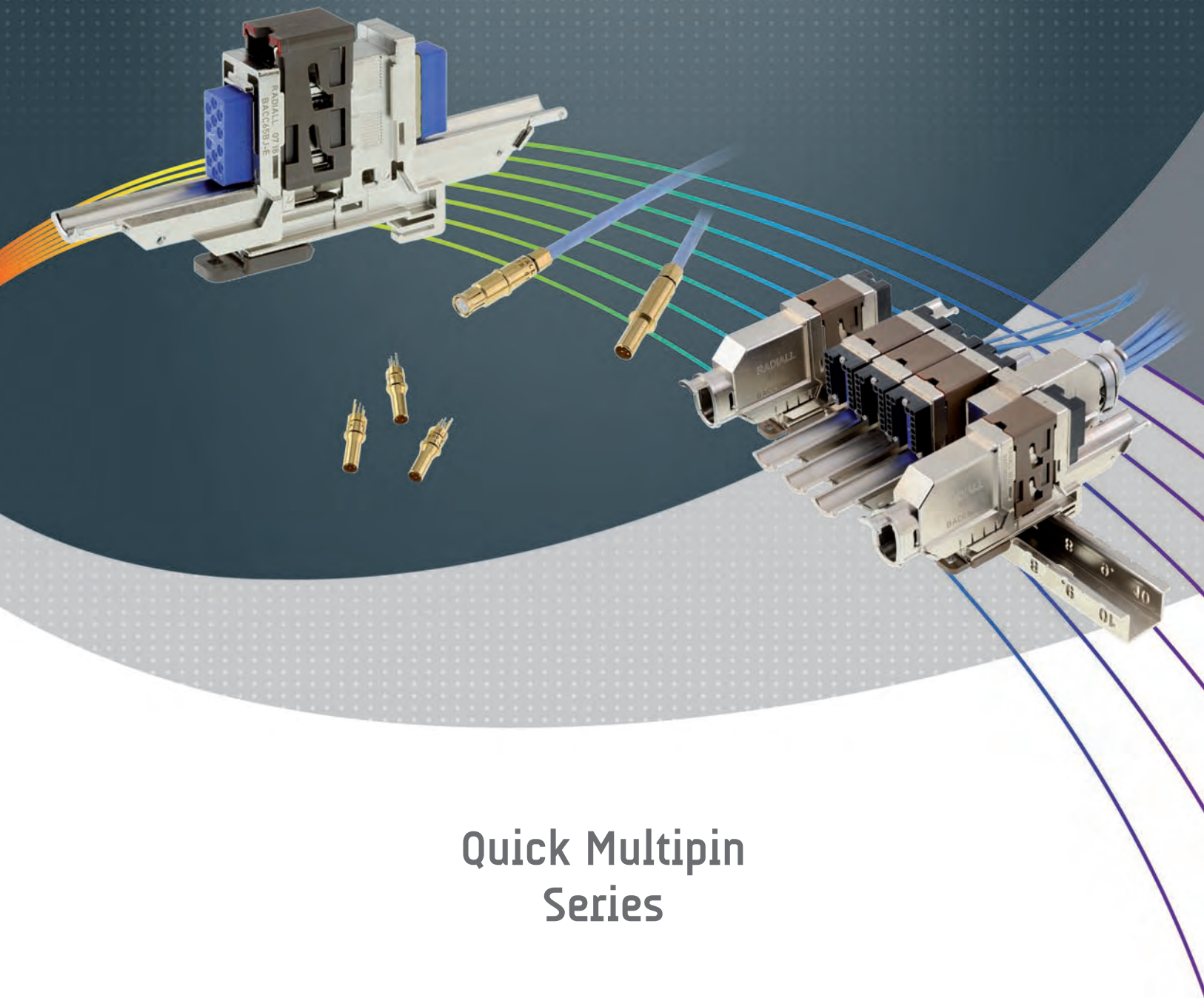


TOOL-LESS MODULAR MULTIPIN CONNECTOR



Quick Multipin Series

RADIALL 
The next connexion

COMPANY PROFILE

Radiall was founded in 1952 as a family owned company making coaxial plugs for the television industry. Today, Radiall is an international and global manufacturer of interconnect components including RF coaxial connectors, cable assemblies, antennas, fiber optic and microwave components, and multipin connectors. Radiall serves the Aerospace, Automotive, Defense, Industrial, Medical, Space, and Telecommunication industries.

QSE (Quality Safety Environment) POLICY

Radiall maintains a quality management system that is highly recognized by it's customers because it conforms to most international standards, including those for environmental protection.



Since 1994, all Radiall sites are **ISO9001** certified. As a result of Radiall's continuous improvement efforts, some dedicated activities are certified to either AS9100, or TS 16949 or ISO14001. Certain product lines are **MIL ESA/SCC** Qualified products.

Radiall also complies with other industry directives such as **RoHS** for hazardous substance restrictions and **EuP** for environmentally friendly designs for energy-consuming products.



A WORLDWIDE ENGINEERING & MANUFACTURING CAPABILITY



Technical information and sales contacts are available at : www.radiall.com

With expertise centers and manufacturing locations in 3 continents and 12 industrial sites, Radiall offers it's customers the proximity needed to provide the best quality, service and delivery performance.

Our facilities feature state of the art equipment for the many technologies involved in the design, manufacturing and assembly of interconnect solutions. Manufacturing plants based in low cost countries give Radiall the opportunity to offer quality at competitive prices.

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CONTACTS PART NUMBERS

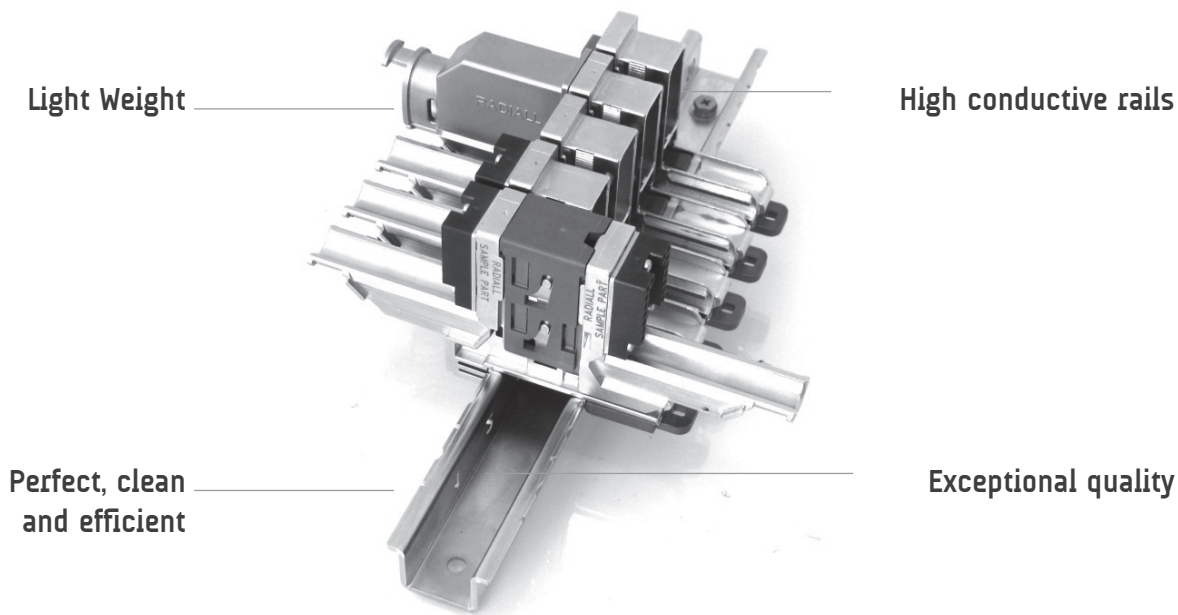
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INTRODUCTION

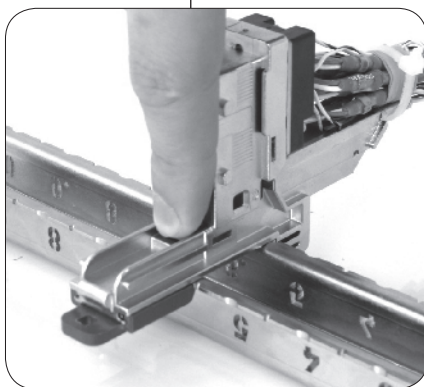
A MODULAR TOOL-LESS INSTALLATION MULTIPIN CONNECTOR

Radiall QM® series connectors have been designed for use with in-line disconnect applications on commercial airplanes. QM connectors offer outstanding electrical performance and are designed with environmental and mechanical characteristics that provide for long lasting durability needed for the most severe aerospace applications. The QM® series offer a wide range of inserts solutions and a large variety of contacts.

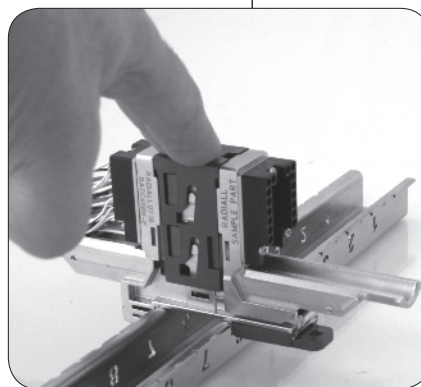
FEATURES & BENEFITS



User friendly - no tool needed



Click to install



Push to lock

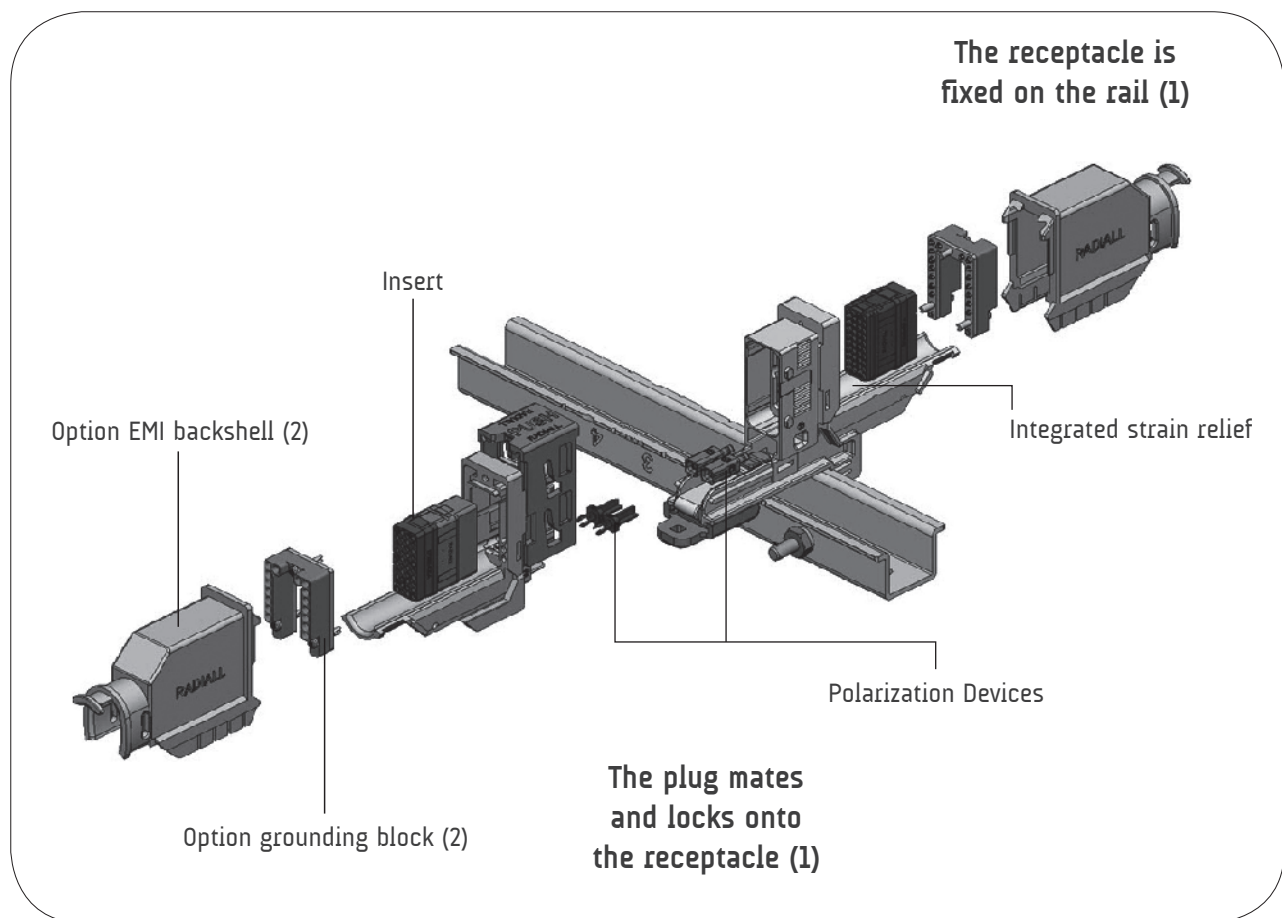
APPLICATIONS

Interconnect solution for aerospace and harsh environment applications.



PRODUCT OVERVIEW

View of receptacle and plug connectors on rail



Notes

- (1) Please refer to our user manual MIIN1700000 to have detailed mounting instructions of the QM on the rail.
- (2) EMI backshell and ground block are not compatible

ELECTRICAL CHARACTERISTICS

Contacts are per EN3155-76 and EN3155-77. Electrical characteristics conform to SAE AS 39029 (MIL-C-39029 type A).

GROUND BLOCK CONTACT

	Contact with wire size	Max Current Amps
Contact to contact	Contact + AWG20	7.5
Contact to mounting surface	Contact + AWG20	7.5

CONTACTS

Contact size	Wire size	Max Current Amps
22	AWG22	5
	AWG24	3
	AWG26	2
20	AWG20	7.5
	AWG22	5
	AWG24	3
16	AWG16	13
	AWG18	10
	AWG20	7.5
12	AWG12	23
	AWG14	17
	AWG16	13
8	AWG8	46
	AWG10	33
5	AWG8	46 — See note 1
	AWG10	33

Note 1: Size 5 contacts are not part of SAE AS 39029 (MIL-C-39029 type A). They are qualified by Radiall to 46 Amps.

EMI SHIELDING EFFECTIVENESS

Frequency (MHz)	Leakage attenuation (dB)
100	65
200	63
300	61
400	59
500	58

DIELECTRIC WITHSTANDING VOLTAGE EIA 364-20 (MIL-STD-1344 / Method 3001.1) with leakage current $\leq 1\text{ m}\Omega$

Level	Environmental inserts Voltage (VRMS)	Non-environmental voltage (VRMS)
Sea level	1500	1500
50 000 feet	800	600
70 000 feet	800	300

INSULATION RESISTANCE EIA 364-21 (MIL-STD-1344 / Method 3003.1)

Temperature	Insulation resistance
Ambient temperature	> 5000 M Ω
155°C (+311°F)	>200 M Ω

OTHER CHARACTERISTICS

- Shell to shell conductivity < 2.5 m Ω , operating voltage: 400 Vrms or 500 Vdc at sea level.
- Voltage stability (ground block): Maximum variation 4mV SAE AS 81714 (MIL-T-81714).
- Magnetic permeability < 2 μ and comparative tracking index = 250 V.

MECHANICAL CHARACTERISTICS

MATING/ UNMATING: up to 50 cycles

VIBRATION AND SHOCK

Shell type	Material	Vibration	Shock
		for 5 hours in each of the 3 axis/interruption < 1µs EIA 364-28 (MIL-STD-1344 /Method 2005.1)	three shocks in each axis EIA 364-27 (MIL-STD-1344 /Method 2004.1) condition A
QM	Composite	<u>4 positions rail</u> = Acceleration 13,8 Grms 0,2G ² /Hz from 10 to 400HZ and 0,03G ² /hz from 400 to 2000Hz	<u>4 positions rail</u> = Shock amplitude 50g / duration 11ms
		<u>22 positions rails</u> = Acceleration 6,2 Grms 0.04 g ² /Hz from 10 to 400 Hz 0.006 g ² /Hz at 2000 Hz	<u>22 positions rail</u> = Shock amplitude 15G / duration 11ms

Interruption < 1µs - on electrical contacts
- between shells
- between shell and rail

RETENTION CHARACTERISTICS

Contact retention EIA 364-29 (MIL-STD-1344 / Method 2007.1) on terminated connectors.

Contact size	Retention force	Max displacement
Ground block	88N (20lbs)	0.30mm (.012 in.)
22	53.4N (12lbs)	0.38mm (.015 in.)
20	89N (20 lbs)	0.38mm (.015 in.)
16	111.2N (25lbs)	0.38mm (.015 in.)
12	133.45N (30lbs)	0.38mm (.015 in.)
8	133.45N (30lbs)	0.38mm (.015 in.)
5	133.45N (30lbs)	0.38mm (.015 in.)

- **Insert retention:** 400N (90lbs) (EIA 364-35 = MIL-STD-1344 /Method 2010.1)
- **Max displacement:** 0.30mm (.012 in.)

ENVIRONMENTAL CHARACTERISTICS

TEMPERATURE

- **Temperature range:** -65° / +155°C
- **Temperature life:** 1000H at 155°C

OTHER CHARACTERISTICS

- **Salt spray:** 96 hours (Nickel plating) EIA 364-26 (MIL-STD-1344 / Method 1001.1) test condition A
- **Humidity:** 10 days with temperature variation from -10°C to +65°C EIA 364-31 Method 4, test condition B (MIL-STD-1344 /Method 1002.2, type II test condition)
- **Altitude immersion:** 3 cycles at 50 000 feet EIA 364-03 (MIL-STD-1344 /Method 1004.1)
- For more detail please refer to **QM product specification**.

INSERT PART NUMBER

INSERT CODIFICATION			
EPXB	E	C3	PA

Series (1 & 2)

Class

E: Environmental with rear grommet and interfacial seal for pin inserts

Environmental with rear grommet for socket inserts

H: Insert for pin contacts with a rear grommet and without interfacial seal

Contact arrangement

00 - C3 - P3 - 3Q3 - 06 - 10Q2 - F12C - 12F6 (3)

13C1 - 13P1 - 14 - 17 - 20C1 - 20P1

22 - 22V - 25P1 - 25Q1 - 28 - 30 - 34 - 40 - 48

Contact type

PA: Pin

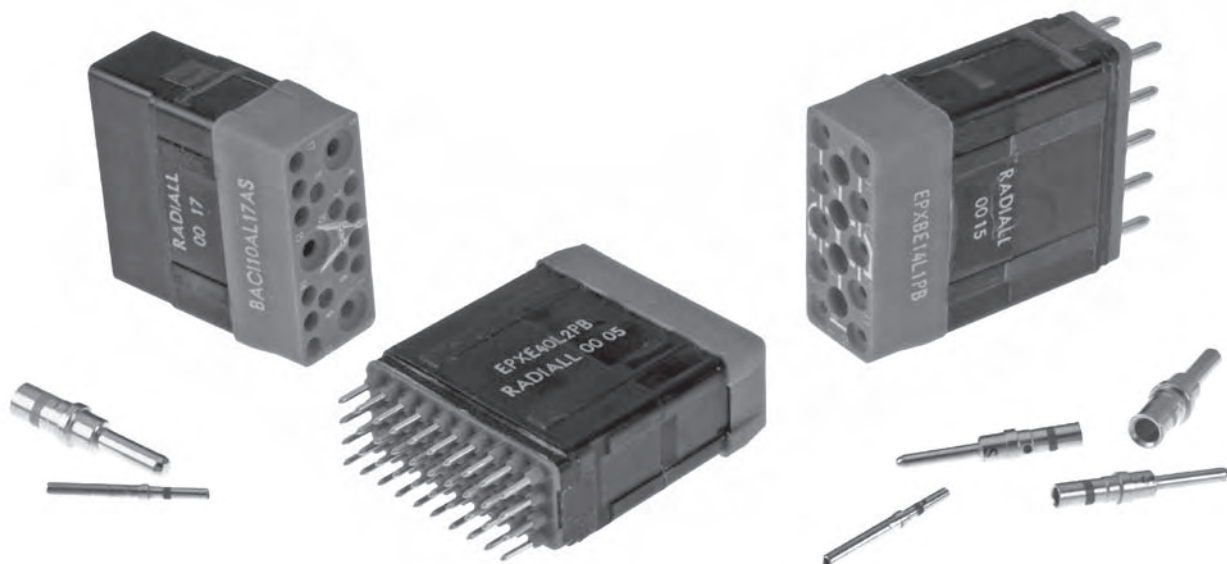
SA: Socket

Notes

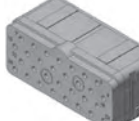
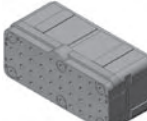
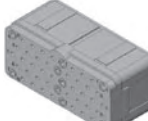
(1) Inserts are designed for rear release rear removable contacts

(2) Pin and socket inserts can be installed in either plug or receptacle shell.

(3) F12C and 12F6 inserts available only in E class and 00 insert is only available in E class



The full range of environmental EN4644 insert arrangements is available.
All inserts are delivered without contacts. Contacts have to be ordered separately.

			
00 Dummy insert	C3 3 x size 5 contacts	P3 3 x size 5 Power	3Q3 3 x size 8 Quadrax
			
06 6 x size 12 contacts	10Q2 8 x size 20 contacts 2 x size 8 Quadrax	12F6 6 x size 16 Optical LuxCis 6 x size 16 special electrical contacts	F12C (high grade thermoplastic) 12 x size 16 Optical LuxCis
			
13C1 6 x size 20 contacts 4 x size 15 or 16 contacts 2 x size 12 contacts 1 x size 5 contacts	13P1 6 x size 20 contacts 4 x size 15 or 16 contacts 2 x size 12 contacts 1 x size 5 Power	14 14 x size 15 or 16 contacts	17 14 x size 20 contacts 3 x size 12 contacts
			
20C1 19 x size 20 contacts 1 x size 5 contacts	20P1 19 x size 20 contacts 1 x size 5 Power	22 16 x size 20 contacts 6 x size 15 or 16 contacts	22V 16 x size 20 contacts 6 x size 16 contacts
			
25P1 24 x size 22 contacts 1 x size 8 Power	25Q1 24 x size 22 contacts 1 x size 8 Quadrax	28 22 x size 22 contacts 6 x size 15 or 16 contacts	30 30 x size 20 contacts
			
34 18 x size 22 contacts 16 x size 20 contacts	40 40 x size 22 contacts	48 48 x size 22 contacts	

INSERTS TABLE

EPXB® range of inserts is used for the Quick Lock Multipin connectors.

Serie	Inserts	Total Contacts	Contact Size & Type									
			22	20	15 or 16	16	16	12	8	8	5	5
			Signal	Signal	Medium Power or Coax	LuxCis Fiber optic	Power in Fiber Optic cavity	Medium Power or Coax	Power	Quadrax or Twinax	Coax or Triax	Power
EPXB & QM	C3	3									3	
	P3	3										3
	3Q3	3								3		
	06	6										
	10Q2	10		8						2		
	12F6	12				6	6					
	F12C	12				12						
	13C1	13		6	4			2			1	
	13P1	13		6	4			2				1
	14	14			14							
	17	17		14				3				
	20C1	20		19							1	
	20P1	20		19								1
	22	22		16	6							
	22V	22		16	6							
	25P1	25	24						1			
	25Q1	25	24							1		
	28	28	22		6							
	30	30		30								
	34	34	18	16								
	40	40	40									
	48	48	48									

SHELL PART NUMBER

SHELL CODIFICATION				
QM	B	P	N	00

Series

Shell Size

B: Insert size B

Product Type

P: Plug

R: Receptacle

W: Plug with ground block (1)

Z: Receptacle with ground block (1)

Finish

N: Nickel plating

Polarisation

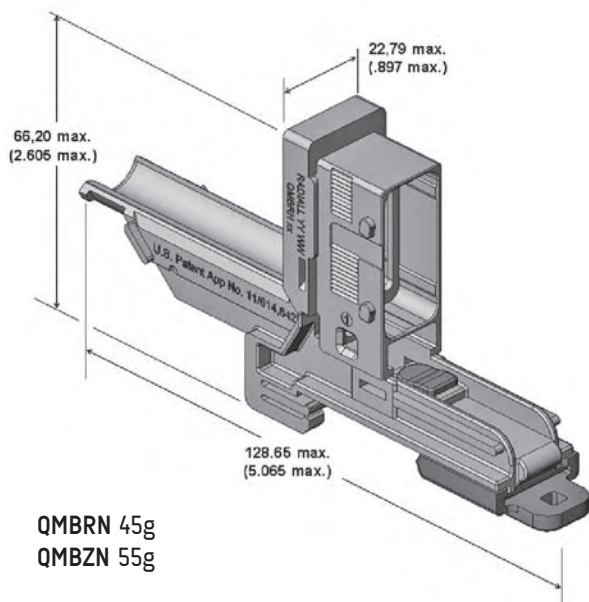
00: delivered without polarizing keys

Delivered with polarizing keys not installed (without code)

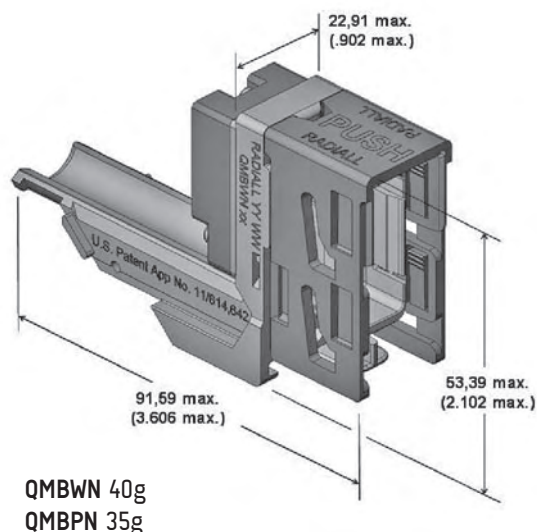
** : delivered with polarizing keys installed according to code (see table 2 on page 14)

SINGLE SHELL DIMENSIONS

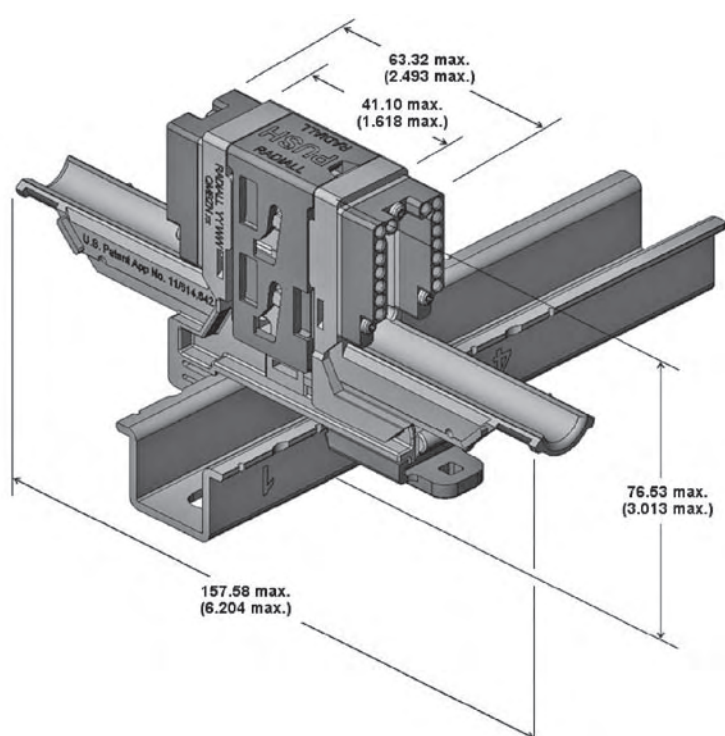
Receptacle



Plug



MATED SHELL DIMENSIONS



MOUNTING DEVICE PART NUMBER

MOUNTING DEVICE CODIFICATION				
QM	U	04	A	N

Series

Mounting Device

U: U shape rail single sided

Number of Connector Position

01 - 04 - 06 - 08 - 10 - 15 - 18 - 22

04S - 06S - 08S - 15S - 10G - 18G (1&2)

Mounting Device Material

A: Aluminium

Finish

N: Nickel

Notes

(1) Other length can be developed on demand

(2) Please refer to the mounting device table 1 on page 13 to have detailed information

The first variable (2 digits) after the basic number designates the quantity of connector positions. The second variable designates options on the rail such as mounting slots or alternative ground stud, please refer to table 1 below.

Basic drawing of the QM connector rail, please refer to table 1 for detail on each part number.

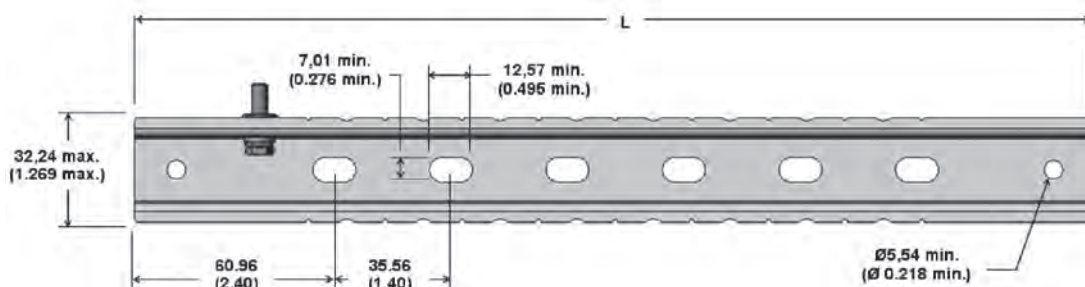
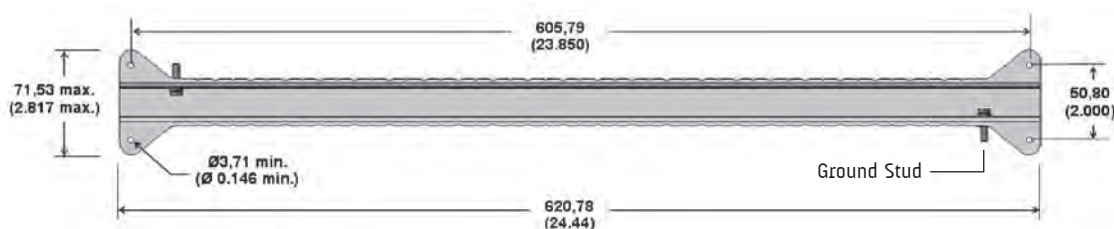


Table 1 - Part number list and mounting device options of the QM rail.

Part number	Length mm (inch)	Number of mounting slots	Number of ground studs	Weight in (g)
04	199.60 (7.86)	none	1	85
04S	199.60 (7.86)	4	1	85
6	246.40 (9.70)	none	1	90
06S	246.40 (9.70)	5	1	90
08	293.10 (11.54)	none	1	100
08S	293.10 (11.54)	6	1	100
10	258.10 (10.16)	none	1	105
10G	258.10 (10.16)	none	1	105
15	457.20 (18)	none	1	220
15S	457.20 (18)	11	1	220
18	501.40 (19.74)	none	None	240
18G	501.40 (19.74)	none	1	240
22	620.80 (24.44)	none	2	260

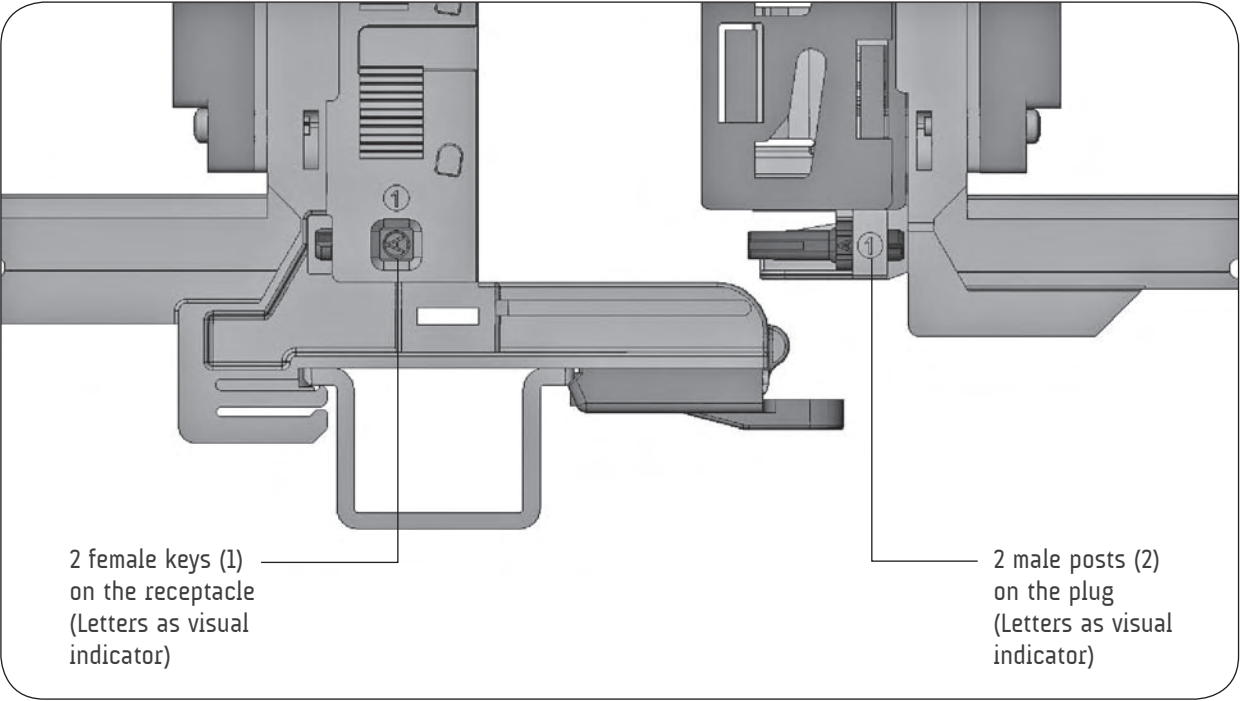
Example of the QMU22AN rail.



POLARIZATION CODE

Easy reading of polarization code

Polarization code is added at the end of the Part Number and can be seen on the polarization keys as shown below.
Caution: read the polarization code according to the Part Number marking on the connector and not up-side-down.



	RECEPTACLE		PLUG	
Coding device				
	View shows A & D	View shows C & B	View shows A & B	View shows C & D

Table 2: the 16 possible codings for polarization code:

Key position	A	A	A	A	B	B	B	B	C	C	C	C	D	D	D	D
Key position	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D

Notes

- (1) Polarizing keys are intended for use on receptacle, use plier 617954020 to remove.
- (2) Polarizing posts are intended for use on plug, use plier 617954020 to remove

Please note Radiall recommends plastic extraction tool for environmental cavities 22-20-16 and 12 (metal extraction tool leads to damage grommet). For cavities 5 and 8, the extraction tool is metallic. However, you can order a plastic extraction tool for the cavity 8 with the PN M81969/14-06.

CRIMP CONTACTS

Contact size	Wire size	Type	Part number	Crimping tool	Positioner	Ins / ext tool (5)
22	22-24-26	Pin	617200	M22520/2-01	M22520/2-23	M81969/14-01
		Socket	617300	282 281	282 970	282 522
22 reduced crimp barrel	28-30	Pin	617201 (1)	M22520/2-01	M22520/2-23	M81969/14-01
		Socket	617301 (1)	282 281	282 970	282 522
20	20-22-24	Pin	617221	M22520/2-01	M22520/2-08	M81969/14-10
		Socket	617320	282 281	282 971	282 549 029
20 reduced crimp barrel	22-24-26	Pin	617224001 (1)	M22520/2-01	M22520/2-08	M81969/14-02
		Socket	617324001 (1)	282 281	282 971	282 886
16	16-18-20	Pin	617240	M22520/1-01	M22520/1-02	M81969/14-03
		Socket	617340	282 291	282 972	282 515
16 reduced crimp barrel	20-22-24	Pin	617241 (1)	M22520/1-01	M22520/1-02	M81969/14-03
		Socket	617341 (1)	282 291	282 972	282 515
16 for ground block	20	Pin	617221050	M22520/2-01	M22520/2-11	M81969/14-10
		Socket	N/A	282 281	282581015	282 549 029
16 for optical electrical insert	16-18-20	Pin	617235003	M22520/1-01	282581013	M81969/14-03
			see note 2	282 291		282 515
16 reduced crimp barrel for optical electrical insert	20-22-24	Pin	617235002	M22520/1-01	282581013	M81969/14-03
			(1 & 2)	282 291		282 515
12	12-14-16	Pin	617250	M22520/1-01	M22520/1-02	M81969/14-04
		Socket	617350	282 291	282 972	282 549 004
8	8-10	Pin	617291002 (3 & 4)	M22520/23-01 or R282.600.000	282588	M81969/28-03
		Socket	617391002 (3 & 4)	Die set M22520/23-02 or		282 549 001
5	8-10	Pin	617280 (3 & 5)	M22520/23-01 +	282557020	M81969/28-01
		Socket	617390 (3 & 5)	Die set M22520/23-02	282557021	282 946
5	12-16	Pin	617260001 (3 & 5)	282613	282 586 003	M81969/28-01
		Socket	617370001 (3 & 5)			282 946

Notes

- (1) When smaller wire sizes are used on contacts with reduced crimp barrel, the wire won't provide sealing to the grommet. If sealing is required, please contact Radiall.
- (2) Electrical contacts for optical insert are always pin contacts (hermaphrodite).
- (3) In order to make these contacts environmental, it is necessary to add a sealing boot. Please contact us for additional information.
- (4) These power contacts can be used in power inserts only (25P1)
- (5) These power contacts can be used in power inserts only (P3, 13P1, 20P1)
- (6) Tools in bold are in plastic material and remaining in metal.

CONTACTS PART NUMBER

COAXIAL CRIMP CONTACTS



Contact size	Cable type	Type	Environmental part number	Non Environmental part number	Center conductor		Outer conductor		Ins/ext tool (2)
					Crimping tool	Positioner	Crimping tool	Die set	
15-16	RG174-RG179 RG316	Pin	see Note 1	617130	M22520/2-01	282 578	M22520/4-01	282 556	282 512
		Socket	see Note 1	617030	282 281		282 292		
15-16	RG178	Pin	see Note 1	617131	M22520/2-01	282 578	M22520/4-01	282 556	282 512
		Socket	see Note 1	617031	282 281		282 292		
15-16	GORE/AXON P812817 FILECA F1703-134 FILOTEX SP132868	Pin	see Note 1	617132	M22520/2-01	282 578	M22520/4-01	282 556	282 512
		Socket	see Note 1	617032	282 281		282 292		
15-16	RG178 DT	Pin	see Note 1	617133	M22520/2-01	282 578	M22520/4-01	282 556	282 512
		Socket	see Note 1	617033	282 281		282 292		
15-16	UT .047	Pin	see Note 1	617135	M22520/2-01	282 578	M22520/4-01	282 556	282 512
		Socket	see Note 1	617035	282 281		282 292		
12	UT.085-RG405	Pin	see Note 1	617160	N/A solder termination				M81969/14-04
		Socket	see Note 1	617060					282 549 004
5	RG58-RG141	Pin	see Note 1	617101	M22520/2-01	282 572	M22520/5-01	M22520/5-05	M81969/28-01
		Socket	see Note 1	617001	282 281		282 293	282 246	282 946
5	RG142-RG223 RG400	Pin	617 102 001	617102	M22520/2-01	282 572	M22520/5-01	M22520/5-05	M81969/28-01
		Socket	617 002 001	617002	282 281		282 293	282 246	282 946
5	RG174-RG316 RG188	Pin	617 103 001	617103	M22520/2-01	282 572	M22520/5-01	M22520/5-05	M81969/28-01
		Socket	617 003 001	617003	282 281		282 293	282 246	282 946
5	RG178-RG196	Pin	see Note 1	617104	M22520/2-01	282 572	M22520/5-01	M22520/5-05	M81969/28-01
		Socket	see Note 1	617004	282 281		282 293	282 246	282 946
5	RG180	Pin	see Note 1	617105	M22520/2-01	282 572	M22520/5-01	M22520/5-05	M81969/28-01
		Socket	see Note 1	617005	282 281		282 293	282 246	282 946

CONTACTS FOR TWINAX CABLE

Contact size & type	Cable type	Type	Environmental Part number	Non Environmental Part number	Center conductor		Outer conductor		Ins/ext tool (2)
					Crimping tool	Positioner	Crimping tool	Die set	
12 Triax	ECS0700	Pin	see Note 1	617 190 010	M22520/2-01	282 581 004	M22520/31-01	282 581 005	M81969/14-04
		Socket	see Note 1	617 090 010	282 281		282 297		282 549 004
12 Triax	M17/176-00002	Pin	see Note 1	617 190 012	M22520/2-01	282 581 004	M22520/31-01	282 581 005	M81969/14-04
		Socket	see Note 1	617 090 012	282 281		282 297		282 549 004
8 Triax	TENSOLITE 2447 /03159X-2	Pin	617 165 021	617 165 020	M22520/5-01	282 560	M22520/5-01	M22520/5-05	M81969/28-03 or M81969/14-06
		Socket	617 065 021	617 065 020	282 293		282 293	282 236	282 549 001
8 Triax	WHITMOR W26751575	Pin	617 165	617 165 001	M22520/5-01		M22520/5-01	M22520/5-104	M81969/28-03 or M81969/14-06
		Socket	617 065	617 065 001	282 293		282 293	282 293	282 549 001
8 Twinax	ABS0386WF24	Pin	617 165 011	620 165 010	M22520/2-01	Daniels K709	M22520/5-01	M22520/5-45	M81969/28-03 or M81969/14-06
		Socket	617 065 011	620 065 010	282 281	282 581 010	282 293	282 236	282 549 001
8 Twinax	TYCO 1726A1424A	Pin	617 165 011	620 165 010	M22520/2-01	Daniels K709	M22520/5-01	M22520/5-45	M81969/28-03 or M81969/14-06
		Socket	617 065 011	620 065 010	282 281	282 581 010	282 293	282 236	282 549 001
5 Triax	M17/176-0002	Pin	617 150 001	617150	M22520/2-01	282 560	M22520/5-01	M22520/5-05	M81969/28-01
		Socket	617 050 001	617050	282 281		282 293	282 246	282 946
5 Triax	PAN6421	Pin	617 152 001	617 152	M22520/2-01	282 560	M22520/5-01	M22520/5-05	M81969/28-01
		Socket	617 052 001	617 052	282 281		282 293	282 246	282 946

Notes

((1) In order to make these contacts environmental, it is necessary to add a sealing boot, please contact us for information.

((2) Tools in bold are in plastic material and remaining in metal.



CONTACTS PART NUMBER



QUADRAX CONTACTS

Contact size	Cable type	Type	Environmental Part number	Non Environmental Part number	Center conductor		Outer conductor		Ins / ext tool in metal
					Crimping tool	Positioner	Crimping tool	Die set	
8	Ethernet cable	Pin	617 175 011	620 175 010	M22520/2-01	Daniels K709	M22520/5-01	M22520/5-45	M81969/28-03 or M81969/14-06
	ABS0972 & ABS1503	Socket	617 075 011	620 075 010	282 281	282 581 010	282 293	282 236	282 549 001
8	TENSOLITE	Pin	617 175 051	620 175 050	M22520/2-01	Daniels K709	M22520/5-01	M22520/5-45	M81969/28-03 or M81969/14-06
	NF24Q100	Socket	617 075 051	620 075 050	282 281	282 581 010	282 293	282 236	282 549 001

These contacts have been tested as per ARINC 600 supplement 14 standard.



BMA CONTACTS

Contact size	Cable type	Connector Type	Environmental part number	Non Environmental part number	Frequency range	VSWR	Ext tool
8	SHF5 - SHF5M (1)	Pin (2)	617 171 011	617 171 010	DC-18GHZ	1,35 @ 18GHZ	282549001
8	RG142	Pin (2)	617 171 021	617 171 020	DC-12GHZ	1,35 @ 3GHZ	
8	SHF24M (1) / UT.085 Harbour SS405 Times Tflex405	Pin (2)	617 171 031	617 171 030	DC-18GHZ	1,35 @ 18GHZ	
8	SHF5 - SHF5M (1)	Socket	617 071 011	617 071 010	DC-18GHZ	1,35 @ 18GHZ	
8	RG142	Socket	617 071 021	617 071 020	DC-12GHZ	1,35 @ 3GHZ	
8	SHF3 (1)	Socket	617 071 041	617 071 040	DC-18GHZ	1,35 @ 18GHZ	
8	SHF24M (1) / UT.085 Harbour SS405 Times Tflex405	Socket	617 071 031	617 071 030	DC-18GHZ	1,35 @ 18GHZ	

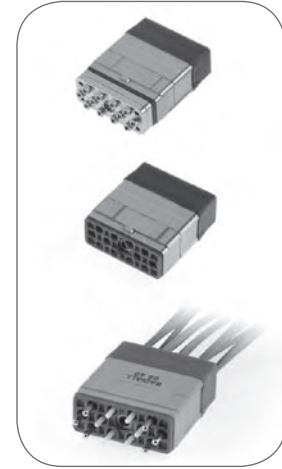
Notes

- (1) BMA which have to accommodate SHF cable requires a wiring done by Radiall .Please consult us.
 (2) Pin BMA can only be installed in modified EPXB quadrax insert like 3T3AP , 10T2AP ,25T1APEg : EPXBE3T3APA.

This section includes all specific parts used to accommodate the Luxcis® termini in the QM connector.

INSERT RANGE

	Material	Part number
Pin insert for 12 Luxcis® termini	Fiberglass filled thermosetting	EPXBFI2CPA
Socket insert (with sleeve holder) for 12 Luxcis® termini	Insert and sleeve holder: aluminium alloy	EPXBFI2SA
	Insert: fiberglass thermosetting Sleeve holder: high grade thermoplastic	EPXBFI2CSA
Hybrid pin insert for 6 electrical contact and 6 FO Luxcis® termini	Fiberglass filled thermosetting	EPXBE12F6PA
Hybrid socket insert for 6 electrical contact and 6 FO Luxcis® termini (with sleeve holder)	Insert: fiberglass thermosetting Sleeve holder: high grade thermoplastic	EPXBE12F6SA



- Socket insert is always supplied with sleeve holder.
- Pin and socket insert can be mounted in either plug or receptacle shells.

HERMAPHRODITE ELECTRICAL CONTACTS FOR HYBRID INSERTS

Hermaphrodite connectors which is neither male nor female have been developed in which any connector may be joined to any other connector of the same design.

Contact size	Cable size	Part number	Crimping tool	Positioner	Ins/Ext tool in plastic
16	16-18-20	617 235 003	282 291	282 581 013	282 515
	20-22-24	617 235 002	(M22520/1-01)		(M81969/1-03)

OPTICAL PERFORMANCES

	Singlemode (UPC) 1310/1550nm	Singlemode / APC 1310/1550nm	Multimode (PC) 850 nm/ 1310nm
Attenuation - Mean - Standard deviation (against a reference plug, IEC 61300-3-4 Method B)	0.15 dB 0.10 dB	0.20 dB 0.12 dB	0.10 dB 0.07 dB
Return loss (maximum low variation: IEC 61300-3-6)	> 50 dB	> 60 dB	> 20 dB

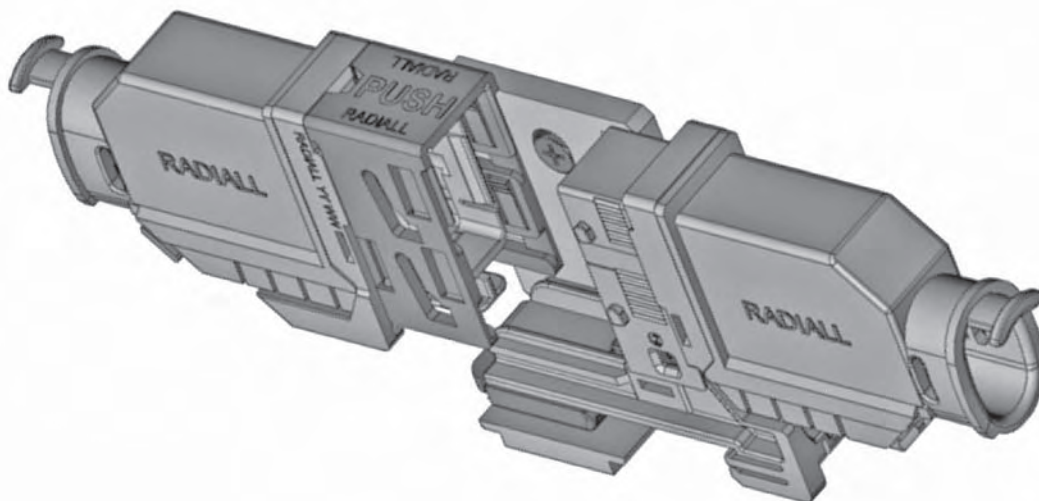
For further details on the LuxCis® Termini please consult Radiall's LuxCis® catalog or web site.

TOOLING AND ACCESSORIES

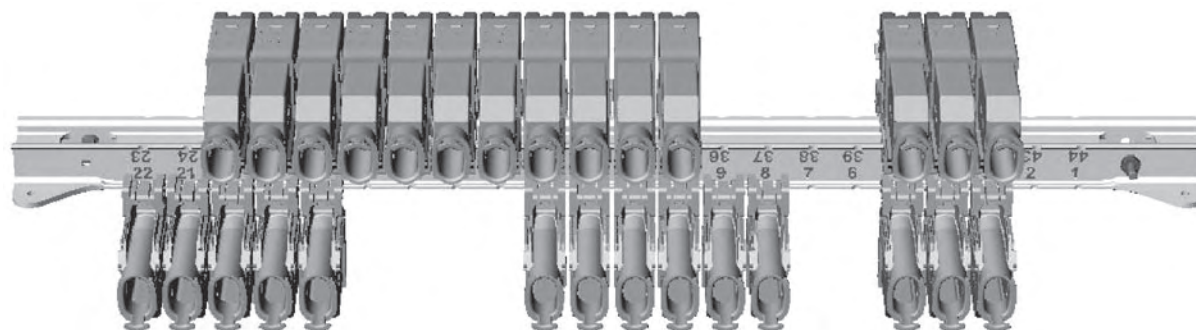
	Part number	Description
	617 954 041	Dust cap for plug shell
	617 954 042	Dust cap for receptacle shell
	617 980 024	Polarization key pin
	617 980 025	Polarization key socket
	282 668 001	Plier for polarizing post and key
	282 521 004	Right angle insert extraction tool
	F780 855 000	Hexagonal key 5/64 inch(2mm)/ flats for sleeve holder removal
	282 521 002	Insert extraction tool
	617 954 020	Insert handling cover
	282 515	Pastic insert extraction tool for Luxcis® termini (MIL M81 969/14-03)
	617 991 001	EMI backshell

In development, 2 new mounting device solutions with the QM connector:

The L-Bracket - for single connector use, limited space solution.



The H Shape Rail - double sided rail, a space saving solution for installation of either 30 or 44 connectors.



Name of the user manual: MIIN1700000 please contact Radiall for a copy.

Name of the technical specification: BPS-C-212.

Manufactured under US patent App, No. 11/614.642.

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- Technologies used: wire, patch, printed, wire-plate, PIFA
- Numerous types of antennas: single pole, dipole, network,

passive or active (with LNA), adaptable and intelligent, outdoor or integrated.



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AEP RF connectors are designed and manufactured in USA for the demanding requirements of military field radio and avionics systems:

- Coaxial waterproof connectors with a unique system of sealing.

- MIL-PRF-39012 QPL connectors
- SSMB and SSMC superior connectors
- SLB Self Aligning connector system.



FIBER OPTIC CONNECTORS

Wide range of interconnect solutions, including standard connector interfaces for multimode and singlemode fiber (LC, SC, FC, ST...) as well as connectors and terminations (MIL-T-29504, ARINC 801) for harsh

environment applications (aeronautic, military, naval, medical, railway...). Great flexibility for custom design.



HARNESSES

The combination of design and manufacturing of RF and microwave cables as well as multipin connectors (EPX, ARINC 404 and 600) allows Radiall to be a specialist of harnesses for onboard (aeronautic, navy...) or land (railways, removed

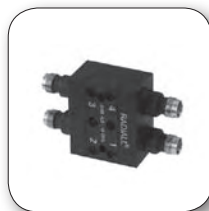
antenna...) equipment or communications systems. All types of contacts can be used and mixed such as signal, power, RF, quadrax, fiber optic...



RF & MICROWAVE SWITCHES

Wide range of coaxial switching products for commercial, military and instrumentation applications. Available with a large choice of interfaces (SMA, QMA, N, ...), from DC to 40 GHz. Main products :

- Standard RAMSES series.
- PLATINUM series with high repeatability (0.03dB) on insertion loss during 10 million actuations.
- Subminiature SPnT up to 26.5 GHz.
- SMT high power micro-SPDT.



MICROWAVE COMPONENTS

Wide range of coaxial terminations and attenuators using standard interfaces (SMA, QMA, N, QN...) from low (1W) to high power (100W) and new cable load solution, chip terminations up to 18 GHz, hybrid or directional SMT couplers up to connectorized couplers, lightning protectors, detectors, rotary joints, phase shifters, DCBlocks...



MULTIPIN CONNECTORS

The range includes rack and panel connectors (Arinc 404 & MIL-C-81659B DSX, Arinc 600 NSX & SW280WS1 BPX, EN3682/ MIL-C-83527 MPX JN1123 TCX), modular connector (EPX A & B), compatible with a large variety

of contacts : signal, power, RF, data bus, fiber optic, quadrax and twinax.

A range of wire to wire and wire to board is also available: B & MCSR duty connectors, M, MM, MB, MBC rectangular miniature series, MMC.



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Our multi-channel transceiver modules in smallest available packages are fully qualified for harsh environments and avionics applications.

- Bit rate up to 10 Gbps
- Up to 12 channels per module
- Various packages with footprint as small as 12x13mm²



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Wide range of cable assemblies using all types of coaxial connectors and cables.

- RG, LMR, conformable, semi-rigid, corrugated, etc.
- Cable diameter 0.8mm up to 1 5/8"
- SHF wrapped cable manufactured

in house for applications at 40GHz and above

- TestPro range dedicated to test benches
- Lightweight range designed for airframe installation
- Phase matching available for radar and other applications



RF COAXIAL CONNECTORS

The widest range of coaxial connectors in the world from microminiature (UMP) to standard connectors (7/16) covering the frequency range of DC to 65 GHz mixing standardized and custom interfaces (UMP, IMP, MMS, MMT, QMA, QN, MMBX).



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