

# 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 today’s most stringent signal integrity requirements. Use the performance data below to create a baseline for your next high-performance coaxial cable assembly.

### 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

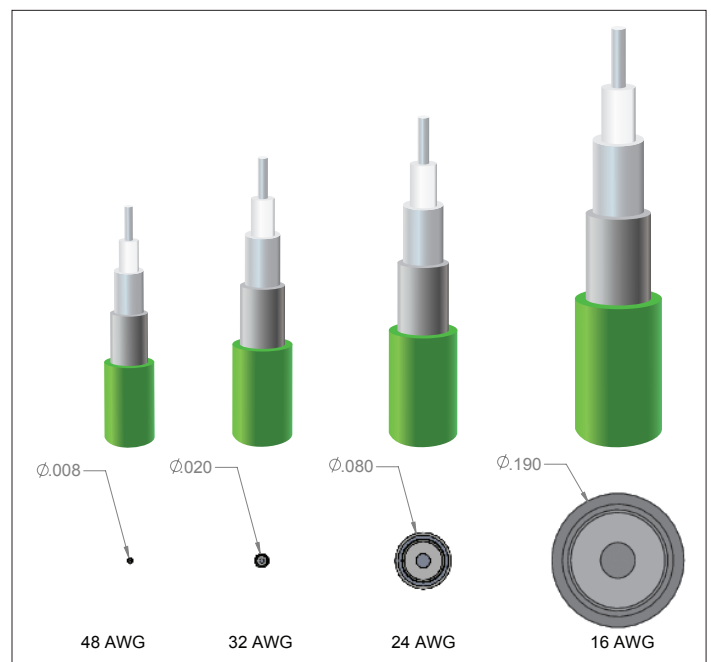


Illustration: 8:1 scale

### PRODUCTS:

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

### APPLICATIONS:

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



## 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
<b>MECHANICAL</b>										
Dielectric	VP90	VP90	VP90	VP90	VP90	VP90	VP90	VP90	VP90	VP90
Dielectric 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

<b>ELECTRICAL</b>										
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) <sup>†</sup>	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

<sup>†</sup>Impedance is tunable from 25 to 100 Ohms



## 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*
<b>MECHANICAL</b>									
Dielectric	VP90	VP90	VP90	VP90	VP90	VP90	VP90	VP90	VP90
Dielectric 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

<b>ELECTRICAL</b>									
DCR (Ohms/ft)	1.05	0.082	0.066	0.062	0.032	0.026	0.010	0.008	0.004
Impedance (Ohms) <sup>†</sup>	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%+
<b>Attenuation (dB/ft)</b>									
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

<sup>†</sup>Impedance is tunable from 25 to 100 Ohms