

INCH-POUND

MIL-DTL-17/54B
w/AMENDMENT 1
13 April 2010

SUPERSEDING
MIL-C-17/54B
18 July 1985

DETAIL SPECIFICATION SHEET

CABLES, RADIO FREQUENCY, FLEXIBLE, COAXIAL,
50 OHMS, M17/54-RG122

Inactive for new design after 13 August 1993. For
new design use MIL-C-17/187.

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 sheet and MIL-DTL-17.

NOTE: This cable uses PVC material and is not to be used in enclosed environments or
shipboard applications. The replacements that are to be used in enclosed areas or
shipboard applications are referenced in the following table.

The Air Force has restricted use of PVC in aerospace and ground support
applications.

Cables listed on the current QPL may continue to be manufactured and supplied for
existing enclosed applications only for a period not to exceed 3 years from the date of this
specification.

TABLE I. Cross-reference data.

Current Part or Identifying Number (PIN)	Replacement PIN
M17/54-RG122	M17/187-00001

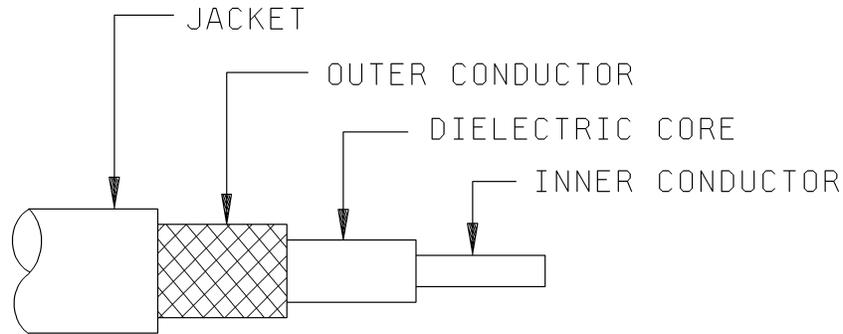


FIGURE 1. Configuration.

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TABLE II. Description.

Components	Construction details												
Inner conductor	Twenty-seven strands of tinned copper wire, each strand 0.005 inch diameter. Overall diameter: 0.0308 inch \pm 0.0020.												
Dielectric core	Type A-1: Solid, polyethylene. Diameter: 0.096 inch \pm 0.003.												
Outer conductor	Double braid of AWG #36, tinned copper wire. Diameter: 0.126 inch maximum. <p style="text-align: right;"><u>Alternate</u></p> <table style="width: 100%; border: none;"> <tr> <td>Coverage:</td> <td style="text-align: center;">95.3% nominal</td> <td style="text-align: center;">99.3% nominal</td> </tr> <tr> <td>Carriers:</td> <td style="text-align: center;">16</td> <td style="text-align: center;">24</td> </tr> <tr> <td>Ends:</td> <td style="text-align: center;">6</td> <td style="text-align: center;">5</td> </tr> <tr> <td>Picks/inch:</td> <td style="text-align: center;">12.9 \pm 10%</td> <td style="text-align: center;">12.2 \pm 10%</td> </tr> </table>	Coverage:	95.3% nominal	99.3% nominal	Carriers:	16	24	Ends:	6	5	Picks/inch:	12.9 \pm 10%	12.2 \pm 10%
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Carriers:	16	24											
Ends:	6	5											
Picks/inch:	12.9 \pm 10%	12.2 \pm 10%											
Jacket	Type IIa: PVC. Diameter: 0.160 inch \pm 0.005.												

ENGINEERING INFORMATION

Continuous working voltage: 1,400 V rms, maximum.

Operating frequency: 1 GHz, maximum.

Velocity of propagation: 65.9 percent, nominal.

Power rating: See figure 2.

Operating temperature range: -40°C to +85°C.

Inner conductor properties:

DC resistance (maximum at 20°C): 1.79 ohms per 100 feet.

Elongation: 10 percent, minimum.

Tensile strength: Not applicable.

Engineering notes: This cable useful in general purpose medium low temperature applications.
(See connector series "TNC", "BNC" and "SMA" in accordance with MIL-PRF-39012.)

REQUIREMENTS

Dimensions, configuration, and descriptions: See figure 1 and table II.

Environmental and mechanical:

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Visual and mechanical examination:

Out-of-roundness: Not applicable.

Eccentricity: 10 percent, maximum.

Adhesion of conductors:

Inner conductor to core: 1.3 pounds, minimum; 13 pounds, maximum.

Aging stability: $+98^{\circ}\text{C} \pm 2^{\circ}\text{C}$.

Stress crack resistance: Not applicable.

Outer conductor integrity: Not applicable.

Cold bend: $-55^{\circ}\text{C} \pm 2^{\circ}\text{C}$.

Dimensional stability: $+85^{\circ}\text{C} \pm 2^{\circ}\text{C}$.

Inner from conductor core: 0.062 inch, maximum.

Inner conductor from jacket: 0.125 inch, maximum.

Contamination: Applicable.

Bendability: Not applicable.

Flammability: Not applicable.

Weight: 0.021 pound per foot, maximum.

Electrical:

Continuity: Applicable.

Spark test: 3,000 V rms, +10%, -0%.

Voltage withstanding: 5,000 V rms, +10%, -0%.

Insulation resistance: Not applicable.

Corona extinction voltage: 1,900 V rms, minimum.

Characteristic impedance: 50 ohms ± 2 .

Attenuation: See figure 2.

Structural return loss: See figure 3.

Capacitance: 32.2 pF per foot, maximum.

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Capacitance stability: Not applicable.

Capacitance unbalance: Not applicable.

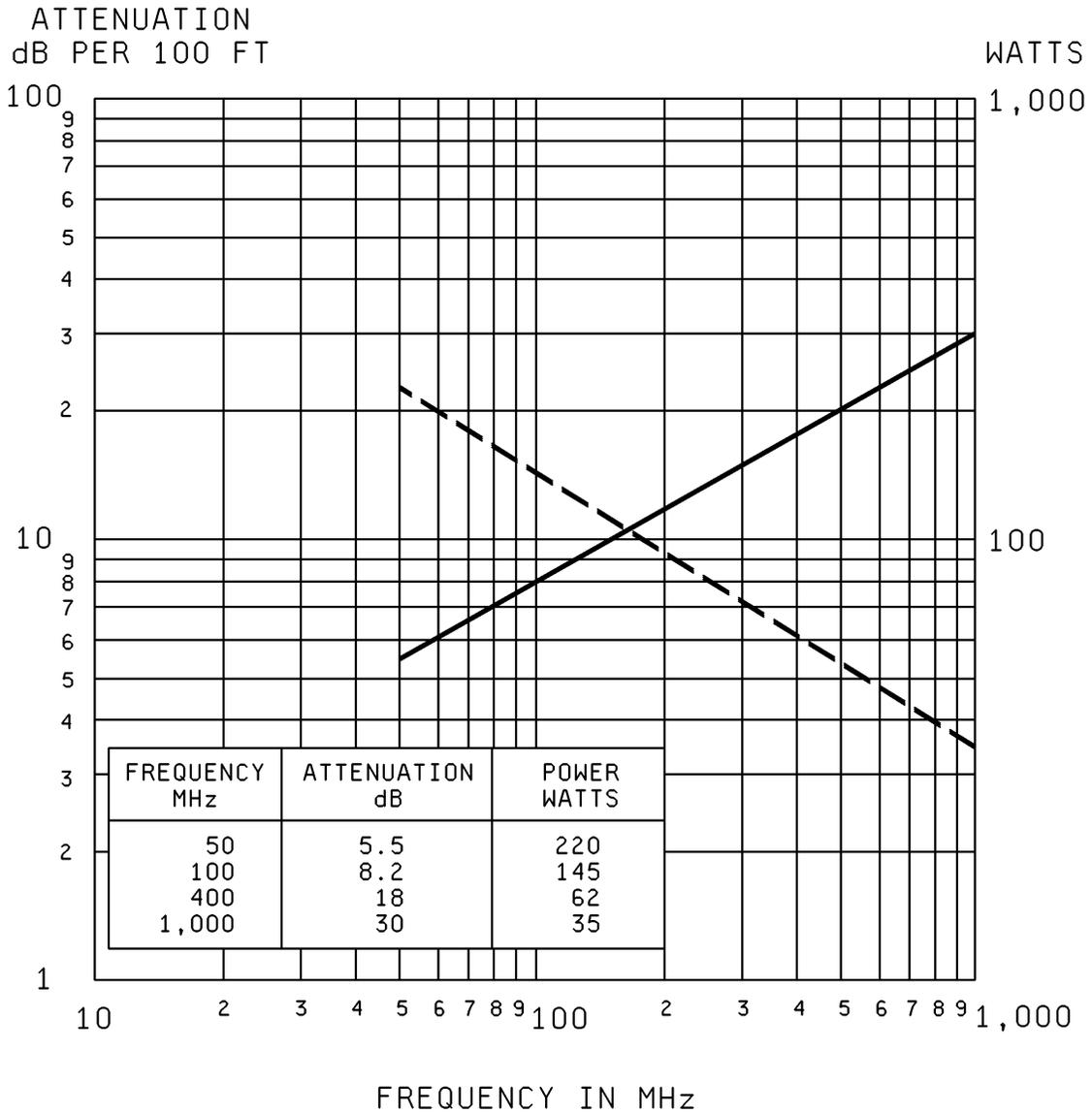
Transmission unbalance: Not applicable.

Mechanically induced noise voltage: Not applicable.

Time delay: Not applicable.

PIN: M17/54-RG122. See table I.

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MAXIMUM ATTENUATION ———

MAXIMUM POWER - - - -

AT 25°C SEA LEVEL

Tabulated values are for reference purposes only.
The values on the chart represent the requirements.

FIGURE 2. Power rating and attenuation.

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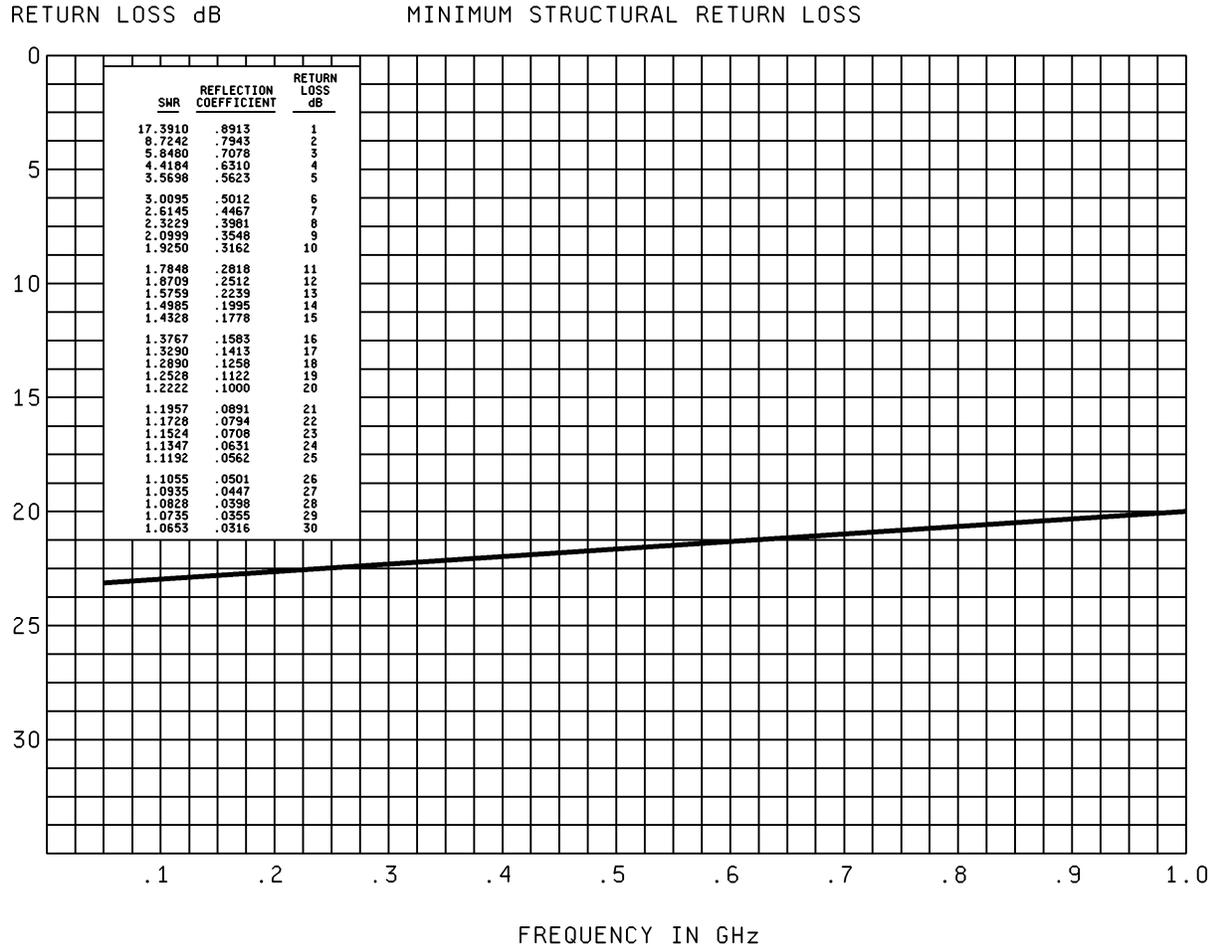


FIGURE 3. Structural return loss.

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Amendment notations. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations.

Referenced documents. In addition to MIL-DTL-17, this document references the following:

MIL-PRF-39012
MIL-C-17/187

CONCLUDING MATERIAL

Custodians:

Army – CR
Navy – EC
Air Force – 85
DLA - CC

Preparing activity:
DLA - CC

(Project 6145-2010-026)

Review activities:

Army – AT, CR4, MI
Navy – AS, MC, OS, SH
Air Force – 19, 99
DLA - IS

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.daps.dla.mil>.