CV INTERFACE [OP-8]

INSTRUCTIONS

Roland

The Jupiter-8 is an eight voice fully programmable synthesizer whose function of retaining the tone colors attracts not only live performers but also the musicians who are to use system synthesizers with MicroComposers.

The interface OP-8 was born to meet the requirement of having the Jupiter-8 played by using the MicroComposer MC-8 or MC-4. This interface functions as an intermediary between a MicroComposer and the Jupiter-8. It has a wide application range as a result of its computer controlled system. Read "BASIC COURSE" first, then proceed to "ADVANCED COURSE" if necessary.

The instructions do not include the functions of the Jupiter-8 or a MicroComposer's. Please refer to each owner's manual for the explanations.

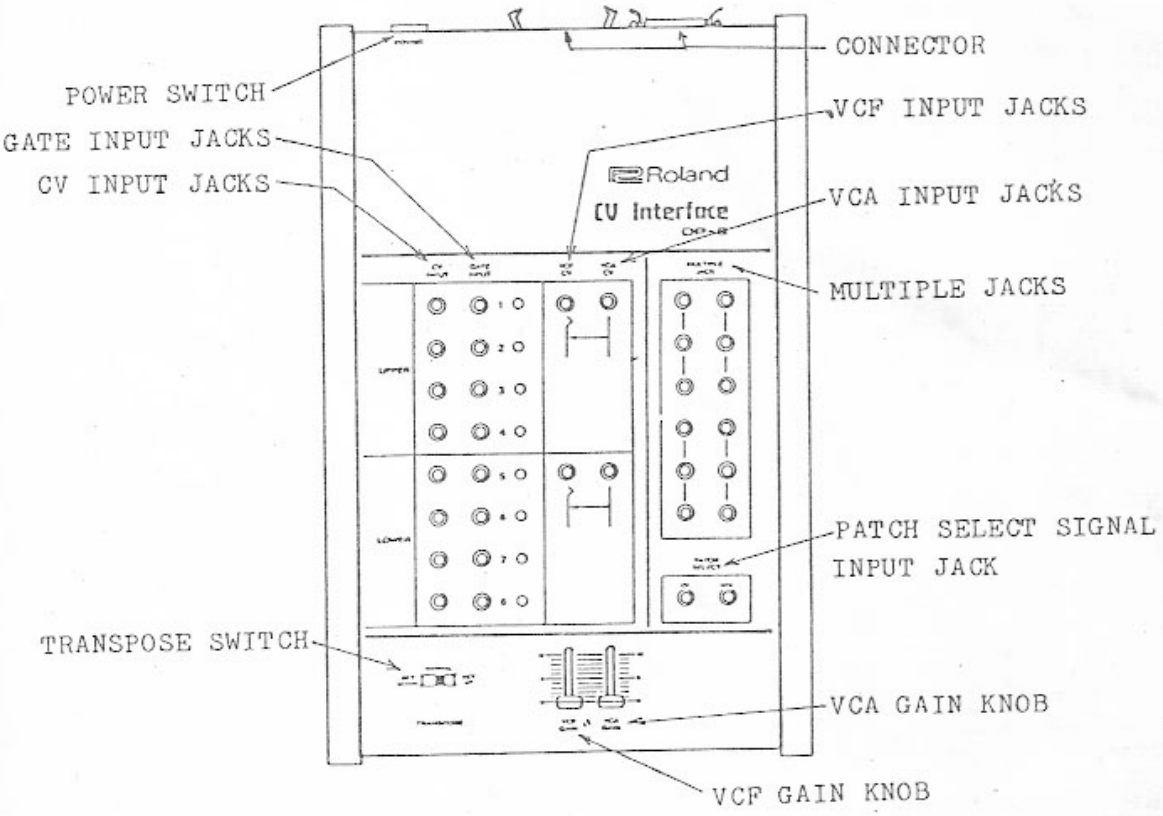
NOTE: 1

As the Jupiter-8 is a keyboard unit, even if you input same data into several CVs, the sound would not become richer when using it with a MicroComposer. It has the same result as by playing a single note on the keyboard. Please note that the function of a MicroComposer is to replace manual play.

NOTE: 2

When you use the MC-4 with the OP-8, set the TOTAL TUNE knob of the MC-4 to the center position.

FRONT PANEL


CONNECTOR
POWER SWITCH
VCF INPUT JACKS
GATE INPUT JACKS
Roland
CV Interface
CV INPUT JACKS
VCA INPUT JACKS
MULTIPLE JACKS
PATCH SELECT SIGNAL
INPUT JACK
TRANSPOSE SWITCH
VCA GAIN KNOB
VCF GAIN KNOB

1. KEY MODE of the Jupiter-8

The OP-8 has 8 CV inputs and 8 GATE inputs correspondingly (No. 1 to 8). Connect the outputs of the MicroComposer to these input jacks. No. 1 to 4 are applied to the UPPER section and No. 5 to 8 to the LOWER section of the Jupiter-8. The function varies depending on the KEY MODE of the Jupiter-8.

a. WHOLE

The CV and the GATE signal can be connected to any of these input jacks. For instance when you connect four CV's and four GATE's of the MC-4 to No.1 to 4 of the OP-8, the Jupiter-8 allows you automatic play with 4 notes and manual play with up to 4 notes, therby altogether 8 notes play.

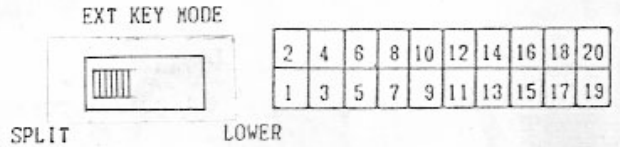
b. SPLIT

On the rear panel of the Jupiter-8 is EXT KEY MODE switch as shown in Fig 1. The function varies depending on its position.

- SPLIT -

No.1 to 4 CV inputs of the OP-8 are distributed to the UPPER section of the Jupiter-8 and No.5 to 8 to the LOWER section. If using only 2 notes, you are allowed 2 notes play on the keyboard.

FIG 1



The Rear Panel of the Jupiter-8

* Even if the note from the MicroComposer's data coincides with the note being pressed in the keyboard play, only one note will be heard.

- LOWER -

The CV's and the GATE's, which can be input, are up to 4, and all of them are applied to the LOWER section, and manual play in full keyboard range is assigned to the UPPER section. If the CONTROL BUS is not connected, the EXIT KEY MODE switch does not function and has no effect on the Jupiter-8.

c. DUAL

Maximum of 4 CV's and 4 GATE's can be used. You can use any input jacks.

2. TRANSPOSE

You can shift the pitch range by one octave with the TRANSPOSE switch of the OP-8. The appropriate range for the CV data varies depending on the position of the switch. The sound gets one octave lower when the CV data exceeds the range, and one octave higher when it does not reach the range.

a. OCT DOWN

When the CV data of the Microcomposer shows 48, the pitch is the Middle C. The CV of 2 to 7 V covers the 61 keys of the Jupiter-8.i.e. 2V CV input makes the lowest note.

* Appropriate data range .... 24 to 84

b. NORMAL

When the CV data of the MicroComposer shows 36, the pitch is the Middle C. The CV of 1 to 6 V corresponds to 61 keys of the Jupiter-8.

* Appropriate data range .... 12 to 72

c. OCT UP

When the CV data of the MicroComposer shows 24, the pitch is the Middle C. The CV of 0 to 5 V corresponds to 61 keys of the Jupiter-8.

* Appropriate data range .... 0 to 60

**** ADVANCED COURSE ****

1. CONTROLLING THE VCF

The OP-8 is able to control not only the pitch but also the tone color of the JP-8. By sending the voltage of 0 to 10 V to the CV jack of the VCF, the Cutoff Frequency of the Jupiter-8's VCF can be controlled. When using the MicroComposer MC-4, input the program into the CV-2. The CV-2 automatically shows 50 when it is not programmed at all. If you want to raise the Cutoff Frequency, set it to bigger than 50, and smaller to lower it. The VCF GAIN knob can adjust its sensitivity. The change of the Cutoff Frequency will become greater as you slide the knob upward. When the knob is set to '0', there will be no change of the Cutoff Frequency.

* CV data 50 in the MicroComposer corresponds to output of 4.167 V

The input jacks of the VCF CV are separated for the LOWER and the UPPER sections, either of which is individually controllable. The lower 4 notes and the upper 4 notes are controlled regardless of the KEY MODE, so send the same amount of voltage to both LOWER and UPPER when using the WHOLE MODE.

2. CONTROLLING THE VCA

Just like the VCF, within the range of 0 to 10 V you can have the MicroComposer control the Jupiter-8. (Expression Control) The CV data is set at 50 and the volume will increase if you set it at bigger figure, and decrease at smaller figure. The GAIN knob can adjust the sensitivity of the volume increasing or decreasing.

By using this function, you can add the delicate expressions such as forte, piano, crescendo and diminuendo. Also, by adding the same CV data to the VCF and adjusting the both GAIN's, you can enjoy the effect of making a big sound bright and a small sound soft.

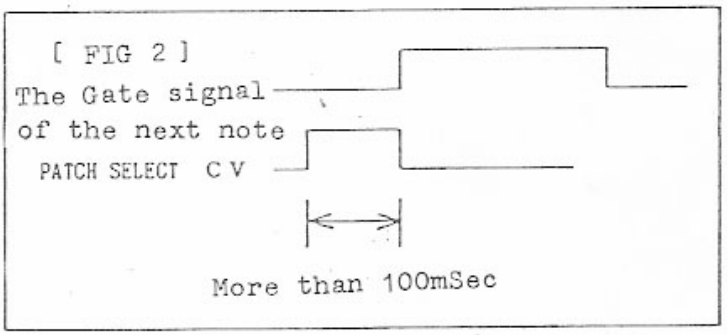
3. SELECTING THE PATCH PRESET

You can select any PATCH PRESET from A to H automatically with the instruction from the MicroComposer.

CV data from 1 to 8 should be used, and the PATCH PRESETs A to H correspond to those numbers. What is important here is to output this CV earlier than the GATE signal of the next note by more than 100mSec.

The CV data, the PATCH PRESET, and the Voltage are related with each other as shown in the table below.

VOLTAGE	1/12	2/12	3/12	4/12	5/12	6/12	7/12	8/12
CV data	1	2	3	4	5	6	7	8
PATCH PRESET	A	B	C	D	E	F	G	H



The Fig 2 shows how the GATE signal and the PATCH PRESET CV should be input. If the pulse is shorter than 100mSec, a kind of noise might be heard.

When the CV controls the VCF and VCA and there is no available channel for having the MicroComposer control the PATCH SELECT, you can have the CV work for that purpose by using the MPX's output as follows.

When the PATCH SELECT MPX jack of OP-8 is connected, the PATCH PRESET of the Jupiter-8 does not change even if the PATCH SELECT CV is sent in. Only when the voltage over +5 V is add to this MPX jack, the PATCH PRESET of the Jupiter-8 changes with the PATCH SELECT voltage.

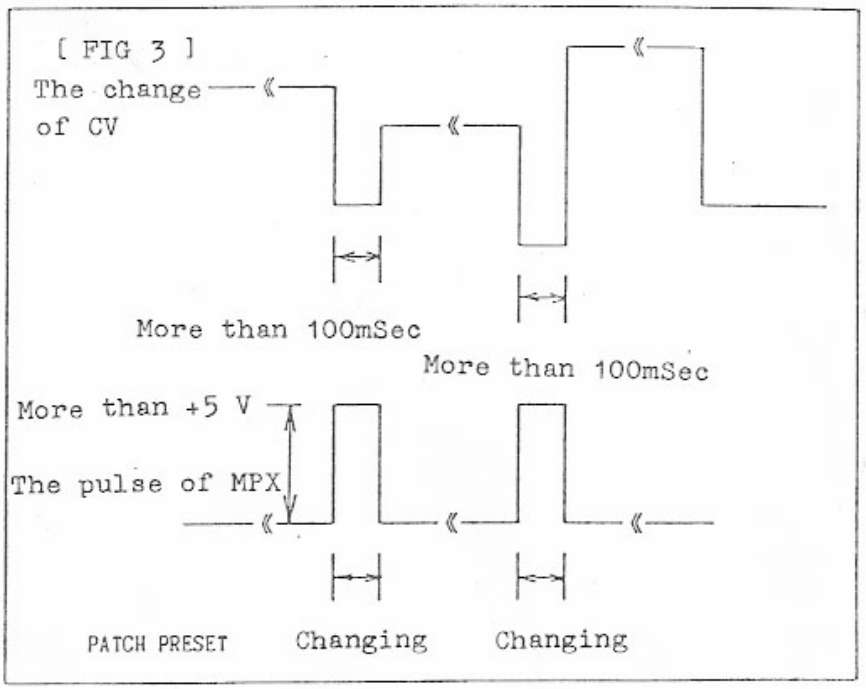
The pulse applied to this MPX needs to be longer than 100mSec as well.

Sharing the CV which controls the VCF or the VCA means borrowing it for the PATCH SELECT as long as the length of the pulse, but this does not affect the control of the VCF or the VCA.

Use the MULTIPLE JACK for sharing the CV.

Refer to Sec. 4. THE PROGRAMMING OF THE PATCH SELECT DATA to make the program for PATCH SELECT.

Fig 3 shows the relation between CV pulse and MPX's.



STEP TIME to get 100msec interval depends on the TIME BASE and TEMPO.

How to work out this figure is:

TIME BASE x TEMPO ÷ 600 ≦ the required figure

e.g. When the MicroComposer is being operated with the TIME BASE at 48 and the TEMPO at 112:

48 x 112 ÷ 600 = 8.96

As the figures with decimal points cannot be input, the figure bigger than 9 should be inputted in this case. This, however, applies only when the TEMPO VOLUME is set to the middle position. When the tempo is quickened, you naturally have to increase the number.

4. THE PROGRAMMING OF THE PATCH SELECT DATA

The examples shown on the next page explains the case when you change the PATCH PRESET of the Jupiter-8 in the middle of the music.

The CV data is input in the STEP-1 and the STEP-10 in the MEAS-1.

* Remember to input the CV data at the beginning of the music. If you manually operate the PATCH PRESET switches of the Jupiter-8 while doing the PATCH SELECT operation with the MicroComposer, the OP-8 might fail to function correctly.

MEAS	STEP	CV for VCO	CV for VCF VCA PATCH	STEP TIME	GATE TIME	
1	1	24	1	30	0	
	2	24	50	120	15	
	3	26	50	120	15	
	4	28	50	120	15	
	5	29	50	120	15	
	6	31	50	120	15	
	7	33	50	120	15	
	8	35	50	120	15	
	9	36	50	90	15	
	10	36	2	30	0	
2	1	36	50	120	15	
	2	35	50	120	15	
	3	33	50	120	15	
	4	31	50	120	15	
	5	29	50	120	15	
	6	28	50	120	15	
	7	26	50	120	15	
	8	24	50	90	15	

PATCH PRESET [A]

PATCH PRESET [B]

5. CHANGING THE SPLIT POINT OF THE JUPITER-8

Modified JP-8 allows you to specify KEY SPLIT position. Without playing the Jupiter-8, hold down the SPLIT KEY MODE situated in the KEY MODE on the panel. While you are holding it down, the LED of the SPLIT will light up. Then press any key you like, the key will become the lowest note of the UPPER section.