

BALI series

Host based Wi-Fi (802.11a/b/g/n/ac) Modules

Mini/half mini PCIe USB Card Datasheet

For additional Information, please contact info@ivativ.com

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1 Overview

EVIA Mini PCIe USB card is a high performance multi-protocol certified wireless system supporting dual-band 1-stream (1T1R) Wi-Fi 802.11 a/b/g/n/ac. This card provides high throughputs and long range by integrating high performance baseband, MAC, fine-tuned RF front end, power amplifiers, filters, switches, diplexer and needed crystals. This card enables low-power designs by utilizing multiple advanced power-saving techniques including many host off-loading features. EVIA Mini PCIe USB card is based on Qualcomm QCA9377 SoC and connects to host processor with USB2.0 host interface.

These cards are offered with antenna diversity in Industrial and commercial temperature grades. They are certified for FCC, IC, ETSI/CE and TELEC. Approvals for other countries may be possible upon request.

Module specifications

WLAN Technology	802.11 a/b/g/n, 1-stream MU-MIMO 802.11ac
Frequency band	2.4GHz, 5GHz
On air data rates	2.4GHz 11b - 1, 2, 5.5, 11Mbps 11g - 6, 9, 12, 18, 24, 36, 48, 54Mbps 11n/ac - MCS0 to MCS7 or up-to 150Mbps 5GHz 11a - 6,9,12,18,24,36,48, 54Mbps 11n/ac - MCS0 to MCS9 or upto 433Mbps
Security features	WPA/WPA2 -PSK TKIP/AES, WPS 2.0, Enterprise Security (EAP) STA only.
Modulation schemes	2.4GHz 11b - BPSK,QPSK, CCK 11g - BPSK, QPSK, 16QAM, 64 QAM 11n/ac-PSK, QPSK, 16QAM, 64 QAM 5GHz 11a/n/ac-BPSK,QPSK, 16QAM, 64 QAM
Antenna options	Antenna Diversity with dual antenna connectors (U.FL)
Host interface	Wi-Fi – USB 2.0
Max throughput	300Mbps
Maximum Transmit Power	18dBm
Receive Sensitivity	-97.5dBm
WLAN bandwidths	20/40/80MHz

Table 1: EVIA Module specifications

2 Features

2.1 WLAN Features

- Wi-Fi - Low power dual-band (2.4 and 5 GHz), 1-stream MU-MIMO 802.11ac
- WLAN TCP Throughput at 80 MHz 11ac : **300Mbps**
- WLAN Security
 - WPA/WPA2 Personal
 - Enterprise security (STA only)
 - WPS 2.0
- WLAN Encryption
 - WEP
 - TKIP
 - AES
- Operating modes
 - STA
 - SoftAP
 - P2P Group Owner and Client
 - STA + SoftAP
 - STA + P2P Group Owner
 - STA + P2P Client
- Power save
 - Card power saving features
 - Idle mode power save / Deep sleep
 - Legacy Protocol Power save / Beacon Mode Power Save
 - WMM-PS / UAPSD
 - Tx power-saving feature (Green TX)
 - Host power saving features
 - Offloading features : ARP, GTK , Neighbor solicitation (NS) offloading to the FW
 - Wake-on Bluetooth low energy
- WMM and WMM-PS
- DFS Client
- Transmit beam forming
- 11r/FT roaming and Legacy fast roaming
- Supports Wi-Fi monitor mode

3 Module Block Diagram

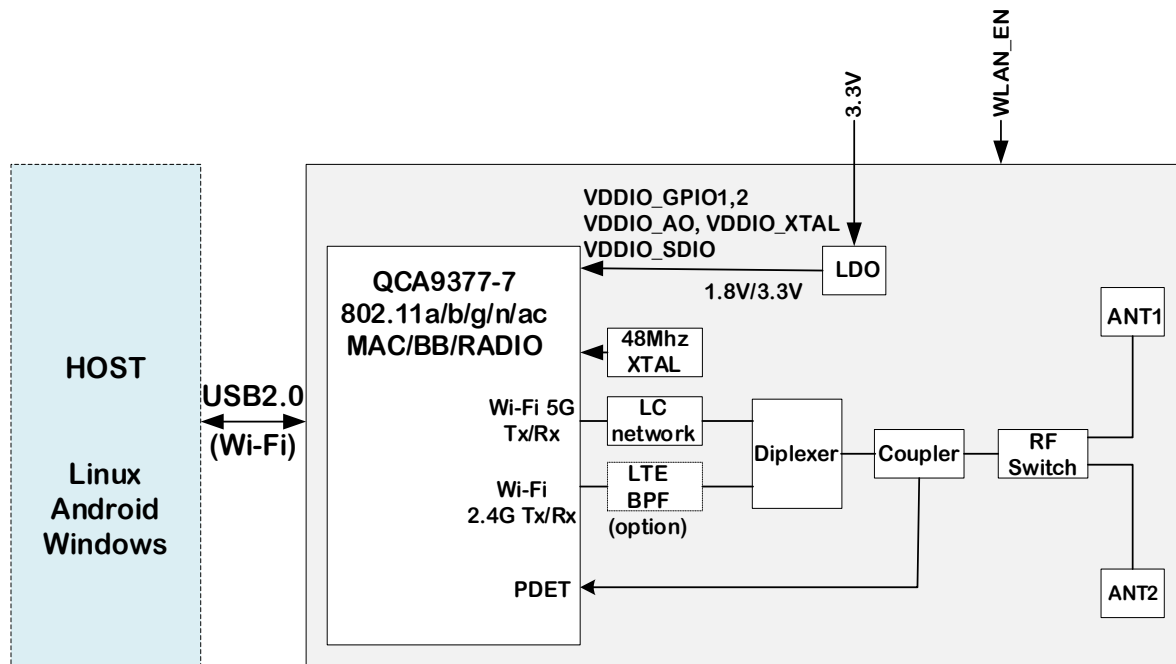


Figure 1: EVIA mPCIe USB card Block Diagram

4 Pin Definition

4.1 Pin Table

Pin Number	Pin Name	Pin Type	Description
1	NC	NC	No connect
2	3.3Vaux	Power	3.3V power
3	GND	Ground	Ground
4	GND	Ground	Ground
5	NC	NC	No connect
6	NC	NC	No connect
7	NC	NC	No connect
8	NC	NC	No connect
9	GND	Ground	Ground
10	NC	NC	No connect
11	NC	NC	No connect
12	NC	NC	No connect
13	NC	NC	No connect
14	NC	NC	No connect
15	GND	Ground	Ground
16	NC	NC	No connect
17	NC	NC	No connect
18	GND	Ground	Ground
19	NC	NC	No connect
20	W_DISABLE#	I	WLAN Enable
21	GND	Ground	Ground
22	NC	NC	No connect
23	NC	NC	No connect
24	3.3Vaux	Power	3.3V power
25	NC	NC	No connect
26	GND	Ground	Ground
27	GND	Ground	Ground
28	NC	NC	No connect
29	GND	Ground	Ground
30	NC	NC	No connect
31	NC	NC	No connect
32	NC	NC	No connect
33	NC	NC	No connect

34	GND	Ground	Ground
35	GND	Ground	Ground
36	USB-		USB 2.0 negative
37	NC	NC	No connect
38	USB+		USB 2.0 positive
39	NC	NC	No connect
40	GND	Ground	Ground
41	NC	NC	No connect
42	NC	NC	No connect
43	NC	NC	No connect
44	NC	NC	No connect
45	Reserved	Reserved	Reserved
46	NC	NC	No connect
47	Reserved	Reserved	Reserved
48	NC	NC	No connect
49	Reserved	Reserved	Reserved
50	GND	Ground	Ground
51	Reserved	Reserved	Reserved
52	3.3Vaux	Power	3.3V power

Table 2: EVIA mPCIe USB card Pintable

5 Electrical Specification

5.1 Power Sources and Grounds

EVIA Mini PCIe USB card utilizes a single 3.3 V power sources. The voltage source, 3.3 V, is expected to be available during the system's stand-by/suspend state to support wake event processing on the communications card.

Some of the higher frequency signals require additional isolation from surrounding signals using the concept of interleaving GND pins separating signals within the connector. These pins should be treated as a normal ground pin with connections immediately made to the GND planes within a card design.

Parameter	Min	Max	Unit
Power source 3.3 V	0.0	3.6	V

Table 3: Absolute max power ratings

Note: Do not exceed minimum or maximum voltage. Module will be damaged permanently above this limit.

5.2 Performance Specifications

5.2.1 WLAN RF characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Synthesizer composite characteristics for 2.4 GHz						
F_C	Center channel frequency	Center frequency at 5 MHz spacing	2.412	–	2.484	GHz
F_{REF}	Reference oscillator frequency	± 20 ppm	–	48	–	MHz
F_{STEP}	Frequency step size (at RF)		–	1	–	MHz
$TS_{POWERUP}$	Time for power up (from sleep)		–	0.2	–	ms
Synthesizer composite characteristics for 5 GHz						
F_C	Center channel frequency	Center frequency at 5 MHz spacing	4.90		5.925	GHz
F_{REF}	Reference oscillator frequency	± 20 ppm	–	48	–	MHz
F_{STEP}	Frequency step size (at RF)	5.725 GHz to 5.925 GHz band	–	1	–	MHz
$TS_{POWERUP}$	Time for powerup (from sleep)		–	0.2	–	ms
Transmit output power accuracy						

A _{PC}	Accuracy of transmit power control at 2.4 GHz at room temperature	Open loop power control (OLPC)	–	+1.50	–	dB
		Self-calibrated power control (SCPC)	–	±1.9	–	dB
A _{PC}	Accuracy of transmit power control at 5 GHz at room temperature	OLPC	–	+2.00	–	dB
		SCPC	–	±2.4	–	dB

Table 4: WLAN RF characteristics per chain operation

Note: All A_{PC} numbers assume a test conducted with a 50 Ω load.

5.2.1.1 Transmit Power at 2.4 GHz

Note: All typical values may vary ±1.5 dB

Standard	Modulation	Data rates	2.4 GHz: Transmit power with IEEE 802.11 EVM and spectral mask compliance at chip output at 25°C			
		Index	802.11b/g	802.11n/ac 20 MHz	802.11n/ac 40 MHz	Unit
			Typ	Typ	Typ	
802.11b	BPSK	1 Mbps	16.0	–	–	dBm
	QPSK	2 Mbps	16.0	–	–	dBm
	CCK	5.5 Mbps	16.0	–	–	dBm
	CCK	11 Mbps	16.0	–	–	dBm
802.11g	BPSK	6 Mbps	18.0	–	–	dBm
	BPSK	9 Mbps	18.0	–	–	dBm
	QPSK	12 Mbps	18.0	–	–	dBm
	QPSK	18 Mbps	18.0	–	–	dBm
	16 QAM	24 Mbps	18.0	–	–	dBm
	16 QAM	36 Mbps	18.0	–	–	dBm
	64 QAM	48 Mbps	18.0	–	–	dBm
	64 QAM	54 Mbps	18.0	–	–	dBm
802.11n/ac	BPSK	MCS0	–	18.0	16.0	dBm
	QPSK	MCS1	–	18.0	16.0	dBm
	QPSK	MCS2	–	18.0	16.0	dBm
	16 QAM	MCS3	–	18.0	16.0	dBm
	16 QAM	MCS4	–	18.0	16.0	dBm
	64 QAM	MCS5	–	18.0	16.0	dBm
	64 QAM	MCS6	–	18.0	16.0	dBm
	64 QAM	MCS7	–	18.0	16.0	dBm

802.11ac	256 QAM	MCS8	–	15.0	16.0	dBm
	256 QAM	MCS9	–	15.0	16.0	dBm

Table 5: Transmit power at 2.4 GHz

5.2.1.2 Transmit Power at 5 GHz

Note: All typical values may vary ± 1.5 dB

Standard	Modulation	Data rates	5 GHz: Transmit power with IEEE 802.11 EVM and spectral mask compliance at chip output at 25°C				
		Index	802.11a	802.11n/ac 20 MHz	802.11n/ac 40 MHz	802.11n/ac 80 MHz	Unit
			Typ	Typ	Typ	Typ	
802.11a	BPSK	6 Mbps	14.0	–	–	–	dBm
	BPSK	9 Mbps	14.0	–	–	–	dBm
	QPSK	12 Mbps	14.0	–	–	–	dBm
	QPSK	18 Mbps	14.0	–	–	–	dBm
	16 QAM	24 Mbps	14.0	–	–	–	dBm
	16 QAM	36 Mbps	14.0	–	–	–	dBm
	64 QAM	48 Mbps	14.0	–	–	–	dBm
	64 QAM	54 Mbps	14.0	–	–	–	dBm
802.11n/ac	BPSK	MCS0	–	14.0	12.0	–	dBm
	QPSK	MCS1	–	14.0	12.0	–	dBm
	QPSK	MCS2	–	14.0	12.0	–	dBm
	16 QAM	MCS3	–	14.0	12.0	–	dBm
	16 QAM	MCS4	–	14.0	12.0	–	dBm
	64 QAM	MCS5	–	14.0	12.0	–	dBm
	64 QAM	MCS6	–	14.0	12.0	–	dBm
	64 QAM	MCS7	–	14.0	12.0	–	dBm
802.11ac	256 QAM	MCS8	–	14.0	14.0	14.0	dBm
	256 QAM	MCS9	–	14.0	14.0	14.0	dBm

Table 6: Transmit power at 5 GHz

Receiver minimum sensitivity for 2.4 GHz at 25°C

Note: All typical values may vary ± 1.0 dB

Standard	Modulation	Data rates	2.4 GHz: IEEE receive minimum input level sensitivity at chip input with 10% packet error rate (100 bytes at 11b and 1000 bytes at OFDM) at 25°C, LDPC enabled			
			802.11b/g	802.11n/ac 20 MHz	802.11n/ac 40 MHz	Unit
		Index	Typ	Typ	Typ	
802.11b	BPSK	1 Mbps	-99.5	–	–	dBm
	CCK	11 Mbps	-92.0	–	–	dBm
802.11g	BPSK	6 Mbps	-94.0	–	–	dBm
	64 QAM	54 Mbps	-78.0	–	–	dBm
802.11n/ac	BPSK	1SS MCS0	–	-94.0	-91.0	dBm
	64 QAM	1SS MCS7	–	-77.0	-72.0	dBm
802.11ac	256 QAM	1SS MCS8	–	-73.0	-70.0	dBm
	256 QAM	1SS MCS9	–	–	-69.0	dBm

Table 7: Receive minimum input level sensitivity at chip input at 2.4 GHz for configuration at 25°C

Receiver minimum sensitivity for 5 GHz at 25°C

Note: All typical values may vary ± 1.0 dB

Standard	Mod	Data rates	5 GHz: IEEE receive minimum input level sensitivity at chip input with 10% packet error rate (1000 bytes) at 25°C, LDPC enabled				Unit
		Index	802.11a	802.11n/ac 20 MHz	802.11n/ac 40 MHz	802.11n/ac 80 MHz	
			Typ	Typ	Typ	Typ	
802.11a	BPSK	6 Mbps	-94.0	–	-	–	dBm
	64 QAM	54 Mbps	-77.0	–	-	–	dBm
802.11n/ac	BPSK	1SS MCS0	–	-94.0	-91.0	-88.0	dBm

	64 QAM	1SS MCS7	–	-76.5	-74.0	-70.0	dBm
802.11ac	256 QAM	1SS MCS8	–	–	-72.5	-68.0	dBm
	256 QAM	1SS MCS9	–	–	–	-64.0	dBm

Table 8: Receive minimum input level sensitivity at chip input at 5 GHz at 25°C

Maximum input level sensitivity at 25°Cs

Maximum input level sensitivity at chip input					
Standard	Band	Modulation	IEEE max input level	Max input level at chip input	Unit
802.11b	2.4 GHz	DBPSK	-4	-5.5	dBm
802.11b	2.4 GHz	CCK	-10	-5	dBm
802.11g	2.4 GHz	OFDM	-20	-10	dBm
802.11a	5 GHz	OFDM	-30	-10	dBm
802.11n	2.4 GHz	OFDM	-20	-10	dBm
	5 GHz	OFDM	-30	-10	dBm
802.11ac	2.4 GHz	OFDM	-30	-10	dBm
	5 GHz	OFDM	-30	-10	dBm

Table 9: Maximum input level sensitivity at 25°C

6 Software

6.1 Software Architecture

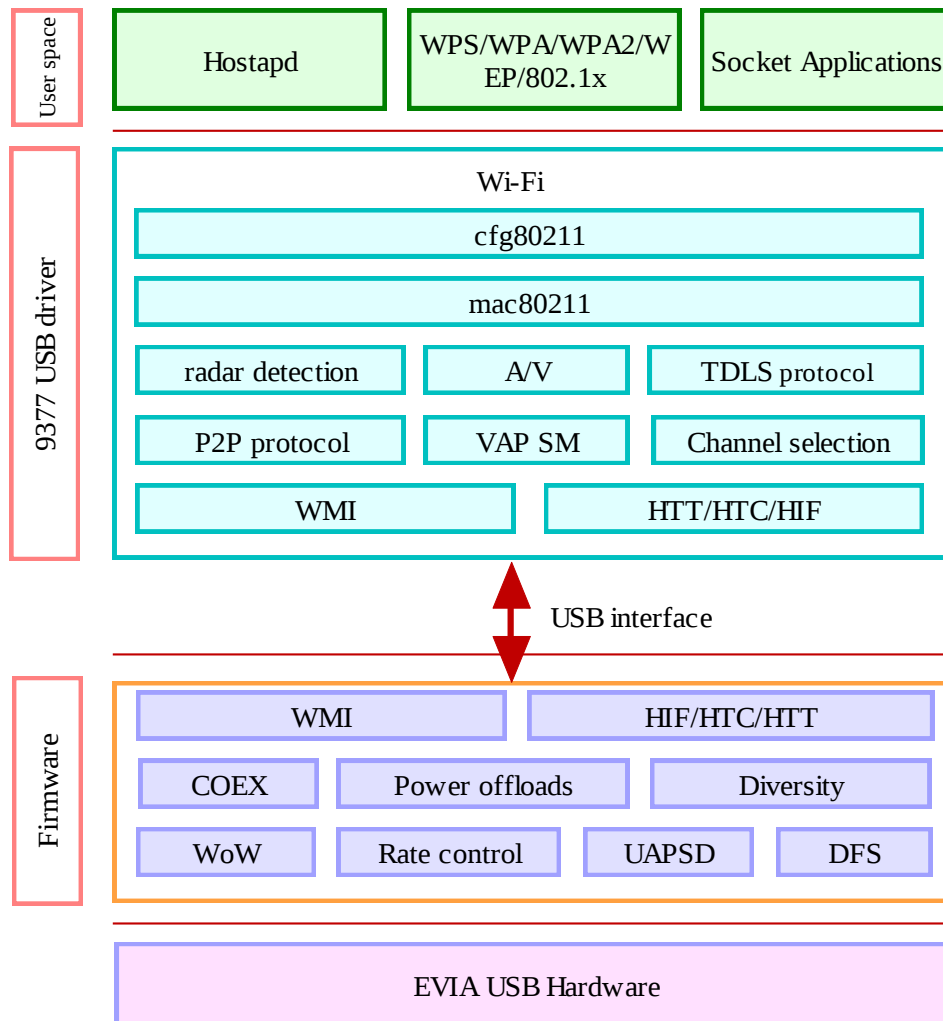


Figure 2: EVIA Software Architecture

6.2 WLAN

Drivers are available for Linux (Kernel Version 4.4.15, 4.9.11 and 4.11), Android Nougat and Windows 10.

- Refer to USB DVK User Guide for more details about driver and testing procedures

7 Package Description

7.1 EVIA Mini PCIe USB card

7.1.1 Mechanical characteristics

EVIA Mini PCIe USB card is available in size 30mm x 50.95mm x 2.2mm

Parameter	Value (L X W X H)	Units
Module Dimensions	30 X 50.95 X 2.2	mm
Tolerance	+/- 0.15	mm

Table 10: Mechanical Characteristics

7.1.2 Physical Dimensions

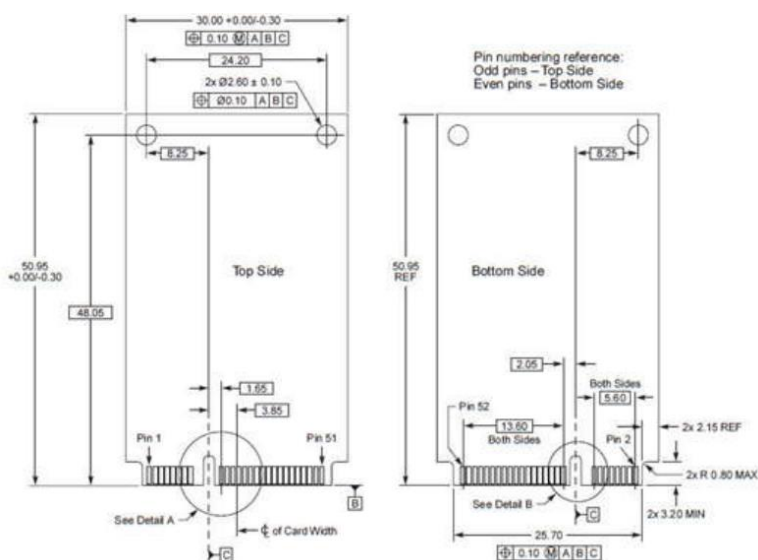


Figure 3: EVIA Mini PCIe USB Dimensions in mm

7.2 EVIA Half Mini PCIe USB card

7.2.1 Mechanical characteristics

EVIA Half Mini PCIe USB card is available in size 30mm x 26.80mm x 2.2mm

Parameter	Value (L X W X H)	Units
Module Dimensions	30 X 26.80 X 2.2	mm
Tolerance	+/- 0.15	mm

Table 11: Mechanical Characteristics

7.2.2 Physical Dimensions

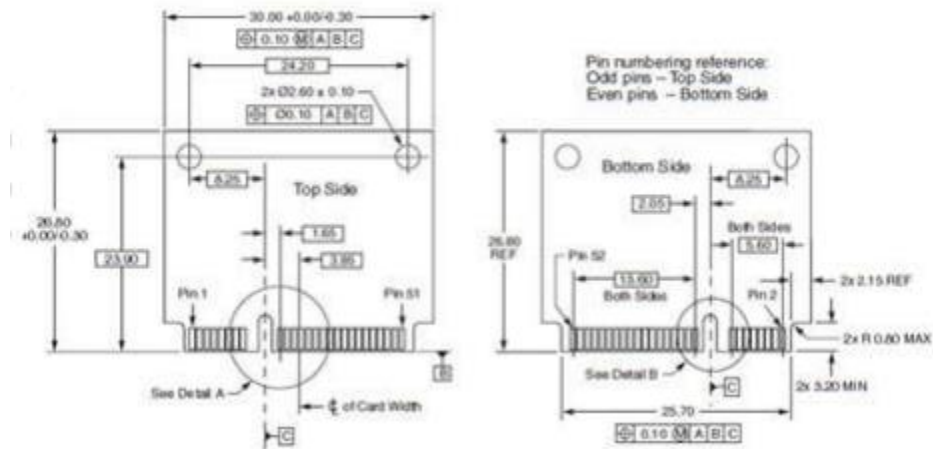


Figure 4: EVIA Half Mini PCIe USB Dimensions in mm

8 Regulatory Qualifications and Approvals

BALI series modules hold full modular approvals and are certified for FCC, IC, CE/ETSI and TELEC for use in USA, Canada, Europe and Japan respectively. End product manufacturers can inherit the module approvals for compliance testing of their device by strictly following grantee's compliance guidelines for module integration and operation and can avoid further testing of module transmitter function.

For detailed information on how to integrate BALI series modules for leveraging the module certification, please see 'BALI series Regulatory Compliance App Note'.

8.1 FCC Compliance

BALI series modules are intended for OEM integrators only. These integrators should make sure that the end product using BALI series module uses only authorized antennas and is compliant to all rules. End user manual shall include all the required regulatory information given in this manual.

8.1.1 FCC Compliance Statement

This equipment has been tested and found to compliant with 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.

§15.19 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.

§15.21 Information to user:

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

8.1.2 RF Exposure compliance statement

This Module complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator

and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance with FCC multi-transmitter guidelines.

8.1.3 Labelling Instruction for Host Product Integrator

Please notice that if the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following:

“Contains FCC ID: 2AYLDI95” or

“Contains Transmitter Module FCC ID: 2AYLDI95”

§ 15.19 Labelling requirements shall be complied on end user device.

Labelling rules for special device, please refer to §2.925, § 15.19 (a)(5) and relevant KDB publications. For E-label, please refer to §2.935.

8.1.4 Installation Notice to Host Product Manufacturer

The OEM integrator is responsible for ensuring that the end-user has no manual instruction to remove or install module.

RF exposure compliance instruction

The module is limited to installation in mobile application, a separate approval is required for all other operating configurations, including portable configurations with respect to §2.1093, co-location with another transmitter and difference in antenna configurations.

Host product manufacturer shall at least provide information of minimum separation distance to end users in RF exposure compliance statement to end users in their end-product manuals.

8.1.5 Antenna Change Notice to Host manufacturer

Module integrators are recommend using antenna which is certified with this module mentioned in this manual. Module integrators can use their own antenna but must ensure it is of same type and of equal or less gain as of certified antenna. No retesting of this system configuration is required. Refer to FCC Part 15.20 (c)(4).

If you desire to increase antenna gain and either change antenna type or use same antenna type certified, a Class II permissive change application is required to be filed by us, or you (host manufacturer) can take responsibility through the change in FCC ID (new application) procedure followed by a Class II permissive change application based on new emissions testing. Please perform testing on frequency bands where the antenna gain is highest, worst-case band-edges based on original filing, and only on frequency bands where the antenna gain is highest. See §2.1043. Contact Ivativ representative before adding different antennas.

8.1.6 FCC other Parts, Part 15B Compliance Requirements for Host product manufacturer

This modular transmitter is only FCC authorized for the specific rule parts listed on our grant, host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification.

Host manufacturer in any case shall ensure host product which is installed and operating with the module is in compliant with Part 15B requirements.

Please note that For a Class B or Class A digital device or peripheral, the instructions furnished in the user manual of the end-user product shall include statement set out in §15.105 *Information to the user* or such similar statement and place it in a prominent location of host product manual. Original texts from FCC Rules are as following you may refer to:

For Class B

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.

For Class A

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Additionally, investigative spot check measurements are strongly recommended to verify the full system compliance after module integration and operating in intended use case. For more information on end product test guidance please check KDB 996369 D04 Module Integration Guide V02.

8.2 IC

BALI series radio transmitter IC:26840-I95 has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

A list of all antenna types

Item #	Part Number	Manufacturer	Description	Gain dBi
1	GW.59.3153	Taoglas	2.4GHz/5.1~5.85GHz RP_SMA male dipole antenna. 50 Ohm impedance	2.4 - 2.5GHz: 3dBi 5.15 - 5.85GHz: 3dBi

Cet émetteur radio IC:26840-I95 a été approuvé par innovation, sciences et développement économique Canada pour fonctionner avec les types d'antennes énumérés ci - dessous et afficher le gain maximal autorisé. Les types d'antennes qui ne sont pas inclus dans cette liste sont strictement interdits avec cet appareil si leur gain est supérieur au gain maximal de l'un des types énumérés.

Liste de tous les types d'antennes

Item #	Part Number	Manufacturer	Description	Gain dBi
1	GW.59.3153	Taoglas	2.4GHz/5.1~5.85GHz RP_SMA male dipole antenna. 50 Ohm impedance	2.4 - 2.5GHz: 3dBi 5.15 - 5.85GHz: 3dBi

8.2.1 ISED compliance statement

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference.
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) L'appareil ne doit pas produire de brouillage;
- (2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

The user manual for LE-LAN devices shall contain instructions related to the restrictions mentioned in the above sections, namely that:

- i. the device for operation in the band 5150–5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;

- i. le dispositif utilisé dans la bande 5150-5250 MHz est réservé à une utilisation en intérieur afin de réduire le risque de brouillage préjudiciable aux systèmes mobiles par satellite dans le même canal;

8.2.2 ISED Radiation Exposure statement

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator and your body.

Cet équipement est conforme aux limites d'exposition aux radiations IC CNR-102 établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec une distance minimale de 20 cm entre le radiateur et votre corps.

8.2.3 End Product Labeling instruction

Please notice that if the IC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following:

“Contains IC:26840-I95” or any similar wording that expresses the same meaning may be used.

L'étiquette d'homologation d'un module d'Innovation, Sciences et Développement économique Canada devra être posée sur le produit hôte à un endroit bien en vue, en tout temps. En l'absence d'étiquette, le produit hôte doit porter une étiquette sur laquelle figure le numéro d'homologation du module d'Innovation, Sciences et Développement économique Canada, précédé du mot « contient », ou d'une formulation similaire allant dans le même sens et qui va comme suit :

“Contient IC:26840-I95” est le numéro d'homologation du module

8.3 CE

BALI series modules comply with the essential requirements and other relevant provisions of the Radio Equipment Directive (RED) 2014/53/EU. BALI series modules are compliant with directive 2011/65/EU (EU RoHS 2) and its amendment directive 2015/863 (EU RoHS 3). In European market, it is the end product manufacturer who is ultimately responsible for the compliance of their device.

For more information on EU regulatory compliance of BALI series modules, please see BALI series Declaration of Conformity and RoHS Declaration. Test reports are available on request.

8.4 TELECOM

BALI Series modules comply with Japanese regulatory requirements of MIC certification Item 19, Article 2, Paragraph 1. Test reports are available on request.

8.5 Pre-Approved antennas

BALI series modules are certified with the following antennas.

Item #	Part Number	Manufacturer	Description	Gain dBi
1	GW.59.3153	Taoglas	2.4GHz/5.1~5.85GHz RP_SMA male dipole antenna. 50 Ohm impedance	2.4 - 2.5GHz: 3dBi 5.15 - 5.85GHz: 3dBi

Table 12: Certified Antennas

9 Product Shipping, Storage and Handling

9.1 Packaging Information

The EVIA cards are delivered as hermetically sealed trays. For more information, please refer to 'Ivativ Package Shipping, Storage and Handling Guide'.

9.2 Storage and Baking Instructions

EVIA cards are moisture sensitive devices and are rated at MSL 3. The new packages contain desiccant to absorb moisture and humidity indicator card to display the moisture level maintained during storage and shipment. If the card recommends baking, bake the parts in accordance with JEDEC standard J-STD-033. Floor life for these modules is 168 hours of factory conditions ($\leq 30^{\circ}\text{C}$, 60% RH). For more information, please refer to 'Ivativ Package Shipping, Storage and Handling Guide'.

9.3 Moisture sensitivity levels and Baking instructions

The BALI/EVIA series cards are rated at moisture sensitivity level 3. Please refer to J-STD-033B standard for bake procedure.

10 Product label and ordering information

The labels of EVIA cards include important product information.

Below figure illustrates EVIA Mini PCIe Product labeling, it includes: The Data code, Lot number, Certifications, Model number and Logo. Table 10 illustrates the complete description about EVIA Product labeling.

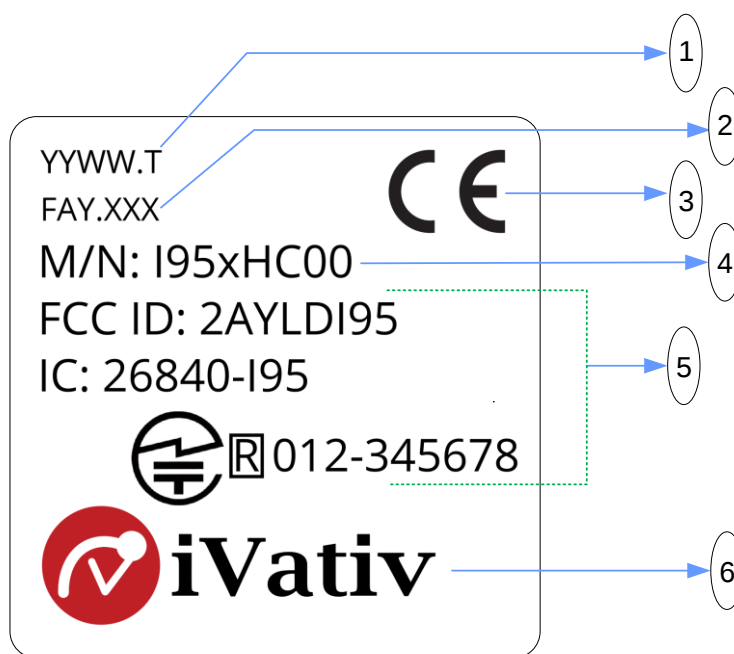


Figure 5: Module labeling

The table below describes the markings on the label.

Reference	Description
1	Date Code. YYWW.T: Year/Week/Temp Grade
2	Lot Number. FAY.XXX FAY: Fab, assembly and single digit year of make XXX: Lot number
3	CE Mark
4	Model number. Where 'x' indicates host interface 0- SDIO interface 1- PCIe interface 2- USB interface
5	Certification IDs and GITEKI mark
6	Ivativ Logo. Round logo symbol indicates the pin 1, unless marked specifically

Table 13: Module Label Description

10.1 Part ordering

EVIA Mini PCIe

I952HC00-I64T	EVIA Half Mini PCIe USB card with Antenna Diversity, Tray packing
I952HC00-I65T	EVIA Mini PCIe USB card with Antenna Diversity, Tray packing

Table 14: Part Ordering for EVIA Mini PCIe USB card

Contact Information

Please contact info@ivativ.com