

4 Sound Notifications

Sound notification

The RFID Controller is capable of playing a notification sound. This feature is typically used to notify a user that an alarm system is being activated. Since the RFID Controller is a non-listening device, the feature can not be controlled at all times. It requires the RFID Controller to wake up and send a Wake Up Notification. After sending a notification that a tag/code is read (either an unknown or already configured code), the RFID Controller will send a Wake Up Notification. The notification sound can be turned on/off upon receiving any Wake Up Notification. See the section about the Wake Up Command Class for information on when a Wake Up Notification is send.

Notification sound and acknowledgement

The RFID Controller supports 3 types of notification sound configurations:

1. Notification sound disabled (configuration parameter 2 set to zero)
2. Notification sound enabled (*default*, configuration parameter 2 set to auto-stop time).
3. Notification sound and acknowledgement enabled (configuration parameter 3 set to acknowledgement timeout).

In the first mode, any Basic or Switch Binary commands that are received are ignored.

The second mode, the default, can be used to inform a user that the alarm system is armed or disarmed. To use this, you can send a Basic or Switch Binary set on (0xFF) after receiving an Alarm Report and the Wake Up Notification following it.

The last mode can be used in situations where, for example, users can only disarm the alarm system at certain times. In this case, the user can be notified whether or not its code or tag is accepted. By configuring configuration parameter 3, you can set an acknowledge timeout. Whenever a Lock/Unlock Alarm Report containing an UID is send by the RFID Controller, the acknowledgement timeout timer is started.

After this there are two possibilities:

1. The RFID Controller does not receive anything (or receives a Wake Up No More Information upon its Wake Up Notification). It starts the error sound to notify the user of the unaccepted code.
2. The RFID Controller receives either a Basic (or Switch Binary) on (to start the normal notification sound) or off (to silently acknowledge the code). The acknowledgement timer is stopped.

Note that it is actually possible to disable notification sound, but enable acknowledgement. In this case a silent

Acknowledgement can be both a Basic/Switch Binary on (0xFF) or off (0x00).

Indication modes

The indicator gives various statuses of the device as follows:

1. Ready for learn mode: Indicator light blinks every second.
2. Learn in progress (add): Indicator light blinks 2 times every second.
3. Learn in progress (remove): Indicator light blinks 3 times every second.
4. Learn mode success: Indicator light is on for 1 second.
5. Learn mode failed: Indicator light blinks 8 times fast.
6. Tamper pressed/released indicator light blinks 3 times rapidly.
7. Mounting successful indicator light is on for 1 second.
8. Busy sending an RF message Indicator light is blinking each second.
9. RF message send failed indicator light blinks 6 times rapidly

Package Contents

- 1) DHS RFID Wall Scene Controller
- 2) RFID Tag (1 pcs)
- 3) Two wall screws and 3M tape
- 3) Product Manual and Installation Guide
- 4) Integration with Vera Z-Wave Home Controllers Manual

DHS RFID Wall Scene Controller is Z-Wave enabled device for Home Automation system which can:

- arm/disarm a security system or control predefined scenes and modes
- can read Mini RFID tags to arm/disarm
- has keypad for manual code entry to arm/disarm
- have sound and light indication features

Technical Specifications:

Item	Description
RF Protocol	Z-Wave , ISO15693, ISO18000-3, Tag-it™, RFID
Z-wave device type	BASIC_TYPE_ROUTING_SLAVE GENERIC_TYPE_ENTRY_CONTROL
Operating Voltage	2 x AA 1.5V batteries (from 2.3 to 4V DC)
RF Frequency	921.42Mhz AUS/NZ
Operating humidity:	30% to 80%
Operation Range	Up to 30m when no obstacles
Application	Indoor use only
Operation Temperature	10 ° C to 40 ° C
Storage Temperature	-5°C to 80 °C
Weight	45g (excluding batteries)
Housing	ABS

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Full Technical Specification



DHS RFID Wall Scene Controller

CATALOGUE NO: DHS-CON-RFID-DHS



1 Supported Command Classes

Basic type: BASIC_TYPE_ROUTING_SLAVE
Generic type: GENERIC_TYPE_ENTRY_CONTROL
Specific type: SPECIFIC_TYPE_NOT_USED
Listening: FALSE, Z-Wave Lib: 4.51

class: 0x85 COMMAND_CLASS_ASSOCIATION
class: 0x80 COMMAND_CLASS_BATTERY
class: 0x84 COMMAND_CLASS_WAKE_UP
class: 0x86 COMMAND_CLASS_VERSION
class: 0x72 COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2
class: 0x71 COMMAND_CLASS_ALARM_V2
class: 0x70 COMMAND_CLASS_CONFIGURATION
class: 0x25 COMMAND_CLASS_SWITCH_BINARY
class: 0x63 COMMAND_CLASS_USER_CODE Version 0.1

Not listening Routing SLAVE

This Z-Wave product will be used as routing slave. Slave nodes are nodes in a Z-Wave network that receive commands and perform actions based on the command. This device will always be in sleep mode because it works on batteries. In sleep mode the device is not active listening, the device will wake up according to the wakeup command class.

Include Initiator

The include initiator is used when Primary and Inclusion Controllers include nodes into the network. When both the include initiator have been activated simultaneously the new node will be included to the network (if the node was not included previously).

Exclude Initiator

The exclude initiator is used by Primary and Inclusion Controllers to exclude nodes from the network. When the exclude initiator and a slave initiator are activated simultaneously, it will result in the slave being excluded from the network (and reset to Node ID zero). Even if the slave was not part of the network it will still be reset by this action.

Z-Wave compatibility

Because this is a Z-Wave device, it means it can co-operate with other Z-Wave devices of other manufacturers. It can co-exist in a Z-Wave network existing with product from other manufacturers.

Hops & Retries

The Z-Wave range has a range of up to 30 meters in line of sight. This signal is not limited to the 30 meter range due to routing the Z-Wave message to other nodes in the network. This way the range of the Z-Wave network can be expanded to 150 meters indoors (limit of 4 hops).

class: 0x63 COMMAND_CLASS_USER_CODE

The purpose of the User Code Command Class is to configure the RFID Controller to accept certain RFID Tags or codes. This is typically done by some kind of static controller or gateway (for instance the Vera). After sending a User Code Set, including a unique User Identifier (UID), the in-use state (0x01) and the Tag code or keypad sequence using ASCII codes, the RFID Controller will accept the code and notify any other device using the Alarm Command Class.

This other device can be configured using the Association Command Class and is typically the same controller or gateway. When a tag or code is not known to the RFID Controller, it will send an unsolicited report to the devices in its association group with the UID 0x00. The value in this message can be used to configure new tags. **Note:** Code length must be 4 to 10 ASCII digits.

class: 0x86 COMMAND_CLASS_VERSION

This Command Class is used to obtain information about the RFID Controller. The Z-Wave library type, the Z-Wave protocol ver and the app version will be reported.

class 0x25 COMMAND_CLASS_SWITCH_BINARY

The Switch Binary Command Class is used to enable or disable the notification sound. This sound is typically used to notify a user when the alarm system is being activated. See also the 'Sound Notification' section.

class 0x20 COMMAND_CLASS_BASIC

The basic command class only has a supporting role and is mapped to the Switch Binary Command Class.

class: 0x80 COMMAND_CLASS_BATTERY

This class is used to request and report battery levels for a given device. When battery level is lower than 20% the RFID Controller will send a battery warning (value 255) after every wake up notification. A battery get will report the actual value even if below 20 %

class: 0x85 COMMAND_CLASS_ASSOCIATION

The Association Command Class is used to associate the RFID Controller to other devices. When a tag or code is read, the RFID Controller will send a notification to the Z-Wave devices in its association group. It will also report the state of the tamper alarm to the devices in this association group. Number of groupings: 1
Maximum supported nodes per group: 5

class: 0x84 COMMAND_CLASS_WAKE_UP

The Wake Up Command Class is used at battery-operated devices. This class allows the RFID Controller to wake up occasionally to notify others devices, that the RFID Controller is ready to receive commands. After receiving the commands the RFID Controller will go into sleep mode again. The wake up interval can be set using the WAKE_UP_INTERVAL_SET command. The default value is 0x1C20 = 7200 sec = 2 hour The default node is 0xFF = 255 (broadcast).

It is possible to send a **wake up notification** on user interaction. Besides sending a Wake Up Notification automatically every 2 hours (or any other time that is configured using the Wake Up Interval Set command), the RFID Controller also sends a Wake Up Notification when:

1. The tamper alarm state changes (RFID Controller is mounted or removed from the wall)
2. A tag read
3. A code is entered using the keypad

When the wake up time is set to 0 a **wake up notification** is never send periodically, only on user interaction. Version 0.1

2 Configuration Parameters

class: 0x70 COMMAND_CLASS_CONFIGURATION_V1

Configuration parameters:

Parameter 1. Set to default

Description: Set all configuration values to default values (factory settings).
Read more in chapter Configuration Reset.

Size: 1 byte*

Param1: if 0xFF then set to default

Param2,3,4: not used

Parameter 2. Feedback time

Description: To configure the time the beep is automatically turned off in seconds.
Default: 0x0F

Param1: 0x00 means disabled, 0xFF is endless.

Param2,3,4: not used

Size: 1 byte*

Parameter 3. Feedback timeout

Description: To configure the timeout to wait for a WAKEUP_NO_MORE_INFORMATION before the error beep is Automatically sound.

The error beeps are fixed 8 beeps shortly after each other.

Default: 0x00

Param1: 0x00 means disabled

Param2,3,4: not used

Size: 1 byte*

Parameter 4. Feedback beeps per second

Description: To configure the number of beeps per second.
Every beep is fixed about 10ms.

Default: 0x02

Param1: nr of beeps per second

Param2,3,4: not used

Size: 1 byte*

Parameter 5. The mode

Description: To configure the operating mode.

Default: 0x01

Size: 1 byte*

Param1: Mode 1: Normal operating mode.

Mode 3: Z-Wave chip is always on to request e.g. version or manufacturer id. If any mode other than 3, that value will be reported after a get but will be handled in SW as mode 1.

Param2,3: not used.

* if a size is other than given size the frame is ignored totally so configuration values are **not** changed Version 0.1

class: 0x71 COMMAND_CLASS_ALARM_V2

In the RFID Controller, this Command Class has two purposes:

1. Identify the state of the tamper alarm. The device will send an unsolicited report to the devices in its association group if tampering is detected. The state of the tamper alarm can also be requested by any other device.
2. Report tags or codes that are entered. The RFID Controller will send an unsolicited report to the devices in its association group with the UID that belongs to the code or tag and whether the alarm system should be armed (Away) or disarmed (Home).

Every other alarm type that is requested will be ignored by application. Version 0.1

3 Configuration Reset

The RFID Controller Supports a configuration reset function. Configuration reset means

- All configuration values are defaulted.

- Wake up interval is defaulted.

This function can be activated by sending a configuration set frame:

CONFIGURATION_SET

Parameter: 0x01

Size: 0x01 (can't be different from 1)

Value: 0xFF (can be any value except for 0x55)

When the value of configuration value is requested 2 possible values can be returned

CONFIGURATION_REPORT

Parameter: 0x01

Value 0x55: Configuration settings of the device are altered.

The device will report this even if the configuration parameters are changed back to the default value.

Value 0xAA: Configuration of the device is untouched.

Note that this value will not change to 0x55 upon modifying the wake up interval and that re-setting the value to 0xAA will always reset the wake up interval.

Always awake mode

The always awake mode is used to request different values from the device e.g. version and manufacturer specific.

Note: in always awake mode the batteries will be drain very fast, we do not recommend to use this mode for a longer period. Always awake mode should only be used in order to configure the device.

Note: it is not possible to use the buttons of the RFID Controller while it is operating in always awake mode.

The always awake mode can be activated by:

CONFIGURATION_SET

Parameter: 0x05

Size: 0x01 (can't be different from 1)

Value: 0x03 (mode 3)

The LED of the device will toggle on and off every second to notify you that it is functioning in always awake mode. Version 0.1