

# Celer Max-5G

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### Introduction

The **Celer-series** is Teldat's next generation multi-service communications platform for vehicles. It provides 5G/4G Wi-Fi 6 broadband, secure connectivity with Teldat's next generation firewall, artificial intelligence applications with Google's Coral and eSIM for remote SIM provisioning via Teldat's SENDA (Service for ENhanced Deployment & Administration) service.

ITxPT should be understood as an agreement between many public transport stakeholders to enable digitalization and integration of mobility services, defines interoperability on 3 levels, hardware, communication protocols, and service level.

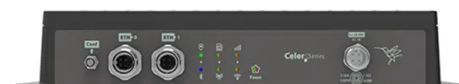
<https://itxpt.org/>

### Interfaces

Cellular module	5G
Wi-Fi module	Wi-Fi 6 802.11ax
BT Interface	Bluetooth 5.1
Location system	GPS embedded
Digital I/O	Yes 1 PIN
Ethernet interface	2 x 2.5 GbE M12

### Destacar

- 5G with Wi-Fi 6
- be.OT: Next Generation FireWall IDS/IPS by Teldat
- Remote SIM provisioning and SENDA service
- Artificial Intelligence Google Coral
- ITxPT Compliance
- GNSS Tracking Services
- Multi-gigabit Ethernet



## Competitive Advantage

Dedicated cybersecurity embedded	IDS/IPS with +800 firms, webfiltering, NGFW and traffic analyser with multiple configurations all embedded in the router.
Best performance WWAN	5G with Wi-Fi 6 802.11ax/ac/b/g/n in dual band AP and client modes.
Bluetooth 5.1 Connectivity	Bluetooth connectivity increases the networks scalability of the router.
Artificial Intelligence applications	With the Google Coral chip the Celer has the state-of-art AI in-vehicule applications and its future updates.

## Key Features

- **5G configurable cellular module** 5G NR, higher performance and improved efficiency empower new user experiences and connects new industries.
- **Bluetooth 5.1 low consumption** Multi service BT 5.1 to configure the router and various functions such as connection of sensors or on-board accessories.
- **AI Applications** Via TPU (Tensor Processing Unit) embedded Google Coral for dedicated applications such as video processing (Computer Vision), predictive maintenance and many other AI applications.
- **dual-SIM slot with eSIM** Dual SIM for each port to increase connection availability, using any telecommunications operator as a backup for the others in case of connection loss in a single module and eSIM availability to zero-touch provisioning.
- **Embedded GPS with Teldat's Mobility applications** Ideal for fleet management or telemarketing applications. The equipment has GPS accessible via TCP port that provides real-time geolocation information in NMEA standard.
- **Wi-Fi 6 802.11ax** Multi user 2x2 MiMo dual band Wi-Fi that seamless integrates with HotSpot and WebFilter applications, creating a full solution for on-board Internet connectivity.
- **Cybersecurity embedded** Teldat's Security Solutions of Operational Technology to on-board systems.
- **Optimised hardware design for on-board environment** Extended temperature range (-25°C to 70°C). Anti-vibration design. 12-24 VDC for connection to batteries with optimising battery consumption capabilities.
- **Power supply protection (increase MTBF)** Power supply protection and ignition detection for delayed shutdown. Minimisation of failures due to unstable power supply. Temperature sensor for automatic shutdown.
- **ITxPT Compliance** (\*Roadmap) Compliance with ITxPT Information Technology for Public Transport certifications.

## CARACTERÍSTICA TÉCNICA DEL HARDWARE

### WWAN

5G-NR and LTE/HSPA+ (external fakra antennas)  
Wi-Fi: dual MiMo 2x2 radio in 2.4 and 5 GHz with fakra connectors  
Bluetooth: low energy 5.1 single fakra antenna connector

### SIM

Dual-SIM with one physical slot-tray and one eSIM per modem.  
SENDA service (optional)

### Dimensions and weight

249.8x219x44.5 mm (LxWxH)  
Approximate weight: 1.5 Kg

### Ethernet

2 x 2.5 GbE LAN/WAN  
Duplex support  
M12

### Certifications

Regulatory: e-Mark, CE(EU), FCC, RED, ITxPT\*  
Materials: RoHS, REACH  
EN 60068-2, EN60950-1, EN55022, EN55024

### Envirnomenta

Ingress Protection: IP65  
Operating temperature: -25 to + 70 °C  
Storage temperature: min. -40 °C max. +75 °C

## CARACTERÍSTICA TÉCNICA DEL SOFTWARE

### Management

Interface: User friendly GUI, CLI configuration and storage in a plain text  
Cloud based Network Management with auto provision functionality.?  
Certificates: RADIUS and TACACS+ compatible AAA support

### IP Services and Protocols

DHCP, DNS, SFTP, and SSH server and client NTP, LDAP, Syslog  
ARP, ARP Proxy, MTU discovery, NAT, ECMP, BFD RIP, OSPF, BGP  
Multicast: IGMP (v1 to 3), PIM-SM, MSDP, MLDv2

### Wi-Fi specific functions

HotSpot Gateway functionality to support HotSpot services  
WLAN controller functionality for Teldat on-board APs

### Security

IPSec in transport and tunnel mode, DMVPN, wireguard, OpenVPN and PulseSecure  
Certificates: CSR, SCEP, X.509v3, PKIX, LDAP revocation ?  
NGFW with additional license.?

### Quality of Services

Classification, marking, BW management, BW prioritisation and limitation

## CARACTERÍSTICA TÉCNICAS ADICIONALES

### TPU Google Coral (\*Roadmap)

High-speed inferencing for machine learning (ML) models.  
4 TOPS: capable of performing 4 trillion operations per second

### Bundle CNM & CNM Mobility (\*Roadmap)

Global centralized device management tool  
Info in real time of the vehicles  
Coverage, signal strength, bandwidth or throughput among others.

### SENDA (\*Roadmap)

Service for ENhanced Deployment & Administration  
Selected edge devices  
Enhanced deployment (universal zero-touch provisioning)

### ITxPT Certifications (\*Roadmap)

ITxPT hardware compliance  
ITxPT software compliance

## Scenarios

