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Amphenol RF's AFI - Floating Interface

Amphenol AFI Features

- The AFI (Amphenol Floating Interface) has been engineered to be superior to other blind mate systems currently on the market.
- The AFI interface was developed to achieve a higher level of density in a crash-proof, blind mate connector system.
- It is a drastic improvement over existing blind mate systems that can crash if their float capabilities are exceeded.
- The AFI has built in protection to eliminate damage from mating or from production test fixtures, thus boosting it's ruggedness.
- To ensure consistent system level performance, the AFI has been electrically optimized to deliver excellent and stable return loss throughout the range of wipe.



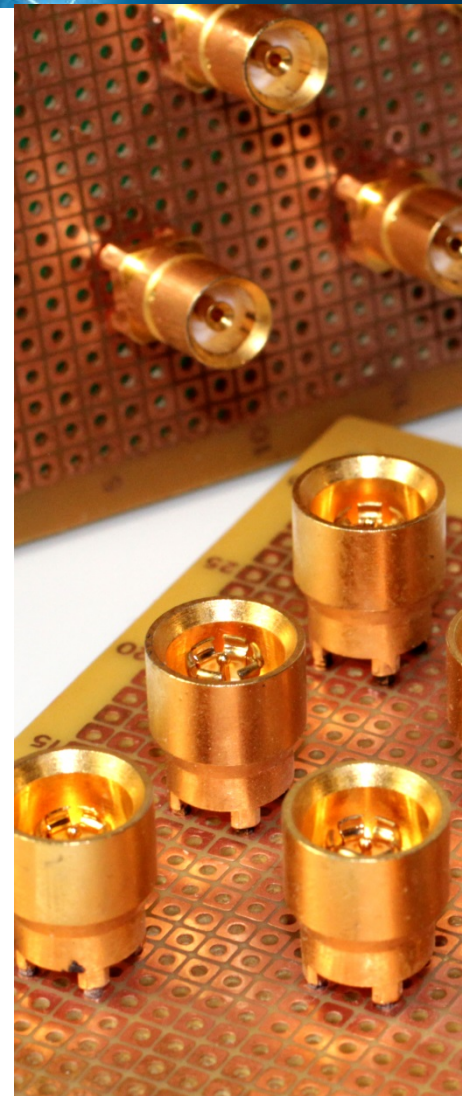
Amphenol AFI Product Series

- The AFI delivers unsurpassed RF performance across a wide range of board spacing possibilities.
- Configurations are available to fit board spacing from 12.7 to 25 mm.
- The wipe range is greater than 1 mm, which can compensate for most chassis tolerance stack up.

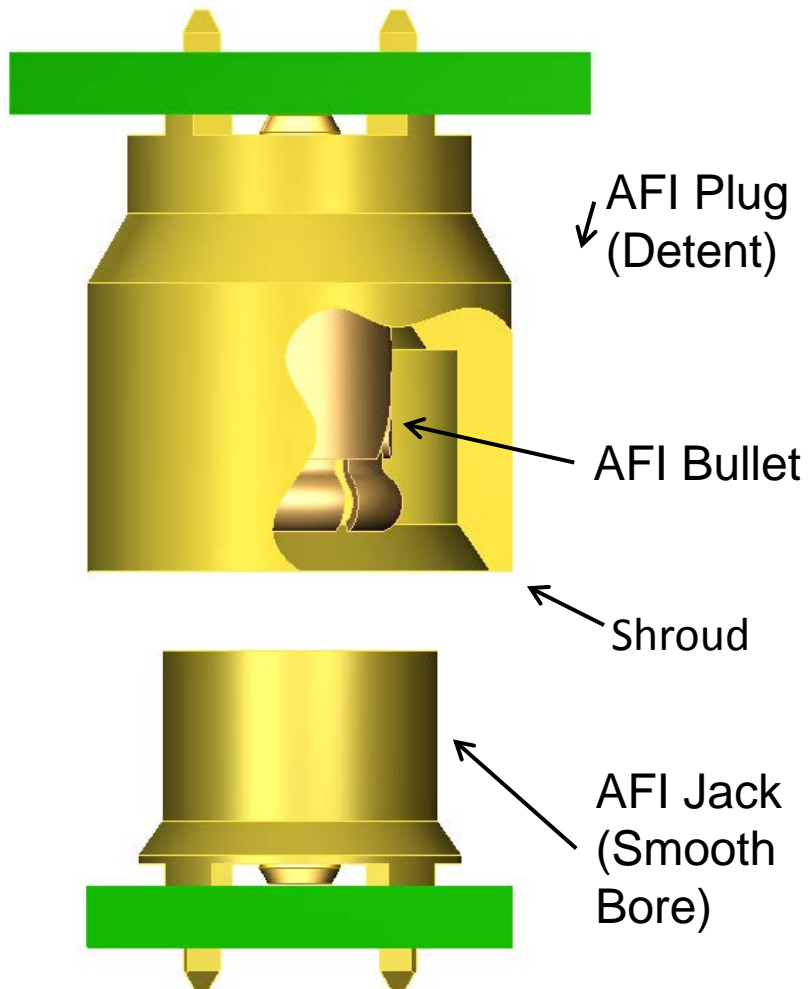


Amphenol AFI Benefits

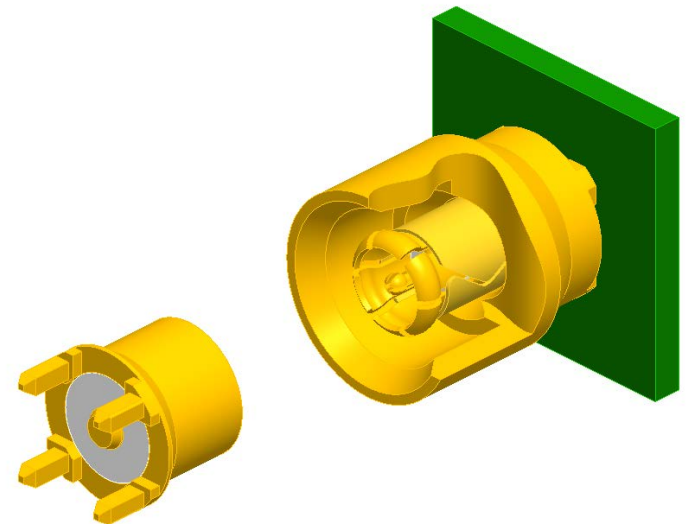
- Board to board solution at an exceptionally low cost.
 - Stamped bullet vs. custom machined bullet of others
 - Heat treated Beryllium Copper
 - Protective shroud



AFI Overview & Terminology

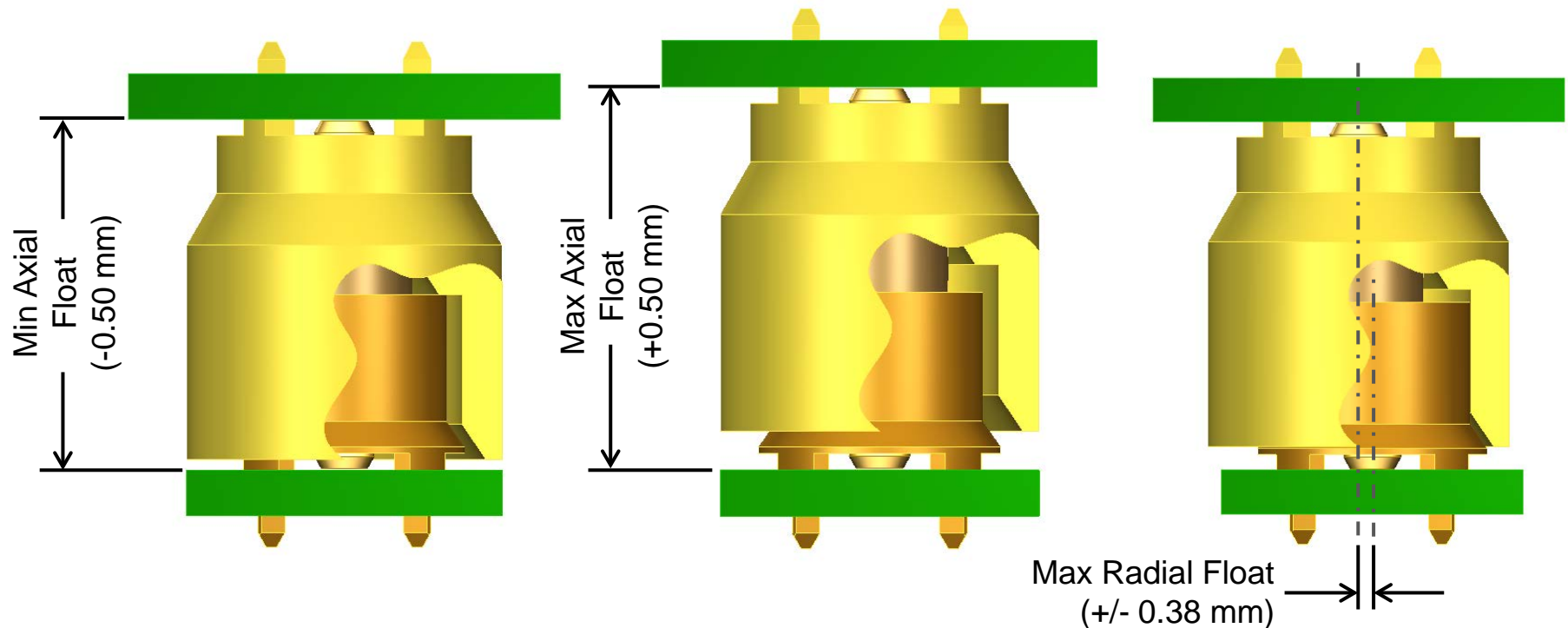


- 50 Ω board-to-board solution
- VSWR optimized up to 6 GHz
- Floating bullet allows radial and axial misalignment during mating

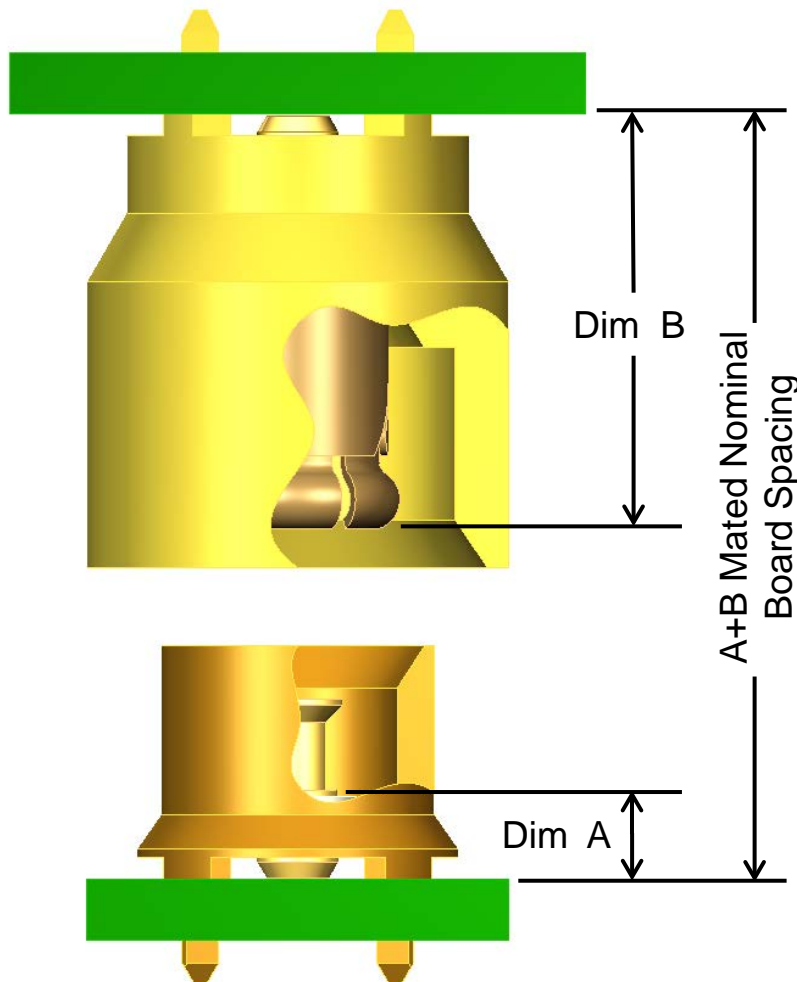


Explanation of Float

- Floating bullet allows misalignment between connectors
- Axial Float: $\pm 0.50\text{mm}$ [0.020"]
- Radial Float: $\pm 0.38\text{mm}$ [0.015"]



Board to Board Spacing



- A full series of part numbers can be combined to meet a variety of board to board spacing, ranging from 12.7mm to 25.0mm.
- To find the board to board spacing of a pair of connectors, simply add the A and B reference dimensions in the part number matrix.
- This is the nominal board to board spacing. AFI will provide float in both directions from this nominal distance.

50 Ohm Part Number Matrix



		Jack Part Numbers						
		920-256J-51P (A = 1.44)	920-249J-51P (A = 2.71)	920-265J-51P (A = 3.71)	920-250J-51P (A = 4.71)	920-251J-51P (A = 5.71)	920-262J-51P (A = 8.71)	920-266J-51P (A = 9.71)
Plug Part Numbers	920-255P-51P (B = 11.29)	12.7	14.0	15.0	16.0	17.0	20.0	21.0
	920-263P-51P (B = 12.29)	13.7	15.0	16.0	17.0	18.0	21.0	22.0
	920-248P-51P (B = 13.29)	14.7	16.0	17.0	18.0	19.0	22.0	23.0
	920-264P-51P (B = 15.29)	16.7	18.0	19.0	20.0	21.0	24.0	25.0
		Board to Board Spacing						

Technical Specifications

Electrical	
Impedance	50 Ω
Frequency Range	DC to 6 GHz
VSWR	$1.1 + 0.006 \times f$ (GHz) from DC to 3 GHz
RF Leakage	-70 dB
Power Handling	95 Watts

Mechanical	
Axial Float	$\pm 0.50\text{mm}$ [$\pm 0.020''$]
Radial Float	$\pm 0.38\text{mm}$ [$\pm 0.015''$]
Engagement Force	3.0 lbs Max
Disengagement Force	0.5 lbs Min
Durability	100 Mating Cycles
Temperature Range	-65° to +165°

Technical Specifications

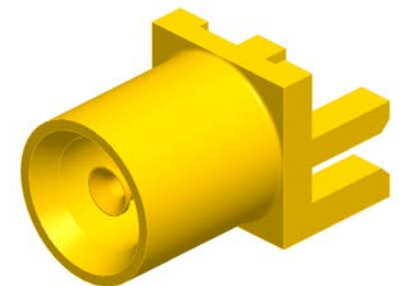
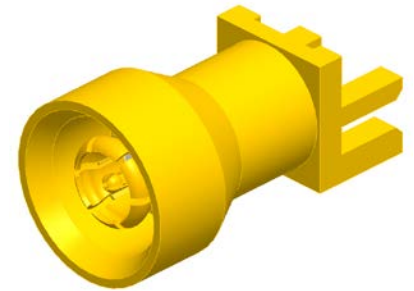
Materials	
Body	Brass, Gold Plated
Contact	Beryllium Copper, Gold Plated
Insulator	PTFE
Bullet Body	Beryllium Copper, Gold Plated
Bullet Contact	Beryllium Copper, Gold Plated
Bullet Insulator	PTFE

Environmental Specs	
Thermal Shock	EIA-364-32
Temperature	EIA-364-31A
Humidity Cycling	EIA-364-17B
Mixed Flowing Gas	EIA-364-65A
Vibration	EIA-364-28D
Mechanical Shock	EIA-364-27B

50 Ohm AFI Product

Additional Product Information

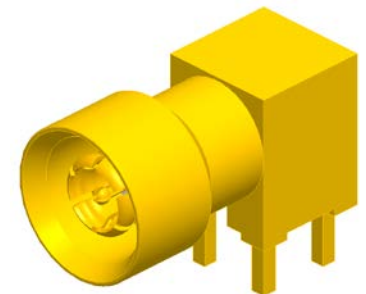
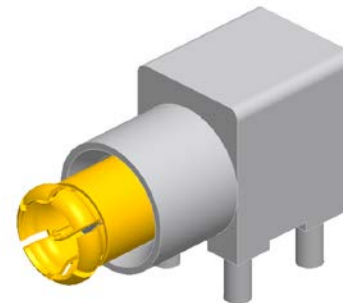
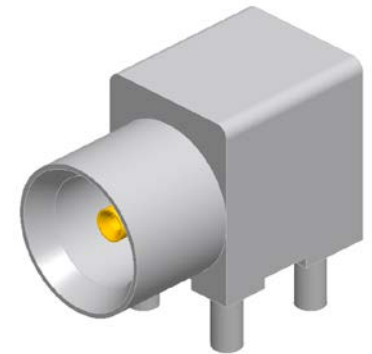
- PCB edge launch and right angle PCB connectors:
 - 920-222J-51A: AFI (F) EDGE LAUNCH 0.62" PCB
 - 920-185J-51A: AFI (F) R/A PCB
 - 920-224P-51S: AFI (M) EDGE LAUNCH 0.62" PCB
 - 920-233P-51A: AFI (M) R/A PCB



75 Ohm AFI Product

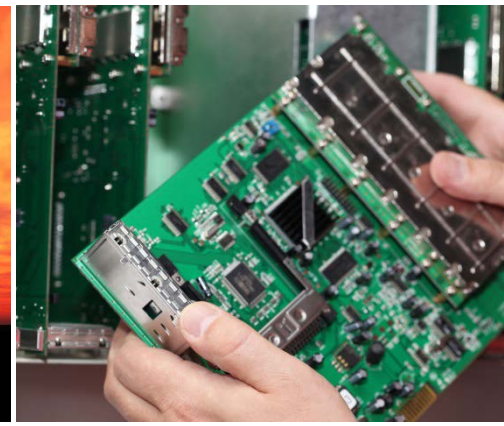
Additional Product Information

- PCB straight and right angle PCB connectors:
 - 920-132P-71P: AFI (M) STR PCB
 - 920-133J-71P: AFI (F) STR PCB
 - 920-140P-71A: AFI (M) R/A PCB
 - 920-142J-71A: AFI (F) R/A PCB
 - 920-192J-71A: AFI (F) R/A PCB



Markets and Applications

- Wireless Infrastructure
- CATV
- Broadband
- Military markets



Summary

Key Features and Benefits

- Float
- Density
- Durability
- Electrical performance
- Built-in crash proof features
- Cost

