

AMATEUR RADIO FACT SHEET / DISCUSSION POINTS

TOPIC: EOC HF Antenna Performance

Objective Comparison: EOC HF antenna versus KX4Z home antenna, May 2016.

EOC HF ANTENNA:	Vertical Jetstream JVT-680, 24-foot antenna, 125 watt
KX4Z personal antenna	Sloping dipole non resonant, from approximately 45 feet to approximately 15 feet, fed by manual antenna tuner. 100 watt transmitter.
KX4Z WINLINK antenna	Inverted vee, non resonant, with 2 traps, fed by automated LDG antenna tuner. 100 watt transmitter.

EOC MEASUREMENTS:

Attempt connection 7104 kHz to KX4Z (15 miles)	Unsuccessful	Possibly due to skip zone effect.
Attempt connection 7104 kHz to N0IA (Deland)	Unsuccessful	Should have worked.
Attempt connection 14074.9 kHz to N0IA	Unsuccessful	Might have skipped over.
Attempt connection to AJ4GU (near Atlanta GA) 7089.5 kHz	Unsuccessful	Should have worked
Listening on 40 meters	Only heard 3 or 4 stations	Should have heard many more
Listening on 20 meters	Only heard 3 or 4 stations	Should have heard many more

Note that this was done during daylight, and 80 meters would have had no receivable activity so it wasn't tested.

Went back to KX4Z and repeated:

Attempted connection to AJ4GU (near Atlanta) on 7089.5 kHz	Immediate connection, and downloaded 2 emails. His signal was 2 S units above background, roughly 10 db S/N ratio.	The expected success.
Attempted connection to N0IA on 7104kHz.	Unable to connect but because of SO MANY OTHER STATIONS audible on that frequency (it is a highly used frequency)	A normal result
Listening up and down the 40 meter band.	Dozens and dozens of stations --- 30 or so audible.	The expected outcome.

CONCLUSIONS

- EOC HF antenna many dB inferior to simple home dipole, hears only 10% of stations
- Greatly reduced ability to make necessary connections in adverse condntions.
- Disability possibly 10-20 dB
- Engineering review explains problems.