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Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China
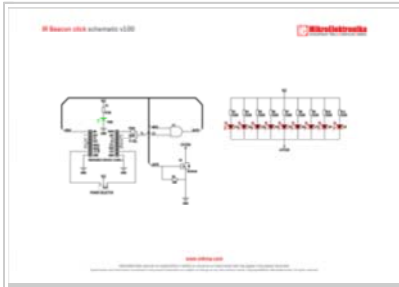
IR Beacon click

IR Beacon click is a mikroBUS™ add-on board with an array of nine high speed infrared emitting diodes. It functions as a beacon device, transmitting infrared rays in a wide angle, which can be detected by nearby infrared receivers (such as the one on IR click).

Features and usage notes

Schematic also available in PDF (http://cdn-docs.mikroe.com/images/e/e8/IR_Beacon_Click_sche

Each of the nine VSMB2948SL diodes have a transparent plastic package that serve as tiny lenses. The IR wave has a half intensity angle of ±25 degrees. The diodes have high radiant power and intensity with a peak wavelengths of 940nm..

IR Beacon click is suitable for high pulse current operation. The mainboard MCU drives the infrared diodes through the mikroBUS™ MOD pin, providing a carrier signal (which can be modified to match the frequency of the receiver). Either UART or PWM can be used to transmit a signal to a target receiver (specified by the position of the TX SEL jumper in the middle of the board).

The range is up to half a meter. You can increase it by stacking multiple IR Beacon clicks onto a same mikroBUS™ socket. The board can use either a 3.3V or a 5V power supply.

IR Beacon click

IR Beacon click

IC/Module	Array of nine VSMB2948SL (http://www.vishay.com/docs/83498/vsmb2948sl.pdf) infrared diodes
Interface	MOD, PWM, TX
Power supply	3.3V, 5V
Website	www.mikroe.com/click/ir-beacon (http://www.mikroe.com/click/ir-beacon)

Programming

This code demonstrates how the IR Beacon click sends IR signals depending on the PWM frequency.

```
1  unsigned int ratio;
2  sbit IR_control at GPIOA_ODR.B4;
3
4  void main() {
5
6        ratio = PWM_TIM2_Init(74);
7        PWM_TIM2_Set_Duty(ratio / 4, _PWM_INVERTED, _PWM_CHANNEL1);
8        PWM_TIM2_Start(_PWM_CHANNEL1, &_GPIO_MODULE_TIM2_CH1_PA0);
9
10       GPIO_Digital_Output(&GPIOA_BASE, _GPIO_PINMASK_4);
11
12       /* Sending IR signals */
13
14       while (1) {
15             IR_control = 1;
16             delay_us(13);
17             IR_control = 0;
18             delay_us(13);
19       }
20 }
```

Code examples that demonstrate the usage of IR Beacon click with MikroElektronika hardware, written for mikroC for ARM, PIC32, and FT90x are available on Libstock (http://libstock.mikroe.com/projects/view/1846/ir-beacon-click).

Resources

- Vendor's data sheet (http://www.vishay.com/docs/83498/vsmb2948sl.pdf)

- MikroBUS standard specifications (http://www.mikroe.com/downloads/get/1737/mikrobus_specification.pdf)

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