

## Sensor downlink payload

Downlink payloads are sent on the configured port + 1. If configured port is the default (5) then downlink settings should be sent on port 6.

### Payload format

Header byte (0x3E)	Payload length	Settings data	...	Settings data
1 byte	1 bytes	n bytes		n bytes

### Settings data format

Type	Value
1 byte	0-16 bytes

### Possible settings

ID (hex)	Setting	Size	Reboot	Disabled <sup>1</sup>	Min. version
0x01	AppSKey	16 byte key	■		
0x02	NwkSKey	16 byte key	■		
0x03	DevEUI	8 byte device EUI	■	■	
0x04	AppEUI	8 byte application EUI	■		
0x05	AppKey	16 byte key	■		
0x06	DevAddr	4 byte device address	■		
0x07	OTA	1 byte bool			
0x08	Port	1 byte			
0x09	Mode	1 byte		■	
0x0A	Ack	1 byte bool			
0x0B	DrDef	1 byte			
0x0C	DrMax	1 byte			
0x0D	DrMin	1 byte			
0x0E	Payload	1 byte		■	
0x0F	Power	1 byte		■	
0x10	ExtCfg	1 byte			

<sup>1</sup> Sensor will ignore commands which are disabled.

ID (hex)	Setting	Size	Reboot	Disabled	Min. version
0x11	PirCfg	1 byte			
0x12	Co2Cfg	1 byte			
0x13	AccCfg	4 byte config			
0x14	SplPer	4 byte period	■ <sup>2</sup>		
0x15	TempPer	4 byte period			
0x16	RhPer	4 byte period			
0x17	LightPer	4 byte period			
0x18	PirPer	4 byte period			
0x19	Co2Per	4 byte period			
0x1A	ExtPer	4 byte period			
0x1B	ExtPwrTime	4 byte time (ms)			
0x1C	TriggTime	4 byte time (s)			
0x1D	AccPer	4 byte period			
0x1E	VddPer	4 byte period			
0x1F	SendPer	4 byte period			
0x20	Lock	4 byte lock code			
0x21	RFU	4 byte, not used		■	
0x22	LinkCheck	4 byte link threshold, period			
0x23	PressPer	4 byte period			
0x24	SoundPer	4 byte period			
0xF9	Settings	0 bytes, request sensor settings			2.3.0
0xFA	EXT/LED	4 bit ext mode, 4 bit LED mode <sup>3</sup>			
0xFB	Version	2 byte version number		■	
0xFC	Sleep	4 byte forced sensor sleep (s)			
0xFD	Generic	1 byte length, x byte NFC string			
0xFE	Reboot	0 bytes	■		

<sup>2</sup> Reboot is enforced from version 2.3.0.

<sup>3</sup> See appendix 1 for available EXT/LED modes.

## Examples

### Reboot sensor only

<b>3E</b>	<b>01</b>	<b>FE</b>
Header	Length of settings	Reboot

Payload: **3E01FE**

### Set application settings

<b>3E</b>	<b>1C</b>	<b>05</b> 2B7E1...F4F3C	<b>04</b> 00...00	<b>07</b> 01
Header	Length of settings	Set AppKey (16 bytes)	Set AppEUI (8 bytes)	Enable OTAA

Payload: **3E1C052B7E151628AED2A6ABF7158809CF4F3C0400000000000000000701**

### Lock/unlock sensor

<b>3E</b>	<b>05</b>	<b>20</b> 1234FF00
Header	Length of settings	Unlock/lock

Payload: **3E05201234FF00**

## Appendix 1 – Ext/LED control

### Structure

<b>FA</b>	<b>0</b>	<b>0</b>
Type (Ext/LED control)	4 bit EXT mode	4 bit LED action

### EXT modes

Mode	Value (hex)
Force output off (persistent)	0x0
Force output on (persistent)	0x1
Remove persistent output setting	0x2
Set output off (non-persistent)	0x3
Set output on (non-persistent)	0x4
Force IO2 output off (persistent)	0x5
Force IO2 output on (persistent)	0x6
Remove persistent IO2 output setting	0x7

### LED actions

Mode	Value (hex)
LED off	0x0
LED on, green	0x1
LED on, red	0x2
LED on, orange	0x3

LED actions can be chained, see example payload below;

#### Green, 1s on, then off

<b>3E</b>	<b>04</b>	<b>FA 21</b>	<b>FA 20</b>
Header	Length of settings	LED green	LED off

Payload: **3E04FA21FA20**