



Physical layer SpaceWire router aboard the James Webb Space Telescope (NASA)

SpaceWire Cable Assemblies

Flight- and lab-grade SpaceWire qualified cable assemblies for IEEE 1355 space network node interconnection of routers, switches, recorders, transceivers, and other physical layer devices

The success of any space mission begins with reliable data transmission and Glenair SpaceWire cables, built to meet the strict standards set forth by ECSS-E-ST-50-12C make this a reality. Our SpaceWire cables offer bidirectional, high speed data transmission rates up to 400 Mbits/s while significantly reducing cross talk, skew, and signal attenuation. By incorporating a serial, point-to-point cable, with low voltage differential signaling (LVDS) reduced costs are realized through an easily integrated data transmission cable. These features allow SpaceWire cables to be incorporated across various satellite data transmission programs without the expense of costly design customization.

Glenair SpaceWire assemblies begin with a high performance cable built with expanded polytetrafluoroethylene (ePTFE) insulation. This material allows for low-loss transmission of LVDS signals, maximizing data-rates while allowing for the implementation of standard hardware protocols, thus eliminating the need for design customization and long lead time cable projects.

TYPICAL USES INCLUDE

- EGSE applications
- Radar sensor systems
- Hi-resolution camera equipment
- Sensor, mass-memory unit, and telemetry subsystem interconnections

APPROVED FOR USE BY:

- ESA
- NASA
- JAXA
- RKA

CONNECTOR/CABLE

- Laboratory and space-grade versions available
- Qualified MIL-DTL-83513 Micro-D connectors
- Gold-plated copper alloy TwistPin contacts
- Basic cable, 4 twisted pair cables and a ground
- Epoxy resin potting
- EMI banding backshell

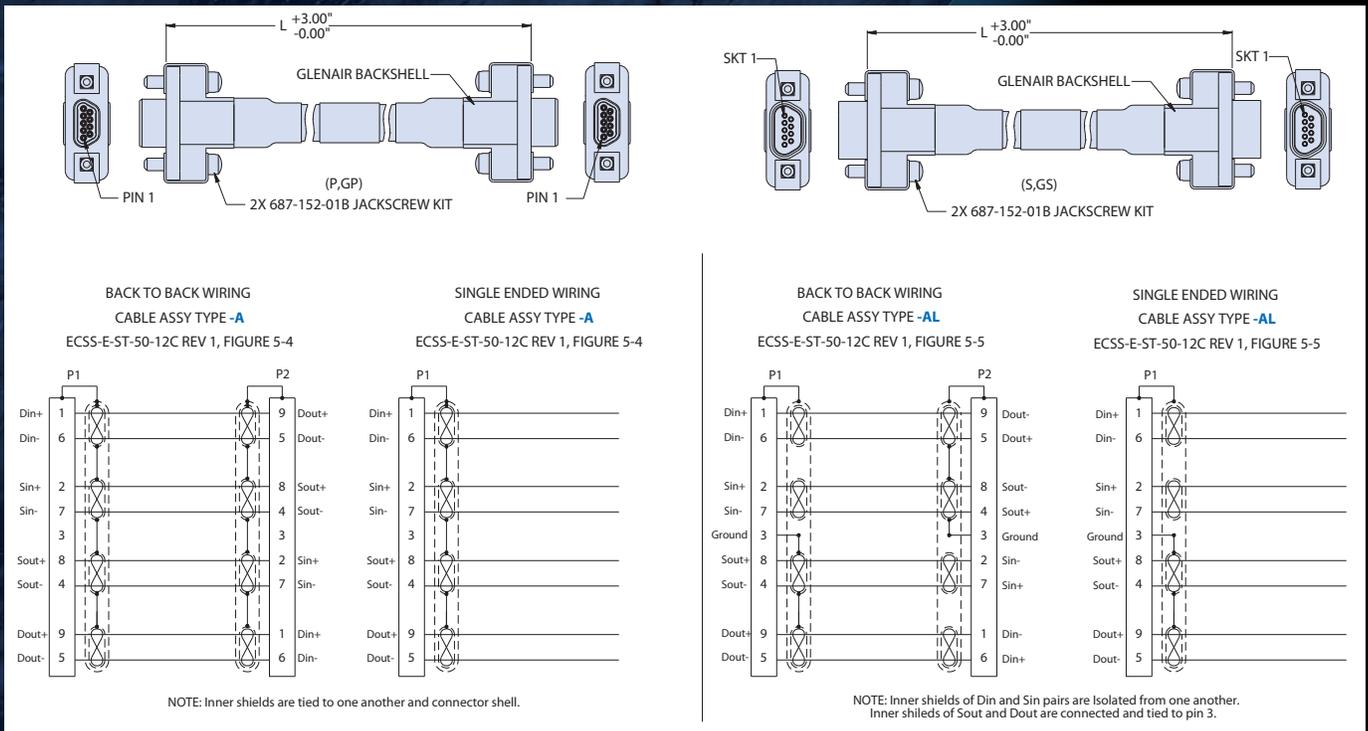
PERFORMANCE

- 3 Amps
- Temperature tolerance -200° to 180° C
- 100 Ω impedance shielded signal pair
- Very low skew, signal attenuation and crosstalk
- 65dB minimum attenuation shielding effectiveness
- Low magnetic permeability IAW EIA-364-54

POINT-TO-POINT AND SINGLE-ENDED SpaceWire cable assemblies

Technical specifications / how-to-order

How To Order SpaceWire Cable Assembly	
Sample Part Number	GSWM 2 L -9 GP -6 F B -16 S -A G
Product Series	GSWM Glenair SpaceWire Micro-D
Shell Plating	2 - Electroless Nickel 5 - Gold
Insulator Material	L - LCP
Shell Size	9
Connector Type	P - Single-Ended Pin (Plug) S - Single-Ended Socket (Receptacle) GP - Pin (Plug) Connector Both Ends GS - Socket (Receptacle) Both Ends
Wire Gauge	6 - 26 AWG 8 - 28 AWG 0 - 30 AWG (30 AWG-Lab Only)
Cable Type	F - Flight Grade L - Lab Grade
Termination Option	B - Backshell
Cable Length In Inches	16 - 16 inches (12 inches minimum)
Hardware	S - Male Slotted Jackscrew P - Female Jackpost
Wiring Schedule Type	-A - as per ECSS-E-ST-50-12C Rev 1 figure 5-4 -AL - as per ECSS-E-ST-50-12C Rev 1 figure 5-5
Ground Spring Option	N - No Ground Spring G - Ground Spring Installed



NOTES:

1. Flight grade (cable Type F) assemblies to be screened IAW NASA EEE-INST-002, Table 2. Level 1 with 100% thermal vacuum outgassing (24 hours/+125°C/10⁻⁶ torr). Reference Glenair Mod Code 429C.
2. Operating temperature -55°C to +125°C
3. Electrical performance:
Dielectric withstanding voltage: 600 VAC.
Insulation resistance: 5000 megohms @500 VDC.

MATERIALS/FINISH:

- Shells/backshells - aluminum alloy/electroless nickel.
- Insulators - high grade rigid dielectric/N.A.
- Contacts - copper alloy, gold plated.
- Hardware - stainless steel/passivated.