
















GSM/GPRS Module GE863-PRO³

Dual core with integrated GPS, 850/900/1800/1900, EASY GPRS Embedded (TCP/IP stack inside), EASY SCRIPT and ARM9™



-  Telit Unified AT Command Set
-  BGA Package
-  Quad Band GPRS
-  GPRS Class 10
-  RoHS Compliant
-  SIM Access Profile
-  PYTHON[®] Script Interpreter
-  PYTHON/C++
-  ARM9 200 MIPS Embedded
-  Linux
-  Embedded FTP and SMTP Client
-  Extended Temperature Range
-  Extended RF Sensitivity
-  Serial Port Multiplexer (GSM 7.10)
-  Embedded TCP/IP Stack

The GE863-PRO³ is an innovation to the quad-band, RoHS compliant GE863 product family which includes a powerful ARM9™ processor core exclusively dedicated to customer applications.

The concept of co-locating a powerful processor core with the GSM/GPRS engine allows developers to host their application directly. The PRO³ incorporates much of the necessary hardware for communicating microcontroller solutions, including the critical element of memory, significant simplification of the bill of material, vendor management, and logistics effort are achieved.

Additionally, this packaging of powerful components virtually eliminates the need for regulatory re-certifications typically required when key components such as memory are changed.

The PRO³ is offered in a Ball-Grid-Array (BGA) package enabling a very low profile and small product size required for the design of extremely compact applications. Since connectors are eliminated, the solution cost is significantly reduced compared to conventional mounting concepts. With its low profile design, dedicated 8 MB RAM, 4 MB flash, and its extended programming capabilities in C++ and Python, the GE863-PRO³ is the ideal hardware platform for complete and compact customer solutions.

The GE863-PRO³ was designed to simplify connectivity through the availability of interfaces such as SPI, IIC, SD/MMC and USB (Host/Device). We will offer a vast collection of reference designs enabling use of the PRO³ with external peripherals such as camera, keyboard, display, Wi-Fi®, Bluetooth®, SmartCard, SD Card, Ethernet, ZigBee® and GPS. Application development is accomplished easily given our continued commitment to open systems. With the use of LINUX (optional in a different P/N), developers have access to an extensive library of drivers for different peripherals and to complete development environments.

Product features

Quad band EGSM 850/900/1800/1900 MHz
 Output power
 Class 4 (2W) @ 850/900 MHz
 Class 1 (1W) @ 1800/1900 MHz
 Control via AT commands GSM 27.05 plus enhancements
 Wide supply voltage tolerant 3.3-4.5 V
 Operating supply voltage 3.4-4.2V DC (3.8 V recommended)
 ARM9™ core 220 MIPS
 Serial port multiplexer GSM 27.010
 SIM access profile

Sensitivity:
 -107 dBm (typ.) @ 850/900 MHz
 -106dBm (typ.) @ 1800/1900 MHz
 Dimensions 41.4 x 31.4 x 3.6 mm
 Weight 9 grams
 Extended temperature range
 -30 to +80 °C
 RoHS compliant
 Embedded SSL encryption
 TCP/IP stack supporting IP, TCP, UDP, FTP, SMTP, PPP via AT commands and Python accessible

Interfaces

- 90+9 GPIO
- 2 Analog Audio (balanced and unbalanced)
- 4 A/D with A/D trigger and 6 PWM D/A
- Buzzer output
- 1 USB device and 2 USB host
- 2 clock output pins
- 2 SPI buses with up to 7 slaves
- 1 IIC interface
- 1 SSC (I2S) digital audio interface
- 1 SD/MMC card and SAM/SmartCard ISO7816 interface
- 1 image sensor interface ITU-B 601/656
- 6 USARTs and 1 UART
- 1 debug trace serial port (1ARM)
- ARM JTAG debug
- Serial flash

Audio

- Telephony, emergency call, DTMF, handset & hands-free operations
- Half rate, full rate and adaptive multi rate voice codecs (HR, EFR, AMR)
- Echo cancellation & noise reduction

SMS

- Point-to-point mobile originated and mobile terminated SMS
- Concatenated SMS support
- SMS cell broadcast
- Text and PDU mode

Circuit switched data transmission

- Asynchronous transparent circuit switched data (CSD) up to 14.4 kbps
- Asynchronous non-transparent CSD up to 9.6 kbps
- V.110

GPRS data

- GPRS class 10
- Mobile station class B
- Coding scheme 1 to 4
- PBCCH support

Fax

- Group 3, class 1

GSM supplementary

- Call forwarding
- Call barring
- Call waiting & call hold
- Advice of charge
- Calling line identification presentation (CLIP)
- Calling line identification restriction (CLIR)
- Unstructured supplementary services mobile originated data (USSD)
- Closed user group

Additional features

- SIM phonebook
- Fixed dialling number (FDN)
- Real-time clock
- Alarm management
- Battery management
- Network LED support
- IRA character set
- Jamming detection & report
- Embedded TCP/IP stack, including TCP, IP, UDP, SMTP and FTP protocols

ARM processor

- ARM9™ 200 MHz
- Independent form GSM engine custom processor
- 8 MB RAM standard
- 32 MB to 64 MB expansion (custom design)
- Linux OS (optional in different P/N)

Python application resources

Python script interpreter:

- Python core version 2.4

ARM core:

- Real-time OS
- Multitasking/interrupt
- SSL
- Cross compilation on PC
- 220 MIPS
- 8 MB SDRAM plus 4 MB serial flash

Over-the-air application software update and GSM/GPRS firmware over-the-air

IIC Bus and SPI Bus controlled through Python