

## MOD-WiFi development board

### User's manual



All boards produced by Olimex are ROHS compliant

Document revision B, May 2014

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## **INTRODUCTION:**

**MOD-WiFi** module gives you the opportunity to add WIFI to any of our development boards with UEXT connector. There is ready made support in Microchip's TCP-IP stack so you can use MOD-WIFI with any PIC board with UEXT and you have hands on the complete source code.

## **BOARD FEATURES:**

- MOD-WIFI extends OLIMEX boards (that have a UEXT connector) to have Wireless internet access
- Uses Microchip MRF24WB0MA module
- Works with Microchip TCP-IP stack
- PCB: FR-4, 1.5 mm (0,062"), soldermask, white silkscreen component print
- Dimensions: (29.00x22.50)mm (1.14x0.86)"
- Space between the pin rows: 20mm (0.8")

## **ELECTROSTATIC WARNING:**

The MOD-WiFi board is shipped in protective anti-static packaging. The board must not be subject to high electrostatic potentials. General practice for working with static sensitive devices should be applied when working with this board.

## **BOARD USE REQUIREMENTS:**

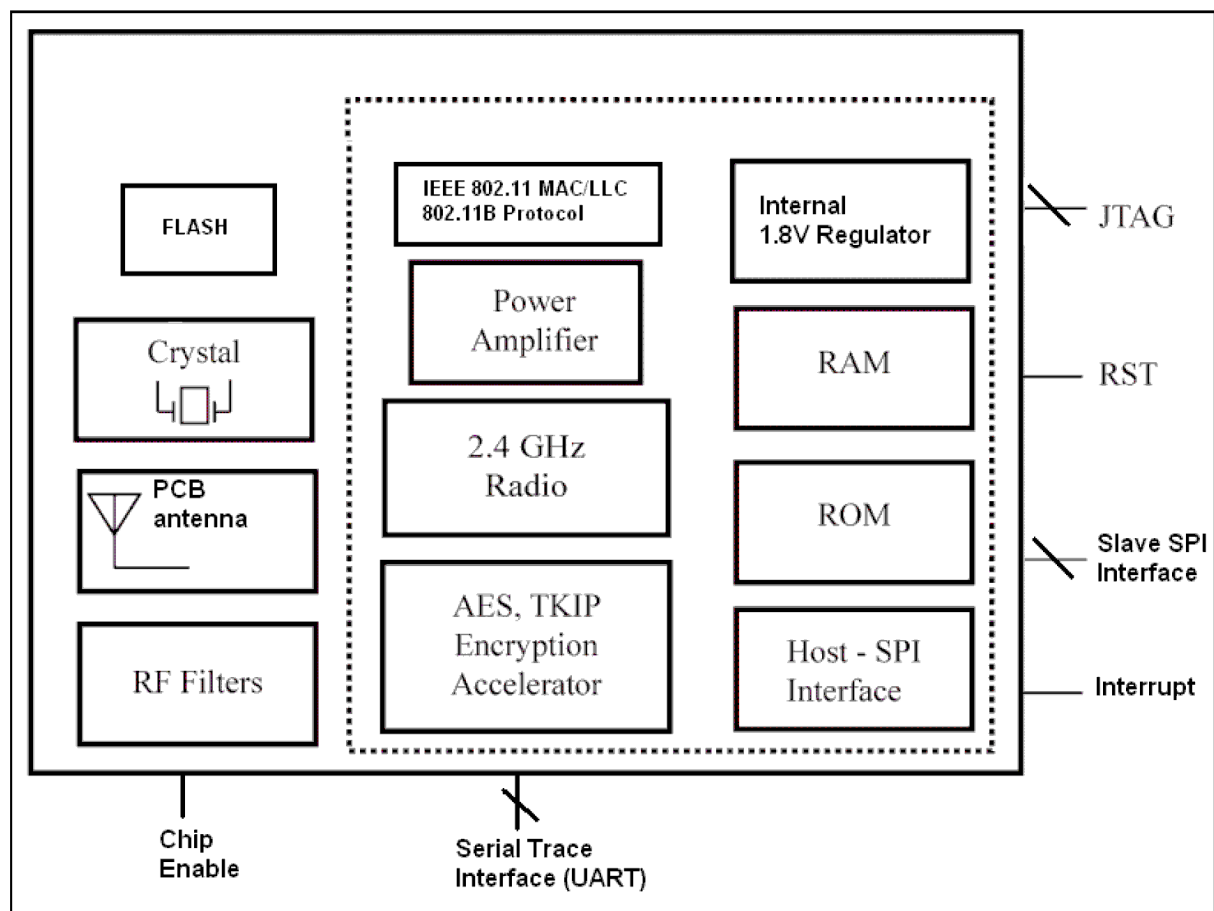
**Hardware:** some of our development boards with UEXT.

## **Wi-Fi Module Features:**

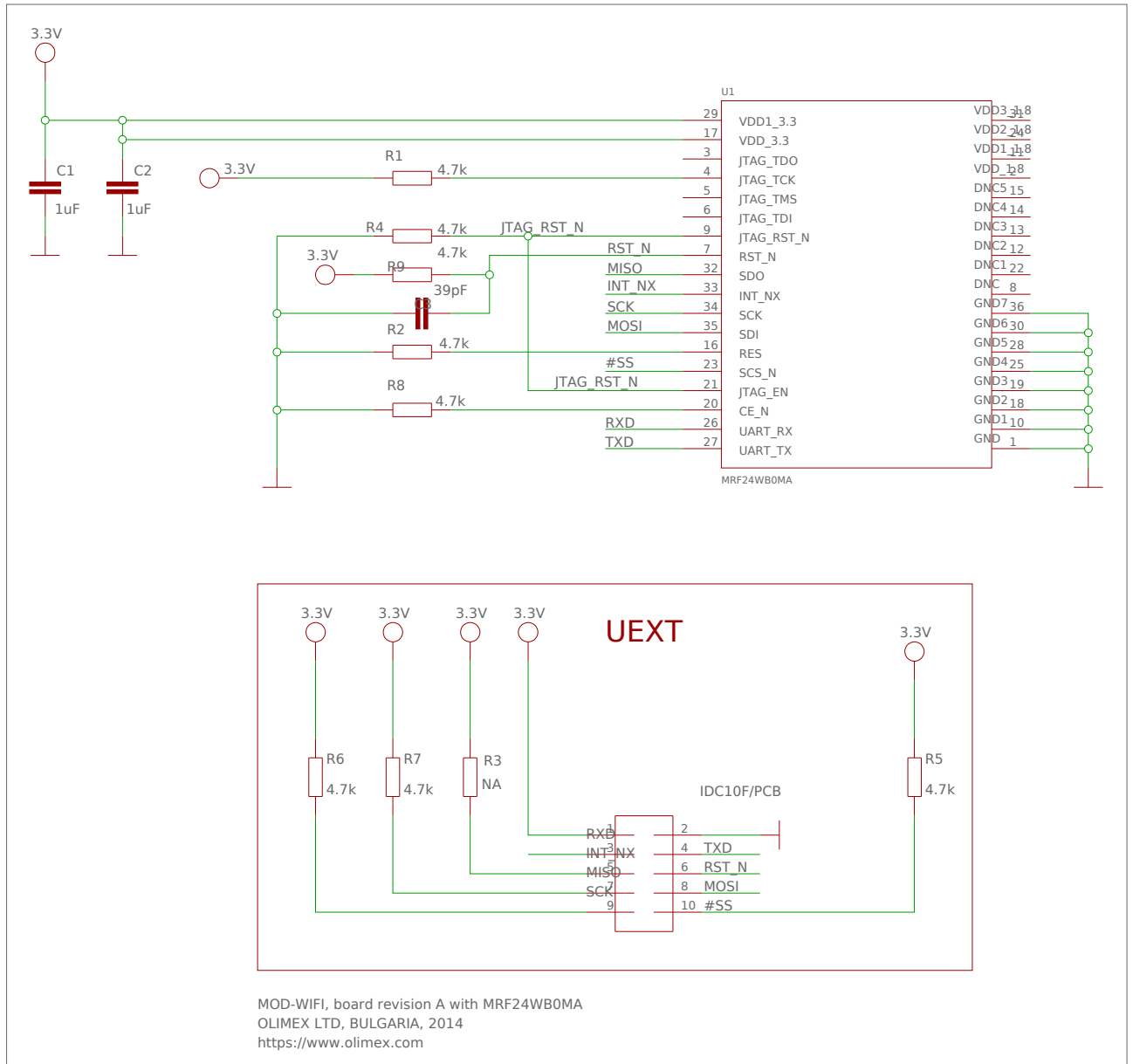
**MOD-WiFi** board use MRF24WB0MA Wi-Fi module with these features:

- Single-chip 802.11b including MAC, baseband, RF and power amplifier
- Data Rate: 1 & 2 Mbps
- 802.11b/g/n compatible
- Low power operation
- API for embedded markets, no OS required
- PCB antenna
- Hardware support for AES and RC4 based ciphers (WEP, WPA, WPA2 security)
- SPI slave interface with interrupt
- Single 3.3V supply, operates from 2.7V to 3.6V
- 21mm x 31mm 36-pin Dual Flat pack PCB SM Package
- Wi-Fi certified, RoHS and CE compliant
- FCC Certified (USA, FCC ID: W7O-ZG2100-ZG2101)
- IC Certified (IC: 8248A-G21ZEROG)
- Fully compliant with EU & meets the R&TTE Directive for Radio Spectrum
- Radio Type Approval Certified (Japan, MRF24WB0MA based solution ID: AC164136-2 – 005WWCA0311 005GZCA0149)

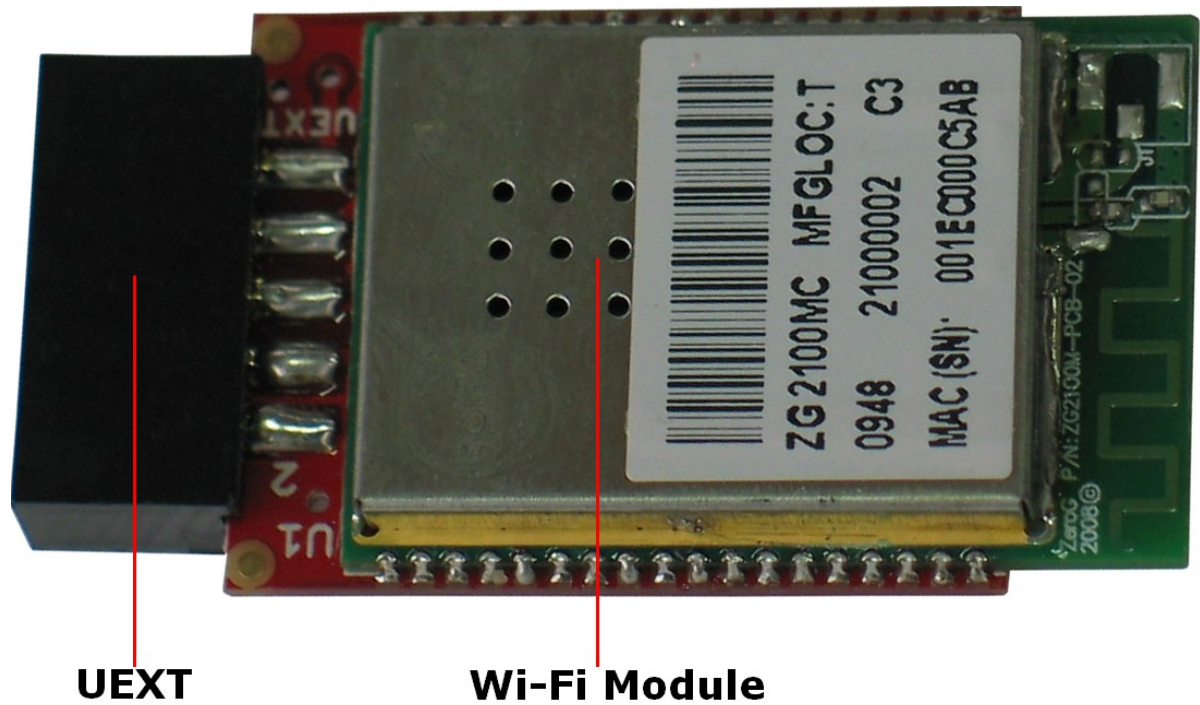
## **BLOCK DIAGRAM:**



## SCHEMATIC:



## **BOARD LAYOUT:**



## **POWER SUPPLY CIRCUIT:**

MOD-WiFi is typically power supplied by UEXT pin 1 and pin 2 with 3.3V.

The board power consumption is about 110 mA.

## **RESET CIRCUIT:**

MOD-WiFi reset circuit includes pull down R4 (4.7k) connected to MRF24WB0MA pin 8 (JTAG\_RST\_N) and pin 21 (JTAG\_EN).

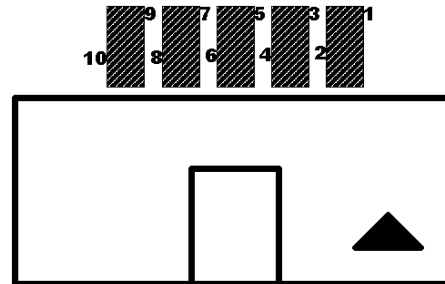
## **JUMPER DESCRIPTION:**

There are no jumpers on this board.

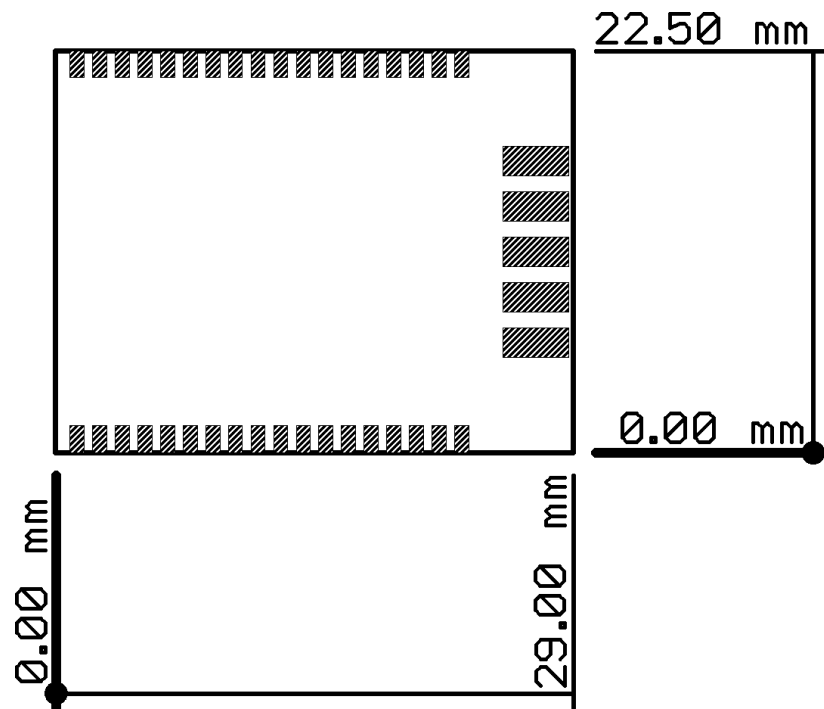
## CONNECTOR DESCRIPTIONS:

### UEXT:

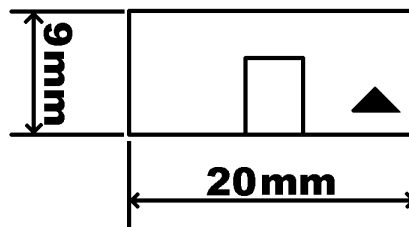
Pin #	Signal Name
1	VCC
2	GND
3	RXD
4	TXD
5	INT_NX
6	RST_N
7	MISO
8	MOSI
9	SCK
10	#SS



## MECHANICAL DIMENSIONS:



UEXT measures





## **AVAILABLE DEMO SOFTWARE:**

–[Microchip's application libraries](#) libraries that include a TCP-IP stack and examples, very easy to configure and use with PIC microcontrollers.

–PIC-WEB and MOD-WIFI demo example; based on MICROCHIP's application libraries: [https://www.olimex.com/Products/PIC/Development/PIC-WEB/resources/PIC WEB MOD WIFI 5 42.zip](https://www.olimex.com/Products/PIC/Development/PIC-WEB/resources/PIC_WEB_MOD_WIFI_5_42.zip)

–MOD-MX460 and MOD-WIFI demo example:  
<https://www.olimex.com/Products/Modules/Ethernet/MOD-WIFI/resources/MOD-WIFI-demo-for-the-PIC32-MX460-rev.B-board.zip>

–PIC-T795 and MOD-WIFI demo example:  
<https://www.olimex.com/Products/Duino/PIC32/PIC32-T795/resources/T795-MOD-WIFI.zip>

## **ORDER CODE:**

MOD-WiFi – completely assembled and tested

How to order?

You can order to us directly or by any of our distributors.

Check our web [www.olimex.com](http://www.olimex.com) for more info.

## **Revision history:**

Board revision:	Rev. A – February 2010
Manual revision:	Rev. Initial – June 2011
	Rev. B – May 2014

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All goods are checked before they are sent out. In the unlikely event that goods are faulty, they must be returned, to OLIMEX at the address listed on your order invoice.

OLIMEX will not accept goods that have clearly been used more than the amount needed to evaluate their functionality.

If the goods are found to be in working condition, and the lack of functionality is a result of lack of knowledge on the customers part, no refund will be made, but the goods will be returned to the user at their expense.

All returns must be authorized by an RMA Number. Email [support@olimex.com](mailto:support@olimex.com) for authorization number before shipping back any merchandise. Please include your name, phone number and order number in your email request.

Returns for any unaffected development board, programmer, tools, and cables permitted within 7 days from the date of receipt of merchandise. After such time, all sales are considered final.

Returns of incorrect ordered items are allowed subject to a 10% restocking fee. What is unaffected? If you hooked it to power, you affected it. To be clear, this includes items that have been soldered to, or have had their firmware changed. Because of the nature of the products we deal with (prototyping electronic tools) we cannot allow returns of items that have been programmed, powered up, or otherwise changed post shipment from our warehouse.

All returned merchandise must be in its original mint and clean condition. Returns on damaged, scratched, programmed, burnt, or otherwise 'played with' merchandise will not be accepted.

All returns must include all the factory accessories which come with the item. This includes any In-Circuit-Serial-Programming cables, anti-static packing, boxes, etc.

With your return, enclose your PO#. Also include a brief letter of explanation of why the merchandise is being returned and state your request for either a refund or an exchange. Include the authorization number on this letter, and on the outside of the shipping box.

Please note: It is your responsibility to ensure that returned goods reach us. Please use a reliable form of shipping. If we do not receive your package we will not be held liable.

Shipping and handling charges are not refundable. We are not responsible for any shipping charges of merchandise being returned to us or returning working items to you.

The full text might be found at <https://www.olimex.com/wiki/GTC#Warranty> for future reference.

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