



# CF10AG

## Hardware Integration Guide Version 2.1

**global solutions: local support™**

Americas : +1-800-492-2320

Europe : +44-1628-858-940

Hong Kong : +852-2923-0610

[www.lairdtech.com/wi-fi](http://www.lairdtech.com/wi-fi)

Embedded Wireless Solutions Support Center: <http://ews-support.lairdtech.com>

## REVISION HISTORY

Version	Revision Date	Change Description	Approved By
1.0	5/07/2010	Transitioned Application Notes documentation to Hardware Integration Guide format.	Ron Seide
1.1	7/19/2010	Updated Pin table format.	Ron Seide
1.2	12/01/2010	Corrected System Interface information (changed Type 1 to Type 2)	Ron Seide
1.3	05/18/2011	Updated Supported Operating Systems	Andrew Chen
1.4	01/31/2013	Updated 5 GHz Channel and Frequency Data	Andrew Chen
1.5	6/17/2013	Updated Antenna Connector illustration	Andrew Chen
2.0	10/23/2013	Laird formatting. Removed references to summitdata.com	Sue White
2.1	05 Aug 2014	Updated TKIP and WEP security information in the specifications table.	Andrew Chen

CONTENTS

Revision History..... 1

Scope..... 4

Operational Description ..... 4

Block Diagram ..... 5

Specifications ..... 5

    Recommended Operating Conditions..... 9

Pin Definitions..... 9

Mechanical Specifications ..... 11

    Dimensions ..... 11

    Connector Overview ..... 11

RF Layout Design Guidelines..... 12

Regulatory..... 12

    Certified Antennas ..... 12

    Documentation Requirements ..... 13

        FCC ..... 13

        Industry Canada..... 14

        European Union..... 15

## SCOPE

This document describes key hardware aspects of the SDC-CF10AG 802.11a/g Compact Flash Module. This document is intended to assist device manufacturers and related parties with the integration of this radio into their host devices. Data in this document is drawn from a number of sources and includes information found in the Broadcom BCM4318E data sheet issued in July of 2006.

The information in this document is subject to change without notice. Please contact Laird or visit the [CF10AG page of the Laird website](#) to obtain the most recent version of this document.



## OPERATIONAL DESCRIPTION

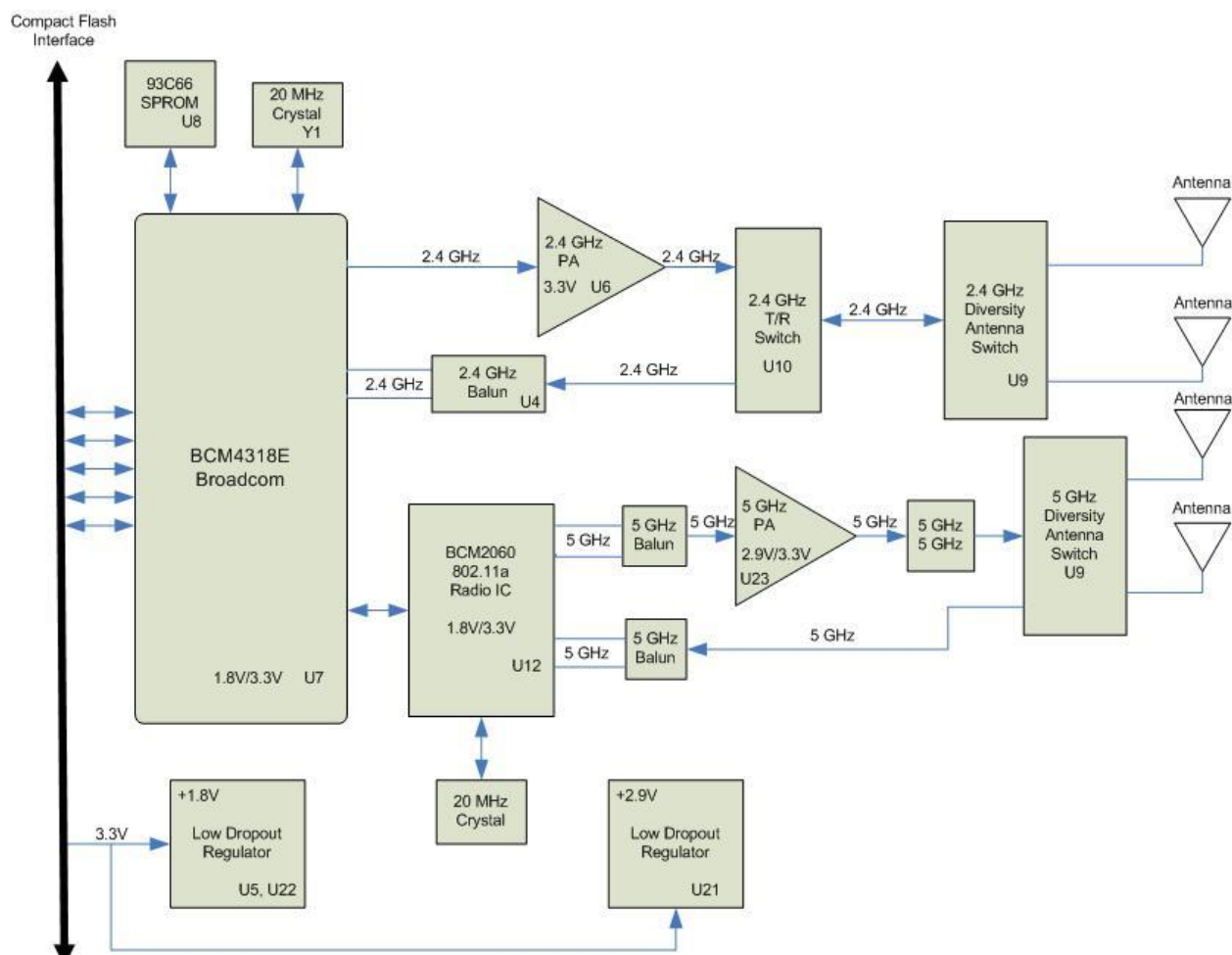
This device is an SDC-CF10AG 802.11a/g Compact Flash Module with Antenna Connectors, which operates in the 2.4 GHz and 5 GHz portions of the radio frequency spectrum. The device is compliant with IEEE 802.11a, 802.11b, and 802.11g standards using Direct Sequence Spread Spectrum and Orthogonal Frequency Division Multiplexing. The device supports all 802.11a, 802.11b, and 802.11g data rates and automatically adjusts data rates and operational modes based on various environmental factors.

When operating on channels in the UNII-2 and UNII-2 Extended bands that are in the 5 GHz portion of the frequency spectrum and are subject to Dynamic Frequency Selection requirements, the SDC-CF10AG fully conforms to applicable regulatory requirements. In the event that specified types of radar are detected by the network infrastructure, the SDC-CF10AG will fully conform to commands from the infrastructure for radar avoidance.

The SDC-CF10AG is compliant with 16-bit Compact Flash Type 2 mechanical specifications and interfaces to host devices via a 50-pin connector. The device is based on the Broadcom BCM4318e chip which is an integrated device providing a Media Access Controller (MAC), a Physical Layer Controller (PHY or baseband processor) and a 2.4 GHz transceiver. The SDC-CF10AG incorporates an external 5 GHz transceiver to allow for dual band operation. To maximize operational range, the SDC-CF10AG incorporates 2.4 GHz and 5 GHz Power Amplifiers to increase transmit power to as much as 19 dBm (80 mW) and a 2.4 GHz Low Noise Amplifier to improve receiver sensitivity. The frequency stability for both 2.4 GHz (802.11b and 802.11g) and 5 GHz (802.11a) operation is +/- 20 ppm. The SDC-CF10AG is powered by the host device into which it is installed and uses a DC to DC regulator. The SDC-CF10AG incorporates four Hirose U.FL antenna connectors to provide an omnidirectional coverage pattern and support dual band transmit and receive diversity. Typical host devices include: (1) Portable Data Terminals (PDTs) and (2) Vehicle Mounted Terminals (VMTs).

The device is labeled with all applicable regulatory information in a manner that's compliant with all regulatory standards. Regulatory operational requirements are included with this document and are to be incorporated into the operating manual of any device into which the SDC-CF10AG is installed. The SDC-10AG is designed for installation into mobile devices such as vehicle mount data terminals which typically operate at distances greater than 20 cm from the human body and portable devices such as handheld data terminals which typically operate at distances less than 20 cm from the human body. See "[Documentation Requirements](#)" for more information.

## BLOCK DIAGRAM




## SPECIFICATIONS


Feature	Description
System Interface	16-bit Compact Flash Type 2 with 50-pin connector
Antenna Interface	4 Hirose U.FL connectors for dual band antenna diversity
Chip Set	Broadcom BCM4318E
Input Voltage Requirements	3.3 VDC +/- 10%
Current Consumption (At maximum transmit power setting)	Transmit: 440mA (1320mW) Receive: 180mA (594mW) Standby: 10mA (33mW)
Operating Temperature	-30° to 75°C (-22° to 167°F)
Operating Humidity	10 to 90% (non-condensing)
Storage Temperature	-40° to 80°C (-40° to 176°F)

Feature	Description
Storage Humidity	10 to 90% (non-condensing)
Maximum Electrostatic Discharge	4 kV
Length	54.5 mm (2.15 in.)
Width	43 mm (1.69 in.)
Card Thickness	5 mm (0.2 in.)
Weight	20 g (0.7 oz.)
Mounting	50-pin connector. Through hole (non-metallic screw recommended)
Wireless Media	Direct Sequence-Spread Spectrum (DSSS) Orthogonal Frequency Divisional Multiplexing (OFDM)
Media Access Protocol	Carrier sense multiple access with collision avoidance (CSMA/CA)
Network Architecture Types	Infrastructure and ad hoc
Network Standards	IEEE 802.11a, 802.11b, 802.11d, 802.11e, 802.11g, 802.11h, 802.11i
Data Rates Supported	802.11a (OFDM) 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11b (DSSS) 1, 2, 5.5, 11 Mbps 802.11g (OFDM) 6, 9, 12, 18, 24, 36, 48, 54 Mbps
Modulation	BPSK @ 1, 6, and 9 Mbps QPSK @ 2, 12, and 18 Mbps CCK @ 5.5 and 11 Mbps 16-QAM @ 24 and 36 Mbps 64-QAM @ 48 and 54 Mbps
Regulatory Domain Support	FCC (Americas, Parts of Asia, and Middle East) ETSI (Europe, Middle East, Africa, and Parts of Asia) MIC (formerly TELEC) (Japan)
2.4 GHz Frequency Bands	<b>ETSI</b> 2.4 GHz to 2.483 GHz <b>FCC</b> 2.4 GHz to 2.473 GHz <b>MIC (formerly TELEC)</b> 2.4 GHz to 2.495 GHz
5 GHz Frequency Bands	<b>ETSI</b> 5.15 GHz to 5.35 GHz 5.47 GHz to 5.725 GHz <b>FCC</b> 5.15 GHz to 5.35 GHz 5.47 GHz to 5.725 GHz 5.725 GHz to 5.82 GHz <b>MIC (formerly TELEC)</b> 5.15 GHz to 5.35 GHz
2.4 GHz Operating Channels	<b>ETSI:</b> 13 (3 non-overlapping) <b>FCC:</b> 11 (3 non-overlapping) <b>MIC:</b> 14 (4 non-overlapping)
5 GHz Operating Channels	<b>ETSI:</b> 19 non-overlapping <b>FCC:</b> 23 non-overlapping <b>MIC:</b> 8 non-overlapping

Feature	Description	
Transmit Power Settings	<b>802.11a</b> 15 dBm (30 mW) 10 dBm (10 mW) 0 dBm (1 mW) <b>802.11b</b> 18 dBm (63 mW) 17 dBm (50 mW) 15 dBm (30 mW) 10 dBm (10 mW) 0 dBm (1 mW) <b>802.11g</b> 15 dBm (30 mW) 10 dBm (10 mW) 0 dBm (1 mW)	
Typical Receiver Sensitivity	<b>802.11a:</b>	
	6 Mbps	-85 dBm
	9 Mbps	-84 dBm
	12 Mbps	-83 dBm
	18 Mbps	-80 dBm
	24 Mbps	-76 dBm
	36 Mbps	-73 dBm
	48 Mbps	-70 dBm
	54 Mbps	-65 dBm (PER <= 10%)
	<b>802.11b:</b>	
	1 Mbps	-96 dBm
	2 Mbps	-95 dBm
	5.5 Mbps	-94 dBm
	11 Mbps	-90 dBm (PER <= 10%)
	<b>802.11g:</b>	
	6 Mbps	-94 dBm
	9 Mbps	-91 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 (PER <= 10%)	
Delay Spread	600 ns @ 1 Mbps	350 ns @ 12 Mbps
	500 ns @ 2 Mbps	350 ns @ 18 Mbps
	400 ns @ 5.5 Mbps	250 ns @ 24 Mbps
	400 ns @ 6 Mbps	250 ns @ 36 Mbps
	400 ns @ 9 Mbps	150 ns @ 48 Mbps
	200 ns @ 11 Mbps	150 ns @ 54 Mbps

Feature	Description	
Operating Systems Supported	Windows Mobile 6.1 Windows Mobile 6.0 Windows Mobile 5.0 Pocket PC 2003	Windows Embedded CE 6.0 R2 & R3 Windows Embedded CE 6.0 Windows Embedded CE 5.0 Windows XP Professional and Embedded
Security	<b>Standards</b> <ul style="list-style-type: none"> <li>Wireless Equivalent Privacy (WEP)</li> <li>Wi-Fi Protected Access (WPA)</li> <li>IEEE 802.11i (WPA2)</li> </ul> <b>Encryption</b> <ul style="list-style-type: none"> <li>Wireless Equivalent Privacy (WEP, RC4 Algorithm)</li> <li>Temporal Key Integrity Protocol (TKIP, RC4 Algorithm)</li> <li>Advanced Encryption Standard (AES, Rijndael Algorithm)</li> </ul> <b>Encryption Key Provisioning</b> <ul style="list-style-type: none"> <li>Static (40-bit and 128-bit lengths)</li> <li>Pre-Shared (PSK)</li> <li>Dynamic</li> </ul> <b>802.1X Extensible Authentication Protocol Types</b> <ul style="list-style-type: none"> <li>EAP-FAST</li> <li>EAP-TLS</li> <li>PEAP-GTC</li> <li>PEAP-MSCHAPv2</li> <li>PEAP-TLS</li> <li>LEAP</li> </ul>	
Notes:	<ul style="list-style-type: none"> <li>WEP is not permitted with HT (Higher Throughput) rates.</li> <li>TKIP-only profiles are no longer permitted. TKIP is only supported if the same profile also supports a WPA2/AES profile connection.</li> <li>For the Laird CLI and LCM, WPA/TKIP-only profiles are now WPA/WPA2.</li> </ul>	
Compliance	<b>ETSI Regulatory Domain</b> <a href="#">EN 300 328</a> <a href="#">EN 301 489</a> <a href="#">EN 301 893</a> <a href="#">EN 62311</a> <a href="#">EN 60950-1</a> <a href="#">EU 2002/95/EC (RoHS)</a> <b>FCC Regulatory Domain</b> Part 15.247 Subpart C <a href="#">Grant</a> <a href="#">Test Report</a> Part 15.407 Subpart E <a href="#">Grant</a> <a href="#">Test Report</a> <b>Industry Canada</b> <a href="#">RSS-210</a> <a href="#">RSS-Gen Issue 2</a> <b>MIC Regulatory Domain</b> <a href="#">Article 2 Item 19, Category WW (2.4GHz Channels 1-13)</a> <a href="#">Article 2 Item 19-2, Category GZ (2.4GHz Channel 14)</a>	
Certifications	<b>Wi-Fi Alliance</b> 	



Feature	Description
	<a href="#">802.11a, 802.11b, 802.11g</a> <a href="#">WPA Enterprise</a> <a href="#">WPA2 Enterprise</a>  <a href="#">Cisco Compatible Extensions</a> (Version 4)
Warranty	Limited Lifetime
<i>All specifications are subject to change without notice</i>	

## Recommended Operating Conditions

Parameter	Min.	Typical	Max.	Units	Comments
<b>Supply Voltage</b>					
▪ VDDIO, VDDBUS	3.0	3.3	3.6	V	
▪ VDDCORE, PLLVDD, AVDD	1.71	1.8	1.89	V	
<b>Logic Inputs</b>					
▪ $V_{INH}$ , Input High Voltage	2.0	–	–	V	
▪ $V_{INL}$ , Input Low Voltage	–	–	0.8	V	
<b>Logic Outputs</b>					
▪ $V_{OH}$ , Output High Voltage	2.4	–	–	V	Current is determined by the specific pad.
▪ $V_{OL}$ , Output Low Voltage	–	–	0.4	V	

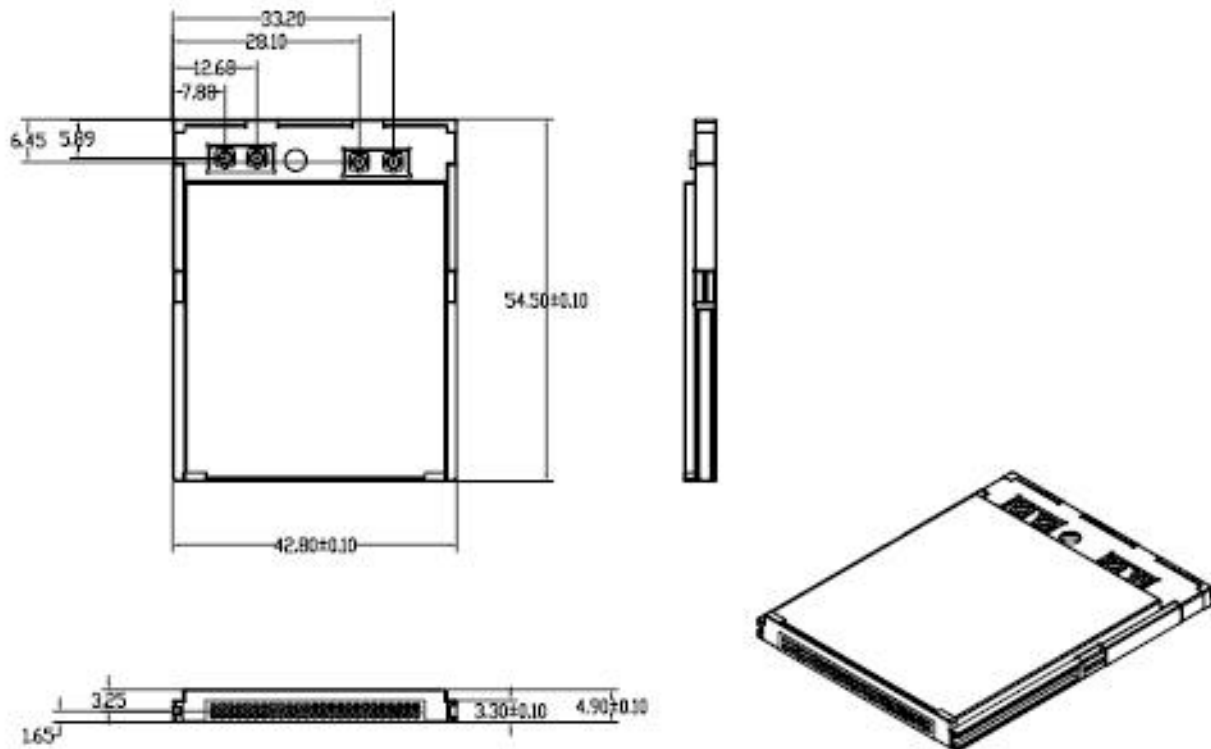
## PIN DEFINITIONS

Pin #	Pin Name	I/O	Power Type	Description
1	GND			Ground
2	Slot0_data3			Data bus, bit 3
3	Slot0_data4			Data bus, bit 4
4	Slot0_data5			Data bus, bit 5
5	Slot0_data6			Data bus, bit 6
6	Slot0_data7			Data bus, bit 7
7	Slot0_nCE1			Enable for even-numbered address bytes. Active low.
8	Slot0_addr10			Address bus, bit 10
9	Slot0_nOE			Memory access output enable. Active low.
10	Slot0_addr9			Address bus, bit 9
11	Slot0_addr8			Address bus, bit 8
12	Slot0_addr7			Address bus, bit 7
13	VCC3_3			3.3V Module Power
14	Slot0_addr6			Address bus, bit 6
15	Slot0_addr5			Address bus, bit 5
16	Slot0_addr4			Address bus, bit 4
17	Slot0_addr3			Address bus, bit 3
18	Slot0_addr2			Address bus, bit 2
19	Slot0_addr1			Address bus, bit 1
20	Slot0_addr0			Address bus, bit 0

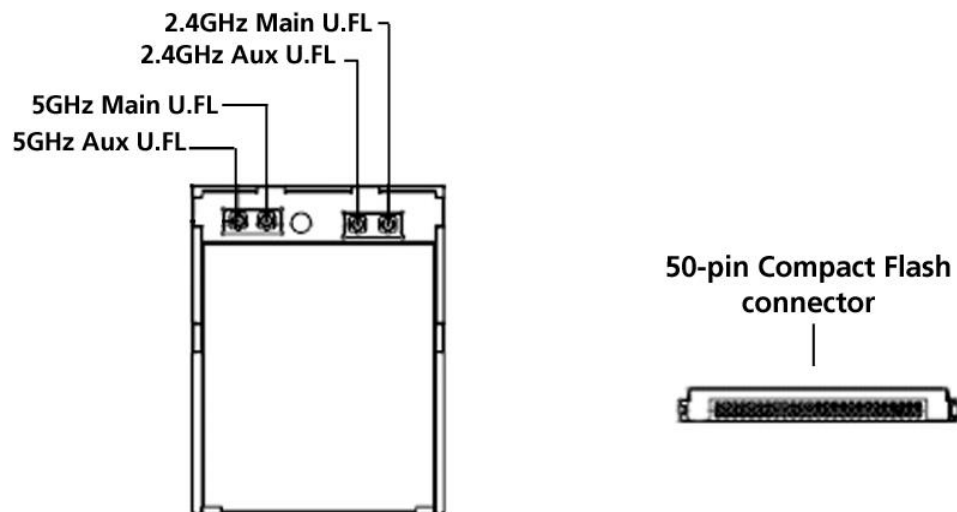
Pin #	Pin Name	I/O	Power Type	Description
21	Slot0_data0			Data bus, bit 0
22	Slot0_data1			Data bus, bit 1
23	Rfu_data2			Data bus, bit 2
24	Slot0_nIOIS16			Current access is 16 bit. Active low.
25	Slot0_nCD2			Card detect. Tied to ground in module.
26		N/C		No Connect
27	Slot0_data11			Data bus, bit 11
28	Slot0_data12			Data bus, bit 12
29	Slot0_data13			Data bus, bit 13
30	Rfu_data14			Data bus, bit 14
31	Slot0_data15			Data bus, bit 15
32	Slot0_nCE1			Enable for even-numbered address bytes. Active low.
33	GND			Ground
34	Slot0_nIOR			IO access read enable. Active low.
35	Slot0_nIOW			IO access write enable. Active low.
36	Slot0_nWE			Memory access write enable. Active low.
37	Slot0_nIREQ			Interrupt request. Active low.
38	VCC3_3			3.3V Module Power
39	BT_ACTIVE	I	VDDIO	Input from BT device. When high, indicates that Bluetooth is transmitting or receiving. The radio does not transmit when BT_ACTIVE is high. Tie to GND when not used
40	Slot0_nVS2			Not Used. Leave Open (Float)
41	Slot0_RESET			Card reset. Active high.
42	Slot0_nWAIT			Current access is extended. Active low.
43	INPACK			This signal must be inactive until the card is configured.
44	Slot0_nREG			Current access is to attribute memory. Active low.
45	WLAN_ACTIVE	O	VDDIO	Output to BT device. When high, indicates that WLAN is transmitting or receiving. Do not connect when not used
46	Slot0_nSTSCHG			Module status change. Active low.
47	Slot0_data8			Data bus, bit 8
48	Slot0_data9			Data bus, bit 9
49	Slot0_data10			Data bus, bit 10
50	GND			Ground

## MECHANICAL SPECIFICATIONS

### Dimensions



### Connector Overview



## RF LAYOUT DESIGN GUIDELINES

The following is a list of RF layout design guidelines and recommendation when installing a Summit-brand radio into your device.

- Do not run antenna cables directly above or directly below the radio.
- Do not place any parts or run any high speed digital lines below the radio.
- If there are other radios or transmitters located on the device (such as a Bluetooth radio), place the devices as far apart from each other as possible.
- Ensure that there is the maximum allowable spacing separating the antenna connectors on the radio from the antenna. In addition, do not place antennas directly above or directly below the radio.
- Laird recommends the use of a double shielded cable for the connection between the radio and the antenna elements.
- Laird has provided three plated mounting holes that can be used for grounding. When additional ground plane is required, you may use some or all of these grounded mounting holes.

## REGULATORY

### Certified Antennas

The SDC-CF10AG has been tested to the regulatory standards defined in the “Certifications” section of the Specifications table above. These tests were conducted with the following antennas:

[Radiall Larsen Dipole](#) (click for datasheet)

- Form Factor: Whip
- Type: Dipole
- Maximum 2.4 GHz Gain: 1.6 dBi (not used during testing)
- Maximum 5 GHz Gain: 5 dBi

[Laird NanoBlade](#) (click for datasheet)

- Form Factor: PCB
- Type: Dipole
- Maximum 2.4 GHz Gain: 3.8 dBi
- Maximum 5 GHz Gain: 5.1 dBi

[Volex Dipole](#) (click for datasheet)

- Form Factor: Omni
- Type: Dipole
- Maximum 2.4 GHz Gain: 1.6 dBi
- Maximum 5 GHz Gain: 5.0 dBi

## Documentation Requirements

In order to maintain regulatory compliance, when integrating the SDC-CF10AG into a host device and leveraging Summit's grants and certifications, it is necessary to meet the documentation requirements set forth by the applicable regulatory agencies. The following sections (FCC, Industry Canada, and European Union) outline the information that must be included in the user's guide and external labels for the host devices into which the SDC-CF10AG is integrated.

### FCC

#### *User's Guide Requirements*

As outlined in the Operational Description, the SDC-CF10AG complies with [FCC Part 15 Rules](#) for a Limited Modular Approval. To leverage Laird's grant, the two conditions below must be met for the host device into which the SDC-CF10AG is integrated:

1. The antenna is installed with 20 cm maintained between the antenna and users.
2. The transmitter module is not co-located with any other transmitter or antenna that is capable of simultaneous operation.

As long as the two conditions above are met, further *transmitter* testing is typically not required. However, the OEM integrator is still responsible for testing its end-product for any additional compliance requirements required with this module installed, such as (but not limited to) digital device emissions and PC peripheral requirements.

---

**IMPORTANT!** In the event that the two conditions above *cannot be met* (for example certain device configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID *cannot* 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.

---

When using Laird's FCC grant for the SDC-CF10AG, the integrator must include specific information in the user's guide for the device into which the SDC-CF10AG is integrated. The integrator must not provide information to the end user regarding how to install or remove this RF module in the user's manual of the device into which the SDC-CF10AG is integrated. The following FCC statements must be added in their entirety and without modification into a prominent place in the user's guide for the device into which the SDC-CF10AG is integrated:

---

**"IMPORTANT NOTE:** To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter."

---

#### 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:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. 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. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

---

### ***Labeling Requirements***

The final end product must be labeled in a visible area with the following notice:

**Contains FCC ID: TWG-SDC10AG**

## **Industry Canada**

### ***User's Guide Requirements***

As outlined in the Operational Description, the SDC-CF10AG complies with Industry Canada (IC) rules for a Limited Modular Approval. To leverage Laird's grant, the two conditions below must be met for the host device into which the SDC-CF10AG is integrated:

1. The antenna is installed with 20 cm maintained between the antenna and users.
2. The transmitter module is not co-located with any other transmitter or antenna that is capable of simultaneous operation.

As long as the two conditions above are met, further *transmitter* testing is typically not required. However, the OEM integrator is still responsible for testing its end-product for any additional compliance requirements required with this module installed, such as (but not limited to) digital device emissions and PC peripheral requirements.

**IMPORTANT!**

In the event that the two conditions above *cannot be met* (for example certain device configurations or co-location with another transmitter), then the IC authorization is no longer considered valid and the IC ID *cannot* 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 IC authorization.

When using Laird's IC grant for the SDC-CF10AG, the integrator must include specific information in the user's guide for the device into which the SDC-CF10AG is integrated. The integrator must not provide information to the end user regarding how to install or remove this RF module in the user's manual of the device into which the SDC-CF10AG is integrated. . In addition to the required FCC statements outlined above, the following IC statements must be added in their entirety and without modification into a prominent place in the user's guide for the device into which the SDC-CF10AG is integrated:

To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing.

The integrator must list out information for each antenna used with the host device into which the SDC-CF10AG is integrated. The following examples are based on antennas with which the SDC-CF10AG was certified and represent an acceptable format:

**Radiall Larsen Dipole**

- **Form Factor:** Whip
- **Type:** Dipole
- **Maximum 2.4 GHz Gain:** 1.6 dBi (not used during testing)
- **Maximum 5 GHz Gain:** 5 dBi

**Laird NanoBlade**

- **Form Factor:** PCB
- **Type:** Dipole
- **Maximum 2.4 GHz Gain:** 3.8 dBi
- **Maximum 5 GHz Gain:** 5.1 dBi

**Volex Dipole**

- **Form Factor:** Omni
- **Type:** Dipole
- **Maximum 2.4 GHz Gain:** 1.6 dBi
- **Maximum 5 GHz Gain:** 5.0 dBi

***Labeling Requirements***

The final end product must be labeled in a visible area with the following notice:

**Contains IC ID: 6616A-SDCCF10AG**

**European Union*****User's Guide Requirements***

The integrator must include specific information in the user's guide for the device into which the SDC-CF10AG is integrated. In addition to the required FCC and IC statements outlined above, the following R&TTE

statements must be added in their entirety and without modification into a prominent place in the user's guide for the device into which the SDC-CF10AG is integrated:





This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE Directive 1999/5/EC:

- **EN60950-1:2001 A11:2004**  
Safety of Information Technology Equipment
- **EN 300 328 V1.7.1: (2006-10)**  
Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband Transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using spread spectrum modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive
- **EN 301 489-1 V1.6.1: (2005-09)**  
Electromagnetic compatibility and Radio Spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements
- **EN 301 489-17 V1.2.1 (2002-08)**  
Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for 2,4 GHz wideband transmission systems and 5 GHz high performance RLAN equipment
- **EN 301 893**  
Electromagnetic compatibility and Radio spectrum Matters (ERM); Broadband Radio Access Networks (BRAN); Specific conditions for 5 GHz high performance RLAN equipment
- **EU 2002/95/EC (RoHS)**  
Declaration of Compliance – EU Directive 2003/95/EC; Reduction of Hazardous Substances (RoHS)









This device is a 2.4 GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries, except in France and Italy where restrictive use applies.






In Italy the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying public access to telecommunications and/or network services.

This device may not be used for setting up outdoor radio links in France and in some areas the RF output power may be limited to 10 mW EIRP in the frequency range of 2454 – 2483.5 MHz. For detailed information the end-user should contact the national spectrum authority in France.

 <b>Česky</b> [Czech]	<i>[Jméno výrobce]</i> tímto prohlašuje, že tento <i>[typ zařízení]</i> je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
 <b>Dansk</b> [Danish]	Undertegnede <i>[fabrikantens navn]</i> erklærer herved, at følgende udstyr <i>[udstyrets typebetegnelse]</i> overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
 <b>Deutsch</b> [German]	Hiermit erkläre <i>[Name des Herstellers]</i> , dass sich das Gerät <i>[Gerätetyp]</i> in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
 <b>Eesti</b>	Käesolevaga kinnitab <i>[tootja nimi = name of manufacturer]</i> seadme <i>[seadme tüüp]</i>



[Estonian]	= <i>type of equipment</i> /vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
 English	Hereby, <i>[name of manufacturer]</i> , declares that this <i>[type of equipment]</i> is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
 Español [Spanish]	Por medio de la presente <i>[nombre del fabricante]</i> declara que el <i>[clase de equipo]</i> cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
 Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ <i>[name of manufacturer]</i> ΔΗΛΩΝΕΙ ΟΤΙ <i>[type of equipment]</i> ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
 Français [French]	Par la présente <i>[nom du fabricant]</i> déclare que l'appareil <i>[type d'appareil]</i> est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
 Italiano [Italian]	Con la presente <i>[nome del costruttore]</i> dichiara che questo <i>[tipo di apparecchio]</i> è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo <i>[name of manufacturer / izgatavotāja nosaukums]</i> deklarē, ka <i>[type of equipment / iekārtas tips]</i> atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]	Šiuo <i>[manufacturer name]</i> deklaruoja, kad šis <i>[equipment type]</i> atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
 Nederlands [Dutch]	Hierbij verklaart <i>[naam van de fabrikant]</i> dat het toestel <i>[type van toestel]</i> in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
 Malti [Maltese]	Hawnhekk, <i>[isem tal-manifattur]</i> , jiddikjara li dan <i>[il-mudel tal-prodott]</i> jikkonforma mal- <i>[li għat]</i> għajiet essenzjali u ma provvedimenti oħrajn rilevanti li hemm fid-Dirrettiva 1999/5/EC.
 Magyar [Hungarian]	Alulírott, <i>[gyártó neve]</i> nyilatkozom, hogy a <i>[... típus]</i> megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.

 Polski [Polish]	Niniejszym <i>[nazwa producenta]</i> oświadcza, że <i>[nazwa wyrobu]</i> jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
 Português [Portuguese]	<i>[Nome do fabricante]</i> declara que este <i>[tipo de equipamento]</i> está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
 Slovensko [Slovenian]	<i>[Ime proizvajalca]</i> izjavlja, da je ta <i>[tip opreme]</i> v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovenský [Slovak]	<i>[Meno výrobcu]</i> týmto vyhlasuje, že <i>[typ zariadenia]</i> spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
 Suomi [Finnish]	<i>[Valmistaja = manufacturer]</i> vakuuttaa täten että <i>[type of equipment = laitteen tyyppimerkintä]</i> tyypinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
 Svenska [Swedish]	Härmed intygar <i>[företag]</i> att denna <i>[utrustningstyp]</i> står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

### Labeling Requirements

The final end product must be labeled in a visible area with the following notice:

