

Renesas Wi-Fi Product Portfolio

Renesas		VirtualZero™ Low Power Wi-Fi Solution			Wi-Fi 6/6E Networking				
Part Number		DA16200	DA16200MOD	DA16600MOD	CL8080	CL8060	CL8040	CL8066	CL8046
Product Description		Ultra-Low Power Wi-Fi SoC for Battery-Powered IoT Devices	Ultra-Low Power Wi-Fi Modules for Battery Powered IoT Devices	Ultra-Low Power Wi-Fi + Bluetooth® Low Energy Combo Modules	Wi-Fi 6 Concurrent Dual-Band, Dual Transceiver in a single chip	Wi-Fi 6 Concurrent Dual-Band, Dual Transceiver in a single chip	Wi-Fi 6 Concurrent Dual-Band, Dual Transceiver in a single chip	Wi-Fi 6/6E Concurrent Dual-Band, Dual Transceiver in a single chip	Wi-Fi 6/6E Concurrent Dual-Band, Dual Transceiver in a single chip
TYPE	SoC	•							
	Chip				•	•	•	•	•
	Module		•	•					
TECHNOLOGY	Bluetooth® LE			5.1					
	Wi-Fi	2.4GHz	2.4GHz	2.4GHz	Wi-Fi 6 2.4GHz + 5GHz	Wi-Fi 6 2.4GHz + 5GHz	Wi-Fi 6 2.4GHz + 5GHz	Wi-Fi 6/6E 6GHz + 5GHz	Wi-Fi 6/6E 6GHz + 5GHz
Wi-Fi Features	Wi-Fi Standards	Wi-Fi 6 802.11 802.1 n/g/b/a	Wi-Fi 6 802.11 802.1 n/g/b/a	Wi-Fi 6 802.11 802.1 n/g/b/a	Wi-Fi 6 802.11ax R2 802.11ac/n/g/b/a	Wi-Fi 6 802.11ax R2 802.11ac/n/g/b/a	Wi-Fi 6 802.11ax R2 802.11ac/n/g/b/a	Wi-Fi 6 802.11ax R2 802.11ac/n/g/b/a	Wi-Fi 6 802.11ax R2 802.11ac/n/g/b/a
	Tranceiver				Dual Transceiver - Concurrent Dual Band	Dual Transceiver - Concurrent Dual Band	Dual Transceiver - Concurrent Dual Band	Dual Transceiver - Concurrent Dual Band	Dual Transceiver - Concurrent Dual Band
	Multuser technology				MU-OFDMA, MU-MIMO	MU-OFDMA, MU-MIMO	MU-OFDMA, MU-MIMO	MU-OFDMA, MU-MIMO	MU-OFDMA, MU-MIMO
	Modulation	QAM 64 (MCS 7)	QAM 64 (MCS 7)	QAM 64 (MCS 7)	QAM 1024 (MCS 10, 11)	QAM 1024 (MCS 10, 11)	QAM 1024 (MCS 10, 11)	QAM 1024 (MCS 10, 11)	QAM 1024 (MCS 10, 11)
	Datalink Speed				Up to 6Gbps	Up to 5.4Gbps	Up to 4.8Gbps	Up to 6Gbps	Up to 4.8Gbps
	MIMO Configurations	1x1	1x1	1x1	4T4R+4T4R	2T2R+4T4R	2T2R+2T2R	4T4R+2T2R	4T4R
	Channel Bandwidth	20MHz	20MHz	20MHz	20 / 40 / 80 / 160 MHz (5 GHz) 20 / 40 MHz (2.4 GHz)	20 / 40 / 80 / 160 MHz (5 GHz) 20 / 40 MHz (2.4 GHz)	20 / 40 / 80 / 160 MHz (5 GHz) 20 / 40 MHz (2.4 GHz)	20 / 40 / 80 / 160 MHz	20 / 40 / 80 / 160 MHz
	Interfaces				PCI Express 3.0 Dual Lane	PCI Express 3.0 Dual Lane	PCI Express 3.0 Dual Lane	PCI Express 3.0 Dual Lane	PCI Express 3.0 Dual Lane
Max Connected Clients	8 (SoftAP)	8 (SoftAP)	8 (SoftAP)	512	512	512	512	512	
CORE SYSTEM	CPU	160MHz Arm Cortex-M4F Floating Point	160MHz Arm Cortex-M4F Floating Point	160MHz Arm Cortex-M4F Floating Point 16MHz Arm Cortex-M0+					
	RAM	512kB	512kB	512kB + 48kB					
	ROM OTP	256kB 8kB	256kB 8kB	256kB + 144kB 8kB + 32kB					
	Flash	QSPI Flash	4096kB	4096kB					
	Crystals	40MHz+32kHz	40MHz+32kHz	40/32MHz, 32kHz					
POWER	Internal DCDC	Buck	Buck	Buck					
SECURITY	AES / SHA	256 / 256	256 / 256	256 / 256	AES 256	AES 256	AES 256	AES 256	AES 256
	ECC / TRNG	I/I	I/I	I/I					
	Secure Key Handling	I	I	I					
	WPA/WPA2/WPA3	I	I	I	I	I	I	I	I
	WPA3 Enterprise 192 bit				I	I	I	I	I
RADIO	Frequency	2.4GHz	2.4GHz	2.4GHz	2.4GHz, 5GHz	2.4GHz, 5GHz	2.4GHz, 5GHz	5GHz, 6GHz	5GHz, 6GHz
	Tx Power	19dBm	18dBm	18dBm	External FEM	External FEM	External FEM	External FEM	External FEM
	Rx Sensitivity	98.5dBm	97.5dBm	97.5dBm	External FEM	External FEM	External FEM	External FEM	External FEM
PERIPHERALS	UART/SPI/I2C	3 / 1 / 1	3 / 1 / 1	2 / 1 / 1	0/0/1	0/0/1	0/0/1	0/0/1	0/0/1
	QSPI XiP	1							
	On-the-fly decryption	-							
	eMMC/SD	1	1						
	Timers/PWM/RTC	4/4/1	4/4/1	4/4/1					
	I2S,PCM/PDM	1CH/0	1CH/0	1CH/0					
	ADC	4CH 12b	4CH 12b	4CH 12b					
Temperature sensor	•	•	•						
APPLICATIONS	Appliances	•	•	•					
	Asset Tracking	•	•	•					
	Beacons	•	•	•					
	Consumer Electronics	•	•	•	•	•	•	•	•
	Gaming and AR/VR				•	•	•	•	•
	Headsets and Microphones								
	Industrial Automation	•	•	•	•	•	•	•	•
	Medical and Healthcare	•	•	•					
	MESH networks	•	•	•	•	•	•	•	•
	PC Peripherals	•	•	•					
	Smart Home and Building	•	•	•	•	•	•	•	•
	Wearables	•	•	•					
	Wireless door bells	•	•	•					
	Smart door-locks	•	•	•					
	IoT sensors	•	•	•					
	Home Gateways	•	•	•	•	•	•	•	•
	Multimedia Gateways				•	•	•	•	•
	IoT Gateways	•	•	•	•	•	•	•	•
	Wi-Fi Infrastructure				•	•	•	•	•
	Enterprise/SMB Access Points				•	•	•	•	•
Extenders				•	•	•	•	•	
PACKAGES	Type#Pins (#GPIO) Dimensions	fcCSP72 (15) 3.8x3.8 mm QFN48 (15) 6x6 mm	MOD37 (15) 13.8x22.1 mm	MOD51(16) 14.3x24.3 mm	BGA 11x11 mm	BGA 11x11 mm	BGA 11x11 mm	BGA 11x11 mm	BGA 11x11 mm
	Operating Temperature	-40 to 85 C	-40 to 85 C	-40 to 85 C	-40 to 110 C Case Temp	-40 to 110 C Case Temp	-40 to 110 C Case Temp	-40 to 110 C Case Temp	-40 to 110 C Case Temp
Supply Voltage Range		2.1 to 3.6V	2.1 to 3.6V	2.1 to 3.6V	1.8V Supply Voltage: 1.71 to 1.89 0.9V Supply Voltage: 0.86 to 0.94	1.8V Supply Voltage: 1.71 to 1.89 0.9V Supply Voltage: 0.86 to 0.94	1.8V Supply Voltage: 1.71 to 1.89 0.9V Supply Voltage: 0.86 to 0.94	1.8V Supply Voltage: 1.71 to 1.89 0.9V Supply Voltage: 0.86 to 0.94	1.8V Supply Voltage: 1.71 to 1.89 0.9V Supply Voltage: 0.86 to 0.94
DEVELOPMENT KITS		DA16200MOD PRO	DA16200MOD PRO	DA16600MOD PRO	•	•	•	•	•