



***Society of Cable
Telecommunications
Engineers***

**ENGINEERING COMMITTEE
Interface Practices Subcommittee**

AMERICAN NATIONAL STANDARD

ANSI/SCTE 155 2017

Indoor “F” Female to “F” Female Inline Splice

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1. Scope

The purpose of this document is to recommend the mechanical and electrical standards for 75 ohm broadband radio frequency (RF) devices that provide an indoor inline connection between two type “F” male connectors that conform to ANSI/SCTE 123 2011, Specification for “F” Connector, Male, Feed-Through or ANSI/SCTE 124 2011, Specification for “F” Connector, Male, Pin Type. The mechanical configuration is designed to accommodate wall plate and bulkhead applications.

This specification is not intended to restrict any manufacturer’s innovation and improvement. The specification may be amended in the future as deemed appropriate.

2. Normative References

The following documents contain provisions, which, through reference in this text, constitute provisions of the standard. At the time of Subcommittee approval, the editions indicated were valid. All standards are subject to revision; and while parties to any agreement based on this standard are encouraged to investigate the possibility of applying the most recent editions of the documents listed below, they are reminded that newer editions of those documents may not be compatible with the referenced version.

- ANSI/SCTE 04 2014, Test Method for “F” Connector Return Loss
- ANSI/SCTE 48-1 2012, Test Method for Measuring Shielding Effectiveness of Passive and Active Devices Using a GTEM Cell
- ANSI/SCTE 103 2012, Test Method for DC Contact Resistance, Drop cable to F-Connectors and F81 Barrels
- ANSI/SCTE 123 2011; Specification for “F” Connector, Male, Feed-Through
- ANSI/SCTE 124 2011; Specification for “F” Connector, Male, Pin Type
- ANSI/SCTE 143 2013, Test Method for Salt Spray
- ANSI/SCTE 144 2012, Test Procedure for Measuring Transmission and Reflection

3. Compliance Notation

<i>shall</i>	This word or the adjective “ required ” means that the item is an absolute requirement of this specification.
<i>shall not</i>	This phrase means that the item is an absolute prohibition of this specification.
<i>forbidden</i>	This word means the value specified shall never be used.
<i>should</i>	This word or the adjective “ recommended ” means that there may exist valid reasons in particular circumstances to ignore this item, but the full implications should be understood and the case carefully weighted before choosing a different course.
<i>should not</i>	This phrase means that there may exist valid reasons in particular circumstances when the listed behavior is acceptable or even useful, but the full implications should be understood and the case carefully weighed before implementing any behavior described with this label.
<i>may</i>	This word or the adjective “ optional ” means that this item is truly optional. One vendor may choose to include the item because a particular marketplace requires it or because it enhances the product, for example; another vendor may omit the same item.
<i>deprecated</i>	Use is permissible for legacy purposes only. Deprecated features may be removed from future versions of the standard. Implementations should avoid use of deprecated features.

4. Mechanical

4.1. Dimensions

The physical dimension of the inline splice *shall* meet the dimensional requirements of Figure 1.

4.2. Center Conductor Mating

The center conductor contact of both ends *shall* accept male “F” connector center conductors whose diameters are between 0.0250” (0.64 mm) diameter and 0.0403” (1.02 mm) diameter. The junction *shall* have a minimum retention force of 50 grams with a 0.0320” (0.81 mm) diameter conductor inserted after the contact is mated 25 times with a center conductor whose diameter is 0.0403” (1.02 mm) when tested in accordance to IPS TP 417, Test Method for F Connector Center Conductor Retention.

5. Electrical

5.1. Bandwidth

Bandwidth *shall* be a minimum of 5 MHz to 1,218 MHz.

Unless otherwise specified, all performance parameters listed *shall* be tested in this frequency range.

5.2. Insertion Loss

Shall not exceed 0.1 dB for frequencies between 5 MHz and 600 MHz, 0.2 dB, for frequencies above 600 MHz and up to 1,002 MHz, 0.25 dB for frequencies above 1002 MHz and up to 1,218 MHz and 0.30 dB for frequencies above 1218 MHz and up to 1794 MHz when tested in accordance to ANSI/SCTE 144 2012, Test Procedure for Measuring Transmission and Reflection.

5.3. Return Loss

Shall be no worse than 30 dB, when tested in accordance to ANSI/SCTE 04 2014, Test Method for “F” Connector Return Loss.

5.4. Shielding Effectiveness

The shielding effectiveness of the assembled components *shall* be a minimum of 100dB, when tested in accordance with ANSI/SCTE 48-1 2012, Test Method for Measuring Shielding Effectiveness of Passive and Active Devices Using a GTEM Cell.

5.5. Center Conductor Contact Resistance

The center conductor junction of the female “F” port to male F center conductor *shall* have a DC contact resistance of less than 25 milliohms after the testing performed in IPS TP 417 and then tested in accordance to ANSI/SCTE 103 2012.

5.6. Outer Conductor Contact Resistance

The outer conductor junction of the indoor female “F” port to male F connector *shall* have a DC contact resistance less than 10 milliohms when tightened to 40 lb.-in. and tested to ANSI/SCTE 103 2012.

6. Environmental

6.1. Salt Spray

Components *shall* meet the electrical performance as outlined in section 5, after 1000 Hours of the salt spray when tested in accordance to ANSI/SCTE 143 2013.

6.2. Temperature

Components *shall* meet all performance requirements during and after exposure to temperatures ranging from -40°F (-40°C) to +140°F (+60°C) inclusive.

7. Dimensions

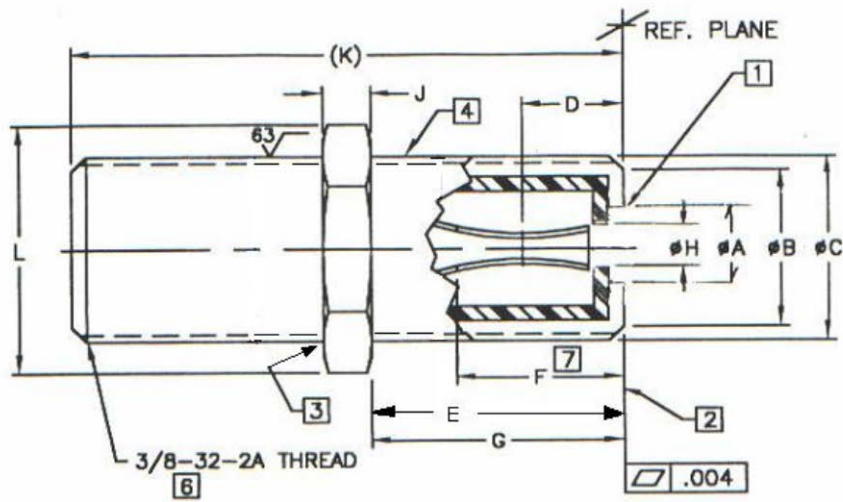


Figure 1

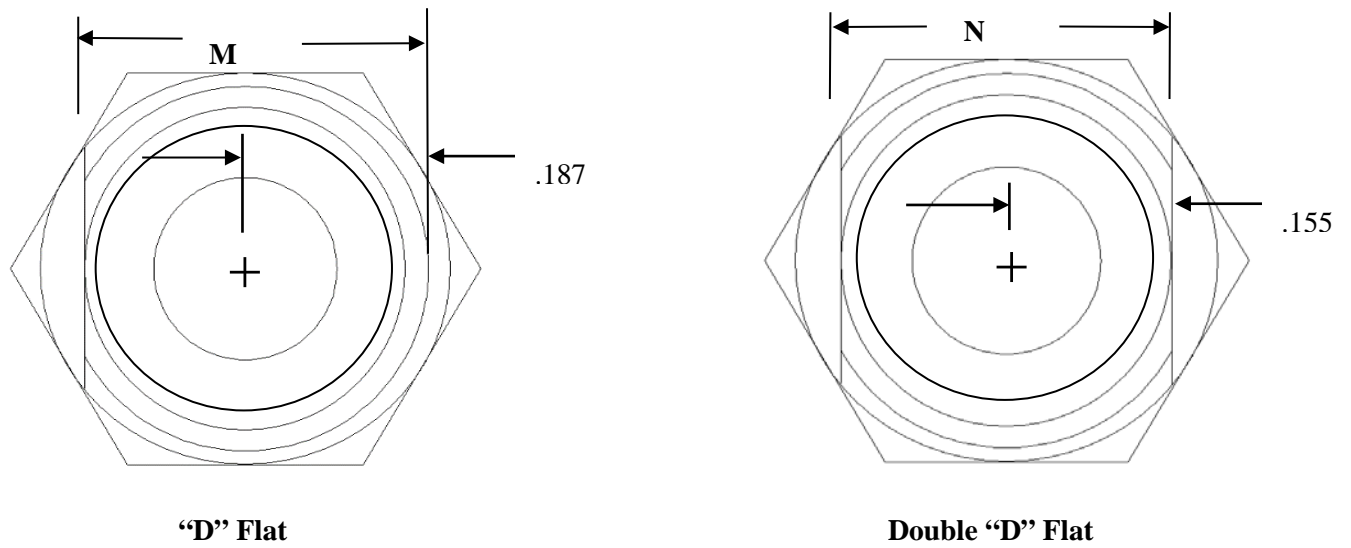


Figure 2

Table 1

DESCRIPTION	DIM	mm		INCHES		NOTES
		min	max	Min	max	
Reference Plane Opening Diameter	A	4.32	6.10	0.170	0.240	
Reference Plane Outer Diameter	B	7.11	8.00	0.280	0.315	
Base Outer Diameter	C	-	9.49	-	.374	6, 10
Positive Contact Point Depth	D	-	5.08	-	0.200	5
Full Thread Depth	E	7.11	-	0.280	-	4
Mating Male Center Conductor Clearance	F	9.65	-	0.380	-	7
Port Length	G	8.38	-	0.330	-	
Center Conductor Guide Inner Diameter	H	-	1.73	-	0.068	
Length	J	2.29	-	0.090	-	
Over All Length	K	25.38	-	1.000	-	
Maximum Crown Envelope Dimension	L	-	16.58	-	0.653	11
“D” Flat	M	-	8.63	-	.34	10
Double “D” Flat	N	-	7.87	-	.31	10

- Notes:**
1. No material shall impede the entry of the male “F” connector.
 2. Reference Plane
 3. Thread relief not to exceed 1 full thread.
 4. Minimum Full Thread
 5. Dimension to point of positive contact of terminal.
 6. ANSI specification B1.1 (Major DIA 0.368/0.374)
 7. Minimum clearance for maximum center conductor.
 8. Recommended Mating Male Center Conductor Diameter Range is 0.032 in. (0.81 mm) Min. to 0.0403 in. (1.02 mm).
 9. All Dimensions Typical, unless specified.
 10. Optional “D” or double “D” configuration *shall* be orthogonal to reference plane and need not be oriented to hex flat.
 11. Maximum Crown envelope dimension allows for optional methods of manufacture.