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 Si2168B integrates DVB-T2, DVB-T, and DVB-C digital demodulators into a single advanced CMOS technology mixed-signal die for next generation terrestrial and legacy cable TV standards. Leveraging Silicon Labs' proven digital demodulation architecture, the Si2168B achieves excellent reception performance while significantly minimizing front-end design complexity, cost, and power dissipation. Connecting the Si2168 to a terrestrial and cable hybrid TV tuner or digital only tuner, such as Silicon Labs' Si2178/58/48 devices, results in a high performance and cost optimized TV front-end solution.

Silicon Labs internally developed DVB-T2, including T2-Lite, demodulator can accept a standard IF (36 MHz) or low-IF input and support all modes specified by the DVB-T2 standard. Main features of the DVB-T2 mode are 256 QAM with rotated constellations, SISO and MISO support, FEF management, fully autonomous signal acquisition including automatic L1 signaling parsing, 600 kHz acquisition range, support for all pilot patterns, and DVB-T/T2 auto-detection. The DVB-T and DVB-C demodulators are enhanced versions of proven and broadly used Si2167B/68/69 Silicon Labs devices.

The Si2168B offers an on-chip blind scanning algorithm for the DVB-C standards as well as blind lock. The Si2168B can use a crystal, as a reference clock, or be driven by an external clock signal from the tuner.

The Si2168B programmable transport stream interface provides a flexible range of output modes and is fully compatible with all MPEG decoders or conditional access modules to support any customer application.

Features

- DVB-T2 and T2-Lite (ETSI EN 302 755-V1.3.1)
  - COFDM demodulator and FEC (LDPC + BCH) decoder
  - Bandwidth: 1.7, 5, 6, 7 or 8 MHz (and extended BW)
  - Supports up to 255 PLP(s) and outputs the data PLP plus the common PLP on a single TS
  - Scrambling of L1 post-signaling supported
  - NorDig Unified v2.4 and D-Book 7 V2 compliant
  - Firmware control (loaded in ROM)
- DVB-T (ETSI EN 300 744)
  - COFDM demodulator and enhanced FEC decoder
  - NorDig Unified 2.4, D-Book 7 V2compliant
- DVB-C (ETSI EN 300 429) / ITU J.83 Annex A/B/C
  - QAM demodulator and FEC decoder
  - 1 to 7.2 MSymbol/s
  - C-Book compliant
- I^2C serial bus interfaces (master and host)
- GPIOs and multi-purpose ports for independent AGCs
- Firmware control for upgradeability
- Flexible TS interface with serial or parallel single output
- Fast lock times for all standards including DVB-T2
- Only two power supplies: 1.2 and 3.3 V
- Pin-to-pin and software compatibility with the Si2168 and Si2164/62/60/66B/67B/69B
- 7x7 mm, QFN-48 pin package, Pb-free/RoHS compliant

Applications

- iDTV: on-board or in a NIM
- Advanced STB
- PC-TV accessories
- PVR, DVD, and Blu-Ray disc recorders
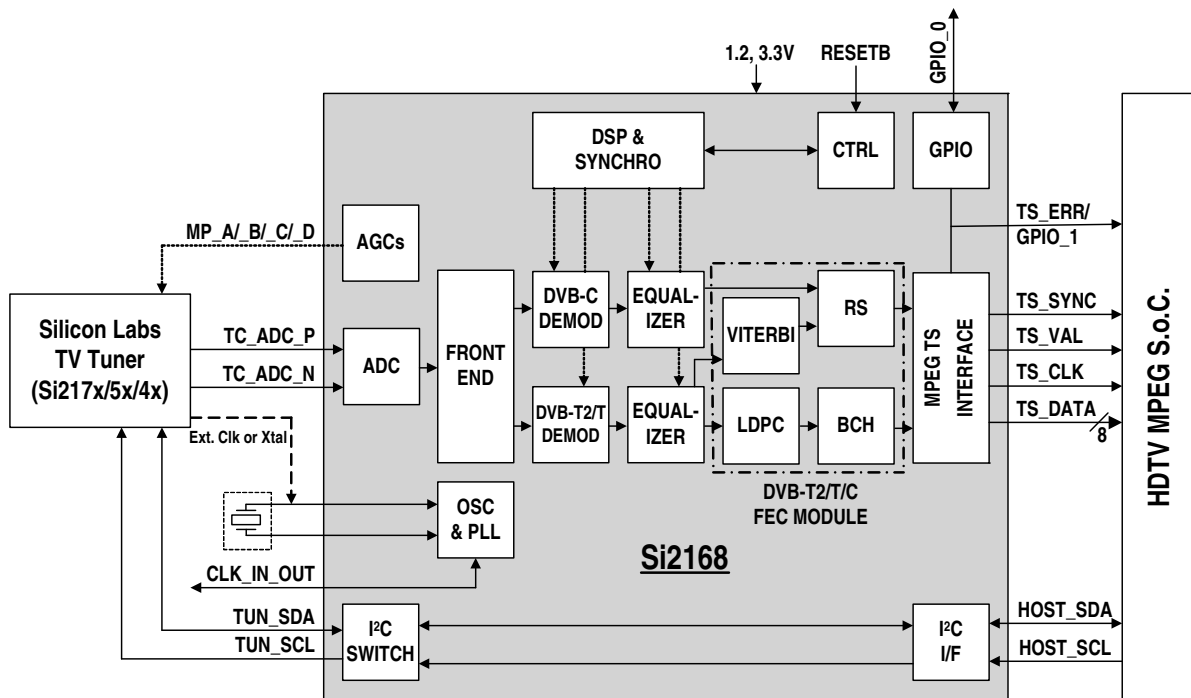
Selected Electrical Specifications

(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	DVB-T2[1]	—	420	—	mW
	DVB-T[2]	—	190	—	mW
	DVB-C[3]	—	180	—	mW
Thermal resistance (θ_{JA})	2 layer PCB	—	35	—	°C/W
	4 layer PCB	—	23	—	°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. Highest power demodulation case: 8 MHz, 256 QAM, 32K FFT, CR=3/5, GI=1/128, PP7, C/N at picture failure.
 2. Highest power demodulation case: 8 MHz, 64QAM, IF Mode, 8K, Parallel TS Output.
 3. Highest power demodulation case: 6.9 Mbaud, 256 QAM, IF Mode, Parallel TS Output.

Pin Assignments
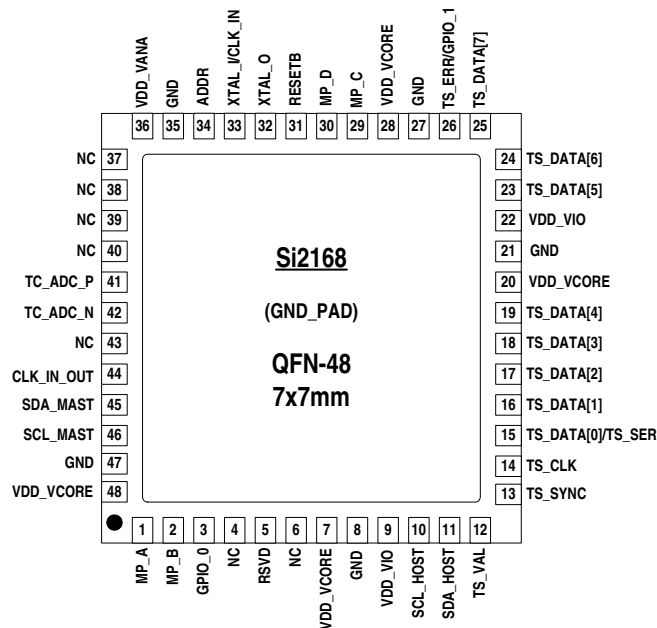
Selection Guide

Part #	Description
Si2168-B40-GM/R	Terrestrial and Cable Digital TV Demodulator for DVB-T2/T/C, 7x7 mm QFN-48