



TransAir® STS-2025

Rugged Mobile Gateway

- AAR S9401 standard compliant for operations in extreme environments
- Dynamic load balancing and link aggregation for fast, reliable WAN connectivity
- Software configurable dual Wi-Fi AP for high-bandwidth applications
- Over-the-air (OTA)-enabled application containers running multiple independent applications
- Centralized, remote monitoring and management



Optional HDLC Cable



The LILEE® Systems TransAir® STS-2025 is a rugged mobile gateway that delivers wireless connectivity and edge computing capabilities. It is designed to enable transportation operators to run operational and passenger applications to increase safety and efficiency.

STS-2025 comes with two 5G/LTE Cat. 20 WWAN interfaces for fast and reliable WAN connectivity through aggregation and dynamic load balancing. The built-in Wi-Fi Access Point provides dual-band 802.11 ax/ac/a/n (5GHz) and 802.11 b/g/n (2.4GHz) connectivity and Power over Ethernet (PoE). It also supports FirstNet band 14 and band 48 CBRS Private LTE for secure,

highly reliability, low latency communication. AAR S9401 standards compliance and IP54 rating allows STS-2025 to operate in extreme environments and makes it suitable for locomotives, hi-rail vehicles and remote wayside locations.

STS-2025 also supports OTA (over-the-air) remote management of devices and applications. Remote deployment, zero-touch onboarding, group configurations and troubleshooting help organizations increase operational efficiency, reduce operating cost and optimize device uptime.

SKU

STS-2025

STS-OPT-HDLC

Description

Rugged Mobile Gateway with 2 5G/LTE, 2 Wi-Fi (802.11 ax/ac/a/b/g/n), PoE+ and Application Containers

RS-232/422/485 (Software Configurable) Serial HDLC Cable to Connect STS-2025 with An Onboard Computer

STS-2025 Specifications

Processor / Memory / Storage

Intel Atom Quad-Core Processor
8 GB onboard memory
2 * mSATA slots (64GB SSD preinstalled at SATA0)

Cellular Interfaces

5G: sub-6 FDD and TDD, SA and NSA operations, up to 5.5 DL/1.5 UL Gbps
4G: 7 CA, up to 20 layers DL/2 CA UL, 256-QAM DL/UL, up to 2 Gbps DL/211 Mbps UL
2 * 4FF/Nano SIM slots
8 * SMA connector (4 x 4 MIMO for each LTE)
4 x 4 MIMO support on RF bands:
- 5G: n1, n2, n3, n7, n8, n12, n20, n25, n28, n38, n40, n41, n48, n66, n71, n77, n78, n79
- 4G: 1, 2, 3, 4, 5, 7, 8, 12, 13, 14, 17, 18, 19, 20, 25, 26, 28, 29DL, 30, 32, 34, 38, 39, 40, 41, 42, 43, 46 (LAA), 48, (CRS), 66, 71

Wi-Fi Interfaces

Wi-Fi 6E, 802.11ax/ac/a/b/g/n, 2T2R up to 160MHz mode
Tri-band 2.4GHz, 5GHz and 6GHz
TBDC (Tri-Band, Dual Concurrent) mode support
2 x WLAN antenna connectors (2 x 2 MIMO)
Dual radio mode (AP or client)
Automatic or manual channels selection

Onboard Sensors

GNSS (GPS, GLONASS) receiver with multi-band, RTK and dead reckoning support
3-axis gyro
3-axis accelerometer
2 * CAN 2.0b bus

Physical Interfaces

1 * Power connector (M12 4+1PE K-Coded)
1 * HDMI (Circular connector)
1 * USB 3.0 (Circular connector)
1 * USB 2.0 (Circular connector)
8 * LTE antenna (SMA)
1 * GPS antenna (SMA)
2 * SIM slots (4FF/Nano SIM)
2 * Wi-Fi antenna (RP-SMA)
1 * Maintenance port and Serial console (M12 12-pin A-Coded)
2 * RS-232/422/485 (M12 8-pin A-Coded)
1 * Digital Input connector (4 * digital input, 4 * ground, M12 8-pin A-Coded)
1 * Digital Output connector (4 * digital output, 4 * ground, M12 8-pin A-Coded)
1 * CAN bus connector (2 * CAN-H/-L pairs, M12 8-pin A-Coded)
4 * 10/100/1000 Ethernet M12 X-Coded ports with 802.3at Type 2 support

OTA (Over-the-Air) Remote Management

Centralized device, application, network and client monitoring and management
Application hosting and edge computing

Local Management

Serial console port
Ethernet maintenance port

Protocol Support

IP Routing, DHCP, SNMPv2, SMS (Short Message Service), NTP, NAT
QoS Priority queuing, classification, and marking
8 VLAN/TOS based queues for application prioritization
NAT (dNAT & sNAT)
IPSec Protocol
PPPoE
Link aggregation across LTE (different providers), Wi-Fi, and Ethernet
Vehicle Wheel Tick input via software interface

Security

IPsec, DTLS, SSL
Encryption: TKIP, AES/CCMP
Authentication
- 802.1X/EAP for WPA/WPA2 Enterprise
- PSK for WPA/WPA2 Personal
- RADIUS Server
Port forwarding and filtering
Captive Web Portal
Content Filtering

Physical Characteristics

Cooling design	Fanless
Housing	Metal
Dimensions (H x W x L)	2.4 x 7.1 x 11.6 in (60 x 180 x 294 mm)
Weight	7.72 lbs. (3.5 kg), estimated
Installation	Shelf and wall

Environmental Limits

Functional Operating Temperature	-40 to 70 °C (-40 to 158 °F)
Storage Temperature	-55 to 85 °C (-67 to 185 °F)
Ambient Relative Humidity	5% to 95% (non-condensing)

Power

Input voltage: 10 – 30 VDC
Shutdown threshold voltage: 9 VDC
Consumption:
- 200mW during soft off
- 12W at idle, no external connections
- 150W maximum with PoE (90W maximum to devices)

Certifications

FCC, PTCRB, CE (EMC), EN50155*, AARS9401**, IP54
* With external isolated DC-DC power source
** Vehicle Interior Non-Cab Environmental Requirement

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