

# TN23

LTE Cat. NB1/NB2



## Product Description

The Cinterion® TN23 IoT Module delivers global LTE NB-IoT (NB1 and NB2) connectivity from a single SKU and it has the revolutionary “Things” footprint. The compact form factor has been engineered to facilitate the design of small, battery-operated LPWA cellular devices such as small payment terminals, connected sensors, track and trace solutions, meterings application, monitoring for smart homes, cities and agriculture.

## Key features

The highly efficient Cinterion TN23 delivers global LPWAN LTE connectivity from a single SKU leveraging mature Rel. 14 second generation Cat.NB1/NB2. The ultra-integrated IoT module’s unique architecture allows the flexibility to run applications with a host processor or inside the module itself using the integrated processor dedicated to customer application for onboard processing, which optimizes the size and cost of your solution. TN23 supports optimized 3GPP power modes PSM and eDRx revolutionizing design possibilities for battery-operated cellular devices. State of the art security features include trusted identities pre-integrated in the root of the module during manufacturing plus secure key storage and certificate handling to protect the device and data and enable trustful enrollment in cloud platforms. An optional integrated eSIM further simplifies manufacturing and logistics while providing flexibility in the field with easy remote provisioning and dynamic subscription updates. What’s more, the TN23 is supported by Cinterion® IoT Suite Services, an optional platform that manages the connectivity, lifecycle and security of IoT solutions ensuring continuity and long life.

## Things footprint revolutionizes small, battery-operated industrial IoT

The tiny 15 x 15 mm Things footprint is revolutionizing possibilities for exceptionally small, battery-operated cellular IoT devices. The footprint design features an optimized, pad position and pitch to prevents PCB warpage while taking full advantage of affordable PCB technology. In addition, the position of antennas and ground maximizes RF performance.

## Embedded Processing lowers TCO

The Cinterion TN23 device features an integrated processor with Real-Time Operating System (RTOS), enabling hostless architecture offered with SDK to build and run your entire application on the small feature-packed module.

## Optional eSIM simplifies and secures IoT connectivity

A embedded SIM strengthens security, authenticates devices, encrypts data and supports secure remote cellular connectivity provisioning. It works seamlessly with subscription management solution to manage connectivity for the lifecycle of devices. All this simplifies integration, manufacturing and logistics and lowers TCO.

AVAILABLE FOR

Worldwide



# TN23

## Product Features

- 3GPP Rel.14 Compliant Protocol
- LTE Cat.NB1/NB2
- Power Class 23 dBm
- Compatible with Cinterion® Things footprint
- FDD-LTE Bands:  
1, 2, 3, 4, 5, 8, 12, 13, 17, 18, 19, 20, 25, 26, 28, 66, 85
- Data only
- LTE Cat.NB1  
DL: max. 27 kbps, UL: max. 63 kbps
- LTE Cat.NB2  
DL: max. 124 kbps, UL: max. 158 kbps
- Embedded Processing\*  
Cortex-M4 @60MHz  
256kB flash (XIP)  
128kB SRAM  
SDK based on Free RTOS
- eDRX 80uA in 81.92s and PSM 1.6uA
- Embedded IPv4 and IPv6 TCP/IP stack for: UDP Client Non-Transp & Transp, NTP client, TCP Client Non-Transp & Transp \*), TCP Listener Transp \*), Std TCP Listener Non-Transp & Transp \*), Non-Transp UDP End-Point \*), FTP(s)/FTPES Client \*), HTTP(s) Client \*), MQTT Client \*), CoAP Client \*)
- Secure Connection with TLS 1.3 / DTLS 1.2\*
- Secure boot
- 2 high-speed serial interface
- UICC and U/SIM card interface 1.8V (embedded SIM option)
- SPI\*, I2C\*, GPIO's
- Cinterion IoT Suite Solution\*:  
Firmware Update Over the Air (OTA) with incremental packages

This solution is currently in an early release state and specifications may change.

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