Qualcomm

Qualcomm® QCA9379 Wi-Fi/Bluetooth SoC

High performance 2x2 dual-band 802.11ac Wi-Fi with MU-MIMO and *Bluetooth*® 5 radios in a single-chip solution.

QCA9379 combines advanced 2x2 dual-band 802.11ac MU-MIMO Wi-Fi + Bluetooth 5 in a high performance, small form factor System-on-Chip (SoC). Supports enhanced Wi-Fi/Bluetooth co-existence with dedicated (third) antenna for Bluetooth.

Designed to deliver seamless integration of WLAN and Bluetooth Low Energy (LE) technology in a single-chip solution, the QCA9379 SoC offers both low power dual-band (2.4 & 5GHz), 2-stream (2x2), 802.11ac MU-MIMO and Bluetooth 5 technologies.

QCA9379 allows for superior rate-over-range throughput and low-latency performance in real-world operating conditions by incorporating an internal 5GHz power amplifier (PA) with enhanced transmit power.

The dedicated (third) antenna for Bluetooth supports enhanced Wi-Fi/Bluetooth coexistence by allowing Wi-Fi and Bluetooth to operate virtually concurrently.

There are three variants available for QCA9379:

- **QCA9379-1:** supports low power PCIe 2.1 (w/L1 substrate) interface for WLAN and UART/PCM interface for Bluetooth.
- **QCA9379-3:** supports low-power SDIO 3.0 interface for WLAN and UART/PCM interface for Bluetooth
- **QCA9379-7:** Supports USB 2.0 interface for WLAN and USB 1.1 interface for Bluetooth

Highlights

Advanced 802.11ac combo SoC

Advanced 802.11ac features such as MU-MIMO and TX Beamformee to increase network capacity, as well as maximal likelihood (ML) decoding, low-density parity check (LDPC), maximum ratio combining (MRC) for robust link connection.

Internal 5GHz PA with enhanced transmit power

The QCA9379 SoC's higher transmit power allows for superior rate-over-range throughput performance in real-world operating conditions.

Supports dedicated (third) antenna for Bluetooth

The dedicated (third) antenna for Bluetooth supports enhanced Wi-Fi/Bluetooth coexistence by allowing Wi-Fi and Bluetooth to operate virtually concurrently.

QFN Package for low cost solution

The QCA9379 QFN package can be mounted on 4-layer non-HDI PCB, plus low BOM (Build of Material) to provide an overall cost-effective solution.

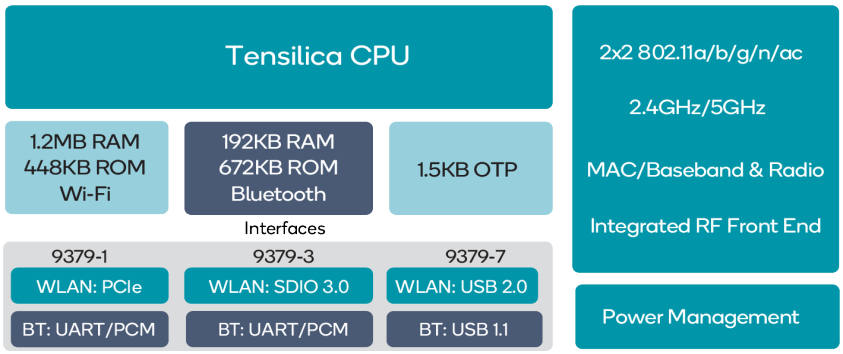
QCA9379 Target Applications

- Internet of Things (IoT)
- OTT/Media Streaming
- Television
- Smart Assistant/Speaker
- Home Automation

Features

- 2x2 802.11ac + Bluetooth 5 in a single SoC
- Supports Bluetooth 5, Bluetooth low energy and is backward compatible with Bluetooth 2.x
- Improved 5GHz transmit performance; reliability over range
- Integrated RF Front End
- Single regulated 3.3V supply operation
- Advanced 11ac features: MU-MIMO, Transmit Beamformee
- Maximal Likelihood (ML) decoding, low-density parity check (LDPC), maximum ratio combining (MRC) for robust link connection
- 256-QAM in 2.4GHz
- PCB friendly: QFN to go on 4-layer FR4 non-HDI PCB

QCA9379 Block Diagram



QCA9379 Specifications

Package	DRQFN-129 10x10
WLAN Technology	802.11ac 2x2
Bluetooth Technology	BT/LE v5.0
Process Node	40nm
Interfaces	**QCA9379-1** WLAN: PCIe P2.1 (w/L1 substrate) Bluetooth: HS-UART/PCM
	QCA9379-3 WLAN: SDIO 3.0 Bluetooth: HS-UART/PCM
	QCA9379-7 WLAN: USB 2.0 Bluetooth: USB 1.1
Antenna Configuration	3-antenna configuration
WLAN Channel Bandwidths	2.4GHz: 20/40 MHz 5GHz: 20/40/80 MHz
WLAN TCP/IP Throughput	620Mbps/600Mbps TCP DL/UL (PCIe2.1) 410Mbps/330Mbps TCP DL/UL (SDIO3.0)
Power Supply	3.3V power supply and 1.8V or 3.3V I/O supply

Ordering Information

Product	Part Number
QCA9379-1	QCA9379-1-129DRQFN
QCA9379-3	QCA9379-3-129DRQFN
QCA9379-7	QCA9379-7-129DRQFN

To learn more visit: qualcomm.com

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