

## Using this Reference

This Quick Set-Up Reference is supplementary to the SmartWORKS User's Guide. It details essential information about installing a SmartWORKS PCM board and establishing connectivity between a board, and customer premises equipment. For information on how to configure the board, refer to the SmartWORKS User's Guide that is included on the product CD-ROM.

To identify and locate board hardware such as LEDs, and jumpers, refer to the information below.

For hardware installation, software installation, and connectivity between a board, the network, and customer premises equipment, refer to the next page.

**NOTE:** This unit is for use only with compatible UL listed PCs or servers.

## Agency Approvals

Agency approvals and homologations are available on the SmartWORKS CD ROM.

## LED Descriptions

### The SmartWORKS PCM:

**CR1 - CR16 (CR1-8 on the 3209)** DSP started LED. Each DSP turns its LED ON to indicate a successful initialization.

**CR17** - A three stage power and board initialization monitoring LED with the following occurrences:

"ON," indicates 3.3V power is supplied and the board is ready for the driver to be loaded.

"OFF," indicates the driver has successfully loaded and the board has initialized.

"BLINKING," indicates the board initialization process has failed or board panic has occurred.

**CR18** - TDM clock termination LED. "ON" indicates the TDM clocks are being terminated. NOTE: to terminate clocks jumper J8 must be closed.

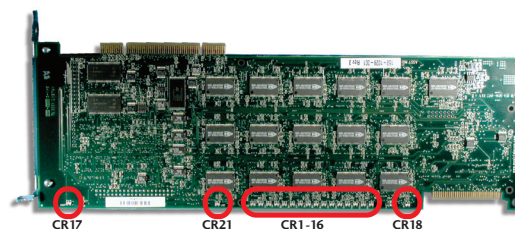
**CR21** - CPU LED. This LED is turned ON by the local CPU upon successful initialization. **Note:** Invoking the MTBlinkBoard() API function causes the LED to blink. The total number of times it blinks equals the board number + 1. Use this function to match board location in a chassis with its board number.

## System Requirements

The computer must meet the following requirements prior to installing the SmartWORKS PCM:

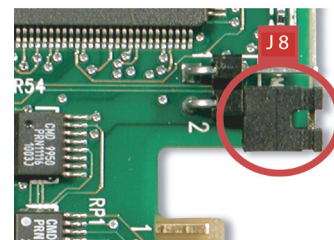
Hardware System Requirements:	Operating Systems:
· Pentium IV or equivalent 400 MHz or better	· Windows 2000 SP 3
· ATX PCI motherboard or passive backplane with 3.3V ATX power supply	· Windows XP SP 1
· PCI 2.2 bus/PCI express	· Windows 2003 Server 32-Bit
	· Linux (Call for availability)

## SmartWORKS PCM LEDs



## Clock Termination and J8

Jumper J8 terminates the clock and control signals on the MVIP or H100 Bus. When jumper J8 is closed, a connection is established that enables clock termination and activates LED CR18.



## Trunk LEDs



-  Framers Reset
-  Signal Present & Alarm
-  Normal Operation
-  No Signal, Framers Started

## Hardware and Software Installation

Switch off the power and remove power cords before opening the computer case. Do not re-attach power cords or switch on power to the computer while the computer case is removed.

Exercise ESD Precautions: Wear an ESD wrist strap.



Install the Card: Secure the card in a PCI slot with a chassis screw.

After the PC is powered back on cancel out of the Windows "Found New Hardware" screen. Place the SmartWORKS CD into the CD ROM to finish the installation. If multiple boards are connected with a MVIP or H.100 cable, they must be configured as Master or Slave. Refer to the *SmartWORKS Developer's Guide* for more information.

*Adding an additional SmartWORKS board to an existing system MAY impact the board and channel numbering of all boards. Refer to the SmartWORKS Developer's Guide for more information.*

### Install the Software:

Choose Products > SmartWORKS Series > Install Software > Install Software.

When prompted, select **Automatically Upgrade Firmware** and **Configure Boards**. For configuration details, refer to the SmartWORKS User's Guide.

*The computer must be re-booted each time a new AudioCodes board or SmartWORKS software is installed.*

### PCM Interface Configuration:

#### Frame Sync Configuration

By default, TDM reference is received on trunk 0 (framer 0). To switch the frame sync reference between trunks or to enable frame sync transmission use the API `MTBoardPCMTTrunkFrameSyncControl()`.

#### Trunk Impedance

By default, all trunks are set to high impedance (passive mode). To change impedance use the API `MTBoardSetTerminationImpedance()`.

#### Coding Format

Idle packets are transmitted when there is no sync to the trunk (port). This feature is enabled by default, and the coding format is set to  $\mu$ -Law. The API `MTBoardSetIdleCoding()` is used to control this feature.

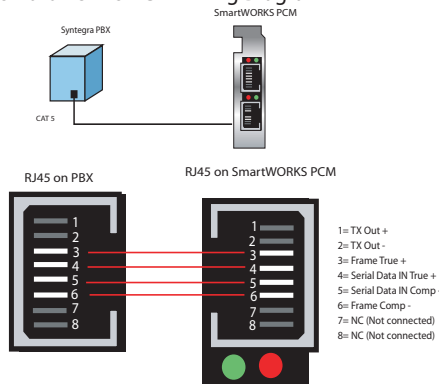
#### Signal Configuration

This can be used when the paired wires have been reversed on installation. Use the API `MTBoardSetSignalConfig()` to configure each trunk on the board. Ai-Logix recommends that the wiring is carefully checked before using this API.

#### Disable Mixing

When the SmartWORKS DLL is loaded, mixing is enabled by default. The user application must disable mixing when connecting to a PCM32 system. For more information refer to the PCM chapter in the *SmartWORKS User Guide*.

SmartWORKS PCM Wiring Diagram



### Verify Setup:

1. Run the SmartWORKS Control Panel.
2. Click on the **Board** tab. Select the board number that represents the PCM board. Verify that the board information is displayed correctly.
3. Click on the **System** tab. Verify that the settings are correct.

### Verify Events:

**Run SmartView:** From the Start Menu select **Programs > Ai-Logix > SmartWORKS > SmartView.exe**.

**Open Channels:** From the Tool Bar, select **System > MTSysStartup**. This opens the board and all channels.

At this point, the system is set up to operate and capture events. Verify that the first trunk is connected to a simulator or a network connection so that the call can be monitored with the PCM:

1. Highlight the first channel on the first trunk using the SmartView Interface.
2. From the Toolbar, select **Settings** then select **MT(Set/Get)EventFilters...Enable Activity and Silence** by placing a check in each box.
3. Place a call on the simulator or digital line.
4. Look for the following events in the SmartView Event Viewer window:

EVT\_CC\_ (call control events)

-OR-

EVT\_ACTIVITY

EVT\_SILENCE

If no events are generated - verify the following:

1. Use SmartView to look for errors on the line indicating a connectivity issue: **FramerStatistics > MTGetFramerAlarmStatus...** The **LOS\_ALARM** field shows sync errors reported by the PCM card.
2. Check your tap and verify that the wiring matches the tip and ring schematic provided.
3. Monitor another channel to verify the channel is not bad.

### Check Recording:

1. Using SmartView, highlight a monitored channel.
2. Initiate a phone call and keep the line open.
3. From the Tool Bar select **Media > MTRecFile...**

Set the following:

· File Name: [Filename].wav - the .wav extension must be appended to the file name

· Data Format: This must be set as MSGSM.

· Click the Advanced button: Under the MS Wave Option, select **RIFF Format ..**

4. Stop recording: from the toolbar select **Channel Functions** then **MTStopChannel**.
5. You can play this back using any standard Media Player.

If the recording contains static or noise:

1. View the tap connection and verify that there are no loose lines.
2. Check whether the actual phone line contains static, it may just be a bad line.
3. Send the recording to AudioCodes for evaluation.