

ZyXEL

User's Manual

N-611

*802.11n Wireless LAN Module
Green Product (RoHS compliant)*

(RL RT2880+ RT2820)

Reversion 1.1

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2008. Revision History

Date	Release	Author	Description
2008/01/09	0.90	Winy.Liu	First Release
2008-1-29	0.91	Steven.Dai	1. Remove "RGMII" in Interface 2. Modify the dual band to single band\ 3. Remove 802.11a standard because not supported 4. Remove feature 6 and 8
2008-1-30	1.0	Steven.Dai	1. finalize the PS 2. modify the interface as "MinPCI"
2008-5-23	1.1	Steven.Dai	1. modify the antenna as 2*2

2. Related Documents

Date	Author	Document
2005	Kevin	G-663

3. Introduction

The N-611 is an IEEE 802.11b/g/n wireless system or other WLAN application operating for single band 2.4G (low-band); up to the performance of 300Mbps. It operates at 2.4GHz unlicensed frequency band for wireless networks in the home or office environment. Base on the RL 2880 chipset and RF 2820, the N-611 supports rapid data transfer rate up to 300Mbps and users could work anywhere in the coverage area and enjoy the convenience and mobility of wireless.

The N-611 also backward compatible with 802.11b/g access point by using 802.11n draft 2.0.

802.11n builds on previous 802.11 standards by adding multiple-input multiple-output (MIMO). MIMO uses multiple transmitter and receiver antennas to improve the system performance. With built-in IEEE 802.11n MAC/BBP and dynamic WEP, WPA, WPA2, the Wireless N-611 provides best security access and 8* mBSSIDs up to 256 clients.

4. Features

- IEEE 802.11n draft complies.
- Backward compatible with IEEE 802.11b/g standard.
- Wire-free access to networked resources from anywhere beyond the desktop.
- Interference resistant designed guarantee reliable performance.
- Delivers data rate up to 300Mbps.
- Allows users move between Access Points without resetting their connection reconfiguration.
- Support WEP64/128, WPA and WPA2
- Support WDS, WMM, mBSSIDs (up to 8),
- Dynamic WEP key exchange support
- Support MiniPCI interface(MII signal or MiniPCI signal)

5. Specification

Specifications	
Product Name	802.11n Wireless LAN Module
Interface	MiniPCI
Network Standard	IEEE802.11b/g/n COMPLIANT
Data Rate	802.11b: 1, 2, 5.5, 11Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11n (draft): 6, 6.5, 13, 13.5, 19.5, 26, 27, 39, 40.5, 53, 54, 58.5, 65, 78, 81, 104, 108, 117, 121.5, 130, 135, 162, 216, 243, 270, 300Mbps
Modulation	802.11g---- 54,48,36,24,18,12,9,6Mbps (OFDM) 802.11b---- CCK (11Mbps, 5.5Mbps), DQPSK (2Mbps), DBPSK (1Mbps) 802.11n---- BPSK, QPSK, 16-QAM, 64-QAM
Operating Frequency	802.11b/g/n ISM band: 2.412 ~ 2.462 GHz: North America(CH1~CH11) 2.412 ~ 2.484 GHz: Japan(CH1~CH13) 2.412 ~ 2.472 GHz: Europe ETSI(CH1~CH13) 802.11n 40MHz band: 2.422~2.452 GHz: (FCC) North America (CH3~CH9) 2.412~2.462 GHz: (TELEC) Japan (CH3~CH11) 2.412~2.462 GHz: (ETSI) Europe (CH3~CH11)
Operating Channels	1~11 for N. America, 14 for Japan, 1~13 for Europe (ETSI),
RF Output Power	11g/n: 14dbm \pm 1dmb; 11b: 17dbm \pm 1dmb;
Antenna	2*2 (dbi default)
Receiver Sensitivity	BPSK (1/2 Rate): -80dBm@20MHz; -77dBm@40MHz QPSK (1/2 Rate): -77dBm@20MHz; -74dBm@40MHz QPSK (3/4 Rate): -75dBm@20MHz; -72dBm@40MHz 16-QAM (1/2 Rate): -72dBm@20MHz; -69dBm@40MHz 64-QAM(5/6 Rate): -62dBm@20MHz; -59dBm@40MHz
Power Consumption	3.5W
Operational Voltage	3.0 to 3.5V
Operating Temperature	0 - 40°C
Humidity	20%~95%
Dimensions (mm)	59.8mm * 45.9mm
Weight (g)	9.6g

6. Certifications

Federal Communications Commission (FCC) Interference Statement

The device complies with Part 15 of FCC rules. Operation is subject to the following two Conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operations.

This device 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 device 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 device does cause harmful interference to radio/television reception, which can be determined by turning the device off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

CAUTION:

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.



FCC Radiation Exposure Statement

• This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide 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. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

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

注意！

依據 低功率電波輻射性電機管理辦法

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、加大功率或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，指依電信規定作業之無線電信。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。

本機限在不干擾合法電臺與不受被干擾保障條件下於室內使用。

減少電磁波影響，請妥適使用。

This device has been designed for the WLAN 2.4 GHz network throughout the EC region and Switzerland, with restrictions in France.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

FCC Caution

1. The 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.
2. FCC RF Radiation Exposure Statement: The equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.
3. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
4. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

NOTE: This device is approved for OEM installation with specified antennas as listed in this Manual. It is the responsibility of the Installer to comply with the separation distance for satisfying RF exposure compliance.

Viewing Certifications

- 1 Go to <http://www.zyxel.com>.
- 2 Select your product on the ZyXEL home page to go to that product's page.
- 3 Select the certification you wish to view from this page.