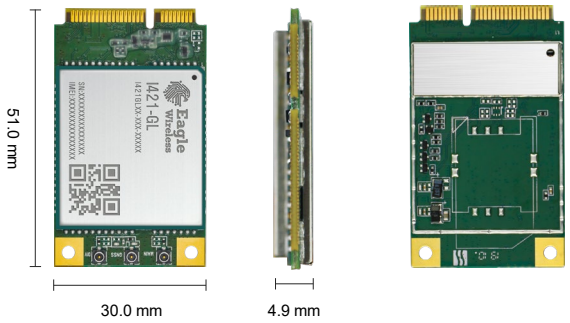
Eagle
I421 Series Mini PCIe



IoT/M2M-optimized
LTE Cat 1 Module

I421 series Mini PCIe is an LTE Cat 1 module adopting standard PCI Express® Mini Card form factor (Mini PCIe). It is optimized specially for M2M and IoT applications and delivers maximum data rates up to 10 Mbps downlink and 5 Mbps uplink.

I421 series Mini PCIe is backward-compatible with existing EDGE and GSM/GPRS networks, ensuring that it can be connected even in remote areas devoid of 4G or 3G coverage.

I421 series Mini PCIe supports Qualcomm® IZat™ location technology Gen8C Lite (GPS, GLONASS, BDS, Galileo and QZSS). The integrated GNSS greatly simplifies product design and provides quicker, more accurate and dependable positioning.

A rich set of Internet protocols, industry-standard interfaces and abundant functionalities (USB serial drivers for Windows 10/11, Linux, Android) extend the applicability of the module to a wide range of M2M and IoT applications, such as smart metering, wearable devices, environmental monitoring, asset tracking, fleet management, smart safety and alarm systems.

Key Features

- ✔ LTE Cat 1 module optimized for M2M and IoT applications
- ✔ Worldwide LTE, UMTS/HSPA(+) and GSM/GPRS/EDGE coverage
- ✔ Multi-constellation GNSS receiver available for applications requiring fast and accurate fixes in any environment
- ✔ Standard PCI Express® Mini Card form factor (Mini PCIe) ideal for manufacturers to easily integrate wireless connectivity into their devices

LTE Cat 1
Max. 10 Mbps (DL)
Max. 5 Mbps (UL)

Max. 42 Mbps (DL)
Max. 5.76 Mbps (UL)

LGA Package

Embedded Abundant Protocols

USB Drivers

Enhanced AT Commands

USB 2.0 High Speed Interface

Multi-constellation GNSS (optional)

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LTE Cat 1	I421-GLGA Mini PCIe	I421-GLGD Mini PCIe
Region/Operator	Global	Global
Dimensions (mm)	30.0 × 51.0 × 4.9	30.0 × 51.0 × 4.9
Weight (g)	Approx. 10.5	Approx. 10.5
Temperature Range		
Operating Temperature	-35 °C to +75 °C	-35 °C to +75 °C
Extended Temperature	-40 °C to +80 °C	-40 °C to +80 °C
Frequency Bands		
LTE-FDD	B1/2/3/4/5/7/8/12/13/18/19/20/25/26/28/66	B1/2/3/4/5/7/8/12/13/18/19/20/25/26/28/66
LTE-TDD	B34/38/39/40/41	B34/38/39/40/41
WCDMA	B1/2/4/5/6/8/19	B1/2/4/5/6/8/19
TD-SCDMA	-	-
GSM/EDGE	B2/3/5/8	B2/3/5/8
GNSS (Optional)	GPS/GLONASS/BDS/Galileo/QZSS	GPS/GLONASS/BDS/Galileo/QZSS
Certifications		
Carrier	**America**: AT&T/Verizon **Canada**: Rogers	**America**: AT&T/Verizon/T-Mobile **Canada**: Telus*
Regulatory	**Global**: GCF **North America**: PTCRB **America**: FCC **Canada**: IC	**Global**: GCF **North America**: PTCRB **America**: FCC **Canada**: IC **Europe**: CE RED&DA* **Oceania**: RCM* **Japan**: JATE*/TELEC*
Others	WHQL*/RoHS*	WHQL*/RoHS*
Max. Data Rates		
LTE-FDD (Mbps)	10 (DL)/5 (UL)	10 (DL)/5 (UL)
LTE-TDD (Mbps)	8.96 (DL)/3.1 (UL)	8.96 (DL)/3.1 (UL)
DC-HSPA+ (Mbps)	42 (DL)/5.76 (UL)	42 (DL)/5.76 (UL)
WCDMA (kbps)	384 (DL)/384 (UL)	384 (DL)/384 (UL)
EDGE (kbps)	296 (DL)/236.8 (UL)	296 (DL)/236.8 (UL)
GPRS (kbps)	107 (DL)/85.6 (UL)	107 (DL)/85.6 (UL)
Interfaces		
(U)SIM	× 1	× 1
UART	× 1 (Main UART)	× 1 (Main UART)
USB 2.0	× 1	× 1
Digital Audio (PCM)	× 1	-
I2C	× 1	× 1
Voice		
Speech Codec Modes	HR/FR/EFR/AMR/AMR-WB	-
Echo Arithmetic	Echo Cancellation/Noise Suppression	-
VoLTE	Digital Audio and VoLTE (Voice over LTE)	-
Enhanced Features		
DTMF	●	-
DFOTA	●	●
QMI/RmNet	●	●
Audio Playback/ Audio Recording	●	-
(U)SIM Card Detection	●	●

NOTE:
1. *: In progress.
2. ●: Supported.
3. - : Not supported.

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Eagle I421 Series Mini PCIe

LTE Cat 1	I421-GLGA Mini PCIe	I421-GLGD Mini PCIe
Software Features		
Protocols	TCP/UDP/PPP/FTP/HTTP/NTP/PING/QMI/NITZ/SMTP/ MQTT/CMUX/HTTPS/FTPS/SMTPS/SSL/MMS/FILE	TCP/UDP/PPP/FTP/HTTP/NTP/PING/QMI/NITZ/SMTP/ MQTT/CMUX/HTTPS/FTPS/SMTPS/SSL/MMS/FILE
Drivers		
USB Serial Driver	**Windows** 10/11 **Linux** 2.6–6.7 **Android** 4.x–14.x	**Windows** 10/11 **Linux** 2.6–6.7 **Android** 4.x–14.x
GNSS Driver	**Android** 4.x–14.x	**Android** 4.x–14.x
RIL Driver	**Android** 4.x–14.x	**Android** 4.x–14.x
USB NDIS Driver	**Windows** 10/11	**Windows** 10/11
USB GobiNet Driver	**Linux** 2.6–6.7	**Linux** 2.6–6.7
USB QMI_WWAN Driver	**Linux** 3.4–6.7	**Linux** 3.4–6.7
Electrical Features		
Supply Voltage Range	3.0–3.6 V, typ. 3.3 V	3.0–3.6 V, typ. 3.3 V
Power Consumption	2.9 mA @ Sleep 22 mA @ Idle	2.9 mA @ Sleep 22 mA @ Idle

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