QCA9377 combines advanced 1x1 dual-band 802.11ac MU-MIMO Wi-Fi + Bluetooth 5 in a high performance, low power, small form factor System-on-Chip (SoC).

Designed to deliver superior integration of WLAN and Bluetooth low energy technology in a single-chip solution, the QCA9377 SoC offers both low power dual-band (2.4 & 5GHz), 1-stream (1x1), 802.11ac MU-MIMO and Bluetooth 5.0 technologies.

QCA9377 supports high-speed Wi-Fi connectivity and enriched media experiences for virtually all connected devices and is optimized for energy efficiency, which is critical to extending the battery life of portable devices.

With advanced WLAN/Bluetooth coexistence algorithms, QCA9377 supports superior rate-over-range throughput and low-latency performance in real-world operating conditions.

The QCA9377 SoC is available in three variants:

- QCA9377-3: supports a low-power SDIO 3.0 interface for WLAN and a UART/PCM interface for Bluetooth
- QCA9377-5: Supports a low-power PCIe 2.1 (with L1 sub-state) interfaces for WLAN and a USB 1.1 interface for Bluetooth
- QCA9377-7: supports a low-power USB 2.0 interface for WLAN and a USB 1.1 interface for Bluetooth

Materials are subject to change without notice.
87YB797.1 Rev. E
Features

- 1x 802.11ac + Bluetooth 5 in a single SoC
- Supports Bluetooth 5, Bluetooth low energy and is backward compatible with Bluetooth 2.x
- Single regulated 3.3V supply operation
- Integrated RF Front End, single ended design
- Offloading for minimal host utilization
- Low-density parity check (LDPC) encoding/decoding
- STBC, MU-MIMO, Transmit Beamforming
- 1.5KB OTP to eliminate an external flash
- 256-QAM in 2.4GHz
- PCB friendly: mountable on 4L FR4 non-HDI PCB
- Provides a 48MHz reference clock
- 1216KB RAM and 448KB ROM for Wi-Fi
- 192KB RAM and 672KB ROM for Bluetooth

QCA9377 Specifications

Package
4.32 x 5.46mm, 115-pin WLNSP, 0.566mm pitch

WLAN Technology
1x 802.11 a/b/g/n/ac with advanced features

Bluetooth Technology
Bluetooth 5.0, Bluetooth LE + HS

PCB Footprint (unshielded)<110 mm2

Interfaces

QCA9377-3
WLAN: SDIO 3.0 4b
Bluetooth: UART/PCM

QCA9377-5
WLAN: PCIe 2.1xL1SS
Bluetooth: USB 1.1+LPM/L1

QCA9377-7
WLAN: USB 2.0
Bluetooth: USB+LPM/L1

Antenna Configuration
Single Wi-Fi/Bluetooth antenna

WLAN Channel Bandwidths
20/40/80MHz

WLAN TCP/IP Throughput
USB2.0: up to 260 Mbps
SDIO3.0 4b SDR104: up to 330 Mbps
PCIe 2.1xL1SS: up to 350 Mbps

Power Supply
Regulated 3.3V

QCA9377 Target Applications
- Internet of Things (IoT)
- Smart Appliances
- Wireless Gaming
- Home Automation
- Industrial Automation
- Infotainment

Ordering Information

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<th>Product</th>
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<tr>
<td>QCA9377-3 SOC</td>
<td>QCA9377-3-115WLNSP</td>
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<tr>
<td>QCA9377-5 SOC</td>
<td>QCA-9377-5-115WLNSP</td>
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<tr>
<td>QCA9377-7 SOC</td>
<td>QCA9377-7-115WLNSP</td>
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For additional product information and updates go to: developer.qualcomm.com /get-started/internet-of-things