Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

Description

The Si21802 integrates two separate high-performance digital demodulators for the Japanese and South American terrestrial ISDB-T standard and for the DVB-T and DVB-C standards in a single compact package. Leveraging Silicon Labs' proven digital demodulation architecture, the Si21802 achieves excellent reception performance for each media while significantly minimizing front-end design complexity, cost, and power dissipation. Connecting the Si21802 to a dual terrestrial/cable TV tuner results in a high-performance and cost optimized TV or STB front-end solution.

Leveraging significant field experience in DVB terrestrial demodulation (DVB-T), the Si21802 dual demodulator can accept standard or low-IF inputs (differential) and complies with the Brazilian SBTVD-T terrestrial specifications (ABNT NBR 16.601 and 15.604). Main features include fast channel scan, very short lock times, state of the art CCI performance, partial reception, and auxiliary channels decoding. DVB-T and DVB-C demodulators are next-generation enhanced versions of proven and broadly-used Silicon Labs' Si2169/68/67/66/64/62/60 devices.

The cable reception allows demodulating widely deployed DVB-C legacy standard (ITU-T J.83 Annex A/C) and the Americas' cable standard (ITU-T J.83 Annex B).

The Si21802 offers an on-chip blind scanning algorithm for DVB-C standard, as well as blind lock function.
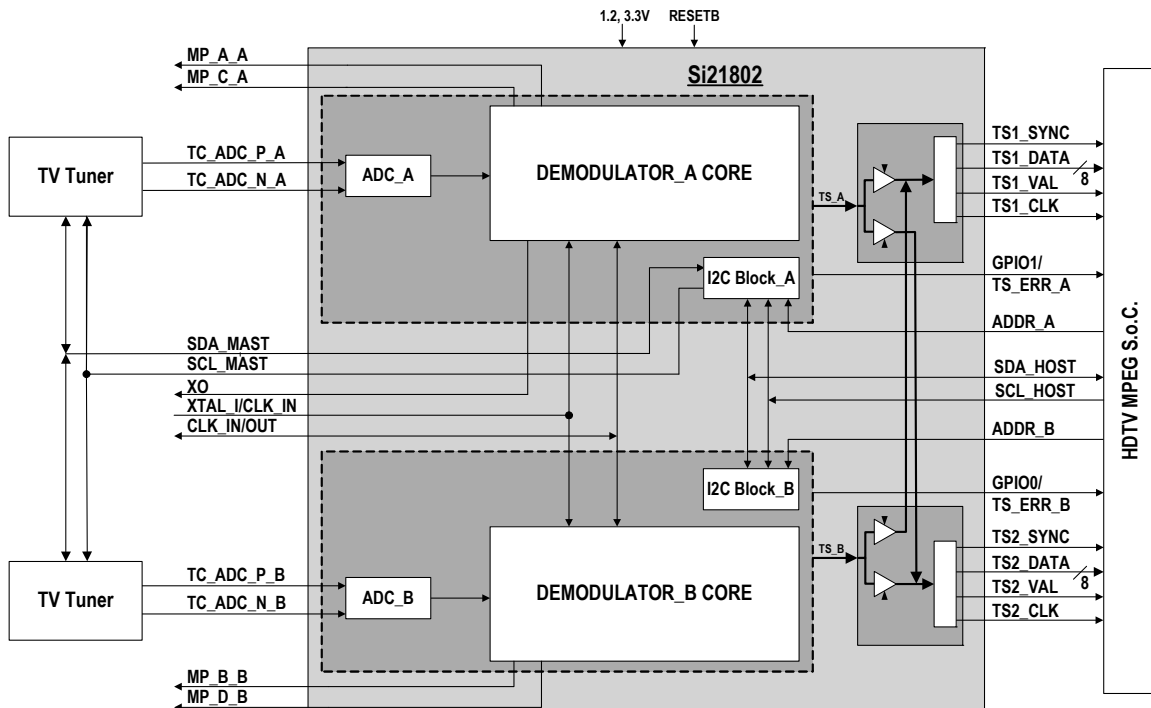
The Si21802 embeds two independent programmable transport stream interfaces which provide a flexible range of output modes, including a cross-bar functionality, and are fully compatible with all MPEG decoders or conditional access modules to support any customer application.

Features

- Pin-to-pin compatible with all dual demodulator family: Si216x2 and Si218x2
- API compatible with all single and all dual demodulators
- ISDB-T (ABNT NBR 16.601 and 15.604)
    - 6, 7, and 8 MHz bandwidth
    - Partial reception supported (reception of only one OFDM segment at the center of a group of segments)
    - AC1 and AC2 decoding
- DVB-T (ETSI EN 300 744)
    - OFDM demodulator and enhanced FEC decoder
    - NorDig Unified 2.5 and D-Book 8 compliant
- DVB-C (ETSI EN 300 429) and ITU-T J.83 Annex A/B/C
    - QAM demodulator and FEC decoder
    - 1 to 7.2 MSymbol/s
- I^2C serial bus interfaces (master and host)
- Upgradeable with firmware patch download via fast SPI or I^2C (broadcast mode supported)
- Firmware control (embedded ROM/NVM)
- Dual independent differential IF input for T/C tuners
- GPIOs and muti-purpose ports (two per demodulator)
- Separate flexible TS interfaces with serial or parallel outputs and cross-bar feature
- Fast lock times for all media
- Low power consumption
- Only two power supplies: 1.2 and 3.3 V
- 8x8 mm, QFN-68 pin package, Pb-free/RoHS compliant

Applications

- Multi-receiver iDTV: on-board or in a NIM
- Advanced multimedia PVR STBs
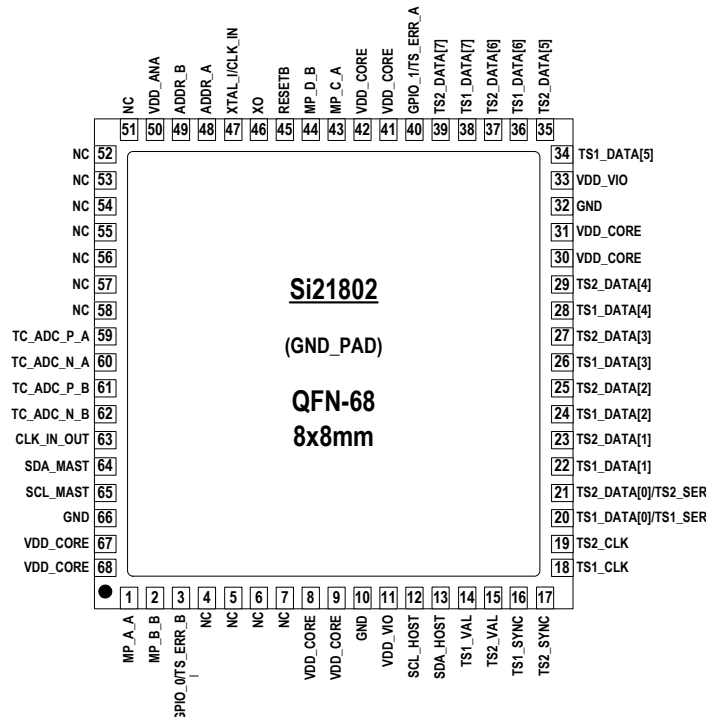- PC-TV accessories
- PVR, DVD, and Blu-Ray disc recorders

Selected Electrical Specifications

(T_A = –10 to 75 °C)

Parameter	Test Condition	Min	Typ	Max	Unit
General					
Input clock reference		4	—	30	MHz
Supported XTAL frequency		16	—	30	MHz
Total power consumption	ISDB-T[1]		168		mW
	DVB-T[2]	—	182	—	mW
	DVB-C[3]	—	142	—	mW
Thermal resistance (θJA)	4 layer PCB	—	42	—	°C/W
Power Supplies					
V_{DD_VCORE}		1.14	1.20	1.30	V
V_{DD_VANA}		3.00	3.30	3.60	V
V_{DD_VIO}		3.00	3.30	3.60	V

Notes:
 1. Test conditions: 8K, 64-QAM, CR = 7/8, GI = 1/32, 13 segments
 2. Test conditions: 8 MHz, 8K FFT, 64-QAM, parallel TS.
 3. Test conditions: 6.9 Mbaud, 256-QAM, parallel TS.

Pin Assignments

Selection Guide

Part Number	Description
Si21802-B60-GM	Dual ISDB-T and DVB-T/C Demodulator, 8x8 mm QFN-68