

DTV12 Reverse Frequency Transmit Off-Axis Summary

6/1/2012

OS1 (102.8W) Beam 13

Antenna Gain Relative to +X-axis

The antenna is left or right hand circularly polarized (LHCP, RHCP)

Three frequencies were analyzed, 17.305, 17.500, and 17.695 GHz

Total number of sheets = 6 (2 polarizations x 3 frequencies)

Each sheet has two header lines and four columns

column 1: Elevation angle relative to x-axis in degrees, rotation about z, $\pm 60^\circ$ every 5° (negative toward

column 2: Azimuth angle relative to x-axis in degrees, rotation about y, $\pm 30^\circ$ every 5° (negative toward

column 3: Co-polarized antenna gain, dBi (RHCP gain for RHCP port or LHCP gain for LHCP port)

column 4: Cross-polarized antenna gain, dBi (LHCP gain for RHCP port or RHCP gain for LHCP port)

Kevin Clancy

DTV12 Antenna Project Engineer

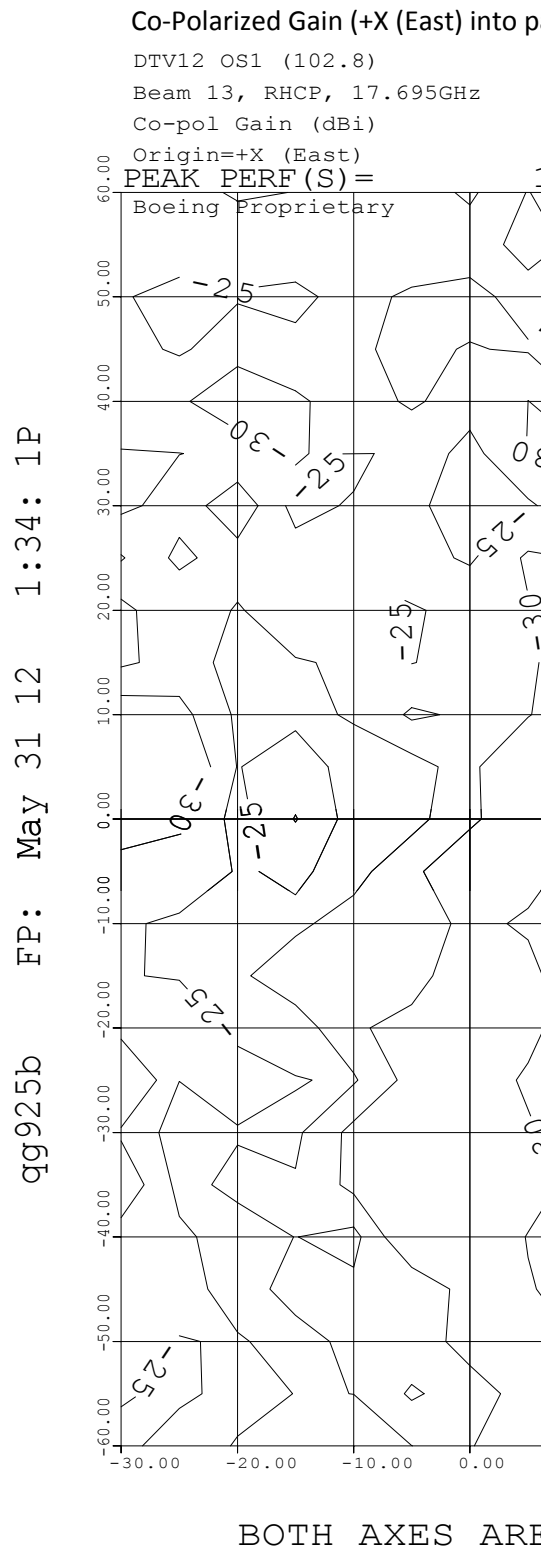
Boeing S&IS, El Segundo

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south)
Earth)

Beam 13 OS1 RHCP 17.695

Z-Rotation (Deg.)	Y-Rotation (Deg.)	Co-pol Gain (dBi)	Cross-pol Gain (dBi)
-60	-30	-22.641	-28.26
-60	-25	-29.09	-21.223
-60	-20	-24.455	-25.524
-60	-15	-23.867	-27.376
-60	-10	-24.171	-23.45
-60	-5	-24.962	-28.121
-60	0	-29.145	-19.047
-60	5	-39.884	-21.078
-60	10	-42.291	-17.662
-60	15	-37.376	-18.424
-60	20	-30.359	-17.778
-60	25	-27.59	-14.34
-60	30	-23.204	-15.378
-55	-30	-25.8	-22.444
-55	-25	-23.384	-26.887
-55	-20	-27.48	-20.859
-55	-15	-24.859	-25.305
-55	-10	-25.012	-27.925
-55	-5	-30.749	-22.407
-55	0	-27.181	-19.722
-55	5	-32.539	-16.692
-55	10	-37.036	-19.448
-55	15	-30.486	-16.167
-55	20	-24.047	-16.29
-55	25	-21.967	-16.496
-55	30	-20.203	-14.071
-50	-30	-29.652	-21.639
-50	-25	-24.699	-23.957
-50	-20	-25.531	-25.067
-50	-15	-23.006	-23.456
-50	-10	-26.395	-20.993
-50	-5	-26.525	-21.596
-50	0	-32.462	-18.431
-50	5	-39.642	-15.892
-50	10	-27.763	-18.208
-50	15	-26.046	-13.947
-50	20	-20.84	-16.625
-50	25	-19.793	-14.083
-50	30	-18.088	-15.646
-45	-30	-28.123	-22.497



-45	-25	-27.446	-21.441
-45	-20	-22.459	-29.055
-45	-15	-26.999	-20.596
-45	-10	-26.12	-19.942
-45	-5	-25.898	-22.797
-45	0	-32.195	-17.31
-45	5	-30.814	-21.054
-45	10	-25.143	-18.495
-45	15	-22.649	-13.828
-45	20	-19.01	-17.131
-45	25	-18.047	-19.863
-45	30	-18.245	-13.42
-40	-30	-27.569	-22.351
-40	-25	-25.889	-22.295
-40	-20	-22.894	-28.303
-40	-15	-25.081	-22.114
-40	-10	-23.468	-21.7
-40	-5	-35.725	-21.556
-40	0	-40.693	-18.059
-40	5	-29.46	-19.66
-40	10	-25.031	-14.262
-40	15	-21.95	-12.778
-40	20	-19.906	-14.105
-40	25	-18.987	-19.528
-40	30	-19.328	-9.897
-35	-30	-34.214	-21.834
-35	-25	-23.601	-23.219
-35	-20	-26.11	-23.828
-35	-15	-25.391	-26.277
-35	-10	-31.445	-20.882
-35	-5	-30.265	-25.047
-35	0	-34.513	-16.204
-35	5	-35.604	-14.326
-35	10	-24.705	-13.51
-35	15	-18.852	-19.444
-35	20	-18.708	-13.88
-35	25	-19.999	-14.869
-35	30	-18.519	-9.912
-30	-30	-29.195	-22.507
-30	-25	-22.734	-26.934
-30	-20	-24.644	-22.466
-30	-15	-24.124	-23.172
-30	-10	-31.572	-21.613
-30	-5	-33.705	-19.299

-30	0	-35.723	-20.804
-30	5	-31.524	-14.998
-30	10	-21.081	-17.938
-30	15	-20.101	-15.021
-30	20	-19.096	-13.731
-30	25	-19.37	-9.536
-30	30	-16.549	-4.994
-25	-30	-37.745	-22.133
-25	-25	-25.043	-25.263
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-25	-10	-24.444	-20.013
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-25	0	-36.764	-17.178
-25	5	-28.293	-15.391
-25	10	-22.066	-14.918
-25	15	-19.019	-18.619
-25	20	-19.5	-18.702
-25	25	-20.513	-10.323
-25	30	-13.017	-6.148
-20	-30	-27.904	-23.229
-20	-25	-28.636	-21.939
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-15	5	-32.608	-14.825
-15	10	-22.041	-13.838
-15	15	-18.377	-19.924
-15	20	-19.835	-14.851

-15	25	-19.652	-8.726
-15	30	-11.844	-2.322
-10	-30	-25.854	-25.503
-10	-25	-23.854	-28.037
-10	-20	-23.562	-22.542
-10	-15	-24.063	-23.301
-10	-10	-27.098	-21.019
-10	-5	-25.636	-21.119
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-5	30	-13.167	-7.199
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0	15	-20.37	-14.08
0	20	-18.804	-12.989
0	25	-18.534	-10.382
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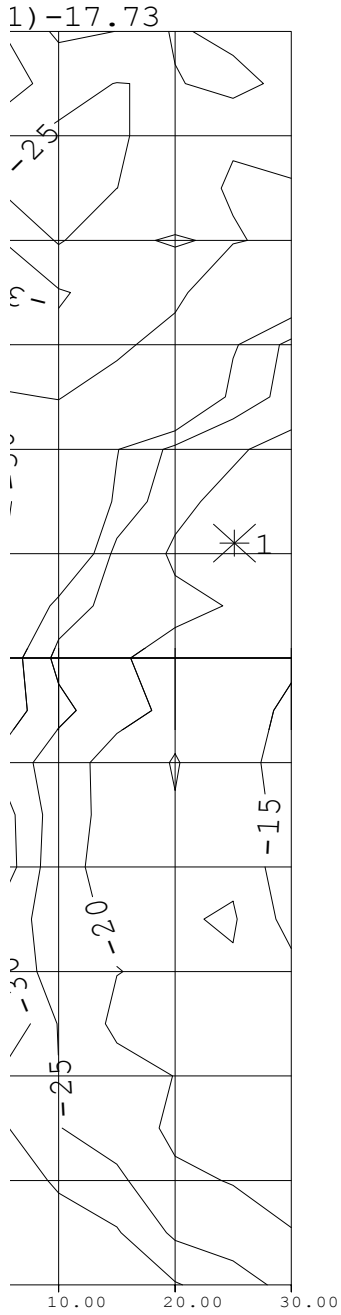
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20	25	-20.677	-15.556
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25	-30	-30.401	-24.098
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25	5	-30.846	-23.015
25	10	-29.612	-19.76
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35	25	-39.46	-22.713
35	30	-36.069	-16.851

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40	-10	-26.949	-26.899
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40	15	-29.219	-25.807
40	20	-30.399	-27.843
40	25	-29.274	-20.417
40	30	-32.205	-18.316
45	-30	-26.425	-29.914
45	-25	-24.434	-28.504
45	-20	-27.216	-25.317
45	-15	-25.886	-25.79
45	-10	-25.423	-28.54
45	-5	-24.307	-25.566
45	0	-25.212	-26.953
45	5	-24.595	-21.292
45	10	-24.888	-23.614
45	15	-24.978	-20.761
45	20	-26.783	-29.112
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50	-15	-24.129	-27.139
50	-10	-26.374	-28.163
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55	15	-24.899	-22.821
55	20	-25.362	-22.697
55	25	-23.305	-22.106
55	30	-26.582	-22.272
60	-30	-27.55	-29.337
60	-25	-28.276	-28.233
60	-20	-30.577	-25.744
60	-15	-29.909	-24.699
60	-10	-25.174	-30.359
60	-5	-27.548	-24.677
60	0	-30.86	-22.96
60	5	-24.757	-23.678
60	10	-31.027	-22.971
60	15	-29.952	-23.202
60	20	-24.373	-22.394
60	25	-26.437	-21.721
60	30	-24.809	-25.446

age)

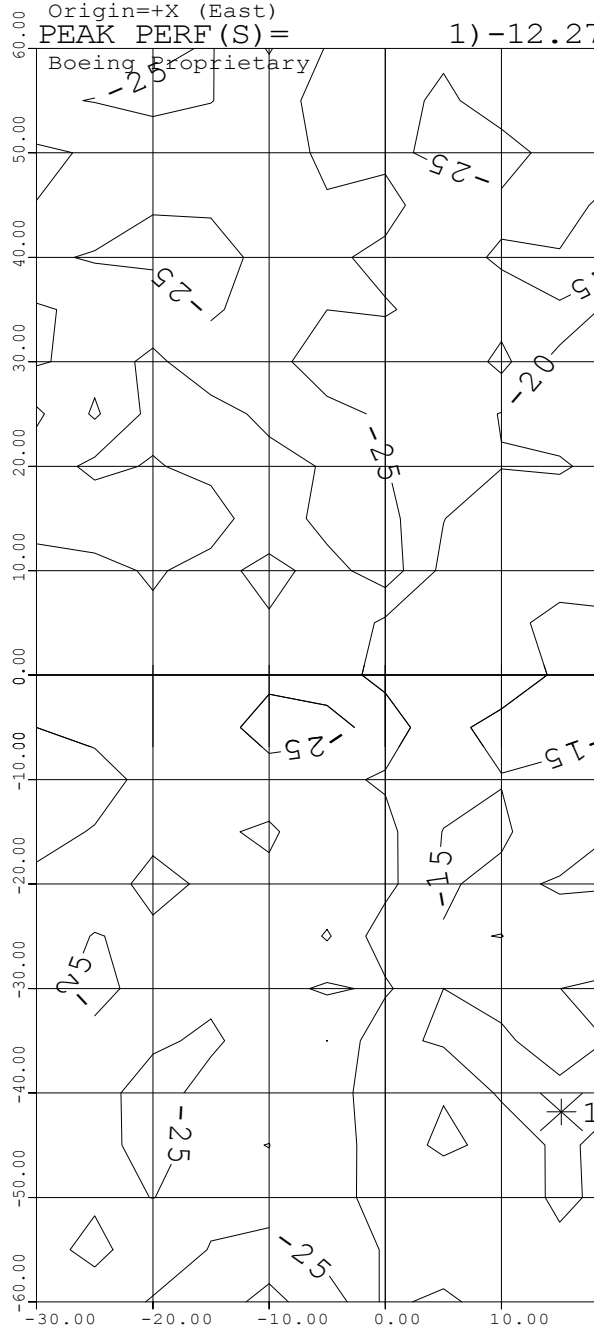


IN DEG

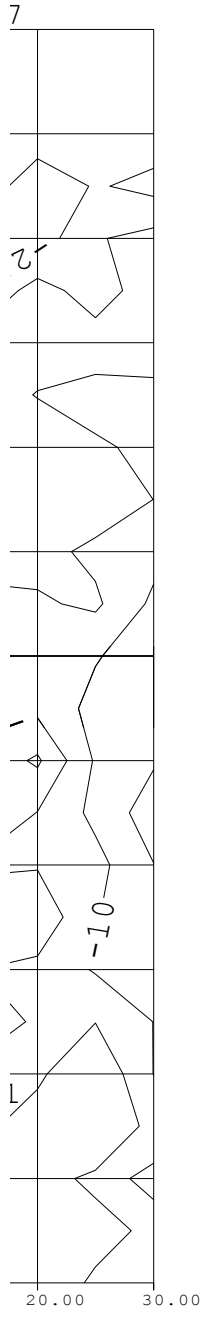
Cross-Polarized Gain (+X (East) into page)

DTV12 OS1 (102.8)
Beam 13, RHCP, 17.695GHz
Cross-pol Gain (dBi)

qq925b FP: May 31 12 1:34: 6P



BOTH AXES ARE IN DEG

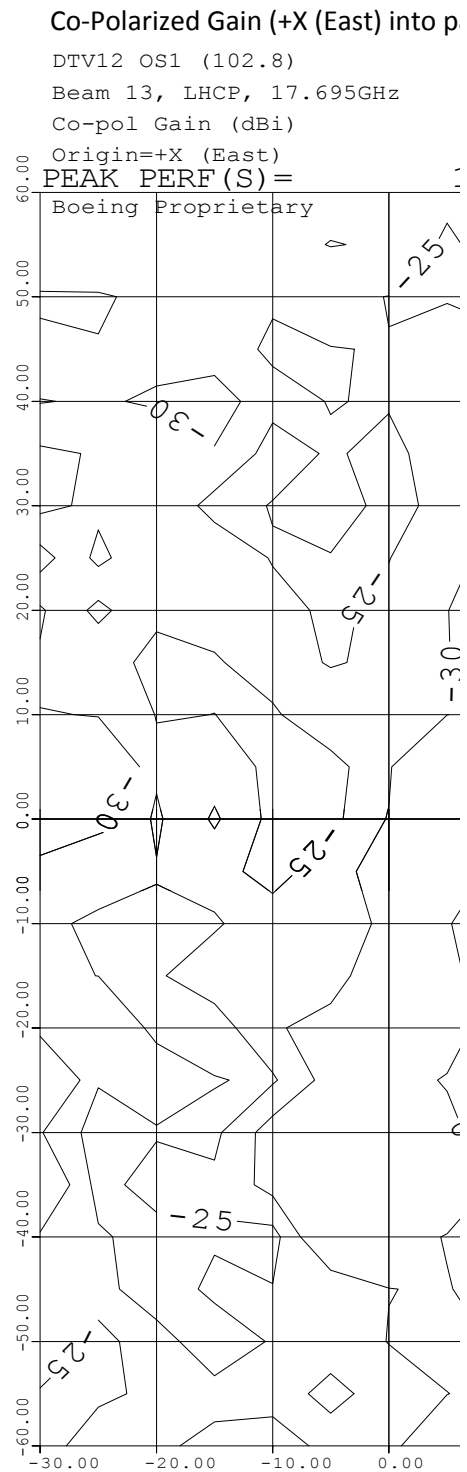


EG

Beam 13 OS1 LHCP 17.695

Z-Rotation (Deg.)	Y-Rotation (Deg.)	Co-pol Gain (dBi)	Cross-pol Gain (dBi)
-60	-30	-22.693	-28.239
-60	-25	-27.813	-21.139
-60	-20	-25.747	-26.243
-60	-15	-23.909	-27.41
-60	-10	-23.622	-22.92
-60	-5	-25.821	-27.786
-60	0	-27.275	-19.065
-60	5	-40.16	-21.882
-60	10	-34.645	-18.056
-60	15	-33.7	-18.066
-60	20	-28.927	-17.751
-60	25	-30.319	-14.574
-60	30	-24.867	-15.706
-55	-30	-24.492	-21.857
-55	-25	-24.007	-28.634
-55	-20	-26.047	-20.66
-55	-15	-26.304	-25.99
-55	-10	-26.098	-29.241
-55	-5	-32.508	-23.119
-55	0	-26.199	-19.146
-55	5	-29.798	-16.548
-55	10	-34.702	-19.53
-55	15	-28.715	-15.885
-55	20	-24.824	-16.821
-55	25	-22.282	-16.989
-55	30	-20.335	-13.973
-50	-30	-29.101	-21.436
-50	-25	-24.072	-23.689
-50	-20	-26.645	-25.82
-50	-15	-22.484	-22.718
-50	-10	-25.369	-20.782
-50	-5	-25.948	-21.312
-50	0	-30.221	-18.326
-50	5	-34.622	-15.9
-50	10	-27.97	-18.728
-50	15	-28.401	-14.141
-50	20	-21.756	-17.089
-50	25	-19.707	-14.072
-50	30	-17.682	-15.283
-45	-30	-29.373	-22.475

qg925b FP: May 31 12 1:33:51P



BOTH AXES ARE

-45	-25	-26.337	-21.225
-45	-20	-22.651	-29.609
-45	-15	-25.923	-20.522
-45	-10	-25.226	-19.76
-45	-5	-25.674	-22.185
-45	0	-29.897	-17.204
-45	5	-30.549	-20.97
-45	10	-24.872	-18.399
-45	15	-23.555	-13.809
-45	20	-18.832	-17.052
-45	25	-18.159	-19.549
-45	30	-17.689	-13.176
-40	-30	-29.32	-22.579
-40	-25	-25.605	-22.098
-40	-20	-23.142	-28.74
-40	-15	-24.503	-21.983
-40	-10	-23.064	-21.31
-40	-5	-37.575	-21.874
-40	0	-35.417	-18.112
-40	5	-29.34	-19.887
-40	10	-26.754	-14.438
-40	15	-23.024	-12.862
-40	20	-20.759	-14.376
-40	25	-19.399	-19.501
-40	30	-18.23	-9.837
-35	-30	-36.938	-21.906
-35	-25	-23.285	-22.919
-35	-20	-27.093	-24.078
-35	-15	-25.938	-26.866
-35	-10	-31.924	-21.051
-35	-5	-31.607	-25.22
-35	0	-31.741	-16.156
-35	5	-40.906	-14.338
-35	10	-26.23	-13.605
-35	15	-19.116	-19.793
-35	20	-18.759	-13.877
-35	25	-19.78	-14.657
-35	30	-17.641	-9.938
-30	-30	-30.346	-22.514
-30	-25	-22.746	-27.131
-30	-20	-24.563	-22.419
-30	-15	-23.954	-23.176
-30	-10	-32.557	-21.766
-30	-5	-32.449	-19.294

-30	0	-35.966	-20.924
-30	5	-33.44	-15.032
-30	10	-21.383	-18.131
-30	15	-20.775	-15.225
-30	20	-19.194	-13.751
-30	25	-18.336	-9.456
-30	30	-16.918	-4.978
-25	-30	-40.077	-22.15
-25	-25	-25.391	-25.424
-25	-20	-27.72	-23.825
-25	-15	-25.209	-21.761
-25	-10	-24.374	-19.96
-25	-5	-32.203	-25.606
-25	0	-34.672	-17.138
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-25	15	-19.33	-18.826
-25	20	-19.413	-18.625
-25	25	-20.115	-10.279
-25	30	-13.315	-6.216
-20	-30	-28.119	-23.272
-20	-25	-29.259	-21.972
-20	-20	-23.877	-27.362
-20	-15	-22.853	-24.131
-20	-10	-28.696	-23.44
-20	-5	-34.225	-21.222
-20	0	-41.091	-21.684
-20	5	-35.931	-14.272
-20	10	-21.443	-16.838
-20	15	-18.913	-14.24
-20	20	-19.858	-14.5
-20	25	-18.935	-11.605
-20	30	-11.992	-5.185
-15	-30	-25.218	-27.251
-15	-25	-24.988	-24.979
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-15	-15	-27.468	-23.869
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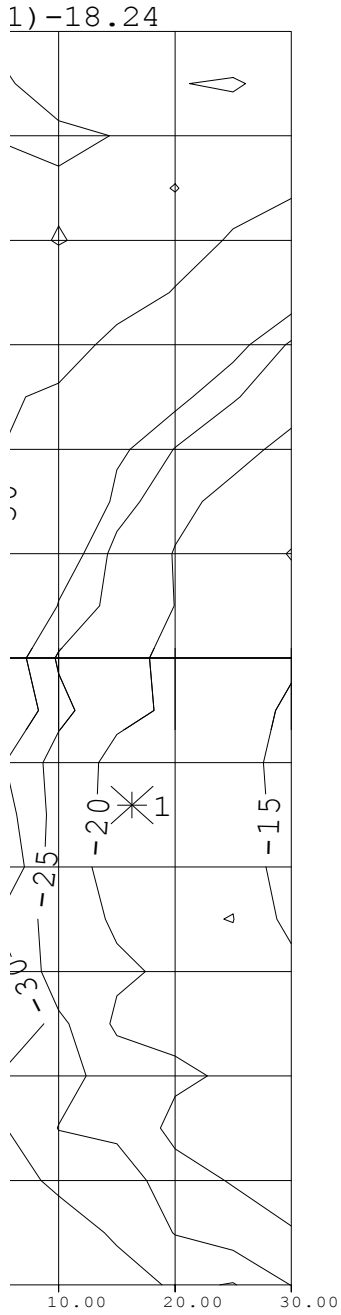
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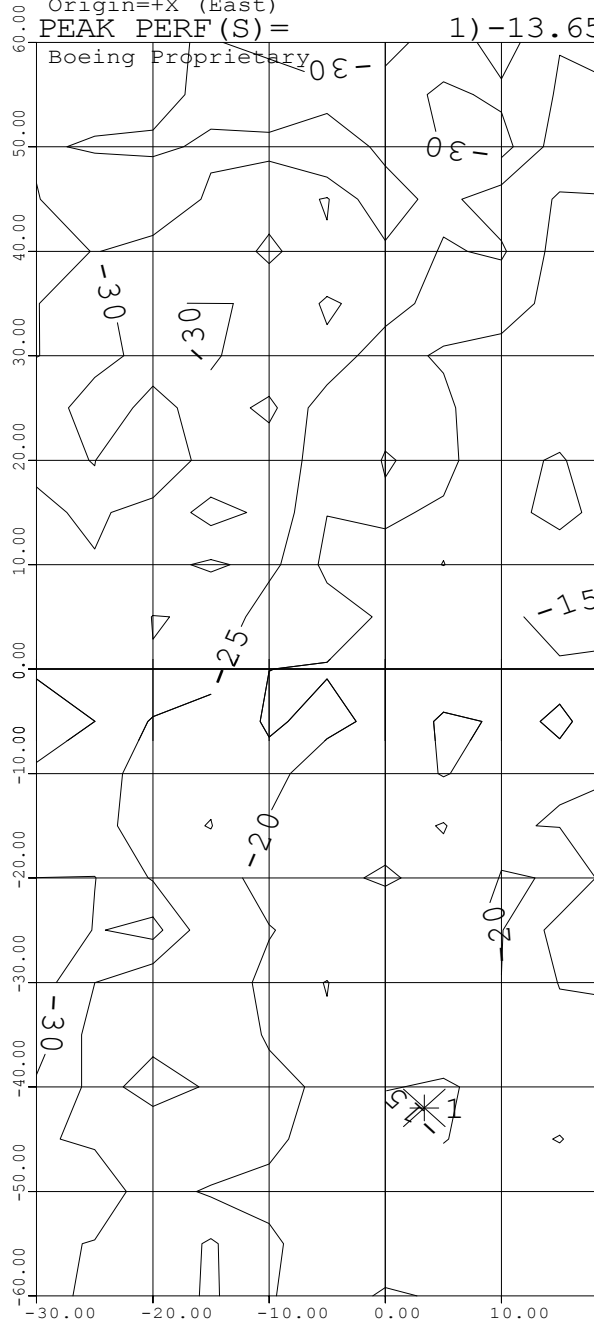
IN DEG

Cross-Polarized Gain (+X (East) into page)

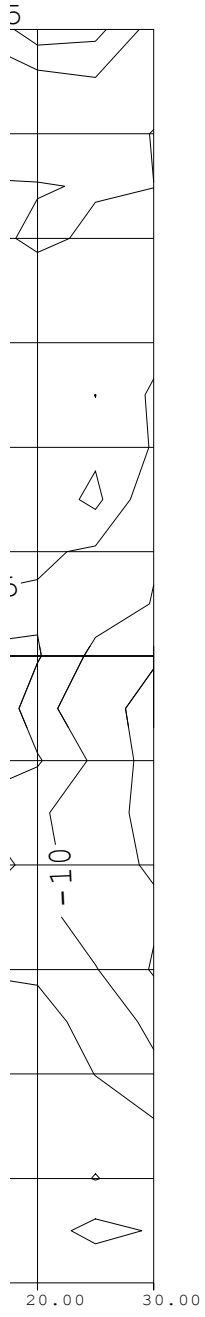
DTV12 OS2 (98.2)
 Beam 10, LHCP, 17.695GHz
 Cross-pol Gain (dBi)

Origin=+X (East)
 PEAK PERF (S) = 1) -13.65

Boeing Proprietary
 qq925b FP: May 31 12 1:23: 9P



BOTH AXES ARE IN D

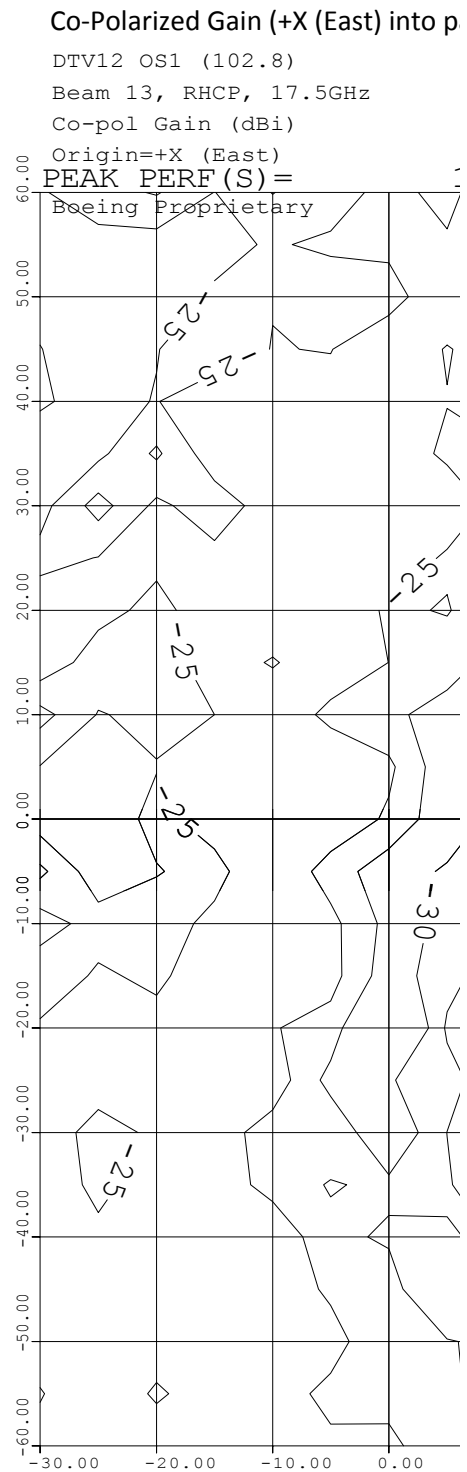


EG

Beam 13 OS1 RHCP 17.5

Z-Rotation (Deg.)	Y-Rotation (Deg.)	Co-pol Gain (dBi)	Cross-pol Gain (dBi)
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-60	-15	-21.494	-23.312
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qq925b FP: May 31 12 1:33:41P



BOTH AXES ARE

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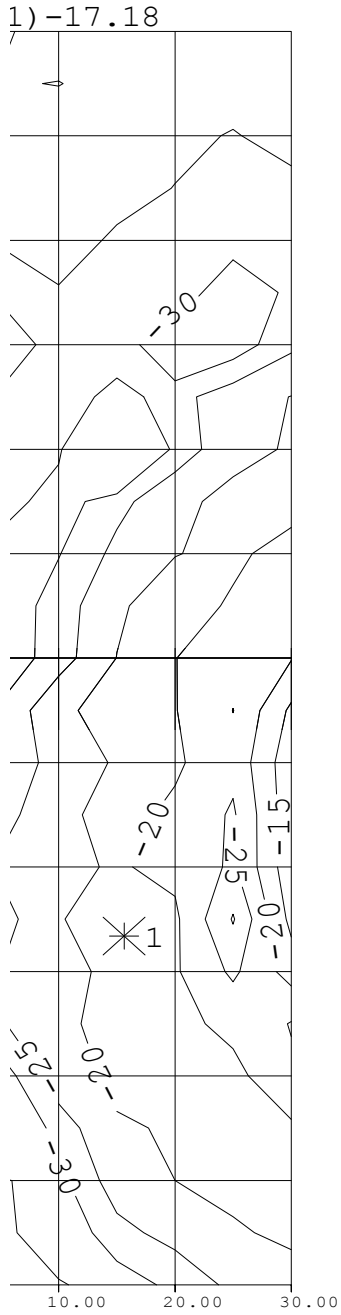
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40	-15	-22.641	-25.65
40	-10	-22.894	-21.189
40	-5	-23.602	-20.338
40	0	-23.734	-22.382
40	5	-24.853	-21.937
40	10	-21.921	-23.595
40	15	-26.054	-20.336
40	20	-27.774	-19.9
40	25	-28.485	-21.647
40	30	-27.348	-17.712
45	-30	-25.082	-26.347
45	-25	-23.217	-26.693
45	-20	-24.874	-25.482
45	-15	-27.103	-23.641
45	-10	-24.886	-20.475
45	-5	-25.136	-20.053
45	0	-21.417	-21.188
45	5	-25.313	-19.147
45	10	-22.165	-21.207
45	15	-22.519	-19.226
45	20	-25.172	-22.577
45	25	-25.085	-18.705
45	30	-27.182	-19.355
50	-30	-24.04	-27.139
50	-25	-22.948	-27.137
50	-20	-23.432	-26.559
50	-15	-25.28	-24.294
50	-10	-25.138	-21.74
50	-5	-26.586	-21.553
50	0	-26.981	-19.867
50	5	-21.022	-23.745
50	10	-21.984	-22.37
50	15	-22.881	-19.279
50	20	-23.167	-19.636
50	25	-25.503	-19.853
50	30	-22.108	-20.617
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55	-20	-22.67	-25.495
55	-15	-24.369	-25.792
55	-10	-25.232	-21.583

55	-5	-24.537	-23.785
55	0	-23.955	-23.512
55	5	-24.601	-19.705
55	10	-25.153	-20.729
55	15	-23.133	-20.396
55	20	-23.54	-19.766
55	25	-21.524	-19.608
55	30	-22.931	-20.204
60	-30	-24.457	-27.007
60	-25	-28.125	-23.895
60	-20	-30.424	-21.997
60	-15	-24.904	-24.657
60	-10	-30.176	-21.889
60	-5	-26.329	-24.035
60	0	-24.029	-24.339
60	5	-25.945	-21.478
60	10	-22.031	-24.688
60	15	-22.175	-24.416
60	20	-24.296	-19.889
60	25	-23.665	-20.512
60	30	-22.83	-22.189

age)



IN DEG

Cross-Polarized Gain (+X (East) into page)

DTV12 OS1 (102.8)

Beam 13, RHCP, 17.5GHz

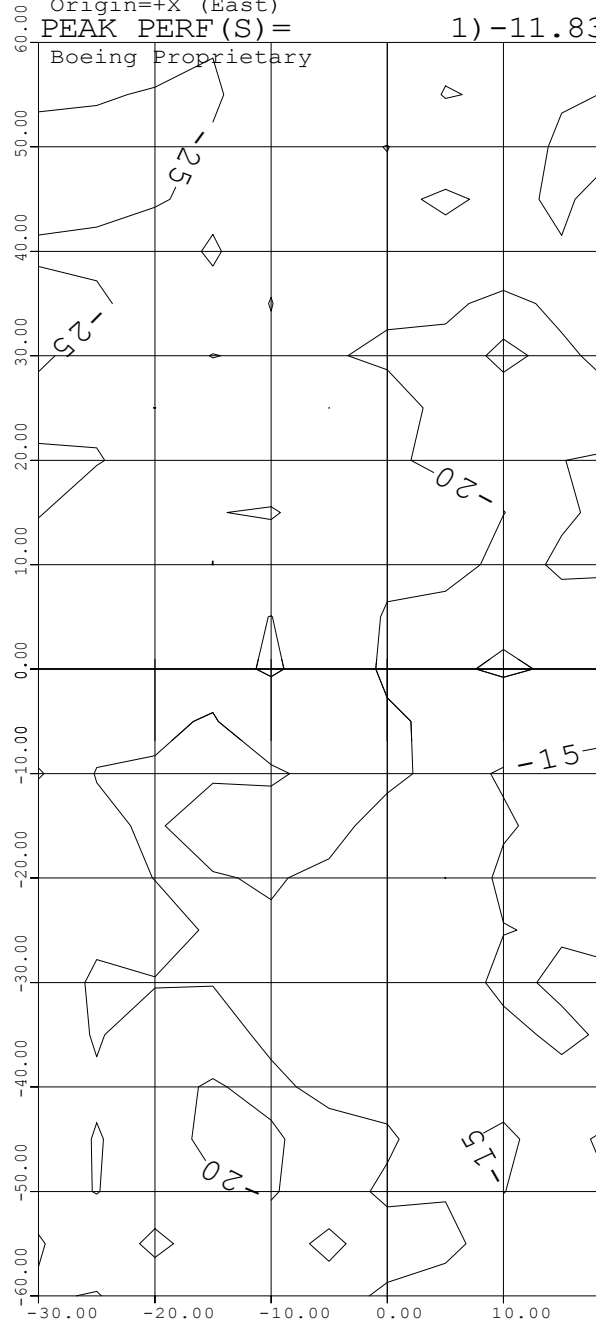
Cross-pol Gain (dBi)

Origin=+X (East)

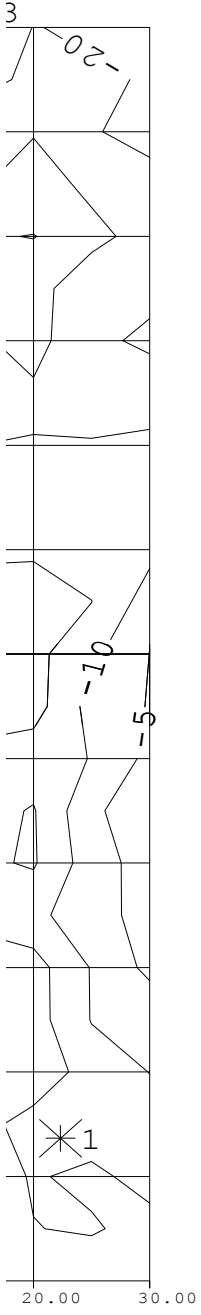
PEAK PERF(S) =

1) -11.83

Boeing Proprietary
qq925b FP: May 31 12 1:33:46P



BOTH AXES ARE IN DEG

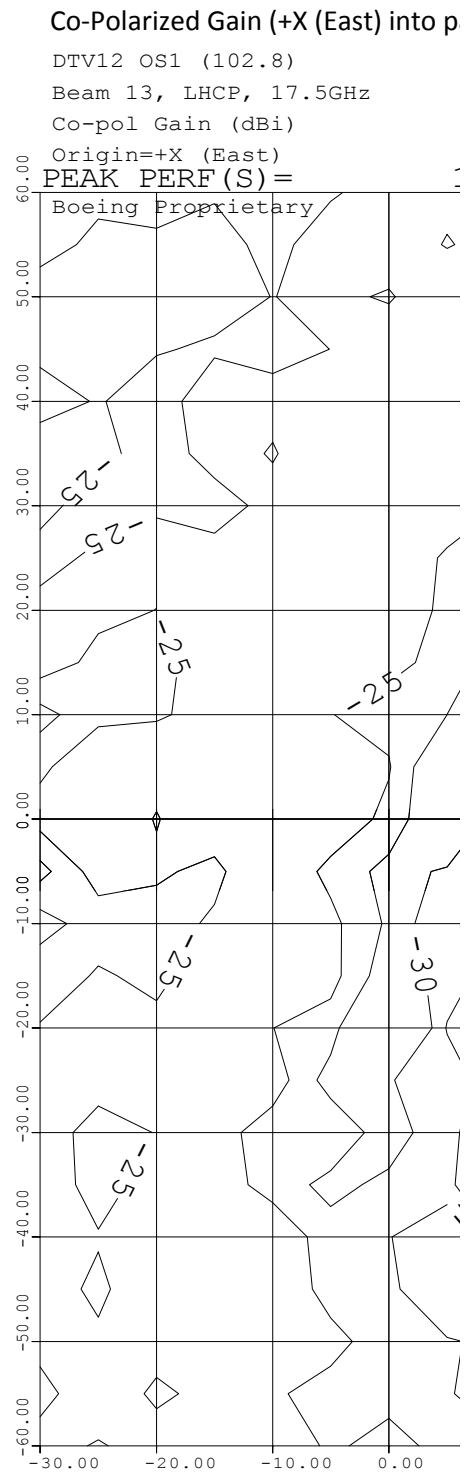


EG

Beam 13 OS1 LHCP 17.5

Z-Rotation (Deg.)	Y-Rotation (Deg.)	Co-pol Gain (dBi)	Cross-pol Gain (dBi)
-60	-30	-22.211	-20.067
-60	-25	-25.633	-20.087
-60	-20	-21.888	-23.907
-60	-15	-21.372	-23.441
-60	-10	-21.26	-22.079
-60	-5	-25.874	-23.463
-60	0	-23.114	-18.423
-60	5	-26.786	-17.231
-60	10	-27.702	-16.746
-60	15	-35.989	-17.994
-60	20	-31.238	-16.426
-60	25	-23.135	-17.319
-60	30	-21.095	-15.682
-55	-30	-27.235	-19.932
-55	-25	-20.174	-22.936
-55	-20	-26.295	-18.917
-55	-15	-22.882	-23.212
-55	-10	-24.605	-23.414
-55	-5	-26.088	-18.889
-55	0	-26.7	-23.043
-55	5	-28.272	-21.054
-55	10	-41.885	-17.193
-55	15	-27.998	-16.977
-55	20	-23.116	-14.8
-55	25	-20.806	-14.44
-55	30	-19.702	-16.651
-50	-30	-22.865	-23.183
-50	-25	-23.926	-19.694
-50	-20	-22.119	-23.714
-50	-15	-20.79	-20.326
-50	-10	-22.763	-19.353
-50	-5	-24.007	-23.055
-50	0	-26.704	-18.425
-50	5	-29.073	-19.181
-50	10	-32.53	-14.711
-50	15	-22.028	-17.36
-50	20	-19.692	-14.42
-50	25	-19.684	-16.254
-50	30	-18.775	-13.614
-45	-30	-22.057	-23.969

qg925b FP: May 31 12 1:33:31P



BOTH AXES ARE

-45	-25	-26.265	-20.046
-45	-20	-20.17	-22.292
-45	-15	-24.417	-18.484
-45	-10	-22.37	-18.618
-45	-5	-26.216	-24.151
-45	0	-27.356	-20.791
-45	5	-41.038	-15.901
-45	10	-30.249	-14.255
-45	15	-20.706	-17.603
-45	20	-20.131	-12.765
-45	25	-17.51	-12.728
-45	30	-18.981	-11.614
-40	-30	-20.882	-24.151
-40	-25	-24.491	-21
-40	-20	-20.956	-21.789
-40	-15	-22.898	-19.339
-40	-10	-21.018	-21.586
-40	-5	-27.661	-17.557
-40	0	-29.594	-17.105
-40	5	-37.016	-15.693
-40	10	-22.069	-16.711
-40	15	-19.209	-18.487
-40	20	-17.869	-19.552
-40	25	-17.913	-12.156
-40	30	-22.913	-10.009
-35	-30	-20.396	-24.57
-35	-25	-27.958	-19.613
-35	-20	-21.724	-24.063
-35	-15	-22.179	-23.852
-35	-10	-27.077	-18.337
-35	-5	-31.683	-19.366
-35	0	-28.54	-18.89
-35	5	-25.649	-19.901
-35	10	-20.979	-17.537
-35	15	-19.076	-13.21
-35	20	-19.239	-17.381
-35	25	-20.119	-9.742
-35	30	-24.722	-8.777
-30	-30	-22.189	-23.693
-30	-25	-27.206	-19.21
-30	-20	-24.832	-19.616
-30	-15	-22.53	-19.778
-30	-10	-27.966	-18.792
-30	-5	-25.448	-17.451

-30	0	-33.305	-15.847
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-30	10	-23.677	-13.137
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-30	25	-24.061	-9.715
-30	30	-19.044	-3.741
-25	-30	-20.916	-23.918
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-25	-5	-32.525	-18.957
-25	0	-30.227	-16.754
-25	5	-27.879	-16.068
-25	10	-20.666	-15.383
-25	15	-17.562	-14.404
-25	20	-18.827	-11.413
-25	25	-27.555	-6.61
-25	30	-14.225	-3.539
-20	-30	-24.524	-21.656
-20	-25	-21.874	-24.32
-20	-20	-23.46	-20.013
-20	-15	-22.364	-19.621
-20	-10	-24.945	-20.754
-20	-5	-27.339	-18.16
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-20	5	-24.603	-20.094
-20	10	-21.55	-13.88
-20	15	-19.866	-14.052
-20	20	-20.878	-15.514
-20	25	-26.167	-7.447
-20	30	-12.23	-2.778
-15	-30	-28.704	-20.639
-15	-25	-24.319	-21.101
-15	-20	-26.424	-19.248
-15	-15	-21.532	-23.991
-15	-10	-23.278	-22.4
-15	-5	-23.139	-23.365
-15	0	-33.531	-16.125
-15	5	-27.89	-17.658
-15	10	-21.222	-15.639
-15	15	-18.638	-13.08
-15	20	-20.625	-15.461

-15	25	-24.91	-6.034
-15	30	-12.032	-1.607
-10	-30	-22.534	-25.309
-10	-25	-27.876	-19.974
-10	-20	-26.722	-19.591
-10	-15	-24.392	-19.312
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-10	5	-28.905	-16.836
-10	10	-22.354	-14.298
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-5	-30	-31.79	-21.003
-5	-25	-22.475	-22.529
-5	-20	-24.386	-20.612
-5	-15	-26.061	-19.522
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-5	-5	-26.377	-20.968
-5	0	-31.812	-20.159
-5	5	-29.32	-18.916
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0	-5	-21.507	-22.922
0	0	-26.337	-19.761
0	5	-37.239	-16.085
0	10	-25.979	-14.155
0	15	-19.444	-15.536
0	20	-19.198	-16.118
0	25	-23.912	-10.54
0	30	-19.09	-4.515
5	-30	-25.934	-23.34
5	-25	-21.399	-25.198
5	-20	-23.866	-20.639

5	-15	-22.927	-21.102
5	-10	-22.807	-20.396
5	-5	-21.193	-23.689
5	0	-24.578	-20.029
5	5	-37.232	-16.763
5	10	-26.272	-15.987
5	15	-20.351	-17.106
5	20	-17.958	-19.099
5	25	-20.311	-15.194
5	30	-26.257	-9.179
10	-30	-32.038	-21.983
10	-25	-26.087	-22.584
10	-20	-25.172	-20.809
10	-15	-24.509	-19.956
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15	-30	-21.99	-25.813
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15	15	-26.794	-16.035
15	20	-21.171	-13.475
15	25	-18.316	-13.333
15	30	-18.664	-11.946
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20	-15	-22.434	-23.097
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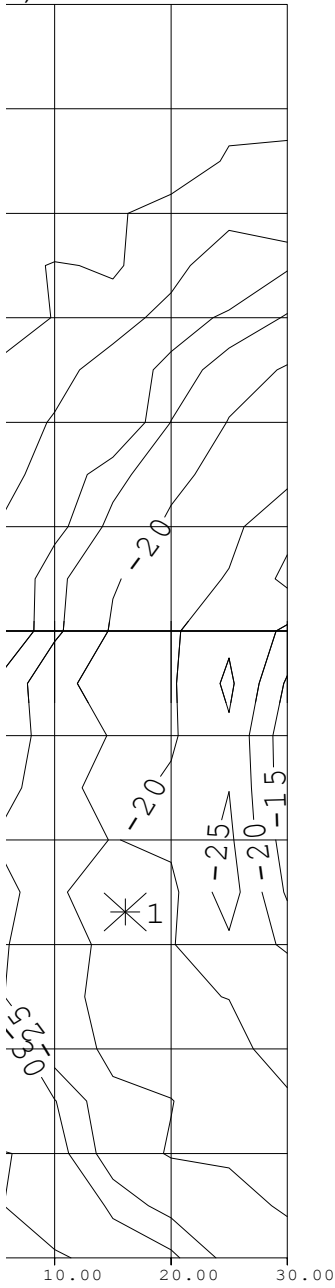
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25	-25	-23.419	-22.704
25	-20	-23.589	-24.191
25	-15	-22.545	-22.178
25	-10	-21.096	-23.236
25	-5	-20.882	-24.143
25	0	-22.196	-22.118
25	5	-25.538	-18.639
25	10	-27.058	-19.114
25	15	-33.946	-20.038
25	20	-28.232	-19.714
25	25	-22.255	-18.682
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30	30	-24.502	-13.813
35	-30	-22.608	-24.603
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35	30	-30.651	-17.413

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40	-15	-22.628	-24.911
40	-10	-23.423	-21.749
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40	15	-24.587	-19.627
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40	25	-26.565	-21.342
40	30	-29.18	-18.475
45	-30	-24.122	-24.942
45	-25	-22.957	-24.715
45	-20	-24.741	-24.297
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55	5	-25.278	-19.999
55	10	-23.182	-20.169
55	15	-23.237	-20.426
55	20	-23.162	-19.868
55	25	-22.749	-20.233
55	30	-22.694	-20.168
60	-30	-24.204	-25.06
60	-25	-25.771	-22.939
60	-20	-28.415	-22.16
60	-15	-25.315	-24.152
60	-10	-26.966	-21.567
60	-5	-25.329	-22.946
60	0	-23.718	-23.724
60	5	-23.872	-20.968
60	10	-21.871	-24.057
60	15	-21.692	-23.571
60	20	-23.983	-19.831
60	25	-22.785	-20.341
60	30	-23.177	-21.8

age)

1) -17.28



IN DEG

Cross-Polarized Gain (+X (East) into page)

DTV12 OS1 (102.8)

Beam 13, LHCP, 17.5GHz

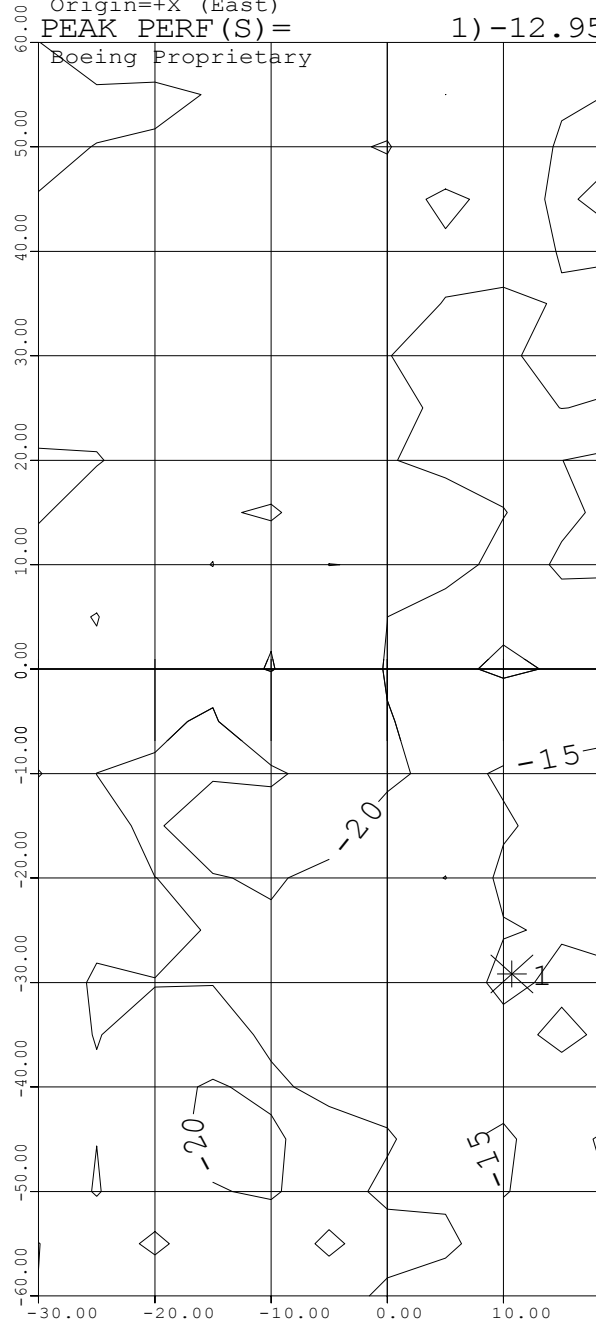
Cross-pol Gain (dBi)

Origin=+X (East)

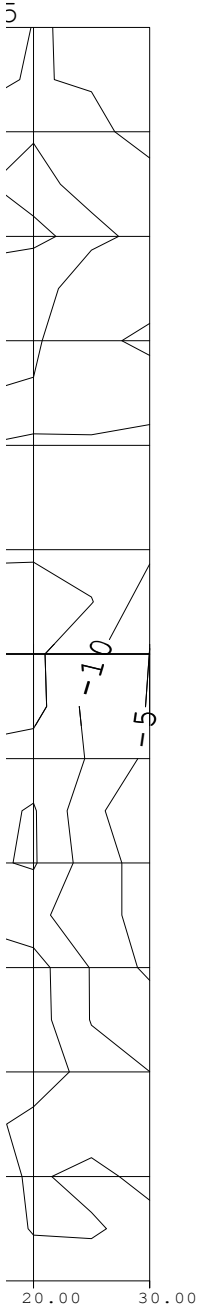
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1) -12.95

qq925b FP: May 31 12 1:33:36P



BOTH AXES ARE IN DEG

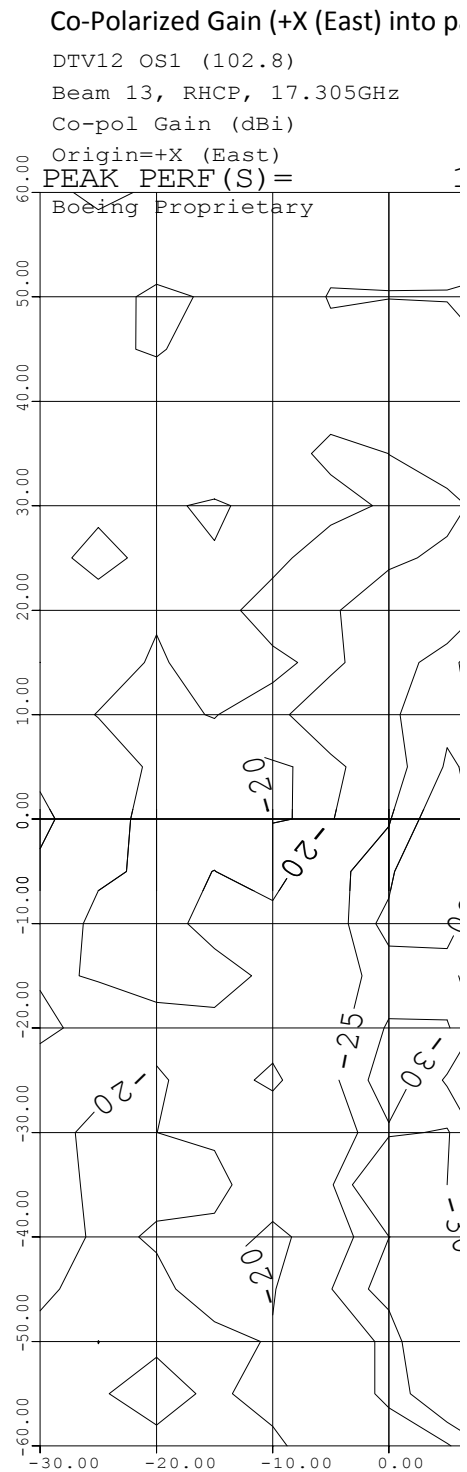


EG

Beam 13 OS1 RHCP 17.305

Z-Rotation (Deg.)	Y-Rotation (Deg.)	Co-pol Gain (dBi)	Cross-pol Gain (dBi)
-60	-30	-22.108	-17.32
-60	-25	-19.057	-19.541
-60	-20	-18.953	-20.86
-60	-15	-19.129	-20.938
-60	-10	-18.962	-22.232
-60	-5	-23.136	-18.551
-60	0	-21.99	-22.949
-60	5	-24.424	-21.258
-60	10	-33.009	-24.029
-60	15	-37.09	-16.903
-60	20	-30.913	-16.883
-60	25	-25.066	-15.435
-60	30	-21.906	-14.037
-55	-30	-18.373	-20.643
-55	-25	-19.633	-18.516
-55	-20	-21.6	-17.584
-55	-15	-19.23	-20.52
-55	-10	-21.742	-19.115
-55	-5	-21.459	-18.63
-55	0	-26.13	-20.593
-55	5	-36.723	-19.83
-55	10	-43.253	-17.607
-55	15	-28.603	-15.98
-55	20	-22.327	-16.453
-55	25	-18.783	-15.799
-55	30	-16.99	-13.781
-50	-30	-18.816	-19.915
-50	-25	-20.017	-18.763
-50	-20	-19.297	-20.149
-50	-15	-18.955	-19.242
-50	-10	-20.28	-19.471
-50	-5	-22.381	-21.949
-50	0	-25.849	-23.084
-50	5	-44.326	-19.801
-50	10	-27.191	-20.602
-50	15	-23.117	-14.797
-50	20	-19.278	-13.848
-50	25	-15.866	-14.562
-50	30	-15.61	-14.955
-45	-30	-20.856	-18.201

qq925b FP: May 31 12 1:33:21P



BOTH AXES ARE

-45	-25	-18.279	-20.719
-45	-20	-19.137	-18.617
-45	-15	-21.735	-17.065
-45	-10	-19.722	-19.254
-45	-5	-24.851	-20.021
-45	0	-32.844	-21.399
-45	5	-33.702	-18.171
-45	10	-23.127	-18.265
-45	15	-20.183	-13.176
-45	20	-16.56	-16.024
-45	25	-16.036	-12.539
-45	30	-16.74	-12.626
-40	-30	-23.224	-17.494
-40	-25	-19.122	-20.545
-40	-20	-20.387	-17.84
-40	-15	-20.754	-17.645
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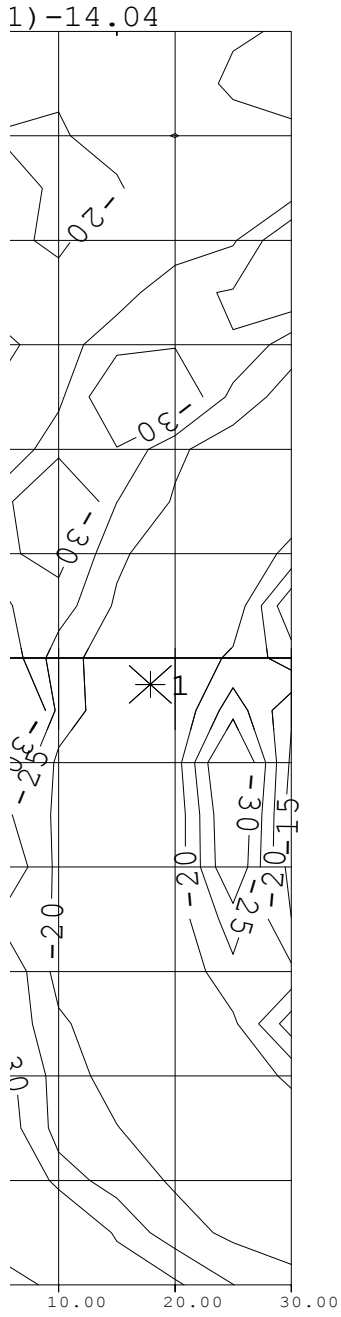
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15	25	-16.702	-14.9
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45	-25	-23.785	-21.788
45	-20	-25.671	-20.567
45	-15	-21.739	-19.682
45	-10	-20.844	-21.58
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45	25	-20.297	-18.218
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55	30	-19.544	-18.939
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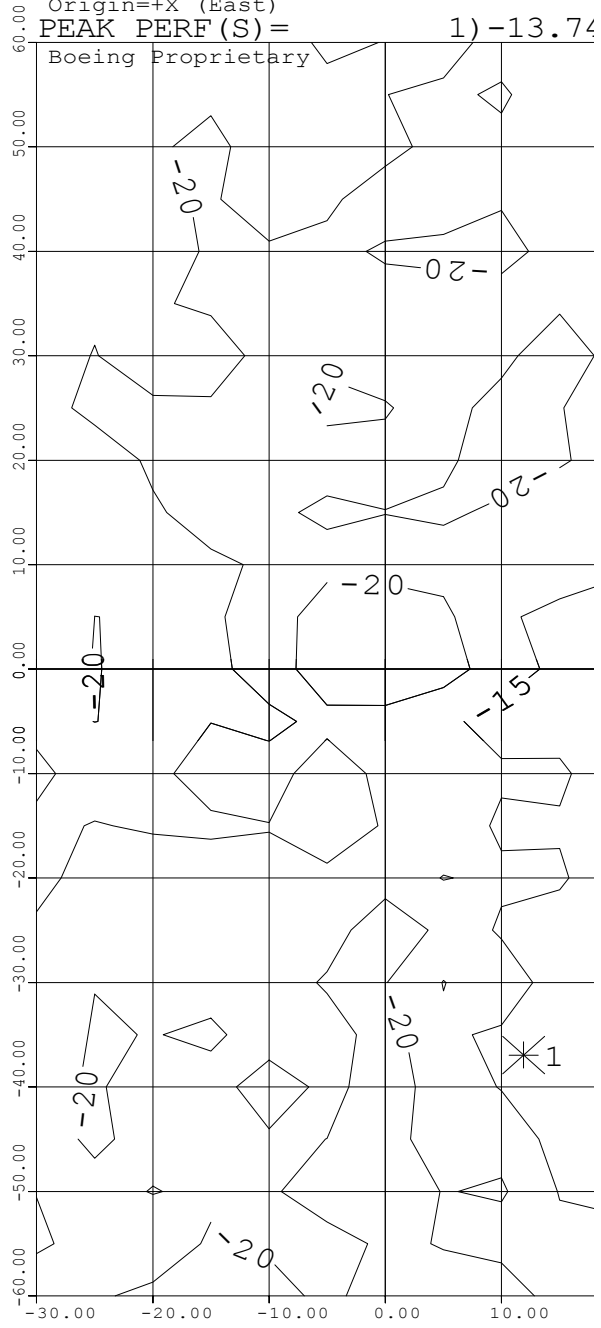
IN DEG

Cross-Polarized Gain (+X (East) into page)

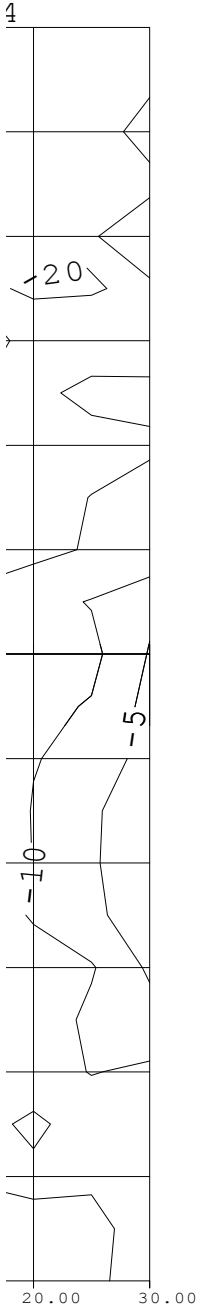
DTV12 OS1 (102.8)
Beam 13, RHCP, 17.305GHz
Cross-pol Gain (dBi)

Origin=+X (East)
PEAK PERF(S) = 1) -13.74

Boeing Proprietary
qq925b FP: May 31 12 1:33:26P



BOTH AXES ARE IN D

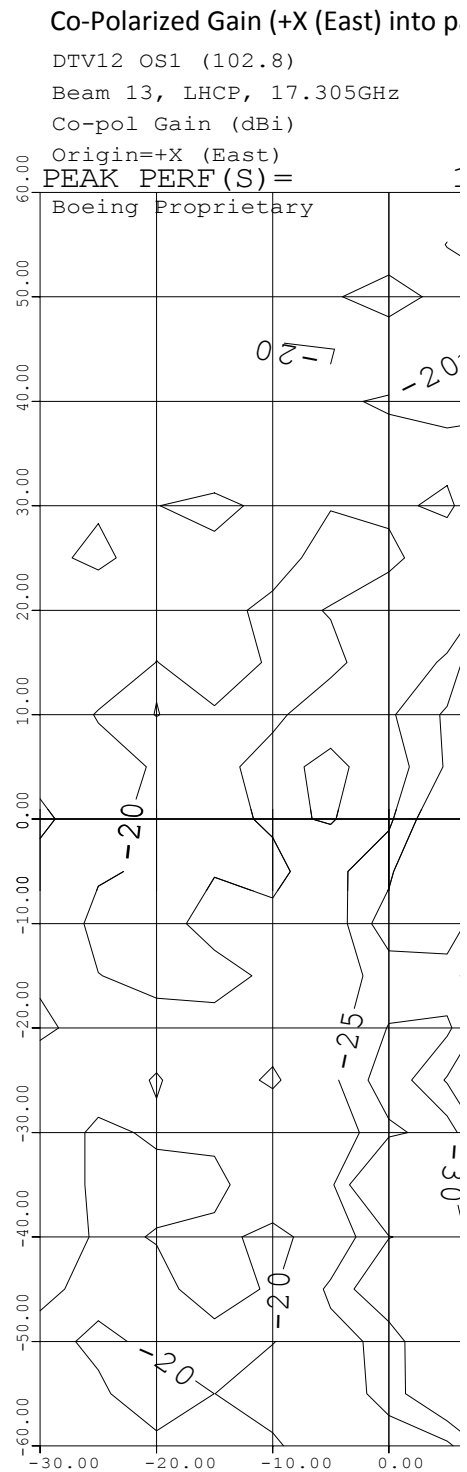


EG

Beam 13 OS1 LHCP 17.305

Z-Rotation (Deg.)	Y-Rotation (Deg.)	Co-pol Gain (dBi)	Cross-pol Gain (dBi)
-60	-30	-22.875	-17.417
-60	-25	-19.933	-20.32
-60	-20	-18.906	-21.144
-60	-15	-19.023	-21.212
-60	-10	-19.055	-22.288
-60	-5	-24.07	-19.041
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-60	5	-23.829	-20.546
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-60	15	-32.525	-16.558
-60	20	-29.609	-16.698
-60	25	-26.181	-15.577
-60	30	-23.38	-14.326
-55	-30	-18.704	-21.592
-55	-25	-19.266	-18.1
-55	-20	-22.701	-17.977
-55	-15	-19.977	-21.155
-55	-10	-22.794	-19.817
-55	-5	-21.197	-18.322
-55	0	-27.323	-21.166
-55	5	-36.78	-20.436
-55	10	-35.854	-17.413
-55	15	-28.042	-15.638
-55	20	-22.51	-16.875
-55	25	-19.294	-16.085
-55	30	-16.39	-13.611
-50	-30	-18.615	-19.734
-50	-25	-20.885	-19.091
-50	-20	-19.126	-20.415
-50	-15	-18.727	-18.901
-50	-10	-19.817	-19.363
-50	-5	-23.58	-22.536
-50	0	-26.162	-23.249
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-50	20	-20.15	-14.193
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-50	30	-15.794	-15.186
-45	-30	-21.002	-18.109

qq925b FP: May 31 12 1:33:11P



BOTH AXES ARE

-45	-25	-18.644	-21.558
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-45	15	-20.6	-13.228
-45	20	-16.905	-16.598
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-45	30	-17.387	-12.86
-40	-30	-23.918	-17.573
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-40	15	-18.339	-12.912
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-40	30	-21.753	-10.886
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-35	-25	-18.788	-21.316
-35	-20	-19.077	-20.007
-35	-15	-19.222	-21.518
-35	-10	-22.075	-17.238
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-25	15	-17.246	-11.807
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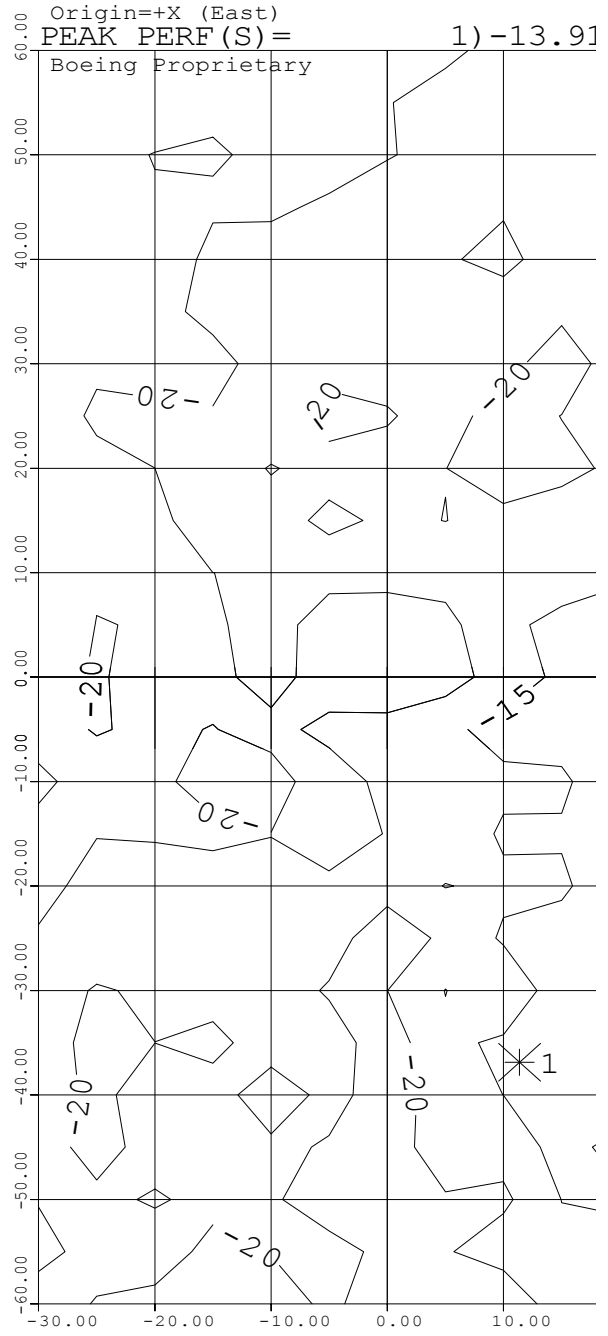
age)



IN DEG

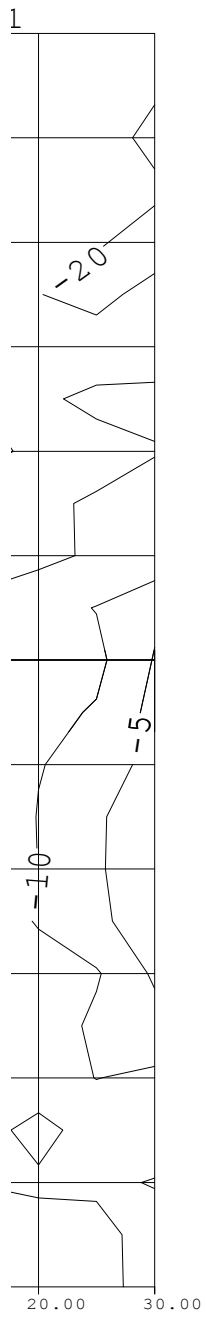
Cross-Polarized Gain (+X (East) into page)

DTV12 OS1 (102.8)
 Beam 13, LHCP, 17.305GHz
 Cross-pol Gain (dBi)



BOTH AXES ARE IN D

qq925b FP: May 31 12 1:33:16P



EG