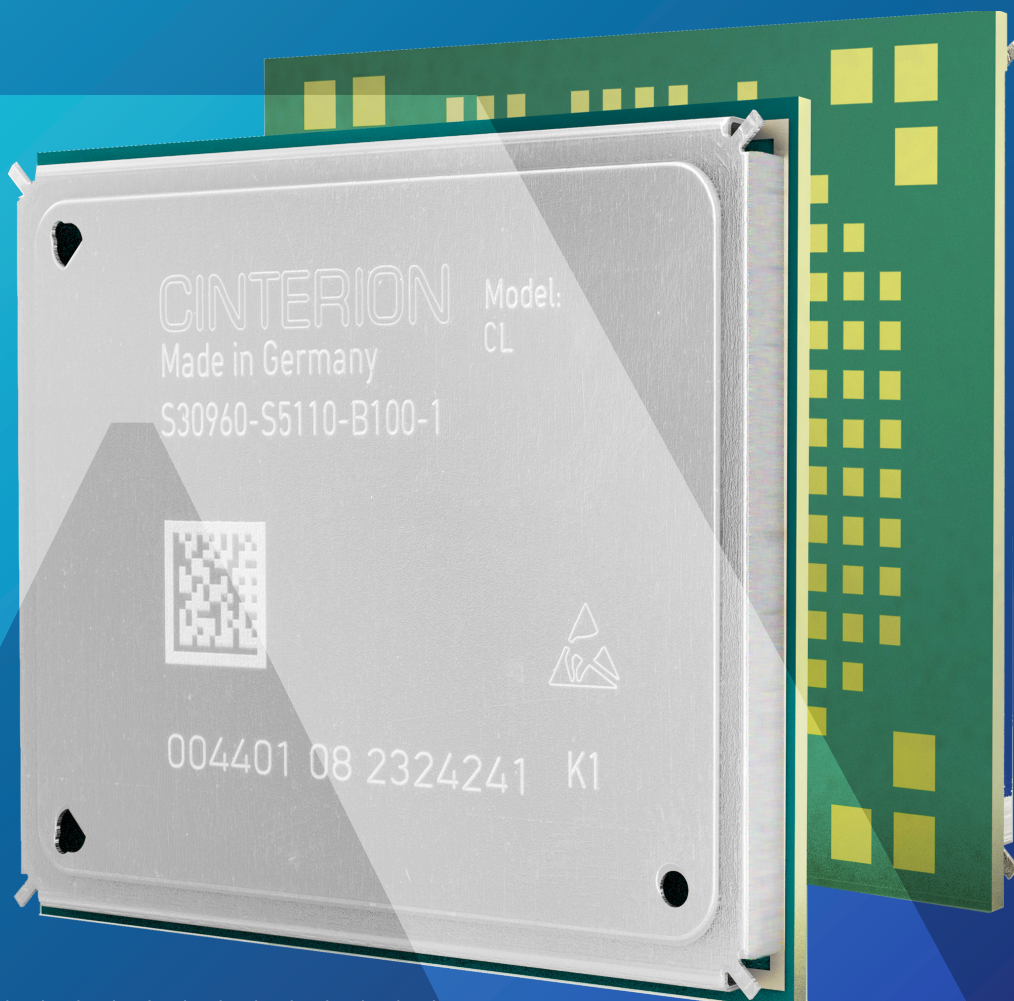


LTE

Cinterion® CL31 and CW31 System on Module

High-Speed LTE with 2G/3G Fallback, WiFi,
Bluetooth and Smart Edge Computing Power



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High-Speed LTE with 2G/3G Fallback, WiFi, Bluetooth and Smart Edge Computing Power



Global coverage

LTE with 3G/2G fallback and with VoLTE/CSFB for worldwide coverage



Enhanced and Scalable Design

Flexibility to serve multiple performance, memory and connectivity (cellular/non-cellular) options with the same design



All-in-one edge-computing platform

Processing power, rich multimedia experience and reliable connectivity packed into one highly integrated package



Biometrics

A wide range of proven Thales biometric solutions pre-integrated



Thales Core Connectivity Solutions ready

State-of-the-art Security, QoS, and zero-touch connectivity with the onboard eSIM

Key Features:

The Cinterion SoM Platform provides global coverage on just two SKUs. The CL31 delivers Cat 4 LTE connectivity with VoLTE/CSFB and seamless fall back to 2G and 3G networks plus WiFi and Bluetooth. The CW31 SoM offers non-cellular WiFi and Bluetooth exclusively. The latest Android operating system provides extraction from hardware for application design ease and agility as well as the ability to tap into an immense software ecosystem for enhanced innovation and streamlined development. It not only provides easy interfacing to displays, cameras and a variety of sensors, but it also has the right application processing and graphical processing performance integrated to power next-generation smart IoT devices requiring multimedia capabilities. The module's powerful quad-core engine handles complex applications with ease and is already geared for delivering future machine learning (ML) and artificial intelligence (AI) use cases. Enabling such new-age use cases is simplified by the support for key frameworks like Caffe and Tensorflow as well as overall compliance with the android neuro engine. The integrated Thales eSIM strengthens security and simplifies manufacturing and logistics and provides on-field flexibility with easy remote provisioning and dynamic subscription updates. The integrated GNSS provides precise positioning capability across

the globe. What's more, the CL31 SoM comes ready for a suite of cutting edge Thales solutions around biometrics, security, QoS and connectivity management. Scalability is at the core of the SoM design, the scalability concept will allow customers to pick and choose the right processing power, memory and connectivity options for the right product in their portfolio – all based on one footprint compatible design.

The CL31 and CW31 SoM enhanced platforms are tuned for IoT with extended operating temperature ranges and a rugged design for product lifecycles up to 10 years. In addition, software support over such long lifecycles is secured with the latest Android releases and fixes.

All Cinterion M2M modules come with global customer support, Full Type Approval (FTA) and local network operator and include a comprehensive set of interfaces. The Cinterion CL31 and CW31 provide a dependable connectivity platform with the support needed for a fast time to market and value you can trust.

All-in-one Android edge-computing platform

Quad-core processing power, Android agility and simplicity, biometrics and multimedia capabilities plus global connectivity packed into one highly integrated package.

Thales eSIM simplifies and secures IoT connectivity

An embedded SIM strengthens security, authenticates devices, encrypts data and securely manages connections to cellular networks. It works seamlessly with Thales subscription management solution to maintain connectivity for the lifecycle of devices. In addition, it simplifies integration, manufacturing and logistics while enabling smaller designs.

General Features

- ARM Cortex A53 - Quad Core 2.0 Ghz Processor
- LTE Cat4 FDD/TDD Rel 11 up to 150 Mbps DL / 50 Mbps UL
- Android 10 OS Support
- Dual Band (2.4/5Ghz) single stream 802.11 ac/a/b/g/n WiFi and WiFi HotSpot 2.0 support
- Bluetooth 5 dual mode (LE and EDR)
- Integrated GNSS – support for GPS/ GLONASS/ Beidou/ Galileo/ QZSS and full A-GPS capability
- Video Encode/Decode 1080p @ 30fps
- OpenGL ES 3.0 3D graphic accelerator and OpenCL 1.1
- 2GB RAM + 16 GB Flash Memory
- LGA pad soldering mount
- Supply voltage range: 3.3 – 4.3V
- Dimension: 43.2 x 41.4 x 2.9mm
- Operating temperature: -25°C to +85°C

Special Features

- Android application framework
- Edge AI support - Android Neuro Network compliant
- Cellular Voice Support VoLTE/ CSFB
- Integrated Audio Codec, noise cancellation over MIC
- Super fast charge with upto 3A
- TEE support
- Dual SIM support with dual VoLTE
- Embedded eSIM ready
- Global coverage on 2 CL31 SKUs + non-cellular CW31

Interfaces

- Single Display MIPI DSI 4x Lane interface supporting up to HD+ 1600x720 resolution
- Triple Camera 3x MIPI CSI 4x Lane interface (3rd MIPI can be divided into two lanes for total 4x Camera interfaces) integrated ISP supports 21 MP / 13+8 MP @ 30fps
- Complete USB2.0 OTG interface
- Speaker, earpiece, headphone and 2 MICs for analog audio
- Complete USB 2.0 OTG interface
- SD/SDHC card support
- Analog/Digital audio Interface (I²S, PCM)

The CL31/CW31 Power Package

- LTE-FDD/TDD Cat 4, 3G/2G fallback (DL/UL 150/50Mbps)
- Quad Core processing
- Android 10 + OS Support
- Dual Band WiFi & BT5
- GNSS support integrated
- Triple Camera, Single Display interface, USB 2.0
- Thales Solutions and Services ready
- Non-cellular/Cellular designing the same footprint
- Global coverage
- eSIM

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