gemalto
security to be free

ELS31

4G	Dual Band / Tri Band LTE Cat. 1		Multi Design Capability (LGA)
	USB 2.0 High Speed compatible		Highly Compact Size
	Embedded TCP/IP Stack		Advanced Temperature Management
	VoLTE prepared	BIP	Bearer Independent Protocol

CINTERION

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LTE

Cat.1 M2M Module
Highly Efficient 4G LTE Connectivity Optimized for the IoT.

Cinterion® ELS31 Cat. 1 LTE M2M Module: delivering power-enhanced performance and M2M-optimized speeds

The first of its kind Cinterion® ELS31 LTE Cat. 1 wireless module is revolutionizing highly efficient 4G LTE connectivity for Machine-to-Machine (M2M) and industrial Internet of Things (IoT) applications. The device features power-optimized performance and M2M-optimized speeds of 10Mbit/s download and 5Mbit/s uplink. It delivers overall cost efficiencies for the vast number of IoT applications that are not dependent on high speed connectivity but still require the longevity and reliability of LTE networks as 2G and 3G phase out in decades ahead. It is ideal for a wide variety of applications including metering, tracking and tracing, fleet management and mHealth.
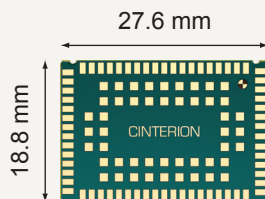
Sharing the same footprint as existing Cinterion industrial portfolio products, the ELS31 modules enable easy migration of 2G and 3G devices to LTE. It also supports multi-designs for different network standards in most dynamic LTE markets such as US and Japan. All Cinterion M2M Modules come with Full Type Approval (FTA) and local network operator certifications to ensure easy integration and a fast time to market for innovative solutions.

The small ELS31 platform comes in Gemalto M2M's unique LGA (Land Grid Array) package perfectly suited to the manufacturing needs of small, high-volume M2M devices with a focus on reliable and efficient processes. The module is designed for optimized power consumption and includes support for common industrial interfaces such as USB and UART.

ELS31 is a single-mode module specifically designed for LTE networks.
Network standards are expected to continue to evolve encompassing increasingly efficient LTE categories (e.g. Cat-M1), or voice over LTE (VoLTE). Future Cinterion modules will support easy forward/ backward migration and compatibility by sharing the same form-factor.

Perfect M2M at Minimal Footprint

27.6 mm

18.8 mm

CINTERION

LTE optimized M2M and IoT
Gemalto LTE Cat. 1 modules are less complex in comparison to higher LTE categories. Tailored specifically for the needs of M2M applications, they offer an optimized feature set and power-enhanced performance. As 2G/3G interworking does not need to be considered for ELS31, reduced approval costs can be achieved for M2M solutions. Mobile network operator or region specific variants are available.

Future proof and support for multi-designs
The unique and stable Cinterion module form factor of ELS31 supports an easy migration between existing and future standards. Currently, this form factor is supported in Gemalto 2G/3G modules. A potential migration to future standards is foreseen, LTE lower categories (e.g. Cat.-M1) will be supported in compatible modules.

Gemalto M2M Support includes:
> Personal design-in consulting for hardware and software
> Extensive RF test capabilities
> GCF/PTCRB conformance pretests to validate approval readiness

Local engineers, an exceptional help-desk, a dedicated team of R&D specialists and an advanced development center are the hallmarks of our leading support offer.

Cinterion® ELS31 Features

GENERAL FEATURES

> LTE (FDD) 3GPP Rel. 9+
> Regional Variants:
  ELS31-V (Verizon, USA): LTE Cat-1
  Bands 4,13 (1700/2100 AWS, 700 MHz)
  ELS31-J (NTTDoCoMo, Japan): LTE Cat-1
  Bands 1,18,19 (2100, 800, 850 MHz)
> SIM Application Toolkit, Rel. 99
> Control via AT commands
  (Hayes, 3GPP TS 27.007 and 27.005)

> Full Gemalto M2M AT command set and services
> Supply voltage range 3.3 - 4.5 V, optimized for minimal power consumption
> Dimension: 27.6 x 18.8 x 2.1 mm
> Operating temperature Range -40°C to +85°C
> Weight: ca. 2.7 g

SPECIFICATIONS

> LTE Cat. 1 single layer DL-MIMO
  DL/UL max: 10.3Mbps / 5.2 Mbps
> Supplementary services & USSD support
> High quality voice support for handset, headset and hands-free operation*

  *) ELS31-VA only

> IMS support, SMS via IMS
> SMS text and PDU mode, 3GPP and 3GPP2 formatting
> Verizon APN class handling (for ELS31-V only)
> IP services
  transparent & nontransparent TCP/UDP client and server, HTTP/FTP/SMP client, TLS support for TCP/UDP/HTTP/FTP/SMTP clients

SPECIAL FEATURES

> Embedded MIM (MFF2) prepared
> Firmware update via UART and USB
> FOTA (Firmware Update Over The Air)

INTERFACES (SMT-LGA, 114 PADS)

> Pads for primary LTE Antenna, LTE DL MIMO-Antenna
> Digital Audio Interface (PCM and I2S)*
> USB 2.0 interface up to 480 Mbps
  (CDC-ACM, CDC-ECM)
> High-speed UART interface

  *) ELS31-VA only

> DUN/PPP
> UICC and U/SIM card interfaces 1.8V/3V
> Up to 20 GPIO pins
> I2C, SPI, ADC interface

DRIVERS

> Driver for Windows Vista® / Windows® 7 / Windows® 8 / Windows 10
> Driver for Android RIL 6.x

APPROVALS

> FCC, GCF, IC, UL, (Verizon versions only)
> JATE,* TELEC*
> Japan Environmental Directives compliant*
> Mobile Operator Approvals: Verizon, NTT DoCoMo certification
> California RoHS

  *) ELS31-J

For more information, please visit
www.gemalto.com/m2m, developer.gemalto.com, www.facebook.com/gemalto,
or follow @gemaltom2m on twitter.

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