Wi-Fi Smart Home Solutions

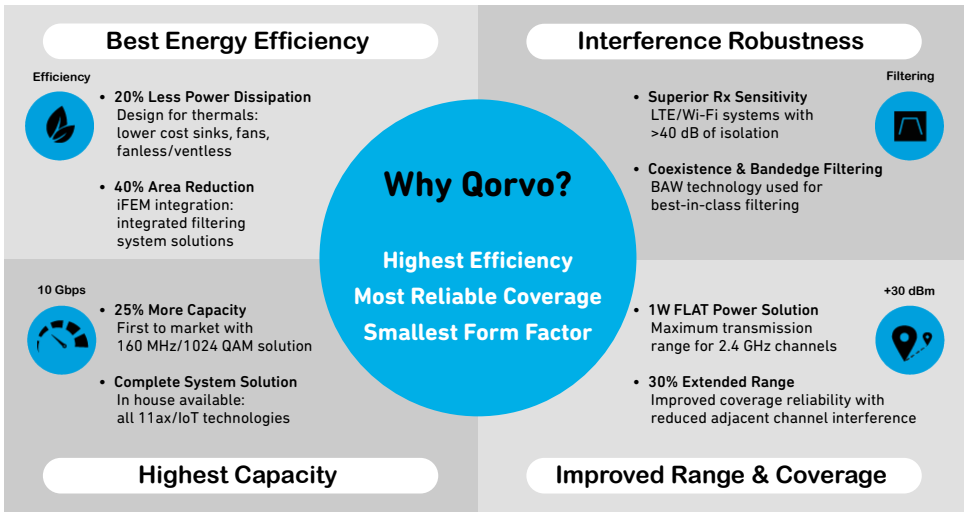
Ultra Low-Power Consumption and High Linearity Wi-Fi Front-End Solutions for Consumer Premise Equipment (CPE), Enterprise, and Connected Home Applications

qorvo®

all around you

Leveraging Qorvo Technologies for Wi-Fi 6 (802.11ax)

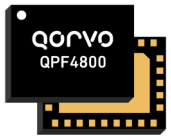
Qorvo® continuously develops a portfolio of leading products for Wi-Fi, always following the newest standards. Products include CPE, enterprise systems and Internet of Things (IoT) applications. We capitalize on our front-end differentiators and focus on reduced power consumption and interference resolution while maintaining high throughput and excellent range. We create the most efficient solutions providing reliable coverage in the smallest form factor.



Wi-Fi 6 and 6E Solutions

Qorvo enables Wi-Fi 6 applications to achieve up to 8x8 MU-MIMO in both conventional and power over ethernet (PoE) systems. Below are highlights from our broad set of solutions. For the full portfolio, visit **www.qorvo.com/innovation/wi-fi**.

Dual-band Front-End Module

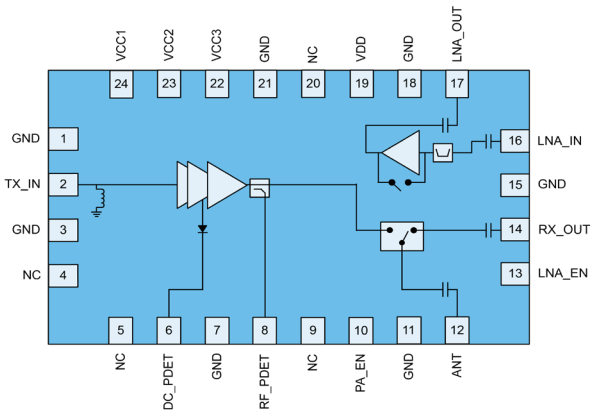


QPF4800: As the industry's first dual-band FEM for Wi-Fi 6, it is ideally suited for customer premise equipment, combining the performance required to deliver HD/4K video with the efficiency for the IoT. It offers superior thermal design, high-linear output power and receive performance in compact dual-band form factor that supports 2.4 and 5 GHz frequency bands.

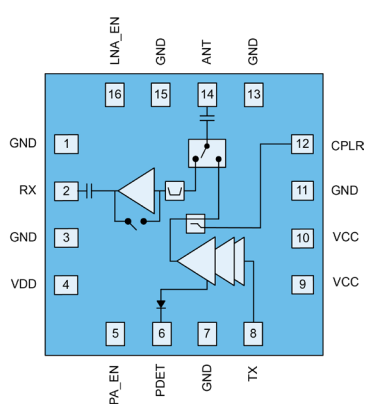
Qorvo enables Wi-Fi 6 applications to achieve up to 8x8 MU-MIMO in both conventional and power over ethernet (PoE) systems.

5 GHz

Functions	V_{CC} (V)	MCS11 -47 dB P_{OUT} (dBm)	MCS11 I_{CC} (mA)	P_{DISS} (W)	MCS11 -43 dB P_{OUT} (dBm)	MCS11 I_{CC} (mA)	MCS9 -35 dB P_{OUT} (dBm)	MCS9 I_{CC} (mA)	MCS7 -30 dB P_{OUT} (dBm)	MCS7 I_{CC} (mA)	MCS0 P_{OUT} (dBm)	Tx Gain (dB)	Noise Figure (dB)	Rx Gain (dB)	Bypass Loss (dB)	2.4 GHz Rej (dB)	Package (mm)	Part Number
PA+SW+ LNA+CPLR	5	16	195	0.98	18	215	23	290	24	320	26	33	2	16	7	30	5x3	QPF4588
PA+SW+ LNA+CPLR	3.3	12.5	120	0.40	15	135	18	155	19	165	21	30	2	15	7	35	3x3	QPF4528



QPF4588



QPF4528

2.4 GHz

Functions	V_{CC} (V)	MCS11 -47 dB P_{OUT} (dBm)	MCS11 I_{CC} (mA)	P_{DISS} (W)	MCS11 -43 dB P_{OUT} (dBm)	MCS11 I_{CC} (mA)	MCS9 -35 dB P_{OUT} (dBm)	MCS9 I_{CC} (mA)	MCS7 -30 dB P_{OUT} (dBm)	MCS7 I_{CC} (mA)	MCS0 P_{OUT} (dBm)	Tx Gain (dB)	Noise Figure (dB)	Rx Gain (dB)	Bypass Loss (dB)	5 GHz Rej (dB)	Package (mm)	Part Number
PA+SW+ LNA+CPLR	5	16	235	1.18	19	275	24.5	375	26	450	28	33	1.8	15.5	7	11	5x3	QPF4288
PA+SW+ LNA+CPLR	3.3	13	110	0.36	14	120	17	140	18	150	21	33	2.2	15	7	15	3x3	QPF4228

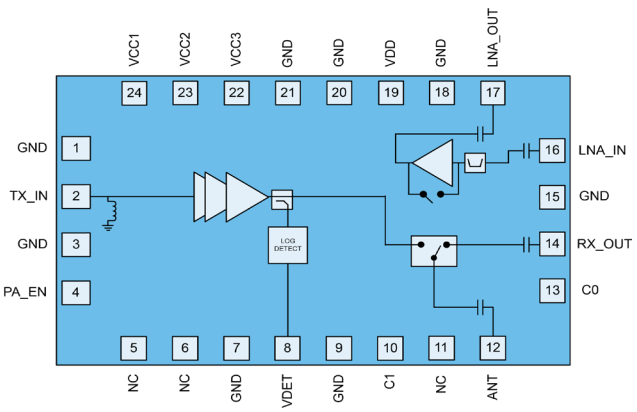
Enabling 160 MHz channels for 4x4 MIMO Wi-Fi 6 systems.

5 GHz

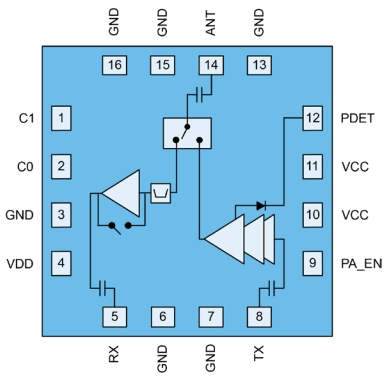
Functions	V_{CC} (V)	MCS11 -43 dB P_{OUT} (dBm)	MCS9 I_{CC} (mA)	P_{DISS} (W)	MCS9 -35 dB P_{OUT} (dBm)	MCS9 I_{CC} (mA)	MCS7 -30 dB P_{OUT} (dBm)	MCS7 I_{CC} (mA)	MCS0 P_{OUT} (dBm)	Tx Gain (dB)	Noise Figure (dB)	Rx Gain (dB)	Bypass Loss (dB)	2.4 GHz Rej (dB)	Package (mm)	Part Number
PA+SW+LNA	5	17	200	1.00	23	285	24	310	27	33	2	15	6	35	5x3	QPF4516B
PA+SW+LNA	5	15	150	0.75	21	200	23	230	25	30	1.7	13.5	6	28	3x3	QPF4506B

2.4 GHz

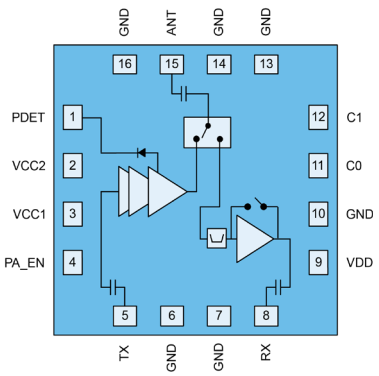
Functions	V_{CC} (V)	MCS11 -43 dB P_{OUT} (dBm)	MCS9 I_{CC} (mA)	P_{DISS} (W)	MCS9 -35 dB P_{OUT} (dBm)	MCS9 I_{CC} (mA)	MCS7 -30 dB P_{OUT} (dBm)	MCS7 I_{CC} (mA)	MCS0 P_{OUT} (dBm)	Tx Gain (dB)	Noise Figure (dB)	Rx Gain (dB)	Bypass Loss (dB)	5 GHz Rej (dB)	Package (mm)	Part Number
PA+SW+LNA	5	18	280	1.4	24	340	25	365	26	32	1.8	15.5	7	15	5x3	QPF4216B
PA+SW+LNA	5	19	230	1.15	21	260	22.5	280	25	33	2.1	15	6	25	3x3	QPF4206B



QPF4516B



QPF4506B



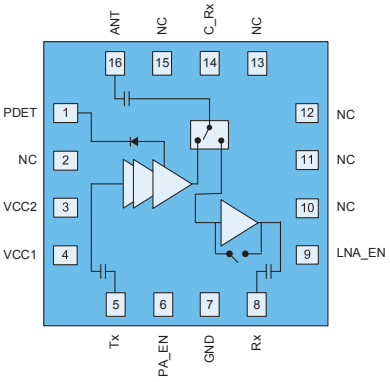
QPF4206B

5 GHz

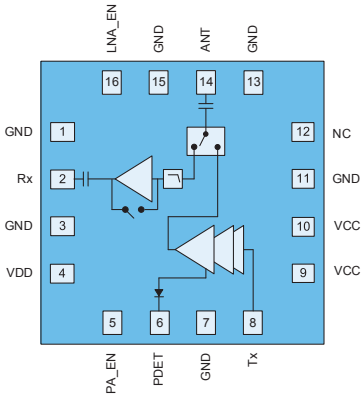
Functions	V_{CC} (V)	MCS11 -43 dB P_{OUT} (dBm)	MCS9 I_{CC} (mA)	P_{DISS} (W)	MCS9 -35 dB P_{OUT} (dBm)	MCS9 I_{CC} (mA)	MCS7 -30 dB P_{OUT} (dBm)	MCS7 I_{CC} (mA)	MCS0 P_{OUT} (dBm)	Tx Gain (dB)	Noise Figure (dB)	Rx Gain (dB)	Bypass Loss (dB)	2.4 GHz Rej (dB)	Package (mm)	Part Number
PA+SW+LNA	5	21	250	1.25	23	280	25	350	27	34	2	15	6	35	5x3	QPF4520
PA+SW+LNA	5	17	165	0.83	21	210	22	220	25	31	2.1	15	7.5	20	2.5x2.5	QPF4550
PA+SW+LNA	3.3	15	135	0.45	18	155	19	165	21	30	2	15	7	37	3x3	QPF4530

2.4 GHz

Functions	V_{CC} (V)	MCS11 -43 dB P_{OUT} (dBm)	MCS9 I_{CC} (mA)	P_{DISS} (W)	MCS9 -35 dB P_{OUT} (dBm)	MCS9 I_{CC} (mA)	MCS7 -30 dB P_{OUT} (dBm)	MCS7 I_{CC} (mA)	MCS0 P_{OUT} (dBm)	Tx Gain (dB)	Noise Figure (dB)	Rx Gain (dB)	Bypass Loss (dB)	2.4 GHz Rej (dB)	Package (mm)	Part Number
PA+SW+LNA	5	22	320	1.6	24.5	370	25.5	385	27	32	1.8	15	7	19	5x3	QPF4220
PA+SW+LNA	5	19	230	1.15	21	260	22.5	280	25	33	2.1	15.5	6	25	3x3	QPF4200
PA+SW+LNA	3.3	14	120	0.4	17	140	18	150	21	33	2.2	15	7	15	3x3	QPF4230



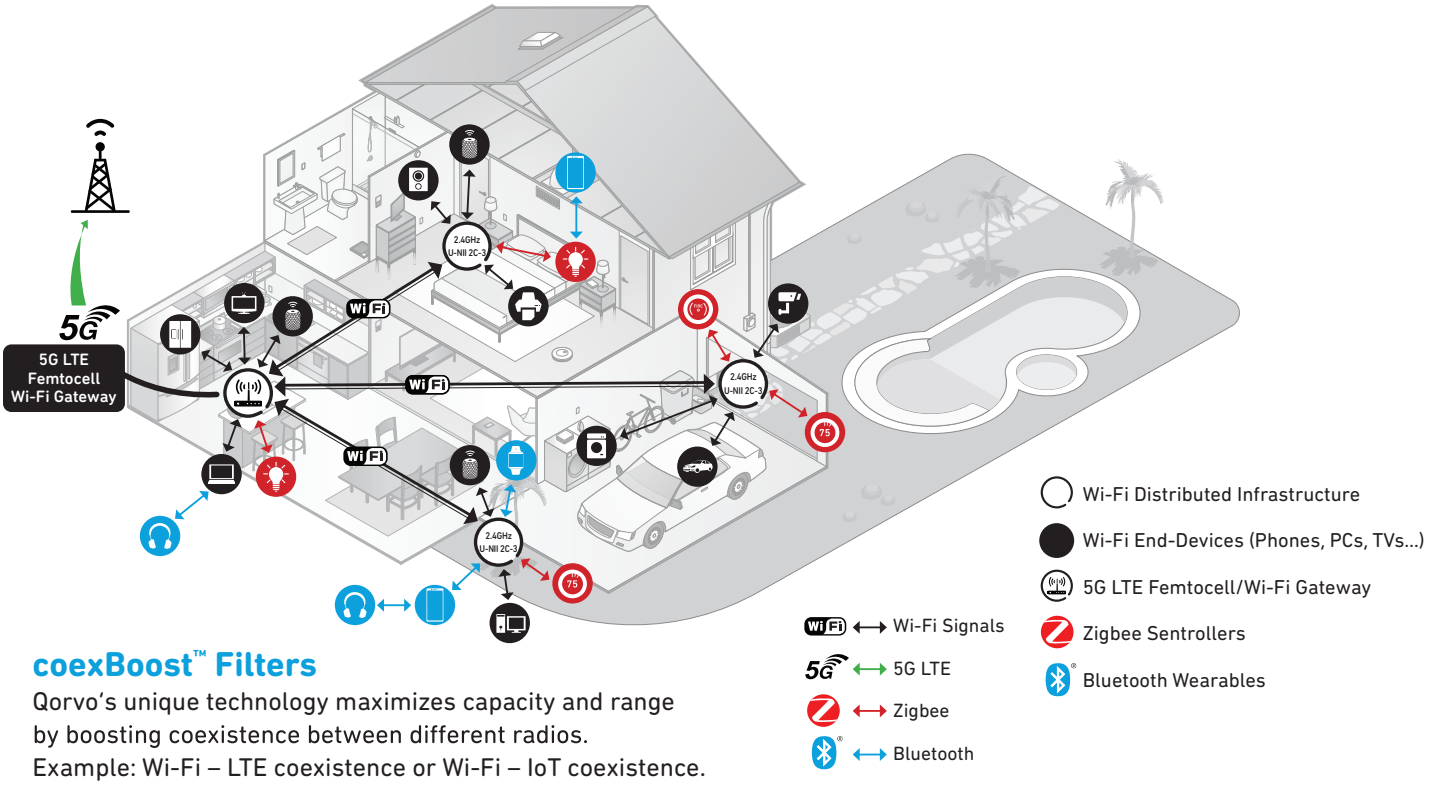
QPF4200



QPF4230
QPF4530

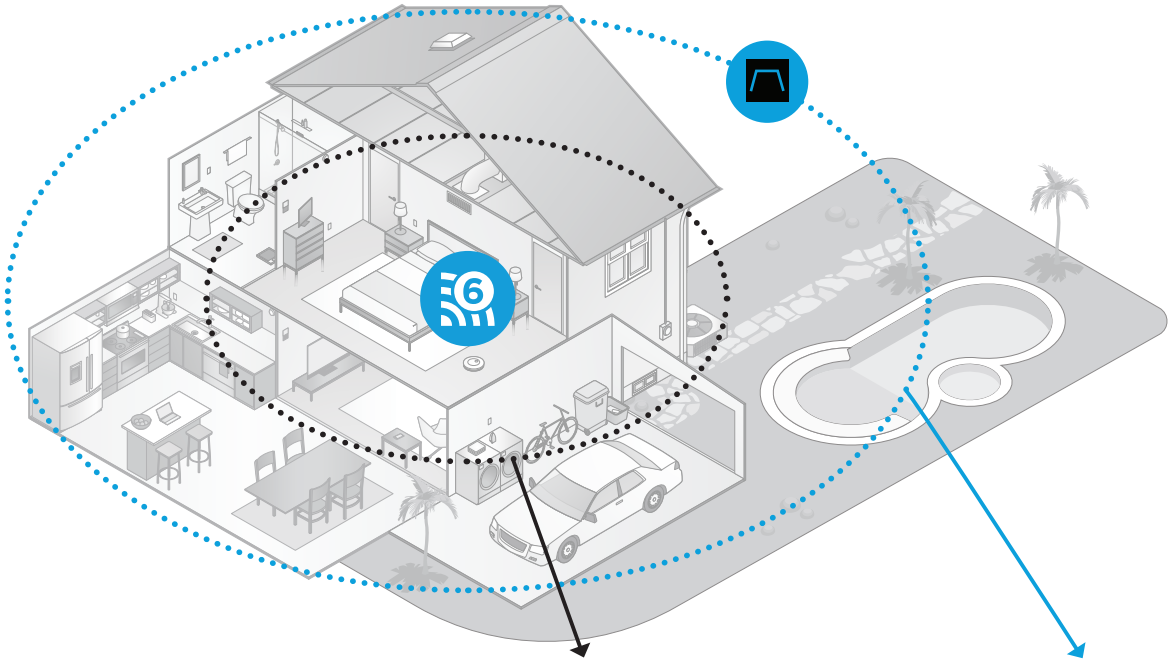
Wi-Fi Advanced Filter Solutions

Qorvo creates the most efficient RF solutions using Bulk Acoustic Wave (BAW) technology providing reliable coverage in the smallest form factor. For more information on our filtering solutions, download our whitepaper at www.qorvo.com/innovation/wi-fi.



coexBoost™ Filters

Qorvo's unique technology maximizes capacity and range by boosting coexistence between different radios.
Example: Wi-Fi – LTE coexistence or Wi-Fi – IoT coexistence.



edgeBoost™ Filters

Qorvo's unique flat-power capability maximizes capacity and range by maximizing output power at channels close to the band edge.

Typical 2 GHz high power FEM coverage range

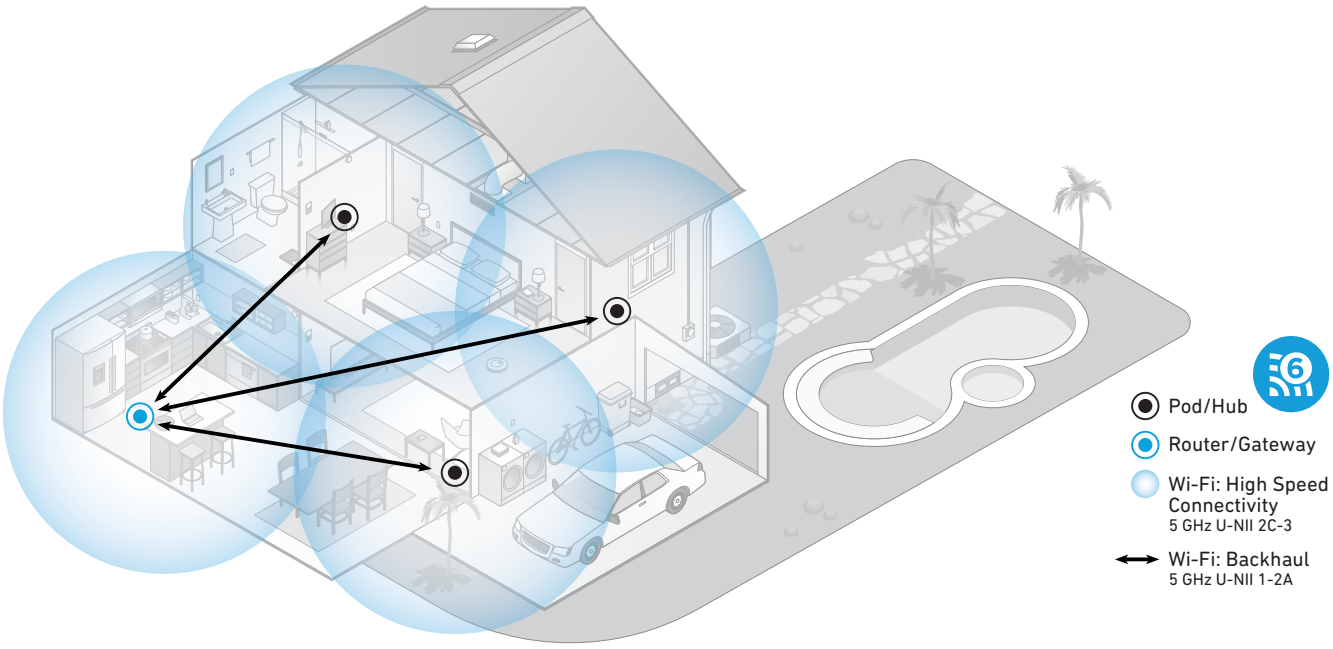
10 dB back-off to meet FCC

100 mWatt	1 Watt	100 mWatt
CH1	Wi-Fi CH2-10	CH11

78% more range with Qorvo's edgeBoost BAW for FCC bandedge

Max power across all channels

1 Watt	1 Watt	1 Watt
CH1	Wi-Fi CH2-10	CH11



bandBoost™ Filters

Qorvo's unique technology maximizes capacity and range by boosting band isolation such as in tri-band mesh (distributed) Wi-Fi systems.

Integrated Front-End Modules (iFEM)

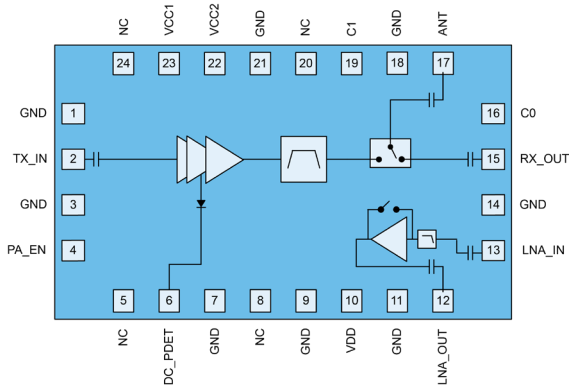
Using Qorvo Wi-Fi BAW filtering, customers can achieve regulatory bandedge compliance at higher power levels across all channels. This enables applications to maximize range, opt to work at lower power levels and reduce the number of MIMO chains needed to achieve maximum allowed power.

New to the portfolio are:

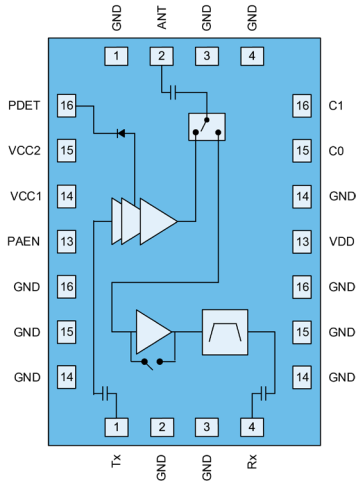
QPF7551: The iFEM integrates a 5 GHz power amplifier (PA), UNII1- 2a bandBoost BAW filter, single pole two throw switch (SP2T) and bypassable low noise amplifier (LNA) into a single device.

QPF7552: The high-power iFEM integrates a 5 GHz power amplifier (PA), UNII2c3 bandBoost BAW filter, single pole two throw switch (SP2T) and bypassable low noise amplifier (LNA) into a single device.

Functions	Std	V_{CC} (V)	MCS11 -43 dB P_{OUT} (dBm)	MCS11 I_{CC} (mA)	P_{DISS} (W)	MCS9 -35 dB P_{OUT} (dBm)	MCS9 I_{CC} (mA)	MCS7 -30 dB P_{OUT} (dBm)	MCS7 I_{CC} (mA)	MCS0 P_{OUT} (dBm)	Tx Gain (dB)	Noise Figure (dB)	Rx Gain (dB)	Bypass Loss (dB)	5 GHz Rej (dB)	Package (mm)	Part Number
PA+FCC BE FLTR+SW+LNA	Wi-Fi 6	5	18.5	225	1.12	22	350	23	370	25	31	2	15	6	20	5x3	QPF7219
PA+SW+ LNA+LTE COEX FLTR	Wi-Fi 6	5	18	240	1.2	21	280	22	320	24	34	2.2	15	10.5	>35	3x4.5	QPF7221
PA+FCC BE FLTR+SW+LNA+ LTE COEX FLTR	Wi-Fi 4	5	–	–	–	Wi-Fi CH1-11		25	650	25	37	2	12	8	>30	8x5.5	QPF7200
						Wi-Fi CH12-13		20	435	20	38						



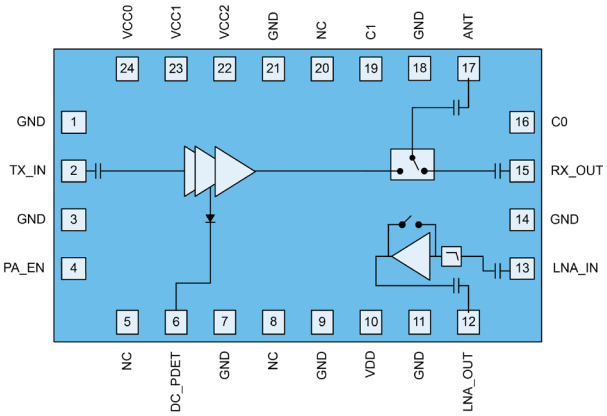
QPF7219



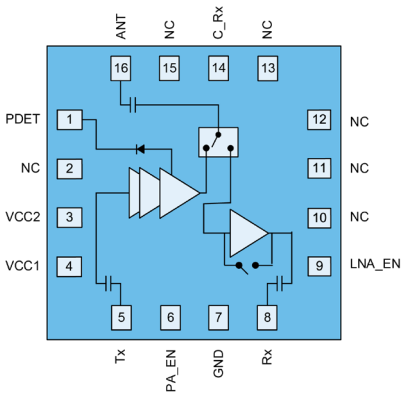
QPF7221

2.4 GHz Front-End Modules

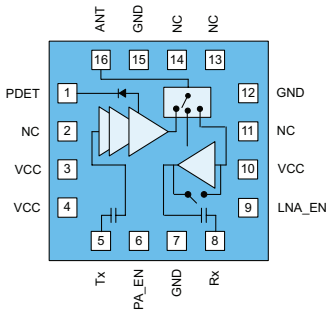
Functions	Std	V_{CC} (V)	MCS9 -35 dB P_{OUT} (dBm)	MCS9 I_{CC} (mA)	P_{DISS} (W)	MCS7 -30 dB P_{OUT} (dBm)	MCS7 I_{CC} (mA)	MCS0 P_{OUT} (dBm)	Tx Gain (dB)	Noise Figure (dB)	Rx Gain (dB)	Bypass Loss (dB)	5 GHz Rej (dB)	Package (mm)	Part Number
PA+SW+LNA	Wi-Fi 5	5	24.5	360	1.8	25.5	375	27	33	1.8	16	7	19	5x3	QPF4219
PA+SW+LNA	Wi-Fi 6	5	21	255	1.28	22.5	275	25	33	2.1	15	6	25	3x3	QPF4200
PA+SP3T+LNA	Wi-Fi 5	3.3	18.5	220	0.73	20	235	22	29	2.5	15	7	13	3x3	RFFM4251
PA+SW+LNA	Wi-Fi 6	3.3	17	145	0.48	18	150	21	33	2.2	14	7	12	3x3	QPF4230
PA+SP3T+LNA	Wi-Fi 4	3.3 5	– –	– –	– –	19 21.5	230 260	21 23	27	2.3	13	7.5	10	3x3	RFFM4203
PA+SW+LNA+SW	Wi-Fi 5	3.3	17.5	190	0.63	19	205	22	29	2	13	5	9.5	2.3x2.3	QPF8248
PA+SP3T+LNA	Wi-Fi 5	3.3	18	195	0.64	19	205	22	28	2.4	15	1.5	–	2.3x2.3	RFFM8228P
PA+SP3T+LNA	Wi-Fi 4	3.6	–	–	–	20	195	21	27	2.5	12	6	10	2.5x2.5	RFFM8211



QPF4219



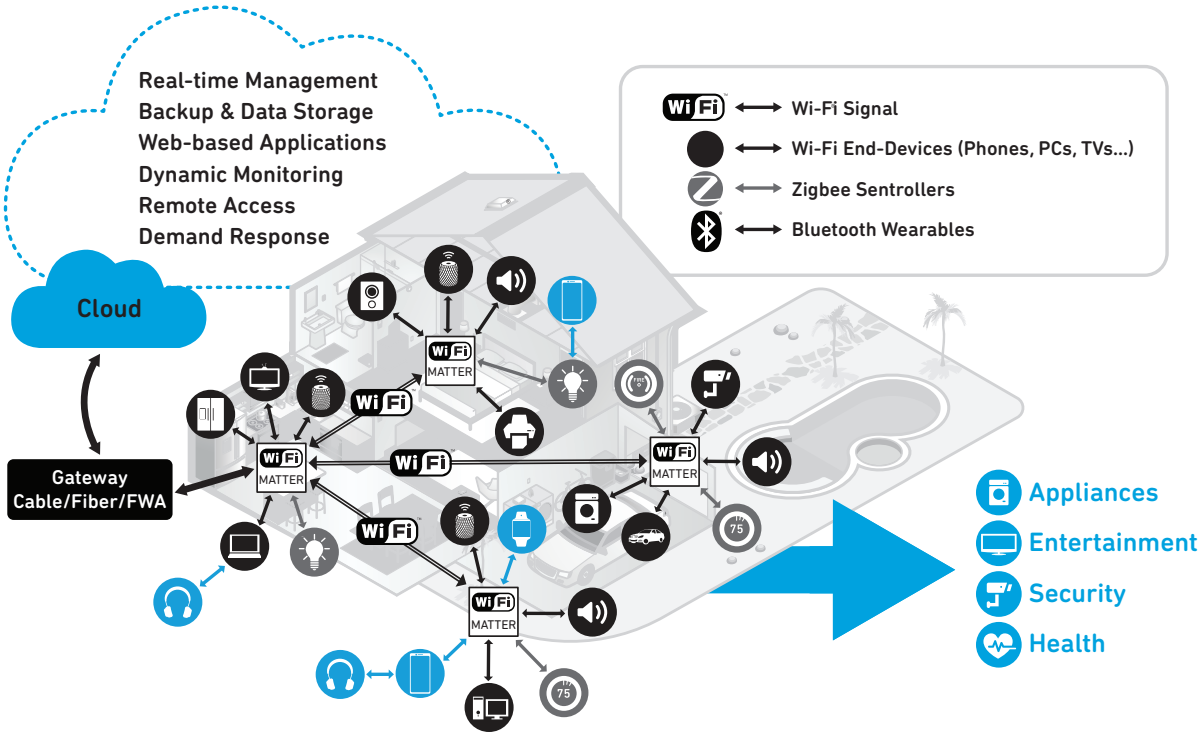
QPF4200



QPF8248

Distributed Wi-Fi for the Smart Home

Distributed Wi-Fi, or Wi-Fi Mesh, allows full home coverage. A single pod positioned in each room increases Wi-Fi range and capacity, and also relays for other IoT wireless communication standards.



Our Wi-Fi solutions enable the backbone of smart home communications. Latest generation Wi-Fi protocols, securing dedicated data traffic links for backhaul and client communications ensure full home coverage with maximum download and upload speeds – satisfying full household usage for all simultaneous applications. Qorvo provides Wi-Fi front-end solutions that offer advanced filtering solutions and multi-protocol SoC and transceiver solutions for Bluetooth® Low Energy, Thread and Zigbee and coming soon - Matter. Learn more about our ConcurrentConnect™ technology and simplified meshing for whole-home coverage at **www.qorvo.com/smarthome**.

QPG7015M

Application	Smart Home Gateways
Protocols	802.15.4, Zigbee 3.0, Zigbee rf4ce, Zigbee Green Power, OpenThread, Bluetooth Low Energy 5.0
Multi-Stack	Yes
Multi-Channel Listening	Yes
Power	+10 dBm, +20 dBm
Type	Transceiver

QPG6095

Application	Smart Home Devices
Protocols	802.15.4, Zigbee 3.0, Zigbee Green Power, Thread, Bluetooth Low Energy
Multi-Stack	Yes
Multi-Channel Listening	Yes
Power	+10 dBm
Type	System on Chip

www.qorvo.com
For more information on Wi-Fi solutions, visit www.qorvo.com/cpe