

# **SCTE** | **STANDARDS**

---

**Interface Practices Subcommittee**

---

**AMERICAN NATIONAL STANDARD**

**ANSI/SCTE 185 2022**

**Test Method for  
Cantilever Force, Female “F” Port**

## NOTICE

The Society of Cable Telecommunications Engineers (SCTE) Standards and Operational Practices (hereafter called “documents”) are intended to serve the public interest by providing specifications, test methods and procedures that promote uniformity of product, interoperability, interchangeability, best practices, and the long term reliability of broadband communications facilities. These documents shall not in any way preclude any member or non-member of SCTE from manufacturing or selling products not conforming to such documents, nor shall the existence of such standards preclude their voluntary use by those other than SCTE members.

SCTE assumes no obligations or liability whatsoever to any party who may adopt the documents. Such adopting party assumes all risks associated with adoption of these documents and accepts full responsibility for any damage and/or claims arising from the adoption of such documents.

NOTE: The user’s attention is called to the possibility that compliance with this document may require the use of an invention covered by patent rights. By publication of this document, no position is taken with respect to the validity of any such claim(s) or of any patent rights in connection therewith. If a patent holder has filed a statement of willingness to grant a license under these rights on reasonable and nondiscriminatory terms and conditions to applicants desiring to obtain such a license, then details may be obtained from the standards developer. SCTE shall not be responsible for identifying patents for which a license may be required or for conducting inquiries into the legal validity or scope of those patents that are brought to its attention.

Patent holders who believe that they hold patents which are essential to the implementation of this document have been requested to provide information about those patents and any related licensing terms and conditions. Any such declarations made before or after publication of this document are available on the SCTE web site at <https://scte.org>.

All Rights Reserved  
© 2022 Society of Cable Telecommunications Engineers, Inc.  
140 Philips Road  
Exton, PA 19341

## Document Types and Tags

Document Type: Specification

Document Tags:

- |   |                                    |  |
|---|------------------------------------|--|
| <input checked="" type="checkbox"/> Test or Measurement | <input type="checkbox"/> Checklist | <input type="checkbox"/> Facility          |
| <input type="checkbox"/> Architecture or Framework      | <input type="checkbox"/> Metric    | <input type="checkbox"/> Access Network    |
| <input type="checkbox"/> Procedure, Process or Method   | <input type="checkbox"/> Cloud     | <input type="checkbox"/> Customer Premises |

## Document Release History

Release	Date
SCTE 185 2012	8/13/2012
SCTE 185 2017	8/21/2017
SCTE 185 2022	August 2022

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.

## Table of Contents

Title	Page Number
NOTICE.....	2
Document Types and Tags.....	3
Document Release History.....	3
Table of Contents.....	4
1. Introduction.....	5
1.1. Executive Summary.....	5
1.2. Scope.....	5
1.3. Benefits.....	5
1.4. Intended Audience.....	5
1.5. Areas for Further Investigation or to be Added in Future Versions.....	5
2. Normative References.....	5
2.1. SCTE References.....	5
2.2. Standards from Other Organizations.....	5
2.3. Other Published Materials.....	5
3. Informative References.....	5
3.1. SCTE References.....	6
3.2. Standards from Other Organizations.....	6
3.3. Other Published Materials.....	6
4. Compliance Notation.....	6
5. Abbreviations and Definitions.....	6
5.1. Abbreviations.....	6
5.2. Definitions.....	6
6. Equipment.....	7
7. Test Samples.....	7
8. Testing Method.....	7
Appendix A Report Form.....	9

## List of Figures

Title	Page Number
Figure 1 - Possible Mounting Stand With Device And Test Fixture Attached. Test Fixture To Be Pulled In The Direction Indicated By The Arrow.....	8
Figure 2 - Test Fixture Design.....	9

## **1. Introduction**

### **1.1. Executive Summary**

High cantilever forces on “F” ports can damage them. This test procedure specifies a way to apply a cantilever force on ports and inspect them for damage.

### **1.2. Scope**

This test procedure is used to evaluate the mechanical strength of female “F” ports on passive or active devices when a cantilever force is applied to the port.

### **1.3. Benefits**

This procedure is needed to determine whether a “F” port is strong enough to withstand high cantilever forces without damage.

### **1.4. Intended Audience**

This is a laboratory test intended for engineers to evaluate product performance.

### **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. The editions indicated were valid at the time of subcommittee approval. 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**

No normative references are applicable.

### **2.2. Standards from Other Organizations**

No normative references are applicable.

### **2.3. Other 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. Other Published Materials

No informative references are applicable.

## 4. Compliance Notation

<i>shall</i>	This word or the adjective “ <i>required</i> ” means that the item is an absolute requirement of this document.
<i>shall not</i>	This phrase means that the item is an absolute prohibition of this document.
<i>forbidden</i>	This word means the value specified <i>shall</i> never be used.
<i>should</i>	This word or the adjective “ <i>recommended</i> ” means that there <i>may</i> exist valid reasons in particular circumstances to ignore this item, but the full implications <i>should</i> be understood and the case carefully weighed before choosing a different course.
<i>should not</i>	This phrase means that there <i>may</i> exist valid reasons in particular circumstances when the listed behavior is acceptable or even useful, but the full implications <i>should</i> be understood and the case carefully weighed before implementing any behavior described with this label.
<i>may</i>	This word or the adjective “ <i>optional</i> ” indicate a course of action permissible within the limits of the document.
deprecated	Use is permissible for legacy purposes only. Deprecated features <i>may</i> be removed from future versions of this document. Implementations <i>should</i> avoid use of deprecated features.

## 5. Abbreviations and Definitions

### 5.1. Abbreviations

SCTE	Society of Cable Telecommunications Engineers
------	---

### 5.2. Definitions

Definitions of terms used in this document are provided in this section. Defined terms that have specific meanings are capitalized. When the capitalized term is used in this document, the term has the specific meaning as defined in this section.

Cantilever	A rigid beam (fixture) supported at one end and free at the other
------------	---

## 6. Equipment

Tensile force testing machine<sup>1</sup> with a recording device. It may be desirable to have an automatic cut off feature which can be activated by a maximum excursion limit setting and/or maximum force limit.

Mounting stand to secure the sample to the Instron base with the sample test port perpendicular to the axis of applied force. A possible configuration is shown in the accompanying drawing (Figure 1).

Cantilever test fixture (Figure 2) that goes over the port to be tested.

Mounting fixture to attach the test fixture to the Instron moving cross head. A pin through the test fixture 0.25 inch hole allows it to swivel as the cross head moves up.

## 7. Test Samples

A minimum of five samples of each device shall be used for testing.

## 8. Testing Method

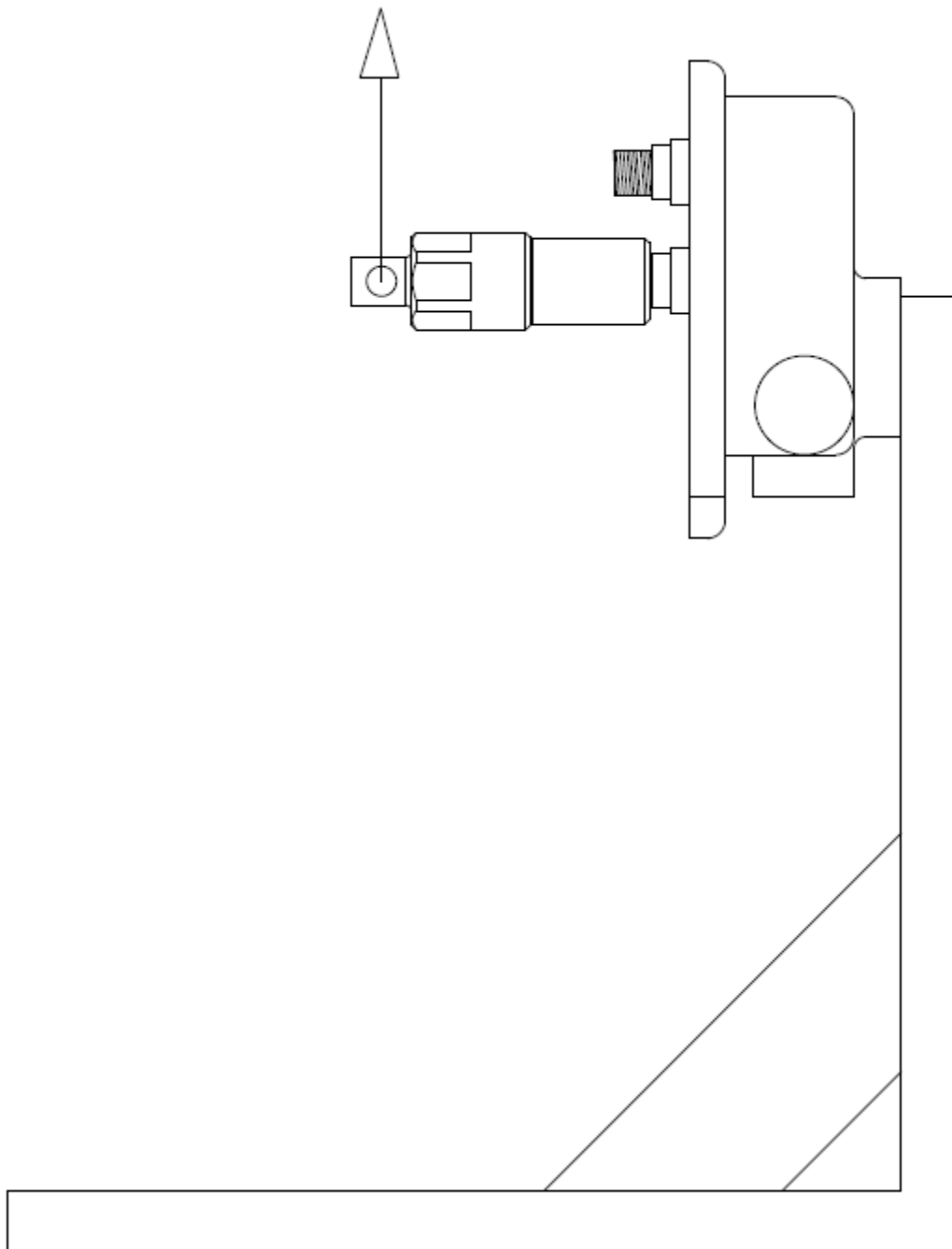
1. Calibrate the tensile test fixture per the manufacturer's recommendations.
2. Secure the device with the female "F" port to be tested to the mounting base.
3. Install the cantilever test fixture onto the female "F" port to be tested and zero out the force gauge.
4. The female "F" port under test shall be pulled to the specified limit or until failure at a cross head speed of 2 inches per minute. Failure is defined as any part of the port breaking, cracking or bending when inspected with the naked eye.
5. Record the maximum measured tensile force on the attached Report Form.
6. Calculate cantilever failure force applied to the tip of the female "F" port using the following formula:

$$\text{Cantilever Force} = \text{Tensile Force} * 7.5$$

Note: The factor 7.5 is the ratio of the test fixture length, 2.25", to the port bore depth, 0.30".

---

<sup>1</sup> Device may be compliant with Instron Model 1122 or equivalent. This identification of products or services is not an endorsement of those products or services or their suppliers



**Figure 1 - Possible Mounting Stand With Device And Test Fixture Attached. Test Fixture To Be Pulled In The Direction Indicated By The Arrow.**



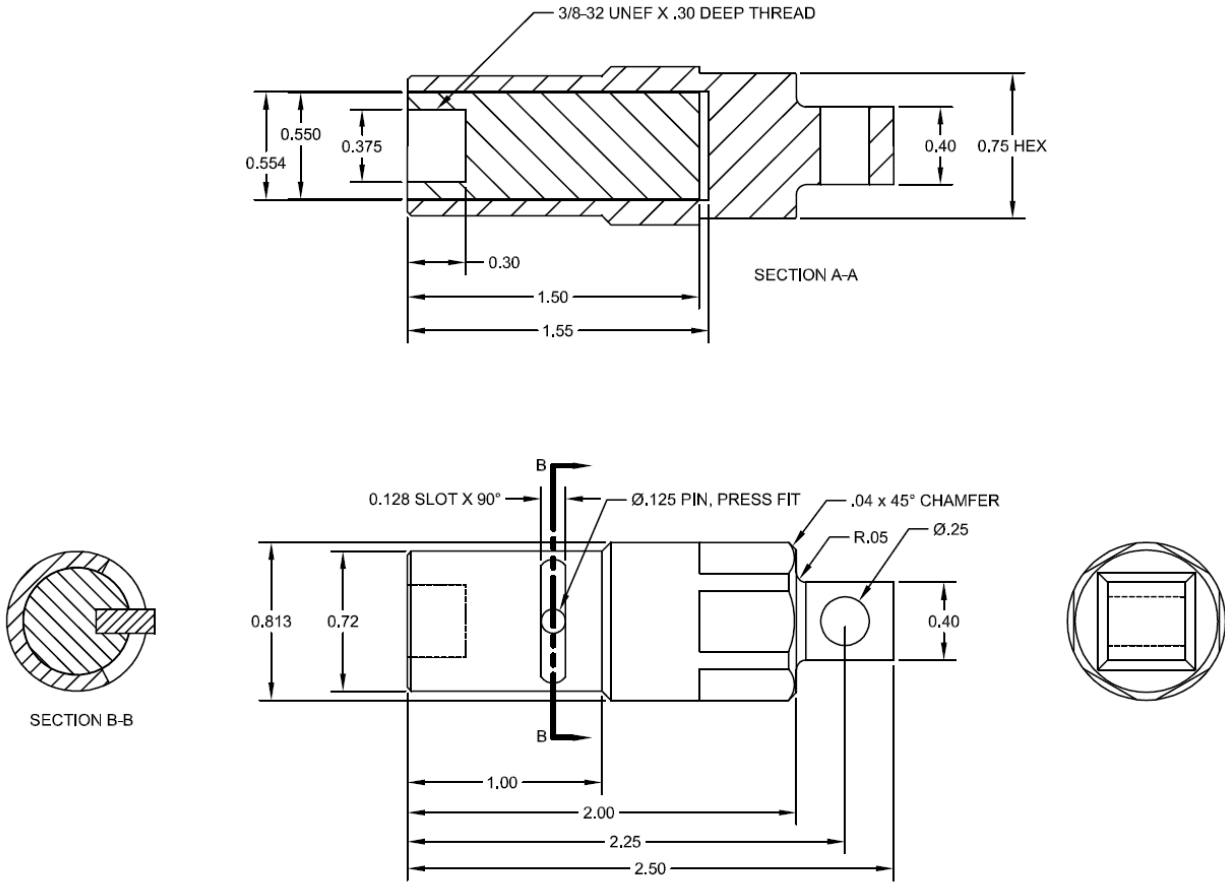


Figure 2 - Test Fixture Design

## Appendix A Report Form

Device Type			
Manufacturer			
Test Sample Number	Force Measured on Tensile Tester (lbf)	Cantilever Failure Force at Port Tip (lbf)	Comments
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			