

MLPF-WB55 RF FILTERS



Harmonics filter and impedance matching for STM32WB wireless MCUs



RF filter companion chips for STM32WB55 wireless MCUs with integrated harmonics filter and impedance matching network

Based on ST's IPD technology on non-conductive glass substrate, our MLPF-WB55 series of RF filters with an integrated harmonics filter and impedance matching network are specifically designed as a companion chip for STM32WB wireless microcontrollers.

Thanks to a $50\ \Omega$ nominal impedance on the antenna side, a deep rejection harmonics filter and low insertion losses, these high-quality RF passive components on a single glass substrate optimize the MCUs' RF performance while offering a small footprint and low thickness.

KEY FEATURES & BENEFITS

- Optimum impedance matched for STM32-WB55 wireless microcontrollers
- Simplifies impedance matching and filtering
- Low temperature variation and 85% less PCB space compared with discretes
- Cost effectiveness thanks to reduced RF BOM

KEY APPLICATIONS

- Diagnostics, e-metering, and industrial applications
- Smart home devices, RF tags and finders, toys and gaming
- Wearables, medical equipment, asset tracking, e-payment, and smart cards
- Standards supported: Bluetooth 5, OpenThread, Zigbee and IEEE 802.15.4

Matching network and harmonics filter

Combining a matching network and harmonics filter in a low profile package customized for STM32WB55 wireless microcontrollers, our MLPF-WB55 RF filters are single-component solutions that offers low dispersion over temperature and a small footprint.

Design issues

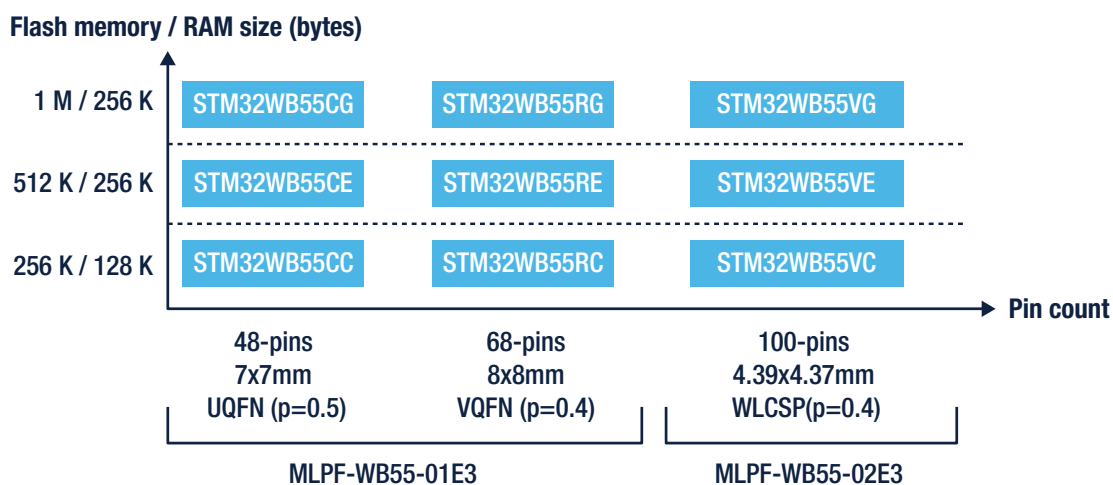
For 2.4 GHz wireless applications, the path between the antenna and the pins of the RF transceiver must feature a matched impedance optimized to guarantee the best Receive sensitivity

and Transmit output power levels. Moreover, this RF path must also limit harmonic emissions in compliance with regulatory agencies including FCC, ETSI and ARIB. Other issues when using discrete components is that the resulting network is very sensitive to temperature variations. The rework is often needed if one component reference is changed for another passive supplier and the discrete network occupies a large PCB space.

ST's solution

ST's IPD technology integrates high-quality RF passive components on a single glass substrate. This ensures an ultra-small footprint providing optimum impedance to guarantee the best RF performance even under temperature variations, removing the hassle for the RF designer to manage all these constraints. With the MLPF-WB55 series, ST is the only semiconductor supplier offering an integrated RF filter and impedance matching with fully optimized performance for our STM32WB55 RF microcontrollers.

A single device to replace a discrete matching network plus harmonic filter



Available Devices

Part Number	MOQ	Package	Packing	Companion Chip for...
MLPF-WB55-01E3	5000	CSP Bumpless	Tape and Reel (7")	STM32-WB55-CG, STM32-WB55-CE, STM32-WB55-CC STM32-WB55-RG, STM32-WB55-RE, STM32-WB55-RC
MLPF-WB55-02E3	5000	CSP Bumpless	Tape and Reel (7")	STM32-WB55-VG, STM-32WB55-VE, STM32-WB55-VC



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