

Monitoring – more important than many believe



Even in music, as is so often the case: “Trust is good, control is better”. The acoustical controlling option addressed here is called Monitoring (lat. monere, to monitor, to warn). Essential for stage or studio musicians, if good sound is of particular importance.

Let’s tread the boards, as the world’s a stage, and devote ourselves to live monitoring on stages. One may ask why this is necessary. Other than perhaps on very small stages, the PA – or rather guitars and drums – are usually so loud, that the singer can’t or the keyboarder barely hear themselves. In order to change the situation and to allow for control over one’s own performance, it is advisable to install a monitoring system. It is a separately managed sound system, isolated from the PA. The musicians receive a similar auditory impression over the loud speakers as the audience does, making it easier to hear themselves and to better coordinate the musical interaction.

Studio monitoring, on the other hand, has a different emphasis. It naturally deals with controlling options, but on a much more sensitive level. On stage, the priority is good musical interaction and a means to check the overall impression, while in the studio everything centers on the quality of the individual signal, in other words of the respective instrument. In this case the sound of the recording and the subsequent editing are monitored. The point is, to reproduce the respective audio signal as exact as a microphone, an amplifier or another sound generator would emit. In order to achieve this, several factors must be considered.

Of overall importance is the right choice of speakers. There’s no getting around special monitor speakers disposing of good impulse reproduction as well as low reverberation and for which a linear frequency output is essential – in other words, frequencies are neither raised nor lowered. Since one sits right in front of the speakers in the studio, they should moreover dispose of a wide emission angle and the sound properties should not alter within the working parameters of the sound technician. Equally important is the correct positioning of the speakers. If the sound should reach the listener directly, without hindrances, it is advisable to mount the speakers on tripods or on the wall. If mounted on a table or at the end of a mixer, distorted reflection could occur. The speakers should be oriented toward the listener and in this manner ideally form an equilateral triangle between the speakers and the technician.

In general, the rating of the amplifier should be larger than that of the speakers, in order to avoid distortions. Furthermore, larger amplifiers offer a higher damping factor and are able to produce precise and fast transmission of voltage peaks.

The selection of monitor speakers for stages is equally important. Similar to studio monitors, they should have a linear frequency response if possible, yet here it is more important to achieve a greater performance. One difference is demonstrated in the emission angle. As opposed to the broad studio version, a targeted emission angle is preferred on stage, as each musician uses his own speaker. A word about the design: it visibly differs from the studio speakers. A horn is used, not a dome tweeter, furthermore one side is sloped so the monitors can be laid on the floor in order to resound upward.

In-Ear monitors are being used more and more on stages, instead of speakers. These are small ear plugs with a fine earpiece, which take over the function of speakers via a wireless link. The advantages are clear. On the one hand, the musician can move freely and always receives an unaltered signal. On the other hand, technicians need to lay less cable and transport fewer speakers. Additionally, In-Ear-Monitoring protects against acoustic feedback, which could occur when, for example, a microphone again picks-up the amplified singing of an artist, which is played back over the speaker monitor.

Whichever version you choose or require, the right equipment is important so the performance isn't distorted and as a result, inferior.

Our product recommendation:

OMNITRONIC IEM-500 In-ear monitoring set

The IEM-500 is a wireless in-ear monitoring system with excellent sound and full user comfort. 16 frequencies in the low-interference UHF band can be adjusted. Due to a limiter in the transmitter input, the ear is completely protected even in case of extreme clipping. The system can be operated in mono and stereo mode and is thus qualified for many applications such as live music, theater use and voice transmission. The multifunctional LCD screen indicates all operation modes. The transmitter features a headphones output with adjustable output level in order to monitor the signal sent to the musician at the FOH. The set comes fully equipped with transmitter, receiver, headphones and 483 mm mounting kit (19").

Video: http://www.youtube.com/watch?v=jt9wNSX9_uA