

## AHS2



HSPA / UMTS



RLS  
Monitoring



eCall /  
ERA GLONASS  
Compliant



GPS / A-GPS,  
GLONASS



Antenna  
Diagnostics



Extended  
Temperature  
Management



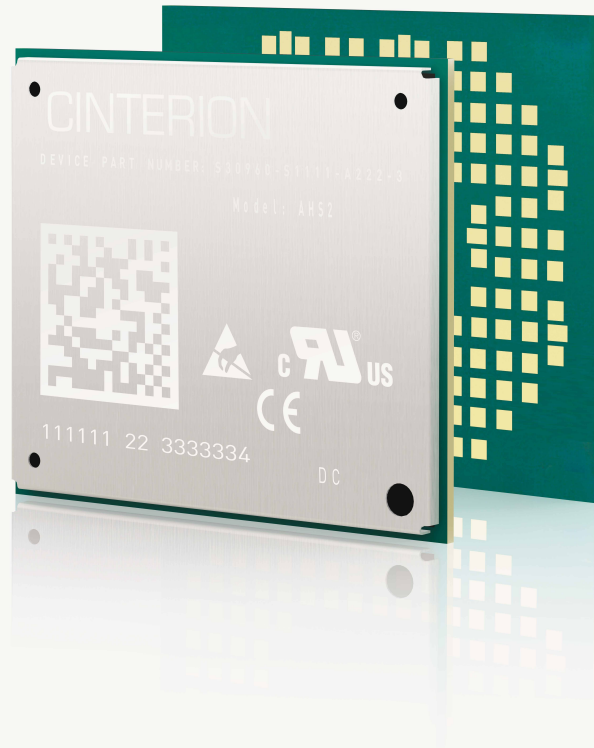
Digital & Analog  
Audio Support



USB 2.0



RIL Driver



## HSPA

Cinterion® AHS2 Wireless Module

European Automotive 3G SMT optimized for eCall / ERA GLONASS

# Cinterion® AHS2 Wireless Module

## European Automotive 3G SMT optimized for eCall / ERA GLONASS

As a part of the Cinterion Automotive family, the AHS2 offers the optimum solution for any European Automotive needs. It's compatible with not only Cinterion 2G European and 3G World solutions, but Long Term Evolution (LTE) as well. This places AHS2 as a future proof component with a reliable migration path for critical 4G technology data-intensive services in automotive entertainment systems.

AHS2 is engineered to meet the highest level of compliance with automotive specifications and provides an unparalleled level of quality and performance, even under the harshest operating conditions.

The unique Cinterion Land Grid Array (LGA) technology enables optimized heat dissipation that prevents warping. It gives our automotive customers the freedom to select the most beneficial soldering paste for each individual application.

Based on Qualcomm's latest chipset, the module's extreme ruggedness and ultra compact LGA footprint guarantee long product availability.

Equipped with high performance GPS/GLONASS, the AHS2 platform is already prepared to meet the comprehensive requirements of the European eCall and ERA-GLONASS initiatives. It also features in-band modem functionality, voice prompts, high quality audio according to VDA 2a, jamming detection, antenna diagnosis as well as TCP/IP services.

The AHS2 is an ideal enabler for current and future high performance automotive and ITS applications including: toll collect, onboard vehicle telematics and fleet management, in-car entertainment systems as well as automatic emergency calling, breakdown support or roadside assistance.

### Automotive 3G SMT with Migration Path to LTE



#### Future Proof Design

At just 2.1 mm in height, AHS2 is ideal for integration in the slimmest and most size constraint automotive solutions. Extreme ruggedness and the latest long-life chipset ensure long product availability to meet automotive market requirements. With the future proven LGA footprint today's automotive application are already prepared for forthcoming LTE standard enjoying a confirmed migration path.

#### Improved Power Management

AHS2 improved power management features preserve the battery power necessary for automotive systems and reduce heat generation. Combined with its intelligent design for superior heat dissipation, AHS2 is the first choice for temperature critical automotive applications.

#### Automotive Compliance

The AHS2 is compliant with multiple automotive manufacturing process standards according to TS16949 and quality processes including APQP, PPAP, PCN and 8D.

#### Gemalto M2M Support includes:

- > Personal design-in consulting for hardware and software
- > Extensive RF test capabilities
- > GCF 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® AHS2 Features

## GENERAL FEATURES

- > AHS2-E:
  - Dual-Band UMTS (WCDMA/FDD): 900 and 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
- > Dual Transfer Mode
- > TCP/IP Stack access via AT commands
- > SAIC for all bands
- > Control via standard and extended AT commands (Hayes, 3GPP TS 27.007 and 27.005, PTCRB RFT 007)
- > Supply voltage range 3.3 V – 4.2 V
- > Dimension: 33 x 29 x 2.4 mm single sided
- > Temperature range -40 °C to +85 °C (Protection switch-off)
- > RoHS, EuP and REACH compliant
- > IMDS listed GADLS compliant

## 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)
- > TCP/IP connectivity
- > Voice support (HR, FR, EFR and AMR), optimized for high quality Handset, Headset and hands-free Telephony
- > RLS Monitoring (Jamming Detection)
- > TTY supported
- > eCall according to 3GPP Rel8, inband modem embedded
- > Voice Prompt Player
- > VDA hands-free category 2a prepared
- > Firmware update via USB and serial Interface
- > Continuous Antenna Diagnostic for GSM/WCDMA and GPS Antennas

## GPS/GLONASS FEATURES

- > Fully integrated GPS solution
- > GPS dedicated AT command
- > Protocol: NMEA-0183 V2.3
- > Dormant mode
- > GPS active Antenna supply prepared
- > GLONASS Support
- > Russian eCall according ERA GLONASS
- > Tracking Sensitivity: better than -158 dBm
- > E911 A-GPS functionality via Control Plane
- > Pan-European eCall according 3GPP Rel. 10, inband modem embedded

## INTERFACES (SMT-LGA)

- > Pad for GSM/WCDMA Antenna
- > Pad for GPS Antenna
- > Audio: 1 x digital, 1 x analog
- > USB 2.0 high speed interface up to 480 Mbps
- > UICC/SIM card interface 3 V, 1.8 V
- > High Speed Serial interface with autobauding
- > 10 x GPIO lines
- > Antenna Diagnostics for GSM/UMTS/GPS Antennas supported
- > UICC and U/SIM card interface 1.8V / 3V
- > Pads for Emergency-Off, PowerOn / 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™

## APPROVALS

- > RED, GCF, CE
- > Automotive e-mark
- > Local approvals and network operator certifications

For more information, please visit

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

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 Gemalto M2M GmbH or supplier companies whose use by third parties for their own purposes could violate the rights of the owners. Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners. ARM9 is a registered trademark of ARM Limited.

