



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

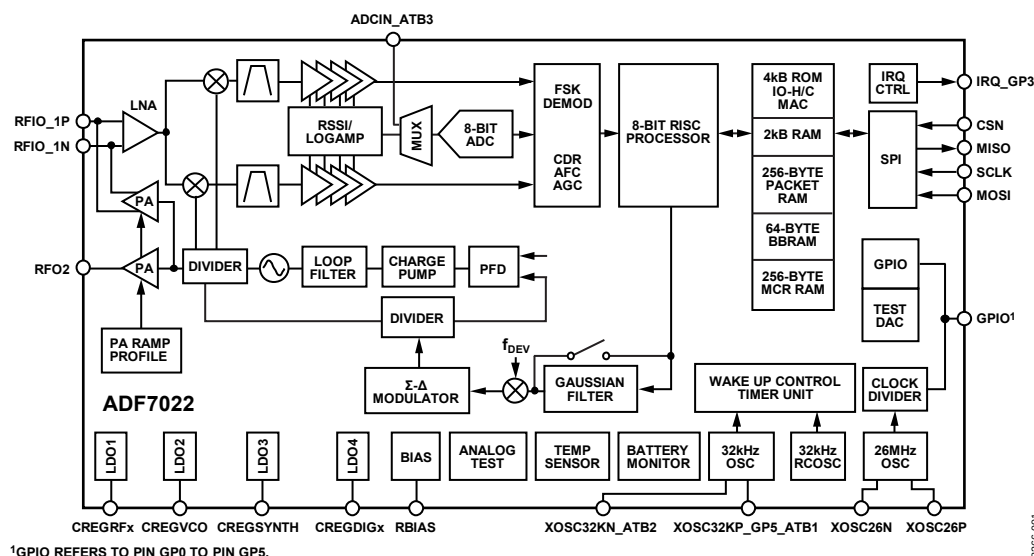
5 mm $\times$ 5 mm, 32-lead LFCSP package

APPLICATIONS

Home automation

Process and building control

FUNCTIONAL BLOCK DIAGRAM



¹GPIO REFERS TO PIN GP0 TO PIN GP5.

Figure 1.

082926-001

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

Rev. SpA

Information furnished by Analog Devices is believed to be accurate and reliable. However, no responsibility is assumed by Analog Devices for its use, nor for any infringements of patents or other rights of third parties that may result from its use. Specifications subject to change without notice. No license is granted by implication or otherwise under any patent or patent rights of Analog Devices. Trademarks and registered trademarks are the property of their respective owners.

One Technology Way, P.O. Box 9106, Norwood, MA 02062-9106, U.S.A.
Tel: 781.329.4700 www.analog.com
Fax: 781.461.3113 ©2009–2011 Analog Devices, Inc. All rights reserved.

ADF7022

NOTES