



## Broadcast Engineering Services of Bonny Doon, Inc.

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Donald E. Mussell Jr. NCE-CBT  
Consulting Engineer

### **Engineering Statement in support of an application for Minor Change to KHPH BNPED-20071018ANP Facility ID 172436**

#### **Background**

Hawaii Public Radio hereby submits an application for a minor change to the construction permit for KHPH, Hana, Hawaii. The applicant is proposing a change to horizontal polarization. This will also correct the antenna location to ASRN 1000676, adjacent to the currently designated tower site. This will place the RCAMSL at 229.9 meters. No other changes are proposed.

#### **Proposal**

The applicant requests to modify the construction permit of KHPH to an existing support pole within an existing, registered tower compound (ASRN 1000676) above Hana town. The ASRN geographic coordinates are:

20 45' 3.5" North  
156 00' 17.1" West

The structure proposed to be used by the applicant is mounted to an existing building. The overall height of this structure within the ASR compound is 9 meters above ground. The applicant proposes to utilize a one-bay horizontally polarized non-directional antenna, top mounted on the existing structure, with 250 watts effective radiated power on Channel 202 (88.3 mhz). This will provide a 60 dbu contour over the entire community of Hana, while maintaining sufficient clearance to all surrounding existing and proposed facilities.

Contour clearances to and from the proposed new facility clear all surrounding existing and proposed stations. The attached contour maps for each facility show the relevant contours and clearances.

#### **RF Statement**

The applicant proposes to mount a one-bay, horizontally polarized FM antenna with a center of radiation 9 meters above ground. This will produce a calculated maximum RFR level of 37.14  $\mu\text{W}/\text{sq. centimeter}$  @ 7 meters from the base of the pole. This is well below the public limit, and complies with FCC and ANSI regulations and limitations concerning RF exposure to the general public.

Summary

Hawaii Public Radio is ready to modify this new facility and begin service to the community of Hana. With the grant of this minor change application, the applicant will be able to provide a unique broadcast service for the residents of this isolated area of east Maui.

Respectfully submitted,

A handwritten signature in black ink, appearing to be 'D. O. O. A.', written in a cursive style.

Consulting Engineer  
September 14, 2010

Broadcast Engineering Services of Bonny Doon, Inc.  
Don Mussell, Consulting Engineer

Hawaii Public Radio, Inc.

Minor change to KHPH CP

REFERENCE  
20 45 03.5 N.  
156 00 17.1 W.

CH# 202A - 88.3 MHz, Pwr= 0.25 kw, HAAT= -41.7 M, COR= 229.9 M  
Average Protected F(50-50)= 7.09 km  
Omni-directional

DISPLAY DATES  
DATA 09-14-10  
SEARCH 09-14-10

CH CITY	CALL	TYPE STATE	ANT STATE	AZI <--	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
202A Hana	KHPH	CP	_CX	10.6 190.6	0.2 BNPED20071018ANP	20 45 09.0 156 00 16.0	0.250 -63	49.2 212	14.7 Hawaii Public Radio, Inc.	-68.8*	-75.6*
203L1 Kahului	KAKU-LP	LIC	---	287.9 107.8	49.6 BLL20050318ACL	20 53 15.0 156 27 30.0	0.100 -169	8.0 12	5.6 Maui County Community Tele	34.5	33.8
204C1 Kailua	KIPH	CP	_HX	175.6 355.6	114.3 BMPED20100630BYS	19 43 16.0 155 55 15.0	5.000 893	4.6 1689	78.0 Hawaii Public Radio, Inc.	90.8	35.3
205C3 Lahaina	1355562	APP	_CX	282.1 101.8	72.1 BNPED20071022ATS	20 53 07.0 156 40 58.0	20.000 -147	2.2 23	21.5 Wren Communications, Inc.	62.9	49.5

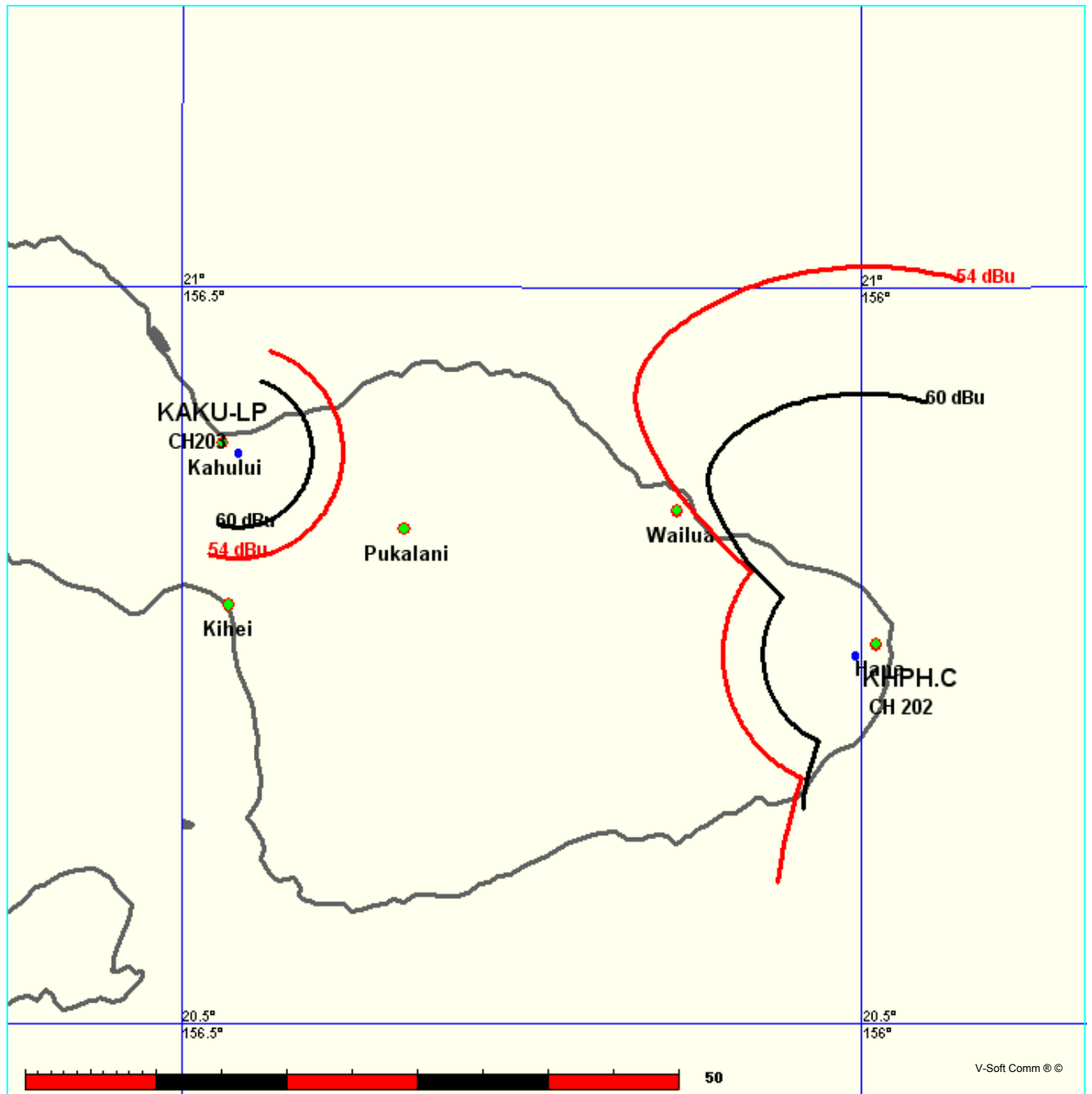
Terrain database is FCC NGDC 30 Sec , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM  
Contour distances are on direct line to and from reference station. Reference zone = , Co to 3rd adjacent.  
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)  
"\*"affixed to 'IN' or 'OUT' values = site inside protected contour.

Hawaii Public Radio, Inc.  
Minor change to KHPH - KAKU contour

FMCommander Single Allocation Study - 09-14-2010 -  
KHPH.C's Overlaps (In= 34.5 km, Out= 33.79 km)

KHPH.C CH 202 A  
Lat= 20 45 03.5, Lng= 156 00 17.1  
0.25 kW -41.7 M HAAT, 229.9 M COR  
Prot.= 60 dBu, Intef.= 54 dBu

KAKU-LP CH 203 L1 BLL20050318ACL  
Lat= 20 53 15.0, Lng= 156 27 30.0  
0.1 kW -169 M HAAT, 12 M COR  
Prot.= 60 dBu, Intef.= 54 dBu

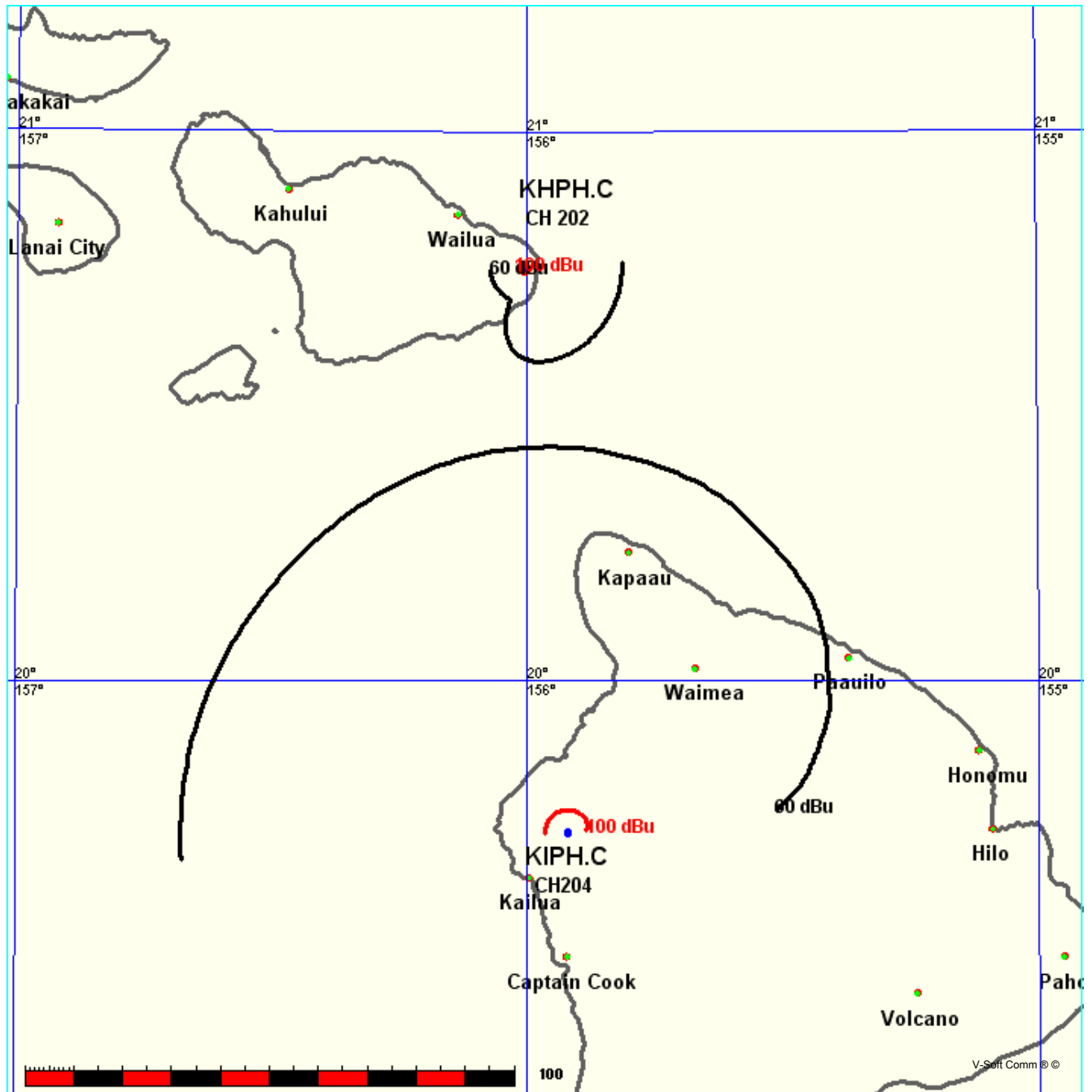


Hawaii Public Radio, Inc.  
Minor change to KHPH - KIPH contour

FMCommander Single Allocation Study - 09-14-2010 -  
KHPH.C's Overlaps (In= 90.83 km, Out= 35.27 km)

KHPH.C CH 202 A  
Lat= 20 45 03.5, Lng= 156 00 17.1  
0.25 kW -41.7 M HAAT, 229.9 M COR  
Prot.= 60 dBu, Intef.= 100 dBu

KIPH.C CH 204 C1 BMPED20100630BYS  
Lat= 19 43 16.0, Lng= 155 55 15.0  
5.0 kW 893 M HAAT, 1689 M COR  
Prot.= 60 dBu, Intef.= 100 dBu



**AFFIDAVIT AND QUALIFICATIONS OF  
DONALD E. MUSSELL JR.**

State of Hawai`i                                 )  
Kilauea   )  
County of Kaua`i                                 )

Donald E. Mussell Jr. affirms that he is a consulting radio and electronics engineer; that he is Certified as a Broadcast Engineer, Class 1, by the National Association of Radio and Telecommunications Engineers, Inc., License #E1-00619, issued in 1985;

That he is recognized as a Broadcast Technologist by the Society of Broadcast Engineers, License # 22301, and a member of the Society of Broadcast Engineers since 1980;

That he held a First Class Radiotelephone License from 1975 until 1985, when it was replaced by a lifetime General Class Radiotelephone license (PG-12-20588), issued by the Federal Communications Commission in January of 1985;

That he has submitted many applications to the Federal Communications Commission for broadcast and auxiliary broadcast construction permits and licenses, and that his experience in Radio and Television broadcast engineering extends over four decades;

That he declares, under penalty of perjury, that the foregoing engineering exhibits were prepared by him or under his direction and supervision; and that the statements contained therein are true and correct to the best of his belief and knowledge.

A handwritten signature in black ink, appearing to read 'Donald E. Mussell Jr.', with a stylized, cursive script.

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September 14, 2010