

# Installation Guide

## 802.11 WLAN Module Series

CONNECTION MADE EASY

### WMIA-139AG

### 802.11a/b/g Wireless Mini-PCI Module



#### Product Specification

<b>Chip Set</b>	Atheros AR5004X	<b>Power Consumption</b>	<b>802.11a</b> Continue Tx : TBD Continue RX : 240mA <b>802.11g</b> Continue Tx : TBD Continue RX : 250mA <b>802.11b</b> Continue Tx : TBD Continue RX : 230mA
<b>Interface Type</b>	mini-PCI Type IIIB (Pin18, 123 is connected to 5V)	<b>Environmental</b>	<b>Temperature Range:</b> -0°~50°C (operating); -20°~85°C (storing) <b>Operating Humidity:</b> -10% to 85% Non-Condensing
<b>Frequency Band</b>	<b>802.11a:</b> UNI band 5.15GHz ~ 5.85GHz <b>802.11b/g:</b> ISM band 2.4GHz ~ 2.4835GHz	<b>Supplied Driver</b>	Windows 98SE/ME/NT4.0/2000/XP
<b>Network Standard</b>	IEEE 802.11a,802.11b,802.11g	<b>Operating Voltage</b>	3.3V ± 5%, (5 GHz PA works on 5V in 802.11A mode)
<b>Modulation</b>	<b>802.11a/g:</b> OFDM <b>802.11b:</b> CCK, DQPSK, DBPSK	<b>Dimensions</b>	59.7x50.95x5 mm
<b>Data Rate</b>	<b>802.11a</b> 54, 48, 36,24,18,12, 9, 6 Mbps per channel, auto fallback for extended range; (option : Enhanced proprietary Turbo Mode up to 108 Mbps) <b>802.11b</b> 11, 5.5, 2, 1 Mbps per channel, auto fallback for extended range <b>802.11g</b> 54, 48, 36,24,18,12,11, 9, 6, 5.5 , 2 , 1 Mbps per channel, auto fallback for extended range (option : Enhanced proprietary Turbo Mode up to 108 Mbps)	<b>Weight</b>	20g
<b>Antenna Connector</b>	UFL-CON	<b>Certification</b>	FCC
<b>Transmit Power</b>	802.11b:14.5dBm@11Mbps 802.11g:15.5dBm@54Mbps 802.11a:14.5dBm@54Mbps		
<b>Security</b>	<b>802.11a</b> 64/128/152-bit WEP Encryption, AES <b>802.11b</b> 64/128-bit WEP Encryption, TKIP, AES <b>802.11g</b> 64/128-bit WEP Encryption, TKIP, AES		
<b>Receive Sensitivity</b>	<b>802.11a/g</b> - 6Mbps 10 <sup>-5</sup> BER @ -90dBm, typical - 9Mbps 10 <sup>-5</sup> BER @ -89dBm, typical - 12Mbps 10 <sup>-5</sup> BER @ -88dBm, typical - 18Mbps 10 <sup>-5</sup> BER @ -87dBm, typical - 24Mbps 10 <sup>-5</sup> BER @ -83dBm, typical - 36Mbps 10 <sup>-5</sup> BER @ -80dBm, typical - 48Mbps 10 <sup>-5</sup> BER @ -74dBm, typical - 54Mbps 10 <sup>-5</sup> BER @ -70dBm, typical <b>802.11b</b> - 1Mbps 10 <sup>-5</sup> BER @ -93dBm, typical - 2Mbps 10 <sup>-5</sup> BER @ -92dBm, typical - 5.5Mbps 10 <sup>-5</sup> BER @ -91dBm, typical - 11Mbps 10 <sup>-5</sup> BER @ -88dBm, typical		

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## The combination of Antennas Type

	Ant model:	Gain form antenna spec	ANT.Type
No1	EA-292B-1	2.4GHz:N/A 5.5~5.825GHz:4.15dBi	Dipole Antenna
No2	EA-292B	2.4GHz:N/A 5.15~5.35GHz:4.56dBi	Dipole Antenna
No3	HAO9SDP	2.4~2.5GHz:9dBi 5GHz:N/A	High-Gain outdoor Directional antenna
No4	HG2409UM	2.4GHz:8.5dBi 5GHz:N/A	Omnidirectional WLAN marine antenna
No5	HGA51G	2.4GHz:N/A 5.5~5.85GHz:8.0dBi	TIKI (Printed antenna)

Warning: The antenna "HAO9SDP", listed above, has non-unique antenna coupler (standard N type connector); this specific antenna can be used only with professional installed products when following conditions are all justified. Marketing of this antenna with retail product is serious violating of US FCC regulation.

### 1) Marketing

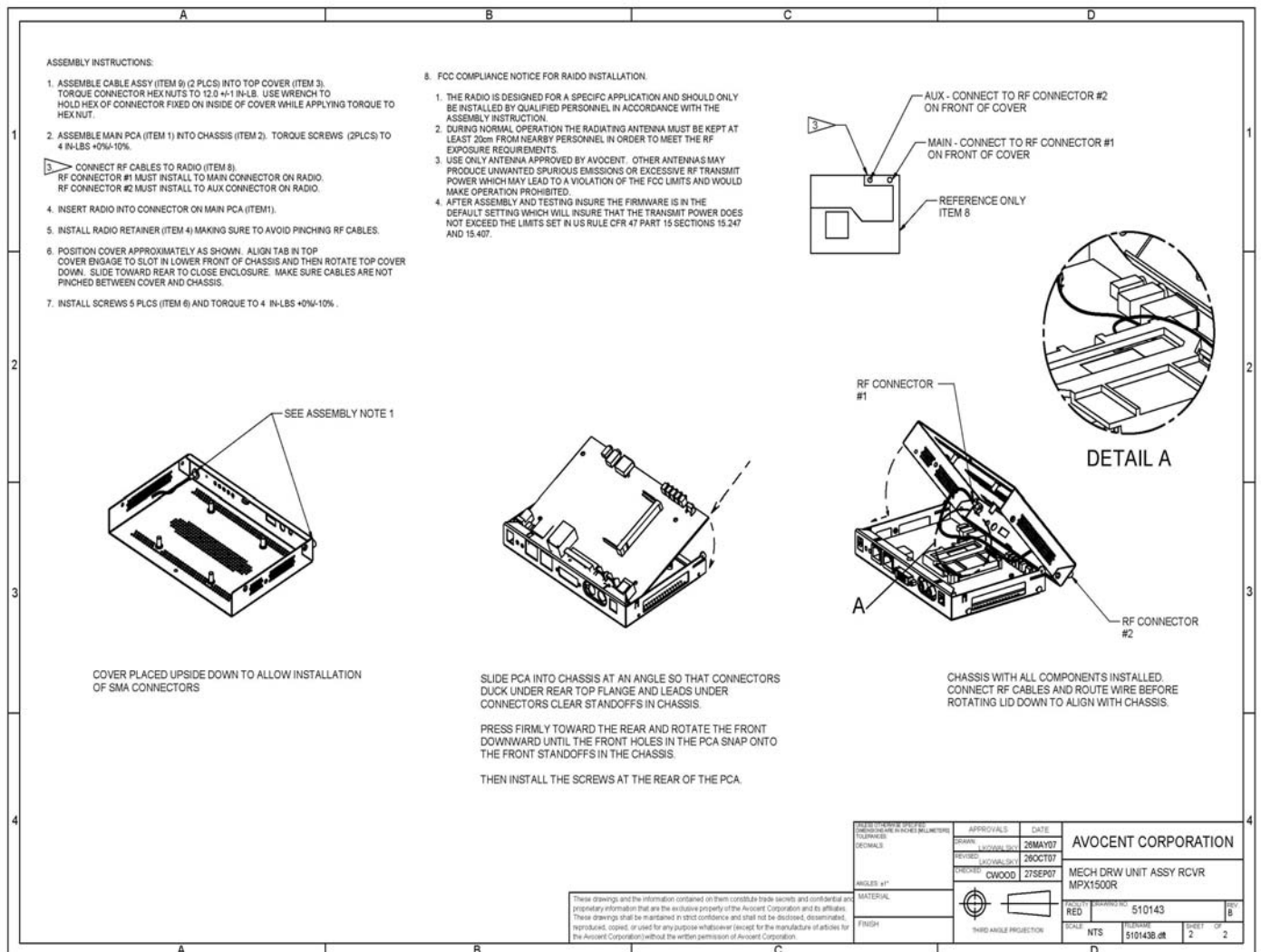
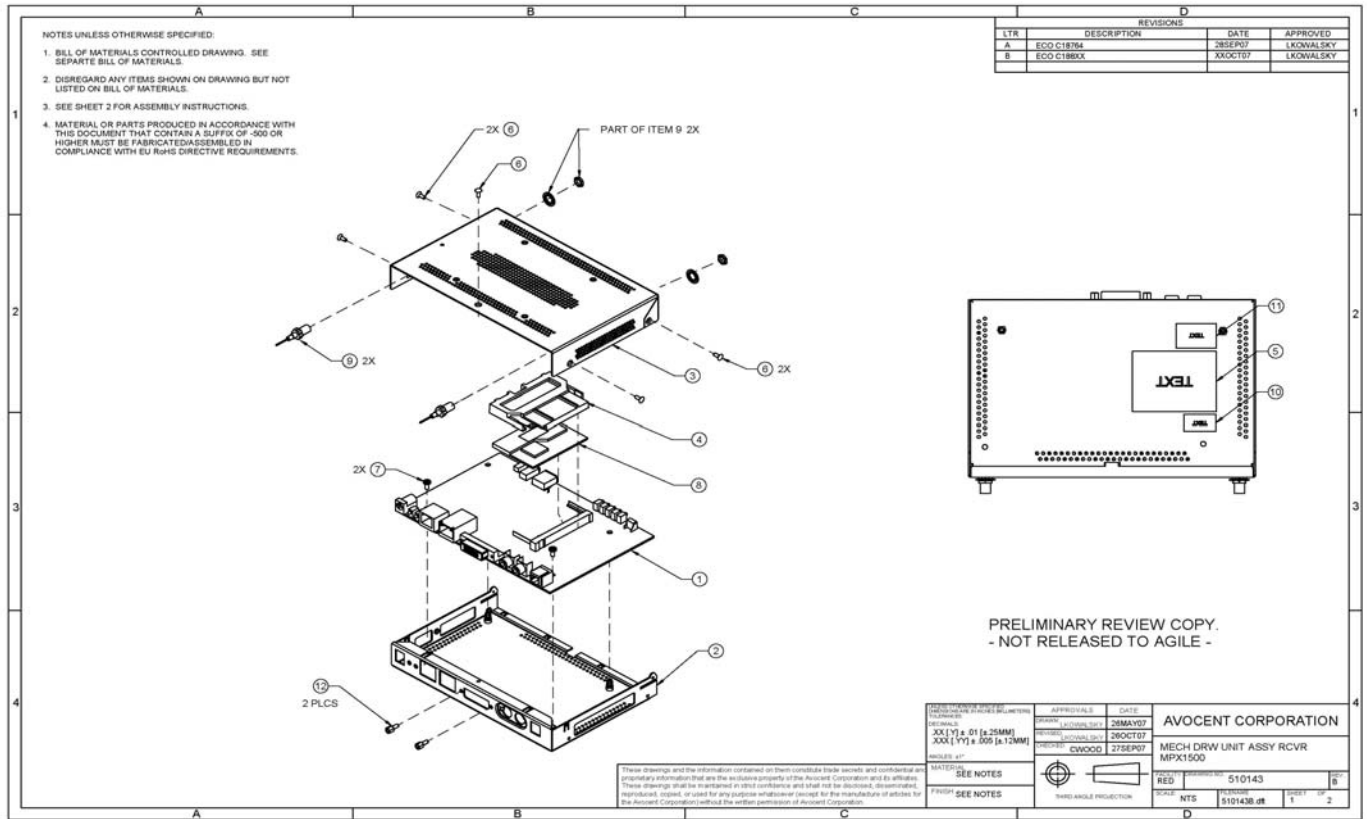
\* The device cannot be sold retail, to the general public or by mail order. It must be sold to dealers.

### 2) Requires professional installation;

- installation must be controlled.
- installed by licensed professionals ( EUT sold to dealer who hire installers)
- installation requires special training ( special programming, access to keypad, field strength measurements made), this product is designed for specific application and needs to be installed by a qualified personal who has RF and related rule knowledge. The general user shall not attempt to install or change the setting.

### 3) Application

-The intended use is generally not for the general public. It is generally for industry/commercial use.



## **Federal Communication Commission Interference Statement**

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 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.

## **IMPORTANT NOTE:**

### **FCC 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 transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Operations in the 5.15-5.25GHz band are restricted to indoor usage only

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

### **This device is intended only for OEM integrators under the following conditions:**

- 1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
- 2) The transmitter module may not be co-located with any other transmitter or antenna,
- 3) For all products market in US, OEM has to limit the operation channels in CH1 to CH11 for

2.4G band by supplied firmware programming tool. OEM shall not supply any tool or info to the end-user regarding to Regulatory Domain change.

As long as 3 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 (for example, **Indoor & Outdoor HD Multipoint Extender**, etc.).

**IMPORTANT NOTE:** In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not 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.

### **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: RYK-WMIA139AGX**".

### **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.