MANTIS

Hybrid-Analogue Synthesiser

PWM Mantis

Thank you for purchasing Mantis, the Hybrid-Analogue Synthesiser from PWM.

Mantis is a sophisticated Duophonic Hybrid-Analogue Synth based on a new design by Chris Huggett and Paul Whittington. This was the last synth that Chris worked on before he was sadly called away to the great synth gig in the sky. Paul and team have taken the concept that he left and worked it up into what you now have before you, honouring as many of Chris' concepts as possible and adding some extra special bits besides!

Based on an updated 'Wasp'* idea with an 'Oscar'* style dual filter, you will find 2 analogue signal paths each with 2 mathematically generated or table-based oscillators plus a sub-oscillator. 2 LFOs and 2 Envelopes with mod routes and triggering selection and topped off with digital Reverb and Chorus, the patch building possibilities are vast!

200 patches memories are available and we've filled 100 with a selection of sounds from some great artists and designers.

Mantis is an instrument to be learned and loved. We love it. We hope you do too!

* Wasp and Oscar are two well known and well loved synths previously designed by Chris Huggett and created by Electronic Dream Plant and the Oxford Synthesiser Company respectively.

Getting Started

This guide will help you get set up and making your first sound with Mantis.

Please read through this guide to help your first experience go as smoothly as possible.

1. Check your Box Contents
2. Connect Power
3. Connect Headphones or Speakers
4. Play a Patch
5. Create your First Patch
6. Using a Mod Route
7. Performance Features and Effects
8. USB-MIDI and Additional Functions
9. Troubleshooting
10. Warranty
11. Top Panel Image

1. Check your Box Contents

Mantis comes with the following in the box. If anything is missing please contact your retailer immediately.

- The PWM Mantis Synthesiser
- This guide ☺
- Insert sheet listing the 100 patches and late breaking information
- 9V DC 600mA Power Supply (with interchangeable heads to suit your country)
- USB-A to USB-C Cable

2. Connect Power

Remove the Mantis from its packaging and set it down on a nice flat surface. Remove the end-caps from their plastic bags and clip them on to the ends of the Mantis. They are magnetic.

Remove the Power supply from its box – you will find it inside of one of the foam end pieces in the box. Have a look through the included interchangeable heads and select the correct one for your country. Carefully clip this on.

Make sure the Mantis is switched off.

Connect the small end of the wire to the power socket on the back of the Mantis and plug the Power Supply in to an available mains socket.

Switch on Mantis and you will see quite a few of the LEDs light up. The 2 LFO LEDs will be pulsing.

Note: Mantis can be bus-powered from USB if that is more convenient. We recommend using the Power Supply first time though to make sure everything is working correctly.

3. Connect Headphones or Speakers

- Mantis has 2 Line Out ¼" TS jacks on the rear panel for connecting to a mixer, amplifier or powered speakers.

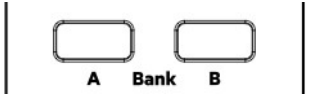
- It has a headphone ¼" TRS jack on the rear panel for connecting headphones.

We recommend you connect the synth in one of the above ways to hear it. Make sure the Master Volume is first turned all the way down.

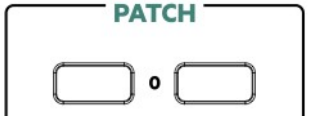
Note 1: Mantis may be LOUD depending on which patch is selected, i.e. some are louder than others! Please be careful and turn up the Master Volume slowly.

Note 2: Please make sure your amp and speakers are turned down low when Mantis is first switched on. Turn on the Mantis before turning on your speakers.

4. Play a Patch



When you first turn Mantis on Bank A should be selected. Press the button for Bank A if this is not the case. Bank A contains the factory pre-programmed patches.



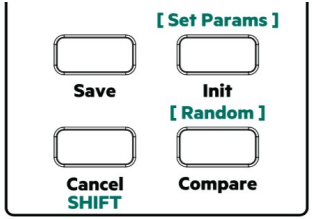
Next select patch 0-0 by pressing the left 0 button followed by the right 0 button in the PATCH section. Now press a key. You should hear the very first Mantis sound!

The sounds are organised by bank, then by the left column of 'tens' and then by the right column of 'ones'. So patches can be as follows:

A00, A01, A02, A03... A10, A11, A12... A99
B00, B01, B02, B03... B10, B11, B12... B99

Bank B contains empty patch locations for you to create your own brand new patches! In total there are 200 patch locations that you can use as you wish.

5. Create your First Patch



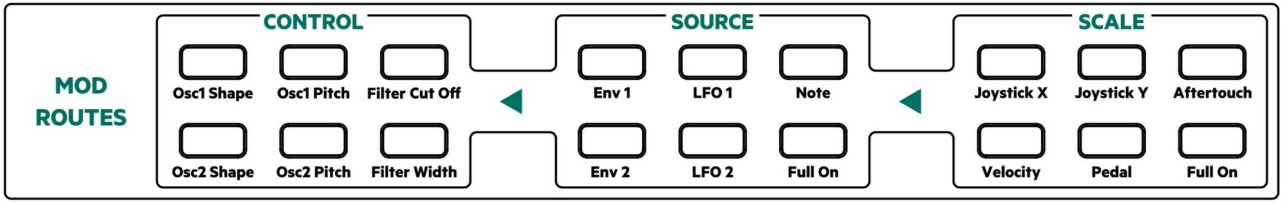
There are a couple of ways to start an original patch on the Mantis. You can start from initial parameters, or an ‘Init’ patch. Or you can randomise all the parameters and start from there!

To initialise all the parameters on the Mantis press the ‘Init’ button. This will give you a basic single oscillator saw wave sound with all parameters set to initial values.

To randomise all parameters, press and hold the ‘SHIFT’ button and press the ‘Random / Compare’ button next to it. This will set every parameter on the Mantis to a random value. Try this several times until you find something you like.

To store your patch press Save followed by Bank B, a ‘tens’ and ‘ones’ location and then press Save again. Bank A is initially protected as it contains the factory patches. It is possible to toggle Bank protection by holding SHIFT and pressing either bank button.

6. Using a Mod Route



In this section you can choose what parameters are used to modulate or affect other parameters of your sound.

1. Start by selecting the CONTROL you would like to affect and press the corresponding button
2. Then press a button for the SOURCE you would like to use to modify that CONTROL
3. Finally press a button for SCALE – this is a multiplier so you can use two elements together to create a modulation. If you only want one then press the button for 'Full on'

7. Performance Features and Effects

Joystick and Aftertouch are great in performance, plus there is Reverb and Chorus available. Give these features a try to add control and richness to your sound!

8. USB-MIDI and Additional Functions

Mantis is a class-compliant USB device which means it can be connected to your computer via USB and your computer will recognise it automatically without the need to install additional drivers.

It can be used as a standard controller keyboard and all the knobs plus the joystick will transmit and receive MIDI messages so you can record and replay knob movements or use them to control any soft synth or other MIDI instrument. Mantis can be used as a polyphonic USB-MIDI controller even though it is a Duophonic synth.

When using USB or MIDI In, Mantis receives and transmits messages on MIDI Channel 1 by default. This can be changed by holding down a key on the keyboard while powering on where the lowest ‘C’ selects MIDI Channel 1 and the highest ‘D’ selects channel 16. Channel selection is remembered over a power-cycle.

Mantis has a Local Off mode which you can enable by holding down ‘Arp’ while powering on. The status of Local Off mode is not saved when you switch off.

To reset MIDI Transmit and Receive Channel, Pitch Bend range and HOLD mode to factory defaults, hold down the top ‘C’ on the keyboard while switching on.

9. Troubleshooting

If you encounter any problems then please check out the Mantis web page first at: www.1pwm.com/Mantis. We aim to always keep this up to date with help and useful info.

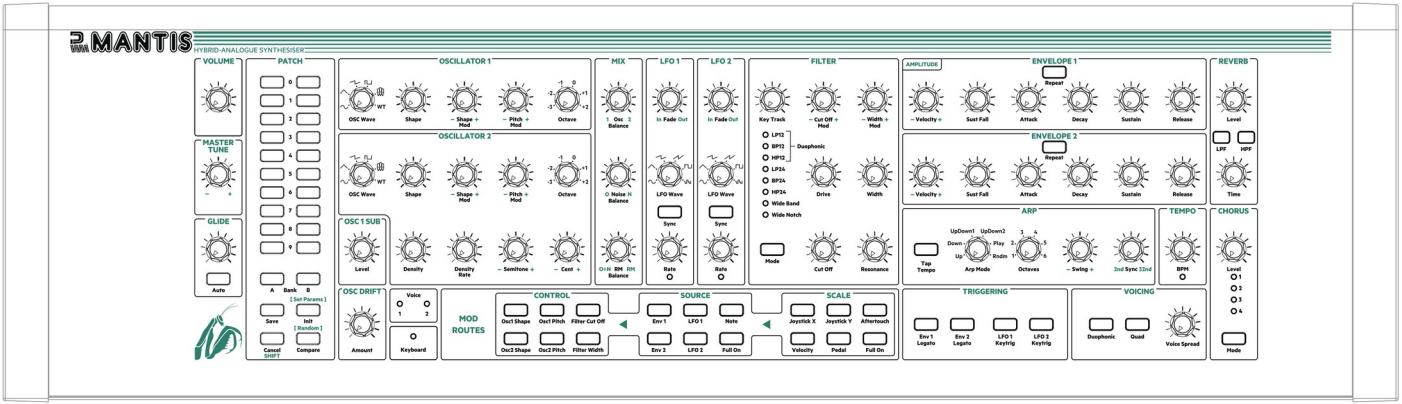
If you're still having difficulties then details of how to contact us can be found on our website: www.1pwm.com. We also have a User Community which can be helpful to share issues and chat about features.

If you are stuck then please email support@1pwm.com and we will do our best to help you.

10. Warranty

Mantis comes with a 1 year Manufacturer's warranty from the date of purchase.

11. Top Panel Image



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