

HSbridge+ Connector System

Product Presentation

Date:2021/12/20

Internet : <https://www.amphenol-icc.com/product-series/hsbridge-plus.html>

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Automotive Product - HSBridge+

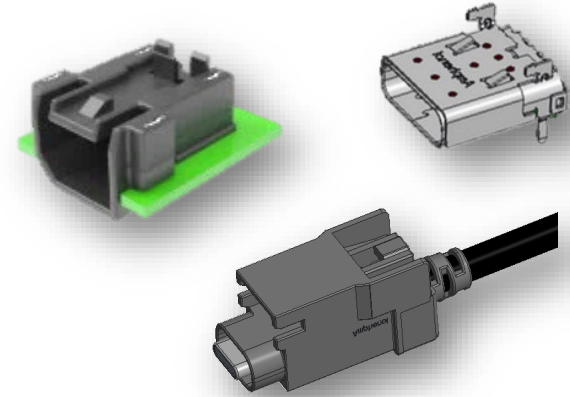
- Product Application & Specification
- Product Show
- Product Drawing
- SI Performance & Reliability test result
- Product strength

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Product Application & Specification

HSBridge+ connectors come with standard **USB Type C** interface. These connectors have headers compliant to USCAR-30 and are performance tested according to USCAR-2.

They are an ideal solution for in-vehicle connections with high data rates up to 10Gbps supporting advanced infotainment, telematics and camera devices across the automotive and commercial vehicle industries. The USB Type C interface helps in connecting the automobile with high bandwidth personal infotainment devices.



Product Type

- HSBridge+ Dual SMT
- HSBridge+ with Hybrid(SMT+DIP)
- HSBridge+ 3A cable solution
- HSBridge+ 5A cable solution
- HSBridge+ 5G cable solution
- HSBridge+ 10G cable solution

Features

- Type-C standard interface
- Color coding effectiveness compliant to automotive requirements
- Cable side with over molding design
- Supports legacy USB 2.0
- USB 3.1, one port solution for data, power and A/V
- Contact has insertion shell protection
- Lock design meeting USCAR-2

Applications

- Infotainment
- Rear-entertainment
- USB Charger
- USB Media Hub
- CIC Module(Car Infotainment Computer)
- Car Multimedia

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Product Application & Specification

Basic Information:

- Operating temperature: -40~100°C
- Flammability Class: UL94 V-0

Electrical Characteristic:

- Contact Resistance: 40mΩ max
- Insulation Resistance: > 100MΩ
- Temperature rise: 55°C max
- Voltage drop: 50mV max

Mechanical Characteristic:

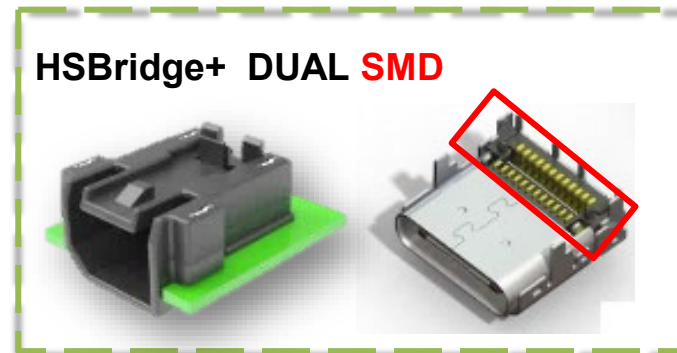
- Durability: 10 cycles
- Cable Retention force: 110N Min
- Mating/Unmating Retention Forces:
Mating force 45N Max
Unmating force 75N Max

Vibration/Mechanical Shock:

- Vibration Level: V1
- Visual Inspection: Can meet the standard of USCAR-2

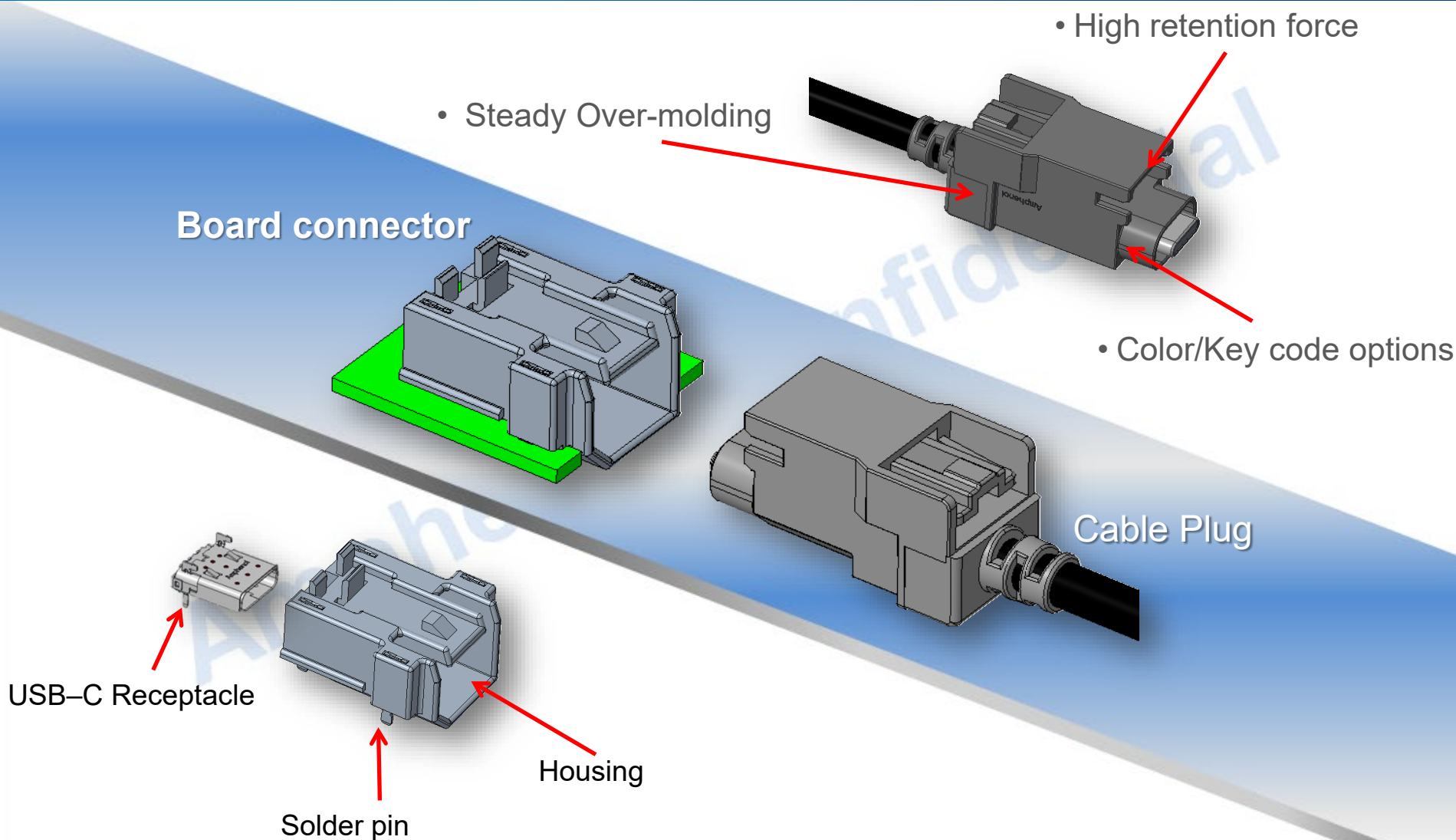
Solderability:

- Solder time: 5±0.5 s
- Solder temperature: 245±5°C
- Solder area shall have minimum of 95% solder coverage



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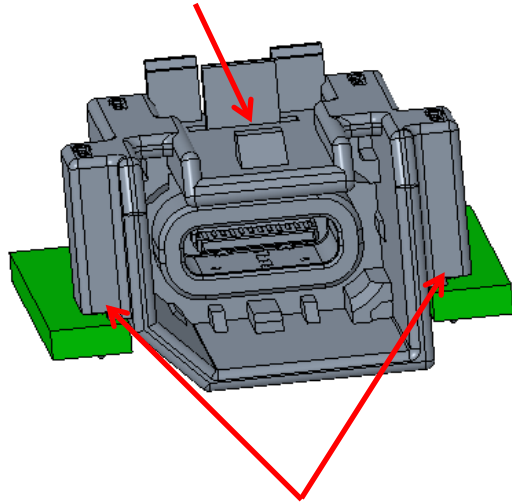
Product show



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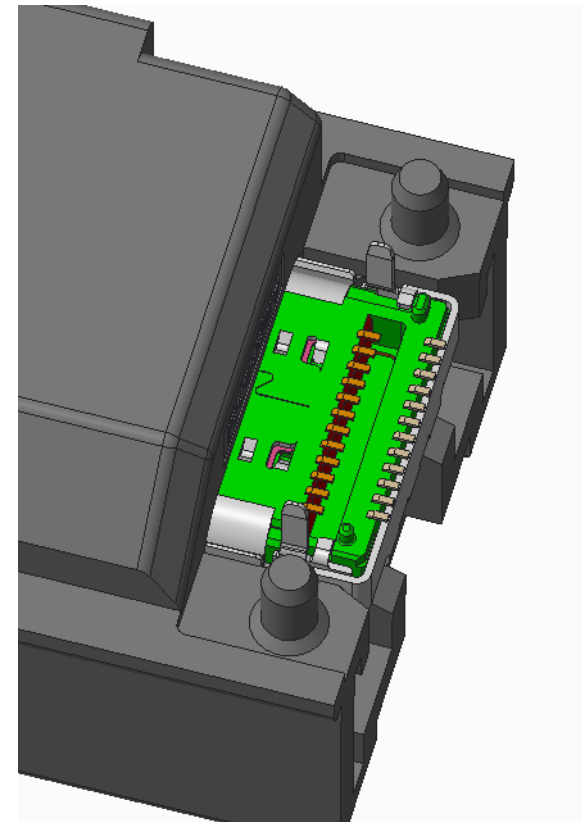
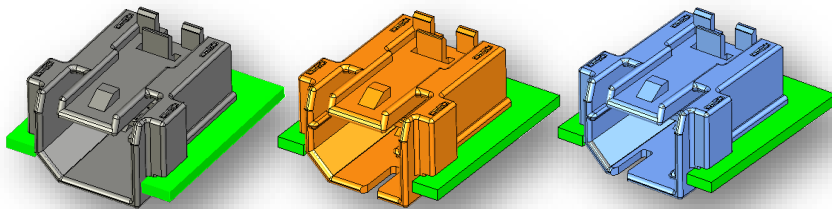
Product show

- High retention force with Plug



- High retention force with PCB

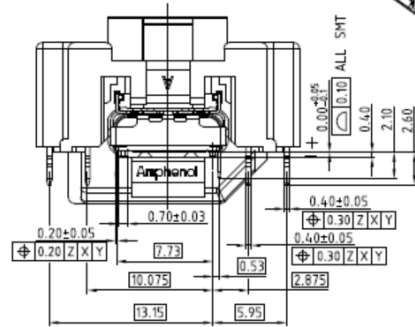
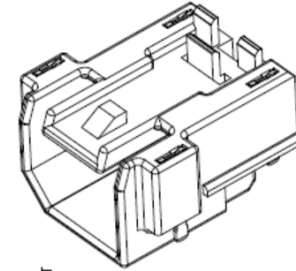
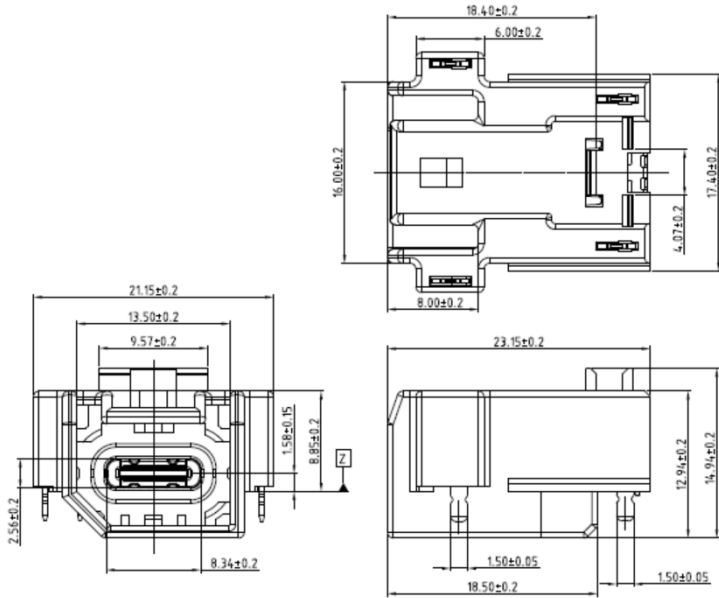
- Color/Key code options



- Dual SMT

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Product drawing & board connector



HF(无卤)	√
Non-HF(有卤)	



5. ORDER P/N SYSTEM/产品料号编码系统:

UTC-X-R-01-1-1-003-S-R

Auto USB Type-C Series

Code of Outer housing:

- A: CODE A, COLOR JET BLACK
- B: CODE B, COLOR CLARET VIOLET
- C: CODE C, COLOR NUT BROWN
- D: CODE D, COLOR LEAF GREEN
- E: CODE E, COLOR SIGNAL BLUE
- F: CODE F, COLOR CREAM WHITE
- G: CODE G, COLOR BLUE GRAY
- H: CODE H, COLOR YELLOW GREEN
- J: CODE J, COLOR BEIGE
- K: CODE K, COLOR CURRY

R: Receptacle

Packing option:
R: REEL

Solder type:
S: SMT TYPE

Sequence No.: 001 ~ 999
003: WITH FOUR SOLDER PEG

Plating option(Contact area/Solder area):
1: Au 0.75μm/ TIN 2.54μm MIN PLATED

1: Right angle

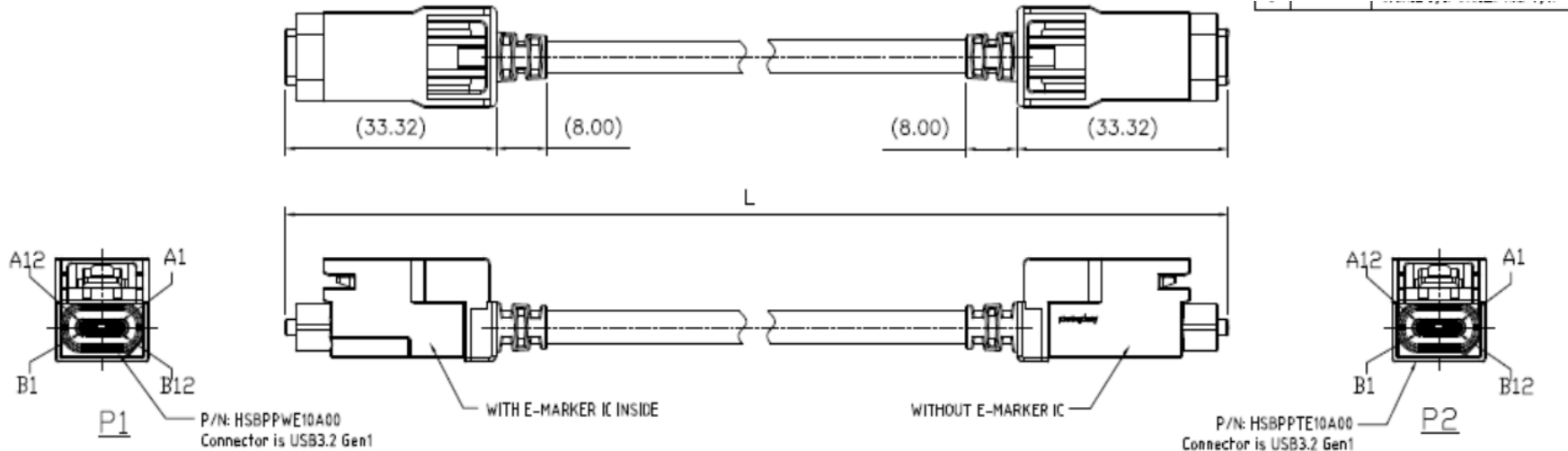
01: Shell solder tail height 2.10mm



UTCXR0111003
SR-8

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Product drawing & cable harness



5. P/N SYSTEM: CAA XX USBC 0 0 2 XXX

KEY CODE (SEE TABLE 1) — XX

AUTO TYPE-C USB CABLE — USBC

TYPE-C CONNECTOR IN BOTH END, USB3.2 GEN1(5Gbps) — 0 0

CABLE LENGTH(CM) SEE TABLE 2 — 2

SEQUENCE NUMBER:
 1: OD=5.2mm
 2: OD=5.0mm — XXX

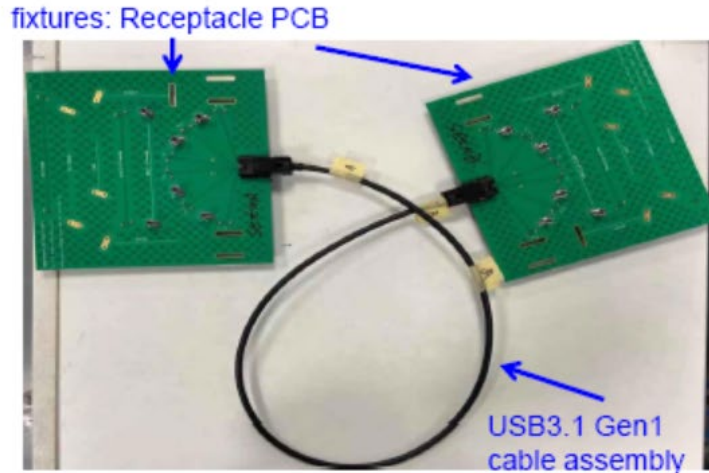
SEQUENCE NUMBER
 0: ONE SIDE WITH E-MARK
 1: DUEL WITHOUT E-MARK
 2: DUEL WITH E-MARK



CAAXXUSBC0XX
 XXX-5

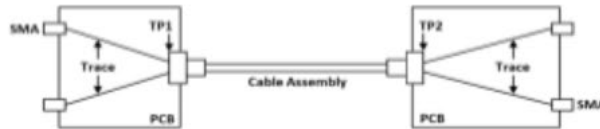
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SI Performance Test



Key Messages:

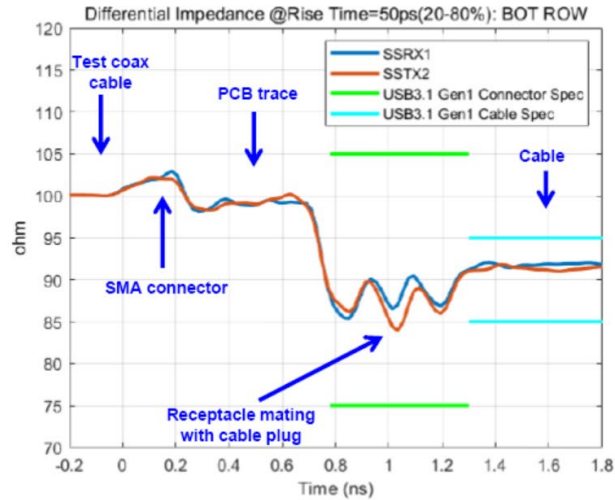
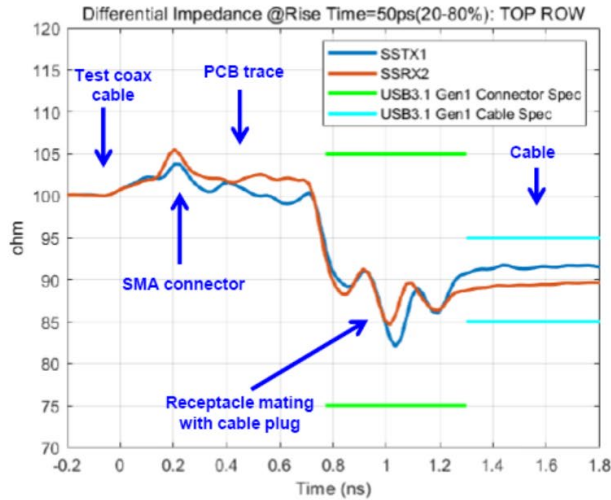
- This technical bulletin presents tested electrical performance data on USB3.1 Gen1 cable assembly. Tested parameters included frequency domain S-parameters and time domain differential impedance.
- Low loss PCB material used and 50ohm single ended PCB traces(100ohm differential impedance) and 2.92mm RF connectors on test board.
- All measurements used AFR(Automatic Fixture Removal) calibration for remove the effects of VNA system, coaxial cable, PCB trace, and SMA. The measured results only included the section of TP1 to TP2.



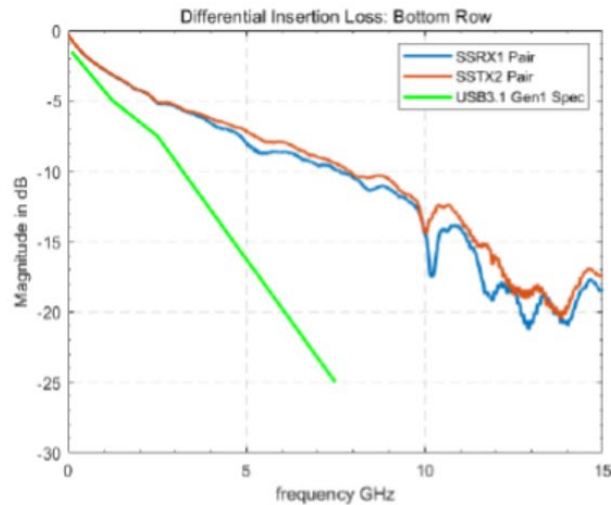
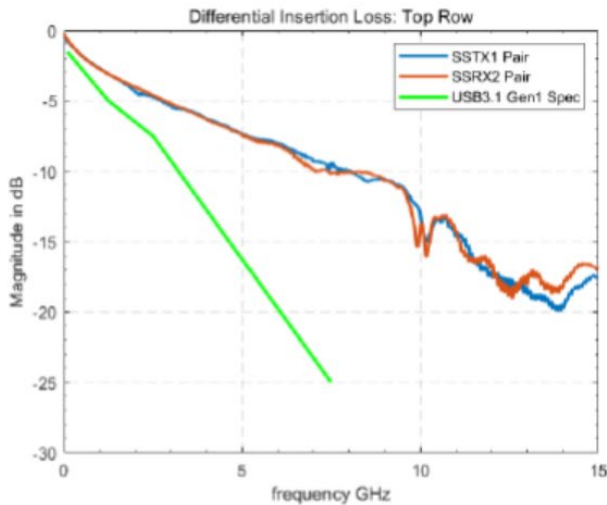
Parameter	Results
Differential Impedance	Pass
Differential Insertion Loss	Pass
Differential Near End & Far End Crosstalk Between Super Speed Pairs	Pass
Differential Near End & Far End Crosstalk Between D+/D- and Super Speed Pairs	Pass
Differential to Common Mode	Pass

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SI Performance Test



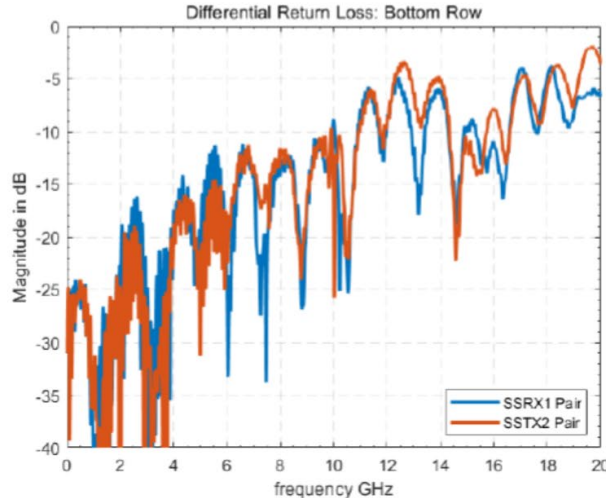
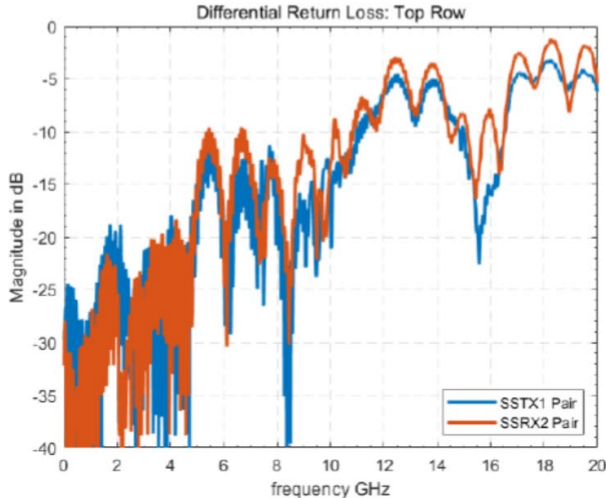
Differential Impedance test



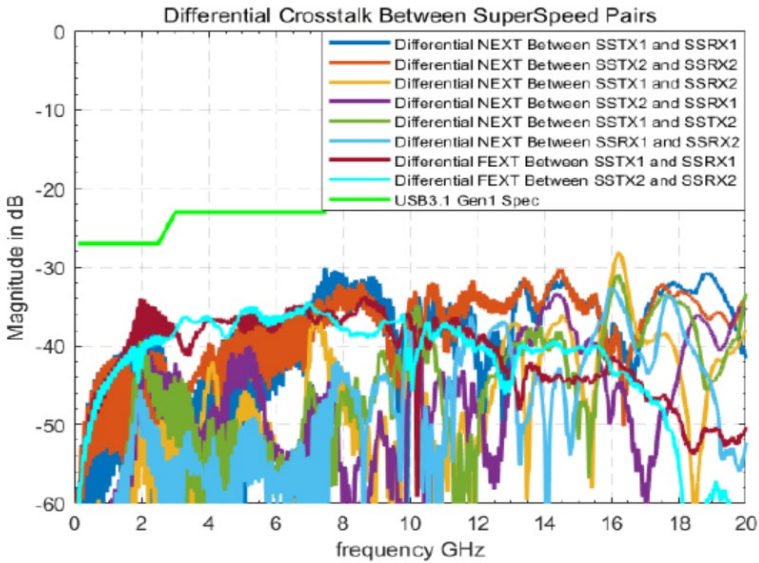
Differential Insertion loss test

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SI Performance Test



Differential Return test



Differential Crosstalk test

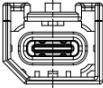
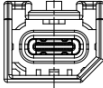
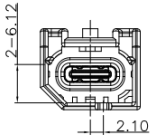
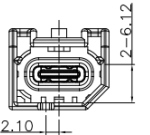
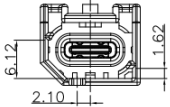
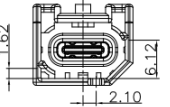
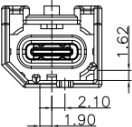
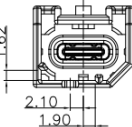
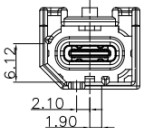
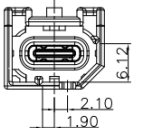
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Product Feature & strength

Pin definition

Pin No	Signal Name	Mating Sequence	Pin No	Signal Name	Mating Sequence
A1	GND	First	B12	GND	First
A2	TX1+	Second	B11	RX1+	Second
A3	TX1-	Second	B10	RX1-	Second
A4	Vbus	First	B9	Vbus	First
A5	CC1	Second	B8	SBU2	Second
A6	D+	Second	B7	D-	Second
A7	D-	Second	B6	D+	Second
A8	SBU1	Second	B5	CC2	Second
A9	Vbus	First	B4	Vbus	First
A10	RX2-	Second	B3	TX2-	Second
A11	RX2+	Second	B2	TX2+	Second
A12	GND	First	B1	GND	First
SHELL		GND	SHELL		GND

Coding options

CODE	RECEPTACLE	CASE COLOR	CASE COLOR	RECEPTACLE	CODE
A		JET BLACK	CLARET VIOLET	 Un-tooled	B
C		NUT BROWN	LEAF GREEN	 Un-tooled	D
E		SIGNAL BLUE	CREAM WHITE	 Un-tooled	F
G		BLUE GRAY	YELLOW GREEN	 Un-tooled	H
J	 Un-tooled	BEIGE	CURRY	 Un-tooled	K

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THANK YOU

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