



ANALOG DEVICES

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

- 12.8 mA in receive mode with AGC active
- 11.9 mA in receive mode with manual AGC, ADC off
- 24.1 mA in transmit mode (10 dBm output)
- 0.75 μ A in RCO wake mode
- 1.25 μ A in XTO wake mode (32 kHz oscillator active)
- 38.4 μ A average current in low power mode

Receiver sensitivity (10^{-3} BER)

- 108.5 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

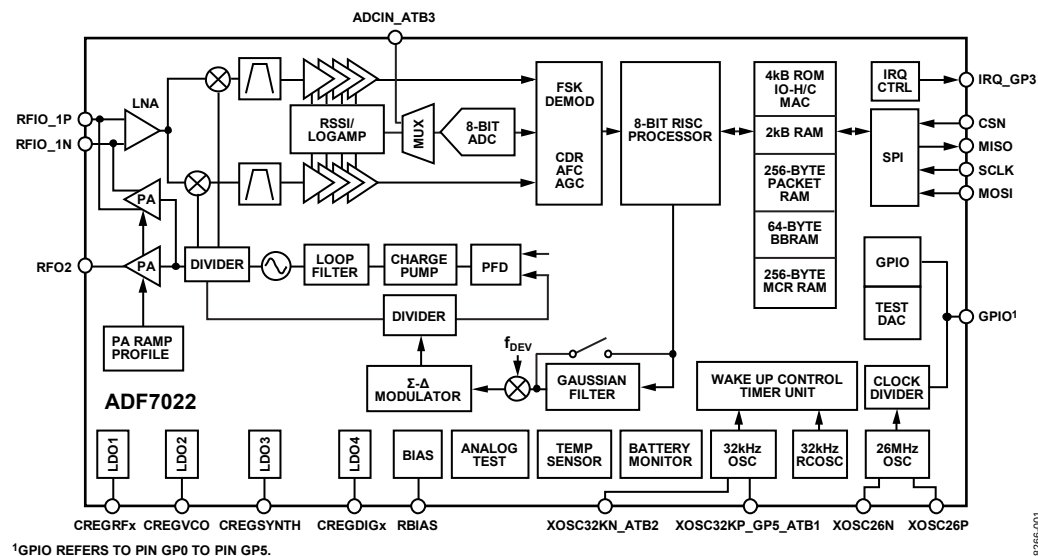


Figure 1.

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

Rev. SpA

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