

JUNO LORAWAN TH TRACKER PAYLOAD DESCRIPTION EN

This chapter describes the structure of the telemetry data. The number of bytes in the payload depends on the configuration of the sensor. The structure of the data depends on which sensors are present in your product. In principle, each version has a header. This has information about the version and status of the sensor and also contains a master measured value. This measured value can simply be assumed to be the current measured value. The header is followed by an additional payload part that contains further information, such as special parameters for the measuring principle or settings for position and opening detection. Not every sensor has an additional payload part.

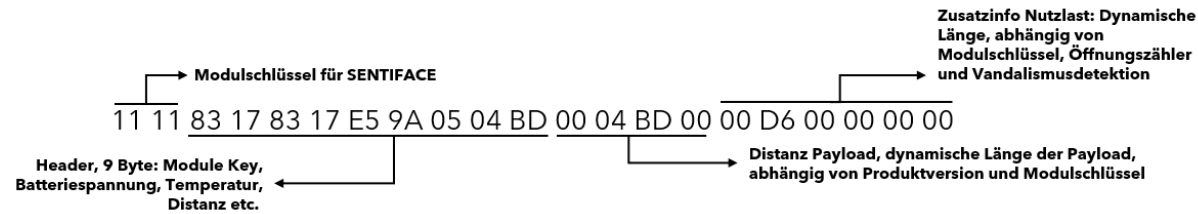
Terms	Description
Byte No.	Byte number starting at 1
Alias	Comprehensible name of the variable
Description	Description of the variables
Designation	Designation in the Dataconverter
Unit	Unit of the variables
Datahub .json key	Key in the .json when using the data hub

STRUCTURE OF THE MODULE KEY

Byte 1		Byte 2	
Bit 7 - 4	Bit 3 - 0	Bit 7 - 4	Bit 3 - 0
Basic ID module e.g. Sentiface, Senticom, Sentivisor	Major version (SW/HW version)	Minor version (SW/HW version)	Product version (sensors, e.g. TH, THL, ACC, ...)

The module key of the SENTIFACE module can be taken from the first 2 bytes of each uplink. The module key is required for the downlink.

UPLINK EXAMPLE (NOT APPLICABLE FOR JUNO)



The following payload example is given for the Helios pressure sensor:

11 11 FE 1A D5 95 06 03 00 23 BE

Bytes	1	2	3	4	5	6	7	8	9	10	11
HEX	11	11	FE	1A	D5	95	06	03	00	23	BE
Description	Module key	Module key	Uplink Counter	Battery Voltage	Battery Voltage	Temperature	Alarm Flag	Alarm Flag	Measurement status	Pressure mbar	Pressure mbar

PORT ASSIGNMENT FOR WIFI SSID SCAN PAYLOAD, GNSS SCAN PAYLOAD AND REGULAR PAYLOAD

Feature	LoRaWAN Port	Description
GNSS Scan Payload	192	Raw data (satellite ID, time, etc.) is sent to the geolocation backend.
WIFI SSID Scan Payload	197	Scanned MAC addresses + RSSI data are transmitted for localization.
Regular telemetry data	1	Regular payload data from the sensor, such as temperature, relative humidity, angle, battery voltage, etc.

Example of the WIFI SSID scan payload:

```

27  {
28    "correlation_ids": [
29      {
30        "gs:uplink:81X25NFV6V6Y7W4N3NYFZC7R"
31      }
32    ],
33    "received_at": "2025-06-06T08:28:07.602296081Z",
34    "uplink_message": {
35      "session_key_id": "AZdBG9Zf0R4vwZawK/d+8Q==",
36      "f_port": 197,
37      "f_cnt": 41,
38      "firm_payload":
39        "AbqSHwkUdq62yPCegvM9zAAksQ05vasMuBX9AzmLACSxA5iB",
40      "decoded_payload": {
41        "access_points": [
42          {
43            "mac": "AC:1F:09:14:0E:AE",
44            "rssi": -70
45          },
46          {
47            "mac": "C8:F0:9E:02:F3:3D",
48            "rssi": -74
49          },
50          {
51            "mac": "00:24:81:03:B9:8D",
52            "rssi": -84
53          },
54          {
55            "mac": "0C:B8:15:FD:03:39",
56            "rssi": -85
57          },
58          {
59            "mac": "00:24:81:03:98:81",
60            "rssi": -91
61          }
62        ],
63        "format": 1
64      },
65      "rx_metadata": [
66        {
67          "gateway_ids": {

```

DECODING OF WIFI SSID SCAN AND GNSS SCAN DATA

The following providers can be recommended for decoding the WIFI SSID SCAN and GNSS SCAN data:

- Semtech LoRa Cloud (discontinued at the end of July 2025)
- AWS
- Tencent
- Traxmate
- Sentinel

Local databases can be used for on-prem applications.

JUNO LORAWAN TH TRACKER PAYLOAD DESCRIPTION

Item number	Radio standard	Functions
S-JUNO(-iX)-LOEU-TH-TRACK	LoRaWAN®	Temperature, relative humidity, tilt detection, activity detection, opening and motion detection

Byte number	Alias name	Description	Unit	Designation in the payload decoder	Module key	Datahub .json key
1 - 2	Module key	Byte 1: 4-bit MSB: Module code. For Mioty exclusively "Sentiface" telemetry module, i.e. always 0x1. 4 bit LSB: Major version. FW of the same major version but larger minor version remain compatible with older decoders. However, the number of bytes may change! Byte 2: 4-bit MSB: Minor version. New SW versions may incrementally add new telemetry to the data packet. 4 Bit LSB: Sub / Product Version. With Helios, these bits encode the specific configuration of connected sensors.		module_key	XXX1	module_key
3	Uplink counter	Uplink counter: Protocol-independent uplink counter that reaches a maximum of 255. After that, the counter starts again at 0.		uplink_counter	XXX1	uplink_counter
4 - 5	Battery voltage	Current voltage of the battery in millivolts //Voltage in volts battery_voltage: (dataBytes[3] << 8 dataBytes[4])/1000.0	mV	battery_voltage	XXX1	battery_voltage
6	Internal temperature	Temperature of the sensor: Internal_temperature = bytes[6] - 128;	°C	internal_temperature	XXX1	internal_temperature

		This value is the temperature value of the controller for this sensor and an inaccurate temperature value +/-2°C				
7	Alarms	The alarms are coded as follows. Caution: Several alarms can be active at the same time! DEZ 1, BIN 0000 0001: Temperature High limit value exceeded DEZ 2, BIN 0000 0010: Temperature low below limit value DEZ 4, BIN 0000 0100: Delta alarm temperature DEZ 8, BIN 0000 1000: Relative humidity High limit value exceeded DEZ 16, BIN 0001 0000: Relative humidity Low below limit value DEZ 32, BIN 0010 0000: Delta alarm rel. humidity		humidity	XXX1	humidity
8 - 9	Temperature	Exact temperature of the SHT40, as described in the data sheet. <code>decoded.temperature = ((bytes[idx++] << 8) bytes[idx++]) / 10 - 100;</code>	°C	temperature	XXX1	temperature
10	Relative humidity	Relative humidity of the SHT40, as described in the data sheet.	%RH	humidity	XXX1	humidity
11	Acceleration sensor status	0: Acceleration sensor without error - Other: Acceleration sensor error		acc_status	XXX1	acc_status
12 - 15	Timestamp start of a movement	Returns the timestamp in seconds at the start of the movement.	s	move_start	XXX1	move_start
16 - 19	Timestamp end of a movement	Returns the timestamp in seconds at the end of the movement.	s	move_end	XXX1	move_end
20	Object is currently moving	Returns whether the object is currently in motion: 0: No activity 1: Object in motion		moving	XXX1	moving

21 - 22	Number of activities counted	Counts the number of activities		move_cnt	XXX1	move_cnt
23	Angle	Returns the angle in °, resolution 1°	°	angle	XXX1	angle

JUNO LORAWAN TH TRACKER PAYLOAD DESCRIPTION (WITHOUT TH)

Item number	Radio standard	Functions
S-JUNO(-iX)-LOEU-TRACK	LoRaWAN®	Tilt detection, activity detection, opening and motion detection

Byte number	Alias name	Description	Unit	Designation in the payload decoder	Module key	Datahub .json key
1 - 2	Module key	Byte 1: 4-bit MSB: Module code. For Mioty exclusively "Sentiface" telemetry module, i.e. always 0x1. 4 bit LSB: Major version. FW of the same major version but larger minor version remain compatible with older decoders. However, the number of bytes may change! Byte 2: 4-bit MSB: Minor version. New SW versions may incrementally add new telemetry to the data packet. 4 Bit LSB: Sub / Product Version. With Helios, these bits encode the specific configuration of connected sensors.		module_key	XXX1	module_key
3	Uplink counter	Uplink counter: Protocol-independent uplink counter that reaches a maximum of 255. After that, the counter starts again at 0.		uplink_counter	XXX1	uplink_counter
4 - 5	Battery voltage	Current voltage of the battery in millivolts //Voltage in volts battery_voltage: (dataBytes[3] << 8 dataBytes[4])/1000.0	mV	battery_voltage	XXX1	battery_voltage
6	Internal temperature	Temperature of the sensor: Internal_temperature = bytes[6] - 128;	°C	internal_temperature	XXX1	internal_temperature

		For this sensor, this value is the temperature value of the controller and an inaccurate temperature value +/-2°C				
7	Acceleration sensor status	0: Acceleration sensor without error - Other: Acceleration sensor error		acc_status	XXX1	acc_status
8 - 11	Timestamp Start of a movement	Returns the timestamp in seconds at the start of the movement.	s	move_start	XXX1	move_start
12 - 15	Timestamp end of a movement	Returns the timestamp in seconds at the end of the movement.	s	move_end	XXX1	move_end
16	Object is currently moving	Returns whether the object is currently in motion: 0: No activity 1: Object in motion		moving	XXX1	moving
17 - 18	Number of activities counted	Counts the number of activities		move_cnt	XXX1	move_cnt
19	Angle	Returns the angle in °, resolution 1°	°	angle	XXX1	angle