The new **a-gsm v2.064** revision 3 series - ARDUINO & RASPBERRY PI GSM / GPRS / SMS / DTMF shield – 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 proudly represents the concept of porting of 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 / RASPBERRY 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#2SBAP | a-gsm 2.064 - 2 SIM sockets, Arduino headers bundle | GLOBAL
AGSM2064#2S0AP | a-gsm 2.064 - 2 SIM sockets, no Arduino headers | GLOBAL
AGSM2064#1SBAP | a-gsm 2.064 - 1 SIM socket, Arduino headers bundle | GLOBAL
AGSM2064#1S0AP | a-gsm 2.064 - 1 SIM socket, no 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-RPiCFS#01 | Raspberry Pi cables set 7x 20cm long
AGSM-BCKSIM#01 | Second (bottom side) SIM card socket spare part

* single SIM active
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 35g.

* 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 RXD(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*

* Arduino LEONARDO & Arduino MEGA ADK/MEGA 2560, additional strap / 1k resistor may be needed

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### Easy RaspberryPI B+ wiring

<table>
<thead>
<tr>
<th>Connection name</th>
<th>RPI pin</th>
<th>a-gsm shield pin</th>
</tr>
</thead>
<tbody>
<tr>
<td>POWER a-gsm</td>
<td>16</td>
<td>D7 - power(UP/DOWN)</td>
</tr>
<tr>
<td>RESET a-gsm</td>
<td>18</td>
<td>D6 - reset *</td>
</tr>
<tr>
<td>a-gsm STATUS</td>
<td>12</td>
<td>D5 - status</td>
</tr>
<tr>
<td>serial TXD0</td>
<td>08</td>
<td>D3 - RX(TXD)</td>
</tr>
<tr>
<td>serial RXD0</td>
<td>10</td>
<td>D2 - TX(RXD)</td>
</tr>
<tr>
<td>GND</td>
<td>06/14</td>
<td>GND - on Arduino power IN connector</td>
</tr>
<tr>
<td>5V power supply</td>
<td>02/04</td>
<td>5V - on Arduino power IN connector **</td>
</tr>
</tbody>
</table>

* connection not mandatory
** mandatory only for a-gsm powered from RPi; not mandatory for a-gsm powered separately: via USB connector or Vin.

### CODE EXAMPLES and UTILITIES:

#### Arduino examples list (C code):
- SD_SS.ino - a-gsm shield 2.064 microSD files list/read/write/delete example >> GSM SHIELD micro SD USAGE tutorial code
- SMS_SS.ino - a-gsm shield 2.064 send/read/list SMS example >> GSM SHIELD SEND/RECEIVE SMS tutorial code
- GPRS_HTTP.ino - a-gsm shield 2.064 HTTP client over GPRS example >> GSM SHIELD GPRS over HTTP tutorial code
- SIM_UTILITIES.ino - a-gsm shield 2.064 SIM/MODEM/NETWORK/POWER ON/POWER OFF utilities >> GSM SHIELD UTILITIES tutorial code
- DTMF_SEND.ino - a-gsm shield 2.064 send DTMF example >> GSM SHIELD DTMF SEND tutorial code
- DTMF_RECEIVE.ino - a-gsm shield 2.064 receive/decode DTMF example >> GSM SHIELD DTMF RECEIVE tutorial code

#### Raspberry PI examples list (python):
- powerOnOff.py - a-gsm 2.064 power on / power off / modem communication example >> GSM SHIELD POWER ON/OFF tutorial code
- setSerial.py - a-gsm 2.064 set serial communication speed example >> GSM SHIELD SET SERIAL SPEED tutorial code
- readSMS.py - a-gsm 2.064 list/read SMS example >> GSM SHIELD READ/LIST SMS tutorial code
- sendSMS.py - a-gsm 2.064 send SMS example >> GSM SHIELD SEND SMS tutorial code
- GprsHttp.py - a-gsm 2.064 HTTP client over GPRS example >> GSM SHIELD GPRS over HTTP tutorial code
- fileHandling.py - a-gsm 2.064 list/read/write/delete files on uSD example >> GSM SHIELD FILE SYSTEM HANDLING tutorial code
- a-gsmUtilities.py - a-gsm 2.064 SIM/MODEM/MISCELLANEOUS (including DTMF) usage example utility >> GSM SHIELD UTILITIES tutorial code

### UTILITIES:
- a-gsm-raspian-ppp-1.0.tar.gz - Raspian PPP and routing utility
- setSerial.py – change and save a-gsm serial communication speed Python utility (included in a-gsm-raspian-ppp.tar.gz and in a-gsm-series-RaspberyPI-code-examples-1.0.tar.gz)

### Additional documentation:
(available on http://itbrainpower.net/a-gsm/)
- Arduino/RaspberryPI gsm shield communication debug how to
- a-gsm v 2.064 audio wiring
- a-gsm v 2.064 rev 1.3 ARDUINO and RASPBERRY PI compatible shield block schematics
- a-gsm series GSM / GPRS / DTMF / SMS ARDUINO and RASPBERRY PI compatible shield
- a-gsm shield series - TOP description
- a-gsm shield series - ARDUINO wiring using software serial (used in CURRENT Arduino code examples)
- a-gsm shield series - Arduino wiring for hardware serial
- a-gsm shield series - Raspberry PI B+ wiring schema
- QUECTEL M85 AT command manual

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