

Velbus protocol

Basic packet layout

Idx		Description	Values
0	Header	Start of packet (STX)	0x0F
1		Priority	0xFB (low), 0xF8 (high)
2		Address	0x00-0xFF
3		Number of data bytes Rtr state	0x00-0x08 Number of data bytes masked with 0x40
4	Data bytes	First data byte (command)	Any valid command
5		Second data byte	N/A
...		...	N/A
Size-2	Trailer	Checksum	2's complement of byte 0..Size-3
Size-1		End of packet (ETX)	0x04

Checksum calculation

1. In standard C

```
unsigned char checksum(unsigned char*lpData, int nSize)
{
    unsigned char c = 0;
    int i = 0;

    for(; i<nSize; ++i)
        c += lpData[i];

    return (-c);
}
```

2. In C#

```
public static byte Crc8(byte[] data, int size)
{
    byte checksum = 0;
    for (int i=0; i<=size; i++)
        checksum += data[i];

    return (byte) (-checksum);
}
```

Packet examples

1. 'Switch relay on' command (p.17 of the VMB4RY manual)

0	0x0F	0x0F
1	0xF8	High priority
2	0x02	Address of my VMB4RY module
3	0x02	Two data bytes with rtr disabled
4	0x02	Switch relay on
5	0x01	Second data byte = "Relay bit number"
6	0xF2	Checksum of byte 0..5
7	0x04	ETX

.NET Code (C#)

```
SerialBus bus = new SerialBus("COM1");
bus.Open();

Packet packet = new Packet(0x02, PacketPriority.High, 2);
packet.Command = 0x02;
packet[1] = 0x01;

bus.SendBlocking(packet);
bus.Close();
```

2. 'Module type request' command (p.18 of the VMB4RY manual)

0	0x0F	0x0F
1	0xFB	Low priority
2	0x02	Address of my VMB4RY module
3	0x40	Zero data bytes with rtr enabled
4	0xB4	Checksum of byte 0..3
5	0x04	ETX

.NET Code (C#)

```
SerialBus bus = new SerialBus("COM1");
bus.Open();

Packet packet = new Packet(0x02, PacketPriority.Low, 0, true);

bus.SendBlocking(packet);
bus.Close();
```