

# GSM Shield

## Starter Guide

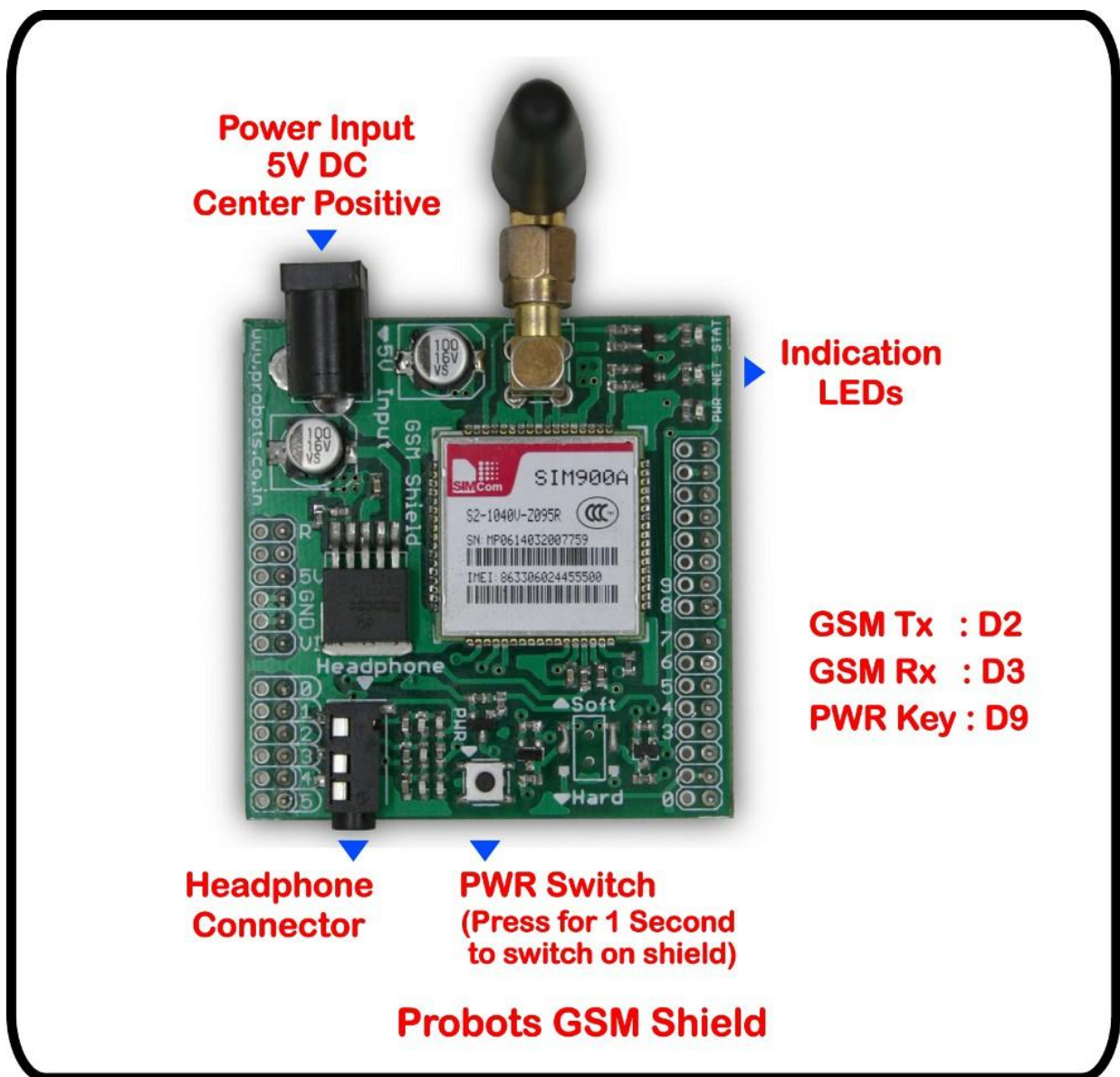


### Overview

This shield connects your Arduino to a cellular GSM Network! It directly plugs onto your Arduino and allows you to send/receive SMS, make/answer calls, access internet through GPRS. The shield includes all hardware required for your Arduino based GSM Project - GSM/GPRS Module, SIM Card Holder, Cellular Antenna, headphone connector, etc. It greatly simplifies your GSM project and allows you to kick start your GSM project using the Arduino. Library to handle SMS, Calls, GPRS, DTMF decoding is available and greatly simplifies your project code.

The shield uses SIM900A Module. AT commands are used to configure and communicate with the shield. All communication with the shield is through serial interface. The shield allows you to use a software serial port on your Arduino

An onboard 3.5mm Audio Jack allows you to connect a headphone to answer calls.



GSM Shield Overview

## Using the Shield

The shield is designed to be plugged onto an Arduino. Insert a suitable SIM card into the SIM Card connector provided at the bottom of the board. Ensure that the SIM card is not locked by PIN.

## Input Power

The GSM Module used in the shield consumes a lot of power and requires an external power supply. You will have to power the shield with an external power supply with an output of 5V DC. Apply power through the DC Jack marked Power Input in the above picture.

*Note: Please use a power supply capable of supplying atleast 1A of current (using a 2A power supply is highly recommended). You may use our 5V SMPS Power Adapter to power the shield.*

## **Indication LEDs**

The shield consists of three LEDs – PWR, NET, STAT.

The PWR LED turns on when the shield is powered on.

The NET LED turns on when the shield is connected to the GSM Network.

The Status LED (yellow) is used to display the network status -

- a) LED Off – GSM Module not running
- b) 64ms On 0.8 Sec Off – GSM Module unable to find network
- c) 64ms On 3 Sec Off - GSM Module found network
- d) 64ms On/ 300ms Off - GPRS communication

## **Using the PWR Switch and PWR Key**

The Power Key (labeled PWR on the shield) can be used to power the module on and off just by a holding it down for a second. Putting the module in power down mode will drastically reduce the shield's power consumption. Pressing the Power Key when the module is off, will power on the module and vice-versa.

The shield can also be switched on/off through the Arduino without manually pressing the PWR switch. The Arduino's pin D9 is can be used to switch the shield on and off. Providing a high signal on D9 for a second will turn on the module. Providing a high signal again on D9 for a second will turn the module off.

*Please refer the SIM900 datasheet for more information.*

*The shield is always off when powered on and requires to be turned on either through the PWR Switch or PWR Key (connected D9 pin on the Arduino).*

## **Using the Headphone Jack**

The onboard headphone jack can be used to connect a heaphone with 3.5 mm audio jack.

## **Communicating with the SIM900 Module**

Communication with the SIM900 Module is required to make/receive calls, sms, use GPRS, etc. Communication is through a serial interface. The GSM Shields Rx and Tx pins are connected to Pins D3 and D4 on the Arduino respectively. You may use the SoftwareSerial

Library to communicate with Shield. AT commands are used to communicate with the modem.

You may use the popular and powerful library GSMLib with the shield. It is available at <http://www.gsmlib.org/> . Please configure the TX, RX and Power Key pin in the library as used in the shield.