Product Note
***Venus*®**
November 1999

microelectronics group

Lucent Technologies
Bell Labs Innovations

Venus® Controller-Based Modem DSP

Features

- Single-chip integrated DSP and controller:
  - — 1673: 56 kbits/s 5 V devices
  - — 1675: 56 kbits/s 3.3 V devices
  - — 1670: 33.6 kbits/s 5 V and 3.3 V devices
- Data mode capabilities:
  - — ITU-T V.90 data rates 28,000 bits/s—56,000 bits/s
  - — Backward compatible to K56flex
  - — ITU-T V.34 extended rates: 33,600 bits/s—2,400 bits/s
  - — V.32terbo, V.32bis, and fallbacks
  - — TIA/*EIA** 602 standard for AT command set
  - — V.42 error correction (LAPM and *MNP*†)
  - — V.42bis and *MNP* class 5 data compression
- FAX mode capabilities:
  - — ITU-T V.17, V.29, V.27ter, and V.21 Ch 2
  - — TIA/*EIA* 578 class 1/class 2 FAX
- Enhanced voice features:
  - — IS-101 AT+V commands with extensions
  - — Telephone answering machine (TAM)
  - — Record/playback
  - — Distinctive ring
  - — Call screening
  - — Ring detect
  - — Data/FAX/voice call discrimination
- *SIMULTALK*® full-duplex speakerphone (FDSP) capabilities:
  - — Adaptive acoustic echo canceller for dynamic speaker/microphone positioning
  - — Concurrent DTMF tone detections
- All-in-one communication center capabilities:
  - — Full-featured stand-alone TAM capabilities including message/FAX time stamping and local message/FAX storage while PC is off
  - — Full-featured telephone capabilities including full-duplex speakerphone, caller ID/call waiting/message forwarding, FAX display on PC, and message playback while PC is off
  - — Works with common telephone applications
- Integrated ISA interface capabilities:
  - — Fully PnP 1.0A Plug and Play compliant
  - — Eight selectable PC IRQs
  - — Six selectable PC DMA channels (three 8-bit, three 16-bit)
- Integrated serial V.24 interface capabilities:
  - — Autobaud up to 230K baud
  - — Full support of RS-232C asynchronous protocol
- Integrated PCMCIA interface capabilities:
  - — Fully PC Card compliant
  - — 16-bit multifunction card support for external logical devices
  - — Independent power management per logical device
- USB support with USB interface chip:
  - — Fully compliant with Universal Serial Bus specification Revision 1.0 including power management
  - — Targeted for *Windows*‡ 98, *Windows* 2000, and *Macintosh*§ operating systems
- PCI support with PCI interface chip:
  - — Meets *Microsoft*‡ PC 98 requirements
  - — ACPI power management
- Supports high-precision sigma-delta codec CSP1034C 3.3 V and CSP1034A 5 V devices
- Extensive bit I/O control for homologation control and cellular direct connect
- Internal PLL for single low-speed crystal support
- Flash-programming support
- Single package (plastic) option: 128-pin TQFP, 144-pin TQFP, or 160-pin MQFP

* *EIA* is a registered trademark of Electronic Industries Association.
† *MNP* is a registered trademark of Microcom, Inc.
‡ *Microsoft* and *Windows* are registered trademarks of Microsoft Corporation.
§ *Macintosh* is a registered trademark of Apple Computer, Inc.

Description

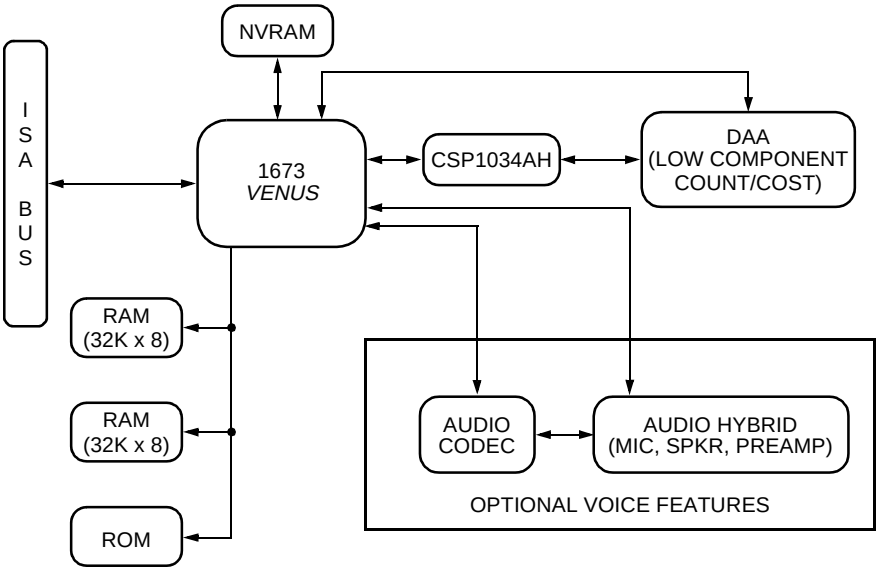

Figure 1. V.90 ISA Bus/Motherboard Block Diagram

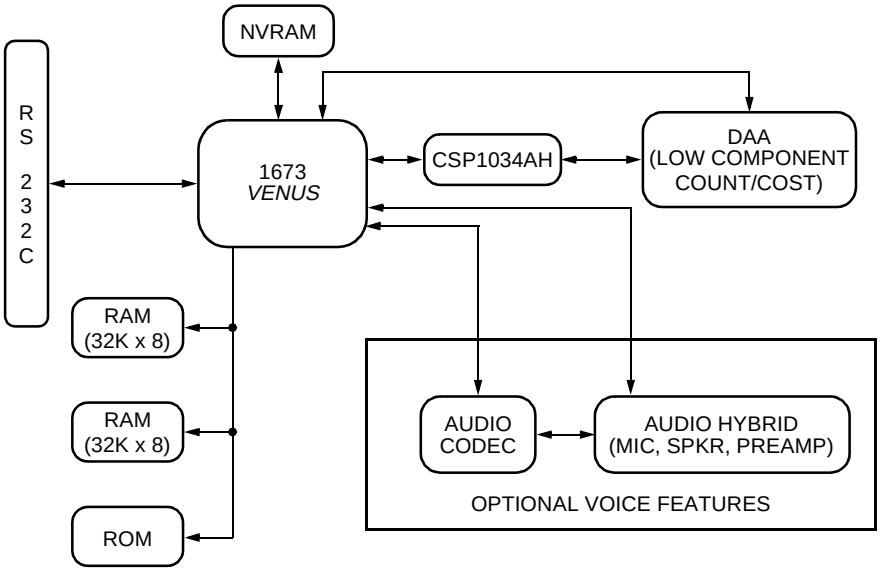

Figure 2. V.90 Serial Box Modem Block Diagram

Description (continued)

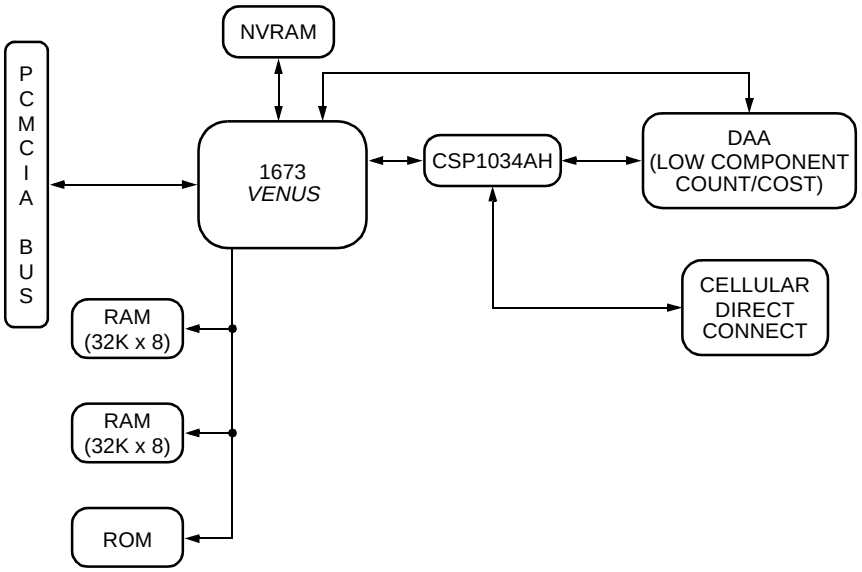

Figure 3. V.90 PC Card Block Diagram

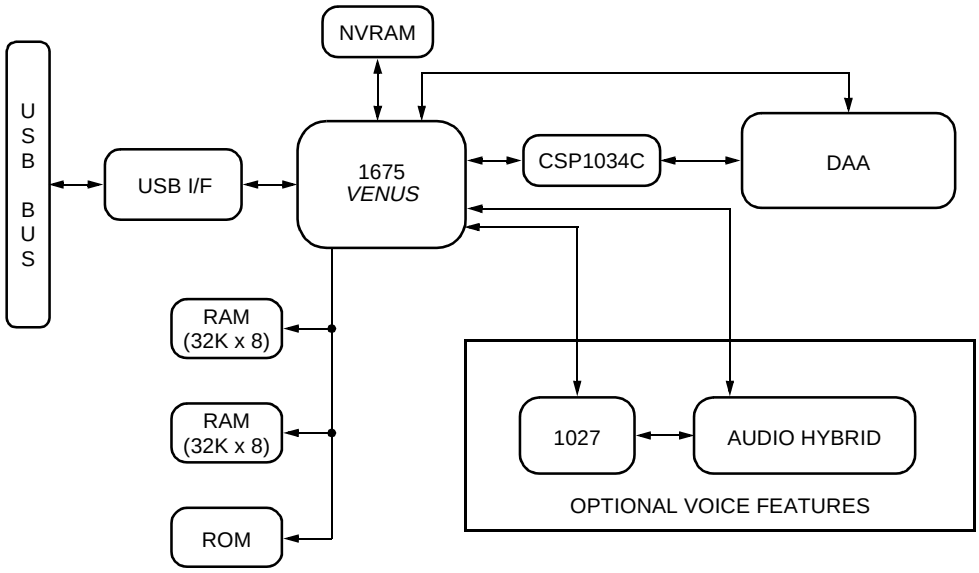

Figure 4. V.90 *Venus* USB Block Diagram

Description (continued)

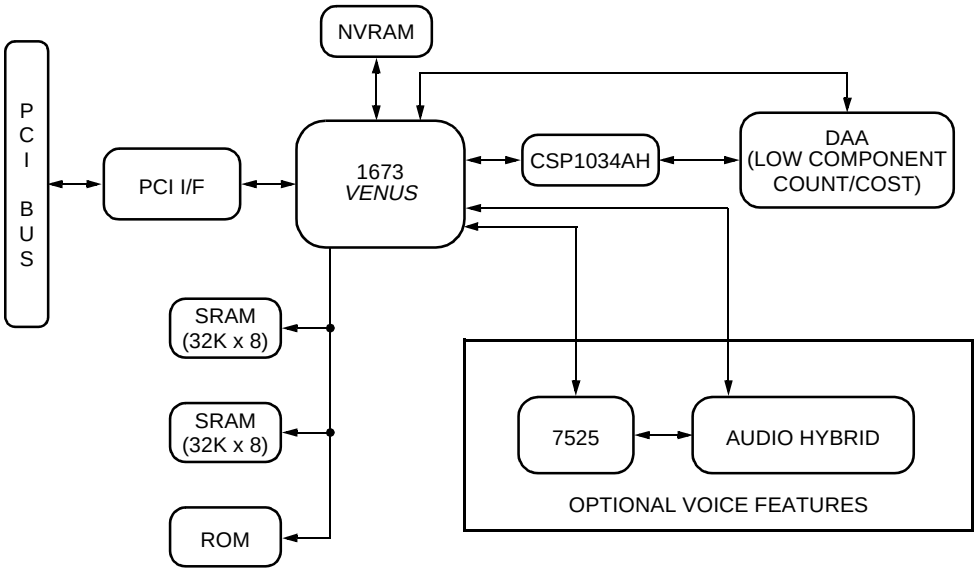

Figure 5. V.90 *Venus* PCI Block Diagram

Operating Systems Supported

- *Windows* 3.1
- *Windows* 3.11
- *Windows* 95
- *Windows NT**
- Complete DOS support
- *OS/2*† – Warp
- *Macintosh*
- *UNIX*‡

* *Windows NT* is a registered trademark of Microsoft Corporation.
† *OS/2* is a registered trademark of International Business Corporation.
‡ *UNIX* is a registered trademark licensed exclusively through X/Open Company Ltd.

Package Ordering Information

Table 1. DSP Ordering Information

Device	Speed	Voltage	128TQFP	144TQFP	160MQFP	160PBGA
1673	V.90	5 V	1673TV8-28RDD-DB	1673TV8-44RDD-DB	1673JV7RDD12-DB	Not Available
1675	V.90	3 V	1675TV3-28RDDV-DB	1675TV3-44RDD-DB	Not Available	1675BAV2RDD12V-DB
1670	V.34	5 V	1670TV8-28RDD-DB	Not Available	Not Available	Not Available
1670	V.34	3 V	1670TV3-28RDDV-DB	Not Available	Not Available	Not Available

Notes:
ISA designs require the 160MQFP for full Plug and Play.

PCMCIA designs require the 144TQFP.

Serial designs require the 128TQFP.

When ordering, make sure that devices from multiple fabs are qualified.

Table 2. Chip Set Names and Part Numbers

Platform	Feature	Chip Set	Package
Desktop ISA	V.90 Data/FAX/Speakerphone	DSP1673 CSP1034AH T7525	160 MQFP 44 MQFP or 48 TQFP 28 SOJ
Desktop Serial	V.90 Data/FAX/Speakerphone	DSP1673 CSP1034AH T7525	128 TQFP 44 MQFP or 48 TQFP 28 SOJ
PC Card	V.90 Data/FAX/Cell	DSP1673 Cell CSP1034AH	144 TQFP 48 TQFP
USB	V.90 Data/FAX	DSP1675 CSP1034C USB INT	128 TQFP 44 MQFP or 48 TQFP 48 TQFP
PCI	V.90 Data/FAX	DSP1673 CSP1034AH PCI INT	128 TQFP 44 MQFP or 48 TQFP 128 TQFP

Notes:
Please provide device number and package when placing orders.

Data/FAX support does not require the T7525.

Package Information

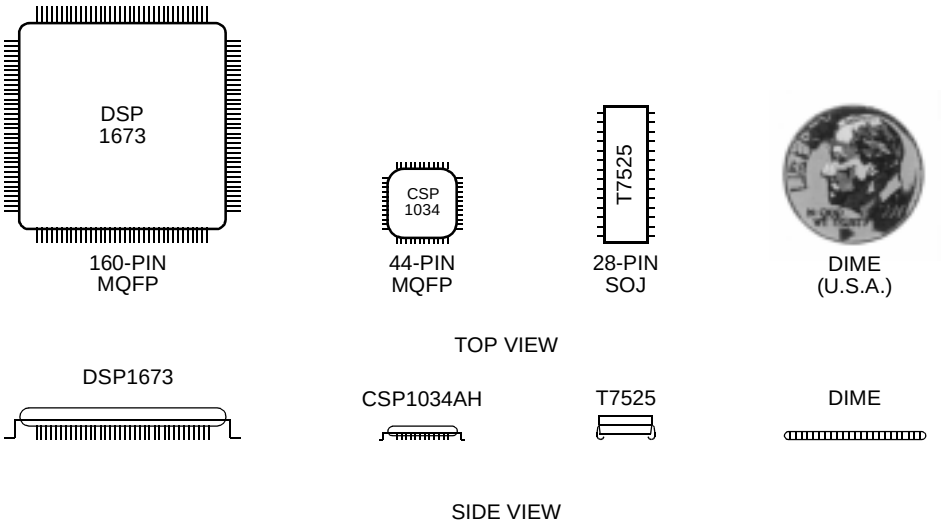

Figure 6. ISA Platform

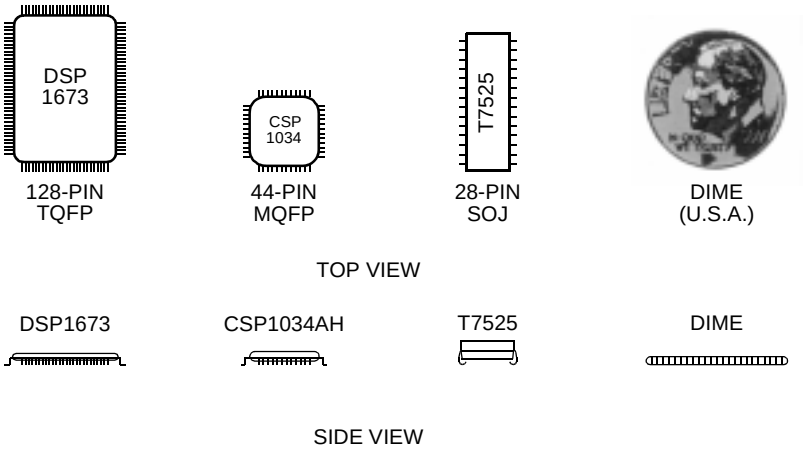

Figure 7. Serial Box Modem Platform

Package Information (continued)

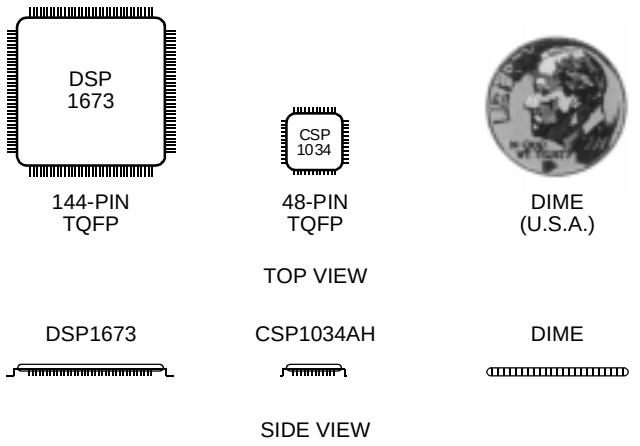

Figure 8. PC Card Platform

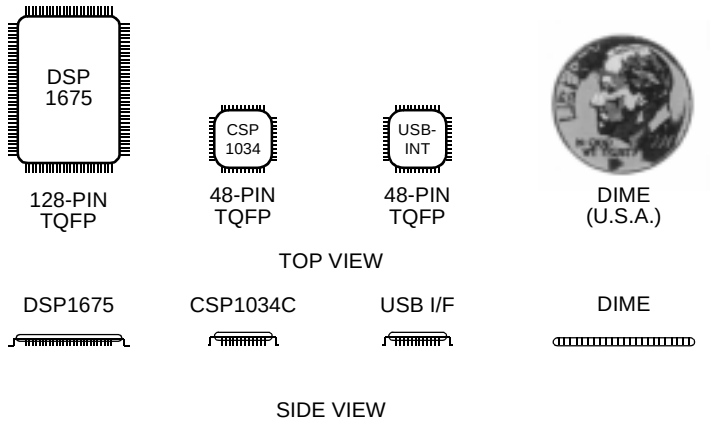

Figure 9. USB Modem Block Diagram

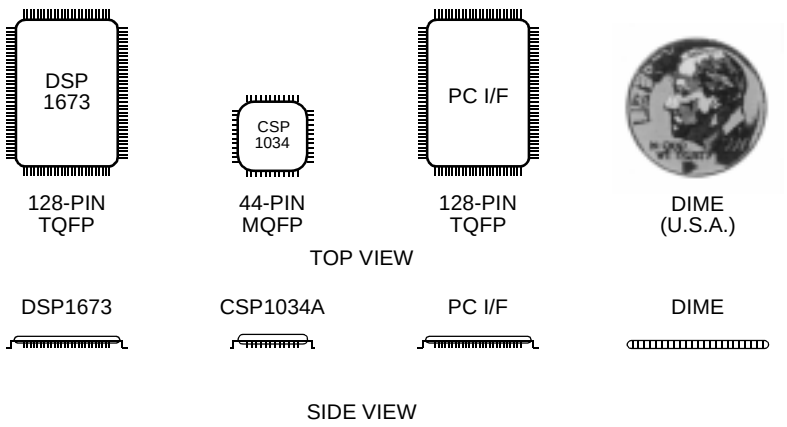

Figure 10. Controller-Based PCI Block Diagram

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