NOTICE OF VALIDATION

INCH-POUND

MIL-C-22931/13A
NOTICE 1
1 May 2003

DETAIL SPECIFICATION SHEET

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

MIL-C-22931/13A, dated 20 January 1972, has been reviewed and determined to be valid for use in acquisition

Custodians:
Army - CR
Navy - EC

Preparing activity:
DLA - CC

Review Activities:
Army - AT, CR4, MI
Navy - AS, MC, OS
Air Force - 19

AMSC N/A **FSC 6145**

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

MIL-C-22931/13A
20 January 1972
SUPERSEDING
MIL-C-22931/13
10 February 1968

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 deg. C.

Inner conductor: See table I.

Dielectrics:
Cable core and insulating layer: See table 1.

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).

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 [3]	Not applicable	Polyethylene [2]	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)	0.059(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 (μF/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

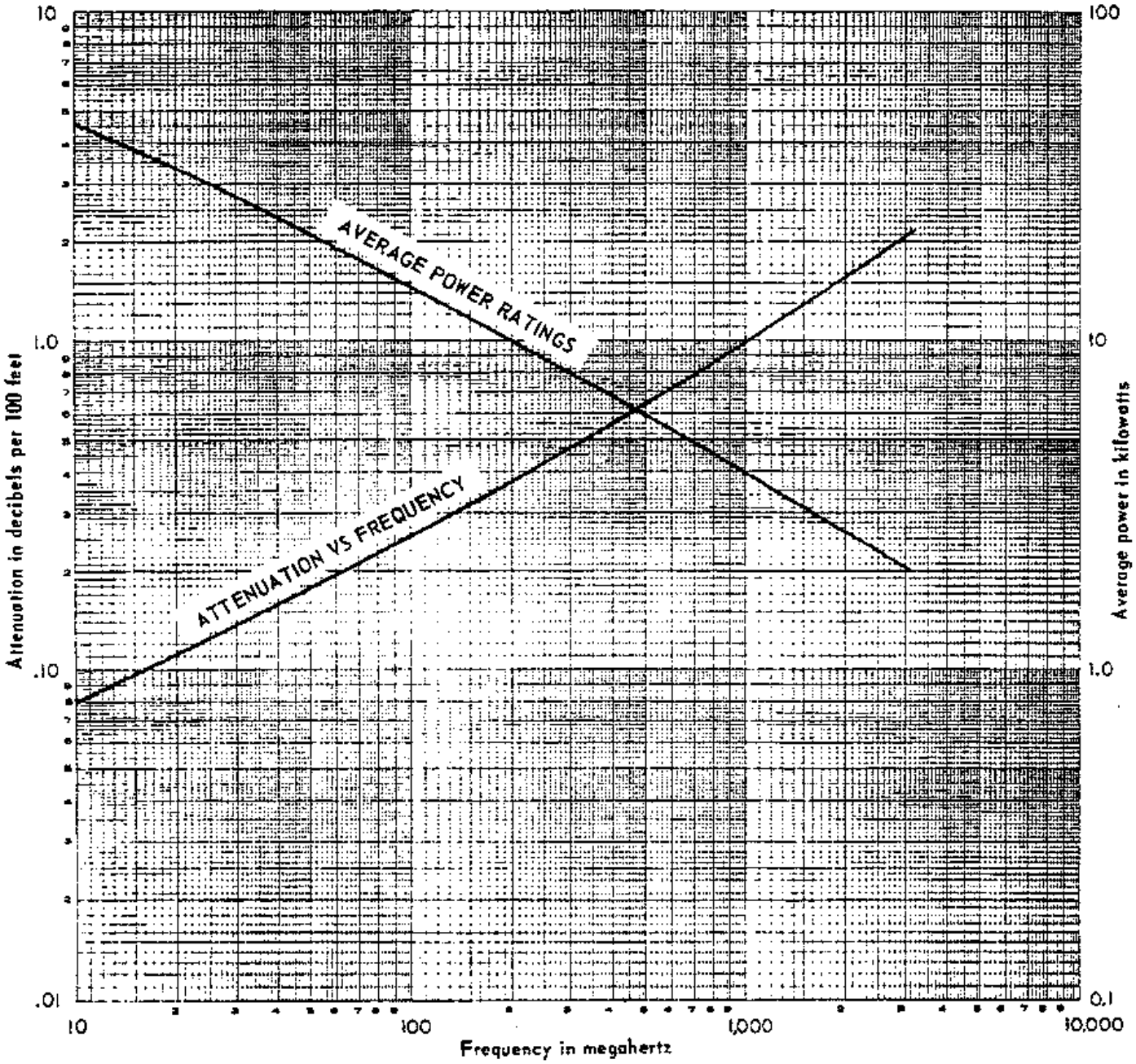
Review activities:
Army - EL, MU, MI
Navy - SH, EC
Air Force - 11, 17, 80
DSA - ES, IS

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

Preparing activity:
Navy - EC

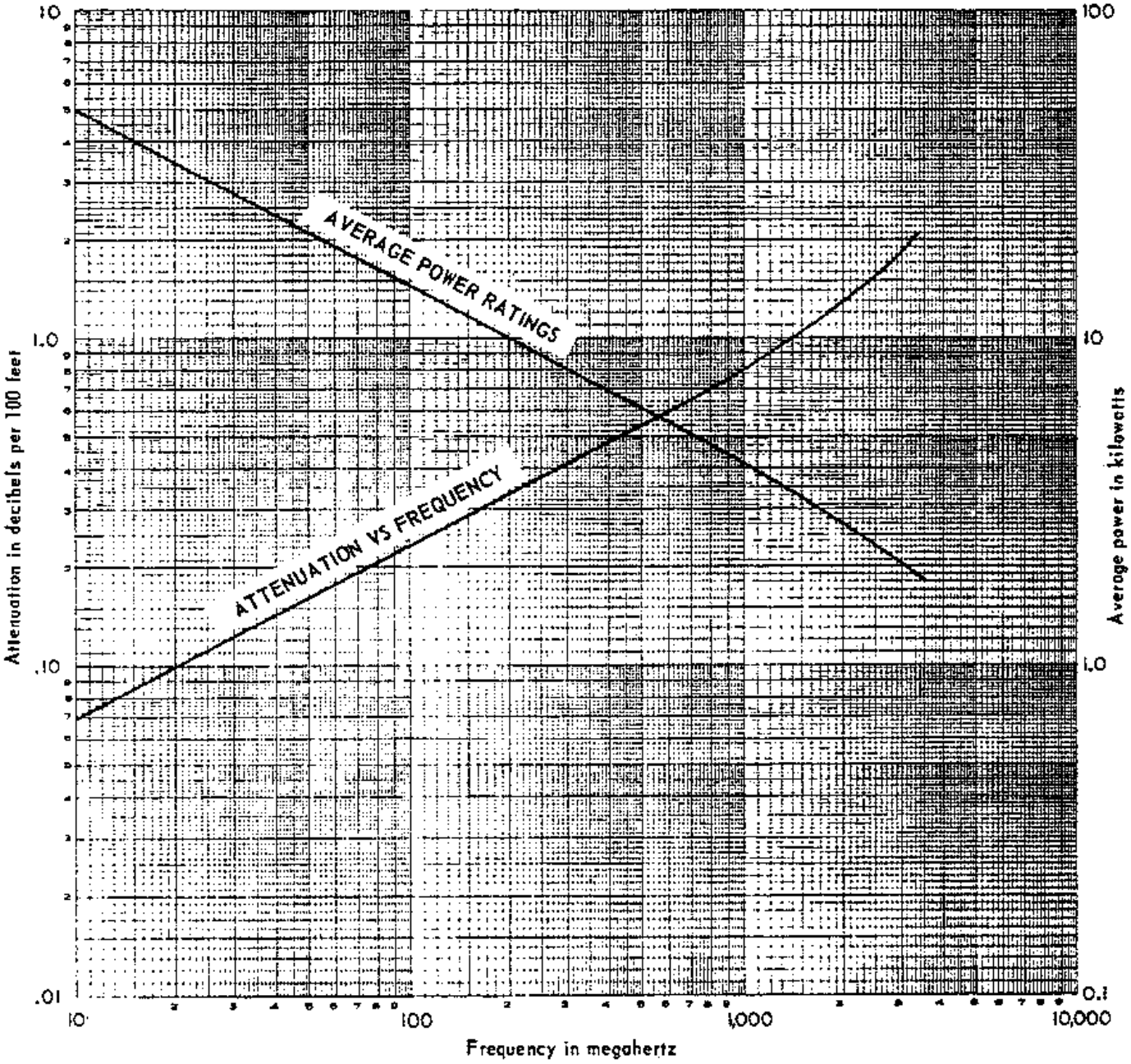
Agent:
DSA - ES

(Project 6145-0604)



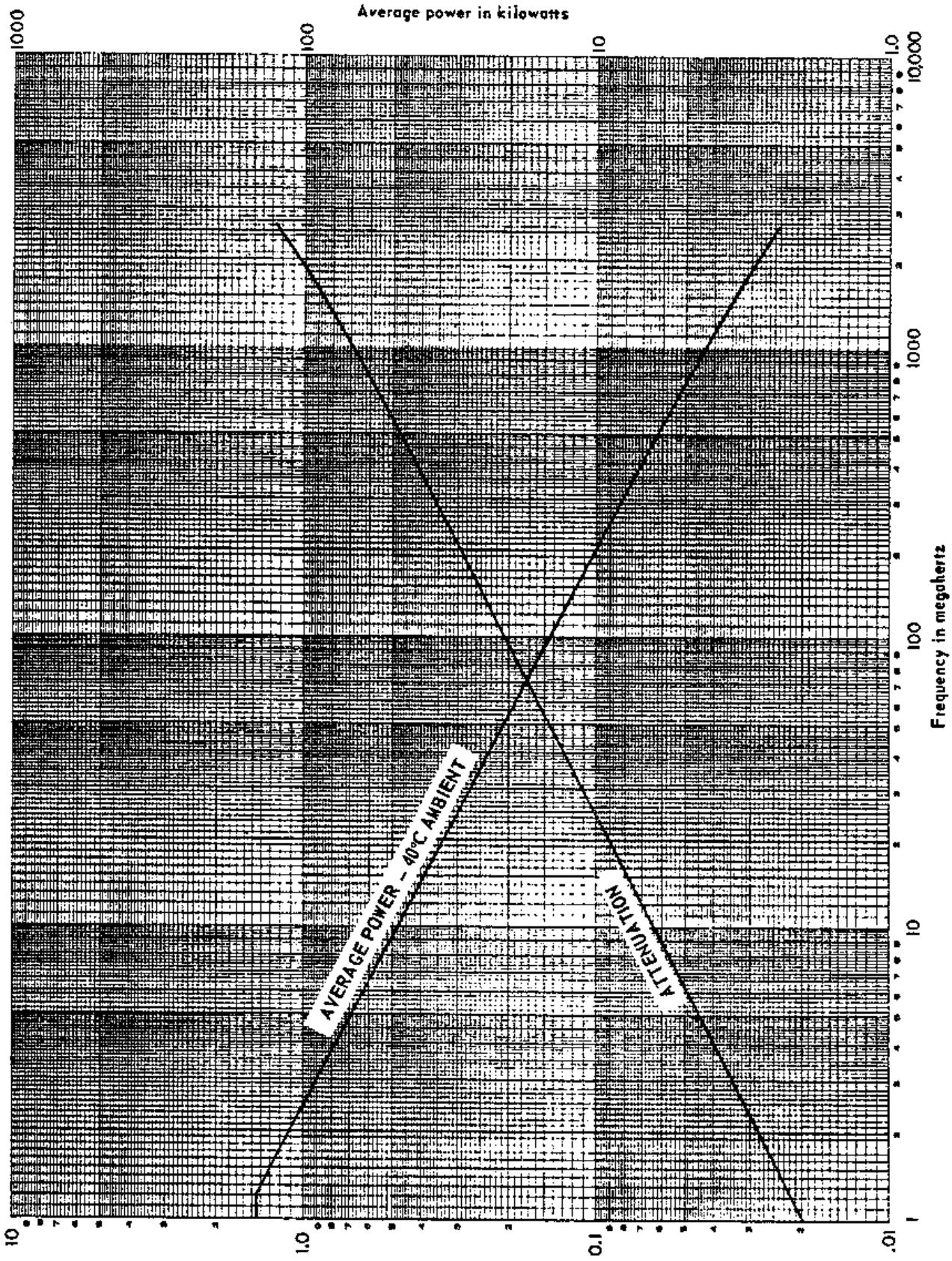
Power rating based upon a 40°C ambient with a 45°C rise in center conductor temperature.

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



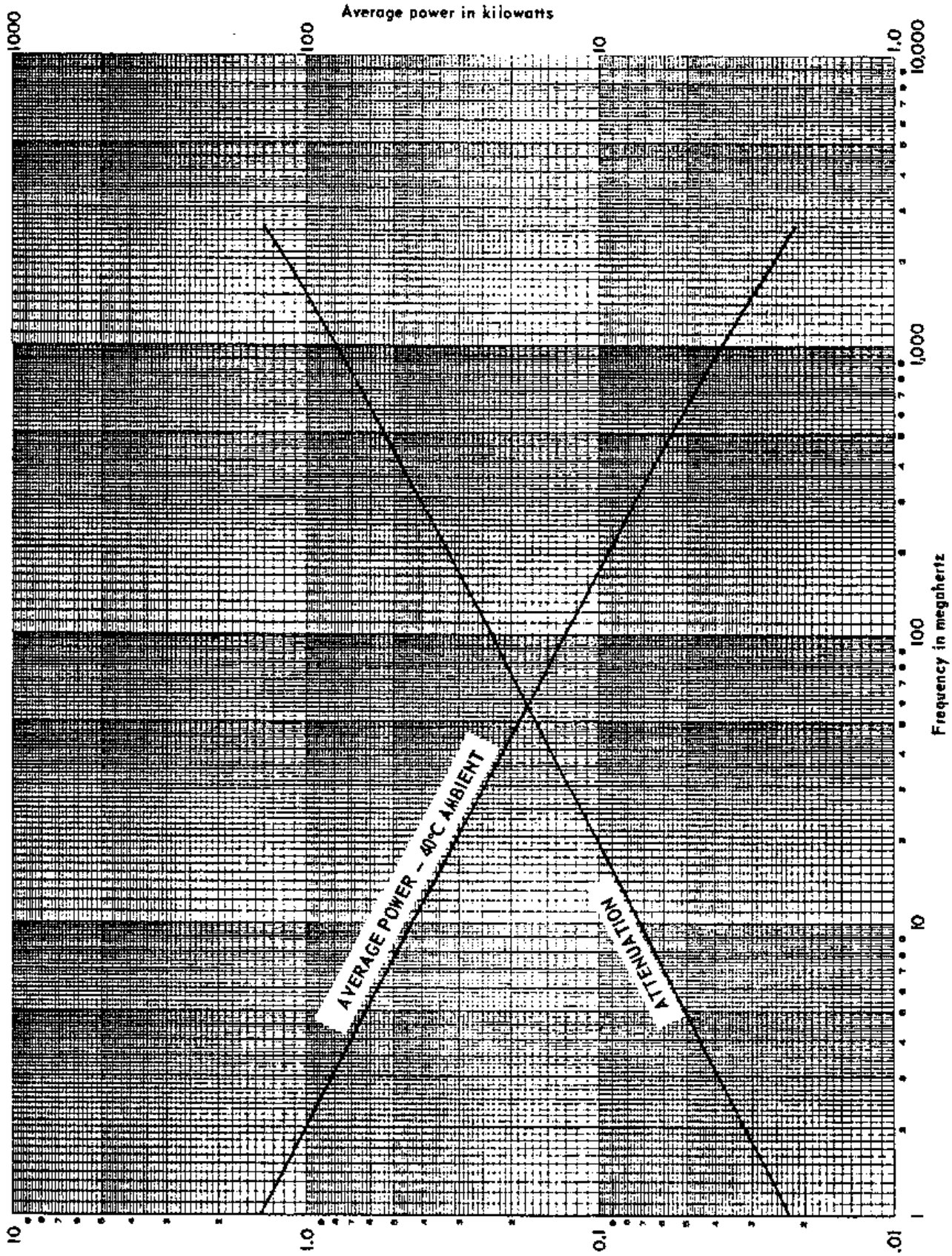
Power rating based upon a 40°C ambient with a 45°C rise in center conductor temperature.

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.

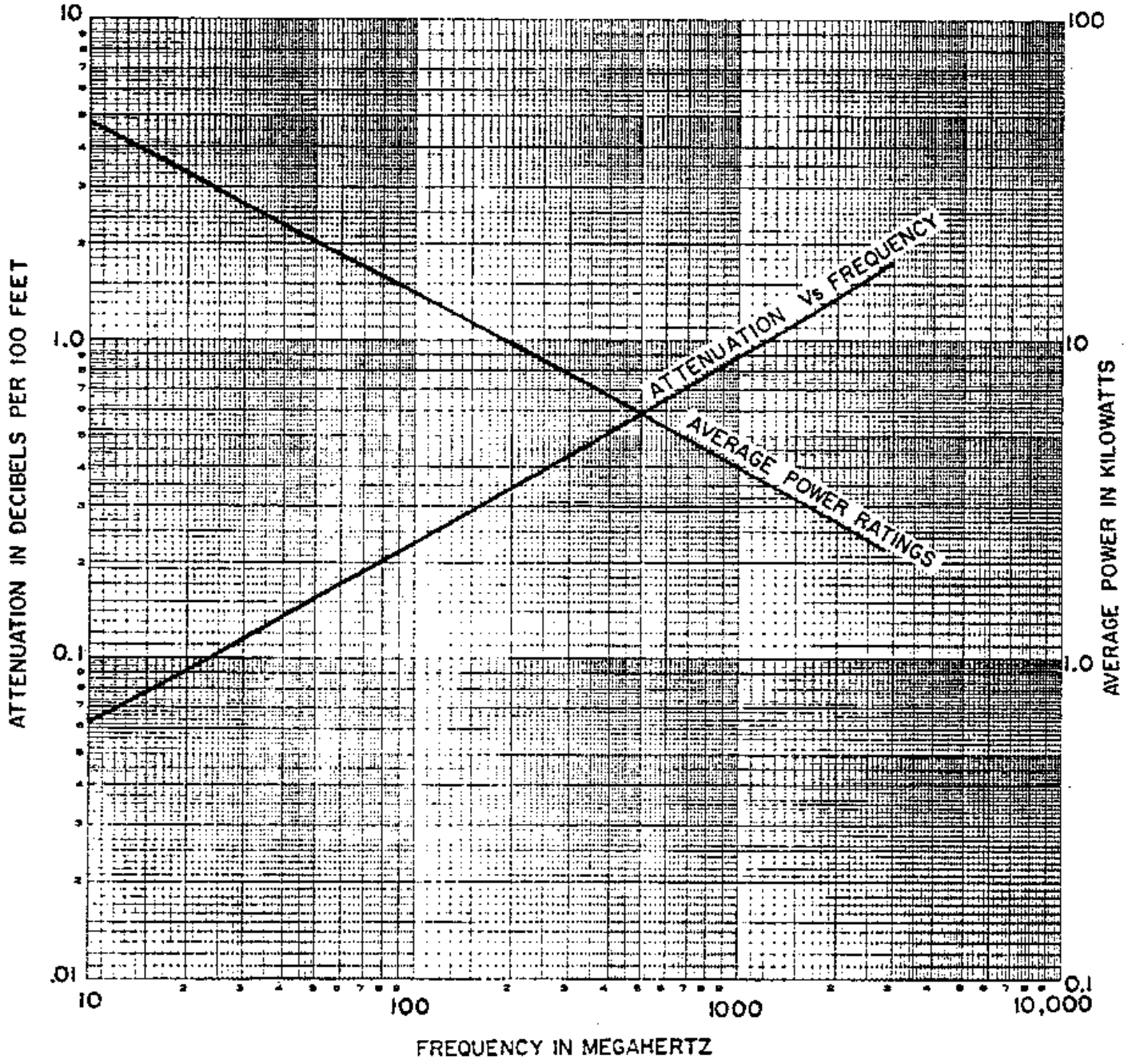


FIGURE 5. Attenuation and power rating curves for 008 and 009.

SPECIFICATION ANALYSIS SHEET

Form Approved
Budget Bureau No. 22-R255

INSTRUCTIONS: This sheet is to be filled out by personnel, either Government or contractor, involved in the use of the specification in procurement of products for ultimate use by the Department of Defense. This sheet is provided for obtaining information on the use of this specification which will insure that suitable products can be procured with a minimum amount of delay and at the least cost. Comments and the return of this form will be appreciated. Fold on lines on reverse side, staple in corner, and send to preparing activity. Comments and suggestions submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or serve to amend contractual requirements.

SPECIFICATION

ORGANIZATION

CITY AND STATE | CONTRACT NUMBER

MATERIAL PROCURED UNDER A

☐ DIRECT GOVERNMENT CONTRACT ☐ SUBCONTRACT

1. HAS ANY PART OF THE SPECIFICATION CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?

A. GIVE PARAGRAPH NUMBER AND WORDING.

B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES

2. COMMENTS ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID

3. IS THE SPECIFICATION RESTRICTIVE?

☐ YES ☐ NO *(If "yes", in what way?)*

4. REMARKS *(Attach any pertinent data which may be of use in improving this specification. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity)*

SUBMITTED BY *(Printed or typed name and activity - Optional)* | DATE

DD FORM 1 JAN 66 1426

REPLACES EDITION OF 1 OCT 64 WHICH MAY BE USED.

S/N-0102-014-1801 C-25254

FOLD

DEPARTMENT OF THE NAVY
NAVAL ELECTRONIC SYSTEMS COMMAND
WASHINGTON, D. C. 20360

POSTAGE AND FEES PAID
NAVY DEPARTMENT

OFFICIAL BUSINESS

COMMANDER
NAVAL ELECTRONIC SYSTEMS COMMAND
DEFENSE STANDARDIZATION PROGRAM BRANCH
DEPARTMENT OF THE NAVY
WASHINGTON, D. C. 20360

FOLD