Evolution Platform
Connector Modules

MC75i, TC65i/TC65i-X, TC63i

- Powerful Processor Large Memory
- SIM Access Profile
- Quad-Band
- Tunneling Mode
- EDGE / GPRS Class 12
- Industrial Interface
- FOTA
- USB
- Java™
- RIL Driver
- TCP / IP
- RLS Monitor (Jamming Detection)

Full Featured, Truly Industrial and Scalable Platform

Cinterion's Evolution Platform is comprised of multiple Cinterion modules offering scalability, compatibility and an easy path to future upgrades and added functionality as technology needs expand.

The award winning products, including the MC75i, TC65i and TC63i modules, as part of the Evolution Platform, feature a flexible, easy to maintain and reliable mounting concept along with optimized size and performance. The refresher with Release 2 adds several additional features such as tunneling mode or a location API for the Java variant.

With the new release Cinterion introduces a new family member TC65i-X with an extended memory (1.7 MB RAM, 8 MB Flash File System) that also enables integrated Firmware Update Over The Air to protect customer investments.

The products are based on an 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. Designed to satisfy the needs of different M2M industry verticals such as metering, security and remote maintenance and control, each module's focus varies in terms of data transmission speed and the JavaTM open platform.

Like all Cinterion modules the Evolution Platform includes approval (FTA) enabling use across the globe.

CINTERION
a Gemalto company

Same Dimensions, full Flexibility

MC75i

- EDGE Class 12
- GPRS Class 12
- GSM

MC75i Wireless Module | EDGE up your business – EDGE, short for Enhanced Data rates for GSM Evolution, is the fastest transmission standard in GSM networks. The MC75i employs this technology to transmit data anywhere on an operator's network. Alongside this core technology, the MC75i comes with a TCP/IP stack over AT, serial and USB ports, and a RIL driver for Microsoft ® Windows CE™ based devices.

**TC65i /
TC65i-X**

- GPRS Class 12
- GSM
- JAVA™

TC65i Wireless Module | The M2M application platform – The heart of the TC65i is the Java™ Virtual Machine, making it a high performance, open platform module. The powerful Java™ platform runs on the embedded ARM9 processor and utilizes internal resources as well as memory tuned and aligned to customer applications. The TC65i leverages this platform-and-processor combination with GPRS technology, a TCP/IP stack over AT, and an array of industrial interfaces such as SPI, I²C bus, AD/DA converter, and GPIOs to speed up time to market and cut development costs.

The **TC65i-X** variant offers extended memory for more powerful applications.

TC63i

- GPRS Class 12
- GSM

TC63i Wireless Module | Top-of-the-scale M2M connectivity – The TC63i features GPRS Class 12, an integrated TCP/IP stack over AT as well as industrial interfaces SPI, I2C bus and USB port. This makes it an ideal choice for M2M applications where a microcontroller is already available and only a high performance wireless communications connection is needed. Rounding out the product platform, the TC63i embodies "grow-as-you-go" benefits of this triple-module package: use it to satisfy basic GPRS needs, and as demand for EDGE technology grows, switch to the MC75i without investing money to redevelop the application.

M2M Glossary

EDGE Class 12 – The highest symmetric data speed (236 kbps in uplink and downlink) for M2M applications requiring quick 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.

Tunneling mode – A smart way that allows the mcirocontroller to control any device that has a serial interface like GPS receiver or NFC device through the module and enable transparent communication.

33.9 mm   3.3 mm

35 mm

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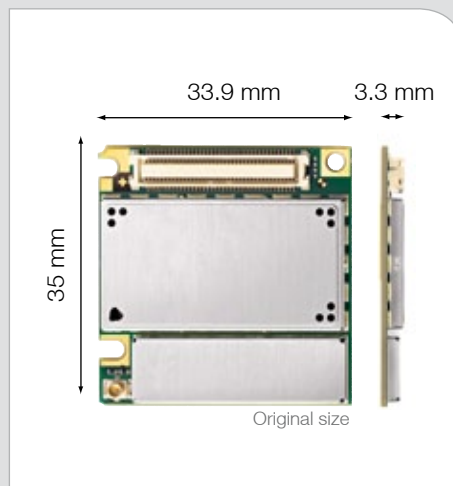
Java™ – Java offers easy and fast application development, a broad choice of tools, high code reusability, easy maintenance, a proven security concept, on-device debugging as well as multi-threading programming and program execution.

FOTA – The new TC65i-X comes with an extended memory that allows customers to use the additional memory also for integrated Firmware Update Over The Air (FOTA).

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

Location API – Easy connection for external GPS to provide coordinates, landmarks or landmark stores.

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.

MC75i, TC65i/TC65i-X, TC63i
Full Featured, Truly Industrial and Scalable Platform

	MC75i	TC65i/TC65i-X	TC63i
	EDGE	Java™	GPRS Advanced
General features			
Control via AT commands (Hayes, 3GPP TS 27.007 and 27.005)	●	●	●
EDGE (E-GPRS) multi-slot	Class 12		
GPRS multi-slot	Class 12	Class 12	Class 12
Circuit Switched Data	Up to 14.4 kbps	Up to 14.4 kbps	Up to 14.4 kbps
SMS, PDU mode, cell broadcast	●	●	●
Fax	Group 3, class 1	Group 3, class 1	Group 3, class 1
SIM Application Toolkit (release 99), letter class "b", "c", "e"			
TCP/IP stack access via AT commands and transparent TCP service	●	●	●
Internet services: TCP, UDP, HTTP, FTP, SMTP, POP3, Ping	●	●	●
Supply voltage range: 3.2 … 4.5 V	●	●	●
Operational temperature range: -40°C to +75°C, switch off: > +80°C	●	●	●
Dimensions: 33.9 x 35.0 x 3.3 mm	●	●	●
Weight: 7.5 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	Max. 86 kbps (DL and UL)	Max. 86 kbps (DL and UL)	Max. 86 kbps (DL and 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, GPS support		●	
Multi-threading programming and program execution		●	
1,7 MB RAM and 8 MB Flash File System		● (TC65i-X)	
Special features (extract)			
Secure data transmission with HTTPS, SSL and PKI	●	●	●
RIL driver for Microsoft® Windows CE™ based devices	●		
Multiplex Driver Microsoft® Windows and Linux	●	●	●
Serial interface modem for Microsoft® Windows 7™/XP™/Vista™	●	●	●
RLS Monitoring (Jamming Detection)	●	●	●
Advanced Temperature Management	●	●	●
Informal Network scan (easy scan)	●	●	●
Firmware update via serial and USB interface	●	●	●
Integrated Firmware Update Over The Air (FOTA)		● (TC65i-X)	
TLS for IP over AT	●	●	●
Tunneling mode for external serial devices	●	●	●
Real time clock with alarm functionality	●	●	●
Interfaces			
Antenna: U.FL-R-SMT + 50 Ω solder pad	●	●	●
Audio: 2 x analog, 1 x digital	●	●	●
Serial interfaces (ITU-T V.24 protocol)	2	2	2
SIM card interface	3 V, 1.8 V	3 V, 1.8 V	3 V, 1.8 V
USB 2.0 full speed	●	●	●
I²C & SPI bus	●	●	●
ADC/DAC		2/1	
Dedicated Multiple GPIOs (digital)		●	
Approvals			
CE, R&TTE, GCF, UL, FCC, IC, PTCRB, RoHS	●	●	●
Local approvals and network operator certifications (list available)	●	●	●
Delivery package			
Tray, modules per tray	100	100	100

For detailed specification please see hardware interface description.

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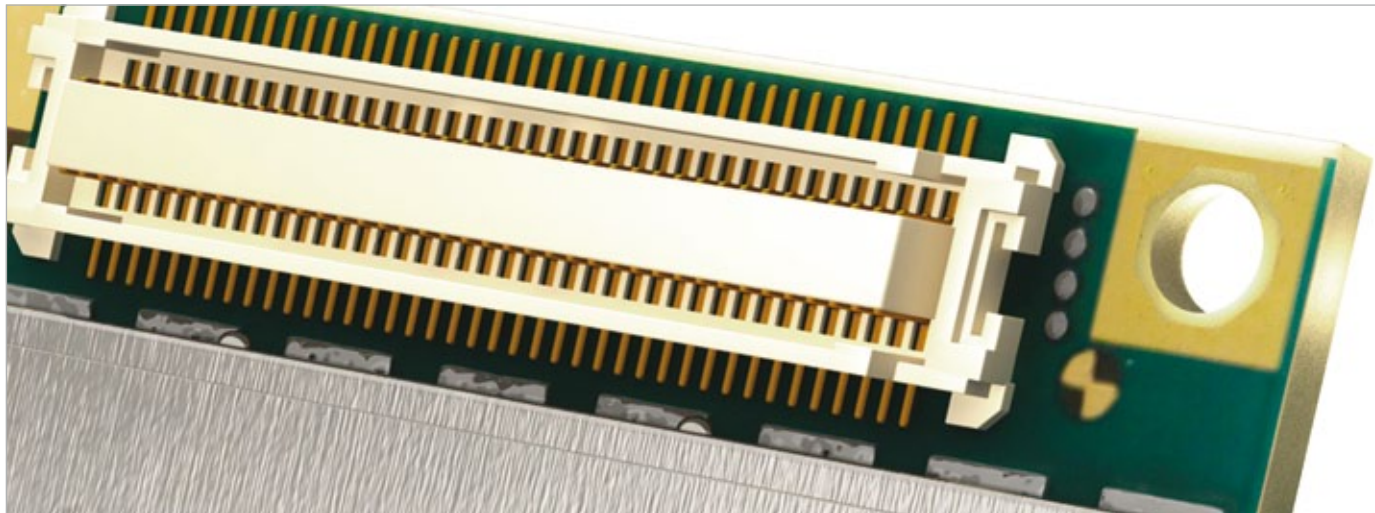
Cinterion Global Support

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

About Cinterion

A Machine-to-Machine (M2M) industry pioneer and market leader for more than 15 years, Cinterion gives customers the confidence to excel in a complex M2M ecosystem through the foundations of expertise, security, simplicity and partnership. Cinterion's award-winning products and services allow a wide range of connected machines, equipment, vehicles and other assets to securely communicate over wireless networks, helping enterprises simplify operations, increase efficiency and establish new business models. Cinterion is a valued partner for equipment makers, integrators, MNOs, and end-users, offering unique competence in combining wireless M2M modules with Machine Identification Modules (MIM), MIM personalization capabilities, cloud-based Service Delivery Platform for M2M applications and device management platforms in a trusted and secure environment. Cinterion products power M2M technology for diverse vertical markets including: automotive, tracking and tracing, industrial mobile computing, metering and smart grid, payment systems, healthcare, security systems, routers and gateways, remote maintenance and control and more.