



Serial/Parallel Modem with 3rd Generation SmartDAA and Speakerphone Support

CX81801

Controller-Based Modem with SmartDAA® 3 for Embedded Applications

Conexant's broadband communications portfolio includes a comprehensive suite of semiconductor solutions that enable the digital home and information network. The Conexant CX81801 modem is ideal for embedded applications such as POS Terminals, Set-Top Boxes, Video Recorders, Metering, Security, Remote Site Management and any other application that requires robust dial-up connectivity.

The device set integrates the micro controller, digital signal processor, memory and a worldwide DAA/telephone line interface function that operates with PSTN telephone lines worldwide.

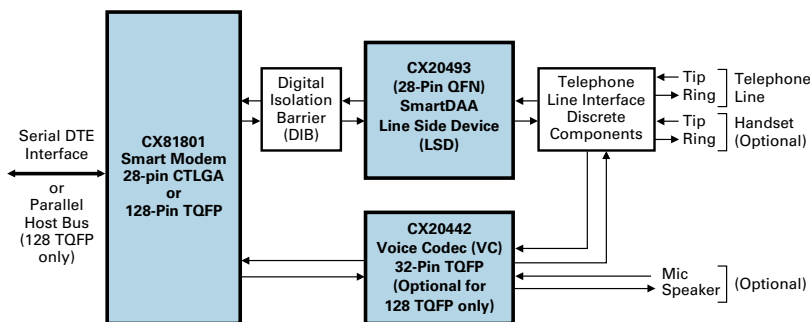
The CX81801 modem supports data/fax/Telephone Answering Machine (TAM) with up to 56 kbps analog data and 14.4 kbps fax modem operation. The V.92 modem includes V.92 features such as Quick Connect, Modem-on-Hold™ and PCM Upstream. The modem device is also available in V.34 and V.32bis options.

The CX81801 modem device set consists of a CX81801 modem in either a 128-pin TQFP or 28-pin CTLGA package, and a Line Side Device (LSD). The CX81801 128-pin TQFP supports either the SmartDAA 3 LSD (CX20493 28-pin QFN) or the SmartDAA (CX20463 32-pin TQFP). The SmartDAA 3 requires fewer discrete components for a low-cost solution. The CX81801 128-pin TQFP supports serial and parallel interface and optional full-duplex speakerphone. The CX81801 Modem in a 28-pin CTLGA supports SmartDAA 3 LSD (CX20493 28-pin QFN). This device targets applications that require the smallest possible dimensions. The CTLGA package has the same footprint as a TSSOP package. The CX81801 28-pin CTLGA supports a serial interface.



Distinguishing Features

- **V.92, V.34 and V.32bis options**
 - V.92 includes Modem-on-Hold™, Quick Connect, and PCM Upstream
- **Fax modem send and receive rates up to 14.4 kbps**
- **FastPOS (V.29) and V.22 fast connect**
- **V.44/V.42bis and MNP5 data compression**
- **V.42 and MNP2-4 error correction**
- **128-pin TQFP package available**
 - Serial or parallel interface
 - Optional full-duplex speakerphone
 - SmartDAA 3 or SmartDAA option
- **28-pin CTLGA package available**
 - Serial interface
 - Pin-compatible with CX84100 V.22bis modem
 - Small form-factor
 - SmartDAA 3
- **SmartDAA 3**
 - Line-in-use detection
 - Digital Line Guard (programmable)
 - Extension Pick-up detection
 - Remote Hang-up detection
- **Worldwide support**
- **Quick time-to-market**
- **Low-cost solution**
- **Optional Pb-free devices available**



CX81801 Modem Block Diagram

Part Number CX81801

Description Serial/Parallel Modem with 3rd Generation SmartDAA and Speakerphone Support



CX81801 Features

General Modem Features

- **Data modem**
 - Quick Connect, Modem-on-Hold™ and PCM Upstream functions (V.92 models)
 - ITU-T V.92, V.90 (V.92 models), V.34 (V.92 and V.34 models), V.32bis, V.32, V.22bis, V.22, V.23, and V.21; Bell 212A and Bell 103
 - V.250 and V.251 commands
- **FastPOS (V.29) and V.22 fast connect**
- **Data compression and error correction**
 - V.44 data compression
 - V.42bis and MNP 5 data compression
 - V.42 LAPM and MNP 2-4 error correction
- **Fax modem send and receive rates up to 14.4 kbps**
 - V.17, V.29, V.27 ter, and V.21 channel 2
 - EIA/TIA 578 Class 1 and T.31 Class 1.0
- **V.80 synchronous access mode supports host-controlled communication protocols with H.324 interface support**
- **Data/Fax/Voice call discrimination**
- **Worldwide operation**
 - Complies to TBR21 and other country requirements
 - Caller ID detection for many countries
 - Call progress, blacklisting
 - Internal ROM includes default values for 29 countries
 - Additional modified country profiles can be stored in internal SRAM (all CX81801) or optional serial EEPROM (128-pin TQFP only)
- **Caller ID detect**
 - On-hook Caller ID detection
 - Off-hook Call Waiting Caller ID detection during data mode in V.92, V.90, V.34, V.32bis, and V.32
- **Distinctive ring detect**
- **Telephony/TAM**
 - V.253 commands
 - 2-bit and 4-bit Conexant ADPCM, 8-bit linear PCM, and 4-bit IMA coding
 - 8 kHz sample rate
 - Concurrent DTMF, ring, and Caller ID detection
- **Direct mode (serial DTE interface)**
- **Flow control and speed buffering**
- **Automatic format/speed sensing**
- **+3.3V operation with +5V tolerant digital inputs**

General Modem Features (28-pin CTLGA only)

- **Built-in host/DTE interface**
 - Serial ITU-T V.24 (EIA/TIA-232-E) logical interface up to 115.2 kbps
- **Serial async/sync data**
- **Thin packages support low profile designs (1.0 mm max. height)**
 - CX81801 modem in 28-pin CTLGA
 - CX20493 LSD in 28-pin QFN

- **Typical power use**
 - 220 mW (Normal Mode); 56 mW (Sleep Mode)

General Modem Features (128-pin TQFP only)

- **Interfaces to optional external ROM/flash ROM, RAM, and/or optional serial EEPROM**
 - Supports custom firmware
- **Modem customization available through patch code that can be stored in optional serial EEPROM or internal SRAM**
- **Full-duplex speakerphone (FDSP) mode using optional CX20442 Voice Codec (S models)**
 - Microphone and speaker interface
 - Telephone handset or headset interface
 - Acoustic and line echo cancellation
 - Microphone gain and muting
 - Speaker volume control and muting
- **Built-in host/DTE interface**
 - Serial ITU-T V.24 (EIA/TIA-232-E) logical interface up to 115.2 kbps
 - Parallel 16550A UART-compatible interface up to 230.4 kbps
- **Serial async/sync data; parallel async data**
- **Thin packages support low profile designs (1.6 mm max. height)**
 - CX81801 modem in 128-pin TQFP
 - CX20493 LSD in 28-pin QFN or 20463 LSD in 32-pin TQFP
 - CX20442 VC in 32-pin TQFP
- **Typical power use**
 - CX81801 and CX20493: 220 mW (Normal Mode); 56 mW (Sleep Mode)
 - CX81801 and 20463: 220 mW (Normal Mode); 56 mW (Sleep Mode)
 - CX20442: 5 mW (Normal Mode)

SmartDAA Features

- **System side powered DAA operates under poor line current supply conditions**
- **Modem Wake-on-Ring**
- **Ring detection**
- **Line polarity reversal detection**
- **Line current loss detection**
- **Pulse dialing**
- **Line-in-use detection during on-hook operation**
- **Remote hang-up detection for efficient call termination**
- **Extension pickup detection**
- **Call waiting detection**
- **Digital PBX line protection**
- **Meets worldwide DC masks requirements**

Conexant Product Portfolio

The company's broad portfolio of semiconductor products also includes client-side DSL, cable, and dial-up modem solutions; fiber optic system-on-chips; broadcast video encoders and decoders; digital set-top box components and systems solutions; and IEEE 802.11a/b/g/n-compliant WLAN chipsets. Additional products include a complete line of asymmetric and symmetric DSL central office solutions, which are used by service providers worldwide to deliver broadband data, voice, and video over copper telephone lines.

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