Application Note

Z-Wave Device Configuration Basics

Document No.:	APL13298
Version:	2 Device Class Ver 1.0
Description:	Best practice guidelines for supporting configuration parameters
Written By:	ABR;BBR
Date:	2018-03-06
Reviewed By:	ABR;JFR;THUMMELI;NTJ;TRO;LTHOMSEN;CRASMUSSEN;BBR
Restrictions:	Public

Approved by:				
Date	CET	Initials	Name	Justification
2018-03-06	11:32:48	NTJ	Niels Thybo Johansen	

REVISION RECORD

Doc. Rev	Date	By	Pages affected	Brief description of changes
1	20150528	ABR	ALL	First revision
2	20180306	BBR	All	Added Silicon Labs template

1 Z-WAVE DEVICE CONFIGURATION BASICS

Z-Wave enables a variety of monitoring and control applications. Sensors can send data to a gateway. Wall controllers may report button presses to a scene controller or control actuators directly. Z-Wave Plus combines a broad range of well-proven Z-Wave technologies.

There may be certain needs in a specific deployment which necessitates configuration of parameters, e.g. how often a sensor sends updated information.

It is a firm requirement that any device operates in a meaningful way in its factory default state. For interoperability purposes it is further a requirement that all functionality that can be controlled via standardized Z-Wave application command classes also support such command classes.

The Configuration Command Class, version 3 allows an installer tool to request relevant information for configuration parameters of a given device.
A device may advertise the complete list of supported configuration parameters and for each parameter, it is possible to advertise

- Parameter name   (Configuration Name Report)
- Intended use   (Configuration Info Report)
- Parameter type   (Configuration Properties Report)
- Parameter ranges   (Configuration Properties Report)

The information allows a device to provide information electronically which would otherwise only be available in the product documentation.

This example shows how the gateway may show configuration parameters in the properties page for a light dimmer.
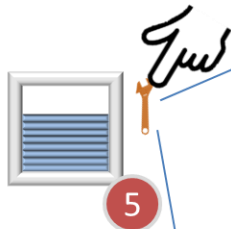
This example shows how the gateway may show configuration parameters in the properties page for a window covering device.

Configuration parameters

1: Bottom edge endpoint, 0% (closed)

+ | 1387 | − | (-10000..10000)

Position measured in steps [~ 1mm)

2: Bottom edge endpoint, 100% (open)

+ | 94 | − | (-10000..10000)

Position measured in steps [~ 1mm)

3: Bottom edge intermediate endpoints

1 ☐   2 ☑

Use intermediate endpoint settings
1: 33%, 66%
2: 25%, 50%, 75%

4: Bottom edge endpoint, 25%

+ | 1156 | − | (-10000..10000)

This example shows how the gateway may show configuration parameters in the properties page for a temperature sensor.


Configuration parameters

1: Report interval

+   300   −   (0..4200)

Interval measured in seconds

2: Report unit

1 ⊙   2 ○

Unit used for unsolicited reports
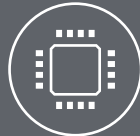1: Celcius
2: Fahrenheit

2 REFERENCES

[1]   APL12956 Z-Wave Association Basics
[2]   APL12955 Z-Wave Multi Channel Basics
[3]   APL12957 Z-Wave Battery Support Basics
[4]   APL13084 Z-Wave Control Application Basics
[5]   SDS12657 Z-Wave Command Class Specification, A-M
[6]   SDS12652 Z-Wave Command Class Specification, N-Z
[7]   SDS11847 Z-Wave Plus Device Types Specification
[8]   SDS11846 Z-Wave Plus Role Types Specification
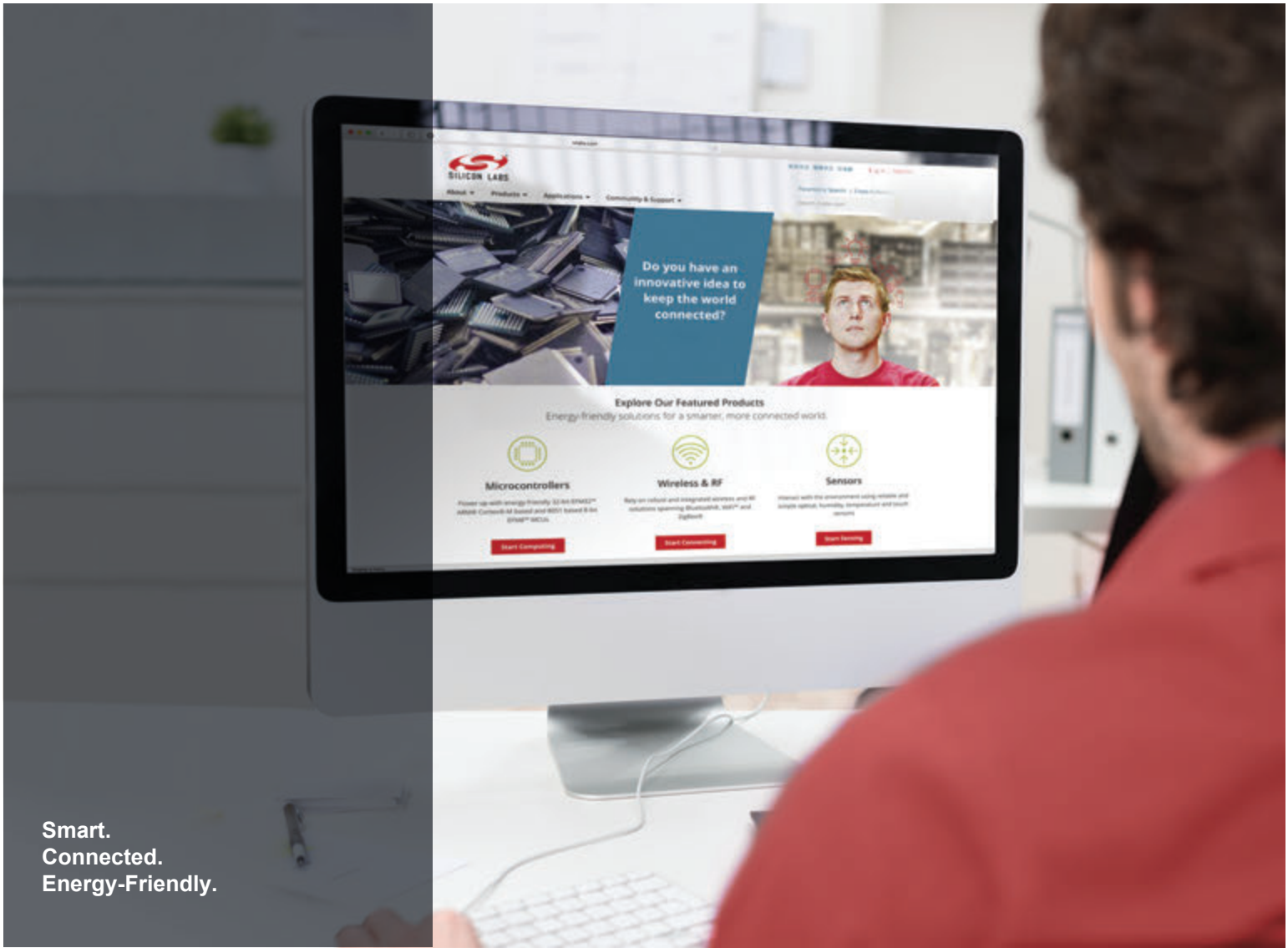
Smart.
Connected.
Energy-Friendly.

Products	Quality	Support and Community
www.silabs.com/products	www.silabs.com/quality	community.silabs.com

Disclaimer
Silicon Labs intends to provide customers with the latest, accurate, and in-depth documentation of all peripherals and modules available for system and software implementers using or intending to use the Silicon Labs products. Characterization data, available modules and peripherals, memory sizes and memory addresses refer to each specific device, and "Typical" parameters provided can and do vary in different applications. Application examples described herein are for illustrative purposes only. Silicon Labs reserves the right to make changes without further notice and limitation to product information, specifications, and descriptions herein, and does not give warranties as to the accuracy or completeness of the included information. Silicon Labs shall have no liability for the consequences of use of the information supplied herein. This document does not imply or express copyright licenses granted hereunder to design or fabricate any integrated circuits. The products are not designed or authorized to be used within any Life Support System without the specific written consent of Silicon Labs. A "Life Support System" is any product or system intended to support or sustain life and/or health, which, if it fails, can be reasonably expected to result in significant personal injury or death. Silicon Labs products are not designed or authorized for military applications. Silicon Labs products shall under no circumstances be used in weapons of mass destruction including (but not limited to) nuclear, biological or chemical weapons, or missiles capable of delivering such weapons.

Trademark Information
Silicon Laboratories Inc.® , Silicon Laboratories®, Silicon Labs®, SiLabs® and the Silicon Labs logo®, Bluegiga®, Bluegiga Logo®, Clockbuilder®, CMEMS®, DSPLL®, EFM®, EFM32®, EFR, Ember®, Energy Micro, Energy Micro logo and combinations thereof, "the world's most energy friendly microcontrollers", Ember®, EZLink®, EZRadio®, EZRadioPRO®, Gecko®, ISOmodem®, Micrium, Precision32®, ProSLIC®, Simplicity Studio®, SiPHY®, Telegesis, the Telegesis Logo®, USBXpress®, Zentri, Z-Wave and others are trademarks or registered trademarks of Silicon Labs. ARM, CORTEX, Cortex-M3 and THUMB are trademarks or registered trademarks of ARM Holdings. Keil is a registered trademark of ARM Limited. All other products or brand names mentioned herein are trademarks of their respective holders.

Silicon Laboratories Inc.
400 West Cesar Chavez
Austin, TX 78701
USA

http://www.silabs.com