802.11b/g Wireless LAN CF card

RA2040-G1

User Guide

Version 2.0

Jan.23, 2006

Wireless CF Card_RA2040-G1 Design Specification   Rev.6

A. Specifications

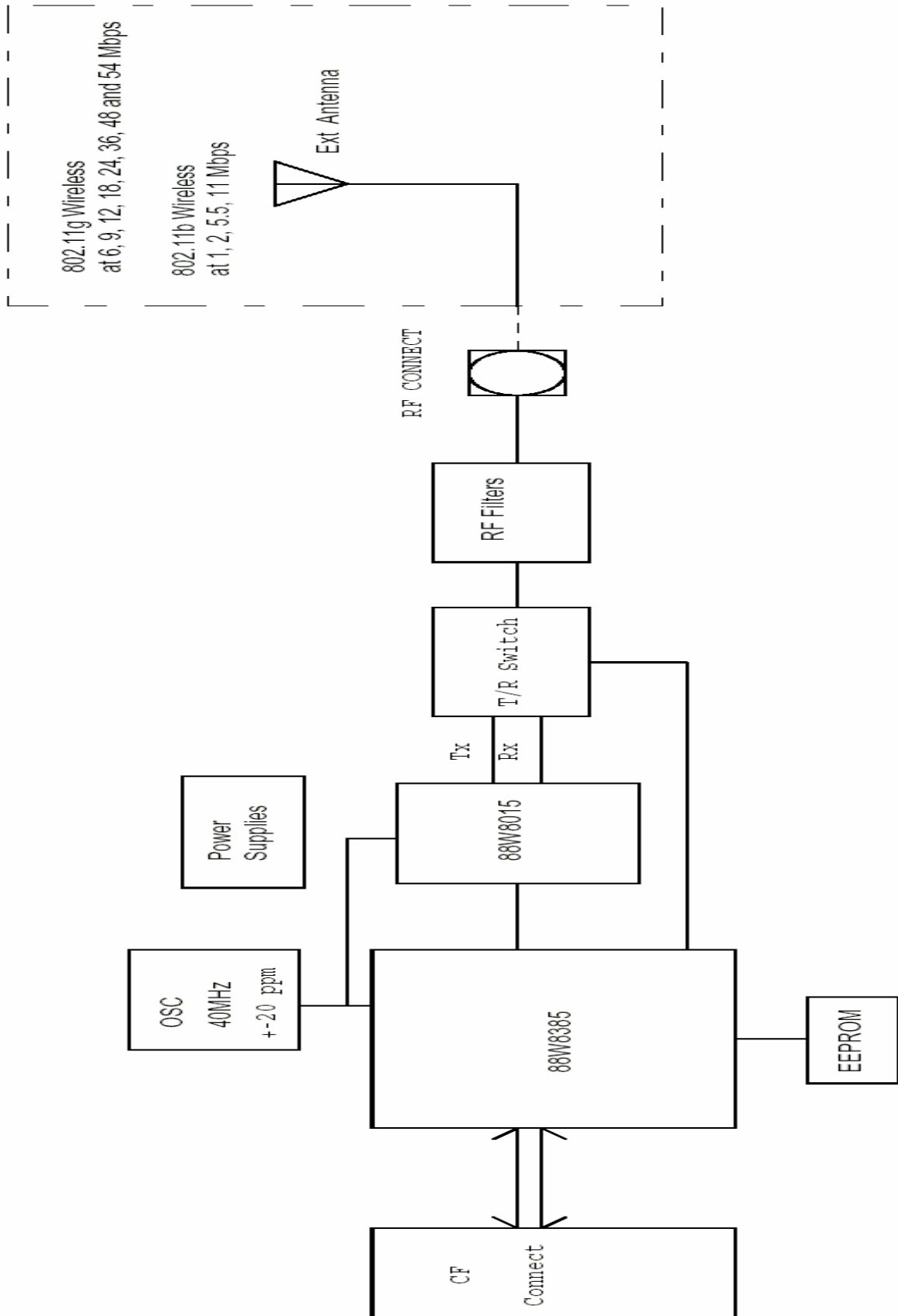|	
Host Interfaces	Compact Flash
Compatible Interfaces	Compact Flash Type I
Form factor	Compact Flash Type I
Chipset	MARVELL 88W8385 + 88W8015
Operation Voltage	DC 3.3V
Network Standards	IEEE 802.11g/b
Modulation Techniques	DBPSK, DQPSK, CCK, 16QAM, 64QAM,
Modulation Technology	DSSS and OFDM
Data Rate	802.11b: 11, 5.5, 2, 1 Mbps 802.11g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps
Network Architectures	Infrastructure and Ad Hoc
Operating Frequencies	2.4 – 2.4835 GHz
Operating Channels	802.11b/g: 1-11 for North America
RF Output Power	Before antenna 802.11b (1M,2M,5.5M,11M) : 13 dBm 802.11g (6M,9M,12M,18M,24M,36M, 48M,54M) : 13 dBm
Receiver sensitivity	802.11b:1M=-90dBm,2M=-90dBm,5.5M=-90dBm,11M=-87dBm 802-11g:6M=-83dBm,9M=-83dBm,12M=-83dBm,18M=-83dBm,24M=-81dBm 36M=-78dBm,48M=-74dBm,54M=-73dBm
Power Consumption	Tx peak: 500mA @ 3.3VDC; Rx peak: 275mA @ 3.3VDC
Support Voltage	3.3V
Security	● WEP 64-and 128-bit encryption with hardware TKIP processing. ● WPA
Delay Tolerance	Multi-path R.M.S Delay Spread @ 10%FER 680 ns in 11M mode,150ns in 54M mode
Software Support	Windows CE 4.2 & CE 5.0,.Linux
Temperatures	Operates from -20 to 70 ℃ Storage from -40 to 120 ℃
Humidity (non-condensing)	5 to 95%*
Certifications	Wi-Fi Pretest*; FCC part 15C/15.247*; ETS 300 328-2*; UL*; IEC60950*; EN 301 489-1,17*; prEN50371*;CE Mark*; TELEC*

*Perform approved procedure is based on customer's request.

WLFWire

B. **Marvell WLAN 802.11b/g CF8385PN Software Feature**

Core Features	Short preamble
	802.11b, 802.11g, and g/b mix-mode infrastructure
	802.11b and 802.11g Adhoc mode
	Transmit fragmentation and receive defragmentation
	Client IEEE Power Save Infrastructure & Adhoc mode
	Basic rate adaptation - 11g/b for optimizing each STA throughput
	Background scan
Security	64/ 128-bit WEP Encryption and open/ shared authentication
	WPA PSK
	WPA 802.1x
	WPAII PSK**
	WPAII 802.1x**
	Cisco CCX V1 (LEAP)**
	Hardware AES
	AH Security
IEEE Standards	IEEE 802.11b
	IEEE 802.11g
	IEEE 802.11d**
	IEEE 802.11e (EDCA)**
	IEEE 802.11e (HCCA)**
Other Standards	Wi-Fi WME**
	Wi-Fi WSM APSD**
Drivers for the following Operating Systems	Windows CE.net (CE4.2, CE5.0)
	Windows Pocket PC 2003
	Windows Mobile Edition
	Linux 2.4.22 and above
Network Protocol	TCP/IP, IPX

** NOTE **

The transmitter module is authorized for use in specific End-product (WORKABOUT PRO Hand-held Micro-computer as models of 7525C, 7525M-E and 7525S).

C. **Block Diagram**

802.11g Wireless
at 6, 9, 12, 18, 24, 36, 48 and 54 Mbps

802.11b Wireless
at 1, 2, 5.5, 11 Mbps

Ext. Antenna

RF CONNECT

RF Filters

T/R Switch

Tx

Rx

88W8015

Power
Supplies

OSC
40MHz
+-20 ppm

88W8385

EEPROM

CF
Connect

***Subject to be changed without notice.

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.

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.

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.

IMPORTANT NOTE:
FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This device is intended only for Psion Teklogix Inc's 7525C, 7525M-E and 7525S Series PDA or Psion Teklogix Inc's platforms with substantially similar physical dimensions, construction, and electrical and RF characteristics under the following conditions:

1) The transmitter module may not be co-located with any other transmitter except Bluetooth device FCC ID: GM37525BTB which has been certified with this product.

2) Product can be sold only to end-user who already has the Psion Teklogix Inc's products, or be used in Psion Teklogix's product lines as mentioned above. The product shall not be marketed at public retail stores.

Psion Teklogix Inc is 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: Please notice that this product is only for Psion's 7525C, 7525M-E and 7525S Series PDA or Psion's platforms with substantially similar physical dimensions, construction, and electrical and RF characteristics. The usage of this product in other application may cause violation to US/Canada EMC or RF exposure rules and is prohibited.

End Product Labeling

The final end product must be labelled in a visible area with the following: "Contains TX FCC ID: GM3RA80211G".

Manual Information That Must be Included in End-Product

End-users must be provided with specific information required to satisfy RF exposure compliance for the final host device.

The transmitter module must not be co-located or operated in conjunction with any other transmitter or antenna not described in application filings under this FCC ID: GM3RA80211G.

As long as the conditions mentioned above are met, further transmitter tests will not be required. However, the grantee shall bear the responsibility for compliance of the device in all final host configurations.

IMPORTANT NOTE: If the conditions mentioned above cannot be met, then the FCC authorization is no longer considered valid and the FCC ID cannot be used on the final product. Under the circumstances, the grantee will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.