

Glenair®

SPACE-GRADE INTERCONNECT SOLUTIONS

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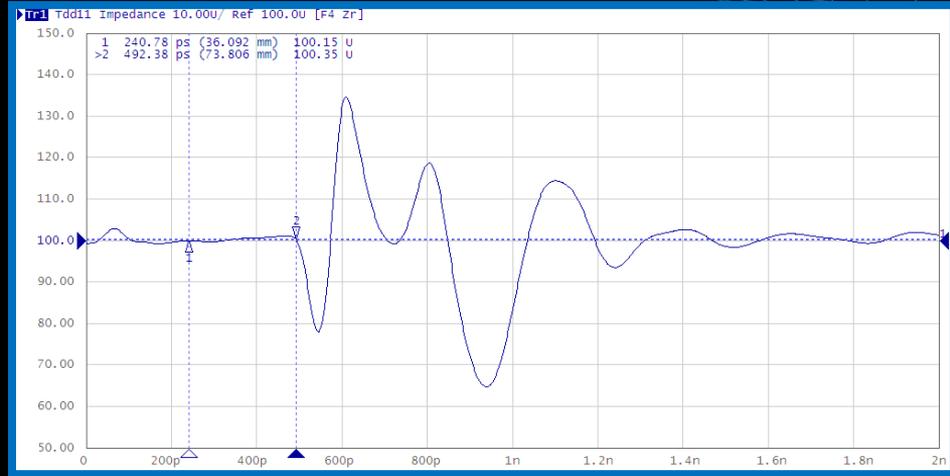
Glenair interconnect solutions for space – focus session, High Speed GMMD interconnect

- The ever growing demands on industry for faster communication speeds has been a challenge for all over the years.
- In support of industry Glenair have developed a whole range of circular and rectangular interconnect to support your High Speed Interconnect needs.
- Today's presentation will focus of the Glenair GMMD high speed Micro D connector portfolio.



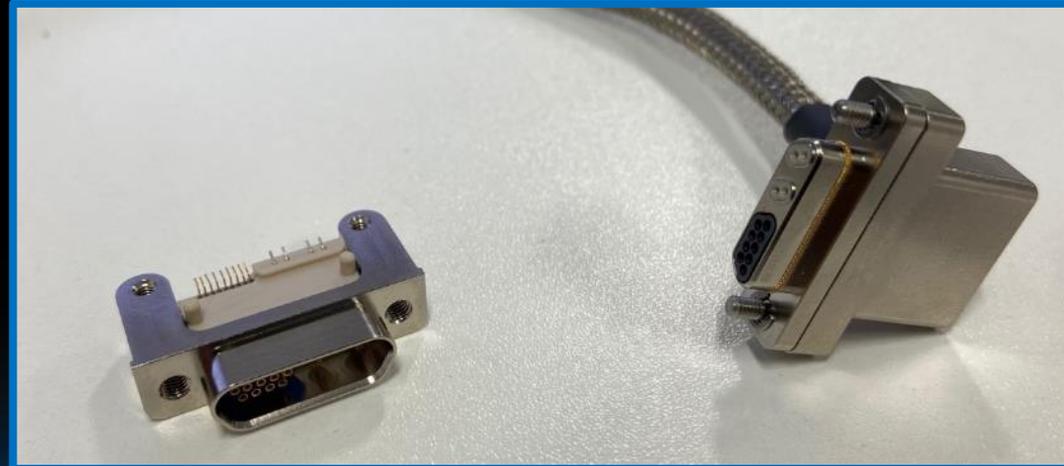
Standard micro-D

- Micro-D format good for low data rate (<1Gb/s) but:
 - Impedance too low for adjacent contacts
 - Poor shielding between contacts
 - Cross talk and impedance not considered on printed circuit board (PCB) and wire terminations



GMMD – Modular Micro-D

- New high speed micro-D hybrid to offer for high data rate applications
 - 10Gb/s
 - Straight and 90°
 - PCB to cable, PCB-PCB, cable-cable
- Surface Mount Technology (SMT) tails
- Low cross talk
- Balanced impedance
- #24 discrete, #30 data contacts

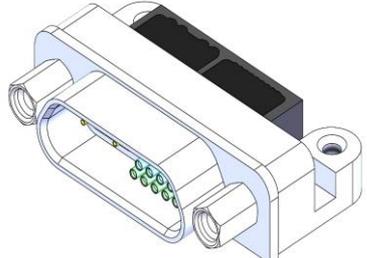
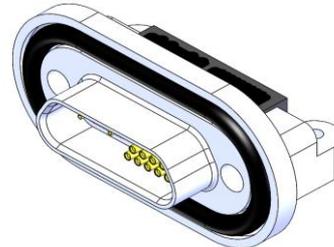
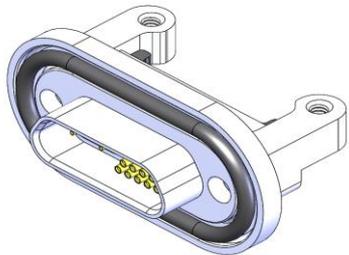
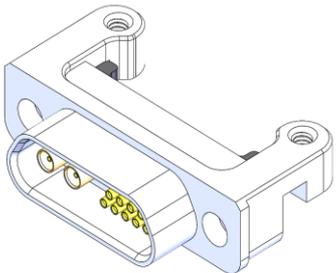
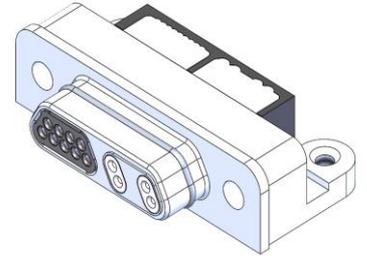
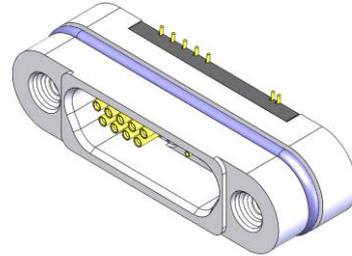
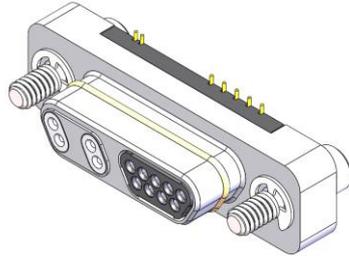
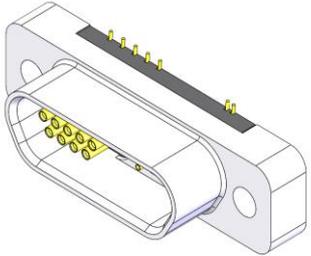
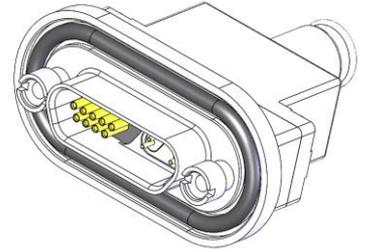
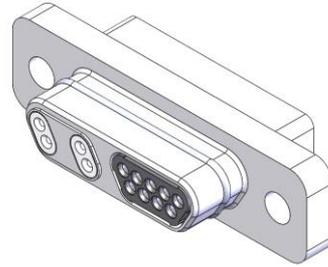
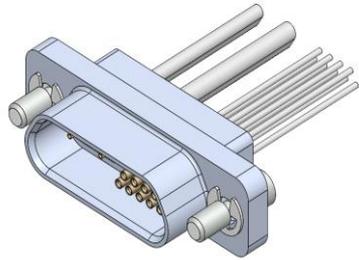


Plug connectors

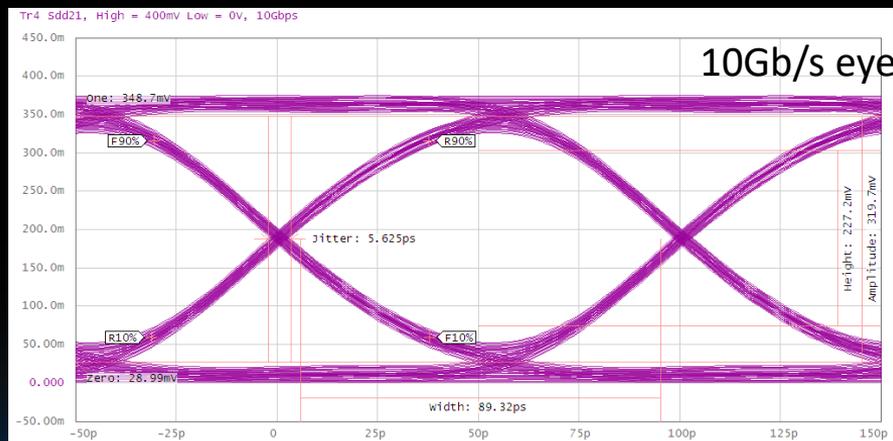
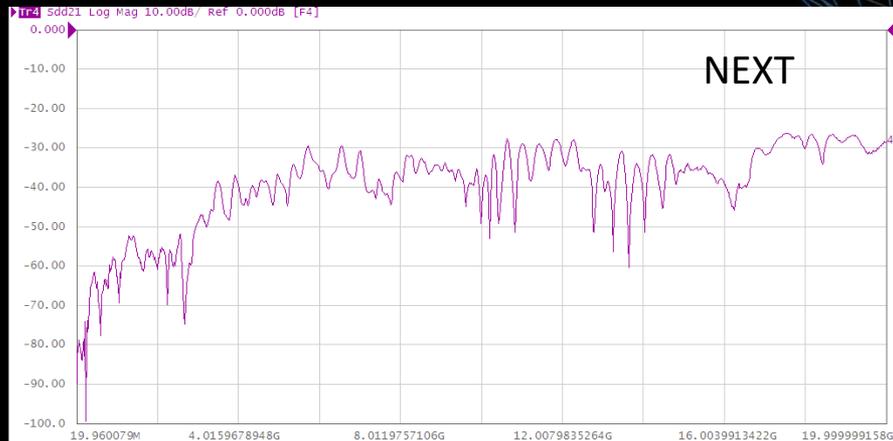
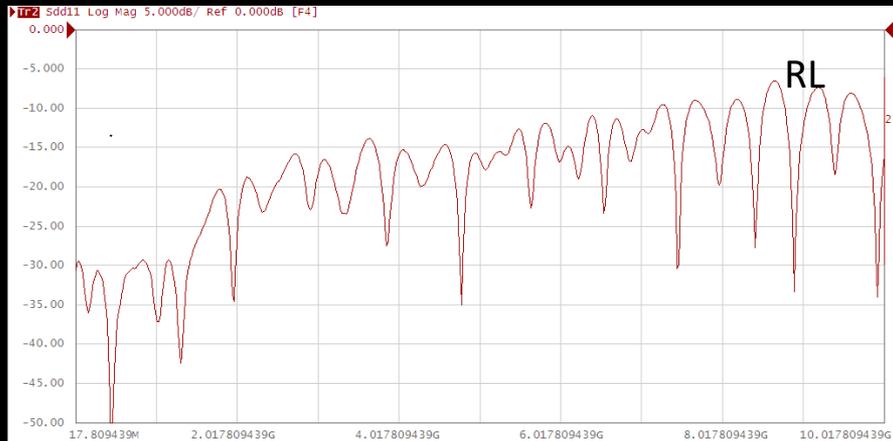
- Canted coil spring included on plug nose to ensure low resistance ground path from cable screen to box ground/PCB
- Glenair made cable assemblies ensure highest quality



Shell types

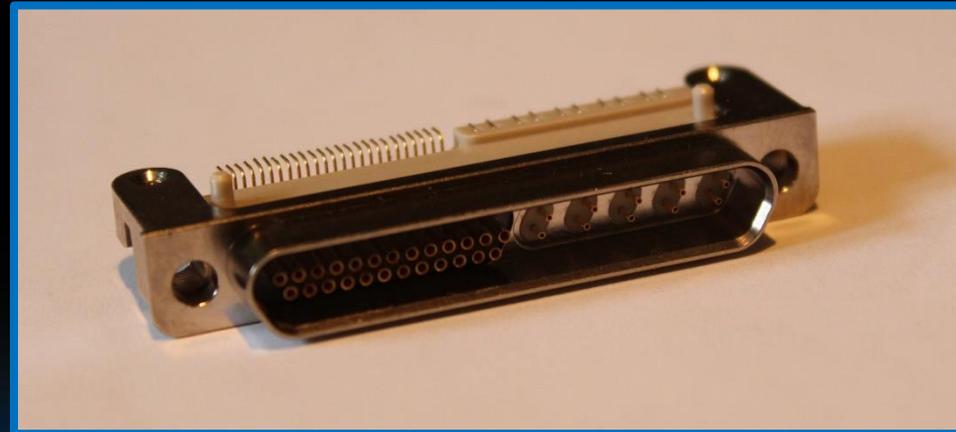


Signal Integrity – VR to VR via 250mm cable



Variants possible

- Shell sizes from 9 to 67 to house any number of twinax pairs and low speed insulator modules
- 50 and 75 Ω coax modules
- PCB to PCB options
- Standard micro-D backshells



Micro-D with coax

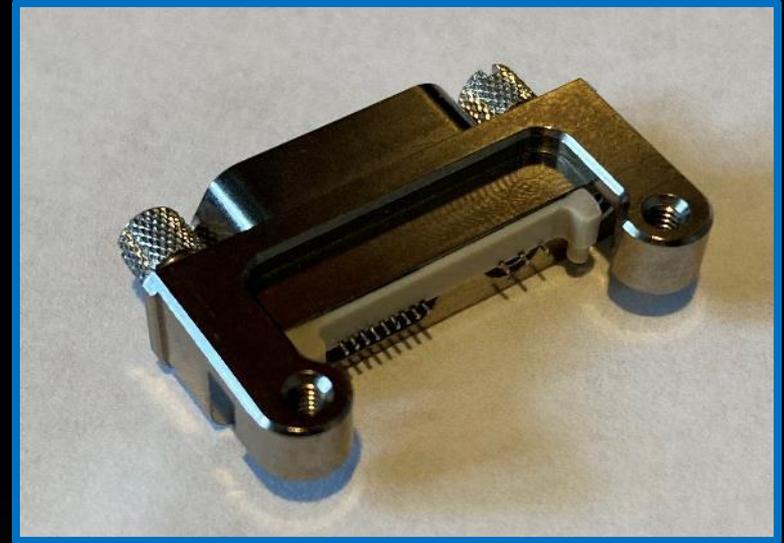
- As an addition to the GMMD range the coax contact is now included
- For RF up to ~20GHz
- Plug cable assemblies made by Glenair terminated to whatever contact needed at the other end, or a flying lead



- 50 and 75 Ω options available

Coax receptacle

- End launched PCB termination SMT
- Arrangement tray to rear of receptacle ensures precise contact to pad alignment
- Cabled receptacle available to RG178/9 or semi rigid cable UT047 or flexible PT047



Coax plug

- Shown here with no backshell, but standard micro-D backshells can be used



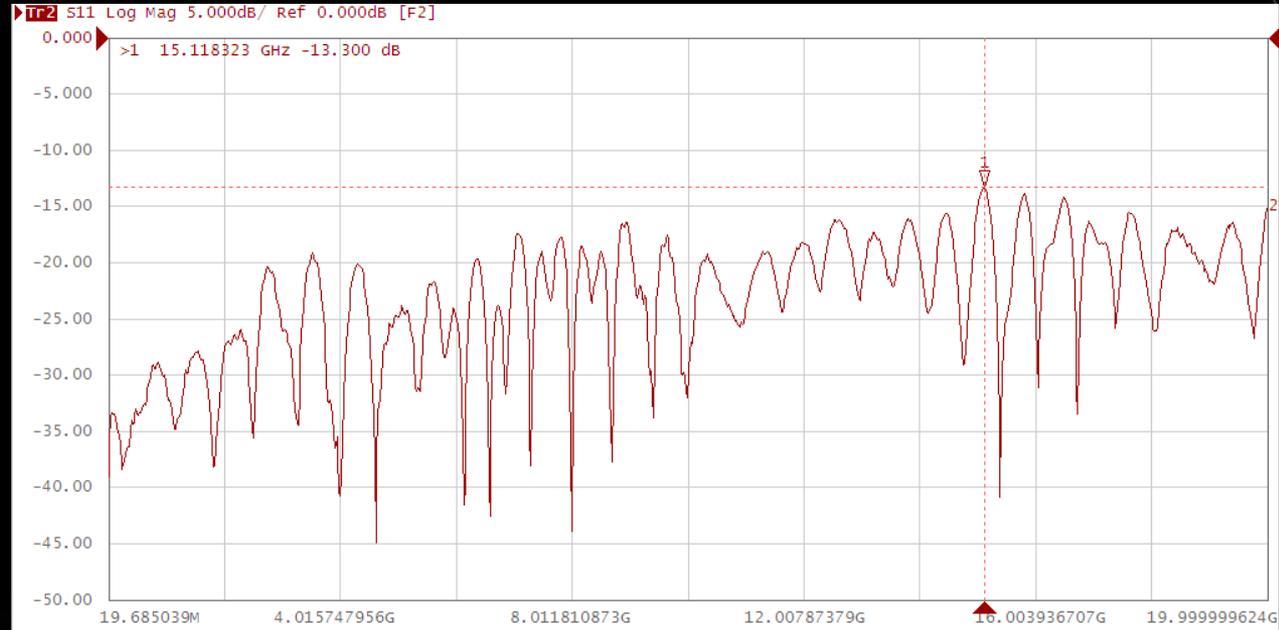
Coax contact

- Centre conductor using a nano contact
- Shield outer 2mm OD
- Housed in an insulating bush to isolate the return path from shell ground
- Hybrids with discrete lines and twinax if required



Coax test data

- PT047 flex cable, 200mm terminated to SMAs both ends
- VSWR 1.55 at 15.1GHz



Coax density

- Examples possible with GMMD range
 - 2 x coax in a shell size 9
 - 4 x coax in a shell size 15
 - 2 x coax plus 9 discrete in shell size 21
 - 8 x coax plus 9 discrete in shell size 51
 - 8 x coax in a shell size 31
 - 16 x coax in a shell size 67

GMMD Summary

- Rugged, proven contact system (twist pin)
- Catalogue hardware
- Low cross talk, high bandwidth lines, 1,2,3,-16 of... up to 10Gb/s
- RF contacts for up to ~20GHz
- Straight and 90° receptacles



GMMD Summary

- SMT receptacles for simple PCB mounting and optimum high speed performance
 - Materials used compliant with high temperature lead free soldering processes
- Nickel or gold plated shells and backshells
- NASA and ESA screening possible
- All outgassing compliant construction