



# PRODUCT SPECIFICATION

## 802.11g, 54Mbps Wireless LAN USB Module

### B94RSVLD0707

Version 1.1

This document contains confidential proprietary information and is property of LTC. The contents of this document should not be disclosed to unauthorized persons without the written consent of LTC.

#### Change History:

| Revision    | Date       | Author    | Change List                        |
|-------------|------------|-----------|------------------------------------|
| Version 1.0 | 2007/08/10 | Brian Liu | Preliminary                        |
| Version 1.1 | 2007/08/13 | Brian Liu | Tx power, power consumption update |

|                   |                            |
|-------------------|----------------------------|
| Author: Brian Liu | Approved by: Sam Chen      |
| Editor: Brian Liu | Project Leader: David Peng |

# PRODUCT SPECIFICATION

802.11g, 54Mbps Wireless LAN USB Module

## B94RSVLD0707

Version 1.1

Networking B.U.  
Lite-On Technology Corporation  
4F, 90, Chien 1 Rd.  
Chung-Ho, Taipei Hsien 235, Taiwan, R.O.C.

Phone: 886-2-2222-6181

Fax: 886-2-2222-3882

Contact: Product Marketing

Mr. Brian Liu #8115

E-mail: brian.liu@liteon.com

Customer Approval: \_\_\_\_\_(Signature)  
\_\_\_\_\_(Title)  
\_\_\_\_\_(Company)  
\_\_\_\_\_(Date)

(Please Sign Back by FAX. For Confirming the Spec Only, not an Official Agreement for OEM/ODM Business)

## CONTENT

|                                      |          |
|--------------------------------------|----------|
| <b>PRODUCT FEATURES .....</b>        | <b>4</b> |
| <b>PRODUCT SPECIFICATIONS .....</b>  | <b>4</b> |
| MAIN CHIPSET .....                   | 4        |
| FUNCTIONAL SPECIFICATIONS .....      | 4        |
| MECHANICAL .....                     | 5        |
| CONNECTOR PIN DEFINITION (2X4) ..... | 5        |
| BLOCK DIAGRAM .....                  | 5        |
| <b>ENVIRONMENTAL .....</b>           | <b>6</b> |
| OPERATING .....                      | 6        |
| STORAGE .....                        | 6        |

## PRODUCT FEATURES

- Operate at ISM frequency bands (2.4GHz) with 54Mbps data rate
- IEEE standards support: IEEE 802.11b, 802.11g
- Rohs compliance

## Product specifications

### Main chipset

Baseband / MAC: Atheros AR2524

RF / Power Amplifier: Atheros AR2124

### Functional Specifications

|                              |   |   |
|------------------------------|---|---|
| <b>Standard</b>              | IEEE802.11b; IEEE 802.11g; IEEE 802.11i, WMM  |   |
| <b>Bus Interface</b>         | Universal Serial Bus (USB2.0)   |   |
| <b>Data Rate</b>             | 802.11g compliant: 11, 5.5, 2, 1 (DSSS/CCK); 6, 9, 12, 18, 24, 36, 48, 54 (OFDM) Mbps data rates  |   |
| <b>Media Access Control</b>  | CSMA/CA with ACK  |   |
| <b>Radio Technology</b>      | <b>802.11b</b> : DSSS (Direct Sequence Spread Spectrum) / CCK<br><b>802.11g</b> : DSSS/CCK, OFDM (Orthogonal Frequency Division Multiplexing) |   |
| <b>Modulation Techniques</b> | <b>802.11b</b><br>DSSS:<br>CCK @ 11, 5.5 Mbps<br>DQPSK @ 2 Mbps<br>DBPSK @ 1 Mbps   | <b>802.11g</b><br>OFDM:<br>BPSK @ 6, 9 Mbps<br>QPSK @ 12, 18 Mbps<br>16-QAM @ 24, 36 Mbps<br>64-QAM @ 48, 54 Mbps   |
| <b>Network architecture</b>  | Ad-hoc mode (Peer-to-Peer )<br>Infrastructure mode  |   |
| <b>Operating Channel</b>     | <b>802.11b &amp; g</b><br>11: (Ch. 1-11) – N. America<br>13: (Ch. 1-13) – Europe ETSI   |   |
| <b>Frequency Range</b>       | <b>802.11 b &amp; g</b><br>2.412 ~ 2.462 GHz – N. America<br>2.412 ~ 2.472 GHz – Europe ETSI  |   |
| <b>Transmit Output Power</b> | <b>802.11b</b><br>21.53 dBm   | <b>802.11 g</b><br>21.86 dBm  |
| <b>Receiver Sensitivity</b>  | <b>802.11b</b><br>@FER<8%<br>11 Mbps: -84 dBm<br>5.5 Mbps: -87 dBm<br>2 Mbps: -87 dBm<br>1 Mbps: -91 dBm                                      | <b>802.11 g</b><br>@PER<10%<br>54 Mbps: -70 dBm<br>48 Mbps: -71 dBm<br>36 Mbps: -76 dBm<br>24 Mbps: -80 dBm<br>18 Mbps: -83 dBm<br>12 Mbps: -84 dBm<br>9 Mbps: -85 dBm<br>6 Mbps: -85 dBm |
| <b>Security</b>              | 64-bit, 128-bit WEP, TKIP, AES, WPA, WPA2   |   |
| <b>Operating Voltage</b>     | 3.3 V ±5% I/O supply voltage  |   |

|                          |   |   |
|--------------------------|---|---|
| <b>Power Consumption</b> | <b>802.11b</b>                              | <b>802.11g</b>                              |
|                          | Rx: 210 mA<br>Tx: 340 mA<br>Standby: 207 mA | Rx: 210 mA<br>Tx: 280 mA<br>Standby: 207 mA |

\*Environmental factors dependent

### Mechanical

Dimensions (Length x Width x Height): 44.5 x 40 x 10mm

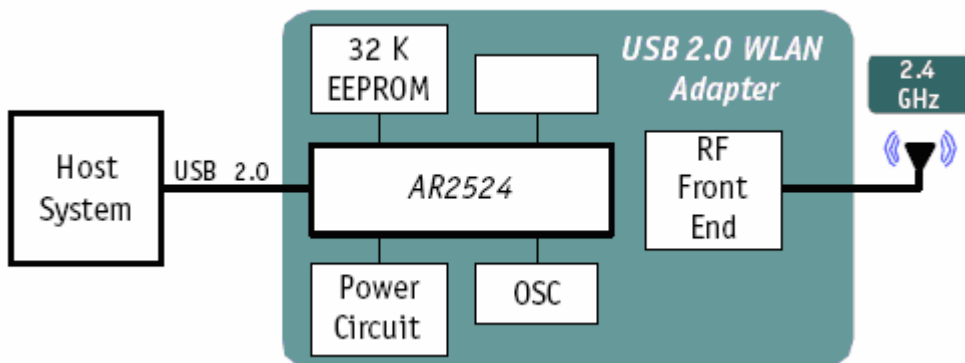
Weight: 30g

### Connector Pin Definition (2x4)

1. PWR
2. PWR\*
3. GND
4. GND\*
5. D+
6. D-
7. ON/OFF\*
8. SHLD

\*Not used in USB cable

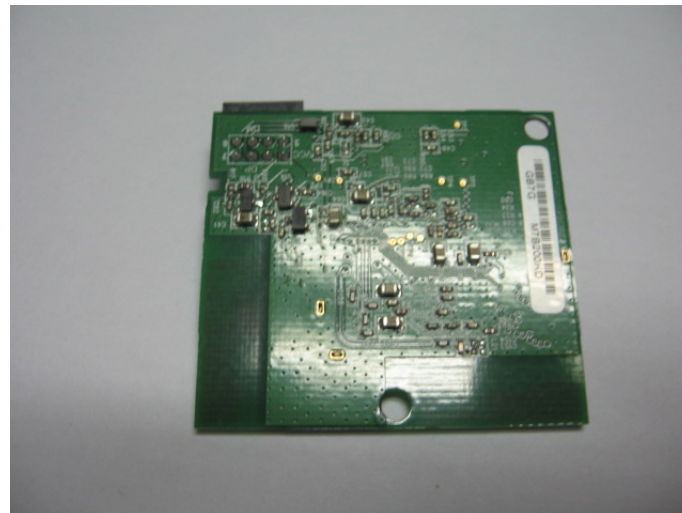
### Block Diagram



## Product ID



Top Side



Bottom Side

## ENVIRONMENTAL

### Operating

Operating Temperature: 0 to 50 °C (32 to 122 °F)

Relative Humidity: 5-90% (non-condensing)

### Storage

Temperature: -20 to 70 °C (-4 to 158 °F)

Relevant Humidity: 5-95% (non-condensing)

# 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.

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

## **IMPORTANT NOTE:**

This module is intended for OEM integrator. The OEM integrator is still responsible for the FCC compliance requirement of the end product, which integrates this module.

20cm minimum distance has to be able to be maintained between the antenna and the users for the host this module is integrated into. Under such configuration, the FCC radiation exposure limits set forth for a/an population/uncontrolled environment can be satisfied.

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

## **USERS MANUAL OF THE END PRODUCT:**

In the users manual of the end product, the end user has to be informed to keep at least 20cm separation with the antenna while this end product is installed and operated. The end user has to be informed that the FCC radio-frequency exposure guidelines for an uncontrolled environment can be satisfied. The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment. If the size of the end product is smaller than 8x10cm, then additional FCC part 15.19 statement is required to be available in the users manual: This device complies with Part 15 of 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.

## **LABEL OF THE END PRODUCT:**

The final end product must be labeled in a visible area with the following " Contains TX FCC ID: **B94RSVLD0707** " and "Contains TX IC: **466F-RSVLD707**". If the size of the end product is larger than 8x10cm, then the following FCC part 15.19 statement has to also be available on the label: This device complies with Part 15 of 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.