

# **ENGINEERING REPORT**

Family Life Broadcasting System  
Requesting Minor Modification  
to W284BQ Translator  
BLFT-20161028ABN

Detroit, Michigan  
Channel 284D (104.7 MHz.)  
0.25 kW ERP

December 2016

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## **Interference Requirements**

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## **Grandfathered Short-Spaced Requirements (none)**

## **RF Radiation Study Requirement**

- Exhibit 17 – RF Compliance Study

(Exhibit numbering is in response to FCC Online Form 349, Section III-A.)

## **DISCUSSION OF REPORT**

Family Life Broadcasting System (“FLBS”), licensee of translator station W284BQ (License File Number BLFT-20161028ABN), a 250-watt translator serving Detroit, Michigan, as a fill-in translator for FLBS’s WUFL (AM) (License File Number BL-20070726AMP) licensed to Sterling Heights Michigan, respectfully submits this application to change the W284BQ transmitting location to the WUFL transmission site.

The Proposed Operating Conditions are shown in **Exhibit 10.1**. The antenna will be mounted on an existing WUFL tower bearing Antenna Structure Registration number 1244020. A copy of the existing Antenna Structure Registration has been included in **Exhibit 10.2**. A map showing the 60-dBu Service Contour of the licensed W284BQ facility as well as the proposed facility that shows compliance to §74.1201(g) of the rules relating to AM Fill-In translators is shown in **Exhibit 4 and Exhibit 10.3**. A study of the required common 60-dBu f[50:50] contour area of both the licensed as well as the proposed facility is shown in **Exhibit 10.4a** and **Exhibit 10.4b**, which shows a “close-up” of the area in common with both service contours.

The CH284 channel study shown in **Exhibit 13.1** demonstrates that the proposed facility’s interference contour overlaps only 2<sup>nd</sup> Adjacent CH282B WOMC, 2<sup>nd</sup> Adjacent CH286B WMGC-FM, and the co-channel CH 284A allocation for Sarnia, Ontario. **Exhibit 13.2** shows that the proposed facility will be compliant with §74.1204(d) of the Commission’s rules in that no 2<sup>nd</sup> adjacent actual interference will occur to WOMC or WMGC-FM. **Exhibit 13.3** shows the Shively 6810-2DA transmission antenna vertical radiation pattern. **Exhibit 13.4** shows that the proposed facility’s 34-dBu interference contour does not overlap the Sarnia allocation beyond the common border between the United States and Canada, and is thus compliant with Section 4.4 of the Agreement between the Government of Canada and the Government of the United States relating to the FM Broadcasting Service. Contour protection toward WIOT (FM), Toledo Ohio is shown in **Exhibit 13.5**.

The transmitter site in this application is 19.9 kilometers from the common border between the United States and Canada. **Exhibit 13.6** shows the proposed facility’s 34-dBu f[50:10] Interference Contour toward Canada does not reach the common border between the United States and Canada and also shows that it is entirely within a 60 km radius from the proposed facility and is thus compliant with the Canada – US Agreement and § 74.1235(d). The proposed transmitter site is well out outside the 320-kilometer limit requiring coordination with Mexico.

The modified facility is located at Family Life Broadcasting System’s WUFL AM station. A set of monitor point readings and adjustment(s) to attain the licensed WUFL pattern will be performed to ensure the WUFL pattern maintains compliance. The proposed facility is 250 km from the closest FCC monitoring station, 552 km from the West Virginia Quiet Zone and 1,888 km from the Table Mountain, Colorado Quiet Zone, thus providing full protection per §73.1690(c)(7)(ii).

The potential for human exposure to non-ionizing radiofrequency radiation at the proposed transmitter site has been evaluated with regards to §1.1307(b)(3) concerning the five percent (5%) contribution rule for multiple transmitter sites. **Exhibit 17** provides the details of the study and demonstrates compliance. The facility is properly marked with signs, and entry is restricted by means of fencing with locked gates. Any other means as may be required to protect employees and the general public will be employed.

*In the event work would be required in proximity to the antenna such that the person or persons working in the area would be potentially exposed to fields in excess of the guidelines set forth in OET Bulletin No. 65 (Edition 97-01), the transmitter power will be reduced or the station will cease operation during the critical period.*

The remainder of the information in this report and exhibit numbering is responsive to the Rules of the Commission, and provides the data for FCC Form 349.

**DISTANCES TO CONTOURS:** The table below shows the distances to the 1.0 mV/m contour from the proposed facility using an ERP of 0.25 kW at an overall HAAT of 93.2 meters. These distances have been calculated based on the FCC f[50-50] curves.

N. Lat. = 42-36-16.2      W. Long. = 082-54-43.0		
HAAT and Distance to Contour = FCC Method - USGS 03 SEC		
Bearing (deg)	Distance (km)	HAAT (m)
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0.0	9.38	51.1
45.0	9.11	55.5
90.0	5.73	61.6
135.0	3.96	61.0
180.0	3.91	54.7
225.0	5.31	53.1
270.0	8.57	47.4
315.0	8.70	44.7
Average HAAT for radials shown: 53.6 meters		