

**Goldman Engineering Management  
Auburn, CA**

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KQED-FM

APPLICATION FOR NEW ON-CHANNEL BOOSTER

This technical statement and attached exhibits have been prepared on behalf of KQED Inc. licensee of station KQED-FM, Channel 203B, San Francisco, CA, Facility identifier 35501 for an on-channel FM booster to cover the community of Alamo, CA which is terrain blocked to the primary KQED-FM signal.

FACILITIES REQUESTED

As required by 47 C.F.R. § 74.1232(f), the requested facility will operate within the Non-Grandfathered 60dBu contour of KQED-FM. To determine the Non-Grandfathered 60dBu contour, the COR AMSL to achieve 150m HAAT was established. The 60dBu maximum Class B contour was then calculated, 50kW @ 150m HAAT. As demonstrated in the exhibit attached to this LMS application, the calculated COR AMSL for the main KQED antenna to achieve 150-meter HAAT is 212.6 meters. The non-grandfathered 60dBu contour is, therefore, calculated as 50kW at 212.6m AMSL. A map showing the coverage of this booster in relationship to the main non-grandfathered KQED-FM signal is shown in Exhibit A. The antenna proposed is a Jampro dual element, single-level log-periodic antenna rotated 45 degrees from vertical to achieve slant H+V polarization. The Azimuth Pattern is attached as Exhibit C.

TECHNICAL SPECIFICATIONS

Booster Location:	“Rocky Rebuild”- Alamo, CA
ASR	ASR Not Required (Existing ATC Asset #281733)
Geographic Coordinates (NAD27):	37°48’56.7” N, 122° 03’ 44.8” W
Channel:	203 (88.5 MHz)
Effective Radiated Power:	140 W (H+V)
Antenna Type, Pattern:	Jampro Java 1-1-(2)-Slant Log Periodic (Exhibit C)
Antenna Orientation:	80° True
Site Height AMSL	613m
Tower OAGL	60m
Antenna Height :	
Above ground:	51m
Above mean sea level:	664m

As shown in Exhibit A the 60dBu contour of the booster will fall inside the Non-Grandfathered 60dBu contour of KQED-FM and is thus compliant with 74.1232(f). As shown in Exhibit B, the proposed booster will provide interference protection to all first adjacent channel stations because the first adjacent interfering contours are within the KQED-FM interfering contours. The KQED-FM interfering 54dBu f50,10 contour does not overlap with any first adjacent stations and, it should be noted, as a grandfathered NCE, it is protected to its grandfathered 60dBu contour. There is no IF restriction on this proposed booster.

### ENVIRONMENTAL CONSIDERATIONS

The Booster will be attached at the 51m height on an existing 60m tower. Because there will be no modifications to this tower it is exempt from environmental processing under CFR Section 1.1306. The booster will be diplexed with three other boosters on the same antenna. Appropriate filtering will be added to ensure that there is no out-of-band emission.

The proposed KQED-FM booster antenna was evaluated for RF energy at ground level. RF fields were calculated using the FCC "FM Model" calculator<sup>1</sup> using a EPA Type 2 antenna. The RF field was calculated at 3.3 $\mu$ W/cm<sup>2</sup> which is 1.7% of the maximum allowable 200  $\mu$ W/cm<sup>2</sup> allowable limit for public exposure. Because the calculated emission from the proposed booster antenna is expected to be less than 5% of the permitted 200 $\mu$ W/cm<sup>2</sup> at 2m above ground level, the facility is categorically exempt from further environmental assessment under 47CFR 1.1306 and 1.1307.

The applicant agrees to reduce power or cease operations when it becomes necessary if workers are near the antenna in order to ensure that they will not be exposed to levels of radiofrequency electromagnetic radiation that exceed FCC guidelines.

### CERTIFICATION

The undersigned hereby certifies that the foregoing statement and associated attachments were prepared by him or under his direct supervision, and that they are true and correct to the best of his knowledge and belief.



Bertram S. Goldman  
Goldman Engineering Management

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<sup>1</sup> <https://www.fcc.gov/general/fm-model>

PROP KQED-FM2 Alamo (Rocky Ridge)- 140 Watts

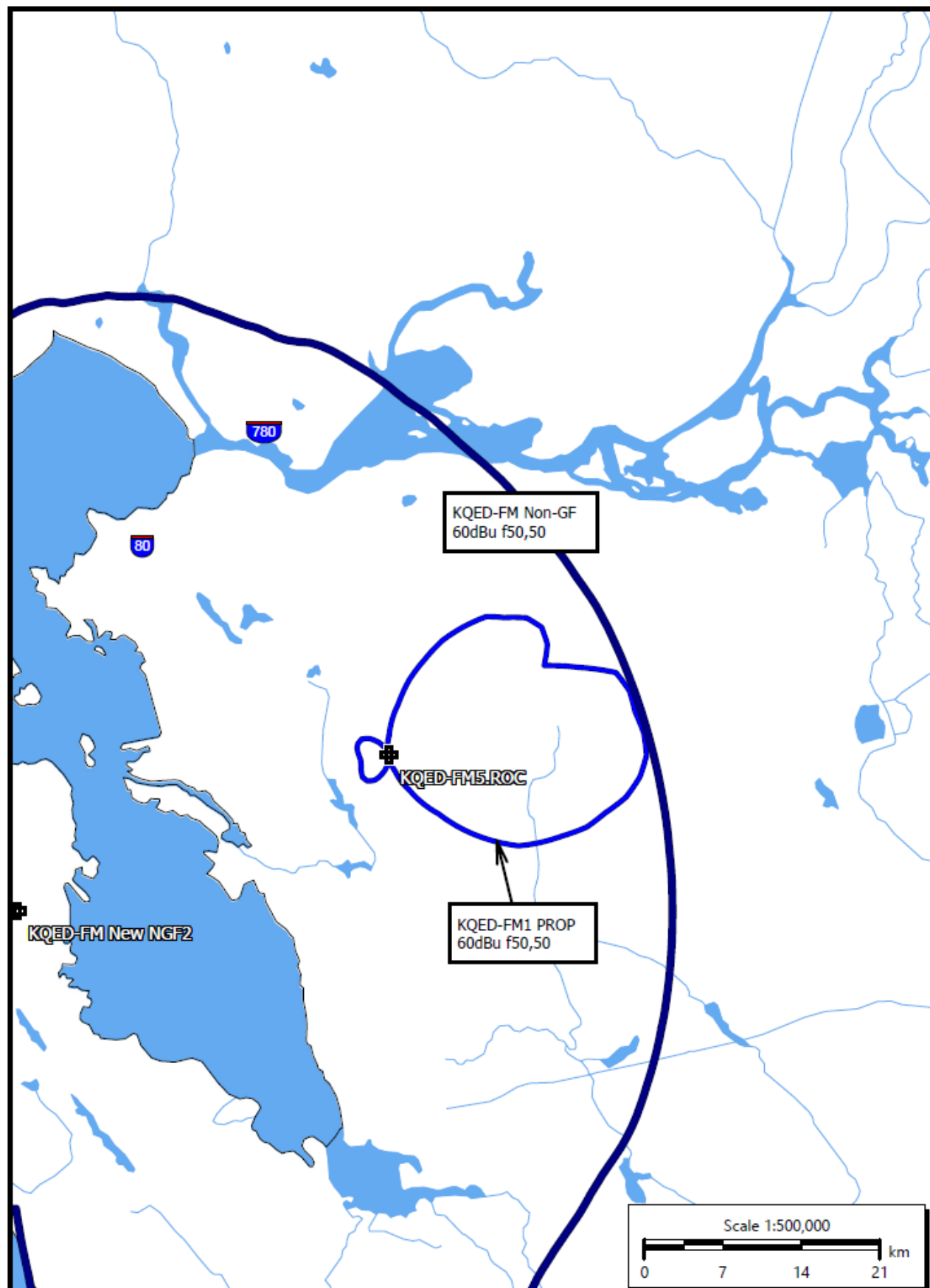
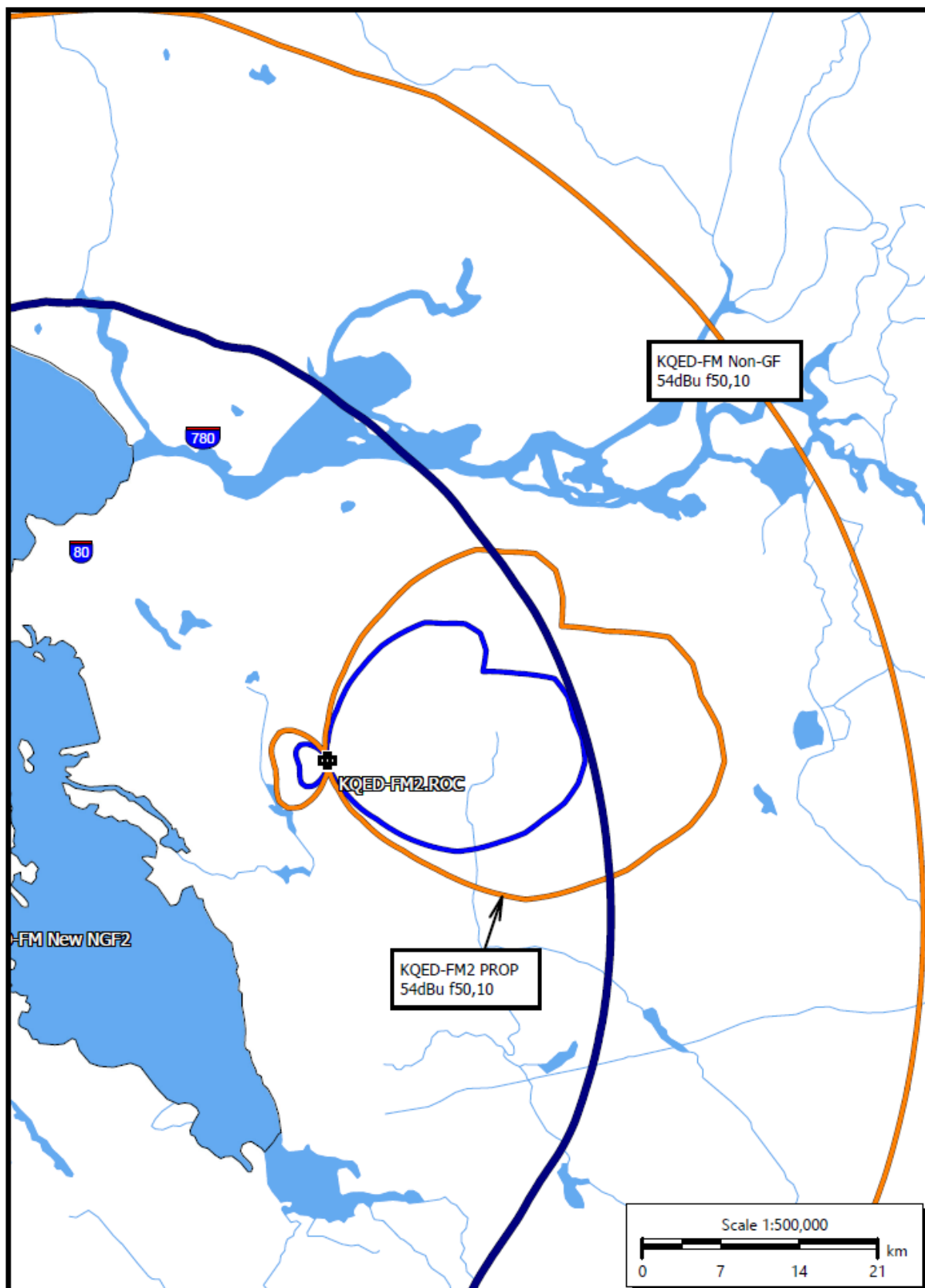


EXHIBIT B- First- Adjacent Protection

PROP KQED-FM2, Alamo (Rocky Ridge)- 140 Watts



# EXHIBIT C- Antenna Pattern

Rocky Ridge Antenna Pattern  
Post-Rotation Antenna Pattern....

Azimuth (deg)	Relative Field
0.0	0.022
5.0	0.042
10.0	0.062
15.0	0.1035
20.0	0.145
25.0	0.212
30.0	0.279
35.0	0.3695
40.0	0.46
45.0	0.5605
50.0	0.661
55.0	0.753
60.0	0.845
65.0	0.9065
70.0	0.968
75.0	0.984
80.0	1.0
85.0	0.975
90.0	0.95
95.0	0.881
100.0	0.812
105.0	0.7165
110.0	0.621
115.0	0.521
120.0	0.421
125.0	0.3345
130.0	0.248
135.0	0.186
140.0	0.124
145.0	0.0875
150.0	0.051
155.0	0.0345
160.0	0.018
165.0	0.0125
170.0	0.007
175.0	0.0055
180.0	0.004
185.0	0.0075
190.0	0.011
195.0	0.0165
200.0	0.022
205.0	0.0275
210.0	0.033
215.0	0.036
220.0	0.039
225.0	0.0395
230.0	0.04
235.0	0.0385
240.0	0.037
245.0	0.0355
250.0	0.034
255.0	0.0335
260.0	0.033
265.0	0.034
270.0	0.035
275.0	0.0365
280.0	0.038
285.0	0.039
290.0	0.04
295.0	0.0385
300.0	0.037
305.0	0.033
310.0	0.029
315.0	0.0235

