

Engineering STA Request

WFNI(AM) – Facility ID No. 19521

Preparer of Engineering STA request:

Bruce Bellamy
Consulting Engineer
Munn-Reese
PO Box 220
Coldwater, MI 49345
517.278.7339
bruce@munn-reese.com

The applicant requests Special Temporary authority to operate WFNI(AM) at reduced power from an alternate site utilizing a rooftop antenna system.

Details:

Coordinates – 39-46-04N, 86 09 31.6W (NAD83)

Antenna System – Information Station Specialists HPR.0990 (see attached specifications)

Power – 200 watts for both Daytime and Nighttime

The measured antenna resistance is 12.2 ohms -j68 giving an operating current of 4.04 amperes. The antenna efficiency at 1070 kHz is 109.5 mv/m/km. A map is included showing the 0.5 mv/m contours of the licensed and proposed STA facilities to demonstrate that the STA facility contour does not extend beyond the licensed contour.

The antenna system will be installed per the manufacturers recommendations on a roof top penthouse. The following RF Radiation statement has been provided by the licensee:

Emmis Communications WFNI Indianapolis – Antenna Access Control

The antenna is mounted on a steel pipe on the roof of the elevator penthouse structure atop our studio building. The only access to this area is via a set of stairs up to a normally locked roof hatch door. Access to these stairs is through a lower stairwell not normally used by station employees.

The antenna will be surrounded by a 10' by 10' by 4' high protective fence constructed of 2" PVC pipe and covered with plastic heavy duty safety fencing. RF hazard warning signs will be posted around the fence, at the base of the access stairs, and inside the roof access hatch.

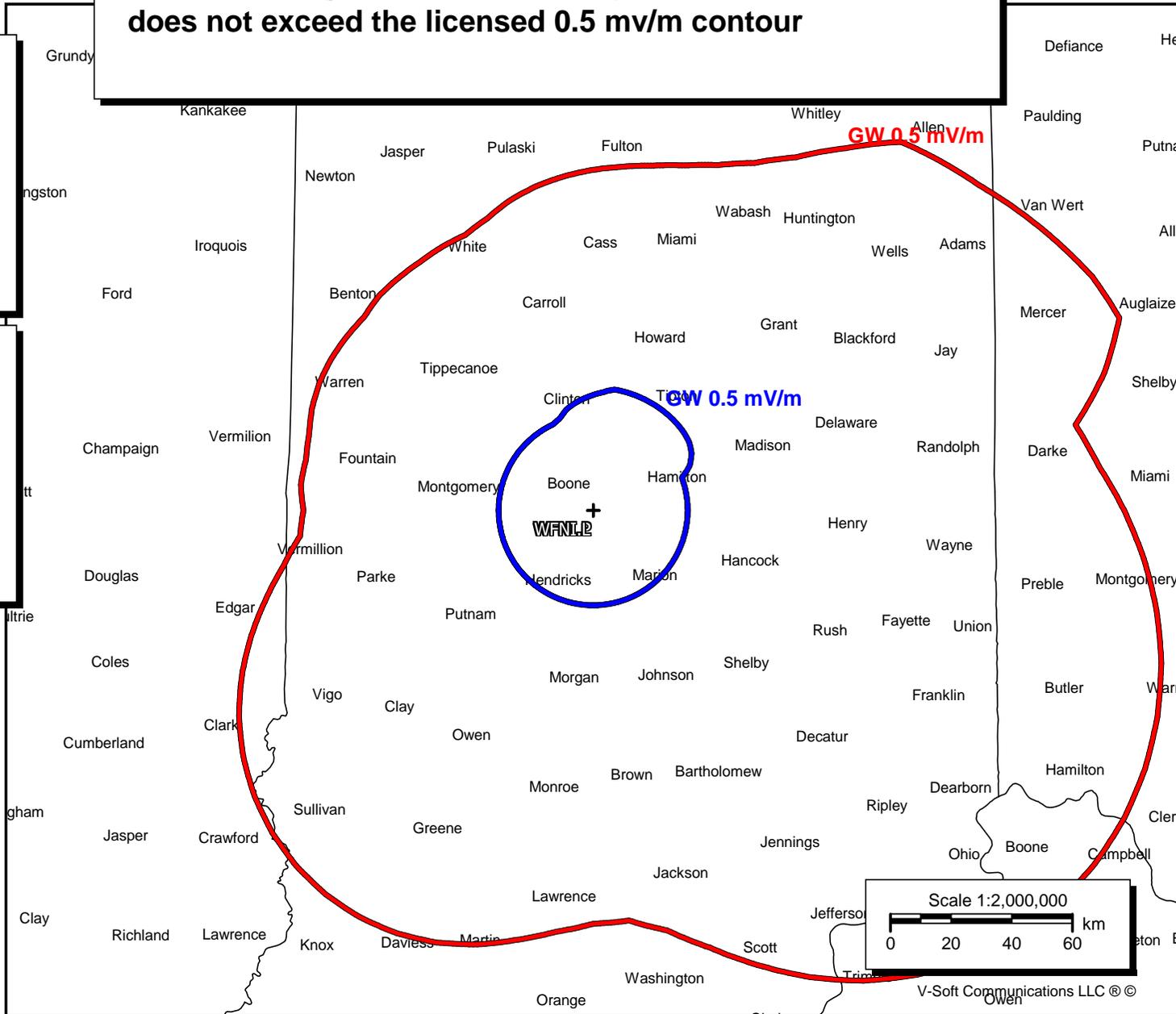
**WFNI - Licensed and Proposed STA
 Demonstrating that the STA facility 0.5 mv/m contour
 does not exceed the licensed 0.5 mv/m contour**

WFNI.L

Freq: 1070 kHz
 Class: B
 Latitude: 39-57-21 N
 Longitude: 086-21-30 W
 Power: 50 kW
 RMS: 2084.1 mV/m @1km
 # Towers: 4
 # Augs: 7

WFNI.P

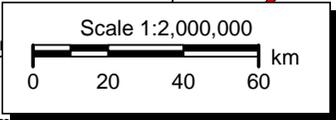
Freq: 1070 kHz
 Class: B
 Latitude: 39-57-21 N
 Longitude: 086-21-30 W
 Power: 0.2 kW
 RMS: 109.51 mV/m @1km
 # Towers: 1
 # Augs: 0



GW 0.5 mV/m

GW 0.5 mV/m

WFNI.L



V-Soft Communications LLC ©

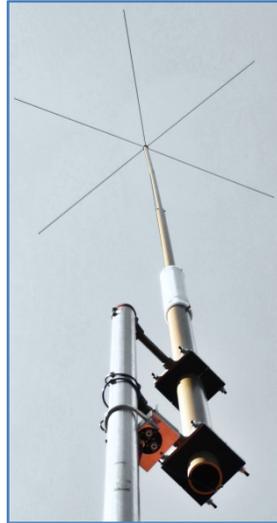


PRODUCT INFORMATION SHEET

Component AM Radio High Performance Antenna

Part Number HPR.0990

Images



The heavy-duty HPR.0990 Antenna Coil can handle hundreds of watts efficiently.



Accessory: M990 Insulators with Stand-Off Mounts

Description

This high performance antenna offers a communication professional the ability to establish an AM broadcast signal more efficiently than before possible with an antenna of similar design and price point. Its 50-ohm resonant design requires only a matching transformer at its feed-point, eliminating the need for an antenna tuner (matching network). Designed to operate most efficiently in conjunction with a horizontal groundplane, this antenna is compact and light-weight, making it easy to ship, set up and install. It may be assembled in minutes, if required, for an emergency application.

- Power: up to 270 watts carrier (1700 kHz)/100% modulation; up to 180 watts carrier (530 kHz)/100% modulation. See Table 1 below.
- Frequency Range: Various versions of the antenna's design allow it to function on any frequency in the 470 to 1800 kHz operating range.
- Impedance: 10-20 ohms (typical) with 50' tip height and 25-50' radius groundplane (typical).
- Mounting Format: Top of support structure [tower, mast or pole]. Lower 36" of antenna base clamps in insulator mounts which can be attached to a vertical support with a round or flat surface.
- Type: center-loaded, bottom-fed vertical, whip-type antenna with adjustable 6-element capacitive top hat and adjustable vertical tuning section . Omni directional. Anodized aluminum finish. Guying ring included.

All products described are subject to availability based on manufacturing capacity and shipping dates. While every effort has been made to ensure the accuracy of all information, ISS does not accept liability for any errors or omissions and reserves the right to change information as needed. These specifications may be changed without notice.

© 2021 Information Station Specialists, Inc. All rights reserved.



PRODUCT INFORMATION SHEET

- Radiation Efficiency Range: 54 mV/m/km at 530 kHz & 171 mV/m/km at 1700 kHz, referenced to 1 KW. See Table 1 below.
- Audio Bandwidth (2:1 SWR): 530 kHz: +/- 1.5 kHz; 1700 kHz +/- 5.5 kHz. See Table 1 below.
- Temperature endurance: -40°C to 85°C.
- Wind endurance: greater than 100 MPH, unguyed. Greater than 140 MPH with the addition of guy lines (nonconductive only).
- Weight of the complete antenna varies with frequency. 30.5 lbs nominal. Mounts with insulators (2): 5.5 lbs total.
- Overall assembly: five sections plus capacitive hat. Length varies with frequency and tip extension. Typical: 32'. Includes assembly hardware. Outside diameter of vertical sections taper from 2.5" (lower) to 1.0" (upper). Capacitive hat spoke length varies with frequency.
- Recommended separation from buildings and structures: 100' or equal to the height of the structure, whichever is greater.
- Required: stand-off mounts with insulators. Options: matching transformer, lightning arrestor, weatherproof cabinets, coaxial cable with connectors, guying kit, support poles and masts, roof stands, fully assembled portable groundplanes.
- RF exposure separation: 1 meter minimum recommended for both occupational and controlled environments.

All products described are subject to availability based on manufacturing capacity and shipping dates. While every effort has been made to ensure the accuracy of all information, ISS does not accept liability for any errors or omissions and reserves the right to change information as needed. These specifications may be changed without notice.

© 2021 Information Station Specialists, Inc. All rights reserved.

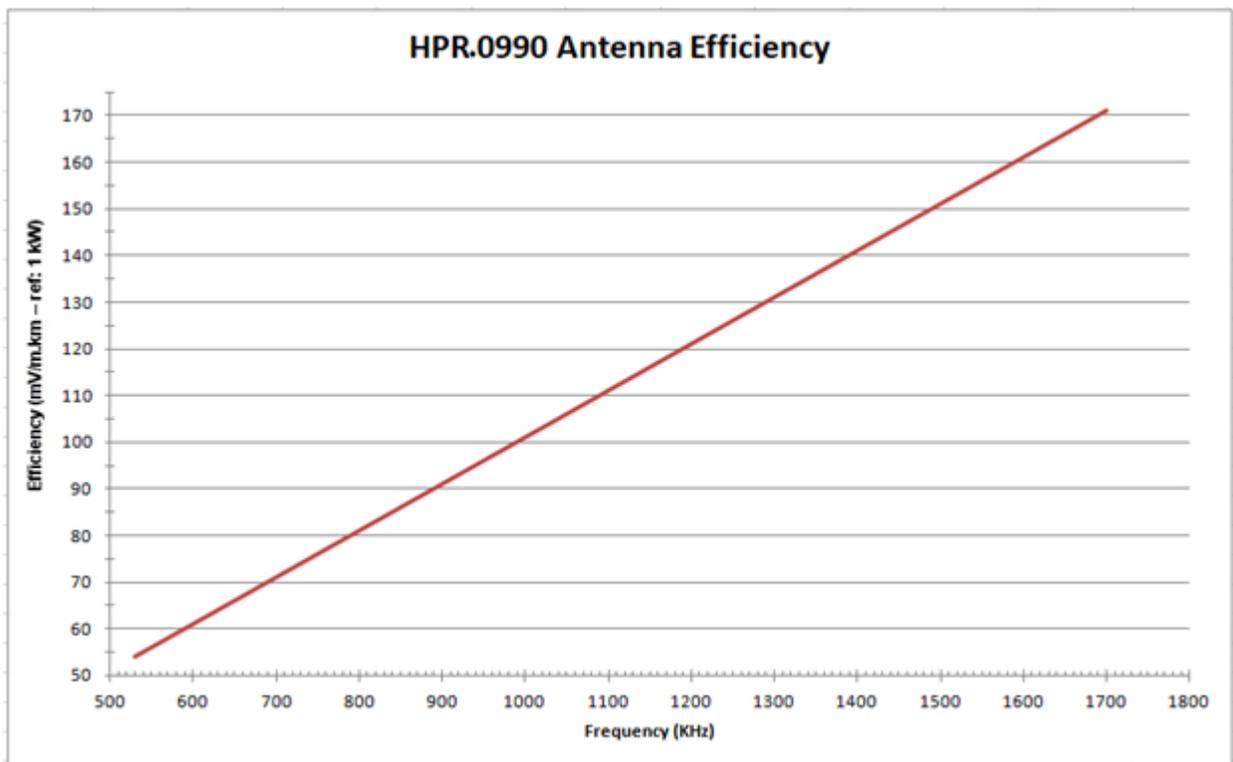


PRODUCT INFORMATION SHEET

Table 1

Frequency Band	Max Carrier Power 100% + Modulation Peaks	Max Carrier Power 125% + Modulation Peaks	2:1 VSWR Bandwidth	Antenna Efficiency mV/m/Km
1500 - 1700KHz	270 Watts	220 Watts	+/- 5.5 KHz	151 - 173
1100 - 1500KHz	250 Watts	210 Watts	+/- 4.5 KHz	111 - 151
800 - 1100KHz	230 Watts	200 Watts	+/- 3.5 KHz	81 - 111
650 - 800KHz	200 Watts	175 Watts	+/- 2.8KHz	66 - 81
530- 650KHz	180 Watts	155 Watts	+/- 1.5 KHz	54 - 66

Table 2



All products described are subject to availability based on manufacturing capacity and shipping dates. While every effort has been made to ensure the accuracy of all information, ISS does not accept liability for any errors or omissions and reserves the right to change information as needed. These specifications may be changed without notice.

© 2021 Information Station Specialists, Inc. All rights reserved.

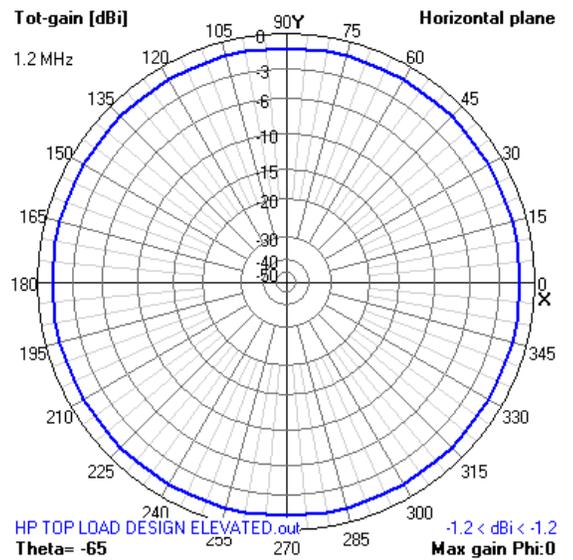
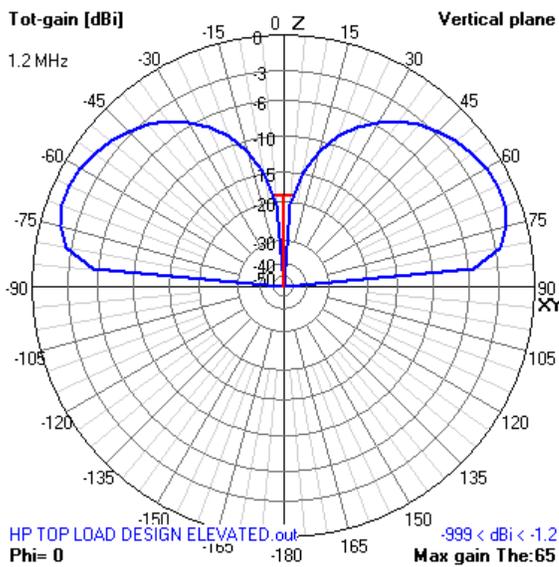


PRODUCT INFORMATION SHEET

Table 3

Typical HPR.0990 Vertical & Horizontal Radiation Pattern

(Feedpoint Elevated on 20ft Pole - 32 Radials [50ft] at Base of Support)



All products described are subject to availability based on manufacturing capacity and shipping dates. While every effort has been made to ensure the accuracy of all information, ISS does not accept liability for any errors or omissions and reserves the right to change information as needed. These specifications may be changed without notice.

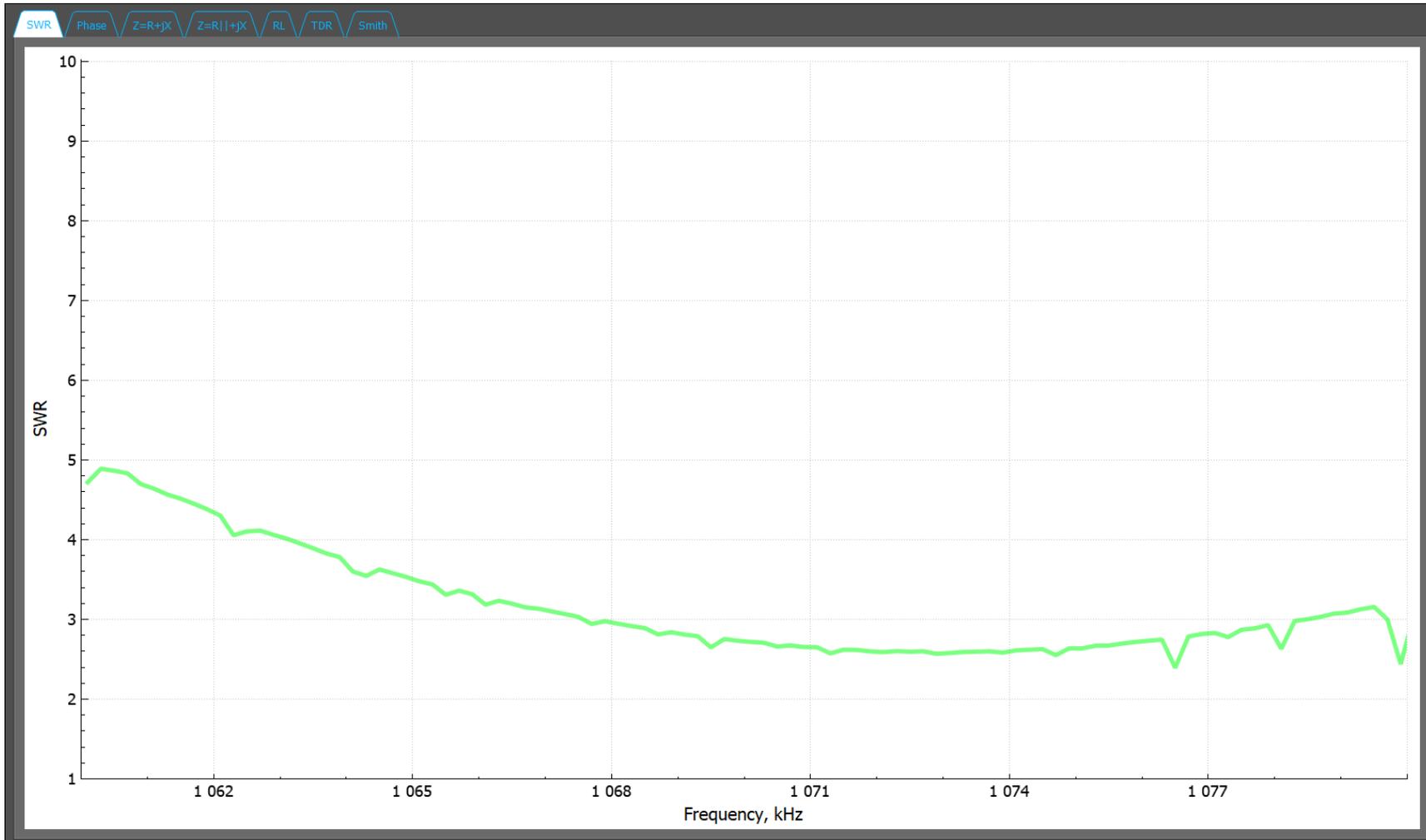
© 2021 Information Station Specialists, Inc. All rights reserved.

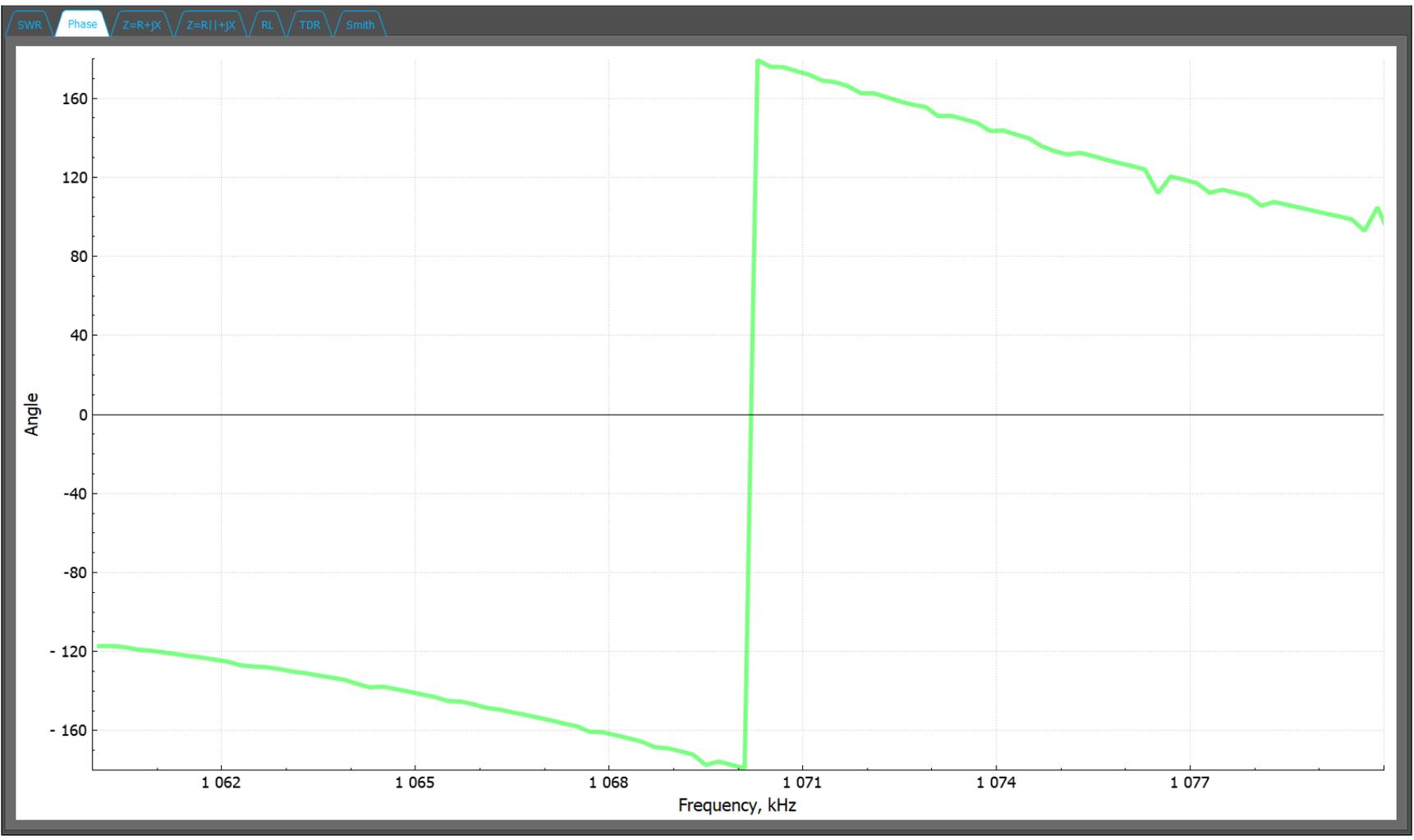
1070 kHz. Emmis Communications / WFNI AM Indianapolis

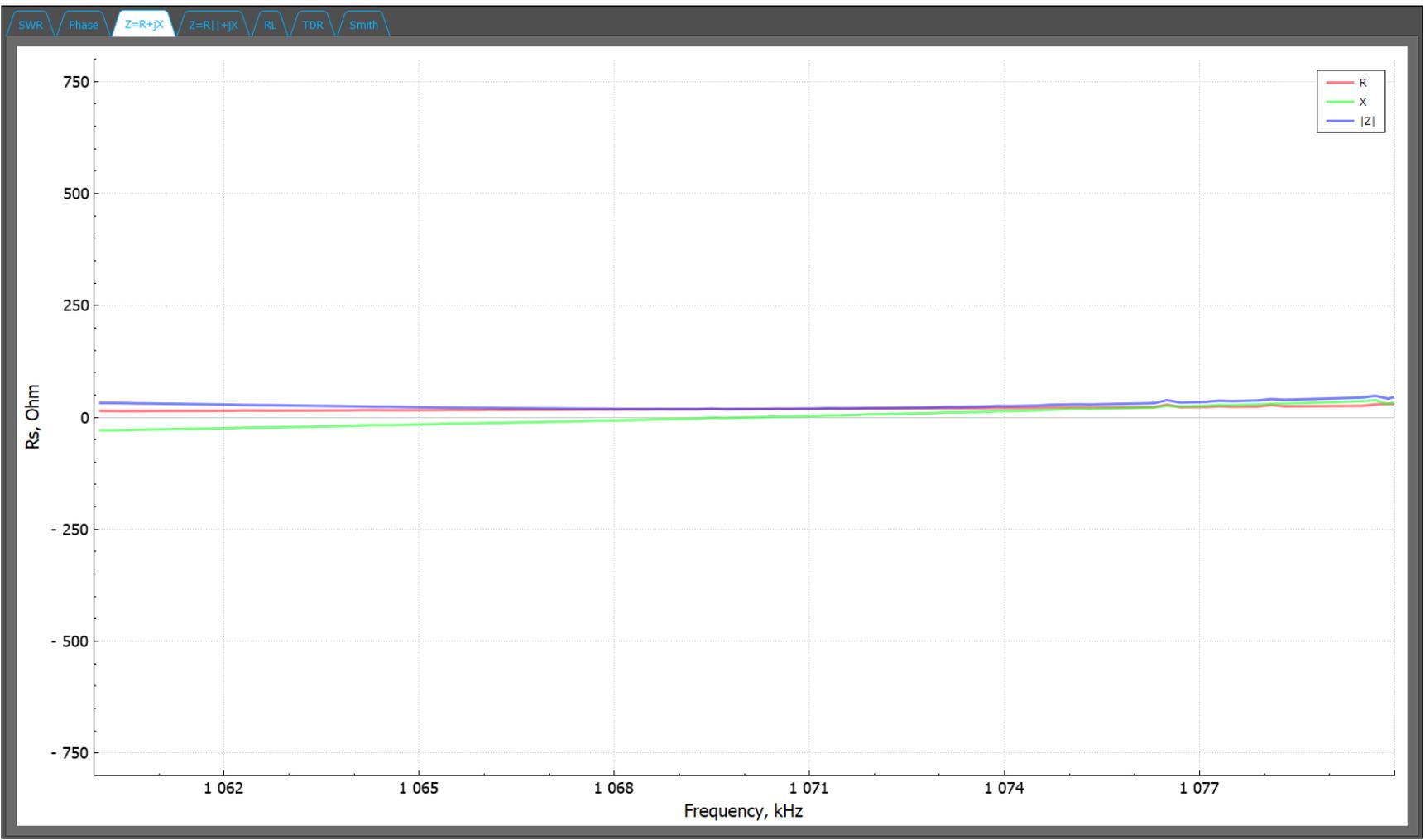
Groundplane 25' buried; No Transformer; Base height 5' AGL

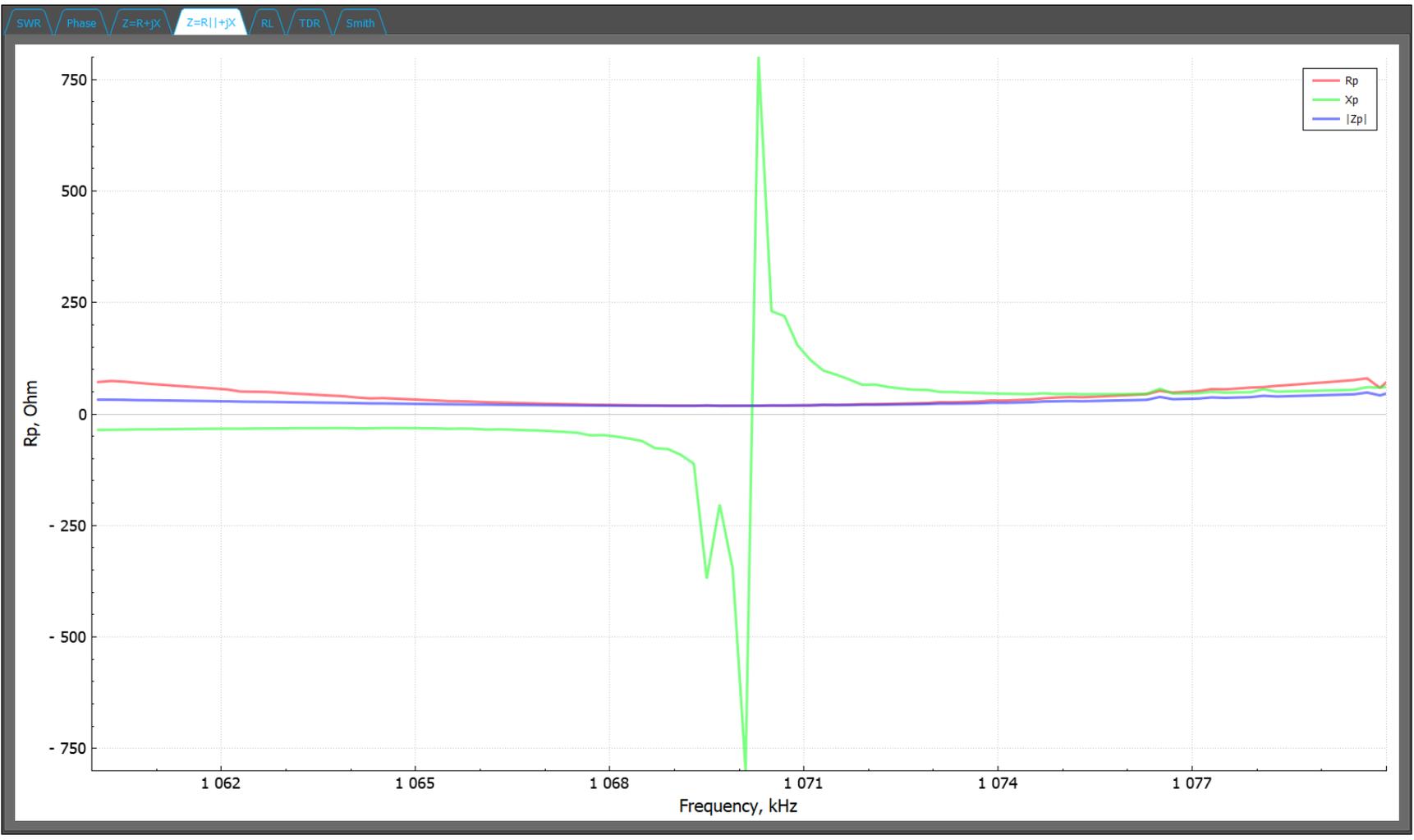
Coil 8; 41" top hat whips

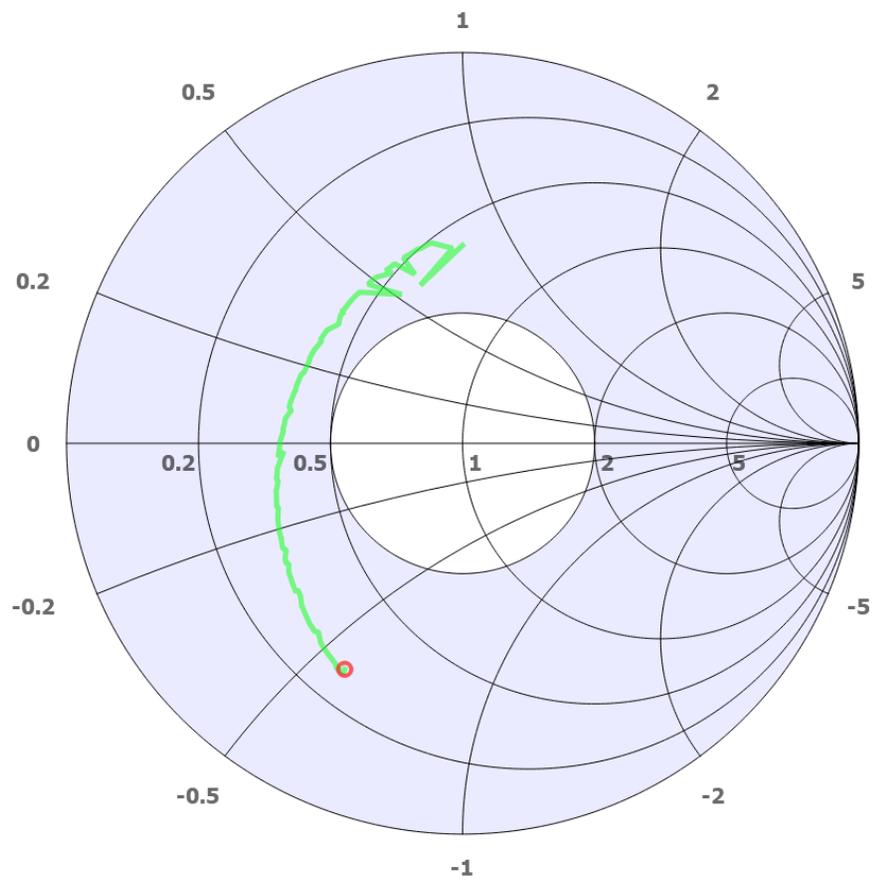
Tip Ext	Resonance	Impedance	Best SWR	SWR	Notes
132"	1070.1	18.4	1073.3	2.5:1	Best resonance at 132" tip extension
134"	1067.7	18.4	1070.4	2.4:1	Best SWR at 1070 at 134" tip extension











Picture of Roof Top Location
Roof Line 44 meters AGL
Antenna Top 51 meters AGL

