ENS22

	Penta Band NB-IoT		embedded Secure Element
	Integrated eSIM		Bearer Independent Protocol
	Advanced Power Management System		Multi Design Capability (LGA)
	Embedded IP Stack		
	Incremental FOTA		

Cinterion® ENS22 Wireless Module

Highly Efficient 5G NB-IoT Connectivity

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The Gemalto Cinterion® ENS22 IoT wireless module marries future 5G connectivity with expanded coverage and enhanced security features to connect and protect industrial IoT solutions. Delivering data speeds up to 27 Kbit/s downlink and 63 Kbit/s uplink, the ENS22 IoT module is ideal for long life data-only solutions such as utility meters and smart city solutions.

Key Features

The Cinterion ENS22 IoT module platform offers a suite of NB-IoT connectivity solutions optimized specifically for IoT applications and prepared to support release 14 without the need to migrate to a new chipset. It delivers Five Band LTE (3, 5, 8, 20, 28) connectivity with deep indoor coverage and extended range in rural areas. The module offers a built-in IP stack which supports a range of internet services protected by an enhanced security concept. An optional integrated MIM authenticates IoT devices, encrypts data, and securely manages connection to cellular networks. An optional embedded Secure Element offers an added layer of security for extra sensitive applications.

Incremental Firmware Over The Air (FOTA) updates allow revision of only the portion of code that needs updating, saving power and bandwidth to extend the life span of IoT solutions. The module's simplified power supply design and advanced management system extends battery lifetime and improves TCO.

Industrial Famiy Benefits

The Cinterion ENS22 IoT wireless module is part of Gemalto's Industrial family, which offers reliability, M2M-optimized features and extreme efficiency for a range of cellular standards from 2G to 3G to LTE Cat. 1 and other Low-Power Wide-Area categories including LTE-M. All Industrial modules share an identical footprint enabling seamless backward and forward migration to protect your IoT investment as technology needs change. Smart module variants with embedded systems powered by Java and Linux improve design simplicity and Total Cost of Ownership. All Cinterion modules are compatible with Gemalto's comprehensive suite of solutions, services and platforms that help enterprises Connect, Secure and Monetize™ IoT technology.

Highly Efficient 5G NB-IoT for Industrial Applications

27.6 mm

18.8 mm

CINTERION
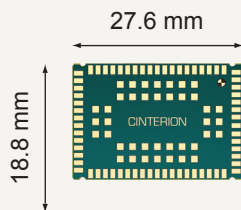
IoT Advanced Power Saving

In addition to standard 3GPP power saving capabilities, the module's advanced power management system lowers energy consumption under varying network scenarios, including for networks that do not yet support PSM/eDRX features.

Incremental FOTA

Incremental FOTA updates allow revision of only the portion of code that needs updating. This significantly reduces transmission time, power draw and throughput, which are all essential in preserving the investment in NB-IoT technology as well as the long life of IoT solutions.

Optional eSIM

Leveraging Gemalto's heritage in securely managing billions of digital credentials, the Cinterion NB-IoT platform offers an optionally integrated eSIM. Gemalto eSIMs authenticate IoT devices, encrypt data and securely manage connections to cellular networks. Embedded into the IoT module, eSIMs reduce the size and cost of solutions while strengthening security and reliability.

Gemalto Advantage:

Since 1996, Gemalto has been pioneering market-leading M2M and IoT products that keep our customers on the leading edge of innovation. Unique value added benefits include:

> Trusted partner to 450+ global MNOs ensures products evolve in sync with networks and modules are pre-certified for all global mobile networks

> Core competency in MIM, SIM and eUICC technology allows simplified integration with modules and lower Total Cost of Ownership

> Expert design consulting, local market engineering support and a skilled 24/7 help desk streamline development and deployment

> Global leader in digital security solutions and platforms

> Experienced provider of software solutions for Quality of Service and product lifecycle management

> Extensive RF test capabilities and GCF/PTCRB pretests to validate readiness for solution approval process

Cinterion® ENS22 Features

GENERAL FEATURES

> LTE Cat. NB1 (HD-FDD) 3GPP Release 13 / 14: B3
> (1800MHz), B5(850MHz), B8 (900MHz), B20 (800MHz), B28 (700MHz)
> DL/UL max throughput: 27 kbps / 63 kbps
> Control via AT Commands (3GPP 27.007 & 27.005)

> Control via Cinterion® AT commands
> Supply voltage range: (3.1 – 4.2 V)
> Dimensions: 27.6 x 18.8 x 2.7 mm
> Operating temperature Range: -40°C to +85°C

SPECIAL FEATURES

> Power Saving Mode (PSM)
> Extended Discontineous Reception (eDRX)
> Multi-tone and single-tone UL
> Guard-band, in-band and stand-alone operation
> FW update via UART
> up to 23db enhancement for expanded coverage
> up to 10~15 years battery life

> Incremental FW update over the air
> IP services, UDP, DTLS, CoAP, non-IP, Ping, IPv4, IPv6, TCP*
> Cinterion® LGA industrial footprint (SMT-LGA, 106 pads)
> SMS PDU mode
> LwM2M
> Integrated eSIM

INTERFACES (LGA PADS)

> Pad for LTE antenna
> 13 GPIO's shared with other interfaces
> 2 x UART
> ADC interface

> UICC / U-SIM interface 1.8V / 3V
> SPI
> I²C

APPROVALS

> GCF, Radio Equipment Directive (RED), CE
> RoHS, REACH, EuP (ENS22-E)
> CCC, SRRC, Chinese MNO approvals (ENS22-C)
> Further MNO approvals t.b.d.

Connect. Secure. Monetize.™

Gemalto's complementary offering of solutions, services and solid identity management helps enterprises unleash the power of the IoT, providing a solid foundation of Trust based on three key pillars:

Connect. The backbone of any IoT solution, Cinterion M2M Modules, SIM/MIMs, Terminals and secure services provide future-proof, reliable connectivity for all vertical market IoT solutions.

Secure. Gemalto's end-to-end security solutions protect device s, the network and the cloud while managing the entire application lifecycle.

Monetize. Our agile Sentinel monetization solutions enable innovative business models and new revenue streams through embedded licensing, while the secure device-to-cloud platform speeds time to market.

For more information, please visit www.gemalto.com/m2m, developer.gemalto.com, blog.gemalto.com, or follow @gemaltoIoT on twitter.

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security to be free