

INCH-POUND

MIL-DTL-17/227A  
27 MAY 2016  
SUPERSEDING  
MIL-DTL-17/227  
26 August 1998

### DETAIL SPECIFICATION SHEET

CABLE, RADIO FREQUENCY, FLEXIBLE, COAXIAL,  
50 OHMS, LOW SMOKE, LOW LOSS DIAMETER 1.200

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

The requirements for acquiring the cable described herein shall consist  
of this specification and MIL-DTL-17.

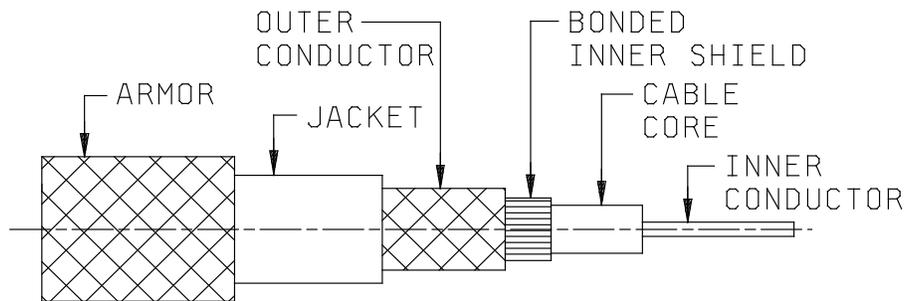


FIGURE 1. General configuration.

TABLE I. Description.

Components	Construction details	Diameters
Inner conductor	Bare copper tube	.349 ±.003 inch (8.86 ±0.09 mm)
Dielectric core	Cellular polyethylene	.920 ±.010 inch (23.37 ±0.25 mm)
Inner shield	.003 inch bonded aluminum tape	.926 ±.010 inch (23.52 ±0.25 mm)
Outer conductor	Single braid of 30 AWG, tinned copper wire.  Coverage: 91.3 percent, nominal Carriers: 48 Ends: 7 Picks/inch: 6.0	.973 ±.010 inch (24.71 ±0.25 mm)
Jacket	Type XIV, crosslinked polyolefin	1.200 ±.025 inch (30.48 ±0.64 mm)
Armor	Single braid of aluminum alloy wire.	1.300 inch (33.02 mm), maximum.



ENGINEERING INFORMATION:

Continuous working voltage: 4,500 V rms, maximum.

Operating frequency: 2.5 GHz, maximum.

Velocity of propagation: 83 percent, nominal.

Power rating: See figure 2.

Operating temperature range: -30° to +105°C.

Inner conductor properties: DC resistance, maximum, at 20°C: .040 ohms per 100 feet.

REQUIREMENTS:

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

Environmental and mechanical:

Visual and mechanical examination: Applicable.

Out-of-roundness: Not applicable.

Eccentricity: 10 percent, maximum.

Adhesion of conductors:

Inner conductor to core: 40 pounds, minimum; 200 pounds maximum.

Aging stability: +98° ±2°C.

Cold bend: -30°C ±2°C.

Dimensional stability: +85°C ±2C.

Inner conductor from core: 0.62 inch (mm), maximum.

Inner conductor from jacket: .125 inch (mm), maximum.

Contamination: Not applicable.

Flame propagation: Applicable.

Acid gas generation: 2.0 percent, maximum.

Halogen content: 0.2 percent, maximum.

Immersion test:

Tensile strength, percent of unaged minimum, 50.

Elongation, percent of unaged minimum: 50.

Smoke index: 25 maximum.

Toxicity index: 5 maximum.

Durometer hardness (type A) 80 minimum.

Weathering: Applicable.

Abrasion resistance: 75 cycles minimum (jacket only).

Tear strength: 35 pounds per inch.

Heat distortion: 30 percent maximum.

Physical tests on unaged jacket.

    Tensile strength: 1,300 psi, minimum.

    Elongation: 160 percent, minimum.

Physical tests on aged jacket:

    Air oven:

        Tensile strength, percent minimum: 60.

        Elongation: percent minimum: 60.

Hot oil immersion:

    Tensile strength, percent minimum: 50.

    Elongation, percent minimum: 50.

Tensile strength and elongation: 1,300psi, 160 percent minimum.

Weight: 686 Lbs/1000 ft, maximum.

    758 Lbs/1000 ft (armored), maximum.

Electrical:

    Spark test: 8,000 V rms, minimum.

    Voltage withstanding: 8,000 V rms, minimum.

    Corona extinction voltage: 6,000 V rms, minimum.

    Characteristic impedance: 50  $\pm$ 2 ohms.

    Attenuation: See figure 2.

    Structural return loss: See figure 3.

Capacitance: 27.0 pF per feet, maximum.

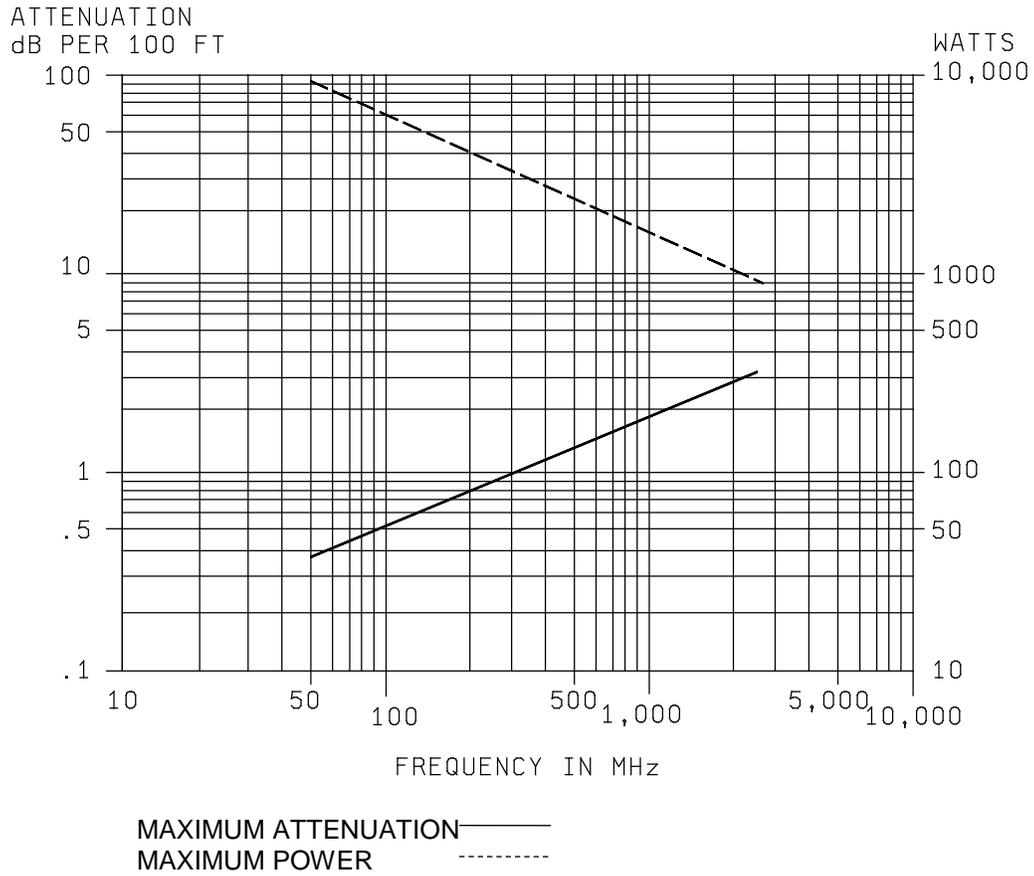
Capacitance unbalance: Not applicable.

Transmission unbalance: Not applicable.

Mechanically induced noise: Not applicable.

Time delay: Not applicable.

Part or Identifying Number (PIN): M17/227-00001 (unarmored)  
M17/227-00002 (armored).



Tabulated values are for reference only. The values on the graph represent the requirements for attenuation. The data regarding power rating are for information only.

Frequency MHz	Attenuation dB	Power Watts
50	.36	8260
150	.64	4660
450	1.14	2600
900	1.74	1670
1500	2.32	1260
2000	2.75	1060
2500	3.12	940

FIGURE 2. Power rating and attenuation.

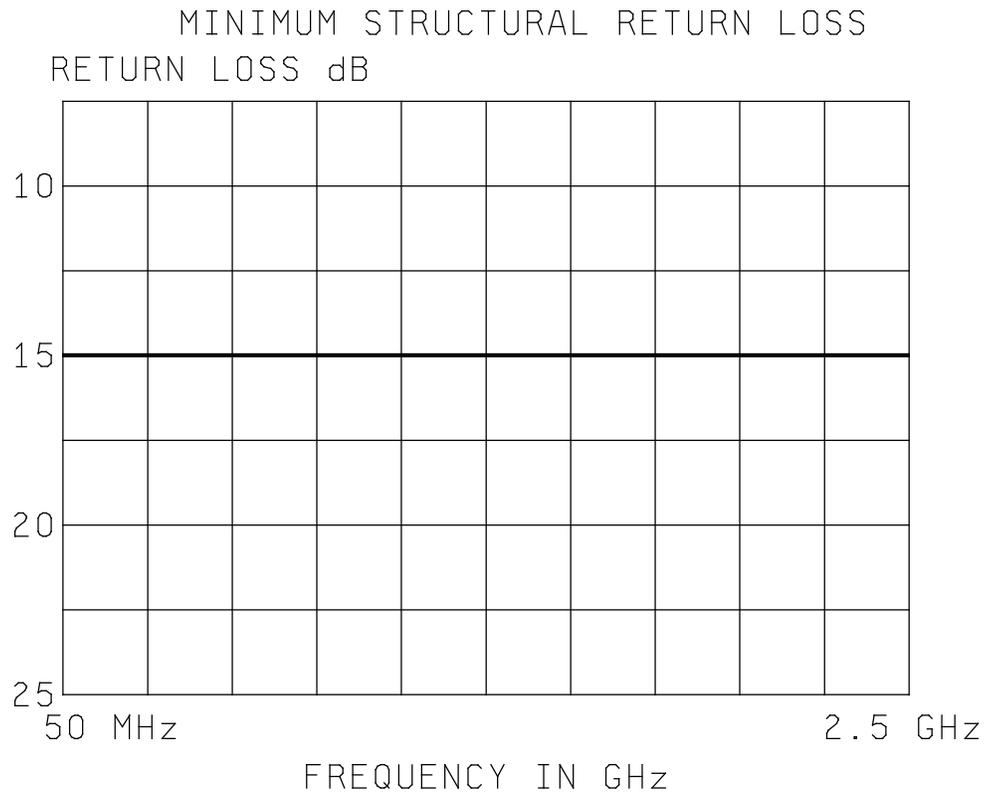


FIGURE 3. Structural return loss.

CONCLUDING MATERIAL

Custodians:

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

Preparing activity:  
DLA - CC

(Project: 6145-2016-037)

Review activities:

Army - AR, AT, CR4, MI  
Navy - AS, MC, OS, SH  
Air Force - 19, 99  
NASA - NA

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>.