



Track and Train modules

Multi-gigabit connectivity rail-qualified mmWave modules for track-side and train-top deployment.

Blu Wireless mmWave solution for high-speed transport provides continuous, on-the-move multi-gigabit connectivity between trackside and train for on-board services including Passenger Internet Access, real time CCTV upload and operational information.

The LightningBlu system is qualified for trackside deployment with extended service life and low maintenance. Typically deployed on rail trackside at intervals of up to 2km, this unit provides the bridge between multi-link wireless connections to trains and a trackside fibre network. The compact TN201SC is qualified for train-top installation with a separate in-train network processor unit which provides the

interface to in-train distribution and delivery systems such as Wi-Fi.

Trackside and train-top units each feature two radios which work together to maintain an aggregated data throughput of between 2-4 Gbps per train, continuously and at speed.

Trackside and train units include the RWM6050 dual modem IC with HYDRA technology developed by Blu Wireless, two-sector electronic phased array antennas operating in 60GHz unlicensed spectrum, and a quad-core ARM Network Processor. The units support flexible network and edge application configuration in a standard and secure Linux environment.

Highlights

Full environmental rail certification to EN50155

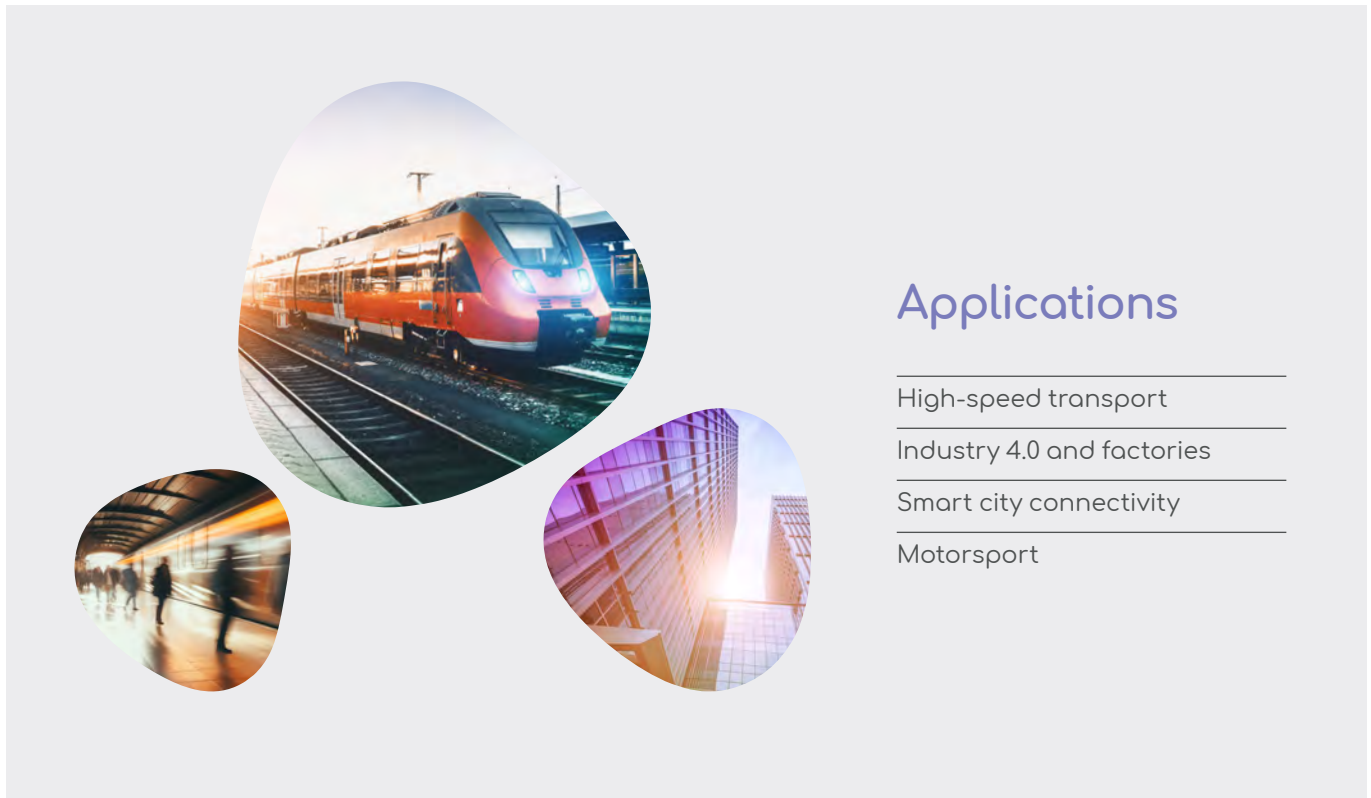
Suitable for High Speed Transport

Linux application platform

Dual modem RWM6050

57-71 GHz phased array antenna

Optimised algorithm for HST



Applications

- High-speed transport
- Industry 4.0 and factories
- Smart city connectivity
- Motorsport

LightningBlu Features

mmWave Wireless	<p>Mobile Connection Manager for wireless link management</p> <p>IEEE 802.11ad TDD-SC with infrastructure extensions</p> <p>MCS0 to MCS12.5 (64QAM) modulation</p> <p>Supports all six IEEE 802.11ad channels (free of oxygen attenuation in channel 5 and 6)</p> <p>Throughput per radio of up to 3.4 Gbps - total of 6.8 Gbps per dual radio equipment</p> <p>Measured range of 700m on channel 5 and 6 (>1Gbps)</p> <p>EIRP +40dBm</p> <p>Beam alignment and tracking using electronic phased-array antennas to accommodate installation and track gradient and bends</p> <p>Sub-channelisation enabling robust co-existence in high density deployments</p>	Networking	<p>Multi-queue QoS</p> <p>Support for Link Aggregation</p> <p>SON support via API</p> <p>OA&M capability</p>
		Applications processor	<p>Quad-core 1.8GHz ARM v8 CPU</p> <p>Linux OS with user-space networking</p> <p>Remote diagnostics and software upgrade</p> <p>Network and security acceleration</p>
		Environmental	<p>Ambient temperature -25°C to +55°C</p> <p>IP66</p>
		Power	<p>24V to 48V DC (isolated)</p>



Trackside Features

Fully integrated track-side unit for pole/gantry mounting, 296 x 170 x 83mm, 3.9kg

Twin antennas with 180 degrees split for up/down-track coverage (extensible to quad-antenna)

Up to 3x10Gb network interfaces. Maximum one copper and two fibre for flexible backhaul and pass-through

Train Features

Compact, self-cleaning train-top enclosure, 200 x 155 x 75mm, 2.3kg

Separate in-train power/interface unit, 38 x 250 x 205mm, 3.0kg

Single-cable connectorised interconnect between units

Up to 3x10Gb network interfaces. Maximum one copper and two fibre



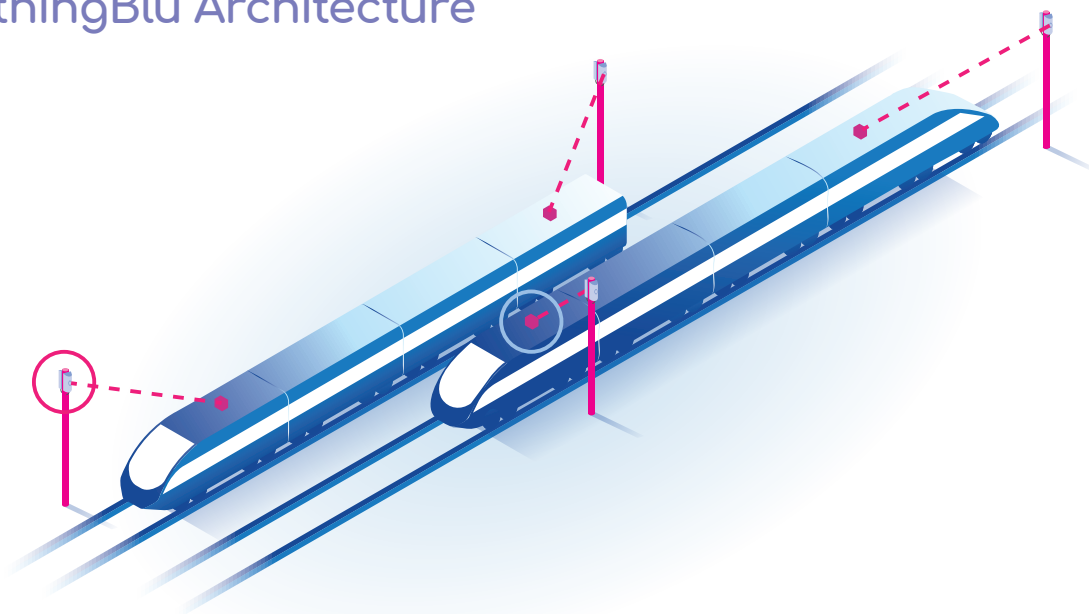


LightningBlu

Powering
Connectivity



LightningBlu Architecture



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