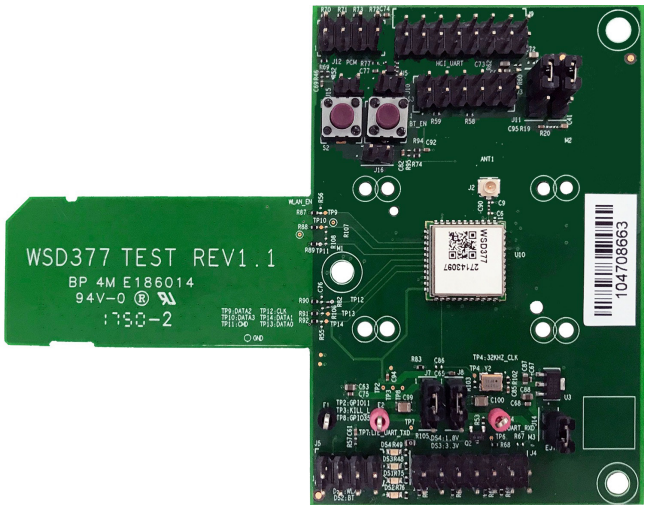
2.4GHz/5GHz WiFi + Bluetooth Module Evaluation Kit

Designed for WLAN/BT and Low-Energy Communications



Model: WSD377 EVK

KEY FEATURES

- Evaluating the WSD377 which is based on the Qualcomm Atheros QCA9377
- WSD377 is a single-die wireless local area network (WLAN) and Bluetooth (BT) combination solution
- Supports 1x1 IEEE 802.11b/g/n at 2.4GHz
- Supports 1x1 IEEE 802.11a/n/ac at 5GHz
- WSD377 provides a highly integrated WLAN system-on-chip (SoC) for 5 GHz 802.11ac, or 2.4 GHz/5 GHz 802.11n WLAN applications
- Supports Bluetooth 4.2 + HS, BLE, and ANT+ and backward compatibility with BT 1.x and BT 2.x + Enhanced Data Rate
- Supports 20/40MHz at 2.4GHz and supports 20/40/80MHz at 5GHz
- Supports multiuser MIMO
- Supports BT-WLAN coexistence and ISM-LTE coexistence
- Supports Dynamic Frequency Selection (DFS)

Specifications

Chipset	QCA9377
Device Variant	QCA9377-3
System Memory	OTP
Host Interface	SMT Pin
Host Interface	SDIO, PCM, UART, JTAG
Operating Voltage	3.3V DC power supply and I/O supply of 1.8V or 3.3V
WLAN Frequency Range	2.412 ~ 2.472 GHz, or 5.180 ~ 5.825 GHz, selectable dual band
Bluetooth Frequency Range	2.402 ~ 2.480 GHz
Power Consumption (Board only)	3.83W (Max)
Modulation Techniques	WiFi: CCK, OFDM - BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM Bluetooth: FHSS, GFSK, DPSK, DQPSK
Temperature Range	Operating: -20°C to 70°C Storage: -40°C to 90°C
Humidity	Operating: 5% to 95% (non-condensing) Storage: Max. 90% (non-condensing)
Dimensions (W x H x D)	101mm x 78mm x 12mm

RF Performance Table for 2.4GHz

	Data Rate	TX Power (per chain)	Tolerance
2.4GHz 802.11b	1Mbps	16dBm	±2dB
	2Mbps	16dBm	±2dB
	5.5Mbps	16dBm	±2dB
	11Mbps	16dBm	±2dB
2.4GHz 802.11g	6Mbps	15dBm	±2dB
	9Mbps	15dBm	±2dB
	12Mbps	15dBm	±2dB
	18Mbps	15dBm	±2dB
	24Mbps	15dBm	±2dB
	36Mbps	15dBm	±2dB
	48Mbps	14dBm	±2dB
	54Mbps	13dBm	±2dB
2.4GHz 802.11n HT20	MCS 0	14dBm	±2dB
	MCS 1	14dBm	±2dB
	MCS 2	14dBm	±2dB
	MCS 3	14dBm	±2dB
	MCS 4	14dBm	±2dB
	MCS 5	14dBm	±2dB
	MCS 6	13dBm	±2dB
	MCS 7	13dBm	±2dB
	MCS 8	13dBm	±2dB
2.4GHz 802.11n HT40	MCS 0	14dBm	±2dB
	MCS 1	14dBm	±2dB
	MCS 2	14dBm	±2dB
	MCS 3	14dBm	±2dB
	MCS 4	14dBm	±2dB
	MCS 5	14dBm	±2dB
	MCS 6	13dBm	±2dB
	MCS 7	13dBm	±2dB
	MCS 8	13dBm	±2dB
	MCS 9	13dBm	±2dB
Bluetooth	1Mbps	8dBm	±2dB
	2Mbps	8dBm	±2dB
	3Mbps	8dBm	±2dB

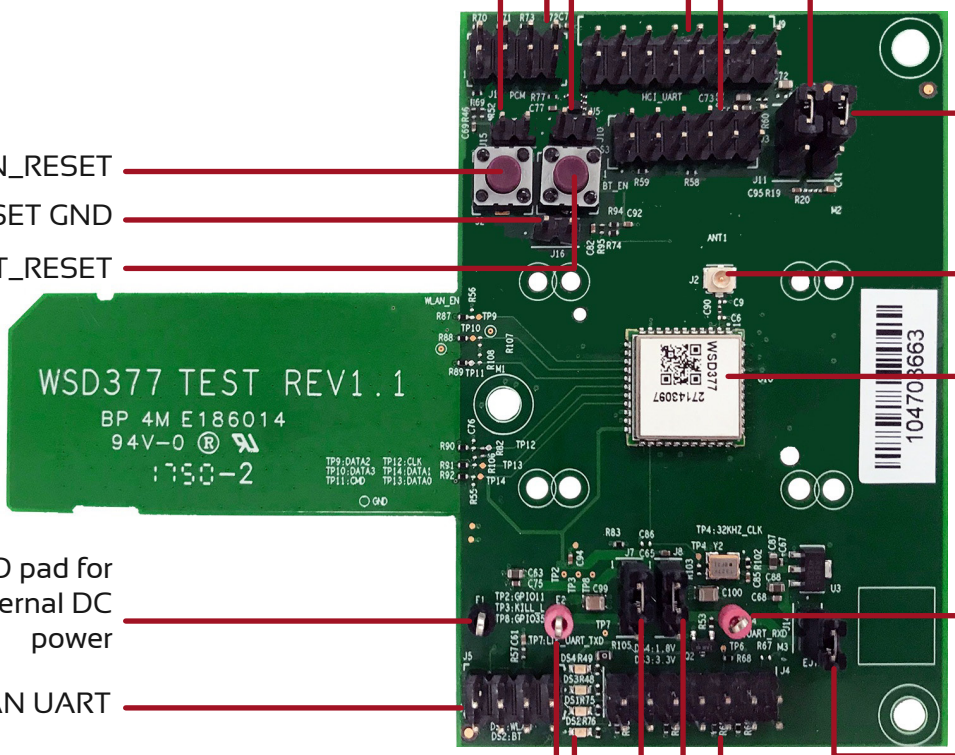
	Data Rate	RX Specifications Sensitivity	Tolerance
2.4GHz 802.11b	1Mbps	-96dBm	±2dB
	2Mbps	-90dBm	±2dB
	5.5Mbps	-88dBm	±2dB
	11Mbps	-87dBm	±2dB
2.4GHz 802.11g	6Mbps	-90dBm	±2dB
	9Mbps	-88dBm	±2dB
	12Mbps	-87dBm	±2dB
	18Mbps	-85dBm	±2dB
	24Mbps	-83dBm	±2dB
	36Mbps	-80dBm	±2dB
	48Mbps	-76dBm	±2dB
	54Mbps	-74dBm	±2dB
2.4GHz 802.11n HT20	MCS 0	-89dBm	±2dB
	MCS 1	-85dBm	±2dB
	MCS 2	-84dBm	±2dB
	MCS 3	-80dBm	±2dB
	MCS 4	-77dBm	±2dB
	MCS 5	-75dBm	±2dB
	MCS 6	-72dBm	±2dB
	MCS 7	-71dBm	±2dB
	MCS 8	-67dBm	±2dB
2.4GHz 802.11n HT40	MCS 0	-89dBm	±2dB
	MCS 1	-85dBm	±2dB
	MCS 2	-84dBm	±2dB
	MCS 3	-80dBm	±2dB
	MCS 4	-76dBm	±2dB
	MCS 5	-72dBm	±2dB
	MCS 6	-70dBm	±2dB
	MCS 7	-69dBm	±2dB
	MCS 8	-65dBm	±2dB
	MCS 9	-64dBm	±2dB
Bluetooth	1Mbps	-92dBm	±2dB
	2Mbps	-92dBm	±2dB
	3Mbps	-85dBm	±2dB

RF Performance Table for 5GHz

	Data Rate	TX Power (per chain)	Tolerance
5GHz 802.11a	6Mbps	11dBm	±2dB
	9Mbps	11dBm	±2dB
	12Mbps	11dBm	±2dB
	18Mbps	11dBm	±2dB
	24Mbps	11dBm	±2dB
	36Mbps	11dBm	±2dB
	48Mbps	10dBm	±2dB
	54Mbps	10dBm	±2dB
5GHz 802.11n/ac VHT20	MCS 0	11dBm	±2dB
	MCS 1	11dBm	±2dB
	MCS 2	11dBm	±2dB
	MCS 3	10dBm	±2dB
	MCS 4	10dBm	±2dB
	MCS 5	10dBm	±2dB
	MCS 6	7dBm	±2dB
	MCS 7	7dBm	±2dB
	MCS 8	7dBm	±2dB
5GHz 802.11n/ac VHT40	MCS 0	10dBm	±2dB
	MCS 1	10dBm	±2dB
	MCS 2	10dBm	±2dB
	MCS 3	9dBm	±2dB
	MCS 4	9dBm	±2dB
	MCS 5	6dBm	±2dB
	MCS 6	6dBm	±2dB
	MCS 7	6dBm	±2dB
	MCS 8	6dBm	±2dB
	MCS 9	6dBm	±2dB
5GHz 802.11ac VHT80	MCS 0	9dBm	±2dB
	MCS 1	9dBm	±2dB
	MCS 2	9dBm	±2dB
	MCS 3	8dBm	±2dB
	MCS 4	8dBm	±2dB
	MCS 5	8dBm	±2dB
	MCS 6	6dBm	±2dB
	MCS 7	6dBm	±2dB
	MCS 8	6dBm	±2dB
	MCS 9	6dBm	±2dB

	Data Rate	RX Specifications Sensitivity	Tolerance
5GHz 802.11a	6Mbps	-91dBm	±2dB
	9Mbps	-89dBm	±2dB
	12Mbps	-88dBm	±2dB
	18Mbps	-86dBm	±2dB
	24Mbps	-82dBm	±2dB
	36Mbps	-79dBm	±2dB
	48Mbps	-74dBm	±2dB
	54Mbps	-73dBm	±2dB
5GHz 802.11n/ac VHT20	MCS 0	-90dBm	±2dB
	MCS 1	-88dBm	±2dB
	MCS 2	-85dBm	±2dB
	MCS 3	-82dBm	±2dB
	MCS 4	-78dBm	±2dB
	MCS 5	-74dBm	±2dB
	MCS 6	-72dBm	±2dB
	MCS 7	-71dBm	±2dB
	MCS 8	-66dBm	±2dB
5GHz 802.11n/ac VHT40	MCS 0	-88dBm	±2dB
	MCS 1	-85dBm	±2dB
	MCS 2	-83dBm	±2dB
	MCS 3	-79dBm	±2dB
	MCS 4	-76dBm	±2dB
	MCS 5	-71dBm	±2dB
	MCS 6	-70dBm	±2dB
	MCS 7	-68dBm	±2dB
	MCS 8	-64dBm	±2dB
	MCS 9	-63dBm	±2dB
5GHz 802.11ac VHT80	MCS 0	-83dBm	±2dB
	MCS 1	-80dBm	±2dB
	MCS 2	-78dBm	±2dB
	MCS 3	-74dBm	±2dB
	MCS 4	-71dBm	±2dB
	MCS 5	-69dBm	±2dB
	MCS 6	-65dBm	±2dB
	MCS 7	-63dBm	±2dB
	MCS 8	-60dBm	±2dB
	MCS 9	-59dBm	±2dB

Component Map



BT PCM

WLAN_RESET
GND

HCI_UART_RXD

BT UART

Boot Strap
/ DEBUG

J11: 3.3V/1.8V DC power option
• 1-2 = 3.3V
• 2-3 = 1.8V

J13: 3.3V/1.8V DC power option
• 1-2 = 3.3V
• 2-3 = 1.8V

WLAN_RESET

BT_RESET GND

BT_RESET

RF Connector

WSD377 Module

GND pad for external DC power

External 1.8V feed point

WLAN UART

LDO 1.8V
If external 1.8V used, open J14.

External 3.3V feed point

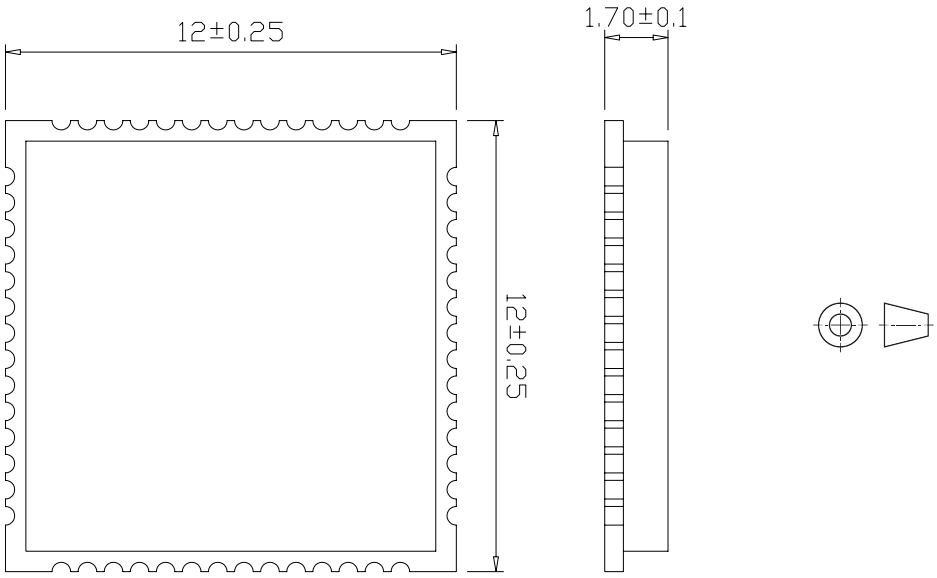
LED array

EJTAG

J7: Internal / External DC power option
• 1-2 = internal DC power
• 2-3 = external DC power

J8: Internal / External DC power option
• 1-2 = internal DC power
• 2-3 = external DC power

Dimensional Drawing



Ordering Configuration

Item Code	Status	Processor	Power Solutions
WSD377 EVAL-R1.1-TE	Sample	QCA9377	SDIO Supply 3.3V DC