



### FEATURES

- Very low power, high performance, low IF transceiver
- Fully integrated io-homecontrol<sup>®</sup>-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  $\mu$ A in RCO wake mode
- 1.25  $\mu$ A in XTO wake mode (32 kHz oscillator active)
- 65  $\mu$ A average current in low power mode (with 2 ms scan time every 0.5 seconds)

### Receiver sensitivity (10<sup>-3</sup> 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 × 5 mm, 32-lead LFCSP package

### APPLICATIONS

- Home automation
- Process and building control

### FUNCTIONAL BLOCK DIAGRAM

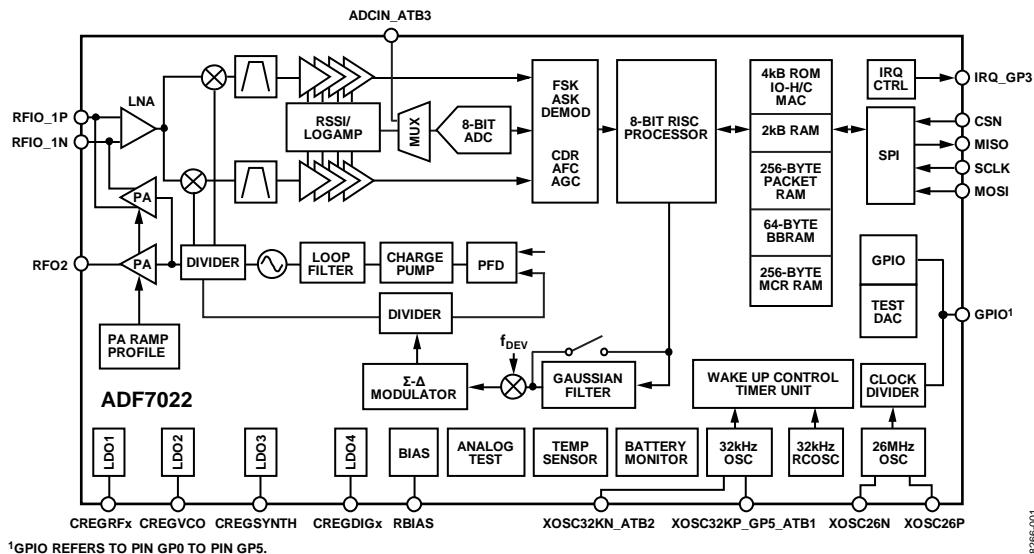


Figure 1.

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

### Rev. Sp0

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**ADF7022**

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