Analog 2.0 **documentation**

Vol. 1

Overview **of** Analog 2.0

Version: 1.0

Created: January 24, 2008

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1. **About this document This**

document provides an overview of the analog synthesizer system Analog2.0.

This document is organized as follows:

--What is Analog2.0 ?-

Configuration of Analog2.0-

Documents **will** be **released**

2. What **is** Analog 2.0?

Analog2.0 is the name given to the design of analog synthesizer systems. It is designed under the following concepts and will be published in the form of a document explaining the production.

ÿsubjectÿ **People who want to make analog synthesizers. Someone who wants to create their own color, not just to make it.**

ÿcompositionÿ **Minimal configuration monophonic. Internal wiring is made, and sound can be produced without patching, but patching is also possible. Separate boards for each functional module and expand And facilitate remodeling.**

[Necessary knowledge] Understand Ohm's law. You can see the difference between current and voltage. I understand that an analog audio signal is a sound wave replaced by a voltage.

[Necessary tools] Soldering iron (and solder), needle-nose pliers, nippers, screwdriver, drill, Testers, amplifiers and speakers, PCs.

[How to proceed] First, make a panel. Periodically release one synth module manufacturing method at a time. Assemble this and fit it on the panel. In addition to the explanation of the manufacturing method Each time I decide on a theme and explain the operating principle of an analog synthesizer.

ÿpartsÿ **All circuits consist of only currently available components.**

[Offer] A production guide is provided. Providing parts and boards is included in the scope of this project I'm sorry

3. Analog 2.0 **design overview**

3.1. **System configuration**

Figure 3-1 is an example panel design for Analog2.0. It consists of the following modules.

-Power **supply**

--VCO _

--LFO _

-Mixer _

-Noise **generator**

-Envelope **generator**

--VCF _

--VCA _

The CV and Gate signals for overall control are externally input.

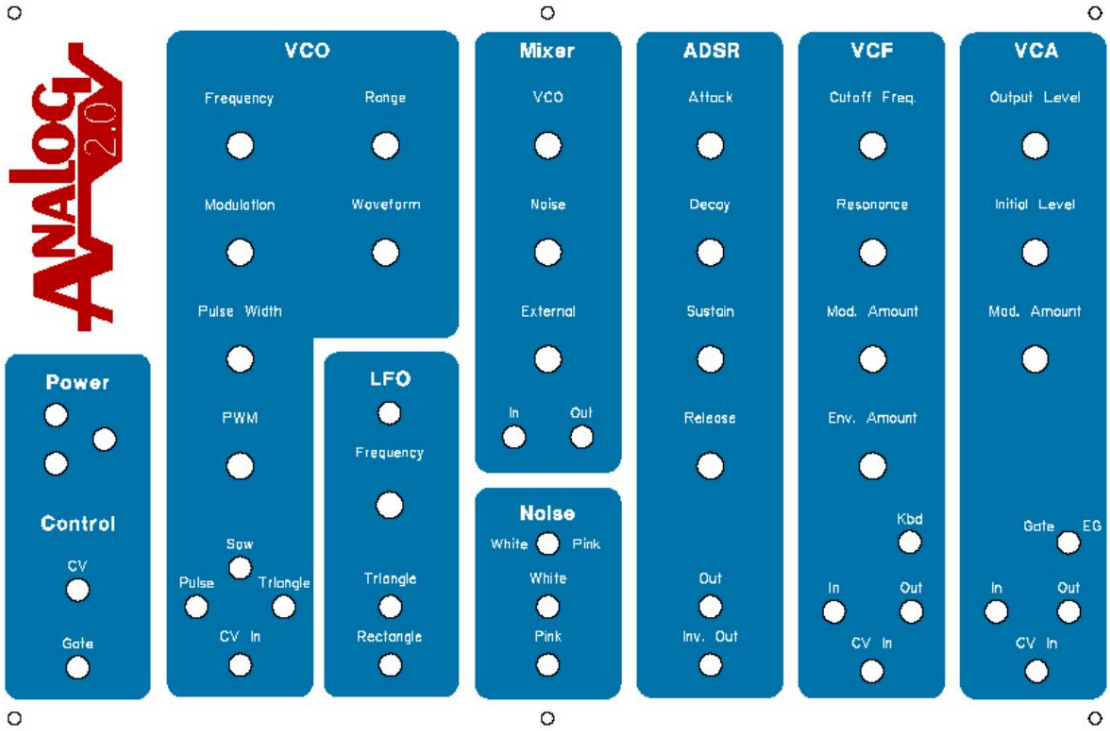

Figure 3-1 Analog2.0 Analog2.0 panel

These modules are pre-configured, as shown in the system block diagram in Figure 3-2.

It will be internally connected. This is to make it easier to use, but also to give you more freedom.

It also has an easy patch system.

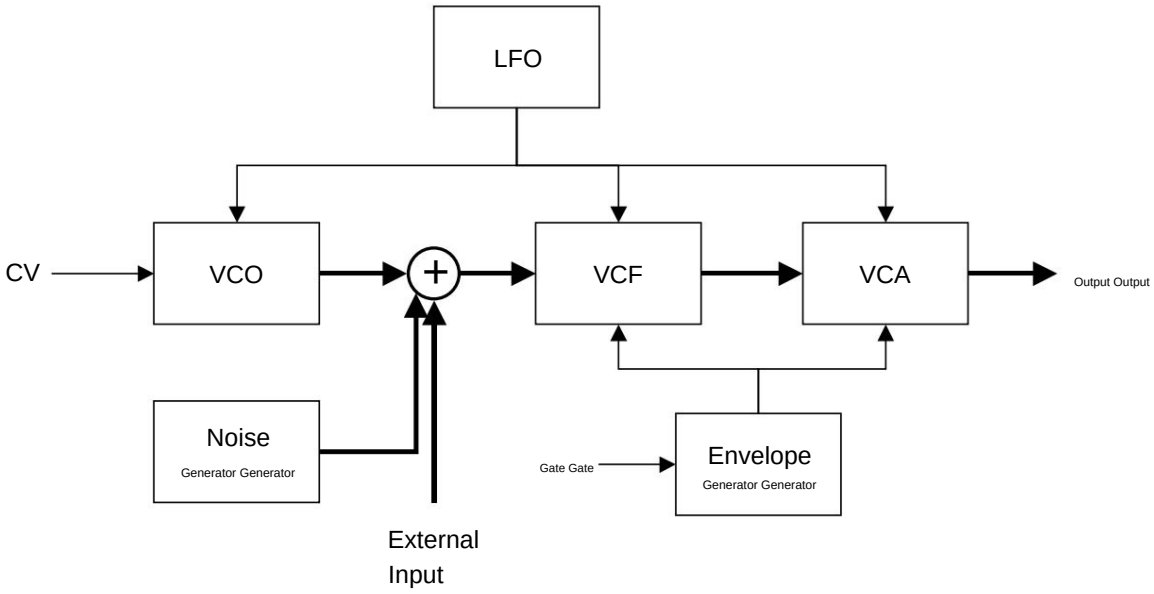

Figure 3-2 Analog2.0 System block diagram of Analog2.0 system block diagram

Figure 3-3 is an overview of the patch system. The arrow is the patch location.

The green arrow indicates the location of the input patch jack. Input patch jack

When you insert the switch plug, the internal wiring of that part is cut, and the signal from the inserted patch plug is cut.

Is used. The blue arrow indicates the location of the output patch jack.

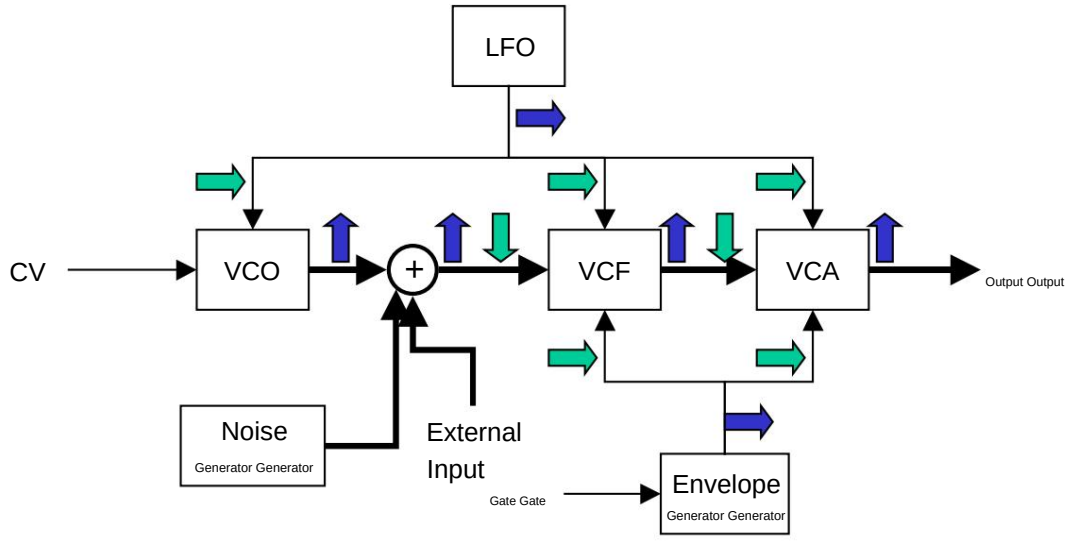

Figure 3-3 Patch system

3.2. **Functional module**

Analog2.0 has a separate board for each functional module. It is easy to expand and modify To make it.

The module board is designed to be mounted directly on the panel, as shown in Figure 3-4. all A common cable called a lifeline is connected to all the boards, and from here the power supply, CV, Gate The signal is supplied.

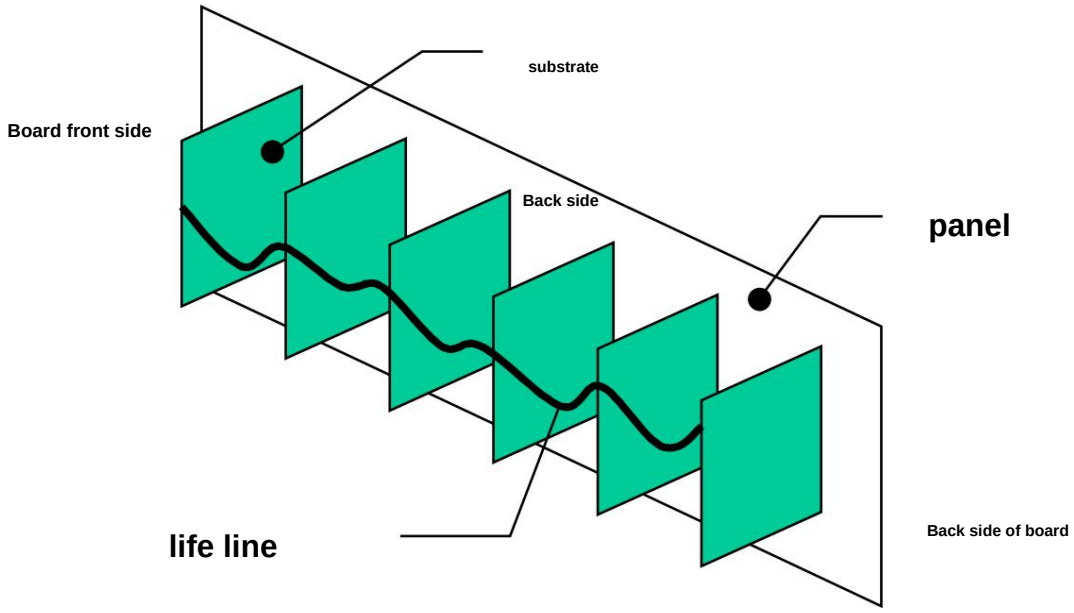

Figure 3-4 Board mounting to the panel

3.3. **Electrical standard**

In Analog2.0, the voltage level of electrical signals, etc. is improved in order to enhance expandability such as the introduction of a unique module. Is standardized.

Power supply

The power supply is a + 12V, -12V positive and negative symmetrical power supply. The rated current of the power supply is 400mA, and the power supply is 0.4A. The user can be attached.

CV **(Control Voltage) Frequency: Octave / V**

Level: Linear / V, maximum output at CV = 10V

Gate Gate

off: 0V

on: on: 5V

Signal level

Sound source (VCO / Noise): -5V to 5V (10V pp)

LFO: -2.5V to 2.5V (5V pp)

EG: 0-8V

4. **Document composition schedule**

The Analog2.0 documentation will be released sequentially as follows:

Vol. Title	Contents
1 Overview of Analog2.0	This document
2 Panel production	
3 Power supply and lifeline production	Explanation: Voltage and current
4 Manufacture of noise generator and mixer	Explanation: Basics of transistor and operational amplifier
5 VCA production	Explanation: Voltage control
6 Manufacture of Envelope Generator	Explanation: Basics of Digital Circuits
7 VCO production	Explanation: Oscillation circuit
8 LFO production	Explanation: Modulation
9 VCF production	Explanation: Filter principle and control method