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XM44 Universal electronic crossover Available 1-, 2-, 3- or 4-way. December 2021



Features

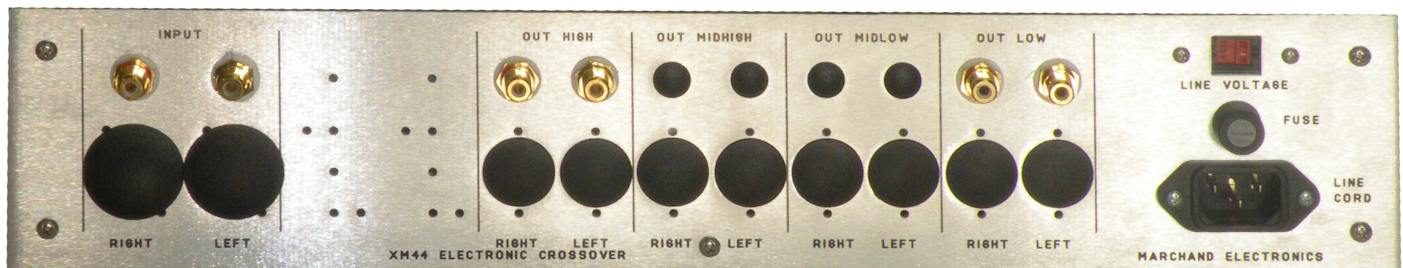
XLR Balanced inputs (optional) RCA inputs XLR Balanced outputs (optional) RCA outputs Level attenuators Fuse 115/230VAC switch Power entry connector	Balanced inputs for high noise immunity Standard line level inputs Balanced inputs for high noise immunity Standard line level inputs 12 position attenuators standard 24 position attenuators optional 1Amp Worldwide AC power compatibility Standard line cord for 120V AC operation.
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Specifications.

Frequency response:	DC - 20KHz +/- 1 dB
Harmonic Distortion @ 1KHz	0.01% or better
Max input voltage	4VRMS
Voltage gain (RCA outputs)	0dB(1X) with attenuator in center position
(XLR outputs)	6dB(2X) with attenuator in center position
Common mode rejection (XLR)	Better than 70dB
Input impedance (RCA, XLR)	100KOhm, 25KOhm
Power requirement	120VAC/240 VAC, 1A fuse
Construction	All metal cabinet, black with white legend
Dimensions:	17" x3.5" x 11" (WxHxD)
Weight:	12 lbs



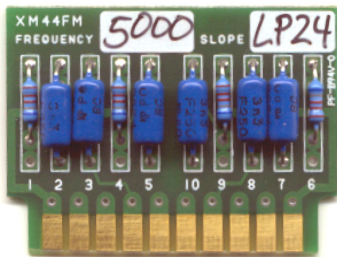
Front panel shows 3-way crossover



Rear panel shows 2-way crossover with RCA. XLR is optional

Frequency modules

The crossover points of the XM44 are set using plug-in frequency modules. The frequency modules plug into 10-position card-edge connectors on the main circuit board. There are two main types of frequency modules: high pass modules and low-pass modules. Each of these frequency modules are available in any frequency and with slopes of 6,12,18 and 24 dB/octave. Specialty modules are available for implementing special functions, like notch filters or delays.



Typical frequency module.

Each channel of the XM44 has 3 module slots. These can take any kind of module. The slots are marked P1,P2 and P3. Slot P1 and P2 are optional. If no module is inserted the enable jumper on that slot needs to be set to off. If a module is used in that slot the enable jumper on that slot needs to be set to on. Typically, the low pass

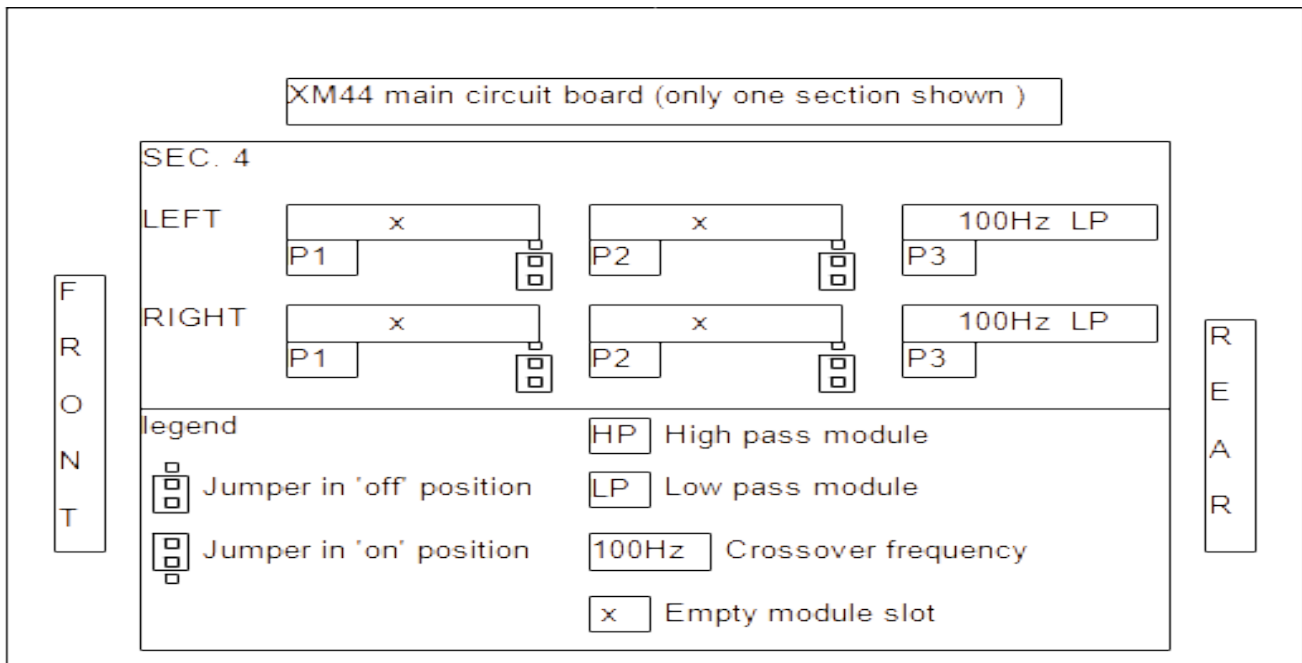
section (section 4) will only have a low-pass module in P3. The high pass section (section 1) will only have a high-pass module in P3. In a 3-way crossover the mid section (sec 2) will have a low pass module in P2 and a high-pass module in P3. Note the setting of the jumper. See figure below and on next page for examples.

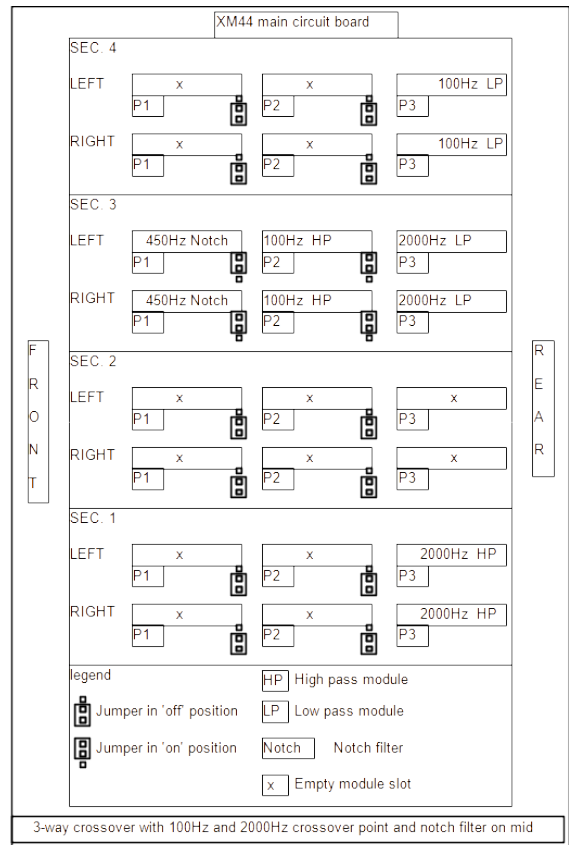
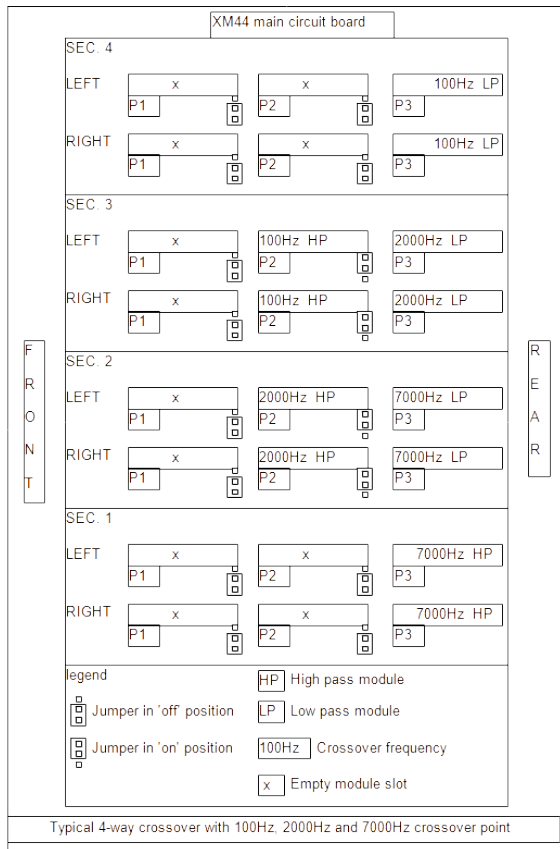
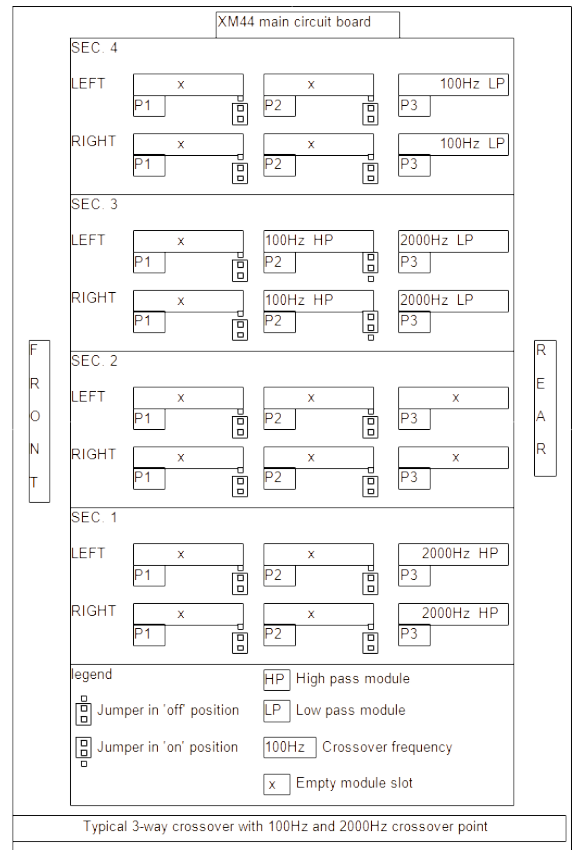
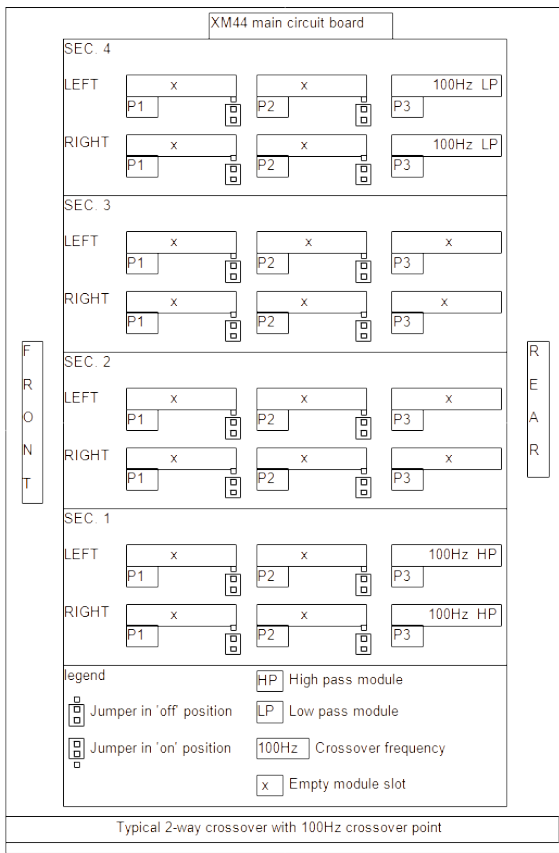
Notch filters and delays are implemented with modules in P1 and P2.

There is a calculator available for choosing the resistance and capacitance values for the various frequency modules.

<https://www.marchandelec.com/programs.html>

Bass boost modules and attenuation/gain modules are included in the calculator.





Location	High Pass	Typical Value for 1000Hz	Low Pass	Typical Value for 1000Hz
1	C1	3300pF	R1	34.0K
2	R2	68.1K	C2	3300pF
3	R3	68.1K	C3	3300pF
4	C4	3300pF	R4	34.0K
5	R5	68.1K	C5	3300pF
6	C6	3300pF	R6	34.0K
7	R7	68.1K	C7	3300pF
8	R8	68.1K	C8	3300pF
9	C9	3300pF	R9	34.0K
10	R10	68.1K	C10	3300pF

Table 1 component selection for frequency module for standard 24dB/oct, Constant Voltage (Linkwitz-Riley) alignment.

Location	High Pass	Typical Value for 1000Hz	Low Pass	Typical Value for 1000Hz
1	J1	Jumper Wire	J1	Jumper Wire
2	not used		not used	
3	not used		not used	
4	C4	3300pF	R4	47.5K
5	R5	47.5K	C5	3300pF
6	C6	3300pF	R6	23.7K
7	R7	47.5K	C7	3300pF+3300pF
8	R8	47.5K	C8	3300pF+3300pF
9	C9	3300pF	R9	23.7K
10	R10	95.3K	C10	3300pF

Table 2 component selection for frequency module for 18dB/oct, Butterworth

Location	High Pass	Typical Value for 1000Hz	Low Pass	Typical Value for 1000Hz
1	J1	Jumper Wire	J1	Jumper Wire
2	not used		not used	
3	not used		not used	
4	J4	Jumper Wire	J4	Jumper Wire
5	not used		not used	
6	C6	3300pF	R6	34.0K
7	R7	68.1K	C7	3300pF
8	R8	68.1K	C8	3300pF
9	C9	3300pF	R9	34.0K
10	R10	68.1K	C10	3300pF

Table 3 component selection for frequency module for 12dB/oct, Butterworth

Location	High Pass	Typical Value for 1000Hz	Low Pass	Typical Value for 1000Hz
1	J1	Jumper Wire	J1	Jumper Wire
2	not used		not used	
3	not used		not used	
4	C4	3300pF	R4	47.5K
5	R5	47.5K	C5	3300pF
6	J6	Jumper Wire	J6	Jumper Wire
7	not used		not used	
8	not used		not used	
9	C9	3300pF	R9	47.5K
10	R10	47.5K	C10	3300pF

Table 4 component selection for frequency module for 12 dB/oct,
Constant Voltage (Linkwitz-Riley) alignment.

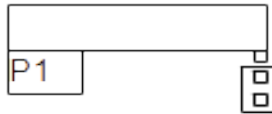
Location	High Pass	Typical Value for 1000Hz	Low Pass	Typical Value for 1000Hz
1	J1	Jumper Wire	J1	Jumper Wire
2	not used		not used	
3	not used		not used	
4	C4	3300pF	R4	47.5K
5	R5	47.5K	C5	3300pF
6	J6	Jumper Wire	J6	Jumper Wire
7	not used		not used	
8	not used		not used	
9	J9	Jumper Wire	J9	Jumper Wire
10	not used		not used	

Table 5 component selection for frequency module for 6 dB/oct

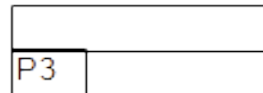
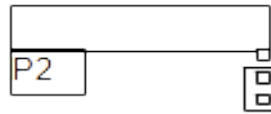
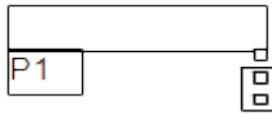
XM44 main circuit board

SEC. 4

LEFT

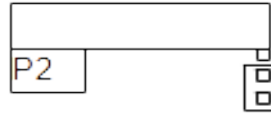
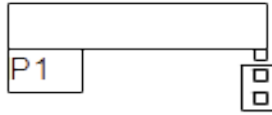


RIGHT

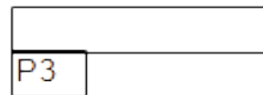
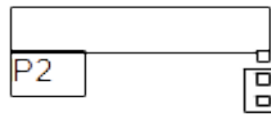
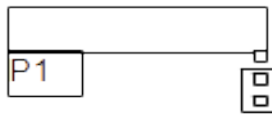


SEC. 3

LEFT

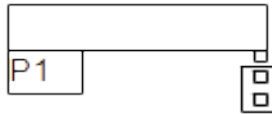


RIGHT

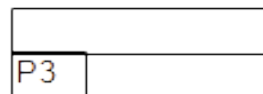
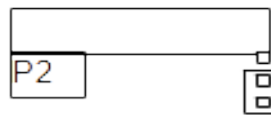
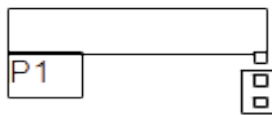


SEC. 2

LEFT

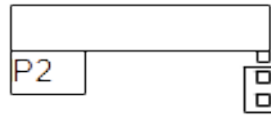


RIGHT

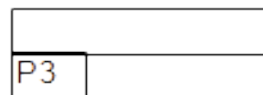
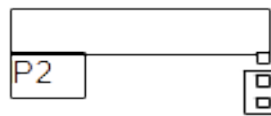
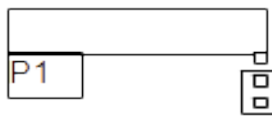


SEC. 1


LEFT





RIGHT




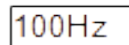
legend


 Jumper in 'off' position

 Jumper in 'on' position

 HP High pass module

 LP Low pass module

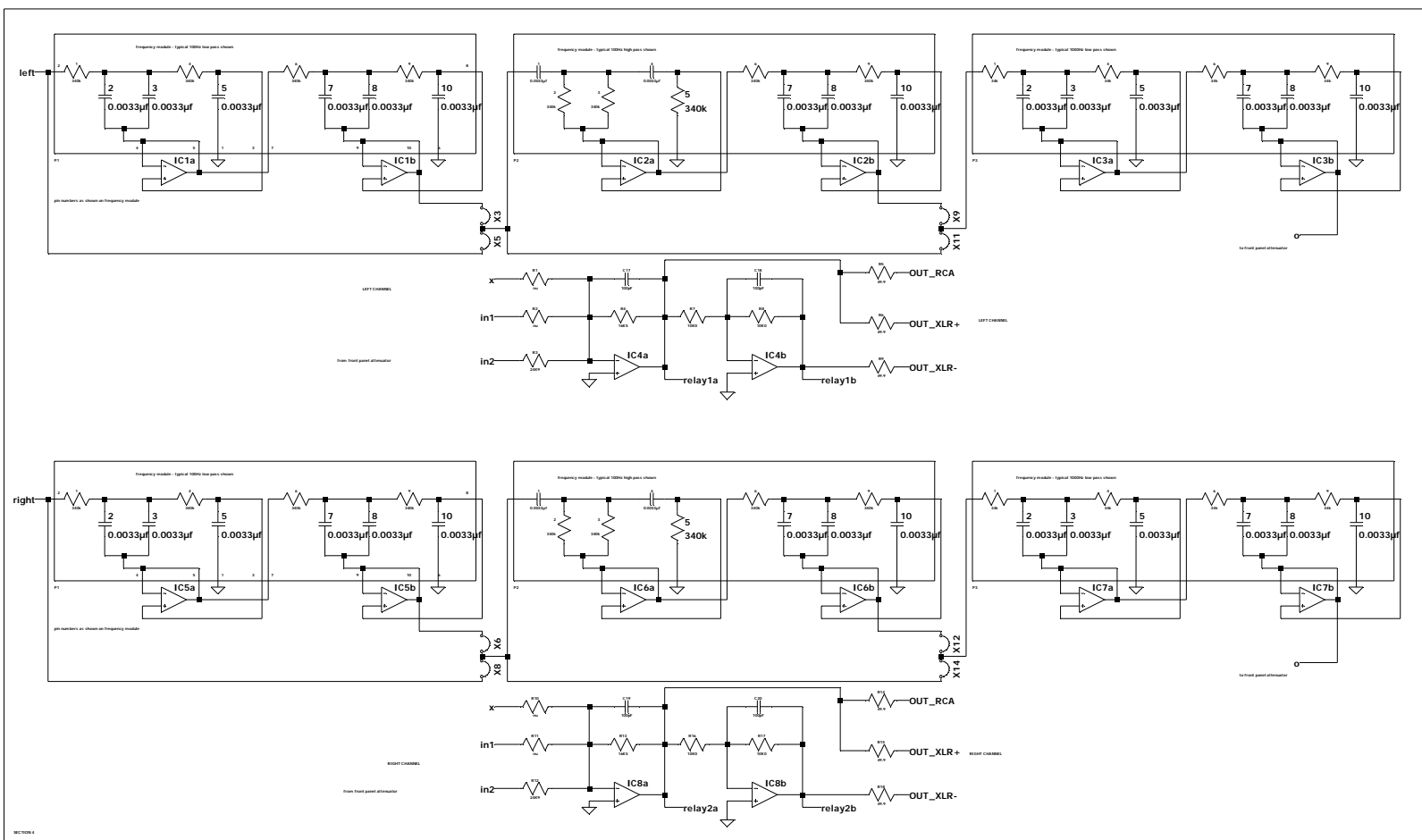
 100Hz Crossover frequency

 x Empty module slot

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Custom frequency module placement



INPUT SECTION

