

EIA & MEIA Series RF Connectors

The EIA (Electronic Industries Alliance) Series and the newer MEIA™ (Miniaturized EIA) Series are both high-power RF connectors used in large-scale radio frequency systems. While the traditional EIA connectors are large, flange-mounted, and designed for rigid coaxial lines, the MEIA™ series provides equivalent power handling in a smaller, lighter form factor with a threaded coupling mechanism, making them ideal for high-density applications like 5G infrastructure.



KEY FEATURES & BENEFITS

EIA Series

- Exceptional Power Handling: Transmits kilowatts of RF power.
- Low PIM Performance: Minimizes PIM, crucial for modern communication.
- Rugged Construction: Built to withstand demanding environments.
- Standardized Interfaces: Established by EIA and IEC standards.

MEIA Series

- Equivalent Power, Smaller Size: Same high power in a 30% smaller and 40% lighter footprint.
- Threaded Coupling: User-friendly and provides a secure connection.
- Optimized for Modern Infrastructure: Ideal for space-constrained and weight-sensitive applications.
- Adaptable: Adapters allow integration into existing EIA systems.

PRODUCT SPECIFICATIONS

Electrical Properties*	
Impedance	50 Ohms (standard); 75 Ohms also available for specific EIA sizes.
Frequency Range	EIA Series: DC to 7.5 GHz (for 7/8"); (lower for larger sizes) MEIA Series: DC to 6 GHz (for MEIA-875); DC to 3 GHz (for MEIA-1625).
Average Power	EIA Series: Varies significantly by size
Power Handling	MEIA Series: Equivalent to comparable EIA line sizes (e.g., MEIA-1625 power equivalent to 1-5/8" EIA).
Voltage Rating	EIA Series: Varies by size (e.g., 7/8" up to ~2121 VRMS; 3-1/8" up to ~5656 VRMS). MEIA Series: Often very high, e.g., 5100 VRMS to 10400 VRMS.
PIM (Passive Intermodulation)	Typically $\leq$ -155 dBc to -160 dBc
VSWR (Voltage Standing Wave Ratio)	Low; designed for minimal signal reflection and power loss across their operating frequency range.
Insertion Loss	Low; designed for minimal signal reflection and power loss across their operating frequency range.

*reference website for specific part number specifications

PRODUCT SPECIFICATIONS CONTD.

Environmental Properties*	
Temperature Range	-55°C to +165°C (standard)
Thermal Shock	MIL-STD-202, Method 107, Test Condition B.
Vibration	MIL-STD-202, Method 204, Test Condition D
Shock	MIL-STD-202, Method 213, Test Condition I.
Moisture Resistance	MIL-STD-202, Method 106.
Corrosion (Salt Fog)	MIL-STD-202, Method 101, Test Condition B (48 hours).
Weatherproofing	Both series offer excellent sealing capabilities (often IP67 or IP68 rated when properly installed) for outdoor and harsh environment applications.
Durability	Built to meet rigorous environmental and mechanical demands, ensuring long-term reliability in critical infrastructure.

*reference website for specific part number specifications

PRODUCT SPECIFICATIONS CONTD.

Mechanical Properties*	
Coupling Mechanism	EIA Series: Flange and bolt attachment (requires mechanical fastening). A male coupling element (bullet) to connect two female flanged connectors. MEIA Series: Threaded coupling (e.g., UNF thread), simplifying installation compared to bolted flanges.
Mating Cycles	≥ 500 cycles.
Sizes	EIA Series: Designated by the outer conductor's inner diameter (e.g., 7/8", 1-5/8", 3-1/8", 4-1/2", 6-1/8"). MEIA Series: Designated similar to EIA by approximate line sizes (e.g., MEIA-875 for 7/8" equivalent, MEIA-1625 for 1-5/8" equivalent).
Materials	Typically constructed from brass, copper alloy, or stainless steel, with plating options like nickel, silver, or tri-metal for enhanced conductivity and corrosion resistance.
Dielectric/Insulator Material	PTFE (Polytetrafluoroethylene) for excellent dielectric properties.

*reference website for specific part number specifications