

ENGINEERING REPORT FOR
CENTRAL OHIO ASSOCIATION OF CHRISTIAN BROADCASTERS
FOR APPLICATION OF
WOCB-LP
CLASS A TELEVISION STATION
MARION, OH
CHANNEL 39 – 18.92 KW MAX. – 383 METERS AMSL

JULY 29, 2002

R & L MEDIA SYSTEMS, INC.
BROADCAST CONSULTANTS
RADIO AND TELEVISION
HENDERSONVILLE, TN

Introduction

This engineering report has been prepared on behalf of Central Ohio Association Of Christian Broadcasters in support of an application for WOCB-CA, FCC Facility ID No. 9939 for Channel 39 at Marion, OH.

It is proposed to operate using a Propagation Systems Inc. directional antenna with an effective radiated power (ERP) of 18.92 Kw at horizon and a radiation center of 383 meters above sea level. Aural power is proposed at 10% of visual power value.

Transmitter Site

It is proposed to side-mount on an existing 98 meter guide tower at 1282 North Main Street, Marion, OH.

The NAD-27 geographic coordinates of the transmitter site are:

North Latitude: 40° 36' 54"

West Longitude: 83° 07' 54"

Equipment Data

Transmitter: Type-Verified, rated at 1.00 Kw visual and .100 Kw aural
Transmission Line: 90 meters of Andrew, Type LDF7-50A
1-5/8" Foam Dielectric 50-ohm line
Antenna: Propagation Systems Inc, PSILP16OI, horizontal polarized, Slot Antenna.

Power Data

Visual

Transmitter output	1.00 kW	0.00 dBk
Transmission line efficiency	65.46 %	-1.84 dB
Power input to antenna	.655 kW	-1.84 dBk
Antenna power gain (Horizon)	28.9	14.61 dB
Effective Radiated Power (Horizon)	18.92 kW	12.77 dBk

Elevation Data

Vertical dimension antenna	8.1 meters
Elevation of the site above mean sea level	295.1 meters
Height of top of structure above ground	97.5 meters
Height of top of supporting structure above mean sea level	392.6 meters
Radiation center above ground	88.0 meters

Other Stations

No objectionable interference problems are anticipated, however, if any problems occur, the applicant will take the necessary steps to resolve them.

FCC Rule, Section 1.1307

The proposed TV operation with a peak ERP of 18.92 kW visual and 1.892 kW aural. Calculations to determine power density levels from the proposed operation were performed using formulas outlined in OET Bulletin 65 (Edition 97-01) based on antenna relative field factor of .1 The formula used is:

$$S = \frac{(33.4)(F^2)(.4VERP+AERP)}{R^2}$$

The maximum power density levels at two meters above ground level are .427 $\mu\text{W}/\text{cm}^2$ computed for a radiation center of 88 meters above ground level. The maximum allowed by OET65 bulletin is:

Occupational/Controlled Exposure
Frequency / .3
2,077 $\mu\text{W}/\text{cm}^2$

General Population
Frequency / 1.5
415 $\mu\text{W}/\text{cm}^2$

The proposed operation will be in compliance with the FCC RF radiation guidelines since areas that exceed the FCC standards will be alerted to workers by posting warning signs and restricting areas. All stations on the tower will have a mutual written agreement and procedures for workers climbing the tower. Transmitter power of each station will be reduced or terminated when workers are near areas on the tower where power density levels are in excess of the FCC standard. An environmental assessment

(EA) is categorically excluded under Section 1.1307 of the FCC Rules and Regulations since the applicant indicates:

- (a)(1) The proposed facilities are not located in an officially designated wilderness area.
- (a)(2) The proposed facilities are not located in an officially designated wildlife preserve.
- (a)(3) The proposed facilities will not affect any listed threatened or endangered species or habitats.
- (a)(3)(ii) The proposed facilities will not jeopardize the continued existence of any proposed endangered or threatened species or likely to result in the destruction or adverse modification of proposed critical habitats.
- (a)(4) The proposed facilities will not affect any known districts, sites, buildings, structures, or objects significant in American history, architecture, archaeology, engineering, or culture.
- (a)(5) The proposed facilities are not located near any known Indian religious sites.
- (a)(6) The proposed facilities are not located in a flood plain.
- (a)(7) The side-mounted TV antenna on the existing tower will not involve a significant change in surface features of the ground in the vicinity of the tower.
- (a)(8) The existing tower structure is not equipped with high intensity white lights.
- (b) There will be a security fence with a locked gate to surround the tower. Workers and the general public will not be subjected to RF radiation levels in excess of FCC OET Bulletin 65 (Edition 97-01). Authorized personnel will be alerted to areas of the tower where potential radiation levels are in excess of the FCC standard. The transmitter power will be reduced or terminated when necessary.

Land Mobile Radio

A study of Land mobile Radio was performed and no objectionable interference problems is anticipated. However, if any problems occur, the applicant will take the necessary steps to resolve them.

Interference Study

A study was done and the following were found to receive possible objectionable interference.

WDLI-DT	39	Canton, OH	See attached Longley-Rice Study.
WLPX-DT	39	Charleston, WV	See attached Longley-Rice Study.

As can be seen, the proposed station meets the FCC criteria and is grantable.

Summary of Channel 39Z

Lat: 40-36-54.0 N
Lon: 83-07-54.0 W
ERP: 18.920

ComStudy 2.2 RadioSoft

Callsign	City	Ch#	Fac ID	ARN	Type	ERP	Status	Bearing	Dist	Clearance	% Within Overlap	Pop Within Protected Contour	Pop Within Overlap
WZPX	BATTLE CREEK	43 -	71871	BLCT19961017KE	LIC	5000	Clear	325.64	280.1	248.1	N/C	N/C	N/C
WDLI*	CANTON	39	67893	DTV ALLOTMENT	LIC	50	Interf	79.86	158.4	-83.6	0.10%	1741963	1993
WDLI-DT	CANTON	39	67893	BPCDT19990423KE	CP	200	Interf	68.76	138.3	-119.5	0.10%	3839731	1986
WLPX-DT	CHARLESTON	39	73189	BPCDT19990513KH	CP	1000	Interf	153.59	265.3	-17.5	0.00%	772935	11
WLPX-TV*	CHARLESTON	39	73189	DTV ALLOTMENT	LIC	50	Clean	153.59	265.3	10.3	0.00%	418153	0
W39CG	CINCINNATI	39 +	19432	BLTTL19990302JH	LIC	18.6	Clean	215.61	202.6	108.6	0.00%	1099749	0
WBQC-CA	CINCINNATI	38 -	19431	BMJPTTA20010112AAT	CP	140	Clean	215.6	202.6	156.4	0.00%	1334715	0
W58CQ	COLUMBUS	24 Z	47695	BLTT19910320IM	LIC	6.4	Clean	174.78	80.7	52.6	0.00%	623647	0
WOSU-DT	COLUMBUS	38	66185	BPEDT20000317AAD	CP	250	Clean	160.71	53.7	-43.1	0.00%	2051667	0
WOSU-TV*	COLUMBUS	38	66185	DTV ALLOTMENT	LIC	50	Clean	160.68	53.6	-31	0.00%	1740104	0
W39AA	FORT WAYNE	39 -	22107	BLTTL19841001IC	LIC	23.2	Clean	288.09	181.5	96.1	0.00%	323679	0
W39AA*	FORT WAYNE	40	22107	DTV ALLOTMENT	LIC	50	Clean	288.09	181.5	105.6	0.00%	722378	0
WFWA	FORT WAYNE	39 -	22108	BLET19920131KF	LIC	1380	Clean	288.09	181.5	19.6	0.00%	682344	0
WFWA	FORT WAYNE	40	22108	BPEDT20000414AAY	CP	90	Clean	288.09	181.5	102.7	0.00%	764745	0
WFWA*	FORT WAYNE	40	22108	DTV ALLOTMENT	LIC	50	Clean	288.09	181.5	105.6	0.00%	722378	0
WZZM-DT	GRAND RAPIDS	39	49713	BDSTA20020612AEJ	LIC	500	Clean	323.42	377.6	104.5	0.00%	1182838	0
WZZM-DT	GRAND RAPIDS	39	49713	BMPCDT20020311AAC	APP	1000	Clean	323.42	377.6	98.4	0.00%	1226196	0
WZZM-DT	GRAND RAPIDS	39	49713	BPCDT19991020ABR	CP	1000	Clean	323.43	377.6	97.5	0.00%	1231462	0
WZZM-TV*	GRAND RAPIDS	39	49713	DTV ALLOTMENT	LIC	1000	Clean	323.42	377.6	99.2	0.00%	1216742	0
WZZM-TV*	GRAND RAPIDS	39	49713	DTV ALLOTMENT	LIC	1000	Clean	323.42	377.6	99.2	0.00%	1216742	0
W51BI	KIRTLAND	39 -	67934	BPTT19980601WM	CP	18.7	Clean	55.24	139.4	72.5	0.00%	629993	0
NEW	KITCHENER	39 Z	136019	BPFS	LIC	100	Clean	32.69	378.1	140.3	N/C	N/C	N/C
WLEX-DT	LEXINGTON	39	73203	BPCDT20000501AJY	APP	1000	Clean	201.13	306.8	14.8	0.00%	790201	0
WLEX-TV	LEXINGTON	39	124959	BPRM20000801AAC	APP	1000	Clean	201.13	306.8	12.5	0.00%	822531	0
WLIO	LIMA	35 -	37503	BLCT19890519KE	LIC	661	Clean	280.29	85.6	53.6	0.00%	433115	0
WUAB	LORAIN	43 Z	8532	BMPCT20001227ABI	CP MOD	4680	Clear	53.89	145.8	113.8	N/C	N/C	N/C
WUAB	LORAIN	43 Z	8532	BLCT19910923KL	LIC	4680	Clear	53.89	145.8	113.8	N/C	N/C	N/C
WADL*	MOUNT CLEMENS	39	455	DTV ALLOTMENT	LIC	148	Clean	5.3	216.6	-38.2	0.00%	4187169	0
WADL-DT	MOUNT CLEMENS	39	455	BPCDT19990614KF	CP	189	Clean	5.3	216.6	-38.2	0.00%	4185105	0
WADL-DT	MT.CLEMENS	39	455	BMPCDT20000501ABI	CP MOD	1000	Clean	5.3	216.6	-46.8	0.00%	4527380	0
NEW	NEW ALBANY	39	127363	BPRM20000717ADC	LIC	1000	Clean	222.79	375.6	97.1	0.00%	1134214	0
WKOI	RICHMOND	43 +	67869	BLCT19820517KJ	LIC	2290	Clear	226.72	177.2	145.2	N/C	N/C	N/C
WKOI*	RICHMOND	39	67869	DTV ALLOTMENT	LIC	59.5	Clean	226.72	177.2	-94.5	0.00%	2731732	0
WKOI-DT	RICHMOND	39	67869	BPCDT19990601KF	CP	500	Clean	226.72	177.2	-107	0.00%	2990024	0
WBAK-DT	TERRE HAUTE	39	65247	BMPCDT19991101AJG	CP MOD	1000	Clean	248.45	394.6	108.6	0.00%	708372	0
WBAK-TV*	TERRE HAUTE	39	65247	DTV ALLOTMENT	LIC	56.8	Clean	248.47	394.8	127.8	0.00%	400601	0
W64BM	TOLEDO	38 -	49188	BPTTL20010112ABY	APP	8.2	Clean	341.03	121.2	99.4	0.00%	415499	0
WNWO-TV	TOLEDO	24 -	73354	BLCT19830503KE	LIC	4370	Clean	350.95	118.5	8.4	0.00%	2219026	0
WUPW	TOLEDO	36 -	19190	BLCT19850930KG	LIC	1950	Clean	347.35	118.6	86.6	0.00%	1388879	0
W52CX	YOUNGSTOWN	39 Z	68064	BPTT20010119AFI	CP	10	Clean	72.04	214.6	73.6	0.00%	233238	0
W52CX	YOUNGSTOWN	39 Z	68064	BLTTL19880725IL	LIC	12.8	Clean	74.7	215.5	80	0.00%	193955	0

Summary of Channel 39Z

Lat: 40-36-54.0 N
Lon: 83-07-54.0 W
ERP: 18.920

ComStudy 2.2 RadioSoft

Callsign	City	Ch#	Fac ID	ARN	Type	ERP	Status	Bearing	Dist	Clearance	% Within Overlap	Pop Within Protected Contour	Pop Within Overlap
WHIZ-DT	ZANESVILLE	40	61216	BMPCDT20020314AAE	CP MOD	620	Clean	127.76	123.6	37.7	0.00%	732203	0
WHIZ-TV*	ZANESVILLE	40	61216	DTV ALLOTMENT	LIC	50	Clean	127.76	123.7	51.5	0.00%	442273	0
WHIZ-TV*	ZANESVILLE	40	61216	DTV ALLOTMENT	LIC	50	Clean	127.76	123.7	51.5	0.00%	442273	0