**Public address speaker resolution**

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First, the power:

Power is divided into maximum withstand power and nominal power.

Nominal power: The nominal power is the rated power we often say, which determines the state in which the speaker can work stably for a long time.

Maximum withstand power: The maximum withstand power is the maximum power that the speaker can withstand for a short period of time. Generally 3-4 times the nominal power.

Take the OBT-511 speaker as an example, its nominal power is 20W, which means that it can work 20W for long-term stable operation. If the speaker is often working above 20W, it will be very easy to damage.

To give a simple example, when a film reaches the climax part, it often uses the shocking music effect to render the atmosphere at that time. At this time, the sound intensity emitted by the speaker will basically exceed the nominal power of the speaker, and this is exceeded. The value is limited, this limit is the maximum power of the speaker.

Through the above content, it is not difficult to see that there is no direct relationship between the power and the sound quality of the speaker. It determines the maximum sound intensity that the speaker can emit.

2. Distortion:

Distortion can be divided into intermodulation distortion, harmonic distortion and transient distortion. What we usually call distortion is harmonic distortion, which refers to the distortion caused by the higher harmonic components that the original signal does not have during the sound playback.

What really affects the quality of the speaker is transient distortion. The transient distortion is due to the fact that the speaker has a certain inertial mass. The vibration of the basin cannot keep up with the vibration of the instantaneously changing electrical signal, and the original signal and the playback tone are present. The difference. This concept is not easy to understand, we only need to remember that the distortion of ordinary multimedia speakers should be less than 0.5%, and the distortion of subwoofers should be less than 5%.

3. Sensitivity:

Sensitivity is an indicator of the efficiency of a speaker, and it has nothing to do with the sound quality of the speaker. The sensitivity of ordinary speakers is generally between 85-90dB (decibel), while that of high-end speakers is above 100dB.

The increase in sensitivity is at the expense of increased distortion, so as a high-fidelity speaker, it is necessary to reduce the sensitivity requirements for the reproduction and reproduction of the tone.

Therefore, we can't think that the sound quality of speakers with high sensitivity must be bad, and the speakers with low sensitivity must be good.

4. Frequency response:

The frequency response refers to the phenomenon that when the audio signal outputted by the constant voltage is connected to the speaker system, the sound pressure generated by the speaker increases or decreases with the change of the frequency, and the phase changes with the frequency.

This relationship between sound pressure and phase associated with frequency is called the frequency response. It has a direct relationship with the performance and price of the speaker. The smaller the value, the flatter the frequency response curve, the smaller the distortion and the higher the performance.

V. Frequency range:

The frequency range refers to the distortion between the lowest effective playback frequency and the highest effective playback frequency, which can be divided into three types: harmonic distortion, intermodulation distortion and transient distortion. What we usually call distortion is harmonic distortion, which refers to the distortion caused by the higher harmonic components that the original signal does not have during the sound playback.

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Under normal circumstances, the audio signal that people can hear is about different frequencies between 20Hz~20kHz, different waveforms, and different amplitudes. Therefore, the amplifier must have a wide enough work to complete the amplification of the audio signal. frequency band.

The frequency bandwidth between two points when an amplifier is at a specified power and the gain of the high and low ends of the frequency is reduced by 0.7 times is called the frequency response range of the amplifier. The frequency response of a better amplifier is generally between 18Hz and 20kHz.