

Bluetooth **LOW ENERGY**

Frames Specifications

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1. Information about this document

This document will feature the Bluetooth frame specifications for ELA Innovation Blue range of products.

To improve readability, the frame specifications will display:

- Established Bluetooth fields highlighted in *blue*.
- User-configurable fields highlighted in *green*.
- Non-configurable Tag information fields highlighted in *orange*.

2. BLE references

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

3. Applicable products



Blue PUCK ID IDF25240
Blue PUCK T IDF25241
Blue PUCK RHT IDF25242
Blue PUCK MAG IDF25243
Blue PUCK MOV IDF25244
Blue PUCK BUZZ IDF25245
Blue PUCK DI IDF25246
Blue PUCK AI IDF25248
Blue PUCK DO IDF25247

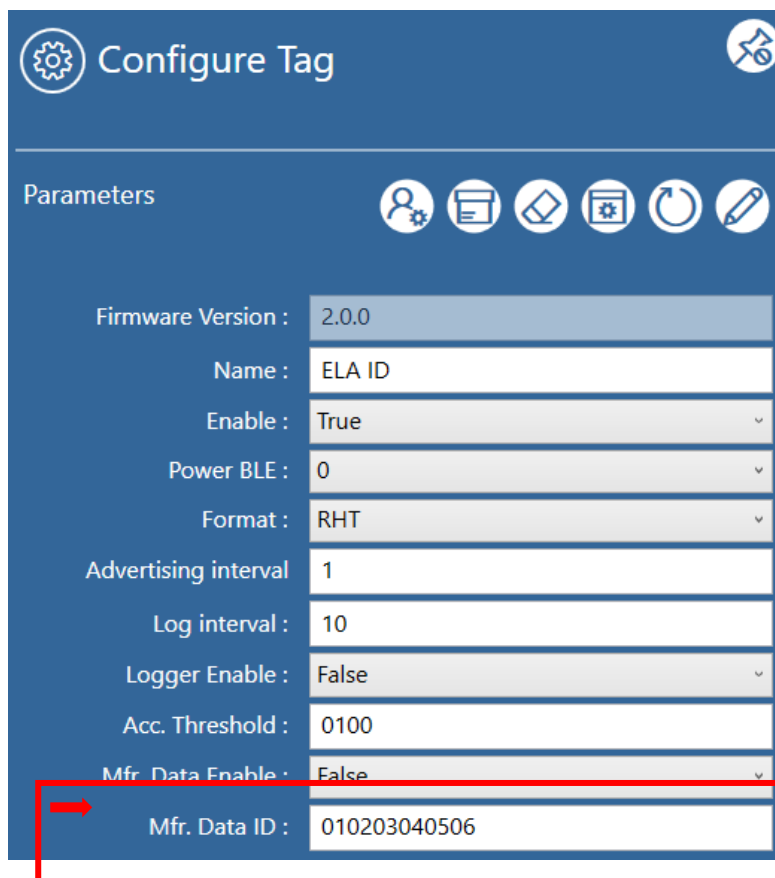
Blue COIN ID IDF10240
Blue COIN T IDF10241
Blue COIN MAG IDF10243
Blue COIN MOV IDF10244

Blue SLIM ID IDF03240

4. « Service data » and « Manufacturer Specific Data »

With the release of the tag firmware version 2.0.0, it is now possible to send ELA sensor and ID data through « Manufacturer Specific Data ». 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.



Configure Tag

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.

5. « 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 scanning device, 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.

Service data

Version v0.3

BLE Frames - Service data

Frame formats - BLE ELA ID - Service datas - version v0.3				
	ELA Id	iBeacon (uneditable)	Eddystone (uneditable)	
Frame bytes	1	Length : 2	Length : 2	
	2	Type : 0x01	Type : 0x01	
	3	Data : 0x04	Data : 0x04	
	4	Length : 4	Length : 26	
	5	Type : 0x16	Type : 0xFF	
	6	Battery Service : 0x0F	Company Id : 0x00	EDDYSTONE_UUID : 0xAA
	7	Battery Service : 0x18	Company Id : 0x4C	EDDYSTONE_UUID : 0xFE
	8	Battery data (%)	Beacon type : 0x02	Length : 23
	9	Length : 16	Data size : 0x15	Type : 0x16
	10	Type : 0x09	UUID	EDDYSTONE UUID : 0xAA
	11	Name	UUID	EDDYSTONE UUID : 0xFE
	12	Name	UUID	Frame Type UID : 0x00
	13	Name	UUID	Tx Power at 0m
	14	Name	UUID	NID
	15	Name	UUID	NID
	16	Name	UUID	NID
	17	Name	UUID	NID
	18	Name	UUID	NID
	19	Name	UUID	NID
	20	Name	UUID	NID
	21	Name	UUID	NID
	22	Name	UUID	NID
	23	Name	UUID	NID
	24	Name	UUID	BID
	25	Name	UUID	BID
	26	Free	Major Value	BID
	27	Free	Major Value	BID
	28	Free	Minor Value	BID
	29	Free	Minor Value	BID
	30	Free	TX Power at 1m	Reserved
	31	Free	Free	Reserved

Sample received frame with nRF Connect (ELA ID) :

Raw data:

0x02010404160F186410095055434B4
944454C41494E4E4F5631

Details:

LEN.	TYPE	VALUE
2	0x01	0x04
4	0x16	0x0F1864
16	0x09	0x5055434B4944454C41494E4E4F5631

Battery

Name

Frame formats - BLE ELA Sensors - Service data - version v0.3

	ELA T	ELA RHT	ELA MAG	ELA MOV	ELA ANG
Frame bytes	1	Length : 2	Not implemented	Not implemented	Not implemented
	2	Type : 0x01			
	3	Data : 0x04			
	4	Length : 4			
	5	Type : 0x16			
	6	Battery Service : 0x0F			
	7	Battery Service : 0x18			
	8	Battery data (%)			
	9	Length : 5			
	10	Type : 0x16			
	11	Temperature service : 0x09			
	12	Temperature service : 0x18			
	13	T (0.01°C) data LSB			
	14	T (0.01°C) data MSB			
	15	Length : 16			
	16	Type : 0x09			
	17	Name			
	18	Name			
	19	Name			
	20	Name			
	21	Name			
	22	Name			
	23	Name			
	24	Name			
	25	Name			
	26	Name			
	27	Name			
	28	Name			
	29	Name			
	30	Name			
	31	Name			

Sample received frame with nRF Connect (ELA T - 26.12°C) :

Raw data:

```
0x02010404160F186405160918340A1
0095055434B54454C41494E4E4F5631
32
```

Details:

LEN.	TYPE	VALUE
2	0x01	0x04
4	0x16	0x0F1864
5	0x16	0x0918340A
16	0x09	0x5055434B54454C41494E4E4F563132

- Battery
- T° data
- Name

Version v0.7

Ble frames - Service data

About this version :

- 1) When battery capacity drops below 15%, the battery service is sent in the ELA ID and ELA T frames. It is located just before the Name in the frame (See ID format in version 0.3 for ID example, and next page for T example).
- 2) The device can send the « Scan Response », which contains Nordic UART service (abbreviated NUS) on 128 bits. This service is used to send a command to the tag or receive data from it (see Application Note on Datalogger Feature on ELA Website). It is not mandatory to consider this « SR » frame, it can be ignored.

Frame formats - BLE ELA ID - Service datas - version v0.7			
	ELA Id	iBeacon	Eddystone
Frame bytes	1	Length : 2	Length : 2
	2	Type : 0x01	Type : 0x01
	3	Data : 0x06	Data : 0x04
	4	Length : 16	Length : 26
	5	Type : 0x09	Type : 0xFF
	6	Name	Company Id : 0x00
	7	Name	Company Id : 0x4C
	8	Name	Beacon type : 0x02
	9	Name	Data size : 0x15
	10	Name	UUID
	11	Name	UUID
	12	Name	UUID
	13	Name	UUID
	14	Name	UUID
	15	Name	UUID
	16	Name	UUID
	17	Name	UUID
	18	Name	UUID
	19	Name	UUID
	20	Name	UUID
	21	Free	UUID
	22	Free	UUID
	23	Free	UUID
	24	Free	UUID
	25	Free	UUID
	26	Free	Major Value
	27	Free	Major Value
	28	Free	Minor Value
	29	Free	Minor Value
	30	Free	TX Power at 1m
	31	Free	Free

Frame formats - BLE ELA Sensors - Service data - version v0.7

	ELA T	ELA RHT	ELA MAG	ELA MOV	ELA ANG
Frame bytes	1	Length : 2	Not implemented	Not implemented	Not implemented
	2	Type : 0x01			
	3	Data : 0x06			
	4	Length : 5			
	5	Type : 0x16			
	6	T° Charac. : 0x6E			
	7	T° Charac. : 0x2A			
	8	T (0.01°C) data LSB			
	9	T (0.01°C) data MSB			
	10	Length : 16			
	11	Type : 0x09			
	12	Name			
	13	Name			
	14	Name			
	15	Name			
	16	Name			
	17	Name			
	18	Name			
	19	Name			
	20	Name			
	21	Name			
	22	Name			
	23	Name			
	24	Name			
	25	Name			
	26	Name			
	27	Free			
	28	Free			
	29	Free			
	30	Free			
	31	Free			

Sample received frame (ELA T – 26.87°C) :

Sample received frame (ELA T – 27.18°C) with 2% battery :

Raw data:

```
0x02010605166E2A7F0A1009424C55
455055434B5438303041313211079EC
ADC240EE5A9E093F3A3B50100406E
```

Details:

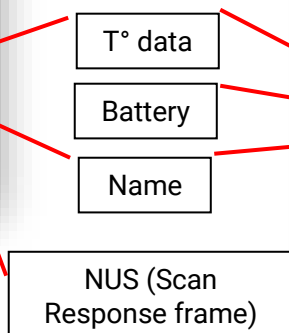
LEN.	TYPE	VALUE
2	0x01	0x06
5	0x16	0x6E2A7F0A
16	0x09	0x424C55455055434B54383030413132
17	0x07	0x9ECADC240EE5A9E093F3A3B50100406E

Raw data:

```
0x02010605166E2A9E0A04160F18021
009424C55455055434B543830304131
3211079ECADC240EE5A9E093F3A3B5
0100406E
```

Details:

LEN.	TYPE	VALUE
2	0x01	0x06
5	0x16	0x6E2A9E0A
4	0x16	0x0F1802
16	0x09	0x424C55455055434B54383030413132
17	0x07	0x9ECADC240EE5A9E093F3A3B50100406E



Version v0.8

BLE frames - Service data

About this version :

- 1) When battery capacity drops below 15%, the battery service is sent in the ELA ID and ELA T frames. It is located just before the Name in the frame (See ID format in version 0.3 for ID example, and T format in version 0.7 for T example).
- 2) The device can send the « Scan Response », which contains Nordic UART service (abbreviated NUS) on 128 bits. **This frame is sent only in ELA T format.** This service is used to send a command to the tag or receive data from it (see Application Note on Datalogger Feature on ELA Website)). It is not mandatory to consider this « SR » frame, it can be ignored.

Frame formats - BLE ELA ID - Service data - version v0.8			
	ELA Id	iBeacon	Eddystone
Frame bytes	1	Length : 2	Length : 2
	2	Type : 0x01	Type : 0x01
	3	Data : 0x04	Data : 0x04
	4	Length : 16	Length : 26
	5	Type : 0x09	Type : 0xFF
	6	Name	Company Id : 0x00
	7	Name	Company Id : 0x4C
	8	Name	Beacon type : 0x02
	9	Name	Data size : 0x15
	10	Name	UUID
	11	Name	UUID
	12	Name	UUID
	13	Name	UUID
	14	Name	UUID
	15	Name	UUID
	16	Name	UUID
	17	Name	UUID
	18	Name	UUID
	19	Name	UUID
	20	Name	UUID
	21	Free	UUID
	22	Free	UUID
	23	Free	UUID
	24	Free	UUID
	25	Free	UUID
	26	Free	Major Value
	27	Free	Major Value
	28	Free	Minor Value
	29	Free	Minor Value
	30	Free	TX Power at 1m
	31	Free	Free

Frame formats - BLE ELA Sensors - Service data - version v0.8

	ELA T	ELA RHT	ELA MAG	ELA MOV	ELA ANG
Frame bytes	1	Length : 2	Not implemented	Not implemented	Not implemented
	2	Type : 0x01			
	3	Data : 0x06			
	4	Length : 5			
	5	Type : 0x16			
	6	T° Charac. : 0x6E			
	7	T° Charac. : 0x2A			
	8	T (0.01°C) data LSB			
	9	T (0.01°C) data MSB			
	10	Length : 16			
	11	Type : 0x09			
	12	Name			
	13	Name			
	14	Name			
	15	Name			
	16	Name			
	17	Name			
	18	Name			
	19	Name			
	20	Name			
	21	Name			
	22	Name			
	23	Name			
	24	Name			
	25	Name			
	26	Name			
	27	Free			
	28	Free			
	29	Free			
	30	Free			
	31	Free			

Sample received frame (ELA T - 26.87°C) :

Sample received frame (ELA T - 27.18°C) with 2% battery :

Raw data:

```
0x02010605166E2A7F0A1009424C55
455055434B5438303041313211079EC
ADC240EE5A9E093F3A3B50100406E
```

Details:

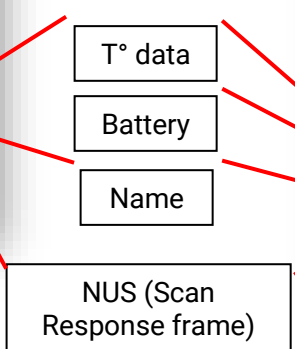
LEN.	TYPE	VALUE
2	0x01	0x06
5	0x16	0x6E2A7F0A
16	0x09	0x424C55455055434B54383030413132
17	0x07	0x9ECADC240EE5A9E093F3A3B50100406E

Raw data:

```
0x02010605166E2A9E0A04160F18021
009424C55455055434B543830304131
3211079ECADC240EE5A9E093F3A3B5
0100406E
```

Details:

LEN.	TYPE	VALUE
2	0x01	0x06
5	0x16	0x6E2A9E0A
4	0x16	0x0F1802
16	0x09	0x424C55455055434B54383030413132
17	0x07	0x9ECADC240EE5A9E093F3A3B50100406E



Version v1.0.0

BLE frames - Service data

About this version :

- 1) When battery capacity drops below 15%, the Battery service is sent in the « Scan Response » frame. This is true for all formats.
- 2) The NORDIC UART Service (NUS) is no longer sent in the « Scan Response ».

Frame formats - BLE ELA ID - Service data - version v1.0.0			
	ELA Id	iBeacon	Eddystone
Frame bytes	1	Length : 2	Length : 2
	2	Type : 0x01	Type : 0x01
	3	Data : 0x06	Data : 0x04
	4	Length : 16	Length : 26
	5	Type : 0x09	Type : 0xFF
	6	Name	Company Id : 0x00
	7	Name	Company Id : 0x4C
	8	Name	Beacon type : 0x02
	9	Name	Data size : 0x15
	10	Name	UUID
	11	Name	UUID
	12	Name	UUID
	13	Name	UUID
	14	Name	UUID
	15	Name	UUID
	16	Name	UUID
	17	Name	UUID
	18	Name	UUID
	19	Name	UUID
	20	Name	UUID
	21	Free	UUID
	22	Free	UUID
	23	Free	UUID
	24	Free	UUID
	25	Free	UUID
	26	Free	Major Value
	27	Free	Major Value
	28	Free	Minor Value
	29	Free	Minor Value
	30	Free	TX Power at 1m
	31	Free	Free

Sample received frame (ELA Id) :

Raw data:

0x020106100942455F544553545F4B204
944204139

Details:

LEN.	TYPE	VALUE
2	0x01	0x06
16	0x09	0x42455F544553545F4B204944204139

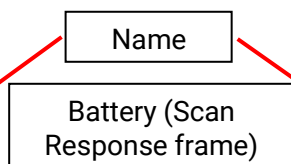
Sample received frame (ELA Id) with 8% battery :

Raw data:

0x020106100942455F544553545F4B204
94420413904160F1808

Details:

LEN.	TYPE	VALUE
2	0x01	0x06
16	0x09	0x42455F544553545F4B204944204139
4	0x16	0x0F1808



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Frame formats - BLE ELA Sensors - Service data - version v1.0.0

	ELA T	ELA RHT	ELA MAG	ELA MOV	ELA ANG	
Frame bytes	1	Length : 2	Length : 2	Length : 2	Length : 2	
	2	Type : 0x01	Type : 0x01	Type : 0x01	Type : 0x01	
	3	Data : 0x06	Data : 0x06	Data : 0x06	Data : 0x06	
	4	Length : 5	Length : 5	Length : 5	Length : 5	
	5	Type : 0x16	Type : 0x16	Type : 0x16	Type : 0x16	
	6	T° Charac. : 0x6E	T° Charac. : 0x6E	Alert Charac : 0x06	Alert Charac : 0x06	ANG Service : 0xA1
	7	T° Charac. : 0x2A	T° Charac. : 0x2A	Alert Charac : 0x2A	Alert Charac : 0x2A	ANG Service : 0x2A
	8	T (0.01°C) data LSB	T (0.01°C) data LSB	MAG (cnt+state) data LSB	MOV (cnt+state) data LSB	X-axis (mg) data LSB
	9	T (0.01°C) data MSB	T (0.01°C) data MSB	MAG (cnt+state) data MSB	MOV (cnt+state) data MSB	X-axis (mg) data MSB
	10	Length : 16	Length : 4	Length : 16	Length : 16	Y-axis (mg) data LSB
	11	Type : 0x09	Type : 0x16	Type : 0x09	Type : 0x09	Y-axis (mg) data MSB
	12	Name	RH Charac. : 0x6F	Name	Name	Z-axis (mg) data LSB
	13	Name	RH Charac. : 0x2A	Name	Name	Z-axis (mg) data MSB
	14	Name	RH (%) data	Name	Name	Length : 16
	15	Name	Length : 16	Name	Name	Type : 0x09
	16	Name	Type : 0x09	Name	Name	Name
	17	Name	Name	Name	Name	Name
	18	Name	Name	Name	Name	Name
	19	Name	Name	Name	Name	Name
	20	Name	Name	Name	Name	Name
	21	Name	Name	Name	Name	Name
	22	Name	Name	Name	Name	Name
	23	Name	Name	Name	Name	Name
	24	Name	Name	Name	Name	Name
	25	Name	Name	Name	Name	Name
	26	Name	Name	Name	Name	Name
	27	Free	Name	Free	Free	Name
	28	Free	Name	Free	Free	Name
	29	Free	Name	Free	Free	Name
	30	Free	Name	Free	Free	Name
	31	Free	Name	Free	Free	Free

Sample received frame (ELA T - 27.31°C) :

Sample received frame (ELA RHT - 26.54°C 30%) :

Raw data:
0x02010605166E2AAB0A1009425055
434B53543830304131324E41

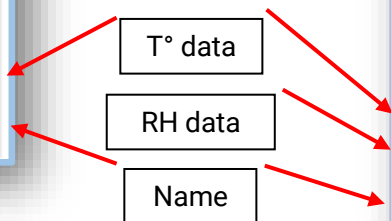
Details:

LEN.	TYPE	VALUE
2	0x01	0x06
5	0x16	0x6E2AAB0A
16	0x09	0x425055434B53543830304131324E41

Raw data:
0x02010605166E2A5E0A04166F2A301
009425055434B53543830304131324E
41

Details:

LEN.	TYPE	VALUE
2	0x01	0x06
5	0x16	0x6E2A5E0A
4	0x16	0x6F2A30
16	0x09	0x425055434B53543830304131324E41



Version v2.0.0

BLE frames - Service data

About this version :

- 1) The battery service (when battery <15%) is still sent in the « Scan Response » for all formats.
- 2) In iBeacon / Eddystone formats, the tag Name is sent the « SR » frame (located after Battery info).

Frame formats - BLE ELA - Service data - version v2.0.0			
	ELA Id	iBeacon	Eddystone
Frame bytes	1	Length : 2	Length : 2
	2	Type : 0x01	Type : 0x01
	3	Data : 0x06	Data : 0x04
	4	Length : 16	Length : 26
	5	Type : 0x09	Type : 0xFF
	6	Name	Company Id : 0x00
	7	Name	Company Id : 0x4C
	8	Name	Beacon type : 0x02
	9	Name	Data size : 0x15
	10	Name	UUID
	11	Name	UUID
	12	Name	UUID
	13	Name	UUID
	14	Name	UUID
	15	Name	UUID
	16	Name	UUID
	17	Name	UUID
	18	Name	UUID
	19	Name	UUID
	20	Name	UUID
	21	Free	UUID
	22	Free	UUID
	23	Free	UUID
	24	Free	UUID
	25	Free	UUID
	26	Free	Major Value
	27	Free	Major Value
	28	Free	Minor Value
	29	Free	Minor Value
	30	Free	TX Power at 1m
	31	Free	Free

Sample received frame (ELA Id) with 8% battery :

Sample received frame (iBeacon) with 9% battery :

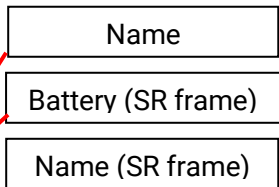
Raw data:

```
0x0201060B0942455F544553545F49440
4160F1808
```

```
0x0201041AFF4C0002150102030405060
708090A0B0C0D0E0F10020B010AC4041
60F1809100942455F544553545F494245
41434F4E
```

Details:

LEN.	TYPE	VALUE
2	0x01	0x06
11	0x09	0x42455F544553545F4944
4	0x16	0x0F1808



Details:

LEN.	TYPE	VALUE
2	0x01	0x04
26	0xFF	0x4C0002150102030405060708090A0B0C0D0E0F10020B010AC4
4	0x16	0x0F1809
16	0x09	0x42455F544553545F49424541434F4E

Frame formats - BLE ELA - Service data - version v2.0.0

	ELA T	ELA RHT	ELA MAG	ELA MOV
Frame bytes	1	Length : 2	Length : 2	Length : 2
	2	Type : 0x01	Type : 0x01	Type : 0x01
	3	Data : 0x06	Data : 0x06	Data : 0x06
	4	Length : 5	Length : 5	Length : 5
	5	Type : 0x16	Type : 0x16	Type : 0x16
	6	T° Charac. : 0x6E	T° Charac. : 0x6E	Alert Charac : 0x06
	7	T° Charac. : 0x2A	T° Charac. : 0x2A	Alert Charac : 0x2A
	8	T (0.01°C) data LSB	T (0.01°C) data LSB	MAG (cnt + state) data LSB
	9	T (0.01°C) data MSB	T (0.01°C) data MSB	MAG (cnt + state) data MSB
	10	Length : 16	Length : 4	Length : 4
	11	Type : 0x09	Type : 0x16	Type : 0x16
	12	Name	RH Charac. : 0x6F	Alert Status Charac. : 0x3F
	13	Name	RH Charac. : 0x2A	Alert Status Charac. : 0x2A
	14	Name	RH (%) data	Data : 0x00
	15	Name	Length : 16	Length : 16
	16	Name	Type : 0x09	Type : 0x09
	17	Name	Name	Name
	18	Name	Name	Name
	19	Name	Name	Name
	20	Name	Name	Name
	21	Name	Name	Name
	22	Name	Name	Name
	23	Name	Name	Name
	24	Name	Name	Name
	25	Name	Name	Name
	26	Name	Name	Name
	27	Free	Name	Name
	28	Free	Name	Name
	29	Free	Name	Name
	30	Free	Name	Name
	31	Free	Name	Name

Sample received frame (ELA T - 25.75°C) :

Raw data:

0x02010605166E2A0F0A0B0942455F544
553545F4944

Details:

LEN.	TYPE	VALUE
2	0x01	0x06
5	0x16	0x6E2A0F0A
11	0x09	0x42455F544553545F4944

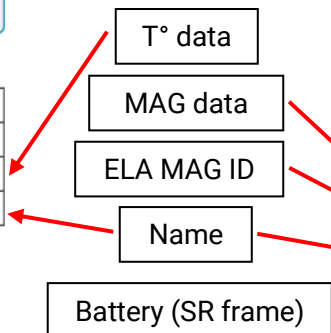
Sample received frame (ELA MAG) with 8% battery
(counter = 3 events, magnet not present) :

Raw data:

0x0201060516062A060004163F2A000B0
942455F544553545F494404160F1808

Details:

LEN.	TYPE	VALUE
2	0x01	0x06
5	0x16	0x062A0600
4	0x16	0x3F2A00
11	0x09	0x42455F544553545F4944
4	0x16	0x0F1808



Frame formats - BLE ELA - Service data - version v2.0.0

	ELA ANG	ELA TOR IN	ELA Analog IN	ELA TOR OUT	
Frame bytes	1	Length : 2	Length : 2	Length : 2	
	2	Type : 0x01	Type : 0x01	Type : 0x01	
	3	Data : 0x06	Data : 0x06	Data : 0x06	
	4	Length : 9	Length : 5	Length : 5	Length : 4
	5	Type : 0x16	Type : 0x16	Type : 0x16	Type : 0x16
	6	ANG Service : 0xA1	Alert Charac : 0x06	Analog Out Charac. : 0x58	Alert Status Charac. : 0x3F
	7	ANG Service : 0x2A	Alert Charac : 0x2A	Analog Out Charac. : 0x2A	Alert Status Charac. : 0x2A
	8	X-axis (mg) data LSB	TOR IN (cnt + state) data LSB	Analog meas. (mV) data LSB	Data : 0x03
	9	X-axis (mg) data MSB	TOR IN (cnt + state) data MSB	Analog meas. (mV) data MSB	Length : 16
	10	Y-axis (mg) data LSB	Length : 4	Length : 16	Type : 0x09
	11	Y-axis (mg) data MSB	Type : 0x16	Type : 0x09	Name
	12	Z-axis (mg) data LSB	Alert Status Charac. : 0x3F	Name	Name
	13	Z-axis (mg) data MSB	Alert Status Charac. : 0x2A	Name	Name
	14	Length : 16	Data : 0x02	Name	Name
	15	Type : 0x09	Length : 16	Name	Name
	16	Name	Type : 0x09	Name	Name
	17	Name	Name	Name	Name
	18	Name	Name	Name	Name
	19	Name	Name	Name	Name
	20	Name	Name	Name	Name
	21	Name	Name	Name	Name
	22	Name	Name	Name	Name
	23	Name	Name	Name	Name
	24	Name	Name	Name	Name
	25	Name	Name	Name	Name
	26	Name	Name	Name	Free
	27	Name	Name	Free	Free
	28	Name	Name	Free	Free
	29	Name	Name	Free	Free
	30	Name	Name	Free	Free
	31	Free	Name	Free	Free

Sample received frame (ELA ANG)
(X-axis : 3mg, Y-axis : 8mg, Z-axis : 1192mg) :

Sample received frame (ELA TOR IN)
(counter = 5 events, input released) :

Raw data:

```
0x0201060916A12A03000800A8040B094
2455F544553545F4944
```

Details:

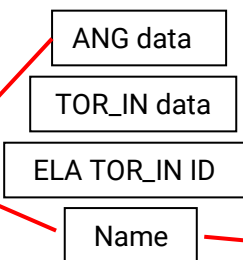
LEN.	TYPE	VALUE
2	0x01	0x06
9	0x16	0xA12A03000800A804
11	0x09	0x42455F544553545F4944

Raw data:

```
0x0201060516062A0A0004163F2A020E0
942455F544553545F544F52494E
```

Details:

LEN.	TYPE	VALUE
2	0x01	0x06
5	0x16	0x062A0A00
4	0x16	0x3F2A02
14	0x09	0x42455F544553545F544F52494E



Manufacturer Specific Data



Version v2.0.0

BLE frames - Manufacturer Specific data

About this version :

- 1) The ELA Company Identifier Number is 0x0757.
- 2) In ELA ID and TOR OUT formats, it is possible to enter a hexadecimal number (max 0xFFFFFFFFFFFF) that will be sent in the frame. This field is named « ID Manufacturer data » in NFC configuration. It is named « **MFR_ID** » in the frames formats of this document.
- 3) The battery service (when battery <15%) is still sent in the « Scan Response » for all formats. Its frame format in Manufacturer Specific data is the following :

Scan Response Frame format		
All formats		
Frame bytes	1	Length : 5
	2	Type : 0xFF
	3	ELA_CIN LSB : 0x57
	4	ELA_CIN MSB : 0x07
	5	0xF0 + Battery data length (1)
	6	Battery (%) data

Frame formats - BLE ELA - Manuf. Specific data - version v2.0.0				
	ELA Id	iBeacon	Eddystone	
Frame bytes	1	Length : 2	Length : 2	
	2	Type : 0x01	Type : 0x01	
	3	Data : 0x06	Data : 0x04	
	4	Length : 10	Length : 26	
	5	Type : 0xFF	Type : 0xFF	
	6	ELA_CIN LSB : 0x57	Company Id : 0x00	EDDYSTONE UUID : 0xAA
	7	ELA_CIN MSB : 0x07	Company Id : 0x4C	EDDYSTONE_UUID : 0xFE
	8	0x00 + MFR_ID length (6)	Beacon type : 0x02	Length : 23
	9	MFR_ID[0]	Data size : 0x15	Type : 0x16
	10	MFR_ID[1]	UUID	EDDYSTONE UUID : 0xAA
	11	MFR_ID[2]	UUID	EDDYSTONE UUID : 0xFE
	12	MFR_ID[3]	UUID	Frame Type UID : 0x00
	13	MFR_ID[4]	UUID	Tx Power at 0m
	14	MFR_ID[5]	UUID	NID
	15	Length : 16	UUID	NID
	16	Type : 0x09	UUID	NID
	17	Name	UUID	NID
	18	Name	UUID	NID
	19	Name	UUID	NID
	20	Name	UUID	NID
	21	Name	UUID	NID
	22	Name	UUID	NID
	23	Name	UUID	NID
	24	Name	UUID	BID
	25	Name	UUID	BID
	26	Name	Major Value	BID
	27	Name	Major Value	BID
	28	Name	Minor Value	BID
	29	Name	Minor Value	BID
	30	Name	TX Power at 1m	Reserved
	31	Name	Free	Reserved

Sample received frame (ELA ID)
(ID Manuf. Data : 0xAABBCCDDEEFF) :

Sample received frame (ELA ID) with 9% battery
(ID Manuf. Data : 0x010203040506) :

Raw data:

Raw data:

0x0201060AFF570706AABBCCDDEEFF0B
0942455F544553545F4944

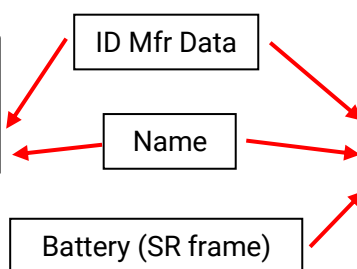
0x0201060AFF5707060102030405060B0
942455F544553545F494405FF5707F109

Details:

LEN.	TYPE	VALUE
2	0x01	0x06
10	0xFF	0x570706AABBCCDDEEFF
11	0x09	0x42455F544553545F4944

Details:

LEN.	TYPE	VALUE
2	0x01	0x06
10	0xFF	0x570706010203040506
11	0x09	0x42455F544553545F4944
5	0xFF	0x5707F109



Frame formats - BLE ELA - Manuf. Specific data - version v2.0.0

	ELA T	ELA RHT	ELA MAG	ELA MOV	
Frame bytes	1	Length : 2	Length : 2	Length : 2	
	2	Type : 0x01	Type : 0x01	Type : 0x01	
	3	Data : 0x06	Data : 0x06	Data : 0x06	
	4	Length : 6	Length : 8	Length : 6	Length : 6
	5	Type : 0xFF	Type : 0xFF	Type : 0xFF	Type : 0xFF
	6	ELA_CIN LSB : 0x57	ELA_CIN LSB : 0x57	ELA_CIN LSB : 0x57	ELA_CIN LSB : 0x57
	7	ELA_CIN MSB : 0x07	ELA_CIN MSB : 0x07	ELA_CIN MSB : 0x07	ELA_CIN MSB : 0x07
	8	0x10 + T data length (2)	0x20 + RH data length (1)	0x30 + MAG data length (2)	0x40 + MOV data length (2)
	9	T (0.01°C) data LSB	RH (%) data	MAG (cnt + state) data LSB	MOV (cnt + state) data LSB
	10	T (0.01°C) data MSB	0x10 + Length T° data (2)	MAG (cnt + state) data MSB	MOV (cnt + state) data MSB
	11	Length : 16	T (0.01°C) data LSB	Length : 16	Length : 16
	12	Type : 0x09	T (0.01°C) data MSB	Type : 0x09	Type : 0x09
	13	Name	Length : 16	Name	Name
	14	Name	Type : 0x09	Name	Name
	15	Name	Name	Name	Name
	16	Name	Name	Name	Name
	17	Name	Name	Name	Name
	18	Name	Name	Name	Name
	19	Name	Name	Name	Name
	20	Name	Name	Name	Name
	21	Name	Name	Name	Name
	22	Name	Name	Name	Name
	23	Name	Name	Name	Name
	24	Name	Name	Name	Name
	25	Name	Name	Name	Name
	26	Name	Name	Name	Name
	27	Name	Name	Name	Name
	28	Free	Name	Free	Free
	29	Free	Name	Free	Free
	30	Free	Free	Free	Free
	31	Free	Free	Free	Free

Sample received frame (ELA T - 26.37°C) :

Raw data:

0x02010606FF5707124D0A0B0942455F544553545F4944

Details:

LEN.	TYPE	VALUE
2	0x01	0x06
6	0xFF	0x5707124D0A
11	0x09	0x42455F544553545F4944

Sample received frame (ELA RHT – 26.67°C 45%) :

Raw data:

0x02010608FF5707212D126B0A0B0942455F544553545F4944

Details:

LEN.	TYPE	VALUE
2	0x01	0x06
8	0xFF	0x5707212D126B0A
11	0x09	0x42455F544553545F4944

T° data

° data

Name

Frame formats - BLE ELA - Manuf. Specific data - version v2.0.0

	ELA ANG	ELA TOR IN	ELA Analog IN	ELA TOR OUT	
Frame bytes	1	Length : 2	Length : 2	Length : 2	
	2	Type : 0x01	Type : 0x01	Type : 0x01	
	3	Data : 0x06	Data : 0x06	Data : 0x06	
	4	Length : 10	Length : 6	Length : 6	Length : 10
	5	Type : 0xFF	Type : 0xFF	Type : 0xFF	Type : 0xFF
	6	ELA_CIN_LSB : 0x57	ELA_CIN_LSB : 0x57	ELA_CIN_LSB : 0x57	ELA_CIN_LSB : 0x57
	7	ELA_CIN_MSB : 0x07	ELA_CIN_MSB : 0x07	ELA_CIN_MSB : 0x07	ELA_CIN_MSB : 0x07
	8	0x50 + ANG data length (6)	0x60 + TOR_IN data length (2)	0x70 + AN_IN data length (2)	0x80 + MFR_ID length (6)
	9	X-axis data LSB	TOR_IN (cnt + state) data LSB	Analog meas. (mV) data LSB	MFR_ID[0]
	10	X-axis data MSB	TOR_IN (cnt + state) data MSB	Analog meas. (mV) data MSB	MFR_ID[1]
	11	Y-axis data LSB	Length : 16	Length : 16	MFR_ID[2]
	12	Y-axis data MSB	Type : 0x09	Type : 0x09	MFR_ID[3]
	13	Z-axis data LSB	Name	Name	MFR_ID[4]
	14	Z-axis data MSB	Name	Name	MFR_ID[5]
	15	Length : 16	Name	Name	Length : 16
	16	Type : 0x09	Name	Name	Type : 0x09
	17	Name	Name	Name	Name
	18	Name	Name	Name	Name
	19	Name	Name	Name	Name
	20	Name	Name	Name	Name
	21	Name	Name	Name	Name
	22	Name	Name	Name	Name
	23	Name	Name	Name	Name
	24	Name	Name	Name	Name
	25	Name	Name	Name	Name
	26	Name	Name	Name	Name
	27	Name	Name	Name	Name
	28	Name	Free	Free	Name
	29	Name	Free	Free	Name
	30	Name	Free	Free	Name
	31	Name	Free	Free	Name

Sample received frame (ELA ANG)
(X-axis : -1mg, Y-axis : -25mg, Z-axis : 1185mg) :

Sample received frame (ELA TOR IN)
(counter = 5 events, input released) :

Raw data:

0x0201060AFF570756FFFE7FFA1040B09
42455F544553545F4944

Raw data:

0x02010606FF5707620A000E0942455F5
44553545F544F52494E

Details:

LEN.	TYPE	VALUE
2	0x01	0x06
10	0xFF	0x570756FFFE7FFA104
11	0x09	0x42455F544553545F4944

ANG data

TOR_IN data

Name

Details:

LEN.	TYPE	VALUE
2	0x01	0x06
6	0xFF	0x5707620A00
14	0x09	0x42455F544553545F544F52494E