KOU20 v2.0
LoRaWAN Protocol
FW v1.0

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1. LoraWAN CONFIG Payload (Uplink)

Parameter:	stat	period	movt	ackco	dr	fid	pid	hw	fw	**SUM**
Size:	1B	1B	1B	1B	1B	1B	1B	1B	1B	**9B**

Parameter	**Name**	**Size**	**Type**	**Default Value**	**Description**
Status	stat	1B	uint8	0x00	Status Codes: 0x00 - OK Bit0 - Movement Detected Bit1 - Accelerometer Failure Bit2 - Temperature Probe Failure Bit3 - NFC IC Failure Bit4 - EUI IC Failure Bit7 - Log Unavailable
Send Period	period	1B	uint8	15 min	Data send period in minutes.
Movement Threshold	movt	1B	uint8	0	Movement threshold to send measurement. (31.25 x movt mg, 0 = OFF, range: 1 - 63)
Packet Confirm	ackco	1B	uint8	24	Request confirmed packed every N transmissions. 0 = OFF
Data Rate	dr	1B	uint8	128 (ADR on, DR0)	Bit0-6 - DRx Bit7 - ADR status (0 = OFF, 1 = ON)
Family Id	fid	1B	uint8	4	Family Id
Product Id	pid	1B	uint8	3	Product Id
Hardware Version	hw	1B	uint8	2.0	Hardware version (hw / 10)
Firmware Version	fw	1B	uint8	1.0	Firmware version (fw / 10)

NOTE: For config packet LoRaWAN Port 3 is used.

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2. LoraWAN DATA Payload (Uplink)

Parameter:	stat	t	bat	**SUM**
Size:	1B	2B	2B	**4/5B**

Parameter	**Name**	**Range**	**Size**	**Type**	**Description**
Status	stat	0 - 255	0/1B	uint8	Status Codes: 0x00 - OK Bit0 - Movement Detected Bit1 - Accelerometer Failure Bit2 - Temperature Probe Failure Bit3 - NFC IC Failure Bit4 - EUI IC Failure Bit7 - Log Unavailable
Temperature	t	-327.68 - 327.67	2B	int16	Probe Temperature (t / 100)
Battery Level	bat	0 - vbat mV	2B	uint16	Battery Voltage in mV

NOTES:
- For regular packet LoRaWAN Port 2 is used.
- Status byte is only visible if any of the status modes is triggered.

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3. Data payload (uplink) if packet retransmitted

Parameter:	Normal data uplink	rfcnt	rstat	rrt	rbat	**SUM**
Size:	4/5B	3B	1B	2B	2B	**12/13B**

Parameter	**Name**	**Range**	**Size**	**Type**	**Description**
Status	stat	0 - 255	0/1B	uint8	Status Codes: 0x00 - OK Bit0 - Movement Detected Bit1 - Accelerometer Failure Bit2 - Temperature Probe Failure Bit3 - NFC IC Failure Bit4 - EUI IC Failure Bit7 - Log Unavailable
Temperature	t	-327.68 - 327.67	2B	int16	Probe Temperature (t / 100)
Battery Voltage	bat	0 – vbat mV	2B	uint16	Battery Voltage in mV
Retransmitted Packet FCNT	rfcnt	0 - 16,777,215	3B	uint24	Retransmitted Packet Frame Counter
RP Status	rstat	0 - 255	1B	uint8	Status Codes: 0x00 - OK Bit0 - Movement Detected Bit1 - Accelerometer Failure Bit2 - Temperature Probe Failure Bit3 - NFC IC Failure Bit4 - EUI IC Failure Bit7 - Log Unavailable
RP Temperature	rrt	-327.68 - 327.67	2B	int16	Probe Temperature (rrt / 100)
RP Battery Voltage	rbat	0 – vbat mV	2B	uint16	Battery Voltage in mV

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4. LoRaWAN CONFIG Payload (Downlink) - Send Period

Parameter:	sendp	**SUM**
Size:	1B	**1B**

Parameter	**Name**	**Size**	**Type**	**Default Value**	**Description**
Send Period	sendp	1B	uint8	15 min	Send period in minutes

DEFAULT DOWNLINK PACKET: 0F

NOTE: For config packet LoRaWAN Port 3 is used.

5. LoRaWAN CONFIG Payload (Downlink) – General setup

Parameter:	period	movt	ackco	dr	**SUM**
Size:	1B	1B	1B	1B	**4B**

Parameter	**Name**	**Size**	**Type**	**Default Value**	**Description**
Period	period	1B	uint8	15 min	Data send period in minutes
Movement Threshold	movt	1B	uint8	0	Movement threshold to send measurement. (31.25 x movt mg, 0 = OFF, range: 1 - 63)
Packet Confirm	ackco	1B	uint8	24	Request confirmed packed every N transmissions, 0 = OFF
Data rate	dr	1B	uint8	128 (ADR on, DR0)	Bit0-6 – DRx Bit7 – ADR status (0 = OFF, 1 = ON)

DEFAULT DOWNLINK PACKET: 0F 00 18 80

NOTE: For config packet LoRaWAN Port 3 is used.

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6. LoRaWAN CONFIG Payload (Downlink) - Factory Defaults

Parameter:	fdef	**SUM**
Size:	2B	**2B**

Parameter	**Name**	**Size**	**Type**	**Default Value**	**Description**
Factory Defaults	fdef	2B	uint16	0xEEEE	Erase NFC EEPROM and restore default settings

DEFAULT DOWNLINK PACKET: EE EE

NOTE: For config packet LoRaWAN Port 3 is used.

7. LoRaWAN CONFIG Payload (Downlink) - Reboot

Parameter:	reboot	**SUM**
Size:	2B	**2B**

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

DEFAULT DOWNLINK PACKET: FF FF

NOTE: For config packet LoRaWAN Port 3 is used.

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8. LoRaWAN CONFIG Payload (Downlink) - Packet Retransmit Parameter

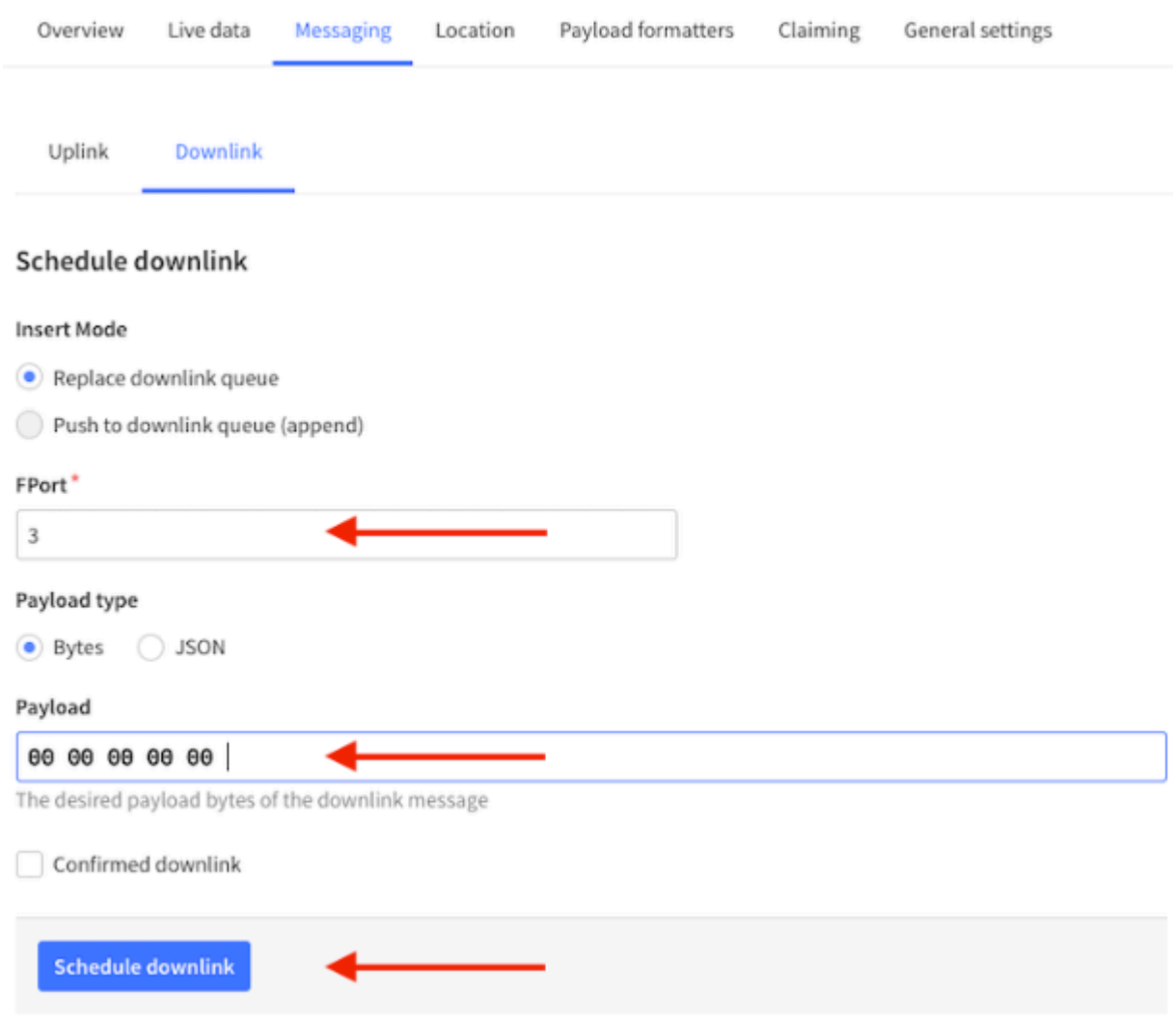
Parameter:	fcnt	**SUM**
Size:	3B	**3B**

Parameter	**Name**	**Size**	**Type**	**Default Value**	**Description**
Packet Retransmit	fcnt	3B	uint24	N/A	Packet f_cnt ID retransmit request

NOTE: For config packet LoRaWAN Port 3 is used.

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9. TTN Downlink Guide



Application > End Device > Messaging > Downlink

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