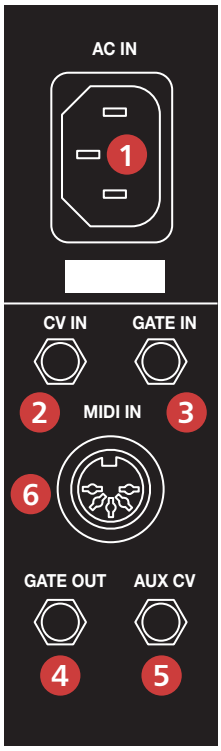
MIDI / CV interface for Antonus model 2600

The Antonus model 2600 has a built in MIDI / CV interface that allows a simple and direct communication with a big number of electronic musical instruments.

Add MIDI to the Antonus 2600 was done with the original ARP 2600 keyboard connector in mind, which allowed in a simple and clean way to connect the tunings of all VCO's, the VCF tracking and GATE and TRIGGER signals using internal buses. This allows classic configurations without need for additional wiring on the front panel.

Panel description



1. IEC C13 AC power input.
2. Voltaje control input normalled to internal KBD CV BUS
3. GATE input normalled to be converted to internal TRIGGER+GATE and connected to ADSR and AR internal bus
4. GATE output, normalled level.
5. MIDI CV auxiliar
6. MIDI input.

MIDI Interface

The MIDI interface of the Antonus 2600 consists of a digital MIDI signal input using a standard DIN-5 connector. This interface interprets the digital messages received at input and converts voltage signals necessary to interact with the 2600. By default the interface recognize note messages and note activated / deactivated. The lowest note corresponds to the MIDI note 36 and the highest to the 97, covering a range of 5 octaves. The voltage conversion of these MIDI notes is 0 volts for the lowest note and 5 volts for the highest note. The voltage curve corresponds to volt per octave norm.

The pitch bend wheel also affects the KBD CV signal, in a range of +/- 2 semitones from the center point of the wheel. Also, the interface interprets the signals of note on / off to generate a signal of positive GATE voltage (+ 10v) for message ON and 0v for message OFF.

It should be noted that TRIGGER the model 2600 a GATE signal conversion is needed since the design needs to work correctly two TRIGGER and GATE signals. This conversion is done electronically on the interface using an internal GATEBOOST circuit. Specifically, the TRIGGER signal (brief pulse) is responsible of the Attack stage start in the ADSR envelope and the GATE signal (continuous on / off signal) is responsible for manage the rest of the stages.

The TRIGGER and GATE signals generated from MIDI are present in the front connectors of the 2600 next to the TRIGGER switch of the front panel. It should be noted that these same connections also work as TRIGGER and GATE input signals that may come from any classic ARP keyboard that follows this TRIGGER standard. The GATE signal will also be present in connector number 4 of the interface panel. The AUX CV output (5) is a voltage output that corresponds to the MIDI value of the modulation wheel control. Being 0 volts the lowest value and 5 volts the highest value. The default setting of this MIDI interface can be changed at the moment of ordering your 2600 by direct request to Antonus or using SYSEX messages for example using the MIDIMPLANT online configurator: http://www.midimplant.com/config3.html.

The online configurator allows to change the MIDI channel, the MIDI note ranges and especially the possibility of assigning the Aux CV to any other available MIDI parameter, for example Velocity, Aftertouch and other controls, as well as cancel or modify the Pitch Bend range. The online configurator generates a MIDI file with all the SYSEX streams necessary to configure the interface. For do that is necessary to use a MIDI file player that does not filter SYSEX messages. An example of SYSEX message stream could be this default configuration:

F0 00 20 7A 01 01 01 01 01 24 F7
F0 00 20 7A 01 02 01 01 03 01 F7
F0 00 20 7A 01 01 03 06 F7
F0 00 20 7A 01 01 04 00 F7
F0 00 20 7A 01 01 06 00 F7
F0 00 20 7A 01 01 07 00 F7
F0 00 20 7A 01 01 08 02 F7
F0 00 20 7A 01 01 09 40 F7
F0 00 20 7A 01 02 09 40 F7

This messages stream can be used to reset the interface in case of an error due to invalid/ corrupt configuration.

Voltage inputs

The interface has two inputs designed to control the 2600 directly by voltage. Connection number 2 corresponds to the voltage control input corresponding to the KBD CV bus. The standard is volt per octave and accepts any voltage between +10 and -10 volts. Connector number 3 corresponds to the GATE trigger signal input. By this connection we ensure total compatibility of a wide range of different GATE signals from different gear and manufacturers as long as they follow the protocol of active GATE = positive voltage and inactive GATE = 0v. This task is done

thanks to the internal circuit (GATEBOOST). If this adapted GATE (3) input is not used it is not possible to guarantee the correct work of any TRIGGER signal when it is connected directly using the front panel to TRIGGER the envelopes. Like the GATE signals generated by MIDI, all signals generated by this input will be added to the internal GATE bus of the 2600.

In the same way the GATE signals will be summed both when the MIDI interface and the GATE IN input are being used. Having these elements in this place allows, in addition to a classic use, a quick and efficient use of those resources in non-standard ways, for example using CV to play the oscillators but use the GATE signal generated in each MIDI note for any other function...

Also in this way you can use the MIDI interface not only for control the same 2600 but also to control any other synthesizer that uses the volt per octave standard and positive GATE using the KBD CV outputs on the front panel and the GATE OUT output on the side panel. Used in this way we obtain an independet MIDI / CV converter from the same Antonus 2600.

Antonus 2600 MIDI-CV interface diagram V1.3