MILITARY SPECIFICATION SHEET

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

The complete requirements for procuring the cables described herein shall consist of this document and the latest issue of Specification MIL-C-22931.

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

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

Minimum bending radius: See table I.

Part number: M22931/13- (dash number from table I).

FSC 6145

TABLE I. Dash numbers and characteristics.

Requirements 1/	Dash number								
	001	002	003	004	005	006	007	008	009
Inner conductor	Copper wire or tube	do.	Copper tube	do.	Copper tube corrugated	do.	do.	Copper tube	Do.
Overall diameter	0.591(15.01) ±.004(.10)		0.606(15.39) ±.003(.08)		0.713(18.11) ±.005(.13)			.650(16.51)	
Dielectrics									
Cable core	Polystyrene		Polyethylene		Polyethylene		---	Polyethylene	
Insulating layer	Polystyrene		Not applicable		Not applicable		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	Not applicable	Polyethylene 2/	Polyethylene	Polyethylene	Not applicable
Diameter	1.730(43.94) +.030(.76) -.014(.36)			3/ 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)	
Insulating defects, spark	Applicable	Not applicable	Not applicable	Applicable	Not applicable	Applicable	Applicable	Applicable	Not applicable
Attenuation (dB/100 ft max)									
30 MHz	0.14	do.	0.14	do.	0.12	do.	0.14	0.12	Do.
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, nom)	90.9		85.5		92.1		92.9	94.0	
Capacitance (pF/ft, nom)	22.4		24.0		22.1		22.1	21.0	
VSWR (max at 500-2,000 MHz)									
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 equivalent (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.

NOTES.

1. Cross reference information is as follows:

Part number	RG number	Former classification Class	Former classification Type
M22931/13-001	RG-233/U	N	I
M22931/13-002	RG-240/U		
M22931/13-003	RG-257/U		
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

2. Figures are for information.

Custodians:
Army - EL
Navy - EC
Air Force - 11

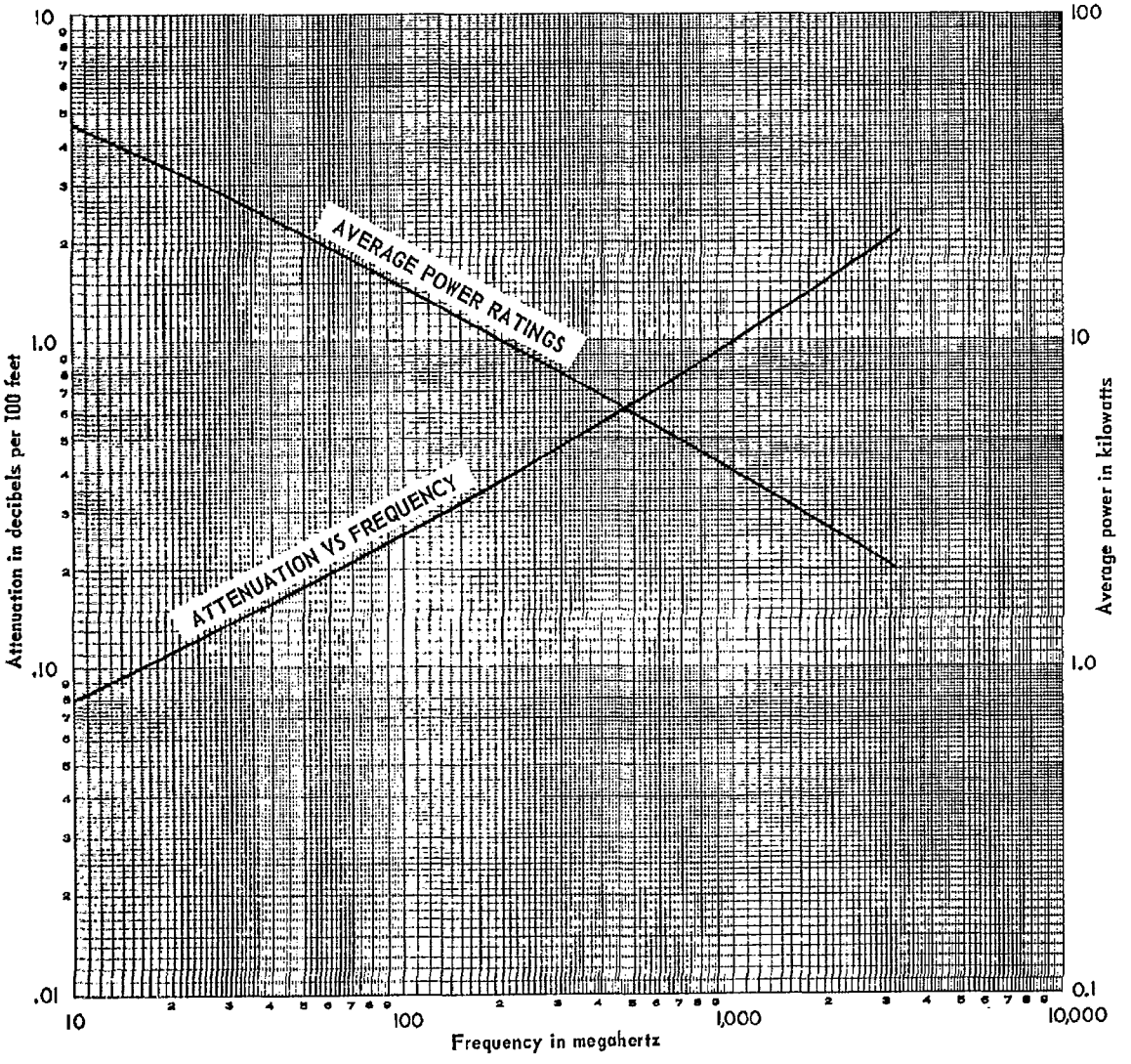
Review activities:
Army - EL, MU, MI
Navy - SH, EC
Air Force - 11, 17, 80
DSA - ES, IS

User activities:
Army - ME, AT, SL
Navy - OS, AS, MC
Air Force - 19

Preparing activity:
Navy - EC

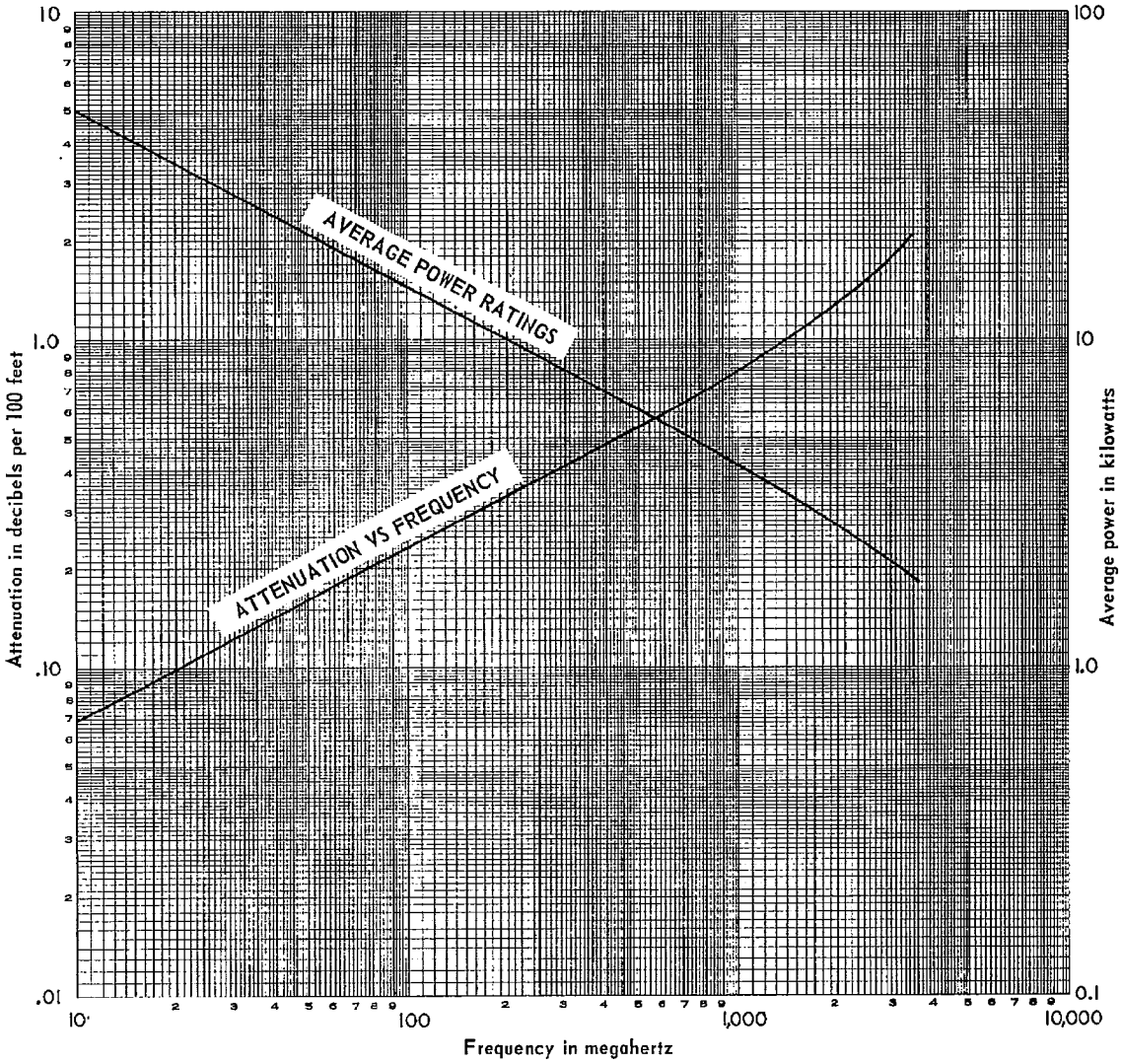
Agent:
DSA - ES

(Project 6145-0604)



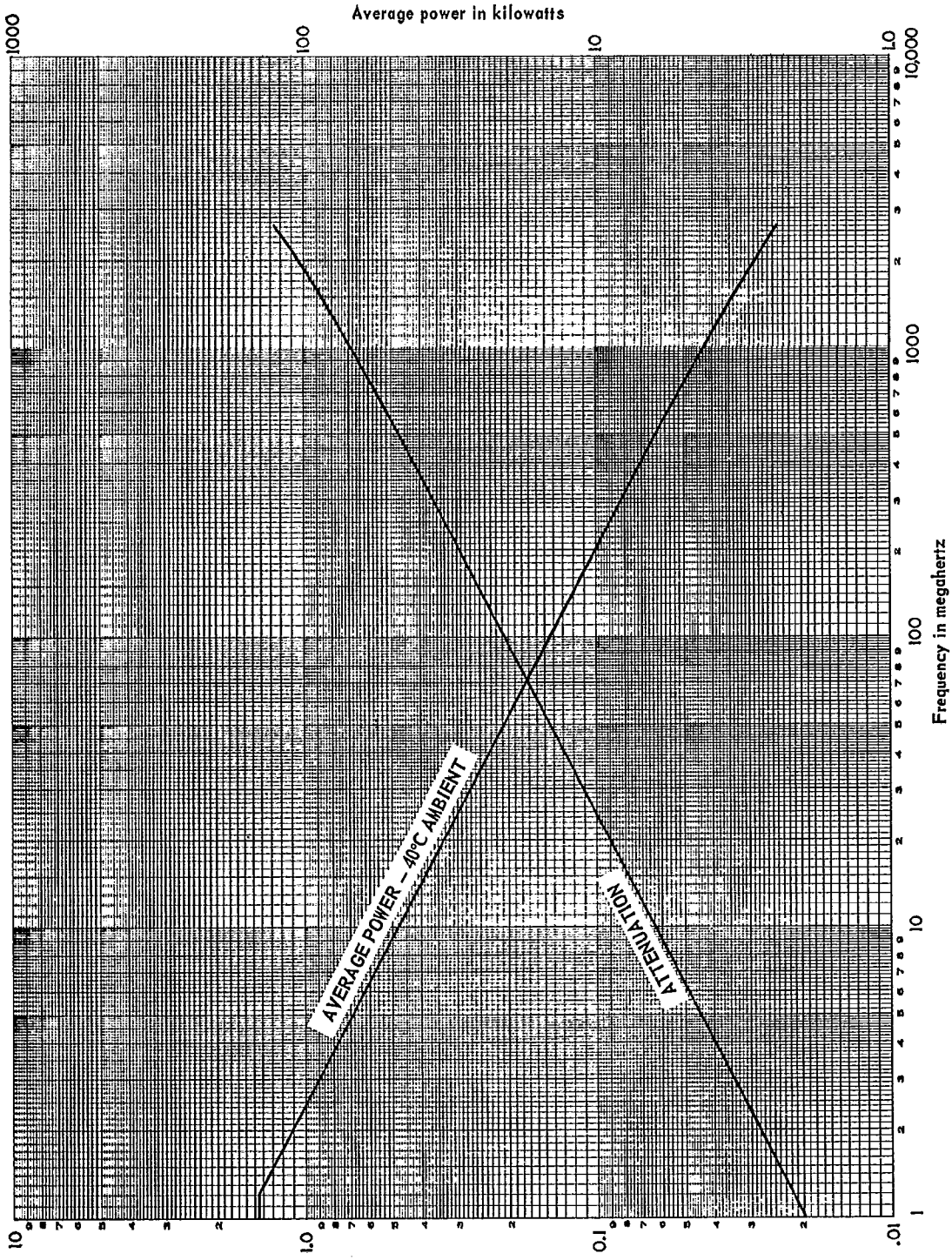
Power rating based upon a 40°C ambient with a 45°C rise in center conductor temperature.

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



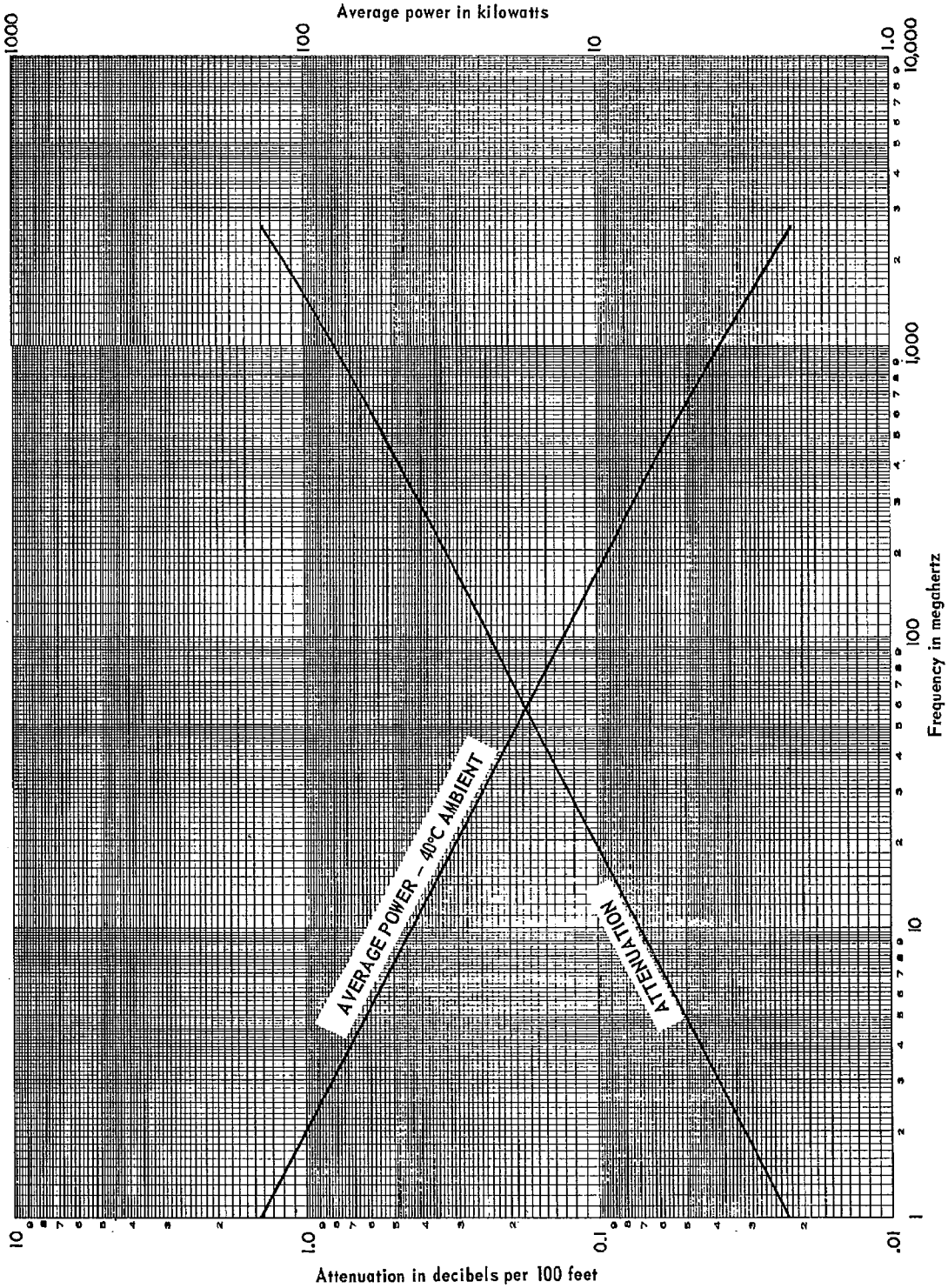
Power rating based upon a 40°C. ambient with a 45°C rise in center conductor temperature.

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



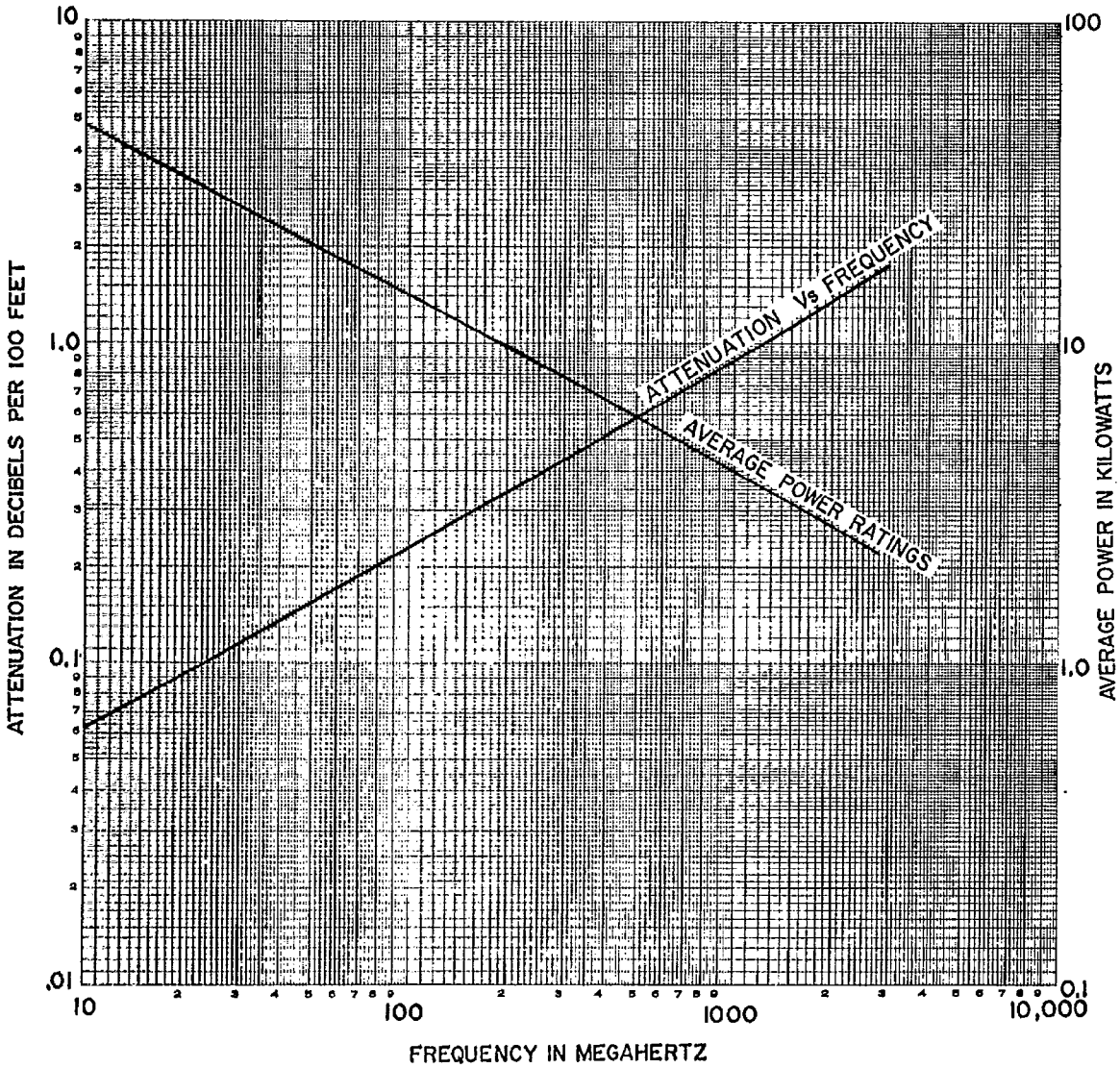
Power rating based upon a 40°C ambient with a 45°C rise in center conductor temperature.

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 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.