HL7900 Global 5G LPWA Module

Ultra-low Power, Future-Ready Connectivity Made Easy

Contact Sales

The HL7900 5G LPWA module is an advanced solution designed for low-power, long-lasting deployments requiring deep area coverage, combining efficiency, longevity, and security. This ultra-low power module reduces current consumption by up to 80%[1], thereby quadrupling the battery life of your IoT deployments. The HL7900 also features integrated GNSS*, and support for 3GPP's Release 14/15/16/17*, enabling new-generation low-power use cases while providing flexible connectivity options, enhanced coverage, and cost savings. Leveraging Semtech's 30 years of expertise in low-power solutions and a long-standing partnership with Sony Altair, the HL7900 simplifies and de-risks low-power deployments across critical applications such as smart energy, smart cities, logistics and asset tracking.

[1] *Compared to previous generation HL78 module.*

Air Interface:
Cat-M1, Cat-NB2, NTN*

Region:
Global

Best-in-Class Power Efficiency

The HL7900 enables the next generation of battery-powered IOT devices with revolutionary decreases in power consumption across all operating modes (up to 4x lower than HL78).

Unlicensed Band Radio*

With optional use of a secondary 802.15.4 radio supporting <1GHz and 2.4GHz frequencies, customers can expand their connectivity options and further optimize their BOM by replacing an external wireless MCU.

Device Longevity

With support for 3GPP Releases 14/15*/16*/17*, the HL7900 future-proofs your deployments and enables device longevity.

Edge Processing

With its integrated low-power MCU, the HL7900 can eliminate a host uP and enable a cost- and power-optimized system.

Location Services*

Integrated GNSS receiver with assisted GNSS enables tracking and location-based services. Optional use of Wi-Fi scan is also supported as an alternative to GNSS.

NTN*

Get uninterrupted global coverage with NB-IoT over satellite support.

Private Networks

Band 8 with NAD to enable utilities in the US to deploy their own 900MHz private network.

End-to-End Security

Security keys encrypted are stored in a secure element. FREE firmware over-the-air (FOTA) upgrades future-proof deployments and keep them secure.

Common Form Factor

Compact **CF3® design** simplifies migration between technologies and enables scalability.

Ready-to-Connect**

Get instant access to our **Smart Connectivity** to reduce total cost of ownership, strengthen end-to-end security, and simplify operations with a single point of accountability and management platform.

TCP/IP Stack

Embedded stack to easily communicate over the internet supporting a rich set of protocols including HTTP/S, TCP, MQTT, LWM2M, UDP, TLS, DTLS.

**Available in a future firmware release*
*** Optional*

Specifications

4G LTE	
Category	Cat-M1/NB2 (NTN*)
Frequency Bands	B1, B2, B3, B4, B5, B8, B12, B13, B18, B19, B20, B23*, B25, B26, B28, B66, B85, B255*, B256*

DATA SPEED	
Peak Download Rate	Cat-M: 590 kbps, Cat-NB2: 127 kbps
Peak Upload Rate	Cat-M: 1100 kbps, Cat-NB2: 158 kbps

LOCATION SERVICES	
Satellite Systems	GPS & Glonass*

EMBEDDED SOFTWARE	
Firmware	Secure boot, Pre-certified firmware

INTERFACES	
UART	1 X 8-wire & 1 X 4-wire
USB	0
ADC	2
GPIO	8
Tx ON Indicator	1
SIM interface 1.8V/3V	1

HARDWARE	
CF3 Form Factor	LGA
Dimensions	15x18x2.4mm
Temperature Range	Industrial Grade: -40°C / +85°C

APPROVALS	
Regulatory	PTCRB, GCF, FCC (USA), ISED (Canada), CE(EU), JRF/JPA (Japan), NCC (Taiwan), RCM (Australia)
Carrier	Verizon, AT&T, KDDI, T-Mobile US, Planned: Docomo, Vodafone

EMBEDDED SIM	
EMBEDDED SIM	Optional Ready-to-Connect (Semtech USIM), iSIM*

CLOUD SERVICES	
CLOUD SERVICES	Free FOTA upgrades, Connectivity Management option, Device Management option

*Available in a future firmware release

See HL7900 Technical Resources

Connect with an IoT Expert

Have an expert help you choose an IoT module that best fits your project.