

# INP301x EVB-A

## Talaria TWO™ Evaluation Kits

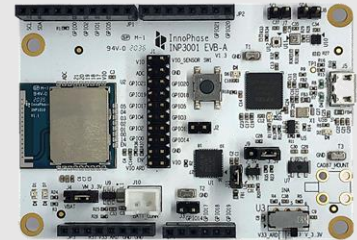
### Complete Solution for Evaluating the Performance and Capability of Talaria TWO Modules

INP3010 / INP3011 / INP3012 / INP3013

The INP301x EVB-A evaluation kits are available for measuring the performance and capability of the Talaria TWO INP101x modules. The modules use InnoPhase’s award-winning Talaria TWO Multi-Protocol Platform with ultra-low power Wi-Fi plus BLE5 for wireless data transfer, an embedded Arm Cortex-M3 for system control and user applications plus advanced security elements for device safeguards.

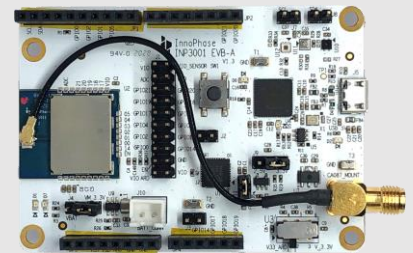
The kits include an Arduino UNO format baseboard with an INP101x module attached. The boards can be used in stand-alone mode or attached to an Arduino UNO compatible host or shield board. The baseboards have all module GPIOs accessible through either an internal 20-pin header or the Arduino connectors. Power is supplied from USB, host Arduino board or battery connector. Also mounted on the baseboards are environmental sensors for capturing temperature, humidity, pressure and light.

#### Ultra-Low Power Wireless Modules for Battery-Based IoT Designs



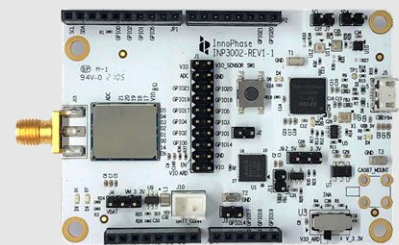
**INP3010**

(Includes INP1010 w/ PCB Antenna)



**INP3011**

(Includes INP1011 w/ U.FL Connector)



**INP3012**

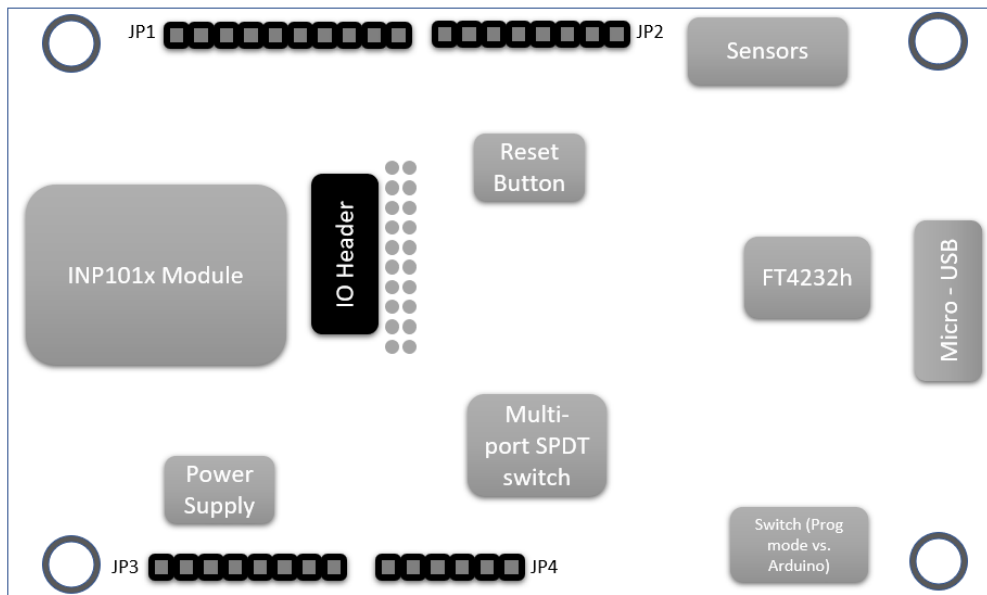
(Includes INP1012 w/ RF Pad)



**INP3013**

(Includes INP1013 w/ Chip Antenna)

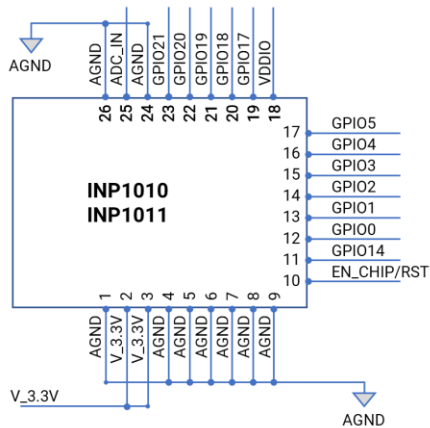
## INP301x Block Diagram



## INP301x EVB-A Kit Contents

Product	INP3010	INP3011	INP3012	INP3013
Baseboard	EVB-A Baseboard, Arduino UNO Compatible (75.0mm x 53.3mm x 10mm)			
Talaria TWO Module Included (Mounted on Baseboard)	INP1010 (w/ PCB Antenna)	INP1011 (w/U.FL Antenna Connector)	INP1012 (w/ RF Pad)	INP1013 (w/ Ceramic Chip Antenna)
Environmental Sensors (Mounted on Baseboard)	Temperature & Humidity (Sensirion SHTC3) Pressure (Bosch BMP388) Light (TI OPT3002)			
USB Interface	USB2.0			
USB Cable	Male USB A to Male USB Micro-B			
External Antenna	Not Included	Stub Antenna with Cable & U.FL Connector	Stub Antenna	Not Included
Battery Holder	Dual "AA" Battery Holder with Wired Connector			
Accessories	4x Stand-Offs and 4x Screw Nuts (Attached)			
Software	Available for Download at: <a href="http://www.innophaseinc.com/talaria-two-modules">http://www.innophaseinc.com/talaria-two-modules</a>			

## INP1010/1011 Module Information



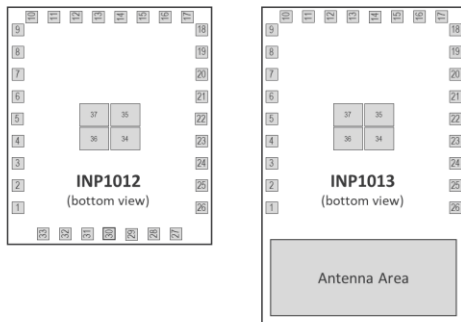
## INP1010/1011 Features

- Fully Integrated Module Including All Required Clocks & Passives
- Agency and Standards Certifications
- Hostless Operation Using Internal Arm Cortex-M3, or Connect to a Host MCU Through UART/SPI Ports
- Eleven (11) Configurable GPIO Ports + Console Port (GPIO17)
- Ultra-Low Power Wi-Fi Connectivity
- BLE5.0 with Advanced Features
- Full SDK Environment for Application Development
- Arduino Compatible EVB Available for Evaluation

## INP1010/INP1011 Product Specifications

Wi-Fi Technology	802.11 b/g/n, up to MCS7	Single-stream (1x1)
Bluetooth Technology	BLE 5.0	w/ Advanced Features: 2Mbps PHY, LE Coding (Long-Range), Extended Advertising
Frequency Band	2.4GHz	
Application Processor	Arm Cortex-M3, 80MHz	
Embedded Memory	512KB SRAM, 2MB Flash	
Host Interface Options	UART, SPI (slave)	
Peripherals	GPIO, 10-bit SAR ADC, PWM, PDM, SPI (slave & master), UART JTAG, I2C, and I2S	
Hardware Based Security	PUF (Physically Unclonable Function), Crypto Engines, Secure Boot	
WiFi Active Mode Power/Performance (@ 3.3V)	<u>TX Current Consumption/Output Power</u>	
	802.11b DSSS 1 Mbps	178 mA (+17.5 dBm)
	802.11g OFDM 54 Mbps	100 mA (+15.5 dBm)
	802.11n OFDM 65 Mbps MCS7	81 mA (+12.5 dBm)
	<u>RX Current Consumption/Sensitivity</u>	
	802.11b DSSS 1Mbps	31 mA (-96 dBm)
WiFi Power Save Mode 802.11b, 1 Mbps (Clean Environment, @ 3.3V)	150 $\mu$ A (DTIM = 3)	
	97 $\mu$ A (DTIM = 5)	
	57 $\mu$ A (DTIM = 10)	
BLE Active Mode Consumption (@ 3.3V, 2Mbps)	30 mA RX	27 mA TX (0dBm), 38mA TX (+10dBm)
Deep Sleep Mode (@ 3.3V)	11-19 $\mu$ A (RTC, memory retained, depends on amount of memory retained)	
Temperature Range	-40°C to +85°C	
Antenna	PCB Antenna (INP1010)	U.FL Connector (INP1011)
Packaging Information	21.6mm x 19.1mm x 2.5mm (height includes shield, both INP1010 & INP1011) 26 Castellated Pins	

## INP1012/INP1013 Pin Diagram



PIN TABLE	GND	GND (RF)	RFIO (Ant.)	V_3.3V	EN_CHIP	VDDIO	ADC_IN	GPIO14	GPIO0	GPIO1	GPIO2	GPIO3	GPIO4	GPIO5	GPIO17	GPIO18	GPIO19	GPIO20	GPIO21
INP1012	1,4,5,6,7,8,9,24,26,34,35,36,37	27,28,29,31,32,33	30	2,3	10	18	25	11	12	13	14	15	16	17	19	20	21	22	23
INP1013		N/A	N/A																

### Features

- Fully Integrated Module in a Smaller, More Compact Footprint
- Agency and Standards Certifications
- Hostless Operation Using Internal Arm Cortex-M3, or Connect to a Host MCU Through UART/SPI Ports
- Eleven (11) Configurable GPIO Ports + Console Port (GPIO17)
- Ultra-Low Power Wi-Fi Connectivity
- BLE5.0 with Advanced Features
- Full SDK Environment for Application Development
- Arduino Compatible EVB Available for Evaluation

## INP1012 & INP1013 Product Specifications

Wi-Fi Technology	802.11 b/g/n, up to MCS7 Single-stream (1x1)
Bluetooth Technology	BLE 5.0 w/ Advanced Features: 2Mbps PHY, LE Coding (Long-Range), Extended Advertising
Frequency Band	2.4GHz
Application Processor	Arm Cortex-M3, 80MHz
Embedded Memory	512KB SRAM, 2MB Flash
Host Interface Options	UART, SPI (slave)
Peripherals	GPIO, 10-bit SAR ADC, PWM, PDM, SPI (slave & master), UART JTAG, I2C, and I2S
Hardware Based Security	PUF (Physically Unclonable Function), Crypto Engines, Secure Boot
WiFi Active Mode Power/Performance (@ 3.3V)	<u>TX Current Consumption/Output Power</u> 802.11b DSSS 1 Mbps 178 mA (+17.5 dBm) 802.11g OFDM 54 Mbps 100 mA (+15.5 dBm) 802.11n OFDM 65 Mbps MCS7 81 mA (+12.5 dBm) <u>RX Current Consumption/Sensitivity</u> 802.11b DSSS 1Mbps 31 mA (-96 dBm)
WiFi Power Save Mode 802.11b, 1 Mbps (Clean Environment, @ 3.3V)	150 $\mu$ A (DTIM = 3) 97 $\mu$ A (DTIM = 5) 57 $\mu$ A (DTIM = 10)
BLE Active Mode Consumption (@ 3.3V, 2Mbps)	30 mA RX 27 mA TX (0dBm), 38mA TX (+10dBm)
Deep Sleep Mode (@ 3.3V)	11-19 $\mu$ A (RTC, memory retained, depends on amount of memory retained)
Temperature Range	-40°C to +85°C
Antenna	INP1012: RF Pad                      INP1013: Ceramic Chip-Antenna
Packaging Information	INP1012: 12.8mm x 15.0mm x 2.5mm (height includes shield) INP1013: 12.8mm x 20.0mm x 2.5mm (shield height) / 3.1mm (antenna height)