DIFFERENT BY DESIGN™

SOLUTION BRIEF: RAILWAY

Increase Passenger Safety, Productivity and Ridership with a Proven In-Train Solution

OVERVIEW

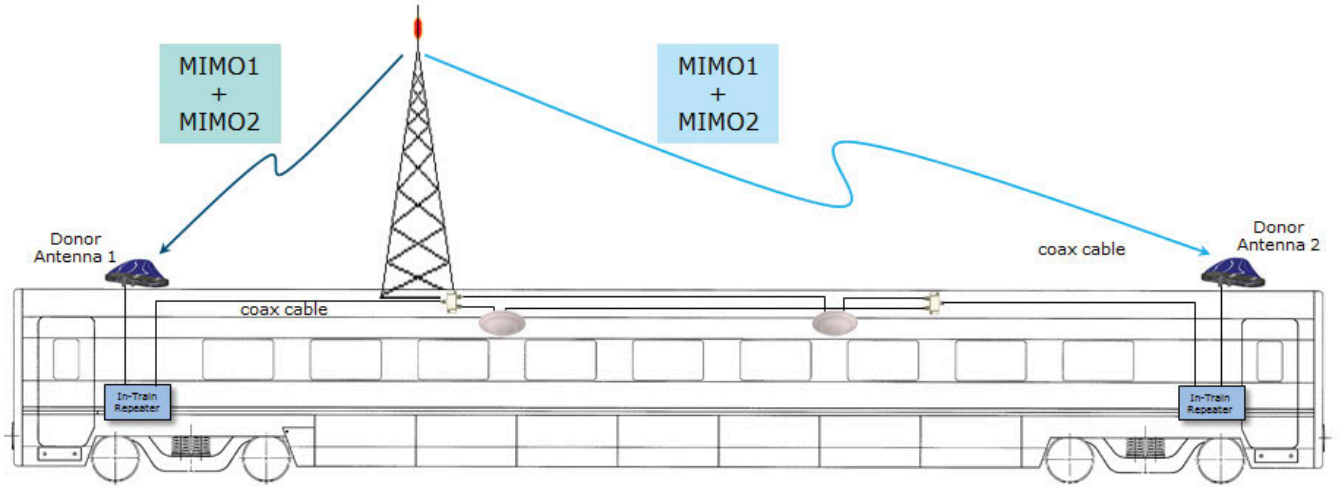
Transforming the rail experience with mobile connectivity

Due to congestion, pollution concerns, and the ever-increasing costs of fuel and parking, millions of people are getting off the roads and opting for trains as an alternative mode of transportation. For many passengers, their daily commute has translated into additional work time, and as a result they need to be reachable and able to communicate. Furthermore, on-board operators and riders alike are concerned about safety in the moving train; therefore, wireless connectivity is mandatory.

Ensuring cellular connectivity for passengers and train workers raises many challenges for operators of railways and for the manufacturers of railcars. Naturally, trains travel through a variety of terrains, including tunnels and metro areas, and they roll into underground stations. All of these environments can impede wireless signals. Passenger cars need technologies that not only provide coverage in any location, but also are conservative on power and space, highly reliable under thousands of hours of operation, and resilient to vibration. As commuters move into stations they expect their connections to be maintained for phone calls, SMS messages and more; therefore, both in carriage and in station solutions are a must. Fortunately, new innovations provide answers for these environments. Both manufacturers of passenger rail carriages and rail operators have excellent options to create a cost effective solution for commuters.

VAL metro system serving Turin

Proven In-Train Repeater System Provides Many Benefits



SITUATION

Enter JMA wireless

Wireless connectivity innovator, JMA Wireless, offers a wide portfolio of solutions including unique industry leading connectors and components, RF repeaters and Active Distributed Antenna System (DAS) technology. The JMA Wireless organization provides over a century of experience. During this time it has been awarded hundreds of patents including ones related to the enhancement and protection of the integrity of wireless signals in all types of environments, from railway stations/trains and airports to sporting complexes, shopping centers and more.

SOLUTION

A straightforward and effective solution

JMA Wireless provides a mobile connectivity solution for railway stations as well as for the rail carriages. The in-train repeater system has been specifically engineered to meet the growing high speed mobile connectivity needs of the railway environment. The compact solution consists of the following products: donor antennas, in-train repeaters and TRU-Omni™ directional antennas.

The JMA Wireless in-train repeater system offers many benefits to its customers. Starting with the installation process, the compact, nonintrusive repeaters are simply plug and play. No tuning or configuration is necessary. These in-train repeaters support JMA Wireless' patented near-far technology, which has proven to preserve and enhance wireless connectivity performance by using a lower power antenna system that delivers similar power levels to the user regardless of the location of the BTS (base transceiver station). Furthermore, there is no need to be concerned about product failure. Due to the passive cooling feature, the solution has the highest MTBF in the industry. This system also supports "green initiatives". A single in-train repeater solution supports a multi-operator configuration. The solution does not require fans due to its passive cooling capability and consumes less than half the power of many competitive offerings. The JMA Wireless in-train repeaters reduce a train's carbon footprint, making it an eco-friendly alternative.

Specifications:

Supported frequency bands:
RGSM900, DCS1800, UMTS2100, LTE2600

Maximum gain:
42dB / 42dB / 51dB

Composite output power:
18/18/15 dBm for DL; 23/25/25 dBm for UL

The in-train repeaters connect to the donor antennas, which are installed on the outside of the train cars. These antennas provide cost effective, enhanced wireless connectivity to deliver high speed LTE coverage. Two PIM optimized TRU-Omni™ directional antennas (optional MIMO - multiple input, multiple output) are mounted inside on the ceiling of each train car to extend this high speed wireless coverage to the passengers. These aesthetically appealing antennas offer the highest gain yet still are low profile. There is no need to deal with unsightly and problematic radiating cables. Furthermore, to help deter crime they easily can be disguised as security cameras.

Copenhagen metro

Driverless light metro rail serves 22 stations

Milan metro

Second largest rail station in Italy

Singapore metro

Transports over 2.7 million passengers daily

About JMA Wireless

JMA Wireless is the leading global innovator in mobile wireless connectivity solutions that ensure infrastructure reliability, streamline service operations, and maximize wireless performance. Employing powerful, patented innovations their solutions portfolio is proven to lower the cost of operations while ensuring lifetime quality levels in equipment and unrivaled performance for coverage and high-speed mobile data.

JMA Wireless solutions cover macro infrastructure, outdoor and indoor distributed antenna systems and small cell solutions. JMA Wireless corporate headquarters are located in Liverpool, NY, with manufacturing, R&D, and sales operations in over 20 locations worldwide.

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