

DETAIL SPECIFICATION SHEET

CABLE, RADIO FREQUENCY, FLEXIBLE COAXIAL,  
50 OHMS, M17/188-00001

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.

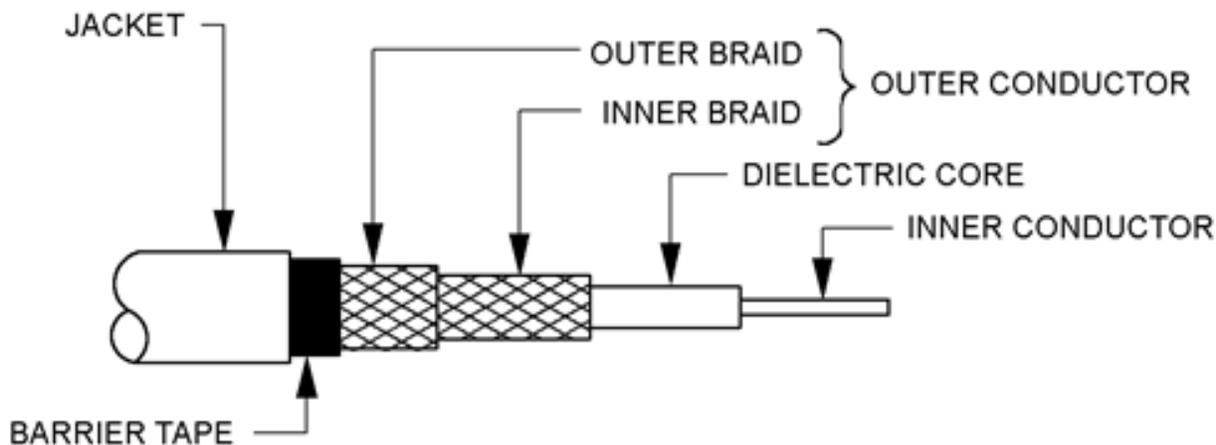


FIGURE 1. Configuration.

TABLE I. Description.

Components	Construction details	
Inner conductor	Solid silver-coating copper wire. Diameter: .0556 inch ± .0010.	
Dielectric core	Type A-1: Solid polyethylene. Diameter: .185 inch ± .004.	
Outer conductor	Double braid of AWG No. 34, silver-coated copper wire. Diameter: .255 inch maximum.	
	<u>Alternate</u>	
Inner	Coverage: 95.0% nominal	95.0% nominal
	Carriers: 16	24
Outer	Ends: 9	6
	Picks/inch: 5.9 ± 10%	8.8 ± 10%
Outer	Coverage: 95.0% nominal	95.0% nominal
	Carriers: 16	24
	Ends: 9	6
	Picks/inch: 8.7 ± 10°	13.0 ± 10°



MIL-DTL-17/188C  
w/AMENDMENT 1

TABLE I. Description – Continued.

Components	Construction details
Barrier tape	A .001 inch thick polyester tape faced with a .002 inch thick layer of aluminum. The tape will be applied with a 50% lap, aluminum face toward the outer conductor. Diameter: .265 inch maximum.
Jacket	Cross-linked polyolefin. Diameter: .332 inch $\pm$ .004.

REQUIREMENTS:

Continuous working voltage: 2,200 V rms, maximum.  
 Operating frequency: 11 GHz, maximum.  
 Velocity of propagation: 65.9 percent, nominal.  
 Power ratings: See figure 2.  
 Operating temperature range: -30°C to +85°C.  
 Inner conductor properties:  
 DC resistance (maximum at +20°C): 0.348 ohms per 100 feet.  
 Elongation: 25 percent, minimum.

Dimensions, configuration, and descriptions: 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: 5 pounds, minimum; 45 pounds, maximum.

Aging stability: +98°C  $\pm$  2°C.  
 Cold bend: -30°C  $\pm$  2°C.  
 Dimensional stability: +85°C  $\pm$  2°C.  
 Inner conductor from core: .062 inch, maximum.  
 Inner conductor from jacket: .125 inch, 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 minimum.  
 Heat distortion: 30 percent maximum distortion.

MIL-DTL-17/188C  
w/AMENDMENT 1

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: 1,300 psi, 160 percent minimum.

Weight: 9.9 pounds per 100 feet maximum.

Electrical:

Spark test: 8,000 V rms, minimum.

Voltage withstanding: 7,000 V rms, minimum.

Corona extinction voltage: 3,000 V rms, minimum.

Characteristic impedance:  $50 \pm 2$  ohms.

Attenuation: See figure 2.

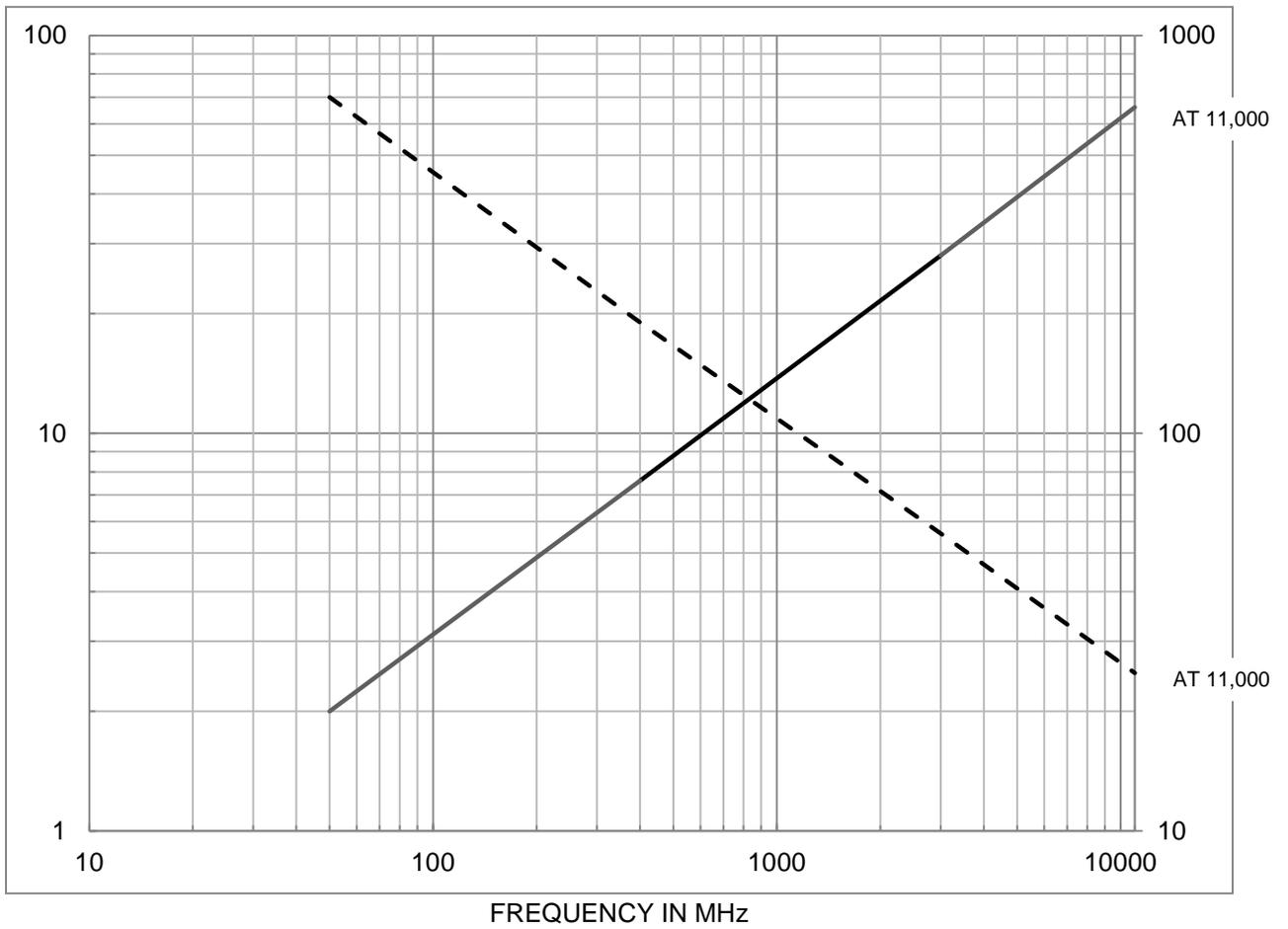
Structural return loss: See figure 3.

Capacitance: 32.2 pF per foot, maximum.

Part or Identifying Number (PIN): M17/188-00001.

Attenuation  
dB / 100 Ft

WATTS

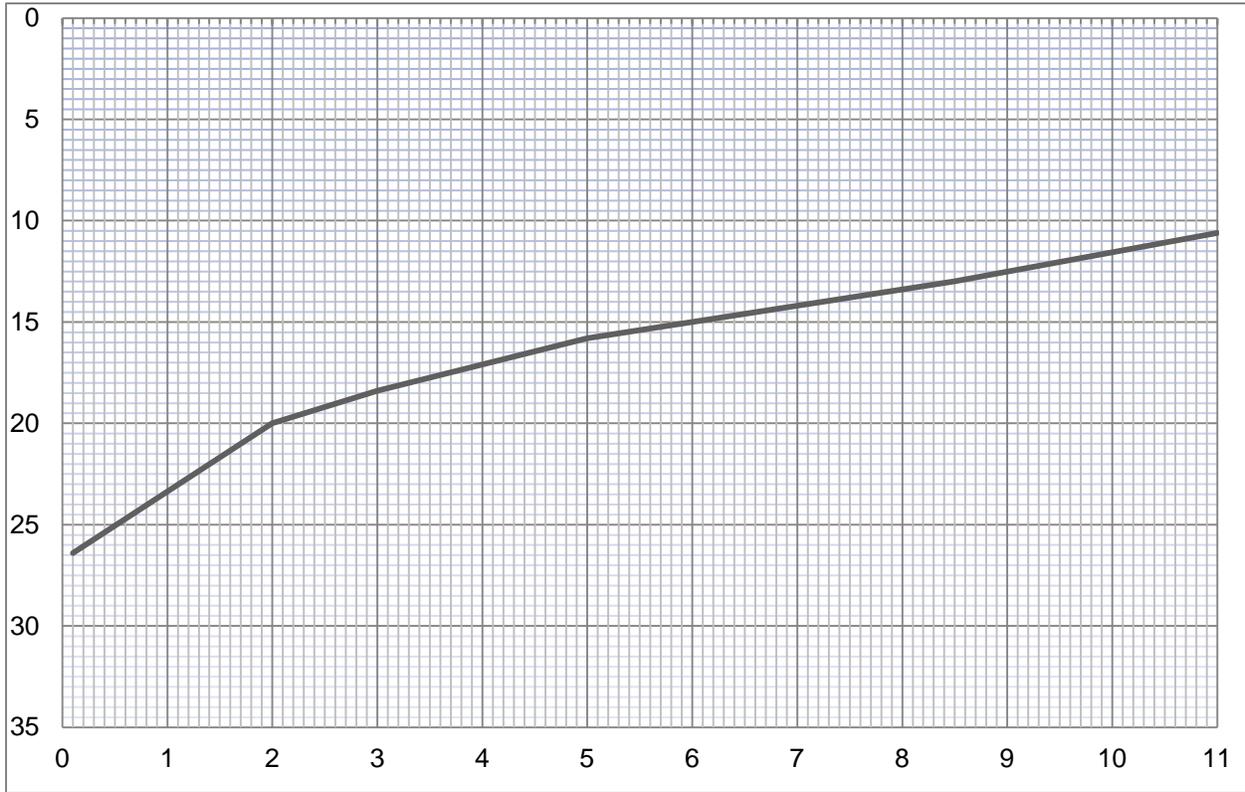


Maximum attenuation —————  
Maximum power - - - - -  
At 25°C sea level.

FIGURE 2. Power rating and attenuation.

RETURN LOSS dB

MINIMUM STRUCTURAL RETURN LOSS



FREQUENCY IN GHz

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

FIGURE 3. Structural return loss.

MIL-DTL-17/188C  
w/AMENDMENT 1

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. This document references MIL-DTL-17.

CONCLUDING MATERIAL

Custodians:

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

Preparing activity:  
DLA-CC

Review activities:

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

(Project 6145-2016-006)

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>.