SCTE | STANDARDS

Interface Practices Subcommittee

AMERICAN NATIONAL STANDARD

ANSI/SCTE 148 2022

Specification for Male “F” Terminator, 75 Ohm

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140 Philips Road
Exton, PA 19341

Document Types and Tags

Document Type: Specification

Document Tags:

☐ Test or Measurement	☐ Checklist	☐ Facility
☐ Architecture or Framework	☐ Metric	☒ Access Network
☐ Procedure, Process or Method	☐ Cloud	☒ Customer Premises

Document Release History

Release	Date
SCTE 148 2008	*3/21/2008*
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Note: Standards that are released multiple times in the same year use: a, b, c, etc. to indicate normative balloted updates and/or r1, r2, r3, etc. to indicate editorial changes to a released document after the year.

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1. Introduction

1.1. Executive Summary

This document outlines the mechanical, electrical, and environmental requirements for the 75 ohm “F” male terminators.

1.2. Scope

The purpose of this specification is to specify requirements of the male “F” terminators that are used on “F” ports as specified in [SCTE 01] and [SCTE 02]. DOCSIS 4.0 specifications include operation at frequencies up to 1794 MHz. This document provides specifications or procedures for frequencies up to 3000 MHz.

1.3. Benefits

This specification provides manufacturers and users of this product a basic set of standard dimensional and performance requirements from which to gauge performance.

1.4. Intended Audience

This document is intended for manufacturers and end users of this product.

1.5. Areas for Further Investigation or to be Added in Future Versions

None

2. Normative References

The following documents contain provisions, which, through reference in this text, constitute provisions of this document. At the time of Subcommittee approval, the editions indicated were valid. All documents are subject to revision; and while parties to any agreement based on this document 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 might not be compatible with the referenced version.

2.1. SCTE References

[SCTE 01] ANSI/SCTE 01 2021, Specification for “F” Port, Female, Outdoor

[SCTE 02] ANSI/SCTE 02 2021, Specification for “F” Port, Female, Indoor

[SCTE 48-1] ANSI/SCTE 48-1 2021, Test Method for Measuring Shielding Effectiveness of Passive and Active Devices Using a GTEM Cell

[SCTE 60] ANSI/SCTE 60 2015 (R2021), Test Method for Interface Moisture Migration Double Ended

[SCTE 98] ANSI/SCTE 98 2020, Test Method for Withstand Tightening Torque - 'F' Male

[SCTE 143] ANSI/SCTE 143 2018, Test Method for Salt Spray

[SCTE 144] ANSI/SCTE 144 2017, Test Procedure for Measuring Transmission and Reflection

2.2. Standards from Other Organizations

No normative references are applicable.

2.3. Published Materials

No normative references are applicable.

3. Informative References

The following documents might provide valuable information to the reader but are not required when complying with this document.

3.1. SCTE References

No informative references are applicable.

3.2. Standards from Other Organizations

No informative references are applicable.

3.3. Published Materials

No informative references are applicable.

4. Compliance Notation

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5. Abbreviations and Definitions

5.1. Abbreviations

dB	decibel
lb-in	pound inch force
MHz	megahertz
SCTE	Society of Cable Telecommunications Engineers

5.2. Definitions

dielectric	The material that is used to insulate the center conductor from contacting the outer housing.
thread relief	A reduced diameter section of the threaded surface to allow the tool to run out. This feature is optional.
center conductor	The inner conductor of a coaxial cable or pin of a male “F” connector.
reference plane	The reference plane on the male “F” connector is the mating surface that seats against the female “F” port. It is also the plane from where all horizontal dimensions are taken.

6. Electric Requirements

6.1. Bandwidth

Bandwidth ***shall*** be a minimum of 5 MHz to 3,000 MHz, unless otherwise specified.

6.2. Impedance

Impedance ***shall*** be 75 ohms nominal.

6.3. Return Loss

Return loss ***shall*** be ≥ 20 dB, when tested in accordance with [SCTE 144].

6.4. Shielding Effectiveness

Shielding effectiveness ***shall*** be a minimum of 100 dB, when tested in accordance with [SCTE 48-1].

7. Mechanical

7.1. Physical dimensions

The recommended physical dimensions for the male “F” terminator ***shall*** be as specified in Figure 1 and Table 1.

7.2. Withstand Tightening Torque

The connector ***shall*** withstand a minimum tightening torque of 40 lb-in without damage when measured per [SCTE 98].

8. Environmental Requirements

8.1. Interface Moisture Migration

Moisture ***shall not*** migrate into the connector interface when tested according to [SCTE 60].

8.2. Salt Spray

The connector ***shall*** be exposed to at least 1,000 hours continuous salt spray with no degradation in electrical or mechanical performance when tested per [SCTE 143].

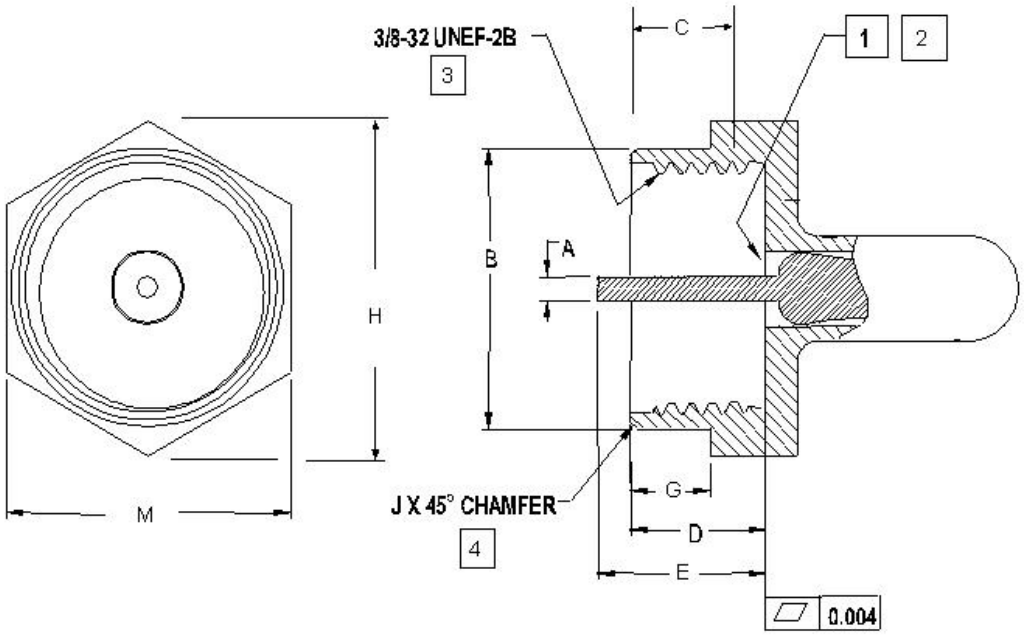

Figure 1 - Male 'F' Terminator Physical Requirements

Table 1 –Dimensions

DESCRIPTION	DIM	mm		Inches		Notes
	Ref.	min.	max.	min.	max.	
Center Conductor Diameter	A	0.76	1.066	0.030	0.042	
Sealing Sleeve Diameter	B	10.41	11.05	0.410	0.435	
Nut Threaded Length	C	3.97	-	0.156	-	3
Reference Plane Depth to Nut Leading Edge	D	4.29	6.10	0.169	0.240	
Center Conductor to Reference Plane Length	E	6.35	9.53	0.250	0.375	
Nut to Sealing Sleeve Interface Length	G	1.78	4.45	0.070	0.175	
Maximum Envelope Dimension	H	-	12.95	-	0.510	
Chamfer Break	J	0.25	0.73	0.010	0.030	4
Nut Dimension Flat-Flat	M	10.97	11.14	0.432	0.438	

Notes:

1. No Material protrusion allowed beyond reference plane.
2. The Mating of the Female “F” to the Reference Plane *should* not be impeded
3. Minimum One Thread Lead In
4. Radius Optional
5. Drawing not to scale