ANTENNA SYSTEM MODEL 3170 INTELL-I-TUNE™ ANTENNA SOLUTION

MODEL 3170

- **30 MHz to 200 MHz Frequency Range**
- **Maintains Low SWR (<3:1, Typically 1.5:1) Across Frequency Range**
- **Achieves 200 V/m at 1 m from the Fundamental for MIL-STD-461G (and H Draft) RS103 Compliance**
- **Auto-tunes Each Element for Optimal Frequency and Polarization Performance (with TILE!™ Software)**
- **Reduces Amplifier Load and Harmonic Emissions by 25+ dB**
- **Enables Fully Automated, Hands-free Tuning with Stored Profiles (with TILE! Software)**
- **Boosts Test Speed, Accuracy, and Repeatability**
- **Supports DO-160 and ISO 11452-2 Test Configurations**

ETS-Lindgren's Model 3170 Intell-I-Tune Antenna Solution delivers true MIL-STD-461G (and 461H Draft) RS103 compliance across the 30 MHz to 200 MHz range, achieving 200 V/m at 1 meter from the fundamental frequency, not harmonics. The system also supports DO-160 and ISO 11452-2 radiated immunity test configurations, making it a versatile tool for high-power testing in defense, aerospace, and select automotive applications.

Unlike traditional fixed-length antennas, which suffer from narrow-band performance and require power-hungry amplifiers, the Intell-I-Tune system features a patented, motorized auto-tuning mechanism. Stepper motors and proprietary algorithms dynamically adjust each antenna element to the optimal length for every frequency and polarization. This ensures true resonance across the frequency range and maintains a low standing wave ratio, less than 3:1 (typically 1.5:1). The result is a clean, efficient signal path that significantly reduces amplifier strain and improves overall system performance.

One of the most critical advantages of the Intell-I-Tune system is its ability to reduce harmonic emissions by more than 25 dB, providing a cleaner signal and eliminating the need to overdrive amplifiers to meet field strength requirements. Because it operates from the fundamental frequency, the system supports lower power amplifiers while still achieving full compliance, which reduces amplifier cost and system complexity.

When integrated with TILE! Software, the tuning control system allows for fully automated, hands-free operation. Once frequency profiles are stored, the antenna automatically adjusts to the correct configuration with no technician intervention required for tuning. This smart automation increases test throughput, minimizes human error, and ensures repeatable, consistent results. Whether used for single-tone frequencies or swept-band testing, the Intell-I-Tune significantly improves efficiency and test lab productivity.

Designed specifically for facilities performing high-field, high-accuracy radiated immunity testing, the Model 3170 is ideal for government and contractor-run military EMC labs, aerospace OEMs and Tier 1 suppliers, commercial EMC test houses, and select industrial electronics environments. Its ability to meet the most demanding test standards while reducing power requirements and technician oversight makes it a standout solution for modern EMC testing challenges.

Note: For vertical polarization, the Model 3170 requires 3.5 m (11.5 ft m) of vertical clearance from the chamber floor to the absorber tip, with at least 30 cm (12 in) spacing from chamber walls or ferrite surfaces to ensure proper operation.

Standard Configuration

- 3170 Antenna
- Mini-Bicon Calibration Antenna
- Intell-I-Tune Analytics Tower
- Non-metallic Tilting Antenna Stand

Options

- TILE! Software (Required)

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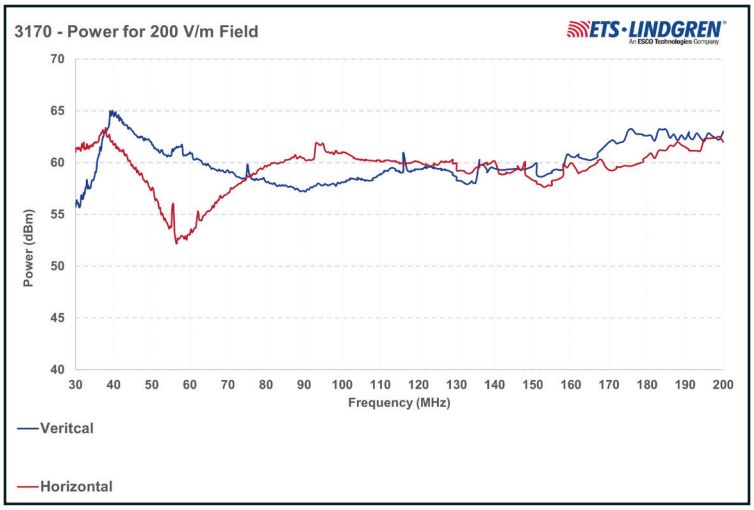
Technical Specifications

Electrical	
Frequency Minimum	30 MHz
Frequency Maximum	200 MHz
Impedance (Nominal)	50 Ω
Maximum Continuous Power	2500 W
Peak Power	3500 W
Pattern Type	Directed Dipole
Polarization	Single (Vertical or Horizontal)
VSWR (Average)	1.5:1
Connectors	7/16" DIN for RF and DB25 for I/O Control
Physical	
Antenna Height	12.5 cm (4.9 in)
Antenna Width	276.9 cm (109.1 in)
Antenna Depth	101.7 cm (40.0 in)
Antenna Weight	15.9 kg (35.0 lb)



Graph represents actual data taken in ETS-Lindgren's FACT™ Chamber located in Cedar Park, Texas. Other chambers will have different power requirements. These power requirements are typically lower for MIL-STD chambers.

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