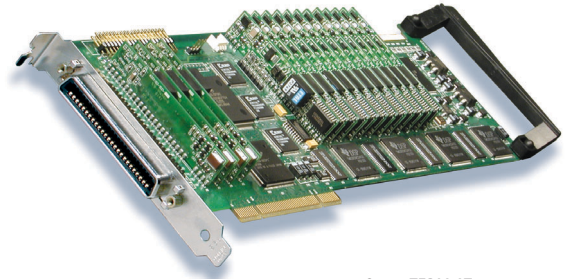


# SMARTTERM AT Series

## Medium Density Analog Terminate Card

### Features

- Industry Standard Voice Store & Forward Features
- Audio port/headset jack
- Call progress detection
- Echo cancellation
- On-board DSP providing Tone Detection & Voice Processing of up to 16 full-duplex channels
- Supports Passive Recurring Mode
- 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

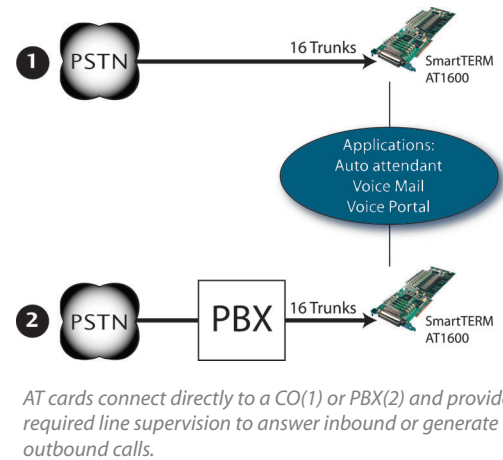
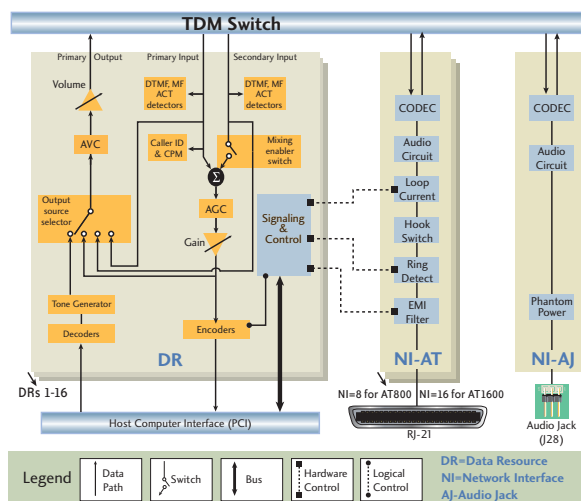


SmartTERM AT

### Overview

The SmartTERM AT uses a unique DSP architecture to deliver world-class DTMF call progress, tone detection and audio compression. Occupying a single PCI slot, the AT easily scales from 8 to 16 channels on a single card. Our SmartWORKS API along with CT Bus support and numerous other features make it easy to build applications supporting up to 256 channels. A built-in audio jack on each board allows audio channel activation for headset record/playback with Windows WAV support. Dedicated on-board DSPs make it possible to support simultaneous processing of all channels.

The SmartTERM AT series utilizes the latest in low-bit rate coders such as GSM and G.726, and is configurable on a per channel basis.



AT cards connect directly to a CO(1) or PBX(2) and provides all required line supervision to answer inbound or generate outbound calls.

The diagram at left shows the AT's Logical Card Model, which shows how the AT functions with the SmartWORKS API.

Product	Part Number	Available
AT800 8-channel card:	910-0310-001	Release 7/02
AT1600 16-channel card:	910-0309-001	Currently in Beta

# 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 XP · Linux\*

## TECHNICAL SPECIFICATIONS

Max boards per system: AT1600=16 boards (256 ports)  
AT800=16 boards (128 ports)

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

## HOST INTERFACE

Bus Compatibility: Complies with PCISIG Bus Specifications, Rev. 2.2  
Bus Speed: 33 MHz  
Bus Mode: 32 bit bus master/target

## TELEPHONY INTERFACE

Trunk type: Loop Start, Terminate  
AC Impedance: 600 Ohms Off-hook, 6K Ohms On-hook  
Loop Detection: Off Hook: 6mA (max)  
On Hook: 8mA (min)

Echo return loss: 32dB +/- 3 dB @ 1400 Hz  
Signal/Noise ratio: 35dB referenced to -15dBm  
Idle channel noise: Less than 20dBnc  
Crosstalk coupling: Less than -70 dB (0dBm, 1004Hz)  
Frequency response: 300Hz to 3400Hz +/-3dB  
Ring detection: 30Vrms (min), 16 to 68Hz  
Ringer Equivalence Number: < 0.5  
External Connector: RJ-21X 25 Pair Female

## ANALOG JACK

Audio Connector: 3-pin to 3.5mm female  
Output impedance: 300Ω  
Input impedance: 33KΩ  
Return loss: >25dB  
Mic bias: +5VDC @ 4.7KΩ  
Input gain: +9dB  
Output gain: 2.73dBm @ 300Ω  
Full scale input: 750 mVRMS  
Full scale output: 1.5 mVRMS open circuit

## SDK

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

## POWER REQUIREMENTS

+3.3 VDC: 1 Amp  
+5 VDC: 40 mA  
-12 VDC: 0.22 A  
+12 VDC: 0.22 A

## 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 from API

## 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: μ-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 TONE DETECTION

DTMF digits: 0 - 9, \*, #, A, B, C, D  
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

## 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

Caller ID: V.23 & Bell 202  
DTMF Detector: Primary & Secondary channel

## ECHO CANCELLATION

Input Dynamic Range: G.165 compliant  
Double-talk detection: G.165 compliant  
End path delay: 8ms

## MF DETECTION

MF Detection: R1 & R2  
R1 digits: Per Q.151

## SAFETY AND CERTIFICATIONS

Telecom: CFR Part 68 · DOC  
Emissions: FCC Part 15 class A · EN 55022  
Immunity: EN 55024  
Safety: EN 60950  
Estimated MTBF: 250,000 hours per Bellcore Method I

## WARRANTY:

3 years standard

\*Call For availability



**Ai-Logix, Inc.**

A member of the Ai-Technology Group

Ai-Logix, Inc. · www.ai-logix.com · Corporate Park III, 580 Howard Ave · Somerset, NJ · 08873 · T: 732-469-0880 · F: 732-469-2298

Charlotte, N.C.  
Tel (704) 365-1100

Dallas, TX.  
Tel (972) 818-8990

Washington, DC  
Tel (301) 622-5330

Europe  
Dorpsstraat 77  
2445 AL Aarlanderveen,  
The Netherlands  
Tel 31+172-425133

China  
Beijing, PRC  
Tel 86+10+82512288  
or  
86+10+82512299