INCH-POUND

MIL-DTL-17/60D
w/AMENDMENT 1
12 October 2006

SUPERSEDING
MIL-DTL-17/60D
4 January 2006

DETAIL SPECIFICATION SHEET

CABLES, RADIO FREQUENCY, FLEXIBLE, COAXIAL, 50 OHMS, M17/60-RG142.

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.

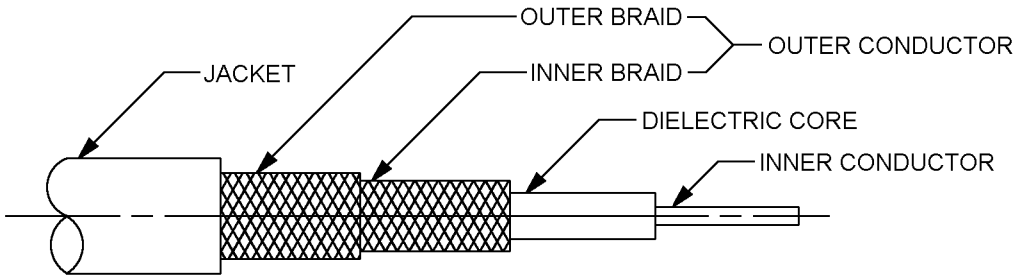


FIGURE 1. Configuration.

TABLE I. Description.

Components	Construction details
Inner conductor	Solid silver-coated, copper covered, steel wire Overall diameter: 0.037 inch ± 0.001
Dielectric core	Type F-1: Solid, extruded PTFE Diameter: 0.116 inch ± 0.005
Outer conductor	Double braid of AWG #36 silver-coated copper wire Diameter: 0.171 inch maximum
Inner braid	Coverage: 94.8% nominal Carriers: 16 Ends: 7 Picks/inch: 11.5 ± 10%
Outer braid	Coverage: 93.1% nominal Carriers: 16 Ends: 7 Picks/inch: 14.5 ± 10%
Jacket	Type IX: FEP Diameter: 0.195 inch ± 0.005

ENGINEERING INFORMATION

Configuration: See figure 1.

Capacitance: 29.3 pF per foot, nominal.

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

Operating frequency: 12.4 GHz, maximum.

Velocity of propagation: 69.5 percent, nominal.

Power rating: See figure 2.

Operating temperature range: -55° to +200°C.

Weight: 0.043 pound per foot, nominal.

Inner conductor properties:

DC resistance (maximum at 20°C): 1.95 ohms per 100 feet.

Elongation: 1 percent, minimum.

Tensile strength: 110 $klb_f/inch^2$, minimum.

Engineering notes: This cable useful in general purpose, high temperature applications. (See connector series "TNC", "BNC", and "SMA" in accordance with MIL-PRF-39012. NATO preferred type NWR-25.)

REQUIREMENTS

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

Environmental and mechanical:

Visual and mechanical examination:

Eccentricity: 10 percent, maximum.

Adhesion of conductors:

Inner conductor to core: 4 pounds, minimum; 15 pounds, maximum.

Stress crack resistance: +230° ± 5°C. Mandrel size: Seven times the jacket diameter.

Dimensional stability: +200° ± 5°C.

Inner conductor from core: 0.250 inch, maximum.

Inner conductor from jacket: 0.312 inch, maximum.

Flammability: Applicable.

Electrical:

Test frequency: 50 MHz to 12.4 GHz.

Spark test: 2,000 V rms, minimum.

Voltage withstanding: 5,000 V rms, minimum.

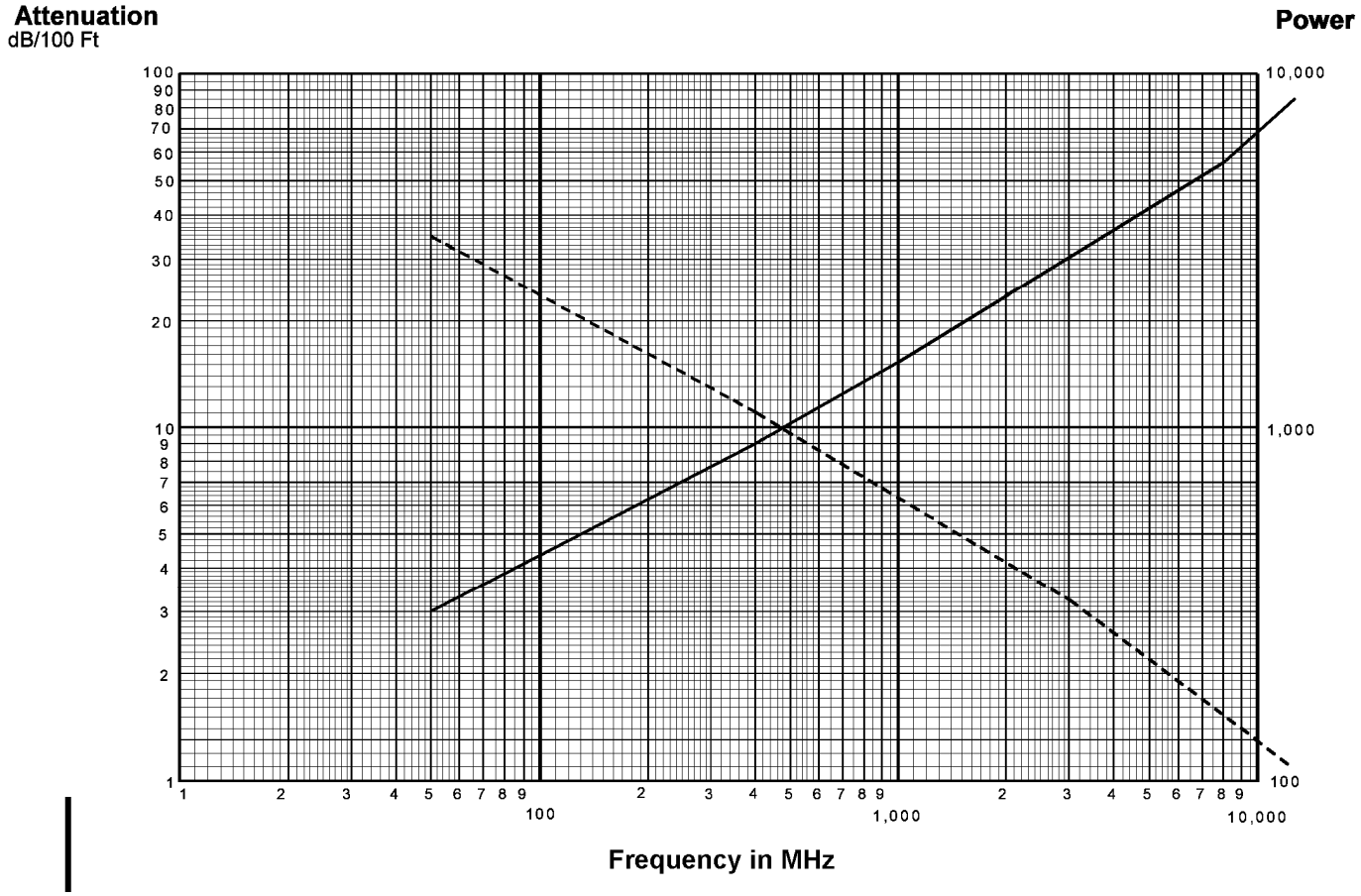
Corona extinction voltage: 1,900 V rms, minimum.

Characteristic impedance: 50 ohms ± 2.

Attenuation: See figure 2.

Structural return loss: See figure 3.

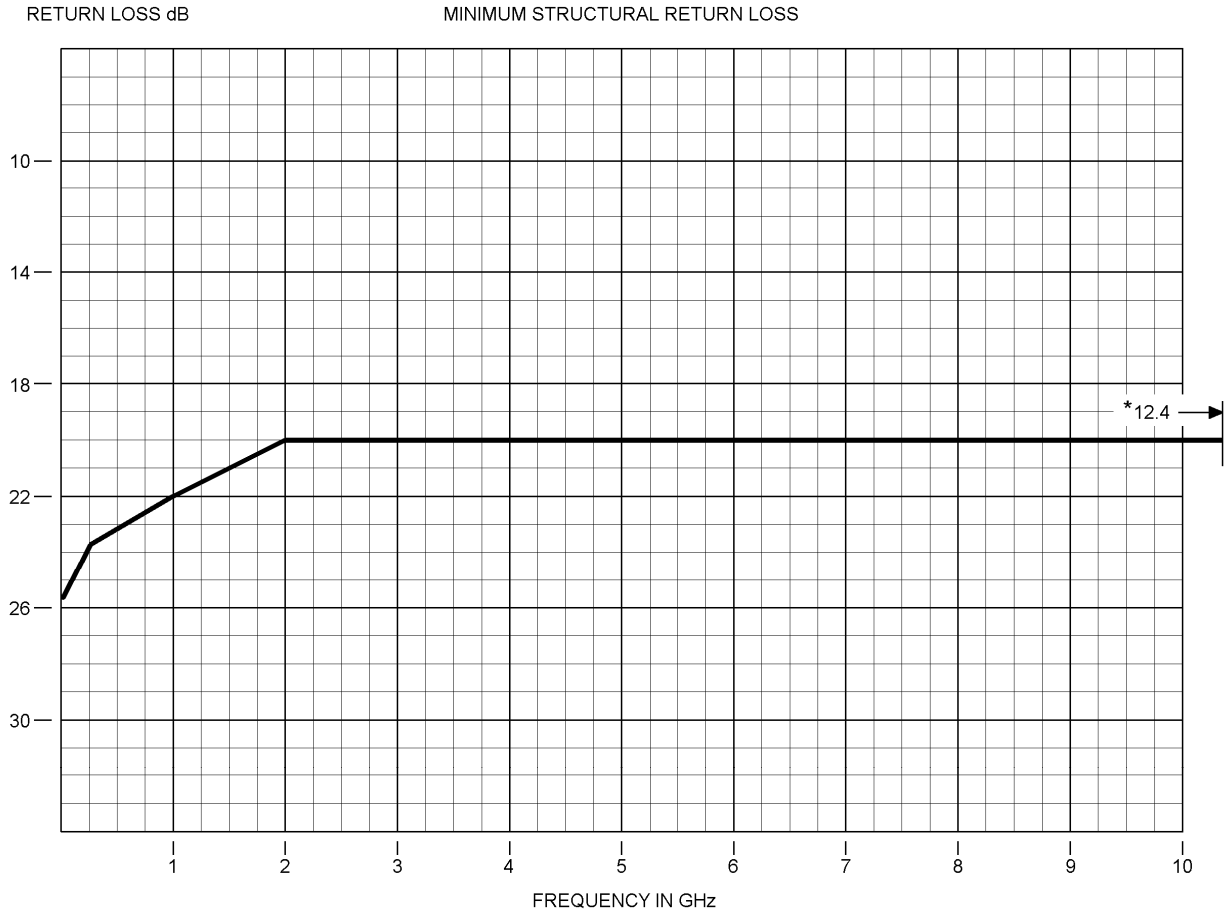
Part or Identifying Number (PIN): M17/60-RG142.



Frequency MHz	Attenuation dB	Power watts
50	3.0	3500
100	4.4	2400
400	9.3	1100
1000	15.3	650
3000	29.3	330
8000	57.8	180
12400	85.4	120

Tabulated values are for references only.
The values on the chart represent the requirements.
Maximum attenuation at 25°C, sea level ————————
Maximum power at 25°C, sea level ----------

FIGURE 2. Power rating and attenuation.



TABULATED VALUES ARE FOR REFERENCE ONLY. THE VALUES ON THE CHART REPRESENT THE REQUIREMENTS

MHz	dB
50	25.5
100	23.8
400	23.1
1000	22
2000	20
3000	20
8000	20
12400	20

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

FIGURE 3. Structural return loss.

SWR	Reflection coefficient	Return loss dB
17.3910	.8913	1
8.7242	.7943	2
5.8480	.7079	3
4.4194	.6310	4
3.5698	.5623	5
3.0095	.5012	6
2.6146	.4467	7
2.3229	.3981	8
2.0999	.3548	9
1.9250	.3162	10
1.7849	.2818	11
1.6709	.2512	12
1.5679	.2239	13
1.4985	.1995	14
1.4326	.1778	15
1.3767	.1585	16
1.3290	.1413	17
1.2880	.1259	18
1.2528	.1122	19
1.2222	.1000	20
1.1957	.0891	21
1.1726	.0794	22
1.1524	.0708	23
1.1347	.0631	24
1.1192	.0562	25
1.1055	.0501	26
1.0935	.0447	27
1.0829	.0398	28
1.0736	.0355	29
1.0653	.0316	30

FIGURE 3. Structural return loss - Continued.

Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes from the previous issue were made. 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 and relationship to the last previous issue.

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

MIL-PRF-39012

CONCLUDING MATERIAL

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

Preparing activity:
DLA - CC

(Project 6145-2006-095)

Review activities:
Army – AR, 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 http://assist.daps.dla.mil.