

## Bluetooth™ Radio Transceiver

The Bluetooth Radio PBA 313 02/1 from Infineon Technologies is a long-range microwave frequency radio transceiver for Bluetooth communication links.

Provided in a compact LGA package, the PBA 313 02/1 is intended primarily for embedded applications and applications requiring a flexible form factor. No external shield is required. This solution enables extremely low height implementations.

With the addition of only an antenna, a reference frequency crystal, and digital control functionality, the PBA 313 02/1 forms a complete radio. As a result, designers can benefit from a pre-tested and ready-to-use device, providing a robust Bluetooth Radio function in the final OEM application.

The Bluetooth Radio offers a combination of compact size, low power consumption, and cost effective assembly – with the radio IC and some major components of the radio integrated into the circuit. This makes it ideal for Bluetooth communications in both mobile and stationary applications.

The PBA 313 02/1 is built around a BiCMOS ASIC, and the antenna filter, RX and TX baluns are all integrated into the circuit.



# Bluetooth

### Key Features

- RF output power class 1
- Compliant with Bluetooth specification 1.1
- Forms a complete radio with only
  - an antenna
  - a 10–20 MHz reference frequency
- On board output power control
- Small outline LGA-package (11.8x11.8x1.6 mm)
- Requires no external shielding
- Requires no external RF design

### Applications

- Access points
- Modems
- Computers
- Mobile phones

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[www.infineon.com/bluetooth](http://www.infineon.com/bluetooth)

## P B A 3 1 3 0 2 / 1

### Radio Transceiver



Never stop thinking.

## Key data

Parameter	Min	Typ	Max	Unit
Frequency range	2.402		2.480	GHz
Reference clock frequency	10		20	MHz
Receiver sensitivity level		-86		dBm
Output power		17	20	dB
Supply Voltage VCC	2.65	2.8	3.0	V
Supply Voltage VCC_PA	2.7	3.2	5.5	V
Maximum Temperature range	-30		+75	°C

## Hardware

PBA 313 02 is a long-range microwave frequency radio transceiver for Bluetooth communication links that are designed to operate in the globally available unlicensed ISM frequency band, 2.4–2.5 GHz.

Fast frequency hopping (1600 channel hops/s) with 79 channels (2.402 to 2.480 GHz) and a maximum TX & RX bit rate of 1 Mbit/s.

The implemented modulation technique is Gaussian Frequency Shift Keying (GFSK) with a BT product of 0.5. The channel bandwidth is 1 MHz and the frequency deviation is between 140 and 175 kHz.

The Bluetooth Radio is built around a BiCMOS ASIC. Antenna filter, RX and TX baluns are all integrated into the ceramic carrier.

Operating from a 2.8 V supply voltage, the device has a typical supply current requirement of only 60 mA (receive mode) or 150 mA (transmit mode), thus helping to extend battery life for portable equipment.

A standby mode provides further power savings.

## Control interface

Operating together with a Bluetooth Baseband using Bluetooth Core from Ericsson is recommended.

## Antenna interface

50 Ohm Bluetooth ISM band antenna (2.4-2.5 GHz).

## Ordering information

The Bluetooth Radio from Infineon Technologies may be ordered as: PBA 313 02/1.

How to reach us:

<http://www.infineon.com>

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St.-Martin-Strasse 53,  
81669 München

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Infineon Technologies is an approved CECC manufacturer.

## Information

For further information on technology, delivery terms and conditions and prices please contact your nearest Infineon Technologies Office in Germany or our Infineon Technologies Representatives worldwide.

## Warnings

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