

INCH-POUND

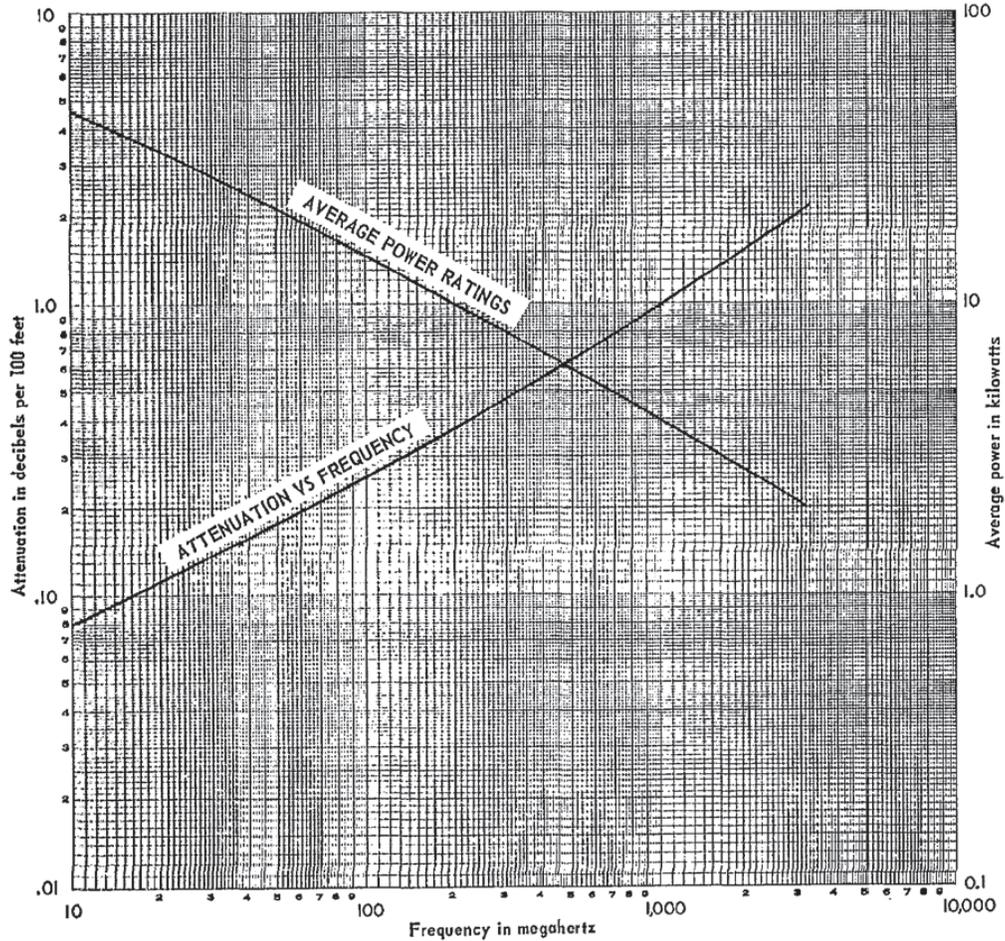
MIL-DTL-22931/13B
01 August 2013
SUPERSEDING
MIL-C-22931/13A
20 January 1972

DETAIL SPECIFICATION SHEET

CABLES, RADIO FREQUENCY, SEMIRIGID, COAXIAL, SEMI-AIR-DIELECTRIC,
1.625 TO 1.830 INCHES OUTSIDE DIAMETER, 50 OHMS

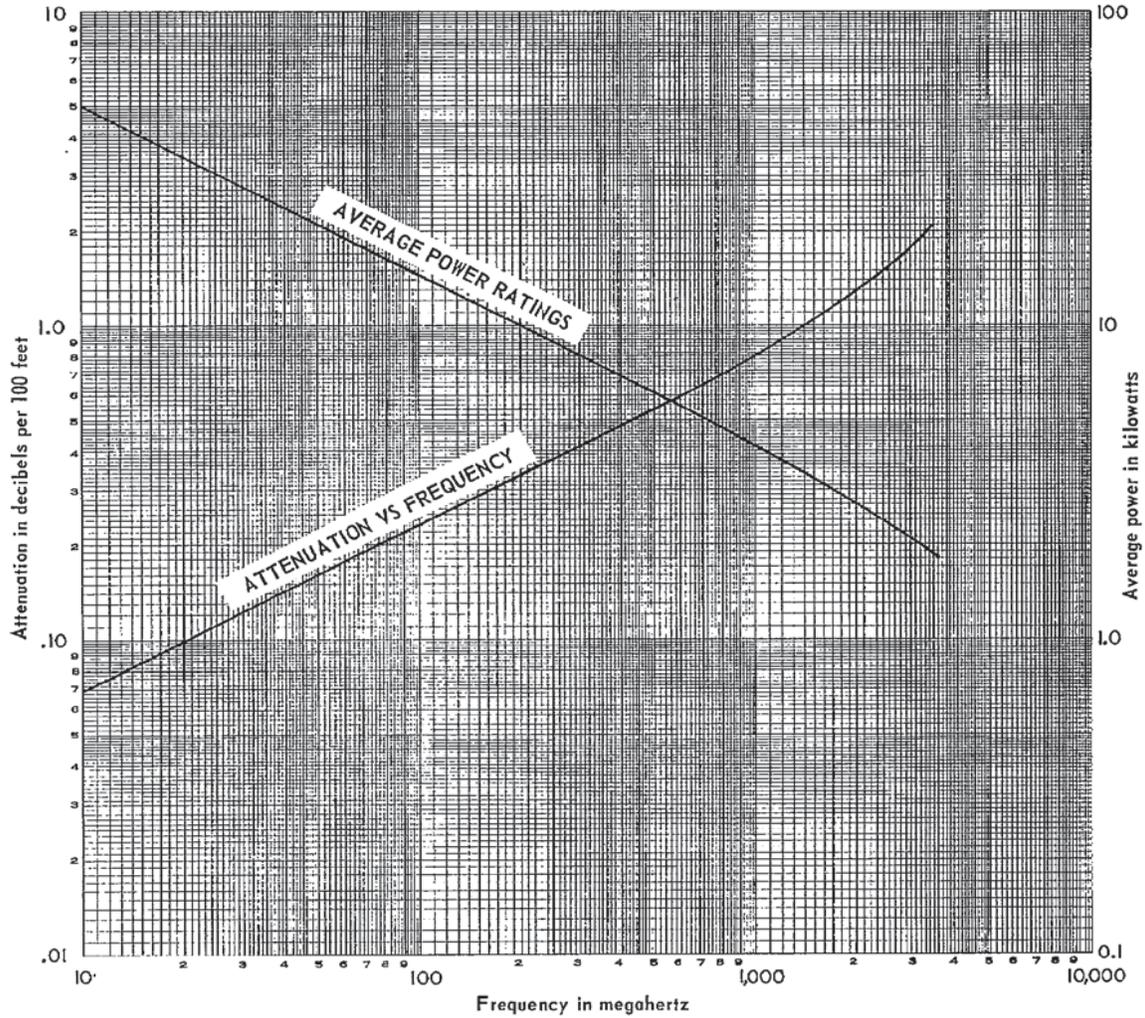
This specification is approved for use by all Departments
and Agencies of the Department of Defense.

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



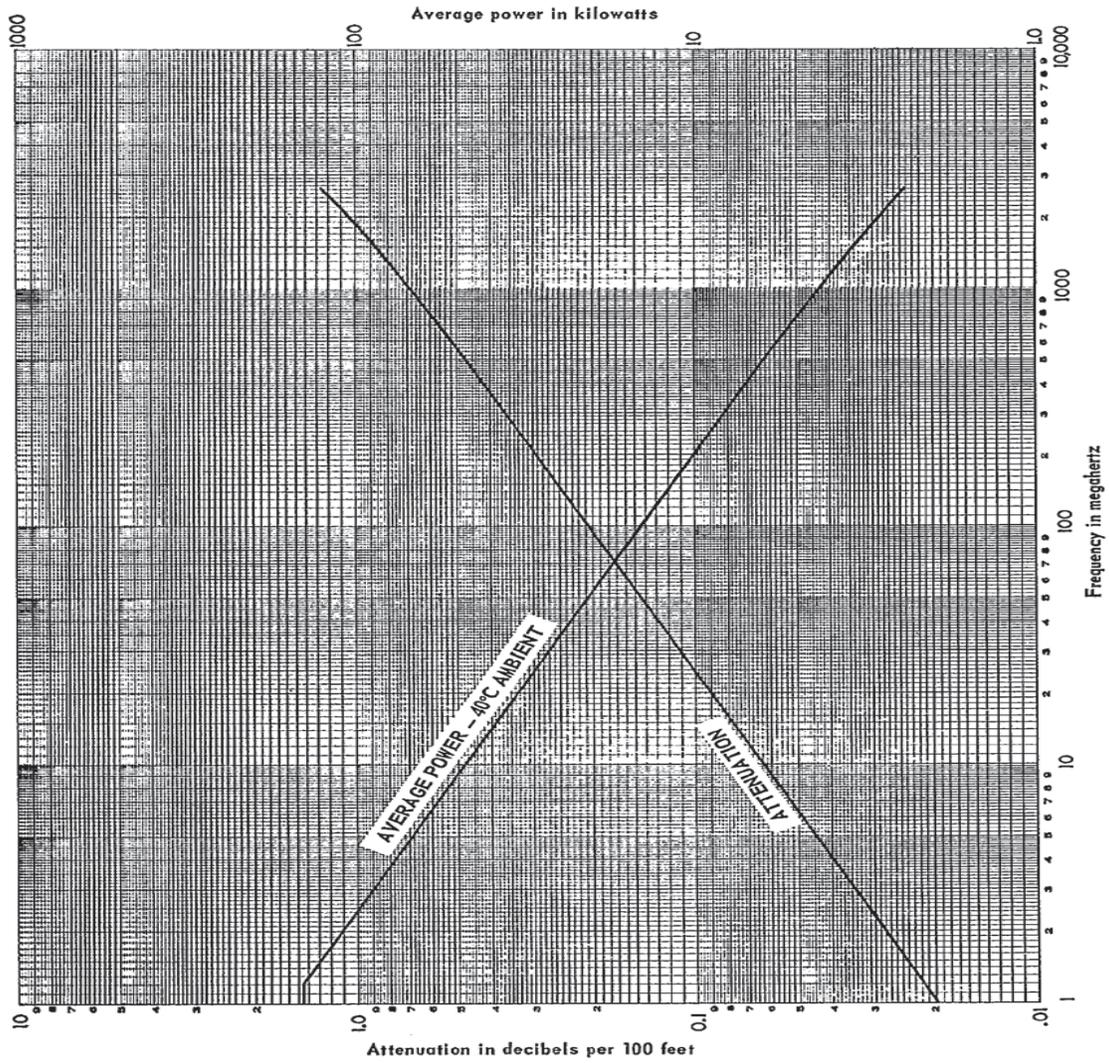
Power rating based upon a 40°C ambient with a 45°C rise in center conductor temperature.

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



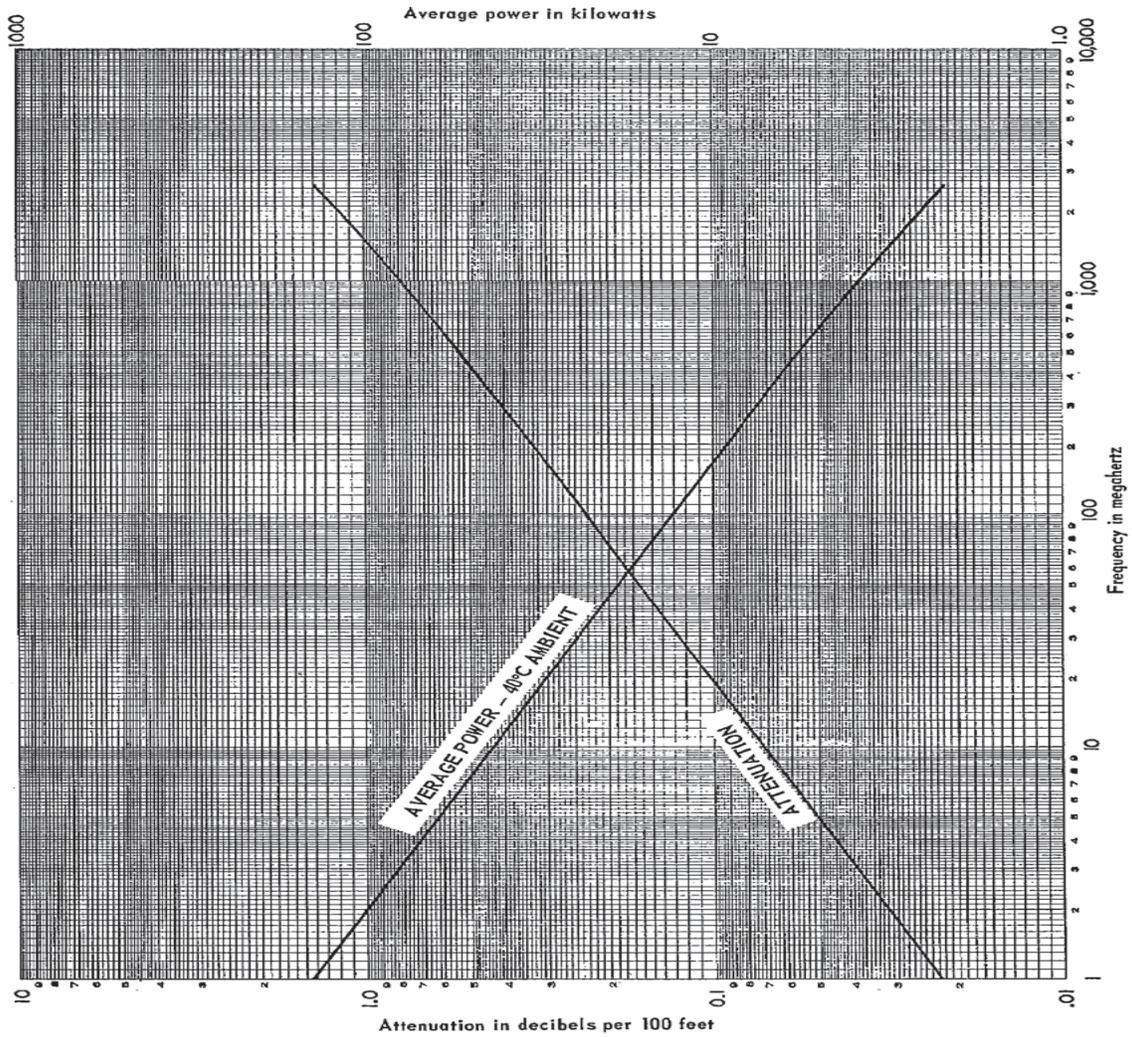
Power rating based upon a 40°C ambient with a 45°C rise in center conductor temperature.

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



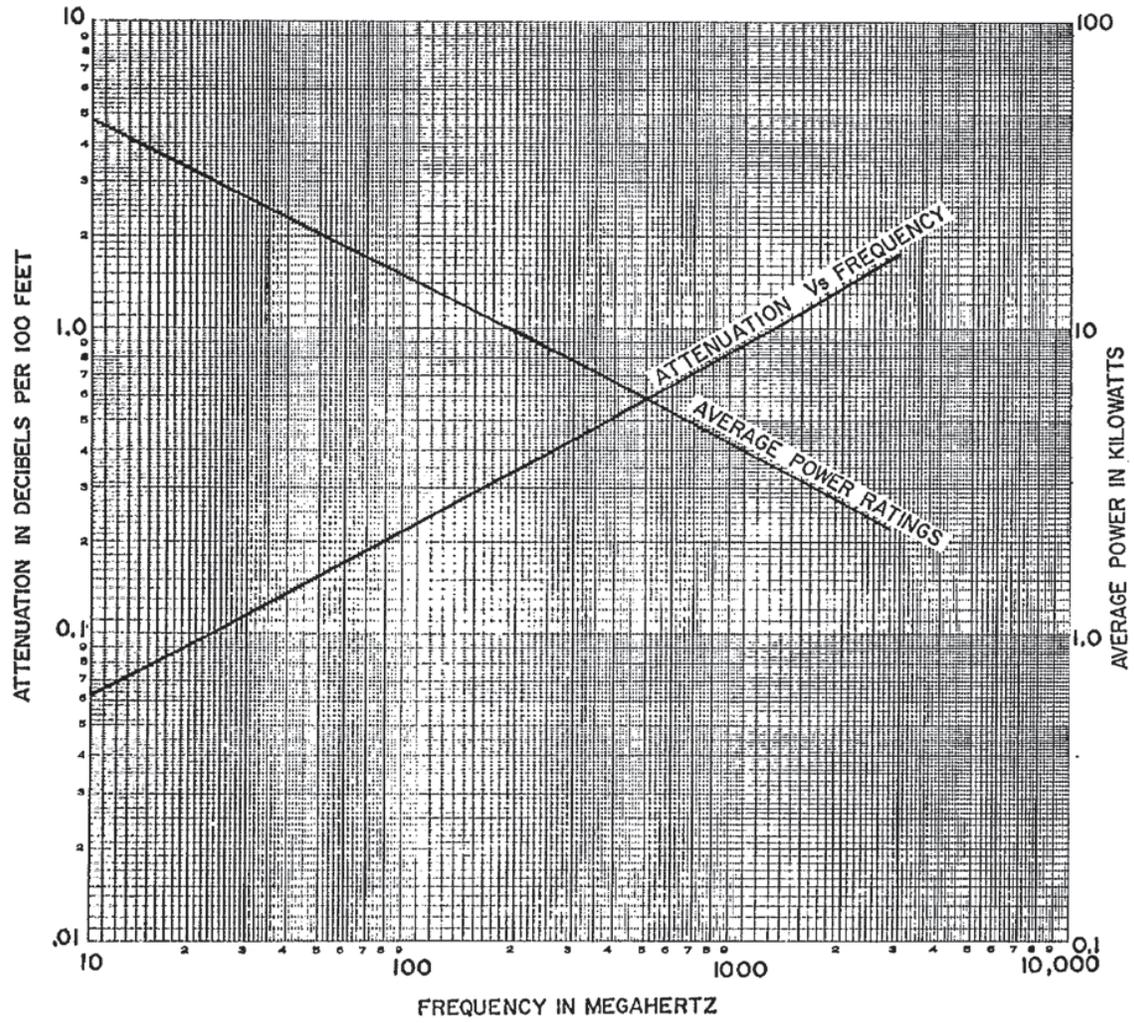
Power rating based upon a 40°C ambient with a 45°C rise in center conductor temperature.

FIGURE 3. Attenuation and power rating curves for -005 and -006.



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

FIGURE 4. Attenuation and power rating curves for -007.



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

Power ratings based on:
 VSWR 1.0
 Ambient temperature 40°C
 Inner conductor temperature 80°C

FIGURE 5. Attenuation and power rating curves for -008 and -009.

REQUIREMENTS:

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

Inner conductor: See table I.

Dielectrics:

Cable core and insulating layer: See table I.

Outer conductor: See table I.

Jacket: See table I.

Voltage withstand: 6,000 volts rms (minimum) at 60 Hz, or 11,000 volts dc.

Insulation defects, spark: See table I.

Attenuation: See table I.

Velocity: See table I.

Capacitance: See table I.

Impedance: 50 ± 1 ohms.

Voltage standing wave ratio: See table I.

Mandrel size for cold bend, bending and temperature cycling tests: 40 inches (1016 mm).

Minimum bending radius: See table I.

Part or Identifying Number (PIN): M22931/13- (dash number from table I).

Cross reference: See table II.

Attenuation and power rating: See figures 1-5.

TABLE I. Dash numbers and characteristics.

Requirements <u>1/</u>	Dash number								
	001	002	003	004	005	006	007	008	009
Inner conductor	Copper wire or tube		Copper tube		Copper tube			Copper tube	
Overall diameter	0.591 (15.01) ± .004 (.10)		0.606 (15.39) ± .005 (.13)		0.713 (18.11) ± .005 (.13)		do.	.650 (16.51)	
Dielectrics									do.
Cable core	Polystyrene		Polyethylene		Polyethylene		---	Polyethylene	
Insulating layer	Polystyrene	do.	Not applicable	do.	Not applicable	do.	Not applicable	Not applicable	
Outer conductor	Aluminum tubing, smooth, seamless		Aluminum tubing, smooth, seamless		Copper tube, corrugated		Aluminum tube corrugated	Copper tube, corrugated	
Inside diameter (nominal)	1.472 (37.39)		1.622 (41.20)		1.540 (39.12)		1.560 (39.62)	1.530 (38.86)	
Outside diameter	1.625 (41.28)		1.786 (45.36) ± .006 (.15)		1.830 (46.48) ± .015 (.38)		1.830 (46.48) ± .015 (.38)	1.750 (44.45) ± .010 (.25)	
Jacket	Polyethylene	Not applicable	Not applicable	Polyethylene <u>3/</u>	Not applicable	Polyethylene <u>2/</u>	Polyethylene	Polyethylene	Not applicable
Diameter	1.730 (43.94) + .030 (.76) - .014 (.36)			1.926 (48.92) + .044 (1.12) - .020 (.51)		2.000 (50.8) ± .055 (1.40)	2.000 (50.8) ± .055 (1.40)	1.840 (46.73) ± .035 (.89)	
Minimum wall thickness	0.049 (1.24)			0.049 (1.24)		0.049 (1.24)	0.065 (1.65)	0.050 (1.27)	
Insulation defects, spark	Applicable	Not applicable	Not applicable	Applicable	Not applicable	Applicable	Applicable	Applicable	Not applicable
Attenuation (dB/100 ft max)									
30 MHz	0.14		0.14		0.12		0.14	0.12	
400 MHz	0.56		.55		0.50		0.53	0.50	
3,000 MHz	2.1		2.1		1.30		1.30	1.30	
Velocity (percent), nominal	90.9		85.5		92.1	do.	92.9	94.0	do.
Capacitance (pF/ft)	22.4		24.0	do.	22.1		22.1	21.0	
VSWR (max at 500-2,000 MHz)		do.							
Initial	1.15		1.15		1.20		1.20	1.20	
After temperature cycling	1.20		1.20		1.25		1.20	1.25	
After bending	1.20		1.20		1.25		1.25	1.25	
Minimum bending radius	25 (335)		25 (335)		20 (508)		20 (508)	20 (508)	

1/ Dimensions are in inches; millimeters are in parentheses. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

2/ Applied over a flooding compound used to fill in corrugations.

3/ Except where press stops are located which will allow for 2.050 inches max.

Table II. Cross reference.

PIN	RG cable classification number	Former classification	
		Class	Type
M22931/13-001	RG-233/U		
M22931-13/002	RG-240/U		
M22931/13-003	RG-257/U	N	I
M22931/13-004	RG-258/U		
M22931/13-005	RG-270/U	N	II
M22931/13-006	RG-319A/U		
M22931/13-007	RG-378/U	None	None
M22931/13-008	None	None	None
M22931/13-009	None	None	None

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.

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

CONCLUDING MATERIAL

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

Preparing activity:
 DLA-CC

Review activities:
 Army – AT, CR4, MI
 Navy – AS, MC, OS
 Air Force – 19

(Project 6145-2013-004)

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>.