

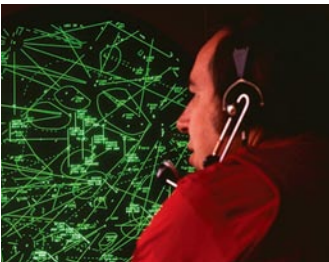
# SMARTWORKS™ DP SERIES

T1/E1 PASSIVE TAP CARD

## Standard Features for SmartWORKS™ Family of Call Recording Products

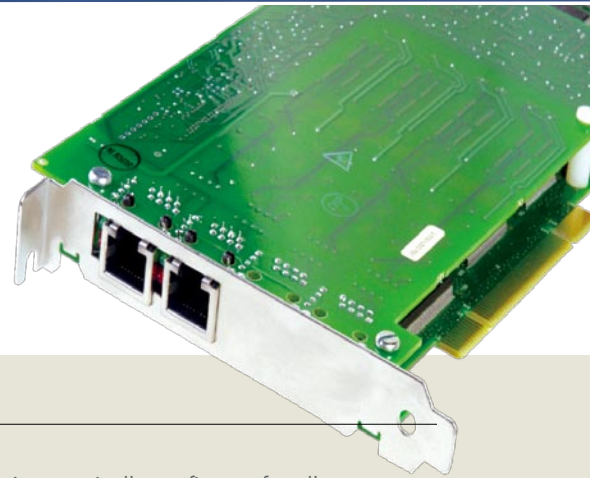
The SmartWORKS™ API provides a common interface that controls the following call recording features:

- Media Control - CODECS
- Tone Detection / Generation
- CallerID/FSK/DTMF/MF Detection
- Activity / Silence Detectors
- Switching (H.100 and MVIP)
- Automatic Gain Control (AGC)
- Automatic Volume Control (AVC)
- Stereo Recording with AGC
- Echo Cancellation
- Call Progress Monitoring (CPM)
- Full-duplex Channels
- Media Streaming
- Start/Stop Call Recording Triggers



Since 1991, Ai-Logix has designed boards used in interactive and passive telephony applications. With global support for all types of telephone and radio systems - analog, digital, and enterprise PBXs, Ai-Logix products have set a new world standard in telephony communications. A single API, combined with event driven reporting simplifies application development by providing one standard for all types of networks.

The SmartWORKS™ DP sets the standard for passive tapping of T1/E1 trunks in high-density environments. The SmartWORKS™ DP is a reliable tool used globally by many of the world's largest call logging application providers.



## Key Features and Benefits

### Software Switchable T1/E1 Interface

Supports T1 and E1 using the same board. Automatically configures for all supported ISDN variants.

### ISDN Call State Monitoring

Interprets the ISDN signaling protocol and reports the call states and call parameters via comprehensible API events.

### True Dual Span Capabilities

A single RJ-45 interface is capable of recording both sides of a conversation, which maximizes the usefulness of each individual port.

### On-board DSP to Complete Voice Processing

Robust call recording features combined with ISDN call control, eliminates the need for other resources on the system.

### CODEC Support

SmartWORKS™ call recording products offer a large selection of voice CODECS. (including G.723.1, G.729A and MS GSM)

### High Density Passive Tap Capabilities

Operating between a central office and PBX, the SmartWORKS™ DP's high impedance receivers records both sides of a call without interrupting service. Each board can process up to 60 channels, with a maximum of 512 channels per host. Service is never interrupted even if the SmartWORKS™ DP-equipped PC is shut down.

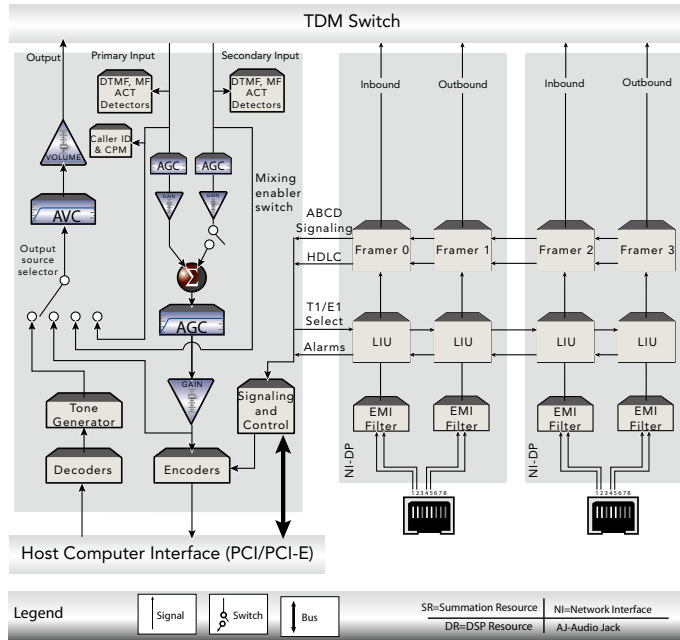
### International Protocol Support

The SmartWORKS™ DP supports Channel Associated Signaling (CAS), Non-Facility Associated Signaling (NFAS), DASS2 and any Q.931 based ISDN variant. Trunk coding and framing is selected on a per framer basis. This allows a single board to monitor two trunks, each with different settings.

### Built in Performance Monitoring

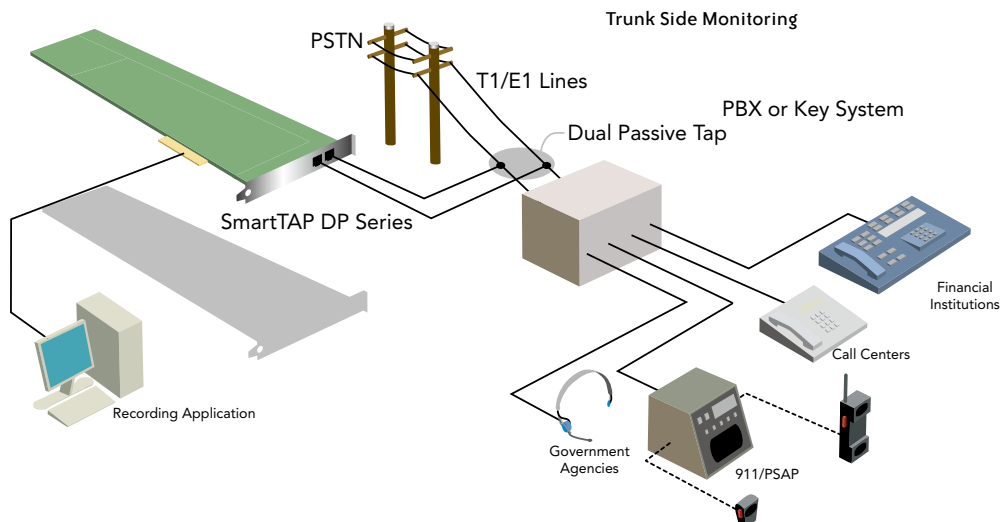
Network conditions and call statistics are easily accessed via the SmartWORKS™ API. Event driven alarms are reported for loss of signal conditions or synchronization errors. Framer and call statistics are available through standard API function calls.

## DP Logical Card Model



## DP Application Model

Applied Use: With a proven field record, the SmartWORKS™ DP has been successfully deployed in various international agencies such as banking, law enforcement, trading and customer support centers.



Technical Specs

SMARTWORKS™ DP SERIES

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AUDIO DIGITIZING (ENCODING & DECODING)

5.3 Kb/s:.....	G.723.1
6.3 Kb/s:.....	G.723.1
8 Kb/s:.....	G.729A
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 (signed & unsigned)
96 Kb/s:.....	6 Khz 16 bit linear PCM(signed)
128 Kb/s: .....	16 bit linear PCM (signed & unsigned)
Wave file formats: .....	Microsoft GSM, Linear signed 8 & 16-bit PCM
Digitization selection: .....	Programmable per channel, independent for encode and decode

SAFETY AND CERTIFICATIONS

Telecom:.....	DOC
Emissions:.....	FCC Part 15 class A · EN 55022
Immunity: .....	EN 55024
Safety:.....	EN 60950
Estimated MTBF:.....	250,000 hours per Bellcore Method I

MODELS AVAIABLE

DP3209/DP3209-eh: .....	Single E1/T1
DP6409/DP6409-eh:.....	Dual E1/T1

# PRODUCT SPECIFICATIONS · SMARTWORKS™ DP

T1/E1 - PASSIVE

## HARDWARE SYSTEM REQUIREMENTS

Pentium 4 or equivalent · 2 GHz or better  
PCI2.2/PCI-X/PCI-E with 3.3V power supply

## OPERATING SYSTEMS

Windows 2000 · Windows XP  
Windows 2003 32 bit · Linux (Call for variant details)

## TECHNICAL SPECIFICATIONS

Max boards per system:.....Any combination up to 512 ports  
Max ports per system:.....Up to 512  
Resource Sharing Bus:.....MVIP or H.100  
Boards Status:.....On-board LEDs  
Clocking:.....Master/Slave

## ENVIRONMENTAL CONDITIONS

Operating Temperature:.....0C to +60C  
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

## POWER REQUIREMENTS (6409)

+ 3.3 VDC:.....2.8 A  
+5 VDC:......5 mA  
-12 VDC:.....n/a  
+12 VDC:......20 mA

## SDK

Ai-Logix Native SmartWORKS™ API  
SmartControl (Control Panel)  
SmartVIEW (Card functionality test application)

## HOST INTERFACE

Bus Compatibility:.....PCISIG 2.2/PCI-X/PCI-E1.1  
Bus Speed:.....33/66/2500MHZ  
Bus Mode:.....32/64 bit bus

## DTMF TONE DETECTION

DTMF digits:.....0 - 9, \*, #, A, B, C, D  
Dynamic range:.....-38 dBm to 0 dBm  
Minimum tone detection:.....40 ms / programmable  
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

## TELEPHONY INTERFACE

Trunk type:.....T1/E1  
Trunk Interface.....Digital High Impedance (Z)  
AC Impedance.....1k Ohms  
Input Impedance.....1000 Ohm +/- 5%  
Maximum Tap Length.....30m (100 feed) of CAT 3 cable  
Connectors.....Two RJ-45 connectors

## T1 INTERFACE

Receive Clock Rate.....1.544 MHz +/-200ppm  
Transmit Clock.....Recovered RX clock or 50 ppm  
Input Level.....LBO 0dB to -22dB  
Framing.....SF (D4), ESF  
Line Coding.....AMI, B8ZS  
Signaling Protocol.....ISDN, NFAS, CAS  
Clock and Data Recovery.....Complies with AT&T TR62411  
and Bellcore TA-TSY-000170  
Loss of Signal Detection.....ANSI T1.231  
Alarm Detection and Integration.....LOS, LOF, Yellow, and AIS per  
ANSI T1.231  
Binary Sequence Detector.....Per ITU-T 0.151

## E1 INTERFACE

Receive Clock Rate.....2.048 +/- 175ppm  
Transmit Clock.....Recovered RX clock or 50 ppm  
Input Level.....3.2V down to 0.45 V  
Framing.....Basic G.704, CRC-4  
Line Coding.....AMI, HDB3  
Signaling Protocol.....ISDN, DASS2, CAS  
Loss of Signal Detection.....per ITU-T G.775  
Alarm Detection and Integration.....LOS, LOSMF, TS16, CRC  
Binary Sequence Detector.....Per ITU-T 0.151

## AUDIO SIGNAL

Receive range:.....-68 dBm to + 3 dBm  
Input gain control:.....+24 to -50 dB  
Silence Detection:.....Programmable from API  
Transmit volume control:.....+24 to -50 dB to MVIP/H.100  
Automatic Gain Control (AGC):.....Programmable from API  
Automatic Volume Control (AVC):.....Programmable from API  
Activity Detection:.....Programmable from API  
Frequency Response:.....300 - 3400 Hz (+/- 3dB)