



# V.92 Soft Modems

## PCI/AC-LINK/USB

Soft Modems — Complete Portfolio,  
Full Features, Low Cost

Conexant's line of software modem solutions are proven, reliable products with cumulative shipments exceeding 31 million units to over 60 countries worldwide. Drawing on Conexant's history in modem technology development, we deliver the latest V.92 features to enhance the end user's Internet experience.

Conexant's low-cost soft modem solutions support a wide range of platforms, including:

- PCI Desktop
- Mini-PCI Notebook
- AC-LINK MDC Notebook
- AC-LINK AMR/CNR/ACR Riser Card
- USB Desktop/Notebooks

Conexant supplies both the silicon and the software drivers for all these solutions, ensuring complete one-stop technical support and total legal indemnity for all V.92-related patents.

The company's Windows™ based ModemXpert™ diagnostic application addresses common problems like no dial tone, low data throughput, no connects and dropped connections, preventing costly returns of properly functioning modem boards.

All Conexant AC-LINK soft modems incorporate the cost-efficient, world safety certified, feature-rich SmartDAA technology to ensure smooth, trouble-free operation.



### Distinguishing Features

- Available in USB, PCI, Mini-PCI and AC-Link
- Supports AMR, MDC, ACR, and CNR platforms
- Incorporates Conexant SmartDAA technology
- ModemXpert™ Windows-based diagnostics software
- ITU V.92 ready
- Faster connection times
- NetWaiting™ application compatible for modem-on-hold
- USB Desktop/Notebooks

# V.92 Soft Modems

## PCI/AC-LINK/USB

### V.92 – The New Standard

V.92 is the new dial-up modem specification from the ITU (International Telecommunications Union) which incorporates exciting new features:

- Quick connect
- Modem-on-hold
- V.44 compression
- PCM (high-speed transmission) upstream
- NetWaiting™

Quick connect shortens the time to make a connection by remembering (“training”) the phone line characteristics and storing them for future use. Typically, the modem “handshake” to make a connection takes from 25 to 27 seconds. Quick connect will cut the handshake time by 50%, averaging 13 seconds for most calls.

Many households use the same phone line for voice and Internet. When a user is browsing the Internet and incoming call either cannot get through or it interrupts the user’s connection. Modem-on-hold allows users to receive an incoming call and stay connected to the Internet. Conversely, users can initiate a voice call and still keep their modem connection.

NetWaiting is bundled with the V.92 modem chipset and driver. It offers a host of customizable features that brings full functionality to the modem-on-hold feature.

PCM upstream boosts the data rates between the user and the Internet to reduce upload times for large files and email attachments. A maximum of 48 Kbps upstream rate, a 40% improvement achieved. PCM upstream works particularly well with new equipment such as Internet-connected digital cameras, which primarily upload rather than download information.

V.44 compression is a new compression algorithm for faster download of popular HTML content from the Internet achieving downloads about 30% faster for a more pleasant end user experience.

### The SmartDAA Architecture

Conexant’s proprietary SmartDAA technology eliminates the need for costly relay and opto-isolators typically used in discrete DAA implementations. The SmartDAA provides all of the interface circuitry, off-hook relay, loop current holding, impedance matching and ring detection. It is designed to meet both USA and international line interface requirements, with enough flexibility to meet all worldwide regulatory requirements.

The PC Host system-powered (via the PCI and AC-LINK bus) SmartDAA operates reliably without drawing power from the telephone line. Line-powered DAAs operate poorly when the line current is insufficient because of long lines or poor line conditions.

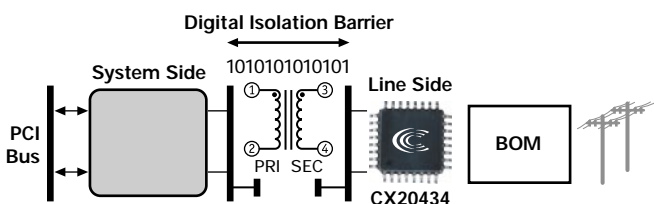
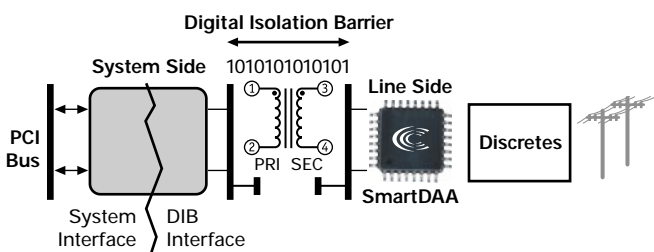
SmartDAA delivers a host of features, including:

- Call-waiting detection
- Extension pickup detection
- Line-in-use detection
- Remote hang-up detection
- European Handset Exclusion

SmartDAA technology consists of three components. A system side device (System PCI or AC-LINK interface), a Digital Isolation Barrier (discrete components, high-voltage barrier) and a Line Side Device (CODEC, hybrid, line protection and DC loop).

## ModemXpert — Solving Problems from the Start

Running in the background as a real-time system tray application, ModemXpert automatically detects communication problems and alerts the user. This Windows-based diagnostic program comes as an option with Conexant products and easily guides the user to a quick resolution. Technical support calls are reduced and in many cases avoided altogether. Customer returns are also significantly reduced. ModemXpert enhances the value of the modem by increasing customer satisfaction. Fewer technical support calls and customer returns add dollars to OEM profits.



## The SmartDAA Advantage

As a worldwide modem leader, Conexant has been in a position to investigate many of the most common user problems. The SmartDAA was designed to help solve these problems.

### Long Telephone Loops Suffering from Low-Voltage Signals

Modems which draw power from the telephone line often suffer from reduced performance on long telephone loops.

#### *The SmartDAA Solution*

*SmartDAA uses system-wide power, guaranteeing operation on any loop. Thus, low-voltage signals are not negatively impacted by the power needs of the modem.*

### Power Line and Common Mode Noise

#### *The SmartDAA Solution*

*The use of differential digital interface acts to cancel such noises.*

### Unwanted Hum Noise on the Telephone Line

Incessant humming plagues the telephone line when the modem is plugged in but not being used.

#### *The SmartDAA Solution*

*SmartDAA minimizes the capacitance across the isolation barrier to eliminate hum noise.*

### Lightning Surges

The modem system is disrupted or damaged due to lightning surges.

#### *The SmartDAA Solution*

*SmartDAA designs have been shown to pass with 5KV surge pulses ranging from 2x10 uS to 10x1000 uS, along with added protection from longitudinal surges. Such problems have rarely been an issue for our SmartDAA customers.*

### International Regulations

PTT, Safety and EMC regulations vary widely and can change often.

#### *The SmartDAA Solution*

*Conexant has designed SmartDAA to be flexible and easy to modify. It is fully configurable and allows many changes and optimizations. Additionally, Conexant has a solid network of relationships with PTT labs around the world and a test laboratory accredited to TBR21 and Advisory Notes.*

## Complete Soft Modem Portfolio

Extensively tested in Conexant's TBR-21-accredited laboratories in France, these PCI, USB and AC-LINK products are backed by the company's 20-year history in modem innovations.

The CX11252 HSFi PCI modem design is the world's lowest-cost PCI desktop and Mini-PCI notebook modem. It features a compact 100TQFP package that ensures a low-cost, low-profile system board. All HSFi PCI modems have full European, U.S. and Japan PTT certification, as well as full Windows XP WHQL logo compliance. A software speakerphone is a value added option.

Featuring Conexant's SmartDAA silicon technology, the CX11246 SmartMC3S is the world's smallest, full-featured AC-LINK modem. Its many benefits include complete AMR/CNR/ACR/MDC compatibility, a compact 16TSOP+28QFN packaging for small, low-cost riser cards and full worldwide or European PTT compliance. Full Windows XP WHQL logo and European safety compliance are standard.

Conexant's CX06836 V.92 USB soft modem device with V.44 protocol, is ideal for desktop PCs, laptops and compact PCs and is a low cost external modem solution that employs ease-of-use ("hot" Plug-N-Play devices) in a compact single chip form factor. The CX06836 supports all V.92 features (quick connect, modem-on-hold, PCM Upstream, NetWaiting), as well as Windows 98, Windows ME, Windows 2000 and Windows XP platforms.

## Product Features

- **PCI, USB and AC-LINK modem solutions available**
- **All solutions developed with same internally-developed code base**
- **V.92 Standard specifications**
  - Quick connect
  - Modem-on-hold
  - V.44 compression
  - PCM upstream
- **NetWaiting™**
- **SmartDAA Technology**
  - System side device (DIB interface, System PCI or AC-LINK)
  - Digital Isolation Barrier (DIB)
  - Line Side Service (DIB interface, CODEC hybrid, line protection and DC loop)

- Call-waiting detection
- Extension pickup detection
- Line-in-use detection
- Remote hang-up detection
- Support for European Handset Exclusion
- **ModemXpert™**
- **Extensively tested in Conexant's TBR-21-accredited labs**

### HSFi PCI Software Modem

- **World's lowest-cost PCI desktop and Mini-PCI notebook modem**
- **Compact 100TQFP package**
- **Worldwide PTT and safety compliant**
- **Supports Euro Handset exclusion, Restricted Dial**

- **Windows XP WHQL logo compliance**
- **LINUX ready**

### SmartMC3S AC-LINK Software Modem

- **World's smallest full-featured AC-LINK modem**
- **Complete AMR/CNR/ACR/MDC compatibility**
- **Compact 16TSOP+28QFPN packaging**
- **Worldwide PTT compliance**
- **Full Windows XP WHQL logo**
- **Worldwide safety and PTT compliant**
- **Linux ready**

### CXHSF-USB Software Modem

- **Single-chip 100-pin in a TQFP package**
- **USB Bus Port**
- **Operating System Support:**
  - Windows 98
  - Windows ME
  - Windows 2000
  - Windows XP
- **External "hot" Plug-N-Play solution**
- **Lowest cost external solution**
- **Compact form factor**

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