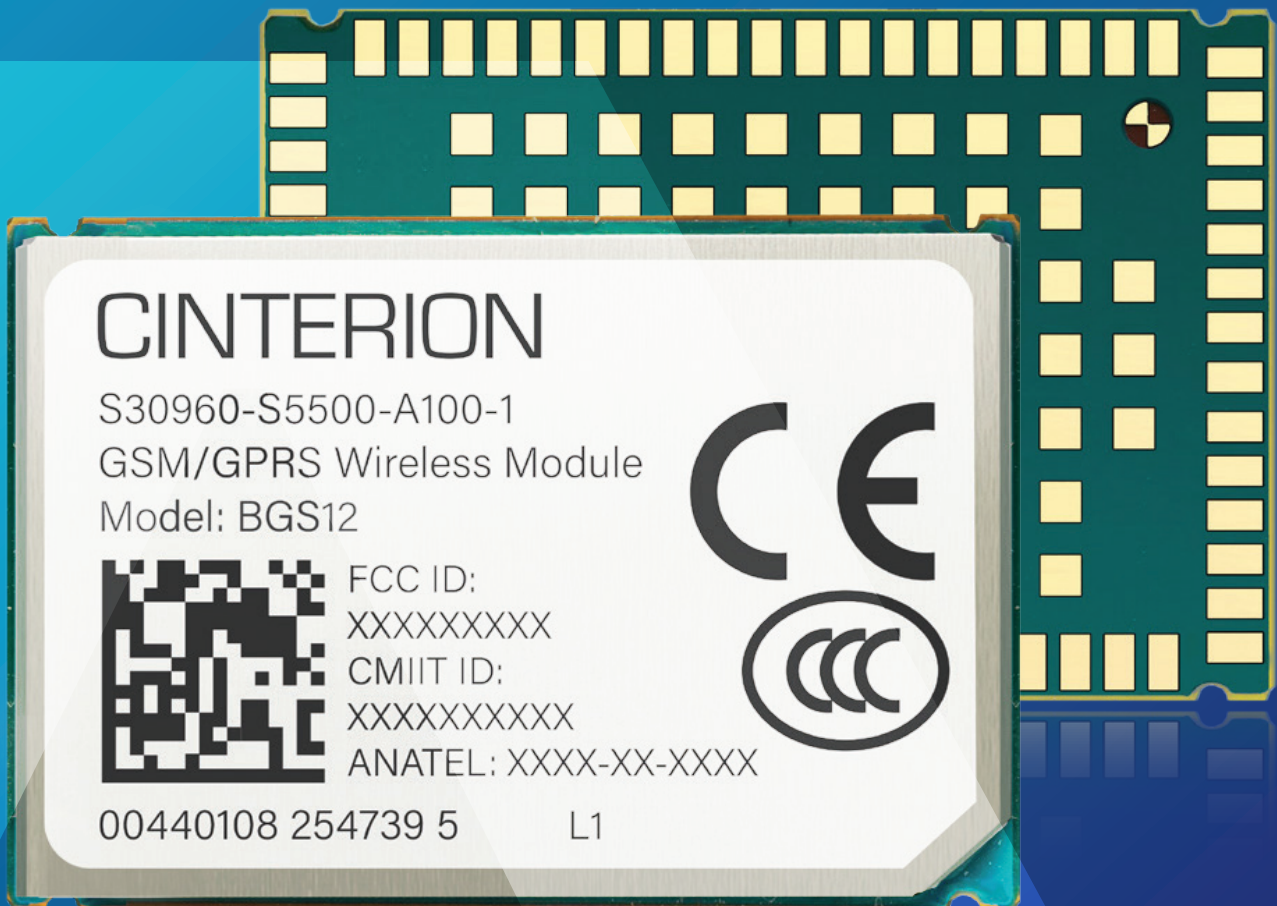


Cinterion® BGS12 IoT Wireless Module

Secure Global 2G Connectivity with a Seamless Path to 5G



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BGS12

-  **2G** Quad-Band GSM/GPRS Class12
-  Dual SIM, smart network switching
-  Embedded IP Stack
-  Firmware update via serial interface
-  Advanced Power Management System

-  Full Voice Support
-  RLS Monitoring Jamming Detection
-  SSL Encryption, Advanced TLS/DTLS support
-  Multi Design Capability (LGA)
-  Bearer Independent Protocol

The Cinterion® BGS12 IoT Wireless Module delivers reliable global 2G GSM/GPRS to connect and protect applications today while supporting easy migration to 5G in the future. The latest 2G chipset enables efficient data speeds up to 86 kbps for downlink and uplink making the BGS12 IoT module ideal for long life solutions such as metering, tracking and tracing and remote maintenance and control.

Key Features

The Cinterion BGS12 IoT module comes as Quad-Band GSM (850, 900, 1800, 1900MHz) and GPRS class 12 for global connectivity. The module's optimized power supply design and advanced power management system extends battery life and improves Total Cost of Ownership (TCO). An embedded IP stack with IPv4 support provides Internet service that is protected by an advanced security concept including TLS/DTLS support and jamming detection. A dual SIM with smart switching technology securely manages the connection to cellular networks and

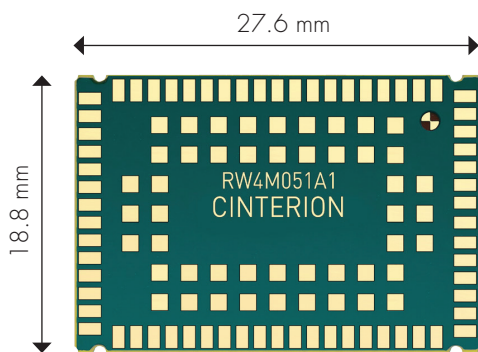
encrypts data. Customer manufacturing support services simplify the device test method (RF TX Wwave Generation / RX Power Measurement) and provide a simplified set-up for customer manufacturing processes.

Industrial Family Benefits

The Cinterion BGS12 IoT wireless module is part of Thales's Cinterion 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, LTE-M, NB-IoT and other 5G categories. All Industrial modules share a compatible 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 TCO.

Complemented by Thales's comprehensive suite of solutions, services and platforms, enterprises can easily Connect, Secure and Monetize™ IoT technology.

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Enhanced Security Concept

Advanced TLS/DTLS support for IP based services and sophisticated encryption secure data shared between device and cloud service. RLS monitoring detects and defends against jamming attacks, triggering preventive actions to secure the device.

Multi Design Capability

The industry proven BGS12 IoT module footprint, based on LGA technology, ensures full compatibility within the product family, offering seamless migration from 2G to 5G with a single design. This ensures future-proofing and investment protection for the long life of IoT applications.

IoT Advanced Power Saving

In addition to standard 3GPP power saving capabilities, the module's state of the art power management system reduces energy consumption and optimizes battery usage. Optimized power management helps to improve overall TCO.

Cinterion® BGS12 Features

General Features

- 3GPP R99 Compliant Protocol Stack
- Quad-Band GSM (850, 900, 1800, 1900MHz)
- GPRS multi-slot class 12
- Control via standardized and extended AT commands (Hayes, TS 27.007 and 27.005)
- Embedded IP stack with IPv4 support
- TCP/IP stack access via AT command and transparent TCP/ UDP services
- Internet Services TCP/UDP server/client, HTTP client, FTP client, DNS, IMCP
- SIM Application Toolkit, letter classes C, E with BIP support
- LGA pad soldering mount, MSL4
- Supply voltage range: 3.3 - 4.5 V
- Dimension: 27.6 x 18.8 x 2.7 mm
- Weight: approx. 2.29 g
- Operating temperature: -40°C to +85°C

Specifications

- GPRS class 12 data rates
- DL: max.85.6 kbps, UL: max 85.6kbps Mobile Station Class B
- PPP-Stack for GPRS data transfer
- High-quality voice support for the handset and hands-free operation
- Supplementary services & USSD support
- SMS text and PDU mode, Cell broadcast

Special Features

- RLS Monitoring (Jamming detection)
- Dual SIM with smart network switching
- Informal Network Scan
- Real-time clock with alarm functionality
- Firmware update via serial interface
- Multiplexer according to 3GPP TS 27.010
- Customer Manufacturing Test Support (RF TX Wave Generation / RX Power Measurement)

Interfaces (LGA Pads)

- Power Supply
- Pad for GSM Antenna
- Digital I2S and Analog Audio Interface with microphone feeding
- 2 High-speed serial interfaces (ASCO, ASC1)
- Serial interface, including automatic baud rate detection(8-wire)
- 6 GPIO lines shared with an I2C interface, Network-Status- Indication, PWM functionality, Jamming-Indication
- UICC and U/SIM card interface 1.8V / 3V
- Fast- Shutdown by hardware signal and AT command
- Switch-on by Hardware signal ON, Switch-off by AT command; Automatic switch-off in case of critical temperature and voltage conditions.
- Reset by hardware signal
- Orderly shutdown and reset by AT command

Drivers

- MUX driver for Windows® 7 / Windows® 8 / Windows® 10 / Windows mobile®

Approvals

- RED, GCF, CE, FCC, PTCRB, UL, IC
- EuP, RoHS, China RoHS and REACH compliant

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/loT or follow [@ThalesIoT](https://twitter.com/ThalesIoT) on Twitter

