



# OEM/Integrators Installation Manual

Version 1.1

April 07. 2014

This document is confidential and subject to change

- 1. The RF module limited to OEM installation ONLY.
- The OEM integrator is responsible for the compliance to all the rules that apply to the product into which this certified
- RF module is integrated.
- 2. 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.
- 3. 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.
- – I Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- – I 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 transmitter must not be co-located or operating in conjunction with any other antenna or ransmitter.
- **Radiation Exposure Statement**
- This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be
- installed and operated with minimum distance 20cm between the radiator & your body.

- **This device is intended only for OEM integrators under the following conditions:**
- The antenna must be installed such that 20 cm is maintained between the antenna and users, and The transmitter module may
- not be co-located with any other transmitter or antenna. As long as 2 conditions above are met, further transmitter test will not
- be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance
- requirements required with this module installed.
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- **IMPORTANT NOTE:**
- In the event that these conditions cannot be met (for example certain laptop configurations or colocation with another
- transmitter), then the FCC authorization is no longer considered valid and the FCC ID cannot be used on the final product. In
- these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and
- obtaining a separate FCC authorization.
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- **End Product Labeling**
- This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be
- maintained between the antenna and users. The final end product must be labeled in a visible area with the following:
- “Contains FCC ID: ZD7-WiMi300”.
- The grantee's FCC ID can be used only when all FCC/ IC compliance requirements are met.
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- **Manual Information To the End User**
- The OEM integrator has to be aware not to provide information to the end user regarding how to
- install or remove this RF module in the user's manual of the end product which integrates this module.
- The end user manual shall include all required regulatory information/warning as show in this manual.
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- **Operations in 5.15-5.25GHz band are for indoor use only.**

# Features



## *Key Features :*

- *3x3 antenna Configuration*
- 802.11n Network Standards (HT 40 only)
- Modulation modes: BPSK, QPSK, 16QAM and 64QAM
- WPS Certified– Wireless Protected Setup for easy set up and security configuration
- Optimal channel selection and connection management
- *Seamless channel switch* under interference
- 40 MHz bandwidth support.
- 300MHz PHY Rate Support and STBC Support for Extended Range
- Antenna: 3x IPex Connectors (3T/3R) – U.FL
- MAC Filtering – No Restriction Mode, White List Mode, Black List Mode; Up to 32 connections
- WDS Enables network management units to collect statistics and manage the device remotely
- Support Low Power Mode

## *Standard & Certifications:*

- FCC
- RoHS Compliance

# Specification



Chipset	
Mac/BB Processor	Lantiq PSB8231
RF Chip	Lantiq PSB8301
Radio	
Standards	2009 IEEE 802.11a, IEEE 802.11n
Antenna U.FL	3 x Ipex Connectors (3T/3R)
RF connector impedance	50 ohm
Operating Frequency	802.11n : 5.190 ~ 5.230GHz, 5.755 ~ 5.795GHz
Modulation	IEEE 802.11n : OFDM
Certifications	
Output Power (Per Antenna @ -25dB EVM)	802.11n HT40 : 5.190 ~ 5.230GHz 17.0 +/- 1dBm (Avg) 5.755 ~ 5.795GHz 25.0 +/- 1dBm (PK)
Receive Sensitivity (PER <10%)	802.11a 64QAM 5/6 <= -75dBm
	802.11a BPSK 1/2 <= -88dBm
	802.11n HT40, 64QAM 5/6 <= -75dBm (@3 antennas)
	802.11n HT20, 64QAM 5/6 <= -78dBm (@3 antennas)
	802.11n HT40, BPSK 1/2 <= -92dBm (@3 antennas)
	802.11n HT20, BPSK 1/2 <= -94dBm (@3 antennas)
Receiver Max Power Sensitivity (PER < 10%)	-20dBm

# Specification



Power Supply		
Input Voltage / Average Power	3.3V / 5.5W	
Environmental		
Output Power (Per Antenna @ -25dB EVM)	Temperature	Humidity
	0 ~ 50 °C	10% to 85% Non-Condensing
	-20 ~ 85 °C	5% to 90% Non-Condensing
Utility		
Driver Support	Linux 2.6.33	
Wireless Statistics	Link quality, RSSI, noise level packet statistics	
Dimensions		
Dimensions(PCBA)	50.95mm x 32 mm	
Manufacturing compliant	Lead-free RoHS	

# Specification

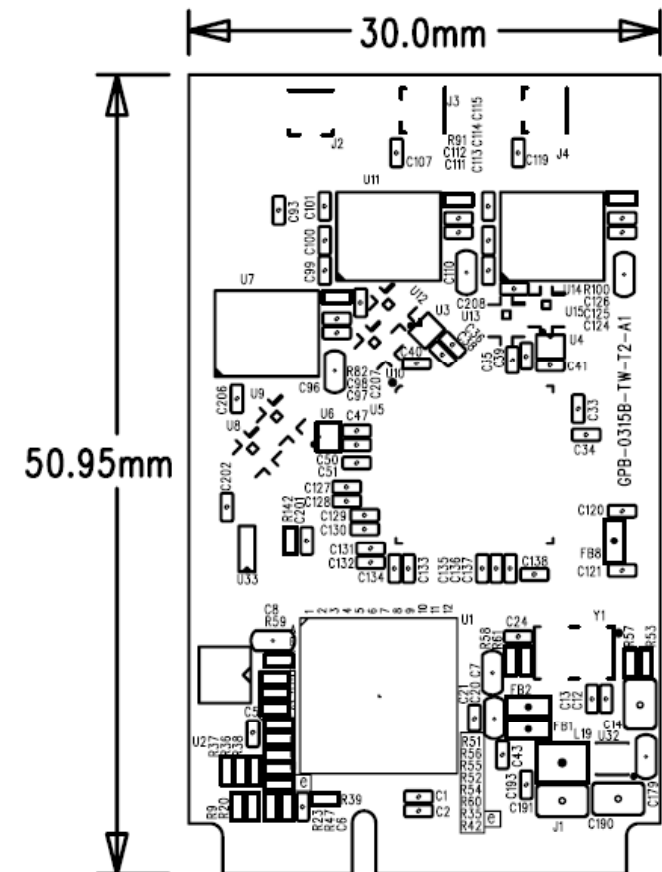


Power Supply		
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	0 ~ 50 °C	10% to 85% Non-Condensing
	-20 ~ 85 °C	5% to 90% Non-Condensing
Utility		
Driver Support	Linux 2.6.33	
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Dimensions		
Dimensions(PCBA)	50.95mm x 32 mm	
Manufacturing compliant	Lead-free RoHS	

# Mechanical Specification

## PCB Dimension:

- Width : 30.0mm
- Height : 50.95mm
- Thickness : 1.0 mm



- PCB Form Factor complied with PCI express Mini Card Electromechanical Specification Rev 1.2(Oct. 26, 2007), Figure 2-3 : Full Mini Card



## Pin Out Definitions – 1 of 2



Pin #	Name	Pin #	Name
51	Reserved	52	+3.3V aux
49	Reserved	50	GND
47	Reserved	48	+1.5V
45	Reserved	46	LED_WPAN#
43	GND	44	LED_WLAN#
41	+3.3V aux	42	LED_WWAN#
39	+3.3V aux	40	GND
37	GND	38	USB_Dp
35	GND	36	USB_Dn
33	PETp0	34	GND
31	PETn0	32	SMB_DATA
29	GND	30	SMB_CLK
27	GND	28	+1.5V
25	PERp0	26	GND
23	PERn0	24	+3.3V aux
21	GND	22	PERST#
19	Reserved	20	W_DISABLE#
17	Reserved	18	GND
Mechanical Key			
15	GND	16	Reserved

## Pin Out Definitions – 2 of 2



Pin #	Name	Pin #	Name
13	REFCLKp	14	Reserved
11	REFCLKn	12	Reserved
9	GND	10	Reserved
7	CLKREQ#	8	Reserved
5	Reserved	6	+1.5V
3	Reserved	4	GND
1	WAKE#	2	+3.3V aux

# Antenna Spec

Manufacturer : Antenna-pro [www.antenna-pro.com](http://www.antenna-pro.com)

Model NO. : KMDA5158-06SMA

Antenna Type : 2.4~5.8G Dual Band WiFi Dipole antenna  
(4 dBi(2.4 GHz), 7 dBi(5 GHz))

Antenna connect : SMA (Male Rev)

