


# High Power RF Cables, Connectors & Assemblies



- Semi-Conductor Manufacturing Equipment
- Flat Panel Manufacturing Equipment
- Solar Panel Manufacturing Equipment
- High Power Lasers
- High Power Radars
- TV/FM Broadcast
- Magnetic Resonance Imaging
- Other High Power RF Applications

 **TIMES**  
MICROWAVE SYSTEMS  
An Amphenol Company

## High Power Coaxial Cable, Connectors & Assemblies

Times offers a broad range of cables, connectors and assemblies for high power RF transmission. Applications such as magnetic resonance imaging (MRI), semi-conductor manufacturing equipment, flat panel manufacturing equipment, broadcast and high power lasers and radar each have their own electrical and mechanical requirements. With our broad range of solutions and capability of producing custom cables and connectors, Times is uniquely positioned to help with all of your high power RF transmission applications.

Although Times Microwave Systems is known for providing precision cable assemblies for microwave applications up to 40 GHz, we are also the leading provider of cables and assemblies for high power, low frequency applications. Our broad range of manufacturing capabilities enables us to offer rugged, flexible cables and cable assemblies, that can operate in high ambient temperatures and provide environmental resistance, while handling both high average and peak powers. Constructions are available to meet requirements for low loss, high RF shielding, and low VSWR.

Since each application requires a different set of performance characteristics, having a wide range of cables to choose from allows the trade-offs to be considered and the best cable for the application to be chosen. We produce cables with dielectrics of solid PE and PTFE, foam PE and expanded PTFE; outer conductors of round wire, flat wire and composite constructions; and jackets of PE, FEP, PVC, Urethane, Nomex®, Kapton® and other materials.

## Connector Selection

At the relatively low frequencies and high powers typically encountered in these applications, considerations for the best interface selection are very different than in microwave applications. Impedance uniformity through the interface is not as critical, but high contact forces, low contact resistance and a large interface diameter are very important. From a performance point of view, EIA flange connectors are the ideal choice with their bolt-together outer contacts and inside spring finger center-contacts. Their disadvantages include large size, high cost and time-consuming installation. Other good choices include LC's and 7/16 DIN's. Frequently, the equipment being connected to dictates the interface. Some interfaces that Times Microwave Systems provide include:

- C
- N
- HN
- 7-16 DIN
- 1-5/8" EIA
- Proprietary LC quick disconnect interface
- SC
- QDS
- LC
- 7/8" EIA
- 3-1/8" EIA

## Cable Assemblies

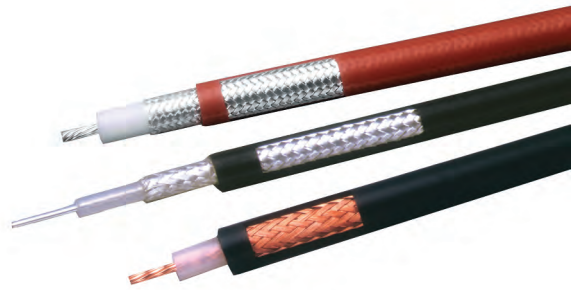
Our capability to manufacture cables and connectors and our expertise in assembling and testing them enable us to design custom cable assemblies for your application. Built to exacting standards, we design our cable assemblies for reliability in the most extreme operating conditions. Assemblies can be matched in phase length or supplied in specific electrical lengths with customer required markings added. Complete test data on VSWR, insertion loss, corona and other parameters can be provided as required.



# HP Cables

## Cable Feature:

Flexibility	Very Good
Cost	High
Attenuation	Medium
Power Handling	Very High
Temperature	High
Connector Availability	Good



	HP-393	HP-226	HP-600A	HP-218	HP-900	HP-1200
<b>AA Drawing Number</b>	AA-9963	AA-9021	AA-11441	AA-9290	AA-11229	AA-11419
<b>Part Number</b>	510-0019	51848	510-0070	51928	54262	54359
<b>Physical Specifications</b>						
Description	in (mm)	in (mm)	in (mm)	in (mm)	in (mm)	in (mm)
Center Conductor	SC	SC	SC	SC	BC Tube	BC Tube
	0.094 (2.39)	0.126 (3.20)	0.152 (3.86)	0.230 (5.84)	0.227 (5.77)	0.308 (7.82)
Dielectric	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE
	0.285 (7.24)	0.370 (9.40)	0.455 (11.56)	0.680 (17.27)	0.680 (17.27)	0.920 (23.27)
Inner Shield	TC	TC	TC	TC	MT	APA
	0.295 (7.49)	0.400 (10.13)	0.488 (12.40)	0.710 (18.11)	0.686 (17.42)	0.932 (23.67)
Interlayer	/	/	/	/	/	/
Outer Shield	TC	TC	TC	TC	TC	TC
	0.330 (8.38)	0.430 (10.87)	0.520 (13.23)	0.740 (18.95)	0.732 (18.59)	0.980 (24.89)
Jacket	FEP	FEP	FEP	Nomex/PTFE	Nomex/Kapton	PTFE
	0.390 (9.91)	0.490 (12.32)	0.590 (14.99)	0.790 (19.94)	0.775 (19.69)	1.050 (26.67)
<b>Mechanical Specifications</b>						
Bend Radius	2.0 (50.8)	5.0 (127.0)	2.8 (69.9)	8.0 (203.0)	4.0 (101.6)	8.0 (203.2)
Weight	0.175 lb/ft	0.240 lb/ft	0.325 lb/ft	0.375 lb/ft	0.475 lb/ft	0.740 lb/ft
Operating Temperature Range	-55/+200 °C	-55/+200 °C	-55/+200 °C	-55/+200 °C	-55/+200 °C	-40/+125 °C
<b>Electrical Specifications</b>						
Impedance	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms
Shielding Effectiveness	60 dB	60 dB	60 dB	60 dB	90 dB	60 dB
Dielectric Constant	1.98	1.98	1.98	1.73	1.73	1.73
Velocity of Propagation	0.71	0.71	0.71	0.76	0.76	0.76
Capacitance	28.6pF/ft	28.6pF/ft	29.0pF/ft	26.7pF/ft	26.7pF/ft	26.7pF/ft
DC Voltage (kV)	1.875	6.9	8.3	9.45	9.45	12.5
<b>Attenuation: dB/100ft (100m) (+25 °C Ambient; Sea Level)</b>						
13.56 MHz	0.76 (2.48)	0.61 (1.99)	0.50 (1.63)	0.34 (1.11)	0.21 (0.70)	0.16 (0.51)
50 MHz	1.48 (4.87)	1.18 (3.88)	0.98 (3.23)	0.66 (2.15)	0.41 (1.36)	0.31 (1.00)
100 MHz	2.14 (7.02)	1.70 (5.56)	1.43 (4.68)	0.93 (3.06)	0.59 (1.94)	0.44 (1.43)
1000 MHz	7.64 (25.07)	5.90 (19.34)	5.31 (17.43)	3.07 (10.08)	1.99 (6.54)	1.50 (4.93)
1500 MHz	9.72 (31.88)	7.44 (24.39)	6.83 (22.40)	3.81 (12.51)	2.49 (8.17)	1.89 (6.21)
2000 MHz	11.57 (37.95)	8.80 (28.86)	8.20 (26.89)	4.45 (14.61)	2.92 (9.59)	2.23 (7.33)
2500 MHz	13.28 (43.56)	10.04 (32.94)	9.48 (31.08)	5.03 (16.49)	3.32 (10.88)	2.55 (8.35)
3000 MHz	14.89 (48.83)	11.21 (36.75)	10.69 (35.05)	5.55 (18.22)	3.68 (12.08)	2.83 (9.30)
K1	0.200595	0.161700	0.131000	0.091400	0.057220	0.041900
K2	0.001300	0.000783	0.001170	0.000183	0.000183	0.000180
<b>Power (Watts) (+25 °C Ambient; Sea Level)</b>						
13.56 MHz	18401	27153	32938	66034	80110	126762
50 MHz	9389	13926	16674	34170	41284	65095
100 MHz	6526	9720	11513	24030	28932	45482
1000 MHz	1836	2809	3106	7306	8586	13225
1500 MHz	1447	2231	2421	5891	6872	10521
2000 MHz	1218	1889	2020	5049	5854	8919
2500 MHz	1064	1657	1750	4476	5162	7831
3000 MHz	951	1487	1554	4053	4653	7033

\* SC = Silver Plated Copper

\* BC = Bare Copper

\* TC = Tinned Copper

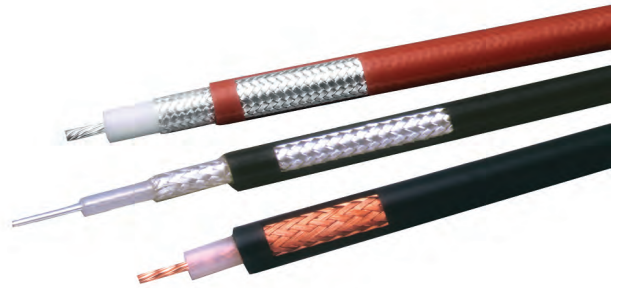
\* MT = Metallized Composite Tapes

Note: HP-393 is marked RG-393-NPP-SN

# HPL Cables

## Cable Feature:

Flexibility	Very Good
Cost	Medium/High
Attenuation	Medium
Power Handling	High
Temperature	Medium
Connector Availability	Good



	HPL-393	HPL-226	HPL-600	HPL-218	HPL-1200
<b>AA Drawing Number</b>	AA-11461	AA-11460	AA-11458	AA-11459	AA-11475
<b>Part Number</b>	510-0079	510-0078	510-0080	510-0077	54367
<b>Physical Specifications</b>					
Description	in (mm)	in (mm)	in (mm)	in (mm)	in (mm)
Center Conductor	Stranded BC	Stranded BC	Stranded BC	Stranded BC	Stranded BC
	0.094 (2.39)	0.117 (2.97)	0.152 (3.86)	0.235 (5.97)	0.314 (7.98)
Dielectric	PTFE	PTFE	PTFE	PTFE	PTFE
	0.285 (7.24)	0.370 (9.40)	0.455 (11.56)	0.68 (17.27)	0.920 (23.37)
Inner Shield	TC	TC	TC	TC	TC
	0.314 (7.98)	0.400 (10.16)	0.488 (12.40)	0.714 (18.14)	0.966 (24.54)
Interlayer	/	/	/	/	/
Outer Shield	TC	TC	TC	TC	TC
	0.340 (8.64)	0.427 (10.85)	0.520 (13.21)	0.745 (18.92)	1.012 (25.70)
Jacket	TPV	TPV	TPV	TPV	TPV
	0.430 (10.92)	0.515 (13.08)	0.610 (15.49)	0.845 (21.46)	1.200 (30.48)
<b>Mechanical Specifications</b>					
Bend Radius	2.3 (57.2)	2.8 (69.9)	3.0 (76.2)	4.3 (108.0)	9.0 (228.6)
Weight	0.185 lb/ft	0.240 lb/ft	0.310 lb/ft	0.610 lb/ft	1.188 lb/ft
Operating Temperature Range	-55/+125 °C	-55/+125 °C	-55/+125 °C	-55/+125 °C	-55/+125 °C
<b>Electrical Specifications</b>					
Impedance	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms
Shielding Effectiveness	60 dB	60 dB	60 dB	60 dB	60 dB
Dielectric Constant	1.98	1.98	1.98	1.73	1.73
Velocity of Propagation	0.71	0.71	0.71	0.76	0.76
Capacitance	28.8pF/ft	28.8pF/ft	28.9pF/ft	26.8pF/ft	29.0pF/ft
DC Voltage (kV)	5.1	6.4	8.3	9.45	12.5
<b>Attenuation: dB/100ft (100m) (+25 °C Ambient; Sea Level)</b>					
13.56 MHz	0.84 (2.74)	0.59 (1.94)	0.51 (1.66)	0.29 (0.96)	0.25 (0.82)
50 MHz	1.62 (5.33)	1.15 (3.79)	1.00 (3.27)	0.56 (1.85)	0.48 (1.59)
100 MHz	2.32 (7.61)	1.65 (5.43)	1.45 (4.74)	0.80 (2.63)	0.69 (2.26)
1000 MHz	7.87 (25.82)	5.77 (18.92)	5.37 (17.62)	2.63 (8.63)	2.30 (7.56)
1500 MHz	9.86 (32.33)	7.28 (23.88)	6.90 (22.64)	3.26 (10.70)	2.87 (9.42)
2000 MHz	11.59 (38.01)	8.62 (28.26)	8.28 (27.17)	3.81 (12.49)	3.37 (11.04)
2500 MHz	13.16 (43.18)	9.84 (32.28)	9.57 (31.39)	4.30 (14.09)	3.81 (12.51)
3000 MHz	14.63 (47.97)	10.98 (36.03)	10.79 (35.39)	4.74 (15.56)	4.22 (13.86)
K1	0.224140	0.157660	0.132920	0.078590	0.067100
K2	0.000783	0.000783	0.001170	0.000146	0.000183
<b>Power (Watts) (+25 °C Ambient; Sea Level)</b>					
13.56 MHz	13663	19232	25403	65129	87899
50 MHz	7039	9859	12865	33718	45371
100 MHz	4932	6879	8886	23722	31840
1000 MHz	1463	1983	2403	7234	9539
1500 MHz	1171	1574	1874	5838	7657
2000 MHz	998	1332	1564	5007	6538
2500 MHz	880	1168	1355	4441	5777
3000 MHz	793	1048	1204	4024	5216

\* SC = Silver Plated Copper

\* BC = Bare Copper

\* TC = Tinned Copper

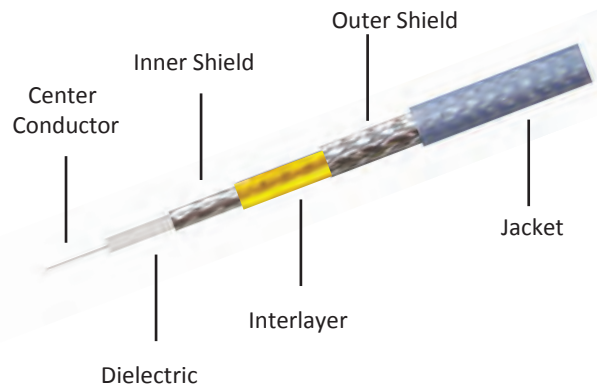
\* MT = Metallized Composite Tapes

Note: HP-393 is marked RG-393-NPP-SN

# SFT Cables

## Cable Feature:

Flexibility	Good/Very Good
Cost	Very High
Attenuation	Low
Power Handling	Very High
Temperature	High
Connector Availability	Good

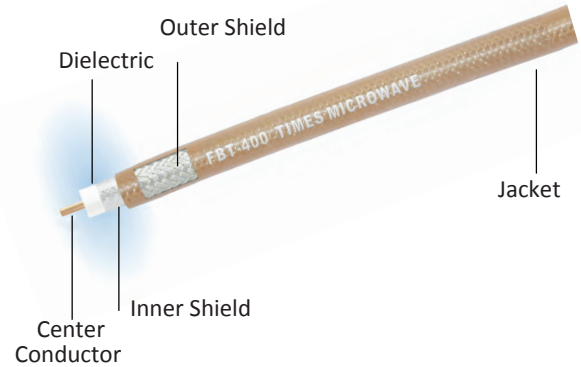


	SFT-393	SFT-226	SFT-500	SFT-600
<b>AA Drawing Number</b>	AA-8653	AA-8654	AA-11168	AA-9649
<b>Part Number</b>	51800	51803	510-0037	51963
<b>Physical Specifications</b>				
Description	in (mm)	in (mm)	in (mm)	in (mm)
Center Conductor	Solid SC	Solid SC	Stranded SC	Stranded SC
	0.096 (2.44)	0.131 (3.33)	0.145 (3.68)	0.160 (4.06)
Dielectric	PTFE	PTFE	PTFE	PTFE
	0.285 (7.24)	0.370 (9.40)	0.408 (10.36)	0.455 (11.56)
Inner Shield	SC Flat Braid	SC Flat Braid	SC Flat Braid	SC Flat Braid
	0.295 (7.49)	0.380 (9.65)	0.420 (10.67)	0.465 (11.81)
Interlayer	MT	MT	NA	MT
	0.301 (7.65)	0.385 (9.78)		0.471 (11.96)
Outer Shield	SC	SC	SC	SC
	0.330 (8.38)	0.399 (10.14)	0.448 (11.38)	0.500 (12.70)
Jacket	FEP	FEP	FEP	FEP
	0.390 (9.91)	0.485 (12.32)	0.490 (12.45)	0.555 (14.10)
<b>Mechanical Specifications</b>				
Bend Radius	2.0 (50.8)	2.5 (63.5)	2.5 (63.5)	2.75 (69.9)
Weight	0.126 lb/ft	0.235 lb/ft	0.230 lb/ft	0.240 lb/ft
Operating Temperature Range	-55/+200 °C	-55/+200 °C	-55/+200 °C	-55/+200 °C
<b>Electrical Specifications</b>				
Impedance	50 ohms	50 ohms	50 ohms	50 ohms
Shielding Effectiveness	100 dB	100 dB	80 dB	100 dB
Dielectric Constant	1.73	1.73	1.73	1.73
Velocity of Propagation	0.76	0.76	0.76	0.76
Capacitance	26.7pF/ft	26.7pF/ft	26.7pF/ft	26.7pF/ft
DC Voltage (kV)	5	6	7	8
<b>Attenuation: dB/100ft (100m) (+25°C Ambient; Sea Level)</b>				
13.56 MHz	0.50 (1.65)	0.45 (1.49)	0.43 (1.43)	0.37 (1.21)
50 MHz	0.97 (3.18)	0.87 (2.87)	0.84 (2.75)	0.71 (2.34)
100 MHz	1.38 (4.52)	1.24 (4.07)	1.19 (3.91)	1.01 (3.32)
1000 MHz	4.48 (14.69)	4.04 (13.24)	3.90 (12.78)	3.30 (10.84)
1500 MHz	5.53 (18.15)	4.99 (16.37)	4.82 (15.82)	4.09 (13.40)
2000 MHz	6.44 (21.12)	5.81 (19.04)	5.62 (18.43)	4.76 (15.61)
2500 MHz	7.25 (23.77)	6.54 (21.43)	6.33 (20.76)	5.36 (17.58)
3000 MHz	7.99 (26.19)	7.20 (23.62)	6.98 (22.90)	5.91 (19.38)
K1	0.135930	0.122500	0.117433	0.099850
K2	0.000180	0.000164	0.000183	0.000146
<b>Power (Watts) (+25°C Ambient; Sea Level)</b>				
13.56 MHz	27605	37095	42102	51888
50 MHz	14319	19241	21820	26900
100 MHz	10090	13558	15366	18948
1000 MHz	3113	4182	4717	5826
1500 MHz	2522	3388	3815	4715
2000 MHz	2169	2915	3278	4053
2500 MHz	1929	2592	2912	3601
3000 MHz	1752	2354	2642	3268

# FBT Cables

## Cable Feature:

Flexibility	Fair
Cost	Medium/High
Attenuation	Low
Power Handling	High
Temperature	High
Connector Availability	Very Good



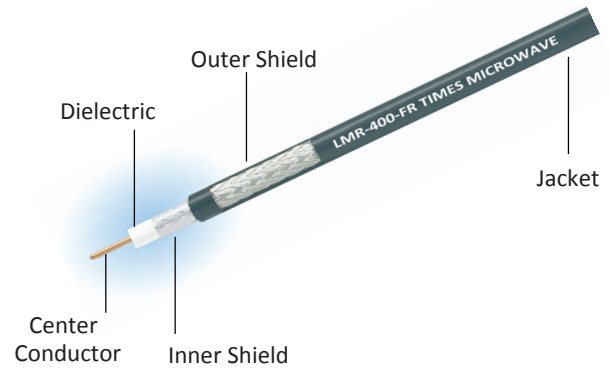
	FBT-400	FBT-500	FBT-600
<b>AA Drawing Number</b>	AA-8957	AA-8958	AA-8959
<b>Part Number</b>	54171	54172	54173
<b>Physical Specifications</b>			
Description	in (mm)	in (mm)	in (mm)
Center Conductor	Solid BCCAl 0.095 (2.14)	Solid BCCAl 0.123 (3.12)	Solid BCCAl 0.150 (3.81)
Dielectric	PTFE 0.285 (7.24)	PTFE 0.370 (9.40)	PTFE 0.455 (11.56)
Inner Shield	MT 0.291 (7.39)	MT 0.376 (9.55)	MT 0.461 (11.71)
Interlayer	/	/	/
Outer Shield	TC 0.320 (8.13)	TC 0.405 (10.29)	TC 0.490 (12.45)
Jacket	FEP 0.370 (9.40)	FEP 0.465 (11.81)	FEP 0.565 (14.35)
<b>Mechanical Specifications</b>			
Bend Radius	4.0 (101.6)	5.0 (127.0)	6.0 (152.4)
Weight	0.104 lb/ft	0.168 lb/ft	0.210 lb/ft
Operating Temperature Range	-55/+150 °C	-55/+150 °C	-55/+150 °C
<b>Electrical Specifications</b>			
Impedance	50 ohms	50 ohms	50 ohms
Shielding Effectiveness	90 dB	90 dB	90 dB
Dielectric Constant	1.73	1.73	1.73
Velocity of Propagation	0.76	0.76	0.76
Capacitance	26.7pF/ft	26.7pF/ft	26.7pF/ft
DC Voltage (kV)	5	7	8
<b>Attenuation: dB/100ft (100m) (+25 °C Ambient; Sea Level)</b>			
13.56 MHz	0.48 (1.57)	0.37 (1.22)	0.30 (0.99)
50 MHz	0.92 (3.02)	0.72 (2.35)	0.58 (1.91)
100 MHz	1.31 (4.28)	1.02 (3.34)	0.83 (2.72)
1000 MHz	4.23 (13.87)	3.32 (10.88)	2.72 (8.92)
1500 MHz	5.22 (17.12)	4.10 (13.45)	3.37 (11.06)
2000 MHz	6.07 (19.90)	4.78 (15.66)	3.93 (12.90)
2500 MHz	6.82 (22.38)	5.38 (17.64)	4.43 (14.55)
3000 MHz	7.51 (24.64)	5.93 (19.45)	4.90 (16.06)
K1	0.129138	0.100255	0.081389
K2	0.000146	0.000146	0.000146
<b>Power (Watts) (+25 °C Ambient; Sea Level)</b>			
13.56 MHz	31011	44385	56975
50 MHz	16096	23010	29501
100 MHz	11350	16208	20758
1000 MHz	3516	4984	6336
1500 MHz	2852	4033	5115
2000 MHz	2456	3467	4388
2500 MHz	2186	3080	3893
3000 MHz	1987	2796	3528

\* BCCAl = Bare Copper Clad Aluminum

# LMR-FR Cables

## Cable Feature:

Flexibility	Fair
Cost	Low
Attenuation	Low
Power Handling	Medium
Temperature	Medium
Connector Availability	Very Good

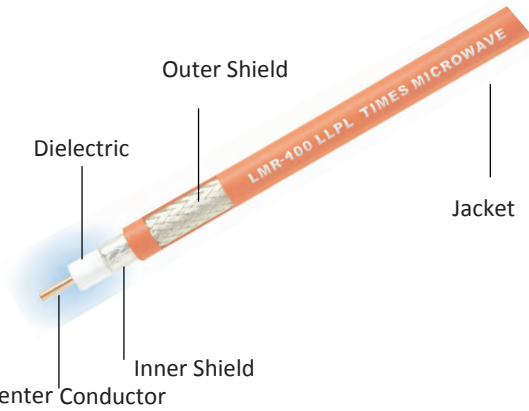


	LMR-400-FR	LMR-500-FR	LMR-600-FR	LMR-900-FR	LMR-1200-FR
<b>AA Drawing Number</b>	AA-8120	AA-8121	AA-8122	AA-8123	AA-8124
<b>Part Number</b>	54030	54031	54032	54033	54034
<b>Physical Specifications</b>					
Description	in (mm)	in (mm)	in (mm)	in (mm)	in (mm)
Center Conductor	Solid BCCAl	Solid BCCAl	Solid BCCAl	BC Tube	BC Tube
	0.108 (2.74)	0.142 (3.61)	0.176 (4.47)	0.262 (6.65)	0.349 (8.86)
Dielectric	PE	PE	PE	PE	PE
	0.285 (7.24)	0.370 (9.40)	0.455 (11.56)	0.680 (17.27)	0.920 (23.37)
Inner Shield	MT	MT	MT	MT	MT
	0.291 (7.39)	0.376 (9.55)	0.461 (11.71)	0.686 (17.42)	0.926 (23.52)
Interlayer	/	/	/	/	/
Outer Shield	TC	TC	TC	TC	TC
	0.320 (8.13)	0.405 (10.29)	0.490 (12.45)	0.732 (18.59)	0.972 (24.69)
Jacket	FRPE	FRPE	FRPE	FRPE	FRPE
	0.405 (10.29)	0.500 (12.70)	0.590 (14.99)	0.870 (22.10)	1.200 (30.48)
<b>Mechanical Specifications</b>					
Bend Radius	1.0 (25.4)	1.3 (31.8)	1.5 (38.1)	3.0 (76.2)	6.5 (165.1)
Weight	0.068 lb/ft	0.097 lb/ft	0.131 lb/ft	0.266 lb/ft	0.448 lb/ft
Operating Temperature Range	-40/+85 °C	-40/+85 °C	-40/+85 °C	-40/+85 °C	-40/+85 °C
<b>Electrical Specifications</b>					
Impedance	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms
Shielding Effectiveness	90 dB	90 dB	90 dB	90 dB	90 dB
Dielectric Constant	1.38	1.35	1.32	1.32	1.29
Velocity of Propagation	0.85	0.86	0.87	0.87	0.88
Capacitance	23.9pF/ft	23.6pF/ft	23.4pF/ft	23.4pF/ft	23.1pF/ft
DC Voltage (kV)	5	7	8	5	6
<b>Attenuation: dB/100ft (100m) (+25 °C Ambient; Sea Level)</b>					
13.56 MHz	0.46 (1.51)	0.36 (1.17)	0.29 (0.95)	0.19 (0.64)	0.14 (0.46)
50 MHz	0.89 (2.92)	0.69 (2.26)	0.56 (1.85)	0.38 (1.24)	0.27 (0.89)
100 MHz	1.27 (4.15)	0.98 (3.22)	0.80 (2.63)	0.54 (1.77)	0.39 (1.28)
1000 MHz	4.17 (13.68)	3.28 (10.77)	2.69 (8.82)	1.84 (6.03)	1.34 (4.39)
1500 MHz	5.17 (16.97)	4.09 (13.42)	3.36 (11.01)	2.31 (7.56)	1.68 (5.52)
2000 MHz	6.04 (19.81)	4.79 (15.73)	3.93 (12.91)	2.72 (8.91)	1.99 (6.51)
2500 MHz	6.82 (22.36)	5.43 (17.81)	4.46 (14.62)	3.09 (10.13)	2.26 (7.42)
3000 MHz	7.53 (24.71)	6.01 (19.73)	4.94 (16.21)	3.44 (11.27)	2.52 (8.26)
K1	0.124100	0.095640	0.077990	0.051869	0.037474
K2	0.000245	0.000259	0.000224	0.000198	0.000155
<b>Power (Watts) (+25 °C Ambient; Sea Level)</b>					
13.56 MHz	12611	18784	26034	49886	81747
50 MHz	6527	9703	13433	25658	41991
100 MHz	4591	6813	9423	17951	29346
1000 MHz	1398	2050	2816	5267	8547
1500 MHz	1128	1648	2259	4202	6803
2000 MHz	967	1408	1928	3570	5769
2500 MHz	858	1246	1702	3140	5067
3000 MHz	777	1126	1537	2825	4552

\* BCCAl = Bare Copper Clad Aluminum

# LMR-LLPL Cables

## Cable Feature:



Flexibility	Fair/Good
Cost	Medium
Attenuation	Low
Power Handling	Medium/High
Temperature	Medium
Connector Availability	Very Good

	LMR-400-LLPL	LMR-500-LLPL	LMR-600-LLPL	LMR-900-LLPL	LMR-1200-LLPL
<b>AA Drawing Number</b>	AA-8317	AA-8278	AA-8279	AA-8280	AA-8281
<b>Part Number</b>	54070	54060	54061	54062	54063
<b>Physical Specifications</b>					
Description	in (mm)	in (mm)	in (mm)	in (mm)	in (mm)
Center Conductor	Solid BCCAl	Solid BCCAl	Solid BCCAl	BC Tube	BC Tube
	0.095 (2.41)	0.123 (3.12)	0.150 (3.81)	0.227 (5.77)	0.310 (7.87)
Dielectric	PTFE	PTFE	PTFE	PTFE	PTFE
	0.285 (7.24)	0.370 (9.40)	0.455 (11.56)	0.680 (17.27)	0.920 (23.37)
Inner Shield	MT	MT	MT	MT	MT
	0.291 (7.39)	0.376 (9.55)	0.461 (11.71)	0.686 (17.42)	0.926 (23.52)
Interlayer	/	/	/	/	/
Outer Shield	TC	TC	TC	TC	TC
	0.320 (8.13)	0.405 (10.29)	0.490 (12.45)	0.732 (18.59)	0.972 (24.69)
Jacket	FRPVC	FRPVC	FRPVC	FRPVC	FRPVC
	0.405 (10.28)	0.500 (12.70)	0.590 (14.99)	0.870 (22.10)	1.200 (30.48)
<b>Mechanical Specifications</b>					
Bend Radius	4.0 (101.6)	5.0 (127.0)	6.0 (152.4)	9.0 (228.6)	12.0 (304.8)
Weight	0.114 lb/ft	0.194 lb/ft	0.240 lb/ft	0.542 lb/ft	0.700 lb/ft
Operating Temperature Range	-5/+75 °C	-5/+75 °C	-5/+75 °C	-5/+75 °C	-5/+75 °C
<b>Electrical Specifications</b>					
Impedance	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms
Shielding Effectiveness	90 dB	90 dB	90 dB	90 dB	90 dB
Dielectric Constant	1.73	1.73	1.73	1.73	1.73
Velocity of Propagation	0.76	0.76	0.76	0.76	0.76
Capacitance	26.7pF/ft	26.7pF/ft	26.7pF/ft	26.7pF/ft	26.7pF/ft
DC Voltage (kV)	5	7	8	5	9
<b>Attenuation: dB/100ft (100m) (+25 °C Ambient; Sea Level)</b>					
13.56 MHz	0.47 (1.55)	0.38 (1.25)	0.32 (1.05)	0.20 (0.67)	0.16 (0.52)
50 MHz	0.91 (2.99)	0.74 (2.42)	0.62 (2.03)	0.40 (1.30)	0.31 (1.02)
100 MHz	1.29 (4.25)	1.05 (3.44)	0.88 (2.89)	0.57 (1.86)	0.44 (1.45)
1000 MHz	4.22 (13.83)	3.45 (11.30)	2.91 (9.55)	1.92 (6.30)	1.51 (4.95)
1500 MHz	5.21 (17.09)	4.27 (14.01)	3.62 (11.86)	2.40 (7.88)	1.89 (6.20)
2000 MHz	6.06 (19.89)	4.98 (16.34)	4.22 (13.85)	2.82 (9.26)	2.22 (7.29)
2500 MHz	6.83 (22.39)	5.62 (18.43)	4.77 (15.65)	3.20 (10.51)	2.53 (8.29)
3000 MHz	7.53 (24.68)	6.20 (20.34)	5.27 (17.30)	3.56 (11.67)	2.81 (9.21)
K1	0.127694	0.103100	0.086250	0.054930	0.042798
K2	0.000177	0.000185	0.000183	0.000183	0.000155
<b>Power (Watts) (+25 °C Ambient; Sea Level)</b>					
13.56 MHz	10052	14391	19407	38959	58185
50 MHz	5212	7452	10038	20069	29945
100 MHz	3672	5244	7057	14060	20962
1000 MHz	1131	1602	2140	4163	6172
1500 MHz	915	1294	1725	3330	4929
2000 MHz	787	1110	1477	2835	4191
2500 MHz	700	985	1309	2499	3689
3000 MHz	635	893	1184	2251	3320

\* BCCAl = Bare Copper Clad Aluminum



# RG Cables

## Cable Feature:

Flexibility	Good/Very Good
Cost	Medium/Low
Attenuation	Medium
Power Handling	Medium/High
Temperature	Medium
Connector Availability	Medium



	RG-393	RG-217	RG-177	RG-218	RG-220
<b>AA Drawing Number</b>	AA-3420	AA-3410	AA-3404	AA-3411	AA-6002
<b>Part Number</b>	51509	41511	41506	41512	41579
<b>Physical Specifications</b>					
Description	in (mm)	in (mm)	in (mm)	in (mm)	in (mm)
Center Conductor	SC	BC	BC	BC	BC
	0.094 (2.39)	0.106 (2.69)	0.195 (4.95)	0.195 (4.95)	0.260 (6.60)
Dielectric	PTFE	PE	PE	PE	PE
	0.285 (7.24)	0.370 (9.40)	0.680 (17.27)	0.680 (17.27)	0.910 (23.11)
Inner Shield	SC	BC	SC	BC	BC
	0.295 (7.49)	0.403 (10.24)	0.709 (18.01)	0.726 (18.44)	0.956 (24.28)
Interlayer	/	/	/	/	/
Outer Shield	SC	BC	SC	/	/
	0.330 (8.38)	0.436 (11.07)	0.738 (18.75)		
Jacket	FEP	PVC	PVC	PVC	PVC
	0.390 (9.91)	0.545 (13.84)	0.895 (22.73)	0.870 (22.10)	1.120 (28.45)
<b>Mechanical Specifications</b>					
Bend Radius	2.0 (50.8)	5.5 (139.7)	9.0 (228.6)	9.0 (228.6)	12.0 (304.8)
Weight	0.175 lb/ft	0.230 lb/ft	0.470 lb/ft	0.460 lb/ft	0.820 lb/ft
Operating Temperature Range	-55/+200 °C	-40/+80 °C	-40/+80 °C	-40/+80 °C	-40/+80 °C
<b>Electrical Specifications</b>					
Impedance	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms
Shielding Effectiveness	60 dB	60 dB	60 dB	40 dB	40 dB
Dielectric Constant	1.98	2.3	2.3	2.3	2.3
Velocity of Propagation	0.71	0.659	0.659	0.659	0.659
Capacitance	28.6pF/ft	30.8pF/ft	30.8pF/ft	30.8pF/ft	30.8pF/ft
DC Voltage (kV)	1.9	5.8	8	8	10.5
<b>Attenuation: dB/100ft (100m) (+25°C Ambient; Sea Level)</b>					
13.56 MHz	0.76 (2.48)	0.61 (1.99)	0.35 (1.14)	0.35 (1.14)	0.24 (0.79)
50 MHz	1.48 (4.86)	1.19 (3.90)	0.71 (2.31)	0.71 (2.31)	0.50 (1.63)
100 MHz	2.13 (6.99)	1.71 (5.60)	1.05 (3.43)	1.05 (3.43)	0.74 (2.43)
1000 MHz	7.64 (25.05)	5.97 (19.59)	4.46 (14.63)	4.46 (14.63)	3.23 (10.60)
1500 MHz	9.71 (31.85)	7.55 (24.75)	5.93 (19.44)	5.93 (19.44)	4.32 (14.16)
2000 MHz	11.56 (37.92)	8.94 (29.32)	7.30 (23.93)	7.30 (23.93)	5.33 (17.49)
2500 MHz	13.27 (43.53)	10.22 (33.51)	8.60 (28.22)	8.60 (28.22)	6.30 (20.68)
3000 MHz	14.88 (48.80)	11.41 (37.43)	9.86 (32.35)	9.86 (32.35)	7.25 (23.77)
K1	0.200407	0.162200	0.087800	0.087800	0.061105
K2	0.001300	0.000842	0.001685	0.001685	0.001300
<b>Power (Watts) (+25°C Ambient; Sea Level)</b>					
13.56 MHz	19909	7230	16686	16888	28800
50 MHz	10158	3704	8196	8295	14061
100 MHz	7060	2582	5525	5592	9434
1000 MHz	1985	741	1302	1317	2168
1500 MHz	1564	588	981	993	1625
2000 MHz	1317	497	799	808	1317
2500 MHz	1149	435	678	687	1115
3000 MHz	1027	390	593	600	971

\* SC = Silver Plated Copper

\* BC = Bare Copper

# Some Other Cables I

	HFlex-142	AA-11406	QEAM-810	HP-1200-PUR	SFT-600-BCCAL-PUR
<b>AA Drawing Number</b>	AA-9406	AA-11406	AA-8848	AA-11470	AA-9593
<b>Part Number</b>	51929	510-0063	51816	54365	51956
<b>Physical Specifications</b>					
Description	in (mm)	in (mm)	in (mm)	in (mm)	in (mm)
Center Conductor	SC	SC	SC	BC Tube	BCCAI
	0.038 (0.01)	0.097 (2.46)	0.228 (5.79)	0.308 (7.82)	0.150 (3.81)
Dielectric	PTFE	PTFE	PTFE	PTFE	PTFE
	0.105 (2.67)	0.285 (7.24)	0.620 (15.75)	0.920 (23.37)	0.455 (11.45)
Inner Shield	SC	SC	FSC	MT	FSC
	0.123 (3.12)	0.306 (7.77)	0.630 (16.00)	0.932 (23.67)	0.465 (11.81)
Interlayer	/	/	MT	/	MT
			0.636 (16.15)		0.469 (11.91)
Outer Shield	SC	SC	TC	TC	TC
	0.141 (3.58)	0.328 (8.33)	0.665 (16.89)	0.980 (24.89)	0.508 (12.90)
Jacket	FEP	PUR	PUR	PUR	PUR
	0.170 (4.32)	0.400 (10.16)	0.810 (20.57)	1.200 (30.48)	0.560 (14.22)
<b>Mechanical Specifications</b>					
Bend Radius	1.5 (38.1)	2.0 (50.8)	8.0 (203.2)	7.0 (177.8)	2.5 (63.5)
Weight	0.030 lb/ft	0.135 lb/ft	0.400 lb/ft	0.950 lb/ft	0.220 lb/ft
Operating Temperature Range	-55/+200 °C	-55/+105 °C	-55/+80 °C	-40/+105 °C	-55/+90 °C
<b>Electrical Specifications</b>					
Impedance	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms
Shielding Effectiveness	60 dB	60 dB	100 dB	90 dB	100 dB
Dielectric Constant	1.73	1.73	1.56	1.73	1.73
Velocity of Propagation	0.76	0.76	0.8	0.76	0.76
Capacitance	26.8pF/ft	26.9pF/ft	25.4pF/ft	26.7pF/ft	26.7pF/ft
DC Voltage (kV)	2	5	9.2	12.5	7.5
<b>Attenuation: dB/100ft (100m) (+25 °C Ambient; Sea Level)</b>					
13.56 MHz	1.59 (5.23)	0.71 (2.34)	0.27 (0.89)	0.16 (0.51)	0.32 (1.06)
50 MHz	3.08 (10.12)	1.38 (4.51)	0.53 (1.73)	0.30 (0.99)	0.62 (2.05)
100 MHz	4.39 (14.40)	1.95 (6.39)	0.75 (2.46)	0.43 (1.42)	0.89 (2.91)
1000 MHz	14.56 (47.76)	6.25 (20.51)	2.47 (8.09)	1.50 (4.92)	2.93 (9.62)
1500 MHz	18.10 (59.38)	7.69 (25.23)	3.06 (10.03)	1.89 (6.19)	3.64 (11.95)
2000 MHz	21.17 (69.43)	8.92 (29.25)	3.57 (11.71)	2.23 (7.31)	4.26 (13.96)
2500 MHz	23.93 (78.48)	10.00 (32.81)	4.03 (13.21)	2.54 (8.34)	4.81 (15.76)
3000 MHz	26.47 (86.82)	10.99 (36.05)	4.47 (14.59)	2.83 (9.29)	5.31 (17.43)
K1	0.429235	0.193622	0.073588	0.041586	0.086948
K2	0.000986	0.000129	0.000139	0.000185	0.000183
<b>Power (Watts) (+25 °C Ambient; Sea Level)</b>					
13.56 MHz	6052	11120	28865	98786	24515
50 MHz	3133	5783	14942	50709	12681
100 MHz	2204	4084	10511	35419	8916
1000 MHz	672	1280	3203	10277	2706
1500 MHz	543	1042	2584	8170	2180
2000 MHz	466	900	2216	6922	1868
2500 MHz	414	803	1965	6076	1655
3000 MHz	375	732	1780	5454	1498

\* SC = Silver Plated Copper

\* BCCAI = Bare Copper Clad Aluminum

\* RSC = Rope Stranded Silver Plated Copper

\* FSC = Silver Plated Copper Flat Strip Braid

\* TC = Tinned Copper

# Some Other Cables II

	AA-11222	AA-11223	AA-9193	SFT-600-BCCAL	LMR-1700-DB-TPV
<b>AA Drawing Number</b>	AA-11222	AA-11223	AA-9193	AA-8980	AA-11629
<b>Part Number</b>	510-0042	510-0043	51887	51839	54376
<b>Physical Specifications</b>					
Description	in (mm)	in (mm)	in (mm)	in (mm)	in (mm)
Center Conductor	RSC	RSC	RSC	BC	BC Tube
	0.160 (4.06)	0.160 (4.06)	0.160 (4.06)	0.150 (3.81)	0.516 (13.11)
Dielectric	PTFE	PTFE	PTFE	PTFE	PE
	0.455 (11.56)	0.455 (11.56)	0.455 (11.56)	0.455 (11.56)	1.35 (34.29)
Inner Shield	FSC	SC	SC	SC	APA
	0.465 (11.81)	0.478 (12.14)	0.478 (12.14)	0.465 (11.81)	1.356 (34.44)
Interlayer	MT	/	/	APT	/
	0.469 (11.91)			0.469 (11.91)	
Outer Shield	TC	SC	SC	TC	TC
	0.508 (12.90)	0.501 (12.73)	0.501 (12.73)	0.508 (12.90)	1.402 (35.61)
Jacket	PUR	PUR	FEP	FEP	TPV
	0.560 (14.22)	0.560 (14.22)	0.555 (14.10)	0.560 (14.22)	1.600 (40.64)
<b>Mechanical Specifications</b>					
Bend Radius	2.5 (63.5)	2.5 (63.5)	2.5 (63.5)	2.5 (63.5)	13.5 (342.9)
Weight	0.300 lb/ft	0.285 lb/ft	0.260 lb/ft	0.235 lb/ft	0.68 lb/ft
Operating Temperature Range	-55/+105 °C	-55/+105 °C	-55/+200 °C	-55/+200 °C	-50/+105 °C
<b>Electrical Specifications</b>					
Impedance	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms
Shielding Effectiveness	100 dB	60 dB	60 dB	100 dB	90 dB
Dielectric Constant	1.73	1.73	1.73	1.73	1.26
Velocity of Propagation	0.76	0.76	0.76	0.76	0.89
Capacitance	26.7pF/ft	26.7pF/ft	26.7pF/ft	26.7pF/ft	22.8pF/ft
DC Voltage (kV)	8	8	8	6	9
<b>Attenuation: dB/100ft (100m) (+25 °C Ambient; Sea Level)</b>					
13.56 MHz	0.38 (1.24)	0.46 (1.51)	0.46 (1.51)	0.32 (1.06)	0.10 (0.33)
50 MHz	0.73 (2.39)	0.89 (2.91)	0.89 (2.91)	0.62 (2.05)	0.20 (0.64)
100 MHz	1.04 (3.40)	1.26 (4.14)	1.26 (4.14)	0.89 (2.91)	0.28 (0.93)
1000 MHz	3.40 (11.17)	4.11 (13.49)	4.11 (13.49)	2.93 (9.62)	0.99 (3.27)
1500 MHz	4.22 (13.84)	5.09 (16.69)	5.09 (16.69)	3.64 (11.95)	1.26 (4.14)
2000 MHz	4.92 (16.14)	5.92 (19.44)	5.93 (19.44)	4.26 (13.96)	1.50 (4.91)
2500 MHz	5.55 (18.21)	6.67 (21.89)	6.67 (21.89)	4.81 (15.76)	1.71 (5.62)
3000 MHz	6.13 (20.10)	7.36 (24.13)	7.36 (24.13)	5.31 (17.43)	1.91 (6.28)
K1	0.101875	0.124310	0.124310	0.086948	0.026741
K2	0.000183	0.000183	0.000183	0.000183	0.000150
<b>Power (Watts) (+25 °C Ambient; Sea Level)</b>					
13.56 MHz	26221	21996	46760	61389	81965
50 MHz	13579	11404	24242	31756	41916
100 MHz	9555	8033	17076	22326	29185
1000 MHz	2919	2471	5253	6775	8293
1500 MHz	2357	2000	4251	5460	6553
2000 MHz	2022	1719	3654	4677	5525
2500 MHz	1794	1528	3248	4144	4830
3000 MHz	1626	1387	2948	3751	4320

\* SC = Silver Plated Copper

\* RSC = Rope Stranded Silver Plated Copper

\* BCCAL = Bare Copper Clad Aluminum

\* FSC = Silver Plated Copper Flat Strip Braid

\* TC = Tinned Copper

# Connectors

We offer a broad range of high power connectors. Below are some of them for reference. Please consult our factory for more details.

Cable Category	Series	Stock Code	Part Number	Cable Attachment
RG-217	HNM	3190-6358	TC-217-HNMC	Clamp
	HNMRA	3190-6359	TC-217-HNMC-RA	Clamp
HP-218	158EIA	3190-2473	EZ-218-158EIA-CL	C-S-C
	LCMRA	3190-2587	TC-218-LCM-RA-CL	C-S-C
	158EIA	3190-6415	TC-218-158EIA-RA-CL	C-S-C
HPL-218	716M	3190-6194	TC-218-716M-CL	C-S-C
	78EIA	3190-6118	TC-218-78EIA-CL	C-S-C
	158EIA	3190-6415	TC-218-158EIA-RA-CL	C-S-C
	318EIA	3190-6256	TC-218-318EIA-RA	Clamp
	318EIA	3190-6262	TC-218-318EIA-CL	Clamp
RG-218	LCMRA	3190-2587	TC-218-LCM-RA-CL	C-S-C
HP-226	716M	3190-2624	TC-226-716M-CL	C-S-C
	716MRA	3190-2625	TC-226-716M-RA-CL	C-S-C
	LCM	3190-2665	TC-226-LCM-CL	C-S-C
	LCMRA	3190-2666	TC-226-LCM-RA-CL	C-S-C
RG-393	716M	3190-2692	TC-393-716M-CL	C-S-C
	716MRA	3190-2693	TC-393-716M-RA-CL	C-S-C
	HNM	3190-2663	TC-393-HNM-CL	C-S-C
	HNMRA	3190-2559	TC-393-HNM-RA-CL	C-S-C
	LCM	3190-2565	TC-393-LCM-CL	C-S-C
	LCMRA	3190-2561	TC-393-LCM-RA-CL	C-S-C
	NM	3190-2745	TC-393-NM-CL	C-S-C
	NMRA	3190-2754	TC-393-NM-RA-CL	C-S-C
	SCM	3190-2569	TC-393-SCM-CL	C-S-C
	SCMRA	3190-2570	TC-393-SCM-RA-CL	C-S-C
SFT-320	HNM	3190-2563	TC-320T-HNM-CL	C-S-C
	LCM	3190-2664	TC-320T-LCM-CL	C-S-C
SFT-500	716M	3190-2730	TC-500T-716MC	Clamp
	716MRA	3190-2729	TC-500T-716MC-RA	Clamp
	HNM	3190-2732	TC-500T-HNMC	Clamp
	HNMRA	3190-2731	TC-500T-HNMC-RA	Clamp

# Connectors

We offer a broad range of high power connectors. Below are some of them for reference. Please consult our factory for more details.

Cable Category	Series	Stock Code	Part Number	Cable Attachment
SFT-600	58EIA	3190-2485	EZ-600T-158EIA-CL	C-S-C
	716M	3190-2636	TC-600T-716MC	Clamp
	716MCL	3190-2595	TC-600T-716M-CL	C-S-C
	716MRA	3190-2637	TC-600T-716MC-RA	Clamp
	716MRA	3190-2594	TC-600T-716M-RA-CL	C-S-C
	78EIA	3190-2755	EZ-600T-78EIA-CL	C-S-C
	78EIA	3190-6163	TC-600T-78EIA-RA-CL	C-S-C
	158EIA	3190-2568	EZ-600T-158EIA-CL (.59")	C-S-C
	158EIA	3190-6229	TC-600T-158EIA-RA-CL	C-S-C
	HNM	3190-2564	TC-600T-HNM-CL	C-S-C
	HNMRA	3190-2560	TC-600T-HNM-RA-CL	C-S-C
	LCM	3190-2566	TC-600T-LCM-CL	C-S-C
	LCMRA	3190-2562	TC-600T-LCM-RA-CL	C-S-C
	NM	3190-2583	TC-600T-NM-CL	C-S-C
	SCM	3190-2971	TC-600T-SCM-CL	C-S-C
	NMRA	3190-2757	TC-600T-NM-RA-CL	C-S-C
13-30M	3190-6333	TC-600T-1330M-CL	C-S-C	
QEAM-810	LCM	3190-2631	LC Male for QEAM-810	C-S-C
LMR-900-LLPL	NF	3190-1586	EZ-900-NFC-PL-2	Clamp
	NM	3190-1585	EZ-900-NMC-PL-2	Clamp
	716M	3190-1549	EZ-900-716MC-PL-2	Clamp
LMR-1200-LLPL	NF	3190-912	EZ-1200-NFC-PL	Clamp
	NM	3190-911	EZ-1200-NMC-PL	Clamp
	NM	3190-6021	EZ-1200-NMC-PL-2	Clamp
HP-1200	158EIA	3190-2724	EZ-HP1200-158EIA	Clamp
	318EIA	3190-2915	EZ-HP1200-318EIA	Clamp
Receptacle	QDSF	3191-296	QDSF-PM w/threaded pin	
	QDLCF	3191-274	QDLCF-RA-PM w/threaded pin	
		3191-293	QDLCF-PM(1.25SQ) w/threaded pin	
		3191-294	QDLCF-RA-PM w/spring pin	
		3191-295	QDLCF-PM w/spring pin	
		3191-297	QDLCF-PM(2SQ) w/threaded pin	
		3191-300	QDLCF-PM w/solder cup pim	
Adapter	HNF-HNF	3191-360	HN Female to HN Female	
	716M-716F	3191-361	7-16 DIN Male to n Female	
	QDLCF-LCM	3191-302	QDLC Female to LC male	
	QDLCM-LCF	3191-303	QDLC Male to LC Female	
	158EIA	3191-6001	Threaded 1-5/8" EIA Male to 1-5/8" EIA	
	NF-1330F	3191-6029	Type N Female to 13-30 Female	

\* "C-S-C" = Clam Shell Clamp

## Threaded EIA connectors

EIA Flange connectors are rugged and are often the optimal choice when working with very high power levels. If there is a disadvantage to the EIA flange, it's the large outer diameter of the flange which may result in a routing challenge when installing a finished assembly. In the case of the 1 5/8" EIA, we've addressed this issue by developing both a threaded 1 5/8" connector as well as a separate 1 5/8" flange adapter. The combined assembly will handle all of the power of the typical 1 5/8" connector and will allow the assembly to be routed through a bulkhead hole/knockout having a diameter which is only a fraction of that required by the standard 1 5/8" connector. This new 1 5/8" EIA connector combination is currently available for our HP-1200-PUR cable.



3191-6001  
Adaptor Threaded 1-5/8" EIA Male  
to 1-5/8" EIA



3190-6069  
Connector Threaded 1-5/8" EIA Female  
for HP-1200-PUR

## Quick Disconnect - QDLC & QDS

Times Microwave Systems provides a few types of quick disconnect connectors including QDLC and QDS.

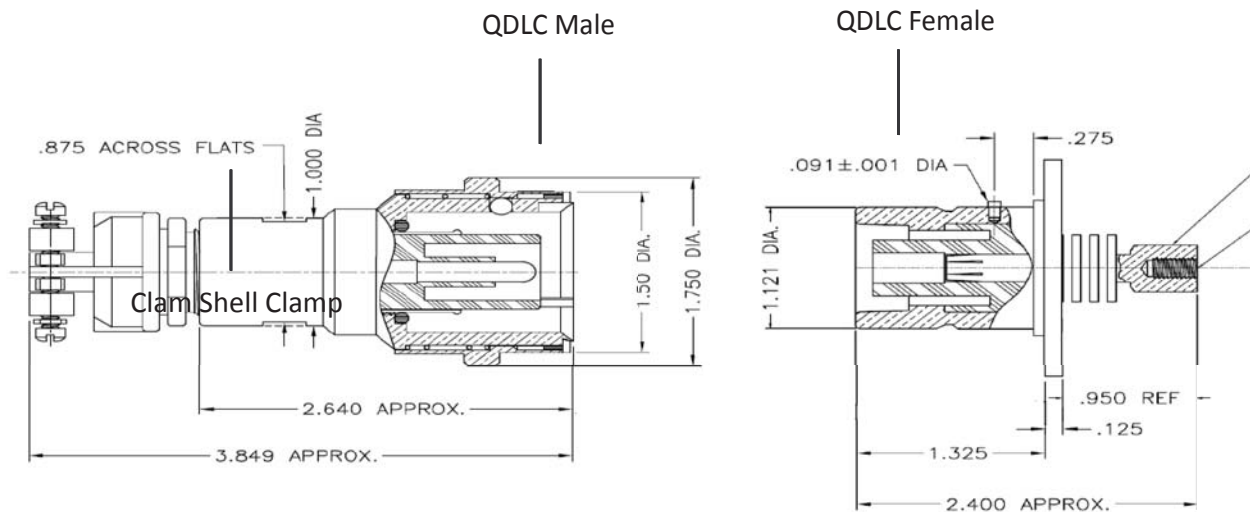
The interface is a proprietary Times developed specifically for high power applications. Based on LC interface, it includes an overlapping dielectric and a quick disconnect mechanism to allow quick installation and removal. We also supply mating female connectors.



TC-400-QDSM



TC-600-QDSM-RA

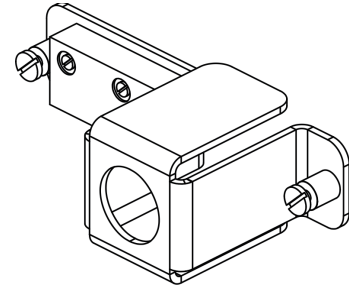
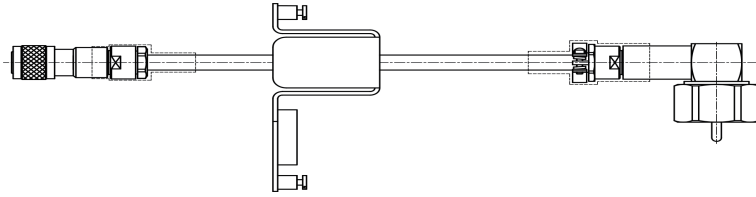


## Clam Shell Clamp Strain Relief

Many high power applications in semi-conductor and flat panel manufacturing require periodically moving cables for maintenance and cleaning operations. This places a great deal of strain on the cable to connector interface. The use of a secondary clam-shell style clamp to secure the connector to the cable is an effective way to provide strain relief and prevent cable to connector failures. Although there may be some distortion of the cable shape, at frequencies below 100 MHz or so, this does not cause a performance issue.

# Custom Interlock Bracket

Times Microwave Systems offers the customized brackets to allow mounting of interlock switches.



# Selection of RF Coaxial Cable by Power Handling

Electrical losses in a coaxial cable result in the generation of heat in the center and outer conductors, as well as in the dielectric core. The power handling capability of a cable is related to the ability of the cable to dissipate this heat. The ultimate limiting factor in power handling is the maximum allowable operating temperature of the materials used in the cable, especially the dielectric. This is because most of the heat is generated at the center conductor of the cable. In general, the power handling capability of a given cable is inversely proportional to its attenuation, and directly related to its size. The other factor is the heat transfer properties of the cable, especially the dielectric.

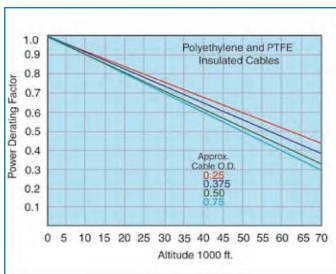
Cable power ratings must be derated by correction factors for the ambient temperature, altitude and VSWR encountered in a particular application. High ambient temperature and high altitude reduce the power rating of a cable by impeding heat transfer out of the cable, VSWR reduces power rating by causing localized hot spots in the cable.

To select the cable construction for a particular requirement, determine the average input power at the highest frequency from system requirements. Then determine the effective average input power as follows:

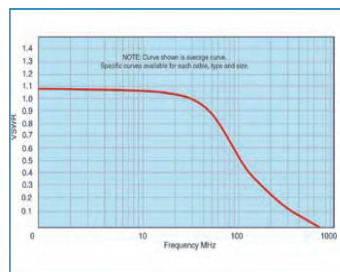
$$\text{Effective Power} = \frac{\text{Average Power} \times (\text{VSWR correction})}{(\text{Temp. correction}) \times (\text{Alt. correction})}$$

Temperature and altitude corrections are shown as:

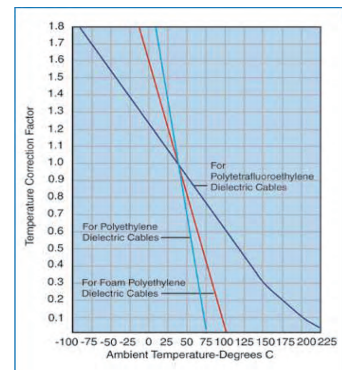
Power Altitude Correction Factor:



VSWR Correction Factor Multiplier K



Power Temperature Correction Factor:



VSWR correction factor =

$$1/2 \left( \text{VSWR} + \frac{1}{\text{VSWR}} \right) + 1/2 k \left( \text{VSWR} - \frac{1}{\text{VSWR}} \right)$$

Where k, is shown in the second Figure. Select a cable from the Attenuation and Power charts rated at this effective power level. Note that the peak power handling capability of a cable is related to the maximum operating voltage rating.

