

IrDA2 click



PIID: MIKROE-1195

RS Product Code: [136-0694](#)

IrDA2 click is a compact and easy solution for adding infrared communication to your device. It features TFDU4101 infrared transceiver module as well as MCP2120 infrared encoder/decoder from Microchip connected with the 7.3728 MHz external crystal. The click is designed to run on either 3.3V or 5V power supply. It communicates with the target board via UART interface and the following mikroBUS™ pins: AN, RST, CS.

Essential features

The combination of the TFDU4101 and MCP2120 results in support for fast and stable infrared data communication. The TFDU4101 infrared transceiver module covers the full IrDA range of more than 1m and speed up to 15.2 kbit/s

Application

With low power consumption, all these features make IrDA2 click ideal for TV and video systems, printers, fax machines, copiers, external infrared adapters, diagnostic systems and other industrial applications.

Key features

- MCP2120 infrared encoder/decoder
- Up to IrDA standard 115.2 kbaud operation
- TFDU4101 infrared transceiver
- UART interface
- 3.3V or 5V power supply

Specification

Product Type:	IR
Applications:	IrDA2 board is ideal for wireless infra-red data communication with PC remote controllers for home appliances and other devices.
On-board modules:	MCP2120 infrared encoder/decoder, TFDU4101 infrared transceiver
Key Features:	Data Communication rates up to 115.2kbaud. Interfaces with IrDA compliant transceivers with 1.63us Transmit/Receive format
Key Benefits:	Low power consumption. Includes UART to IrDA standard bit encoder/decoder functionality
Interface:	UART
Power Supply:	3.3V or 5V
Compatibility:	mikroBUS
Click board size:	S (28.6 x 25.4 mm)
Weight:	30 g

Pinout diagram

This table shows how the pinout on IrDA2 click corresponds to the pinout on the mikroBUS™ socket (the latter shown in the two middle columns).

Notes	Pin	 mikroBUS™				Pin	Notes
		1	AN	PWM	16		
Selects the device mode (Data/Command) for Software Baud Rate operation	MODE	1	AN	PWM	16	NC	Not connected
Resets the device	RESET#	2	RST	INT	15	NC	Not connected
Device Enable	ENABLE	3	CS	TX	14	TX	UART Transmit
Not connected	NC	4	SCK	RX	13	RX	UART Receive
Not connected	NC	5	MISO	SCL	12	NC	Not connected
Not connected	NC	6	MOSI	SDA	11	NC	Not connected
Power supply	+3.3V	7	3.3V	5V	10	+5V	Power supply
Ground	GND	8	GND	GND	9	GND	Ground

Table 1: Baud Rate selection

B2	B1	B0	Software selection	Hardware selection	Baud Rate (bps)
0	0	0		•	9600
0	0	1		•	19200
0	1	0		•	38400
0	1	1		•	57600
1	0	0		•	115200
1	1	1	•		9600

Programming

Code examples for IrDA2 click, written for MikroElektronika hardware and compilers are available on Libstock.

Code snippet 1 - MASTER

This example demonstrates the functionality of the IrDA2 Click board.

The master initiates communication with the slave by sending 1 byte of data to the slave

```
01 void main() {
02     ANSEL = 0;           // Configure ports as digital I/O
03     ANSEL = 0;
04     TRISD = 0;         // Set PORTD as output
05
06     i = 0;             // Initialize global variables
07     received = 0;
08
09     UART1_Init(9600);   // Initialize UART module at 9600 baud rate
10     delay_ms(200);
11
12     RC1IE_bit = 1;     // Enable USART Receiver interrupt
13     GIE_bit = 1;      // Enable Global interrupt
14     PEIE_bit = 1;     // Enable Peripheral interrupt
15
16     UART1_Write(1);    // Master initiates communication
17
18     while(1) {
19         if (received) { // If data received by Slave
20             LATD = i;   // display it on the PORTD
21             i++;       // Increment counter
22             received = 0; // Clear received flag
23         }
24         UART1_Write(i); // Send counter value to Slave via UART1
25         delay_ms(200);
26     }
27 }
```

Code snippet 2 - SLAVE

The slave accepts data, increments it and sends it back to the master.

The data received is shown on PORTD.

```
01 void main() {
02     ANSEL = 0;           // Configure ports as digital I/O
03     ANSEL = 0;
04     TRISD = 0;         // Set PORTD as output
05
06     i = 0;             // Initialize global variables
07     received = 0;
08
09     UART1_Init(9600);   // Initialize UART module at 9600 baud rate
10     Delay_ms(200);
11
12     RC1IE_bit = 1;     // Enable USART Receiver interrupt
13     GIE_bit = 1;      // Enable Global interrupt
14     PEIE_bit = 1;     // Enable Peripheral interrupt
15
16     while(1) {
17         if (received) { // If data received,
18             LATD = i;   // display it on the PORTD
19             i++;       // Increment counter
20             received = 0; // Clear received flag
21             UART1_Write(i); // Send counter value to Master via UART1
22         }
23     }
24 }
```

Downloads

[mikroBUS™ Standard specification](#)

[LibStock: IrDA2 click library](#)

[MCP2120 datasheet](#)

[TFDU4101 datasheet](#)

[IrDA2 click schematic](#)