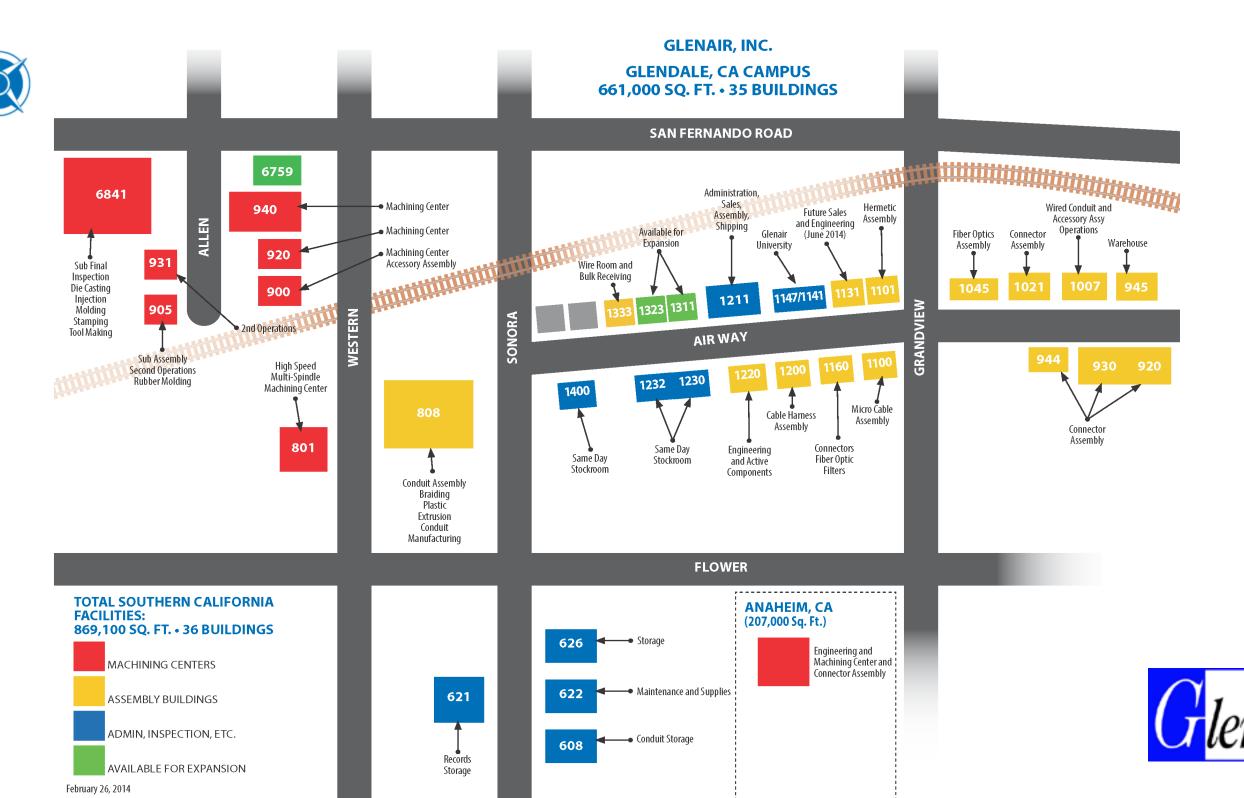




#### New Interconnect Solutions Seminar - 2015



#### **Glenair Southern California Facilities**



#### Quality Management System

AS9100 SAE and ISO 9001 Certified



- QMS audits
- Plus customer audits
  - Boeing
  - Airbus
  - Raytheon
  - Northrop Grumman
  - Others

# Glenair is THE High-Reliability, High-Quality Standard

- Depth of qualifications and approvals from over
   50 years in the business
- Deep fluency in materials selection, machining, plating, assembly, test and certification
- Proven interconnect solutions that solve major performance problems
- "On the print" of hundreds of bench-mark programs





#### Series 20 Super-Twin™ Rack-and-Panel

#### Lightweight composite modular connector

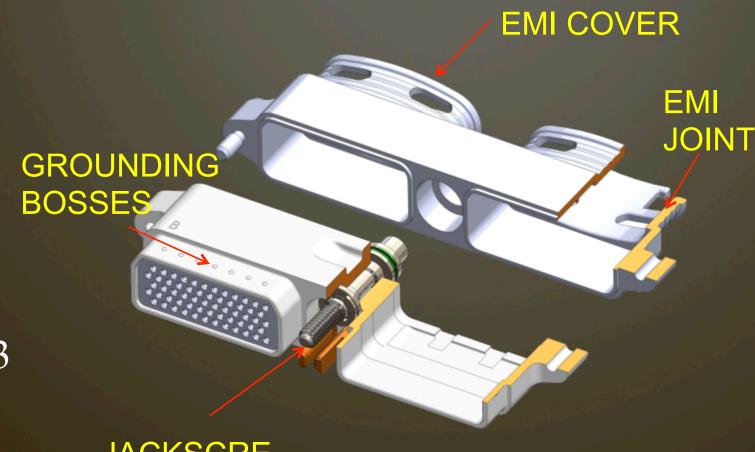
- Rack-and-panel interconnect used in avionics bay applications
- Faster termination and assembly of large pin-count rectangular connectors
- Replaces heavier and larger formfactor legacy connectors



#### Lightweight Series 20 Super-Twin™

#### Technical Overview

- Composite or aluminum shell
- Series 200: modular inserts, composite shell, integral strain relief/backshell
- Series 201: separate backshell, crimp or PC tail, typically composite shells.
   Mates with Sr. 200
- Modular inserts support a wide variety of short, Series II type contacts from #23 to #8
- Polarization both shell and inserts
- Center jackscrew self-locking hardware



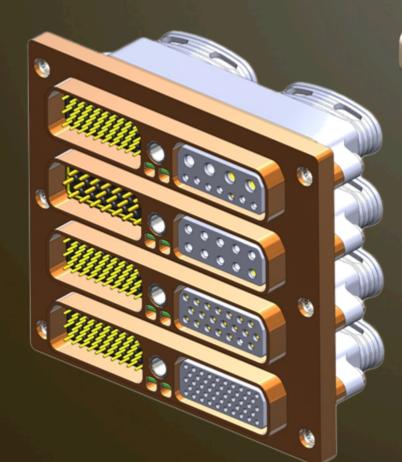
JACKSCRE W, ONE PIECE

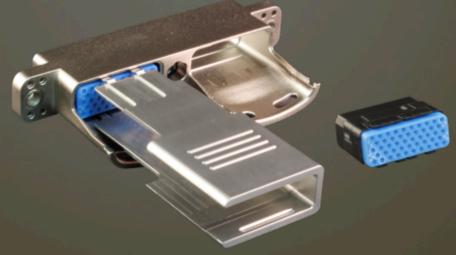


#### Lightweight Series 20 Super-Twin™

#### Product Advantages

- Flexible harness design
- Fast assembly and repair
- Hybrid contact layouts
- Environmental seals
- Keyed and keystoned inserts
- Industry-standard material





EASY INSERTION AND REMOVAL





#### Lightweight Series 20 Super-Twin™

#### Weight Savings

| Series 20 Weight Est | imate            |       |     |               |               |                      |          |
|----------------------|------------------|-------|-----|---------------|---------------|----------------------|----------|
| Part Number          | Description      | grams | Qty | Mated<br>pair | Qty/<br>plane | Weight/<br>plane (g) |          |
| 201-xxxP2-XMD        | Plug Shell       | 13    | 1   | 13            | 117           | 1521                 |          |
|                      | Backshell, Split | 15.8  | 1   | 16            | 117           | 1849                 |          |
| 201-xxxR2-XMD        | Receptacle shell | 17    | 1   | 17            | 117           | 1989                 |          |
|                      | Backshell, Split | 15.8  | 1   | 16            | 117           | 1849                 |          |
| 200-005P2-60A        | Pin Insert       | 5.2   | 2   | 10            | 215           | 1118                 |          |
| 200-006S2-60A        | Socket Insert    | 6.8   | 2   | 14            | 215           | 1462                 |          |
|                      |                  |       |     | 86 g          |               | 9787 g               | 21.6 lbs |



#### **Glenair Shield Termination System**

#### Reduced labor / lighter material shield termination solutions





- 1. Slim Standard and Nano Band-Master ATS bands
- 2. Do-Drop-In Swing-Arm backshells and clamps
- 3. Tubular ArmorLite and AmberStrand braided sleeving and shield sock assemblies

#### **Glenair Shield Termination System**

#### Technical Overview

System features high-performance band technology, shield sock backshells, and Swing-Arm technology

Fast, reliable and qualified EMI/RFI shield termination

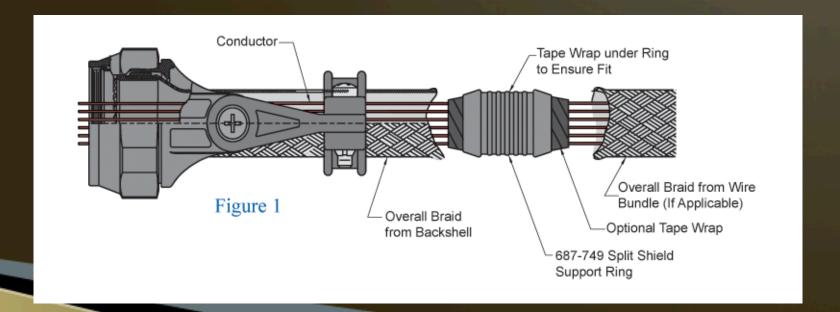
 Microfilament braid, composite hardware, and reduced form-factor bands save significant weight



#### **Glenair Shield Termination System**

#### Product Advantages

- All materials designed for optimal weight reduction
- Banding is faster and more reliable than all other methods
- Microfilament composite and stainless steel braid delivers exceptional EMC performance compared to tin copper
- Repairable, re-enterable solutions





### SuperNine™

#### The "Better Than QPL" D38999 Series from Glenair



1500 Mating Cycle Environmental



High-Speed Environmental

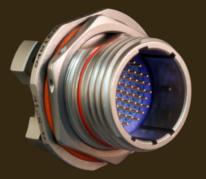


High-Pressure Pin and Socket Hermetic



Ruggedized RJ45 and USB





Special PCB Series



Connector Saver
Go-Betweens



Hermetic and Environmental Feed-Thrus

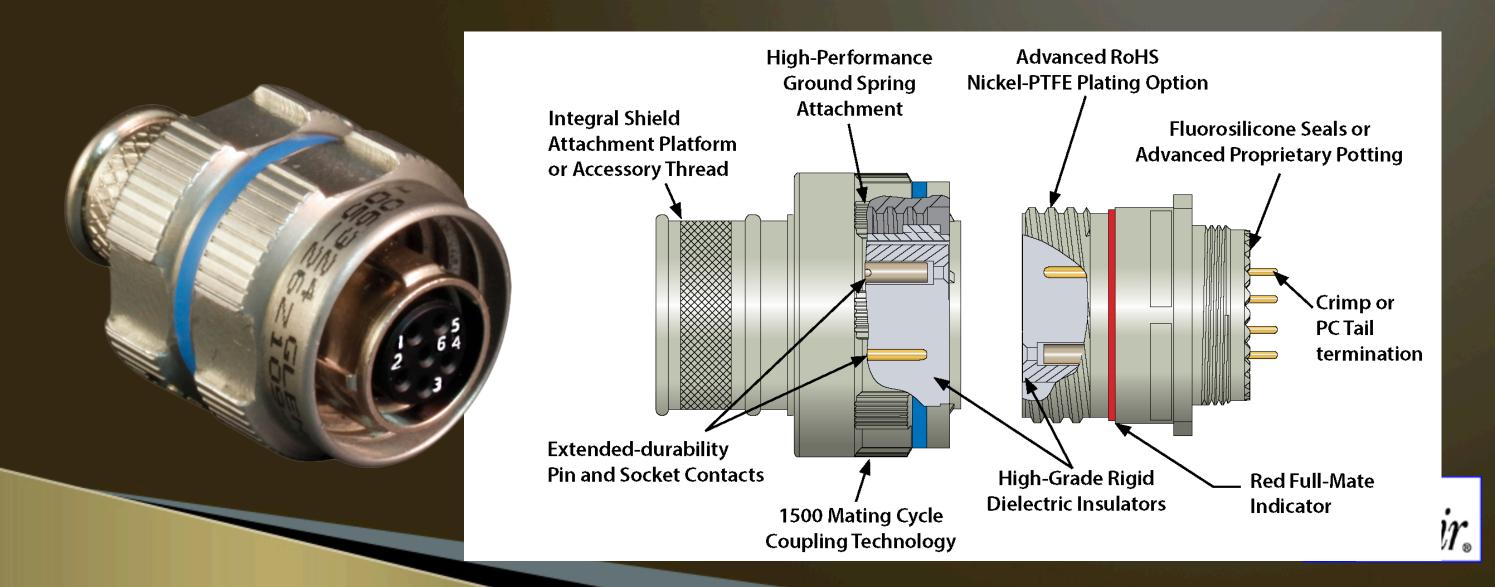


EMI/RFI Filters and TVS Diode EMP Connectors





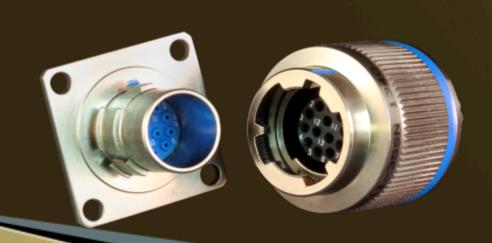
# SuperNine<sup>™</sup> D38999 Environmental 233-205 & 6



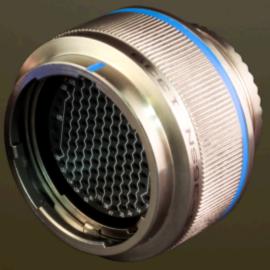
#### MIL-DTL-38999 Series IV

High-Performance Commercial and QPL Versions

- Commercial version ready for May 2014 launch
- QPL qualification process underway with target date
   Q1 2015 completion







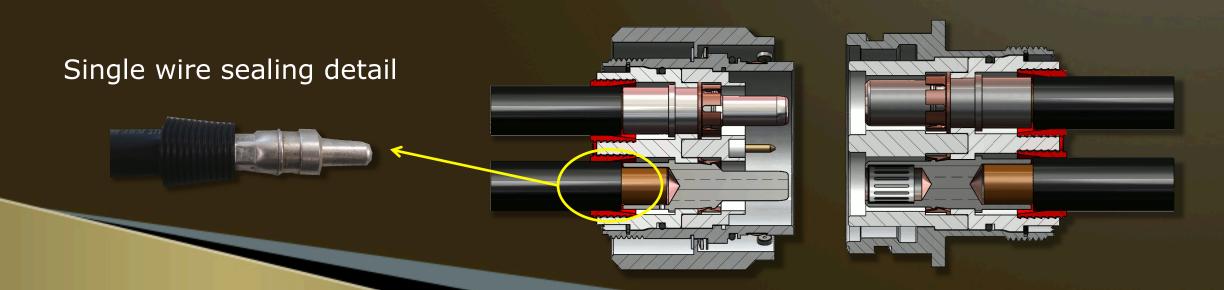


# Super ITS Advanced Performance 5015 Reverse Bayonet



### Super ITS (Series 921)

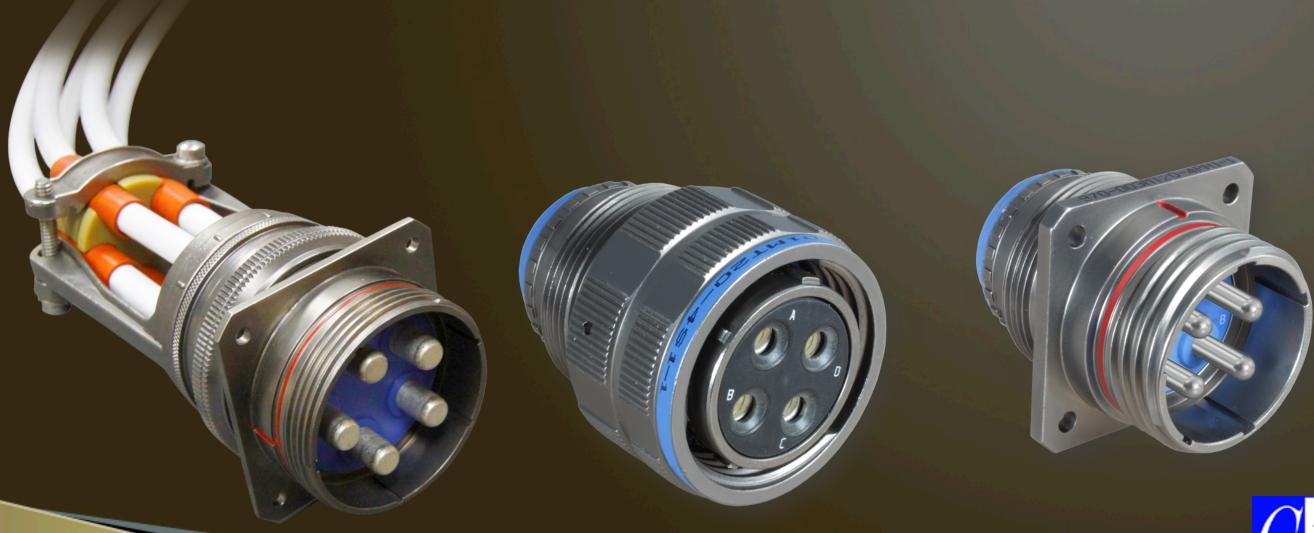
- Power Contacts: Low Insertion Force, High Ampacity, Front Release
- Rigid Insulator with Internal Retention Clip
- Aluminum, Stainless Steel and Marine Bronze Shells with 3 Polarization Keys
- Plating: Cadmium, Nickel, Zinc-Nickel, Black Hard Anodization, Black Electrodeposited Paint
- Silicon O-Ring and Single Wire Seal





### Series 970 PowerTrip™

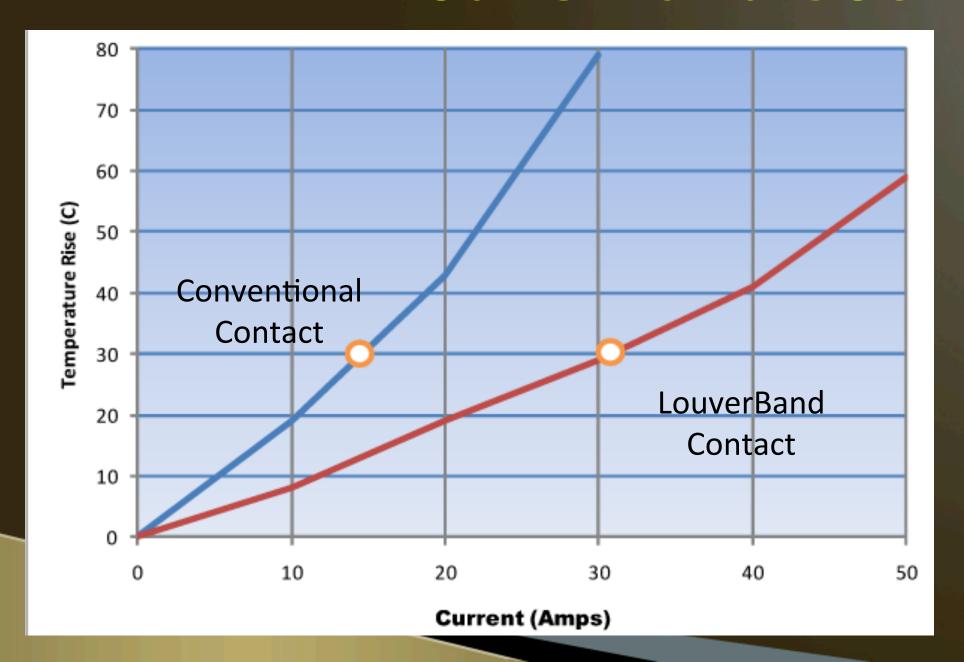
The Power Connector for Extreme Environments



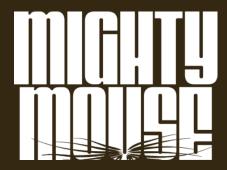


### Series 970 PowerTrip™

#### LouverBand Socket







The New Industry Standard for Reduced Size and Weight Applications



Series 800 UN Thread



Series 801 Double-Start



Series 802 AquaMouse



Series 803 Bayonet



Series 804 Quick-disconnect



Series 805 Triple-Start



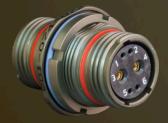
Hermetic



**Filter** 



Fiber Optic



Feed-Through



High-Speed



811 High Density



824 Locking Push-Pull









Cobra



**Ultra-Twinax** 



Size #8





### New Mighty Mouse Cobra

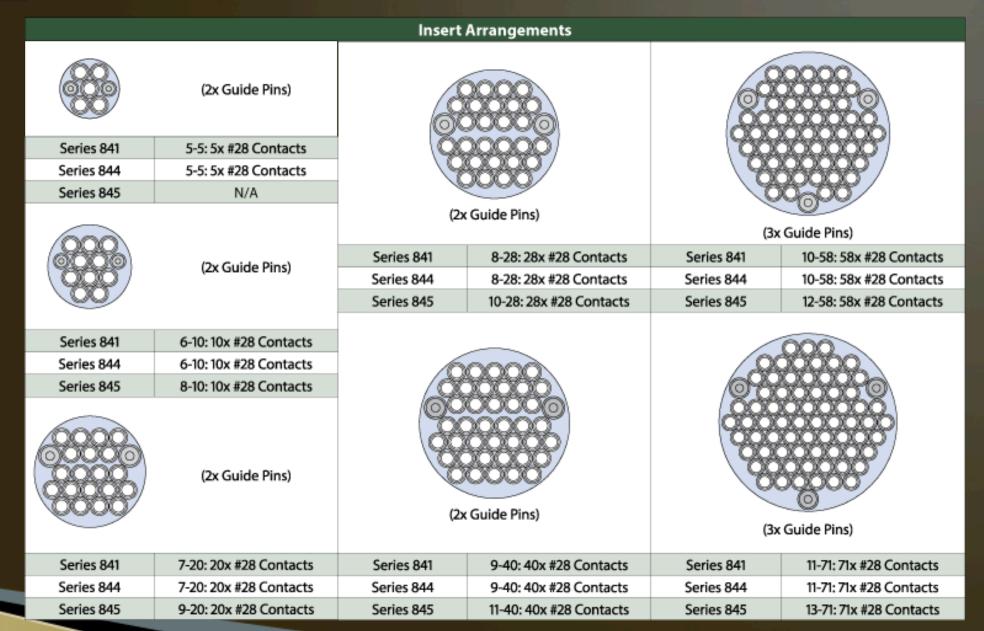


# New Series 824 Mighty Mouse Locking Quick Disconnect

| 5   | pecifications                             |
|---|---|
| Current Rating                              | #23 5 AMPS, #16 13 A., #12 23 A.          |
| Dielectric Withstanding Voltage             | #23 500 VAC RMS, #12 and #16 1800 VAC RMS |
| Insulation Resistance                       | 5000 megohms minimum                      |
| Operating Temperature                       | -65° C to +150° C                         |
| Shock / Vibration                           | 100 g / 16 g                              |
| Shell-to-Shell Resistance,<br>Nickel Plated | 2 milliohms maximum                       |
| Durability                                  | 2000 mating cycles                        |
| Breakaway Force                             | 60 pounds minimum                         |



# New Mighty Mouse "Stinger" Contact Arrangements

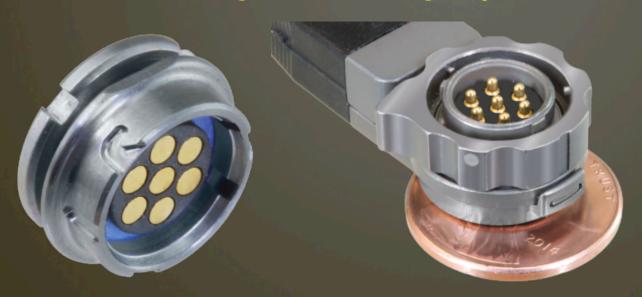


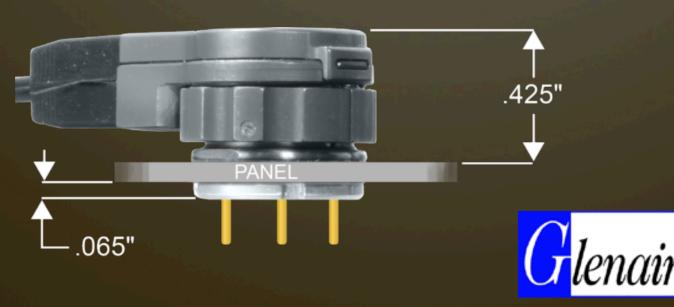


#### New Series 80 Mouse-Bud<sup>TM</sup>

Vest-wearable or cable-to-cable tactical pogo pin Mighty Mouse

- IP67, spring contact interface
- 5 Amps
- Nano Band
- 2500 mating cycles
- Cobra style plug for optimum EMI
- PC tail or solder cup receptacle
- In-line, square flange in process
- Flex assy for wire organization





#### **New Mighty Mouse Aerospace Connector**

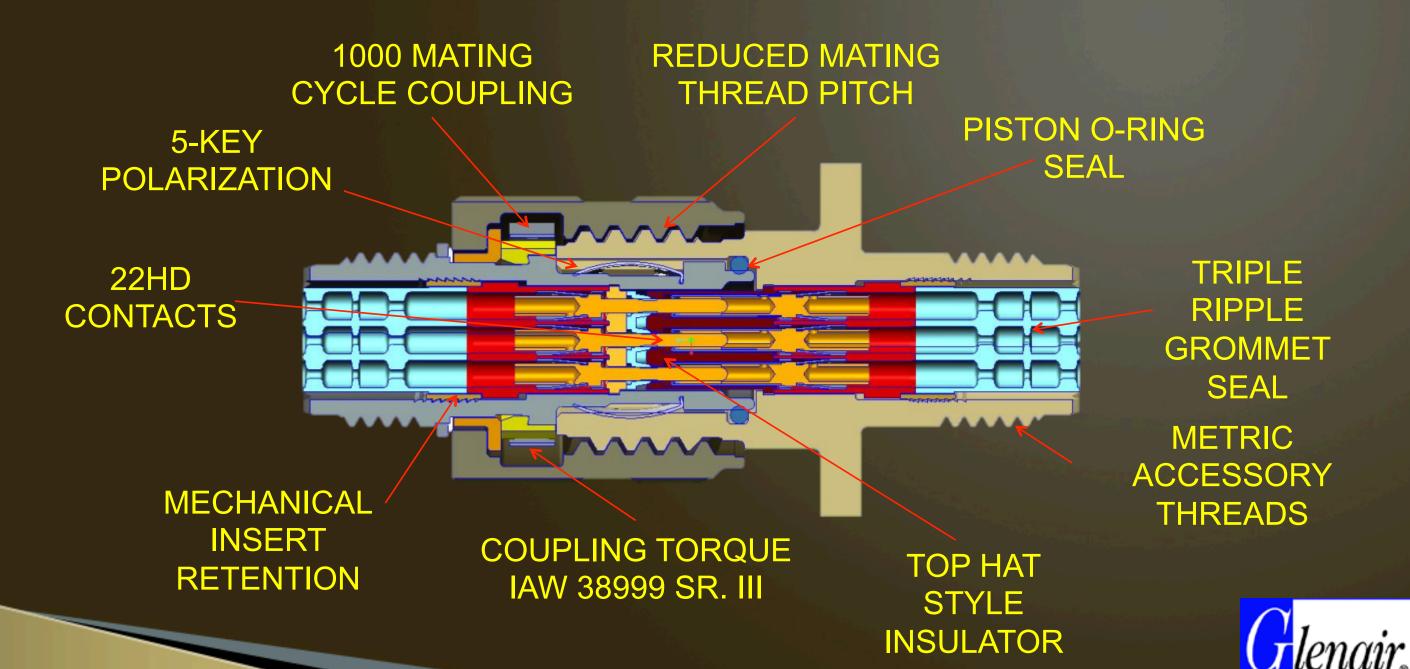
#### True 38999 performance in a reduced size and weight package

- Signal/sensor interconnect used in both pressurized and non-pressurized airframe applications
- Meets key 38999 performance benchmarks (altitude immersion, vibration and shock, mating durability)
- Replaces legacy large form-factor connector series (38999, 5015, 26482)





#### New Mighty Mouse Aerospace Connector



#### **New Mighty Mouse Aerospace Connector**

#### Product Advantages

- Significant EWIS size and weight savings
- Eliminates decoupling, particularly in small shell sizes
- Faster installation and routing of harness assemblies due to reduced form-factor
- Innovative mechanical design delivers enhanced corrosion protection and longer life for lower total installed cost





#### El Ochito

"The Little Eight:" 10G Ethernet Ready

- Glenair solution
- Dramatic size and weight reduction when wire and connector packaging is included
- 100% Drop-in solution for 38999, ARINC and Mighty Mouse
- Twice the density of Quadrax, Split Quadrax or other shielded solutions



### El Ochito® Versus Quadrax

PIC DataMates Lite: 50% Lighter than Tensolite Solution

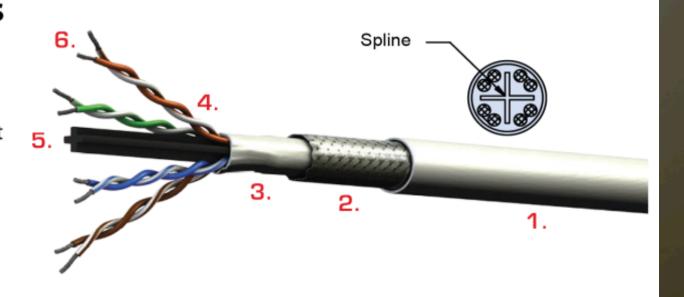
#### GLENAIR SUPPLIED CABLE FOR EL OCHITO® APPLICATIONS 963-003-26

#### CABLE PHYSICAL DATA

- Conductors: 26AWG stranded SPC
- Shield coverage: 80% (braid)
- Temperature: -55°C to +200°C
- Outer diameter: 0.220 (5.588mm)
- Minimum bend radius: 1.13 (78.702mm)
- Weight (lbs/100 ft): 3.05 (4.54 kg/100m)

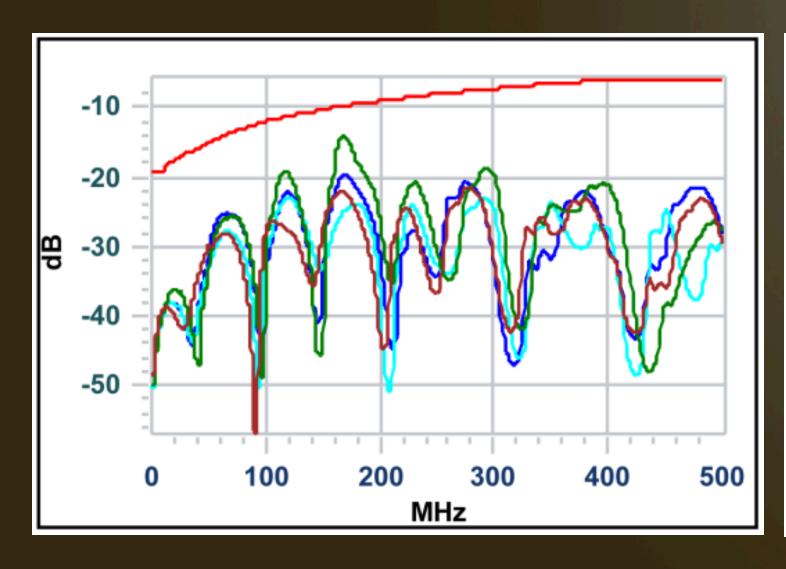
#### CABLE CONSTRUCTION

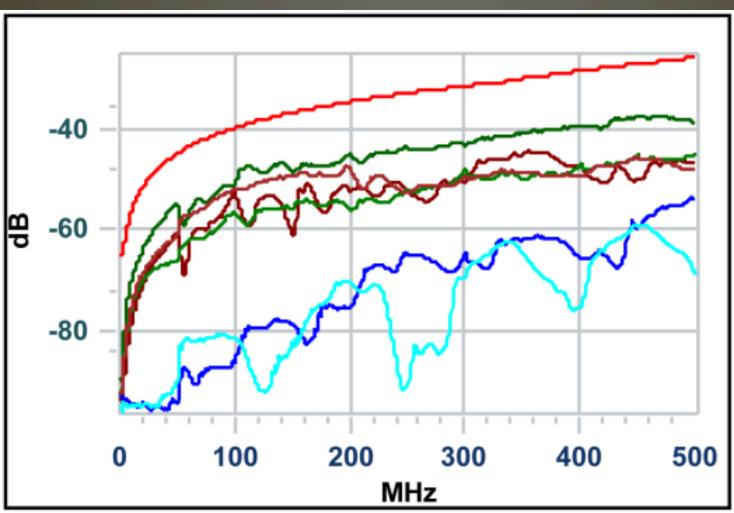
- 1. White PTFE laser-printable jacket
- 2. Silver-plated copper shield
- 3. Fluoropolymer tape
- 4. PFA insulation
- 5. Fluoropolymer spline
- 6. Silver-plated copper conductors





#### El Ochito<sup>®</sup> Performance







# El Ochito Connector Packaging

SuperNine (MIL-DTL-38999 Series III) El Ochito







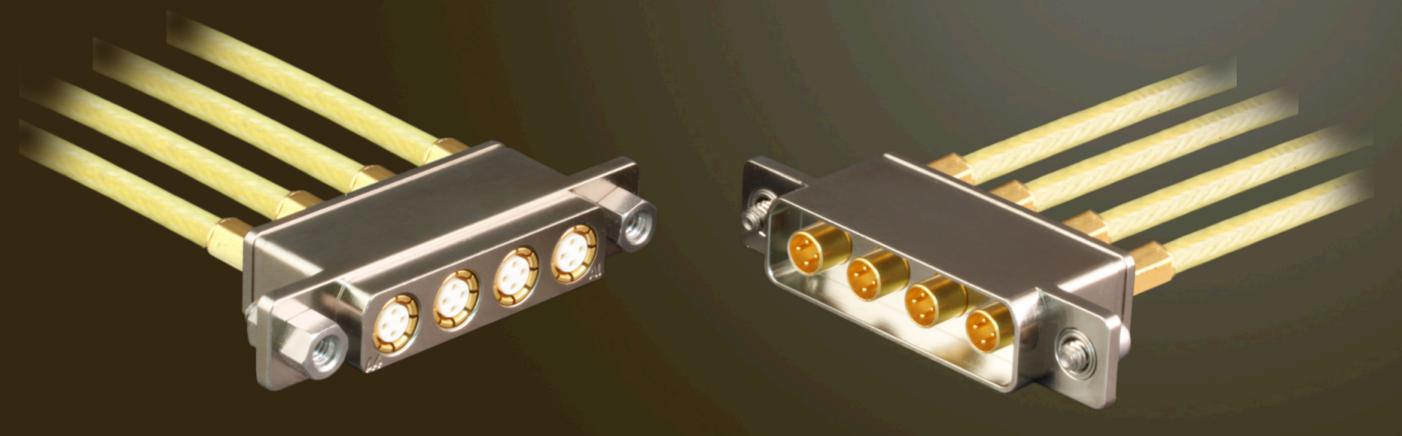
# El Ochito Connector Packaging



Mighty Mouse El Ochito



# El Ochito Connector Packaging



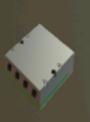
Series 79 El Ochito



#### **Glenair Opto-Electronics**

*Inside the box* 

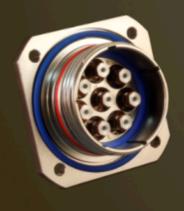






At the panel







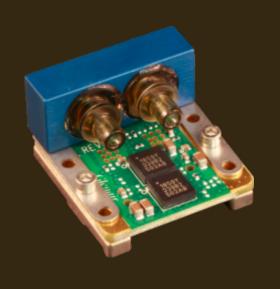


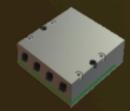


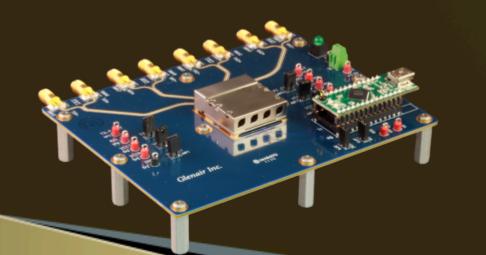


#### Inside the Box

PCB-Mounted E-O Modules (XCVR, TX, RX)







- Up to 12.5 Gbps,
- SMF & MMF Solutions
- Pluggable, Small & Rugged
- Solutions with ALL Glenair fiber-optic connector and cable types



#### At the Panel

Input/Output E-O Conversion



- Conversion in the Connector
  - Permits legacy upgrades
  - No need for Fiber "Inside the Box"
- Up to 5 Gbps today
- Ethernet, Video, etc.
- Available NOW



#### Outside the Box

E-O Media Converters

- Ethernet MC
- Video MC
- Aggregation MC



Customer Equipment

Multiple Signals On Copper Glenair Signal
Aggregation
Unit

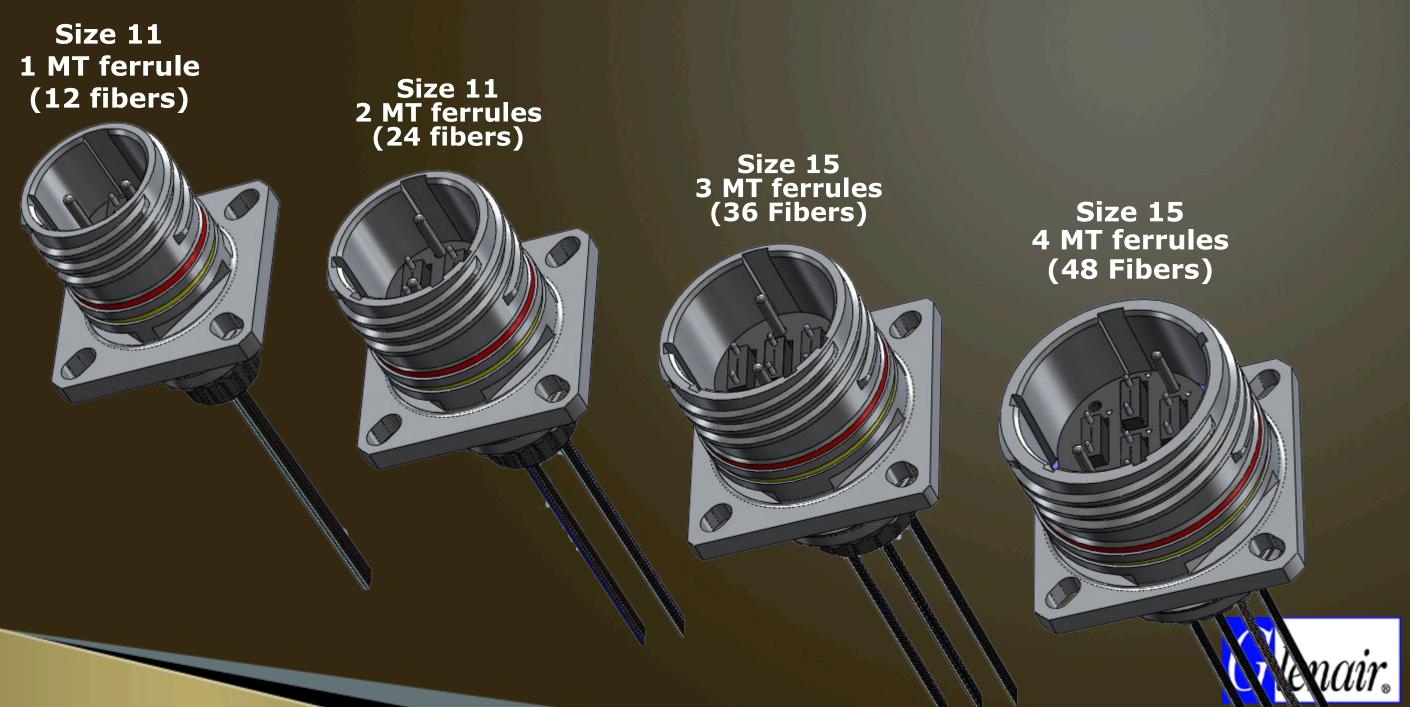
Optical Fiber
Or Ethernet

Glenair Signal Aggregation Unit

Multiple Signals On Copper Customer Equipment



### New MTG D38999 F/O Connector



### GMA (HMA Type) Expanded Beam

Glenair Series 185-002 IAW M83526/20 and /21

- Single and multimode
- Hermaphroditic
- Intermateable with all
   M83526/20 and /21 connectors
- 2 and 4 channel arrangements





#### **ARINC 801 Avionics Connectors**

ARINC 801 Circular Connectors, all shell sizes





#### GMLM = MasterLatch™ Locking Micro-D

#### Low Insertion Force Thumb-Latch Micro-D

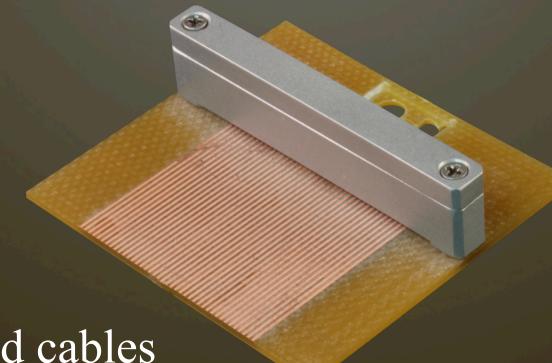
- Plug connector with latch (size 9 37)
- Receptacles
  - In-line,
  - Circuit Board
  - Rear Panel Mount





# AlphaLink: High-Performance Board Connector

- Low Profile pogo-pin headers
- Surface-mount and PC tail connectors
- High-density .050 centers
- Avionic shock/vibration
- Tolerate solder reflow
- 2-3 Amp current rating
- Can be terminated to both flex, PCB's and cables

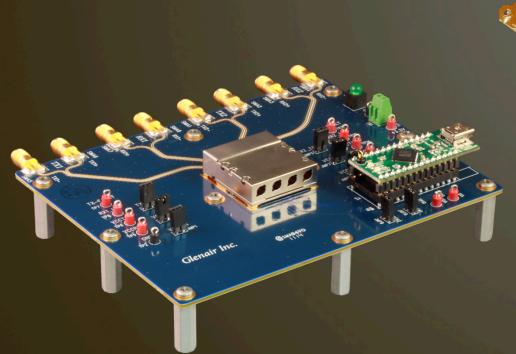




#### Flex/PCB Interconnect Assemblies







Rigid Board
Assemblies



Rigid Flex Assemblies



#### **Advanced Materials and Platings**

- Weight savings
- Reduced maintenance and repair
- Longer system life
- Improved functionality (for example, connector mating)
- Standards compliance







#### New Interconnect Solutions Seminar - 2015