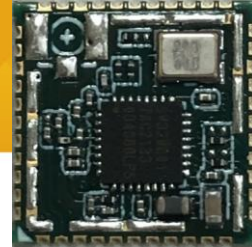# Module Series

IEEE 802.11b/g/n 1T1R WLAN + BLE 5.0 Ultra-Low Power Module

ITM-2011

- Andes Technology D10F processor w/ ILM/DLM and I-cache/D-cache
- DSP instruction set with SIMD
- Tightly coupled single precision floating point unit
- Dedicated 16KB I-cache/D-cache supported
- Memory Protection Unit (MPU) supported
- 128KB ROM and up to 512KB SRAM for Instruction and data SRAM in total

- Low power Dormant mode with 16KB retention SRAM
- Low power Shut-Down mode
- Integrated on-chip Power Management Unit (PMU) support 3.3~5V wide range
- AES/SHA/ECC hardware acceleration
- Flash controller supports eXecute-in-Place (XIP)
- 12-bit ADC for IOT

The ITM-2011 is a highly integrated wireless module with 2.4GHz band 1T1R 11b/g/n Wi-Fi, Bluetooth Low Energy 5.0, and MCU. A single chip MCU SoC targets for applications requiring optimal RF performance, strong security, low power consumption, and small form-factor with minimal external components. Equipped with a proven SDK, ITM-2011 provides customers a fast time to market solution by leveraging existing software eco system, and still keep possibilities for product differentiation.

ITM-2011 features an application processor subsystem based on Andes D10F 32-bit RISC floating point core which runs at 320MHz. It includes 384KB embedded SRAM, which is peripheral addressable. Dedicated 16KB instruction cache and 16KB data cache provides great performance for the execute-in-Place (XIP) in

General Specification	
CPU	Embedded 32bit RISC MCU Andes D10F
Flash	16Mbit, SPI Flash
Memory	Built-in 128KB ROM +512KB SRAM
Wifi Standard	802.11b/g/n
I/O Interface	GPIO, PWM, UART, I2C, SPI, ADC,...
Function	2.4GHz WLAN + BLE 5.0
Antenna_Type	External Antenna IPEX Connector
Tx Power	802.11b: 18dBm 802.11g: 14dBm 802.11n: 14dBm BLE: 5dBm
Rx Sensitivity	802.11b: -83dBm (11Mbps) 802.11g: -73dBm (54Mbps) 802.11n: -69dBm (HT40,MCS7) BLE: -91dBm
Security	WEP 64/128, WPA, WPA2
Dimension	12mm(L)*12mm(W)*1.5(H) mm
Power Consumption	2.7VDC~3.6VDC