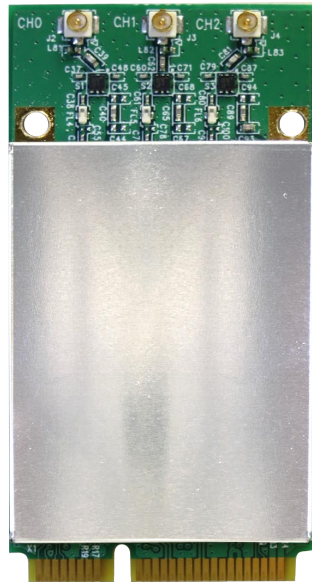




DAXA-GO1 Information Sheet

high-power 802.11 ac/na/a 5GHz 3x3 PCIe mini card, QCA9880



Overview:

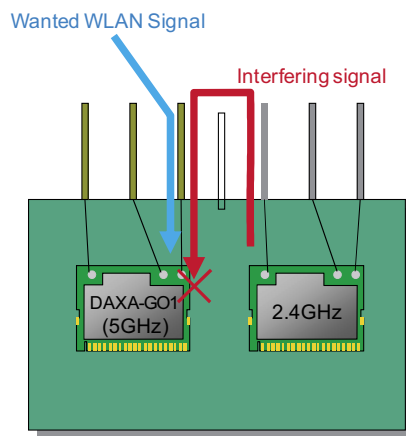
DAXA-GO1 is a high-power 802.11 ac/na/a 5GHz single band 3x3 wifi module in PCIe mini card form factor designed to deliver up to 1.3Gbps wireless data rates, maximize range and performance for a variety of high-reliable and bandwidth-intensive dual-band, dual-concurrent (DBDC) enterprise wireless access point (AP) applications (For 2nd WiFi module, would suggest to use DNXA-GO1: high power 802.11b/g/n 2.4GHz 3x3 PCIe mini card, QCA9381)

Extra Rx filter provides the excellent radio rejection against the interfering signal from the 2nd WiFi module

on con-current 2.4 & 5GHz (dual band dual con-current, DBDC) application to dramatically improve the data throughput/ range performance. A new, highly efficient architecture reduces processing requirements and power consumption to enable broad adoption of enterprise wireless networking.

Key Features:

- » High power 802.11ac/na/a single band 3x3 design deliver up to 1.3Gbps 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.
- » Extra Rx filter provides the excellent radio rejection against the interfering signal from the 2nd WiFi module on con-current 2.4 & 5GHz (dual band dual con-current, DBDC) application to dramatically improve the data throughput/ range performance. (For 2nd WiFi module, would suggest to use DNXA-GO1: high power 802.11b/g/n 2.4GHz 3x3 PCIe mini card, QCA9381)



One DAXA-GO1 and one 2.4GHz wifi module (suggest to use DNXA-GO1) can work simultaneously in the same platform under different frequency band, DAXA-GO1 in 5GHz and the other WiFi module in 2.4GHz, without Rx sensitivity degradation.

- » Supports 20/40/80MHz channel and 256 QAM to maximize bandwidth efficiency.
- » Single band 802.11ac/na/a supports 3Tx/3Rx to enables antenna port data rate up to 1.3Gbps.
- » 29.85 (W) x 60.80 (L) mm (10mm 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:

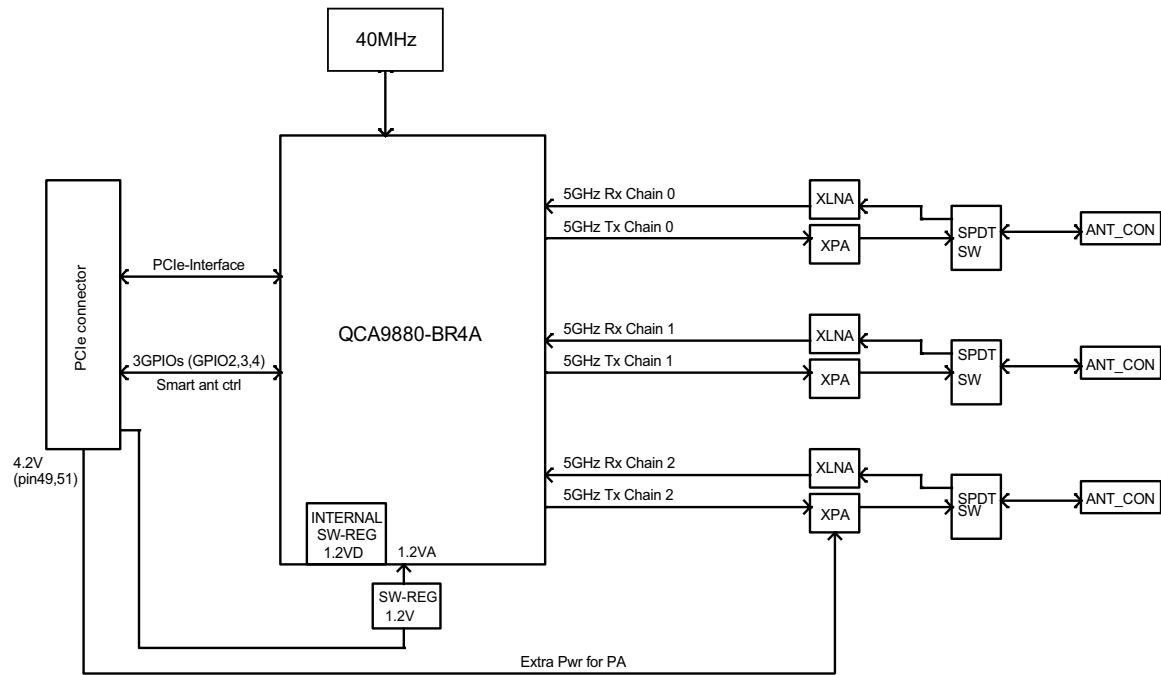
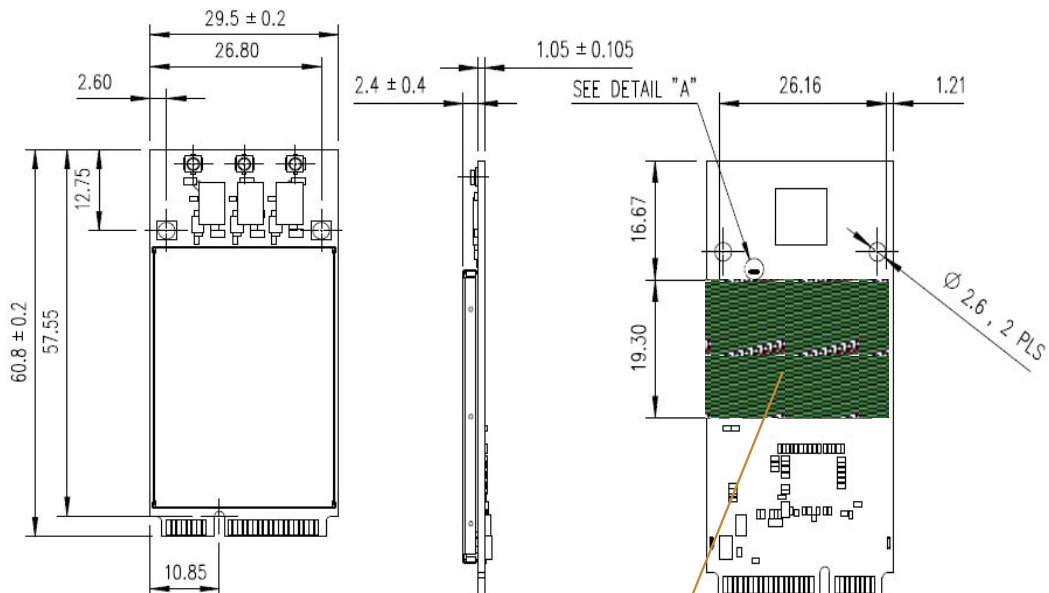


Figure 11 DAXA-GO1 Major Component and System Interface

Mechanical Outline:



Thermal pad area for contacting with AP platform. Need to reserve this area on AP board as well.

Pin Assignment:

Pin No.	Name	Direction	Description
4,9,15,18,21,26,27,29,3 4,35,40,50	GND	---	Ground
43	RESERVED	---	Ground
37	RESERVED	---	No connection
39,41	RESERVED	---	3.3V
49,51	RESERVED	I	External 4.2V Power Supply for PA
3	RESERVED	I/O	Reserved for QCA GPIO.
47	RESERVED	I/O	Reserved for QCA smart antenna control (GPIO2).
45	RESERVED	I/O	Reserved for QCA smart antenna control (GPIO3)
5	RESERVED	I/O	Reserved for QCA smart antenna control (GPIO4)
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	PERP0	Analog output signal	Differential transmit
23	PERN0	Analog output signal	Differential transmit
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 signals with weak internal pulldown, to prevent signals 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 function-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 QCA9880

Tx/Rx 3T3R

Standard
Conformance 802.11ac, 802.11na, and 802.11a

Frequency
Range » USA: 5.15 – 5.35GHz, 5.47 – 5.725GHz, 5.725 – 5.85GHz
 » Europe: 5.15 – 5.35GHz, 5.47– 5.725GHz
 » Japan: 5.15– 5.35GHz, 5.47 – 5.725GHz
 » China: 5.725 – 5.85GHz

Interface PCI Express® mini-card rev. 1.2

Operating
Channels » USA/Canada: 12 non-overlapping channels
 » Major Europe Countries: 19 non-overlapping channels
 » Japan: 19 non-overlapping channels
 » China: 5 non-overlapping channels

Operation
Voltage 3.3V ± 5% & 4.2V ± 5%

Power Consumption (typical level, with $\pm 50\text{mA}$ tolerance)

	802.11a	802.11ac (20MHz)	802.11ac (40MHz)	802.11ac (80MHz)
100% Tx duty (3.3V)	430 mA	430 mA	440 mA	480 mA
100% Tx duty (4.2V)	807 mA	734 mA	648 mA	586 mA

Remark: this can be treated as the peak current consumption during operation. 4.2V power only supply for Power Amplifier.

Output Power (only for max. hardware capability regardless of regulation limitation, power tolerance $\pm 2\text{dB}$)

» 802.11a (typical)

Test Frequency	6-24_Target	36_Target	48_Target	54_Target
5180	23	23	21	20
5320	23	23	21	20
5825	23	23	21	20

» 802.11ac (typical), 5GHz/VHT20 @800GI (400GI):

Test Frequency	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
5180	23	23	23	22	22	21	20	19	17	16
5500	23	23	23	22	22	21	20	19	17	16
5825	23	23	23	22	22	21	20	19	17	16

» 802.11ac (typical), 5GHz/VHT40 @800GI (400GI):

Test Frequency	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
5190	23	23	23	22	22	21	20	19	17	16
5510	23	23	23	22	22	21	20	19	17	16
5795	23	23	23	22	22	21	20	19	17	16

» 802.11ac (typical), 5GHz/VHT80 @800GI (400GI):

Test Frequency	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
5210	23	23	23	22	22	21	20	19	17	16
5530	23	23	23	22	22	21	20	19	17	16
5775	23	23	23	22	22	21	20	19	17	16

Receiver
Sensitivity (3
chains typical
sensitivity level
with ± 3 dB
tolerance)

» 802.11a:

Data Rate	IEEE Spec(1 Rx dBm)	Typical/Maximum (3Rx dBm)
BPSK(6M)	-82	-95/-90
BPSK(9M)	-81	-95/-90
QPSK(12M)	-79	-94/-90
QPSK(18M)	-77	-92/-88
16-QAM(24M)	-74	-88/-84
16-QAM(36M)	-70	-86/-82
64-QAM(48M)	-66	-81/-77
64-QAM(54M)	-65	-80/-76

» 802.11ac VHT20:

Data Rate	IEEE Spec(1 Rx dBm)	Typical/Maximum (3Rx dBm)
BPSK(MCS0)	-82	-95/-90
QPSK(MCS1)	-79	-94/-90
QPSK(MCS2)	-77	-92/-88
16-QAM(MCS3)	-74	-87/-83
16-QAM(MCS4)	-70	-84/-80
64-QAM(MCS5)	-66	-79/-75
64-QAM(MCS6)	-65	-78/-74
64-QAM(MCS7)	-64	-76/-72
256-QAM(MCS8)	-59	-72/-68

» 802.11ac VHT40:

Data Rate	IEEE Spec(1 Rx dBm)	Typical/Maximum (3Rx dBm)
BPSK(MCS0)	-79	-92/-88
QPSK(MCS1)	-76	-91/-87
QPSK(MCS2)	-74	-88/-84
16-QAM(MCS3)	-71	-85/-81
16-QAM(MCS4)	-67	-82/-78
64-QAM(MCS5)	-63	-78/-74
64-QAM(MCS6)	-62	-77/-73
64-QAM(MCS7)	-61	-75/-71
256-QAM(MCS8)	-56	-71/-67
256-QAM(MCS9)	-54	-69/-65

» 802.11ac VHT80:

Data Rate	IEEE Spec(1 Rx dBm)	Typical/Maximum (3Rx dBm)
BPSK(MCS0)	-76	-89/-86
QPSK(MCS1)	-73	-88/-84
QPSK(MCS2)	-71	-86/-82
16-QAM(MCS3)	-68	-82/-78
16-QAM(MCS4)	-64	-79/-75
64-QAM(MCS5)	-60	-75/-71
64-QAM(MCS6)	-59	-74/-70
64-QAM(MCS7)	-58	-72/-68
256-QAM(MCS8)	-53	-68/-65
256-QAM(MCS9)	-51	-65/-62

Dimension 29.50 (W) x 60.80 (L) mm (10mm longer than standard mini-card)

Operation Temperature Range -10°C ~ +50°C ambient

Storage Temperature Range -20°C ~ +80°C

Operating Humidity 15% ~ 95%, non-condensing

Storage Humidity max. 95%, non-condensing

Human Health
& Environment-
Friendly
Compliance

REACH and RoHS

Antenna
Connector

three U.FL ultra-miniature coaxial antenna connectors

Ordering Information:

DAXA-GO1

high-power 802.11ac/na/a 5GHz 3x3 PCIe mini card, QCA9880

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.