

Introduction

The H2-Automotive router is the multi-service communications platform for vehicles. It provides reliable 4G/LTE broadband and Wi-Fi communications with redundancy and aggregation as well as advanced network security mechanisms options.

Based on a rugged hardware design, including power and vibration protection, specific mobile software (for positioning and quality of communication) and delayed power OFF. Moreover, it's easily integrated into management tools and HotSpot platforms for Teldat or third party Wi-Fi services.

Product Highlights

- ▶ Multi-service communications platform
- ▶ Simultaneous multiple WAN (aggregation & balance)
- ▶ Power supply protection - Enhance MTBF
- ▶ Geo-fencing: GPS-based dynamic configuration
- ▶ Isolation of standard-based services
- ▶ Battery saving facility: manageable OFF
- ▶ Turnkey Wi-Fi solution (Management and HotSpot)

Interfaces

H2-Automotive

Up to 2 x 4G/LTE Module	Yes (Depending on the model)
Up to 2 x Wi-Fi 802.11n (Client and AP)	Yes (Depending on the model)
4+1 x Gigabit-Ethernet 10/100/1000Mbps	Yes
Asynchronous Serial Port (RS-232)	Yes
Embedded GPS (NMEA)	Yes
ON/OFF power switch	Yes
2 x SMA LTE module connectors (MIMO)	Yes
2 x SMA-RP Wi-Fi connectors (MIMO)	Yes

Competitive Advantage

Simultaneous use several WWAN interfaces	Simultaneous multiple LTE and/or Wi-Fi access links with aggregation and load balance, ensuring maximum availability and continuity for applications.
Ruggedized hardware design	Designed and exhaustively tested to withstand vibrations and power surges, minimizing maintenance costs and service drops.
Automation based on GPS and services	Communication (availability and quality) and positioning monitoring to dynamically apply routing policies through service, link and position.
Corporate networking software	Latest IP network technologies in vehicles, providing security, quality and simplicity in multiservice mass deployments.

Scenarios

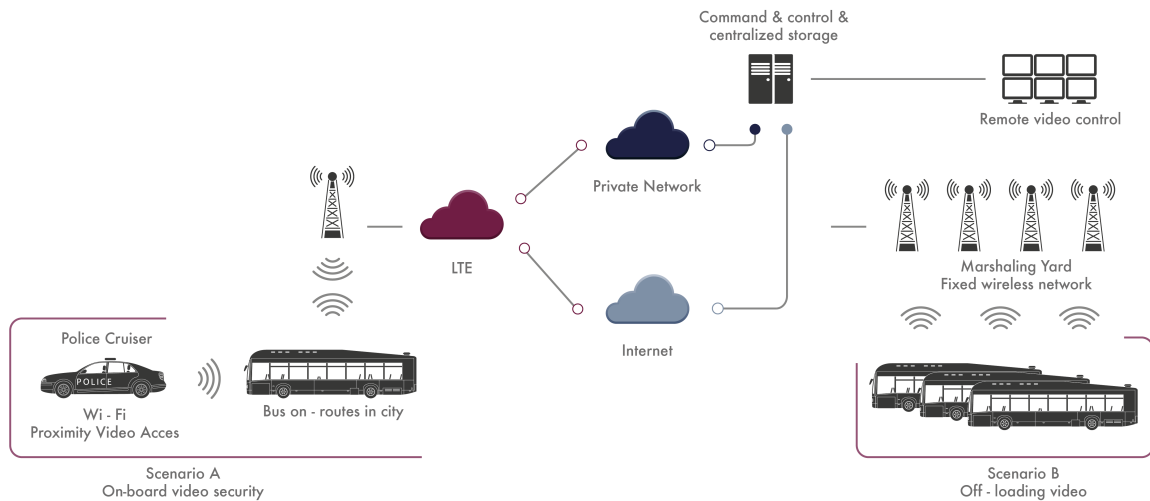


Figure: Connected bus: New public transport paradigm

Key Features

Broadband with simultaneous LTE connections Up to 2 WWAN modules (4G/LTE) can be installed for independent operates or as backup. One module also supports Dual-SIM for carrier redundancy.

4G/LTE dual-SIM for carrier redundancy The double SIM facility with a single module for use by two telecommunications operators, using one as backup for the other using a single module.

2 x high density or backup Wi-Fi (802.11n) Up to 2 Wi-Fi 802.11n modules enables and increase in Wi-Fi service capacity for high density environments. One of them can also operate as a client and the other as an AP to use external Wi-Fi networks as WAN.

Optimised hardware design for onboard environment Wide range of operating temperatures (0° C to 50° C). Anti-shock design. 12/24VDC for direct battery connection. Delayed power down for continuity on vehicle switch off, optimizing battery consumption.

ISO7637-2 power supply protection 8enhanced MTGF) Power supply protection stage for direct connection to vehicle battery; minimizes faults caused by unstable power supply.

Aggregation/balance for application continuity Simultaneous use of WAN interfaces (LTE, Wi-Fi, Satellite, etc.) to distribute/load different services through distincs interfaces, optimizing coverage areas, yielding top rate solutions performance.

Safe isolated multiservice communications Thanks to advanced protocols (such as VRF, VLANs, QoS and *Policy Routing*) and multiple WAN links, different solutions that share the same communications can be completely separated at service and management level.

Embedded GPS (NMEA): full integration of third parties Ideal for fleets or telemarketing management applications. The router incorporates GPS through TCP (port), delivering real time geolocalization with NMEA standard.

Dynamic behavior based on positioning (GPS) Dynamic configuration based on the GPS position, as well as Wi-Fi that can be used as AP or client to synchronize data at depots. A SIM can also be employed to optimize coverage and consumption.

Advanced troubleshooting (finely tuned and in cloud) Advanced troubleshooting (sniffer and Syslog) for analyzing service, position and coverage problems over the route. Cloud management with auto-provisioning means any employee can carry out installations.

HARDWARE TECHNICAL FEATURES

Up to 2 simultaneous WWAN Interfaces (LTE/HSPA+/HSPA/EDGE)

Up to 2 integrated hardware modules with HSPA+or LTE/HSPA + technology

2 external antennas with SMA connector per module

Support for additional external USB modules (licensable option)

Up to 2 Wi-Fi Interfaces (802.11abgn)

Selectable Access Point and client mode 802.11abgn selectable 2.4/5 GHz

MIMO 2x2 with external antennas (SMA-RP connector) per module

WEP, WPA, WPA2 security. Quality of Service: WMM QoS. Multi SSID

Dimensions and Weight

Length x Width x Height: 215 x 211 x 49 mm

Approximate weight: 1.9 Kg

Flexible installation: On a wall, ceiling and horizontal

Ethernet interfaces

4-port switch plus one optional WAN port (RJ45 connector)

802.3i (10BaseT), 802.3u (100BaseT), 802.3ab (1000BaseT)

Duplex support, speed autonegotiation: IEEE 802.3u, VLAN y 802.1X

GPS interface

Active GPS antenna with FME connector and NMEA protocol

Acquisition time (Hot Start 1s, Warm start 29s Cold Start: 32s)

Precision (Horizontal < 2 m (50 %); Altitude < 4 m (50 %); Speed < 0.2 m/s)

Environmental specifications

Relative humidity: 5% to 95 %

Temperature: 0° C to 50° C

Antishock and vibration resistant (EN 60068-2)

SOFTWARE TECHNICAL FEATURES

Specific Wi-Fi functions

HotSpot Gateway function to support HotSpot services

WLAN controller function for onboard Teldat APs

Dynamic function (AP or client) according to position

IP protocol (2)

Multicast: IGMP (v1, v2, v3), PIM-SM, MSDP, MLD, MLDv2

IPSLA polling service (delay, package loss, jitter)

High availability: VRRP, TVRP (HSRP compatible)

Security (2)

Certificates: CSR, SCEP, X.509v3, PKIX, LDAP revocation

Static and dynamic access lists and Fireball based on session

DoS and DDoS attack detection

Quality of Service

Classification, marking, BW management, BW prioritizing and limitation

Up to 32 classes & 16 queues per interface

Strict policies (PQ), Low latency (LLQ), through weight/class (WFQ, CBWFQ)

Management

CLI configuration and storage in a plain text file

Permissions assignment for user and groups

RADIUS and TACACS+ AAA support

IP protocol

ARP, ARP Proxy, MTU discovery, NAT, ECMP, BFD

Static & dynamic routing: TIP, OSPF, BGP, Policy based

Virtual Router Forwarding (Multi-VRF)

Security

IPSec support in transport mode, tunnel and DMVPNs

Preshared authentication, RSA, Certificates, MDS, SHA-1

Encrypted: DES (56 bits), 3DES (168 bits), AES (128, 192 and 256 bits)

IP services

Server & client DHCP, DNS, FTP, SFTP, SSH, Telnet server and client

NTP, LDAP, Syslog, SCP client. TFTP server

DHCP Relay, dynDNS

Specific WWAN functions

Automatic hand-over (passive and active detection based on polls)

Advanced link monitoring (package, latency, jitter error)

Triple SIM and double module associated with the hand-over mechanism

Management (2)

Support for Netflow, RMON V5 & V9, SNMPv1, v2c & v3, Syslog

Manageable through SMS

Wireshark compatible remote traffic capture

ADDITIONAL TECHNICAL FEATURES

Console interface and asynchronous serial port connector

DB-9 connector with proprietary pinouts (including adapter)

RS232, N81

Default speed 9600 bps, maximum speed 115200 bps

VoIP

Protocols: SIP (UDP, TCP, TLS) and support for SIP terminals

GSM media gateway for backup calls over GSM network

Surviving services: Calls, hold, transfers

Traffic balance and broadband aggregation

Multipath per session (TCP/IP)

IPSec-based Smart Balancing aggregation mechanism

Use of DMVPNs and dynamic routing for application continuity

Onboard environment ruggedization and power protection

Power protection for direct power from ISO7637-2 battery

Certificates: EN 60068-2, EN60950-1, EN 55022, EN 55024

Delayed power OFF (activated through ignition)

FLEXIBLE COMMUNICATIONS SOLUTIONS THAT GROW WITH YOU.

H2-Automotive in-vehicle router

Rugged embarked communications platform for vehicles with LTE and Wi-Fi



Teldat is a leading provider in Enterprise Communications equipment and Services for the top corporate to mid-sized and SME markets.

About TELDAT



ROUTERS | Wi-Fi | MANAGEMENT | TRANSPORT | SMART GRID | INDUSTRIAL | VoIP | CLOUD | SECURITY | NFV |

Teldat Group is a leading technology holding that designs, manufactures and distributes advanced Internetworking platforms for corporate environments, providing new and cutting-edge communication solutions without ever losing sight of its customers real requirements. Teldat's solutions development is based on proprietary technology, which is in the Group's DNA. This allows Teldat to be a leading provider in Enterprise Communications equipment and Services for the top corporate to mid-sized markets, as well as the SME and SoHo markets.

From a geographical viewpoint, Teldat Group has a presence in all continents, with its corporate headquarters located in Spain, and operational affiliates in Europe (Germany, Austria, Portugal, Italy and France) and in LATAM (Mexico and Brazil), as well as two business development offices in USA and China.



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