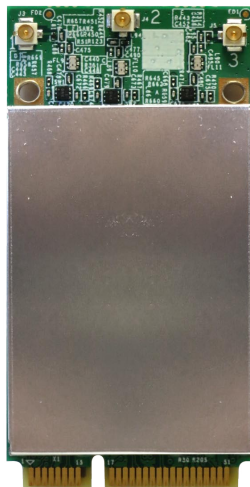




# DNXA-GO1 Information Sheet

high-power 802.11 b/g/n 2.4GHz 3x3 PCIe mini card, QCA9381



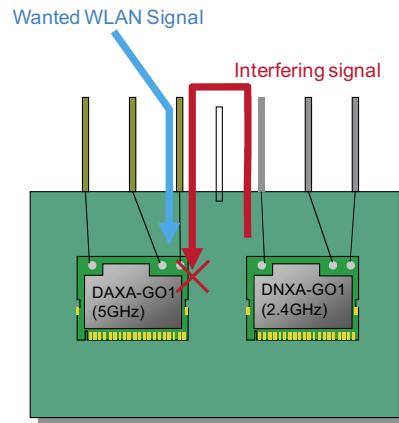
## Overview:

DNXA-GO1 is a high-power 802.11 b/g/n 2.4GHz single band 3x3 wifi module in PCIe mini card form factor designed to deliver up to 450Mbps wireless data rates, maximize range and performance for a variety of high-reliable and bandwidth-intensive dual-band, dual-concurrent (DBDC) enterprise wireless access point applications (For 2nd WiFi module, would suggest to use DAXA-GO1: high power 802.11ac/na/a 5GHz 3x3 PCIe mini card, QCA9880)

High-power design enables high-performance 3x3 MIMO with three spatial streams for DBDC wireless applications demanding the highest robust link quality and maximum throughput and range. A new, highly efficient architecture reduces processing requirements and power consumption to enable broad adoption of enterprise wireless networking.

## Key Features:

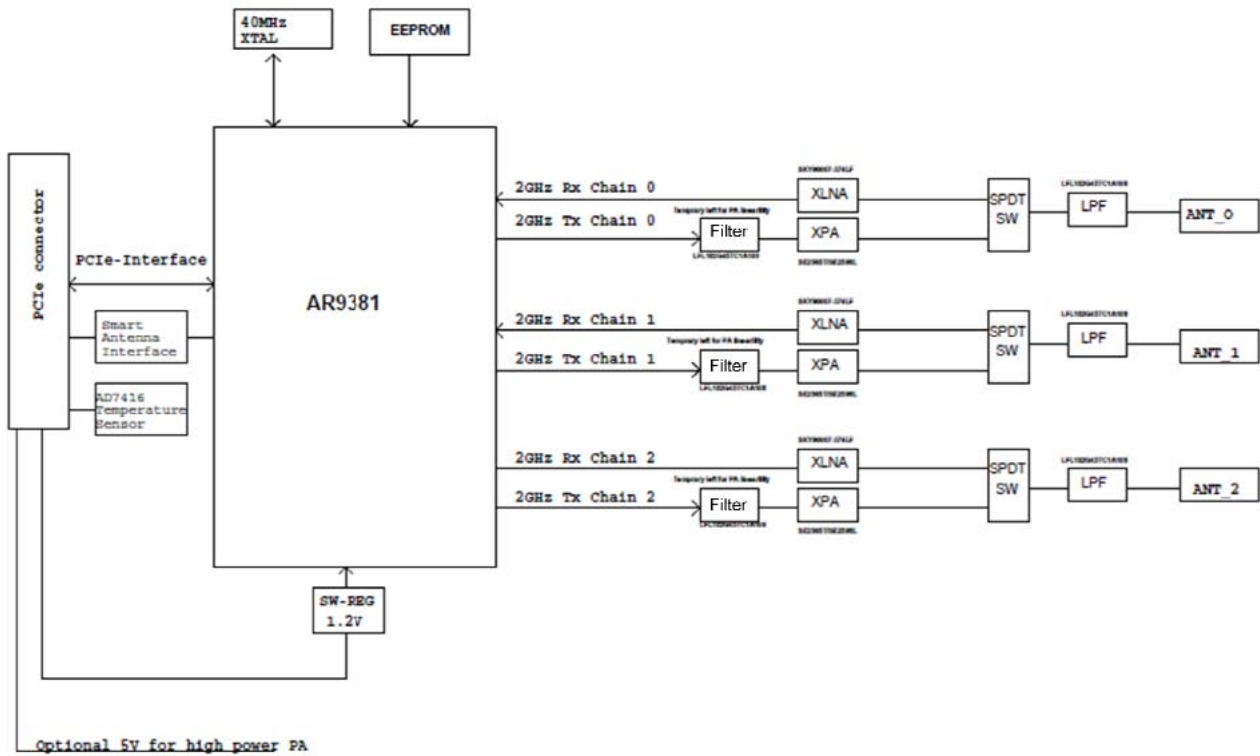
- » High-power design enables high-performance 3x3 MIMO with three spatial streams for DBDC wireless applications demanding the highest robust link quality and maximum throughput and range.
- » 802.11b/g/n 3x3 single band design deliver up to 450Mbps wireless data rates for a variety of high-reliable and bandwidth-intensive dual-band, dual-concurrent (DBDC) enterprise wireless access point applications. (For 2nd WiFi module, would suggest to use DAXA-GO1: high power 802.11ac/na/a 5GHz 3x3 PCIe mini card, QCA9880)



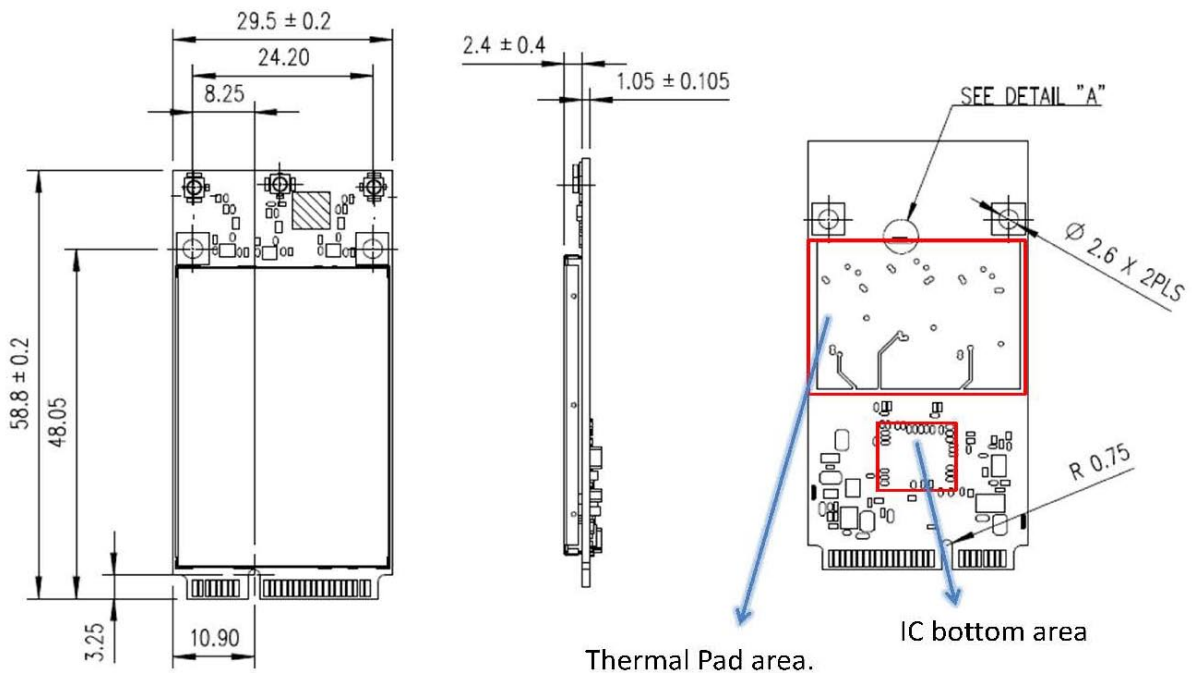
One DNXA-GO1 and one DAXA-GO1 can work simultaneously in the same platform under different frequency band without Rx sensitivity degradation.

- » Supports 20/40MHz channel bandwidth to maximize bandwidth efficiency.
- » Single band 802.11b/g/n supports 3Tx/3Rx to enables antenna port data rate up to 450Mbps for 40MHz short guard interval.
- » 29.5 (W) x 58.8 (L) mm (8mm longer than standard full-size mini card) with same mounting screw hole location as the standard full size PCIe mini card to solid and firmly mount onto main board.
- » Three U.FL antenna connectors enable design flexibility to utilize different transmit/receive chains to communicate with different users.
- » REACH SVHC 73 (2011/12/19) and RoHS compliance ensure a high level protection of human health and the environment from risks that can be posed by chemicals.

## Block Diagram:



## Mechanical Outline:



# Pin Assignment:

Pin No.	Name	Direction	Description
37	RESERVED	---	NC
39,41	RESERVED	---	NC (Reserved for 3.3V)
49,51	RESERVED	I	NC (4.2V for furture ultra high power PA used)
3	RESERVED	I/O	Reserved for QCA GPIO.
47	RESERVED	I/O	Reserved for QCA GPIO.
45	RESERVED	---	NC
5	RESERVED	I/O	Reserved for QCA GPIO
8,10,12,14,16,17,19,	NC	---	No connection.
33	PETp0	Analog input signal	Differential receive
31	PETn0	Analog input signal	Differential receive
25	PERPO	Analog output signal	Differential trnsmmit
23	PERNO	Analog output signal	Differential trnsmmit
13	REFCLK+	Analog input signal	Differential reference clock (100MHz).
11	REFCLK-	Analog input signal	Differential reference clock (100MHz).
20	WLAN_DISABLE_L	I/O	Reserved for QCA GPIO0.
7	CLKREQ_L	A digital output signal with open drain	Reference clock request, open drain
22	PERST_L	Input siganls with weak internal pulldown, to prevent siganls from floating	PCI Express reset with weak pull down

1	WAKE_L	A digital output signal with open drain	Reserved for 3.3V or WAKE2_L (Request to service a fuction-initiated wake event, open drain).
32	SMB_DATA	---	No connection.
30	SMB_CLK	---	No connection.
46	LED_WPAN_L	O	No connection.
44	LED_WLAN_L	O	Reserved for QCA GPIO1.
42	LED_WWAN_L	---	No connection.
38	USB_D+	I/O	USB_D+.
36	USB_D-	I/O	USB_D-.
6,28,48	1.5V	---	No connection.
2,52	3.3V	---	3.3V
24	3.3VAUX	---	Reserved for 3.3V.

# Specifications:

Main Chipset                    QCA9381

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Tx/Rx                            3T3R

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Standard Conformance                    802.11n, 802.11g, and 802.11b

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Frequency Range                    » USA: 2.412 – 2.462GHz  
   » Europe: 2.412 – 2.472GHz  
   » Japan: 2.412– 2.483GHz  
   » China: 2.412 – 2.472GHz

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Interface                            PCI Express ® mini-card rev. 1.1

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Operating Channels                    » USA/Canada: 11 (1-11)  
   » Major Europe Countries: 13 (1-13)  
   » Japan: 11b: 14 (1-13 or 14th), 11g: 13 (1-13)  
   » China: 13 (1-13)

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Operation Voltage                    3.3V ± 10%

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Power  
Consumption@  
25°C

All the test condition is under Art-gui, Tx continuous mode, average current

	Standby mode	120mA
	B mode, 1 stream, 1Mbps, 23dBm	540mA
	B mode, 1 stream, 11Mbps, 23dBm	540mA
	G mode, 1 stream, 6Mbps, 22dBm	550mA
	G mode, 1 stream, 54Mbps, 18dBm	480mA
<hr/>		
N mode:		
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HT20	MCS0, 21dBm	510mA
	MCS8, 21dBm	850mA
	MCS16, 21dBm	1.21A
	MCS7, 17dBm	480mA
	MCS15, 17dBm	810mA
	MCS23, 17dBm	1.16A
HT40	MCS0, 20dBm	510mA
	MCS8, 20dBm	860mA
	MCS16, 20dBm	1.22A
	MCS7, 16dBm	480mA
	MCS15, 16dBm	820mA
	MCS23, 16dBm	1.17A

Remark: the maximum current consumption would be impacted by radiation environment and the driver mechanism.

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Output Power  
(only for max.  
hardware  
capability  
regardless  
of regulation  
limitation, for  
each chain with  
 $\pm 2$ dB power  
tolerance)

» 802.11b:

Test Frequency	1/2_Target	5.5_Target	11_Target
2414	23	22	21
2437	23	22	21
2472	23	22	21

» 802.11g:

Test Frequency	6-24_Target	36_Target	48_Target	54_Target
2412	22	21	20	19
2437	22	21	20	19
2472	22	21	20	19

» 802.11n, HT20:

Test Frequency	MCS0/8	MCS1/9	MCS2/10	MCS3/11	MCS4/12	MCS5/13	MCS6/14	MCS7/15
2412	21	21	21	21	21	21	20	19
2437	21	21	21	21	21	21	20	19
2472	21	21	21	21	21	21	20	19

» 802.11n, HT40:

Test Frequency	MCS0/8	MCS1/9	MCS2/10	MCS3/11	MCS4/12	MCS5/13	MCS6/14	MCS7/15
2422	20	20	20	20	20	19	19	18
2462	20	20	20	20	20	19	19	18



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Receiver Sensitivity (1Rx, with +4/-2 dB tolerance, typical 3 chains combined sensitivity level dBm)

» 802.11b:

Data Rate	IEEE Spec(1 Rx dBm)	Typical(3Rx dBm)
DBPSK(1M)	-80	-98
CCK(11M)	-76	-91

» 802.11g:

Data Rate	IEEE Spec(1 Rx dBm)	Typical(3Rx dBm)
BPSK(6M)	-82	-93
64-QAM(54M)	-65	-80

» 802.11n, HT20:

Data Rate	IEEE Spec(1 Rx dBm)	Typical(3Rx dBm)
BPSK(MCS0)	-82	-93
64-QAM(MCS7)	-64	-78

» 802.11n, HT40:

Data Rate	IEEE Spec(1 Rx dBm)	Typical(3Rx dBm)
BPSK(MCS0)	-79	-90
64-QAM(MCS7)	-61	-75

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Dimension

29.50 (W) x 58.80 (L) mm (8mm longer than standard full-size mini card)

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Operation Temperature Range

-10°C ~ +60°C ambient

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Storage Temperature Range

-20°C ~ +80°C

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Operating Humidity

15% ~ 95%, non-condensing

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Storage Humidity                      max. 95%, non-condensing

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Human Health & Environment-Friendly Compliance                      REACH and RoHS

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Antenna Connector                      three U.FL ultra-miniature coaxial antenna connectors

## Ordering Information:

DNXA-GO1                      high-power 802.11b/g/n 2.4GHz 3x3 PCIe mini card, QCA9381

**Wireless radio modules are ESD sensitive, especially the components such as RF switch and the power amplifier. To avoid damage by electrostatic discharge, the following installation procedure is recommended:**

- » Touch your hands and the bag or tray containing the radio module to a ground point on the host board (for example one of the mounting holes).
- » Install the radio module in the corresponding socket of host board.
- » Install the pigtail cable in the cutout of the enclosure. This will ground the pigtail to the enclosure.
- » Touch the I-PEX connector of the pigtail to the mounting hole (discharge), then plug onto the radio module.
- » Use external lightning protection for outdoor applications.
- » Make sure all antennas are being connected with the radio module (don't leave I-PEX connector open) before powering on the host device.