SparkLAN WPEQ261ACNIBT Wireless Module User Manual

Wireless Module
WPEQ261ACNIBT

Contents

Specification

Standards	IEEE 802.11ac/a/b/g/n (2T2R) Bluetooth V4.2, V4.0 LE, V3.0+HS, V2.1+EDR
Chipset	Qualcomm OCA6174A

Data Rate	802.11b: 11Mbps / 802.11a/g: 54Mbps / 802.11n: MCS0-15/ 802.11ac: MCS0 -9 Bluetooth: 1 Mbps, 2Mbps and Up to 3Mbps
Operating Frequency	IEEE 802.11 ac/a/b/g/n ISM Band, 2.400G Hz-2.497G Hz, 4.900G Hz-5.845G Hz *Subject to local regulations
Interface	PCIe: WLAN / USB: Bluetooth
Form Factor	Half Mini PCIe
Antenna	2xIPEX connectors (ANTI for WIFI+BT, ANT2 for WIFI)
Modulation	802.11b: DSSS (DBPSK, DQPSK, CCK) 802.11a/g: OFDM (BPSK, QPSK, 16-QAM, 64-CAM) 802.11n: OFDM (BPSK, QPSK, 16-QAM, 64-CAM) 802.11ac: OFDM (BPSK, QPSK, 16-CAM, 64-QAM, 256-CAM)
Power Consumption	TX: 610mA / RX: 285mA
Operating Voltage	DC 3.3V
Operating Temperature Range	-40*C”-+85°C
Storage Temperature Range	-40°C-+85°C
Humidity (Non-Condensing)	5°4-90% (Operating) 5°4-90% (Storing)
Dimension (in mm)	29.85mm (±0.15mm) x 26.65mm (±0.15mm) x 2.65mm (±0.2mm)
Weight (g)	6g
Driver Support	Windows 7/8.1/10 Linux (Open Source), Recommend Kernel v4.0+
Security	64/128-bits WEP, WPA, WPA2, 802.1x

Certification

Dipole Ant.

FCC	CE (RED EN 300 328 V2.1.1 / EN 301 893 V2.1.1)
IC	MIC
NCC	ASNZS

Embedded Application
Applications include medical devices, security systems, industrial PC, Point of Sale, digital signs, set-top/net-top boxes, embedded / tablet PCs, Vehicle mounted front, Robot/ Intelligent Gateway, Gaming machines, etc.
Install instruction
Insert WPEQ-261ACNI (BT) into the mini pcie slot of the end product.

Federal Communication Commission Interference 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.

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 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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
Operations in the 5.15-5.25GHz band are restricted to indoor usage only. This device meets all the other requirements specified in Part 15E, Section 15.407 of the FCC Rules. **FOR MOBILE DEVICE USAGE (>20cm/low power)**
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 a minimum distance 20cm between the radiator & your body. This module is intended for OEM integrators only. Per FCC KDB 996369 D03 OEM Manual v01 guidance, the following conditions must be strictly followed when using this certified module:

KDB 996369 D03 OEM Manual v01 rule sections:

2.2 List of applicable FCC rules This module has been tested for compliance to FCC Part 15.
2.3 Summarize the specific operational use conditions The module is tested for standalone mobile RF exposure use conditions. Any other usage conditions such as co-location with another transmitter (s) or being used in a portable condition will need a separate reassessment through a class II permissive change application or new

certification.
2.4 Limited module procedures Not applicable.
2.5 Trace antenna designs Not applicable.
2.6 RF exposure considerations This equipment complies with FCC mobile 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 & your body. If the module is installed in a portable host, a separate SAR evaluation is required to confirm compliance with relevant FCC portable RF exposure rules.
2.7 Antennas The following antennas have been certified for use with this module; antennas of the same type with equal or lower gain may also be used with this module. The antenna must be installed such that 20 cm can be maintained between the antenna (refer to Page 10, Antenna Approved List) and users.

Antenna Type	Dipole	Omni-Directional	PIFA
Antenna connector	RP-SMA		IPEX

2.8 Label and compliance information The final end product must be labeled in a visible area with the following: “Contains FCC ID: RYK-WPEQ261ACNIBT. The grantee’s FCC ID can be used only when all FCC compliance requirements are met.
2.9 Information on test modes and additional testing requirements This transmitter is tested in a standalone mobile RF exposure condition and any co-located or simultaneous transmission with another transmitter (s) or portable use will require a separate class II permissive change re-evaluation or new certification.
2.10 Additional testing, Part 15 Subpart B disclaimer This transmitter module is tested as a subsystem and its certification does not cover the FCC Part 15 Subpart B (unintentional radiator) rule requirement applicable to the final host. The final host will still need to be reassessed for compliance to this portion of rule requirements if applicable.
As long as all 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.
IMPORTANT NOTE: In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not 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.

Manual Information To the End User 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.

OEM/Host manufacturer responsibilities OEM/Host manufacturers are ultimately responsible for the compliance of the Host and Module. The final product must be reassessed against all the essential requirements of the FCC rule such as FCC Part 15 Subpart B before it can be placed on the US market. This includes reassessing the transmitter module for compliance with the Radio and EMF essential requirements of the FCC rules. This module must not be incorporated into any other device or system without retesting for compliance as multi-radio and combined equipment

Industry Canada statement:

This device complies with ISED’s license-exempt RSS. 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.
FOR MOBILE DEVICE USAGE (>20cm/low power)
Radiation Exposure Statement:
This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment.
This equipment should be installed and operated with greater than 20cm between the radiator & your body.
This device is intended only for OEM integrators under the following conditions: (For module device use)
1) The antenna must be installed and operated with greater than 20cm between the antenna and the users

2) The transmitter module may not be co-located with any other transmitter or antenna.
3) Module approval is valid only when the module is installed in the tested host or compatible series of hosts which have similar RF exposure characteristics with equal or larger antenna separation distance.
As long as the 3 conditions above are met, further transmitter tests 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.
Cet appareil est congu uniquement pour les integrateurs OEM dans les conditions suivantes: (Pour utilisation de dispositif module)

IMPORTANT NOTE: In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the Canada authorization is no longer considered valid and the IC ID can not 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 Canada authorization.

End Product Labeling FOR MOBILE DEVICE USAGE (>20cm/low power)
This transmitter module is authorized only for use in devices where the antenna may be installed and operated with greater than 20cm between the antenna and users. The final end product must be labeled in a visible area with the following: “Contains IC: 6158A-EQ261ACNIBT”. Plaque signaletique du produit final

Manual Information
To the End User, 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 shown in this manual.

Caution :
(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;
(ii) for devices with detachable antenna(s), the maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall be such that the equipment still complies with the e.i.r.p. limit; (detachable antenna only)
(iii) for devices with detachable antenna(s), the maximum antenna gain permitted for devices in the band 5725-5850 MHz shall be such that the equipment still complies with the e.i.r.p. limits as appropriate; (detachable antenna only) (iv) where applicable, antenna type(s), antenna models(s), and worst-case tilt angle(s) necessary to remain compliant with the e.i.r.p. elevation mask requirement set forth in section 6.2.2.3 shall be clearly indicated.

DETACHABLE ANTENNA USAGE

This radio transmitter (IC: 6158A-EQ261ACNIBT / Model: WPEQ-261ACNI(BT)) has been approved by ISED to operate with the antenna type listed below with maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Approved antenna(s) list

No.	Transmitter Circuit	Brand	Model	Antenna Type	2.4G gain with cable loss (dBi)	5G gain with cable loss (dBi)	Connector Typ e
1	Chain(0) Chain(1)	Sparkling	AD-301N	Dipole	4.	B1&2: 5.2 B3&4: 5.8	IPEX MHF I at the modular si de & RP -SMA (M) at the ante nna side
2	Chain(0) Chain(1)	Sparkling	AD-103AG	Dipole	2.	B1&2: 1.93 B3&4: 2.03	
3	Chain(0) Chain(1)	Sparkling	AD-305N	Dipole	5.0	5.0	
4	Chain(0) Chain(1)	Sparkling	AD-303N	Dipole	3.0	3.0	
5	Chain(0) Chain(1)	Sparklan	AD-302N	Dipole	3.0	2.0	

No.	Antenna Type	Brand	Model	Connec tor Typ e	Gain SdBi)					
6	Omni Dir ectional	Data A lliance	A2x2P2m iniS12i	IPEX M HF I at the mo dular s ide & R P- SM A (M) at the a ntenna side		2400MHz	2420MHz	2440 MHz	2460 MHz	2483 MHz
					WIFI 1	0.	1.	1.	3.	3.90
					WIFI 2	0.	0.95	1.10	2.30	3.80

No.	Transmitter Circuit	Brand	Model	Antenna Type	2.4G gain with cable loss (dBi)	5G gain with cable loss (dB)	Connector Typ e
7	Chain(0) Ch ain(1)	Sparkling	AD-301PF	PIFA	3.	5.	IPEX

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WNFB-263ACNI(BT)
ver.1.0

Documents / Resources

	SparkLAN WPEQ261ACNIBT Wireless Module [pdf] User Manual WPEQ261ACNIBT, RYK-WPEQ261ACNIBT, RYKWPEQ261ACNIBT, WPEQ261ACNIBT, Wireless Module

References

- sales@sparklan.com
- IoT Wireless Module Solutions | IoT and M2M Experts in Wireless Embedded Wifi
- IoT Wireless Module Solutions | IoT and M2M Experts in Wireless Embedded Wifi

Manuals+,