IMP series

RIO7

RADIALL
The next conneXion

CONTENTS

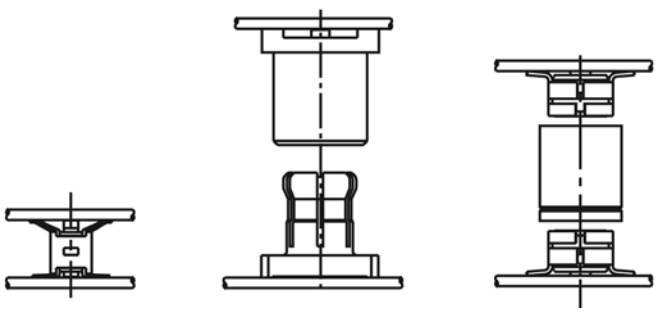
RADIALL, the pioneer in SMT coaxial connectors with the MMS series, has become a world wide leader in this technology.

Thanks to this SMT expertise, RADIALL now announces another breakthrough : the next generation of SMT coaxial connectors called **MMP** (**M**icro **M**iniature **P**ressure contact).

The **MMP** technological advance allows:
- cost savings
- further miniaturization
- exceptional RF performance
- reliability

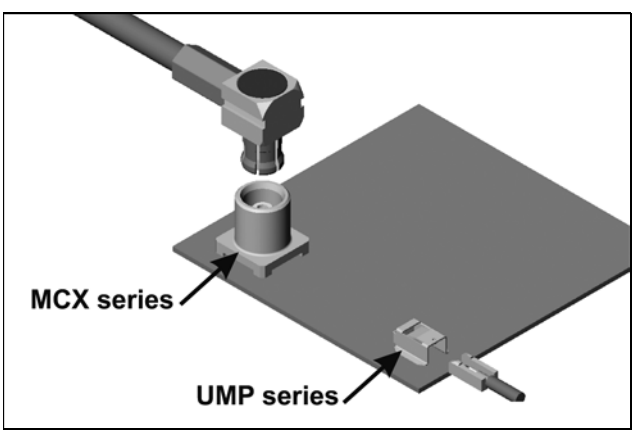
The **MMP** product line includes:
- **IMP** series : board to board application
- **UMP** series : board to wire application

The **IMP** series (**I**nterconnect **M**icro miniature **P**ressure contact) innovation consists of 1 coaxial connector when usually the same application requires either 2 coaxial connectors (a male SMT receptacle and a female SMT receptacle), or 3 coaxial connectors (2 SMT receptacles and an in-series adapter) Catalog P/N: **D1 039 CE**.

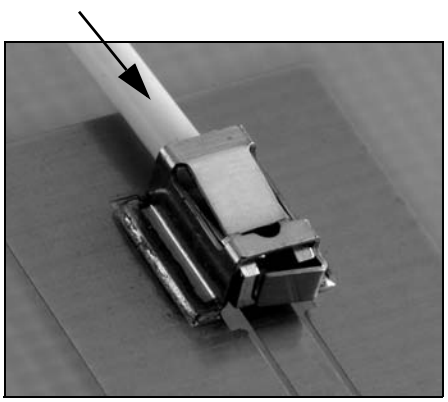


BOARD TO BOARD APPLICATION

The **UMP** series (**U**ltra **M**iniature **P**ressure contact) consists of 1 coaxial connector when 2 coaxial connectors (coaxial plug and SMT coaxial receptacle) are usually used.



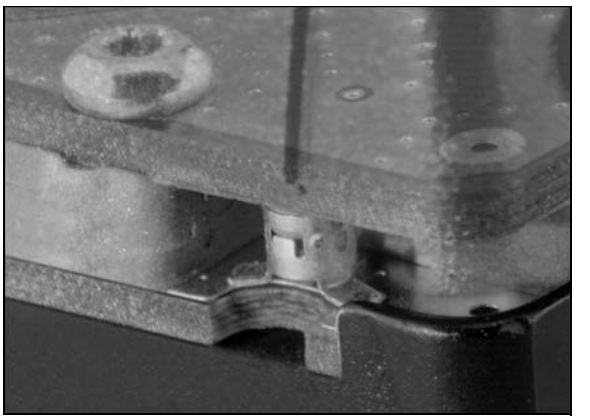
BOARD TO WIRE APPLICATION



The **IMP** series is a press-on electrical contact, and so member of the **MMP** family. It allows a board to board application through the use of only one coaxial connector with high RF electrical performance.

MAIN PRODUCT INTEREST

- Cost effective solution: 1 coax connector only
- High density (example: only 22.2 mm^2 on board (5.7 x 3.9) for the **IMP** 3 mm)
- World lightest connector: (example 0.02 g for the **IMP** 3 mm)
- World lowest profile for a board to board coaxial connexion (2 mm)
- RADIALL patent



APPLICATIONS

IMP can be used on board-to-board (or board-to-antenna) applications:

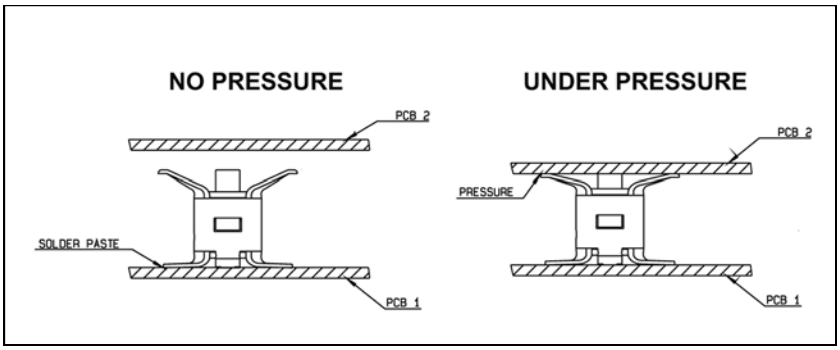
- WLAN
- Mobile phone
- Base station
- Automotive
- Terminals

KEY SPECIFICATIONS

- Operating frequency: DC-6 GHz
- Typical VSWR:

Frequency	Value
2 GHz	1.04
4 GHz	1.08
6 GHz	1.08

- Max. insertion loss (dB): 0.2 F
- Durability: > 20 matings min



INSTALLATION

The distance between the 2 boards should be precisely ensured by a mechanical device (such as spacers). Contact **Radiall** for support regarding the spacers layout in your particular application. Application notes are available upon request.

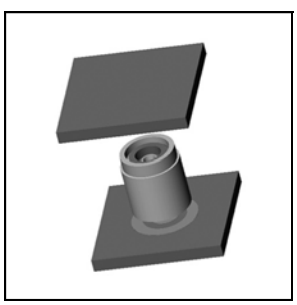
PICK AND PLACE & PACKAGING

- Design adapted to automated pick and place machines. The footprint of IMP allows video positioning by using the component's shadow to facilitate its placement
- Packaging: the IMP is packaged in reels of 100, 600, 2500 or 3500 pieces.

PRODUCT RANGE

IMP exist in 3 mm and 2 mm height. Other heights can be developed upon request

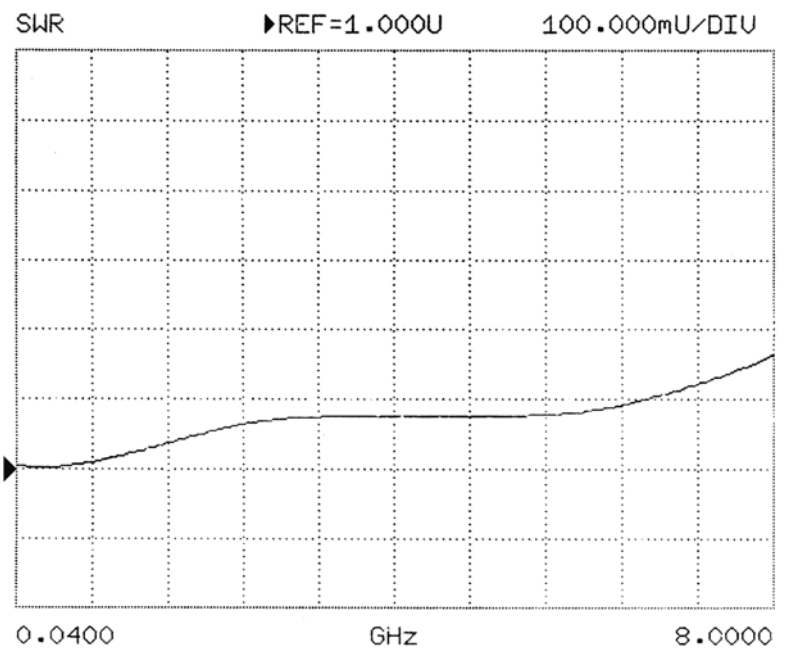
IMP 18 GHz:
a different design to allow exceptional electrical performances up to 18 GHz.



CHARACTERISTICS

	TEST STANDARD	RESULTS
ELECTRICAL CHARACTERISTICS		
Impedance		50 Ω
Frequency range		DC–6 GHz
V.S.W.R.	CECC 22000	1.10+0.03 F (F in GHz)
Insertion loss (dB)	CECC 22000	0.2 F (F in GHz)
Insulation resistance	CECC 22000	3000 MΩ min
Contact resistance center contact outer contact	CECC 22000	3000 MΩ min
Working voltage in VRMS	CECC 22000	100
Dielectric withstanding voltage in VRMS	CECC 22000	350
MECHANICAL CHARACTERISTICS		
Durability	CECC 22000	> 20 matings min
Weight (g)	CECC 22000	0.02
ENVIRONMENTAL CHARACTERISTICS		
Temperature range		-40°C / +90°C
MATERIALS		
Bodies	Beryllium copper	
Contact	Beryllium copper	
Insulator	Polyether ethercetone 30% GF	
PLATINGS		
Bodies	Gold	
Contact	Gold	

Power: at sea level, at 20°C, 3 GHz max: 20 W



Frequency	Typical VSWR
1 GHz	1.01
2 GHz	1.04
3 GHz	1.06
4 GHz	1.08
5 GHz	1.08

All dimensions are given in mm

SMT CONNECTORS

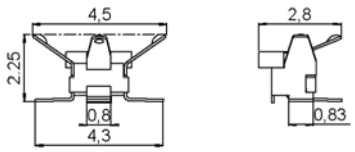


Fig. 1

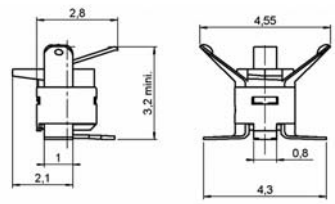
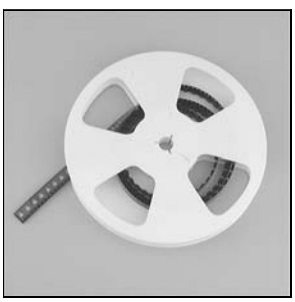


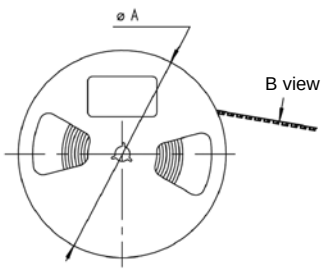
Fig. 2

Part number	Height (mm)	Fig	Packaging	Reel dimensions A (mm)
R107 064 070	2	1	Reel of 100	180
R107 064 070W			Unit	-
R107 064 080			Reel of 3500	330
R107 064 900	3	2	Reel of 2500	330
R107 064 910			Reel of 600	180
R107 064 920			Reel of 100	
R107 064 920W			Unit	-

This connector can also be developed upon request with other heights, in order to adjust space between PCB. Please consult us.

PACKAGING



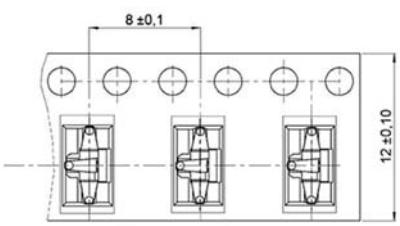


ACCORDING TO IEC 286-3 STANDARD

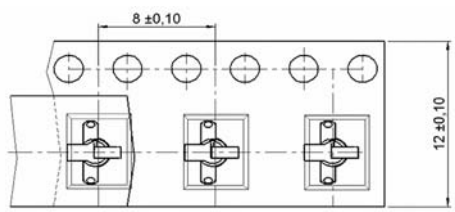
MATERIALS
Reel : polyester
Carrier tape: antistatic PETG (polyester)
Cover tape: polyester

B VIEW

R107 064 070
R107 064 070W
R107 064 080

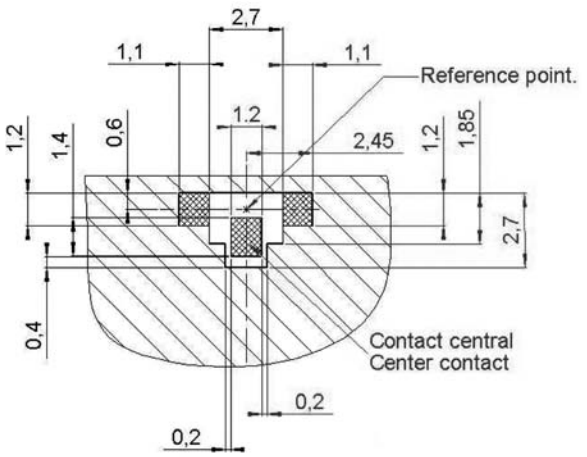


R107 064 900
R107 064 910
R107 064 920
R107 064 920W

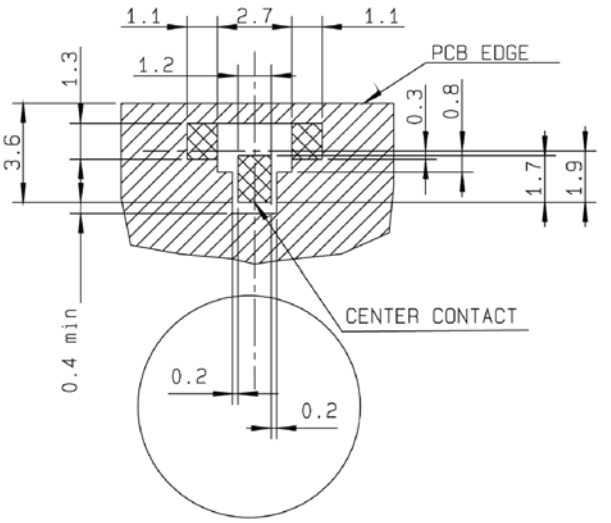


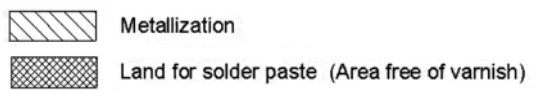
SOLDERING PATTERN

R107 064 070
R107 064 070W
R107 064 080

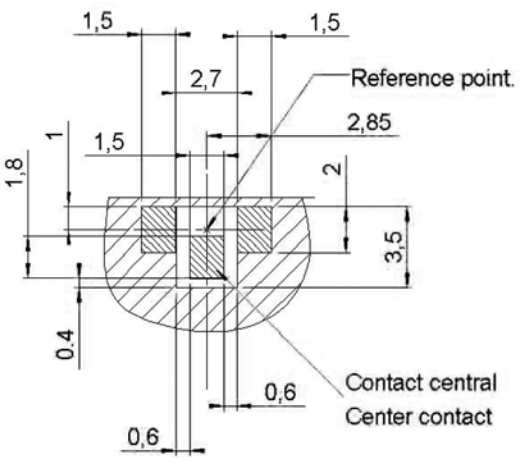


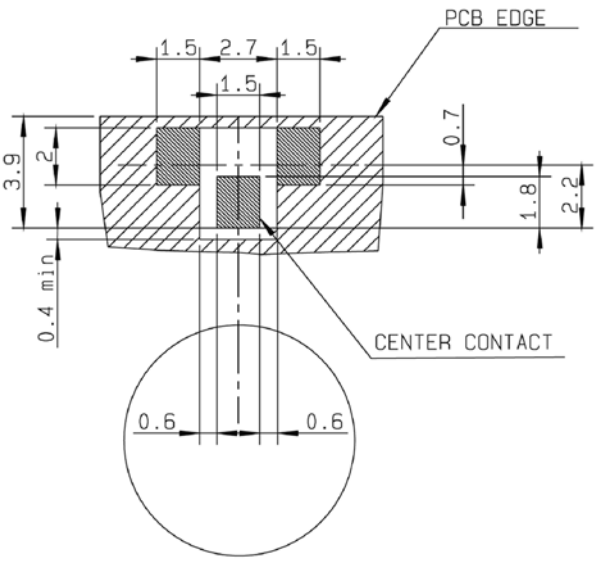
R107 064 900
R107 064 910
R107 064 920
R107 064 920W

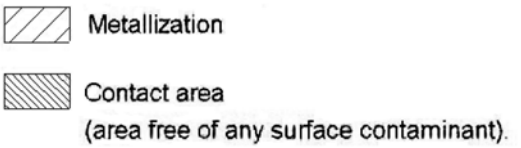




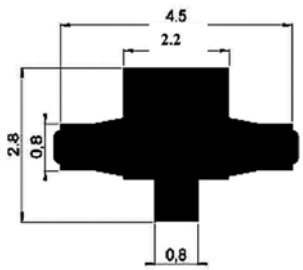
CONTACT PATTERN



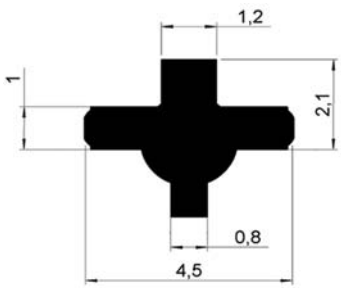




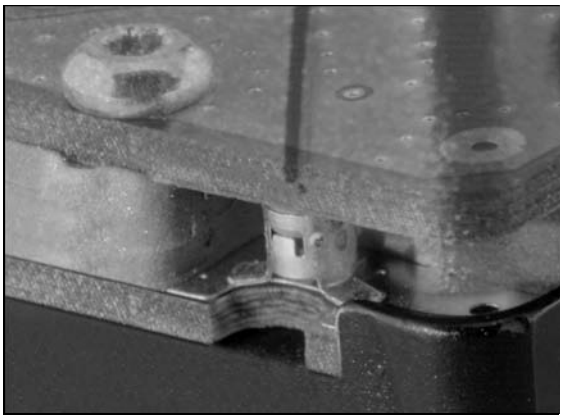
VIDEO SHADOW



IMP H2



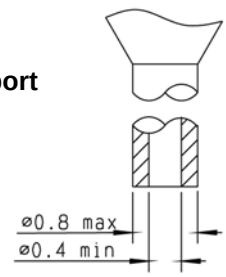
IMP H3



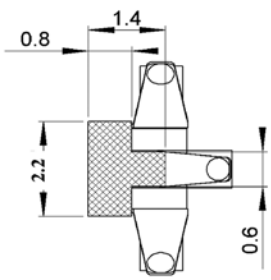
The distance between the 2 boards should be precisely ensured by a mechanical device (such as spacers). Contact Radiall for support regarding the spacers layout in your particular application. Application notes are available upon request.

SUCTION PROCEDURE

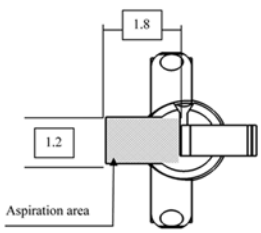
Aspiration port

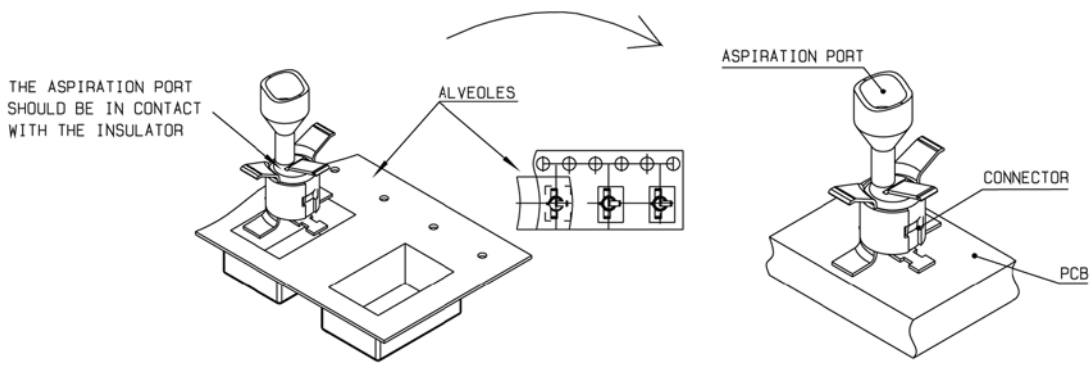


IMP H2



IMP H3





The following pick and place equipment and associated nozzles were successfully tested for the IMP:

A) FUJI: QP-242/MODULE TYPE
QP-242 IMP MOUNT MODULE NAME: TYPE BI-612
IMP NOZZLE PART N°: I-S12B-013-100 (NOZZLE PIE 1.3)

B) PANASONIC: MSF type machine
NOZZLE PART N°: 10 807 GH 810

For other equipment, please contact your supplier to define equivalent nozzles.

SOLDER PROCEDURE

1

Deposit solder paste 'Sn Ag4 Cu0.5' on mounting zone by screen printing application. We recommend a low residue flux.
We advise a thickness of 150 micromm (5.850 microinch). Verify that the edges of the zone are clean.

2

Placement of the receptacle on the mounting zone with an automatic machine of 'pick and place' type.
Video camera is prefered to check the positioning of the component.
Adhesive agents are forbidden on the receptacle.

3

Soldering by infra-red reflow.

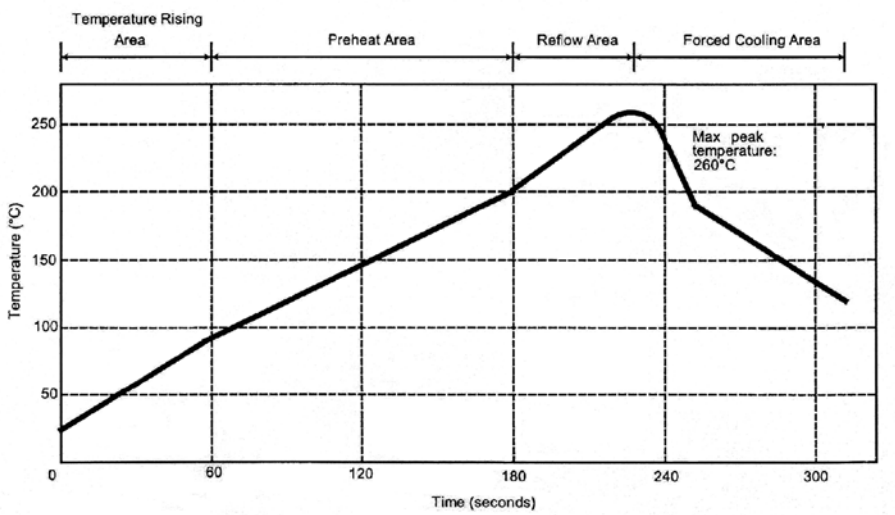
4

Cleaning of printed circuit boards.

5

Cheeking of solder joints and position of the component by visual inspection.

TEMPERATURE PROFILE



Parameter	Value	Unit
Temperature rising Area	1 - 4	°C/sec
Max Peak Temperature	260	°C
Max dwell time @260°C	10	sec
Min dwell time @235°C	20	sec
Max dwell time @235°C	60	sec
Temperature drop in cooling Area	-1 to -4	°C/sec
Max dwell time above 100°C	420	sec