INCH-POUND

MIL-DTL-85/1F
20 November 1998
SUPERSEDING
MIL-W-85/1E
2 July 1974

DETAIL SPECIFICATION SHEET

WAVEGUIDES, RIGID, RECTANGULAR

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

The requirements for acquiring the waveguides described herein shall consist of this document and the latest issue of MIL-DTL-85.

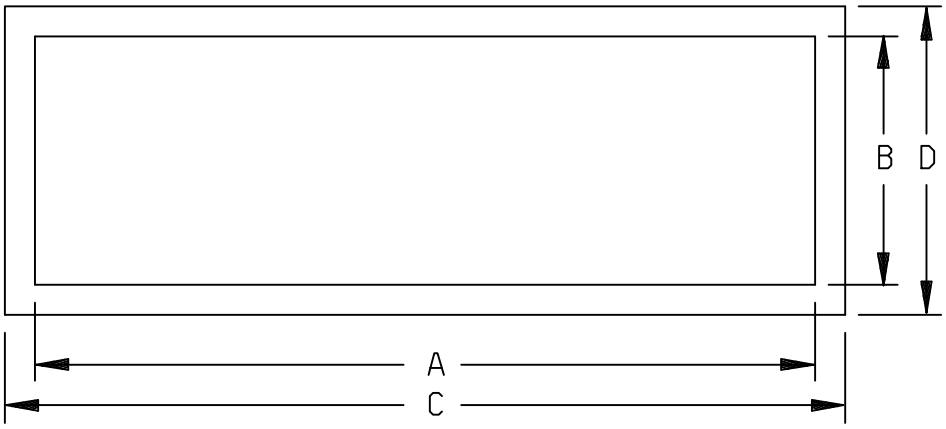

FIGURE 1. Waveguides, rigid, rectangular.

REQUIREMENTS:

Design, construction, and physical dimensions: See figure 1 and table I.

Material: See table I.

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

AN nomenclature: See table II.

NOTES:

Cross index and engineering information: See table II.

Cross index of NATO approved types: See table III.

Resistivity of materials: See table IV.

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

TABLE I. Waveguides, rigid, rectangular.

PIN M85/1- 1/	4/ Dimensions (inches)									ASTM type material
	Inside			Outside			Wall		Max inner corner radius 3/	
	Width (A)	Height (B)	Toler-ance	Width (C)	Height (D)	Toler-ance	Thick-ness (Nominal)	Max allow eccent 2/		
001-XXX 002-XXX 161-XXX	23.000 (584.20)	11.500 (292.10)	±.020 (0.51)	23.376 (593.75)	11.876 (301.65)	± .020 (0.51)	.188 (4.78)	.010 (0.25)	.125 (3.18)	1100 6061 6063
003-XXX 004-XXX 162-XXX	21.000 (533.40)	10.500 (266.70)	±.020 (0.51)	21.376 (542.95)	10.876 (276.25)	± .020 (0.51)	.188 (4.78)	.010 (0.25)	.125 (3.18)	1100 6061 6063
005-XXX 006-XXX 163-XXX	18.000 (457.20)	9.000 (228.60)	±.020 (0.51)	18.250 (463.55)	9.250 (234.95)	± .020 (0.51)	.125 (3.18)	.010 (0.25)	.125 (3.18)	1100 6061 6063
007-XXX 008-XXX 164-XXX	15.000 (381.00)	7.500 (190.50)	±.015 (0.38)	15.250 (387.35)	7.750 (196.85)	± .015 (0.38)	.125 (3.18)	.010 (0.25)	.0937 (2.38)	1100 6061 6063
009-XXX 010-XXX 165-XXX	11.500 (292.10)	5.750 (146.05)	±.015 (0.38)	11.750 (298.45)	6.000 (152.40)	± .015 (0.38)	.125 (3.18)	.010 (0.25)	.0937 (2.38)	1100 6061 6063
011-XXX 012-XXX 166-XXX	9.750 (247.65)	4.875 (123.83)	±.010 (0.25)	10.000 (254.00)	5.125 (130.18)	± .010 (0.25)	.125 (3.18)	.010 (0.25)	.0625 (1.59)	1100 6061 6063
013-XXX 014-XXX 167-XXX	7.700 (195.58)	3.850 (97.79)	±.010 (0.25)	7.950 (201.93)	4.100 (104.14)	± .010 (0.25)	.125 (3.18)	.010 (0.25)	.0625 (1.59)	1100 6061 6063
015-XXX 017-XXX 018-XXX 019-XXX 020-XXX 168-XXX	6.500 (165.10)	3.250 (82.55)	±.008 (0.20)	6.660 (169.16)	3.410 (86.61)	± .008 (0.20)	.080 (2.03)	.008 (0.20)	.0468 (1.19)	OF-DLP Copper alloy 1100 6061 AZ31B 6063
021-XXX 023-XXX 024-XXX 025-XXX 026-XXX 169-XXX	5.100 (129.54)	2.550 (64.77)	±.008 (0.20)	5.260 (133.60)	2.710 (68.83)	± .008 (0.20)	.080 (2.03)	.008 (0.20)	.0468 (1.19)	OF-DLP Copper alloy AZ31B 1100 6061 6063
027-XXX 029-XXX 030-XXX 031-XXX 032-XXX 170-XXX	4.300 (109.22)	2.150 (54.61)	±.008 (0.20)	4.460 (113.28)	2.310 (58.67)	± .008 (0.20)	.080 (2.03)	.008 (0.20)	.0468 (1.19)	OF-DLP 1100 6061 Copper alloy AZ31B 6063
033-XXX 035-XXX 036-XXX 037-XXX 038-XXX 171-XXX	3.400 (86.36)	1.700 (43.18)	±.006 (0.15)	3.560 (90.42)	1.860 (47.24)	± .006 (0.15)	.080 (2.03)	.007 (0.18)	.0468 (1.19)	OF-DLP 1100 6061 Copper alloy AZ31B 6063

See footnotes at end of table.

TABLE I. Waveguides, rigid, rectangular - Continued.

PIN M85/1- 1/	4/ Dimensions (inches)									ASTM type material
	Inside			Outside			Wall		Max inner corner radius 3/	
	Width (A)	Height (B)	Toler-ance	Width (C)	Height (D)	Toler-ance	Thick-ness (Nominal)	Max allow eccent. 2/		
039-XXX 041-XXX 042-XXX 043-XXX 044-XXX 172-XXX	2.840 (72.14)	1.340 (34.04)	±.006 (0.15)	3.000 (76.20)	1.500 (38.10)	± .006 (0.15)	.080 (2.03)	.006 (0.15)	.0468 (1.19)	OF-DLP 1100 6061 Copper alloy AZ31B 6063
045-XXX 047-XXX 048-XXX 049-XXX 050-XXX 173-XXX	2.290 (58.17)	1.145 (29.08)	±.006 (0.15)	2.418 (61.42)	1.273 (32.33)	± .006 (0.15)	.064 (1.63)	.005 (0.13)	.0468 (1.19)	OF-DLP 1100 6061 Copper alloy AZ31B 6063
051-XXX 053-XXX 054-XXX 055-XXX 056-XXX 174-XXX	1.872 (47.55)	.872 (22.15)	±.005 (0.13)	2.000 (50.80)	1.000 (25.40)	± .005 (0.13)	.064 (1.63)	.004 (0.10)	.0312 (0.79)	OF-DLP 1100 6061 Copper alloy AZ31B 6063
057-XXX 059-XXX 060-XXX 061-XXX 062-XXX 175-XXX	1.590 (40.39)	.795 (20.19)	±.005 (0.13)	1.718 (43.64)	.923 (23.44)	± .005 (0.13)	.064 (1.63)	.004 (0.10)	.0312 (0.79)	OF-DLP 1100 6061 Copper alloy AZ31B 6063
063-XXX 065-XXX 066-XXX 067-XXX 068-XXX 176-XXX	1.372 (34.85)	.622 (15.80)	±.004 (0.10)	1.500 (38.10)	.750 (19.05)	± .004 (0.10)	.064 (1.63)	.004 (0.10)	.0312 (0.79)	OF-DLP 1100 6061 Copper alloy AZ31B 6063
069-XXX 071-XXX 072-XXX 073-XXX 074-XXX 177-XXX	1.122 (28.50)	.497 (12.62)	±.004 (0.10)	1.250 (31.75)	.625 (15.88)	± .004 (0.10)	.064 (1.63)	.004 (0.10)	.0312 (0.79)	OF-DLP 1100 6061 Copper alloy AZ31B 6063
075-XXX 077-XXX 078-XXX 079-XXX 080-XXX 178-XXX	.900 (22.86)	.400 (10.16)	±.004 (0.10)	1.000 (25.40)	.500 (12.70)	± .004 (0.10)	.050 (1.27)	.004 (0.10)	.0312 (0.79)	OF-DLP 1100 6061 Copper alloy AZ31B 6063
081-XXX 083-XXX 084-XXX 085-XXX 086-XXX 179-XXX	.750 (19.05)	.375 (9.53)	±.003 (0.08)	.850 (21.59)	.475 (12.07)	± .003 (0.08)	.050 (1.27)	.004 (0.10)	.0312 (0.79)	OF-DLP 1100 6061 Copper alloy AZ31B 6063

See footnotes at end of table.

TABLE I. Waveguides, rigid, rectangular - Continued.

PIN M85/1- 1/	4/ Dimensions (inches)									ASTM type material
	Inside			Outside			Wall		Max inner corner radius 3/	
	Width (A)	Height (B)	Toler-ance	Width (C)	Height (D)	Toler-ance	Thick-ness (Nominal)	Max allow eccent 2/		
087-XXX 089-XXX 090-XXX 091-XXX 092-XXX 093-XXX 180-XXX	.622 (15.80)	.311 (7.90)	±.0025 (0.06)	.702 (17.83)	.391 (9.93)	± .003 (0.08)	.040 (1.02)	.003 (0.08)	.0156 (0.40)	OF-DLP Copper alloy 1100 6061 AZ31B Coin silver 6063
094-XXX 096-XXX 097-XXX 098-XXX 099-XXX 181-XXX	.510 (12.95)	.255 (6.48)	±.0025 (0.06)	.590 (14.99)	.335 (8.51)	± .003 (0.08)	.040 (1.02)	.003 (0.08)	.0156 (0.40)	OF-DLP Copper alloy 1100 6061 AZ31B 6063
100-XXX 102-XXX 103-XXX 104-XXX 105-XXX 106-XXX 182-XXX	.420 (10.67)	.170 (4.32)	±.002 (0.05)	.500 (12.70)	.250 (6.35)	± .003 (0.08)	.040 (1.02)	.003 (0.08)	.0156 (0.40)	OF-DLP Copper alloy 1100 6061 AZ31B Coin silver 6063
107-XXX 109-XXX 110-XXX 111-XXX 112-XXX 113-XXX 183-XXX	.340 (8.64)	.170 (4.32)	±.002 (0.05)	.420 (10.67)	.250 (6.35)	± .003 (0.08)	.040 (1.02)	.003 (0.08)	.0156 (0.40)	OF-DLP Copper alloy 1100 6061 AZ31B Copper alloy 5/ 6063
155-XXX 156-XXX 157-XXX 158-XXX 159-XXX 160-XXX	1.020 (25.91)	.510 (12.95)	±.003 (0.08)	1.148 (29.16)	.638 (16.21)	± .005 (0.13)	.064 (1.63)	---	.016 (0.41)	Copper alloy OF-DLP 1100 6061 AZ31B 6063

1/ The complete PIN shall be the number shown and a three-digit number indicating length in inches (i.e., M85/1-001-096).
2/ The eccentricity of a waveguide is defined as one-half the difference between opposite wall thickness as measured at any cross section perpendicular to the longitudinal axis.
3/ Maximum outer corner radius, .031 inch (0.79 mm); minimum outer corner radius, .016 inch (0.41 mm).
4/ Metric equivalents (to the nearest .01 mm) are given for general information only, and are based upon 1 inch = 25.4 mm. Millimeters are in parentheses.
5/ Material shall be Fine silver laminated on copper alloy, minimum thickness .005 inch (0.13 mm).

TABLE II. Cross index and engineering information.

PIN M85/1-	Old type designation (AN nomenclature)	Suggested frequency range TE_{10} mode	Cutoff for TE_{10} mode	Theoretical 1/ attenuation (lowest to highest frequency)	Theoretical peak power rating 2/ (lowest to highest frequency)	Theoretical CW power rating 3/ (lowest to highest frequency)
		GHz	GHz	dB/100 ft	megawatts	kilowatts
001-XXX	RG-290/U	.32 - .49	.256	0.040 - 0.026	528.3 - 753.8	1702 - 2618
002-XXX	---	.32 - .49	.256	0.047 - 0.031	528.3 - 753.8	1447 - 2194
161-XXX	---	.32 - .49	.256	0.043 - 0.028	528.3 - 753.8	1582 - 2429
003-XXX	RG-291/U	.35 - .53	.281	0.046 - 0.031	439.3 - 625.4	1375 - 2040
004-XXX	---	.35 - .53	.281	0.054 - 0.036	439.3 - 625.4	1170 - 1756
162-XXX	---	.35 - .53	.281	0.050 - 0.034	439.3 - 625.4	1264 - 1859
005-XXX	RG-201/U	.410 - .625	.328	0.057 - 0.038	325.1 - 461.4	973.0 - 1450
006-XXX	---	.410 - .625	.328	0.067 - 0.045	325.1 - 461.4	827.2 - 123.2
163-XXX	---	.410 - .625	.328	0.062 - 0.041	325.1 - 461.4	893.9 - 135.2
007-XXX	RG-202/U	.490 - .750	.393	0.076 - 0.051	224.1 - 320.4	630.1 - 939.0
008-XXX	---	.490 - .750	.393	0.089 - 0.060	224.1 - 320.4	537.7 - 797.6
164-XXX	---	.490 - .750	.393	0.082 - 0.055	224.1 - 320.4	583.6 - 870.1
009-XXX	RG-203/U	.64 - .96	.513	0.113 - 0.076	132.0 - 186.9	342.8 - 509.7
010-XXX	---	.64 - .96	.513	0.133 - 0.089	132.0 - 186.9	291.0 - 434.9
165-XXX	---	.64 - .96	.513	0.122 - 0.082	132.0 - 186.9	317.3 - 472.1
011-XXX	RG-204/U	.75 - 1.12	.605	0.147 - 0.098	93.81 - 133.7	231.2 - 346.9
012-XXX	---	.75 - 1.12	.605	0.173 - 0.115	93.81 - 133.7	196.4 - 295.4
166-XXX	---	.75 - 1.12	.605	0.159 - 0.106	93.81 - 133.7	213.6 - 320.5
013-XXX	RG-205/U	.96 - 1.45	.766	0.205 - 0.139	59.67 - 84.18	137.8 - 203.3
014-XXX	---	.96 - 1.45	.766	0.240 - 0.163	59.67 - 84.18	117.6 - 173.2
167-XXX	---	.96 - 1.45	.766	0.222 - 0.151	59.67 - 84.18	127.9 - 187.0
015-XXX	---	1.12 - 1.70	.908	0.213 - 0.141	41.34 - 59.74	114.8 - 173.6
017-XXX	RG-69/U	1.12 - 1.70	.908	0.316 - 0.209	41.34 - 59.74	80.53 - 121.8
018-XXX	RG-103/U	1.12 - 1.70	.908	0.273 - 0.180	41.34 - 59.74	88.45 - 135.7
019-XXX	---	1.12 - 1.70	.908	0.320 - 0.212	41.34 - 59.74	76.26 - 115.1
020-XXX	RG-206/U	1.12 - 1.70	.908	0.484 - 0.320	41.34 - 59.74	50.35 - 76.15
168-XXX	---	1.12 - 1.70	.908	0.295 - 0.195	41.34 - 59.74	82.72 - 125.1
021-XXX	---	1.45 - 2.20	1.154	0.296 - 0.201	26.19 - 37.00	68.22 - 100.4
023-XXX	RG-337/U	1.45 - 2.20	1.154	0.440 - 0.299	26.19 - 37.00	47.87 - 70.44
024-XXX	RG-339/U	1.45 - 2.20	1.154	0.674 - 0.458	26.19 - 37.00	29.92 - 44.04
025-XXX	RG-338/U	1.45 - 2.20	1.154	0.380 - 0.258	26.19 - 37.00	53.19 - 78.34
026-XXX	---	1.45 - 2.20	1.154	0.446 - 0.303	26.19 - 37.00	45.29 - 66.67
169-XXX	---	1.45 - 2.20	1.154	0.411 - 0.279	26.19 - 37.00	49.14 - 72.39
027-XXX	---	1.70 - 2.60	1.375	0.393 - 0.261	18.23 - 26.26	45.14 - 68.00
029-XXX	RG-105/U	1.70 - 2.60	1.375	0.502 - 0.334	18.23 - 26.26	35.30 - 53.05
030-XXX	---	1.70 - 2.60	1.375	0.590 - 0.392	18.23 - 26.26	30.03 - 45.20
031-XXX	RG-104/U	1.70 - 2.60	1.375	0.583 - 0.387	18.23 - 26.26	31.67 - 47.71
032-XXX	RG-207/U	1.70 - 2.60	1.375	0.892 - 0.592	18.23 - 26.26	19.82 - 29.87
170-XXX	---	1.70 - 2.60	1.375	0.544 - 0.361	18.23 - 26.26	32.57 - 49.08
033-XXX	---	2.20 - 3.30	1.737	0.533 - 0.371	11.87 - 16.44	27.82 - 40.00
035-XXX	RG-113/U	2.20 - 3.30	1.737	0.682 - 0.474	11.87 - 16.44	21.73 - 31.26
036-XXX	---	2.20 - 3.30	1.737	0.801 - 0.557	11.87 - 16.44	18.50 - 26.60
037-XXX	RG112/U	2.20 - 3.30	1.737	0.791 - 0.550	11.87 - 16.44	19.52 - 28.07
038-XXX	RG-208/U	2.20 - 3.30	1.737	1.211 - 0.842	11.87 - 16.44	12.21 - 17.56
171-XXX	---	2.20 - 3.30	1.737	0.739 - 0.514	11.87 - 16.44	20.05 - 28.83
039-XXX	---	2.60 - 3.95	2.080	0.742 - 0.508	7.645 - 10.85	17.19 - 25.11
041-XXX	RG-75/U	2.60 - 3.95	2.080	0.950 - 0.651	7.645 - 10.85	13.42 - 19.59
042-XXX	---	2.60 - 3.95	2.080	1.116 - 0.764	7.645 - 10.85	11.42 - 16.69
043-XXX	RG-48/U	2.60 - 3.95	2.080	1.102 - 0.754	7.645 - 10.85	12.06 - 17.62
044-XXX	RG-167/U	2.60 - 3.95	2.080	1.687 - 1.155	7.645 - 10.85	7.542 - 11.02
172-XXX	---	2.60 - 3.95	2.080	1.029 - 0.704	7.645 - 10.85	12.39 - 18.12

TABLE II. Cross index and engineering information - Continued.

PIN M85/1-	Old type designation (AN nomenclature)	Suggested frequency range TE_{10} mode	Cutoff for TE_{10} mode	Theoretical 1/ attenuation (lowest to highest frequency)	Theoretical peak power rating 2/ (lowest to highest frequency)	Theoretical CW power rating 3/ (lowest to highest frequency)
		GHz	GHz	dB/100 ft	megawatts	kilowatts
045-XXX	---	3.30 - 4.90	2.577	0.946 - 0.671	7.645 - 10.85	11.52 - 16.23
047-XXX	RG-341/U	3.30 - 4.90	2.577	1.211 - 0.858	5.475 - 7.549	8.993 - 12.69
048-XXX	---	3.30 - 4.90	2.577	1.422 - 1.009	5.475 - 7.549	7.659 - 10.79
049-XXX	RG-340/U	3.30 - 4.90	2.577	1.404 - 0.996	5.475 - 7.549	8.083 - 11.39
050-XXX	RG-342/U	3.30 - 4.90	2.577	2.149 - 1.523	5.475 - 7.549	5.057 - 7.136
173-XXX	---	3.30 - 4.90	2.577	1.311 - 0.930	5.475 - 7.549	8.307 - 11.71
051-XXX	---	3.95 - 5.85	3.155	1.395 - 0.967	3.296 - 4.697	6.612 - 9.534
053-XXX	RG-95/U	3.95 - 5.85	3.155	1.785 - 1.238	3.296 - 4.697	5.165 - 7.446
054-XXX	---	3.95 - 5.85	3.155	2.097 - 1.454	3.296 - 4.697	4.397 - 6.340
055-XXX	RG-49/U	3.95 - 5.85	3.155	2.071 - 1.436	3.296 - 4.697	4.639 - 6.690
056-XXX	RG-168/U	3.95 - 5.85	3.155	3.168 - 2.197	3.296 - 4.697	2.904 - 4.187
174-XXX	---	3.95 - 5.85	3.155	1.934 - 1.341	3.296 - 4.697	4.767 - 6.874
057-XXX	---	4.90 - 7.05	3.705	1.553 - 1.160	2.792 - 3.719	5.374 - 7.193
059-XXX	RG-344/U	4.90 - 7.05	3.705	1.988 - 1.485	2.792 - 3.719	4.196 - 5.617
060-XXX	---	4.90 - 7.05	3.705	2.334 - 1.744	2.792 - 3.719	3.574 - 4.783
061-XXX	RG-343/U	4.90 - 7.05	3.705	2.305 - 1.722	2.792 - 3.719	3.771 - 5.047
062-XXX	RG-345/U	4.90 - 7.05	3.705	3.527 - 2.634	2.792 - 3.719	2.360 - 3.160
175-XXX	---	4.90 - 7.05	3.705	2.152 - 1.608	2.792 - 3.719	3.876 - 5.187
063-XXX	---	5.85 - 8.20	4.285	1.978 - 1.562	1.975 - 2.531	3.708 - 4.695
065-XXX	RG-106/U	5.85 - 8.20	4.285	3.532 - 1.999	1.975 - 2.531	2.076 - 3.667
066-XXX	---	5.85 - 8.20	4.285	4.148 - 2.348	1.975 - 2.531	1.768 - 3.122
067-XXX	RG-50/U	5.85 - 8.20	4.285	2.936 - 2.319	1.975 - 2.531	2.602 - 3.294
068-XXX	RG-169/U	5.85 - 8.20	4.285	4.492 - 3.548	1.975 - 2.531	1.629 - 2.062
176-XXX	---	5.85 - 8.20	4.285	3.824 - 2.164	1.975 - 2.531	1.917 - 3.387
069-XXX	---	7.05 - 10.00	5.260	2.776 - 2.154	1.284 - 1.702	2.290 - 2.946
071-XXX	RG-68/U	7.05 - 10.00	5.260	3.548 - 2.756	1.284 - 1702	1.788 - 2.301
072-XXX	---	7.05 - 10.00	5.260	4.166 - 3.238	1.284 - 1.702	1.523 - 1.958
073-XXX	RG-51/U	7.05 - 10.00	5.260	4.114 - 3.197	1.284 - 1.702	1.607 - 2.067
074-XXX	RG-170/U	7.05 - 10.00	5.260	6.275 - 4.891	1.284 - 1.702	1.009 - 1.294
177-XXX	---	7.05 - 10.00	5.260	3.841 - 2.985	1.284 - 1.702	1.652 - 2.124
075-XXX	---	8.20 - 12.40	6.560	4.328 - 2.995	0.758 - 1.124	1.229 - 1.776
077-XXX	RG-67/U	8.20 - 12.40	6.560	5.540 - 3.833	0.758 - 1.124	0.9593 - 1.386
078-XXX	---	8.20 - 12.40	6.560	6.506 - 4.502	0.758 - 1.124	0.8169 - 1.180
079-XXX	RG-52/U	8.20 - 12.40	6.560	6.424 - 4.445	0.758 - 1.124	0.8621 - 1.246
080-XXX	RG-171/U	8.20 - 12.40	6.560	9.830 - 6.801	0.758 - 1.124	0.5395 - 0.7798
178-XXX	---	8.20 - 12.40	6.560	5.998 - 4.150	0.758 - 1.124	0.8860 - 1.280
081-XXX	---	10.00 - 15.00	7.847	5.121 - 3.577	0.622 - 0.903	0.9436 - 1.351
083-XXX	RG-347/U	10.00 - 15.00	7.847	6.554 - 4.578	0.622 - 0.903	0.7368 - 1.055
084-XXX	---	10.00 - 15.00	7.847	7.698 - 5.377	0.622 - 0.903	0.6273 - 0.8982
085-XXX	RG-346/U	10.00 - 15.00	7.847	7.601 - 5.309	0.622 - 0.903	0.6621 - 0.9479
086-XXX	RG-348/U	10.00 - 15.00	7.847	11.631- 8.124	0.622 - 0.903	0.4143 - 0.5932
179-XXX	---	10.00 - 15.00	7.847	7.097 - 4.957	0.622 - 0.903	0.6804 - 0.9473
087-XXX	---	12.40 - 18.00	9.490	6.451 - 4.743	0.457 - 0.633	0.6432 - 0.8749
089-XXX	RG-91/U	12.40 - 18.00	9.490	9.578 - 7.041	0.457 - 0.633	0.4513 - 0.6139
090-XXX	RG-349/U	12.40 - 18.00	9.490	8.259 - 6.071	0.457 - 0.633	0.5022 - 0.6832
091-XXX	---	12.40 - 18.00	9.490	9.700 - 7.131	0.457 - 0.633	0.4276 - 0.5816
092-XXX	RG-172/U	12.40 - 18.00	9.490	14.655 - 10.773	0.457 - 0.633	0.2824 - 0.3842
093-XXX	RG-107/U	12.40 - 18.00	9.490	6.910 - 5.079	0.457 - 0.633	0.6016 - 0.8184
180-XXX	---	12.40 - 18.00	9.490	8.943 - 6.574	0.457 - 0.633	0.4638 - 0.6309

See footnotes at end of table.

TABLE II. Cross index and engineering information - Continued.

PIN M85/1-	Old type designation (AN nomenclature)	Suggested frequency range TE_{10} mode	Cutoff for TE_{10} mode	Theoretical 1/ attenuation (lowest to highest frequency)	Theoretical peak power rating 2/ (lowest to highest frequency)	Theoretical CW power rating 3/ (lowest to highest frequency)
		GHz	GHz	dB/100 ft	megawatts	kilowatts
094-XXX	RG-352/U	15.00 - 22.00	11.54	8.812 - 6.384	0.312 - 0.433	0.4132 - 0.5701
096-XXX	RG-353/U	15.00 - 22.00	11.54	13.08 - 9.477	0.312 - 0.433	0.2899 - 0.4000
097-XXX	RG-351/U	15.00 - 22.00	11.54	11.27 - 8.172	0.312 - 0.433	0.3228 - 0.4452
098-XXX	---	15.00 - 22.00	11.54	13.25 - 9.598	0.312 - 0.433	0.2746 - 0.3791
099-XXX	RG-350/U	15.00 - 22.00	11.54	20.01 - 14.50	0.312 - 0.433	0.1814 - 0.2504
181-XXX	---	15.00 - 22.00	11.54	12.21 - 8.849	0.312 - 0.433	0.2979 - 0.4111
100-XXX	---	18.00 - 26.50	14.080	13.80 - 10.13	0.171 - 0.246	0.2230 - 0.3038
102-XXX	RG-53/U	18.00 - 26.50	14.080	20.48 - 15.04	0.171 - 0.246	0.1565 - 0.2132
103-XXX	RG-121/U	18.00 - 26.50	14.080	17.66 - 12.97	0.171 - 0.246	0.1742 - 0.2372
104-XXX	---	18.00 - 26.50	14.080	20.74 - 15.23	0.171 - 0.246	0.1483 - 0.2020
105-XXX	RG-173/U	18.00 - 26.50	14.080	31.34 - 23.02	0.171 - 0.246	0.9796 - 0.1334
106-XXX	RG-66/U	18.00 - 26.50	14.080	14.77 - 10.85	0.171 - 0.246	0.2087 - 0.2842
182-XXX	---	18.00 - 26.50	14.080	19.12 - 14.04	0.171 - 0.246	0.1609 - 0.2191
107-XXX	---	22.00 - 33.00	17.28	16.86 - 11.73	0.139 - 0.209	0.1676 - 0.2410
109-XXX	RG-354/U	22.00 - 33.00	17.28	25.03 - 17.41	0.139 - 0.209	0.1176 - 0.1691
110-XXX	RG-355/U	22.00 - 33.00	17.28	21.58 - 15.01	0.139 - 0.209	0.1309 - 0.1883
111-XXX	---	22.00 - 33.00	17.28	25.35 - 17.63	0.139 - 0.209	0.1114 - 0.1603
112-XXX	RG-356/U	22.00 - 33.00	17.28	38.29 - 26.63	0.139 - 0.209	0.07365 - 0.1059
113-XXX	RG-357/U	22.00 - 33.00	17.28	16.18 - 11.25	0.139 - 0.209	0.1750 - 0.2517
183-XXX	---	22.00 - 33.00	17.28	23.37 - 16.26	0.139 - 0.209	0.1209 - 0.1738
155-XXX	RG-320/U	7.00 - 11.00	5.780	5.219 - 3.291	1.017 - 1.534	1.220 - 1.935
156-XXX	---	7.00 - 11.00	5.780	3.516 - 2.217	1.017 - 1.534	1.725 - 2.735
157-XXX	---	7.00 - 11.00	5.780	4.500 - 2.838	1.017 - 1.534	1.358 - 2.154
158-XXX	---	7.00 - 11.00	5.780	5.285 - 3.333	1.017 - 1.534	1.156 - 1.834
159-XXX	---	7.00 - 11.00	5.780	7.985 - 5.035	1.017 - 1.534	0.7637 - 1.211
160-XXX	---	7.00 - 11.00	5.780	4.873 - 3.073	1.017 - 1.534	1.254 - 1.989

1/ At 20°C.

2/ These values were determined by calculating the unpressurized air dielectric breakdown strength produced by considering the E field within the waveguide. This determination was based on the peak value of a continuous wave (CW) signal. For further information or to calculate for other situations, see Gould and Gilden's "Handbook of High Power Capabilities of Waveguide Systems" (available from Microwave Associates, Burlington, MA.)

3/ These values were determined by calculation of the rate of heat loss to the ambient, considering a nonpressurized, air dielectric waveguide in air using no artificial heat sink. A maximum waveguide temperature of 71°C, 1:1 VSWR, and an ambient temperature of 30°C were assumed. For further information or to calculate for other situations, see H. E. King, "Rectangular Waveguide Theoretical CW Average Power Rating.", IRE Transactions PGMTT-9, pp 349-357, July 1961.

TABLE III. Cross-index of NATO approved types.

Type designation	EIA type designation	NATO approved types
RG-201/U	WR1800A	NWG-1A01
RG-202/U	WR1500A	NWG-1A02
RG-203/U	WR1150A	NWG-1A03
RG-204/U	WR975A	NWG-1A04
RG-205/U	WR770A	NWG-1A05
RG-69/U	WR650A	NWG-3A06
RG-103/U	WR650A	NWG-1A06
RG-104/U	WR430B	NWG-3A08
RG-105/U	WR430A	NWG-1A08
RG-112/U	WR340B	NWG-3A09
RG-113/U	WR340A	NWG-1A09
RG-48/U	WR284B	NWG-3A10
RG-75/U	WR284A	NWG-1A10
RG-49/U	WR187B	NWG-3A12
RG-95/U	WR187A	NWG-1A12
RG-50/U	WR137B	NWG-3A14
RG-106/U	WR137A	NWG-1A14
RG-51/U	WR112B	NWG-3A15
RG-68/U	WR112A	NWG-1A15
RG-52/U	WR90B	NWG-3A16
RG-67/U	WR90A	NWG-1A16
RG-91/U	WR62B	NWG-3A18
RG-107/U	WR62S	NWG-6A18
RG-53/U	WR42B	NWG-3A20
RG-66/U	WR42S	NWG-6A20
RG-121/U	WR42A	NWG-1A20
RG-167/U	WR284-	NWG-5A10
RG-168/U	WR187-	NWG-5A12
RG-172/U	WR62-	NWG-5A18
RG-169/U	WR137-	NWG-5A14
RG-170/U	WR112-	NWG-5A15

TABLE IV. Typical resistivity and conductivity of materials.

Material	Resistivity at 20°C (max)	Conductivity
	microhm-cm	percent
Aluminum:		
Alloy 1100 - - - - - - -	2.90	57
Alloy 6061 - - - - - - -	4.00	40 to 45
Alloy 6063 - - - - - - -	3.40	50
Copper:		
OF - - - - - - - - - - - - -	1.77	101
DLP - - - - - - - - - - - -	1.793	up to 100
Copper alloy - - - - - - - -	3.9	44
Silver:		
Grade A - - - - - - - -	1.63	106
Grade C - - - - - - - -	2.03	85
Magnesium		
Alloy AZ31B - - - - -	9.13	18.5

Custodians:
Army - CR
Navy - EC
Air Force - 85

International agreement (see section 6)

Review activities:
Army - AR, CR4, MI
Navy - AS, CG, MC, OS
Air Force - 11, 17, 19, 99

Preparing activity:
DLA - CC

(Project 5985-1121)