

RF4000 Digital Terrestrial, DVB-T Tuner IC

The RF4000 is a single chip silicon tuner for DVB-T TV and set top box applications that provides all required RF and analog signal processing from the antenna to the demodulator IC input. As shown below, the IC includes a front-end LNA with internal AGC, a band-pass tracking filter, frequency conversion, staged gain control, and channel filtering blocks.

Other circuits included are the synthesizer, a separate loop through amplifier, and a combiner for a remodulated analog TV signal. 6, 7, and 8MHz programmable channel bandwidths are supported.

Featuring AdaptiveTune™ control technology, the RF4000 improves receiver performance while reducing the bill-of-material component count. A simple 2-layer surface mount board design can improve end product quality, simplify manufacturing, and reduce system cost.



Features

- Single-chip RF design
- No external LNA required
- Integrated channel filter; no external SAW filter required
- No external tracking filter required
- Integrated synthesizer including VCO
- Integrated voltage regulator
- Single-ended RF input – no baluns needed
- Excellent image rejection
- 6, 7, or 8 MHz programmable channel bandwidth
- 36Mhz output interface
- Broad dynamic range
- High immunity to interference
- AdaptiveTune™ programming registers
- Operates from single 5V supply
- Two-wire serial bus protocol

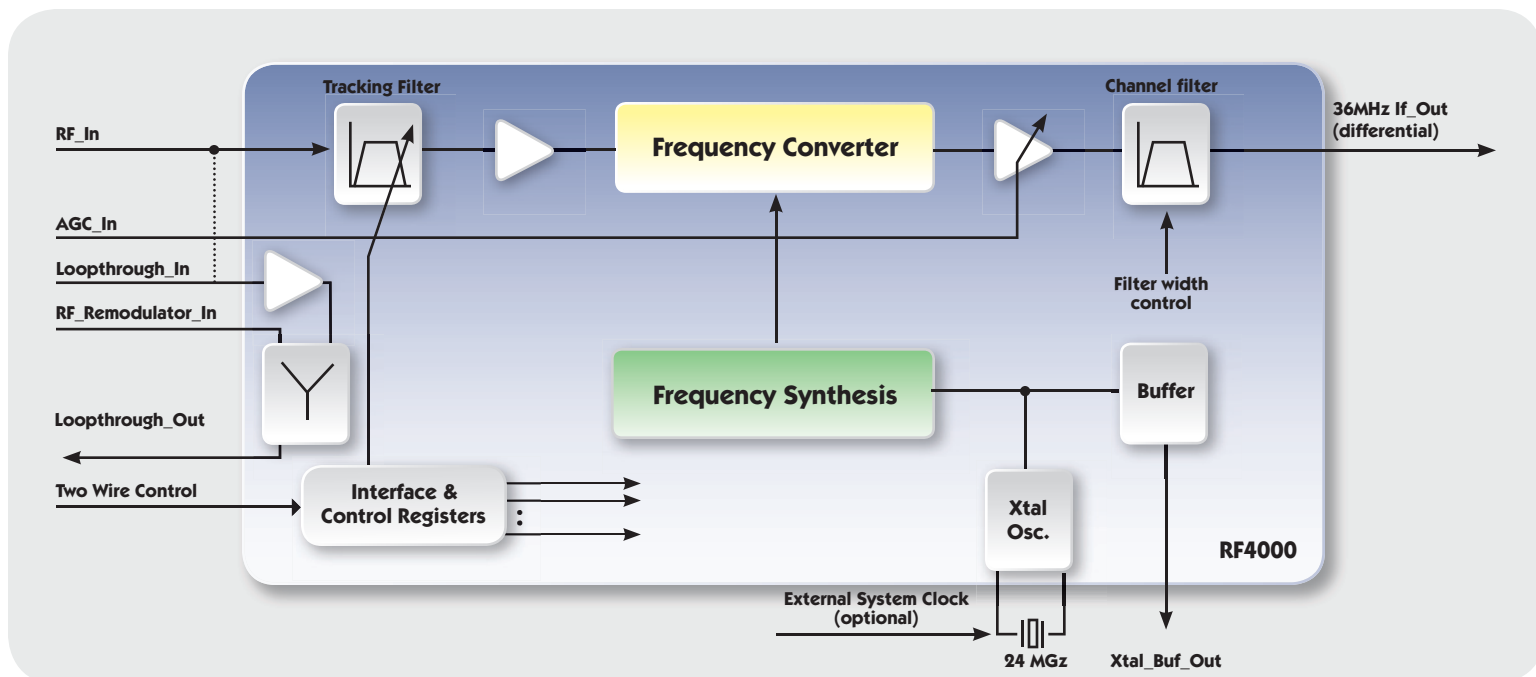
- Includes remodulation input in Loophrough path
- Full integration for lowest BOM cost
- 56 pin QFN package
- Fully compatible with all DTG and Nordig requirements

Applications

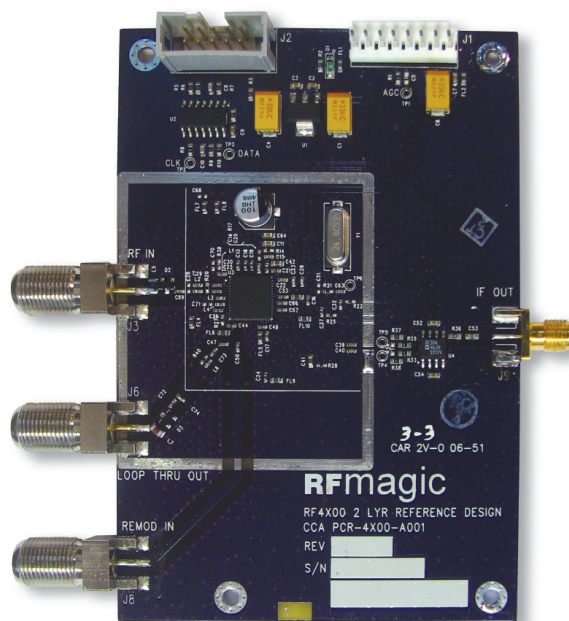
- DVB-T TV Set Top Box Converter
- TV
- PCTV Card
- Multifunction Appliance (PDA, laptop, etc.)

Target Bands

- 174MHz to 230MHz (VHF Band III)
- 470MHz to 622MHz (UHF Band IV)
- 622MHz to 862MHz (UHF Band V)



Functional Block Diagram



Evaluation Board

Ordering Information

| Product | Part Number | EVK Description |
|---------|---------------|------------------------------|
| RF4000 | PCR-4X00-A001 | RF4000 DVB-T Evaluation Kit) |