RF communication
RF mobile ICs & discretes
product portfolio

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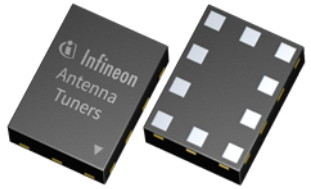
Content

Antenna tuners

Optimizing antenna efficiency in 5G and IoT applications



Antenna tuning switches

Aperture tuning:

– Tuning an antenna to a specific frequency band for optimized efficiency

Impedance tuning:

– Optimizing signal transmission to the antenna by compensating frequency and environmental effects

Target applications

– Smartphones, laptops, tablets and wearables
– Various battery powered cellular applications
– Industrial applications, e.g. asset tracking, smart metering

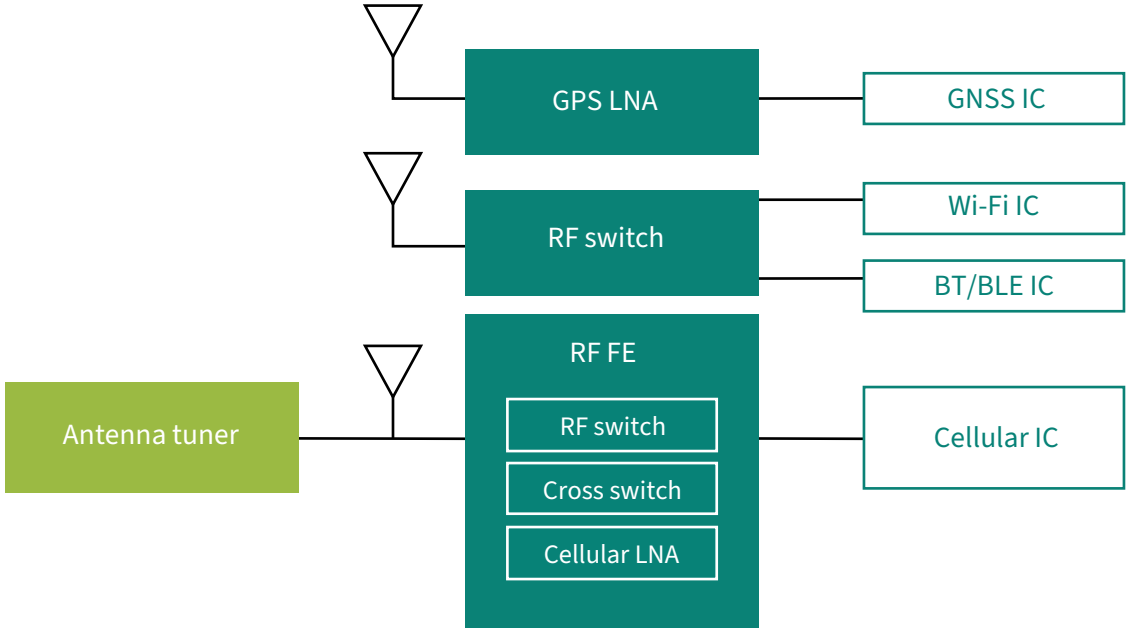
Features

– Frequency range up to 8.25 GHz
– MIPI and GPIO control modes
– Best-in-class harmonics
– Low current consumption
– Compact footprint

Benefits

– Improved antenna performance
– Increased design flexibility
– Higher power efficiency
– Cutting edge Ron x Coff figure of merit

Block diagram

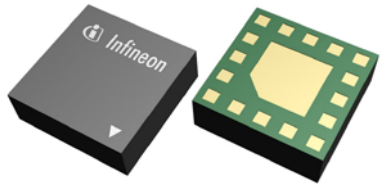


Useful links

Antenna tuner portfolio
RF product selection guide
Antenna Tuner Simulator ATS Guide / Tool

RF cross switches

Select and swap to the best performing antenna for optimized system efficiency



RF cross switches

– High performance family of RF switches ideal for antenna swapping and efficient RF signal routing for power efficient wireless systems

Target applications

– Mobile devices, tablets, laptops
– CPE, 5G routers
– M2M / IoT modules

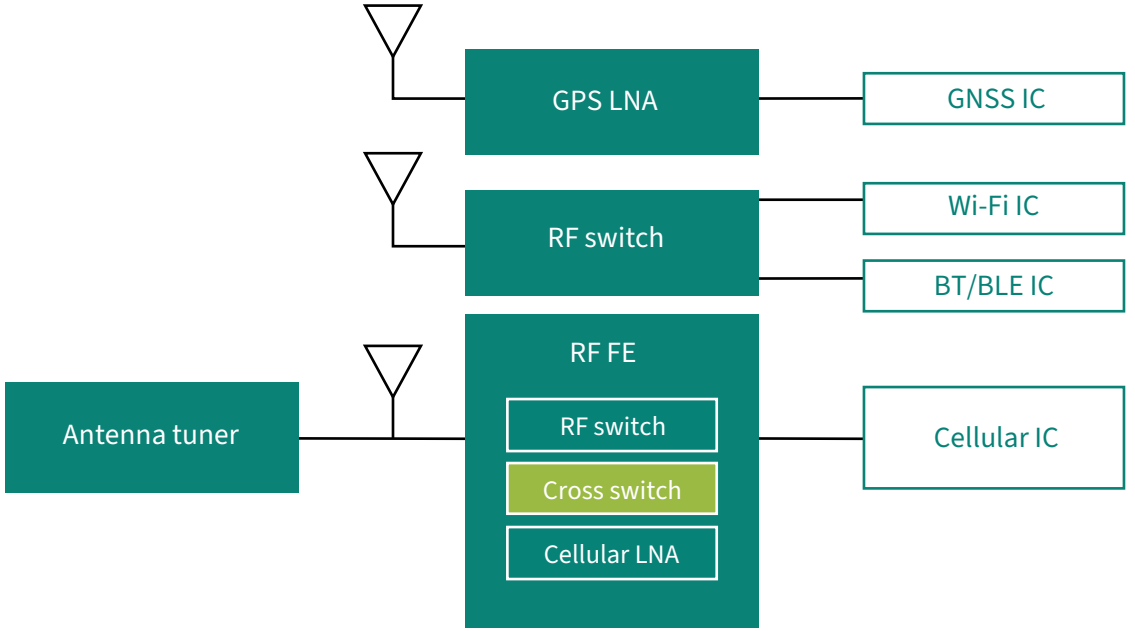
Features

– Up to sub-7.125 GHz specified
– Fast switching speed
– Best-in-class insertion loss performance
– High RF power-handling capability
– Flexible supply voltage support 1.2V / 1.8V
– MIPI and GPIO variants
– Software and hardware programmable

Benefits

– Efficient use of frequency through antenna swapping and dynamic signal routing
– Higher power efficiency
– Improved antenna performance and signal reception
– Increase data rates
– BOM savings

Block diagram

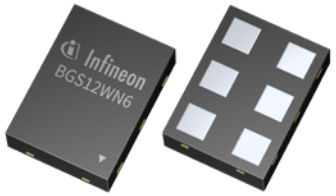


Useful links

RF cross switch portfolio
RF product selection guide

RF switches

Highest RF design flexibility and performance for wireless systems



RF switches

– Compact RF ICs for antenna selection or signal routing (Tx/Rx switching) allowing design flexibility, more features, and system optimization

Target applications

– Mobile devices, tablets, laptops
– Wearables, hearables
– Smart home appliances
– CPE, Wi-Fi / 5G routers
– M2M / IoT modules

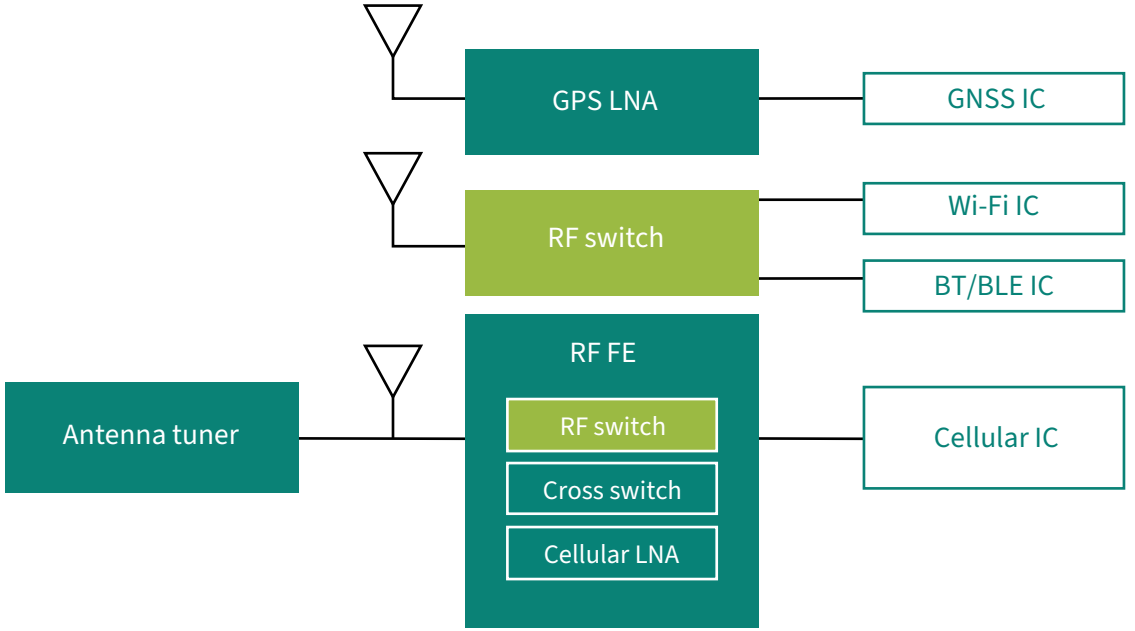
Features

– Wideband applicable up to 9 GHz
– Fast switching speed
– Low insertion loss
– High RF power-handling +38 dBm
– MIPI and GPIO variants
– Low current consumption

Benefits

– Simplify system design
– BOM savings help reduce signal losses
– Efficient (re-)use of frequency through switching
– Increased data rates
– Power efficiency

Block diagram

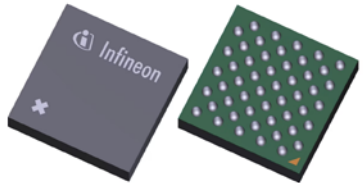


Useful links

RF switch portfolio
RF product selection guide

Cellular LNAs

Optimizing mobile signals and band support in 5G and IoT



LNA Bank
– Providing flexible multi-band support, optimizing power consumption

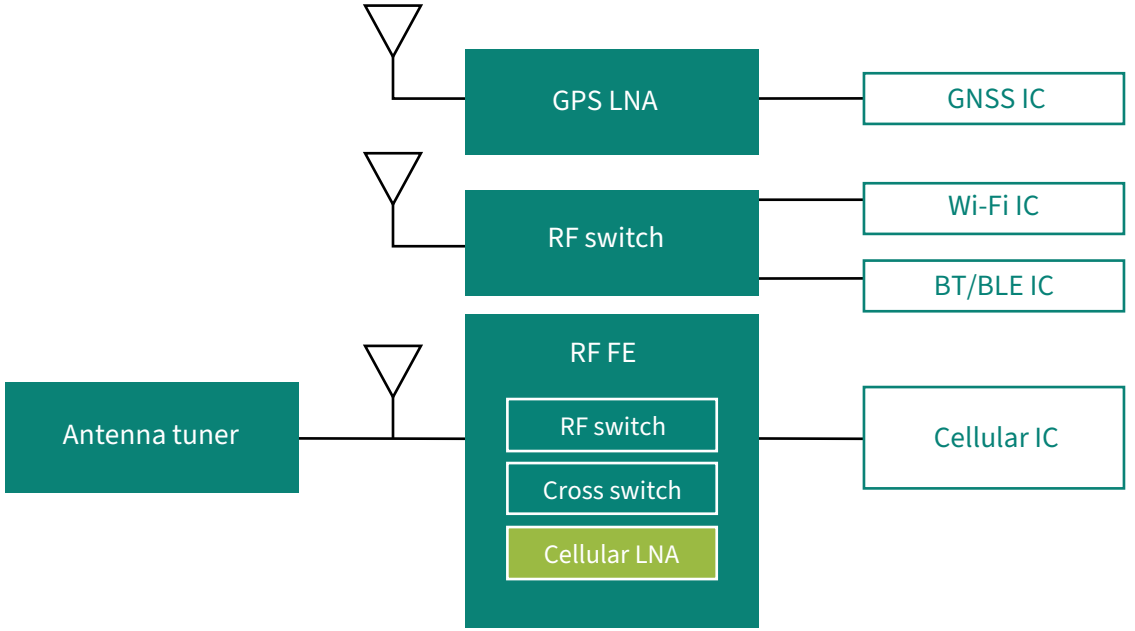
MIPI Cellular LNA
– Efficiently integrating with transceivers for improved performance

Target applications
– Smartphones and mobile devices
– Tablets and Laptops
– Wearables
– Cellular IoT home appliances

Features
– 0.6 to 7.2 GHz coverage
– Low Noise Figure
– High Gain
– High Linearity
– MIPI and GPIO control modes

Benefits
– Enhanced weak signals
– Improved multi-band reception
– Reduced signal noise

Block diagram



Useful links

Cellular LNA portfolio
Multi-purpose LNA portfolio
RF product selection guide

GNSS LNAs

Boosting GNSS performance and signal in 5G and wearables

Low Power GPS LNA
– Extending battery life and reducing heat generation in portable devices

High Linearity GPS LNA
– Improvising receiver sensitivity against strong interfering signals

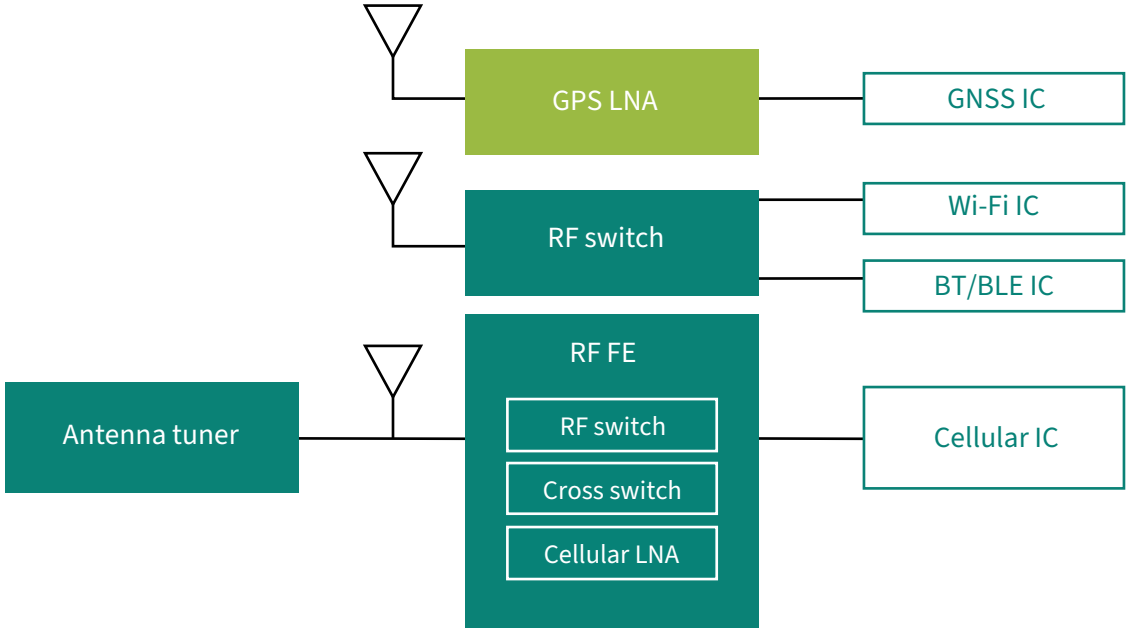
Dualband GPS LNA
– Reducing multipath errors in challenging environments for position accuracy

Target applications
– Smartphones and mobile devices
– Wearables
– Home appliances

Features
– L1 and L2/L5 bands covered
– Low noise figure
– High gain
– Low current consumption
– High linearity
– GPIO control

Benefits
– Enhanced location accuracy
– Improved signal sensitivity
– Reduced interference impact

Block diagram



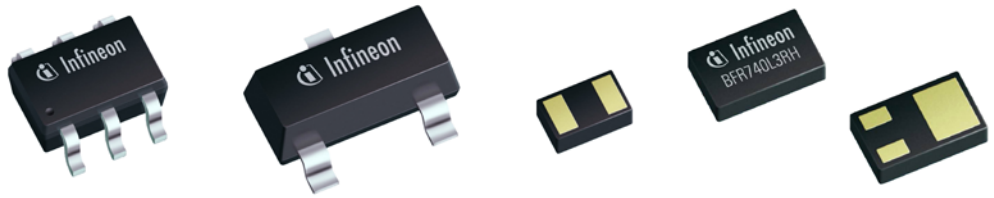
Useful links

GNSS LNA portfolio

RF product selection guide

RF transistors

Flexibility and reliability for long-standing RF wireless systems



RF transistors

– Our versatile SiGe:C NPN transistor portfolio offers flexible and adaptable devices that deliver best-in-class RF performance to a wide range of market applications

Target applications

– Active antenna applications
– GNSS navigation systems
– Wi-Fi routers, set-up boxes
– Applications operating <1GHz
– Home automation
– Industrial IoT applications

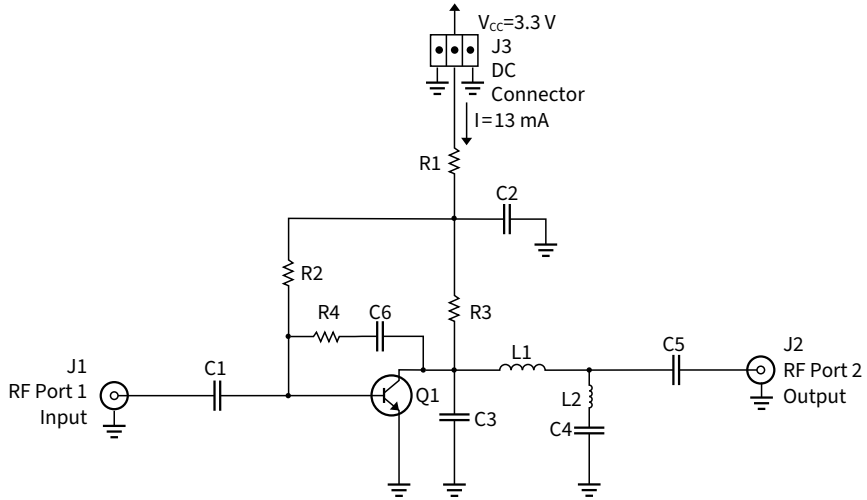
Features

– Wide frequency coverage
– Low Noise Figure, high gain and linearity
– Very low power consumption
– Cost competitiveness

Benefits

– Flexible and customized circuit design
– Energy savings for extended battery life
– System cost reduction
– High quality and reliability for long-life systems

Application example: LiDAR LNA



Useful links

RF transistors portfolio

S-paramter measurements for devices at different biasing levels
Infineon-RFTransistor-SPAR.zip-SM-v02_20-EN EN

Device libraries for all major simulation softwares
MWO **Infineon-RFTransistor-AWR_MWO_Design_Kit-SM-v02_10-EN EN**
ADS **Infineon-RFTransistor-Keysight_ADS_Design_Kit-SM-v02_10-EN EN**
SPICE **Infineon-RFTransistor-SPICE.lib-SM-v02_10-EN EN**

RF schottky diodes

Simple and cost-effective solution for power detection and mixer applications

RF Schottky diodes

- Silicon low-barrier N-type devices used for highly sensitive power detection and mixer circuits

Target applications

- Consumer electronics, e.g. Wi-Fi routers
- Mobile devices
- 24GHz radar and low-noise block (LNB) system

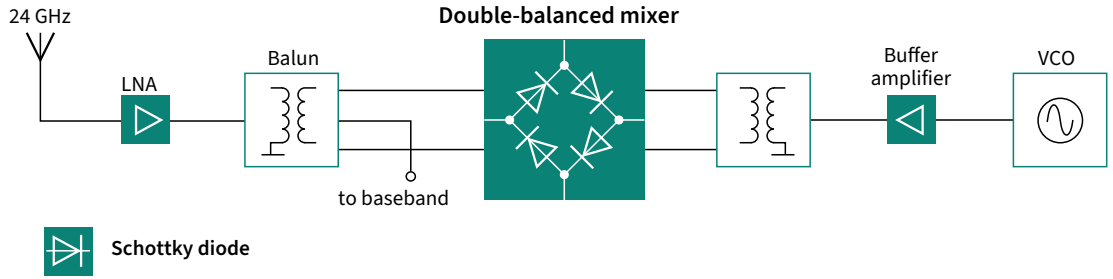
Features

- Low forward voltage drop
- Low junction capacitance
- Various junction diode configurations

Benefits

- Fast switching
- Excellent choice as detector for high frequencies
- Higher linearity and power handling compared to integrated mixers
- Flexibility in circuit design

Application example: 24GHz radar system



Useful links

RF Schottky diode portfolio

Application notes:

Schottky diode mixer for 5.8GHz radar sensor

RF and microwave power detection with Schottky diodes

Design guide for RF transistors and diode in low noise block

Contact

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