Inventek Systems
Embedding Connectivity Everywhere

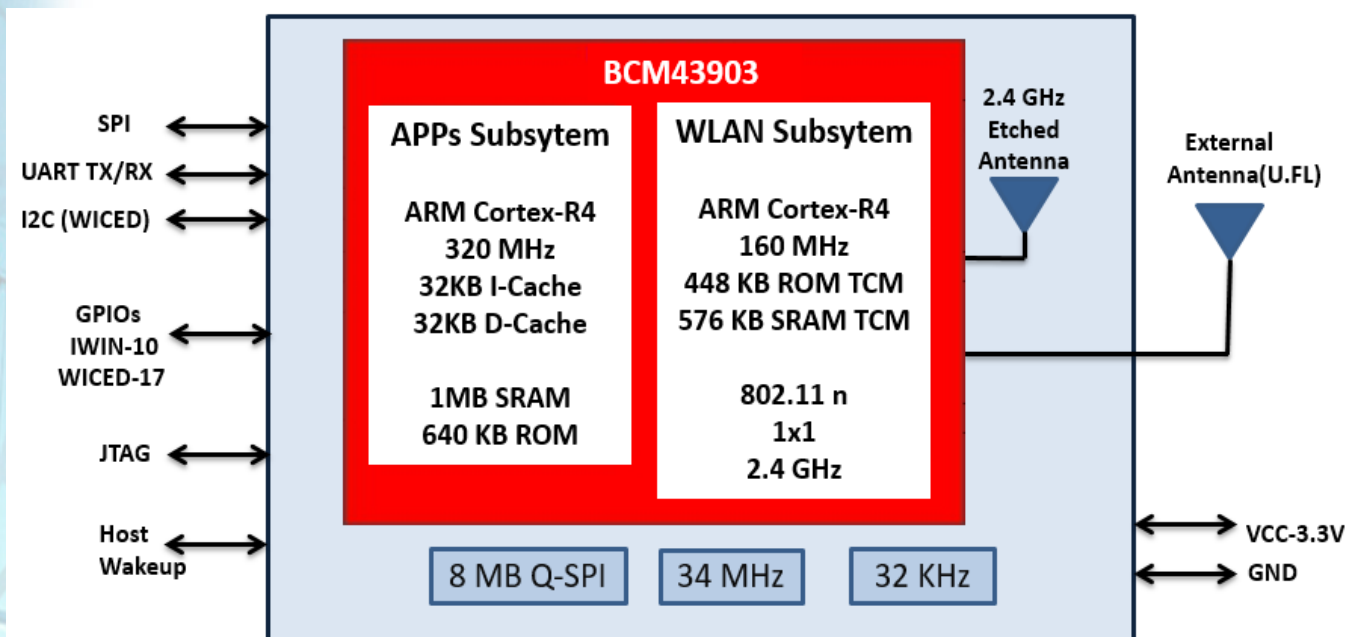# ISM43903 SoC IoT Module

802.11 b/g/n Radio, Cortex R4, 1MB of RAM, 8MB of Flash

WICED SDK and IWIN AT Command Support

AWS IoT and HomeKit/iCloud Support

The Inventek ISM43903-R48-L54 is an embedded low-power 2.4 GHz Wi-Fi module that uses the Cypress BCM43903 SoC optimized for low cost embedded Internet-of-Things applications. For application development, the WICED SDK or Inventek IWIN AT Commands running in an external microcontroller are supported. Multiple Cloud Agents and Protocol's are supported: MQTT and HTTP/S, AWS IoT, Homekit / iCloud, Lowes IRIS, Cloudbourne and others.

Main Features:

- 54 Pad LGA—15mm x 30mm
- ARM Cortex-R4 Application Processor
- 1 MB of on-chip SRAM, 640 KB of ROM and 8MB of Q-SPI Serial Flash
- IWIN AT Command and WICED Support

- 10 GPIOs (IWIN) and 17 GPIOs (WICED)
- OTA Support using IWIN or WICED
- Industrial Temp. –40 to +85C
- Certified Antennas—FCC/IC/CE
- Footprint Compatible with Inventek ISM43362 and ISM43340 Modules

Block Diagram ISM43903 Module

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Application Examples:

- Building automation, Smart Grid, Smart Home
- Smart-Connected Appliances
- Industrial sensing and remote equipment monitoring

- Home Security
- Warehousing, logistics and freight management
- Medical applications including wellness monitoring and remote diagnostics
- Toys, Robots, Wearables, Drones

WiFi	**2.4 GHz**
Network Standards	**802.11 b/g/n (single stream)**
Data Rates	**802.11n 7.2-150 Mbps**
	802.11g: 6- 54 Mbps
	802.11b: 1-11 Mbps
Modulation	**CCK and OFDM w/ BPSK, QPSK, 16 QAM, 64QAM, 256QAM**
Wireless Security	**WEP, WPA, WPA2**
Host Interface	**UART when using IWIN AT Commands**
Network Protocols	**TCP, UDP, IPv4/6, ARP, ICMP, DHCP Client**
Supply Voltage	**3.3V ± 5%**
Package	**54 Pad LGA, 15 mm x 30 mm**
Operating Temp.	**Industrial -40°C to +85°C**
Antenna	**On-module Etched or U.FL for External**
Firmware Options	**IWIN AT Commands or WICED SDK**
Memory	**1MB RAM, 640KB ROM, 8MB Q-SPI Flash**
Transport Protocol	**HTTP, HTTPS, MQTT**
Cloud Agents	**HomeKit/iCloud, AWS IoT, Cloudbourne, Lowes IRIS, Arrayent**

Device	Description	Firmware	Ordering Number
ISM43903-R48-L54-E	**802.11 b/g/n 2.4 GHz WiFi Module with Etched Antenna**	**IWIN or WICED**	**ISM43903-R48-L54-E**
ISM43903-R48-L54-U	**802.11 b/g/n 2.4 GHz WiFi Module with U.FL Connector for External Antenna**	**IWIN or WICED**	**ISM43903-R48-L54-U**

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