PRODUCT SPECIFICATION

802.11n, 2.4G 1T1R Wireless IOT Module

WN4623A

Version 1.0

CONTENT

PRODUCT FEATURES

WN4623A Wi-Fi module provides a highly-integrated and flexible platform for developing and evaluating products and applications based on the QCA4010 SoC. The WN4623A module can be either used with MP1-basebaord development kit for Software development or incorporated into OEM products to enable rapid deployment of Wi-Fi connected systems. The WN4623A is a single band 1x1 802.11 b/g/n device optimized for low-power embedded applications with single-stream capability for both Tx and Rx. It has an integrated network processor with a large set of TCP/IP with IPv4/IPv6-based services. These services can be accessed via a serial SPI link or by a UART link connected to an external host CPU.

PRODUCT SPECIFICATIONS

MAIN CHIPSET

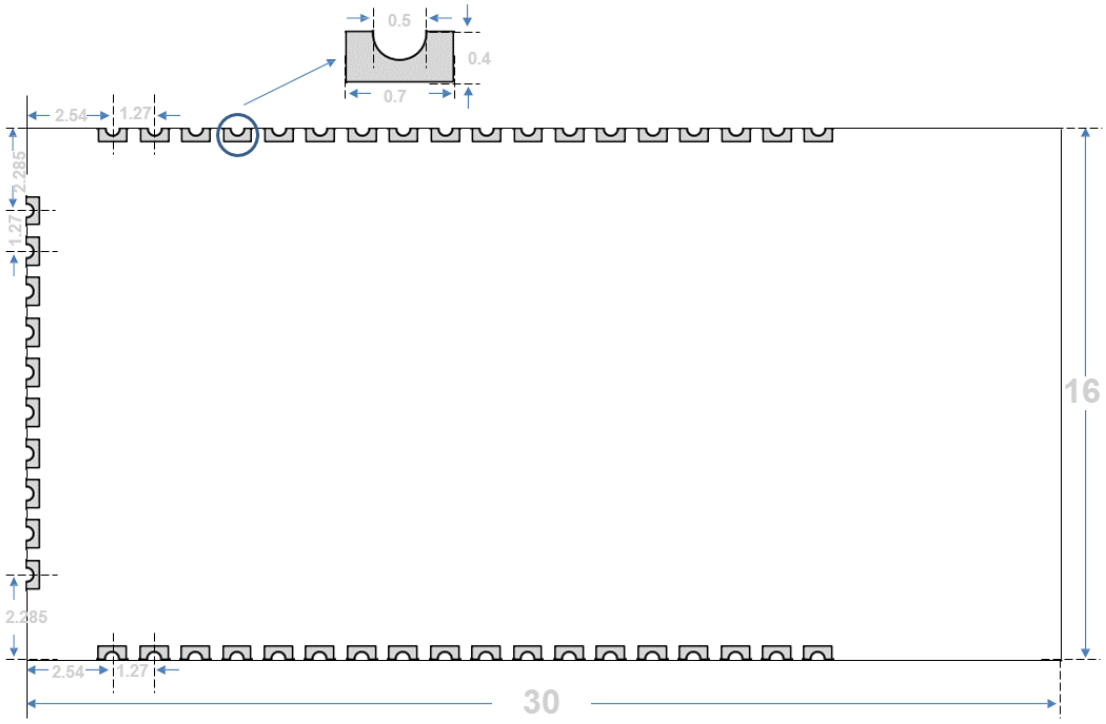
MAC/ Baseband/ RF: QCA4010

FUNCTIONAL SPECIFICATIONS

WiFi Function	
Standard	IEEE802.11b; IEEE 802.11g; IEEE 802.11n
Host Interface	SPI slave x 1 , SDIO 2.0 x1, debug UART x 1 High Speed UART x 2 (up to 3Mbps) I2C master x 1 , I2C Slave x 1 I2S x 1, PWM x 6, ADC x 4, USB2.0 x 1
Data Rate	**802.11b:** 11, 5.5, 2, 1 Mbps **802.11g:** 54, 48, 36, 24, 18, 12, 9, 6 Mbps **802.11n:** MCS 0 to 7
Media Access Control	CSMA/CA with ACK
Modulation Techniques	**802.11b**: CCK, DQPSK, DBPSK **802.11g**: 64QAM, 16QAM, QPSK, BPSK **802.11n**: BPSK, QPSK, 16QAM, 64QAM
Network Architecture	Ad-hoc mode (Peer-to-Peer) Infrastructure mode
Operation Channel	**2.4GHz** 11: (Ch. 1-11) – United States 13: (Ch. 1-13) – Europe 14: (Ch. 1-14) – Japan

Frequency Range	**802.11bg** 2.412 ~ 2.462 GHz
Transmit Output Power – 1x1 **(Tolerance: +-1.5dBm)**	**802.11b:** 19dBm **802.11g:** 16dBm ~54Mbps 20dBm ~6Mbps **802.11n:** 17dBm MCS7 HT20 17dBm MCS7 HT40
Receive Sensitivity	**802.11b: (**IEEE Standard <-76dBm**)** **802.11g: (**IEEE Standard <-65dBm) **802.11n:** **20MHz (**IEEE Standard <-64dBm) **40MHz (**IEEE Standard <-61dBm)
Security	WPA, WPA2, WPS, WEP 64/128, IEEE 802.11x, IEEE 802.11i
Operating Voltage	3.3V ±10% I/O supply voltage
OS Supported	Qualcomm Alljoyn platform
Antenna Type	Printed Antenna, MHF RF connector(optional)

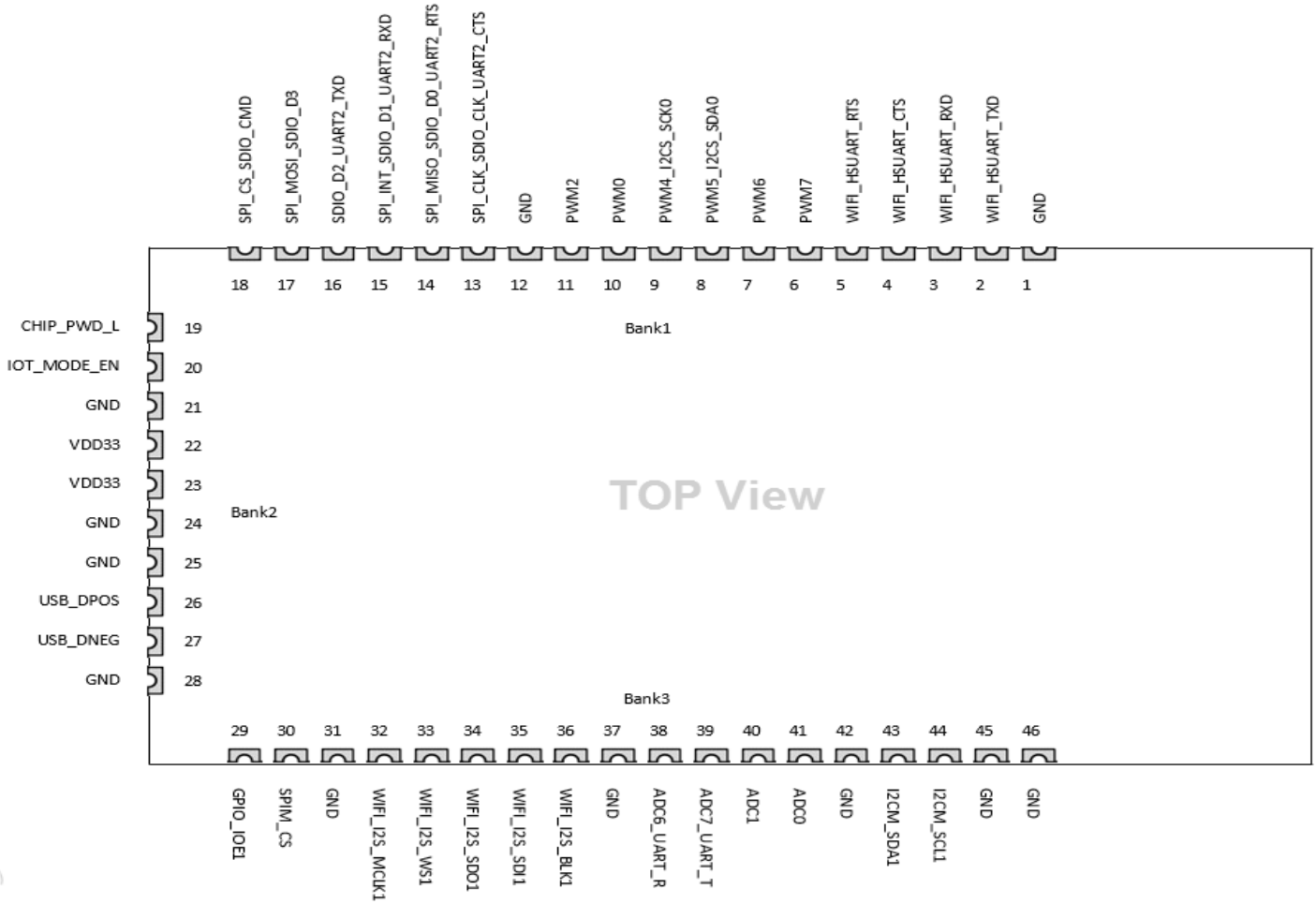
MECHANICAL



PRODUCT PICTURE

Top	Bottom
	

MODULE PIN OUT



Module Bank	Pin No.	Signal/Interface	ALT1	ALT2	ALT3	GPIO No.	Bootstrap
Bank1	pin1	GND	Ground				
	pin2	WIFI_HSUART_TXD	High speed UART TXD			GPIO[24]	
	pin3	WIFI_HSUART_RXD	High speed UART RXD			GPIO[23]	
	pin4	WIFI_HSUART_CTS	High speed UART CTS			GPIO[22]	
	pin5	WIFI_HSUART_RTS	High speed UART RTS			GPIO[21]	
	pin6	PWM7	PWM7			GPIO[13]	
	pin7	PWM6	PWM6			GPIO[12]	
	pin8	PWM5_I2CS_SDA0	PWM5	I2C Slave SDA0		GPIO[11]	
	pin9	PWM4_I2CS_SCK0	PWM4	I2C Slave SCK0		GPIO[10]	
	pin10	PWM0	PWM0			GPIO[6]	
	pin11	PWM2	PWM2			GPIO[8]	Test mode enable
	pin12	GND	Ground				
	pin13	SPI_CLK_SDIO_CLK_UART2_CTS	SPI CLK	SDIO CLK	UART CTS	GPIO[5]	
	pin14	SPI_MISO_SDIO_D0_UART2_RTS	SPI MISO	SDIO Data0	UART RTS	GPIO[4]	Host mode[0]
	pin15	SPI_INT_SDIO_D1_UART2_RXD	SPI Interrupt	SDIO Data1	UART RXD	GPIO[3]	
	pin16	SDIO_D2_UART2_TXD		SDIO Data2	UART TXD	GPIO[2]	
	pin17	SPI_MOSI_SDIO_D3	SPI MOSI	SDIO Data3		GPIO[1]	
	pin18	SPI_CS_SDIO_CMD	SPI CS	SDIO Command		GPIO[0]	Host mode[1]

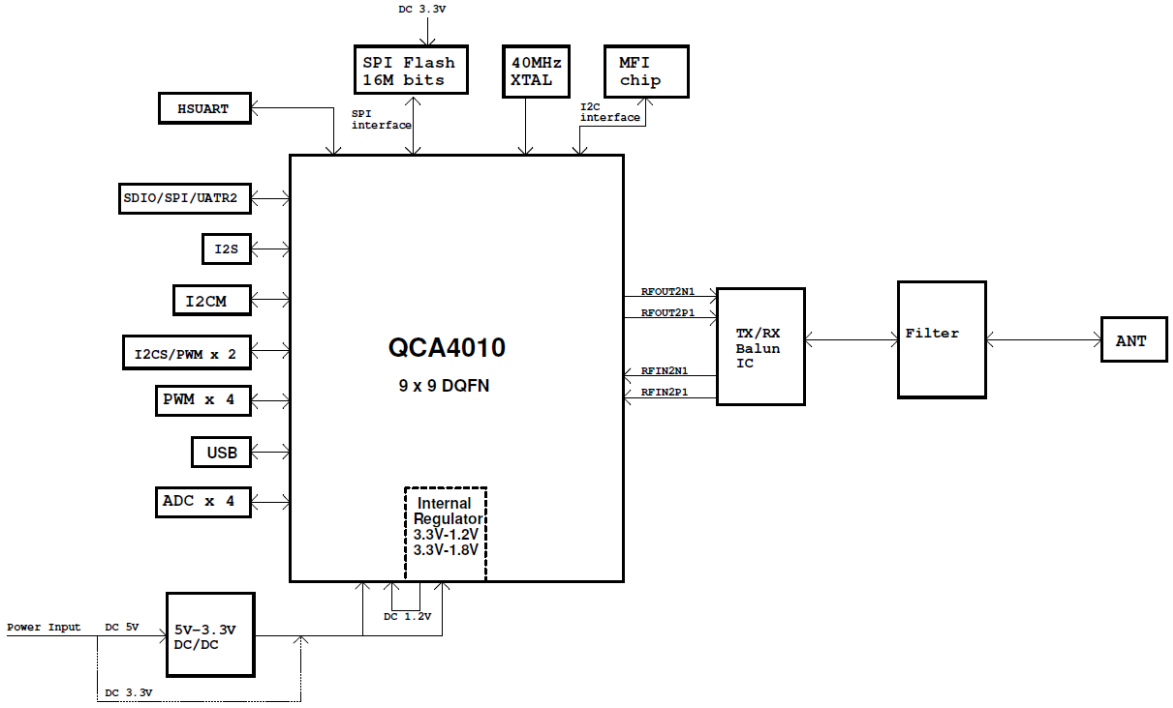
Module Bank	Pin No.	Signal/Interface	ALT1	ALT2	ALT3	GPIO No.	Bootstrap
Bank2	pin19	CHIP_PWD_L	Module reset, active low				
	pin20	IOT_MODE_EN	Wakeup manager enable				IOT mode enable
	pin21	GND	Ground				
	pin22	VDD33	3.3V power supply				
	pin23	VDD33	3.3V power supply				
	pin24	GND	Ground				
	pin25	GND	Ground				
	pin26	USB_DPOS	USB Data+				
	pin27	USB_DNEG	USB Data-				
	pin28	GND	Ground				

Module Bank	Pin No.	Signal/Interface	ALT1	ALT2	ALT3	GPIO No.	Bootstrap
Bank3	pin29	GPIO_IOE1	external wakeup				
	pin30	SPIM_CS	Flash memory /CS pin			GPIO[35]	
	pin31	GND	Ground				
	pin32	WIFI_I2S_MCLK1	I2S MCLK1			GPIO[33]	
	pin33	WIFI_I2S_WS1	I2S WS1			GPIO[32]	
	pin34	WIFI_I2S_SDO1	I2S SDO1			GPIO[31]	
	pin35	WIFI_I2S_SDI1	I2S SDI1			GPIO[30]	
	pin36	WIFI_I2S_BLK1	I2S BLK1			GPIO[27]	
	pin37	GND	Ground				
	pin38	ADC6_UART_R	ADC6	Debug UART RXD		GPIO[29]	
	pin39	ADC7_UART_T	ADC7	Debug UART TXD		GPIO[28]	
	pin40	ADC1	ADC1				
	pin41	ADC0	ADC0				
	pin42	GND	Ground				
	pin43	I2CM_SDA1	I2C Master SDA1			GPIO[14]	
	pin44	I2CM_SCL1	I2C Master SCL1			GPIO[15]	
	pin45	GND	Ground				
	pin46	GND	Ground				

BOOTSTRAPS

Pin No.	Bootstrap name	Description	
pin11	Test mode enable	Should be low while reset released, for normal function	
pin18 pin14	Host mode[1] Host mode[0]	Bootstrap for host interface selection. Default mode is 00.	
		00	USB / manufacturing test and configuration / hostless
		01	Hostless (serial AT command) mode
		10	SPI host mode
		11	SDIO host mode
pin20	IOT mode enable	Keep high always, for normal function	

BLOCK DIAGRAM



ENVIRONMENTAL

Operating

Operating Temperature: -10 to 70 °C

Relevant Humidity: 5-90% (non-condensing)

Storage

Temperature: -40 to 85 °C (-40 to 185 °F)

Relevant Humidity: 5-95% (non-condensing)