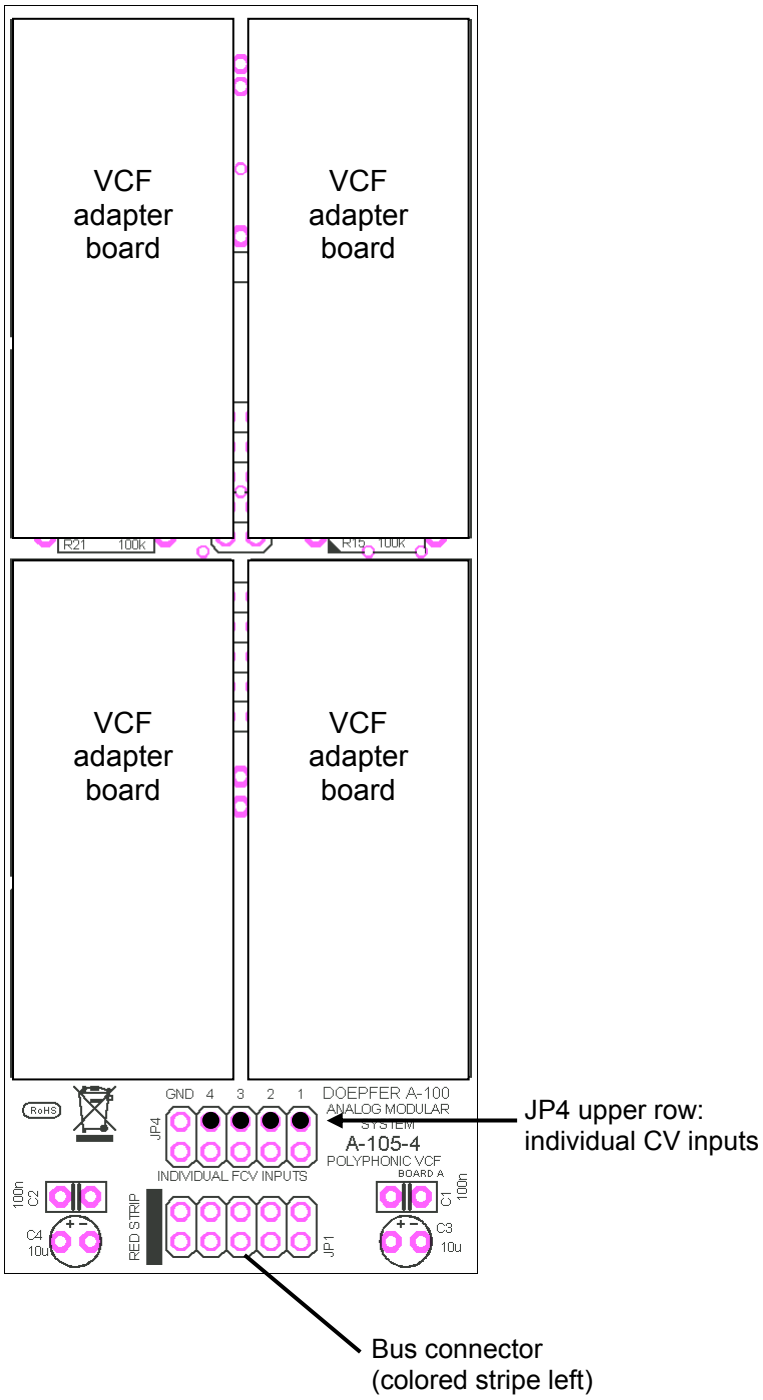
DOEPFER MUSIKELEKTRONIK GMBH

A-105-4 Quad Polyphonic VCF

Position and function of the connectors Board A

Version 1



Function of JP4:

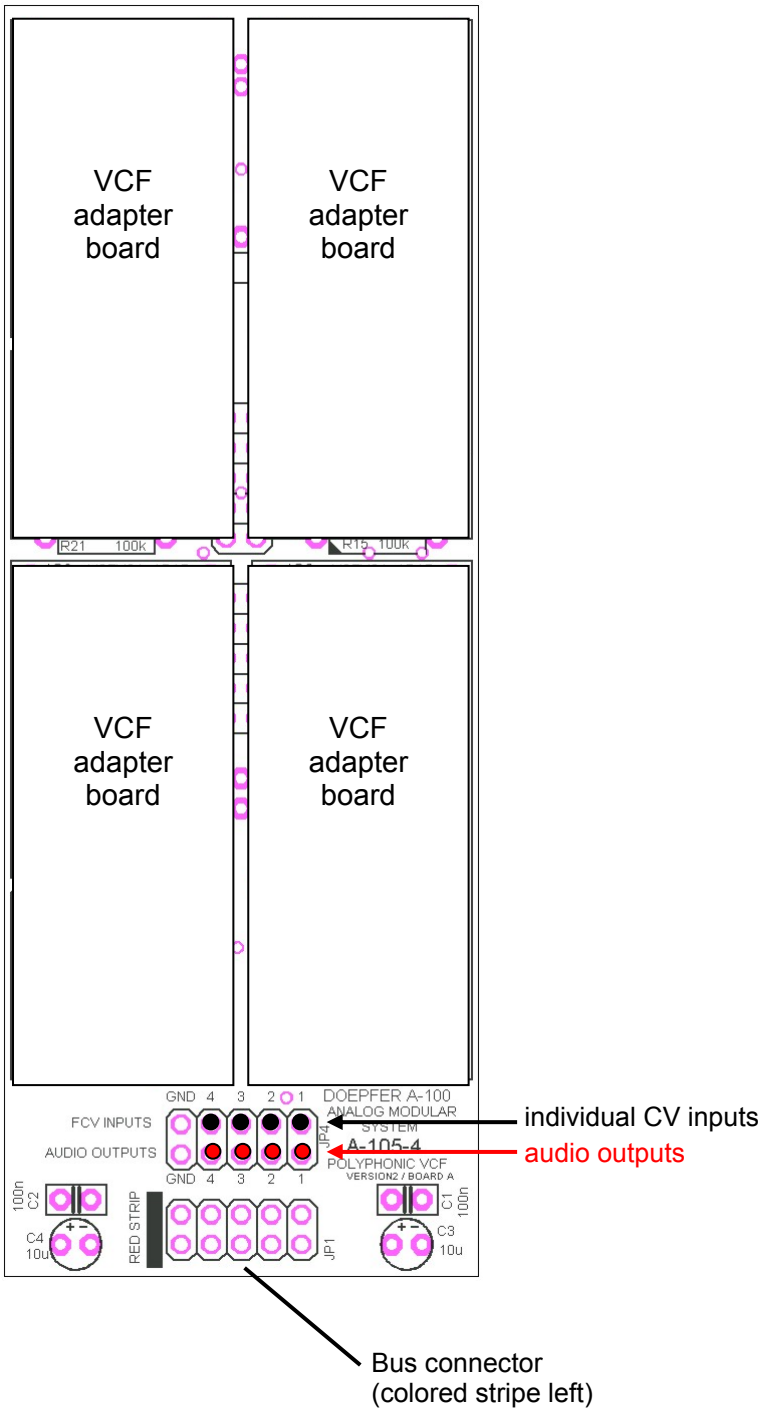
The upper row of JP4 can be used to establish additional internal CV connections. The voltages applied to the 4 pins of JP4 are added to the voltages applied to the FM input sockets at the front panel (i.e. no normalling but addition) ! These CV inputs follow approximately the 1V/octave standard. The typical application for JP4 is filter tracking. For this the corresponding VCO pitch control voltages are also applied to the individual CV inputs of the filters.

For the internal wiring of the pins of JP4 single wire cables with female connectors on both sides can be used (available in electronic shops, e.g. used for Arduino or Raspberry Pi boards). Even 10 pin female IDC connectors with ribbon cables may be used if one pays attention to the correct polarity !

A-105-4 Quad Polyphonic VCF

Position and function of the connectors Board A

Version 2



Function of JP4:

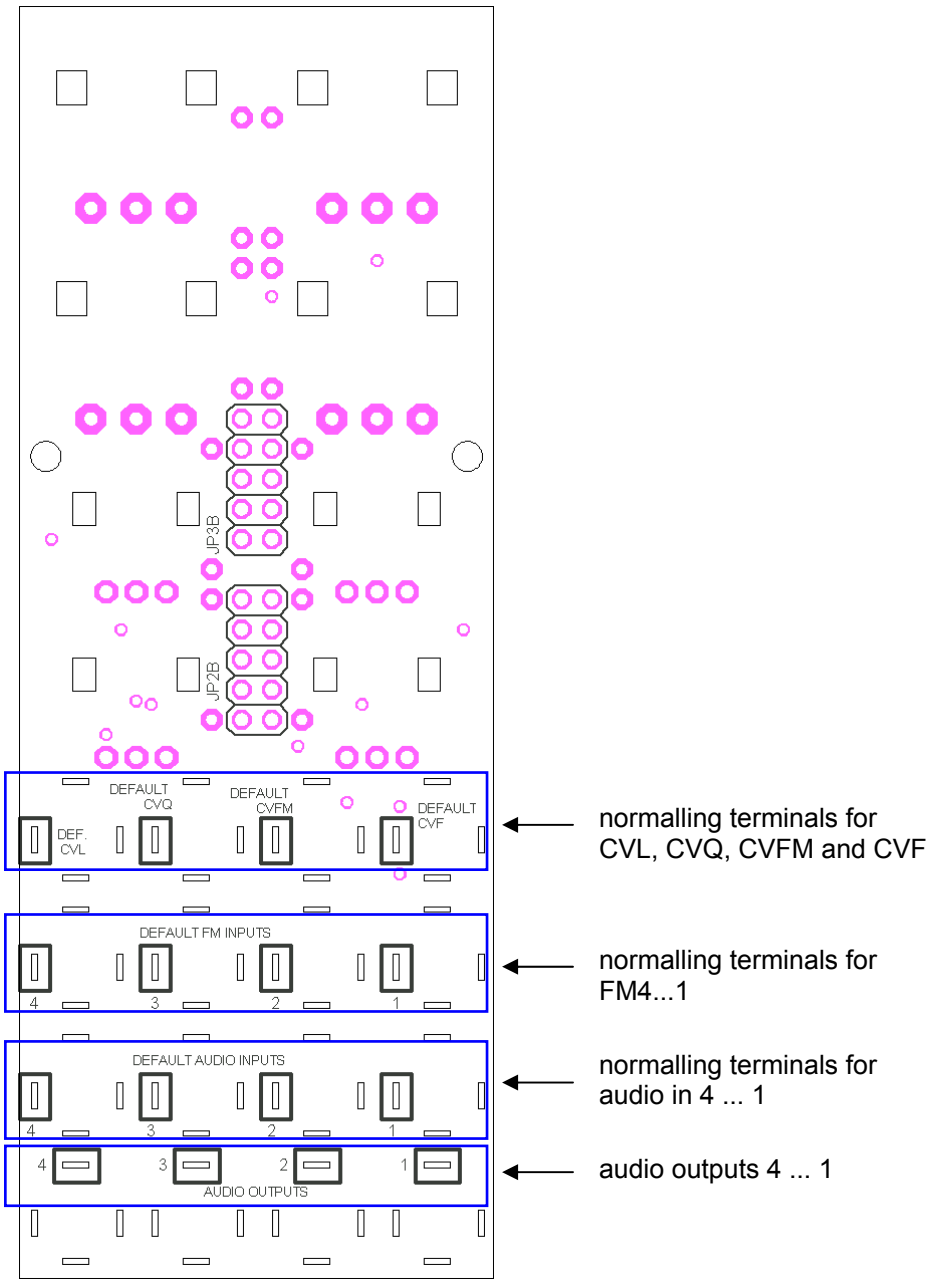
The upper row of JP4 can be used to establish additional internal CV connections. The voltages applied to the 4 pins of JP4 are added to the voltages applied to the FM input sockets at the front panel (i.e. no normalling but addition) ! These CV inputs follow approximately the 1V/octave standard. The typical application for JP4 is filter tracking. For this the corresponding VCO pitch control voltages are also applied to the individual CV inputs of the filters.
New for version 2: The lower row of JP4 output four audio signals and are hard wired to the audio output sockets at the front panel. These pins can be used to establish internal audio connections (typically to the polyphonic VCA A-132-8).

For the internal wiring of the pins of JP4 single wire cables with female connectors on both sides can be used (available in electronic shops, e.g. used for Arduino or Raspberry Pi boards). Even 10 pin female IDC connectors with ribbon cables may be used if one pays attention to the correct polarity !

A-105-4 Quad Polyphonic VCF

Positions and functions of the terminals Board B

Version 1



Important notes

The terminals mentioned above can be used to establish the internal normalling of CV and audio signals between the polyphonic A-100 modules. As soldering is required we recommend the modifications only for experienced users. And we also have to point out that warranty is void if such soldering modifications are made by the customer !

For the internal wiring of the terminals single wire cables with female connectors can be used (available in electronic shops, e.g. used for Arduino or Raspberry Pi boards). One side of the cable is soldered directly to the corresponding terminal of the module. The female connector on the other side is used to establish the connection to the other module which is usually equipped with pin headers (no soldering is required for the connection and the connections can be removed without soldering).

The two pc boards of the module may have to be separated temporarily to establish the internal connections. Pay attention to the correct alignment of the connectors, that are used to connect the two boards, when the module is re-assembled !

Function of the terminals

The upper four terminals can be used to apply default control voltages to the switching contacts of the sockets CVL (level), CVQ (resonance), CVFM (modulation depth) and CVF (common frequency for all filters).

The second terminal row can be used to apply default control voltages to the switching contacts of the sockets FM1...4. They typically establish the internal connections to four outputs of the polyphonic envelope generator A-141-4, which is assigned to the filters (a second A-141-4 is typically used for the VCAs).

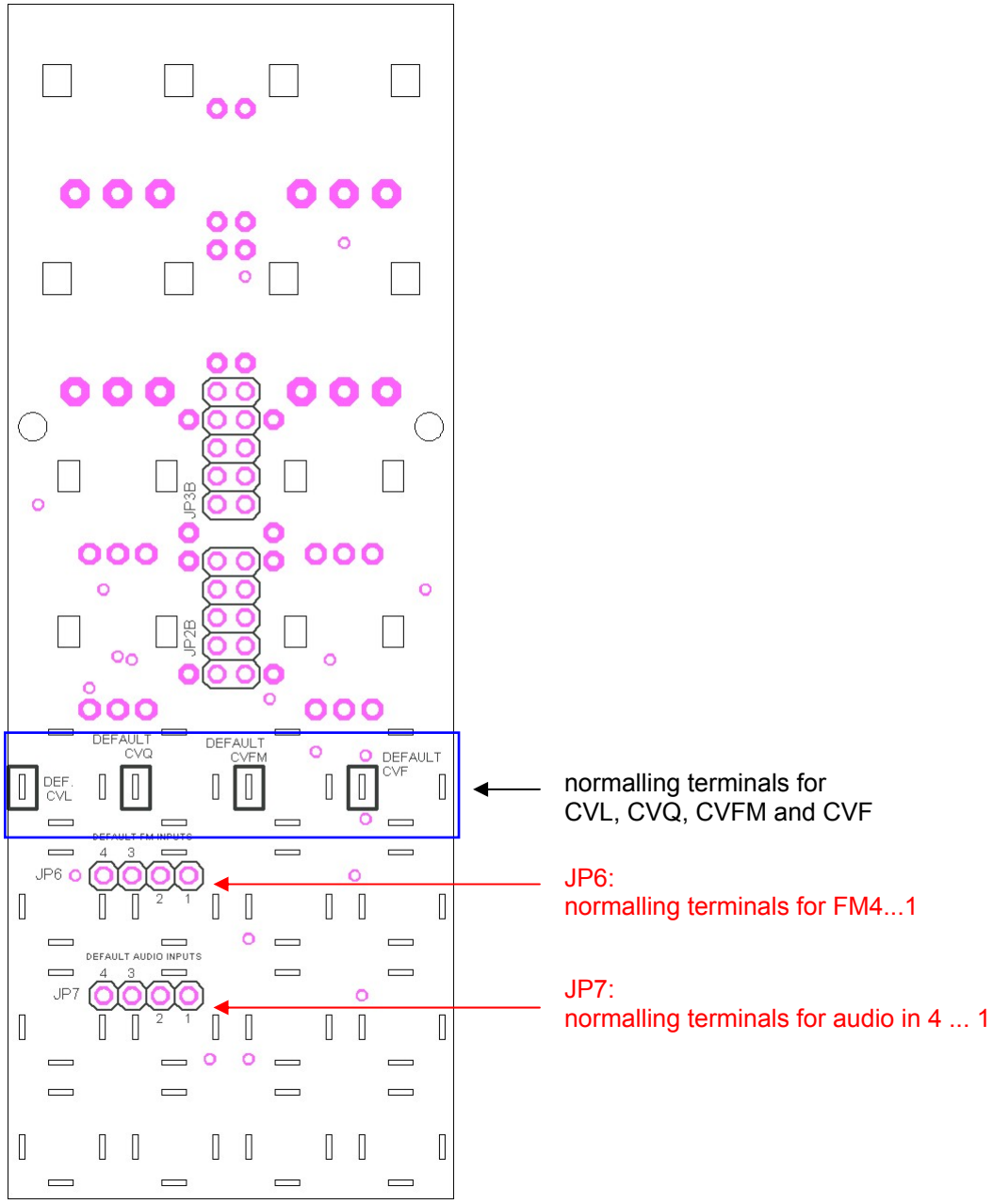
The third terminal row can be used to apply default audio signals to the switching contacts of the sockets audio in 1...4. They typically establish internal connections to four outputs of a polyphonic VCO (e.g. the four sawtooth outputs of the A-111-4).

The lower four terminals can be used to connect the audio inputs of the VCFs to the audio inputs of the polyphonic VCA A-132-8.

A-105-4 Quad Polyphonic VCF

Positions and functions of the terminals Board B

Version 2



Important notes

The terminals mentioned above can be used to establish the internal normalling of CV and audio signals between the polyphonic A-100 modules. As soldering is required for CVL, CVQ, CVFM and CVF we recommend the modifications only for experienced users. And we also have to point out that warranty is void if such soldering modifications are made by the customer !

For the internal wiring of the terminals single wire cables with female connectors can be used (available in electronic shops, e.g. used for Arduino or Raspberry Pi boards). For CVL, CVQ, CVFM and CVF one side of the cable is soldered directly to the corresponding terminal of the module. The female connector on the other side is used to establish the connection to the other module which is usually equipped with pin headers (no soldering is required for the connection and the connections can be removed without soldering).
For the other connections wire cables with female connectors on both ends can be used.

The two pc boards of the module may have to be separated temporarily to establish the internal connections. Pay attention to the correct alignment of the connectors, that are used to connect the two boards, when the module is re-assembled !

Function of the terminals

The upper four terminals can be used to apply default control voltages to the switching contacts of the sockets CVL (level), CVQ (resonance), CVFM (modulation depth) and CVF (common frequency for all filters).

The first pin header (JP6) can be used to apply default control voltages to the switching contacts of the sockets FM1...4. They typically establish the internal connections to four outputs of the polyphonic envelope generator A-141-4, which is assigned to the filters (a second A-141-4 is typically used for the VCAs).

The second pin header (JP7) can be used to apply default audio signals to the switching contacts of the sockets audio in 1...4. They typically establish internal connections to four outputs of a polyphonic VCO (e.g. the four sawtooth outputs of the A-111-4).

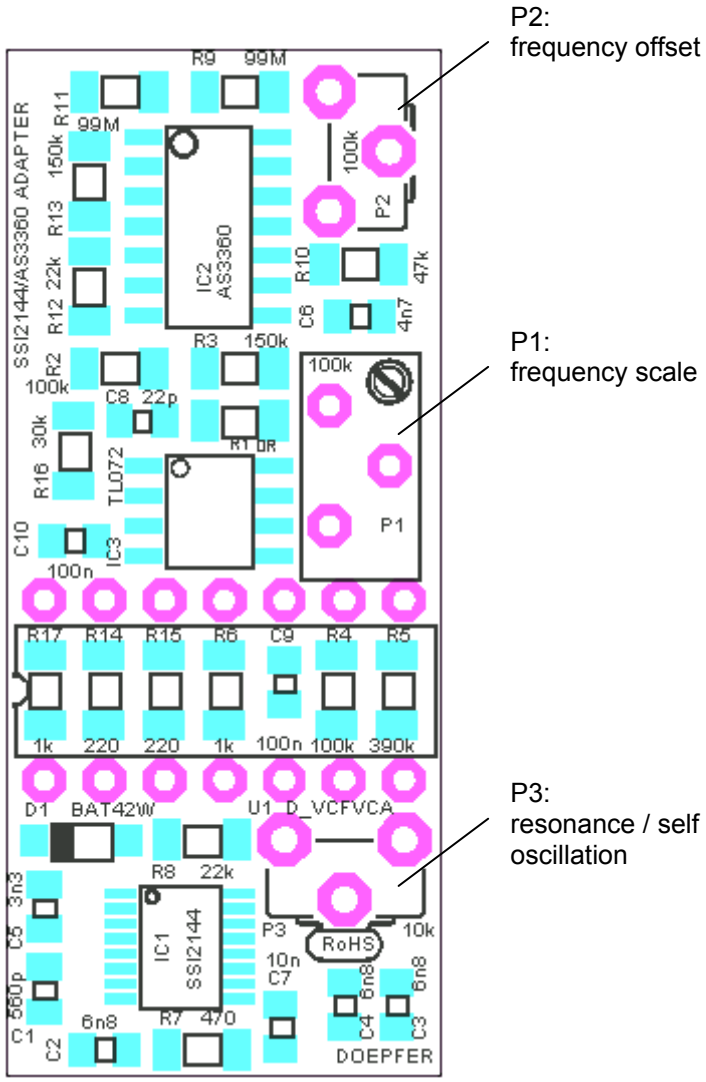
The lower four terminals can be used to connect the audio inputs of the VCFs to the audio inputs of the polyphonic VCA A-132-8.

A-105-4 Quad Polyphonic VCF

Positions and functions of the trimming potentiometers (filter boards)

Version 1

(until ~ 2019)



Function of the trimming potentiometer

P1: frequency scale
P1 is used to adjust the frequency scale to about 1V/octave. For this adjustment the filter resonance is set to self oscillation and the common CVF input is used (with the corresponding attenuator fully CW) as CV input. 1.0V CV differences at the CVF input have to correspond to octave intervals.

P2: frequency offset
P2 is used to adjust the absolute frequency of each filter after the scale has been adjusted.
In the factory the filter modules are adjusted to 15Hz with manual control "F" set to zero (fully CCW).

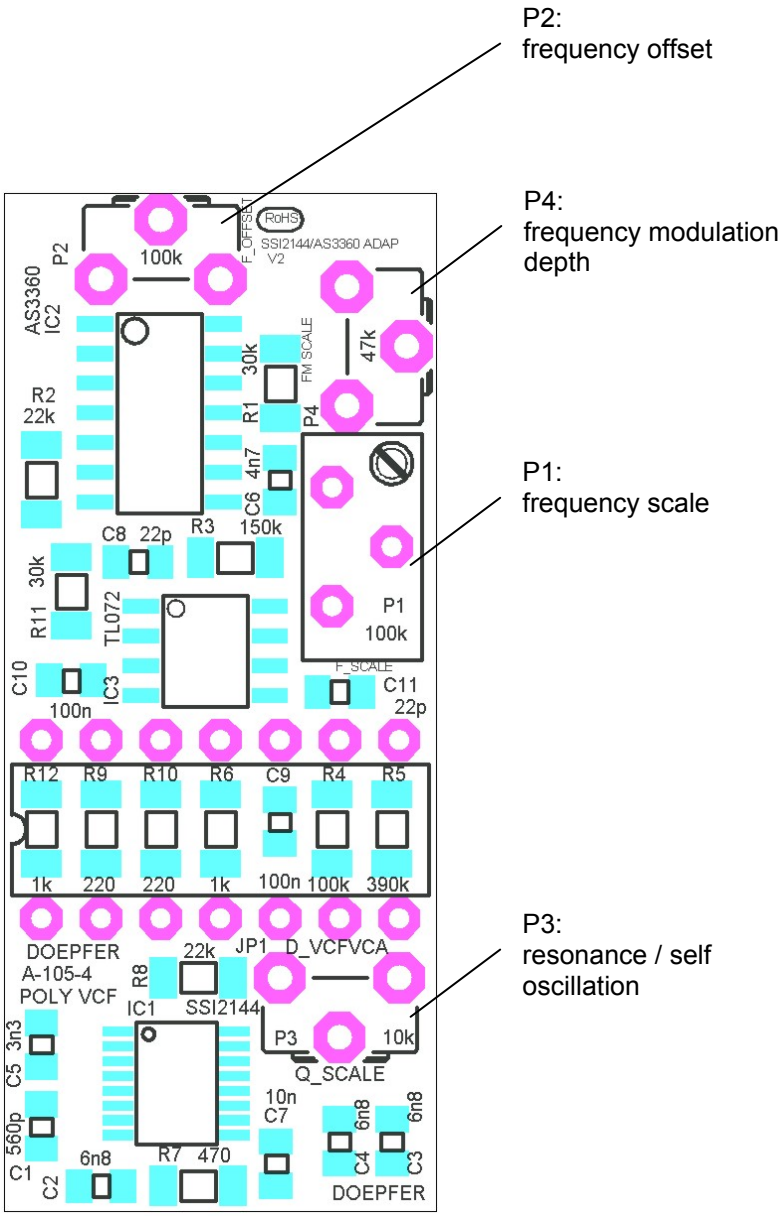
P3: self oscillation "singing point"
P3 is used to adjust the self oscillation "singing point" of each filter so that all four filters start to self oscillate at nearly the same position of the manual Q control. For this the Q control is set e.g. to position 8 and P3 is adjusted so that the self oscillations just begins.

A-105-4 Quad Polyphonic VCF

Positions and functions of the trimming potentiometers (filter boards)

Version 2

(from ~ 2020)



Function of the trimming potentiometer

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P1 is used to adjust the frequency scale to about 1V/octave. For this adjustment the filter resonance is set to self oscillation and the common CVF input is used (with the corresponding attenuator fully CW) as CV input. 1.0V CV differences at the CVF input have to correspond to octave intervals.

P2: frequency offset
P2 is used to adjust the absolute frequency of each filter after the scale has been adjusted.
In the factory the filter modules are adjusted to 15Hz with manual control "F" set to zero (fully CCW).

P3: self oscillation "singing point"
P3 is used to adjust the self oscillation "singing point" of each filter so that all four filters start to self oscillate at nearly the same position of the manual Q control. For this the Q control is set e.g. to position 8 and P3 is adjusted so that the self oscillations just begins.

P4: frequency modulation depth (FM depth)
P4 is used to adjust the frequency modulation depth so that it is the same for all four filters.
Recommended adjustment procedure: Q and FM control fully CW (filters are self oscillating and max. FM), apply the same control voltage (e.g. +5V) to the four FM inputs and adjust P4 so that nearly the same frequency appears at each output. Before this adjustment P1, P2 and P3 have to be adjusted.