

INCH-POUND

MIL-DTL-17/192D
w/AMENDMENT 2
13 January 2009
SUPERSEDING
w/AMENDMENT 1
23 August 2007

DETAIL SPECIFICATION SHEET

CABLE, RADIO FREQUENCY, FLEXIBLE, COAXIAL,
50 OHMS, LOW SMOKE, M17/192-00001, M17/192-00002 (TEMPERATURE STABILIZED)
AND M17/192-00003 (WATER RESISTANT)

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.

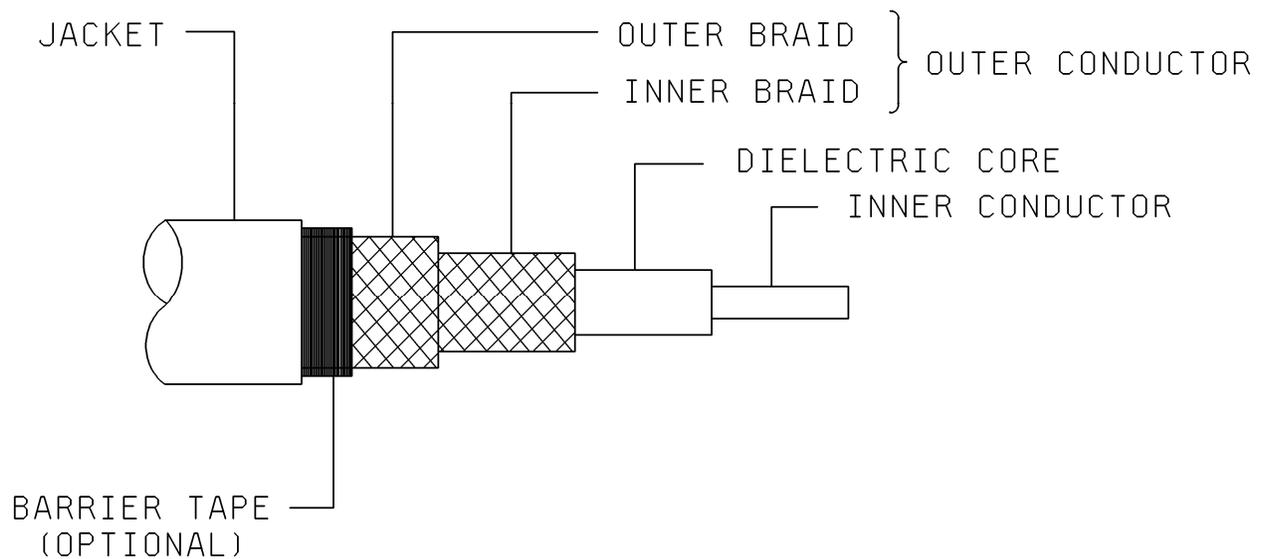


FIGURE 1. General configuration.

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TABLE I. Description. 1/

Component	Construction
Inner conductor	Solid bare copper wire. Diameter: .106 inch \pm 0.001
Dielectric core	Type A-I: Solid polyethylene Diameter: .370 inch \pm 0.010
Outer conductor	Double braid of AWG No. 33, bare copper wire. Diameter: .445 inch, maximum.
Inner braid	Coverage: 94.8% nominal Carriers: 24 Ends: 10 Picks/inch: 5.4 \pm 10%
Outer braid <u>1/</u>	Coverage: 93.6% nominal Carriers: 24 Ends: 8 Picks/inch: 10.6 \pm 10%
Barrier tape (Optional)	A .001 inch thick polyester tape faced with a .002 inch thick layer of aluminum. The tape will be applied with a 50% overlap. Aluminum face toward the outer conductor. Diameter: .455 inch maximum.
Jacket	Cross linked polyolefin. Diameter: .545 inch \pm .010

1/ Water barrier: Viscous waterproofing compound applied to outer braid (under jacket). Applies to M17/192-00003 only.

ENGINEERING INFORMATION

Continuous working voltage: 5,200 V rms, maximum.

Operating frequency: 1 GHz, maximum.

Velocity of propagation: 65.9 percent, nominal.

General configuration: See figure 1.

Power rating: See figure 2.

Operating temperature range: -30°C to +85°C

Inner conductor properties:

DC resistance (maximum at 20°C): 0.0941 ohm per 100 feet.

Elongation: 25 percent, minimum.

Tensile strength: Not applicable.

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Engineering notes: This cable is useful in general purpose applications, medium low temperature applications. (See connector series "N" and "SC" in accordance with MIL-PRF-39012.) These cables were redesigned to meet the vertical flame test. A water blocked cable option has also been included.

REQUIREMENTS

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

Environmental and mechanical:

Visual and mechanical examination: Applicable.

Out-of-roundness: Applicable.

Eccentricity: 10 percent, maximum.

Adhesion of conductors:

Inner conductor to core: 15 pounds, minimum; 150 pounds, maximum.

Aging stability: +98°C \pm 2°C.

Stress crack resistance: Not applicable.

Outer conductor integrity: Not applicable.

Cold bend: -30°C \pm 2°C.

Dimensional stability: +85°C \pm 2°C.

Inner conductor from core: .125 inch, maximum.

Inner conductor from jacket: .250 inch, maximum.

Temperature stabilization: (Applicable to M17/192-00002 cable only). 1/

Temperature cycle at -28°C within 0°C and -5°C, for 24 hours.

Temperature cycle at +65°C within +5°C and -0°C, for 24 hours.

Contamination: Not applicable.

Bendability: Not applicable.

Flame propagation: Applicable.

Acid gas generation: 2.0 percent, maximum.

1/ The cable (1,000 feet) to be treated shall be wound on a spool having a 12 inch minimum barrel diameter before, during and after cycling. The temperature cycling shall be repeated 3 times. The time between cycling shall not exceed 30 minutes. This cable must be able to pass the dimensional stability test following temperature cycling.

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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.

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: Applicable

Tensile strength, percent minimum: 50.

Elongation, percent minimum: 50.

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

Weight: 24.8 pounds per 100 feet, maximum.

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Water resistance (Applicable to M17/192-00003, only): 100 feet of coiled cable shall be immersed in a 4 foot deep water tank (water at ambient temperature) for a minimum of 6 hours. The weight of the cable shall be measured prior to the immersion test. The change in the cable weight before and after the immersion test shall be less than 2%. The ends of the specimen shall be maintained outside of the water tank in order to discount any water leakage introduced from the cable ends.

Electrical:

Continuity: Applicable.

Spark test: 8,000 V rms, minimum.

Voltage withstanding: 12,000 V rms, minimum

Insulation resistance: Not applicable.

Corona extinction voltage: 7,000 V rms, minimum.

Characteristic impedance: 50 ohms \pm 2.

Attenuation: See figure 2.

Structural return loss: See figure 3.

Capacitance: 32.2 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): See table II.

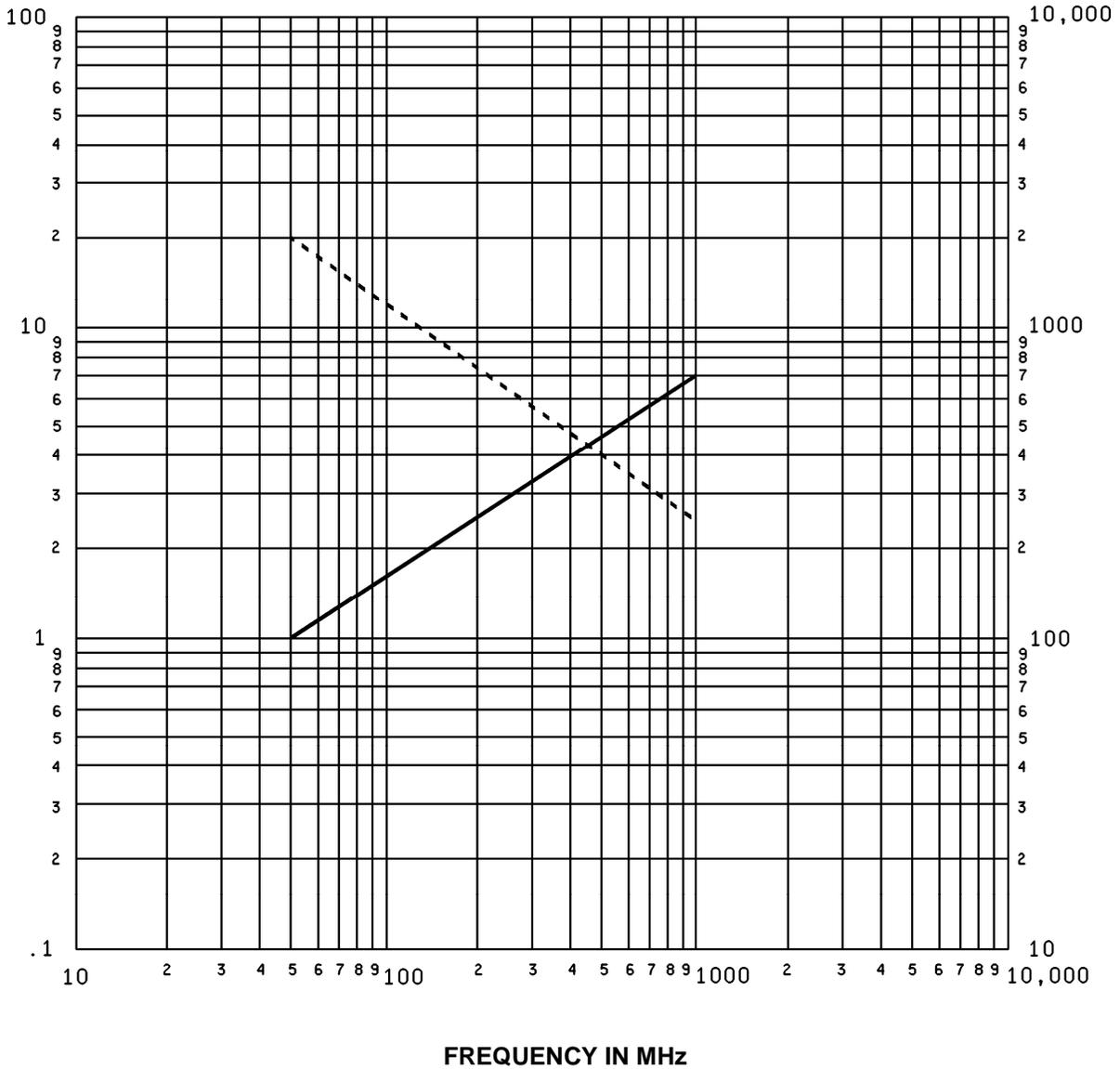
TABLE II. Cross-reference of PIN.

PIN	Type
M17/192-00001	Low smoke
M17/192-00002	Low smoke, temperature stabilized
M17/192-00003	Low smoke, water resistant

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Attenuation maximum
(dB per 100 feet)

Power in Watts



Maximum power (at 25°C sea level) -----

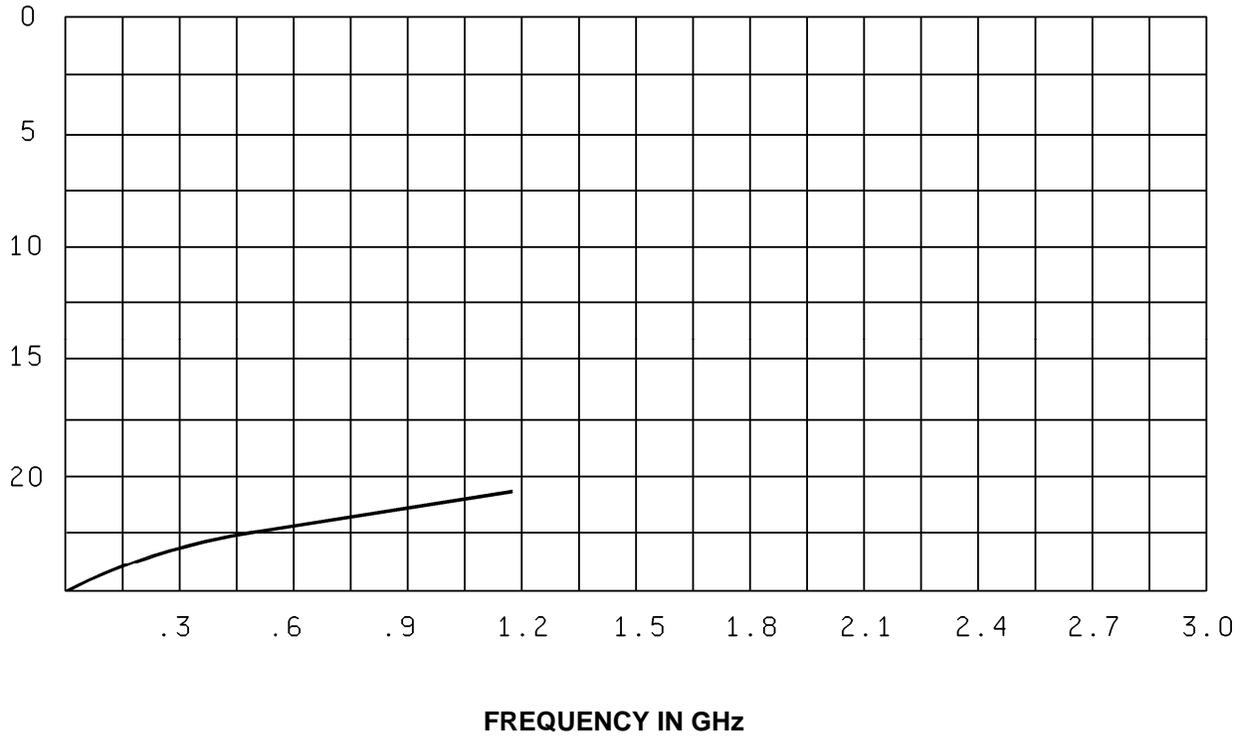
Maximum attenuation _____

Test requirements shall be noted as line indicated on graph.

Frequency MHz	Attenuation dB	Watts dB
50	1	2,000
100	1.5	1,200
1000	7	250

FIGURE 2. Power rating and attenuation.

**Minimum return loss
(in dB)**



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.

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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. 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 6145-2008-124)

Review activities:

Army - AR, AT, CR4, MI
Navy - AS, MC, OS, SH
Air Force - 19, 71, 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 <http://assist.daps.dla.mil>.