Preliminary Manual (Dec.18, 2018)

Module A-190-5 is a four voice Midi/USB to CV/Gate interface.

For each voice a pitch control voltage (CVNote, 1V/octave standard to control VCOs), a gate output (to control envelope generators) and two additional control voltages (CV2, CV3) are available. The two additional CV outputs can be controlled by Midi velocity(CV2), (CV3) volume, modulation, all other free assignable Midi controllers , after touch.

The mode is selected by means of momentary switches and is shown in the LC display.
Certain parameters of each mode can be edited (e.g. the midi channel(s), the midi reference note for 0V CV, assigned controllers for CV3).
The parameter values (e.g. midi channels) are shown in the display and can be modified by means of the momentary switches.
In Play mode the LEDs of the first four switches display the gate states.

a. Display :   2x16 char.LCD display shows names of modes, functions and parameter names as well as parameter values.

b. ↵ Return :   Opens up a sub function resp. takes you to the next lower level of the menue structure (**down**). It also has to be pressed to confirm some functions.

c. ↺ Escape : Takes you back to the next higher level of the menue structure (**up**). It may also be used to cancel certain functions.

d. < / - :   Takes you back to the previous function / parameter on the current menue level (**backwards**). It also decreases a parameter value by one step at a time. When pressed down continously , the value change will be accelerated.

e. > / - :   Takes you to the next function / parameter on the current menue level (**forward**). It also increases a parameter value by one step at a time. When pressed down continously the value change will be accelerated.

f. Shift1   Intended for future extensions

g. Shift 2   Intended for future extensions

In- / Outputs:

1.   USB port: Input for MIDI data. (USB Class Compliant, no need for a custom driver)

2. MIDI IN :   Input for MIDI data (DIN socket)

3. MIDI THRU : Output to loopthrough for most of incomming MIDI data events to another

Matrix of Outputs 4x4

1,2,3,4 on A,B,C,D   = 16

In each column 1-4 is one of 4 'Voices' / Voices, each with:

A. Gate :   GATE signal outputs

B. CV Note :   Outputs for control usually used for controlling VCO pitch.

C. CV 2 :   Output for control voltage Velocity.
May be used to control additional parameters just like e.g. VCF cutoff or VCA level

In addition, there are other control voltages in the form of the CV3 output jacks already, which do not belong directly to the actual voice. These voltages can be controlled independently of the notes / voices by means of associated further midivents, such as controller, aftertouch.

D. CV3: outputs for assignable controller / monophonic aftertouch
Controls (e.g., VCF, VCA, etc.)

After switching on, the LEDs under the buttons are briefly switched from left to right in a kind of 'running light' on / off, after which the A-190-5 is immediately ready for operation.

It is then in the normal operating mode where all incoming MIDI information is converted to corresponding CV, gate and CV2 / CV3 according to the set interface parameters.

The gate LEDs (corresponding to the button LEDs 1 - 4 in this mode) will light up when MIDI is active.

The A-190-5 has in addition to readymade allocation algorithms still some changeable and storable parameters for the conversion of the MIDI information.

To allow easy access to all functions and parameters, the user interface of the A-190-5 is based on a simple menu structure.

The navigation within the menu structure is carried out with the help of the four buttons and follows a uniform scheme:

- Use the "</ -" and "> / +" buttons to move forwards and backwards within the current menu level or from left to right or vice versa.

- In this way you will find different operating mode menus in the upper menu level. As soon as you have reached the last menu position of a level, you must move back with the help of the "</ -" button.

- As soon as you have reached the menu or the function you want to edit, press the button ↵ "Return". This opens its parameter level.

- The parameter level shows in the first instance the respective parameter value, consisting of parameter name and numerical value. This can be recognized by the fact that the parameter name and value are separated by a ':' colon.

- With the "</ -" and "> / +" keys you can now access all the parameters within the current menu. Again, once you have reached the last parameter of a function, you can use the "</ -" key move back.

- Press the button again ↵ "Return" will switch to Edit mode. Now you can change the values of the selected parameter.

- This is indicated by the now editable value of '> ... <' is enclosed.

- Now use the "</ -" and "> / +" buttons to change the values of the selected parameter. Some values are represented as numbers, others in the form of abbreviations. Holding down one of these buttons increases the speed of the value change.

- By means of "</ -" and "> / +" one no longer changes through the parameters, but raises or lowers the value.

- In edit mode and only there it is partly possible to switch through (repeatedly) by pressing ↵ "Return at a parameter of the same name through the columns / voices". The position within the column / voice is displayed in the upper right corner (1 line of the display) in '[..]' - square brackets.

- To be able to leave the edit mode again, and only then is that possible, press the ↻ "Escape" button. In general, ↻ "Escape is used to exit the current menu / edit level and move to the next higher level.

Attention: Changing parameter values has a direct effect on the output NoteCVs, Gate and CV2 / CV3 signals.

You can hear the result directly.

Attention: In order to obtain value changes after switching off the A-100 system, these must be saved. The memory function will be described later in this manual.

Memory function (Store)

If you change the setting for a parameter, it will only be temporary and will be lost after turning off the A-100 system.
To permanently save your setup, you must perform a store function.

If you have the settings of your
A-190-5 saved, they are present immediately after switching on the A-100 system.

To save the settings of the A-190-5:

As soon as you want to save your settings, use the "</ -" button to move to the memory function.

"(c) Software Version & SubIndex"
"SaveMenu = Enter"

Press Enter - ↵

The display shows

"Save-Menu !!!!!!"
"Save = Press '</ -'"

For safety reasons, the actual save process must now be triggered with the "</ -" key, unlike all other menus.

Caution !! The old memory contents will be irrevocably overwritten

• Press ↵ or ↺ or ">/+" to cancel the memory function.

• Press "</ -" to permanently save the current settings of all parameters of the A190-5.

For confirmation the display will show

"Save-Menu !!!!!!"
"Save-Done; AnyKey"

"Anykey" should indicate, no matter which of the keys are pressed, you always return to the normal operating mode.

Basic menu structure, call of the operating and their functions

Use the "</ -" and "> / +" keys to move forwards and backwards through the operating modes within the highest menu level.

In the upper display line, a characteristic short name of the operating mode is displayed, as well as a short diagram of how the individual 'voices' are used within the operating mode.

e.g .:

"Mono 1;2;3;4" =
Monophonic mode, each voice 1, 2, 3, 4; separately addressable. So almost 4 independent monophonic CV interfaces, such. the A190-4, in an A190-5.

"Unison 1+2+3+4" =
Monophonic mode, but all 'voices' are addressed simultaneously in unison '1 + 2 + 3 + 4'.

"Mono/Uni 1+2;+4"
A combination of both above modes. Voice 1 + 2 at the same time and separate 3 + 4 at the same time.

"Poly 1-2-3-4-1.."
Polyphonic mode. The 4 voices are successively, rotating occupied.

etc.

In the second line then again is a description of the operating mode, but this time more of the technical side of the realization or a more detailed description with the number of mode parameters:

Chn No Vo: Midichannel Note Voice

Associated notes are detected by the midi channel 'Chn' of the transmitter (keyboard, DAW, etc.) and send to a mapping algorithm.

This determines how many tones, 'notes' 'No' can be output simultaneously in the assignment algorithm.

And finally assigns it to a 'Voice' 'Vo' determined by the CV outputs, which corresponds directly to the patch of a module system.

e.g .:

"4Chn 1No 1Vo | 03"

A190-5 will receive up to '4' different midi channels, each assigning a '1' note (monophonic mode), using '1' one voice at a time.

"1Chn 1No 4Vo | 01"

A190-5 receives on a '1' midi channel, assigning each a '1' note (monophonic mode) using '4' four voices each.

"1Chn 4No 1Vo | 04"

A190-5 receives on a '1' midi channel assigning four notes to each '4' (polyphonic mode) using '1' voices.

etc.

If more than one voice is assigned to a note, then the CV values are identically on the CV outputs of the same name.

As a result, the 'duplicate' outputs take over the tasks of precision multiplexers.
This makes it possible in the vast majority of cases to switch between the operating modes and to be able to use them immediately, without having to change the patch.

From the menu level of the individual operating modes, you can now press

↵ "Return". go to to the parameter level.

The parameter level shows in the first instance the respective parameter value consisting of parameter name and numerical value. This can be recognized by the fact that the parameter name and value are separated by a ':' colon.

With the keys "</ -" and "> / +" you can now access all parameters within the current operating mode.

Pressing the ↵ "Return" button again will switch to edit mode.

Now you can change the values of the selected parameter.

This is indicated by the now editable value of '> ... <' is enclosed.

With the keys "> / +" and "</ -" you now one no longer travels through the parameters, but changes the values of the selected parameter. Holding down one of these buttons increases the speed of the value change.

In edit mode and only there, it is now partly possible by (repeatedly) pressing ↵ "Return to switch through a parameter of the same name through the column / voices".
The position within the column / voice is displayed in the upper right corner (1 line of the display) in '[..]' - square brackets.

Thus, e.g.

[1], [2], [3], [4]

in that the parameter change relates to the one specified column / voice.

[1-4]

 refers to all 4 columns / votes at the same time ..

[1-2], [3-4] to a group of 2 voices / columns, either 1-2 or 3-4.

[1.D] to the output CV3 - 1st voice / column

[2.D] to the output CV3 - 2nd voice / column

[3.D] on the output CV3 - 3rd voice / column

[4.D] on the output CV3 - 4th voice / column

Overview of individual parameters.

Essentially, all modes have the same set of parameters.

Retrigger:

With this parameter it is determined whether with the pressed key and striking of another key or with the Legato play on the MIDI keyboard / DAW a new gate signal is triggered (RETRIGGER = ON), which for example triggers an ADSR again.

The value range is between 0 (off) and 50 (maximum value).

The value change occurs in 1 millisecond increments.

Midi Channel:

This parameter is the MIDI receive channel. The incoming data is converted into Gate, NoteCV and CV2 / CV3 signals and transmitted to the A-100 modules connected to the A-190-5. You can choose from MIDI channels 1 to 16.

Refnote:

The reference note is the note corresponding to the NoteCV value of 0 volts.

CV3:

This parameter sets the assignment of CV3 to a MIDI event / controller.

According to the assignment, the incoming MIDI data is converted to the corresponding control voltage CV3. The voltage range is 0 to approx. +10 volts.

Here you can assign a MIDI controller and monophonic aftertouch to the CV3 outputs. The display lists all available MIDI controller numbers.

Use the "</ -" and "> / +" buttons to "scroll" through the controller list.

After Midicontroller 127 'Poly On' follows the monophonic aftertouch 'MonoAftouch'

Non-selectable controllers have special functions and are not available.

The different operating modes in detail

Each operating mode is numbered consecutively after the 'shortdescription' in the first display line & the schematic explanation of the function in the second line and at the end of the second line after a '|' - vertical stroke.

e.g. | 01
This is as another characteristic of the operating mode

Operating mode |03
"Mono 1;2;3;4"
"4Chn 1No 1Vo 03"

Monophonic mode, each voice 1, 2, 3, 4; separately addressable.

4 independent monophonic CV interfaces, such. the A190-4, in a single A190-5.

Retrigger: individual for each voice [1], [2], [3], [4]

Midichannel: individual for each voice [1], [2], [3], [4] (*)

Refnote: individual for each voice [1], [2], [3], [4]

CV3: individual for each voice [1.D], [2.D] [3.D] [4.D]

the assigned controller / aftertouch gets its midi channel from the midi channel in the column / voice. (*)

Operating mode |02
"Mono/Uni 1+2;3+4"
"2Chn 1No 2Vo 02"

A combination operating mode off | 03 and | 01.

Voice 1 + 2 at the same time and separate 3 + 4 at the same time.

Retrigger: individually for each 2'er group [1-2], [3-4]

Midichannel: individual for every 2'er group [1-2], [3-4] (*)

Refnote: individual for each 2'er group [1-2], [3-4]

CV3: individual for each voice [1.D], [2.D] [3.D] [4.D]

the assigned controller / aftertouch gets its midi channel from the midi channel in the column / voice group. (*)

Operating mode |01
"Unison 1+2+3+4"
"1Chn 1No 4Vo |01"

A190-5 receives on a '1' midi channel, assigning each a '1' note (monophonic mode) using '4' four voices each.

Retrigger: global for all 4 votes [1-4]

Midichannel: global for all 4 votes [1-4] (*)

Refnote: global for all 4 votes [1-4]

CV3: individual for each voice [1.D], [2.D] [3.D] [4.D]

the assigned controller / aftertouch gets its common midi channel from the midi channel set in this mode. (*)

Operating mode |04
"Poly 1-2-3-4-1.."
"1Chn 4No 1Vo |04"

A190-5 receives on a '1' midi channel, assigning one of '4' four notes in a row (polyphonic mode). In each case '1' a voice is used.

If all 4 notes are used up, the assignment starts again at '1', the 'existing' voice is overwritten there. (Rotating)

Retrigger: global for all 4 votes [1-4]

Midichannel: global for all 4 votes [1-4] (*)

Refnote: global for all 4 votes [1-4]

CV3: individual for each voice [1.D], [2.D] [3.D] [4.D]

the assigned controller / aftertouch gets its common midi channel from the midi channel set in this mode. (*)

Operating Mode |05
"Poly 1+2-3+4-1.."
"1Chn 2No 2Vo |05"

A190-5 receives on a '1' midi channel assigning two notes to each '2' (polyphonic mode) using '2' two voices each.

If all 2 notes are used up, the assignment starts again at '1 + 2', the 'existing' voices are overwritten there. (Rotating)

Retrigger: global for all 4 votes [1-4]

Midichannel: global for all 4 votes [1-4] (*)

Refnote: global for all 4 votes [1-4]

CV3: individual for each voice [1.D], [2.D] [3.D] [4.D]

the assigned controller / aftertouch gets its common midi channel from the midi channel set in this mode. (*)

Operating Mode |06
"Poly 1-2-1;3-4-3"
"2Chn 2No 1Vo |06"

A190-5 receives on two '2' midi channels, assigning two notes to each '2' (polyphonic mode) using '1' voices.

If the two notes are used up, the assignment starts again at '1' or '3', the 'existing' voice is overwritten there. (Rotating)

Retrigger: individually for each 2'er group [1-2], [3-4]

Midichannel: individual for every 2'er group [1-2], [3-4] (*)

Refnote: individual for each 2'er group [1-2], [3-4]

CV3: individual for each voice [1.D], [2.D] [3.D] [4.D]

the assigned controller / aftertouch gets its midi channel from the midi channel in the column / voice group. (*)