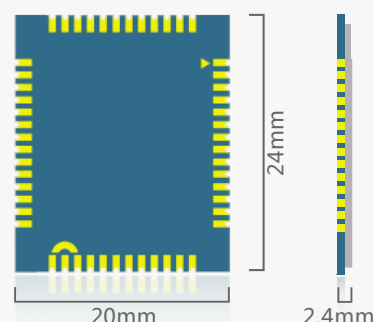
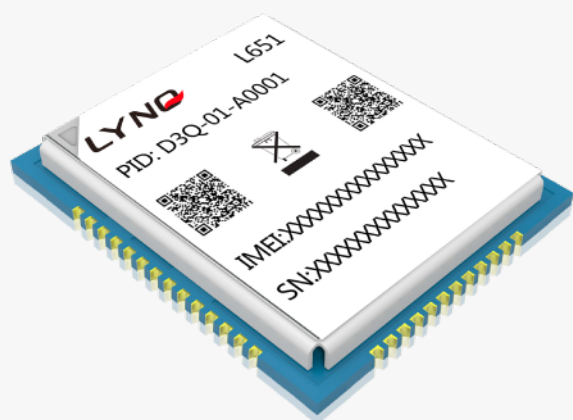




L651

NB-IoT+GSM/GPRS+(GNSS)

L651 is a NB-IoT+GSM/GPRS+(GNSS) module for LCC package, with stable and reliable performance. It supports low/ mid/high bands operation defined by the 3GPP R13/R14, four frequency GSM/GPRS (850/900/1800/1900) Module and integrated high-performance global positioning navigation chip.

L651 size is only 24*20*2.4mm and very convenient for SMT. It can meet the needs of customers for small module products and facilitate customers to reduce product size and optimize product costs. It can be widely used for various products and equipment of NB-IoT+GSM/GPRS+(GNSS).



LCC



NB-IoT



Temperature
-40°C to +85°C



AT



Ultra Low Power
Consumption



eSIM



Quad-band



GPRS Class 12



GNSS

Main Features

- L651C : NB-IoT+GSM/GPRS
- L651G : NB-IoT+GSM/GPRS+GNSS
- NB-IoT support frequency bands : Band3/5/8
- GSM support frequency bands :
GSM/GPRS 850/900/1800/1900 MHz
- GSM 2/2+ standard
- Class 4 (2W @850/900 MHz)
- Class 1 (1W @1800/1900 MHz)
- NB-IoT Output Power : 23dBm $\pm$ 2dB
- GSM Output Power :
GSM850/GSM900 33dBm $\pm$ 2dB
DCS1800/PCS1900 30dBm $\pm$ 2dB
- NB-IoT receiving sensitivity : TBD
- GSM receiving sensitivity :
GSM850/GSM900 $\leq$ -109dBm
DCS1800/PCS1900 $\leq$ -108dBm
- GNSS : GPS+BEIDOU(Glonass)
- Support AT command
- Operation Temperature Range : -40°C ~ +85°C
- Storage temperature range : -45 °C ~ +90°C
- Supply Voltage Range : 3.4 ~ 4.2V (3.8V Typ)
- Dimensions : 24*20*2.4mm
- Package : LCC
- Weight : Approx 1.5g

Other features

- Firmware Update : Firmware updated via UART
- Support PSM and eDRX mode
- Support UDP/TCP/IP/MQTT/HTTP/CoAP/
TLS/LwM2M/OneNet/FOTA*

Data transmission

- Support Cat NB1
DL : TBD
UL : TBD

Specification for GNSS

- Receiver type : 64 tracking
- Max update rate : 10Hz
- Sensitivity
Tracking : -160dBm
Reacquisition : -158dBm
Cold starts : -147dBm
- Time-TO-First-FIX
Cold starts : 25s(typical)
Hot Starts : <1s
- Accuracy
Automatic Position : 2.0m CEP
Speed : 0.1m/s

Interfaces

- UART
- SIM (3.0V/1.8V) or eSIM
- IIC
- ADC
- SPI
- GPIO
- NB-IoT/GSM Antenna
- GNSS Antenna

Power consumption

- PSM : 4uA@3.8V
- DRX : 1.56mA@3.8V/1.28s

Certification

- CCC*/TA*/RoHS*

