

STV0399 Front-End Single Chip

for Digital Satellite Broadcasting

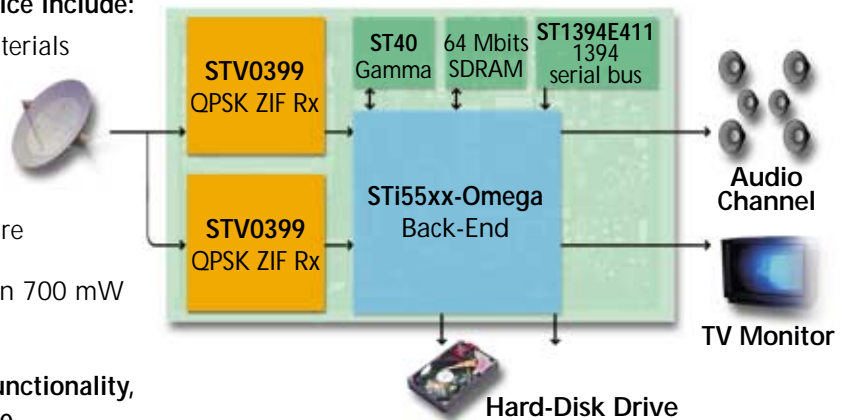


With over five years experience in satellite broadcasting, it is no surprise that STMicroelectronics has become the first company to offer a complete front-end single chip for digital satellite receivers and set-top boxes.

Implemented in an advanced 0.18µm CMOS process, the STV0399 integrates a Zero IF tuner, a multi-standard (QPSK and 8-PSK) demodulator and a Forward Error Correction block in a single chip. Until now, two or more IC's have been required to implement these functions, at a cost significantly higher than that made possible by the STV0399.

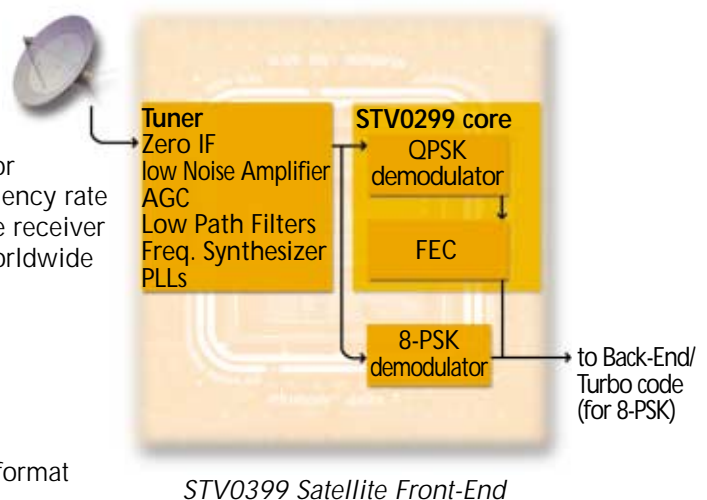
Key benefits of this ground-breaking device include:

- A significant reduction in the bill of materials required by equipment manufacturers
- Comprehensive RF circuitry on-chip, including a full range frequency synthesizer, baseband control and all baseband filters
- Simplified board design and manufacture as no RF expertise required
- Very low power consumption - less than 700 mW
- Small package size



With such a major increase in on-chip functionality, the STV0399 is able to offer a wide range of high performance features. These include:

- Direct RF input from LNB
- Direct conversion demodulation (Zero IF)
- On-chip full range frequency synthesizer
- Wide 950 to 2150 MHz frequency range covering worldwide needs
- Multi-standard QPSK, 8-PSK and BPSK demodulator
- Channel bit rate up to 100 Mbps and symbol frequency rate from 1 to 45 Msymbols, enabling the same satellite receiver design to adapt to various satellite transponders worldwide
- Extremely low BER when co-channel interference
- Wide carrier loop tracking range to compensate for dish frequency shift
- I²C serial bus
- LNB supply control with standard I/O, 22kHz tone and DiSEqC™ Modulator
- DVB common interface compliant parallel output format
- Parallel and serial data output
- Compliance with DVB-S and DirecTV system specifications
- Option to connect to Turbo Code external FEC



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EVAL0399 Development Platform

A comprehensive evaluation platform is provided for the STV0399, which significantly reduces the development time for the new generation of set-top boxes.

Key elements of this advanced platform include:

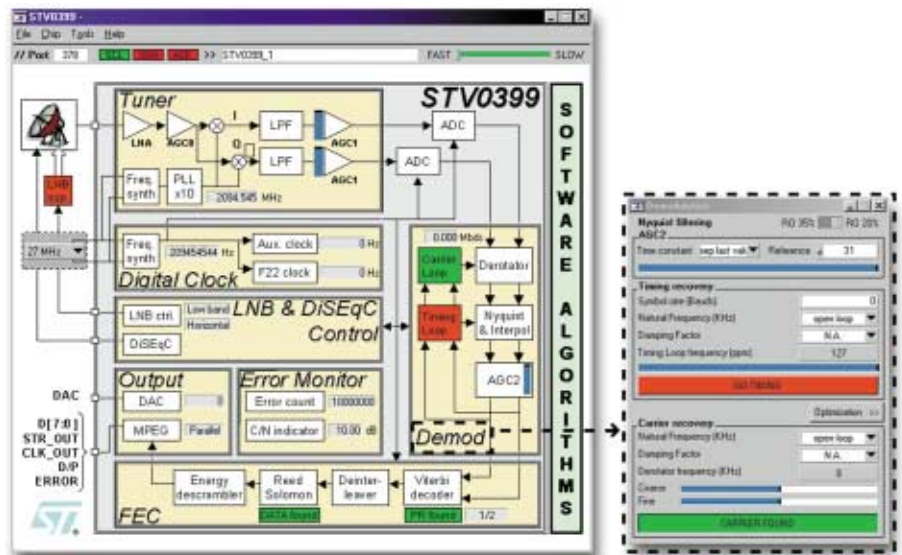
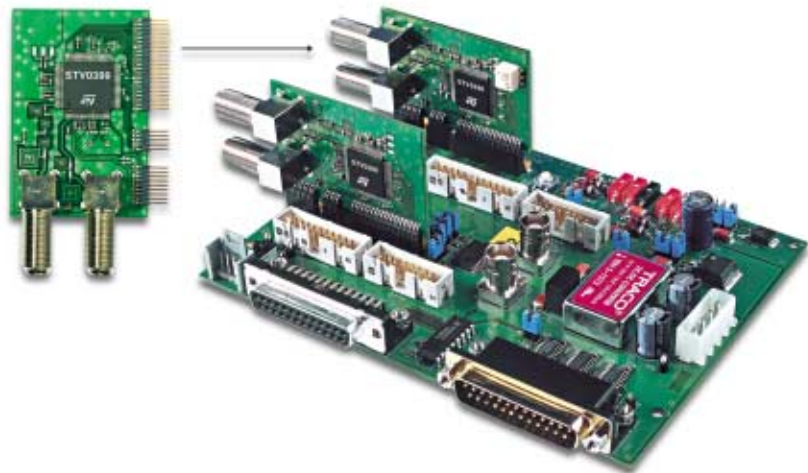
- A **socket board** providing a seamless interface to the back-end
- Up to two **BD0399 tuner boards** for "watch and record" applications. The BD0399 uses a reference design that has been optimized for direct use in production.

Key specifications are:

- Size: 39mm x 59mm
- PCB material: FR4, 1.6mm thickness
- All components soldered on the top side
- No shielding

- All-inclusive **software package** incorporating:

- User friendly graphical interface running under Windows™ (95/98/NT), including full access to STV0399 registers and search/scan algorithms
- STAPI drivers for the 55xx platform
- Detailed documentation



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Full Product Information at www.st.com