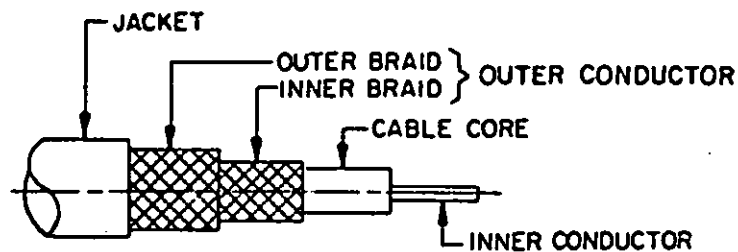


## MILITARY SPECIFICATION SHEET

CABLE, RADIO FREQUENCY, FLEXIBLE COAXIAL,  
50 OHMS, M17/112-RG304

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

The complete requirements for procuring the cable described herein shall consist of this document and the latest issue of Specification MIL-C-17.

FIGURE 1. Configuration.TABLE I. Description.

Components	Construction details
Inner conductor	Silver covered, copper-covered steel wire. Overall diameter: .059 inch $\pm$ .001.
Cable core	Type F-1: Overall diameter: .185 inch. $\pm$ .005.
Outer conductor	Double braid of AWG size 34 silver-covered wire. Overall diameter: .250 inch maximum.
Inner braid	Carriers: 24 Ends: 5 Picks/inch: 14.5 $\pm$ 10%
Outer braid	Carriers: 24 Ends: 6 Picks/inch: 11.5 $\pm$ 10%
Jacket	Type IX. Overall diameter: .280 inch $\pm$ .008. Minimum wall thickness: .015 inch.

ENGINEERING INFORMATION:

Continuous working voltage: 2,200 Vrms, maximum.

Operating frequency: 12.4 GHz, maximum.

Velocity of propagation: 69.5 percent, nominal.

Power rating: See figure 2.

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

Inner conductor properties:

DC resistance (maximum at 20°C): 0.8 ohm per 100 feet.

Elongation: 1 percent, minimum.

Tensile strength: 110 klb<sub>f</sub>/inch<sup>2</sup>, minimum.

Engineering notes: This cable useful in general purpose, high temperature applications (see connector series "TNC" and "BNC" per MIL-C-39012).

REQUIREMENTS:

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

Environmental and mechanical:

Adhesion of conductors:

Inner conductor to core: 4 pounds, minimum; 30 pounds, maximum.

Aging stability: Not applicable.

Stress crack resistance: +230° ±5°C; mandrel size seven times the jacket diameter.

Outer conductor integrity: Not applicable.

Dimensional stability: +200° ±5°C.

Inner conductor from core: .250 inch, maximum.

Inner conductor from jacket: .312 inch, maximum.

Bendability: Not applicable.

Flammability: Applicable.

Weight: 4.5 pounds per 100 feet, maximum.

Electrical:

Spark test: 2,000 Vrms, +25 percent, -0 percent.

Voltage withstanding: 5,000 Vrms, minimum.

Insulation resistance: Not applicable.

Corona extinction voltage: 3,000 Vrms, minimum.

Characteristic impedance: 50 ±2 ohms.

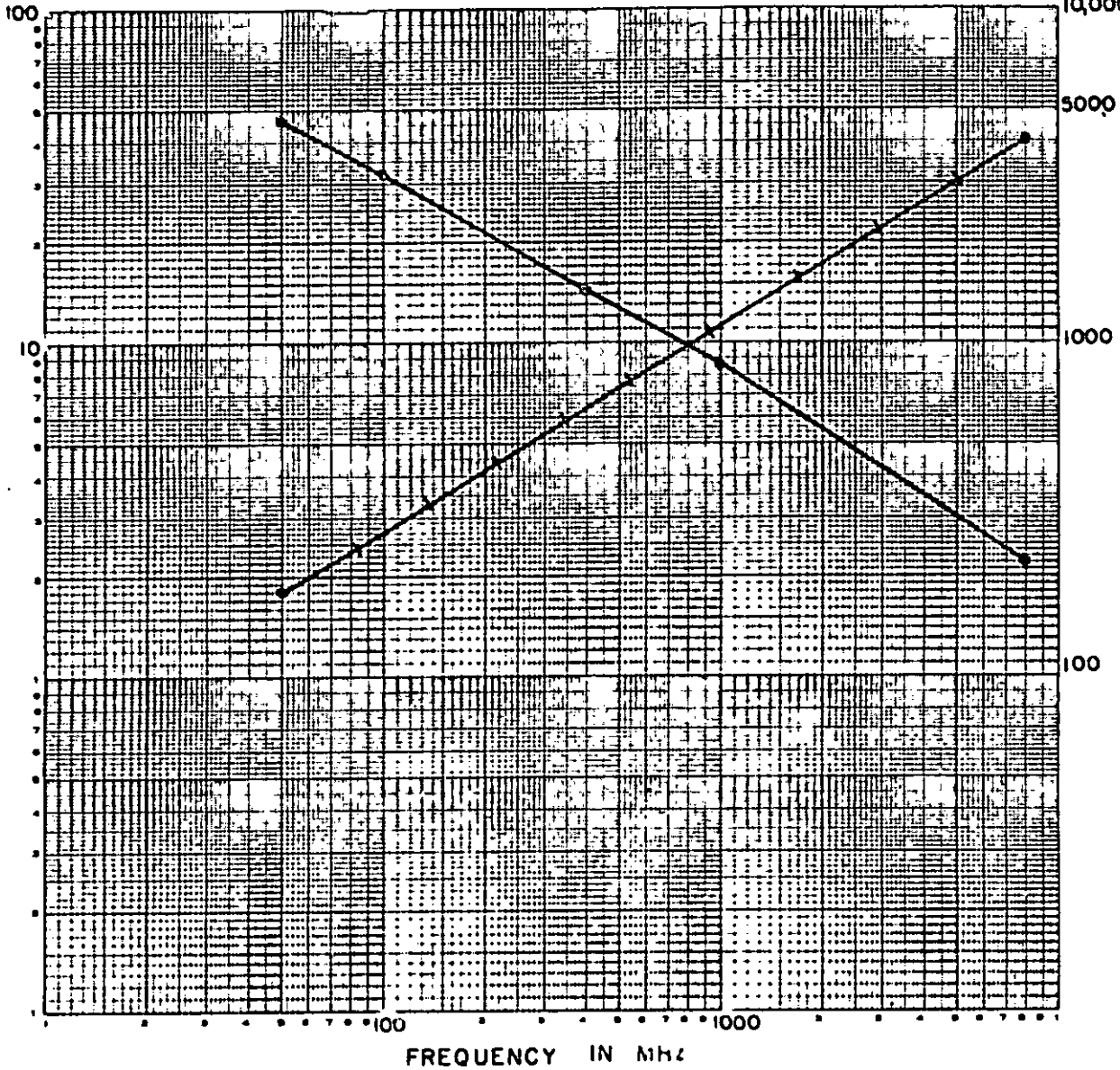
Attenuation: See figure 2.

Structural return loss: See figure 3.

Capacitance: 32 pF per foot, maximum.

ATTENUATION  
dB PER 100 FT

WATTS  
10,000



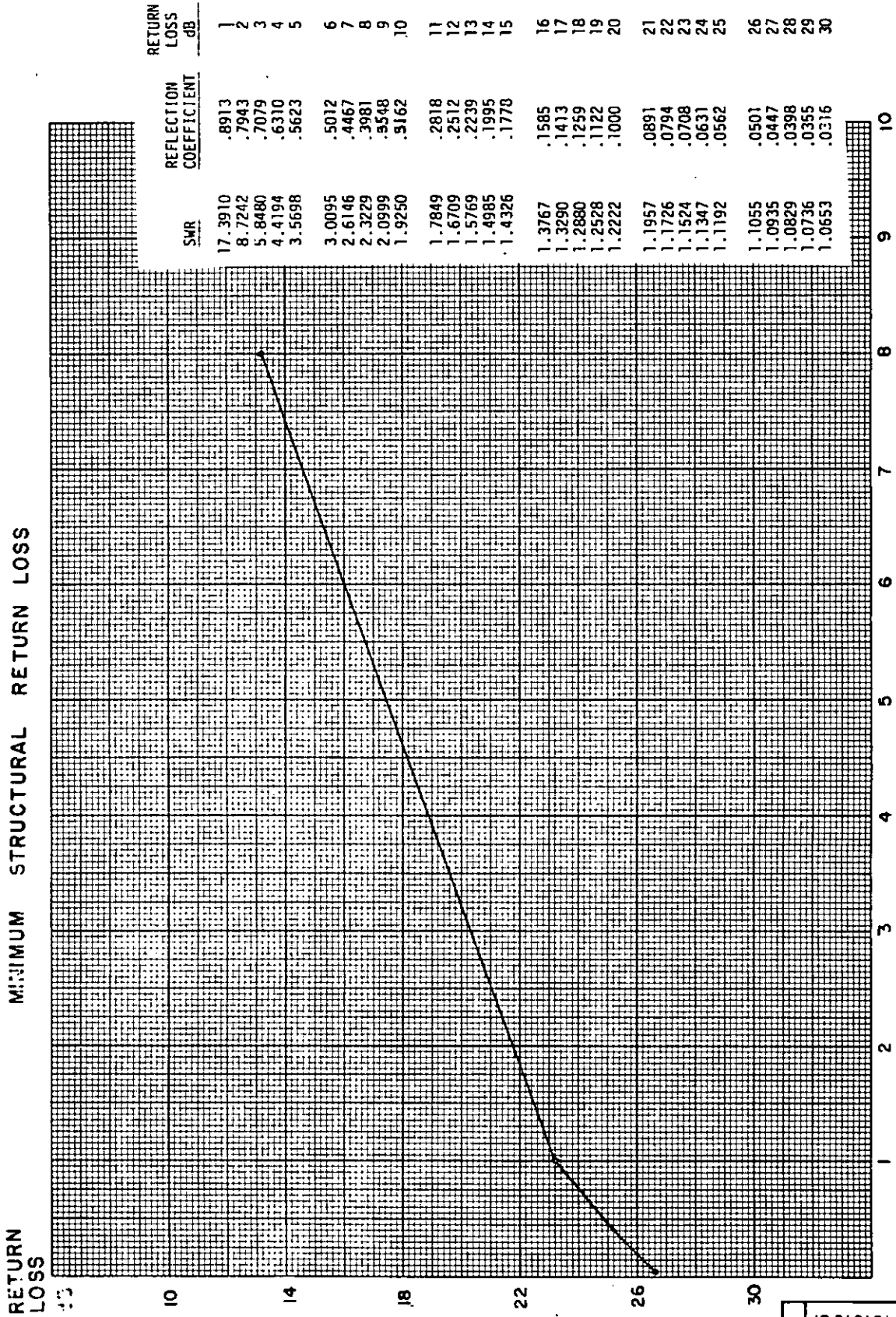
Tabulated values are for reference only. The values on the chart represent the requirement.

Maximum attenuation at 25°C, sea level — + + + +

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

Frequency MHz	Atten dB	Power Watts
50	1.8	4600
100	2.7	3200
400	6.4	1450
1000	11.1	870
8000	40	210

FIGURE 2. Power rating and attenuation.



Tabulated values are for reference only. The values on the chart represent the requirements.

FIGURE 3. Structural return loss.

MHz	dB
50	26.6
400	25.2
1000	23.2
8000	13.2

Capacitance unbalance: Not applicable.

Transmission unbalance: Not applicable.

Mechanically induced noise voltage: Not applicable.

Time delay: Not applicable.

Contamination: Not applicable.

Part number: M17/112-RG304.

NOTE: Revision letters are not used to denote changes due to the extensiveness of the changes.

Custodians:

Army - CR  
Navy - EC  
Air Force - 05

Review activities:

Army - AR, MI  
Navy - SH, EC  
Air Force - 11, 17, 99  
DLA - ES, IS

User activities:

Army - ME, AT  
Navy - AS, OS, MC  
Air Force - 19

Preparing activity:

Army - CR

Agent:

DLA - ES

(Project 6145-0761)