

ELS31



Dual Band /
Tri Band
LTE Cat. 1



Multi Design
Capability
(LGA)



USB 2.0
High Speed
compatible



Highly
Compact
Size



Embedded
TCP/IP Stack



Incremental
Firmware
Update



VoLTE Support



Bearer
Independent
Protocol



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.

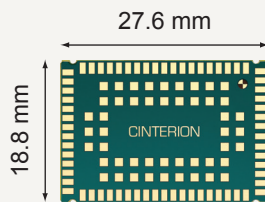
Sharing the same footprint as existing Cinterion industrial portfolio products, the ELS31 modules enable easy migration of 2G and 3G devices to LTE. It also supports multi-designs for different network standards in most dynamic LTE markets such as US and Japan. All Cinterion M2M Modules come with Full 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



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/-VA** (Verizon, USA): LTE Cat-1 Bands 4,13 (1700/2100 AWS, 700 MHz)
 - ELS31-J/-JK** (NTT DoCoMo and KDDI): 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 (ELS31-V and ELS31-VA only)
- > SMS text and PDU mode, 3GPP and 3GPP2 formatting
- > Verizon APN class handling (ELS31-V and ELS31-VA 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 (Incremental Firmware Update Over The Air)
- > Multiplexer according 3GPP TS 27.010

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

*) ELS31-VA only

DRIVERS

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

APPROVALS

- > FCC, GCF, IC, UL,
- > JATE,* TELEC*
- > Japan Environmental Directives compliant*
- > Mobile Operator Approvals:
 - Verizon (-V/-VA)
 - NTT DoCoMo (-J)
 - KDDI (-JK)
- > California RoHS

*) ELS31-J/-JK

For more information, please visit

www.gemalto.com/m2m, developer.gemalto.com, www.facebook.com/gemalto,
or follow @GemaltoIoT on twitter.

The information provided in this brochure contains merely general descriptions or characteristics of performance, which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract. All product designations may be trademarks or product names of Gemalto M2M GmbH or supplier companies whose use by third parties for their own purposes could violate the rights of the owners. Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners. ARM9 is a registered trademark of ARM Limited.

Gemalto M2M GmbH
Werinherstraße 81
81541 Munich
Germany



 WWW.GEMALTO.COM/M2M

gemalto 
a Thales company