

User Manual v1.0





ADS-7 mk2 - is an analog drum synthesizer inspired by the drum machines/synthesizers of the 70s-80s with a built-in 16-track sequencer and MIDI control. It has a digit screen 65 controls, 4 switches and 24 buttons with which you can have a wide control over the sound parameters, sequencer and MIDI. It has individual audio outputs and individual trigger inputs for each of the seven sounds.

Assembled in Moscow/Russia using discrete components and OTA chips.

Specification

- Fully analog, discreet components;
- 7 individual sound channels: Bass Drum (BD), Clap (CL), Open Hat and Closed Hat (OH/CH) with choking on/off, 3 separate Generators (GEN) with Band-pass and Low-pass filter options for creating all kinds of analog tones and fx ranging from bass, toms, snares, noises, zaps, sticks and combined all-together;
- 65 knobs/controls for different sound shaping options: from standard noise to metallic tones;
- 16-tracks MIDI sequencer (pg. 6, drum sequencer version 1 beta manual);
- Up to 16 banks with 16 patterns (256 patterns and 16 chains);
- Ability to load/save 16 Banks, Patterns and Chains;
- MIDI In/MIDI Out;
- 3.5 mm individual triggers for each sound;
- Four 3.5 mm individual trigger outputs to control external devices.
- Stereo/individual 6.3 mm output for each sound;
- Tight steel casing;
- Dimensions: L324xW246xH90 mm;
- Weight: approx. 3 kg (without power supply);
- 15 VAC, 220v euro-type power supply (included)

Controls

Front panel



Rear panel



1 MASTER section

Regulates the master volume level of the unit

2 CLAP section

TRIG - LED indicator VOLUME – volume control level PAN – panning control (L-R) NOISE MIX – mixing of the noise component with the CLAP SPACE – attack time control of the CLAP DECAY – decay control of the noise FILTER – cutoff filter control

3 BASS DRUM (BD) section

TRIG – LED indicator VOLUME – volume control level CLICK TUNE – tonal click control CLICK LEVEL – click volume control TONE LEVEL – tone volume control TONE SWEEP –SWEEP control of the tone TONE DECAY – tone decay control TONE PITCH – tone pitch control

(4)-**(5)** CLOSED HAT (CH) and OPEN HAT (OH) sections

TRIG - indicator of OH and CH VOLUME OH – volume control level of Open Hat PAN OH – panning control of Open Hat (L-R) VOLUME CH – volume control level of Closed Hat PAN CH – panning control of Closed Hat (L-R) CHOKING on/off – turns on the choking effect of Closed Hat applied to Open Hat DECAY OH - decay control of Open Hat DECAY CH - decay control of Closed Hat CUTOFF OH - filet CUTOFF control of Open Hat CUTOFF CH - filter CUTOFF control of Closed Hat NOISE/MET OH – mixing level between the noise and metallic tone of Open Hat NOISE/MET CH – mixing level between the noise and metallic tone of Closed Hat MET CH+OH – Pitch control of the metallic tones

Notice: Due to the circuitry being fully discreet, some level of "bleeding in" the audio path occurs (both in MIX and INDIVIDUAL outs). This only happens at a high ("hot") volume/gain settings. If used more gently in terms of volume level, no bleeding can be heard.

(6) (7) (8) GENERATOR section (GEN1, GEN2, GEN3)
TRIG - LED indicator
VOLUME – volume control level
PAN – panning control (L-R)
CLICK TUNE – tonal click control
CLICK LEVEL – click volume control
TONE LEVEL – tone volume control
TONE SWEEP – SWEEP control of the tone
TONE DECAY – tone decay control
TONE PITCH – tone pitch control
NOISE LEVEL – noise volume control
NOISE SWEEP – noise SWEEP control

NOISE DECAY – noise decay control NOISE CUTOFF – noise filter CUTOFF control NOISE FILTER – switch for changing between the Band-pass and Low-pass filter mode of the noise NOISE RESO – noise resonance control

9 SEQUENCER section

Please refer to page 6 for sequencer version 1 beta operations.

MIDI IN/OUT – use a standard midi cable to connect the unit to MIDI source.

MIX OUTS – 6.3 mm jacks, Left and Right channels to connect the unit to a mixer, amplifier or other sound device.

TRIGGERS OUT (T1, T2, T3, T4) - 3.5 mm jack for controlling the external drum devices. Provides a pulse with duration of 2 ms and a level of 5V.

TRIGGERS IN – 3.5 mm jacks for external control of the unit's sections.

(4) INDIVIDUAL OUTS – 6.3 mm jacks for connection to a mixer or other audio devices.

(15) POWER - button to turn on the unit and socket 15 VAC to connect the power adapter.

Connecting ADS-7 mk2

Connect the power adapter, audio and MIDI cables to your ADS-7 mk2 rear connectors.

Power supply (15 VAC): Connect the included power adapter to the **POWER** input of ADS-7 mk2; Audio outputs (6.3mm jacks): insert cables with 1/4 mono jacks into the MIX OUTS or individual outputs INDIVIDUAL OUTS jacks in order to connect the ADS-7 mk2 to a mixer or other audio equipment; MIDI input: connect the MIDI OUT of an external sequencer or MIDI keyboard (or another MIDI device) to the MIDI IN jack of the ADS-7 mk2 synthesizer.

Powering on ADS-7 mk2

Press the **POWER ON** button (located left rear). The indicator in the sequencer section and the **TAP/TRACK** button will light up indicating that the unit is turned on.

Sequencer Software v1.02



Table of Contents

TABLE OF CONTENTS	6
SEQUENCER FEATURES.	7
PRESENTATION.	7
THE SECTIONS OF THE CONTROL PANEL.	7
START /REC BUTTON BEHAVIOR.	
DISPLAY AND TEMPO POTENTIOMETER.	
MENU SECTION, MAIN MODES.	9
THE TAP AND TRACK MODES	9
TAP AND TRACK SELECTION MODES	9
THE STEP MODE	
THE MUTE MODE	
THE CHAIN MODE	
THE SHUF/SCALE MODE	
THE LAST STEP MODE	
THE PATTERN MODE.	
THE BANK MODE	
TRACK SUB FUNCTIONS	
ТНЕ TRACK COPY	
THE TRACK PASTE	
THE TRACK CLEAR	
THE TRACK LEARN	
THE OPTIONS	
PATTERN SUB FUNCTIONS.	
THE PATTERN COPY.	
THE PATTERN PASTE	
THE PATTERN CLEAR	
BANK SUB FUNCTIONS	
THE BANK CLEAR.	
THE BANK SAVE	
FIRMWARE UPDATE	

Sequencer Features

- 16 tracks/16 drums.
- 16 hardware triggers (0-5V).
- 16 banks of 16 patterns each.
- Pattern chain with 16 positions and 'Freeze' function.
- 24 279 BPM range.
- 96ppqn internal clock, even in Slave MIDI SYNC by interpolation.
- External MIDI, TAP or STEP recording/programming pattern.
- Tracks Muting function.
- '909' like shuffle.
- 8 different Scales. 1/2/8/4/16/3/6/12 steps per beats.
- LAST STEP function.
- MIDI forward. Output with Running Status.
- MIDI Learn function for easy MIDI Drum Map assignation.
- MIDI SYNC Auto/Master/Slave. With MIDI Song Position Pointer Input.
- MIDI SYSEX Dump to archive or recall the banks via MIDI.
- Copy/Paste/Clear for tracks.
- Copy/Paste/Clear for patterns.
- Clear/Save for banks.

Presentation

The Sections of the control panel:



START /REC button behavior.

When your sequencer is not running:



- Short press will start the sequencer in normal playing mode.
- Long press (>1s) will start the sequencer in record mode on release.

When your sequencer is already running:

• Short press will stop the sequencer.

• Long press (>1s) will active the record mode on release, without stopping running, same operation to leave the record mode always without stopping running too.

Notes: Record mode is an 'overdub' mode, means the sequencer layers the tapped sounds. If you first want to clear the track or the pattern, please refer to TRACK CLEAR or PATTERN CLEAR functions.

Display and TEMPO potentiometer.

During normal time the display shows the number of the current pattern played (P - -)... Except when the **PATTERN** mode is active in this case this is the **CHAIN** position which is shown (C - -).

The display shows the bpm once you turn the **TEMPO** potentiometer and during 1s after you stop turning it The **TEMPO** range is between 24 - 279 BPM.

Notes: The potentiometer has no effect when the machine is in SYNC 'Slave mode'.



The 3 dots under the digits constantly indicate:

- The beat.
- The beginning of a **PATTERN** (first step).
- The beginning of the CHAIN (first pattern/first step).

MENU section, main modes

Those functions are the main features of your sequencer. Those modes work in combination with the KEY. Notes: Those operations can be done when the sequencer is running only. Of Course ;-)



The TAP and TRACK modes.

TAP and TRACK Selection modes.



A short press on this button will enter in the TAP mode, the TAP /TRACK led is lit. In this mode each KEY is triggering a drum/tr

(BD, CL, CH, OH, G1, G2, G3 and T1-T4).

In REC mode, the trig are quantized (depending on the PATTERN Scale) and recorded on their respective track.



Holding this button will show the selected track on the step sections led. When not holding the TAP / TRACK button, this becomes the TRACK Selection mode, change the selection by pressing a KEY. The KEY led of the selected track is lit, the others led of the KEY Section show the others tracks activity when the sequencer is running or when the track is triggered from an

external MIDI device. Release the **TAP /TRACK** button to leave the **TRACK** Selection mode and go back to the last entered mode.

The STEP mode.

Pattern's STEP toggle mode. This is your patterns composition.



A short press on this button will enter in the STEP mode, here the 16 KEYs represents a pattern of the previously selected track (TAP /TRACK). The KEY section's button are toggled here to create the PATTERN. The led of the KEY section shows the steps activity when the sequencer is running.

Holding this button will do the same, you will enter in STEP mode, except that you will automatically leave this mode on release and go back to the last entered mode, this permits fast mode switching.

The MUTE mode.

Tracks MUTE toggling mode. The current MUTE state is saved within a bank, and recall when you load a bank.



A short press on this button will enter in the **MUTE mode**, here the KEY section represents the 16 tracks, use the KEY section's to **Mute or Un-Mute a track**. The KEY led is lit when the track is Muted, if not the led shows the track activity when the sequencer is running or when the track is triggered from an external MIDI device.

Holding this button will do the same, you will enter in **MUTE mode**, except that you will automatically leave this mode on release and go back to the last entered mode. This permits fast mode switching.

The CHAIN mode.



Patterns CHAIN mode. This feature is part of the bank memory and recalled with it.

A short press on this button will enter in the CHAIN mode, here the KEY section represents the amount of chained Patterns and the position in the chain. You can chain until 16 patterns, you can add the same patterns several times. The KEY leds, which are lit, show the amount of patterns in the chain, the one that is blinking shows the position in the chain. The display indicates the current pattern number depending on the chain position. *Note: See PATTERN mode to add a Pattern to the CHAIN.*

A short press on a KEY will change the current position.

Holding a position during more than 1s will **freeze** the chain, means this position will be looped and the CHAIN button will blink too. When the freeze is activated the frozen position can be changed by pressing a step. Press shortly the CHAIN button to unfreeze the chain.

Holding the CHAIN button will momentary show the available PATTERNs and press a step (pattern number) will reset the chain, by setting the length to one with the selected pattern as value.

The SHUF/SCALE mode.

Shuffle and SCALE Pattern selection mode. This feature is part of a pattern, then saved and recalled with it.



A short press on this button will enter in the SHUFFLE and SCALE selection mode, here the KEY 1 to 8 are the SHUFFLE value and 9 to 16 are the SCALE value.

The **SHUFFLE** is set by pressing a KEY from 1 to 8, you can switch the SHUFFLE off by toggling the selected value, in this case all led from 1 to 8 will be switched off.

Note: The SHUFFLE process is the same has the legendary 909, except that it is extended because the SCALE itself is extended. The principle is to delay every odd step to a maximum of a half step duration.

The **SCALE** is set by pressing a KEY from 9 to 16, this sequencer is rated at 96ppqn then some very fast scale can be achieved. *Note: For the value 3, 6 and 12 steps per beat the LAST STEP is automatically set to 12 steps instead of 16, they are ternary scales.*

Holding this SHUF/SCALE button will enter in MUTE mode too, except that you will automatically leave this mode on release and go back to the last entered mode

The LAST STEP mode.

SHUF/SCALE + STEP button. This is the LAST STEP selection mode of the Pattern. This feature is part of a pattern, then saved and recalled with it.



Hold the SHUF/SCALE button then short press the STEP button will enter in the LAST STEP selection mode. The KEY section represents the length of the pattern in steps. Notes: This value is automatically set when you change the SCALE, 16 for binary rhythm and 12 for ternary.

Holding **SHUF/SCALE** button then holding **STEP** button will enter in **LAST STEP** mode too, except that you will automatically leave this mode on the **STEP** button release and go back to the **last entered mode**.

The PATTERN mode.

PATTERN selection mode, this mode is also used to fill the CHAIN.



A short press on the PATTERN button will enter in the PATTERN mode, here the KEY section represents all the patterns which are contained in the chain. The KEY leds, which are lit, show non empty patterns, the one which is blinking shows the current played pattern.

The display indicates the position of the current pattern in the chain.

A short press on a KEY will assign the selected Pattern to the current chain position.

Holding the PATTERN button and pressing the needed step number will add this pattern to the end of the chain, the chain length is incremented each time you press a step and select a pattern. Release the PATTERN button will leave this mode and go back to the last entered mode.

The BANK mode.

The BANK loading mode.

Notes: Think about saving your bank before loading another one or you will lose your work!



A short press on this button will enter in the BANK mode, here the step section represents the 16 banks, use a step to load a bank.

The step leds, which are lit show non-empty banks, the one that is blinking shows the current selected bank.

Holding this button will do the same, you will enter in BANK mode, except that you will automatically leave this mode on release and go back to the last entered mode. This permits fast mode switching.

TRACK sub functions



Notes: COPY/PASTE/CLEAR functions are only accessible when:

- The sequencer is stopped.
- The sequencer is running but there's only one pattern in the chain.
- The sequencer is running but the chain is frozen (Freeze feature).

Notes: LEARN function and the OPTIONS are only accessible when:

• The sequencer is stopped.

The TRACK COPY.

The Track to COPY selection.



Hold the TAP /TRACK button then press the STEP button, you will enter in the track COPY selection mode. The TAP /TRACK and STEP leds start to blink. Press a KEY to select/change the track you want to copy. The blinking KEY leds indicate which tracks are not empty, the one which is constantly lit is selected track to copy. Notes: the selected track is static in memory and pattern dependent, means you can copy a track from a pattern to another, not just within the same pattern, the KEY leds indicate which track number is selected but it may be from another pattern or bank.

You will leave the mode when you release the TAP /TRACK button and go back to the last entered main mode.

The TRACK PASTE.





Hold the TAP /TRACK button then press the MUTE button, you will enter in the track PASTE selection mode.

The TAP /TRACK, COPY and MUTE leds start to blink. Press a KEY to paste the track (you can paste it multiple time). The blinking KEY leds indicate which tracks are not empty, the one which is constantly lit was previously selected pattern to copy.

Note: A start-up, there's no COPY selection track, then you will not be able to access the PASTE function until you select one.

You will leave the mode when you release the TAP /TRACK button and go back to the last entered main mode.

The TRACK CLEAR.

The track CLEAR.



Hold the TAP /TRACK button then press the CHAIN button, you will enter in the track CLEAR selection mode. The TAP /TRACK and CHAIN leds start to blink. Press a KEY to clear a track. The blinking KEY leds indicate which tracks are not empty, the one which is constantly lit is the current selected track.

You will leave the mode when you release the TAP /TRACK button and go back to the last entered main mode.

The TRACK LEARN (Midi learn).

This feature is a MIDI one and permits to assign a MIDI Note Event to a Track (Drum).

The 1st MIDI channel is set by default.



Hold the TAP /TRACK button then hold a KEY during 3s.

When the TAP /TRACK led and the selected track (KEY led) are starting to blink you can release both button. You can select another track is you wish. You can leave this mode by pressing any other main MENU button. This mode will wait for an incoming valid MIDI Note On event and leave this mode once it receives it. You can repeat the operation for each track.

Notes: This feature is accessible only when the sequencer is stopped.

The OPTIONS

This mode gives the access to some configuration options.

This is the list:

- MUTE ALL, Mute all events if enabled, else only steps(pattern) events.
- MIDI SYNC Input, 0: Auto (led 2 and 3 off), 1: Master (led 2 On), 2: Slave (led 3 on).
- MIDI SYNC Output, off: disabled, on: enabled.
- **MIDI Song Position Pointer(SPP)**, off: disabled, on: enabled. Note: by definition SPP has a resolution of 16th note then try to start on it from you DAW timeline ;)
- **MIDI FORWARD**, off: disabled, on: enabled. Forward the TAP or incoming Note On/Off event. *Notes: only if event matches an existing drum map.*
- MIDI Running Status, off: disabled, on: enabled. It is enabled by default to optimize the MIDI traffic but can be disabled for some old synth which don't recognize it. *e.g.Yamaha DX7, Ensoniq Mirage and Sequential Circuits Prophet t8.*

Here you will also find the **SYSEX MIDI Dump** functions, which permits at recall or archive one or all the banks from/to a computer:

To receive a dump. Press the KEY 13 (WAIT ONE), the KEY led 13 will start to blink, the machine will wait for incoming datas which represent a bank, when datas are loaded, the received bank will be automatically saved on the current Bank position. You can receive the 16 banks at the same time by pressing KEY 14 (WAIT ALL). *Notes: This operation is definitive! So think about archiving you banks before.*

To send a dump. Press the KEY 15 (SEND ONE), the KEY led 15 will start to blink and stop when the operation is finished. You can send all the banks at the same time by pressing the KEY 16 (SEND ALL).

Note: for those operations, your computer must be prepared. You will need a SYSEX software like MIDI-OX(PC) or SYSEX Libarians (MAC).

The banks are archivied as *.syx files.



To access those **OPTIONS**, **Hold the TAP /TRACK button then hold the START button during 3s**. When the TAP /TRACK and START leds are starting to blink you can release both button. You can leave this mode by pressing any other main MENU button.

PATTERN sub functions



Notes: Those operations can be done when the sequencer is running.

The PATTERN COPY.

The Pattern to COPY selection.



Hold the PATTERN button then press the STEP button, you will enter in the pattern COPY selection mode. The PATTERN and STEP leds start to blink. Press a KEY to select/change the pattern you want to copy. The blinking KEY leds indicate which patterns are not empty, the one which is constantly lit is selected pattern to copy.

You will leave the mode when you release the PATTERN button and go back to the last entered main mode.

The PATTERN PASTE.

Once a pattern is selected for copy, you can PASTE this pattern to several others patterns.



Hold the PATTERN button then press the MUTE button, you will enter in the pattern PASTE selection mode.

The PATTERN and MUTE leds start to blink. Press a KEY where you want to paste the pattern (you can paste it multiple time). The blinking KEY leds indicate which patterns are not empty, the one that is constantly lit is the pattern previously selected to copy.

Note: A start-up there's no COPY selection pattern, then you will not be able to access the PASTE function until you select one.

You will leave the mode when you release the PATTERN button and go back to the last entered main mode.

The PATTERN CLEAR.

The pattern CLEAR.



Hold the PATTERN button then press the CHAIN button, you will enter in the pattern CLEAR selection mode. The PATTERN and CHAIN leds start to blink. Press a KEY to clear a pattern.

The blinking KEY leds indicate which patterns are not empty, the one which is constantly lit is the current used pattern. *Notes: This operation is not definitive until you save the whole bank!*

You will leave the mode when you release the PATTERN button and go back to the last entered main mode.

BANK sub functions



Notes: Those operations can be done only when the sequencer is stopped.

The BANK CLEAR.

The bank CLEAR.



The bank 10 is the current bank in memory, the banks 1, 2, 3, 5, 7, 8 and 9 are not empty.

Hold the BANK button then press the CHAIN button, you will enter in the bank CLEAR selection mode.

The BANK and CHAIN leds will start to blink. Press a KEY to clear a bank. The blinking KEY leds indicate which banks are not empty, the one which is constantly lit is the current used bank. *Notes: This operation is definitive!*

You will leave the mode when you release the BANK button and go back to the last entered main mode.

The BANK SAVE.

The bank SAVE.



Hold the BANK button then press the SHUF/SCALE button, you will enter in the pattern SAVE selection mode. The BANK and SHUF/SCALE leds will start to blink. Press a KEY where you want to save the bank. The blinking KEY leds indicate which banks are not empty, the one which is constantly lit is the current used bank.

You will leave the mode when you release the BANK button and go back to the last entered main mode.

Note: the BANK SAVE function only works when the sequencer is not running.

Firmware Update

The unit is able to be updated by sysex, for that purpose just follow the steps:

- 1. Download the last firmware from avpsynth.com, this is a sysex file (*.syx).
- Prepare your computer to send the sysex file. You will need a SYSEX software like MIDI-OX(PC) or SYSEX Libarians (MAC).
 MIDI OUT of your computer(MIDI interface) must be connected to the MIDI IN of the ADS-7.
- 3. Hold START /REC button and switch on the unit, the 8 first step leds are lit, you can release the button.
- 4. Start to send the sysex from your computer, you will see the progression on the step leds, don't switch off the unit! When finished the ADS-7 will restart with the new firmware.

Note: this operation doesn't delete your saved banks.

Package includes

- ADS-7 mk2 Analog Drum Synthesizer unit;
- Euro type 220 volt power adapter (in 110 volt zones to be used with a step down transformer);
- User Manual v1.0;
- Logo stickers.

Warranty

The standard warranty on ADS-7 mk2 is for one year from the date of purchase.

1. The warranty does not apply in the following cases:

- Expiration of the guarantee (after one year from the date of purchase);

After-guarantee servicing is available.

Shipping both ways is at the expense of the buyer.

- There is any mechanical damage to the inside and/or outside of the unit;

- There are signs of opening or self-repair;

- A malfunction caused by self-updating software, or installing additional options/mods;

- A malfunction caused by damage of the product by other objects and liquids, as well as the results of fog, rain, snow and fire.

2. The guarantee does not apply to:

- Power adapter;

- the controls themselves, if their failure was caused by normal wear or contamination during use.

We try to stay reasonable concerning servicing but keep in mind that the unit requires more careful operational usage as all similar electronic devices of this type do 😳

Feel free to email us if you have any inquiries: avpsynths@gmail.com

AVP Svnth	
www.avpsynth.com	
2010	
2019	
	AVP Synth www.avpsynth.com 2019





AVP Synth
www.avpsynth.com
2019