

PRELIMINARY - INFORMATION SUBJECT TO CHANGE

ImageCraft wifi2go Module Datasheet

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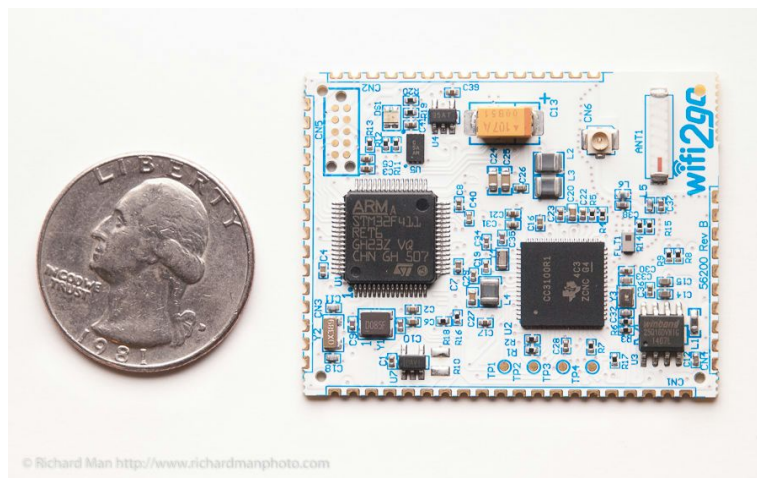
Concept: MCU + Wifi + C Tools

OEM production-ready module with STM32 Cortex-M MCU and TI CC3100 Wifi chip:

- Fully debugged hardware. Plug-n-go!
- All-in-One hardware and software package from a single source
- Simplify programming with JumpStart C for Cortex-M C Tools and JumpStart API
- ImageCraft provides consulting services for hardware / software design and implementation
- Cloud services integration with AWS / Google IoT / Azure forthcoming

Price Benefits:

- Competitive hardware pricing through volume manufacturing, more cost-effective than sourcing your own chips
- ImageCraft's JumpStart™ C for Cortex-M: professional tools at a reasonable price: \$249+ vs. \$7000+
- Unlike other tools and APIs, JumpStart C with JumpStart API gets you up and running with Cortex-M programming in minutes, not days or weeks. Shorter Time To Market!



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Features at a Glance

- Physical dimensions: 35x45mm
- 4 rows of SMD alignment holes for drop-in production PCB assembly and pinout connections
- Low power: 3.3V regulated supply up to 200mA under full wifi
- Choices of STM32 MCU: e.g.: Cortex-M0 for low-cost or Cortex-M4 for high performance
- TI CC3100 for robust wifi performance; it is the first device to be Wi-Fi CERTIFIED™ at the chip level (end users must still have their products Wi-Fi CERTIFIED™)
- 16 Mbits flash for storing wifi profiles and other configuration data
- 2K Bytes I2C EEPROM
- External independent watchdog timer
- Atmel AT24SHA I2C crypto chip for secure operations
- RGB LED
- Either an on-module chip antenna or UMC connector as external connector (quantity purchase options)
- Production programming using Tag-Connect connector
- Evaluation carrier boards available for prototyping and evaluation purposes
- Professional JumpStart C for Cortex-M available at low cost
- Simple-to-use JumpStart API. No need to learn "ins and outs" of wireless technology or deal with low-level MCU tedious peripheral setup
- Simple multitasking executive included
- Optional eMOS RTOS message passing RTOS available
- Optionally use your favorite RTOS

MCU Specifications

The standalone MCU is separate from the TI CC3100 Wifi chip, with the full flash and RAM memory available to user applications (minus a minimal amount used by the driver interface code). The following choices are available:

STM MCU	Flash	RAM	Timers	SPI	I2C	UART	ADC	Clock
F030RC	256K	32K	6	2	2	6	12 bits	48 MHz
F411RC	256K	128K	7	5	3	3	12 bits	100 MHz
F411RE	512K	128K	7	5	3	3	12 bits	100 MHz

Note 1: One SPI is used for communication with the TI CC3100, and therefore the number of usable SPIs is reduced by one.

Note 2: Other STM32F MCUs may be possible, depending on the pinout compatibility

TI CC3100 Specifications

- Single-chip wifi device in TI's SimpleLink™ Wi-Fi® family
- Integrates all protocols for Wi-Fi and Internet
- Built-in security protocols
- First device Wi-Fi CERTIFIED™ at the chip level
- Robust firmware

Wi-Fi® Certification

- While the TI CC3100 is Wi-Fi CERTIFIED™ at the chip level, end users must still have their products Wi-Fi CERTIFIED™

JumpStart C for Cortex-M

- IDE (Integrated Development Environment) with state-of-the-art project management, editor, and code browser features
- Integrated source level debugger
- Fast ANSI C compiler tools
- Loads fast and runs fast - much faster than GCC and Eclipse

JumpStart API

- Programmer-friendly API dramatically decreases the learning curve to start programming the STM32 devices
- High level API for accessing TI CC3100 protocol stacks
- Single-thread or RTOS friendly

eMOS RTOS

- Basic multitasking kernel is included with JumpStart C for Cortex-M free of charge
- Fully integrated with wifi2go modules
- Royalty-free message passing RTOS available for a reasonable price

Optional TI CC3100MOD Module

- TI CC3100MOD is a higher cost device fully compatible with the TI CC3100, and with the benefit of allowing transfer of TI's Wi-Fi Certification to end user products
- Full hardware and software compatible design with TI CC3100MOD will be available for quantity production purchase

Carrier Board Options

- For evaluation and prototyping

Availability

- Production commences Feb 2016, available in April 2016

APPENDIX

Pinout Connectors (total 60 pins in 4 rows)

CN1 (left vertical) 20 pins	Pin	CN2 (right vertical) 15 pins	Pin
CN1.1	PC0	CN2.1	PB12
CN1.2	PC1	CN2.2	PB13
CN1.3	PC2	CN2.3	PB14
CN1.4	PC3	CN2.4	PB15
CN1.5	RESET	CN2.5	PA9
CN1.6	PA0	CN2.6	PA11
CN1.7	PA1	CN2.7	PA12
CN1.8	PC4	CN2.8	PA10
CN1.9	PC5	CN2.9	PC6
CN1.10	PB0	CN2.10	+3.3V
CN1.11	PB1	CN2.11	PC7
CN1.12	PB2	CN2.12	PC8
CN1.13	PB10	CN2.13	PC9
CN1.14	PB11	CN2.14	JNTRST
CN1.15	PB8	CN2.15	JTMS
CN1.16	PB9		

CN1.17	PD2 (watchdog)		
CN1.18	GND		
CN1.19	GND		
CN1.20	GND		

CN3 (top) 15 pins	Pin	CN4 (bottom) 10 pins	Pin
CN3.1	JDTI	CN4.1	PA15
CN3.2	JTCK	CN4.2	+3.3V
CN3.3	JTDO	CN4.3	+3.3V
CN3.4	PC10	CN4.4	+3.3V
CN3.5	PC11	CN4.5	CC3100 UART1 nRTS
CN3.6	PC12	CN4.6	CC3100 UART1 nCTS
CN3.7	PC13	CN4.7	CC3100 UART1 RX
CN3.8	PC14	CN4.8	CC3100 UART1 TX
CN3.9	PC15	CN4.9	GND
CN3.10	PB4	CN4.10	GND
CN3.11	PB5		
CN3.12	PB6		
CN3.13	PB7		
CN3.14	BOOT0		
CN3.15	GND		