

TINIEST MATCHED BALUNS



for STMicroelectronics RF ICs



Full STMicroelectronics solution to 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: FCC, ETSI, ARIB.

KEY BENEFITS

Integration

- Integrated matched balun with harmonic filter
- Package size down to 1.2 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

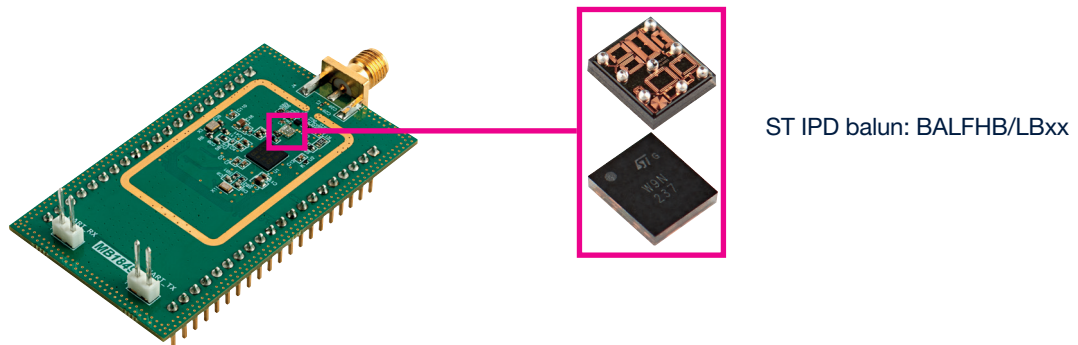
Standard Protocols



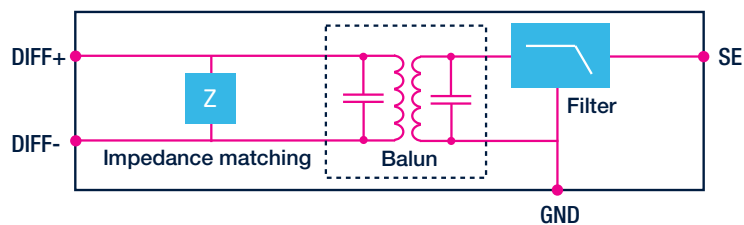
STMicroelectronics balun and RF filter portfolio

RF IC name	Balun IPD namer	Frequency (MHz)	Integrated filter	Size	Package
STM32WL5/E (QFN48)	BALFHB-WL-0xD3 "x=1 to 6"	868-915	Yes	1.83 mm x 2.13 mm	CSP
STM32WL5/E (BGA73)	BALFLB-WL-0yD3 "y=7 to 9"	490	Yes	1.83 mm x 2.13 mm	CSP
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	2.1 mm x 1.55 mm	CSP
	BALF-SPI2-02D3	433	Yes	2.1 mm x 1.55 mm	CSP
BlueNRG-MS (QFP32 and CSP34)	BALF-NRG-01D3	2400	Yes	1.4 mm x 0.85 mm	CSP
BlueNRG-1 (QFP32 and CSP34)	BALF-NRG-02D3				CSP
BlueNRG-2 (QFN32 and CSP34)	BALF-NRG-02J5 (Height <350 μm)	2400	Yes	1.4 mm x 0.85 mm	Thin CSP

STM32WL Reference design based on ST IPD balun: BALFHB/LBxx



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



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