IR Range Sensor

SHARP1 — C1 10uF — 5V — GND
SHARP2 — C2 10uF — 5V — GND
SHARP3 — C3 10uF — 5V — GND
SHARP4 — C4 10uF — 5V — GND
SHARP5 — C5 10uF — 5V — GND
SHARP6 — C6 10uF — 5V — GND

Communications I2C/SPI

I2C1 — I2C_SCL / I2C_SDA
I2C2 — I2C_SCL / I2C_SDA
I2C3 — I2C_SCL / I2C_SDA

SPI1 — SPI_CS1 / SPI_MOSI / SPI_SCK / SPI_MISO
SPI2 — SPI_CS2 / SPI_MOSI / SPI_SCK / SPI_MISO
SPI3 — SPI_CS3 / SPI_MOSI / SPI_SCK / SPI_MISO

UI
BTN_UP 1 2 BTN_DOWN
BTN_LEFT 3 4 BTN_RIGHT
BTN_CENTER 7 6 8 — 5V / GND

Motor Drivers

U1 L293DD
VSS 20 / VS 10 — 5V 12V
IN1 2 / EN1 1 / IN2 9 — OUT1 3 MOT1_OUT2 / OUT2 8 MOT1_OUT1
IN3 12 / EN2 11 / IN4 19 — OUT3 13 MOT2_OUT1 / OUT4 18 MOT2_OUT2
MOT1_2 / MOT1_1 / MOT2_1 / MOT2_2
GND 4 15 / GND 6 16 / GND 7 17 / GND 14

U2 L293DD
VSS 20 / VS 10 — 5V 12V
IN1 2 / EN1 1 / IN2 9 — OUT1 3 / OUT2 8
IN3 12 / EN2 11 / IN4 19 — OUT3 13 MOT3_OUT1 / OUT4 18 MOT3_OUT2
MOT3_1 / MOT3_2
GND 4 15 / GND 6 16 / GND 7 17 / GND 14

MOT LEFT
6 ENC1_B / 5 ENC1_A / 2 MOT1_OUT2 / 1 MOT1_OUT1
R2 1k / R1 1k — 5V

MOT RIGHT
6 ENC2_B / 5 ENC2_A / 2 MOT2_OUT2 / 1 MOT2_OUT1
R4 1k / R3 1k — 5V

MOT FRONT
6 ENC3_B / 5 ENC3_A / 2 MOT3_OUT2 / 1 MOT3_OUT1
R6 1k / R5 1k — 5V

U$1 TEENSY_3.5-3.2INV
BT_RX — 0/RX1/MOSI1
BT_TX — 1/TX1/MISO1
BTN_UP — 2/PWM
BTN_LEFT — 3/CAN0-TX/SCL2/PWM
BTN_CENTER — 4/CAN0-RX/SDA2/PWM
BTN_RIGHT — 5/PWM
BUZZER — 6/PWM
BTN_DOWN — 7/RX3/PWM
ENC2_A — 8/TX3/PWM
SPI_CS2 — 9/RX2/PWM
SPI_CS3 — 10/TX2/PWM
SPI_MOSI — 11/MOSI0
SPI_MISO — 12/MISO0
SPI_SCK — 13/SCK0/LED
ENC2_B — 14/A0/PWM
SPI_CS1 — 15/A1
ENC1_A — 16/A2
ENC1_B — 17/A3/PWM
I2C_SDA — 18/A4/SDA0
I2C_SCL — 19/A5/SCL0
MOT2_2 — 20/A6/PWM
MOT2_1 — 21/A7/PWM
MOT1_2 — 22/A8/PWM
MOT1_1 — 23/A9/PWM
— 24
— 25
T_IRQ — 26
T_CS — 27
MPU_INT — 28
ENC3_A — 29/PWM
ENC3_B — 30/PWM
RF_CE — 31/A12/RX4
RF_CS — 32/A13/TX4/SCK1
SHARP6 — 33/A14/TX5
SHARP5 — 34/A15/RX5
SHARP1 — 35/A16/PWM
SHARP2 — 36/A17/PWM
SHARP3 — 37/A18/SCL1/PWM
SHARP4 — 38/A19/SDA1/PWM
MOT3_2 — 39/A20
MOT3_1
BATT1

VIN — 5V 3.3V
3.3V
GND
AGND
PGM — S3
A22/DAC1 — BATT3
A21/DAC0 — BATT2

BUZZER + 2 / - GND
TOUCH 2 T_IRQ / 1 T_CS

Teensy 3.2 or 3.5 can be used
Only the Teensy 3.5 offers the total shield capacity

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Sheet: 1/2 — Rev:2.0

Radio Communications

3.3V

100nF
C7

M1
WIRELESS-NRF24L01

2	VCC
3	CE
4	CSN
5	SCK
6	MOSI
7	MISO
8	IRQ
1	GND

RF_CE
RF_CS
SPI_SCK
SPI_MOSI
SPI_MISO

ANTENNA

GND

U3
HC_05

BT_RX
BT_TX

1	TX	PIO11	34
2	RX	PIO10	33
3	CTS	PIO9	32	DTR
4	RTS	PIO8	31
5	PCM_CLK	PIO7	30
6	PCM_OUT	PIO6	29
7	PCM_IN	PIO5	28
8	PCN_SYNC	PIO4	27
9	AIO0	PIO3	26
10	AIO1	PIO2	25
11	RST	PIO1	24
12	3V3	PIO0	23
13	GND	GND2	22

3.3V

S1

3.3V

R19
10k

R7
750

D1

NC VBUSD- CSB MOSI MISO CLK VBUSD+ GND1
14 15 16 17 18 19 20 21

GND   GND   GND   GND   GND

HC-05 or HC-06 module can be used

JP1

5V

VCC	VCC 3.3V (or 5v)
GND	GND
SCL	SCL
SDA	SDA
XDA	XDA
XCL	XCL
ADO	ADO
INT	INT

GND
I2C_SCL
I2C_SDA

MPU_INT

GY-521 ITG/MPU

y
x

JP1 selects between I2C address 0x68 and 0x69

Power Control

BATT

4	S3
3	S2
2	S1
1	

GND

R9 470k   S1
T1 BSS84

R8 470k

3.3V

Q1 BSS138

GND

R11 470k   S2
T2 BSS84

R10 470k

R12 470k

Q2 BSS138

R13 150k

GND

BATT1

BATT2

R15 470k   S3
T3 BSS84

R14 470k

R16 470k

Q3 BSS138

R17 150k

GND

BATT3

R18 470k

GND

5.5x2.1mm Barrel

T4 S12323DS

12V

J7

R21 470k

S2

R20 1k

D2

GND

5V

| OUT+ | IN+ |
| OUT- | IN- |

12V

GND   GND

DC-DC-STEP-DOWN-MP2307_SMD
U$2

MOUNT-HOLE3.2
H1

MOUNT-HOLE3.2
H2

MOUNT-HOLE3.2
H3

MOUNT-HOLE3.2
H4

Designed in France

Made by Mr. Robotics

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Brainsy	
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