

ENGINEERING TECHNICAL STATEMENT PREPARED BY WILLIAM T. GODFREY, JR. WITH THE TELECOMMUNICATIONS CONSULTING ENGINEERING FIRM KESSLER AND GEHMAN ASSOCIATES, INC. (“KGA”) IN CONNECTION WITH A MODIFICATION OF LICENSED FACILITY FOR DTV APPLICATION PURSUANT FOR FCC CHANNEL REPACK.

Unable to Construct

The licensed pre-auction WFRV-DT facility currently operates with Dielectric model TUD-C5SP-14/70H-1 top-mount panel antenna on Channel 39. The antenna is broadband; however, the relative field values of the azimuth pattern will change with frequency and the scalloping in the pattern is due to the interaction with the panels. The antenna was optimized for Channel 39 and the pattern changes significantly as the channel moves farther away from the optimized portion of the band (mid-band). Exhibit 1 below displays the specific azimuth pattern optimized for Channel 39. It can be seen that the pattern is symmetrical and similar to an omnioid with scalloping. However, Exhibit 2 below shows how the pattern will change at the assigned Channel 22. The pattern is no longer symmetrical and it would result in significant losses in many azimuthal directions up to 3 dB. WFRV is assigned an ERP of 699 kW for post-transition operation and it would actually have to increase its ERP up to 1,400 kW before it would be able to gain all of its pre-auction coverage back. The FCC rules only authorize an ERP of 1,000 kW so it's not possible for WFRV to regain its coverage area and population back; not even in a priority filing window fully maximized. Even if WFRV were authorized to operate with an ERP of 1,400 kW to regain its population and coverage it has served for decades, it is not reasonable to expect a station to have to double its power by increasing its ERP from 699 kW to 1,400 kW and therefore, significantly increasing operating expenses as a result of the repack. Lastly, remaining on the existing antenna does not serve the public's interest since many off-air viewers in the Green Bay area would no longer be able to receive the programming currently provided by WFRV at no cost; especially in the fringe areas in 12 counties toward the outer edges of the existing protected noise limited contour.

Exhibit 3 is a copy of an email between the antenna manufacturer (Dielectric) and the tower owner (American Tower). American Tower asked Dielectric if the antenna could be retrofitted in order to optimize for the lower post-auction channel. Dielectric informed American Tower that it is not possible. A like-for-like antenna replacement would be to replace the existing panel antenna, which is optimized for the mid-UHF band (Dielectric TUD model), with a new panel antenna, which is optimized for the lower-UHF band (Dielectric TUC model); however, that could cost over \$500,000 and the station is only interested in replicating its pre-auction coverage so it would be willing to replace the existing top-mount panel antenna with a new top-mount slot antenna which would cost approximately half as much.

Since the pattern of the existing antenna at post-auction Channel 22 is completely different; asymmetrical; and creates reductions equating to 3 dB nulls, the station has decided to use “To Be Determined” in the construction permit application for the antenna make and model since it is not known at this time which reimbursement-antenna shall be used for post-auction operation that will replicate the station’s pre-auction coverage instead of creating significant coverage losses.

Certification

This technical statement was prepared by William T. Godfrey, Jr., Engineering Associate with the firm Kessler and Gehman Associates, Inc. having offices in Gainesville, Florida, and has been working with the firm in the field of radio and television broadcast consulting since 1998. Mr. Godfrey was a graduate from the University of North Florida and a Distinguished Military Graduate from the University of Florida. As a Professional in the field of Telecommunications he states under penalty of perjury that the information contained in this report is true and correct to the best of his knowledge and belief.



WILLIAM T. GODFREY, JR.
Engineering Associate

9 July, 2017

EXHIBIT 1

Proposal Number	DCA-8938	Revision:	3
Date	6-Jun-01		
Call Letters		Channel	39
Location	Greenbay, WI		
Customer	CBS		
Antenna Type	TUD-C5SP-14/70H-1		

AZIMUTH PATTERN

Gain	1.39	(1.43 dB)	Frequency	623.00 MHz
Calculated / Measured		Calculated	Drawing #	TUD-C5SP-623

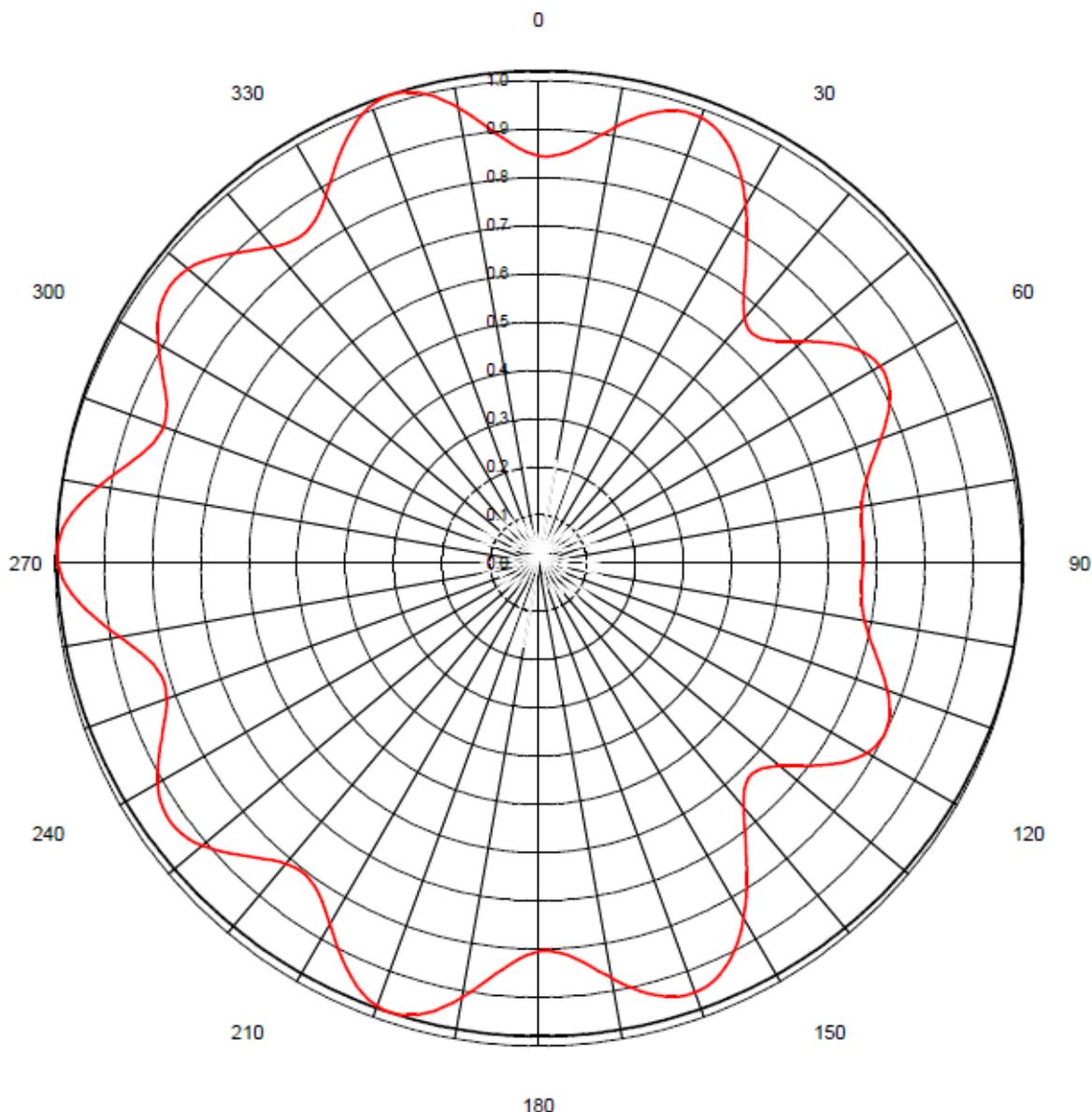
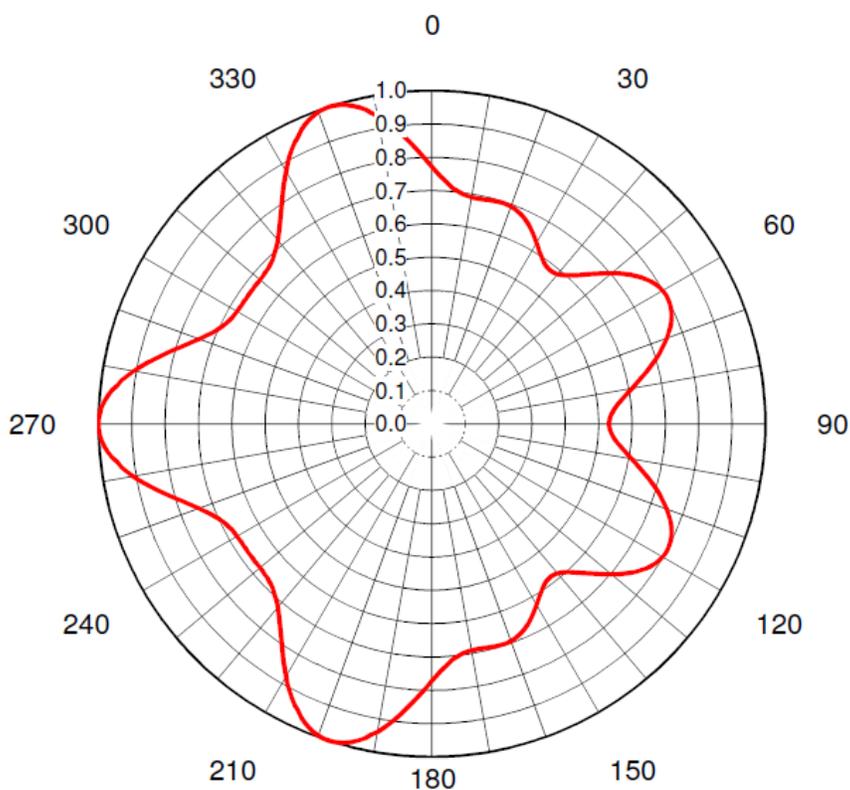


EXHIBIT 2



**AZIMUTH PATTERN
Horizontal Polarization**

Proposal No.	C-70470
Date	23-Mar-17
Call Letters	WFRV
Channel	22
Frequency	521 MHz
Antenna Type	TUD-C5SP-14/70H-1
Gain	1.72 (2.36dB) Calculated

EXHIBIT 3

To: Brett E. Jenkins; James Stenberg
Cc: Cyndi Byrd; ATC-Broadcast-Repack; 'LeBlanc, Jacques (jacques@leblanc-technologies.com)'
Subject: RE: Existing BBA Green Bay pattern optimization WFRV

----- Original message -----

From: James Stenberg <James.Stenberg@AmericanTower.com>
Date: 6/29/17 7:51 AM (GMT-05:00)
To: "Brett E. Jenkins" <bjenkins@nexstar.tv>, "William T. Godfrey, Jr. (bill@kesslerandgehman.com)" <bill@kesslerandgehman.com>
Cc: Cyndi Byrd <Cynthia.Byrd@AmericanTower.com>, ATC-Broadcast-Repack <atcbroadcastrepack@americantower.com>, "LeBlanc, Jacques (jacques@leblanc-technologies.com)" <jacques@leblanc-technologies.com>
Subject: FW: Existing BBA Green Bay pattern optimization WFRV

Guys,

Here is the answer I got from Dielectric on retrofitting the antenna at Green Bay for WFRV which looks like a no go.

Jim

Jim Stenberg

Principal Engineer - RF Broadcast

American Tower Corporation

10 Presidential Way

Woburn, MA 01801

207-632-8973 (mobile)

781-926-4545 (fax)

james.stenberg@americantower.com

Find, Apply and Track Online with [ON AIR Access](#).

From: Craig Beaucage [<mailto:Craig.Beaucage@dielectric.com>]
Sent: Thursday, June 29, 2017 5:31 AM
To: James Stenberg; John Schadler
Cc: 'LeBlanc, Jacques (jacques@leblanc-technologies.com)'
Subject: RE: Existing BBA Green Bay pattern optimization

It's not possible to add fins in the field. Sorry!

Regards,
Craig Beaucage
Proposals, Dielectric



22 Tower Rd.
Raymond, ME 04071
(207) 655-8255 OFFICE
www.dielectric.com

From: James Stenberg [<mailto:James.Stenberg@AmericanTower.com>]
Sent: Wednesday, June 28, 2017 4:22 PM
To: Craig Beaucage <Craig.Beaucage@dielectric.com>; John Schadler <John.Schadler@dielectric.com>
Cc: 'LeBlanc, Jacques (jacques@leblanc-technologies.com)' <jacques@leblanc-technologies.com>
Subject: Existing BBA Green Bay pattern optimization

Craig, John,

WFRV in Green Bay is on our TUD-C5SP-14/70H-1 from DCA-8938 on channel 39 now and moving to ch 22. In a pattern Craig supplied us the new channel has a ripple that is about 3 dB higher in spots and -4.7dB total ripple.

SO the question is, can this antenna be retrofitted in the field with "wings/fins/etc" to optimize it for the low channels or is it toast?

Jim

Jim Stenberg
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