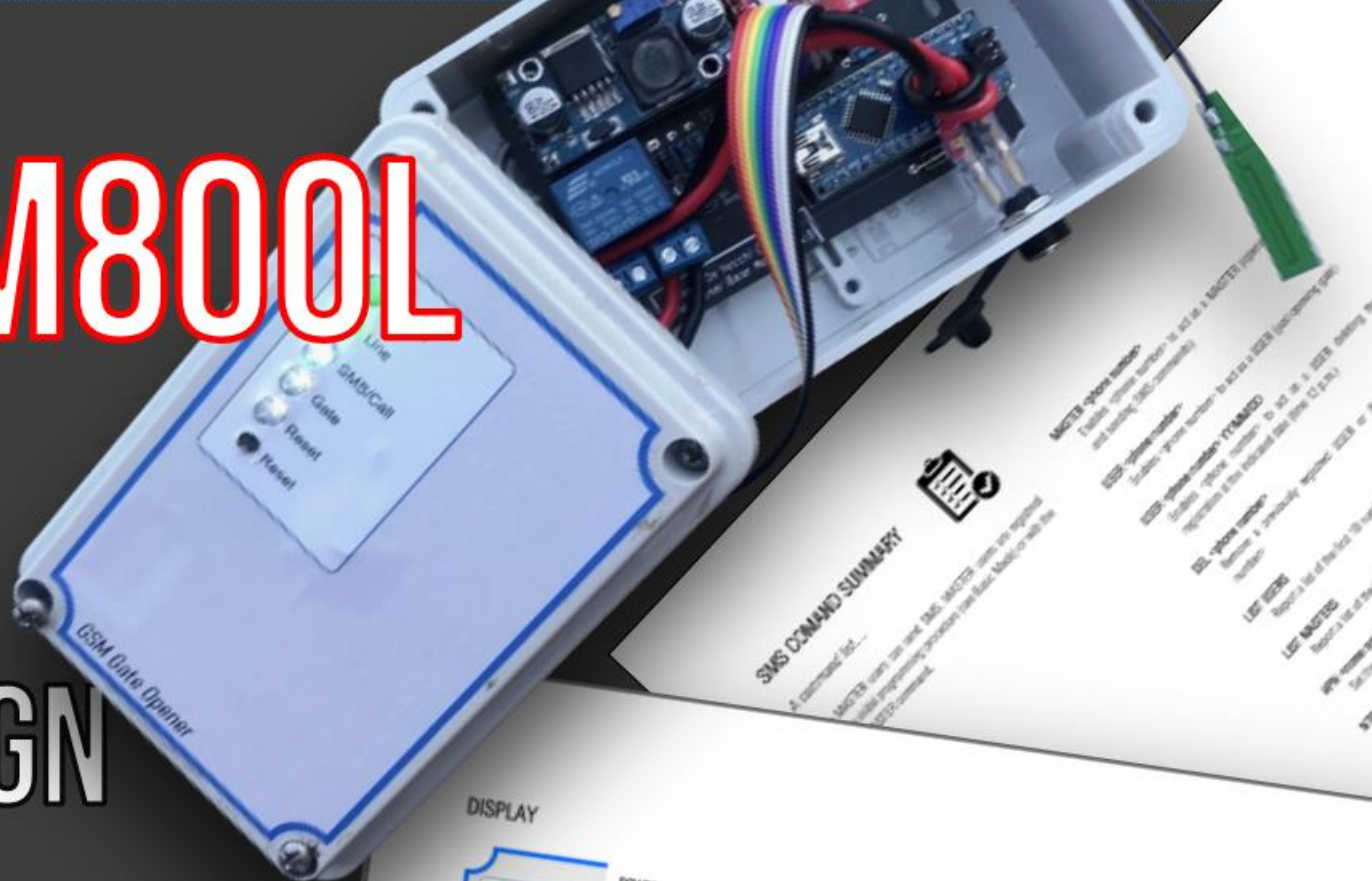


ARDUINO + SIM800L

FINAL PROJECT DESIGN

THE GSM GATE OPENER



DISPLAY

POWER

Indicates that GSM GATE OPENER is correctly connected to power

LINE

Shows status of GSM line:

- Green - best quality GSM line
- Green/Yellow blinking - good quality GSM line
- Yellow - medium quality GSM line
- Yellow/Red blinking - lower quality GSM line
- Flashing - missing GSM line or unable to connect
- Failure on SIM card or GSM module

CALL

- Blue - Phone call incoming
- White - SMS message incoming
- Magenta - Sending SMS
- Red blinking -

GATE

It is on while GSM GATE OPENER

RESET

- On (no blinking) - while pushing Reset button
- Fast blinking - after pushing Reset button, internal memory is being registered
- Slow blinking - "Auto Phonebook Register" is being registered as authorized

RESET BUTTON

Arduino + SIM800L = Apricancello GSM

▶ EXTENDING DESIGN SPECIFICATIONS

▶ 3 OPERATING MODES

▶ BASIC

Configuration setting with no SMS
For “easier” user needs

▶ EXTENDED

“Extending” use of gate opener to
“authorized” people. Using SMS.

▶ PRO

Needing recurring authorization updates (B&B,
holiday homes)
Using SMS and calendar.

“BASIC” MODE

Configuration settings without commands: no SMS
Ref.: WPS tool over domestic WiFi setup

USE

- Push a button on gate opener module
- Gate opener enters in «registration mode» for 5 minutes
- Calling phones are registred as authorized numbers enabled to open the gate
- Gate opener deletes previously stored phone numbers

“EXTENDED” MODE

Using SMS, add authorization without whole phonebook reset

Two kind of users: «MASTER» can open the gate and add new authorizations, «USER» can only open the gate

Start configuration storing at least 1 Master with reset button (Base mode)

SMS commands:

USER <phone number> – registers USER user
MASTER <ph.num.> – registers MASTER user
DEL < phone number > – delete a user
LIST USER/MASTER– list registred users

“PRO” MODE

Let masters register phone numbers with a «expiration date». After that date phone number is removed from phonebook.

Need to set GPRS e NTP parameters.

More commands:

USER <phone number> YY/MM/DD

APN <server name>

NTP <server name>

TIMEZONE snn

CONFIG – current configuration list

LED: checking running activities

- ▶ **POWER LED**
power on (check 4V line)
- ▶ **LINE STATUS LED**
shows GSM signal level or network errors
- ▶ **CALLING LED**
shows incoming calls, incoming/outgoing SMS
- ▶ **GATE LED**
shows sending gate command
- ▶ **RESET PUSH-BUTTON**
starting phonebook reset procedure
- ▶ **RESET LED**
shows status of reset procedure

Remote monitoring Arduino activities

Every SMS makes gate opener to send a reply SMS

Check each Arduino activity working time

- Average time
- Max time

Added command:

STATS – Send the times report

Riepilogo comandi

- **SMS (only for master)**

- a- USER <phone_number>
- a- USER <ph_number> AA/MM/GG
- a- MASTER <phone_number>
- a- DEL <phone_number>
- b- LIST USERS
- b- LIST MASTERS
- c- APN <APN_server_name>
- c- NTP <NTP_server_name>
- c- TIMEZONE <sxx>
- d- CONFIG
- e- STATS

- **INCOMING CALL(for master and user)**

- Apertura del cancello

- **RESET PUSH_BUTTON**

- Phonebook reset and initial masters registration

Display

