

# **ENGINEERING EXHIBIT**

## **Application for Broadcast Station License**

prepared for

### **Hawaii Public Television Foundation**

K29HL-D Hanalei, Etc., Hawaii

Facility ID 26434

Ch. 29 (Digital Flash Cut) 0.360 kW

### **Table of Contents**

FCC Form 347, Section III – Engineering

#### **Exhibit 7**

Statement A	Engineering Statement
Table I	Antenna / Line System Gains and Losses

*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: 29
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 22 Minutes 12 Seconds 42 <input checked="" type="radio"/> North <input type="radio"/> South  Longitude: Degrees 159 Minutes 28 Seconds 13 <input checked="" type="radio"/> West <input type="radio"/> East
4.	Maximum Effective Radiated Power (ERP) (if analog station Toward Radio Horizon): 0.36 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.	<b>Constructed Facility.</b> 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.	<b>Special Operating Conditions.</b> 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]  <b>An exhibit may be required.</b> 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**  
K29HL-D Hanalei, Etc., Hawaii  
Facility ID 26434  
Ch. 29 (Digital Flash Cut) 0.360 kW

This engineering statement has been prepared on behalf of *Hawaii Public Television Foundation*, (“*HPTF*”) permittee of digital television translator station K29HL-D<sup>1</sup>, Channel 29, Hanalei, Etc., HI, in support of *HPTF*’s license application for this facility.

K29HL-D is presently authorized (BMPD TT-20090824AJP, “CP”) to construct a digital television facility on Channel 29 with an ERP of 0.378 kW and 124.8 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 K29HL-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 SL-8 non-directional antenna was specified in the CP and utilized for actual construction. Since the transmitter is limited to 50 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 0.378 kW to 0.36 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 for modification of Construction Permit has also been filed to amend the facility’s ERP (see BMPD TT-20100602AJC).

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<sup>1</sup> K29HL-D is the call sign assigned to the digital flash-cut facility for analog translator K68BE.

Exhibit 7 - Table I  
**ANTENNA / LINE SYSTEM GAINS AND LOSSES**  
prepared June 2010 for  
**Hawaii Public Television Foundation**  
K29HL-D Hanalei, Etc., Hawaii  
Facility ID 26434  
Ch. 29 (Digital Flash Cut) 0.360 kW

License to Cover Permit BMPD TT-20090824AJP

<b>Authorized Effective Radiated Power:</b>	<b>0.360 kW</b>	<b>-4.44 dBk</b>
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**Antenna System**

Scala	Max Power Gain:	8.17	9.12 dB
SL-8 (as Omni)			
	<b>Antenna Input Power:</b>	<b>0.044 kW</b>	<b>-13.56 dBk</b>

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**Line and Other Losses**

Transmission Line			
7/8" Dielectric FLF-20			
Length 57 ft	Efficiency:	88.9 percent	0.51 dB
	<b>Total Losses:</b>		<b>0.51 dB</b>

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<b><u>Transmitter Power Output:</u></b>	<b>0.05 kW</b>	<b>-13.05 dBk</b>
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