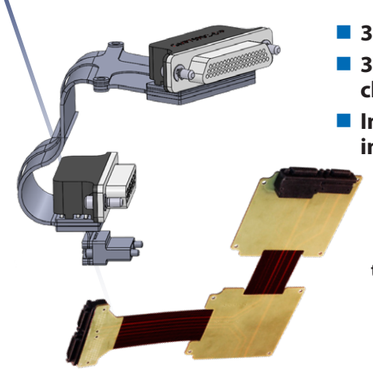
SolidWorks modeling · 3D printed prototyping

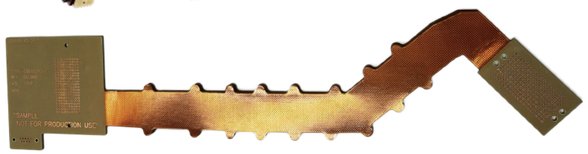
MODELING AND 3D PRINT

Optimized for **Rapid** Prototyping



- **3D representation of flex assemblies using SolidWorks**
- **3D printed "paper doll" outline mockups for fit checks with copper clad DuPont™ Kapton® to simulate actual flexibility**
- **Incorporation of customer-supplied wiring diagram and chassis information in laser-cut mechanical samples**

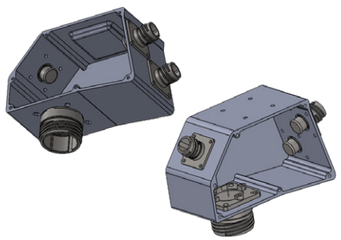
Example SolidWorks and 3D printed paper doll prototype mockups produced by Glenair's Integrated Flex Assembly team—typical turnaround 2–3 days upon receipt of request for most application designs



Complimentary quick-turn mockups produced by by Glenair: 28-layer rigid flex, and 12-layer multibranch rigid flex

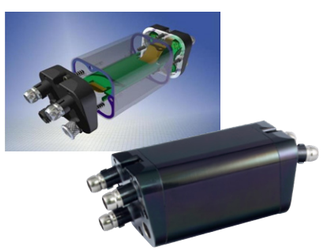
HD Stacker board-to-board connector/flex mockup

3D MODELING OF BOX BUILDS FOR OPTIMAL INTEGRATION OF I/O INTERCONNECTS AND FLEX CIRCUIT ASSEMBLIES



- **Customer-supplied STEP file of box with panel cutouts**
- **Glenair value-added 3D model with connector size and flange modifications**

In this example, customer supplied a STEP file of a box enclosure with existing panel cutouts. The Glenair engineering team used SolidWorks to design a specially-modified connector flange, enabling the use of a smaller, higher-density connector, for significant size-and weight-savings.



- **Electronic box builds are supported by software-based design and prototyping of I/O connectors and integrated flex circuits**
- **Process leads to optimized location and routing of internal assembly and I/O interface**

This integrated system enclosure, complete with printed circuitry, I/O connectors, and power modules was designed and modeled in SolidWorks prior to production manufacturing.

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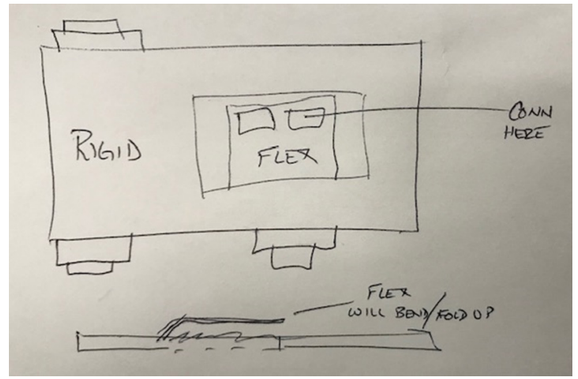
Typical design and production process

GLENAIR INTEGRATED PCB/FLEX ENGINEERING

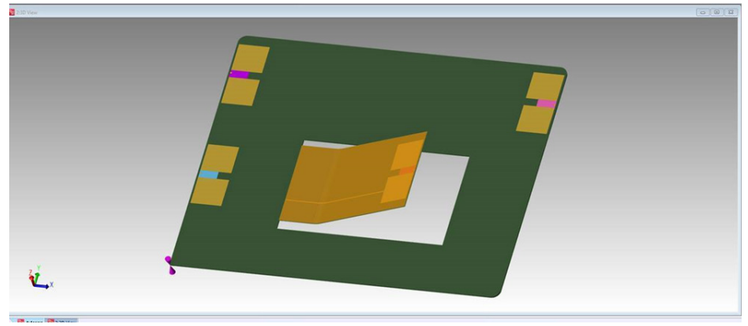
From **Concept** to **Design**

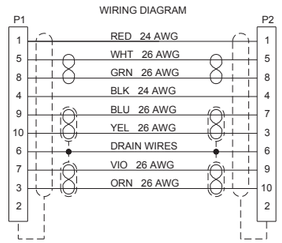
The **mechanical schematic design** process typically takes one of two forms: either the customer presents a fully-realized mechanical design, or as is often the case, the process begins with a "napkin sketch" of the project. Here is an example of just such a rough design that kicked off a rigid-flex circuit assembly development process.



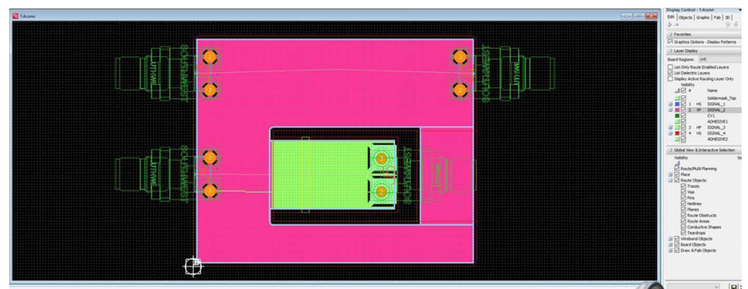
Glenair engineers utilized our **Altium** software to create a functional and problem-free mechanical design for customer review and modification prior to starting the build.

Altium





Electricals: The next step is to define the electricals. To approximate layer count, we need a wiring diagram "schematic" complete with signal types, currents, and shielding requirements. This is also used to determine ROM pricing. In this project, work to this point was completed in just 3 weeks. With the final design approved, we were ready for production manufacturing.



Validation test requirements: Glenair offers complete generation of PCB/flex fabrication data packages including component-level documentation. Most flex customers specify validation testing as a separate part of the documentation package. Tests may include DWV/IR, continuity, impedance (eye pattern), and others.