

INGICS

iBS01 Payload Format

Mar, 2019
rev. 4

Sensor Tag Packet (iBS01/iBS01H/iBS01G)

AD1 Length (1 Byte)	AD1 Type (1 Byte)	AD1 Flags (1 Byte)	AD2 Length (1 Byte)	AD2 Type (Manufacturer Spec) (1 Byte)	Manufacturer Spec Data (17 Bytes < 26)
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MFG Code (2 Bytes)	Beacon Code/Type (2 Bytes)	Tag Batt (2 Bytes)	Event Status (1 Byte)	Reserved (2 Bytes)	Reserved (2 Bytes)	Reserved (6 Bytes)
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AD1 (Length, Type, Flags)	BLE Advertising Flags
AD2 Length	depends on payload length
AD2 Type	fixed to 0xFF (for manufacturer)
Manufacturer Spec Data	manufacturer defined payload (currently as 0x0059)

example:

02010612FF590080BC4D0100FFFFFFFFFFFFFFFFFFFFFFFF

Sensor Tag Packet (iBS01/iBS01H/iBS01G)

MFG Code (2 Bytes)	Beacon Code/Type (2 Bytes)	Tag Batt (2 Bytes)	Event Status (1 Byte)	Reserved (2 Bytes)	Reserved (2 Bytes)	Reserved (6 Bytes)
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* Endianness: little endian

Field	Description	Field Offset
MFG Code	Manufacturer vendor code, fixed	
Beacon Code and Type	Magic Code to identify packet format, fixed to 0xBC80	
Tag Batt	batt voltage of tag in 0.01v unit	
Event Status	8bits for 8 input: button: bit 0, moving: bit 1, hall sensor: bit 2, fall: bit 3	

example:

02010612FF590080BC4D0100FFFFFFFFFFFFFFFFFFFFFFFF

02010612FF590080BC4D0104FFFFFFFFFFFFFFFFFFFFFFFF → **Magnetic Active**

Reader Output Example(iBS01/iBS01H/iBS01G)

example:

\$GPRP,EAC653D3AA8D,CCB97E7361A4,-44,02010612FF590080BC4D0100FFFFFFFFFFFFFFFFFFFFFFFF

→ **Button Released, Not Moving, Hall Inactive (Magnet far away)**

\$GPRP,EAC653D3AA8D,CCB97E7361A4,-44,02010612FF590080BC4D0102FFFFFFFFFFFFFFFFFFFFFFFF

→ **Moving**

\$GPRP,EAC653D3AA8D,CCB97E7361A4,-43,02010612FF590080BC4D0100FFFFFFFFFFFFFFFFFFFFFFFF

\$GPRP,EAC653D3AA8D,CCB97E7361A4,-43,02010612FF590080BC4D0101FFFFFFFFFFFFFFFFFFFFFFFF

→ **Button Pressed**

\$GPRP,EAC653D3AA8D,CCB97E7361A4,-60,02010612FF590080BC4D0100FFFFFFFFFFFFFFFFFFFFFFFF

\$GPRP,EAC653D3AA8D,CCB97E7361A4,-43,02010612FF590080BC4D0104FFFFFFFFFFFFFFFFFFFFFFFF

→ **Hall Active (Magnet nearby)**

\$GPRP,EAC653D3AA8D,CCB97E7361A4,-43,02010612FF590080BC4D0100FFFFFFFFFFFFFFFFFFFFFFFF

\$GPRP,EAC653D3AA8D,CCB97E7361A4,-43,02010612FF590080BC4D0105FFFFFFFFFFFFFFFFFFFFFFFF

→ **Hall and Button Active**

Sensor Tag Packet (iBS01T)

AD1 Length (1 Byte)	AD1 Type (1 Byte)	AD1 Flags (1 Byte)	AD2 Length (1 Byte)	AD2 Type (Manufacturer Spec) (1 Byte)	Manufacturer Spec Data (17 Bytes < 26)
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MFG Code (2 Bytes)	Beacon Code/Type (2 Bytes)	Tag Batt (2 Bytes)	Event Status (1 Byte)	Temperature (2 Bytes)	Humidity (2 Bytes)	Reserved (6 Bytes)
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AD1 (Length, Type, Flags)	BLE Advertising Flags
AD2 Length	depends on payload length
AD2 Type	fixed to 0xFF (for manufacturer)
Manufacturer Spec Data	manufacturer defined payload (currently as 0x0059)

example:

02010612FF590080BC4A0101A10A3F00FFFFFFFFFFFF

→ **Batt:** 0x014A (3.3V), **Temp:** 0x0AA1 (27.21), **RH:** 0x003F (63%)

Sensor Tag Packet (iBS01T)

MFG Code (2 Bytes)	Beacon Code/Type (2 Bytes)	Tag Batt (2 Bytes)	Event Status (1 Byte)	Temperature (2 Bytes)	Humidity (2 Bytes)	Reserved (6 Bytes)
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* Endianness: little endian

Field	Description	Field Offset
MFG Code	Manufacturer vendor code, fixed	
Beacon Code and Type	Magic Code to identify packet format, fixed to 0xBC80	
Tag Batt	batt voltage of tag in 0.01v unit	
Event Status	8bits for 8 input: button: bit 0, moving: bit 1, reed bit 2	
Temperature	Temperature in 0.01 C unit (signed 16bit)	
Humidity	Relative Humidity in 1%	

example:

02010612FF590080BC4A0101A10A3F00FFFFFFFFFFFFFFF

→ **Batt:** 0x014A (3.3V), **Temp:** 0x0AA1 (27.21), **RH:** 0x003F (63%)

Reader Output Example(iBS01T)

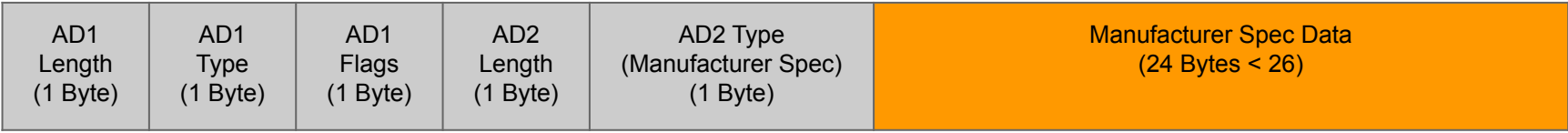
Example:

\$GPRP,FCF009C0C673,CCB97E7361A4,-54,02010612FF590080BC4A0101A10A3F00FFFFFFFFFFFF
→**Batt: 0x014A (3.3V), Temp: 0x0AA1 (27.21), RH: 0x003F (63%)**

\$GPRP,FCF009C0C673,CCB97E7361A4,-54,02010612FF590080BC4A0101E6F95000FFFFFFFFFFFF
→**Batt: 0x014A (3.3V), Temp: 0xF9E6 (-15.62), RH: 0x0050 (80%)**

\$GPRP,FCF009C0C673,CCB97E7361A4,-54,02010612FF590080BC4A0101A10A3F00FFFFFFFFFFFF

Raw Accel Tag Packet (iBS01RG)



AD1 (Length, Type, Flags)	BLE Advertising Flags
AD2 Length	depends on payload length
AD2 Type	fixed to 0xFF (for manufacturer)
Manufacturer Spec Data	manufacturer defined payload (currently as 0x0059)

example:

02010619FF590081BC4D014D0072FFC9004D0072FFC9004D0072FFC900

Raw Accel Tag Packet (iBS01RG)

MFG Code (2 Bytes)	Beacon Code/Type (2 Bytes)	BATT/ACT (2 Bytes)	Accel X,Y,Z (6 Bytes)	Accel X,Y,Z (6 Bytes)	Accel X,Y,Z (6 Bytes)
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* Endianness: little endian

Field	Description	Field Offset
MFG Code	Manufacturer vendor code, fixed	
Beacon Code and Type	Magic Code to identify packet format, fixed to 0xBC81	
Tag Batt / Act	Bit[13]: Button pressed, bit[12]: ACT/INACT, bit[0-11] BATT voltage of tag in 0.01v unit	
Accel X, Y, Z	raw data, 2 byte for each axis	

Parameter	Value
Accel Sampling Period	100ms
Adv Interval	300ms (3 samples per packet)

Reader Output Example

example:

\$GPRP,EAC653D3AA8D,CB412F0C8EDC,-57,02010619FF590081BC4B01F5FFFEFFE800F4FFFCFFE700F5FFFBFFE800

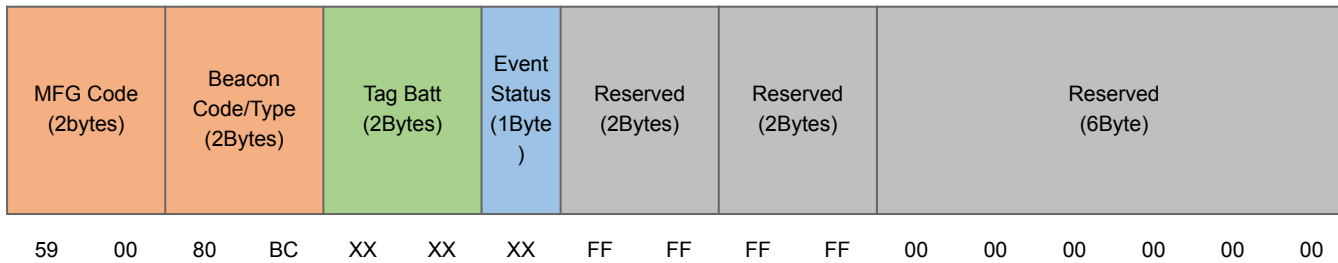
→ F5FF FEFF E800 (x: 0xFFFF5=-11, y: 0xFFFFE=-2, z: 0x00E8=232)

\$GPRP,CC5B2813FE55,DB024BFC4863,-58,02010619FF590081BC4B313A00D6FFF0003800D4FFF8003A00D6FFF6

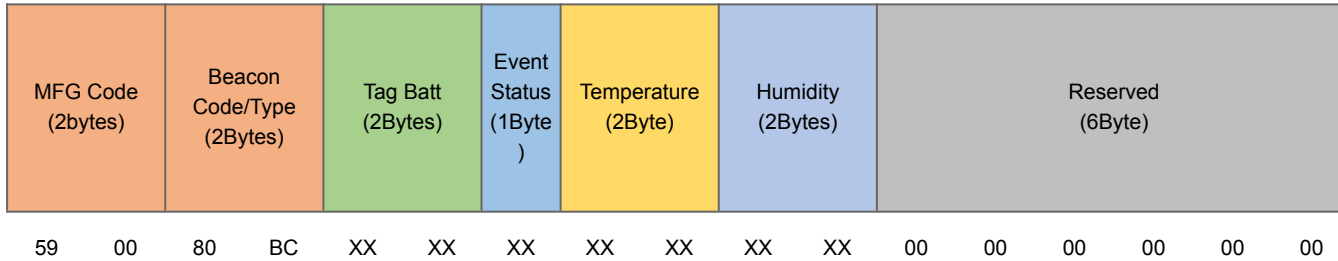
→ Button Pressed, Moving (3)

Summary

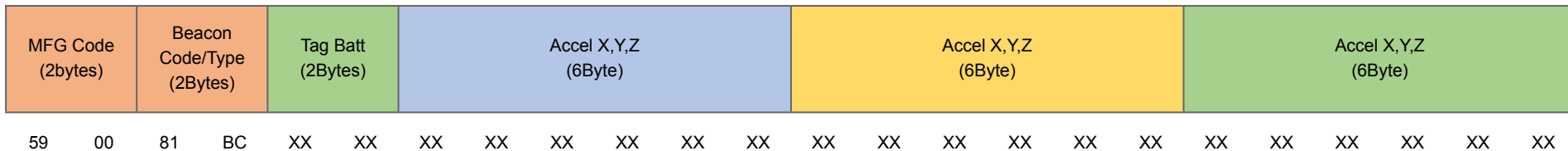
iBS01H/G 17bytes



iBS01T 17bytes



iBS01RG 24bytes



VER	DATE	CHANGES	NOTE
1	Dec, 2015	Initial release	
2	May, 2016	Update iBS01/iBS01H/iBS01T format	
3	Jul, 2016	Add iBS01RG format	
4	Mar, 2016	Add Button pressed for iBS01RG	