

**Broadcast Engineering Services of Bonny Doon, Inc.**

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**Engineering Statement  
in support of a Minor Change  
KAHU, Pahala, Hawaii  
BLED-20131118BJY**

Hawaii Public Radio (HPR), licensee of KAHU, is requesting a minor change to the KAHU facilities, including a move to a new tower site, a power increase to 12 kilowatts and change from Class A to Class C2. The population served within the primary 60 dbu contour will increase from 1,601 persons to 81,644 persons. The city of license will be 100% encompassed by the proposed 60 dbu contour of this modification.

There are no full power FM or TV facilities in the entire state of Hawaii that are affected or overlapped by this proposal, except for co-owned KANO, licensed to Hilo, Hawaii (BLED-20080501ACI). Concurrently with this application, the licensee is filing an application that proposes to move KANO to Ch 206, and by doing so eliminate any overlap to this proposal. So this proposal is contingent with the grant of the change in channel for KANO. An allocation study, along with detail maps, is attached to this statement.

The proposed antenna system is a Shively model 6600-5-.9-SS, a five bay, horizontally polarized 9/10 wave spaced design, mounted 40 meters above ground. This antenna will produce a calculated worst-case RFR energy field of 3.47 mW/cm<sup>2</sup> microwatts per squared centimeter at a distance of 30 meters from the base of the tower support structure. This is just under 2% of the non-occupied limit, and is therefore compliant with the FCC rules concerning RFR both on and adjacent to the proposed tower location. There are no other radio broadcast facilities within 2 miles of this site.

Respectfully submitted,



Donald E. Mussell Jr. NCE-CBT  
Consulting Engineer  
March 22, 2014

Broadcast Engineering Services of Bonny Doon, Inc.  
Don Mussell NCE-CBT

KAHU Minor change  
Hawaii Public Radio, Inc.

REFERENCE CH# 217C2 - 91.3 MHz, Pwr= 12 kW, HAAT= 227.5 M, COR= 1718.2 M  
19 31 25.3 N. Average Protected F(50-50)= 46.67 km  
155 18 07.0 W. Omni-directional

DISPLAY DATES  
DATA 03-21-14  
SEARCH 03-22-14

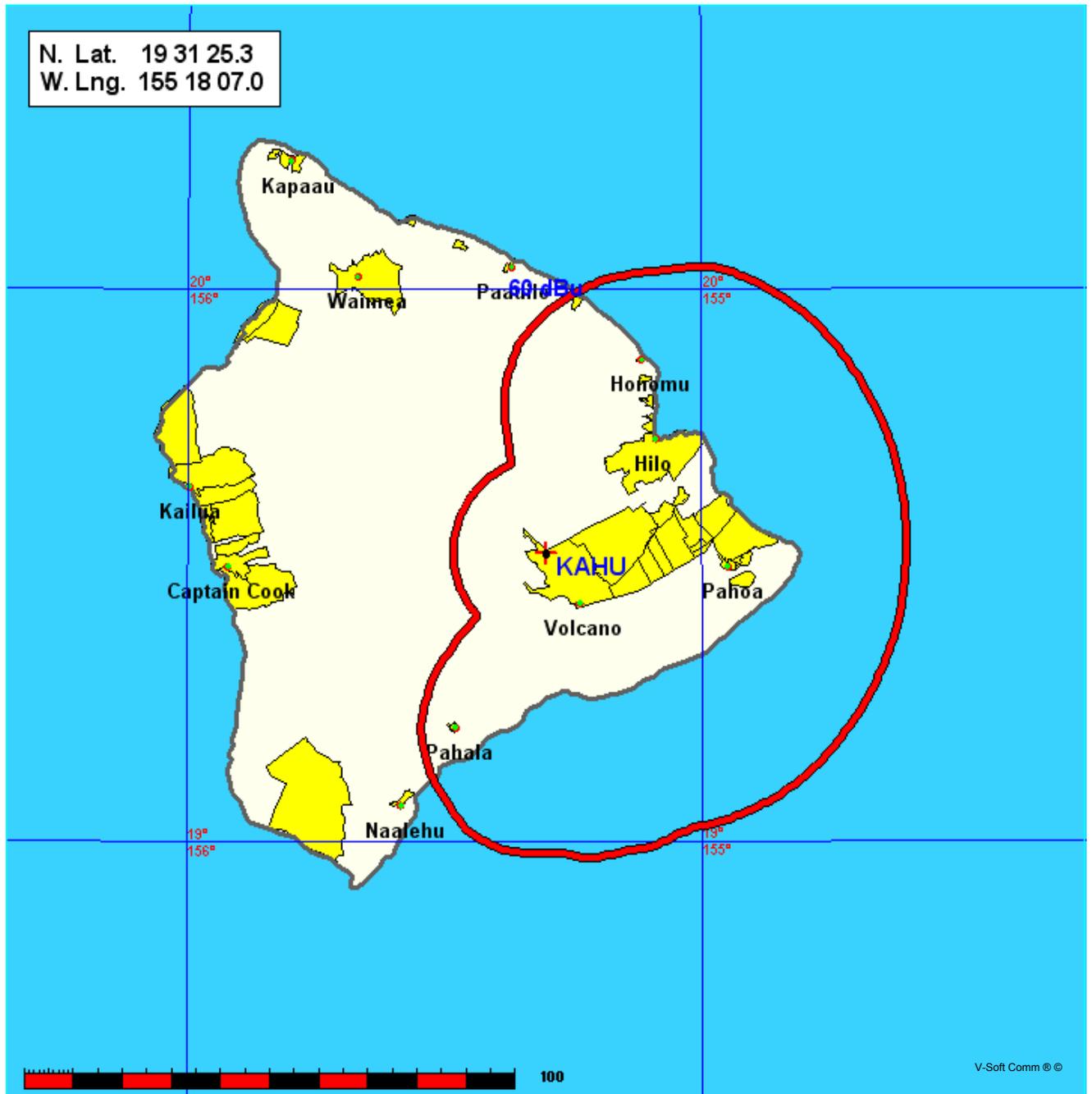
CH	CALL	TYPE	ANT	AZI	DIST	LAT	PWR(kw)	INT(km)	PRO(km)	*IN*	*OUT*
CITY	STATE			<--	FILE #	LNG	HAAT(M)	COR(M)	LICENSEE	(Overlap in km)	
216C2	KANO	LIC _CX		67.5	19.88	19 35 31.4	30.000	37.9	23.6	-91.0*	-111.1*
Hilo	HI	HI		247.5	BLED20080501ACI	155 07 36.0		536	Hawaii Public Radio, Inc.		
220D	K220EO	CP DC_		38.8	27.49	19 43 00.0	0.250	0.9	6.4	-42.7*	14.4
Hilo	HI	HI		218.9	BPFT20120831ABB	155 08 13.0	-140	300	The Moody Bible Institute		
220D	K220EO	LIC DVN		38.8	27.49	19 43 00.0	0.040	0.1	1.8	-41.8*	18.0
Hilo	HI	HI		218.9	BLFT19970325TB	155 08 13.0	-143	299	The Moody Bible Institute		
Translator for WGNR, Monee, IL. Vertical Polarization Only											
219A	KAHU	LIC NHX		207.7	40.50	19 12 00.0	0.800	1.6	9.6	-11.7*	25.7
Pahala	HI	HI		27.6	BLED20131118BJY	155 28 54.0	-323	254	Hawaii Public Radio		
271C2	KTBH-FM<<	LIC _HX		53.7	32.51	19 41 48.0	50.000	12.8	58.8	20.0R	12.5M
Kurtistown	HI	HI		233.8	BLH20080324AFT	155 03 05.0	-63	83	Resonate Hawaii Llc		
219D	K219LK	LIC _V_		288.8	68.51	19 43 15.0	0.010	0.2	3.2	49.3	57.4
Kalaooa	HI	HI		108.6	BLFT20120131AIN	155 55 16.0	867	1659	Calvary Chapel of Twin Fal		

Terrain database is FCC NGDC 30 Sec , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM  
In & Out distances between contours are shown at closest points. Reference zone= - Zone 2, 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.  
<< = Station meets FCC minimum distance spacing for its class.

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Coverage Study - FCC NGDC 30 Sec  
03-22-2014

KAHU CH217 C2, 12.0 kW, 227.5M HAAT, 1718.2M COR AMSL  
Service Contour = 60 dBu. Population = 81,644



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FMCommander Single Allocation Study - 03-22-2014 - FCC NGDC 30 Sec  
KAHU's Overlaps (In= -11.75 km, Out= 25.66 km)

KAHU CH 217 C2  
Lat= 19 31 25.3, Lng= 155 18 07.0  
12.0 kW 227.5 M HAAT, 1718.2 M COR  
Prot.= 60 dBu, Intef.= 100 dBu

KAHU CH 219 A 73.215 N BLED20131118BJY  
Lat= 19 12 00.0, Lng= 155 28 54.0  
0.8 kW -323 M HAAT, 254 M COR  
Prot.= 60 dBu, Intef.= 100 dBu

