SCXV.92/V.34/V.32bis Modem

Controller-based Modem with Worldwide SmartDAA 3 Line Side Device for Embedded Applications

Overview

The Conexant® SCXV.92, SCXV.34, and SCXV.32bis modems are worldwide operational modem device sets for embedded applications that support modulations up to V.92, V.34, and V.32bis, respectively. All modems also support V.44/V.42bis/MNP 5 data compression for greater data throughput, V.42 LAPM/MNP2-4 error correction protocol for increased data integrity and reliability.

The SCXV.92/V.34/V.32bis device set consists of a modem device and a SmartDAA® 3 Line Side Device (LSD). The modem device integrates a microcontroller (MCU), a digital signal processor (DSP), and a SmartDAA system side device (SSD) onto a single die (Figure 1). The modem is available in 28-pin or 38-pin TSSOP versions. The 28-pin version is for serial interface applications (Figure 2) and is footprint-compatible with the CX84100 (SCXV.22bis) and CX81801-9x (SmartV.XX) modem devices. The 38-pin version is for serial (Figure 3) or parallel (Figure 4) interface applications (interface type selectable by an I/O pin). Major hardware interfaces are illustrated in Figure 1.

Conexant's SmartDAA technology used in the SmartDAA 3 LSD eliminates the need for bulky analog transformers, relays, and opto-isolators typically used in discrete DAA implementations. The SmartDAA 3 LSD operates without drawing power from the phone line, unlike line-powered DAAs, and is therefore not subject to variations in line voltage conditions. The SmartDAA 3 LSD also adds enhanced telephony extension features to the modem's operation and other functions such as Call Waiting detection, and Caller ID decoding. Incorporating Conexant's proprietary Digital Isolation Barrier (DIB) design and other innovative DAA features, the SmartDAA architecture simplifies application design and minimizes layout area to reduce design cost. The SmartDAA 3 LSD is available in a 28-pin Quad Flat No-lead (QFN) package or in a 32-pin Low Profile Quad Pack (LQFP) package.

The modem operates by executing masked code from internal ROM. The modem features internal RAM memory that enhances the modem's flexibility. The modem's internal RAM can be used to load new country profiles, override existing country profiles or add customized firmware code. An optional external serial NVRAM is supported by the 38-pin version. The optional external NVRAM adds the convenience of permanent storage, just like internal RAM, NVRAM can be used to store new country profiles, override existing ones or add customized firmware code.

Small, low-profile packages, reduced voltage operation, and low power consumption make this device set an ideal solution for embedded applications.

Applications

- Set top boxes
- Point-of-Sale terminals
- ATM machines
- Metering terminals
- Video game consoles
- Internet appliances

Features

- Modulations and protocols
  - ITU-T V.92
    - Modem-on-Hold (MOH)
    - Quick connect (QC)
    - PCM upstream
  - V.90/V.34/V.32bis/V.32
  - V.22bis/V.22/V.23/V.21
  - V.23 reverse, V.23 half-duplex
  - Bell 212A/Bell 103
  - V.29 FastPOS
  - V22bis fast connect
  - V.80 Synchronous Access Mode
- Data compression
  - V.44/V.42bis/MNP5
- Error correction
  - V.42/MNP 4/MNP 2
- Call Waiting (CW) detection
- Type I and Type II Caller ID (CID) decoding
- DTE/host interface
  - Serial DTE interface
  - Parallel 16550 UART-compatible host interface (38-pin version)
  - Direct Mode
  - Synchronous Mode
  - Asynchronous Mode

(Continued on Page 2)

Features (Continued)

- No external memory required
- Embedded and upgradeable country profiles
- Serial NVRAM interface for optional permanent country profile storage (38-pin version)
- Embedded AT commands
- Full-duplex 8-bit/14-bit PCM voice pass-through mode
- SmartDAA
  - Extension pick up detection
  - Digital line protection
  - Line reversal detection
  - Line-in-use detection
  - Remote hang-up detection
  - Worldwide compliance
- Selectable 28.224 MHz or 27.000 MHz frequency of operation
- Low power and voltage
  - Single +3.3V supply
  - Low power consumption mode
  - +3.3V I/O level
- Compact, robust board design
  - Small, low-profile modem packages
  - SmartDAA and DIB technologies
  - Reference design supports 5KV isolation

Figure 1. SCXV.92/V.34/V.32bis Modem Simplified Interface

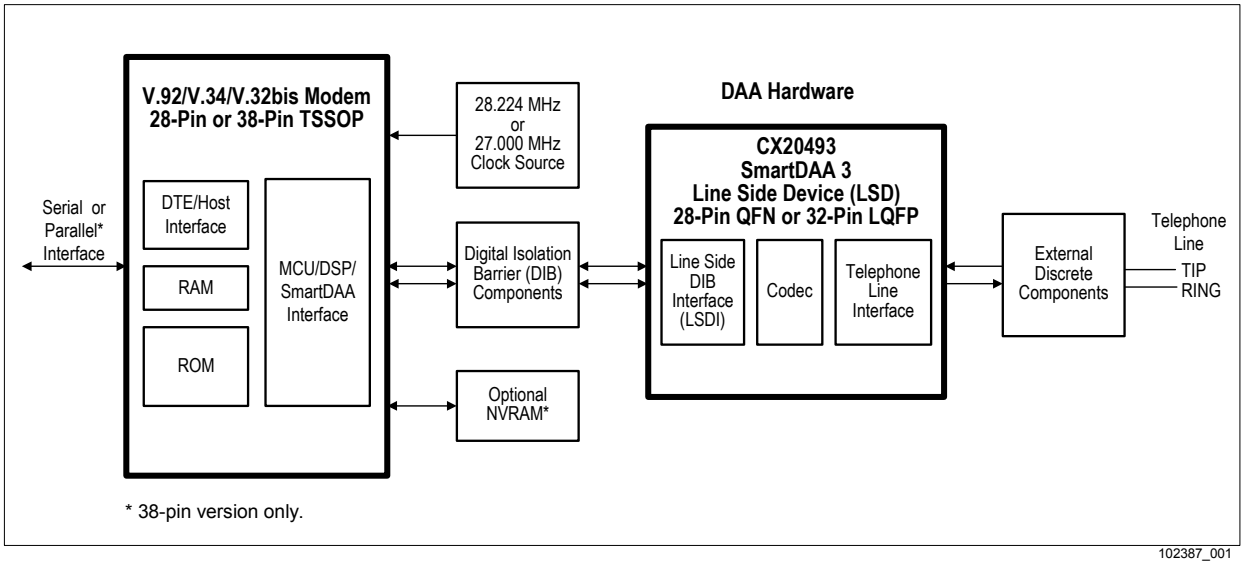
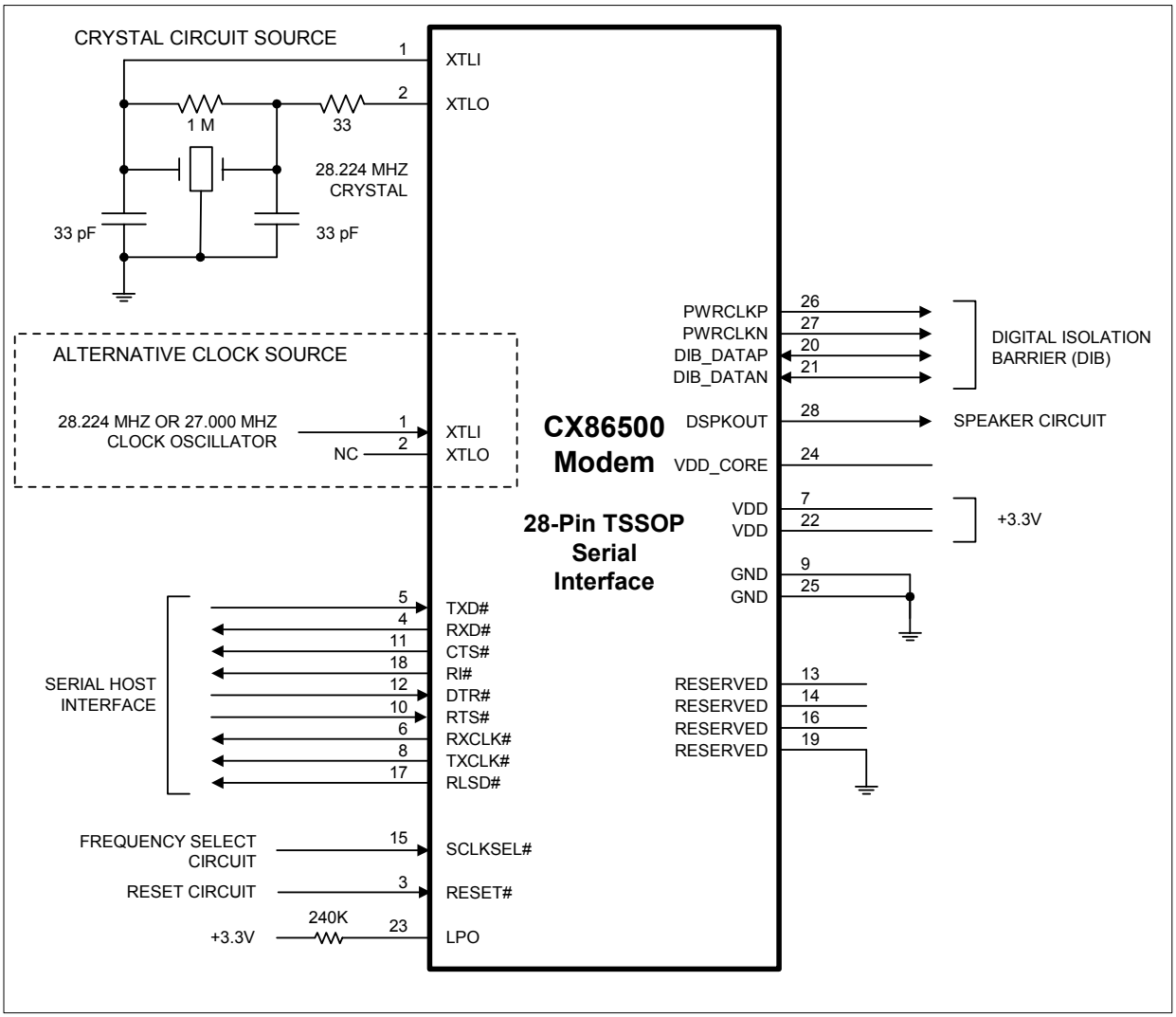
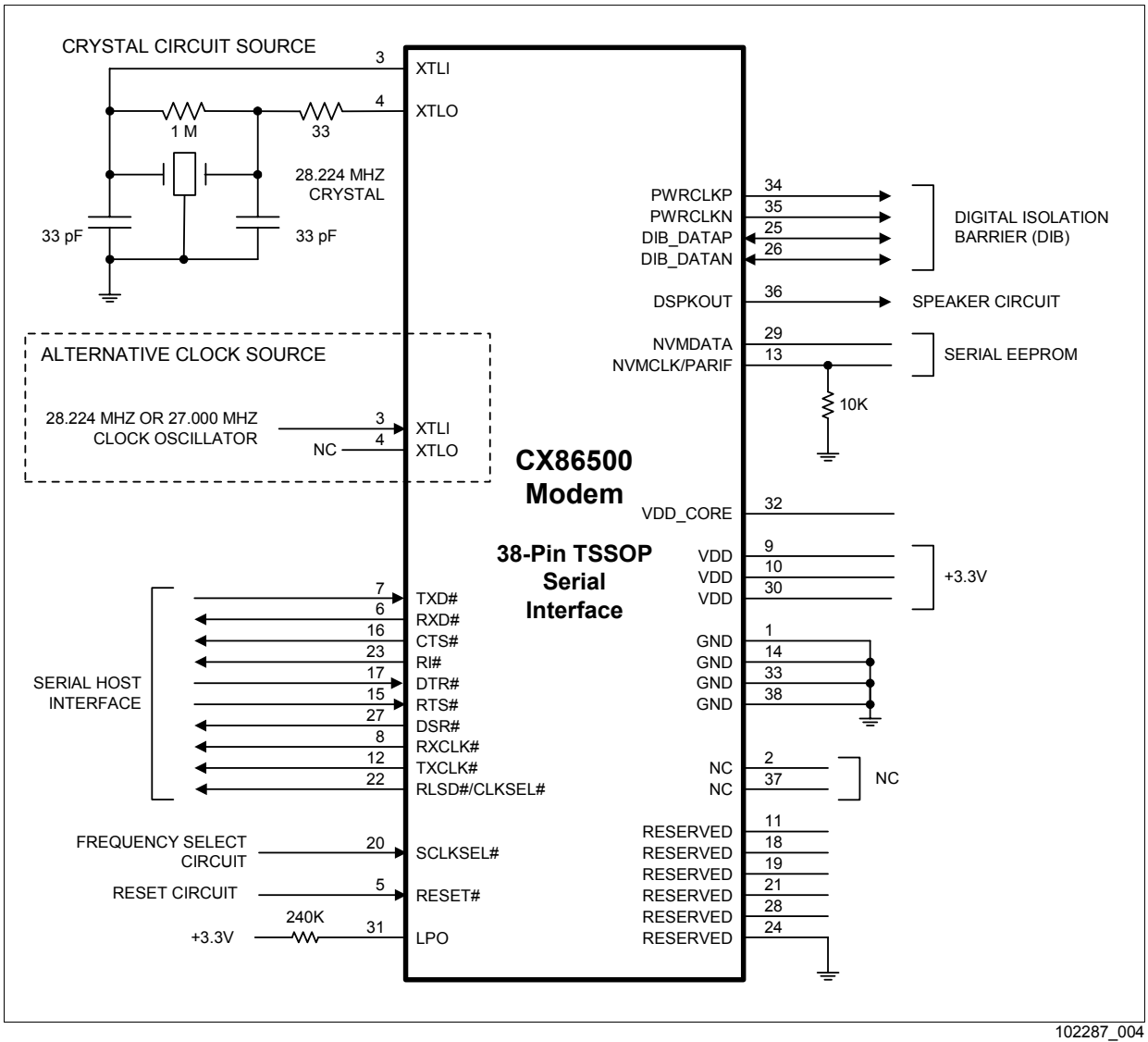


Figure 2. CX86500 Modem 28-Pin TSSOP with Serial Interface Hardware Signals



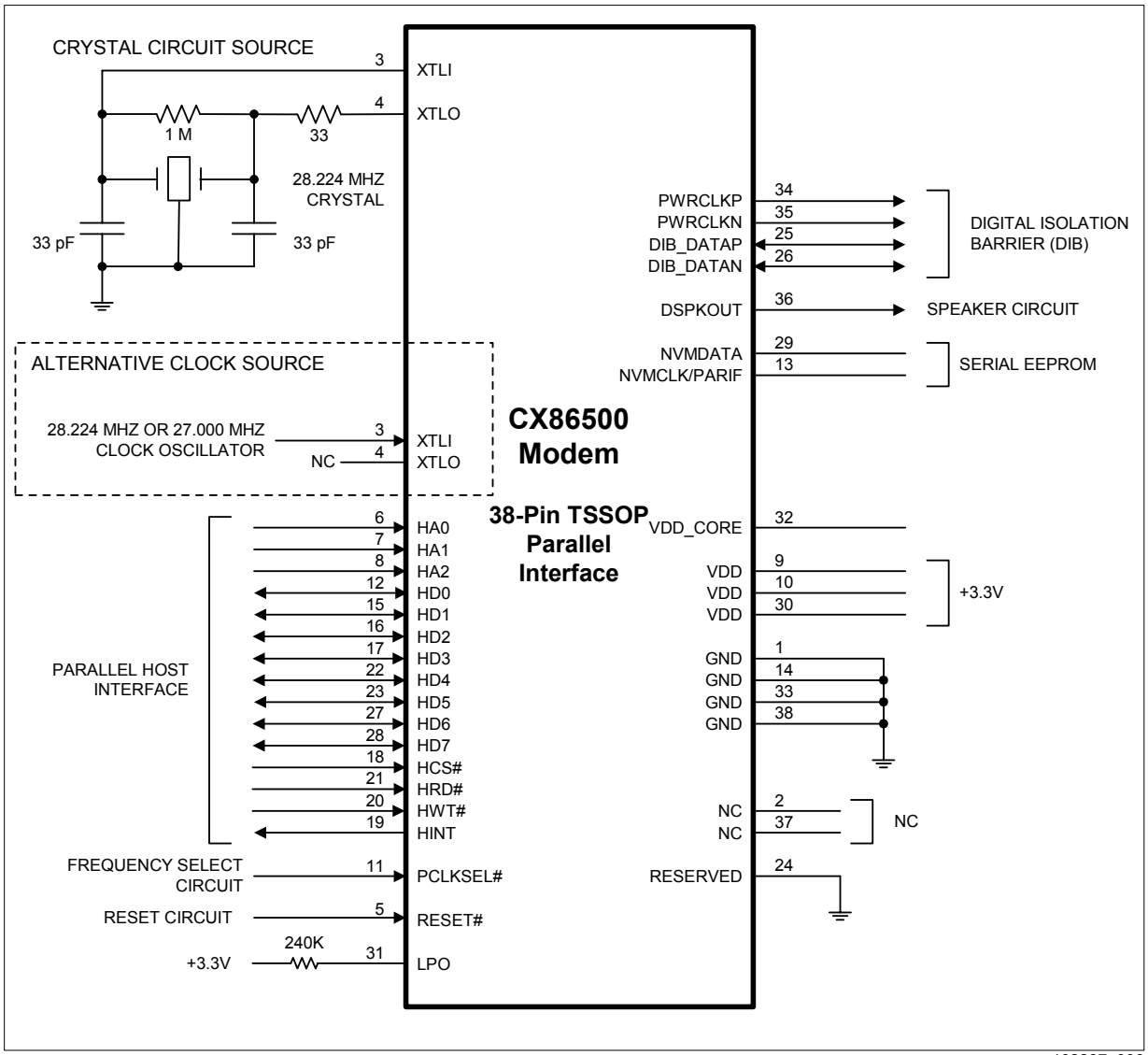
102287_002

Figure 3. CX86500 Modem 38-Pin TSSOP with Serial Interface Hardware Signals



102287_004

Figure 4. CX86500 Modem 38-Pin TSSOP with Parallel Interface Hardware Signals



102287_006

© 2003, 2004 Conexant Systems, Inc.
All Rights Reserved.

Information in this document is provided in connection with Conexant Systems, Inc. (“Conexant”) products. These materials are provided by Conexant as a service to its customers and may be used for informational purposes only. Conexant assumes no responsibility for errors or omissions in these materials. Conexant may make changes to specifications and product descriptions at any time, without notice. Conexant makes no commitment to update the information and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to its specifications and product descriptions.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Conexant’s Terms and Conditions of Sale for such products, Conexant assumes no liability whatsoever.

THESE MATERIALS ARE PROVIDED “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF CONEXANT PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, CONSEQUENTIAL OR INCIDENTAL DAMAGES, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. CONEXANT FURTHER DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. CONEXANT SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS, WHICH MAY RESULT FROM THE USE OF THESE MATERIALS.

Conexant products are not intended for use in medical, lifesaving or life sustaining applications. Conexant customers using or selling Conexant products for use in such applications do so at their own risk and agree to fully indemnify Conexant for any damages resulting from such improper use or sale.

The following are trademarks of Conexant Systems, Inc.: Conexant® and the Conexant C symbol, and SmartDAA®. Product names or services listed in this publication are for identification purposes only, and may be trademarks of third parties. Third-party brands and names are the property of their respective owners.

For additional disclaimer information, please consult Conexant’s Legal Information posted at www.conexant.com, which is incorporated by reference.

Reader Response: Conexant strives to produce quality documentation and welcomes your feedback. Please send comments and suggestions to tech.pubs@conexant.com. For technical questions, contact your local Conexant sales office or field applications engineer.

www.conexant.com
General Information:
U.S. and Canada: (800) 854-8099
International: (949) 483-6996
Headquarters – Newport Beach
4000 MacArthur Blvd.
Newport Beach, CA. 92660

CONEXANT®