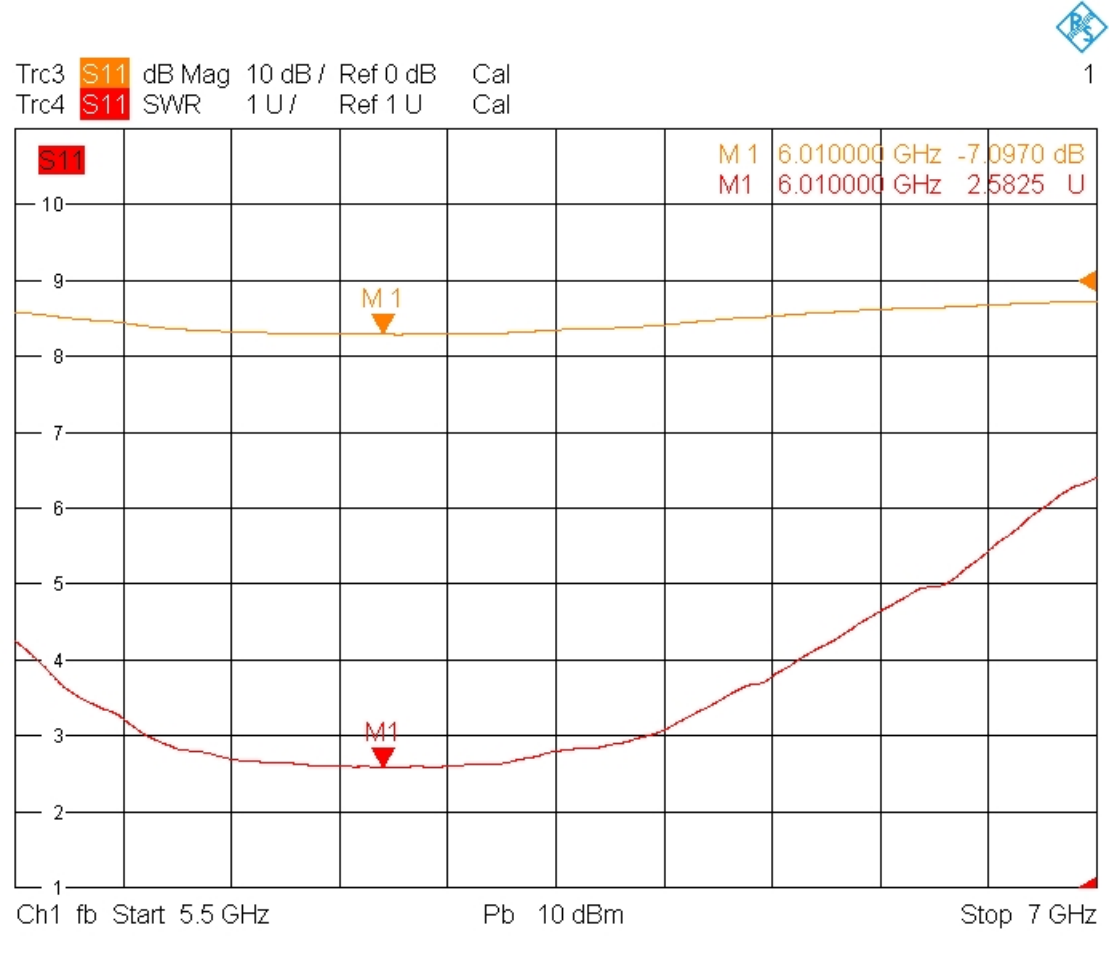
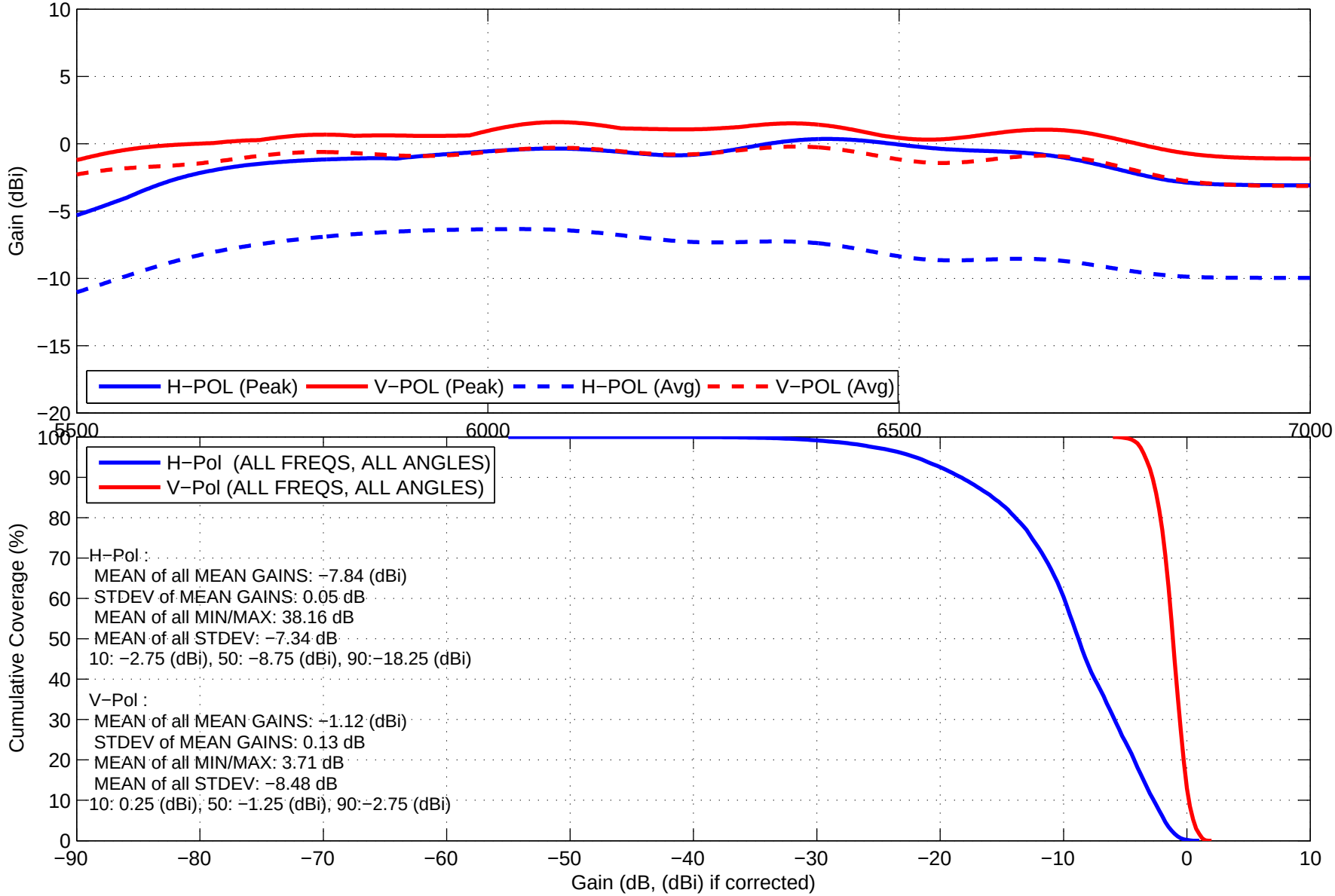

Trc3 S11 dB Mag 10 dB / Ref 0 dB Cal
Trc4 S11 SWR 1 U / Ref 1 U Cal
1
S11
M 1 6.010000 GHz -7.0970 dB
M1 6.010000 GHz 2.5825 U
10
9
8
7
6
5
4
3
2
1
M 1
M1
Ch1 fb Start 5.5 GHz
Pb 10 dBm
Stop 7 GHz

Pattern File.....2013−11−26−15−33− 5_AZIMUTH_CUT_001.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
Unit Tested....."ABG TAG TRACK"
Mfr./Model....."ABG"
ID Number....."SAMPLE A"
Antenna Type..."TOPHAT MONOPOLE"

RF Detector....Vector Network Analyzer
Mfr./Model.....Rohde & Schwarz ZVB−20
Resolution BW.. 2.000000 kHz
Detector Function..."SPARAMS (V)"
Span...N/A

RF Source.....Vector Network Analyzer
RF Level.....10.000000 dBm
Transmit Ant..."CONDOR QUAD−RIDGE 2−18 GHZ"
Height....."1.5 m"
Range....."3 m"

Ant. Location...."CENTER OF AZIMUTH TURNTABLE, ANT VERTICAL"
Comments....."AZIMUTH CUT THROUGH PLANE OF PCB, THETA = 90, PHI = −179 TO 180 DEG. PHI = 0 DEG AT FEED LOCATION."



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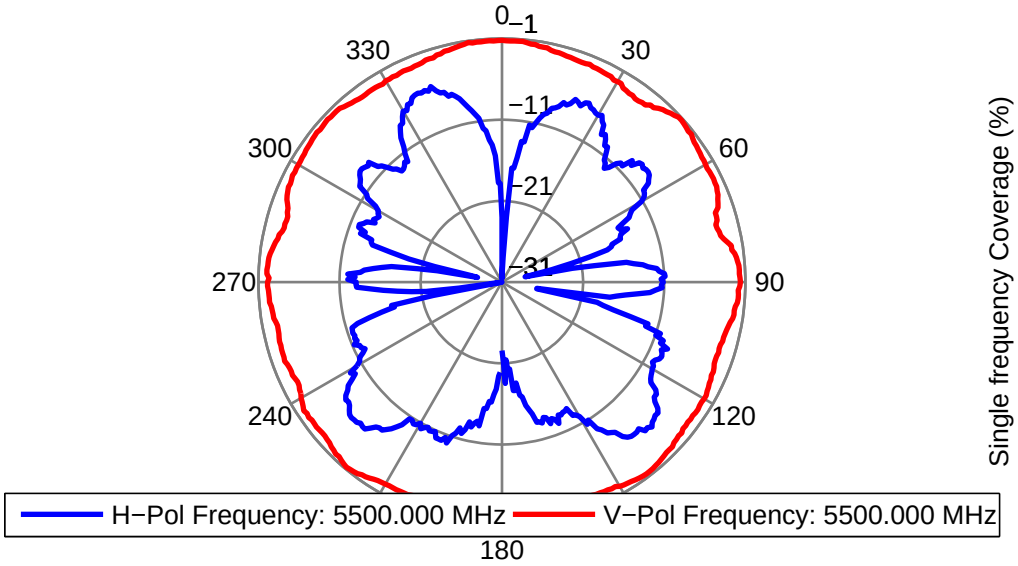

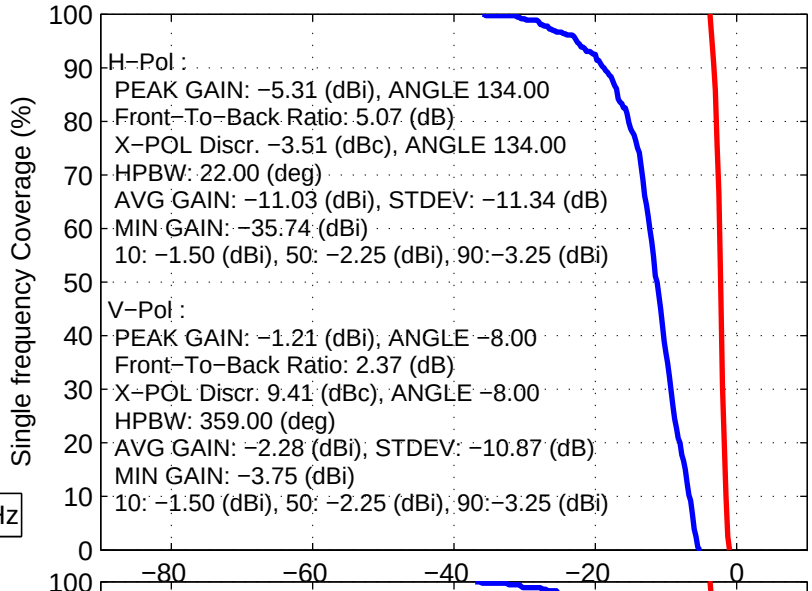

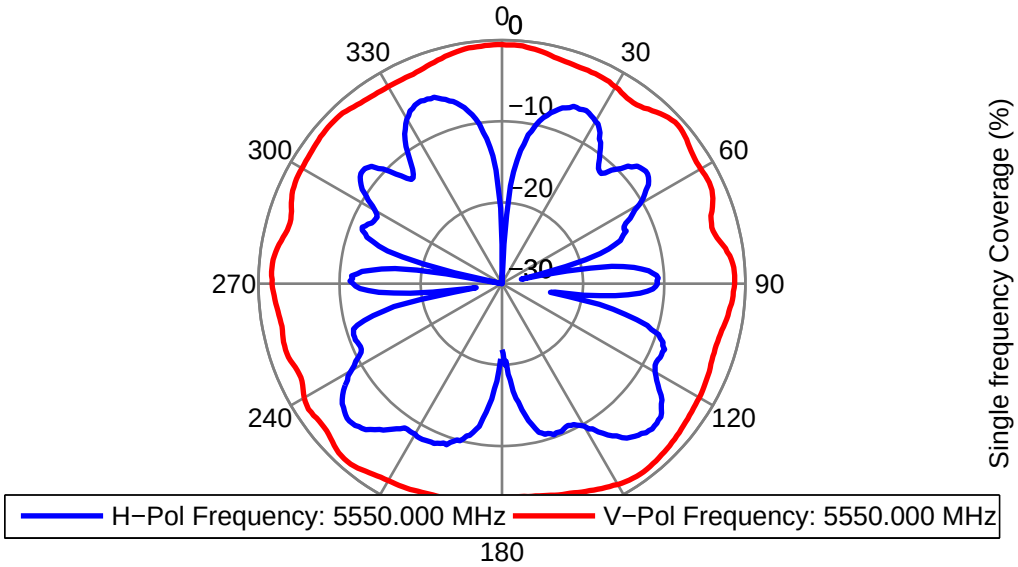

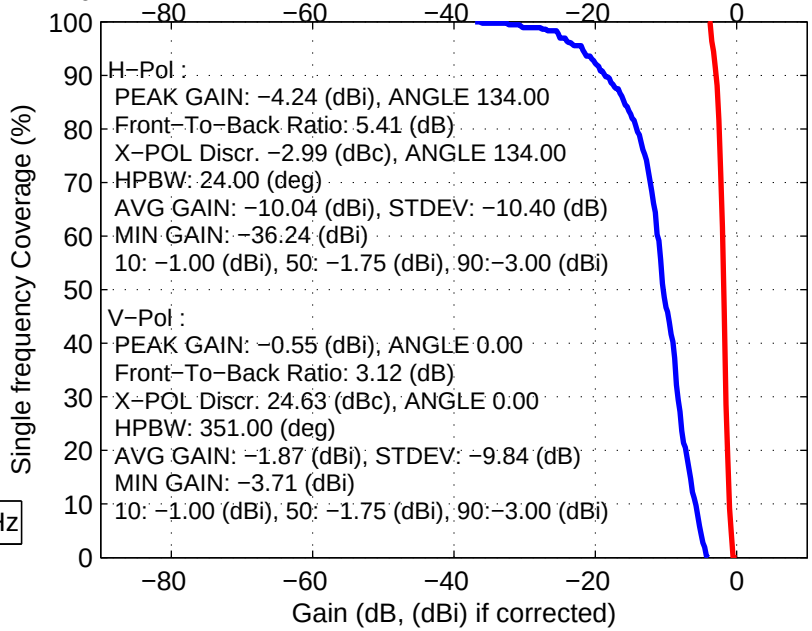

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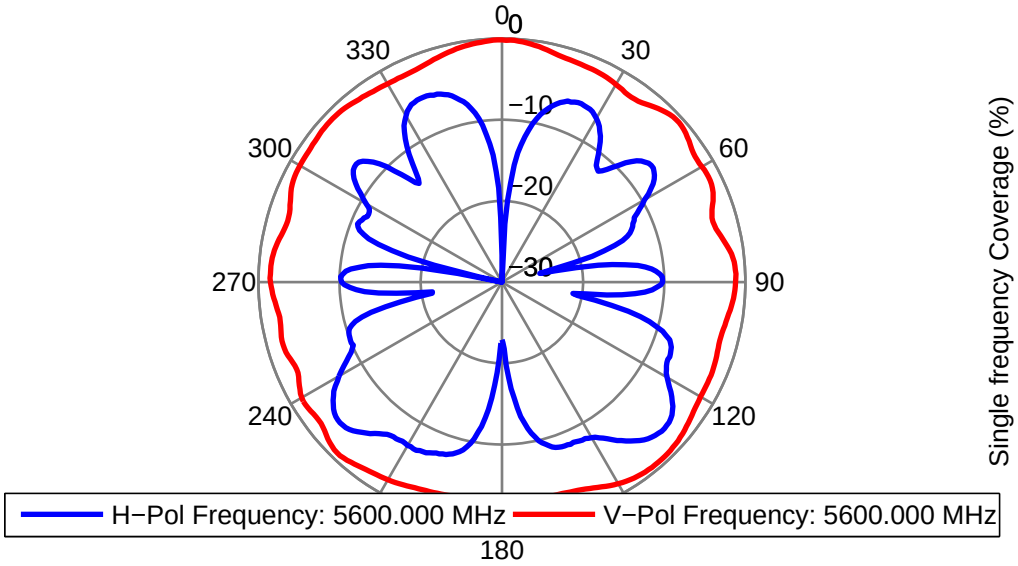

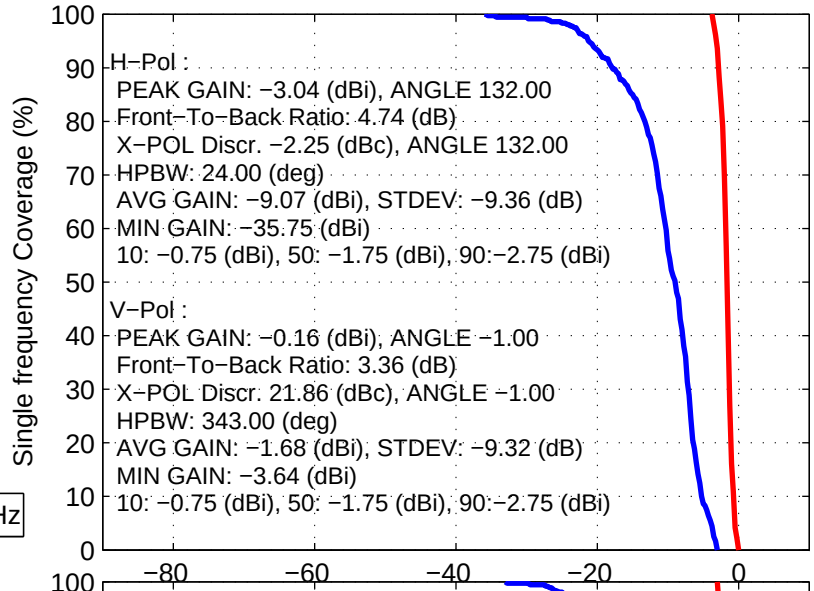

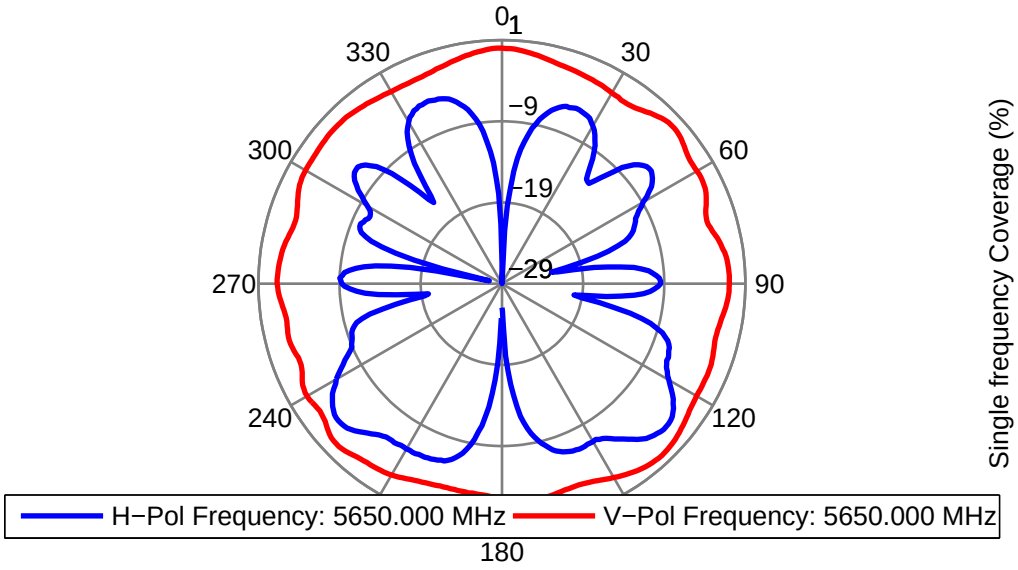

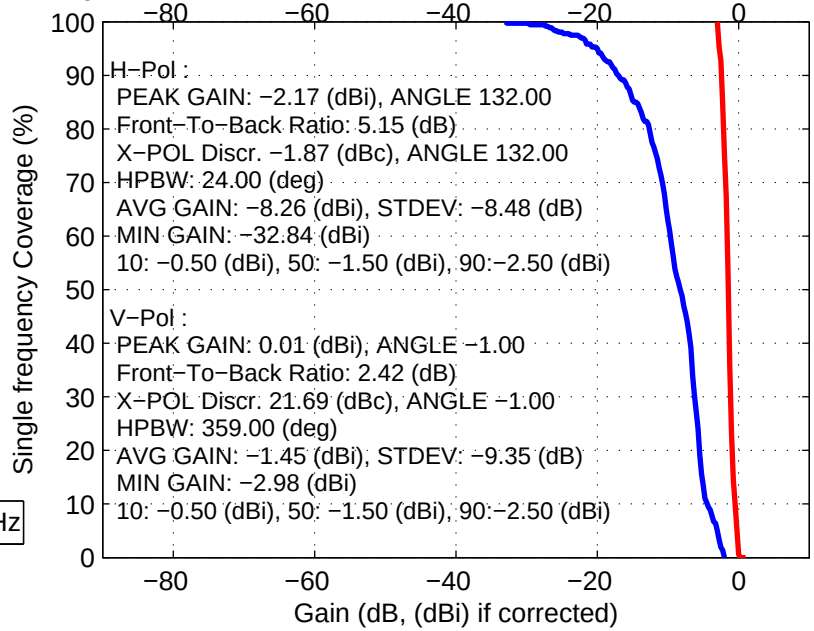

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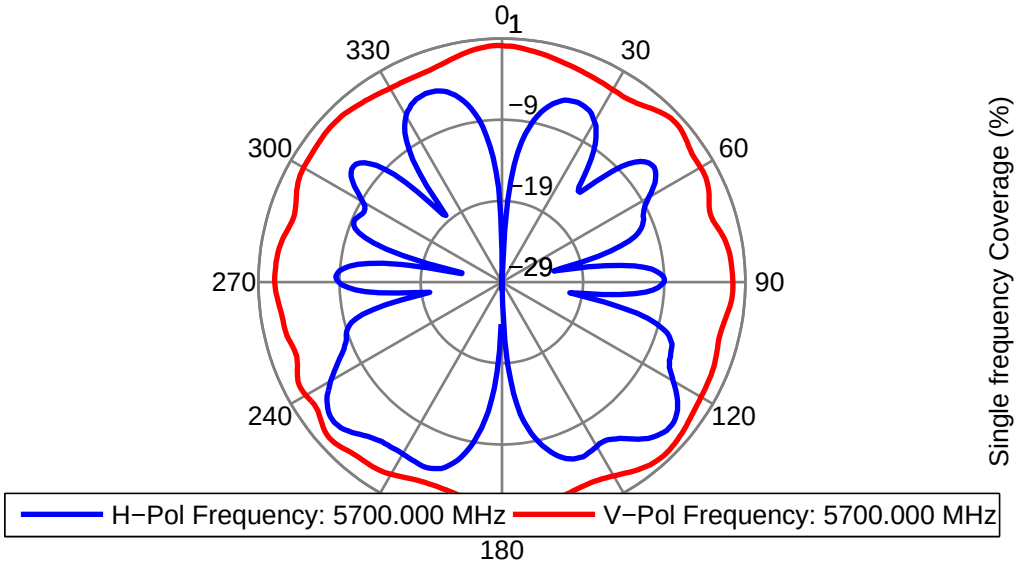

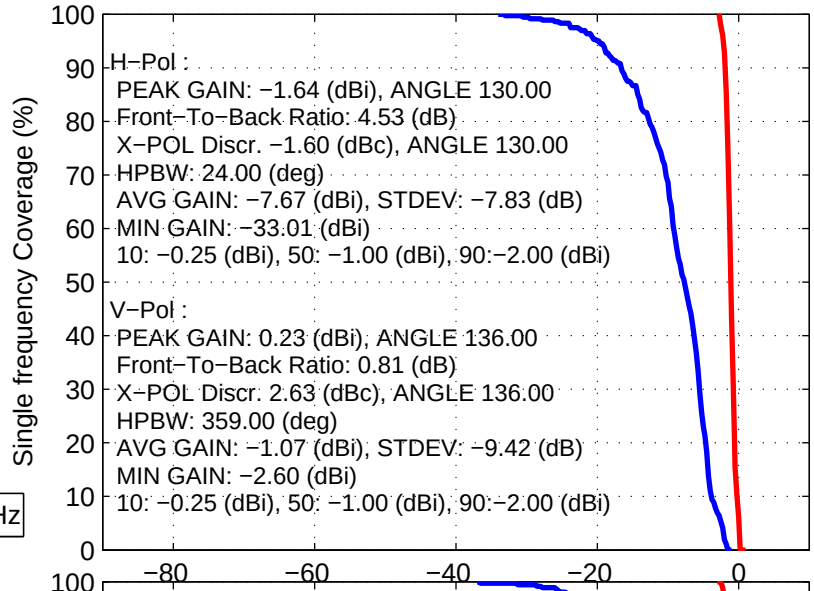

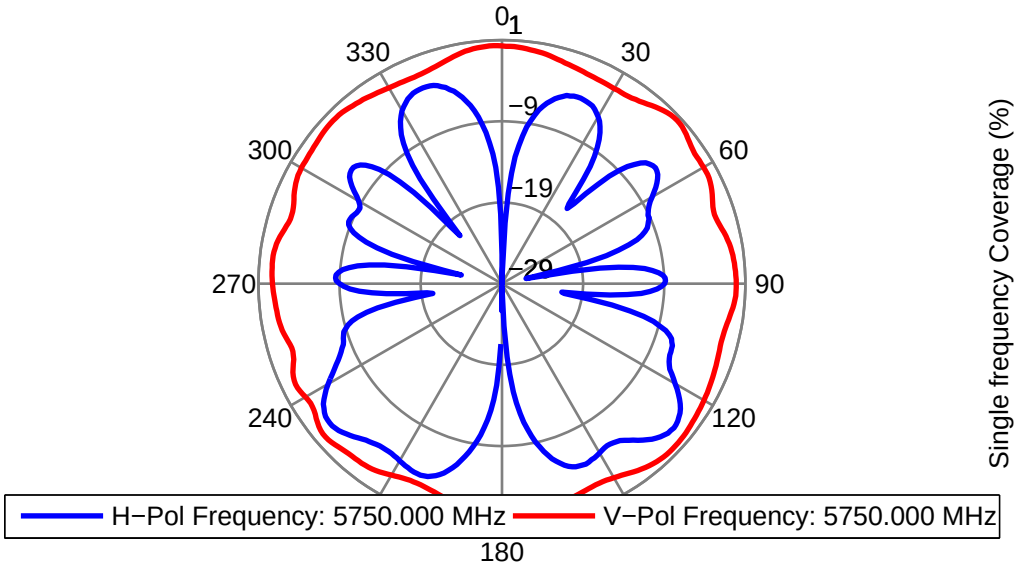

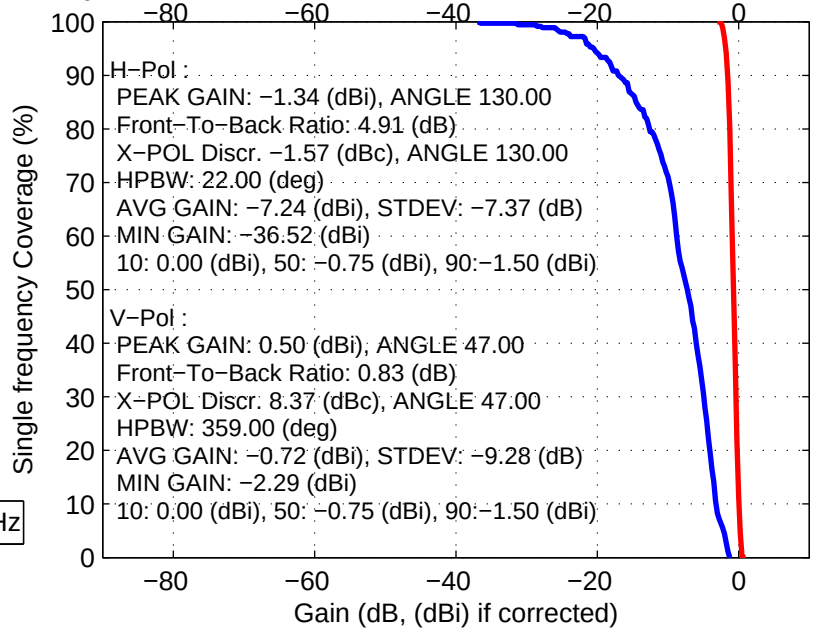

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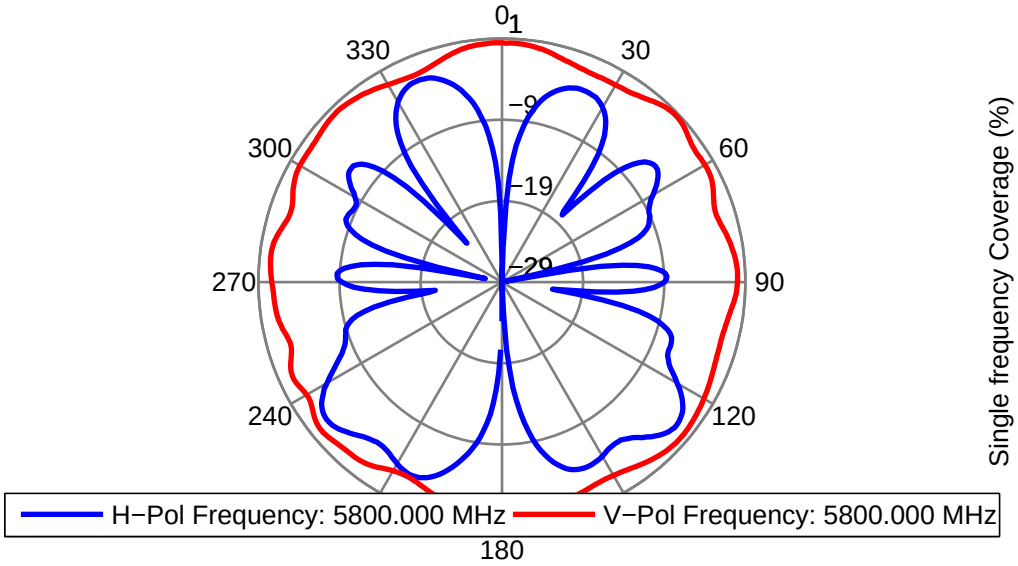

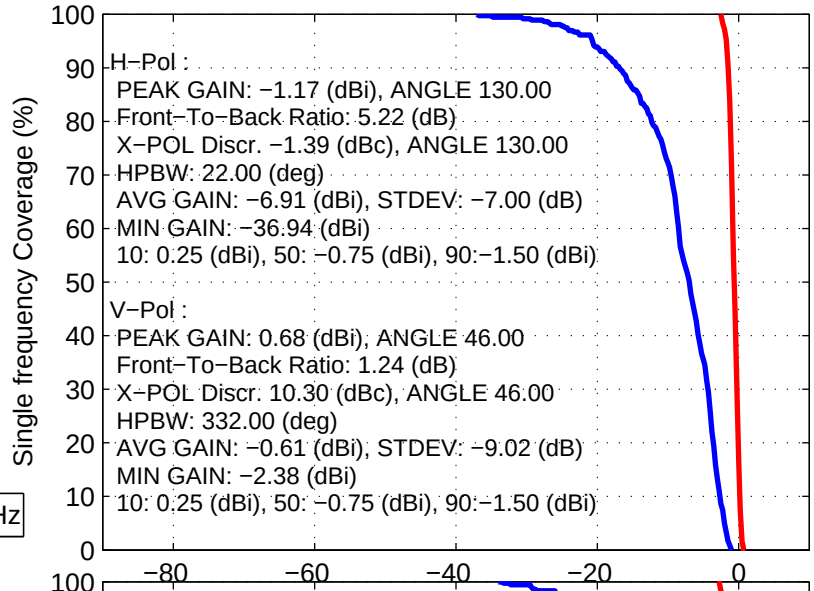

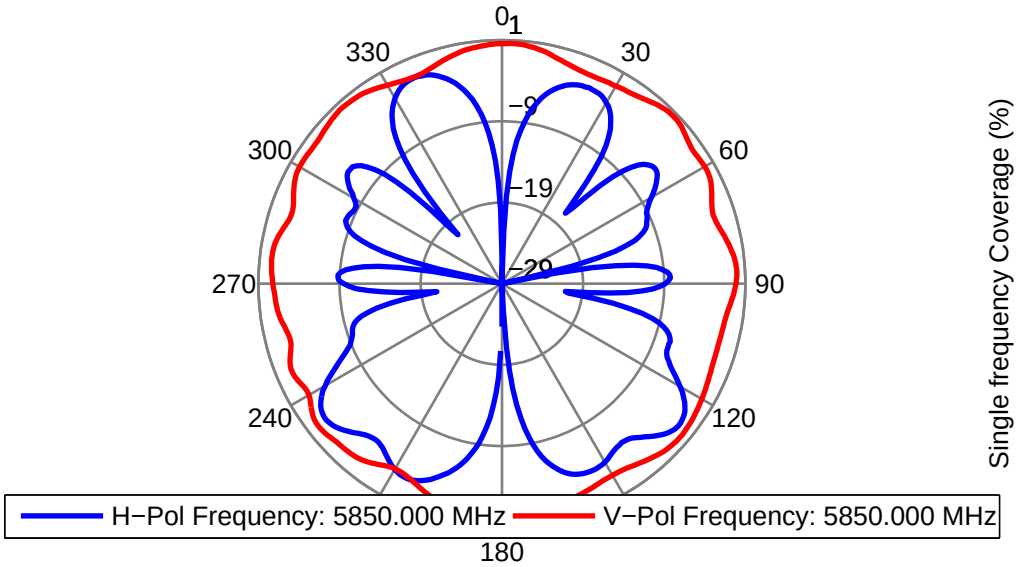

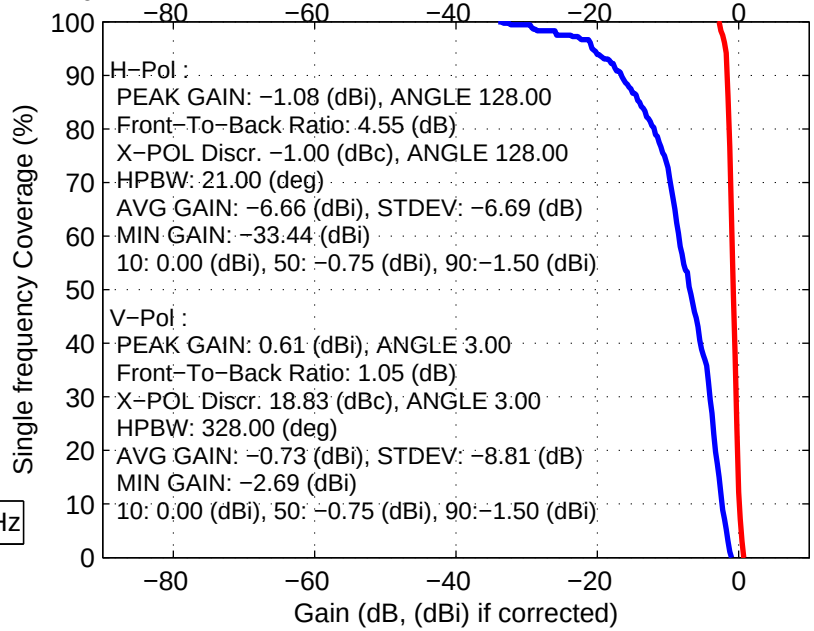

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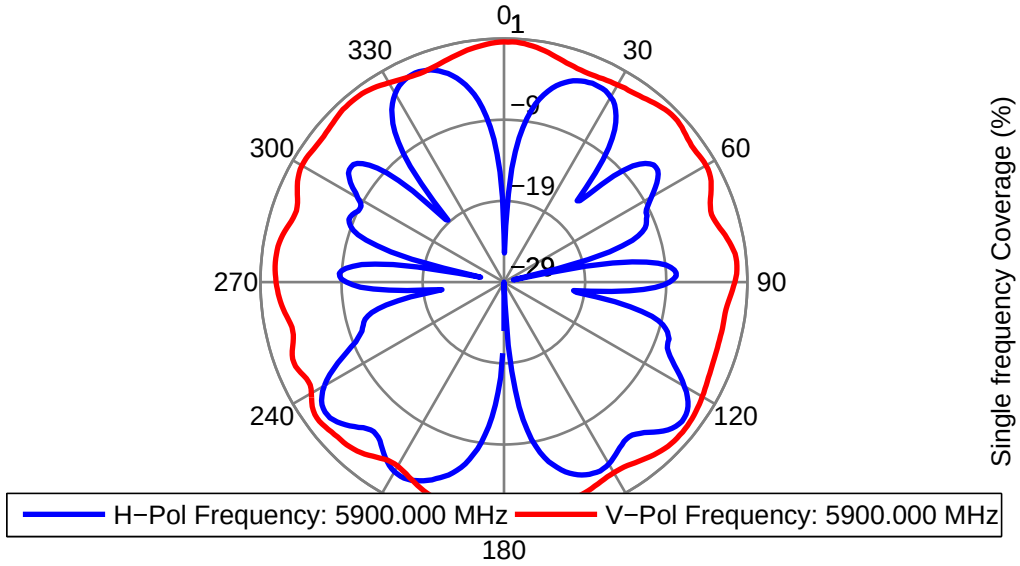

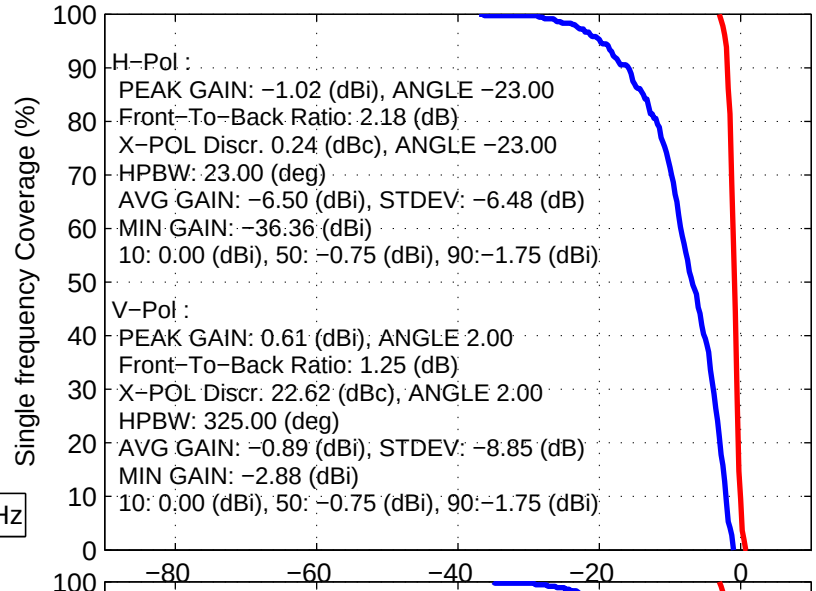

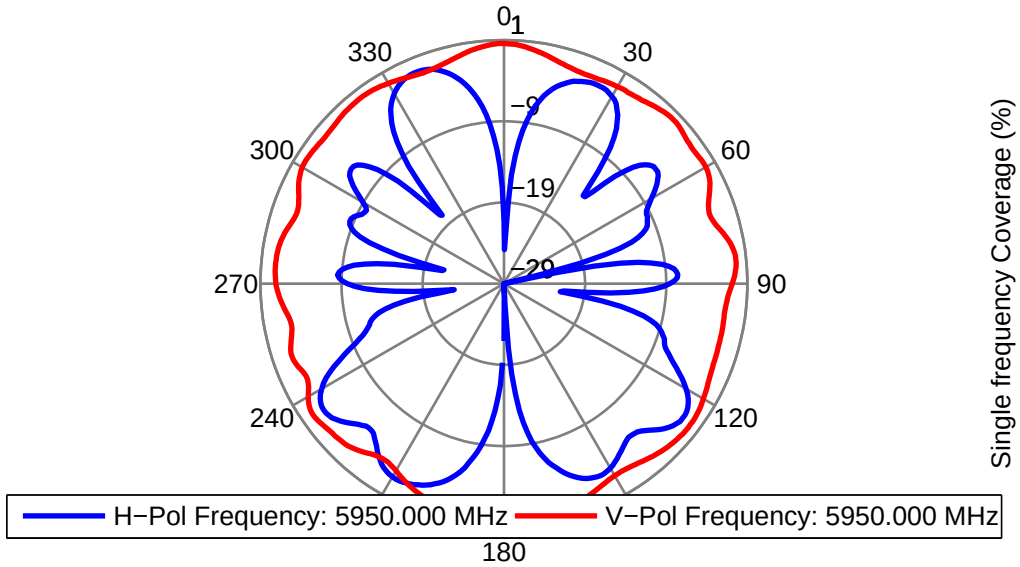

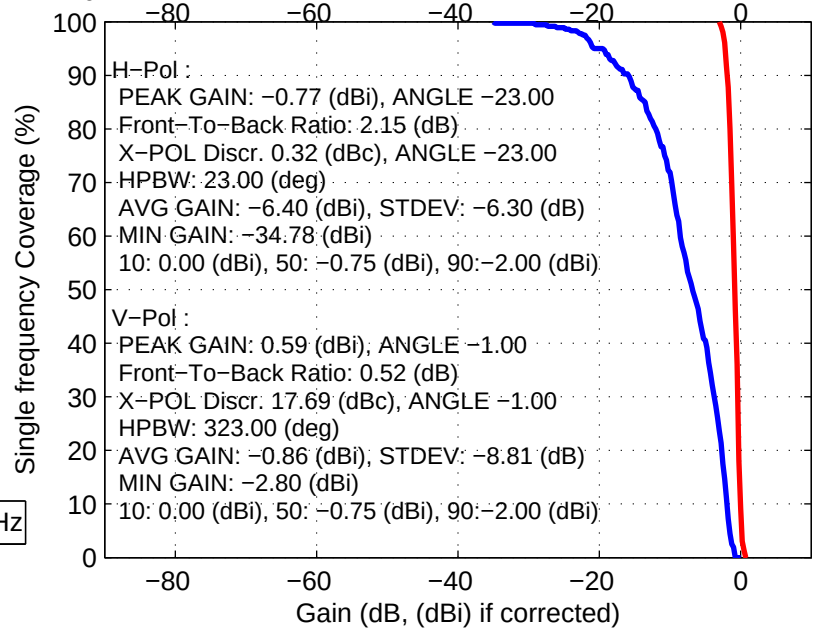

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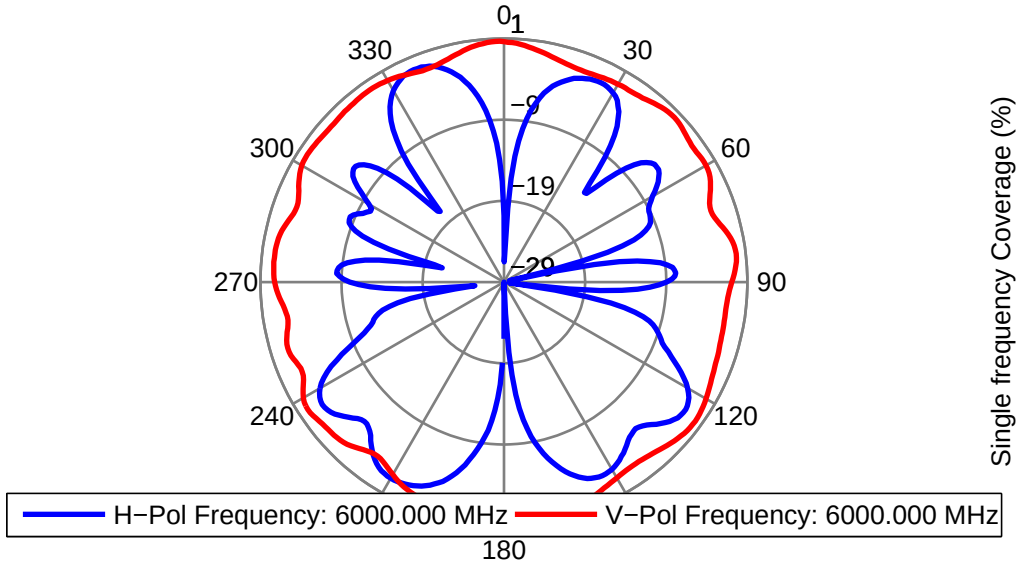

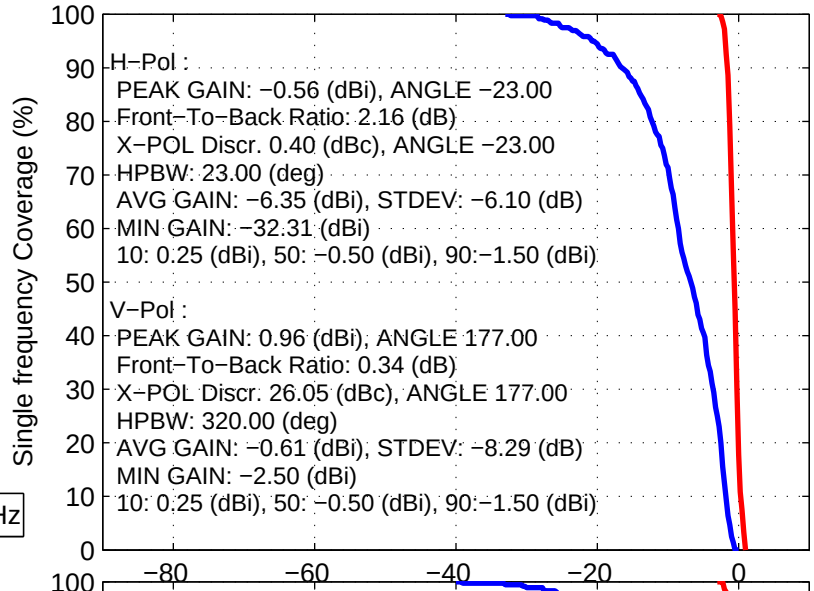

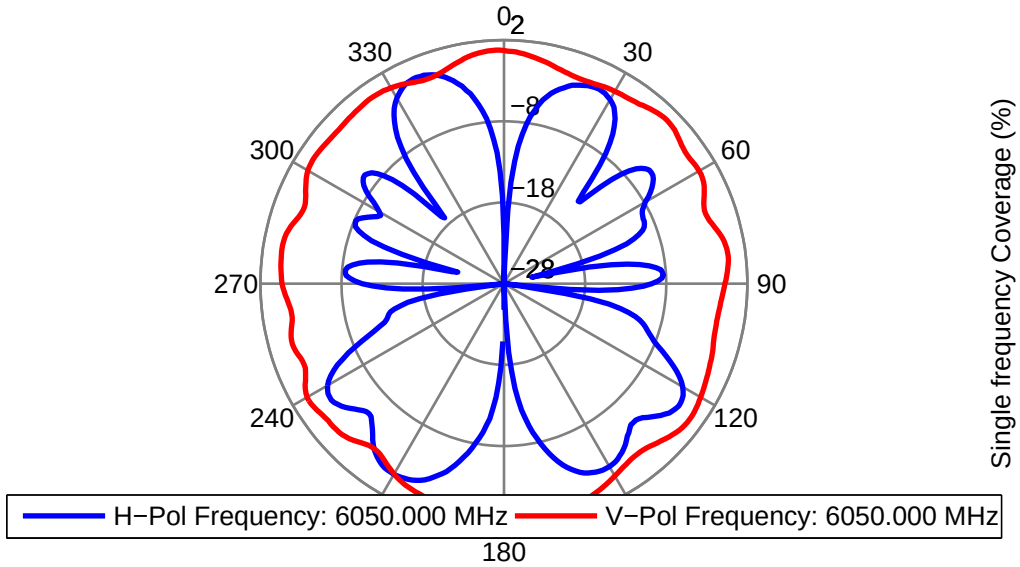

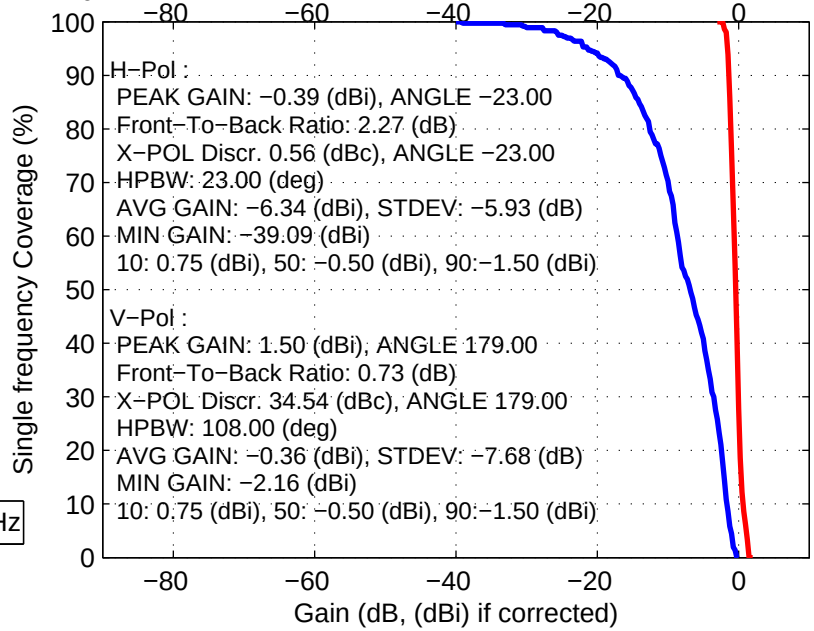

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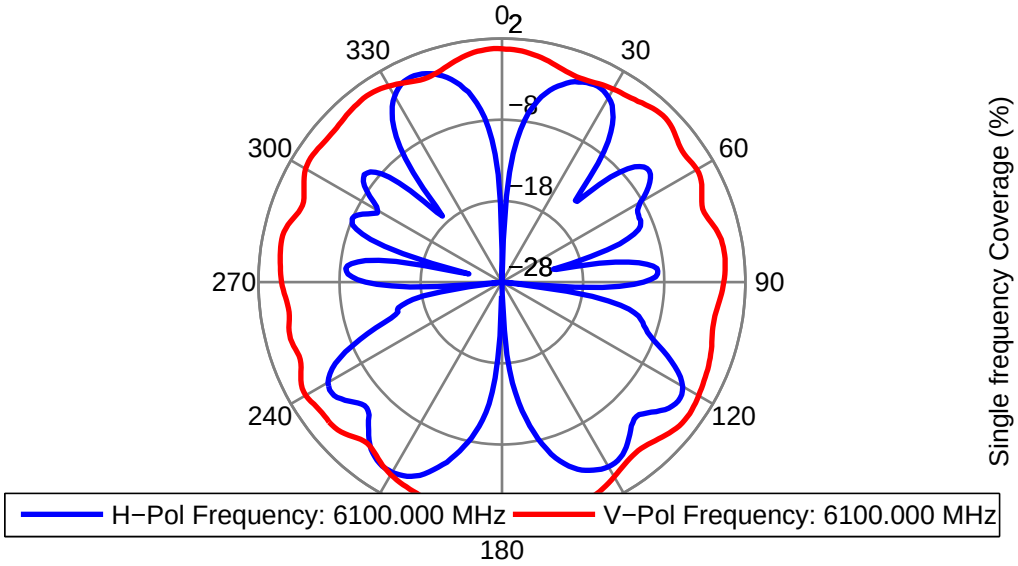

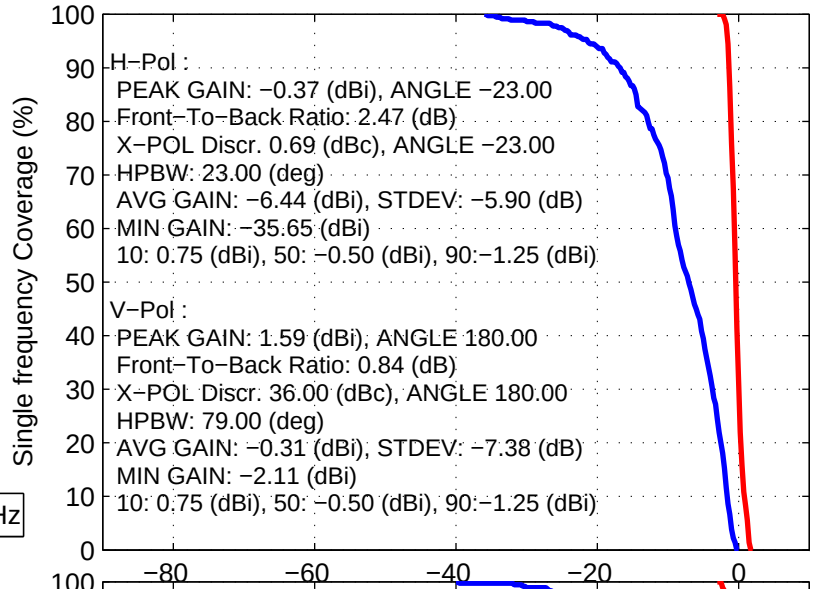

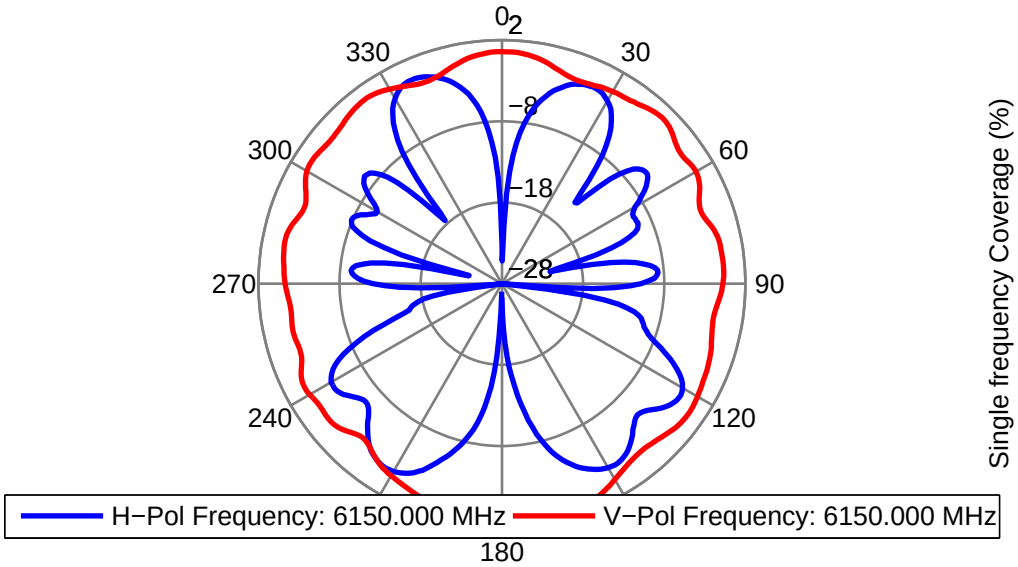

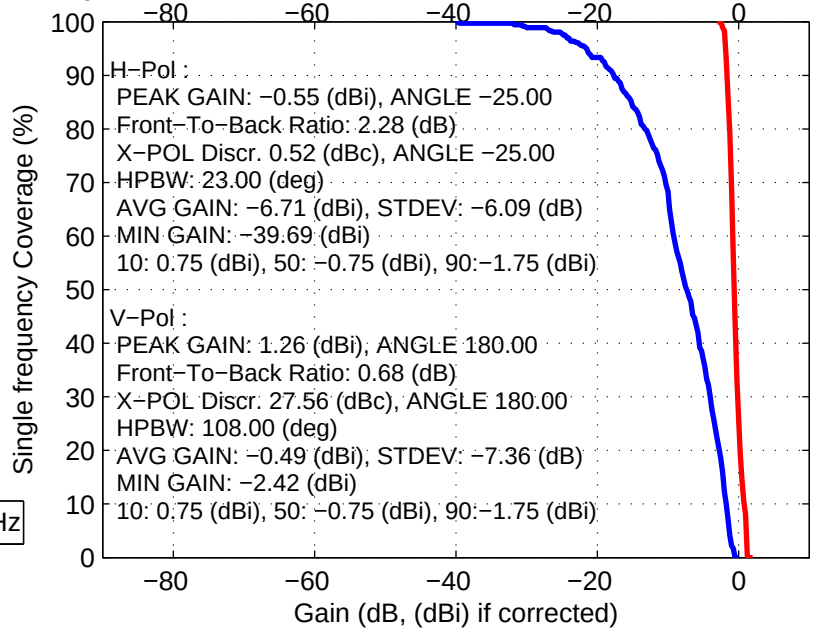

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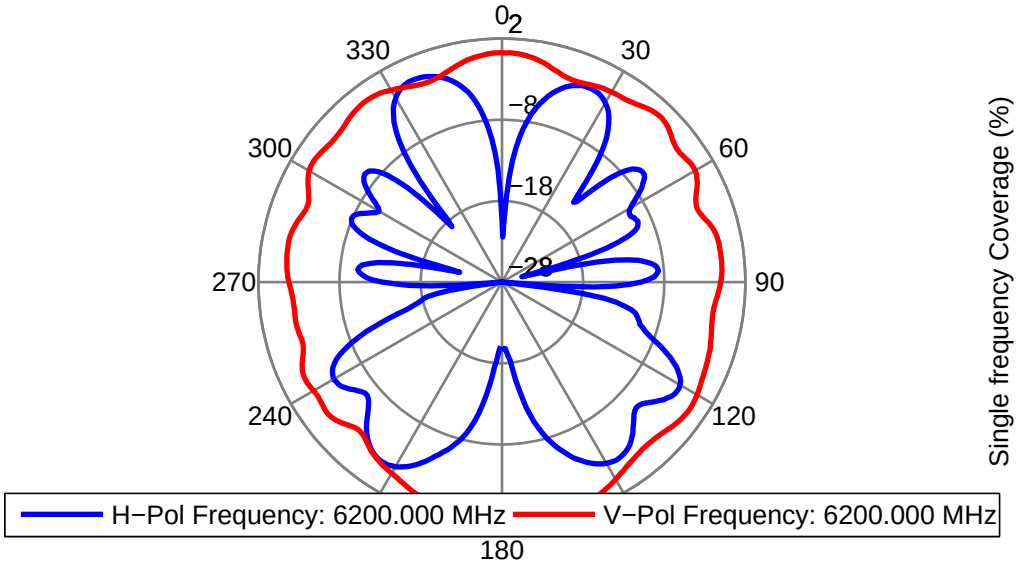

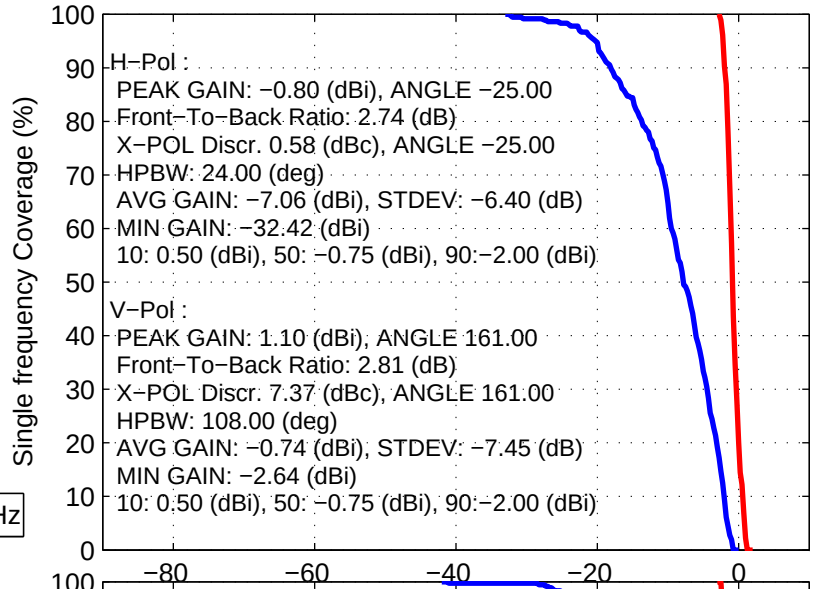

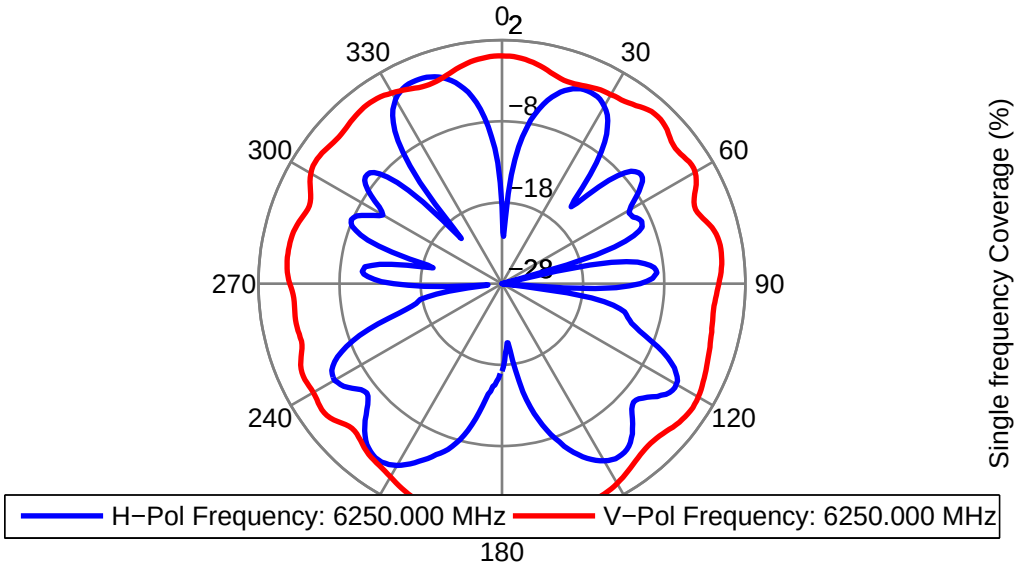

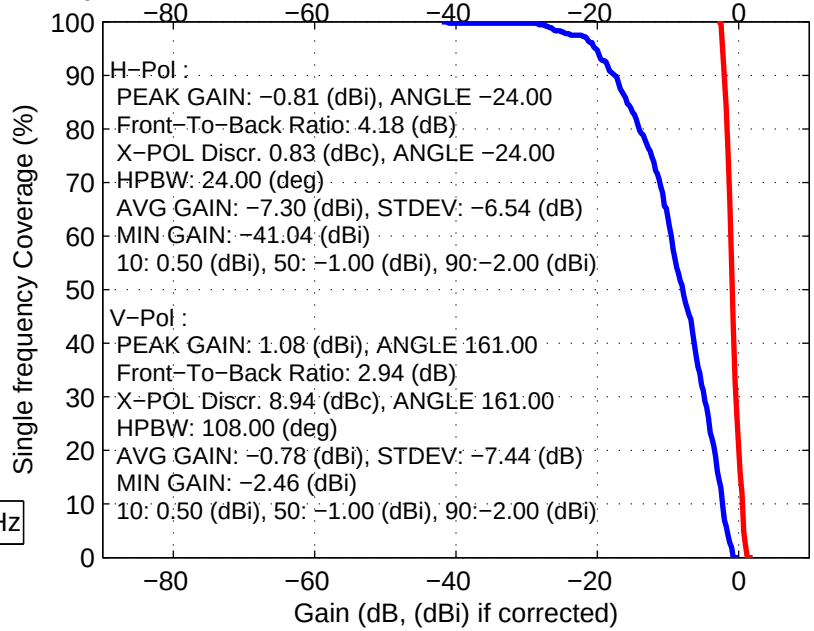

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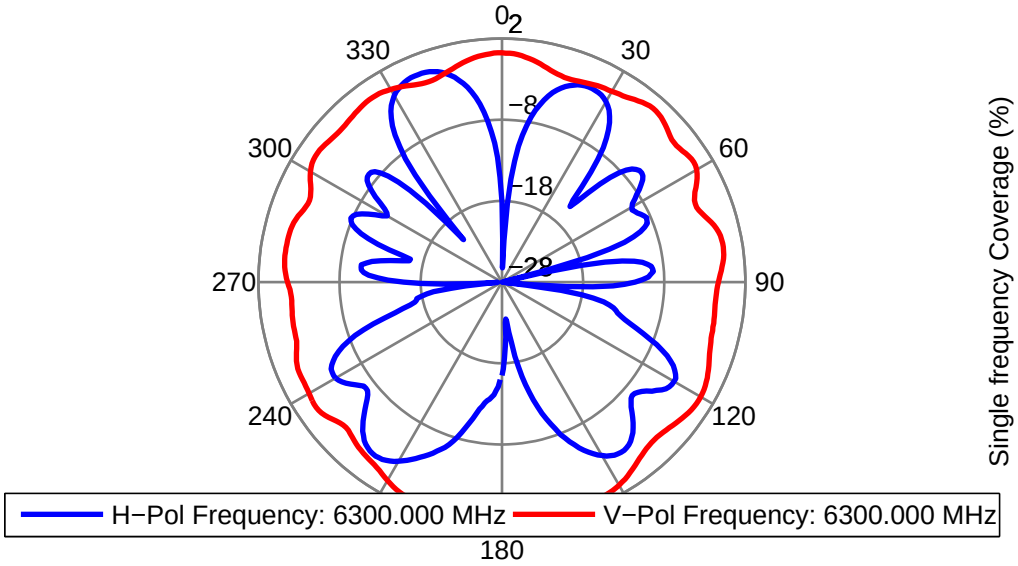
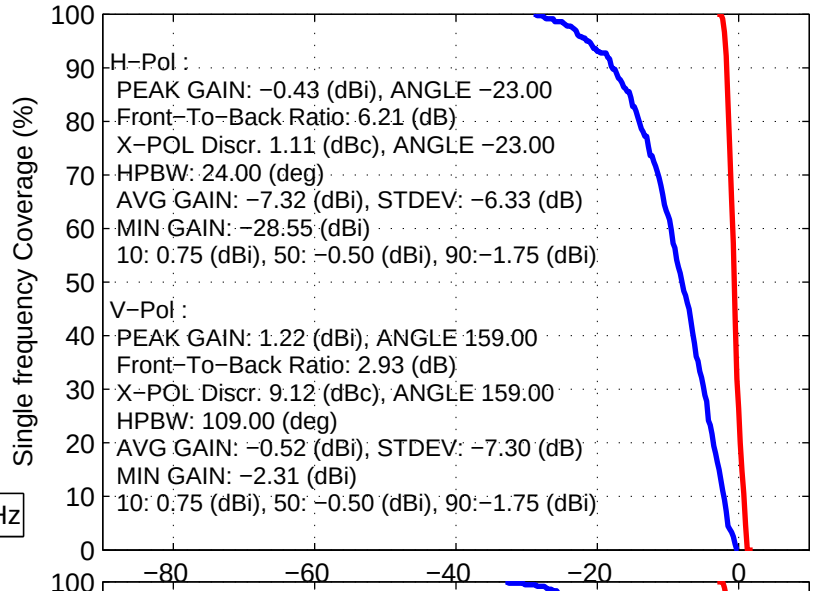
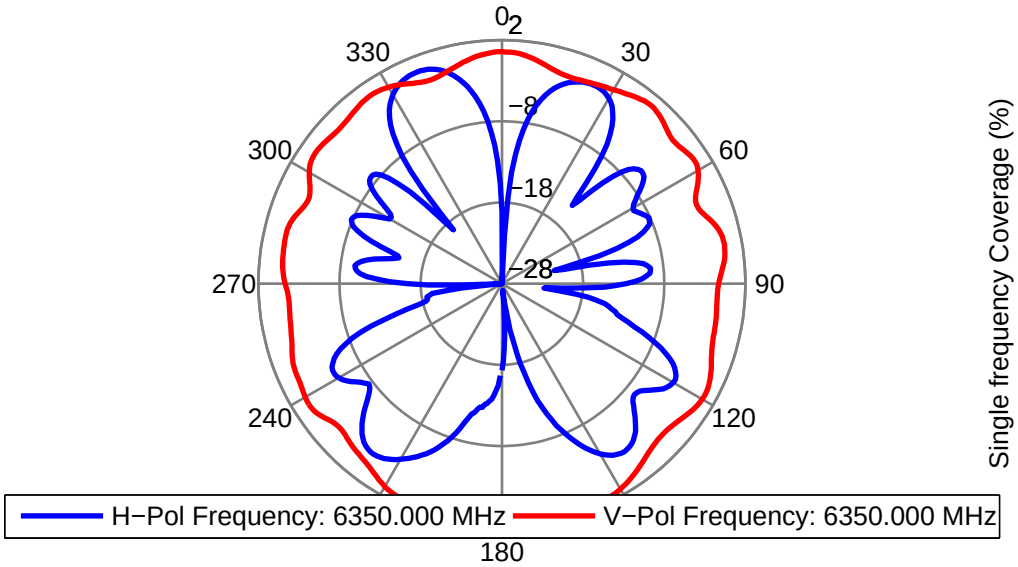
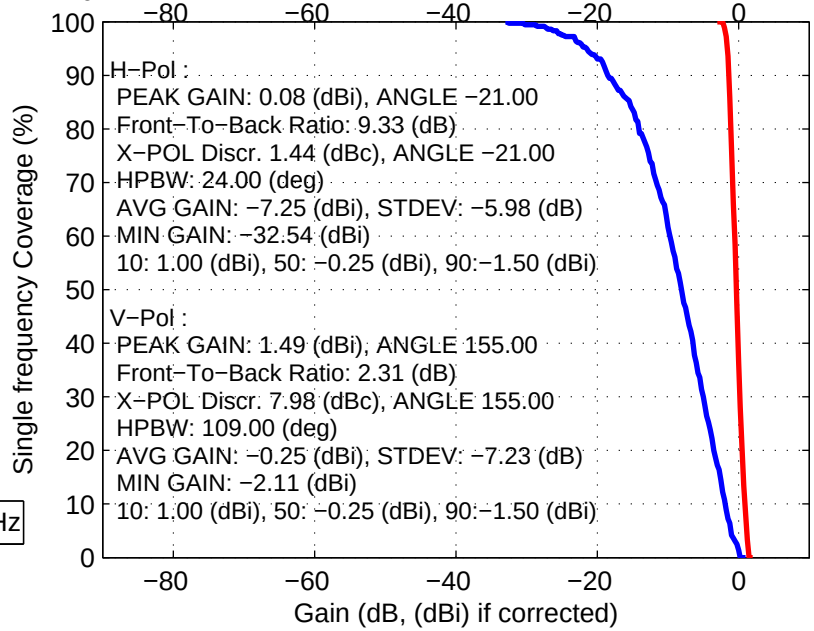






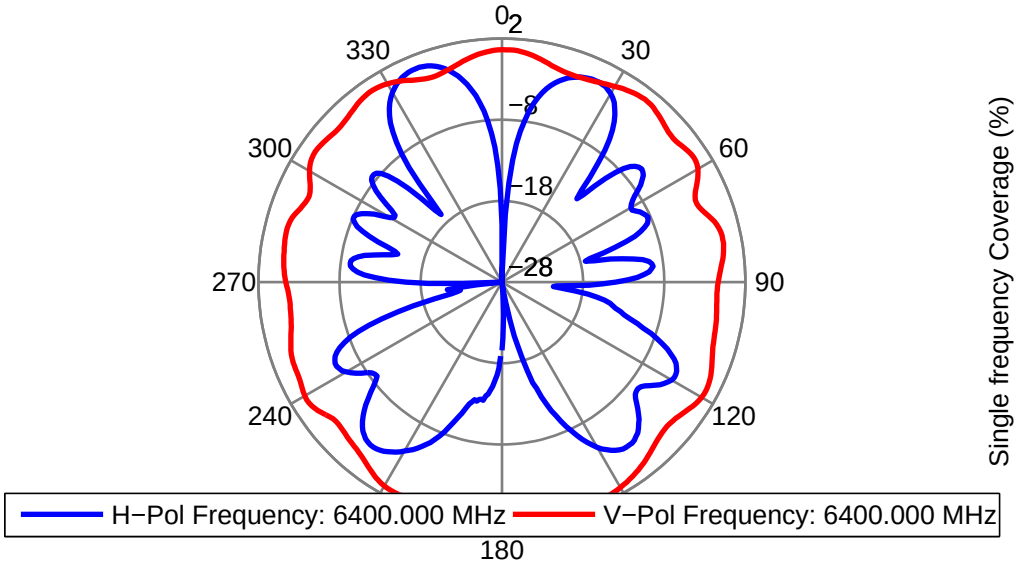


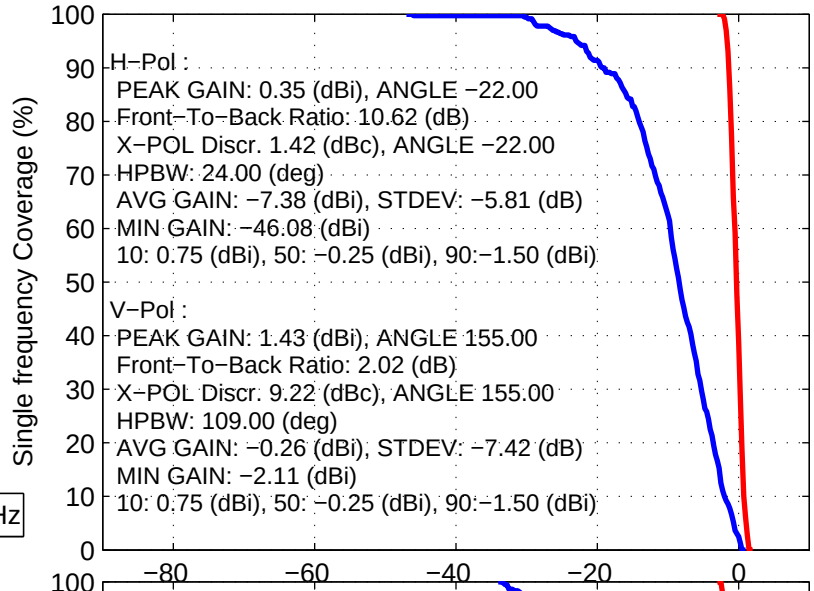
Pattern File.....2013−11−26−15−33− 5_AZIMUTH_CUT_001.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
Unit Tested....."ABG TAG TRACK"
Mfr./Model....."ABG"
ID Number....."SAMPLE A"
Antenna Type..."TOPHAT MONOPOLE"

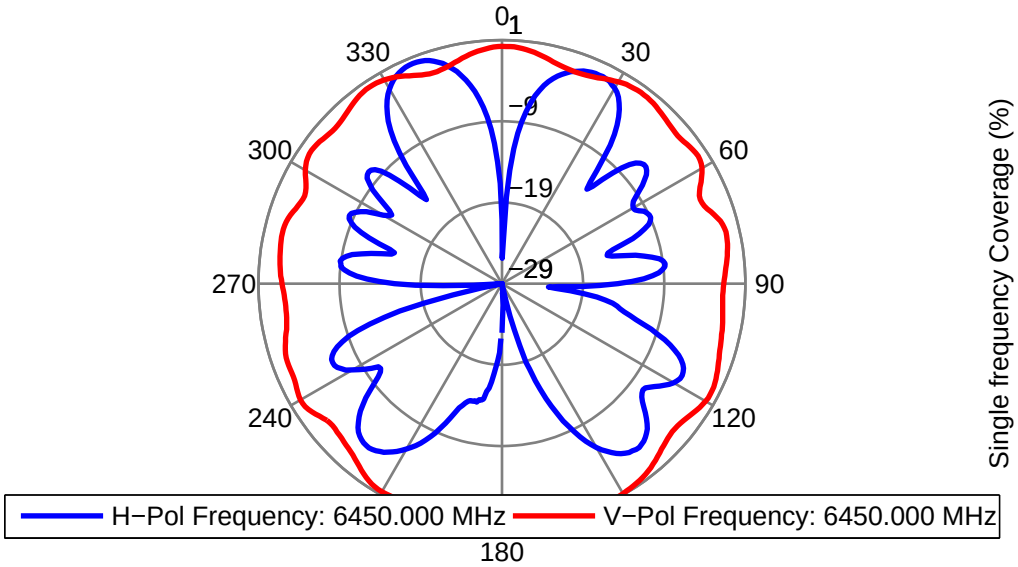
RF Detector....Vector Network Analyzer
Mfr./Model.....Rohde & Schwarz ZVB−20
Resolution BW.. 2.000000 kHz
Detector Function..."SPARAMS (V)"
Span...N/A

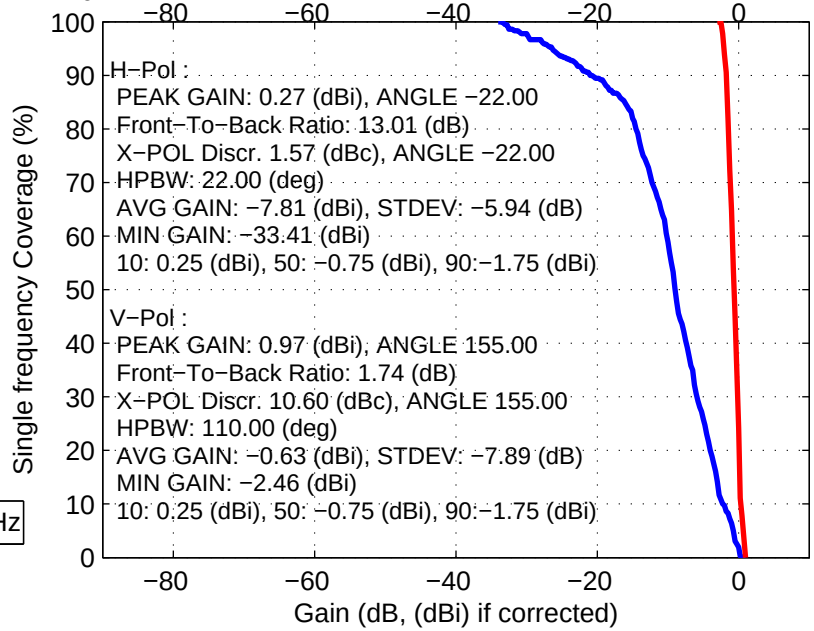
RF Source.....Vector Network Analyzer
RF Level.....10.000000 dBm
Transmit Ant..."CONDOR QUAD−RIDGE 2−18 GHZ"
Height....."1.5 m"
Range....."3 m"

Ant. Location...."CENTER OF AZIMUTH TURNTABLE, ANT VERTICAL"
Comments....."AZIMUTH CUT THROUGH PLANE OF PCB, THETA = 90, PHI = −179 TO 180 DEG. PHI = 0 DEG AT FEED LOCATION."









Pattern File.....2013−11−26−15−33− 5_AZIMUTH_CUT_001.mat
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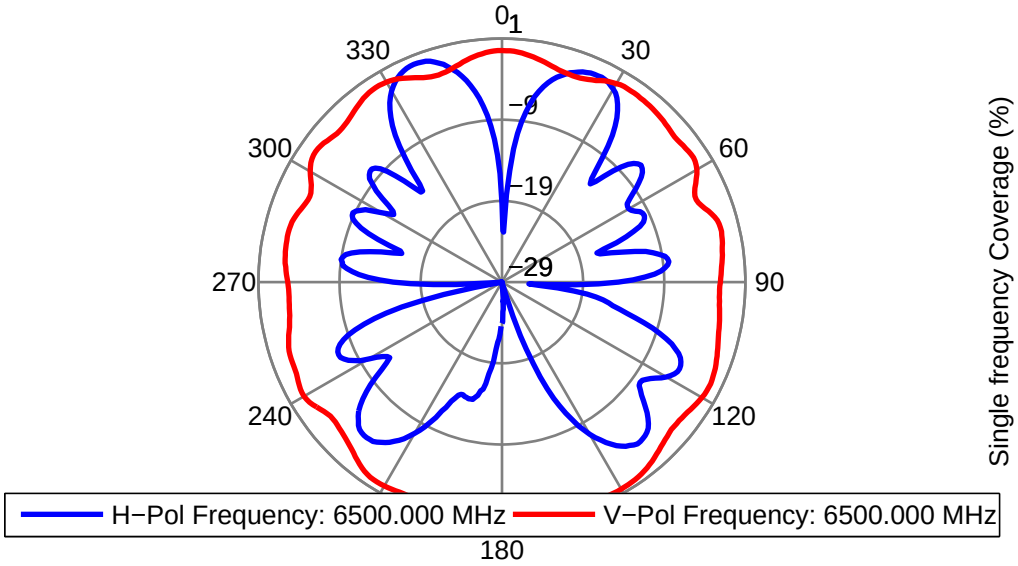
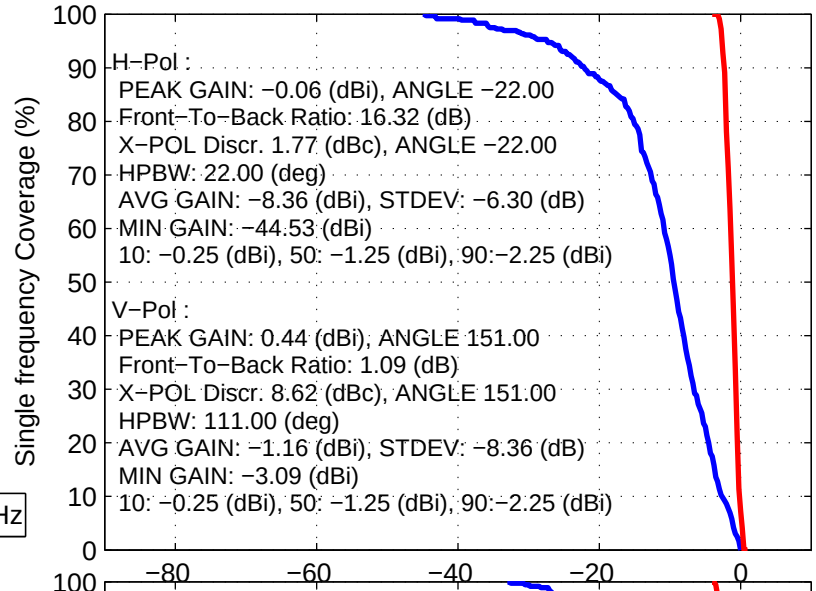
Unit Tested....."ABG TAG TRACK"
Mfr./Model....."ABG"
ID Number....."SAMPLE A"
Antenna Type..."TOPHAT MONOPOLE"

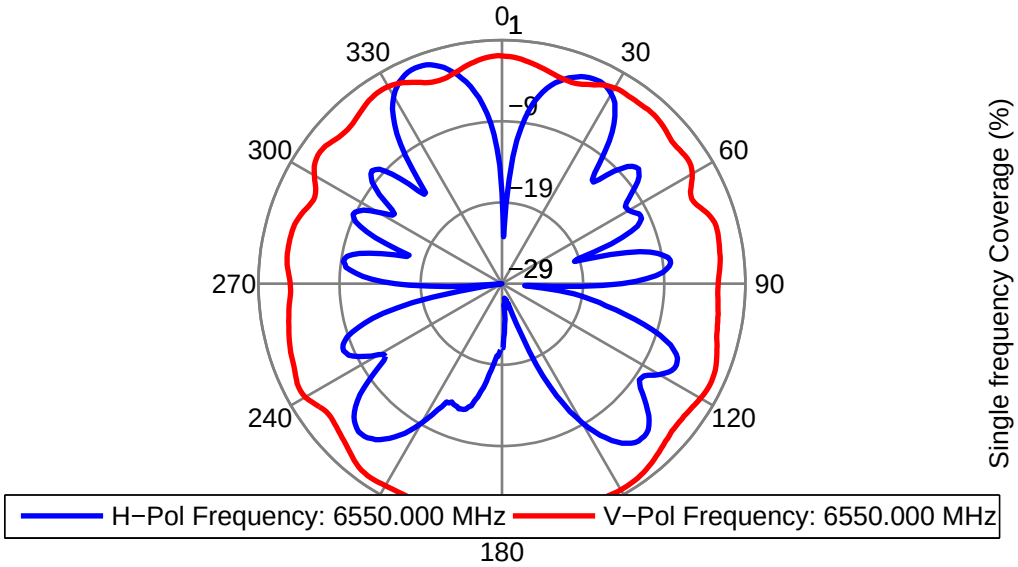
RF Detector....Vector Network Analyzer
Mfr./Model.....Rohde & Schwarz ZVB−20
Resolution BW.. 2.000000 kHz
Detector Function..."SPARAMS (V)"
Span...N/A

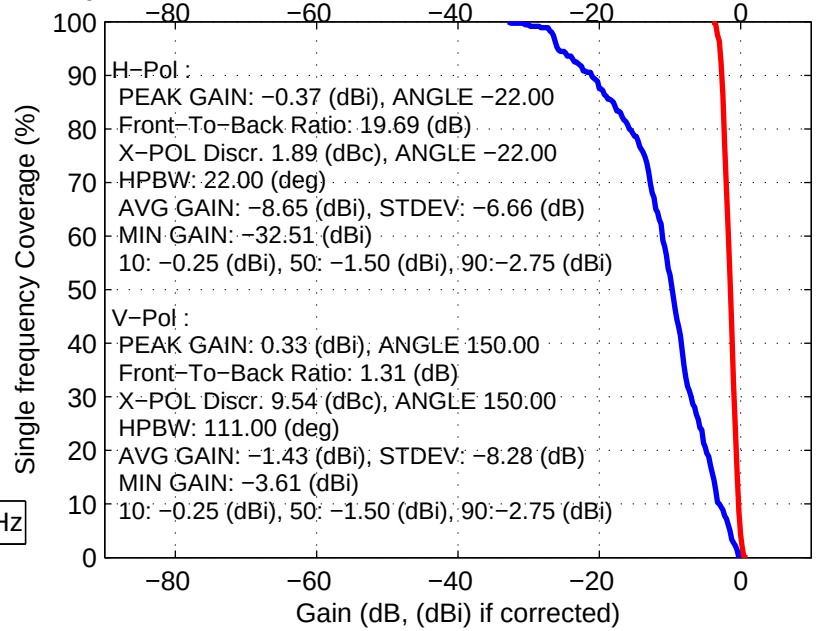
RF Source.....Vector Network Analyzer
RF Level.....10.000000 dBm
Transmit Ant..."CONDOR QUAD−RIDGE 2−18 GHZ"
Height....."1.5 m"
Range....."3 m"

Ant. Location...."CENTER OF AZIMUTH TURNTABLE, ANT VERTICAL"
Comments....."AZIMUTH CUT THROUGH PLANE OF PCB, THETA = 90, PHI = −179 TO 180 DEG. PHI = 0 DEG AT FEED LOCATION."









Pattern File.....2013−11−26−15−33− 5_AZIMUTH_CUT_001.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
Unit Tested....."ABG TAG TRACK"
Mfr./Model....."ABG"
ID Number....."SAMPLE A"
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RF Detector....Vector Network Analyzer
Mfr./Model.....Rohde & Schwarz ZVB−20
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Span...N/A

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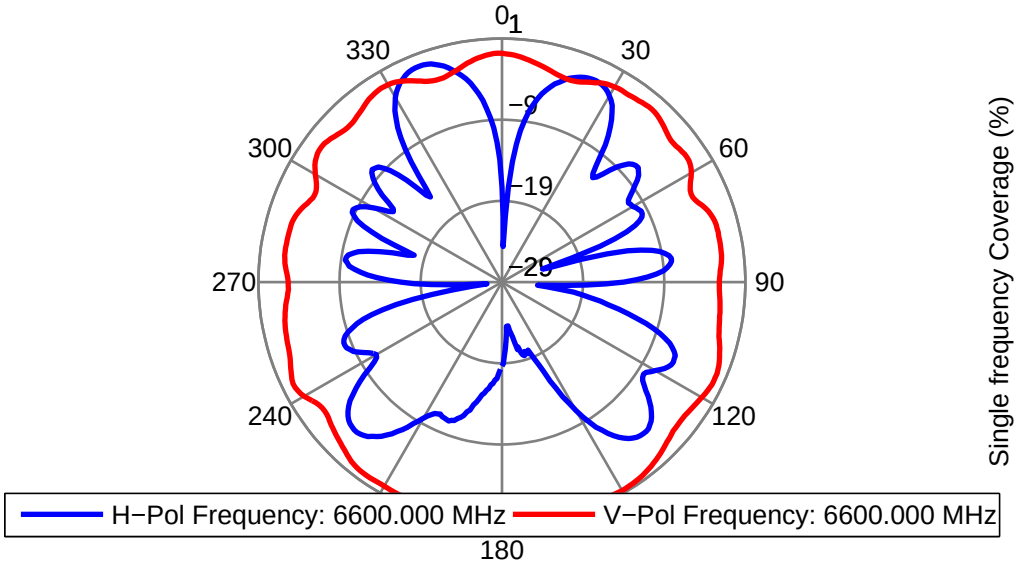
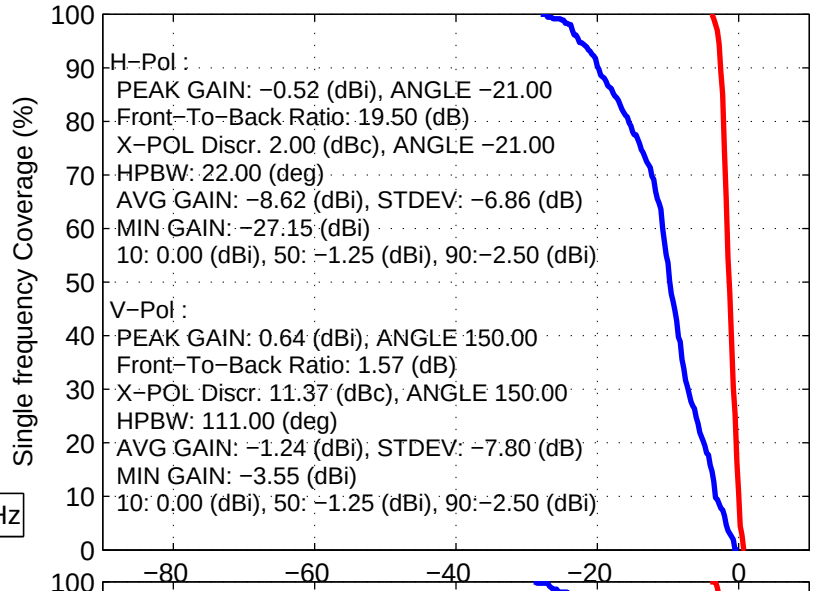
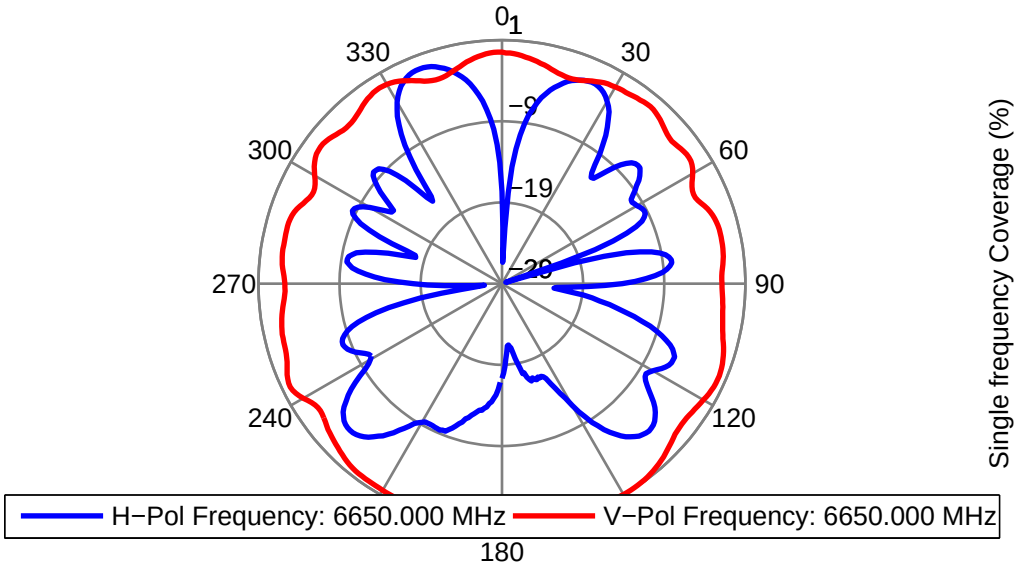
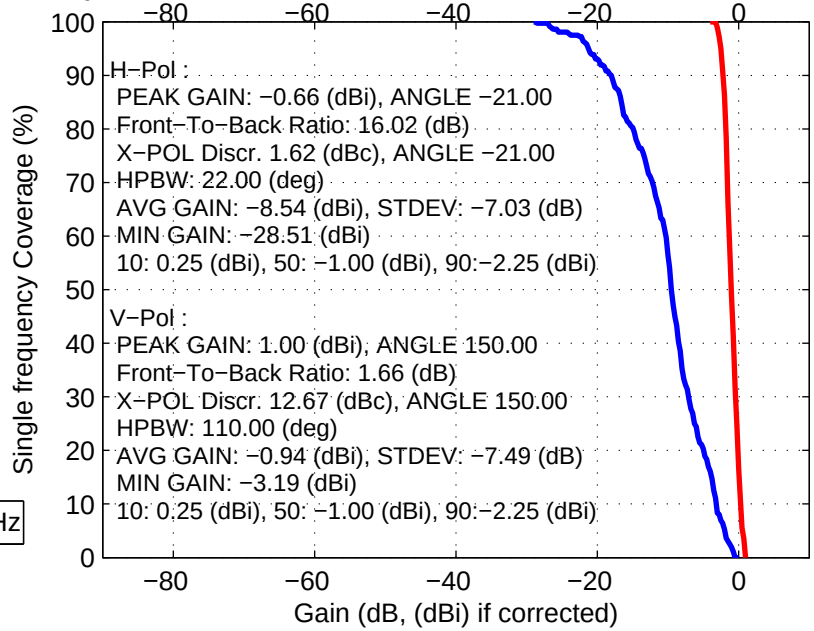
Ant. Location...."CENTER OF AZIMUTH TURNTABLE, ANT VERTICAL"
Comments....."AZIMUTH CUT THROUGH PLANE OF PCB, THETA = 90, PHI = −179 TO 180 DEG. PHI = 0 DEG AT FEED LOCATION."









Pattern File.....2013−11−26−15−33− 5_AZIMUTH_CUT_001.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
Unit Tested....."ABG TAG TRACK"
Mfr./Model....."ABG"
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Span...N/A

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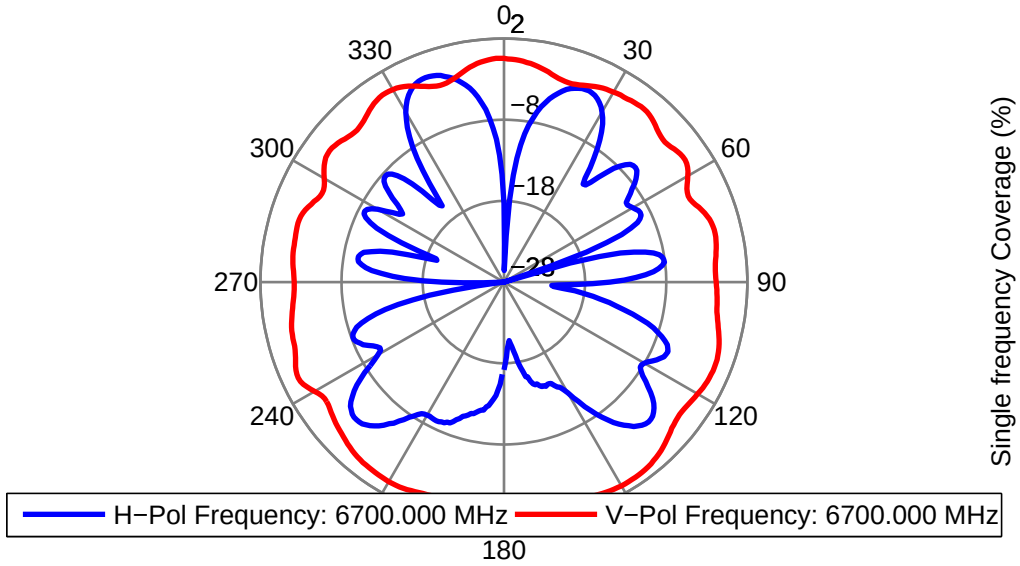
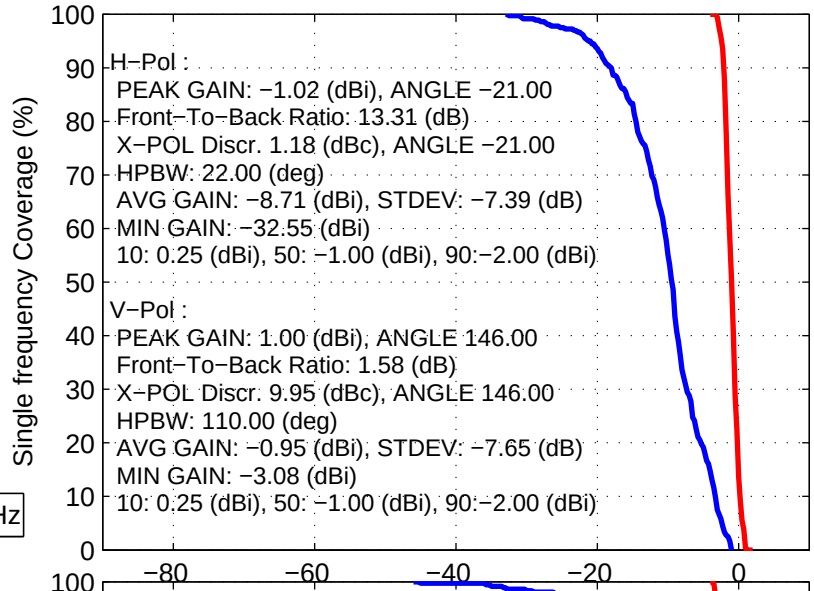
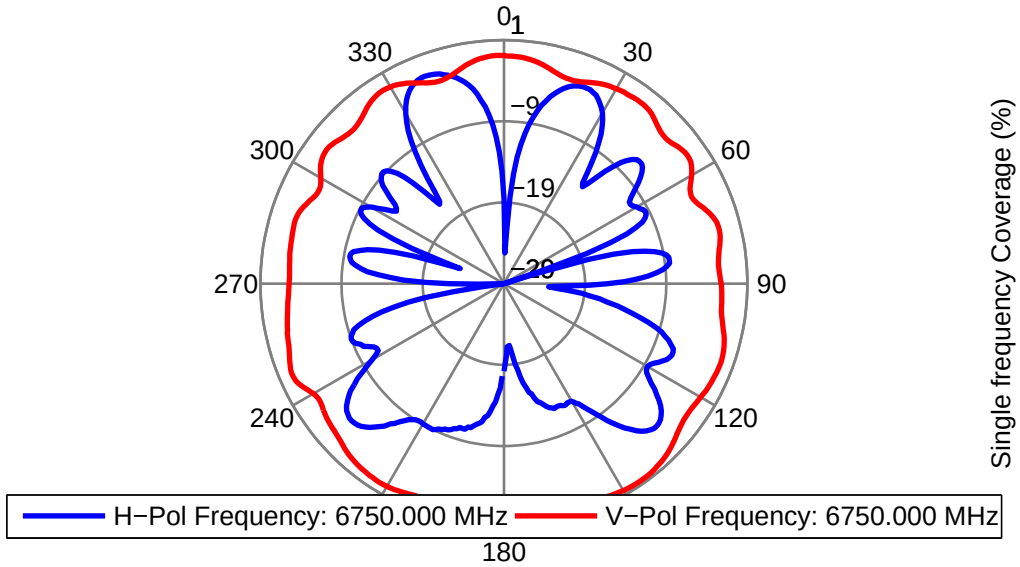
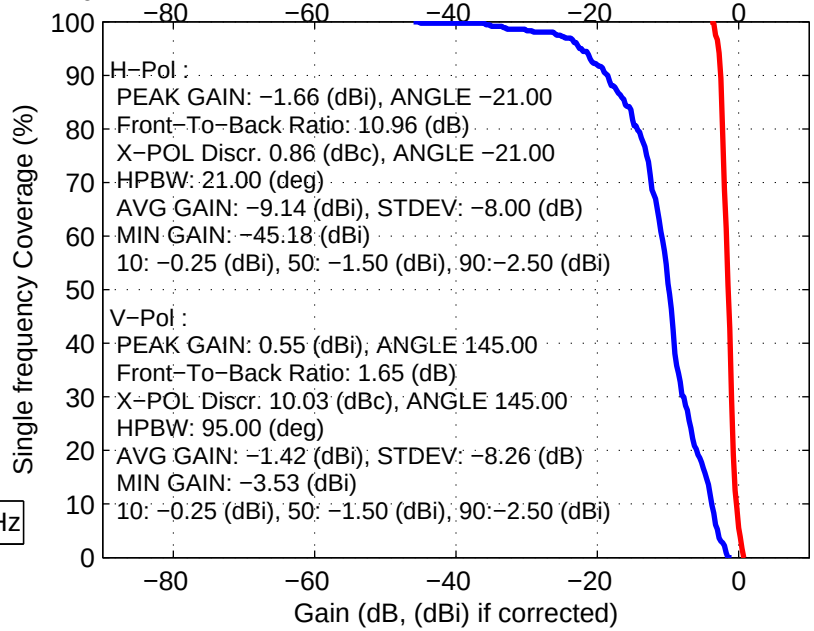
Comments....."AZIMUTH CUT THROUGH PLANE OF PCB, THETA = 90, PHI = −179 TO 180 DEG. PHI = 0 DEG AT FEED LOCATION."









Pattern File.....2013−11−26−15−33− 5_AZIMUTH_CUT_001.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
Unit Tested....."ABG TAG TRACK"
Mfr./Model....."ABG"
ID Number....."SAMPLE A"
Antenna Type..."TOPHAT MONOPOLE"

RF Detector....Vector Network Analyzer
Mfr./Model.....Rohde & Schwarz ZVB−20
Resolution BW.. 2.000000 kHz
Detector Function..."SPARAMS (V)"
Span...N/A

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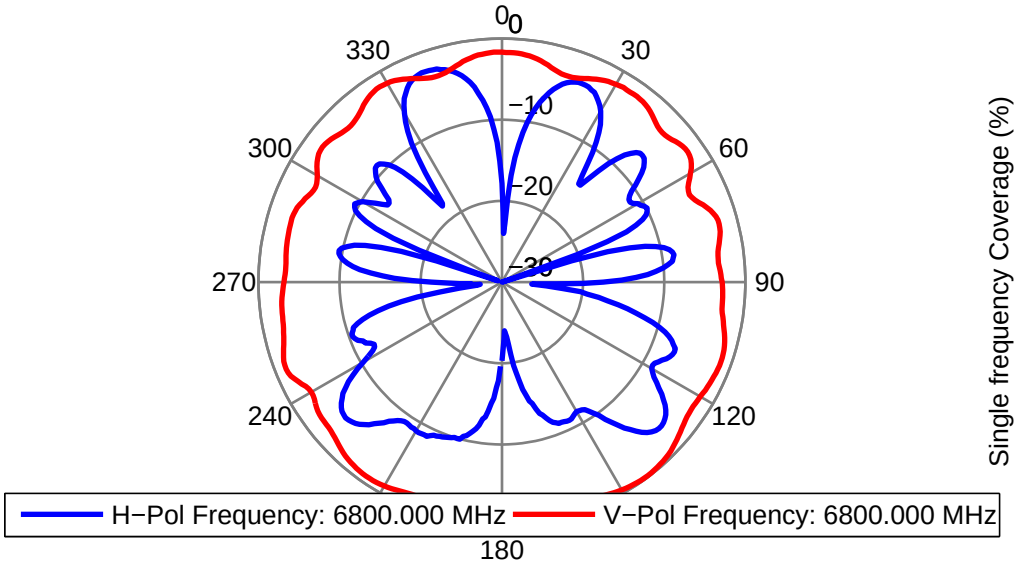
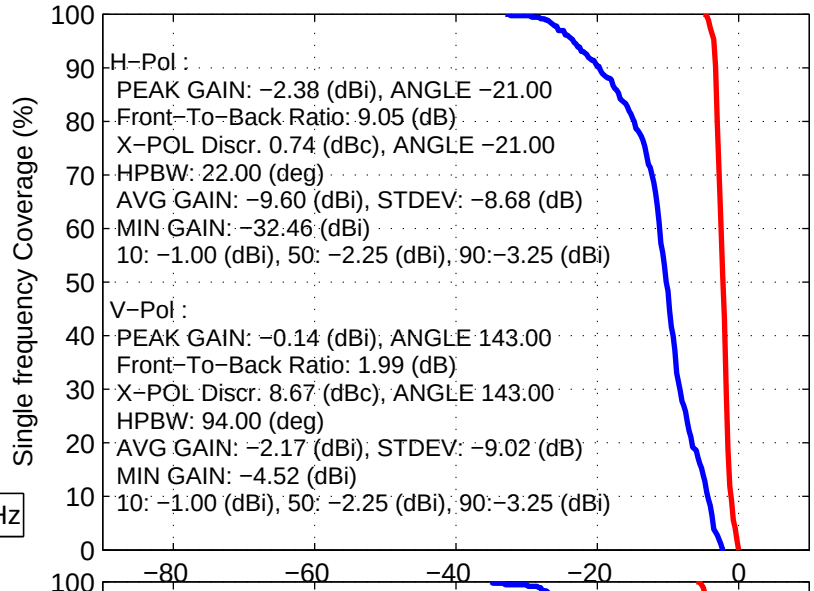
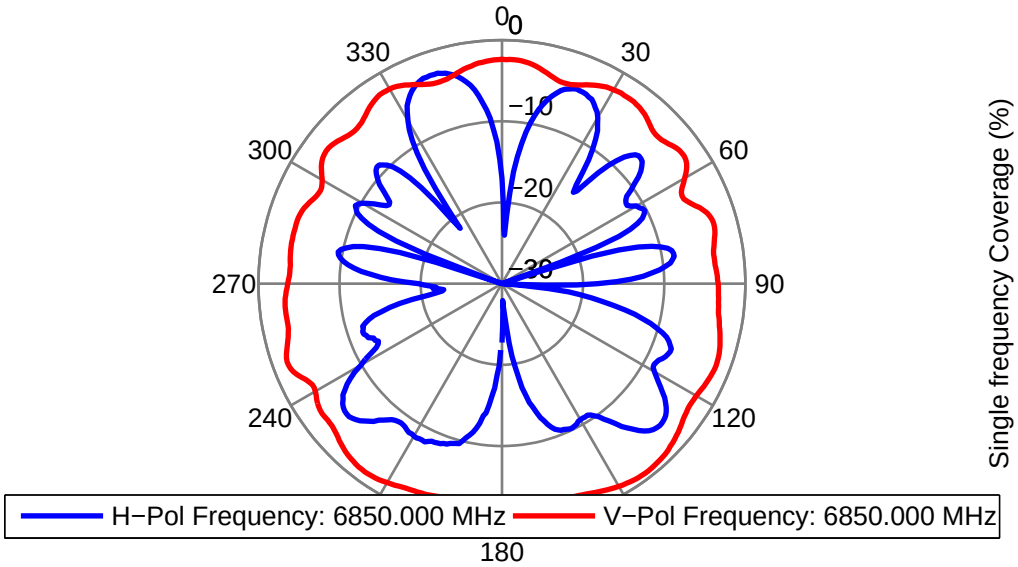
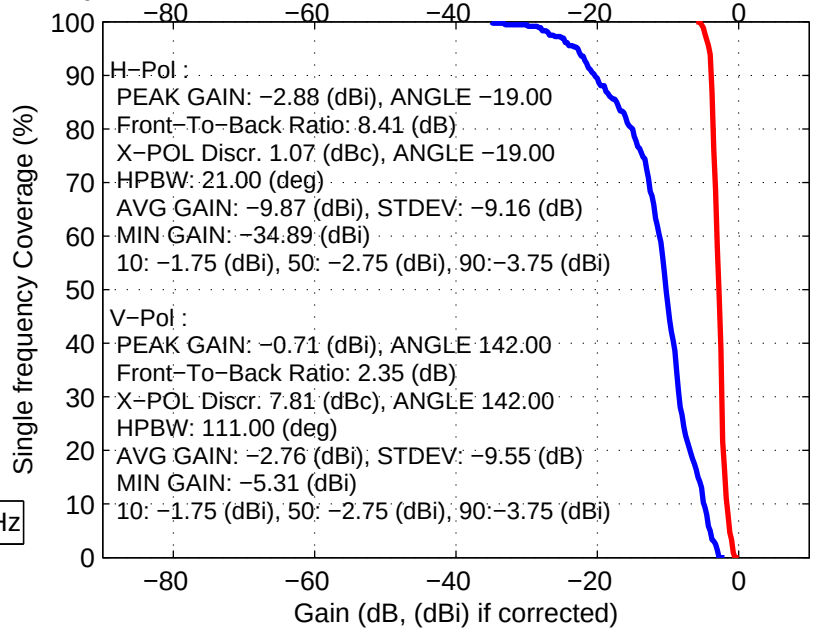
Comments....."AZIMUTH CUT THROUGH PLANE OF PCB, THETA = 90, PHI = −179 TO 180 DEG. PHI = 0 DEG AT FEED LOCATION."









Pattern File.....2013−11−26−15−33− 5_AZIMUTH_CUT_001.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
Unit Tested....."ABG TAG TRACK"
Mfr./Model....."ABG"
ID Number....."SAMPLE A"
Antenna Type..."TOPHAT MONOPOLE"

RF Detector....Vector Network Analyzer
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Detector Function..."SPARAMS (V)"
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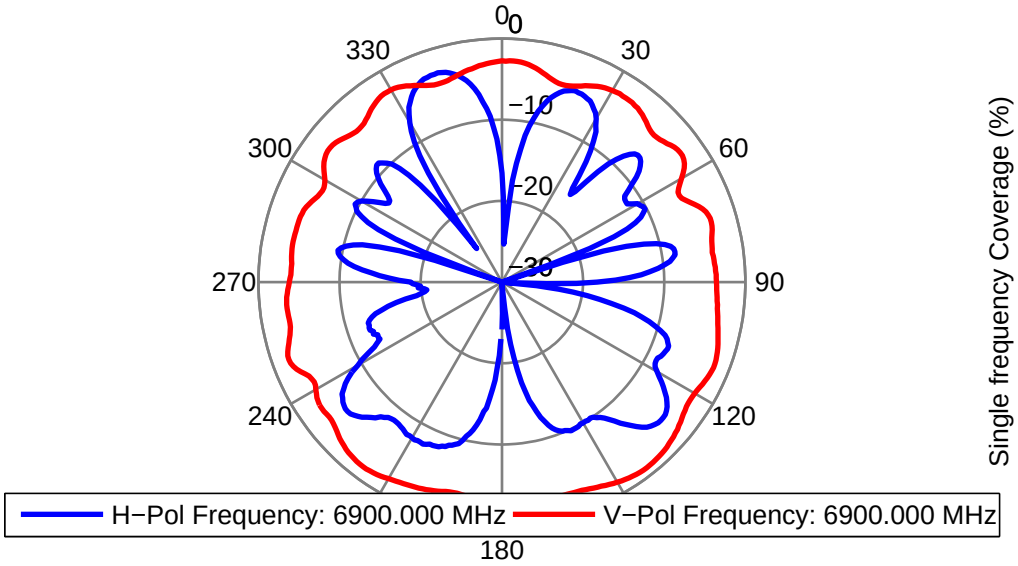
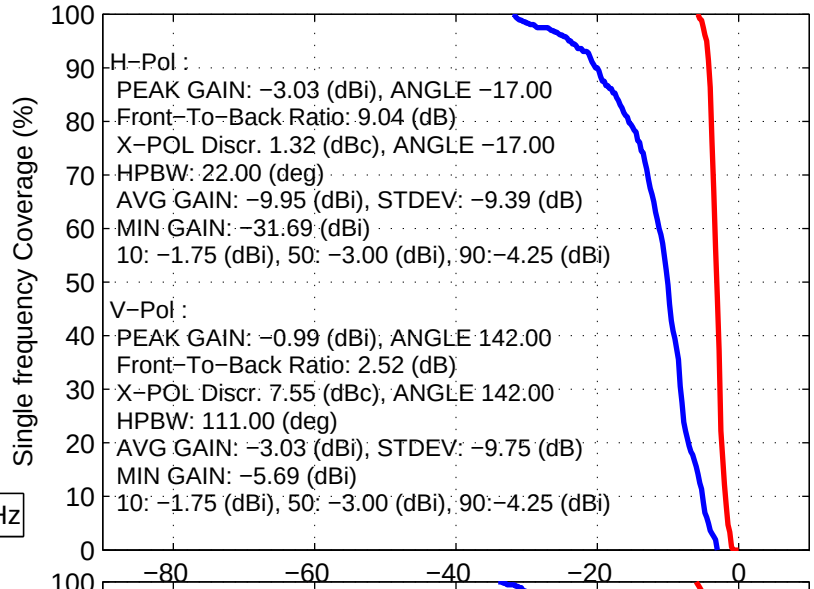
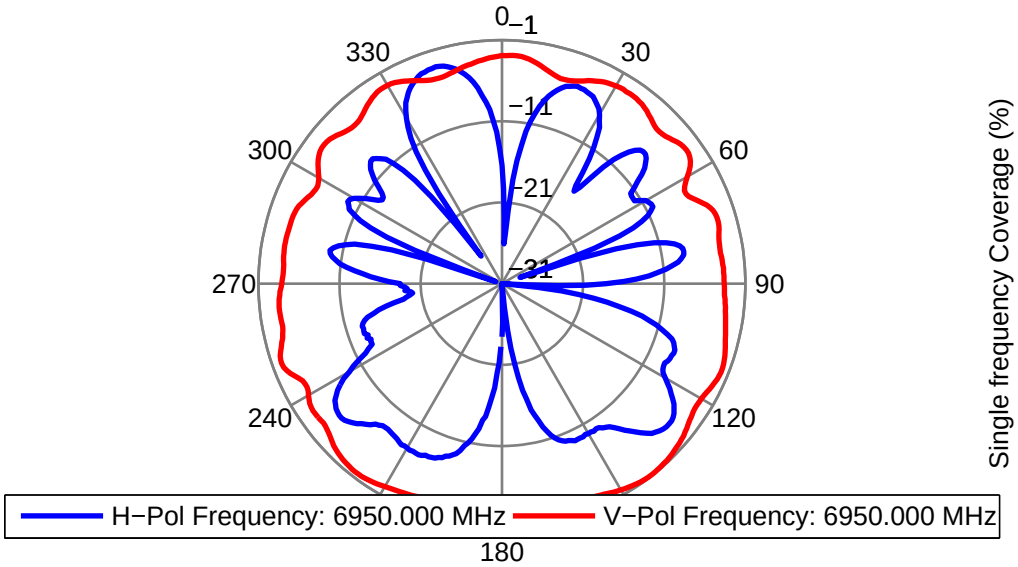
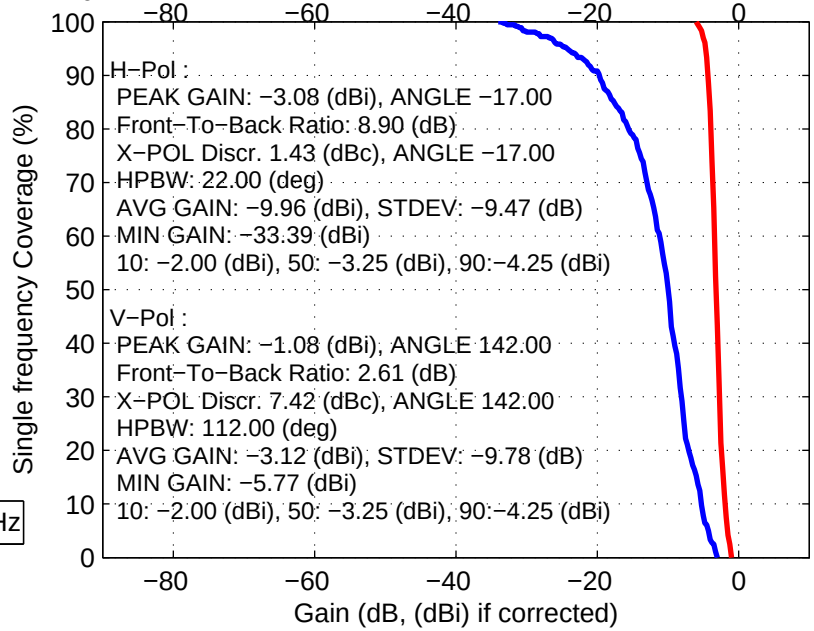
Range....."3 m"

Ant. Location...."CENTER OF AZIMUTH TURNTABLE, ANT VERTICAL"
Comments....."AZIMUTH CUT THROUGH PLANE OF PCB, THETA = 90, PHI = −179 TO 180 DEG. PHI = 0 DEG AT FEED LOCATION."







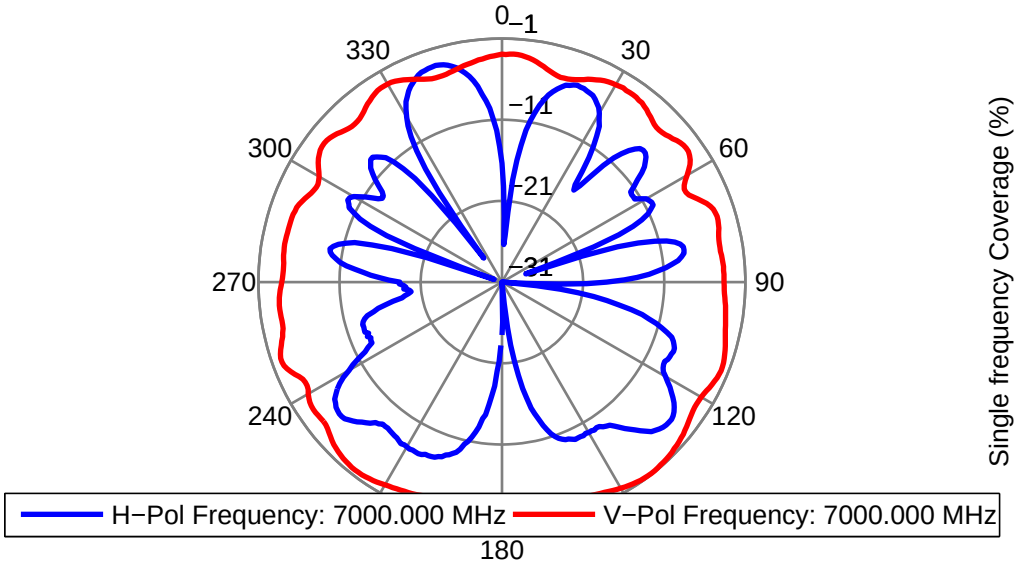


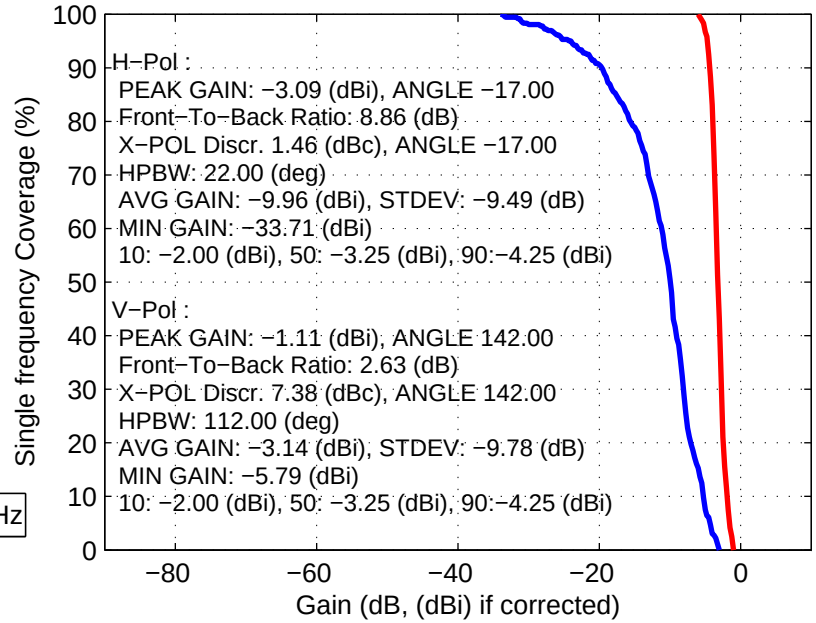
Pattern File.....2013−11−26−15−33− 5_AZIMUTH_CUT_001.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
Unit Tested....."ABG TAG TRACK"
Mfr./Model....."ABG"
ID Number....."SAMPLE A"
Antenna Type..."TOPHAT MONOPOLE"

RF Detector....Vector Network Analyzer
Mfr./Model.....Rohde & Schwarz ZVB−20
Resolution BW.. 2.000000 kHz
Detector Function..."SPARAMS (V)"
Span...N/A

RF Source.....Vector Network Analyzer
RF Level.....10.000000 dBm
Transmit Ant..."CONDOR QUAD−RIDGE 2−18 GHZ"
Height....."1.5 m"
Range....."3 m"

Ant. Location...."CENTER OF AZIMUTH TURNTABLE, ANT VERTICAL"
Comments....."AZIMUTH CUT THROUGH PLANE OF PCB, THETA = 90, PHI = −179 TO 180 DEG. PHI = 0 DEG AT FEED LOCATION."



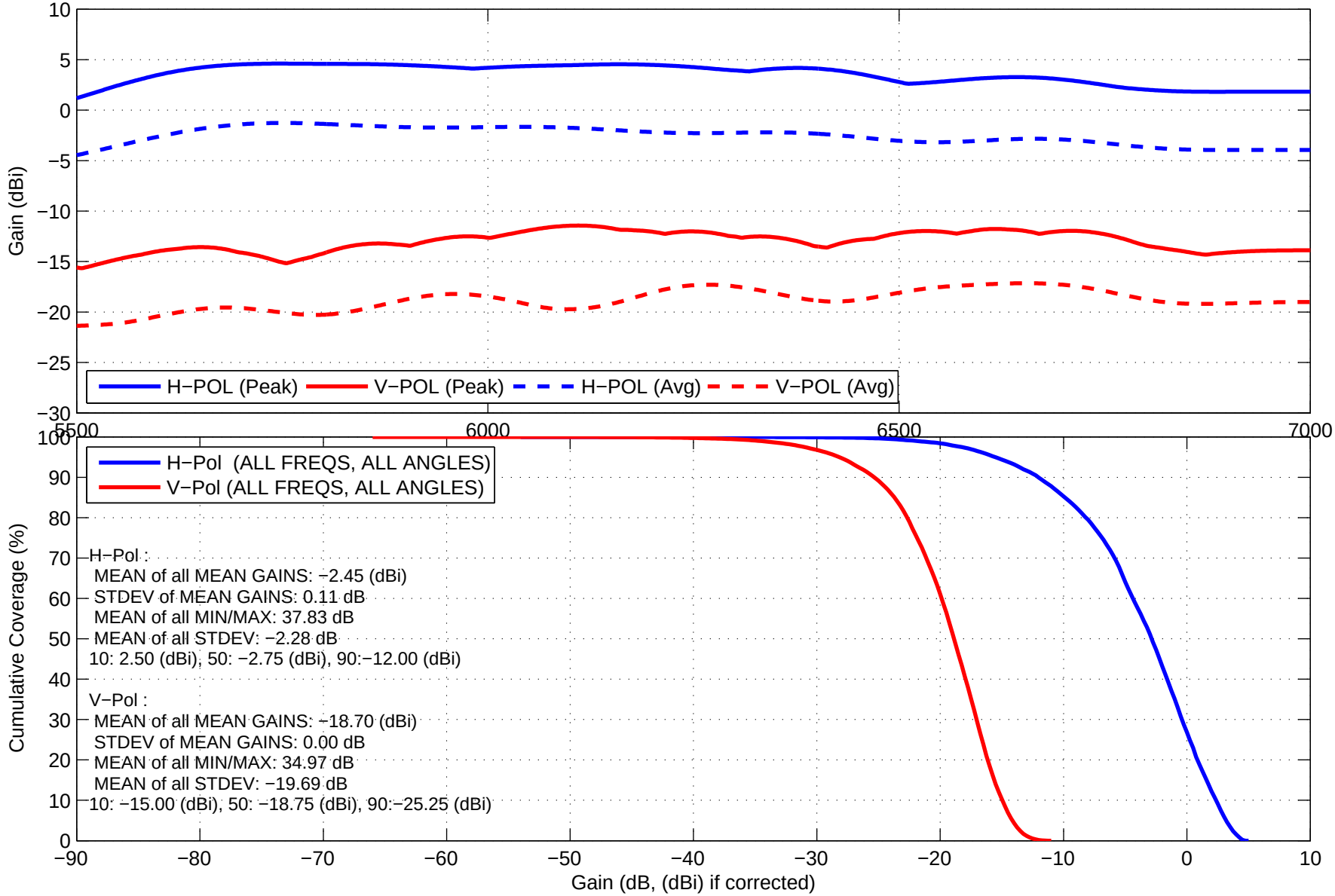


Pattern File.....2013−11−26−15−46−22_ELEVATION_CUT_1_002.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
Unit Tested....."ABG TAG TRACK"
Mfr./Model....."ABG"
ID Number....."SAMPLE A"
Antenna Type..."TOPHAT MONOPOLE"

RF Detector....Vector Network Analyzer
Mfr./Model.....Rohde & Schwarz ZVB−20
Resolution BW.. 2.000000 kHz
Detector Function..."SPARAMS (V)"
Span...N/A

RF Source.....Vector Network Analyzer
RF Level.....10.000000 dBm
Transmit Ant..."CONDOR QUAD−RIDGE 2−18 GHZ"
Height....."1.5 m"
Range....."3 m"

Ant. Location...."CENTER OF AZIMUTH TURNTABLE, ANT HORIZONTAL"
Comments....."ELEVATION CUT ACROSS PLANE OF PCB, THETA = −179 TO 180 DEG. CUT THROUGH FEED AT PHI = 0 DEG."

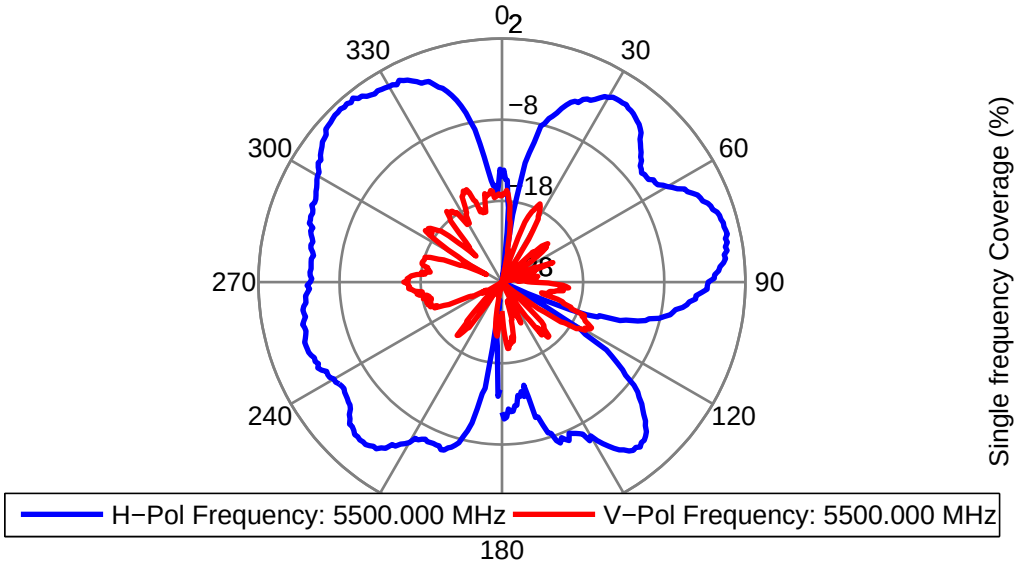


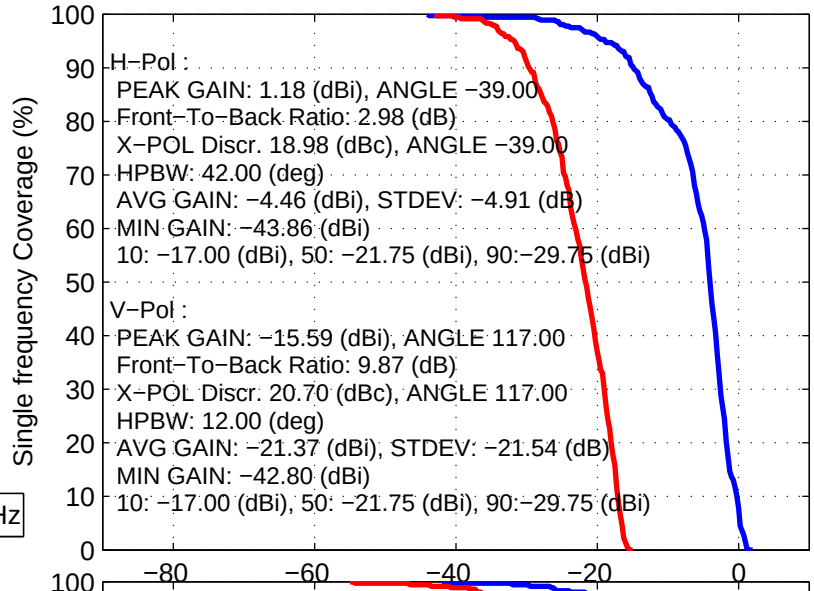
Pattern File.....2013−11−26−15−46−22_ELEVATION_CUT_1_002.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
Unit Tested....."ABG TAG TRACK"
Mfr./Model....."ABG"
ID Number....."SAMPLE A"
Antenna Type..."TOPHAT MONOPOLE"

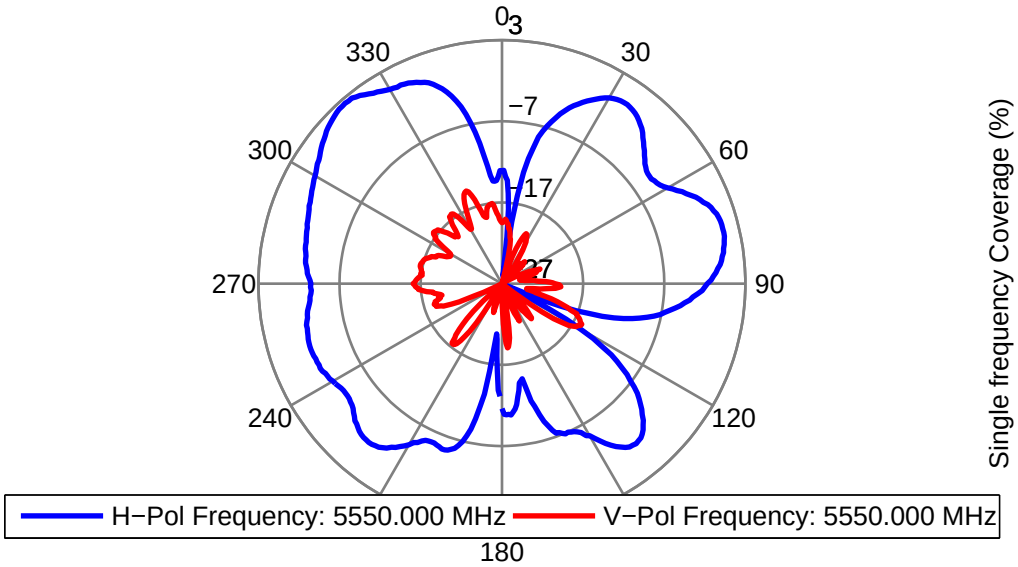
RF Detector....Vector Network Analyzer
Mfr./Model.....Rohde & Schwarz ZVB−20
Resolution BW.. 2.000000 kHz
Detector Function..."SPARAMS (V)"
Span...N/A

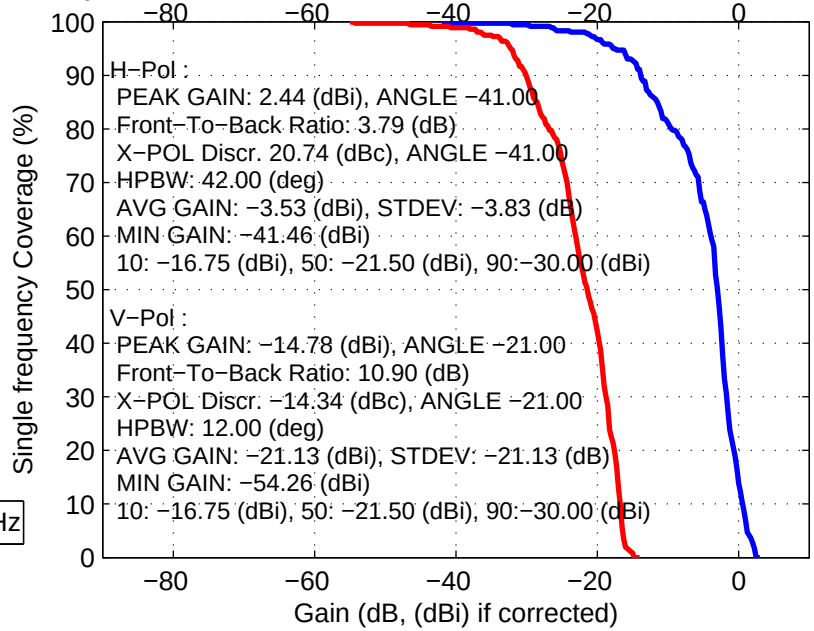
RF Source.....Vector Network Analyzer
RF Level.....10.000000 dBm
Transmit Ant..."CONDOR QUAD−RIDGE 2−18 GHZ"
Height....."1.5 m"
Range....."3 m"

Ant. Location...."CENTER OF AZIMUTH TURNTABLE, ANT HORIZONTAL"
Comments....."ELEVATION CUT ACROSS PLANE OF PCB, THETA = −179 TO 180 DEG. CUT THROUGH FEED AT PHI = 0 DEG."









Pattern File.....2013−11−26−15−46−22_ELEVATION_CUT_1_002.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
Unit Tested....."ABG TAG TRACK"
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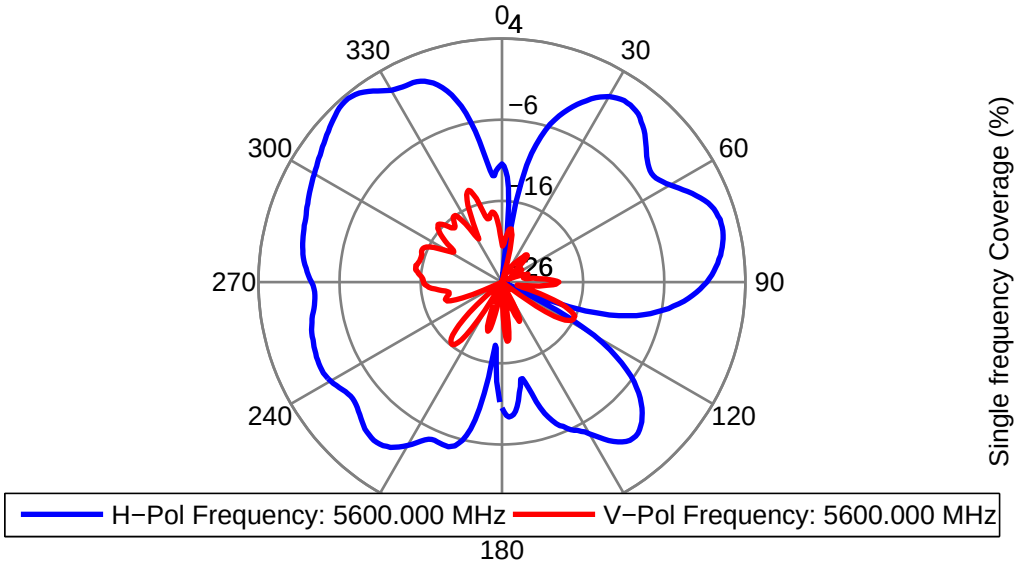
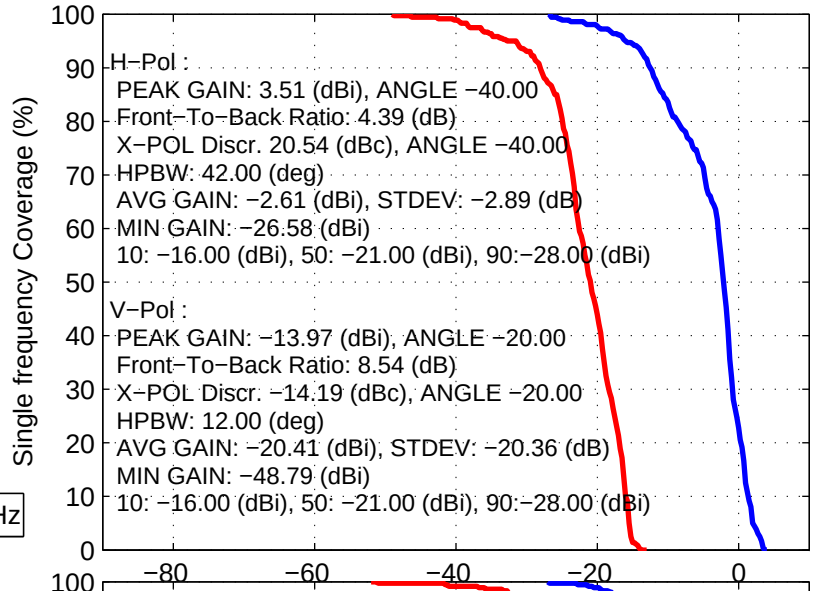
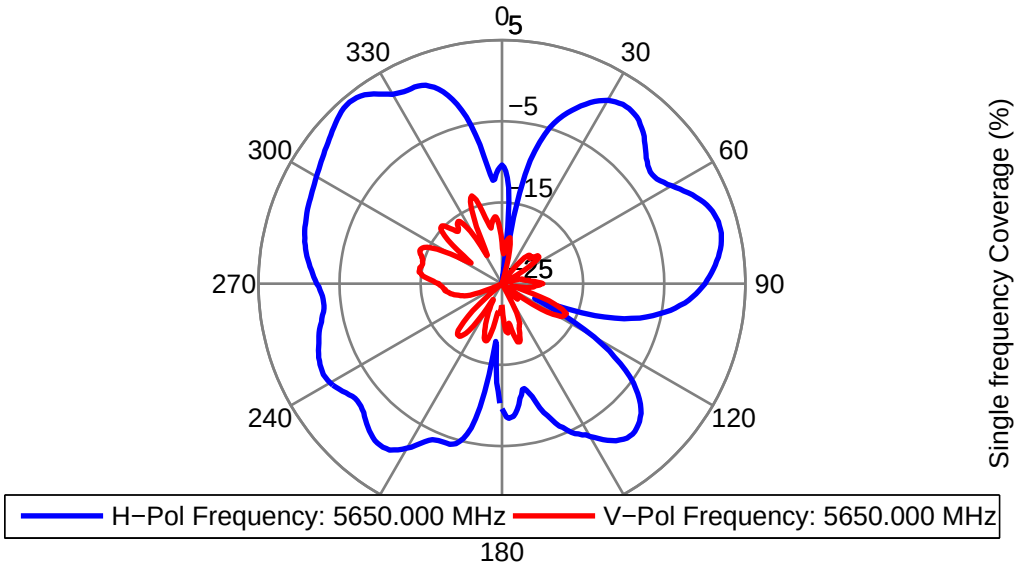
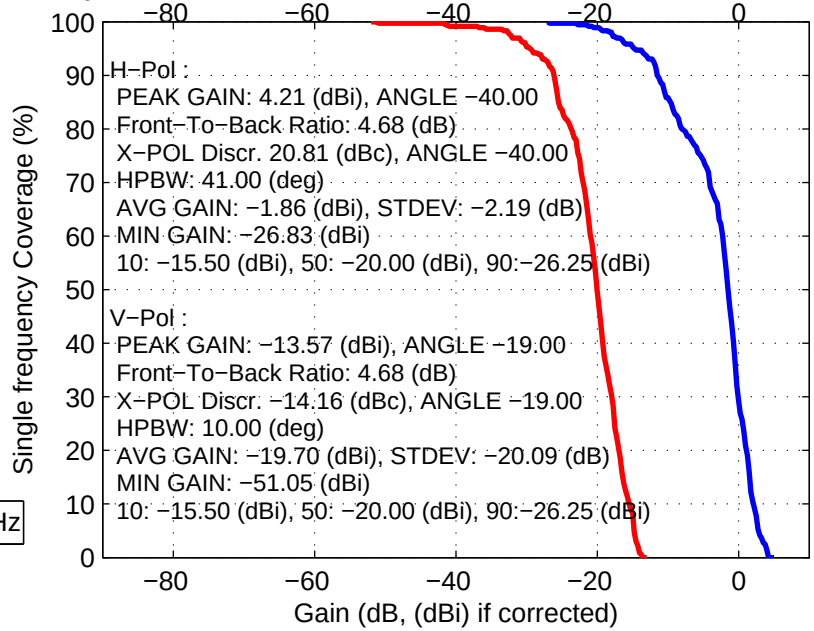
Comments....."ELEVATION CUT ACROSS PLANE OF PCB, THETA = −179 TO 180 DEG. CUT THROUGH FEED AT PHI = 0 DEG."









Pattern File.....2013−11−26−15−46−22_ELEVATION_CUT_1_002.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
Unit Tested....."ABG TAG TRACK"
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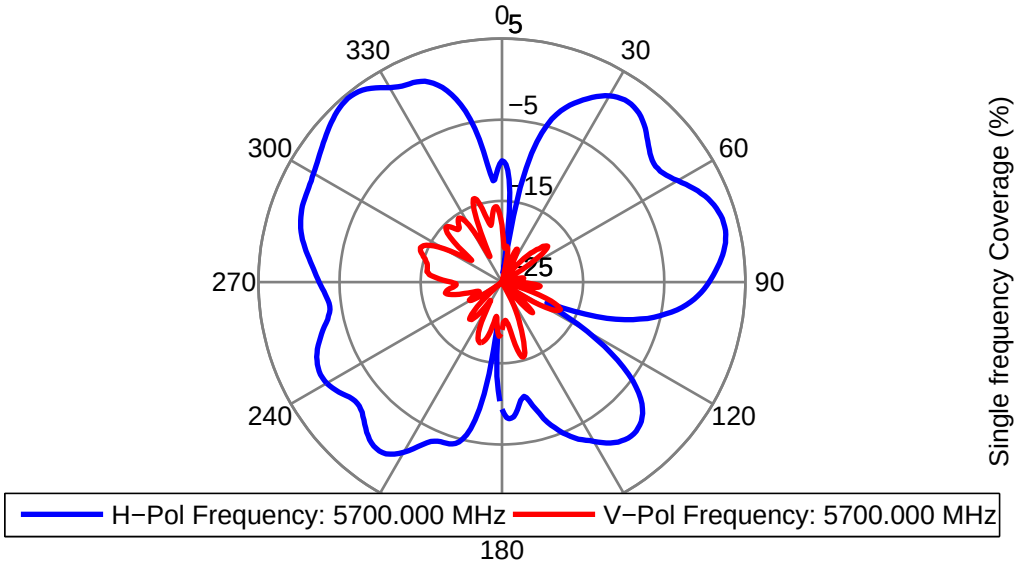
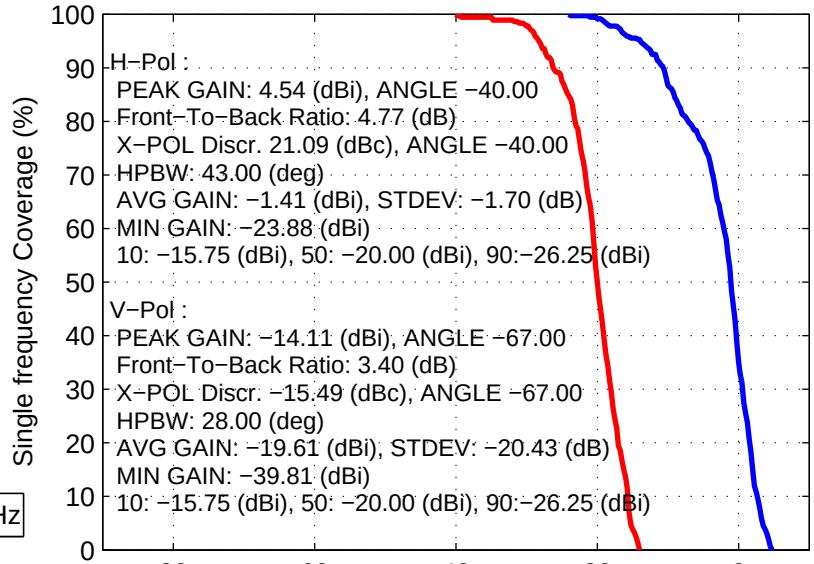
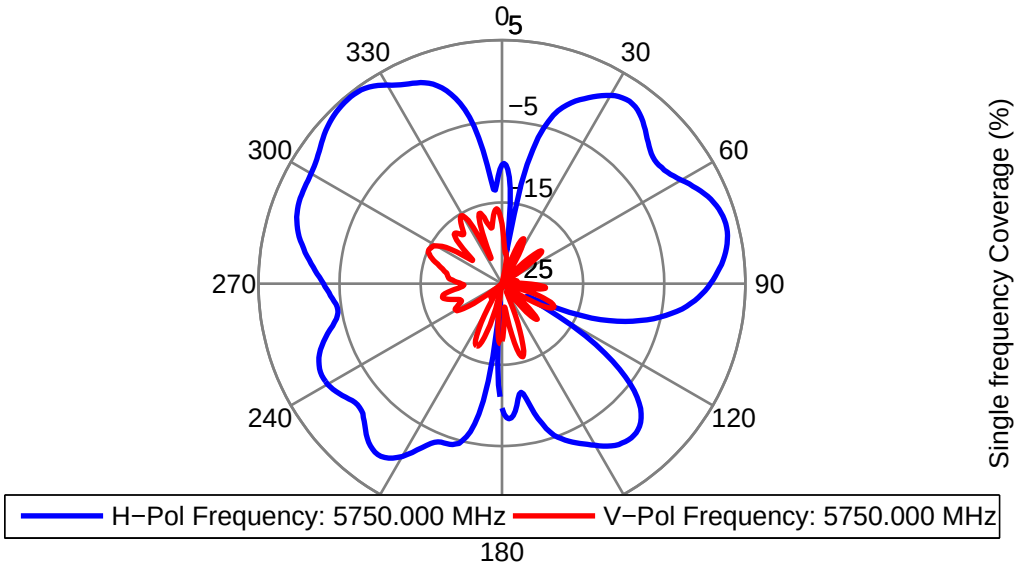
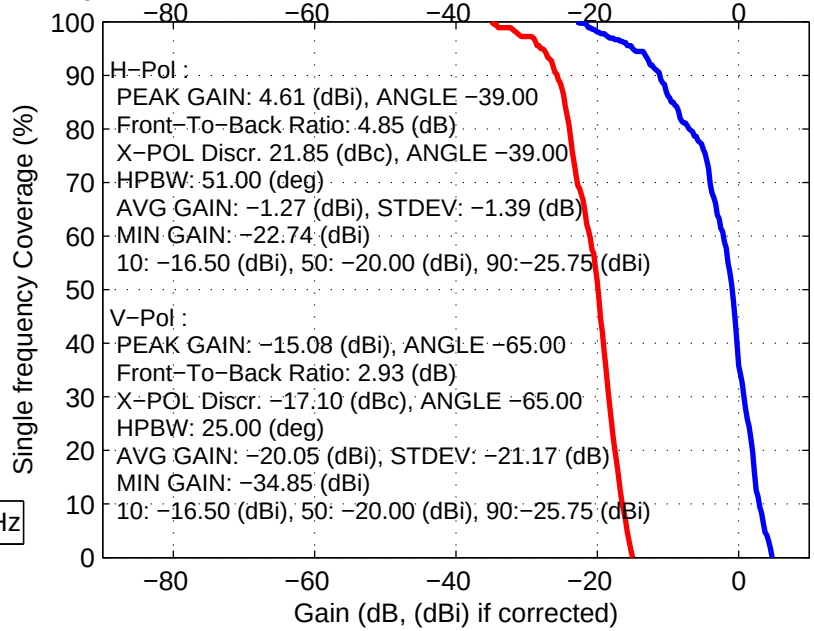
Transmit Ant..."CONDOR QUAD−RIDGE 2−18 GHZ"
Height....."1.5 m"
Range....."3 m"

Ant. Location...."CENTER OF AZIMUTH TURNTABLE, ANT HORIZONTAL"
Comments....."ELEVATION CUT ACROSS PLANE OF PCB, THETA = −179 TO 180 DEG. CUT THROUGH FEED AT PHI = 0 DEG."







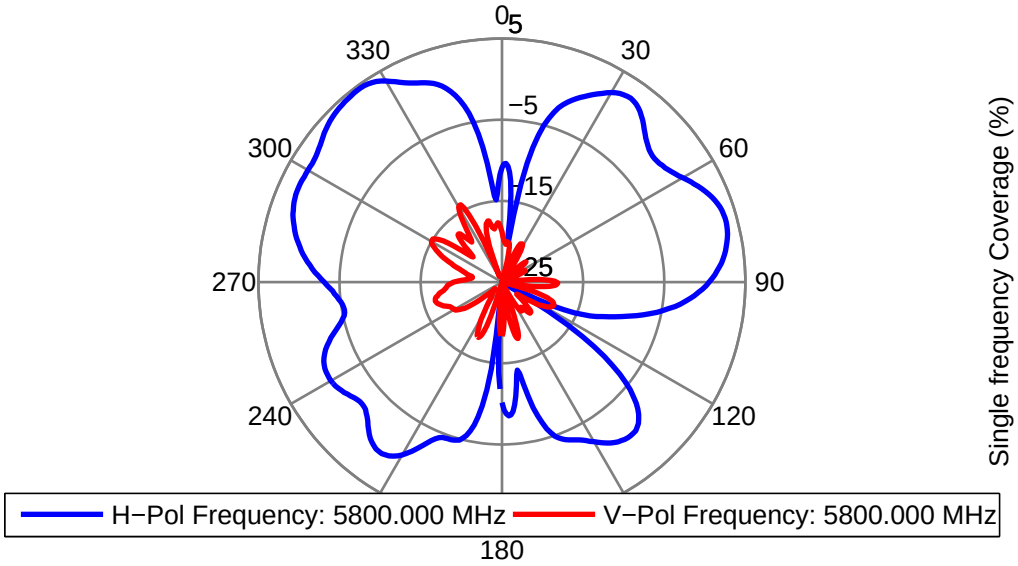


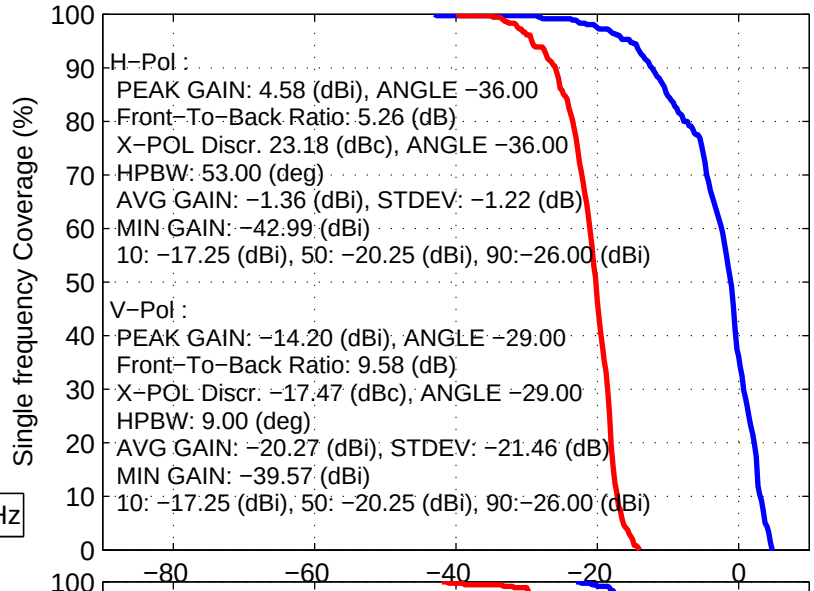
Pattern File.....2013−11−26−15−46−22_ELEVATION_CUT_1_002.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
Unit Tested....."ABG TAG TRACK"
Mfr./Model....."ABG"
ID Number....."SAMPLE A"
Antenna Type..."TOPHAT MONOPOLE"

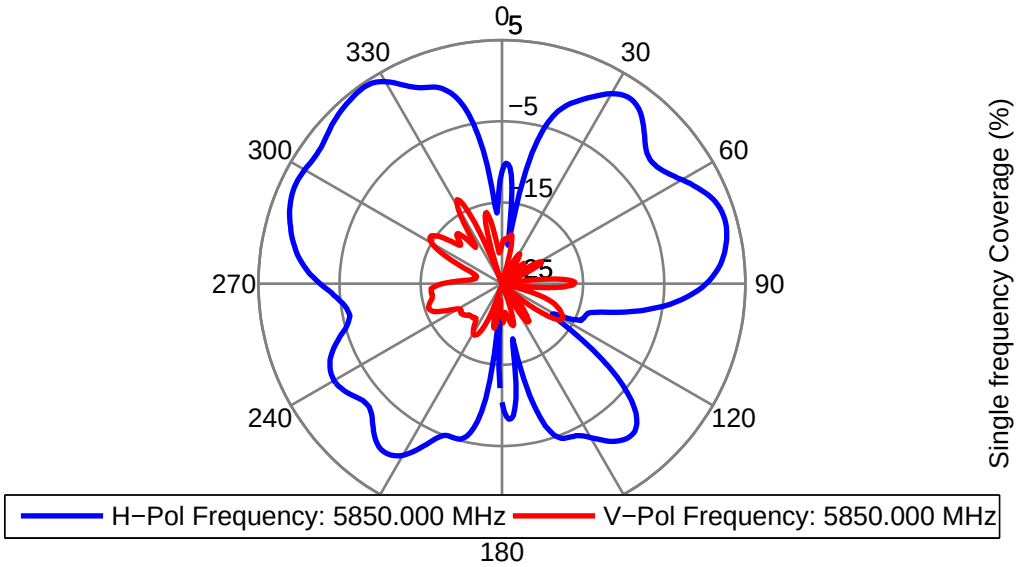
RF Detector....Vector Network Analyzer
Mfr./Model.....Rohde & Schwarz ZVB−20
Resolution BW.. 2.000000 kHz
Detector Function..."SPARAMS (V)"
Span...N/A

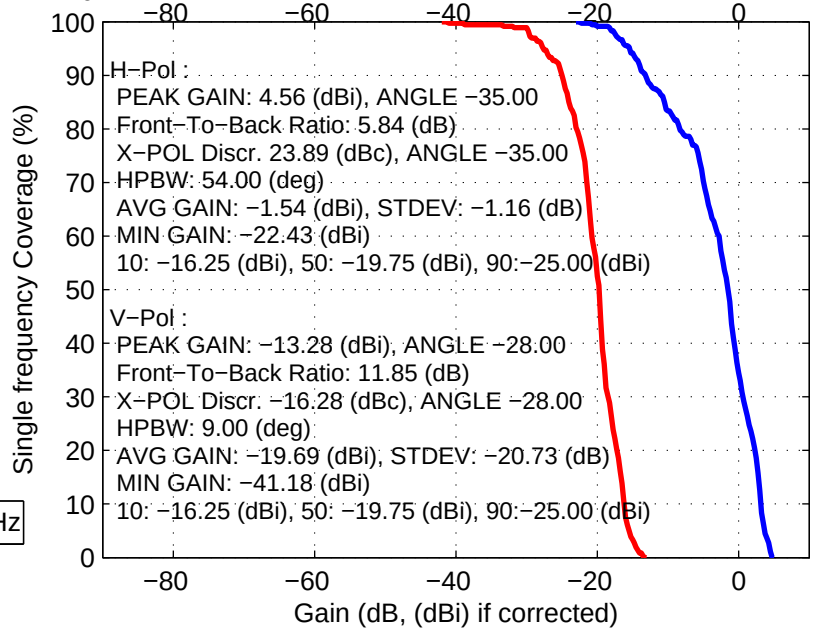
RF Source.....Vector Network Analyzer
RF Level.....10.000000 dBm
Transmit Ant..."CONDOR QUAD−RIDGE 2−18 GHZ"
Height....."1.5 m"
Range....."3 m"

Ant. Location...."CENTER OF AZIMUTH TURNTABLE, ANT HORIZONTAL"
Comments....."ELEVATION CUT ACROSS PLANE OF PCB, THETA = −179 TO 180 DEG. CUT THROUGH FEED AT PHI = 0 DEG."









Pattern File.....2013−11−26−15−46−22_ELEVATION_CUT_1_002.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
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Detector Function..."SPARAMS (V)"
Span...N/A

RF Source.....Vector Network Analyzer
RF Level.....10.000000 dBm
Transmit Ant..."CONDOR QUAD−RIDGE 2−18 GHZ"
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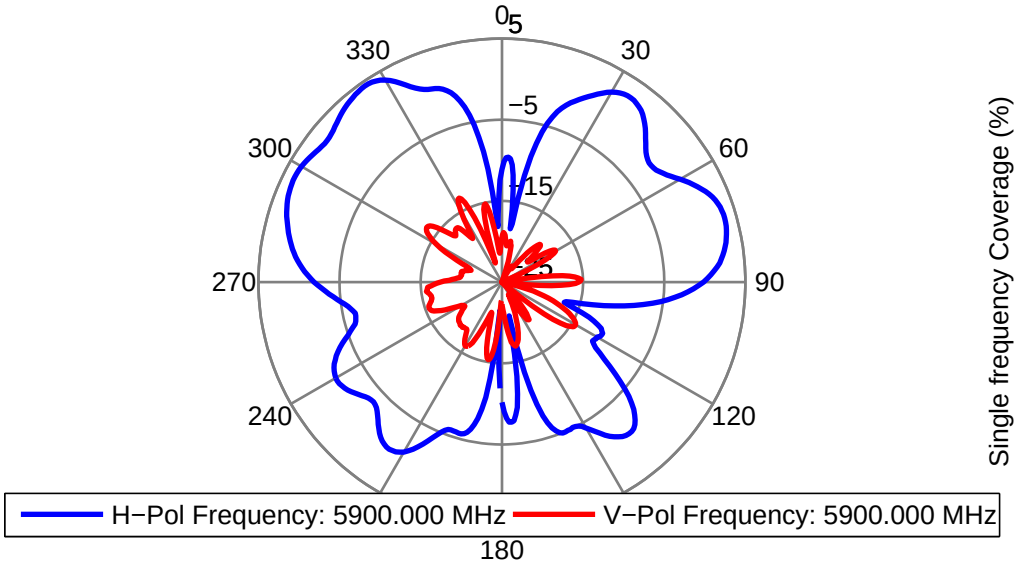
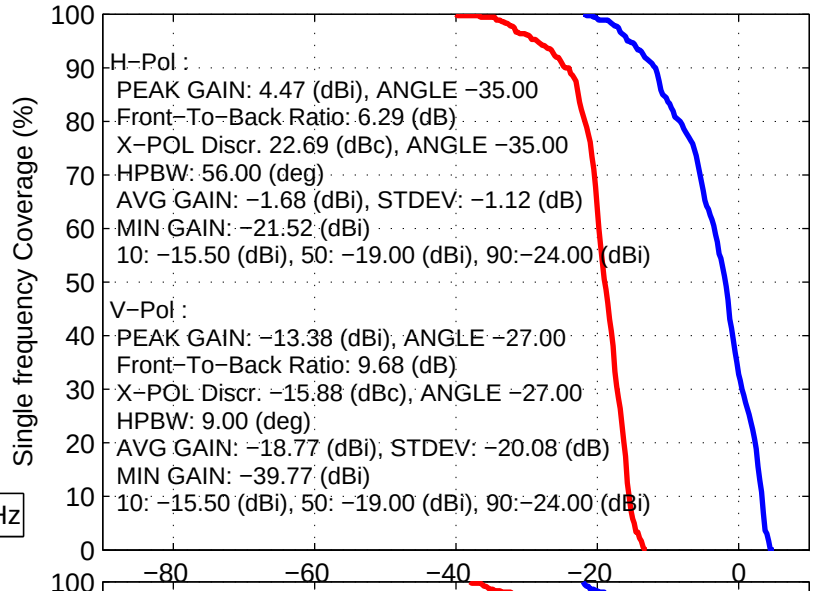
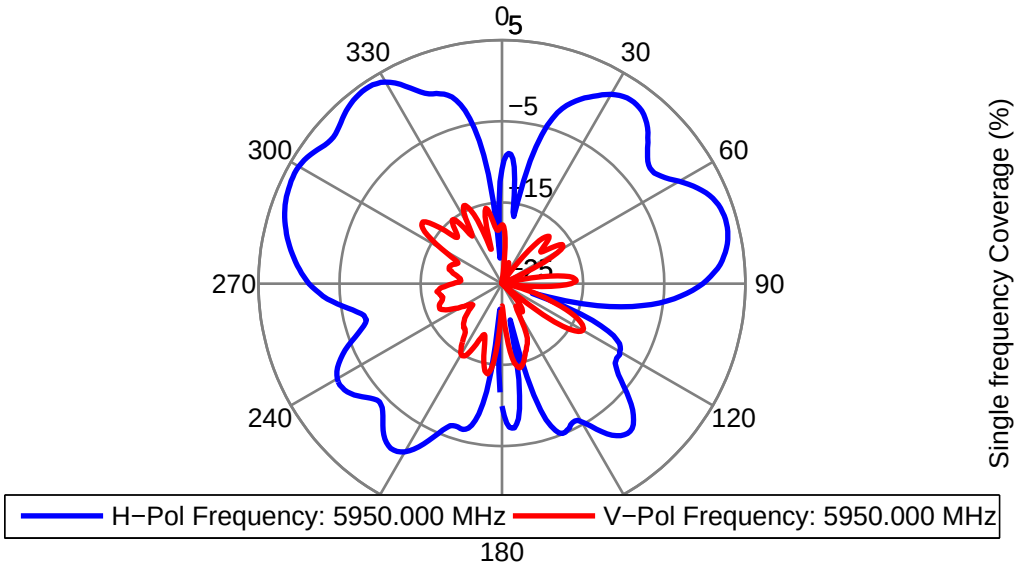
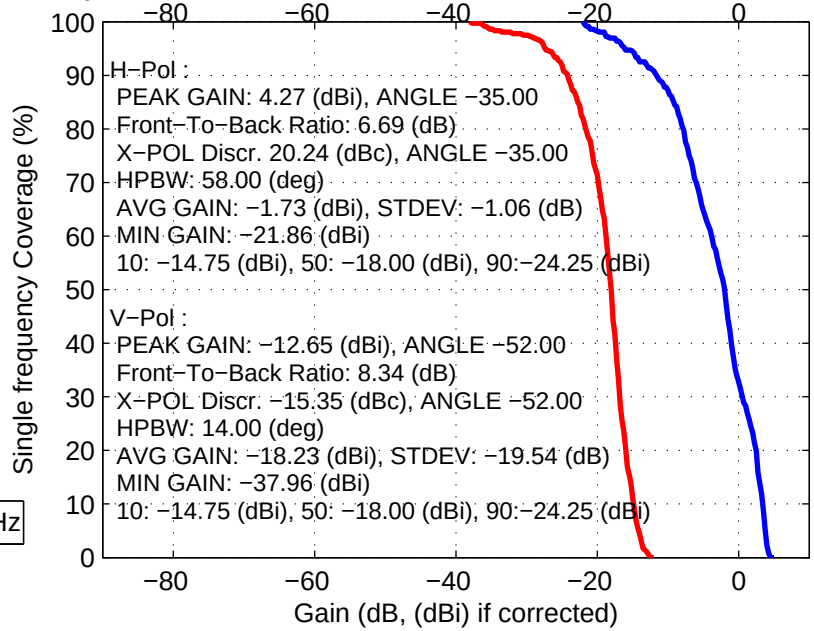
Range....."3 m"

Ant. Location...."CENTER OF AZIMUTH TURNTABLE, ANT HORIZONTAL"
Comments....."ELEVATION CUT ACROSS PLANE OF PCB, THETA = −179 TO 180 DEG. CUT THROUGH FEED AT PHI = 0 DEG."









Pattern File.....2013−11−26−15−46−22_ELEVATION_CUT_1_002.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
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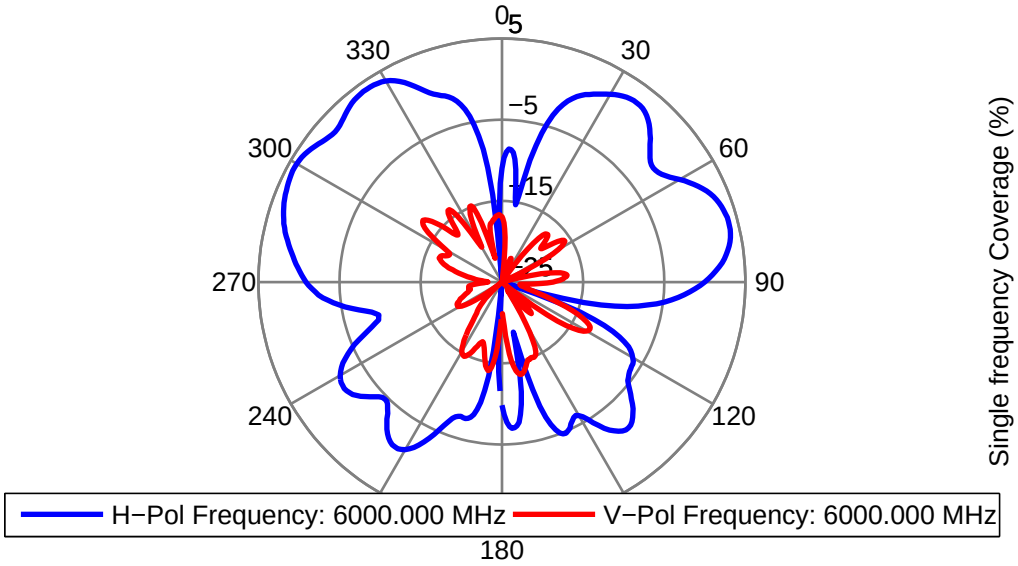
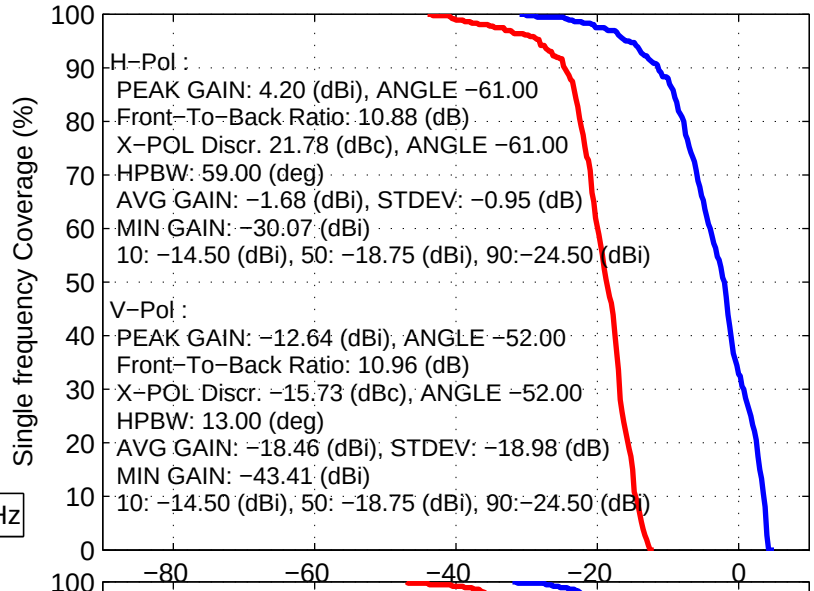
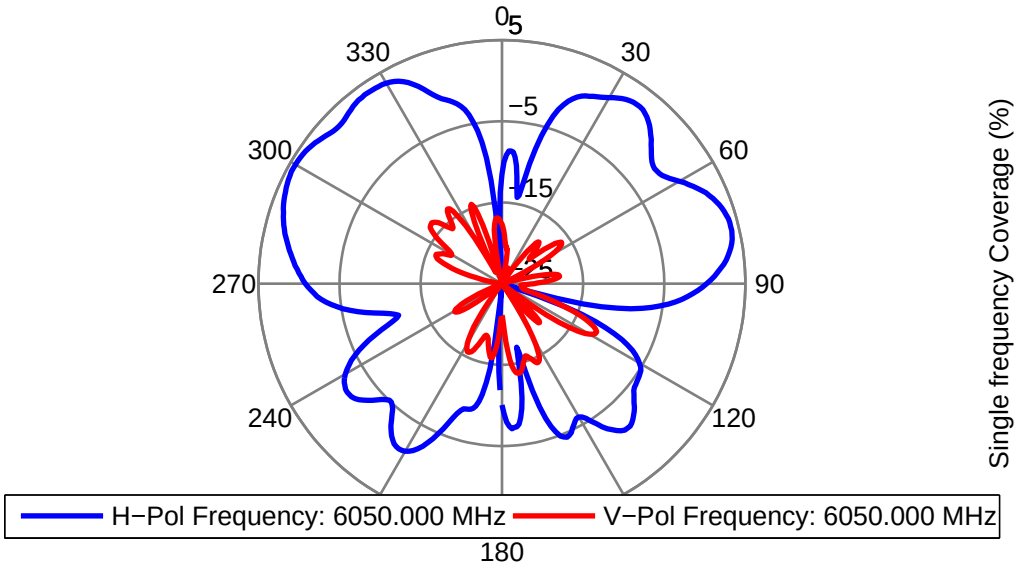
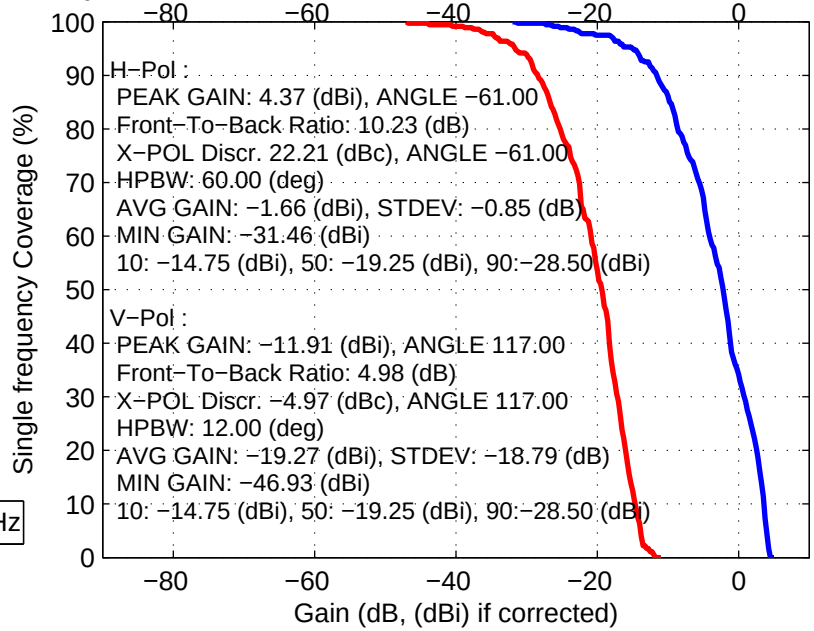
Comments....."ELEVATION CUT ACROSS PLANE OF PCB, THETA = −179 TO 180 DEG. CUT THROUGH FEED AT PHI = 0 DEG."









Pattern File.....2013−11−26−15−46−22_ELEVATION_CUT_1_002.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
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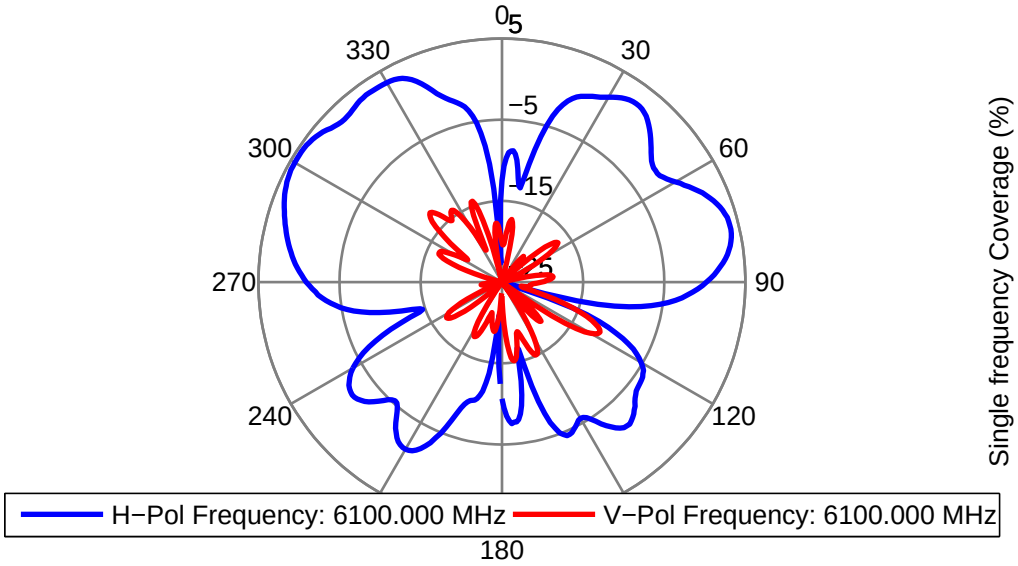
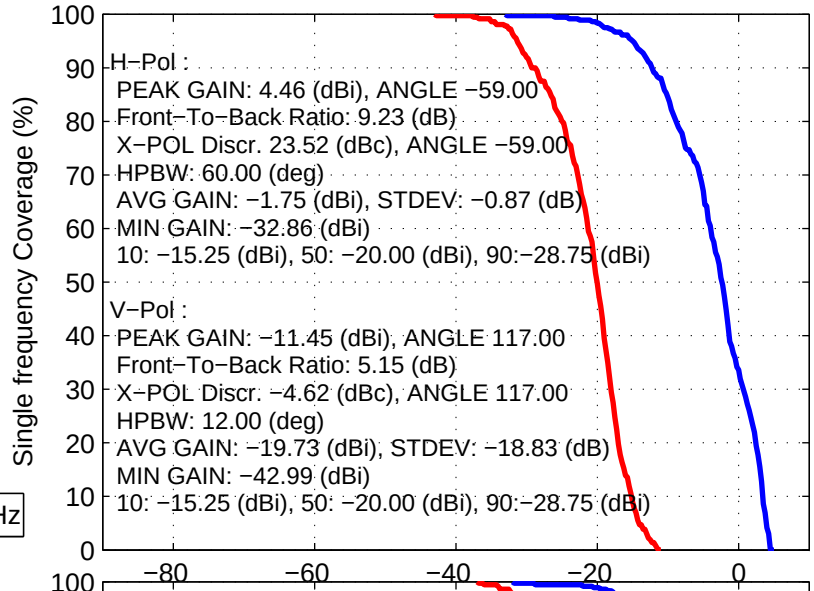
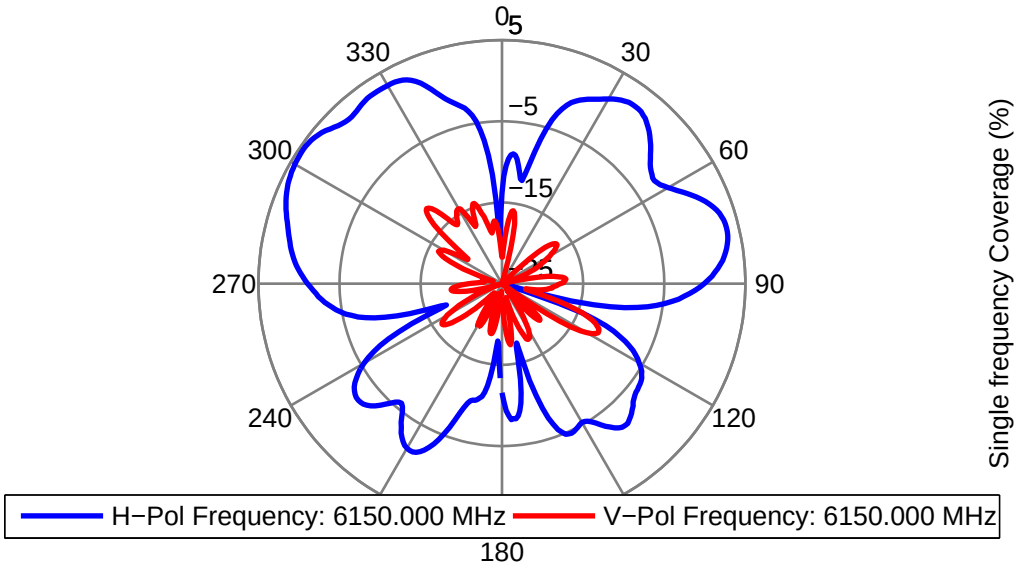
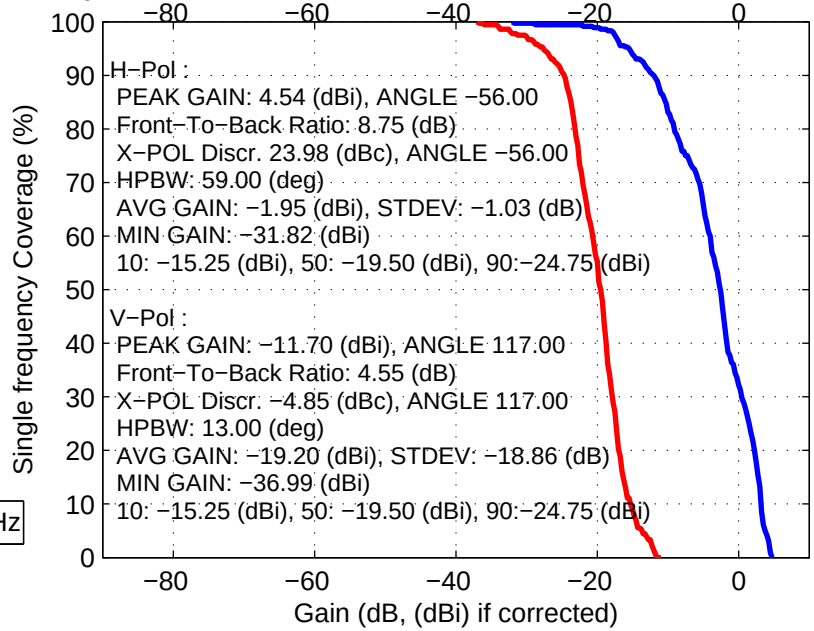
Comments....."ELEVATION CUT ACROSS PLANE OF PCB, THETA = −179 TO 180 DEG. CUT THROUGH FEED AT PHI = 0 DEG."









Pattern File.....2013−11−26−15−46−22_ELEVATION_CUT_1_002.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
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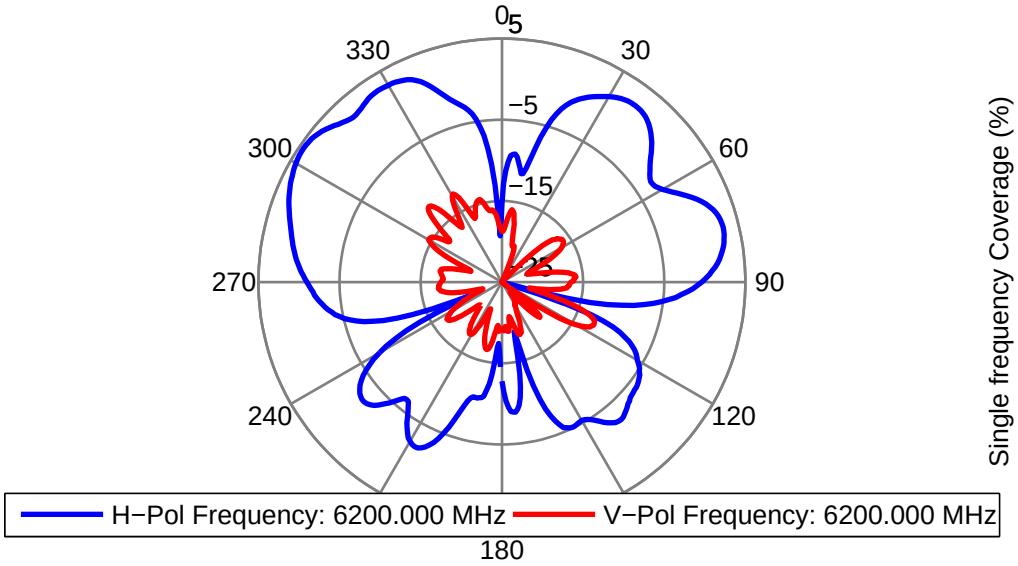

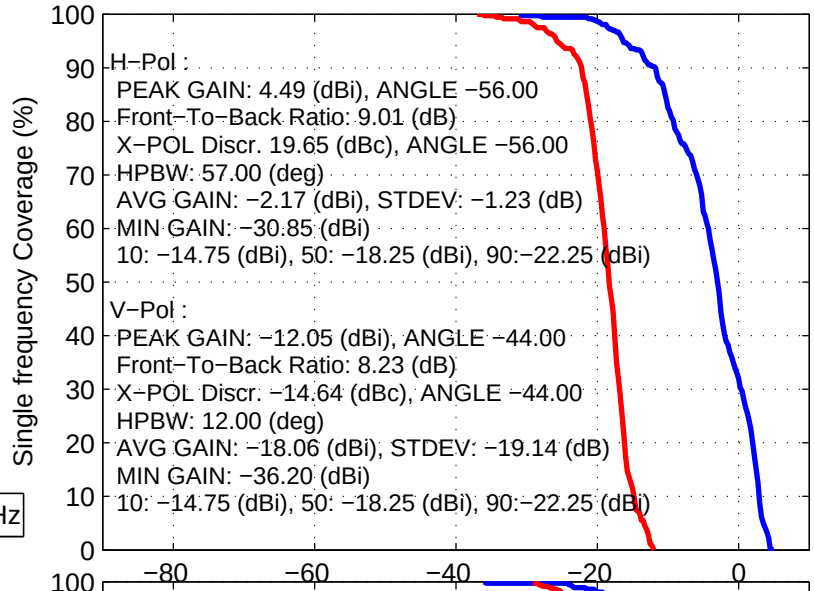

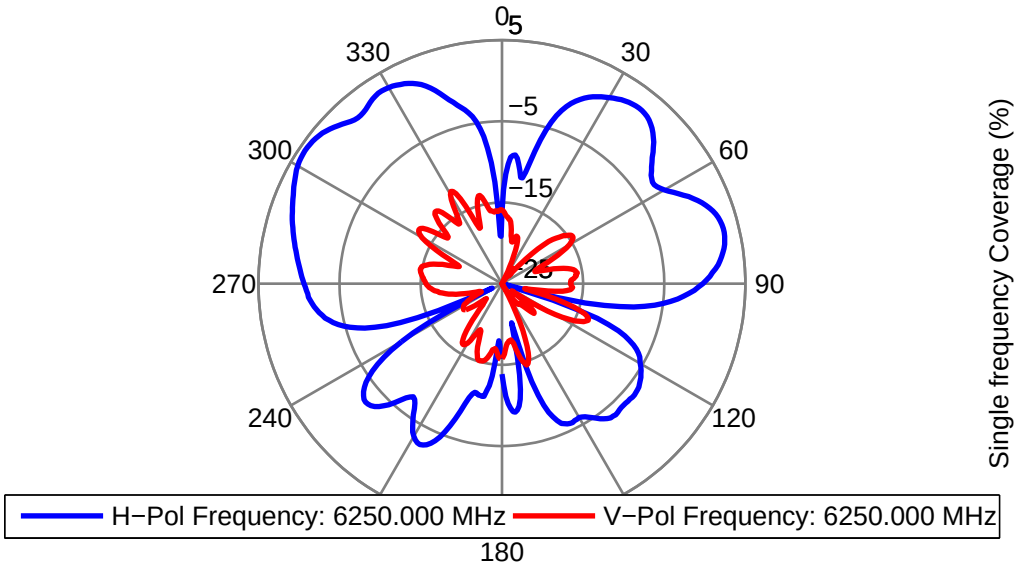

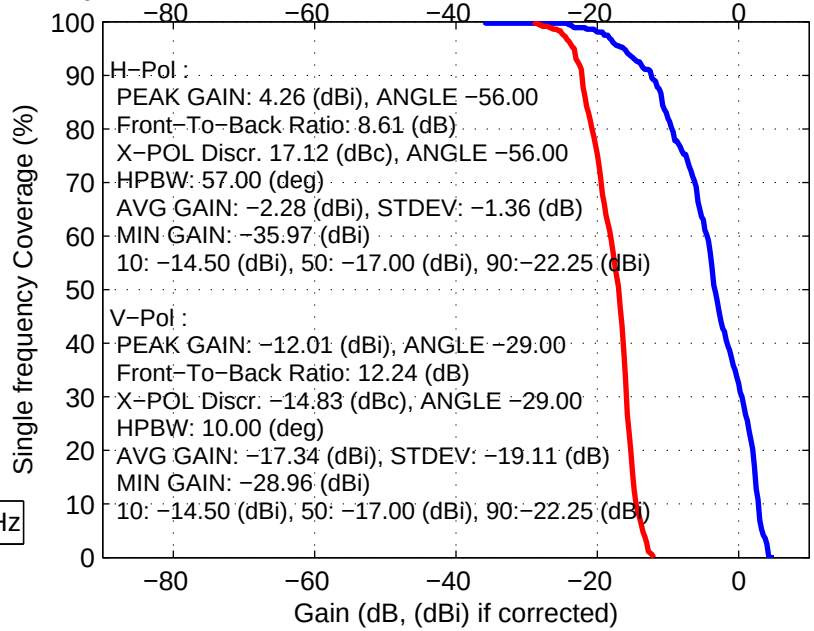

Pattern File.....2013−11−26−15−46−22_ELEVATION_CUT_1_002.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
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Mfr./Model....."ABG"
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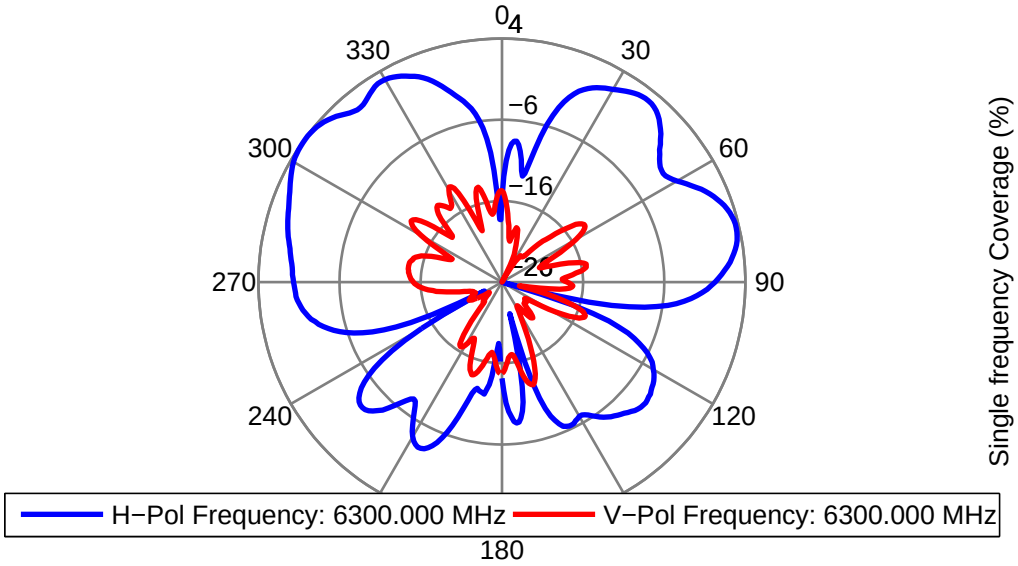
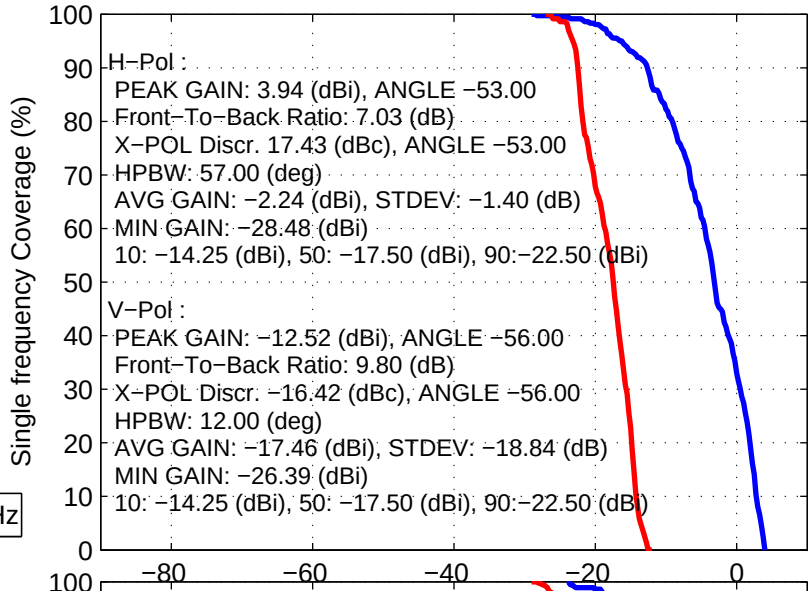
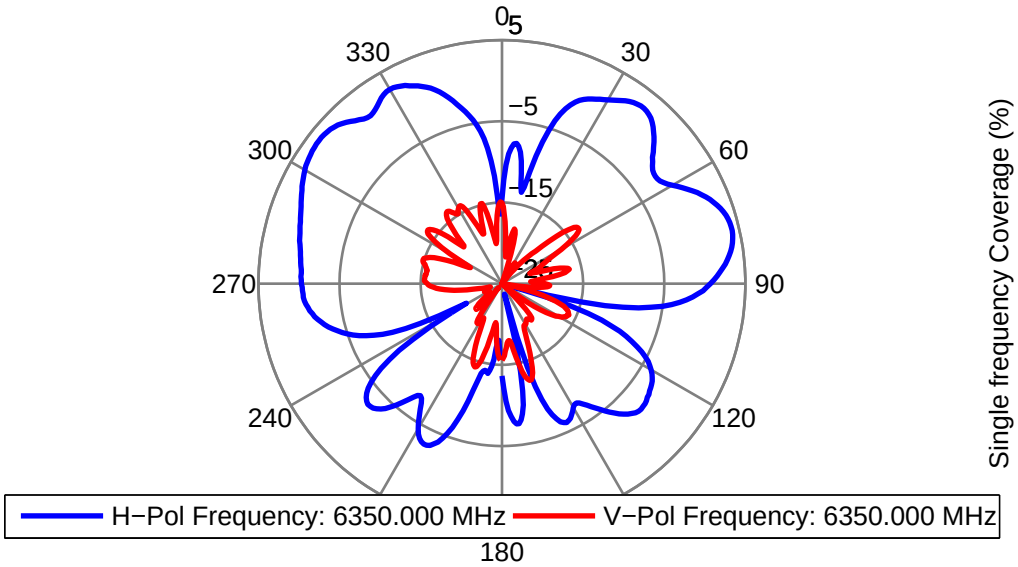
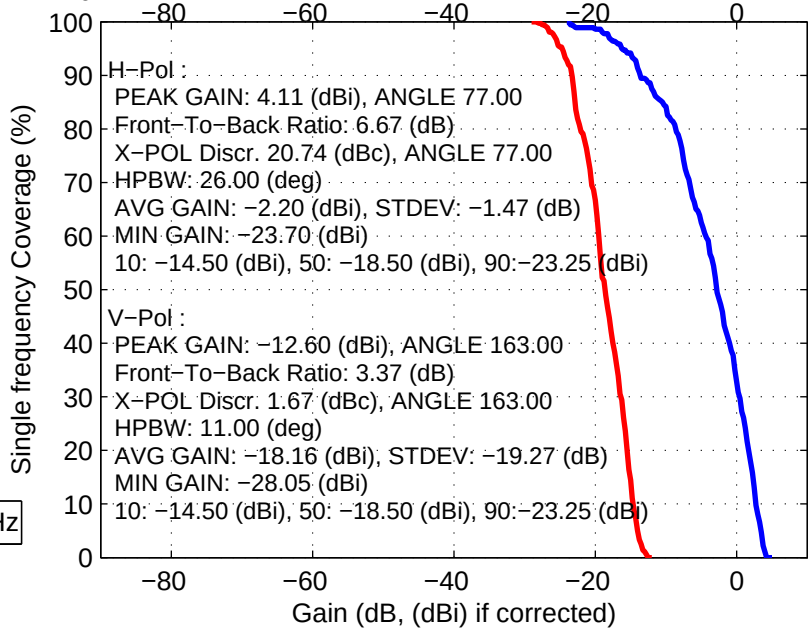
Comments....."ELEVATION CUT ACROSS PLANE OF PCB, THETA = −179 TO 180 DEG. CUT THROUGH FEED AT PHI = 0 DEG."









Pattern File.....2013−11−26−15−46−22_ELEVATION_CUT_1_002.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
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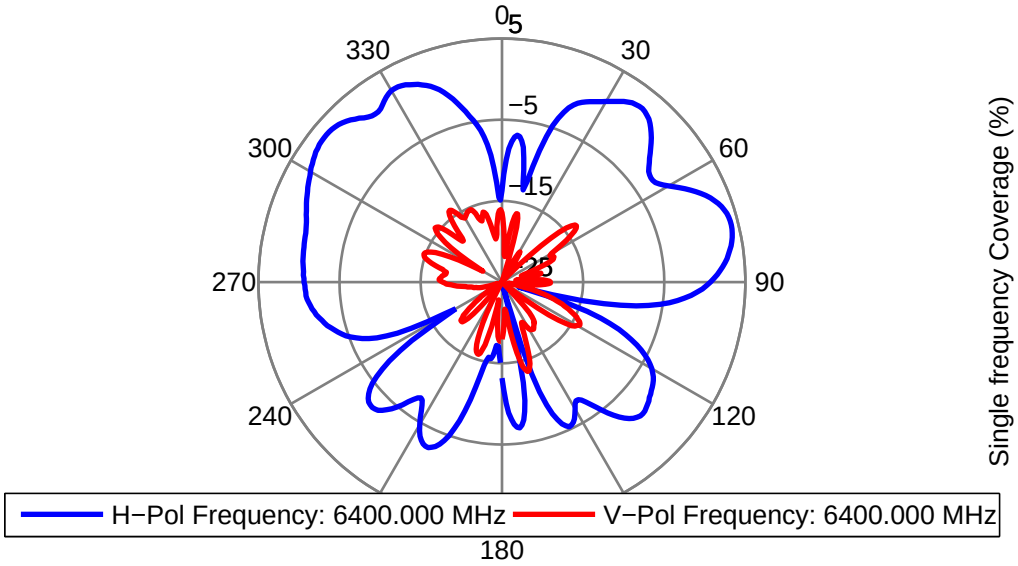

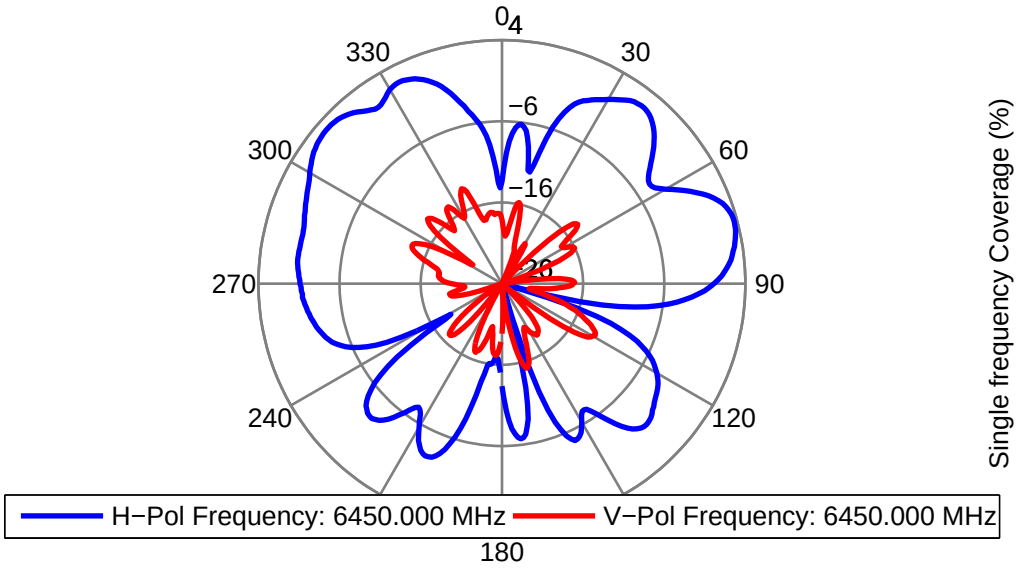

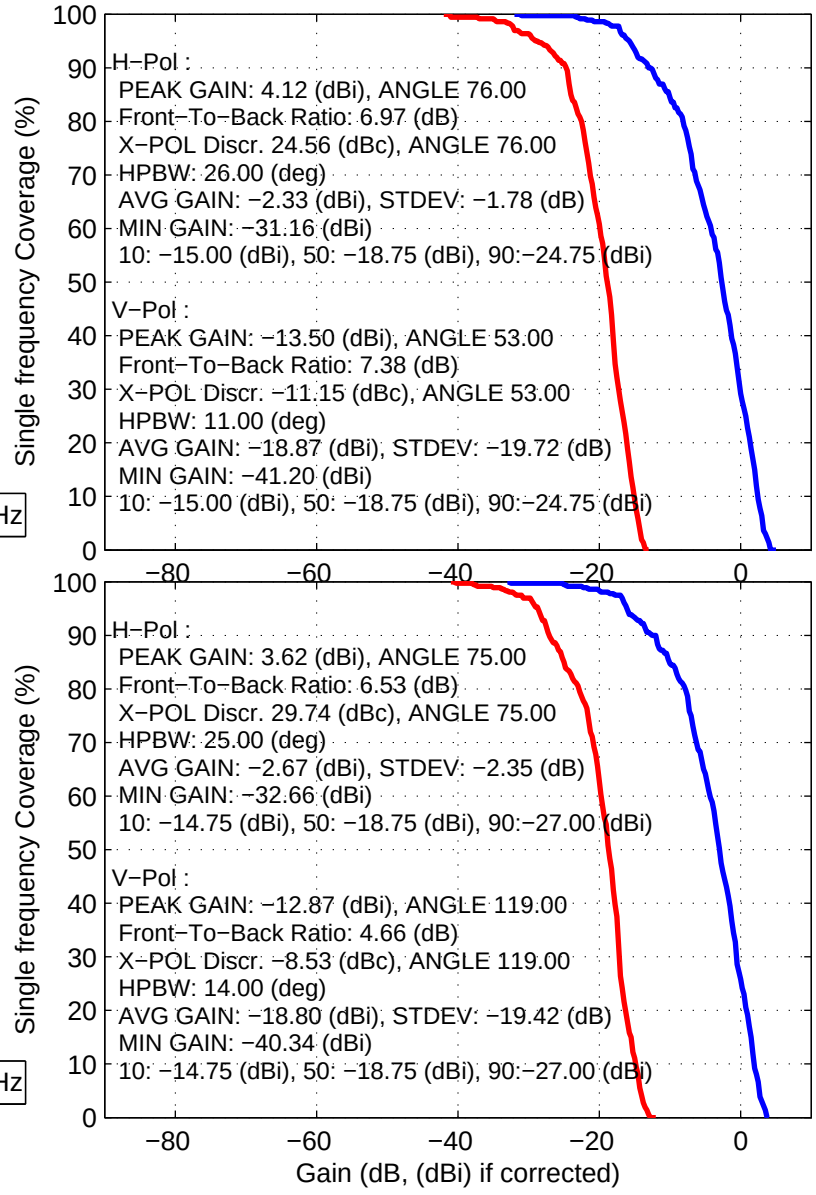

Pattern File.....2013−11−26−15−46−22_ELEVATION_CUT_1_002.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
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RF Detector....Vector Network Analyzer
Mfr./Model.....Rohde & Schwarz ZVB−20
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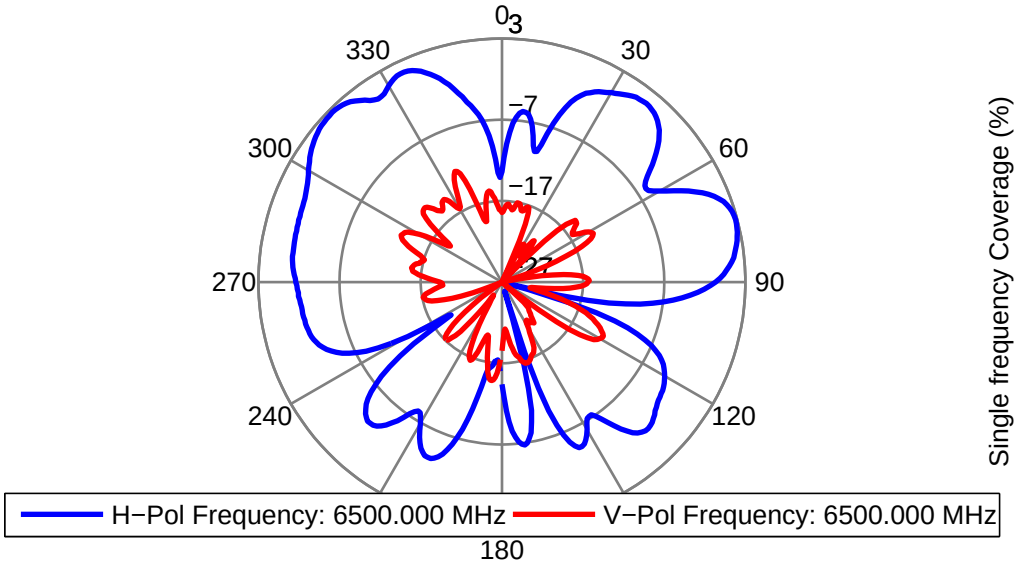
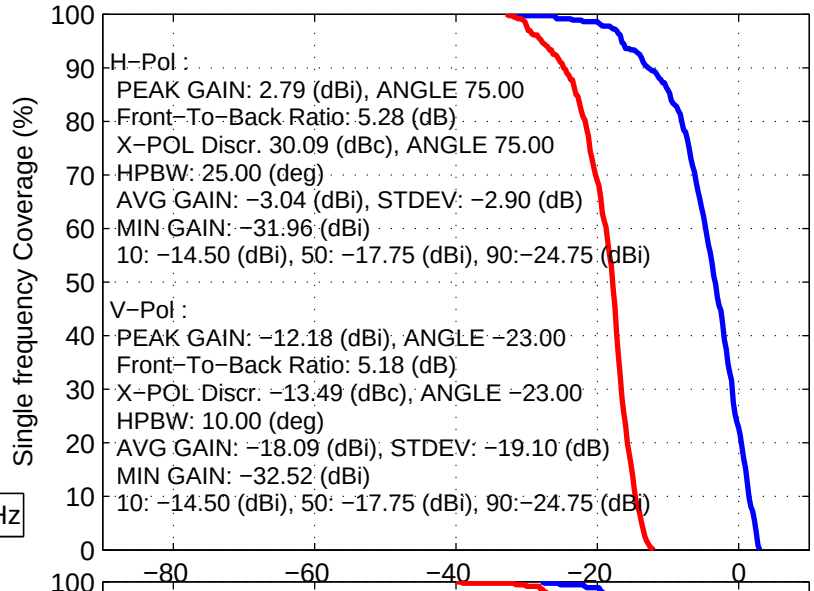
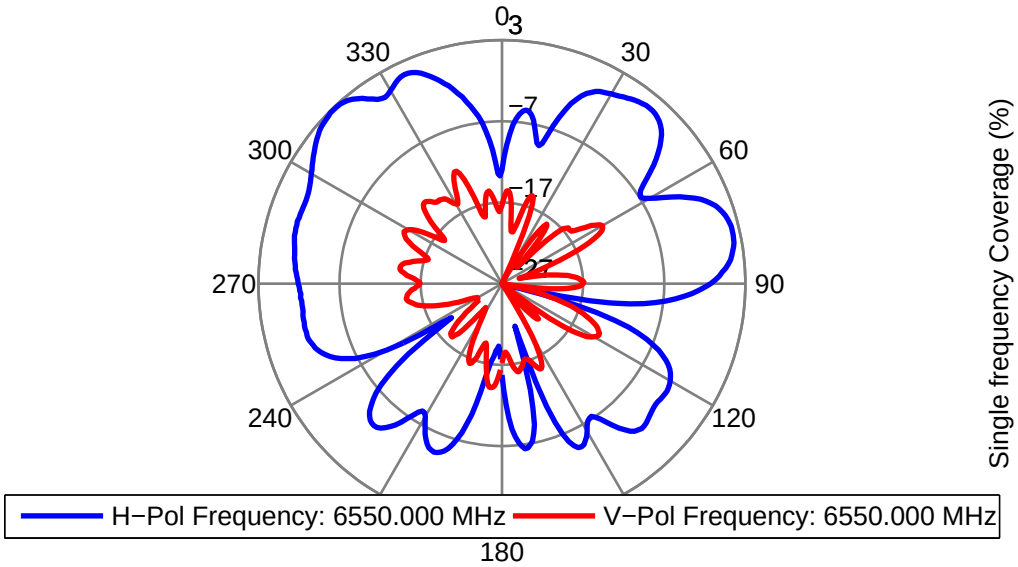
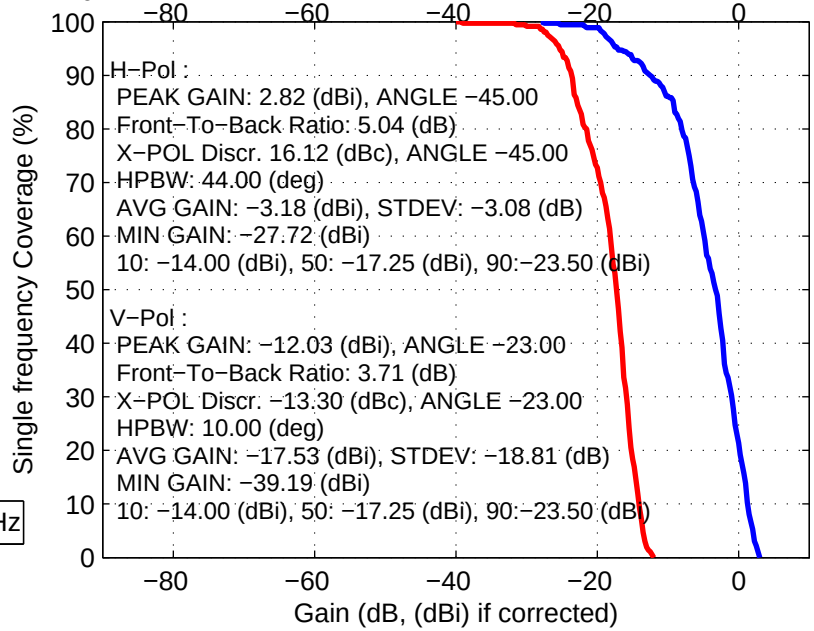
Comments....."ELEVATION CUT ACROSS PLANE OF PCB, THETA = −179 TO 180 DEG. CUT THROUGH FEED AT PHI = 0 DEG."









Pattern File.....2013−11−26−15−46−22_ELEVATION_CUT_1_002.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
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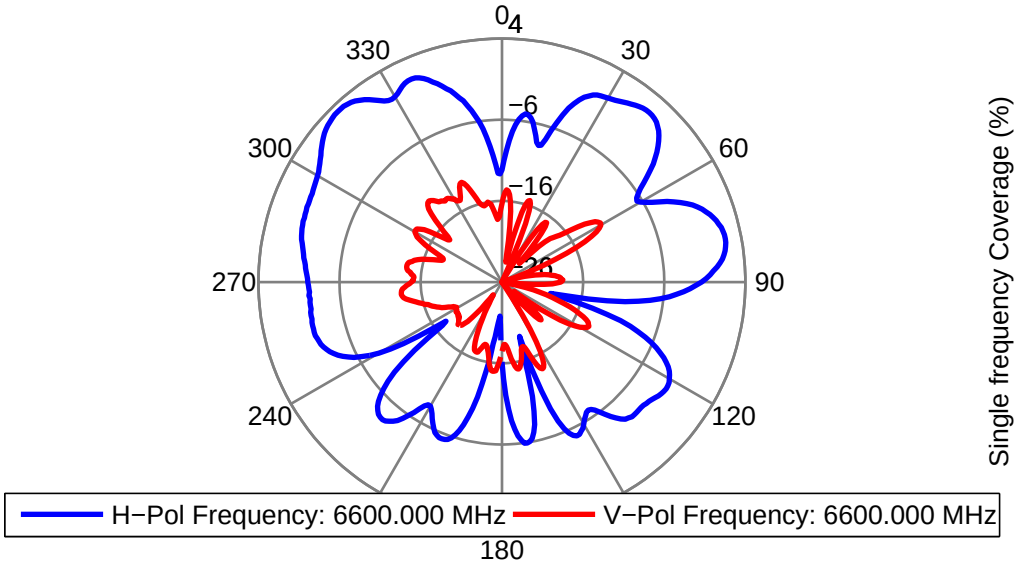

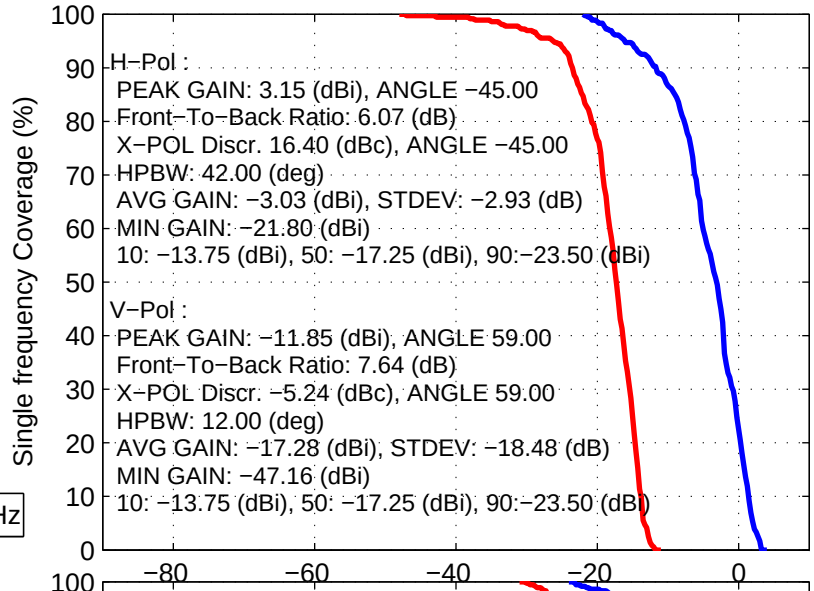

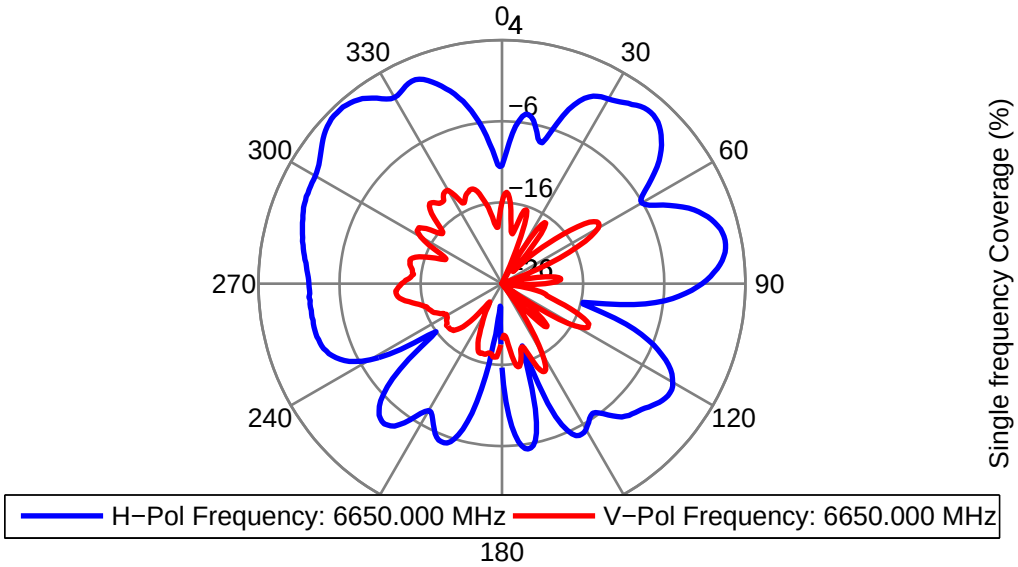

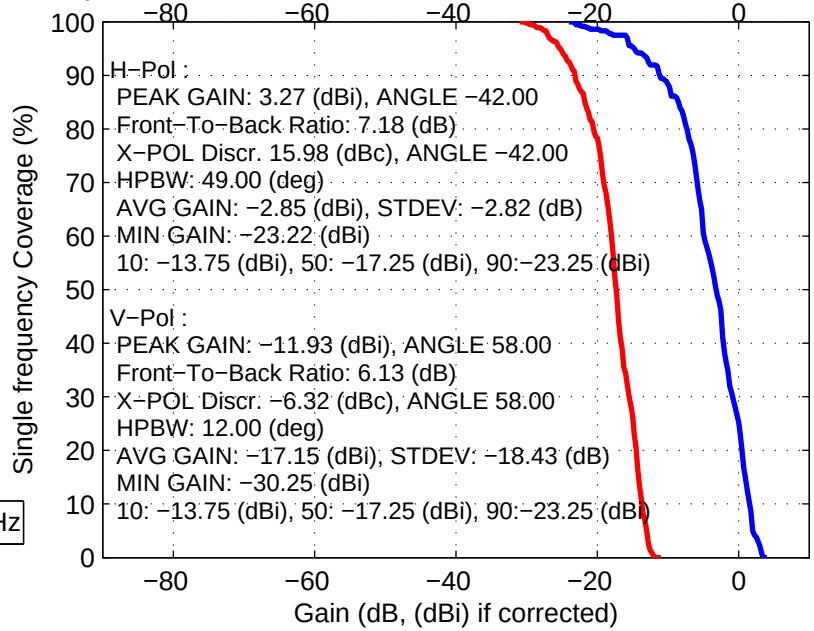

Pattern File.....2013−11−26−15−46−22_ELEVATION_CUT_1_002.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
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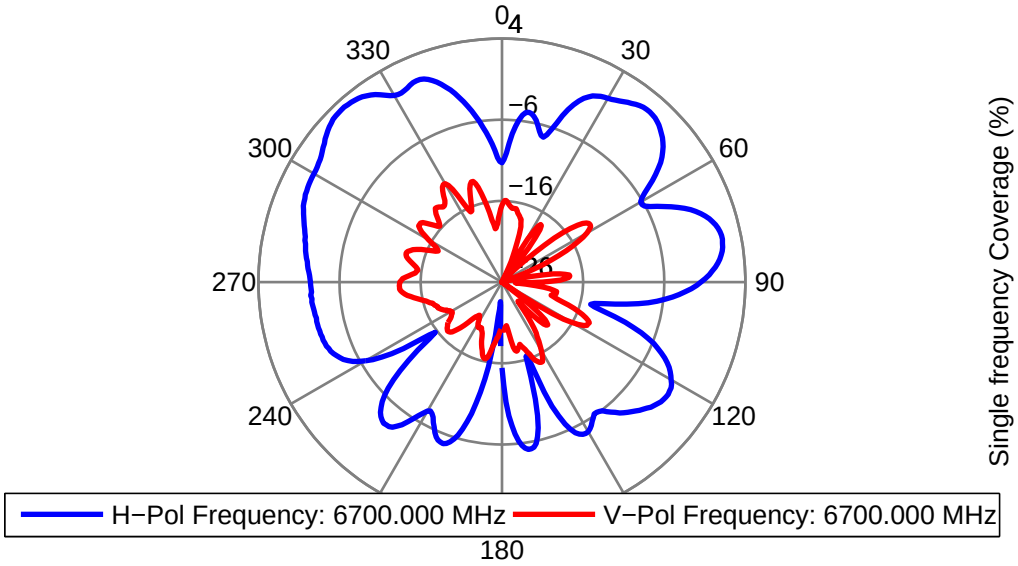
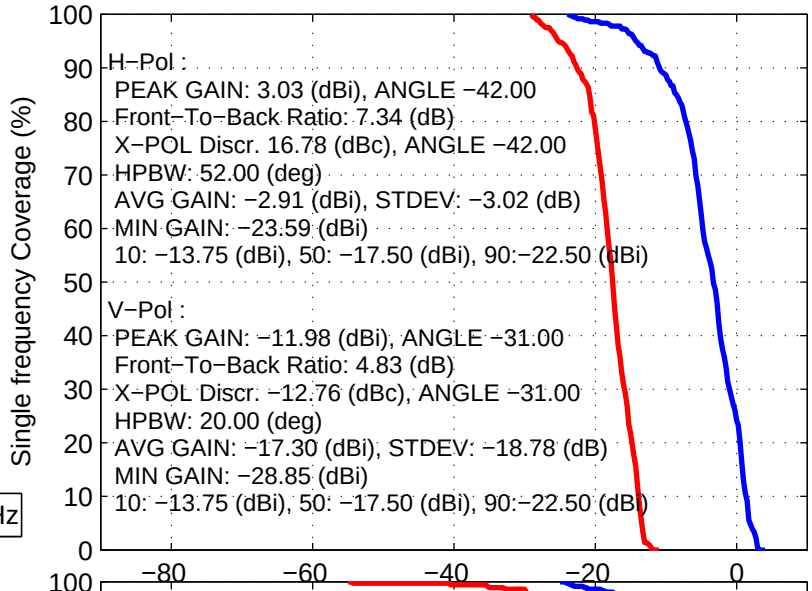
Antenna Type..."TOPHAT MONOPOLE"

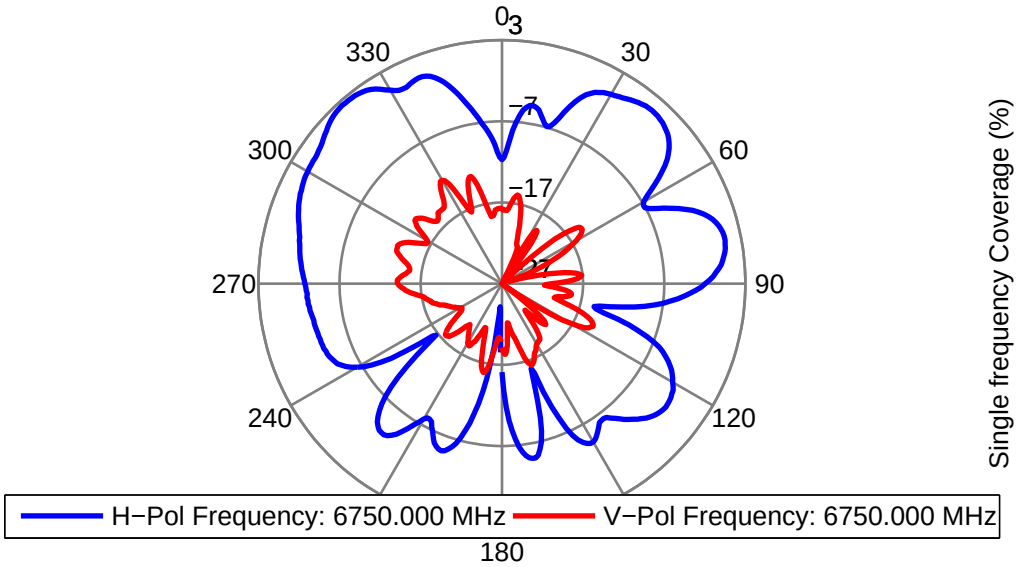
RF Detector....Vector Network Analyzer
Mfr./Model.....Rohde & Schwarz ZVB−20
Resolution BW.. 2.000000 kHz
Detector Function..."SPARAMS (V)"
Span...N/A

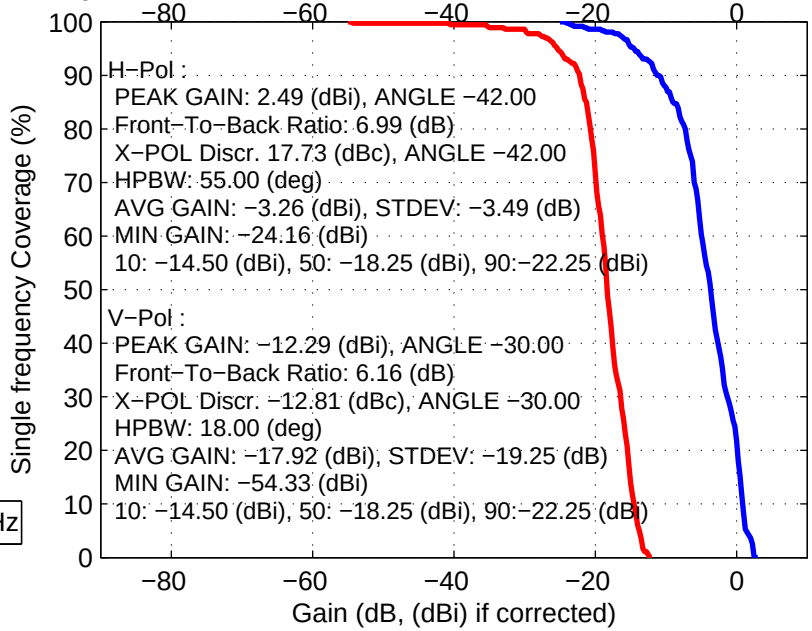
RF Source.....Vector Network Analyzer
RF Level.....10.000000 dBm
Transmit Ant..."CONDOR QUAD−RIDGE 2−18 GHZ"
Height....."1.5 m"
Range....."3 m"

Ant. Location...."CENTER OF AZIMUTH TURNTABLE, ANT HORIZONTAL"
Comments....."ELEVATION CUT ACROSS PLANE OF PCB, THETA = −179 TO 180 DEG. CUT THROUGH FEED AT PHI = 0 DEG."







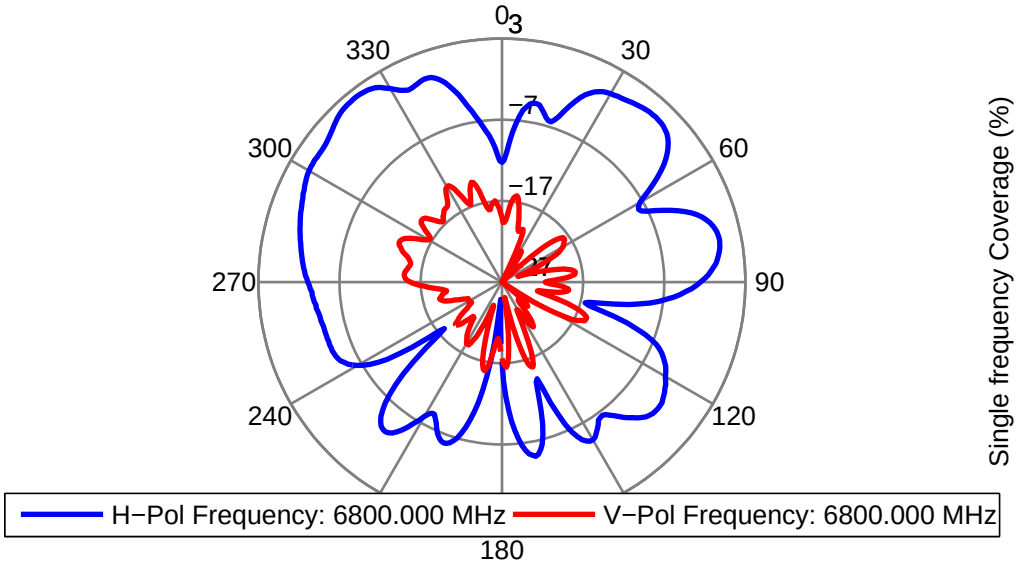


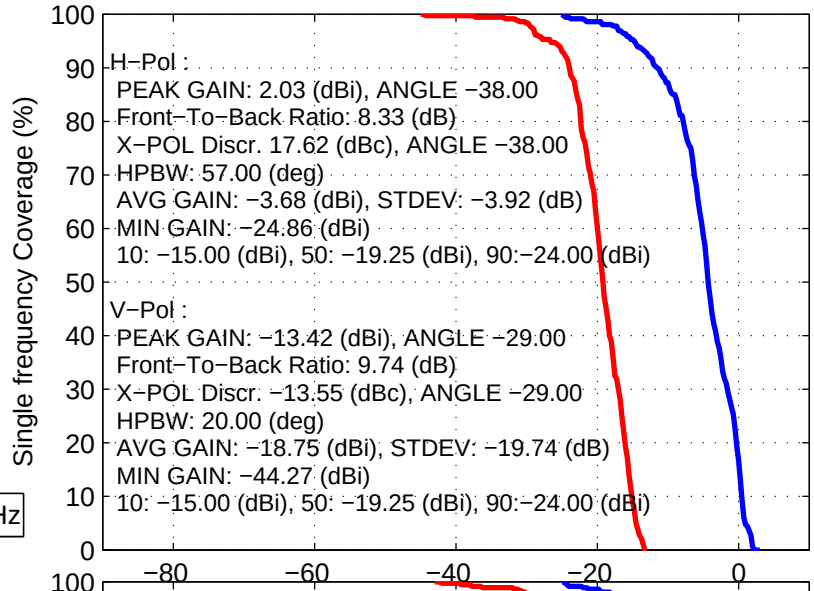
Pattern File.....2013−11−26−15−46−22_ELEVATION_CUT_1_002.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
Unit Tested....."ABG TAG TRACK"
Mfr./Model....."ABG"
ID Number....."SAMPLE A"
Antenna Type..."TOPHAT MONOPOLE"

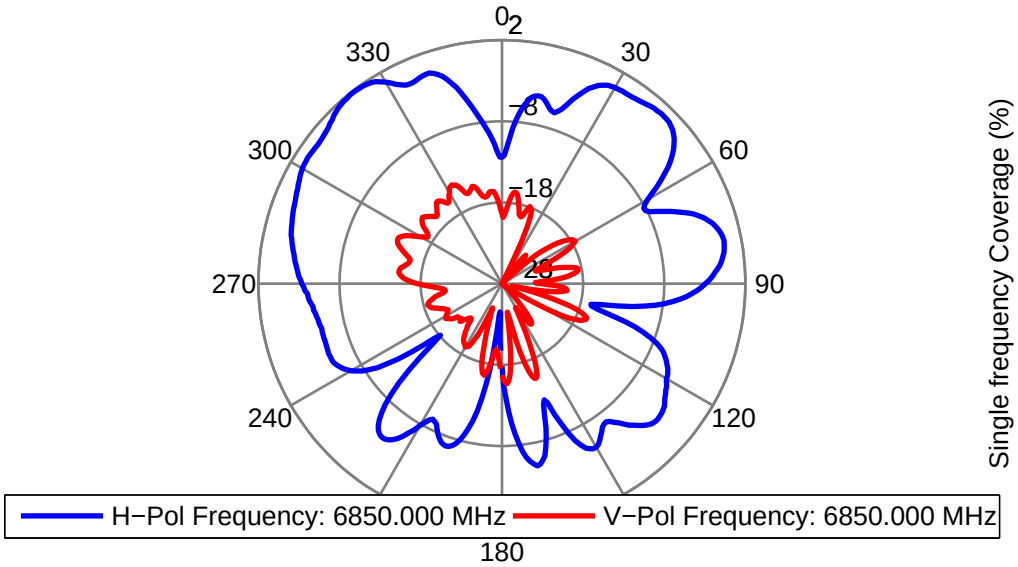
RF Detector....Vector Network Analyzer
Mfr./Model.....Rohde & Schwarz ZVB−20
Resolution BW.. 2.000000 kHz
Detector Function..."SPARAMS (V)"
Span...N/A

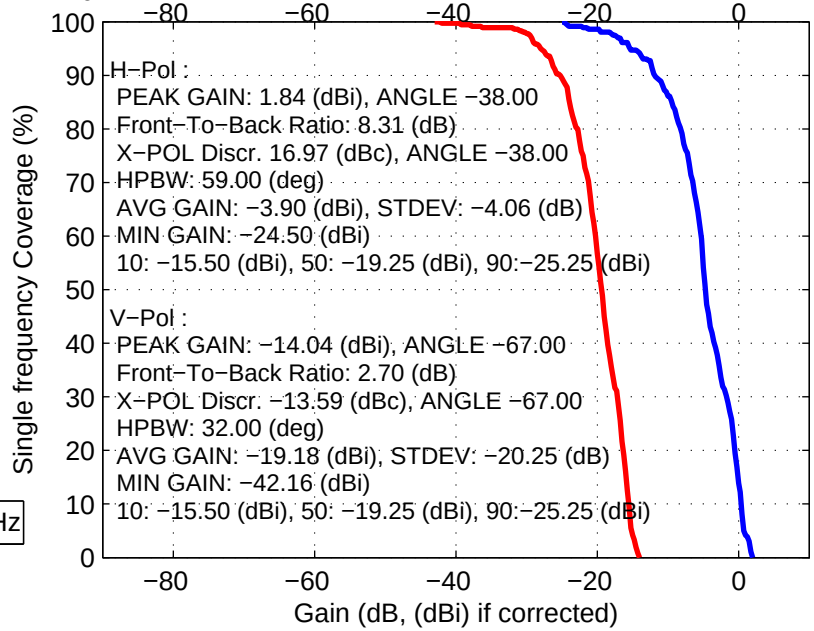
RF Source.....Vector Network Analyzer
RF Level.....10.000000 dBm
Transmit Ant..."CONDOR QUAD−RIDGE 2−18 GHZ"
Height....."1.5 m"
Range....."3 m"

Ant. Location...."CENTER OF AZIMUTH TURNTABLE, ANT HORIZONTAL"
Comments....."ELEVATION CUT ACROSS PLANE OF PCB, THETA = −179 TO 180 DEG. CUT THROUGH FEED AT PHI = 0 DEG."









Pattern File.....2013−11−26−15−46−22_ELEVATION_CUT_1_002.mat
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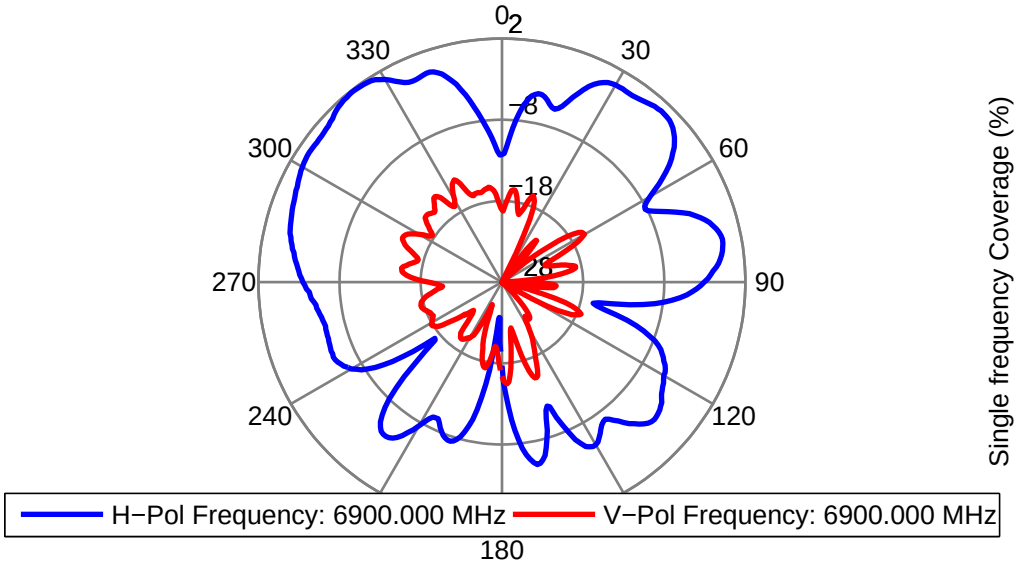
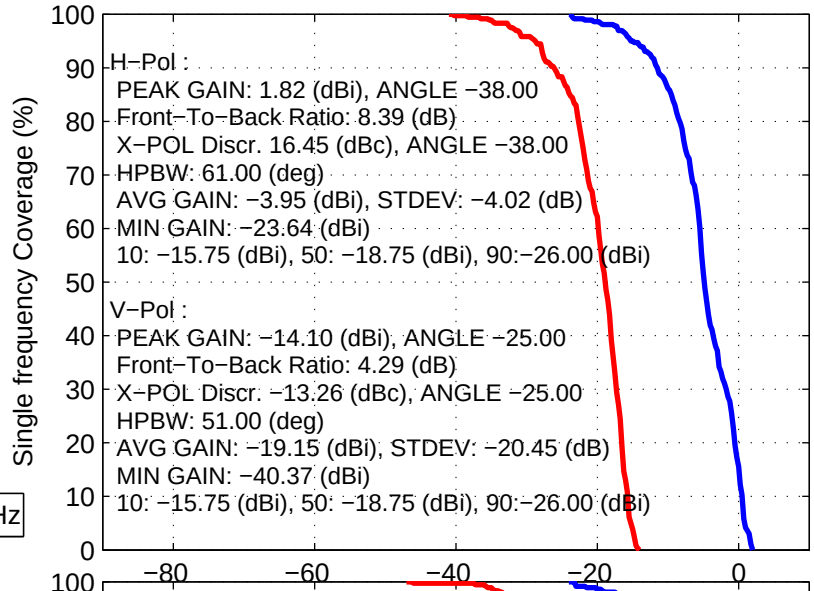
Unit Tested....."ABG TAG TRACK"
Mfr./Model....."ABG"
ID Number....."SAMPLE A"
Antenna Type..."TOPHAT MONOPOLE"

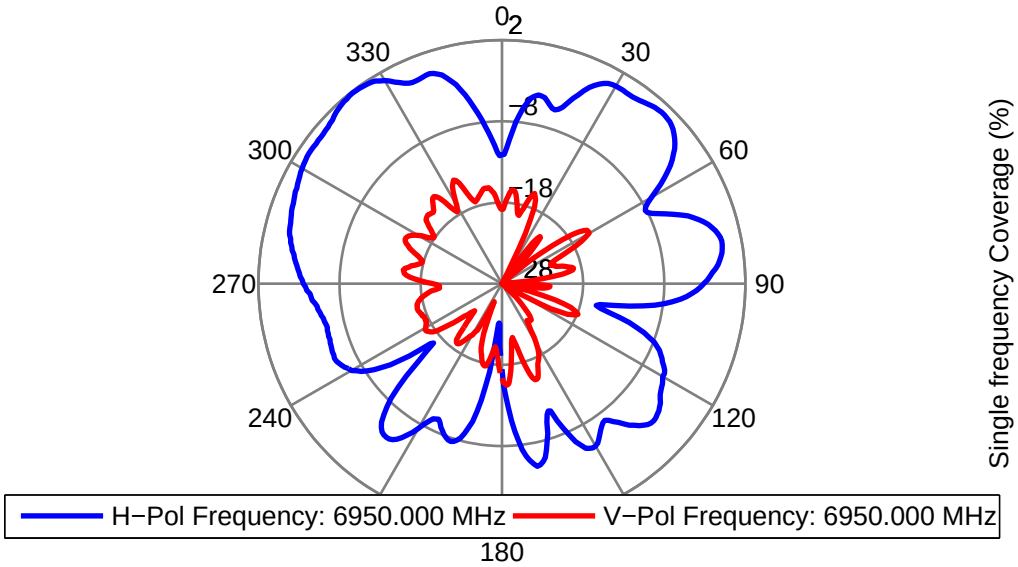
RF Detector....Vector Network Analyzer
Mfr./Model.....Rohde & Schwarz ZVB−20
Resolution BW.. 2.000000 kHz
Detector Function..."SPARAMS (V)"
Span...N/A

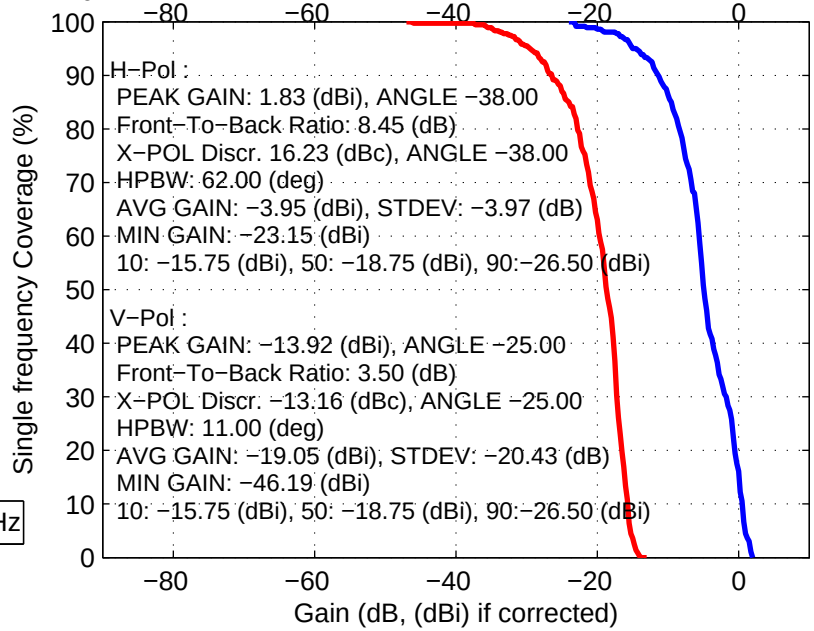
RF Source.....Vector Network Analyzer
RF Level.....10.000000 dBm
Transmit Ant..."CONDOR QUAD−RIDGE 2−18 GHZ"
Height....."1.5 m"
Range....."3 m"

Ant. Location...."CENTER OF AZIMUTH TURNTABLE, ANT HORIZONTAL"
Comments....."ELEVATION CUT ACROSS PLANE OF PCB, THETA = −179 TO 180 DEG. CUT THROUGH FEED AT PHI = 0 DEG."









Pattern File.....2013−11−26−15−46−22_ELEVATION_CUT_1_002.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
Unit Tested....."ABG TAG TRACK"
Mfr./Model....."ABG"
ID Number....."SAMPLE A"
Antenna Type..."TOPHAT MONOPOLE"

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Mfr./Model.....Rohde & Schwarz ZVB−20
Resolution BW.. 2.000000 kHz
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Span...N/A

RF Source.....Vector Network Analyzer
RF Level.....10.000000 dBm
Transmit Ant..."CONDOR QUAD−RIDGE 2−18 GHZ"
Height....."1.5 m"
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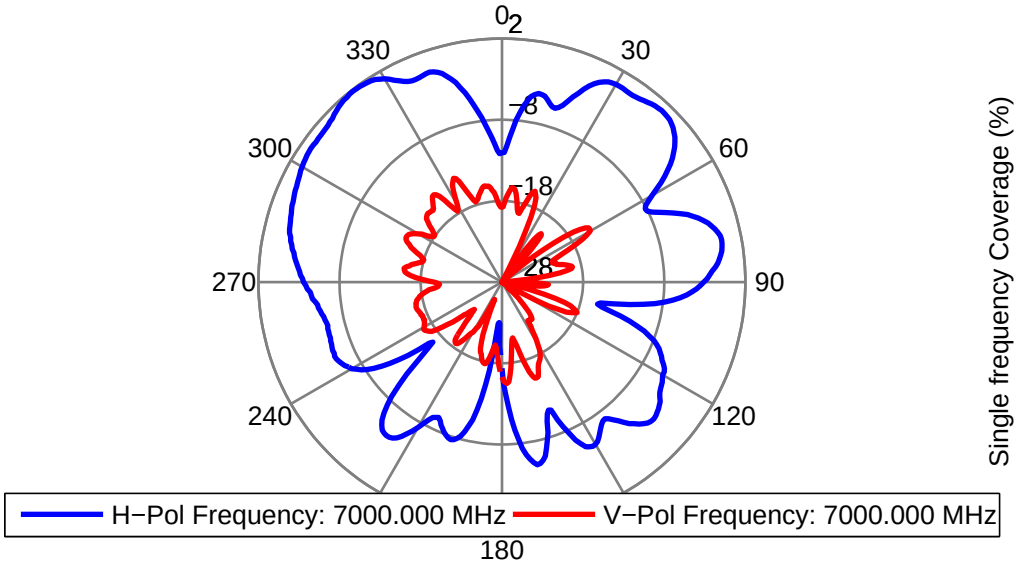
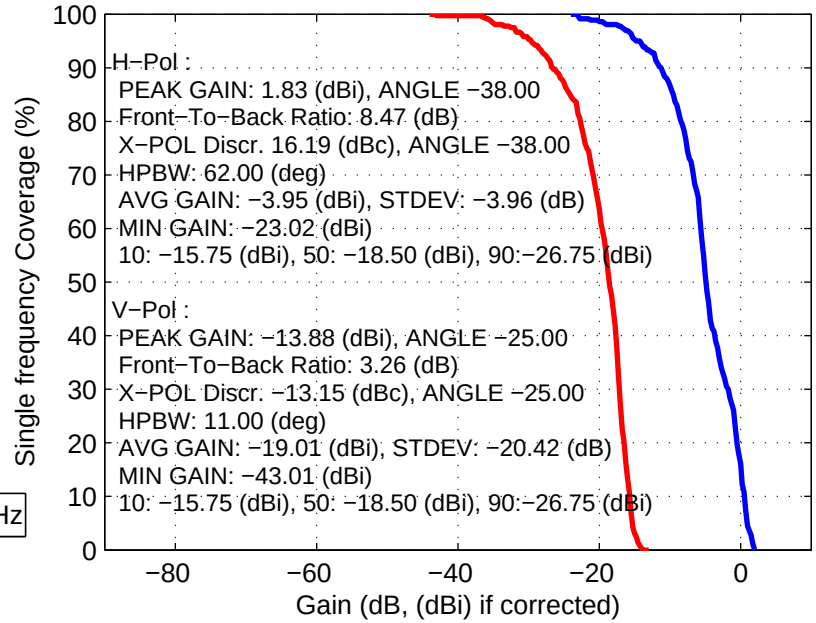
Ant. Location...."CENTER OF AZIMUTH TURNTABLE, ANT HORIZONTAL"
Comments....."ELEVATION CUT ACROSS PLANE OF PCB, THETA = −179 TO 180 DEG. CUT THROUGH FEED AT PHI = 0 DEG."



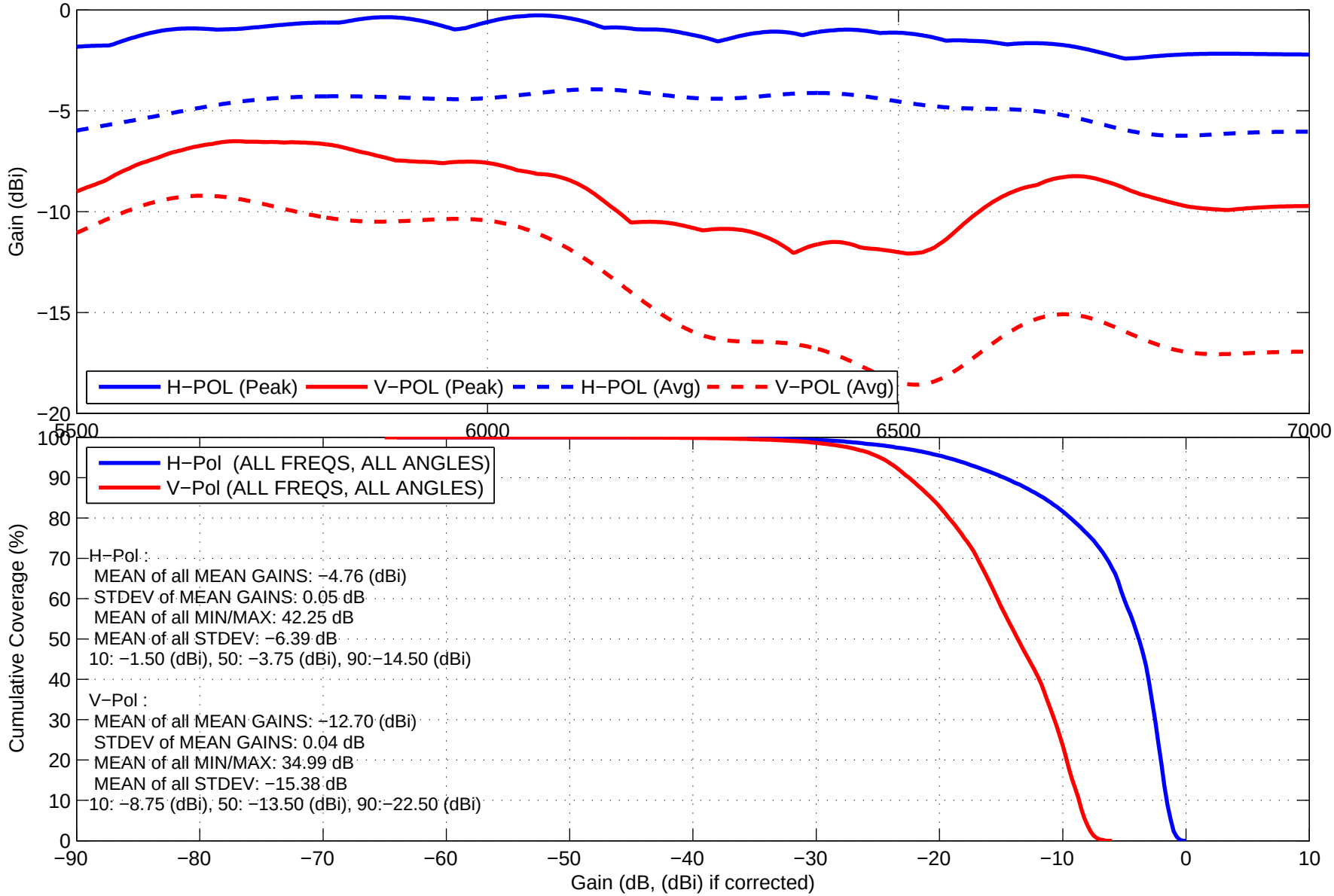


Pattern File.....2013−11−26−16−0− 8_ELEVATION_CUT_2_003.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
Unit Tested....."ABG TAG TRACK"
Mfr./Model....."ABG"
ID Number....."SAMPLE A"
Antenna Type..."TOPHAT MONOPOLE"

RF Detector....Vector Network Analyzer
Mfr./Model.....Rohde & Schwarz ZVB−20
Resolution BW.. 2.000000 kHz
Detector Function..."SPARAMS (V)"
Span...N/A

RF Source.....Vector Network Analyzer
RF Level.....10.000000 dBm
Transmit Ant..."CONDOR QUAD−RIDGE 2−18 GHZ"
Height....."1.5 m"
Range....."3 m"

Ant. Location...."CENTER OF AZIMUTH TURNTABLE, ANT HORIZONTAL"
Comments....."ELEVATION CUT ACROSS PLANE OF PCB, THETA = −179 TO 180 DEG. CUT PERP TO FEED AT PHI = 90 DEG, THROUGH NARROW DIMENSIO



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CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
Unit Tested....."ABG TAG TRACK"
Mfr./Model....."ABG"
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RF Detector....Vector Network Analyzer
Mfr./Model.....Rohde & Schwarz ZVB−20
Resolution BW.. 2.000000 kHz
Detector Function..."SPARAMS (V)"
Span...N/A

RF Source.....Vector Network Analyzer
RF Level.....10.000000 dBm
Transmit Ant..."CONDOR QUAD−RIDGE 2−18 GHZ"
Height....."1.5 m"
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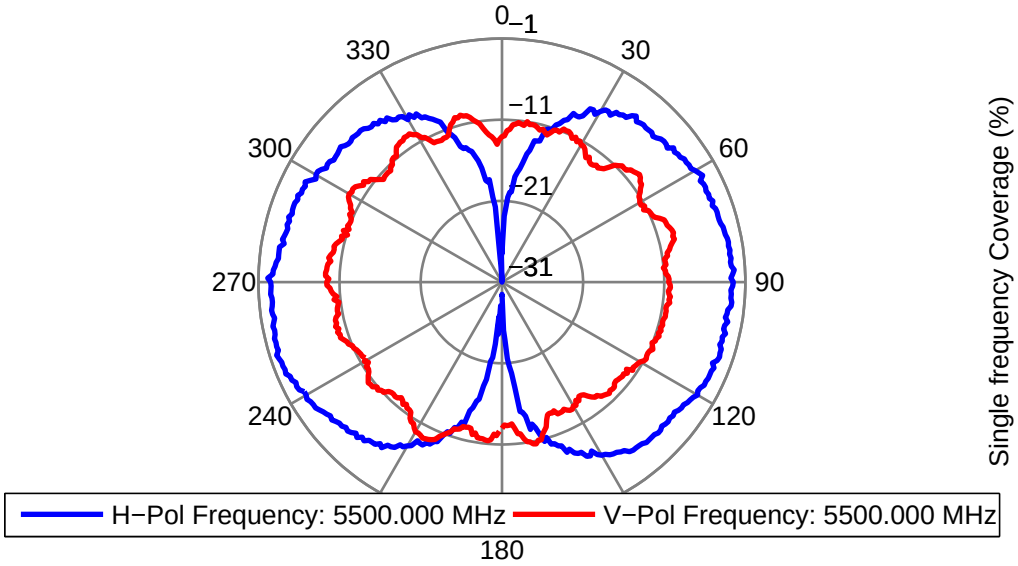
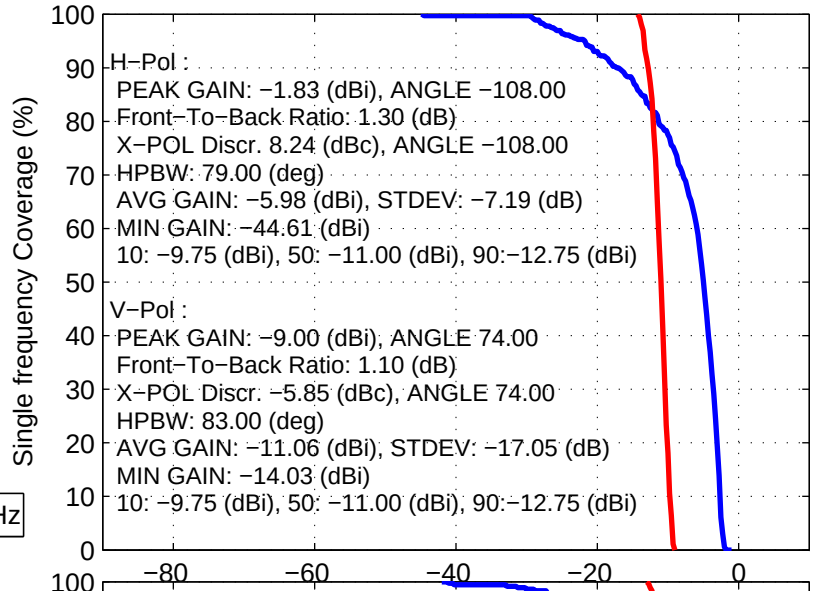
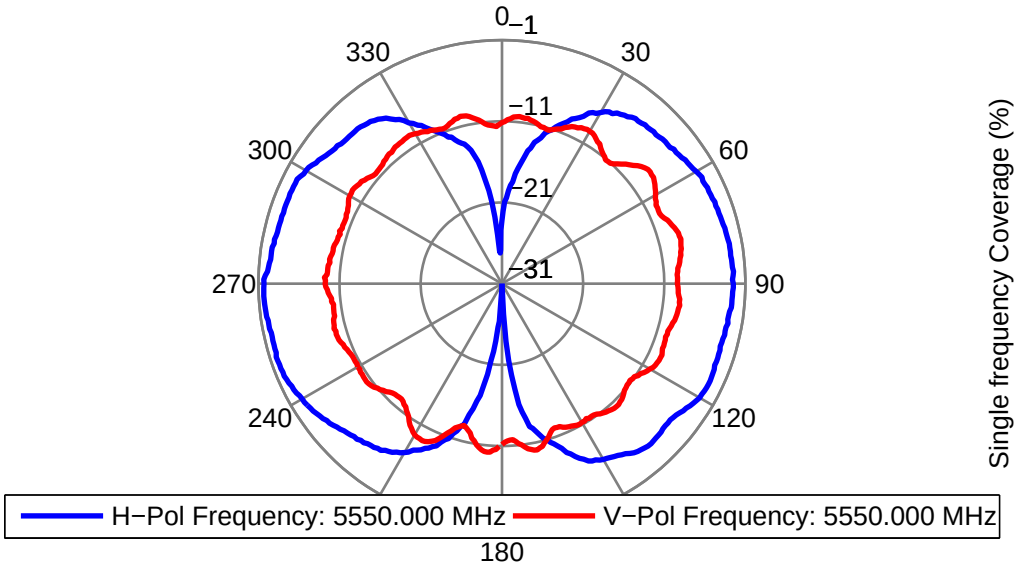
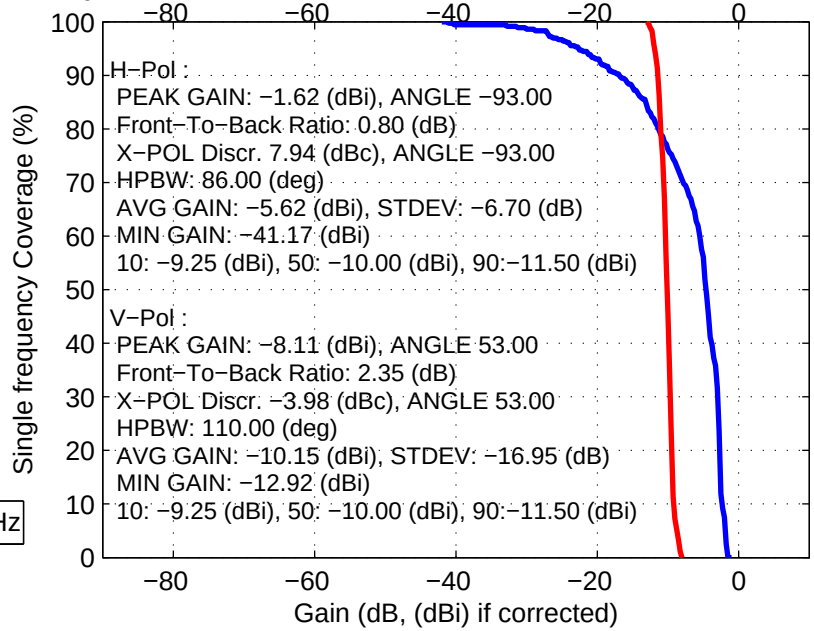
Ant. Location...."CENTER OF AZIMUTH TURNTABLE, ANT HORIZONTAL"
Comments....."ELEVATION CUT ACROSS PLANE OF PCB, THETA = −179 TO 180 DEG. CUT PERP TO FEED AT PHI = 90 DEG, THROUGH NARROW DIMENSIO









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Mfr./Model....."ABG"
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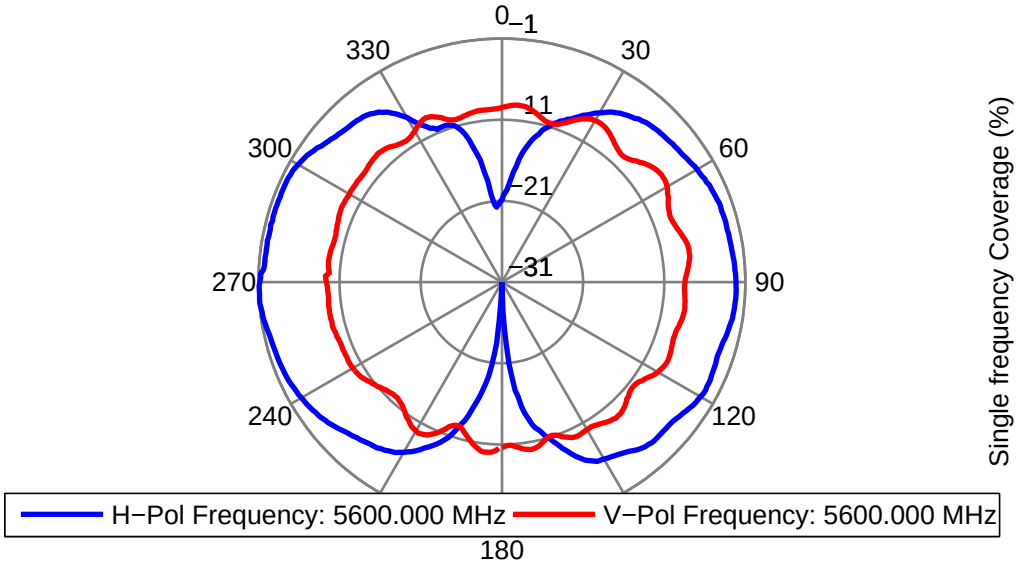
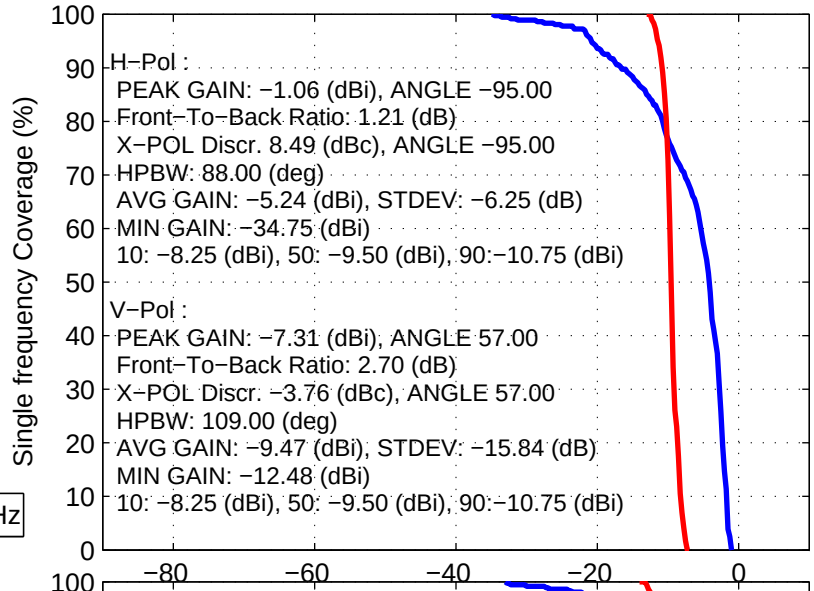
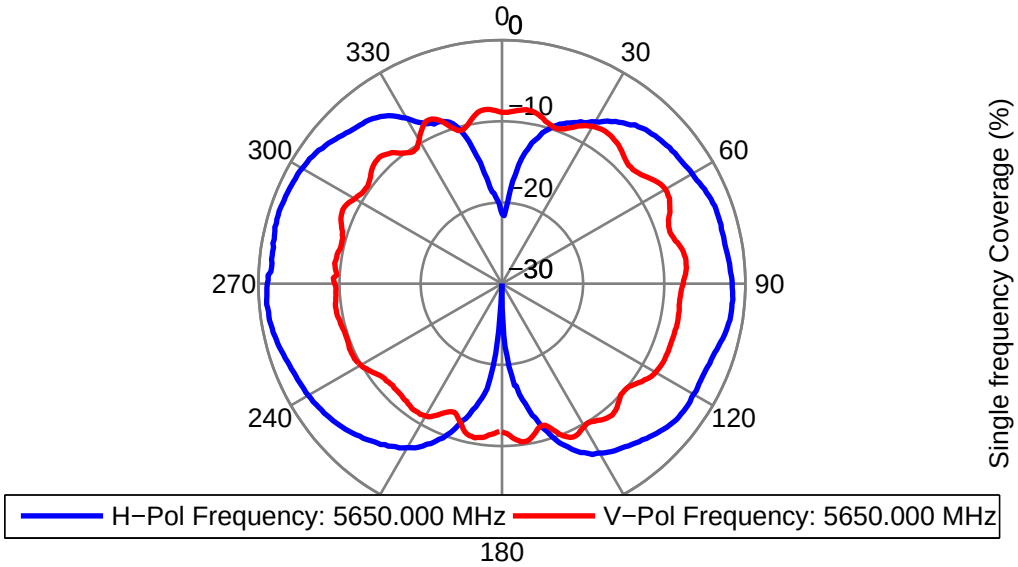
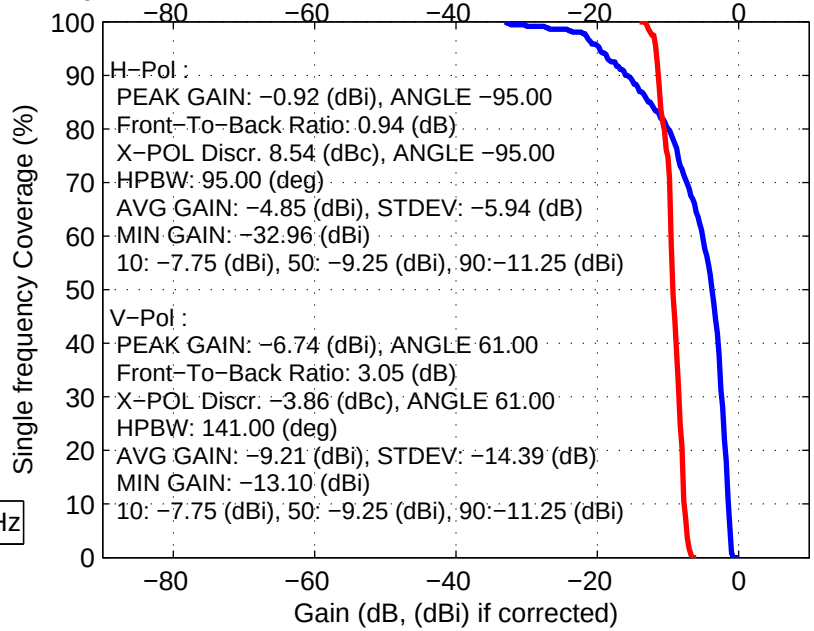
Comments....."ELEVATION CUT ACROSS PLANE OF PCB, THETA = −179 TO 180 DEG. CUT PERP TO FEED AT PHI = 90 DEG, THROUGH NARROW DIMENSIO









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Unit Tested....."ABG TAG TRACK"
Mfr./Model....."ABG"
ID Number....."SAMPLE A"
Antenna Type..."TOPHAT MONOPOLE"

RF Detector....Vector Network Analyzer
Mfr./Model.....Rohde & Schwarz ZVB−20
Resolution BW.. 2.000000 kHz
Detector Function..."SPARAMS (V)"
Span...N/A

RF Source.....Vector Network Analyzer
RF Level.....10.000000 dBm
Transmit Ant..."CONDOR QUAD−RIDGE 2−18 GHZ"
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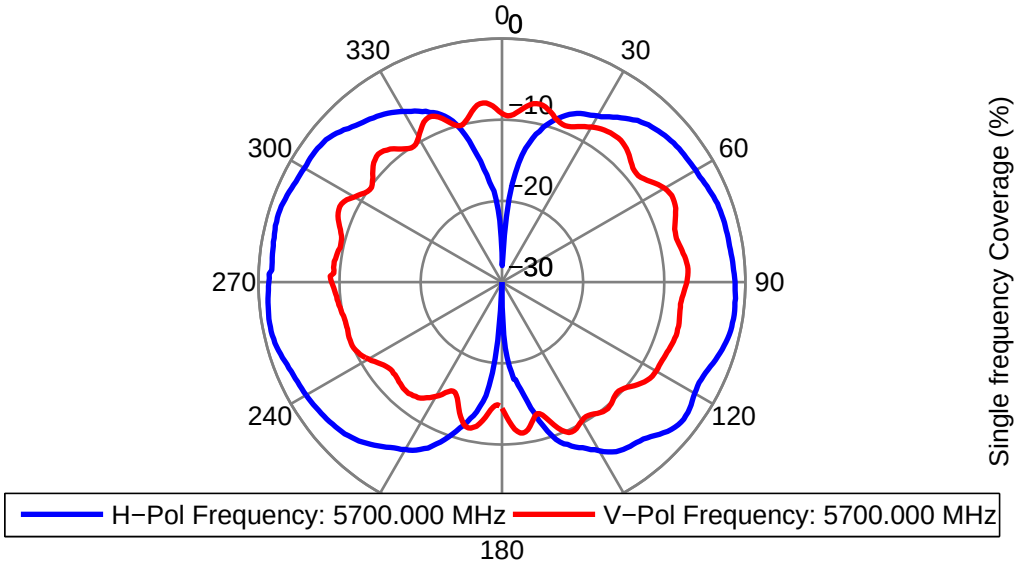
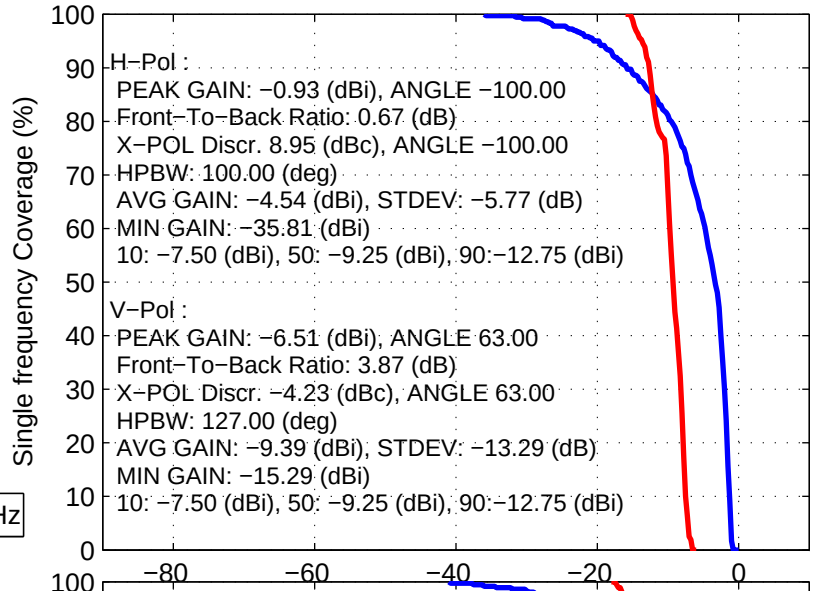
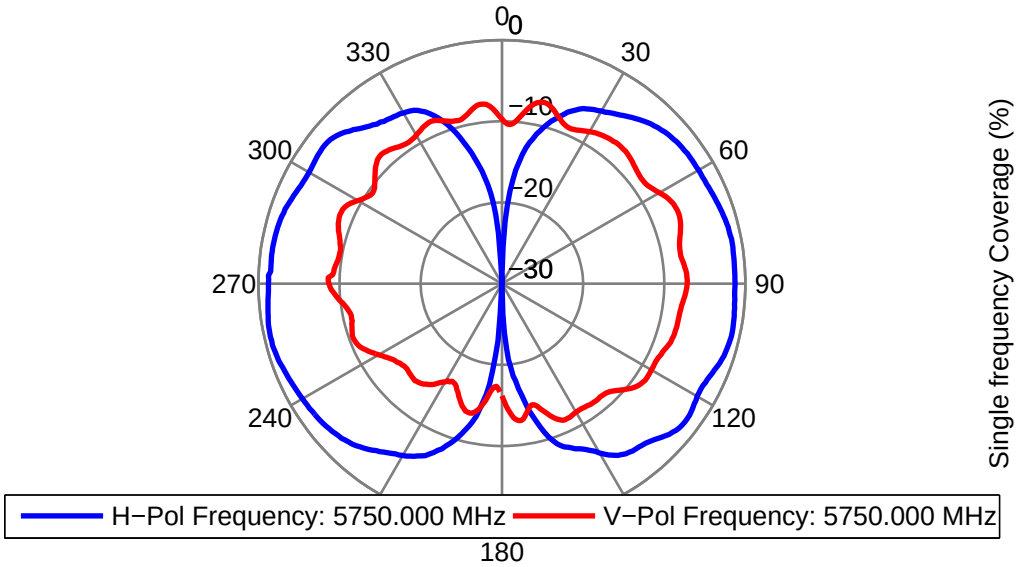
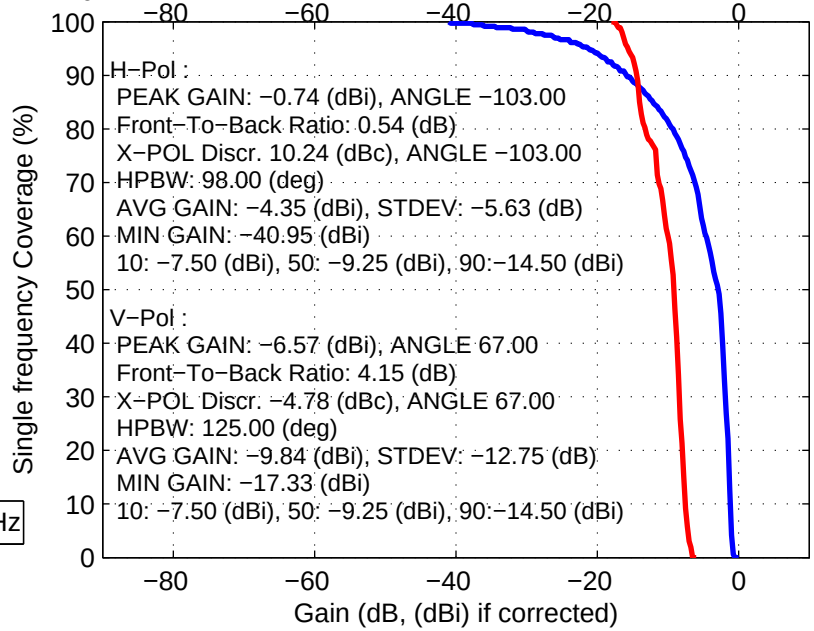
Ant. Location...."CENTER OF AZIMUTH TURNTABLE, ANT HORIZONTAL"
Comments....."ELEVATION CUT ACROSS PLANE OF PCB, THETA = −179 TO 180 DEG. CUT PERP TO FEED AT PHI = 90 DEG, THROUGH NARROW DIMENSIO









Pattern File.....2013−11−26−16−0− 8_ELEVATION_CUT_2_003.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
Unit Tested....."ABG TAG TRACK"
Mfr./Model....."ABG"
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Mfr./Model.....Rohde & Schwarz ZVB−20
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Span...N/A

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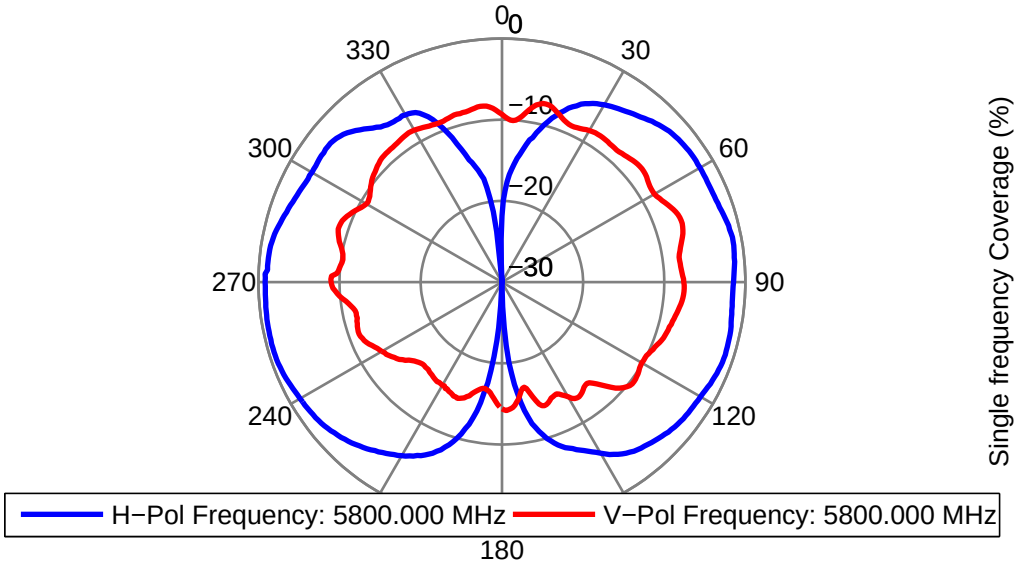
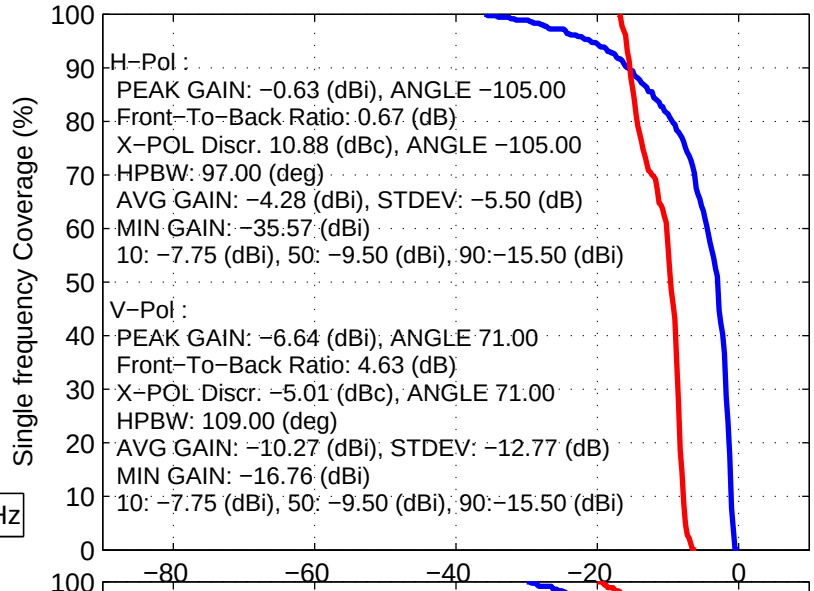
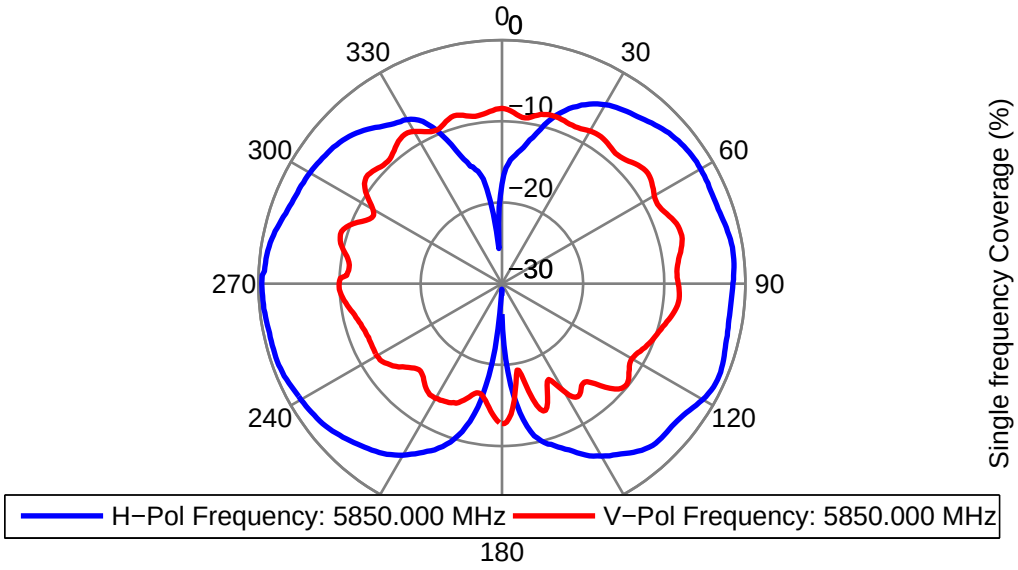
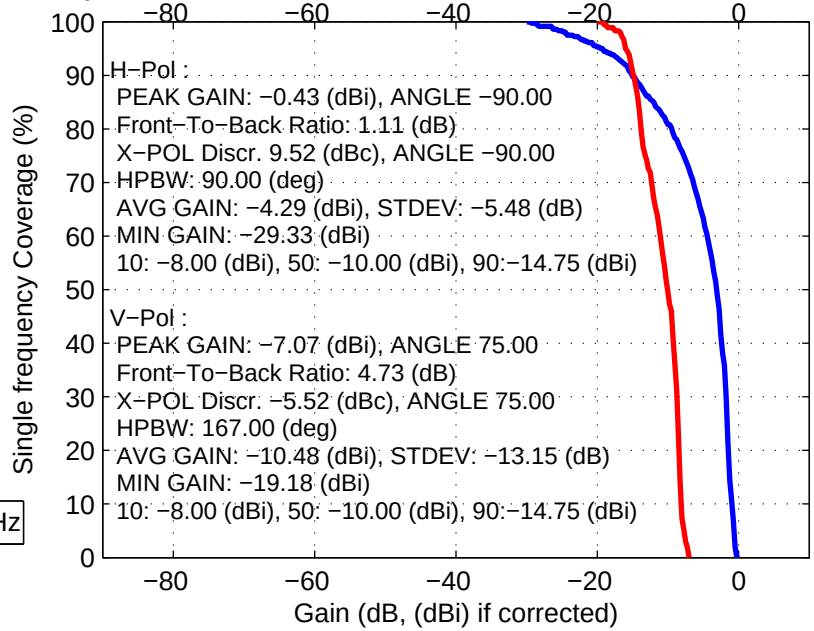
Ant. Location...."CENTER OF AZIMUTH TURNTABLE, ANT HORIZONTAL"
Comments....."ELEVATION CUT ACROSS PLANE OF PCB, THETA = −179 TO 180 DEG. CUT PERP TO FEED AT PHI = 90 DEG, THROUGH NARROW DIMENSIO









Pattern File.....2013−11−26−16−0− 8_ELEVATION_CUT_2_003.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
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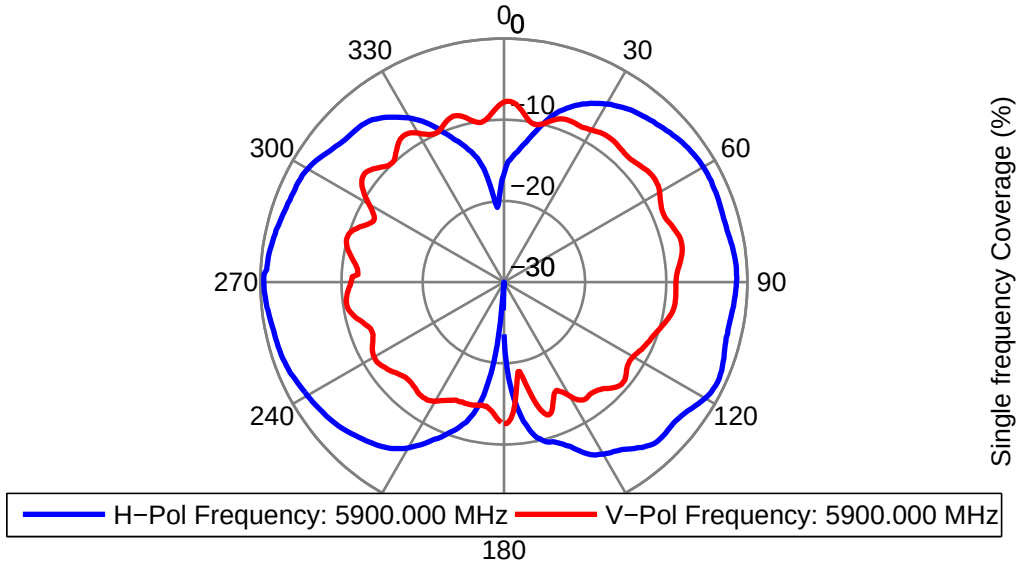

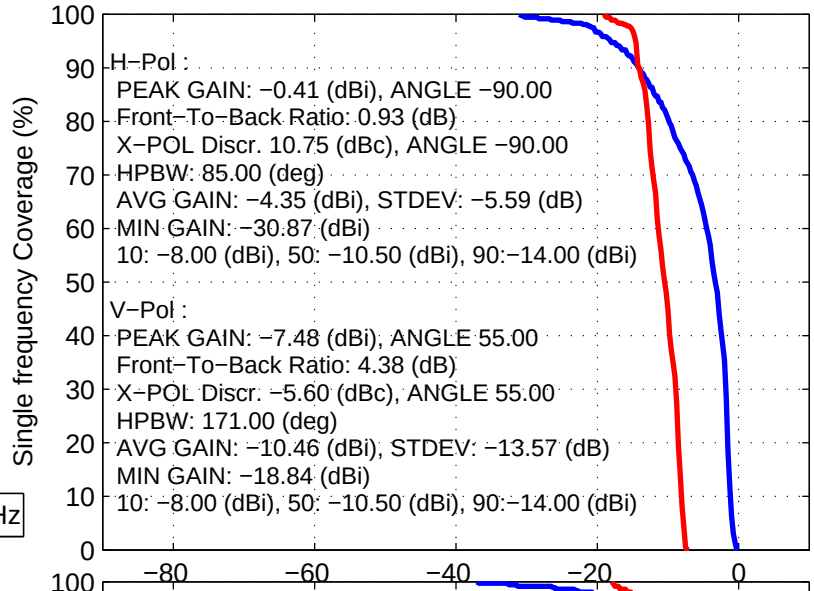

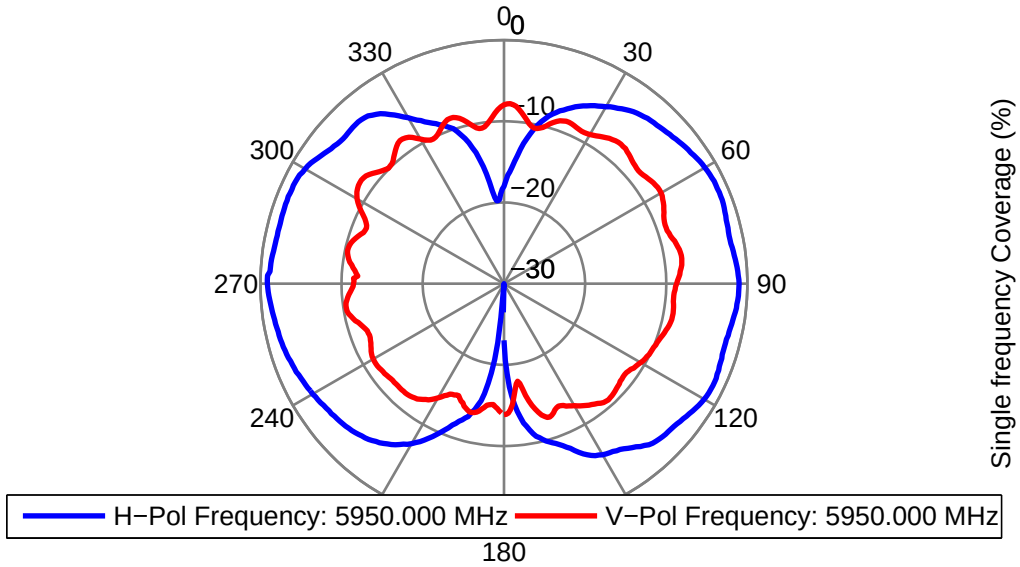

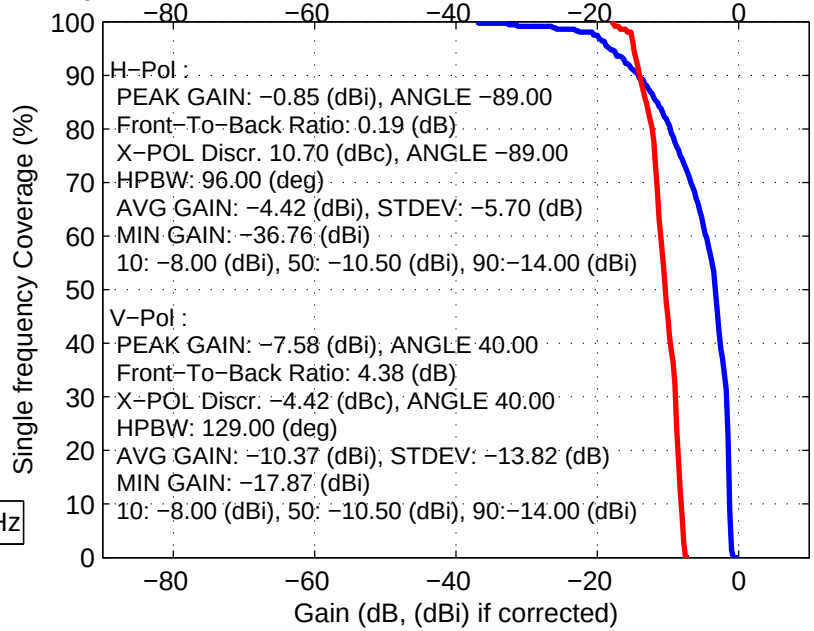

Pattern File.....2013−11−26−16−0− 8_ELEVATION_CUT_2_003.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
Unit Tested....."ABG TAG TRACK"
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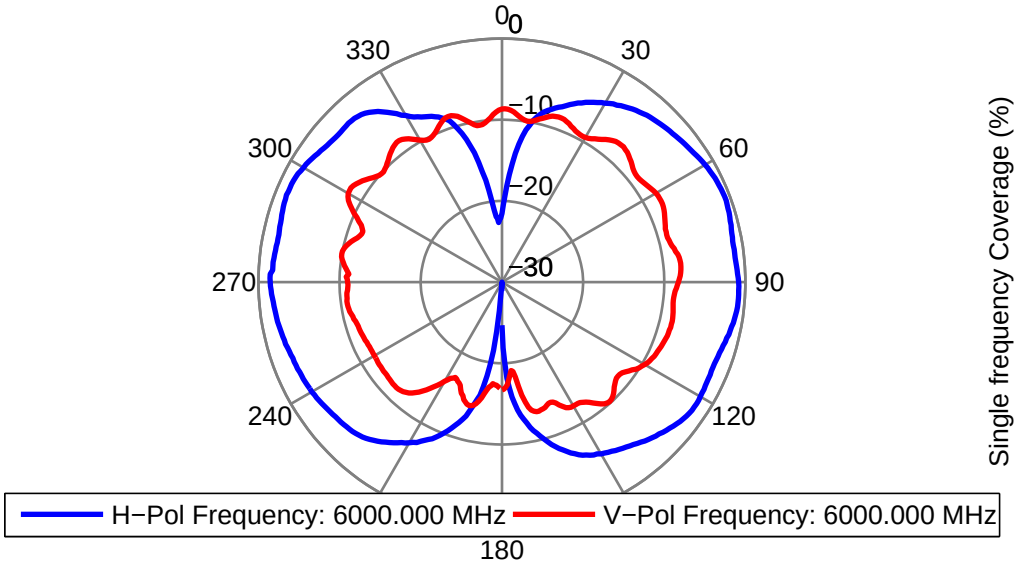
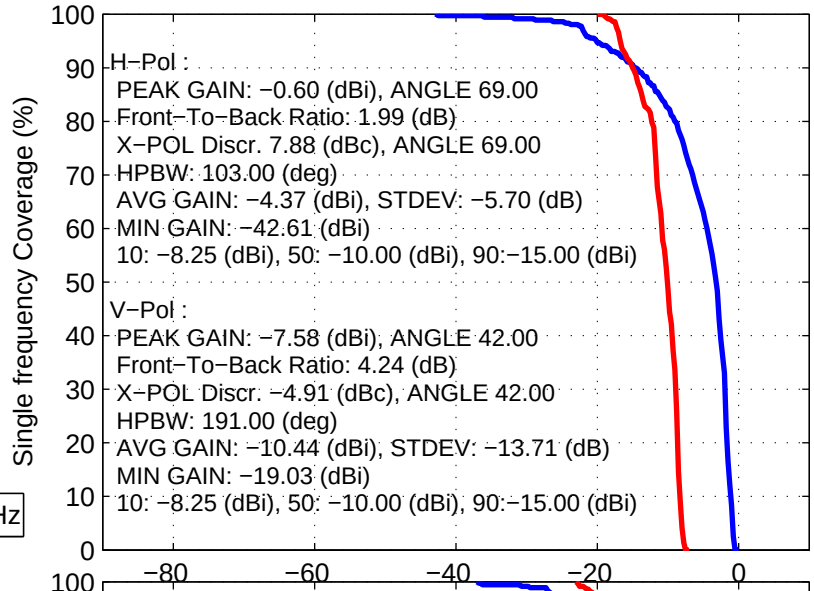
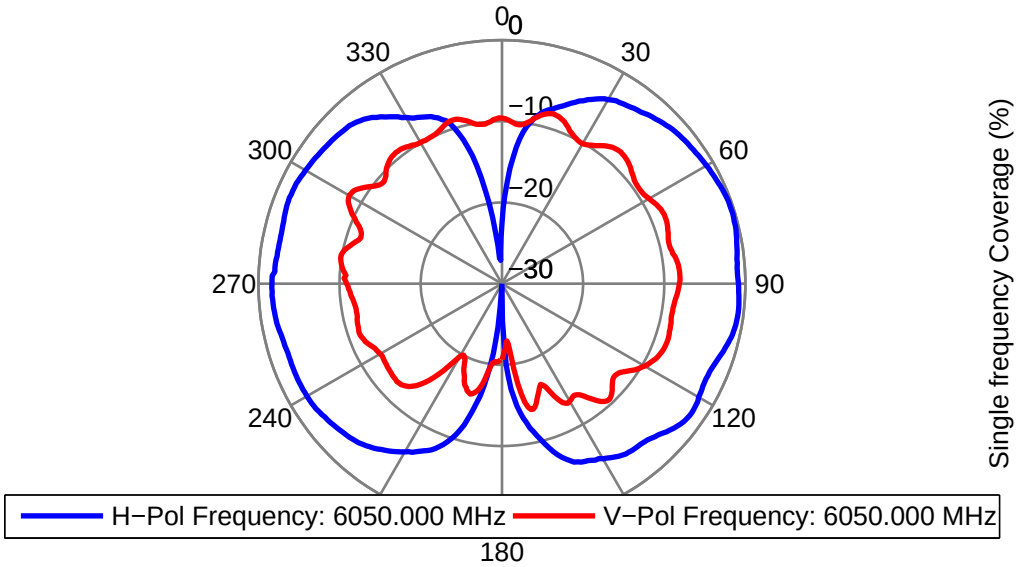
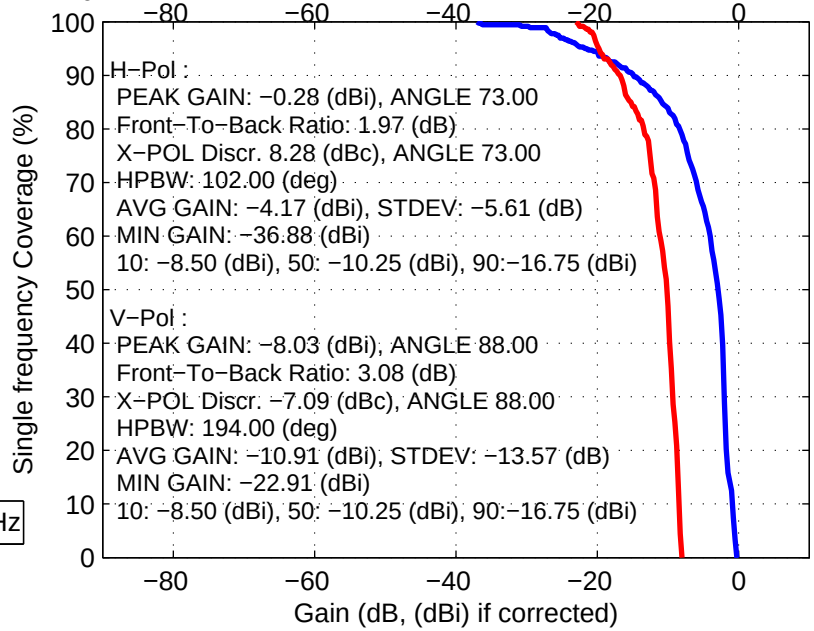
Comments....."ELEVATION CUT ACROSS PLANE OF PCB, THETA = −179 TO 180 DEG. CUT PERP TO FEED AT PHI = 90 DEG, THROUGH NARROW DIMENSIO







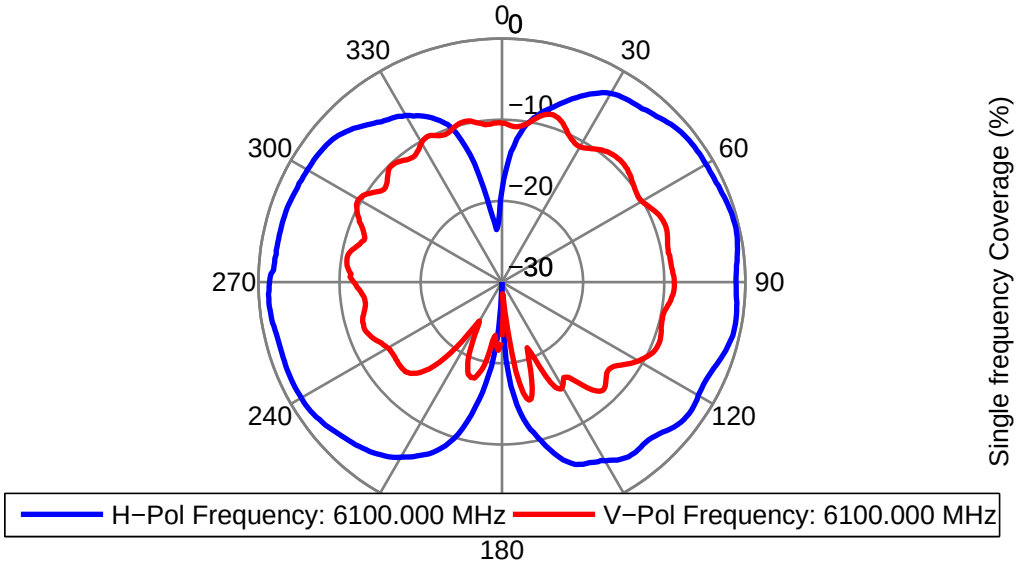


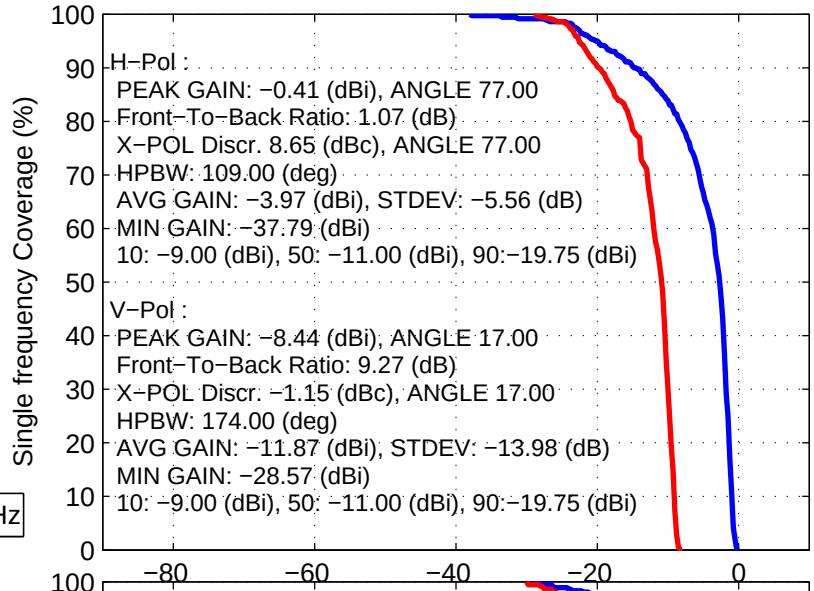
Pattern File.....2013−11−26−16−0− 8_ELEVATION_CUT_2_003.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
Unit Tested....."ABG TAG TRACK"
Mfr./Model....."ABG"
ID Number....."SAMPLE A"
Antenna Type..."TOPHAT MONOPOLE"

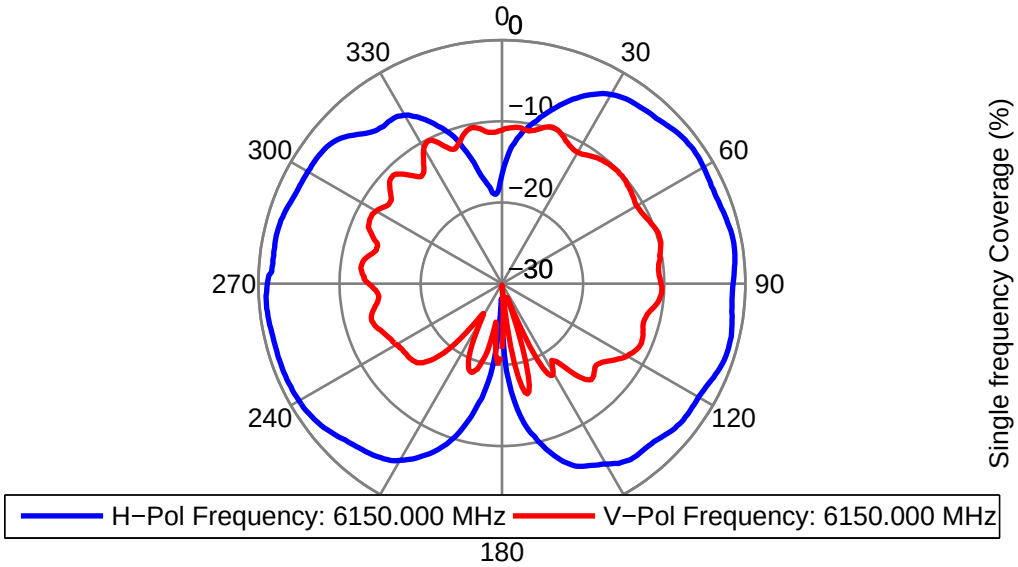
RF Detector....Vector Network Analyzer
Mfr./Model.....Rohde & Schwarz ZVB−20
Resolution BW.. 2.000000 kHz
Detector Function..."SPARAMS (V)"
Span...N/A

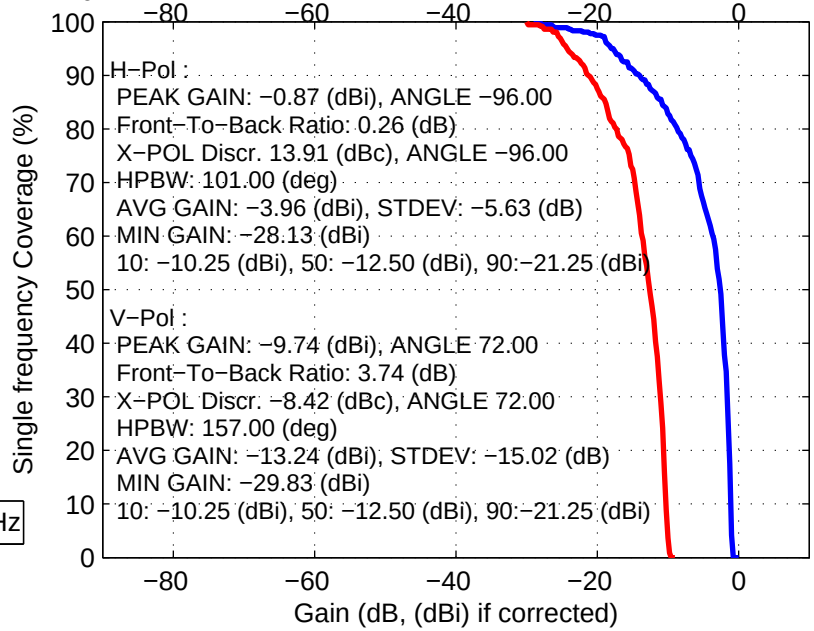
RF Source.....Vector Network Analyzer
RF Level.....10.000000 dBm
Transmit Ant..."CONDOR QUAD−RIDGE 2−18 GHZ"
Height....."1.5 m"
Range....."3 m"

Ant. Location...."CENTER OF AZIMUTH TURNTABLE, ANT HORIZONTAL"
Comments....."ELEVATION CUT ACROSS PLANE OF PCB, THETA = −179 TO 180 DEG. CUT PERP TO FEED AT PHI = 90 DEG, THROUGH NARROW DIMENSIO









Pattern File.....2013−11−26−16−0− 8_ELEVATION_CUT_2_003.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
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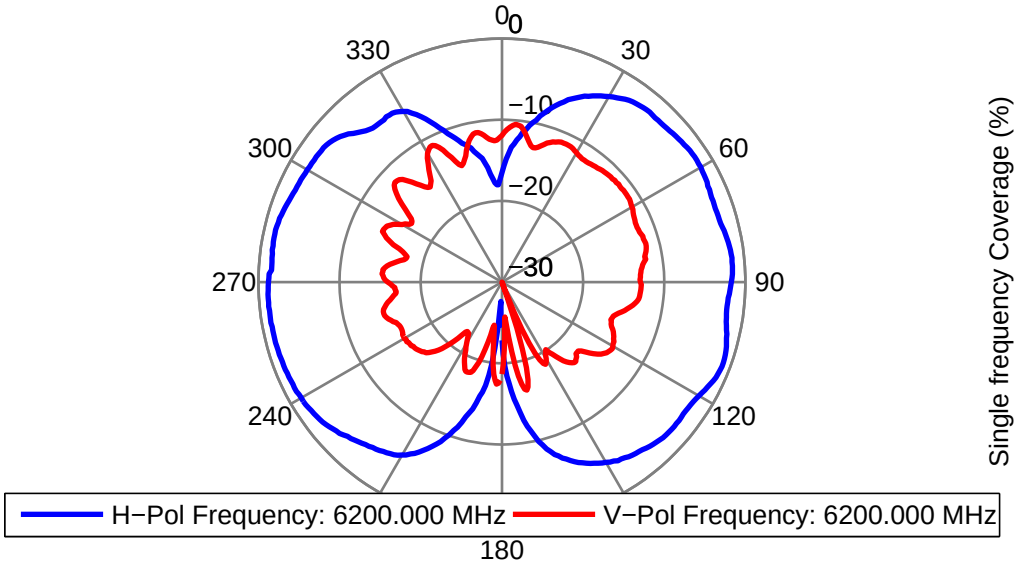

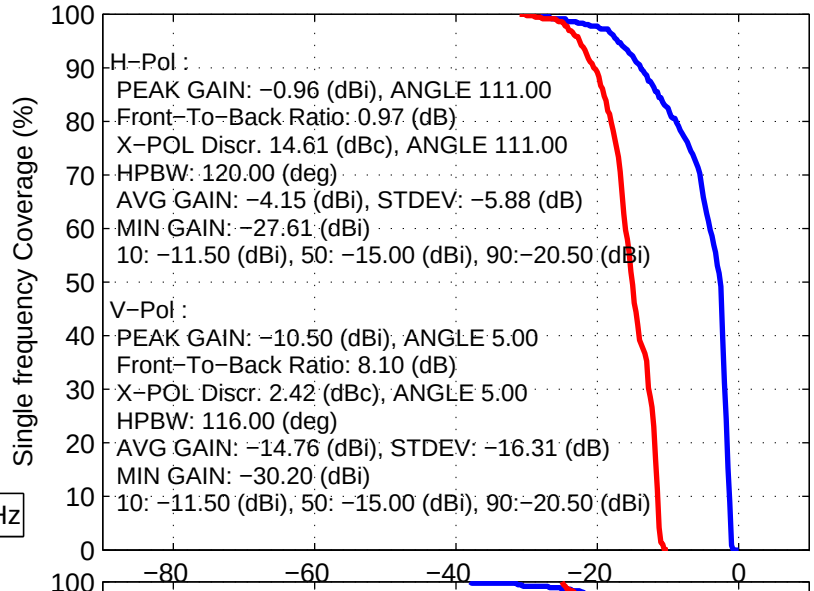

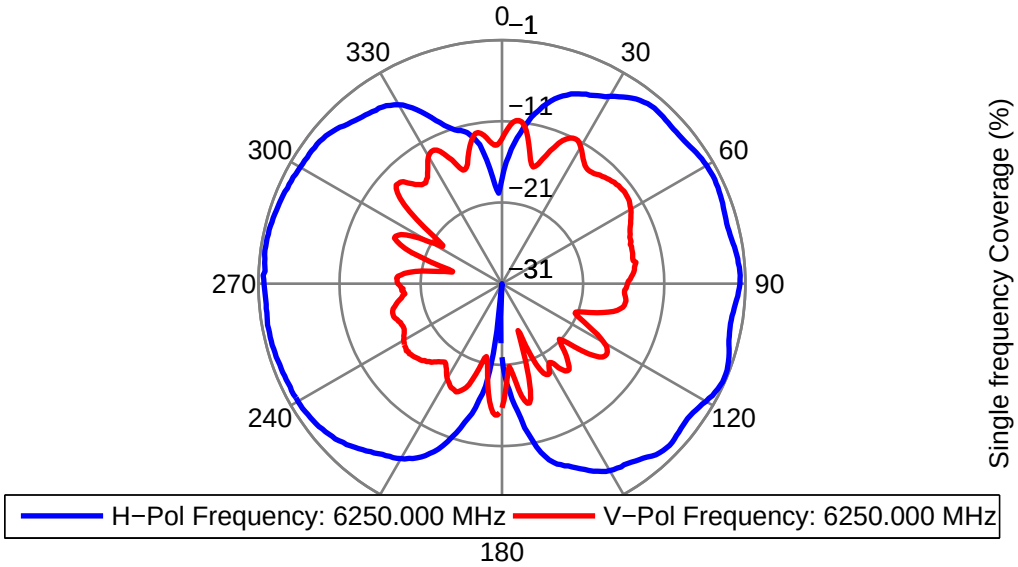

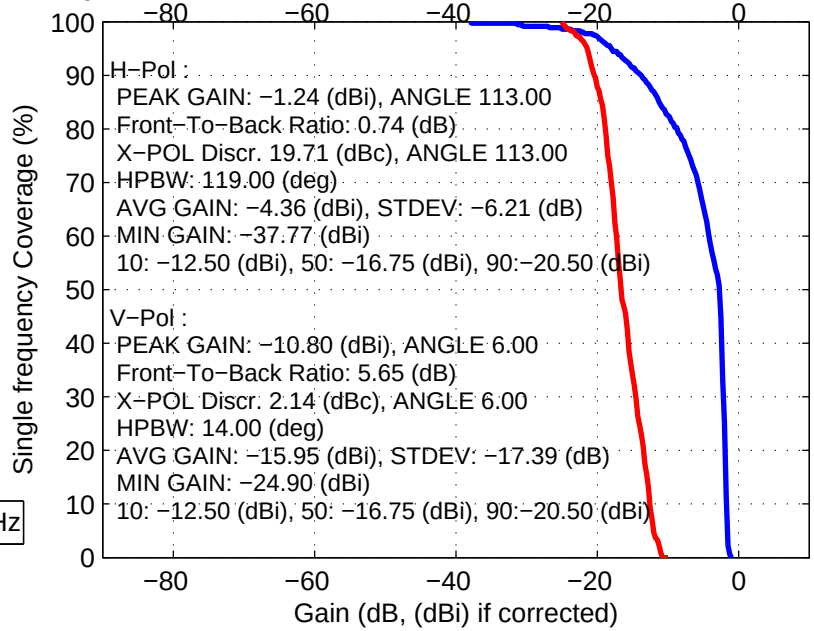

Pattern File.....2013−11−26−16−0− 8_ELEVATION_CUT_2_003.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
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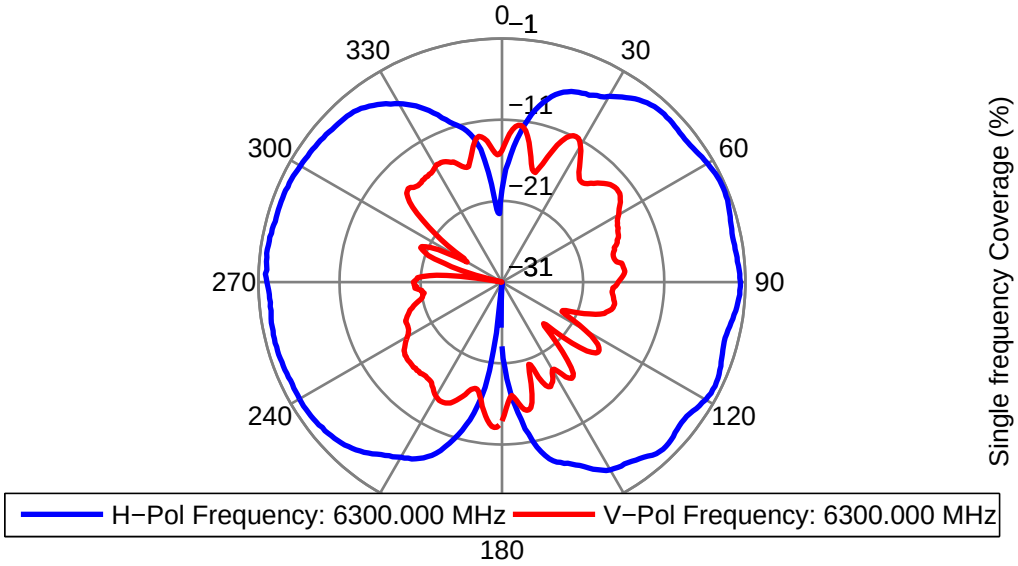

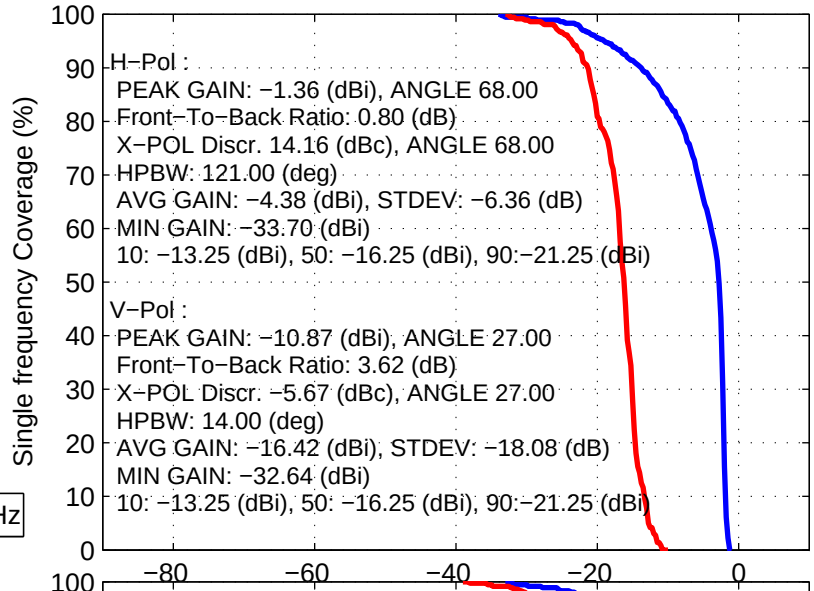

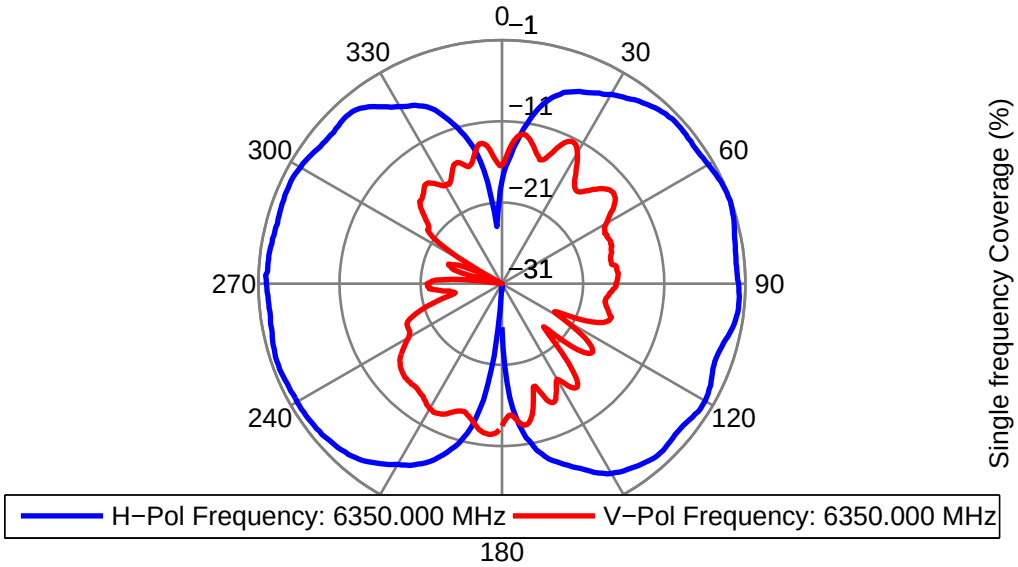

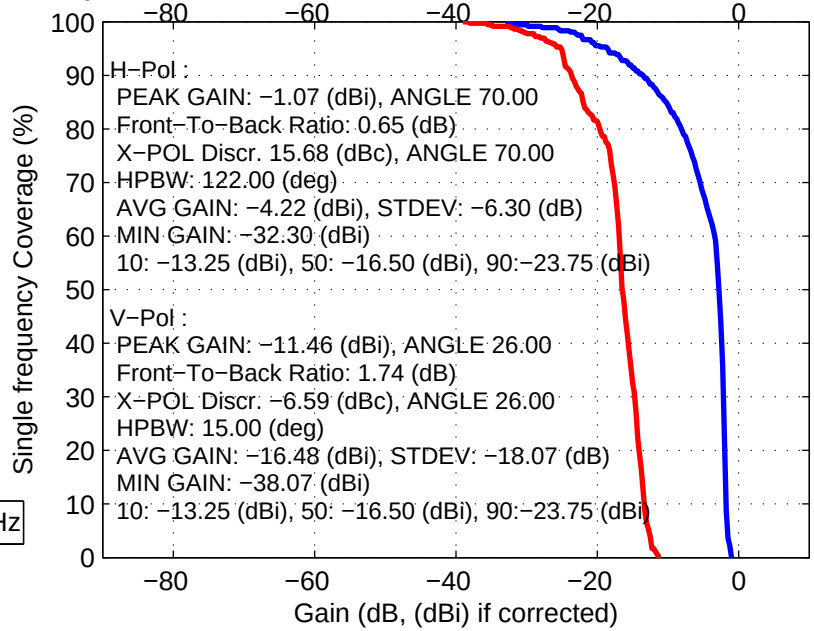

Pattern File.....2013−11−26−16−0− 8_ELEVATION_CUT_2_003.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
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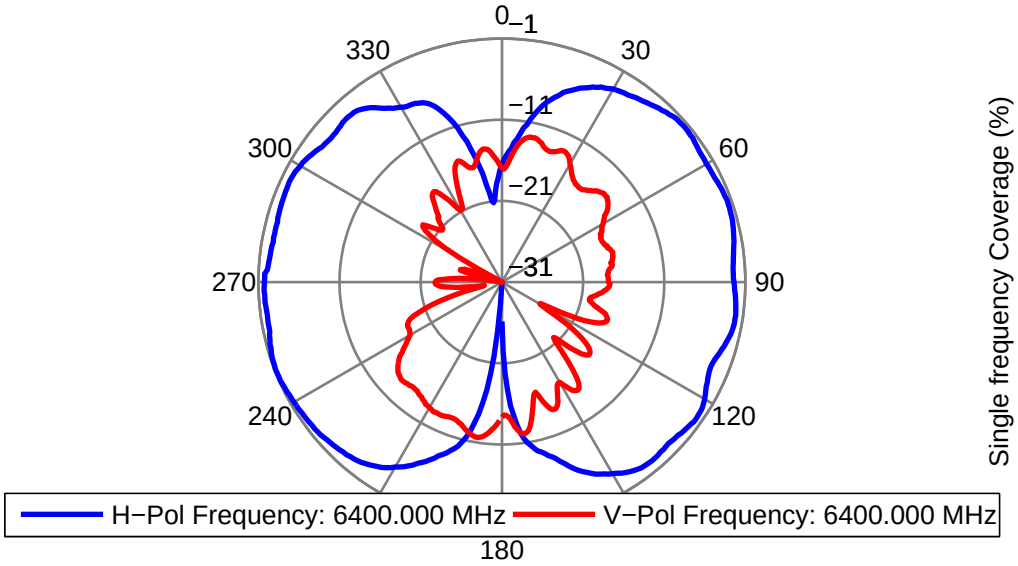
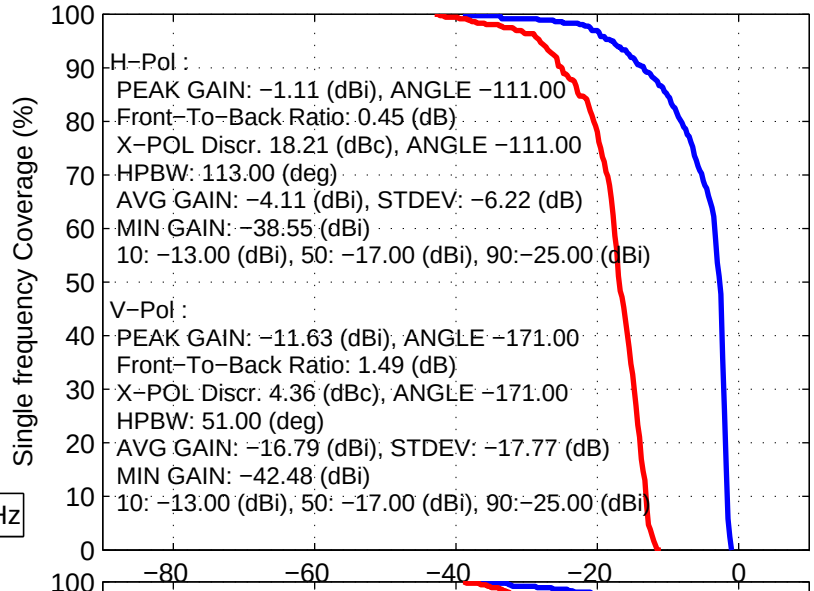
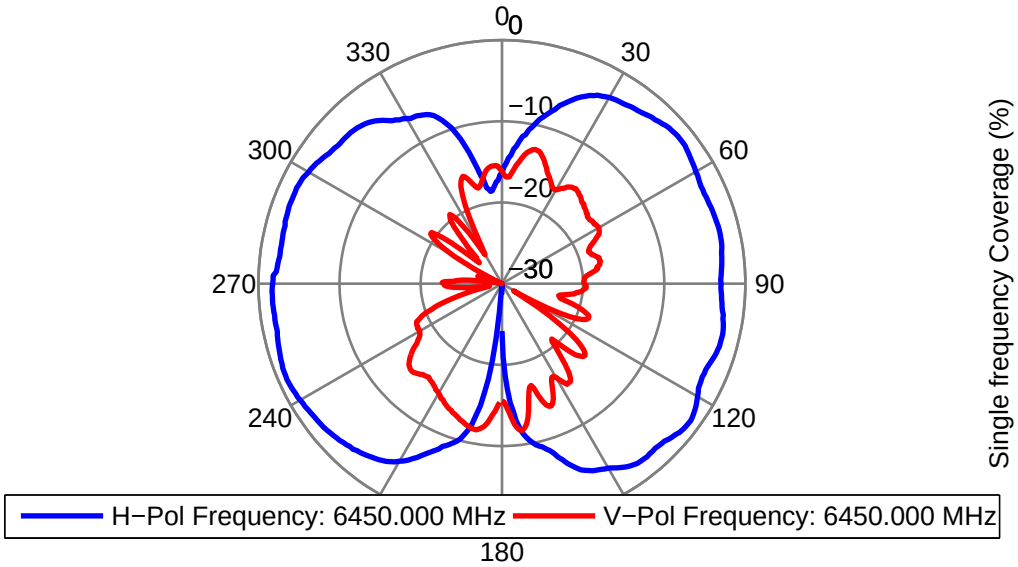
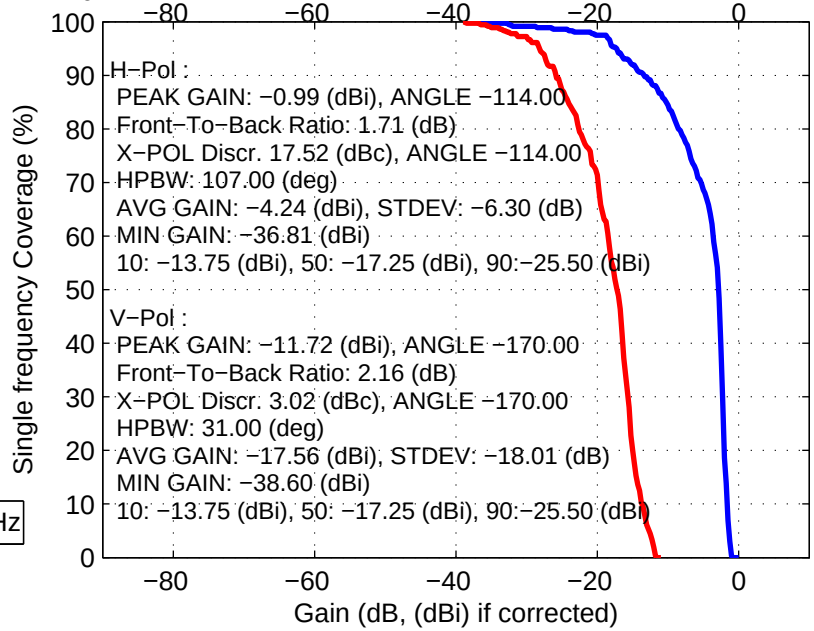
Comments....."ELEVATION CUT ACROSS PLANE OF PCB, THETA = −179 TO 180 DEG. CUT PERP TO FEED AT PHI = 90 DEG, THROUGH NARROW DIMENSIO









Pattern File.....2013−11−26−16−0− 8_ELEVATION_CUT_2_003.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
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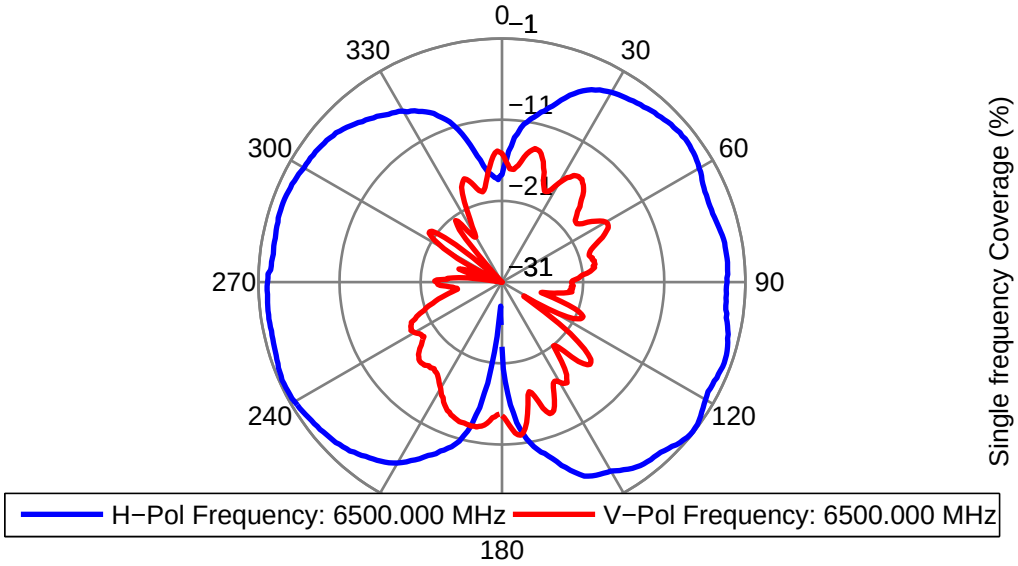

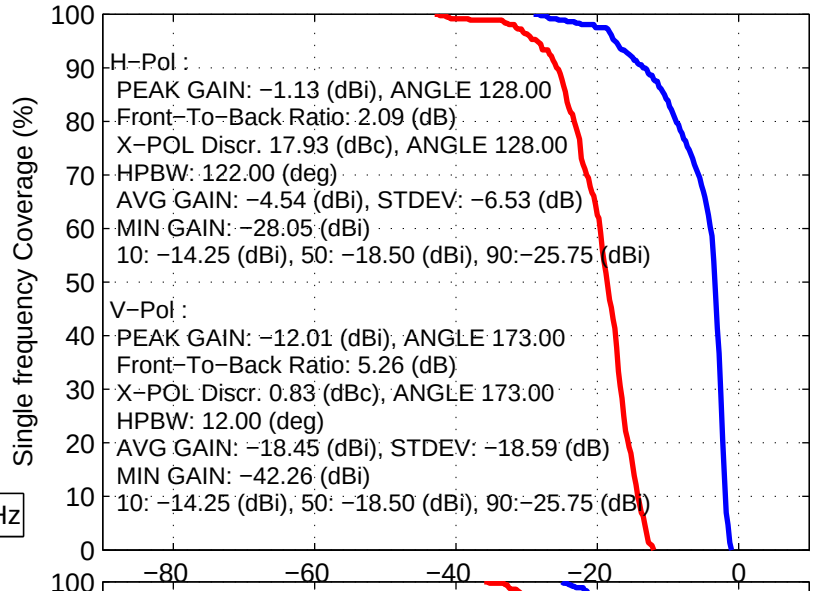

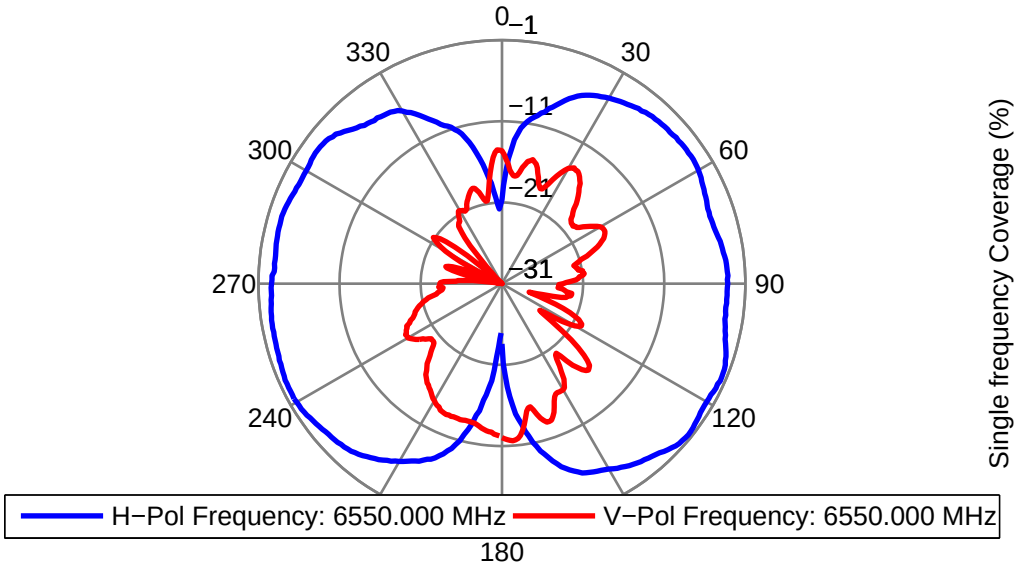

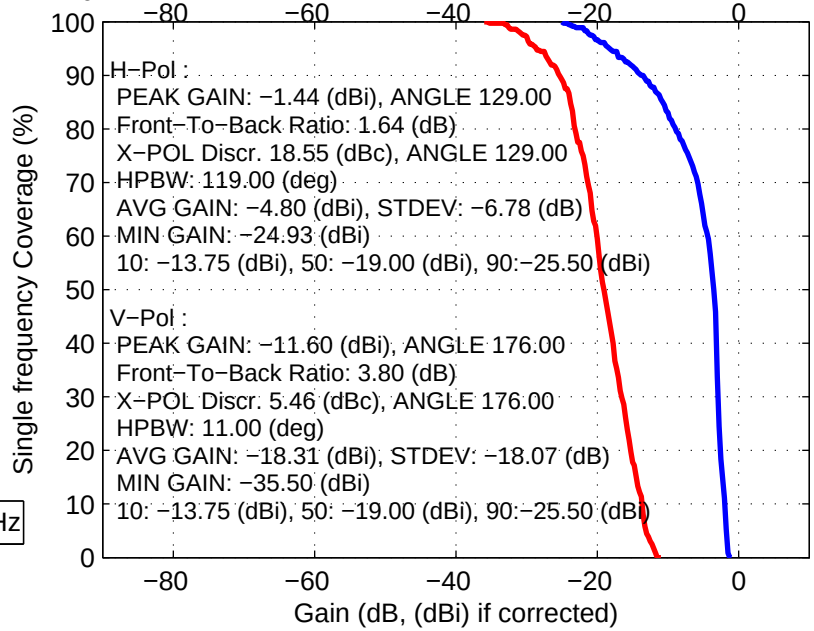

Pattern File.....2013−11−26−16−0− 8_ELEVATION_CUT_2_003.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
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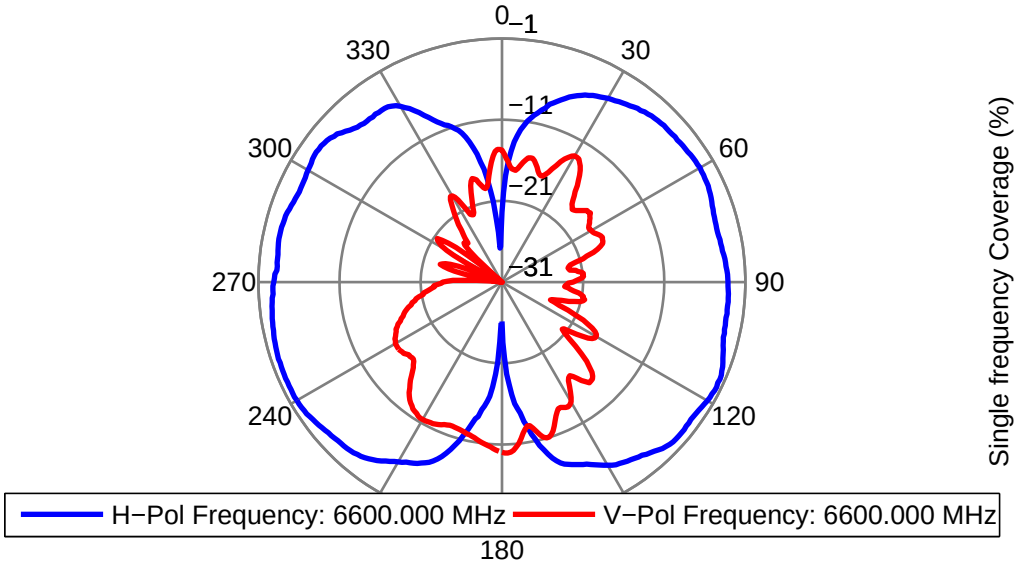
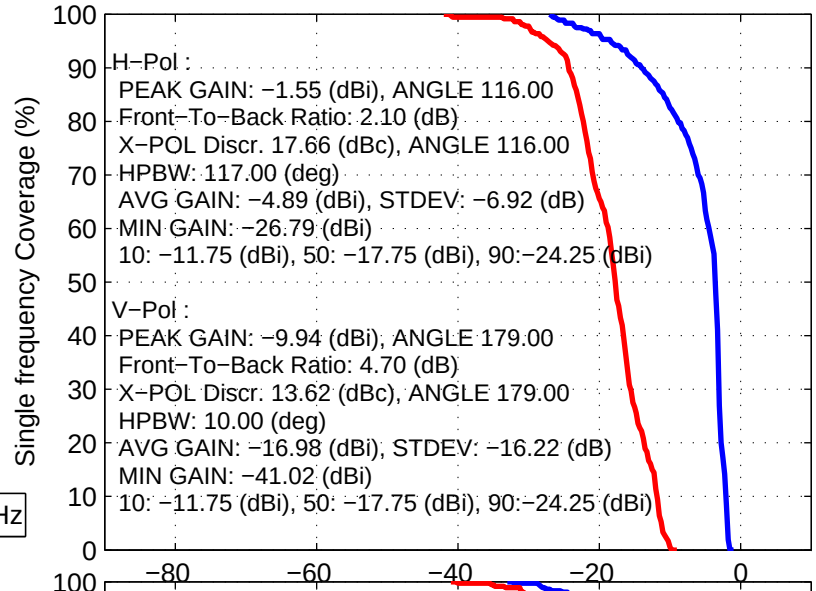
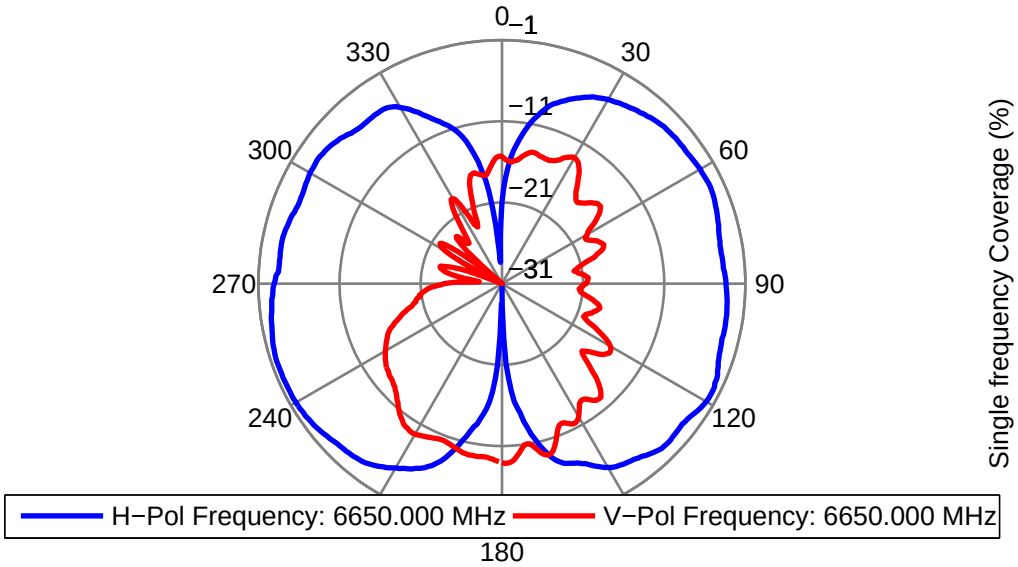
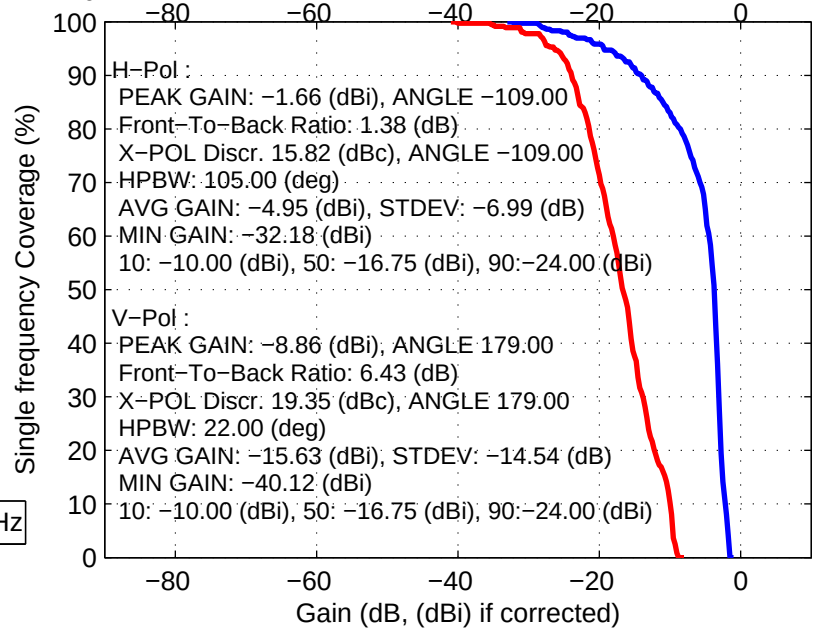
Comments....."ELEVATION CUT ACROSS PLANE OF PCB, THETA = −179 TO 180 DEG. CUT PERP TO FEED AT PHI = 90 DEG, THROUGH NARROW DIMENSIO









Pattern File.....2013−11−26−16−0− 8_ELEVATION_CUT_2_003.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
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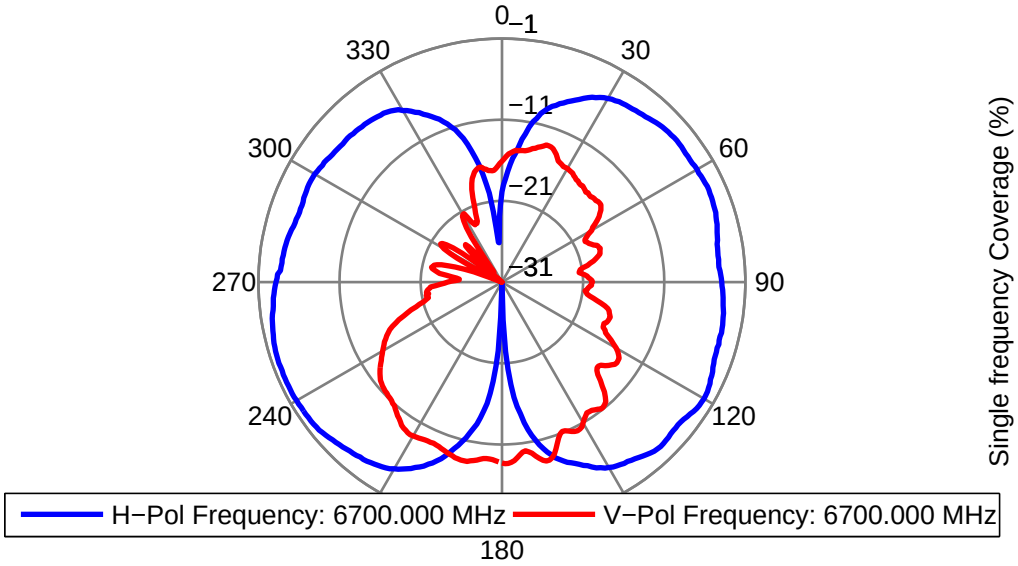
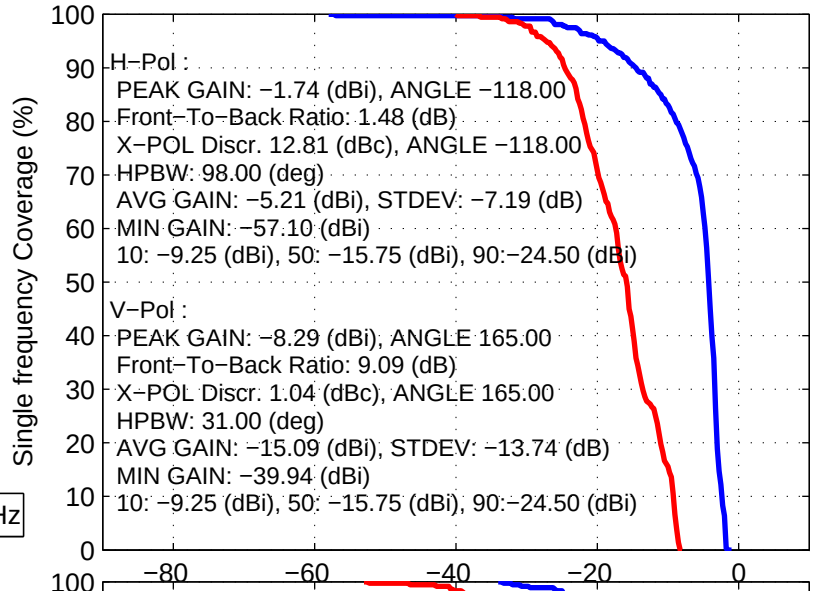
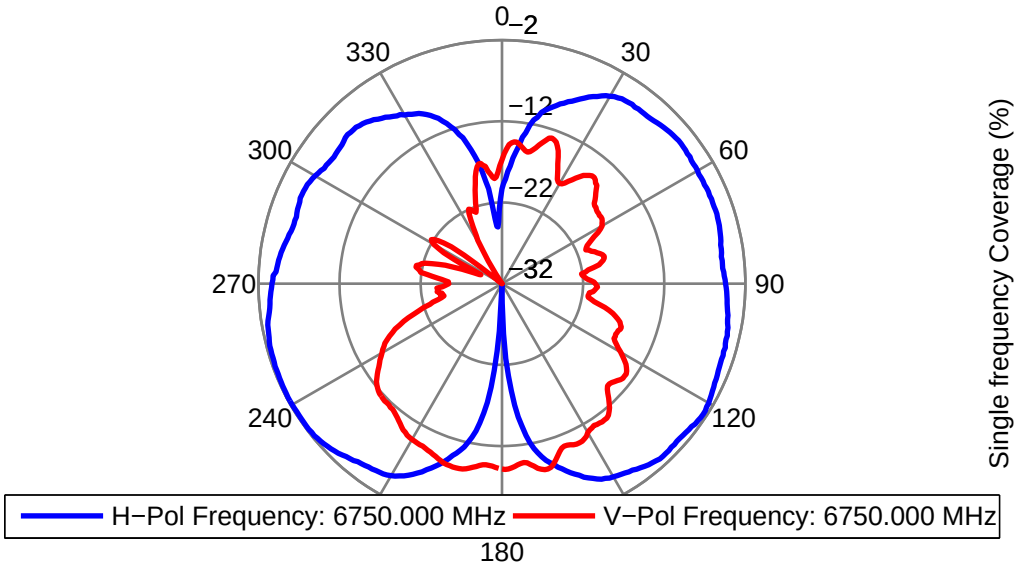
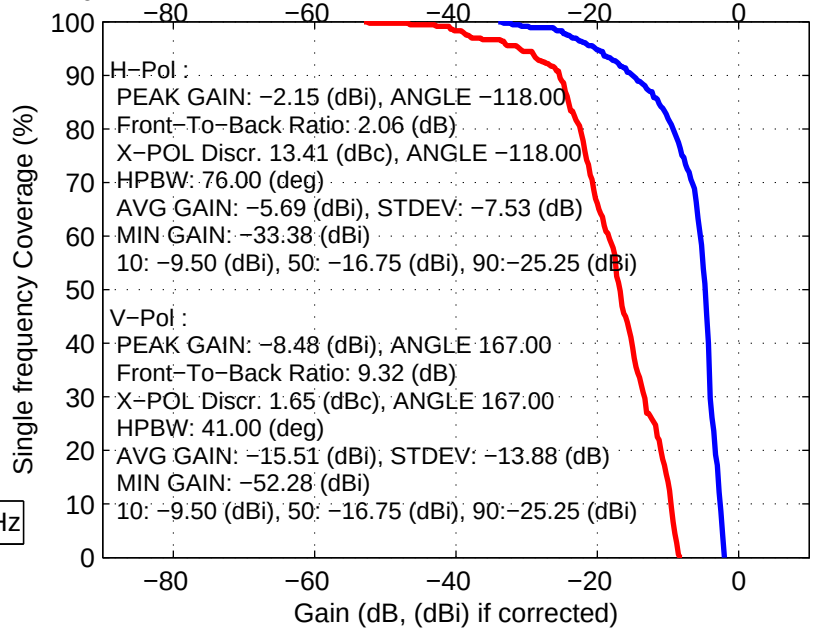
Comments....."ELEVATION CUT ACROSS PLANE OF PCB, THETA = −179 TO 180 DEG. CUT PERP TO FEED AT PHI = 90 DEG, THROUGH NARROW DIMENSIO









Pattern File.....2013−11−26−16−0− 8_ELEVATION_CUT_2_003.mat
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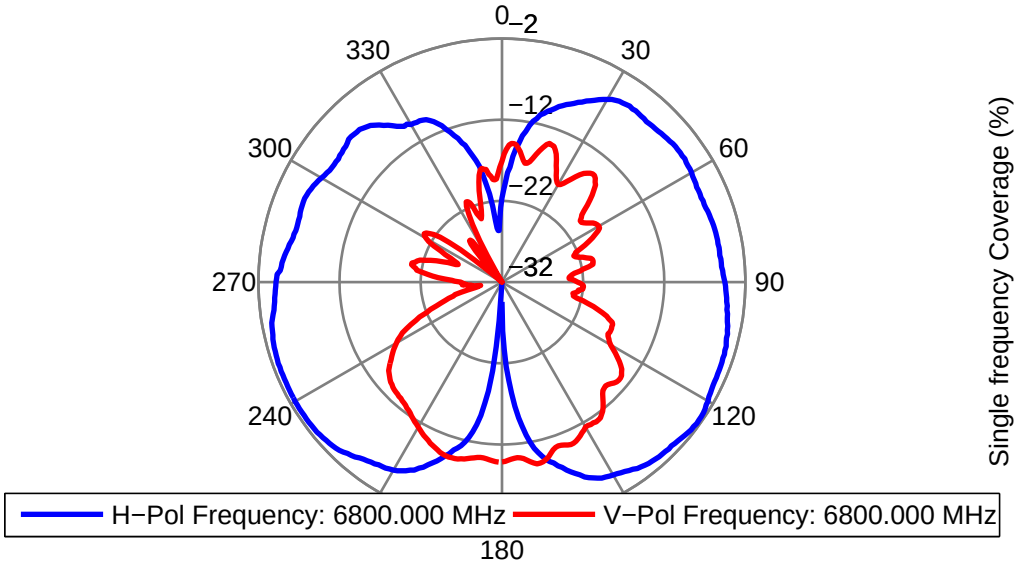

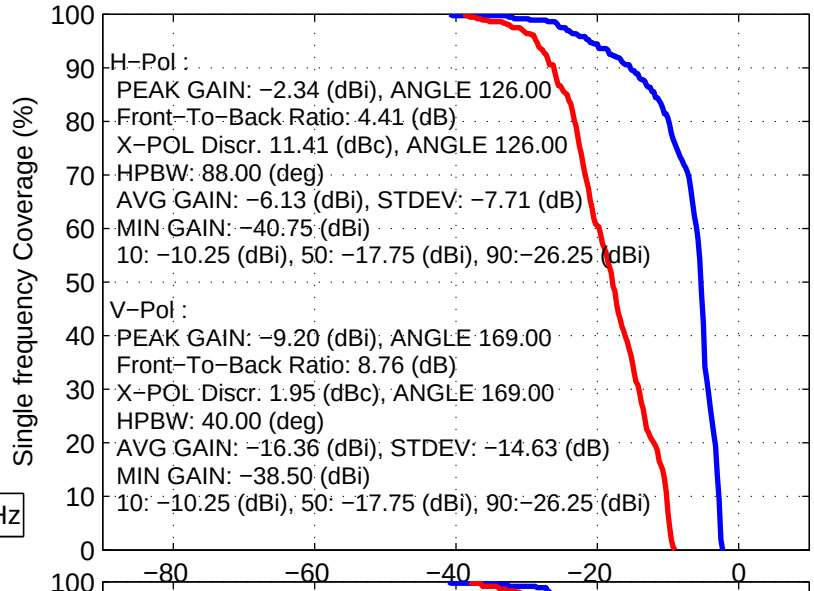

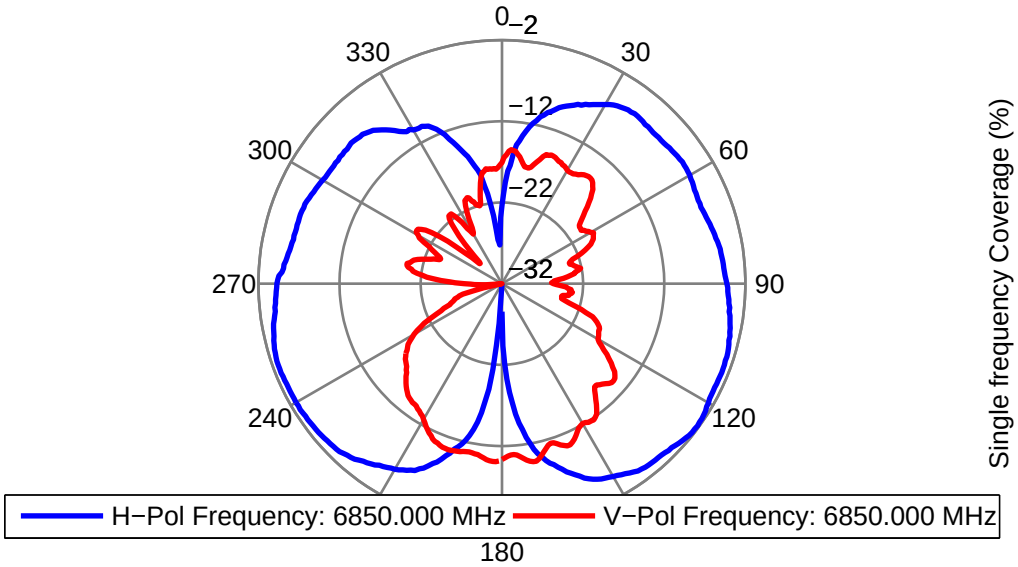

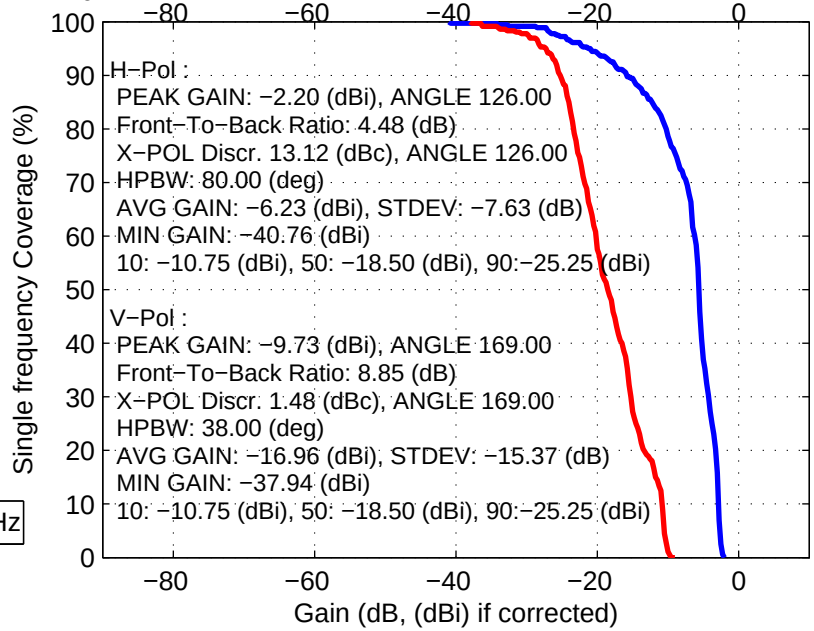

Pattern File.....2013−11−26−16−0− 8_ELEVATION_CUT_2_003.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
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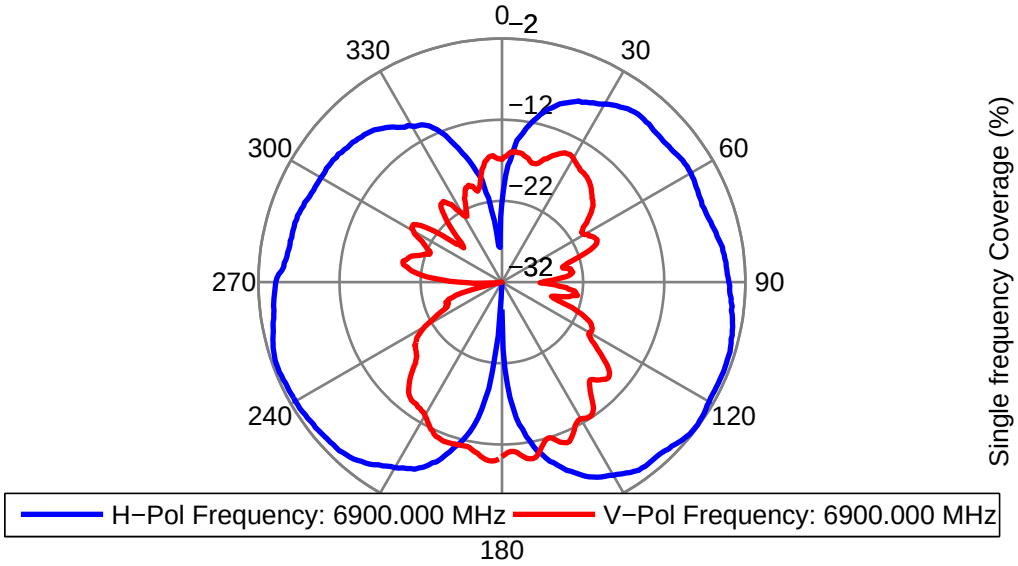
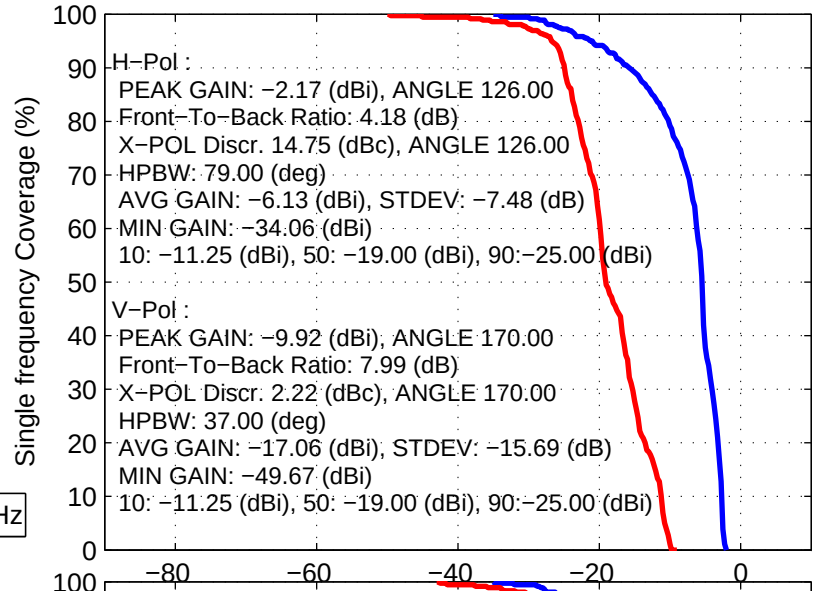
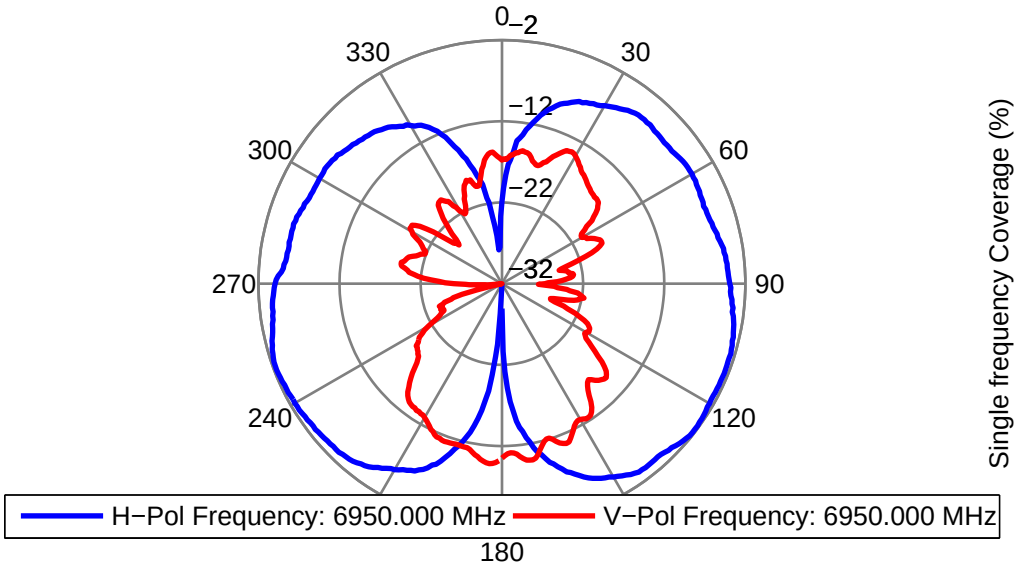
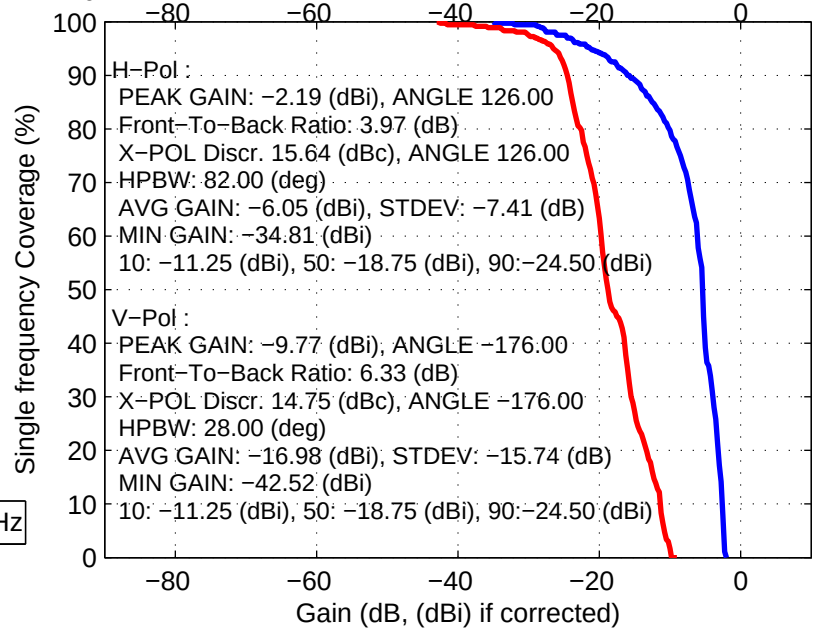






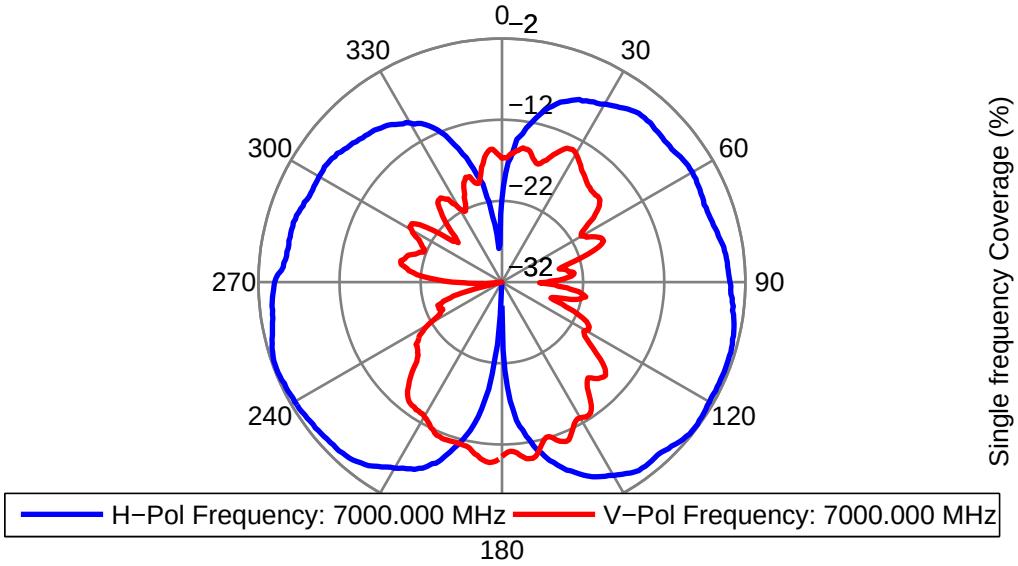


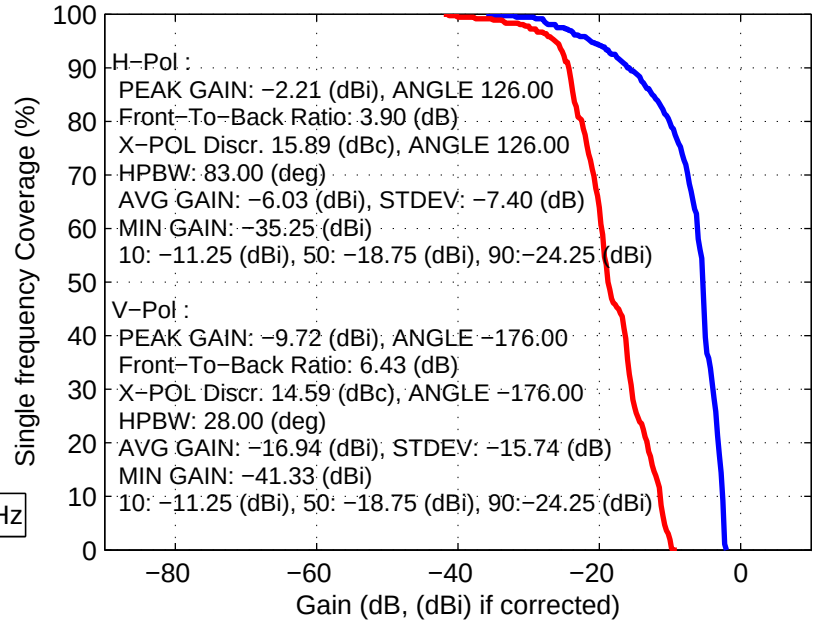
Pattern File.....2013−11−26−16−0− 8_ELEVATION_CUT_2_003.mat
CAL Files.....HPOL: 2013−11−26−16−9−56__XNBAND_CAL_HPOL_007.mat,VPOL: 2013−11−26−16−9− 6_XNBAND_CAL_VPOL_006.mat
Unit Tested....."ABG TAG TRACK"
Mfr./Model....."ABG"
ID Number....."SAMPLE A"
Antenna Type..."TOPHAT MONOPOLE"

RF Detector....Vector Network Analyzer
Mfr./Model.....Rohde & Schwarz ZVB−20
Resolution BW.. 2.000000 kHz
Detector Function..."SPARAMS (V)"
Span...N/A

RF Source.....Vector Network Analyzer
RF Level.....10.000000 dBm
Transmit Ant..."CONDOR QUAD−RIDGE 2−18 GHZ"
Height....."1.5 m"
Range....."3 m"

Ant. Location...."CENTER OF AZIMUTH TURNTABLE, ANT HORIZONTAL"
Comments....."ELEVATION CUT ACROSS PLANE OF PCB, THETA = −179 TO 180 DEG. CUT PERP TO FEED AT PHI = 90 DEG, THROUGH NARROW DIMENSIO





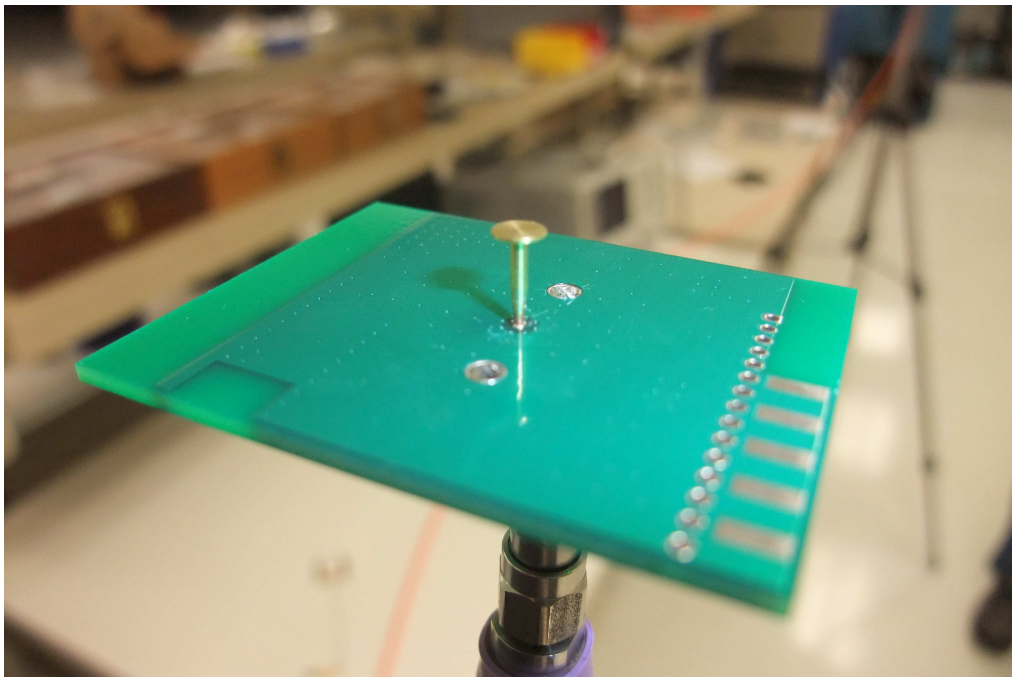


Figure 1. Prototype of the Top Hat Monopole.

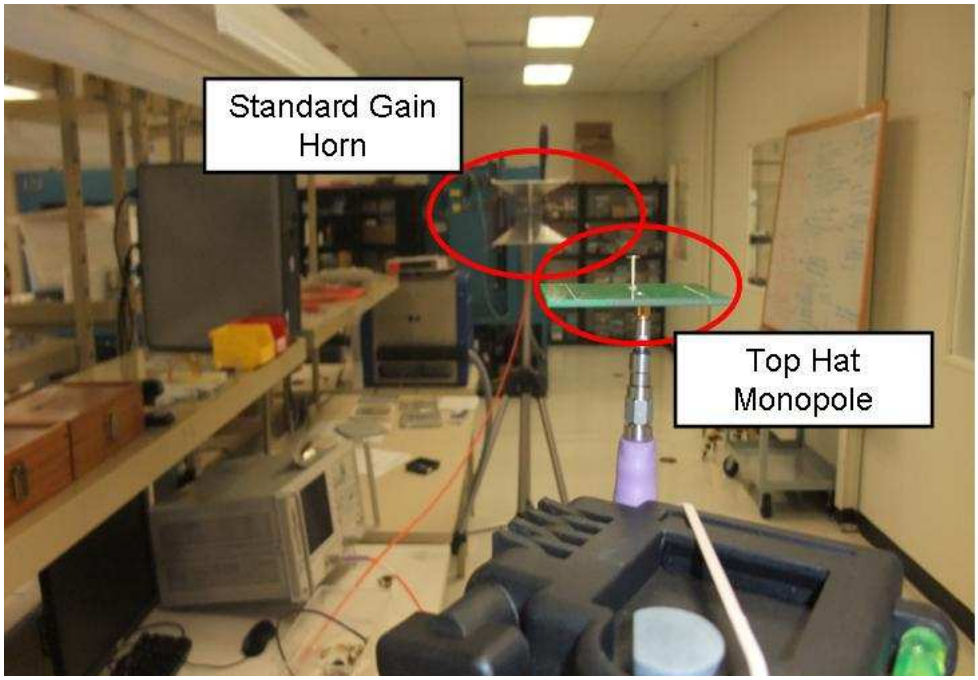


Figure 2. Test setup. S21 of a standard gain horn to a standard gain horn was measured. S21 of a standard gain horn to the Top Hat Monopole was measured. The antenna was tested in four different positions: 0, 90, 180, and 270 degrees in azimuth. The difference between the S21 measurements is a rough estimate of the antenna gain compared to the known gain of the horns.

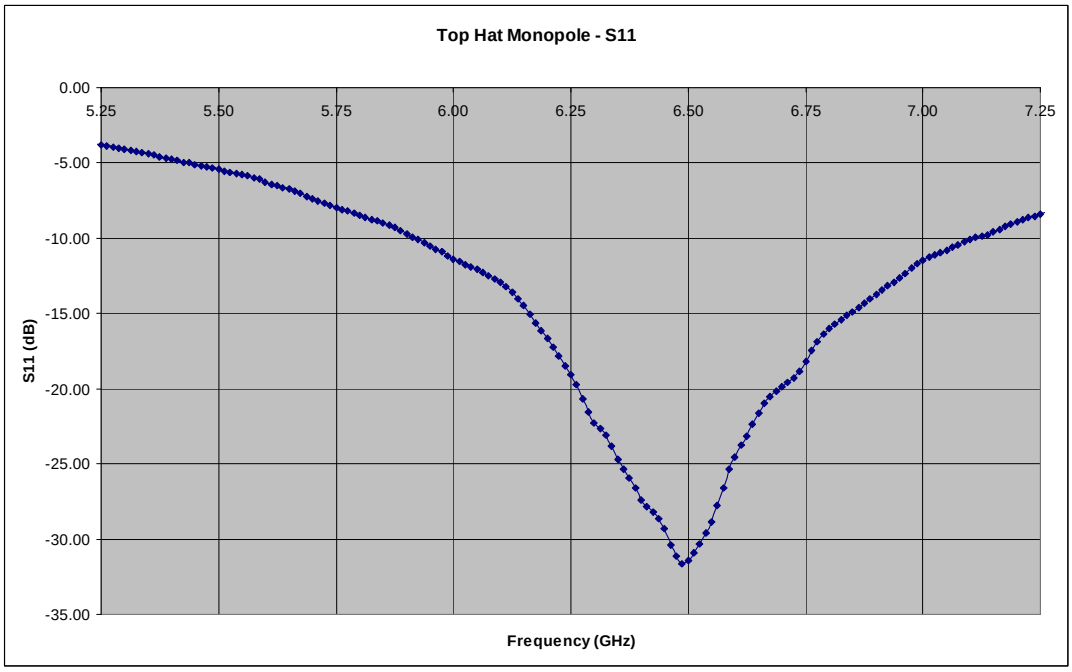


Figure 3. S11 of the Top Hat Monopole. Note that the monopole was tuned slightly higher than 6.25 GHz to attempt to account for the drop in frequency when a radome is installed.

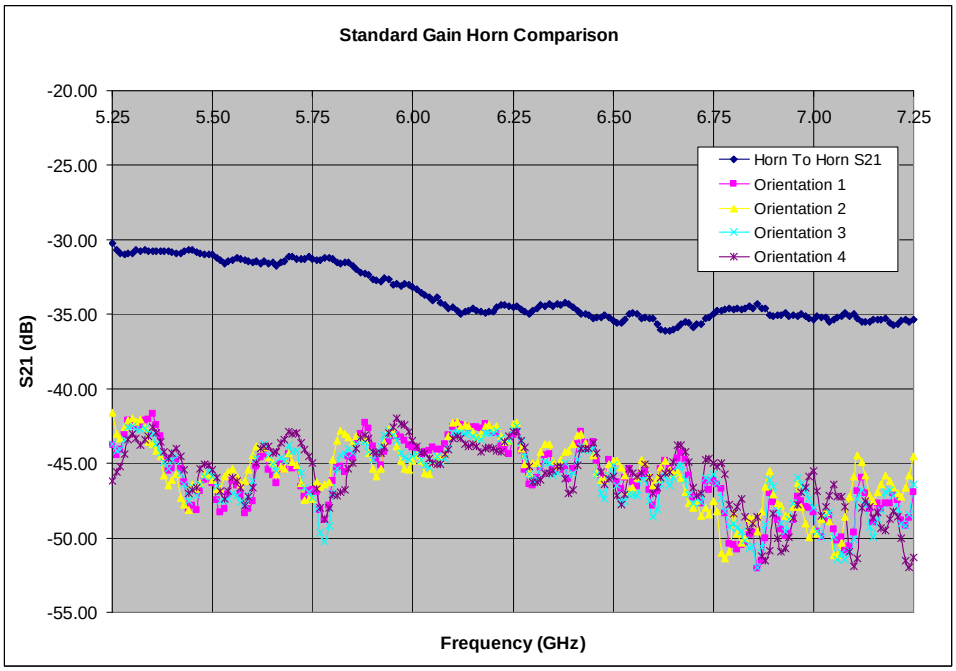


Figure 4. S21 measurements of the Top Hat Monopole compared to standard gain horns. At 6.25 GHz the gain of the horns is 9.85 dB; because S21 of the horn to monopole is ~9.0 dB below S21 of the standard gain horns, the gain of the monopole can be estimated at about 0-1 dB at the horizon.

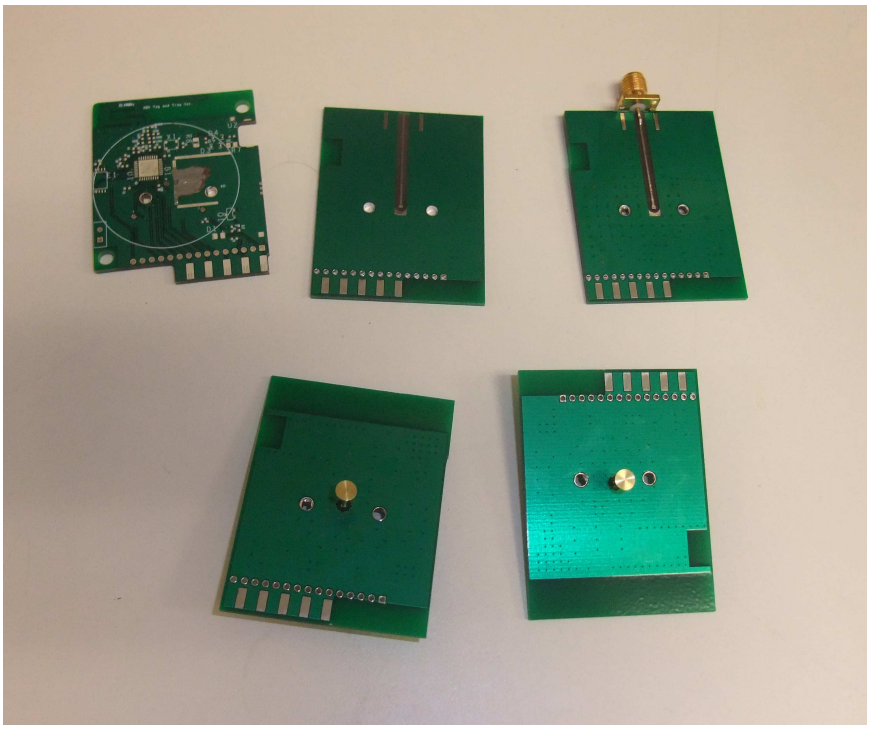


Figure 5. Prototype boards that will be delivered to ABG Tag and Traq Inc. The two boards on the bottom have the Top Hat Monopole and surface mount SMP connector attached.

Delivery to ABG Tag and Traq Inc.:

Quantity 1: Original circuit board
Quantity 1: Prototype strip line circuit board
Quantity 1: Prototype strip line circuit board with attached SMA connector
Quantity 2: Prototype coax-via circuit board with attached SMP and Top Hat Monopole Antenna