ISOmodem® Solutions

EMBEDDED MODEMS AND FAX MODEMS WITH AN INTEGRATED GLOBAL DAA
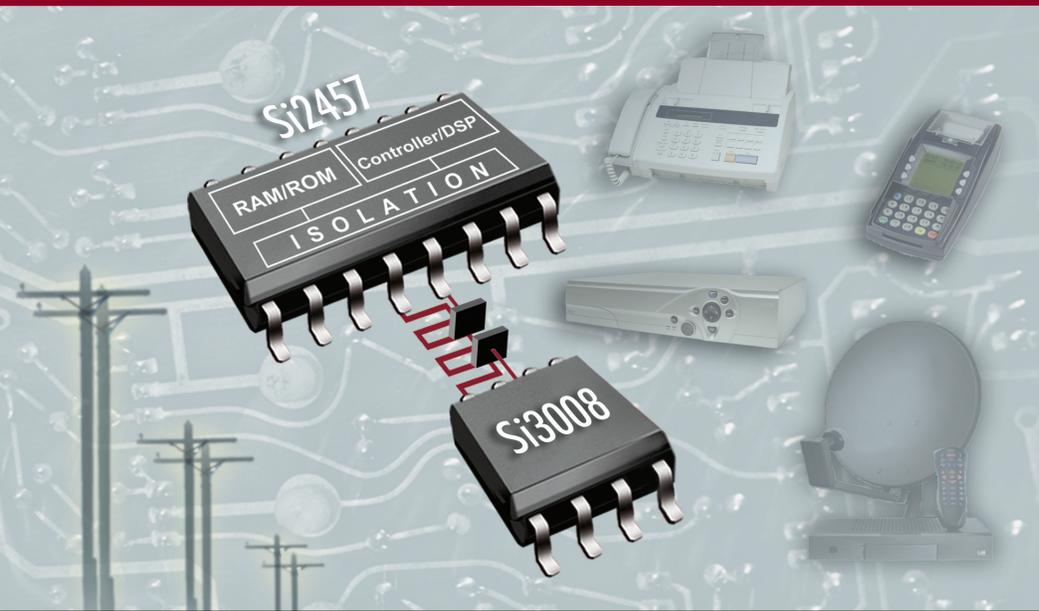

DESCRIPTION

The ISOmodem family of products are complete modems ranging in speed from 2400 bps to 56,000 bps. Offered as a chipset with a 16-pin high-speed global line side (LS) device, 16-pin low-speed global LS, or an 8-pin FCC+ LS (see back for country list), the ISOmodem utilizes Silicon Laboratories' patented direct access arrangement (DAA) technology to provide a programmable telephone line interface with an unparalleled level of integration. Available in two small packages, these compact solutions eliminate the need for a separate DSP, modem controller, codec, transformer, relay, opto-isolators, clocking crystal and 2–4 wire hybrid. These devices are ideal for embedded modem and fax modem applications due to their flexibility, small footprint and minimal external components.

BENEFITS

- Smallest, most compact modem solution
- Lowest external component count
- Reduces development time and resources

ISOmodem BLOCK DIAGRAM
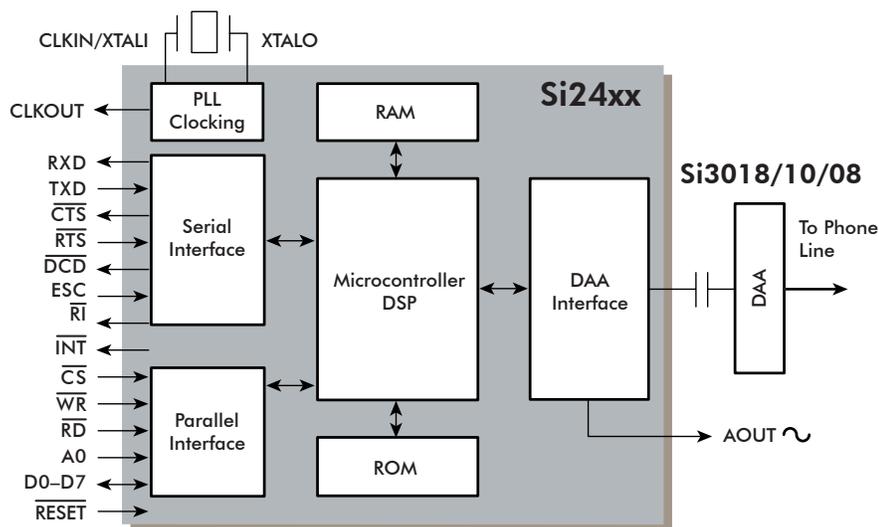
FEATURES

- Data modem formats
    - 56,000 bps: V.90
  - 33,600 bps: V.34
  - 14,400 bps: V.32bis
    - 9600 bps: V.32
  - 2400 bps: V.22bis
    - 1200 bps: V.22, V.23, Bell 212A
  - 300 bps: V.21, Bell 103
- Fax modem formats
    - 33,600 bps: V.34 half-duplex
  - 14,400 bps: V.17
  - 9600 bps: V.29
    - 4800 bps: V.27ter
  - 300 bps: V.21 channel 2
- Integrated DAA
  - Over 6000 V isolation
  - Global country support (Si3018/10 LS)
  - FCC, JATE, China and 47 other countries (Si3008 LS)
  - On and off hook line voltage monitoring
  - Parallel handset (intrusion) detection
- V.22 and V.29 fast connect
- V.42 and MNP 2–4 error correction
- V.42bis and MNP5 data compression
- AT command set
- 27 MHz clock input support
- Type I and Type II Caller ID
- Serial UART or parallel interface
- Field upgradable
- <85 mW power consumption
- Lead-free, RoHS compliant packages

APPLICATIONS

- Set-top boxes
- Multi functional printers
- Electronic point-of-sale
- Remote monitoring
- Data/video telephones
- Fax machines

SOLUTION GUIDE

SINGLE DESIGN

SUPPORTS ALL COUNTRIES

AND ALL SPEEDS

SILICON LABS

ISOmodem Solutions

Highest Level of Integration

By integrating the DSP, modem controller, RAM and ROM on-chip, the ISOmodem significantly reduces software development time and resources needed to provide a full-featured modem.

Smallest Footprint

Dramatically reducing the bill-of-materials to less than 30 external components, the ISOmodem is the smallest complete modem solution on the market. This compact design eases layout, procurement and compliance testing while the smaller footprint allows for more functions on a given PCB.

Proven, Robust Solution

Leveraging Silicon Laboratories' proven DAA technology, the ISOmodem offers robust operation, excellent surge immunity and reliable worldwide performance.

Compact Design with Fewest External Components

Si3018/10 global LS
• Parallel handset detection
• 16-pin SOIC package
• Less than 35 external components

Si3008 FCC+ LS
• Parallel handset detection
• 8-pin SOIC package
• Less than 30 components
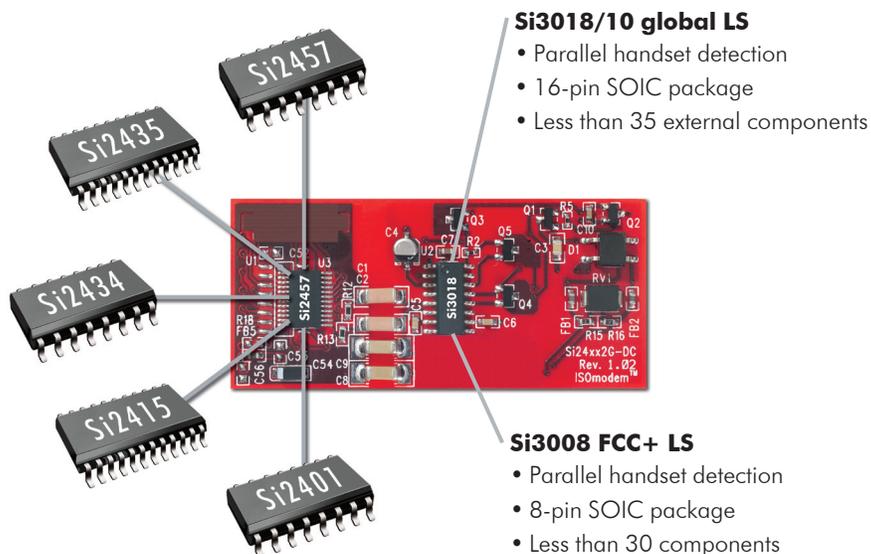
Global Line Side Compliance

Si3018/10 Global Line Side: Supports all countries

Si3008 FCC+ Line Side: Supports the following countries:

Argentina, Armenia, Bahamas, Bangladesh, Belarus, Bermuda, Brazil, Brunei, Canada, Caribbean, Chile, China, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Georgia, Guam, Hong Kong, India, Indonesia, Japan, Kazakhstan, Kuwait, Kyrgyzstan, Macao, Mexico, Moldova, New Zealand, Paraguay, Peru, Puerto Rico, Russia, Saudi Arabia, Singapore, South Korea, Sri Lanka, Taiwan, Thailand, Tunisia, UAE, Ukraine, Uruguay, Uzbekistan, USA, Venezuela, Vietnam, Yemen

Part Number	Max Data Rate (bps)	Data Support	Fax Support	Line-Side Device Options	Digital Interface	BOM Components	Package
Si2401	2400	✓	—	Si3010/Si3008	UART	32/25	16-pin SOIC + 8 or 16-pin SOIC
Si2404	2400	✓	—	Si3010/Si3008	UART or parallel	32/25	16-pin SOIC + 8 or 16-pin SOIC
Si2415	14400	✓	—	Si3018/Si3008	UART or parallel	32/25	16-pin SOIC + 8 or 16-pin SOIC
Si2417	14400	—	✓	Si3018	UART or parallel	32	24-pin TSSOP + 16-pin SOIC
Si2434	33600	✓	—	Si3018/Si3008	UART or parallel	32/25	16-pin SOIC + 8 or 16-pin SOIC
Si2435	33600	—	✓	Si3018	UART or parallel	32	24-pin TSSOP + 16-pin SOIC
Si2457	56000	✓	—	Si3018/Si3008	UART or parallel	32/25	16-pin SOIC + 8 or 16-pin SOIC

CONTACT INFORMATION

SILICON LABS

Silicon Laboratories Inc.
400 West Cesar Chavez • Austin, TX 78701
Phone: +1 (512) 416-8500
Toll Free: (877) 444-3032
Web site: www.silabs.com

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ORDERING INFORMATION

Modem	Line-Side DAA	Description
Si2401-FS	Si3010-F-FS, Si3008-B-FS	V.22bis Modem, 0 to 70 °C
Si2401FS10-EVB, Si2401FS08-EVB		Si2401 Evaluation Board
Si2404-C-FT, Si2404-C-FS	Si3010-F-FS, Si3008-B-FS	V.22bis Modem, 0 to 70 °C
Si2404FS10-EVB, Si2404FS08-EVB		Si2404 Evaluation Board
Si2415-C-FT, Si2415-C-FS	Si3018-F-FS, Si3008-B-FS	V.32bis Modem, 0 to 70 °C
Si2415FS18-EVB, Si2415FS08-EVB		Si2415 Evaluation Board
Si2417-B-FT, Si2417-C-FT	Si3018-F-FS	V.17 Fax Modem, 0 to 70 °C
Si2434-C-FT, Si2434-C-FS	Si3018-F-FS, Si3008-B-FS	V.34 Fax Modem, 0 to 70 °C
Si2434FS18-EVB, Si2434FS08-EVB		Si2434 Evaluation Board
Si2435-B-FT, Si2435-C-FT	Si3018-F-FS	V.34 Modem, 0 to 70 °C
Si2457-C-FT, Si2457-C-FS	Si3018-F-FS, Si3008-B-FS	V.90 Modem, 0 to 70 °C
Si2457FS18-URT, Si2457FS08-URT		Si2457 Evaluation Board

Note: Industrial temperature devices available (-40 to 70 °C)