

# SparkLAN: Wireless Card Installation Manual SPK-633 Version 0.1

## ***0-Introduction***

The Ralink RT2561+ WLAN NIC is a complete wireless high speed Network Interface Card (NIC) utilizing the Ralink RT2561+ chip set. It conforms to the IEEE 802.11g protocol and operates in the 2.45 GHz ISM frequency bands. It provides a complete reference design evaluation platform of hardware and software to system providers or integrators requiring wireless data communications capability and is ideal for integration into computer platforms.

Fully compliant with the IEEE 802.11g WLAN standards

FCC Certified Under Part 15 (pending) to Operate in the 2.45 Bands

Support for 54, 48, 36, 24, 18, 12, 9, and 6 Mbps OFDM, 11 and 5.5 Mbps CCK and legacy 2 and 1 Mbps data rates

Driver Supports Microsoft Windows ® 98/SE, ME, XP and 2000 (SR1)

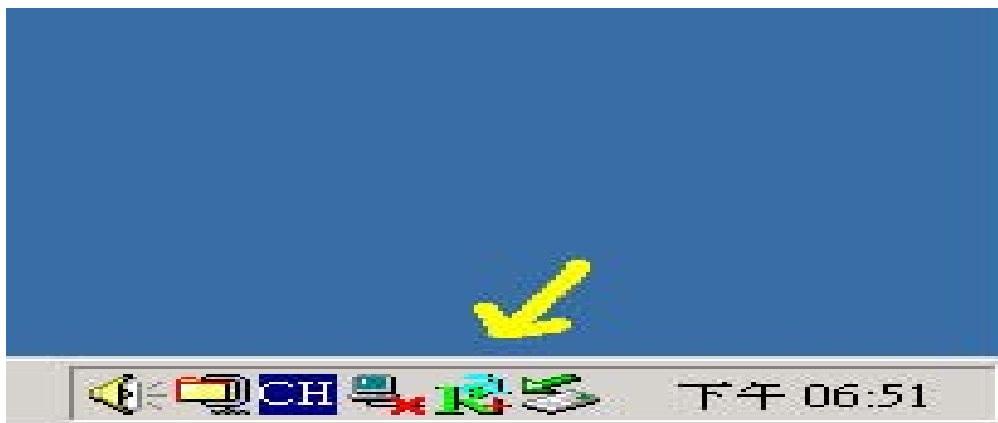
## ***1-SPK-633 Installation procedure***

### ***1.1 Installing the miniPCI card into the host PC Notebook***

a-open miniPCI slot cover of host PC Notebook housing b-insert miniPCI card into miniPCI slot  
c-connect the host PC notebook antennas to the miniPCI card antenna connectors (Hirose type UFL connector) d-close miniPCI slot cover of host PC Notebook housing

### ***1.2 Installing the software drivers***

a-Start windows b-When windows detects new hardware and asks for drivers, point to directory where the Ralink driver is located (for example floppy drive, cdrom , harddisk) to install. c-after drivers are installed, restart windows



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### ***1.3 Wireless LAN installation guide lines and Authorization for use***

Installation and use of this Wireless LAN device must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications made to this device that are not expressly approved by Ralink may void the user's authority to operate the equipment. Ralink is not responsible for any radio or television interference caused by unauthorized modification of this device, or the substitution or attachment of connecting cables and equipment other than specified. It is the responsibility of the user to correct any interference caused by such unauthorized modification, substitution or attachment. Ralink and its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from failing to

comply with these guidelines.

The use of Wireless LAN devices may be restricted in some situations or environments for example:

- \* On board of airplanes, or
- \* In an explosive environment, or
- \* In case the interference risk to other devices or services is perceived or identified as harmful.

In case the policy regarding the use of Wireless LAN devices in specific organizations or environments

(e.g. airports, hospitals, chemical/oil/gas industrial plants, private buildings etc.) is not clear, please first verify authorization to use these devices prior to operating the equipment.

## **2-Regulatory information**

### **2.1 FCC Information to User**

This product does not contain any user serviceable components and is to be used with approved antennas only. Any product changes or modifications will invalidate all applicable regulatory certifications and approvals

### **2.2 FCC Guidelines for Human Exposure**

**Warning:**

***In order to comply with RF exposure limits established in the ANSI C95.1 standards, the user is advised to maintain a distance of at least 1 inch (20 cm) from the antenna of this device while it is in use.***

### **2.3 FCC Electronic Emission Notices**

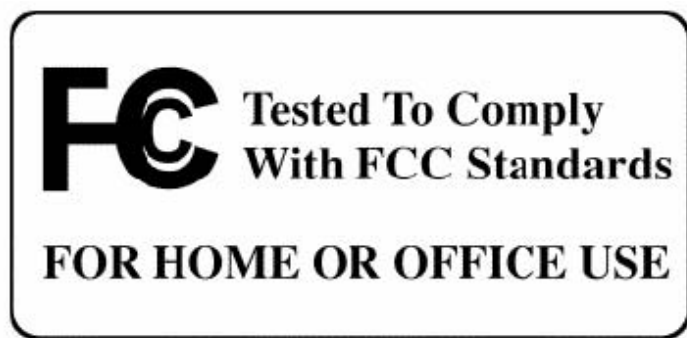
This device complies with part 15 of the FCC Rules.

Operation is subject to the following two conditions:

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

operation. Preliminary SPK-633 installation manual FCC ID: RYK-CAS633

### **2.4 FCC Radio Frequency 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 when the equipment is operated in a commercial environment. 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. Operation of this equipment in a residential area may cause harmful interference, in which case the user will be required to correct the interference at his own expense. 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

### **2.5 Export restrictions**

This product or software contains encryption code which may not be exported or transferred from the US or Canada without an approved US Department of Commerce export license. Preliminary SPK-633 installation manual FCC ID: RYK-CAS633

## **2.6 Europe -EURtion of Conformity**

This device complies with the essential requirements and other relevant provisions of the European R&TTE Directive 1999/5/EC. Compliance to essential test suites is met per standards:

### **R&TTE Harmonized Standard Description**

LVD specification EN 60950 EN 60950,ed. (1992), incl A1(1993), A2(1993), A3(1995) and A4(1997) Safety of information technology equipment, including electrical business equipment. Meets R&TTE directive art. 3.1.a of essential requirements on protection of the health and safety of the user. ETSI EMC specification ETSI EN 301 489-1 V1.2.1 (2000-08) ETSI EN 301 489-17 V1.1.1 (2000-09) Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services;

*Part 1: Common technical requirements Part 17: Specific conditions for Wideband data and HIPERLAN equipment*

Meets R&TTE directive art. 3.1.b of essential requirements on protection with respect to ElectroMagnetic Compatibility. ETSI RF specification ETSI EN 300 328 Part 1 V1.2.2 (2000-07) ETSI EN 300 328 Part 2 V1.1.1 (2000-07) Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband Transmission systems; data transmission equipment operating in the 2,4 GHz ISM band and using spread spectrum modulation techniques;

*Part 1: Technical characteristics and test conditions Part 2: Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive*

Meets R&TTE directive art. 3.2.a on effective use of spectrum so as to avoid harmful interference.

### **Important Notice :**

This device is a 2.4 GHz low power RF device intended for home and office use in EU and EFTA member states. In some EU / EFTA member states some restrictions may apply. Please contact local spectrum management authorities for further details before putting this device into operation.

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## **3-Technical Specifications**

**Radio Technology** IEEE 802.11g (DSSS and OFDM)

**Operating Frequency** 2412-2462MHz ISM band **Modulation Schemes** DQPSK, DBPSK, CCK, 16 QAM, 64 QAM **RF Channel Availability** 11 channels for United States (2412 MHz to 2462 MHz) 13 channels for Europe (2412 MHz to 2472 MHz) 13 channels for Japan (2412 MHz to 2472 MHz), channel 14 only available in DSSS mode (11 Mbps max) 11 channels for Taiwan (2412 MHz to 2462 MHz)

**Data Rate** Support for 54, 48, 36, 24, 18, 12, 9, and 6 Mbps OFDM, 11 and

5.5 Mbps CCK and legacy 2 and 1 Mbps data rates **Media Access Protocol** CSMA/CA with ACK **Transmitter RF Output Power** < 18.0 dBm EIRP (typical) including antenna gain **Operating Voltage** 3.3 VDC via PC host miniPCI slot

**Interface** miniPCI formfactor **Device driver Support** Microsoft® Windows® NT, 2000, ME, and XP

To reduce potential radio interference to other users, the dipole antenna with a gain not more than 2dBi should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that permitted for successful communication.

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

1) The antenna must be installed such that `<?xml:namespace prefix = st1 ns = "urn:schemas-microsoft-com:office:smarthtml" />`20 cm is maintained between the antenna and users. For laptop installations, the antenna must be installed to ensure that the proper spacing is maintained in the event the users place the device in their lap during use (i.e. positioning of antennas must be placed in the upper portion of the LCD panel only to ensure 20 cm will be maintained if the user places the device in their lap for use) and

2) The transmitter module may not be co-located with any other transmitter or antenna. As long as the 2 conditions above are met, further transmitter testing 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.  
End Product Labeling

This transmitter module is authorized only for use in devices where the antenna may be installed such that 20 cm may be maintained between the antenna and users (for example access points, routers, wireless ADSL modems, certain laptop configurations, and similar equipment). The final end product must be labeled in a visible area with the following: "Contains TX FCC ID: RYK-CAS633".

#### RF Exposure Manual Information That Must be Included

The users manual for end users must include the following information in a prominent location "IMPORTANT NOTE: To comply with FCC RF exposure compliance requirements, the antenna 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."

#### Additional Information That Must be Provided to OEM Integrators

The end user should NOT be provided any instructions on how to remove or install the device.