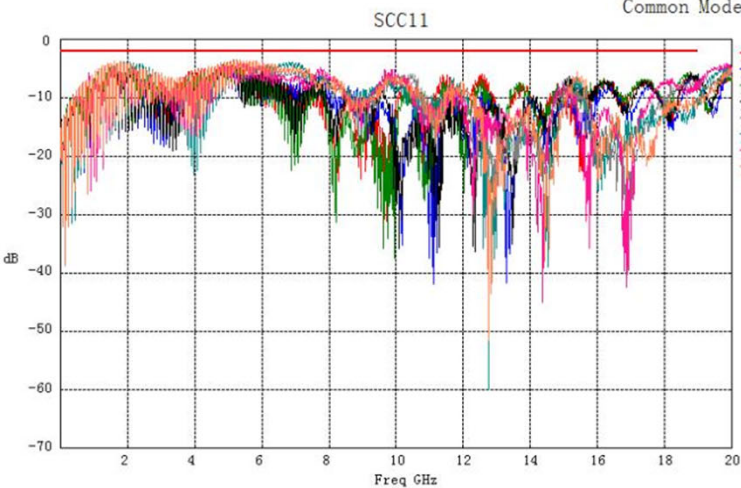
Return Loss Results



Insertion Loss Results



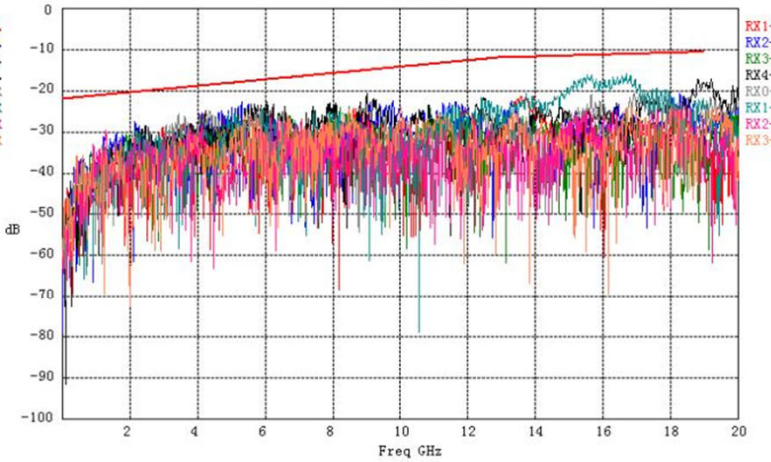
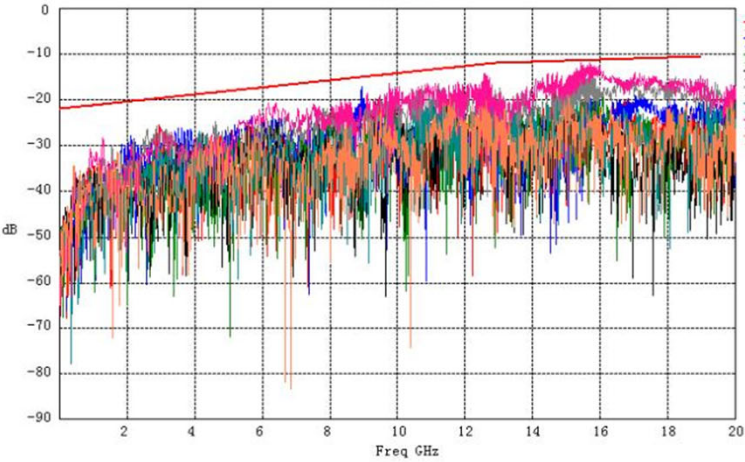
Common Mode Return Loss Results



Common to Differential Mode Return Loss Results

SCD11

SCD22



SCD21-SDD21

ILD

