

INCH-POUND

MIL-DTL-17/113D
19 June 2015
SUPERSEDING
MIL-C-17/113C
7 Nov 1978

MILITARY SPECIFICATION SHEET

CABLE, RADIO FREQUENCY, FLEXIBLE, COAXIAL, 50 OHMS, M17/113-RG316

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.

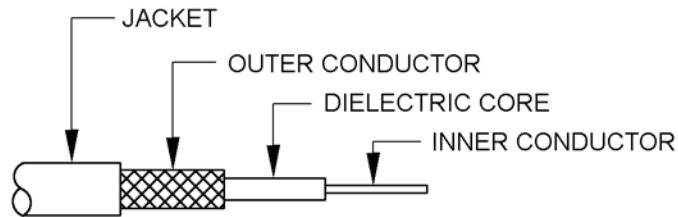


FIGURE 1. Configuration.

TABLE I. Description.

Components	Construction details
Inner conductor	Seven strands of silver-coated, annealed-copper-covered, steel wire, each strand, .0067 inch diameter. Overall diameter: 0.0201 inch \pm 0.0010.
Dielectric core	Type F-1: Solid, extruded PTFE. Diameter: 0.060 inch \pm 0.003.
Outer conductor	Single braid of AWG No. 38 silver-coated copper wire. Diameter: 0.081 inch maximum. Coverage: 95.2% nominal Carriers: 16 Ends: 5 Picks/inch: 12.0 \pm 10%
Jacket	Type IX: FEP. Diameter: 0.098 inch \pm 0.004.

AMSC N/A

FSC 6145



ENGINEERING INFORMATION:

Continuous working voltage: 900 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 at 20°C: 8.41 ohms per 100 feet.
Elongation: 10 percent, minimum.
Tensile strength: 50 klb_f/inch², minimum.

Engineering notes: This cable is useful in general purpose, high temperature applications. (See connector series "SMA", "SMB", and "SMC" per MIL-PRF-39012. NATO preferred type NWR-32).

REQUIREMENTS:

Design and construction:

Dimensions, configuration, and description: See figure 1 and table I.
Weight: 1.22 pounds per 100 feet, maximum.

Environmental and mechanical:

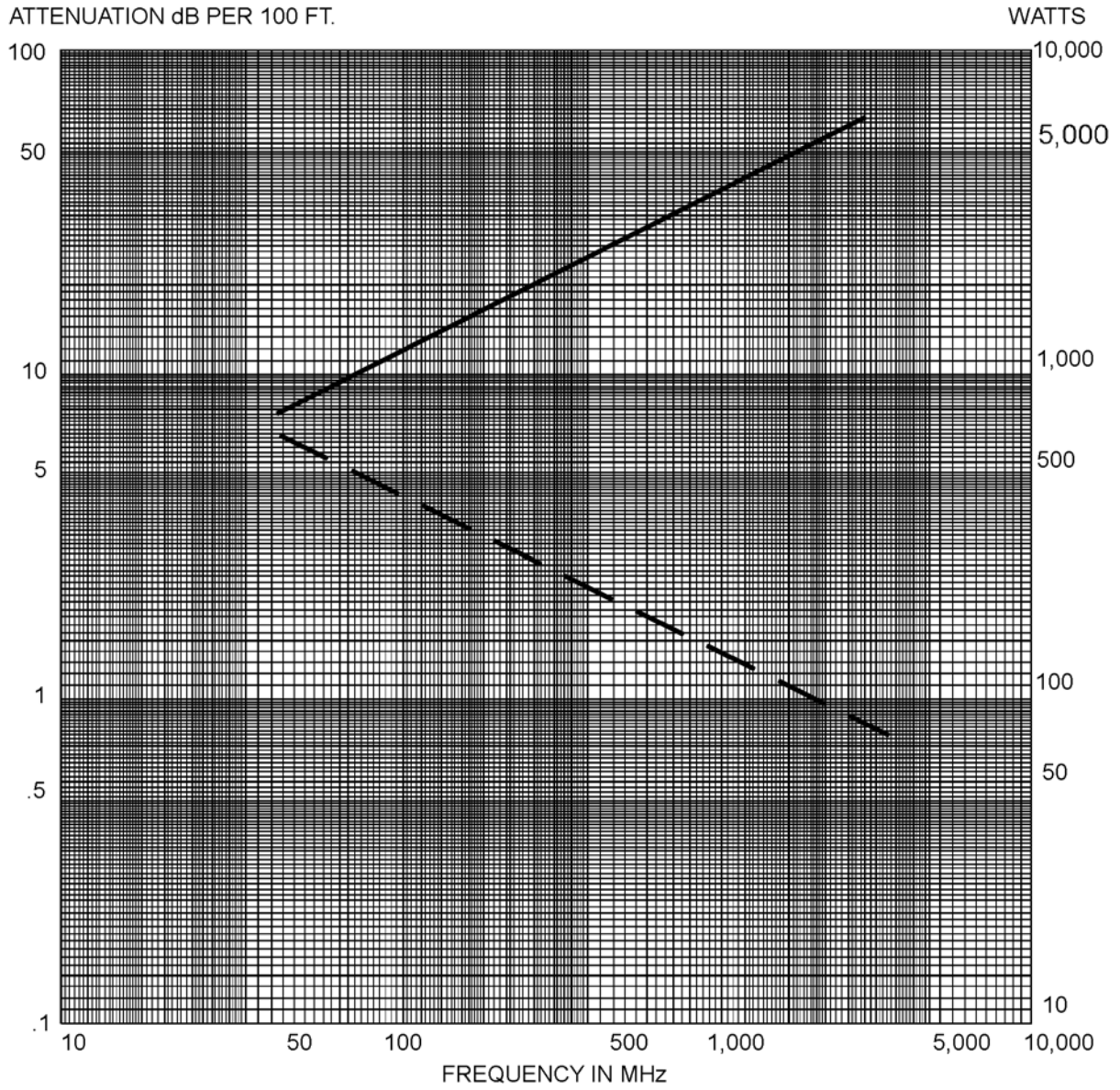
Visual and mechanical examination:
Eccentricity: 10 percent, maximum.

Adhesion of conductors:

Inner conductor to core: 2 pounds, minimum; 8 pounds, maximum.
Stress crack resistance: +230° ± 5°C; mandrel size 7 1/2 times the jacket diameter.
Cold Bend: -55° ± 2°C.
Dimensional stability: +200° ± 5°C.
Inner conductor from core: 0.187 inch, maximum.
Inner conductor from jacket: 0.187 inch, maximum.
Flammability: Applicable.

Electrical:

Capacitance: 32.0 pF per foot, maximum.
Test frequency: 50 MHz to 3 GHz.
Spark test: 2,000 Vrms, +25% -0%.
Voltage withstanding: 2,000 Vrms, minimum.
Corona extinction voltage: 1,200 Vrms, minimum.
Characteristic impedance: 50 ohms ± 2.
Attenuation: See figure 2.
Structural return loss: See figure 3.

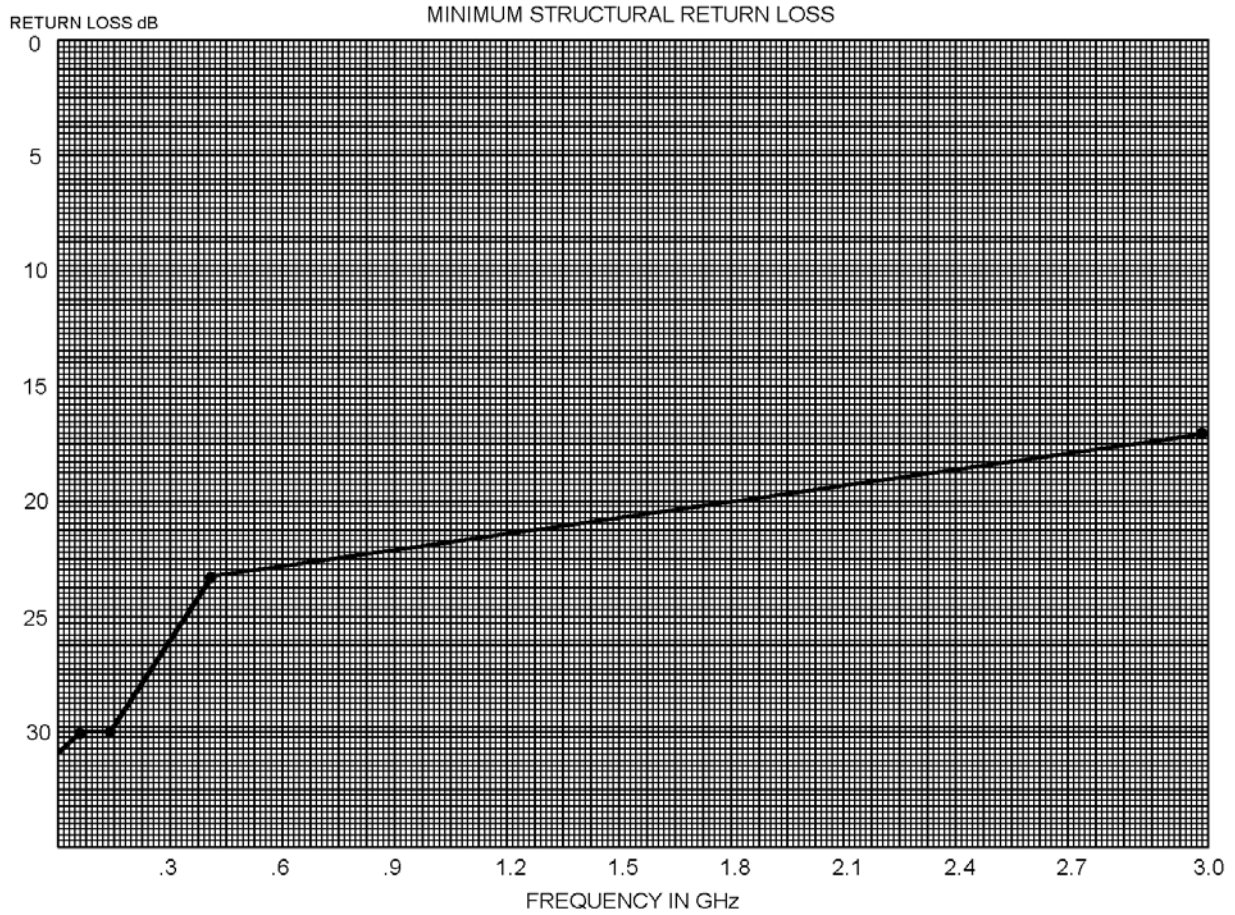


Maximum attenuation —————

Maximum power at 25°C, sea level - - - - -

Attenuation	
MHz	dB
50	7.5
100	11
400	21
1000	38
3000	58

FIGURE 2. Power rating and attenuation.



SWR	REFLECTION COEFFICIENT	RETURN LOSS dB	SWR	REFLECTION COEFFICIENT	RETURN LOSS dB
17.3910	.8913	1	1.3767	.1585	16
8.7242	.7943	2	1.3290	.1413	17
5.8480	.7079	3	1.2880	.1259	18
4.4194	.6310	4	1.2528	.1122	19
3.5698	.5623	5	1.2222	.1000	20
3.0095	.5012	6	1.1957	.0891	21
2.6146	.4467	7	1.1726	.0794	22
2.3229	.3981	8	1.1524	.0708	23
2.0999	.3548	9	1.1347	.0631	24
1.9250	.3162	10	1.1192	.0562	25
1.7849	.2818	11	1.1055	.0501	26
1.6709	.2512	12	1.0935	.0447	27
1.5769	.2239	13	1.0829	.0398	28
1.4985	.1995	14	1.0736	.0355	29
1.4326	.1778	15	1.0653	.0316	30

MHz	dB
50	30
100	30
400	23
1000	21
3000	17

FIGURE 3. Structural return loss.

Part or Identifying Number (PIN): M17/113-RG316.

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

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 – 85
DLA - CC

Preparing activity:
DLA - CC

(Project 6145-2015-018)

Review activities:

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

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.dla.mil>.