HIGH SPEED INTERCONNECTS
Technology-Driven Coaxial Solutions

DATASHEET

Flexible, Micro-Coaxial and Coaxial Cables with VP90™

The Ultimate Flexible Solution is Here.

High Speed Interconnects ("HSI") is your high-performance, flexible, micro-coaxial and coaxial cable assembly manufacturer. HSI's flexible cable assemblies incorporate proprietary membranes and films, which deliver exceptional insertion loss, phase stability, capacitance, and velocity of propagation. Our flexible coaxial cables are intended to be packaged as discrete, ribbonized, or bundled configurations and terminated to a variety of circular connectors (SMA, MMCX, SMP), micro-coaxial connectors down to 0.3 mm pitch, and micro-miniature pitches down to 0.175 mm.

HSI has established an entire team, manufacturing center and proven technology platform which strives to exceed todays most stringent signal integrity requirements. Use the performance data below to create a baseline for your next high-performance coaxial cable assembly.

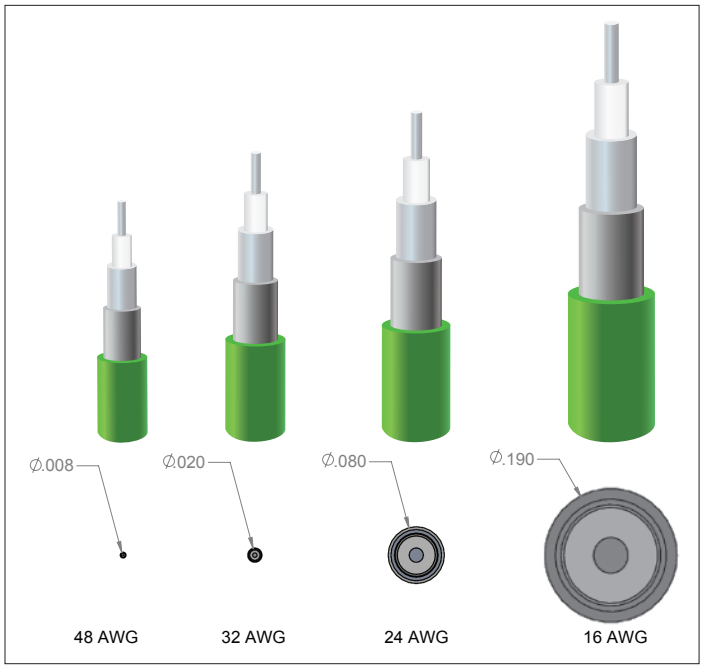

Illustration: 8:1 scale

FEATURES:
- Ultra-low Insertion Loss
- Exceptional Phase Stability
- Low Capacitance
- Tunable Impedance
- Velocity of Propagation up to 90%

CAPABILITIES:
- Extrusion of Flexible, Micro-Coaxial and Coaxial Cable Assemblies
- Fine-wire Termination Down to 0.175 mm Pitch
- Single, Discrete, Ribbonized, Multi-conductor Packaging
- Twinax, Triax Twisted, Shielded Pairs, Shielded Parallel Pairs, Differential Pairs, and Other Multi-conductor Solutions

PRODUCTS:
- Flexible, RF/Microwave Coaxial Cable (16-31 AWG)
- Flexible, Microcoaxial Cable (32-48 AWG)
- Micro-Miniature Coaxial Cable (48-52 AWG)

APPLICATIONS:

Aerospace
Automotive
Defense
Embedded Devices
High Speed Servers
Interventional Catheters
Medical Imaging
Patient Monitoring
Radar
Robotics
Satellite
Semiconductors
Surgical
Test and Measurement
Ultrasound
Wearable
Wireless Broadband

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High Speed Interconnects, LLC
8777 N. Gainey Center 175, Scottsdale, Arizona 85258 USA
Tel: 480-998-2540 ▪ www.highspeedint.com

Properties: Flexible, Micro-coaxial Cable with VP90™ (30 – 48 AWG)*

	48 AWG	46 AWG	44 AWG	42 AWG	40 AWG	38 AWG	36 AWG	34 AWG	32 AWG	30 AWG
MECHANICAL										
Dieletric	VP90	VP90	VP90	VP90	VP90	VP90	VP90	VP90	VP90	VP90
Dieletric Diameter (in)	0.0047	0.0041	0.0049	0.0065	0.0082	0.0107	0.0139	0.0171	0.0207	0.0278
Jacket Material	PET	PET	PET	PET	PET	PET	PET	PET	PET	PET
Overall Diameter	0.0076	0.0078	0.0092	0.0115	0.013	0.0155	0.019	0.0245	0.028	0.035

*All sizes available across range

ELECTRICAL										
DCR (Ohms/ft)	7.324	4.465	2.862	1.788	1.144	0.714	0.451	0.285	0.183	0.108
Impedance (Ohms)†	75	50	50	50	50	50	50	50	50	50
Capacitance (pF/ft)	≤ 14	≤ 24	≤ 24	≤ 24	≤ 24	≤ 24	≤ 24	≤ 24	≤ 24	≤ 24
Attenuation (dB/ft)										
500 MHz	-2.20	-1.77	-1.13	-1.13	-0.88	-0.70	-0.54	-0.44	-0.36	-0.28
1 GHz	-3.11	-2.51	-1.60	-1.60	-1.25	-0.99	-0.77	-0.63	-0.51	-0.39
5 GHz	-6.99	-5.64	-3.60	-3.60	-2.83	-2.23	-1.75	-1.43	-1.16	-0.91
10 GHz	-9.91	-8.00	-5.12	-5.12	-4.03	-3.19	-2.50	-2.05	-1.68	-1.31
15 GHz	-12.16	-9.83	-6.30	-6.30	-4.96	-3.93	-3.09	-2.54	-2.08	-1.63
20 GHz	-14.07	-11.37	-7.30	-7.30	-5.75	-4.56	-3.60	-2.96	-2.43	-1.91
30 GHz	-17.29	-13.98	-9.00	-9.00	-7.10	-5.64	-4.46	-3.68	-3.03	-2.39

†Impedance is tunable from 25 to 100 Ohms

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Properties: Flexible, Coaxial Cable with VP90™ (16 – 31 AWG)*

	31 AWG	29 AWG	28 AWG	26 AWG	25 AWG	24 AWG	20 AWG	19 AWG	16 AWG*
MECHANICAL									
Dieletric	VP90	VP90	VP90	VP90	VP90	VP90	VP90	VP90	VP90
Dieletric Diameter (in)	0.024	0.0294	0.032	0.043	0.046	0.054	0.087	0.095	0.136
Single/Dual Shield	Copper	Copper	Copper	Copper	Copper	Copper	Copper	Copper	Copper
Jacket Material	Flouro-polymer	Flouro-polymer	Flouro-polymer	PTFE	Flouro-polymer	Flouro-polymer	Flouro-polymer	Flouro-polymer	Flouro-polymer
Overall Diameter (in)	0.042	0.049	0.055	0.067	0.066	0.083	0.135	0.140	0.190

*All sizes available across range

ELECTRICAL									
DCR (Ohms/ft)	1.05	0.082	0.066	0.062	0.032	0.026	0.010	0.008	0.004
Impedance (Ohms)†	50 +/-.5	50+/-1	50 +/-1	50 +/- .7	50 +/-1	50 +/-1	50 +/-1	50 +/-1	50 +/-1
Capacitance (pF/ft)	≤ 24	≤ 24	≤ 24	≤ 24	≤ 24	≤ 24	≤ 24	≤ 24	≤ 24
Velocity of Propagation	80%+	80%+	80%+	80%+	80%+	78%+	82%+	85%+	85%+
Attenuation (dB/ft)									
1 GHz	-0.54	-0.39	-0.35	-0.38	-0.25	-0.23	-0.15	-0.14	-0.10
5 GHz	-1.25	-0.91	-0.82	-0.89	-0.61	-0.55	-0.38	-0.35	-0.27
10 GHz	-1.80	-1.33	-1.21	-1.30	-0.90	-0.82	-0.58	-0.54	-0.43
15 GHz	-2.25	-1.67	-1.52	-1.63	-1.15	-1.05	-0.75	-0.71	-0.56
20 GHz	-2.64	-1.96	-1.80	-1.93	-1.36	-1.25	-0.90	-0.85	-0.69
25 GHz	-2.99	-2.24	-2.05	-2.19	-1.56	-1.44	-1.1	-0.99	-0.81
30 GHz	-3.31	-2.49	-2.28	-2.44	-1.75	-1.61	-1.2	-1.0	-0.92

†Impedance is tunable from 25 to 100 Ohms