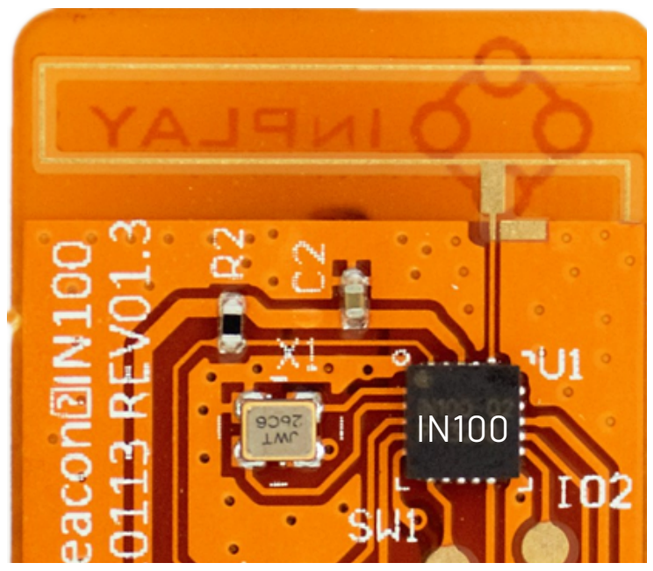
INPLAY

IN100

Redefining Bluetooth Beacon

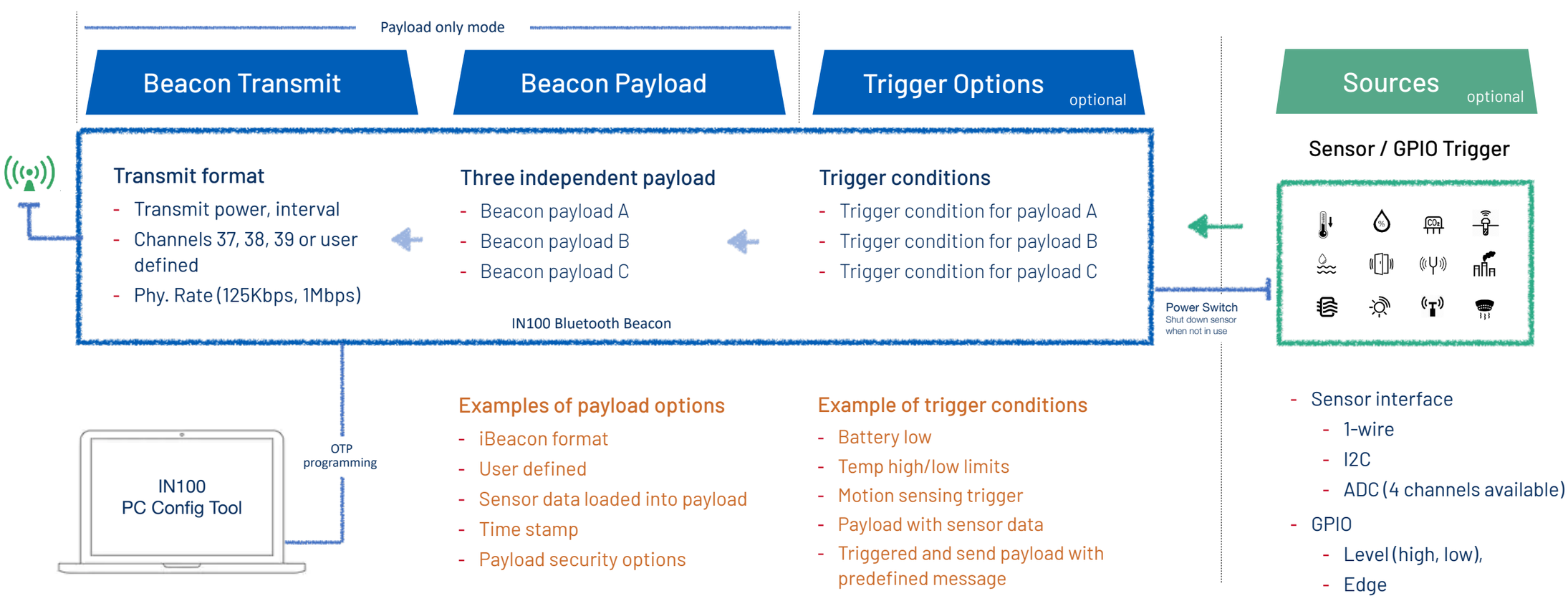
NanoBeacon™



- Low cost enough as disposable
- No firmware required
- Ultra low power consumption
- Single 1.5V coin battery operation
- Few system components
- Long range (hundreds of meters)
- Rich interface to sensor

Average current of 1.4uA@ 10 seconds adv. interval
Average current of 650nA@ 1 min adv. interval
500nA of sleep current

NanoBeacon IN100 redefines Bluetooth Beacon by achieving the power consumption, cost and ease-of-use for rapid adoption. IN100 can be used as a beacon or paired easily with sensor or MCU as a low cost wireless solution without any firmware development.



IN100 supports the latest Bluetooth 5 advertising extensions providing 255 bytes of message capacity and 40 channels of advertising capability, a boost from the 31 bytes and three advertising channels from the legacy BLE standard.

IN100 operates from 1.1 to 3.6 volts to extract maximum reserve energy from battery. IN100 is capable to start transmitting message when certain pre-programed threshold is exceeded from sensor source. Users could configure the frequency of transmissions, such as once daily, or have the system remain in sleep mode until an exception occurs.

INPLAY

IN100 NanoBeacon Applications

- Smart sensors
- Asset tracking
- Cold chain
- Farming
- Healthcare
- Smart building

IN100 Features

Beacon
- Bluetooth 5.0 compliant
- Long range mode (125Kbps)

Memory
- 4KB SRAM (data payload storage)
- 4Kb OTP memory (data payload storage, manufacturer ID)

RF Performance
- Bluetooth SIG compliant 2.4GHz frequency band
- Tx output power, up to +5dBm, w/ programmable output power (2dB as step size)

Power Consumption
- Avg. 1.4uA @ 10s as advertising interval
- Avg. 650nA @ 1min as advertising interval

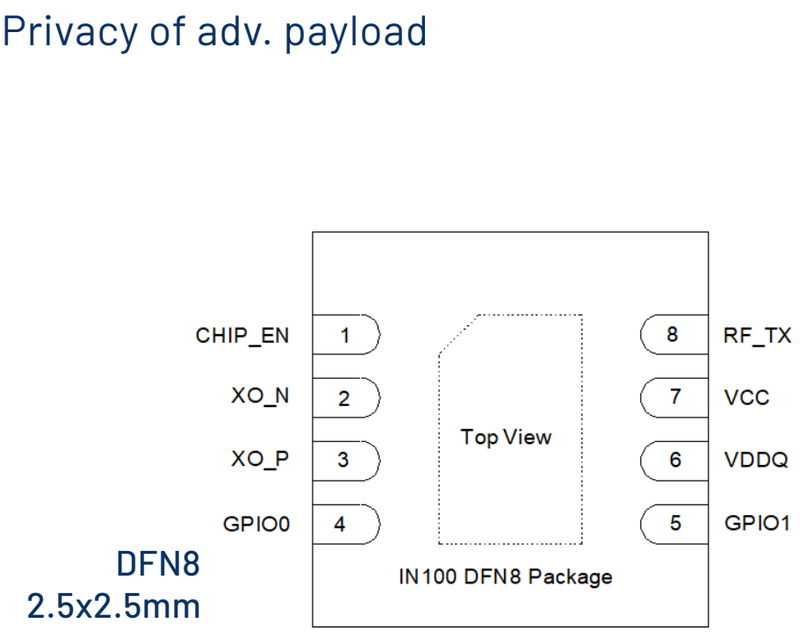
Security
- Authentication of Beacon ID
- Privacy of adv. payload

Peripheral Interface
- UART
- Pulse count interface for low cost temp sensor
- I2C interface for sensor
- Quadrature decoder
- 11-bit ADC, 100Ksps, up to 4 channels
- Integrated ultra low leakage load switch x 2

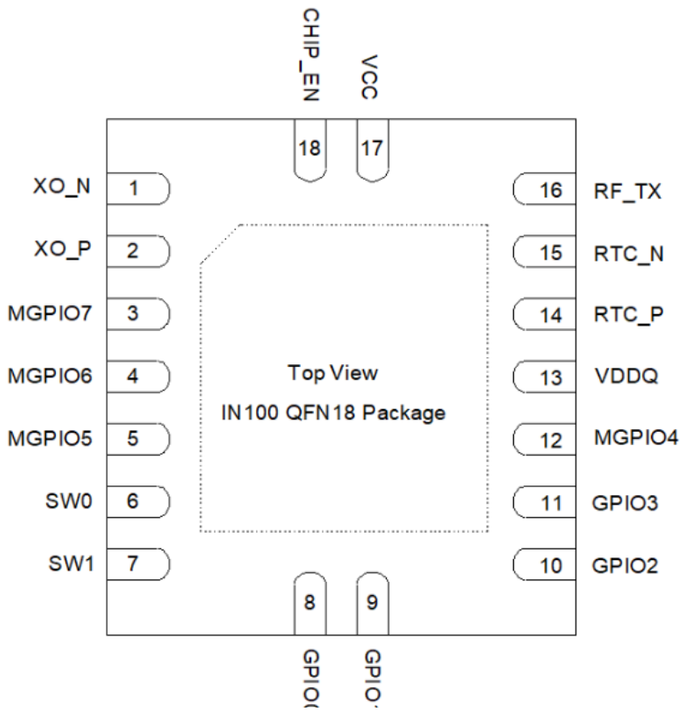
Clock Source
- XO clock, 26MHz X-tal
- RTC clock, 32.768KHz (optional)

Reduced eBOM
- 1 Xtal and 1 cap
- 50 Ohm antenna pin
- No RF matching required

Wide Operating Voltage Range
- 1.1 - 3.6V input
- Single 1.5V battery support



DFN8
2.5x2.5mm



QFN18
3.0x3.0mm

QFN18 Pin #	DFN8 Pin #	Pin name	Pin Type	Description	UART	I2C	Pulse Counting	ADC	GPIO Trigger
1	2	XO_N	Analog	26MHz XO N					
2	3	XO_P	Analog	26MHz XO P					
3		MGPIO_7	MGPIO	Mixed signal GPIO		Any GPIO_0 to 5, 7	Any GPIO_0 to 7	ADC channel 3	Yes
4		MGPIO_6	MGPIO	Mixed signal GPIO			Any GPIO_0 to 7	ADC channel 2	Yes
5	4	MGPIO_5	MGPIO	Mixed signal GPIO	UART_Tx_backup	Any GPIO_0 to 5, 7	Any GPIO_0 to 7	ADC channel 1	Yes
6		SW0	Switch	IO Power Switch					
7		SW1	Switch	IO Ground Switch					
8		GPIO_0	DGPIO	Digital signal GPIO	UART_Rx	Any GPIO_0 to 5, 7	Any GPIO_0 to 7		
9		GPIO_1	DGPIO	Digital signal GPIO	UART_Tx	Any GPIO_0 to 5, 7	Any GPIO_0 to 7		
10		GPIO_2	DGPIO	Digital signal GPIO		Any GPIO_0 to 5, 7	Any GPIO_0 to 7		Yes
11		GPIO_3	DGPIO	Digital signal GPIO		Any GPIO_0 to 5, 7	Any GPIO_0 to 7		Yes
12	5	MGPIO_4	MGPIO	Digital signal GPIO	UART_Rx_backup	Any GPIO_0 to 5, 7	Any GPIO_0 to 7	ADC channel 0	Yes
13	6	VDDQ	I/O Power	Efuse programmable power supply					
14		RTC_P	Analog	32.768KHz RTC P					
15		RTC_N	Analog	32.768KHz RTC N					
16	8	RF_TX	Analog RF	2.4GHz RF output					
17	7	VCC	Power	Power supply& IO ref. voltage					
18	1	CHIP_EN	Analog	Chip enable					