

# AST-GLSRF GLONASS RF Downconverter



AST-GLSRF is a high performance, fully integrated GLONASS RF front-end chip for down conversion and signal amplification. It is designed for GLONASS receivers.

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- *Fully integrated GLONASS RF front-end IC*
  - *On-chip LNA, PLL and IF band pass filter*
  - *Digital 2-bit output*
  - *Single 2.7 to 3.3V power supply*
  - *Antenna sensing circuit present on-chip*
  - *Auto-calibrated*
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AST-GLSRF follows a typical super-heterodyne architecture. It has an on-chip LNA as the first block with a typical gain of 20dB and Noise figure of 2dB. This is followed by a single mixer stage which down-converts the input signal frequency band of GLONASS satellites to a manageable IF frequency of 2.46 to 9.77MHz. The IF amplifier and low pass filter stages that follow ensure that the IF signal is suitably amplified and filter the unwanted out of band interference.

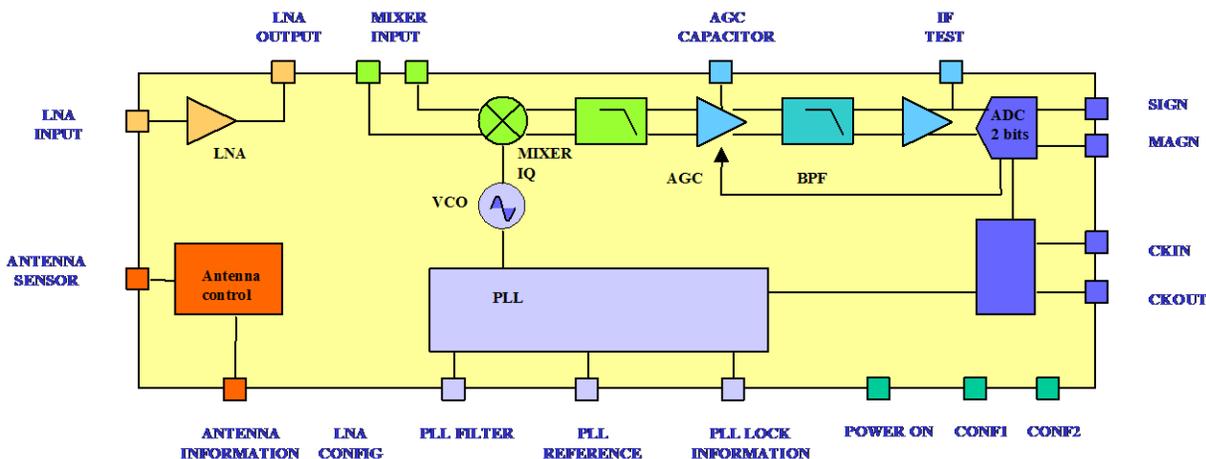
The IF band pass filter stage is uniquely designed and does not require calibration for each and every device.

A last stage 2-bit ADC digitizes the IF signal into SIGN and MAG outputs to be interfaced to a GLONASS Correlator along with the sampling clock. An on-chip PLL accepts a 16.368MHz clock input and derives the mixer frequency.

It is possible to interface either active or passive GLONASS antenna to AST-GLSRF. In addition, AST-GLSRF also provides features such as GLONASS antenna open and short detection and protection. AST-GLSRF has an indication of PLL Lock status that can be used to verify the PLL behavior.

For power sensitive applications, AST-GLSRF has configurable power down mode, which is selectable by a dedicated pin on the IC. The IF output before the ADC is brought out to a pin for evaluation / measurement.

AST-GLSRF operates from a single power supply of 2.7 to 3.3V. A typical value of 3.0V is preferred for most applications. At 3.0V, the current drawn is about 15mA.



### Applications:

- Vehicle Navigation
- Asset Tracking
- GPS-GLONASS Receivers

