

H/V ELECTRIC FIELD GENERATOR MODEL 5502



MODEL 5502

- Generates Vertical or Horizontal Electric Field
- Generates Fields up to 200 v/m in the 10 kHz to 30 MHz Frequency Range
- Fully Adjustable Height and Separation of Main Conductors
- Large Immunity Volume
- Fully Supported by the Structure of the Semi-Anechoic Chamber
- Fully Remote Controllable

ETS-Lindgren's Model 5502 Horizontal/Vertical (H/V) Electric Field Generator is a two conductor transmission line system that generates a Transverse Electromagnetic wave (TEM) at low frequencies. The Model 5502 is also known as an E/H field generator for its ability to excite a vertical electric or magnetic field over the conductive ground of the chamber or outdoor site.

The ETS-Lindgren family of E-field generators are highly customizable to handle different maximum continuous RF power levels, and accommodate test devices of varying sizes.

The distinguishing feature of the 5502 model is its remotely controllable height adjustment and in-ceiling storage, where the structure can be nestled in the ceiling absorbers without affecting the NSA performance of the chamber.

Either Horizontal or Vertical Field Generation

The Model 5502 has two modes of operation, a switch located in the balun/feed box to change between modes. The E-Mode (or vertical electric field generation) occurs when the two elements are driven together against the ground of the chamber. A vertical electric field is generated between the two elements and the ground. The H-Mode (or horizontal electric field generation) occurs when the elements are isolated from ground by means of an isolating transformer. One element is then driven against the other elements. A horizontal electric field and a vertical magnetic field is created between the two elements simultaneously.

Frequency Range

The Model 5502 has a frequency range of 10 kHz to 30 MHz when operating on the E-Mode. The H-Mode is limited to 100 kHz to 30 MHz with a band break at 1.5 MHz. The frequency range makes the Model 5502 ideal for ISO-11451-2 and SAE J551/11. The Model 5502 can also be used for MIL-STD 461 testing of military vehicles.

Adjustable Height and Separation

The Model 5502 allows for the elements to be located between 1 m to 6 m (3.28 ft to 19.69 ft) over the ground. When not in use, the elements are disconnected and stored (with the balun and load boxes) outside the chamber. The non-metallic frame can then be raised and stored nested in the ceiling absorber. Element to element separation can be adjusted from 1 m to 4.5 m (3.28 ft to 14.76 ft).

Large Immunity Volume

The Model 5502 provides a large test volume for immunity testing at low frequencies (under 30 MHz), provided the TEM mode is supported by the structure. At the upper limit of its frequency range, the element separation and height may require adjustment to improve the performance. Internal chamber resonances can also affect the performance. Ferrite or hybrid absorber lined chambers are preferred, but not required. The length and width of the 5502 can be customized if one of the standard sizes is not available.

Chamber Supported

The two conductors are supported by a non-metallic frame, suspended from the ceiling of the chamber. Shielded penetrations of up to 18 GHz attach the supporting cables to the pulley and motor system mounted on top of the chamber.

When installing the unit inside an existing chamber, ETS-Lindgren engineers will examine the chamber drawings to ensure proper support of the frame and pulley/motor system.

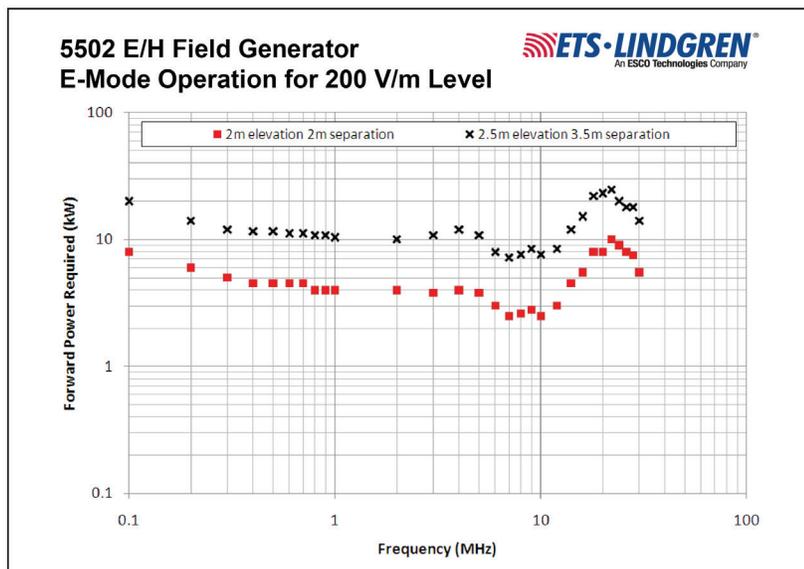
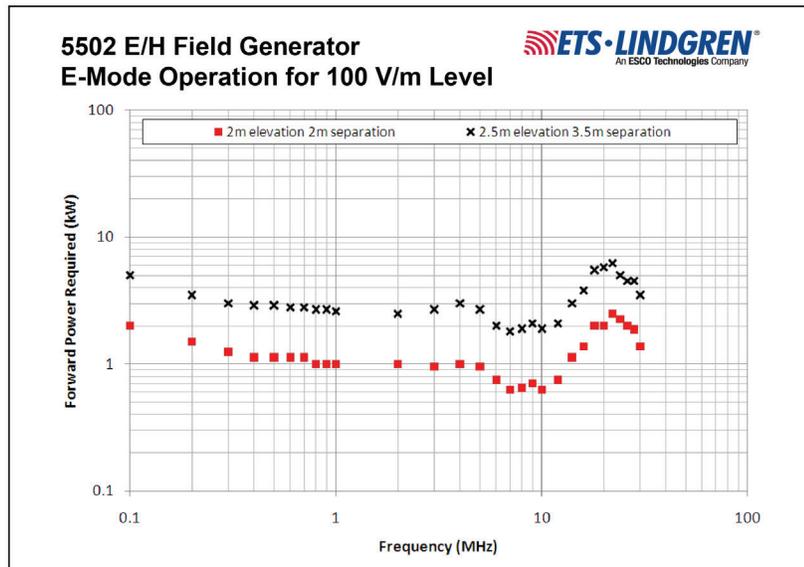
Penetrations and grounding sockets must be installed in the chamber to support the operation of the unit.

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Technical Specifications (Base Model)

Electrical	
Frequency E Mode	10 kHz to 30 MHz
Frequency H Mode	100 kHz to 300 MHz
Impedance (Nominal)	50, (H), <150 (E)
Maximum RF Input Power	10 kW
RF Connector	1-5/8" EIA
VSWR	2:1 Typical, 4:1 Maximum
Physical	
Frame Width	7.6 m (24.93 ft)
Frame Length	5.58 m (18.31 ft)
Element Length	Standard: 6 m (19.7 ft) Optional: 8 m (26.2 ft)
Element Diameter	30.5 cm (12.01 in)
Weight	1,134 kg (2500.0 lb)

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