Overview

- Rail passengers are coming to expect a seamless digital experience, not only to check email or browsing but also for data-intensive applications like video streaming and gaming.
- 5G promises to improve cellular network performance in the future. To satisfy demand for reliable, high-bandwidth connectivity now, railroads are looking for ways to upgrade existing 4G systems.
- LILEE Systems specializes in high-quality networking solutions, purpose-designed for transportation. The LTE-A Pro module works with existing 4G equipment to increase speed, capacity and performance, effectively bridging customers until 5G technologies are widely available.

LTE-A Pro Module Bridges 4G and 5G for Connected Rail

The LILEE Systems LTE-A Pro Module innovates on existing 4G technology to improve speed and capacity that approaches 5G capabilities.

In today's on-demand society, people have come to expect reliable connectivity — no matter where they are. For rail companies, passenger experience is no longer about simply getting from Point A to Point B. Passengers want to stay connected to work applications, infotainment and popular content as they commute, vacation or attend special events.

The LILEE Systems Communication Gateway with LTE-A Pro Modules

As more passengers access data-intensive applications, rail operators need to respond to increasing bandwidth requirements. Emerging 5G technologies are starting to appear; however, the long, complex and expensive 5G adoption cycle will not support the needs of today's transportation market.

LILEE Systems was founded to create networking technology for smart transportation. The LILEE LTE-A Pro module innovates on existing 4G technology to increase downlink and uplink performance and enable industrial IoT connectivity. Using the LTE-A Pro module as part of a defined 5G upgrade path, rail operators can protect investments in existing technology, reduce costs and provide superior customer experience.

Solution Brief

LTE-A Pro Module

Solution Approach

The LILEE Systems LTE-A Pro module, available with Dead Reckoning, is a cellular module that works with LILEE TransAir™ LMS communication gateway. LILEE Systems solutions are rail certified and optimized for high-bandwidth services including mobile Wi-Fi, GPS and infotainment applications.

The LTE-A Pro module offers a clear upgrade path and delivers near-5G performance with current cellular standards. The LTE-A Pro module is backward compatible with LTE and LTE-A base stations. The module adds more worldwide frequency bands, supports carrier aggregation, and works with advanced antenna technology to increase data speeds and available capacity. GPS and available Dead Reckoning enable location accuracy even in areas like tunnels or urban environments that can throw off location calculations.

All LILEE Systems solutions are integrated with T-Cloud™ services for zero-touch device and firmware management. Modular form factors mean that customers can easily adapt equipment and services as technology advances.

Feature & Benefits

Feature	Benefits	
Performance Metrics	- 600 Mbps downlinks, 10x faster - 150 Mbps uplinks, 3x faster	- 3.5 GHz private networks - 4x QAM speed boost
Modular Form Factor	- 5G upgrade path for exisiting ME-100 technology - Single SKU to support customers worldwide	
Carrier Aggregation	- 3CA support per 3GPP standards Release 12	
Dual SIM	- Capable of switching between carriers to manage cost	
Ruggedized	- Rail certified - Works at -40 to +70 C	
Advanced Connectivity	- Available content filtering, WLAN captive portal, VLAN, inter-car networking for passenger rail	
Global Support	Supports more frequency bands: B1, B2, B3, B4, B5, B7, B8, B9, B12, B13, B18, B19, B20, B26, B28, B29, B30, B32, B41, B42, B43, B46, B48, B66	Positioning with Dead Reckoning: GPS (US), Galileo (EU), GLONASS (Russia), BeiDou (China), QZSS (Japan)

Summary

Today's travelers expect transportation providers to deliver more than a way to get from point A to B.

The LILEE Systems LTE-A Pro module provides a 5G upgrade path and enables high-bandwidth connectivity for data-intensive applications such as video streaming, gaming and web conferencing now.

Operators can provide 5G-class throughput with minimal disruption. Zero-touch, cloud-managed services keep devices and firmware current while keeping IT and cellular costs low.

Contact sales@lileesystems.com or **+1 (408) 988-8672** to discuss how we can help you increase ridership by providing a safer and more enjoyable experience for your passengers.

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