

FRAMES SPECIFICATIONS



1. BLUETOOTH GENERAL INFORMATION	3
2. APPLICABLE PRODUCT	4
3. GENERAL INFORMATION	5
a. "Services Data" and "Manufacturer specific Data"	5
b. « Scan Response » frame	6
c. Custom Frames	6
4. RELEASE NOTE	7
5. BATTERY INFORMATION	8
6. FRAME FORMAT	10
a. "ID", "ID+" Format	11
b. "iBeacon" Format	12
c. "Eddystone" Format	13
i. "T", "T EN", "T Probe" format	14
d. "RHT" format	15
e. "MAG" format	16
f. "MOV" format	17
g. "ANG" format	18
h. "DI" format (Digital Input)	19
i. "PIR" format	20
j. "Touch" format	21

1. BLUETOOTH GENERAL INFORMATION

General information	https://www.bluetooth.com/bluetooth-technology
BLE Specifications	https://www.bluetooth.com/specifications
BLE Services et Characteristics	https://www.bluetooth.com/specifications/gatt

2. APPLICABLE PRODUCT



Blue PUCK ID IDF25240 / IDF26240
Blue PUCK T EN12830 IDF25241 / IDF26241
Blue PUCK RHT IDF25242
Blue PUCK MAG IDF25243 / IDF26243
Blue PUCK MOV IDF25244
Blue PUCK BUZZ IDF25245
Blue PUCK DI IDF25246
Blue PUCK T Probe IDF25250
Blue PUCK PIR IDF25249
Blue PUCK ID+ IDF25253



Blue COIN ID / AERO ID IDF10240
Blue COIN T IDF10241
Blue COIN MAG IDF10243
Blue COIN MOV IDF10244
Blue COIN ID+ IDF10253



Blue SLIM ID IDF03240



Blue LITE ID IDF28240
Blue LITE ID+ IDF28253
Blue LITE TOUCH IDF28255

3. GENERAL INFORMATION

BLE protocol fixes the length of BLE packets to 47 Bytes maximum among which a maximum of 37 are define by the user and are generally referred as the **payload**.

In this payload, the 6 first bytes are reserved for the advertiser address (mac address), the following 3 are used to flag the type of advertising frame and the 29 remaining contains actual datas of interest. Position, types and length of data defines **the frame format** that must be known on the scanner side in order to decode the payload. This document provide the information of available frame format in ELA INNOVATION tag as well as the information require to request a full custom frame format.

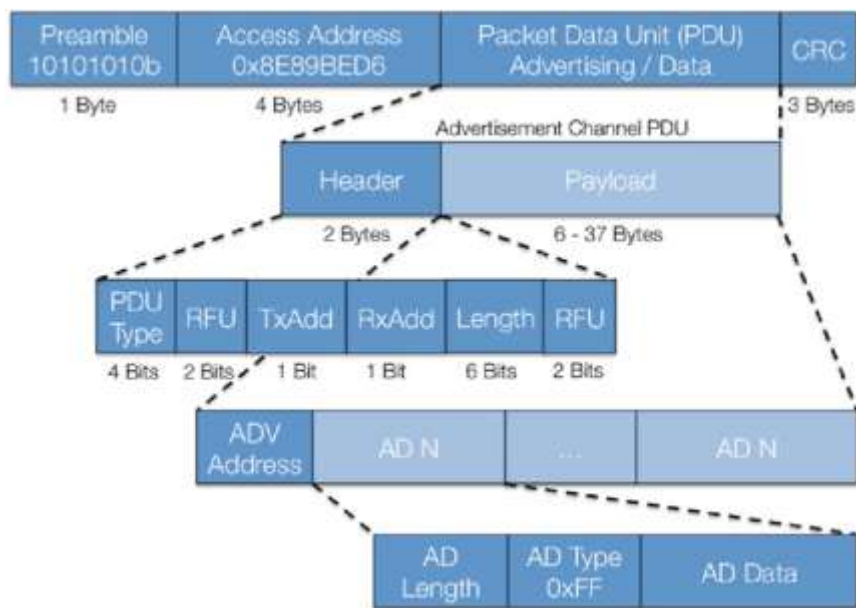


Figure 1 : Advertising frame format as per BLE SIG specifications

a. "Services Data" and "Manufacturer specific Data"

Historical ELA tag frame format uses "Service data" identification of data type following BLE core specification. Starting from firmware version 2.0.0, it is possible to send ELA sensor and ID data through « Manufacturer Specific Data » identification of type. The Manufacturer Specific data are specific Bluetooth frame fields that are unique to a company, that can be used to add custom data into advertising packets. If Manufacturer Specific data are not enabled, all sensor data will be sent into the Bluetooth Services data.

To enable it, it is necessary to set to « True » the configuration field « *Mfr. Data Enable* » in the NFC configuration.

The screenshot shows the 'Configure Tag' interface with the following parameters:

Firmware Version :	2.0.0
Name :	ELA ID
Enable :	True
Power BLE :	0
Format :	RHT
Advertising interval :	1
Log interval :	10
Logger Enable :	False
Acc. Threshold :	0100
Mfr. Data Enable :	False
Mfr. Data ID :	010203040506

For a tag firmware below 2.0.0, the data advertised is always into Service datas.

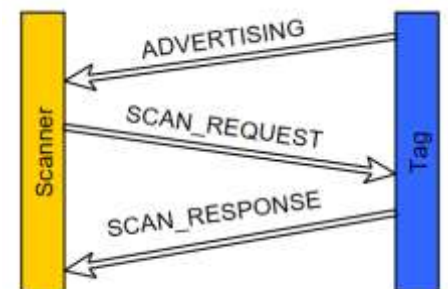
b. « Scan Response » frame

In some formats and versions, the tag can send a frame called « Scan Response frame ».

Once an advertising packet has been received by a scanner, further information can be requested. Then the tag responds with the “scan response” frame.

This frame is located right after the advertising frame and contains different data depending on the version and format.

The data sent in “Scan response” frame is also formatted either in Service mode or in Manufacturer Specific mode.



c. Custom Frames

Starting from version 4.0.0, ELA INNOVATION tags can be configured in factory with any frame format upon request. More information at <https://www.ela-innovation.com/>

4. RELEASE NOTE

1.0.0 Version

- When the battery drops below 15% capacity, the *Battery Service* is sent in the "Scan Response" frame for all formats.
- Nordic UART Service (NUS) is no longer sent in the Scan Response frame.

2.0.0 Version

- In iBeacon/Eddystone formats, the tag name is sent in the "SR" frame (after the battery info).
- The Company Identifier (CIN) number of ELA Innovation is 0x0757.
- In Manufacturer Specific Data mode, in ELA_ID and DIGI_OUT formats, it is possible to enter a hexadecimal number (max 0xFFFFFFFFFFFF) that will be sent in the frame. This field is called "ID Manufacturer Data" in the NFC configuration. This number is called "MFR_Num" in the frame formats of this document.

2.1.0 Version

- The names of the TOR IN and TOR OUT formats have been changed to Digi IN and Digi OUT respectively.

2.2.0 Version

- The Battery data is now sent in the Battery Level service feature (0x2A19).
- The MAC address type of the tag is changed from **Random** to **Public**.

3.0.0 Version

- Ability to transmit the battery voltage in the Scan Response via an NFC parameter.

4.0.0 Version

- Custom Frame format available on request
- Predefine custom format: iBeacon with sensor data in scan response, Eddystone with sensor data in scan response, Geotab T, Geotab RHT, Geotab MAG.

5. BATTERY INFORMATION

Battery capacity

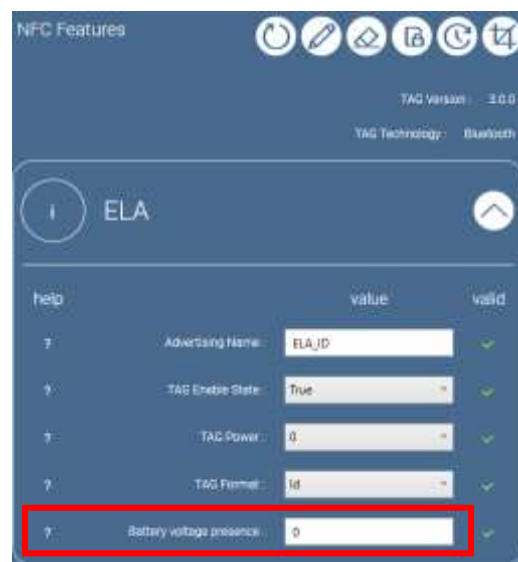
ELA Innovation's tags are based on the transmission of battery information in the Scan Response when the capacity of the battery falls below 15%. The formatting of the information is as follows:

Frame type	Service Data	Service Data	Mfr. Spec. Data
Version	1.0.0, 2.0.0, 2.1.x	≥2.2.0	≥2.0.0
Transmission	Batt. capacity < 15%	Batt. capacity < 15%	Batt. capacity < 15%
Frame bytes	1	Length : 0x04	Length : 0x05
	2	Type : 0x16	Type : 0xFF
	3	Battery Serv. LSB : 0x0F	ELA_CIN_LSB : 0x57
	4	Battery Serv. MSB : 0x18	ELA_CIN_MSB : 0x07
	5	Batt. data (%)	BATT_DATA_ID: 0xF1
	6	Not used	Batt. data (%)
	7	Not used	Not used

Battery voltage

From version 3.0.0 onwards, it is possible to transmit battery voltage information for all formats. For this purpose, the "**Battery voltage presence**" option must be configured in the NFC memory.

When the option is activated, the tag no longer transmits battery capacity information below 15%.



Once the option is enabled, the battery voltage information is transmitted in the "Scan Response" frame with the following formatting:

Frame type		All
Version		≥3.0.0
Transmission		Battery voltage presence = 1
Frame Bytes	1	Length : 0x06
	2	Type : 0xFF
	3	ELA_CIN_LSB : 0x57
	4	ELA_CIN_MSB: 0x07
	5	BATT_DATA_ID: 0xF2
	6	Batt. voltage (mV) LSB
	7	Batt. voltage (mV) MSB

Frame examples:

Received frame : ELA ID, Service Data, v3.0.0 Battery voltage presence = 0			Received frame : ELA T, MFR Spec. Data, v3.0.0 Battery voltage presence = 0																													
Name	BE_BATTERY		Name	BE_BATTERY																												
			Measured temp.	27.12°C (0x0A98)																												
Battery cap.	13% (0x0D)		Battery cap	13% (0x0D)																												
Raw data: 0x0201060B0942455F424154544552590 416192A0D			Raw data: 0x02010606FF570712980A0B0942455F4 241545445525905FF5707F10D																													
Details:<table><tr><th>LEN.</th><th>TYPE</th><th>VALUE</th></tr><tr><td>2</td><td>0x01</td><td>0x06</td></tr><tr><td>11</td><td>0x09</td><td>0x42455F42415454455259</td></tr><tr><td>4</td><td>0x16</td><td>0x192A0D</td></tr></table>			LEN.	TYPE	VALUE	2	0x01	0x06	11	0x09	0x42455F42415454455259	4	0x16	0x192A0D	Details:<table><tr><th>LEN.</th><th>TYPE</th><th>VALUE</th></tr><tr><td>2</td><td>0x01</td><td>0x06</td></tr><tr><td>6</td><td>0xFF</td><td>0x570712980A</td></tr><tr><td>11</td><td>0x09</td><td>0x42455F42415454455259</td></tr><tr><td>5</td><td>0xFF</td><td>0x5707F10D</td></tr></table>			LEN.	TYPE	VALUE	2	0x01	0x06	6	0xFF	0x570712980A	11	0x09	0x42455F42415454455259	5	0xFF	0x5707F10D
LEN.	TYPE	VALUE																														
2	0x01	0x06																														
11	0x09	0x42455F42415454455259																														
4	0x16	0x192A0D																														
LEN.	TYPE	VALUE																														
2	0x01	0x06																														
6	0xFF	0x570712980A																														
11	0x09	0x42455F42415454455259																														
5	0xFF	0x5707F10D																														

T° Data

Name

Battery cap.
(SR Frame)

In Eddystone and iBeacon formats, the battery information is located before the Tag Name :

Received frame : iBeacon, v2.1.0, MFR Spec. Data Battery voltage presence = 0			Received frame : Eddystone, v3.0.0 Battery voltage presence = 0																																			
Name	BE_BATTERY		Name	BE_BATTERY																																		
Battery cap.	13% (0x0D)		Battery cap.	13% (0x0D)																																		
Raw data: 0x0201061AFF4C0002150102030405060708090A0B0C0D0E0F10020B010AC404160F180D0B0942455F42415454455259 Details: <table><thead><tr><th>LEN.</th><th>TYPE</th><th>VALUE</th></tr></thead><tbody><tr><td>2</td><td>0x01</td><td>0x06</td></tr><tr><td>26</td><td>0xFF</td><td>0x4C0002150102030405060708090A0B0C0D0E0F10020B010AC4</td></tr><tr><td>4</td><td>0x16</td><td>0x0F180D</td></tr><tr><td>11</td><td>0x09</td><td>0x42455F42415454455259</td></tr></tbody></table>			LEN.	TYPE	VALUE	2	0x01	0x06	26	0xFF	0x4C0002150102030405060708090A0B0C0D0E0F10020B010AC4	4	0x16	0x0F180D	11	0x09	0x42455F42415454455259	Raw data: 0x0201060303AAFE1716AAFE00ED0102030405060708090A010203040A0B00000416192A0D0B0942455F42415454455259 Details: <table><thead><tr><th>LEN.</th><th>TYPE</th><th>VALUE</th></tr></thead><tbody><tr><td>2</td><td>0x01</td><td>0x06</td></tr><tr><td>3</td><td>0x03</td><td>0xAAFE</td></tr><tr><td>23</td><td>0x16</td><td>0xAAFE00ED0102030405060708090A010203040A0B0000</td></tr><tr><td>4</td><td>0x16</td><td>0x192A0D</td></tr><tr><td>11</td><td>0x09</td><td>0x42455F42415454455259</td></tr></tbody></table>			LEN.	TYPE	VALUE	2	0x01	0x06	3	0x03	0xAAFE	23	0x16	0xAAFE00ED0102030405060708090A010203040A0B0000	4	0x16	0x192A0D	11	0x09	0x42455F42415454455259
LEN.	TYPE	VALUE																																				
2	0x01	0x06																																				
26	0xFF	0x4C0002150102030405060708090A0B0C0D0E0F10020B010AC4																																				
4	0x16	0x0F180D																																				
11	0x09	0x42455F42415454455259																																				
LEN.	TYPE	VALUE																																				
2	0x01	0x06																																				
3	0x03	0xAAFE																																				
23	0x16	0xAAFE00ED0102030405060708090A010203040A0B0000																																				
4	0x16	0x192A0D																																				
11	0x09	0x42455F42415454455259																																				

iBeacon field

Eddystone field

Battery cap.
(SR Frame)

Name (SR Frame)

Received frame : iBeacon, v3.0.0 Battery voltage presence = 1		Received frame : ELA T, Service Data, v3.0.0 Battery voltage presence = 1																															
Name	BE_BATTERY	Name	BE_BATTERY																														
Batt. voltage	2.478V (0x09AE)	Measured temp	21.87°C (0x088B)																														
		Batt. voltage	2.988 V (0x0BAC)																														
Raw data: 0x0201061AFF4C0002150102030405060708090A0B0C0D0E0F10020B010AC406FF5707F2AE090B0942455F42415454455259		Raw data: 0x02010605166E2A8B080B0942455F4241545445525906FF5707F2AC0B																															
Details: <table><tr><th>LEN.</th><th>TYPE</th><th>VALUE</th></tr><tr><td>2</td><td>0x01</td><td>0x06</td></tr><tr><td>26</td><td>0xFF</td><td>0x4C0002150102030405060708090A0B0C0D0E0F10020B010AC4</td></tr><tr><td>6</td><td>0xFF</td><td>0x5707F2AE09</td></tr><tr><td>11</td><td>0x09</td><td>0x42455F42415454455259</td></tr></table>		LEN.	TYPE	VALUE	2	0x01	0x06	26	0xFF	0x4C0002150102030405060708090A0B0C0D0E0F10020B010AC4	6	0xFF	0x5707F2AE09	11	0x09	0x42455F42415454455259	Details: <table><tr><th>LEN.</th><th>TYPE</th><th>VALUE</th></tr><tr><td>2</td><td>0x01</td><td>0x06</td></tr><tr><td>5</td><td>0x16</td><td>0x6E2A8B08</td></tr><tr><td>11</td><td>0x09</td><td>0x42455F42415454455259</td></tr><tr><td>6</td><td>0xFF</td><td>0x5707F2AC0B</td></tr></table>		LEN.	TYPE	VALUE	2	0x01	0x06	5	0x16	0x6E2A8B08	11	0x09	0x42455F42415454455259	6	0xFF	0x5707F2AC0B
LEN.	TYPE	VALUE																															
2	0x01	0x06																															
26	0xFF	0x4C0002150102030405060708090A0B0C0D0E0F10020B010AC4																															
6	0xFF	0x5707F2AE09																															
11	0x09	0x42455F42415454455259																															
LEN.	TYPE	VALUE																															
2	0x01	0x06																															
5	0x16	0x6E2A8B08																															
11	0x09	0x42455F42415454455259																															
6	0xFF	0x5707F2AC0B																															

6. FRAME FORMAT

General information of this document

To improve the readability of the screen formats, this document presents :

- The fixed Bluetooth fields highlighted in **blue**.
- The Variable Bluetooth fields highlighted in **orange**.
- User-defined fields highlighted in **green**.

The screenshots have been taken on the nRF Connect application, developed by Nordic Semiconductors.

The screenshots show examples of frame decoding of information sent in advertising by ELA Innovation's products. There is also sample software code developed by the ELA Innovation team that can be used to decode frame information.

a. "ID", "ID+" Format

Frame type	Service Data	Mfr Spec. Data
Version	All	≥2.0.0
Frame Bytes	1 Length : 0x02	Length : 0x02
	2 Type : 0x01	Type : 0x01
	3 Data : 0x06	Data : 0x06
	4 Length : ≤0x10	Length : 0x0A
	5 Type : 0x09	Type: 0xFF
	6 Name[0]	ELA_CIN_LSB : 0x57
	7 Name[1]	ELA_CIN_MSB: 0x07
	8 Name[2]	MFR_ID : 0x06
	9 Name[3]	MFR_Num[0]
	10 Name[4]	MFR_Num[1]
	11 Name[5]	MFR_Num[2]
	12 Name[6]	MFR_Num[3]
	13 Name[7]	MFR_Num[4]
	14 Name[8]	MFR_Num[5]
	15 Name[9]	Length : ≤0x10
	16 Name 10]	Type : 0x09
	17 Name[11]	Name[0]
	18 Name[12]	Name[1]
	19 Name[13]	Name[2]
	20 Name[14]	Name[3]
	21 Not used	Name[4]
	22 Not used	Name[5]
	23 Not used	Name[6]
	24 Not used	Name[7]
	25 Not used	Name[8]
	26 Not used	Name[9]
	27 Not used	Name[10]
	28 Not used	Name[11]
	29 Not used	Name[12]
	30 Not used	Name[13]
	31 Not used	Name[14]

Frame example

Received frame : ELA ID, Service Data		Received frame : ELA ID, MFR Spec. Data																						
Name	BE_TEST_K ID A9	Name	BE_TEST_ID																					
		MFR_Num	0xAABBCCDDEEFF																					
Raw data: 0x020106100942455F544553545F4B204944204139 Details: <table><thead><tr><th>LEN.</th><th>TYPE</th><th>VALUE</th></tr></thead><tbody><tr><td>2</td><td>0x01</td><td>0x06</td></tr><tr><td>16</td><td>0x09</td><td>0x42455F544553545F4B204944204139</td></tr></tbody></table>		LEN.	TYPE	VALUE	2	0x01	0x06	16	0x09	0x42455F544553545F4B204944204139	Raw data: 0x0201060AFF570706AABBCCDDEEFF0B0942455F544553545F4944 Details: <table><thead><tr><th>LEN.</th><th>TYPE</th><th>VALUE</th></tr></thead><tbody><tr><td>2</td><td>0x01</td><td>0x06</td></tr><tr><td>10</td><td>0xFF</td><td>0x570706AABBCCDDEEFF</td></tr><tr><td>11</td><td>0x09</td><td>0x42455F544553545F4944</td></tr></tbody></table>		LEN.	TYPE	VALUE	2	0x01	0x06	10	0xFF	0x570706AABBCCDDEEFF	11	0x09	0x42455F544553545F4944
LEN.	TYPE	VALUE																						
2	0x01	0x06																						
16	0x09	0x42455F544553545F4B204944204139																						
LEN.	TYPE	VALUE																						
2	0x01	0x06																						
10	0xFF	0x570706AABBCCDDEEFF																						
11	0x09	0x42455F544553545F4944																						

ID Mfr Data

Name

0x020106100942455F544553545F4B204944204139

0x0201060AFF570706AABBCCDDEEFF0B0942455F544553545F4944

b. "iBeacon" Format

Frame type		Service & Mfr Spec. Data	Service & Mfr Spec. Data
Version		1.0.0, 2.0.0	≥2.1.0
Frame Bytes	1	Length : 0x02	Length : 0x02
	2	Type : 0x01	Type : 0x01
	3	Data: 0x04	Data : 0x06
	4	Length : 0x1A	Length : 0x1A
	5	Type : 0xFF	Type : 0xFF
	6	Apple CIN_LSB : 0x4C	Apple CIN_LSB : 0x4C
	7	Apple CIN_MSB : 0x00	Apple CIN_MSB : 0x00
	8	Beacon type : 0x02	Beacon type : 0x02
	9	Data size : 0x15	Data size : 0x15
	10	UUID[0]	UUID[0]
	11	UUID[1]	UUID[1]
	12	UUID[2]	UUID[2]
	13	UUID[3]	UUID[3]
	14	UUID[4]	UUID[4]
	15	UUID[5]	UUID[5]
	16	UUID[6]	UUID[6]
	17	UUID[7]	UUID[7]
	18	UUID[8]	UUID[8]
	19	UUID[9]	UUID[9]
	20	UUID[10]	UUID[10]
	21	UUID[11]	UUID[11]
	22	UUID[12]	UUID[12]
	23	UUID[13]	UUID[13]
	24	UUID[14]	UUID[14]
	25	UUID[15]	UUID[15]
	26	Major[0]	Major[0]
	27	Major[1]	Major[1]
	28	Minor[0]	Minor[0]
	29	Minor[1]	Minor[1]
	30	Power TX at 1m	Power TX at 1m
	31	Not used	Not used

For the iBeacon format, the Tag Name is transmitted into the Scan Response.

Frame type		Scan Response
Version		All
Frame Bytes	1	Length : ≤0x10
	2	Type : 0x09
	3	Name[0]
	4	Name[1]
	5	Name[2]
	6	Name[3]
	7	Name[4]
	8	Name[5]
	9	Name[6]
	10	Name[7]
	11	Name[8]
	12	Name[9]
	13	Name[10]
	14	Name[11]
	15	Name[12]
	16	Name[13]
	17	Name[14]

Frame example

Received frame : iBeacon, V2.1.0

Name	P ID 002BEA		
UUID	0xFF02030405FF0708090AA00C0D0E0F11		
Major	0x5555	Minor	0xAAAA

Raw data:

0x0201061AFF4C000215FF02030405FF0
708090AA00C0D0E0F115555AAAAC40C0
95020494420303032424541

Details:

LEN.	TYPE	VALUE
2	0x01	0x06
26	0xFF	0x4C000215FF02030405FF0708090AA00C0D0E0F115555AAAAC4
12	0x09	0x5020494420303032424541

iBeacon field

Name (SR Frame)

c. "Eddystone" Format

Frame type		Service & Mfr Spec. Data
Version		All
Frame Bytes	1	Length : 0x02
	2	Type : 0x01
	3	Data : 0x06
	4	Length : 0x03
	5	Type : 0x03
	6	Eddystone_UUID_LSB : 0xAA
	7	Eddystone_UUID_MSB : 0xFE
	8	Length : 0x17
	9	Type : 0x16
	10	Eddystone_UUID_LSB : 0xAA
	11	Eddystone_UUID_MSB : 0xFE
	12	Frame type UUID : 0x00
	13	Power TX à 0m
	14	NID[0]
	15	NID[1]
	16	NID[2]
	17	NID[3]
	18	NID[4]
	19	NID[5]
	20	NID[6]
	21	NID[7]
	22	NID[8]
	23	NID[9]
	24	BID[0]
	25	BID[1]
	26	BID[2]
	27	BID[3]
	28	BID[4]
	29	BID[5]
	30	Reserved
	31	Reserved

For the Eddystone format, the Tag Name is transmitted into the Scan Response.

Frame type		Scan Response
Version		All
Frame Bytes	1	Length : ≤0x10
	2	Type : 0x09
	3	Name[0]
	4	Name[1]
	5	Name[2]
	6	Name[3]
	7	Name[4]
	8	Name[5]
	9	Name[6]
	10	Name[7]
	11	Name[8]
	12	Name[9]
	13	Name[10]
	14	Name[11]
	15	Name[12]
	16	Name[13]
	17	Name[14]

Frame example

Received frame : Eddystone, V3.0.0

Name	P ID 002BEA
NID	AA020FF40506070809FF
BID	01FA03BB05DD

Raw data:

```
0x0201060303AAFE1716AAFE00EDAA02
0FF40506070809FF01FA03BB05DD00000
C095020494420303032424541
```

Details:

LEN.	TYPE	VALUE
2	0x01	0x06
3	0x03	0xAAFE
23	0x16	0xAAFE00EDAA020FF40506070809FF01FA03BB05DD0000
12	0x09	0x5020494420303032424541

Eddystone field

Name (SR Frame)

i. "T", "T EN", "T Probe" format

Frame type		Service Data	Mfr Spec. Data
Version		≥1.0.0	≥2.0.0
Frame bytes	1	Length : 0x02	Length : 0x02
	2	Type : 0x01	Type : 0x01
	3	Data: 0x06	Data : 0x06
	4	Length : 0x05	Length : 0x06
	5	Type : 0x16	Type: 0xFF
	6	Temperature carac. LSB : 0x6E	ELA_CIN_LSB : 0x57
	7	Temperature carac. MSB : 0x2A	ELA_CIN_MSB: 0x07
	8	T° Data (0,01°C) LSB	TEMP_ID: 0x12
	9	T° Data (0,01°C) MSB	T° Data (0,01°C) LSB
	10	Length : ≤0x10	T° Data (0,01°C) MSB
	11	Type : 0x09	Length : ≤0x10
	12	Name[0]	Type : 0x09
	13	Name[1]	Name[0]
	14	Name[2]	Name[1]
	15	Name[3]	Name[2]
	16	Name[4]	Name[3]
	17	Name[5]	Name[4]
	18	Name[6]	Name[5]
	19	Name[7]	Name[6]
	20	Name[8]	Name[7]
	21	Name[9]	Name[8]
	22	Name[10]	Name[9]
	23	Name[11]	Name[10]
	24	Name[12]	Name[11]
	25	Name[13]	Name[12]
	26	Name[14]	Name[13]
	27	Not used	Name[14]
	28	Not used	Not used
	29	Not used	Not used
	30	Not used	Not used
	31	Not used	Not used

Frame example

Received frame : ELA T, Service Data			Received frame : ELA T, MFR Spec. Data																										
Name	P T 801803		Name	P T 801803																									
Measured Temp.	0x0A6C = 26.68°C		Measured Temp.	0x0A85 = 26.93°C																									
Raw data: 0x02010605166E2A6C0A0B0950205420383031383033			Raw data: 0x02010606FF570712850A0B0950205420383031383033																										
Details: <table><tr><th>LEN.</th><th>TYPE</th><th>VALUE</th></tr><tr><td>2</td><td>0x01</td><td>0x06</td></tr><tr><td>5</td><td>0x16</td><td>0x6E2A6C0A</td></tr><tr><td>11</td><td>0x09</td><td>0x50205420383031383033</td></tr></table>			LEN.	TYPE	VALUE	2	0x01	0x06	5	0x16	0x6E2A6C0A	11	0x09	0x50205420383031383033	Details: <table><tr><th>LEN.</th><th>TYPE</th><th>VALUE</th></tr><tr><td>2</td><td>0x01</td><td>0x06</td></tr><tr><td>6</td><td>0xFF</td><td>0x570712850A</td></tr><tr><td>11</td><td>0x09</td><td>0x50205420383031383033</td></tr></table>			LEN.	TYPE	VALUE	2	0x01	0x06	6	0xFF	0x570712850A	11	0x09	0x50205420383031383033
LEN.	TYPE	VALUE																											
2	0x01	0x06																											
5	0x16	0x6E2A6C0A																											
11	0x09	0x50205420383031383033																											
LEN.	TYPE	VALUE																											
2	0x01	0x06																											
6	0xFF	0x570712850A																											
11	0x09	0x50205420383031383033																											

T° Data

Name

d. "RHT" format

Frame type		Service Data	Mfr Spec. Data
Version		≥1.0.0	≥2.0.0
Frame bytes	1	Length : 0x02	Length : 0x02
	2	Type : 0x01	Type : 0x01
	3	Data : 0x06	Data : 0x06
	4	Length : 0x05	Length : 0x08
	5	Type : 0x16	Type : 0xFF
	6	Temperature carac. LSB : 0x6E	ELA_CIN_LSB : 0x57
	7	Temperature carac. MSB : 0x2A	ELA_CIN_MSB : 0x07
	8	T° Data (0,01°C) LSB	RHT_DATA_ID: 0x21
	9	T° Data (0,01°C) MSB	RH Data (%)
	10	Length : 0x04	TEMP_DATA_ID: 0x12
	11	Type : 0x16	T° Data (0,01°C) LSB
	12	Humidity carac. LSB : 0x6F	T° Data (0,01°C) MSB
	13	Humidity carac. MSB : 0x2A	Length : ≤0x10
	14	RH Data (%)	Type : 0x09
	15	Length : ≤0x10	Name[0]
	16	Type : 0x09	Name[1]
	17	Name[0]	Name[2]
	18	Name[1]	Name[3]
	19	Name[2]	Name[4]
	20	Name[3]	Name[5]
	21	Name[4]	Name[6]
	22	Name[5]	Name[7]
	23	Name[6]	Name[8]
	24	Name[7]	Name[9]
	25	Name[8]	Name[10]
	26	Name[9]	Name[11]
	27	Name[10]	Name[12]
	28	Name[11]	Name[13]
	29	Name[12]	Name[14]
	30	Name[13]	Not used
	31	Name[14]	Not used

Frame example

Received frame : ELA RHT, Service Data				Received frame : ELA RHT, MFR Spec. Data			
Name		P RHT 900459		Name		P RHT 900459	
Measured Temp	26.98°C	Measured RH	47%	Measured Temp	27.44°C	Measured RH	48%
Raw data:				Raw data:			
0x02010605166E2A8A0A04166F2A2F0D09502052485420393030343539				0x02010608FF5707213012B80A0D09502052485420393030343539			
Details:				Details:			
LEN.	TYPE	VALUE		LEN.	TYPE	VALUE	
2	0x01	0x06		2	0x01	0x06	
5	0x16	0x6E2A8A0A		8	0xFF	0x5707213012B80A	
4	0x16	0x6F2A2F		13	0x09	0x502052485420393030343539	
13	0x09	0x502052485420393030343539					

e. "MAG" format

Frame type	Service Data	Service Data	Mfr Spec. Data
Version	1.0.0	≥2.0.0	≥2.0.0
Frame Bytes	1 Length: 0x02	Length : 0x02	Length : 0x02
	2 Type: 0x01	Type : 0x01	Type : 0x01
	3 Data : 0x06	Data : 0x06	Data : 0x06
	4 Length: 0x05	Length : 0x05	Length : 0x06
	5 Type: 0x16	Type : 0x16	Type: 0xFF
	6 Alert Level carac. LSB : 0x06	Alert Level carac. LSB : 0x06	ELA_CIN_LSB : 0x57
	7 Alert Level carac. MSB : 0x2A	Alert Level carac. MSB : 0x2A	ELA_CIN_MSB : 0x07
	8 MAG Data (cnt + state) LSB	MAG Data (cnt + state) LSB	MAG_DATA_ID: 0x32
	9 MAG Data (cnt + state) MSB	MAG Data (cnt + state) MSB	MAG Data (cnt + state) LSB
	10 Length : ≤0x10	Length : 0x04	MAG Data (cnt + state) MSB
	11 Type: 0x09	Type : 0x16	Length: ≤0x10
	12 Name[0]	Alert Status carac. LSB : 0x3F	Type : 0x09
	13 Name[1]	Alert Status carac. MSB : 0x2A	Name[0]
	14 Name[2]	Data : 0x00	Name[1]
	15 Name[3]	Length : ≤0x10	Name[2]
	16 Name[4]	Type : 0x09	Name[3]
	17 Name[5]	Name[0]	Name[4]
	18 Name[6]	Name[1]	Name[5]
	19 Name[7]	Name[2]	Name[6]
	20 Name[8]	Name[3]	Name[7]
	21 Name[9]	Name[4]	Name[8]
	22 Name[10]	Name[5]	Name[9]
	23 Name[11]	Name[6]	Name[10]
	24 Name[12]	Name[7]	Name[11]
	25 Name[13]	Name[8]	Name[12]
	26 Name[14]	Name[9]	Name[13]
	27 Not used	Name[10]	Name[14]
	28 Not used	Name[11]	Not used
	29 Not used	Name[12]	Not used
	30 Not used	Name[13]	Not used
	31 Not used	Name[14]	Not used

Frame example

Received frame : ELA MAG, V3.0.0, Service Data				Received frame : ELA MAG, V3.0.0, MFR Spec. Data					
Name		P MAG C0062E		Name		P MAG C0062E			
Event Counter		4	Magnet state	present	Event Counter		5	Magnet state	absent
Raw data:				Raw data:					
0x0201060516062A090004163F2A000D0950204D414720433030363245				0x02010606FF5707320A000D0950204D414720433030363245					
Details:				Details:					
LEN.	TYPE	VALUE		LEN.	TYPE	VALUE			
2	0x01	0x06		2	0x01	0x06			
5	0x16	0x062A0900		6	0xFF	0x5707320A00			
4	0x16	0x3F2A00		13	0x09	0x50204D414720433030363245			
13	0x09	0x50204D414720433030363245							
MAG Data ELA MAG ID Name									

f. "MOV" format

Frame type		Service Data	Service Data	Mfr Spec. Data
Version		1.0.0	≥2.0.0	≥2.0.0
Frame bytes	1	Length : 0x02	Length : 0x02	Length : 0x02
	2	Type : 0x01	Type : 0x01	Type : 0x01
	3	Data : 0x06	Data : 0x06	Data : 0x06
	4	Length : 0x05	Length : 0x05	Length : 0x06
	5	Type : 0x16	Type : 0x16	Type: 0xFF
	6	Alert Level carac. LSB : 0x06	Alert Level carac. LSB : 0x06	ELA_CIN_LSB : 0x57
	7	Alert Level carac. MSB : 0x2A	Alert Level carac. MSB : 0x2A	ELA_CIN_MSB : 0x07
	8	MOV Data (cnt + state) LSB	MOV Data (cnt + state) LSB	MOV_DATA_ID: 0x42
	9	MOV Data (cnt + state) MSB	MOV Data (cnt + state) MSB	MOV Data (cnt + state) LSB
	10	Length : ≤0x10	Length : 0x04	MOV Data (cnt + state) MSB
	11	Type : 0x09	Type : 0x16	Length : ≤0x10
	12	Name[0]	Alert Status carac. LSB : 0x3F	Type : 0x09
	13	Name[1]	Alert Status carac. MSB : 0x2A	Name[0]
	14	Name[2]	Data : 0x01	Name[1]
	15	Name[3]	Length : ≤0x10	Name[2]
	16	Name[4]	Type : 0x09	Name[3]
	17	Name[5]	Name[0]	Name[4]
	18	Name[6]	Name[1]	Name[5]
	19	Name[7]	Name[2]	Name[6]
	20	Name[8]	Name[3]	Name[7]
	21	Name[9]	Name[4]	Name[8]
	22	Name[10]	Name[5]	Name[9]
	23	Name[11]	Name[6]	Name[10]
	24	Name[12]	Name[7]	Name[11]
	25	Name[13]	Name[8]	Name[12]
	26	Name[14]	Name[9]	Name[13]
	27	Not used	Name[10]	Name[14]
	28	Not used	Name[11]	Not used
	29	Not used	Name[12]	Not used
	30	Not used	Name[13]	Not used
	31	Not used	Name[14]	Not used

Frame example

Received frame : ELA MOV, V3.0.0, Service Data				Received frame : ELA MOV, V3.0.0, MFR Spec. Data			
Name		P MOV B00557		Name		P MOV B00557	
Event counter	3	Mvt state	In progress	Event counter	6	Mvt state	No mvt
Raw data:				Raw data:			
0x0201060516062A070004163F2A010D0950204D4F5620423030353537				0x02010606FF5707420C000D0950204D4F5620423030353537			
Details:				Details:			
LEN.	TYPE	VALUE		LEN.	TYPE	VALUE	
2	0x01	0x06		2	0x01	0x06	
5	0x16	0x062A0700		6	0xFF	0x5707420C00	
4	0x16	0x3F2A01		13	0x09	0x50204D4F5620423030353537	
13	0x09	0x50204D4F5620423030353537					

g. "ANG" format

Frame type		Service Data	Mfr Spec. Data
Version		≥1.0.0	≥2.0.0
Frame bytes	1	Length : 0x02	Length : 0x02
	2	Type : 0x01	Type : 0x01
	3	Data : 0x06	Data : 0x06
	4	Length : 0x09	Length : 0x0A
	5	Type : 0x16	Type: 0xFF
	6	MAG 3D carac. LSB : 0xA1	ELA_CIN_LSB : 0x57
	7	MAG 3D carac. MSB : 0x2A	ELA_CIN_MSB: 0x07
	8	Accel. Data X axis (mg) LSB	ANG_DATA_ID: 0x56
	9	Accel. Data X axis (mg) MSB	Accel. Data X axis (mg) LSB
	10	Accel. Data Y axis (mg) LSB	Accel. Data X axis (mg) MSB
	11	Accel. Data Y axis (mg) MSB	Accel. Data Y axis (mg) LSB
	12	Accel. Data Z axis (mg) LSB	Accel. Data Y axis (mg) MSB
	13	Accel. Data Z axis (mg) MSB	Accel. Data Z axis (mg) LSB
	14	Length : ≤0x10	Accel. Data Z axis (mg) MSB
	15	Type : 0x09	Length : ≤0x10
	16	Name[0]	Type : 0x09
	17	Name[1]	Name[0]
	18	Name[2]	Name[1]
	19	Name[3]	Name[2]
	20	Name[4]	Name[3]
	21	Name[5]	Name[4]
	22	Name[6]	Name[5]
	23	Name[7]	Name[6]
	24	Name[8]	Name[7]
	25	Name[9]	Name[8]
	26	Name[10]	Name[9]
	27	Name[11]	Name[10]
	28	Name[12]	Name[11]
	29	Name[13]	Name[12]
	30	Name[14]	Name[13]
	31	Not used	Name[14]

Frame example

Received frame : ELA ANG, Service Data		Received frame : ELA ANG, MFR Spec. Data																									
Name	P MOV B00557	Name	P MOV B00557																								
Accel. X axis	0xFFB9 = -71 mg	Accel. X axis	0xFFB8 = -72mg																								
Accel. Y axis	0x0007 = 7 mg	Accel. Y axis	0xFFEC = -20mg																								
Accel. Z axis	0x0484 = 1156 mg	Accel. Z axis	0xFCAC = -852 mg																								
Raw data: 0x0201060916A12AB9FF070084040D0950204D4F5620423030353537		Raw data: 0x0201060AFF570756B8FFECFFACFC0D0950204D4F5620423030353537																									
Details: <table><tr><th>LEN.</th><th>TYPE</th><th>VALUE</th></tr><tr><td>2</td><td>0x01</td><td>0x06</td></tr><tr><td>9</td><td>0x16</td><td>0xA12AB9FF07008404</td></tr><tr><td>13</td><td>0x09</td><td>0x50204D4F5620423030353537</td></tr></table>		LEN.	TYPE	VALUE	2	0x01	0x06	9	0x16	0xA12AB9FF07008404	13	0x09	0x50204D4F5620423030353537	Details: <table><tr><th>LEN.</th><th>TYPE</th><th>VALUE</th></tr><tr><td>2</td><td>0x01</td><td>0x06</td></tr><tr><td>10</td><td>0xFF</td><td>0x570756B8FFECFFACFC</td></tr><tr><td>13</td><td>0x09</td><td>0x50204D4F5620423030353537</td></tr></table>		LEN.	TYPE	VALUE	2	0x01	0x06	10	0xFF	0x570756B8FFECFFACFC	13	0x09	0x50204D4F5620423030353537
LEN.	TYPE	VALUE																									
2	0x01	0x06																									
9	0x16	0xA12AB9FF07008404																									
13	0x09	0x50204D4F5620423030353537																									
LEN.	TYPE	VALUE																									
2	0x01	0x06																									
10	0xFF	0x570756B8FFECFFACFC																									
13	0x09	0x50204D4F5620423030353537																									
ANG Data Name																											

h. "DI" format (Digital Input)

Frame type		Service Data	Mfr Spec. Data
Version		≥2.0.0	≥2.0.0
Frame bytes	1	Length : 0x02	Length : 0x02
	2	Type : 0x01	Type : 0x01
	3	Data : 0x06	Data : 0x06
	4	Length : 0x05	Length : 0x06
	5	Type : 0x16	Type: 0xFF
	6	Alert Level carac. LSB : 0x06	ELA_CIN_LSB : 0x57
	7	Alert Level carac. MSB : 0x2A	ELA_CIN_MSB: 0x07
	8	DI Data (cnt + state) LSB	DIGI_IN_DATA_ID: 0x62
	9	DI Data (cnt + state) MSB	DI Data (cnt + state) LSB
	10	Length : 0x04	DI Data (cnt + state) MSB
	11	Type : 0x16	Length : ≤0x10
	12	Alert Status carac. LSB : 0x3F	Type : 0x09
	13	Alert Status carac. MSB: 0x2A	Name[0]
	14	Data : 0x02	Name[1]
	15	Length : ≤0x10	Name[2]
	16	Type : 0x09	Name[3]
	17	Name[0]	Name[4]
	18	Name[1]	Name[5]
	19	Name[2]	Name[6]
	20	Name[3]	Name[7]
	21	Name[4]	Name[8]
	22	Name[5]	Name[9]
	23	Name[6]	Name[10]
	24	Name[7]	Name[11]
	25	Name[8]	Name[12]
	26	Name[9]	Name[13]
	27	Name[10]	Name[14]
	28	Name[11]	Not used
	29	Name[12]	Not used
	30	Name[13]	Not used
	31	Name[14]	Not used

Frame example

Received frame : ELA DI, V3.0.0, Service Data				Received frame : ELA DI, V3.0.0, MFR Spec. Data					
Name		BE_TEST_TORIN		Name		BE_TEST_TORIN			
Evt. counter		5	Input state	Released	Evt. counter		5	Input state	Released
Raw data:					Raw data:				
0x0201060516062A0A0004163F2A020E0942455F544553545F544F52494E					0x02010606FF5707620A000E0942455F544553545F544F52494E				
Details:					Details:				
LEN.	TYPE	VALUE			LEN.	TYPE	VALUE		
2	0x01	0x06			2	0x01	0x06		
5	0x16	0x062A0A00			6	0xFF	0x5707620A00		
4	0x16	0x3F2A02			14	0x09	0x42455F544553545F544F52494E		
14	0x09	0x42455F544553545F544F52494E							

DIGI_IN Data

ELA DIGI_IN ID

Name

i. "PIR" format

Frame type		Service Data	Mfr Spec. Data
Version		≥3.0.1	≥3.0.1
Octets frame	1	Length: 0x02	Length: 0x02
	2	Type : 0x01	Type : 0x01
	3	Data : 0x06	Data : 0x06
	4	Length: 0x05	Length: 0x06
	5	Type : 0x16	Type: 0xFF
	6	Rainfall Carac. LSB : 0x78	ELA_CIN_LSB : 0x57
	7	Rainfall Carac. MSB : 0x2A	ELA_CIN_MSB: 0x07
	8	PIR Data (cnt + state) LSB	PIR_DATA_ID: 0x92
	9	PIR Data (cnt + state) MSB	PIR Data (cnt + state) LSB
	10	Length: ≤0x0F	PIR Data (cnt + state) MSB
	11	Type : 0x09	Length: ≤0x0F
	12	Name[0]	Type : 0x09
	13	Name[1]	Name[0]
	14	Name[2]	Name[1]
	15	Name[3]	Name[2]
	16	Name[4]	Name[3]
	17	Name[5]	Name[4]
	18	Name[6]	Name[5]
	19	Name[7]	Name[6]
	20	Name[8]	Name[7]
	21	Name[9]	Name[8]
	22	Name[10]	Name[9]
	23	Name[11]	Name[10]
	24	Name[12]	Name[11]
	25	Name[13]	Name[12]
	26	Name[14]	Name[13]
	27	Not used	Name[14]
	28	Not used	Not used
	29	Not used	Not used
	30	Not used	Not used
	31	Not used	Not used

Frame example

Received frame : ELA PIR, V3.0.1, Service Data				Received frame : ELA PIR, V3.0.1, MFR Spec. Data																											
Name		ELA_PUCK_PIR_01		Name		ELA_PUCK_PIR_01																									
Evt. counter	13	Mouvement state	Detected	Evt. counter	78	Mouvement state	Not detected																								
Raw data: 0x0201060516782A1B001009454C415F5055434B5F5049525F3031				Raw data: 0x02010606FF5707929C001009454C415F5055434B5F5049525F3031																											
Details:<table><tr><th>LEN.</th><th>TYPE</th><th>VALUE</th></tr><tr><td>2</td><td>0x01</td><td>0x06</td></tr><tr><td>5</td><td>0x16</td><td>0x782A1B00</td></tr><tr><td>16</td><td>0x09</td><td>0x454C415F5055434B5F5049525F3031</td></tr></table>				LEN.	TYPE	VALUE	2	0x01	0x06	5	0x16	0x782A1B00	16	0x09	0x454C415F5055434B5F5049525F3031	Details:<table><tr><th>LEN.</th><th>TYPE</th><th>VALUE</th></tr><tr><td>2</td><td>0x01</td><td>0x06</td></tr><tr><td>6</td><td>0xFF</td><td>0x5707929C00</td></tr><tr><td>16</td><td>0x09</td><td>0x454C415F5055434B5F5049525F3031</td></tr></table>				LEN.	TYPE	VALUE	2	0x01	0x06	6	0xFF	0x5707929C00	16	0x09	0x454C415F5055434B5F5049525F3031
LEN.	TYPE	VALUE																													
2	0x01	0x06																													
5	0x16	0x782A1B00																													
16	0x09	0x454C415F5055434B5F5049525F3031																													
LEN.	TYPE	VALUE																													
2	0x01	0x06																													
6	0xFF	0x5707929C00																													
16	0x09	0x454C415F5055434B5F5049525F3031																													
PIR Data				PIR Data																											
Name				Name																											

- j. "Touch" format

Frame type		Service Data (Legacy)	Mfr Spec. Data (Legacy)	iBeacon format
Version		≥4.1.1	≥4.1.1	≥4.1.1
Octets frame	1	Length: 0x02	Length: 0x02	Length : 0x02
	2	Type : 0x01	Type : 0x01	Type : 0x01
	3	Data : 0x06	Data : 0x06	Data : 0x06
	4	Length: 0x05	Length: 0x06	Length : 0x1A
	5	Type : 0x16	Type: 0xFF	Type : 0xFF
	6	Altitude Carac. LSB : 0xB3	ELA_CIN_LSB : 0x57	Apple CIN_LSB : 0x4C
	7	Altitude Carac. MSB : 0x2A	ELA_CIN_MSB: 0x07	Apple CIN_MSB : 0x00
	8	Touch Data (cnt + state) LSB	TOUCH_DATA_ID: 0xB2	Beacon type : 0x02
	9	Touch Data (cnt + state) MSB	Touch Data (cnt + state) LSB	Data size : 0x15
	10	Length: ≤0x0F	Touch Data (cnt + state) MSB	Touch_Fixed_ID[0]: 0x45
	11	Type : 0x09	Length: ≤0x0F	Touch_Fixed_ID[1]: 0x4C
	12	Name[0]	Type : 0x09	Touch_Fixed_ID[2]: 0x41
	13	Name[1]	Name[0]	Touch_Fixed_ID[3]: 0x20
	14	Name[2]	Name[1]	Touch_Fixed_ID[4]: 0x49
	15	Name[3]	Name[2]	Touch_Fixed_ID[5]: 0x4E
	16	Name[4]	Name[3]	Touch_Fixed_ID[6]: 0x4E
	17	Name[5]	Name[4]	Touch_Fixed_ID[7]: 0x4F
	18	Name[6]	Name[5]	Touch_Fixed_ID[8]: 0x56
	19	Name[7]	Name[6]	Touch_Fixed_ID[9]: 0x41
	20	Name[8]	Name[7]	Touch_Fixed_ID[10]: 0x54
	21	Name[9]	Name[8]	Touch_Fixed_ID[11]: 0x49
	22	Name[10]	Name[9]	Touch_Fixed_ID[12]: 0x4F
	23	Name[11]	Name[10]	Touch_Fixed_ID[13]: 0x4E
	24	Name[12]	Name[11]	Touch_Fixed_ID[14]: 0x20
	25	Name[13]	Name[12]	Touch_State
	26	Name[14]	Name[13]	Touch_Major[0]: 0x32
	27	Not used	Name[14]	Touch_Major[1]: 0x34
	28	Not used	Not used	Touch_Serial_ID[0]
	29	Not used	Not used	Touch_Serial_ID[1]
	30	Not used	Not used	Power TX at 1m
	31	Not used	Not used	Not used

Frame type		Scan Response
Version		All
Frame Bytes	1	Length : ≤0x10
	2	Type : 0x09
	3	Name[0]
	4	Name[1]
	5	Name[2]
	6	Name[3]
	7	Name[4]
	8	Name[5]
	9	Name[6]
	10	Name[7]
	11	Name[8]
	12	Name[9]
	13	Name[10]
	14	Name[11]
	15	Name[12]
	16	Name[13]
	17	Name[14]

Frame example

[illegible]