

SVI-TRX402

High Performance ISM Band Transceiver

Silicon Vision, Ultra Low Power Sub-1GHz Radio Transceiver (415/433/470/868/915/950MHz)

MAIN FEATURES

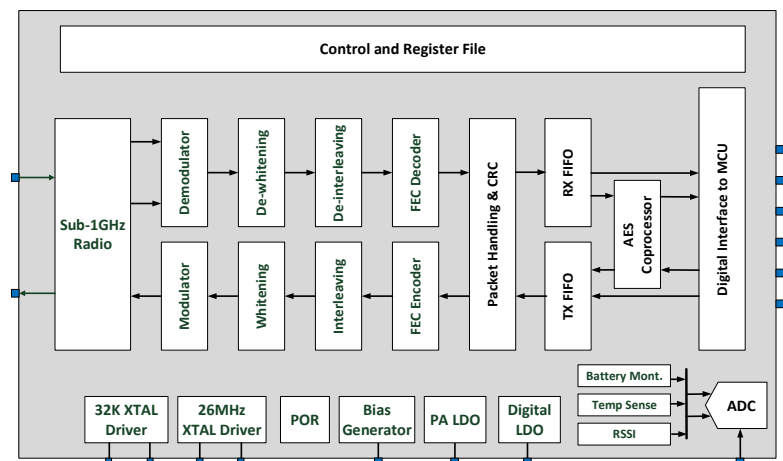
- Silicon Verified
- Process: TSMC-RF180nm (1P6M)
- Compatible with *IEEE 802.15.4G*
- Frequency bands:
415/433/470/868/915/950MHz
- 2-FSK, GFSK, GMSK, and MSK
- Sensitivity = -114dBm @ 2kbps
- Supply: 1.9 to 3.6V
- Output power range: -12 to +17 dBm
- Ultra low power consumption
 - 15 mA @ Receive (868Mhz)
 - 31 mA @ 0 dBm Transmit
 - 84 mA @ +17 dBm Transmit
- Data Rate: up to 200 kbps
- Temperature range: -40 – +85 °C
- Programmable IF filter bandwidth (50/100/200/400 kHz)
- Ultra low power OFF/Standby modes
- Automatic Frequency Correction (AFC)
- Single ended & Differential PA options
- Offset Cancellation Loop
- FEC with 1-bit error correction
- AES-256 encryption/decryption
- Efficient 4-wire SPI interface
- 64 bytes TX/RX FIFOs
- CRC/LQI/CCA
- Optional packet scrambling
- Automatic VCO & RX filter tuning
- No external components (only matching network and crystal)

IP DESCRIPTION

Silicon Vision, SVITRX402 is a highly integrated, low power, high performance multiband radio transceiver IP covering the 415/433/868/915/950MHz ISM bands (Industrial, Scientific and Medical) and compatible with **IEEE 802.15.4G standard**. SVITRX402 contains an integrated +17dBm Power amplifier and sensitivity of -114dBm at 2kbps on air data rate. SVITRX402 is an ideal solution for longer-range low data rate applications and is widely used in smart meters. The integrated hardware protocol accelerator and encryption co-processor offload time critical protocol functions from the application microcontroller enabling the implementation of advanced and robust wireless connectivity with low cost 3rd-party microcontrollers.

APPLICATIONS

- Smart Cities
- Metering systems
- VoIP headsets
- Keyboard video mouse (KVM)
- Remote keyless entry
- Industrial control
- Sensor networks



Block Diagram for SVITRX402



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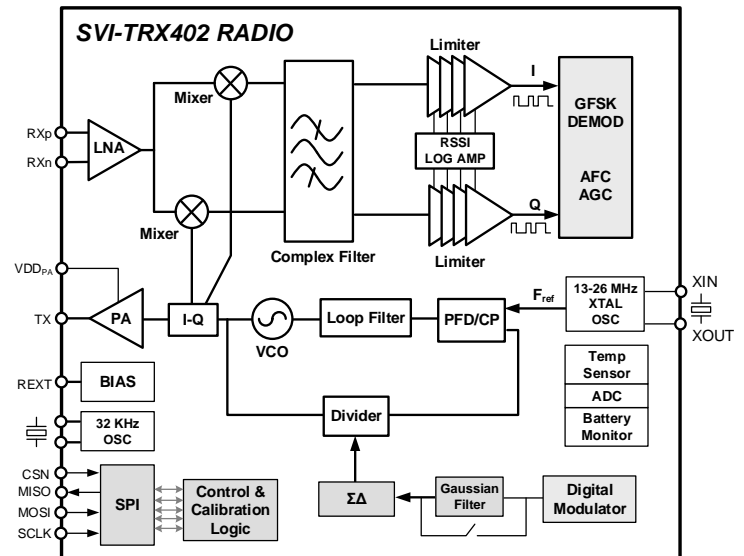
MAIN FEATURES

- Silicon Verified
- Automatic Frequency Correction (AFC)
- Integrated 26MHz XTAL oscillator
- Integrated 32kHz XTAL oscillator
- Integrated 32kHz RC oscillator
- Integrated Sleep timers
- Temperature sensor ($\pm 2.5^{\circ}\text{C}$)
- Battery monitor ($\pm \text{mV}$)
- 9bit auxiliary ADC
- Frequency hopping capability
- Programmable packet length from 1 to 256 bytes
- Can fit in 20L/32LQFN package in case of standalone IC

Evaluation Boards (EVB402) available:
Please contact info@si-vision.com
for more details

IP DESCRIPTION

The SVITRX402 integrates a complete sub-1GHz ISM radio transceiver, RF frequency synthesizer and baseband logic, including the integrated hardware protocol accelerator and encryption co-processor supporting a high-speed SPI interface for the application controller. No external loop filter, resonators, or VCO varactor diodes are required, only a low cost crystal, matching circuitry and antenna.



Block Diagram for SVI-TRX402 PHY

