

# ***Abstrakt Instruments***

## **VS-1 Synthesizer DIY Standard Kit**

*Thank you for backing the VS-1 Synthesizer kit - and tremendous acknowledgment for being so patient!*

The build notes, schematics, and links to the PCB assembly tool are available at <https://abstraktinstruments.com/vs1-diy/>

It is highly recommended to build each different board one at a time. For each board it is also recommended to install the components one part number at a time. Unless otherwise noted start with resistors, followed by capacitors, diodes, integrated circuits & transistors. Lastly, install any switches, connectors & miscellaneous hardware.

Each master bag is labeled with a *Bag #* that corresponds to the VS-1 DIY BOM (v1.02 and above) to show exactly where each part resides. The standard kit only includes the Bag #'s shown in the table on page 2. You may want to check your kit when first opened to make sure all the main parts & parts bags are present.

The recommended build order is as follows:

- Voice Motherboard
- Voice Cards
- Output Board
- Panelboard
- Mainboard

**Please Note:** The Mainboard, DAC Board, IO Board, & MCU Module are shipping separately and are not included inside this package. The DAC Board, IO Board & MCU Module ship fully assembled.

# ***Abstrakt Instruments***

## **Package Contents - Standard Kit**

Enclosure	Front Panel, Side Panels, Top Panel, Bottom Panel, Rear Panel
Voice Card PCB	(8) Double-sided PCB's, SMD parts pre-installed on bottom side
Voice Mobo PCB	Double-sided PCB - all through-hole
Output Board PCB	Double-sided PCB - SMD parts pre-installed on component side
Panelboard PCB	Double-sided PCB - all through-hole
Bag 1	Hardware Bag 1 - Black Screws
Bag 2	Hardware Bag 2 - Nuts, Spacers
Bag 3	Hardware Bag 3 - M3 Standoffs
Bag 4	Switch Spacers
Bag 5	Male Headers (2mm Dual-Row Headers)
Bag 6	Headphone Cable, Gnd Cable, Wire Ties
Bag 7	Power Switch Cables
Bag 8	Ribbon Cables
Bag 22	30cm 3Pin Shielded JST Cable
Bag 25	Serial Number Label, OLED Bezel, 3M transfer tape
LED	(12) 3mm Discrete Red LED's (match switches)

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## **VS-1 Synthesizer DIY Kit w/ Full Parts Kit**

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The build notes, schematics, and links to the PCB assembly tool are available at <https://abstraktinstruments.com/vs1-diy/>

It is highly recommended to build each different board one at a time. For each board it is also recommended to install the components one part number at a time. Unless otherwise noted start with resistors, followed by capacitors, diodes, integrated circuits & transistors. Lastly, install any switches, connectors & miscellaneous hardware.

The parts for each board are packaged separately, ideally one bag will be opened at a time. The labels on each bag are waterproof thermal transfer labels, so the printing will not fade over time in the case that all assemblies are not completed right away. This will aid in finding components and avoiding mistakes. Furthermore, each master bag is labeled with a *Bag #* that corresponds to the VS-1 DIY BOM (v1.02 and above) to show exactly where each part resides. You may want to check your kit when first opened to make sure all the main parts & parts bags are present. A table is included on page 2.

The recommended build order is as follows:

- Voice Motherboard
- Voice Cards
- Output Board
- Panelboard
- Mainboard

**Please Note:** The Mainboard, DAC Board, IO Board, & MCU Module are shipping separately and are not included inside this package. The DAC Board, IO Board & MCU Module ship fully assembled. Also, the IEC power cable and IC Tube 7 will ship with the second package as there was not enough room to fit in the main package.

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## **Package Contents - Kit w/ Full Parts**

Enclosure	Front Panel, Side Panels, Top Panel, Bottom Panel, Rear Panel
Voice Card PCB	(8) Double-sided PCB's, SMD parts pre-installed on bottom side
Voice Mobo PCB	Double-sided PCB - all through-hole
Output Board PCB	Double-sided PCB - SMD parts pre-installed on component side
Panelboard PCB	Double-sided PCB - all through-hole
Bag 1	Hardware Bag 1 - Black Screws
Bag 2	Hardware Bag 2 - Nuts, Spacers
Bag 3	Hardware Bag 3 - M3 Standoffs
Bag 4	Switch Spacers
Bag 5	Male Headers (2mm Dual-Row Headers)
Bag 6	Headphone Cable, Gnd Cable, Wire Ties
Bag 7	Power Switch Cables
Bag 8	Ribbon Cables
Bag 9	IEC Jack, Headphone Jack, Power Switch, OLED Display, Fan Guard, JST Wires & Housings, Cable Mounts
Bag 10	Voice Cards - Resistors
Bag 11	Voice Cards - Capacitors
Bag 12	Voice Cards - Transistors
Bag 13	Voice Cards - Diodes & Voltage Regulators
Bag 14	Voice Cards - Trimmers
Bag 15	Voice Cards - Connectors
Bag 16	Voice Cards - IC Sockets
Bag 17	Output Board - All Parts
Bag 18	Panelboard - All Parts
Bag 19	Panelboard - Switches
Bag 20	Voice Mobo - All Parts (except Phone Jacks)
Bag 21	Mainboard - All Parts
Bag 22	30cm 3Pin Shielded JST Cable
Bag 23	Control Knobs
Bag 24	Voice Mobo - Phone Jacks
Bag 25	Serial Number Label, OLED Bezel, 3M transfer tape
Tube 1	IC's - Voice Cards - 1
Tube 2	IC's - Voice Cards - 2
Tube 3	IC's - Voice Cards - 3
Tube 4	IC's - Output Board, Voice Mobo, Panelboard
Tube 5	IC's - Mainboard
Tube 6	IC's - Mainboard
NA	Power Supply Unit
NA	Fan

# ***Abstrakt Instruments***

## **VS-1 Synthesizer DIY Kit w/ Rare Parts Kit**

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The build notes, schematics, and links to the PCB assembly tool are available at <https://abstraktinstruments.com/vs1-diy/>

It is highly recommended to build each different board one at a time. For each board it is also recommended to install the components one part number at a time. Unless otherwise noted start with resistors, followed by capacitors, diodes, integrated circuits & transistors. Lastly, install any switches, connectors & miscellaneous hardware.

Each master bag is labeled with a *Bag #* that corresponds to the VS-1 DIY BOM (v1.02 and above) to show exactly where each part resides. The standard kit only includes the Bag #'s shown in the table on page 2. You may want to check your kit when first opened to make sure all the main parts & parts bags are present.

The recommended build order is as follows:

- Voice Motherboard
- Voice Cards
- Output Board
- Panelboard
- Mainboard

**Please Note:** The Mainboard, DAC Board, IO Board, & MCU Module are shipping separately and are not included inside this package. The DAC Board, IO Board & MCU Module ship fully assembled.

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## **STANDARD PARTS**

Enclosure	Front Panel, Side Panels, Top Panel, Bottom Panel, Rear Panel
Voice Card PCB	(8) Double-sided PCB's, SMD parts pre-installed on bottom side
Voice Mobo PCB	Double-sided PCB - all through-hole
Output Board PCB	Double-sided PCB - SMD parts pre-installed on component side
Panelboard PCB	Double-sided PCB - all through-hole
Bag 1	Hardware Bag 1 - Black Screws
Bag 2	Hardware Bag 2 - Nuts, Spacers
Bag 3	Hardware Bag 3 - M3 Standoffs
Bag 4	Switch Spacers
Bag 5	Male Headers (2mm Dual-Row Headers)
Bag 6	Headphone Cable, Gnd Cable, Wire Ties
Bag 7	Power Switch Cables
Bag 8	Ribbon Cables
Bag 22	30cm 3Pin Shielded JST Cable
Bag 25	Serial Number Label, OLED Bezel, 3M transfer tape
LED	(12) 3mm Discrete Red LED's (match switches)

## **RARE PARTS & SWITCHES**

IC's - Rare Parts (1)	(40) AS3080E, (5) AS3310D
IC's - Rare Parts (2)	(3) AS3310D, (7) V2164D, (2) V571D, (2) MN3007, (8) LM3086J, (1) LM4863N
Bag 23	Control Knobs
Bag 19	Panelboard - Switches
PSU	Triple Output Power Supply Unit (already modified)
Fan	5VDC Fan (pre-configured)