



# Extended-K™ Male In-line Cable Connector

For 0.085" Cables

## EK101M-085-R

DC to 43.5 GHz



## Introduction

Anritsu Extended-K™ EK101M-085-R series cable connectors are the only class of K connectors (2.92 mm) capable of providing mode-free and traceable performance from DC to 43.5 GHz in the connector market. These new connectors enable coaxial cables to address the signal interface for new 5G telecommunication standards equipment requirements.

The Extended-K connectors provide an alternative to 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: <a href="http://www.anritsu.com">www.anritsu.com</a>

## Highlights

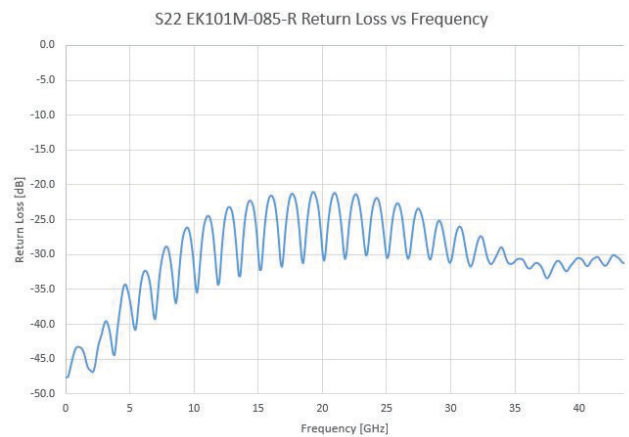
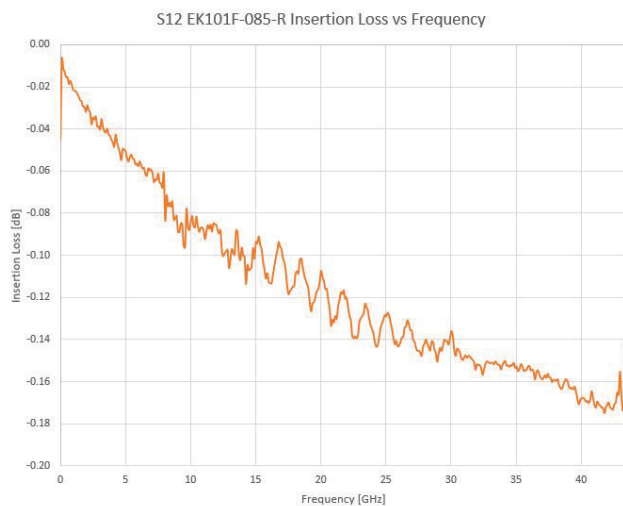
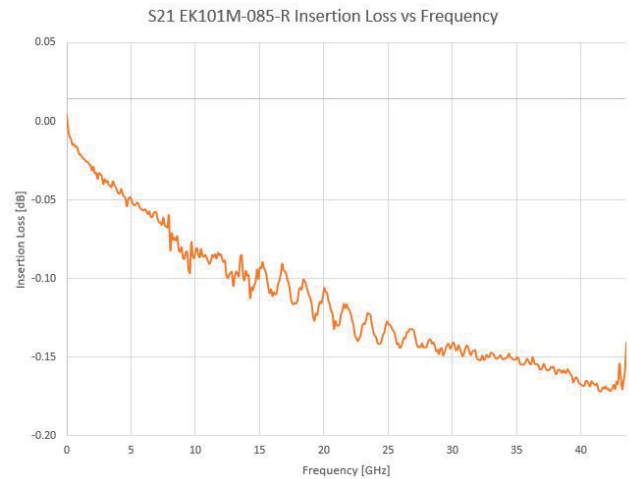
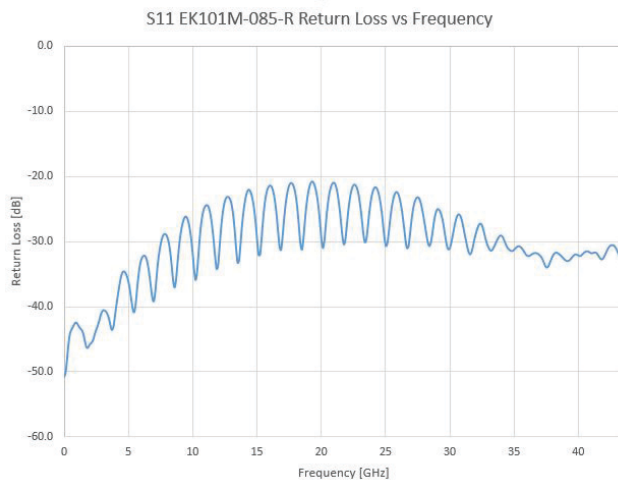
- Traceable and Mode-free Performance up to 43.5 GHz
- Performance Exceeding SMA Below 18 GHz
- Mate Compatible with SMA, WSMA, 3.5mm, and 2.92 mm
- Step-by-step Instructions for Easy Construction
- Superior Reliability
- Low VSWR
- Low Insertion Loss
- Complete Testability on Existing Network Analyzers

## Electrical Data

Specifications in parentheses are typical.

Frequency Range	DC to 43.5 GHz	
VSWR	DC to 10 GHz	1.22 (1.12)
	> 10 to 30 GHz	1.43 (1.22)
	> 30 to 43.5 GHz	1.33 (1.11)
Return Loss	DC to 10 GHz	-20 dB (-25 dB)
	> 10 to 30 GHz	-15 dB (-20 dB)
	> 30 to 43.5 GHz	-17 dB (-26 dB)
Insertion Loss	DC to 5 GHz	-0.09 dB (-0.06 dB)
	> 5 to 15 GHz	-0.15 dB (-0.12 dB)
	> 15 to 25 GHz	-0.19 dB (-0.14 dB)
	> 25 to 38 GHz	-0.20 dB (-0.16 dB)
	> 38 to 43.5 GHz	-0.25 dB (-0.18 dB)
Impedance	50 $\Omega$	
Insulation Resistance	$\geq 5$ G $\Omega$	
RF Leakage	-90 dB (typical)	
Dielectric Withstanding voltage	750 Vrms	
Working Voltage	250 Vrms	

## Electrical Performance<sup>1,2</sup>



1. All plots typical.
2. All Plot are made using insertable 3" K119 cable fitted with (2) EK101M-085-R connectors.

**Mechanical Data**

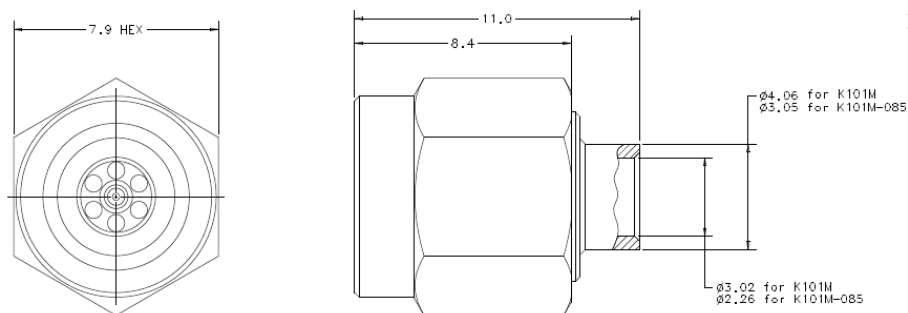
Mating Cycles	> 500
Connector Type	K(m), 2.92 mm
Pin Depth	0.000 to -0.13 mm for male and female connectors
Weight	1.89 g

**Regulatory Compliance**

European Union	RoHS Directive: 2011/65/EU + Amendment 2015/863
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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](http://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)

### Notes

## Training at Anritsu

Anritsu has designed courses to help you stay up to date with technologies important to your job. For available training courses, visit: [www.anritsu.com/training](http://www.anritsu.com/training)



### • United States

**Anritsu Americas Sales Company**  
450 Century Parkway, Suite 190,  
Allen, TX 75013, U.S.A.  
Phone: +1-800-Anritsu (1-800-267-4878)

### • Canada

**Anritsu Electronics Ltd.**  
700 Silver Seven Road, Suite 120,  
Kanata, Ontario K2V 1C3, Canada  
Phone: +1-613-591-2003  
Fax: +1-613-591-1006

### • Brazil

**Anritsu Eletronica Ltda.**  
Praça Amadeu Amaral, 27 - 1 Andar  
01327-010 - Bela Vista - São Paulo - SP, Brazil  
Phone: +55-11-3283-2511  
Fax: +55-11-3288-6940

### • Mexico

**Anritsu Company, S.A. de C.V.**  
Blvd Miguel de Cervantes Saavedra #169 Piso 1,  
Col. Granada, Mexico, Ciudad de Mexico,  
11520, MEXICO  
Phone: +52-55-4169-7104

### • United Kingdom

**Anritsu EMEA Ltd.**  
200 Capability Green,  
Luton, Bedfordshire, LU1 3LU, U.K.  
Phone: +44-1582-433200  
Fax: +44-1582-731303

### • France

**Anritsu S.A.**  
12 avenue du Québec, Immeuble Goyave,  
91140 VILLEBON SUR YVETTE, France  
Phone: +33-1-60-92-15-50

### • Germany

**Anritsu GmbH**  
Nemetschek Haus, Konrad-Zuse-Platz 1,  
81829 München, Germany  
Phone: +49-89-442308-0  
Fax: +49-89-442308-55

### • Italy

**Anritsu S.r.l.**  
Spaces Eur Arte, Viale dell'Arte 25, 00144 Roma, Italy  
Phone: +39-6-509-9711

### • Sweden

**Anritsu AB**  
Kistagången 20 B, 2 tr, 164 40 Kista, Sweden  
Phone: +46-8-534-707-00

### • Finland

**Anritsu AB**  
Technopolis Aviapolis, Teknobulevardi 3-5 (D208.5.),  
FI-01530 Vantaa, Finland  
Phone: +358-20-741-8100

### • Denmark

**Anritsu A/S**  
c/o Regus Winghouse, Ørestads Boulevard 73, 4th floor,  
2300 Copenhagen S, Denmark  
Phone: +45-7211-2200

### • Russia

**Anritsu EMEA Ltd.**  
**Representation Office in Russia**  
Tverskaya str. 16/2, bld. 1, 7th floor,  
Moscow 125009, Russia  
Phone: +7-495-363-1694  
Fax: +7-495-935-8962

### • Spain

**Anritsu EMEA Ltd.**  
**Representation Office in Spain**  
Paseo de la Castellana, 141.  
Planta 5, Edificio Cuzco IV  
28046, Madrid, Spain  
Phone: +34-91-572-6761

### • Austria

**Anritsu EMEA GmbH**  
Am Belvedere 10, A-1100 Vienna, Austria  
Phone: +43-(0)1-717-28-710

### • United Arab Emirates

**Anritsu EMEA Ltd.**  
**Anritsu A/S**  
Office No. 164, Building 17, Dubai Internet City  
P. O. Box - 501901, Dubai, United Arab Emirates  
Phone: +971-4-3758479

### • India

**Anritsu India Private Limited**  
6th Floor, Indique ETA, No.38/4, Adjacent to EMC2,  
Doddanekundi, Outer Ring Road,  
Bengaluru - 560048, India  
Phone: +91-80-6728-1300  
Fax: +91-80-6728-1301

### • Singapore

**Anritsu Pte. Ltd.**  
11 Chang Charn Road, #04-01, Shriro House  
Singapore 159640  
Phone: +65-6282-2400  
Fax: +65-6282-2533

### • Vietnam

**Anritsu Company Limited**  
16th Floor, Peakview Tower, 36 Hoang Cau Street,  
O Cho Dua Ward, Dong Da District, Hanoi, Vietnam  
Phone: +84-24-3201-2730

### • P.R. China (Shanghai)

**Anritsu (China) Co., Ltd.**  
Room 2701-2705, Tower A, New Caohejing  
International Business Center No. 391 Gui Ping Road  
Shanghai, 200233, P.R. China  
Phone: +86-21-6237-0898  
Fax: +86-21-6237-0899

### • P.R. China (Hong Kong)

**Anritsu Company Ltd.**  
Unit 1006-7, 10/F., Greenfield Tower, Concordia Plaza,  
No. 1 Science Museum Road, Tsim Sha Tsui East,  
Kowloon, Hong Kong, P.R. China  
Phone: +852-2301-4980  
Fax: +852-2301-3545

### • Japan

**Anritsu Corporation**  
8-5, Tamura-cho, Atsugi-shi, Kanagawa, 243-0016 Japan  
Phone: +81-46-296-6509  
Fax: +81-46-225-8352

### • South Korea

**Anritsu Corporation, Ltd.**  
5FL, 235 Pangyojeok-ro, Bundang-gu, Seongnam-si,  
Gyeonggi-do 13494, South Korea  
Phone: +82-31-696-7750  
Fax: +82-31-696-7751

### • Australia

**Anritsu Pty. Ltd.**  
Unit 20, 21-35 Ricketts Road,  
Mount Waverley, Victoria 3149, Australia  
Phone: +61-3-9558-8177  
Fax: +61-3-9558-8255

### • Taiwan

**Anritsu Company Inc.**  
7F, No. 316, Sec. 1, NeiHu Rd., Taipei 114, Taiwan  
Phone: +886-2-8751-1816  
Fax: +886-2-8751-1817

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