The QPG7015M Development Kit (DK) provides SW engineers, RF designers and product managers with all tools required to evaluate the QPG7015M performance, its differentiators and develop novel IoT Gateway Applications. The development kit features Bluetooth® LE, Zigbee and Thread communication stacks, combined with turn-key reference applications showing Zigbee, Thread, Matter-over-Thread and Bluetooth LE. Documentation, Software API's and evaluation tools required to integrate QPG7015M into your IoT gateway are included.

Benefits

Unique ConcurrentConnect™ technology – Out-of-the box, the QPG7015M DK will act as a Zigbee coordinator, Matter Hub and Bluetooth LE Central/Peripheral concurrently. The DK relies on the ConcurrentConnect™ technology integrated into the QPG7015M HW. This HW makes it easy to build applications that use different SW stacks concurrently.

Antenna diversity Increasing interference robustness in presence of other 2.4 GHz radios

Multi-channel technology, The QPG7015M DK enables the user to run up to 3 IEEE 802.15.4 stacks, such as a Matter hub and the Zigbee coordinator, on **3 different channels.**

Radio Performance tooling enables the customer to verify and test the QPG7015M RF performance.

Reference designs for turn-key product solutions. These enable the user to verify and optimize their application requirements and thus achieve a **Fast-time-to-market**. A Board Specific Package allows configuration at runtime for:

- The firmware to map to the board layout silicon
- The pinout of the QPG7015M
- The QPG7015M listening mode

Linux based development environment The QPG7015M applications are built on top of a Linux Operating System (OS), the typical OS used in smart home gateways. SW Developers can work in the development environment they are used to and leverage the powerful Linux API to build the applications. The QPG7015M DK also comes with scripting to start, stop and reset the applications and drivers.

Interoperable with major Smart Home ecosystems: IKEA Home Smart, Philips Hue, Samsung SmartThings and Amazon Alexa to name a few.

Certified Solution for Bluetooth LE 5.2, Zigbee R22 and Thread 1.3

Wi-Fi/IoT coexistence tooling enables configuring and verifying the 3-wire coexistence protocol between the different radios. Using QPG7015M, coexistence becomes easy as the IoT coexistence is dealt with by the QPG7015M, and the user only needs to configure coexistence with Wi-Fi. Qorvo's default coexistence configurations which have been benchmarked in real-life use cases such as a Wi-Fi Access Point are included to give customers a head start.

Development Kit
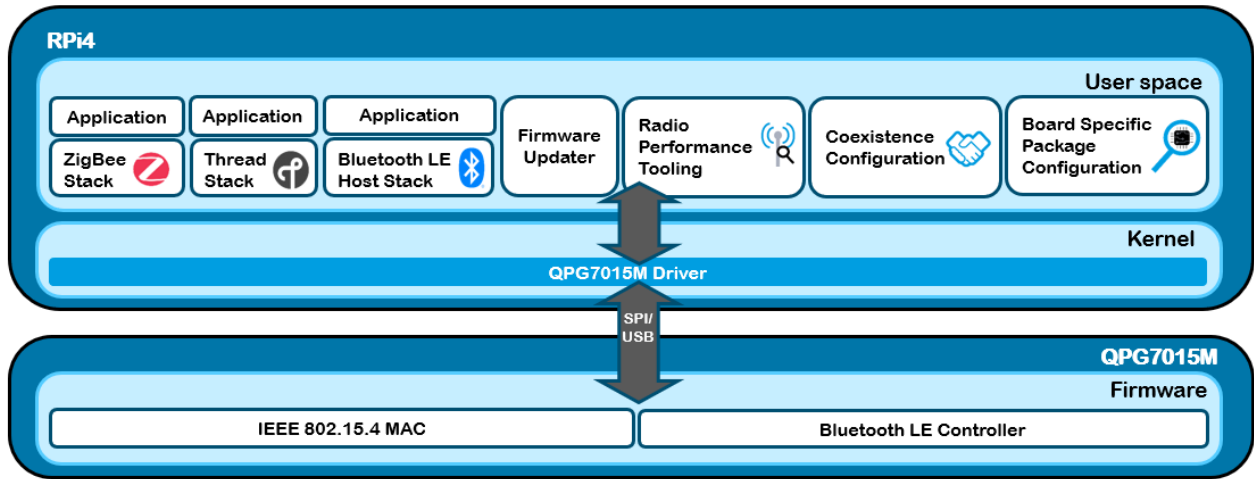
The Development kit combines a Raspberry Pi 4 and QPG7015M plug-on radio board. The Raspberry Pi hosts the user application and communication stacks. The QPG7015M radio board enables the user to verify both **SPI** and **USB** as interface to the QPG7015M giving the user maximum flexibility and compatibility with the interface on the customer application processor. The radio board also provides access to the Wi-Fi/IoT **coexistence interface** through a pin header.

QPG7015M DK HW features:

- Qorvo's QPG7015M transceiver featuring ConcurrentConnect™
- Raspberry Pi host platform using Linux OS and running QPG7015M applications
- 2.4 GHz PCB antennas supporting Antenna Diversity with u.FL connectors
- Access to applications and tools over SSH Linux terminal

Zigbee R22

Platform certification of the R22 standard compliant Zigbee stack and compatibility with sleepy/non-sleepy end devices and router products.

API to access the network and devices in the network, is available. This gives the QPG7015M DK a **Zigbee coordinator** functionality, showcased via a reference command line application.

Smartphone application allows the user to configure and control the Zigbee network. Adding/removing devices in the network and controlling and monitoring the user's home is made easy from your smartphone.

OTA server functionality to distribute firmware updates to the devices in your network is supported.

C++ API used in the reference applications can be extended with customer functionality.

Thread 1.3 and Matter

Certification of the 1.2 standard compliant Thread stack and compatibility with Full Thread Devices and Minimal Thread Devices.

Thread Border Router and **Thread FTD CLI** configurations are included in the DK, enabling customers to build a Matter hub or custom Thread based applications. The Thread border router configuration works out of the box with Matter devices.

The open-source software repositories contain the QPG7015M Thread applications. A Radio Co-Processor (RCP) approach is used to maximize the abilities to run multiple communication stacks concurrently.

Bluetooth LE 5.2

Platform certification of the 5.2 standard compliant Bluetooth LE stack.

The Bluetooth LE host stack API is compatible with the **Amazon Common Software** (ACS) API, enabling integration with ACS compliant device SDKs. A certified Bluetooth LE stack is included, enabling customers to build Bluetooth LE connected products. Bluetooth LE Peripheral and Central functionality is supported.

A command line interface is available as reference application. It shows typical Bluetooth LE functionality such as scanning, advertising, connecting and exchanging data. Customers have the flexibility to define custom and standard Bluetooth LE services and profiles and interact with services and profiles of connected devices.

ConcurrentConnect™ is supported, allowing Bluetooth LE peripheral/central functionality to be combined with the Zigbee and Thread applications without any compromise or requirement for application managed time slicing.

Contact Information

For the latest specifications, additional product information, worldwide sales and distribution locations:

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