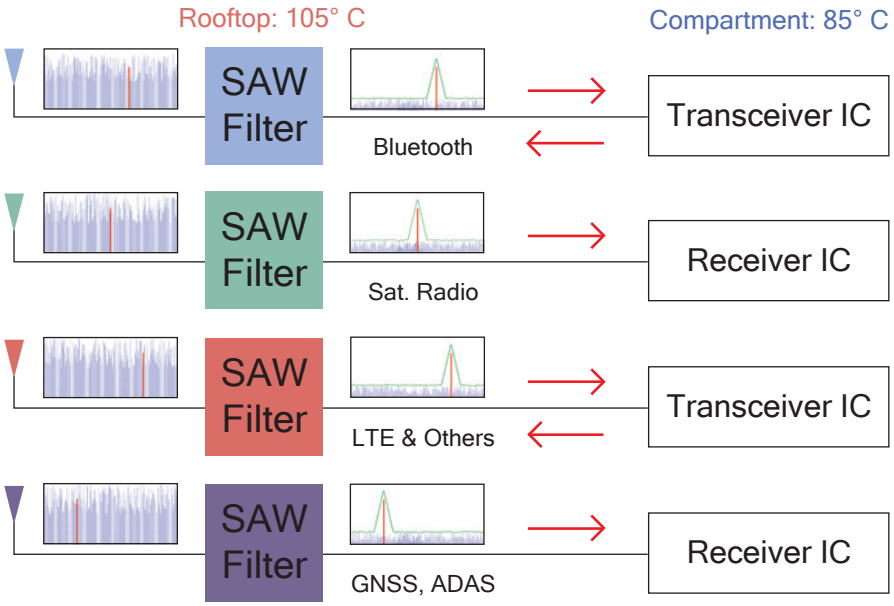
Qualcomm

SAW Filters for Automotive: Antennas

Why SAW Filters are needed?

- Every RF front-end needs to have very high sensitivity, while being immune to any RF interference from other applications
- SAW filters, typically placed between antenna & receiver IC, offer superior protection compared to any other filter technology, such as LC or ceramic filters, due to higher selectivity
- In transmit paths (Tx), SAW filters suppress the radiation of undesired harmonics
- In receive paths (Rx), SAW filters improve the selectivity of the front-end, with image frequencies being rejected & powerful interferers are blocked

BAW technology is part of the SAW filter family



Key Factors for Automotive SAW Filters

☑ Package size	>	RF board = small! > 3030 > 1411 > 1109
☑ Frequency spectrum	>	All: Unlicensed, Proprietary, Licensed
☑ Temperature range	>	-40°C up to +125°C
☑ Power handling	>	Transceiver or FEM dependent
☑ Reliability	>	1000h in 85%/85°C, 1000 temperature shocks
☑ Product Life Cycle	>	5 - 7 years min
☑ Performance	>	Superior to any other filter technology

Free samples, eval boards & RF-support included

Customer Benefits

- ☑ Component qualification to AEC-Q200, Rev. D
- ☑ PPAP available
- ☑ Hermetically sealed package for operation in hostile environments & enhanced reliability
- ☑ Longevity of production
- ☑ Special frequencies & customized product solutions
- ☑ Comprehensive application support

World leader in SAW Automotive

Qualcomm

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SAW Filters for WiFi/ Bluetooth

Bands & Applications	fc [MHz]	Package [mm x mm]	Part Number (* = non AEC-Q200 Qualified
WiFi/Bluetooth 2.4GHz	2448.5	3.0 x 3.0	B3912
WiFi/Bluetooth 2.4GHz	2441.75	3.0 x 3.1	B3918
WiFi/Bluetooth 2.4GHz	2442	1.4 x 1.1	B4346
WiFi/Bluetooth 2.4GHz	2441.75	1.4 x 1.1	B4347
WiFi/Bluetooth 2.4GHz	2441.75	1.1 x 0.9	B4360
WiFi/Bluetooth 2.4GHz	2442	1.1 x 0.9	B8857*
WiFi/Bluetooth 2.4GHz	2442	1.1 x 0.9	B8863*
WiFi/Bluetooth 2.4GHz	2442	1.1 x 0.9	B8840*
WiFi/Bluetooth 2.4GHz	2442	1.4 x 1.1	B8328*
WiFi/Bluetooth 2.4GHz	2442	1.1 x 0.9	B8873*

SAW Filters for Satellite Radio

Bands & Applications	fc [MHz]	Package [mm x mm]"	Part Number
SDARS	2326.25	3.0 x 3.0	B1646
SDARS	2338.755	3.0 x 3.0	B1644
SDARS	2332.5	3.0 x 3.0	B3425
SDARS	2332.5	3.0 x 3.0	B1669
SDARS	2332.5	3.0 x 3.0	B3595
SDARS	2332.5	3.0 x 3.0	B3404
SDARS	2332.5	3.0 x 3.0	B3416
SDARS	2332.5	3.0 x 3.0	B3442
SDARS	2332.5	3.0 x 2.5	B3471

SAW Filters for LTE + WiFi / Bluetooth

Bands & Applications	fc [MHz]	Package [mm x mm]	Part Number (* = non AEC-Q200 Qualified
LTE + GPS (L1)	1582.5	1.7 x 1.3	B8666*
LTE + GPS (L1)	1582.5	1.7 x 1.3	B8636*
LTE + GPS/GLONASS (L1)	1590.155	2.0 x 1.6	B4322
LTE + GPS/GLONASS (L1)	1590.155	3.0 x 2.5	B3405
LTE + GPS/GLONASS/Beidou (L1)	1582.47	3.0 x 2.5	B3478
LTE + GPS/GLONASS (L1)	1590.155	2.0 x 1.6	B4340
LTE + GPS/GLONASS/Beidou (L1)	1582.47	2.0 x 1.6	B4368

Bands & Applications	fc [MHz]	Package [mm x mm]	Part Number (* = non AEC-Q200 Qualified
LTE + Wifi/Bluetooth 2.4GHz	2442	1.7 x 1.3	B8908*
LTE + Wifi/Bluetooth 2.4GHz	2442	1.7 x 1.3	B8910*
LTE + Wifi/Bluetooth 2.4GHz	2442	1.7 x 1.3	B8688*
LTE + Wifi/Bluetooth 2.4GHz	2442	1.7 x 1.3	B1224*

SAW Filters for GPS, GNSS ADAS

Bands & Applications	fc [MHz]	Package [mm x mm]	Part Number (* = non AEC-Q200 Qualified)
GPS/Galileo (L1)	1575.42	1.4 x 1.1	B4300
GPS/Galileo (L1)	1576.42	1.4 x 1.1	B4308
GPS/Galileo/Glonass (L1)	1588.655	1.4 x 1.1	B4310
GPS/Galileo/Glonass (L1)	1588.655	1.4 x 1.1	B4313
GPS/Galileo/Glonass/Beidou (L1)	1582.4	1.4 x 1.1	B4327
GPS/Galileo/Glonass/Beidou (L1)	1582.4	1.4 x 1.1	B4353
GPS/Galileo/Glonass/Beidou (L1)	1582.47	1.4 x 1.1	B4348
GPS/Galileo (L1)	1575.42	3.0 x 3.0	B3923
GPS/Galileo (L1)	1575.42	3.0 x 3.0	B3525
GPS/Galileo (L1)	1575.42	3.0 x 3.0	B3528
GPS/Galileo (L1)	1575.42	3.0 x 3.0	B3400
GPS/Galileo/Glonass (L1)	1585.5	3.0 x 3.0	B3519
GPS/Galileo/Glonass (L1)	1585.65	3.0 x 3.0	B3414
GPS/Galileo/Glonass (L1)	1586	3.0 x 3.0	B3517
GPS/Galileo/Glonass/Beidou (L1)	1588	3.0 x 3.0	B3913
GPS/Galileo/Glonass/Beidou (L1)	1587.5	3.0 x 3.0	B3412
GPS/Galileo/Glonass/Beidou (L1)	1587.5	3.0 x 3.0	B3413
GPS/Galileo/Glonass/Beidou (L1)	1582.5	3.0 x 3.0	B3415
GPS/Galileo (L1)	1575.42	2.5 x 2.0	B3524
GPS/Glonass (L1)	1588.65	2.5 x 2.0	B3401
GPS/Glonass/Beidou (L1)	1582.35	2.5 x 2.0	B3431
GPS (L1)	1575.42	3.0 x 2.5	B3470
GPS/Galileo + Glonass	1575 + 1602	3.0 x 2.5	B3518
GNSS (L2)	1228	3.0 x 3.0	B4057
GNSS(E5b/L2/G2)	1223	3.0 x 3.0	B3596
GNSS (L6)	1278.75	3.0 x 3.0	B3428
GNSS (L)	1542	3.0 x 3.0	B3421
GNSS (L1/E1/G1)	1583	3.0 x 3.0	B3423
GNSS (L/L1/E1/G1)	1565.5	3.0 x 3.0	B3424
GPS/Glonass/Beidou (L1)	1582.47	1.1 x 0.9	B8813*
GPS/Glonass/Beidou (L1)	1582.47	1.1 x 0.9	B8828*
GPS/Glonass/Beidou (L1)	1582.47	1.1 x 0.9	B8839*
GPS/Glonass (L1)	1585.66	1.1 x 0.9	B9877*
GPS/Glonass/Beidou (L1)	1582.47	1.1 x 0.9	B8819*
GPS (5)	1176.45	1.1 x 0.9	B8884*
GPS/Glonass/Beidou (L1/L5)	1582.47	1.8 x 1.4	B1234*

SAW Filters for GNSS + SDARS

Bands & Applications	fc [MHz]	Package [mm x mm]	Part Number (* = non AEC-Q200 Qualified)
GPS (L1) + SDARS	1575.42 + 2326.25	3.0 x 3.0	B3526
GPS/Galileo (L1) + SDARS	1575.42 + 2332.5	3.0 x 3.0	B3920
GPS/Galileo/Glonass (L1) + SDARS	1591.21 + 2332.5	3.0 x 3.0	B3927

