

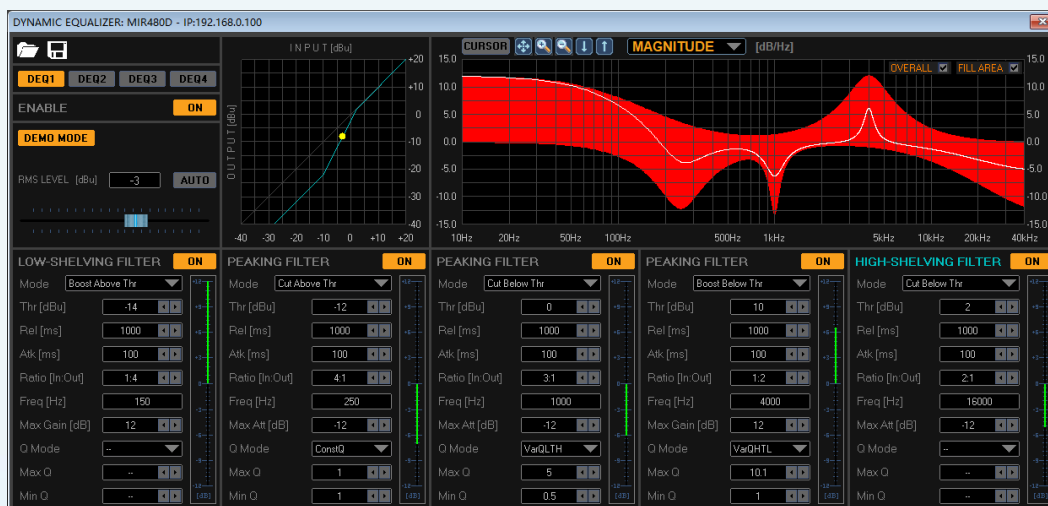


MARANI® exclusively newly developed Dynamic EQ (DEQ) and applied it to the MIR-D series.

Dynamic EQ is a Top-of-the-line and incredibly powerful feature that provides dynamic management for our audio systems, with 5 bands of dynamic EQ (Low/High Shev and 3 peak filters) on each input, supporting 4 jobs Mode (Boost/Cut Above/Below Thr). Each segment covers the full frequency range of 20-20kHz, and the peak filter also provides 3 Q-value modes (ConstQ\VarQLTH\VarQHTL) Dynamic equalization activity correction can be freely designed (step up/attenuate following the preset Q value, gradually increase/decay from small Q value to large Q value, and gradually increase/decay from large Q value to small Q value), and perform real-time detection of audio signals, Threshold trigger/release to dynamically boost/decay preset frequency bands.

Provides independent preset save/recall, fast duplication of designs and protection against loss, Demo mode analog signal activity prioritizing observation of equalizer designs.

For example, human hearing is characteristic. Dynamic EQ is designed to make the system fit the equal-loudness curve of the human ear. When Dynamic EQ is turned on, the system is dynamically optimized, so that the system can provide the best sense of hearing regardless of whether the system is at high or low level.



Featured Function

- Each input is equipped with a Dynamic EQ (DEQ) designed exclusively by MARANI® for dynamic compensation/attenuation management of the system, each DEQ provides 5-band filters, including: 3 peak filters and low/high snow filter
- The machine runs at 96kHz sampling rate, the frequency response remains flat at 20-40kHz, the background noise is as low as -94dBu, and the maximum input level reaches +20dBu.
- ut channel can be sent to the output channel, and even several non-adjacent output channels can be superimposed and mixed to the physical output.
- Each input and output channel is equipped with an RMS compressor, which can control the signal dynamics on the input channel or use it to shape the sound intensity. The newly designed extremely low distortion peak limiter can prevent sudden large dynamic signals from damaging the speaker unit and effectively guarantee the safety of the system.
- Each channel is equipped with FIR filter up to 1024 Taps.
- New MIR linear phase crossover filter: MIR linear phase filter is a new X-over filter, which has the shape of a classic filter (LR24/48) without any phase distortion and keeps the phase curve flat straight.
- The machine is equipped with a standard network port, which can be directly connected to a PC through a network cable. The default DHCP automatically obtains an IP address and completes all connections with one click.
- The new marshalling setting can control 128 processors at the same time, and can control gain, mute, PEQ and polarity uniformly, which increases the convenience of multi-machine debugging.

Technical Parameter

Input/Output	4x4 / 4x8
Sampling frequency	96kHz
Input impedance	20KΩ
Output impedance	100Ω
A/D Dynamic range	118dB
D/A Dynamic range	118dB
Max input level	+20dBu
Max output level	+18dBu
Total harmonic distortion	≤0.003%(+4dBu 1kHz)
Frequency response	20Hz~40kHz ±0.3dB
Crosstalk	≤-95dB
SNR	≥113dB (A weighting)
Noise floor	≤-94dBu (A weighting)
Common Mode Rejection Ratio	60dB
Connection Type	TCP/IP、USB、RS485
Preset	32
Size	482x44x207mm 1RU
Net/Gross weight	3.0 Kg / 3.5 Kg

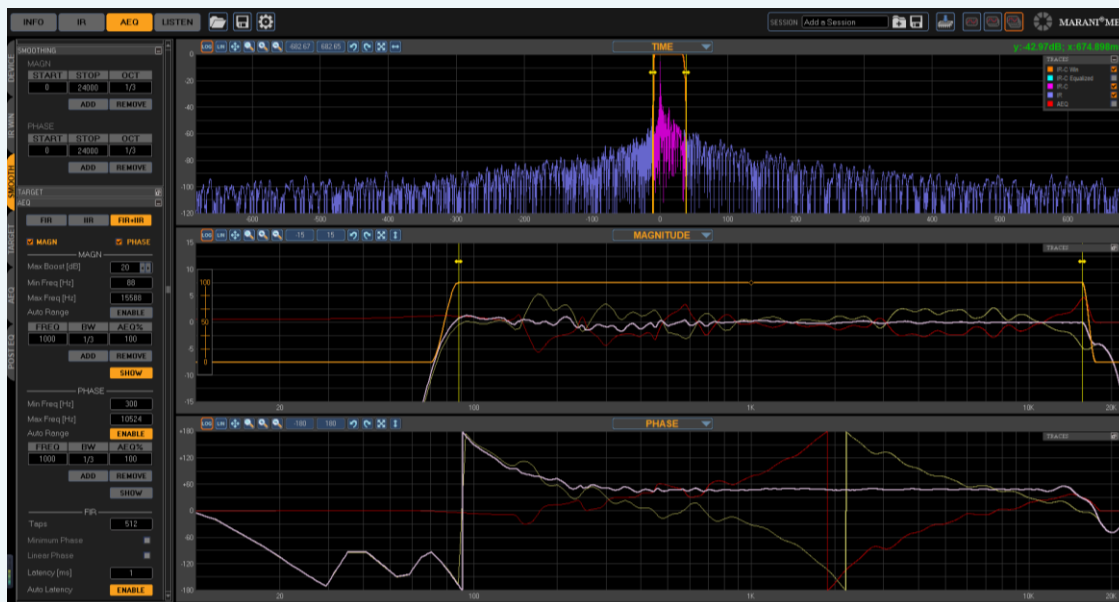


Marani® AEQ (Auto EQ) is the function of designing filter parameters with a new automatic calculation adjustment parameter exclusively designed and developed by Marani.

Auto EQ automatic equalization algorithm, one-key measurement of the system impulse response, optional automatic calculation to correct the amplitude and phase curves, or manual design of the target curve according to requirements, through MARANI's exclusive algorithm processing, generate FIR coefficients/PEQ parameters (IIR) and insert into the device.



While correcting the amplitude and frequency response, the phase problem is completely solved, and the system debugging can be completed quickly, so that the system debugging work can be done with less effort.

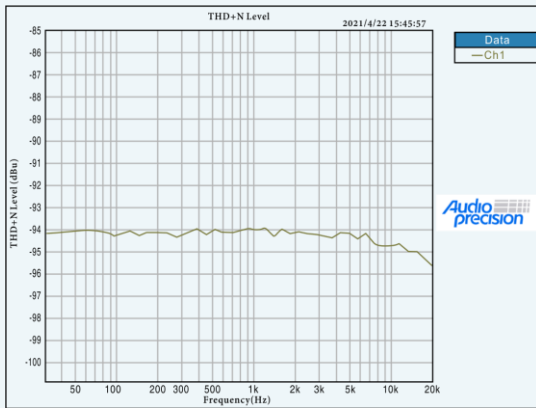


DSP Processing

Signal generator	white noise/pink noise level range: -30dBu~+10dBu	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 octave NXF horn filter slope is 40/45/50/50/55/60/65/70/75dB per octave
input & output gain	-18 dB ~ +12 dB, step 0.1dB	MIR linear phase filter	Linkwitz-Riley: 24/48dB per octave, NXF-40per octave
Noise gate	Threshold range: -80dBu~-45dBu Attack time: 1ms~1000ms; Release time: 1ms~1000ms	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 / Kaiser /Hanning / Hamming / Blackman /Blackman-Harris/ Blackman-Nuttal / Nuttal/Kaiser -Bessel/Sine
Dynamic loudness filter	Gain range: 0dB-10dB Attack speed: fast/medium/slow	RMS compresso Starting	hreshold 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:Maxi 12dB
Parametric equalizer	Input channels up to 31 optional types of PEQ output channels up to 8 optional types of PEQ	Peak limiter	hreshold range: -10dBu~ +20dBu Attack time: 1ms~1000ms; Release time: 10ms~3000ms
Optional types include	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	Hard limiter	Threshold range: -10dBu~ +18dBu
center frequency	adjustable within the frequency range of 20Hz~20kHz with a step accuracy of 1Hz	Delay	he adjustable delay time of each input + output is 452ms,Step accuracy 0.0104ms (10.4us)
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/high-pass/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	Auto EQ	Equipped
Equalizer gain range	-15dB ~ +15dB		
FIR filter	Each input channel and output channel can import FIR filter with 48kHz sampling rate and 512 taps		

Featured Functions

1. The new circuit design of the MIR-D series has extremely low background noise, as low as -94dBu, 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.

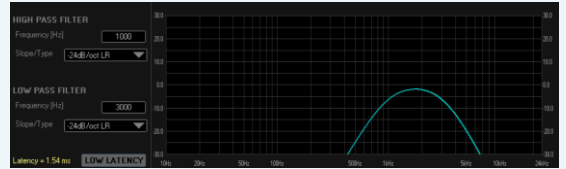


5. All series support online upgrade, you can go to Marani official website to download the latest firmware to upgrade the device, without returning to the factory to enjoy the latest features.

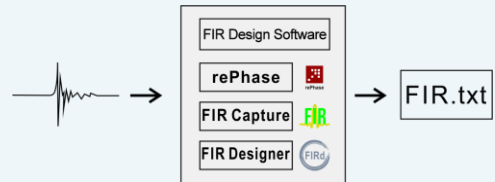
6. EQ preset/channel preset, diversified preset save/recall for better flexibility, which can provide flexible preset recall between different devices/different channels.

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; the output end can do RMS thermal power protection according to the RMS power value of the speaker unit; it is also equipped with a newly designed "zero delay" The "time" extremely low distortion hard limiter can prevent sudden large dynamic signals from damaging the speaker unit, and the correct use of multiple compressors can make the speaker emit a dynamic sound without losing safety protection, effectively guaranteeing the stability of the system.

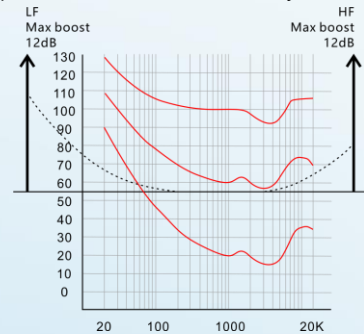
8. Added **MIR linear phase filter**: MIR (Marani Impulse Response) is a brand new linear crossover filter. It has the shape of a classic filter (LR24/48/NXF40) without any phase distortion. After crossover, the phase curve remains flat, making crossover The dot position phase is better joined and the 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.