



KRC 161 393/2 Product Manual

EPIC WLAN Radio Module

Document Date:	July 16, 2013
Document Number:	KRC 161 393/2
Document Version Number:	1
Document Status:	Release

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1 About this Document

This document is a product manual for the EPIC 2.4 and 5 GHz EPIC WLAN Radio Module, including its limitations on use in any product marketed or offered for sale. It is intended as a supplement to training and documentation by Ericsson, or its authorized agents.



2 Introduction

The KRC 161 393/2 (hereafter referred to as “the EPIC module”) is a 2.4 and 5 GHz radio module compatible with the IEEE 802.11 standard for Wireless LAN operation. It is designed to be interoperable with WLAN products which are based on Orthogonal Frequency Division Multiplexing (OFDM) radio technology.

The module contains a complete IEEE 802.11b/g/n radio and Medium Access Control (MAC) protocol engine which allows implementation of an IEEE 802.11b/g/n access point (AP).

The module is not intended for stand-alone operation. It will only be marketed as a complete product, in conjunction with a package, DC power supply and antennas (hereafter referred to as “the product” or the “final product”) into other Ericsson Radio Base Station products.

The module can be used in the 2.4 GHz ISM unlicensed bands.

Since the module has a Ericsson proprietary digital interface, it cannot be directly connected to any standard telecommunications or computer devices. It can only be used with final products designed and authorized specifically for that purpose.



3 Conditions of Use

4 General Conditions of Use

This manual is intended to supplement training provided by Ericsson or authorized parties. The module KRC 161 393/2 is only intended for use in Ericsson products and is not for sale to the general public as a stand-alone module.

Please read this entire document, including the Regulatory Statements section before attempting to install or operate the module.

Warning: Any use of KRC 161 393/2 in any manner which is not expressly specified within this manual or specifically approved by Ericsson or its authorized agents will void the user's right to operate this module, and is expressly forbidden by Ericsson. This includes any modification of the module, installation of the module in a configuration or used with antennas which are not expressly listed in this document or approved by Ericsson.



5 Country of Use

The KRC 161 393/2 is certified with modular approval for use as an Intentional Radiator in the United States as device: FCC ID: RAR40025002 and in Canada as IC: 4674A-40025002. Please read all regulatory statements at the end of this document before any attempt to install or operate this module.

The module is only certified for operation in the United States and Canada. Before attempting to install and operate this module in any other country, contact Ericsson for approval.

6 Module Labeling

One or more labels are applied to the module during manufacture, including a label which identifies the FCC and Industry Canada identification numbers. Do not attempt to remove any labels from the module.

7 Module Installation and Service

8 Installation into a Product

The module shall only be installed by a technician trained by Ericsson or its authorized agents. It should only be installed into an approved product (see above) following all manufacturing and service procedures for that product. The module should only be installed into a final product in a manufacturing or service depot site.

Caution: KRC 161 393/2 is an electro-static discharge (ESD) sensitive device. All appropriate ESD measures must be taken when handling the module. Failure to employ appropriate ESD protection may damage the module.

9 Module Service

The module is not intended as a field-serviceable unit. It contains no field-replaceable or field-serviceable parts, or any external adjustable mechanisms. The module should only be serviced in a manufacturing or service depot site approved by Ericsson or its authorized agents.



10 Final Product Requirements

The requirements below apply to any final product in which the KRC 161 393/2 module is installed.

11 Antenna Usage

The KRC 161 393/2 EPIC module supports MIMO 2x2 and 3x3 MIMO configuration on 2.4 GHz configuration with up to three transmit chains and three receive chains. On 5 GHz the KRC 161 393/2 supports MIMO 2x2 with two transmit chains and two receive chains.

12 Certified Antennas:

Only the following antennas are certified for use:

BMAG00296-A assembly.

For 2.4G this antenna has 2 cross polarized directional patch antenna and one vertically polarized antenna This provides an antenna gain of 7.7 dB with a MIMO gain of 3 dB. At 5 GHz the antenna assembly has two cross polarized directional path antennas with 7.2 dB antenna gain. No MIMO gain.

In order to comply with the FCC and Industry Canada rules in the USA and Canada, respectively, it is required to respect the maximum transmit power limits as follows for each of the antenna types as indicated in the FCC , IC radio test reports.

Warning: Use of this module in conjunction with any antenna not expressly listed above will void authority to install or operate this equipment.

Warning: Setting of module transmit power above the limits specified in the in the FCC, Industry Canada radio test reports for a particular combination of antenna type, frequency of operation, and type of usage, will exceed FCC or Industry Canada limits and void authority to install or operate this equipment.



13 Product Installation

Products which contain KRC 161 393/2 shall only be installed by professional installers trained by Ericsson or its authorized agents. This product is to be installed on fixed permanent structures. In addition to normal installation procedures and good installation practice, professional installers are responsible to ensure that:

Adherence to these rules by the professional installer is mandatory. See full installation procedures for the particular product for details.

14 Product Labeling

The following permanent label, or one containing equivalent information, must be affixed in a conspicuous location on the exterior of every product containing this module:

FCC ID: RAR40025002 IC: 4674A-40025002



15 Regulatory Statements

The following regulatory notes apply to the product which contains module KRC 161 393/2. The following sections or equivalent information shall appear in the user documentation of the final product.

16 Regulatory Information and Disclaimers

Installation and use of this device must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications to this product not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

The manufacturer is not responsible for any interference to radio or television equipment caused by unauthorized modification of this device, or attachment of any antennas or equipment other than those specified by the manufacturer. The manufacturer or 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.

17 Manufacturer's FCC Conformity Statement

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.

18 FCC 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 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.

19 Manufacturer's Industry Canada Conformity Statement

This device has been designed to operate with an antenna having a maximum gain of 7.7 dBi at 2.4 GHz and 7.2 dBi at 5 GHz. dBi. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

This device has been designed to ensure that radio frequency emissions are maintained within the band of operation under all normal operating conditions listed in this manual.

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropic radiated power (EIRP) is not more than that required for successful communication.

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



20 RF Exposure Statement

IMPORTANT NOTE:

Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator and a human body.

Ce dispositif est conforme à la norme CNR-210 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

NOTE IMPORTANTE:

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et d'un corps humain.