



# GPS Receiver Overview

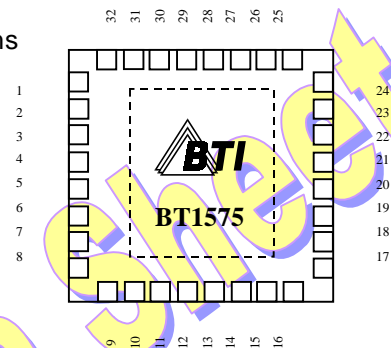
# BT1575A

## Single Chip L1 GPS RF-IF Receiver with Mobile Immunity™

### Features

- Complete L1 band GPS RF-IF receiver
- Single supply operation: 2.4 V to 3.0 V
- Low current consumption
- Optimized for Cellular/PCS embedded applications
- Designed to be compatible with the SnapTrack®\* System
- Programmable sleep mode for more standby time in TDMA systems
- Integrated LNA
- Integrated synthesizer circuitry
- 4 bit analog-to-digital converter (ADC) with AGC for improved GPS receiver sensitivity
- CDMA/TDMA/GSM system clock compatible synthesizer
- Image reject architecture for reduced parts count
- Operating temperature range: -40 to +85 °C
- CMOS compatible inputs/outputs
- User selected internal/external sampling clock for ADC
- RF BiCMOS technology with ESD Protection
- 32 Pad Quad Leadless Exposed Pad Package (QLP)

QLP 32L  
(Top View)



### Benefits

- Extremely Flexible: Add to ANY existing MPU, DSP or Base-Band (no expensive chip set)
- Mobile Immunity™ architecture will not interfere with RF-IF signals in digital cellular handsets
- No special reference frequencies or TCXOs required: Use ANY external source from 10-40MHz
- Programmable Serial or Parallel digital outputs increase flexibility & reduce GPS system cost
- Very low parts count results in  $< 1\text{in}^2$ , 2-layer PCB, with all components mounted on one side!
- Enhanced performance GPS receiver provides additional operational margin for higher yields
- Very Low power consumption allows adding GPS to existing limited battery power budgets
- Total receiver system is programmable for on-demand GPS location fixes with low standby power

### Applications

- Any Digital Cell Phone handset
- PDAs, HPCs, PCMCIA cards, Compact Flash Cards
- Notebook PCs, Desktop PCs
- Handheld GPS Receivers
- Automotive Systems, Marine Systems, Aircraft Systems
- Security Systems, Timing Reference Systems
- Consumer Appliances, Industrial Process Control Systems

### General Description

The BT1575 is a dual down-conversion GPS receiver optimized for operation in CDMA, TDMA, GSM, and AMPS mobile telephone terminals. The advanced architecture of the BT1575 provides Mobile Immunity™ to the complex signals present in digital cellular handsets, as well as notebook PCs, HPCs, and PDAs. The external signals of the BT1575 also have been carefully designed to prevent interference with the operation of digital cellular handsets. The BT1575 includes an integrated low-noise amplifier, programmable synthesizer and a four-bit analog-to-digital converter (ADC) for use in GPS applications requiring exceptional sensitivity, such as SnapTrack® compatible E-911. The BT1575 can also be used with more conventional base-band processors that may require only single bit resolution.

\* SnapTrack® is a registered mark of the SnapTrack Corp.

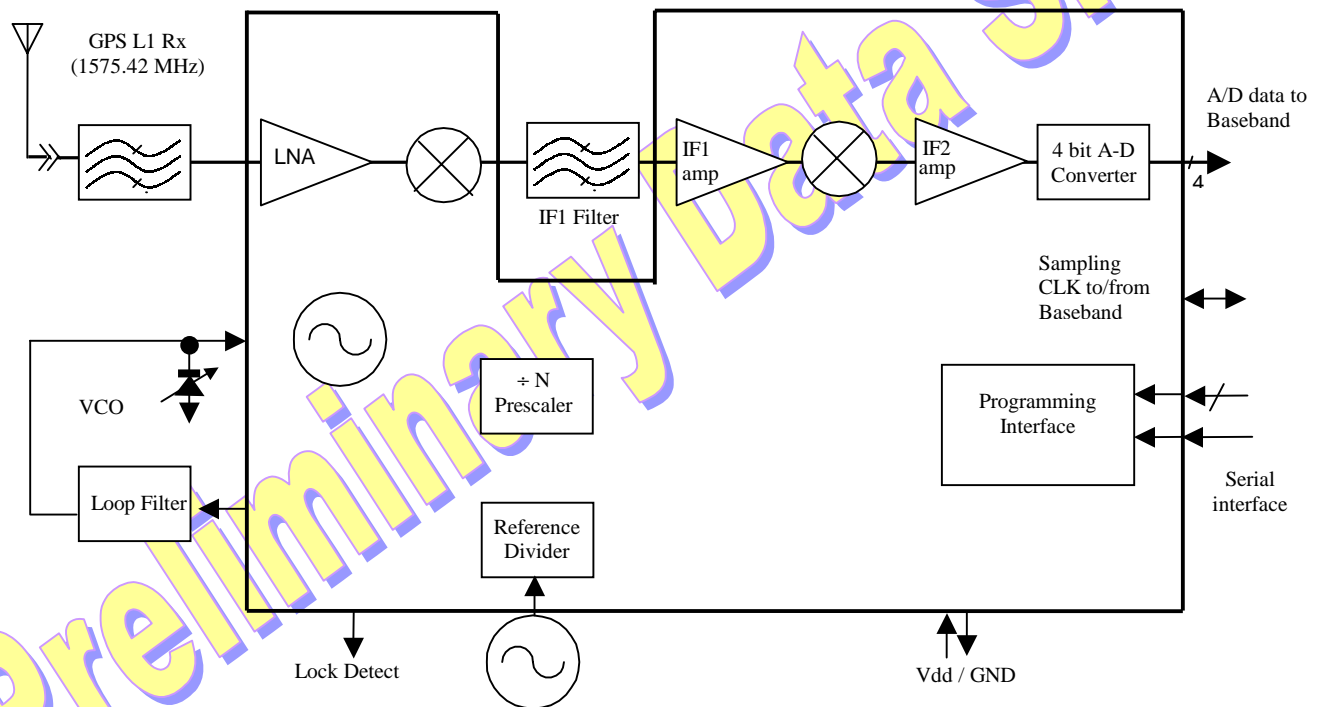


## Operating Modes Description

Two non-reset operating modes exist in the BT1575. Normal mode (GPS RECEIVER ENABLED) powers up the entire receive chain to allow immediate processing of down converted GPS signals. Sleep mode (also known as blanking mode) is programmable via the three-wire interface to allow maximum flexibility.

## Block Diagram

As illustrated below, the BT1575 is a dual down conversion receiver optimized for operation in the presence of strong CDMA, TDMA, GSM, and AMPS mobile telephone interferers. An external or internal sampling clock can be selected for operation of the BT1575.



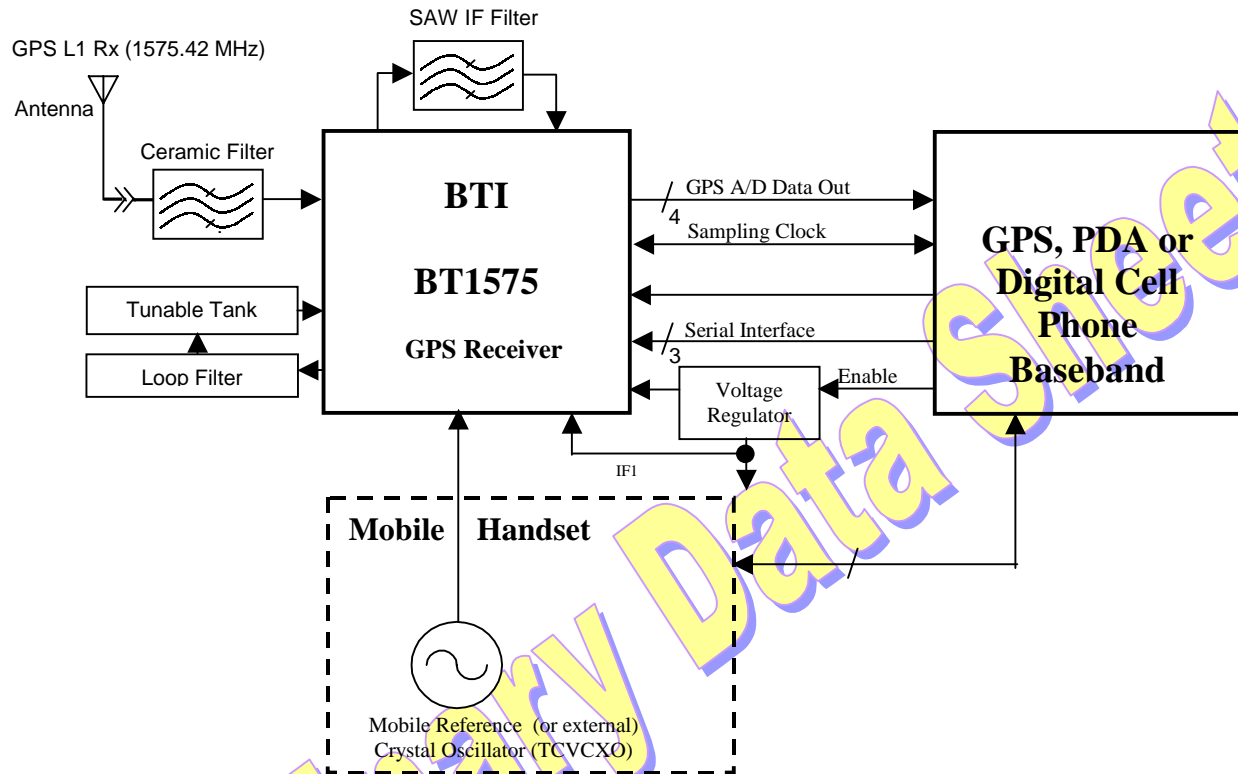


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## System Diagram

The receiver architecture below shows a typical low power integration of the GPS BT1575 with a GPS Baseband to provide a complete solution for integration into a single mode, multi-mode, or multi-band multi-mode cellular/PCS mobile handset.



## Ordering Information

Part No. / Description	For:	Contact:
BT1575 GPS Receiver	<ul style="list-style-type: none"><li>Pricing Information</li><li>Application Assistance</li><li>Samples &amp; Eval Boards</li><li>Other RFIC products</li></ul>	USA: BTI Tel: (562) 407-0500 Fax: (562) 407-0510 sales@betheltronix.com

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13825 Cerritos Corporate Dr., Cerritos, CA 90703, USA

Phone: 562-407-0500

Fax: 562-407-0510

<http://www.betheltronix.com>