

COMPREHENSIVE TECHNICAL EXHIBIT

Discussion

Applicant seeks an LPFM Construction Permit for:
Westfield, MA
Channel 298 (107.5 Mhz), See **Figure 2** Channel Study
ERP = 0.1 kW
Ground Elevation = 76 meters
RCAGL = 15.2 meters
RCAMSL = 91.2 meters
HAAT = -40.0 meters (Globe terrain data) (See **Figure 1**)
Overall Tower Height = 15.3meters
FAA (TOWAIR study), See **Figure 4**
NAD83 Latitude: 42 05 29.3N 72 45 43.2W
No AM station notifications required (Closest AM Facility is WNNZ, WESTFIELD, MA, L, DA2 at 5.1° at a distance of 9.8 km)
Facility is okay with respect to Canada. Distance = 325.3 km.
Facility is okay with respect to FCC monitoring stations.
Closest FCC Monitoring Station is 381.3 km= Canandaigua, NY
Facility is okay toward West Virginia Quiet Zone. Distance to center = 706.5 km
Facility is okay toward Table Mountain. Distance to Center = 2736.5 km, Azimuth = 276.4 Degrees True

HAAT CALCULATION (FCC HAAT Calculator)

[Antenna Height Above Average Terrain Calculations -- Results](#)

Input Data

Latitude **42° 5' 29.3"** North
Longitude **72° 45' 43.2"** West (NAD 83)

Height of antenna radiation center above mean sea level: **91.2** meters AMSL

Number of Evenly Spaced Radials = **360** 0° is referenced to True North

Results

Calculated HAAT = **-40 meters**

Antenna Height Above Average Terrain calculated
using 1 km [GLOBE terrain data](#)

FIGURE 1

CHANNEL STUDY

channel 298 study

REFERENCE			CLASS = L1	DISPLAY DATES
42 05 29.30 N.				DATA 09-21-23
72 45 43.20 W.		Current	Spacings to 2nd Adj.	SEARCH 09-21-23
----- Channel 298 - 107.5 MHz -----				

Call		Channel	Location		Azi	Dist	FCC	Margin
WACC-LP	LIC	299L1	Enfield	CT	131.7	19.71	13.5	6.2
W297BT	LIC-D	297D	New Britain	CT	168.9	36.75	27.5	9.3
WWMM-LP	LIC	298L1	Collinsville	CT	201.6	33.47	23.5	10.0
W297BT	CP -D	297D	Hartford	CT	168.9	36.75	20.5	16.3
WWMM-LP	CP	298L1	Collinsville	CT	209.4	40.89	23.5	17.4
WGNA-FM	LIC	299B	Albany	NY	301.3	118.42	96.5	21.9
WAIY-LP	LIC	299L1	Belchertown	MA	40.2	37.50	13.5	24.0
WEBE	LIC-N	300B	Westport	CT	201.4	96.87	66.5	30.4
W298CA	LIC	298D	Greenfield	MA	12.1	56.52	25.5	31.0
WFCS	LIC	299D	New Britain	CT	180.1	44.21	12.5	31.7
WKVB	LIC-N	297B1	Westborough	MA	72.3	109.66	73.5	36.2
WWRX	LIC	299A	Bradford	RI	135.1	98.49	55.5	43.0
WRWD-FM	LIC	297A	Highland	NY	247.4	111.78	55.5	56.3
WNHA-LP	LIC	298L1	New Haven	CT	183.2	86.15	23.5	62.7
WBLS	LIC	298B	New York	NY	214.7	180.87	111.5	69.4
WVEW-LP	CP	299L1	Brattleboro	VT	10.4	84.79	13.5	71.3
WVEW-LP	LIC	299L1	Brattleboro	VT	10.4	84.79	13.5	71.3
WXKS-FM	LIC	300B	Medford	MA	77.8	141.55	66.5	75.1
W298BT	LIC-D	298D	Keene	NH	22.0	100.66	25.5	75.2
W297AN	LIC-D	297D	Danbury	CT	215.7	97.89	20.5	77.4
W296AO	LIC-D	296D	New Haven	CT	189.0	88.61	7.5	81.1
W298DE	LIC	298D	Warwick	RI	108.4	115.46	31.5	84.0
WTPL	LIC-D	299A	Hillsboro	NH	33.5	142.28	55.5	86.8
W297CP	LIC-D	297D	Bridgeport	CT	198.1	108.67	20.5	88.2
WCAA-LP	LIC	297L1	Albany	NY	307.4	102.47	13.5	89.0
W300DU	LIC-D	300D	Kingston	NY	260.9	104.63	13.5	91.1
W298BN	LIC	298D	Noyack	NY	164.4	129.04	31.5	97.5
W298BN	CP	298D	Noyack	NY	164.4	129.33	31.5	97.8
W296EO/W2APP-D		296D	Providence	RI	103.8	119.17	20.5	98.7
DWRUT	VAC	298A	West Rutland	VT	353.1	165.23	66.5	98.7

All separation margins include rounding

FIGURE 2

Input protection of any relevant FM Translators or Boosters

There is one (1) FM translator authorization within 10 km of the proposed LPFM transmitter site (see **Figure 3**), however, the proposed frequency (channel 298) does not occupy the 3rd adjacent channel to the primary station off-air input of any of the nearby translators. Thus the Application complies with the provisions of 73.827(a).

WESTFIELD, MA FM TRANSLATORS/BOOSTERS WITHIN 10 KM OF PROPOSED CHANNEL 298

FCC		Translator	Primary
ID	DISTANCE (km)	INPUT	CHANNEL
W247DL	4.91	Off-Air	250
W247DL	4.91	Off-Air	226

FIGURE 3

TOWAIR study

DETERMINATION Results							
PASS SLOPE(100:1): NO FAA REQ-RWY MORE THAN 10499 MTRS & 6957.66 MTRS (6.9577 KM) AWAY							
Type	C/R	Latitude	Longitude	Name	Address	Lowest Elevation (m)	Runway Length (m)
AIRP	R	42-08-43.00N	072-43-8.00W	WESTFIELD-BARNES RGNL	HAMPDEN WESTFIELD/SPRINGFIELD, MA	75.3	2743.1999999999998
Your Specifications							
NAD83 Coordinates							
Latitude						42-05-29.3 north	
Longitude						072-45-43.2 west	
Measurements (Meters)							
Overall Structure Height (AGL)						15.3	
Support Structure Height (AGL)						9.1	
Site Elevation (AMSL)						76	
Structure Type							
BMAST - Building with Mast							

Figure 4

RF EXPOSURE

The proposed single bay Type 2 antenna will be mounted 15.2 meters above ground level. (6.1 meters above the supporting roof, see aerial photo, **FIGURE 5**). All occupancy in the immediate area is single story. FMModel predicts exposure of 109.4 uW/cm^2 at roof level and 10.55 uW/cm^2 at ground level, well within limits for uncontrolled access.



Antenna Mast Location
FIGURE 5