

TINIEST MATCHED BALUNS

for WiFi, Bluetooth & Sub-GHz



Simplify RF complexity

The tremendous growth of the Internet of Things is leading to the development of increasingly smaller wearables that require easy-to-implement electronic components in environments with higher densities.

Tuned for high RF integration, ST's RF IPD baluns provide improved system performances while simplifying RFIC to antenna matching network complexity.

In addition, designed with integrated harmonic filters, they make it easy to comply with major EMC regulations: CCC, FCC, ETSI, ARIB.

KEY BENEFITS

Integration

- Integrated matched balun with harmonic filter
- Package size down to 0.8 mm² compared to 60 mm² for discrete RF solution
- Less than 560 µm height after reflow

Performance

- Improve RF performance and save battery life
- Low insertion loss
- Low amplitude imbalance

- Low phase imbalance

Simplicity

- Replaces twisty discrete SMD matching network
- Single-chip solution

KEY APPLICATIONS

- Alarm
- Assets tracking
- Beacons
- Drones
- Fitness devices
- Smartbands
- Smart speakers
- Smart watches
- Thermostats
- Wireless toys

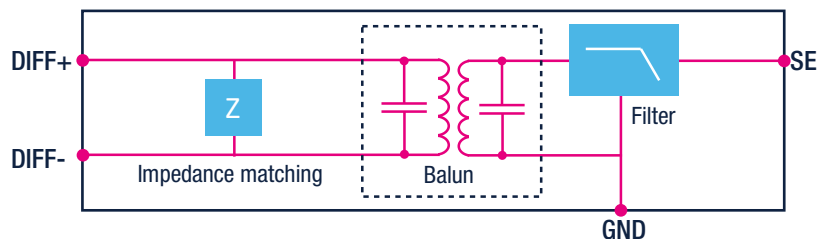
Balun and RF filter portfolio

RF IC supplier	RF IC name	Matched Balun	Frequency (MHz)	Integrated filter	Size	Package
STMicroelectronics	SPIRIT 1	BALF-SPI-01D3	868-915	Yes	1.4 mm x 2.0 mm	CSP
		BALF-SPI-02D3	433	Yes	1.4 mm x 2.0 mm	CSP
	S2-LP	BALF-SPI2-01D3	868-915	Yes	2.1mm x 1.55 mm	CSP
		BALF-SPI2-02D3	433	Yes	2.1mm x 1.55 mm	CSP
	BlueNRG-MS (QFP32 &nd CSP34)	BALF-NRG-01D3	2400	Yes	1.4 mm x 0.85 mm	CSP
BlueNRG-1 (QFP32 and CSP34) BlueNRG-2 (QFN32 and CSP34)	BALF-NRG-02D3 BALF-NRG-02J5 (Height <350µm)	2400	Yes	1.4 mm x 0.85 mm	CSP and Thin CSP	
Atmel	ATWINC1500A	BAL-WILC10-01D3	2400	No	0.95mm x 0.95mm	CSP
	ATSAMR21E8	BALF-ATM-01E3	2400	Yes	2.0 mm x 1.25 mm	Bumpless CSP (LTCC assy-like)
Texas Instrument	CC1101	BAL-CC1101-01D3	868-915	No	2.0 mm x 1.0 mm	CSP
	CC1120/C1125	BALF-112X-01D3	868-915	Yes	1.95 mm x 1.87 mm	CSP
		BALF-112X-02D3	433	Yes	1.95 mm x 1.87 mm	CSP
	CC2540/43/45 , CC2530/31/33	BAL-CC25-01D3	2400	Yes	0.9 mm x 0.9 mm	CSP
	CC2541	BALF-CC25-02D3	2400	Yes	0.9 mm x 0.9 mm	CSP
CC2610/2620/2630/2640/2650	BALF-CC26-05D3	2400	Yes	0.9 mm x 0.9 mm	CSP	
Nordic Semi	nRF51822-QFAACx/QFABAx nRF51422-QFAACx	BAL-NRF01D3	2400	Yes	1.5 mm x 1.0 mm	CSP
	nRF51822-CTAx	BALF-NRF01J5 (Height <350µm)	2400	Yes	1.4 mm x 0.85 mm (height < 350 µm)	Thin CSP
	nRF51822-CxAx/nRF51422-CxAx	BAL-NRF02D3	2400	Yes	1.4 mm x 0.9 mm	CSP
	nRF51822-QFAAHx/nRF51822-QFACAx nRF51422-QFAAFx/nRF51422-QFACAx	BALF-NRF01E3	2400	Yes	1.5 mm x 1.0 mm	Bumpless CSP (LTCC assy-like)
	nRF51822-QFAAGx/nRF51822-QFABBx nRF51422-QFAAEx/nRF51422-QFABAx	BALF-NRF01D3	2400	Yes	1.5 mm x 1.0 mm	CSP

RF IC supplier	RF IC name	Matched Low Pass Filter	Frequency (MHz)	Integrated filter	Size	Package
STMicroelectronics	STM32WB55Cx, STM32WB55Rx, STM32WB50Cx, STM32WB35Cx, STM32WB30Cx BLE 5.0	MLPF-WB55-01E3	2400-2500	Yes	1.5 mm x 1.0 mm	Bumpless CSP (LTCC assy-like)
STMicroelectronics	STM32WB55Vx BLE 5.0	MLPF-WB55-02E3	2400-2500	Yes	1.5 mm x 1.0 mm	Bumpless CSP (LTCC assy-like)

RF IC supplier	ULTRA WIDE BAND	Balun 50/100 Ω	Frequency (GHz)	Integrated filter	Size	Package
Ultra Wide Band	Recommended for DW1000 from DecaWave	BAL-UWB-01E3	3-8	No	1.8 mm x 1.25 mm	Bumpless CSP (LTCC assy-like)

The baluns of STMicroelectronics integrate 3 functions : impedance matching, 50 Ω nominal input impedance and harmonic filter.



© STMicroelectronics - November 2020 - Printed in the United Kingdom - All rights reserved
 ST and the ST logo are registered and/or unregistered trademarks of STMicroelectronics International NV or its affiliates in the EU and/or elsewhere. In particular, ST and the ST logo are Registered in the US Patent and Trademark Office.
 For additional information about ST trademarks, please refer to www.st.com/trademarks.
 All other product or service names are the property of their respective owners.

