

ENGINEERING NARRATIVE
IN SUPPORT OF APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT
FOR INCENTIVE AUCTION REASSIGNMENT CHANNEL

Prepared for

CMCG PUERTO RICO, LLC

WQQZ-CD CH 24 Facility ID 32142 15 kW DA RC 577.3 M AMSL

PONCE, PUERTO RICO

NOVEMBER 2017

Summary

CMCG Puerto Rico, LLC ("CMCG") specifies herein its proposed maximized post-auction CH 24 transmission facilities. The proposed facility is based on continued use of the licensed site and RC AMSL. At this site and RC AMSL of 577.3 meters the authorized replication ERP is 0.544 kW on CH 16 as specified in FCC file number 0000028131. The proposed antenna is an elliptically polarized, panel type, with a horizontal plane radiation pattern similar to the replication pattern. This antenna replaces an existing horizontal only polarized panel antenna. At this site and RC AMSL of 577.3 meters the proposed ERP is 15 Kw on CH 24. The entire community boundary of Ponce, Puerto Rico is located well inside the city grade contour.

Attached herein is the TVStudy version 2.2.3 output which demonstrates that the proposed facility will cause no impermissible interference to any station and the proposed population is 161 percent of the baseline population.

Environmental

The proposed antenna system is an Alive Telecom model ATC-BPE2C1-U, elliptically polarized, UHF, slot type, TV antenna. The radiation center is 18.3 meters above ground. Utilizing formula 10 OF OET Bulletin No. 65, Edition 97-01, a value F of 0.1 has been used to calculate the power density 2 meters above ground. The maximum power density is 24.5 microwatts/cm squared calculated for an ERP of 15,000 watts H. polarization and 4,500 watts V. polarization. This value is 6.9% of the General Population exposure per section 1.1310. Based on this analysis it is believed that the proposed facility follows OET-65 Guidelines.

The applicant will reduce power or cease transmission as required to meet FCC OET-65 Worker Safety Guidelines.

TVSTUDY VERSION 2.2.3 Allocation Study Using LMS database dated 10/23/2017

WQQZ-CD CH 24 PONCE, PUERTO RICO

Study created: 2017.11.01 19:27:45

Study build station data: LMS TV 2017-10-23 (14)

Proposal: WQQZ-CD D24 DC CP PONCE, PR
File number: BLANK0000028131
Facility ID: 32142
Station data: User record
Record ID: 137
Country: U.S.

Build options:
Protect LPTV records from Class A

Stations affected by proposal:

Call	Chan	Svc	Status	City, State	File Number	Distance
WVSN	D23	DT	CP	HUMACAO, PR	BLANK0000026037	97.4 km
WVSN	D23	DT	BL	HUMACAO, PR	DTVBL67190	97.4
WUJA	D24	DT	CP	CAGUAS, PR	BLANK0000024838	71.3
WUJA	D24	DT	BL	CAGUAS, PR	DTVBL8156	71.3
W24EI-D	D24	LD	LIC	CAYEY, PR	BLANK0000004264	56.3
WQHA	D25	DT	CP	AGUADA, PR	BLANK0000024555	53.2
WQHA	D25	DT	BL	AGUADA, PR	DTVBL3255	53.2

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D24
 Mask: Full Service
 Latitude: 18 4 38.80 N (NAD83)
 Longitude: 66 45 1.60 W
 Height AMSL: 577.3 m
 HAAT: 0.0 m
 Peak ERP: 15.0 kW
 Antenna: ATC-BPE2C1-U 155.0 deg
 Elev Pattn: Generic
 Elec Tilt: 1.00

49.8 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	0.003 kW	-171.1 m	4.3 km
45.0	0.018	-181.6	6.7
90.0	0.930	339.7	43.8
135.0	11.9	453.0	63.2
180.0	10.6	542.0	65.2
225.0	0.553	482.0	45.5
270.0	0.048	358.2	27.5
315.0	0.012	-188.6	6.1

Database HAAT does not agree with computed HAAT
Database HAAT: 0 m Computed HAAT: 204 m

Distance to Canadian border: 2488.9 km

Distance to Mexican border: 3222.0 km

Conditions at FCC monitoring station: Santa Isabel PR
Bearing: 101.4 degrees Distance: 40.5 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 311.9 degrees Distance: 4415.8 km

Study cell size: 1.00 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%

No IX check failures found.

WQQZ-CD CH 24 PONCE, PUERTO RICO TVIX STUDY DETAIL :

tvstudy v2.2.3 (ujVPF2)
Database: 127.0.0.1, Study: BLANK0000028131 (385), Model: Longley-Rice
Start: 2017.11.01 19:28:28

Study created: 2017.11.01 19:27:45

Study build station data: LMS TV 2017-10-23 (14)

 Proposal: WQQZ-CD D24 DC CP PONCE, PR
 File number: BLANK0000028131
 Facility ID: 32142

Station data: User record

Record ID: 137

Country: U.S.

Build options:

Protect LPTV records from Class A

Stations affected by proposal:

Call	Chan	Svc	Status	City, State	File Number	Distance
WVSN	D23	DT	CP	HUMACAO, PR	BLANK0000026037	97.4 km
WVSN	D23	DT	BL	HUMACAO, PR	DTVBL67190	97.4
WUJA	D24	DT	CP	CAGUAS, PR	BLANK0000024838	71.3
WUJA	D24	DT	BL	CAGUAS, PR	DTVBL8156	71.3
W24EI-D	D24	LD	LIC	CAYEY, PR	BLANK0000004264	56.3
WQHA	D25	DT	CP	AGUADA, PR	BLANK0000024555	53.2
WQHA	D25	DT	BL	AGUADA, PR	DTVBL3255	53.2

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D24

Mask: Full Service

Latitude: 18 4 38.80 N (NAD83)

Longitude: 66 45 1.60 W

Height AMSL: 577.3 m

HAAT: 0.0 m

Peak ERP: 15.0 kW

Antenna: ATC-BPE2C1-U 155.0 deg

Elev Pattn: Generic

Elec Tilt: 1.00

49.8 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	0.003 kW	-171.1 m	4.3 km
45.0	0.018	-181.6	6.7

90.0	0.930	339.7	43.8
135.0	11.9	453.0	63.2
180.0	10.6	542.0	65.2
225.0	0.553	482.0	45.5
270.0	0.048	358.2	27.5
315.0	0.012	-188.6	6.1

Database HAAT does not agree with computed HAAT

Database HAAT: 0 m Computed HAAT: 204 m

Distance to Canadian border: 2488.9 km

Distance to Mexican border: 3222.0 km

Conditions at FCC monitoring station: Santa Isabel PR

Bearing: 101.4 degrees Distance: 40.5 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:

Bearing: 311.9 degrees Distance: 4415.8 km

Study cell size: 1.00 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 BLANK0000026037 CP, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WVSN	D23	DT	CP	HUMACAO, PR	BLANK0000026037	
Undesireds:	WQQZ-CD	D24	DC	CP	PONCE, PR	BLANK0000028131	97.4 km
	WSJN-CD	D22	DC	CP	SAN JUAN, PR	BLANK0000028045	33.2
	WQST-CD	D23	DC	CP	QUEBRADILLAS, PR	BLANK0000028044	140.7
	WCVI-TV	D23	DT	LIC	CHRISTIANSTED, VI	BLCDT20090625AAH	132.6
	WUJA	D24	DT	CP	CAGUAS, PR	BLANK0000024838	27.1

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
23365.5 2,869,329	20604.6 2,485,563	20491.4 2,459,040	20349.1 2,459,040	0.69 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WQQZ-CD D24 DC CP	142.3 0	142.3 0	
WSJN-CD D22 DC CP	71.8 15,401	24.6 13,582	24.6 13,582
WQSJ-CD D23 DC CP	2.0 10	2.0 10	2.0 10
WCVI-TV D23 DT LIC	1.0 0	0.0 0	0.0 0
WUJA D24 DT CP	86.6 12,931	39.4 11,112	39.4 11,112

Interference to BLANK0000026037 CP, scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WVSN	D23	DT	CP	HUMACAO, PR	BLANK0000026037	
Undesireds:	WQQZ-CD	D24	DC	CP	PONCE, PR	BLANK0000028131	97.4 km
	WSJN-CD	D22	DC	BL	SAN JUAN, PR	DTVBL48239	33.2
	WQSJ-CD	D23	DC	CP	QUEBRADILLAS, PR	BLANK0000028044	140.7
	WCVI-TV	D23	DT	LIC	CHRISTIANSTED, VI	BLCDT20090625AAH	132.6
	WUJA	D24	DT	CP	CAGUAS, PR	BLANK0000024838	27.1

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
23365.5 2,869,329	20604.6 2,485,563	20491.4 2,459,040	20349.1 2,459,040	0.69 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WQQZ-CD D24 DC CP	142.3 0	142.3 0	
WSJN-CD D22 DC BL	71.8 15,401	24.6 13,582	24.6 13,582
WQSJ-CD D23 DC CP	2.0 10	2.0 10	2.0 10
WCVI-TV D23 DT LIC	1.0 0	0.0 0	0.0 0
WUJA D24 DT CP	86.6 12,931	39.4 11,112	39.4 11,112

Interference to BLANK0000026037 CP, scenario 3

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WVSN	D23	DT	CP	HUMACAO, PR	BLANK0000026037	
Undesireds:	WQQZ-CD	D24	DC	CP	PONCE, PR	BLANK0000028131	97.4 km
	WSJN-CD	D22	DC	CP	SAN JUAN, PR	BLANK0000028045	33.2
	WQSJ-CD	D23	DC	BL	QUEBRADILLAS, PR	DTVBL48237	140.7
	WCVI-TV	D23	DT	LIC	CHRISTIANSTED, VI	BLCDT20090625AAH	132.6
	WUJA	D24	DT	CP	CAGUAS, PR	BLANK0000024838	27.1

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
23365.5 2,869,329	20604.6 2,485,563	20491.4 2,459,040	20349.1 2,459,040	0.69 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WQQZ-CD D24 DC CP	142.3 0		142.3 0
WSJN-CD D22 DC CP	71.8 15,401	24.6 13,582	24.6 13,582
WQSJ-CD D23 DC BL	2.0 10	2.0 10	2.0 10
WCVI-TV D23 DT LIC	1.0 0	0.0 0	0.0 0
WUJA D24 DT CP	86.6 12,931	39.4 11,112	39.4 11,112

Interference to BLANK0000026037 CP, scenario 4

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WVSN	D23	DT	CP	HUMACAO, PR	BLANK0000026037	
Undesireds:	WQQZ-CD	D24	DC	CP	PONCE, PR	BLANK0000028131	97.4 km
	WSJN-CD	D22	DC	BL	SAN JUAN, PR	DTVBL48239	33.2
	WQSJ-CD	D23	DC	BL	QUEBRADILLAS, PR	DTVBL48237	140.7
	WCVI-TV	D23	DT	LIC	CHRISTIANSTED, VI	BLCDT20090625AAH	132.6
	WUJA	D24	DT	CP	CAGUAS, PR	BLANK0000024838	27.1

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
23365.5 2,869,329	20604.6 2,485,563	20491.4 2,459,040	20349.1 2,459,040	0.69 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WQQZ-CD D24 DC CP	142.3 0		142.3 0
WSJN-CD D22 DC BL	71.8 15,401	24.6 13,582	24.6 13,582
WQSJ-CD D23 DC BL	2.0 10	2.0 10	2.0 10
WCVI-TV D23 DT LIC	1.0 0	0.0 0	0.0 0
WUJA D24 DT CP	86.6 12,931	39.4 11,112	39.4 11,112

Interference to BLANK0000026037 CP, scenario 5

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WVSN	D23	DT	CP	HUMACAO, PR	BLANK0000026037	
Undesireds:	WQQZ-CD	D24	DC	CP	PONCE, PR	BLANK0000028131	97.4 km
	WSJN-CD	D22	DC	CP	SAN JUAN, PR	BLANK0000028045	33.2
	WQSJ-CD	D23	DC	CP	QUEBRADILLAS, PR	BLANK0000028044	140.7
	WCVI-TV	D23	DT	LIC	CHRISTIANSTED, VI	BLCDT20090625AAH	132.6
	WUJA	D24	DT	BL	CAGUAS, PR	DTVBL8156	27.1

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
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23365.5	2,869,329	20604.6	2,485,563	20491.4	2,459,040	20349.1	2,459,040	0.69	0.00
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Undesired		Total IX	Unique IX, before	Unique IX, after
WQQZ-CD D24 DC CP	142.3	0		142.3
WSJN-CD D22 DC CP	71.8	15,401	24.6	13,582
WQSJ-CD D23 DC CP	2.0	10	2.0	10
WCVI-TV D23 DT LIC	1.0	0	0.0	0
WUJA D24 DT BL	86.6	12,931	39.4	11,112

Interference to BLANK0000026037 CP, scenario 6

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WVSN	D23	DT	CP	HUMACAO, PR	BLANK0000026037	
Undesireds:	WQQZ-CD	D24	DC	CP	PONCE, PR	BLANK0000028131	97.4 km
	WSJN-CD	D22	DC	BL	SAN JUAN, PR	DTVBL48239	33.2
	WQSJ-CD	D23	DC	CP	QUEBRADILLAS, PR	BLANK0000028044	140.7
	WCVI-TV	D23	DT	LIC	CHRISTIANSTED, VI	BLCDT20090625AAH	132.6
	WUJA	D24	DT	BL	CAGUAS, PR	DTVBL8156	27.1

	Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX
23365.5	2,869,329	20604.6	2,485,563	20491.4	2,459,040	20349.1	2,459,040	0.69	0.00

Undesired		Total IX	Unique IX, before	Unique IX, after
WQQZ-CD D24 DC CP	142.3	0		142.3
WSJN-CD D22 DC BL	71.8	15,401	24.6	13,582
WQSJ-CD D23 DC CP	2.0	10	2.0	10
WCVI-TV D23 DT LIC	1.0	0	0.0	0
WUJA D24 DT BL	86.6	12,931	39.4	11,112

Interference to BLANK0000026037 CP, scenario 7

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WVSN	D23	DT	CP	HUMACAO, PR	BLANK0000026037	
Undesireds:	WQQZ-CD	D24	DC	CP	PONCE, PR	BLANK0000028131	97.4 km
	WSJN-CD	D22	DC	CP	SAN JUAN, PR	BLANK0000028045	33.2
	WQSJ-CD	D23	DC	BL	QUEBRADILLAS, PR	DTVBL48237	140.7
	WCVI-TV	D23	DT	LIC	CHRISTIANSTED, VI	BLCDT20090625AAH	132.6
	WUJA	D24	DT	BL	CAGUAS, PR	DTVBL8156	27.1

	Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX
23365.5	2,869,329	20604.6	2,485,563	20491.4	2,459,040	20349.1	2,459,040	0.69	0.00

Undesired		Total IX	Unique IX, before		Unique IX, after	
WQQZ-CD D24 DC CP	142.3	0			142.3	0
WSJN-CD D22 DC CP	71.8	15,401	24.6	13,582	24.6	13,582
WQSJ-CD D23 DC BL	2.0	10	2.0	10	2.0	10
WCVI-TV D23 DT LIC	1.0	0	0.0	0	0.0	0
WUJA D24 DT BL	86.6	12,931	39.4	11,112	39.4	11,112

Interference to BLANK0000026037 CP, scenario 8

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WVSN	D23	DT	CP	HUMACAO, PR	BLANK0000026037	
Undesireds:	WQQZ-CD	D24	DC	CP	PONCE, PR	BLANK0000028131	97.4 km
	WSJN-CD	D22	DC	BL	SAN JUAN, PR	DTVBL48239	33.2
	WQSJ-CD	D23	DC	BL	QUEBRADILLAS, PR	DTVBL48237	140.7
	WCVI-TV	D23	DT	LIC	CHRISTIANSTED, VI	BLCDT20090625AAH	132.6
	WUJA	D24	DT	BL	CAGUAS, PR	DTVBL8156	27.1

Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX
23365.5	2,869,329	20604.6	2,485,563	20491.4	2,459,040	20349.1	2,459,040	0.69 0.00

Undesired		Total IX	Unique IX, before		Unique IX, after	
WQQZ-CD D24 DC CP	142.3	0			142.3	0
WSJN-CD D22 DC BL	71.8	15,401	24.6	13,582	24.6	13,582
WQSJ-CD D23 DC BL	2.0	10	2.0	10	2.0	10
WCVI-TV D23 DT LIC	1.0	0	0.0	0	0.0	0
WUJA D24 DT BL	86.6	12,931	39.4	11,112	39.4	11,112

Interference to DTVBL67190 BL, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WVSN	D23	DT	BL	HUMACAO, PR	DTVBL67190	
Undesireds:	WQQZ-CD	D24	DC	CP	PONCE, PR	BLANK0000028131	97.4 km
	WSJN-CD	D22	DC	CP	SAN JUAN, PR	BLANK0000028045	33.2
	WQSJ-CD	D23	DC	CP	QUEBRADILLAS, PR	BLANK0000028044	140.7
	WCVI-TV	D23	DT	LIC	CHRISTIANSTED, VI	BLCDT20090625AAH	132.6
	WUJA	D24	DT	CP	CAGUAS, PR	BLANK0000024838	27.1

Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX
23366.5	2,869,966	20602.6	2,485,069	20484.5	2,456,862	20334.3	2,456,862	0.73 0.00

Undesired		Total IX	Unique IX, before	Unique IX, after
WQQZ-CD D24 DC CP	150.2	0		150.2
WSJN-CD D22 DC CP	75.8	16,566	26.6	14,747
WQSJ-CD D23 DC CP	2.0	0	1.0	0
WCVI-TV D23 DT LIC	1.0	0	0.0	0
WUJA D24 DT CP	89.5	13,460	41.3	11,641

Interference to DTVBL67190 BL, scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WVSN	D23	DT	BL	HUMACAO, PR	DTVBL67190	
Undesireds:	WQQZ-CD	D24	DC	CP	PONCE, PR	BLANK0000028131	97.4 km
	WSJN-CD	D22	DC	BL	SAN JUAN, PR	DTVBL48239	33.2
	WQSJ-CD	D23	DC	CP	QUEBRADILLAS, PR	BLANK0000028044	140.7
	WCVI-TV	D23	DT	LIC	CHRISTIANSTED, VI	BLCDT20090625AAH	132.6
	WUJA	D24	DT	CP	CAGUAS, PR	BLANK0000024838	27.1
Service area		Terrain-limited		IX-free, before		IX-free, after	
23366.5	2,869,966	20602.6	2,485,069	20484.5	2,456,862	20334.3	2,456,862
						Percent New IX	
						0.73	
						0.00	

Undesired		Total IX	Unique IX, before	Unique IX, after
WQQZ-CD D24 DC CP	150.2	0		150.2
WSJN-CD D22 DC BL	75.8	16,566	26.6	14,747
WQSJ-CD D23 DC CP	2.0	0	1.0	0
WCVI-TV D23 DT LIC	1.0	0	0.0	0
WUJA D24 DT CP	89.5	13,460	41.3	11,641

Interference to DTVBL67190 BL, scenario 3

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WVSN	D23	DT	BL	HUMACAO, PR	DTVBL67190	
Undesireds:	WQQZ-CD	D24	DC	CP	PONCE, PR	BLANK0000028131	97.4 km
	WSJN-CD	D22	DC	CP	SAN JUAN, PR	BLANK0000028045	33.2
	WQSJ-CD	D23	DC	BL	QUEBRADILLAS, PR	DTVBL48237	140.7
	WCVI-TV	D23	DT	LIC	CHRISTIANSTED, VI	BLCDT20090625AAH	132.6
	WUJA	D24	DT	CP	CAGUAS, PR	BLANK0000024838	27.1
Service area		Terrain-limited		IX-free, before		IX-free, after	
23366.5	2,869,966	20602.6	2,485,069	20484.5	2,456,862	20334.3	2,456,862
						Percent New IX	
						0.73	
						0.00	

Undesired		Total IX	Unique IX, before	Unique IX, after
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WQQZ-CD D24 DC CP	150.2	0			150.2	0
WSJN-CD D22 DC CP	75.8	16,566	26.6	14,747	26.6	14,747
WQSJ-CD D23 DC BL	2.0	0	1.0	0	1.0	0
WCVI-TV D23 DT LIC	1.0	0	0.0	0	0.0	0
WUJA D24 DT CP	89.5	13,460	41.3	11,641	41.3	11,641

Interference to DTVBL67190 BL, scenario 4

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WVSN	D23	DT	BL	HUMACAO, PR	DTVBL67190	
Undesireds:	WQQZ-CD	D24	DC	CP	PONCE, PR	BLANK0000028131	97.4 km
	WSJN-CD	D22	DC	BL	SAN JUAN, PR	DTVBL48239	33.2
	WQSJ-CD	D23	DC	BL	QUEBRADILLAS, PR	DTVBL48237	140.7
	WCVI-TV	D23	DT	LIC	CHRISTIANSTED, VI	BLCDT20090625AAH	132.6
	WUJA	D24	DT	CP	CAGUAS, PR	BLANK0000024838	27.1
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
23366.5 2,869,966		20602.6 2,485,069		20484.5 2,456,862		20334.3 2,456,862	0.73 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WQQZ-CD D24 DC CP	150.2 0	150.2 0	
WSJN-CD D22 DC BL	75.8 16,566	26.6 14,747	
WQSJ-CD D23 DC BL	2.0 0	1.0 0	
WCVI-TV D23 DT LIC	1.0 0	0.0 0	
WUJA D24 DT CP	89.5 13,460	41.3 11,641	

Interference to DTVBL67190 BL, scenario 5

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WVSN	D23	DT	BL	HUMACAO, PR	DTVBL67190	
Undesireds:	WQQZ-CD	D24	DC	CP	PONCE, PR	BLANK0000028131	97.4 km
	WSJN-CD	D22	DC	CP	SAN JUAN, PR	BLANK0000028045	33.2
	WQSJ-CD	D23	DC	CP	QUEBRADILLAS, PR	BLANK0000028044	140.7
	WCVI-TV	D23	DT	LIC	CHRISTIANSTED, VI	BLCDT20090625AAH	132.6
	WUJA	D24	DT	BL	CAGUAS, PR	DTVBL8156	27.1
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
23366.5 2,869,966		20602.6 2,485,069		20484.5 2,456,862		20334.3 2,456,862	0.73 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WQQZ-CD D24 DC CP	150.2 0	150.2 0	

WSJN-CD D22 DC CP	75.8	16,566	26.6	14,747	26.6	14,747
WQSJ-CD D23 DC CP	2.0	0	1.0	0	1.0	0
WCVI-TV D23 DT LIC	1.0	0	0.0	0	0.0	0
WUJA D24 DT BL	89.5	13,460	41.3	11,641	41.3	11,641

Interference to DTVBL67190 BL, scenario 6

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WVSN	D23	DT	BL	HUMACAO, PR	DTVBL67190	
Undesireds:	WQQZ-CD	D24	DC	CP	PONCE, PR	BLANK0000028131	97.4 km
	WSJN-CD	D22	DC	BL	SAN JUAN, PR	DTVBL48239	33.2
	WQSJ-CD	D23	DC	CP	QUEBRADILLAS, PR	BLANK0000028044	140.7
	WCVI-TV	D23	DT	LIC	CHRISTIANSTED, VI	BLCDT20090625AAH	132.6
	WUJA	D24	DT	BL	CAGUAS, PR	DTVBL8156	27.1

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
23366.5 2,869,966	20602.6 2,485,069	20484.5 2,456,862	20334.3 2,456,862	0.73 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WQQZ-CD D24 DC CP	150.2 0	150.2 0	
WSJN-CD D22 DC BL	75.8 16,566	26.6 14,747	
WQSJ-CD D23 DC CP	2.0 0	1.0 0	
WCVI-TV D23 DT LIC	1.0 0	0.0 0	
WUJA D24 DT BL	89.5 13,460	41.3 11,641	

Interference to DTVBL67190 BL, scenario 7

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WVSN	D23	DT	BL	HUMACAO, PR	DTVBL67190	
Undesireds:	WQQZ-CD	D24	DC	CP	PONCE, PR	BLANK0000028131	97.4 km
	WSJN-CD	D22	DC	CP	SAN JUAN, PR	BLANK0000028045	33.2
	WQSJ-CD	D23	DC	BL	QUEBRADILLAS, PR	DTVBL48237	140.7
	WCVI-TV	D23	DT	LIC	CHRISTIANSTED, VI	BLCDT20090625AAH	132.6
	WUJA	D24	DT	BL	CAGUAS, PR	DTVBL8156	27.1

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
23366.5 2,869,966	20602.6 2,485,069	20484.5 2,456,862	20334.3 2,456,862	0.73 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WQQZ-CD D24 DC CP	150.2 0	150.2 0	
WSJN-CD D22 DC CP	75.8 16,566	26.6 14,747	

WQSJ-CD D23 DC BL	2.0	0	1.0	0	1.0	0
WCVI-TV D23 DT LIC	1.0	0	0.0	0	0.0	0
WUJA D24 DT BL	89.5	13,460	41.3	11,641	41.3	11,641

Interference to DTVBL67190 BL, scenario 8

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WVSN	D23	DT	BL	HUMACAO, PR	DTVBL67190	
Undesireds:	WQQZ-CD	D24	DC	CP	PONCE, PR	BLANK0000028131	97.4 km
	WSJN-CD	D22	DC	BL	SAN JUAN, PR	DTVBL48239	33.2
	WQSJ-CD	D23	DC	BL	QUEBRADILLAS, PR	DTVBL48237	140.7
	WCVI-TV	D23	DT	LIC	CHRISTIANSTED, VI	BLCDT20090625AAH	132.6
	WUJA	D24	DT	BL	CAGUAS, PR	DTVBL8156	27.1

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
23366.5 2,869,966	20602.6 2,485,069	20484.5 2,456,862	20334.3 2,456,862	0.73 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WQQZ-CD D24 DC CP	150.2 0	150.2 0	
WSJN-CD D22 DC BL	75.8 16,566	26.6 14,747	
WQSJ-CD D23 DC BL	2.0 0	1.0 0	
WCVI-TV D23 DT LIC	1.0 0	0.0 0	
WUJA D24 DT BL	89.5 13,460	41.3 11,641	

Interference to BLANK0000024838 CP, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WUJA	D24	DT	CP	CAGUAS, PR	BLANK0000024838	
Undesireds:	WQQZ-CD	D24	DC	CP	PONCE, PR	BLANK0000028131	71.3 km
	WVSN	D23	DT	CP	HUMACAO, PR	BLANK0000026037	27.1
	WQSJ-CD	D23	DC	CP	QUEBRADILLAS, PR	BLANK0000028044	113.7
	WQHA	D25	DT	CP	AGUADA, PR	BLANK0000024555	114.2

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
16394.4 2,640,763	13671.4 2,405,782	12864.2 2,377,610	12828.7 2,377,048	0.28 0.02

Undesired	Total IX	Unique IX, before	Unique IX, after
WQQZ-CD D24 DC CP	422.5 562	35.5 562	
WVSN D23 DT CP	807.1 28,172	420.1 28,172	

Interference to BLANK0000024838 CP, scenario 2

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WUJA	D24	DT	CP	CAGUAS, PR	BLANK0000024838	
Undesireds:	WQQZ-CD	D24	DC	CP	PONCE, PR	BLANK0000028131	71.3 km
	WVSN	D23	DT	BL	HUMACAO, PR	DTVBL67190	27.1
	WQSJ-CD	D23	DC	CP	QUEBRADILLAS, PR	BLANK0000028044	113.7
	WQHA	D25	DT	CP	AGUADA, PR	BLANK0000024555	114.2
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
16394.4	2,640,763	13671.4	2,405,782	12861.3	2,378,067	12825.8 2,377,505	0.28 0.02
Undesired				Total IX	Unique IX, before	Unique IX, after	
WQQZ-CD D24 DC CP				422.5 562		35.5 562	
WVSN D23 DT BL				810.1 27,715	810.1 27,715	423.1 27,715	

Interference to DTVBL8156 BL, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WUJA	D24	DT	BL	CAGUAS, PR	DTVBL8156	
Undesireds:	WQQZ-CD	D24	DC	CP	PONCE, PR	BLANK0000028131	71.3 km
	WVSN	D23	DT	CP	HUMACAO, PR	BLANK0000026037	27.1
	WQSJ-CD	D23	DC	CP	QUEBRADILLAS, PR	BLANK0000028044	113.7
	WQHA	D25	DT	CP	AGUADA, PR	BLANK0000024555	114.2
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
16393.4	2,640,763	13672.4	2,404,901	12864.3	2,376,729	12827.7 2,376,167	0.28 0.02
Undesired				Total IX	Unique IX, before	Unique IX, after	
WQQZ-CD D24 DC CP				424.5 562		36.5 562	
WVSN D23 DT CP				808.1 28,172	808.1 28,172	420.1 28,172	

Interference to DTVBL8156 BL, scenario 2

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WUJA	D24	DT	BL	CAGUAS, PR	DTVBL8156	
Undesireds:	WQQZ-CD	D24	DC	CP	PONCE, PR	BLANK0000028131	71.3 km
	WVSN	D23	DT	BL	HUMACAO, PR	DTVBL67190	27.1
	WQSJ-CD	D23	DC	CP	QUEBRADILLAS, PR	BLANK0000028044	113.7
	WQHA	D25	DT	CP	AGUADA, PR	BLANK0000024555	114.2

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
16393.4 2,640,763	13672.4 2,404,901	12861.3 2,377,186	12824.8 2,376,624	0.28 0.02
Undesired	Total IX	Unique IX, before	Unique IX, after	
WQQZ-CD D24 DC CP	424.5 562		36.5 562	
WVSN D23 DT BL	811.1 27,715	811.1 27,715	423.1 27,715	

Interference to BLANK0000004264 LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	W24EI-D	D24	LD	LIC	CAYEY, PR	BLANK0000004264	
Undesireds:	WQQZ-CD	D24	DC	CP	PONCE, PR	BLANK0000028131	56.3 km
	W23EM-D	D23	LD	LIC	CEIBA, PR	BLANK0000010679	62.6
	WXWZ-LD	D23	LD	LIC	GUAYAMA, PR	BLDTL20100324ABD	24.4
	WVSN	D23	DT	CP	HUMACAO, PR	BLANK0000026037	43.8
	WUJA	D24	DT	CP	CAGUAS, PR	BLANK0000024838	16.7
	W24DW-D	D24	LD	LIC	CULEBRA, PR	BLANK0000010481	102.1
	W24DO-D	D24	LD	LIC	SION FARM, ST CROIX, VI	BLANK0000010845	166.3
	NEW	D25	LD	APP	CAMUY, PR	BNPDTL20090825BHQ	52.4
	W25EF-D	D25	LD	LIC	TOA BAJA, PR	BLDTL20140611AAU	0.0

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
4465.5 2,243,575	3836.9 1,970,199	2277.9 722,489	2276.9 722,393	0.04 0.01
Undesired	Total IX	Unique IX, before	Unique IX, after	
WQQZ-CD D24 DC CP	6.9 646		1.0 96	
W23EM-D D23 LD LIC	3.9 1,026	0.0 0	0.0 0	
WXWZ-LD D23 LD LIC	61.1 26,061	5.9 3,137	5.9 3,137	
WVSN D23 DT CP	11.8 1,522	3.0 871	3.0 871	
WUJA D24 DT CP	1458.7 1,196,227	944.9 914,363	943.0 914,033	
W24DW-D D24 LD LIC	60.1 15,019	5.9 1,709	5.9 1,709	
W24DO-D D24 LD LIC	23.7 5,241	1.0 0	0.0 0	
NEW D25 LD APP	75.8 22,966	19.7 9,297	19.7 9,297	
W25EF-D D25 LD LIC	423.1 271,750	53.2 33,620	53.2 33,620	

Interference to BLANK0000024555 CP, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WQHA	D25	DT	CP	AGUADA, PR	BLANK0000024555	
Undesireds:	WQQZ-CD	D24	DC	CP	PONCE, PR	BLANK0000028131	53.2 km

WUJA	D24	DT	CP	CAGUAS, PR	BLANK0000024838	114.2
WIPR-TV	D26	DT	CP	SAN JUAN, PR	BLANK0000024552	122.3

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
14580.4 1,050,970	13800.4 874,292	13373.7 870,923	13373.7 870,923	0.00 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WQQZ-CD D24 DC CP 42.5	0	0.0	0
WIPR-TV D26 DT CP 426.7	3,369	426.7 3,369	384.2 3,369

Interference to BLANK0000024555 CP, scenario 2

Call	Chan	Svc	Status	City, State	File Number	Distance
Desired: WQHA	D25	DT	CP	AGUADA, PR	BLANK0000024555	

Undesireds: WQQZ-CD	D24	DC	CP	PONCE, PR	BLANK0000028131	53.2 km
WUJA	D24	DT	CP	CAGUAS, PR	BLANK0000024838	114.2
WIPR-TV	D26	DT	BL	SAN JUAN, PR	DTVBL53859	122.4

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
14580.4 1,050,970	13800.4 874,292	13372.8 870,923	13372.8 870,923	0.00 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WQQZ-CD D24 DC CP 42.5	0	0.0	0
WIPR-TV D26 DT BL 427.7	3,369	427.7 3,369	385.2 3,369

Interference to DTVBL3255 BL, scenario 1

Call	Chan	Svc	Status	City, State	File Number	Distance
Desired: WQHA	D25	DT	BL	AGUADA, PR	DTVBL3255	

Undesireds: WQQZ-CD	D24	DC	CP	PONCE, PR	BLANK0000028131	53.2 km
WUJA	D24	DT	CP	CAGUAS, PR	BLANK0000024838	114.2
WIPR-TV	D26	DT	CP	SAN JUAN, PR	BLANK0000024552	122.3

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
14564.6 1,050,970	13785.6 874,109	13359.0 870,925	13359.0 870,925	0.00 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WQQZ-CD D24 DC CP 41.5	0	0.0	0
WIPR-TV D26 DT CP 426.7	3,184	426.7 3,184	385.2 3,184

Interference to DTVBL3255 BL, scenario 2

	Call	Chan	Svc	Status	City, State	File Number	Distance			
Desired:	WQHA	D25	DT	BL	AGUADA, PR	DTVBL3255				
Undesireds:	WQQZ-CD	D24	DC	CP	PONCE, PR	BLANK0000028131	53.2 km			
	WUJA	D24	DT	CP	CAGUAS, PR	BLANK0000024838	114.2			
	WIPR-TV	D26	DT	BL	SAN JUAN, PR	DTVBL53859	122.4			
Service area		Terrain-limited			IX-free, before		IX-free, after	Percent New IX		
14564.6	1,050,970	13785.6	874,109		13357.0	870,925	13357.0	870,925	0.00	0.00
Undesired				Total IX		Unique IX, before		Unique IX, after		
WQQZ-CD	D24	DC	CP	41.5		0		0.0		0
WIPR-TV	D26	DT	BL	428.7		3,184		387.2		3,184

Interference to proposal, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WQQZ-CD	D24	DC	CP	PONCE, PR	BLANK0000028131	
Undesireds:	WVSN	D23	DT	CP	HUMACAO, PR	BLANK0000026037	97.4 km
	WQSJ-CD	D23	DC	CP	QUEBRADILLAS, PR	BLANK0000028044	52.7
	WUJA	D24	DT	CP	CAGUAS, PR	BLANK0000024838	71.3
	WQHA	D25	DT	CP	AGUADA, PR	BLANK0000024555	53.2
Service area		Terrain-limited		IX-free		Percent IX	
4950.5		427,588		4764.2		367,856	0.00
						4764.2	0.00

32142	BLANK0000001465	WQQZ-CD	16	PONCE	PR	DC	1924.8	237540	1892.7	228749	1884.7	228502
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The proposed population is 161 percent of the baseline population.

Conclusion

Based on the information supplied herein, and accompanying application for construction permit, it is believed that the proposed facilities meet all applicable FCC requirements for modification of construction permit.

The foregoing was prepared on behalf of CMCG Puerto Rico, LLC by Clarence M. Beverage of *Communications Technologies, Inc.*, Marlton, New Jersey, whose qualifications are a matter of record with the Federal Communications Commission. The undersigned certifies, under penalty of perjury, that the statements herein are true and correct of his own knowledge, except such statements made on information and belief, and as to these statements he believes them to be true and correct.



By _____

Clarence M. Beverage
for Communications Technologies, Inc.

Marlton, New Jersey

November 1, 2017

