



SLS Guide to Line Array Testing Procedures

1. **Confirm that the array(s) are flown in the exact position that was used to optimize the array articulation using the LASS software.**
 - a. If the array is off from the calculated position, room coverage errors can result.
 - i. If the array is off from the calculated array placement, re-calculate the array articulation with the new coordinate values using LASS.
2. **Confirm array(s) impedance at amplifiers**
 - a. Calculate the proper impedance for a parallel wiring or a series/parallel wiring scheme.
 - i. Use the Technical Data Sheets to obtain the individual driver information
 - b. If cable lengths to the arrays are dissimilar, slightly different readings will be obtained for each line array position
 - c. Look for similar impedances across all wiring schemes and common driver types
 - i. The readings will not necessarily be the exact calculated impedance since the meter will be measuring DC resistance, not a frequency applicable AC resistance.
 - ii. If the impedance measurements are taken with the speakers cables connected to the amplifiers, make sure the amplifiers are turned off.
3. **Confirm that all similar drivers in the array(s) are producing sound at an equal level**
 - a. Connect all speaker lines to the appropriate amplifier(s)
 - b. Input the suggested DSP processor settings for each speaker as required
 - c. Play quiet pink noise and check operation for each driver by ear or portable SPL meter
 - i. A lift may be required as one should be very close to the array to individually check each driver
4. **Confirm that all drivers in the arrays are in proper polarity**
 - a. Use a polarity measurement system and check each driver for proper polarity
 - i. A lift may be required as one should be very close to each driver to accurately check phase
 - ii. Cross reference the DSP polarity settings as to whether the drivers should test for positive or negative polarity.
5. **Average corrective room EQ measurements at different positions in the room**
 - a. Line arrays should not be equalized for the room without averaging the response of at least (5) different positions
 - i. Take measurements in a sampling area of each coverage zone and average them before making any corrective EQ.
 - b. Ground plane measurements are suggested for frequencies below 150Hz and for integrating subwoofers into the main PA.
 - c. In a properly designed system, typically only a few filters will be required for room equalization.
 - i. These filters would be in addition to the factory recommended settings.
6. **Setup the system limiters**
 - a. Use the SLS application note "Setting System Limiters" for reference
 - i. If using a series/parallel wiring, recalculate the required voltage settings for proper protection.
 1. The application support specialists at SLS can assist with the series/parallel voltage calculation if requested.