

3G

Cinterion® EHS8 Wireless Module

Global 3G with Java™ embedded and GPS



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EHS8



Five Band 3G HSPA



Multi Design Capability (LGA)



USB 2.0 High Speed compatible



Embedded TCP/IP Stack



FOTA configurable & free of charge



Bearer Independent Protocol



Java embedded



Advanced Temperature Management



RLS Monitoring (Jamming Detection)



GPS

For more than a decade, Thales's Java strategy has enabled customers and partners to leverage the massive Java ecosystem by offering a powerful ARM11 architecture to reduce complexity and speed up application integration. Thales is expanding its leading edge portfolio of Java embedded solutions and services with the Cinterion® EHS8, an embedded GPS machine-to-machine (M2M) module.

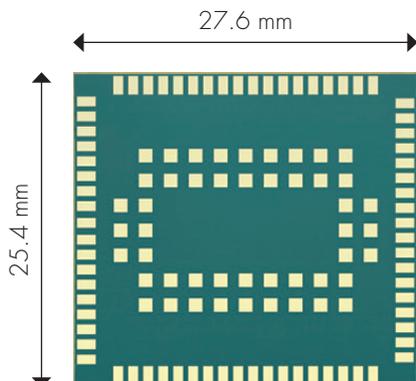
The compact EHS8 module offers the latest Java ME 3.2 client runtime platform optimized for resource-constrained M2M applications. It significantly reduces total cost of ownership (TCO) and development timelines by sharing internal resources such as memory, a large existing code base and proven software building blocks. The improved Java concept uses Multi MIDlet Java execution to simultaneously host and run multiple applications and protocols. An extended security concept with the latest TLS/SSL engine provides secure and reliable TCP/IP connectivity while an enriched internal flash file system enables free of charge firmware updates over-the-air (FOTA) when required.

Sophisticated sandbox modeling and layered architectures simplify device management (DM) and separate mobile network operator approvals from application code development, allowing simultaneous progress of both phases for a shorter time to market.

Providing the capability for multiple designs from one solution, the newest addition to Thales's Industrial platform is an ideal module for applications migrating from 2G to 3G requiring cost efficiency along with global connectivity. EHS8 offers five band HSPA to support high bandwidth connectivity and enables speeds up to 7.2 Mbps in downlink and 5.7 Mbps in uplink. EHS8 supports common industrial interfaces such as USB, serial interfaces, I²C and various GPIO's to be connected with the Java engine.

Bringing together embedded GPS, a miniaturized footprint and cost efficiency with Java flexibility and 3G capabilities, the EHS8 module is the ideal solution for size-constrained applications such as track and trace solutions.

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BIP (Bearer Independent Protocol)

BIP secures broadband speed to eUICC (MIM / classic) to enable On-Demand Provision Service (OPS) and Remote Application Management by direct communication between eUICC and network based on internal TCP/IP stack. As a result it enables instant data connectivity on 1st use of a device, as well as a flexible mobile subscription throughout the lifecycle and a reduced number of customer device variants.

Full type approval

As is true with all Cinterion modules, EHS8 includes full type approval (FTA) for global roaming as well as certification from the largest mobile operators worldwide.

Java™

Java offers easy and fast application development, a broad choice of tools, high code reusability, easy maintenance, a proven security concept, on-device debugging as well as multi-threading programming and program execution.

Thales M2M Support includes:

- Personal design-in consulting for hardware and software
- Extensive RF test capabilities
- GCF/PTCRB conform pretests to validate approval readiness
- Regular training workshops



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

Cinterion® EHS8 Features

General Features

- 3GPP Rel.7 Compliant Protocol Stack
- Five Bands UMTS (WCDMA/FDD)
Bands: 800, 850, 900, 1900 and 2100 MHz
- Quad-Band GSM
Bands: 850, 900, 1800 and 1900 MHz
- SIM Application Toolkit, letter class "b", "c", "e" with BIP and RunAT support
- Control via standardized and extended ATcommands (Hayes, TS 27.007 and 27.005)
- TCP/IP stack access via AT command and transparent TCP/UDP services
- Secure Connection with TLS
- Internet Services TCP/UDP server/client, DNS, Ping, HTTP, FTP client
- LGA pad soldering mount, MSL4
- Supply voltage range 3.1 - 4.5 V, highly optimized for minimal power consumption
- Dimension: 27.6 x 25.4 x 2.2 mm
- Weight: 3 g
- Operating Temperature: -40 °C to +90 °C

Specifications

- HSDPA Cat.8 / HSUPA Cat.6 data rates
DL: max. 7.2 Mbps, UL: max. 5.76 Mbps
- EDGE Class 12 data rates
DL: max. 237 kbps, UL: max. 237 kbps
- GPRS Class 12 data rates
DL: max. 85.6 kbps, UL: max. 85.6 kbps
- CSD data transmission up to 9.6 kbps
- SMS text and PDU mode support
- High quality voice support for handset, headset and hands-free operation
- Integrated TTY modem

Special Features

- USB interface feature a composite mode, compliant to Windows, Linux and Mac
- Firmware update via USB and serial interface
- RLS Monitoring (Jamming detection) in 2G and 3G
- Informal Network Scan
- Integrated FOTA, configurable and free of charge

Java Open Platform

- Java™ ME 3.2
- Multi-Threading programming and Multi-Application execution
- 10 MB RAM and 10 MB Flash File System

GPS Features

- Integrated 32 Channel GNSS receiver
- NMEA-183, EGNOS, WAAS
- Position Accuracy (CEP50): 1.5m
- TTFF (-130dBm): 1s Hot Start, <35s Cold Start
- Sensitivity (active antenna):
 - Acquisition -145dBm
 - Navigation -156dBm
 - Tracking -162dBm

Interfaces (LGA Pads)

- Power Supply
- Pad for GSM/WCDMA Antenna
- Pad for AGPS Antenna
- USB 2.0 HS interface up to 480 Mbps

- High speed serial modem interface ASCO
- HSIC interface up to 480 Mbps
- 16 GPIO lines shared with DSR, DTR, DCD (all ASCO), ASC1 (RXD, TXD, RTS, CTS), SPI, Fast-Shutdown, Network-Status-Indication, PWM and Pulse-Counter lines
- ADC and I²C interface
- Digital audio interface
- UICC and U/SIM card interface 1.8 V / 3 V
- Lines for Module-On and Reset

Drivers

- USB, MUX driver for Microsoft® Windows XP™, Vista™ and 7™
- RIL, USB driver for Microsoft® Windows Embedded Handheld™ >= 6.x
- USB, MUX driver for Microsoft® Windows Embedded Compact™ >= 5.x

Approvals

- R&TTE, GCF, CE, FCC, PTCRB, IC, UL
- AT&T and other local approvals and provider certifications
- EuP, 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/iot or follow [@ThalesIoT on Twitter](https://twitter.com/ThalesIoT)

