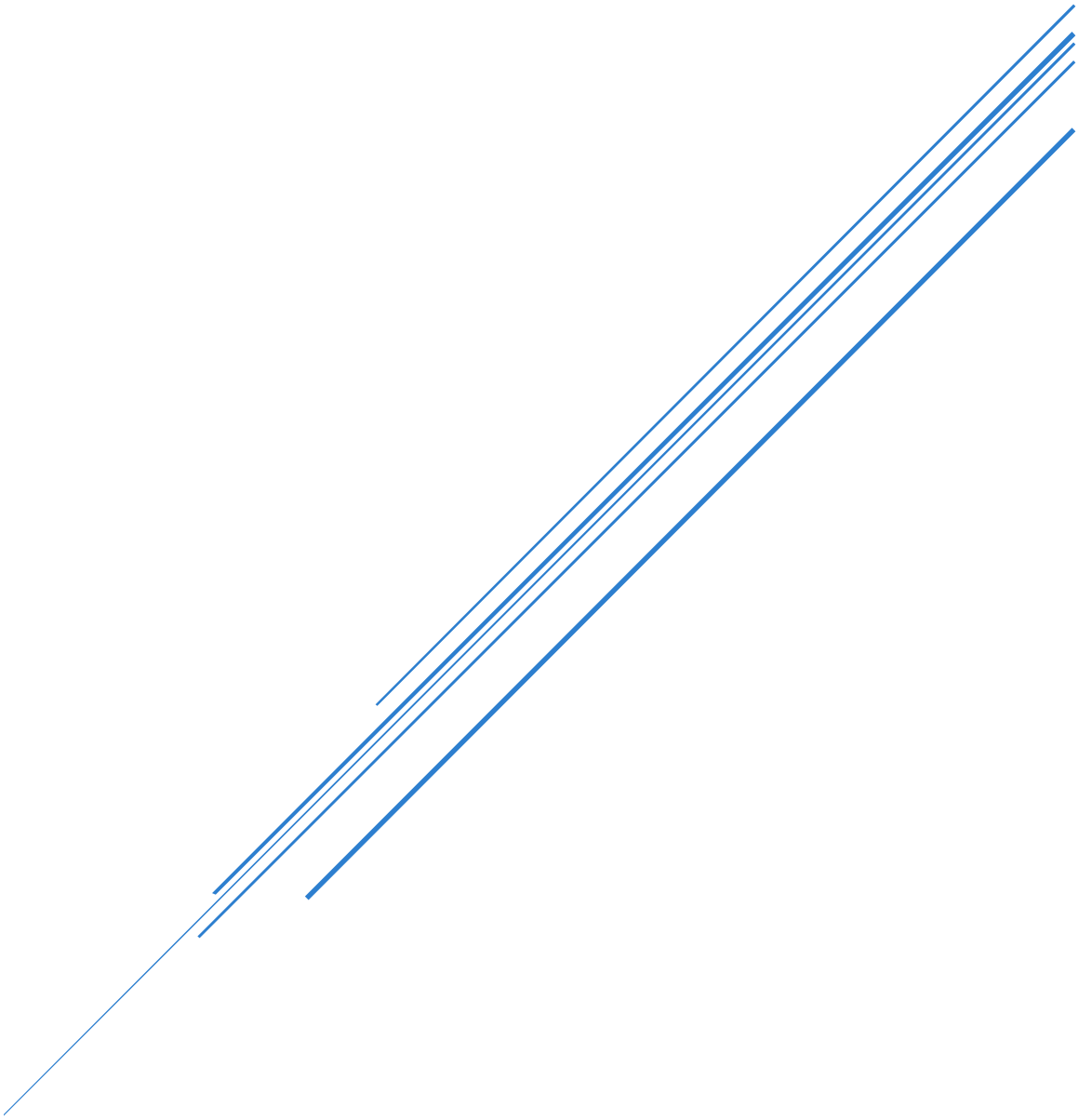
MTP-25K

USER MANUAL



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The information contained in this user manual is designed for any level of music enthusiast. Reading this manual will make you fluent in the product's functionality and ensure proper use.

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Introduction

Congratulations and thank you for your purchase of the WAW MTP-25K MIDI Controller!

This device is a keyboard-style MIDI controller with multiple touch inputs and open source, extensible firmware. We focused on quality over quantity in our design and are proud to deliver a fun and responsive instrument to you. Enjoy!

Required Equipment

There are only a few things you will need before you begin playing:

- Micro-USB cable (for power and MIDI data transfer)
- MIDI DIN Cable and TRS-A MIDI Adapter* (optional, for use with MIDI-enabled synthesizers)**
- Computer, synthesizer, or other sound generator
- If applicable, headphones, speakers, or other audio output device***

***Note:** The TRS-A wiring scheme is the recommended standard from the MIDI Association for wiring TRS to 5-pin DIN MIDI cables, however **not all** TRS-to-DIN MIDI cables follow this convention. Unfortunately, many TRS-to-MIDI adapter cables do not say explicitly which wiring scheme they use on the packaging. Make sure your cable uses the appropriate wiring scheme for this device, or the MIDI data **will not** be passed correctly. Most currently available adapter cables **should** be appropriate, especially if labelled "Type A".*

***Note:** If playing external sound generators like synthesizers over a MIDI cable connection, the MTP-25K still requires power from the USB input, via a computer, or a USB power connection such as a cell phone charger or power bank.*

****Note:** The MTP-25K does not provide any audio output. Audio output comes from the sound generator, in tandem with an applicable output device. The user is responsible for configuring their own audio output. If using a laptop or desktop computer, use the built in sound output, or connected speakers. If using a standalone synthesizer or other MIDI-enabled sound generator, use headphones or speakers connected to this external device.*

Part 1: Getting Started

In Part 1, we will go over how to get up and running playing music with the MTP-25K.

Quick Start Guide

Follow these easy steps to start playing!

- **For Computer USB-MIDI Connections:**

STEP 1: Plug the MTP-25K into a USB port on your computer with an appropriate Micro-USB cable. The MTP-25K is a class-compliant USB MIDI device and will show up automatically as a MIDI device in most operating systems like Windows, MacOS, or certain Linux distributions. No driver installation is required.

STEP 2: Configure your MIDI settings in an appropriate Digital Audio Workstation or other music software. Refer to the user manual for your software if you are unsure how to do this.

STEP 3: Activate a virtual instrument in your music software and start playing!

- **For MIDI Cable Connections to External Hardware:**

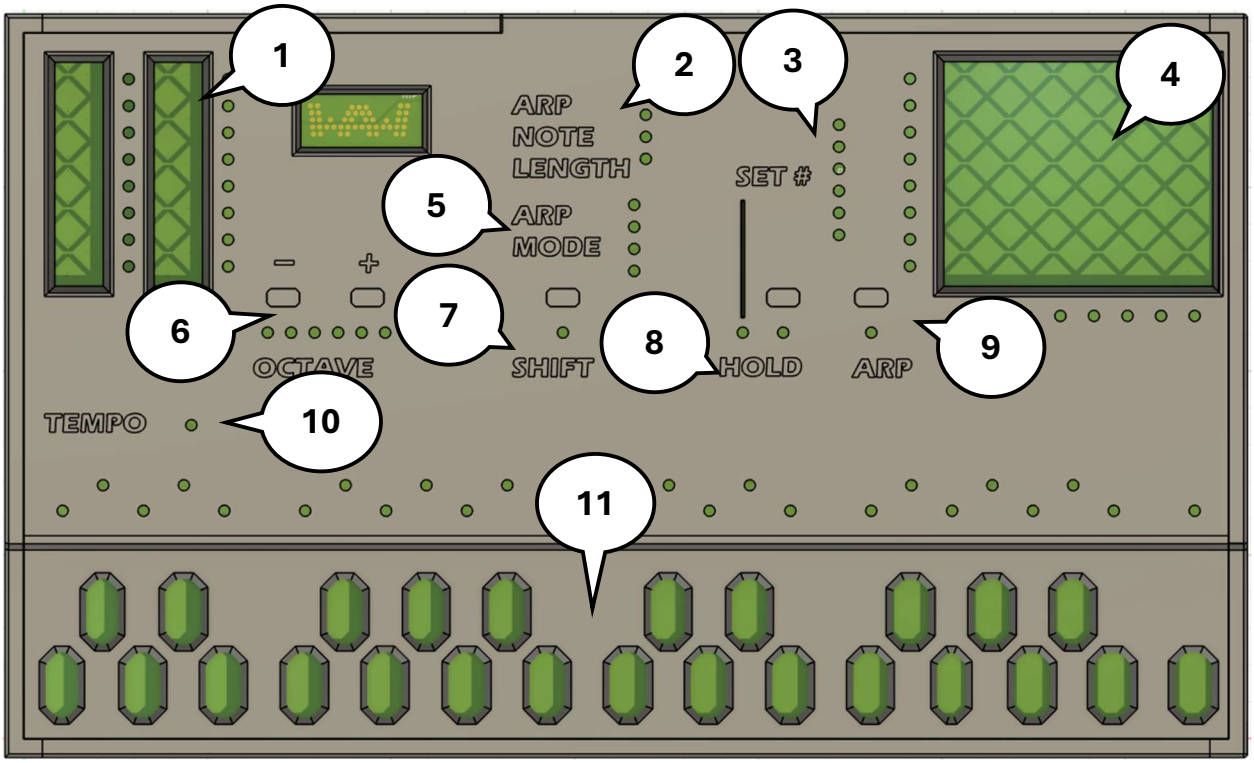
STEP 1: Plug the MTP-25K into a computer USB port, or an external USB power source, such as a power bank or cell phone charger. The USB MIDI connection is not required, but power from the USB port is.

STEP 2: Connect a 3.5mm TRS-A to MIDI DIN adapter cable* to the TRS MIDI Out jack on the rear of the MTP-25K. Connect a regular 5-pin DIN MIDI cable from the adapter to the MIDI In port of the external device.

STEP 3: Ensure your external device is hooked up to an appropriate sound output setup and start playing!

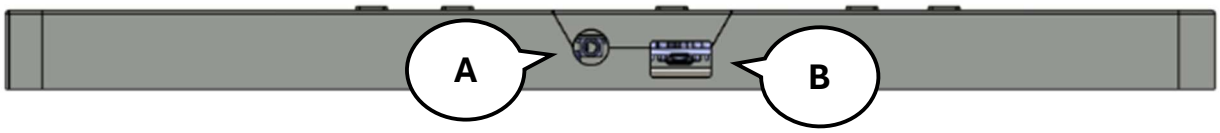
***Note:** The TRS-A wiring scheme is the recommended standard from the MIDI association for wiring TRS to 5-pin DIN MIDI cables, however **not all** TRS-to-DIN MIDI cables follow this convention. Make sure your cable follows the appropriate wiring scheme for this device, or the MIDI data will not be passed correctly.*

MTP-25K Front Panel



1. Sliders	Capacitive touch sliders for Pitch Bend and Mod controls
2. Arpeggio Note Length	Indicates current note division for the arpeggio
3. Set Number	Indicates maximum notes held in the arpeggio
4. XY Trackpad	2-dimensional touch expression pad with assignable CCs
5. Arpeggio Mode	Indicates current arpeggiator mode
6. Octave Control	Controls and indicates current keyboard octave setting
7. Shift Control	Activates the Shift modifier key
8. Hold Mode	Activates Hold mode
9. Arpeggio	Activates Arp mode
10. Tempo Indicator	Indicates current arpeggiator tempo
11. Keyboard	Two-octave capacitive touch keyboard

MTP-25K Top Panel



A. 3.5mm TRS MIDI Out port
B. Micro-USB Port

About the MTP-25K

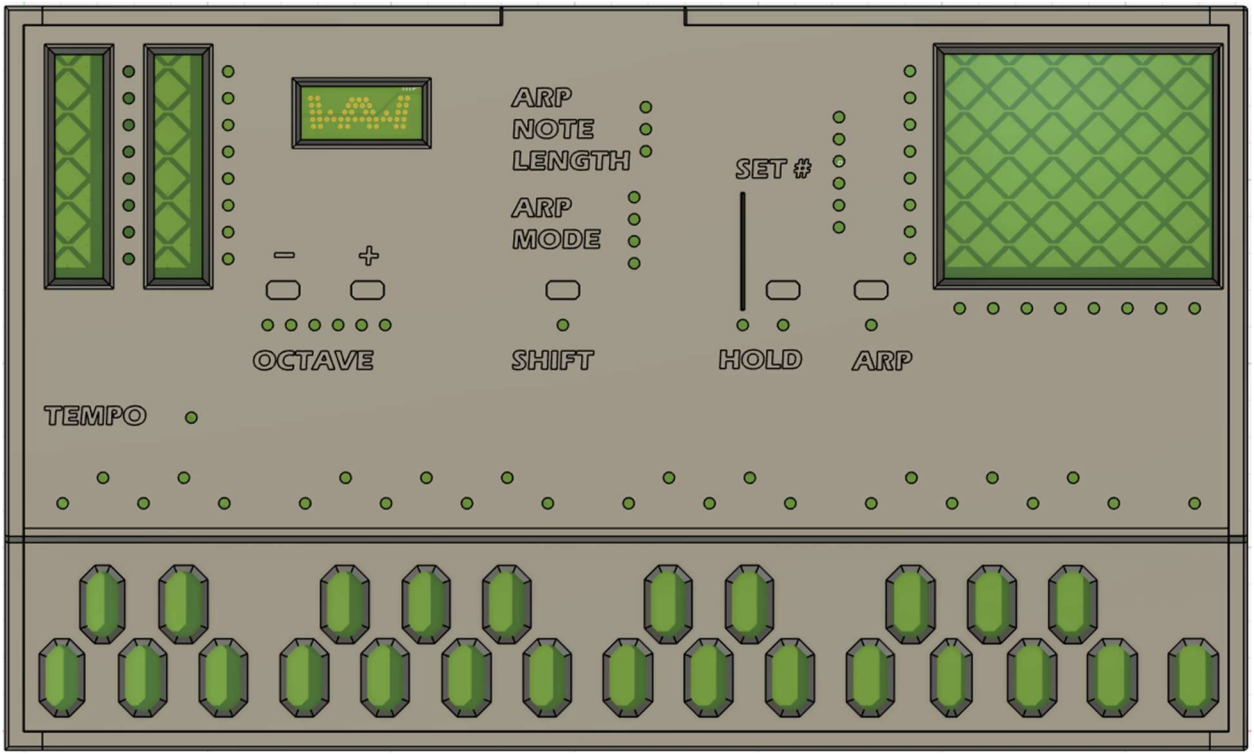
The MTP-25K is comprised of:

- 1x Teensy 4.1 microcontroller
- 2x MCP23017 I2C GPIO expanders
- 1x IS31FL3731 Charlieplexing PWM LED Matrix Driver
- 25x AT42QT1010 Touch Sensor
- 2x IQS7211A Touch Sensor
- 2x NAND gates
- 1x LMV243B 4-Channel Linear Op-Amp

Part 2: Using the MTP-25K

Now that it's working, here's how to use it.

Front Panel Operation



The 25-key, capacitive touch keyboard works with a variety of modes, controlled by the function keys above. The other primary controls are the Pitch Bend and Mod Wheel sliders and the 2-dimensional expression pad.

Button Features

OCTAVE –	Lowers keyboard by one octave.
OCTAVE +	Raises the keyboard by one octave.
SHIFT	SHIFT + Octave Up/Down - Changes the Tempo. SHIFT + HOLD + Octave Down = Enables HOLD_SET sub-mode. SHIFT + HOLD + Octave + = Enables HOLD_ALL sub-mode. SHIFT + ARP + Octave Up = Cycles ARP Mode (pattern). SHIFT + ARP + Octave Down = Cycles Note Length. SHIFT + ARP + HOLD + Octave Up/Down – Changes the Set Number.
HOLD	Continues to sustain the note after it is released.
ARP	Enables the arpeggiator.

Further Reading

These directions cover the standard functionality of the MTP-25K and will allow any musician to play the device using the default controls. However, this device is also an open-source instrument. This means the firmware may be freely modified or extended by the user. A tutorial guide with a step-by-step explanation of all features and a look at how the code is structured, as well as the firmware files for user editing, is available through our GitHub page.

https://github.com/WAW-MIDI-Controller/MTP-25K-Prototype

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