



### Overview

The HD-EFI product series is a micro-miniature interface designed to allow large board tolerance stack ups, blind mating and multiple RF lines. These 50 ohm products have an operating frequency of DC to 6 GHz which makes them ideal for high-performance applications with a small package size. The selection of PCB mounts and bullet lengths offer versatility for board launches and PCB stacking configurations.

HD-EFI PCB jacks are available in through-hole, surface mount, edge launch and thread-in receptacle designs. The three-piece mating system uses a limited detent and a smooth bore PCB connector joined by a floating bullet adapter in between. The generous gathering cone and unique bullet design allows for 1.4 mm of axial float and 1.4 mm of radial float with a maximum float angle of 5 degrees.

HD-EFI bullet adapters are uniquely designed to provide crash-proof mating, facilitated by the extension of the insulator beyond the adapter body. Used in conjunction with the smooth bore connectors, this mating system allows for easy alignment and a secure connection.

Also available are cable plugs in straight and right-angle configurations, designed to terminate to common highly flexible coaxial cable, and HD-EFI to SMA adapters.

### Features and Benefits

- Designed to maximize radial and axial float in board-to-board applications
- Available in through-hole, surface mount, and edge launch configurations
- Provides crash-proof mating

### Applications

- Wireless Base Station Equipment
- Backplane Design
- Multiple Board to Board Connections
- Complex PCB Stack-ups

### Amphenol RF

Four Old Newtown Road  
Danbury, CT 06810

For more information visit [www.amphenolrf.com](http://www.amphenolrf.com)  
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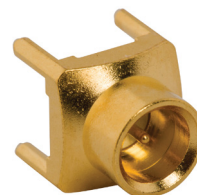
### Ordering Information

#### PCB Mount Jack, Male Contact

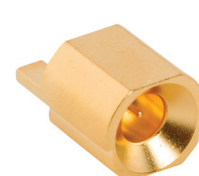
	Smooth Bore	Limited Detent
Surface Mount	920-501J-53P	920-502J-52P
Through Hole	920-503J-53P	920-504J-52P
Edge Mount	920-507J-52P	920-508J-53P
Thread-In	920-532J-52S	920-526J-52S



920-503J-53P



920-504J-52P



920-508J-53P

#### Cable Plug, Female Contact

Part Number	Description
920-510P-51S	Straight Crimp Plug RG-174 RG-188 RG-316 Times LMR-100A
920-511P-51S	Straight Crimp Plug RG-178 RG-196
920-512P-51S	Straight Crimp Plug 1.13 mm
920-515P-51A	Right Angle Crimp Plug 1.13 mm
920-514P-51A	Right Angle Crimp Plug RG-178 RG-196
920-513P-51A	Right Angle Crimp Plug RG-174 RG-188 RG-316 Times LMR-100A

#### Bullet Adapter, Female Contact

Part Number	Description	PCB Spacing
920-505A-51S	Bullet Adapter, 8.38mm	12.7mm
920-506A-51S	Bullet Adapter, 7.14mm	11.46mm
920-509A-52S	Bullet Adapter, 13.02mm	17.34mm
920-517A-52S	Bullet Adapter, 18.28mm	22.6mm



920-505A-51S



920-506A-51S



920-509A-51S

#### HD-EFI to SMA Adapters

Part Number	Description
AD-SMAJHDEFIJ-1	HD-EFI Limited Detent Jack to SMA Jack
AD-SMAJHDEFIJ-2	HD-EFI Smooth Bore Jack to SMA Jack
AD-SMAJHDEFIP-1	HD-EFI Plug to SMA Jack

# Amphenol® RF

## Technical Specifications

### Electrical

Impedance		50 Ω
Frequency Range		DC - 6 GHz
Voltage Rating		335 VRMS
Dielectric Withstanding Voltage		1000 VOLTS
Contact Resistance	Center Contact	5 mΩ Max (Initial)
	Outer Contact	5 mΩ Max (Initial)
Insulator Resistance		5000 MΩ Min
VSWR (Mated Solution)	DC - 3 GHz	1.21 Max
	3 - 6 GHz	1.24 Max
Insertion Loss (Mated Solution)	DC - 3 GHz	-0.14dB
	3 - 6 GHz	-0.27dB
Isolation		70dB Min @ Up to 4 GHz @ 8mm Pitch
3rd Order Intermodulation	930 & 955 MHz (2X43 dBm)	-163dBc Max (Low PIM Design)
Power Handling		40 W @ 2.6 GHz @ 95° C Tested
		120 W @ 2.5 GHz @ 95° C Tested

### Mechanical

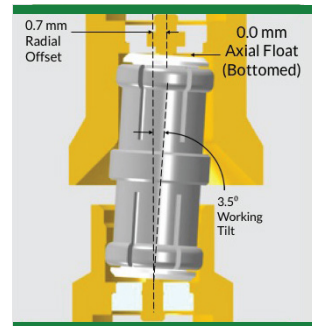
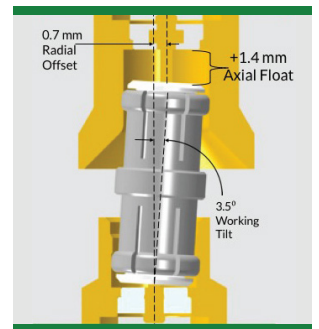
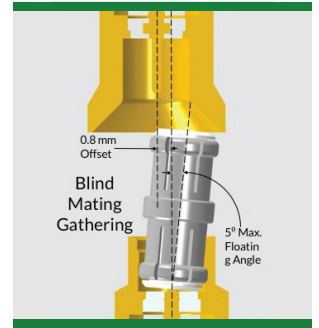
Interface Mating Forces	Engagement	12 N Max (Smooth Bore), 25 N Max (Limited Detent)
	Disengagement	2 - 6 N (Smooth Bore), 9 N Min (Limited Detent)
Connector Durability		50 Cycles Min. (Limited Detent)
		200 Cycles Min. (Brass Housing) (Smooth Bore)
Center Pin Mating Forces	Engagement	3 N Max (Ø 0.52mm Max Pin with Chamfer)
	Disengagement	0.2 N Min (Ø 0.48mm Min Pin with Chamfer)
Outer Contact Mating Forces	Engagement	8 N Max (Ø 3.52mm Min Hole with Chamfer)
	Disengagement	1 N Min (Ø 3.58mm Min Hole with Chamfer)
Mechanical Misalignment	Axial	±0.7 mm
	Radial	±0.7 mm
Max Floating Angle		5° Surface Mount Parts, 3.5° Through-hole Mount Parts
Min Board to Board Distance		11.46 mm

### Environmental

Temperature Range		-45°C To 125°C
Thermal Shock		MIL-STD-202, Method 107, condition B
Corrosion Resistance		MIL-STD-202, Method 101, condition B
Humidity/Temperature Cycling		MIL-STD-202, Method 106, condition A
Temperature Life		250 Hours at 125° C
		No Damage to Parts
Vibration		MIL-STD-202, Method 204, condition B
Mechanical Shock		MIL-STD-202, Method 213, condition A

### Materials

Body		Brass, Gold Plated
Outer Contacts	Contact	Beryllium Copper, White Bronze Plated
	Stamped Version	Beryllium Copper, White Bronze Plated
Center Contacts	Female	Beryllium Copper Heat Treated, Gold Plated
	Male	Brass, Gold Plated
	Stamped Version	Copper Alloy, Gold Plated
Insulators	Bullet	POM, Natural
	PCB Surface/Through-Hole Mount	LCP, Natural
	PCB Edge Mount	PTFE, Natural



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