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Revision 1.0

WF-10040

User Manual



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1. Introduction

1.1 Purpose and Scope

The purpose of this document is to provide details on how to integrate this module into a design. The module includes a wireless transceiver chip (Jorjin WG3710) and antenna (Antenova 3030A5839-01) that will be placed on a printed circuit board (PCB) and interface with a CPU. This document will provide guidance on how to maintain regulatory compliance.

1.2 Audience

This document is intended for HandEra engineers.

1.3. Reference Documents

1. Jorjin WG7310 Datasheet
2. Antenova 3030A5839-01 Datasheet
3. Test board schematics (HandEra P/N 2400-00348)
4. Test board layout (HandEra P/N 2400-00348)

2. EMC Compliance Guide

2.1 Introduction

This module has been tested as a Modular Radio in accordance with the FCC and IC. This allows HandEra to integrate this module into a product and only be responsible for Unintentional Emissions produced by this product as long as the recommendations in this guide are followed.

2.2 Module Integration Considerations – Firmware

The module must use specific operational firmware. This firmware includes:

1. BRF61_7.2.31.bts
2. FW1273_CHIP.bin (Rev. 6.1.0.1.349)



2.3 Antenna

This module must use the Antenova 3030A5839-01 or an antenna of the same type with equal or lesser gain. All requirements from the datasheet, including ground plane clearance must be followed.

2.4 Circuit Implementation

All requirements from the Jorjin WG7310 datasheet must be followed along with best engineering practices. The HandEra test board schematics and layout should be followed as closely as possible.

2.5 Top Assembly Implementation

In addition to the recommendations given for the antenna systems and the module placement onto a product PCB, it is recommended that all wiring and interconnect systems within the product be not routed anywhere close the module and its associated circuitry on the PCB, doing so could change the emission characteristics of the module.

2.6 Marking Requirements for End-Product and Compliance Statements

2.6.2 Agency Certifications

FCC ID:

2.6.1 Operating Requirements and Conditions

The design of RB-C220 complies with U.S. Federal Communications Commission (FCC) guidelines respecting safety levels of radio frequency (RF) exposure for Mobile

2.6.2 Agency Certifications:

FCCID: URZ-WF10040

IC ID: 6827A-WF10040

2.6.3 Mobile Device RF Exposure Statement:

RF Exposure - This device is only authorized for use in a mobile application. At least 20 cm of separation distance between the RB-C220 device and the user's body must be maintained at all times.

2.6.4 Caution Statement for Modifications:



CAUTION: Any changes or modifications not expressly approved by Intoxalock could void the user's authority to operate the equipment.

2.6.5 FCC Part 15 Statement:

Note: 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.

2.6.6 IC Statements

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 isotropically radiated power (e.i.r.p.) is not more than that permitted for successful communication.

This device has been designed to operate with the antenna listed below, and having a maximum gain of 2.1 dBi. Antennas not included in this list or having a gain greater than 2.1 dBi are strictly prohibited for use with this device. The required antenna impedance is 50 ohms.

List of all Antennas Acceptable for use with the Transmitter

- 1) Antenova 3030A5839-01 Rufa 2.4 GHz SMD Antenna.

L'opération est soumise aux deux conditions suivantes: (1) cet appareil ne peut pas provoquer d'interférences et (2) cet appareil doit accepter toute interférence, y compris les interférences qui peuvent causer un mauvais fonctionnement de l'appareil.

Pour réduire le risque d'interférence aux autres utilisateurs, le type d'antenne et son gain doivent être choisis de manière que la puissance isotrope rayonnée équivalente (PIRE) ne dépasse pas celle permise pour une communication réussie.

Cet appareil a été conçu pour fonctionner avec l'antenne (s) ci-dessous, et ayant un gain maximum de 2,1 dBi. Antennes pas inclus dans cette liste ou d'avoir un gain supérieur à 2,1 dBi sont strictement interdites pour l'utilisation avec cet appareil. L'impédance d'antenne requise est de 50 ohms.

Liste de toutes les antennes acceptables pour une utilisation avec l'émetteur

- 1) Antenova 3030A5839-01 Rufa 2.4 GHz SMD Antenne

2.6.7 Responsibilities to Comply with FCC and Industry Canada Regulations

The TiWi-R2 Module has been certified for integration into products only by OEM integrators under the following conditions:

This device is granted for use in Mobile only configurations in which the antennas used for this transmitter must be installed to provide a separation distance of at least 20cm from all person and not be co-located with any other transmitters except in accordance with FCC and Industry Canada multi-transmitter product procedures.



As long as the two 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 cannot be met (for certain configurations or co-location with another transmitter), then the FCC and Industry Canada authorizations are no longer considered valid and the FCC ID and IC Certification Number 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 and Industry Canada authorization.

Le module de TiWi-R2 a été certifié pour l'intégration dans des produits uniquement par des intégrateurs OEM dans les conditions suivantes:

Ce dispositif est accordé pour une utilisation dans des configurations mobiles seul dans lequel les antennes utilisées pour cet émetteur doit être installé pour fournir une distance de séparation d'au moins 20cm de toute personne et ne pas être colocalisés avec les autres émetteurs, sauf en conformité avec la FCC et de l'Industrie Canada, multi-émetteur procédures produit.

Tant que les deux conditions précitées sont réunies, les tests de transmetteurs supplémentaires ne seront pas tenus. Toutefois, l'intégrateur OEM est toujours responsable de tester leur produit final pour toutes les exigences de conformité supplémentaires requis avec ce module installé (par exemple, les émissions appareil numérique, les exigences de périphériques PC, etc.)

NOTE IMPORTANTE: Dans le cas où ces conditions ne peuvent être satisfaites (pour certaines configurations ou de co-implantation avec un autre émetteur), puis la FCC et Industrie autorisations Canada ne sont plus considérés comme valides et l'ID de la FCC et IC numéro de certification ne peut pas être utilisé sur la produit final. Dans ces circonstances, l'intégrateur OEM sera chargé de réévaluer le produit final (y compris l'émetteur) et l'obtention d'un distincte de la FCC et Industrie Canada l'autorisation.

2.6.8 End Product Labeling

The outside of the end product must display a label referring to the enclosed module. The product must be labeled in a visible area with the following:

“Contains Transmitter Module FCC ID: URZ-WF10040”

“Contains Transmitter Module IC: 6827A-WF10040”

Or

“Contains FCC ID: URZ-WF10040”

“Contains IC: 6827A-WF10040”

The user manual for the end product must include the following information in a prominent location:

“To comply with FCC and Industry Canada RF radiation exposure limits for general population, the antenna(s) used for this transmitter must be installed such that a minimum separation distance of 20cm is maintained between the radiator (antenna) and all persons at all times and must not be co-located or operating in conjunction with any other antenna or transmitter.”