FlyPort Wi-Fi

802.11 b/g/n embedded module

EIKON be wireless

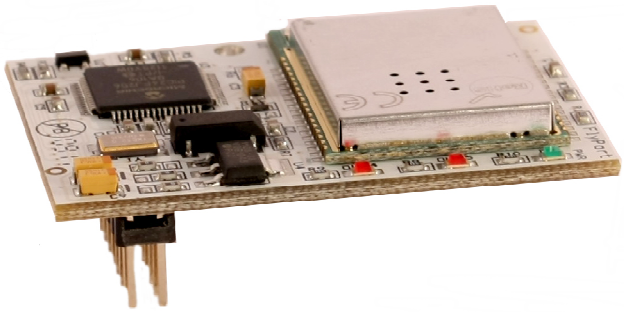
Introduction

Flyport Wi-Fi is a miniature **web server module** featuring a fully integrated 802.11 b/g/n Wi-Fi interface and several interfaces to the 'real world'.

The module integrates a powerful **16 bit processor** which runs custom applications and a **Wi-Fi certified transceiver** which handles the connectivity. A PCB antenna is on the module.

The module provides the embedded world with a powerful 'Internet engine' to a browser-based interface over Internet, in a small footprint, at low power and low cost. Real time data can be both displayed and/or updated from a standard web browser, even on smartphone or tablets, because Flyport supports dynamic web pages.

Flyport WiFi is powered by openPICUS, open source framework and serial booloader. The free openPICUS IDE allows to create applications, to import web pages and to compile and download code to the module.



Facts

16 Bit Processor	PIC24FJ256,256K Flash,16K Ram,16Mips@32Mhz
Transceiver	802.11 b/g/n Wi-Fi certified MRF24WB0MB
Power Supply	5V or 3,3V, integrated LDO
Integrated RTC	32,768 Khz quartz onboard
Digital I/O	up to 18, remappable at Runtime
Analog In	up to 4, 10bits ADC, Vref=2,048V
Communication	up to 4 UARTs, SPI, I2C
Connector	26 ways, 2 rows, standard 2.54mm male pin header
Dimensions	35 x 48 x 15 mm, 11 grams

Benefits

- Easy to setup
- Easy to manage and use
- Low power
- Zero Time for development
- Open source

Applications

- Wi-Fi sensors
- Wi-Fi automation
- Internet of Things
- Wi-Fi audio/music
- Home remote control
- Industrial/process management

- 802.11 b/g/n WIFI
- Microchip PIC 24F 16 bit processor
- Microchip Wi-Fi Module MRF24WB0MA/RM Pcb Antenna or uFL
- openPICUS Free IDE
- Serial Bootloader
- Webserver
  TCP Socket
  UDP Socket
  SNTP
  SMTP
- 3,3/5V power supply
- RTCC onboard
- **Remappable** pins at runtime
- Digital I/O
- Analog Inputs
- Up to 4 UARTs
- SPI
- I2C
- 35*48*15mm (11 gr)

Introduction

FLYPORT Wi-Fi is powered by openPICUS technology. FLYPORT Wi-Fi has a powerful 256K Flash 16bit processor from Microchip that runs the Wireless Stack and the application layer. This means that you have full control of the connectivity (extremely important for energy saving) and the application (for ex. the PIC micro controller onboard can process data coming from an analog sensor and display these data on the integrated webserver, or send by email or save to a remote FTP server).

Available pins:
SPI, I2C, UART and embedded Real Time clock.
I/O : analog and digital and PWM.

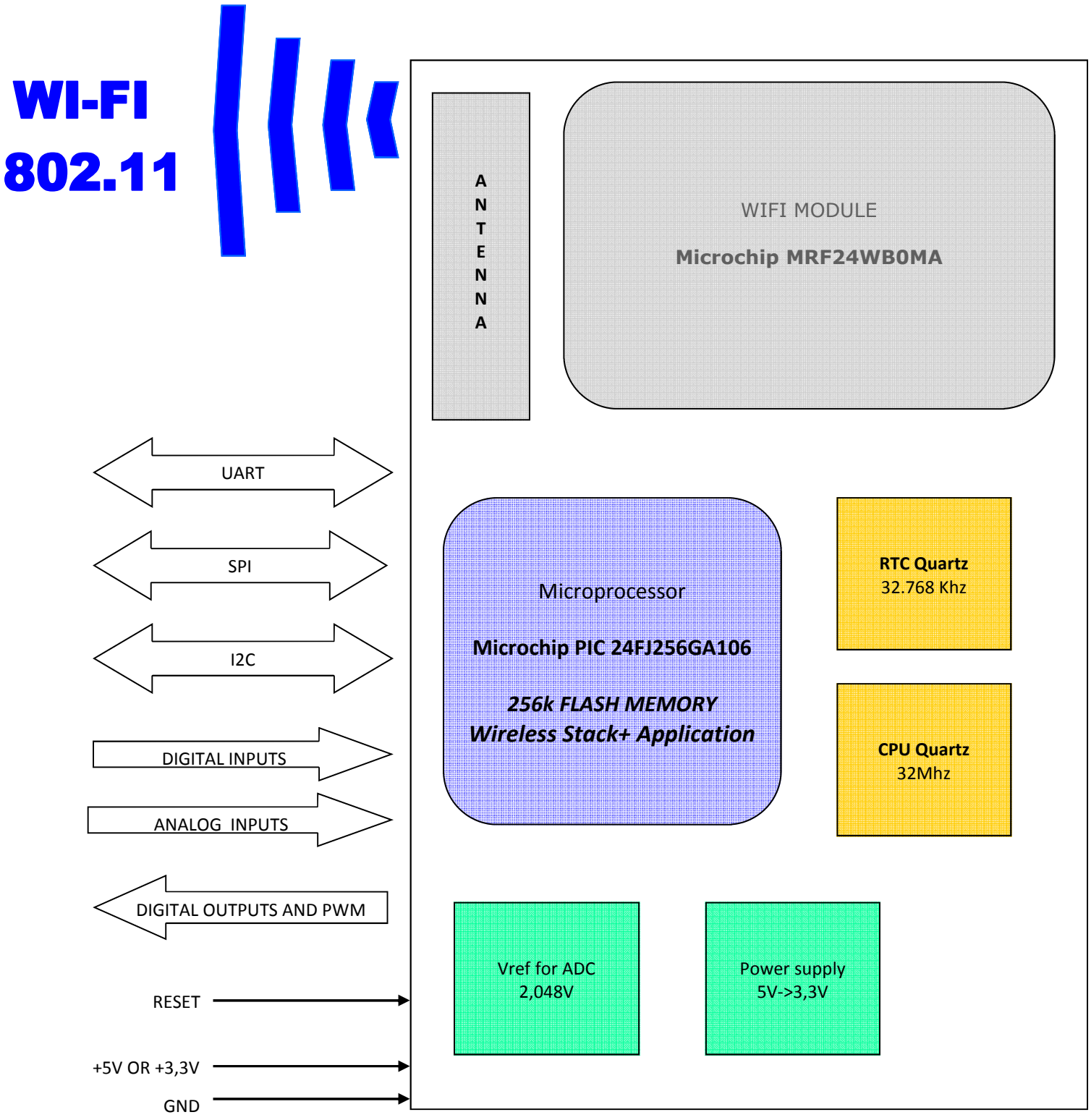
Programming:
C/C++ skills are needed. No expansive programmer is needed since a serial bootloader on module allows you to download the firmware using just a serial cable.

On www.openpicus.com you can find examples, libraries and tools to start to develop immediately.

Technical Informations

Electrical			**802.11 WIFI**	
Power supply	5V or 3.3V		Compatibility	b/g/n networks
Current consumption (External 3.3V supply	Wi-Fi connected 127.5mA	LDO current 80uA (in case of use)	Output power	10dBm
And LDO not used)	HIBERNATION (transceiver OFF) 38.5mA	LED current (7mA each)	Sensitivity	-91dBm
	SLEEP (micro and transceiver OFF) 11uA (without LED and LDO)		Max Data Rate	2 Mbit
Mechanical			**Certifications**	
Operating Temperature	-20..+85°C		Radio regulation certification for United States (FCC), Canada (IC), Europe (ETSI) and Japan (ARIB)	
Dimensions	35*48*15mm		Wi-Fi® certified (WFA ID: WFA7150)	

Block diagram



powered by openPICUS technology

JP1 PINOUT

JP1 is the common connector of Flyport Modules (Wi-Fi, Ethernet).

Flyport is based on Microchip PIC processor and offers **remappable pins function.** User can customize the hardware configuration by firmware. It means that you can have up to 4 UARTs , up to 18 Digital I/Os and 9 independent PWMs.

Pin	Default name	Default function	5V Tolerant	Remappable
1	I2C_clk	I2C bus Clock signal	Yes	No
2	D5_in	Digital input #5	Yes	Yes
3	I2C_data	I2C bus Data signal	Yes	No
4	D1_out	Digital output #1	Yes	Yes
5	D1_in	Digital input #1	Yes	Yes
6	D2_out	Digital output #2	Yes	Yes
7	D2_in	Digital input #2	Yes	No
8	SPI_clk	SPI bus Clock (SCLK)	Yes	Yes
9	D3_in	Digital input #3	Yes	Yes
10	SPI_out	SPI bus Out (SDO)	Yes	Yes
11	D4_in	Digital input #4	Yes	Yes
12	SPI_in	SPI bus In (SDI)	Yes	Yes
13	uRX_in	UART RX input	Yes	Yes
14	SPI_cs	SPI bus chip select (CS)	Yes	Yes
15	uTX_out	UART TX output	Yes	Yes
16	+5V_in	Power supply input (see note 1)	-	-
17	D3_out	Digital output #3	No	Yes
18	PGC/A4_in	Analog input #4 (see note 2)	No	Yes
19	D4_out	Digital output #4 (connected on red Led OUT4)	No	Yes
20	PGC/A3_in	Analog input #3 (see note 2)	No	Yes
21	D5_out	Digital output #5 (connected on red Led OUT5)	No	Yes
22	GND	Ground	-	-
23	A1_in	Analog input #1	No	Yes
24	+3,3V	Power input/output (see note 1)	-	-
25	A2_in	Analog input #2	No	Yes
26	Reset	Reset (Active Low)	No	Yes

Note 1. Flyport can be powered at 3.3V OR at 5V. If the module is powered by 5V on pin 16, pin 24 is the output of integrated LDO (max output current available:100mA).
If Flyport is powered using a single 3,3V on pin 24, leave pin 16 unconnected!

Note 2. Pins 16-18-20-22-24-26 are pin to pin compatible with the Microchip PicKit programmer connector

Note on PROGRAMMING: to make the code easier D5_out becomes d5out on code, don't use the underscore symbol

Mechanical info

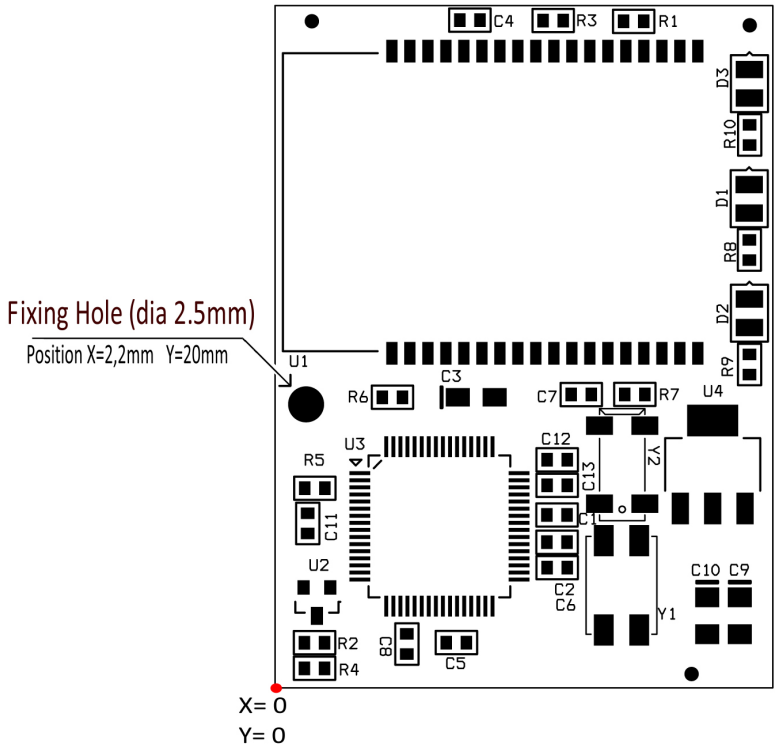
FLYPORT WiFi has a 2.5mm hole suitable to fix the module against vibrations.

The connector JP1 is on the bottom side and it's a standard 2*13 ways 2.54mm Male Pin header connector (SAMTEC TSM-113-01-F-DV)

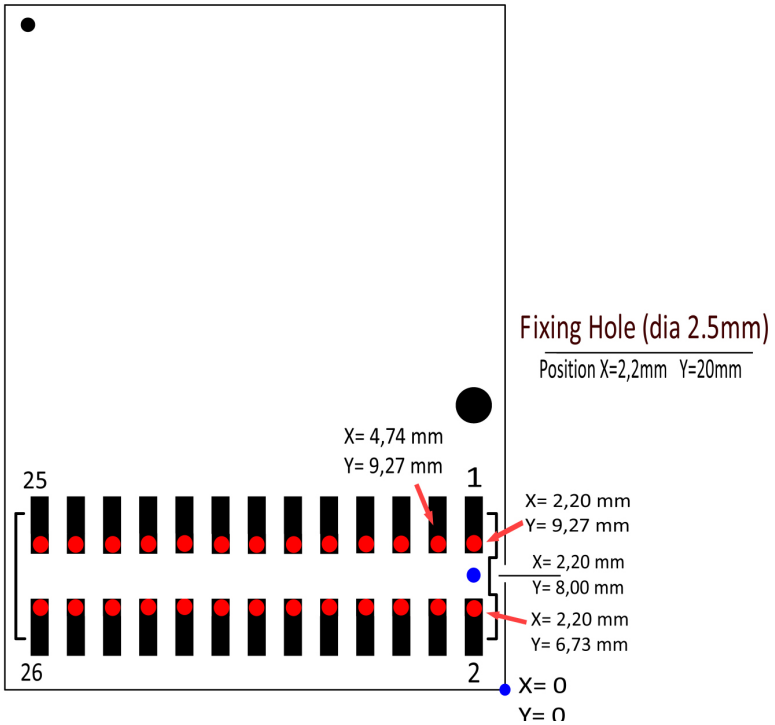
It's compatible with standard female pin-headers or directly with a Flat cable IDC connector.

Suggested Female connector:

SAMTEC	SSW-113-01-T-D
FCI	65781-013



Bottom View



Applications development

Please visit openPICUS project website **www.openpicus.com** to download the IDE, a getting started guide and some apps examples and libraries.

The **suggested starter kit** is composed by:

- miniUSB PROGRAMMER (to download firmware) Code.015371
- Proto NEST Code.015376
- Flyport Wi-Fi module Code.015350 or Code.015353

Each FlyPort Module has a serial bootloader onboard.

ORDERING INFORMATION

Buy online from www.eikonsite.it or contact your local reseller.

FLYPORT WI-FI MODULE (PCB ANTENNA)

Product Code	015350
EAN	8055112971100

FLYPORT WI-FI MODULE (uFL CONNECTOR)

Product Code	015353
EAN	8055112971110

Eikon srl
Via Giacomo Peroni 442
00131 Rome (RM) Italy

Tel +39 06 92916378 Fax +39 0721 054588
Web www.eikonsite.it Email info@eikonsite.it

Partner