Creo que este módulo GSM/PRS de SIMCOM, se merece un hilo exclusivamente dedicado a él.

Características Generales
•Quad-band 850/900/1800/1900MHz
•GPRS multi-slot class 12/10
•GPRS mobile station class B
•Compliant to GSM phase 2/2+
– Class 4 (2 W @ 850/900 MHz)
– Class 1 (1 W @ 1800/1900MHz)
•FM: 76~109MHz worldwide bands with 50KHz tuning step
•Dimensions: 15.8*17.8*2.4 mm
•Weight: 1.35g
•Control via AT commands (3GPP TS 27.007, 27.005 and SIMCOM enhanced AT Commands)
•Supply voltage range 3.4 ~ 4.4V
•Low power consumption
•Operation temperature:-40°C~85°C

Especificaciones para Datos GPRS
•GPRS class 12: max. 85.6 kbps (downlink/uplink)
•PBCCH support
•Coding schemes CS 1, 2, 3, 4
•PPP-stack
•CSD up to 14.4 kbps
•USSD
•Non transparent mode
Specifications for SMS via GSM/GPRS
•Point to point MO and MT
•SMS cell broadcast
•Text and PDU mode

Características Software
•0710 MUX protocol
•Embedded TCP/UDP protocol
•FTP/HTTP

•MMS
•E-MAIL
•DTMF
•Jamming Detection

Especificaciones para voz
•Tricodec
– Half rate (HR)
– Full rate (FR)
– Enhanced Full rate (EFR)
•AMR
– Half rate (HR)
– Full rate (FR)
•Hands-free operation
(Echo suppression)
Interfaces
88 LGA pads including:
•Analog audio interface
•PCM interface
•RTC backup
•Serial interface
•USB interface
•Interface to external SIM 3V/1.8V
•Keypad interface
•GPIO
•ADC
•GSM Antenna pad
•FM Antenna pad
Compatibility
•AT cellular command

Certificaciones (Plan):
•CE
•GCF
•FCC
•ROHS
•REACH

Documentación archivos PDF.

Datasheet SIM800L https://mega.nz/#!cBt3UBxS!t4ZBUn3rmoWxlEEHg4QprUcxAMm167ExxUa6WhWDctc
Schematic and PCB Reference Design https://mega.nz/#!wV1ETLra!PSWrR3JihqHDggomK4brhX8G1k-x6AdWTcXE0_vePdI
Hardware design https://mega.nz/#!QQlxFRBZ!zD2JXErkHBn4yMXRo9T1-nrqgx928pGBlJCu9_Sr7Bg
Comandos AT Serie
SIM800 https://mega.nz/#!gV91QLIA!QscPHpiUc0VOZnZip7jAUTphVac3gl7TgdftdVkbcPU
TCP/IP Application https://mega.nz/#!oI0wzLqQ!63_xfV0Yq5eQHdixeNfBSEaE28chUWbinGC5bmaH_lU
MMS Application https://mega.nz/#!MZcxiQAb!N-S_p_AXF36XnnTz3KftRtS86-xoI-wCln-uspeNltI
IP Application https://mega.nz/#!FU0yCKQL!-9AMSS3BnbF6_ucqjkN3UXhpYPqLYUTDePmI3hTnp4w
FM Application https://mega.nz/#!0EMnlRJL!BX39Xk0r9ATbH3Uiyg50fRduv5xlHGPOXatArNqG9nc
Email Application https://mega.nz/#!UR0FTSaQ!T7XaBPd5Tl43al6UXWBeqxIGiNjjB1qJi83bw1AyHSQ
SSL Application https://mega.nz/#!wZ80mQAS!LCdenDm43U9_wdwvwqZjSQ5ShRei9J0y45pe2lO_NcA
Software Upgrade https://mega.nz/#!FBFSyIwA!sYZYC_Q1so9mMZJ8PZm7AqhISBRNdp82razJUQjEq6w

Software

SIM800 entorno desarrollo
App https://mega.nz/#!AdcXEKSI!e_1RORN9FvqLZq0YXPPVJlz31re6iqBW4sWYa00h5QA

Footprint PCB

Símbolo y Footprint Eagle https://mega.nz/#!ZdMXxCaZ!ZZQiJ2hhyyU3bNRljdKx6OO8sP3OKySs595JH9-v6oE

Enlaces de interés relacionados

Adafruit FONA basado en SIM800L: https://learn.adafruit.com/adafruit-fona-mini-gsm-gprs-cellular-phone-module/overview
Librerías Arduino para FONA: https://github.com/adafruit/Adafruit_FONA_Library
Librería Arduino Microduino:https://github.com/Microduino/Microduino_Tutorials/tree/master/Microduino_Libraries/_03_Microduino_GSM_SIM800L

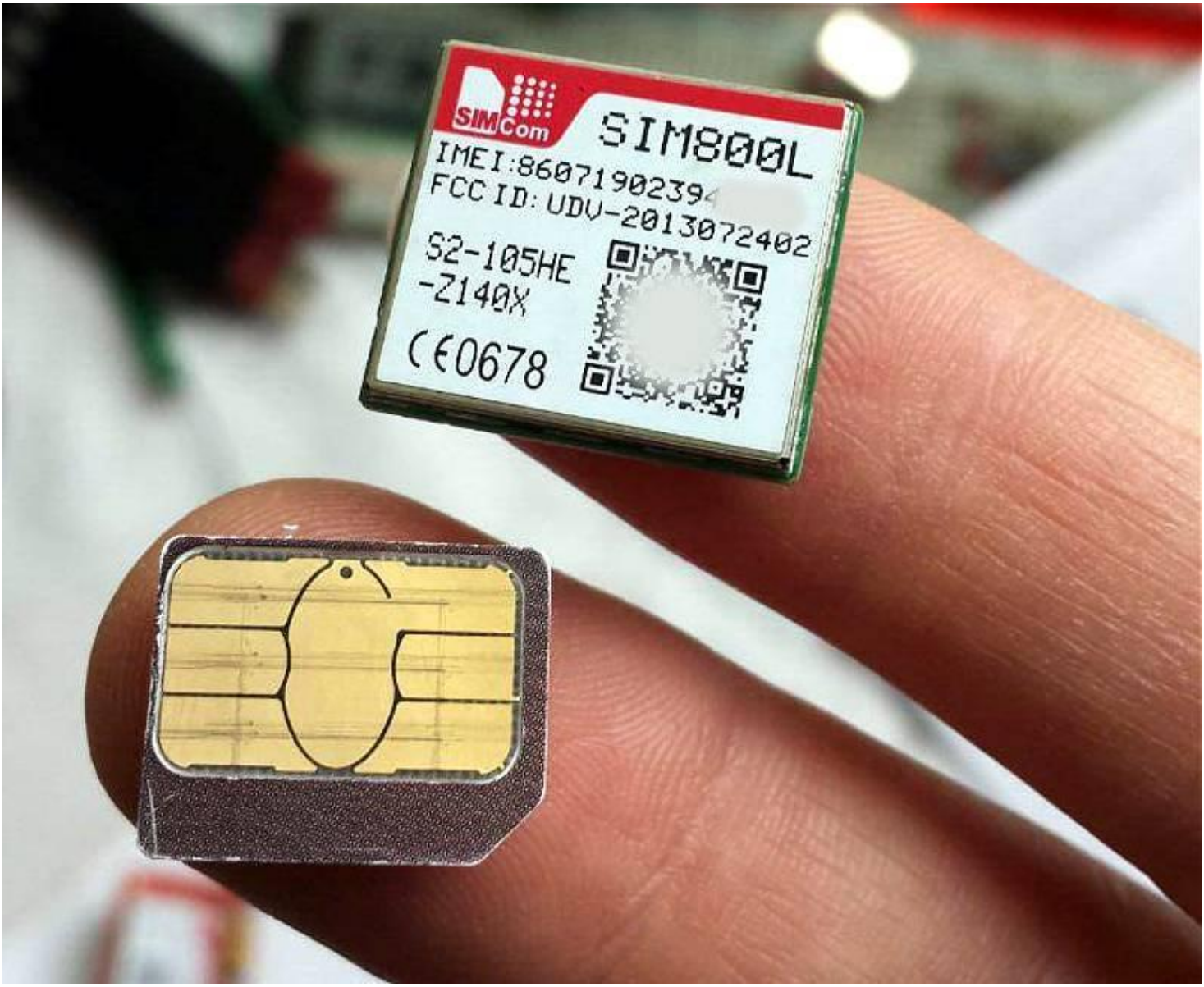
Esquemas aplicativos

Esquema aplicativo SIM800H (compatible con el SIM800L): http://www.libstock.com/img/projects/21707/1212/1425051944_schemati.jpg
Esquema aplicativo SIM800L http://www.electrodragon.com/w/images/4/4a/Sim800L_schematic.jpg
Esquema Seedstudio SIM800L http://www.seeedstudio.com/wiki/images/c/c4/SIM800L_Schematic.pdf

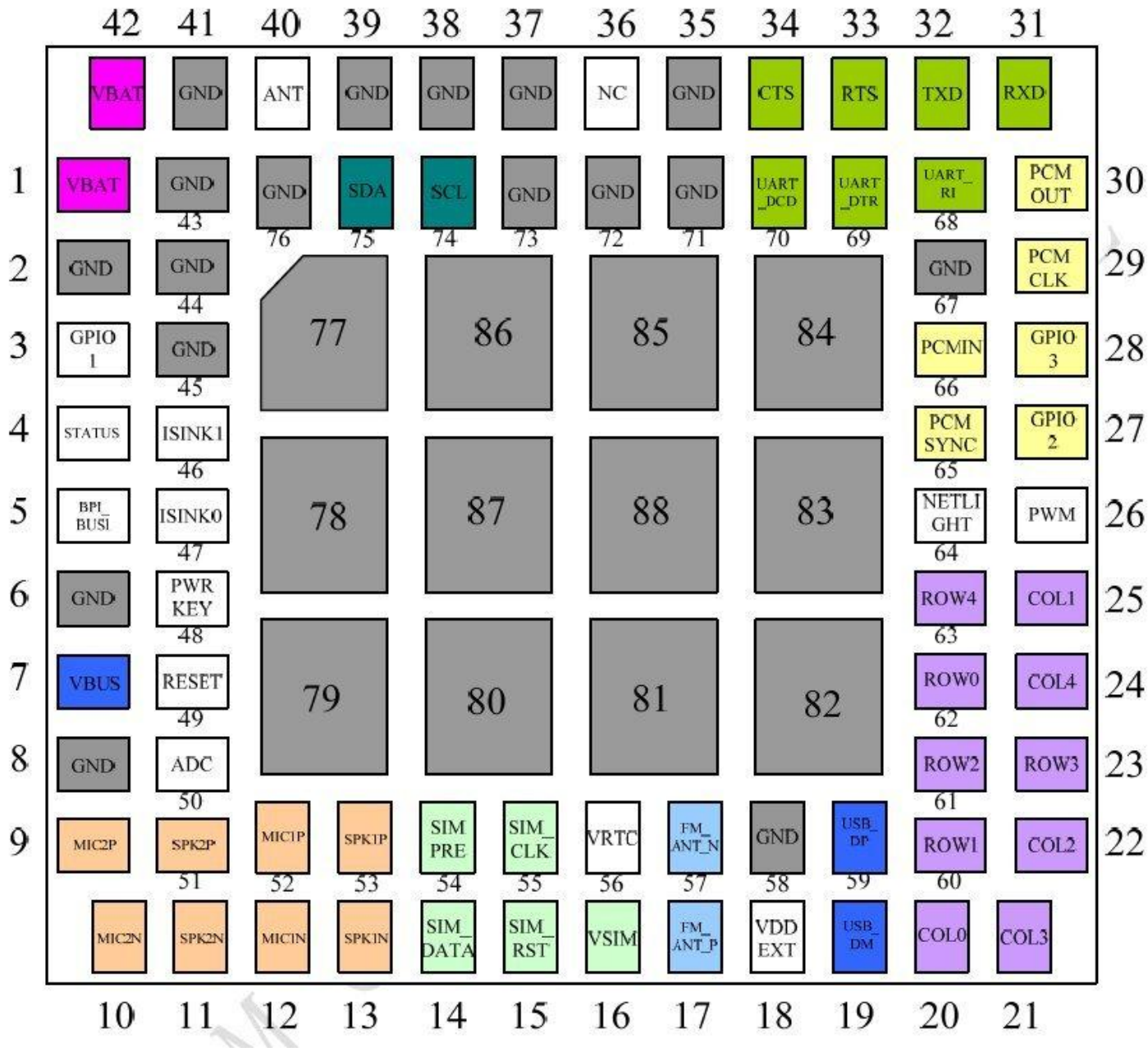
Proyectos

Comunicación HTTP/GPRS http://arduinodev.com/arduino-library-for-gprshttp-communication-with-sim800/
Localizador de Ubicación GSM http://www.instructables.com/id/How-to-make-a-Mobile-Cellular-Location-Logger-with/?ALLSTEPS

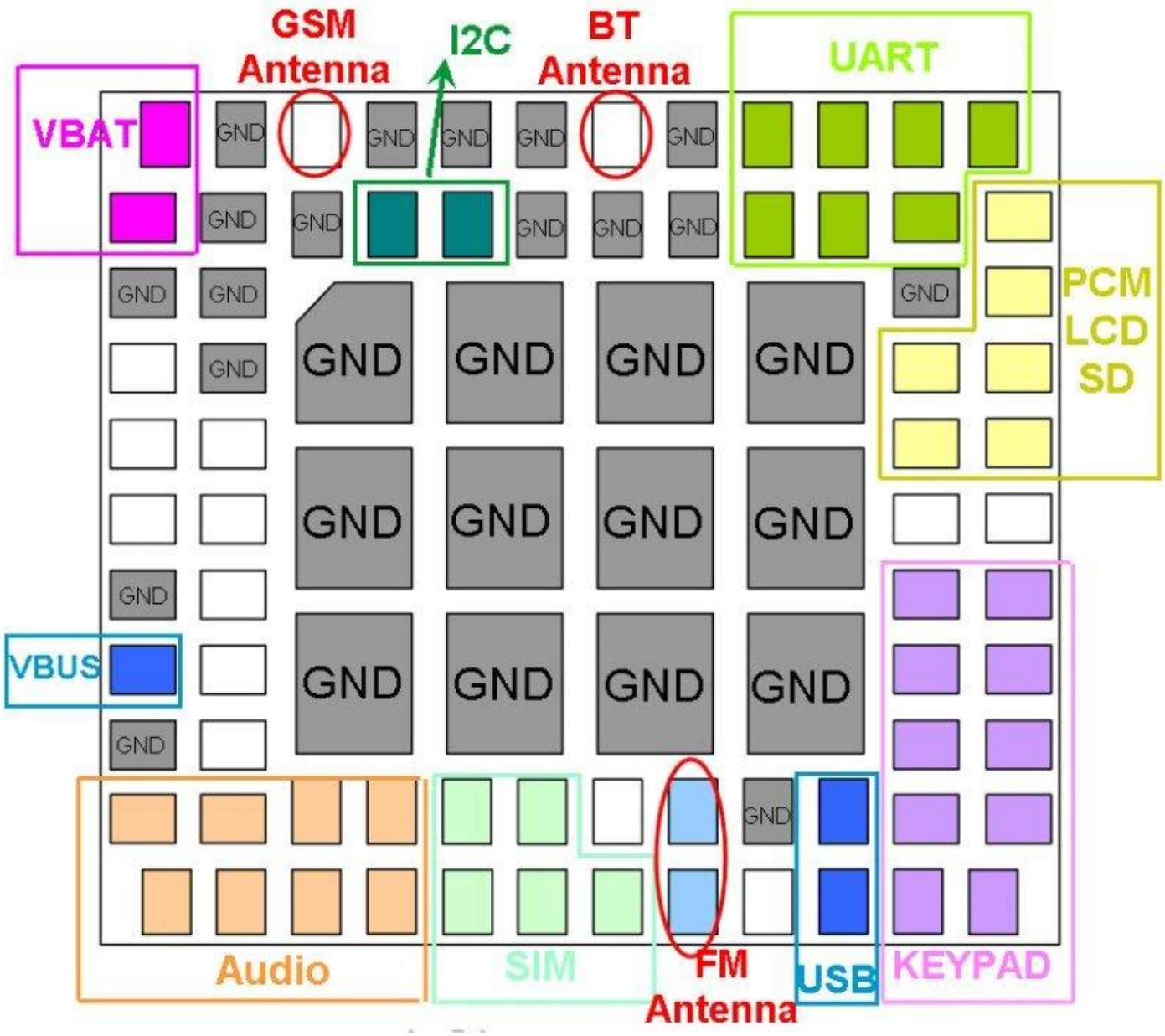
El SIM800L es realmente diminuto, casi tanto como la propia tarjeta SIM.



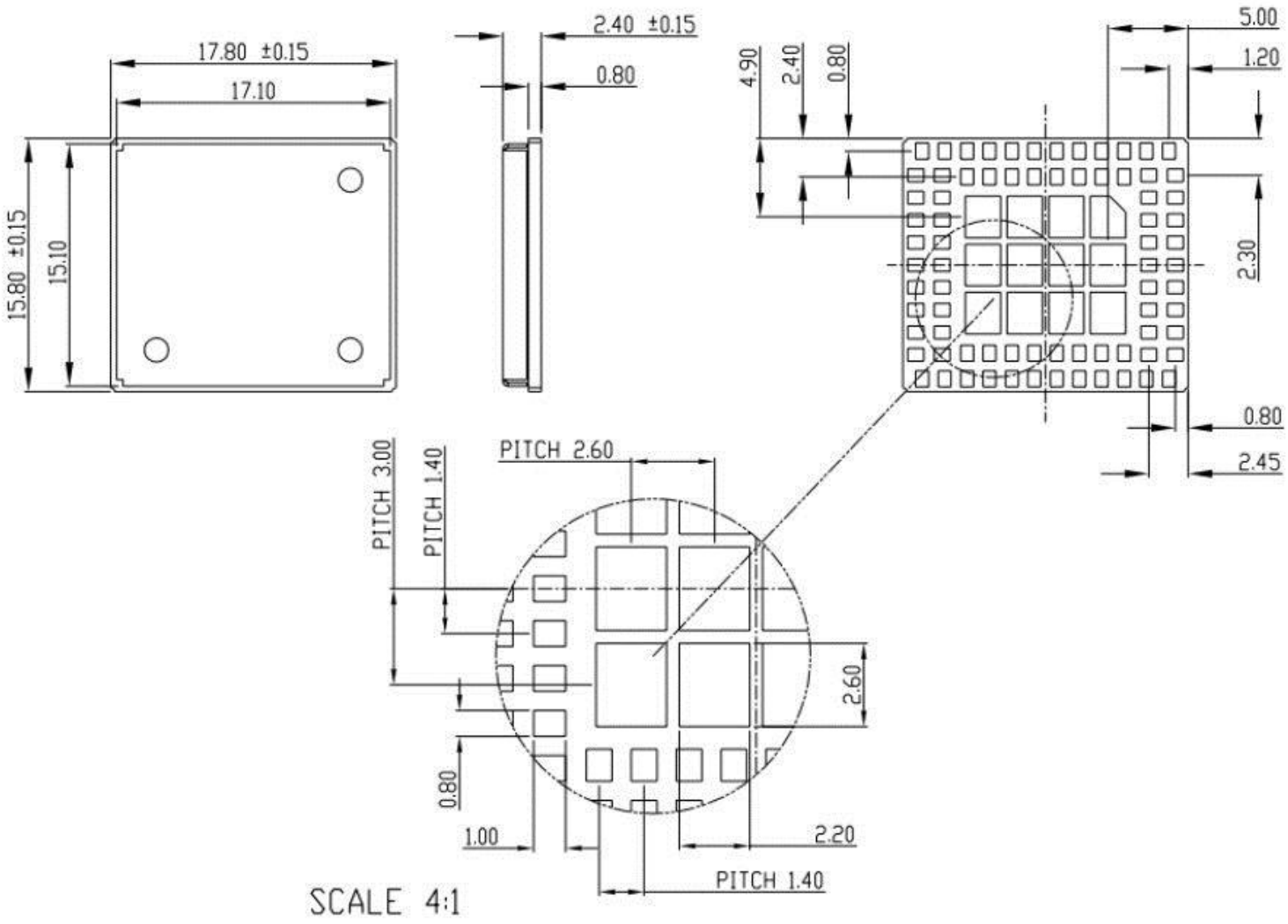
Pinout del SIM800L



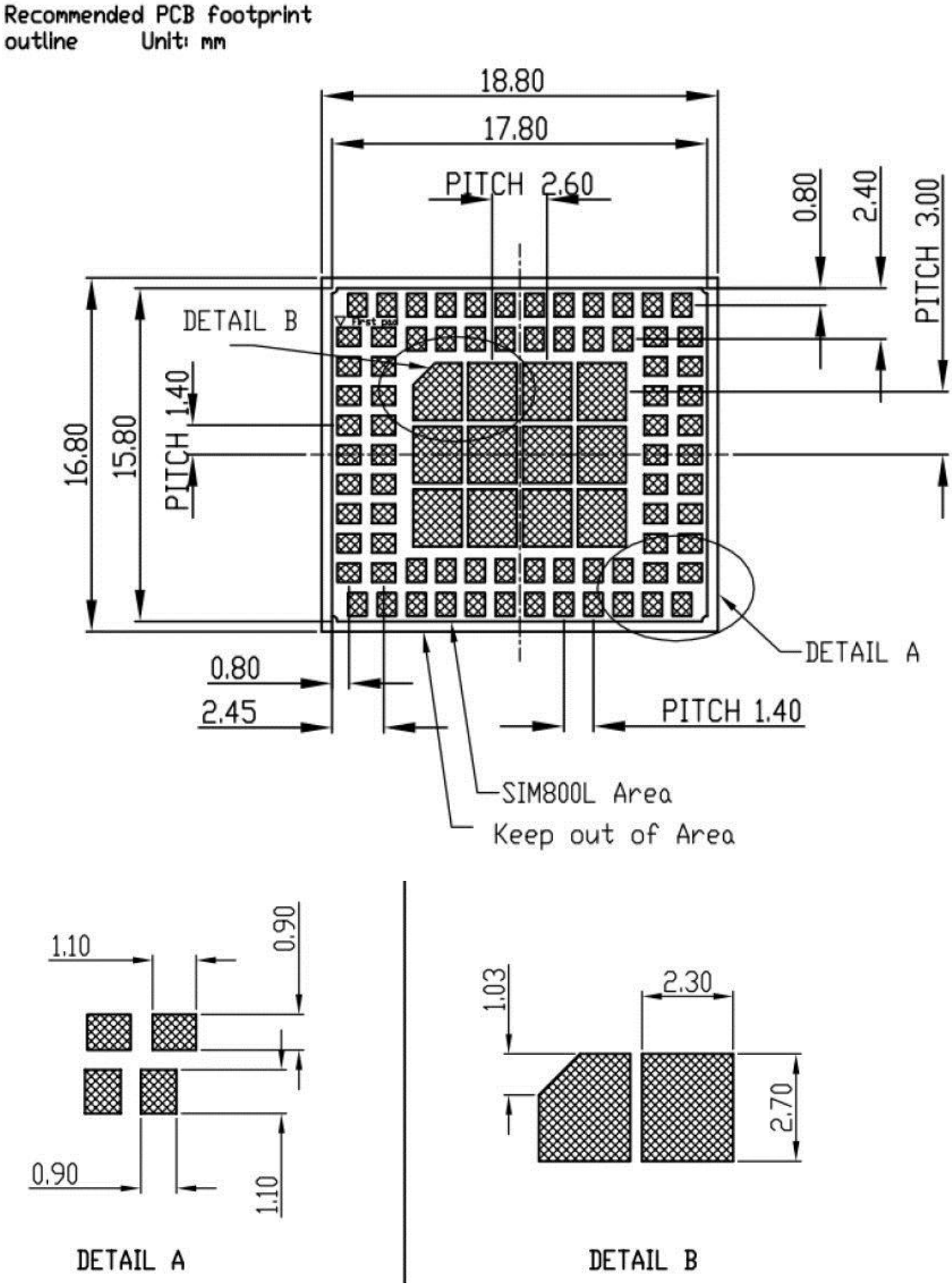
Asignación de pines por bloques


GSM
Antenna
I2C
BT
Antenna
UART
VBAT
GND
PCM
LCD
SD
VBUS
Audio
SIM
FM
Antenna
USB
KEYPAD

Dimensiones del SIM800L



Footprint recomendado.



El SIM800L tiene consumos de pico importantes de 2 a 3 amperios, así que recomendable usar un buen estabilizador conmutado. Yo uso el LM2596 para cargas que requieren consumos de hasta 3 amperios, y también aparece recomendado en el datasheet del SIM800L