VMBSIG-21

Home automatization over internet

External CAN communication protocol

Standard CAN packet format

<SOF-SID10...SID0-RTR-IDE-r0-DLC3...0-DATABYTE1...DATABYTEn-CRC15...CRC1-CRCDEL-ACK-ACKDEL-EOF7...EOF1-IFS3...IFS1>

bits	*Description*
SOF	Start Of Frame (always 0)
SID10 & SID9	Priority 00: highest 01: firmware 10: reserved 11: lowest
SID8…SID1	Address
SID0	Always 0
RTR	Remote Transmit Request
IDE	Identifier Extension (always 0)
r0	reserved (always 0)
DLC3…DLC0	Data Length Code (0…8)
Databyte1	Command
Databyte2	Parameter
Databyte3	Parameter
Databyte4	Parameter
Databyte5	Parameter
Databyte6	Parameter
Databyte7	Parameter
Databyte8	Parameter
CRC15…CRC1	Cyclic Redundancy Checksum
CRCDEL	CRC Delimiter (always 1)
ACK	Acknowledge slot (transmit 1 readback 0 if received correctly)
ACKDEL	Acknowledge Delimiter (always 1)
EOF7...EOF1	End Of Frame (always 1111111)
IFS3...IFS1	InterFrame Space (always 111)

Power up message received or transmitted

SID10-SID9	11 (lowest priority)
SID8...SID1	0x00 (broadcast address)
RTR = 0	0
DLC3...DLC0	2 data bytes
DATABYTE1	COMMAND_POWER_UP (0xAB)
DATABYTE2	module address

Module type request command received

SID10-SID9	11 (low priority)
SID8...SID1	Module address
RTR	1 (remote transmit request)
DLC3...DLC0	0 data bytes

Module type message transmitted

SID10-SID9	11 (low priority)
SID8...SID1	Module address
RTR	0 (no remote transmit request)
DLC3...DLC0	8 data bytes
DATABYTE1	COMMAND_MODULE_TYPE (0xFF)
DATABYTE2	Type (VMBSIG-21 = 0x60)
DATABYTE3	High byte of serial number
DATABYTE4	Low byte of serial number
DATABYTE5	Memory map version
DATABYTE6	Bootloader build high byte
DATABYTE7	Bootloader build low byte
DATABYTE8	Properties: bit : terminator closed/open (0 = open) bit3…1: hardware version bit 4: connection type (0 = CAN bus) Bit 5: CAN FD support (0 = only standard CAN allowed)

Module status request command received

SID10-SID9	11 (lowest priority)
SID8...SID1	Module address
RTR	0
DLC3...DLC0	2 data bytes
DATABYTE1	COMMAND_MODULE_STATUS_REQUEST (0xFA)
DATABYTE2	don't care

Module status message transmitted

SID10-SID9	11 (lowest priority)
SID8...SID1	Module address
RTR	0
DLC3...DLC0	3 data bytes
DATABYTE1	COMMAND_STATUS (0xED)
DATABYTE2	tactile button channels 1…8 status (1 = pressed / 0 = released)
DATABYTE3	error status 0x00: Normal power supply voltage 0x01: CAN bus error 0x02: Low power supply voltage error 0x03: High power supply voltage error

Change master address and serial number command received

SID10-SID9	01 (firmware priority)
SID8...SID1	Module address
RTR	0
DLC3...DLC0	7 data bytes
DATABYTE1	COMMAND_WRITE_ADDR_SERIALNR (0x6A)
DATABYTE2	Module type (0x60 = VMSIG-21)
DATABYTE3	Current serial nr high byte
DATABYTE4	Current serial nr low byte
DATABYTE5	New module address
DATABYTE6	New serial nr high byte
DATABYTE7	New serial nr low byte

Bootloader request command received

SID10-SID9	01 (firmware priority)
SID8...SID1	Module address
RTR	0
DLC3...DLC0	1 or 2 data bytes
DATABYTE1	COMMAND_ENTER_BOOTLOADER_REQUEST (0x60)
DATABYTE2	Processor nr (0x00 = main processor)

Remark: if DLC = 1 then always the main processor is selected

Bootloader information message transmitted

SID10-SID9	11 (low priority)
SID8...SID1	Module address
RTR	0
DLC3...DLC0	7 data bytes
DATABYTE1	COMMAND_BOOTLOADER_INFO (0x61)
DATABYTE2	module type (VMBSIG-21 = 0x60)
DATABYTE3	Build number (year)
DATABYTE4	Build number (week)
DATABYTE5	PROCESSOR ID high byte (0x04 for STM32G0B0CET6)
DATABYTE6	PROCESSOR ID low byte (0x67 for STM32G0B0CET6)
DATABYTE7	Processor nr (0x00 = main processor)

Remark: this message will be echoed to the CM4 module via Uart communication

Enter bootloader command received

SID10-SID9	0xF9 (firmware priority)
SID8...SID1	Module address
RTR	0
DLC3...DLC0	6 or 7 data bytes
DATABYTE1	COMMAND_ENTER_BOOTLOADER (0x62)
DATABYTE2	module type (VMBSIG-21 = 0x60)
DATABYTE3	Build number (year)
DATABYTE4	Build number (week)
DATABYTE5	PROCESSOR ID high byte (0x04 for STM32G0B0CET6)
DATABYTE6	PROCESSOR ID low byte (0x67 for STM32G0B0CET6)
DATABYTE7	processor nr (0x00 = main processor)

Remark: if DLC = 6 then always the main processor is selected

Abort entering bootloader command for one module received

SID10-SID9	0xF9 (firmware priority)
SID8...SID1	Module address
RTR + length	1 data byte
DATABYTE1	COMMAND_ABORT_BOOTLOADER_REQUEST (0x63)

Or

SID10-SID9	0xF9 (firmware priority)
SID8...SID1	Module address
RTR + length	1 data byte
DATABYTE1	COMMAND_EXIT_BOOTLOADER (0x64)

Abort entering bootloader command for all modules received

SID10-SID9	0xF9 (firmware priority)
SID8...SID1	0x00 (broadcast address)
RTR + length	2 data byte
DATABYTE1	COMMAND_ABORT_BOOTLOADER_REQUEST (0x63)
DATABYTE2	module type (VMBSIG-21 = 0x60)

Or

SID10-SID9	0xF9 (firmware priority)
SID8...SID1	0x00 (broadcast address)
RTR + length	2 data byte
DATABYTE1	COMMAND_EXIT_BOOTLOADER (0x64)
DATABYTE2	module type (VMBSIG-21 = 0x60)