



Altium®

Defining System Connectivity with **Harness Design** in Altium

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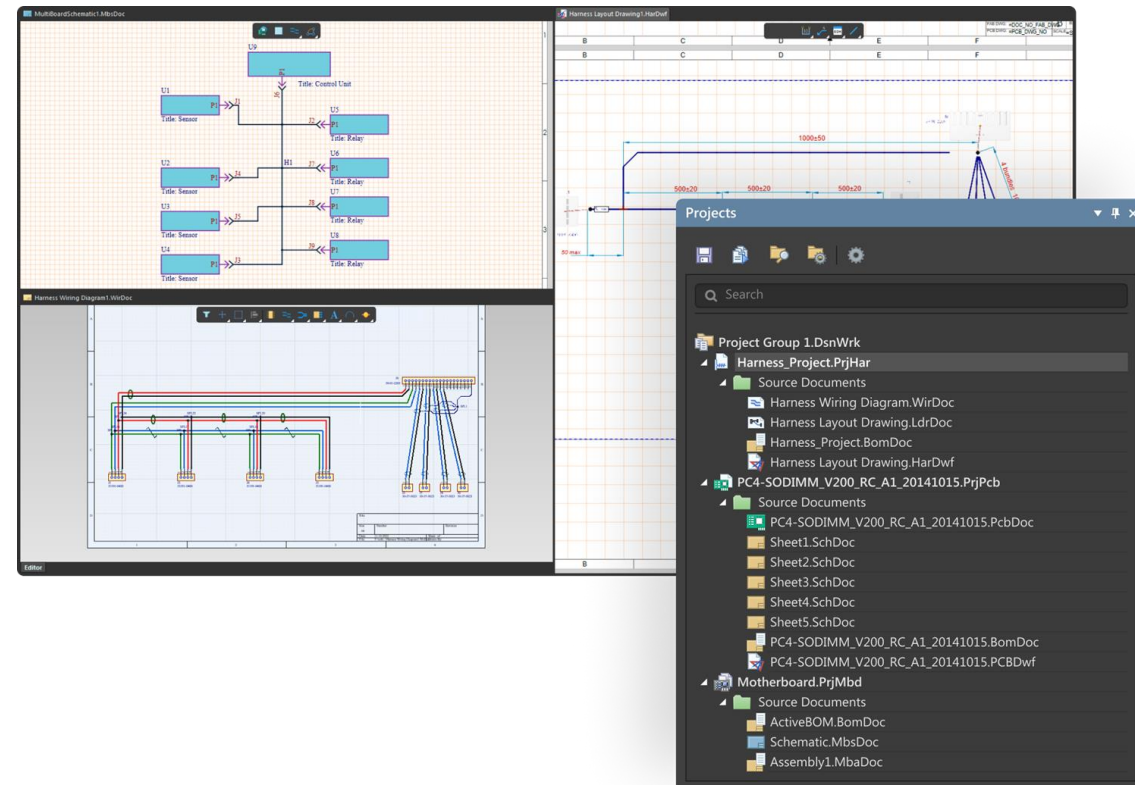


Electronic designs come in various levels of complexity, from simple to intricate. And when you factor in challenges like flexible designs and multi-board setups, the complexities you're already working through only become more difficult.

Altium Designer is a complete solution designed for the entire spectrum of PCB projects, from a basic circuit to a full avionics system. With the right tools for managing design rules, advanced routing, and designing on 3D surfaces, your team can work efficiently and avoid extra costs no matter how complex the project is.

Harness design involves creating and optimizing the layout and configuration of electrical wiring systems within Altium Designer to efficiently arrange wires, connectors, and components to achieve a clean and organized electrical system.

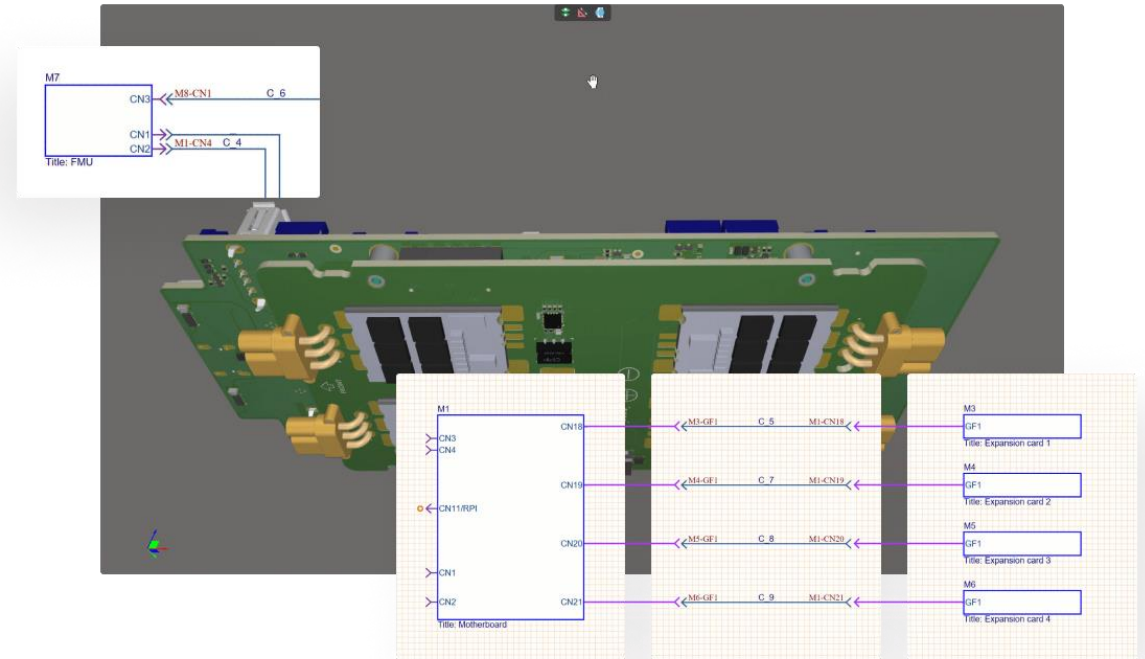
- Create and synchronize multi-board systems and the electrical harnesses connecting them in one platform
- Prevent costly manufacturing errors with automated design checks when working on complex harnesses
- Easily create harness documentation drawings
- Automatically generate your complete harness bill of materials





Intuitively design multi-board systems complete with harnesses

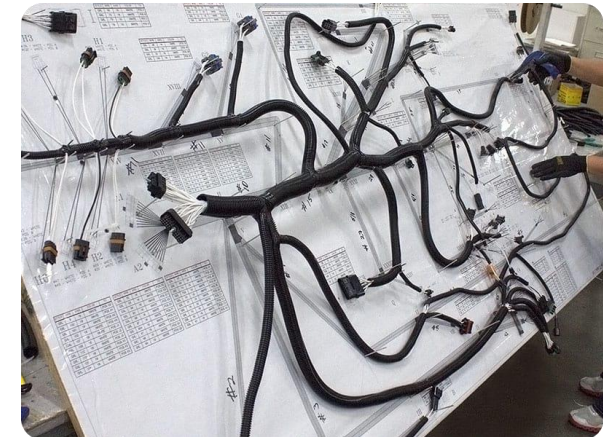
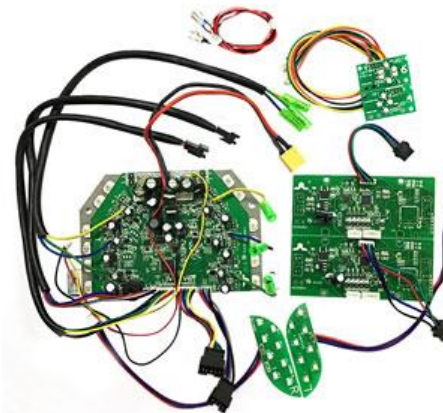
Spend more time creating complex designs and less time learning how to integrate multiple boards in your design tools. With the same design approach and editors used for single-board designs, Altium Designer empowers designers of all levels to intuitively create interconnections between multiple boards. Plus, with harness design synchronization, you have everything you need to complete your multi-board projects.





Why Did Altium Designer Introduce Harness Design?

- We want to provide platform for complete product design
- We did have **multi-board** but not a way to connect everything together
- Now we have harness design to connect our multiple boards into an electronic system.





What benefits do engineers get from this

- Single Integrated Platform
- Don't need to learn/invest in a new tool
- No Manual file transfers
- PCB Synchronization - Connectivity is pushed to harness from multi-board project

Competitive Advantage

- Integrated ecosystem without the need to manually upload files
- Full product design in the same environment without needing third-party software
- Time saving by working with a single cohesive data model that encompasses all the necessary information for complete system integration.
- Traceability in design & minimizing the revision of the subsequent product design iterations by using a single integrated EDA tool.
- Manufacturing cost reduction & improve reliability by having full definition within the multi-board environment.
- Documentation - Single software that holds the complete product design data, enabling easier troubleshooting & navigation.
- Synchronization with multi-board



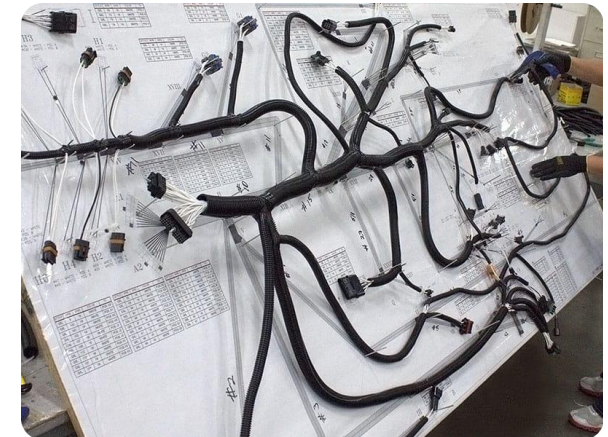
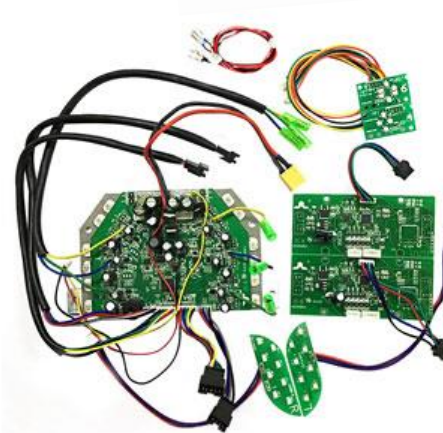
How are we doing it?

Project Creation

- Standalone harness project
- Part of a multi-board project
 - Can Bring in connectivity

New Harness Project Documents

- [Harness Wiring Diagram \(*.WirDoc\)](#) – individual wires and cables are placed to create the required physical connections within the harness.
- [Harness Layout Drawing \(*.LdrDoc\)](#) – the wires and cables are arranged to represent the physical construction of the harness.
- [Draftsman Document \(*.HarDwf\)](#) – read-only views of the wiring diagram, layout drawing and BOM are imported, and any additional information required for the manufacturing of the harness is added.



Harness Design: Who can take advantage?



Companies that design Products consisting of electrical, electronics and mechanical elements, with emphasis on MCAD collaboration and harness design. Their products can be as small and simple as home appliances or as big and complex as communication satellites.

Engineers who design both electronics and harnesses with or without aid of Mechanical Engineers or Harness Engineers.



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Demonstration



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Questions?