

# **BLIND MATE** **ANTENNA** *Solutions*



## **for** **Military Applications**

- **Convert Antennas to Blind Mate**
- **Improve Reliability, Maintainability & Serviceability**
- **Simplify Mission Equipment Role Changes**
- **Eliminate the Cable Service Loop**
- **Reduce System Insertion Loss**
- **Transfer Vibration Loads to Airframe**

# Blind Mate Antenna Solutions

The Blind Mate Antenna, a unique product available only from Times Microwave Systems, enables design engineers to convert almost all existing platform Avionic and Electronic Warfare Antennas into Blind Mate "plug-in and forget" quick release antennas, which can be quickly installed and removed from platforms without having to connect or disconnect the coaxial cable. By simply adding a screw-on alignment sleeve, an existing antenna (Blades, Spirals, multi-connector antennas, etc.) is converted to a plug-in device. The alignment sleeve converts the antenna connector to the Blind Mate connector called MNC. The interconnecting coaxial connector is fitted with a mating MNC connector, which is permanently attached to the aircraft structure via a spring loaded receiver sleeve (see illustration below).

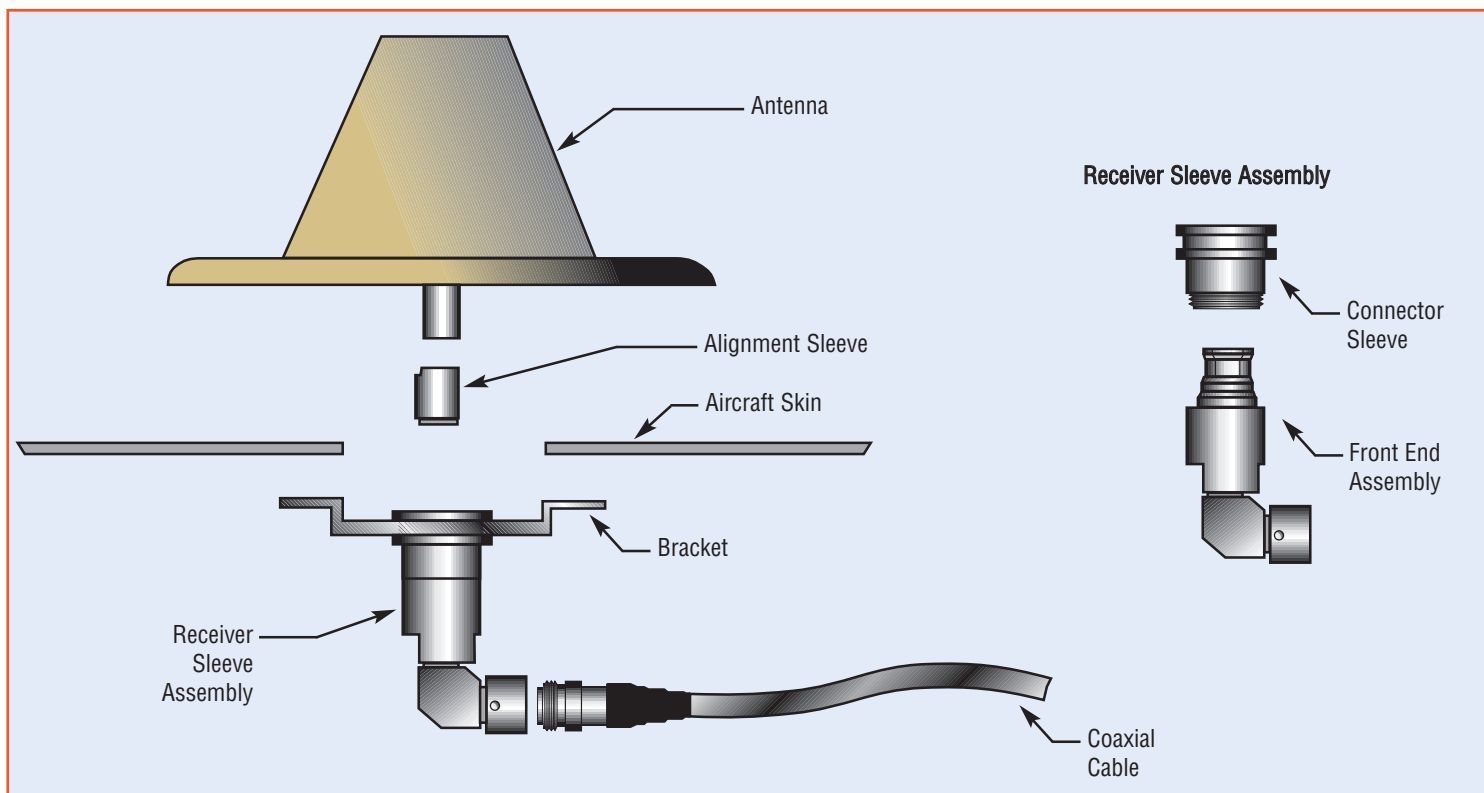
Blind Mate Antennas also provide a solution to the inherent mechanical problems associated with using large diameter, heavy coaxial cable assemblies terminated with

small, fragile connector styles, such as SMA, K or 2.4 mm 40 GHz types at antenna interfaces. These situations have frequently resulted in cable assembly failure due to large mechanical loads presented at the fragile connectors. Platform vibration may even cause these cable assemblies to disconnect from the antenna, resulting in the complete loss of system integrity. The Blind Mate Antenna transfers all mechanical loads from the interconnecting cables to the platform structure via the mounting bracket and receiver sleeve.

Times Microwave Systems is a key supplier of innovative RF/Microwave interconnect solutions for Military Avionics and Electronic Warfare applications in airborne, naval and land based platforms. With over 35 years experience in this field Times is responsible for many advances. Committed to creating innovative solutions to existing problems, Times Microwave Systems' latest development

## Blind Mate Antenna Advantages:

- Occupies less space — antennas can be mounted in areas previously thought impossible, since space is not needed behind the antenna for connecting/disconnecting the interconnecting coaxial cable assembly.
- Eliminates service loops and lockwire requirements — cables remain mounted to brackets even without antenna installed.
- Quick antenna removal /exchange in role change situations — Does not require stowage brackets and dummy connectors.
- Decreases coaxial cable damage — cables are no longer exposed during servicing.
- Improves system performance — without the use of a service loop and without the need for repeated cable flexing when installing and removing antennas, insertion loss can be decreased.





Blind Mate Antenna solutions are uniquely designed for each application. Calculation of bracket stand off distances, spring strengths and alignment sleeve lengths are provided by Times Microwave Systems' engineers for each application – contact us.

## Universal Blind Mate Component Part Numbers

Antenna Connector Type	Female 2.4mm (max freq)	Female SMA (max freq)	Male TNC (max freq)	Female TNC (max freq)	Female BNC (max freq)	Female C (max freq)	Female N (short ver. max freq)	Female N (long ver. max freq)
<b>Alignment Sleeve</b> (Short Style Guide Sleeve)	N/A	18621	N/A	AC4325-2 (18 GHz*)	N/A	N/A	AC4654 (18 GHz*)	N/A
<b>Alignment Sleeve</b> (Long Style)	AC4642 (40 GHz*)	AC4646 (26.5 GHz*)	AC4650 (18 GHz*)	48715 (18 GHz*)	AC4651 (2 GHz*)	AC4652 (8 GHz*)	N/A	48714 (18 GHz*)
<b>Connector Sleeve</b>	AC4643	AC4655	AC4483	AC4483	AC4483	AC4483	AC4655	AC4483
<b>Front End Assy</b> (Non-Replaceable Str)	AC4644 (40 GHz*)	48450 (26.5 GHz*)	N/A	N/A	N/A	N/A	N/A	N/A
<b>Front End Assy</b> (Replaceable Str)	N/A	AC4647 (18 GHz*)	48707 (18 GHz*)	48707 (18 GHz*)	48707 (18 GHz*)	48707 (18 GHz*)	N/A	48707 (18 GHz*)
<b>Front End Assy</b> (Non-Replaceable R/A)	AC4645 (40 GHz*)	AC4649 (26.5 GHz*)	N/A	N/A	N/A	N/A	N/A	N/A
<b>Front End Assy</b> (Replaceable R/A)	N/A	N/A	48708 (18 GHz*)	48708 (18 GHz*)	48708 (18 GHz*)	48708 (18 GHz*)	48743 (18 GHz*)	48708 (18 GHz*)

\* Note: The maximum frequency listed here shows the maximum frequency that this particular component is capable of. The actual frequency of operation may be limited by other components such as the antenna itself, cable chosen or replaceable components other than these.

## Alignment Sleeve Specifications

Component Part Numbers	Description (maximum frequency, may be lower depending on antenna)
<b>AC4642</b>	Female 2.4mm Antenna to Male M24 Interface (Maximum Frequency 40 GHz*)
<b>AC4646</b>	Female SMA Antenna to Male M24 Interface (Maximum Frequency 26.5 GHz*)
<b>AC4650</b>	Male TNC Antenna to Female MNC Interface (Maximum Frequency 18 GHz*)
<b>AC4325-2</b>	Female TNC Antenna, Guide Sleeve Only (Maximum Frequency 18 GHz*)
<b>48715</b>	Female TNC Antenna to Female MNC Interface (Maximum Frequency 18 GHz*)
<b>AC4651</b>	Female BNC Antenna to Female MNC Interface (Maximum Frequency 2 GHz*)
<b>AC4652</b>	Female C Antenna to Female MNC Interface (Maximum Frequency 8 GHz*)
<b>AC4654</b>	Female N Antenna, Guide Sleeve Only (Maximum Frequency 18 GHz*)
<b>48714</b>	Female N Antenna to Female MNC Interface (Maximum Frequency 18 GHz*)

\* Note: The maximum frequency listed here shows the maximum frequency that this particular alignment sleeve is capable of. The actual frequency of operation may be limited by other components such as the antenna itself or replaceable components other than the alignment sleeve.

## ***Our Mission***

TIMES MICROWAVE SYSTEMS designs and manufactures high performance RF and microwave transmission lines for the military, aerospace and telecommunications industries. These products consist of flexible coaxial cable, connectors, accessories and cable assemblies.

We are committed to understanding the needs and requirements of our customers and providing highly engineered, cost effective products. TIMES MICROWAVE SYSTEMS is dedicated to *total* customer satisfaction and superior results for our shareholders in all we do.

***TIMES MICROWAVE SYSTEMS - THE COAX LEADER***



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