Solution
- Rolling Stock

At a Glance

The demands for intelligent rail networks, such as high-speed railways, subways, commuter trains and light rail are at a record high due to rapid urbanization. However, the railway environment is notoriously characterized by a harsh and tough working environment, where constant shock, vibration, dust, temperature and humidity variations, along with electrical disturbances are common and inevitable. These environmental factors pose foreseeable challenges to network operators which include the following.

Challenges

- The network devices in railway systems often operate in a narrow and harsh environment with unique requirements. For example, severe air pollution, vibration, shock and EMC are commonly seen.
- Providing easily accessible Wi-Fi hotspots so passengers may connect on the Internet, particularly when moving at high-speeds.
- Network devices need to be able to automatically reconfigure for topology changes when train carriages are swapped or removed.

- Providing stable Passenger Information Systems (PIS) that show real-time weather forecasts, arrival times, rail speed and other information to rail riders.
- When deploying a large network (at least 2000 nodes), mass configuration functions are required to reduce setup time.
- Providing feature-rich and railway-certified switches to ensure reliability is essential.

CTC Union's Solution

CTC Union, with abundant experience in providing network solutions, offers a comprehensive range of network devices targeted at Intelligent Transportation Systems (ITS) applications. Our intelligent railway solutions are designed to provide uninterrupted and reliable network transmissions especially in constantly changing and harsh environment employments. Major features of our solutions that are intended to solve existing and other potential problems faced by network operators are as follows:

- Providing Industrial grade EMI and EMS certification to offer better protection against unexpected lightning strikes, ESD or surges.
- Passing of the EN 50121-4 certification for trackside use.
- Supporting various efficient network redundancy (such as μ-Ring) when a single point of failure occurs. μ-Ring can support up to 5 rings (maximum) and can recover from a single point of failure in 10 ms.
- With an M12 connector design, CTC ITP Ethernet switches are designed to withstand severe shock and vibration , making them reliable for uninterrupted rail communication in rolling stock or moving vehicles. ITP Ethernet switches adopt an IP-67 rated housing which can effectively protect against dust, oil and water.
- Supporting wide range of operating temperatures (-40~70°C) with rugged design.
- Providing 2 copper interfaces with auto bypass function , so if one of the Ethernet switches fails due to power loss, its ports are bypassed with a relay circuit, and the transmission lines will interconnect automatically to assure continuous system operation.
- Providing TTDP function that identifies the order of the Ethernet switches in a train backbone from the head and allows auto-reconfiguration of the other switches in the entire network.
- Providing Industrial Device Management System which is a comprehensive management tool that includes our SmartView™ and SmartConfig™ programs. Whether for monitoring, configuration, maintenance, or troubleshooting , our management software has a tool for every task and is specifically designed to meeting the needs of industrial and railway communications networks.


EN50155


EN50121-4


EN45545-2


M12


-40~75°C

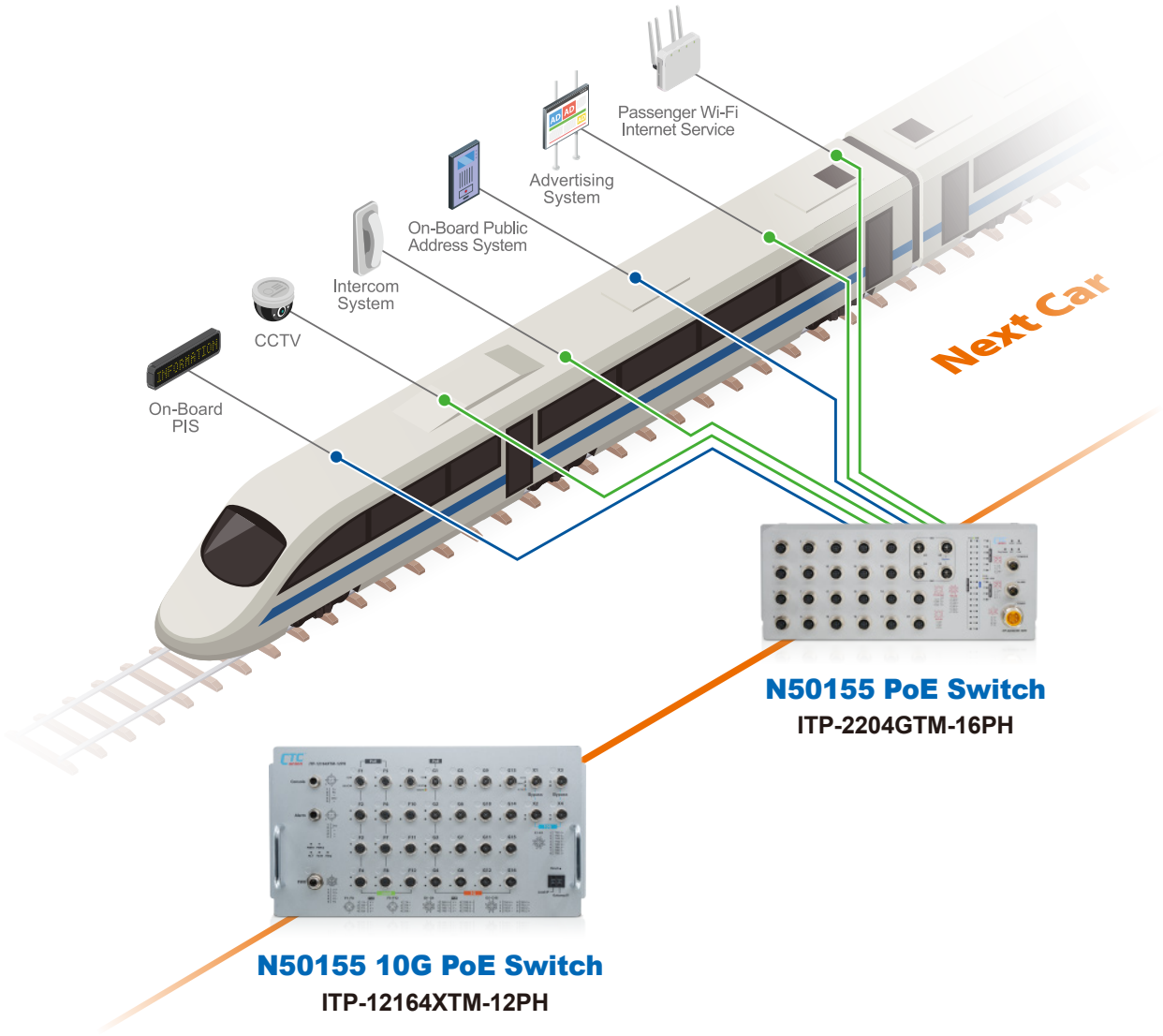

Regulated


PoE Booster


TTDP


Power isolation

Application



Related Products

EN50155 Managed 10G PoE Switch

ITP-12164XTM-12PH

12x 10/100Base M12 with 8x PoE + 16x GbE M12 with 4x PoE and 4x 10G M12, 80W, 24/48/72/110VDC

EN50155 Managed PoE Switch

ITP-2204GTM-16PH & ITP-1204GTM-12PH

◄22x 10/100Base M12 + 4x GbE M12 with 16x PoE 120W, 24/48/72/110VDC
►12x 10/100Base M12 + 4x GbE M12 with 12x PoE 120W, 24/48/72/110VDC

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