

**Model 242E**  
**Linear X-Y Single Horn**  
**Target Motion Simulator (TMS)**

**STANDARD FEATURES**

- Position Accuracy:  $\pm 0.5$  inch
- Maximum Velocity: 20 inch/sec
- Axis Displacement:  $\pm 60$  inch
- Rack-mounted AERO 4000 Digital Controller
  - Front panel display of status and data
  - Local and remote operation
  - Trapezoidal velocity profiles (in rate mode) with programmable velocity and acceleration
  - Sinusoidal motion generator, with programmable amplitude and frequency
  - Profile mode for position, velocity, and flight (PVA) commands
  - Programmable analog inputs and outputs

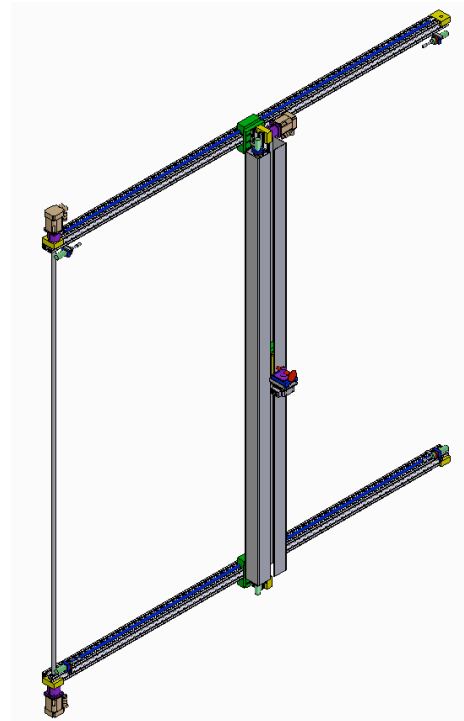
**DESCRIPTION**

Ideal Aerosmith will design, fabricate, and deliver a new Single Horn X-Y Target Motion Simulator (TMS) System and install, integrate, and demonstrate performance by testing at the customers' facility. The TMS described in this datasheet is based on off-the-shelf components and it is controlled by a field proven Ideal Aerosmith Aero 4000 controller.

The system consists of a small payload platform which rides on an X-Y TMS. The X- and Y-axes have a  $\pm 60$ -inch useful range of motion and the TMS resides at one end of an anechoic chamber. An additional positioning system or flight motion simulator resides at the opposite end of the anechoic chamber. The center of the X- and Y-axes corresponds to the centerline of the positioner or FMS.

The X-Y transport will use off-the-shelf linear actuator sets for the X- and Y- axes. The specific characteristics that make these actuators so attractive include:

- Good repeatability and accuracy for a belt-type drive
- High-speed capability
- Designed to accommodate high acceleration
- The belt drive reduces RF reflections



The X-axis will use two drive motors, located at the top and bottom of the X-rail sections, as shown in the conceptual layout drawing. A "torque tube" couples the two motors together, to help balance the load and assure synchronous motion of the top and bottom drive belts.

The Y-axis uses a single drive motor, and includes a fiberglass shroud that surrounds the vertical extrusion and metal elements as much as possible.

**OPTIONS**

- Custom target payload interfaces
- SCRAMNet or VMIC shared-memory interfaces
- Various wire-wrap configurations for cables
- Custom dynamic performance characteristics

**Contact Ideal Aerosmith to request a Specification Document that is customized to meet specific test requirements.**

(Rev - A)