

*DRCB-M1*

*IEEE 802.11 b/g CF WLAN Module*

*User's Manual*

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## **FEDERAL COMMUNICATIONS COMMISSION**

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.

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 radiated 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.

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

This device is intended only for OEM integrators under the following conditions: 1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and 2) The transmitter module may not be co-located with any other transmitter or antenna.

As long as 2 conditions above are met, further transmitter test 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 can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not 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. **The antenna cable can only be connected on J2 port.**

If the FCC ID is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains FCC ID: NKRDRCB".

# Chapter 1 Functional Description

Thank you very much for purchasing this IEEE802.11b/g CF WLAN Module. This product provides the easiest way to wireless networking. This User Manual contains instructions in the operation of this product. Please keep this manual for future reference.

## 1.1 Features

- Includes Encore signal processing for Industry-leading receive sensitivity and extended range:
  - -74 dBm at 54Mbps
  - -76 dBm with external LNA
- High level of integration with direct conversion radio architecture minimizes external circuitry, leading to lowest cost, lowest power, and smallest footprint implementation
- Flexible support for a variety of system bus interfaces including: PCI, Mini PCI, CardBus, PCMCIA/Compact Flash, and SDIO (4-wire, 1-wire, and SPI)
- Programmable data rates of 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps.
- 24-bit IV and 40-bit/104-bit key WEP encryption support
- System support for 128-bit AES
- IEEE802.1x support
- Dynamic Power Management under driver control
- WHQL-certified drivers for Windows® XP/Me/2000/98SE/98 operating systems
- Wi-Fi® compliant

## 1.2 Integrated Radio Transceiver

This CF module includes an integrated RF transceiver that has been optimized for use in 2.4-GHz WLAN systems. It has been designed to provide low-power, low-cost, and robust communications for applications operating in the globally available 2.4-GHz unlicensed ISM band. With an external transmit power amplifier, it develops full output power per

the IEEE802.11b/g Specification.

## 1.3 Receiver Path

This CF module has a wide dynamic range, direct conversion receiver. It employs high-order on-chip channel filtering to ensure reliable operation in the noisy 2.4-GHz ISM band. The excellent noise figure of the receiver makes an external LNA unnecessary.

Leading-edge Encore DSP technology improves the receive sensitivity and extended range, that enables whole home coverage.

## 1.4 Transmitter Path

This CF module includes a linear transmitter capable of delivering up to +6 dBm while meeting the IEEE802.11g specification. The output power is adjustable in 0.6-dB steps, down to -15 dBm. Baseband data is up-converted directly to the 2.4-GHz ISM band.

## 1.5 Calibration

This CF module enables the device to be used in high-volume applications because calibration routines are not required during manufacturing test. These calibration routines are performed periodically in the course of normal radio operation.

## Chapter 2 Installation Driver

This driver is porting from bcm4318 1.130.35.0 with CCX source code to WinCE NDIS CF interface. This CF driver is workable in Intermec 751 PDA, and CN30 PDA.

### 2.1 Driver Features

- IEEE 802.11b/g
- Ad-Hoc / Infrastructure
- WEP 64 / 128-bit
- WPA-PSK / WPA2-PSK (by WZC / Funk Client)
- WPA / WPA2 (by WZC / Func Client)
- 802.1x – TLS / 802.1x – PEAP (by WZC / Funk Client)
- LEAP (by Funk Client)
- WPA-TTLS (by Funk Client)
- TKIP
- AES
- IEEE Power Save
- IEEE 802.11d

### 2.2 Installing the driver

Step1. Copy the file, “bcmcf.dll”, into PDA.

Step2. Plug in BCM4318 CF card into system.

Step3. Enter the driver name “bcmcf” in the unknown card dialog.