Advancing the Room: Remote Antennas

Whether you are planning an event, a permanent installation, or a major tour date, the best way to ensure that your wireless systems provide great performances is by properly "Advancing the Room." A tried and true method in the professional AV world, advancing the room is the practice of determining the best deployment profile of your wireless systems given the space where the gear will be operating. It is important to plan out your deployment whether your event calls for many wireless channels, or just one. This guide outlines the steps involved in advancing the room so that you and your customers get the full performance benefits of Line 6 digital wireless systems.

Line 6 XD-V75

STEP 2: REMOTE ANTENNAS

In order to maintain optimal antenna coverage and the best possible line of sight, it is sometimes necessary to mount the antennas remotely from the digital wireless receiver chassis. Line 6 offers two remote antenna options, P180 directional and P360 omni-directional.

Line 6 P180
Directional Antenna

Line 6 P360
Omni Antenna

Both the P180 and P360 have built-in amplifiers and are switchable for +3dB, +12dB or +23dB of gain, which correspond to approximately 16', 65' and 124' makeup gains for LM-195 cable. Greater cable distances can also be achieved with low loss cable such as LMR-400 (6.8dB per 100 feet) or 9913 (7.7dB per 100 feet).

Directional antennas are recommended for precision reception of one or more transmitters on a stage. Omni antennas are recommended for general reception of transmitters in a wider space such as audience mics.

ANTENNA ORIENTATION

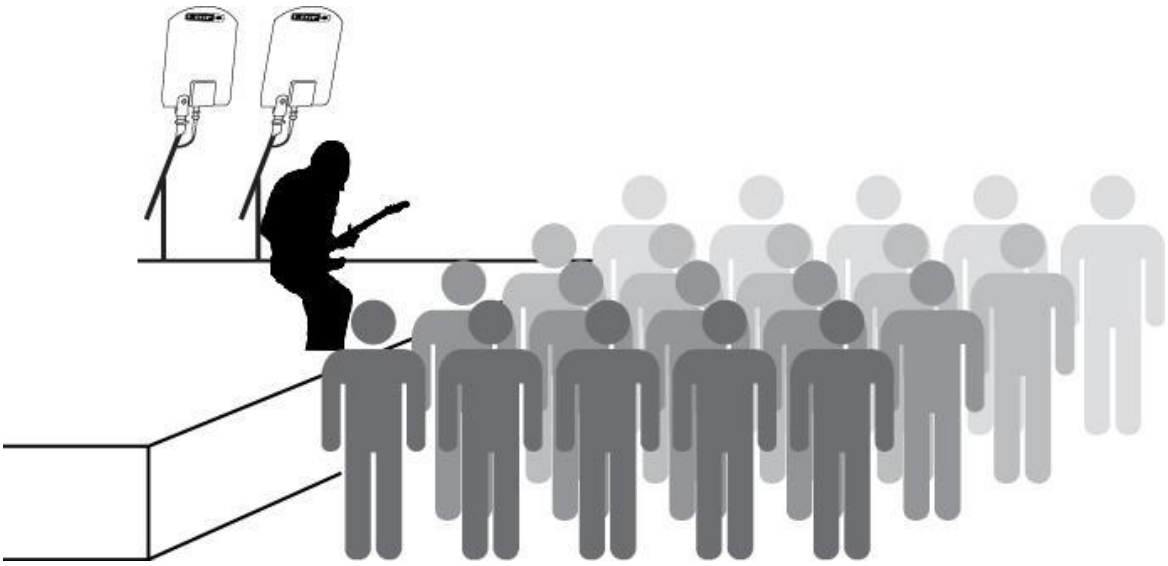
During setup, it is best to P180 directional antennas on boom mic stands angle the paddles down toward the performer and the area that the performer tends to move around in. Try to keep the antennas reasonably close together and overlap their coverage patterns as much as possible for redundancy and also to take advantage of the system's time and space diversity, but they must be at least 5 inches apart. The following sections outline typical deployment examples.

INSTRUMENT TRANSMITTER COVERAGE

To cover a single transmitter used by a guitar player, the two remote antennas should be located at the edge of the stage as close to the performer as possible, pointed downward toward the guitar player's bodypack, and angled slightly outward from each other in order to cover other parts of the stage that the performer may use.

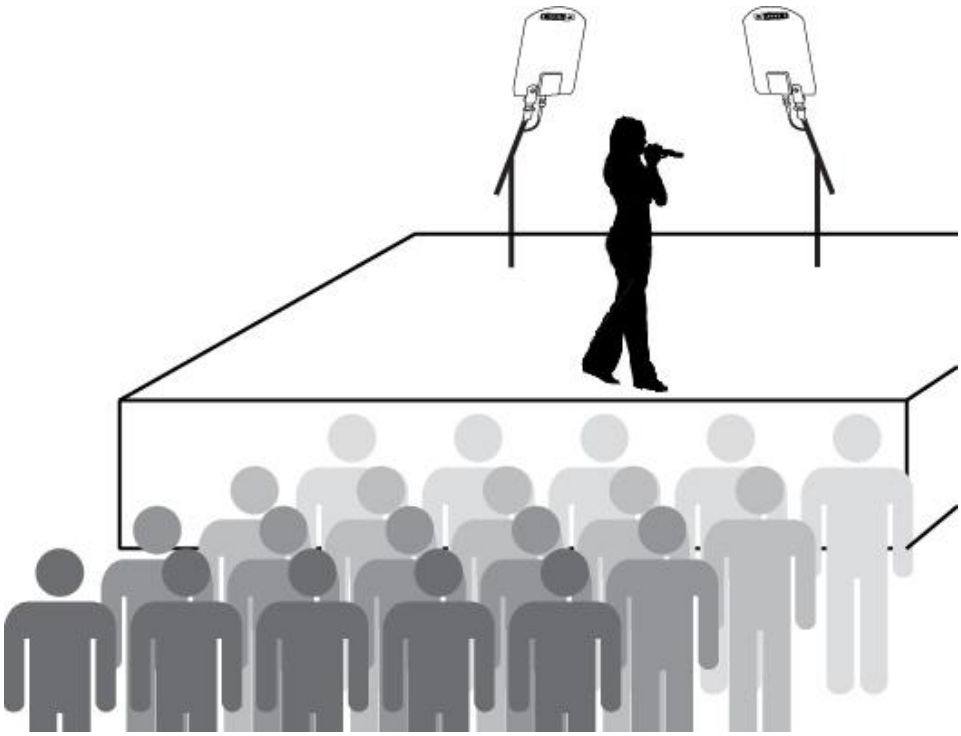
To the right is a side view of the mounted remote antennas pointed toward the guitar player.

Below is a stage view that shows the orientation of the remote antennas to the performer.



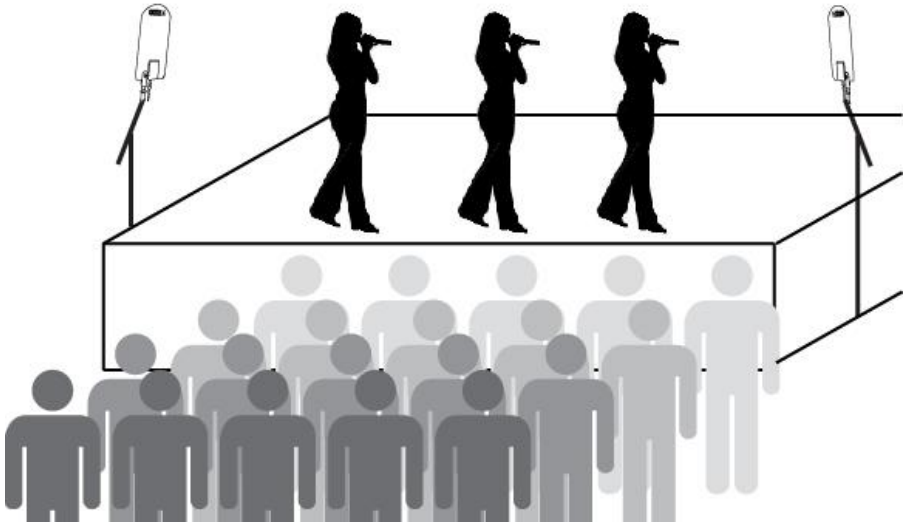
MICROPHONE TRANSMITTER COVERAGE

To cover a single microphone transmitter used by the lead vocalist, the two remote antennas could be located on either side of the drum set, pointed downward toward the singer's microphone, and angled slightly inward in order to cover the main singer position as well as the other parts of the stage that the performer may use.



MULTIPLE PERFORMER COVERAGE

Use remote antennas together with the XD-AD8 antenna distribution system to cover multiple performers. The two remote antennas could be located on either side of the stage pointed toward the performers.

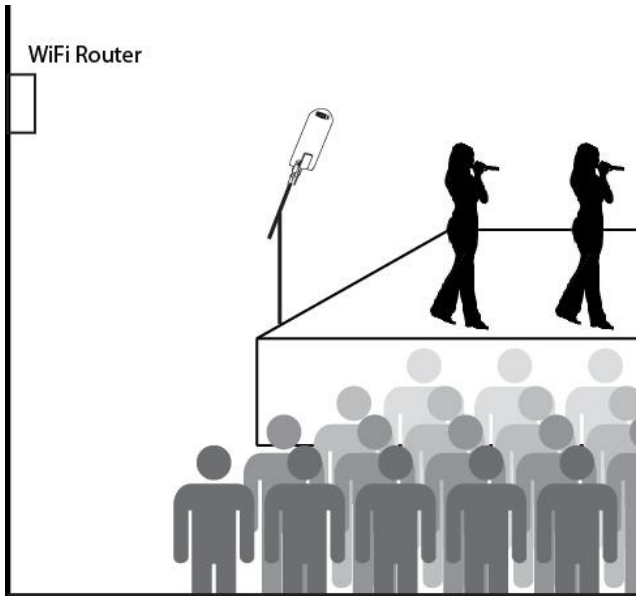


The above illustrations are simply to offer general recommendations. In all cases it is recommended to walk your intended coverage area and check performance. Small adjustments can yield big improvements. Remember, antenna patterns should be selected with the thought of including or rejecting pickup of a selected area.

ANTENNA HEIGHT AND ANGLE

Your remote antennas should be placed at least three feet above the floor in order to minimize RF reflections, and ideally the antennas should be raised just over the heads of your audience, but not too high overhead or up near the ceiling. Antennas placed too high up tend to pick up more undesired signals while increasing the distance from the performers you are trying to cover. Proper antenna height will maximize the range of your wireless system.

The overall goal is to place the antennas as close to the performers as possible while also being as far away from any interference sources as you can. For example: if there is a Wi-Fi router mounted to a wall or ceiling in the same room as the performance space, point the directional antenna away from the Wi-Fi router and toward the performer.



ANTENNA DISTRIBUTION SYSTEM

Line 6 also offers the XD-AD8 antenna distribution system. The system allows multiple wireless receivers to share the same pair of antennas, giving greater flexibility in the configuration of multi-wireless installations. With rack-mounted

wireless systems, setup is easier and the wiring connections are uncluttered, with the added convenience of powering the receivers from the AD8.

NEXT STEP: OPERATING SUCCESSFULLY IN WIFI SPACES