

ENGINEERING STATEMENT

In support of a request for

Amendment to a Minor Modification of a Licensed Facility

for Digital Class A TV Station Application

WKHU-CD CH32

Kittanning, PA

Facility ID: 68401

PURPOSE

MARSAND, INC. has been retained by OTA Broadcasting (PIT), LLC, the “applicant”, to prepare this engineering statement in support of a request for Amendment to a Minor Modification of a Licensed Facility for Digital Class A TV Station Application pursuant to the Commission’s directive in *Procedures for the Post-Incentive Auction Broadcast Transition*, DA 17-106, released January 27, 2017 and the *Incentive Auction Closing and Channel Reassignment Public Notice*, DA 17-314, released April 13, 2017. The applicant proposes to replace its existing side-mount Broadband Panel antenna with a single channel panel antenna and new transmission line on its reassigned channel 32 to be able to meet the construction deadline for its transition phase 4. This application proposes to amend the ERP and antenna to correct the underlying Minor Modification application (LMS File No. 27841).

The proposed DTV facility will operate on the DTV channel for this station as established in the post-incentive auction channel reassignment public notice. It will operate post-incentive auction facilities that do not expand the noise-limited service contour in any direction beyond that established by the post-incentive auction channel reassignment public notice and that match or reduce by no more than five percent with respect to predicted population from those defined in the post-incentive auction channel reassignment public notice. The antenna structure to be used by this facility has been registered by the Commission and will not require reregistration.

DISCUSSION

The applicant currently is licensed and operating on channel 44 with Digital TV service with 6.38 kW ERP at 434.8 m RCAMSL (BLDTA-20121001BDO). The station has been reassigned channel 32 with 5.04 kW ERP at 434.8 m RCAMSL . The current tower is leased by the applicant and will not require modifications. The current antenna was filed as a Scala 4DR-4-2HN, however an Aldena ATU.08.07.420 Broadband Panel antenna was installed as an equivalent antenna. Retuning the existing Broadband Panel antenna to the reassigned channel alters the horizontal pattern and cannot meet the 1%/5% requirements for the post-auction facility. A single channel panel antenna that approximates the antenna pattern on file will be installed to replace the existing antenna. New transmission line will be installed to connect the new antenna to the transmitter to allow the pre-auction channel facility to operate uninterrupted until the transition deadline. The proposed facility would establish service on the reassigned channel at an ERP of 4.90 kW and an RCAMSL of 434.8 m. The proposed service area will remain within the FCC baseline +1% and still maintain a service area population of more than 95% of baseline. The study results of this proposal utilizing the FCC TVStudy v2.2.3 software are included as **Exhibit 1**.

FCC OET Bulletin No. 65 "Evaluating Compliance With FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields", Edition 97-01, and has been found to comply with the limits set forth in Section 1.1310 of the Rules as shown in **Exhibit 2**. The total exposure as defined by the ANSI standard computations for occupational/controlled area is 0.03 % of the maximum. The total exposure as defined by the ANSI standard computations for general population/uncontrolled area is 0.17 % of the maximum.

Proposed coverage contour shown in **Exhibit 3**.

Proposed antenna technical information is shown in **Exhibit 4**.

CONCLUSION

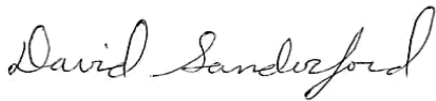
It is respectfully requested that the Commission grant this request for minor modification for these facilities as specified herein.

DECLARATION

David Sanderford, EIT, declares and states that he is a graduate Electrical Engineer with a Bachelor of Science Degree in Electrical Engineering from the Georgia Institute of Technology, and his qualifications are known to the Federal Communications Commission, and that he is Vice-President of MARSAND, INC., a Registered Professional Engineering firm in the State of Texas, and that firm has been retained by OTA Broadcasting (PIT), LLC, to perform the engineering support as contained in this report.

All facts contained herein are true of his own knowledge except where stated to be on information or belief provided by others, and as to those facts, he believes them to be true.

I declare under penalty of perjury that the foregoing is true and correct.



David Sanderford, EIT
Vice-President - MARSAND, INC.

Executed this 7th day of September, 2017
State of Texas

EXHIBIT 1

tvstudy v2.2.3 (Dxtpx3)
Database: localhost, Study: WKHU_PROPOSED34, Model: Longley-Rice
Start: 2017.09.06 08:37:48

Study created: 2017.09.06 08:36:57

Study build station data: LMS TV 2017-09-06 (13)

Proposal: WKHU-CD D32 DC BL KITTANNING, PA
File number: WKHU_PROPOSED34
Facility ID: 68401
Station data: User record
Record ID: 263
Country: U.S.

Stations affected by proposal:

Call	Chan	Svc	Status	City, State	File Number	Distance
WMVH-CD	D32	DC	CP	CHARLEROI, PA	BLANK0000027843	80.0 km
WMVH-CD	D32	DC	BL	CHARLEROI, PA	DTVBL68394	80.0
WFMJ-TV	D33	DT	CP	YOUNGSTOWN, OH	BLANK0000024782	98.3
WFMJ-TV	D33	DT	BL	YOUNGSTOWN, OH	DTVBL72062	98.3

Non-directional AM stations within 0.8 km:

WTYM 1380 L ND1 D KITTANNING, PA BL
WTYM 1380 L ND1 N KITTANNING, PA BL

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D32
Mask: Full Service
Latitude: 40 47 18.50 N (NAD83)
Longitude: 79 32 4.50 W
Height AMSL: 434.8 m
HAAT: 82.0 m
Peak ERP: 4.90 kW
Antenna: Alive ATC-BPHC2NS 205.0 deg
Elev Pattn: Generic

50.5 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	0.008 kW	79.9 m	8.5 km
45.0	0.018	80.3	10.3
90.0	0.012	45.2	7.1
135.0	0.168	76.5	17.4
180.0	1.07	126.5	32.2
225.0	1.85	118.4	34.5
270.0	0.161	69.0	16.3
315.0	0.018	60.2	9.0

Proposal service area is within baseline plus 1.0%
Proposal service area population is more than 95.0% of baseline

Distance to Canadian border: 184.1 km

Distance to Mexican border: 2297.0 km

Conditions at FCC monitoring station: Laurel MD
Bearing: 127.1 degrees Distance: 293.2 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 276.6 degrees Distance: 2165.7 km

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

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

Interference to BLANK0000027843 CP, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WMVH-CD	D32	DC	CP	CHARLEROI, PA	BLANK0000027843	
Undesireds:	WKHU-CD	D32	DC	BL	KITTANNING, PA	DTVBL68401	80.0 km
	WKHU-CD	D32	DC	BL	KITTANNING, PA	WKHU_PROPOSED34	80.0
	WYTV	D31	DT	CP	YOUNGSTOWN, OH	BLANK0000028136	121.6
	WATM-TV	D31	DT	CP	ALTOONA, PA	BLANK0000028661	132.6
	WOUB-TV	D32	DT	CP	ATHENS, OH	BLANK0000025156	212.7
	WOCB-CD	D32	DC	CP	MARION, OH	BLANK0000024957	268.6
	WHP-TV	D32	DT	CP	HARRISBURG, PA	BLANK0000027770	258.0
	WCAV	D32	DT	CP	CHARLOTTESVILLE, VA	BLANK0000025088	267.2
	WFMJ-TV	D33	DT	CP	YOUNGSTOWN, OH	BLANK0000024782	123.5
	Service area	Terrain-limited		IX-free, before		IX-free, after	Percent New IX
	3668.2	504,518		3317.4		420,066	3261.0 413,614
							0.00 0.00

Undesired			Total IX	Unique IX, before		Unique IX, after	
WKHU-CD D32 DC BL	32.2		4,574	28.2		4,163	
WKHU-CD D32 DC BL	32.2		4,574			28.2 4,163	
WOUB-TV D32 DT CP	24.2		2,217	20.1		1,806	
WHP-TV D32 DT CP	4.0		72	4.0		72	

Interference to BLANK0000027843 CP, scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WMVH-CD	D32	DC	CP	CHARLEROI, PA	BLANK0000027843	
Undesireds:	WKHU-CD	D32	DC	BL	KITTANNING, PA	DTVBL68401	80.0 km
	WKHU-CD	D32	DC	BL	KITTANNING, PA	WKHU_PROPOSED34	80.0
	WYTV	D31	DT	CP	YOUNGSTOWN, OH	BLANK0000028136	121.6
	WATM-TV	D31	DT	CP	ALTOONA, PA	BLANK0000028661	132.6
	WOUB-TV	D32	DT	BL	ATHENS, OH	DTVBL50147	212.6
	WOCB-CD	D32	DC	CP	MARION, OH	BLANK0000024957	268.6
	WHP-TV	D32	DT	CP	HARRISBURG, PA	BLANK0000027770	258.0
	WCAV	D32	DT	CP	CHARLOTTESVILLE, VA	BLANK0000025088	267.2
	WFMJ-TV	D33	DT	CP	YOUNGSTOWN, OH	BLANK0000024782	123.5
	Service area	Terrain-limited		IX-free, before		IX-free, after	Percent New IX
	3668.2	504,518		3317.4		420,066	3261.0 413,614
							0.00 0.00

Undesired			Total IX	Unique IX, before		Unique IX, after	
WKHU-CD D32 DC BL	32.2		4,574	28.2		4,163	
WKHU-CD D32 DC BL	32.2		4,574			28.2 4,163	
WOUB-TV D32 DT BL	24.2		2,217	20.1		1,806	
WHP-TV D32 DT CP	4.0		72	4.0		72	

Interference to BLANK0000027843 CP, scenario 3

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WMVH-CD	D32	DC	CP	CHARLEROI, PA	BLANK0000027843	
Undesireds:	WKHU-CD	D32	DC	BL	KITTANNING, PA	DTVBL68401	80.0 km
	WKHU-CD	D32	DC	BL	KITTANNING, PA	WKHU_PROPOSED34	80.0
	WYTV	D31	DT	CP	YOUNGSTOWN, OH	BLANK0000028136	121.6
	WATM-TV	D31	DT	CP	ALTOONA, PA	BLANK0000028661	132.6
	WOUB-TV	D32	DT	CP	ATHENS, OH	BLANK0000025156	212.7
	WOCB-CD	D32	DC	CP	MARION, OH	BLANK0000024957	268.6
	WHP-TV	D32	DT	BL	HARRISBURG, PA	DTVBL72313	258.0
	WCAV	D32	DT	CP	CHARLOTTESVILLE, VA	BLANK0000025088	267.2
	WFMJ-TV	D33	DT	CP	YOUNGSTOWN, OH	BLANK0000024782	123.5
	Service area	Terrain-limited		IX-free, before		IX-free, after	Percent New IX

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3668.2	504,518	3317.4	420,066	3261.0	413,614	3261.0	413,614	0.00	0.00
Undesired		Total IX		Unique IX, before		Unique IX, after			
WKHU-CD D32 DC BL	32.2	4,574	28.2	4,163					
WKHU-CD D32 DC BL	32.2	4,574			28.2	4,163			
WOUB-TV D32 DT CP	24.2	2,217	20.1	1,806	20.1	1,806			
WHP-TV D32 DT BL	4.0	72	4.0	72	4.0	72			

Interference to BLANK0000027843 CP, scenario 4

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WMVH-CD	D32	DC	CP	CHARLEROI, PA	BLANK0000027843	
Undesireds:							
	WKHU-CD	D32	DC	BL	KITTANNING, PA	DTVBL68401	80.0 km
	WKHU-CD	D32	DC	BL	KITTANNING, PA	WKHU_PROPOSED34	80.0
	WYTV	D31	DT	CP	YOUNGSTOWN, OH	BLANK0000028136	121.6
	WATM-TV	D31	DT	CP	ALTOONA, PA	BLANK0000028661	132.6
	WOUB-TV	D32	DT	BL	ATHENS, OH	DTVBL50147	212.6
	WOCB-CD	D32	DC	CP	MARION, OH	BLANK0000024957	268.6
	WHP-TV	D32	DT	BL	HARRISBURG, PA	DTVBL72313	258.0
	WCAV	D32	DT	CP	CHARLOTTESVILLE, VA	BLANK0000025088	267.2
	WFMJ-TV	D33	DT	CP	YOUNGSTOWN, OH	BLANK0000024782	123.5

Service area				Terrain-limited		IX-free, before		IX-free, after		Percent New IX	
3668.2				504,518		3317.4		420,066		3261.0	
						413,614		3261.0		413,614	
										0.00	
										0.00	
Undesired						Total IX		Unique IX, before		Unique IX, after	
WKHU-CD D32 DC BL				32.2		4,574		28.2		4,163	
WKHU-CD D32 DC BL				32.2		4,574				28.2	
WOUB-TV D32 DT BL				24.2		2,217		20.1		1,806	
WHP-TV D32 DT BL				4.0		72		4.0		72	

Interference to DTVBL68394 BL, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WMVH-CD	D32	DC	BL	CHARLEROI, PA	DTVBL68394	
Undesireds:							
	WKHU-CD	D32	DC	BL	KITTANNING, PA	DTVBL68401	80.0 km
	WKHU-CD	D32	DC	BL	KITTANNING, PA	WKHU_PROPOSED34	80.0
	WYTV	D31	DT	CP	YOUNGSTOWN, OH	BLANK0000028136	121.5
	WATM-TV	D31	DT	CP	ALTOONA, PA	BLANK0000028661	132.6
	WOUB-TV	D32	DT	CP	ATHENS, OH	BLANK0000025156	212.6
	WOCB-CD	D32	DC	CP	MARION, OH	BLANK0000024957	268.6
	WHP-TV	D32	DT	CP	HARRISBURG, PA	BLANK0000027770	258.0
	WCAV	D32	DT	CP	CHARLOTTESVILLE, VA	BLANK0000025088	267.3
	WFMJ-TV	D33	DT	CP	YOUNGSTOWN, OH	BLANK0000024782	123.5

Service area				Terrain-limited		IX-free, before		IX-free, after		Percent New IX											
3668.1				509,178		3277.0		416,469		3224.7		406,722		3228.7		406,901		-0.12		-0.04	
Undesired						Total IX		Unique IX, before		Unique IX, after											
WKHU-CD D32 DC BL				28.2		1,468		28.2		1,468											
WKHU-CD D32 DC BL				24.2		1,289						24.2		1,289							
WOUB-TV D32 DT CP				24.1		8,279		24.1		8,279		24.1		8,279							

Interference to DTVBL68394 BL, scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WMVH-CD	D32	DC	BL	CHARLEROI, PA	DTVBL68394	
Undesireds:							
	WKHU-CD	D32	DC	BL	KITTANNING, PA	DTVBL68401	80.0 km
	WKHU-CD	D32	DC	BL	KITTANNING, PA	WKHU_PROPOSED34	80.0
	WYTV	D31	DT	CP	YOUNGSTOWN, OH	BLANK0000028136	121.5
	WATM-TV	D31	DT	CP	ALTOONA, PA	BLANK0000028661	132.6
	WOUB-TV	D32	DT	BL	ATHENS, OH	DTVBL50147	212.6
	WOCB-CD	D32	DC	CP	MARION, OH	BLANK0000024957	268.6
	WHP-TV	D32	DT	CP	HARRISBURG, PA	BLANK0000027770	258.0
	WCAV	D32	DT	CP	CHARLOTTESVILLE, VA	BLANK0000025088	267.3
	WFMJ-TV	D33	DT	CP	YOUNGSTOWN, OH	BLANK0000024782	123.5

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Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX	
3668.1	509,178	3277.0	416,469	3224.7	406,722	3228.7	406,901	-0.12	-0.04
Undesired		Total IX		Unique IX, before		Unique IX, after			
WKHU-CD D32 DC BL		28.2	1,468	28.2	1,468				
WKHU-CD D32 DC BL		24.2	1,289			24.2	1,289		
WOUB-TV D32 DT BL		24.1	8,279	24.1	8,279	24.1	8,279		

Interference to BLANK0000024782 CP, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WFMJ-TV	D33	DT	CP	YOUNGSTOWN, OH	BLANK0000024782	
Undesireds:	WKHU-CD	D32	DC	BL	KITTANNING, PA	DTVBL68401	98.3 km
	WKHU-CD	D32	DC	BL	KITTANNING, PA	WKHU_PROPOSED34	98.3
	WMVH-CD	D32	DC	CP	CHARLEROI, PA	BLANK0000027843	123.5
	WHUT-TV	D33	DT	LIC	WASHINGTON, DC	BLEDT20071018AIJ	384.5
	WKAR-TV	D33	DT	CP	EAST LANSING, MI	BLANK0000027882	360.4
	WGRZ	D33	DT	LIC	BUFFALO, NY	BLCDT20050705AAG	250.4
	WHIO-TV	D33	DT	CP	DAYTON, OH	BLANK0000025295	340.0
	WNPB-TV	D34	DT	CP	MORGANTOWN, WV	BLANK0000026236	170.9

Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX	
24103.6	3,500,648	23195.1	3,240,123	22982.3	3,202,098	22986.3	3,202,221	-0.02	-0.00
Undesired		Total IX		Unique IX, before		Unique IX, after			
WKHU-CD D32 DC BL		12.0	728	4.0	123				
WKHU-CD D32 DC BL		0.0	0			0.0	0		
WGRZ D33 DT LIC		144.8	14,172	136.8	13,567	144.8	14,172		
WHIO-TV D33 DT CP		60.0	23,622	60.0	23,622	60.0	23,622		
WNPB-TV D34 DT CP		4.0	108	4.0	108	4.0	108		

Interference to BLANK0000024782 CP, scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WFMJ-TV	D33	DT	CP	YOUNGSTOWN, OH	BLANK0000024782	
Undesireds:	WKHU-CD	D32	DC	BL	KITTANNING, PA	DTVBL68401	98.3 km
	WKHU-CD	D32	DC	BL	KITTANNING, PA	WKHU_PROPOSED34	98.3
	WMVH-CD	D32	DC	CP	CHARLEROI, PA	BLANK0000027843	123.5
	WHUT-TV	D33	DT	LIC	WASHINGTON, DC	BLEDT20071018AIJ	384.5
	WKAR-TV	D33	DT	CP	EAST LANSING, MI	BLANK0000027882	360.4
	WGRZ	D33	DT	LIC	BUFFALO, NY	BLCDT20050705AAG	250.4
	WHIO-TV	D33	DT	CP	DAYTON, OH	BLANK0000025295	340.0

Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX	
24103.6	3,500,648	23195.1	3,240,123	22986.3	3,202,206	22990.3	3,202,329	-0.02	-0.00
Undesired		Total IX		Unique IX, before		Unique IX, after			
WKHU-CD D32 DC BL		12.0	728	4.0	123				
WKHU-CD D32 DC BL		0.0	0			0.0	0		
WGRZ D33 DT LIC		144.8	14,172	136.8	13,567	144.8	14,172		
WHIO-TV D33 DT CP		60.0	23,622	60.0	23,622	60.0	23,622		

Interference to BLANK0000024782 CP, scenario 3

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WFMJ-TV	D33	DT	CP	YOUNGSTOWN, OH	BLANK0000024782	
Undesireds:	WKHU-CD	D32	DC	BL	KITTANNING, PA	DTVBL68401	98.3 km
	WKHU-CD	D32	DC	BL	KITTANNING, PA	WKHU_PROPOSED34	98.3
	WMVH-CD	D32	DC	CP	CHARLEROI, PA	BLANK0000027843	123.5
	WHUT-TV	D33	DT	LIC	WASHINGTON, DC	BLEDT20071018AIJ	384.5
	WKAR-TV	D33	DT	CP	EAST LANSING, MI	BLANK0000027882	360.4
	WGRZ	D33	DT	LIC	BUFFALO, NY	BLCDT20050705AAG	250.4
	WHIO-TV	D33	DT	BL	DAYTON, OH	DTVBL41458	340.0
	WNPB-TV	D34	DT	CP	MORGANTOWN, WV	BLANK0000026236	170.9

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Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
24103.6 3,500,648	23195.1 3,240,123	22982.3 3,202,098	22986.3 3,202,221	-0.02 -0.00
Undesired	Total IX	Unique IX, before	Unique IX, after	
WKHU-CD D32 DC BL	12.0 728	4.0 123		
WKHU-CD D32 DC BL	0.0 0		0.0 0	
WGRZ D33 DT LIC	144.8 14,172	136.8 13,567	144.8 14,172	
WHIO-TV D33 DT BL	60.0 23,622	60.0 23,622	60.0 23,622	
WNPB-TV D34 DT CP	4.0 108	4.0 108	4.0 108	

Interference to BLANK0000024782 CP, scenario 4

Call	Chan	Svc	Status	City, State	File Number	Distance
Desired: WFMJ-TV	D33	DT	CP	YOUNGSTOWN, OH	BLANK0000024782	
Undesireds: WKHU-CD	D32	DC	BL	KITTANNING, PA	DTVBL68401	98.3 km
WKHU-CD	D32	DC	BL	KITTANNING, PA	WKHU_PROPOSED34	98.3
WMVH-CD	D32	DC	CP	CHARLEROI, PA	BLANK0000027843	123.5
WHUT-TV	D33	DT	LIC	WASHINGTON, DC	BLEDT20071018AIJ	384.5
WKAR-TV	D33	DT	CP	EAST LANSING, MI	BLANK0000027882	360.4
WGRZ	D33	DT	LIC	BUFFALO, NY	BLCDDT20050705AAG	250.4
WHIO-TV	D33	DT	BL	DAYTON, OH	DTVBL41458	340.0

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
24103.6 3,500,648	23195.1 3,240,123	22986.3 3,202,206	22990.3 3,202,329	-0.02 -0.00
Undesired	Total IX	Unique IX, before	Unique IX, after	
WKHU-CD D32 DC BL	12.0 728	4.0 123		
WKHU-CD D32 DC BL	0.0 0		0.0 0	
WGRZ D33 DT LIC	144.8 14,172	136.8 13,567	144.8 14,172	
WHIO-TV D33 DT BL	60.0 23,622	60.0 23,622	60.0 23,622	

Interference to DTVBL72062 BL, scenario 1

Call	Chan	Svc	Status	City, State	File Number	Distance
Desired: WFMJ-TV	D33	DT	BL	YOUNGSTOWN, OH	DTVBL72062	
Undesireds: WKHU-CD	D32	DC	BL	KITTANNING, PA	DTVBL68401	98.3 km
WKHU-CD	D32	DC	BL	KITTANNING, PA	WKHU_PROPOSED34	98.3
WMVH-CD	D32	DC	CP	CHARLEROI, PA	BLANK0000027843	123.5
WHUT-TV	D33	DT	LIC	WASHINGTON, DC	BLEDT20071018AIJ	384.5
WKAR-TV	D33	DT	CP	EAST LANSING, MI	BLANK0000027882	360.5
WGRZ	D33	DT	LIC	BUFFALO, NY	BLCDDT20050705AAG	250.4
WHIO-TV	D33	DT	CP	DAYTON, OH	BLANK0000025295	340.0
WNPB-TV	D34	DT	CP	MORGANTOWN, WV	BLANK0000026236	170.9

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
24111.7 3,500,845	23203.3 3,242,140	22994.4 3,202,727	22998.4 3,202,850	-0.02 -0.00
Undesired	Total IX	Unique IX, before	Unique IX, after	
WKHU-CD D32 DC BL	8.0 613	4.0 123		
WKHU-CD D32 DC BL	0.0 0		0.0 0	
WGRZ D33 DT LIC	136.9 15,038	132.9 14,548	136.9 15,038	
WHIO-TV D33 DT CP	64.0 24,144	64.0 24,144	64.0 24,144	
WNPB-TV D34 DT CP	4.0 108	4.0 108	4.0 108	

Interference to DTVBL72062 BL, scenario 2

Call	Chan	Svc	Status	City, State	File Number	Distance
Desired: WFMJ-TV	D33	DT	BL	YOUNGSTOWN, OH	DTVBL72062	
Undesireds: WKHU-CD	D32	DC	BL	KITTANNING, PA	DTVBL68401	98.3 km
WKHU-CD	D32	DC	BL	KITTANNING, PA	WKHU_PROPOSED34	98.3
WMVH-CD	D32	DC	CP	CHARLEROI, PA	BLANK0000027843	123.5
WHUT-TV	D33	DT	LIC	WASHINGTON, DC	BLEDT20071018AIJ	384.5
WKAR-TV	D33	DT	CP	EAST LANSING, MI	BLANK0000027882	360.5
WGRZ	D33	DT	LIC	BUFFALO, NY	BLCDDT20050705AAG	250.4
WHIO-TV	D33	DT	CP	DAYTON, OH	BLANK0000025295	340.0

Matthew A. Sanderford, Jr., P.E.

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
24111.7 3,500,845	23203.3 3,242,140	22998.4 3,202,835	23002.4 3,202,958	-0.02 -0.00
Undesired	Total IX	Unique IX, before	Unique IX, after	
WKHU-CD D32 DC BL	8.0 613	4.0 123		
WKHU-CD D32 DC BL	0.0 0		0.0 0	
WGRZ D33 DT LIC	136.9 15,038	132.9 14,548	136.9 15,038	
WHIO-TV D33 DT CP	64.0 24,144	64.0 24,144	64.0 24,144	

Interference to DTVBL72062 BL, scenario 3

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WFMJ-TV	D33	DT	BL	YOUNGSTOWN, OH	DTVBL72062	
Undesireds:	WKHU-CD	D32	DC	BL	KITTANNING, PA	DTVBL68401	98.3 km
	WKHU-CD	D32	DC	BL	KITTANNING, PA	WKHU_PROPOSED34	98.3
	WMVH-CD	D32	DC	CP	CHARLEROI, PA	BLANK0000027843	123.5
	WHUT-TV	D33	DT	LIC	WASHINGTON, DC	BLEDT20071018AIJ	384.5
	WKAR-TV	D33	DT	CP	EAST LANSING, MI	BLANK0000027882	360.5
	WGRZ	D33	DT	LIC	BUFFALO, NY	BLCDDT20050705AAG	250.4
	WHIO-TV	D33	DT	BL	DAYTON, OH	DTVBL41458	340.0
	WNPB-TV	D34	DT	CP	MORGANTOWN, WV	BLANK0000026236	170.9

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
24111.7 3,500,845	23203.3 3,242,140	22990.4 3,202,360	22994.4 3,202,483	-0.02 -0.00
Undesired	Total IX	Unique IX, before	Unique IX, after	
WKHU-CD D32 DC BL	8.0 613	4.0 123		
WKHU-CD D32 DC BL	0.0 0		0.0 0	
WGRZ D33 DT LIC	136.9 15,038	132.9 14,548	136.9 15,038	
WHIO-TV D33 DT BL	68.1 24,511	68.1 24,511	68.1 24,511	
WNPB-TV D34 DT CP	4.0 108	4.0 108	4.0 108	

Interference to DTVBL72062 BL, scenario 4

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WFMJ-TV	D33	DT	BL	YOUNGSTOWN, OH	DTVBL72062	
Undesireds:	WKHU-CD	D32	DC	BL	KITTANNING, PA	DTVBL68401	98.3 km
	WKHU-CD	D32	DC	BL	KITTANNING, PA	WKHU_PROPOSED34	98.3
	WMVH-CD	D32	DC	CP	CHARLEROI, PA	BLANK0000027843	123.5
	WHUT-TV	D33	DT	LIC	WASHINGTON, DC	BLEDT20071018AIJ	384.5
	WKAR-TV	D33	DT	CP	EAST LANSING, MI	BLANK0000027882	360.5
	WGRZ	D33	DT	LIC	BUFFALO, NY	BLCDDT20050705AAG	250.4
	WHIO-TV	D33	DT	BL	DAYTON, OH	DTVBL41458	340.0

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
24111.7 3,500,845	23203.3 3,242,140	22994.4 3,202,468	22998.4 3,202,591	-0.02 -0.00
Undesired	Total IX	Unique IX, before	Unique IX, after	
WKHU-CD D32 DC BL	8.0 613	4.0 123		
WKHU-CD D32 DC BL	0.0 0		0.0 0	
WGRZ D33 DT LIC	136.9 15,038	132.9 14,548	136.9 15,038	
WHIO-TV D33 DT BL	68.1 24,511	68.1 24,511	68.1 24,511	

Interference to proposal, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WKHU-CD	D32	DC	BL	KITTANNING, PA	WKHU_PROPOSED34	
Undesireds:	WYTV	D31	DT	CP	YOUNGSTOWN, OH	BLANK0000028136	97.3 km
	WATM-TV	D31	DT	CP	ALTOONA, PA	BLANK0000028661	95.2
	WNLO	D32	DT	LIC	BUFFALO, NY	BLCDDT20070320AAV	254.3
	WOUB-TV	D32	DT	CP	ATHENS, OH	BLANK0000025156	276.3
	WOCB-CD	D32	DC	CP	MARION, OH	BLANK0000024957	301.6
	WMVH-CD	D32	DC	CP	CHARLEROI, PA	BLANK0000027843	80.0
	WHP-TV	D32	DT	CP	HARRISBURG, PA	BLANK0000027770	230.4
	WCAV	D32	DT	CP	CHARLOTTESVILLE, VA	BLANK0000025088	324.5
	WFMJ-TV	D33	DT	CP	YOUNGSTOWN, OH	BLANK0000024782	98.3

Matthew A. Sanderford, Jr., P.E.

Service area	Terrain-limited	IX-free	Percent IX
1106.9 163,548	1002.8 142,593	994.8 142,238	0.80 0.25
Undesired	Total IX	Unique IX	Prcnt Unique IX
WNLO D32 DT LIC	4.0 79	0.0 0	0.00 0.00
WMVH-CD D32 DC CP	8.0 355	4.0 276	0.40 0.19

Interference to proposal, scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WKHU-CD	D32	DC	BL	KITTANNING, PA	WKHU_PROPOSED34	
Undesireds:	WYTV	D31	DT	CP	YOUNGSTOWN, OH	BLANK0000028136	97.3 km
	WATM-TV	D31	DT	CP	ALTOONA, PA	BLANK0000028661	95.2
	WNLO	D32	DT	LIC	BUFFALO, NY	BLCDDT20070320AAV	254.3
	WOUB-TV	D32	DT	CP	ATHENS, OH	BLANK0000025156	276.3
	WOCB-CD	D32	DC	CP	MARION, OH	BLANK0000024957	301.6
	WMVH-CD	D32	DC	BL	CHARLEROI, PA	DTVBL68394	80.0
	WHP-TV	D32	DT	CP	HARRISBURG, PA	BLANK0000027770	230.4
	WCAV	D32	DT	CP	CHARLOTTESVILLE, VA	BLANK0000025088	324.5
	WFMJ-TV	D33	DT	CP	YOUNGSTOWN, OH	BLANK0000024782	98.3

Service area	Terrain-limited	IX-free	Percent IX
1106.9 163,548	1002.8 142,593	994.8 142,238	0.80 0.25
Undesired	Total IX	Unique IX	Prcnt Unique IX
WNLO D32 DT LIC	4.0 79	0.0 0	0.00 0.00
WMVH-CD D32 DC BL	8.0 355	4.0 276	0.40 0.19

EXHIBIT 2**ENVIRONMENTAL STATEMENT**

The proposed facility complies in full with the requirements of 47 C.F.R. Section 1.1306 and will have no significant environmental impact. Population is very scattered and sparse near the immediate location of the proposed site. The proposed site does not involve any of the conditions specified in Section 1.1307(a)(1)-(6) of the Rules.

The facility of WKHU-CD has been studied in accordance with the procedures set forth in the FCC OET Bulletin No. 65 "Evaluating Compliance With FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields", Edition 97-01, and has been found to comply with the limits set forth in Section 1.1310 of the Rules. This determination has been based upon calculations with the total radiated power from all TV & FM co-located broadcast emitters. The total exposure as defined by the ANSI standard computations for occupational/controlled area is **0.03** % of the maximum. The total exposure as defined by the ANSI standard computations for general population/uncontrolled area is **0.17** % of the maximum. The proposed facility is in compliance with the Commission's guidelines.

Multiple Use FM/TV Tower						
Location:		WKHU-CD - Kittanning, PA				9/6/2017
Channel Frequency Type	Call Letters	Service	ERP (W) H+V	Ant Center of Radiation AG (m)	% of ANSI/FCC Limit (6min)	% of ANSI/FCC Limit (30 min)
32	WKHU-CD	TV UHF#1	4,900	59.00	0.03	0.17
Total %					0.03	0.17
IN COMPLIANCE						

The Applicant agrees to maintain full compliance with the safety precautions to workers on the tower (controlled) and the general public (uncontrolled) by reducing or removing radiated power during the time of construction or maintenance on or near the antenna. The Applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from Radiofrequency Electromagnetic exposure in excess of FCC guidelines

The Applicant is believed to be in full compliance with the Environmental Impact and Commission Rules.

EXHIBIT 3

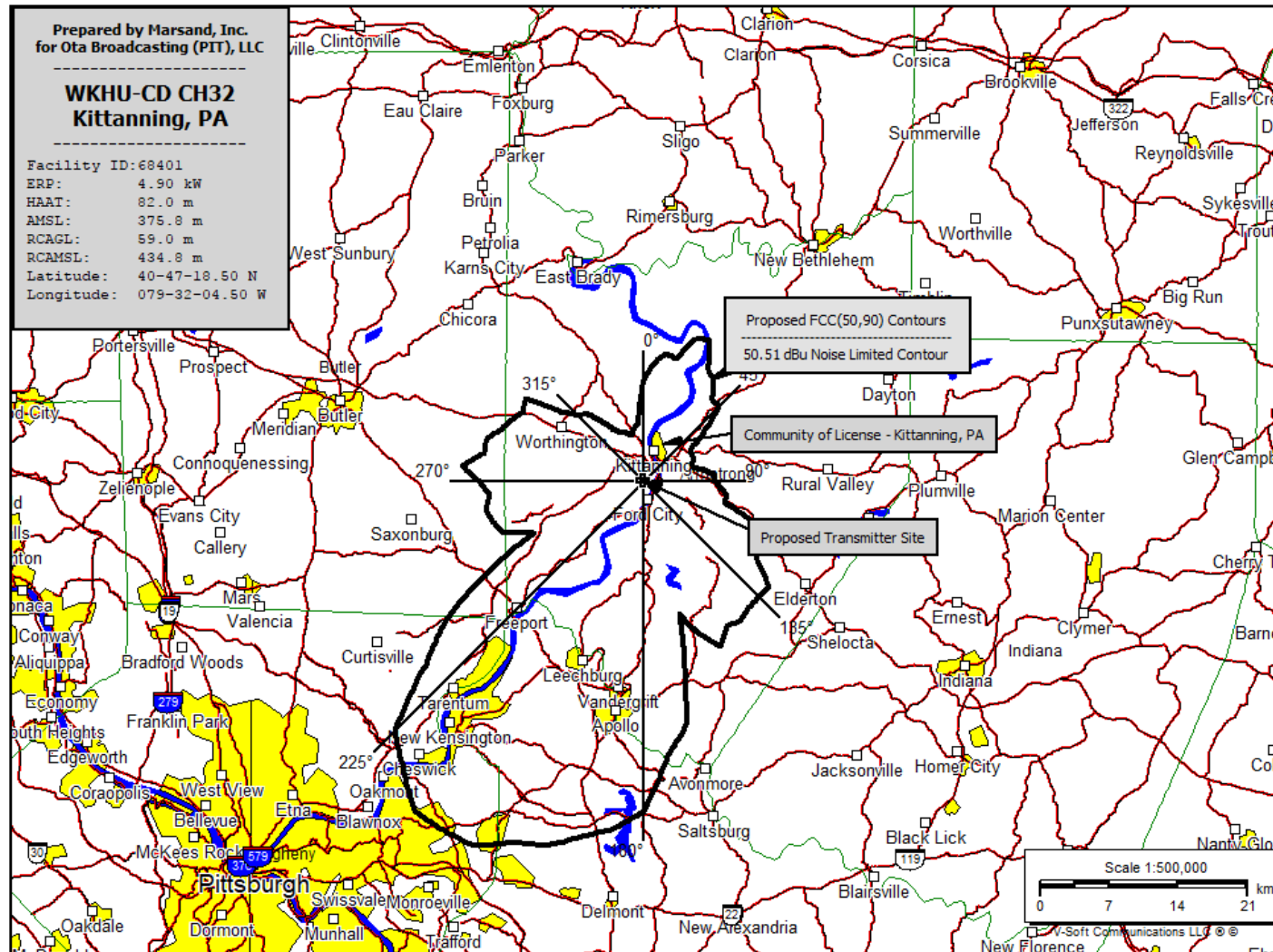


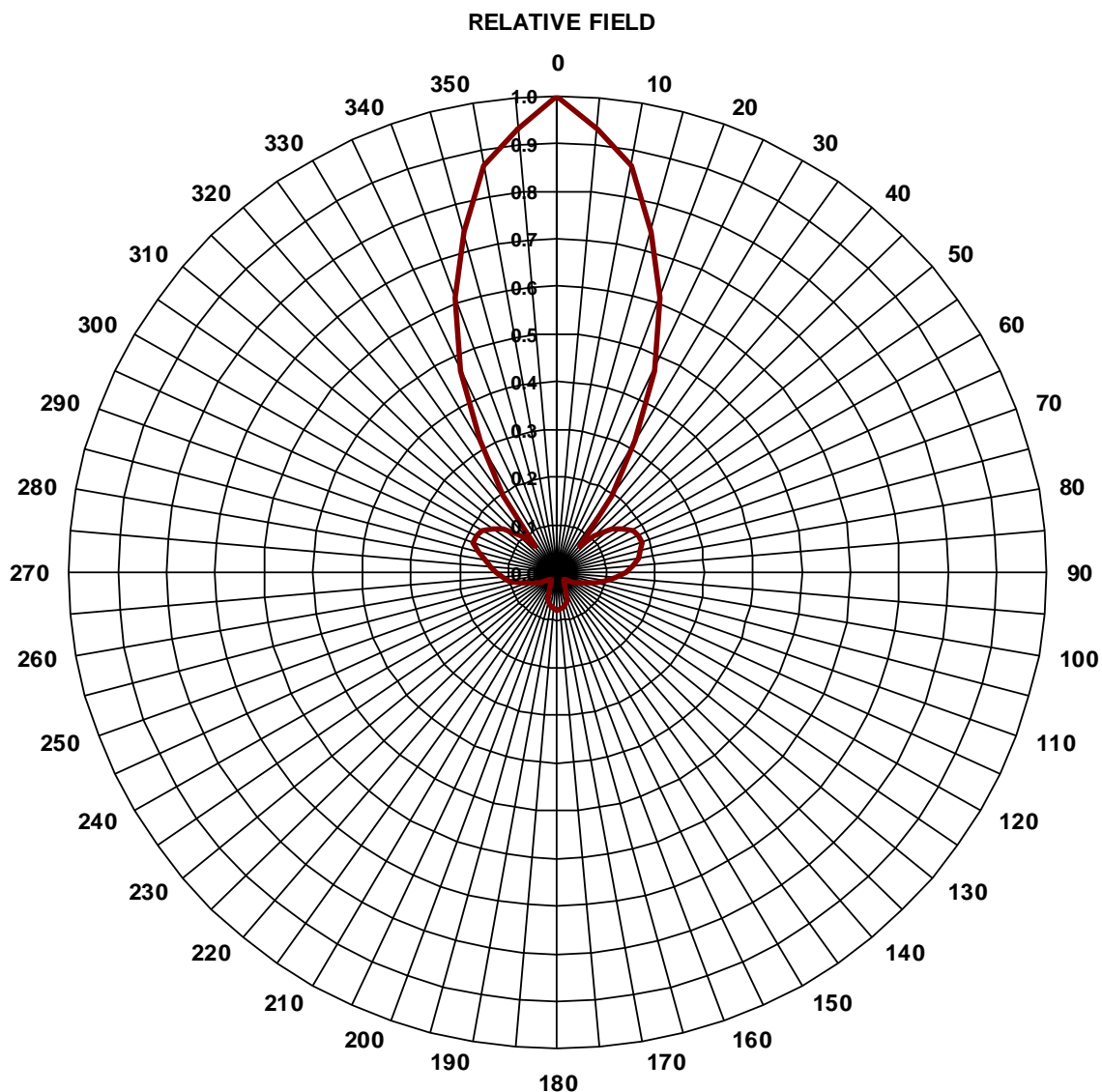
EXHIBIT 4



AZIMUTH PATTERN



TYPE:	ATC-BPHC2NS	
	Numeric	dB
Directivity:		#####
Polarization:	Horizontal	
Channel:	32	
Location:		



**AZIMUTH PATTERN TABULATION**

TYPE: ATC-BPHC2NS



ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
0	1.000	0.00	94	0.125	-18.06	188	0.075	-22.44	282	0.154	-16.23
2	1.000	0.00	96	0.115	-18.79	190	0.075	-22.50	284	0.163	-15.75
4	0.951	-0.44	98	0.105	-19.58	192	0.073	-22.72	286	0.172	-15.30
6	0.918	-0.75	100	0.100	-20.00	194	0.069	-23.18	288	0.181	-14.86
8	0.901	-0.91	102	0.095	-20.45	196	0.066	-23.66	290	0.185	-14.66
10	0.868	-1.23	104	0.085	-21.41	198	0.062	-24.17	292	0.184	-14.70
12	0.868	-1.23	106	0.075	-22.50	200	0.060	-24.44	294	0.182	-14.78
14	0.773	-2.24	108	0.065	-23.74	202	0.055	-25.14	296	0.181	-14.86
16	0.710	-2.98	110	0.060	-24.44	204	0.046	-26.76	298	0.179	-14.95
18	0.647	-3.79	112	0.058	-24.81	206	0.037	-28.74	300	0.178	-14.99
20	0.615	-4.22	114	0.053	-25.60	208	0.027	-31.31	302	0.174	-15.20
22	0.578	-4.76	116	0.048	-26.47	210	0.023	-32.96	304	0.166	-15.62
24	0.504	-5.94	118	0.043	-27.43	212	0.022	-33.08	306	0.157	-16.06
26	0.431	-7.32	120	0.040	-27.96	214	0.022	-33.33	308	0.149	-16.53
28	0.357	-8.95	122	0.038	-28.46	216	0.021	-33.58	310	0.145	-16.77
30	0.320	-9.90	124	0.033	-29.56	218	0.020	-33.84	312	0.136	-17.35
32	0.289	-10.79	126	0.029	-30.83	220	0.020	-33.98	314	0.117	-18.65
34	0.226	-12.91	128	0.024	-32.31	222	0.020	-33.87	316	0.098	-20.16
36	0.164	-15.72	130	0.022	-33.15	224	0.021	-33.66	318	0.079	-22.01
38	0.101	-19.89	132	0.023	-32.90	226	0.021	-33.45	320	0.070	-23.10
40	0.070	-23.10	134	0.022	-33.09	228	0.022	-33.25	322	0.101	-19.89
42	0.079	-22.01	136	0.021	-33.38	230	0.022	-33.15	324	0.164	-15.72
44	0.098	-20.16	138	0.021	-33.67	232	0.024	-32.31	326	0.226	-12.91
46	0.117	-18.65	140	0.020	-33.98	234	0.029	-30.83	328	0.289	-10.79
48	0.136	-17.35	142	0.020	-33.84	236	0.033	-29.56	330	0.320	-9.90
50	0.145	-16.77	144	0.021	-33.58	238	0.038	-28.46	332	0.357	-8.95
52	0.149	-16.53	146	0.022	-33.33	240	0.040	-27.96	334	0.431	-7.32
54	0.157	-16.06	148	0.022	-33.08	242	0.043	-27.43	336	0.504	-5.94
56	0.166	-15.62	150	0.023	-32.96	244	0.048	-26.47	338	0.578	-4.76
58	0.174	-15.20	152	0.027	-31.31	246	0.053	-25.60	340	0.615	-4.22
60	0.178	-14.99	154	0.037	-28.74	248	0.058	-24.81	342	0.647	-3.79
62	0.179	-14.95	156	0.046	-26.76	250	0.060	-24.44	344	0.710	-2.98
64	0.181	-14.86	158	0.055	-25.14	252	0.065	-23.74	346	0.773	-2.24
66	0.182	-14.78	160	0.060	-24.44	254	0.075	-22.50	348	0.836	-1.55
68	0.184	-14.70	162	0.062	-24.17	256	0.085	-21.41	350	0.868	-1.23
70	0.185	-14.66	164	0.066	-23.66	258	0.095	-20.45	352	0.885	-1.07
72	0.183	-14.75	166	0.069	-23.18	260	0.100	-20.00	354	0.918	-0.75
74	0.179	-14.92	168	0.073	-22.72	262	0.103	-19.73	356	0.951	-0.44
76	0.176	-15.11	170	0.075	-22.50	264	0.109	-19.22	358	0.984	-0.14
78	0.172	-15.30	172	0.075	-22.44	266	0.116	-18.74	360	1.000	0.00
80	0.170	-15.39	174	0.076	-22.34	268	0.122	-18.28			
82	0.166	-15.58	176	0.077	-22.23	270	0.125	-18.06			
84	0.159	-15.99	178	0.078	-22.12	272	0.128	-17.85			
86	0.151	-16.41	180	0.079	-22.07	274	0.134	-17.43			
88	0.144	-16.85	182	0.078	-22.12	276	0.141	-17.04			
90	0.140	-17.08	184	0.077	-22.23	278	0.147	-16.66			
92	0.135	-17.39	186	0.076	-22.34	280	0.150	-16.48			



ELEVATION PATTERN TABULATION

TYPE: ATC-BPHC2NS



ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
-5	0.957	-0.38	6.75	0.931	-0.62	26.5	0.179	-14.94	50	0.404	-7.87
-4.75	0.957	-0.38	7	0.926	-0.67	27	0.157	-16.08	51	0.407	-7.81
-4.5	0.961	-0.35	7.25	0.920	-0.72	27.5	0.136	-17.33	52	0.409	-7.77
-4.25	0.965	-0.31	7.5	0.915	-0.77	28	0.115	-18.79	53	0.409	-7.77
-4	0.968	-0.28	7.75	0.909	-0.83	28.5	0.094	-20.54	54	0.409	-7.77
-3.75	0.972	-0.25	8	0.903	-0.89	29	0.074	-22.62	55	0.407	-7.81
-3.5	0.976	-0.21	8.25	0.896	-0.95	29.5	0.053	-25.51	56	0.403	-7.89
-3.25	0.978	-0.19	8.5	0.890	-1.01	30	0.034	-29.37	57	0.399	-7.98
-3	0.982	-0.16	8.75	0.883	-1.08	30.5	0.014	-37.08	58	0.394	-8.09
-2.75	0.984	-0.14	8.75	0.883	-1.08	31	0.005	-46.02	59	0.388	-8.22
-2.5	0.986	-0.12	9	0.877	-1.14	31.5	0.024	-32.40	60	0.381	-8.38
-2.25	0.989	-0.10	9.25	0.870	-1.21	32	0.042	-27.54	61	0.373	-8.57
-2	0.990	-0.09	9.5	0.863	-1.28	32.5	0.060	-24.44	62	0.364	-8.78
-1.75	0.993	-0.06	9.75	0.855	-1.36	33	0.078	-22.16	63	0.355	-9.00
-1.5	0.994	-0.05	10	0.849	-1.42	33.5	0.095	-20.45	64	0.345	-9.24
-1.25	0.996	-0.03	10.5	0.841	-1.50	34	0.112	-19.02	65	0.335	-9.50
-1	0.997	-0.03	11	0.825	-1.67	34.5	0.128	-17.86	66	0.324	-9.79
-0.75	0.998	-0.02	11.5	0.809	-1.84	35	0.144	-16.83	67	0.312	-10.12
-0.5	0.999	-0.01	12	0.792	-2.03	35.5	0.160	-15.92	68	0.301	-10.43
-0.25	0.999	-0.01	12.5	0.775	-2.21	36	0.175	-15.14	69	0.289	-10.78
0	1.000	0.00	13	0.757	-2.42	36.5	0.189	-14.47	70	0.276	-11.18
0.25	1.000	0.00	13.5	0.739	-2.63	37	0.203	-13.85	71	0.264	-11.57
0.5	1.000	0.00	14	0.720	-2.85	37.5	0.217	-13.27	72	0.251	-12.01
0.75	1.000	0.00	14.5	0.701	-3.09	38	0.230	-12.77	73	0.238	-12.47
1	0.999	-0.01	15	0.681	-3.34	38.5	0.242	-12.32	74	0.225	-12.96
1.25	0.999	-0.01	15.5	0.661	-3.60	39	0.255	-11.87	75	0.211	-13.51
1.5	0.998	-0.02	16	0.641	-3.86	39.5	0.266	-11.50	76	0.198	-14.07
1.75	0.997	-0.03	16.5	0.620	-4.15	40	0.277	-11.15	77	0.185	-14.66
2	0.996	-0.03	17	0.599	-4.45	40.5	0.288	-10.81	78	0.171	-15.34
2.25	0.994	-0.05	17.5	0.578	-4.76	41	0.298	-10.52	79	0.157	-16.08
2.5	0.992	-0.07	18	0.556	-5.10	41.5	0.308	-10.23	80	0.144	-16.83
2.75	0.990	-0.09	18.5	0.535	-5.43	42	0.317	-9.98	81	0.130	-17.72
3	0.988	-0.10	19	0.513	-5.80	42.5	0.326	-9.74	82	0.116	-18.71
3.25	0.985	-0.13	19.5	0.491	-6.18	43	0.334	-9.53	83	0.103	-19.74
3.5	0.982	-0.16	20	0.468	-6.60	43.5	0.342	-9.32	84	0.089	-21.01
3.75	0.980	-0.18	20.5	0.446	-7.01	44	0.350	-9.12	85	0.075	-22.50
4	0.978	-0.19	21	0.424	-7.45	44.5	0.357	-8.95	86	0.062	-24.15
4.25	0.974	-0.23	21.5	0.401	-7.94	45	0.363	-8.80	87	0.048	-26.38
4.5	0.970	-0.26	22	0.379	-8.43	45.5	0.369	-8.66	88	0.034	-29.37
4.75	0.967	-0.29	22.5	0.356	-8.97	46	0.375	-8.52	89	0.021	-33.56
5	0.963	-0.33	23	0.333	-9.55	46.5	0.380	-8.40	90	0.001	-60.00
5.25	0.959	-0.36	23.5	0.311	-10.14	47	0.384	-8.31			
5.5	0.955	-0.40	24	0.289	-10.78	47.5	0.389	-8.20			
5.75	0.951	-0.44	24.5	0.266	-11.50	48	0.392	-8.13			
6	0.946	-0.48	25	0.244	-12.25	48.5	0.396	-8.05			
6.25	0.941	-0.53	25.5	0.222	-13.07	49	0.399	-7.98			
6.5	0.936	-0.57	26	0.200	-13.98	49.5	0.401	-7.94			