

## Ultra-compact low-power 3.3-V terrestrial tuner IC

Data Brief

### Features

- RF-to-baseband direct conversion (IQ interface only)
- Single 3.3-V DC supply
- Input frequency range 174 to 230 MHz and 470 to 870 MHz
- Fully integrated VCO
- Harmonic rejection mixer stage
- Fully integrated RF AGC with RF power monitoring
- Programmable channel filter covers 6 to 8 MHz channel spacing
- Low external component count
- Low power consumption (625 mW typical)
- Temperature range -10° C to 70° C
- Crystal frequency output to drive the demodulator IC
- Compatible with 5-V and 3.3-V I<sup>2</sup>C bus
- Fully Nordig Unified (versions 1.0.2, 1.0.3, 2.0) compliant
- DTG (D-Book) compliant
- Digitenne compliant
- VFQFPN-32 5x5x1 mm<sup>3</sup>, exposed pad down
- ECOPACK, environmentally-friendly package, RoHS (2002/95/EC) compliant.

### Description

The STV4100 terrestrial tuner is a direct-conversion (zero-IF) receiver with quadrature outputs intended for digital TV broadcasting.

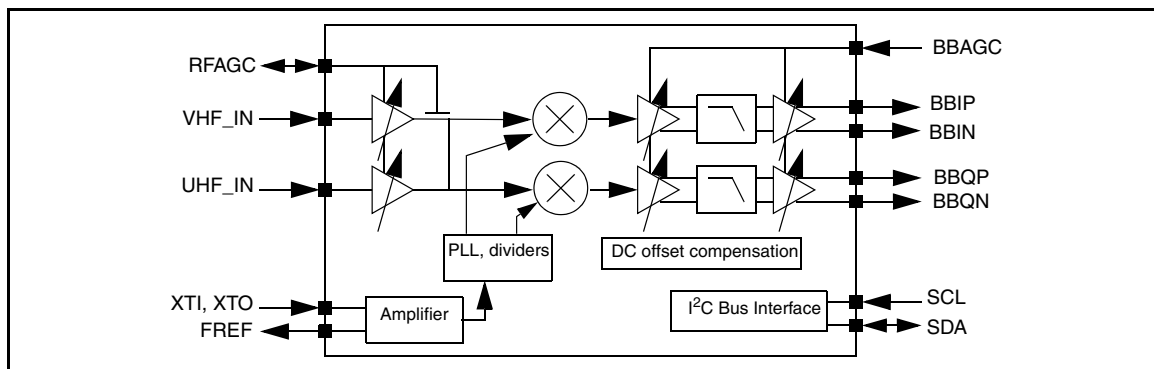
On each VHF and UHF input is a low noise amplifier with both switchable and variable gain to ensure an optimal signal level for the two mixers. Each mixer, which down-converts the signal to baseband, is followed by a low-pass filter and amplifier. The baseband gain is programmable via a dedicated pin.

The LO signals are provided by an integrated PLL which contains an on-chip voltage controlled oscillator meeting stringent phase noise requirements. The LO frequencies are programmable.

The comparison frequency for the phase/frequency detector is generated by dividing the crystal oscillator reference frequency. The crystal frequency can be from 16 MHz to 31 MHz depending on application.

### Typical applications

- Terrestrial set-top box
- iDTV
- PCTV



# 1 Applications

The STV4100 DVB-T tuner is designed to match optimally to industry-leading STMicroelectronics demodulator ICs such as the STV0362.

**Figure 1. Applications diagram for DVB-T system**

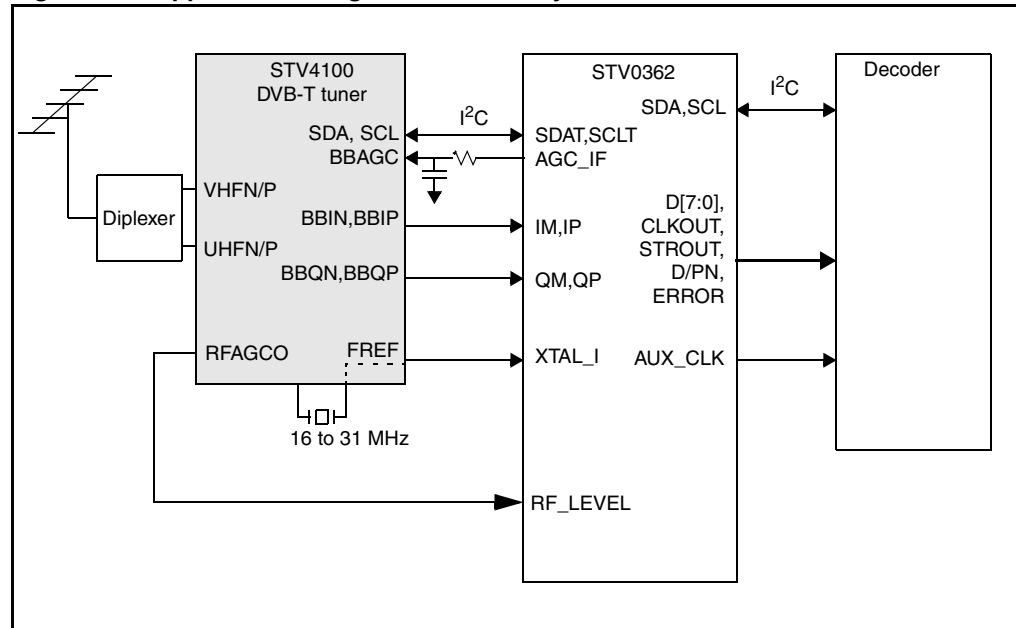


Figure 2. Applications diagram without loop-through

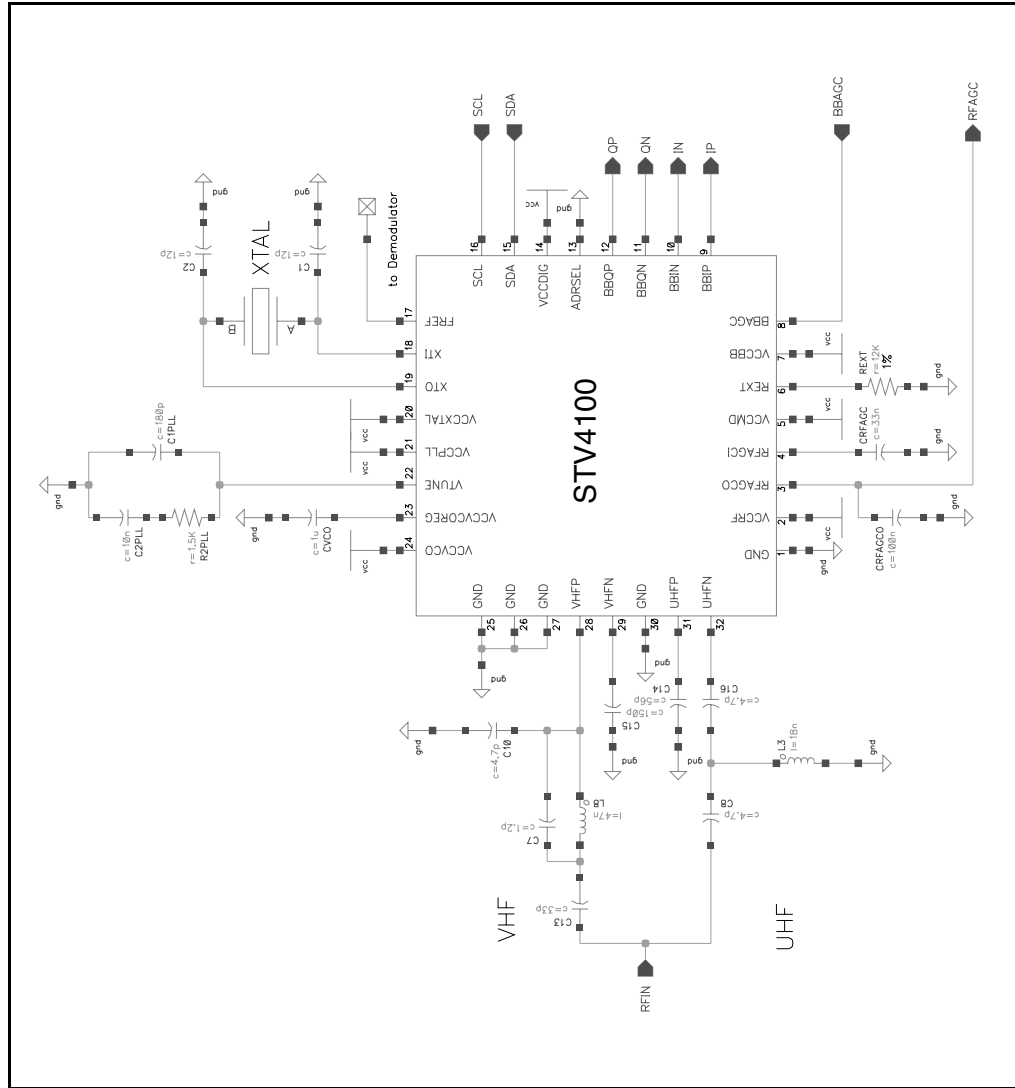
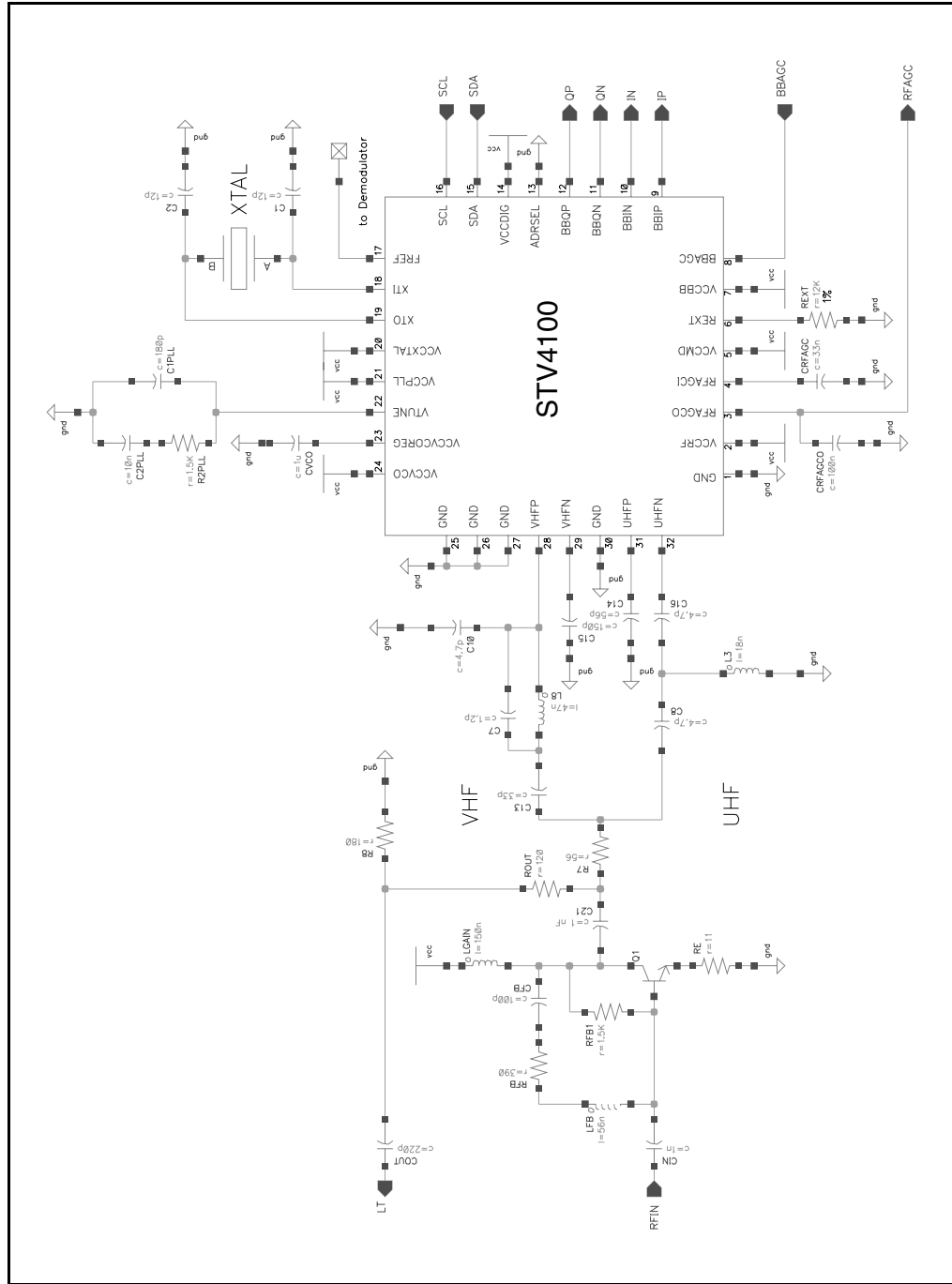


Figure 3. Applications diagram with loop-through (simplified)



## 2 Ordering information

Table 1. Ordering information

| Order code | Temperature range | Package                       | Packaging     |
|------------|-------------------|-------------------------------|---------------|
| STV4100B   | -10 to 70° C      | VFQFPN-32<br>exposed pad down | Tray          |
| STV4100BT  | -10 to 70° C      | VFQFPN-32<br>exposed pad down | Tape and reel |

### 3 Revision history

Table 2. Document revision history

| Date        | Revision | Changes          |
|-------------|----------|------------------|
| 18-Mar-2009 | 1        | Initial release. |

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