


RoamAbout 802.11a PC Card (R2 Only)

This document provides the Regulatory information and technical specifications for the RoamAbout 802.11a PC Card that must be used in the **RoamAbout R2 Wireless Access Platform only** with the **RoamAbout AP Manager Version 10.01** (or higher).

For the procedure to install the PC Card into the R2, refer to the *RoamAbout R2 Wireless Access Platform Installation Guide*. For the procedure to configure the R2, refer to the *RoamAbout 802.11 Wireless Networking Guide*.

For the latest version of this document, check the web site at: www.enterasys.com/wireless

RADIO CERTIFICATION AND REGULATORY INFORMATION

Country	Part Number	Supported Antennas	Approval Number	Approval Reference
Australia	RBTBF-AX	None	There is no requirement for direct approval from the ACA, only compliance with LIPD class license. The supplier must maintain a compliance folder in accordance with the requirements of the Radio communications standards regulatory arrangements.	
Canada	RBTBF-AX	None	IC 4138A-RBTBF	
Europe	RBTBF-AL RBTBF-AX	None	CE0470	
Japan	RBTBF-AJ	None	04WYAA0001	
USA	RBTBF-AX	None	FCC ID: QXO-RBTBF	


Channel Information

- The RoamAbout RBTBF-AX uses channels 36, 40, 44, 48, 52, 56, 60, and 64.
- The RoamAbout RBTBF-AJ uses channels 34, 38, 42, and 46.
- The RoamAbout RBTBF-AL uses channels 36, 40, 44, and 48.

Country Specific Power Limits and Restrictions

A	B	DK	FIN	Member states in EU with restrictive use for this product are crossed out!
F	B	IRL	I	<i>Les états membres de l'Union Européenne avec une utilisation restrictive de ce produit sont rayés !</i>
CHE	NOR	NL	P	Mitgliedsstaaten der EU mit eingeschränkten Nutzungsrechten für dieses Produkt sind herausgestrichen
S	UK	L	SR	<i>Gli Stati membri nella Comunità Europea (EU) con restrizioni sull'uso di questi prodotti sono contrassegnati di seguito!</i>
ISL	E			

The following is the CE0470 notice.

	Important Notice: Low power radio LAN product operating in 5GHz band for Home and Office environments. Please refer to flyer/manual for details on restrictions.
	Notice Importante : Produit réseau local radio basse puissance opérant dans la bande de fréquence 5 GHz pour les environnements bureautiques et résidentielles. Merci de vous référer au manuel pour les détails des restrictions
	Wichtige Mitteilung Low Power FunkLAN Produkt für den Home- und Office-Bereich, das im 5GHz Band arbeitet. Weitere Informationen bezüglich Einschränkungen finden Sie im Datenblatt/Handbuch
	Nota Importante: Apparati Radio LAN a bassa potenza, operanti a 5 GHz, per ambienti domestico ed ufficio. Fare riferimento alla Guida d'Utente per avere informazioni dettagliate sulle restrizioni

The following table provides the configuration for the 5GHz RLAN in EU countries. The procedure to set the transmit power settings follows.

Country	IEEE 802.11a RoamAbout Channel Sets (MHz)							
	(Max. mW E.I.R.P.) [AP Power Setting]							
	5180 (Max. mW EIRP) [AP Set]	5200 (Max. mW EIRP) [AP Set]	5220 (Max. mW EIRP) [AP Set]	5240 (Max. mW EIRP) [AP Set]	5260 (Max. mW EIRP) [AP Set]	5280 (Max. mW EIRP) [AP Set]	5300 (Max. mW EIRP) [AP Set]	5320 (Max. mW EIRP) [AP Set]
Austria (A)	Maximum EIRP: 30 mW AP Power 5 [Indoor Use Only]				Not allowed at the moment. (8/2003)			
Belgium (B)	Maximum EIRP: 50 mW AP Power 5 [Indoor Use Only]							
Denmark (DK)	Maximum EIRP: 50 mW AP Power 4 [Indoor Use Only]				Not allowed at the moment. (8/2003)			
Finland (FIN)	Maximum EIRP: 50 mW AP Power 4 [Indoor Use Only]				Not allowed at the moment. (8/2003)			
France (F)	Maximum EIRP: 40 mW AP Power 5 [Indoor Use Only]				Not allowed at the moment. (8/2003)			
Germany (D)	Maximum EIRP: 30 mW AP Power 5 [Indoor Use Only]				Not allowed at the moment. (8/2003)			

Greece (EL)	Maximum EIRP: 50 mW AP Power 5 [Indoor Use Only]	
Hungary (HU)	Maximum EIRP: 50 mW AP Power 4 [Indoor Use Only]	Not allowed at the moment. (9/2003)
Ireland (IRL)	Maximum EIRP: 60 mW AP Power 5 [Indoor Use Only]	
Italy (I)	Maximum EIRP: 30 mW AP Power 5 [Indoor Use Only]	Not allowed at the moment. (8/2003)
Switzerland (CHE)/ Liechtenstein (LI)	Maximum EIRP: 60 mW AP Power 5 [Indoor Use Only]	
Norway (NOR)	Maximum EIRP: 50 mW AP Power 4 [Indoor Use Only]	Not allowed at the moment. (8/2003)
Netherlands (NL)	Maximum EIRP: 50 mW AP Power 4 [Indoor Use Only]	Maximum EIRP: 50 mW AP Power 5 [Indoor Use Only]
Portugal (P)	Maximum EIRP: 30 mW AP Power 5 [Indoor Use Only]	Not allowed at the moment. (8/2003)
Spain (E)	Maximum EIRP: 30 mW AP Power 5 [Indoor Use Only]	Not allowed at the moment. (9/2003)
Sweden (S)	Maximum EIRP: 100 mW AP Power 1 [Indoor Use Only]	Not allowed at the moment. (8/2003)
United Kingdom (UK)	Maximum EIRP: 60 mW AP Power 5 [Indoor Use Only]	
Lithuania (LT)	Maximum EIRP: 50 mW AP Power 5 [Indoor Use Only]	
Luxembourg (L)	Maximum EIRP: 50 mW AP Power 4 [Indoor Use Only]	Not allowed at the moment. (8/2003)
Slovak Republic ¹ (SR)	Maximum EIRP: 30 mW AP Power 5 [Indoor Use Only]	Not allowed at the moment. (8/2003)
Iceland (ISL)	Maximum EIRP: 50 mW AP Power 4 [Indoor Use Only]	Maximum EIRP: 50 mW AP Power 5 [Indoor Use Only]
¹ Type license require from telecommunication office of Slovakia. It means that Slovak importer has to declare conformity of this equipment with Slovak harmonized standard and on the base of this declaration he can receive a type license on TU SR.		

To set the power limit using the RoamAbout AP Manager, select the RoamAbout R2 from the main window and click on the **Wireless Parameters** button. If necessary, click on the **Advanced** button. Select the Transmit Power Level setting and click on **OK**.

To set the power limit using the console port or Telnet, choose **Wireless Configuration** from the Main Menu, then choose **Set/Show Wireless Configuration**. At the top of screen, choose the radio slot (1 or 2) to configure. Enter the Transmit Power Level settings. Set the **Reset Option** to **Reset Radio if necessary** (default setting). Choose **Save**.

REGULATORY INFORMATION



Caution: Changes or modifications made to this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Exposure to Radio Frequency Radiation

The radiated output power of the IEEE 802.11 RoamAbout PC Card is far below the FCC radio frequency exposure limits. Nevertheless, the RoamAbout PC Card shall be used in such a manner that the potential for human contact during normal operation is minimized. This 802.11a RoamAbout PC Card is intended for indoor use only.

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 device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it 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 or more of the following measures:

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

Enterasys Networks is not responsible for any radio or television interference caused by unauthorized modification of the devices included in this kit, or the substitution or attachment of connecting cables and equipment other than specified by Enterasys Networks. The correction of interference caused by such unauthorized modification, substitution or attachment will be the responsibility of the user.

Visit the RoamAbout Wireless web site for updated country approvals.

Canada - Industry Canada (IC)

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

cet appareil de la class B respecte toutes les exigences du Reglement sur le matereil brouiller du Canada.

Europe - European Union Notice

All products with the CE marking comply with the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community. Compliance with these directives implies conformity to the following European Norms (in brackets are the equivalent international standards).



- EN 55022 (CISPR 22) - Electromagnetic Interference
- EN 55024 (IEC61000-4-2,3,4,5,6,8,11) - Electromagnetic Immunity
- EN 61000-3-2 (IEC610000-3-2) - Power Line Harmonics
- EN 61000-3-3 (IEC610000-3-3) - Power Line Flicker
- EN 60950 (IEC60950) - Product Safety

Products labeled with the CExxxx or the CE alert marking contain a radio transmitter that complies with the R&TTE Directive (1999/5/EC) issued by the Commission of the European Community.



Compliance with this directive implies conformity to the following European Norms (in brackets are the equivalent international standards).

- EN 60950 (IEC60950) - Product Safety
- EN 300 328 Technical requirements for radio equipment.
- ETS 300 893 and ETS 301 489-17 General EMC requirements for radio equipment.
- ETS 301489-1

To determine the type of transmitter, check the identification label on your Wireless LAN Product.

Technical Specifications

This section provides the specifications for the RoamAbout IEEE 802.11a PC Card. The PC Card is WiFi Certified.

Radio Characteristics

Consult your authorized RoamAbout reseller sales office for information about the radio regulations that apply in your country. [Table 1](#) shows the radio characteristics for the 802.11a PC Card.

Table 1 802.11a Radio Characteristics

Characteristic	Value
R-F frequency band	5 GHz (5.15 - 5.35 GHz)
Number of channels supported	8 (-AX variant) 4 (-AJ and -AL variants)
Modulation technique	OFDM Modulation (BPSK, QPSK, 16 QAM, 64 QAM)
Bit error rate	Better than 10^{-5}
Receiver sensitivity at 54 Mbit/s	-69dBm
Receiver sensitivity at 48 Mbit/s	-70dBm
Receiver sensitivity at 36 Mbit/s	-75dBm
Receiver sensitivity at 24 Mbit/s	-80dBm
Receiver sensitivity at 18 Mbit/s	-83dBm
Receiver sensitivity at 12 Mbit/s	-86dBm
Receiver sensitivity at 9 Mbit/s	-88dBm
Receiver sensitivity at 6 Mbit/s	-88dBm
Integrated antenna	up to 4.5 dBi
Output power	14 dBm
Receive Mode	430 mA
Transmit Mode	540 mA
Power Supply	3.3 V

Physical Specifications

Table 2 802.11a PC Card Physical Specifications

Specification	Value
Dimensions (LxWxH)	114 x 54 x 9.65 mm (4.51 x 2.26 x 0.38 in)
Weight	62.4 grams (2.2 oz)
Temperature (Operation)	-20° to 50° C (-4° to 122° F)
Temperature (Storage)	-30° to 66° C (-22° to 150.8° F)
Humidity	Maximum 95%, no condensation allowed

Supported Frequency Sub-Bands

The RoamAbout PC Card supports a number of factory-programmed channels. The number of available frequencies is subject to local radio regulations as defined by local authorities.

In RoamAbout infrastructure environments, the RoamAbout PC Card automatically starts operation at the frequency channel that is used by the RoamAbout AP. This frequency is controlled by the LAN administrator who sets the RoamAbout AP configuration. [Table 3](#) shows the channel IDs and frequencies for the 802.11a PC Card. The factory-set default is printed in bold. The variant for Japan (-AJ) uses 4 different channels, as shown in [Table 4](#).

ALERT: Different countries have different regulations that affect which channels can be used. It is the user's responsibility to operate on legal channels only.

Table 3 IEEE 802.11a RoamAbout Channel Set

Channel ID	Frequency
36	5180
40	5200
44	5220
48	5240
52	5260
56	5280
60	5300
64	5320

- The -AX variant of the PC card uses all 8 channels.
- The -AL variant of the PC card only uses channels 36, 40, 44, and 48.

Table 4 IEEE 802.11a RoamAbout Channel Set for Japan

Channel ID	Frequency
34	5170
38	5190
42	5210
46	5230

Product Safety

USA: UL 1950, UL Listed

Canada: CUL 1950

Europe: EN60950

Japan: IEC 950

Enterasys Networks reserves the right to make changes in specifications and other information contained in this document and its web site without prior notice. The reader should in all cases consult Enterasys Networks to determine whether any such changes have been made.

The hardware, firmware, or software described in this document is subject to change without notice.

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