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Building a future we can all trust

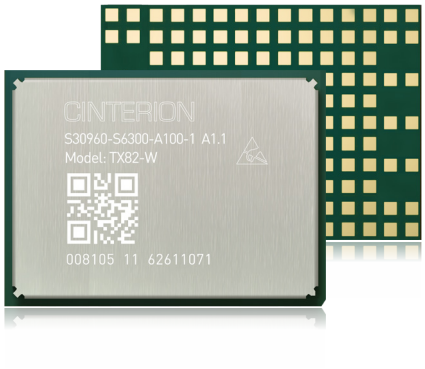
Cinterion® TX82 IoT Module

Global MTC Module Offering LTE Cat. M1, Cat. NB1, Cat. NB2, and 2G



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TX82

Multiple MTC Technologies for Global Connectivity

- 3GPP Rel.14 Cat.M1, Cat.NB1, Cat. NB2, and 2G
- Global LPWA from a single package

Compact Things Footprint

- Compact & scalable form factor developed for the needs of small, battery-operated devices
- Large surface pads for improved soldering and reduced SMT warpage
- Easy routing and optimized antenna position

Ultra-Integrated for Lower Total Cost of Ownership

- Cinterion IoT Embedded Processing enables you to build a secure & robust embedded application that runs on Cinterion IoT Module leveraging module's onboard resources
- Embedded GNSS multi constellation (GPS, Galileo, Glonass, Beidou)

Secured by design

- Pre-provisioned digital identities in the root of device
- Embedded eSIM option
- Secure key store management
- Secure boot

Easy Connectivity and Lifecycle Management

- Secure enrollment into main cloud platforms including AWS IoT Core or Azure IoT Hub
- Remote updates and device management

Cinterion® TX82 IoT Module LTE Cat. M1, NB1, NB2, and 2G from a Single Global SKU

The Cinterion® TX82 IoT Module is the ultimate MTC solution delivering global LTE-M and NB-IoT (NB1 and NB2) connectivity with 2G fallback from a single SKU. Offered in the compact "Things" footprint, it is specially engineered for small, battery-operated LPWA cellular devices such as mobile payment terminals, connected sensors, track and trace solutions, metering applications, and monitoring solutions for smart homes, cities and agriculture.

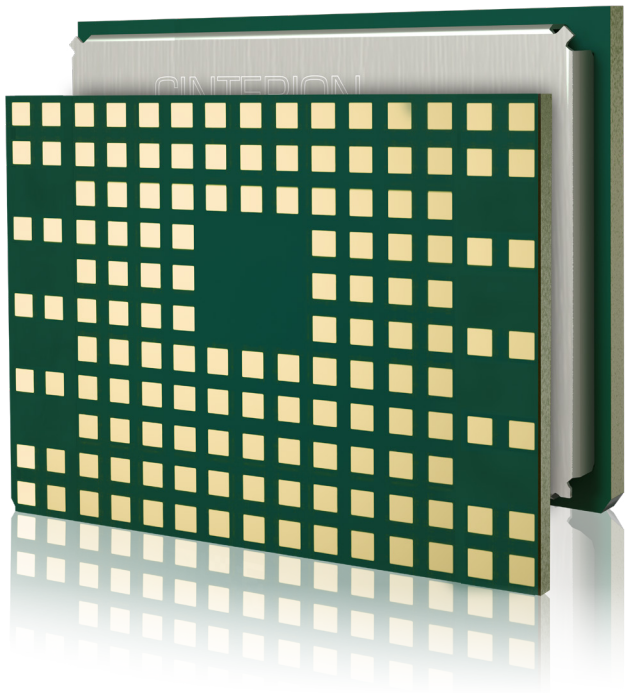
Key Features:

The highly efficient Cinterion TX82 delivers global LPWAN connectivity from a single device leveraging mature Rel. 14 second generation Cat. M1/NB1/NB2 and optional 2G for regions where 2G is preferred. The module's unique architecture allows the flexibility to run applications with a host processor or on the module itself leveraging powerful embedded processing, which optimizes the size and cost of your solution. A unique antenna design enables optimal tuning across all LTE and 2G bands which is especially useful for the low (700MHz) and very low bands (600 MHz).

TX82 supports optimized 3GPP power modes including PSM and eDRx revolutionizing design possibilities for battery-operated cellular devices. State of the art security features include trusted identities pre-integrated into 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 Thales eSIM simplifies manufacturing and logistics by providing remote provisioning for any MNO network in the field with flexible and dynamic subscription updates. All this combined with integrated GNSS support (GPS/Galileo/ GLONASS) provides a steady stream of timing and location information for precision positioning data anywhere in the world for small tracking devices. What's more, the TX82 is supported by the Cinterion® IoT Suite, an optional service 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 20.9 x 15.3 x 2.28 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.

Cinterion IoT Embedded Processing

The Cinterion TX82 device features an integrated processor with Real-Time Operating System (RTOS) enabling hostless architecture offered with an SDK to build and run your entire application on the small feature-packed module.

Optional Thales eSIM simplifies and secures IoT connectivity

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

Cinterion® TX82 Features

General Features

- 3GPP Rel.14 Compliant Protocol
- LTE Cat. M1/NB1/NB2/2G
- Compatible with Cinterion® Things footprint
- FDD-LTE Bands:
  1, 2, 3, 4, 5, 8, 12, 13, 18, 19, 20, 25, 26, 27, 28, 66, 71, 85
- Data only
- LTE Cat.M1
  DL: max. 300 kbps, UL: max. 1.1 Mbps
- LTE Cat.NB1
  DL: max. 27 kbps, UL: max. 63 kbps
- LTE Cat.NB2
  DL: max. 124 kbps, UL: max. 158 kbps
- LTE Power Class 5 (20 dBm)
- eDRX (0.8mA 81.92s eDRx and PSM 4.5µA)
- Embedded IPv4 and IPv6 TCP/IP stack access via AT command, provides: TCP/UDP Client, UDP Endpoint, TCP Listener, HTTP client, FTP client, MQTT client, NTP service, CoAP Client
- Secure Connection with TLS 1.3 / DTLS 1.2
- Secure boot
- Integrated GNSS support (GPS/BeiDou/Galileo/GLONASS
- 2 high-speed serial interface
- UICC and U/SIM card interface 1.8V (embedded SIM option)
- SPI, I2C, PWM signal line, GPIO´s
- ADC interface

Thales in IoT:
Driving digital transformation with the power of the IoT

Thales delivers innovative IoT technology that simplifies and speeds enterprise digital transformation. For more than 20 years, our customers – in a wide range of industries - trust our IoT solutions to seamlessly connect and secure their IoT devices, maximise field insights, and accelerate their global business success.

Thales solutions:

- **Connect** assets to wireless networks and cloud platforms
- **Manage** the long lifecycle of IoT solutions
- **Secure** devices and their data
- **Analyse** real-time data transforming it into business intelligence that improves decision making

Our 360° approach provides the essential building blocks needed to simplify design, streamline development and accelerate time-to-market.

For more information, please visit **www.thalesgroup.com/IoT** or follow **@ThalesIoT on Twitter**

thalesgroup.com/iot

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