

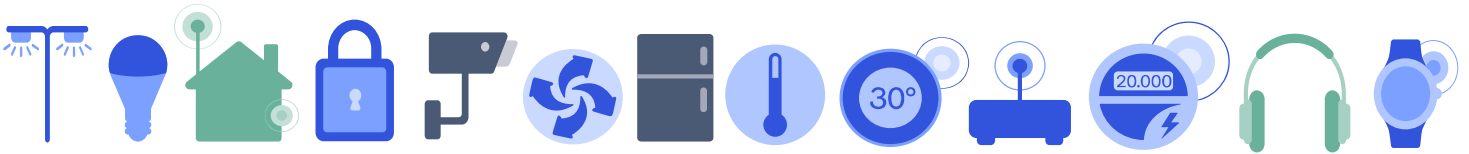
Product Guide: SAW / BAW Filters for non-cellular based IoT, Industrial and Consumer Applications

Web: www.rffe.qualcomm.com

Our SAW and BAW filters are designed for spectrum challenging applications. With their small packaging footprint as small as 0.9 mm x 0.7 mm they can easily be incorporated into the smallest applications. There are two reliability grades available, for consumer grade and industrial grade applications. Industrial grade filters are optimized for harsh environments like high temperature and humidity.

Wireless IoT standards: Short range and LP-WAN like LoRa®, Sigfox, Wifi, Bluetooth, Zigbee, Z-Wave, HaLow, Wi-SUN, OMS®

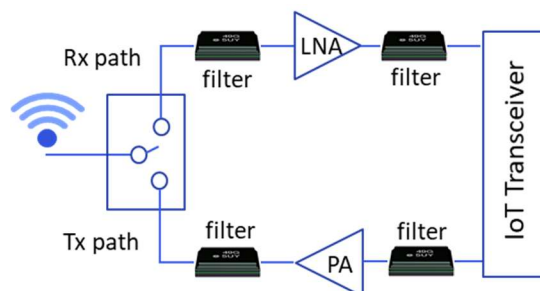
Application examples: Smart metering, energy control, home comfort, temperature control, thermostat, air conditioning, security, surveillance, smoke detector, (street) lighting, small and white good appliance, remote control, traffic control systems (e.g. parking spot detection, traffic light control), etc.



Features and qualification of RF360 filters:

Test criteria	For consumer grade applications	For industrial grade applications
Package size [mm x mm]	0.9x0.7 to 1.5x1.1	1.1x0.9 to 1.5x1.1
Frequency spectrum	169.5 MHz to 2.4 GHz	
Temperature cycling	100 cycles @ -40 °C to +85 °C	1000 cycles @ -40 °C to +85 °C / 95 °C / 105 °C / 125 °C
Biased or static humidity @ 85 °C, 85% rel. humidity	168 hours	1000 hours
High temperature exposure	125 °C, 96 hours	up to 145 °C, 1000 hours up to 135 °C, 1200 hours with RF power
Application area	consumer devices, indoor	devices in harsh environment, outdoor

Example of an IoT front end design:



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Product Range:

Pass Band [MHz]				Package Size [mm x mm]			Top, max [°C]	Comment		
Lower Frequency [MHz]	Center Frequency [MHz]	Upper Frequency [MHz]	Bandwidth [MHz]	0.9 x 0.7 ¹⁾ 1.1 x 0.9	1.4 x 1.1	3.0 x 3.0 5.0 x 5.0 ²⁾				
169,40	169,50	169,60	0,2			B3942 ²⁾	125	Silabs Si446x		
344,60	345,00	345,40	0,8			B3408	125			
433,00	433,92	434,71	1,7			B3710	125	Ref. Design Semtech SX1301 - SX1255		
470,00	480,00	490,00	20,0			B3427	125	Rx filter, codesigned with B3426 for duplexing		
500,00	505,00	510,00	10,0			B3426	125	Tx filter, codesigned with B3427 for duplexing		
863,00	866,50	870,00	7,0		B4377	B3717	125	Ref. Design Semtech SX1308 Picocell Gateway - EU		
863,00		870,00	7,0			B3420	125	high power version of B3717		
865,60	866,80	868,00	2,4			B3441	125	temperature compensated filter - LTE co-existence		
863,00	868,00	873,00	10,0			B3430	125			
868,15	868,30	868,45	0,3			B3734	125			
868,00		868,60	0,6			B3744	125			
868,00	868,60	869,20	1,2			B3948	125			
868,00		869,20	1,2			B3746	125			
868,70	868,95	869,20	0,5			B3941	125			
862,00	869,00	876,00	14,0		B2600		125			
868,00		870,00	2,0		B4365	B3440	125	temperature compensated filter - LTE co-existence		
868,00		870,00	2,0		B4316	B3715	85 / 125	B3440: Semtech SX1301 Macro Gateway - EU		
868,00		870,00	2,0			B3716	125	GSM attenuation		
868,00		870,00	2,0		B2636	B3725	125	B2636: high attenuation @ 862 MHz		
868,00		870,00	2,0		B2674 (GT)		85	B3725: improved nearby attenuation		
868,00	872,00	876,00	8,0			B3443	125	temperature compensated filter		
902,00	908,50	915,00	13,0		in dev.		125	high attenuation @ 894 MHz		
					13,0			B3429	125	Rx filter, codesigned with B3433 for duplexing
923,00	925,50	928,00	5,0			B3433	125	Tx filter, codesigned with B3429 for duplexing		
908,27	908,42	908,57	0,3			B3943	125	Z-Wave		
908,00	912,50	917,00	9,0			B3406	125			
902,00	915,00	928,00	26,0		B4344	B3728	85 / 125	Ref. design Semtech SX1308 Picocell Gateway - NAFTA		
					26,0	B2671 (GT)	B2672 (GT)	85	B3728: Semtech SX1301 - SX1257 Macro Gateway - NAFTA	
					26,0	B4379	B2625	125	B4344: high att. @ 894 MHz + Semtech SX1302, SX1250	
					26,0		B4301	85	NAFTA	
					26,0			B3435	125	NAFTA; B2625: Semtech SX1302, SX1250
					26,0			B3726	125	NAFTA; se/bal pin configuration
					10,0			B3726	125	NAFTA
910,00		920,00	10,0			B3434	125	NAFTA; steeper skirts than B3726		
912,80	915,70	918,60	5,8			B3432	125	low IA		
914,25	916,00	917,75	3,5			B3718	125			
915,90	916,50	917,10	1,2			B3300	125			
921,27	921,42	921,57	0,3			B3949	125	Z-Wave		
915,00	921,50	928,00	13,0		B2615		125	Australia		
920,00	922,50	925,00	5,0		B2619	B3407	125	Hong Kong		
923,40	924,00	924,60	1,2			B3945	125	New Zealand		
920,60	924,15	927,70	7,1			B3419	125			
922,00	924,50	927,00	5,0		B2616		125	New Zealand		
923,40	925,00	926,60	3,2			B3919	125			
922,20	925,15	928,10	5,9		B4336		85	Japan		
922,20		928,10	5,9		B8331 (GT)		85	Japan		
922,30	925,20	928,10	5,8		B2645	B3926	125	Japan		
922,30		928,10	5,8			B3916	125	Japan - low IA		
922,30		928,10	5,8			B3921	125	Japan - high selectivity		
923,05	925,40	927,75	4,7			B3446	125	temperature compensated filter - LTE coexistence		
2403,10	2442,00	2480,90	77,8	B8883 ¹⁾ (GT)	B8328 (GT)		85			
2403,10	2442,00	2480,90	77,8	B7506 (GT)			85	no external matching components		
2400,00	2441,75	2483,50	83,5		B8371 (GT)		85			
2403,10	2442,00	2480,90	77,8	B7520 (GT)			85	with B7/B40/B41 co-existence; very low insertion attenuation, no external matching components		
2402,50	2442,00	2481,50	79,0	B7509 (GT)			85	with B7/B40/B41 co-existence		
2403,10	2442,00	2480,90	77,8	B8857 (GT)			85	BAW; with B7/B40/B41 co-existence		
2400,00	2442,00	2497,00	97,0			B3912	125			
2400,00	2442,00	2500,00	100,0	in dev.			85	extreme low insertion attenuation		
2400,00	2442,00	2483,50	83,5	B4360	B4347		125			
2401,50	2442,00	2480,90	79,4	B9645			95	BAW; with B7/B40/B41 co-existence		
2403,10	2442,00	2480,90	77,8		B9634		95	BAW; with B7/B40/B41 co-existence		
2402,50	2442,00	2493,50	91,0	B7511			85	BAW; wide band filter, band edge on CH1 supports WiFi Ch 1-14		
2402,50	2442,00	2471,50	69,0	B7512			85	BAW; band Edge filter; supports Wi-Fi Ch 1-11; no external matching components		

Remark: Type codes followed by "(GT)" indicate filters for consumer grade applications.