

## EHS8



Five Band 3G  
HSPA



Bearer  
Independent  
Protocol



Multi Design  
Capability  
(LGA)



Java  
embedded



USB 2.0  
High Speed  
compatible



Advanced  
Temperature  
Management



Embedded  
TCP/IP Stack



RLS Monitoring  
(Jamming Detection)



FOTA  
configurable &  
free of charge



GPS



## 3G

Cinterion® EHS8 Wireless Module  
Global 3G with Java™ embedded and GPS

# Cinterion® EHS8 Wireless Module

## Global 3G with Java™ Embedded and GPS

For more than a decade, Gemalto'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. Gemalto is expanding its leading edge portfolio of Java embedded solutions and services with the Cinterion® EHS8, an embedded GPS machine-to-machine (M2M) module.

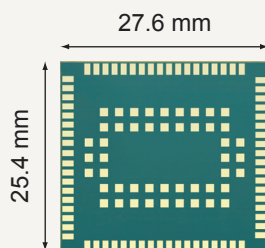
The compact EHS8 module offers the latest Java ME 3.2 client runtime platform optimized for resource-constrained M2M applications. It significantly reduces total cost of ownership (TCO) and development timelines by sharing internal resources such as memory, a large existing code base and proven software 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 Gemalto'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, I<sup>2</sup>C 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.

### Global 3G with Java™ Embedded and GPS



#### 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.

#### Gemalto 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 ASC0
- > HSIC interface up to 480 Mbps
- > 16 GPIO lines shared with DSR, DTR, DCD (all ASC0), ASC1 (RXD, TXD, RTS, CTS), SPI, Fast-Shutdown, Network-Status-Indication, PWM and Pulse-Counter lines
- > ADC and I<sup>2</sup>C 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

**For more information, please visit**

[m2m.gemalto.com](http://m2m.gemalto.com), [developer.gemalto.com](http://developer.gemalto.com), [www.facebook.com/gemalto](http://www.facebook.com/gemalto),  
or follow @gemaltom2m 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**  
St.-Martin-Str. 60  
81541 Munich  
Germany



➔ [M2M.GEMALTO.COM](http://M2M.GEMALTO.COM)

**gemalto**  
security to be free