

# HARDWARE INTEGRATION GUIDE VERSION 2.1

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Hardware Integration Guide

# **REVISION HISTORY**

| Version | Revision Date | Change Description           | Approver  |
|---------|---------------|------------------------------|-----------|
| 1.0     | 4/21/2011     | Initial version              | Ron Seide |
| 2.0     | 11/07/2012    | Updated formatting (Laird).  | Ron Seide |
| 2.1     | 12/19/12      | Removed EN 301.893 standard. | Ron Seide |
|         |               |                              |           |

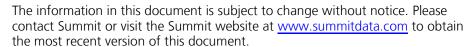
#### Hardware Integration Guide

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#### **SCOPE**

This document describes key hardware aspects of the Summit SDC-CF20G 802.11a/g compact flash radio module. This document is intended to assist device manufacturers and related parties with the integration of this radio into their host devices. Data in this document is drawn from a number of sources and includes information found in the Broadcom BCM4318E data sheet issued in July of 2006.





#### **OPERATIONAL DESCRIPTION**

This device is an SDC-CF20G 802.11b/g compact flash card with an integrated antenna, which operates in the 2.4 GHz portions of the radio frequency spectrum. The device is compliant with IEEE 802.11b and 802.11g standards using Direct Sequence Spread Spectrum and Orthogonal Frequency Division Multiplexing. The device supports all 802.11b and 802.11g data rates and automatically adjusts data rates and operational modes based on various environmental factors.

The SDC-CF20G is compliant with Compact Flash Type 1 mechanical specifications and interfaces to host devices via a 50-pin connector. The device is based on the Broadcom BCM4318E chip which is an integrated device providing a Media Access Controller (MAC), a Physical Layer Controller (PHY or baseband processor) and a 2.4 GHz transceiver. To maximize operational range, the SDC-CF20G incorporates a 2.4 GHz Power Amplifier to increase transmit power to as much as 15 dBm (30 mW) and a 2.4 GHz Low Noise Amplifier to improve receiver sensitivity. The frequency stability for both 2.4 GHz (802.11b and 802.11g) operation is +/-20 ppm.

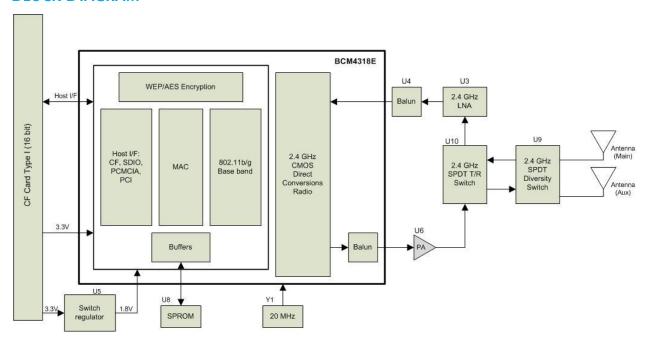
The CF20G has its own RF shielding and does not require shielding provided by the host device into which it is installed in order to maintain compliance with applicable regulatory standards. As such, the device may be tested in a standalone configuration via an extender card.

The device buffers all data inputs so that it will comply with all applicable regulations even in the presence of over-modulated input from the host device. Similarly, the SDC-CF20G incorporates power regulation to comply with all applicable regulations even when receiving excess power from the host device.

The CF20G card includes two 0-dBi omnidirectional antenna elements under a sturdy plastic cover.to support transmit and receive diversity.

The device is labeled with all applicable regulatory information in a manner that's compliant with all regulatory standards. Regulatory operational requirements are included with this document and may be incorporated into the operating manual of any device into which the SDC-CF20G is installed. The SDC-20G is designed for installation into mobile devices such as vehicle mount data terminals which typically operate at distances greater than 20 cm from the human body and portable devices such as handheld data terminals which typically operate at distances less than 20 cm from the human body. See "<u>Documentation</u> <u>Requirements</u>" for more information.

# **BLOCK DIAGRAM**



# **SPECIFICATIONS**

| Feature   | Description  |
|---|--|
| System Interface  | 16-bit Compact Flash Type I with 50-pin connector <b>Note:</b> This card is not designed for operation in the CF slot on standard laptop and desktop PCs. For these devices, Summit suggests using the SDC-PC20G in the PC Card (PCMCIA) or CardBus slot found on most laptops and desktops. |
| Antenna   | Diversity omnidirectional antenna with 0 dBi gain  |
| Chip Set  | Broadcom BCM4318E  |
| Input Voltage Requirements                              | 3.3 VDC +/- 10%  |
| Current Consumption (At maximum transmit power setting) | Transmit: 440mA (1320mW)<br>Receive: 180mA (594mW)<br>Standby: 10mA (33mW)   |
| Operating Temperature                                   | -30° to 85°C (-22° to 185°F)   |
| Operating Humidity                                      | 10 to 90% (non-condensing)   |
| Storage Temperature                                     | -40° to 80°C (-40° to 176°F)   |
| Storage Humidity  | 10 to 90% (non-condensing)   |
| Maximum Electrostatic Discharge                         | 4 kV   |
| Length  | 72.8 mm (2.87 in.)   |
| Width   | 43 mm (1.69 in.)   |
| Thickness   | Card Body: 3.3 mm (0.13 in.) Antenna: 7.3 mm (0.29 in.)  |
| Weight  | 21 g (0.7 oz.)   |

| Feature   | Description   |
|---|---|
| Mounting  | 50-pin connector  |
| Wireless Media  | Direct Sequence-Spread Spectrum (DSSS)<br>Orthogonal Frequency Divisional Multiplexing (OFDM)   |
| Media Access Protocol   | Carrier sense multiple access with collision avoidance (CSMA/CA)  |
| Network Architecture Types  | Infrastructure and ad hoc   |
| Network Standards   | IEEE 802.11b, 802.11d, 802.11e, 802.11g, 802.11i  |
| Data Rates Supported  | 802.11b (DSSS) 1, 2, 5.5, 11 Mbps<br>802.11g (OFDM) 6, 9, 12, 18, 24, 36, 48, 54 Mbps   |
| Modulation  | BPSK @ 1, 6, and 9 Mbps<br>QPSK @ 2, 12, and 18 Mbps<br>CCK @ 5.5 and 11 Mbps<br>16-QAM @ 24 and 36 Mbps<br>64-QAM @ 48 and 54 Mbps     |
| Regulatory Domain Support   | FCC (Americas, Parts of Asia, and Middle East)<br>ETSI (Europe, Middle East, Africa, and Parts of Asia)<br>MIC (Japan) (formerly TELEC) |
| 2.4 GHz Frequency Bands   | ETSI 2.4 GHz to 2.483 GHz FCC 2.4 GHz to 2.473 GHz MIC (Japan) 2.4 GHz to 2.495 GHz   |
| 2.4 GHz Operating Channels  | ETSI: 13 (3 non-overlapping) FCC: 11 (3 non-overlapping) MIC (Japan): 14 (4 non-overlapping)  |
| Transmit Power Settings   | <b>802.11b</b><br>19 dBm (80 mW)  |
| Note: Maximum transmit power varies<br>according to individual country regulations.<br>All values nominal, +/-2 dBm | 17 dBm (50 mW) 15 dBm (30 mW) 10 dBm (10 mW) 0 dBm (1 mW)  802.11g 15 dBm (30 mW) 10 dBm (10 mW) 0 dBm (1 mW)                           |

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| Feature                      | Description                          |
|------------------------------|--------------------------------------|
| Typical Receiver Sensitivity | 1 Mbps: -96 dBm                      |
|                              | 2 Mbps: -95 dBm                      |
|                              | 5.5 Mbps: -94 dBm                    |
|                              | 6 Mbps: -94 dBm                      |
|                              | 9 Mbps: -91 dBm                      |
|                              | 11 Mbps: -90 dBm                     |
|                              | 12 Mbps: -88 dBm                     |
|                              | 18 Mbps: -86 dBm                     |
|                              | 24 Mbps: -83 dBm                     |
|                              | 36 Mbps: -78 dBm                     |
|                              | 48 Mbps: -76 dBm                     |
|                              | 54 Mbps: -75 dBm (PER <= 10%)        |
| Delay Spread                 | 600 ns @ 1 Mbps                      |
|                              | 500 ns @ 2 Mbps                      |
|                              | 400 ns @ 5.5 Mbps                    |
|                              | 400 ns @ 6 Mbps                      |
|                              | 400 ns @ 9 Mbps                      |
|                              | 200 ns @ 11 Mbps                     |
|                              | 350 ns @ 12 Mbps                     |
|                              | 350 ns @ 18 Mbps                     |
|                              | 250 ns @ 24 Mbps                     |
|                              | 250 ns @ 36 Mbps                     |
|                              | 150 ns @ 48 Mbps                     |
|                              | 150 ns @ 54 Mbps                     |
| Operating Systems Supported  | Windows Mobile 6.1                   |
|                              | Windows Mobile 6.0                   |
|                              | Windows Mobile 5.0                   |
|                              | Pocket PC 2003                       |
|                              | Windows Embedded CE 6.0 R2           |
|                              | Windows Embedded CE 6.0              |
|                              | Windows Embedded CE 5.0              |
|                              | Windows XP Professional and Embedded |

| Feature  | Description  |
|----------|--|
| Security | Standards  Wireless Equivalent Privacy (WEP)  Wi-Fi Protected Access (WPA)  IEEE 802.11i (WPA2)  |
|          | <ul> <li>Encryption</li> <li>Wireless Equivalent Privacy (WEP, RC4 Algorithm)</li> <li>Temporal Key Integrity Protocol (TKIP, RC4 Algorithm)</li> <li>Advanced Encryption Standard (AES, Rijndael Algorithm)</li> <li>Encryption Key Provisioning</li> <li>Static (40-bit and 128-bit lengths)</li> <li>Pre-Shared (PSK)</li> <li>Dynamic</li> </ul> |
|          | <ul> <li>802.1X Extensible Authentication Protocol Types</li> <li>EAP-FAST</li> <li>EAP-TLS</li> <li>PEAP-GTC</li> <li>PEAP-MSCHAPv2</li> <li>PEAP-TLS</li> <li>LEAP</li> </ul>  |

| Feature   | Description  |
|---|--|
| Note: For additional information, refer to the Certifications section of the Summit website: http://www.summitdata.com/certifications.htm  Because the SDC-CF20 is the same core product as the SDC-CF10G, all certifications for the SDC-CF10 also apply to the SDC-CF20G. | ETSI Regulatory Domain EN 300 328 EN 301 489-1 EN 301 489-17 EN 60950-1 EU 2002/95/EC (RoHS) FCC Regulatory Domain Part 15.247 Subpart C  Grant Test Report Grant (Class II Permissive Change to current grant)  Industry Canada RSS-210 and RSS-Gen Issue 2 Grant/Certification (Using 0dBi PCB omnidirectional and 2dBi dipole antennas) Grant (Using 2dBi PCB omnidirectional and 5dBi dipole antennas)  MIC (formerly TELEC) Regulatory Domain Article 2 Item 19, Category WW (2.4GHz Channels 1-13) Certification Test Report  Article 2 Item 19-2, Category GZ (2.4GHz Channel 14) Certification Test Report |
| Certifications  Note: Summit has secured Wi-Fi Alliance certification for the SDC-CF20G as a "Dependent Product" of the SDC-CF10G.  | Wi-Fi Alliance 802.11a, 802.11b, 802.11g WPA Enterprise WPA2 Enterprise  Cisco Compatible Extensions (Version 4)   |
| Warranty  | Limited Lifetime   |

All specifications are subject to change without notice

# **Recommended Operating Conditions**

| Parameter                             | Min. | Typical | Max. | Units | Comments              |
|---------------------------------------|------|---------|------|-------|-----------------------|
| Supply Voltage                        |      |         |      |       |                       |
| VDDIO, VDDBUS                         | 3.0  | 3.3     | 3.6  | V     |                       |
| VDDCORE, PLLVDD, AVDD                 | 1.71 | 1.8     | 1.89 | V     |                       |
| Logic Inputs                          |      |         |      |       |                       |
| V <sub>INH</sub> , Input High Voltage | 2.0  | _       | _    | V     |                       |
| V <sub>INL</sub> , Input Low Voltage  | _    | _       | 0.8  | V     |                       |
| Logic Outputs                         |      |         |      |       |                       |
| V <sub>он</sub> , Output High Voltage | 2.4  | _       | _    | V     | Current is determined |
| V <sub>OL</sub> , Output Low Voltage  | _    | _       | 0.4  | V     | by the specific pad.  |

# **PIN DEFINITIONS**

| Pin<br>Number | Pin<br>Name   | I/O             | Power<br>Type | Description  |
|---------------|---------------|-----------------|---------------|--|
| 1             | GND           |                 | •             | Ground   |
| 2             | Slot0_data3   |                 |               | Data bus, bit 3  |
| 3             | Slot0_data4   |                 |               | Data bus, bit 4  |
| 4             | Slot0_data5   |                 |               | Data bus, bit 5  |
| 5             | Slot0_data6   |                 |               | Data bus, bit 6  |
| 6             | Slot0_data7   |                 |               | Data bus, bit 7  |
| 7             | Slot0_nCE1    |                 |               | Enable for even-numbered address bytes.<br>Active low. |
| 8             | Slot0_addr10  |                 |               | Address bus, bit 10                                    |
| 9             | Slot0_nOE     | I               |               | Memory access output enable. Active low.               |
| 10            | Slot0_addr9   |                 |               | Address bus, bit 9                                     |
| 11            | Slot0_addr8   |                 |               | Address bus, bit 8                                     |
| 12            | Slot0_addr7   |                 |               | Address bus, bit 7                                     |
| 13            | VCC3_3        |                 |               | 3.3V Module Power                                      |
| 14            | Slot0_addr6   |                 |               | Address bus, bit 6                                     |
| 15            | Slot0_addr5   |                 |               | Address bus, bit 5                                     |
| 16            | Slot0_addr4   |                 |               | Address bus, bit 4                                     |
| 17            | Slot0_addr3   |                 |               | Address bus, bit 3                                     |
| 18            | Slot0_addr2   |                 |               | Address bus, bit 2                                     |
| 19            | Slot0_addr1   |                 |               | Address bus, bit 1                                     |
| 20            | Slot0_addr0   |                 |               | Address bus, bit 0                                     |
| 21            | Slot0_data0   |                 |               | Data bus, bit 0  |
| 22            | Slot0_data1   | Data bus, bit 1 |               | Data bus, bit 1  |
| 23            | Rfu_data2     |                 |               | Data bus, bit 2  |
| 24            | Slot0_nlOIS16 |                 |               | Current access is 16 bit. Active low.                  |

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| Pin<br>Number | Pin<br>Name   | VO  | Power<br>Type | Description   |
|---------------|---------------|-----|---------------|---|
| 25            | Slot0_nCD2    |     |               | Card detect. Tied to ground in module.  |
| 26            |               | N/C |               | No Connect  |
| 27            | Slot0_data11  |     |               | Data bus, bit 11  |
| 28            | Slot0_data12  |     |               | Data bus, bit 12  |
| 29            | Slot0_data13  |     |               | Data bus, bit 13  |
| 30            | Rfu_data14    |     |               | Data bus, bit 14  |
| 31            | Slot0_data15  |     |               | Data bus, bit 15  |
| 32            | Slot0_nCE1    |     |               | Enable for even-numbered address bytes.<br>Active low.  |
| 33            | GND           |     |               | Ground  |
| 34            | Slot0_nIOR    | 1/0 |               | IO access read enable. Active low.  |
| 35            | Slot0_nIOW    | I/O |               | IO access write enable. Active low.   |
| 36            | Slot0_nWE     | l   |               | Memory access write enable. Active low.   |
| 37            | Slot0_nIREQ   | 0   |               | Interrupt request. Active low.  |
| 38            | VCC3_3        |     |               | 3.3V Module Power   |
| 39            | BT_ACTIVE     | 1   | VDDIO         | Input from BT device. When high, indicates that Bluetooth is transmitting or receiving. The Summit radio does not transmit when BT_ACTIVE is high. Tie to GND when not used |
| 40            | Slot0_nVS2    |     |               | Not Used. Leave Open (Float)  |
| 41            | Slot0_RESET   | l   |               | Card reset. Active high.  |
| 42            | Slot0_nWAIT   | I/O |               | Current access is extended.<br>Active low.  |
| 43            | INPACK        | 0   |               | This signal must be inactive until the card is configured.  |
| 44            | Slot0_nREQ    | 0   |               | Interrupt request. Active low.  |
| 45            | WL_LED_ACT    | 0   | VDDIO         | WLAN LED activity indicator   |
| 46            | Slot0_nSTSCHG |     |               | Module status change. Active low.   |
| 47            | Slot0_data8   |     |               | Data bus, bit 8   |
| 48            | Slot0_data9   |     |               | Data bus, bit 9   |
| 40            | Slot0_data10  |     |               | Data bus, bit 10  |
| 49            | Jioto_data10  |     |               | 2 4 4 5 4 5 7 5 7 7 7   |

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#### **REGULATORY**

#### **Certified Antennas**

The SDC-CF20G has been tested to the regulatory standards defined in the "Certifications" section of the Specifications table above.

Summit does not have specific regulatory approvals for the SDC-CF20G. From a regulatory and certification perspective, the SDC-CF20G is the same core product (with identical radio performance) as the SDC-CF10G. All ETSI, FCC, Industry Canada, and TELEC certifications for the SDC-CF10G are applicable to the SDC-CF20G.

The SDC-CF20G incorporates an integrated dual band antenna that supports transmit and receive diversity:

Type: Dipole

Maximum 2.4 GHz Gain: 0 dBi

# **Documentation Requirements**

In order to maintain regulatory compliance, when integrating the SDC-CF20G into a host device and leveraging Summit's grants and certifications, it is necessary to meet the documentation requirements set forth by the applicable regulatory agencies. The following sections (FCC, Industry Canada, and European Union) outline the information that must be included in the user's guide and external labels for the host devices into which the SDC-CF20G is integrated.

#### FCC

#### User's Guide Requirements

As outlined in the Operational Description, the SDC-CF20G complies with <u>FCC Part 15 Rules</u> for a Limited Modular Approval. To leverage Summit's grant, the two conditions below must be met for the host device into which the SDC-CF20G is integrated:

- 1. The antenna is installed with 20 cm maintained between the antenna and users.
- 2. The transmitter module is not co-located with any other transmitter or antenna that is capable of simultaneous operation.

As long as the two conditions above are met, further *transmitter* testing is typically not required. However, the OEM integrator is still responsible for testing its end-product for any additional compliance requirements required with this module installed, such as (but not limited to) digital device emissions and PC peripheral requirements.

### IMPORTANT!

In the event that the two conditions above *cannot be met* (for example certain device configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID *cannot* 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.

When using Summit's FCC grant for the SDC-CF20G, the integrator must include specific information in the user's guide for the device into which the SDC-CF20G is integrated. The integrator must not provide information to the end user regarding how to install or remove this RF module in the user's manual of the device into which the SDC-CF20G is integrated. The following FCC statements must be added in their entirety and without modification into a prominent place in the user's guide for the device into which the SDC-CF20G is integrated:

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"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."

#### 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:

- 1. Reorient or relocate the receiving antenna.
- 2. Increase the separation between the equipment and 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.

**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.

#### Labeling Requirements

The final end product must be labeled in a visible area with the following notice:

Contains FCC ID: TWG-SDCCF10G

#### **Industry Canada**

#### **User's Guide Requirements**

As outlined in the Operational Description, the SDC-CF20G complies with Industry Canada (IC) rules for a Limited Modular Approval. To leverage Summit's grant, the two conditions below must be met for the host device into which the SDC-CF20G is integrated:

- 1. The antenna is installed with 20 cm maintained between the antenna and users.
- 2. The transmitter module is not co-located with any other transmitter or antenna that is capable of simultaneous operation.

As long as the two conditions above are met, further *transmitter* testing is typically not required. However, the OEM integrator is still responsible for testing its end-product for any additional

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compliance requirements required with this module installed, such as (but not limited to) digital device emissions and PC peripheral requirements.

## IMPORTANT!

In the event that the two conditions above *cannot be met* (for example certain device configurations or co-location with another transmitter), then the IC authorization is no longer considered valid and the IC ID *cannot* 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 IC authorization.

When using Summit's IC grant for the SDC-CF20G, the integrator must include specific information in the user's guide for the device into which the SDC-CF20G is integrated. The integrator must not provide information to the end user regarding how to install or remove this RF module in the user's manual of the device into which the SDC-CF20G is integrated. In addition to the required FCC statements outlined above, the following IC statements must be added in their entirety and without modification into a prominent place in the user's guide for the device into which the SDC-CF20G is integrated:

To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing.

The integrator must list out information for each antenna used with the host device into which the SDC-CF20G is integrated.

#### Labeling Requirements

The final end product must be labeled in a visible area with the following notice:

Contains IC ID: 6616A-SDCCF10G

#### **European Union**

#### **User's Guide Requirements**

The integrator must include specific information in the user's guide for the device into which the SDC-CF20G is integrated. In addition to the required FCC and IC statements outlined above, the following R&TTE statements must be added in their entirety and without modification into a prominent place in the user's guide for the device into which the SDC-CF20G is integrated:

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE Directive 1999/5/EC:

- EN60950-1:2001 A11:2004
   Safety of Information Technology Equipment
- EN 300 328 V1.7.1: (2006-10)

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; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive

#### EN 301 489-1 V1.6.1: (2005-09)

Electromagnetic compatibility and Radio Spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements

#### EN 301 489-17 V1.2.1 (2002-08)

Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for 2,4 GHz wideband transmission systems and 5 GHz high performance RLAN equipment

#### EU 2002/95/EC (RoHS)

Declaration of Compliance – EU Directive 2003/95/EC; Reduction of Hazardous Substances (RoHS)

This device is a 2.4 GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries, except in France and Italy where restrictive use applies.

In Italy the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying public access to telecommunications and/or network services.

This device may not be used for setting up outdoor radio links in France and in some areas the RF output power may be limited to 10 mW EIRP in the frequency range of 2454 – 2483.5 MHz. For detailed information the end-user should contact the national spectrum authority in France.

| ত্রে Česky<br>[Czech]   | [Jméno výrobce] tímto prohlašuje, že tento [typ zařízení] je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.   |
|-------------------------|--|
| da Dansk<br>[Danish]    | Undertegnede [fabrikantens navn] erklærer herved, at følgende udstyr [udstyrets typebetegnelse] overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.   |
| de Deutsch<br>[German]  | Hiermit erklärt [Name des Herstellers], dass sich das Gerät [Gerätetyp] in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.           |
| et Eesti<br>[Estonian]  | Käesolevaga kinnitab [tootja nimi = name of manufacturer] seadme [seadme tüüp = type of equipment] vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele. |
| en English              | Hereby, [name of manufacturer], declares that this [type of equipment] is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.  |
| es Español<br>[Spanish] | Por medio de la presente [nombre del fabricante] declara que el [clase de equipo] cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.            |
| el Ελληνική<br>[Greek]  | ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ [name of manufacturer] ΔΗΛΩΝΕΙ ΟΤΙ [type of equipment]<br>ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ<br>ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.                                       |
| fr Français<br>[French] | Par la présente [nom du fabricant] déclare que l'appareil [type d'appareil] est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.                                  |
| <b>it</b> Italiano      | Con la presente [nome del costruttore] dichiara che questo [tipo di apparecchio] è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla  |

| [Italian]                   | direttiva 1999/5/CE.   |
|-----------------------------|--|
| Latviski<br>[Latvian]       | Ar šo [name of manufacturer / izgatavotāja nosaukums] deklarē, ka [type of equipment / iekārtas tips] atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.                       |
| Lietuvių<br>[Lithuanian]    | Šiuo [manufacturer name] deklaruoja, kad šis [equipment type] atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.  |
| nl<br>Nederlands<br>[Dutch] | Hierbij verklaart [naam van de fabrikant] dat het toestel [type van toestel] in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.                                  |
| Malti<br>[Maltese]          | Hawnhekk, [isem tal-manifattur], jiddikjara li dan [il-mudel tal-prodott] jikkonforma mal-ħtiģijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.                                   |
| իս Magyar<br>[Hungarian]    | Alulírott, [gyártó neve] nyilatkozom, hogy a [ típus] megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.  |
| Polski<br>[Polish]          | Niniejszym [nazwa producenta] oświadcza, że [nazwa wyrobu] jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.  |
| Português<br>[Portuguese]   | [Nome do fabricante] declara que este [tipo de equipamento] está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.  |
| Slovensko<br>[Slovenian]    | [Ime proizvajalca] izjavlja, da je ta [tip opreme] v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.  |
| Slovensky<br>[Slovak]       | [Meno výrobcu] týmto vyhlasuje, že [typ zariadenia] spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.   |
| fi Suomi<br>[Finnish]       | [Valmistaja = manufacturer] vakuuttaa täten että [type of equipment = laitteen tyyppimerkintä] tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen. |
| SV Svenska<br>[Swedish]     | Härmed intygar [företag] att denna [utrustningstyp] står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.                                       |

#### **Labeling Requirements**

The final end product must be labeled in a visible area with the following notice:

