

**MULLANEY ENGINEERING, INC.**

4937 G - GREEN VALLEY ROAD  
MONROVIA, MARYLAND 21770

**ENGINEERING STATEMENT**

**PMCM TV, LLC  
APPLICATION FOR MODIFICATION OF LICENSE  
DIGITAL TELEVISION STATION WJLP**

**CHANNEL 3, MIDDLETOWN TOWNSHIP, NEW JERSEY  
FCC FACILITY ID NUMBER: 86537**

**NOVEMBER 2017**

**NARRATIVE**

**The Current Facility:**

Digital Television Station, WJLP, Middletown Township, New Jersey currently operates on Television Channel 3 (60-66 MHz) with a maximum effective radiated power of 6.96-kilowatts (8.43 dBk) from a site located atop a building structure at 4-Times Square, New York, New York.

The station employs a circularly polarized nondirectional antenna system with an antenna center of radiation of 354.4 meters above sea level, and 340.2 meters above average terrain. The antenna center of radiation is 339.2 meters above ground level at the site. Additional details of the current licensed operation can be found in FCC Permit: BPCDT-20130528AJP.

**The Proposed Facility:**

PMCM TV, LLC, (hereafter "PMCM") proposes to modify the license of WJLP and seeks authorization to relocate the transmission facility to atop One World Trade Center ("The Freedom Tower"), New York, New York. The distance between the licensed facility and the proposed facility is 5.3 kilometers (3.29 miles).

**A Rule Compliant Facility:**

The move to One World Trade Center (hereafter "WTC") would necessitate a reduction in effective radiated power to approximately 2.28 kilowatts as a result of a greater height above average terrain (HAAT) atop the taller building and the radiated power rollback requirements of 47 CFR 73.622(f)(6)(ii) for facilities with an HAAT of more than 305 meters located in TV Zone I.<sup>1</sup>

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<sup>1</sup> (f)(6)(ii) For DTV stations located in Zone I that operate on channels 2-6 with an HAAT that exceeds 305 meters, the allowable maximum ERP expressed in decibels above 1 kW (0 dBk) is determined using the following formula, with HAAT

The proposed HAAT atop WTC is 476 meters. The antenna center of radiation above mean sea level (RCAMSL) is 484.6 meters. As a rule compliant facility the effective radiated power (ERP) is limited to a maximum power of 2.28-kilowatts at the elevations proposed in this application.

The proposed WTC site is fully-spaced to co-channel and adjacent channel stations of concern as shown in the table below:

WTC SPACING TABLE

STATION	FCC REQUIRED SPACING	ACTUAL SPACING	BUFFER
WBRA CH 3	244.6 KM	659.6 KM	415.0 KM
WACP CH 4	<20 KM >110 KM	129.5 KM	19.5 KM
KJWP CH 2	<20 KM >110 KM	127.8 KM	17.8 KM

As the WTC site is fully-spaced, no consideration of interference levels to co-channel or adjacent channel operations need be evaluated as long as the maximum ERP of the facility remains rule-compliant.

Therefore for the purposes of a mutual interference agreement between stations, the parties have agreed that the starting baseline for WJLP's signal is from the WTC site with an RCAMSL of 484.6 meters, and a resulting ERP of 2.28 kilowatts (with a HAAT 476 meters).

The WTC site has been selected as a long-term solution to the encroachment of nearby mega-skyscrapers being constructed or proposed in midtown Manhattan. Unfortunately the increased elevation (HAAT) results in a punitive impact on signal density to the public in a highly urbanized area.

A Non-Rule Compliant Facility is Proposed:

The radiated power allowed (under the Commission's rules) for a full-service facility Lo-VHF (Channels 2 to 6) facility at WTC does not provide a sufficient power density (signal level) to allow for the casual indoor reception in an urban environment.

***In fact, the allowable power is less than the power allowed for a VHF Class-A or other secondary service LPTV facility.<sup>2</sup>***

***At antenna elevations greater than 438 meters above average terrain (HAAT) in Zone 1, the maximum power for full-service Lo-VHF station is less than that allowed for secondary LPTV VHF facility.***

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expressed in meters:  $ERP_{max} = 92.57 - 33.24 \cdot \log_{10} (HAAT)$

<sup>2</sup> LPTV stations are not required to "roll-back" their power regardless of the height above average terrain.

***LPTV VHF stations are allowed to operate with a maximum power of 3-kilowatts regardless of antenna height and are not subjected to the restrictions imposed on full-service facilities.***

The maximum power restrictions imposed upon over height Lo-VHF stations is no longer relevant in today's digital television allocation environment; there are far, far fewer low-band full-service VHF stations in operation today than yesterday for the limitations of maximum power on facilities located in Zone I to be enforced.

Zone I Lo-VHF power limitations were designed to allow a larger number of VHF facilities to be allocated to a smaller geographical high density populated area in what was then prime television analog spectrum.<sup>3</sup>

For example, even the radiated power restrictions imposed on a full-service Lo-VHF facility located in Zone II (while still restrictive) are not as punitive as Zone I power/height restrictions.<sup>4</sup>

Additional radiated power (ERP) is required to overcome the increasing levels of man-made radio frequency noise (impulse noise, and general electrical hash) that is especially prevalent in urbanized areas. The "digital cliff" effect as a function of a lack of signal density to overcome the noise floor in an urbanized area is discussed in detail in the waiver request(s) attached to this application.

The "digital cliff" effect should not be thought of as something that only occurs in a so-called fringe service area, but an effect that occurs quite frequently across all service areas as a result of an elevated RF background noise that can be attributed to modern day life in the digital age.

The lack of radiated power, especially in an urbanized area that is subjected to an elevated background signal noise floor simply renders all service areas as possibly prone to poor reception and/or decoding of the digital signal.

Additionally, the wide-spread use of indoor rabbit-ear style receiving antennas for Lo-VHF reception of service compounds the issue; while computer models for predicting digital television service utilize directional outdoor antennas elevated at 10 meters above the ground.

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<sup>3</sup> It should be noted that UHF television channels have never been restrained in ERP by Zone location (Zones only apply to the VHF channels).

<sup>4</sup> A similar HAAT in Zone II would have a power restriction of 15-16 kilowatts, but even then it still does not fully address the issues of overcoming man-made noise in an urban environment and indoor antenna useage.

What is Proposed:

PMCM has entered into a mutual interference and joint improvement agreement with three other facilities to facilitate the improvement of service to the public from its facility and to accept interference from each other as necessary to effectuate the improvements proposed as a group.

Parties to the Agreement:

Channel Relationship

WVIR, Channel 2, Charlottesville, Virginia

TO/FROM

KJWP, Channel 2, Wilmington, Delaware

TO/FROM

WJLP, Channel 3, Middletown Township, New Jersey

TO/FROM

WACP, Channel 4, Atlantic City, New Jersey

The “Joint Applicants” request individually and collectively that the four maximization requests and associated waiver requests (individually and collectively) be processed as a group.

Each applicant proposes to make certain changes to its operating/application/or construction permit facilities as outlined in Table I of the agreement. Basically, each facility has agreed to increase its effected radiated power by 9 dB over the current authorized or approved levels (including WJLP rule compliant facility as outlined previously).

No interference to other facilities is expected to occur with the exception of the agreed upon interference to each other within the group. The end result is an increase in received signal level to the public within the existing service area by 9 dB.

In support of the WJLP application to change sites and antenna height and radiated power the following exhibits/tables/figures are provided.

Figure I

Vertical Sketch of Antenna Elevations and Supporting Structure. ASR # 1263701

No change in the overall height of this structure is proposed.

Figure 2A

Predicted Service Coverage Map 28 dBu digital service contour with city of license service contour 35 dBu detailed.

#### Figure 2B

Line of Sight Graphical Plot of the terrain between the transmitter antenna and the city of license, showing a path free of obstructions.

#### Figure 3

Figure 3 contains the details of the circularly polarized 4-bay omni directional antenna system, including the relative field pattern of the vertical plane. 1-degree of electrical beam tilt will be employed by this Alan Dick Broadcast Crossbow antenna.

#### Table 1A

FCC TV Study output of baseline service data from each applicants (joint agreement party members) baseline facility. Baseline facilities are calculated using the licensed/construction permit/and/or rule-compliant parameters as noted in the tabulation.

#### Table 1B

FCC TV Study output of baseline service data from each applicant's (joint agreement party members) baseline facility using a mutually agreed power increase of 9 dB for each facility. Again, the baseline facilities are calculated using the licensed/construction permit/or rule compliant parameters as noted in the tabulation plus 9 dB added to the radiated power (ERP),

#### Table 1C

Table 1C is simply a comparison of GAIN in service data from each applicant's improved facility. Table 1C is a summary of the change amounts in service between Table 1A and Table 1B. There are no loss-in-services (in either area or population) as a result of this mutually beneficial proposal.

#### Table 2

Table 2 is the summary output of an interference study utilizing FCC TV Study Version 2.2.4 computer program. The study was conducted on WJLP at the WTC site using a radiated power of 18.11 kilowatts and an RCAMSL of the antenna at 484.6 meters. As the summary table provides, there are no interference concerns to other facilities, and only those facilities that are a part of the interference/improvement group are impacted.

#### Figure 4 Radiation Hazard Statement

The proposed WJLP DTV operation was evaluated for human exposure to RF energy using the procedures outlined in the FCC's OET Bulletin Number 65.

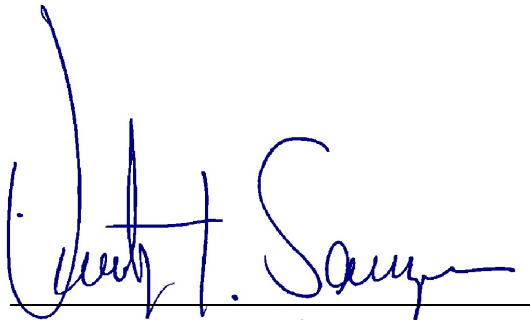
At the WTC Site and based on OET-65 equation (10), and considering 30 percent (0.3) antenna relative field in downward elevations (pattern data shows less than 30 percent relative vertical field at angles 30 to 90 degrees below the antenna), the calculated signal density near the tower at two meters above roof level attributable to the facility is 21.3  $\mu\text{W}/\text{cm}^2$ , which is 2.13% of the controlled worker permissible level and 10.65% of the general population/uncontrolled maximum permitted exposure limits.

Access to the rooftop area is highly controlled by building security and is a restricted high security area with access granted to only authorised and trained personnel.

The general public or workers will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines.

RF exposure warning signs will continue to be posted. With respect to worker safety, the applicant will coordinate exposure procedures with all pertinent stations and will reduce power or cease operation as necessary to protect persons having access to the site, tower, or antenna from RF electromagnetic field exposure in excess of FCC guidelines.

November 27, 2017

A handwritten signature in blue ink, appearing to read "Timothy Z. Sawyer", is written over a horizontal line.

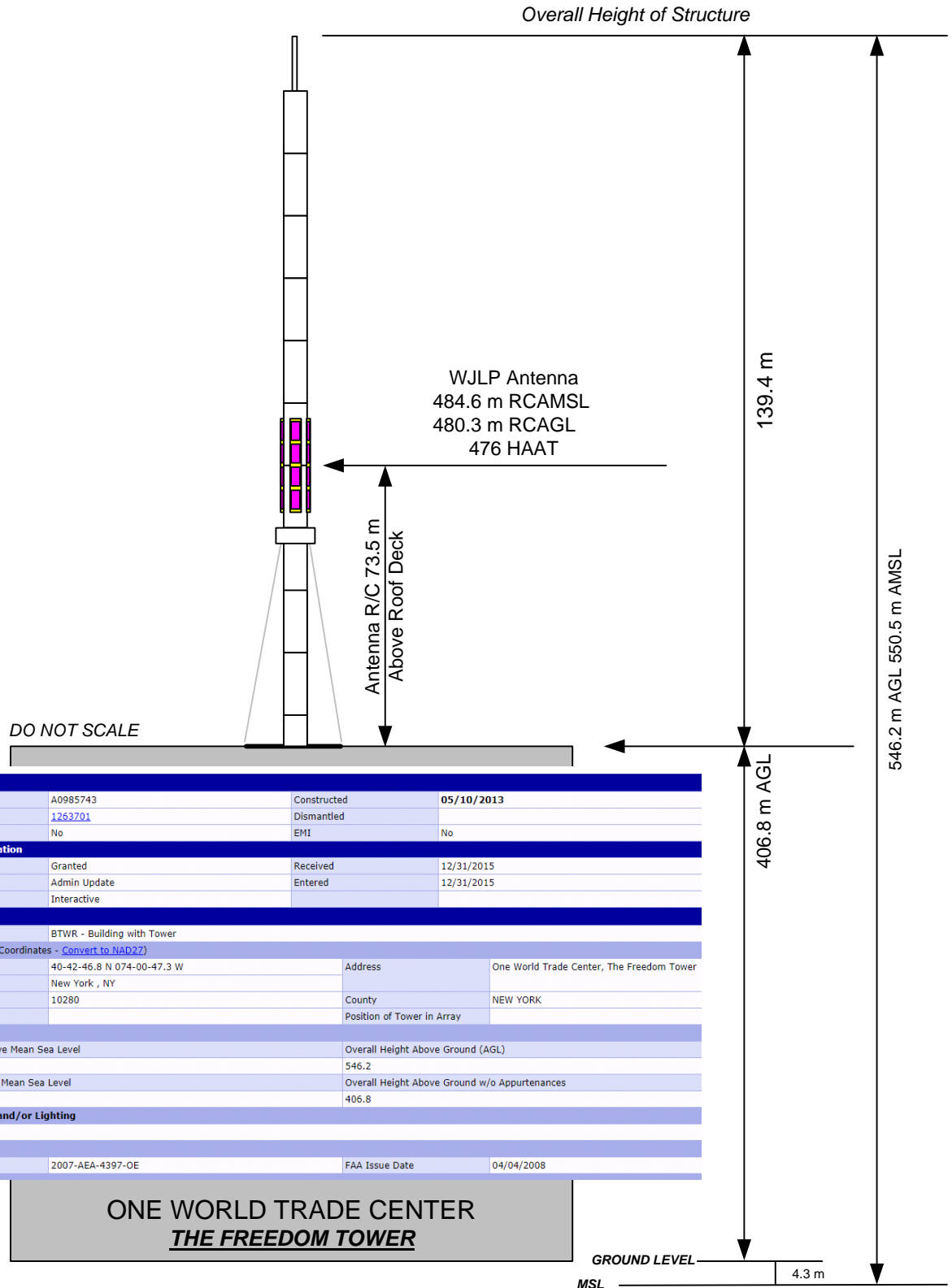
Timothy Z. Sawyer  
Consulting Engineer

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Email to: [tzsawyer@mullengr.com](mailto:tzsawyer@mullengr.com)

FCC ASR # 1263701  
 FAA STUDY: 2007-AEA-4397-OE  
 NO CHANGES ARE PROPOSED IN HEIGHT OF EXISTING  
 STRUCTURE



**FIGURE 1**  
 VERTICAL SKETCH OF ANTENNA AND  
 SUPPORTING STRUCTURE



Application Detail			
File Number	A0985743	Constructed	05/10/2013
Registration Number	<a href="#">1263701</a>	Dismantled	
NEPA	No	EMI	No
Application Information			
Status	Granted	Received	12/31/2015
Purpose	Admin Update	Entered	12/31/2015
Mode	Interactive		
Antenna Structure			
Structure Type	BTWR - Building with Tower		
Location (in NAD83 Coordinates - <a href="#">Convert to NAD27</a> )			
Lat/Long	40-42-46.8 N 074-00-47.3 W	Address	One World Trade Center, The Freedom Tower
City, State	New York, NY	County	NEW YORK
Zip	10280	Position of Tower in Array	
Center of AM Array			
Heights (meters)			
Elevation of Site Above Mean Sea Level		Overall Height Above Ground (AGL)	
4.3		546.2	
Overall Height Above Mean Sea Level		Overall Height Above Ground w/o Appurtenances	
550.5		406.8	
Proposed Marking and/or Lighting			
FAA Style F			
FAA Notification			
FAA Study	2007-AEA-4397-OE	FAA Issue Date	04/04/2008

**WJLP-APP****MUTUAL POWER INCREASE APPLICATION**

FCC Facility ID:86537

NAD 83 Latitude: 40-42-46.8 N

NAD 83 Longitude: 74-00-47.3 W

ERP: 18.11 kW

Channel: 3 Frequency: 63.0 MHz

AMSL Height: 484.6 m

Horiz. Pattern: Omni

Antenna Beam Tilt: 1.0 degree

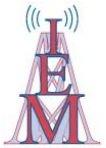
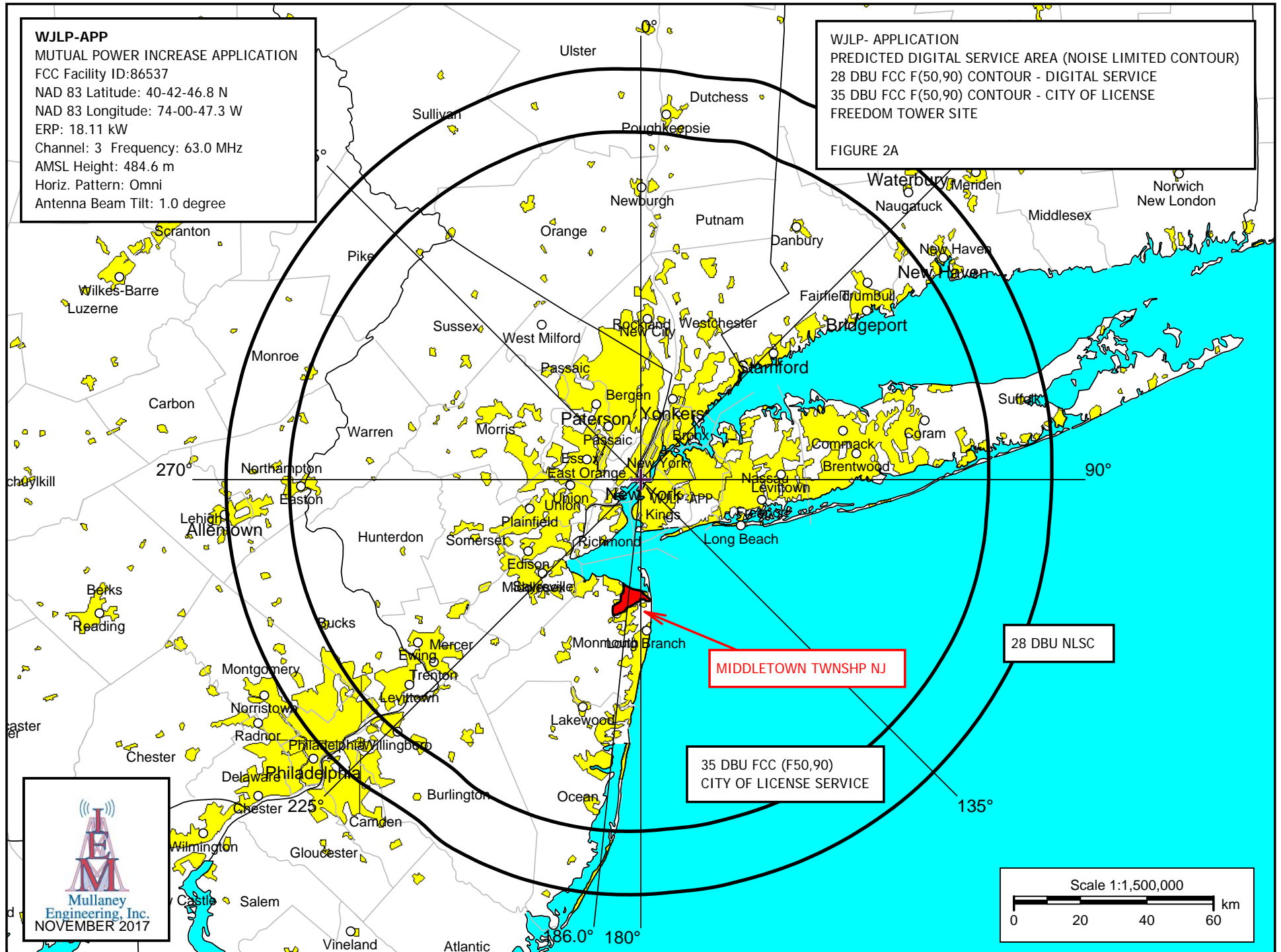
**WJLP- APPLICATION****PREDICTED DIGITAL SERVICE AREA (NOISE LIMITED CONTOUR)**

28 DBU FCC F(50,90) CONTOUR - DIGITAL SERVICE

35 DBU FCC F(50,90) CONTOUR - CITY OF LICENSE

FREEDOM TOWER SITE

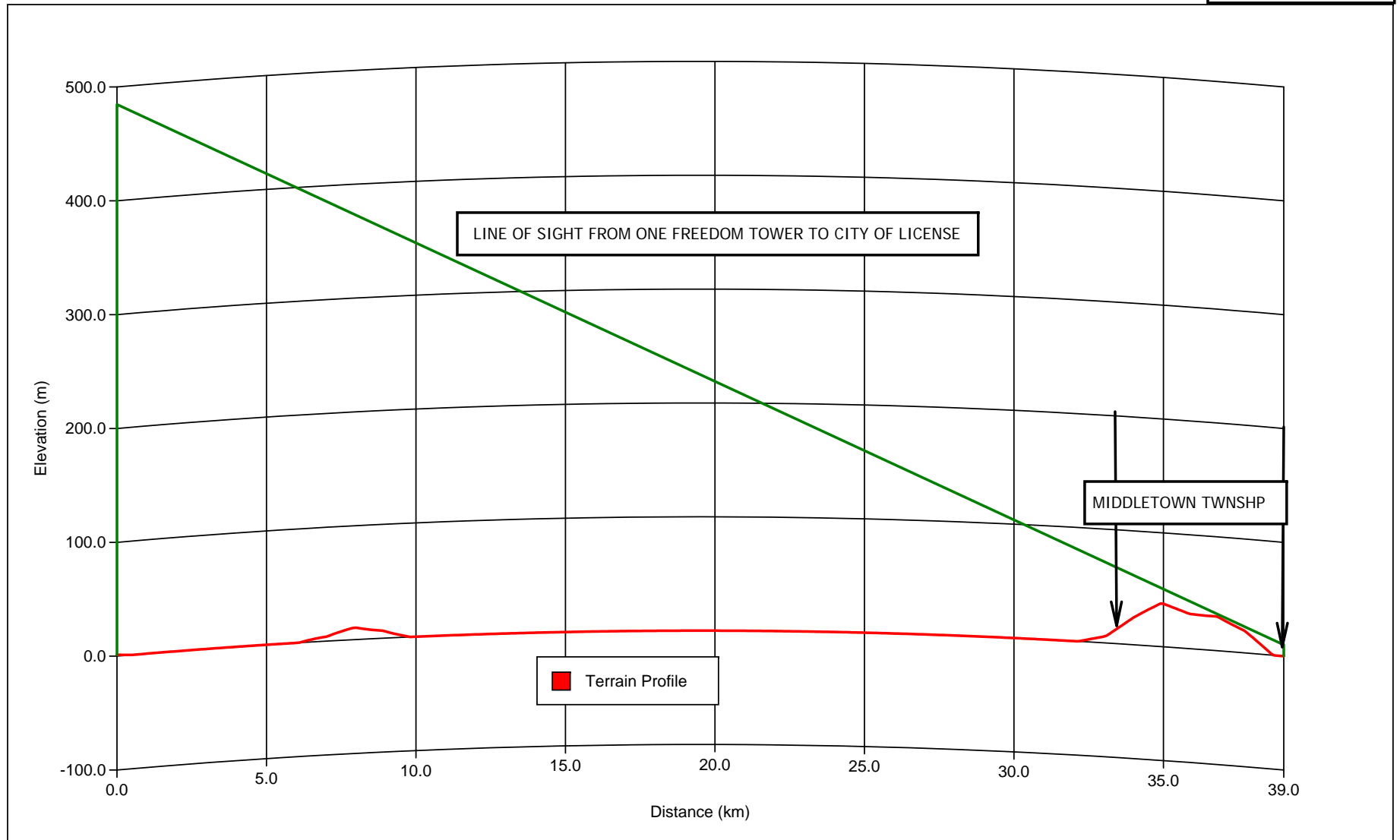
FIGURE 2A



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NOVEMBER 2017



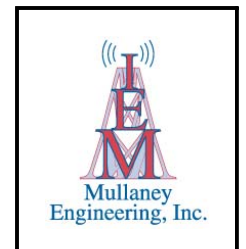
FIGURE 2B



Start Latitude: 40-42-46.8 N  
Start Longitude: 074-00-47.3 W  
NAD 83

End Latitude: 40-21-48.30 N  
End Longitude: 074-03-41.66 W  
RADIAL TO MIDDLETOWN  
TOWNSHIP, NJ

Distance: 39.02 km  
Bearing: 186.0 deg



## FIGURE 3

### Alan Dick Broadcast Feasibility Report

Circularly Polarised Band I Antenna System,  
Channels 3, 4 & 5.  
Tower One World Trade, New York.

# Technical Proposal

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

**Approved by:** Jon Watson  
RF Engineer

Date of issue: 3rd April 2017  
Document number: E50494  
Version: 3.0

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## 1.) Document History & Structure

Prepared by: Chris Randall  
Senior RF Engineer

Approved by : Jonathan Watson  
RF Engineer

Document History			
Version No.	Date	Change Details	Author
1.0	10 <sup>th</sup> March 2017	Original Version	CCR
2.0	31 <sup>th</sup> March 2017	4 Bay with Platform Information Added	CCR
3.0	3 <sup>rd</sup> April 2017	Horizontal Parasitics Added	CCR

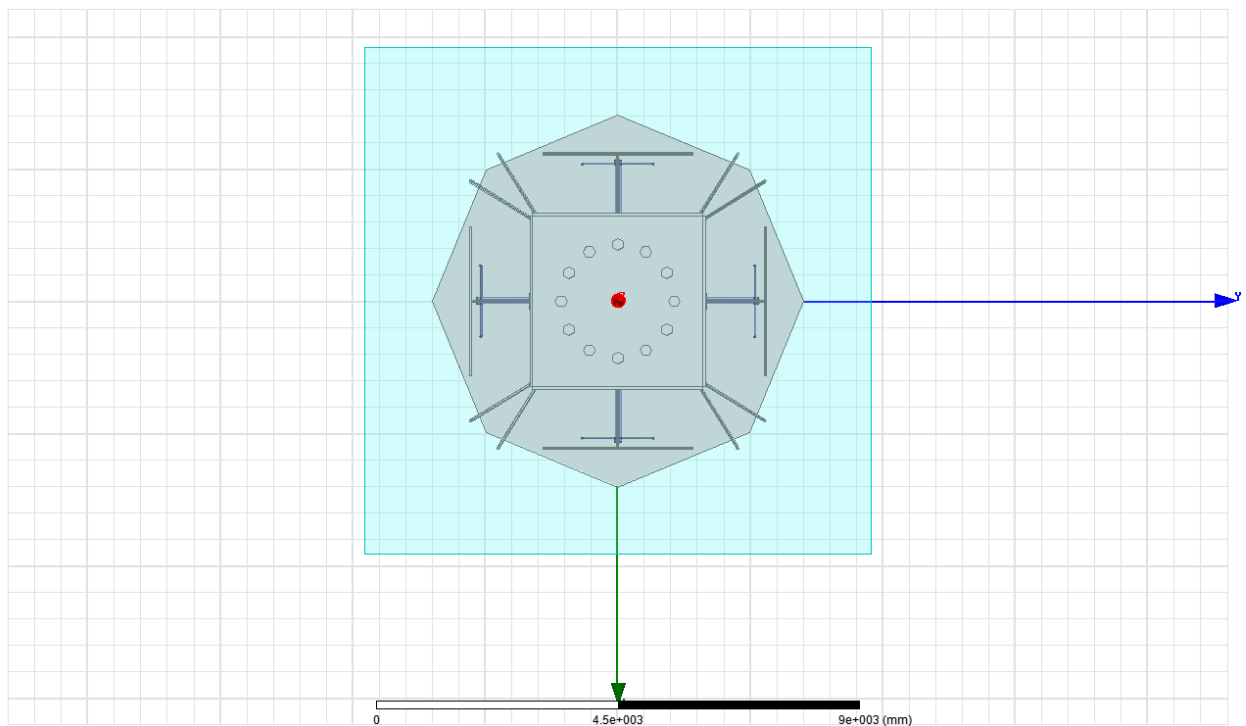
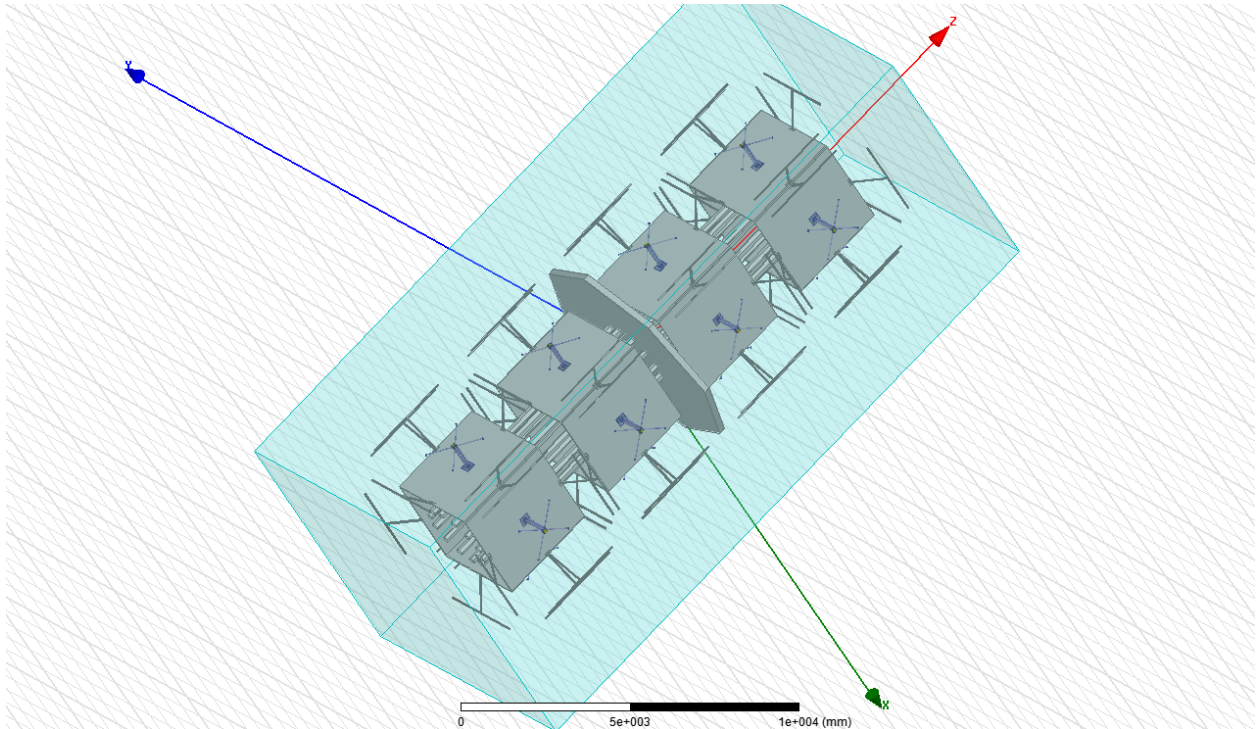
### Structure of document

This document consists of the following sections and appendices:

Subject	Description
Technical Solution	System Data:  Antenna Electrical Parameters

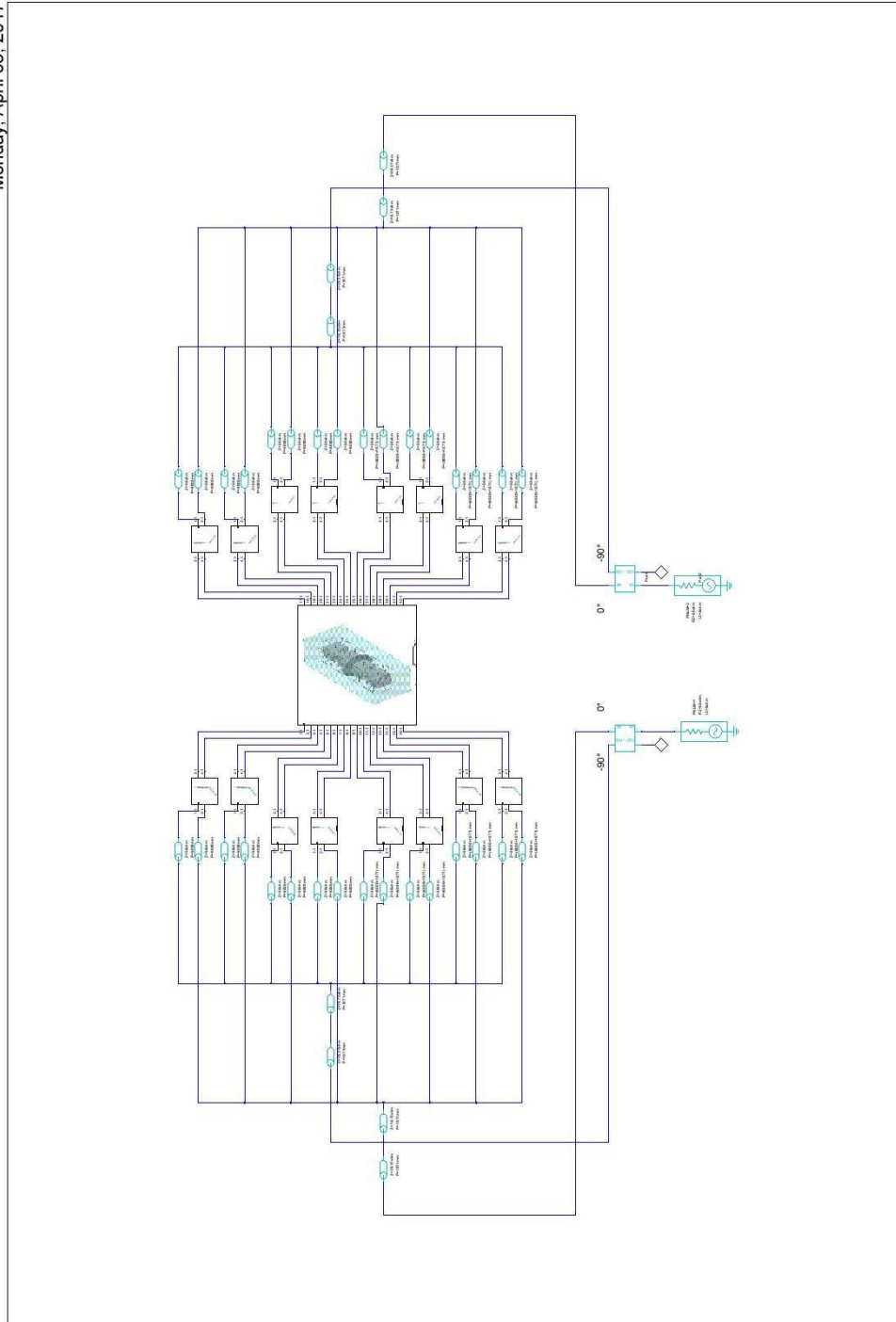
## 2.) Proposed Antenna System

4 Bay 4 around Band 1 Crossbow Antenna. Bay Spacing is 1 Wavelength mid band 70MHz



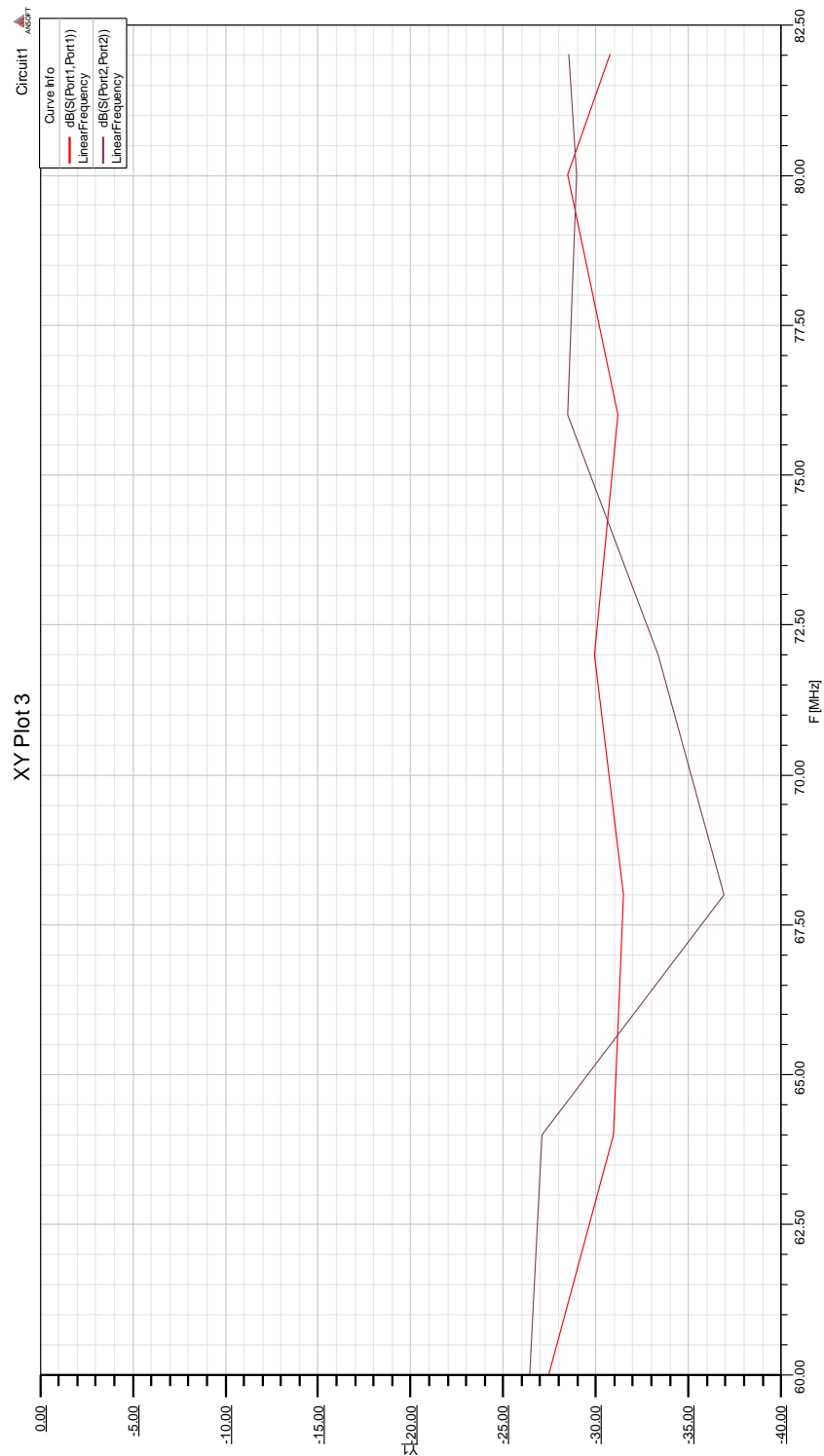
### 3.)System Distribution Designer 4 Bay System

Monday, April 03, 2017

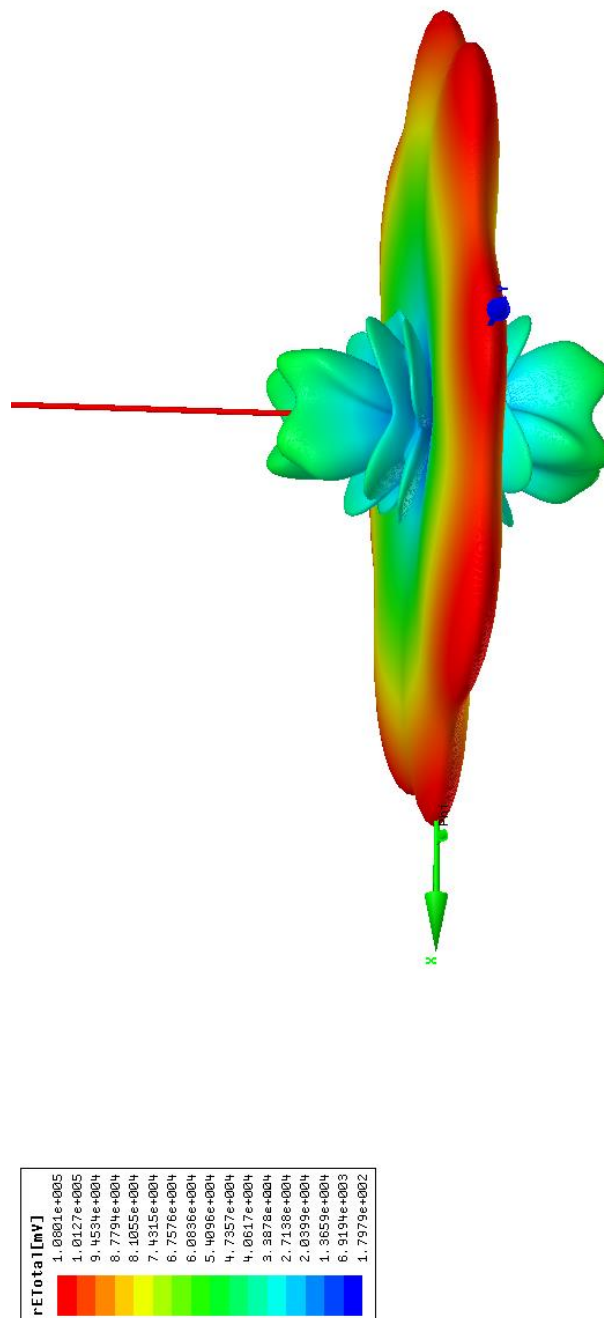


Page 1 of 1

## 4.) Return Loss Half Antennas 4 Bay System

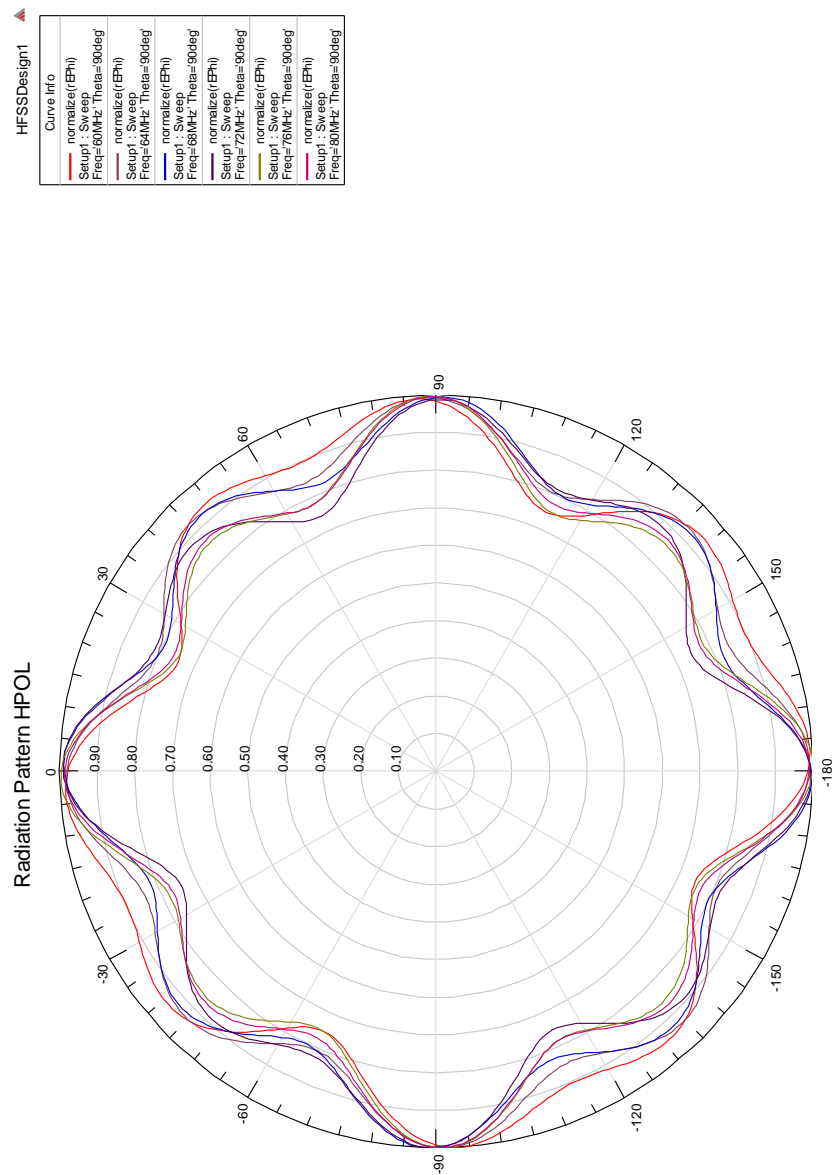


## 5.) Total Radiation Pattern 3d Plot

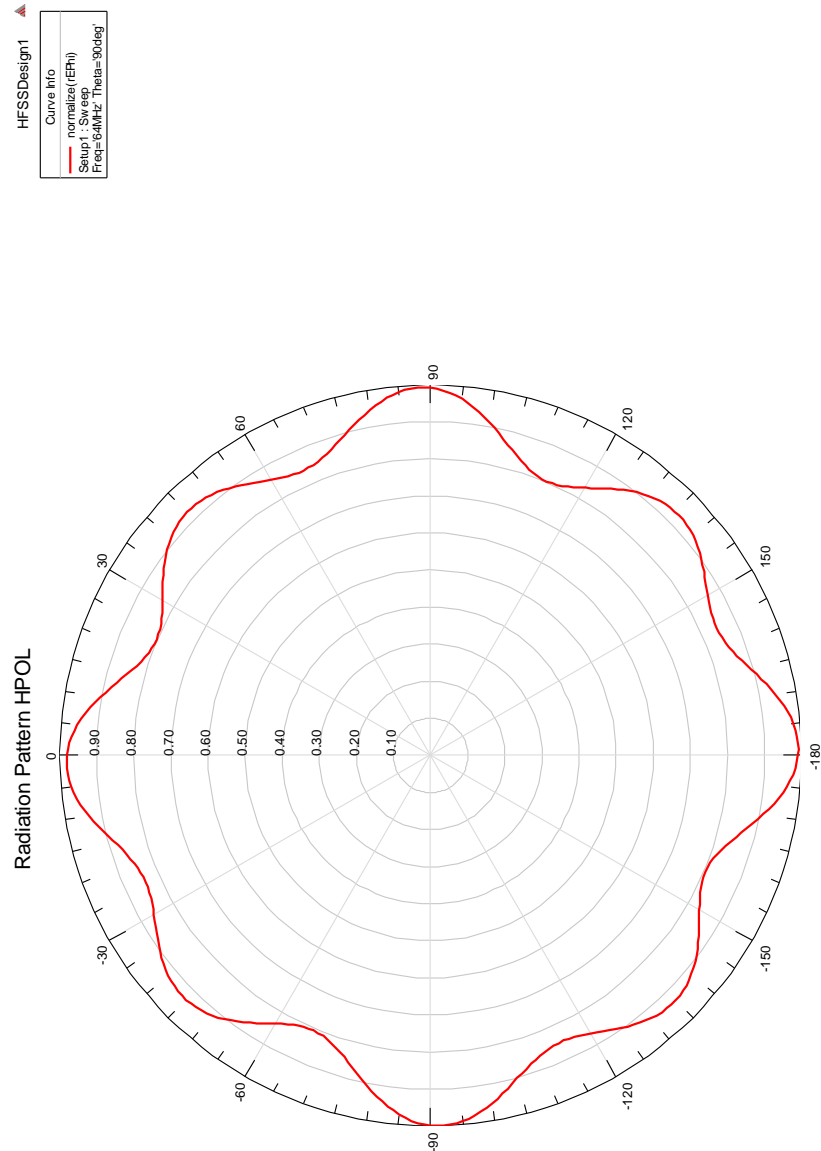




## 6.)Horizontal Radiation Pattern Horizontal Component



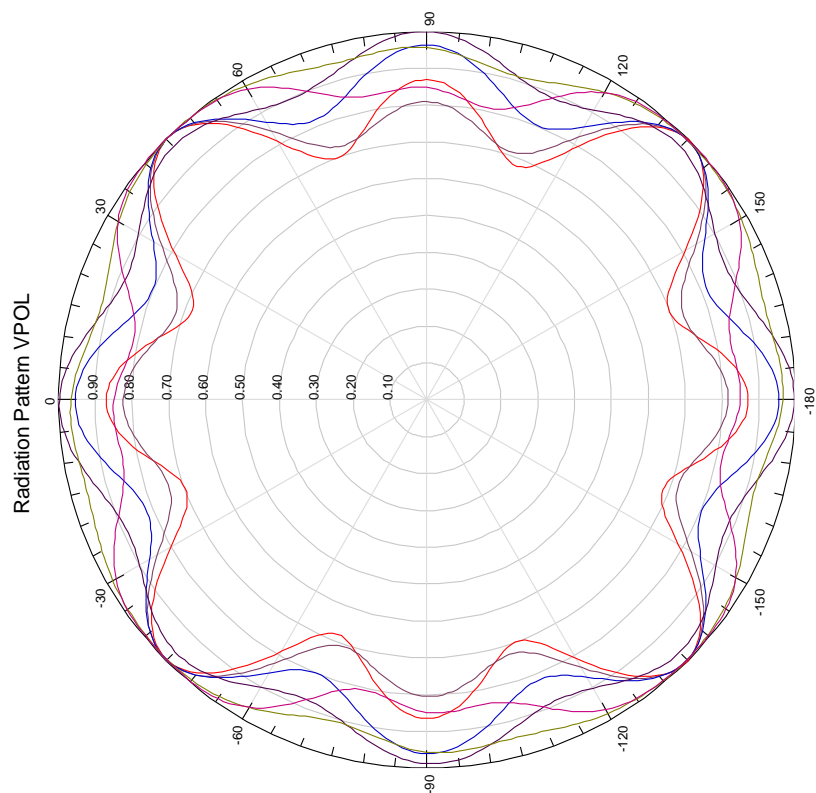
## 7.)Horizontal Radiation Pattern Horizontal Component 64MHz



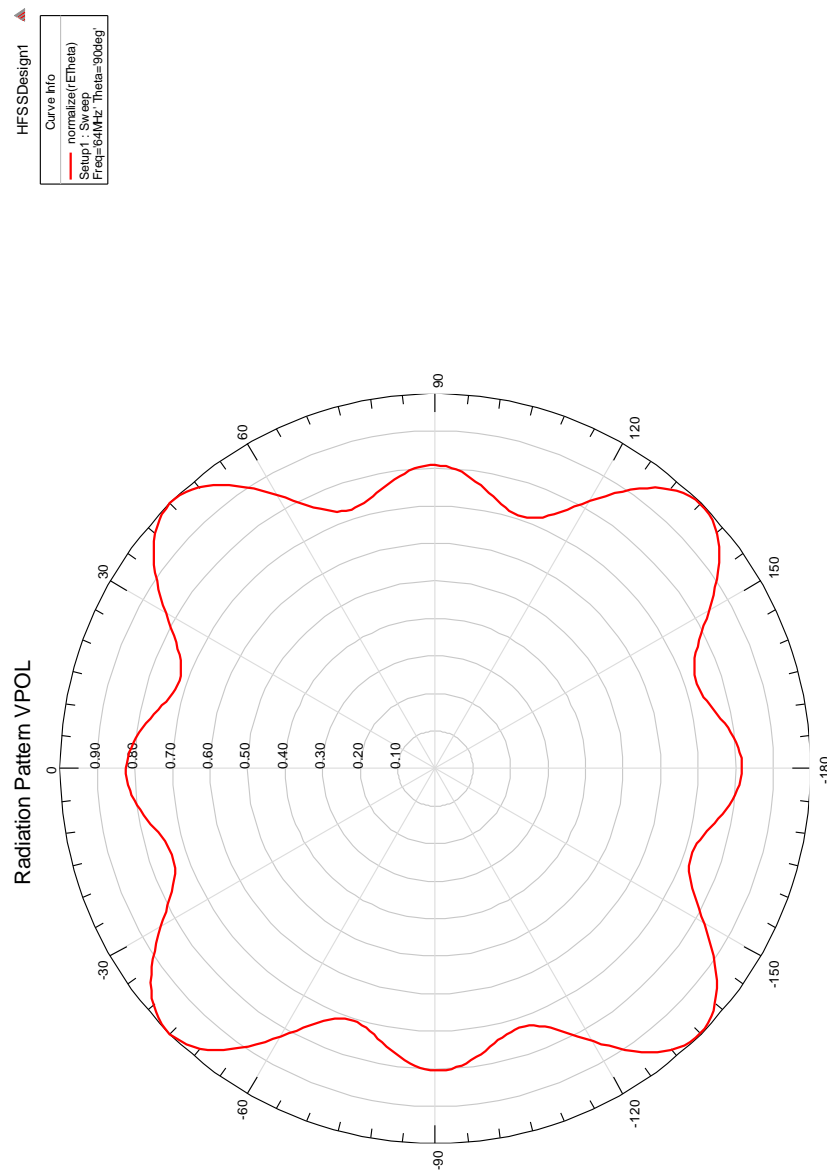
## 8.) Horizontal Radiation Pattern Vertical Component

HFSSDesign1

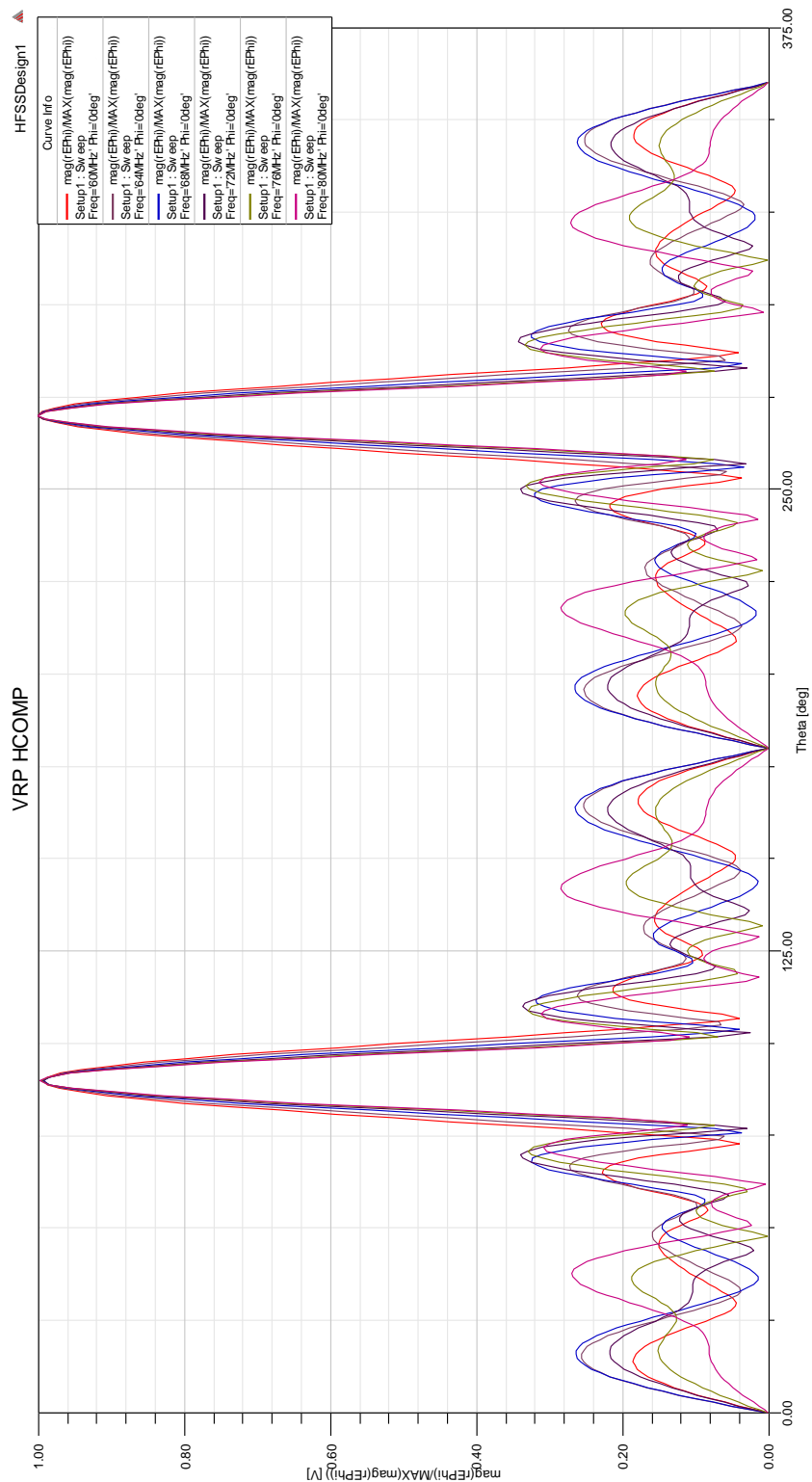
Curve Info
Setup1: Sweep Freq=80MHz Theta=90deg normalize(r(Etheta))
Setup1: Sweep Freq=84MHz Theta=90deg normalize(r(Etheta))
Setup1: Sweep Freq=88MHz Theta=90deg normalize(r(Etheta))
Setup1: Sweep Freq=72MHz Theta=90deg normalize(r(Etheta))
Setup1: Sweep Freq=76MHz Theta=90deg normalize(r(Etheta))
Setup1: Sweep Freq=80MHz Theta=90deg normalize(r(Etheta))



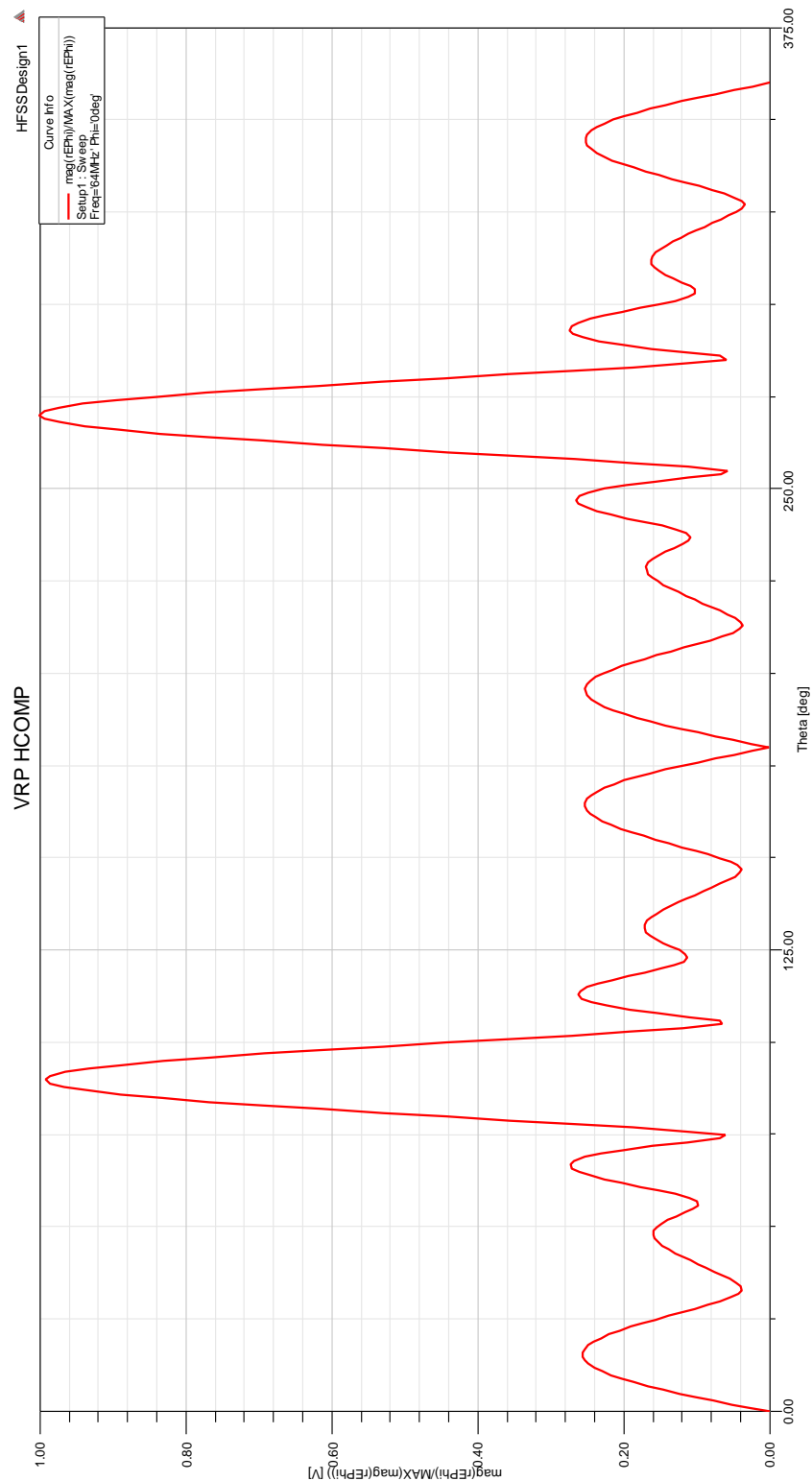
## 9.)Horizontal Radiation Pattern Vertical Component 64MHz



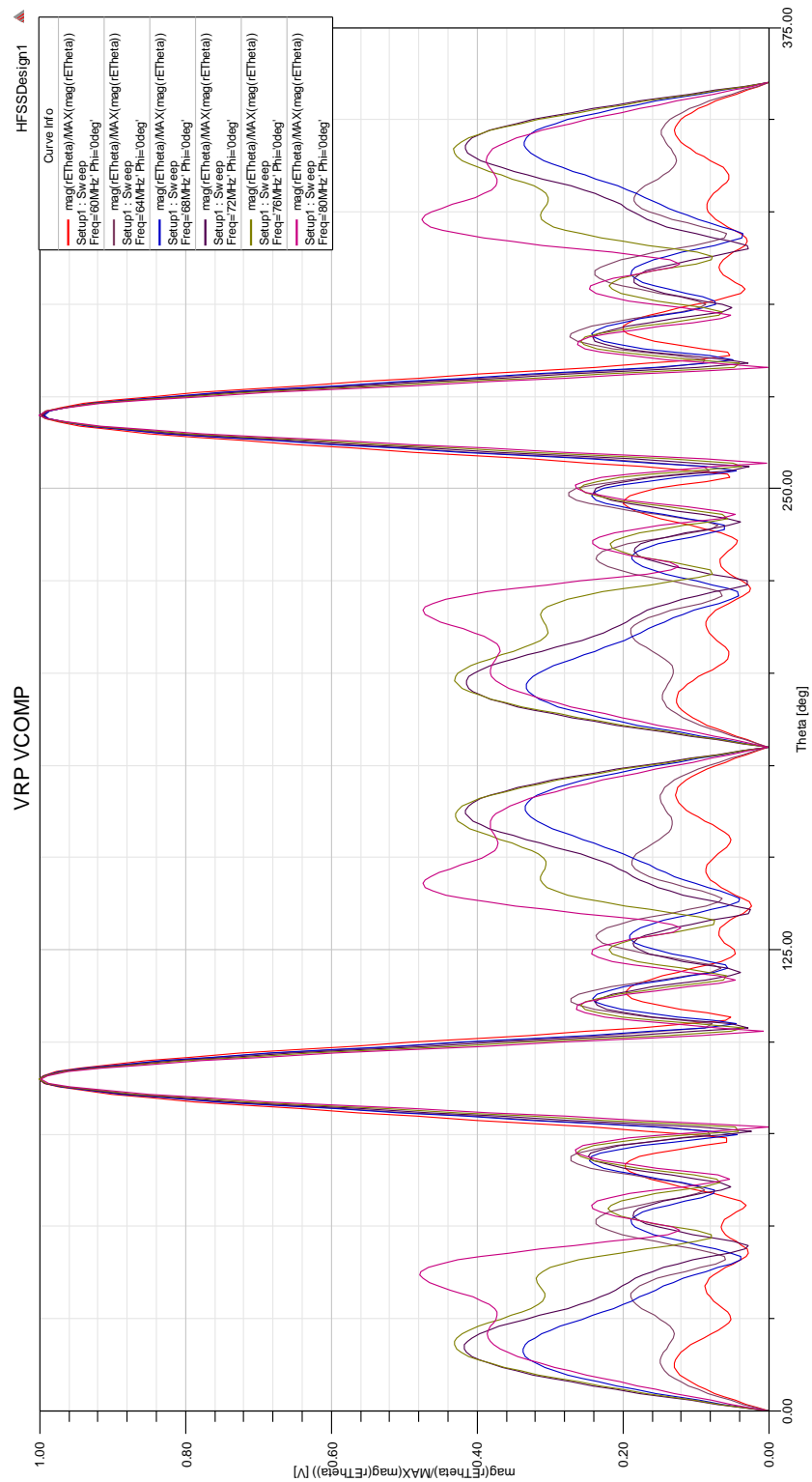
## 10.) Vertical Radiation Pattern Horizontal Component



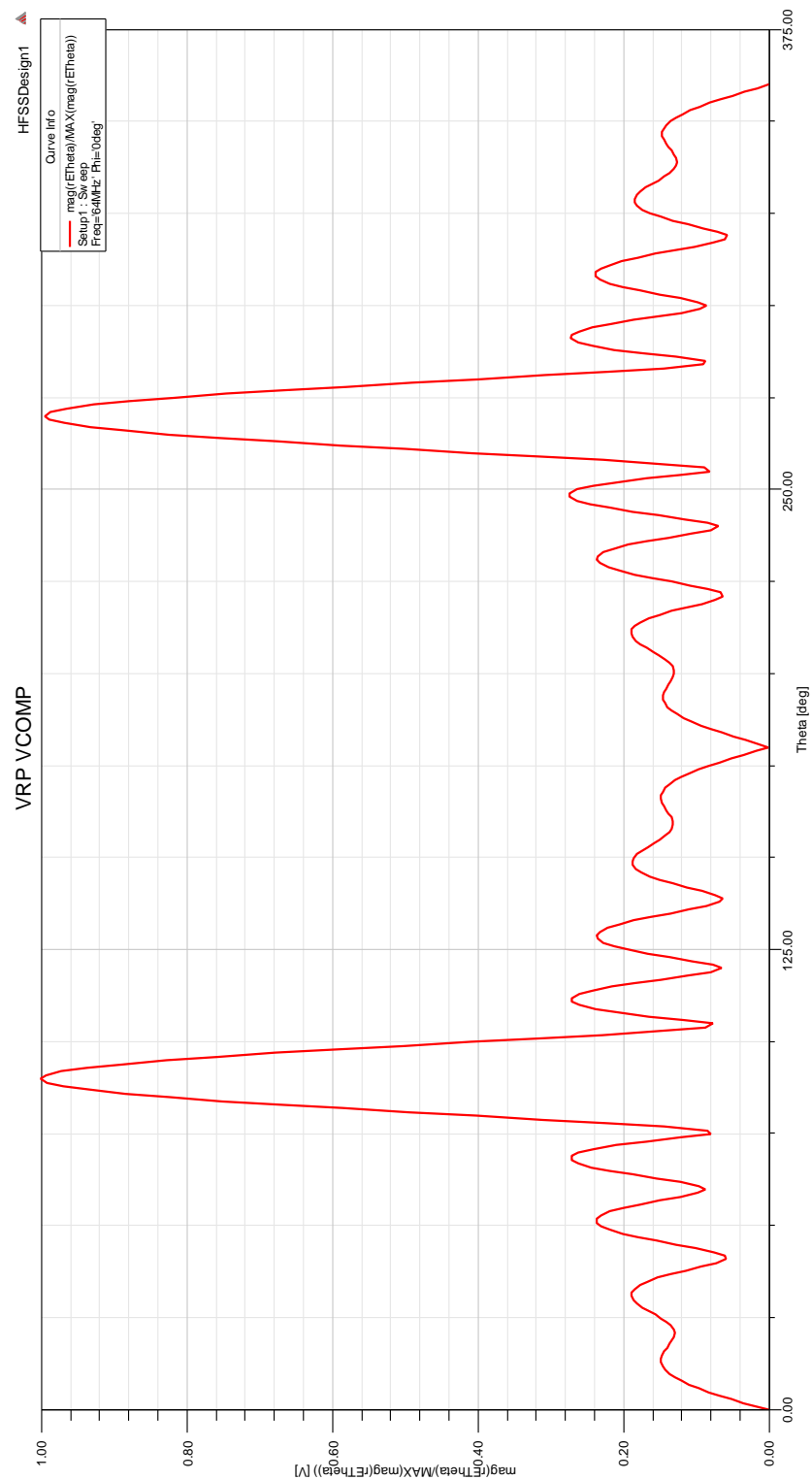
## 11.) Vertical Radiation Pattern Horizontal Component 64MHz



## 12.) Vertical Radiation Pattern Vertical Component



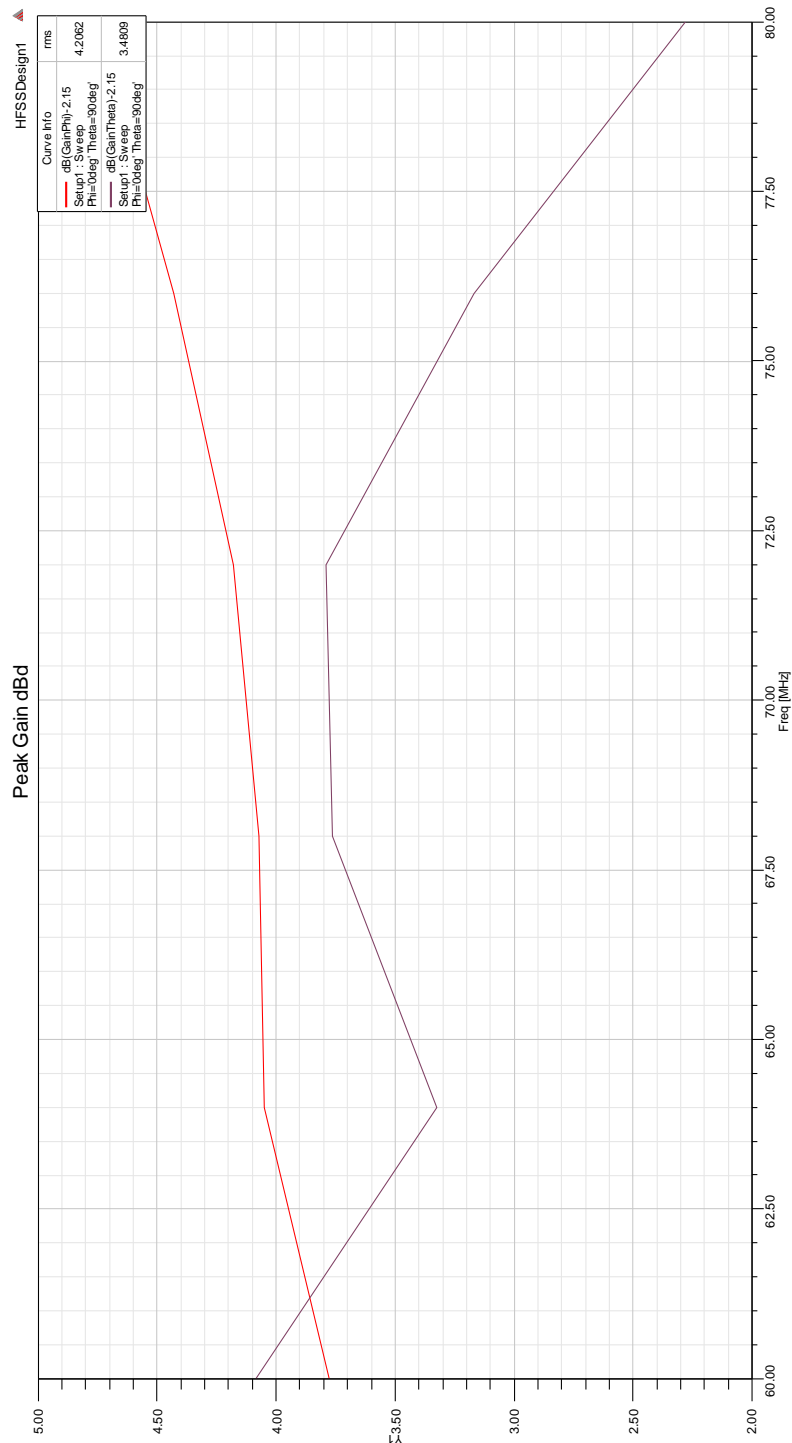
### 13.) Vertical Radiation Pattern Vertical Component 64MHz



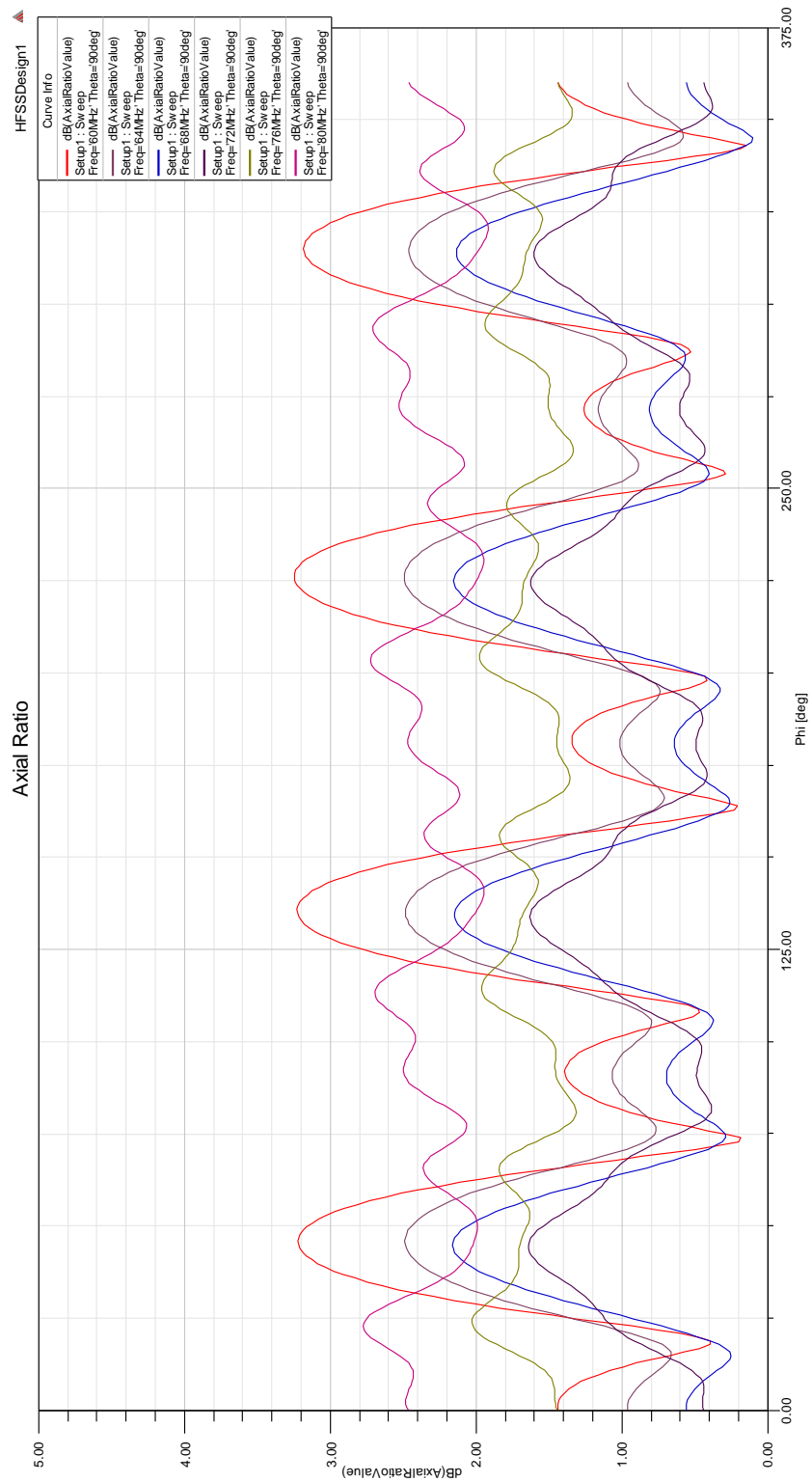


## 14.) Peak Gain Plot

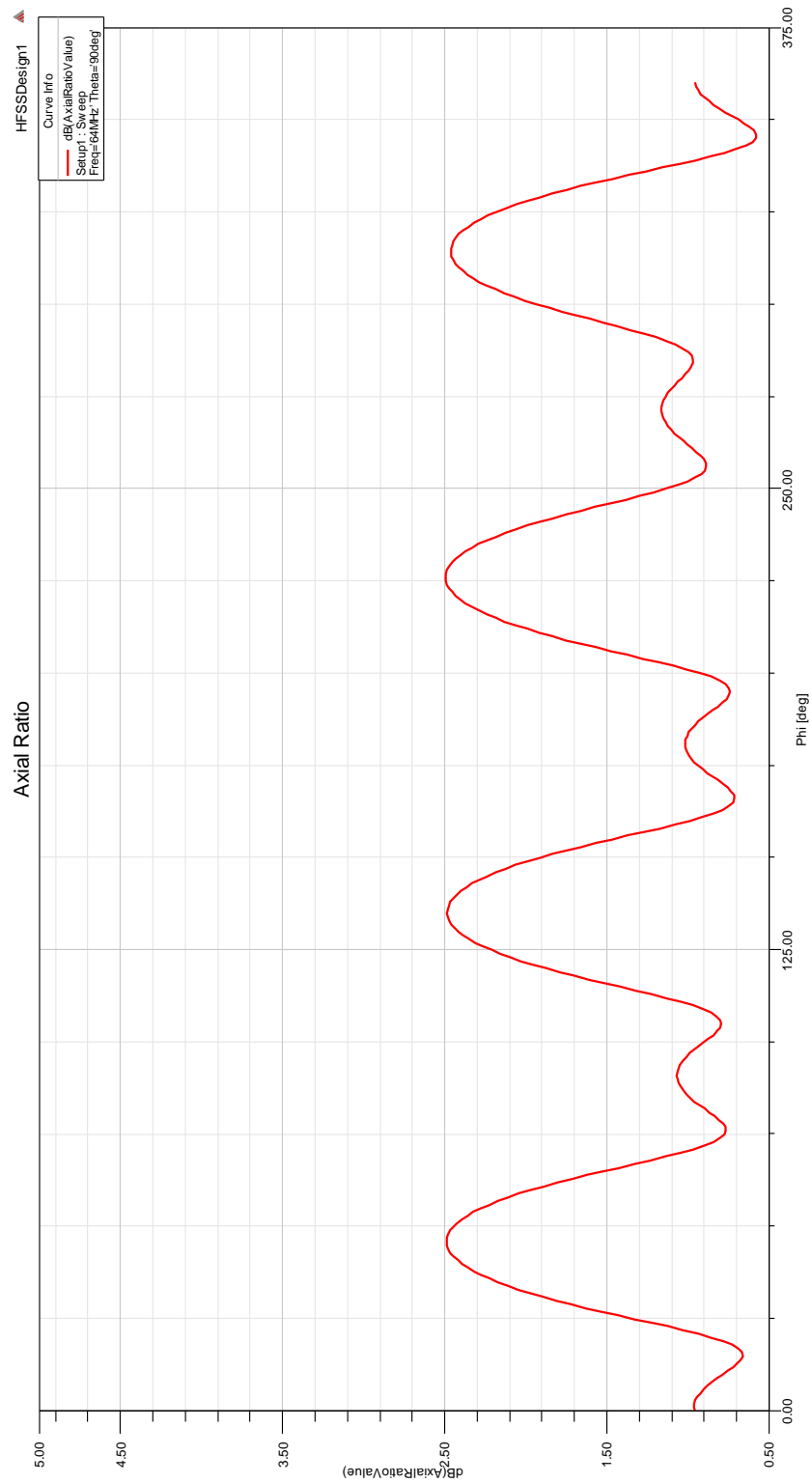
The Horizontal field peak gain is averaged at 3.9dB across channel 3. Another 0.5dB of loss should be considered for system losses and null fill. A resultant gain for the horizontal field component is 3.4dBd. (Main feeder/combiner losses are not considered).



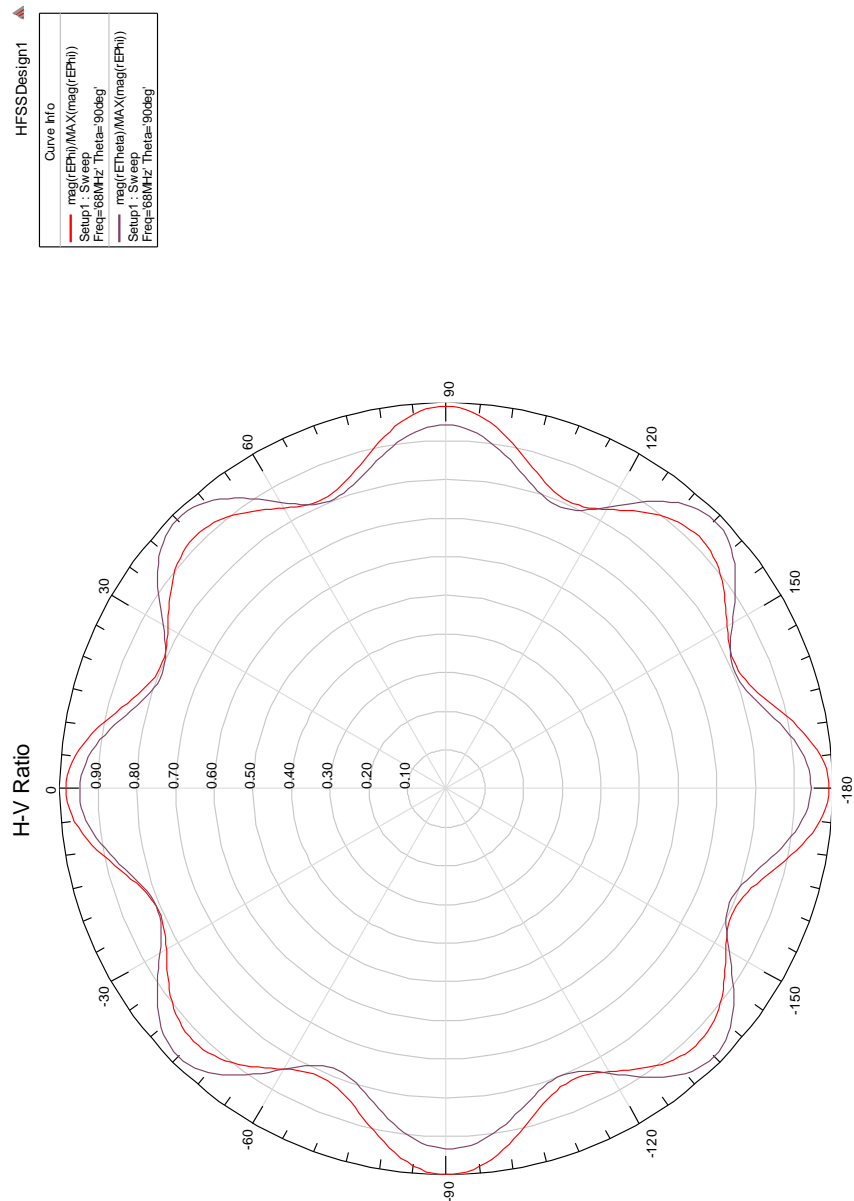
## 15.) Axial Ratio



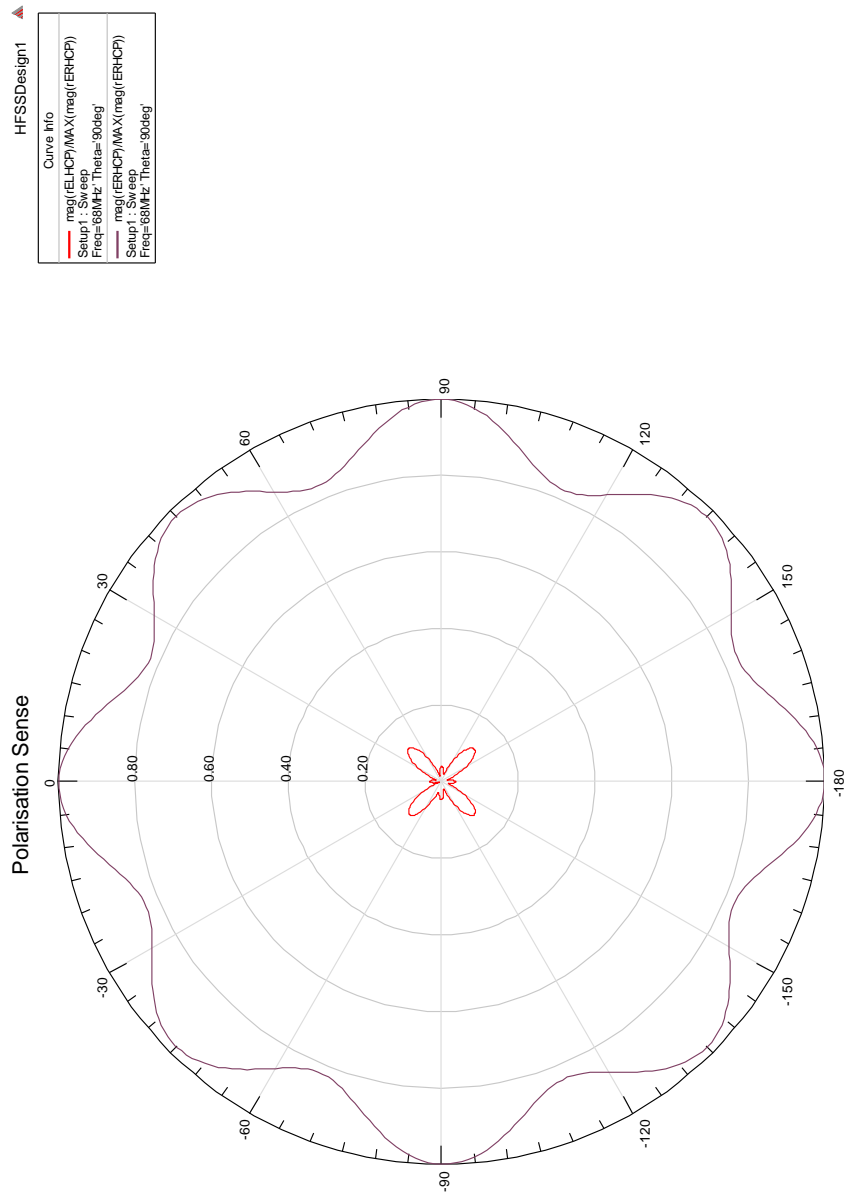
## 16.) Axial Ratio 64MHz



## 17.) Horizontal to Vertical Ratio



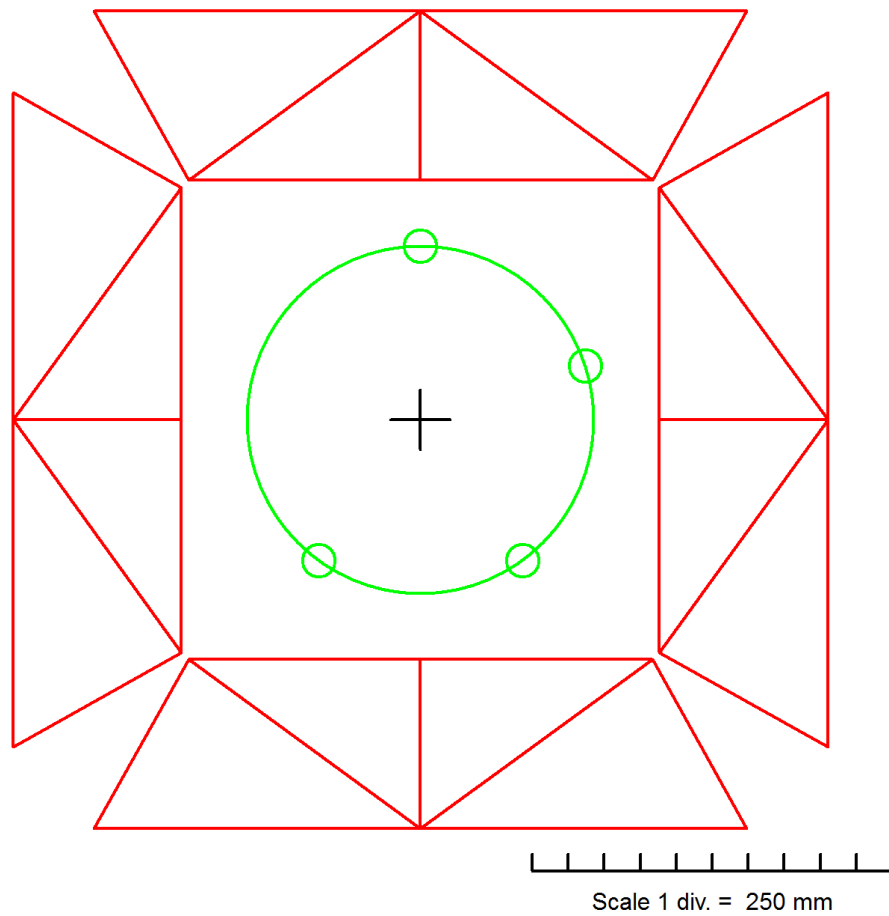
## 18.) Polarisation Sense



## 19.) Antenna Array Plan

### ARRAY PLAN

Station ***Tower One***  
Frequency ***70 MHz***  
Type ***Band 1 Crossbow Antenna***



***Antenna Radius 1660mm***

***Reflector Size 3220mm SQ***

***Parasitic Spacing 4530mm***

***Parasitic Height from Screen 1169mm***

Engineer ***Chris R*** Date ***10 Mar 2017***

Pat. No. 48703107 Chris Randall v8.1.1

TABLE 1A

FCC TV STUDY v2.2.4  
Station Data: LMS TV 11-25-2017  
Scenario: BASELINE AGREEMENT +0DB POWER INCREASE (GROUP ONLY)

Desired station	Service area		Terrain-limited		Interference-free	
	Area	Population	Area	Population	Area	Population
KJWP 0DB D2 DT APP WILMINGTON, DE	35855.7	11,594,463	34944.7	11,467,943	34432.4	11,028,319
Undesired station	Total interference		Unique interference			
	Area	Population	Area	Population		
WJLP-WTC 0DB D3 DT APP MIDDLETOWN TOWNSHIP	420.3	428,537	420.3	428,537		
WVIR-TV 0DB D2 DT APP CHARLOTTESVILLE, VA	92.0	11,087	92.0	11,087		
Desired station	Service area		Terrain-limited		Interference-free	
	Area	Population	Area	Population	Area	Population
WACP 0DB D4 DT APP ATLANTIC CITY, NJ	33689.0	9,415,263	33351.8	9,301,049	33115.4	9,115,041
Undesired station	Total interference		Unique interference			
	Area	Population	Area	Population		
WJLP-WTC 0DB D3 DT APP MIDDLETOWN TOWNSHIP	236.4	186,008	236.4	186,008		
Desired station	Service area		Terrain-limited		Interference-free	
	Area	Population	Area	Population	Area	Population
WJLP-WTC 0DB D3 DT APP MIDDLETOWN TOWNSHIP	33507.9	21,212,016	32518.1	20,991,972	31897.4	20,748,078
Undesired station	Total interference		Unique interference			
	Area	Population	Area	Population		
KJWP 0DB D2 DT APP WILMINGTON, DE	406.7	186,517	160.8	62,852		
WACP 0DB D4 DT APP ATLANTIC CITY, NJ	459.9	181,042	214.0	57,377		
Desired station	Service area		Terrain-limited		Interference-free	
	Area	Population	Area	Population	Area	Population
WVIR-TV 0DB D2 DT APP CHARLOTTESVILLE, VA	37658.1	2,182,763	35764.1	2,140,556	35659.8	2,128,853
Undesired station	Total interference		Unique interference			
	Area	Population	Area	Population		
KJWP 0DB D2 DT APP WILMINGTON, DE	104.3	11,703	104.3	11,703		

TABLE 1B

FCC TV STUDY v2.2.4  
Station Data: LMS TV 11-25-2017  
Scenario: BASELINE AGREEMENT +9DB POWER INCREASE (GROUP ONLY)

Desired station	Service area		Terrain-limited		Interference-free	
	Area	Population	Area	Population	Area	Population
KJWP 9DB D2 DT APP WILMINGTON, DE	52307.2	15,918,416	51184.5	15,644,903	48309.6	12,418,032
Undesired station	Total interference		Unique interference			
	Area	Population	Area	Population		
WJLP-WTC 9DB D3 DT APP MIDDLETOWN TOWNSHIP	2072.1	3,132,729	2072.1	3,132,729		
WVIR-TV 9DB D2 DT APP CHARLOTTESVILLE, VA	802.8	94,142	802.8	94,142		
Desired station	Service area		Terrain-limited		Interference-free	
	Area	Population	Area	Population	Area	Population
WACP 9DB D4 DT APP ATLANTIC CITY, NJ	49125.4	13,457,182	48256.0	13,072,446	46362.5	10,463,535
Undesired station	Total interference		Unique interference			
	Area	Population	Area	Population		
WJLP-WTC 9DB D3 DT APP MIDDLETOWN TOWNSHIP	1893.5	2,608,911	1893.5	2,608,911		
Desired station	Service area		Terrain-limited		Interference-free	
	Area	Population	Area	Population	Area	Population
WJLP-WTC 9DB D3 DT APP MIDDLETOWN TOWNSHIP	48437.5	24,524,414	46957.9	24,184,827	43911.9	22,288,104
Undesired station	Total interference		Unique interference			
	Area	Population	Area	Population		
KJWP 9DB D2 DT APP WILMINGTON, DE	2171.3	1,831,733	739.0	334,409		
WACP 9DB D4 DT APP ATLANTIC CITY, NJ	2307.0	1,562,314	874.7	64,990		
Desired station	Service area		Terrain-limited		Interference-free	
	Area	Population	Area	Population	Area	Population
WVIR-TV 9DB D2 DT APP CHARLOTTESVILLE, VA	56413.5	3,172,944	52743.5	3,093,939	51465.5	2,869,797
Undesired station	Total interference		Unique interference			
	Area	Population	Area	Population		
KJWP 9DB D2 DT APP WILMINGTON, DE	1278.0	224,142	1278.0	224,142		



TABLE 1C

## FCC TV STUDY v2.2.4

## SUMMARY OF SERVICE GAINS FROM PROPOSED GROUP POWER INCREASE TO THE 28 DBU SERVICE CONTOUR

STATION	CITY/STATE	STATUS	SERVICE		TERRAIN LIMITED		INTERFERENCE FREE	
			AREA SQ. KM	POPULATION	AREA SQ. KM	POPULATION	AREA SQ. KM	POPULATION
KJWP	WILMINGTON, DE	APP	52307.2	15,918,416	51184.5	15,644,903	48309.6	12,418,032
		LIC	35855.7	11,594,463	34944.7	11,467,943	34432.4	11,028,319
		GAIN	16451.5	4,323,953	16239.8	4,176,960	13877.2	1,389,713

STATION	CITY/STATE	STATUS	SERVICE		TERRAIN LIMITED		INTERFERENCE FREE	
			AREA SQ. KM	POPULATION	AREA SQ. KM	POPULATION	AREA SQ. KM	POPULATION
WACP	ATLANTIC CITY NJ	APP	49125.4	13,457,182	48256.0	13,072,446	46362.5	10,463,535
		LIC	33689.0	9,415,263	33351.8	9,301,049	33115.4	9,115,041
		GAIN	15436.4	4,041,919	14904.2	3,771,397	13247.1	1,348,494

STATION	CITY/STATE	STATUS	SERVICE		TERRAIN LIMITED		INTERFERENCE FREE	
			AREA SQ. KM	POPULATION	AREA SQ. KM	POPULATION	AREA SQ. KM	POPULATION
WJLP	MIDDLETOWN TOWNSHIP NJ	APP	48437.5	24,524,414	46957.9	24,184,827	43911.9	22,288,104
		WTC-RC	33507.9	21,212,016	32518.1	20,991,972	31897.4	20,748,078
		GAIN	14929.6	3,312,398	14439.8	3,192,855	12014.5	1,540,026

STATION	CITY/STATE	STATUS	SERVICE		TERRAIN LIMITED		INTERFERENCE FREE	
			AREA SQ. KM	POPULATION	AREA SQ. KM	POPULATION	AREA SQ. KM	POPULATION
WVIR	CHARLOTTES- VILLE VA	APP	56413.5	3,172,944	52743.5	3,093,939	51465.5	2,869,797
		CP	37658.1	2,182,763	35764.1	2,140,556	35659.87	2,128,853
		GAIN	18755.4	990,181	16979.4	953,383	15805.63	740,944

PROPOSAL TO OTHER NON-GROUP FACILITIES  
FCC TV STUDY v2.2.4  
Study build station data: LMS TV 11-25-2017

Proposal: WJLP-WTC 9DB D3 DT APP MIDDLETOWN TWNSHP, NJ  
File number: WJLP-WTC-9DB  
Facility ID: 86537  
Station data: User record  
Country: U.S. Zone: I

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
Yes	KJWP	D2	DT	LIC	WILMINGTON, DE	BLCDT20131129AIH	127.6 km
No	WSBE-TV	D2	DT	CP	PROVIDENCE, RI	BLANK0000029862	261.2
Yes	WACP	D4	DT	LIC	ATLANTIC CITY, NJ	BMLCDT20140304AAS	129.5

No non-directional AM stations found within 0.8 km  
No directional AM stations found within 3.2 km  
Record parameters as studied:

Channel: D3  
Latitude: 40 42 46.80 N (NAD83)  
Longitude: 74 0 47.30 W  
Height AMSL: 484.6 m  
HAAT: 476.0 m  
Peak ERP: 18.11 kW  
Antenna: Nondirectional 0.0 deg  
Elev Pattn: Generic Elec Tilt: 1.00

28.0 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	18.1 kW	468.0 m	123.7 km
45.0	18.1	482.0	124.9
90.0	18.1	464.9	123.5
135.0	18.1	471.9	124.1
180.0	18.1	475.8	124.4
225.0	18.1	478.4	124.6
270.0	18.1	477.9	124.5
315.0	18.1	474.3	124.2

Database HAAT: 476 m  
Computed HAAT: 474 m

PROPOSAL TO OTHER NON-GROUP FACILITIES  
FCC TV STUDY v2.2.4  
Study build station data: LMS TV 11-25-2017

Proposal: WJLP-WTC 9DB D3 DT APP MIDDLETOWN TWNSHP, NJ  
File number: WJLP-WTC-9DB  
Facility ID: 86537

ERP exceeds maximum  
ERP: 18.11 kW ERP maximum: 2.30 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: 397.2 km  
Distance to Mexican border: 2670.8 km

Conditions at FCC monitoring station: Laurel MD  
Bearing: 235.2 degrees Distance: 294.7 km

Proposal is not within the West Virginia quiet zone area  
Conditions at Table Mountain receiving zone:  
Bearing: 279.0 degrees Distance: 2627.4 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%

\*\*IX check failure to KWHP BLCDT20131129AIH LIC scenario 1, interference caused (SEE GROUP IX AGREEMENT)\*\*  
\*\*IX check failure to WACP BMLCDT20140304AAS LIC scenario 1, interference caused (SEE GROUP IX AGREEMENT)\*\*

\*\*NO PREDICTED INTERFERENCE TO ANY OTHER NON-GROUP FACILITIES\*\*

WJLP CHANNEL 3  
ONE WORLD TRADE CENTER  
"THE FREEDOM TOWER"

Human Exposure to Radiofrequency Electromagnetic Field

The proposed WJLP DTV operation was evaluated for human exposure to RF energy using the procedures outlined in the FCC's OET Bulletin Number 65.

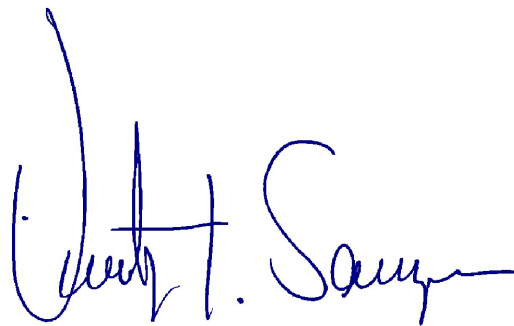
At the WTC Site and based on OET-65 equation (10), and considering 30 percent (0.3) antenna relative field in downward elevations (pattern data shows less than 30 percent relative field at angles 30 to 90 degrees below the antenna), the calculated signal density near the tower at two meters above roof level attributable to the facility is  $21.3 \mu\text{W}/\text{cm}^2$ , which is 2.13% of the controlled worker permissible level and 10.65% of the general population/uncontrolled maximum permitted exposure limit.

Access to the rooftop area is highly controlled by building security and is a restricted high security area, with access granted to only authorised and trained personnel. The general public or workers will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines.

RF exposure warning signs will continue to be posted. With respect to worker safety, the applicant will coordinate exposure procedures with all pertinent stations and will reduce power or cease operation as necessary to protect persons having access to the site, tower, or antenna from RF electromagnetic field exposure in excess of FCC guidelines.

November 27, 2017

Timothy Z. Sawyer, Senior Engineer/Consultant  
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(703) 848-2130 Direct Line (301) 921-0115 Main Office

A handwritten signature in blue ink, appearing to read "Timothy Z. Sawyer". The signature is fluid and cursive, with a large initial "T" and "S".