

Low-Power Fax Data Pump with Fourth Generation SmartDAA®

Product Overview

Conexant has been providing fax modem solutions for over five decades with the largest installed base of fax modems in the market. Conexant's comprehensive solutions include both a hardware and software-enabling design for ease and flexibility with quick time-to-market.

Conexant's CX957x0 SSFL336/314 high performance fax modem family with SmartDAA® technology offers low power and best-in-class VoIP performance that supports ITU-T V.34 half-duplex operation up to 33,600bps, as well as synchronous G3 facsimile up to 14,400bps. The CX957x0 supports the host interface with either an SPI or I²C interface, and a parallel bus interface (separate version) that allows for the most design flexibility.

The SSFL336/314 device set consists of two devices:

- CX957x0 HSD with an integrated modem DSP and a SmartDAA SSD in a 28-pin or 48-pin QFN package
- CX20548 SmartDAA 4 LSD in a 16-pin QFN package

An optional CX20548 CODEC (LSD) in a 16-pin QFN is available for external handset support.

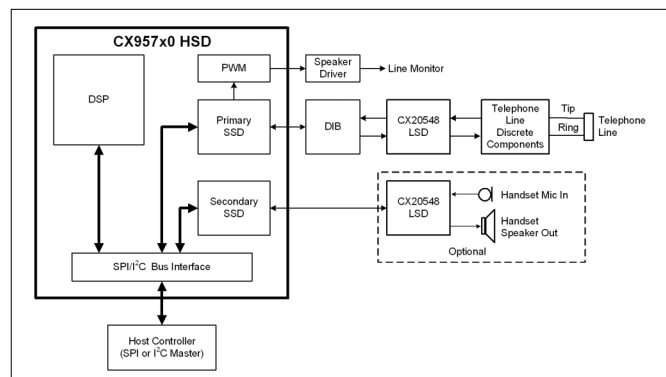
Because Conexant's SmartDAA 4 LSD builds on three generations of market-leading silicon DAA devices and reduces BOM costs and necessary board space, it makes it the most cost-efficient silicon DAA in the market. The SmartDAA 4 LSD eliminates the need for costly analog transformers, relays, and opto-isolators that are typically used in country-specific discrete DAA implementations. The result is a worldwide reduced system cost solution using a single BOM. The SmartDAA 4 is system-powered, making it the most reliable and best performing silicon DAA in the market.

The CX957x0 is firmware-compatible with Conexant's popular previous generation CX95110 fax data pump, preserving its customer's investment in firmware. For the new customer, Conexant offers a comprehensive firmware suite.

Key Features

- Two-wire fax modem modes with send and receive data rates up to 33,600bps
 - V.34 half-duplex fax modem mode (SSFL336)
 - V.17, V.29, V.27ter, and V.21 channel 2
 - Short train option in V.17 and V.27ter
- HDLC support at all speeds
 - Flag generation, 0-bit stuffing, and ITU CRC-16 or CRC-32 calculation and generation
 - Flag detection, 0-bit deletion, and ITU CRC-16 or CRC-32 check sum error detection
 - FSK flag pattern detection during high-speed receiving
- Tone modes and features
 - Programmable single or dual tone generation
 - DTMF receiver
 - Tone detection with three programmable tone detectors
- Auto-dial and auto-answer control
- Receive dynamic range of –3dBm to –43dBm for V.17, V.29, V.27ter, and V.21 channel 2
- Caller ID (V.23, 1200bps Rx) demodulation
- ADPCM voice mode (Conexant proprietary)
- Programmable RLSD turn-on and turn-off thresholds

System Block Diagram



Additional Features

- Programmable transmit level of -4dBm to -15dBm
- Two 16-byte FIFO data buffers for burst data transfer with an extension up to 255 bytes
- Digital speaker output to monitor received signals
- PWM
 - PWM output to monitor transmitted and received signals
 - Concurrent dual tone to PWM output in any modes
- V.21 channel 1 and channel 2 flag detect
- Support for external handset (voice conversation)
- 3.3V only operation

- Typical power consumption (Charge Pump mode)
 - On-hook Idle mode = 119mW
 - On-hook mode = 132mW
 - Off-hook mode = 172mW
 - Deep Sleep mode = 12mW
 - Stop mode = 8mW
- PRAM
 - Download capability
 - Retention capability

SmartDAA Features

- Minimum support component count and cost
- Eliminates costly line transformers, relays, and opto-isolators
- Enables single, worldwide board configurations

- Digital PBX line protection
- System-side powered DAA operates under poor line current supply conditions
- Wake-on-ring
- Ring detection
- Line polarity reversal detection
- Line current loss detection
- Pulse dialing
- Line-in-use detection—Detects while on-hook
- Extension pick-up detection—Detects while off-hook
- Remote hang-up detection—Efficient call termination
- Meets worldwide DC V-I mask requirements

SSFL336/314 Product Ordering Guide

Ordering Number	Modem Model	HSD	SmartDAA4 LSD	Handset CODEC Part Number	G3 Fax Up to 14,400bps	V.34 Fax Up to 33,600bps	Host Interface
DSFX-L571-001	SSFL336	CX95710-11Z	CX20548-11Z/C1 ¹	N/A	Yes	Yes	SPI
DSFX-L571-002	SSFL336	CX95710-11Z	CX20548-11Z/C1 ¹	CX20548-13Z/C1 ²	Yes	Yes	SPI
DSFX-L571-003	SSFL314	CX95710-12Z	CX20548-11Z/C1 ¹	N/A	Yes	No	SPI
DSFX-L571-004	SSFL314	CX95710-12Z	CX20548-11Z/C1 ¹	CX20548-13Z/C1 ²	Yes	No	SPI
DSFX-L572-001	SSFL336	CX95720-11Z	CX20548-11Z/C1 ¹	N/A	Yes	Yes	I ² C
DSFX-L572-002	SSFL336	CX95720-11Z	CX20548-11Z/C1 ¹	CX20548-13Z/C1 ²	Yes	Yes	I ² C
DSFX-L572-003	SSFL314	CX95720-12Z	CX20548-11Z/C1 ¹	N/A	Yes	No	I ² C
DSFX-L572-004	SSFL314	CX95720-12Z	CX20548-11Z/C1 ¹	CX20548-13Z/C1 ²	Yes	No	I ² C
DSFX-L573-001	SSFL336	CX95730-11Z	CX20548-11Z/C1 ¹	N/A	Yes	Yes	Parallel
DSFX-L573-002	SSFL336	CX95730-11Z	CX20548-11Z/C1 ¹	CX20548-13Z/C1 ²	Yes	Yes	Parallel
DSFX-L573-003	SSFL314	CX95730-12Z	CX20548-11Z/C1 ¹	N/A	Yes	No	Parallel
DSFX-L573-004	SSFL314	CX95730-12Z	CX20548-11Z/C1 ¹	CX20548-13Z/C1 ²	Yes	No	Parallel

1 = The device is marked as 20548-A on the package.

2 = The device is marked as 20548-C on the package.

Note: All devices are lead-free (Pb-free) and RoHS-compliant. These devices are compatible with leaded re-flow processes.

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