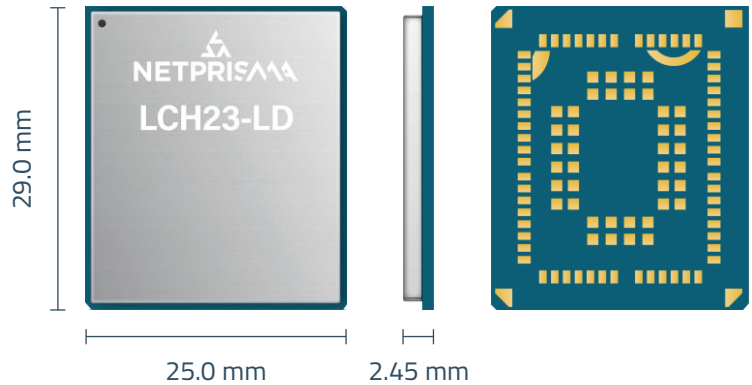


LCH23-LD

IoT/M2M-optimized
LTE Cat 4 module











Product features

- ▶ LTE Cat 4 module optimized for M2M and IoT applications
- ▶ Multi-band LTE and UMTS/HSPA(+) coverage
- ▶ Compact SMT form factor ideal for size-constrained applications with extended operation temperature range
- ▶ Embedded power management unit (PMU) featuring ultra-low deep-sleep current consumption
- ▶ Simple migration from 2G/3G to 4G with a flexible and scalable platform

LCH23-LD is an LTE Cat 4 module especially optimized for M2M and IoT applications. Adopting 3GPP Rel-11 LTE technology, it delivers maximum data rates up to 150 Mbps downlink and 50 Mbps uplink.

LCH23-LD is backward compatible with existing UMTS/HSPA(+) networks, ensuring that it can be connected even in remote areas devoid of 4G network coverage.

A rich set of Internet protocols, industry-standard interfaces and abundant functionalities (USB serial drivers for Windows 7/8/8.1/10/11, Linux, Android) extend the suitability of the module to a wide range of M2M and IoT applications such as industrial routers, industrial PDAs, rugged tablet PCs, video transmission and digital signage.

- | | | |
|--|---|---|
|  LTE Cat 4
Max. 150 Mbps (DL)
Max. 50 Mbps (UL) |  Max. 42 Mbps (DL)
Max. 5.76 Mbps (UL) |  LGA form factor |
|  Abundant protocols
embedded |  Compact size |  Enhanced
AT commands |
|  USB 2.0 high speed
interface |  USB drivers | |

LCH23-LD

Mechanical data

Region/Operator	North America
Dimensions (mm)	29.0 × 25.0 × 2.45

Temperature range

Operating temperature	-35 °C to +75 °C
Extended temperature	-40 °C to +85 °C

Frequency bands

LTE-FDD	B2/4/5/12/13/25/26
WCDMA	B2/4/5
GSM/EDGE	-
GNSS (Optional)	GPS/GLONASS/BDS/Galileo/QZSS

Data transmission

LTE-FDD data rate (Mbps)	Max. 150 (DL)/Max. 50 (UL)
DC-HSPA+ data rate (Mbps)	Max. 42 (DL)/Max. 5.76 (UL)
WCDMA data rate (kbps)	Max. 384 (DL)/Max. 384 (UL)
EDGE data rate (kbps)	-
GPRS data rate (kbps)	-

Interfaces

(U)SIM	× 2
UART	× 2
USB 2.0	× 1
Audio digital (PCM)	× 1
I2C	× 1
NETLIGHT	× 1
SPI	× 1
Main antenna	× 1
Rx-diversity antenna	× 1
GNSS antenna	× 1
PWRKEY	× 1
RESET_N	× 1
USB_BOOT	× 1

Enhanced features

DFOTA	Supported
QMI/ RmNet	Supported
MIMO 2 × 2	Supported
Audio playback*/ audio recording*	Optional
(U)SIM card detection	Supported
SMS	Supported
eSIM* ¹	Supported

Software features

USB serial driver	Windows 7/8/8.1/10/11, Linux 2.6–6.5, Android 4.x–13.x
GNSS/RIL driver	Android 4.x–13.x
USB NDIS driver	Windows 7/8/8.1/10/11
USB MBIM driver	Windows 8/8.1/10/11, Linux 3.18–6.5
USB GobiNet driver	Linux 2.6–6.5
USB QMI_WWAN driver	Linux 3.4–6.5

Certifications

Carrier	America: Verizon/AT&T/T-Mobile/Sprint/ U.S. Cellular
Regulatory	Global: GCF North America: PTCRB America: FCC Canada: IC
Others	WHQL/RoHS

Electrical features

Supply voltage	3.3–4.3 V, typ. 3.8 V
Power consumption	11 μA @ Power off 1.1 mA @ Sleep, typ. 18 mA @ Idle

¹: eSIM function can be supported by software, but an external eSIM chip is required.
*: under development.