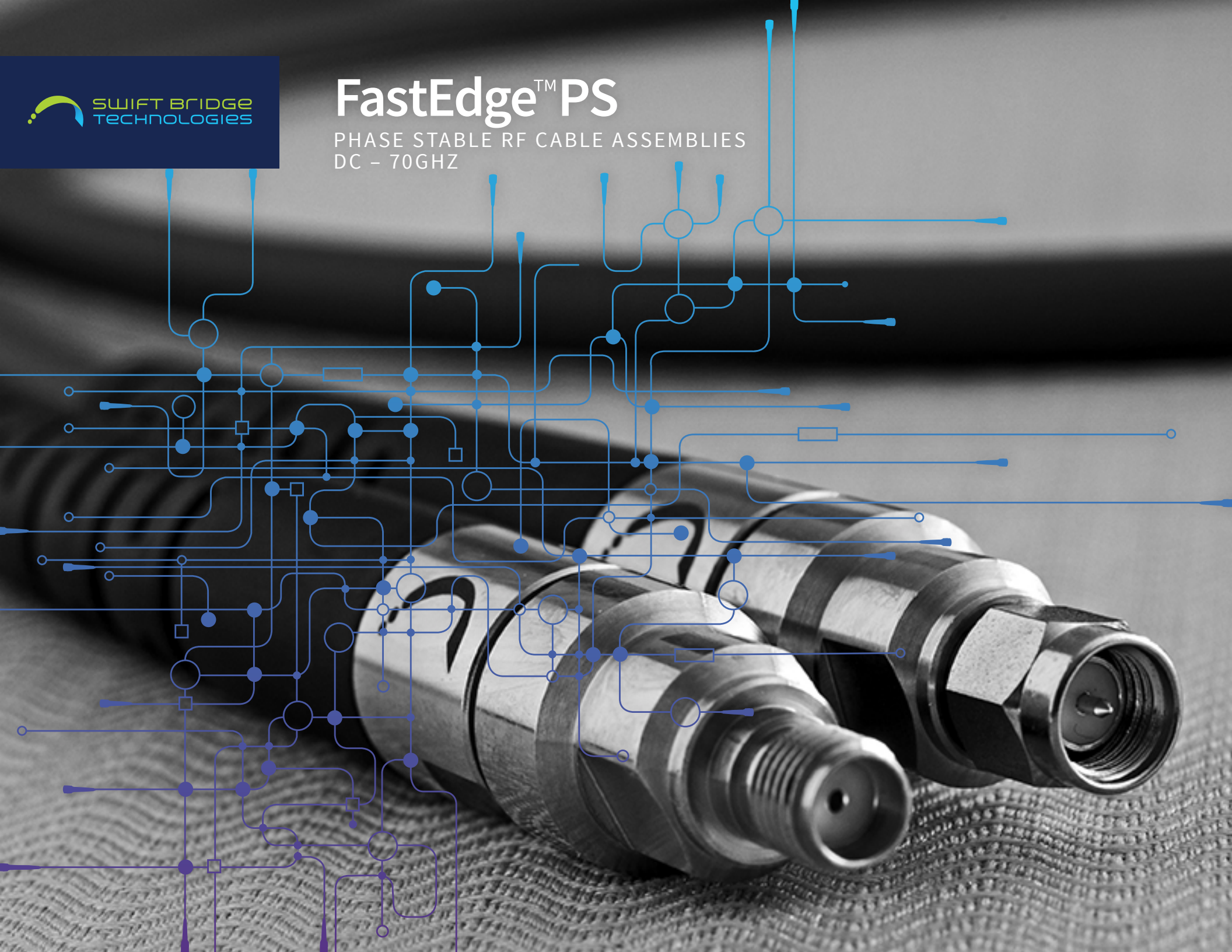
SWIFT BRIDGE TECHNOLOGIES

FastEdge™ PS

PHASE STABLE RF CABLE ASSEMBLIES
DC – 70GHZ



FastEdge™ PS PHASE STABLE RF CABLE ASSEMBLIES

FastEdge™ PS RF cable assemblies feature enhanced phase and amplitude stability with flexure without sacrificing flexibility. They are optimized for laboratory and production test environments that require precise and repeatable measurements. The flexibility of FastEdge™ PS cables reduces mechanical stresses on the device under test (DUT) as compared to phase stable assemblies from other manufacturers.

MEASUREMENT QUALITY

The excellent phase and amplitude stability of FastEdge™ PS RF Cable Assemblies ensures accurate and repeatable measurements on the DUT (device under test). All cable assemblies are 100% tested to assure S-parameters and stability with flexure meet or exceed their specified performance.

FREQUENCY, GHz	TYPICAL INSERTION LOSS AT MAX FREQUENCY, dB	TYPICAL RETURN LOSS THRU MAX FREQUENCY, dB	[1] TYPICAL PHASE STABILITY W/ FLEXURE (± deg)	[1] GUARANTEED PHASE STABILTY W/ FLEXURE (± deg)	TYPICAL AMPLITUDE STABILITY W/ FLEXURE (± dB)	GUARANTEED AMPLITUDE STABILITY W/ FLEXURE (± dB)
PS18	-2.0	-20	2.5	5.0	0.05	0.15
PS26	-2.3	-20	3.5	7.0	0.05	0.15
PS33	-2.6	-20	4.5	8.5	0.05	0.15
PS40	-2.8	-20	6.0	10.0	0.05	0.15
PS50	-4.8	-17	9.0	12.0	0.05	0.15
PS70	-6.2	-17	10.0	16.0	0.05	0.15

NOTE: Data is for a 1 meter cable assembly with connectors

[1] SBT sought to better simulate the actual use model of RF cables utilized in the test and measurement market. In actual use, the RF cable is calibrated or normalized in one position then the distal end is disconnected and reconnected after moving the cable into a new position. SBT's quality inspection procedures specify that upon normalization, the cable is disconnected from port 2 of the VNA, wrapped 360° around a 4.5" diameter mandrel and reconnected to port 2 of the VNA; maximum phase and IL change is measured at this point. Therefore phase and insertion loss stability is measured in transmission rather than reflection which simulates actual use more closely. SBT utilizes one wrap in the preferred direction of cable lay since RF cables have a preferred direction in which they coil; normally the user will follow the natural direction of lay rather than forcing the cable to bend or coil "unnaturally".

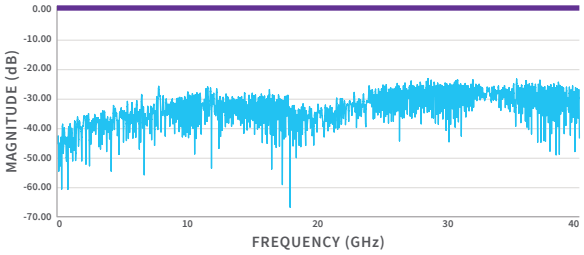
PHASE/TIME DELAY MATCHING

Upon request, phase or time delay matching can be specified for FastEdge™ PS RF cable assemblies. According to the user's requirements for their application, cable assemblies may be specified to meet absolute or relative matching values.

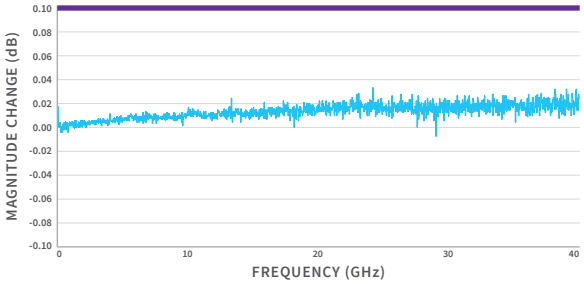
- **Absolute matching** is when one or more cable assemblies conform to a specific time delay target value within some tolerance (±) value.
- **Relative or Differential matching** is when the time delays of two or more assemblies conform to a specified delay range. Relative or differential matching ensures consistent matching within a set of cables, but an assembly from one set may not necessarily be matched with cable assemblies in another set. Swift Bridge Technologies addresses this by uniquely labeling the cables within a matched pair or set. Time delay matching within 1 ps available.

DC-40GHz: 2.92mm (m) to 2.92mm (m) Cable Assembly, 1 meter | SN 1731004 | Sample Data

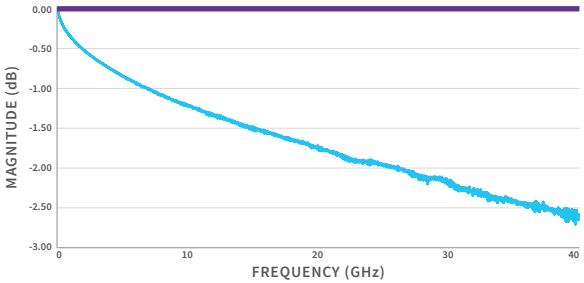
S11 RETURN LOSS



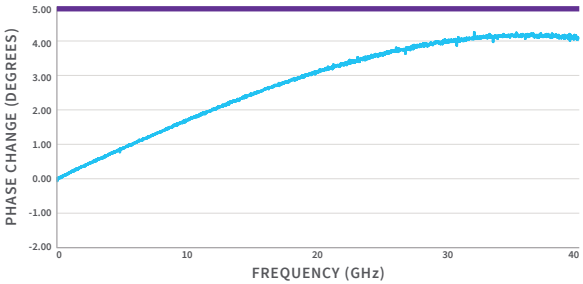
IL Δ W/ 360° WRAP, Ø 4.5" MANDREL



S12 INSERTION LOSS

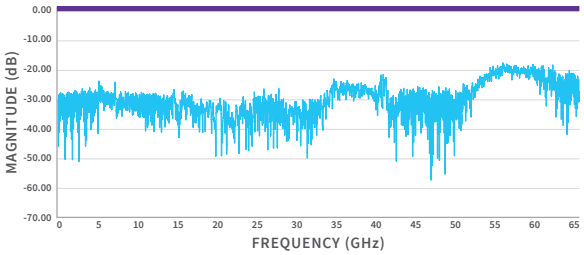


PHASE Δ W/360° WRAP, Ø 4.5" MANDREL

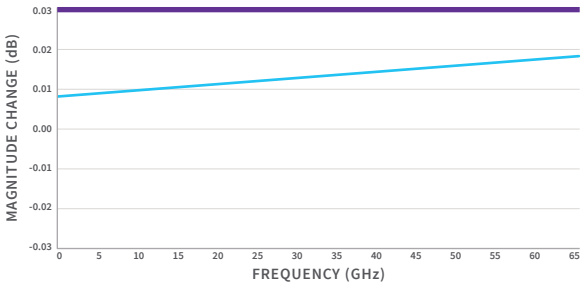


DC-70GHz: 1.85mm (m) to 1.85mm (m) Cable Assembly, 1 meter | Sample Data

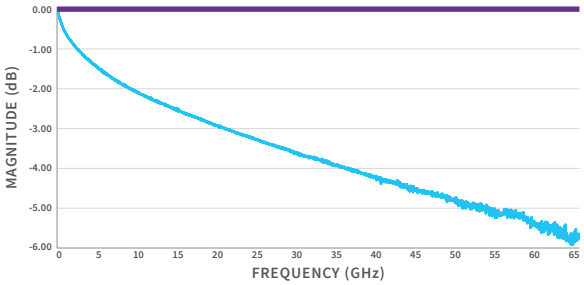
S11 RETURN LOSS



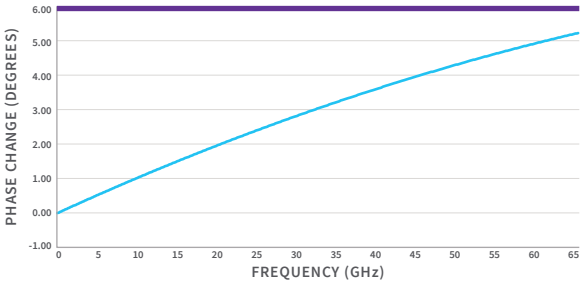
IL Δ W/ 360° WRAP, Ø 4.5" MANDREL



S12 INSERTION LOSS



PHASE Δ W/360° WRAP, Ø 4.5" MANDREL



FastEdge™ PS

For use with:

TDR Oscilloscopes
Wafer Probing Systems
Vector Network Analyzers
Scalar Network Analyzers
Spectrum Analyzers
Test Rack Systems
Automated Test Equipment

CABLE SPECIFICATIONS

MAXIMUM OPERATING FREQUENCY	18 GHz	26 GHz	33 GHz	40 GHz	50 GHz	70 GHz
MECHANICAL CHARACTERISTICS						
Outer Cable Diameter, inch	0.300	0.300	0.300	0.300	0.200	0.200
Tensile Pull (continuous), lbs	25	25	25	25	25	25
Minimum Cable Bend Radius (static), in	1.0	1.0	1.0	1.0	1.0	1.0
Minimum Cable Bend Radius (dynamic), in	2.0	2.0	2.0	2.0	2.0	2.0
Temperature Range	-40°C to 80°C	-40°C to 80°C	-40°C to 80°C	-40°C to 80°C	-40°C to 80°C	-40°C to 80°C
CONSTRUCTION						
Center Conductor	SPC, Solid	SPC, Solid	SPC, Solid	SPC, Solid	SPC, Solid	SPC, Solid
Dielectric	Low Density PTFE	Low Density PTFE	Low Density PTFE	Low Density PTFE	Low Density PTFE	Low Density PTFE
Shield Conductor	SPC Braid over SPC Flat Wire	SPC Braid over SPC Flat Wire	SPC Braid over SPC Flat Wire	SPC Braid over SPC Flat Wire	SPC Braid over SPC Flat Wire	SPC Braid over SPC Flat Wire
Outer Jacket	PVC	PVC	PVC	PVC	PVC	PVC
Flex Relief	TPV	TPV	TPV	TPV	TPV	TPV
ELECTRICAL CHARACTERISTICS						
Impedance, ohms	50 ± 1.5	50 ± 1.5	50 ± 1.5	50 ± 1.5	50 ± 1.5	50 ± 1.5
Typical Velocity of Propagation, %	78	78	78	78	78	76
Capacitance (nominal), pf/ft	26	26	26	26	26	27
Shielding Effectiveness thru 20 GHz, db	>90	>90	>90	>90	>90	>90
Temperature Phase Stability, GHz and 20°C - 35°C	200ppm	200ppm	200ppm	200ppm	125ppm	125ppm
[1] Flexure Phase Stability	±2.5	±3.5	±4.5	±6	±9	±10
Typical Return Loss, dB, thru max *f*	≤ -20	≤ -20	≤ -20	≤ -20	≤ -17	≤ -17
Typical Attenuation, dB, @ max *f* (1m cable w/ connectors)	2.0	2.3	2.6	2.8	4.8	6.2

CONNECTOR SPECIFICATIONS

SPECIFICATIONS		N	SMA	3.5mm	2.92mm	2.4mm	1.85mm
FREQUENCY RANGE (GHz)		DC-18	DC-26.5	DC-33	DC-40	DC-50	DC-70
NOMINAL IMPEDANCE (ohms)		50	50	50	50	50	50
RECOMMENDED MATING TORQUE		12-15 in·lbs	8-10 in·lbs	8-10 in·lbs	8-10 in·lbs	8-10 in·lbs	8-10 in·lbs
CONNECTOR DURABILITY (min. mate/demate cycles)		>500	>500	>500	>500	>500	>500
MATERIALS OF CONSTRUCTION							
CONNECTOR BODY COMPONENTS	303 SS[6]	●	●	●	●	●	●
CENTER CONTACT	BeCu[5]	●	●	●	●	●	●
DIELECTRIC	PTFE[4] or Fluoro-polymer	●	●	●	●	●	●
SEALS, GASKETS, O-RINGS	Silicone Rubber[3]	●	●	●	●	●	●
FINISH							
CONNECTOR BODY COMPONENTS	Passivated [1]	●	●	●	●	●	●
CENTER CONTACT	Gold[2]	●	●	●	●	●	●

[1] Passivated per ASTM-A-987 and AMS-QQ-P-35 | [2] Gold plating, minimum 50µin, per ASTM-B-488, Type 2, Code C, Class 1, over 50µin minimum of nickel per AMS-QQ-N-290, Class 1 | [3] Silicone rubber per ZZ-R-765 and MIL-R-5847 Class 2 A&B, Grades 50-70 | [4] PTFE per ASTM-D-1710, Type 1, Grade 1, Class A | [5] Beryllium copper per ASTM-B-196, Alloy C17300, ASTM Temper TD04 | [6] Corrosion resistant Type 303 Stainless Steel, non-magnetic, per ASTM-A-484 and ASTM-A-582

SWIFT BRIDGE TECHNOLOGIES

North America and Europe
Design Center and Sales Office
6975 SW Sandburg Street, Suite 200
Tigard, Oregon 97223
(971) 888-4821

Asia Pacific and India
Swift Bridge Technologies (M) Sdn Bhd
Lot 81, Jalan PKNK 1/8,
Kawasan Perindustrian Sg. Petani,
08000 Sungai Petani,
Kedah, Malaysia
+6-012-483-2186

Asia Sales Office
2-07-24, Harbour Trade Centre
Gat Lebuh Macallum,
10300 Penang, Malaysia
+60 4 2610029

US and Malaysia facilities are ISO 9001:2015 certified.

info@swiftbridgetechnologies.com
www.swiftbridgetechnologies.com

1/2018 070-0035-00 Rev A