FireAngel Zigbee 3.0 Alarm

Device API Datasheet

Document Revision 8

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REVISION HISTORY

DATE	REVISION TYPE	REVISION #	COMMENTS	INITIALS
04/16/2018	Major	1	Initial version	MG
04/17/2018	Minor	2	Added FireAngel manufacturer code	MG
04/18/2018	Minor	3	Improved document appearance	MG
04/25/2018	Minor	4	Added IAS WD Emergency warning description.	MG
05/11/2018	Minor	5	Added manufacturer name and model id	MG
05/24/2018	Minor	6	FA format	GA
09/21/2018	Minor	7	Editorial corrections	MD
10/01/2018	Minor	8	Name update	GA

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1   DISCLAIMER

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Actual performance of products may vary based upon many factors and may be less than stated. Differences in system hardware, software design or configuration, as well as system use patterns, may affect product performance. For any product specific performances, we recommend you to consult the official published Product Datasheet. This binding condition applies to all information contained within this document.

This document version supersedes all earlier releases.

2 PRODUCT OVERVIEW

FireAngel Zigbee 3.0 Alarm Device is a module which can be installed into an FireAngel intelligent detector. This module enables selected FireAngel Smoke, Fire and/or CO (carbon monoxide) to work within Zigbee operated networks. The module includes functionality build on top of the DSR's ZBOSS* 3.0 stack.

FireAngel Alarm Device operates as a sleepy end device in a wireless Zigbee network and allows robust and rapid alarm detection and propagation across a network.

Key features:
- Zigbee 3.0 compatible (Zigbee 3.0 Certification Pending)
- Over-the-air firmware upgrade (OTA)
- LED indicator for current operational state
- Integrated button to initiate device commissioning and reset device to factory defaults
- Quick and easy setup

* ZBOSS is a Trademark of DSR Corporation

3   PRODUCT SPECIFICATION*

For any product specific performances, we recommend you to consult the official published Product Datasheet.

Input voltage	3 Volts, CR2 Lithium Battery
Frequency band	2.4 GHz
Default TX power	10 dBm
RX Sensitivity	-102 dBm

Range	• 100 meters line-of-sight
	• 30 meters for Residential wood
	   o 2 layers of aerated concrete (6 cm, 4 dB attenuation each), and
	   o 4 layers of wood (2.5 cm, 2 dB attenuation each)
	• 10 meters for Residential stone/concrete
	   o 1 layer of reinforced concrete (15 cm, 12 dB attenuation), and
	   o 1 layer of brick stone wall (10cm, 8dB attenuation), and
	   o 2 layers of aerated concrete (2.5 cm, 2 dB attenuation each)

RF Channels	IEEE 802.15.4, channels 11-26
RF Protocol	Zigbee 3.0
Network role	Zigbee End Device (RxOnWhenIdle = FALSE)
Manufacturer Code	FireAngel Safety Technology Ltd. (0x1242)
Manufacturer Name	Fireangel
Model ID	Alarm_SD_Device
Application endpoint	0x01
Application profile ID	Home Automation (0x0104)

ZCL clusters	• Basic Cluster (0x0000) • Power Configuration Cluster (0x0001) • Identify Cluster (0x0003) • OTA Upgrade Cluster (0x0019) • Poll Control Cluster (0x0020) • IAS Zone Cluster (0x0500) • IAS WD Cluster (0x0502)

Reporting	• Power Configuration Cluster (0x0001)
	  o Battery voltage (0x0020) attribute
	    ▪ Default reporting settings:
	      • Minimum interval 5 minutes
	      • Maximum interval 12 hours
	      • Reportable change (delta value) is 50 millivolts
	  o Battery alarm state (0x003E) attribute
	    ▪ Default reporting settings:
	      • Minimum interval 5 minutes
	      • Maximum interval 12 hours

LEDs	Red LED – network operational status

Controls	One button to perform several actions:
	• Short press
	  o Start commissioning
	  o Force join/rejoin
	  o Send enroll request if not enrolled
	• Long press (> 5 seconds)
	  o Reset to Factory defaults

Production time functionality	Production configuration data • Channel Mask • TX power • Installation code • Manufacturer name • Model ID • Manufacturer code

4 SUPPORTED CLUSTERS

4.1 BASIC CLUSTER (0x0000)

Cluster type - Server

4.1.1 Attributes

Identifier	Attribute name	Description
0x0000	ZCL Version	Published set of foundation items, such as global commands and functional descriptions
0x0001	Application Version	The version number of the application software contained in the device
0x0002	Stack Version	The version number of the implementation of the Zigbee stack contained in the device
0x0003	HW Version	The version number of the hardware of the device
0x0004	Manufacturer Name	The name of the manufacturer as a Zigbee character string
0x0005	Model ID	The model number (or other identifier) assigned by the manufacturer as a Zigbee character string
0x0006	Date Code	The first 8 characters specify the date of manufacturer of the device in international date notation according to ISO 8601, i.e., YYYYMMDD, e.g., 20060814. The final 8 characters MAY include country, factory, line, shift or other related information at the option of the manufacturer
0x0007	Power Source	The source of power available to the device
0x0010	Location ID	The physical location of the device as a Zigbee character string
0x0011	Physical Environment	The type of physical environment in which the device will operate

Global Attributes

Identifier	Attribute name	Description
0xfffd	Cluster Revision	This cluster attribute represents the revision of the cluster specification that has been implemented.
0xfffe	Attribute Reporting Status	When reporting requires sending multiple Report Attributes commands, this attribute SHOULD be included in the last attribute record, in order to indicate that all required attributes have been reported, or that there are still attributes pending to be reported. 0x00 – Pending 0x01 – Attribute Reporting Complete

4.1.2   Commands Received

4.1.2.1   Reset to Factory Defaults (0x00)

On receipt of this command, the device resets all the attributes of all its clusters to their factory defaults.

Note that Zigbee networking functionality, bindings, groups, or other persistent data are not affected by this command.

4.1.3   Commands Generated

Cluster does not receive any cluster-specific commands.

4.2 POWER CONFIGURATION CLUSTER (0x0001)

Cluster type - Server

4.2.1 Attribute sets

Supported attribute sets list:

Attribute Set Identifier	Description
0x000	Mains Information
0x001	Mains Settings
0x002	Battery Information
0x003	Battery Settings
0x004	Battery Source 2 Information
0x005	Battery Source 2 Settings

4.2.2 Attributes

Mains Information and Mains Settings attributes (SD Mains):

Identifier	Attribute name	Description
0x0000	Mains Voltage	The Mains Voltage attribute is 16 bits in length and specifies the actual voltage currently applied to the device, measured in units of 100mV
0x0010	Mains Alarm Mask	The Mains Alarm Mask attribute is 8 bits in length and specifies which mains alarms MAY be generated. A '1' in each bit position enables the alarm. Bit 0 - Mains Voltage too low Bit 1 - Mains Voltage too high Bit 2 - Mains power supply lost/unavailable (i.e., device is running on battery)

Battery Information and Battery Settings attributes (RM battery):

Identifier	Attribute name	Description
0x0020	Battery Voltage	The Battery Voltage attribute is 8 bits in length and specifies the current actual (measured) battery voltage, in units of 100mV. The value 0xff indicates an invalid or unknown reading. This attribute could be configured for reporting. Minimum reporting time interval is 5 minutes. Maximum reporting interval is 12 hours.
0x0031	Battery Size	The Battery Size attribute is an enumeration which specifies the type of battery being used by the device.
0x0033	Battery Quantity	The Battery Quantity attribute is 8 bits in length and specifies the number of battery cells used to power the device.
0x0034	Battery Rated Voltage	The Battery Rated Voltage attribute is 8 bits in length and specifies the rated voltage of the battery being used

		in the device, measured in units of 100mV.
0x0035	Battery Alarm Mask	The Battery Alarm Mask attribute specifies which battery alarms must be generated.
0x0036	Battery Voltage Min Threshold	Specifies the low battery voltage alarm threshold, measured in units of 100mV at which the device can no longer operate or transmit via its radio (i.e., last gasp).
0x003e	Battery Alarm State	Specifies the current state of the device's battery alarms. This attribute provides a persistent record of a de vice's battery alarm conditions as well as a mechanism for reporting changes to those conditions, including the elimination of battery alarm states (e.g., when a battery is replaced).

Battery Source 2 Information and Battery Source 2 Settings(SD battery):

Identifier	Attribute name	Description
0x0040	Battery Voltage	The Battery Voltage attribute is 8 bits in length and specifies the current actual (measured) battery voltage, in units of 100mV. The value 0xff indicates an invalid or unknown reading.
0x0051	Battery Size	The Battery Size attribute is an enumeration which specifies the type of battery being used by the device.
0x0053	Battery Quantity	The Battery Quantity attribute is 8 bits in length and specifies the number of battery cells used to power the device.
0x0054	Battery Rated Voltage	The Battery Rated Voltage attribute is 8 bits in length and specifies the rated voltage of the battery being used in the device, measured in units of 100mV.
0x0055	Battery Alarm Mask	The Battery Alarm Mask attribute specifies which battery alarms must be generated.
0x0056	Battery Voltage Min Threshold	Specifies the low battery voltage alarm threshold, measured in units of 100mV at which the device can no longer operate or transmit via its radio (i.e., last gasp).
0x005e	Battery Alarm State	Specifies the current state of the device's battery alarms. This attribute provides a persistent record of a de vice's battery alarm conditions as well as a mechanism for reporting changes to those conditions, including the elimination of battery alarm states (e.g., when a battery is replaced).

Global Attributes

Identifier	Attribute name	Description
0xfffd	Cluster Revision	This cluster attribute represents the revision of the cluster specification that has been implemented.
0xfffe	Attribute Reporting Status	When reporting requires sending multiple Report Attributes commands, this attribute SHOULD be included in the last attribute record, in order to indicate that all required

		attributes have been reported, or that there are still attributes pending to be reported. 0x00 – Pending 0x01 – Attribute Reporting Complete

4.2.3   Commands

Cluster does not receive or generate any cluster-specific commands.

4.3 IDENTIFY CLUSTER (0x0003)

Cluster type - Server

4.3.1 Attributes

Identifier	Attribute name	Description
0x0000	Identify Time	The remaining length of time, in seconds, that the device will continue to identify itself

Global Attributes

Identifier	Attribute name	Description
0xfffd	Cluster Revision	This cluster attribute represents the revision of the cluster specification that has been implemented.
0xfffe	Attribute Reporting Status	When reporting requires sending multiple Report Attributes commands, this attribute SHOULD be included in the last attribute record, in order to indicate that all required attributes have been reported, or that there are still attributes pending to be reported. 0x00 – Pending 0x01 – Attribute Reporting Complete

4.3.2 Commands Received

4.3.2.1 Identify (0x00)
The identify command starts or stops the receiving device identifying itself.

Payload format

Octets	Data Type	Field Name	Description
2	uint16	Identify Time	New value for cluster's "Identify Time" attribute

4.3.2.2 Identify Query
The identify query command allows the sending device to request the target or targets to respond if they are currently identifying themselves.

This command has no payload.

4.3.3 Commands Generated

4.3.3.1 Identify Query Response (0x00)

The identify query response command is generated in response to receiving an Identify Query command in the case that the device is currently identifying itself.

Payload format

Octets	Data Type	Field Name	Description
2	uint16	Timeout	The Timeout field contains the current value of the Identify Time attribute, and specifies the length of time, in seconds, that the device will continue to identify itself.

4.4 OTA UPGRADE CLUSTER (0x0019)

Cluster type - Client

4.4.1 Attributes

Identifier	Attribute name	Description
0x0000	Upgrade Server	Used to store the IEEE address of the upgrade server resulted from the discovery of the upgrade server's identity
0x0001	File Offset	Indicates the current location in the OTA upgrade image
0x0002	Current File Version	The file version of the running firmware image on the device
0x0003	Current Stack Version	The Zigbee stack version of the running image on the device
0x0004	Downloaded File Version	The file version of the downloaded image on additional memory space on the device
0x0005	Downloaded Stack Version	The Zigbee stack version of the downloaded image on additional memory space on the device
0x0006	Image Upgrade Status	The upgrade status of the client device: the status indicates where the client device is at in terms of the download and upgrade process
0x0007	Manufacturer ID	Reflect the Zigbee assigned value for the manufacturer of the device
0x0008	Image Type ID	Indicate the image type identifier of the file that the client is currently downloading, or a file that has been completely downloaded but not upgraded to yet
0x0009	Minimum Block Period	Acts as a rate limiting feature for the server to slow down the client download and prevent saturating the network with block requests
0x000a	Image Stamp	Acts as a second verification to identify the image in the case that sometimes developers of the application have forgotten to increase the firmware version attribute

Global Attributes

Identifier	Attribute name	Description
0xfffd	Cluster Revision	This cluster attribute represents the revision of the cluster specification that has been implemented.
0xfffe	Attribute Reporting Status	When reporting requires sending multiple Report Attributes commands, this attribute SHOULD be included in the last attribute record, in order to indicate that all required attributes have been reported, or that there are still attributes pending to be reported. 0x00 – Pending 0x01 – Attribute Reporting Complete

4.4.2   Commands Generated

4.4.2.1   Query Next Image Request (0x01)

The purpose of sending Query Next Image Request command is to check if there is new OTA upgrade image available.

Payload format

Octets	Data Type	Field Name	Description
1	uint8	Field control	The field control indicates whether additional information such as device's current running hardware version is included as part of the Query Next Image Request command.
2	uint16	Manufacturer code	The parameter indicates certain manufacturer.
2	uint16	Image type	The parameter indicates certain image type.
4	uint32	(Current) File version	The parameter indicates current file version.
0/2	uint16	Hardware version	The parameter indicates hardware version.

4.4.2.2   Image Block Request (0x03)

The client device requests the image data at its leisure by sending Image Block Request command to the upgrade server. The client knows the total number of request commands it needs to send from the image size value received in Query Next Image Response command.

Payload format

Octets	Data Type	Field Name	Description
1	uint8	Field control	The field control indicates whether additional information such as device's current running hardware version is included as part of the Query Next Image Request command.
2	uint16	Manufacturer code	The parameter indicates certain manufacturer.
2	uint16	Image type	The parameter indicates certain image type.
4	uint32	File version	The parameter indicates current file version.
4	uint32	File offset	The parameter indicates file offset version.
1	uint8	Maximum data size	The value indicates the largest possible length of data (in bytes) that the client can receive at once.
0/8	EUI64	Request node address	This is the IEEE address of the client device sending the Image Block Request command.
0/2	uint16	Minimum Block Period	This is the current value of the Minimum Block Period attribute of the device that is making the request as set by the server. If the device supports the attribute then it SHALL include this field in the request. The value is in seconds.

4.4.2.3   Upgrade End Request (0x06)

This command is sent when the device verifies the image to ensure its integrity and validity.

Payload format

Octets	Data Type	Field Name	Description
1	uint8	Status	Status of image verification.
2	uint16	Manufacturer code	The parameter indicates certain manufacturer.
2	uint16	Image type	The parameter indicates certain image type.
4	uint32	File version	The parameter indicates new file version.

4.4.3 Commands Received

4.4.3.1 Image Notify (0x00)

The purpose of sending Image Notify command is so the server has a way to notify client devices of when the OTA upgrade images are available for them.

Payload format

Octets	Data Type	Field Name	Description
1	enum8	Payload type	Describes payload type.
1	uint8	Query jitter	The parameter indicates whether the client receiving Image Notify Command SHOULD send in Query Next Image Request command or not.
0/2	uint16	Manufacturer code	The parameter indicates certain manufacturer.
0/2	uint16	Image type	The parameter indicates certain image type.
0/4	uint32	(new) File version	The parameter indicates new file version.

4.4.3.2 Query Next Image Response (0x02)

The purpose of sending Image Query Next Image Response is to indicate execution status of Query Next Image Request.

Payload format

Octets	Data Type	Field Name	Description
1	uint8	Status	Status of Query Next Image Request execution.
0/2	uint16	Manufacturer code	The parameter indicates certain manufacturer.
0/2	uint16	Image type	The parameter indicates certain image type.
0/4	uint32	(new) File version	The parameter indicates new file version.
0/4	uint32	Image size	The parameter indicates image size.

4.4.3.3 Image Block Response (0x05)

This command is generated upon receipt of Image Block Request.

Payload format with Success status

Octets	Data Type	Field Name	Description
1	uint8	Success Status	Status Image Block Request execution (SUCCESS)
2	uint16	Manufacturer code	The parameter indicates certain manufacturer.
2	uint16	Image type	The parameter indicates certain image type.
4	uint32	File version	The parameter indicates file version.
4	uint32	File offset	The parameter indicates file offset version.
1	uint8	Data size	The value indicates the length of the image data (in bytes) that is being included in the command.
Variable	Opaque	Image Data	The actual OTA upgrade image data with the length equals to data size value.

Payload format with WAIT_FOR_DATA status

Octets	Data Type	Field Name	Description
1	uint8	WAIT_FOR_DATA Status	Status Image Block Request execution (WAIT_FOR_DATA)
4	uint32	Current time	If the current time value is zero that means the server does not support UTC time and the client SHALL treat the request time value as offset time. If neither time value is zero, and the client supports UTC time, it SHALL treat the request time value as UTC time. If the client does not support UTC time, it SHALL calculate the offset time from the difference between the two time values. The offset indicates the minimum amount of time to wait in seconds. The UTC time indicates the actual time moment that needs to pass before the client SHOULD try again.
4	uint32	Request time	See above.
2	uint16	Minimum Block Period	This is the current value of the Minimum Block Period attribute of the device that is making the request as set by the server.

4.4.3.4　Upgrade End Response (0x07)

This command is sent either as response to Upgrade End Request command or might be sent unsolicited.

Payload format

Octets	Data Type	Field Name	Description
2	uint16	Manufacturer code	The parameter indicates certain manufacturer.
2	uint16	Image type	The parameter indicates certain image type.
4	uint32	File version	The parameter indicates file version.
4	uint32	Current time	Current time and Upgrade time values are used by the client device to determine when to upgrade its running firmware image(s) with the newly downloaded one(s)
4	uint32	Upgrade time	Current time and Upgrade time values are used by the client device to determine when to upgrade its running firmware image(s) with the newly downloaded one(s)

4.5   POLL CONTROL CLUSTER (0x0020)

Cluster type - Server

4.5.1   Attributes

Identifier	Attribute name	Description
0x0000	Check-in Interval	The Check-in Interval represents the default amount of time between check-ins by the poll control server with the poll control client. The Check-in Interval is measured in quarterseconds. A value of 0 indicates that the Poll Control Server is turned off and the poll control server will not check-in with the poll control client
0x0001	Long Poll Interval	An end device that implements the Poll Control server MAY optionally expose a Long Poll Interval attribute. The Long Poll Interval represents the maximum amount of time in quarterseconds between MAC Data Requests from the end device to its parent. The Long Poll Interval defines the frequency of polling that an end device does when it is NOT in fast poll mode. The Long Poll Interval SHOULD be longer than the Short Poll Interval attribute but shorter than the Check-in Interval attribute. A value of 0xffffffff is reserved to indicate that the device does not have or does not know its long poll interval.
0x0002	Short Poll Interval	An end device that implements the Poll Control server MAY optionally expose the Short Poll Interval attribute. The Short Poll Interval represents the number of quarterseconds that an end device waits between MAC Data Requests to its parent when it is expecting data (i.e., in fast poll mode).
0x0003	Fast Poll Timeout	The Fast Poll Timeout attribute represents the number of quarterseconds that an end device will stay in fast poll mode by default. It is suggested that the Fast Poll Timeout attribute value be greater than 7.68 seconds.
0x0004	Check-in Interval Min	The Poll Control Server MAY optionally provide its own minimum value for the Check-in Interval to protect against the Check-in Interval being set too low and draining the battery on the end device implementing the Poll Control Server.
0x0005	Long Poll Interval Min	The Poll Control Server MAY optionally provide its own minimum value for the Long Poll Interval to protect against another device setting the value to too short a time resulting in an inadvertent power drain on the device.

0x0006	Fast Poll Timeout Max	The Poll Control Server MAY optionally provide its own maximum value for the Fast Poll Timeout to avoid it being set to too high a value resulting in an inadvertent power drain on the device.

Global Attributes

Identifier	Attribute name	Description
0xfffd	Cluster Revision	This cluster attribute represents the revision of the cluster specification that has been implemented.
0xfffe	Attribute Reporting Status	When reporting requires sending multiple Report Attributes commands, this attribute SHOULD be included in the last attribute record, in order to indicate that all required attributes have been reported, or that there are still attributes pending to be reported. 0x00 – Pending 0x01 – Attribute Reporting Complete

4.5.2 Commands Received

Cluster does not receive any cluster-specific commands.

4.5.3 Commands Generated

4.5.3.1 Check-in (0x00)

The Poll Control Cluster server sends out a Check-in command to the devices to which it is paired based on the server's Check-in Interval attribute. It does this to find out if any of the Poll Control Cluster Clients with which it is paired are interested in having it enter fast poll mode so that it can be managed. This request is sent out based on either the Check-in Interval, or the next Check-in value in the Fast Poll Stop Request generated by the Poll Control Cluster Client.

The Check-in command expects a Check-in Response command to be sent back from the Poll Control Client. If the Poll Control Server does not receive a Check-in response back from the Poll Control Client up to 7.68 seconds it is free to return to polling according to the Long Poll Interval.

There is no payload for this command

4.6 IAS ZONE CLUSTER (0x0500)

Cluster type – Server

4.6.1 Attribute sets

Supported attribute sets list:

Attribute Set Identifier	Description
0x000	Zone information
0x001	Zone settings

4.6.2 Attributes

Attributes of the Zone Information Attribute Set

Identifier	Attribute name	Description
0x0000	Zone State	Reflect the IAS Zone cluster enroll state
0x0001	Zone Type	Reflect the IAS Zone type device: motion/fire/water/etc. sensor type
0x0002	Zone Status	Indicates current alarms status

Attributes of the Zone Settings Attribute Set

0x0010	IAS CIE Address	The IAS CIE Address attribute specifies the address that commands generated by the server SHALL be sent to. All commands received by the server must also come from this address. It is up to the zone's specific implementation to permit or deny change (write) of this attribute at specific times.
0x0011	Zone ID	A unique reference number allocated by the CIE at zone enrollment time

4.6.3 Commands Received

4.6.3.1 Zone Enroll Response (0x00)

On receipt, the device embodying the Zone server is notified that it is now enrolled as an active alarm device

Payload format

Octets	Data Type	Field Name	Description
1	enum8	Enroll response code	Enrollment status code
1	uint8	Zone ID	Assigned ID of the controlled Zone

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4.6.4 Commands Generated

4.6.4.1 Zone Status Change Notification (0x00)

The Zone Status Change Notification command is generated when a change takes place in one or more bits of the ZoneStatus attribute.

Payload format

Octets	Data Type	Field Name	Description
2	map16	Zone Status	The current value of Zone Status attribute
1	map8	Extended Status	This field is reserved for additional status information and is set to zero
1	uint8	Zone ID	The index of Zone in the CIE's zone table
2	uint16	Delay	The Delay field is defined as the amount of time, in quarter-seconds, from the moment when a change takes place in one or more bits of the Zone Status attribute and the successful transmission of the Zone Status Change Notification.

4.6.4.2 Zone Enroll Request (0x01)

The Zone Enroll Request command is generated when a device embodying the Zone server cluster wishes to be enrolled as an active alarm device. It must do this immediately it has joined the network (during commissioning).

Payload format

Octets	Data Type	Field Name	Description
2	enum16	Zone Type	The current value of the ZoneType attribute
2	uint16	Manufacturer Code	The manufacturer code as held in the node descriptor for the device. Manufacturer Codes are allocated by the Zigbee Alliance.

4.7 IAS WD CLUSTER (0x0502)

Cluster type - Client/Server4.8

4.8.1 Attributes

Identifier	Attribute name	Description
0x0000	Max Duration	The Max Duration attribute specifies the maximum time in seconds that the siren will sound continuously, regardless of start/stop commands.

Global Attributes

Identifier	Attribute name	Description
0xfffd	Cluster Revision	This cluster attribute represents the revision of the cluster specification that has been implemented.
0xfffe	Attribute Reporting Status	When reporting requires sending multiple Report Attributes commands, this attribute SHOULD be included in the last attribute record, in order to indicate that all required attributes have been reported, or that there are still attributes pending to be reported. 0x00 – Pending 0x01 – Attribute Reporting Complete

4.8.2 Commands

IAS WD Cluster functionality was extended by manufacturer-specific HUSH (0x02) command.

4.8.2.1 Start Warning Command (0x00)

This command starts the WD operation. The WD alerts the surrounding area by audible (siren) and visual (strobe) signals.

This command could be received and generated.

Payload format

Bits	Field Name	Description
4	Warning Mode	The Warning Mode field is used as an 4-bit enumeration, can have one of the values defined below this table. Supported values: 0 - Stop (no warning) 2 - Fire (Used for smoke/heat detector alarms) 3 - Emergency (Used for CO detector alarms)
2	Strobe	The Strobe field is used as a 2-bit enumeration, and determines if the visual indication is required in addition to the audible siren. Always set to 0, which means no strobe.

2	Siren Level	The Siren Level field is used as a 2-bit enumeration, and indicates the intensity of audible squawk sound. Always set to 3, which means very high level sound.
16	Warning Duration	Requested duration of warning, in seconds. Not used.
8	Strobe Duty Cycle	Indicates the length of the flash cycle. Not used.
8	Strobe Level	Indicates the intensity of the strobe. Not used.

4.8.2.2 Squawk Command (0x01)

This command uses the WD capabilities to emit a quick audible/visible pulse called a "squawk". The squawk command has no effect if the WD is currently active (warning in progress).

This command could only be received.

Payload format

Bits	Field Name	Description
4	Squawk mode	The Squawk Mode field is used as a 4-bit enumeration. Always set to 0, which means notification sound for "System is armed"
1	Strobe	The strobe field is used as a Boolean, and determines if the visual indication is also required in addition to the audible squawk. Always set to 0, which means no strobe.
1	Reserved	Not used.
2	Squawk level	The squawk level field is used as a 2-bit enumeration, and determines the intensity of audible squawk sound. Always set to 3, which means very high level sound.

4.8.2.3 HUSH (0x02), manufacturer-specific

This command causes FireAngel radio module to sent HUSH command to SD via SPI.

Being a manufacturer-specific command, the command requires:
- Manufacturer-specific bit in ZCL Frame Control Field to be set,
- 2-byte manufacturer code to be included into the command. For proper handling manufacturer code should be equal to the manufacturer code set in production configuration data.

This command could only be received.

Payload format

Bits	Field Name	Description
24	FireAngel device ID	FireAngel-specific device ID.
8	Priority	FireAngel-specific device priority.