

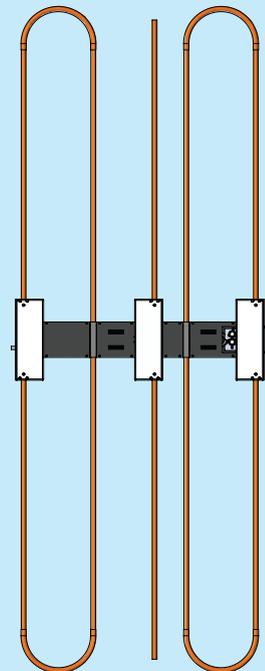


## THE NEW STANDARD

Finally, the solution to MIL-STD-461G radiated susceptibility testing 30-200 MHz

# PROBLEM SOLVED

The SteppIR SY3-EMC Auto-tuned Yagi system is the solution to MIL-STD-461G and RS-103 for radiated susceptibility testing over the 30-200 MHz frequency range – making it the only system in the world that can legitimately claim to reach or exceed the required 200 V/m @1 Meter, at the fundamental frequency.



## 200 V/m

### THE WAY IT WAS MEANT TO BE



The SY3-EMC has been tested at all required frequencies between 30 and 200 MHz in both horizontal and vertical positions. Typical results in a fully anechoic test chamber in horizontal configuration\*:

Frequency MHz	Required Field Strength V/m	Averaged Field Strength V/m	Fwd Pwr dBm	VSWR
32.49	200	216.30	57.30	1.20
47.47	200	204.80	55.00	1.30
57.66	200	202.40	56.70	1.60
64.99	200	202.60	58.60	1.20
67.64	200	201.20	58.60	1.10
75.11	200	202.00	59.10	1.30
85.08	200	201.00	60.50	1.30
99.80	200	204.00	60.70	1.40
112.49	200	201.80	59.80	1.50
122.45	200	201.10	59.10	1.20
135.29	200	218.40	60.40	1.20
150.23	200	211.20	59.70	1.50
162.71	200	205.30	60.00	1.70
177.11	200	200.00	60.20	1.20
185.24	200	211.70	60.20	1.70
197.65	200	200.90	61.80	1.50

\*Results will vary when considering test room size/shape, test position and the type of absorber being utilized.

## SAY GOODBYE TO HARMONICS

The ultra-low SWR (1.5:1 typical) allows for reduced input power from the amplifier, resulting in much less harmonic radiation emitting from the amplifier. And due to its High-Q design, the harmonic radiation is greatly reduced – typical 2nd harmonic radiation is reduced by 25 dB or more. This ensures that the E-Field sensor is indicating the field from the fundamental frequency – NOT from the harmonics.

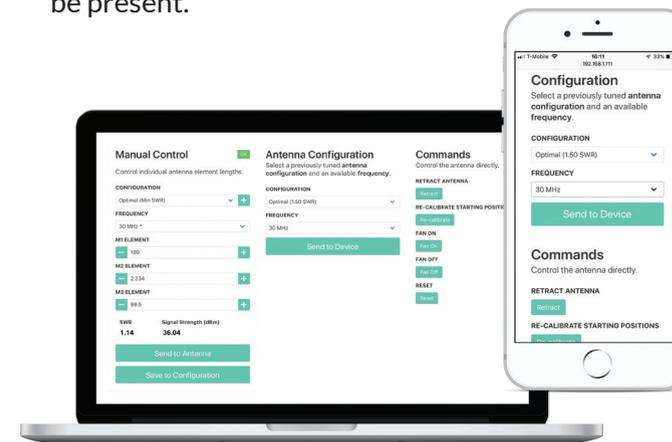
HARMONIC REDUCTION SAMPLE:

Frequency MHz	2nd Harmonic dBm	3rd Harmonic dBm	4th Harmonic dBm
30.00	-44.97	-54.84	-71.17
49.90	-58.43	-53.79	-82.44
70.39	-43.91	-50.75	-51.24
80.94	-41.07	-46.19	-46.13
110.28	-42.92	-46.43	-46.21
128.07	-42.89	-42.70	-42.77
145.08	-43.01	-43.15	-42.89
165.16	-47.73	-48.30	-47.86
192.78	-49.17	-49.05	-48.35

\*test was conducted in fully anechoic EMC chamber

## A USER INTERFACE DESIGNED FOR RESULTS

The patent-pending OptimizIR-EMC™ auto-tune system makes it possible to effortlessly tune the antenna to the exact length required at any given frequency – automatically. The OptimizIR-EMC tuning system is turnkey in design, meaning there is no need for additional equipment during the tune process – the tuning procedure is fast, highly accurate and does not require that an EMC technician be present.



The touchscreen user interface is compatible for use with PC/MAC computers and iPhone/Android devices. API Documentation is available for interfacing of the OptimizIR-EMC with popular industry/proprietary software systems



# SY3-EMC

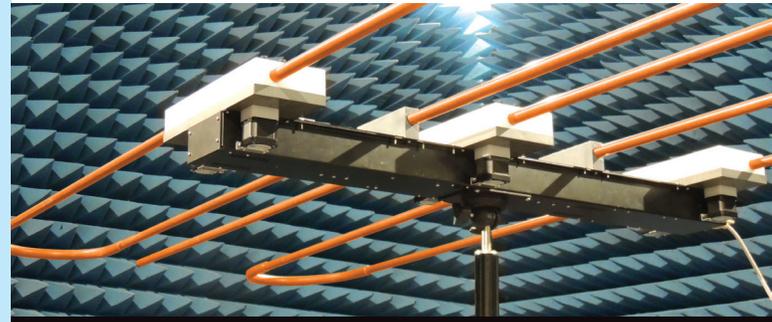
**THE SY3-EMC IS A TUNABLE ANTENNA SYSTEM THAT ALLOWS PRECISE CONTROL OF EACH INDIVIDUAL ELEMENT LENGTH.**

This allows for very broad frequency coverage with a single antenna while maintaining ideal performance characteristics. The ability to mechanically adjust the antenna also allows for operation in less-than-ideal locations such as EMC chambers where room effects significantly detune antennas in the 30-200 MHz range. The SY3-EMC Yagi incorporates a patented fold-back technique that reduces the physical size of the antenna while minimally decreasing performance (typical 0.3 dB loss when compared to a full-size dipole). The conductor of the antenna is located inside non-metallic tubular support structures – shielding the high voltages at the tips away from structural surfaces, thus minimizing E-Field pattern distortion and maintaining a very high return loss.

HOW IT WORKS

*“Based upon the test results the SteppIR SY3-EMC Yagi has a very clear advantage over a the biconical antenna when used as a radiated RF susceptibility transmit antenna over the 30 – 200 MHz frequency range.”*

– Donald Jones, Lab Manager, Sr. EMC Engineer



## WHAT'S INCLUDED?

**SY3-EMC Mechanically adjustable Yagi**

**OptimizIR-EMC analytics tower**

**IR-7K Antenna/Probe**

**Optional: 09-0010-EMC non-metallic tilting antenna stand**

 **steppIR EMC**

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