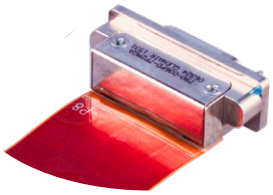
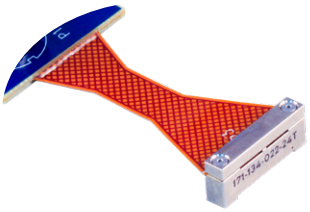
Application / design options

GROUND PLANES AND SHIELDS

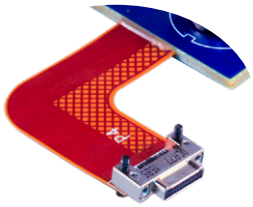
Managing EMI emissions and signal line impedance are critical aspects of flex circuit design. Effective use of ground / shield planes, appropriate connector interfaces, and matched-impedance flex circuits delivers optimal high-speed signal integrity.



Full copper shield



Cross-hatch mesh shield

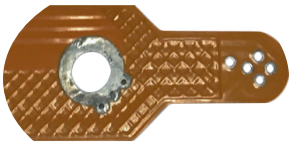


Hybrid solid/mesh

Silver epoxy

Connector-to-flex shielding (soldered pin insert)

Stitched vias



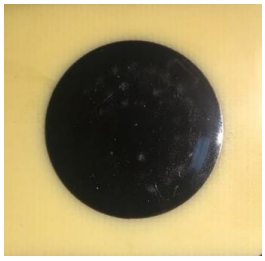
Polyimide-bared for contact grounding

Black Tatsua

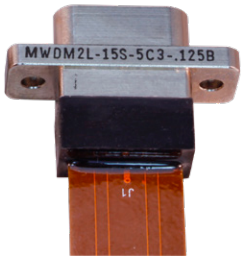
STRAIN RELIEF OPTIONS FOR FLEX AND RIGID FLEX

Reinforcing "wings"

Stiffeners at critical assembly points

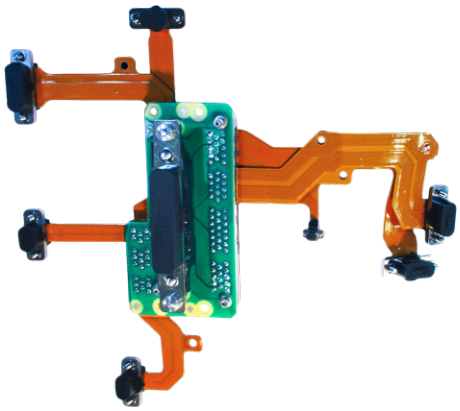


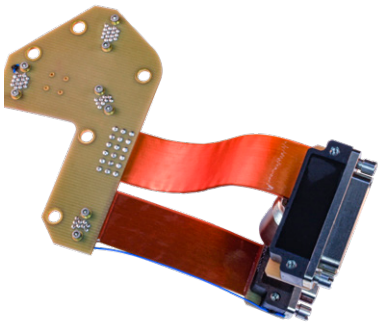
Reinforced solder joint with potting

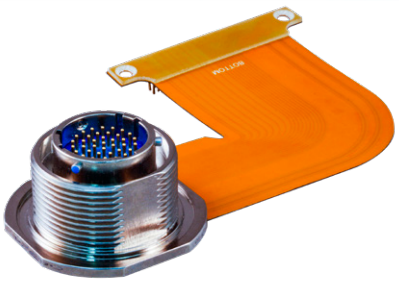


Molded epoxy encapsulant

RIGID FLEX MOUNTING POINTS FOR IMPROVED VIBRATION AND SHOCK RESISTANCE





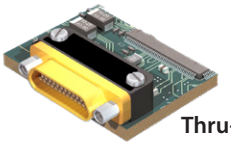


Typical examples of rigid flex mounting points in connectorized flex circuit assemblies

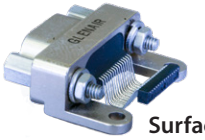
Flex, Rigid Flex, and Rigid PCB Assemblies

Application / design options

FLEX, RIGID FLEX, AND PCBA CONNECTOR TERMINATION OPTIONS

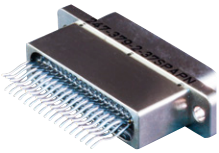


Thru-hole



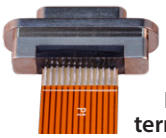
Surface mount

Pogo pin / spring-loaded contacts

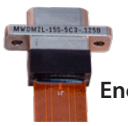


Straddle mount

Compliant pins



Direct termination



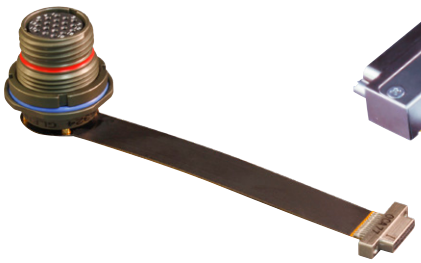
Encapsulating pot

ZIF (zero insertion force

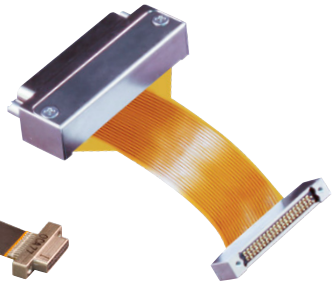
FLEX AND RIGID FLEX I/O CONNECTOR OPTIONS

Environmentally sealed rectangular I/O interface

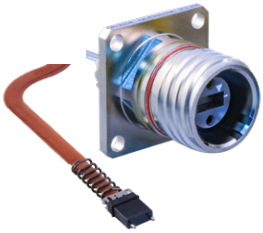
Military aerospace grade circular: SuperNine D38999



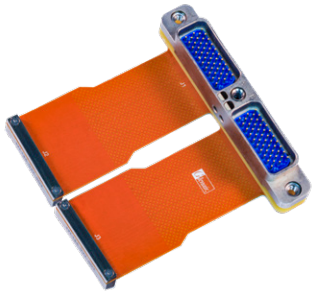
Micro miniature aerospace-grade circular: Mighty Mouse



EMI shrouded precision-machined M2430



Ruggedized MT fiber optic I/O circular

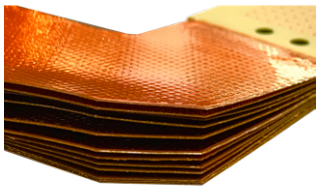


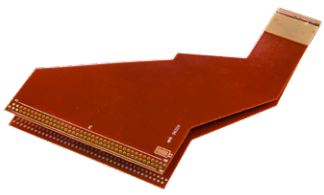
Dual-gang modular I/O: Series 20 Super-Twin

Series 970 PowerTrip power connector I/O

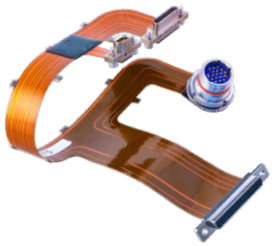
Micro miniature push-pull QDC I/O

MULTILAYER AND DOUBLE-SIDED FLEX AND RIGID-FLEX DESIGN OPTIONS





Multilayer rigid-flex circuit assemblies—up to 27 layers—offer increased circuit density while still maintaining the medium's dynamic 3D flex characteristics



Double-sided flex circuits increase circuit density and power handling