

# Tiniest Matched Baluns for WiFi, Bluetooth & Sub-GHz



## Simplify RF complexity

The tremendous growth of 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 mm<sup>2</sup> compared to 60 mm<sup>2</sup> 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

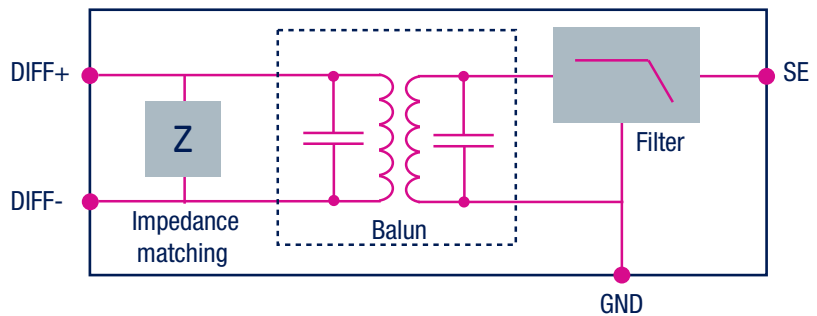
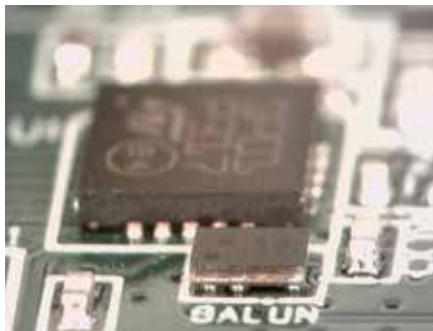
- Beacons
- Wireless toys
- Smart watches
- Smartbands
- Drones
- Thermostats
- Fitness devices

# BALUN PORTFOLIO

RF IC supplier	RF IC	Matched Balun	Frequency (MHz)	Integrated filter	Size	Package
STMicroelectronics	SPIRIT 1	BALF-SPI-01D3	868-915	Yes	1.4 mm x 2.0 mm	WLCSP
	SPIRIT 1	BALF-SPI-02D3	433	Yes	1.4 mm x 2.0 mm	WLCSP
	SPIRIT 2(*)	BALF-SPI-03D3(*)	868-915	Yes	2.1mm x 1.55 mm	WLCSP
	SPIRIT 2(*)	BALF-SPI-04D3(*)	433	Yes	2.1mm x 1.55 mm	WLCSP
	STLC2690	BALF-2690-02D3	2400	Yes	1.64 mm x 0.94 mm	WLCSP
	BLUENRG BLUENRG-MS	BALF-NRG01D3	2400	Yes	1.4 mm x 0.85 mm	WLCSP
	BLUENRG-1	BALF-NRG-02D3 (*)	2400	Yes	(*)	WLCSP
Atmel	ATWINC1500A	BAL-WILC10-01D3(*)	2400	No	0.95mm x 0.95mm	WLCSP
Texas Instrument	CC1101	BALF-CC1101-01D3	868-915	No	2.0 mm x 1.0 mm	WLCSP
	CC1120 CC1125	BALF-112X-01D3	868-915	Yes	1.95mm x 1.87mm	WLCSP
	CC1120 CC1125	BALF-112X-02D3	433	Yes	1.95mm x 1.87mm	WLCSP
	CC2540/43/45 CC2530/31/33	BAL-CC25-01D3	2400	Yes	0.9 mm x 0.9 mm	WLCSP
	CC2541	BALF-CC25-02D3	2400	Yes	0.9 mm x 0.9 mm	WLCSP
	CC2650/CC2640 CC2630/CC2620 CC2610	BALF-CC26-05D3	2400	Yes	0.9 mm x 0.9 mm	WLCSP
Nordic Semi	nRF51822-QFAACx nRF51822-QFABAx nRF51422-QFAACx	BAL-NRF01D3	2400	Yes	1.5 mm x 1.0 mm	WLCSP
	nRF51822-CxAx nRF51422-CxAx	BAL-NRF02D3	2400	Yes	1.4 mm x 0.9 mm	WLCSP
	nRF51822-QFAAHx nRF51822-QFACAx nRF51422-QFAAFx nRF51422-QFACAx	BAL-NRF01E3	2400	Yes	1.5 mm x 1.0 mm	LGA
	nRF51822-QFAAGx nRF51822-QFABBx nRF51422-QFAAEx nRF51422-QFABAx	BALF-NRG-01D3	2400	Yes	1.5 mm x 1.0 mm	WLCSP

\*available in Q4 2016

## EXAMPLE OF BLUETOOTH LOW ENERGY RF IPD BALUN



© STMicroelectronics - September 2016 - Printed in United Kingdom - All rights reserved  
 The STMicroelectronics corporate logo is a registered trademark of the STMicroelectronics group of companies  
 All other names are the property of their respective owners

