Qualcomm QCNFA765 OEM Integration User Guide

Contents

Qualcomm

Qualcomm QCNFA765 OEM Integration

Product Information

Specifications

- **Product Name**: XYZ-123
- **Model Number**: ABC456
- **Dimensions:** 10″ x 5″ x 3″
- **Weight**: 2 lbs
- **Power Source**: AC Adapter
- **Power Consumption**: 50W
- **Operating Temperature**: 0°C – 40°C
- **Storage Temperature**: -20°C – 60°C

Product Usage Instructions

Unboxing and Setup

To begin using your XYZ-123, follow these steps:

1. Open the package and remove all contents.
2. Ensure that all parts are included and undamaged.
3. Place the XYZ-123 on a stable surface.
4. Connect the AC adapter to the power port on the XYZ-123.
5. Plug the AC adapter into a power outlet.

Powering On and Off

To power on the XYZ-123, press the power button located on the front panel. To power off, press and hold the power button for 3 seconds.

Adjusting Settings

The XYZ-123 has various settings that can be adjusted to suit your preferences. To access the settings menu, follow these steps:

1. Press the menu button on the front panel.
2. Navigate through the menu options using the arrow buttons.
3. Press the select button to enter a submenu.
4. Use the arrow buttons to adjust the desired setting.
5. Press the select button to confirm the changes.
6. Press the menu button to exit the settings menu.

Troubleshooting

If you encounter any issues with the XYZ-123, refer to the troubleshooting section of the user manual for possible solutions. If the problem persists, contact our customer support for further assistance.

FAQ

- **Q: Can I use the XYZ-123 with batteries?**
  - **A:** No, the XYZ-123 requires an AC adapter for power and does not support battery operation.
- **Q: What is the maximum operating temperature for the XYZ-123?**
  - **A:** The XYZ-123 can operate in temperatures ranging from 0°C to 40°C.
- **Q: Can I mount the XYZ-123 on a wall?**
  - **A:** Yes, the XYZ-123 is designed to be wall-mountable. Please refer to the user manual for instructions on how to properly mount it.

For additional information or to submit technical questions, go to: **https://createpoint.qti.qualcomm.com**

Revision history

Revision	Date	Description
AA	January 2021	Initial release
AB	February 2021	Update
AC	March 2021	Antenna gain table update
AD	April 2021	Update
AE	April 2021	Update
AF	June 2021	Include 6GHz information

Introduction

This document provides instructions and steps that the OEM Integrator must follow when designing and manufacturing a system using a Qualcomm® design radio module, the “Module”.

CAUTION: Failure to follow the instructions in this document may invalidate the FCC certification and authorization of the Module for use in the U.S. and in other countries. The OEM integrator is responsible for all system-level EMI/EMC and product safety testing and certification that apply to the host system in the U.S. and

other countries where the system will be marketed or sold. for the Module.

The Qualcomm modular certifications described in this document only apply to radio conformance May Contain 1

Applicable Module

Regulatory model: QCNFA765
FCC ID: J9C-QCNFA765
IC: 2723A-QCNF A765

Available Global Modular Approvals from Qualcomm

Module certification is limited to those countries in which Qualcomm has obtained radio modular approvals
For integrators to access the current list of certified countries:

1. Log on to the Qualcomm CreatePoint system.
2. Search for the regulatory document under chip model WCN6855.

NOTE: If integrators do not have access to the Qualcomm CreatePoint system, contact a Qualcomm account representative to request access to the country list and modular certificates.

OEM integrators must receive their own radio certification for each country where the system will be sold if a modular certification for that country is not available from Qualcomm.

Additional Regulatory Conformance Testing and/or Submissions Required by the Integrator

Global modular certifications only apply to radio conformance for the Module.

- The OEM integrator is responsible for any additional system-level EMI/EMC and product safety testing and certifications that apply in the U.S. and other countries where the host system is containing the Module. This includes, but is not limited to, Federal Communications Commission (FCC) Part 15 Class B Digital Emissions, China CCC, Taiwan BSMI, Korea KC, ETSI EN 301 489-17, and others.
  • These system-level EMC tests are done with the Module installed and included in the scope of the submission.

Modular radio certification is not possible in some countries.

For these countries, OEM integrators must ensure radio certification for the end system is obtained before placing the product on the market.

The current list of applicable countries is provided by Qualcomm.

For questions, additional regulatory conformance testing information, and/or related submissions, contact a Qualcomm account representative.

Compliant/Allowable Tx Power File

This file contains the transmit power settings that are programmed in the board-data file in the software. The software image is installed at the time of manufacture of the module.

The board data information is provided by Qualcomm. Contact your Qualcomm account representative for details on the board data file (BDF).

CAUTION: For US 6GHz. This module is under control Low-power indoor access point and Standard power Access Point, And can adjust a transmitter's output power based on access point categories which to connected (for example. Module transmit power/PSD will be limited to low power indoor compliant power when connect to LPI AP). This function is auto controlled by software.

Allowable Antennas to Use with the Radio Module

The module is certified for use only with certain types of antenna described in this chapter.

NOTE: Allowed antenna type: PIFA and MONOPOLE type with omnidirectional pattern antenna.

NOTE: End host product must use integrated antenna that antenna is integrated in host mechanicalhousing.

Table 6-1 Allowed maximum gain (dBi), including antenna cable loss

Frequency	PIFA type (dBi)	MONOPOLE type (dBi)	Max. gain (dBi) for Japan and Korea antenna filing/listing
2.4 GHz	**3.53 (H or V)**	3.22 (H or V)	**3.53 (H or V)**
5.150-5.250 GHz	3.06 (H or V)	**3.35 (H or V)**	**3.35 (H or V)**
5.250-5.350 GHz	3.07 (H or V)	**3.42 (H or V)**	**3.42 (H or V)**
5.470-5.725 GHz	**4.81 (H or V)**	4.77 (H or V)	**4.81 (H or V)**
5.725-5.850 GHz	4.2 (H or V)	**4.72 (H or V)**	**4.72 (H or V)**
5.850-5.895 GHz	**5.09 (H or V)**	4.71 (H or V)	**5.09 (H or V)**
5.925-6.425 GHz	**5.14 (H or V)**	4.75 (H or V)	**5.14 (H or V)**
6.425-6.525 GHz	**5.09 (H or V)**	4.29 (H or V)	**5.09 (H or V)**
6.525-6.875 GHz	**5.16 (H or V)**	4.81 (H or V)	**5.16 (H or V)**
6.875-7.125 GHz	**5.12 (H or V)**	4.74 (H or V)	**5.12 (H or V)**

CAUTION: For US , Canada and Taiwan, Use of other antenna types or the same type of antenna but with higher gain than listed above is not allowed without additional testing and appropriate permissiv change approval.

Use of other similar type antennas may only require a C1PC to confirm SAR performance is the same or better, i.e., lower, but only an equivalent type antenna can be used without any additional testing/submission.

Contact your Qualcomm account representative for additional guidance if you choose to use different antenna types or higher gain antennas in the end system.
Some examples of antennas Not considered the same type as PIFA or Monopole:

Dipole

- PCB trace
- Patch
- Chip antennas

In addition, regulatory agencies in Japan, Korea, and Taiwan require submission of antenna specification sheets for all antenna models used with the Qualcomm module. This notification process must be followed by the integrator before the original product launch and whenever new host systems, with new antenna models, are launched.

The antenna type does not matter in Japan and Korea antenna filing/listing as long as host platform antenna gain does not exceed max. gain value as represented in Table 6-1.

Notification of all antenna models to be used with the Module

For training on the notification process and submitting antenna specifications, send an email to: **qca.ant@qti.Qualcomm.com**

Antenna Placement Inside the Host System and RF Exposure

The FCC and regulatory bodies of other countries impose strict conditions and limitations on the RF exposure levels of end products.
Acceptable RF exposure levels for the Module depend on:

- Transmit power.
- Location of the transmitting antenna(s) inside the host system.
- Expected separation of the transmitting antennas to the end user.

OEM integrators must take great care to ensure each host system complies with the applicable RF exposure requirements.

For mobile devices

The antenna-to-user separation distance must be greater than 20 cm. verlas
CAUTION: Failure to adhere to these separation/spacing rules will invalidate the FCC certification for the Module.

- This separation is measured between the closest point of each transmitting antenna inside the host device to the point of contact by the user or nearby person outside of the host device.
- For notebooks/netbooks/laptops with antenna(s) in the display section, the LCD is opened 90 degrees/perpendicular to the keyboard. The separation distance is then measured from the nearest point of each transmitting antenna to the bottom of the host.

NOTE: When one or more of these conditions cannot be met for a particular host system, additional testing is required to secure the necessary certifications for the system. Contact your Qualcomm account representative with any questions regarding compliance for host systems) with these restrictions.

NOTE: These restrictions do not apply to a receive-only antenna.

Simultaneous Transmission with Other Integrated or Plug-In Radios

The FCC imposes conditions and limitations when additional radios) are co-located in the same host system as the Qualcomm Module with capability to transmit simultaneously.

- Co-locating other radios, such as an integrated or plug-in wireless WAN/cellular radio with the Qualcomm

wireless LAN module requires additional evaluation and possible submission for authorization from the FCC.

- The rules are highly dependent on the characteristics of the particular radios that are co- located and simultaneously transmitting.
- The OEM integrator should seek guidance from a knowledgeable test lab or consultant to determine if additional testing and FCC certification is required.
- In this case, failure to evaluate and follow the required FCC procedures will invalidate the

FCC certification of the Module and end system.

Detailed rules from the FCC are described in various Knowledge Database (KDB) publications and can be found using the following instructions.

1. To download the FCC rules for co-located radios:
    - **a**. https://apps.fcc.gov/oetcf/kdb/index.cfm
    - **b**. Enter 616217 in the 'publication number' search box
    - **c**. Download latest applicable version of KDB 616217 document.
2. For expert advice regarding co-location rules, the recommendation is to contact an FCC- approved Telecommunication Certification Body (TCB):
    - **a**. https://apps.fcc.gov/oetcf/kdb/index.cfm.
    - **b**. Choose your country and or state from the pull-down list.
    - **c**. Scroll through the search results and choose a TCB contact from which to seek advice.
3. Contact your Qualcomm account representative with any questions regarding compliance of the host systems) with the above restrictions.

Module May Not Be Installed by End Users

FCC rules require that the Module be installed in host systems at the factory by the OEM integrator.

- End users of the system may not install the Module.
- The host product user instructions must not advise the end user on how to access or remove the Module.
- Additional FCC authorization/filing is needed to allow end user installation of radio modules.

If modules are provided to end users for installation in the host, a two-way authentication protocol is required to limit the Module to operate only with authorized host systems.
For more details, refer to FCC KDB 996393 found at **https://apps.fcc.gov/oetcf/kdb/index.cfm**

Required Labeling on the Outside of the Host

Explanatory text in red font must not be included in the final label.

FCC

The FC requires a label on the outside of the host system visie to the end user. Example wording is:

Contains:
FCC ID: XXX-XXXXXXX
IC: XXXXX-XXXXXX

(Replace X's with actual IDs found in Section 2).
auveritas.com

The FCC requires a logo signifying emissions compliance on the outside of the host system. Additional options are available for placement of the FCC label on the host. Refer to the FCC Knowledge Database KDB 784748 found at https://apps.fcc.gov/oetcf/kdb/index.cfm.

NOTE: The Integrator is responsible for performing FCC Part 15 Class B digital emissions testing on the end-system with the radio Module installed. The FCC logo that follows should not be affixed, unless the OEM integrator has obtained the necessary Part 15 approval, e.g., self-declaration of conformity.

If the host system is approved to FCC Class B digital emissions limits under a grant of certification issued by a TCB, the FCC ID number shown on the grant should be used on the label instead of the FCC logo that follows.

Taiwan NCC
Taiwan NCC requires a label on the outside of the host system visible to the end user.
The required wording is:

(Replace X's with actual IDs found in Section 2).

European Community Radio Equipment Directive (RED)

The European Community RED (Radio Equipment Directive) requires the CE Marking shown as follows on the outside of the host AND on the outside of the shipping container/packaging:

The European Community RE Directive also requires the following note to consumers on the outside of the shipping container/packaging:

NOTE: The Integrator is expected to translate the text in this Section into the appropriate local languagesfor the European countries in which the product will be marketed or sold.

AT	BE	BG	CZ	DK	EE	FR
DE	IS	IE	IT	EL	ES	CY
LV	LI	LT	LU	HU	MT	NL
NO	PL	PT	RO	SI	SK	TR
FI	SE	CH	UK	HR		

The full text of the RED is located at: **http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32014L0053**

Required Labeling on the Module

FCC labeling on the Module

The Integrator must ensure that the FCC ID (as indicated in Section 2) is affixed on the Module along with other country certification numbers and logos as described in this section.

NOTE: The Module ODM may affix regulatory labeling at time of the Module manufacturing. However, the PCOEM must ensure the Module label is complete, correct, and applicable for all countries where the host system will be imported, marketed, or sold.

Rest of world labeling on the Module

The Integrator must ensure the Module includes a global regulatory label with certification numbers and logos for all target countries.

- The system integrator is responsible for confirming the final regulatory label on the radio Module contains all required certification IDs for all countries in which the system will be marketed or sold.
- It is recommended that the PCOEM implement a review and sign-off process and change control process with each Module ODM to ensure the Module label meets the POEM requirements.
  Qualcomm provides sample artwork with the applicable certification numbers for this Module.
- The PDF document can be opened using Adobe Illustrator, so the sample artwork can be copied and modified as needed.
- Therefore, the final label produced by the Module manufacturer will vary from this sample.
- However, the logos and certification numbers must be those shown in the sample global label.

Contact your Qualcomm account representative with any questions regarding module labeling.

Instructions to download the sample global label artwork with certification IDs

1. Log on to the Qualcomm CreatePoint system.
2. Follow the links and instruction provided by Qualcomm for regulatory certifications.
3. **Find**: Sample labeling for the Module.
4. Download the PDF file found in the folder.

NOTE: Search for the chip model in the Qualcomm CreatePoint system.

OR, if you do not have access to the Qualcomm CreatePoint system, contact your Qualcomm account representative

Required Regulatory Wording for User Manual/Installation Manual

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NOTE: Text in red font must be replaced.

FCC compliance information

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 product does not contain any user serviceable components. Any unauthorized product changes or modifications will invalidate warranty and all applicable regulatory certifications and approvals, including authority to operate this device.

FCC Part 15 Digital Emissions Compliance

We [System Manufacturer Name, Address, Telephone], declare under our sole responsibility that the product [System Name] 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.

WARNING: 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 and radiates 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 the one the receiver is connected to.
- Consult the dealer or an experienced radio/TV technician for help.

The user may find the following booklet prepared by the Federal Communications Commission helpful:

The Interference Handbook

This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402. Stock No.004-000-00345-4.

RF Exposure Statement

Radiation Exposure Statement

The product complies with the FCC portable RF exposure limit set forth for an uncontrolled environment and is safe for intended operation as described in this manual. The further RF exposure reduction can be achieved it theodistan baciopt as faraspossible from the users body or by setting the device to

FCC 6GHz statement

Prohibited for control of or Communications with unmanned aircraft systems, including drones.

Industry Canada Notices

This device complies with Canadian RSS-247.

This device complies with Industry Canada license-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.

NOTE: For 5GHz and/or when co-located with 5 GHz transmitters, the following statements should be provided in the user information

Caution

1. 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;
2. 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
3. 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.
4. Users should also be advised that high-power radars are allocated as primary users (i.e. priority users) of the bands 5250-5350 MHz and 5650-5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.

Radiation Exposure Statement

The product complies with the Canada portable RF exposure limit set forth for an uncontrolled environment and is safe for intended operation as described in this manual. The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user's body or by setting the device to lower \output power if such function is available.

European Community (RED) user manual wording and declaration
NOTE: Text in red font must be replaced with name of company responsible for placing the system on the European Community Market.

Europe – EU Declaration of ConformityCE

Marking by this symbol indicates compliance with the Essential Requirements of the RED of the European Union (2014/53/EU). This equipment meets the following conformance standards:
EN 200 228 EN 201 803 EN 201 480.17 EN 62268-1 EN 62211

Hereby, [COMPANY NAME], declares that this Radiolan is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.

European Community (RED) Declaration of Conformity for System

In addition to including the radio conformity wording described in Section 12.3, the end integrator must also create and sign a European Declaration of Conformity (DoC) for all European Directives applicable to the end product.

- At a minimum, this will be a DoC per the RED Directive covering the essential requirements.
- The DoC must reference harmonized standards used for all radios present in the system.

NOTE: An image of the DoC signed by the OEM integrator may be included in the user manual or a link to the DoC on the integrator's company website should be provided in the user documentation.

Host products that are not subject to Anatel approval, but include this approved module must include in their manual, quick guide, or by other authorized means in Act 4088, the following information:

OEM Integrator Checklist

The party below will implement the Qualcomm Module in host systems in accordance with the instructions specified in this document and the documents referenced herein.

- The OEM integrator will ensure the Module is integrated in a host systems using only the approved antenna model(s) described in this document.
- The OEM integrator will ensure the antenna placement inside the host system will maintain the required spacing to end user for RF Exposure compliance, as specified in this document.
- If other radios are integrated inside the host with the Qualcomm Module, the OEM integrator will contact its test lab, TCB or Qualcomm to determine if additional FCC compliance evaluation is required to meet FCC collocation rules.
- The OEM integrator will ensure end user documentation will contain the specified regulatory wording and ensure the host system and the Module itself are labeled as specified in this document.
- The OEM integrator will ensure the Module is programmed in the factory with compliant transmit power not exceeding the levels specified in this document. Qualcomm Incorporated requests that the OEM integrator acknowledge its receipt of this document and the above instructions. You may contact Qualcomm with any questions concerning this document or the responsibilities of the OEM integrator.

Company Name Signature
Name
Title
Email
Phone
Date
Company Address

NOTE: Email a signed and completed copy of this acknowledgment to **moduleinstructions@qualcomm.com**

Documents / Resources

	**Qualcomm QCNFA765 OEM Integration** [pdf] User Guide QCNFA765 OEM Integration, QCNFA765, OEM Integration, Integration

References

- **User Manual**