

# Industrial, Scientific & Medical (ISM) Radio Band

Single Chip Integrated FEMs for High-Performance ISM Band Applications



**qorvo**<sup>TM</sup>  
all around you

# ISM Band Front-End Modules

The Qorvo portfolio of single-chip integrated Front-End Modules (FEMs) is developed for high-performance ISM band applications in the 433MHz, 868/915MHz and 2.4GHz to 2.5GHz ISM bands. The RFFM69xx, RFFM65xx, RFFM64xx and RFFM62xx series are specifically designed to address the need for aggressive size reduction in a typical front end design and offer a reduced footprint and minimized component count, outside of the core chipset.

Each of our ISM band front-end modules include harmonic filtering that meets or exceeds the RF front end needs for ISM bands. All front-end modules are fully DC and RF-tested.



## Features

- Integrated PA, Tx harmonic filtering, LNA and switches
- High power: up to >2W
- High gain: 28 to 31 dB
- High efficiency: >55%
- Advanced module packaging

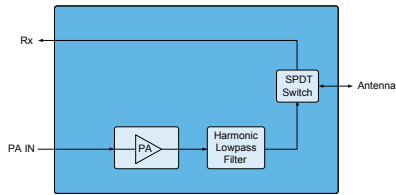
## Applications

- Wireless microphones
- Security key fobs
- Smart energy
- Automatic Metering Infrastructure (AMI)
- Alarm systems
- Home Area Network (HAN)
- Dog collars

## Specifications

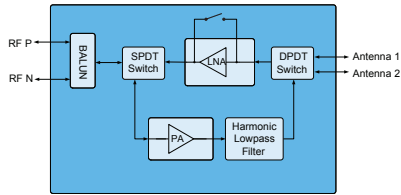
Freq Range (MHz)	Architecture	Gain (dB)	Average P <sub>OUT</sub> (dBm)	V <sub>CC</sub> (V)	Current at P <sub>OUT</sub> (mA)	Package (mm)	Part Number
405 to 475	PA, SP3T, SP2T, LNA	20.0	30.0	2.5 to 4.2	1250	6x6x1.2	RFFM6403
408 to 455	PA, SP3T, SP2T, LNA	25.0	31	2.5 to 4.2	825	6x6x0.975	RFFM6406
430 to 450	PA, SP2T, LNA	25.0	27.5	2.5 to 4.5	350	6x6x0.975	RFFM6404
433 to 470	PA, SPDT	15.0	30.0	3.3 to 4.0	700	5x5.5x1.2	RF6504
433 to 470	PA, SP2T	30.0	30.0	3.3 to 4.0	750	5x5.5x1.2	RFFM6401
470 to 510	PA, SPDT	15.0	30.0	3.3 to 4.0	800	5x5.5x1.2	RF6514
902 to 928, 868	LNA, DP2T	14.0	-	3.3 to 4.0	8	4x3 LGA	RFFM6909
902 to 928, 868	PA, DP2T	16.5	20.0	3.3 to 4.0	90	5x5.5x1.2	RF6539
902 to 928, 868	PA, DP2T	16.5	26.0	3.3 to 4.0	215	5x5.5x1.2	RF6599
902 to 928, 868	PA, SP2T, DP2T, LNA	30.0	26.0	3.3 to 5.0	225	5x5.5x1	RF6519
902 to 928, 868	PA, DP2T, SP2T, LNA	30.0	27.0	2.7 to 4.4	215	6x6x1.2	RF6549
902 to 928, 868	PA, SP2T	14.0	30.0	3.1 to 3.8	850	5x5.5x1.2	RF6569
902 to 928, 868	PA, SP3T, SP2T, LNA	25.0	30.0	2.5 to 4.2	850	6x6x1.2	RFFM6903
902 to 928, 868	PA, DP2T, LNA	27.0	30.0	3.1 to 3.8	750	5x5.5x1.2	RFFM6906
902 to 928, 868	PA, DP2T, LNA	30.0	30.0	2.8 to 4.2	600	6x6x1.2	RFFM6901
902 to 928, 868	PA, DP2T	13.0	30.5	2.8 to 4.0	550	5x5.5x1.2	RFFM6907
902 to 928, 868	PA, LNA, SP2T, SP3T	20.0	30.5	3.6	650	6x6x0.975	RFFM6900
2400 to 2500	PA, SP3T x 2, LNA	15.0	13.0	2.0 to 4.0	20	2.5x2.5x0.4	RFFM6204
2400 to 2500	PA, SP3T x 2, LNA	12.0	14.0	2.0 to 4.0	20	2.5x2.5x0.4	RFFM6205
2400 to 2500	PA, SP2T, DP2T, LNA	25.0	18.0	2.0 to 3.6	70	5x5x1	RF6555
2400 to 2500	PA, SP2T	28.0	20.0	2.85 to 4.2	160	3.5x3.5x0.5	RF6515
2400 to 2500	PA, DP2T, LNA	28.0	20.0	3.0 to 4.2	160	3.5x3.5x0.5	RF6525
2400 to 2500	PA, DP2T, SPDT	28.0	20.0	3.0 to 3.6	160	3.5x3.5x0.5	RF6545
2400 to 2500	PA, DPDT, SPDT, LNA	28.0	20.0	3.0 to 3.6	160	3.5x3.5x0.5	RF6575
2400 to 2500	PA, DP2T, LNA	28.0	22.0	3.0 to 4.2	210	3.5x3.5x0.5	RF6535
2400 to 2500	PA, SP2T, DP2T, LNA	25.0	23.0	2.0 to 3.6	175	5x5x1	RFFM6201
2400 to 2500	PA, SP3T, LNA	30.0	23.0	3.0 to 4.5	230	3x3x0.5	RF5745
2400 to 2500	PA, SP2T, DP2T, LNA	28.0	27.0	3.2 to 4.2	500	3.5x3.5x0.6	RF6505

\* At PA OUT



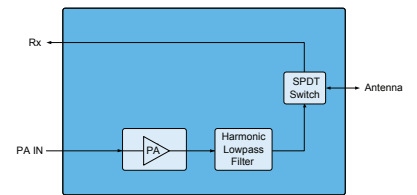
### RF6504

PA, Tx filtering, SPDT switch



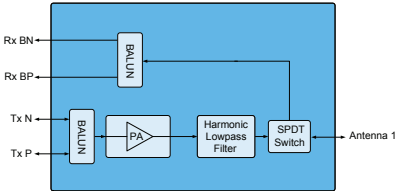
### RF6505

PA, Tx filtering, LNA w/bypass, SPDT/DPDT switch



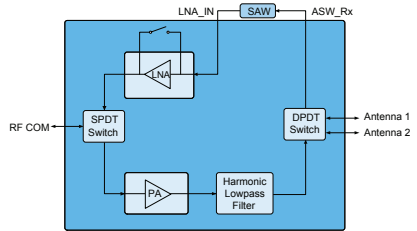
### RF6514

PA, Tx filtering, SPDT switch



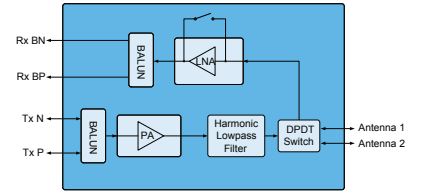
### RF6515

PA, Tx filtering, SPDT switch



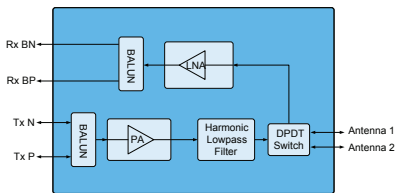
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PA, Tx filtering, LNA w/bypass, SPDT/SPDT switch



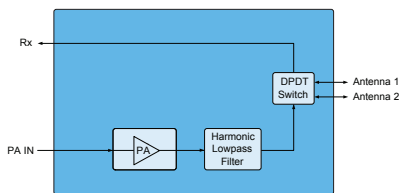
### RF6525

PA, Tx filtering, LNA w/bypass, DPDT switch



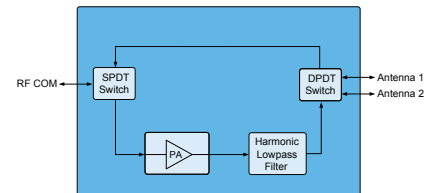
### RF6535

PA, Tx filtering, LNA, DPDT switch



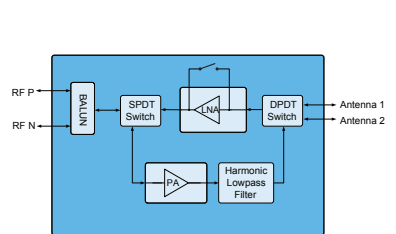
### RF6539

PA, Tx filtering, SPDT switch



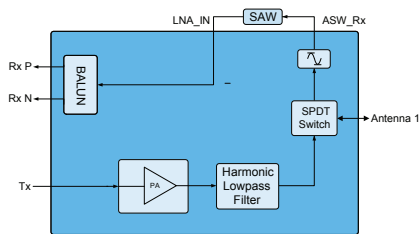
### RF6545

PA, Tx filtering, SPDT/DPDT switch



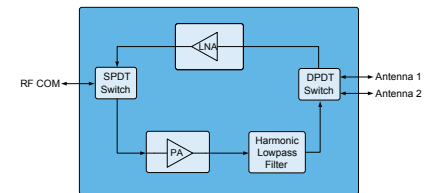
### RF6555

PA, Tx filtering, LNA w/bypass, SPDT/DPDT switch



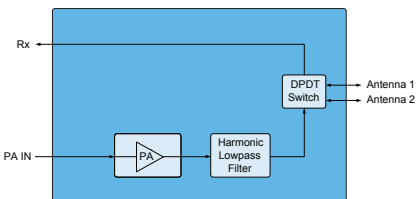
### RF6569

PA, Tx filtering, Tx/Rx SPDT switch, Rx balun



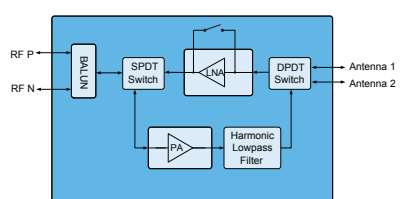
### RF6575

PA, Tx filtering, LNA, SPDT/DPDT switch



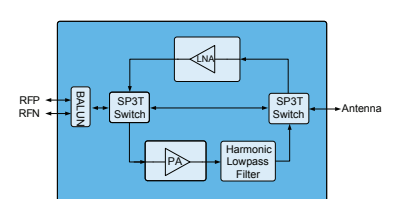
### RF6599

PA, Tx filtering, Tx/Rx DPDT switch



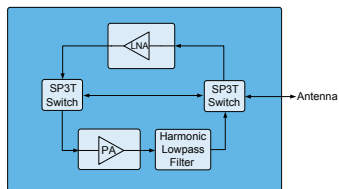
### RFFM6201

PA, Tx filtering, LNA w/bypass, SPDT/DPDT switch



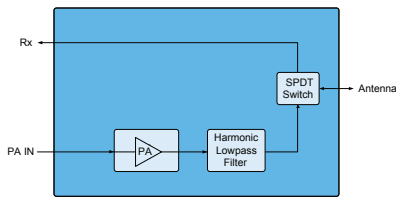
### RFFM6204

PA, Tx filtering, LNA, thru path and 2x SP3T



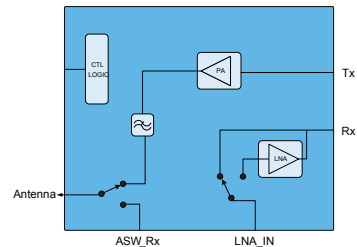
### RFFM6205

PA, Tx filtering, LNA, thru path and 2x SP3T



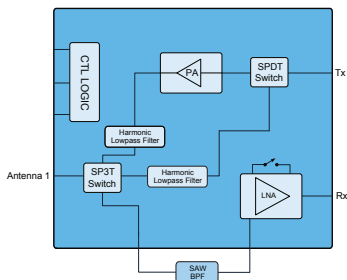
### RFFM6401

PA, Tx filtering, SPDT switch



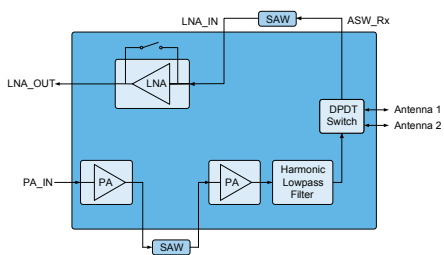
### RFFM6404

PA, Tx filtering, LNA w/bypass, SPDT switch



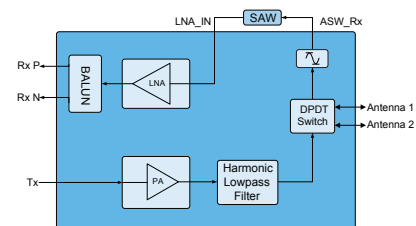
### RFFM6900

PA, Tx filtering, Tx thru path, LNA w/bypass, SPDT/SP3T switch



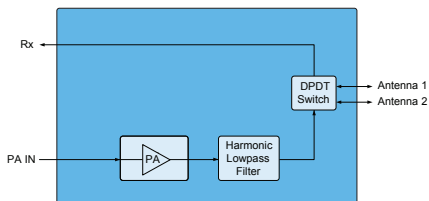
### RFFM6901

PA, Tx filtering, LNA w/bypass, DPDT switch



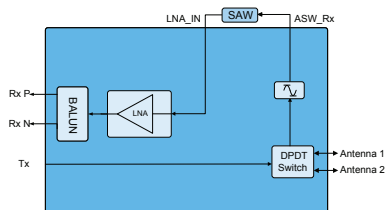
### RFFM6906

PA, Tx filtering, LNA w/limiter, DPDT switch



### RFFM6907

PA, Tx filtering, Tx/Rx, DPDT switch



### RFFM6909

LNA, Rx balun, and Tx/Rx SPDT switch