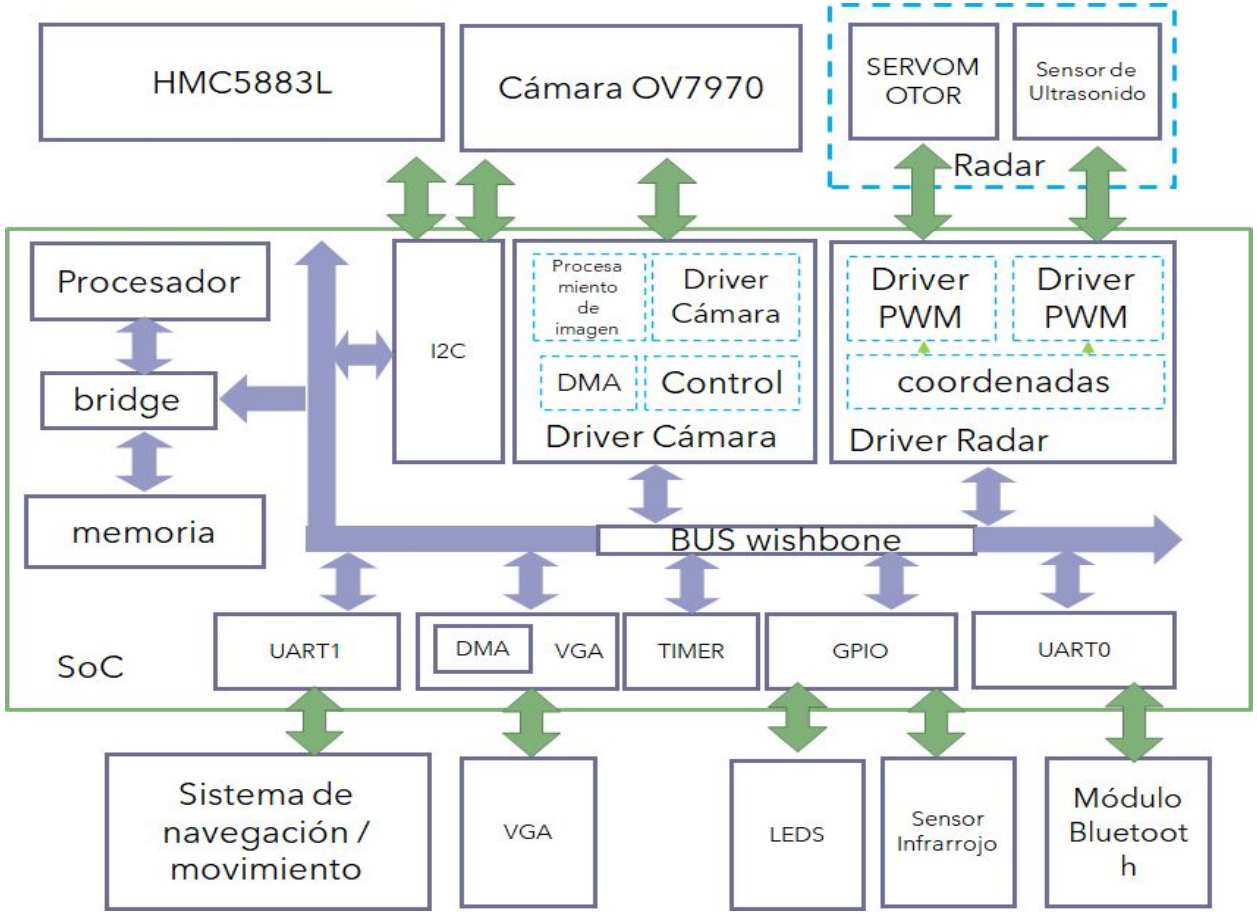
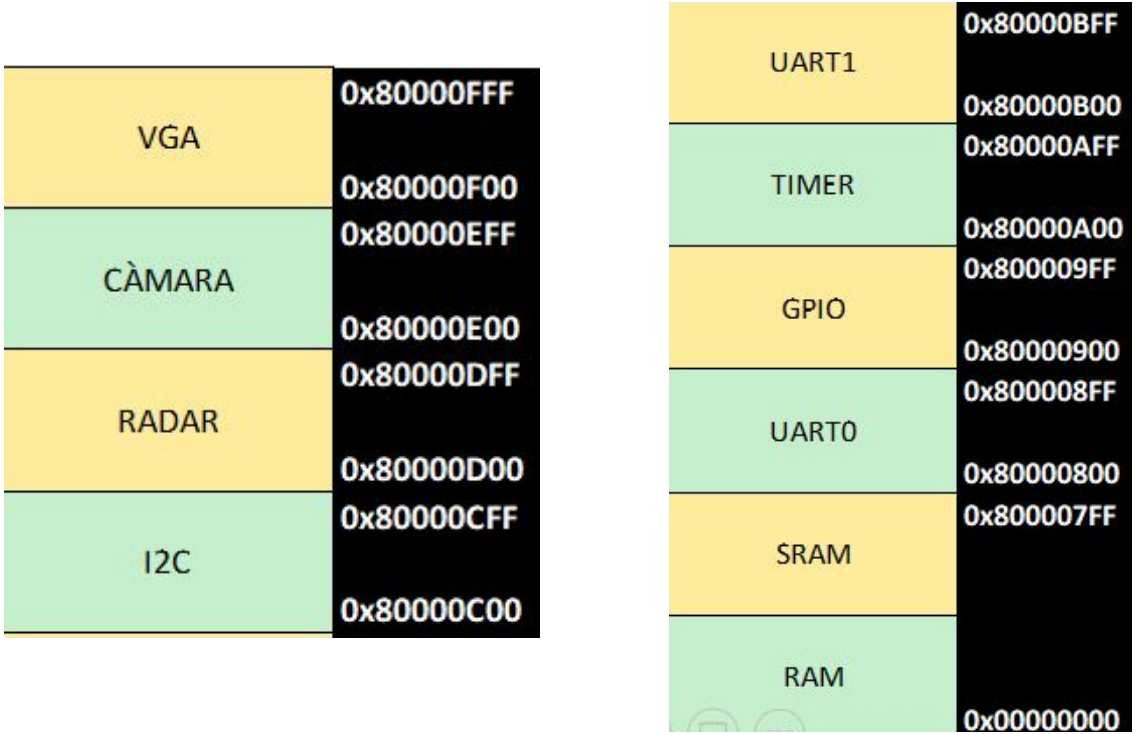
Proyecto SoC
Robot Cartógrafo

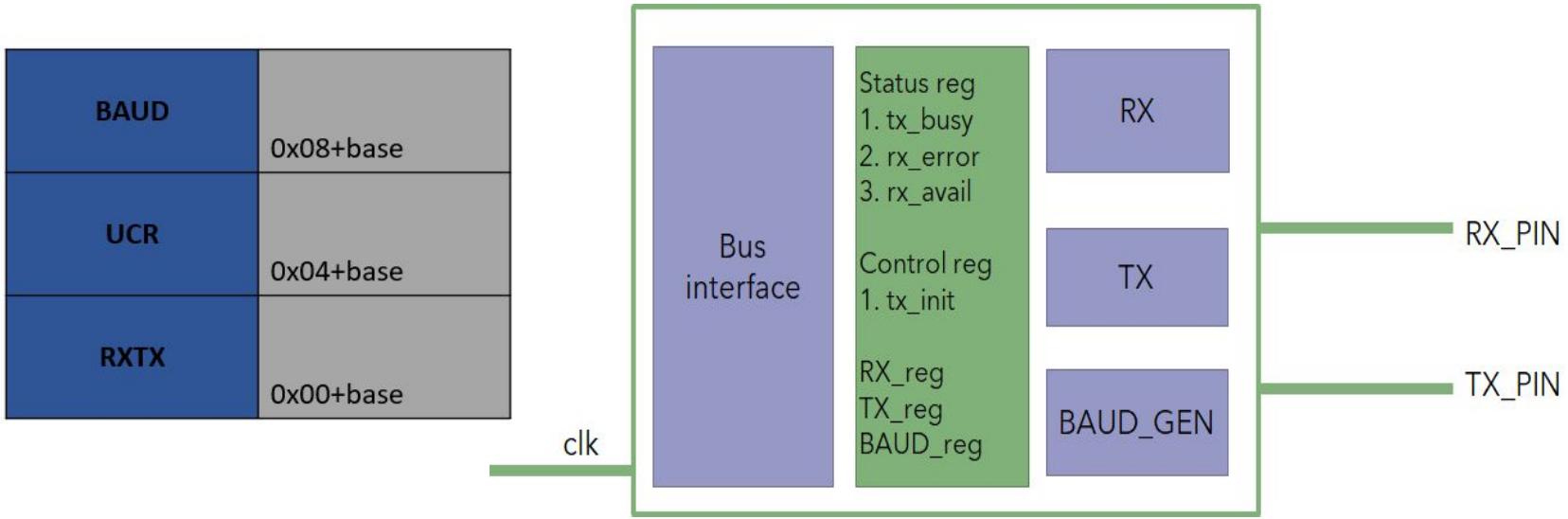
Grupo 5
David Rodriguez Soler
Santiago Ducuara Lizcano
Carlos Yezid Rubio



SoC Robot Cartógrafo

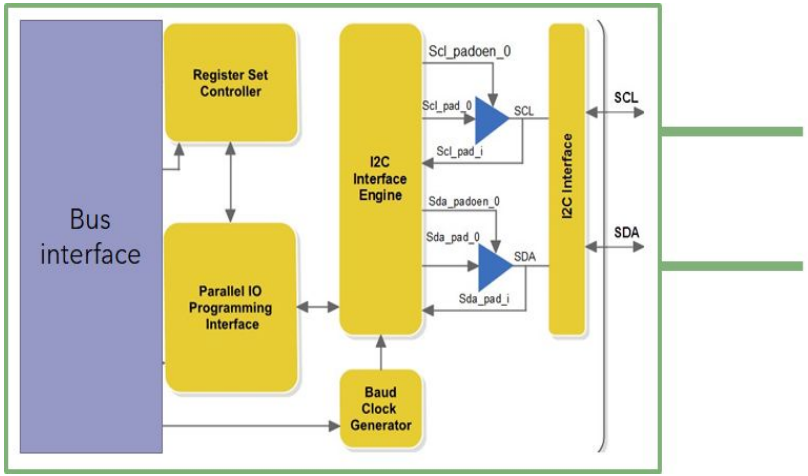

VGA
0x80000FFF
0x80000F00
CÀMARA
0x80000EFF
0x80000E00
RADAR
0x80000DFF
0x80000D00
I2C
0x80000CFF
0x80000C00
UART1
0x80000BFF
0x80000B00
TIMER
0x80000AFF
0x80000A00
GPIO
0x800009FF
0x80000900
UART0
0x800008FF
0x80000800
SRAM
0x800007FF
RAM
0x00000000

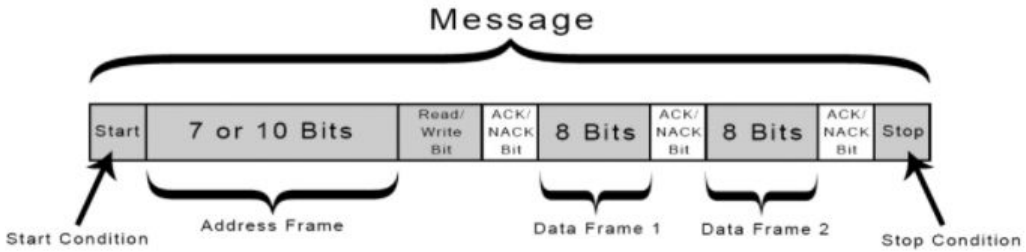
UART


BAUD
0x08+base
UCR
0x04+base
RXTX
0x00+base
clk
Bus interface
Status reg
1. tx_busy
2. rx_error
3. rx_avail
Control reg
1. tx_init
RX_reg
TX_reg
BAUD_reg
RX
TX
BAUD_GEN
RX_PIN
TX_PIN

I2C

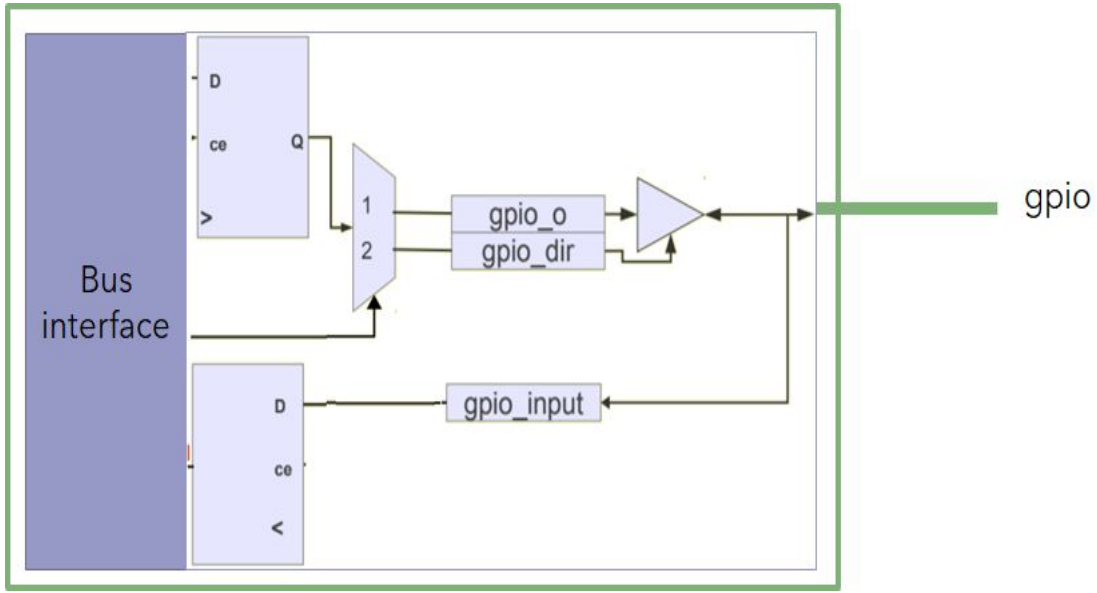
CTR	0x08+base
BAUD	0x04+base
SDA	0x00+base





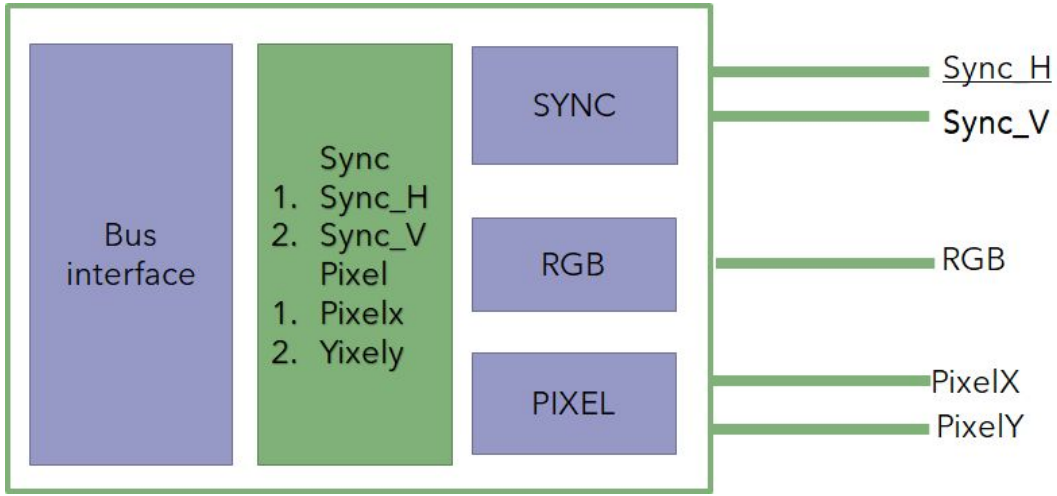
GPIO

WRITE	0x08+base
READ	0x04+base
DIR	0x00+base

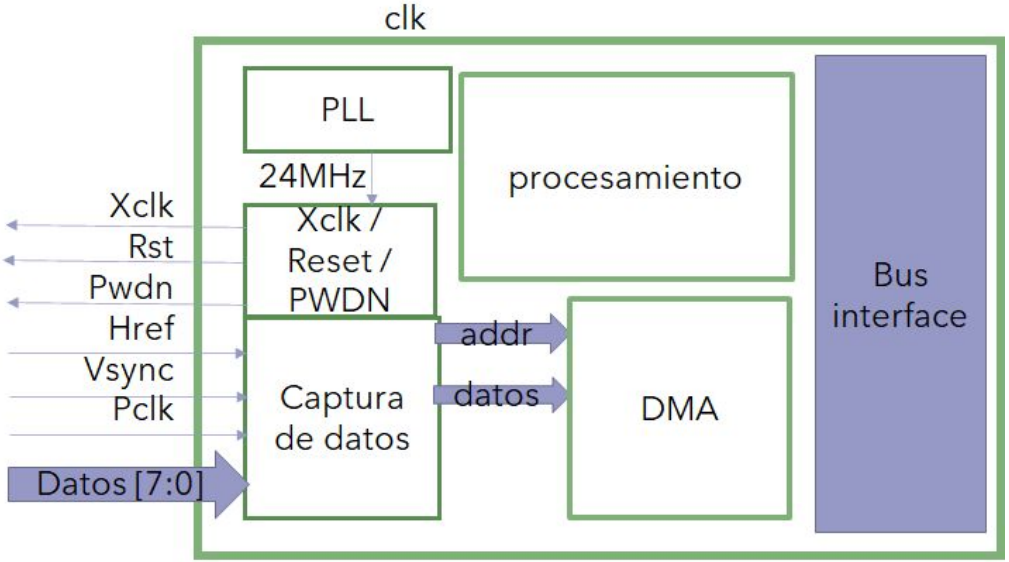


VGA

#Pixel	0x0C+base
RGB	0x08+base



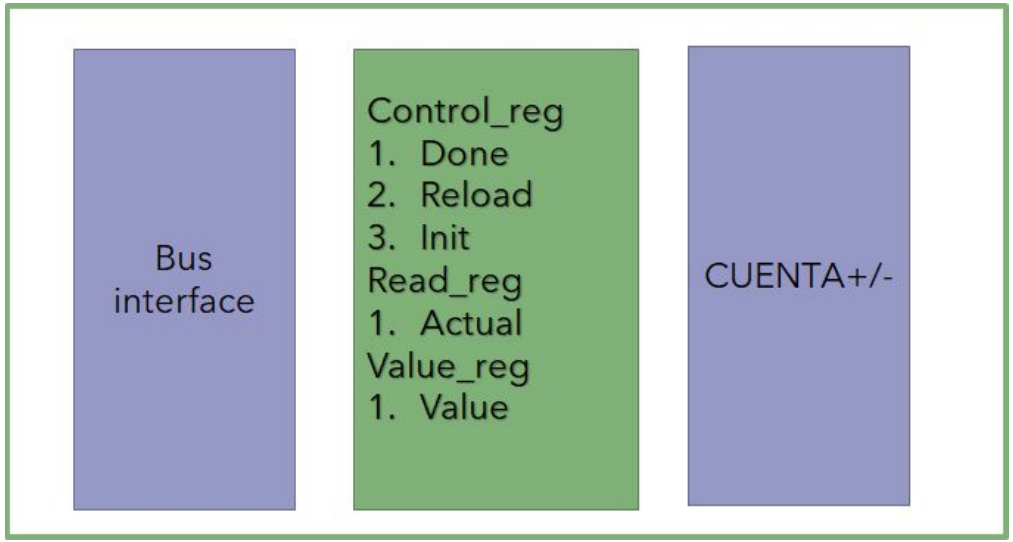
CÁMARA



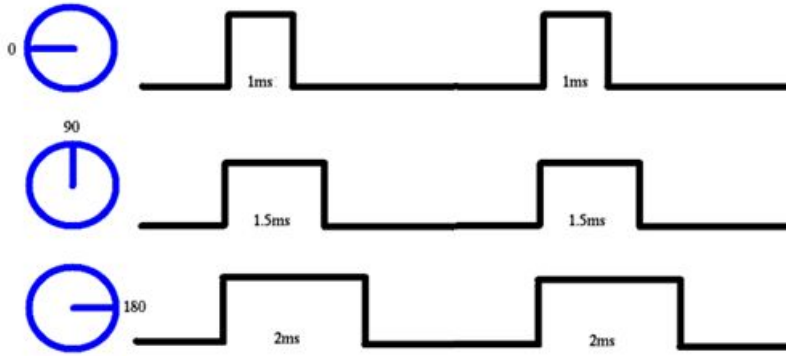
DONE	0x0C+base
FIGURA	0x08+base
COLOR	0x04+base
INIT	0x00+base

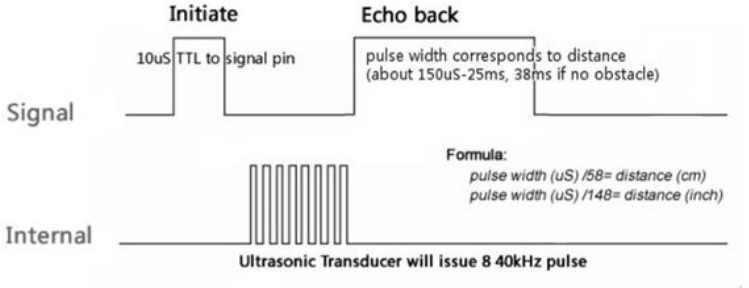
TIMER

UpDown	0x0C+base
Control	0x08+base
Actual	0x04+base
Value	0x00+base



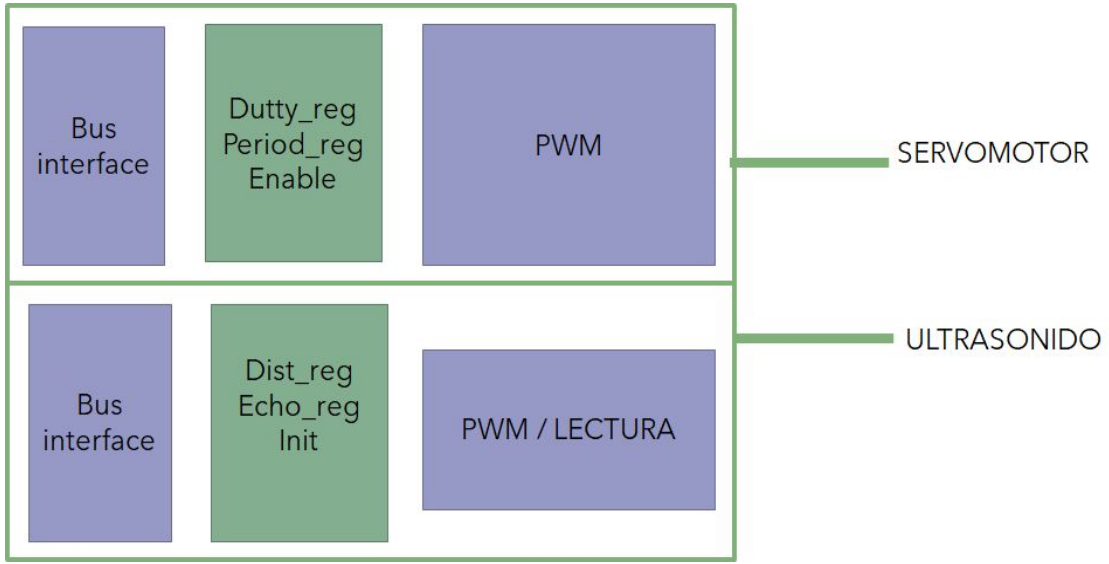
RADAR


0
1ms
1ms
90
1.5ms
1.5ms
180
2ms
2ms


Initiate
Echo back
10uS TTL to signal pin
pulse width corresponds to distance
(about 150uS-25ms, 38ms if no obstacle)
Signal
Formula:
pulse width (uS) /58= distance (cm)
pulse width (uS) /148= distance (inch)
Internal
Ultrasonic Transducer will issue 8 40kHz pulse

RADAR

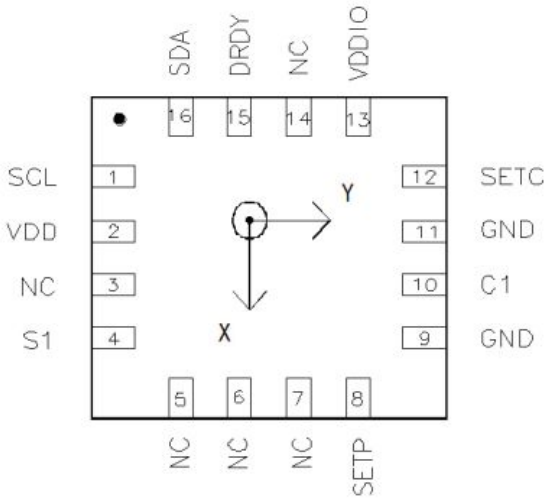
DUTTY	0x14+base
PERIOD	0x10+base
ENABLE	0x0c+base
DIST	0x08+base
ECHO	0x04+base
INIT	0x00+base



MAGNETÓMETRO (HMC5883L)

I2C

CTR	0x08+base
BAUD	0x04+base
SDA	0x00+base



Referencias

- https://cdn-shop.adafruit.com/datasheets/HMC5883L_3-Axis_Digital_Compass_IC.pdf
- http://www.datasheet.es/PDF/940447/OV7910-pdf.html