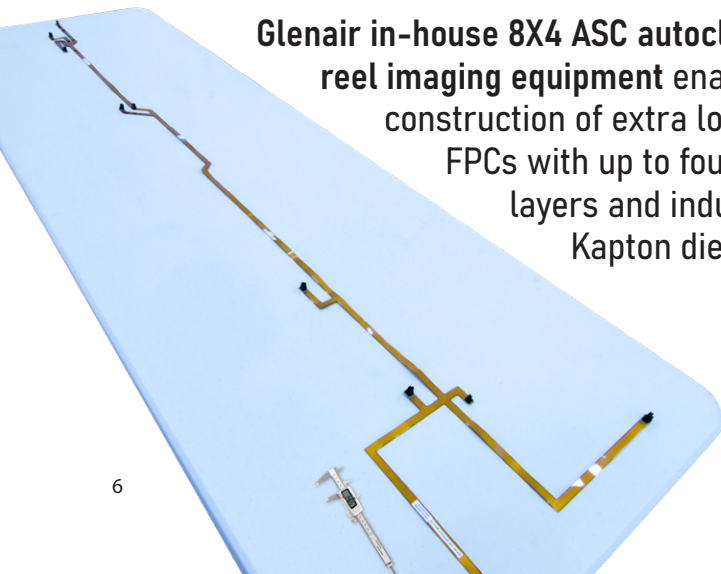# Fairway-Flex™
LONG-LENGTH FLEX ASSEMBLIES

Long-Length Flexible Printed Circuit Assemblies, 3 to 8 feet

Glenair Fairway-Flex™ is a long-length, space- and mil-aero grade flexible printed circuit solution incorporating Glenair's broad range of innovative small form-factor circular and rectangular PC-tail connectors.

Glenair in-house 8X4 ASC autoclave and reel-to-reel imaging equipment enables one-piece construction of extra long "Fairway-Flex" FPCs with up to four layers circuit layers and industry-leading Kapton dielectric substrates.

- **Turnkey:** from design to prototype to volume production
- **Rapid prototye process** includes 3-D "paper doll" fit-check mockups with copper-clad DuPont™ Kapton® to simulate actual flexibility
- **EMI/RFI Shielding** with solid or patterned shield planes, and/or with shielded I/O interconnects
- **Configurations include** single-sided, double-sided, and multilayered
- **Point-to-point** and **multibranch** assemblies
- **ISO 9001, AS9100** certified
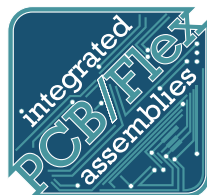
Fairway-Flex™ Signature Long-Length FPC

Replacing long-length wire bundle assemblies with high-density flex circuitry ensures optimal size and weight reduction, eliminates wiring errors resulting in faster, error-free on-site installation and assembly. Long-length Fairway-Flex assemblies offer better resistance to high levels of vibration and shock, and up to 1 million flex and duty cycles. Fairway-Flex designs offer both single- and double-sided connector mounting and 3D circuit routing within equipment enclosures, LRUs, and the aircraft or space fuselage. Typical max length is up to 96 inches. Consult the factory for longer designs.

Fairway-Flex assemblies may be equipped with **hard mount points and stiffeners** as required, as well as the ability to implement flex-to-install designs that combine PCB boards and flex circuitry
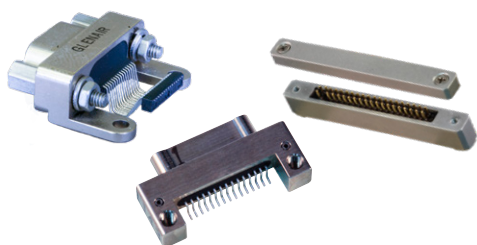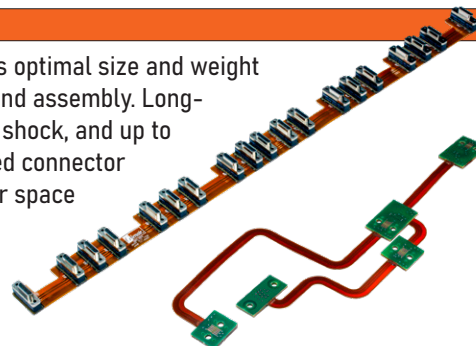
A key step in the conceptualization of most flex assemblies is the **selection of I/O and board-level PCB connectors**. Glenair manufactures the industry's most complete range of rectangular and circular PCB connectors for turnkey incorporation into flex assembly designs. Note that this lineup includes both industry-standard solutions such as D-Subs, Micro-Ds and Nanos, but also Glenair signature solutions such as the Series 79 Micro-Crimp, that offer better-than-QPL performance.

The following tables describe Glenair Fairway-Flex **manufacturing formats and specifications**. Glenair recommends commercial customers follow IPC-6012/6013 specification standards. Military customers may alternatively cite specifications IAW MIL-PRF-31032. 5. Vias for interconnect mounting and signal translation between layers to be located on far ends of extended length flex. For vias in center body of extended length flex—or for other non-standard requirements, consult factory.

Fairway-Flex™ Assemblies

Design Formats	PADS • PADS PRO • Pro E / Creo • SolidWorks • Autodesk Inventor • CAM 350 • Altium • Valor • POLAR • XPedition
Manufacturing Formats	DXF • Gerber • ODB++ • IPC 2581
Layer Count	Max typ. up to 4
Termination	Thru hole • Straddle-mount • ZIF Termination
Conductor Width/Space	Lines: .010" • Spacing: .010" (design-dependent)
Bend Radius (military)	Single Metal Layer: 4–6X overall flex thickness• Double Metal Layers: 6–10X overall flex thickness • Multi Layer Metal: 12–15X overall flex thickness
Materials / Tg	Substrate: DuPont™ Kapton® adhesive and adhesiveless -60°C to 125°C, Panasonic Felios Cover layer: DuPont™ Kapton®, Panasonic Felios Stiffener: FR4 or DuPont™ Kapton® (metal stiffeners available upon request) Conductor: Copper, 1/4 ounce to 2 ounce High-temperature materials and more available
Surface Finish	ENIG • HASL • Immersion Tin and Silver • Soft and Hard Gold
Specs and Quality Management	IPC-6013 Class I, II, III, types 1-3 • ISO 9001, AS 9100J-STD-001 Space