

OEM Installation Guidance Document
For Broadcom BCM943228Z
FCC ID: QDS-BRCM1084; IC: 4324A-BRCM1084

Conditions on using BRCM regulatory approvals:

- A. Customer must ensure that its product (the “CUSTOMER Product”) is electrically identical to Broadcom’s product. Customer acknowledges that any modifications to Broadcom’s product may invalidate regulatory approvals in relation to the CUSTOMER Product, or may necessitate notifications to the relevant regulatory authorities.
- B. OEM must inform Broadcom of any changes which may require Class I or Class II permissive changes. Any substituted antenna and RF cable assemblies must be approved by Broadcom in order to maintain compliance.
- C. Appropriate labels must be affixed to the CUSTOMER Product that comply with applicable regulations in all respects.
- D. A user’s manual or instruction manual must be included with the customer product that contains the text as required by applicable law. Without limitation of the foregoing, an example (for illustration purposes only) of possible text to include is set forth below:

1. USA—Federal Communications Commission (FCC)

FCC COMPLIANCE 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.

INFORMATION TO USER:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of 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. If not installed and used in accordance with the instructions, it 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 tuning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the distance between the equipment and the receiver.
- Connect the equipment to outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

OEM Installation Guidance Document
For Broadcom BCM943228Z
FCC ID: QDS-BRCM1084; IC: 4324A-BRCM1084

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

CAUTION: (this only applicable to 5GHz device)

This device is restricted to indoor use due to its operation in the 5.15 to 5.25 GHz frequency range. FCC requires this product to be used indoors for frequency range 5.15 to 5.25 GHz to reduce the potential for harmful interference to co-channel Mobile Satellite systems.

High power radars are allocated as primary users of the 5.25 to 5.35 GHz and 5.65 to 5.85 GHz bands. These radar stations can cause interference with and/or damage this device.

System integrators must include the FCC ID on the end product.

FCC Radio-Frequency Exposure & Approval Conditions:

1. Antennas must be installed in the display section or underneath the keyboard in Netbook/notebook/laptop computers to provide at least 5mm separation distance from the transmitting antenna to the body of user, or any other person during normal operating condition. Configuration in tablets must be with at least 10mm antenna-to-enclosure separation distance.

-For portable applications, the WLAN antennas used must be the same antennas as in this filing. The distance between two antennas (Chain 1 and Chain 2) is 5cm.

- For standalone SAR testing, the antenna is mounted on lossless foam material for testing. In order to use Broadcom modular approval, PC-OEMs must install antennas with non-conductive materials surrounding the antenna.

2. The antenna(s) used for this transmitter must not be collocated or operating in conjunction with any other antenna or transmitter within a host device, except in accordance with FCC multi-transmitter product procedures.

3. The regulatory label on the final system must include the statement: "Contains FCC ID: QDS-BRCM1084 "or using electronic labeling method as documented in KDB 784748.

4. The final system integrator must ensure there is no instruction provided in the user manual or customer documentation indicating how to install or remove the transmitter module except such device has implemented two-ways authentication between module and the host system.

OEM Installation Guidance Document
For Broadcom BCM943228Z
FCC ID: QDS-BRCM1084; IC: 4324A-BRCM1084

5. The final host manual shall include the following regulatory statement:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of 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. If not installed and used in accordance with the instructions, it 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 tuning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the distance between the equipment and the receiver.
- Connect the equipment to outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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.

2. Canada - Industry Canada (IC)

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

This radio transmitter, IC ID: 4324A-BRCM1084, has been approved by Industry Canada to operate with the onboard antenna or a detachable WLAN antenna with a maximum gain of 3.33dB/2.4GHz and 6.21dBi/5GHz. Any other detachable antennas, with a different type or having a gain greater than 3.33dB/2.4GHz and 6.21dBi/5GHz are strictly prohibited for use with this device. The required antenna impedance is 50 ohms.

Caution: (this only applicable to UNII device)

OEM Installation Guidance Document
For Broadcom BCM943228Z
FCC ID: QDS-BRCM1084; IC: 4324A-BRCM1084

- (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) the maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall comply with the e.i.r.p. limit; and
- (iii) the maximum antenna gain permitted for devices in the band 5725-5825 MHz shall comply with the e.i.r.p. limits specified for point-to-point and non point-to-point operation as appropriate.

High power radars are allocated as primary users of the 5.25 to 5.35 GHz and 5.65 to 5.85 GHz bands. These radar stations can cause interference with and/or damage this device.

Caution: Exposure to Radio Frequency Radiation.

To comply with RSS 102 RF exposure compliance requirements, for mobile configurations, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons. This device must not be co-located or operating in conjunction with any other antenna or transmitter.

System integrators must include a label with “Contains IC: 4324A-BRCM1084” on the end product. Industry Canada user statements should be provided in both English and French, at the time each product is offered for sale or lease in Canada.

For portable configurations, antennas must be installed in the display section or underneath the keyboard in Netbook/notebook/laptop/tablet computers to provide at least 5mm separation distance from the transmitting antenna to the body of user, or any other person during normal operating condition.

French:

Cet appareil est conforme avec Industrie Canada exempts de licence standard RSS (s) l'opération est soumise aux deux conditions suivantes: . (1) ce dispositif ne doit pas causer d'interférences et (2) cet appareil doit accepter toute interférence , y compris les interférences qui peuvent provoquer un mauvais fonctionnement de l'appareil.

Conformément à la réglementation d'Industrie Canada, cet émetteur radio ne peut fonctionner à l'aide d'une antenne d'un type et maximum (ou moins) Gain approuvé pour l'émetteur par Industrie Canada. Afin de réduire le risque d'interférence avec d'autres utilisateurs, le type d'antenne et son gain doivent être choisi que la puissance isotrope rayonnée équivalente (PIRE) ne dépasse pas ce qui est nécessaire pour une communication réussie .

Cet émetteur radio , IC ID: 4324A – BRCM1084 , a été approuvé par Industrie Canada pour fonctionner avec l'antenne intégrée ou une antenne WLAN amovible avec un gain maximum de 3.33dB/2.4GHz et 6.21dBi/5GHz Les autres antennes détachables, avec . un type différent ou d'avoir un gain supérieur à 3.33dB/2.4GHz et 6.21dBi/5GHz sont strictement interdits pour une utilisation avec cet appareil. L'impédance d'antenne requise

OEM Installation Guidance Document
For Broadcom BCM943228Z
FCC ID: QDS-BRCM1084; IC: 4324A-BRCM1084

est de 50 ohms.

Attention: (ceci ne s'applique à un appareil UNII)

(I) l'appareil pour fonctionner dans la bande 5150-5250 MHz est réservé à une utilisation en intérieur afin de réduire les risques d'interférence nuisible aux systèmes mobiles par satellite co- canal;

(ii) le gain d'antenne maximal autorisé pour les dispositifs dans les bandes 5250-5350 MHz et 5470-5725 MHz doivent respecter la limite de pire , et

(iii) le gain d'antenne maximal autorisé pour les dispositifs fonctionnant dans la bande 5725-5825 MHz doivent respecter les limites de pire spécifiées pour le point -à-point et l'exploitation non point à point , le cas échéant .

Les radars à haute puissance sont désignés comme utilisateurs principaux de 5,25 à 5,35 GHz et 5,65 à 5,85 GHz . Ces stations radars peuvent causer des interférences et / ou endommager cet appareil .

Attention: Exposition aux radiations de fréquences radio.

Pour se conformer aux normes RSS 102 exigences de conformité d'exposition aux radiofréquences , pour les configurations mobiles , une distance de séparation d'au moins 20 cm doit être maintenue entre l' antenne de cet appareil et toutes les personnes . Cet appareil ne doit pas être co- localisées ou opérant en conjonction avec une autre antenne ou transmetteur .

Les intégrateurs de systèmes doivent comporter une étiquette avec «Contient IC: 4324A – BRCM1084 " . Sur le produit final comptes d'utilisateur d'Industrie Canada devraient être fournis en anglais et en français , au moment où chaque produit est offert à la vente ou la location au Canada.

Pour les configurations portables , antennes doivent être installées dans la section d'affichage ou sous le clavier dans Netbook / portables / ordinateurs portable / tablette pour assurer une distance de séparation d'au moins 5 mm de l'antenne d'émission sur le corps de l'utilisateur , ou toute autre personne au cours de fonctionnement normal .

3. Europe - EU Restrictions

This equipment needs to be marked with the **CE 0560**  symbol and can be used throughout the European community.

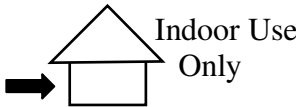
Marking by the symbol  indicates that usage restrictions apply.

Information to be supplied to the users:

802.11a Restrictions:

OEM Installation Guidance Document
For Broadcom BCM943228Z
FCC ID: QDS-BRCM1084; IC: 4324A-BRCM1084

- This product is for indoor use only when using channels 36, 40, 44, 48, 52, 56, 60, or 64 (5150–5350 MHz).
- DFS and TPC must remain enabled to ensure product compliance with EC regulations.
- To ensure compliance with local regulations, be sure to select the country in which the access point is installed.
- This product can be used as shown in the table below:

5 GHz wireless LAN IEEE 802.11a	 Indoor Use Only	A, AND, B, CH, D, CY, CZ, DK, ES, EST, F, FIN, FL, FR, GB, GR, H, I, IRL, IS, L, LT, M, MC, N, NL, P, PL, RSM, S, SK, SLO, V
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Caution: Exposure to Radio Frequency Radiation.

To comply with RF exposure compliance requirements, for mobile configurations, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons.

Czech:

User's Manual in Czech language and a statement of conformity with Directive 1999/5/EC in Czech language must be enclosed to each product.

France (Removed after July 1, 2012):

2.4GHz for Metropolitan France:

In all Metropolitan départements, wireless LAN frequencies can be used under the following conditions, either for public or private use:

- Indoor use: maximum power (EIRP*) of 100 mW for the entire 2400-2483.5 MHz frequency band
- Outdoor use: maximum power (EIRP*) of 100 mW for the 2400-2454 MHz band and with maximum power (EIRP*) of 10 mW for the 2454-2483 MHz band

Italy:

For private use, a general authorisation is required if WAS/RLAN's are used outside own premises. For public use, a general authorisation is required

Note for system integrators:

OEM Installation Guidance Document
For Broadcom BCM943228Z
FCC ID: QDS-BRCM1084; IC: 4324A-BRCM1084

- The module is tested to comply with the requirement of the R&TTE Directive. System integrators are responsible for compliance of the final device with the R&TTE Directive.
- Packaging: CE Marking must also be on the outer packaging of the product. The outer packaging must also provide an indication as to where the device is intended to be used and OR conversely, where there may be restrictions for use.

4. Taiwan - NCC Statement to be included in the user guide

Statement- For general products

低功率電波輻射性電機管理辦法

第十二條經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信規定作業之無線電信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

Additional Statement - For 5G Band products

在5.25G ~5.35G頻帶內操作之無線資訊傳輸設備僅適於室內使用

Translation:

Article 12

Without permission, any company, firm or user shall not alter the frequency, increase the power, or change the characteristics and functions of the original design of the certified lower power frequency electric machinery.

Article 14

The application of low power frequency electric machineries shall not affect the navigation safety nor interfere a legal communication, if an interference is found, the service will be suspended until improvement is made and the interference no longer exists.

The foregoing legal communication refers to the wireless telecommunication operated according to the telecommunications laws and regulations.

The low power frequency electric machinery should be able to tolerate the interference of the electric wave radiation electric machineries and equipments for legal communications or industrial and scientific applications.

Radio devices using 5.25-5.35GHz bands are restricted to indoor use only.

Appendix:

模組認證合格標籤 (ID):

“ CCXXxxLPyyyZz ”

如果使用本模組之平台,無法在外部看見審驗合格標籤時,應在該平台的外部明顯標示

“內含射頻模組  CCXXxxLPyyyZz” .

5. Korea

Include the following statement either on the label or in the User Guide.

"당해 무선설비가 전파혼신 가능성이 있으므로 인명안전과 관련된 서비스는 할 수 없음"

6. Argentina

The current approval is in the name of Broadcom's local representative. It may be necessary to obtain regulatory approval in the name of the local distributor or importer. We suggest manufacturers check with their local distributors and importers in Argentina.

7. Brazil - Anatel

Before using Broadcom Anatel approvals,

1. PC- OEM must make arrangement for its local offices or distributors to provide maintenance, technical assistance or replace any faulty products sold in Brazil.
2. All warranty services will be provided by the distributors or PC-OEM sales support in Brazil. An official agreement stating warranty responsibilities must be signed and made available to Broadcom.

Interference statement to be included in the Users Guide

"Este equipamento opera em caráter secundário, isto é, não tem direito a proteção contra interferência prejudicial, mesmo de estações do mesmo tipo, e não pode causar interferência a sistemas operando em caráter primário."

Translation:

"This equipment operates in secondary character. It can be affected by harmful interference. However, it cannot cause interference to systems operating in primary character."

8. South Africa – ICASA

PC-OEMs must make arrangement for importers to supply spare parts and carry out repairs in South Africa.

9. Indonesia – POSTEL, Kenya – CCK, Nepal - NTA

PC-OEMs must make arrangement for importers to provide product warranty and after sales services.

10. Japan – MIC

Radio devices using 5.15-5.35GHz bands are restricted to indoor use only.

11. Mexico

PC-OEMs must make arrangement for importers to provide User Manual in Spanish in Mexico.

The User Manual must feature the following mandatory statement:

**“La operación de este equipo está sujeta a las siguientes dos condiciones:
(1) es posible que este equipo o dispositivo no cause interferencia
prejudicial y (2) este equipo o dispositivo debe aceptar cualquier
interferencia, incluyendo la que pueda causar su operación no deseada.”**

Translation:

The operation of this device is subject to the following two conditions:

- (1) this equipment or device must not cause harmful interference and
- (2) this equipment or device must accept any interference, including interference which could otherwise cause its undesired operation.

12. CB Certifications

PC-OEMs must provide User Guides in the language suitable for the countries when shipping products to countries listed in the CB reports.

13. Moldova- Labeling to be included

Proper Marking must be included on each certified unit shipping into Moldova,

14. Tunisia

When shipping into Tunisia, only 5150-5350MHz is allowed for the 5GHz WLAN.
Passive Scan on other 5GHz channels is prohibited.