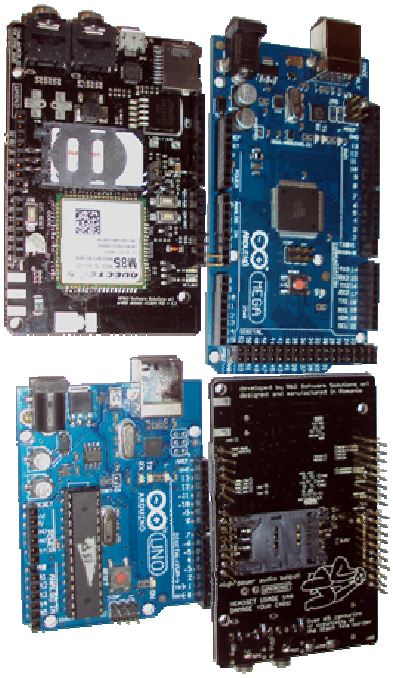
a-gsm series

ARDUINO & RASPBERRY PI GSM / GPRS / DTMF / SMS shield



- **Worldwide compatibility # quad band module**
- **GSM / GPRS / SMS / DTMF supported**
- **Two SIM sockets***
- **Integrated GSM antenna and uFL connector for external antenna**
- **Integrated uSD(TF) socket**
- **Micro-USB interface**
- **3-5V serial interface**
- **5-38V wide voltage switching power supply**
- **ARDUINO & RASPERRY PI direct compatibility**
- **Windows and Linux PC connectivity**
- **Audio jacks (out-700 mW RMS, in- capacitor MIC)**
- **Complex code examples**
- **Ideal for small-medium series gadget / project integration**

* single SIM active

The new **a-gsm v2.064** revision 3 series - ARDUINO & RASBERRY PI GSM / GPRS / SMS /DTMF shied – offers to best market performances for their product class, accompanied by reasonable cost.

Designed in EUROPE by **R&D Software Solutions** team -awarded in 2006 with the **GST SSC Bronze Award**, the a-gsm shield stands as example for our concept of porting professional solutions to the hobby / DYI market.

The **a-gsm series** answers at your needs for a fully integrated, functional and affordable cellular modem shield / platform. Smart complete design of the a-gsm shield brings you the flexibility and easiness in integration, wherever your platform and application. Beyond ARDUINO / RASPBERY PI / others hobby / DYI platforms integration, the a-gsm series can be easily and in a time manner incorporated into your equipment regardless your previous experience in modem technology. The a-gsm series represents your best choice for usage into a wide range of designs requiring robust and reliable performance.

Our range of products is available in following main versions: with or without ARDUINO headers soldered, combined with single or dual SIM sockets installed.
All versions offers as standard: high performance GSM/GPRS module (Quectel M85) with worldwide coverage- 850/950/1800/1900 MHz, integrated GSM antenna and u.FL socket for external antenna, USB (micro type B) and serial (3 up to 5V compliant) interfaces, POWER ON/POWER OF, MODEM STATUS and MODEM RESET controller interfaces, micro SD slot (supporting micro TF cards up to 32Gb), high performance switching power supply, 2 x standard 3.5mm stereo jacks for high power output (700mW RMS) audio and for capacitor microphone input and a lot of other electrical interfaces, including SERIAL2 and DIGITAL AUDIO interfaces, all in 84.00x53.34mm form factor.

Manufactured in EU.

Part number	Description	Usage
AGSM2064#2S4AP	a-gsm 2.064 - 2 SIM sockets and Arduino headers	GLOBAL
AGSM2064#2S0AP	a-gsm 2.064 - 2 SIM sockets, no Arduino headers	GLOBAL
AGSM2064#1S4AP	a-gsm 2.064 - 1 SIM socket and Arduino headers	GLOBAL
AGSM2064#1S0AP	a-gsm 2.064 - 1 SIM socket and Arduino headers	GLOBAL

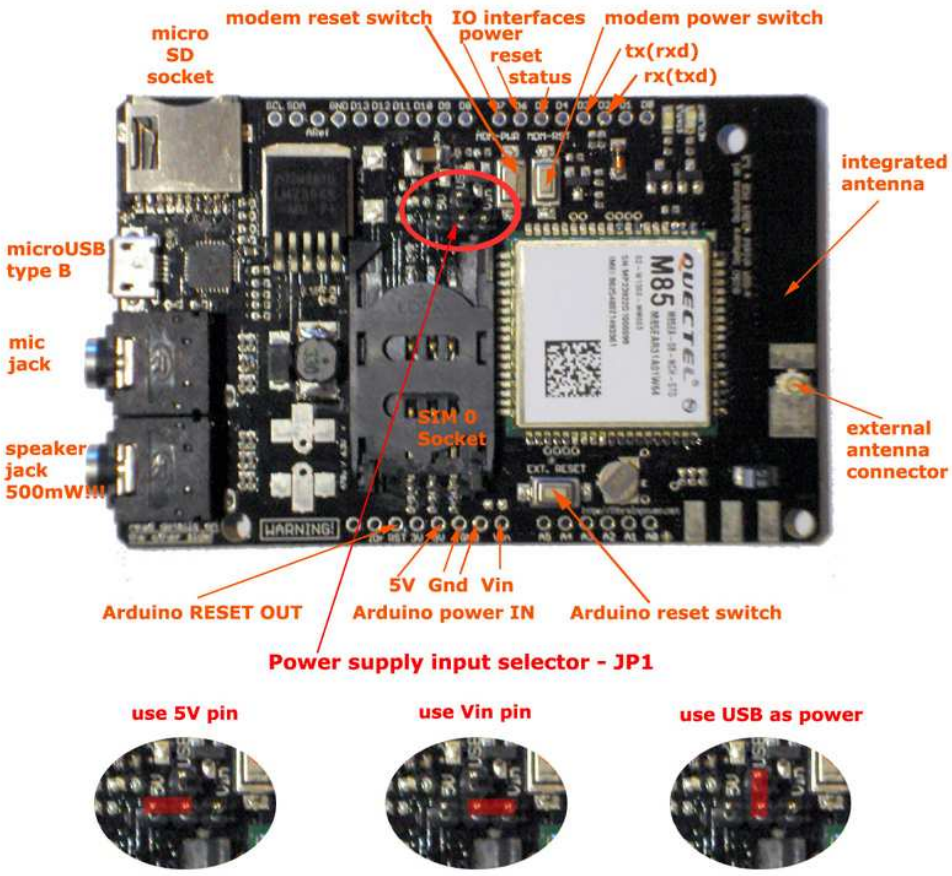
Part number	Accessories description
AGSM-SMAF#085	u.FL to SMA female panel 85mm pigtail
AGSM-SMAF#100	u.FL to SMA female panel 100mm pigtail
AGSM-APHFS#01	Arduino pin headers set (1x6+2x8+1x10) 12mm high
AGSM-RPiCFS#01	Raspberry PI cables set 8x 25cm long
AGSM-BCKSIM#01	Second (bottom side) SIM card socket spare part

FEATURES AT A GLANCE:

Quad band GSM/GPRS module (Quectel M85) with true worldwide coverage: 850MHz, 900MHz, 1800MHz and 1900MHz
INTEGRATED GSM antenna and **connector for external GSM antenna** thought **u.FL connector**;
DUAL SIM, SINGLE STANDBY - MAIN SIM card socket standard, and SECOND SIM card socket (depends on ordered code) - (SIM cards required not included)
MicroSD card socket standard (support uTF cards up to 32 Gb),
USB adapter embedded standard - SERIAL to USB bridge adapter with micro-USB type B socket (you can use the a-gsm board as wireless modem with your PC, connecting it directly thought USB to your PC - Windows and Linux compatible),
SERIAL TTL interface, down to 3V compliant (TX and RX) available in Arduino pin-out,
SWITCH POWER Supply* with efficiency up to 95%; the shield can be powered using: Arduino Vin pin(5-12V), Arduino 5V pin and thought USB connector(*).
Audio in and out 3.5 stereo jacks standard - HIGH power audio output (700mW RMS) and capacitor Microphone interfaces embedded,
Embedded switches: control for modem ON/OFF & modem RESET and Arduino Reset
DIGITAL AUDIO interface and SERIAL2 (3V TXD and RXD) interfaces available thought additional back PCB side pads.
COMPACT FORMAT: 84.00x53.34mm, around 75g.
* 5V-38V input support, low consumption, 3 way powering profiles: USB, Vin pin or 5V pin with manually selector for users convenience
** High Speed GPRS Multi-slot class 12 (configurable 1~12) Downlink and uplink speed - 85.6 kbps Max
Extended Arduino and RaspberryPI support, with code examples: - **GSM, TCP/UDP, HTTP over GPRS**, DTMF, SMS** and other features and utilities like **micro-TF CARD FILE SYSTEM STORAGE, DUAL SIM**, others.
RaspberryPI PPP and TCPIP routing support (RaspbianOS) trough easy installation and usage scripts.

PIN definition:

Pin D2 = GSM TXD(RX),
Pin D3 = GSM RX(TX),
Pin D7 = PWRKEY - POWER-CONTROL-MODEM(ON/OFF),
Pin D5 = MODEM-STATUS,
Pin D6 = RESET-MODEM,
PinRST = Arduino RESET OUT,
Pin5V = Arduino 5V,
PinVin = Arduino Vin,
Pin GND(1&2) = GND



Standard Arduino Pin-out
ONE to ONE connection without additional cables for Arduino UNO/LEONARDO and Arduino MEGA ADK/MEGA 2560

pic. 1 a-gsm (v 2.064 release 3) series, top view

Easy RaspberryPI wiring

Connection name	RPi pin	a-gsm shield pin
POWER a-gsm	**16**	D7 - power(UP/DOWN)
RESET a-gsm	18	D6 - reset *
a-gsm STATUS	**12**	D5 - status
serial TXD0	**08**	D4 - tx(rxd)
serial RXD0	**10**	D3 - rx(txd)
GND	**06**(or 14)	GND - on Arduino power IN connector
5V power supply	**04**(or 02)	5V - on Arduino power IN connector **

* connection not mandatory

** mandatory only for a-gsm powered from RPi; not mandatory for a-gsm powered separately: via USB connector or Vin. "**Power supply input selector**" (JP1) **must** be placed in "**use 5V pin**" position (see: pic. 1)

CODE EXAMPLES and UTILITIES:

Arduino examples list (C code):

- SD_SS.ino - a-gsm 2.064 microSD files list/read/write/delete example
- SMS_SS.ino - a-gsm 2.064 send/read/list SMS example
- GPRS_HTTP.ino - a-gsm 2.064 HTTP client over GPRS example
- SIM_UTILITIES.ino - a-gsm 2.064 send SIM/MODEM/NETWORK/POWER ON/POWER OFF utilities
- DTMF_SEND.ino - a-gsm 2.064 send DTMF example
- DTMF_RECEIVE.ino - a-gsm 2.064 receive/decode DTMF example

Raspberry PI examples list (python):

- powerOnOff.py - a-gsm 2.064 power on / power off / modem communication example
- setSerial.py - a-gsm 2.064 set serial communication speed example
- readSMS.py - a-gsm 2.064 list/read SMS example
- sendSMS.py - a-gsm 2.064 send SMS example
- GprsHttp.py - a-gsm 2.064 HTTP client over GPRS example
- fileHandling.py - a-gsm 2.064 list/read/write/delete files on uSD example
- a-gsmUtilities.py - a-gsm 2.064 SIM/MODEM/MISCELLANEOUS (including DTMF) usage example utility

UTILITIES:

a-gsm-raspian-ppp.tar.gz **- Raspian PPP and routing utility**

setSerial.py – change and save a-gsm serial communication speed Python utility