

TECHNICAL EXHIBIT
APPLICATION FOR AUXILIARY STATION CONSTRUCTION PERMIT
STATION KCCN-FM
HONOLULU, HAWAII
CH 262C 50 KW (MAX-DA) 566 M

Technical Narrative

The technical exhibit of which this narrative is part was prepared on behalf of radio station KCCN-FM at Honolulu, Florida. The KCCN-FM main facility is presently licensed on Channel 262C with a maximum effective radiated power of 100 kilowatts employing a directional antenna and antenna height above average terrain of 599 meters.¹ By this instant application, KCCN-FM is proposing a new auxiliary (stand-by) construction permit authorization. The proposed auxiliary transmitter site is located immediately adjacent to the main transmitter site. Several FM stations, including KCCN-FM, will employ this auxiliary transmitter site and common master FM antenna.

Transmitter Location

The proposed auxiliary site location is uniquely described by the following NAD-27 coordinates:

21° 23' 52.1" North Latitude
158° 06' 01.1" West Longitude

A topographic map showing the locations of both the existing KCCN-FM and proposed KCCN-FM transmitter sites are shown in Figure 1. As can be seen, the proposed auxiliary site is located less than 200 feet away from the existing main transmitter site. A sketch showing the antenna and supporting structure is shown on Figure 2. It is proposed to operate with a maximum ERP of 50 kilowatts.

¹ See FCC File No. BLH-19940331KA.

Monitoring Station Impact

The KCCN-FM main facility and herein proposed auxiliary facility are located near the FCC's Waipahu, Hawaii monitoring station. This FCC monitoring station is located 10.8 kilometers away from KCCN-FM at an azimuth of 101.1 degrees, true with a depression angle of 3.6 degrees below the horizontal plane. The path profile between KCCN-FM and the monitoring station is line-of-sight.

As KCCN-FM is fully-spaced to all stations, the antenna directionality is not employed for allocation protection to other broadcast stations. The antenna is directional to (1) permit a lower operating transmitter power output to limit the amount of electrical power necessary for a Class C station and (2) protect the FCC monitoring station. The same type of directional antenna is that used by the main facility will be employed by the auxiliary facility, except it will employ 7 levels instead of the current 14 levels.

According to the KCCN-FM license, the limit at the Waipahu monitoring station is 27 mV/m. Based upon past measurements made at the Waipahu monitoring station using the same type of transmission antenna and effective radiated power to be employed by the KCCN-FM auxiliary, the 27 mV/m limit is not exceeded. Therefore, the KCCN-FM herein proposed auxiliary facility is expected to be in compliance with the limit of 27 mV/m at the monitoring station.

The Appendix contains the manufacturer supplied vertical plane pattern for the proposed 7 level Shively 6014 panel antenna.

Coverage Contours

The predicted 60 dBu coverage contours for the auxiliary operation and the existing main operation were calculated in accordance with the provisions of Section 73.313. In accordance with current FCC practice, the distances to the contours were calculated without consideration given to terrain roughness correction factors.

The average terrain elevations from 3 to 16 kilometers along eight radials evenly spaced at 45 degree intervals were obtained from the National Geophysical Data Center's (NGDC) 30-second terrain database. The terrain elevations were then used in combination with the effective radiated power for determining the distances to coverage contours.

Figure 3 is a map showing the predicted 60 dBu coverage contours for the licensed and proposed operations. As the map illustrates, the predicted auxiliary's 60-dBu contour is entirely encompassed by the primary station's 60-dBu contour.

Radiofrequency Electromagnetic Field Considerations

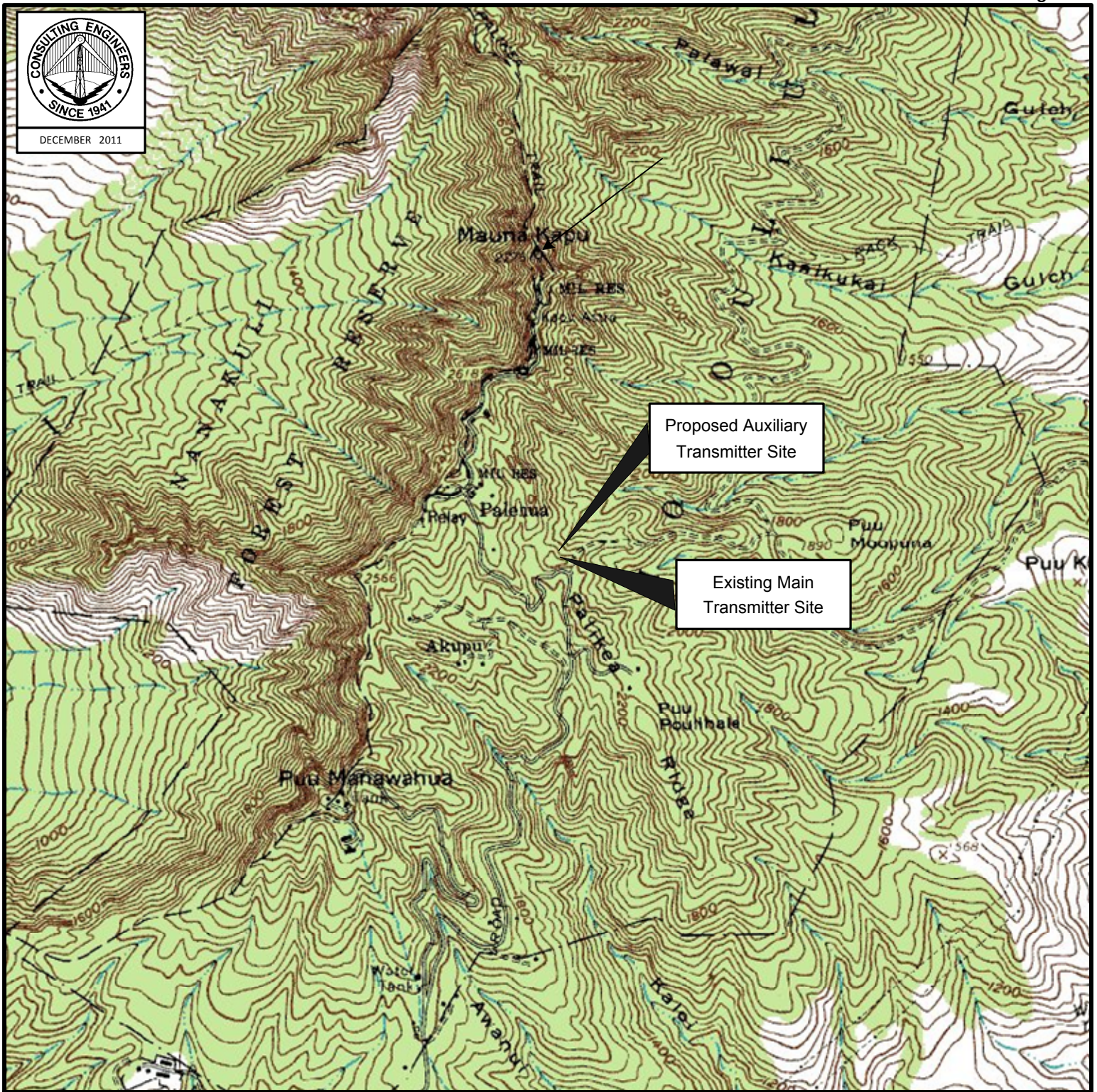
The KCCN-FM auxiliary facilities will be surveyed at ground level with respect to the radiofrequency electromagnetic field considerations after construction is complete. The results of the survey will be provided with the application for license.

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Figure 1



PROPOSED TRANSMITTER SITE LOCATION

AUXILIARY FM STATION KCCN-FM

HONOLULU, HAWAII

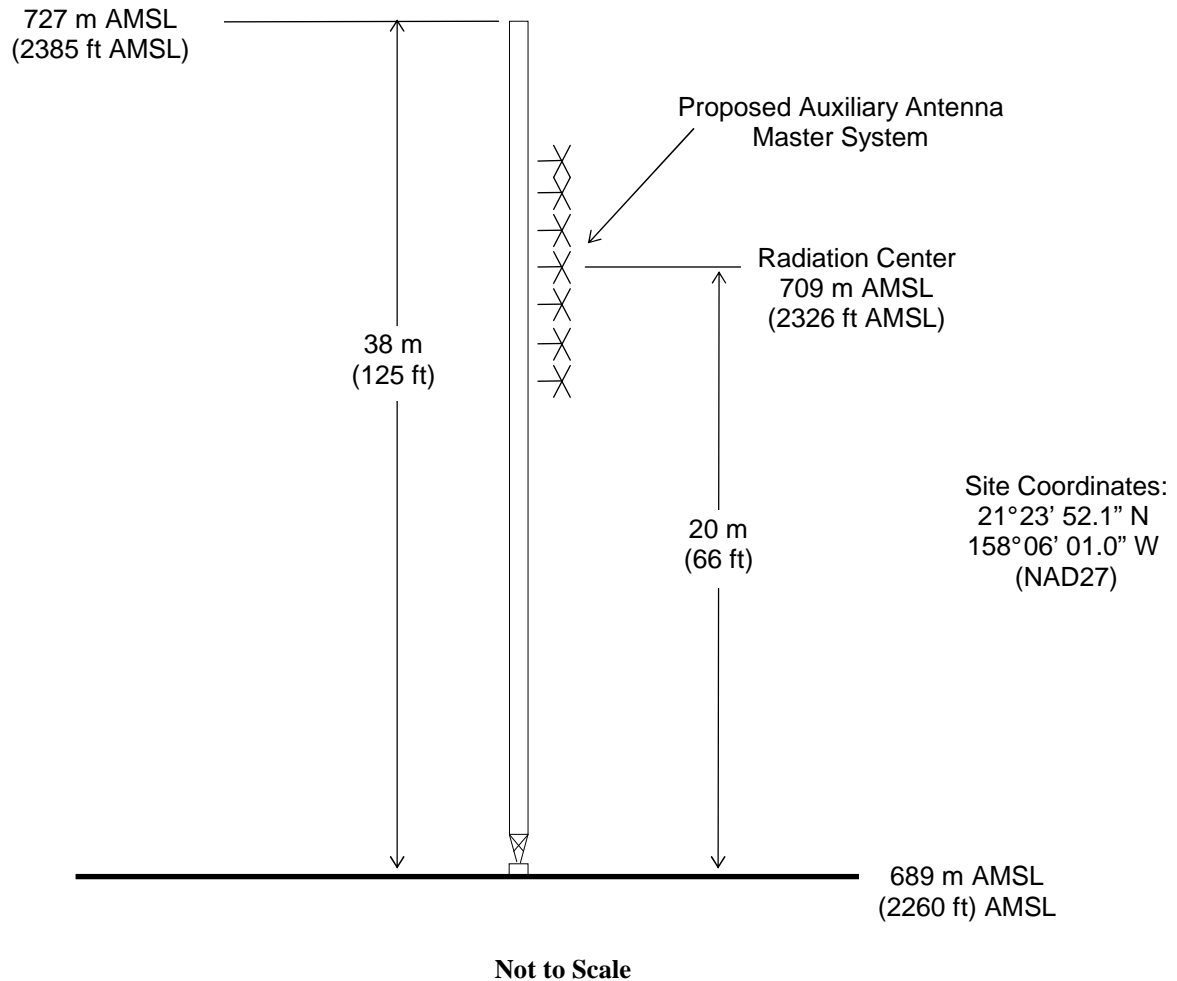
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Figure 2



Registration No. N/A



ANTENNA AND SUPPORTING STRUCTURE

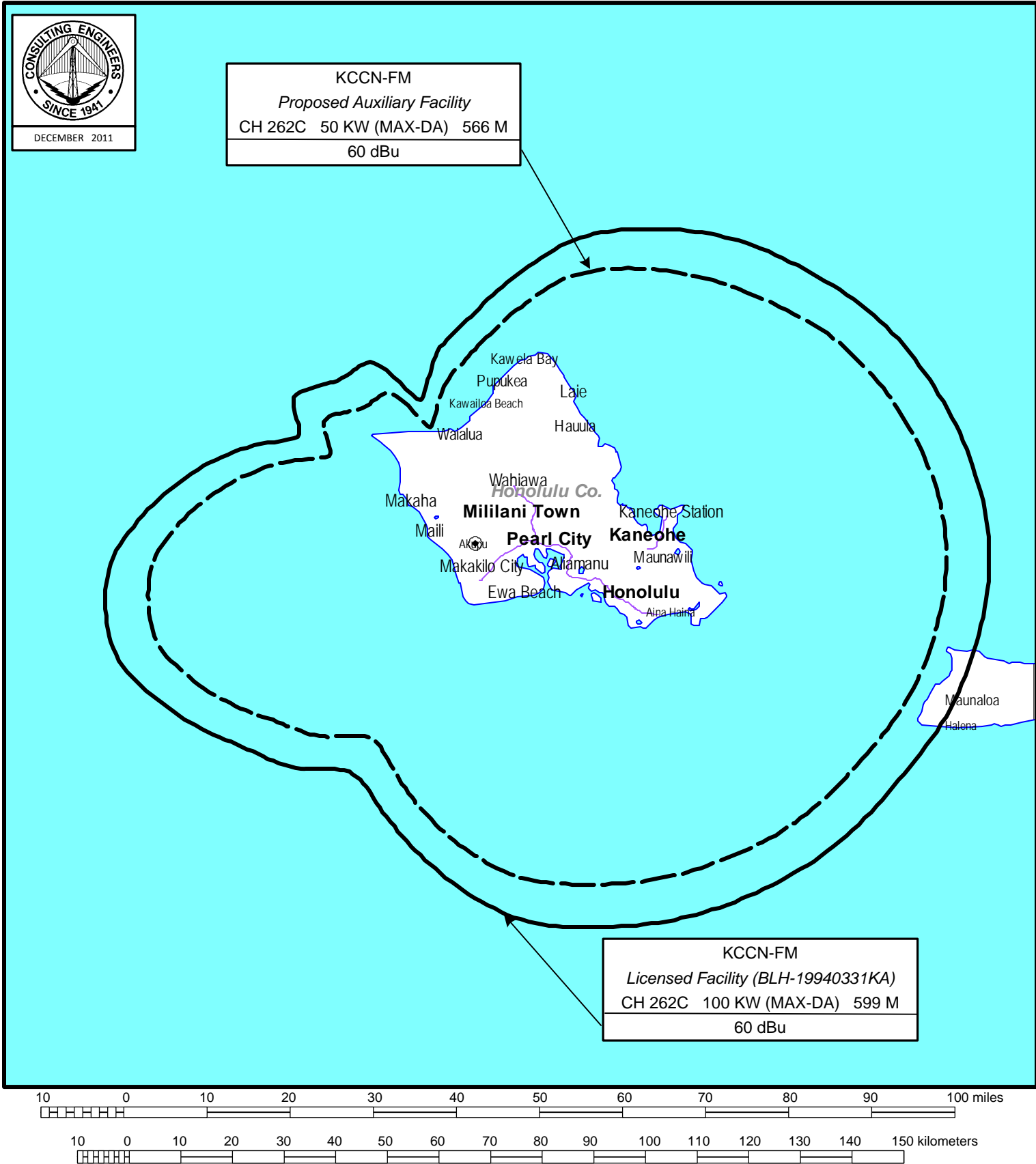
AUXILIARY STATION KCCN-FM

HONOLULU, HAWAII

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Figure 3



PREDICTED COVERAGE CONTOURS
AUXILIARY FM STATION KCCN-FM
HONOLULU, HAWAII
CH 262C 50 KW (MAX-DA) 566 M

du Treil, Lundin & Rackley, Inc Sarasota, Florida

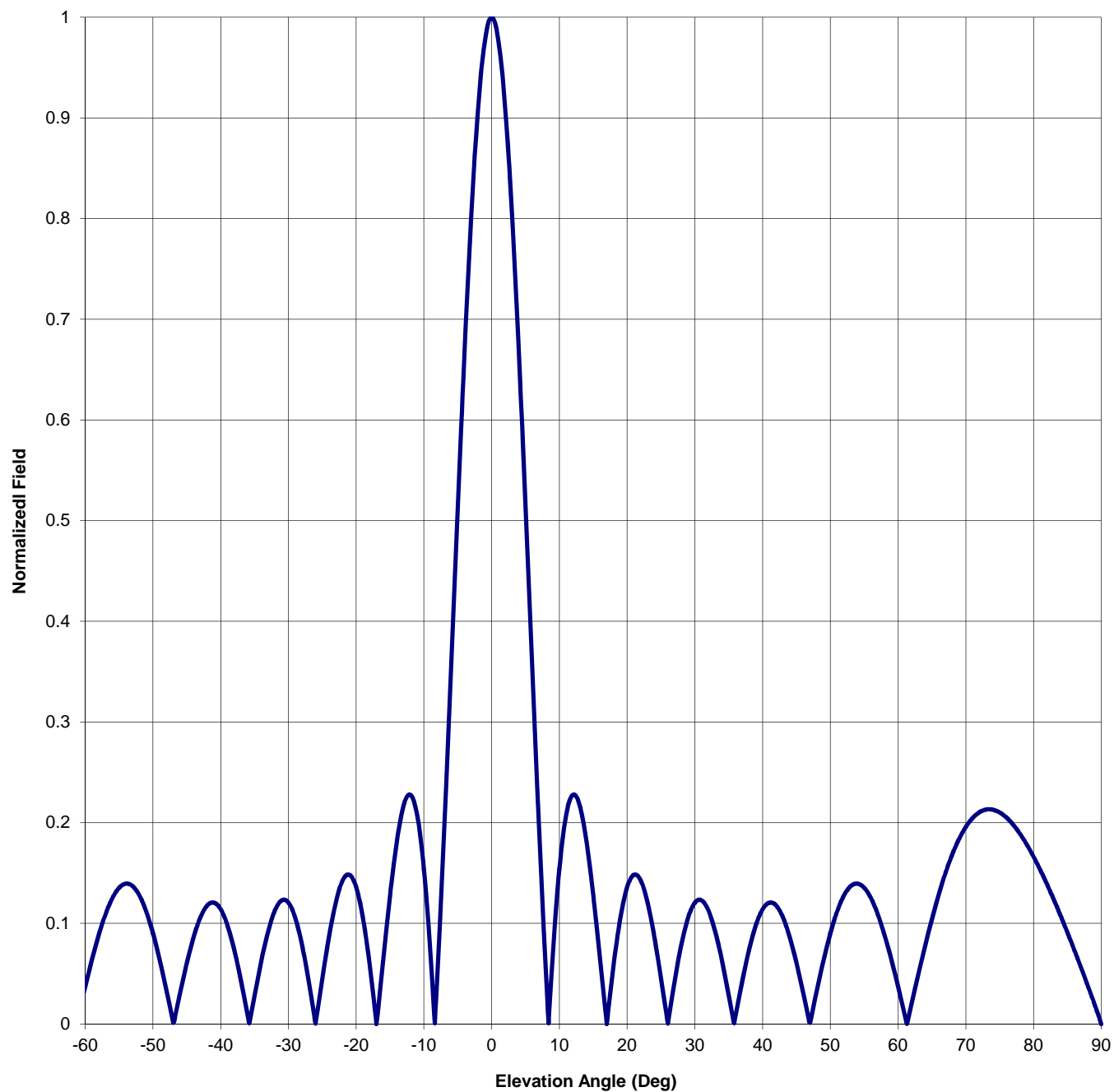
APPENDIX

MANUFACTURER PROVIDED DIRECTIONAL ANTENNA VERTICAL PLANE PATTERN

Date: 12/27/2011

Beam Tilt	0	
Gain (Max)	16.895	12.278 dB
Gain (Horizon)	16.895	12.278 dB

Figure: Figure 3



Antenna Mfg.: Shively Labs
Antenna Type: 6014-14/1-DA

Date: 12/27/2011

Station: KCCN

Beam Tilt 0

Frequency: 100.3

Gain (Max) 16.895 12.278 dB

Channel #: 262

Gain (Horizon) 16.895 12.278 dB

Figure: Figure 3

Angle of Depression (Deg)	Relative Field	Angle of Depression (Deg)	Relative Field	Angle of Depression (Deg)	Relative Field	Angle of Depression (Deg)	Relative Field
-90	0.000	-44	0.086	0	1.000	46	0.031
-89	0.020	-43	0.106	1	0.977	47	0.001
-88	0.038	-42	0.118	2	0.910	48	0.033
-87	0.056	-41	0.121	3	0.804	49	0.064
-86	0.074	-40	0.114	4	0.669	50	0.090
-85	0.091	-39	0.098	5	0.514	51	0.112
-84	0.107	-38	0.074	6	0.352	52	0.128
-83	0.123	-37	0.043	7	0.194	53	0.137
-82	0.139	-36	0.008	8	0.051	54	0.139
-81	0.153	-35	0.029	9	0.067	55	0.135
-80	0.166	-34	0.063	10	0.154	56	0.125
-79	0.178	-33	0.092	11	0.208	57	0.109
-78	0.189	-32	0.113	12	0.228	58	0.089
-77	0.198	-31	0.123	13	0.217	59	0.064
-76	0.205	-30	0.121	14	0.181	60	0.037
-75	0.210	-29	0.106	15	0.128	61	0.009
-74	0.213	-28	0.079	16	0.065	62	0.021
-73	0.213	-27	0.042	17	0.000	63	0.050
-72	0.210	-26	0.000	18	0.059	64	0.078
-71	0.205	-25	0.045	19	0.105	65	0.104
-70	0.196	-24	0.087	20	0.136	66	0.129
-69	0.184	-23	0.121	21	0.148	67	0.150
-68	0.169	-22	0.143	22	0.143	68	0.169
-67	0.150	-21	0.148	23	0.121	69	0.184
-66	0.129	-20	0.136	24	0.087	70	0.196
-65	0.104	-19	0.105	25	0.045	71	0.205
-64	0.078	-18	0.059	26	0.000	72	0.210
-63	0.050	-17	0.000	27	0.042	73	0.213
-62	0.021	-16	0.065	28	0.079	74	0.213
-61	0.009	-15	0.128	29	0.106	75	0.210
-60	0.037	-14	0.181	30	0.121	76	0.205
-59	0.064	-13	0.217	31	0.123	77	0.198
-58	0.089	-12	0.228	32	0.113	78	0.189
-57	0.109	-11	0.208	33	0.092	79	0.178
-56	0.125	-10	0.154	34	0.063	80	0.166
-55	0.135	-9	0.067	35	0.029	81	0.153
-54	0.139	-8	0.051	36	0.008	82	0.139
-53	0.137	-7	0.194	37	0.043	83	0.123
-52	0.128	-6	0.352	38	0.074	84	0.107
-51	0.112	-5	0.514	39	0.098	85	0.091
-50	0.090	-4	0.669	40	0.114	86	0.074
-49	0.064	-3	0.804	41	0.121	87	0.056
-48	0.033	-2	0.910	42	0.118	88	0.038
-47	0.001	-1	0.977	43	0.106	89	0.020
-46	0.031	0	1.000	44	0.086	90	0.000
-45	0.061			45	0.061		