Evolution Platform
LGA Solderable

CINTERION
WIRELESS MODULES

EES3, EGS5, EGS3, BGS3
Full flexibility with leading edge LGA technology

Evolution Platform

LGA Mounting

Quad-Band

EDGE Class 12

GPRS Class 12

Java™

Powerful Processor Large Memory Integrated

Multi SIM Interface

RLS

TCP/IP

Industrial Interface

USB

RIL Driver

SIM Access Profile

Cinterion's Evolution Platform is comprised of multiple Cinterion modules offering scalability, compatibility as well as an easy path to future upgrades and added functionality as technology needs expand. Portfolio benefits include maximum flexibility, high functionality, ease of integration, as well as backward and forward compatibility, which ensures a reliable, high quality and cost efficient solution that preserves your technology investment.

Part of the Evolution Platform, the LGA solderable products including the EES3, EGS5, EGS3 and BGS3 modules which feature efficient and reliable LGA mounting technology along with optimized size and performance.
The modules are based on a new advanced processor design and the field proven and reliable Cinterion M2M software stack. The latest chip technology enables high performance, improved efficiency and the benefit of long-term availability.

www.cinterion.com

- EDGE Class 12
- GPRS Class 12
- GSM

The EES3 Wireless Module — One of the smallest EDGE modules in the world (Enhanced Data Rates for GSM Evolution — the fastest transmission standard in GSM). The EES3 features an integrated TCP/IP stack over AT, serial and USB ports, and a RIL driver for Microsoft® Windows™ Mobile 6.1 based devices.

- GPRS Class 12
- GSM
- JAVA™

The EGS5 Wireless Module — Offers embedded JAVA™ processing based on a state-of-the-art ARM 9 processor architecture. Other features include GPRS Class 12 functionality, an integrated TCP/IP stack over AT, and an array of industrial interfaces such as SPI, I²C bus, USB, AD/DA converter, and multiple GPIOs.
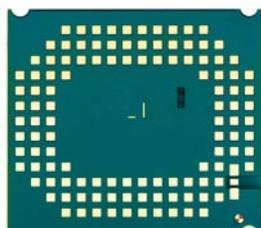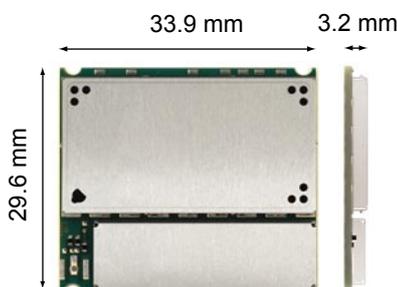

- GPRS Class 12
- GSM

The EGS3 Wireless Module — Offers enhanced M2M connectivity with GPRS Class 12 functionality, an integrated TCP/IP stack over AT as well as industrial interfaces SPI, I²C, and USB port.

- GPRS Class 10
- GSM

The BGS3 Wireless Module — Basic M2M functionality with GPRS Class 10 functionality, two serial interfaces, an integrated TCP/IP stack over AT and a RIL driver for Microsoft® Windows™ Mobile 6.1 based devices.

33.9 mm   3.2 mm

29.6 mm

Original size

EDGE Class 12 — The highest symmetric data speed (236.8 kbps in uplink and downlink) for M2M applications requiring fast data transmissions.

GPRS Class 12 — High symmetric data speed (86 kbps in uplink and downlink) for M2M applications.

RLS Monitoring — Remote Link Stability Monitoring providing network performance information which enables for example effective customized jamming detection.

Advanced Temperature Management — Protects the module in critical thermal environments to maintain reliability and functionality, allowing a long product life time.

Internal Memory — Fully integrated and optimized internal memory for highest reliability and easy design-in.

Java™ — Java offers easy and fast application development, a broad choice of tools, high code reusability, easy maintenance, a proven security concept, on-device debugging as well as multi-threading programming and program execution.

Multi SIM Interface — Flexible SIM interface enables usage of the best fitting and newest SIM technology — from regular SIM cards to M2M component SIM's.

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

	EES3	EGS5	EGS3	BGS3
	EDGE	Java™	GPRS Advanced	GPRS Standard
General features				
Control via AT commands	●	●	●	●
EDGE (E-GPRS) multi-slot	Class 12			
GPRS multi-slot	Class 12	Class 12	Class 12	Class 10
Circuit Switched Data	Up to 14.4 kbps	Up to 14.4 kbps	Up to 14.4 kbps	Up to 14.4 kbps
SMS	●	●	●	●
Fax	Group 3, class 1	Group 3, class 1	Group 3, class 1	Group 3, class 1
Control via AT commands (Hayes 3GPP TS 27.007 and 27.005)	●	●	●	●
SIM Application Toolkit (release 99)	●	●	●	●
TCP/IP stack access via AT commands	●	●	●	●
Internet services: TCP, UDP, HTTP, FTP, SMTP, POP3	●	●	●	●
Supply voltage range: 3.2 … 4.5 V	●	●	●	●
Operational temperature range: -40°C to +85°C, switch off: > +85°C	●	●	●	●
Dimensions: 33.9 x 29.6 x 3.2 mm	●	●	●	●
Weight: 5.5 g	●	●	●	●
Specification for EDGE data transmission				
EDGE Class 12	Max. 236.8 kbps (DL and UL)			
Modulation and coding schemes MCS 1-9	●			
Specification for GPRS data transmission				
GPRS Class 12 & Class 10	Max. 86 kbps (DL and UL)	Max. 86 kbps (DL and UL)	Max. 86 kbps (DL and UL)	Max. 86 kbps (DL) Max. 43 kbps (UL)
Coding schemes CS 1-4	●	●	●	●
Specification for voice				
Triple-rate codec for HR, FR, and EFR	●	●	●	●
Adaptive multi-rate AMR	●	●	●	●
Hands-free operation, Echo cancellation & Noise reduction	●	●	●	●
Java™ features				
Java™ profile IMP-NG & CLDC 1.1 HI		●		
Secure data transmission with HTTPS, SSL, and PKI		●		
Multi-threading programming and program execution		●		
Special features (extract)				
RIL driver for Microsoft® Windows Mobile™ 6.1 based devices	●			●
Character framing 7E1 and 8E1 at serial interface	●	●	●	
SIM Access Profile integrated	●	●	●	
RLS Monitoring	●	●	●	●
Advanced Temperature Management	●	●	●	●
Interfaces (LGA pads)				
Antenna 50 Ω solder pad	●	●	●	●
Audio: 2 x analog, 1 x digital	●	●	●	●
Serial interfaces (ITU-T V.24 protocol)	2	2	2	2
SIM card interface	3 V, 1.8 V	3 V, 1.8 V	3 V, 1.8 V	3 V, 1.8 V
USB 2.0 full speed	●	●	●	
I²C & SPI bus	●	●	●	
Analog in and analog out (ADC and PWM)		2 ADC, 1 PWM		
Multiple GPIOs		●		
Approvals				
CE, R&TTE, GCF, UL, FCC, IC, PTCRB	●	●	●	●
Local approvals and network operator certifications (list available)	●	●	●	●
Delivery Package				
Tape and Reel, modules per reel	300	300	300	300

For detailed specification please see Hardware Interface Description.

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WIRELESS MODULES

EES3, EGS5, EGS3, BGS3
Full flexibility with leading edge LGA technology

LGA Benefits

Land grid array, or LGA, is a surface-mount technology for fully automated manufacturing allowing the benefit of efficiency and process consistency. Cinterion's unique type of LGA technology was designed with a focus on reliability and flexibility to meet the demanding requirements of M2M applications.

Cinterion's LGA features include:
▪ A unique layout for heat dissipation that prevents warpage
▪ Customizable soldering provides the freedom to select the most beneficial soldering paste for each individual application
▪ Optimized pad size and layout enables customer specific overprinting

Cinterion's engineering expertise and close attention to customer needs offer a competitive advantage that shortens the time to market. For instance, Cinterion provides:
▪ "Tape and reel" module delivery for efficient manufacturing
▪ Delivery of 300 modules per reel for mass production
▪ Daisy Chain modules for soldering tests, 50 per reel
▪ Evaluation Modules with soldered LGA modules on a DSB75 compatible adaptor PCB for easy and fast application development

Cinterion Wireless Modules
St-Martin-Str. 53
81669 Munich, Germany

Further information about our products and services is also accessible via www.cinterion.com

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About Cinterion Wireless Modules

Cinterion Wireless Modules is a leading supplier of machine-to-machine communication devices and solutions based on HSDPA, EDGE, GPRS and GSM technologies. Our broad product portfolio of fully certified and high quality products offer communication for a wide range of applications, including automotive, metering, remote maintenance, e-health, e-toll systems, POS systems, tele-services, industrial PDA's, routers and gateways, security systems, as well as tracking and tracing.