

io-homecontrol-Compliant RF Transceiver

ADF7022

FEATURES

Very low power, high performance, low IF transceiver Fully integrated io-homecontrol®-compliant protocol covering

Layer 1, Layer 2, and time critical elements of Layer 3 $\,$

Media access

Master, slave, and beacon modes supported

Automatic io-homecontrol channel scan

Automatic CRC, preamble, start byte insertion/check

UART data encoding as per io-homecontrol

Smart preamble detect/packet sniffing

Automatic address filtering

Low power modes

Autonomous packet handling without intervention of host microprocessor thus significantly increasing battery life

1-way and 2-way communication supported

Automatic wake-up timer

32-bit hardware timer, 16-bit firmware timer (48 bits total)

Uses either

External 32 kHz crystal

Internal 32 kHz RC oscillator

Patented fast settling automatic frequency control (AFC)
Fully integrated image rejection calibration (patent pending)

Digital RSSI

Operating frequencies

Channel 1: 868.25 MHz Channel 2: 868.95 MHz Channel 3: 869.85 MHz **Very low power consumption**

13 mA in receive mode

24.1 mA in transmit mode (10 dBm output)

0.65 µA in RCO wake mode

1.25 µA in XTO wake mode (32 kHz oscillator active)

65 μA average current in low power mode (with 2 ms scan time every 0.5 seconds)

Receiver sensitivity (10⁻³ BER)

-107.5 dBm at 38.4 kbps FSK, 20 kHz deviation

Output power programmable up to 13.5 dBm

Automatic PA ramping

Dual PAs offer Tx antenna diversity

Very few external components

Integrated PLL loop filter

Integrated Rx/Tx switch

Integrated battery monitor

On-chip 8-bit ADC and temperature sensor

Efficient and flexible SPI control interface

4 lines available for low cost microcontroller interface

Flexible Tx and Rx data buffers

Efficient burst mode register access

1.8 V to 3.6 V power supply

5 mm \times 5 mm, 32-lead LFCSP package

APPLICATIONS

Home automation

Process and building control

FUNCTIONAL BLOCK DIAGRAM

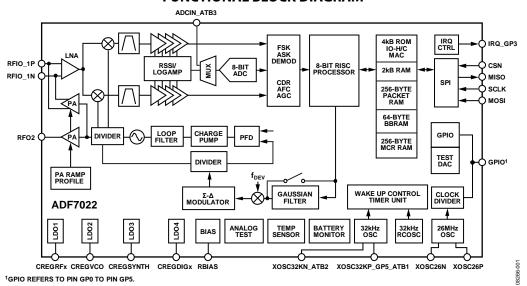


Figure 1

For more information on the ADF7022, contact a local sales office at Analog Devices, Inc.

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