

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

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### **Engineering Statement New Auxiliary Site For KTUH Honolulu, Hawaii BLED-20160321AAC**

The University of Hawaii Manoa (KTUH) is requesting a construction permit for a new auxiliary site for KTUH, using the formerly licensed main site, but now on 90.1 mhz.

An allocation study, attached to this engineering statement, reveals no conflicts with existing or proposed stations. The proposed 60 dbu contour does not exceed the 60 dbu contour of the newly licensed KTUH main facility.

The former and proposed antenna system is a Shivley 6813-4, a circularly polarized non-directional design. This antenna, mounted at 47 meters above ground, and 22 meters above the rooftop, will produce a calculated worst-case RFR energy field of 7.26 microwatts per squared centimeter at a distance of 20 meters from the base of the building, and 36.79 microwatts per squared centimeter at 9 meters from the tower structure itself. The calculated rooftop level is 18.4% of the public limit, and is therefore compliant with the FCC rules concerning RFR both on and adjacent to the proposed tower location. This tower site is located on the roof of Saunders Hall on the UH campus, and the rooftop and the tower is not accessible by the general public.

Respectfully submitted,



Donald E. Mussell Jr. NCE-CBT  
Consulting Engineer  
March 30, 2016

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

KTUH Aux Site  
The University of Hawaii at Manoa  
REFERENCE CH# 211A - 90.1 MHz, Pwr= 3 kw, HAAT= -19.7 M, COR= 77 M DISPLAY DATES  
21 18 14.0 N. Average Protected F(50-50)= 13.22 km DATA 03-29-16  
157 49 22.0 W. Omni-directional SEARCH 03-29-16

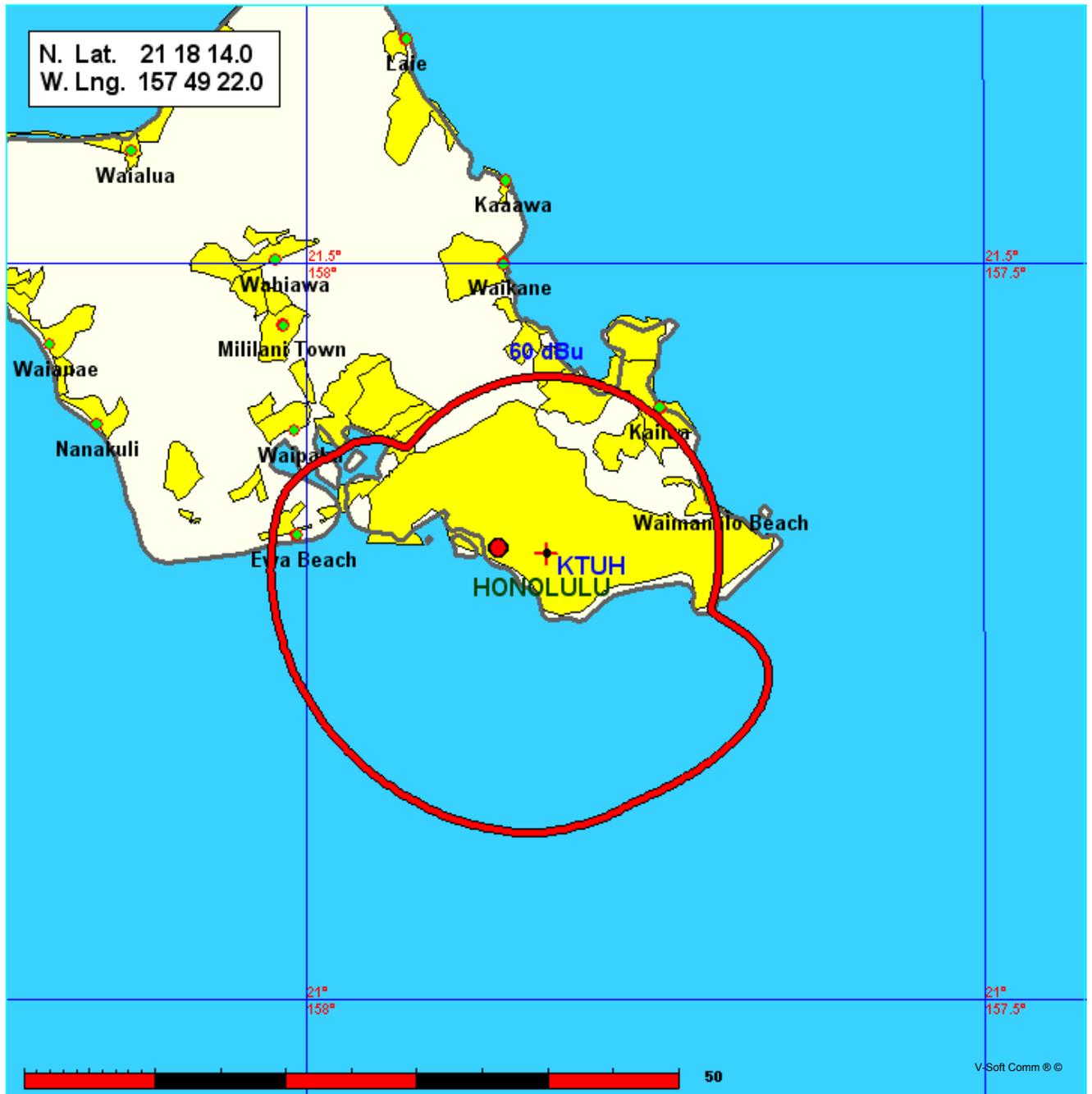
CH CITY	CALL	TYPE STATE	ANT STATE	AZI <--	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
211C1 Honolulu	<del>KTUH</del>	CP	_HX HI	8.5 188.5	3.67 BPED20140825AAR	21 20 12.0 157 49 03.0	7.000 501	146.6 619	64.2 The Universit	-156.1*	-113.8*
212A Honolulu	<del>KTUH</del>	LIC	_C_ HI	0.0 0.0	0.00 BLED20010820AAQ	21 18 14.0 157 49 22.0	3.000 -25	19.5 77	13.2 The Universit	-32.7*	-32.7*
264D Honolulu	<del>K264D</del>	LIC	_V_ HI	66.8 246.8	7.45 BLFT20151013AIM	21 19 49.0 157 45 24.0	0.010 668	12.8 748	58.8 University Of Hawaii	10.0R	-2.6M

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.  
Call signs with strikeout need not be protected.  
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 restricted contour.

KTUH Aux Site  
The University of Hawaii at Manoa

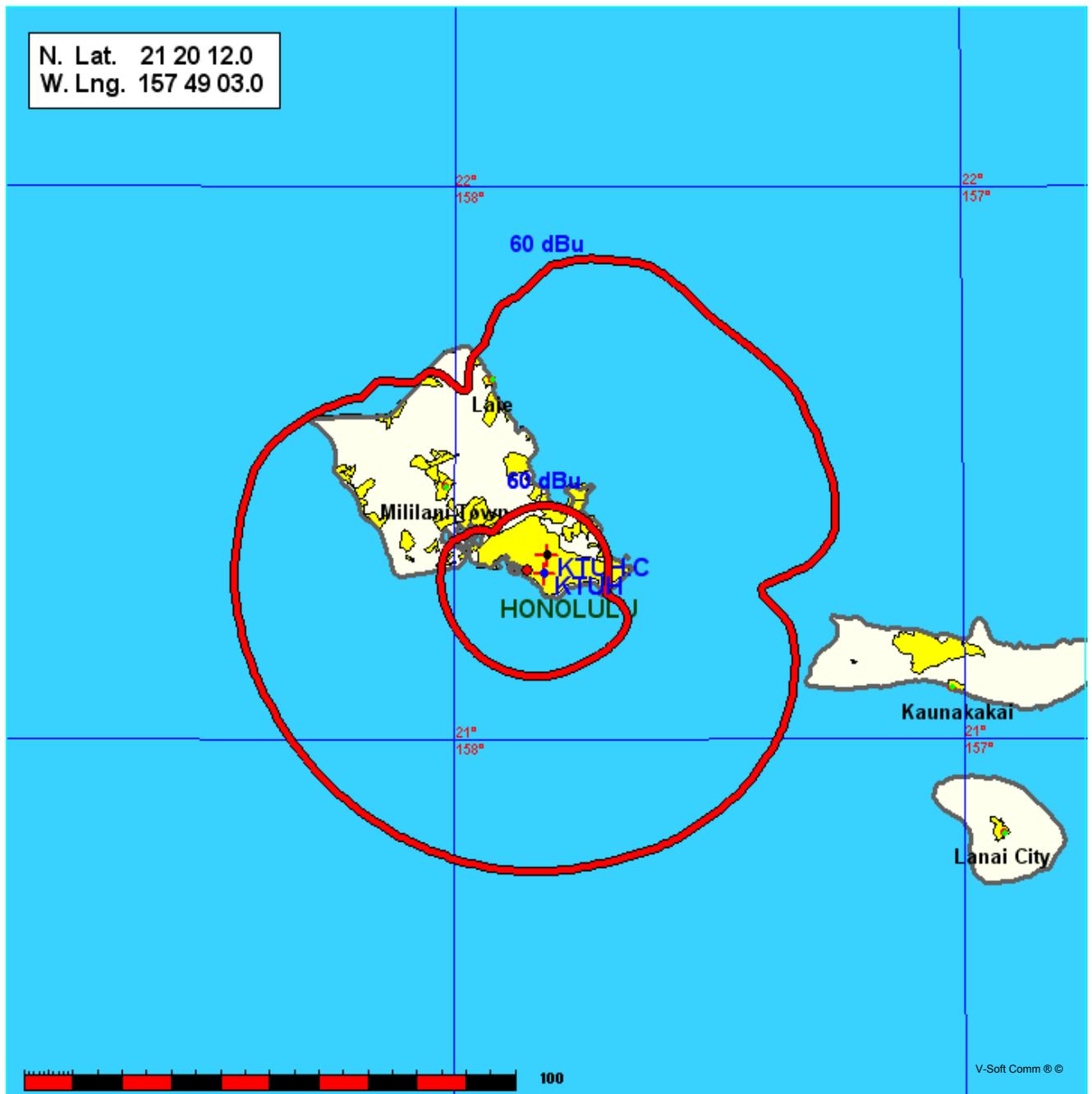
Coverage Study - FCC NGDC 30 Sec  
03-29-2016

KTUH CH211 A , 3.0 kW, -19.7m HAAT, 77.0m COR AMSL  
Service Contour = 60 dBu. Population = 447,329



KTUH Aux Site  
The University of Hawaii at Manoa

Coverage Study - FCC NGDC 30 Sec  
03-29-2016



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

State of Hawaii                    )  
Kilauea                             )  
County of Kauai                 )

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.



Donald E. Mussell Jr. NCE-CBT  
Consulting Engineer  
March 30, 2016