

# HSPA+

## M2M Advanced



**CINTERION**  
a Gemalto company

### Wireless Module PH8

True global coverage with 3G,  
including AWS.



M2M Advanced



Quad-Band  
2G



Five-Band  
3G



80 pin B2B  
Connector



EDGE  
Class 12



GPS



GPRS  
Class 12



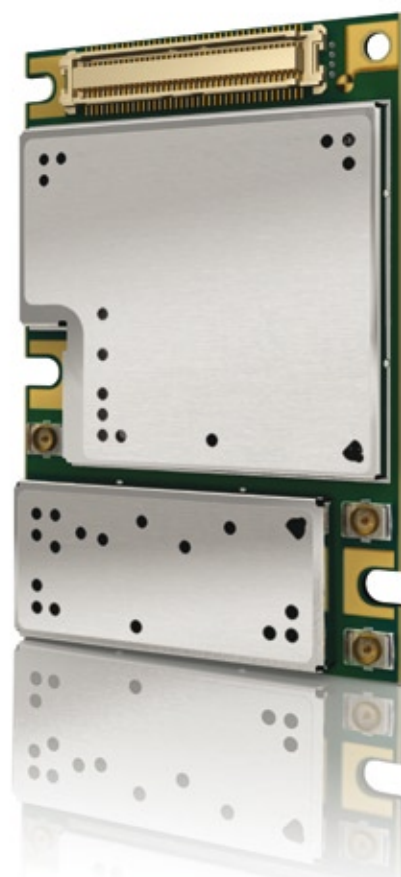
Extended  
Temperature  
Range



Full Voice  
Support



USB 2.0



The new CINTERION PH8 HSPA+ cellular machine-to-machine (M2M) module offers a smart solution for wireless connectivity today and in the future. With the latest HSPA+ technology, PH8 is optimized for high bandwidth functionality and allows for speeds up to 14.4 Mbps for download and 5.7 Mbps for uplink. Operating on quad-band GSM/GPRS, EDGE and five-band UMTS /HSPA+ (800/850, AWS, 1900, 2100 MHz), PH8 provides true worldwide coverage and reliability even while roaming across different wireless network technologies. By enabling a full range of M2M functions and features, PH8 protects your technology investment by ensuring reliable communications today while allowing room for growth to 3.5G cellular technology on evolving GSM networks for many years to come.

PH8 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.

CINTERION's PH8 offers GPS capabilities with three antennas for HSPA diversity and concurrent GPS tracking. An intelligent single-sided design provides superior heat dissipation characteristics. With an 80-pin B2B connector, PH8 easily supports migration from 2G to 3G and is based on a state-of-the-art chipset with 45 nanometer technology for an extended product lifecycle.



**По вопросам продаж и поддержки обращайтесь:**

Архангельск (8182)63-90-72

Астана +7(7172)727-132

Белгород (4722)40-23-64

Брянск (4832)59-03-52

Владивосток (423)249-28-31

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Новокузнецк (3843)20-46-81

Новосибирск (383)227-86-73

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Самара (846)206-03-16

Санкт-Петербург (812)309-46-40

Саратов (845)249-38-78

Смоленск (4812)29-41-54

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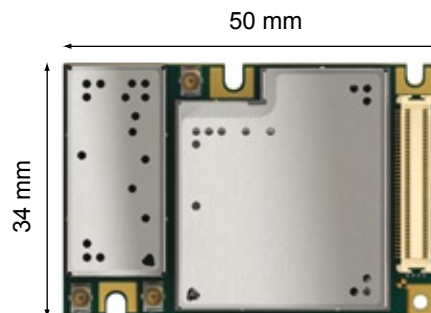
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**сайт: [www.cinterion.nt-rt.ru](http://www.cinterion.nt-rt.ru) || эл. почта: [cnr@nt-rt.ru](mailto:cnr@nt-rt.ru)**

# Wireless Module PH8

## True global coverage with 3G, including AWS



### General features

- Five Band UMTS (WCDMA/FDD): 800, 850, 1900, AWS and 2100 MHz
- Quad-Band GSM: 850, 900, 1800, 1900 MHz
- UMTS / HSPA+, 3GPP release 6 / 7
- GSM / GPRS / EDGE, 3GPP release 99 / 4
- SIM Application Toolkit, release 99
- SAIC / RX Diversity Type 3i for all bands
- Control via AT commands (Hayes, 3GPP TS 27.007 and 27.005)
- Supply voltage range 3.3 - 4.2 V
- Dimension: 50 x 33.9 x 3.1 mm, single sided
- Operational Temperature range: -40°C to +85°C

### GPS features

- E911 A-GPS functionality via Control Plane
- Standalone GPS, SUPL prepared
- GPS dedicated AT command
- Protocol: NMEA-0183 V2.3
- GPS active antenna supply: 3.3 V
- Tracking Sensitivity: better than -158 dBm
- No GPS blanking

For detailed specification please see Hardware Interface Description.

### Specifications

- HSDPA/HSUPA data rates  
DL: 3.6 / 7.2 / 14.4 Mbps, UL: 2.0 / 5.67 Mbps  
concurrent data rate:  
DL 7.2 Mbps/UL 5.67 Mbps
- UMTS data rates  
DL: max. 384 kbps, UL: max. 384 kbps
- EDGE class 12  
DL: max. 237 kbps, UL: max. 237 kbps
- GPRS class 12  
DL: max. 85.6 kbps, UL: max. 85.6 kbps  
full PBCCH support, EDA
- CSD data transmission 14.4 kbps, V.110
- SMS text and PDU mode
- Voice specification:  
HR, FR, EFR and AMR supported  
Handset, Headset and Handsfree modes
- TTY supported

### Approvals

- R&TTE, FCC, GCF, PTCRB, UL, IC, CE
- AT&T and additional local approvals and network operator certifications

### Interfaces

- 80-pin board-to-board connector
- 2 x antenna connectors for GSM/UMTS
- 1 x antenna connector for GPS
- Power supply
- Audio: 1 x analog, 1 x digital
- USB 2.0 high speed
- UICC and U/SIM card interface 3V, 1.8 V
- Emergency-off
- Network status
- serial interface 920 kbps with autobauding up to 460 kbps

### Special features

- NDIS/USB driver for Microsoft® Windows XP™, Windows Vista™ and Windows 7™
- RIL/NDIS/USB driver for devices based on Microsoft® Windows Mobile™ >= 6.X
- USB driver for Microsoft® Windows CE™ 5.0 and 6.0
- Multiplex driver for Microsoft® Windows XP™, Windows Vista™ and Windows 7™
- Customer IMEI/Netlock as variant
- Firmware update via USB and serial Interface

### Full voice support

PH8 includes best-in-class analog audio processing which allows quick & easy audio implementation.

### Improved power management

Improved power management features in the PH8 module preserve battery power necessary for remote M2M devices and results in less heat production. Combined with a single-sided design, the resulting superior heat dissipation strategy makes PH8 the first choice for temperature critical M2M applications.

### Three antenna connectors

Three distinct connectors enable antenna diversity, so PH8 provides improved data speed under fluctuating 3G network conditions and eliminates blanking on GPS for consistent performance.



### 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)

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