CAN Network Testing Rack



Overview

This product is a rack cabinet test system designed to perform comprehensive conformance tests on CAN and CAN-FD bus implementations.

Key Takeaways

A CAN network testing rack is a modular, rack-mounted system designed to house and organize CAN, CAN FD, and CAN XL testing equipment for automotive and industrial network validation.

Overview

A CA

N network testing rack serves as a centralized platform for testing and validating electronic control units (ECUs) and network devices using the CAN protocol and its variants. These racks are commonly used in automotive, industrial automation, and embedded systems labs to simulate, monitor, and analyze network communication between ECUs. Key ComponentsCAN Interfaces and Modules: Devices like Vector's VN1600 or VN1630A/VN1640A provide multiple CAN channels for simulation, monitoring, and diagnostics.

Diagnostic and Simulation Software: Tools such as CANoe and CANalyzer allow for ECU simulation, bus analysis, and automated testing of CAN, LIN, FlexRay, and CAN XL networks. Power Distribution Units (PDUs): Integrated power management ensures stable operation of all test devices. Cooling and Ventilation: Proper airflow and thermal management prevent overheating of sensitive electronics.

Cable Management and Shielding: Organized cabling and RF shielding reduce interference, ensuring accurate signal measurements.

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Design Considerations

Modularity: Racks often feature adjustable shelves and brackets to accommodate different device sizes, from small-form-factor modules to full 19-inch subracks. Scalability: Modular designs allow for future expansion as testing requirements grow, supporting additional CAN channels or new protocols. Mobility: Some racks include casters for easy relocation within labs or field environments.

Environmental Protection: Shock-resistant and EMC-shielded enclosures protect sensitive test equipment from vibrations and electromagnetic interference.

Applications

Automotive Testing: Validate ECU communication, perform diagnostics, and simulate in-vehicle networks. Industrial Automation: Test CAN-based controllers and networked devices in manufacturing systems. Research and Development: Universities and labs use these racks for hands-on training and prototyping.

Field Testing: Portable subracks allow for on-site network verification and monitoring.

Benefits

Centralized and organized testing environment. Enhanced accuracy and repeatability of CAN network tests. Flexibility to integrate multiple protocols and devices.

Protection of sensitive electronics from environmental and RF interference. A well-designed CAN network testing rack ensures efficient, reliable, and scalable testing of complex networked systems, supporting both development and quality assurance processes in automotive and industrial applications.

Article Content

CAN Bus Test: A Comprehensive Guide

This product is a rack cabinet test system designed to perform comprehensive conformance tests on CAN and CAN-FD bus implementations. It integrates a controlled power supply, oscilloscope, digital

Considerations of Building a Rack Based Test System

Reduce downtime by proactively managing systems with a built-in Rack Control Unit (RCU) to control power, fans, ITA, buttons and monitor system component health.

CAN Bus Network Testing | DigiKey

Build reliable CAN test benches for R&D teams with our comprehensive guide covering hardware components, setup protocols, and troubleshooting techniques.

Best Practices for Building a Rack-Based Test System

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In this presentation, we''ll use the term rack to refer to a freestanding and self-supporting structure for mounting test equipment, regardless of whether it''s an open structure or an enclosure, and

Tools for CAN, CAN FD and CAN XL | Vector

Analyze all in-vehicle communications across bus and protocol boundaries and take advantage of functions for analyzing and stimulating CAN, but also LIN, FlexRay and more.

Wireless and Network Testing | nVent SCHROFF

To protect deployed test equipment, nVent SCHROFF provides racks and enclosures for applications such as: Lightweight, portable standalone subracks with large potential display area that can house

Network Conformance Test | CAN | Ethernet | LIN

We offer Network Conformance Test Services, including Ethernet, LIN, and CAN conformance testing. Our expert team ensures your network''s compliance with

CAN Bus Analysis and Testing | linux-can/can-utils | DeepWiki

These tools work together to provide a complete testing solution for CAN networks, enabling users to verify both functional correctness and performance characteristics of their

Whitepaper Sensor Network for Rack and Room Monitoring

Test setup thanks to its extensive fault detection capabilities. Whereas the cabling of sensors posed considerable problems in some cases with the CMC-TC and often resulted in a highly complex

Server Racks | Server Management | StarTech

StarTech Server Racks offer durable construction that ensures a stable platform for valuable network and server equipment. Our wide range of server racks includes unique wallmount and small

Server Racks & Cabinets

RackSolutions has been manufacturing high quality server racks and cabinets for over 20 years. Whether you need a single rack at home or a thousand in a data

Network Rack Cable Management: 2026 Standards

2026 Guide to Network Rack Cable Management. Includes Rack Unit Calculator, PoE++ thermal planning, Grounding safety, and Cat6A vs Cat6

Can I Mix Tires With Different Tread Depths?

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We''ve combined hundreds of hours of classroom training and testing with years of industry and product knowledge into easy-to-understand articles within our Tech

CAN Bus Network Testing | DigiKey

CAN bus is well established in automotive, but it continues to evolve, as do oscilloscopes and their ability to test and develop CAN-based designs.

Test-Rack UTP 7033 RF for validation

Test efficiently! Modern vehicles are equipped with a variety of innovative vehicle control units that incorporate the latest technologies and standards. To test these

Introduction to the Controller Area Network (CAN) (Rev

ABSTRACT A controller area network (CAN) is ideally suited to the many high-level industrial protocols embracing CAN and ISO-11898:2003 as their physical layer. Its cost, performance, and

Testing of CAN, LIN and FlexRay network characteristics of cont...

The CAN bus is the most common data network in modern vehicles. However, as the trend continuously moves towards an increasing number of ECUs per additional communication networks

How To Wire a Server and Network Rack | Tips & Best

That same rack can become the source of frustration and the stuff of nightmares if you plan it all wrong, however! In this blog, we will cover: What is a

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

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