

Product Name: ZX0002SRF4 High Frequency semi-rigid SMA to bare wire coaxial cable assembly

Product Description: ZX0002SRF4 is high frequency semi rigid SMA to bare wire coaxial cable assembly. It is ideal cable assembly solution for high frequency bandwidth DC – 25GHz applications.

- 1- SMA to Bare core wire – 50Ω semi-rigid coaxial cable assembly with insertion loss of > -0.3dB @8GHz
- 2- Outer layer of the coaxial cable assembly is Copper tube with Tin plated. It is designed to be soldered to system Ground fills / plates.
- 3- Semi-Rigid coaxial cable assembly with 0.16" (4.2mm) bending radius – enabling system test & measurement flexibility.
- 4- Center core wire diameter of 0.011" (0.29mm) , enabling to solder onto landing pads as small as 0402 SMD pads.
- 5- Standard SMA connector, enabling interface to any test equipment for purpose of test & measurement.
- 6- Pre stripped core wire of 0.2" (5mm)
- 7- Flexible and easy to use.
- 8- Wide operating temperature, -55°C to +125°
- 9- Shipped in protective tubing

Electrical:

Coaxial cable Assembly:

Insertion loss > -0.3dB @8GHz
 > -0.4dB @ 10GHz
 > -0.5dB @ 20GHz

VSWR : 1.30 max
 type: Semi-rigid coaxial cable
 Impedance: 50Ω (50 Ohms)
 Capacitance: 9.8pF (nominal)
 Voltage withstanding: (AC) : 1000Vrms/min
 Operating Temperature: -55°C to +125°C (continuous)
 Bending Radius: 0.16" (4.2mm)
 Tensile Strength: 1.4Kg
 Length: 4" (10cm)

Coaxial cable:

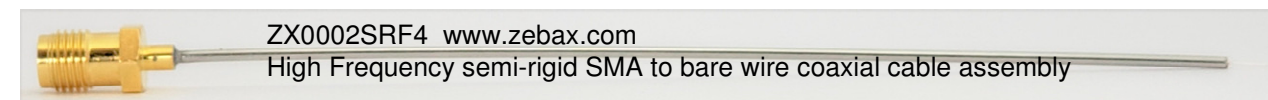
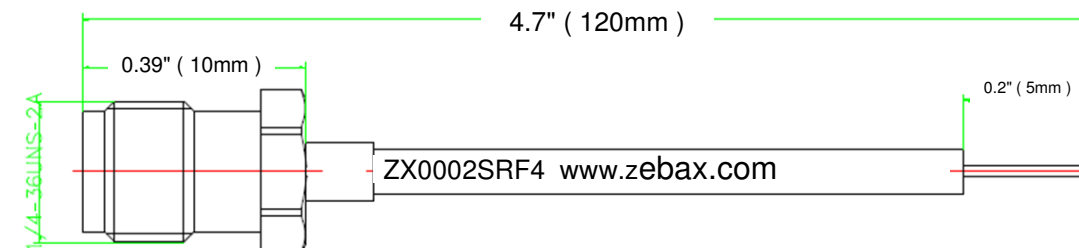
Inner Conductor: Silver-plated Copper Clad Steel
 Inner Conductor diameter: 0.011" (0.29mm)
 Insulation material: Poly (tetrafluoroethylene) (PTFE) - diameter: 0.037" (0.94mm)
 Outer Conductor Material : Copper Tube
 Outer Conductor plating : Tin plated - diameter: 0.047" (1.19mm)

SMA connector: 0.025" (0.64mm) square pin header

Plating
 Center contact : 20 μ" (0.5 μm) Gold
 Outer contact : 3 μ" (0.08 μm) Gold
 Insulating Material: PTFE (-PN)
 Shell Material: Brass
 Contact Material: BeCu

Application: Test & measurement - Single-ended and differential scope probe interface – Tektronix Keysight and more wifi, mipi, PCIe, RF sensors GHz and general high speed & ultra high speed signal test and measurements

Mates with : Any standard SMA plug , Tektronix , Keysight scope probes , any test equipment utilizing SMA connector interface



See Page 2 for s-parameters + charts



ZX0002SRF4 package includes:

Part number	Quantity	Description
ZX0002SRF4	1 pc	High Frequency semi-rigid SMA to bare wire coax cable assembly
ZX000101C8	0	9.4" (24cm) long High Frequency semi-rigid SMA to SMA wire coax cable assembly

Compliance:

- ISO2001 certified
- RoHs - Lead Free
- EU RoHS2
- UL E111594 document
- ELV- Vehicle Directive (Directive 2000/EC)
- European Union Directive (203/11/EC)
- Halogen Free per IEC-61249-2.21 : 2003
- RoHs Directive 2011/65/EU
- WEEE Directive (2012/12/EU)
- Certificate of Compliance for Radioactive substances
- Certificate of Compliance for Asbestos
- Certificate of Compliance for Ozone Depleting Substances, ODS
- Certificate REACH SVHC
- Certificate of Compliance RoHS_EN_CoC

Note ALL ZEBAX products are RoHS compliant and Lead Free unless otherwise indicated.

ZEBAX TECHNOLOGIES SANTA CRUZ, CA U.S.A (831) 222-0717 WWW.ZEBAX.COM		
SPECIFIED DIMENSIONS ARE INCHES (MM). ROHS COMPLIANT	ASSEMBLY DRAWING ITEM: ZX0002SRF4	
DESCRIPTION: High Frequency semi-rigid SMA to bare wire coaxial cable assembly		
CHECKED: M. MARINA	DRAWN: SONYA	REVISION: 1.0 SHEET: 1 OF 2

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S-parameter: Two ZX0002SRF4 cable assemblies were used in order to characterize the cable assembly using Keysight Network Analyzer, NA , model # E5071C

ZX0002SRF4 s-parameters : [ZX0002SRF4-S-Parameter.s2p](#) - S2P , 2 Port – Testcase using two ZX0002SRF4
[ZX0002SRF4-S-Parameter-S11.s1p](#) - S1P , 1 Port – Testcase using a ZX0002SRF4 - unloaded on open end
[ZX0002SRF4-NA-Loopback-S-Parameter.s2p](#) - S2P , 2 Port – NA baseline test equipment measurement

Insertion loss calculation:

Based on Figure 1 and 2, the instrumentation error is recorded at -0.3dB, therefore the ZX0002SRF4 insertion loss would be calculated to $> -0.3416\text{dB}$ at DC to 8.5GHz

Note : $IL > - (0.9832-0.3) / 2$ - The "/2" is due to utilizing 2x ZX0002SRF4 cable assemblies.

Figure 1 – NA port loopback insertion loss, instrumentation error

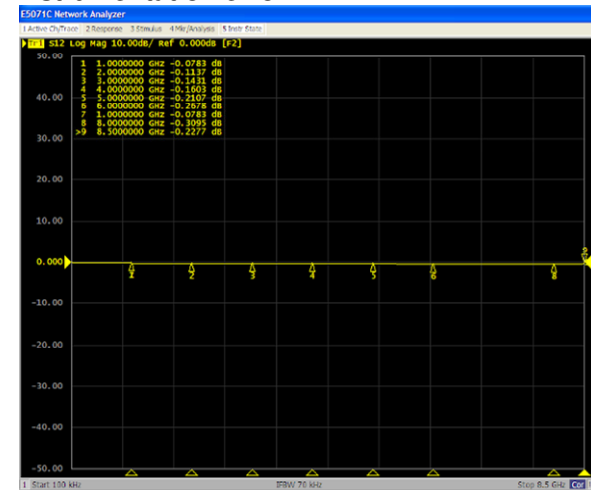


Figure 2 – ZX0002SRF4 insertion loss

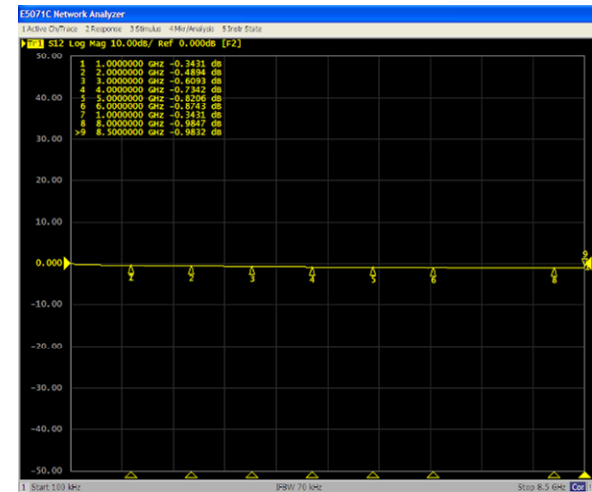


Figure 3 – Polar chart – Lin-Phase

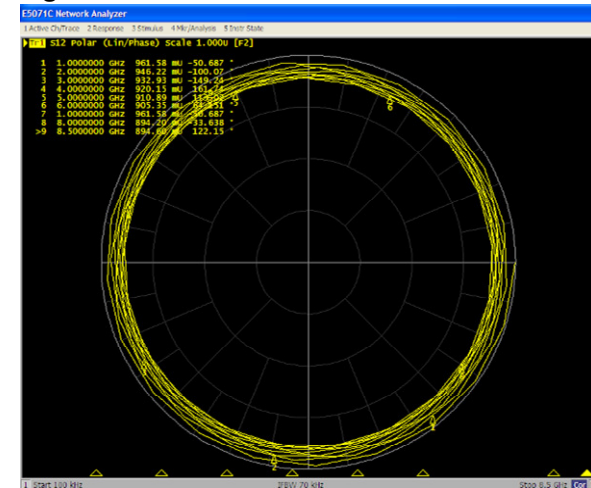


Figure 4 – Polar chart – Log-Phase

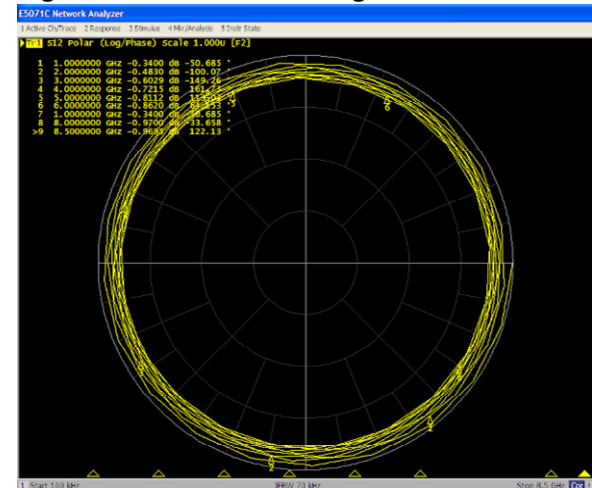


Figure 5 – Smit Chart – Log / Phase

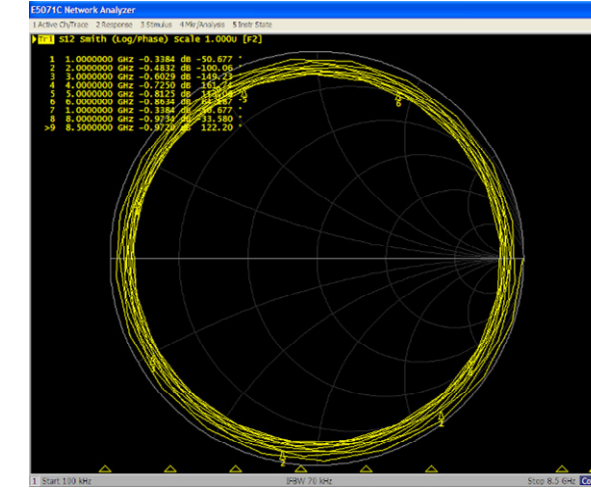


Figure 6 – Smit Chart – Real / Imaginary

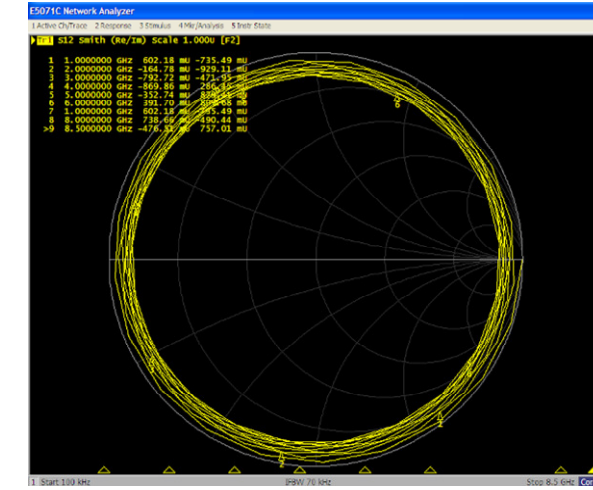


Figure 7 – Smit Chart – R+jX

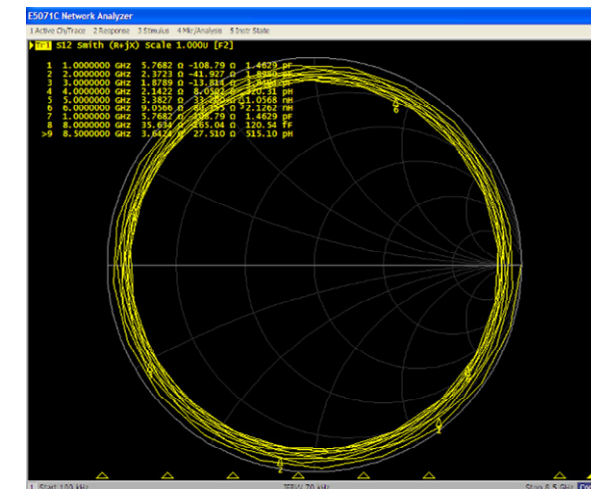
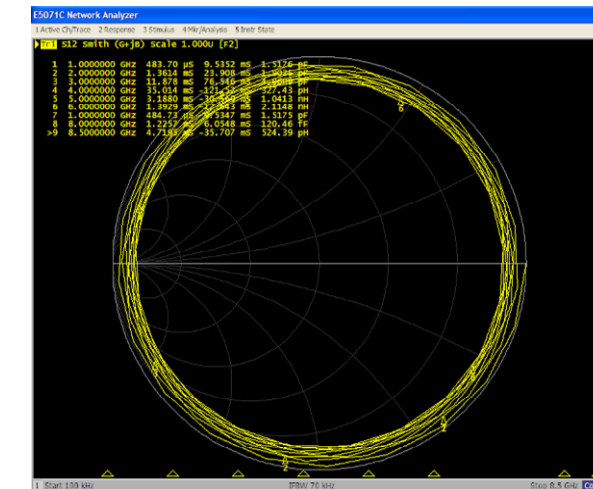


Figure 8 – Smit Chart – G+jB



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ASSEMBLY DRAWING
 ITEM: ZX0002SRF4

DESCRIPTION: High Frequency semi-rigid SMA to bare wire coaxial cable assembly

CHECKED: M. MARINA
 DRAWN: SONYA
 REVISION: 1.0
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