



**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

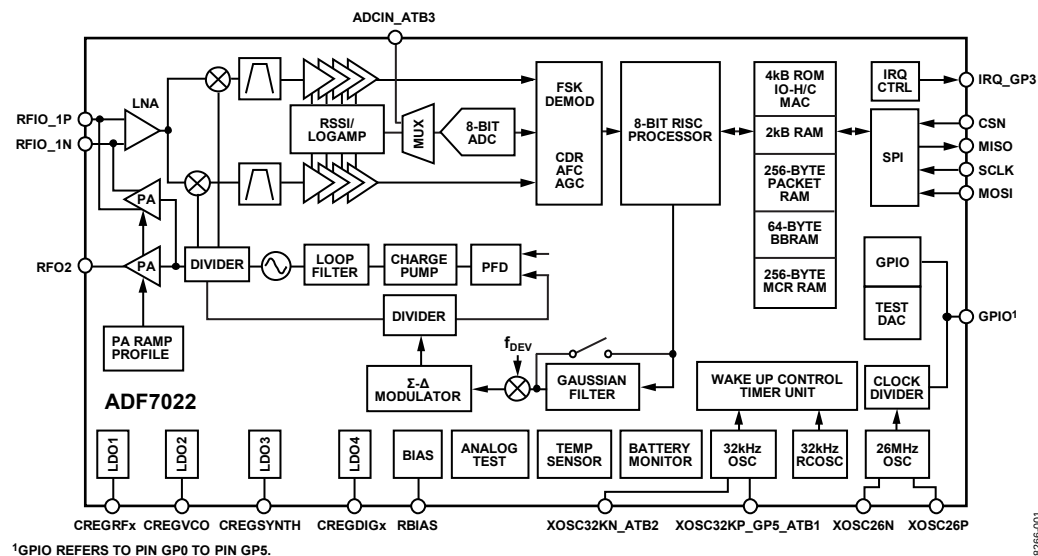
5 mm $\times$ 5 mm, 32-lead LFCSP package

APPLICATIONS

Home automation

Process and building control

FUNCTIONAL BLOCK DIAGRAM



¹GPIO REFERS TO PIN GP0 TO PIN GP5.

Figure 1.

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

Rev. SpA

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