Hyperfrequency (DC - 40 Ghz) Low Loss Cable Assemblies

HD-TECH
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HD-TECH's low loss cable assemblies provide the highest level of electrical performance for applications requiring extremely low attenuation over a broad frequency range. By combining silver-plated copper center conductor, expanded PTFE tape dielectric, aluminum polyester or polymide tape, silver-plated copper outer braid, and FEP jacket, these low loss cable assemblies achieve outstanding electrical characteristics to 40 GHz. Available in custom lengths with outer cable diameters of 0.195 and 0.335 in, HD-TECH's low loss cables feature custom connectors with rugged stainless steel solder clamp construction for optimum reliability&performance.

For example, HD-TECH's low loss cable assemblies with 0.195-in, outer diameter (LL142) minimize attenuation to typically 0.082 dB/ft at 1 GHz, 0.250 dB/ft at 10 GHz, and 0.360 dB/ft at 18 GHz. With a minimum bend radius of 1 in., these low loss cable assemblies can handle 720 W CW input power at 1 GHz and 220 W CW input power at 10 GHz, with outstanding VSWR performance. For even less loss, cable assemblies with 0.335-in outer diameter (LL335) achieve typical attenuation of 0.048 dB/ft at 1 GHz, 0.17 dB/ft at 10 GHz, and 0.22 dB/ft at 18 GHz. These cable assemblies feature a minimum bend radius of 1.7 in and can handle 1800 W CW input power at 1 GHz and 600 W CW input power at 10 GHz. Both sizes of cable assemblies offer shielding effectiveness of greater than 95 dB with low coefficient of expansion over a wide temperature range of -55 to +200°C to ensure that attenuation and phase performance remains stable over time and temperature.

HD-TECH's hyperfrequency low loss cable assemblies are available with a wide range of connector choices, including SMA, Type N, and TNC connectors.

Cabling specifications :

Feel free to contact us for any inquiries about HD-TECH, our products, members and tailor-made services, request for quote, shipping, stock checking, ect... See our complete details on next page.

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Construction:

Center Conductor: Solid silver plated copper
Dielectric: Expanded PTFE tape
Inner Braid: Flat silver plated copper strip
Inter layer: Aluminum polyester or polyimide tape
Outer Braid: Round silver plated copper
Jacket: FEP, translucent colors, solid colors or clear

Operating temperature -55 +200° C
Velocity of Propagation 80%
Impedence 50 Ohms
Capacitance 25.0 pF/ft
Shielding Effectiveness <-95 dB

	LL120	LL160	LL142	LL235	LL335
Center conductor diameter	.0285″	.0403"	.051″	.057″	.089″
Dielectric diameter	.080″	.110"	.145″	.160″	.250″
Diameter over inner braid	.086″	.116"	.152″	.170″	.258″
Diameter over interlayer	.092″	.122"	.158″	.175″	.264″
Diameter over outer braid	.108″	.140"	.174″	.191″	.284″
Overall diameter	.120″	.160"	.195″	.235″	.335″
Weight(lbs/mft)	17	21	44	48	100
Bend radius	0.6″	0.8"	1.0″	1.2″	1.7″
Attenuation (dB/100ft)	Typ / Max	Typ / Max	Typ / Max	Typ / Max	Typ / Max
400 MHz	9.0 / 12.0	6.4 / 7.1	5.2 / 6.5	4.6 / 5.0	2.4 / 3.5
1 GHz	14.6 / 18.0	10.2 / 11.2	8.2 / 10.0	7.4 / 8.0	4.8 / 5.5
2 GHz	21.0 / 25.0	14.6 / 16.0	11.3 / 14.0	10.6 / 11.4	6.8 / 7.8
3 GHz	25.6 / 30.0	17.8 / 19.6	14.0 / 17.0	13.1 / 14.0	8.4 / 9.5
5 GHz	32.0 / 38.0	23.3 / 25.7	18.0 / 21.0	17.2 / 18.0	10.3 / 12.5
10 GHz	48.0 / 54.0	33.5 / 36.9	25.0 / 30.0	25.0 / 27.0	17.0 / 19.0
18 GHz	61.5 / 74.0	45.8 / 50.4	36.0 / 40.0	34.1 / 37.0	22.0 / 26.0
Cut-off frequency (Ghz)	64.0	42.0	32.9	23.0	18.0

Additional constructions available - check with the factory for details
All figures referenced are nominal

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- Jacket: FEP, translucent colors, solid colors or clear

Operating temperature -55 +200° C
Velocity of Propagation 80%
Impedence 50 Ohms
Capacitance 25.0 pF/ft
Shielding Effectiveness <-95 dB

	LL142STR	LL270STR	LL450STR	LL475STR
Center conductor diameter	.051″ (7/.017")	.068" (7/.023")	.133″ (7/.048")	.155" (7/.0553")
Dielectric diameter	.138″	.185″	.360″	.405"
Diameter over inner braid	.146″	.195″	.368″	.418"
Diameter over interlayer	.151″	.200″	.374″	
Diameter over outer braid	.167″	.220″	.394″	.435"
Overall diameter	.195″	.270″	.450″	.475"
Weight(lbs/mft)	44	70	165	180
Bend radius	1.0″	1.4″	2.2″	2.4"
Attenuation (dB/100ft)	**Typ / Max**	**Typ / Max**	**Typ / Max**	**Typ / Max**
400 MHz	5.7 / 7.0	4.3 / 4.5	2.1 / 2.3	1.9 / 2.2
1 GHz	8.9 / 11.1	6.7 / 7.3	3.5 / 3.7	3.1 / 3.4
2 GHz	12.4 / 15.6	9.6 / 10.6	5.1 / 5.6	4.7 / 5.1
3 GHz	14.9 / 19.0	12.0 / 13.4	6.3 / 7.1	5.8 / 6.4
5 GHz	20.1 / 24.0	15.8 / 18.0	8.4 / 10.0	7.5 / 8.0
10 GHz	28.8 / 35.0	22.5 / 26.0	12.4 / 13.3	11.4 / 12.5
18 GHz	39.4 / 43.0	31.1 / 36.0	- / -	- / -
Cut-off frequency (Ghz)	32.0	24.0	12.8	11.0

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