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**WIN-B2
Bluetooth Module
User Manual
Rev. 1.1**

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1. Revision History

Date	Change Note	REV Note
2011-02-22	Initial Release	1.0
2011-02-26	Correct typo in page 5, section 3.1, correct "WiFi" to "Bluetooth"	1.1



2. Introduction

Project Name: Bluetooth 4.0 +EDR(Low Energy support) module

This documentation describes the product specification of the Bluetooth 4.0 module. It is a confidential document of Foxconn.

2.1 Scope

This Bluetooth module is available in the 2.4-GHz ISM band, it is compatible with Bluetooth specification v4.0. It supports basic rate of 1Mbps with GFSK modulation, and EDR 2Mbps for DQPSK and 3Mbps for 8DPSK, in addition, it supports Low Energy function (LE GFSK).

2.2 Function

- Class 2 specification RF output power (max +4 dBm)
- Full piconet and scatternet operation
- Supports 1Mbps basic rate, 2Mbps, 3Mbps Enhanced Data Rate, and Bluetooth Low Energy (1Mbps).
- USB 2.0 full-speed compliant interface
- Full support for power saving modes
- FW via on-line downloading and upgrade



3. Product Specification

3.1 Bluetooth RF Specification

Bluetooth Standards	v4.0 (Basic Rate + EDR + LE)
Operating Frequency	2.400 – 2.4835
Data Rate	Basic Rate: 1Mbps Enhanced Data Rate: 2Mbps, 3Mbps Low Energy: 1Mbps
Modulation Schemes	GFSK(1Mbps); DQPSK(2Mbps), 8DPSK(3Mbps); LE GFSK(1Mbps)

Transmitter Output Power

Transmitter Output Power: -6dBm~ +4dBm (Class 2 Specification)
EDR Relative Transmit Power: $(P_{GFSK}-4dB) < P_{DPSK} < (P_{GFSK}+1dB)$

Receiver Sensitivity

Typical -90dBm @1Mbps (PER<0.1%)
Typical -90dBm @2Mbps (PER<0.01%)
Typical -85dBm @3Mbps (PER<0.01%)

3.2 Electrical Specification

Absolute Maximum Ratings

These specification indicate levels where permanent damage to the device can occur. Functional operation is not guaranteed under these conditions. Operation at absolute maximum conditions for extended can adversely affect long-term reliability of the device.

Rating	Symbol	Value	Unit
DC supply voltage for the device	VDD	3.0~3.6	V

Recommended Operating Condition

Element	Symbol	Value			Unit
		Minimum	Typical	Maximum	
DC supply voltage for the device	VDD	3.0	3.3	3.6	V

Function operation is not guaranteed outside this limit, and operation outside this limit for extended periods can adversely affect long-term reliability of the device.

Current Consumption

Idle: 6mA @3.3V
Transmit: 36mA @3.3V
Receive: 26mA @3.3V



6. Regulatory Information

USA-Federal Communications Commission (FCC)

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.

Caution

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Labeling

Hon Hai Precision Bluetooth 4.0 module WIN-B2 labeled as below.

FCC ID: MCLWINB2

The proposed with FCC ID label format is to be placed on the module. If FCC ID is not visible when the module is installed into the system, "Contains FCC ID: MCLWINB2" shall be placed on the outside of final host system.

Caution: Exposure to Radio Frequency Radiation.

To comply with FCC RF exposure compliance requirements, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons. This device must not be co-located or operating in conjunction with any other antenna or transmitter.

Canada-Industry Canada (IC)

This device complies with RSS 210 of Industry Canada.

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 this device.

The term "IC" before the equipment certification number only signifies that the Industry Canada technical specifications were met.

Caution: Exposure to Radio Frequency Radiation.

To comply with IC RF exposure compliance requirements, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons. This device must not be co-located or operating in conjunction with any other antenna or transmitter.