

## PHS8



Five-Band  
3G



Quad-Band  
2G



HSPA+



GPS



GPRS / EDGE  
Class 12



Extended  
Temperature  
Range



Full Voice  
Support



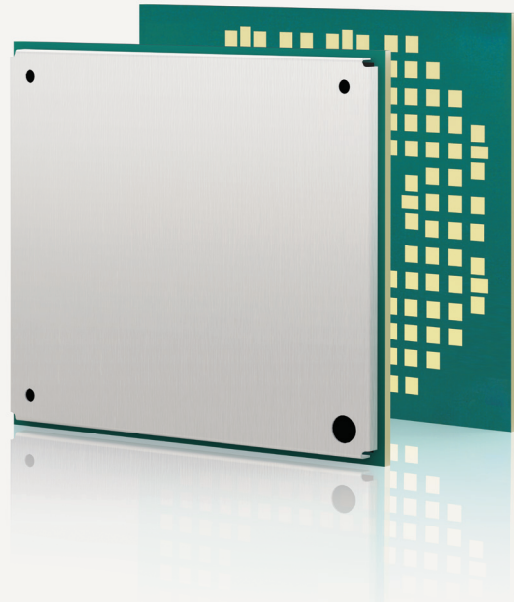
USB 2.0



TCP/IP



RIL Driver



## HSPA+

Cinterion® PHS8 Wireless Module  
The Thinnest 3G LGA Module in the Market

# Cinterion® PHS8 Wireless Module

## The Thinnest 3G LGA Module in the Market

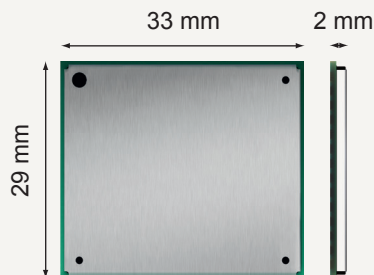
The new Cinterion PHS8 HSPA+ cellular machine-to-machine (M2M) module offers a smart solution for wireless connectivity today and in the future. With the latest HSPA+ technology, PHS8 is optimized for high bandwidth and allows speeds up to 14.4 Mbps for downlink and 5.7 Mbps for uplink. PHS8 is available in different versions, the PHS8-P, PHS8-J and PHS8-K with five bands UMTS for true global roaming and local dual band variants, the PHS8-US / PHS8-USA (United States) and PHS8-E (Europe), for improved TCO. PHS8 provides true worldwide coverage and reliability even while roaming across different wireless network technologies. By enabling a full range of M2M functions and features, PHS8 protects your technology investment by ensuring reliable communications today while allowing room for growth to 4G cellular technology on evolving GSM networks for many years to come.

PHS8 with its variants offers an ideal communication solution for the challenging requirements of a variety of M2M applications such as ruggedized mobile computing, security solutions, medical equipment, payment systems and gateway routers.

Two antenna pads enable diversity support allowing PHS8 to provide improved data speeds even under fluctuating 3G network conditions. The GPS antenna path is optimized for elimination of blanking on GPS for consistent performance.

The unique type of LGA technology enables optimized heat dissipation that prevents warpage. It gives our customers the freedom to select the most beneficial soldering paste for each individual application.

### The Thinnest 3G LGA Module in the Market



#### Future Proof Design

At just 2 mm in height, PHS8 is ideal for integration in the slimmest and most size constraint M2M solutions. With the latest long-life chipset and a footprint prepared for forthcoming LTE modules, PHS8 provides longevity and a reliable path to the future for any high-bandwidth M2M applications.

#### Full Voice Support

PHS8 includes best-in-class analog audio processing which allows quick & easy audio implementation.

#### Improved Power Management

PHS8 improved power management features preserve the battery power necessary for remote M2M devices and reduce heat generation. Combined with its intelligent design for superior heat dissipation, PHS8 is the first choice for temperature critical M2M applications.

#### 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® PHS8 Features

## GENERAL FEATURES

- > PHS8-P / PHS8-J / PHS8-K: Five Bands UMTS/HSPA+ (WCDMA/FDD) (850/800, 900, 1900 and 2100 MHz), Quad-Band GSM (850/900/1800/1900 MHz)
- > PHS8-US / PHS8-USA: Dual Band UMTS/HSPA+ (850, 1900 MHz), Dual-Band GSM (850/1900 MHz)
- > PHS8-E: Dual Band UMTS/HSPA+ (900/2100 MHz), Dual-Band GSM (900/1800 MHz)
- > UMTS / HSPA+, 3GPP release 6 / 7
  - > Rx-Diversity with Equalizer (Type 3i)
  - > Enhanced F-DPCH, DTX, DRX, SCH-IC
- > GSM / GPRS / EDGE, 3GPP release 99 / 4 Improved SAIC
- > SIM Application Toolkit, 3GPP release 99
- > Data, Voice and TTY support
- > Control via standardized and extended AT commands (Hayes, TS 27.007, TS 27.005)
- > Supply voltage range 3.3 - 4.2 V highly optimized for minimal power consumption
- > Dimension: 29 × 33 × 2 mm
- > Operational Temperature range: -40 °C to +85 °C
- > RoHS and WEEE compliant

## SPECIFICATIONS

- > HSDPA Cat. 10 / HSUPA Cat.6 data rates  
DL: max. 14.4 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 14.4 kbps, V.110
- > SMS text and PDU mode, Phonebook support
- > Voice support, optimized for high quality handset, headset and hands-free telephony with dual microphone support for suppression of non-stationary background noise

## SPECIAL FEATURES

- > USB interface supports multiple composite modes and a Linux -/Mac- compliant mode
- > Multiplexer according 3GPP TS 27.010
- > Firmware update via USB and serial interface
- > TCP/IP stack access via AT commands
- > Customer IMEI/Netlock variants

## GPS/GLONASS FEATURES

- > Standalone GPS and GLONASS
- > GNSS dedicated AT commands
- > A/GPS support: standalone, XTRA®, CP E911
- > Protocol: NMEA-0183 V2.3
- > Option for temporary NMEA stream buffering
- > Tracking Sensitivity: better than -158 dBm

## INTERFACES

- > LGA mounting
- > 2 pads for WAN Diversity-Antennas
- > 1 pad for an active GPS Antenna
- > Analog audio interface (balanced)
- > Digital audio interfaces (PCM or I2S)
- > USB 2.0 HS interface up to 480 Mbps
- > High speed serial interface up to 920 kbps
- > UICC and U/SIM card interface 1.8 V and 3 V
- > Pads for Emergency-Off, Ignition, Network Status Indication, Low Current Indication

## DRIVERS

- > NDIS/USB/MUX driver for Microsoft® Windows XP™, Windows Vista™ and Windows 7™
- > RIL/NDIS/USB/MUX driver for devices based on Microsoft® Windows Embedded Handheld™
- > USB/MUX driver for Microsoft® Windows Embedded Compact™
- > RIL driver for devices based on Android OS™
- > CDC-ACM compliant mode for Linux

## APPROVALS

- > RED, FCC, GCF, PTCRB, UL, IC, CE
- > AT&T, Telstra and other local approvals and provider certifications (PHS8-P)
- > NTT DoCoMo and other local approvals (PHS8-J)
- > SK Telecom and other local approvals (PHS8-K)

\*) PHS8-P / -J / -K / -USA only

For more information, please visit

[gemalto.com/m2m](http://gemalto.com/m2m), [www.facebook.com/gemalto](http://www.facebook.com/gemalto), or Follow @gemaltoIoT on twitter.

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