Your Smart Partner for the IoT

Connecting People, Places and Things

qorvo

all around you

Technology Innovator. Trusted Supplier.

Qorvo® technology is advancing and expanding the Internet of Things (IoT) by solving the difficult challenges of connecting people, places and things. Our advanced, core RF solutions are at work today, around the globe:

- Creating stronger connections and faster speeds in critical networks
- Enhancing the safety, speed and reliability of connected cars
- Enabling greater home security, control and energy management
- Preparing for the low-power future with high-efficiency products based on cellular IoT

We Are Making the IoT Future-Proof

Qorvo leads the industry with solutions that support all wireless communication protocols, including IEEE 802.15.4, Zigbee, Thread/CHIP, **Bluetooth®** Low Energy, Wi-Fi and cellular IoT (LTE, NB-IoT) – creating a future-proof foundation for the connected world. Our products offer:

- Ultra-low-power, lifetime battery that eliminates maintenance
- Industry-best range for full-home coverage
- Robust resistance to Wi-Fi interference
- High reliability
- Low cost
- Alignment with the world's leading chipset solutions
- Excellent power management

Qorvo Connectivity Spanning the IoT

Five ways to connect

Bluetooth®	UWB	Zigbee/Thread	Wi-Fi	LTE/NB-IoT
Personal connectivity integrated solutions	Asset tracking, secure communications	Ubiquitous sensors with maintenance-free battery operation	Smart home/office requiring compact, high bandwidth RF	Long-range connectivity for auto telematics and high-value sensors
System on chip	System on chip	Ultra low power system on chip	Wi-Fi front-end with BAW filters	Large scale RF integration

Short Range | Local Area | Wide Area

Our Connections are Growing

Qorvo technology is powering some of the most visible elements of today's connected life – smart homes and smart cars.

Simplifying Smart Homes

As service providers, utilities and insurance companies launch smart home applications, consumers are transforming their residences into state-of-the-art environments that they can connect to from anywhere in the world using their smartphones. Home monitoring and access control, improved energy efficiency, lighting control and lifestyle monitoring are all enabled with Qorvo chipsets that easily and reliably connect devices to a central home gateway and Wi-Fi network.

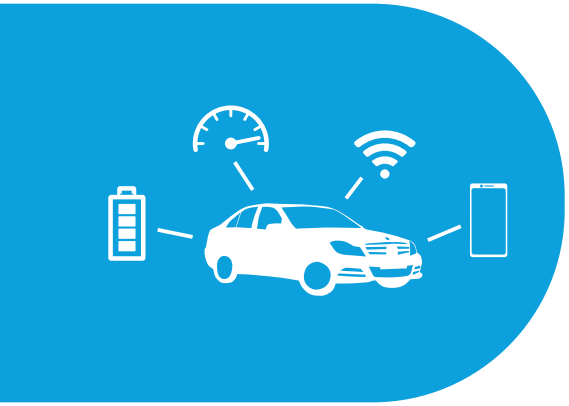
Our multi-stack system on chips (SoCs) and transceivers are supporting simultaneous multiple protocols in a single radio for future-proof solutions.

- **We Make It Easy –** Qorvo's communication controllers for sensor and end devices offer a low-cost and highly reliable solution for all smart home applications with small size, ultra low-power, integrated software, tools and reference designs for seamless integration into residential end applications.

- **We Cover the Home –** Distributed Wi-Fi, or Wi-Fi Mesh, allows full coverage of the entire home with a pod in every room. Qorvo's core RF technology increases Wi-Fi range and capacity, and uses Wi-Fi backhaul for other IoT wireless communication standards (Zigbee, Thread, Bluetooth Low Energy).

- **We Bring Peace of Mind –** Qorvo's Senior Lifestyle Services are built around a system of wireless Zigbee sensor nodes located throughout the home. The system connects via internet gateway to a cloud based, self-learning algorithm with advanced behavior pattern recognition capabilities. It learns the normal day-to-day activities and behavior of senior people in their home, providing intelligent status updates in a dashboard app and generating alerts when something unexpected happens.

- **We Make It Secure –** Qorvo's UWB solutions is an ultra low power, micro-location-based IoT technology. By itself or combined with other Qorvo solutions, use cases extend to tracking for accurate location measurements, secure access to the home and vehicle keyless entry.



Connecting Our Cars

The age of the connected car is here, and applications that support it are reaching critical demand. Qorvo connects and protects our homes, and now the car with our growing portfolio of AEC-Q Grade 2 & 3 qualified RF products for automotive applications.

Qorvo offers advanced power amplifiers, low noise amplifiers, high-linearity front-end modules (FEMs), temperature-compensated BAW filters, UWB (ultra-wideband) chipsets providing ultra-low power operation, and low-loss switches for the smart car market.

Qorvo is a core member of the Car Connectivity Consortium (CCC) which adopted UWB for ultra-secure remote car access systems between worldwide smartphones and global car makers.

These products all meet Tier 1 requirements to fully implement RF data stream support for Wi-Fi, SDARS satellite radio, and vehicle-to-vehicle to infrastructure, or to pedestrian (V2X), applications. They also deliver market-leading linearity, dynamic bias performance and high efficiency, with a goal of simplifying and reducing BOM cost and PCB footprint, while improving our customers' reliability and time-to-market.

Creating Future-Proof Cellular IoT Applications

Cellular IoT is one of today's fastest-growing markets, as it offers the opportunity to connect devices using existing cellular networks. Since cellular networks already reach some 90 percent of the world's population, this means greater coverage, availability and range for the IoT. Another benefit is reduced cost, since little additional infrastructure investment is required.

Qorvo applies its expertise in advanced RF technologies to a broad range of cellular IoT solutions, including products for IoT connectivity in devices and base stations. These include low-power RF front-end modules that enable devices to support LTE-M and NB-IoT; dual-mode, system-on-chip (SoC) products for IoT devices; and high-performance, off-the-shelf components – including amplifiers, switches and filters – for base stations.

Together, Qorvo's innovative technology helps pave the way for a wide range of cellular IoT applications:

- **Asset/Logistics Tracking** of objects and people anywhere in the world – even in challenging or remote environments.
- **Smart Cities**, where municipal services such as water supply, lighting and power are connected, monitored and managed proactively.
- **Smart Buildings** that monitor indoor climate, operation of elevators, parking and other essential functions.
- **Smart Homes**, where everything from security systems to washing machines, climate control and entertainment is connected.
- **Gateways –** NB-IoT gateways connected to the cloud provide connectivity in places where wires cannot reach and enable complex processing closer to the edge.

Use Cases for IoT Technologies

Speed	1+ Mbps	~100 kbps	<10 kbps
Example technology	4G	2G, LTE-M	LoRa, SIGFOX, NB-IoT
Spectrum	Licensed	Licensed	Licensed or unlicensed
Example use cases	Smart phone, Connected car, CCTV	Smart grid, Smart watch, High value object tracking	Low value object tracking, Smart meter, Smart parking, Smart street lights

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