

INCH-POUND

MIL-DTL-22931/9A

21 August 2013

SUPERSEDING

MIL-C-22931/9

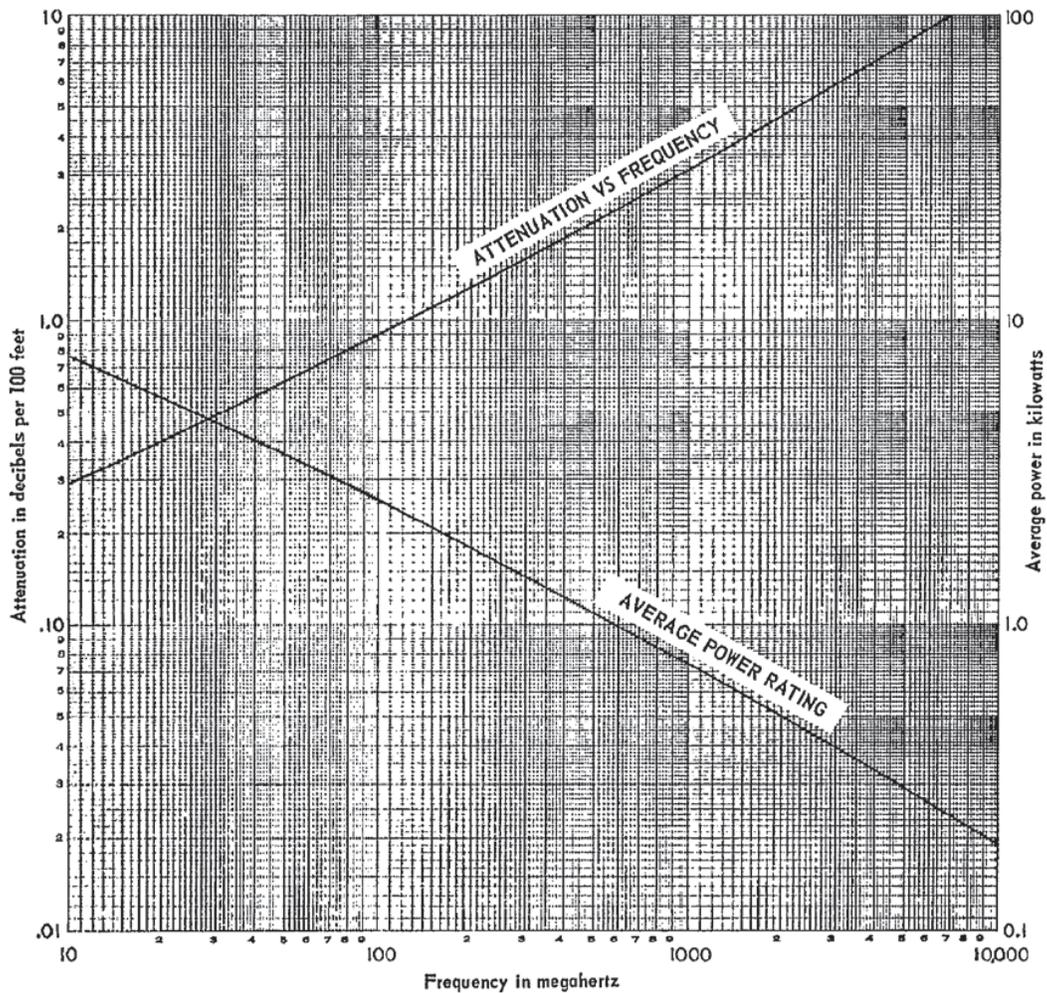
10 February 1968

### DETAIL SPECIFICATION SHEET

CABLES, RADIO FREQUENCY,  
SEMIRIGID, COAXIAL, SEMI-AIR-DIELECTRIC,  
.500 AND .530 INCH OUTSIDE DIAMETER, 50 OHMS

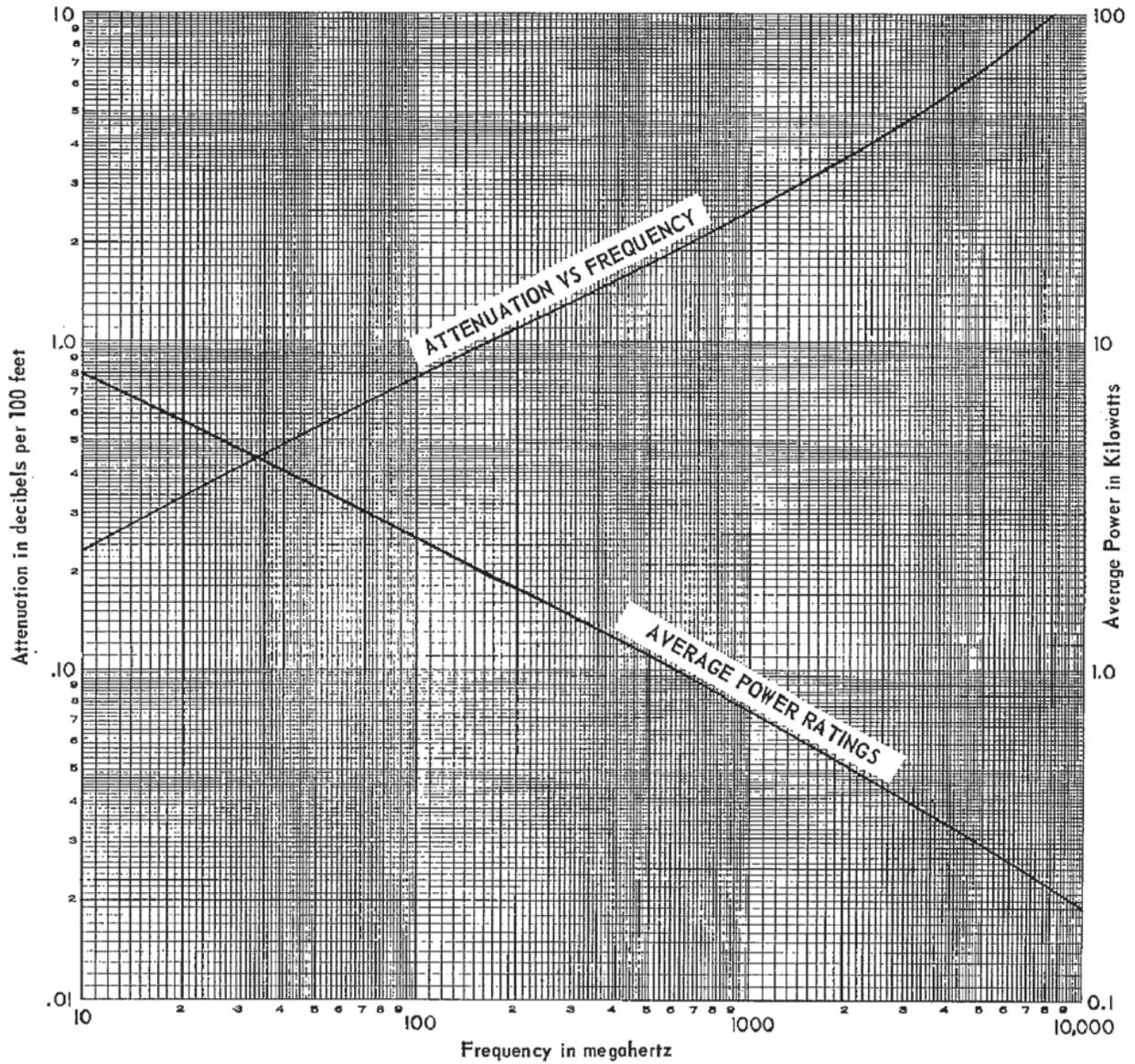
This specification is approved for use by all Departments  
and Agencies of the Department of Defense.

The requirements for acquiring the product described herein  
shall consist of this specification sheet and MIL-DTL-22931.



Power rating based upon a 40°C ambient with a 45°C rise in center conductor temperature.

FIGURE 1. Attenuation and power rating curves for -001 and -002.



Power rating based upon a 40°C ambient with a 45°C rise in center conductor temperature.

FIGURE 2. Attenuation and power rating curves for -003 and -004.

## REQUIREMENTS:

Operating temperature range: -55 to +80°C.

Inner conductor: See table II.

Dielectric:

Cable core and insulating layer: See table II.

Outer conductor: Aluminum tubing, smooth, seamless.

Diameters – See table II.

Jacket: See table II.

Voltage withstand: 1,800 volts rms (minimum) at 60 Hz, or 3,200 volts dc.

Insulation defects, spark: See table II.

Attenuation: See table II.

Velocity: See table.

Capacitance: 24.0 pf/ft.

Impedance:  $50 \pm 2$  ohms.

Voltage standing wave ratio: See Table I.

TABLE I. Initial and Final Frequency Ranges.

Frequency range (MHz)	Initial (max)	After bending and temperature cycling (max)
500 – 2,000	1.15	1.18
2,000 – 5,000	1.20	1.25
5,000 – 10,000	1.20	1.25

Mandrel size for cold bend, bending and temperature cycling tests: 15 inches (381.0 mm).

Minimum bending radius: 5 inches (127.0 mm).

Table II. Dash numbers and characteristics. 1/, 2/

Requirement	M22931/09 dash number			
	-001	-002	-003	-004
Inner conductor	Copper wire or tube		Copper wire	
Overall diameter (± .002 (.05))	0.161 (4.09)		0.165 (4.19)	
Dielectrics				
Cable core	Polystyrene	do.	Polyethylene	Do.
Insulating layer	Polystyrene		Not applicable	
Outer conductor diameter				
Inside (nominal)	0.421 (10.69)		0.456 (11.58)	
Outside	0.500 (12.70)		0.530 (13.46)	
Jacket	Not applicable	Polyethylene	Not applicable	Polyethylene
Overall diameter +.020 (.51) - .010 (.25)		0.575 (14.61)		0.615 (15.62)
Min. wall thickness		0.035 (.89)		0.035 (.89)
Insulation defects, spark	Not applicable	Applicable	Not applicable	Applicable
Attenuation (dB/100 ft. max)				
30 MHz	0.48		0.46	
400 MHz	1.93	do.	1.93	Do.
3,000 MHz	5.90		5.90	
Velocity (percent)	86.5		85.5	

1/ Dimensions are in inches.

2/ Metric equivalents are given for information only.

Part or Identifying Number (PIN): See table III.

Table III. Cross reference information.

PIN	RG number	Former classification	
		Class	Type
M22931/09-001	RG-236/U		
M22931/09-002	RG-237/U		
M22931/09-003	RG-252/U	N	I
M22931/09-004	RG-253/U		

Attenuation and power rating. See figures 1 and 2.

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

Referenced documents. This document references MIL-DTL-22931.

CONCLUDING MATERIAL

Custodians:

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

Preparing activity:

DLA-CC

(Project 6145-2013-007)

Review activities:

Army – AR, AT, AV, CR4  
Navy – AS, MC, OS  
Air Force – 19

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>.