

## Features

- Fully integrated single-chip transceiver with on-chip VCO, synthesizer, PA, LNA, Image Reject Downconverter, IF filters, RSSI and bit slicer for ISM 2.4GHz RF Transceiver.
- Class 2 and 3 (1 to 10 meter range) compliant with Bluetooth Specification v1.0.
- Low Voltage Supply 1.8V.
- 14 mA Transmit and Receive current consumption
- RF sensitivity to -84 dBm.
- +2 dBm RF output power
- Crystal Independent Fractional-N Synthesizer.
- Digital Crystal Frequency Error Compensation.
- Programmable Tx Power Control.
- Requires no external shielding.

## PH2401 Applications

- ISM 2.4GHz frequency band applications.
- Personal Wireless Communications.
- Cellular Phones & Handset.
- Headset, Earpiece
- PDAs & Mobile Computers & Peripherals

## Product Description

The PH2401 Single Chip Radio Transceiver is an integrated radio transceiver optimized for use in a 2.4 GHz wireless system. Using SiGe, the design has been optimized for ultra-low power applications such as Personal Wireless Connectivity. These applications require maximum battery life, small form factor and low system cost.

The PH2401 radio is designed to meet Bluetooth Class 2 and Class 3 operation, providing ranges from 1 to 10 meters, and is fully compliant with Bluetooth Specification v1.0.

Fast frequency hopping (1600 hop/s) with 79 channels available (2.402 to 2.480 GHz) and a maximum Tx & Rx bit rate of 1Mbit/s exploits the maximum channel bandwidth allowed in the ISM band.

The implemented modulation techniques is Guassian Frequency Shift Keying, GFSK, with a modulation index of 0.3. The channel bandwidth is 1MHz and the frequency deviation is between 140 and 175 kHz.

The PH2401 has been designed using state-of-art circuit implementation. Features include:

- a Delta-Sigma synthesizer incorporating two point angle modulation, stabilized over the operating temperature range with calibration means for two-point angle modulation scheme.
- a transmitter power amplifier featuring programmable output levels from -10 to +2 dBm.
- a receiver architecture based on cascaded complex AGC/Filtering stages and a complex PLL demodulator.
- a fast dynamic-threshold MFSK bit slicer.

The PH2401 is fabricated in a SiGe BiCMOS ASIC process, and is mounted in a BCC++ 48 pin package.

**Preliminary Data Sheet Available Under Non Disclosure Agreement**