USB One Channel Relay Controller
RS232 Serial controlled

A general purpose USB Relay board (controller) for connection to a PC's USB port using VCP (Virtual COM port). Control devices using your PC.

Features:
- Fully assembled and tested.
- For 12V/24V DC 15A or 120V/220V AC at 10A max.

Complete including:
- One USB relay Controller

Dimensions (PCB board):
90 mm / 35 mm
Drivers are available to work with the following operating systems:

Communication Parameters:
8 Data, 1 Stop, No Parity
Baud rate : 9600

Commands:
OFF command: “FF 01 00” (HEX) or “255 1 0” (DEC)
ON command: “FF 01 01” (HEX) or “255 1 1” (DEC)
NOTE: Each command consists in 3 binary bytes (shown in hexadecimal below) without any space!
You have to download the drivers from FTDI website:
http://www.ftdichip.com/Drivers/VCP.htm
http://www.ftdichip.com/Drivers/CDM/CDM%202.04.06%20WHQL%20Certified.zip

Unzip it to your own folder ....

When you connect the USB board, the following message appears: FOUND NEW HARDWARE and drives need to be installed.

When you connect the USB board to the PC the red and green LED flashes 2,3 times and turn off. When the red LED and the green LED flashes means that there is a communication between the programmer and PC.

Drivers' installation:
After the drivers' installed, an additional COM port appears in the Device Manager of Windows- usually it is COM3:
Testing:

1. Download USB Relay Test software from:
   http://www.sigma-shop.com/software/usb_relay/usb_relay_software.zip

2. Connect board to USB and run software. If everything is ok this should appear:

![USB relay test](image)

You can also download source code:
http://www.sigma-shop.com/software/usb_relay/usb_relay_source_code.zip

Support forum:

If you get this message you see the following error:

![Application Error](image)

that means that you do not have the latest version of Microsoft .NET Framework installed on your computer.

The program has to be installed on your computer in order to use the software.

You can download this from there

(c) www.Sigma-Shop.com  All rights reserved.
3. Software will detect all COM ports you have and there must be one more (Virtual COM port):

![USB relay test window](image1)

4. Choose COM port. Click on "OPEN" button and using "ON" and "OFF" buttons you can test relays.
   
   NOTE: USB one relay no support "All ON" and "All OFF" buttons

![USB relay test window](image2)
Software examples:
Abacom ProfiLab-Expert example:

Download software:
http://www.sigma-shop.com/software/usb_relay/abacom_proflabexpert_one_channel_relay.zip

You can made similar application with ProfiLab within minutes!
ProfiLab-Expert is available in our shop:
http://www.sigma-shop.com/category/1/softwares.html

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WinExplorer:
http://www.sigma-shop.com/software/usb_relay/WinExplorer.zip
Sample VB6 code:

Private Sub cmdOff_Click()
    With MSComm1
        'make sure the serial port is open
        If .PortOpen = False Then .PortOpen = True
        'send the data
        .Output = Chr$(255)
        .Output = Chr$(1)
        .Output = Chr$(0)
    End With 'MSComm1
End Sub

Private Sub cmdOn_Click()
    With MSComm1
        'make sure the serial port is open
        If .PortOpen = False Then .PortOpen = True
        'send the data
        .Output = Chr$(255)
        .Output = Chr$(1)
        .Output = Chr$(1)
    End With 'MSComm1
End Sub

Sample 1 Microsoft Visual Basic 2008 code:

    Private Sub ON_Button_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles ON_Button.Click
        SerialPort1.Open()
        SerialPort1.Write(New Byte() {255, 1, 1}, 0, 3)
        SerialPort1.Close()
    End Sub

    Private Sub OFF_Button_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles OFF_Button.Click
        SerialPort1.Open()
        SerialPort1.Write(New Byte() {255, 1, 0}, 0, 3)
        SerialPort1.Close()
    End Sub

Sample 2 Microsoft Visual Basic 2008 code:
(Many thanks to Andrew Magennis for this code)

    If SerialPort1.IsOpen = False Then
        SerialPort1.Open() 'opens the serial port
        Dim data(3) As Byte
        data(0) = 255 'data for entering comand mode
        data(1) = 1 'data to select which relay 1-8, in this case 2
        data(2) = 1 'turn on the relay, or 0 to turn it off
        SerialPort1.Write(data, 0, 3) 'write the data to the serial port, SerialPort1.
    End If

    If SerialPort1.IsOpen = False Then
        SerialPort1.Open() 'opens the serial port
        Dim data(3) As Byte
        data(0) = 255 'data for entering comand mode
        data(1) = 1 'data to select which relay 1-8, in this case 2
        data(2) = 0 'turn on the relay, or 0 to turn it off
        SerialPort1.Write(data, 0, 3) 'write the data to the serial port, SerialPort1.
    End If
Sample C# code:

```csharp
private void button1_ON_Click(object sender, EventArgs e)
{
    serialPort1.Write(new byte[] { 0xFF, 0x01, 0x01 }, 0, 3);
}

private void button1_OFF_Click(object sender, EventArgs e)
{
    serialPort1.Write(new byte[] { 0xFF, 0x01, 0x00 }, 0, 3);
}
```

Linux:

In this case the driver is correctly installed and with the bash's command:

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The old kernel's "echo" commands:

echo "\xff\x01\x01" > ttyUSB0
the relay 1 go ON.

echo "\xff\x01\x00" > ttyUSB0
the relay 1 go OFF.
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The new kernel's "echo" commands:

echo -e \xff\x01\x01' > /dev/ttyUSB0
the relay 1 go ON.

echo -e \xff\x01\x00' > /dev/ttyUSB0
the relay 1 go OFF.
```

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