



ZBS-130

Interface Control Document

History:

DVers.:	Date	Author	Change	State
1.00	09.03.2008	PI-MH	Born	
1.00b	20.03.2008	PI-MH	Changing message in case of alarm button unhand. Added event report. AT → API	
1.01	19.05.2009	PI-TL	Universal FW separated	
2.01	19.06.2009	PI-MH	FW Version 0202 Send event counter added. Device acknowledges corrected. Added BAT and UBAT to DEV package Added SET TBREP Changing "BUTTON UP" message Added BUTTON CONFIRMED Added SET HBEAT	release
2.02	20.01.2011	PI-MH	Added Fallsensor commands	

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Direction from Coordinator	Syntax	Parameter	Description	Example
I	GET	./.	(no single parameter possible) Get information package from ZBS module	see below
		BAT	Battery Status (only if battery is present e.g. ZBS-1xx) "LOW" if battery is low "OK" if battery is ok	BAT=OK
		UBAT	Battery Voltage in [V] with decimal point	UBAT=3.88V
I	DEV	./.	(no single parameter possible) Get bulk device information package from ZBS module	see below
		PID	Product Identification	PID=ZBS-130
		HW	Hardware Version	HW=0100
		SW	Software Version	SW=0100
		SN	Serial Number, also used as node identifier in XBee module, max. 12 bytes	SN=00012345
		ID	ID for customer's purpose, max. 12 bytes	ID=0815BZ4711
		EV	Count the send events up to 65535	EV=12
		BAT	Power supply status of the	BAT=OK

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			device	
		UBAT	Power supply voltage of the device	UBAT=3.76V
O	SET	TBMIN	This period of time (* 100 ms) must be pushed the alarm button to trigger a report, default 1	SET TBMIN=13
O	SET	TBMAX	The report is repeated at a depressed alarm button after this period of time (* 100 ms), default 40	SET TBMAX=120
O	SET	TBREP	The "BUTTON UP" message is repeated after this period of time (* 100 ms), default 300	SET TBREP=600
O	BUTTON CONFIRMED		Confirmed the receiving of the "BUTTON UP" message and stop them	BUTTON CONFIRMED
O	SET	HBEAT	Heartbeat Interval in [s] (1..65000), 0 means no heartbeat, default 0	SET HBEAT=3600
O	SET	LD0	An action of the green LED triggers [cycles, duration on * 100ms, duration off * 100ms]	SET LD0=10,4,1
O	SET	LD1	An action of the green LED triggers [cycles, duration on * 100ms, duration off * 100ms]	SET LD1=15,1,4
O	SET	B1	An action of the Buzzer triggers [cycles, duration on * 100ms, duration off * 100ms, frequency in Hz]	SET B1=5,4,6,2000

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O	SET	B2	An action of the pager motor triggers [cycles, duration on * 100ms, duration off * 100ms]	SET B2=5, 2, 5
O	RESET	./.	Resets and associates device to the network	RESET
O	DEFAULTS	./.	Loads factory defaults	DEFAULTS
I	./.	BUTTON	Outgoing message for button getting pressed	BUTTON DOWN BAT=OK UBAT=2.85V
I	./.	BUTTON	Outgoing message for button getting released	BUTTON UP=30s BUTTON DOWN=4.8s BAT=OK UBAT=2.85V
O	SET	FALLREG	Set the register of the integrated fall sensor [register(0..12), value (0..255)] Possible register: 1: Freefall gravity threshold 2: Freefall time threshold 3: Gravity threshold for start detection of a rotational fall 4: Time threshold for start detection of a rotational fall 5: Back-Front and Z-Lock Angle for position change detection 6: Time threshold for position change detection	SET FALLREG=1, 18

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			7-12: Angle thresholds for position change detection at the end of the rotational fall	
I	./.	FREEFALL	Outgoing message if a freefall was detected	FREE FALL
I	./.	ROTATEFALL	Outgoing message if a fall with a following change of position was detected	ROTATE FALL
I	./.	FALLSENSOR	Outgoing message if the fall sensor was activated	FALLSENSOR ON
I	./.	FALLSENSOR	Outgoing message if the fall sensor was deactivated after a minute without motion	FALLSENSOR OFF
O	!#*	ID	Sets ID (default is the serial number)	!#*ID=1234567890
O	!#*	B1	Prepares for firmware update	!#*B1
O	!#*	B2	Erases flash and updates firmware	!#*B2
O	!#*	WRITE	Writes XBee register directly	!#*WRITE=SPG (writes '0x67' to 'sp' register)
O	!#*	READ	Reads XBee register directly	!#*READ=NP
I	./.	Register name and value	Separate message for READ result	NP=' 0x00' ' 0x54'

Communication Facts & Features

- Communication Mode Xbee-Module: API
- All incoming messages must be terminated with linefeed character (0x0a)
- All outgoing messages are terminated with double linefeed character
- Maximum incoming message length: 24 bytes including linefeed
- Device acknowledges positive and negative:
 - SET TBMAX=480 ...will lead to... ack: set tbmax=480
 - SET TBMAK=480 ...will lead to... nack: set tbmak=480

Firmware Update will affect

- Firmware
- SW-Version
- PID (product identification)

Firmware Update will NOT affect

- HW-Version
- ID
- SN