

Product Brief:

SDC-CF20G 802.11g Compact Flash Card with Integrated Antenna

The SDC-CF20G compact flash (CF) card from Summit Data Communications combines Summit’s 802.11g radio and customized software – both proven on mobile computers and other business-critical mobile devices – with a high-performance diversity antenna in a rugged endcap. The result is a Wi-Fi® card with unmatched range, robust security, and easy administration, ideal for use in any mobile device with an external CF slot.



Each CF20G card delivers:

- Hardware: Maximized radio range, minimized power consumption, and broad operating temperature range
- Software: Enterprise-level security, fast and reliable roaming, and easy administration
- Certifications: Regulatory certifications plus Wi-Fi Alliance® and CCX V4 certifications

The SDC-CF20G CF card is designed for use in business-critical mobile devices and the challenging RF environments in which they operate.

The CF20G card is backed by a full set of support services including system integration support, regulatory process assistance, and technical support from product and wireless LAN (WLAN) experts.

Hardware Capabilities

The CF20G card is designed for use in business-critical mobile devices and the challenging radio environments in which they operate. Hardware innovations enable the CF20G card to provide far greater performance and range than WLAN radio cards designed for office and consumer applications while minimizing power consumption and allowing for operation in extreme environments. Key hardware capabilities include:

- **802.11b/g:** By supporting the IEEE 802.11g protocol, the CF20G card provides for a maximum data rate of 54 megabits per second (Mbps) to maximize data transfer and overall WLAN performance. Operating in the 2.4 GHz portion of the radio frequency spectrum, 802.11g is a superset of the popular 802.11b standard. As a result, the CF20G card can be thought of as an 802.11b and 802.11g card.

- **Integrated diversity antenna:** The CF20G card includes two 0-dBi omnidirectional antenna elements under a sturdy plastic cover. This antenna system supports transmit and receive diversity to maximize performance in environments with a lot of metal objects, such as factories and warehouses, that are subject to multipath propagation.
- **Range:** To maximize radio range – how far the card can be from a WLAN access point and still send data to that AP and receive data from it – the CF20G card offers market-leading transmit power, receiver sensitivity, and delay spread. As a result, the CF20G card delivers reliable connectivity, even in environments with few APs, many substances that absorb or reflect radio waves, and many devices that compete for the airwaves.
- **Low power consumption:** With power consumption that's up to 40% lower than other 802.11g radio cards, the CF20G card maximizes device battery life to provide for full-shift operation.
- **Extended operating temperature:** To allow for device operation in extreme environments such as factories, warehouses, freezers, and the outdoors, the CF20G card provides an extended operating temperature range of -30° to +75° C, which far exceeds the capabilities of most other radio cards.

Software Capabilities

To operate effectively in a business-critical mobile device, a WLAN radio needs specialized software to deliver the security, trouble-free operations, and manageability that customers demand. Software for the CF20G card includes a driver, an integrated supplicant, and a full-featured management and monitoring utility called the Summit Client Utility (SCU). Key capabilities of CF20G card software include:

- **Operating system support:** CF20G software operates on:
 - Windows Embedded CE 5.0 and 6.0 (all versions)
 - Windows Mobile 5.0, 6.0, 6.1, and 6.5
 - Windows XP Professional and Embedded
- **Security:** Compliance with IEEE 802.11i, which is certified by the Wi-Fi Alliance through testing for Wi-Fi Protected Access™ 2 (WPA2) Enterprise, provides for the highest level of interoperable WLAN security available. An integrated 802.1X supplicant supports authentication via pre-shared keys as well as a broad range of EAP types including EAP-



SCU is a graphical utility for configuration, troubleshooting, and management



TLS, EAP-TTLS, PEAP-MSCHAPv2, PEAP-GTC, PEAP-TLS, LEAP, and EAP-FAST. Data privacy is ensured via encryption and decryption using AES (WPA2), TKIP (WPA), or WEP.

- **Mobility:** A mobile device often roams from one AP to another. When scanning for a better AP or roaming to that AP, a device's radio cannot send or receive data. If roaming takes too long, a business-critical application that requires a constant connection can be disrupted. Summit radios support the fastest roaming in the industry and enable an administrator to tune roaming behavior to the needs of an application and its environment.
- **Administration:** SCU enables a user to view, and an administrator to configure, all radio operation and security settings. SCU also enables a user or administrator to view status and troubleshoot issues. All SCU functions are available to centralized management applications through the Summit software developer's kit (SDK).
- **Integration:** Summit provides device manufacturers with the Summit Manufacturing Utility, a tool that can be used to set regulatory parameters such as channel set and maximum transmit power to provide for worldwide compliance across multiple platforms.

Certifications

The CF20G card is certified as compliant with all applicable regulations as set forth by agencies such as ETSI, the FCC, and TELEC. Thanks to software support for all Wi-Fi requirements and key Cisco innovations, the CF20G card is Wi-Fi CERTIFIED™ and certified for Cisco Compatible Extensions (CCX) Version 4 for application-specific devices.

Summit helps device manufacturers achieve regulatory, Wi-Fi, and CCX certifications for devices equipped with the CF20G card. By leveraging existing grants, test reports, and approvals, Summit customers incur minimal costs when attaining all required certifications.

Support Services



A business-critical mobile device depends on its WLAN radio for communication with the business network. **Summit understands that, if the radio doesn't work, the device doesn't work. If the device doesn't work, the end user can't do his or her job.**

Summit tests the CF20G card on a broad range of devices. For device vendors that offer the CF20G card as a device component or option, Summit provides consultation and documentation to aid in hardware and software integration. When devices experience issues with the CF20G card in the field, Summit's support team provides Level 2 technical support to device vendors. That team is well-versed in radio frequency characteristics, wired and wireless network architectures, and security protocols.

SDC-CF20G Specifications

System Interface	16-bit Compact Flash Type I with 50-pin connector	
Antenna	0 dBi gain omnidirectional with diversity	
Chipset	Broadcom BCM4318E	
Input Power Requirements	3.3 VDC +/- 5%	
Typical Power Consumption (at maximum transmit power setting)	Transmit: 400 mA (1320mW) Receive: 180 mA (594mW) Standby: 10 mA (33 mW)	
Operating Temperature	-22° to 167°F (-30° to 75°C)	
Operating Humidity	10 to 90% (non-condensing)	
Length	2.87" (72.8 mm)	
Width	1.69" (43 mm)	
Thickness	Card Body: 0.13" (3.3 mm); Antenna: 0.29" (7.3 mm)	
Weight	0.7 oz (21g)	
Mounting	50 pin connector	
Network Standards	IEEE 802.11b, 802.11g, 802.11i	
Network Architecture Types	Infrastructure and ad hoc	
Frequency Band	2.4 to 2.4897 GHz	
Wireless Media	Direct Sequence-Spread Spectrum (DSSS) Orthogonal Frequency Divisional Multiplexing (OFDM)	
Media Access Protocol	Carrier sense multiple access with collision avoidance (CSMA/CA)	
Data Rates Supported	802.11b (DSSS): 1, 2, 5.5, 11 Mbps 802.11g (OFDM): 6, 9, 12, 18, 24, 36, 48, 54 Mbps	
Modulation	1, 6, 9 Mbps: BPSK 2, 12, 18 Mbps: QPSK 5.5, 11 Mbps: CCK 24, 36 Mbps: 16-QAM 48, 54 Mbps: 64-QAM	
Regulatory Domain Support	FCC (Americas, Parts of Asia and Middle East) ETSI (Europe, Middle East, Africa and Parts of Asia) TELEC (Japan)	
Operating Channels	FCC: 11 ETSI: 13 TELEC: 14	
Non-overlapping Channels	Three	
Transmit Power Settings	DSSS:	OFDM:
<i>Maximum transmit power will vary according to individual country regulations. All values nominal, +/-1.5dBm</i>	19 dBm (80 mW)	15 dBm (30 mW)
	17 dBm (50 mW)	10 dBm (10 mW)
	15 dBm (30 mW)	0 dBm (1 mW)
	10 dBm (10 mW)	
	0 dBm (1 mW)	

Typical Receiver Sensitivity	1 Mbps: -96 dBm 2 Mbps: -95 dBm 5.5 Mbps: -94 dBm 6 Mbps: -94 dBm 9 Mbps: -91 dBm 11 Mbps: -90 dBm 12 Mbps: -88 dBm 18 Mbps: -86 dBm 24 Mbps: -83 dBm 36 Mbps: -78 dBm 48 Mbps: -76 dBm 54 Mbps: -75 dBm
Delay Spread	1 Mbps: 600 ns 2 Mbps: 500 ns 5.5 Mbps: 400 ns 6 Mbps: 400 ns 9 Mbps: 400 ns 11 Mbps: 200 ns 12 Mbps: 350 ns 18 Mbps: 350 ns 24 Mbps: 250 ns 36 Mbps: 250 ns 48 Mbps: 150 ns 54 Mbps: 150 ns
Security	<p>Standards Wireless Equivalent Privacy (WEP) Wi-Fi Protected Access (WPA) IEEE 802.11i (WPA2)</p> <p>Encryption Wireless Equivalent Privacy (WEP, RC4 Algorithm) Temporal Key Integrity Protocol (TKIP, RC4 Algorithm) Advanced Encryption Standard (AES, Rijndael Algorithm)</p> <p>Encryption Key Provisioning Static (40-bit and 128-bit lengths) Pre-Shared (PSK) Dynamic</p> <p>802.1X Extensible Authentication Protocol Types EAP-FAST EAP-TLS EAP-TTLS PEAP-GTC PEAP-MSCHAPv2 PEAP-TLS LEAP</p>
Operating Systems Supported	Windows Mobile 6.5, 6.1, 6.0, 5.0, and (Pocket PC) 2003 Windows Embedded CE 6.0 (all versions) and 5.0 Windows XP Professional and Embedded

Compliance	<p>ETSI Regulatory Domain EN 300 328 EN 301 489-1 EN 301 489-17 EN 60590-1 EU 2002/95/EC (RoHS)</p> <p>FCC Regulatory Domain Part 15.247 Subpart C</p> <p>Industry Canada RSS-210 RSS-Gen Issue 2</p> <p>TELEC Regulatory Domain Article 2 Item 19, Category WW (2.4GHz Channels 1-13) Article 2 Item 19-2, Category GZ (2.4GHz Channel 14)</p>
Certifications	<p>Wi-Fi Alliance 802.11b, 802.11g WPA Enterprise WPA2 Enterprise</p>  <p>Cisco Compatible Extensions (CCX) Version 4</p> 
Warranty	<u>Limited Lifetime</u>

Summit Data Communications, Inc. designs, manufactures, and supports WLAN radio modules for business-critical mobile devices such as data terminals, medical devices, and industrial equipment. Summit delivers comprehensive solutions of hardware, software, certifications, and support services that ensure trouble-free integration and operation.

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