

SV92A3

HDA/AC97 Soft Modem



FEATURES

- Two-chip HDA/AC97 soft modem solution:
 - SV92A3 host interface in a 16-pin TSSOP (3.3v only), or
 - SV92A35 host interface in a 16-pin TSSOP (1.5v or 3.3v), and
 - CSP1040 DAA in a 20-pin TSSOP.
- Data mode capabilities:
 - ITU-T™ V.92: 56000 bits/s—28000 bits/s.
 - ITU-T V.90: 56000 bits/s—28000 bits/s.
 - ITU-T V.34: 33600 bits/s—2400 bits/s.
 - V.32bis and fallbacks.
 - V.44, V.42, V.42 bis, and MNP™ Class 5 data compression.
 - High compression throughput due to parallel access directly to the host PC.
- FAX mode capabilities:
 - ITU-TT.31 class 1 FAX.
 - ITU-T V.17: 14400 bits/s, 12000 bits/s, 9600 bits/s, 7200 bits/s (TCM).
 - ITU-T V.29: 9600 bits/s, 7200 bits/s (QAM).
 - ITU-T V.27ter: 4800 bits/s, 2400 bits/s (DPSK).
 - ITU-T V.21 Channel 2: 300 bits/s (FSK).
- AC'97 bus interface:
 - AC'97 specification 2.3 compliant.
 - Configurable for secondary device 1 or 2.
- HD Audio bus interface:
 - HD Audio specification 1.0 compliant.
 - 1.5v or 3.3v signalling
- Hardware support for pulse dialing.
- Wake-on-ring and caller ID support.
- Single 3.3 V power supply.
- CSP1040:
 - System-powered.
 - Proprietary transformer-based isolation barrier.
 - Programmable event detect for caller-ID reception and power ring detection.
 - Programmable pulse shaping and spark quench.
 - Programmable dc-impedance termination for country-specific VI templates.
 - Programmable ac-impedance termination for return-loss matching.
 - Programmable ringer-impedance emulation.



The SV92A3 chip set using LSI's CSP1040 silicon DAA is a soft-modem solution for AC'97 and HD Audio applications. The chip set works with LSI's standard soft modem drivers and supports V.92 and lower rates. The SV92A3 chip set enables modem designs with lowest parts count and minimum board area, creating the best possible solution for MDC 1.0/1.5 and modem-on-motherboard applications.

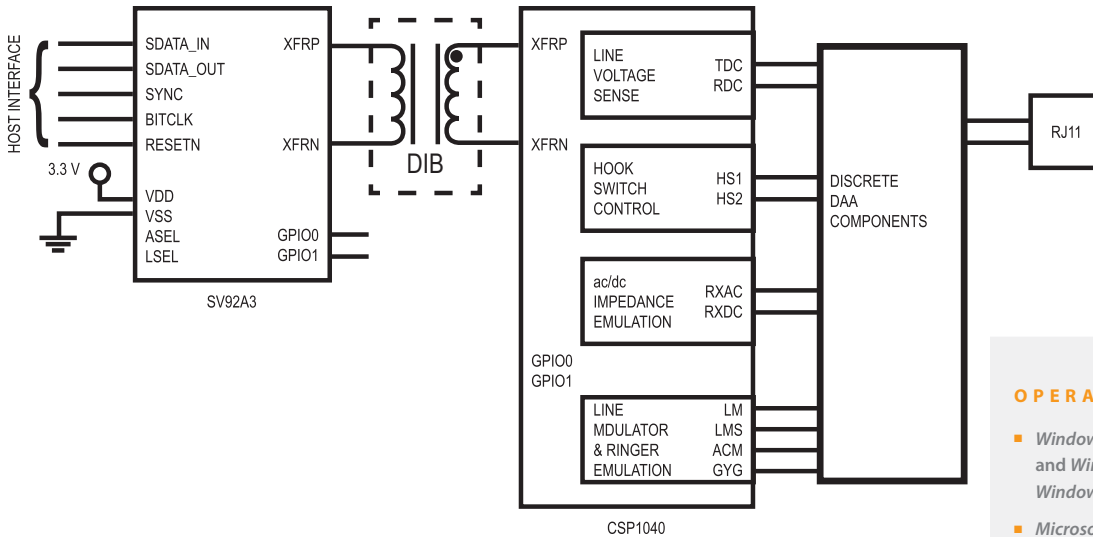
The SV92A3 device provides a dual-mode AC'97 and HD Audio interface with automatic mode detection. The SV92A3 is available in a 16-pin TSSOP package. A new version (SV92A35) is also available that supports 1.5v as well as 3.3v signalling. The SV92A3 includes logic to provide robust ring detection and qualification eliminating unintended wake-on-ring events due to activity on the phone line other than ringing. The SV92A3 also handles pulse dial timing control in hardware to eliminate system timing dependencies common with earlier soft modem products.

The CSP1040 device is LSI's third-generation silicon DAA and reduces the number of

components and board area required to implement a full-featured modem, while achieving compliance with worldwide regulatory requirements. A low-profile digital transformer provides the communications link between the CSP1040 and SV92A3 devices. This digital link also provides power to the CSP1040, allowing full operation on even marginal phone lines that caused problems with earlier generation silicon DAAs. The CSP1040 includes hardware support for detecting line-in-use status, over-current, polarity reversals, caller ID, and ringing, without the need for additional external circuitry. This allows for full-featured modem designs without increased bill-of-materials or board.

* Actual speeds over U.S. telephone lines vary and are less than 56K due to current FCC regulations and line conditions.

Functional Block Diagram



OPERATING SYSTEM SUPPORT

- Windows® 98, Windows 2000, Windows ME®, and Windows XP 32/64-bit Editions, Windows VISTA 32/64-bit Editions
- Microsoft Designed for Windows logo device requirement compliant

HD Audio Interface

The HD Audio specification is designed to implement a broader range of audio, modem, and communication functionalities in PCs, handhelds, and CE devices. The specification primarily focuses on audio functionality for purposes of architectural description. Other codec types are implementable within the HD Audio architecture. In particular, voice-band modem codecs (V.92, for instance) are supported, since the modem data rates and types of data are typically a subset of the audio data rates and types.

V.92 Features

The ITU-T recommendation for V.92 includes several features that are supported by LSI's soft modem drivers. Downstream connection rates of up to 56000 bits/s are supported when connecting to V.90/V.92 capable server modems through an appropriate path. Not all phone lines can support these connection rates. LSI's soft modem driver will automatically fall back to V.34 rates if a V.90/V.92 connection is not negotiated. When connecting in V.92 mode, the fast-connect feature allows the modem to shorten the start-up time on recognized connections. If call-waiting service is available, the modem-on-hold feature allows the user to place the modem connection on hold and switch to an incoming voice call if desired.

Ordering Information

Table 1. SV92A Ordering Information

DEVICE	PRODUCT NUMBER	PACKAGE	COM CODE
SV92A3	L-SV92A3-V16-D	16-pin TSSOP	7000737580
	L-SV92A3-V16-DT	16-pin TSSOP	7000773740
SV92A35	L-SV92A35V1-V16-D	16-pin TSSOP	7110072210
	L-SV92A35V1-V16-DT	16-pin TSSOP	7110072220
CSP1040	L-CSP1040A3-E11-D	20-pin ETSSOP	7110072260
	L-CSP1040A3-E11-DT	20-pin ETSSOP	7110072670

- Notes:
- 1) Part numbers beginning with "L" are lead-free, RoHS compliant devices.
 - 2) Part numbers ending in "T" are tape and reel packaging. Others are shipped in trays.

For more information and sales office locations, please visit the LSI web sites at: lsi.com lsi.com/contacts

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