AHS2

- HSPA / UMTS
- eCall / ERA GLONASS Compliant
- Antenna Diagnostics
- Digital & Analog Audio Support
- RIL Driver
- RLS Monitoring
- GPS / A-GPS, GLONASS
- Extended Temperature Management
- USB 2.0

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

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<th>Feature</th>
<th>Description</th>
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| 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 4ADLS compliant |

## Specifications

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| UMTS data rates | DL: max. 14.4 Mbps, UL: max. 5.7 Mbps  
Concurrent data rate: DL 7.2 Mbps/UL 5.7 Mbps |
| GSM data rates | 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

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<td>Fully integrated GPS solution</td>
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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)

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</table>
| 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

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| NDIS/USB/MUX driver for Microsoft® Windows XP™, Windows Vista™ and Windows 7™ | USB/MUX driver for Microsoft® Windows Embedded Compact™  
RIL/NDIS/USB/MUX driver for devices based on Microsoft® Windows Embedded Handheld™  
RIL driver for devices based on Android OS™ |

## Approvals

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