INNOPHASE

INP1010/1011

Multi-Protocol Wireless Module

Integrated Communications & Control for Ultra-Energy Efficient IoT Nodes

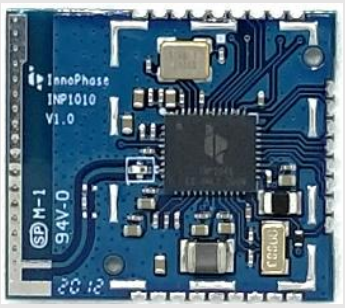
The INP1010/1011 products are complete solutions with integrated wireless connectivity plus microcontroller for edge-of-network IoT designs. The modules use InnoPhase's award-winning Talaria TWO™ Multi-Protocol Platform with Wi-Fi and BLE for wireless data transfer, an embedded Arm Cortex-M3 for system control and user applications plus advanced security elements for device safeguards.

The Talaria TWO's unique digital polar radio architecture makes the INP1010/1011 modules the world's lowest power Wi-Fi solution. It also provides BLE connectivity for Wi-Fi provisioning, diagnostics and other local communication. The integrated solution is ideally suited for battery-based, direct-to-cloud devices such as smart door locks, remote security cameras and connected sensors.

The modules have either a printed PCB antenna (INP1010) or U.FL antenna connector (INP1011) and have completed Wi-Fi Alliance, Bluetooth SIG, FCC, IC (Canada), and CE testing and certification.

CES INNOVATION AWARDS 2020 HONOREE

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



INP1010

INP1011

Wi Fi CERTIFIED FC IC

Ultra-Low Power

Industry's lowest Wi-Fi power consumption enables battery-based cloud-connected IoT products

Superior Integration

Complete module solution including embedded microcontroller, clocks, passives and antenna connections

Maximum Flexibility

Programmable radio protocols can be easily changed within microseconds through software APIs

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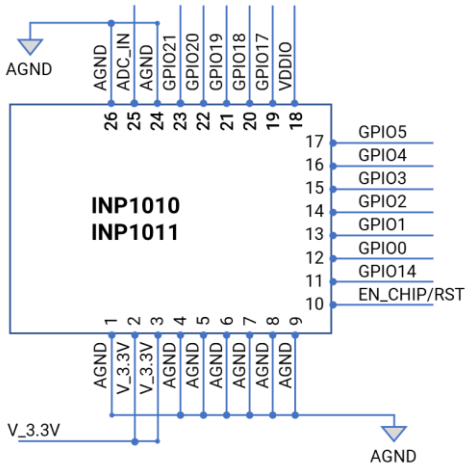
INP1010/1011 I/O Diagram



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
- Twelve (12) Configurable GPIO Ports
- 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, UART JTAG, I2C, and I2S
Hardware Based Security	PUF (Physically Unclonable Function), Crypto Engines, Secure Boot
WiFi Active Mode Power/Performance (@ 3.3V)	TX Current Consumption/Output Power 802.11b DSSS 1 Mbps 129 mA (+14 dBm) 187 mA (+18 dBm) 802.11g OFDM 54 Mbps 105 mA (+12 dBm) 133 mA (+15.5 dBm) 802.11n OFDM 65 Mbps 92 mA (+9 dBm) 107 mA (+12 dBm) RX Current Consumption/Sensitivity 802.11b DSSS 1Mbps 32 mA (-96 dBm)
WiFi Power Save Mode 802.11b, 1 Mbps (Clean Environment, @ 3.3V)	150 µA (DTIM = 3) 97 µA (DTIM = 5) 57 µA (DTIM = 10)
BLE Active Mode Power Consumption (@ 3.3V)	27 mA RX 52 mA TX (0dBm), 77mA TX (+10dBm)
Deep Sleep Mode (@ 3.3V)	11-19µA (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) 26 Castellated Pins

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