

DTV12 Reverse Frequency Transmit Off-Axis Summary

6/1/2012

OS1 (102.8W) Beam 10

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 l

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

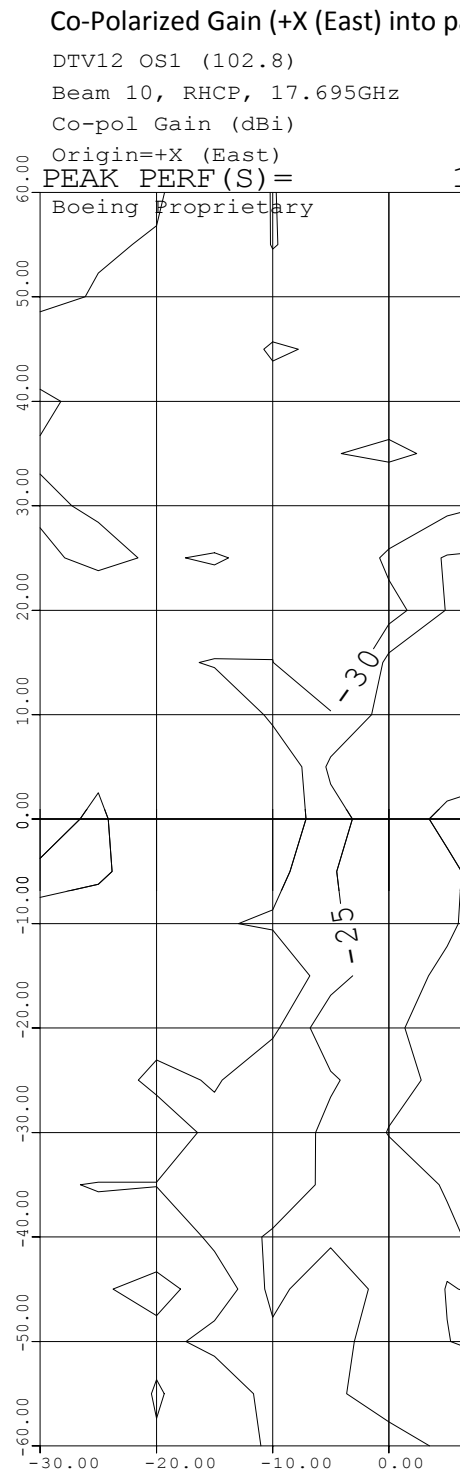
kevin.clancy@boeing.com

south)
Earth)

Beam 10 OS1 RHCP 17.695

Z-Rotation (Deg.)	Y-Rotation (Deg.)	Co-pol Gain (dBi)	Cross-pol Gain (dBi)
-60	-30	-44.736	-25.34
-60	-25	-32.826	-24.223
-60	-20	-31.202	-28.214
-60	-15	-37.574	-20.83
-60	-10	-28.057	-22.686
-60	-5	-26.768	-20.769
-60	0	-26.458	-17.257
-60	5	-24.376	-16.126
-60	10	-21.561	-18.465
-60	15	-20.026	-17.317
-60	20	-18.644	-19.555
-60	25	-19.805	-14.841
-60	30	-18.986	-16.932
-55	-30	-35.749	-28.706
-55	-25	-41.573	-23.689
-55	-20	-28.917	-24.926
-55	-15	-36.976	-22.798
-55	-10	-26.527	-22.451
-55	-5	-25.64	-19.673
-55	0	-23.264	-18.859
-55	5	-20.325	-19.321
-55	10	-21.897	-14.559
-55	15	-18.98	-16.333
-55	20	-18.662	-16.846
-55	25	-19.696	-14.646
-55	30	-19.662	-17.297
-50	-30	-36.408	-27.119
-50	-25	-49.422	-28.12
-50	-20	-32.977	-22.231
-50	-15	-27.154	-20.804
-50	-10	-26.244	-20.706
-50	-5	-26.475	-17.28
-50	0	-22.817	-16.548
-50	5	-20.082	-18.423
-50	10	-18.772	-17.384
-50	15	-19.841	-15.835
-50	20	-19.871	-15.121
-50	25	-18.325	-22.656
-50	30	-19.1	-14.893
-45	-30	-34.861	-25.684

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BOTH AXES ARE

-45	-25	-31.04	-23.783
-45	-20	-26.928	-24.479
-45	-15	-34.313	-23.813
-45	-10	-23.562	-23.247
-45	-5	-28.439	-16.472
-45	0	-23.124	-15.894
-45	5	-19.886	-15.963
-45	10	-20.474	-14.262
-45	15	-18.541	-15.651
-45	20	-18.458	-22.326
-45	25	-18.638	-12.872
-45	30	-18.247	-10.337
-40	-30	-48.778	-27.613
-40	-25	-34.545	-24.683
-40	-20	-36.197	-26.107
-40	-15	-28.353	-24.257
-40	-10	-24.23	-21.307
-40	-5	-24.12	-19.887
-40	0	-22.084	-15.584
-40	5	-20.643	-15.272
-40	10	-18.245	-18.836
-40	15	-19.961	-15.026
-40	20	-18.593	-13.424
-40	25	-19.322	-12.12
-40	30	-16.895	-7.77
-35	-30	-31.569	-27.156
-35	-25	-29.3	-23.485
-35	-20	-29.748	-22.654
-35	-15	-27.581	-20.425
-35	-10	-28.962	-19.459
-35	-5	-23.566	-18.628
-35	0	-22.035	-15.097
-35	5	-19.688	-16.926
-35	10	-17.636	-21.411
-35	15	-18.127	-20.157
-35	20	-19.775	-16.161
-35	25	-18.675	-9.642
-35	30	-14.596	-6.128
-30	-30	-31.864	-26.788
-30	-25	-44.225	-27.874
-30	-20	-35.319	-23.077
-30	-15	-27.777	-26.434
-30	-10	-29.399	-18.756
-30	-5	-23.444	-19.523

-30	0	-19.835	-18.932
-30	5	-19.129	-18.534
-30	10	-18.368	-16.552
-30	15	-20.3	-16.76
-30	20	-19.418	-13.209
-30	25	-16.578	-8.661
-30	30	-12.41	-7.713
-25	-30	-32.111	-28.276
-25	-25	-34.655	-29.852
-25	-20	-27.895	-24.058
-25	-15	-30.674	-24.525
-25	-10	-25.501	-23.971
-25	-5	-25.728	-17.742
-25	0	-21.287	-15.63
-25	5	-18.97	-16.612
-25	10	-18.957	-20.226
-25	15	-19.292	-17.493
-25	20	-18.451	-10.466
-25	25	-14.994	-9.717
-25	30	-11.491	-2.92
-20	-30	-42.683	-31.068
-20	-25	-30.225	-25.065
-20	-20	-33.288	-29.691
-20	-15	-33.888	-26.164
-20	-10	-31.122	-19.611
-20	-5	-21.629	-21.776
-20	0	-20.643	-18.372
-20	5	-18.289	-19.714
-20	10	-18.623	-19.203
-20	15	-18.773	-17.134
-20	20	-19.664	-14.757
-20	25	-13.916	-9.804
-20	30	-10.455	-2.504
-15	-30	-43.947	-33.005
-15	-25	-40.799	-29.368
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-15	-15	-30.282	-20.417
-15	-10	-35.182	-18.696
-15	-5	-27.035	-16.529
-15	0	-21.645	-16.023
-15	5	-19.232	-18.445
-15	10	-18.396	-14.478
-15	15	-19.881	-16.255
-15	20	-18.437	-14.183

-15	25	-13.704	-9.853
-15	30	-10.542	-2.351
-10	-30	-31.826	-30.137
-10	-25	-35.571	-31.988
-10	-20	-32.66	-32.673
-10	-15	-30.494	-28.059
-10	-10	-29.281	-23.555
-10	-5	-26.326	-17.672
-10	0	-20.039	-20.517
-10	5	-20.587	-14.905
-10	10	-17.567	-17.938
-10	15	-20.004	-16.215
-10	20	-19.041	-13.552
-10	25	-15.464	-7.129
-10	30	-10.139	-5.103
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-5	-20	-36.055	-34.489
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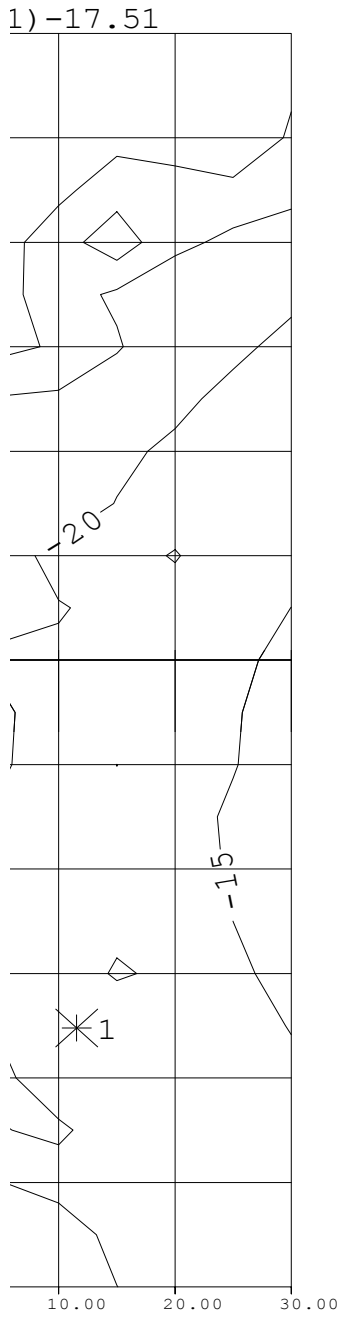
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10	-5	-29.281	-21.933
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15	-10	-29.905	-25.106
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20	20	-18.813	-16.478
20	25	-19.253	-20.922
20	30	-19.966	-18.811
25	-30	-32.822	-30.078
25	-25	-26.197	-27.998
25	-20	-31.764	-25.655
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25	-5	-38.933	-22.547
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25	10	-24.118	-17.136
25	15	-21.133	-18.811
25	20	-21.567	-14.659
25	25	-18.146	-18.401
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35	0	-28.377	-28.21
35	5	-31.753	-22.422
35	10	-27.262	-22.341
35	15	-24.112	-20.407
35	20	-22.309	-19.922
35	25	-20.603	-16.674
35	30	-21.459	-15.224

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40	0	-34.416	-30.232
40	5	-31.537	-28.649
40	10	-27.78	-25.624
40	15	-33.057	-18.097
40	20	-25.933	-18.212
40	25	-24.12	-17.057
40	30	-22.77	-16.21
45	-30	-38.706	-31.267
45	-25	-32.744	-34.075
45	-20	-42.308	-33.913
45	-15	-35.704	-28.748
45	-10	-28.973	-25.483
45	-5	-31.298	-25.192
45	0	-40.599	-30.652
45	5	-40.5	-24.215
45	10	-30.935	-27.306
45	15	-27.842	-21.916
45	20	-26.992	-23.059
45	25	-27.345	-18.968
45	30	-26.294	-17.198
50	-30	-26.511	-29.186
50	-25	-31.005	-28.756
50	-20	-33.34	-28.329
50	-15	-30.755	-29.401
50	-10	-36.528	-35.892
50	-5	-42.83	-33.321
50	0	-42.307	-31.187
50	5	-42.627	-25.447
50	10	-40.898	-25.957
50	15	-31.185	-20.992
50	20	-33.538	-22.031
50	25	-38.475	-18.968
50	30	-28.655	-21.262
55	-30	-29.568	-28.534
55	-25	-28.801	-28.414
55	-20	-30.858	-29.9
55	-15	-46.375	-32.636
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55	-5	-36.393	-29.164
55	0	-43.713	-29.745
55	5	-32.5	-25.296
55	10	-32.801	-23.565
55	15	-46.696	-28.81
55	20	-36.577	-26.145
55	25	-34.395	-21.518
55	30	-31.361	-20.274
60	-30	-31.758	-28.903
60	-25	-27.922	-29.763
60	-20	-28.482	-36.639
60	-15	-39.58	-30.637
60	-10	-29.561	-32.164
60	-5	-36.635	-27.89
60	0	-30.413	-25.359
60	5	-37.93	-40.855
60	10	-34.343	-27.617
60	15	-43.021	-32.31
60	20	-34.053	-23.753
60	25	-37.972	-23.206
60	30	-31.5	-26.959

age)



IN DEG

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

DTV12 OS1 (102.8)

Beam 10, RHCP, 17.695GHz

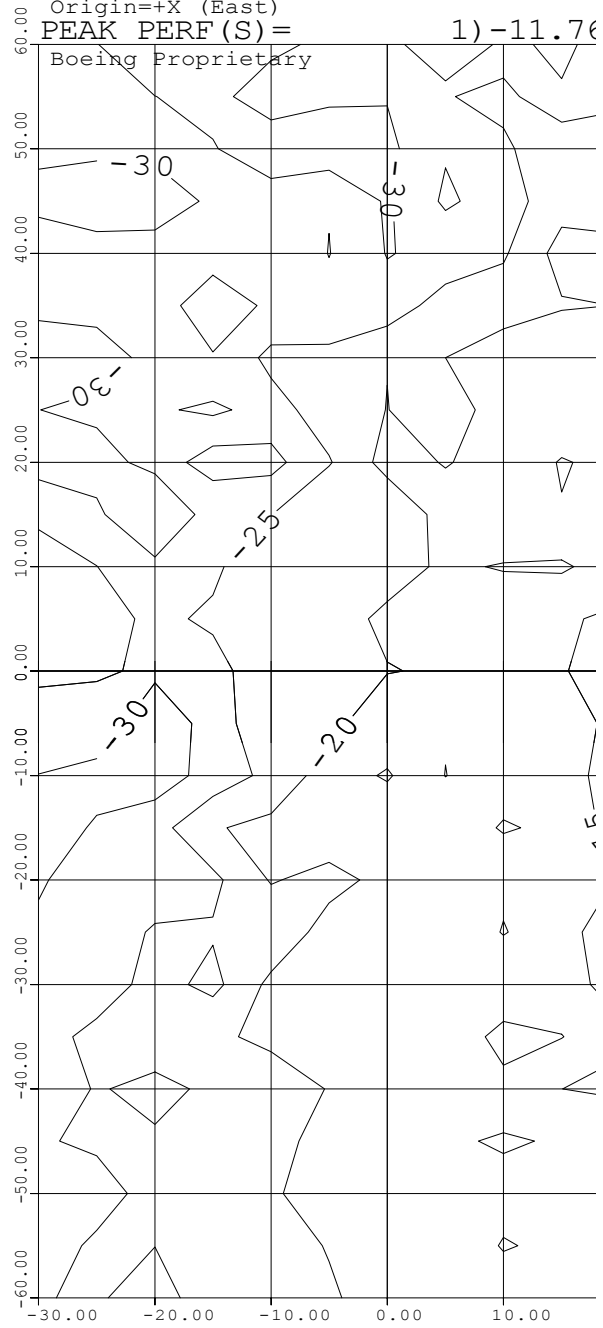
Cross-pol Gain (dBi)

Origin=+X (East)

PEAK PERF(S) = 1) -11.76

Boeing Proprietary

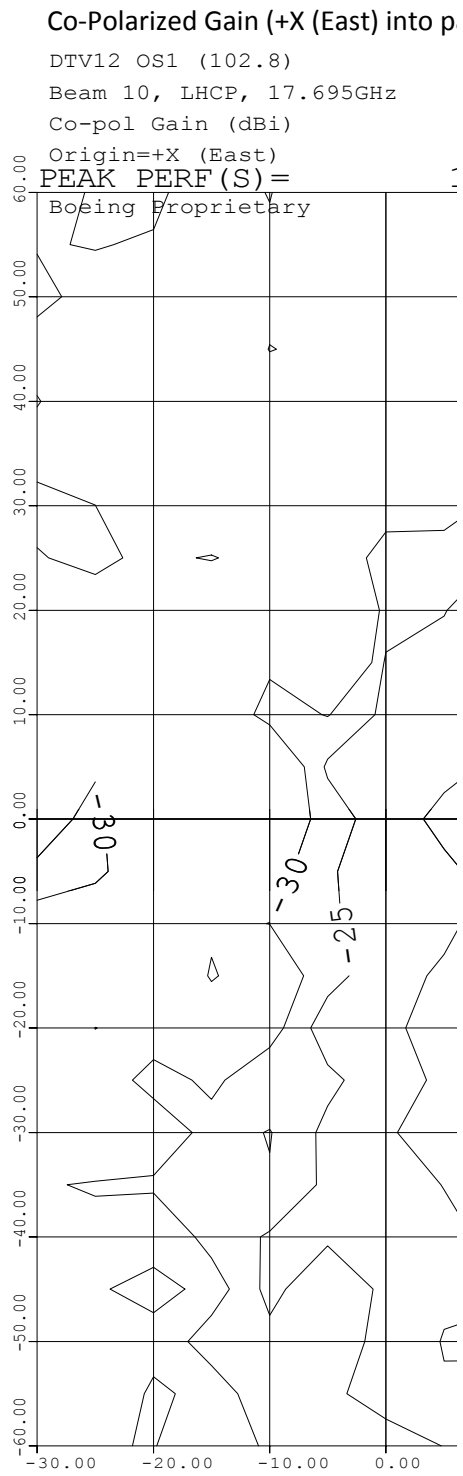
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BOTH AXES ARE IN DEG

Beam 10 OS1 LHCP 17.695

Z-Rotation (Deg.)	Y-Rotation (Deg.)	Co-pol Gain (dBi)	Cross-pol Gain (dBi)
-60	-30	-43.71	-24.846
-60	-25	-31.327	-24.6
-60	-20	-29.256	-27.734
-60	-15	-43.057	-20.408
-60	-10	-26.855	-22.202
-60	-5	-26.515	-20.943
-60	0	-26.919	-17.151
-60	5	-24.901	-16.086
-60	10	-21.327	-18.474
-60	15	-19.903	-17.326
-60	20	-18.883	-20.128
-60	25	-19.032	-14.618
-60	30	-18.46	-16.725
-55	-30	-33.158	-29.815
-55	-25	-40.868	-23.342
-55	-20	-27.954	-25.804
-55	-15	-33.36	-22.065
-55	-10	-25.934	-22.432
-55	-5	-25.9	-19.884
-55	0	-23.155	-18.979
-55	5	-20.443	-19.877
-55	10	-22.436	-14.617
-55	15	-18.679	-16.081
-55	20	-19.307	-17.092
-55	25	-19.739	-14.881
-55	30	-20.261	-17.947
-50	-30	-35.388	-26.256
-50	-25	-44.224	-28.092
-50	-20	-34.316	-22.179
-50	-15	-27.055	-21.122
-50	-10	-26.624	-20.943
-50	-5	-27.494	-17.276
-50	0	-23.545	-16.561
-50	5	-19.735	-18.189
-50	10	-18.58	-17.197
-50	15	-20.731	-16.21
-50	20	-20.268	-15.432
-50	25	-19.036	-22.37
-50	30	-18.58	-14.88
-45	-30	-33.043	-25.332



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BOTH AXES ARE

-45	-25	-31.175	-23.244
-45	-20	-26.5	-25.173
-45	-15	-32.944	-23.58
-45	-10	-23.369	-23.901
-45	-5	-29.326	-16.35
-45	0	-23.775	-15.971
-45	5	-20.879	-16.365
-45	10	-20.914	-14.409
-45	15	-18.737	-15.704
-45	20	-19.095	-22.393
-45	25	-17.699	-12.88
-45	30	-17.805	-10.173
-40	-30	-42.168	-27.678
-40	-25	-33.555	-24.15
-40	-20	-34.905	-26.272
-40	-15	-28.019	-24.583
-40	-10	-24.427	-21.605
-40	-5	-24.077	-19.984
-40	0	-23.064	-15.805
-40	5	-21.617	-15.555
-40	10	-18.32	-18.919
-40	15	-20.195	-15.269
-40	20	-17.873	-13.341
-40	25	-18.737	-11.931
-40	30	-16.79	-7.735
-35	-30	-31.056	-27.455
-35	-25	-29.001	-23.246
-35	-20	-29.062	-22.638
-35	-15	-27.372	-20.47
-35	-10	-29.584	-19.514
-35	-5	-23.881	-18.772
-35	0	-22.982	-15.251
-35	5	-19.825	-17.114
-35	10	-17.864	-21.652
-35	15	-18.27	-19.934
-35	20	-19.601	-15.793
-35	25	-18.338	-9.491
-35	30	-14.66	-6.157
-30	-30	-30.883	-26.683
-30	-25	-44.084	-27.871
-30	-20	-34.39	-22.837
-30	-15	-27.823	-26.648
-30	-10	-30.259	-18.822
-30	-5	-23.651	-19.714

-30	0	-20.156	-19.152
-30	5	-19.367	-18.878
-30	10	-18.458	-16.642
-30	15	-20.351	-16.872
-30	20	-19.064	-13.009
-30	25	-16.157	-8.598
-30	30	-12.506	-7.789
-25	-30	-31.96	-28.266
-25	-25	-34.264	-29.97
-25	-20	-27.581	-23.976
-25	-15	-31.231	-24.69
-25	-10	-25.787	-24.173
-25	-5	-26.304	-17.91
-25	0	-21.672	-15.716
-25	5	-19.272	-16.81
-25	10	-19.061	-20.505
-25	15	-19.3	-17.405
-25	20	-17.739	-10.35
-25	25	-15.072	-9.74
-25	30	-12.023	-2.989
-20	-30	-43.598	-30.61
-20	-25	-29.885	-24.821
-20	-20	-33.758	-29.883
-20	-15	-34.529	-26.348
-20	-10	-32.471	-19.708
-20	-5	-21.938	-21.972
-20	0	-20.778	-18.476
-20	5	-18.498	-19.96
-20	10	-18.692	-19.412
-20	15	-18.581	-17.1
-20	20	-19.359	-14.728
-20	25	-13.958	-9.746
-20	30	-11.029	-2.596
-15	-30	-42.721	-32.705
-15	-25	-39.633	-29.752
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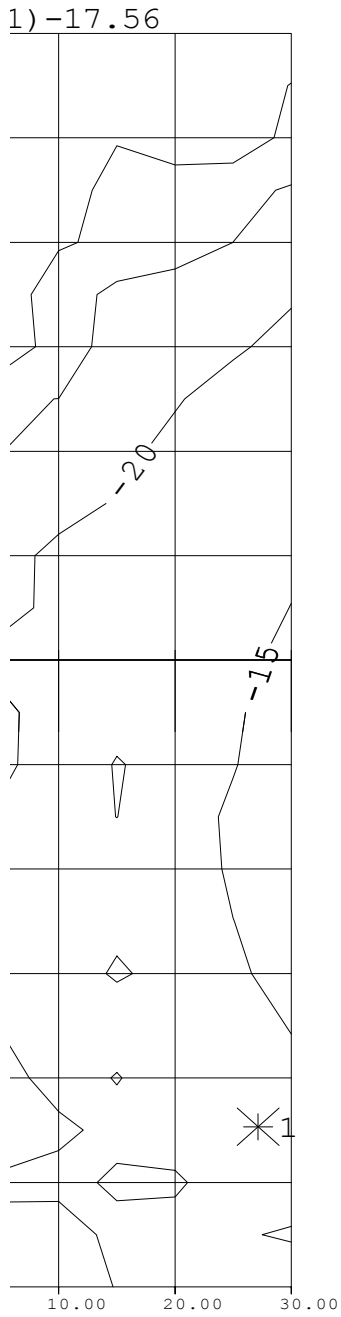
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age)



IN DEG

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

DTV12 OS1 (102.8)

Beam 10, LHCP, 17.695GHz

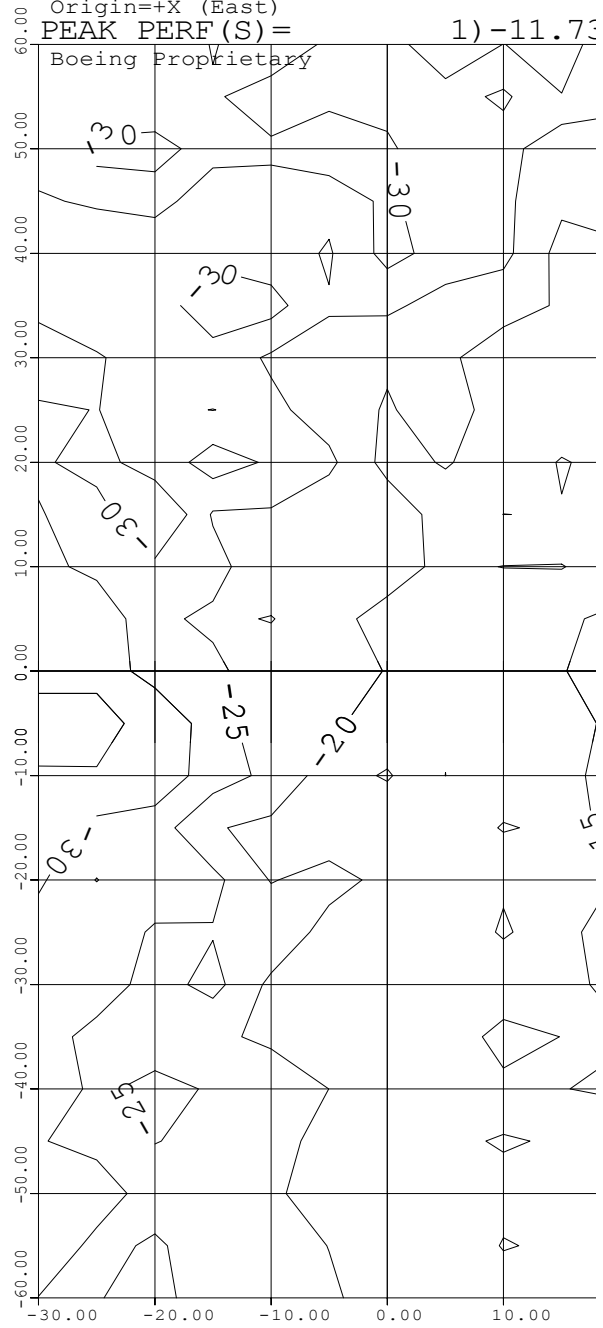
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Origin=+X (East)

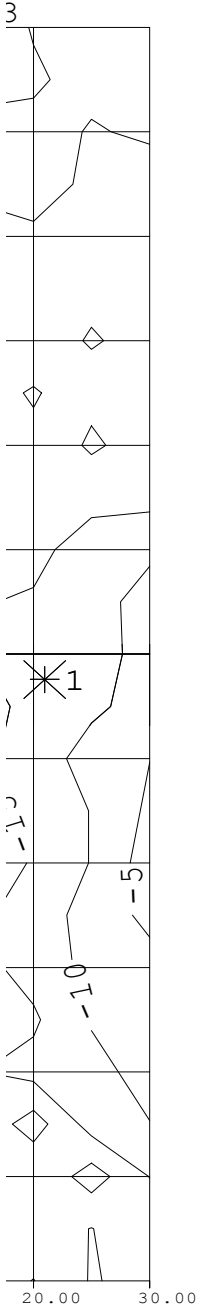
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BOTH AXES ARE IN DEG



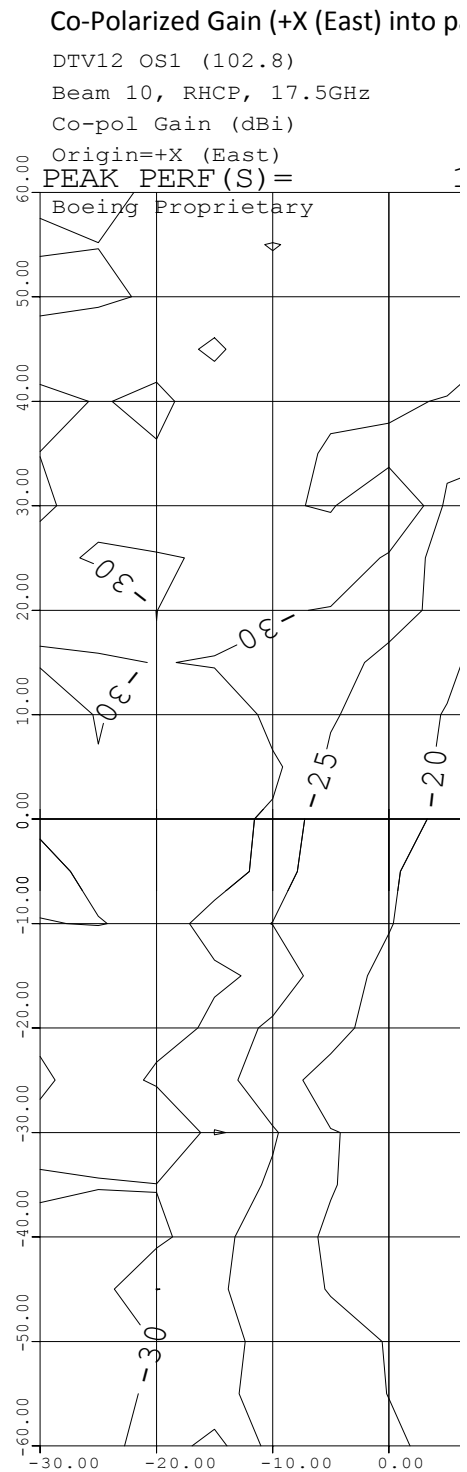
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Beam 10 OS1 RHCP 17.5

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BOTH AXES ARE

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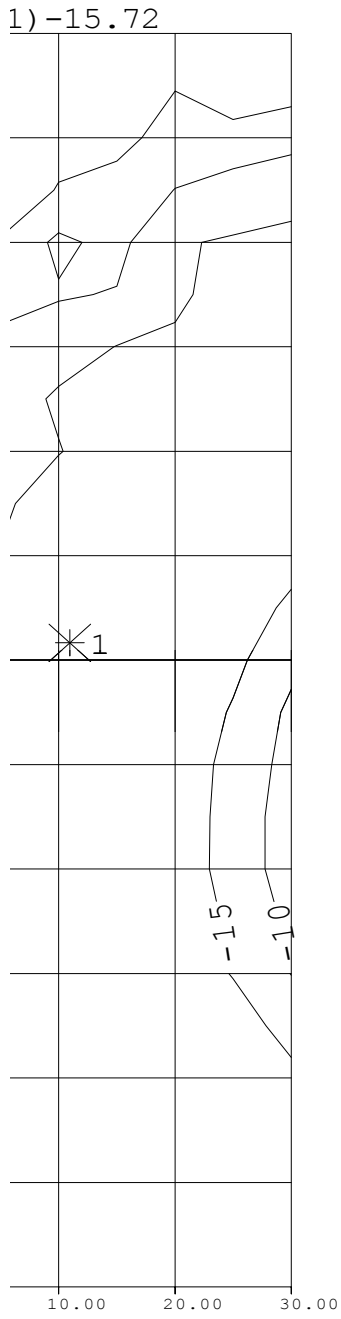
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40	-10	-30.984	-26.911
40	-5	-30.837	-31.219
40	0	-32.391	-22.819
40	5	-28.907	-24.601
40	10	-24.061	-24.016
40	15	-26.408	-16.929
40	20	-20.468	-20.414
40	25	-19.448	-19.133
40	30	-18.952	-16.916
45	-30	-37.38	-28.397
45	-25	-36.157	-26.421
45	-20	-33.931	-25.53
45	-15	-28.502	-25.657
45	-10	-36.096	-28.893
45	-5	-33.341	-25.792
45	0	-34.627	-23.521
45	5	-39.806	-20.591
45	10	-29.11	-24.138
45	15	-27.745	-19.574
45	20	-24.905	-20.228
45	25	-23.315	-17.347
45	30	-21.568	-17.24
50	-30	-25.693	-28.953
50	-25	-28.467	-29.757
50	-20	-31.165	-30.69
50	-15	-35.419	-30.351
50	-10	-32.388	-24.227
50	-5	-32.07	-23.855
50	0	-37.26	-26.426
50	5	-46.136	-23.035
50	10	-35.092	-21.728
50	15	-31.805	-20.469
50	20	-27.608	-21.309
50	25	-27.419	-18.47
50	30	-26.64	-17.868
55	-30	-31.271	-28.556
55	-25	-30.129	-30.757
55	-20	-34.969	-31.461
55	-15	-31.883	-25.583
55	-10	-29.695	-32.983

55	-5	-31.919	-29.16
55	0	-42.849	-28.639
55	5	-43.809	-24.578
55	10	-40.491	-24.001
55	15	-37.044	-24.732
55	20	-30.272	-24.74
55	25	-34.838	-19.763
55	30	-32.253	-18.882
60	-30	-28.752	-27.022
60	-25	-26.576	-31.896
60	-20	-32.172	-32.122
60	-15	-31.762	-27.474
60	-10	-37.24	-28.015
60	-5	-47.749	-29.805
60	0	-39.034	-30.771
60	5	-32.434	-23.668
60	10	-33.835	-23.023
60	15	-33.819	-23.127
60	20	-34.245	-23.062
60	25	-38.984	-21.073
60	30	-28.933	-27.977

age)



IN DEG

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

DTV12 OS1 (102.8)

Beam 12, RHCP, 17.5GHz

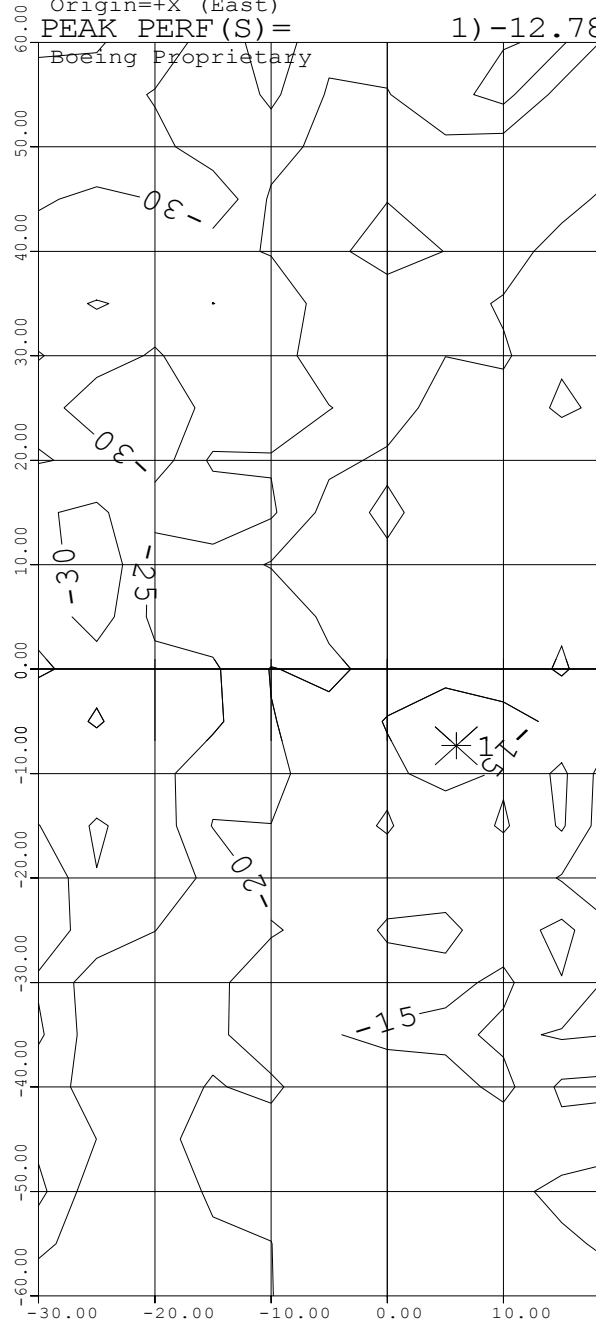
Cross-pol Gain (dBi)

Origin=+X (East)

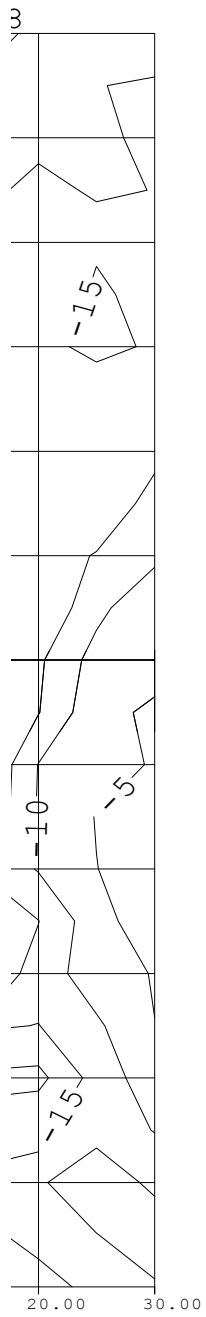
PEAK PERF(S) =

1) -12.78

qq925b FP: Jun 1 12 11:37:41A



BOTH AXES ARE IN DEG



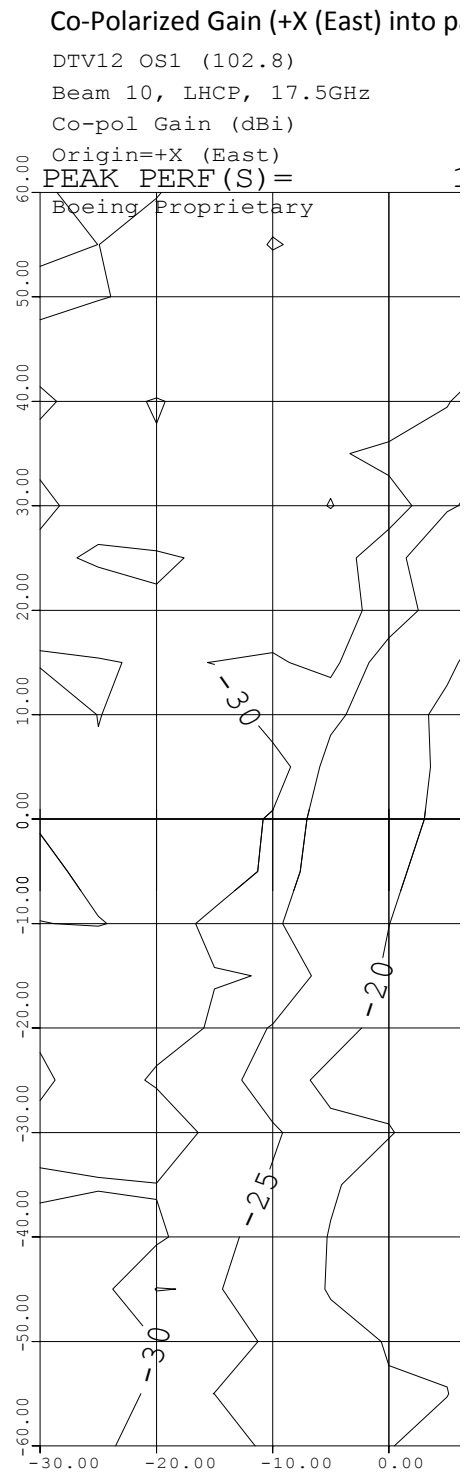
EG

Beam 10 OS1 LHCP 17.5

Z-Rotation (Deg.)	Y-Rotation (Deg.)	Co-pol Gain (dBi)	Cross-pol Gain (dBi)
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-60	-25	-31.695	-24.478
-60	-20	-26.025	-24.012
-60	-15	-29.819	-19.286
-60	-10	-22.919	-21.165
-60	-5	-22.66	-18.455
-60	0	-20.156	-18.522
-60	5	-18.515	-18.142
-60	10	-19.249	-14.976
-60	15	-17.836	-15.929
-60	20	-17.158	-13.979
-60	25	-17.898	-16.033
-60	30	-17.677	-14.57
-55	-30	-34.751	-25.656
-55	-25	-37.927	-22.638
-55	-20	-27.106	-23.843
-55	-15	-24.951	-21.526
-55	-10	-23.531	-20.296
-55	-5	-22.481	-17.166
-55	0	-20.225	-17.476
-55	5	-20.103	-14.605
-55	10	-16.5	-18.461
-55	15	-17.722	-15.717
-55	20	-15.987	-16.177
-55	25	-17.222	-21.248
-55	30	-17.188	-20.012
-50	-30	-41.708	-23.769
-50	-25	-42.896	-23.121
-50	-20	-29.801	-20.833
-50	-15	-28.253	-19.407
-50	-10	-23.896	-17.976
-50	-5	-21.304	-17.851
-50	0	-19.804	-16.226
-50	5	-19.289	-14.9
-50	10	-18.126	-15.027
-50	15	-16.212	-16.817
-50	20	-16.922	-20.575
-50	25	-16.075	-15.461
-50	30	-19.329	-20.593
-45	-30	-42.956	-27.886

FP: Jun 12 11:37: 4A

qg925b



BOTH AXES ARE

-45	-25	-31.708	-20.601
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-45	0	-18.047	-17.888
-45	5	-17.13	-14.699
-45	10	-16.228	-19.226
-45	15	-16.49	-19.212
-45	20	-16.03	-15.808
-45	25	-18.407	-17.542
-45	30	-17.783	-11.655
-40	-30	-34.148	-28.333
-40	-25	-39.069	-22.676
-40	-20	-30.957	-24.534
-40	-15	-26.412	-21.802
-40	-10	-23.113	-17.567
-40	-5	-19.786	-18.046
-40	0	-18.6	-15.037
-40	5	-16.525	-15.69
-40	10	-17.829	-13.643
-40	15	-17.334	-22.668
-40	20	-18.157	-16.083
-40	25	-17.714	-12.231
-40	30	-16.079	-7.645
-35	-30	-27.746	-28.298
-35	-25	-28.705	-22.359
-35	-20	-29.629	-23.307
-35	-15	-28.498	-19.35
-35	-10	-24.321	-19.029
-35	-5	-20.473	-18.149
-35	0	-17.879	-16.05
-35	5	-17.527	-15.33
-35	10	-16.568	-13.924
-35	15	-16.19	-14.261
-35	20	-18.077	-12.965
-35	25	-17.025	-9.317
-35	30	-13.148	-6.322
-30	-30	-34.772	-28.146
-30	-25	-38.134	-23.211
-30	-20	-42.408	-20.532
-30	-15	-25.074	-23.069
-30	-10	-25.932	-18.089
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-30	0	-20.274	-13.653
-30	5	-17.428	-14.448
-30	10	-17.083	-17.202
-30	15	-18.195	-21.344
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-30	25	-14.539	-9.561
-30	30	-10.232	-5.938
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-25	-25	-38.812	-25.575
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-25	15	-17.528	-17.756
-25	20	-17.904	-12.268
-25	25	-14.438	-6.019
-25	30	-9.513	-2.651
-20	-30	-32.709	-24.747
-20	-25	-36.815	-29.029
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-20	20	-18.576	-10.4
-20	25	-12.505	-8.06
-20	30	-8.662	-1.514
-15	-30	-43.647	-25.057
-15	-25	-44.472	-25.189
-15	-20	-34.946	-21.71
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-15	-10	-29.754	-18.087
-15	-5	-22.61	-16.827
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0	10	-16.35	-15.181
0	15	-17.141	-19.671
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0	30	-11.116	-4.002
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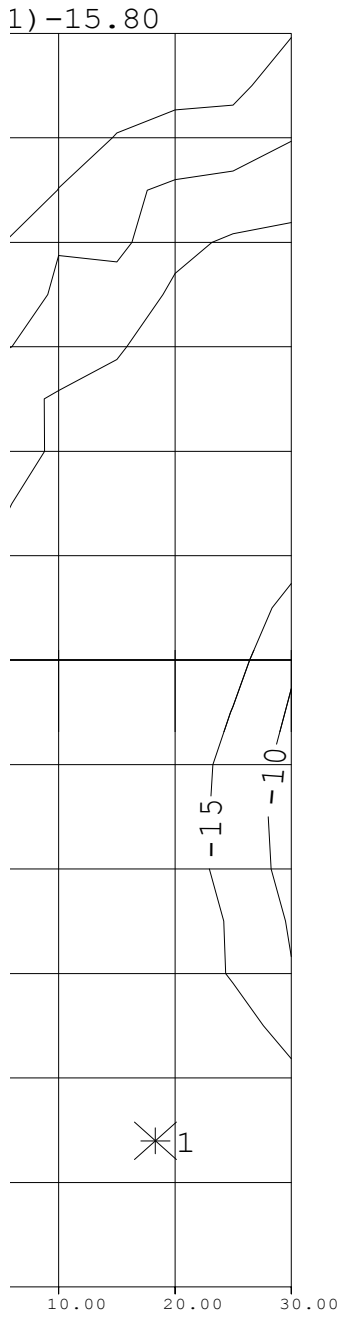
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20	10	-19.597	-14.415
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20	20	-16.533	-15.841
20	25	-16.767	-15.624
20	30	-18.152	-20.216
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25	-20	-28.968	-31.965
25	-15	-31.143	-26.419
25	-10	-37.368	-26.967
25	-5	-32.898	-21.1
25	0	-26.316	-18.053
25	5	-21.862	-18.082
25	10	-19.376	-18.813
25	15	-19.106	-13.894
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30	10	-23.27	-17.902
30	15	-20.288	-15.628
30	20	-18.59	-14.089
30	25	-16.465	-17.757
30	30	-17.089	-13.527
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35	-20	-31.13	-31.854
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35	5	-27.434	-21.463
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35	30	-16.921	-16.567

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40	10	-25.192	-23.823
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40	25	-19.433	-18.573
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45	-25	-35.638	-25.885
45	-20	-41.594	-25.681
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45	-5	-35.459	-24.78
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45	15	-25.851	-18.898
45	20	-24.225	-19.465
45	25	-22.903	-17.417
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55	10	-36.936	-23.587
55	15	-39.035	-25.124
55	20	-31.669	-24.883
55	25	-30.763	-19.55
55	30	-28.396	-18.663
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60	-25	-27.11	-34.055
60	-20	-29.693	-29.047
60	-15	-33.502	-28.334
60	-10	-33.872	-26.44
60	-5	-40.495	-28.359
60	0	-34.759	-28.847
60	5	-35.613	-24.699
60	10	-37.667	-23.165
60	15	-37.823	-24.405
60	20	-34.711	-22.514
60	25	-36.808	-21.143
60	30	-30.146	-26.154

age)



IN DEG

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

DTV12 OS1 (102.8)

Beam 10, LHCP, 17.5GHz

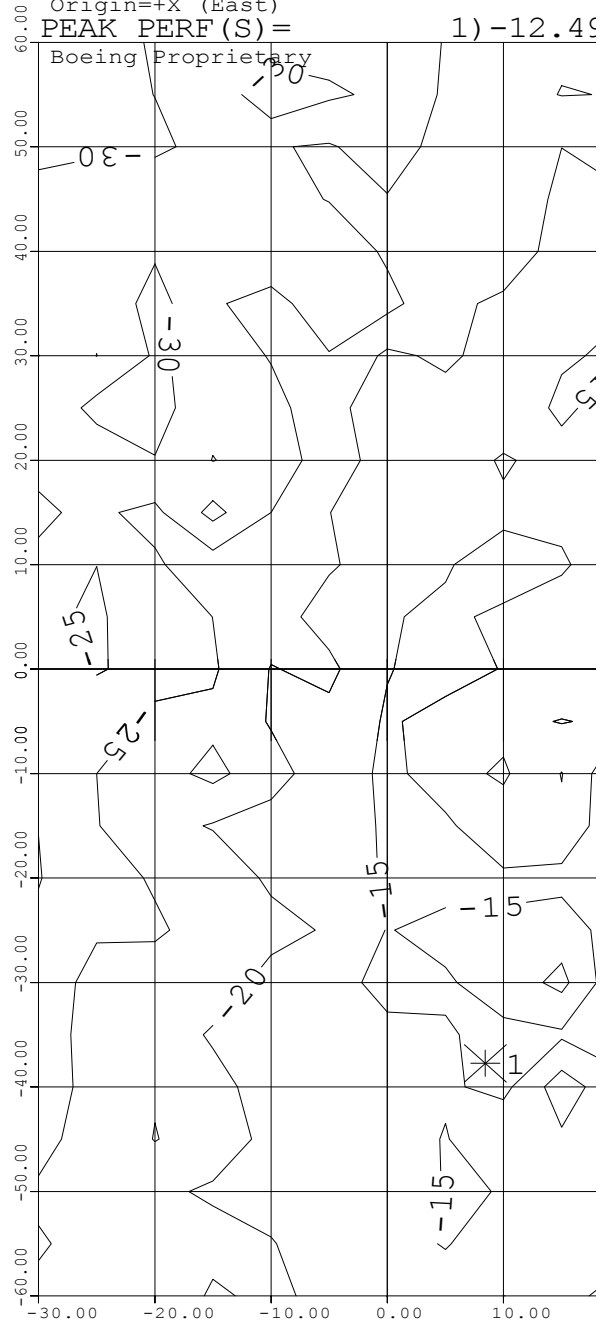
Cross-pol Gain (dBi)

Origin=+X (East)

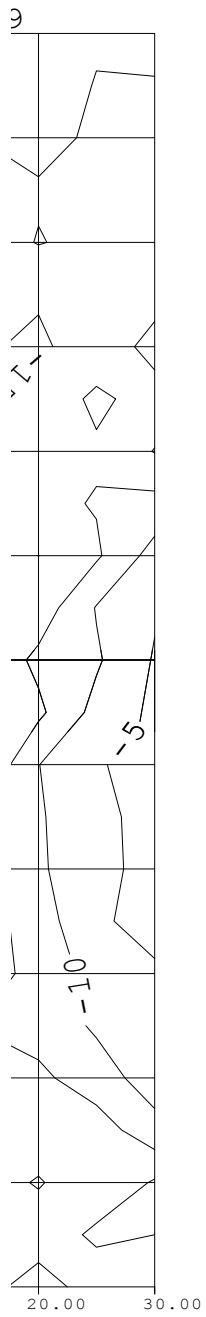
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1) -12.49

qq925b FP: Jun 1 12 11:37:10A



BOTH AXES ARE IN DEG

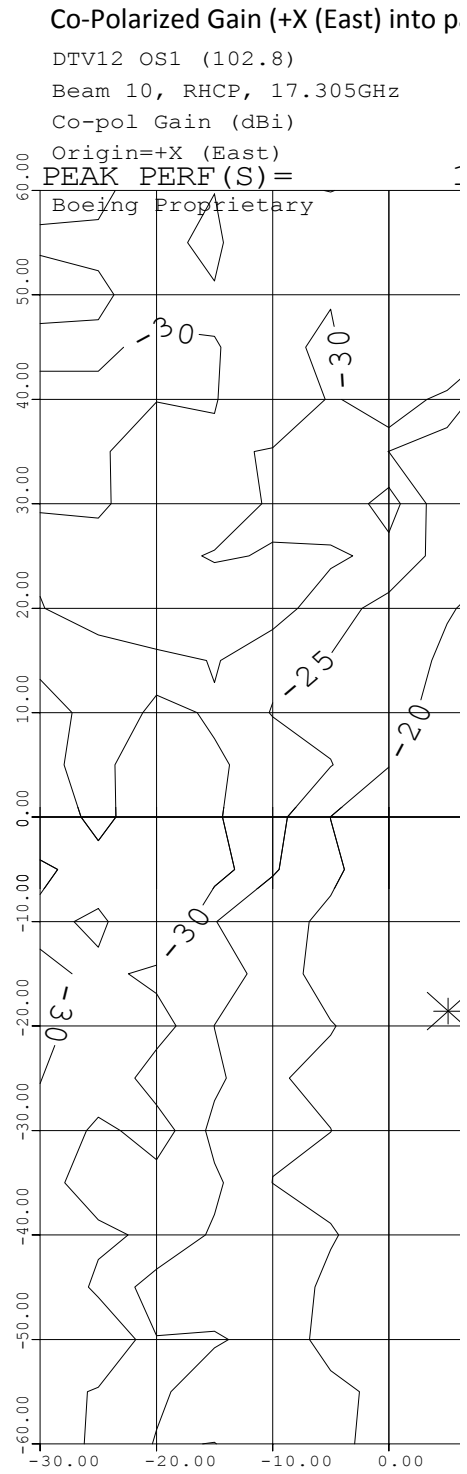


EG

Beam 10 OS1 RHCP 17.305

Z-Rotation (Deg.)	Y-Rotation (Deg.)	Co-pol Gain (dBi)	Cross-pol Gain (dBi)
-60	-30	-31.541	-23.888
-60	-25	-29.505	-22.358
-60	-20	-24.649	-21.7
-60	-15	-25.09	-19.336
-60	-10	-22.273	-18.617
-60	-5	-21.138	-15.564
-60	0	-18.387	-16.372
-60	5	-18.173	-14.441
-60	10	-17.296	-14.612
-60	15	-16.912	-13.699
-60	20	-16.128	-16.117
-60	25	-15.094	-16.68
-60	30	-15.439	-20.903
-55	-30	-33.525	-22.27
-55	-25	-29.173	-22.527
-55	-20	-25.967	-21.283
-55	-15	-22.058	-21.274
-55	-10	-22.37	-18.217
-55	-5	-21.249	-15.008
-55	0	-18.699	-14.502
-55	5	-17.068	-14.891
-55	10	-17.539	-12.854
-55	15	-15.955	-14.6
-55	20	-16.841	-14.028
-55	25	-15.508	-16.773
-55	30	-17.118	-16.557
-50	-30	-34.355	-24.867
-50	-25	-38.891	-20.031
-50	-20	-25.124	-19.701
-50	-15	-25.563	-18.09
-50	-10	-23.256	-15.566
-50	-5	-18.128	-17.961
-50	0	-17.232	-16.48
-50	5	-16.288	-14.435
-50	10	-15.887	-14.799
-50	15	-15.834	-15.771
-50	20	-16.274	-16.205
-50	25	-17.356	-15.511
-50	30	-20.423	-15.176
-45	-30	-40.63	-23.543

qg925b FP: Jun 1 12 11:36:52A



BOTH AXES ARE

-45	-25	-27.843	-20.644
-45	-20	-23.324	-23.17
-45	-15	-21.876	-21.506
-45	-10	-23.212	-16.025
-45	-5	-18.798	-16.713
-45	0	-17.825	-14.077
-45	5	-16.499	-15.144
-45	10	-15.789	-13.781
-45	15	-16.302	-14.673
-45	20	-17.281	-15.336
-45	25	-20.378	-14.504
-45	30	-20.5	-12.006
-40	-30	-37.685	-21.748
-40	-25	-31.916	-23.659
-40	-20	-28.163	-21.507
-40	-15	-24.413	-19.892
-40	-10	-24.036	-15.103
-40	-5	-20.478	-13.994
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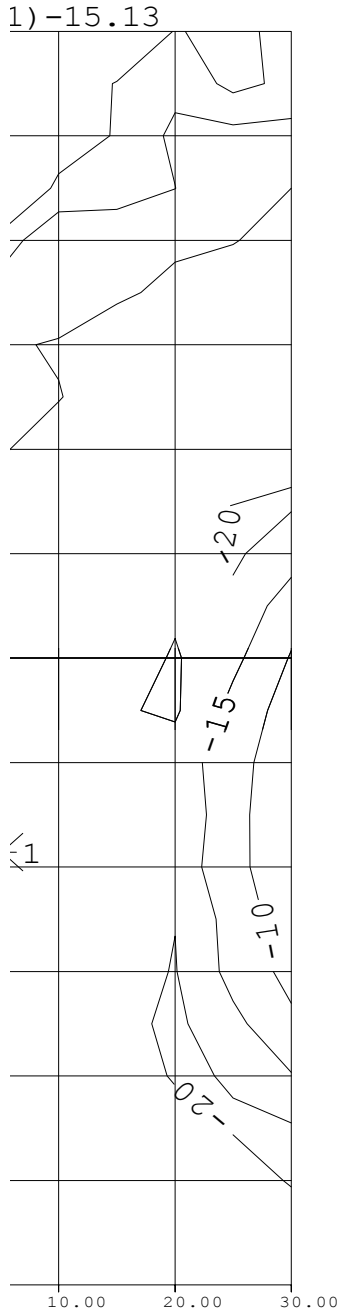
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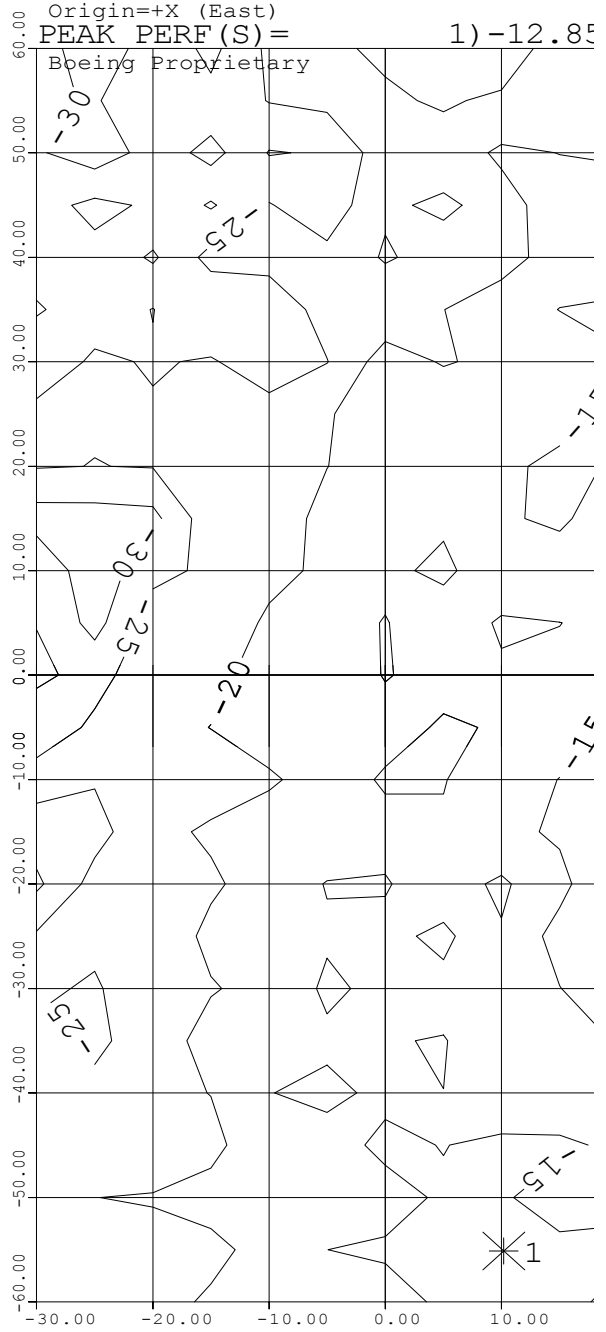
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IN DEG

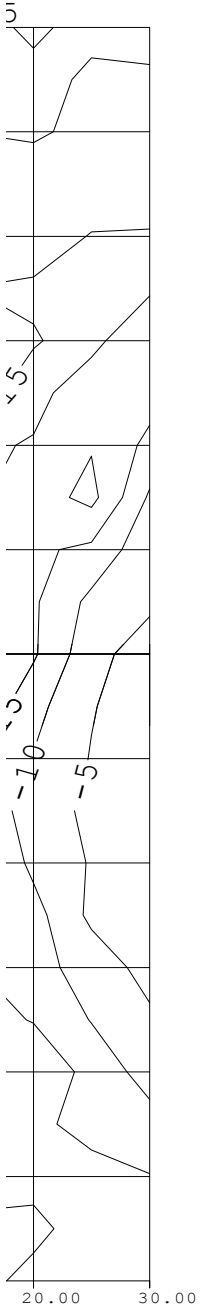
Cross-Polarized Gain (+X (East) into page)

DTV12 OS1 (102.8)
Beam 10, RHCP, 17.305GHz
Cross-pol Gain (dBi)



qq925b FP: Jun 1 12 11:36:58A

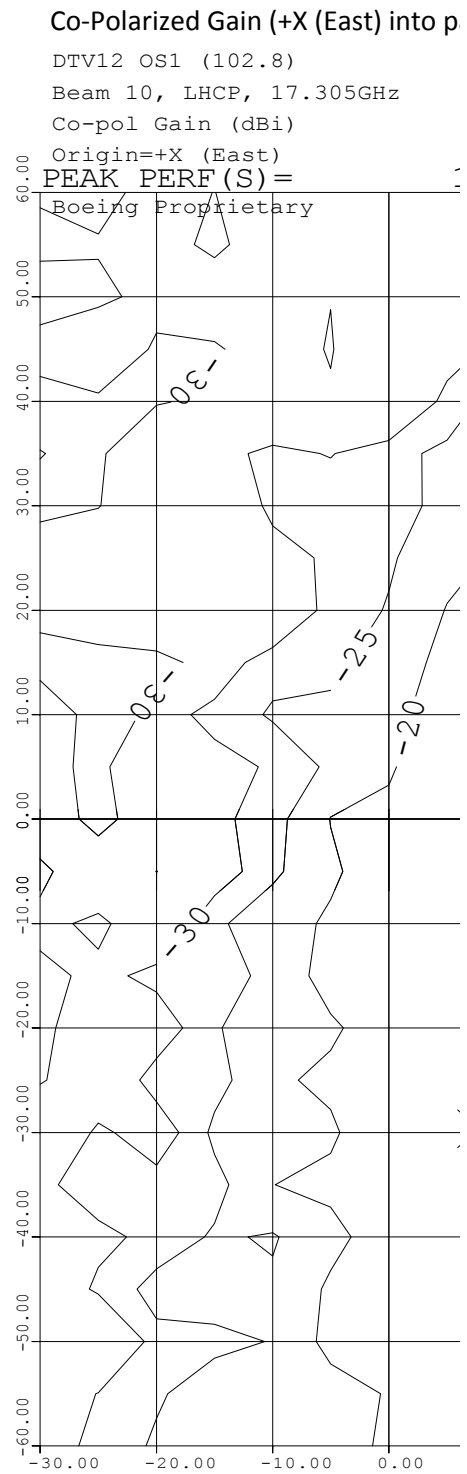
BOTH AXES ARE IN DEG



EG

Beam 10 OS1 LHCP 17.305

Z-Rotation (Deg.)	Y-Rotation (Deg.)	Co-pol Gain (dBi)	Cross-pol Gain (dBi)
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-45	-30	-38.541	-23.302



qg925b FP: Jun 1 12 11:36:41A

BOTH AXES ARE

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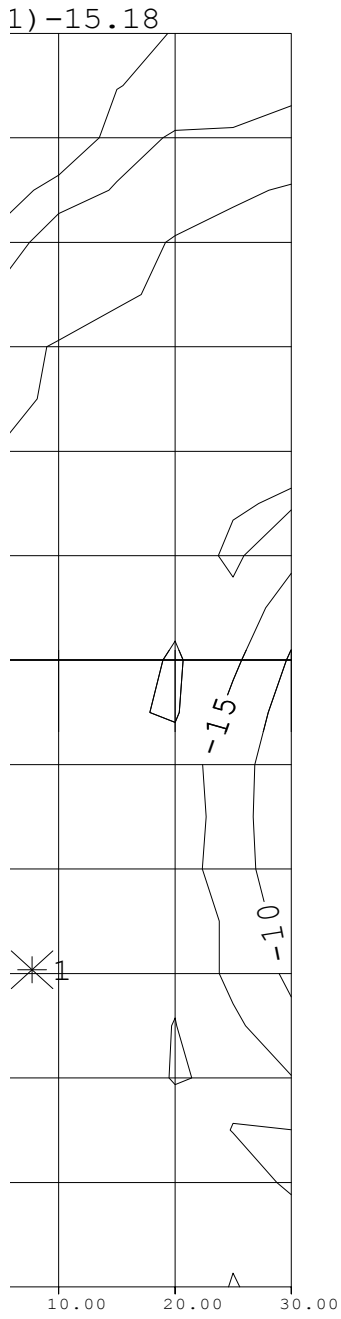
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15	-20	-27.225	-28.596
15	-15	-33.242	-22.87
15	-10	-27.075	-23.37
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15	10	-16.868	-15.053
15	15	-16.245	-14.01
15	20	-16.413	-17.847
15	25	-19.62	-20.643
15	30	-20.49	-9.487
20	-30	-32.903	-25.449
20	-25	-36.641	-26.048
20	-20	-39.853	-24.37
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20	-5	-27.699	-20.685
20	0	-24.65	-17.287
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20	15	-16.538	-13.757
20	20	-15.989	-15.624
20	25	-16.826	-19.17
20	30	-18.795	-14.12
25	-30	-34.571	-24.781
25	-25	-36.695	-24.37
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25	-15	-30.14	-26.351
25	-10	-32.497	-23.607
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25	0	-25.608	-16.847
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25	15	-16.427	-16.494
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25	25	-15.959	-17.978
25	30	-17.059	-16.487
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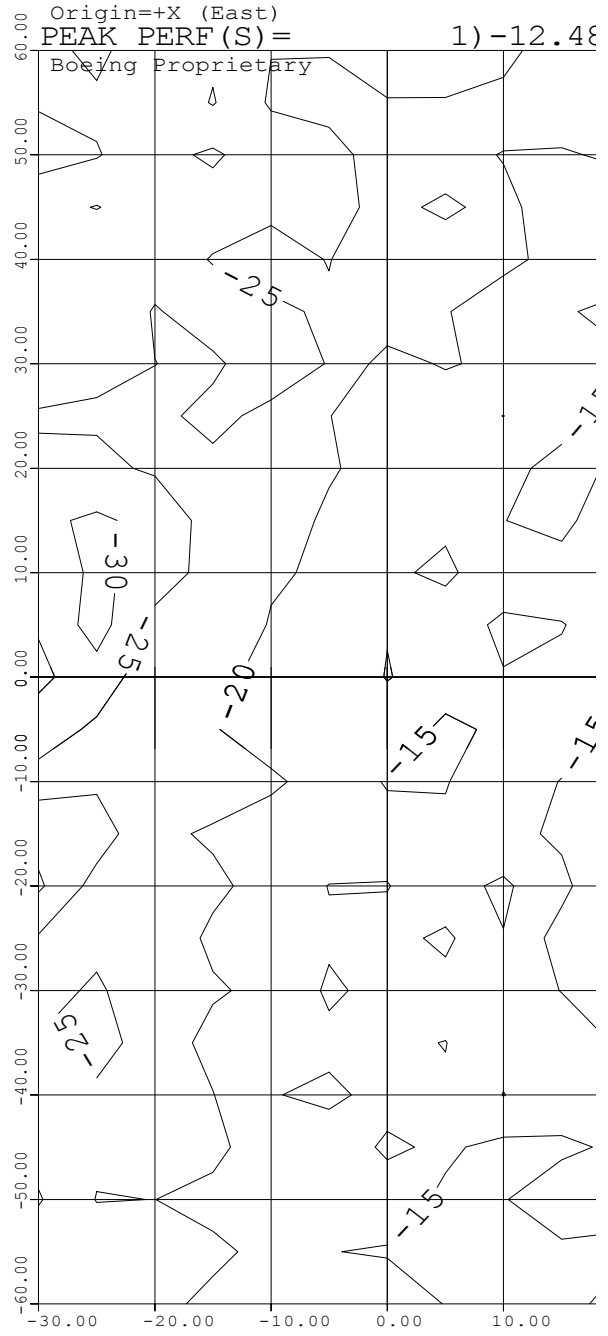
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IN DEG

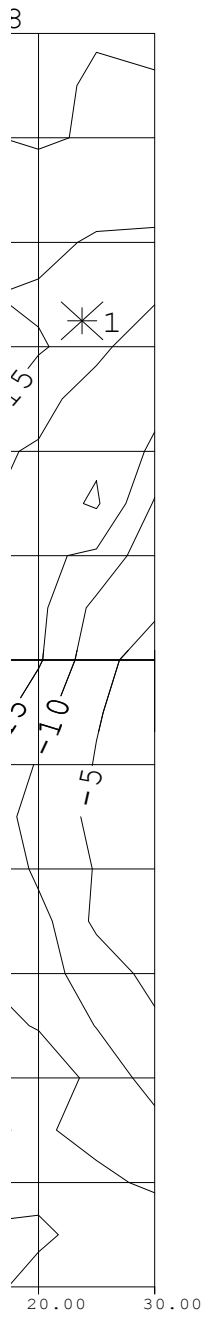
Cross-Polarized Gain (+X (East) into page)

DTV12 OS1 (102.8)
 Beam 10, LHCP, 17.305GHz
 Cross-pol Gain (dBi)



BOTH AXES ARE IN DEG

qq925b FP: Jun 1 12 11:36:47A



EG