



## Install Confidence in your DAS System with RF Industries Low PIM Cable Assemblies

**X-ray inspection assures reliability of Low PIM Assemblies**



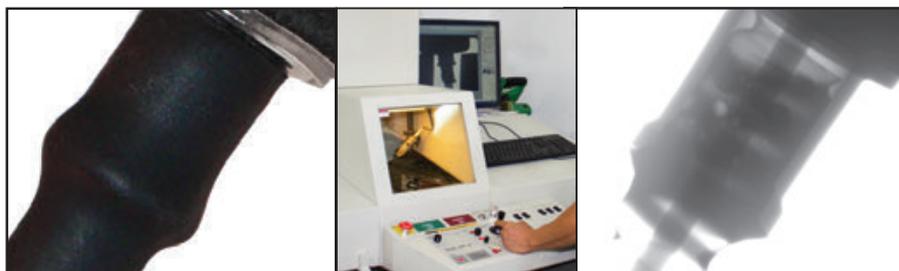
Quality assurance



Quick delivery

MANY FACTORS CONTRIBUTE to the performance of low PIM cable assemblies. In addition to using cable and connectors designed for low PIM, the attachment of the connector to the cable is crucial to performance and long term reliability. The solder joint should be concentric with even flow around the circumference of the center contact and outer ground. Just as important, the solder should cover the entire length of the cable to connector junction. Visual inspection will not recognize solder problems after assembly. PIM testing may discover some problems, but a shallow solder joint may pass initial PIM tests. RF Industries has added X-ray inspection to the fabrication process followed for certified low PIM cable assemblies. Skilled assemblers use advanced soldering equipment and each assembly undergoes in-process and finished article inspections followed by 100% testing for insertion loss, VSWR and PIM rating.

With additional torque applied during installation in the field, stress cracks can be created resulting in PIM introduced in the system. By beginning with a quality certified low PIM assembly from RF Industries, this risk is minimized.



External photo

Xray in process

Xray image

### Low PIM Testing Criterion

- Low PIM cable
- Low PIM connectors
- Concentric solder flow around circumference of center contact
- Concentric solder flow around circumference of outer ground
- Solder covers entire length of junction between cable and connector

## Custom multi-conductor cable harness for industrial laser application meets complex criterion



Design  
services

A MANUFACTURER OF INDUSTRIAL LASERS used for etching integrated circuit wafers required a series of cables and harnesses to connect the various functions of the machine. Included in the requirement was a single entry point for the cables to pass through a bulkhead. The electronic signals for the cabling included RF, power, data and video. Due to the industrial application, the assemblies needed to operate under high vibration conditions and require sufficient shielding to endure an extreme noisy RF environment. RF Industries provided the design, fabrication and testing of the various cables. This included the methodology to encapsulate all cables within a single lightly armored jacket for passing through the bulkhead and yet survive the harsh environment. Design and fabrication were provided by the Multi-Conductor product group of RF Industries in San Diego.



P2RFD-1654-4



In stock



Ready to ship

### New low PIM 7/16 DIN bulkhead adapter now available for wireless infrastructure OEM applications

7/16 DIN CONNECTOR INTERFACE has been the choice for wireless infrastructure applications for its high power and low intermodulation characteristics. RF Industries expands their line of 7/16 DIN connectors and adapters with a female to female bulkhead adapter, part number [P2RFD-1654-4](#).

The adapter is manufactured with a machined brass body, plated with tri-metal (white-bronze) plating for a durable finish with low PIM properties. Double flats are machined on two sides and, along with a silicone gasket, lock washer and hex nut, provides secure mounting to a panel or bulkhead. The O-ring is recessed and provides weather sealing. VSWR is less than 1.2:1 within the operating frequency of 0-8Ghz. PIM rating is better than minus 155 dBc @2X43dBm.



Trivia Question (see last page for answer)  
What are the larger venues for DAS?



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# New Coaxial Cable Assembly guide calls out cables for wireless applications



RF INDUSTRIES' COAXIAL CABLE ASSEMBLIES GUIDE has been revised to include low PIM and plenum rated assemblies as well as all the standard RF cable assembly configurations that have become customer staples. For easier reference, connector interfaces have been incorporated within the chart, so you can quickly identify which combinations of connector to cable are available. The cables listed have been increased from our previous guide and those that are plenum rated, low PIM, fire retardant or direct burial rated have been clearly labeled.

[Access this new guide online](#), or contact RF Industries Sales for your copy.



*Also serves as a connector interface guide*

## RF Industries expands offering of Low PIM 4.1/9.5 (Mini) DIN adapters to include "in-series" variations



RFD-4195-1950



RFD-4195-1952

IN ADDITION TO 8 VARIATIONS of 4.1/9.5 (Mini) DIN to N type and 7/16 DIN adapters, RF Industries has developed 4.1/9.5 (Mini) DIN male to female right angle and straight adapters. The 4.1/9.5 (Mini) DIN is essentially a compact version of the 7-16 DIN with similar electrical performance. Applications include wireless infrastructure sites, indoor/outdoor DAS (Distributed Antenna Systems) requiring low PIM (Passive Intermodulation) performance.

The right angle adapter features a radius internal design that provides constant 50 ohm impedance for optimum electrical performance to 7.5 GHz. Both adapters have large hex coupling nuts on the male interface for easy mating using a torque wrench. All adapters are manufactured with brass bodies and durable non-tarnish tri-metal (white bronze) plating with a PIM rating of less than or equal to -160dBc using 2 tones at 20 watts.

4.1/9.5 DIN male to female straight, part number [RFD-4195-1950](#)

4.1/9.5 DIN male to female right angle, part number [RFD-4195-1952](#)



In stock



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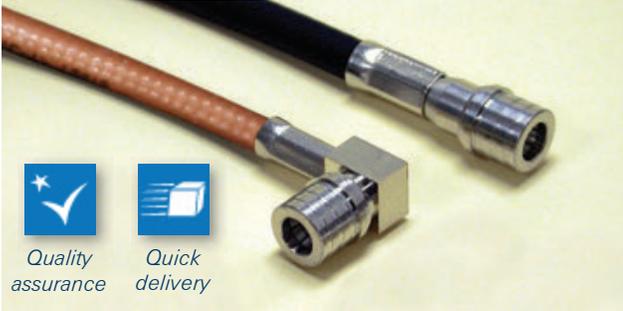
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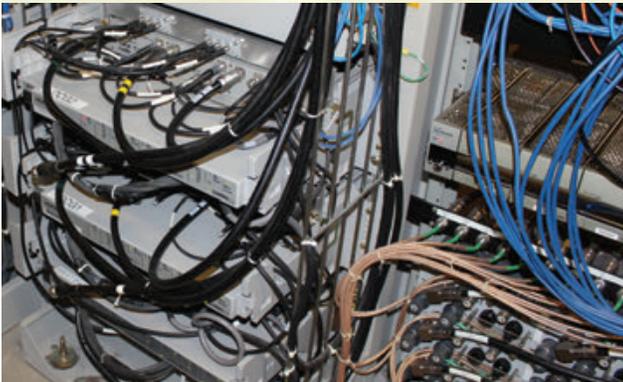
## QMA high performance, low loss cable assemblies excel for wireless DAS applications



Quality  
assurance



Quick  
delivery



DAS installation using QMA cable assemblies.

QMA CONNECTORS FEATURE a snap lock connection as an alternative to SMA connectors with a threaded connection. The QMA connector, with a quick connect/disconnect feature along with excellent electrical performance up to 6 GHz, is used in wireless infrastructure applications including DAS (Distributed Antenna Systems).

RF Industries manufactures QMA coax cable assemblies with Time Microwave LMR®-240 and LMR-195 low loss, high performance cables and RG-142 double shielded cable. Plenum rated RG-142 is also available. Cables are terminated with QMA straight and right angle connectors as well as other connectors, including N, SMA, TNC, BNC and 7/16 DIN. Assemblies are custom made to customer required lengths. All assemblies are electrical tested to assure performance.

LMR is a registered trademark of Times Microwave Systems.

### Connectors available separately



In stock



Ready  
to ship

### Trivia Answer



*Although DAS in stadiums make the news, airports and high rise office buildings are 4 times the potential opportunities. There are only 518 stadiums in the world with over 20,000 seats.*

*— Mobile Experts via DAS and Small Cell Congress*

### INSIDE **RF** INDUSTRIES

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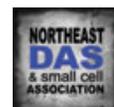
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