INCH-POUND

MIL-DTL-17/111D
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SUPERSEDING
MIL-C-17/111C
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DETAIL SPECIFICATION SHEET

CABLES, RADIO FREQUENCY, FLEXIBLE, COAXIAL, 50 OHMS, M17/111-RG303

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-C-17.

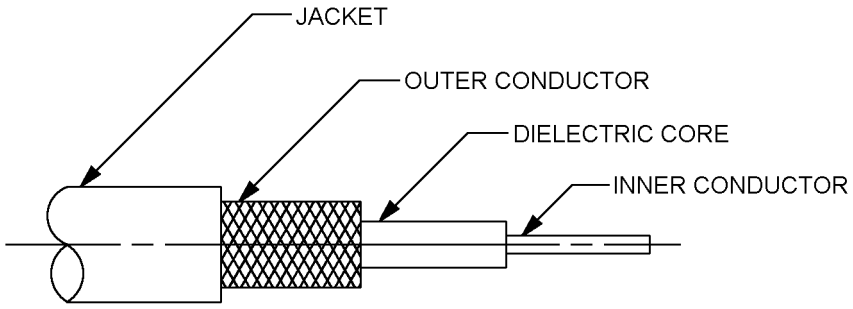


FIGURE 1. Configuration.

TABLE I. Description.

Components	Construction details
Inner conductor	Solid, silver-coated, copper-covered steel wire. Diameter: 0.037 inch ± 0.001
Dielectric core	Type F-1: Solid extruded PTFE Diameter: .116 inch ± 0.005
Outer conductor	Single braid of AWG No. 36 silver-coated, copper wire. Diameter: 0.146 inch maximum Coverage: 94.8% nominal Carriers: 16 Ends: 7 Picks/inch: 11.5 ± 10%
Jacket	Type IX: FEP Diameter: 0.170 inch ± 0.005

ENGINEERING INFORMATION

Configuration: See figure 1.

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

Operating frequency: 3 GHz, maximum.

Velocity of propagation: 69.5 percent, nominal.

Power rating: See figure 2.

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

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 is useful in general purpose, high temperature applications. (See connector series “TNC” and “BNC” in accordance with MIL-PRF-39012. NATO preferred type NWR-30.)

REQUIREMENTS

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

Environmental and mechanical:

Visual and mechanical examination:

Out-of-roundness: Not applicable.

Eccentricity: 10 percent, maximum.

Adhesion of conductors:

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

Aging stability: Not applicable.

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

Outer conductor integrity: Not applicable.

Cold bend: -55ºC ± 2ºC.

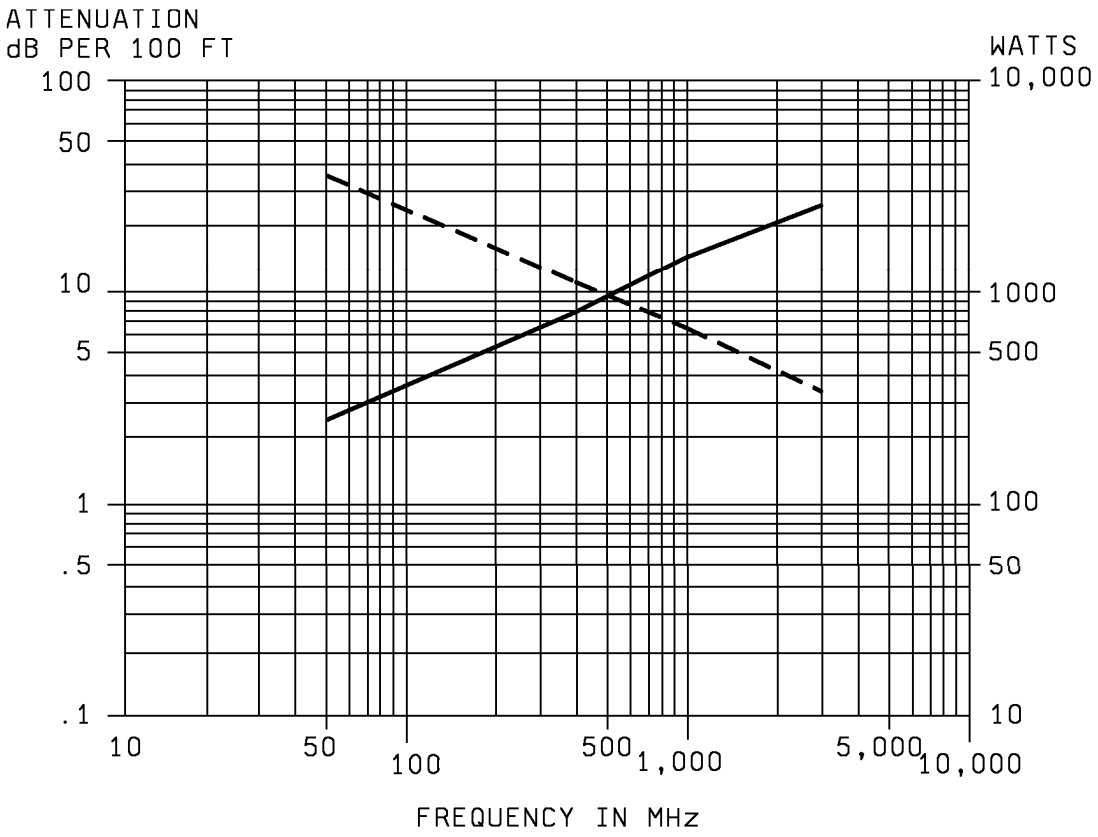
Dimensional stability: +200ºC ± 5ºC.

Inner conductor from core: 0.125 inch, maximum.

Inner conductor from jacket: 0.187 inch, maximum.

Contamination: Not applicable.

Bendability: Not applicable.



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 - - - - - - - - - -

Frequency MHz	Attenuation dB	Power watts
50	2.7	3800
400	8.6	1100
1000	15	630
3000	28	370

FIGURE 2. Power rating and attenuation.

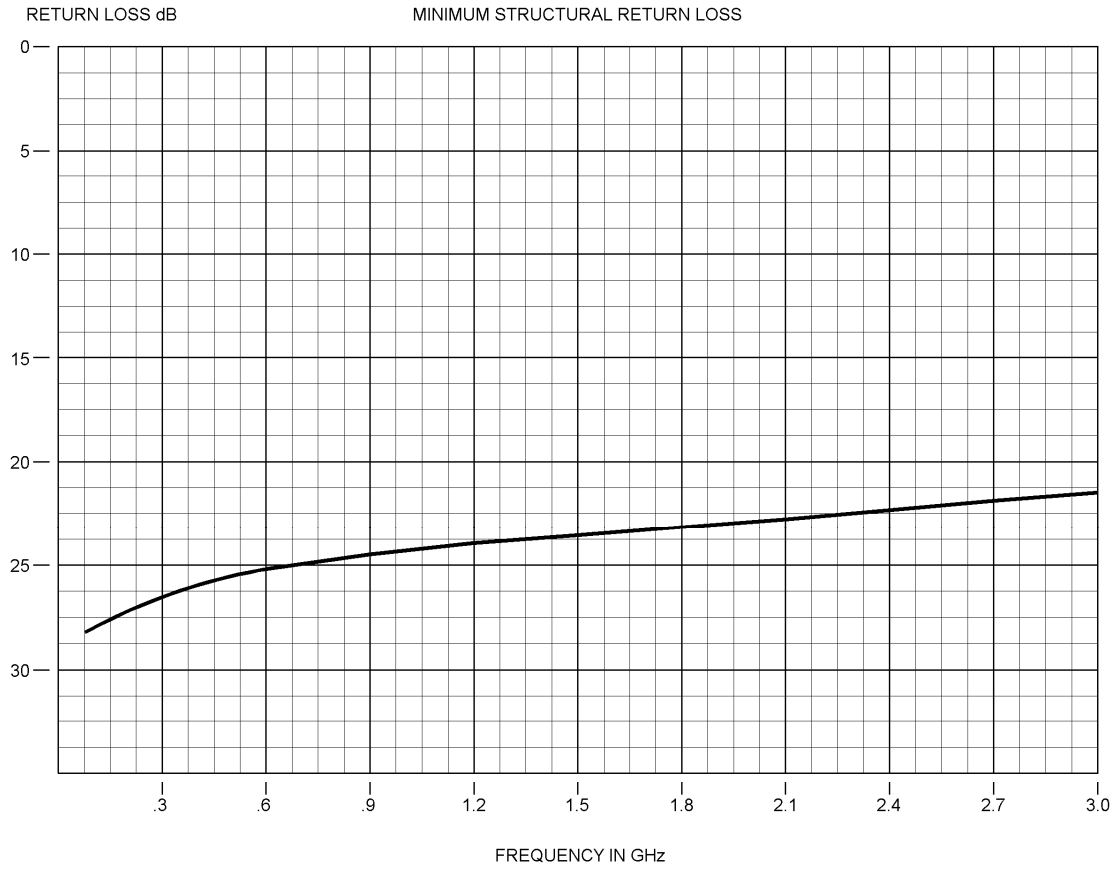


FIGURE 3. Structural return loss.

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.

Flammability: Applicable.

Weight: 0.031 pound per foot, maximum.

Electrical:

Continuity: Applicable.

Spark test: 2,000 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 ± 2 ohms.

Attenuation: See figure 2.

Structural return loss: See figure 3.

Capacitance: 32 pF per foot, maximum.

Capacitance stability: Not applicable.

Capacitance unbalance: Not applicable.

Transmission unbalance: Not applicable.

Mechanically induced noise voltage: Not applicable.

Time delay: Not applicable.

Part or Identifying Number (PIN): M17/111-RG303.

Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

Referenced documents. In addition to MIL-C-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 6145-2381-002)

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.