MaxLinear

General Description

The MxL581C is a low-power single-chip satellite receiver IC, featuring an L-band Full-Spectrum Capture® (FSC®) tuner and eight demodulators that are compliant with DVB-S, DVB-S2, and DIRECTV legacy standards.

The MxL581C receives signals from the L-band differential RF input from 950 MHz to 2150 MHz, and demodulates eight satellite channels to produce eight independent serial TS outputs. All eight TS outputs support two-wire, three-wire, or four-wire modes.

The MxL581C communicates with satellite LNBs through on-chip DiSEqC and FSK modems.

All major functions are incorporated onto the device, including LNA, channel filters, AGC, adaptive equalizers, PLLs, crystal load capacitors, and demodulators. The MxL581C enables simple, compact board designs with low-power consumption and reduced BOM costs.

The MxL581C is controlled via an I^2C interface, and operates using 1.8V and 1.1V core supplies and an I/O supply of 3.3V. The MxL581C is available in a small 10 mm x 10 mm footprint 72-pin QFN package.

Applications

- STBs
- Residential gateways
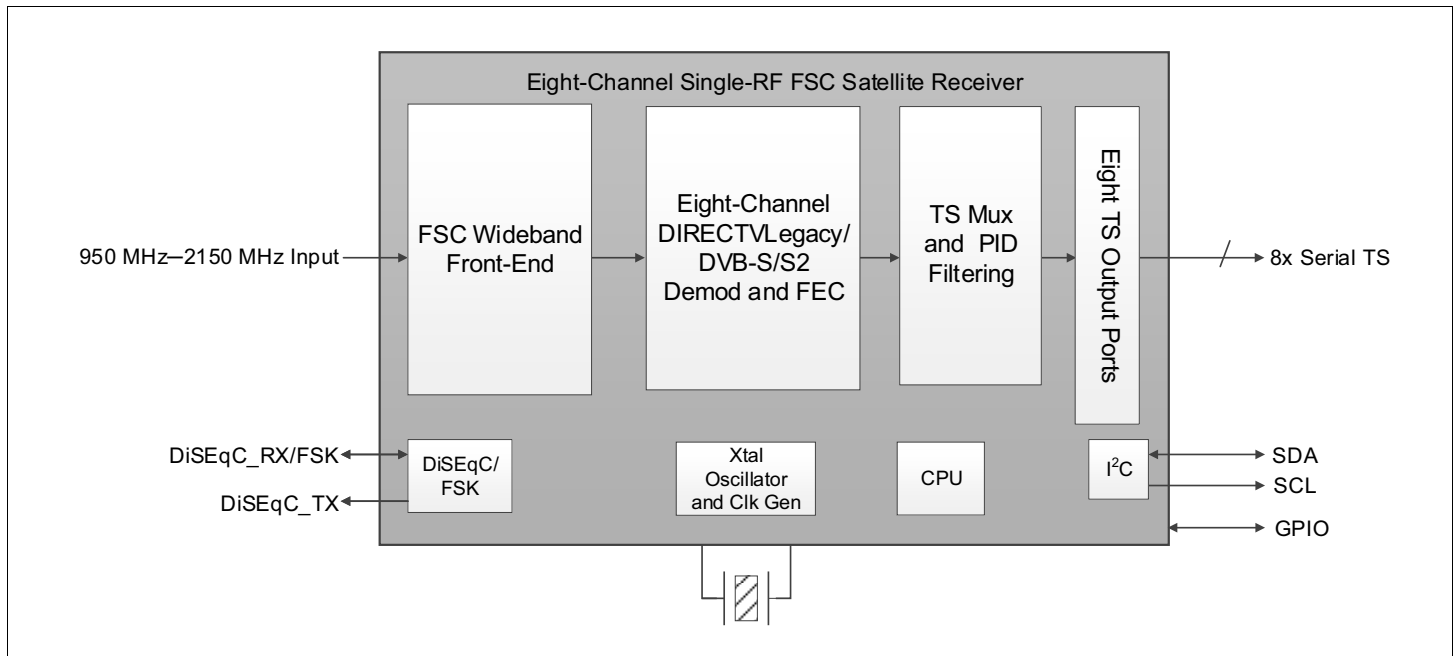- SAT>IP multi-switch
- IP-LNB

Features

- Ultra low power
- Symbol rates of:
  - 1 MSps to 45 MSps in DVB-S and DVB-S2 modes
  - 20 MSps to 30 MSps in DIRECTV legacy mode
- DIRECTV full transponder loading compliant
- Broadcast wake-up
- Conversion from DIRECTV legacy packets to standard DVB-S/DVB-S2 TS packets
- Single-channel or Network Tuner mode
- Integrated LNA
- Differential RF input
- Channel spectrum analysis data available through I^2C
- On-chip programmable crystal load capacitors to reduce external components
- Coexistence with MoCA, LTE, and WiFi
- Automatic channel acquisition
- Auto-detection and auto-correction of spectral inversion
- Eight serial TS output ports, configurable in two-wire, three-wire, or four-wire modes
- PID filtering and output TS multiplexing with two, four, or eight TS output ports
- DiSEqC 2.2 two-way LNB control interface and FSK modem
- Unicable, *EN50494:2007* and *EN50607:2013* standards, and SWM single-cable LNB distribution
- I^2C compatible interface

Supported Standards

- DVB-S
- DVB-S2
- DIRECTV legacy standard

Block Diagram

Ordering Information

Marketing Part Number	Ordering Part Number	Package	Dimensions	Shipping
MxL581C	MxL581C-AK-T	SAWN QFN72	10 mm x 10 mm x 0.85 mm	Tray
MxL581C	MxL581C-AK-R	SAWN QFN72	10 mm x 10 mm x 0.85 mm	Tape and Reel

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