

# Sending Custom ZCL & ZDO Messages



## Overview

- In the RapidHA protocol, you can transmit custom ZCL & ZDO messages form the Host to the Module.
- These commands provides facilities for configuring the following:
  - Encryption Level of the message
  - Available Response Options
  - Custom sequence numbers
  - Requiring an APS ACK and more....
- This presentation will go over the basics of using these commands and also provide some real-world examples.



# Command Breakdown : ZCL Unicast Command

- We will use the ZCL Unicast Command for an example of deciphering the commands. Some commands may have less or may have more fields, all can be interpreted a similar fashion.
- Before we send our ZCL Unicast Command we will first need to build the frame, both the ZCL Unicast command fields and the custom ZCL message payload.
- To find the necessary command field, first go to the <u>RapidHA Serial Protocol Homepage</u> and then visit the 'Frame Payload Definition' Page.
- Here you will find the available RapidHA Frames and a description of their payload fields.



## Command Breakdown : ZCL Unicast Command cont.

Here we can see the description for the ZCL Unicast Command which we are using as our example.

Byte Index	Field Name	Notes
0,1	Destination Node ID	
2	Destination Endpoint ID	
3	Local Endpoint ID	
4,5	Cluster ID	
13	Payload Length	Length of our custom message
14n	Payload	Custom message fields





## **Building the ZCL Unicast Command**

- From our table above we can see what data our command requires. For our payload we want to issue a ZCL Configure Reporting Command(0x06: From ZCL Spec) to our End Device
- Example building ZCL Unicast Command:

Byte Index	Field Name	Data
0,1	Destination Node ID	OxDDDD (IASZone Sensor ID)
2	Destination Endpoint ID	0x01
3	Local Endpoint ID	0x01
4,5	Cluster ID	0x0500(IASZone Cluster)

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# Building the ZCL Unicast Command cont.

Byte Index	Field Name	Data
12	Command ID	0x06 (ZCL Configure Reporting Command)
13	Payload Length	0x08
14n	Payload	00 02 00 19 01 00 fe ff





### Payload Breakdown

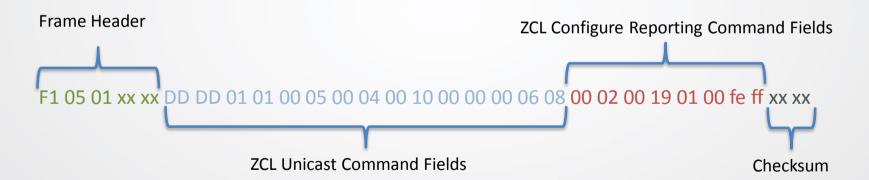
- ZCL Configure Reporting Command Payload Decoded: 00 02 00 19 01 00 fe ff
  - Direction: 0x00
  - Attribute Id: 0x0002(Zone Status Attribute)
  - Attribute Type: 0x19 (Bitmap 16)
  - Min Report: 0x0001
  - Max Report: 0xFFFE

Optional field: Depends on attribute type



### **Full Frame**

Full ZCL Unicast Command Frame with Frame Header.





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