

# 3G

## M2M Advanced



**CINTERION**  
WIRELESS MODULES

### Wireless Module HC25 HSDPA ready to integrate



M2M  
Advanced



HSDPA



RIL Driver



GPS



USB



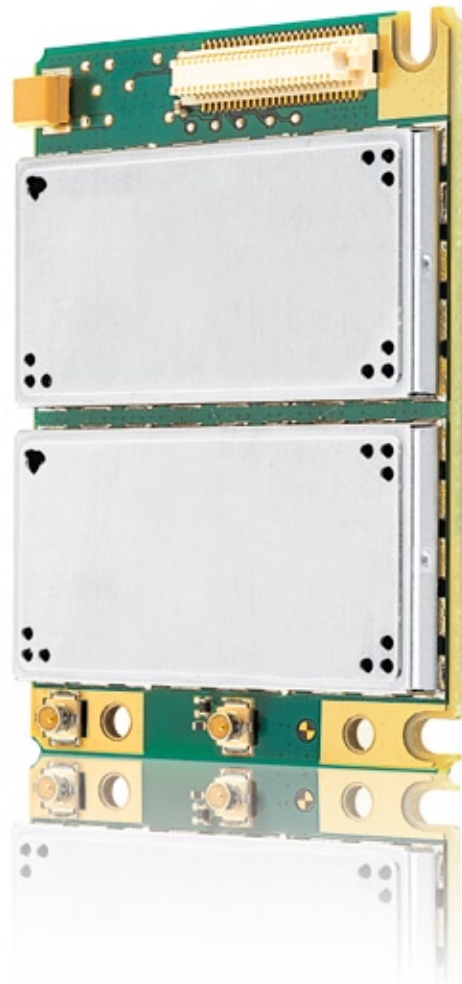
Tri-Band 3G



Serial Interface



Quad-Band 2G



The HC25 provides HSDPA 3.6 Mbit/s download speed, Tri-Band UMTS/HSDPA, Quad-Band GSM/GPRS/EDGE, an RIL/NDIS/USB driver for Microsoft® Windows Mobile™-based devices, and robust mounting and interfaces, including a serial and USB port. Beyond that, the HC25 offers on-board GPS functionality, making it a good choice for tracking applications, and meets the USA's E911 standard.

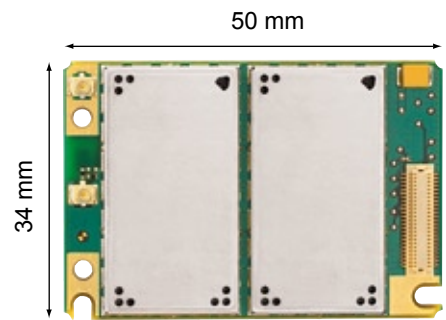
HSDPA (High Speed Downlink Packet Access) technology is a transmission standard based on the UMTS technology. This technology, in combination with full voice and data capability,

a USB and serial interface, a RIL/NDIS/USB driver and connected via a rugged board-to-board connector, provides manufacturers with the opportunity to develop new devices and solutions within a very short time and at a low cost of ownership. As a result, the HC25 enables applications to offer services like broadband internet and e-mail access, high-speed download of large files and streaming of videos or music.

In addition, the HC25 comes with full type approval. It has also been approved by major network carriers around the world, including US operators.

# Wireless Module HC25

## HSDPA ready to integrate



### General features

- Tri-Band UMTS/HSDPA (WCDMA/FDD) 850/1900/2100 MHz
- Quad-Band GSM 850/900/1800/1900 MHz
- EDGE (E-GPRS) multi-slot class 10
- GPRS multi-slot class 10
- UMTS/HSDPA 3GPP release 5
- GSM 3GPP release 99
- Output power:
  - Class 4 (2 W) for GSM900
  - Class 3 (0.25 W) for UMTS/HSDPA
  - Class E2 (0.5 W) for EDGE 850/900
  - Class E2 (0.4 W) for EDGE 1800/1900
  - Class 1 (1 W) for GSM 1800/1900
- Control via AT commands (Hayes 3GPP TS 27.007 and 27.005)
- SIM Application Toolkit (release 99)
- Supply voltage range: 3.2 ... 4.2 V
- Power consumption:
  - Power down 50  $\mu$ A
  - HSDPA @ +10dB 420 mA
- Temperature range
  - Normal Operation: -20°C to +65°C
  - Restricted Operation: -30°C to +75°C
  - Storage: -40°C to +85°C
- Dimensions: 34 x 50 x 4.5 mm
- Weight: approx. 10g
- E911 functionality via Control Plane

### Specification for HSDPA

- data transmission**
- max. 3.6 Mbps (DL), max. 384 kbps (UL)
  - UE CAT [1-6], 11, 12 supported
  - Compressed mode according to 3GPP TS 25.212

### Specification for UMTS

- data transmission**
- max. 384 kbps (DL), max. 384 kbps (UL)

### Specification for EDGE

- data transmission**
- Class 10: max. 237 kbps (DL), max. 118 kbps (UL)
  - Mobile station class B
  - Modulation and coding scheme MCS 1-9

### Specification for GPRS

- data transmission**
- Class 10: max. 85.6 kbps (DL), max. 42.8 kbps (UL)
  - Mobile station class B
  - Full PBCCH support
  - Coding schemes CS 1-4

### Specification for CS

- data transmission**
- GSM CSD data rate 14.4 kbps, V.110
  - 3G UDI data rate 64 kbps, X.31
  - Non-transparent and transparent mode

### Specification for GPS

- Tracks up to 13 satellites, L1 1575.42 MHz
- Accuracy Position: 2.5 m CEP; 5.0 m SEP
- Protocols: NMEA-0183 V2.3
- GPS dedicated AT commands
- Date WGS-84
- Tracking sensitivity: -158 dBm (with active antenna)
- Start-up Time: Hot start: <3s, Warm start: 30s, Cold start: 30s
- GPS active antenna supply: 3.3 V

### Specification for fax

Group 3, class 1

### Specification for SMS

- Point-to-point MO and MT
- SMS cell broadcast
- Text and PDU mode

### Specification for voice

- Triple-rate codec for HR, FR and EFR
- GSM & UMTS: Adaptive multi-rate AMR
- DTMF supported
- CEPT/ANSI supervisory tones supported
- Handset, Headset, Handsfree modes
- TTY supported

### Special features

- NDIS/USB driver for Microsoft® Windows XP™ & Microsoft® Windows Vista™
- RIL/NDIS/USB driver for devices based on Microsoft® Windows Mobile™6
- Multiplex driver for Microsoft® Windows XP™ & Microsoft® Windows Vista™
- USB driver for Microsoft® Windows CE™ 5.0
- Customer IMEI as variant
- Firmware update via USB & serial interface

### Interfaces

- U.FL-R-SMT 50  $\Omega$  antenna connector
- Antenna pad
- 50-pin board-to-board connector
  - Power supply
  - Audio: 1 x analog
  - USB 2.0 full speed
  - UICC/SIM card interface 3 V, 1.8 V
  - Emergency-off & Network status
  - Serial Interface ASC0

### Approvals

- R&TTE, GCF, CE, FCC, PTCRB, UL, IC
- Local approvals and network operator certifications

### 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



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

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