

User Manual

Multi-Viewer Switch API

Adder Technology Limited

Part No. MAN-000023
Release 1.0

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Introduction

This guide explains how to use RS-232 to remotely control an Adder Multi-Viewer switch (AVS-1124, CCS-MV4224).

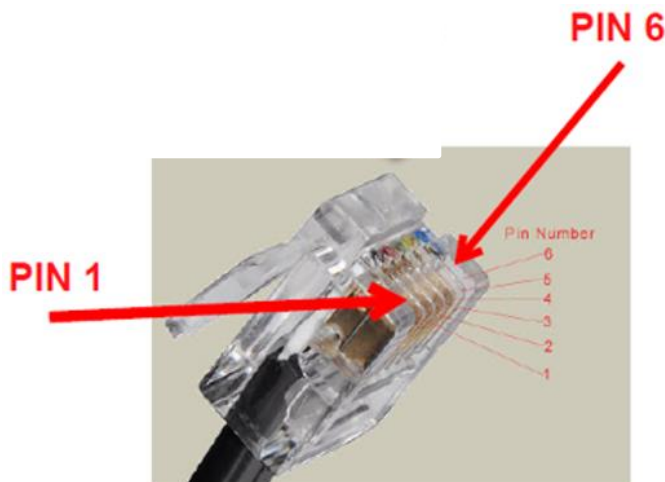
To control a switch using RS232, the user needs to connect a controlling device to the switch's RCU port. The controlling device can be a PC or any custom device with RS-232 capability.

Remote controlling means performing actions that users could otherwise do only using the front panel or hotkeys, including:

- Switching channels
- Audio hold
- Selecting a screen preset layout

Installation

This procedure shows how to connect a switch to a remote-control device. A suitable RS232 cable will be required with an RJ12 connector to plug into the RCU port with the pinout shown below:



Pinout for the RDU port:

- Pin 1: 5V
- Pin 2: Not connected
- Pin 3: Not Connected
- Pin 4: GND
- Pin 5: RX
- Pin 6: TX

Few modern PCs have an RS232 port, so it may be necessary to use a USB or Ethernet adapter.

Operation

Configuring example using the PuTTY open-source serial console utility. This procedure demonstrates how to switch channels via RS-232 using a remote control Windows PC.

Pre-configuration

1. Install PuTTY on the remote computer.
2. Connect a serial cable from the PC's USB port to the switch's RCU port.
3. Run the PuTTY utility.
4. Configure the Serial, Terminal and Session settings, as per figures 1 to 3



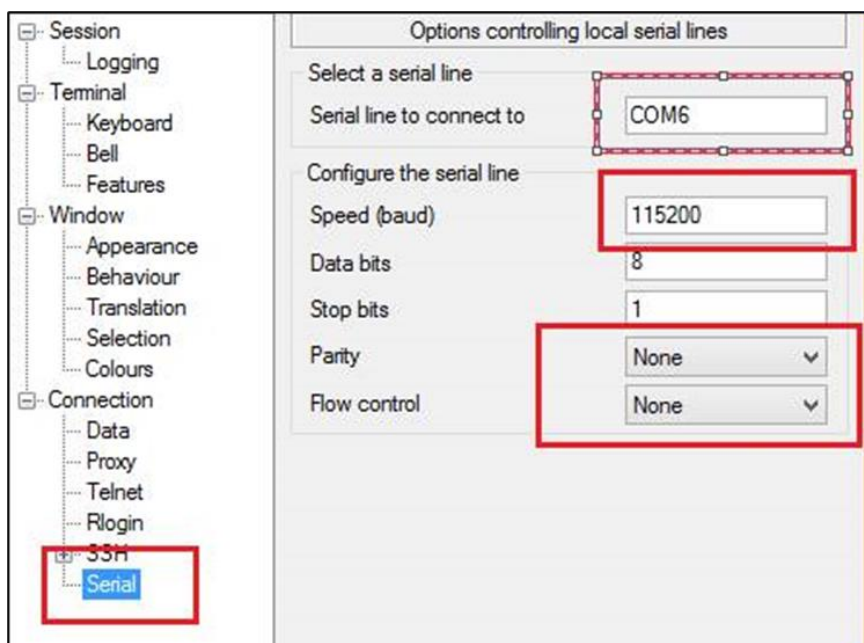


Figure 1: PuTTY Serial Settings

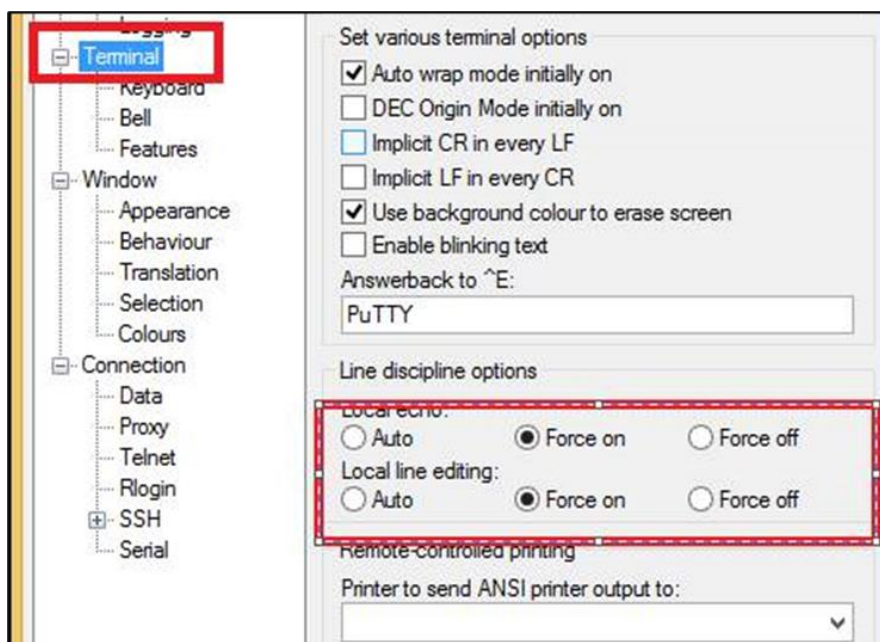


Figure 2: PuTTY Terminal Settings

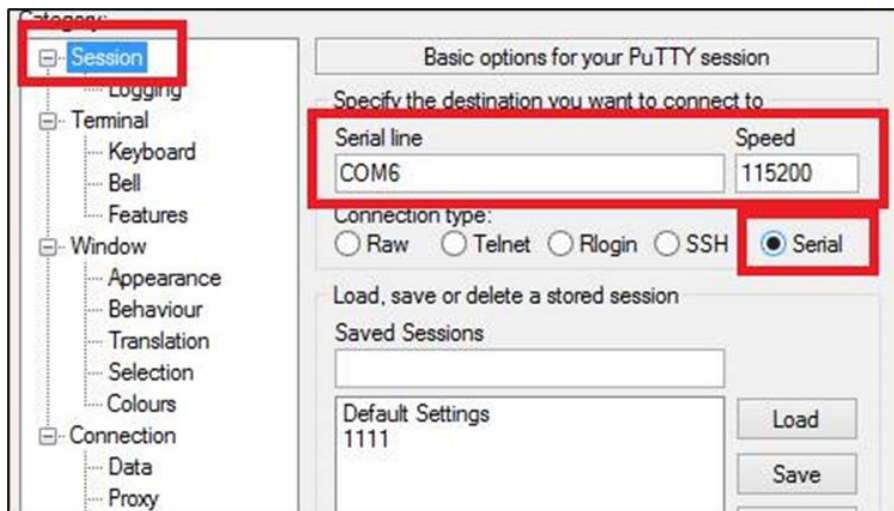


Figure 3: PuTTY Session Settings

Note: At this point, the device starts sending Keep-Alive events, every five seconds.

Keep-Alive events are transmitted by the switch periodically to communicate the current configuration. For example, to switch to Channel 4, the user types: #AFP_ALIVE F7

Then, every five seconds, the device sends the following keep-alive event: 00@alive fffffff7 as shown in Figure 4.

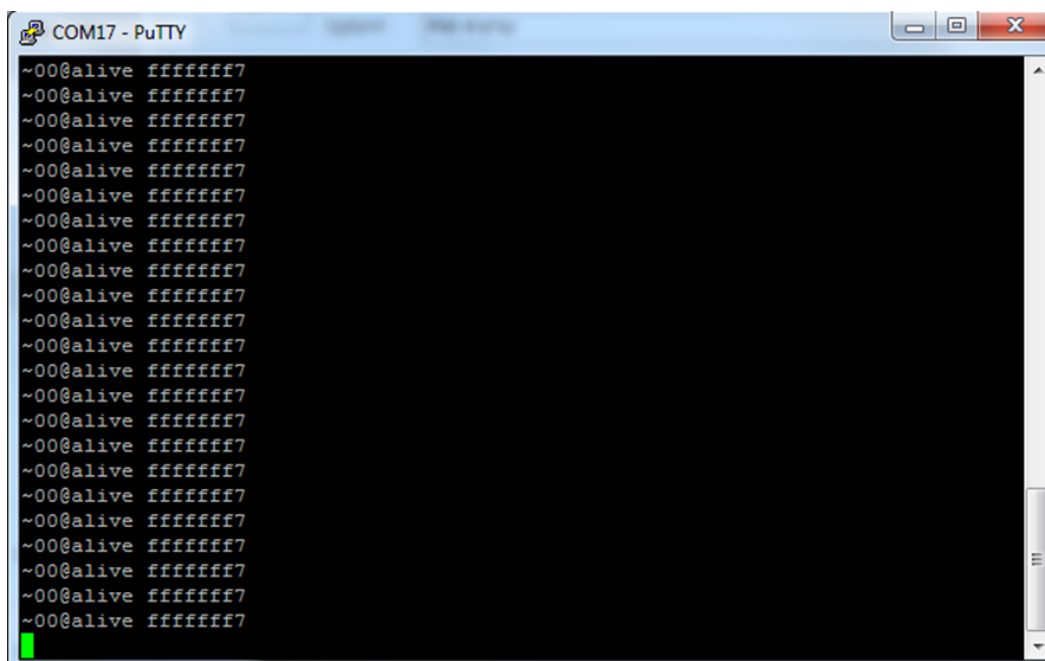


Figure 4: Keep-Alive Events

The interval time of keep-alive events can be changed, using the #ANATA command followed by a time period operand in units of 0.1 second. Thus:

- #ANATA 1 gives an interval of 0.1 seconds
- #ANATA 30 gives an interval of 3 seconds

Command Structure

The command structure is comprised of the following 4 fields:



<pre-amble> <command> <operand1> <operand2>

Where:

- There is a space between each field
- The pre-amble is either #ANATL or #ANATR, where:
 - #ANATL equals the key sequence Left CTRL | Left CTRL
 - #ANATR equals the key sequence Right CTRL | Right CTRL
- Commands require 0, 1 or 2 operands
- Command success: Upon successful command execution, the device returns the output: command + OK
- Command failure: Upon failure, the device returns the output: command + Error Message
- To initiate a new serial connection, enter #ANATF 1

Command List

The command is a translation of the keyboard hotkey listed in an Appendix of the Multi-Viewer User Manual (MAN-000007). Example translations are:

Description	Hotkey	API Command
Load preset #3	Left Ctrl Left Ctrl F3	#ANATL F3
Switch to channel #4	Left Ctrl Left Ctrl 4	#ANATL 4
Maximize active channel to full screen	Left Ctrl Left Ctrl F	#ANATL F

Figure 5: Example commands

The most common commands are likely to be loading a preset and positioning and resizing windows on the display. The general format of the command to move and resize a window is:

#ANATL F11 END <Channel> <Operation> <Location>

Where:

<Channel> is 1 to 4

<Operation> is:

1. Window top left X location (0 to 100%)
2. Window top left Y location (0 to 100%)
3. Window X extent as percentage of total X width
4. Window Y extent as percentage of total Y height
5. X offset (the location of the window compared to the full image size when bigger).
6. Y offset (the location of the window compared to the full image size when bigger).
7. X scaling as a percentage
8. Y scaling as a percentage

<Percent> is a 4 digit number in increments of 0.01%

Note that where dual monitors are used in Extend mode, the percentages relate to the total display size. For example, to set the window for channel 1 to occupy the 4th quadrant:

Description	API Command
Set the window top left X position at half display	#ANATL F11 END 1 1 5000
Set the window top left Y position at half display	#ANATL F11 END 1 2 5000
Set window X extent to half screen	#ANATL F11 END 1 3 5000
Set window Y extent to half screen	#ANATL F11 END 1 4 5000

Figure 6: Set Channel 1 to 4th quadrant (single monitor)

Note that the commands change slightly when using dual side by side monitors:



Description	API Command
Set the window top left X position at half display	#ANATL F11 END 1 1 2500
Set the window top left Y position at half display	#ANATL F11 END 1 2 5000
Set window X extent to half screen	#ANATL F11 END 1 3 2500
Set window Y extent to half screen	#ANATL F11 END 1 4 5000

Figure 7: Set Channel 1 to 4th quadrant of left monitor

There is one command that doesn't adhere to the aforementioned pattern, Audio Hold. To toggle the audio hold button, enter the command:

#AUDFREEZE 1

