



SEMICONDUCTOR · TEST SYSTEM INTEGRATION

POWERING VALIDATION. ACCELERATING INNOVATION.

Hardware-in-the-Loop systems, assembled to perfection — tested for performance.

HiL systems let engineers validate ECUs and vehicle subsystems against a real-time simulated environment — long before a vehicle ever reaches the road. Alwyn delivers the complete physical build: precision assembly, wiring, harnessing and validation, executed exactly to your OEM specification.

[BOOK A TECHNICAL MEETING →](#)

TALK TO US
+1 267-893-8516



100%

BOM-driven assembly, built to OEM specs

7

Integration checkpoints, fully traceable

4

Industries served across safety-critical loops

On time

Deployment-ready handoff, no compromise

WHY TEAMS CHOOSE HIL — VALIDATION, EARLIER & SAFER —



EARLY ECU VALIDATION

Test logic before silicon & vehicle.



FASTER DEV CYCLES

Compress iteration timelines.



FEWER PROTOTYPES

Cut physical build cost.



REPEATABLE & SAFE

Deterministic, reliable runs.



FAULTS & EDGE CASES

Exercise the impossible-to-drive.

**REAL HARDWARE,
A SIMULATED VEHICLE,
ONE VALIDATED LOOP.**

Connect physical ECUs, sensors and actuators to a high-fidelity simulation. Alwyn engineers the enclosure, signal architecture and harnessing so your hardware behaves exactly as it will in the field — repeatably, and on schedule.



WHAT WE DELIVER — COMPLETE HIL INFRASTRUCTURE —

01

ASSEMBLY & INTEGRATION

Mechanical and electrical components built with structural stability and architectural accuracy.

02

WIRING & HARNESSING

Clean, high-fidelity cable layouts with precision routing for efficiency and durability.

03

BREAKOUT BOXES (BOBS)

Custom fault-injection matrices and diagnostic intercept assemblies for active configurations.

04

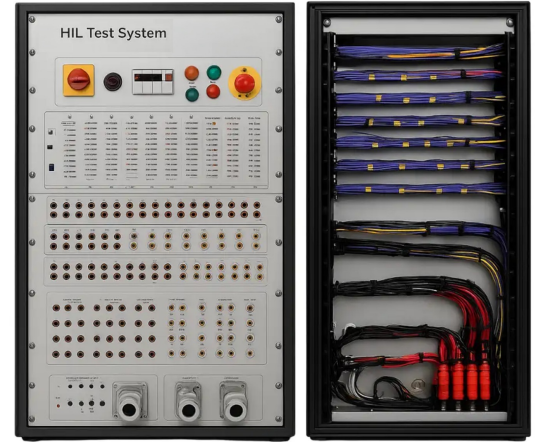
QUALITY ASSURED

Every unit passes comprehensive checks against industry and OEM standards.



TESTED, VALIDATED & READY-TO-DEPLOY

Rigorous structural loop testing verifies clean signal transmission, then systems ship fully integrated and deployment-ready.



FRONT PANEL · STRUCTURED HARNESSING

HOW WE DO IT — OUR HIL INTEGRATION CAPABILITIES —

1

RACK & MECHANICAL
ASSEMBLY

2

WIRING DESIGN &
ARCHITECTURE

3

ELECTRICAL WIRING &
HARNESSING

4

INTERFACE PANEL &
CONNECTORS

5

POWER DISTRIBUTION
KL30/31/IGN

6

TESTING & VALIDATION

7

TEST REPORT &
DOCUMENTATION

INDUSTRIES SERVED — SAFETY-CRITICAL VALIDATION —



AUTOMOTIVE

Powertrain validation & diagnostic module loops.



EV / ELECTRIC

High-voltage battery management (BMS) frameworks.



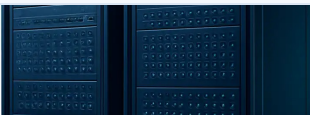
AEROSPACE

Safety-critical avionic signal routing grids.



INDUSTRIAL

Distributed plant controller & safety-loop setups.



LET'S BUILD YOUR HIL SYSTEM.

Tell us your device footprints and pin maps — Alwyn delivers a seamless, deployment-ready simulation platform tailored to your production specs.

- ✓ 100% BOM-driven assembly
- ✓ Neat, future-ready harnessing
- ✓ Quality checks every stage
- ✓ Detailed test reports

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CONTACT US →