



**SYSTEMS WITH RELIABILITY, LP**

**Broadcast Antenna & Transmission Systems**

## SYSTEM DATA SHEET

Customer	R&L Media
Call Letters	KQUP
Contact	Rick Goetz
Location	Pullman, WA
Antenna Model	SWEDL8BF/24
Channel / Frequency	24 533 MHz

### ELECTRICAL SPECIFICATION

Polarization Type	Horizontal
Polarization Ratio	
H-Pol. (PRH)	100.0000 %
Elevation Directivity at Peak (ED)	8.261
Azimuth Directivity (AD) H-Pol.	2.667
Antenna Gain (GH)	
H-Pol. (GH)	22.029
dB Gain (AG)	
H-Pol (AGH)	13.430 dB
Beam Tilt	-0.5 Degrees
Null Fill	10,7,5
ERP Below Horizontal Plane	
H-Pol. (ERPH)	57.000 kW
Line Type	7/8" Virtual Air AVA5-50
Attenuation per 100 ft.	0.814 dB/100ft
Line Length (LL) AGL + 30' Hor. Run	72.65 ft.
Total Line Attenuation	0.59 dB
Line Efficiency (LE)	87.27 %
Line Loss (LPL)	0.38 kW
Antenna Input Power (AIP)	2.59 kW
Req'd. Transmitter Output Power	2.96 kW

### MECHANICAL SPECIFICATION

No. Of Bays	8		
Antenna Aperture	12.92	ft.	3.94 m
Antenna Total Length	16.30	ft.	4.97 m
Center of Radiation AGL	42.65	ft.	13.00 m
Antenna Weight	78.25	lbs.	35.57 kg
Windload (50/33) / CaAc	288.00	lbs.	8.30 ft^2

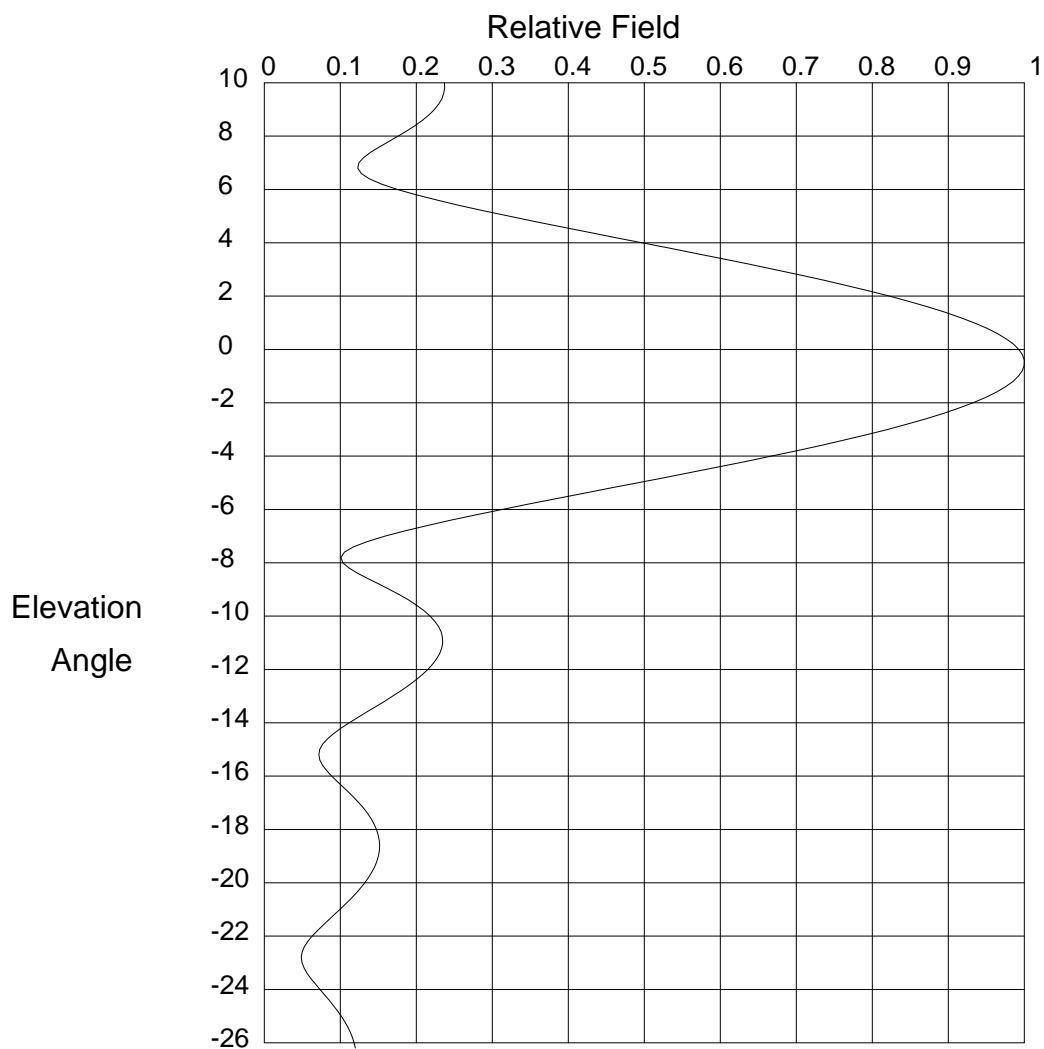
Mechanical Specifications will be certified upon final construction and testing.

Note: Given values can be used for planning system.

Prepared by:

*David K. Edmiston Jr.*

David K. Edmiston Jr.  
SWR, LP Engineering



## Elevation Pattern

Scale: Linear

Units: Field, Relative

## Systems With Reliability

CLIENT: *KQUP*

Date: 2/6/2014

ANTENNA TYPE: SWEDL8BF/24

FREQUENCY: 533 MHz

PATTERN POL.: Horizontal

DIRECTIVITY(Peak): 8.261/9.17 dBd

Beam Tilt (Deg.) : -5

DIRECTIVITY(Horiz): 8.145/9.109 dBd

Null Fill(s)(%) : 10, 7, 5

# Relative Field Tabulation

Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)
90.0	.10 (-19.996)	52.0	.121 (-18.321)	14.0	.068 (-23.362 )
89.0	.116 (-18.729)	51.0	.099 (-20.056)	13.0	.107 (-19.419 )
88.0	.131 (-17.624)	50.0	.075 (-22.52)	12.0	.166 (-15.58 )
87.0	.147 (-16.646)	49.0	.055 (-25.251)	11.0	.215 (-13.358 )
86.0	.163 (-15.769)	48.0	.052 (-25.758)	10.0	.237 (-12.505 )
85.0	.178 (-14.979)	47.0	.067 (-23.415)	9.8	.237 (-12.491 )
84.0	.194 (-14.263)	46.0	.089 (-21.015)	9.6	.236 (-12.531 )
83.0	.209 (-13.613)	45.0	.107 (-19.401)	9.4	.234 (-12.627 )
82.0	.223 (-13.025)	44.0	.118 (-18.572)	9.2	.23 (-12.781 )
81.0	.237 (-12.495)	43.0	.119 (-18.479)	9.0	.224 (-12.996 )
80.0	.251 (-12.022)	42.0	.11 (-19.141)	8.8	.217 (-13.274 )
79.0	.263 (-11.607)	41.0	.093 (-20.667)	8.6	.208 (-13.619 )
78.0	.274 (-11.251)	40.0	.069 (-23.242)	8.4	.199 (-14.034 )
77.0	.283 (-10.957)	39.0	.047 (-26.558)	8.2	.188 (-14.522 )
76.0	.291 (-10.729)	38.0	.045 (-26.916)	8.0	.176 (-15.081 )
75.0	.296 (-10.573)	37.0	.066 (-23.674)	7.8	.164 (-15.706 )
74.0	.299 (-10.496)	36.0	.089 (-20.982)	7.6	.152 (-16.378 )
73.0	.298 (-10.505)	35.0	.107 (-19.438)	7.4	.14 (-17.056 )
72.0	.295 (-10.612)	34.0	.113 (-18.908)	7.2	.131 (-17.665 )
71.0	.287 (-10.829)	33.0	.108 (-19.351)	7.0	.125 (-18.089 )
70.0	.276 (-11.172)	32.0	.09 (-20.874)	6.8	.123 (-18.193 )
69.0	.261 (-11.661)	31.0	.065 (-23.705)	6.6	.128 (-17.888 )
68.0	.242 (-12.321)	30.0	.044 (-27.075)	6.4	.138 (-17.195 )
67.0	.219 (-13.189)	29.0	.052 (-25.71)	6.2	.154 (-16.23 )
66.0	.193 (-14.309)	28.0	.079 (-22)	6.0	.175 (-15.125 )
65.0	.163 (-15.744)	27.0	.105 (-19.552)	5.8	.20 (-13.982 )
64.0	.132 (-17.575)	26.0	.12 (-18.398)	5.6	.227 (-12.861 )
63.0	.101 (-19.871)	25.0	.12 (-18.398)	5.4	.257 (-11.791 )
62.0	.075 (-22.486)	24.0	.105 (-19.61)	5.2	.289 (-10.786 )
61.0	.061 (-24.263)	23.0	.077 (-22.283)	5.0	.322 (-9.848 )
60.0	.067 (-23.465)	22.0	.051 (-25.813)	4.8	.356 (-8.976 )
59.0	.086 (-21.3)	21.0	.061 (-24.307)	4.6	.391 (-8.166 )
58.0	.108 (-19.34)	20.0	.097 (-20.25)	4.4	.426 (-7.415 )
57.0	.127 (-17.921)	19.0	.131 (-17.655)	4.2	.461 (-6.717 )
56.0	.141 (-17.03)	18.0	.15 (-16.476)	4.0	.497 (-6.069 )
55.0	.148 (-16.623)	17.0	.148 (-16.57)	3.8	.533 (-5.468 )
54.0	.146 (-16.684)	16.0	.125 (-18.044)	3.6	.568 (-4.909 )
53.0	.138 (-17.23)	15.0	.088 (-21.138)	3.4	.603 (-4.39 )

## Systems With Reliability

Page 1 of 3

CLIENT: *KQUP*

Date: 2/6/2014

ANTENNA TYPE: SWEDL8BF/24

FREQUENCY: 533 MHz

PATTERN POL.: Horizontal

DIRECTIVITY(Peak): 8.261/9.17 dBd

Beam Tilt (Deg.) : -.5

DIRECTIVITY(Horiz): 8.145/9.109 dBd

Null Fill(s)(%) : 10, 7, 5

# Relative Field Tabulation

Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)
3.2	.638 (-3.909)	-4.4	.599 (-4.456)	-12.0	.215 (-13.341 )
3.0	.671 (-3.462)	-4.6	.563 (-4.984)	-12.2	.208 (-13.649 )
2.8	.704 (-3.049)	-4.8	.528 (-5.555)	-12.4	.199 (-14.011 )
2.6	.736 (-2.667)	-5.0	.491 (-6.17)	-12.6	.19 (-14.429 )
2.4	.766 (-2.315)	-5.2	.455 (-6.836)	-12.8	.18 (-14.903 )
2.2	.795 (-1.992)	-5.4	.419 (-7.555)	-13.0	.169 (-15.438 )
2.0	.823 (-1.695)	-5.6	.383 (-8.334)	-13.2	.158 (-16.034 )
1.8	.849 (-1.425)	-5.8	.348 (-9.178)	-13.4	.146 (-16.692 )
1.6	.873 (-1.181)	-6.0	.313 (-10.096)	-13.6	.135 (-17.414 )
1.4	.895 (-0.961)	-6.2	.279 (-11.094)	-13.8	.123 (-18.197 )
1.2	.916 (-0.765)	-6.4	.246 (-12.179)	-14.0	.112 (-19.033 )
1.0	.934 (-0.592)	-6.6	.215 (-13.359)	-14.2	.101 (-19.904 )
.8	.95 (-0.442)	-6.8	.186 (-14.63)	-14.4	.091 (-20.778 )
.6	.964 (-0.314)	-7.0	.159 (-15.975)	-14.6	.083 (-21.598 )
.4	.976 (-0.208)	-7.2	.136 (-17.337)	-14.8	.077 (-22.281 )
.2	.986 (-0.124)	-7.4	.118 (-18.594)	-15.0	.073 (-22.733 )
.0	.993 (-0.062)	-7.6	.106 (-19.532)	-15.2	.072 (-22.878 )
-.2	.998 (-0.02)	-7.8	.101 (-19.925)	-15.4	.073 (-22.708 )
-.4	1.00 (0)	-8.0	.103 (-19.708)	-15.6	.077 (-22.281 )
-.6	1.00 (-0.001)	-8.2	.112 (-19.045)	-15.8	.082 (-21.691 )
-.8	.997 (-0.023)	-8.4	.123 (-18.175)	-16.0	.089 (-21.027 )
-1.0	.992 (-0.066)	-8.6	.137 (-17.269)	-16.2	.096 (-20.352 )
-1.2	.985 (-0.131)	-8.8	.151 (-16.417)	-16.4	.103 (-19.705 )
-1.4	.975 (-0.217)	-9.0	.165 (-15.653)	-16.6	.111 (-19.107 )
-1.6	.963 (-0.324)	-9.2	.178 (-14.987)	-16.8	.118 (-18.567 )
-1.8	.949 (-0.454)	-9.4	.19 (-14.416)	-17.0	.125 (-18.09 )
-2.0	.933 (-0.606)	-9.6	.201 (-13.936)	-17.2	.131 (-17.676 )
-2.2	.914 (-0.781)	-9.8	.21 (-13.539)	-17.4	.136 (-17.323 )
-2.4	.893 (-0.98)	-10.0	.218 (-13.218)	-17.6	.141 (-17.029 )
-2.6	.871 (-1.203)	-10.2	.225 (-12.968)	-17.8	.145 (-16.792 )
-2.8	.846 (-1.45)	-10.4	.23 (-12.783)	-18.0	.148 (-16.61 )
-3.0	.82 (-1.723)	-10.6	.233 (-12.66)	-18.2	.15 (-16.481 )
-3.2	.792 (-2.023)	-10.8	.235 (-12.596)	-18.4	.151 (-16.403 )
-3.4	.763 (-2.35)	-11.0	.235 (-12.588)	-18.6	.152 (-16.375 )
-3.6	.732 (-2.707)	-11.2	.234 (-12.634)	-18.8	.151 (-16.397 )
-3.8	.70 (-3.094)	-11.4	.231 (-12.733)	-19.0	.15 (-16.467 )
-4.0	.667 (-3.513)	-11.6	.227 (-12.883)	-19.2	.148 (-16.587 )
-4.2	.633 (-3.966)	-11.8	.222 (-13.086)	-19.4	.145 (-16.756 )

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DIRECTIVITY(Peak): 8.261/9.17 dBd

Beam Tilt (Deg.) : -5

DIRECTIVITY(Horiz): 8.145/9.109 dBd

Null Fill(s)(%) : 10, 7, 5

# Relative Field Tabulation

Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)
-19.6	.142 (-16.975)	-27.2	.119 (-18.515)	-54.0	.123 (-18.198 )
-19.8	.137 (-17.245)	-27.4	.117 (-18.667)	-55.0	.137 (-17.293 )
-20.0	.132 (-17.567)	-27.6	.114 (-18.865)	-56.0	.143 (-16.875 )
-20.2	.127 (-17.944)	-27.8	.111 (-19.109)	-57.0	.143 (-16.89 )
-20.4	.121 (-18.377)	-28.0	.107 (-19.4)	-58.0	.136 (-17.314 )
-20.6	.114 (-18.87)	-28.2	.103 (-19.741)	-59.0	.124 (-18.144 )
-20.8	.107 (-19.424)	-28.4	.098 (-20.132)	-60.0	.107 (-19.382 )
-21.0	.10 (-20.042)	-28.6	.094 (-20.577)	-61.0	.09 (-20.963 )
-21.2	.092 (-20.725)	-28.8	.088 (-21.076)	-62.0	.075 (-22.555 )
-21.4	.084 (-21.473)	-29.0	.083 (-21.632)	-63.0	.069 (-23.235 )
-21.6	.077 (-22.281)	-29.2	.077 (-22.245)	-64.0	.077 (-22.275 )
-21.8	.07 (-23.133)	-29.4	.071 (-22.915)	-65.0	.096 (-20.398 )
-22.0	.063 (-24.003)	-29.6	.066 (-23.637)	-66.0	.119 (-18.494 )
-22.2	.057 (-24.836)	-29.8	.06 (-24.4)	-67.0	.143 (-16.865 )
-22.4	.053 (-25.552)	-30.0	.055 (-25.182)	-68.0	.167 (-15.543 )
-22.6	.05 (-26.044)	-31.0	.043 (-27.414)	-69.0	.189 (-14.491 )
-22.8	.049 (-26.221)	-32.0	.06 (-24.456)	-70.0	.207 (-13.667 )
-23.0	.05 (-26.052)	-33.0	.085 (-21.417)	-71.0	.223 (-13.036 )
-23.2	.053 (-25.59)	-34.0	.104 (-19.679)	-72.0	.235 (-12.568 )
-23.4	.057 (-24.936)	-35.0	.112 (-19.033)	-73.0	.244 (-12.241 )
-23.6	.062 (-24.192)	-36.0	.108 (-19.341)	-74.0	.25 (-12.036 )
-23.8	.067 (-23.429)	-37.0	.093 (-20.611)	-75.0	.253 (-11.939 )
-24.0	.073 (-22.693)	-38.0	.071 (-22.963)	-76.0	.253 (-11.939 )
-24.2	.079 (-22.007)	-39.0	.049 (-26.232)	-77.0	.25 (-12.026 )
-24.4	.085 (-21.382)	-40.0	.043 (-27.41)	-78.0	.246 (-12.194 )
-24.6	.091 (-20.82)	-41.0	.06 (-24.47)	-79.0	.239 (-12.436 )
-24.8	.096 (-20.322)	-42.0	.083 (-21.6)	-80.0	.23 (-12.75 )
-25.0	.101 (-19.887)	-43.0	.103 (-19.776)	-81.0	.22 (-13.132 )
-25.2	.106 (-19.51)	-44.0	.114 (-18.846)	-82.0	.209 (-13.582 )
-25.4	.11 (-19.19)	-45.0	.117 (-18.672)	-83.0	.197 (-14.101 )
-25.6	.113 (-18.923)	-46.0	.11 (-19.209)	-84.0	.184 (-14.69 )
-25.8	.116 (-18.708)	-47.0	.095 (-20.489)	-85.0	.171 (-15.356 )
-26.0	.118 (-18.542)	-48.0	.074 (-22.595)	-86.0	.157 (-16.105 )
-26.2	.12 (-18.424)	-49.0	.054 (-25.368)	-87.0	.142 (-16.949 )
-26.4	.121 (-18.353)	-50.0	.045 (-26.861)	-88.0	.127 (-17.904 )
-26.6	.121 (-18.326)	-51.0	.058 (-24.77)	-89.0	.112 (-18.996 )
-26.8	.121 (-18.345)	-52.0	.081 (-21.883)	-90.0	.097 (-20.258 )
-27.0	.12 (-18.408)	-53.0	.104 (-19.684)	90.0	.00 (-50 )

## Systems With Reliability

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CLIENT: *KQUP*

Date: 2/6/2014

ANTENNA TYPE: SWEDL8BF/24

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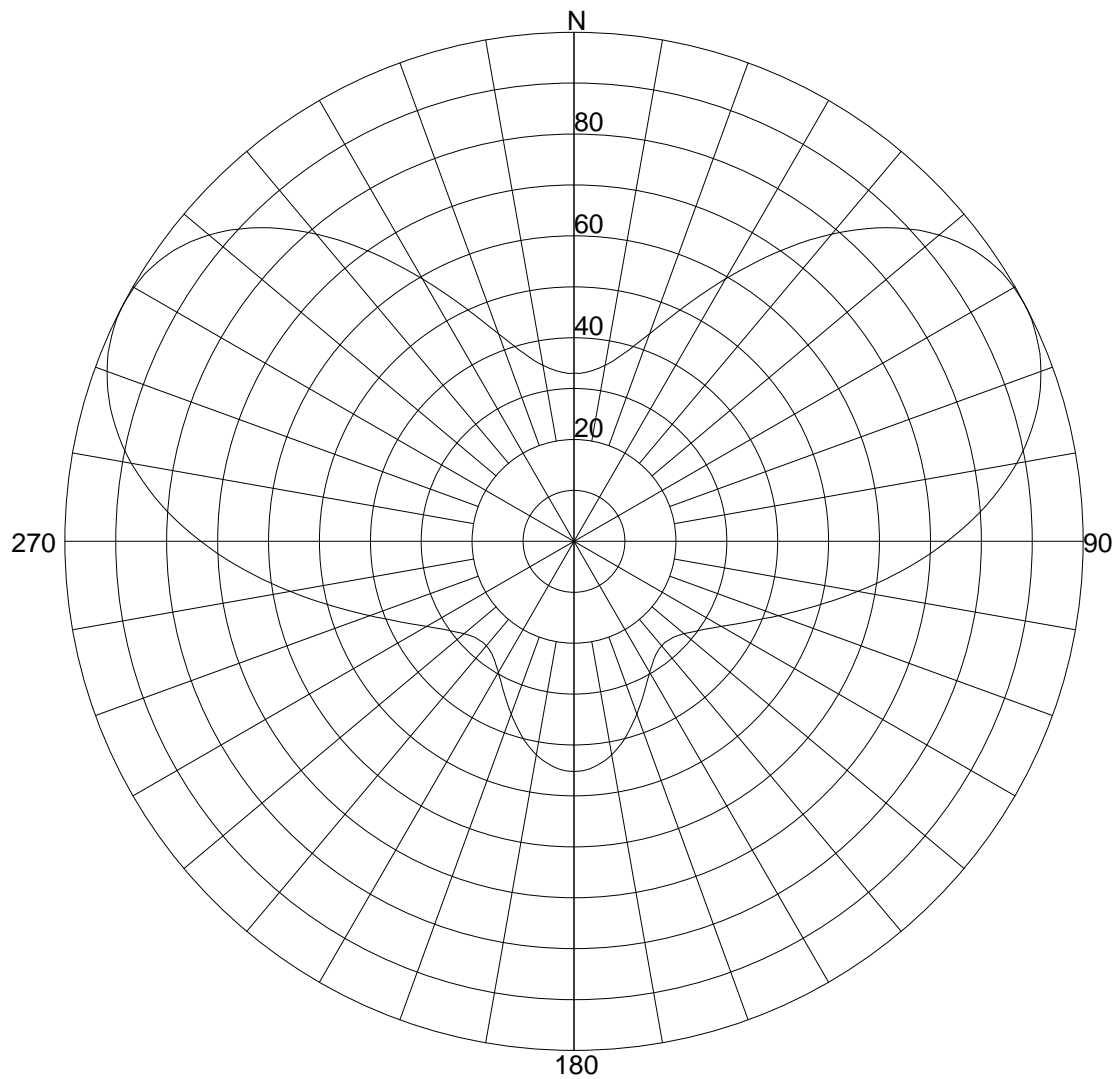
PATTERN POL.: Horizontal

DIRECTIVITY(Peak): 8.261/9.17 dBd

Beam Tilt (Deg.) : -.5

DIRECTIVITY(Horiz): 8.145/9.109 dBd

Null Fill(s)(%) : 10, 7, 5



## Azimuth Pattern

Scale: Linear

Unit: Relative Field

## Systems With Reliability

CLIENT: *KQUP*

Date: 2/6/2014

ANTENNA TYPE: SWEDL8BF/24

FREQUENCY: 533 MHz

PATTERN POL.: Horizontal

CIRCULARITY(+/-dB):

AZ. DIRECTIVITY: 2.6666 / 4.26dB

PATTERN RMS: 0.612

## Relative Field Tabulation(Azimuth)

Azimuth Heading	Normalized Field(dB)	Azimuth Heading	Normalized Field(dB)
0	.3300 (-9.63 )	180	.4520 (-6.9 )
5	.3350 (-9.5 )	185	.4450 (-7.03 )
10	.3510 (-9.09 )	190	.4260 (-7.41 )
15	.3830 (-8.34 )	195	.3960 (-8.05 )
20	.4340 (-7.25 )	200	.3610 (-8.85 )
25	.5065 (-5.91 )	205	.3265 (-9.72 )
30	.5950 (-4.51 )	210	.2970 (-10.54 )
35	.6925 (-3.19 )	215	.2770 (-11.15 )
40	.7880 (-2.07 )	220	.2680 (-11.44 )
45	.8710 (-1.2 )	225	.2700 (-11.37 )
50	.9360 (-0.57 )	230	.2820 (-11 )
55	.9780 (-0.19 )	235	.3040 (-10.34 )
60	.9980 (-0.02 )	240	.3340 (-9.53 )
65	.9965 (-0.03 )	245	.3750 (-8.52 )
70	.9760 (-0.21 )	250	.4270 (-7.39 )
75	.9375 (-0.56 )	255	.4910 (-6.18 )
80	.8830 (-1.08 )	260	.5660 (-4.94 )
85	.8130 (-1.8 )	265	.6490 (-3.76 )
90	.7330 (-2.7 )	270	.7330 (-2.7 )
95	.6490 (-3.76 )	275	.8130 (-1.8 )
100	.5660 (-4.94 )	280	.8830 (-1.08 )
105	.4910 (-6.18 )	285	.9375 (-0.56 )
110	.4270 (-7.39 )	290	.9760 (-0.21 )
115	.3750 (-8.52 )	295	.9965 (-0.03 )
120	.3340 (-9.53 )	300	.9980 (-0.02 )
125	.3040 (-10.34 )	305	.9780 (-0.19 )
130	.2820 (-11 )	310	.9360 (-0.57 )
135	.2700 (-11.37 )	315	.8710 (-1.2 )
140	.2680 (-11.44 )	320	.7880 (-2.07 )
145	.2770 (-11.15 )	325	.6925 (-3.19 )
150	.2970 (-10.54 )	330	.5950 (-4.51 )
155	.3265 (-9.72 )	335	.5065 (-5.91 )
160	.3610 (-8.85 )	340	.4340 (-7.25 )
165	.3960 (-8.05 )	345	.3830 (-8.34 )
170	.4260 (-7.41 )	350	.3510 (-9.09 )
175	.4450 (-7.03 )	355	.3350 (-9.5 )

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ANTENNA TYPE: SWEDL8BF/24

FREQUENCY: 533 MHz

PATTERN POL.: Horizontal

CIRCULARITY(+/-dB):

AZ. DIRECTIVITY: 2.6666 / 4.26dB

PATTERN RMS: 0.612

[Previous Record](#) -- [Next Record](#)

KQUP

WA PULLMAN

USA

(Digital)

Licensee: WORD OF GOD FELLOWSHIP, INC.

Service Designation: **DT** Digital television stationTransmit Channel: **24** 530 - 536 MHz **Application**Virtual Channel: **24** (viewer sees this channel number)

Network affiliation: DAYSTAR

File No.: BLCDT-20100120ACV Facility ID number: 78921

CDBS Application ID No.: 1354095

47° 15' 30.00" N Latitude

Site in Canadian Border Zone

117° 05' 24.00" W Longitude (NAD 27)

Polarization: Horizontal  
(H)

Effective Radiated Power (ERP): 57. kW ERP

Antenna Height Above Average Terrain: 419. meters HAAT -- [Calculate HAAT](#)

Antenna Height Above Mean Sea Level: 1231. meters AMSL

Antenna Height Above Ground Level: 13. meters AGL

TV Zone: 2

Directional

Antenna ID No.: 94587

Pattern Rotation: 260.00

Relative Field values for directional antenna

[Relative Field polar plot](#)

Relative field values do not include any pattern rotation that may be indicated above.

0° 0.330	60° 0.998	120° 0.334	180° 0.452	240° 0.334	300° 0.998
10° 0.351	70° 0.976	130° 0.282	190° 0.426	250° 0.427	310° 0.936
20° 0.434	80° 0.883	140° 0.268	200° 0.361	260° 0.566	320° 0.788
30° 0.595	90° 0.733	150° 0.297	210° 0.297	270° 0.733	330° 0.595
40° 0.788	100° 0.566	160° 0.361	220° 0.268	280° 0.883	340° 0.434
50° 0.936	110° 0.427	170° 0.426	230° 0.282	290° 0.976	350° 0.351

Additional azimuths:

62° 1.000

298° 1.000

CDBS: [Station Info](#) [Application Info](#) [Mailing Address](#) [Assignments and Transfers](#)  
[Application List](#) [CDBS Search Page](#) [Ownership Info](#) [EEO](#) [Call Sign Changes](#)  
[Correspondence for KQUP](#) [Correspondence for application BLCDT-20100120ACV](#)

Maps: [Service Contour on Google map \(41 dBu\)](#)  
[KML file \(41 dBu\)](#) or [Text file \(41 dBu\)](#) for KML-capable browsers

Station [Profiles and Public Inspection Files for KQUP](#) [[About this information](#)]

ULS: [Related facilities in ULS](#)  
[ASRNs within 0.5 km radius](#)

[First Record](#)

\*\*\* 2 Records Retrieved \*\*\*