

Anritsu envision : ensure

EK101F-R Cable Connector

Extended-K™ Female In-line Cable Connector

DC to 43.5 GHz



Introduction

Anritsu Extended-K™ EK101F-R series cable connectors are the only class of K connectors (2.92 mm) in the connector market capable of providing mode-free and traceable performance from DC to 43.5 GHz. These new connectors enable coaxial cables to address new 5G telecommunication standards equipment requirements.

The Extended-K connectors provide an alternative to a more expensive Q connectors (2.4 mm) when coverage past 43.5 GHz is not warranted or necessary. Additionally, Anritsu Extended-K connectors are traceable to 43.5 GHz, enabling accurate measurement uncertainty budgeting for the tightest measurement requirements. Anritsu provides the highest quality connectors with hard specifications using a coverage factor of K=2 meaning a 95% confidence level of performance guaranteed. Connectors are randomly sample tested per various lots to ensure Extended-K connectors meet electrical specifications.

For frequency domain systems and products, Extended-K connectors provide low insertion loss and good return loss ensuring minimal signal interaction through the connector. For time domain systems and products, Extended-K has good eye diagram characteristics in both NRZ and PAM4, displaying minimal impact on signal fidelity.

Definitions

Specifications	Specifications are warranted and include guard-bands, unless otherwise stated.
Typical Performance	Typical performance indicates the measured performance of an average unit. It does not include guard-bands and are shown in parenthesis, such as (-30 dB), or noted as Typical.
Measurement Method	Connectors are measured in a back-to-back configuration using an Anritsu proprietary fixture. Data provided for Extended-K connectors are done with Insertion loss doubled from the specification because of back-to-back configuration.
Specifications Subject to Change	All specifications subject to change without notice. For the most current data sheet, please visit the Anritsu website: www.anritsu.com

Highlights

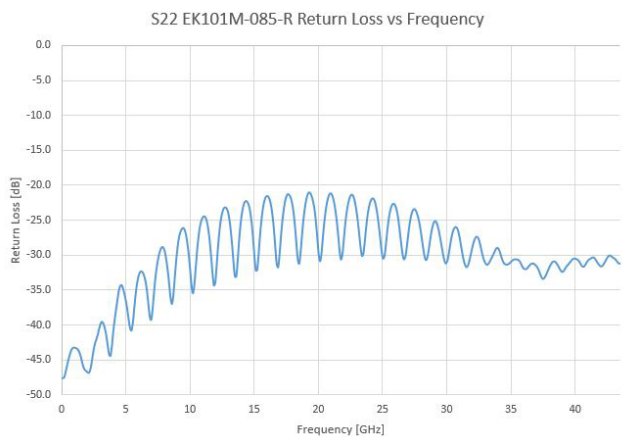
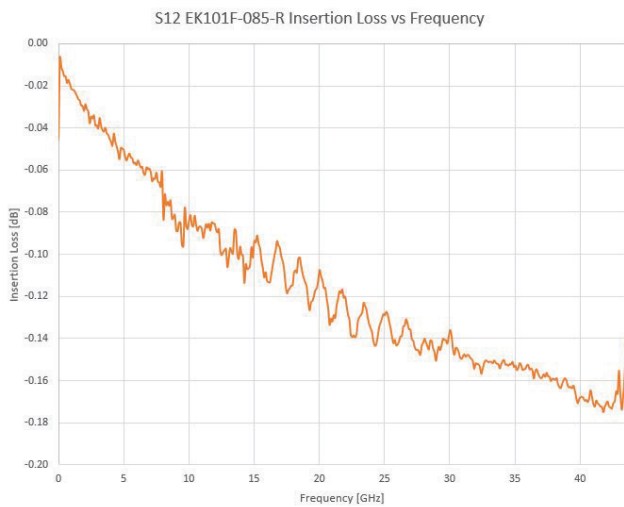
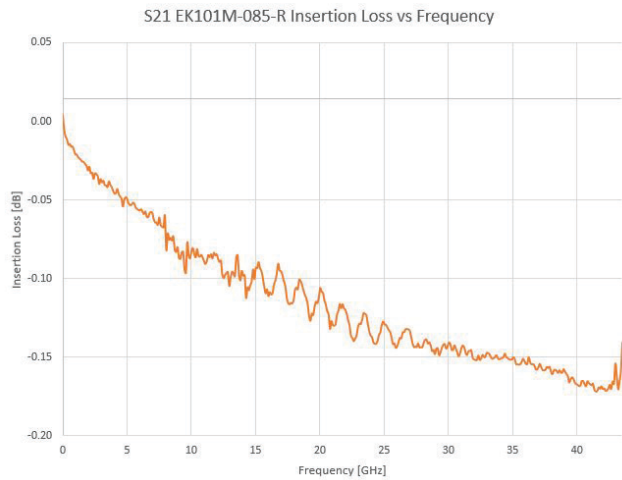
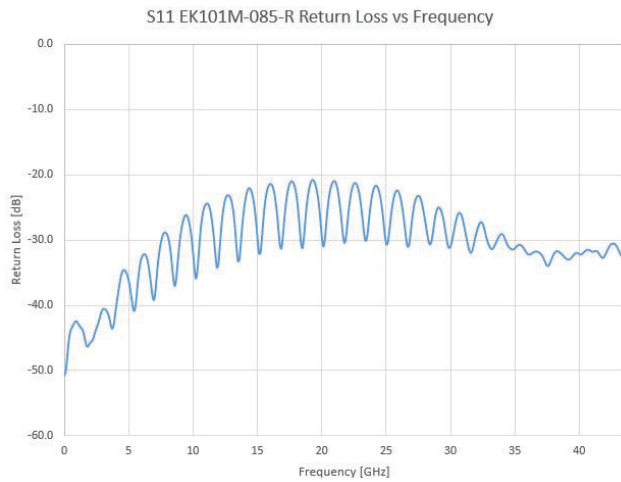
- Traceable and Mode-free Performance up to 43.5 GHz
- Performance Exceeding SMA Below 18 GHz
- Mate Compatible with SMA, WSMA, 3.5mm, and 2.92 mm
- Step-by-step Instructions for Easy Construction
- Superior Reliability
- Low VSWR
- Low Insertion Loss
- Complete Testability on Existing Network Analyzers

Specifications

Specifications in parentheses are typical.

Frequency Range	DC to 43.5 GHz	
VSWR	DC to 10 GHz	1.22 (1.09)
	> 10 to 40 GHz	1.33 (1.17)
	> 40 to 43.5 GHz	1.38 (1.22)
Return Loss	DC to 10 GHz	-20 dB (-27 dB)
	> 10 to 40 GHz	-17 dB (-22 dB)
	> 40 to 43.5 GHz	-16 dB (-16 dB)
Insertion Loss	DC to 5 GHz	-0.08 dB (-0.04 dB)
	> 5 to 15 GHz	-0.13 dB (-0.09 dB)
	> 15 to 25 GHz	-0.15 dB (-0.11 dB)
	> 25 to 35 GHz	-0.18 dB (-0.13 dB)
	> 35 to 40 GHz	-0.20 dB (-0.15 dB)
	> 40 to 43.5 GHz	-0.22 dB (-0.15 dB)
Impedance	50 Ω	
Insulation Resistance	$\geq 5 \text{ G}\Omega$	
RF Leakage	-90 dB (typical)	
Dielectric Withstanding voltage	750 Vrms	
Working Voltage	250 Vrms	

Electrical Performance^{1,2}



1. All plots typical.
 2. All Plot are made using insertable 3" K118 cable fitted with (2) EK101F-R connectors.

Mechanical Data

Mating Cycles	> 500
Connector Type	K(f), 2.92 mm
Pin Depth	0.000 to -0.13 mm for male and female connectors
Weight	1.89 g

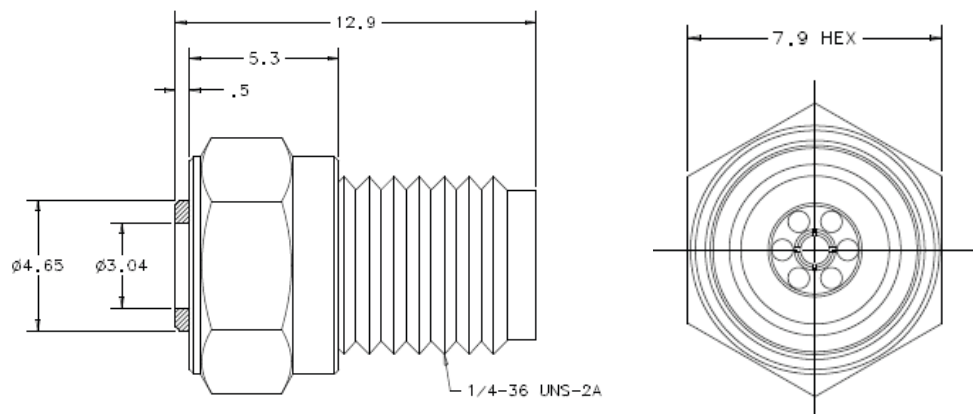
Regulatory Compliance

European Union	RoHS Directive 2011/65/EU
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Material Data

Outer Conductor	Passivated Stainless Steel
Bead Holder	Passivated Stainless Steel
Center Conductor	Heat-treated Beryllium Copper, Gold-plated over Nickel MIL-G-45204C

Outline Drawing



All dimensions are in mm.

Installation Resources

For installation procedures, please visit www.anritsu.com and search for PN: 10100-00046. This part number references the *K Connector Instruction Sheets*, which outlines the technique required to install any of the K connectors or Extended-K connectors. The *K Connector Instruction Sheets* also list a section, the Tools and Materials section, for each connector that identifies all parts needed to install an Anritsu Extended-K connector.

Accessories

01-101A	K Connector Evaluation Kit
01-103	Soldering Fixture for Sparkplug Launcher Glass Bead
01-104	Drill and Tap Set (For precision machining of concentric holes in microwave housing for K connector)
01-105A	Male and Female Sparkplug torquing kit for K & V Connector
01-106	K Soldering fixture for Flange Launcher glass bead
01-107M	K cable sleeve soldering fixture, male connector
01-107F	K cable sleeve soldering fixture, female connector
01-108	Drill and Tap Set (For precision machining of concentric holes in microwave housing for K connector using sliding contacts)
01-118	K connector cable assembling fixture for 0.118" semi-rigid coax cable
01-201	Torque end wrench, 5/16 in, 0.9 N·m (8lbf·in), For tightening male devices, for SMA, 3.5 mm, 2.4 mm, K and V connectors.
01-202	Universal test port connector wrench
01-204	Anritsu stainless steel connector wrench
K110-1-R	Microstrip stress relief contact
K110-2-R	Stripline stress relief contact
K110-3-R	Microstrip stress relief contact (larger contact pad)
S110-1-R	Microstrip and coplanar waveguide stress relief contact for 0.38 mm glass feedthrough center conductor
S110-3-R	Microstrip and coplanar waveguide stress relief contact for 0.38 mm glass feedthrough center conductor (Larger contact pad)

Training at Anritsu

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