1 Node Descriptor 11 – Button/Placement

1.1 Device Description

The Button/Placement sensor reports into the network when its button is pushed. When used as button sensor, it is a manually triggered event intended to alert the network. When used as a placement sensor, the user can test the range of the network in various areas or intended placements of other sensors, to gauge reliable communication. Pressing the button initiates a test cycle. If a response from the network is received, the LED will flash green. If no response is received, the LED will flash red; however, there could be a delay of several seconds before the red flash is observed.

The user can configure alerts and notifications upon the network's receipt of a button press.

1.2 Hardware Details

1.2.1 Push Button

Possible hardware combinations include:

- Platform RFSC Rev A, Version x: Input: SP5. Ground: SP8.
- Platform RFSC Rev B, Version x: Input: SP5. Ground: SP8
- Platform RFSC Rev C, Version x: Input: SP5. Ground: SP8

Switch Function	Single Pole/Momentary
Actuation Force/Max Actuation Force	3.0N / 100N for 10 sec
Travel	1 mm
Electrical Life	10,000,000 operations
Contact Rating	50mA @ 24VDC
Contact Resistance (typical)	10 mΩ
Insulation Resistance	> 10MΩ
Contact Bounce (typical)	0.5 ms
Operating Temperature	-40 to +115 C
Storage Temperature	-40 to +115 C
RoHS	Compliant

1.2.2 LED

Possible hardware combinations include:

- Platform RFSC Rev A, Version x: 120 ohm resistor on S1. Input: SP1. Ground: SP2.

- Platform RFSC Rev B, Version x: 120 ohm resistor on S1. Input: SP1. Ground: SP2

- Platform RFSC Rev C, Version x: 120 ohm resistor on S1. Input: SP1. Ground: SP2

The LED is a dual colored LED. With current applied in one direction, the LED is red and reversing the current, the LED is green.

Lens Type	White Diffused
Viewing Angle	35°
Peak Wavelength (I_F = 20 mA)	Red: 660 nm
	Green: 565 nm
Dominant Wavelength (I_F = 20 mA)	Red: 640 nm
	Green: 568
Spectral Line Half-Width (I_F = 20 mA)	Red: 20
	Green: 30
Capacitance (V_F = 0V; f = 1MHz)	Red: 45 pF
	Green: 15 pF
Forward Voltage (I_F = 20 mA)	Red: 1.85 V
	Green: 2.2 V
Power Dissipation (Absolute Max)	Red: 75 mW
	Green: 62.5 mW
DC Forward Current	Red: 30 mA
	Green: 25 mA
Peak Forward Current	Red: 155 mA
	Green: 140 mA
Operating/Storage Temperature	-40°C to +85°C
ROHS	Compliant

(Ta = 25°C)

1.3 Enclosure Details

The button/placement sensor uses a different enclosure than the standard WIT to accommodate both the push button and the dual LED. The battery is installed at factory and is generally not removable. Other enclosures include, WIT2, Wi-Fi. It is not available in Industrial.

1.4 MNP Message Details

1.4.1 STATE (SOM, SDM)

Both the Spurious Orphan Message (SOM) and the Spurious Data Message (SDM) contain the STATE field. STATE is defined here. (For definition of STATE, refer to Monnit Network Specifications, Section 4.2).

Field	Length	Description
Test Active	1 bit LSB	Test state is active (1) or inactive (0)
Aware State	1 bit	Aware state is active (1) or inactive (0)
Sensor Disable	1 bit	Sensor is disable (communication still happens)
RSVD	1 bit	Currently not used
Not used	1 bit	
Not used	1 bit	
Not used	1 bit	
Not used	1 bit MSB	

This application specifies no additional action control types.

1.4.2 SDATA (SDM)

The Spurious Data Message contains the SDATA field, which is defined here. The SDATA field is defaulted to 3 bytes for this application.

SDATA[0]: App_DiscoverState()

SDATA[1]: 0 = Button not pressed; 1 = Button pressed.

SDATA[2]: 0

Field	Length	Value	Format
SDATA[0]	1 byte	Int8	STATE
SDATA[1]	1 byte	Int8	0 = Button Not Pressed. 1 = Button Pressed.
SDATA[2]	1 byte	Int 8	Always 0.

1.5 General Configuration Defaults

The Configuration Defaults below are native to the Button/Placement sensor only.

Field	Default	Min	Max	Comments
NODEDESC	11	N/A	N/A	Fixed.

1.6 Profile Defaults

The Button/Placement sensor operates using the Trigger device profile.

Field	Default	Min	Max	Comments
PROFILE	2	N/A	N/A	2 = Triggered profile.
DETEVTYPE	0	0	1	Single press - idle low.
DETEVPERIOD	250	25	10000	Value is in milliseconds.
DETEVCOUNT	3	3	3000	Number of correct states detected (divide by 3)
REARMTRIG	2	1	3600	Value in seconds for trigger rearm.
BISTABLE	0	0	1	Only reports a qualified triggered event.
RSVD	-	-	-	Reserved for future use.