BE IDENEERS

TESTING SOLUTIONS

ITALDESIGN

www.italdesign.it

What shape does the future have?
It is shaped like what we have learnt from our past.
That before being past, it was also future.

It is a continuous and generative motion,
which takes time to be understood.

But it is in the moment of its reveal,
at that very time, that we start defining the future.

Visualizing its structure, tracing its shape.

The future is a curved and perfect line.
A line which, at the peak of its beauty, becomes an idea.

And every day we work to make it concrete and real.
Because this is who we are.
Pioneers of ideas.
Engineers of what has yet to come.
Designers of tomorrow.

And since there was no word
to define what we are, we invented it.
Ideneers, engineers of ideas.

ITALDESIGN
Be ideneers

Italdesign: a flexible design approach to embedded systems SW testing

Italdesign has a strong background in vehicle engineering, including electronics integration. This comprehensive and thorough understanding of single components and their interaction was fundamental to the SW testing approach, focusing not only on DUTs, but also on the systems they belong to. At Italdesign, the design approach starts from system requirements and test cases, to define all the toolchain aspects from HW to SW, by technology benchmarking, keeping into account scalability, easy switch among market variants/platforms and interaction with signals from multiple domains (audio/video, radio, GPS, mobiles, analog, digital).

Company

ITALDESIGN

Italdesign is a customer-centric company that operates in Styling, Engineering, Production, and New Mobility Solutions.

With its headquarters in Moncalieri, Turin, Italy, the company boasts a workforce of over 1,200 employees working both within Italy and abroad. For more than five decades, Italdesign has collaborated with major national and international players in the fields of mobility, product design, and transportation.

Italdesign offers an integrated set of methods, techniques, and tools to industrialize new products. From the initial concept to series production, the company provides services across various phases, including consultancy, creativity, engineering, pre-series prototypes, project management, testing, validation, and homologation.

In addition to its core services, Italdesign serves as an incubator and acceleration platform for innovative technologies and radical prototyping. Collaborating with cutting-edge technology partners and strategy alliances, the company remains at the forefront of industry advancements.

Renewed for its world-class coachbuilding capabilities, Italdesign has evolved into a system developer within automotive electronics, focusing on areas such as Infotainment, ADAS (Advanced Driver Assistance Systems), and High Voltage Battery Systems.

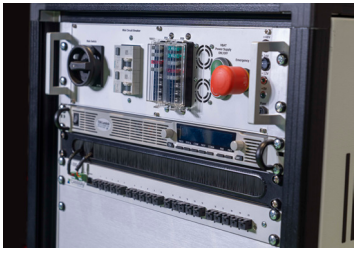
New Product 2025

Bugzer ™

Purpose :
Support test drivers to easy collect information when a bug is found while driving.

Technical data:
Raspberry® Pi5 computational core
1 TB non volatile memory for video logs storage
Touch display 7.9'' with graphical user interface
Steering wheel remote control to easily interact with system
3x USB Cameras to analyse Cockpit, central displays and external scene
Optional rear camera
Custom support to hang cameras to rearview mirror
Built in microphone to record vocal notes
Speaker to verify system status
2x CAN interfaces
OBD interface to power the system and to collect diagnostics info
Car sunshades fixing of main system

PC tool for data postprocessing



Body & Lighting HIL

Purpose:
Testing and simulation of Body Control Systems and Internal and external Lighting, camera based

Technical data:
dSpace® Scalexio LabBox with
DS6001, 2x DS6101, DS6201, DS6301, DS6333
TDK® G30-1112 Power Supply for battery simulation with Power Sink
CANWAY® CW330 light measurement system for internal lights analysis
Basler® ACA1920 camera for external lights analysis
IDG PSU for power distribution
IDG IO Mapping Unit for simulation and measurement resources mapping
Body Control Module fake loads subrack
Body Control Module Subrack
Optional subracks for any other needed ECU
Optional external rack to host lights to be tested or real loads (eg: wipers, heaters, etc)
19", 30 HU Rack, 1000 mm depth

Product

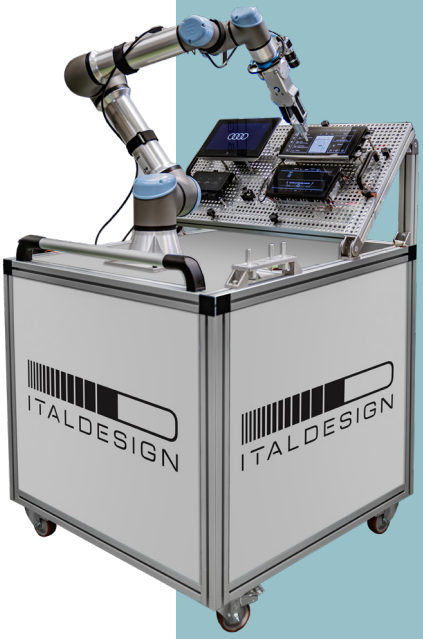
Product

Chassis HIL

Purpose :
Testing and simulation of Vehicle Dynamics integrated Control Systems

Technical data:
dSpace® Scalexio LabBox with
DS6001, 2x DS6101, 2x DS6601, 6x DS6651, DS6301, DS6341, DS6311
TDK® G20-170 Power Supply for battery simulation with Power Sink
IDG PSU for power distribution
IDG IO Mapping Unit for simulation and measurement resources mapping
FPGA based simulation of electrical motors for special actuations
Subracks for each ECU with specific design
Optional external rack to host real loads (eg: dumpers, aero actuators, etc)
19", 42 HU Rack, 1000 mm depth

Product



APTI - Automatic Physical Touch Interaction Optional Module

Purpose:
Physical stimulation and testing of dispalys and of any other aptic device

Technical data:
Universal Robots® UR5e
Basler® ACA1920 Camera for displays video analysis
Cart for easy transportation
Fast switch concept for displays and aptic devices under test
It can be coupled with all IDG test benches

Product

Infotainment HIL Gen 3

Purpose:
Testing and simulation of automotive infotainment systems

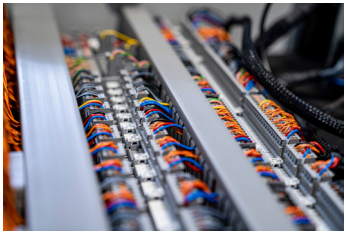
Technical data:
NI PXI® Computational Core with Embedded GPU
NI PXI® I/O: PXIe-1095, PXIe-8881,PXIe-6363, 3xPXIe-8510, 2xPxie-8523, PXI-2520
Programmable Power Supply 30V-20A
12xCAN, 6xLIN, 12xEth BR 1Gb/100MB Interfaces for RBS and Logging
Logging of all debug interfaces (serial, etc)
Displays touch simulation
Compartment for displays with up to 3 Cameras for
video analysis
Analog/A2B audio stream analysis
Speech replay to inject vocal commands
Automated interaction with Mobile devices and Radio/GNSS Simulations
Italdesign board for current measurement (0-10 A) up to 4 channels
Configurable Fault Injection Capability
19", 37HU Rack, 1000 mm depth
Fast switch concept for displays and DUT Subrack

Product

Compact HIL

Purpose :
Testing of the integration of infotainment/connectivity components with low cost and compact packaging

Technical data:
Embedded PC
Vector® VN5650 + VN1670
Programmable Power Supply 30V-20A
12xCAN, 5xLIN, 12xEth BR 1Gb/100MB Interfaces for RBS and Logging
Logging of all debug interfaces (serial, etc)
Displays touch simulation
Frame grabber for main display video analysis
Analog/A2B audio stream analysis
Configurable ECUs busses interconnection
Configurable Fault Injection Capability
Custom rack 450 x 700 x 1000 mm (WxHxD)
Reconfigurable ECUs set



ITA Box (Infotainment Testcube Automation)

Purpose:
Automated testing on infotainment test cubes in
a transportable packaging

Technical data:
Embedded PC with GPU
Vector® VN5650 + VN1670
Foldable PC Display and keyboard
Programmable Power Supply 15V-25A
12xCAN, 5xLIN, 1xFR, 12xEth BR 1Gb/100MB Interfaces
for RBS and Logging
Logging of all debug interfaces (serial, etc)
Displays touch simulation
External Camera for display video analysis by AI Segmentation
Relays for Start&Stop, Mute, Reset, eCall, bCall simulation
Analog audio stream analysis
Speaker for Microphones stimulation
Rugged suitcase 594 x 473 x 270 mm (WxDxH)
Connection to Desk Test Cubes by specific harness
It can be used for In vehicle test

Product

Product

Networks HIL Gen 2

Purpose:
Testing and simulation of
vehicle networks and protocols

Technical data:
Vector® RT Rack Computational Core
Vector® VT System with 4xVT6204B,
5xVT6303B, VT2848, VT7001, VTC8920B
Programmable Power Supply 30V-20A
16xCAN, 6xLIN, 1xFR, 18xEth BR 1 Gbit,.
12xEth BR 100 Mbit, 2xDoIP Interfaces
Logging of all debug interfaces (serial, etc)
Displays touch simulation
Configurable Fault Injection Capability
19”, 24HU Rack, 800 mm depth

Product

Radio And GNSS Server

Purpose:
Simulation Server for Radio and GNSS physical signals
To feed up to 16 test benches

Technical data:
AST-1000 Averna® Radio Signal Tester with PXIe-1088, PXIe-8861 (8GB RAM), PXIe-5841, PXIe-7971
2 x 16 Channels RF Switches PXIe-2748
Averna® Toolkits for AM/FM, DAB ETI, HD Radio, RDS Single Channel, Sirius Multi-Beam, XM Multi-Beam
NI® USRP X300 + CDA-2990 for GNSS signal generation
Skydel® Software Toolkits for GPS, GLONASS, Galileo, Beidou, NavIc
uBlox® EVK-M101C for GNSS signal check
Workstation with 64GB RAM, 1TB +2TB SSD, 2 x GeForce RTX 4070 12GB
Space to host MAC® Mini for Mobile Devices automation
19", 24HU Rack, 800 mm depth

Strengths

- Holistic approach: individual components and system interaction
- Customized to specific requirement
- Best solution principle
- Full coverage of the entire component and vehicle development process
- Worldwide support
- Quick delivery and implementation
- Continuous development and improvement

Selected areas of activity

- Networks Testing
- Infotainment Testing
- Connectivity Testing
- Integration Testing
- Hardware Development
- Powertrain Testing
- Komfort & Lighting Testing
- ADAS Testing

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