CONEXANT®
EXPERIENCE SMART™

Low-Power Fax Data Pump with Fifth 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 CX96710 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 CX96710 supports the host interface that allows for the most design flexibility.

The SSFL336/314 device set consists of two devices:

• CX96710 Host Side Device (HSD) with an integrated modem DSP and a SmartDAA System Side Device (SSD) in a 28-pin package

• CX21548 SmartDAA 5 LSD in a 16-pin QFN package

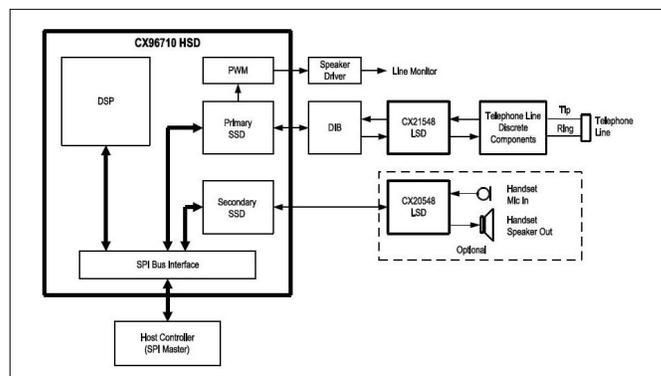An optional CX20548 CODEC (LSD) in a 16-pin QFN is available for external handset support.

Because Conexant's SmartDAA 5 LSD builds on four 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 5 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 5 is system-powered, making it the most reliable and best performing silicon DAA in the market.

The CX96710 is firmware-compatible with Conexant's popular previous generation CX95110 or CX95710 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 (FSK and DTMF) demodulation
• Programmable RLSD turn-on and turn-off thresholds

System Block Diagram

Additional Features

- Programmable transmit level of –4dBm to –25dBm
- Two 16-byte FIFO data buffers for burst data transfer with an extension up to 255 bytes
- Pulse Width Modulation (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 operation
- Ability to wake on ring as part of deep sleep mode

- Typical power consumption (Charge Pump mode)
  - On-hook = 119 mW
  - Off hook = 149 mW
  - Low Energy Caller ID = 40 mW
  - Deep Sleep mode = 13 mW
  - Stop mode = 8 mW
- 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
- 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
- Sleep mode wakeup on the FSK and DTMF CID, or a telephone line event

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-L671-001	SSFL336	CX96710-11Z	CX21548-11Z/T	N/A	Yes	Yes	SPI
DSFX-L671-002	SSFL336	CX96710-11Z	CX21548-11Z/T	CX20548-13Z/T	Yes	Yes	SPI
DSFX-L671-003	SSFL314	CX96710-12Z	CX21548-11Z/T	N/A	Yes	No	SPI
DSFX-L671-004	SSFL314	CX96710-12Z	CX21548-11Z/T	CX20548-13Z/T	Yes	No	SPI

- The CX21548-11Z device is marked 21548-A on the package.
- The CX20548-13Z is marked 20548-C on the package.

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

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