

Falcon / DRCB-M1
IEEE 802.11b/g CF WLAN Module
User's Manual

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Federal Communication Commission 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 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.

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

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.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. To maintain compliance with FCC RF exposure compliance requirements, please follow operation instruction as documented in this manual.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

IEEE 802.11b or 802.11g operation of this product in the U.S.A. is firmware-limited to channels 1 through 11.

This device is intended only for OEM integrators under the following conditions:

- 1) The transmitter module may not be co-located with any other transmitter or antenna,
- 2) For all products market in US, OEM has to limit the operation channels in CH1 to CH11 for 2.4G band by supplied firmware programming tool. OEM shall not supply any tool or info to the end-user regarding to Regulatory Domain change.
- 3) This module has been SAR evaluated inside the Portable Data Terminal, model Falcon P40, of Datalogic Scanning Inc. and this module can be used only with this specific product without further SAR evaluation. All other portable applications need separate SAR re-evaluation.

As long as 3 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 (e.g. Portable Data Terminal).

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.

End Product Labeling

The final end product must be labeled in a visible area with the following: "Contains FCC ID: O9NPA".

Manual Information To the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as show in this manual.

Canadian Regulatory Wireless Notice

This device complies with RSS-210 of the Industry Canada Rules. 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

IMPORTANT NOTE:

IC Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. To maintain compliance with IC RF exposure compliance requirements, please follow operation instruction as documented in this manual.

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 converseon radio architecture minimizes external circuitry, leading to lowest cost, lowest power, and smallest footprint implementation
- Flexible support for a variety of system bus interfaces includeing: 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.