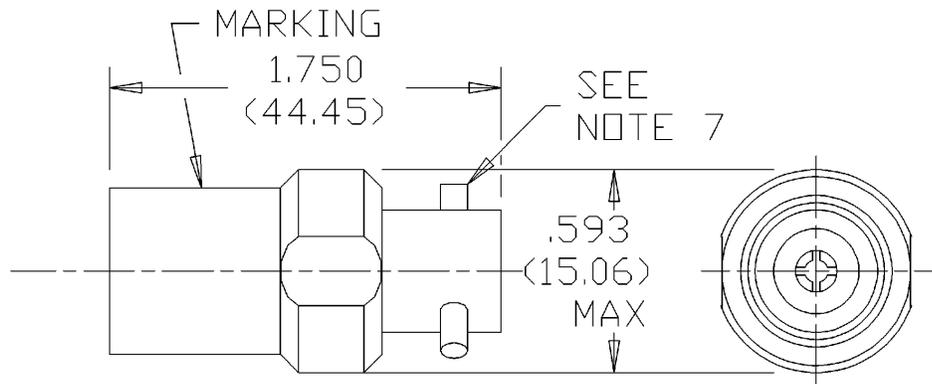


## PERFORMANCE SPECIFICATION SHEET

CONNECTOR, PLUG, ELECTRICAL, TRIAXIAL, RADIO FREQUENCY  
(SERIES TRB (CABLED), SOCKET CONTACT, CLASS 2)

This specification is approved for use by all Departments  
and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of  
this specification and MIL-PRF-49142.



## NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Metric equivalents are in parentheses.
4. Wrench flats are to accommodate standard wrench openings in accordance with FED-STD-H28.
5. 1.750 (44.45 mm) defines the maximum length of the connector when assembled to the appropriate cable.
6. All undimensioned pictorial representations are for reference purpose only.
7. Alternate keying configurations, see MIL-PRF-49142, figure 1.
8. Interface shall be in accordance with MIL-STD-348, TRB, socket contact.

FIGURE 1. General configuration.

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ENGINEERING DATA:

Nominal impedance: Nonconstant.

Frequency range: 0 to 500 MHz minimum.

Voltage rating: 400 V rms maximum working voltage at sea level. 100 V rms maximum working voltage at 70,000 feet.

Temperature range: -65°C to +165°C.

REQUIREMENTS:

Dimensions and configuration: See figure 1 and MIL-STD-348.

Force to engage and disengage:

Longitudinal force: 4 pounds maximum.

Torque: 2.5 inch-pounds maximum.

Coupling proof torque: Not applicable.

Mating characteristics: See MIL-STD-348 for dimensions.

Center contact (socket):

Oversize test pin: 0.040 inch diameter minimum (nonclosed entry contacts only).

Insertion depth: .125 inch minimum.

Number of insertions: 1.

Insertion force test:

Steel test pin finish: 16 microinches.

Insertion force: 2 pounds maximum.

Steel test pin diameter: .039 inch minimum +.001 inch.

Withdraw force test:

Steel test pin diameter: .037 inch maximum -.001 inch.

Withdrawal force: 2 ounces minimum.

Test pin finish: 16 microinches.

Permeability: Applicable.

Hermetic seal: Not applicable.

Leakage: Not applicable.

Insulation resistance: 5,000 megohms.

Center conductor retention: 6 pounds minimum axial force.

Dielectric withstanding voltage: At sea level, 1,200 V rms, between center conductor and intermediate conductor; 500 V rms, between intermediate conductor and outer conductor.

Salt spray (corrosion): Applicable.

Vibration: Applicable.

Shock: Applicable.

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Thermal shock: Applicable (except high test temperature shall be +200°C for connectors using +200°C cables).

Moisture resistance: Applicable.

Conductor resistance: In milliohms, maximum.

	<u>Initial</u>	<u>After environment</u>
Center conductor:	2.0	2.5
Intermediate conductor	0.5	0.6
Outer conductor	0.2	0.3

Dash number and applicable cable: See table I.

TABLE I. Dash number and applicable cable.

*Dash number	Cable <u>1/</u>
Category A – No special tools required <u>2/ 3/</u>	
0001 <u>4/</u> 0101 0201	M17/134-00001 M17/134-00003
0002 <u>4/</u> 0102 0202	M17/134-00002 M17/134-00004
0003 <u>5/</u>	D3-7619-5/336
0004 <u>5/</u>	D3-7619-5/338
0005 <u>4/</u>	380-10045-1
0006 <u>4/</u> 0106 0206	M17/116-RG307
0007 <u>4/</u> , 3007 <u>4/</u> 0107, 3107 0207, 3207	M17/176-00002 <u>6/</u>
0008 <u>4/</u> , 3008 <u>4/</u> 0108, 3108 0208, 3208	M17/45-RG108 M17/186-00001
0009 <u>4/</u> 0109 0209	M17/177-00001 <u>6/</u>
0010 <u>4/</u> 0110 0210	M17/178-00001
0011 <u>4/</u> 0111 0211	M17/179-00001
0012 <u>4/</u> 0112 0212	M17/135-00003 M17/135-00005
0021 <u>4/</u> 0121 0221	M17/135-00004 M17/135-00006

See footnotes at end of table.

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TABLE I. Dash number and applicable cable – Continued.

*Dash number	Cable <u>1/</u>
Category G – Use of MIL-C-22520 tool required for assembly <u>2/</u> <u>7/</u> <u>8/</u>	
0013 <u>4/</u> 0113 0213	M17/134-00001 M17/134-00003
0014 <u>4/</u> 0114 0214	M17/134-00002 M17/134-00004
0015 <u>4/</u> 0115 0215	M17/116-RG307
0016 <u>4/</u> 0116 0216 3016 <u>4/</u> 3116 3216	M17/45-RG108 M17/186-00001
0017 <u>4/</u> 0117 0217 3017 <u>4/</u> 3117 3217	M17/176-00002 <u>6/</u>
0018 <u>4/</u> 0118 0218	M17/177-00001 <u>6/</u>
0019 <u>4/</u> 0119 0219	M17/178-00001
0020 <u>4/</u> 0120 0220	M17/179-00001
0022 <u>4/</u> 0122 0222	M17/135-00003 M17/135-00005
0023 <u>4/</u> 0123 0223	M17/135-00004 M17/135-00006

\* Not for Naval Air Systems Command (AS) use.

1/ The latest version of each cable shall be applicable.

2/ These connectors have captivated center contacts.

3/ Not for Navy use.

4/ Preferred keying arrangement.

5/ Inactive for new design (see table III).

6/ Cables to be used for the +200°C thermal shock test.

7/ These connectors are assembled using the applicable crimping tool to the specified cables.

8/ Complete connector assembly shall consist of a body, center contact, intermediate contact, ferrule, and assembly instructions.

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Corona level:

Altitude: 70,000 feet.

Voltage: 200 V rms minimum.

RF high potential withstanding voltage:

800 V rms, between center conductor and intermediate conductor.

200 V rms, between intermediate conductor and outer conductor at 5 MHz to 7.5 MHz.

Leakage current: Not applicable.

Cable retention force (for cable .200 inch to .325 inch outside dimension). 40 pounds minimum.

Coupling mechanism retention force: Not applicable.

Rise time degradation: 400 picoseconds maximum. (Not applicable to connectors using twin conductor cables.)

Connector durability: 500 cycles minimum at 12 cycles per minute maximum.

Part or Identifying Number (PIN): M49142/06- (dash number from table I).

Group qualification: See table II.

Cross-reference of cables: See table III.

Retention of qualification: See table IV.

TABLE II. Group qualification. 1/

Groups	Submission and qualification of any of the following dash numbers	Qualifies the following dash numbers
I	*X01 *X02 *X05 *X06 *X09	*X01 *X02 *X05 *X06 *X09
II	*X03 *X04 *X10 *X11	*X03 *X04 *X10 *X11
III	*X07 *X08	*X07 *X08
IV	*X13 *X14 *X15 *X18	*X13 *X14 *X15 *X18
V	*X16 *X17	*X16 *X17
VI	*X19 *X20	*X19 *X20
VII	*012 *112 *212 *021 *121	*012 *112 *212 *021 *121
VIII	*022 *122 *222 *023 *123 *223	*022 *122 *222 *023 *123 *223

1/ If a connector manufacturer produces a connector which meets all the requirements for two or more connector PIN'S (within same series), the manufacturer may receive qualification approval for two or more connector PINs by qualifying the one connector. It is not necessary that such connectors be in the same group. Each connector, however, must be marked with its own appropriate PIN. For group qualification, the connectors must be of similar design. Qualification of connectors qualifies connectors of the same body material and finish only. \* Designates body material and finish. X designates keying (see MIL-PRF-49142).

TABLE III. Cross-reference of cables.

Preferred cable	Superseded cable
M17/177-00001	380-10045-1
M17/178-00001	D3-7619-5/336
M17/179-00001	D3-7619-5/338

TABLE IV. Retention of qualification.

Subgroup	/3 & /8		/4 & /10	/5 & /9		/6 & /11	
1	/3-0008	---	/4-0004	---	---	---	---
2	/3-0008	/8-0006	/4-0004	---	---	---	/11-0006
3	/3-0008	/8-0006	---	---	---	---	---
4	/3-0008	/8-0006	---	---	---	/6-0007	/11-0006
5	/3-0008	---	/4-0004	---	---	---	---
Units	15	9	9	0	0	3	6

NOTE: Revision letters are not used to denote changes due to the extensiveness of the changes.

## CONCLUDING MATERIAL

Custodians:  
 Army - CR  
 Navy - EC  
 Air Force - 11  
 NASA - NA  
 DLA - CC

Preparing activity:  
 DLA - CC  
 (Project 5935-4550-003)

Review activities:  
 Army - AR, AT, MI  
 Navy - AS, MC, OS, SH  
 Air Force - 19, 99