# General Interconnect Table



General Interconnect Table

| | | SHF2.2UF | SHF2.4M | SHF3 | SHF3M | SHF4M | SHF4.2M |
|---|---|---|---|---|---|---|---|
| Construction | Application Code | GI / UF | GI | GI | GI | GI / ULL | GI |
| | Center conductor | Stranded SPC | Solid SPC | Stranded SPC | Solid SPC | Solid SPC | Solid SPC |
| | Dielectric | PTFE tape | PTFE tape | PTFE tape | PTFE tape | Low density PTFE tape | PTFE tape |
| | Inner shield | SPC tape | SPC tape | SPC tape | SPC tape | SPC tape + Aluminium-polyimide foil | SPC tape |
| | Outer shield | SPC braid | SPC braid | SPC braid | SPC braid | SPC braid | SPC braid |
| | Jacket | PTFE | Green PFA | Green FEP | Green PFA | Black PFA | Green FEP |
| | Outer diameter (Max.) | 2.25 mm / 0.089 in | 2.45 mm / 0.095 in | 3.50 mm / 0.138 in | 3.64 mm / 0.139 in | 4.15 mm / 0.160 in | 4.20 mm / 0.165 in |
| Electrical Characteristics | Impedance | 50 ohms ±1 ohm | 50 ohms ±1 ohm | 50 ohms ±1 ohm | 50 ohms ±1 ohm | 50 ohms ±1 ohm | 50 ohms ±1 ohm |
| | Operating frequency range | DC - 40 GHz | DC - 40 GHz | DC - 40 GHz | DC - 40 GHz | DC - 40 GHz | DC - 30 GHz |
| | Velocity of propagation | 79% | 76% | 76% | 76% | 84% | 76% |
| | Time delay | 4.25 ns/m; 1.29 ns/ft | 4.4 ns/m; 1.3 ns/ft | 4.4 ns/m; 1.3 ns/ft | 4.4 ns/m; 1.3 ns/ft | 4.0 ns/m; 1.2 ns/ft | 4.4 ns/m; 1.3 ns/ft |
| | Capacitance at 1 GHz | 85 pF/m; 25.8 pF/ft | 87 pF/m; 26.4 pF/ft | 85 pF/m; 25.8 pF/ft | 88 pF/m; 26.7 pF/ft | 79 pF/m; 24.1 pF/ft | 91 pF/m; 27.6 pF/ft |
| | Screening effectiveness at 18 GHz | >70 dB | >90 dB | >90 dB | >90 dB | >90 dB | >90 dB |
| | Phase stability with bending | <0.6° / 360° / GHz | <0.4° / 360° / GHz | <0.4° / 360° / GHz | <0.4° / 360° / GHz | <0.4° / 360° / GHz | <0.4° / 360° / GHz |
| | Phase stability with temp. | <2°/m/GHz (-55 / +125°C) | <3°/m/GHz (-55 / +100°C) | | <3°/m/GHz (-55 / +100°C) | <1.8°/m/GHz (-55 / +100°C) | <3°/m/GHz (-55 / +100°C) |
| | Attenuation stability with bending | <0.1 dB at 18 GHz; <0.25 dB at 40 GHz | <0.05 dB at 18 GHz; <0.1 dB at 40 GHz | <0.1 dB at 18 GHz; <0.2 dB at 40 GHz | <0.05 dB at 18 GHz; <0.1 dB at 40 GHz | <0.05 dB at 18 GHz; <0.15 dB at 40 GHz | <0.05 dB at 18 GHz; <0.1 dB at 30 GHz |
| | Att. variation with temp. | Att. (at X°C) = att.(at 20°C) x ( 1 + (X - 20) x 0.002) | | | | | |
| Mechanical | Maximum weight | 14 g/m; 4.3 g/ft | 14 g/m; 4.3 g/ft | 29 g/m; 8.8 g/ft | 35 g/m; 10.6 g/ft | 40 g/m; 12.2 g/ft | 45 g/m; 13.6 g/ft |
| | Min. bend radius | 10 mm; 0.394 in | 10 mm; 0.394 in | 12.5 mm; 0.492 in | 12.5 mm; 0.492 in | 20 mm; 0.788 in | 25 mm; 0.984 in |
| | Crush resistance | | > 400 N / 100 mm | > 400 N / 100 mm | > 400 N / 100 mm | > 200 N / 100 mm | > 600 N / 100 mm |
| Environmental | Operating temp. range (*) | -70 / +200° C -94 / +392° F | -70 / +200° C -94 / +392° F | -70 / +200° C -94 / +392° F | -70 / +200° C -94 / +392° F | -70 / +200° C -94 / +392° F | -70 / +200° C -94 / +392° F |
| | Flammability | yes (MIL 87104) | J25/FAR25 853 | J25/FAR25 853 | J25/FAR25 853 | J25/FAR25 853 | J25/FAR25 853 |
| | Halogen free jacket | No | No | No | No | No | No |
| Frequency/Attenuation | 1 (dB /m - dB /ft) | 0.75 - 0.23 | 0.62 - 0.19 | 0.51 - 0.15 | 0.39 - 0.12 | 0.3 - 0.09 | 0.36 - 0.11 |
| | 2 | 1.07 - 0.32 | 0.89 - 0.27 | 0.72 - 0.22 | 0.56 - 0.17 | 0.43 - 0.13 | 0.51 - 0.16 |
| | 4 | 1.53 - 0.46 | 1.28 - 0.39 | 1.04 - 0.32 | 0.8 - 0.24 | 0.61 - 0.19 | 0.73 - 0.22 |
| | 6 | 1.89 - 0.57 | 1.59 - 0.48 | 1.29 - 0.39 | 0.98 - 0.3 | 0.75 - 0.23 | 0.9 - 0.27 |
| | 8 | 2.20 - 0.67 | 1.86 - 0.57 | 1.51 - 0.46 | 1.15 - 0.35 | 0.87 - 0.27 | 1.04 - 0.32 |
| | 12.4 | 2.47 - 0.75 | 2.36 - 0.72 | 1.91 - 0.58 | 1.45 - 0.44 | 1.1 - 0.33 | 1.31 - 0.4 |
| | 18 | 3.37 - 1.02 | 2.91 - 0.89 | 2.35 - 0.72 | 1.77 - 0.54 | 1.33 - 0.41 | 1.6 - 0.49 |
| | 26.5 | 4.15 - 1.26 | 3.62 - 1.1 | 2.92 - 0.89 | 2.19 - 0.67 | 1.64 - 0.5 | 1.96 - 0.6 |
| | 32 | 4.60-1.39 | 4.03 - 1.23 | 3.25 - 0.99 | 2.44 - 0.74 | 1.82 - 0.55 | |
| | 40 | 5.20 - 1.58 | 4.59 - 1.4 | 3.7 - 1.13 | 2.76 - 0.84 | 2.05 - 0.62 | |
| | Attenuation calculation (dB/m) | (0.74 x √F GHz) + (0.013 x F GHz) | (0.6 x √F GHz) + (0.02 x F GHz) | (0.49 x √F GHz) + (0.015 x F GHz) | (0.38 x √F GHz) + (0.009 x F GHz) | (0.2955 x √F GHz) + (0.0045 x F GHz) | (0.355 x √F GHz) + (0.005 x F GHz) |

| SHF4.6M | SHF5 | SHF5M | SHF5UF | SHF8 | SHF8M | SHF13 |
|---|---|---|---|---|---|---|
| GI / ULL / LW | GI | GI / ULL | GI / UF | GI | GI / ULL | GI / ULL / LW |
| Solid SPCC AL | Stranded SPC | Solid SPC | Stranded SPC | Stranded SPC | Solid SPC | SPC Tube |
| Low density PTFE tape | PTFE tape | Low density PTFE tape | PTFE tape | PTFE tape | Low density PTFE tape | Low density PTFE Tape |
| SPC tape | SPC tape | SPC tape | SPC tape + PTFE tape | SPC tape | SPC tape | SPC tape |
| SPC braid | SPC braid | SPC braid | SPC braid | SPC braid | SPC braid | SPC braid |
| Green FEP | Green FEP | Green FEP | PTFE | Green FEP | Green FEP | Black PFA |
| 4.65 mm / 0.183 in | 5.25 mm / 0.203 in | 5.20 mm / 0.201 in | 5.47 mm / 0.215 in | 7.80 mm / 0.303 in | 7.78 mm / 0.302 in | 13.80 mm / 0.543 in |
| 50 ohms ±1 ohm | 50 ohms ±1 ohm | 50 ohms ±1 ohm | 50 ohms ±1 ohm | 50 ohms ±1 ohm | 50 ohms ±1 ohm | 50 ohms ±1 ohm |
| DC - 32.3 GHz | DC - 26.5 GHz | DC - 26.5 GHz | DC - 26.5 GHz | DC - 18 GHz | DC - 18 GHz | 100kHz - 9.5 GHz |
| 84% | 78% | 84% | 77% | 78% | 84% | 85% |
| 4.0 ns/m; 1.22 ns/ft | 4.3 ns/m; 1.3 ns/ft | 4.0 ns/m; 1.2 ns/ft | 4.3 ns/m; 1.3 ns/ft | 4.2 ns/m; 1.3 ns/ft | 4.0 ns/m; 1.2 ns/ft | 3.9 ns/m; 1.2 ns/ft |
| 79.4 pF/m; 24.2 pF/ft | 85 pF/m; 25.8 pF/ft | 79 pF/m; 23.9 pF/ft | 87 pF/m; 26.5 pF/ft | 85 pF/m; 25.8 pF/ft | 79 pF/m; 23.9 pF/ft | 78 pF/m; 23.6 pF/ft |
| >90 dB | >90 dB | >90 dB | >90 dB | >90 dB | >90 dB | >90 dB (at 9.5 GHz) |
| <1° / 360° / GHz | <0.4° / 360° / GHz | <0.4° / 360° / GHz | <0.4° / 360° / GHz | <0.4° / 360° / GHz | <0.4° / 360° / GHz | <0.6° / 360° / GHz |
| <2°/m/GHz (-55 / +85°C) | | <1°/m/GHz (-55 / +100°C) | | | <1°/m/GHz (-55 / +100°C) | |
| <0.05 dB at 18 GHz; <0.12 dB at 32 GHz | <0.1 dB at 18 GHz; <0.15 dB at 26.5 GHz | <0.05 dB at 18 GHz; <0.1 dB at 26.5 GHz | < 0.1 dB (at 18 GHz); < 0.15 dB (at 26.5 GHz) | <0.1 dB (at 18 GHz) | <0.05 dB (at 18 GHz) | <0.05 dB (at 18 GHz) |
| Att. (at X°C) = att.(at 20°C) x ( 1 + (X - 20) x 0.002) | | | | | | |
| 41 g/m; 12.5 g/ft | 72 g/m; 21.8 g/ft | 60 g/m; 18.2 g/ft | 72g/m; 21.9 g/ft | 140 g/m; 42.4 g/ft | 130 g/m; 39.4 g/ft | 280 g/m; 84.8 g/ft |
| 25 mm; 0.984 in | 25 mm; 0.984 in | 25 mm; 0.984 in | 25 mm; 0.984 in | 40 mm; 1.575 in | 40 mm; 1.575 in | 60 mm; 2.362 in |
| > 200 N / 100 mm | > 400 N / 100 mm | > 200 N / 100 mm | > 400 N / 100 mm | > 400 N / 100 mm | > 200 N / 100 mm | > 600 N / 100 mm |
| -70 / +200° C -94 / +392° F | -70 / +200° C -94 / +392° F | -70 / +200° C -94 / +392° F | -70 / +200° C -94 / +392° F | -70 / +200° C -94 / +392° F | -70 / +200° C -94 / +392° F | -70 / +200° C -94 / +392° F |
| J25/FAR25 853 | J25/FAR25 853 | J25/FAR25 853 | yes (MIL 87104) | J25/FAR25 853 | J25/FAR25 853 | J25/FAR25 853 |
| No | No | No | No | No | No | No |
| 0.25 - 0.08 | 0.26 - 0.08 | 0.23 - 0.07 | 0.27 - 0.08 | 0.18 - 0.05 | 0.15 - 0.04 | 0.09 - 0.03 |
| 0.36 - 0.11 | 0.37 - 0.11 | 0.32 - 0.1 | 0.39 - 0.12 | 0.26 - 0.08 | 0.21 - 0.06 | 0.14 - 0.04 |
| 0.52 - 0.16 | 0.54 - 0.16 | 0.46 - 0.14 | 0.56 - 0.17 | 0.38 - 0.12 | 0.3 - 0.09 | 0.2 - 0.06 |
| 0.65 - 0.2 | 0.67 - 0.2 | 0.57 - 0.17 | 0.70 - 0.21 | 0.48 - 0.15 | 0.37 - 0.11 | 0.26 - 0.08 |
| 0.76 - 0.23 | 0.79 - 0.24 | 0.66 - 0.2 | 0.82 - 0.25 | 0.56 - 0.17 | 0.44 - 0.13 | 0.3 - 0.09 |
| 0.98 - 0.3 | 1 - 0.31 | 0.84 - 0.26 | 1.05 - 0.32 | 0.72 - 0.22 | 0.55 - 0.17 | |
| 1.21 - 0.37 | 1.24 - 0.38 | 1.02 - 0,31 | 1.30 - 0.40 | 0.9 - 0.27 | 0.68 - 0.21 | |
| 1.51 - 0.46 | 1.55 - 0.47 | 1.27 - 0.39 | 1.63 - 0.50 | | | |
| 1.69 - 0.51 | | | | | | |
| | | | | | | |
| (0.242 x √F GHz) + (0.01 x F GHz) | (0.25 x √F GHz) + (0.01 x F GHz) | (0.22 x √F GHz) + (0.005 x F GHz) | (0.26 x √F GHz) + (0.011 x F GHz) | (0.17 x √F GHz) + (0.01 x F GHz) | (0.14 x √F GHz) + (0.005 x F GHz) | (0.087 x √F GHz) + (0.007 x F GHz) |