

# Rosenberger

Miniature Low PIM RF Coax Connector System

## NEX10<sup>®</sup>

COMMUNICATION





Screw (HEX)



Push-Pull

Universal Jack



## New Market Standard

### NEX10<sup>®</sup> small coax connector system for small cell mobile communication market

As a leading global manufacturer of RF products, Rosenberger is an active partner in a development group tasked with providing innovative solutions for the telecommunications industry.

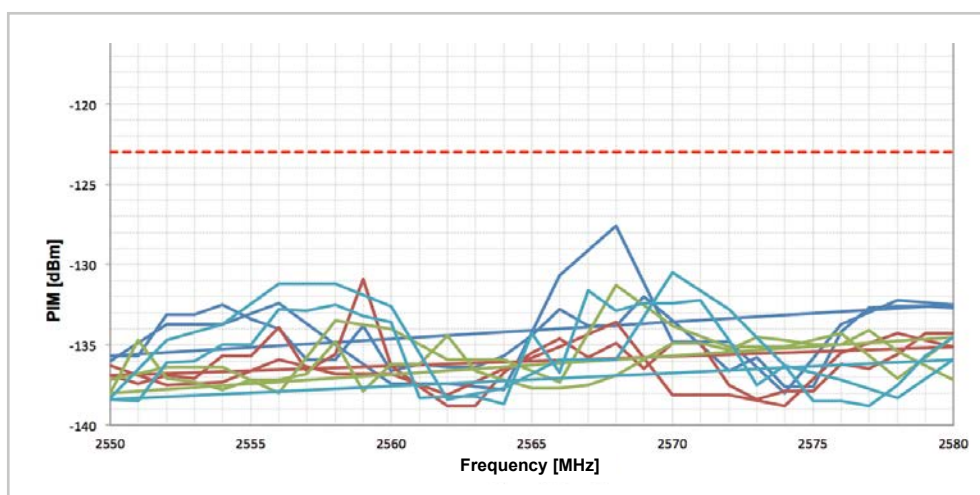
The new NEX10<sup>®</sup> connector system is designed to meet the existing and future demands of small cell and upcoming 5G networks. The NEX10<sup>®</sup> interface offers very low PIM performance in a robust design and compact size.

### File for IEC standardization in 2019

NEX10<sup>®</sup> consortium has a progressive approach adding suppliers to produce NEX10<sup>®</sup> and file for an IEC standard. The ultimate goal of the NEX10<sup>®</sup> consortium is to make the interface a market standard that is available to customers worldwide.

NEX10<sup>®</sup> consortium will file for IEC standardization in 2019.

NEX10<sup>™</sup> cable assembly PIM measurement with 2 x 20 W signals in UMTS II frequency band



NEX10®-4



Screw (HEX)



Push-Pull



Universal Jack

NEX10®-5



## Providing 4 or 5 NEX10® Interfaces

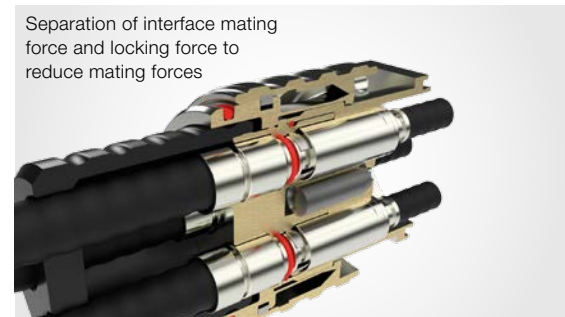
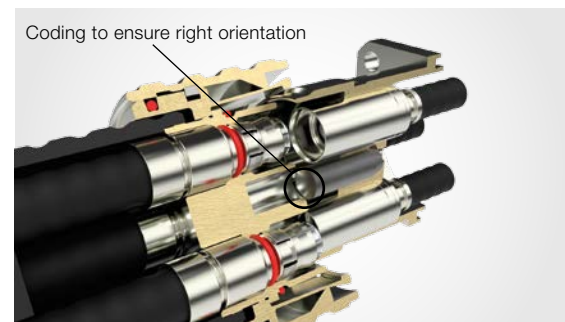
### NEX10® Multi Coax

The increasing number of jumper connections per site has resulted in the need for a Multi Coax connector. The NEX10® Multi Coax connector provides 4 or 5 NEX10® interfaces within one connector on the same form factor as a 7-16 connector. For very narrow applications, a push-pull version is available.

### Features & Benefits

- Reduced installation time
- Same outstanding electrical performance as 4 or 5 single NEX10®
- Smaller form factor as single connectors
- Foolproof – no swapped links

### NEX10® quick-lock mechanism





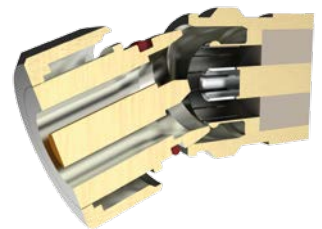
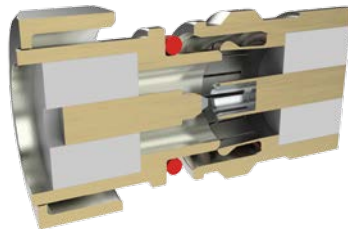
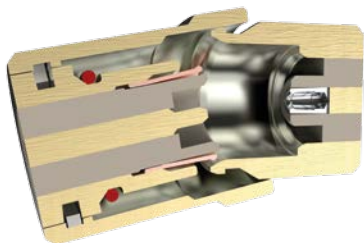
## Development Based on Expert Knowledge and Experience

### Safe and damage-free connecting

The small size of the 4.3-10 connector family makes it particularly susceptible to mechanical defects and accidental damage. The inherent weak points were fully addressed and eliminated during the design and development of the NEX10® connector series:

### Typical problem areas

- Damage from male connector misalignment during insertion
- Damage from mating with wrong connector



### Our Solution: NEX10®

- Slotted outer contact element fully protected from damage
- A dielectric surround provides additional protection of slotted contact elements
- Robust Jack outer contact prevents damage if incorrect connector is inserted

### 4.3-10 and 2.2-5

- Unprotected slotted contact elements are prone to damage if mated incorrectly or male connector is not inserted straight

## Difference in assembly size

7-16

4.3-10

NEX10®



## Compact Size for Small Cells

### Connectors in comparison – technical data

Connector Type	NEX10®	4.3-10
Impedance	50 Ω	50 Ω
Frequency range	DC to 20 GHz	DC to 12 GHz
PIM (Passive Intermodulation)	≥ 166 dBc @ 2 × 43 dBm	≥ 166 dBc @ 2 × 43 dBm
Return loss (typical)	≥ 36 dB @ DC to 4 GHz ≥ 34 dB @ 4 GHz - 6 GHz ≥ 30 dB @ 6 GHz - 10 GHz ≥ 20 dB @ 10 GHz - 20 GHz	≥ 36 dB @ DC to 4 GHz ≥ 32 dB @ 4 GHz - 6 GHz
Mating cycles	≥ 100 (standard application) ≥ 500 for test and measurement types	≥ 100 (standard application)
Engagement force (push-pull)	50 N typical	100 N typical
Disengagement force (push-pull)	35 N typical	80 N typical
Recommended torque (screw type)	1.5 Nm	5 Nm
Degree of protection	IP 68 (@ 1 m, 24 hours)	IP 68 (@ 25 m, 1 hour)

### Designed to meet the future demands of upcoming 5G networks

Robust and low PIM Connector High-speed data transmission in today's global mobile communication networks demands a highly efficient network infrastructure. Passive intermodulation (PIM) in a network can cause serious interference, significantly degrade the network quality, and impact on KPI figures. The NEX10® interface has been designed using the many years of experience gained in the field of low PIM connector design to develop a robust, small-size low PIM connector.



## Guaranteeing PIM Stability

### Features & Benefits

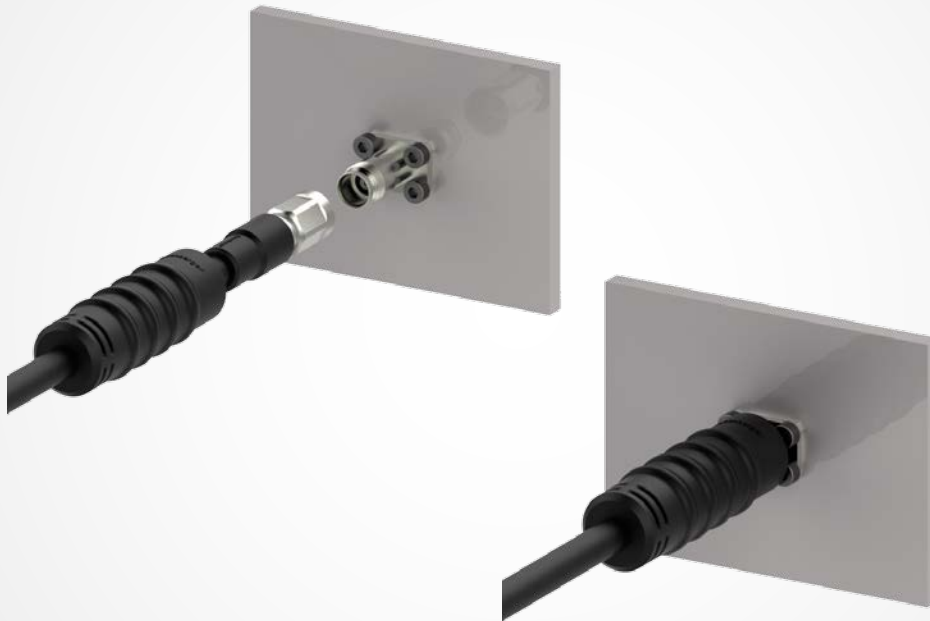
The NEX10® interface was designed using the many years of experience gained in the field of low PIM connector design to develop a robust, low PIM connector.

- Separation of electrical contact from the mechanical reference, which yields a low PIM and high RL performance regardless of the coupling mechanism or applied torque
- Robust design prevents any damage in the event of cable movement or vibration
- Contact areas protected against damage during handling
- Elimination of installation errors
- Excellent RL performance up to 20 GHz and high screening efficiency, offering reliable electrical performance
- Small size, minimum flange height of 12.7 mm allowing compact and lightweight modules
- Two possible mechanical connections – screw type and push-pull – are providing flexibility during installation
- Interface-specific weather protection boot providing a uniform and tested solution as a standard product

### Applications

The NEX10® interface is the ideal candidate for applications requiring PIM stability in a compact size, such as small cells, distributed antenna systems (DAS), in-building architecture, and MIMO.

- In small cell applications, NEX10® is particularly suitable for challenging space restrictions and electrical performance requirements
- In low-power base stations, NEX10® can be used for interconnections in the remote radio head (RRH) and as an interface on the antenna and jumpers
- In multi-operator/multiband DAS, NEX10® can be used where RF signals have to be combined, terminated, or distributed to antennas
- Blind mate for panel as well as test and measurement
- The multi coax connector will speed up the installation especially in MIMO applications by covering 4 or 5 signal paths with one mechanical connection



## Protection for Extreme Weather Conditions

### Rosenberger Jumper Boot for NEX10®

Even if jumpers comply with IP68, in some cases it may be necessary to add more protection due to extreme weather conditions. The NEX10® jumper boot is an ideal alternative to tape. Whether pre-installed in the factory or installed in the field, the jumper boot provides a fast, easy and durable solution.

The NEX10® female connector has a designated sealing area for weather protection boots. On screw-type connectors, the boot is pushed over the coupling nut after tightening. On push-pull connectors, the boot enables one-step installation for the interface. The boot sits tight on the quick lock mechanism and slides into place when the cable is connected to the equipment. Simply pull back the boot to disconnect the cable.

### Features & Benefits

- Self-lubricating for fast and easy installation
- Reusable
- UV-resistant
- IP68
- Dedicated sealing area on universal jack
- Supports high-density radio and antenna ports



## Website

For more information refer to our website:  
[www.rosenberger.com/nex10](http://www.rosenberger.com/nex10)

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