Cover Page

Standard: 5M3191 Rev: (B) 14-Nov-2011

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STANDARD PART DOCUMENT THE BOEING COMPANY	**5M3191** Revision B 14 November 2011 Page 1 of 5

CABLE, CATEGORY 7 ETHERNET, FOUR TWISTED SHIELDED PAIRS, 24 AWG, SHIELDED AND JACKETED, 100 OHMS

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SCALE: NONE

DIMENSIONS IN INCHES: TOLERANCES UNLESS OTHERWISE SPECIFIED: X.XX ± 0.03; X.XXX ± 0.010; ANGLES ±0.5°

REVISION BARS DENOTE CHANGE

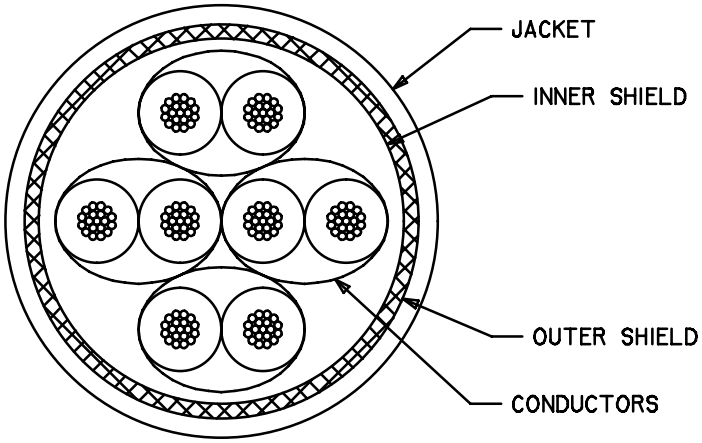

FIGURE 1 - Physical Configuration

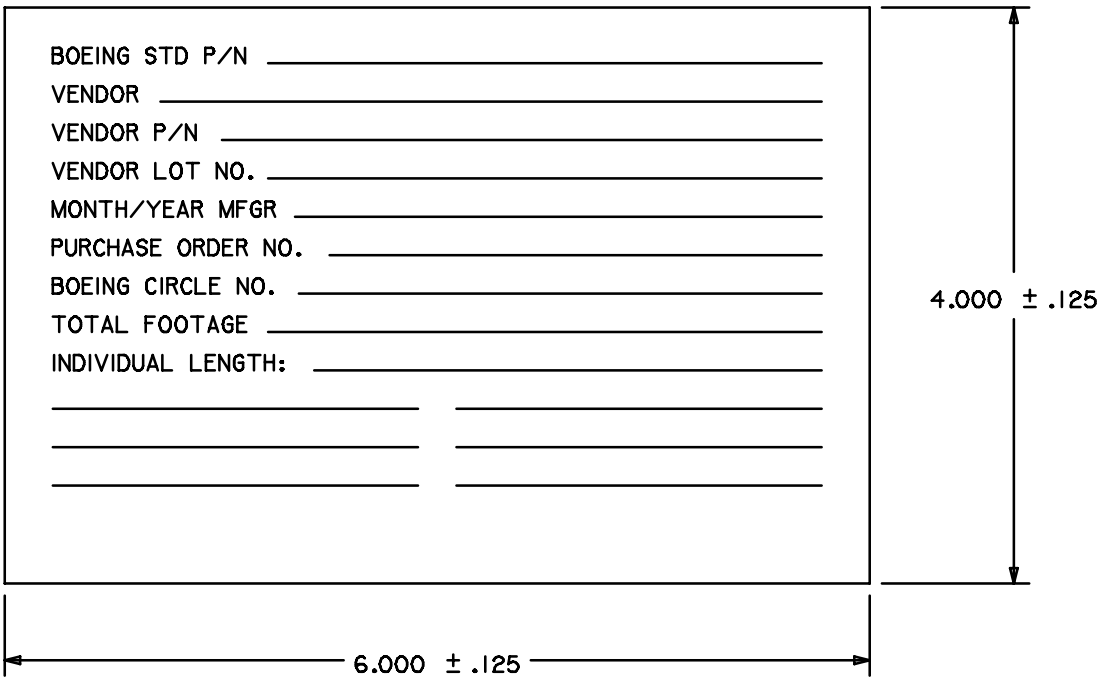

FIGURE 2 - Reel Label

TABLE I - Construction Details

Approved Callout	5M3191-1
BOEING-ST. LOUIS ASSIGNED CIRCLE NUMBER	**D95**
Inner Conductors	
Material	24 AWG, 19 Strands of 36 AWG Silver Plated Copper
O.D. of Each Conductor	0.0245 ± 0.005
Cable	
Number of Conductors	8, Each Pair Individually Shielded with Alu/ Polyester Tape
Dielectric Material	Foam PTFE Tape Wrapped with Extruded Fluoropolymer Skin
Color	Pair #1: Blue, White; Pair #3: Green, White; Pair #2: Red, White; Pair #4: Yellow, White
O.D. of Each Conductor	0.057 ± 0.004
Inner Shield	
Material	Alu/Polyester/Alu Tape
O.D.	TBD
Outer Shield	
Material	Single Braid, 36 AWG Silver Plated Copper, Round Braid, Coverage 85% Minimum
O.D.	TBD
Jacket	
Material	Fluoropolymer
Color	Light Blue
O.D.	0.326 ± 0.015

TABLE II - Mechanical, Electrical and Environmental Requirements

APPROVED CALLOUT	5M3191-1	
Impedance Between Conductors (Ohms)	100 Ohms ± 10%	
Dielectric Strength	1000 Volts rms	
Insulation Resistance	5,000 Megohms for 1000 ft., Min.	
Jacket Spark	1500 Volts rms	
Capacitance (Cond. to Cond., Shield Floating)	15 pF/ft., Max.	
Capacitance (Cond. to Cond., Shield Grounded)	15.5 pF/ft., Max.	
Operating Voltage	600 Volts rms Max.	
Corona Extinction	1000 Volts rms Min.	
Velocity of Propagation	75% Min.	
Frequency	Maximum Attenuation in dB/100 meters (328 feet) at 20°C	Near End Crosstalk (NEXT) at 20°C min in dB
At 1 MHz	2.1	80
At 4 MHz	4.5	71

TABLE II - Mechanical, Electrical and Environmental Requirements (Continued)

APPROVED CALLOUT	5M3191-1	
At 10 MHz	7.2	65
At 16 MHz	9.0	62
At 20 MHz	10	60
At 31.25 MHz	12.7	57
At 62.5 MHz	19	53
At 100 MHz	25.0	50
At 250 MHz	42.0	44
At 600 MHz	62.0	38
Conductor Elongation		6% Min.
Conductor Resistance (D.C.)		26.8 ohms/1000 ft. @ 20°C, Max.
Cable Bend Radius		1.96 Inches, Min.
Temperature Range (Continuous)		-55 to 125°C
Weight		67.2 lbs./1000 ft. Max.
Transfer Impedence		3.05 Ω/1000 ft. Max
Maximum Loop Resistance		58.52 Ω/1000 ft.

1. Scope

1.1 This document describes the requirements for Cable, Category 7 Ethernet, Four Twisted Shielded Pairs, 24 AWG, Shielded and Jacketed, 100 Ohms.

1.2 These parts shall be specified, procured, and used under the Boeing-St. Louis approved callout number.

1.3 The approved callout shall consist of this document number and an assigned dash number as shown in the following example:

5M3191 - 1 Cable

└ Assigned dash number, see Table I.

1.4 Parts selected from this document require approval from Boeing-St. Louis Standards Engineering and the applicable project parts control authority.

2. Applicable Documents

2.1 This document is the controlling document and takes precedence over all referenced documents.

2.2 Referenced documents shall be of the issue in effect on date of invitation for bid.

2.3 The following documents form a part of this document to the extent specified herein.

Specifications:

Federal:

A-A-1051 Paperboard, Wrapping and Cushioning

Specifications:

Military

MIL-DTL-17	Cables, Radio Frequency, Flexible and Semirigid, General Specification for

Standards:

Boeing-St. Louis:

6M148	Instructions Regarding Procurement and Interchangeability Information on Standard Part Drawings
6M255	Spools, Electrical, Wire/Cable
40M106	Engineering Responsibilities and Technical Data Requirements for Parts

3. Requirements

3.1 Procurement Specification: MIL-DTL-17.

3.2 Material: Cable material shall be as specified in Table I.

3.3 Finish: Finishes shall be in accordance with Table I.

3.4 Identification of Product: Parts shall be marked in accordance with MIL-DTL-17 with the Boeing-St. Louis approved callout, vendor name and vendor cage code, as a minimum.

3.5 Mechanical: Cable shall comply with Table I, Table II and Figure 1.

3.6 Electrical: Cable shall comply with Table II.

3.7 Environmental: Cable shall comply with Table II.

4. Quality Assurance Provisions

4.1 Boeing-St. Louis reserves the right to perform all inspections and/or tests to ensure compliance with this document and to accept or reject lots in accordance with Boeing-St. Louis Quality Assurance Provisions.

4.2 Any change in product design, materials, or processes shall be reported to the procuring activity at the time of quotation and will require re-qualification to an extent determined by Boeing-St. Louis Standard Engineering.

4.3 It shall be the responsibility of the supplier to determine conformance of the supplier's drawing to this standard part document and to notify Boeing-St. Louis of drawing non-conformances no later than the time of quotation.

4.4 Qualification: Cables furnished to this drawing shall be qualified as being capable of complying with the requirements of this drawing and the applicable documents. Data shall be supplied to verify that cables meet all of the requirements of this drawing and shall be verified in accordance with Boeing-St. Louis standard 40M106 and data items P1, P3, and P4. Suppliers may, at the discretion of Boeing-St. Louis Standards Engineering Department, qualify their product to this drawing, either in part or in full, by similarity per 40M106.

4.4.1 Suppliers listed on the QPL for the corresponding Military parts are exempt from data items P3 and P4 of 40M106.

4.5 Quality Conformance Inspection: Quality Conformance tests and inspections shall be in accordance with MIL-DTL-17.

4.5.1 Acceptance Tests: Group A tests and inspections of MIL-DTL-17 shall be performed on all parts supplied to this drawing. Certificate of compliance shall be provided with each lot.

4.5.2 Periodic Tests: Group B tests and inspections of MIL-DTL-17 shall only be performed by the supplier when specified by Boeing-St. Louis. However, Boeing-St. Louis reserves the right to perform all tests and inspections in accordance with MIL-DTL-17 and reject lots in accordance with quality requirements of that specification.

5. Preparation for Delivery

5.1 Packaging:

5.1.1 Minimum Length: The cable shall be supplied in minimum lengths of 100 feet.

5.1.2 Reel Size and Construction: Cable shall be wound on reels conforming to 6M255.

5.1.3 Reel Protection: All shipping reels shall have a minimum of two wraps of corrugated cardboard (reel wrap per A-A-1051 or equivalent) covering the outer layer of wire.

5.1.4 Reel Loading and Cable Ends: When cable lengths permit, more than one length of cable shall be wound on a reel. The ends shall be brought out for inspection and sealed. No loaded reel shall exceed 50 pounds in weight.

5.2 Package Marking: Each reel of cable shall be identified with the sticky removable label shown in Figure 2 having the appropriate information legibly and durably printed on the label.

6. Notes

6.1 Operating Temperature Range: -55 to 125°C.

6.2 The vendors and designations as listed below are the only items and sources for parts shown hereon approved for procurement and/or use on Boeing-St. Louis products. Vendors of competitive articles may apply to Boeing-St. Louis Standards Engineering for approval as a source of supply.

Approved Vendor and Cage Code:

Vendor Cage Code	Vendor Name and Address
F1868	Draka Fileca, Sainte-Genevieve, France

Approved Callout	Approved Vendor's Cage Code and Vendor's Designation	Superseded Parts Not Approved for Procurement See 6M148 for Disposition Directions
	F1868	
5M3191-1	F4709-5	None