

# SMARTDSP VR Series

## General Purpose Voice Resource Card

### Features

Flexible design allows the VR to be used in both Call Recording and General CT applications

Supports Speech Recognition

Supports "Barge-In" functionality

High Impedance interfaces providing On-Hook recording capability

On-board DSP providing Tone Detection & Voice Processing full-duplex channels

MVIP/H.100 TDM Bus (Software Selectable)

Caller ID / FSK /DTMF/MF

Full-Time/On-Demand Recording/Event Driven record

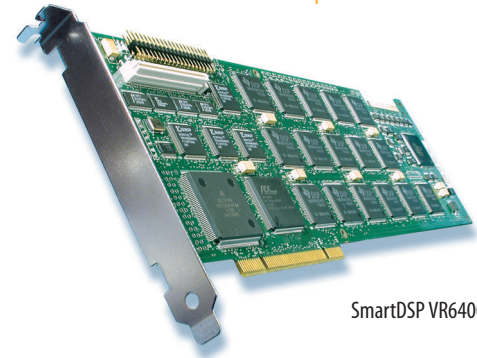
Uses SmartWORKS API (Common to all SmartWORKS products)

Expansive Speech CODEC support (20+)

Automatic Gain and Volume Control (AGC/AVC)

Advanced Streaming to prevent data loss regardless of system resource demand

Available for Windows NT 4.0, Windows 2000, Windows XP, Linux

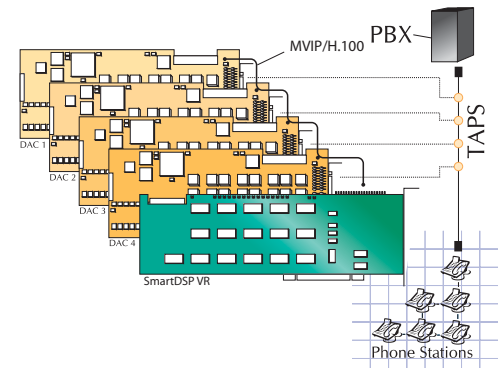
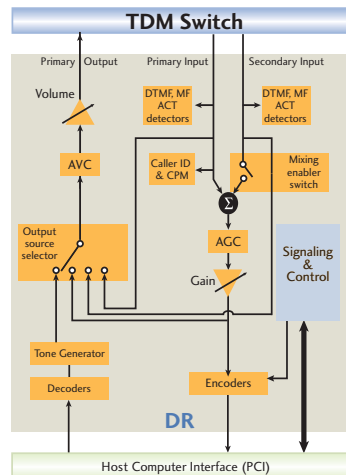


SmartDSP VR6400

### Overview

Ai-Logix's SmartDSP VR is a general purpose DSP resource card intended specifically to provide cost-effective solutions when coupled with Ai-Logix's DAC card.

Aside from its raw processing capability, the SmartDSP VR is set apart by Ai-Logix's SmartWORKS API designed to facilitate every stage of telephony application development. Combined with an Ai-Logix or third party network interface card, the VR dramatically increases your application's ability to process data. The SmartDSP VR gives developers the flexibility to trigger call recording however they wish, write to multiple CODECs, mix (or sum) voice data, perform voice processing, and much more.



VR cards connect to other cards in a system via MVIP/H.100. The VR multiplies the processing power of your call recording environment with ease.

#### Legend



The diagram above shows the VR's Logical Card Model, which shows how the VR functions with the SmartWORKS API.

Product	Part Number	Available
VR3200 32 channel Voice Resource:	910-0303-001	Now
VR6400 64 channel Voice Resource:	910-0301-001	Now

# Product Specifications

## HARDWARE SYSTEM REQUIREMENTS

Pentium II or equivalent 400 MHz or better  
 ATX PCI motherboard or passive backplane with 3.3V ATX power supply  
 PCI 2.2 bus

## OPERATING SYSTEMS

Windows NT® 4.0 · Windows 2000 · Windows WDM · Windows XP · Linux\*

## TECHNICAL SPECIFICATIONS

Max boards per system 4 (256 ports) - may be limited by platform performance  
 Resource Sharing Bus MVIP or H.100  
 Control Microprocessor Motorola Coldfire™ RISC (50 MHz)  
 DSP Multiple Texas Instruments TMS320C5402  
 Boards errors On-board LEDs  
 Clocking Master/Slave  
 DRAM 16 MB per board  
 SRAM 128 Kword/DSP

## ENVIRONMENTAL CONDITIONS

Operating Temperature: 0C to +50C  
 Storage Temperature: -20C to +85C  
 Humidity: 8% to 80% non-condensing  
 Storage humidity: 8% to 80% non-condensing

## PHYSICAL CHARACTERISTICS

Form Factor: Full-size PCI card

## HOST INTERFACE

Bus Compatibility: Complies with PCISIG Bus Specifications, Rev. 2.2  
 Bus Speed: 33 MHz  
 Bus Mode: 32 bit bus master/target  
 Shared Memory: 16 MB Global shared RAM

## SDK

Ai-Logix Native SmartWORKS API  
 SmartControl (Control Panel)  
 SmartVIEW (card functionality test application)  
 SmartWF (firmware flash update utility)

## POWER REQUIREMENTS

+3.3 VDC: 2.5 Amp  
 +5 VDC: 5mA  
 -12 VDC: Not Required  
 +12 VDC: 20 mA

## TRIGGER CONDITIONS

Event Driven Caller ID, Min/Max silence · Min/Max activity

## AUDIO SIGNAL

Receive range: -68 dBm to + 3 dBm  
 Input gain control: +24 to -64 dB  
 Silence Detection: Programmable from API  
 Transmit volume control: +24 to -64 dB  
 Automatic Gain Control (AGC) Programmable from API  
 Automatic Volume Control (AVC) Programmable from API  
 Activity Detection Programmable from API  
 Alert Tone Programmable  
 Frequency Response 300 - 3400 Hz (+/- 3dB)

## AUDIO DIGITIZING (ENCODING & DECODING)

13 Kb/s: GSM 6.10, Microsoft GSM  
 16 Kb/s: G.726  
 24 Kb/s: G.726, OKI  
 32 Kb/s: G.726, OKI  
 40 Kb/s: G.726  
 64 Kb/s:  $\mu$ -law or A-law per G.711, 8 bit linear PCM  
 128 Kb/s: 16 bit linear PCM  
 Wave file formats: Microsoft GSM, 16-bit PCM  
 Digitization selection: Programmable per channel, independent for encode and decode

## DTMF/MF TONE DETECTION

DTMF digits: 0 - 9, \*, #, A, B, C, D  
 MF R2 Digits 15 Digits Forward & Reverse per Q.441  
 Dynamic range: -38 dBm to 0 dBm  
 Minimum tone detection: 40 ms  
 Interdigit timing: 40 ms min.  
 Acceptable twist: Per LSSGR sec. 6, 8 dB forward, 4 dB reverse  
 Frequency variation: Accept all +/- 1.5%, reject all +/-2.5%  
 Noise tolerance: Per LSSGR sec. 6  
 Talk off: Bellcore TR-TSY-000762

## GLOBAL TONE GENERATION

Tone Type Single or dual frequency  
 Frequency range 300 Hz – 3400 Hz  
 Frequency resolution 1 Hz  
 Duration 1 ms – 8191 ms programmable in 1 ms steps  
 Amplitude +3 dBm to -68 dBm

## CALL PROGRESS MONITORING

Number of programmable tones 20  
 Number of bandpass filters 10  
 Number of filters per tone 1,2 or 3  
 Number of cycles 0 to 255  
 SIT tones Yes, programmable frequencies and duration  
 Answering Machine Detection Yes

## TONE DIALING

DTMF digits 0 – 9, \*, #, A, B, C, D  
 Frequency variation Less than 1 Hz  
 Rate API Programmable  
 Duration API Programmable

## VOICE PROCESSING

Echo cancellation G.165  
 Caller ID V.23 & Bell 202  
 DTMF Detector Primary & Secondary channel  
 MF Detection R1 & R2

## SAFETY AND CERTIFICATIONS

Telecom: DOC  
 Emissions: FCC Part 15 class A · EN 55022  
 Immunity: EN 55024  
 Safety: EN 60950  
 Estimated MTBF: 150,000 hours per Bellcore Method I

## WARRANTY:

3 years standard

\*Call For availability



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Part# 401-0011-001 - Rev B

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