

## QUICK START GUIDE

### FIRST STEPS

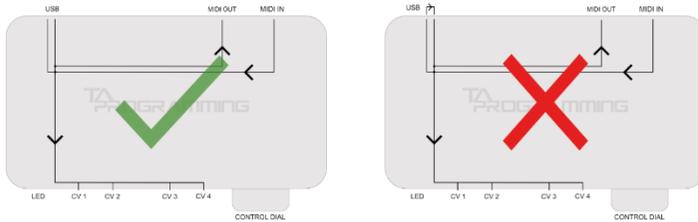
Download the Control Software from <https://taprogramming.com/product/midi-cv-interface/> and Install. (note: If using Interface as a MIDI - USB converter then no software interfacing is necessary, simply plug-and-play).

Open the Control Software and plug in your TA Programming MIDI & CV Interface via USB.

### I/O

All of the CV outputs on the TA Programming MIDI & CV Interface are completely routable allowing you any desired combination. Input sources include both USB and DIN, together or independently.

With MIDI passthrough, you can control your DAW via a MIDI capable synth, or control a MIDI capable synth from software, independent of the CV outputs, should you choose.



In order to reduce latency to minimum when running USB and DIN simultaneously, it is important to use direct connections from the inputs to the CV Outputs. If you use a controller via DIN as your MIDI input in your DAW, and then loop that MIDI, via your DAW, back to the CV outputs, this may increase latency (**but often doesn't with a computer fast enough**).

### ROUTING

#### PITCH, GATE & VELOCITY

If routing from USB, set up MIDI output settings in your chosen DAW, selecting TA Programming Studio MIDI & CV Interface as your output.

If routing from DIN, simply plug your MIDI capable synthesizer/sequencer in via DIN sockets.

In your Control Software: Click the routing arrow  beneath your desired output number and play a note on your MIDI controller (USB or DIN) or in the piano roll in your DAW. Your Control Software will present you with the auto-router selection screen. Select Pitch.

Repeat the previous step on your next desired output but, at the end of the process, select Gate rather than Pitch. If you desire Velocity as well, repeat again on a 3rd output, ending with selecting Velocity.

Your next step is to select V/oct or Hz/V depending on the requirements of your synthesizer, followed by tuning. (The software automatically selects V/oct). **Please see the TUNING section.**

#### MIDI CC

Use your control software for filter CV or any other voltage controllable parameters on your synthesizer, via your DAW.

If routing from USB, set up MIDI output settings in your chosen DAW, selecting TA Programming Studio MIDI & CV Interface as your output.

If routing from DIN, simply plug your MIDI capable synthesizer/sequencer in via DIN sockets.

In your Control Software: Click the routing arrow  beneath your desired output number and manipulate a parameter on your MIDI controller or in your DAW.

Your Control Software will present you with the auto-router selection screen confirming your selected MIDI CC number, source and channel. Select 'SAVE'.

Repeat Steps 3 & 4 on as many outputs as you wish to use as CV controls.

Your next step is to choose MIDI and Voltage ranges. **Please see the TUNING section.**

#### PITCH BEND

Set-up external MIDI pitch bend output in your desired DAW, or if routing from DIN, this step is not necessary.

In the Control Software App; on an output where PITCH is already routed, select the "pitch bend" dial and turn the Device "Control" Dial to cycle between on and off.

#### INTELLI-GLIDE (PORTAMENTO)

In the Control Software App; on an output where PITCH is already routed, select the Intelli-GLIDE dial and turn the Device Dial to increase glide time.

Intelli-Glide adds more musical control to standard portamento. Playing legato will activate portamento, but staccato will temporarily disable portamento.

#### TOOL STRIP UI CONTROLS

When you click on one of the editable parameters, a toolstrip will appear next to it, containing options for manipulating the value of the selected parameter.

highlighted in blue shows that you can now use the Hardware Control Dial on the front of the interface to change the value of a parameter (fig 1). Clicking the Device Dial button again will highlight the button purple instead of blue (fig 2). This will increase the accuracy of the control but will reduce range.



fig. 1



fig. 2

If you are unsure of the function of a button that only contains an icon, then rollover with your mouse, and an animation will show you the text.



Please note that if the value does not immediately change when turning the Device Dial, you will need to match the value before it changes. This is so the value doesn't immediately jump to the position of the dial and you can edit more accurately.

## TUNING

Tuning the MIDI & CV Interface requires the MIDI Range and the Voltage Range to be matched.

### MIDI RANGES

The MIDI Range is the range of MIDI values that the Interface can accept whether it be for PITCHES or CC.

To select your intended MIDI range; Make sure that the output you wish to tune is routed. Then edit each MIDI range selectors from left to right using your desired method of control from the Tool Strip. The default ranges are labelled C2 & C7.

### VOLTAGE RANGES

On each output, the Voltage Range should be a 1:1 equivalent of the corresponding MIDI Range. While the MIDI Range may stay the same, the Voltage Range will most likely be different for each synthesizer you wish to control.

To select your intended VOLTAGE range; Make sure that the output you wish to tune is routed. Then edit each VOLTAGE range selector from left to right using your desired method of control from the Tool Strip.

When editing outputs that are routed as PITCH, the process is explained in the next section.

### THE FINER POINTS OF TUNING YOUR SYNTH

The following methods only apply to outputs that are routed to PITCH.

### MANUAL TUNING

Make sure that Device Dial is highlighted blue in the Toolstrip UI and the audio output of your synthesizer is plugged into a tuner set to Hz (whether it be in your DAW or external tuner).

Select the lowest and highest voltage values in turn to match their corresponding MIDI values. Start to edit the voltages by turning the Device Dial. As soon as you let go of the device dial or stop it for a moment, your synthesizer should play the voltage that you have selected.

When you are within a semi-tone of your target pitch, click the Device Dial button on the Toolstrip UI again to highlight purple for increased accuracy. This is required in order to get your tuning as perfect as possible.

C2 = 65.406Hz, C4 = 261.43Hz, C6 = 1046.5Hz, C7 = 2093Hz

### MULTI-MAPPING

Some synthesizers have drift and non-linearities in their V/Oct range that are beyond what a simple two-point range can compensate for. Therefore, we've added multi-mapping to add extra voltage points to the range to compensate effectively.

First, make sure that your output is routed to PITCH, and that you have set up the basic tuning ranges for both MIDI and VOLTAGES correctly.

To add an extra 4 points to the voltage range, click on the Multi-Mapping button . A standard technique for using this feature is to play a note in each octave within the original two-point range.

Play your desired note, adjust it's tuning using the +1 or -1 buttons and click Next to move onto the next note. Once all extra points have been selected Click Save.

*TIP: If 3 to 5 notes bunched together are out of tune, then only the worst note needs to be corrected.*

*TIP: If there is a particularly bad non-linearity then it will help to select the next completely in tune note as an extra point without adjustment.*

### LINKED MODE

This function will constrain the MIDI Ranges and allow users to play multiple synthesizers from the same MIDI Channel and Controller in Unison or Split Keyboard configuration.

To enable Linked Mode, first ensure that your desired outputs are routed to PITCH and GATE respectively, and that you have set up the basic tuning ranges for both MIDI and VOLTAGES correctly.

Next click the  button in between your PITCH and GATE outputs.

### MEMORY AND PRESETS

There are two levels to the memory functionality on the Studio MIDI & CV Interface.

### AUTOMATIC EEPROM STORAGE

There is no need to press save or load, everything is automatic. As soon as a parameter is configured it will save to the interface. Upon reconnection to power, the Interface will automatically reload your current configuration.

### PRESETS

When working with multiple synths, it is sometimes necessary to swap between certain configurations. Instead of having to configure your Interface again, you can save time by storing unlimited presets.

To access preset functionality, use the top click-down menu to find a Save

Icon  and Load Icon . Using these you can save your current configuration as a file on your computer and load it at another time.

### MIDI DASHBOARD

The MIDI Dashboard allows for software hosting of MIDI Controllers in our software. This reduces latency and bypasses the need for a DAW. In here you can find features such as LFOs, BPM-Locked Arpeggiators, Poly, Split Keyboard over MIDI and MPE Passthrough.

To access the MIDI Dashboard, click the TA Programming Logo at the top of the application to show the pull-down menu and click the MIDI logo.

**MPE Mode only needs to be activated when working with FULL 16 Channel MPE. Single Channel MPE is natively supported in the software and nothing needs to be activated.**

### SETTINGS

#### DEFAULT GATE

To tune synthesizers that use a non-standard gate trigger above 5V, Ground, or Negative Voltage, you'll need to edit this setting to tell the software which voltage to send your synthesizer to trigger the gate when Tuning. A correct Gate Trigger Voltage is necessary for both Manual and Autotuning.

#### DAISY CHAIN

If you own multiple Interfaces, it would be useful to link them together to work in tandem to save USB port space and create more CV Outputs.

In order to set up Daisy Chain, your Interfaces will be put into a master/slave configuration.

The Master Interface will be connected to the computer via USB and should not have Daisy Chain activated. Only Slave Interfaces should have Daisy Chain activated, as this turns off USB-MIDI passthrough and turns on DIN passthrough.

All DIN Ports should be connected in an OUT to IN configuration, leaving the IN port on the Master Interface free for input from external devices

and output free for connection to external devices on the last Slave Interface. The USB ports on all Slave Interfaces should connect to power only.

*N.B. The more interfaces that are daisy chained, the more likely it will be that latency slightly increases going down the stack as MIDI bandwidth would become a premium as more information is transferred. However, this may not be the case in your experience.*

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## CALIBRATION

**As each interface is factory calibrated by hand, you shouldn't need to ever touch this. However, if you do please ensure you keep a note of the current settings.**

Please follow the instructions in the calibration window. You will need a decent digital multi meter to perform this adjustment.

**We will not be liable for any re-calibration mistakes. If you need help, please contact us and we will be happy to assist.**

## TROUBLESHOOTING

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### WHY IS AUTOROUTE NOT IDENTIFYING THE CONTROL BEING USED?

If routing from USB and your DAW, please ensure that your external MIDI instrument is set up properly, and that the Interface is set up as an output device in your DAW's MIDI settings.

If routing from DIN, please ensure that your cables are plugged in securely in the correct orientation. Secondly, please ensure that your MIDI device has an output channel selected.

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### I'VE FOLLOWED THE TUNING INSTRUCTIONS, BUT MY SYNTH IS STILL OUT OF TUNE.

Firstly, ensure that the low and high Voltage values match the MIDI range exactly and that it was tuned using a tuner set to measure in Hz and not Cents.

Secondly if other oscillators on your synth are badly out of alignment with the first, then you will need to have your synth professionally recalibrated.

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## MY SYNTH DOES NOT RESPOND WHEN TUNING

Please ensure that the Default Gate Value in the settings is correct for your synthesizer.

Make sure that a patch cable from one of the Interface outputs is plugged into your synth's trigger/gate input.

Lastly, ensure that your synth has correct parameter configuration for sound output such as bringing the cutoff and volumes up, and that your synth is connected to speakers, a tuner, or your audio interface.

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## MY SYNTH DOES NOT HAVE STABLE VOLTAGE OR DOES NOT RESPOND RELIABLY WHEN I TRY TO TUNE OR PLAY.

Some modern synthesizers with CV Inputs occasionally have pitch quantizing functionality in order to work well with very simple CV hardware.

This however interferes with our tuning system from working correctly. Please try to make sure that any pitch quantising or mapping is turned off in your synthesizer.

Alternatively, if that is not possible, instead set the voltage range in the control software to what is expected by your synthesizer, such as 0V to 4V over a 4-octave range.

Further to that, setting Release to 0 on your synth's VCA Envelope will help keep the tuning stable, if you're finding that your synth is distorting the pitch in order to try and "compensate" for what it believes are inaccurate control voltages.

## CONTACT

If you still require help, please feel free to contact us.

Email: [support@taprogramming.com](mailto:support@taprogramming.com)

Website: <https://taprogramming.com/>

Thank you for purchasing our Studio MIDI & CV Interface.

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