

ENGINEERING STATEMENT  
APPLICATION FOR MODIFICATION OF  
CONSTRUCTION PERMIT  
(FCC FILE NO. 0000028590)  
TO INCREASE EFFECTIVE RADIATED POWER  
FOR REPACKED FACILITIES  
WZVN-TV, NAPLES, FLORIDA  
CH. 28 1000 KW HORIZONTAL MAX ERP DA  
453.9 M HAAT

OCTOBER 2017

COHEN, DIPPELL AND EVERIST, P.C.  
CONSULTING ENGINEERS  
RADIO AND TELEVISION  
WASHINGTON, D.C.

COHEN, DIPPELL AND EVERIST, P. C.

City of Washington            )  
  ) ss  
District of Columbia         )

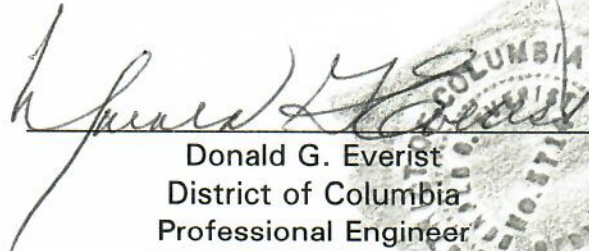
Donald G. Everist, being duly sworn upon his oath, deposes and states that:

He is a graduate electrical engineer, a Registered Professional Engineer in the District of Columbia, and is President, Secretary and Treasurer of Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1420 N Street, N.W., Suite One, Washington, D.C. 20005;

That his qualifications are a matter of record in the Federal Communications Commission;

That the attached engineering report was prepared by him or under his supervision and direction and

That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.

  
Donald G. Everist  
District of Columbia  
Professional Engineer  
Registration No. 5714

Subscribed and sworn to before me this 27<sup>th</sup> day of October, 2017.

  
Notary Public

My Commission Expires: 2/28/2018



### Introduction

This engineering statement has been prepared on behalf of Montclair Communications, licensee of TV station WZVN-TV, Naples, Florida, in support of an application to modify outstanding construction permit (FCC File No. 0000028590) for Channel 28 to increase effective radiated power ("ERP"). No other change is requested.

At present, WZVN-TV operates on Channel 41 (632-638 MHz) with 1000 kW effective radiated power ("ERP") and 453.9 meters antenna height above average terrain ("HAAT"). The proposed WZVN-TV operation is 1000 kW maximum horizontal and 415 kW vertical ERP at 453.9 meters HAAT using a directional TV antenna manufactured by AlanDick. Initially the antenna was under the Andrew brand name. AlanDick is now under the Jampro corporate umbrella. The existing antenna is being replaced with a Jampro authorized antenna, AlanDick, Model No. ADB-E90-14/4 (56).

### Antenna Site

It is proposed to replace the existing broadband antenna on Channel 41 that currently transmits the WZVN signal. The current TV antenna is also used by the licensed Channel 15 DTV operation of WBBH-DT and will also operate from the new antenna.

The geographic coordinates (NAD-27) of the proposed tower are as follows:

North Latitude: 26° 49' 21"

West Longitude: 81° 45' 54"

(NAD-27)

North Latitude: 26° 49' 22"

West Longitude: 81° 45' 53"

(NAD-83)

Exhibit E-1 provides a sketch of the tower. The antenna registration number 1231697.

The following data shows the pertinent information concerning the proposed DTV operation.

Antenna

Antenna: AlanDick, Model ADB-E90-14/4 (56) (or equivalent) elliptically polarized directional antenna with 0.70° electrical beam tilt. The azimuth and vertical plane patterns and other exhibits required by Section 73.625(c) are included in Exhibit E-2

Elevation Data  
(Unchanged)

Vertical dimension of Channel 28 top-mounted antenna	Unchanged
Elevation of site above mean sea level	10.1 meters 33 feet
Overall height above ground of existing tower structure and appurtenances (including lightning protection)	462.1 meters 1516.1 feet
Overall height above mean sea level of existing tower and appurtenances (including lightning protection)	472.2 meters 1549.2 feet
Center of radiation of Channel 28 antenna above ground	453.1 meters 1486.5 feet
Center of radiation of Channel 28 antenna above mean sea level	463.2 meters 1519.7 feet
Antenna height above average terrain	453.9 meters

NOTE: Slight height differences result due to conversion to metric.

Environmental Statement

The RFF contribution of each station will be calculated using the following formula:

$$S = \frac{33.4(F^2) \text{ Total ERP}}{R^2}$$

where:

S = power density in  $\mu\text{W}/\text{cm}^2$

F = relative field factor

Total ERP = ERP Horizontal Polarization + ERP Vertical Polarization

R = RCAGL - 2 meters

ERP = RMS ERP in watts for DTV Stations

The proposed facilities will not affect any known districts, sites, buildings, structures, or objects significant in American history, architecture, archaeology, engineering, or culture.

An evaluation has been made to determine compliance with the Commission's specified standards for human exposure to RF fields at set forth in the OET Bulletin No. 65 dated August 1997. For a maximum effective radiated power of 1000 kW (H) and 415 kW (V) and a radiation center of 453.1 meters above ground level, the proposed DTV operation would have less than 3 (70 to 90°) microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ) RF field at 2 meters toward the base of the tower. The Commission's guidelines for Channel 28 TV operation are 1857  $\mu\text{W}/\text{cm}^2$  for the occupational/controlled and 371  $\mu\text{W}/\text{cm}^2$  for the general population/uncontrolled environment. The RF field contributed by WZVN-TV toward the ground would be less than one percent of the Commission's guidelines for the general population/uncontrolled environment for Channel 28.

Therefore, the proposed operation of WZVN-TV complies with the Commission's guidelines with respect to RF fields exposure to members of the public and personnel working around the proposed WZVN-TV, Channel 28 DTV facility. With respect to work performed on the tower, station WZVN-TV, in coordination with the other station, will establish procedures to

ensure that workers are not exposed to RF fields above the Commission's guidelines, by reducing or turning off the power, as appropriate.

#### Environmental Assessment

An environmental assessment ("EA") is categorically excluded under Section 1.1306 of the FCC Rules and Regulations because the tower structure is existing and will not be modified so as to invoke the need for environmental analysis. The existing tower is registered with the FCC, and approved by the FAA, and neither the ASR nor FAA approval will require modification. It was not constructed during 2001-2005 and thus is not a "twilight tower."

While some structural reinforcement of the tower will be required to support additional weight, there will be no material change in visual appearance.

Compliance with OET Bulletin No. 65 (non-ionizing radiation) is discussed in the previous section of this exhibit.

ABOVE MEAN SEA LEVEL

ABOVE GROUND

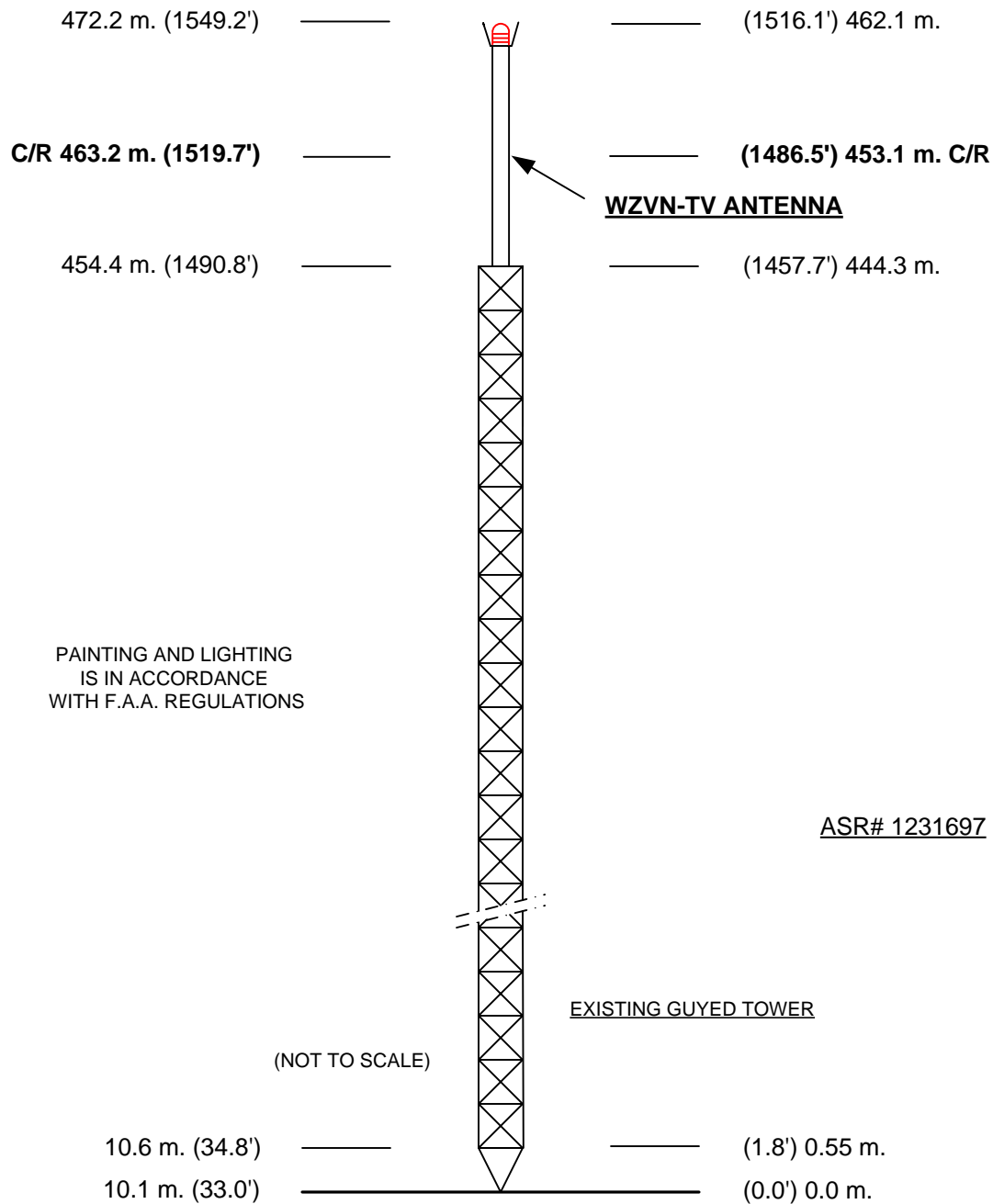


EXHIBIT E - 1  
VERTICAL SKETCH  
FOR THE REPACKING OPERATION OF  
**WZVN-TV, NAPLES, FLORIDA**  
CHANNEL 28 1000 kW ERP 453.9 METERS HAAT  
OCTOBER 2017

COHEN, DIPPELL and EVERIST, P.C. CONSULTING ENGINEERS

EXHIBIT E-2

ANTENNA MANUFACTURER DATA

MODEL NUMBER ADB-E90-14/4 (56)



Alan Dick Broadcast

Model# ADB-E90-14/4(56)

## 14 Bay UHF Elliptically Polarised Antenna (14,14,14,14) for Fort Myers, Florida, USA.

# Technical Proposal

**Created by:** Alan Dick Broadcast  
Chris Randall  
Senior RF Engineer

**Approved by:** Jonathan Watson  
RF Engineer

Date of issue: 31th October 2017  
Document number: E50540  
Version: 2.0

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## 1.) Document History & Structure

Prepared by: Chris Randall  
Senior RF Design Engineer

Approved by : Jonathan Watson  
RF Engineer

Document History			
Version No.	Date	Change Details	Author
1.0	31st October 2017	Original Version	CR

### Structure of document

This document consists of the following sections and appendices:

Subject	Description
Technical Solution	System Data: Elliptically Polarised Antenna  Gains, Safety Factor Tables, Radiation Patterns etc.

## 1.)Gain Table (Not Including Feeder Losses)

<b>ADB 50540</b>	<b>Table of Gains</b>			
<b>Country</b>	<b>USA</b>			
<b>Site Name</b>	<b>Fort Myers</b>			
<b>Antenna Type</b>	<b>UHF</b>			
<b>Polarisation</b>	<b>Elliptical</b>			
No of Tiers	14		14	
Panel per face	14,14,14,14		14,14,14,14	
	H	V	H	V
Frequency	557MHz	557MHz	479MHz	479MHz
Physical Aperture	15m	15m	15m	15m
Aperture wavelengths	28.6	28.6	24.6	24.6
Intrinsic Gain	15.2dB	15.2dB	14.4dB	14.4dB
Polarisation Ellipse 70-30	1.55dB	5.23dB	1.55dB	5.23dB
Distribution loss	0.36dB	0.36dB	0.33dB	0.33dB
Null fill loss	0.84	0.81	0.62	0.62
Antenna mean gain	12.49dB	8.84dB	11.89dB	8.21dB
HRP Max/Mean Gain	3.6dB	3.5dB	3.6dB	4.3dB
<b>Antenna Max gain</b>	16.1dB	12.3dB	15.5dB	12.5dB
Max system gain	16.1dB	12.3dB	15.5dB	12.5dB
<b>Transmitter power</b>	24.5kW	24.5kW	28.0kW	28.0kW
Transmitter power	13.9dBkW	13.9dBkW	14.5dBkW	14.5dBkW
Maximum ERP / plane	30.0dBkW	26.2dBkW	30.0dBkW	27.0dBkW
Maximum ERP / Plane	1000kW	415kW	1000kW	498kW
Total ERP (Mixed polarisation)	<b>1415kW</b>		<b>1498kW</b>	
ERP	1000kW	415kW	1000kW	498kW
Power Ratio	71kW	29kW	67kW	33kW

## 2.) Safety Factor

**E50540**

**USA**

### Antenna Type

### UHF E90 Broadband Panel

Channel	28	15
Frequency	557.0MHz	479.0MHz
Transmitter Power	18.80kW	28.00kW
Modulation Type	DVB-T2	DVB-T2
Peak/mean Power ratio	7 X	7 X
Peak/Mean Voltage	2.6457513	2.645751
Ratio	X	X
Combiner loss	0.0dB	0.0dB
Nominal Power	24.50kW	28.00kW

### Input to main Feeder

<b>Main Feeder Split</b>	1	1		
Mean power	24.50kW	28.00kW	52.50kW	Total
Peak Voltage	4,138V	4,424V	8,562V	Total

<b>Antenna Input Power</b>	24.50kW	28.00kW		
Mean Power	24.50kW	28.00kW	52.50kW	Total
Peak Voltage	4,138V	4,424V	8,562V	Total

### 2 Exit Equal Power Divider 6 1/8" - 4 1/8"

Mean Input Power	24.50kW	28.00kW	52.50kW	Total
Total Peak Voltage	4,138V	4,424V	8,562V	Total
<b>Power Rating</b>	77.32kW	77.32kW	<b>1.47</b>	Safety Factor
<b>Voltage Rating</b>	13,090V	13,090V	<b>1.53</b>	Safety Factor
Power divider Exits	2	2		

### 2 Exit Equal Power Divider 4 1/8" - 4 1/8"

Mean Input Power	12.25kW	14.00kW	26.25kW	Total
Total Peak Voltage	2,926V	3,128V	6,054V	Total
<b>Power Rating</b>	44.62kW	44.62kW	<b>1.70</b>	Safety Factor
<b>Voltage Rating</b>	10,760V	10,760V	<b>1.78</b>	Safety Factor
Power divider Exits	2	2		

Power Divider Split	Port (1)	Port(2)
	3.68dB	2.43dB

#### 4 Exit Equal Power Divider 3 1/8" - 1 5/8"

<b>Previous PD Split</b>	2.43dB	2.43dB		
Mean Input Power	7.00kW	8.00kW	15.00kW	Total
Total Peak Voltage	2,212V	2,365V	4,577V	Total
<b>Power Rating</b>	21.83kW	21.83kW	<b>1.46</b>	Safety Factor
<b>Voltage Rating</b>	7,560V	7,560V	<b>1.65</b>	Safety Factor
Power divider Exits	4	4		

#### 3 Exit Equal Power Divider 3 1/8" - 1 5/8"

<b>Previous PD Split</b>	3.68dB	3.68dB		
Mean Input Power	5.25kW	6.00kW	11.25kW	Total
Total Peak Voltage	1,916V	2,048V	3,963V	Total
<b>Power Rating</b>	23.37kW	23.37kW	<b>2.08</b>	Safety Factor
<b>Voltage Rating</b>	8,560V	8,560V	<b>2.16</b>	Safety Factor
Power divider Exits	4	4		

#### Cable 1 5/8" (HJ7-50A)

Mean Input Power	1.75kW	2.00kW	3.75kW	Total
Total Peak Voltage	1,106V	1,182V	2,288V	Total
<b>Cable Rating</b>	6.90kW	6.90kW	<b>1.84</b>	Safety Factor
<b>Cable Rating</b>	5,520V	5,520V	<b>2.41</b>	Safety Factor
Cable Loss	0.28dB	0.28dB		

#### 4 Exit Un-Equal Power Divider 1 5/8" - 7/8"

Mean Input Power	1.64kW	1.88kW	3.52kW	Total
Total Peak Voltage	1,071V	1,145V	2,216V	Total
<b>Power Rating</b>	6.83kW	6.83kW	<b>1.94</b>	Safety Factor
<b>Voltage Rating</b>	4,050V	4,050V	<b>1.83</b>	Safety Factor
Power divider Exits	2	2		

Power Divider Split

Port (1)	Port(2)
4.35dB	8.78dB

#### Cable 7/8" (HJ5-50A)

<b>Previous PD Split</b>	4.35dB	4.35dB		
Mean Input Power	0.60kW	0.69kW	1.29kW	Total
Total Peak Voltage	649V	694V	1,343V	Total
<b>Cable Rating</b>	3.13kW	3.13kW	<b>2.42</b>	Safety Factor
<b>Cable Rating</b>	3,000V	3,000V	<b>2.23</b>	Safety Factor

Cable Loss	0.06dB	0.06dB		Factor
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**Hybrid Panel Coupler 4" Body 7/8" Ports 70:30 Split**

Mean Input Power	0.59kW	0.68kW	1.27kW	
Total Peak Voltage	645V	689V	1,334V	
<b>Power Rating</b>	2.39kW	2.39kW	<b>1.88</b>	Safety Factor
<b>Voltage Rating</b>	2,550V	2,550V	<b>1.91</b>	Safety Factor
Hybrid Coupler Exits	1	1		

Hybrid Split	Port (1)	Port(2)
	1.55dB	5.23dB

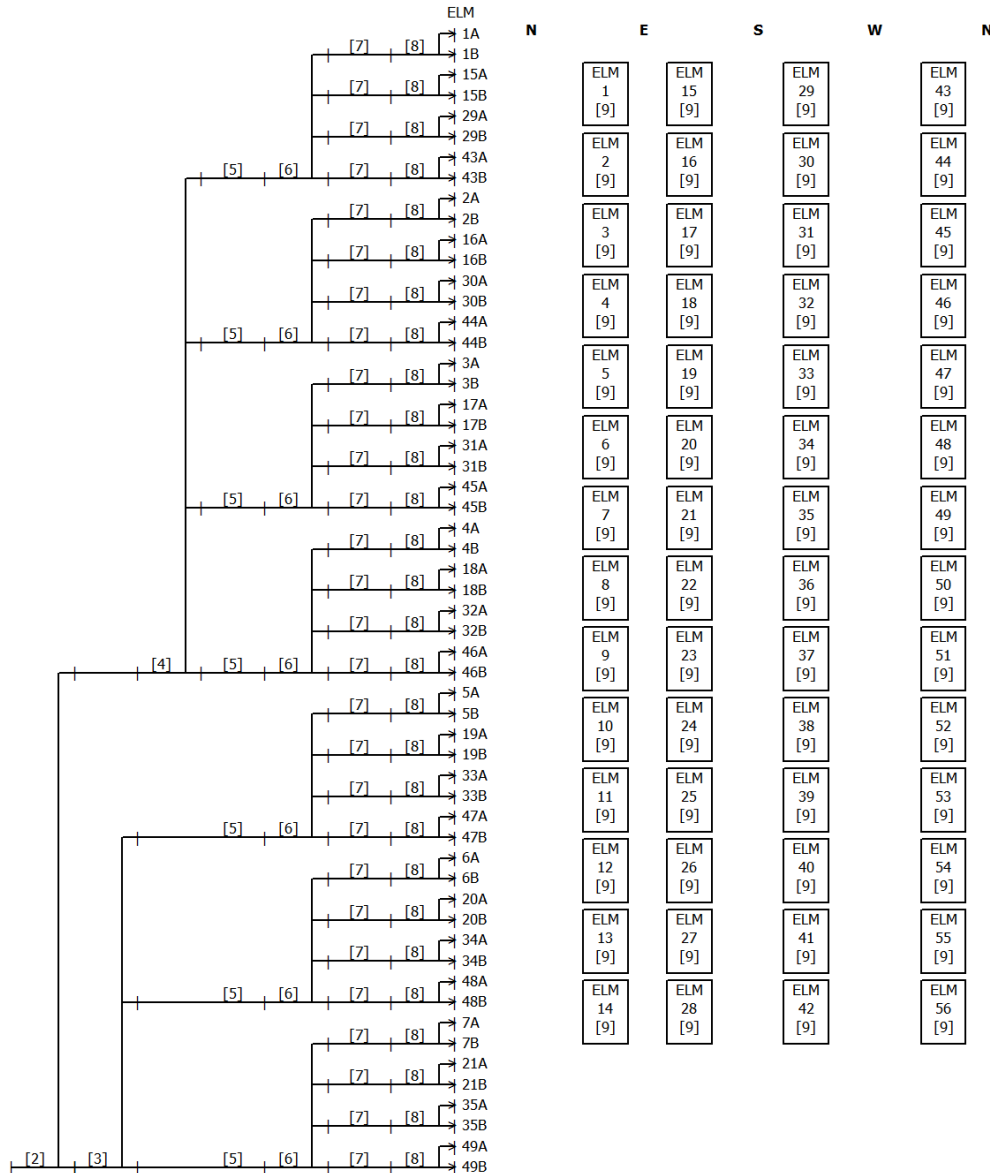
**Panel Input**

Hybrid Split	1.55dB	1.55dB		
Mean Input Power	0.42kW	0.48kW	0.89kW	Total
Total Peak Voltage	539V	576V	1,116V	Total
<b>Power Rating</b>	1.60kW	1.60kW	<b>1.79</b>	Safety Factor
<b>Voltage Rating</b>	2,550V	2,550V	<b>2.29</b>	Safety Factor

### 3.)Key Diagram

#### KEY DIAGRAM Sheet 1 of 3

##### Fort Myers Elliptically Polarised UHF Antenna



- [1] Power Divider 2Exit EQUAL D25206/27 6 1/8 - 4 1/8 50 - 50 Ohm  
 [2] Power Divider 2Exit 100:86 B40439/9 4 1/8 - 3 1/8 50 - 50 Ohm  
 [3] Power Divider 3Exit EQUAL B25326/9 3 1/8 - 1 5/8 50 - 50 Ohm  
 [4] Power Divider 4Exit EQUAL B25326/10 3 1/8 - 1 5/8 50 - 50 Ohm  
 [5] Cable HJ7-50A 18m 50 Ohm  
 [6] Power Divider 4Exit 100(2):60(2) B40439/10 1 5/8 - 7/8 50 - 50 Ohm  
 [7] Cable HJ5-50 1.8m 50 Ohm  
 [8] Power Divider 2Exit Elliptical 70/30\_Coupler-4". 7/8 - 7/8 50 - 50 Ohm  
 [9] Panel UHF Elliptical Panel AD\_EP\_010 7/8 50 Ohm

Engineer Chris R

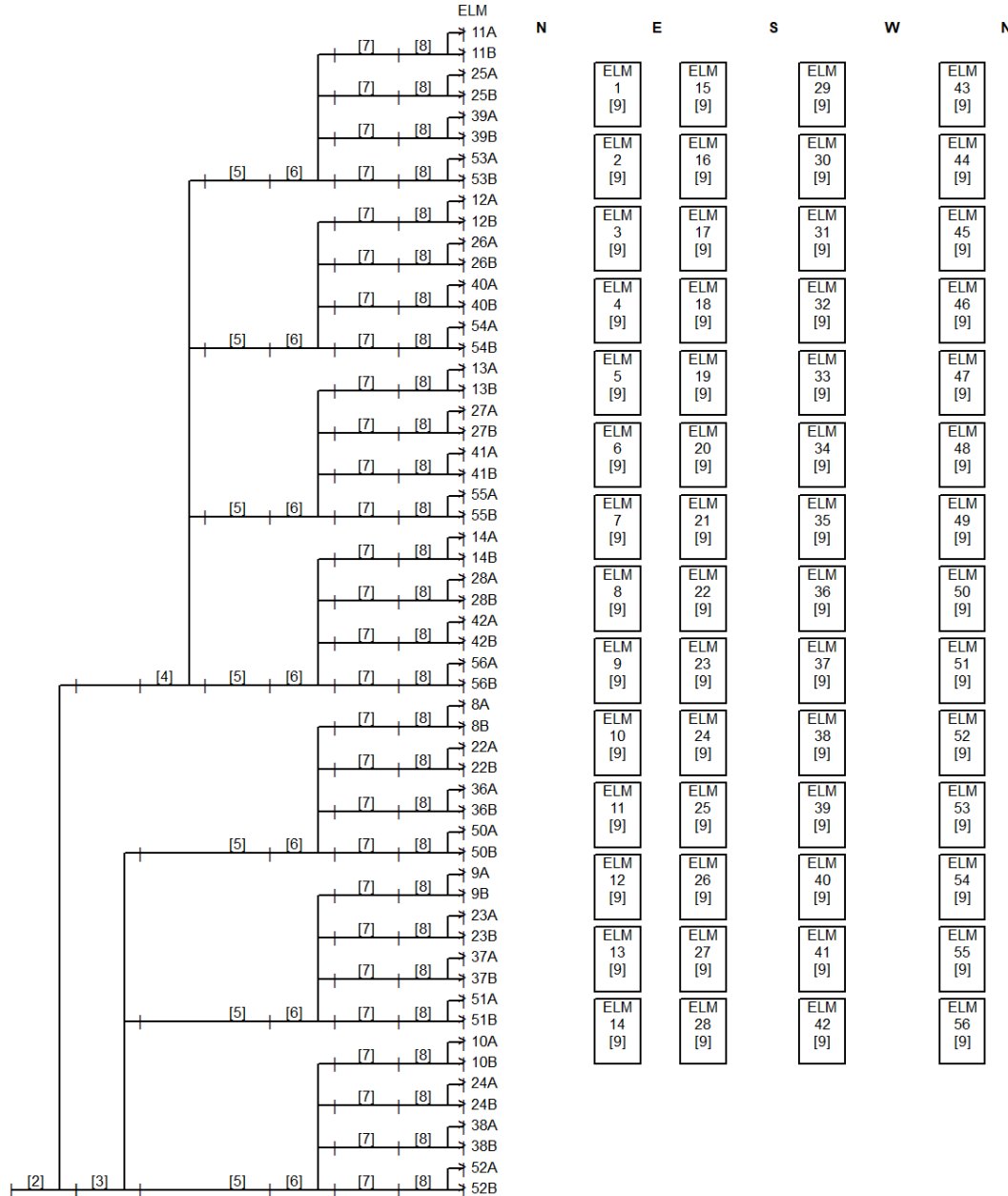
26 Oct 2017

Des. No. 503810267 Chris Randall v8.1.1



## KEY DIAGRAM Sheet 2 of 3

### Fort Myers Elliptically Polarised UHF Antenna



- [1] Power Divider 2Exit EQUAL D25206/27 6 1/8 - 4 1/8 50 - 50 Ohm  
 [2] Power Divider 2Exit 100:86 B40439/9 4 1/8 - 3 1/8M 50 - 50 Ohm  
 [3] Power Divider 3Exit EQUAL B25326/9 3 1/8 - 1 5/8 50 - 50 Ohm  
 [4] Power Divider 4Exit EQUAL B25326/10 3 1/8 - 1 5/8 50 - 50 Ohm  
 [5] Cable HJ7-50A 18m 50 Ohm  
 [6] Power Divider 4Exit 100(2):60(2) B40439/10 1 5/8 - 7/8M 50 - 50 Ohm  
 [7] Cable HJ5-50 1.8m 50 Ohm  
 [8] Power Divider 2Exit Elliptical 70/30\_Coupler-4". 7/8 - 7/8 50 - 50 Ohm  
 [9] Panel UHF Elliptical Panel AD\_EP\_010 7/8 50 Ohm

Engineer Chris R

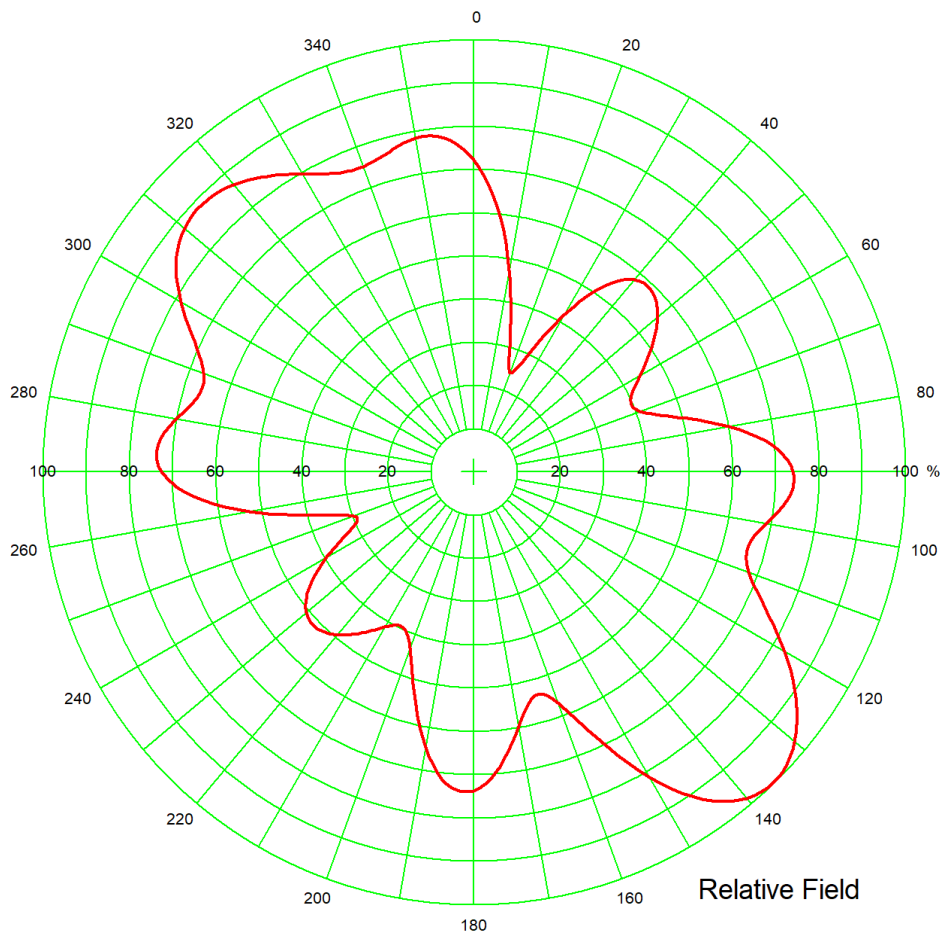
26 Oct 2017

Des. No. 503810267 Chris Randall v8.1.1

## 4.) Horizontal Radiation Pattern Horizontal Component

### HORIZONTAL RADIATION PATTERN

Station **Fort Myers**  
 Frequency **479 MHz**  
 Type **Elliptically Polarised UHF Antenna**



Engineer **Chris R**      Date **26 Oct 2017**

Ang	Amp	dB
0	71.95	-2.86
2	68.31	-3.31
4	63.91	-3.89
6	58.83	-4.61
8	53.21	-5.48
10	47.23	-6.52
12	41.12	-7.72
14	35.22	-9.06
16	29.97	-10.5
18	26.07	-11.7
20	24.3	-12.3
22	25.08	-12
24	28.04	-11
26	32.32	-9.81
28	37.15	-8.6
30	42.01	-7.53
32	46.54	-6.64
34	50.5	-5.93
36	53.77	-5.39
38	56.23	-5
40	57.87	-4.75
42	58.7	-4.63
44	58.78	-4.62
46	58.2	-4.7
48	57.05	-4.87
50	55.46	-5.12
52	53.53	-5.43
54	51.36	-5.79
56	49.05	-6.19
58	46.68	-6.62
60	44.36	-7.06
62	42.27	-7.48
64	40.61	-7.83
66	39.67	-8.03
68	39.72	-8.02
70	40.95	-7.75
72	43.38	-7.25
74	46.84	-6.59
76	51.01	-5.85
78	55.54	-5.11
80	60.08	-4.43
82	64.31	-3.83
84	67.98	-3.35
86	70.89	-2.99
88	72.92	-2.74
90	74.02	-2.61

Ang	Amp	dB
92	74.21	-2.59
94	73.59	-2.66
96	72.34	-2.81
98	70.67	-3.02
100	68.9	-3.24
102	67.31	-3.44
104	66.23	-3.58
106	65.89	-3.62
108	66.43	-3.55
110	67.87	-3.37
112	70.1	-3.09
114	72.96	-2.74
116	76.22	-2.36
118	79.68	-1.97
120	83.18	-1.6
122	86.56	-1.25
124	89.72	-0.94
126	92.58	-0.67
128	95.07	-0.44
130	97.12	-0.25
132	98.67	-0.12
134	99.65	-0.03
136	100	0
138	99.66	-0.03
140	98.56	-0.13
142	96.69	-0.29
144	94.01	-0.54
146	90.56	-0.86
148	86.4	-1.27
150	81.63	-1.76
152	76.42	-2.34
154	71.01	-2.97
156	65.7	-3.65
158	60.89	-4.31
160	57	-4.88
162	54.47	-5.28
164	53.58	-5.42
166	54.36	-5.29
168	56.56	-4.95
170	59.72	-4.48
172	63.31	-3.97
174	66.86	-3.5
176	69.97	-3.1
178	72.33	-2.81
180	73.74	-2.65
182	74.05	-2.61

Ang	Amp	dB
184	73.23	-2.71
186	71.3	-2.94
188	68.37	-3.3
190	64.61	-3.79
192	60.26	-4.4
194	55.6	-5.1
196	50.99	-5.85
198	46.78	-6.6
200	43.33	-7.26
202	40.9	-7.77
204	39.63	-8.04
206	39.44	-8.08
208	40.12	-7.93
210	41.38	-7.66
212	42.95	-7.34
214	44.63	-7.01
216	46.29	-6.69
218	47.82	-6.41
220	49.15	-6.17
222	50.23	-5.98
224	50.99	-5.85
226	51.35	-5.79
228	51.26	-5.8
230	50.65	-5.91
232	49.47	-6.11
234	47.7	-6.43
236	45.37	-6.86
238	42.54	-7.42
240	39.33	-8.11
242	35.97	-8.88
244	32.8	-9.68
246	30.31	-10.4
248	29.11	-10.7
250	29.71	-10.5
252	32.22	-9.84
254	36.32	-8.8
256	41.45	-7.65
258	47.1	-6.54
260	52.8	-5.55
262	58.21	-4.7
264	63.05	-4.01
266	67.11	-3.46
268	70.24	-3.07
270	72.37	-2.81
272	73.49	-2.68
274	73.64	-2.66

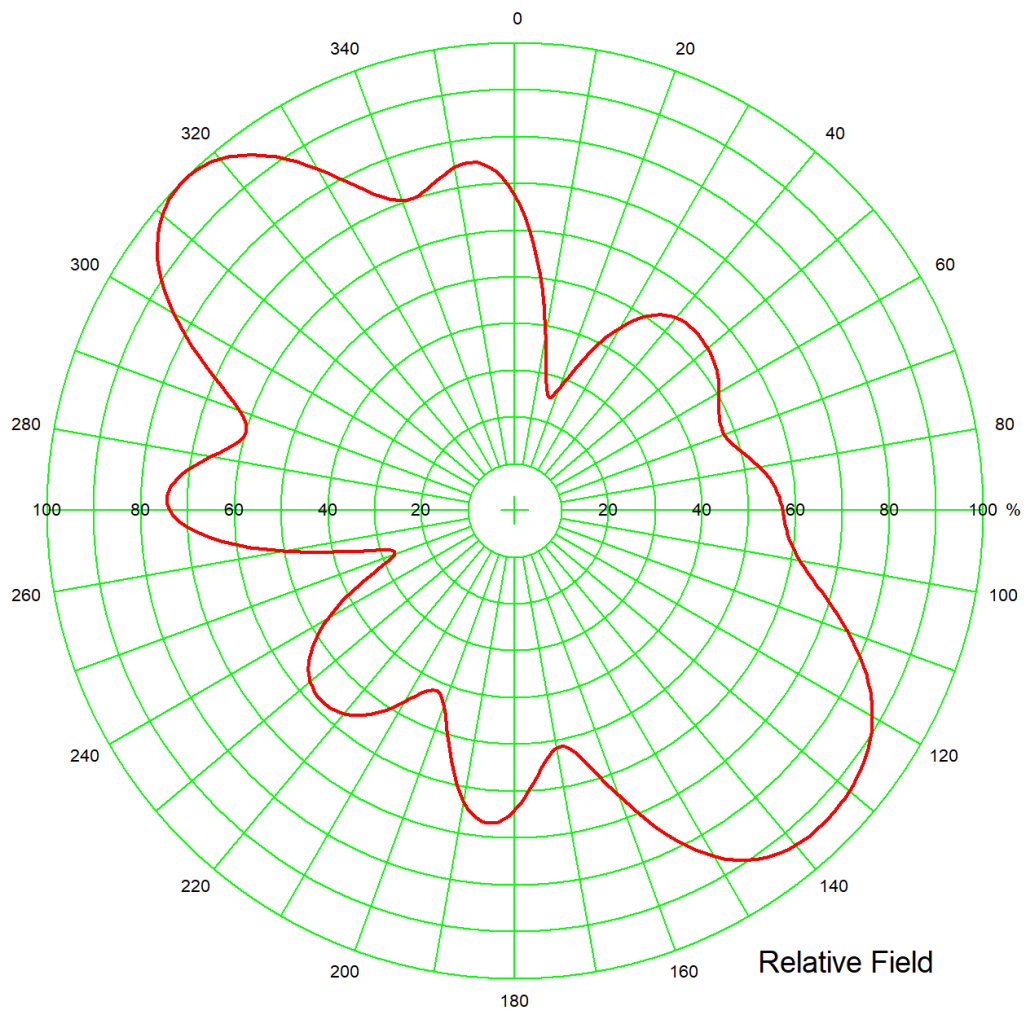
Ang	Amp	dB
276	72.98	-2.74
278	71.7	-2.89
280	70.06	-3.09
282	68.36	-3.3
284	66.93	-3.49
286	66.05	-3.6
288	65.92	-3.62
290	66.62	-3.53
292	68.12	-3.33
294	70.26	-3.07
296	72.83	-2.75
298	75.6	-2.43
300	78.36	-2.12
302	80.94	-1.84
304	83.21	-1.6
306	85.09	-1.4
308	86.54	-1.26
310	87.55	-1.15
312	88.12	-1.1
314	88.27	-1.08
316	88.05	-1.11
318	87.48	-1.16
320	86.61	-1.25
322	85.47	-1.36
324	84.11	-1.5
326	82.59	-1.66
328	80.98	-1.83
330	79.38	-2.01
332	77.89	-2.17
334	76.62	-2.31
336	75.68	-2.42
338	75.15	-2.48
340	75.07	-2.49
342	75.4	-2.45
344	76.05	-2.38
346	76.87	-2.28
348	77.67	-2.19
350	78.23	-2.13
352	78.37	-2.12
354	77.92	-2.17
356	76.74	-2.3
358	74.77	-2.53
360	71.95	-2.86

## HORIZONTAL RADIATION PATTERN

Station **Fort Myers**

Frequency **557 MHz**

Type **Elliptically Polarised UHF Antenna**



Engineer **Chris R** Date **26 Oct 2017**

Ang	Amp	dB
0	67.48	-3.42
2	62.85	-4.03
4	57.32	-4.83
6	51.14	-5.82
8	44.64	-7.01
10	38.22	-8.35
12	32.43	-9.78
14	27.95	-11.1
16	25.53	-11.9
18	25.52	-11.9
20	27.56	-11.2
22	30.84	-10.2
24	34.64	-9.21
26	38.46	-8.3
28	42.03	-7.53
30	45.2	-6.9
32	47.9	-6.39
34	50.09	-6
36	51.78	-5.72
38	53.01	-5.51
40	53.81	-5.38
42	54.27	-5.31
44	54.44	-5.28
46	54.41	-5.29
48	54.22	-5.32
50	53.91	-5.37
52	53.49	-5.43
54	52.94	-5.52
56	52.25	-5.64
58	51.43	-5.78
60	50.5	-5.93
62	49.54	-6.1
64	48.65	-6.26
66	47.98	-6.38
68	47.64	-6.44
70	47.74	-6.42
72	48.29	-6.32
74	49.25	-6.15
76	50.5	-5.93
78	51.9	-5.7
80	53.29	-5.47
82	54.54	-5.27
84	55.58	-5.1
86	56.37	-4.98
88	56.94	-4.89
90	57.37	-4.83

Ang	Amp	dB
92	57.79	-4.76
94	58.34	-4.68
96	59.17	-4.56
98	60.39	-4.38
100	62.08	-4.14
102	64.23	-3.85
104	66.81	-3.5
106	69.7	-3.14
108	72.77	-2.76
110	75.89	-2.4
112	78.93	-2.06
114	81.79	-1.75
116	84.38	-1.48
118	86.64	-1.25
120	88.56	-1.06
122	90.14	-0.9
124	91.39	-0.78
126	92.35	-0.69
128	93.07	-0.62
130	93.6	-0.57
132	93.97	-0.54
134	94.18	-0.52
136	94.24	-0.52
138	94.11	-0.53
140	93.74	-0.56
142	93.05	-0.63
144	91.97	-0.73
146	90.42	-0.87
148	88.34	-1.08
150	85.68	-1.34
152	82.45	-1.68
154	78.65	-2.09
156	74.39	-2.57
158	69.79	-3.12
160	65.07	-3.73
162	60.53	-4.36
164	56.55	-4.95
166	53.53	-5.43
168	51.85	-5.71
170	51.7	-5.73
172	53.01	-5.51
174	55.41	-5.13
176	58.41	-4.67
178	61.51	-4.22
180	64.23	-3.85
182	66.21	-3.58

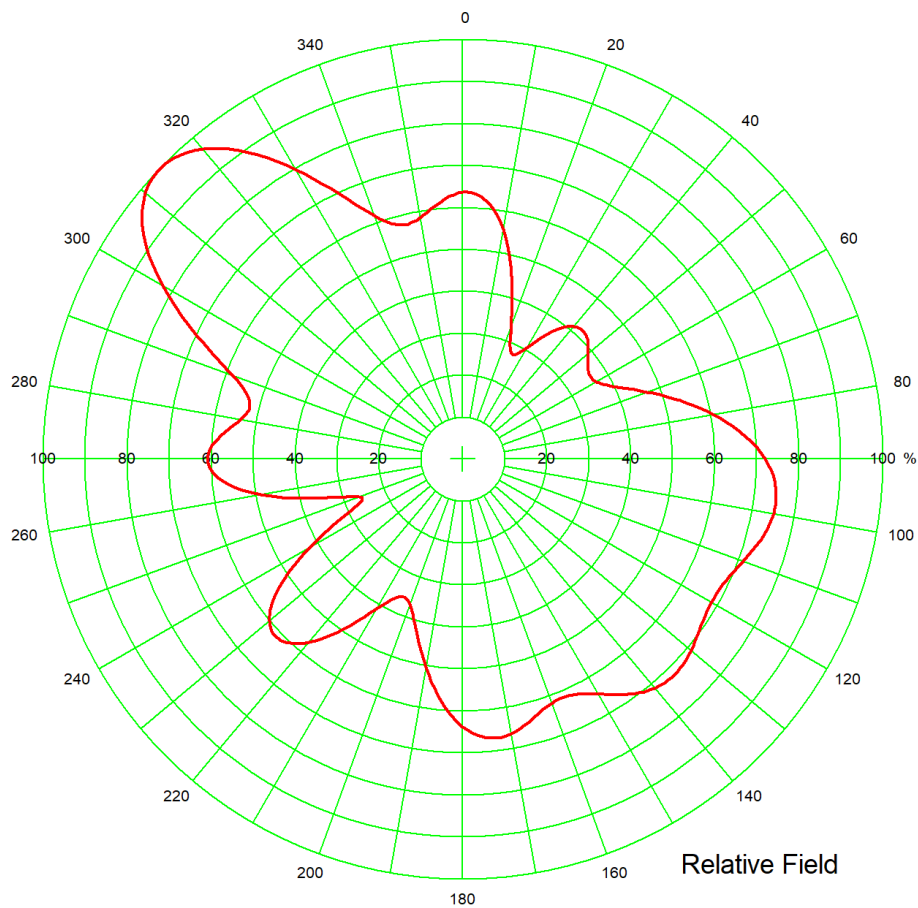
Ang	Amp	dB
184	67.19	-3.45
186	67.02	-3.48
188	65.67	-3.65
190	63.2	-3.99
192	59.8	-4.47
194	55.77	-5.07
196	51.51	-5.76
198	47.53	-6.46
200	44.36	-7.06
202	42.46	-7.44
204	42.04	-7.53
206	42.98	-7.33
208	44.88	-6.96
210	47.29	-6.5
212	49.79	-6.06
214	52.1	-5.66
216	54.06	-5.34
218	55.62	-5.1
220	56.76	-4.92
222	57.53	-4.8
224	57.94	-4.74
226	58.01	-4.73
228	57.73	-4.77
230	57.06	-4.87
232	55.96	-5.04
234	54.35	-5.3
236	52.17	-5.65
238	49.39	-6.13
240	45.99	-6.75
242	42.03	-7.53
244	37.67	-8.48
246	33.26	-9.56
248	29.44	-10.6
250	27.21	-11.3
252	27.62	-11.2
254	30.93	-10.2
256	36.45	-8.77
258	43.18	-7.29
260	50.24	-5.98
262	57.03	-4.88
264	63.07	-4
266	68.01	-3.35
268	71.63	-2.9
270	73.78	-2.64
272	74.46	-2.56
274	73.75	-2.64

Ang	Amp	dB
276	71.86	-2.87
278	69.14	-3.21
280	66.03	-3.61
282	63.08	-4
284	60.88	-4.31
286	59.94	-4.45
288	60.55	-4.36
290	62.71	-4.05
292	66.14	-3.59
294	70.41	-3.05
296	75.08	-2.49
298	79.78	-1.96
300	84.22	-1.49
302	88.23	-1.09
304	91.69	-0.75
306	94.54	-0.49
308	96.79	-0.28
310	98.44	-0.14
312	99.5	-0.04
314	100	0
316	99.94	-0.01
318	99.32	-0.06
320	98.14	-0.16
322	96.38	-0.32
324	94.06	-0.53
326	91.21	-0.8
328	87.92	-1.12
330	84.34	-1.48
332	80.66	-1.87
334	77.16	-2.25
336	74.14	-2.6
338	71.88	-2.87
340	70.58	-3.03
342	70.28	-3.06
344	70.86	-2.99
346	72.01	-2.85
348	73.36	-2.69
350	74.5	-2.56
352	75.08	-2.49
354	74.82	-2.52
356	73.51	-2.67
358	71.07	-2.97
360	67.48	-3.42

## 5.) Horizontal Radiation Pattern Vertical Component

### HORIZONTAL RADIATION PATTERN

Station **Fort Myers**  
Frequency **479 MHz**  
Type **Elliptically Polarised UHF Antenna**



Engineer **Chris R** Date **26 Oct 2017**

Pat. No. 507310267 Chris Randall v8.1.1

Ang	Amp	dB
0	63.56	-3.94
2	63.48	-3.95
4	62.69	-4.06
6	61.11	-4.28
8	58.73	-4.62
10	55.59	-5.1
12	51.77	-5.72
14	47.43	-6.48
16	42.78	-7.38
18	38.11	-8.38
20	33.8	-9.42
22	30.32	-10.4
24	28.16	-11
26	27.6	-11.2
28	28.56	-10.9
30	30.6	-10.3
32	33.16	-9.59
34	35.78	-8.93
36	38.12	-8.38
38	39.97	-7.97
40	41.21	-7.7
42	41.81	-7.57
44	41.79	-7.58
46	41.24	-7.69
48	40.29	-7.9
50	39.12	-8.15
52	37.92	-8.42
54	36.91	-8.66
56	36.29	-8.8
58	36.22	-8.82
60	36.76	-8.69
62	37.91	-8.42
64	39.6	-8.05
66	41.7	-7.6
68	44.11	-7.11
70	46.73	-6.61
72	49.47	-6.11
74	52.29	-5.63
76	55.14	-5.17
78	57.98	-4.73
80	60.77	-4.33
82	63.47	-3.95
84	66.02	-3.61
86	68.36	-3.3
88	70.44	-3.04
90	72.2	-2.83

Ang	Amp	dB
92	73.6	-2.66
94	74.61	-2.54
96	75.22	-2.47
98	75.45	-2.45
100	75.32	-2.46
102	74.87	-2.51
104	74.17	-2.6
106	73.29	-2.7
108	72.3	-2.82
110	71.29	-2.94
112	70.35	-3.05
114	69.54	-3.16
116	68.95	-3.23
118	68.61	-3.27
120	68.54	-3.28
122	68.74	-3.26
124	69.17	-3.2
126	69.78	-3.13
128	70.47	-3.04
130	71.15	-2.96
132	71.72	-2.89
134	72.1	-2.84
136	72.21	-2.83
138	72	-2.85
140	71.43	-2.92
142	70.53	-3.03
144	69.33	-3.18
146	67.92	-3.36
148	66.39	-3.56
150	64.89	-3.76
152	63.57	-3.93
154	62.54	-4.08
156	61.93	-4.16
158	61.79	-4.18
160	62.1	-4.14
162	62.8	-4.04
164	63.75	-3.91
166	64.8	-3.77
168	65.79	-3.64
170	66.56	-3.54
172	66.99	-3.48
174	66.98	-3.48
176	66.47	-3.55
178	65.44	-3.68
180	63.9	-3.89
182	61.88	-4.17

Ang	Amp	dB
184	59.44	-4.52
186	56.66	-4.93
188	53.62	-5.41
190	50.43	-5.95
192	47.21	-6.52
194	44.08	-7.12
196	41.19	-7.7
198	38.74	-8.24
200	36.92	-8.65
202	35.93	-8.89
204	35.9	-8.9
206	36.87	-8.67
208	38.75	-8.23
210	41.36	-7.67
212	44.46	-7.04
214	47.81	-6.41
216	51.15	-5.82
218	54.3	-5.3
220	57.04	-4.88
222	59.24	-4.55
224	60.74	-4.33
226	61.44	-4.23
228	61.27	-4.26
230	60.17	-4.41
232	58.14	-4.71
234	55.19	-5.16
236	51.41	-5.78
238	46.92	-6.57
240	41.92	-7.55
242	36.72	-8.7
244	31.79	-9.95
246	27.85	-11.1
248	25.78	-11.8
250	26.26	-11.6
252	29.13	-10.7
254	33.57	-9.48
256	38.72	-8.24
258	43.95	-7.14
260	48.81	-6.23
262	53.02	-5.51
264	56.39	-4.98
266	58.82	-4.61
268	60.26	-4.4
270	60.72	-4.33
272	60.29	-4.4
274	59.12	-4.57

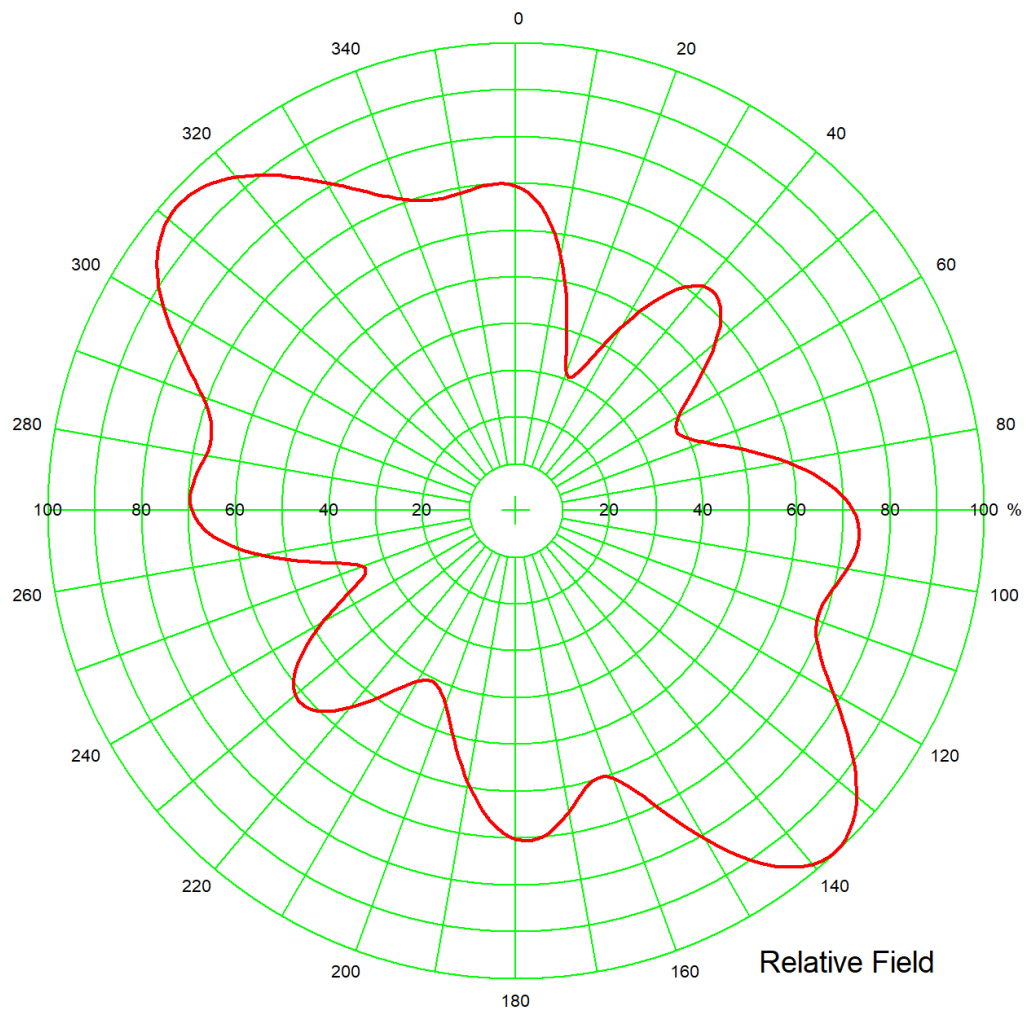
Ang	Amp	dB
276	57.44	-4.82
278	55.54	-5.11
280	53.77	-5.39
282	52.54	-5.59
284	52.21	-5.64
286	53.06	-5.5
288	55.17	-5.17
290	58.44	-4.67
292	62.63	-4.06
294	67.43	-3.42
296	72.52	-2.79
298	77.64	-2.2
300	82.53	-1.67
302	87.03	-1.21
304	90.99	-0.82
306	94.3	-0.51
308	96.88	-0.28
310	98.7	-0.11
312	99.74	-0.02
314	100	0
316	99.5	-0.04
318	98.28	-0.15
320	96.39	-0.32
322	93.9	-0.55
324	90.9	-0.83
326	87.46	-1.16
328	83.7	-1.55
330	79.73	-1.97
332	75.67	-2.42
334	71.69	-2.89
336	67.92	-3.36
338	64.53	-3.8
340	61.68	-4.2
342	59.52	-4.51
344	58.12	-4.71
346	57.51	-4.81
348	57.64	-4.79
350	58.37	-4.68
352	59.5	-4.51
354	60.8	-4.32
356	62.05	-4.15
358	63.04	-4.01
360	63.56	-3.94

## HORIZONTAL RADIATION PATTERN

Station **Fort Myers**

Frequency **557 MHz**

Type **Elliptically Polarised UHF Antenna**



Engineer **Chris R** Date **26 Oct 2017**

Pat. No. 507610267 Chris Randall v8.1.1



Ang	Amp	dB
0	69.3	-3.19
2	68.11	-3.34
4	66.16	-3.59
6	63.37	-3.96
8	59.75	-4.47
10	55.35	-5.14
12	50.32	-5.97
14	44.94	-6.95
16	39.59	-8.05
18	34.88	-9.15
20	31.61	-10
22	30.56	-10.3
24	32.01	-9.89
26	35.5	-9
28	40.18	-7.92
30	45.28	-6.88
32	50.23	-5.98
34	54.64	-5.25
36	58.24	-4.7
38	60.88	-4.31
40	62.46	-4.09
42	62.96	-4.02
44	62.42	-4.09
46	60.93	-4.3
48	58.62	-4.64
50	55.68	-5.09
52	52.32	-5.63
54	48.81	-6.23
56	45.42	-6.86
58	42.44	-7.44
60	40.14	-7.93
62	38.73	-8.24
64	38.34	-8.33
66	38.95	-8.19
68	40.45	-7.86
70	42.67	-7.4
72	45.45	-6.85
74	48.61	-6.27
76	52.02	-5.68
78	55.55	-5.11
80	59.06	-4.57
82	62.44	-4.09
84	65.54	-3.67
86	68.26	-3.32
88	70.48	-3.04
90	72.14	-2.84

Ang	Amp	dB
92	73.19	-2.71
94	73.63	-2.66
96	73.51	-2.67
98	72.93	-2.74
100	72.01	-2.85
102	70.92	-2.98
104	69.84	-3.12
106	68.97	-3.23
108	68.5	-3.29
110	68.56	-3.28
112	69.27	-3.19
114	70.68	-3.01
116	72.75	-2.76
118	75.41	-2.45
120	78.54	-2.1
122	81.97	-1.73
124	85.54	-1.36
126	89.06	-1.01
128	92.34	-0.69
130	95.23	-0.42
132	97.55	-0.22
134	99.18	-0.07
136	100	0
138	99.93	-0.01
140	98.93	-0.09
142	96.99	-0.27
144	94.15	-0.52
146	90.5	-0.87
148	86.18	-1.29
150	81.39	-1.79
152	76.39	-2.34
154	71.5	-2.91
156	67.08	-3.47
158	63.5	-3.94
160	61.07	-4.28
162	59.96	-4.44
164	60.14	-4.42
166	61.37	-4.24
168	63.28	-3.97
170	65.46	-3.68
172	67.55	-3.41
174	69.24	-3.19
176	70.34	-3.06
178	70.71	-3.01
180	70.31	-3.06
182	69.17	-3.2

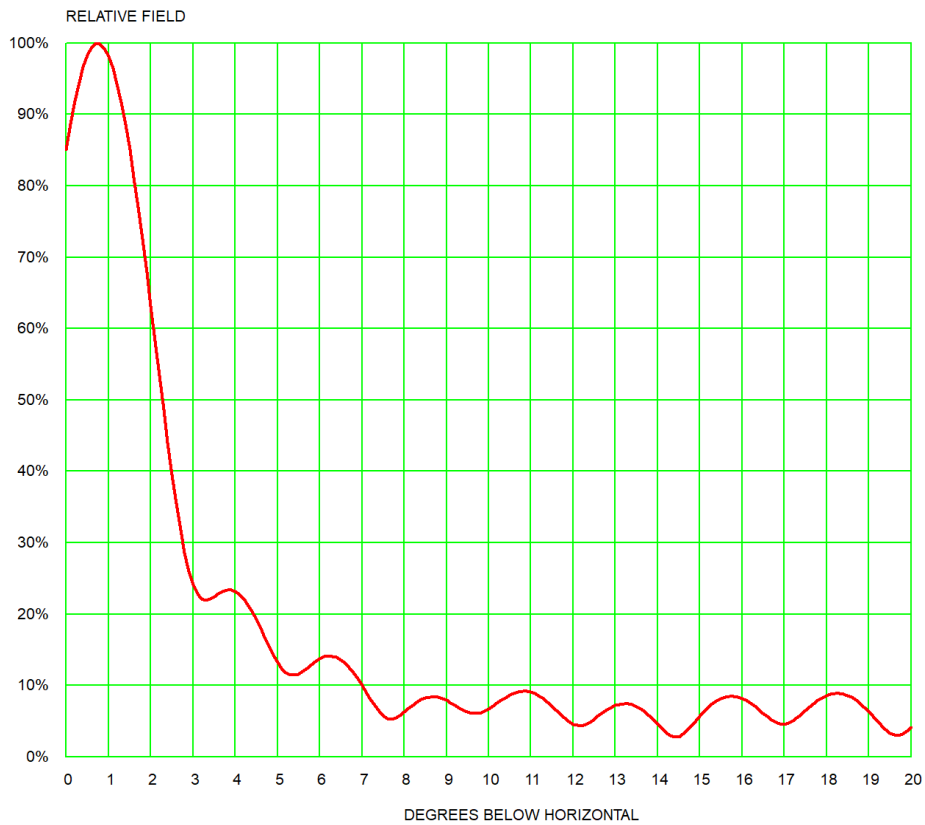
Ang	Amp	dB
184	67.34	-3.43
186	64.95	-3.75
188	62.12	-4.14
190	59	-4.58
192	55.74	-5.08
194	52.48	-5.6
196	49.37	-6.13
198	46.54	-6.64
200	44.12	-7.11
202	42.25	-7.48
204	41.03	-7.74
206	40.57	-7.84
208	40.93	-7.76
210	42.08	-7.52
212	43.94	-7.14
214	46.36	-6.68
216	49.14	-6.17
218	52.08	-5.67
220	54.93	-5.2
222	57.5	-4.81
224	59.58	-4.5
226	61	-4.29
228	61.62	-4.21
230	61.37	-4.24
232	60.18	-4.41
234	58.09	-4.72
236	55.15	-5.17
238	51.51	-5.76
240	47.39	-6.49
242	43.12	-7.31
244	39.15	-8.15
246	36.07	-8.86
248	34.49	-9.25
250	34.85	-9.16
252	37.12	-8.61
254	40.85	-7.78
256	45.45	-6.85
258	50.34	-5.96
260	55.1	-5.18
262	59.42	-4.52
264	63.07	-4
266	65.93	-3.62
268	67.95	-3.36
270	69.13	-3.21
272	69.56	-3.15
274	69.38	-3.18

Ang	Amp	dB
276	68.77	-3.25
278	67.97	-3.35
280	67.23	-3.45
282	66.8	-3.5
284	66.88	-3.49
286	67.62	-3.4
288	69.07	-3.21
290	71.2	-2.95
292	73.89	-2.63
294	76.99	-2.27
296	80.3	-1.91
298	83.66	-1.55
300	86.88	-1.22
302	89.84	-0.93
304	92.39	-0.69
306	94.46	-0.5
308	95.97	-0.36
310	96.89	-0.27
312	97.19	-0.25
314	96.9	-0.27
316	96.05	-0.35
318	94.7	-0.47
320	92.94	-0.64
322	90.83	-0.84
324	88.49	-1.06
326	85.99	-1.31
328	83.42	-1.57
330	80.87	-1.84
332	78.41	-2.11
334	76.1	-2.37
336	74.02	-2.61
338	72.21	-2.83
340	70.73	-3.01
342	69.6	-3.15
344	68.86	-3.24
346	68.5	-3.29
348	68.49	-3.29
350	68.75	-3.25
352	69.17	-3.2
354	69.6	-3.15
356	69.89	-3.11
358	69.84	-3.12
360	69.3	-3.19

## 6.) Vertical Radiation Pattern

### VERTICAL RADIATION PATTERN

Station **Fort Myers**  
Frequency **479 MHz**  
Type **Elliptically Polarised UHF Antenna**  
Face **All**



Beam Tilt **.7 deg**  
Engineer **Chris R** Date **26 Oct 2017**

Pat. No. 510210267 Chris Randall v8.1.1

Ang	Amp	dB
0.0	85.13	-1.40
0.3	93.27	-0.61
0.5	98.35	-0.14
0.8	100.00	0.00
1.0	98.17	-0.16
1.3	93.05	-0.63
1.5	85.05	-1.41
1.8	74.80	-2.52
2.0	63.12	-4.00
2.3	50.98	-5.85
2.5	39.53	-8.06
2.8	30.09	-10.43
3.0	24.07	-12.37
3.3	21.99	-13.16
3.5	22.45	-12.98
3.8	23.27	-12.66
4.0	23.17	-12.70
4.3	21.77	-13.24
4.5	19.25	-14.31
4.8	16.13	-15.85
5.0	13.25	-17.56
5.3	11.59	-18.72
5.5	11.62	-18.70
5.8	12.69	-17.93
6.0	13.76	-17.23
6.3	14.14	-16.99
6.5	13.59	-17.34
6.8	12.13	-18.32
7.0	10.00	-20.00
7.3	7.64	-22.34
7.5	5.79	-24.75
7.8	5.37	-25.40
8.0	6.29	-24.03
8.3	7.48	-22.52
8.5	8.26	-21.66
8.8	8.40	-21.51
9.0	7.91	-22.04
9.3	7.05	-23.04
9.5	6.25	-24.08
9.8	6.07	-24.34
10.0	6.68	-23.50
10.3	7.70	-22.27
10.5	8.63	-21.28
10.8	9.14	-20.78
11.0	9.04	-20.88
11.3	8.33	-21.59
11.5	7.12	-22.95
11.8	5.69	-24.90
12.0	4.59	-26.76
12.3	4.46	-27.01
12.5	5.30	-25.51
12.8	6.39	-23.89
13.0	7.20	-22.85
13.3	7.46	-22.55
13.5	7.07	-23.01
13.8	6.08	-24.32
14.0	4.64	-26.67
14.3	3.19	-29.92
14.5	2.79	-31.09
14.8	4.01	-27.94
15.0	5.70	-24.88

Ang	Amp	dB
15.3	7.17	-22.89
15.5	8.15	-21.78
15.8	8.49	-21.42
16.0	8.20	-21.72
16.3	7.34	-22.69
16.5	6.14	-24.24
16.8	5.00	-26.02
17.0	4.57	-26.80
17.3	5.21	-25.66
17.5	6.45	-23.81
17.8	7.69	-22.28
18.0	8.57	-21.34
18.3	8.90	-21.01
18.5	8.61	-21.30
18.8	7.72	-22.25
19.0	6.35	-23.94
19.3	4.73	-26.50
19.5	3.33	-29.55
19.8	3.08	-30.23
20.0	4.13	-27.68
20.3	5.50	-25.19
20.5	6.61	-23.60
20.8	7.22	-22.83
21.0	7.25	-22.79
21.3	6.68	-23.50
21.5	5.55	-25.11
21.8	3.96	-28.05
22.0	2.07	-33.68
22.3	0.22	-53.15
22.5	2.02	-33.89
22.8	3.84	-28.31
23.0	5.32	-25.48
23.3	6.34	-23.96
23.5	6.85	-23.29
23.8	6.82	-23.32
24.0	6.28	-24.04
24.3	5.31	-25.50
24.5	4.05	-27.85
24.8	2.75	-31.21
25.0	1.95	-34.20
25.3	2.34	-32.62
25.5	3.32	-29.58
25.8	4.21	-27.51
26.0	4.78	-26.41
26.3	4.95	-26.11
26.5	4.71	-26.54
26.8	4.15	-27.64
27.0	3.45	-29.24
27.3	2.97	-30.54
27.5	3.15	-30.03
27.8	3.96	-28.05
28.0	5.00	-26.02
28.3	5.96	-24.50
28.5	6.65	-23.54
28.8	6.95	-23.16
29.0	6.83	-23.31
29.3	6.31	-24.00
29.5	5.47	-25.24
29.8	4.51	-26.92
30.0	3.81	-28.38
30.3	3.89	-28.20

Ang	Amp	dB
30.5	4.78	-26.41
30.8	6.04	-24.38
31.0	7.28	-22.76
31.3	8.25	-21.67
31.5	8.83	-21.08
31.8	8.93	-20.98
32.0	8.57	-21.34
32.3	7.84	-22.11
32.5	7.00	-23.10
32.8	6.55	-23.68
33.0	7.06	-23.02
33.3	8.71	-21.20
33.5	11.15	-19.05
33.8	13.95	-17.11
34.0	16.82	-15.48
34.3	19.54	-14.18
34.5	21.94	-13.18
34.8	23.90	-12.43
35.0	25.31	-11.93
35.3	26.14	-11.65
35.5	26.36	-11.58
35.8	25.98	-11.71
36.0	25.02	-12.03
36.3	23.56	-12.56
36.5	21.67	-13.28
36.8	19.46	-14.22
37.0	17.03	-15.38
37.3	14.51	-16.77
37.5	12.03	-18.39
37.8	9.73	-20.24
38.0	7.75	-22.21
38.3	6.26	-24.07
38.5	5.38	-25.38
38.8	5.08	-25.88
39.0	5.13	-25.80
39.3	5.27	-25.56
39.5	5.33	-25.47
39.8	5.24	-25.61
40.0	4.96	-26.09
40.3	4.54	-26.86
40.5	4.01	-27.94
40.8	3.45	-29.24
41.0	2.96	-30.57
41.3	2.62	-31.63
41.5	2.51	-32.01
41.8	2.58	-31.77
42.0	2.75	-31.21
42.3	2.92	-30.69
42.5	3.02	-30.40
42.8	3.02	-30.40
43.0	2.91	-30.72
43.3	2.69	-31.40
43.5	2.39	-32.43
43.8	2.04	-33.81
44.0	1.67	-35.55
44.3	1.37	-37.27
44.5	1.19	-38.49
44.8	1.20	-38.42
45.0	1.34	-37.46
45.3	1.53	-36.31
45.5	1.70	-35.39

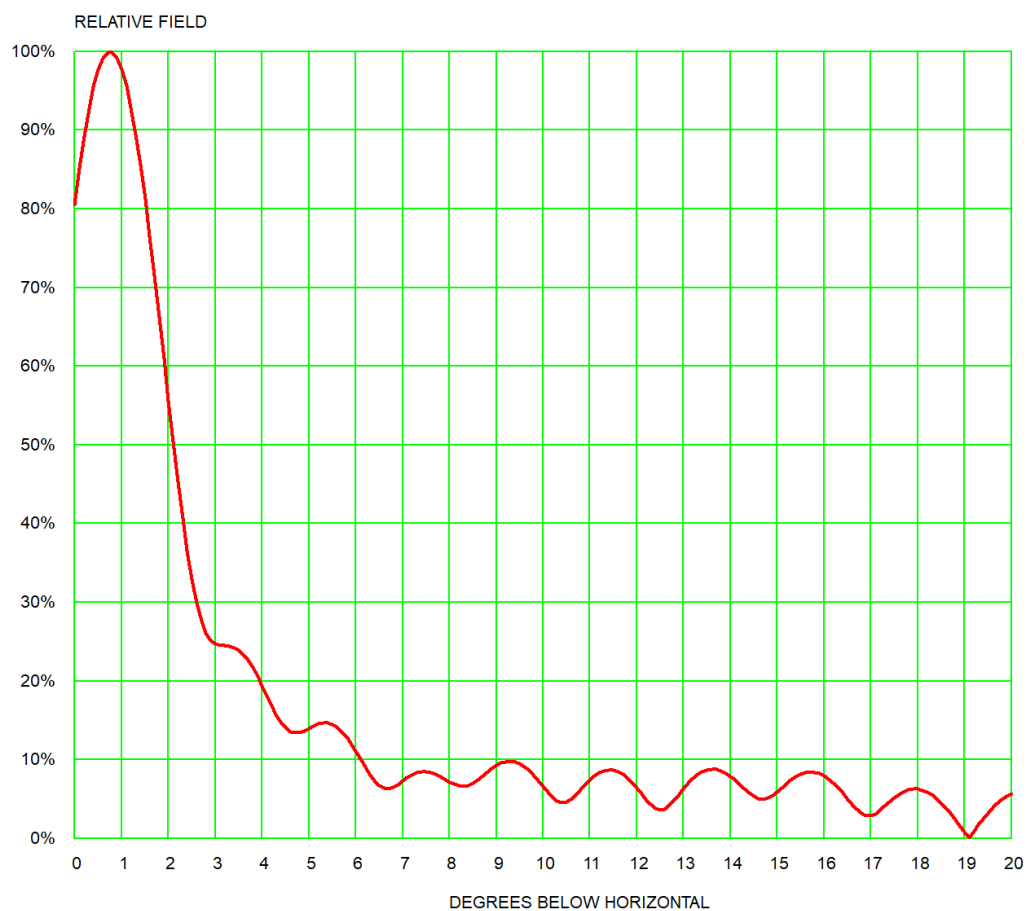
Ang	Amp	dB
45.8	1.81	-34.85
46.0	1.85	-34.66
46.3	1.82	-34.80
46.5	1.73	-35.24
46.8	1.60	-35.92
47.0	1.45	-36.77
47.3	1.33	-37.52
47.5	1.28	-37.86
47.8	1.30	-37.72
48.0	1.40	-37.08
48.3	1.53	-36.31
48.5	1.67	-35.55
48.8	1.79	-34.94
49.0	1.86	-34.61
49.3	1.87	-34.56
49.5	1.83	-34.75
49.8	1.74	-35.19
50.0	1.60	-35.92
50.3	1.42	-36.95
50.5	1.23	-38.20
50.8	1.05	-39.58
51.0	0.93	-40.63
51.3	0.90	-40.92
51.5	0.96	-40.35
51.8	1.09	-39.25
52.0	1.23	-38.20
52.3	1.36	-37.33
52.5	1.47	-36.65
52.8	1.52	-36.36
53.0	1.53	-36.31
53.3	1.49	-36.54
53.5	1.39	-37.14
53.8	1.26	-37.99
54.0	1.08	-39.33
54.3	0.89	-41.01
54.5	0.71	-42.97
54.8	0.57	-44.88
55.0	0.56	-45.04
55.3	0.68	-43.35
55.5	0.86	-41.31
55.8	1.06	-39.49
56.0	1.26	-37.99
56.3	1.42	-36.95
56.5	1.55	-36.19
56.8	1.65	-35.65
57.0	1.70	-35.39
57.3	1.70	-35.39
57.5	1.66	-35.60
57.8	1.59	-35.97
58.0	1.48	-36.59
58.3	1.36	-37.33
58.5	1.21	-38.34
58.8	1.07	-39.41
59.0	0.96	-40.35
59.3	0.88	-41.11
59.5	0.86	-41.31
59.8	0.91	-40.82
60.0	1.00	-40.00
60.3	1.11	-39.09
60.5	1.24	-38.13
60.8	1.35	-37.39

Ang	Amp	dB
61.0	1.45	-36.77
61.3	1.52	-36.36
61.5	1.57	-36.08
61.8	1.59	-35.97
62.0	1.59	-35.97
62.3	1.55	-36.19
62.5	1.49	-36.54
62.8	1.41	-37.02
63.0	1.30	-37.72
63.3	1.18	-38.56
63.5	1.05	-39.58
63.8	0.91	-40.82
64.0	0.77	-42.27
64.3	0.65	-43.74
64.5	0.54	-45.35
64.8	0.48	-46.38
65.0	0.48	-46.38
65.3	0.52	-45.68
65.5	0.60	-44.44
65.8	0.69	-43.22
66.0	0.78	-42.16
66.3	0.86	-41.31
66.5	0.94	-40.54
66.8	1.00	-40.00
67.0	1.04	-39.66
67.3	1.07	-39.41
67.5	1.09	-39.25
67.8	1.09	-39.25
68.0	1.07	-39.41
68.3	1.04	-39.66
68.5	1.00	-40.00
68.8	0.94	-40.54
69.0	0.88	-41.11
69.3	0.80	-41.94
69.5	0.72	-42.85
69.8	0.63	-44.01
70.0	0.54	-45.35
70.3	0.44	-47.13
70.5	0.34	-49.37
70.8	0.24	-52.40
71.0	0.15	-56.48
71.3	0.05	-66.02
71.5	0.06	-64.44
71.8	0.15	-56.48
72.0	0.24	-52.40
72.3	0.32	-49.90
72.5	0.40	-47.96
72.8	0.47	-46.56
73.0	0.54	-45.35
73.3	0.60	-44.44
73.5	0.65	-43.74
73.8	0.70	-43.10
74.0	0.74	-42.62
74.3	0.77	-42.27
74.5	0.80	-41.94
74.8	0.82	-41.72
75.0	0.84	-41.51
75.3	0.84	-41.51
75.5	0.85	-41.41
75.8	0.85	-41.41
76.0	0.84	-41.51

Ang	Amp	dB
76.3	0.83	-41.62
76.5	0.82	-41.72
76.8	0.80	-41.94
77.0	0.78	-42.16
77.3	0.76	-42.38
77.5	0.73	-42.73
77.8	0.70	-43.10
78.0	0.67	-43.48
78.3	0.64	-43.88
78.5	0.61	-44.29
78.8	0.58	-44.73
79.0	0.54	-45.35
79.3	0.51	-45.85
79.5	0.48	-46.38
79.8	0.45	-46.94
80.0	0.41	-47.74
80.3	0.38	-48.40
80.5	0.35	-49.12
80.8	0.33	-49.63
81.0	0.30	-50.46
81.3	0.28	-51.06
81.5	0.26	-51.70
81.8	0.24	-52.40
82.0	0.23	-52.77
82.3	0.22	-53.15
82.5	0.21	-53.56
82.8	0.21	-53.56
83.0	0.21	-53.56
83.3	0.22	-53.15
83.5	0.22	-53.15
83.8	0.23	-52.77
84.0	0.24	-52.40
84.3	0.26	-51.70
84.5	0.27	-51.37
84.8	0.28	-51.06
85.0	0.30	-50.46
85.3	0.31	-50.17
85.5	0.32	-49.90
85.8	0.34	-49.37
86.0	0.35	-49.12
86.3	0.37	-48.64
86.5	0.38	-48.40
86.8	0.40	-47.96
87.0	0.41	-47.74
87.3	0.42	-47.54
87.5	0.44	-47.13
87.8	0.45	-46.94
88.0	0.47	-46.56
88.3	0.48	-46.38
88.5	0.49	-46.20
88.8	0.51	-45.85
89.0	0.52	-45.68
89.3	0.53	-45.51
89.5	0.55	-45.19
89.8	0.56	-45.04
90.0	0.57	-44.88

## VERTICAL RADIATION PATTERN

Station **Fort Myers**  
 Frequency **557 MHz**  
 Type **Elliptically Polarised UHF Antenna**  
 Face **All**



Beam Tilt **.7 deg**  
 Engineer **Chris R** Date **26 Oct 2017**

Ang	Amp	dB
0.0	80.58	-1.88
0.3	91.04	-0.82
0.5	97.74	-0.20
0.8	100.00	0.00
1.0	97.71	-0.20
1.3	91.21	-0.80
1.5	81.23	-1.81
1.8	68.88	-3.24
2.0	55.58	-5.10
2.3	42.97	-7.34
2.5	32.86	-9.67
2.8	26.78	-11.44
3.0	24.67	-12.16
3.3	24.43	-12.24
3.5	23.91	-12.43
3.8	22.18	-13.08
4.0	19.37	-14.26
4.3	16.26	-15.78
4.5	14.02	-17.07
4.8	13.41	-17.45
5.0	14.01	-17.07
5.3	14.66	-16.68
5.5	14.51	-16.77
5.8	13.27	-17.54
6.0	11.12	-19.08
6.3	8.61	-21.30
6.5	6.71	-23.47
6.8	6.38	-23.90
7.0	7.28	-22.76
7.3	8.20	-21.72
7.5	8.46	-21.45
7.8	8.00	-21.94
8.0	7.15	-22.91
8.3	6.63	-23.57
8.5	7.03	-23.06
8.8	8.14	-21.79
9.0	9.26	-20.67
9.3	9.80	-20.18
9.5	9.50	-20.45
9.8	8.33	-21.59
10.0	6.59	-23.62
10.3	4.94	-26.13
10.5	4.60	-26.74
10.8	5.83	-24.69
11.0	7.41	-22.60
11.3	8.49	-21.42
11.5	8.70	-21.21
11.8	7.97	-21.97
12.0	6.45	-23.81
12.3	4.60	-26.74
12.5	3.55	-29.00
12.8	4.49	-26.96
13.0	6.31	-24.00
13.3	7.87	-22.08
13.5	8.72	-21.19
13.8	8.70	-21.21
14.0	7.88	-22.07
14.3	6.57	-23.65
14.5	5.34	-25.45
14.8	5.04	-25.95
15.0	5.90	-24.58

Ang	Amp	dB
15.3	7.16	-22.90
15.5	8.13	-21.80
15.8	8.43	-21.48
16.0	7.95	-21.99
16.3	6.76	-23.40
16.5	5.09	-25.87
16.8	3.42	-29.32
17.0	2.85	-30.90
17.3	3.84	-28.31
17.5	5.15	-25.76
17.8	6.04	-24.38
18.0	6.25	-24.08
18.3	5.72	-24.85
18.5	4.51	-26.92
18.8	2.78	-31.12
19.0	0.76	-42.38
19.3	1.33	-37.52
19.5	3.22	-29.84
19.8	4.71	-26.54
20.0	5.63	-24.99
20.3	5.93	-24.54
20.5	5.59	-25.05
20.8	4.72	-26.52
21.0	3.49	-29.14
21.3	2.21	-33.11
21.5	1.58	-36.03
21.8	2.19	-33.19
22.0	3.06	-30.29
22.3	3.64	-28.78
22.5	3.80	-28.40
22.8	3.52	-29.07
23.0	2.96	-30.57
23.3	2.41	-32.36
23.5	2.36	-32.54
23.8	2.93	-30.66
24.0	3.72	-28.59
24.3	4.37	-27.19
24.5	4.71	-26.54
24.8	4.65	-26.65
25.0	4.23	-27.47
25.3	3.55	-29.00
25.5	2.88	-30.81
25.8	2.66	-31.50
26.0	3.11	-30.14
26.3	3.90	-28.18
26.5	4.65	-26.65
26.8	5.13	-25.80
27.0	5.26	-25.58
27.3	5.03	-25.97
27.5	4.56	-26.82
27.8	4.14	-27.66
28.0	4.18	-27.58
28.3	4.96	-26.09
28.5	6.30	-24.01
28.8	7.84	-22.11
29.0	9.33	-20.60
29.3	10.61	-19.49
29.5	11.54	-18.76
29.8	12.08	-18.36
30.0	12.19	-18.28
30.3	11.92	-18.47

Ang	Amp	dB
30.5	11.27	-18.96
30.8	10.33	-19.72
31.0	9.14	-20.78
31.3	7.82	-22.14
31.5	6.47	-23.78
31.8	5.17	-25.73
32.0	4.05	-27.85
32.3	3.20	-29.90
32.5	2.68	-31.44
32.8	2.45	-32.22
33.0	2.39	-32.43
33.3	2.35	-32.58
33.5	2.25	-32.96
33.8	2.07	-33.68
34.0	1.83	-34.75
34.3	1.58	-36.03
34.5	1.38	-37.20
34.8	1.29	-37.79
35.0	1.31	-37.65
35.3	1.38	-37.20
35.5	1.45	-36.77
35.8	1.47	-36.65
36.0	1.42	-36.95
36.3	1.29	-37.79
36.5	1.12	-39.02
36.8	0.92	-40.72
37.0	0.76	-42.38
37.3	0.68	-43.35
37.5	0.71	-42.97
37.8	0.80	-41.94
38.0	0.88	-41.11
38.3	0.92	-40.72
38.5	0.91	-40.82
38.8	0.85	-41.41
39.0	0.79	-42.05
39.3	0.77	-42.27
39.5	0.83	-41.62
39.8	0.95	-40.45
40.0	1.11	-39.09
40.3	1.24	-38.13
40.5	1.33	-37.52
40.8	1.35	-37.39
41.0	1.29	-37.79
41.3	1.16	-38.71
41.5	0.99	-40.09
41.8	0.81	-41.83
42.0	0.70	-43.10
42.3	0.73	-42.73
42.5	0.90	-40.92
42.8	1.10	-39.17
43.0	1.29	-37.79
43.3	1.41	-37.02
43.5	1.45	-36.77
43.8	1.41	-37.02
44.0	1.28	-37.86
44.3	1.09	-39.25
44.5	0.86	-41.31
44.8	0.68	-43.35
45.0	0.66	-43.61
45.3	0.84	-41.51
45.5	1.09	-39.25

Ang	Amp	dB
45.8	1.35	-37.39
46.0	1.56	-36.14
46.3	1.69	-35.44
46.5	1.74	-35.19
46.8	1.71	-35.34
47.0	1.61	-35.86
47.3	1.45	-36.77
47.5	1.27	-37.92
47.8	1.14	-38.86
48.0	1.10	-39.17
48.3	1.19	-38.49
48.5	1.37	-37.27
48.8	1.58	-36.03
49.0	1.77	-35.04
49.3	1.90	-34.42
49.5	1.96	-34.15
49.8	1.94	-34.24
50.0	1.84	-34.70
50.3	1.66	-35.60
50.5	1.42	-36.95
50.8	1.15	-38.79
51.0	0.91	-40.82
51.3	0.76	-42.38
51.5	0.80	-41.94
51.8	0.99	-40.09
52.0	1.22	-38.27
52.3	1.44	-36.83
52.5	1.61	-35.86
52.8	1.71	-35.34
53.0	1.73	-35.24
53.3	1.67	-35.55
53.5	1.53	-36.31
53.8	1.31	-37.65
54.0	1.03	-39.74
54.3	0.70	-43.10
54.5	0.34	-49.37
54.8	0.06	-64.44
55.0	0.42	-47.54
55.3	0.78	-42.16
55.5	1.11	-39.09
55.8	1.40	-37.08
56.0	1.62	-35.81
56.3	1.79	-34.94
56.5	1.88	-34.52
56.8	1.90	-34.42
57.0	1.85	-34.66
57.3	1.74	-35.19
57.5	1.58	-36.03
57.8	1.36	-37.33
58.0	1.12	-39.02
58.3	0.87	-41.21
58.5	0.65	-43.74
58.8	0.53	-45.51
59.0	0.57	-44.88
59.3	0.73	-42.73
59.5	0.92	-40.72
59.8	1.10	-39.17
60.0	1.25	-38.06
60.3	1.35	-37.39
60.5	1.41	-37.02
60.8	1.42	-36.95

Ang	Amp	dB
61.0	1.39	-37.14
61.3	1.33	-37.52
61.5	1.23	-38.20
61.8	1.13	-38.94
62.0	1.03	-39.74
62.3	0.96	-40.35
62.5	0.95	-40.45
62.8	1.01	-39.91
63.0	1.12	-39.02
63.3	1.27	-37.92
63.5	1.43	-36.89
63.8	1.58	-36.03
64.0	1.71	-35.34
64.3	1.82	-34.80
64.5	1.90	-34.42
64.8	1.95	-34.20
65.0	1.96	-34.15
65.3	1.93	-34.29
65.5	1.87	-34.56
65.8	1.78	-34.99
66.0	1.67	-35.55
66.3	1.54	-36.25
66.5	1.41	-37.02
66.8	1.29	-37.79
67.0	1.20	-38.42
67.3	1.15	-38.79
67.5	1.15	-38.79
67.8	1.22	-38.27
68.0	1.32	-37.59
68.3	1.46	-36.71
68.5	1.61	-35.86
68.8	1.77	-35.04
69.0	1.91	-34.38
69.3	2.04	-33.81
69.5	2.16	-33.31
69.8	2.25	-32.96
70.0	2.32	-32.69
70.3	2.36	-32.54
70.5	2.38	-32.47
70.8	2.37	-32.51
71.0	2.35	-32.58
71.3	2.30	-32.77
71.5	2.24	-33.00
71.8	2.17	-33.27
72.0	2.09	-33.60
72.3	2.01	-33.94
72.5	1.94	-34.24
72.8	1.90	-34.42
73.0	1.87	-34.56
73.3	1.88	-34.52
73.5	1.93	-34.29
73.8	2.01	-33.94
74.0	2.12	-33.47
74.3	2.27	-32.88
74.5	2.44	-32.25
74.8	2.62	-31.63
75.0	2.82	-31.00
75.3	3.03	-30.37
75.5	3.24	-29.79
75.8	3.45	-29.24
76.0	3.66	-28.73

Ang	Amp	dB
76.3	3.86	-28.27
76.5	4.05	-27.85
76.8	4.24	-27.45
77.0	4.42	-27.09
77.3	4.59	-26.76
77.5	4.75	-26.47
77.8	4.90	-26.20
78.0	5.04	-25.95
78.3	5.16	-25.75
78.5	5.27	-25.56
78.8	5.37	-25.40
79.0	5.47	-25.24
79.3	5.55	-25.11
79.5	5.62	-25.01
79.8	5.68	-24.91
80.0	5.73	-24.84
80.3	5.76	-24.79
80.5	5.79	-24.75
80.8	5.82	-24.70
81.0	5.83	-24.69
81.3	5.84	-24.67
81.5	5.84	-24.67
81.8	5.83	-24.69
82.0	5.82	-24.70
82.3	5.80	-24.73
82.5	5.78	-24.76
82.8	5.75	-24.81
83.0	5.72	-24.85
83.3	5.68	-24.91
83.5	5.65	-24.96
83.8	5.60	-25.04
84.0	5.55	-25.11
84.3	5.51	-25.18
84.5	5.46	-25.26
84.8	5.41	-25.34
85.0	5.35	-25.43
85.3	5.30	-25.51
85.5	5.25	-25.60
85.8	5.19	-25.70
86.0	5.13	-25.80
86.3	5.07	-25.90
86.5	5.01	-26.00
86.8	4.96	-26.09
87.0	4.90	-26.20
87.3	4.84	-26.30
87.5	4.78	-26.41
87.8	4.73	-26.50
88.0	4.67	-26.61
88.3	4.61	-26.73
88.5	4.55	-26.84
88.8	4.50	-26.94
89.0	4.44	-27.05
89.3	4.38	-27.17
89.5	4.33	-27.27
89.8	4.27	-27.39
90.0	4.21	-27.51



# Horizontal Component

Ang	Field V	dB
0	68.56	-3.278584
10	38.83	-8.216652
20	28	-11.05684
30	45.93	-6.758071
40	54.68	-5.24343
50	54.78	-5.227559
60	51.31	-5.79596
70	48.5	-6.285165
80	54.14	-5.329635
90	58.29	-4.688119
100	63.08	-4.002166
110	77.11	-2.257786
120	89.99	-0.916115
130	95.1	-0.43639
140	95.24	-0.423612
150	87.06	-1.203627
160	66.11	-3.594657
170	52.54	-5.590199
180	65.26	-3.707059
190	64.22	-3.846594
200	45.07	-6.922249
210	48.06	-6.364325
220	57.69	-4.777989
230	57.99	-4.732938
240	46.74	-6.606226
250	27.66	-11.16296
260	51.05	-5.840085
270	74.97	-2.50225
280	67.08	-3.468139
290	63.7	-3.917211
300	85.56	-1.354584
310	100	0
320	99.7	-0.026097
330	85.68	-1.342411
340	71.7	-2.889617
350	75.69	-2.41923
360	68.56	-3.278584

Ang	Field V	dB
0	70.05	-3.091837
10	55.94	-5.045551
20	31.96	-9.907865
30	45.78	-6.786484
40	63.14	-3.993908
50	56.28	-4.992918
60	40.57	-7.8359
70	43.13	-7.304411
80	59.7	-4.480513
90	72.92	-2.743067
100	72.79	-2.758566
110	69.31	-3.184082
120	79.39	-2.004684
130	96.26	-0.331083
140	100	0
150	82.27	-1.69517
160	61.73	-4.190074
170	66.18	-3.585465
180	71.08	-2.965052
190	59.65	-4.487791
200	44.6	-7.013303
210	42.54	-7.42405
220	55.54	-5.107882
230	62.04	-4.146564
240	47.92	-6.389664
250	35.23	-9.061747
260	55.7	-5.082896
270	69.88	-3.112942
280	67.95	-3.356211
290	71.96	-2.858177
300	87.81	-1.12912
310	97.92	-0.182572
320	93.93	-0.543914
330	81.73	-1.75237
340	71.48	-2.916309
350	69.48	-3.162804
360	70.05	-3.091837

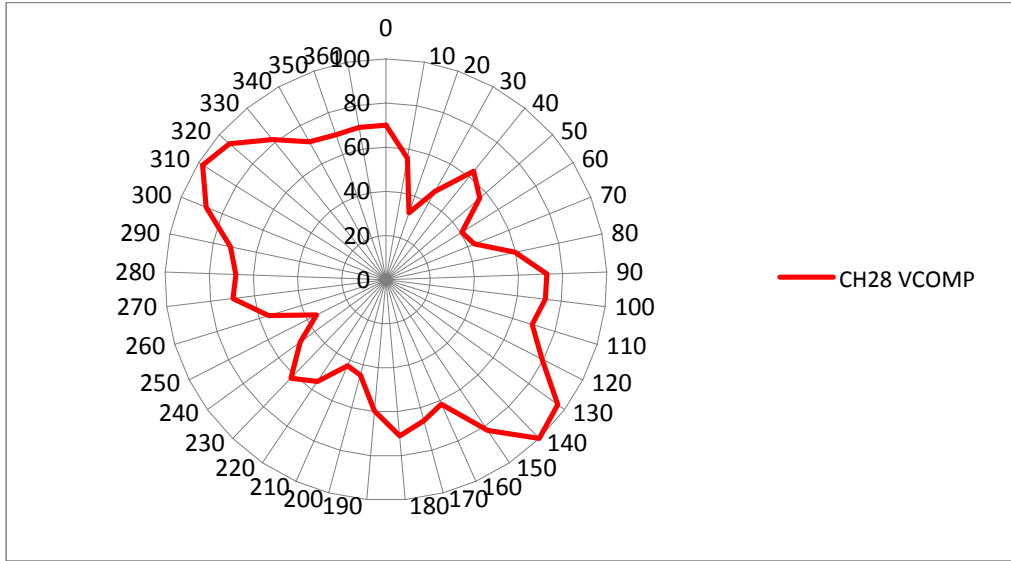
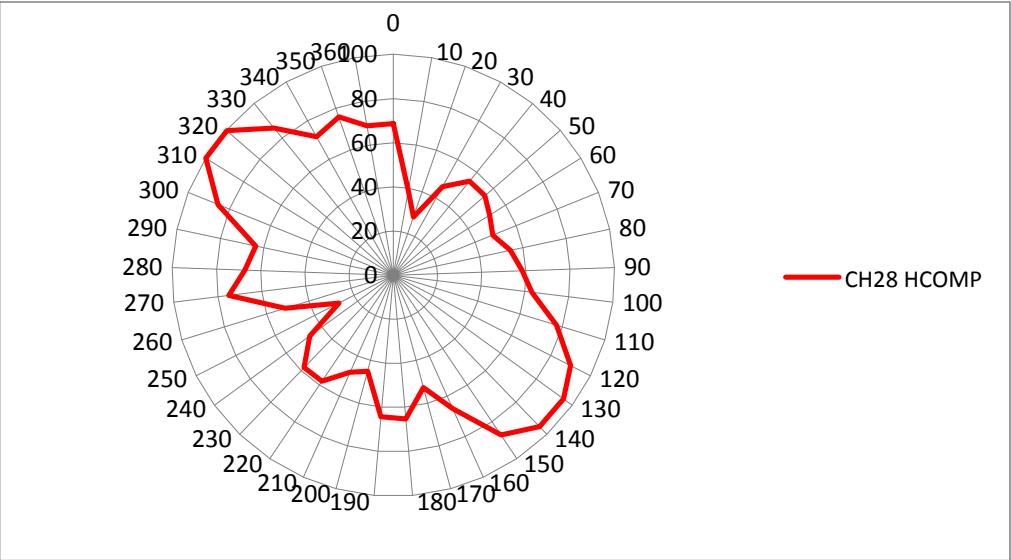




EXHIBIT E-3

ALLOCATION STUDY

tvstudy v2.2.3 (Dxtpx3)  
Database: localhost, Study: WZVN-AlanDick1000kW, Model: Longley-Rice  
Start: 2017.10.31 16:32:25

Study created: 2017.10.31 16:31:44

Study build station data: LMS TV 2017-10-30 (25)

Proposal: WZVN-TV D28 DT CP NAPLES, FL  
File number: AlanDick1000kW  
Facility ID: 19183  
Station data: User record  
Record ID: 101  
Country: U.S.  
Zone: III

Stations affected by proposal:

Call	Chan	Svc	Status	City, State	File Number	Distance
WHFT-TV	D28	DT	CP	MIAMI, FL	BLANK0000028120	183.3 km
WRBW	D28	DT	CP	ORLANDO, FL	BLANK0000027486	210.4
WXPX-TV	D29	DT	CP	BRADENTON, FL	BLANK0000027004	121.1
WXPX-TV	D29	DT	APP	BRADENTON, FL	BLANK0000034359	121.1

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D28  
Latitude: 26 49 22.40 N (NAD83)  
Longitude: 81 45 53.60 W  
Height AMSL: 463.2 m  
HAAT: 453.9 m  
Peak ERP: 1000 kW  
Antenna: WZVN Ch28 EPOL-AlanDick 0.0 deg  
Elev Pattnr: Generic  
Elec Tilt: 0.8

40.1 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	471 kW	452.0 m	105.1 km
45.0	300	450.3	100.6
90.0	340	454.2	102.1
135.0	905	457.3	112.3
180.0	426	458.8	104.7
225.0	335	456.4	102.2
270.0	563	455.1	107.2
315.0	997	452.9	112.9

Database HAAT does not agree with computed HAAT  
Database HAAT: 454 m    Computed HAAT: 455 m

ERP exceeds maximum  
ERP: 1000 kW    ERP maximum: 648 kW

\*\*Proposal service area extends beyond baseline plus 1.0%  
Proposal service area population is more than 95.0% of baseline

Distance to Canadian border: 1652.0 km

Distance to Mexican border: 1511.3 km

Conditions at FCC monitoring station: Vero Beach FL  
Bearing: 51.8 degrees    Distance: 141.6 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:  
Bearing: 310.3 degrees    Distance: 2616.4 km

Study cell size: 2.00 km  
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%  
Maximum new IX to LPTV: 2.00%

-----  
Interference to BLANK0000028120 CP, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WHFT-TV	D28	DT	CP	MIAMI, FL	BLANK0000028120	
Undesireds:	WZVN-TV	D28	DT	BL	NAPLES, FL	DTVBL19183	183.3 km
	WZVN-TV	D28	DT	CP	NAPLES, FL	AlanDick1000kW	183.3
	WSFL-TV	D27	DT	CP	MIAMI, FL	BLANK0000025685	5.5
	WPBT	D29	DT	CP	MIAMI, FL	BLANK0000024658	5.4
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
21510.4	5,417,409	21510.4	5,417,409	20886.6	5,417,382	20838.5 5,417,382	0.23 0.00
Undesired		Total IX		Unique IX, before		Unique IX, after	
WZVN-TV D28 DT BL		619.7		27	619.7 27		
WZVN-TV D28 DT CP		667.8		27		667.8 27	
WPBT D29 DT CP		4.0		0	4.0 0	4.0 0	

-----  
Interference to BLANK0000027486 CP, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WRBW	D28	DT	CP	ORLANDO, FL	BLANK0000027486	
Undesireds:	WZVN-TV	D28	DT	BL	NAPLES, FL	DTVBL19183	210.4 km
	WZVN-TV	D28	DT	CP	NAPLES, FL	AlanDick1000kW	210.4
	WRDQ	D27	DT	LIC	ORLANDO, FL	BLC DT20111011AJM	4.6
	WXPX-TV	D29	DT	CP	BRADENTON, FL	BLANK0000027004	146.8
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
39649.1	4,025,123	39641.0	4,023,804	38507.4	3,926,671	38491.5 3,926,580	0.04 0.00
Undesired		Total IX		Unique IX, before		Unique IX, after	
WZVN-TV D28 DT BL		1044.7		85,156	862.6 52,323		
WZVN-TV D28 DT CP		1064.6		85,247		878.5 52,414	
WRDQ D27 DT LIC		16.1		190	16.1 190	16.1 190	
WXPX-TV D29 DT CP		254.9		44,620	72.8 11,787	68.8 11,787	

-----

Interference to BLANK0000027486 CP, scenario 2

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WRBW	D28	DT	CP	ORLANDO, FL	BLANK0000027486	
Undesireds:	WZVN-TV	D28	DT	BL	NAPLES, FL	DTVBL19183	210.4 km
	WZVN-TV	D28	DT	CP	NAPLES, FL	AlanDick1000kW	210.4
	WRDQ	D27	DT	LIC	ORLANDO, FL	BLCDT20111011AJM	4.6
	WXPX-TV	D29	DT	APP	BRADENTON, FL	BLANK0000034359	146.8
	Service area	Terrain-limited		IX-free, before		IX-free, after	Percent New IX
	39649.1 4,025,123	39641.0	4,023,804	38491.2	3,926,644	38475.3 3,926,553	0.04 0.00
Undesired				Total IX	Unique IX, before	Unique IX, after	
WZVN-TV D28 DT BL	1044.7	85,156		834.3	49,354		
WZVN-TV D28 DT CP	1064.6	85,247				850.1	49,445
WRDQ D27 DT LIC	16.1	190		16.1	190	16.1	190
WXPX-TV D29 DT APP	299.4	47,616		89.0	11,814	84.9	11,814

-----  
Interference to BLANK0000027004 CP, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WXPX-TV	D29	DT	CP	BRADENTON, FL	BLANK0000027004	
Undesireds:	WZVN-TV	D28	DT	BL	NAPLES, FL	DTVBL19183	121.1 km
	WZVN-TV	D28	DT	CP	NAPLES, FL	AlanDick1000kW	121.1
	WRBW	D28	DT	CP	ORLANDO, FL	BLANK0000027486	146.8
	WGFL	D29	DT	CP	HIGH SPRINGS, FL	BLANK0000027932	203.5
	WMVJ-CD	D29	DC	LIC	MELBOURNE, FL	BLDTA20121120AEA	157.7
	WEFS	D30	DT	LIC	COCOA, FL	BLEDT20130801ABM	146.8
	Service area	Terrain-limited		IX-free, before		IX-free, after	Percent New IX
	30612.3 4,566,037	30604.2	4,564,088	29951.5	4,484,550	29907.8 4,479,978	0.15 0.10
Undesired				Total IX	Unique IX, before	Unique IX, after	
WZVN-TV D28 DT BL	75.5	7,010		75.5	7,010		
WZVN-TV D28 DT CP	119.3	11,582				119.3	11,582
WRBW D28 DT CP	448.2	69,438		424.0	69,289	424.0	69,289
WGFL D29 DT CP	104.6	3,048		104.6	3,048	104.6	3,048

WMVJ-CD D29 DC LIC	48.6	191	24.3	42	24.3	42
WEFS D30 DT LIC	4.0	149	0.0	0	0.0	0

-----  
Interference to BLANK0000034359 APP, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WXPX-TV	D29	DT	APP	BRADENTON, FL	BLANK0000034359	
Undesireds:	WZVN-TV	D28	DT	BL	NAPLES, FL	DTVBL19183	121.1 km
	WZVN-TV	D28	DT	CP	NAPLES, FL	AlanDick1000kW	121.1
	WRBW	D28	DT	CP	ORLANDO, FL	BLANK0000027486	146.8
	WGFL	D29	DT	CP	HIGH SPRINGS, FL	BLANK0000027932	203.5
	WMVJ-CD	D29	DC	LIC	MELBOURNE, FL	BLDTA20121120AEA	157.7
	WEFS	D30	DT	LIC	COCOA, FL	BLEDT20130801ABM	146.8

	Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
	31325.3 4,611,401	31317.2 4,609,452	30656.7 4,529,198	30609.0 4,525,487	0.16 0.08

Undesired	Total IX	Unique IX, before	Unique IX, after
WZVN-TV D28 DT BL	83.5 4,611	83.5 4,611	
WZVN-TV D28 DT CP	131.2 8,322		131.2 8,322
WRBW D28 DT CP	436.1 72,103	399.7 69,662	399.7 69,662
WGFL D29 DT CP	116.7 3,498	116.7 3,498	116.7 3,498
WMVJ-CD D29 DC LIC	48.6 51	24.3 42	24.3 42
WEFS D30 DT LIC	16.1 2,432	0.0 0	0.0 0

-----  
Interference to proposal, scenario 1  
3.18% interference

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WZVN-TV	D28	DT	CP	NAPLES, FL	AlanDick1000kW	
Undesireds:	WSFL-TV	D27	DT	CP	MIAMI, FL	BLANK0000025685	180.6 km
	WHFT-TV	D28	DT	CP	MIAMI, FL	BLANK0000028120	183.3
	WRBW	D28	DT	CP	ORLANDO, FL	BLANK0000027486	210.4
	WXPX-TV	D29	DT	CP	BRADENTON, FL	BLANK0000027004	121.1

Service area	Terrain-limited	IX-free	Percent IX
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33760.2	1,986,032	33760.2	1,986,032	31513.0	1,922,921	6.66	3.18
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Undesired			Total IX		Unique IX	Prcnt Unique IX	
WHFT-TV D28 DT CP	1251.9		562	1251.9	562	3.71	0.03
WRBW D28 DT CP	600.8		15,662	519.6	15,107	1.54	0.76
WXPX-TV D29 DT CP	475.7		47,442	394.5	46,887	1.17	2.36

-----  
Interference to proposal, scenario 2

\*\*MX: 3.40% interference

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WZVN-TV	D28	DT	CP	NAPLES, FL	AlanDick1000kW	
Undesireds:	WSFL-TV	D27	DT	CP	MIAMI, FL	BLANK0000025685	180.6 km
	WHFT-TV	D28	DT	CP	MIAMI, FL	BLANK0000028120	183.3
	WRBW	D28	DT	CP	ORLANDO, FL	BLANK0000027486	210.4
	WXPX-TV	D29	DT	APP	BRADENTON, FL	BLANK0000034359	121.1

	Service area		Terrain-limited		IX-free		Percent IX
33760.2	1,986,032	33760.2	1,986,032	31473.1	1,918,488	6.77	3.40

Undesired			Total IX		Unique IX	Prcnt Unique IX	
WHFT-TV D28 DT CP	1251.9		562	1251.9	562	3.71	0.03
WRBW D28 DT CP	600.8		15,662	515.5	15,107	1.53	0.76
WXPX-TV D29 DT APP	519.7		51,875	434.4	51,320	1.29	2.58

TABLE I  
COMPUTED COVERAGE DATA  
FOR THE PROPOSED DTV OPERATION OF  
WZVN-TV, NAPLES, FLORIDA  
CHANNEL 28 1000 KW ERP 453.9 METERS HAAT  
OCTOBER 2017

<u>Radial</u> N ° E, T	<u>Average</u> <u>Elevation</u> meters	<u>Effective</u> <u>Height</u> meters	<u>Depression</u> <u>Angle</u> degrees	<u>Effective</u> <u>Radiated</u> <u>Power</u> kW	<u>Distance to Contour</u>	
					<u>48 dBu</u> km	<u>40.140 dBu</u> km
0	11.2	452.0	0.589	661.0	89.7	105.1
10	11.6	451.6	0.589	202.5	82.0	94.7
20	12.0	451.2	0.588	157.6	77.7	89.8
30	12.3	450.9	0.588	313.6	84.1	97.5
40	12.7	450.5	0.588	282.0	86.5	100.6
50	12.5	450.7	0.588	350.4	86.5	100.7
60	11.6	451.6	0.589	287.3	85.7	99.5
70	10.7	452.5	0.589	128.2	85.0	98.6
80	9.9	453.3	0.590	222.8	86.5	100.7
90	9.0	454.2	0.590	463.8	87.5	102.1
100	8.3	454.9	0.591	622.6	88.7	103.7
110	7.7	455.5	0.591	622.6	91.6	107.8
120	7.0	456.2	0.592	799.3	94.0	111.0
130	6.3	456.9	0.592	935.2	94.9	112.2
140	5.8	457.4	0.592	866.8	95.0	112.3
150	5.4	457.8	0.593	785.1	93.6	110.5
160	5.1	458.1	0.593	535.8	89.5	104.9
170	4.7	458.5	0.593	466.4	86.3	100.5
180	4.4	458.8	0.593	577.6	89.4	104.7
190	4.9	458.3	0.593	368.5	89.1	104.4
200	5.5	457.7	0.593	150.6	84.3	97.7
210	6.0	457.2	0.592	324.9	85.1	98.8
220	6.5	456.7	0.592	351.6	87.5	102.1
230	6.9	456.3	0.592	282.0	87.6	102.2
240	7.2	456.0	0.591	297.0	84.6	98.2
250	7.5	455.7	0.591	115.6	77.8	89.9
260	7.8	455.4	0.591	338.7	85.8	99.8
270	8.1	455.1	0.591	734.5	91.2	107.2



TABLE I  
COMPUTED COVERAGE DATA  
FOR THE PROPOSED DTV OPERATION OF  
WZVN-TV, NAPLES, FLORIDA  
CHANNEL 28 1000 KW ERP 453.9 METERS HAAT  
OCTOBER 2017

<u>Radial</u> N ° E, T	<u>Average</u> <u>Elevation</u> meters	<u>Effective</u> <u>Height</u> meters	<u>Depression</u> <u>Angle</u> degrees	<u>Effective</u> <u>Radiated</u> <u>Power</u> kW	<u>Distance to Contour</u>	
					<u>48 dBu</u> km	<u>40.140 dBu</u> km
280	8.6	454.6	0.591	443.5	89.5	104.9
290	9.1	454.1	0.590	624.2	88.8	103.9
300	9.6	453.6	0.590	900.5	93.0	109.8
310	10.1	453.1	0.590	855.7	95.5	112.9
320	10.4	452.8	0.589	960.5	95.4	112.8
330	10.6	452.6	0.589	919.6	93.0	109.7
340	10.8	452.4	0.589	501.3	90.3	106.1
350	11.0	452.2	0.589	538.8	91.1	107.1

