



Wi-Fi MODULE SPECIFICATION

Part Number: BW2570-PCIE

Version: V 1.0





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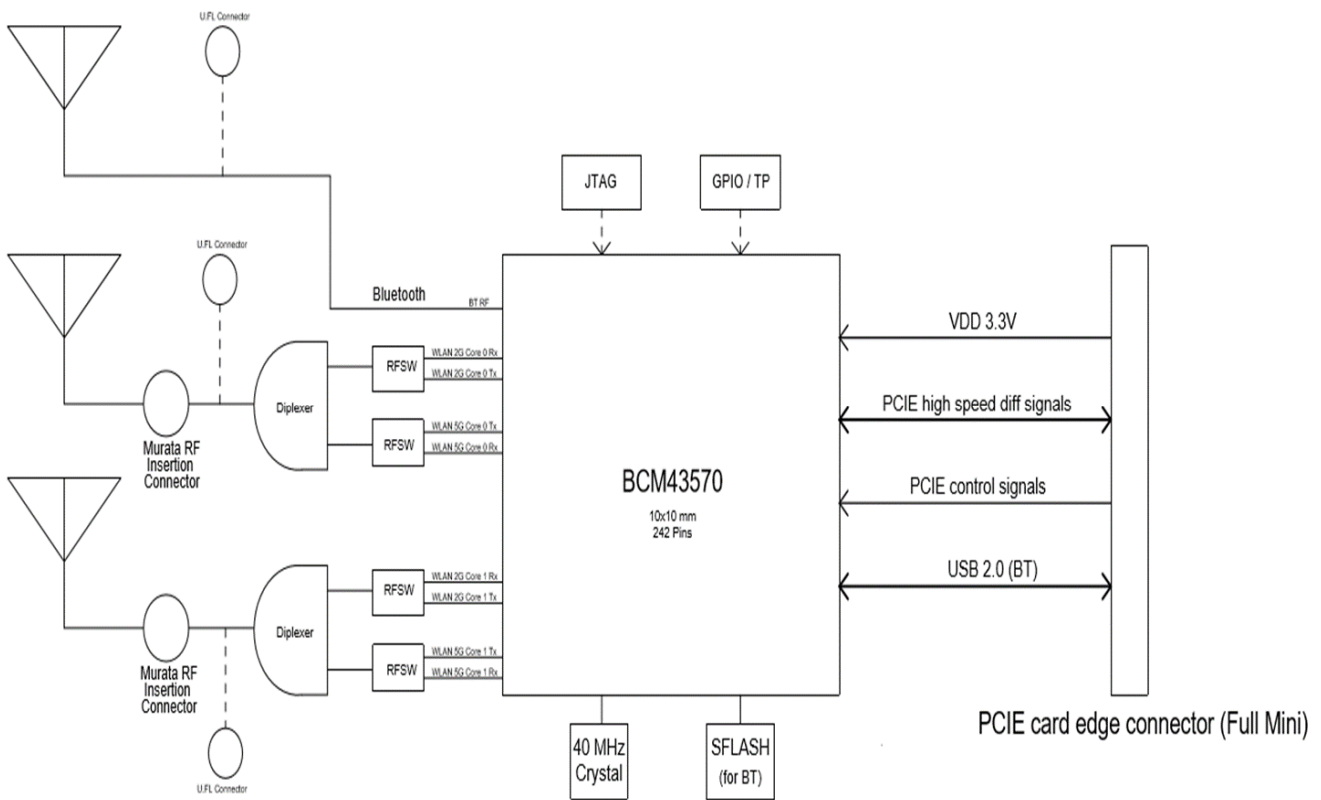
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1. Overview

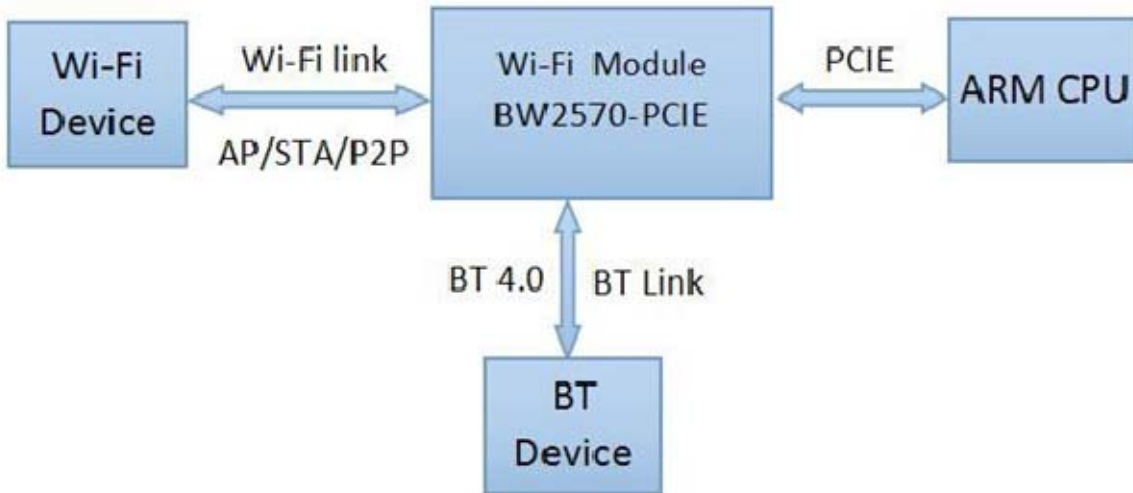
GENERAL DESCRIPTION

The Broadcom BCM43570 single-chip device provides the highest level of integration for a mobile or handheld wireless system, with integrated IEEE 802.11 a/b/g/n/ac MAC/baseband/radio and Bluetooth 4.1 + EDR. It provides a small form-factor solution with minimal external components to drive down cost for mass volumes and allows for handheld device flexibility in size, form, and function. Comprehensive power management circuitry and software ensure the system can meet the needs of highly mobile devices that require minimal power consumption and reliable operation.

2. Block Diagram



3. Application Diagram



4. Feature

Wi-Fi Key Feature

- IEEE 802.11ac Draft compliant
- Dual-stream spatial multiplexing from 1 Mbps up to 866.7 Mbps data rates
- Supports 20, 40, and 80 MHz channels with optional Short GI(SGI) (256QAM modulation)
- Full IEEE 802.11a/b/g/n legacy compatibility with enhanced performance
- Supports IEEE 802.11ac/n beam forming
- On-chip power amplifiers and low-noise amplifiers for both bands
- Supports various RF front-end architectures including:
 - Three antennas design: two separate antennas (Core0 and Core1 to WLAN) and a separate antenna to Bluetooth
- Supports PCIe Gen2 interfaces

Bluetooth Key Features

- Complies with Bluetooth Core Specification Version 4.1 + EDR with provisions for supporting future specifications
- Bluetooth Class 1 or Class 2 transmitter operation
- Adaptive frequency hopping(AFH) for reducing radio frequency interference
- USB 2.0 full-speed (12Mbps) supported for Bluetooth
- Supports Serial Flash interface
- Incorporates GFSK for 1Mbps, Pi/4-DQPSK for 2Mbps and 8-DPSK for 3Mbps to support EDR

5. WLAN Product Specification

Dimension	29.8*26.8*0.3mm
Chip-set	BCM43570



Standard	IEEE802.11ac;IEEE802.11n;IEEE802.11g;IEEE802.11b; IEEE802.11a; Integrated Bluetooth 4.1
Modulation Type	OFDM(CCK/16-QAM/64-QAM/ 256 QAM)
Frequency Band	40MHz
Interface	WLAN PCIe, Bluetooth USB 2.0
Spread Spectrum	DSSS
Transmission Distance	Indoor up to 100m, outdoor up to 300m(limited in an environment)
Data Security	64/128 bit WEP, WPA/WPA2,WPA-PSK/WPA2-PSK(TKIP/AES)
Transmit Power	2.4G[11g: 15±2dBm, 11b:17±2dBm, 11n HT20 : 14±2dBm,11n HT40 :14±2dBm] 5G[11n HT20:11±2dBm, 11n HT40:11±2dBm HT80 10±2dBm 11a:12±2dBm]
Rx Sensitivity	867Mbps:-61dBm@10% PER 300Mbps:-61dBm@10% PER
Data Rate	Support 802.11ac 80MHz Max. 866.7Mbps/780Mbps(400GI/800GI)
Operating Temperature	0°C ~ 50°C
Storage Temperature	-10°C ~ 70°C
Relative humidity	10%~95%
Antenna	external PF
Operation System	windows XP32/64,Vista 32/64, Win7 32/64, Linux, Mac
Operation Voltage	DC 3.3V

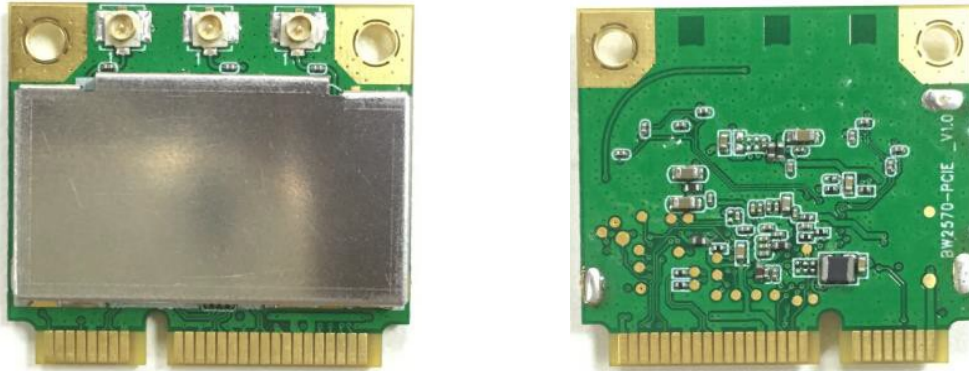


6. BT Product Specification

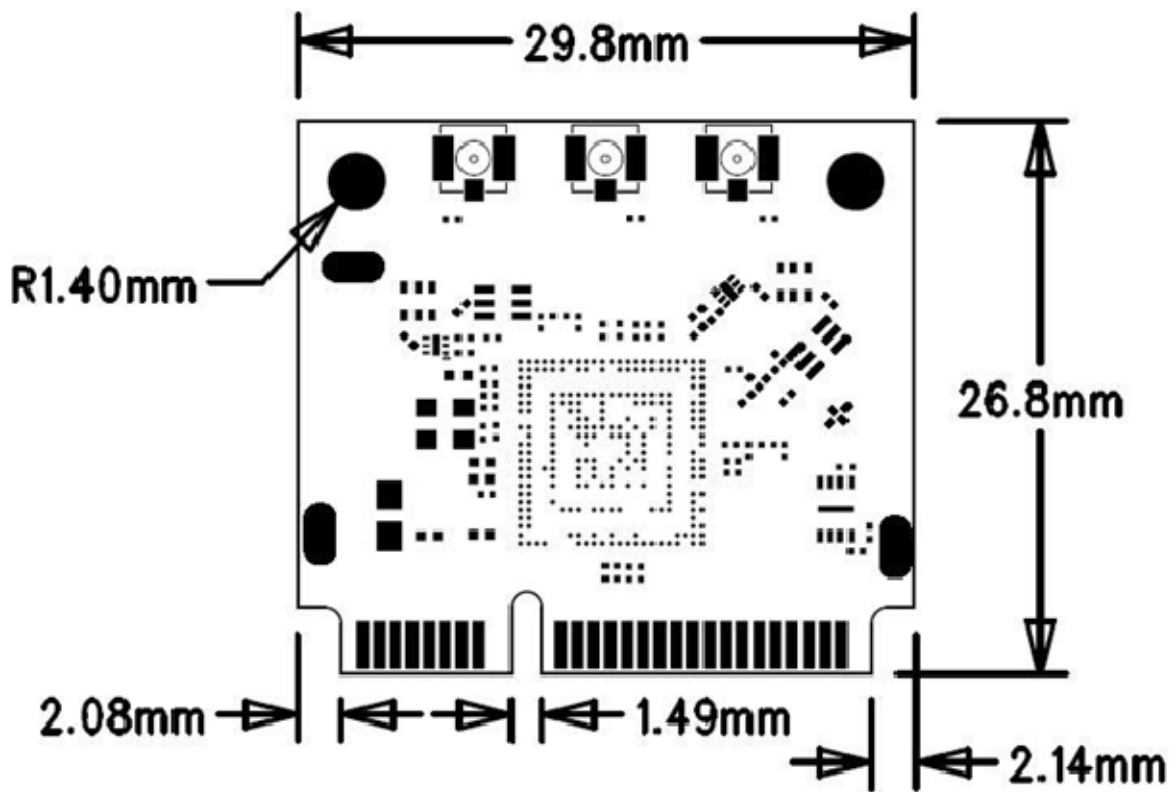
Parameter	Conditions	Minimum	Typical	Maximum	Unit
Frequency range		2402		2480	MHz
RX sensitivity	1 Mbps		-82		dBm
	2 Mbps		-82		dBm
	3 Mbps		-82		dBm
Initial carrier frequency offset		-24	5	24	KHz
Output power	Class 1/GFSK		8		dBm
	Class 2/GFSK	-6	0	4	dBm

7. Size Of Module Graph

7.1 Physical Map



7.2 Machine Size Map And Pin Definition



Pin	Name	Description
1	PCIE_WAKE_N	PCI Power management event output



2	VDD3_3	Module +3.3V power supply
3	NC	NC
4	Ground	Ground
5	NC	NC
6	NC	NC
7	PCIE_CLKREQ_N	PCIE clock request signal
8	NC	NC
9	Ground	Ground
10	NC	NC
11	PCIE_REFCLK_N	100 OHM differential pair clock signal
12	NC	NC
13	PCIE_REFCLK_P	100 OHM differential pair clock signal
14	NC	NC
15	Ground	Ground
16	NC	NC
17	NC	NC
18	Ground	Ground
19	NC	NC
20	W_DISABLE_N	WLAN & Bluetooth regulator power up
21	Ground	Ground
22	PCIE_PRST_N	PCIE preset signal
		100 OHM differential pair TX data signal
24	VDD3_3	Module +3.3V power supply
		100 OHM differential pair TX data signal
26	Ground	Ground
27	Ground	Ground
28	NC	NC
29	Ground	Ground
30	NC	NC
		100 OHM differential pair RX data signal



32	NC	NC
		100 OHM differential pair RX data signal
34	Ground	Ground
35	Ground	Ground
36	BT_USB_DN	Bluetooth USB 2.0
37	Ground	Ground
38	BT_USB_DP	Bluetooth USB 2.0
39	VDD3_3	Module +3.3V power supply
40	Ground	Ground
41	VDD3_3	Module +3.3V power supply
42	NC	NC
43	Ground	Ground
44	WLAN_LED_N_GPIO_13	
45	WLAN_HOST_WAKE	WLAN wake up Host
46	NC	NC
47	BT_HOST_WAKE	Bluetooth wake up Host
48	NC	NC
49	BT_DEV_WAKE	Host wake up Bluetooth device
50	Ground	Ground
51	NC	NC
52	VDD3_3	Module +3.3V power supply

FCC STATEMENT:



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.

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

NOTE: 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 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.

Operations in the 5.15-5.25GHz band are restricted to indoor usage only.

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.

FCC INFORMATION (additional)

OEM INTEGRATION INSTRUCTIONS:



This device is intended only for OEM integrators under the following conditions: The module must be installed in the host equipment such that 20 cm is maintained between the antenna and users, and the transmitter module may not be co-located with any other transmitter or antenna. The module shall be only used with the internal antenna(s) that has been originally tested and certified with this module. 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 (for example, digital device emissions, PC peripheral requirements, etc.).

Validity of using the module certification:

In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization for this module in combination with the host equipment is no longer considered valid and the FCC ID of the module 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.

End product labeling:

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains FCC ID: 2AJ22-BW2570PCIE".

Information that must be placed in the end user manual:

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.

This device must be kept away from all persons by 20cm or more and installations using less distance, or installations using antennas with gain greater than that with which this was Certified will require additional approvals.