

# Specification for SN™ Transceiver Receptacle

Rev 1.1      June 29<sup>th</sup>, 2020

## Abstract:

This specification defines the fiber optic connector interface, a single position plug connector set of plug/adapter configuration that is characterized by two 1.25 mm nominal diameter ferrules.

This document provides a specification for systems manufacturers, system integrators, and suppliers. It summarizes the receptacle interface into a clearly defined solution for users.

Limitations of the use of this information: This specification is being provided under and subject to the provisions of the QSFP-DD Multi Source Agreement.

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Change History:

Revision	Date	Changes
1.0	2/12/2019	First Release
1.1	6/29/2020	Added Dimension (AL)

## Definitions

### QSFP-DD

The QSFP-DD MSA is a multi-company industry group. The QSFP-DD MSA has defined a high density 8-channel (8x) module, cage, and connector system. QSFP-DD supports up to 400 Gb/s in aggregate over an 8 x 50 Gb/s electrical interface. The cage and connector design provides backwards compatibility to QSFP28 modules which can be inserted into a QSFP-DD port and connected to 4 of the 8 electrical channels.

### LC Connector

LC Connector is a small form factor fiber optic connector. The LC connector has been standardized as FOCIS 10 (Fiber Optic Connector Intermateability Standards) in EIA/TIA-604-10. The LC connector uses a 1.25 mm ferrule. A single pair of LC connectors (dual LC connector) fit in the form-factor of a QSFP transceiver module.

### Hooks

Adapter hooks are required in the SN™ receptacle and allow the plug connector to latch (lock in place) on to the receptacle. For clarity, the drawings are provided with and without hooks.

The drawings of the receptacle interface with hooks shows the completed assembly for the SN™ connector. The connector plug frame mates with a receptacle with hooks.

The drawings without hooks are for reference only to allow transceiver vendors to design their module housing. A module housing, designed to the receptacle drawings without hooks, will allow the SN™ hooks to be subsequently installed into the module housing.

**Foreword**

The QSFP-DD MSA specification defines an 8-channel module, cage and connector system. The cage and connector system provides backward compatibility to the 4-channel QSFP28 modules. Doubling the number of duplex optical links with the QSFP-DD specification requires a new smaller optical interconnect to fit in the same physical cage form factor. The SN™ connector provides the characteristics and simplicity of the duplex LC connector into a smaller footprint to allow 4 pairs of TN™ connectors to fit within the physical constraints of the QSFP-DD form factor.

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## 1. SCOPE

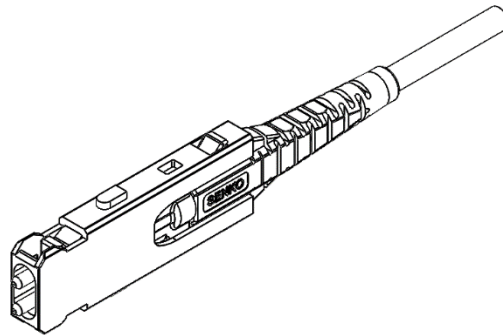
This specification defines the standard interface dimensions for the SN™ Transceiver Receptacle interface.

## 2. INTRODUCTION

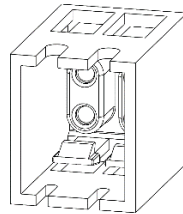
### 2.1 Overview

The SN™ connector is a miniature single-position plug which is characterized by duo cylindrical, spring-loaded butting ferrule(s) of a 1.25 mm typical diameter, and a push-pull coupling mechanism. The optical alignment mechanism of the connectors is a rigid bore sleeve or a resilient sleeve.

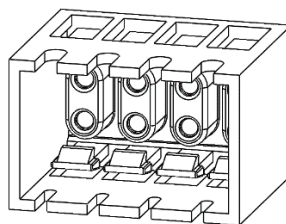
The document defines the standard interface dimensions of active device receptacles for SN™ connector. The receptacles are used to retain the connector plugs and mechanically maintain the optical datum target of the plugs at a defined position within the receptacle housings.



SN™ Connector appearance



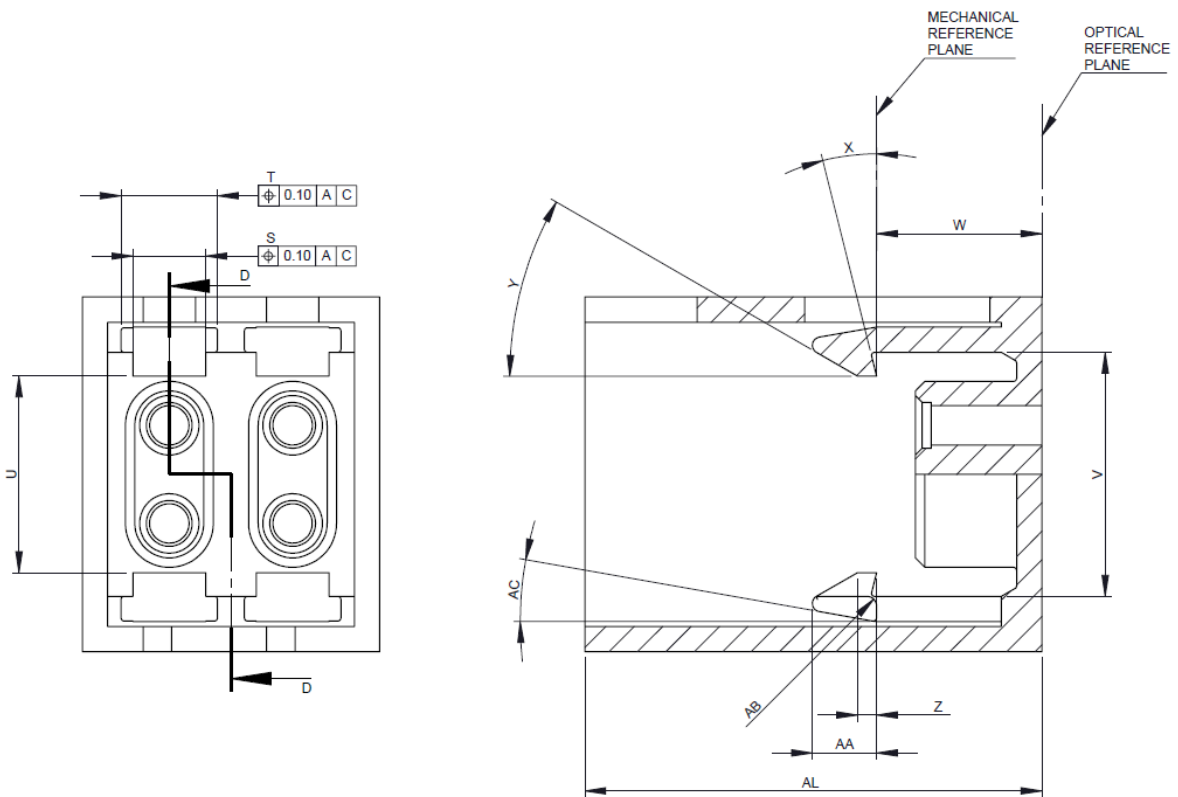
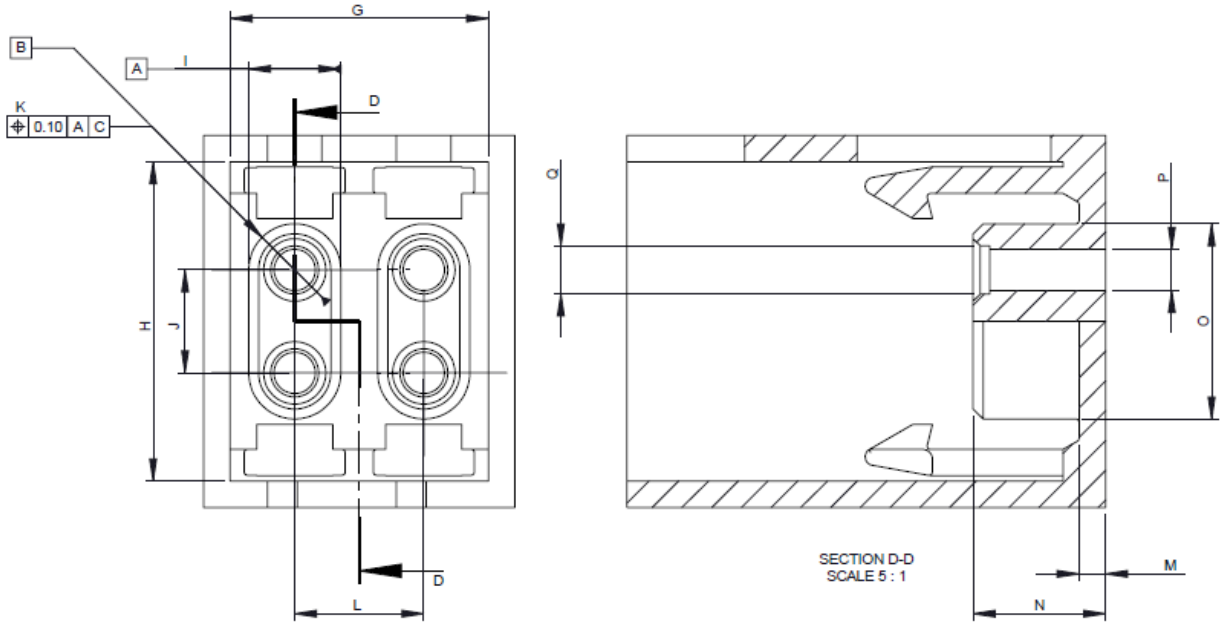
Quad SN™ Dual Channel Receptacle appearances



Quad SN™ Quadruplex Channel Receptacle appearances

### 3. SN™ TRANSCEIVER RECEPTACLE INTERFACE

#### 3.1 SN™ Dual Channel Transceiver Receptacle Interface



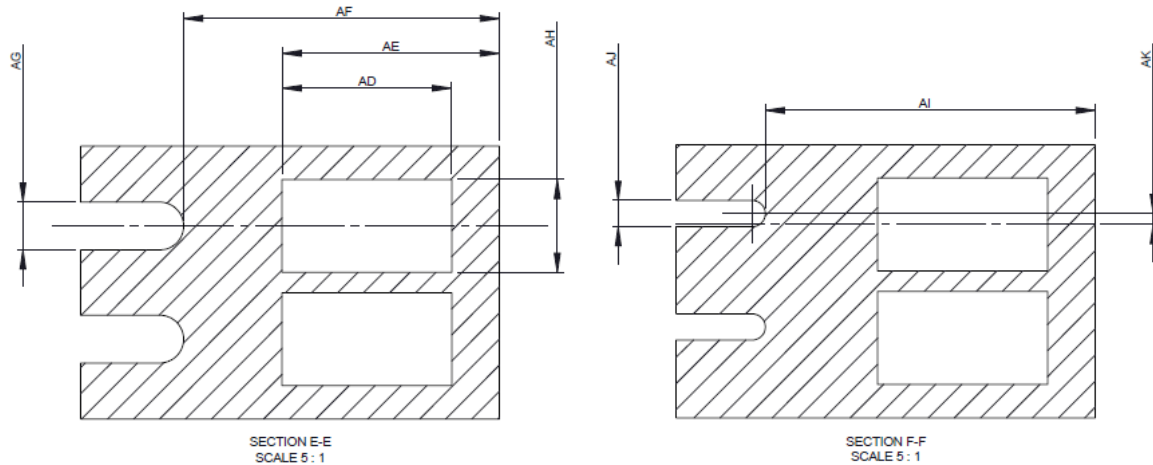


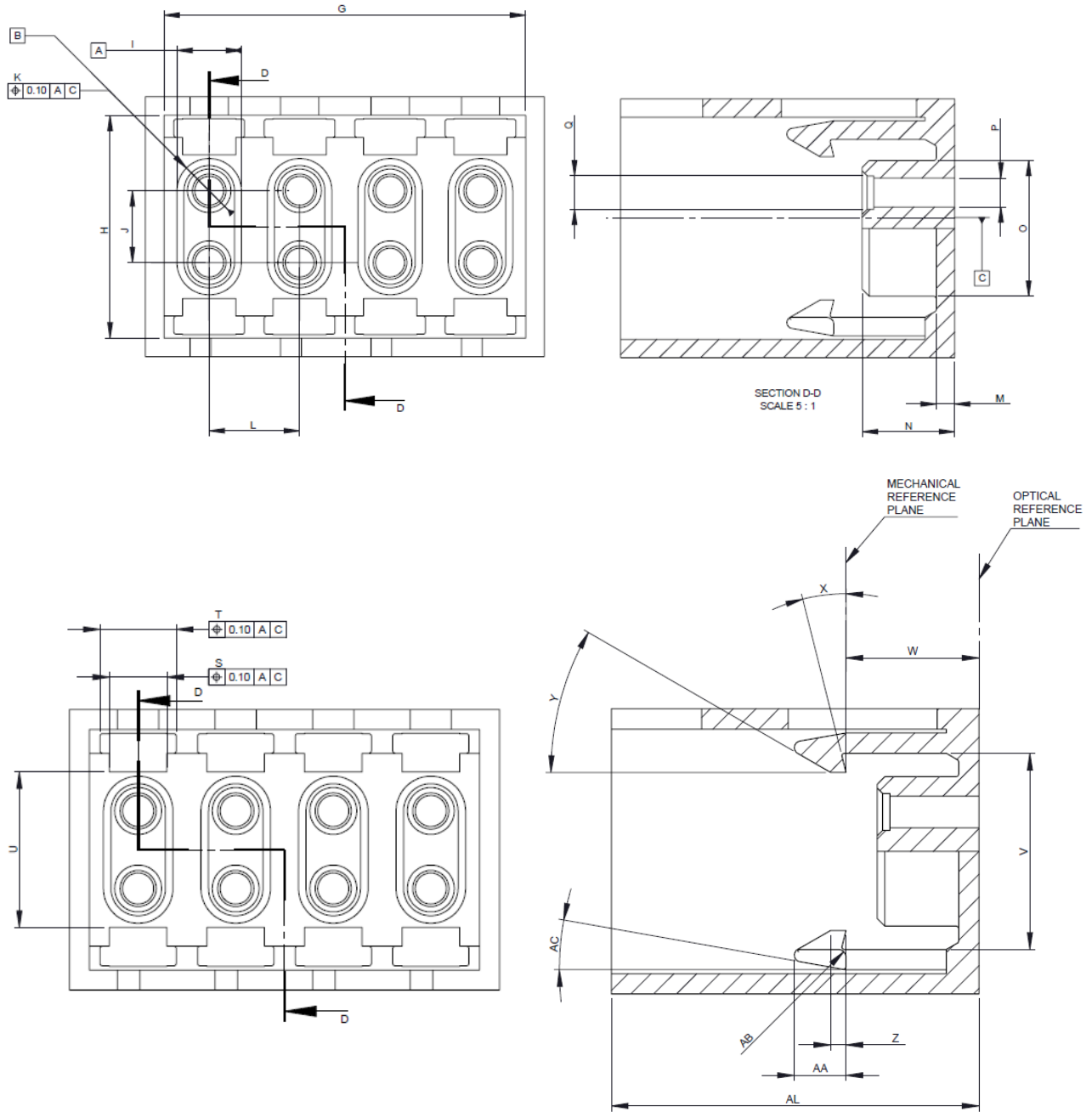
Figure 3-1 SN™ 2CH Receptacle

REF.	DIMENSION (mm)		REMARKS
	MIN.	MAX.	
A	N/A	N/A	DATUM A
B	N/A	N/A	DATUM B
C	N/A	N/A	DATUM C
D	N/A	N/A	SECTION D
E	N/A	N/A	SECTION E
F	N/A	N/A	SECTION F
G	7.8	8	
H	9.61	9.81	
I	2.73	2.83	
J	3.1		
K	2.73	2.83	DIAMETER
L	3.9		
M	0.75	0.85	
N	4	4.1	
O	5.83	5.93	
P	1.2488	1.2492	DIAMETER, SLEEVE I.D.
Q	1.4	1.5	DIAMETER
R	N/A		
S	2.25	2.35	
T	3	3.1	
U	6.16	6.26	
V	7.66	7.76	
W	5.18	5.28	
X	13	15	DEGREES

Y	29	31	DEGREES
Z	0.55	0.65	
AA	1.98	2.08	
AB	0.25	0.35	RADIUS
AC	9	11	DEGREES
AD	5.85	-	
AE	7.5	-	
AF	-	10.9	
AG	1.65	-	
AH	3.2	-	
AI	-	11.38	
AJ	0.9	-	
AK	0.325	0.425	
AL	14.2	-	

**Table 3-1 SN™ 2CH Receptacle**

### 3.2 SN™ Quadruplex Channel Transceiver Receptacle Interface





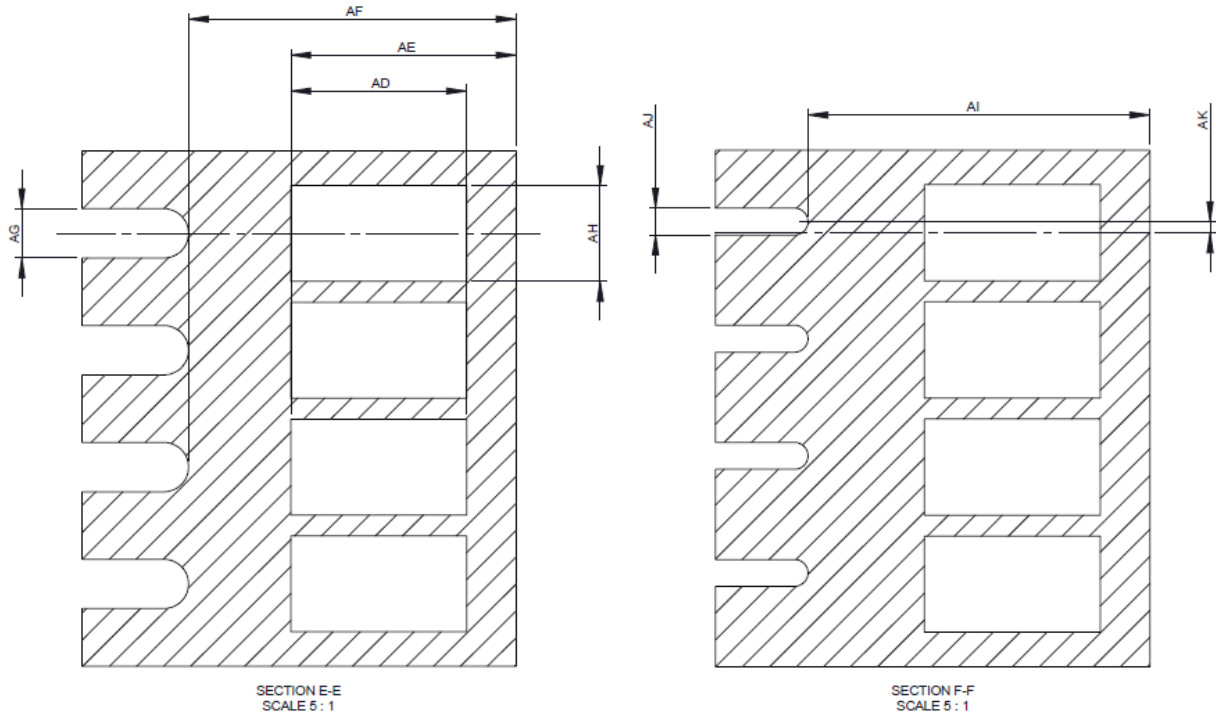


Figure 3-2 SN™ 4CH Receptacle

REF.	DIMENSION (mm)		REMARKS
	MIN.	MAX.	
A	N/A	N/A	DATUM A
B	N/A	N/A	DATUM B
C	N/A	N/A	DATUM C
D	N/A	N/A	SECTION D
E	N/A	N/A	SECTION E
F	N/A	N/A	SECTION F
G	15.6	15.8	
H	9.61	9.81	
I	2.73	2.83	
J	3.1		
K	2.73	2.83	DIAMETER
L	3.9		
M	0.75	0.85	
N	4	4.1	
O	5.83	5.93	
P	1.2488	1.2492	DIAMETER, SLEEVE I.D.
Q	1.4	1.5	DIAMETER
R	N/A		
S	2.25	2.35	

T	3	3.1	
U	6.16	6.26	
V	7.66	7.76	
W	5.18	5.28	
X	13	15	DEGREES
Y	29	31	DEGREES
Z	0.55	0.65	
AA	1.98	2.08	
AB	0.25	0.35	RADIUS
AC	9	11	DEGREES
AD	5.85	-	
AE	7.5	-	
AF	-	10.9	
AG	1.65	-	
AH	3.2	-	
AI	-	11.38	
AJ	0.9	-	
AK	0.325	0.425	
AL	14.2	-	

**Table 3-2 SN™ 4CH Receptacle**