

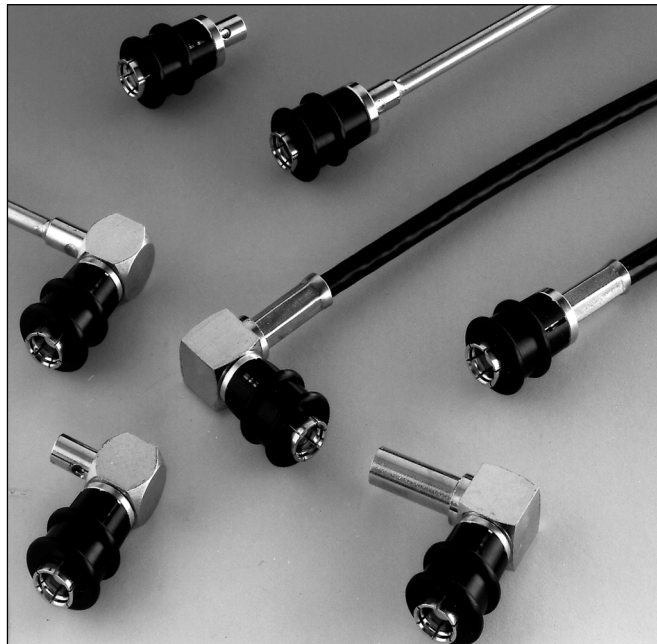
The SMB snap-on subminiature coaxial connectors provide a fast and reliable connection for high density packaging for applications up to 4 GHz.

Radiall offers a very large range of SMB connectors, including cable plugs and jacks with bulkhead and panel mount configurations, bulkhead and panel mount receptacles; PCB, SMT and edge card receptacles and in-series and between series adapters.

The SMB series also features versions with lower mating forces than standard. Three types of interconnection mechanisms are available :

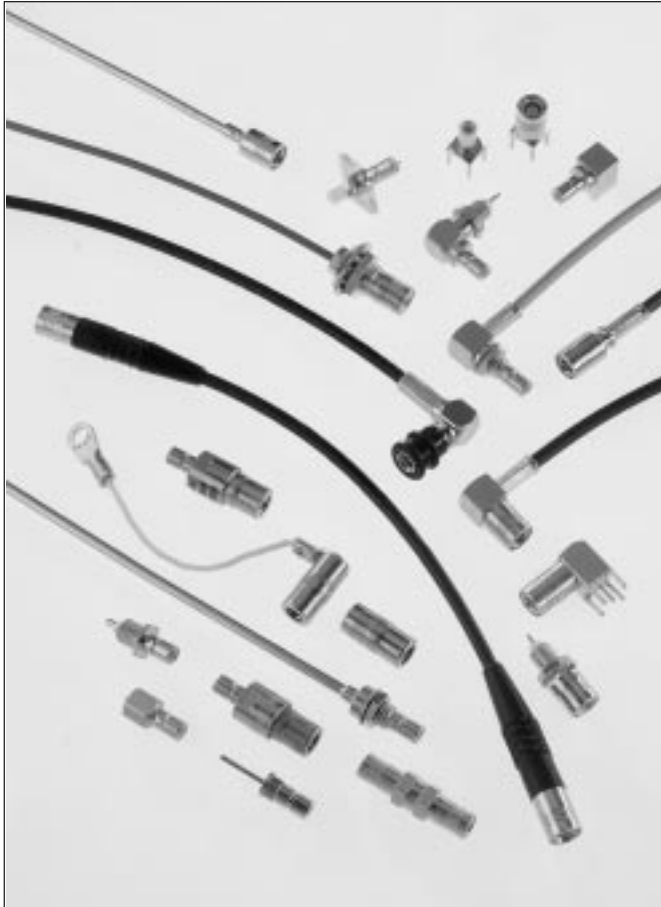
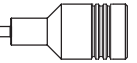
- **SMB : standard** snap-on connection (page 10 to 25)
The design permits quick engagement and disengagement in limited spaces.
- **SMB limited detent (SMB-A)** : snap-on connection with **low mating force** (page 30 to 31)
The design permits quick engagement and disengagement in limited spaces and is suitable for printed circuit boards. Radiall offers a range of PCB and bulkhead receptacles with female center contact.
The SMB-A receptacles are completely intermateable with standard SMB jacks.
- **SMB slide-on (SUBGLIS)** : **slide-on** connection (page 32 to 35)
The design is suitable for back plane and blind mate applications. In this case, we recommend the association of a mobile connector (floating jack / receptacle) with a fixed connector (panel plug / jack, receptacle).
The SUBGLIS connectors are completely intermateable with standard SMB and SMB-A connectors and for that, they can be used for test applications.

Radiall also offers a range of **SMB LOCK** plugs (with female center contact) with coupling nut allowing a reliable lock-on connection (50 N min). This range allows a visual control of the locking system (page 26-29).



These four types of SMB connectors have the same electrical performances (see page 11-12).

Radiall also offers a complete range of **MICROWAVE COMPONENTS** : terminations, attenuators, etc. designed around the SMB interface (page 38-39).



50 Ω

DC - 4 GHz

INTRODUCTION

- Subminiature coaxial connectors
- Snap-on coupling
- Plugs have female contacts
- Jacks have male contacts
- Low weight and reduced outline dimensions
- Captive contact (except contrary specification)

APPLICABLE STANDARDS

- SMB series MIL-C-39012
MIL-C-39012/67-72
- IEC 169-10
- CECC 22130
- BS 9210 N0007

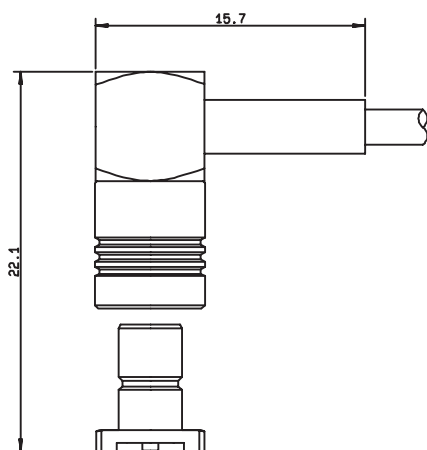
QUALIFICATIONS / APPROVALS

- MIL-C-39012 QPL type
- CECC
- NF-CCQ
- STTE/A homologation
- LNZ list

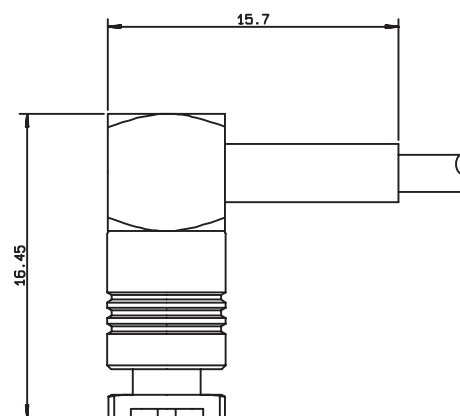
APPLICATIONS

- Mobile communication systems
- Civil and military telecommunications
- Aeronautics
- Video
- IF systems

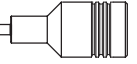
PROFILE



Unmated



Mated



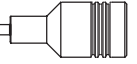
CABLE CONNECTORS (R114 : SMB / R115 : SMB-A / R116 : Subglis)

model	straight plug			bulkhead straight plug		right-angle plug			straight jack		bulkhead straight jack			right angle bulkhead jack
	crimp and full crimp	clamp	solder	clamp	solder	crimp	clamp	solder	crimp	clamp	crimp	clamp	solder	crimp
2/50/S (RG 178)	R 114 073 000 R 114 073 134 R 114 081 020 (page 13)	R 114 003 000 R 114 003 020 R 114 003 133 (page 13)		R 116 003 900 (page 32)		R 114 183 000 R 114 183 020 R 114 183 430 (page 14)	R 114 163 000 R 114 163 133 (page 15)		R 114 237 000 (page 16)	R 114 203 000 R 114 203 133 (page 16)	R 114 311 000 (page 17) R 116 311 000 (page 33)	R 114 303 000 R 114 303 133 (page 17) R 116 303 330 (page 33)		R 116 372 000 (page 33)
2.6/50+75/S (RG 316)	R 114 015 000 R 114 075 000 R 114 075 134 R 114 082 0X0 (page 13) R 117 082 807 (page 28)	R 114 005 000 R 114 005 133 (page 13)				R 114 185 000 R 114 185 020 R 114 186 000 R 114 186 X20 R 114 186 730 R 114 187 0X0 (page 14) R 117 186 807 (page 28)	R 114 165 000 R 114 165 133 (page 15)		R 114 238 000 R 114 238 120 R 114 239 000 (page 16)	R 114 205 000 R 114 205 133 (page 16)	R 114 312 000 R 114 313 000 R 114 313 020 R 114 316 000 R 114 316 020 (page 17) R 116 312 000 (page 33)	R 114 305 000 R 114 305 133 (page 17)		R 114 373 020 R 114 373 120 (page 18) R 116 373 000 (page 33)
2.6/50/D (RD 316)	R 114 083 000 R 114 083 020 (page 13) R 117 083 807 (page 28)					R 114 182 000 R 114 191 130 (page 14) R 117 187 807 (page 28)					R 114 315 000 (page 17)			
3/50/D (K02252d)									R 114 245 020 (page 16)					
3.6/75/D (BT3002)						R 114 191 300 (page 14)								
3.8/95/S (RG180)		R 114 009 000 (page 13)												
5/50/S (RG 58)	R 117 086 827 (page 28)					R 114 192 420 (page 14) R 117 178 827 (page 28)								
5/50/D (RG 142)	R 117 087 827 (page 28)					R 117 179 827 (page 28)								
.085 (RG 405)	R 117 053 807 (page 28)		R 114 053 000 (page 14)		R 116 056 000 (page 32)	R 117 152 807 (page 29)			R 114 152 000 R 114 169 000 (page 15)				R 114 222 000 (page 18)	

RECEPTACLES (R114 : SMB / R115 : SMB-A / R116 : Subglis)

model	straight male flange			straight male bulkhead			straight female bulkhead	right angle male bulkhead	PCB male receptacle		PCB female receptacle	
	square	2-holes	round	front mount	rear mount	front mount recessed	front mount	front mount	straight	right-angle	straight	right-angle
solder contact with extended dielectric	R 114 413 000 (page 19)	R 114 450 000 R 114 450 205 (page 19)		R 114 552 400 (page 20)								
solder slotted contact	R 114 409 030 (page 19)	R 114 453 307 (page 19)										
solder cylindrical contact			R 114 510 000 (page 19)	R 114 553 000 (page 20) R 116 553 000 (page 34)	R 114 554 000 (page 20) R 116 554 000 (page 34)	R 114 566 000 R 114 566 020 (page 20) R 116 566 000 (page 34)	R 116 556 000 R 116 557 000 (page 34) R 115 556 000 (page 30)	R 114 670 000 R 114 670 020 R 114 671 000 (page 20)				
press mount			R 114 505 220 (page 19)									
surface mount (on board)									R 114 424 XX0 (page 21)	R 114 664 000 R 114 664 100 R 114 664 120 (page 22)		
surface mount (edge card)									R 114 423 XX0 (page 21)		R 114 444 800 (page 21)	
solder pins									R 114 426 XXX R 114 560 200* R 114 590 035* (page 21) R 116 426 000 R 116 426 030 (page 35)	R 114 665 XXX R 114 673 020* R 114 673 120* (page 22) R 116 665 000 (page 35)	R 114 425 00X (page 21) R 116 425 010 (page 35) R 115 427 000 R 115 427 830 (page 30)	R 116 666 030 (page 35) R 115 666 000 (page 31)
harpon pins									R 114 426 530 (page 21)			
press fit pins									R 114 416 020 R 114 416 000 (page 21)	R 114 661 020 (page 22)		

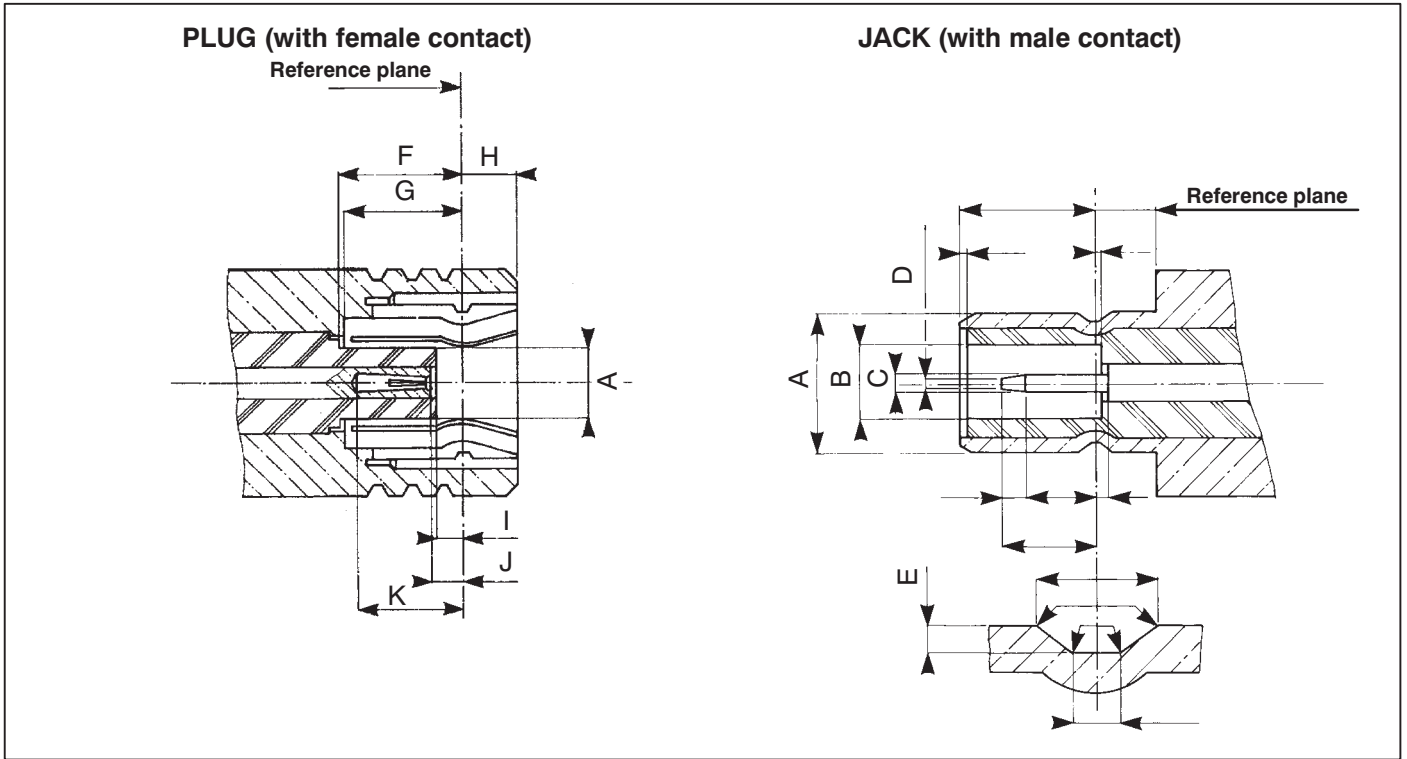
* with rear bulkhead mount



IN-SERIES ADAPTERS

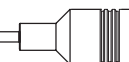
model	straight	straight bulkhead	straight bulkhead (herm.sealed)	tee
M - M	R114 703 000 (page 23)	R 114 720 000 R 114 720 020 (page 23)	R 114 753 000 (page 23)	
F - F	R 114 704 000 (page 23)			
M - F			R 114 754 000 (page 23)	
M - M / F				R 114 780 000 R 114 780 020 (page 23)
M - M / M				R 114 781 000 (page 23)
F - F / M				R 114 783 000 (page 23)

ATTENTION ! This guide is intended as an information and does not include all SMB SERIES P/N



Letter	PLUG				JACK				Letter	PLUG				JACK			
	mm		inch		mm		inch			mm		inch		mm		inch	
	min.	max.	min.	max.	min.	max.	min.	max.		min.	max.	min.	max.	min.	max.	min.	max.
Dia. A	-	2.06	-	.081	-	3.71	-	.146	J	0.18	0.94	.007	.037	0.25	-	.010	-
Dia. B	-	-	-	-	2.08	-	.082	-	K	2.97	-	.117	-	1.32	-	.052	-
Dia. C	-	-	-	-	0.48	0.53	.019	.021	L	-	-	-	-	-	0.18	-	.007
Dia. D	-	-	-	-	-	0.25	-	.010	M	-	-	-	-	-	2.97	-	.117
E	-	-	-	-	0.15	0.25	.006	.010	N	-	-	-	-	0.69	0.94	.027	.037
F	3.58	-	.141	-	3.33	3.58	.131	.141	P	-	-	-	-	0.05	0.15	.002	.006
G	3.58	-	.141	-	1.65	-	.065	-	Q	-	-	-	-	-	0.13	-	.005
H	-	1.63	-	.064	0	-	.000	-	R	-	-	-	-	0.28	0.38	.011	.015
I	0.18	-	.007	-	-	0.18	-	.007									

CLAMP TYPE CONNECTORS : R 114 xxx 000 = braid retention with cylindrical gasket
R 114 xxx 133 = braid retention with V groove gasket



TEST/CHARACTERISTICS	MIL-C-39012 A	VALUES/REMARKS
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ELECTRICAL CHARACTERISTICS

Impedance		50 Ω			
Frequency range		DC-4 GHz			
V.S.W.R. (typ.)	Frequency	3-14	1 GHz	2.5 GHz	4 GHz
Straight models	cable group:	.085"	1.12	1.22	1.33
			2	1.10	1.22
Right angle models		.085"	1.12	1.22	1.35
			2	1.10	1.18
Insertion loss (typ.)	cable group:	.085"	0.05	0.07	0.15
			2	0.05	0.10
Straight models		.085"	0.05	0.05	0.05
			2	0.05	0.07
RF leakage		3-26	-55 dB min from 2 to 3 GHz		
Insulation resistance		3-11	1000 MΩ min		
Contact resistance		3-16	Initial	After test	
	center contact (mΩ)		6	8	
	outer contact (mΩ)		1	1.5	
Working voltage	Cable group		2/50	2.6/50	
	at sea level		250 V rms	335 V rms	
	at 70000 ft (21000 m)		60 V rms	85 V rms	
Dielectric withstanding voltage	Cable group	3-17	2/50	2.6/50	
	at sea level		750 V rms	1000 V rms	
	at 70000 ft (21000 m)		185 V rms	250 V rms	
RF withstanding voltage (5 MHz sine wave)	Cable group	3-23	2/50	2.6/50	
	at sea level		500 V rms	700 V rms	

MECHANICAL CHARACTERISTICS

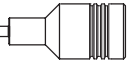
Durability		3-15	500 matings		
Mating / unmating		3-5-1	axial force : 62 N max (14 Lbf)		
Cabling retention force	cable group:	3-24	58 N (13 Lbf)		
	2/50		110 N (25 Lbf)		
	2.6/50				
Center contact retention			Axial : 10 N (2.25 Lbf)		

ENVIRONMENTAL CHARACTERISTICS

Temperature range	standard models		-65°C / + 165°C		
	hermetic sealed models		-65°C / +165°C		
	models for semi-rigid cables		-65°C / +105°C		
Combined climate tests			MIL-STD-202. method 102. condition C		
Thermal shock		3-20	MIL-STD-202. method 107. condition B		
High temperature endurance			MIL-STD-202. method 108		
Corrosion (salt spray)		3-13	MIL-STD-202. method 101. condition B, 5%		

All dimensions are given in millimeters

Standard packaging : 100 pieces (Same part number). For unit packaging, add "W" after the P/N.



ENVIRONMENTAL CHARACTERISTICS

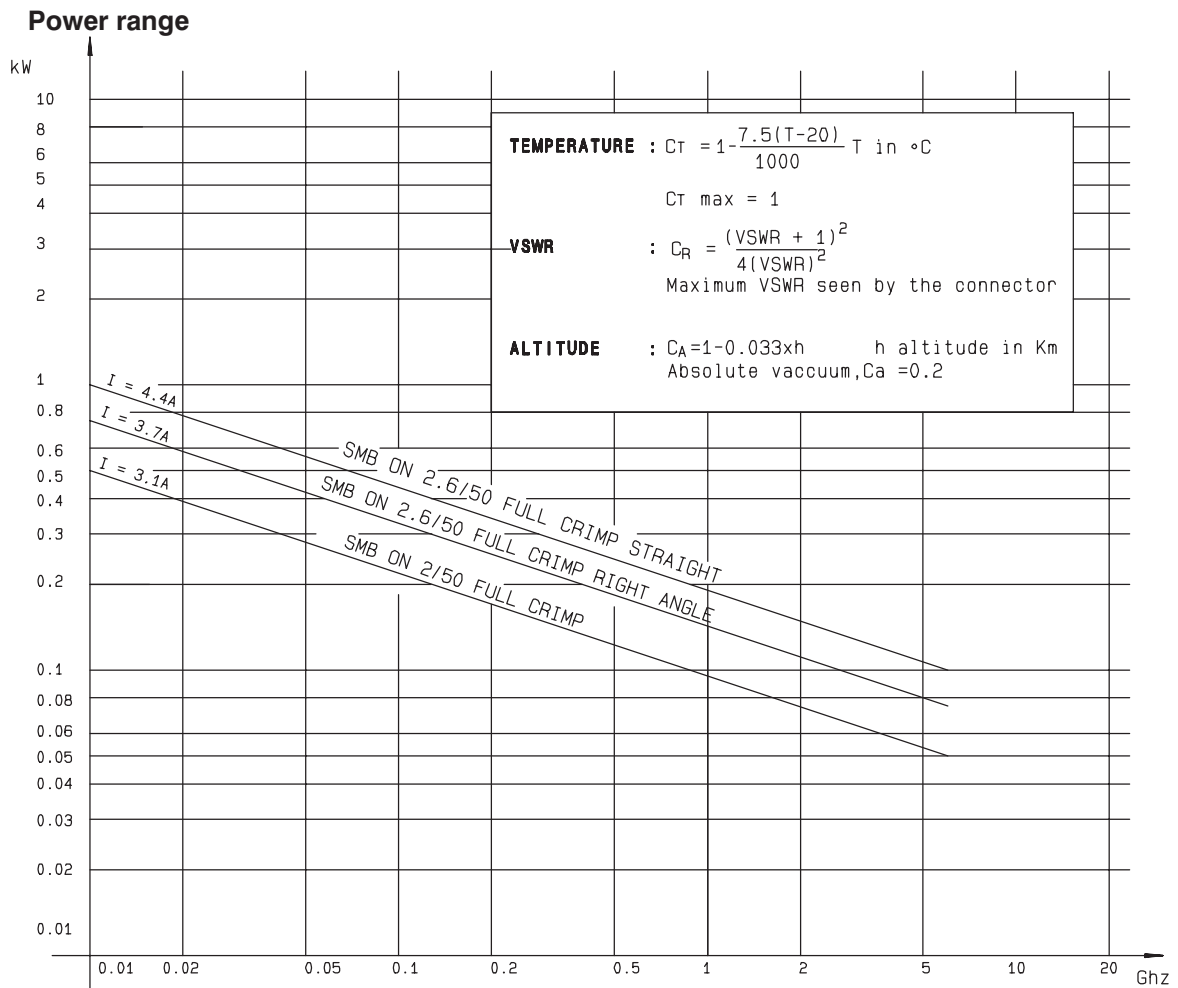
Vibrations	3-18	MIL-STD-202. method 204. condition B, 15g
Shocks	3-19	MIL-STD-202. method 213. condition B, 75g
Low pressure	3-22	MIL-STD-202. method 105. condition C
Hermetic seal		applied vacuum 10^{-6} mm of Hg (Torr) leakage rate $< 10^{-6}$ atm/cm ³ /s

MATERIALS

Body and center pin contact		half hard brass as per QQ-B-626
Center socket contact		beryllium copper as per QQ-C-530
Ferrules		brass
Insulators		PTFE teflon
Gaskets		silicone elastomer

PLATING

Body		gold or nickel
Center contacts		gold



All dimensions are given in millimeters

Standard packaging : 100 pieces (Same part number). For unit packaging, add "W" after the P/N.