



Taiwan Anjie

Product Specification

Model: **MWR188FT-U**

WIFI Module

Revision: 1.5

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File name	Date	Released by
MWR188FT-U .pdf	11-Dec-2017	Eddy Chen

CONTENTS

1. INTRODUCTION	4
1.1 Scope.....	4
1.2 Features.....	4
1.3 Model Define	4
2. SPECIFICATION.....	5
2.1 HARDWARE SPECIFICATION	5
2.1.1 General Specification.....	5
2.1.2 Board Specification.....	5
2.1.3 Environmental.....	5
2.1.4 PIN Define	6
2.2 MECHANICAL SPECIFICATION	7
2.2.1 Board Dimension	7
2.2.2 Mechanical Drawing	7
2.3 SOFTWARE SPECIFICATION	9
2.3.1 Operating system	9
3. PACKING & ACCESSORIES	9

Revision History

Rev.	Change Note	Date
1.0	- First Release	11-Dec-2017
1.1	- Test result revised	13-Apr-2018
1.2	- Dimension info update	11-Dec-2018
1.3	- Thermal Pad info update	17-Jan-2019
1.4	- Layout Recommendation info update	24-Apr-2019
1.5	- Naming and dimension info. changed	23-May-2019

Declaration

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Information for the Integrators:

- (1)Antenna Type:FPCB Antenna , Gain:2.85dBi (Max.)
- (2)The Modular transmitter is used for FCC part 15C listed on the FCC grant. The final host product manufacturer is responsible to ensure the host product undergoes FCC part 15B compliance testing with the modular transmitter installed.
- (3)Please see the full Grant Equipment document for other restriction.
- (4)The final end product must be labeled in a visible area with following "Contain"

FCC ID:2AP85-MWR188FTU

1. INTRODUCTION

1.1 Scope

The MWR188FT-U is a small size and low profile of Wi-Fi module, board size is 12.2mm*13.0mm with module thickness of 1.7mm. It can be easily manufactured on SMT process and highly suitable for tablet PC, ultra book, mobile device and consumer products. It provides USB interface for Wi-Fi to connect with host processor. The Wi-Fi throughput can go up to 150Mbps in theory by using 1x1 802.11n b/g/n MIMO technology.

MWR188FT-U uses Realtek RTL8188FTV, a highly integrated Wi-Fi single chip based on advanced COMS process. RTL8188FTV integrates whole 2.4GHz 1T1R Wi-Fi function blocks into a chip, such as USB, MAC, BB, AFE, RFE, PA, EEPROM and LDO/SWR, except fewer passive components remained on PCB.

1.2 Features

- Operate at ISM frequency bands (2.4GHz).
- Support: IEEE 802.11b/g/n/d/e/h/i.
- I/O: **USB**.
- Enterprise level security which can apply WPA/WPA2 certification for Wi-Fi.
- Wi-Fi 1 transmitter and 1 receiver allow data rates supporting up to 150 Mbps downstream and 150 Mbps upstream PHY rates.
- 50 Ohm RF connectors for print 2.4G antennas.
- Win7, Vista, XP WHQL certified.
- RoHS compliant.

1.3 Model Define

	MWR188FT-U
RF Connector #	NA
Antenna design	External antenna for Tx/Rx

2. SPECIFICATION

2.1 HARDWARE SPECIFICATION

2.1.1 General Specification

Specification	IEEE 802.11 b/g/n Wireless Local Area Networks
Protocol	WEP 64/128, WPA, WPA2, TKIP, AES
PHY Rate	1T1R mode with 150Mbps PHY Rate for both transmit and receiving
RF Frequency Range	2412 ~ 2484 MHz
Operating Voltage	+3.3V ($\pm 0.3V$)
Interface	USB V1.1, 2.0

2.1.2 Board Specification

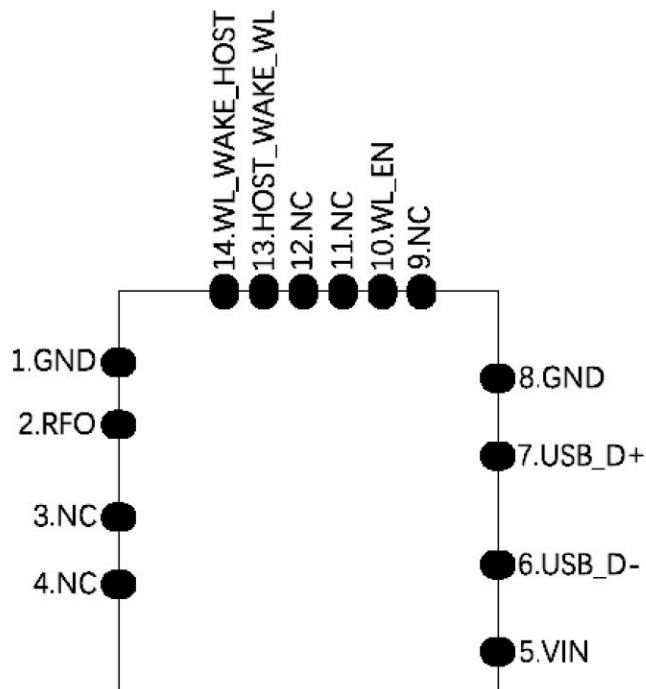
WLAN Chip	Realtek RTL8188FTV
Antenna design	Pin 2 offers RF antenna path (please refer 2.1.4pin define)
RF connector	NA.
Form Factor	12.2mm*13.0mm

2.1.3 Environmental

Operating	Operating temperature: -10 to 70°C Relative Humidity : 5-90% (non-condensing)
Storage	Temperature: -40 to 85°C Relative Humidity : 5-95% (non-condensing)

2.1.4 PIN Define

Please refer to the following circuits to know the pin-definition.



PIN	Definition	Remark
1	GND	Ground
2	RFO	WLAN RF output
3	NC	Floating (NC)
4	NC	Floating (NC)
5	VIN	Main power voltage source input
6	USB_D-	USB_D-
7	USB_D+	USB_D+
8	GND	Ground
9	NC	Floating (NC) if not used
10	NC(WL_EN)	Floating (WLAN enable/disable) if not used
11	NC	Floating (NC) if not used
12	NC	Floating (NC) if not used
13	NC(HOST_WAKE_WL)	Floating (Host wake up WLAN device) if not used
14	NC(WL_WAKE_HOST)	Floating (WLAN device wake up host) if not used

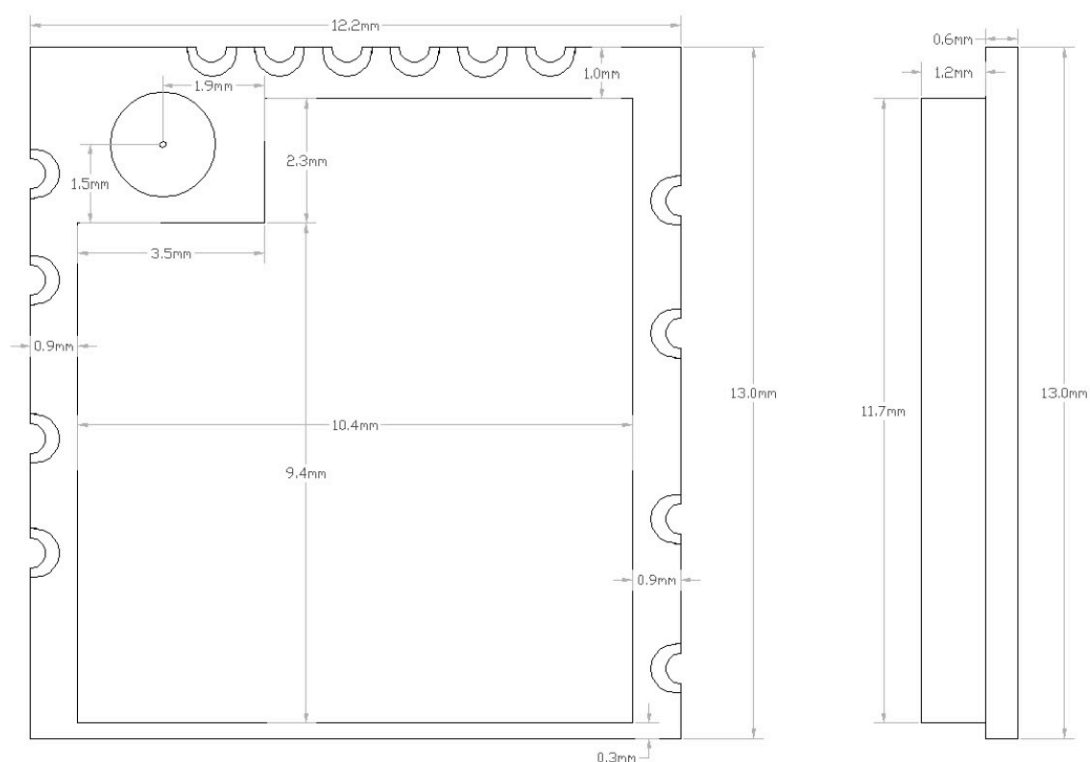
2.2 MECHANICAL SPECIFICATION

2.2.1 Board Dimension

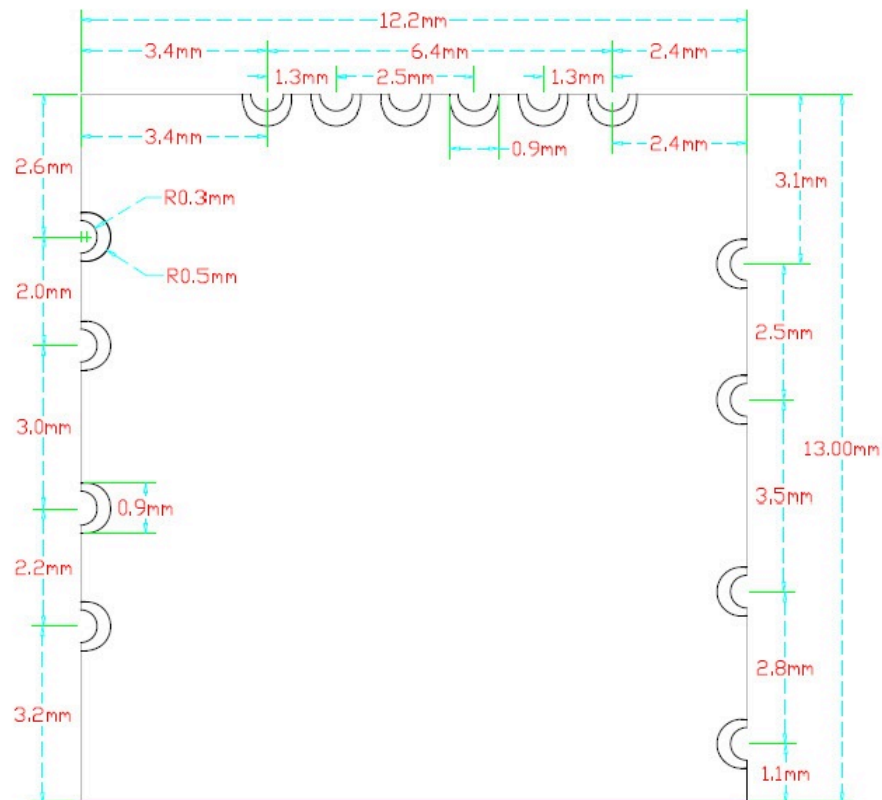
Form factor	Ultra mini-size		
PCB Dimension	12.2mm*13.0mm		
PCB thickness	0.6mm (+/- 0.1mm)		
SMD	Single side		
Max. height of components (from PCB)	Top side	Shielding case	1.8mm (+/- 0.2mm)
	Bottom side	0mm	

2.2.2 Mechanical Drawing

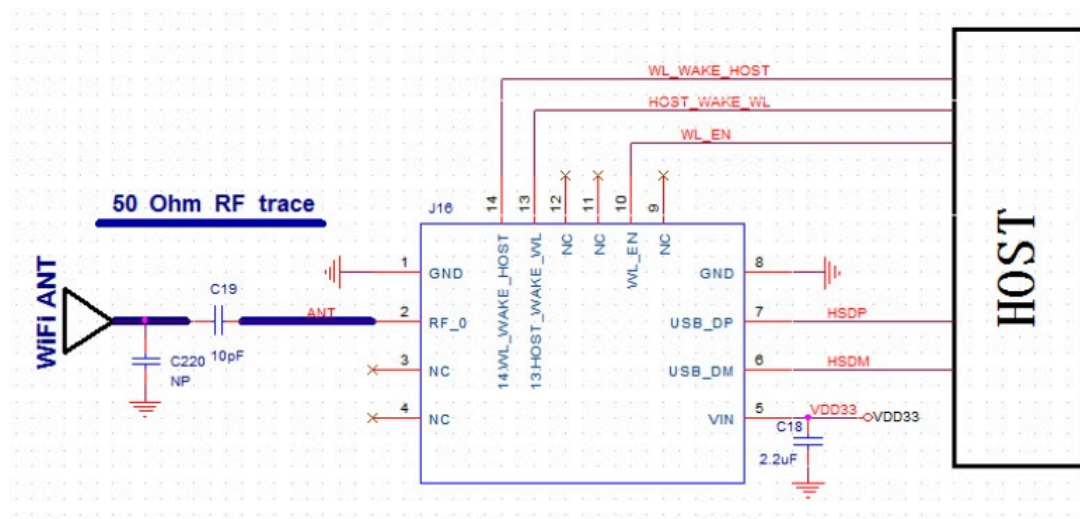
TOP VIEW



Layout Recommendation (Unit: mm)



Reference Design



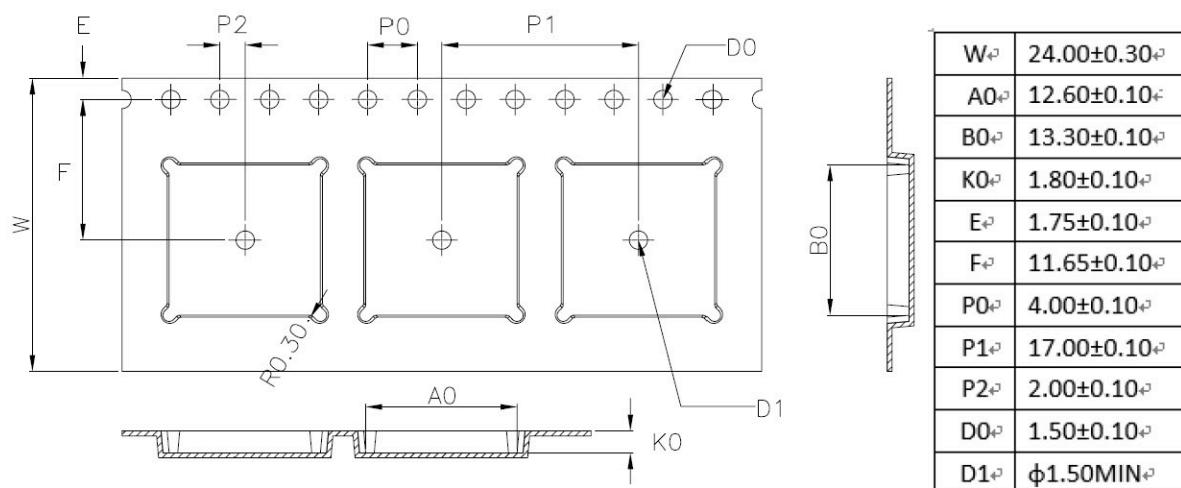
2.3 SOFTWARE SPECIFICATION

2.3.1 Operating system

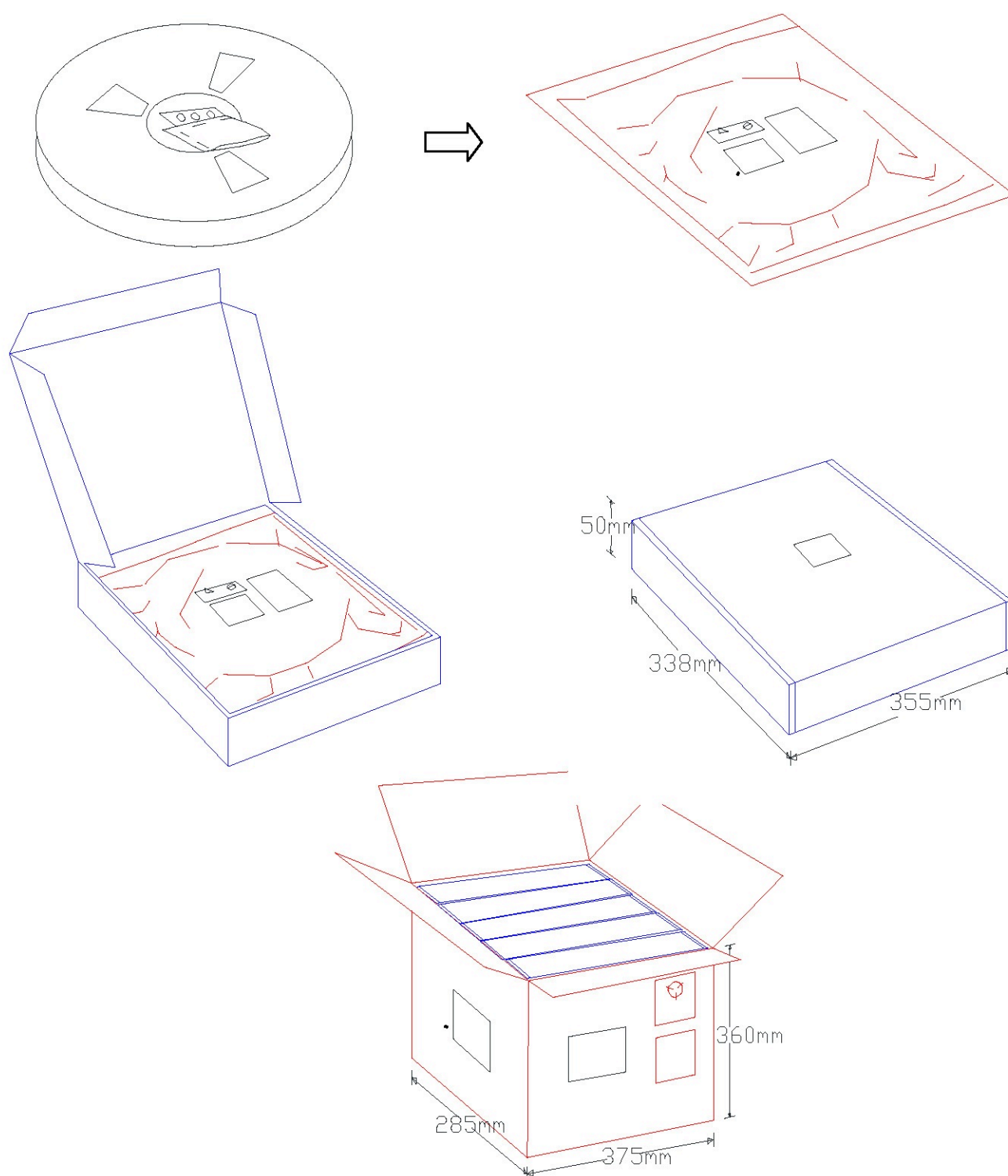
- Windows WHQL'd.
- Linux, Android supported. Necessary customized per customer requirement.

3. PACKING & ACCESSORIES

Contents	Unit	Remarks
MWR188FT-U	*1	1,500pcs for a reel.
Reel	*1	One reel for a box.
Carton	*1	5 boxes in a carton.



1. 10 sprocket hole pitch cumulative tolerance ± 0.20 .
2. Carrier camber is within 1 mm in 250 mm.
3. Material : Black Conductive Polystyrene Alloy.
4. All dimensions meet EIA-481-D requirements.
5. Thickness : 0.30 ± 0.05 mm.
6. Packing length per 22" reel : 98.5 Meters.(1:3)
7. Component load per 13" reel : 1500 pcs.



END OF THIS DOCUMENTATION

NCC 警語

根據 NCC 低功率電波輻射性電機管理辦法規定：

第十二條 經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率變更原設計之特性及功能。

第十四條 低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

FCC 警語

FCC Caution: 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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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