

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

Prepared for
CMCG PUERTO RICO, LLC

WOST CH 20 Facility ID 60357 47.7 kW DA RC 374.4 M AMSL

MAYAGUEZ, PUERTO RICO

Summary

CMCG Puerto Rico, LLC (“CMCG”) specifies herein its post-auction CH 20 transmission facilities. The proposed facility is based on continued use of the licensed site, RC AMSL and licensed antenna pattern. At this site and RC AMSL of 374.4 meters the Replication ERP specified by the FCC is limited to 47.7 kW to maintain the proposed 39.4 dBu F(50,90) contour inside the licensed baseline contour. The entire city of Mayaguez community boundary is located well within the city grade contour.

Attached herein is the TVStudy version 2.2.2 output which demonstrates that the proposed facility complies with the requirements for expedited processing in that there is no new interference to any station, the proposed population is 100 percent of the baseline population and the proposed coverage contour does not exceed the baseline contour.

Environmental

The proposed site is an existing broadcast site and the tower is existing.

The proposed antenna system consists of a Micronetix Model CS-2030-7617-12 horizontally polarized, panel, UHF TV antenna. The relative field in the elevation pattern across the depression angle range of 20 to 90 degrees does not exceed 0.2 with a radiation center 24.4 meters above ground. Utilizing formula 10 OF OET Bulletin No. 65, Edition 97-01, a value F of 0.2 has been used to calculate the power density 2 meters above ground. The maximum power density is 107 uw/cm squared calculated for an ERP OF 47,700 watts H. polarization. This value is 31.8% of the General Population exposure per section 1.1310. Based on this analysis it is believed that the proposed facility is in compliance with OET-65 Guidelines.

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

The proposed tower is an existing site with tower, building, access road and power.

OET-69 Bulletin, TVStudy Output

Study created: 2017.07.11 15:44:08

Study build station data: LMS TV 2017-06-21 (6)

Proposal: WOST D20 DT BL MAYAGUEZ, PR
 File number: DTVBL60357
 Facility ID: 60357
 Station data: LMS TV 2017-06-21 (6)
 Record ID: DTVBL60357
 Country: U.S.

Non-U.S. records included

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
WQTO	D19	DD	BL	PONCE, PR	DTVBL2175	53.4 km
WSVI	D20	DT	LIC	CHRISTIANSTED, VI	BLCDT20090603AFN	260.2
WJPX	D21	DT	LIC	SAN JUAN, PR	BLCDT20060621ACJ	141.0

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D20
Latitude: 18 18 43.82 N (NAD83)
Longitude: 67 11 22.65 W
Height AMSL: 374.4 m
HAAT: 327.0 m
Peak ERP: 47.7 kW
Antenna: SWR-SWEDL12BFRR/32 (ID 85049) 95.0 deg

39.4 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	15.0 kW	355.5 m	73.9 km
45.0	40.6	276.5	73.5
90.0	3.16	212.3	56.1
135.0	27.9	297.5	73.0
180.0	30.5	374.3	80.1
225.0	0.935	374.4	58.7
270.0	0.345	371.4	53.2
315.0	0.687	347.1	55.7

Database HAAT does not agree with computed HAAT

Database HAAT: 327 m Computed HAAT: 326 m

Distance to Canadian border: 2464.9 km

Distance to Mexican border: 3169.4 km

Conditions at FCC monitoring station: Santa Isabel PR

Bearing: 111.5 degrees Distance: 92.5 km

ERP: 5.22 kW Field strength: 6.9 dBu, 0.0 mV/m

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:

Bearing: 311.9 degrees Distance: 4363.9 km

No land mobile station failures found

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, 0.90% interference to DTVBL2175 BL, scenario 1
Proposal receives 6.01% interference from scenario 1

OET-69 Bulletin, TVStudy tvix Output

tvstudy v2.2.2
Database: 127.0.0.1, Study: DTVBL60357, Model: Longley-Rice
Start: 2017.07.11 15:44:32

Study created: 2017.07.11 15:44:08

Study build station data: LMS TV 2017-06-21 (6)

Proposal: WOST D20 DT BL MAYAGUEZ, PR
File number: DTVBL60357
Facility ID: 60357
Station data: LMS TV 2017-06-21 (6)
Record ID: DTVBL60357
Country: U.S.

Non-U.S. records included

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
WQTO	D19	DD	BL	PONCE, PR	DTVBL2175	53.4 km
WSVI	D20	DT	LIC	CHRISTIANSTED, VI	BLCDT20090603AFN	260.2
WJPX	D21	DT	LIC	SAN JUAN, PR	BLCDT20060621ACJ	141.0

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D20
Latitude: 18 18 43.82 N (NAD83)
Longitude: 67 11 22.65 W
Height AMSL: 374.4 m
HAAT: 327.0 m
Peak ERP: 47.7 kW
Antenna: SWR-SWEDL12BFRR/32 (ID 85049) 95.0 deg

39.4 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	15.0 kW	355.5 m	73.9 km
45.0	40.6	276.5	73.5
90.0	3.16	212.3	56.1
135.0	27.9	297.5	73.0
180.0	30.5	374.3	80.1
225.0	0.935	374.4	58.7
270.0	0.345	371.4	53.2
315.0	0.687	347.1	55.7

Database HAAT does not agree with computed HAAT

Database HAAT: 327 m Computed HAAT: 326 m

Distance to Canadian border: 2464.9 km

Distance to Mexican border: 3169.4 km

Conditions at FCC monitoring station: Santa Isabel PR

Bearing: 111.5 degrees Distance: 92.5 km

ERP: 5.22 kW Field strength: 6.9 dBu, 0.0 mV/m

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
 Bearing: 311.9 degrees Distance: 4363.9 km

No land mobile station failures found

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 DTVBL2175 BL, scenario 1

**IX: 0.90% interference

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WQTO	D19	DD	BL	PONCE, PR	DTVBL2175	
Undesireds:	WOST	D20	DT	BL	MAYAGUEZ, PR	DTVBL60357	53.4 km
	WECN	D18	DT	LIC	NARANJITO, PR	BLCDT20090610ABG	56.1

	Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New
IX	30328.7	2,864,201	28516.0	1,926,216	28436.1
				1,922,262	27861.3
					1,905,022
					2.02
					0.90

Undesired	Total IX	Unique IX, before	Unique IX, after
WOST D20 DT BL	614.7	17,240	574.8
WECN D18 DT LIC	79.9	3,954	79.9
			3,954
			40.0
			3,954

 Interference to BLCDT20090603AFN LIC, scenario 1
 Proposal causes no interference.

 Interference to BLCDT20060621ACJ LIC, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WJPX	D21	DT	LIC	SAN JUAN, PR	BLCDT20060621ACJ	
Undesireds:	WOST	D20	DT	BL	MAYAGUEZ, PR	DTVBL60357	141.0 km
	WSVI	D20	DT	LIC	CHRISTIANSTED, VI	BLCDT20090603AFN	125.8
	WZVI	D21	DT	BL	CHARLOTTE AMALIE, VI	DTVBL83270	97.9
	WSJN-CD	D22	DC	BL	SAN JUAN, PR	DTVBL48239	33.1

IX	Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New	
40275.6	3,254,481	39018.8	3,008,658	38878.9 2,991,858	38866.9 2,990,987	0.03
0.03						

Undesired	Total IX	Unique IX, before	Unique IX, after
WOST D20 DT BL 12.0	871	12.0	871
WZVI D21 DT BL 8.0	0	8.0	0
WSJN-CD D22 DC BL 131.9	16,800	131.9	16,800

Interference to proposal, scenario 1
6.01% interference

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WOST	D20	DT	BL	MAYAGUEZ, PR	DTVBL60357	
Undesireds:	WQTO	D19	DD	BL	PONCE, PR	DTVBL2175	53.4 km
	WSVI	D20	DT	LIC	CHRISTIANSTED, VI	BLCDT20090603AFN	260.2
	WJPX	D21	DT	LIC	SAN JUAN, PR	BLCDT20060621ACJ	141.0

Service area	Terrain-limited	IX-free	Percent IX
13574.2 921,993	12913.3 801,692	12192.5 753,517	5.58 6.01

Undesired	Total IX	Unique IX	Prcnt Unique IX
WQTO D19 DD BL 469.1	29,779	469.1	29,779
WJPX D21 DT LIC 251.7	18,396	251.7	18,396

Coverage Baseline for Post-Auction Table of Allotments

Noise Limited Ter. limited Interfer. Free

60357	BLCDT20090813AAM	WOST	20	MAYAGUEZ	PR	DT	13574.2	921993	12913.3	801692	12204.5	753684
-------	------------------	------	----	----------	----	----	---------	--------	---------	--------	---------	--------

Proposed population 100% of Baseline.

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 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

July 11, 2017

