

Introduction

The H1-Automotive+ router is the multi-service communications platform for vehicles. It provides reliable GPS location, 4G/LTE and WiFi broadband communications with redundancy, aggregation and advanced network safety mechanisms options.

Based on rugged hardware design for installation in places with difficult access and extreme conditions, with protection of power supply and vibration-proof, extended temperature range, connectors on one side only and delayed ignition-sense power-off. It also provides extremely reliable dynamic configurations (through positioning and communications quality).

Product Highlights

- ▶ Multi-service communications platform
- ▶ Multiple simultaneous WAN (aggregation and balance)
- ▶ Power supply protection - MTBF improvements
- ▶ Geo-fencing: GPS-based dynamic configuration
- ▶ Isolation of standard-based services
- ▶ Manageable power OFF to save battery
- ▶ Turnkey WiFi solution (Management and HotSpot)

Interfaces

H1-Automotive+

Up to 2 x 4G/LTE Module	Yes (Depends on the model)
1 x WiFi 802.11n (Client and AP)	Yes (Optional)
4 x Fast-Ethernet 10/100 Mbps (RJ-45F)	Yes
Asynchronous Serial Port (RS-232)	Yes
Embedded GPS (NMEA)	Yes (Optional)
1 x M-12 locking power connector	Yes
2 SMA LTE module connectors (MIMO)	Yes
2 SMA-RP WiFi connectors (MIMO)	Yes

Competitive Advange

Simultaneous use of several WWAN interfa	Multiple LTE and/or WiFi access links. Simultaneous use, adding capacities, balancing loads or ensuring high application availability and continuity
Rugged hardware design	It supports extreme vibration, temperature (-30 to 70° C) and overvoltage conditions . Minimising maintenance costs and outages.
GPS and service-based automated features	Communication monitoring (availability and quality) and gps positioning for dynamic application of routing policies for each service, link and position.
Corporate networking software	It uses the latest IP network technologies available in the vehicle, providing safe, quality and user-friendly multi-service mass deployment.

Scenarios

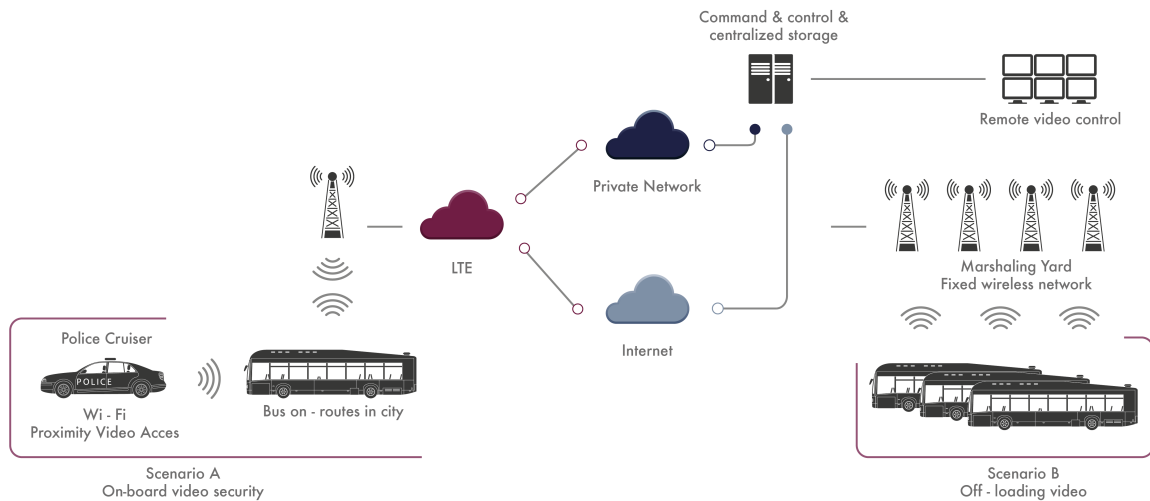


Figure: Connected bus: New public transport paradigm

Key Features

Broadband with simultaneous LTE connections Up to 2 WWAN modules (4G/LTE) can be installed. For separate operation or backup. One of the modules 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 carriers, using one as backup for the other using a single module.

WiFi (802.11n) for passengers (AP) or depots (Client) An 802.11n WiFi module enables WiFi services to be supplied to passengers during the journey (with multiple SSIDs and integration with HotSpot platforms) and act in client mode for connection to external WiFi networks.

Hardware designed for vehicles and extreme environments Extended temperature range (-30 to 70°C). Vibration-proof design. 12/240 Vdc for connection to batteries. Delayed power OFF for application continuity after the vehicle is turned off, thus optimising battery consumption.

Protection for power supply ISO7637-2 (MTBF improved) Power supply protection stage that enables direct connection to vehicle batteries and minimises faults due to unstable power supply.

Aggregation/balance for application continuity Simultaneous use of WAN interfaces (LTE, WiFi, Satellite, etc.) to share and/or aggregate the load from different services using different interfaces, optimising coverage areas and total performance solutions.

Isolated and secure multi-service communications Use of advanced protocols such as VRF, VLANs, QoS and Policy Routing together with multiple WAN links enables logical separation of each service and management of different solutions sharing the communications.

Embedded GPS (NMEA) easily utilized by third party apps Ideal for fleet management or telemarketing applications. The equipment comes with a GPS that can be accessed through a TCP port that supplies information on real time geo-positioning using NMEA data.

Dynamic performance based on positioning (GPS) The device allows for performance to be adjusted according to its GPS position. The use of WiFi as an AP or client for data synchronisation at depots or SIM selection to optimise coverage and data consumed.

Advanced troubleshooting (CLI and cloud based) Advanced troubleshooting such as sniffer and syslog to analyse problems according to service, position and coverage along the route. Cloud management with zero touch self-provisioning allows for less skilled installers.

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
LTE/DC-HSPA+/HSPA+/HSPA/UMTS/EDGE/GPRS;
LTE/EVDO/1xRTT (Inquire for others)

Wi-Fi interface (802.11abgn)

Access Point and client mode 802.11abgn selectable 2.4/5GHz
MIMO 2x2 with external antennas (SMA-RP connector) per module
WEP, WPA, WPA2 security. WMM QoS service quality Multi SSID

Dimensions and Weight

Length x Width x Height: 206 x 165 x 62 mm
Approximate weight: 1.5 Kg
Flexible installation: On a wall, ceiling and horizontal

Ethernet interfaces

10/100BaseT Fast Ethernet switch with 4 ports (RJ-45F connector)
MDI / MDI-X crossover detection
Duplex support, speed link auto-negotiation IEEE 802.3u, VLAN and 802.1X

GPS interface

GPS antenna activates FME and NMEA protocol
48 channels, high sensitivity and WAA support
Supply of local and remote information

Environmental specifications

Temperature: -30 to 70 ° C
Relative humidity: 5 to 95%
Shock and vibration-proof (EN 60068-2)

SOFTWARE TECHNICAL FEATURES

Specific WiFi functions

HotSpot Gateway function for HotSpot service support
WLAN controller function for Teldat APs
Dynamic function (AP or client) according to position

IP protocol (2)

Multicast: IGMP (v1,v2, v3), PIM-SM, MSDP, MLD, MLDv2
IPSLA service probes (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 session-based Firewall
Detection of DoS and DDoS attacks

Service quality

Classification, marking, BW management, BW prioritisation and limitation
Up to 32 types 16 queues per interface
Strict policies (PQ), Low latency (LLQ), using weight/type (WFQ), CBW

Management

CLI configuration and storage in a plain text file
Assignment of user and group licenses
RADIUS and TACACS+ AAA support

IP protocol

ARP, ARP Proxy, MTU discovery, NAT, ECMP, BFD
RIP, OSPF, BGP, Policy based static and dynamic routing
Virtual Router Forwarding (Multi-VRF)

Security

IPSec support in transport mode, tunnel and DMVPNs
Pre-shared authentication, RSA, Certificates, MDS, SHA-1
Coded: DES (56 bits), 3DES (168 bits), AES (128, 192 and 256 bits)

IP services

DHCP, DNS, FTP, SFTP, SSH, Telnet server and client
NTP, LDAP, Syslog, SCP client. TFTP server
DHCP, dynDNS relay

Specific WWAN functions

Automatic hand-over (passive and active probe-based detection)
Advanced link monitoring (package, latency, jitter error)
Double SIM and double module associated with the hand-over mechanism

Management (2)

Netflow, RMON V5 and V9, SNMPv1, v2c and v3, Syslog support
Manageable via SMS
Remote Wireshark compatible traffic collection

ADDITIONAL TECHNICAL FEATURES

Traffic balancing and broad band aggregation

Type RS232, N81
Default speed 9600 bps, maximum speed 115200 bps
Multipath per session (TCP/IP)

Embarked environment ruggedness and power supply protection

Activation of routes and links according to position
Interface management (such as WiFi as client/AP) according to zones
Power supply protection for direct battery power supply ISO7637-2

Advanced GPS functions

IPSec-based Smart Balancing aggregation mechanism
Use of DMVPNs and dynamic routing for application continuity
GPS geo-fencing for dynamic performance according to position

DB-9 connector with proprietary pinouts (including adapter)

Certifications: EN 60068-2, EN60950-1, EN 55022, EN 55024
Delayed power OFF (activated by ignition switch sensing)

FLEXIBLE

COMMUNICATIONS SOLUTIONS

THAT GROW WITH YOU.

H1-Automotive+ in-vehicle router

Rugged communications platform for vehicles with LTE and WiFi



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 midsized 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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