

PAC Instructions for ADA Power Amplifiers

Introduction

The PAC module (Programmable Amplifier Controller) is used in several ADA multi-channel power amplifiers including the PTM-1645, PTM-1260, PTM-6150, PTM-8100 and PTM-8150. All models incorporate a micro-controller for turn on power inrush control and smart zone trigger control. Triggers are activated by voltage input or by RS-232 data control.

Low Voltage Trigger Control

You may use the triggers normally on a preamp-zone to amp-zone basis or you may custom assign several amplifier zone(s) to any preamplifier trigger. This allows you to use multiple amplifier channel pairs on any single audio zone. While you still need to split line-level audio from the preamp output to the multiple channel inputs on the power amplifier, you no longer need to to customize the 9-pin ribbon cable (12VDC zone trigger cable).

Quick Turn Feature

The PAC amplifiers feature a Quick Turn On option whereby the amplifier can remain powered and charged even when the last zone turns off. This makes PAC amplifiers ideal for paging. You can also turn this feature off so that the amplifier fully powers off.

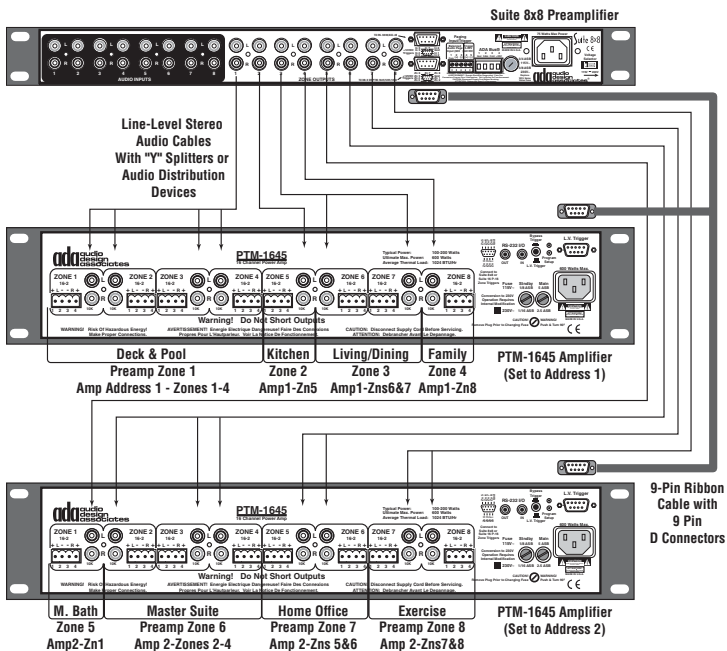
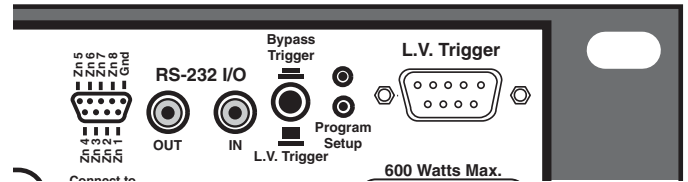
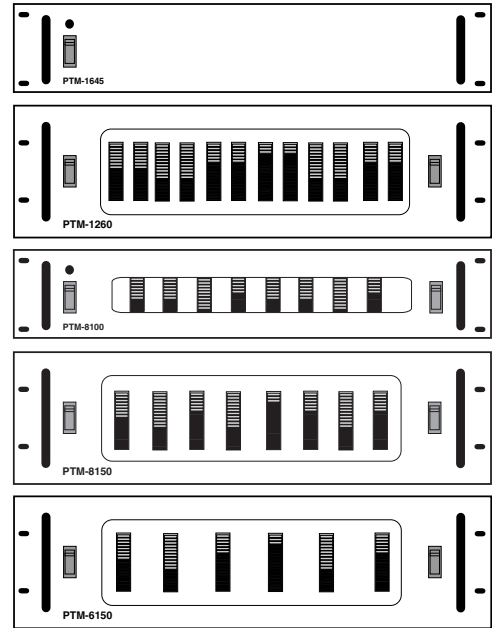


Diagram shows PAC Amps controlled by low voltage triggers.



RS-232 Control

For RS-232 control, these amplifiers can be set to one of nine possible addresses permitting up to nine amplifiers to be PAC linked together.

By-Pass Option

You can also select the bypass mode on the rear panel which will activate all triggers anytime the main power is on.

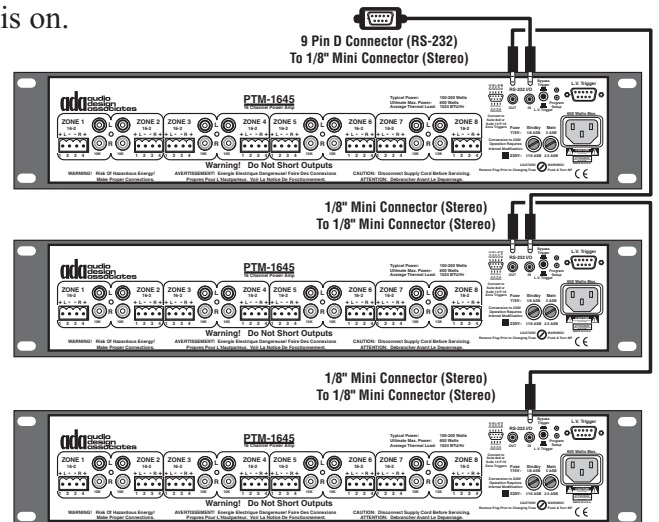


Diagram shows PAC Amps controlled by RS-232.

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Using the ADA PC PAC Program

Under Configuration, select the COM port connected to the power amplifier and make certain that the amplifier's program LED is blinking.

View Commands - View Feedback

If you want to either view commands or feedback, select these check boxes.

Retrieve ALL Button

The Retrieve All button updates the program with the amplifier's current settings including zone triggers, address, and quick turn-on state. All default amplifier addresses are address 1 and all quick turn on states are Off.

All Set, All Clear Buttons, & Default Buttons

Turns all triggers on to all zones or clears all triggers from all zones. The default button sets output 1 to trigger 1, output 2 to trigger 2....etc. Note that by clicking these buttons you are not immediately affecting a change on the power amplifier. In order for any changes to take affect, you also need to press the "Send All & wait for update" button.

Trigger/Output Grid Check Boxes

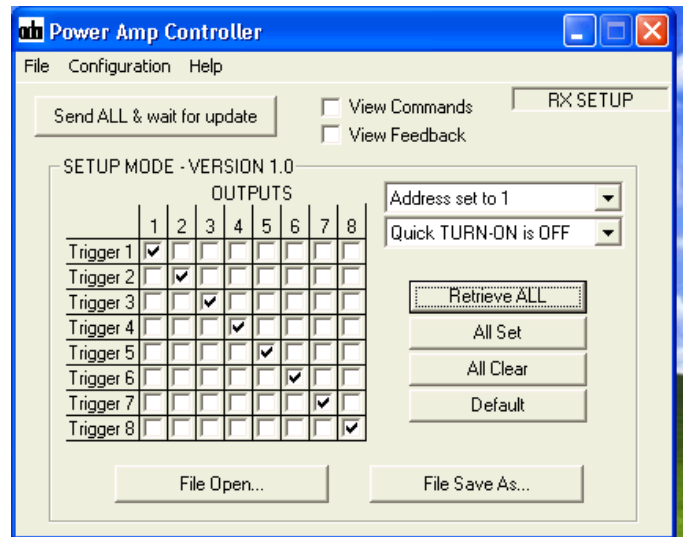
Here you can assign amplifier "outputs" to preamplifier zone "triggers" by clicking on the check boxes. This permits you to customize the triggers to suit your installation.

Address Selection

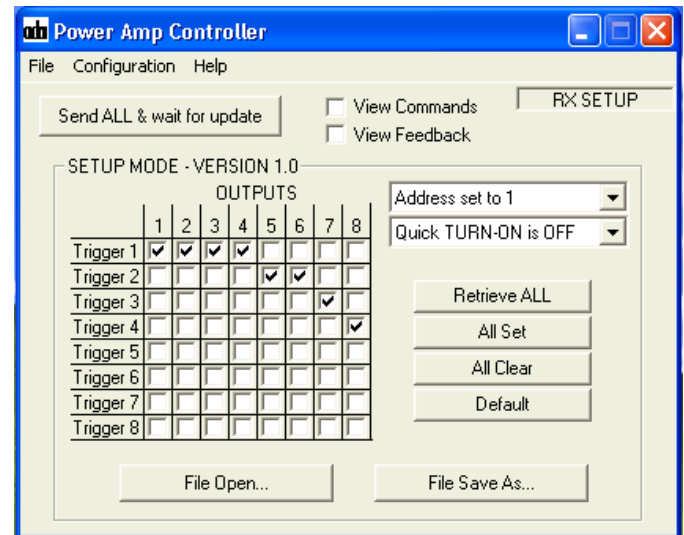
Address selection is only used if you are controlling the amplifiers via RS-232 and then, only if you are daisy-chaining more than one amplifier on a control system's RS-232 port.

Quick Turn On

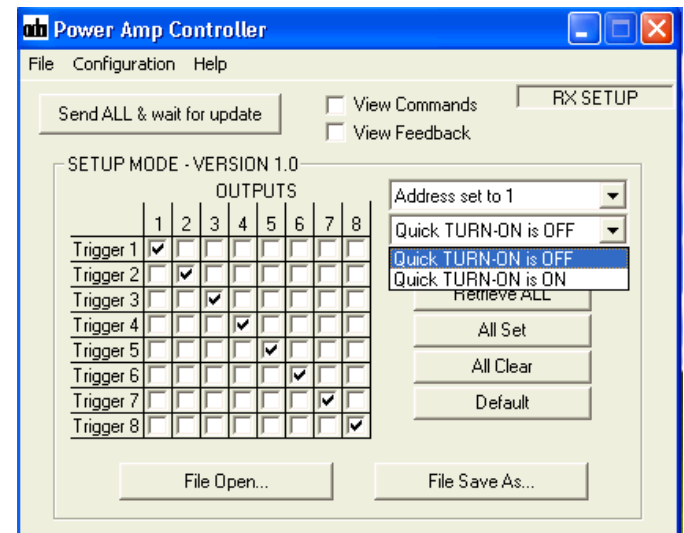
All PAC amplifiers can be set to quick turn ON, ideal when using the amplifier for paging. When quick turn on is set to ON, then the amplifier will remain powered even after the last zone turns off. When quick turn on is set to OFF, the amplifier powers down with the last zone.



Retrieve All - Retrieves current settings from PAC Amps.



Custom Trigger Setup - Trigger 1 turns on Amp Channels 1-4, Trig. 2/Ch. 5-6, Trig. 3/Ch 7, & Trig. 4/Ch.8



Default Trigger Setting - Quick Turn On is OFF

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Send ALL & wait for update Button

After selecting the trigger/output boxes, the quick turn on setting, and address (if applicable), press the Send ALL button. This loads these settings into the PAC power amplifier. To verify, press All Clear button and then the Retrieve All button. The setup you sent should be recalled.

File Save As and File Open

You can also save your trigger/amplifier settings for future use through these options. To save a setting, press the File Save As. To open a previously saved setting, press File Open. Remember, once you open a saved setting, you will need to Send All to program it into the PAC amplifier.

Using Hyperterminal

If you don't have the ADA PAC PC program, you can opt to use hyperterminal to setup the PAC amplifier.

Keyboard Entries - Any letters used must be uppercase only.

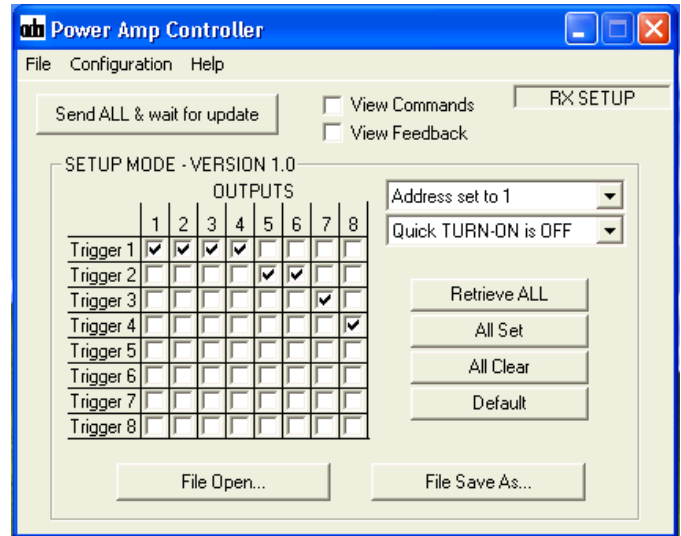
Press <ENTER> at any time to update screen.

Pressing <ENTER> in the middle of an incomplete string will update screen with no changes.

D <ENTER> sets all triggers to default 1 to 1 settings, screen will update.

Q <ENTER> toggles the Quick Turn On mode and the PC's screen will update. In Quick Turn On mode, the amplifier's power supply is always on so the turn on response time will be immediate. This is useful for paging applications or where an instant response is required. When Quick Turn On mode is off, the amplifier's power supply is in standby when any zone is not active. The first time the amp is activated, there will be a delay for the current inrush limiter before audio can be heard. The inrush limiter also operates the first time the amp mains are powered when Quick Turn On mode is on.

A1 <ENTER> sets amplifier address to 1 and the PC's screen will update. Addresses allowed are 1 through 9 (A# <ENTER>).



HYPERTERMINAL Screen (*Notes in bold italic*)

```

                                OUTPUTS
                                _|_1_|_2_|_3_|_4_|_5_|_6_|_7_|_8_| ← zone outputs
TRIGGER INPUTS T1| x | | | | | | | | ← output 1 assigned
                                _|_||_|_|_|_|_|_|_|_| to trigger 1
                                T2| | x | | | | | | | |
                                _|_||_|_|_|_|_|_|_|_|
                                T3| | | x | | | | | | | |
                                _|_||_|_|_|_|_|_|_|_|
                                T4| | | | x | | | | | | | |
                                _|_||_|_|_|_|_|_|_|_|
                                T5| | | | | x | | | | | | | |
                                _|_||_|_|_|_|_|_|_|_|
                                T6| | | | | | x | | | | | | | |
                                _|_||_|_|_|_|_|_|_|_|
                                T7| | | | | | | x | | | | | | | |
                                _|_||_|_|_|_|_|_|_|_|
                                T8| | | | | | | | x | | | | | | | | ← output 8 assigned
                                _|_||_|_|_|_|_|_|_|_| to trigger 8

                                VERSION 1.0 ← firmware version
address-> CURRENT ADDRESS = 1 QUICK TURN ON = OFF ← quick turn on

ENTER STRING IN THE FORM OF:

T8=00000001 <enter> 1=ON 0=OFF ← setup a trigger
FOR DEFAULT, D <enter> ← set all triggers to default 1 to 1
                                as shown above
FOR QUICK TURN ON, Q <enter> ← toggle quick turn on

ENTER ADDRESS IN THE FORM OF:

A1 <enter> (A1-A9 allowed) ← change address

```

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LOW VOLTAGE TRIGGER SETUP

T1=10000000 <ENTER> - Sets trigger 1 to turn on amplifier output 1.

T8=11111111 <ENTER> - Sets trigger 8 to turn on all amp outputs.

T2=01000000 <ENTER> - Sets trigger 2 to turn on amp output 2.

T7=00010000 <ENTER> - Sets trigger 7 to turn on amp output 4.

A NOTE ABOUT LOW VOLTAGE TRIGGERS

Low voltage triggers and data control triggers will operate as they have been setup. Low voltage triggers can be used along with data control. Low voltage triggers will override data control.

A NOTE ABOUT DATA FEEDBACK

When in default mode, triggers and zones work one for one. If you configure a single trigger to activate multiple zones, the data feedback indicates which zones are on, NOT which triggers are on.

Data Commands - All 8 amplifier outputs per address are loaded in one string. This is even true for six zone (12 channels), four zone (8 Channels) or three zone (6 Channels) power amplifiers.

S1=10000000 <ENTER> set amplifier at address 1, output 1 on. feedback 1=10000000 <ENTER> reflect zones that are active.

S1=11110000 <ENTER> set amplifier at address 1, output 1,2,3,4 on. feedback 1=11110000 <ENTER>

G1 <ENTER> request update from amplifier at address 1.

GA <ENTER> request update from all amplifiers & feedback is sequenced 0.1 second intervals by address.

feedback 1=10000000 <ENTER>, 2=10000000 <ENTER>
3=10000000 <ENTER>, 4=10000000 <ENTER>
5=10000000 <ENTER>, 6=10000000 <ENTER>
7=10000000 <ENTER>, 8=10000000 <ENTER>
9=10000000 <ENTER>

SA=00000000 <ENTER> set all amplifiers off & feedback is sequenced 0.1 second intervals by address.

feedback 1=00000000 <ENTER>, 2=00000000 <ENTER>
3=00000000 <ENTER>, 4=00000000 <ENTER>
5=00000000 <ENTER>, 6=00000000 <ENTER>
7=00000000 <ENTER>, 8=00000000 <ENTER>,
9=00000000 <ENTER>

HYPERTERMINAL Screen (Notes in bold italic)

```
                                OUTPUTS
                                __|_1_|_2_|_3_|_4_|_5_|_6_|_7_|_8_| ← zone outputs
TRIGGER INPUTS T1| X | X | X | X | | | | | ← output 1 assigned
                                | | | | | | | | | to trigger 1
T2| | | | | X | X | | | |
T3| | | | | | | X | | | |
T4| | | | | | | | X | | | |
T5| | | | | | | | | | | | |
T6| | | | | | | | | | | | |
T7| | | | | | | | | | | | |
T8| | | | | | | | | | | | | ← output 8 assigned
                                | | | | | | | | | to trigger 8

                                VERSION 1.0 ← firmware version
address-> CURRENT ADDRESS = 1 QUICK TURN ON = OFF ← quick turn on

ENTER STRING IN THE FORM OF:
T8=00000001 <enter> 1=ON 0=OFF ← setup a trigger
FOR DEFAULT, D <enter> ← set all triggers to default 1 to 1
                                as shown above
FOR QUICK TURN ON, Q <enter> ← toggle quick turn on

ENTER ADDRESS IN THE FORM OF:
A1 <enter> (A1-A9 allowed) ← change address
```

