

NOISE TESTING

Noise testing is performed for the following reasons:

- To verify the ability of equipment to withstand its external acoustic environment without unacceptable reduction in its functionality and/or structural integrity.
- To measure the noise generated by the equipment.

External Noise Environment

Equipment may be subjected to an external generated noise environment when the unit is located in areas such as adjacent to jet exhausts.

Measurement of Self-generated Noise

To determine the noise characteristics of equipment measurement of the acoustic output is performed. The noise generated by equipment is of two types:

- *Airborne noise* is that which is produced by a source that radiates directly into the air. The airborne sound waves are transmitted by pressure fluctuations in the air.
- *Structureborne noise* occurs when items are set into vibratory motion by equipment noise sources. The vibrational energy is consequently transmitted throughout the structure where it will force various surfaces to vibrate. The vibrating surfaces in turn transmit their motion to the air causing pressure fluctuations that are then propagated as airborne noise. However, during testing usually only the equipment vibration is measured.