



Witty - smart, compact, beautiful

The Witty is a 2-wheel unusual robot. With the slanted wheels it is never blocked in a box. Able to rotate, you have to understand the conditions that makes it move or rotate. It is a fully compatible Arduino board, using as the Arduino Mini an external USB/Serial adapter. A Bahoma Lipo power the Witty in a snap, no hard to insert small connector.



Load www.didel.com/Witty.html to click on all our documentation.

General specs

| | |
|------------------------|--|
| Size | 80 x 32 x 32 mm |
| Processor | AtMega 328P-AU |
| Motor and wheels | Vigor Bo-30 1:96 with Didel 32mm weels |
| Motor drivers | CS 7721 |
| IR module | CHQ0038 |
| Programming connectors | ISP 6 holes 1.27mm pich Gaia female 5 pins 1.27mm |
| Extension connectors | Gy521 2.54mm pitch I2C 1.27mm A2A3 + - 1.27mm |
| Switches | 2x push button 1x SPD switch |
| Voltage and current | 3.0V/40mA-5.5V/80mA (both motors free running) 3.7V/200mA (both motors blocked) |

Witty microcontroller is an AtMega 328, initialized with Duemilanove loader. Pin assignment is given below, with usual Arduino pin numbers and AVR328 port assignment.

| AVR328 pins | | | | | |
|-------------|------|----------|-----|------|-----------------|
| Pin | Port | | Pin | Port | |
| 0 | PD0 | Rx | 11 | PB3 | (s2 prog) |
| 1 | PD1 | Tx | 12 | PB4 | (s1 prog) |
| 2 | PD2 | IRmodule | 13 | PB5 | (Tell prog) |
| 3 | PD3 | TellConn | 14 | PC0 | Pous active low |
| 4 | PD4 | - | 15 | PC1 | Led active high |
| 5 | PD5 | AvG | 16 | PC2 | Ana pin4 |
| 6 | PD6 | AvD | 17 | PC3 | Ana pin3 |
| 7 | PD7 | - | 18 | PC4 | I2C SCL pin3 |
| 8 | PB0 | - | 19 | PC5 | I2C SDA pin4 |
| 9 | PB1 | AvD | | | |
| 10 | PB2 | RecD | | | |

Typical definition file beginning (see WittySoft.pdf)

| | |
|--|---|
| <pre>// Witty.h #define bLed 1 // PORTC #define LedOn bitSet (PORTC,bLed) #define LedOff bitClear (PORTC,bLed) #define LedToggle (PORTC^=(1<<bLed)) #define bPous 0 // actif à zero #define PousOn (!(PINC&(1<<bPous))) void SetupPushLed { DDRC = 0b000010 ; //Led out PORTC = 0b000001; // pullup on pous }</pre> | <pre>// Witty.h #define Led 15 #define LedOn digitalWrite (Led,HIGH) #define LedOff digitalWrite (Led,LOW) #define Button 14 #define PushOn digitalRead (Button) void SetupPushLed{ pinMode (Led,OUTPUT); pinMode (Button,INPUT_PULLUP); }</pre> |
|--|---|