

## AH3



HSPA+ / UMTS



80 pin B2B  
Connector



GPRS / EDGE  
Class 12



GPS / A-GPS  
GLONASS



RLS Monitoring



Extended  
Temperature  
Management



Advanced  
Antenna  
Concept  
(Pogo)



SIM Access  
Profile



Antenna  
Diagnostics



# AUTOMOTIVE

Cinterion® AH3 Wireless Module  
Global Coverage with HSPA+ Performance

# Cinterion® AH3 Wireless Module

## Global Coverage with HSPA+ Performance

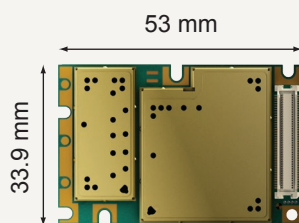
The Cinterion AH3 module is the latest in a long history of successful automotive grade products for enhanced automotive applications. It is the first variant of a new 3G automotive platform to incorporate dedicated features such as antenna diagnostics, extended temperature range, SIM access profile and a configurable RLS function for jamming detection.

State-of-the-art chipsets with 45 nanometer technology ensure a long product lifecycle and highest reliability even under rugged conditions. An intelligent single-sided design also provides superior heat dissipation characteristics.

With an 80-pin B2B connector, the Cinterion AH3 enables flexible mounting for easy design-ins and testing. In addition, it offers the most advanced embedded GPS capabilities with three antennas for HSPA diversity and concurrent GPS tracking to avoid GPS blanking. Based on the latest HSPA+ technology, AH3 is optimized for high bandwidth speeds up to 14.4 Mbps for downlink and 5.7 Mbps for uplink.

AH3 comes in two versions: AH3-US which supports AWS band in Northern America, and AH3-W which adds 900 MHz to cover all other world regions and to ensure true global roaming.

### Global Coverage with HSPA+ Performance



#### Improved Power Management

AH3's improved power management features preserve the battery power necessary for car alarm or fleet management applications and reduce heat generation. Combined with an intelligent single-sided design for superior heat dissipation, AH3 is the first choice for temperature critical telematics applications.

#### Intelligent Antenna Concept

AH3 integrates pogo pads, or gold plated landing arrays that ensure a reliable and robust 50 Ohms antenna connection via a spring contact. The intelligent antenna concept is simple to mount and cost efficient. Two antenna pads enable diversity support allowing AH3 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.

#### Full Voice Support

AH3 includes best-in-class analog audio processing supporting VDA hands-free category 2a and digital audio for quick and easy audio implementation.

#### 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® AH3 Features

## GENERAL FEATURES

- > Four-Bands UMTS (WCDMA/FDD) 800, 850, 900 and 2100 MHz (AH3-W)
- > Tri-Bands UMTS (WCDMA/FDD) 850, 1900 MHz and AWS 1700/2100 MHz (AH3-US)
- > 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 800/850 and 2100 MHz
- > Control via AT commands (Hayes, 3GPP TS 27.007 and 27.005)
- > TCP/IP stack access via AT commands
- > Supply voltage range 3.3 - 4.2 V
- > Dimension: 53 x 33.9 x 3.1 mm, single sided
- > Temperature range -40 °C to +85 °C (Protection switch-off)

## SPECIFICATIONS

- > HSDPA/HSUPA data rates  
DL: max. 14.4 Mbps, UL: max. 5.7 Mbps  
concurrent data rate: DL 7.2 Mbps/UL 5.7 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
- > CSD data transmission 14.4 kbps, V.110
- > SMS text and PDU mode
- > Remote SIM access (SIM Access Profile)
- > Voice specification:  
HR, FR, EFR and AMR supported  
Handset, Headset and Handsfree modes
- > RLS Monitor (Jamming Detection)
- > TTY supported
- > VDA hands-free category 2a
- > Firmware update via USB and serial Interface

## GPS / GLONASS FEATURES

- > E911 A-GPS functionality via Control Plane
- > Fully integrated GPS solution
- > GPS dedicated AT command
- > Protocol: NMEA-0183 V2.3
- > GPS active antenna supply: 3 V
- > Tracking Sensitivity: better than -158 dBm

## INTERFACES

- > 80-pin board-to-board connector
- > 2 x antenna pad for GSM/UMTS
- > 1 x antenna pad for GPS
- > Audio: 1 x analog, 1 x digital
- > USB 2.0 high speed
- > UICC/SIM card interface 3 V, 1.8 V
- > serial interface with autobauding
- > 10 x GPIO
- > Antenna diagnostics for GSM/UMTS/GPS antennas supported

## APPROVALS

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

**For more information, please visit**

[m2m.gemalto.com](http://m2m.gemalto.com), [www.facebook.com/gemalto](http://www.facebook.com/gemalto), or Follow @gemaltom2m on twitter.

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