

# National Datacomm Corporation (NDC)

*ISO 9000 Certified*

## IEEE802.11a/g/b NWH3054A WLAN mini-PCI Product Specification

<b>DOC. ID:</b> PD-NWH3054-mini-PCI-SPEC-0.01	<b>FILENAME:</b>
<b>PRODUCT:</b>	<b>NUMBER OF PAGES:</b> 5
<b>REVISION NO:</b> 1.0	<b>STATUS:</b> Released
<b>CREATED ON:</b> 14-September-2006	<b>LAST REVISED:</b> 14-September-2006
<b>CREATED BY:</b> <b>NAME:</b>	<b>APPROVED BY:</b> <b>NAME:</b> Jerome Wu Director of Product Development
<b>SIGNATURE:</b> <b>DATE:</b>	<b>SIGNATURE:</b> <b>DATE:</b>

**Change History**

Date	Location	Description

All information disclosed herein is the property of National DataComm Corporation and is STRICTLY CONFIDENTIAL AND PROPRIETARY. Any reproduction or distribution of this information, in whole or part, or the divulgence of any portion of the contents of same, to other than internal company recipients without prior written permission of National DataComm Corporation . is prohibited.

## Table of Contents

<b>1. PRODUCT DESCRIPTION.....</b>	<b>4</b>
1.1 WIRELESS LAN RADIO MODULE.....	4
1.1.1 General.....	4
1.1.2 Specification for Radio characteristic.....	4
1.1.3 Digital hardware specification.....	4
1.1.4 Radio Power consumption.....	4
1.2 MECHANICAL SPECIFICATION.....	5
1.3 OPERATION TEMPERATURE.....	5
1.4 REGULATION COMPLIANCE.....	5

All information disclosed herein is the property of National DataComm Corporation and is STRICTLY CONFIDENTIAL AND PROPRIETARY. Any reproduction or distribution of this information, in whole or part, or the divulgence of any portion of the contents of same, to other than internal company recipients without prior written permission of National DataComm Corporation is prohibited.

## ***NWH3054 WLAN mini-PCI Bus Adapter Product Specification***

### **1. Product Description**

NWH3054A is an IEEE802.11a/g/b compliant WLAN mini-PCI module. The radio system is based on Zydax ZD1212B MAC/Base band processor together with Alhora's AL7230 radio transceiver. An additional PA is used to enhance the transmitter's power to extend the radio communication.

#### ***1.1 Wireless LAN Radio module***

##### **1.1.1 General**

Standards:	IEEE802.11a/g/b Compliance
Data Rate:	11a : 54M/48M/36M/24M/18M/12M/9M/6M 11g : 54M/48M/36M/24M/18M/12M/9M/6M 11b: 11Mbps /5.5 Mbps/2 Mbps/1Mbps
Communication method:	CSMA/CA
Security:	WEP 256bits/128 bits/64 bits
Antenna connector	IPEX connector x 2
Dimension:	45 mm x 60 mm

##### **1.1.2 Specification for Radio characteristic**

FCC part 15 compliant

Item	Specification
Operating frequency	<b>802.11a/g/b:</b> <b>USA:</b> 2.400 – 2.483GHz, 5.725 ~ 5.825Ghz <b>Europe:</b> 2.400 – 2.483GHz, 5.47 ~ 5.725Ghz <b>China:</b> 2.400 – 2.483GHz, 5.725 ~5.85Ghz
Transmitting Power	16 dbm for 11a at 5.8Ghz at 54M OFDM modulation 19 dbm for 11g at 54M bps OFDM mode 18 dbm for 11b at 11MM bps CCK mode
Receiving Sensitivity	-72 dBm for 54 Mbps(11a Typical) -72 dBm for 54 Mbps(11g Typical) -82dBm for 11 Mbps(11b Typical)

##### **1.1.3 Digital hardware specification**

Mini-PCI Bus:	Mini-PCI Interface
Combo MAC/Base band:	ZD1212B
Radio transceiver	Alroha AL7230
Data width:	32 bits

##### **1.1.4 Radio Power consumption**

Power Supply:	3.3 Volt $\pm$ 5 % provided by Host computer
Power consumption:	450 mA (Radio Transmission) maximum

All information disclosed herein is the property of National DataComm Corporation and is STRICTLY CONFIDENTIAL AND PROPRIETARY. Any reproduction or distribution of this information, in whole or part, or the divulgence of any portion of the contents of same, to other than internal company recipients without prior written permission of National DataComm Corporation . is prohibited.

3000 mA (Radio Receiving)

## 1.2 Mechanical specification

Dimension: 60 mm length x 45 mm width  
Weight: 12 grams  
Connector part type: mini-PCI Bus connector



## 1.3 Operation temperature

Operational from -10 C° to +70 C(Radio performance degrade is excluded)

## 1.4 Regulation compliance

FCC part 15 class B compliant

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.

All information disclosed herein is the property of National DataComm Corporation and is STRICTLY CONFIDENTIAL AND PROPRIETARY. Any reproduction or distribution of this information, in whole or part, or the divulgence of any portion of the contents of same, to other than internal company recipients without prior written permission of National DataComm Corporation . is prohibited.

- Consult the dealer or an experienced radio/TV technician for help.

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.

**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.

**IMPORTANT NOTE:**

**FCC Radiation Exposure Statement:**

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. IEEE 802.11b or 802.11g operation of this product in the U.S.A. is firmware-limited to channels 1 through 11.

**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, digital device emissions, PC peripheral requirements, 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.

## **2. 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: **IOU-NWH3054A**".

## **3. 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.