



Velbus Protocol Summary

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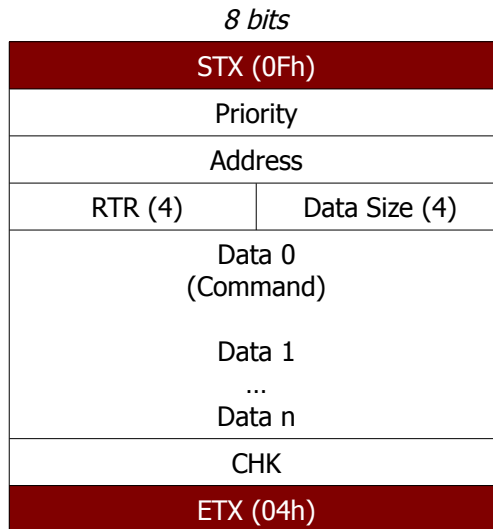
Table of contents

Packet Composition.....	2
Overview.....	2
Checksum.....	3
Examples.....	4
VMB1RY Module type request command.....	4

Packet Composition

Overview

Packets for the Velbus are **6 + n bytes** in size. Each packet is delimited by the *STX* (0Fh) and *ETX* (04h) bytes. Validity of the packet can be checked by verifying the checksum byte (*CHK*).



1. Velbus Packet Diagram

A packet can be sent to an address in the range of (00h to FFh) by setting the *Address* byte. Note that certain address ranges are reserved by the modules as special function addresses.

Each packet has an optional number of data bytes, up to a maximum of eight, to contain additional data. The *Data Size* nibble indicates how many data bytes are included in the packet. The first data byte is usually the *Command* byte.

Packet priority is determined by setting the *Priority* bits in the second byte of the packet (F8 = High, FB = Low).

The *RTR* value is only set for scan (module type) packets. For any other packets the *RTR* nibble is zero (0h). Scan packets also do not contain any data bytes. *RTR* must be set to 4h if it is enabled.

Checksum

The checksum is calculated by taking the two's complement checksum of all bytes up to (and not including) the checksum byte. Then inverting the bits and adding 1. See the examples section for more details.

Examples

VMB1RY Module type request command

Packet properties:

RTR	ON
Priority	Low
Data Size	0

We're going to send this command to address 0Eh. This gives us the following packet in its raw form:

STX	0Fh		
Priority	FBh (Low)		
Address	0Eh		
RTR	Data Size	4h (RTR on)	0h (0 data bytes)
CHK	$0Fh + FBh + 0Eh + 40h = 158h$ (sum) $= 58h$ (discard overflow) $= A7h$ (invert bits) $= A8h$ (add 1)		
ETX	04h		

Our raw packet: **0Fh FBh 0Eh 40h A8h 04h**