

ENGINEERING EXHIBIT

Application for Broadcast Station License

prepared for

Hawaii Public Television Foundation

K31IZ-D Naalehu, Hawaii

Facility ID 26439

Ch. 31 (Digital Flash Cut) 0.292 kW

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FCC Form 347, Section III – Engineering

Exhibit 7

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This material supplies a “hard copy” of the engineering portions of this application as entered June 4, 2010 for filing electronically. Since the FCC’s electronic filing system may be accessed by anyone with the applicant’s name and password, and electronic data may otherwise be altered in an unauthorized fashion, we cannot be responsible for changes made subsequent to our entry of this data and related attachments.

SECTION III - Engineering**TECHNICAL SPECIFICATIONS**

Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

TECH BOX

1.	Channel: 31
2.	Frequency Offset (analog stations): <input type="radio"/> No offset <input type="radio"/> Zero offset <input type="radio"/> Plus offset <input type="radio"/> Minus offset
3.	Antenna Location Coordinates: (NAD 27) Latitude: Degrees 19 Minutes 2 Seconds 48.1 <input checked="" type="radio"/> North <input type="radio"/> South Longitude: Degrees 155 Minutes 34 Seconds 58.7 <input checked="" type="radio"/> West <input type="radio"/> East
4.	Maximum Effective Radiated Power (ERP) (if analog station Toward Radio Horizon): 0.292 kW
5.	Maximum ERP in any horizontal and vertical angle (analog stations): kW

NOTE: In addition to the information called for in this section, an explanatory exhibit providing full particulars must be submitted for each question for which a "No" response is provided.

CERTIFICATION

All applicants must complete this section.

6.	Constructed Facility. The facility was constructed as authorized in the underlying construction permit. <input type="radio"/> Yes <input checked="" type="radio"/> No See Explanation in [Exhibit 7]
7.	Special Operating Conditions. The facility was constructed in compliance with all special operating conditions, terms, and obligations described in the construction permit. <input checked="" type="radio"/> Yes <input type="radio"/> No See Explanation in [Exhibit 8] [Exhibit 9] An exhibit may be required. Review the underlying construction permit.

PREPARER'S CERTIFICATION ON PAGE 4 MUST BE COMPLETED AND SIGNED.

SECTION III - PREPARER'S CERTIFICATION

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name ROBERT J. CLINTON	Relationship to Applicant (e.g., Consulting Engineer) CONSULTANT	
Signature	Date 6/4/2010	
Mailing Address CAVELL, MERTZ & ASSOCIATES, INC. 7839 ASHTON AVENUE		
City MANASSAS	State or Country (if foreign address) VA	Zip Code 20109 - 2883
Telephone Number (include area code) 7033929090	E-Mail Address (if available) BCLINTON@CAVELLMERTZ.COM	

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

Exhibits

Exhibit 7

Description: EXHIBIT 7 - STATEMENT A

EXHIBIT 7 - STATEMENT A - ENGINEERING STATEMENT (WITH TABLE OF CONTENTS AND COPY OF FORM 347 SECTION III - ENGINEERING)

Attachment 7

Description
<u>EXHIBIT 7 - STATEMENT A</u>

Exhibit 7 - Statement A
APPLICATION FOR BROADCAST STATION LICENSE
prepared for
Hawaii Public Television Foundation
K31IZ-D Naalehu, Hawaii
Facility ID 26439
Ch. 31 (Flash Cut) 0.292 kW

This engineering statement has been prepared on behalf of *Hawaii Public Television Foundation*, (“*HPTF*”) permittee of digital television translator station K31IZ-D¹, Channel 31, Naalehu, HI, in support of *HPTF*’s license application for this facility.

K31IZ-D is presently authorized (BMPD TT-20090824AJL, “CP”) to construct a digital television facility on Channel 31 with an ERP of 0.33 kW and 195.2 meters height above mean sea level (“AMSL”) utilizing a simple emission mask filter. The CP facility has now been constructed and placed into operation pursuant to automatic program test authority and at a reduced ERP as explained below.

Special Operating Conditions

As specified by Special Operating Condition 1 of the original CP, *HPTF* understands that K31IZ-D is a secondary service, and must not cause interference to the reception of full service stations, as well as accept any interference from same. No additional conditions were included in the CP-Mod, which the instant application references.

Differences From the Construction Permit

A Scala model 4DR-4-3HC directional antenna was specified in the CP and utilized for actual construction. The antenna was installed with its major lobes oriented toward 5 and 265 degrees True as specified in the CP. Since the transmitter is limited to 100 Watts output as indicated in the CP, and because the final transmission line losses are slightly higher than predicted, Item 6 under Section III in the Tech Box has been answered “NO.” The transmission line losses were recalculated, resulting in a slight reduction from the authorized 0.33 kW to 0.292 kW ERP. **Exhibit 7 – Table I** provides a summary of the system gain and loss calculations. At the request of Commission Staff, an FCC Form 346 application to modify the Construction Permit has also been filed to amend the facility’s ERP (see BMPD TT-20100602AJA).

¹ K31IZ-D is the call sign assigned to the digital flash-cut facility for analog translator K63BB.

Exhibit 7 - Table I
ANTENNA / LINE SYSTEM GAINS AND LOSSES
prepared June 2010 for
Hawaii Public Television Foundation
K31IZ-D Naalehu, Hawaii
Facility ID 26439
Ch. 31 (Digital Flash Cut) 0.292 kW

License to Cover Constuction Permit BMPDTT-20090824AJL

Authorized Effective Radiated Power:	0.292 kW	-5.35 dBk
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Antenna System

Scala 4DR-4-3HC	Max Power Gain:	3.63	5.60 dB
	Antenna Input Power:	0.080 kW	-10.95 dBk

Line and Other Losses

Transmission Line 7/8" Dielectric FLF-20 Length 105 ft	Efficiency:	80.4 percent	0.95 dB
	Total Losses:		0.95 dB

<u>Transmitter Power Output:</u>	0.100 kW	-10.00 dBk
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