

SECTION 1



NEX10™ SERIES
R180



Contents

NEX10™

Introduction	1-4
Characteristics	1-5
Plugs and jacks.....	1-6 to 1-7
Accessories and tools.....	1-8
Panel drilling	1-8

SECTION 1 TABLE OF CONTENTS

Introduction

Radiall's NEX10™ series is a miniature and lightweight RF coaxial connector with excellent intermodulation performance for outdoor telecom applications up to 20 GHz.

Growing demand for new generation equipment within the Telecom market requires a top performance solution with exceptional benefits and features. To develop this solution, Radiall partnered with two leading RF connector manufacturers to develop a new compact extremely robust Low PIM connector: NEX10™.

With exceptional performance up to 20 GHz in order to meet the performance needs of customers, NEX10™ also features a compact design which is 50% smaller than 4.3-10. This unique solution also offers separation of electrical and mechanical reference planes, which maximizes intermodulation performance under static, dynamic, vibrations and torque stress conditions.

NEX10™ is available in multiple configurations:

- Jack: square flange, bulkhead
- Plug: straight & right angle
- Screw-on & push-pull coupling mechanism
- Multi coax
- Additional boot
- Jumper

FEATURES & BENEFITS

- Robust design for outdoor usage
- Low PIM, independent of applied torque
- Multiple coupling mechanism of push-pull and torque
- RF shielding
- Optimized for 1/4" superflexible corrugated and smaller flexible cables
- 12.7mm minimum flange height
- Contact areas protected from damage

APPLICATIONS

- Small Cell and MIMO
- DAS/In-building
- Antennas, radios and filter output
- Outdoor and Indoor
- Applications requiring PIM stability in a compact size
- Multi-coax/Blind mate applications



Characteristics

	Values / Remarks
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ELECTRICAL CHARACTERISTICS

impedance	50Ω			
Frequency	DC - 20 GHz			
PIM (passive intermodulation)	-166 dBc, 2x43 & 2x40 dBm (static and dynamic)			
Power	100W @ 2GHz @ 85°C 50W @ 2GHz @ 105°C 250W @ 2GHz @ 25°C			
Return Loss (typical)	DC-4GHz	4-6GHz	6-10GHz	10-20GHz
	≥ 36 dB	≥ 34 dB	≥ 30 dB	≥ 20 dB
Screening Effectiveness • DC to 6 GHz (torque type) • DC to 3 GHz (push pull) • 3 to 6 GHz (push pull)	- 110 dB typical - 90 dB typical - 70 dB typical			
Lightning Protection • Center Conductor • Outer Conductor	±1 kA 10/350 μs pulse and ±4 kA 8/20 μs pulse ±1 kA 10/350 μs pulse and ±4 kA 8/20 μs pulse			
Contact Resistance	Center contact 2.0 mΩ Outer contact 1.0 mΩ			
Voltage	Operating voltage: 1kV Breakdown voltage: 3kV			

MECHANICAL CHARACTERISTICS

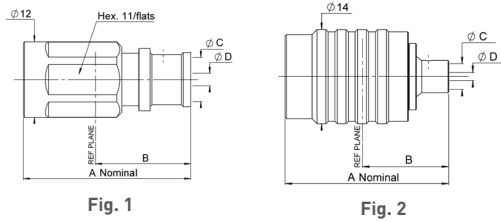
Coupling Mechanisms	Torque, Push-Pull
Durability (mating cycles)	100 min. 500 for test and measurement types
Boot Protection	Designated area for sealing
Mating Characteristics • Quick-lock - Engagement Force - Disengagement Force • Screw - Recommended Torque	50 N typical 35 N typical 1.5Nm (Maximum 5Nm)
Interface Retention Force	Quick-lock: 150 N min. Screw: 500 N min.
Cable Size Diameter	Optimized for cables upto 1/4"
Bending Force	5Nm

ENVIRONMENTAL CHARACTERISTICS

Temperature Range	-55°C/+125°C
Corrosion	48 hours salt mist test
Interface Ingress Protection	IP68 (24hrs, 1m, room temp, mated pair)
RoHS	Compliant

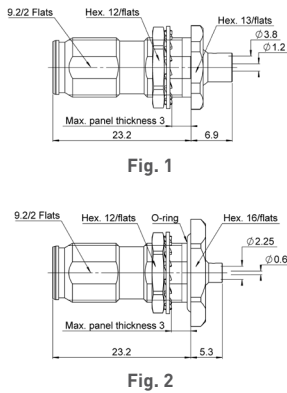
Plugs and jacks

STRAIGHT PLUGS SOLDER TYPE



Cable group	Cable group dia.	Part number	Fig.	Dimensions				Finish	Coupling mechanism
				A	B	C	D		
RG402	.141	R180 052 007	1	24.3	12.8	3.8	1.2	Silver + BBR	Screw-on
		R180 052 017	2						Push pull
HCF 1/4" Cu2YAICu	1/4" superflexible corrugated	R180 060 007	2	26.7	15.2	7	2	Silver + BBR	Push pull
		R180 060 017	1						Screw-on

BULKHEAD JACKS



Cable group	Cable group dia.	Part number	Fig.	Finish	Panel drilling	Note
RG402	.141	R180 300 007	1	Silver + BBR	P03	Solder
KS1 / RG405	.085	R180 301 007	2			

Jacks

FLANGE JACKS

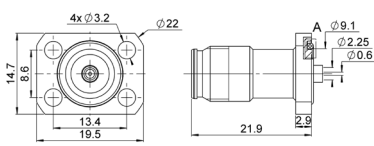


Fig. 1

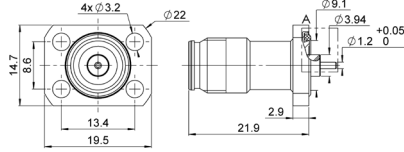


Fig. 2

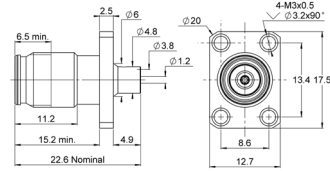





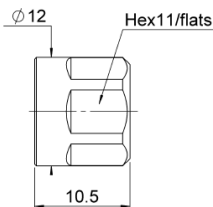
Fig. 3

Cable group	Cable group dia.	Part number	Fig.	Finish	Panel drilling	Note	
-	-	R180 540 007		1	Silver + BBR	P01	Pin dia 1.2
KS1 / RG405	.085	R180 415 007		2		P02	Solder
RG402	.141	R180 252 007		3			

NEX10™

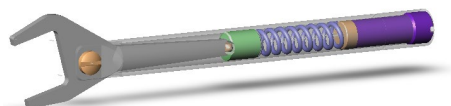
Accessories and tools

PROTECTIVE CAPS



Part number	Coupling mechanism	Note	Material
R180 805 010	Screw-on	IP67	ABS
R180 805 007			Metal

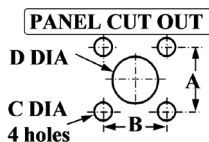
TOOLS



Part number	Description	Across flats D (mm)
R282 329 010	Torque wrench 3N.m	11

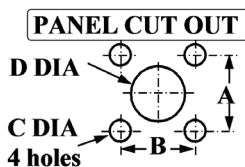
Panel drilling

P01



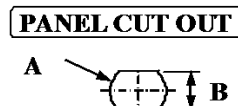
	mm		inch	
	Maxi	mini	Maxi	mini
A	8.65	8.55	0.340	0.336
B	13.45	13.35	0.529	0.525
C	3.3	3.2	0.129	0.078
D	4.2	4.1	0.165	0.161

P02



	mm		inch	
	Maxi	mini	Maxi	mini
A	8.65	8.55	0.34	0.336
B	13.45	13.35	0.529	0.525
C	3.3	3.2	0.129	0.125
D	7.3	7.2	0.287	0.283

P03



	mm		inch	
	Maxi	mini	Maxi	mini
A	10.1	10	0.397	0.393
B	9.3	9.2	0.366	0.362