senzemo

Senstick Mini Power Meter 1.0
LoRaWAN Protocol
FW v1.0

1. LoraWAN DATA Payload (Uplink)

Parameter:	stat	count	**SUM**
Size:	1B	4B	**5B**

Parameter	**Name**	**Range**	**Size**	**Type**	**Description**
Status	stat	0 - 255	1B	uint8	Status Codes: 0x00 - OK Bit0 - Movement Detected Packet Bit1 - Movement Detected Confirmed Bit2 - Battery Low Power Bit3 - Accelerometer Failure Bit4 - NFC Failure Bit5 - EUI Failure Bit6 - Pulse Limit Exceeded Bit7 - Heartbeat Packet
Count Value	count	0 - 4,294,967,295	4B	uint32	Count value.

NOTE: The alert packet is sent using, LoRaWAN Port 1 and the regular data packet using LoRaWAN Port 2.

2. LoraWAN DATA Payload (Uplink)

Parameter:	stat	**SUM**
Size:	1B	**1B**

Parameter	**Name**	**Range**	**Size**	**Type**	**Description**
Status	stat	0 - 255	1B	uint8	Status Codes: 0x00 - OK Bit0 - Movement Detected Packet Bit1 - Movement Detected Confirmed Bit2 - Battery Low Power Bit3 - Accelerometer Failure Bit4 - NFC Failure Bit5 - EUI Failure Bit6 - Pulse Limit Exceeded Bit7 - Heartbeat Packet

NOTE: LoRaWAN Port 2 is used.

3. LoraWAN CONFIG Payload (Uplink)

Param:	stat	period	hbp	pm	alert	movt	ackco	dr	fid	pid	hw	fw	**SUM**
Size:	1B	1B	1B	2B	2B	1B	1B	1B	1B	1B	1B	1B	**14B**

Parameter	**Name**	**R/W**	**Size**	**Type**	**Default Value**	**Description**
Status	stat	R	1B	uint8	0x00	Status Codes: 0x00 - OK Bit0 - Movement Detected Packet Bit1 - Movement Detected Confirmed Bit2 - Battery Low Power Bit3 - Accelerometer Failure Bit4 - NFC Failure Bit5 - EUI Failure Bit6 - Pulse Limit Exceeded Bit7 - Heartbeat Packet
Send Period	period	R/W	1B	uint8	60 min	Data send period in minutes.
Heartbeat Period	hbp	R/W	1B	uint8	24h	Data send period in hours.
Pulse Multiplier	pm	R/W	2B	uint16	100	Pulse Multiplier.
Count Alert	alert	R/W	2B	uint16	1000	Count Value Alert.
Movement Threshold	movt	R/W	1B	uint8	12 (1 - 127)	Movement threshold to send measurement. (16 x movt mg). 0 == OFF.
Packet Confirm	ackco	R/W	1B	uint8	24	Request confirmed packed every N transmission. 0 == OFF.
Data Rate	dr	R/W	1B	uint8	0 - 7 (255)	DR0 - DR7 (x = DRx), 255 = ADR On.
Family Id	fid	R	1B	uint8	4	Family Id.
Product Id	pid	R	1B	uint8	2	Product Id.
Hardware Version	hw	R	1B	uint8	1.0	Hardware version (hw / 10).
Firmware Version	fw	R	1B	uint8	1.0	Firmware version (fw / 10).

NOTE:

- For Config packet, LoRaWAN Port 3 is used.
- The Heartbeat Period is used when no pulse is detected in the current period.
- The Count Alert defines the Count Value when the critical/alert packet should be sent.

4. LoRaWAN RECEIVE Payload Config (Downlink)

Param:	period	hbp	pm	alert	movt	ackco	dr	**SUM**
Size:	1B	1B	2B	2B	1B	1B	1B	**9B**

Parameter	**Name**	**R/W**	**Size**	**Type**	**Default Value**	**Description**
Send Period	period	R/W	1B	uint8	60 min	Data send period in minutes.
Heartbeat Period	hbp	R/W	1B	uint8	24h	Data send period in hours.
Pulse Multiplier	pm	R/W	2B	uint16	100	Pulse Multiplier.
Count Alert	alert	R/W	2B	uint16	1000	Count Value Alert.
Movement Threshold	movt	R/W	1B	uint8	12 (1 - 127)	Movement threshold to send measurement. (16 x movt mg). 0 == OFF.
Packet Confirm	ackco	R/W	1B	uint8	24	Request confirmed packed every N transmission. 0 == OFF.
Data Rate	dr	R/W	1B	uint8	255	DR0 - DR7 (x = DRx), 255 = ADR On.

DEFAULT DOWNLINK PACKET: 3C 18 00 64 03 E8 0C 18 FF

NOTE:

- For Config packet, LoRaWAN Port 3 is used.
- The Heartbeat Period is used when no pulse is detected in the current period.
- The Count Alert defines the Count Value when the critical/alert packet should be sent.

5. LoRaWAN CONFIG Payload (Downlink) - Pulse Count

Param:	count	**SUM**
Size:	4B	**4B**

Parameter	**Name**	**R/W**	**Size**	**Type**	**Default Value**	**Description**
Pulse Count	count	R/W	4B	uint32	0	Pulse count

NOTE: For Config packet, LoRaWAN Port 3 is used.

6. LoRaWAN CONFIG Payload (Downlink) - Send Period

Param:	sendp	**SUM**
Size:	1B	**1B**

Parameter	**Name**	**R/W**	**Size**	**Type**	**Default Value**	**Description**
Send Period	sendp	R/W	1B	uint8	60 min	Send period in minutes.

DEFAULT DOWNLINK PACKET: 3C

7. LoRaWAN CONFIG Payload (Downlink) - Reboot

Param:	reboot	**SUM**
Size:	2B	**2B**

Parameter	**Name**	**R/W**	**Size**	**Type**	**Default Value**	**Description**
Reboot	reboot	W	2B	uint16	0xFFFF	Start REBOOT procedure.

DEFAULT DOWNLINK PACKET: FF FF

NOTE: Do not use the Confirmed downlink setting.

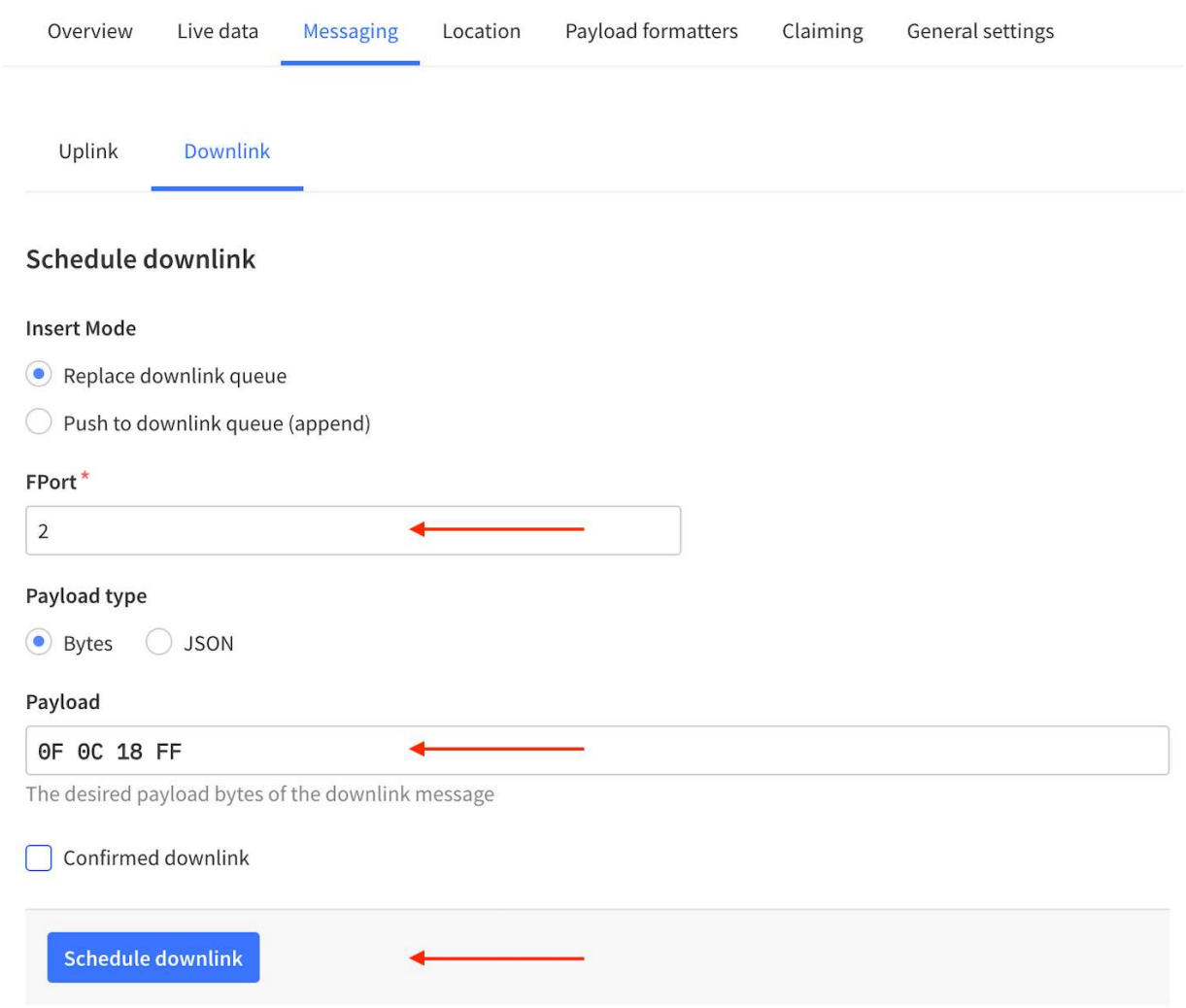
8. LoRaWAN CONFIG Payload (Downlink) - Factory Defaults

Param:	fdef	**SUM**
Size:	2B	**2B**

Parameter	**Name**	**R/W**	**Size**	**Type**	**Default Value**	**Description**
Factory Defaults	fdef	W	2B	uint16	0xEEEE	Erase NFC EEPROM.

DEFAULT DOWNLINK PACKET: EE EE

9. TTN Downlink Guide



Application > End Device > Messaging > Downlink