

# SMP-MAX/SMP-MAX Evolution (EVO) 50-Ohm Board-to-Board and Board-to-Filter RF Connectors >

Lowering the risk of assembly error and simplifying design requirements, SMP-MAX and SMP-MAX EVO 50-Ohm Board-to-Board and Board-to-Filter RF Connectors use patented technology to increase mechanical tolerances

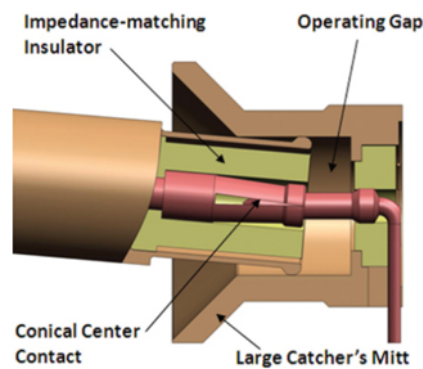
## FEATURES AND ADVANTAGES: SMP-MAX

### Impedance-matching insulator optimized in case of operating gaps if the adapter is not fully engaged in the receptacle

Ensures signal integrity even with gaps up to 2.00mm (SMP-MAX) and 2.40mm (SMP-MAX EVO) with no significant changes to VSWR

### Board-mount receptacle with a conical center contact

Prevents additional stress due to misalignment. Increases reliability



### Patented technology accommodates significant misalignment variation and increases board-to-board mechanical tolerances

Eliminates the risk of assembly errors during manufacturing. Reduces manufacturing time and costs by simplifying design efforts

### Funnel-shape (catcher's mitt) design in PCB receptacle with up to 3 degrees of angular misalignment allowance

Minimizes stubbing of mating pairs. Facilitates blind mating



SMP-MAX 50-Ohm  
Board-to-Board Connectors

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## FEATURES AND ADVANTAGES

Features	Advantages
Wide operating frequency range of DC to 10 GHz	Meets wireless communications' required range of 800 MHz to 6 GHz
Optional adapter lengths of 6.20 to 67.45mm	Accommodates a wide range of board-to-board distances
Subminiature connector	Provides space savings and is lightweight for smaller applications
Rugged construction @ 4 GHz	Delivers 100-minimum mating life cycle
Power handling SMP-MAX: <ul style="list-style-type: none"> <li>&gt;300W at 2.7 GHz and 25°C</li> <li>&gt;200W at 2.7 GHz and 85°C</li> </ul> SMP-MAX EVO: <ul style="list-style-type: none"> <li>30W @ 125°C average</li> <li>150W @ 125°C peak</li> </ul>	Provides ideal performance for RF amplifiers
Push-on and snap coupling options	Offers two levels of retention for design flexibility: high-retention snap for sturdy connections and low-retention push on for applications involving swapping out boards
Through-hole and surface-mount options available	Provides flexibility to meet application requirements

## SMP-MAX EVOLUTION (EVO AND EVO 5)

### Bullet outer contact developed from deep-drawn technology

Eases blind mating. Prevents damage during mating



SMP-Max Plug



SMP-Max EVO Plug



### Machined contact via deep-drawn process

Produces larger quantities for faster mass production. Deliver cost efficiencies for bulk orders

### Outer contact available with gold or tri-metal plating

Has tri-metal plating provides a cost-saving option by eliminating the need for soldering



Tri-Metal Deep-Drawn Body

### The SMP-MAX EVO 5 Bullet has a stamped contact with an injection insulator

An ideal option for cost-effective, high-production programs

Features	Advantages
Frequency up to 10 GHz (Note: dependent upon customer's working frequency)	Meets needs of market trends, such as 5G capabilities and beyond. Provides economical RF connectivity without compromising performance
PCB type body machined brass to black PA	Alternative for less power handling
Less machined brass material used	Reduced metal as well as plating composition

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## MARKETS AND APPLICATIONS

### Telecommunications/Networking

Base Stations  
(Macro RRH/AAU/Antenna/Filter)  
Radio Heads  
System Modules  
Radio Modules  
Small Cells  
Repeaters  
5G Massive MIMO



Radio Heads



5G infrastructure

## SPECIFICATIONS

### Reference Information

Packaging: Tray, Bulk, Single Bag, Tape and Reel  
Designed In: Millimeters  
RoHS: Yes  
Halogen Free: Yes

### Mechanical

Center Contact Retention Force: > 7N  
Force to Engage/Disengage:  
Engagement Force (Typical)  
Detent (Snap-On) — 45N  
Smooth Bore — 14N  
Disengagement Force (Typical)  
Detent (Snap-On) — 9 to 45N  
Smooth Bore (Slide-On) — 9N  
Connector Durability (min.): 100 Cycles

### Electrical

Nominal Impedance: 50 Ohms  
Voltage (max.): 330V rms  
Frequency Rating: DC to 10 GHz  
Power (50 Ohm Design):  
>300W at 2.7 GHz and 25°C  
>200W at 2.7 GHz and 85°C  
EVO 30W @ 125°C average, 150W @ 125°C  
peak VSWR (max.):  
See individual SD or below typical  
1.20 — DC to 3 GHz  
1.35 — 3 to 6 GHz  
Insertion Loss (max.):  
See individual SD or below typical  
0.12 — DC to 3 GHz  
0.25 — 3 to 6 GHz

### Physical

Housing: Brass/Beryllium Copper  
Male Center Contact: Brass  
Female Center Contact: Beryllium Copper  
Plating:  
Body and Contact — Gold Over High-  
Phosphorous Nickel Over Copper  
Insulator: PEEK or Teflon  
Operating Temperature: -55 to +165°C

[www.molex.com/link/smpmax.html](http://www.molex.com/link/smpmax.html)