

**SIEMENS**



# TC65 – The m2m Applications Platform

Wireless Modules



The new Java-based TC65 is the first product of its kind giving developers a complete hardware and software platform with which to create brand-new m2m applications. But that's not all – quadband and GPRS class 12 provide top-quality GSM/GPRS connectivity. Thanks to the variety of interfaces included, like GPIOs, I2C bus and SPI bus, plus its integrated TCP/IP stack, the TC65 can be utilized in just about any m2m application you can imagine,

- Remote metering and remote control systems
- Security systems, e.g. alarm systems
- Vending machines
- POS devices and automatic teller machines
- ... and many more applications.

The TC65 supports IMP 2.0, the new Java profile specially developed for data communication modules. It is downward-compatible with IMP 1.0, which was used in the TC45 - TC65's predecessor. An on-board ARM processor ensures high-speed data processing, while the quadband technology makes it possible for you to employ the module in any GSM network in the world.

# TC65

# TC65 – The Next Generation Java Module

Java is a complete software development platform with which to create license-free, hardware-independent applications. Using TC65, product developers can cut down their bill of material costs as well as speed up their time-to-market. Thanks to the IMP 2.0 profile, the TC65 enables simple yet safe over-the-air software updates and data encryption for applications in which security is a top issue. As far as environmental friendliness is concerned, the module is ahead of the times: the TC65 is lead-free, meeting the European requirement on limiting the use of certain hazardous substances in electrical and electronic devices (RoHS).



## Technical Data

Original size

### General features

- Quadband:  
850/900/1800/1900 MHz
- GSM release 99
- Output power:
  - Class 4 (2 W) for EGSM 850 and 900
  - Class 1 (1 W) for GSM 1800 and 1900
- AT commands Hayes GSM 07.05 and GSM 07.07
- SIM application toolkit release 99
- Supply voltage range:  
3.2 to 4.5 V
- Recommended supply voltage:  
3.8 +/- 0.2 V
- Power consumption:
  - Power down t.b.d.  $\mu$ A
  - Sleep mode  
(registered DRX =6) t.b.d. mA
  - Talk mode (average) t.b.d. mA
  - GPRS class 12 (average)  
t.b.d. mA
- Charging control for Lithium batteries
- Dimensions: 34 x 45 x 3.5 mm
- Weight < 10 g
- Ambient temperature range:  
- 30 to + 65°C
- Automatic switch off at + t.b.d.°C

### Open application platform features

- ARM7 processor
- Memory: t.b.d. kbytes (RAM) and t.b.d. Mbytes (Flash)
- Improved power-saving modes
- TCP/IP stack access via AT commands

### Java features

- CLDC 1.1
- J2ME profile IMP 2.0
- Secure data transmission with HTTPS and PKI
- Support of TCP, UDP, HTTP, FTP, SMTP, POP3
- Application SW and module FW update over-the-air

### Specification for GPRS data transmission

- Multislot class 12
- PBCCH support
- Coding scheme 1 to 4
- Class B mobile station

### Specification for CSD data transmission

- Up to 14.4 kbit/s
- V.110
- Non-transparent mode
- USSD support

### Specification for fax

- Group 3, class 1

### Specification for voice

- Triple-rate codec for HR, FR, and EFR
- Adaptive multirate AMR
- Basic hands-free operation
- Echo cancellation
- Noise reduction

### Specification for SMS

- Via GSM or GPRS
- Point-to-point MO and MT
- Text and PDU mode
- SMS cell broadcast

### Approvals

- R&TTE, FCC, UL, IC, GCF, PTBRC
- Local approvals and network operator certifications

### Interfaces

- Molex 80-pin board-to-board connector
- Hirose U.FL 50 ohm antenna connector
- Antenna solder pad
- Audio: 2 x analog, 1 x digital
- 2 serial interfaces with the ITU-T V.24 protocol
- USB 2.0 full speed
- SIM card interface, 3 V, 1.8 V
- I2C bus and SPI bus
- 2 x analog in (ADC)
- 1 x analog out (PWM)
- 10 GPIOs

More about Siemens  
Wireless Modules at:  
[www.siemens.com/wm](http://www.siemens.com/wm)

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