

Audio Processor

MIR-E Series



DSP Processing

Signal generator	White / Pink noise Level range: -30dBu ~ +10dBu
Input & output Gain	-18 dB ~ +12 dB, step 0.1dB
Noise gate	Threshold: -80dBu ~ -45dBu Attack time: 1ms ~ 1000ms Release time: 1ms ~ 1000ms
Dynamic loudness filter	Gain range: 0dB-10dB Attack speed: fast/medium/slow
Parametric equalizer	Input channels up to 31 optional types of PEQ output channels up to 8 optional types of PEQ
Optional filter types	Bell filter, 1st order high Shelf filter, 2nd order high Shelf filter Variable Q high Shelf filter, 1st order low Shelf filter, 2nd order low Shelf filter Variable Q low Shelf filter, 1st-order low-pass filter, 2nd order low-pass filter Variable Q low pass filter, 1st order high pass filter, 2nd order high pass filter Variable Q high pass filter, band pass filter, notch filter 1st order allpass filter, 2nd order all-pass filter with variable Q value
Center frequency	adjustable within the frequency range of 20Hz~20kHz with a step accuracy of 1Hz
Q value / Bandwidth	The Q value range of Bell filter is 0.4~128, the step is 0.01 The range of the Q value of the Chevron/highpass/low-pass filter is: 0.1~5.1, and the step is 0.01 The value range of bandpass /notch filter Q is: 4~104, step is 1
Equalizer gain range	-15dB ~ +15dB
IIR crossover filter	Butterworth slope: 6/12/18/24/36/48dB per octave Bessel slope: 12/24dB per octave Linkwitz-Riley slope: 12/24/36/48dB per
MIR linear Phase filter	Linkwitz-Riley: 24/48dB per octave(Linear Phase)
FIR crossover filter	Type: high pass/low pass/band pass/external import Taps range:256 ~ 512,slope range 21 ~ 120dB per octave Time window type: Rect / Sinc / Keiser /Hanning / Hamming / Blackman /Blackman-Harris/ Blackman-Nuttal / Nuttal/Keiser -Bessel/Sine
RMS compressor	Starting threshold range: -10dBu ~ +20dBu Compression ratio range:2~32: 1 Soft and hard knee: 0~100% Attack time:0.1ms~1000ms Release time: 10ms~15000ms Gain compensation: Maximum 12dB
Peak limiter	Threshold range: -10dBu ~ +20dBu Attack time: 1ms~1000ms Release time: 10ms~3000ms
Delay	The adjustable delay time of each input channel + output channel is 452ms, Step accuracy 0.0104ms (10.4us)
FIR filter	Each input channel and output channel can import FIR filter with 48kHz sampling rate and 512 taps

Features

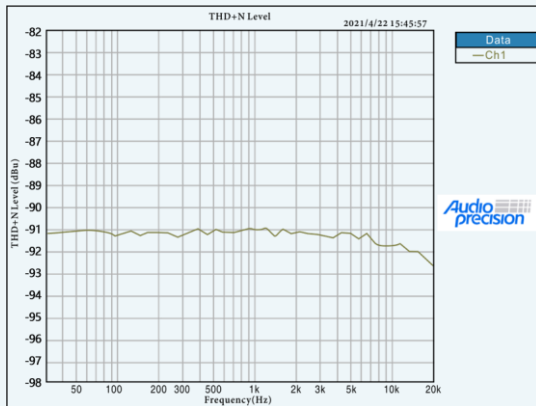
1. The whole machine operates at 48Khz sampling rate, the frequency response remains flat at 20-20KHz, the background noise is reduced to -91dbu, and the maximum input level reaches +20dbu.
2. Full matrix mixing, any input channel can be sent to the output channel, and even several non adjacent output channels can be superimposed and mixed to the physical output.
3. Each input and output channel is equipped with an RMS compressor, which can control the signal dynamics in the input channel or be used to shape the sound strength. The output end can be protected by RMS thermal power according to the RMS power value of the speaker unit.
4. Add Mir linear phase frequency division filter: the Mir linear phase frequency division filter is a new frequency division filter, which has the shape of a classical filter (lr24/48), without any phase distortion, so that the phase curve remains straight.
5. The whole machine is equipped with a standard network port, which can be directly connected to the PC through the network cable. The default DHCP automatically obtains the IP address and completes all the connections with one click.
6. The new marshalling setting can control 32 processors at the same time, and can uniformly control the gain, mute, PEQ and polarity, so as to increase the convenience of multi machine debugging.
7. The input channel is configured with a dynamic loudness booster, which can effectively improve the listening sense.

Technical

Input x Output	2x6 / 3x6 / 4x4 / 4x8
Sample rate	48kHz
Input Impedance	20KΩ
Output impedance	100Ω
A/D Dynamic range	118dB
D/A Dynamic range	118dB
Maximum input level	+20dBu
Maximum output level	+18dBu
Total harmonic distortion	≤0.003%(+4dBu 1kHz)
Frequency response	20Hz~20kHz
Crosstalk	≤-95dB
SNR	≥111dB
Noise floor	≤-91dB (A weighting)
Common mode rejection ratio	60dB
Remote control	TCP/IP、RS485
Presets	32
Size	482x44x207mm 1RU
Net/Gross weight	3.0 Kg / 3.5 Kg

Featured Functions

1. The new circuit design of the MIR-E Series has extremely low background noise, as low as -91dBu, which has reached the effect of the industry's top processors. It is not afraid of high-amplification power amplifiers, and the speakers produce lower noise in a quiet environment. Provide a more ideal amplification environment.



2. The max input is up to +20dBu, which can accept any kind of analog mixer/DJ mixer/digital mixer/professional player to output large dynamic signals without distortion.



3. Full matrix mixing, you can send any input channel to the output channel, and even mix several non-adjacent output channels to the physical output, you can create filters of any shape and type, breaking the inherent mode of traditional processors, Provide more space for professional users to play.

4. The whole series adopts TCP/IP local area network connection, which avoids the need to install various drivers and connection problems due to the diversification of Windows series and hardware. It can be directly connected to the PC through a network cable. The default DHCP automatically obtains an IP address. Open the software and automatically find the device and prompt it to connect. When multiple devices are required to be connected, they can be controlled online in a star topology through an independent switch, or connected to a wireless router to achieve wireless connection, up to 32 devices.

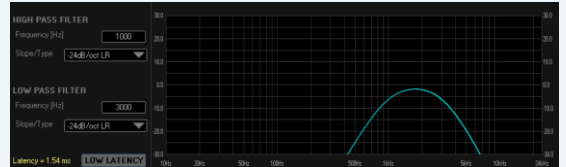


5. All series support online upgrade, you can go to Marani official website to download the latest firmware to upgrade the device, without returning to the factory to enjoy the latest features.

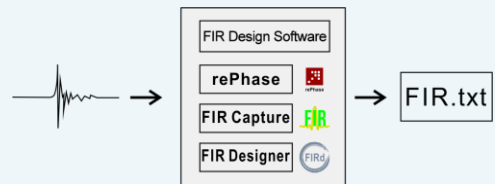
6. EQ preset/channel preset, diversified preset save/recall for better flexibility, which can provide flexible preset recall between different devices/different channels.

7. Each input and output is equipped with an RMS compressor, which can control the dynamics of the signal on the input channel, or be used to shape the sound strength;

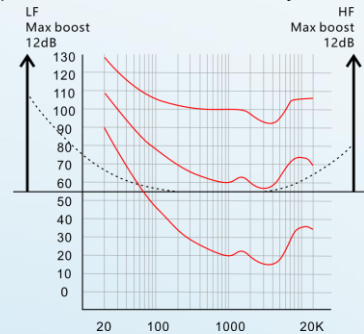
8. Added **MIR linear phase filter**: MIR (Marani Impulse Response) is a brand new linear crossover filter. It has the shape of a classic filter (LR24/48/NXF40) without any phase distortion. After crossover, the phase curve remains flat, making crossover The dot position phase is better joined and the frequency response is flatter. And the system displays and calculates the time delay in real time, which is easy to use; there is also a low-latency mode, which can reduce the time delay by up to 30%, which is suitable for various time-sensitive applications such as return speakers.



9. Equipped with FIR filter, it can reduce phase distortion and correct phase while correcting the frequency response of the unit. At the same time, the AUTO EQ algorithm specially designed and developed by MARANI® can be used to quickly measure and correct the frequency response and phase.



10. The built-in dynamic loudness booster can adaptively boost the ultra-low and high-frequency frequency bands according to the amplitude of the signal, so that the overall frequency response of the system is closer to the equal impact curve of the human ear, and it has an immediate effect on the overall listening experience of small and medium systems.



11. The new grouping settings can control up to 32 devices at the same time, and can control gain, mute, PEQ, etc. in a unified manner, increasing the convenience of multi-machine debugging of large systems.



12. The new backup/restore can quickly backup/restore the data of the whole machine, which can clone the device faster, and at the same time better save the data parameters to prevent loss.