

## PHS8



Five-Band  
3G



Quad-Band  
2G



HSPA+



GPS



GPRS / EDGE  
Class 12



Extended  
Temperature  
Range



Full Voice  
Support



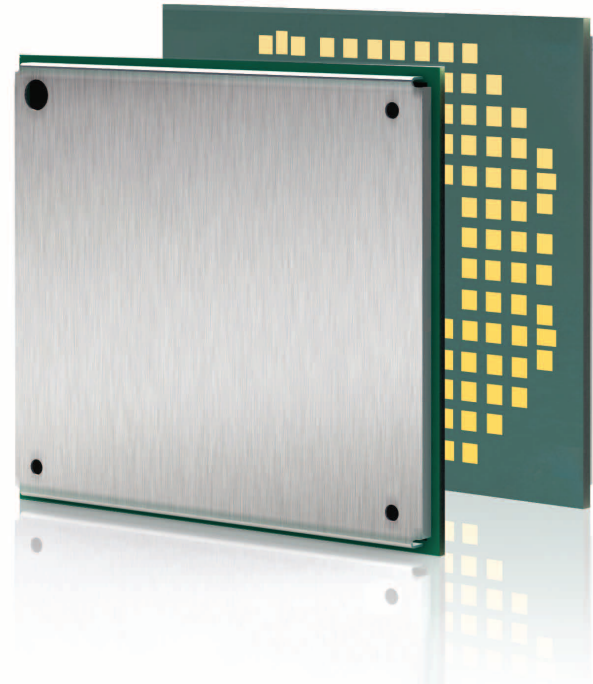
USB 2.0



TCP/IP



RIL Driver



## Cinterion PHS8

### 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.

Cinterion's 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.

# PHS8

## General Features

- True global coverage with 3G  
**PHS8-P / PHS8-J / PHS8-K:** Five Bands UMTS/HSPA+ (850/800, 900, 1900 and 2100 MHz), Quad-Band GSM
- **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
- GSM / GPRS / EDGE, 3GPP release 99 / 4
- SIM Application Toolkit, release 99
- SAIC / RX Diversity Type 3i
- Control via AT commands (Hayes, 3GPP TS 27.007 and 27.005)
- Supply voltage range 3.3 - 4.2 V
- Dimension: 29 x 33 x 2 mm
- Operational Temperature range: -40°C to +85°C

## GPS Features

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

## Specifications

- HSDPA/HSUPA data rates:  
DL: 7.2 / 14.4 Mbps, UL: 2.0 / 5.76 Mbps  
Concurrent data rate:  
DL: 7.2 Mbps, UL: 5.76 Mbps
- UMTS data rates:  
DL: max. 384 kbps, UL: max. 384 kbps
- 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
- Voice features:  
HR, FR, EFR and AMR supported for Handset, headset and hands-free telephony.  
Dual microphone support for suppression of non-stationary background noise.
- TTY supported

## Approvals

- R&TTE, 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

## Interfaces

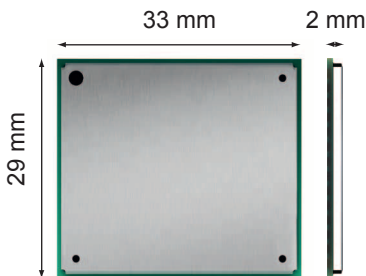
- LGA mounting
- 2 x antenna pads for GSM/UMTS
- 1 x antenna pad for GPS
- Power supply
- Audio: 1 x analog\*, 1 x digital (PCM or I<sup>2</sup>S)
- USB 2.0 high speed
- UICC and U/SIM card interface 1.8V/3V
- Emergency-off
- Network status
- Serial interfaces up to 920 kbps

## Special Features

- NDIS/USB/MUX driver for Microsoft<sup>®</sup> Windows XP<sup>™</sup>, Windows Vista<sup>™</sup> and Windows 7<sup>™</sup>
- RIL/NDIS/USB/MUX driver for devices based on Microsoft<sup>®</sup> Windows Embedded Handheld<sup>™</sup>
- USB/MUX driver for Microsoft<sup>®</sup> Windows Embedded Compact<sup>™</sup>
- RIL driver for devices based on Android OS<sup>™</sup>
- Internet Services via TCP/IP Stack
- Customer IMEI/Netlock as variant
- Firmware update via USB and serial Interface
- USB supports multiple composite modes and a Linux-/Mac- compliant mode

For detailed specification please see hardware interface description.

## Introducing 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.



## Cinterion Global Support

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.

The Cinterion support includes:

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

Further information about our products and services is also accessible via [www.cinterion.com](http://www.cinterion.com)

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 Cinterion or supplier companies whose use by third parties for their own purposes could violate the rights of the owners. Java and the Java logo are registered trademarks of Sun Microsystems, Inc. in the United States and other countries. ARM9 is a registered trademark of ARM Limited.

Cinterion  
St-Martin-Str. 60  
81541 Munich  
Germany