

MWMII OPERATOR'S MANUAL



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1 Introduction

MWMII (Masimo Wifi Module II) contains an Azureware AW-CM256SM radio module, which incorporates the Broadcom BCM43455 radio chip. It offers IEEE 802.11 a/b/g/n WIFI with Bluetooth 4.2. The Wifi radio uses a 50MHz SDIO interface and the Bluetooth radio uses a 3MBaud UART interface. MWMII has 32.768 kHz Oscillator and 37.5 MHz crystal along with the u. Fl. connector. The radio module is certified for use with the following two (external) trace antennas: Ethertronics 9000129 and Ethertronics 1000672.

Bluetooth system is fully compliant to Bluetooth 4.2 and V2.1 that supports EDR of 2 Mbps and 3 Mbps for data and audio communications. It uses Direct Sequence Spread Spectrum (DSSS), Orthogonal Frequency Division Multiplexing (OFDM), BPSK, QPSK, CCK and QAM based modulation technologies.

2 Compliance Warnings and Cautions

Caution: Disposal of product - Comply with local laws in the disposal of the device and/or its accessories.

Caution: To minimize radio interference, other electrical equipment that emits radio frequency transmissions should not be in close proximity to MWMII.

Note: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This device complies with Industry Canada's license-exempt RSSs of the Industry Canada Rules. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Note: Operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Note: In accordance with international telecommunication requirements, the frequency band of 2.4 GHz and 5.15 to 5.25 GHz is only for indoor usage to reduce potential for harmful interference to co-channel mobile satellite systems.

Note: To satisfy RF exposure requirements, this device and its antenna must operate with a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

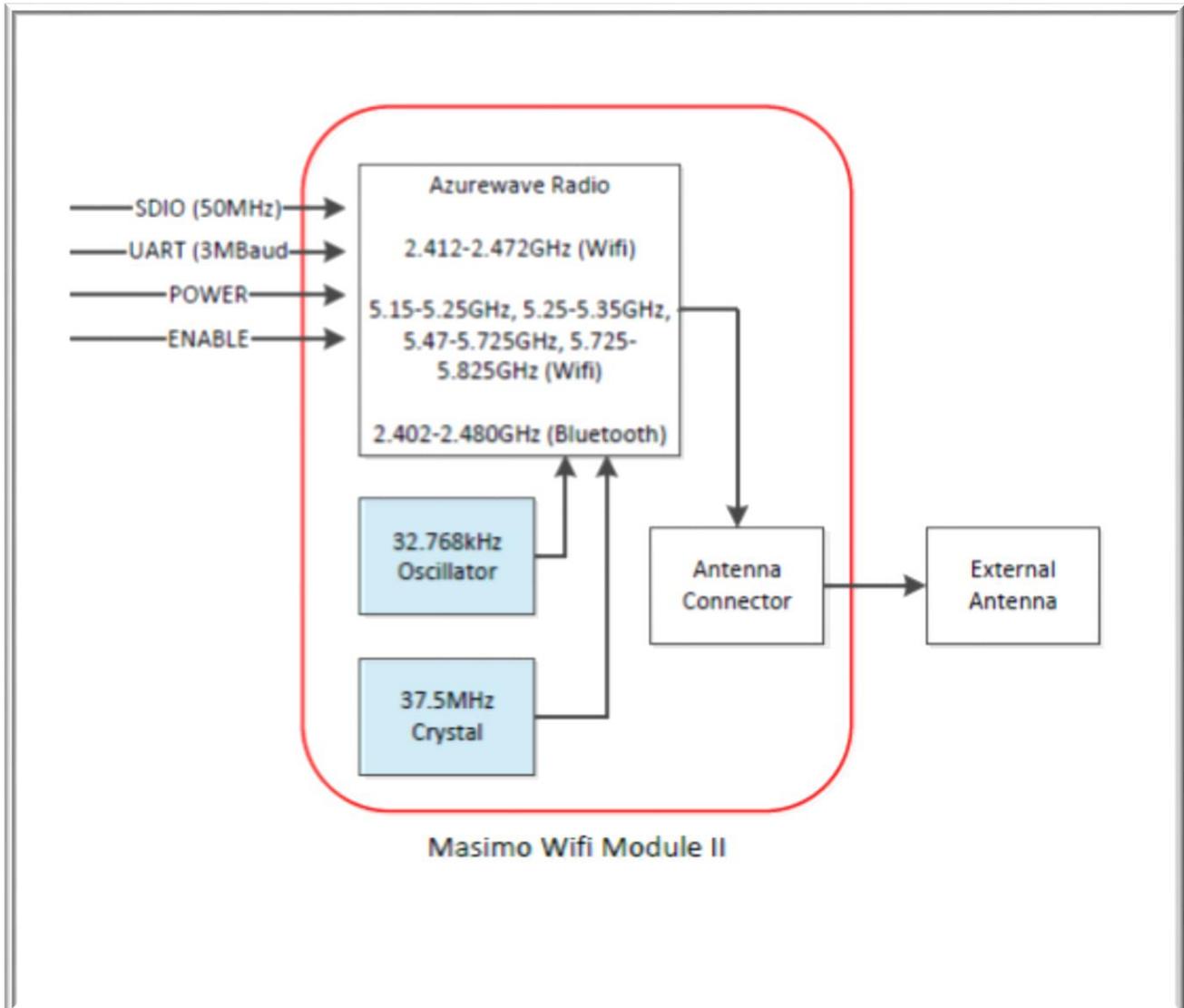
Note: Change or modifications that are not expressly approved by the manufacturer could void the user's authority to operate the equipment.

3 MWMII Features

The MWMII board includes the following features:

- Bluetooth HCI module
- Supports Bluetooth specification V4.2
- WCS (Wireless Coexistence System)
- Enhanced Data Rate (EDR) compliant for both 2 Mbps and 3Mbps supported
- Full speed operation with Piconet and Scatternet support
- High speed UART and PCM for Bluetooth
- Dual-band 2.4 GHz and 5 GHz 802.11 a/b/g/n

4 Block Diagram



5 General Specifications

Model Name	MWMII				
Radio modes	IEEE 802.11 a/b/b/n, WiFi compliant / Bluetooth 4.2 standard				
Host Interface	Wi-Fi: SDIO, BT: UART				
Major Chipset	BCM43455				
Dimension	26 mm X 16 mm X 2.4 mm				
Frequency Range	Wi-Fi: 2.4 GHz ISM Bands 2.412 – 2.472 GHz 5.15-5.25 GHz (FCC UNII-low band) for US/Canada and Europe 5.25-5.35 GHz (FCC UNII-middle band) for US/Canada and Europe 5.47-5.725 GHz for Europe 5.725-5.825 GHz (FCC UNII-high band) for US/Canada BT: 2402MHz~2483MHz				
Electrical rating	3.2 VDC – 4.8 VDC; Typical: 3.6 VDC				
Drivers	WiFi: 7.45.100.7 Bluetooth: 003.001.025.0143.0000				
Duty Cycle¹	Mode	Band	Max Data Rate (Mbps)	Duty Cycle (%)	
	2.4 GHz Wifi	802.11b	11	21.8	
		802.11g	54	4.4	
		802.11n	72	3.3	
		802.11n	150	1.6	
	5 GHz Wifi	802.11a	54	4.4	
		802.11n	72.2	3.3	
		802.11n	150	1.6	
	2.4 GHz BT/BLE	BT	3	100.0	
BLE		1	50.0		
FCC ID	VKF-MWM2				
FCC Rules	15.207, 15.209, 15.247, and 15.407				
Output Power:	Mode	Band	Bandwidth (MHz)	Tx Power Setting²	Max Power (dBm)
	Wifi 2.4 GHz	b	20	17	17.1
		g	20	14	12.1
		n	20	15	14.5
		n	40	10	10.8
		BT	N/A	0	8.2
		BLE	N/A	0	4.75
	Wifi 5 GHz	a	20	20	13.934
		n	20	5.2 GHz: 20 5.3/5.6/5.8 GHz: 21	5.2 GHz: 13.695 5.3/5.6/5.8 GHz: 14.886
n		40	18	5.2 GHz: 13.621 5.3/5.6/5.8 GHz: 13.695	

¹ This is the maximum duty cycle permitted.

² This is the maximum power setting allowed. This is controlled through the wl commands.