



ZBS-132

# Interface Control Document

## History:

<b>DVers.:</b>	<b>Date</b>	<b>Author</b>	<b>Change</b>	<b>State</b>
1.00	09.11.2011	PI-JB	Born	
1.01	31.01.2012	PI-JB	...	
1.02	20.02.2012	PI-MH	Commands changed and added	
1.03	07.08.2012	PI-JB	Commands adapted to hardware modification	Release
1.04	17.04.2013	PI-MH	Settings for the External moved from reg2 to reg1 New configuration state at "set sensor" Get-message order changed	

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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
		CONTACT1	Contact1 condition (automatically deactivated when contact 2 is enabled, until HW0120)	CONTACT1=OPENED or CONTACT1=CLOSED or CONTACT1=OFF	
		CONTACT2	Contact2 condition (automatically deactivated when contact 1 is enabled, until HW0120)	CONTACT2=OPENED or CONTACT2=CLOSED or CONTACT2=OFF	
		EXTERNAL	External contact condition	EXTERNAL=OPENED or EXTERNAL=CLOSED or EXTERNAL=OFF	
		NOISELEVEL	Average value of the volume at the microphone	NOISELEVEL=11	
		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=2.93V	

I	DEV	./ (no single parameter possible)	Get bulk device information telegram from ZBS module	see below
		PID	Product Identification	PID=ZBS-132
		HW	Hardware Version	HW=0100
		SW	Software Version	SW=0102
		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
		UB	Inform about the user settable Byte	UB=8
		ST	Cause of DEV telegram  1 = DEV command 2 = Push button 4 = Device reset 8 = PAN connect 16 = Heartbeat  <u>Note:</u> Concurrent causes are added to one value (e.g. Device reset and PAN connect → ST=12)	ST=16
		EV	TX telegram counter (repeatedly counts up to 65535 and restarts from 0)	EV=12
BAT	Power supply status of the device	BAT=OK		

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		<b>UBAT</b>	Power supply voltage of the device	UBAT=2.93V
<b>O</b>	SET	<b>SENSOR</b>	<p>#sensor, configuration</p> <p>Configuration:</p> <p>0: OFF</p> <p>1: Normally open (NO), ON (External contact, until HW0120)</p> <p>2: Normally closed (NC)</p> <p>3: Auto Switch (AS) (Alarm at every state change)</p> <p>#sensor:</p> <p>1: Contact1 (def. NO) 2: Contact2 (def. OFF) 3: External contact (def. OFF)</p>	SET SENSOR=2,0
<b>O</b>	SET	<b>ALARM</b>	<p>Alarm settings [#sensor, repetition time (*100ms)], default 30</p> <p>#sensor:</p> <p>1: Contact1 2: Contact2 3: External contact</p>	SET Alarm=1,30
<b>O</b>	SET	<b>MIC</b>	<p>State of noise detection, default 0</p> <p>0: OFF 1: ON</p>	SET MIC=1

I	./.	CONTACT1	Outgoing message for contact 1 has changed	CONTACT1 BAT=OK UBAT=2.85V
I	./.	CONTACT2	Outgoing message for contact 2 has changed	CONTACT2 BAT=OK UBAT=2.85V
I	./.	EXTERNAL	Outgoing message for external contact has changed	EXTERNAL BAT=OK UBAT=2.85V
O	CONTACT1 CONFIRMED	./.	Confirms the receipt of the "CONTACT1" message and stop them	CONTACT1 CONFIRMED
O	CONTACT2 CONFIRMED	./.	Confirms the receipt of the "CONTACT2" message and stop them	CONTACT2 CONFIRMED
O	EXTERNAL CONFIRMED	./.	Confirms the receipt of the "EXTERNAL" message and stop them	EXTERNAL CONFIRMED
O	SET	HBEAT	Heartbeat Interval in [s] (1..65000), 0 means no heartbeat, default 0, sends DEV telegram	SET HBEAT=3600
O	SET	LD0	An action of the green LED triggers [repetitions, duration on * 100ms, duration off * 100ms]	SET LD0=10,4,1

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O	SET	LD1	An action of the red LED triggers [reiterations, duration on * 100ms, duration off * 100ms]	SET LD1=15,1,4
O	RESET	./.	Resets and associates device to the network	RESET
O	DEFAULTS	./.	Loads factory defaults	DEFAULTS
O	!#*	ID	Sets ID (default is the serial number)	!#*ID=1234567890
O	!#*	B1	Prepares for firmware update	!#*B1
O	!#*	B2	Erases flash and wait for updates	!#*B2
O	!#*	UB	Set the user byte	!#*UB=8
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'
O	!#*	REG1	Reads the first part of the ZBS settings / configuration	!#*REG1

I	./.		Separate message for REG1 result	HBEAT=0 MIC=0 EXTERNAL=0 TREPEXTERNAL=30
O	!#*	REG2	Reads the second part of the ZBS settings / configuration	!#*REG2
I	./.		Separate message for REG2	CONTACT1=1 TREPCONTACT1=301 CONTACT2=3 TREPCONTACT2=302



### 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 SENSOR=2,0 ...will lead to... ack: set sensor=2,0
  - SET SENNSOR=2,0 ...will lead to... nack: set sennsor=2,0

### Firmware Update will affect

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

### Firmware Update will NOT affect

- HW-Version
- ID
- SN