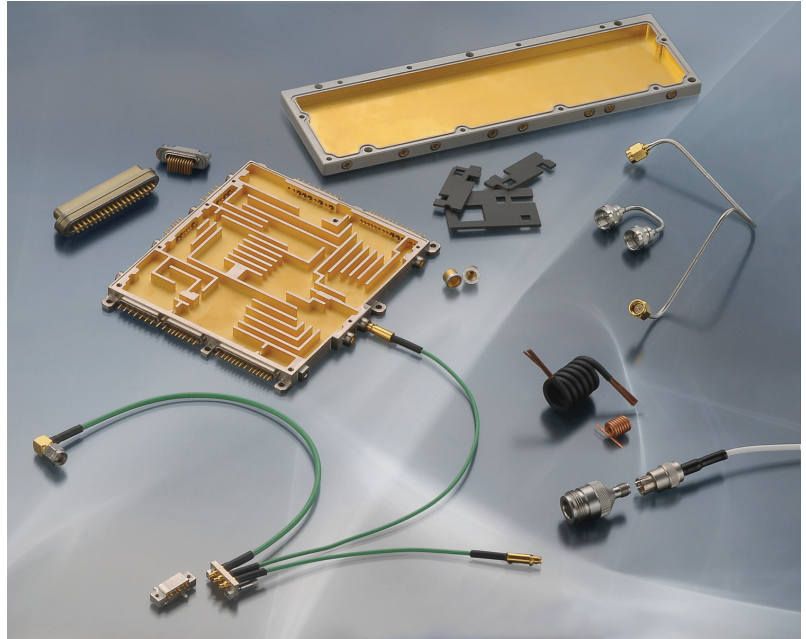




INTERCONNECT SOLUTIONS FOR  
**HIGH PERFORMANCE  
MICROWAVE ASSEMBLIES**

Winchester designs, builds, and ships integrated hermetic microwave packaging, cover assemblies using microwave absorber (PolyIron™) and Hydrogen Getter, RF feedthroughs, multi-pin connector designs, IR (infrared) packages, and more. With associated, innovative RF/Microwave connector and cable solutions, let Winchester help with your most challenging application.

# HERMETIC RF SOLUTIONS



## Advanced Hermetic Sealing

Is your Glass-to-Metal hermetic solution failing due to extreme pressure, temperature, or vibration? Our Ceramax™ technology solves your problem with extreme reliability. With industry leading material science and superior hermetic sealing technology, our vertically integrated manufacturing capabilities provide your design team with limitless solutions. In-house high precision machining, laser welding, vacuum brazing, and plating means tightly controlled, precision built hermetic solutions with sealing beyond  $1 \times 10^{-9}$  and operating temperatures of  $-269^{\circ}\text{C}$  to  $+450^{\circ}\text{C}$ .

## Joining of Dissimilar Metals

**Laser Beam Welding (LBW)** is ideally suited for assembly and integration of hermetic connectors due to its precise application and small heat-affected zone. Connectors can be joined together and mounted into higher level assemblies with little to no thermal stress impact.

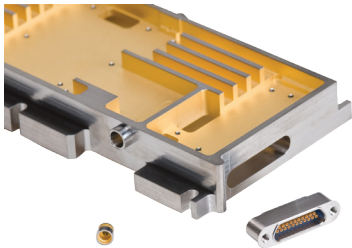
**Explosion Welding (EXW)** uses chemical explosives to accelerate one metal into another at high velocity, which creates a welded interface between two metals. This unique metal joining process allows for the capability of creating hermetic connectors that consist of two, or more, dissimilar metals.

**Vacuum Brazing** is a joining process where filler metal is heated to melting temperatures above  $450^{\circ}\text{C}$  and distributed between two or more base materials by capillary action while protected by an oxygen-free (vacuum) atmosphere.

# PRODUCTS

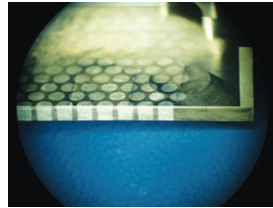


## Hermetic Solutions



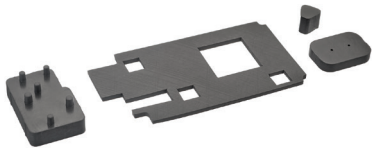
### Hermetic Microwave Packaging

Utilizing explosion/laser welding, vacuum brazing, and diffusion bonding technologies, Hermetic Microwave Packaging Solutions are available in Stainless Steel, Aluminum, Titanium, or any combination thereof.



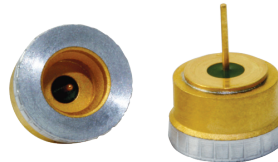
### Titanium Aluminum Packaging (TAP)

When requirements for hermetic packaging include high thermal conductivity, a low coefficient of thermal expansion ("CTE"), and light weight, **Titanium-Aluminum Packaging (TAP)** provides a great solution. TAP utilizes titanium as its main housing structure material while integrating aluminum into thermally sensitive areas to optimize heat dissipation.



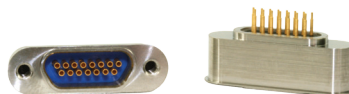
### Cover Assemblies

**Hermetically Sealed, Laser Welded Covers** with installed **PolyIron Microwave Absorber** and **Hydrogen Getter** material provide a complete solution addressing potential EMI and hydrogen contaminant issues within the hermetically sealed electronic enclosure. PolyIron magram absorber addresses potential EMI issues by absorbing it, not reflecting it. Hydrogen getter material captures hydrogen, which is often present and can damage electronics within the microwave package. Ideal for use with densely packed microwave packages where space is at a premium.



### Hermetic RF Feedthroughs

Laser-welded SMP, SMPM, SMA, SSMA, TNC feedthroughs available in Stainless Steel, Aluminum, and Titanium with patented Press-In design.



### Hermetic Multi-pin Connectors

Exclusive dielectric material, Ceramax, Ceramic-to-Metal laser-welded true hermetic Nano D, Micro D, Standard D and Military Circular connectors IAW Mil Specs including, but not limited to, M32139, M83513, M24308 and D38999.



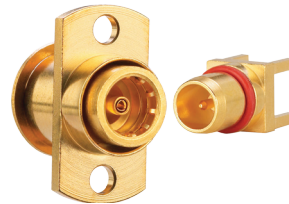


## RF Connector Solutions



### Ganged/Multiport

Ganged, Multiport 50 Ohm and 75 Ohm interconnects in multiple micro-miniature and sub-miniature interfaces as well as power, signal, and combinations of these types.



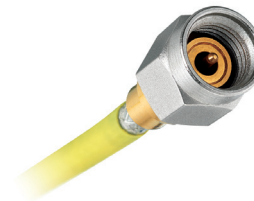
### BMA

BMA Blindmate Connectors designed for blindmate applications where multiple RF connectors need to be mated simultaneously. Unique first-make-last-break ground contact allows modular components and subsystems to be "hot swapped" in and out of a live system.



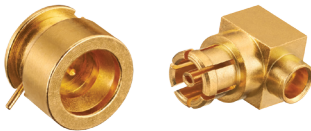
### SMP

Subminiature high-frequency connectors with push-on interface used in PCB-to-PCB or Cable-to-PCB applications.



### 2.92 mm

Precision SMK 40 GHz product ideal for demanding test environments that require high frequency transmission with low VSWR. Similar to the SMA interface, it has a smaller body ID and an air dielectric to achieve a significantly higher cutoff frequency. Cable plugs, panel receptacles, and adapters are available.



### SMPM

Micro-miniature high-frequency connectors with push-on interface used in PCB-to-PCB or Cable-to-PCB applications; 30% smaller than SMP connectors.



### Mil Spec

Winchester is qualified to more RF/Microwave connector military specifications than any other manufacturer with qualification to more than 600 MIL-PRF-39012 Coaxial Connector part numbers—including C, N, TNC, BNC, and SMA interfaces, in- and between-series Adapters to MIL-PRF-55339, and Triaxial connectors to MIL-PRF-49142.



### QC-SMA

Quick Connect SMA mates/unmates quicker than standard, threaded SMA without tooling. Backwards compatible to field-installed SMA jacks with a frequency range up to 18 GHz.



# PRODUCTS

## RF Cable Solutions



### MIL-C-17 Semi-Rigid

Winchester is one of three approved, qualified MIL-C-17 semi-rigid cable manufacturers, producing cable to M17/129, /130, /133, and /151.



### TRUcore™

TRUcore™ series assemblies offer excellent RF and Microwave electrical performance combined with superior mechanical and environmental durability. TRUcore™ is available for 18, 26.5, 40, and 50 GHz broadband.



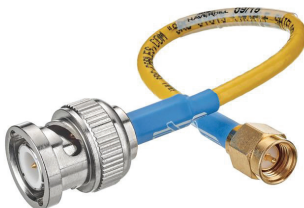
### SteelFlex Assemblies

SteelFlex and H-Flex are flexible alternatives to standard .085, .141, and .047 semi-rigid coax. Both are ideal for electronic warfare applications, higher frequency test cables, and detachable interconnects that demand low attenuation in an affordable low loss flexible coax cable.



### Vortex Low Loss

Low Loss and Phase Stable flexible coaxial cable assemblies operating up to 18 GHz with industry leading 83% Velocity of Propagation (VoP). Available with SMA, TNC, and N connectors.



### SRC 316/316-TS

SRC 316 and SRC 316-TS "Triple Shield" were designed to replace standard RG316, RG174, and RG188 for microwave antenna, test equipment, radar, and tactical applications. Both offer an advanced 'cross-linked' pre-treated dielectric and shielding above 110 dB. SRC 316-TS also performs well up to 18 GHz.





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## BRANDS

