

# Regulatory WWAN Antenna Information (NB Mode)

Platform information						
Brand	ODM	Platform model name		Platform type (ex: regular NB, convertible PC, AIO...etc)		*SAR minimum separation (mm)
HP Inc.	Inventec	Arizona (HSN-I57C)		Convertible PC,		199 mm
Antenna information						Maximum Peak gain
Vendor	Type	Antenna Part number (Ant5 TX/RX)	Antenna Part number (Ant6 RX)	Antenna Part number (Ant7 RX)	Antenna Part number (Ant8 RX)	2300 MHz (Choice TX high peak gain)
WNC	PIFA	6036B0327801 (81EABL15.G79)	6036B0327901 (81EABL15.G80)	N/A	N/A	2.93 dBi
Module information						
Model	Form factor and suffixes ( NGW/ HMW AND AN/ NB/ BN....)					
Patron	Fibocom L860R WWAN 4x4 LTE radio module					

## Antenna Sample / Antenna Data Requirements for worldwide regulatory approval

Section	Description of Required OEM / ODM Antenna Information	US / IC	EU	Japan	Taiwan	S.Korea
1A	Part Number for Antenna Assembly	Required	Required	Required	Required	Required
1B	Antenna Manufacturer Name	Required	Required	Required	Required	Required
1C	Description of Antenna Type	Required	N/A	N/A	N/A	N/A
1D	Tx antenna Gain(Peak Gain W/ cable loss) *	Required	Required	Required	Required	Required
2	Dimensioned Photographs and Drawings of Tx and Rx antennas	Required	Required	Required	Required	Required
3	Radiation patterns of antennas loaded in the host platform.	N/A	Required	Required	Required	N/A
4	Platform model name / number - correlated to antenna manufacturer and antenna part number	Required	Required	Desired	Required	Desired
5	Photograph(s) or Drawings showing location of antennas in platform. <u>(S. Korea requires photographs of antennas for approval submission). Taiwan requires pictures of each antenna type shown in the system.</u>	Required	Required	Desired	<u>Required (Photos)</u>	<u>Required (Photos)</u>
6	Mech. drawings / photos with dimensions of antenna locations and distance from end-user (For evaluation of SAR testing requirement).	Required	N/A	N/A	N/A	N/A
7	Photograph(s) or Drawings showing the location of all antennas (WLAN, other) and distance between those transmitting antennas. Information will be used to evaluate whether co-location testing is required.	Required	N/A	N/A	N/A	N/A
8	Local representative contact information for LMA/ PARS process.	Required	N/A	N/A	N/A	N/A

## Antenna Information

### Section 1. Antenna Assembly Specifications

Communication System	Band	Frequency(MHz) from low to high spectrum		1A Part Number for Antenna Assembly	1B Antenna Manufacturer Name	1C Description of Antenna Type	1D Tx Antenna Gain(dBi) Ant5
WCDMA/ LTE	1	1920	1980	Ant5 : 81EABL15.G79	WNC	PIFA	1.16
WCDMA/ LTE	2	1850	1910				0.72
LTE	3	1710	1785				2.28
WCDMA/ LTE	4	1710	1755				2.54
WCDMA/ LTE	5	824	849				-0.96
LTE	7	2500	2570				1.47
WCDMA/ LTE	8	880	915				-2.31
LTE	12	699	716				-0.65
LTE	13	777	787				-0.99
LTE	14	788	798				-1.04
LTE	17	704	716				-0.69
LTE	18	815	830				-0.96
LTE	19	830	845				-0.96
LTE	20	832	862				-1.07
LTE	25	1850	1915				2.83
LTE	26	814	849				-0.96
LTE	28	703	748				-0.65
LTE	30	2305	2315				0.88
LTE	34	2010	2025				1.14
LTE	38	2570	2620				0.96
LTE	39	1880	1920				2.78
LTE	40	2300	2400				2.93
LTE	41	2496	2690				0.47
LTE	42	3400	3600				0.72
LTE	43	3600	3800				-0.04
LTE	48	3550	3700				0.21
LTE	66	1710	1780				2.19
LTE	71	663	698				-0.71

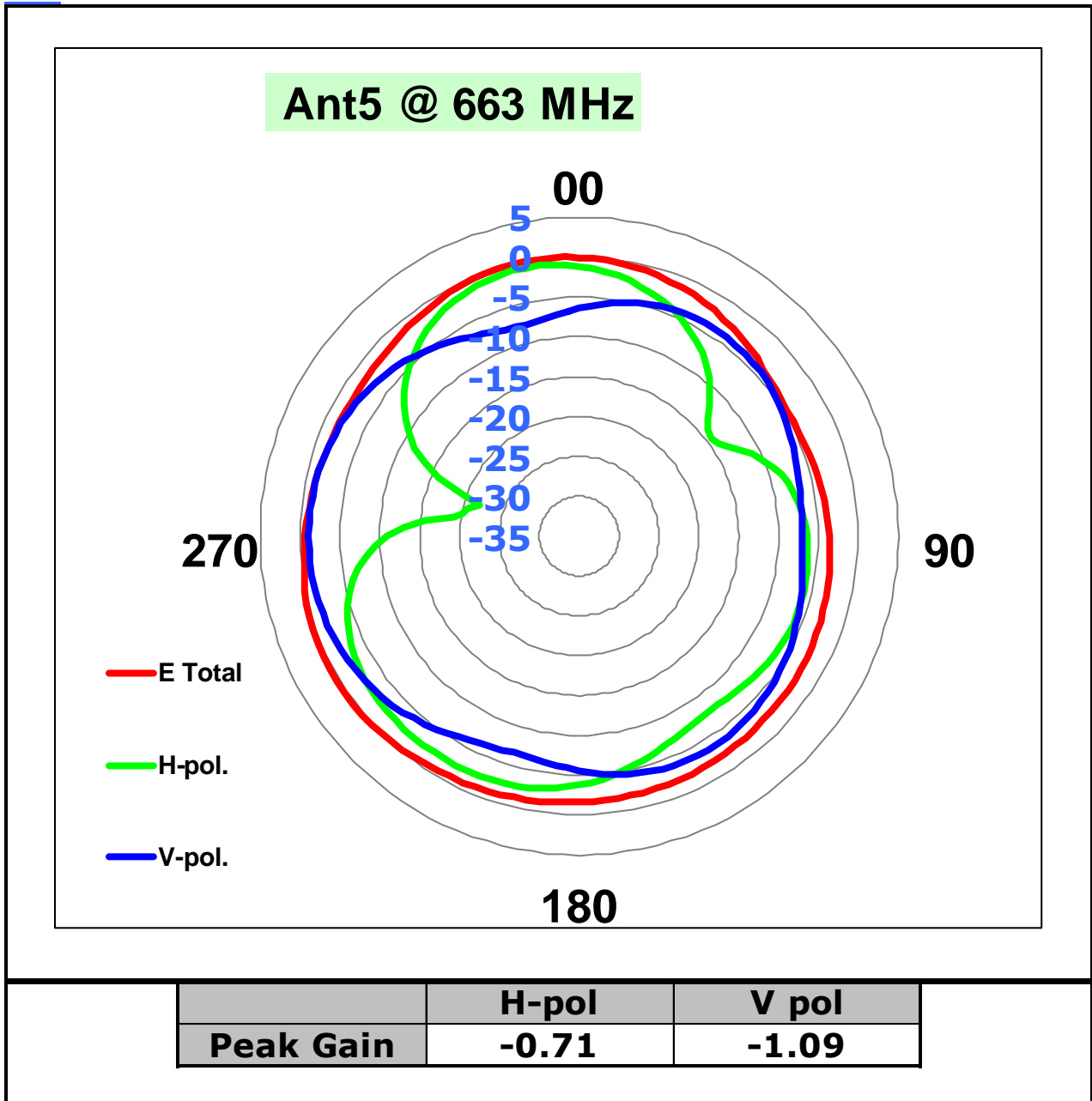
- Antenna Peak Gain required being test in system basis.

## Section 2. Dimensioned Photos or Drawings of Antennas

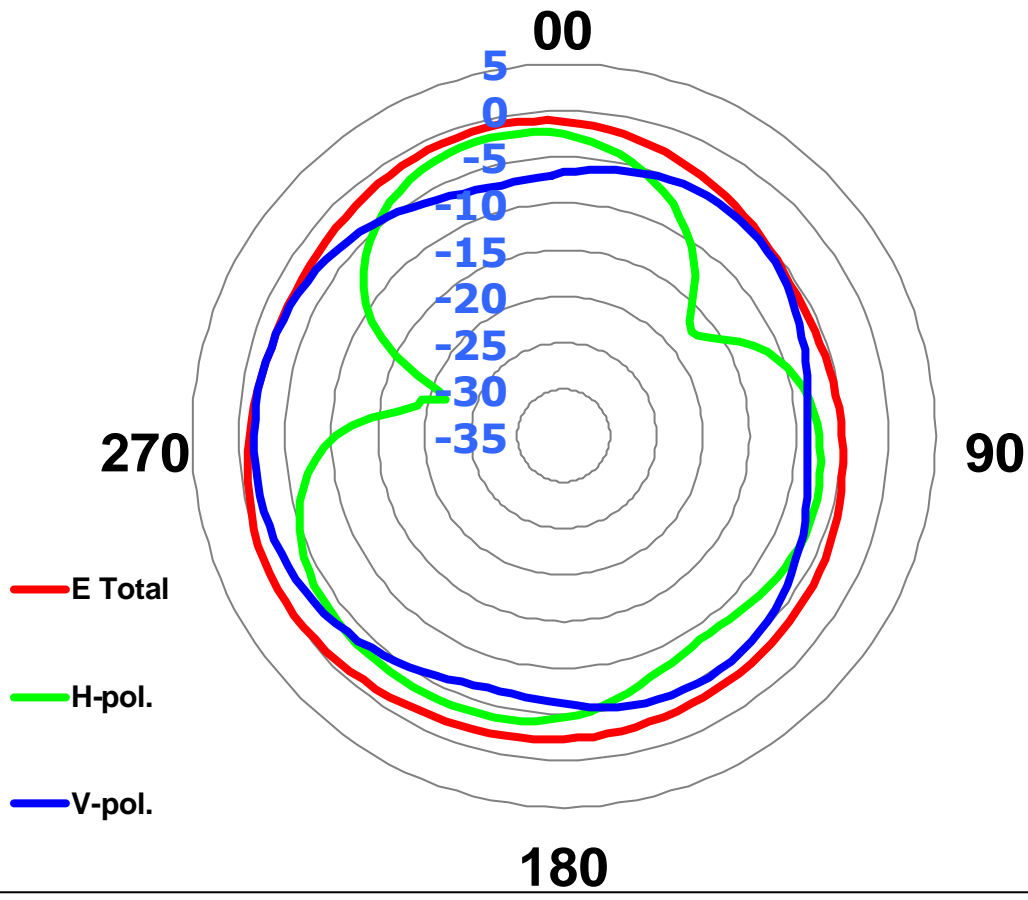
	Ant supplier	Part number	Drawing	Photo
Ant5	6036B0327801	81EABL15.G79	V	V
Ant6	6036B0327901	81EABL15.G80	V	V

The listed frequency 2D radiation pattern is required

• **Ant5:**

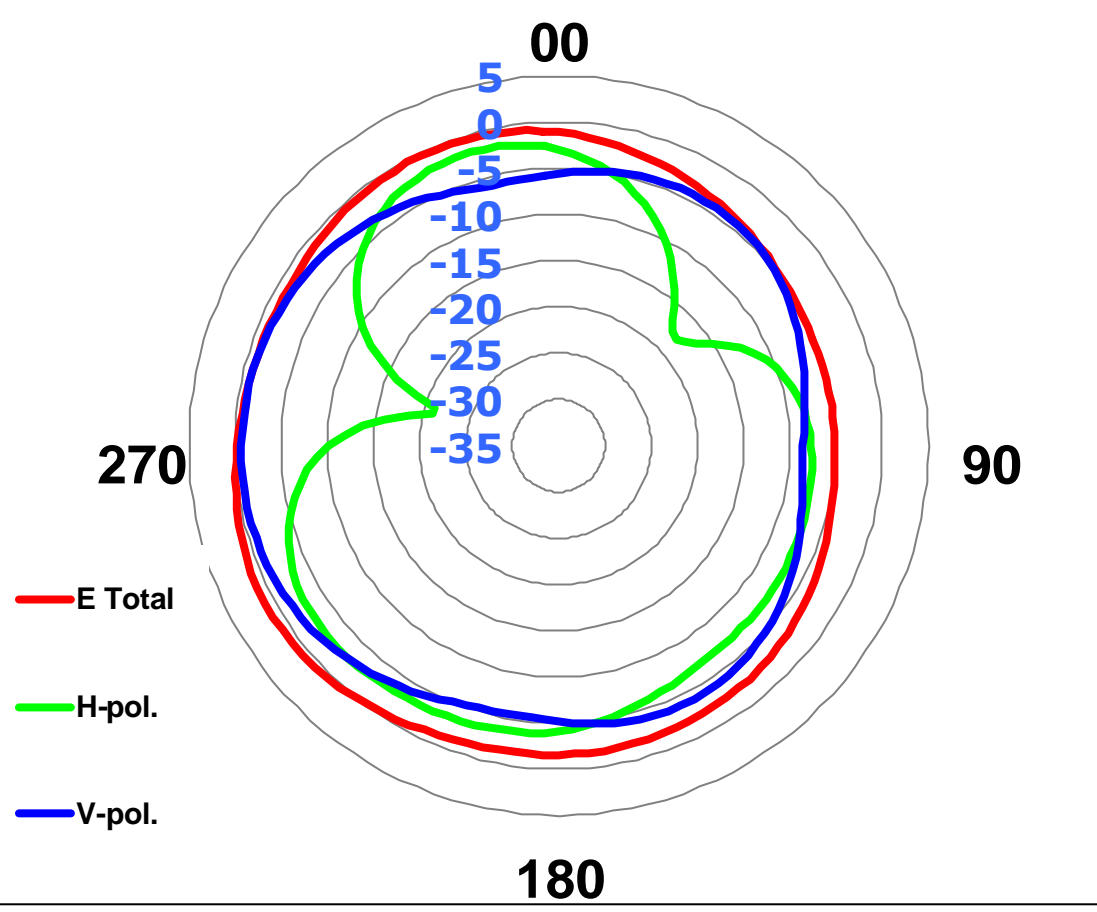


### Ant5 @ 680 MHz



	H-pol	V pol
<b>Peak Gain</b>	<b>-1.99</b>	<b>-1.70</b>

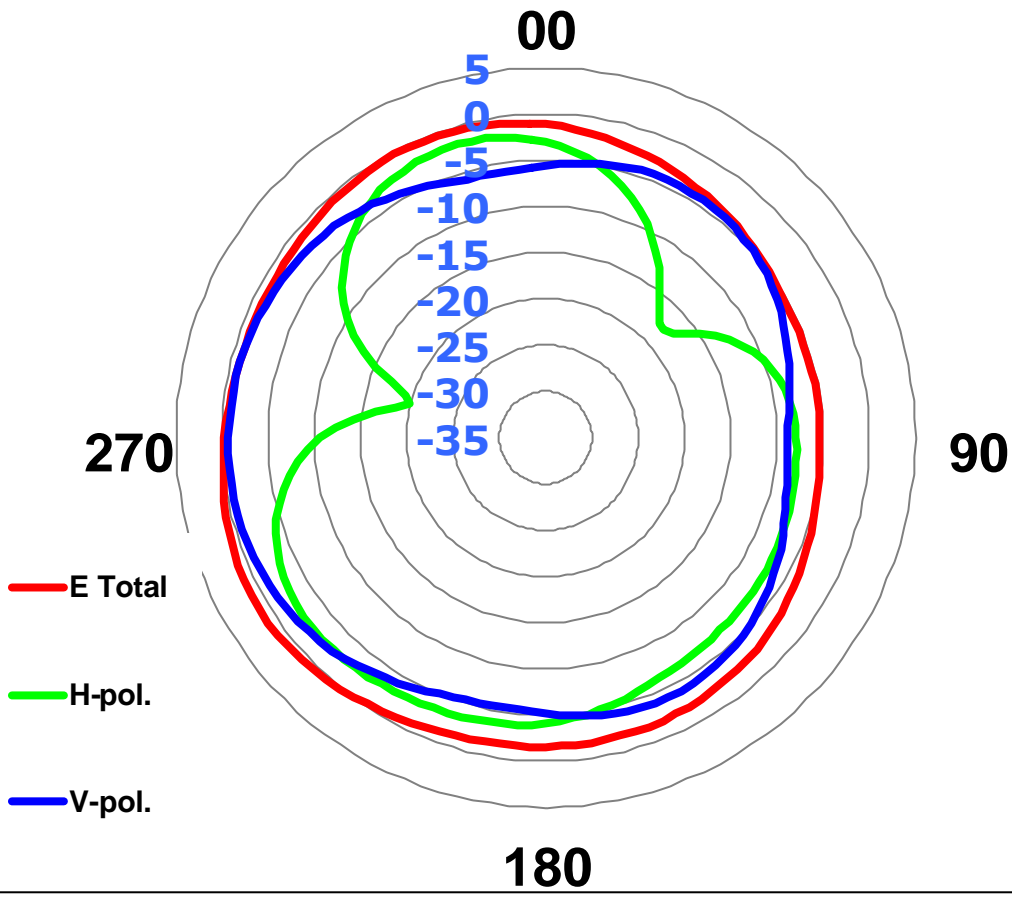
**Ant5 @ 699 MHz**



— E Total  
 — H-pol.  
 — V-pol.

	H-pol	V pol
<b>Peak Gain</b>	<b>-1.87</b>	<b>-0.68</b>

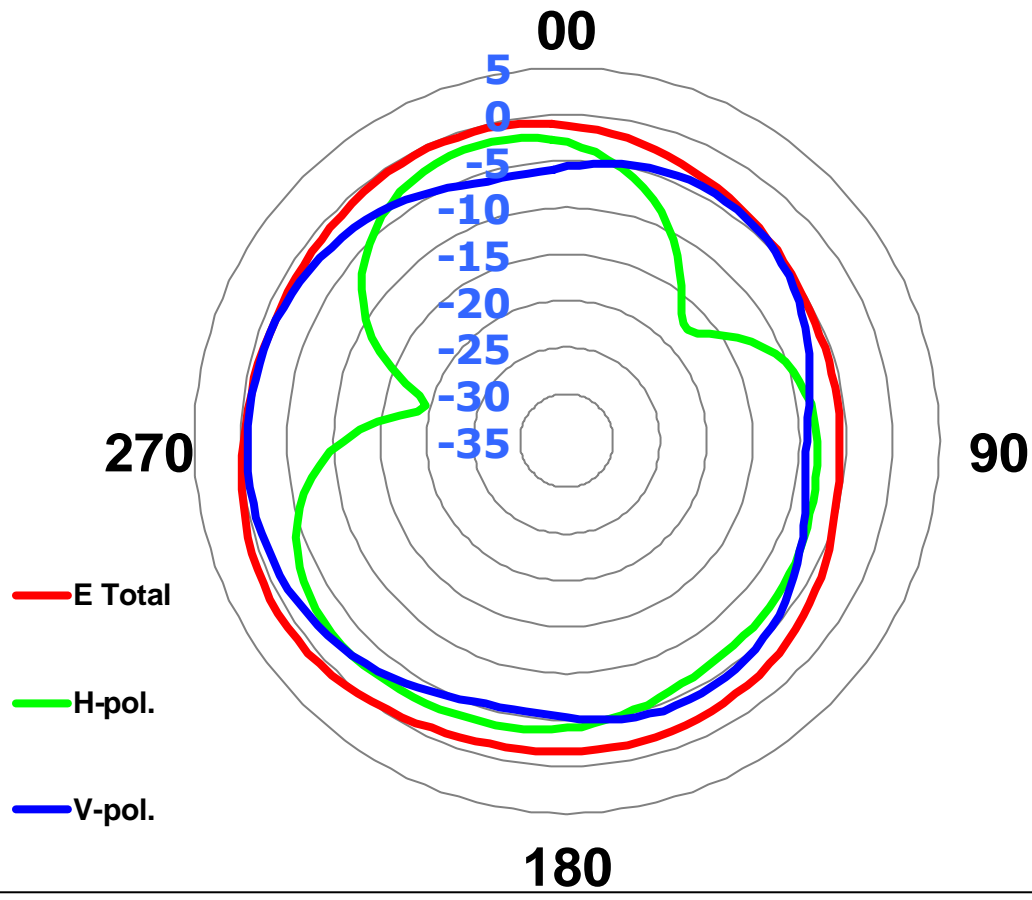
**Ant5 @ 703 MHz**



	<b>H-pol</b>	<b>V pol</b>
<b>Peak Gain</b>	<b>-1.87</b>	<b>-0.65</b>

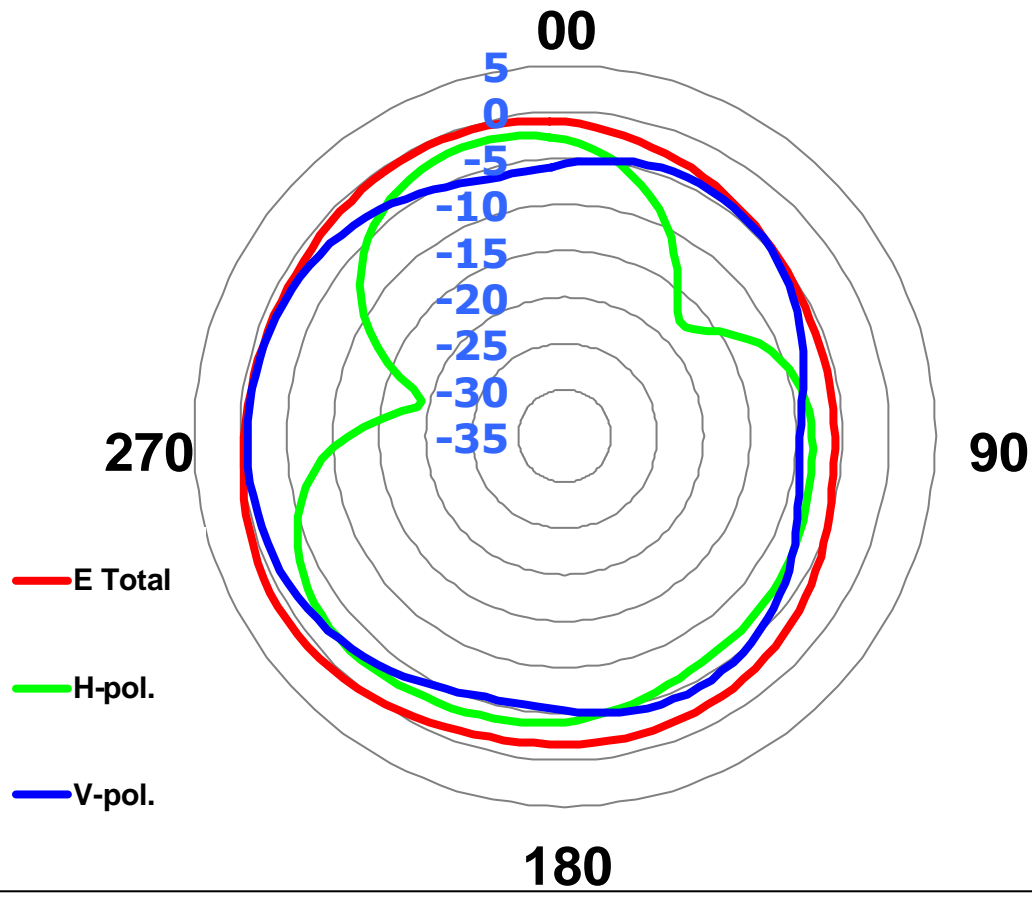


**Ant5 @ 707 MHz**



	H-pol	V pol
<b>Peak Gain</b>	<b>-1.90</b>	<b>-0.69</b>

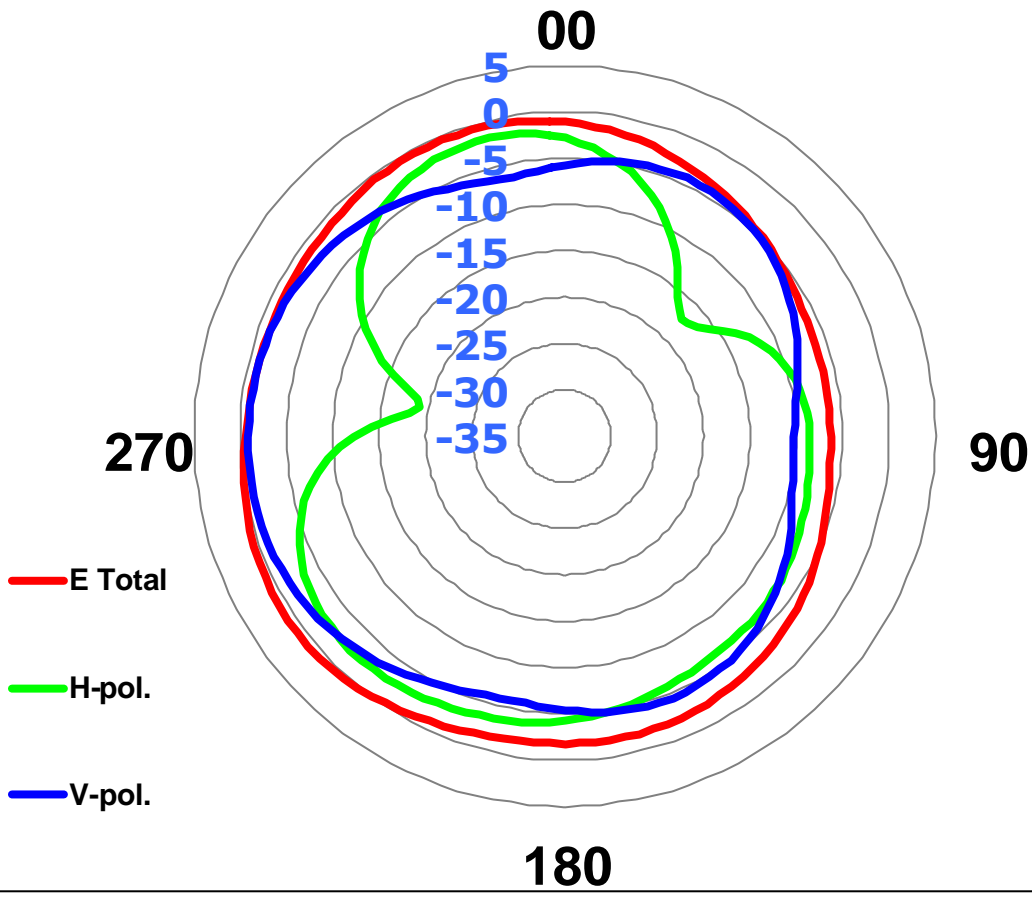
**Ant5 @ 710 MHz**



- E Total
- H-pol.
- V-pol.

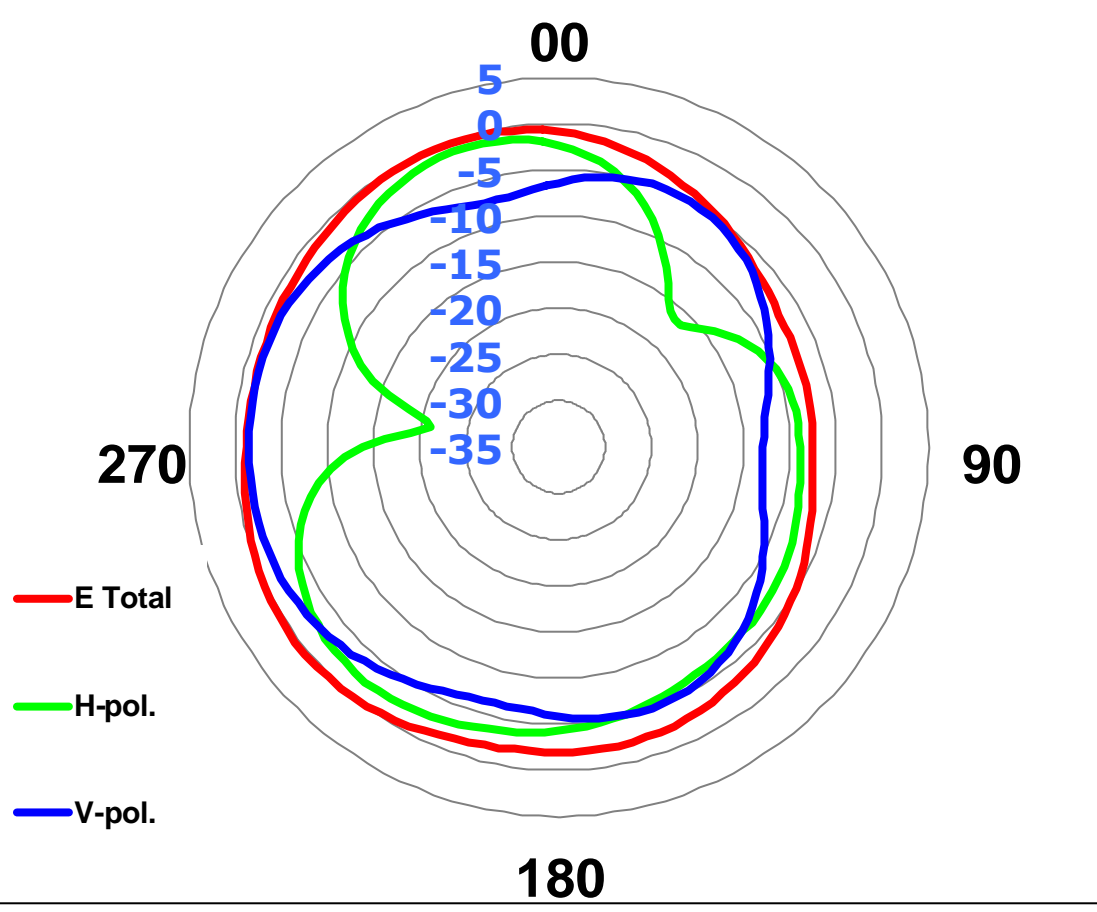
	H-pol	V pol
<b>Peak Gain</b>	<b>-1.89</b>	<b>-0.76</b>

### Ant5 @ 715 MHz



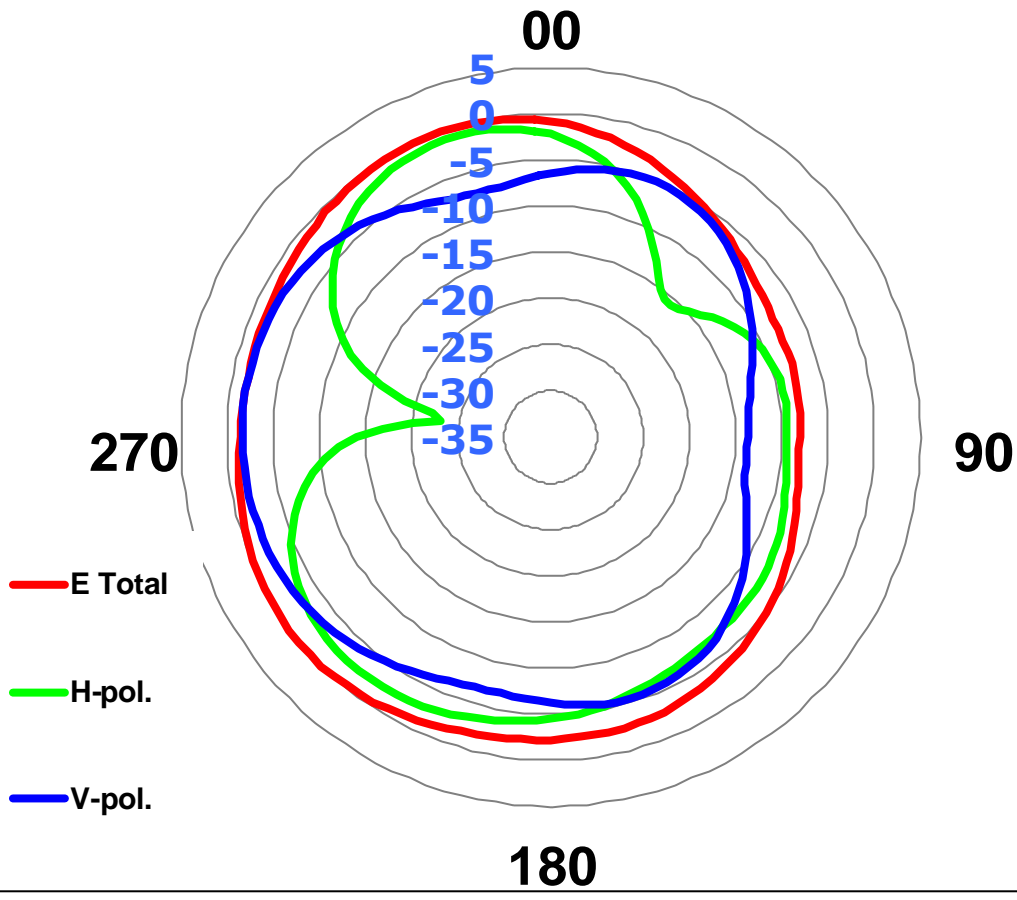
	H-pol	V pol
<b>Peak Gain</b>	<b>-1.81</b>	<b>-0.86</b>

### Ant5 @ 734 MHz



	H-pol	V pol
<b>Peak Gain</b>	<b>-1.05</b>	<b>-1.43</b>

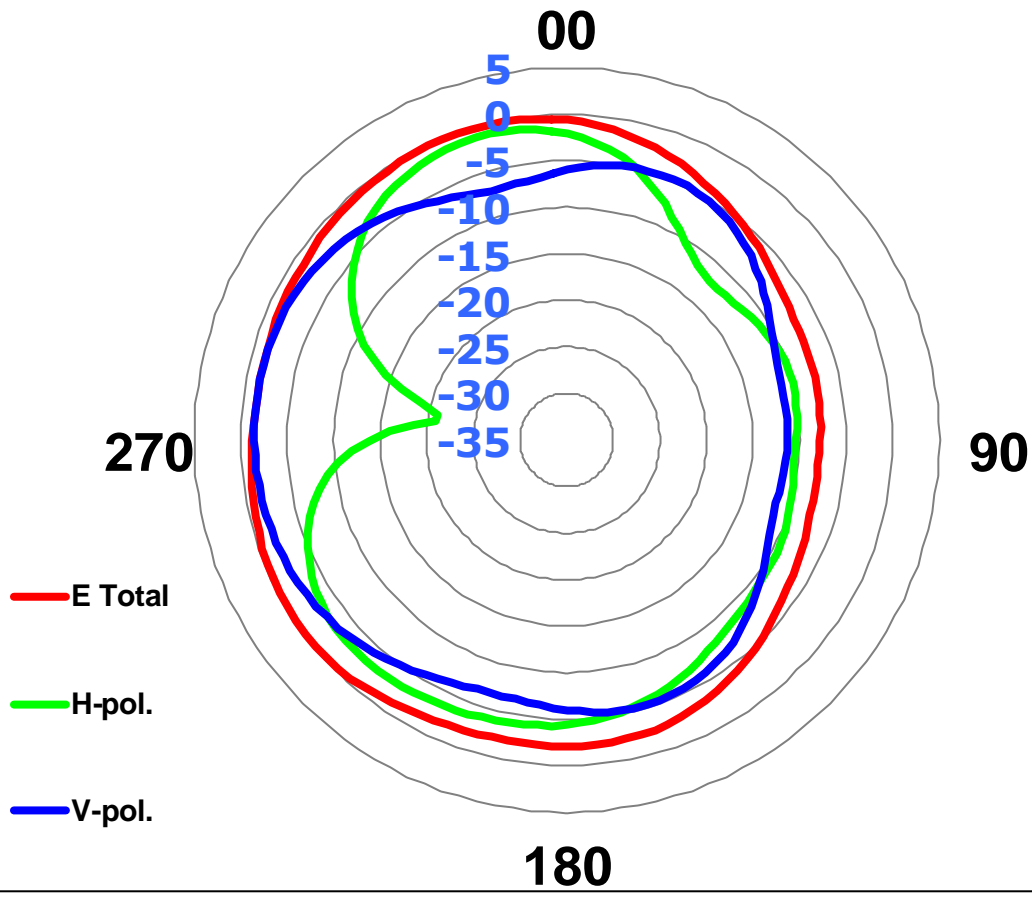
**Ant5 @ 745 MHz**



— E Total  
 — H-pol.  
 — V-pol.

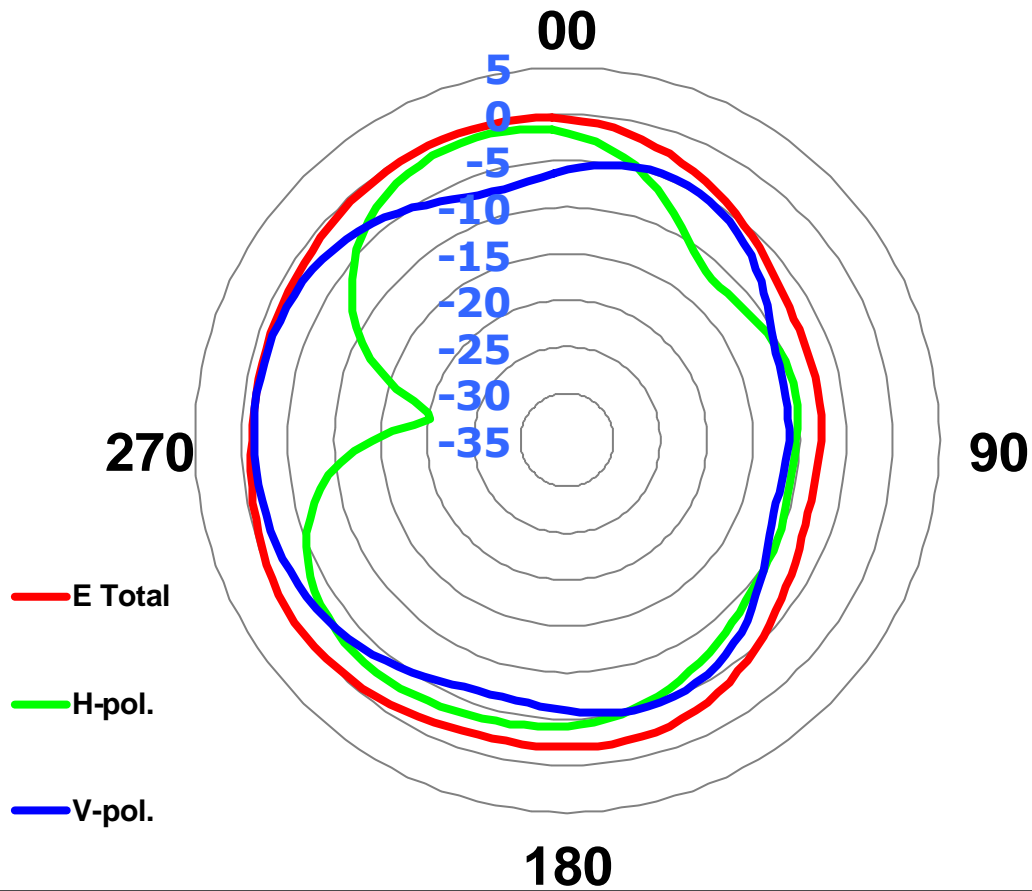
	H-pol	V pol
<b>Peak Gain</b>	<b>-0.85</b>	<b>-1.65</b>

### Ant5 @ 777 MHz



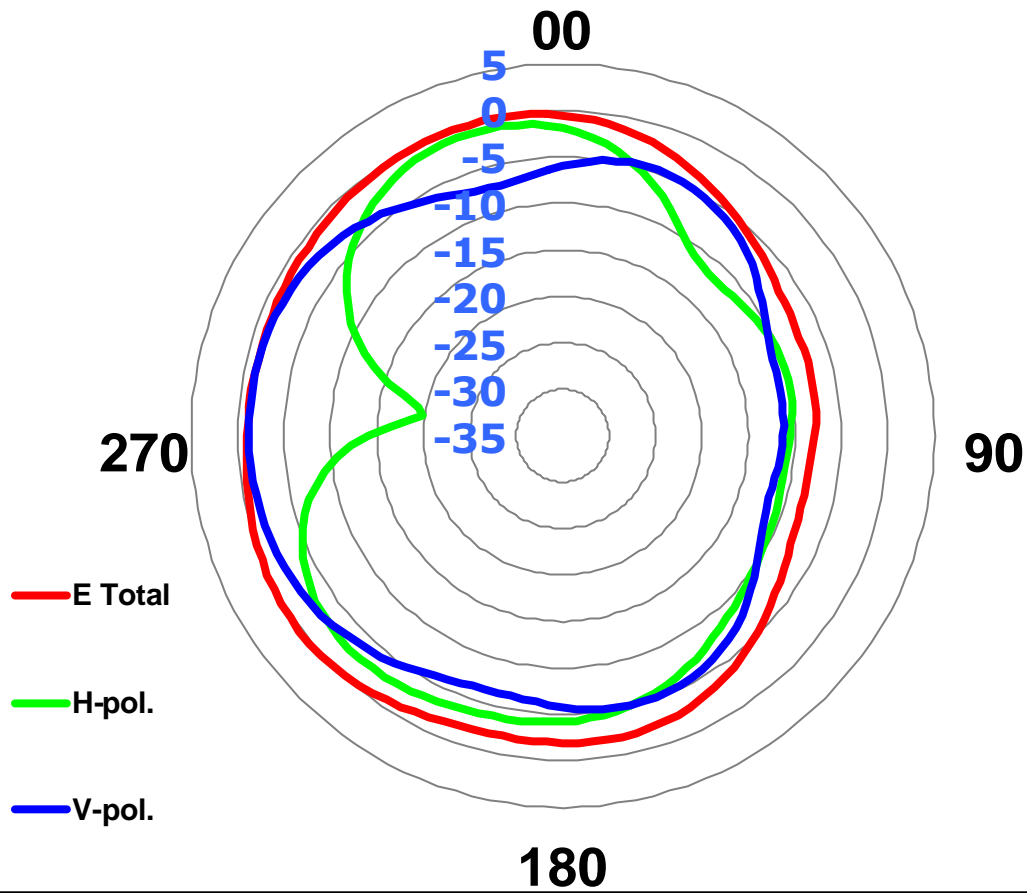
	H-pol	V pol
Peak Gain	-1.09	-1.47

### Ant5 @ 782 MHz



	H-pol	V pol
Peak Gain	-1.04	-1.36

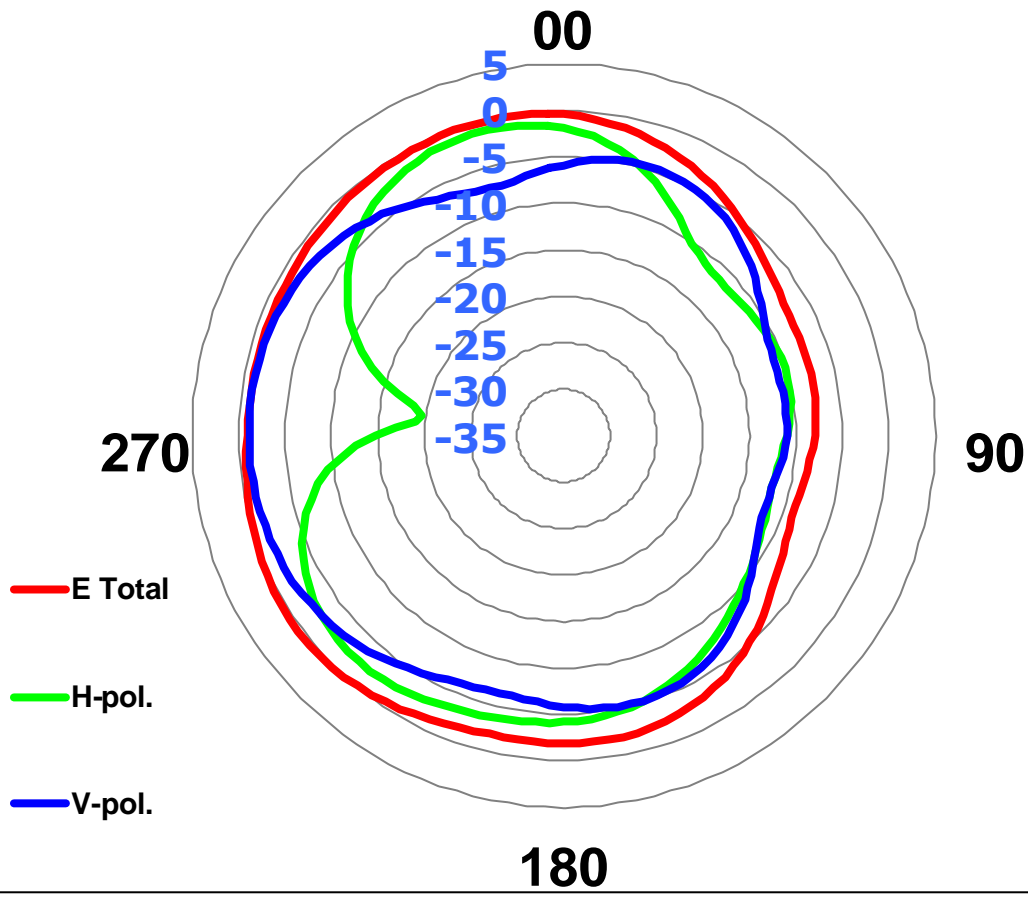
**Ant5 @ 786 MHz**



	H-pol	V pol
<b>Peak Gain</b>	<b>-0.99</b>	<b>-1.24</b>

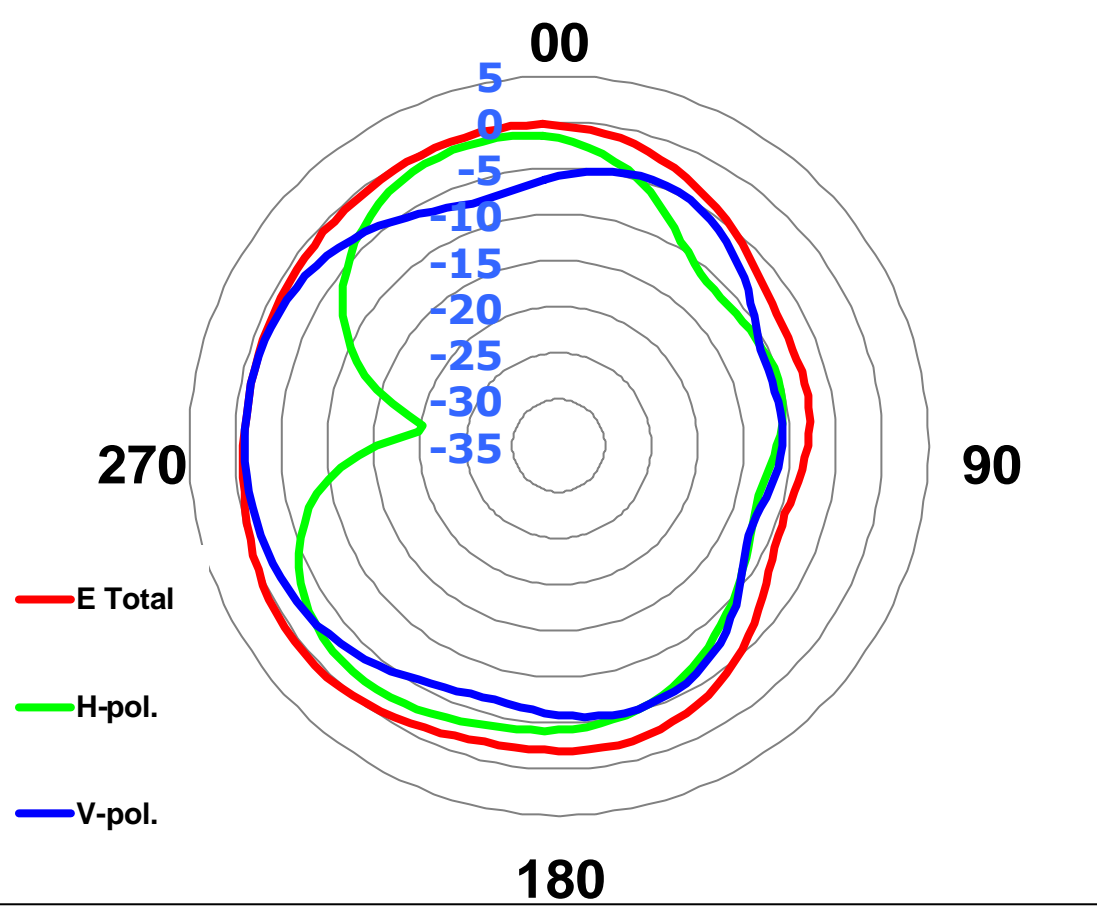


**Ant5 @ 793 MHz**



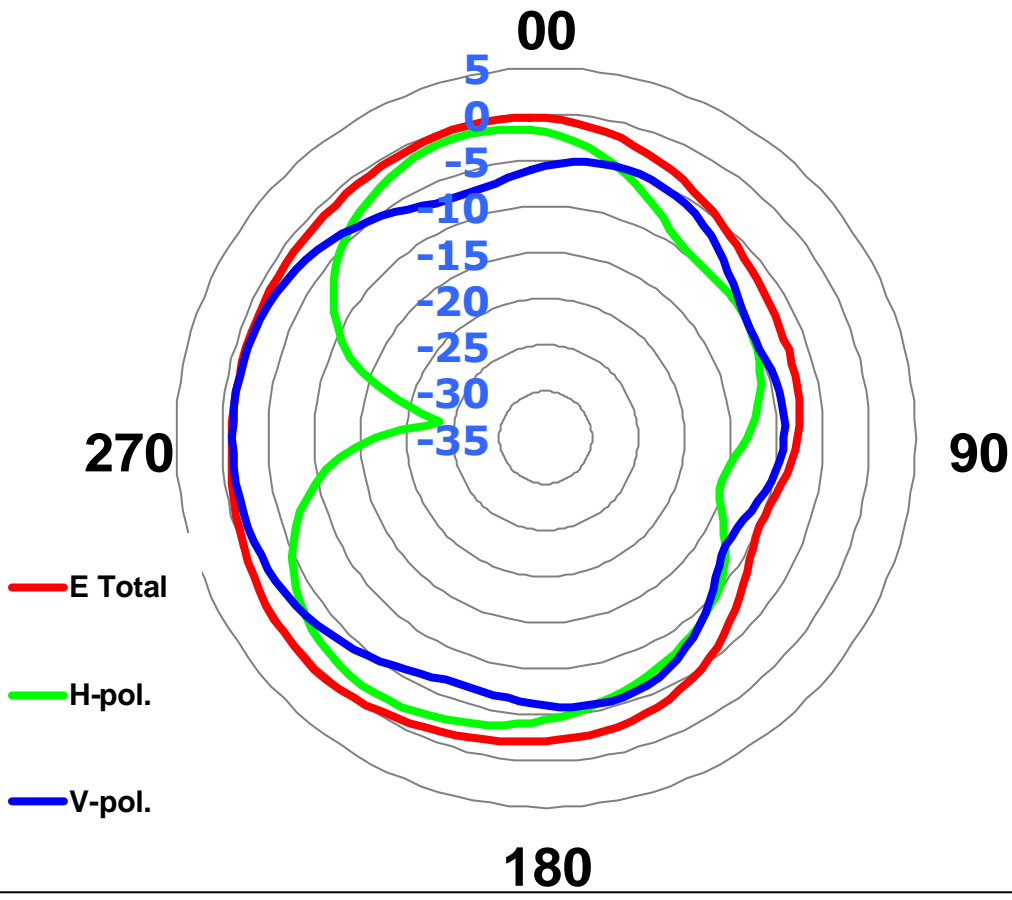
	H-pol	V pol
<b>Peak Gain</b>	<b>-1.07</b>	<b>-1.13</b>

**Ant5 @ 798 MHz**



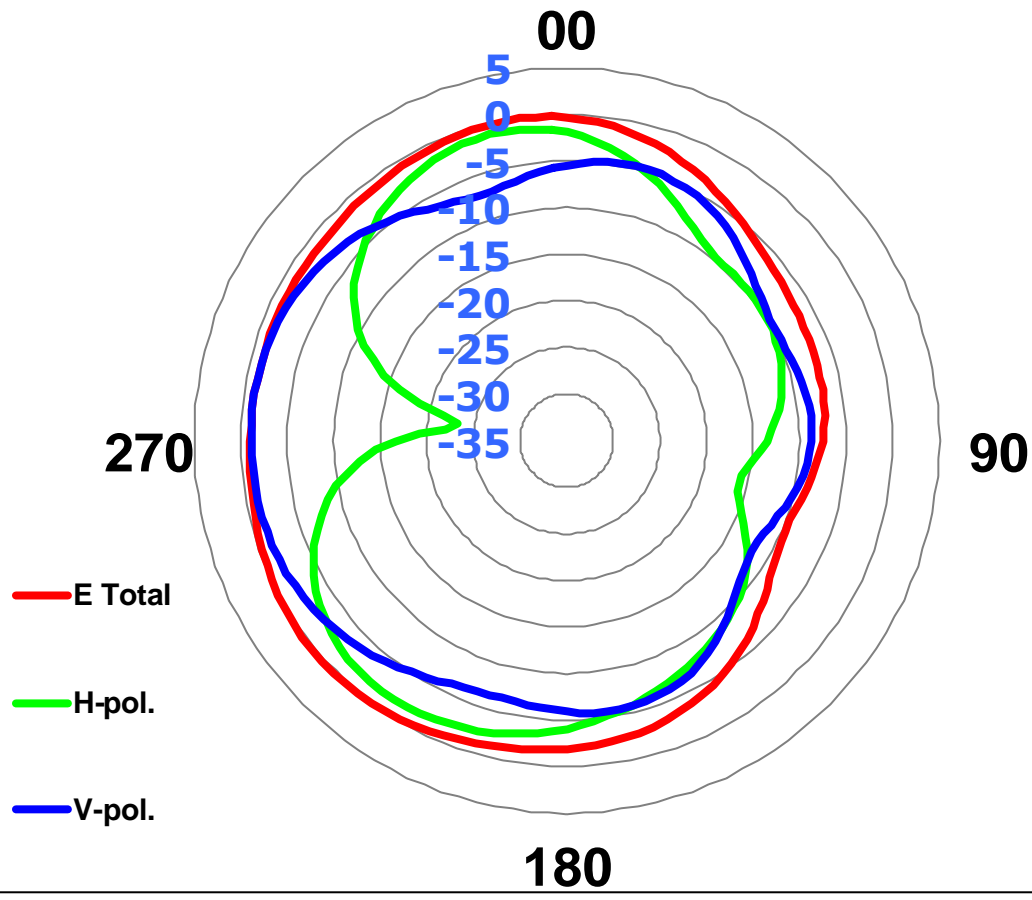
	H-pol	V pol
<b>Peak Gain</b>	<b>-1.04</b>	<b>-1.05</b>

**Ant5 @ 814 MHz**



	H-pol	V pol
<b>Peak Gain</b>	<b>-1.13</b>	<b>-1.15</b>

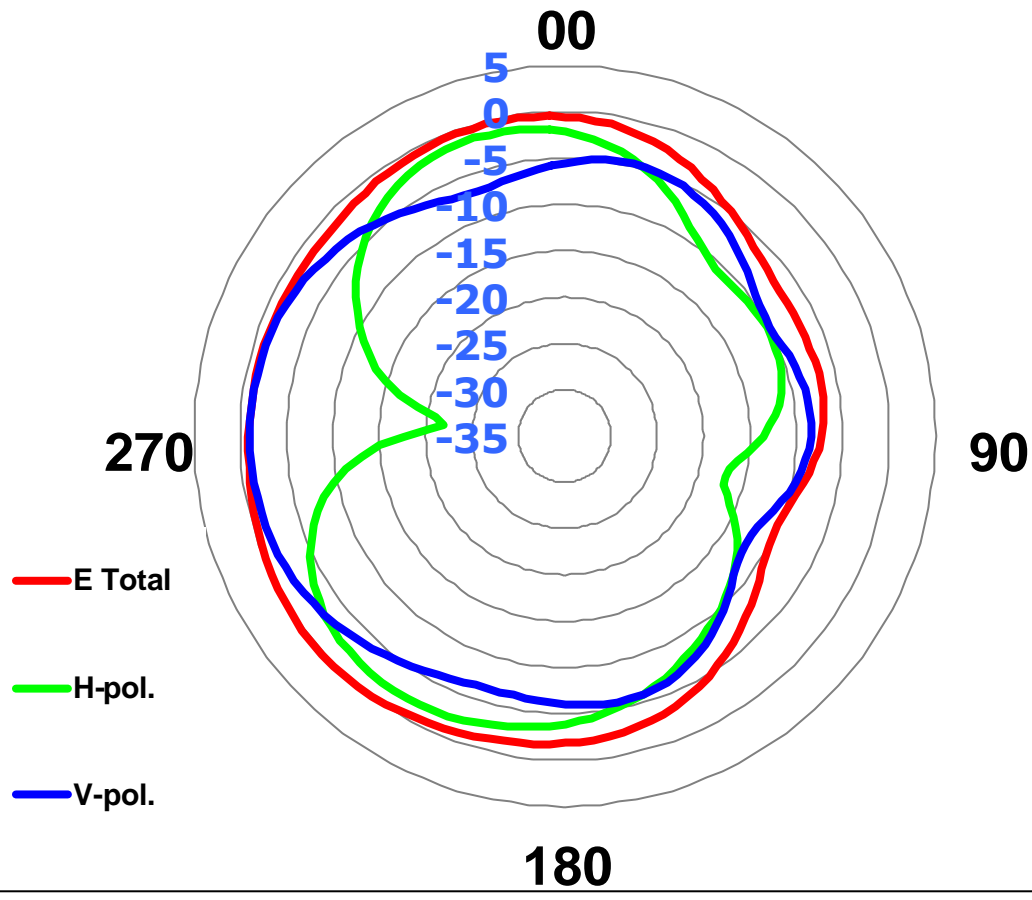
**Ant5 @ 821 MHz**



— E Total  
— H-pol.  
— V-pol.

	H-pol	V pol
<b>Peak Gain</b>	<b>-1.13</b>	<b>-1.15</b>

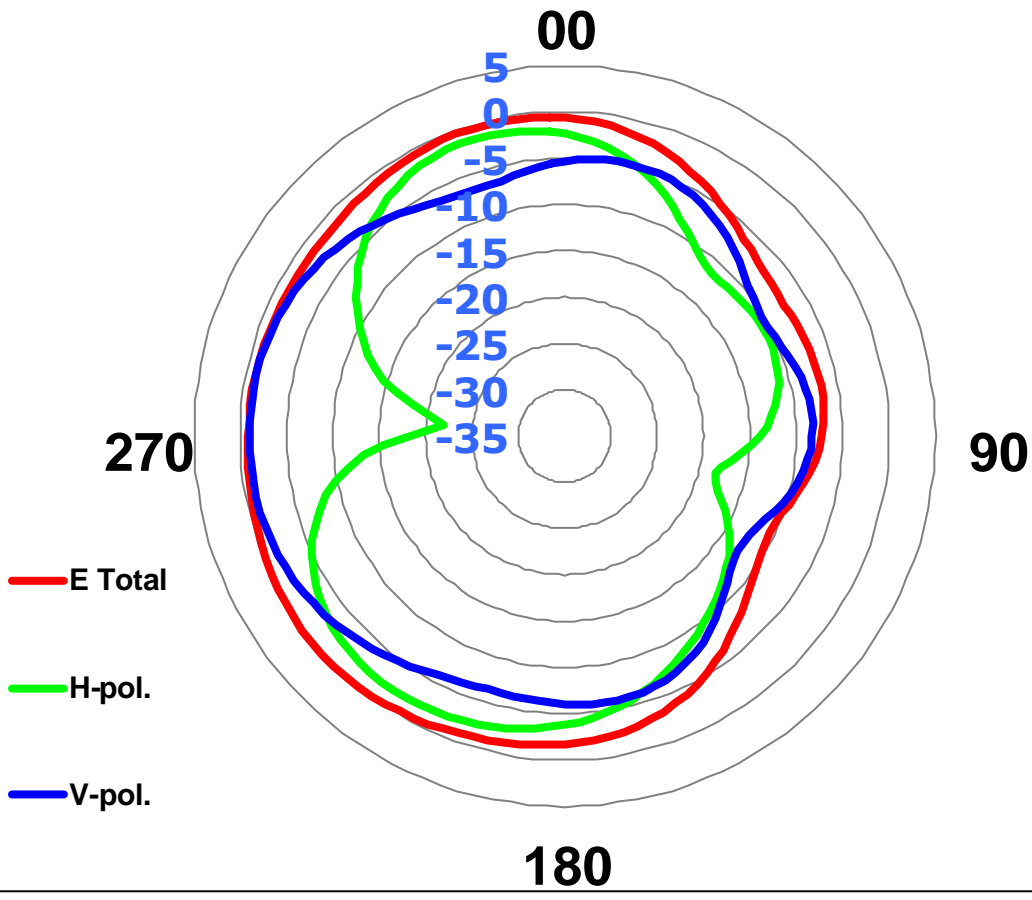
**Ant5 @ 824 MHz**



- E Total
- H-pol.
- V-pol.

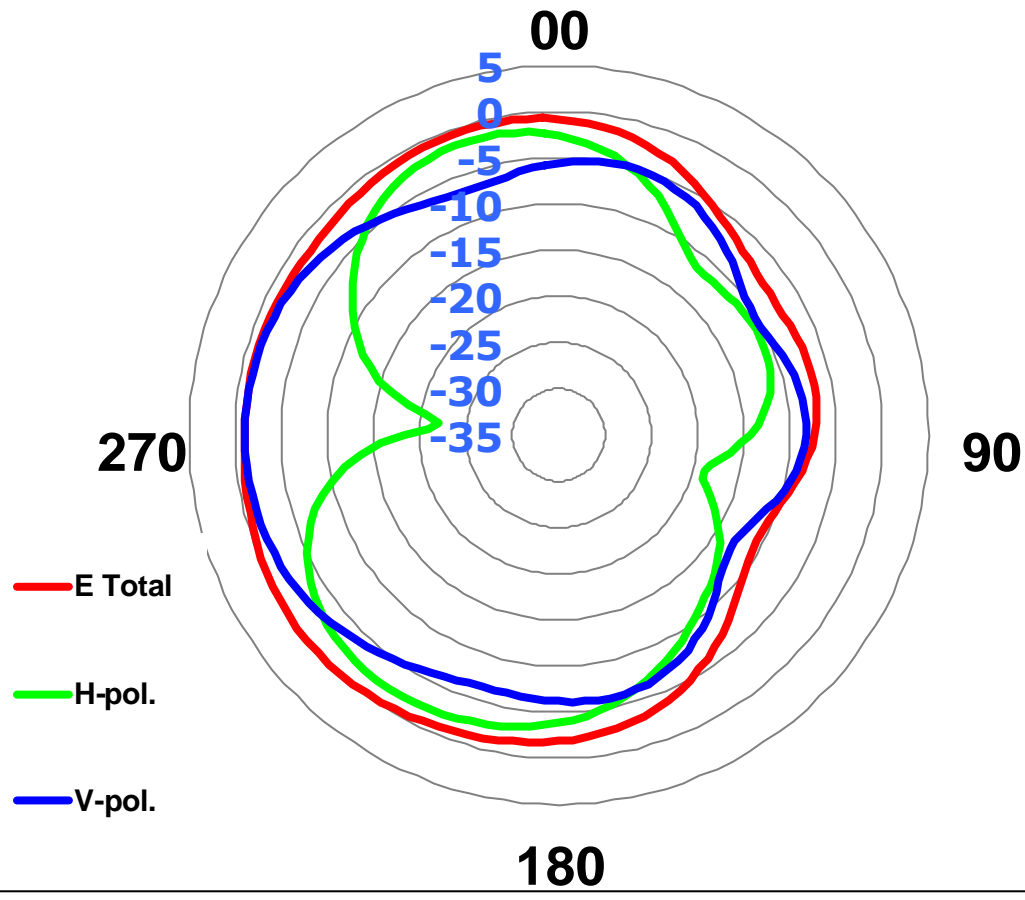
	H-pol	V pol
<b>Peak Gain</b>	<b>-1.42</b>	<b>-1.01</b>

### Ant5 @ 830 MHz



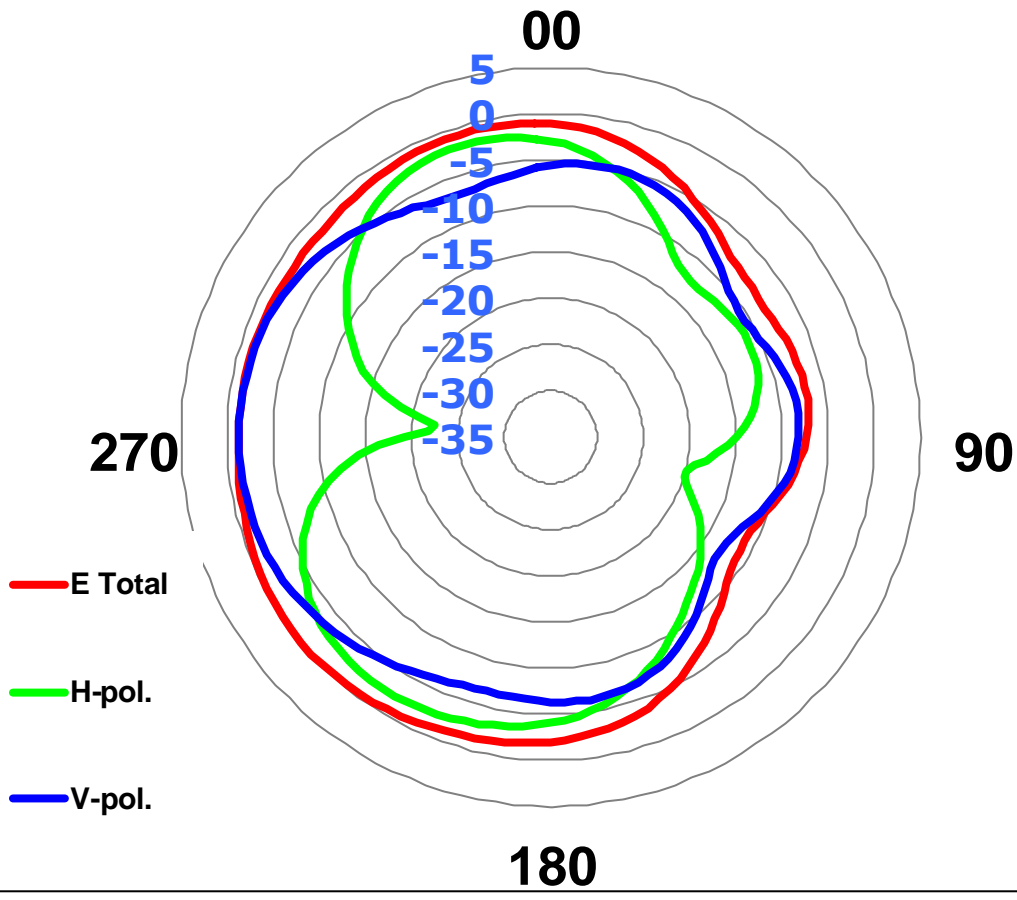
	H-pol	V pol
<b>Peak Gain</b>	<b>-1.51</b>	<b>-0.96</b>

### Ant5 @ 832 MHz



	H-pol	V pol
<b>Peak Gain</b>	<b>-1.67</b>	<b>-1.07</b>

### Ant5 @ 837 MHz

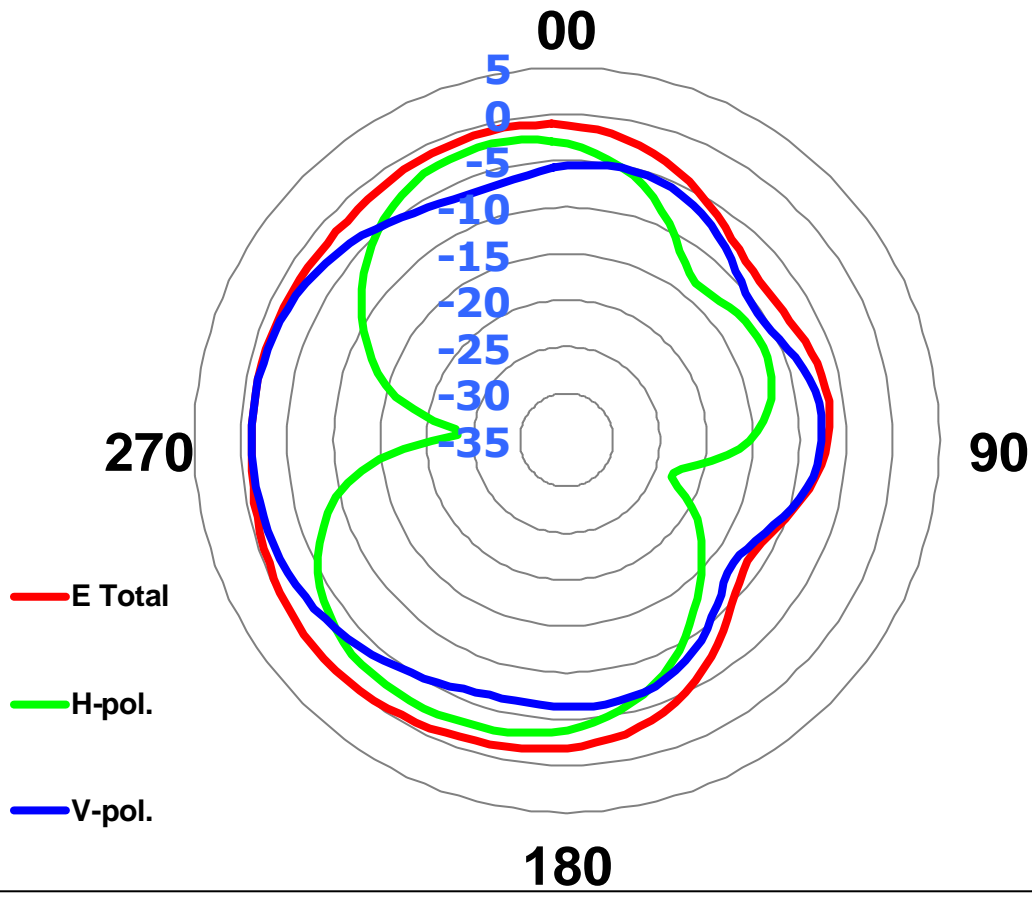


- E Total
- H-pol.
- V-pol.

	H-pol	V pol
Peak Gain	-2.00	-1.26

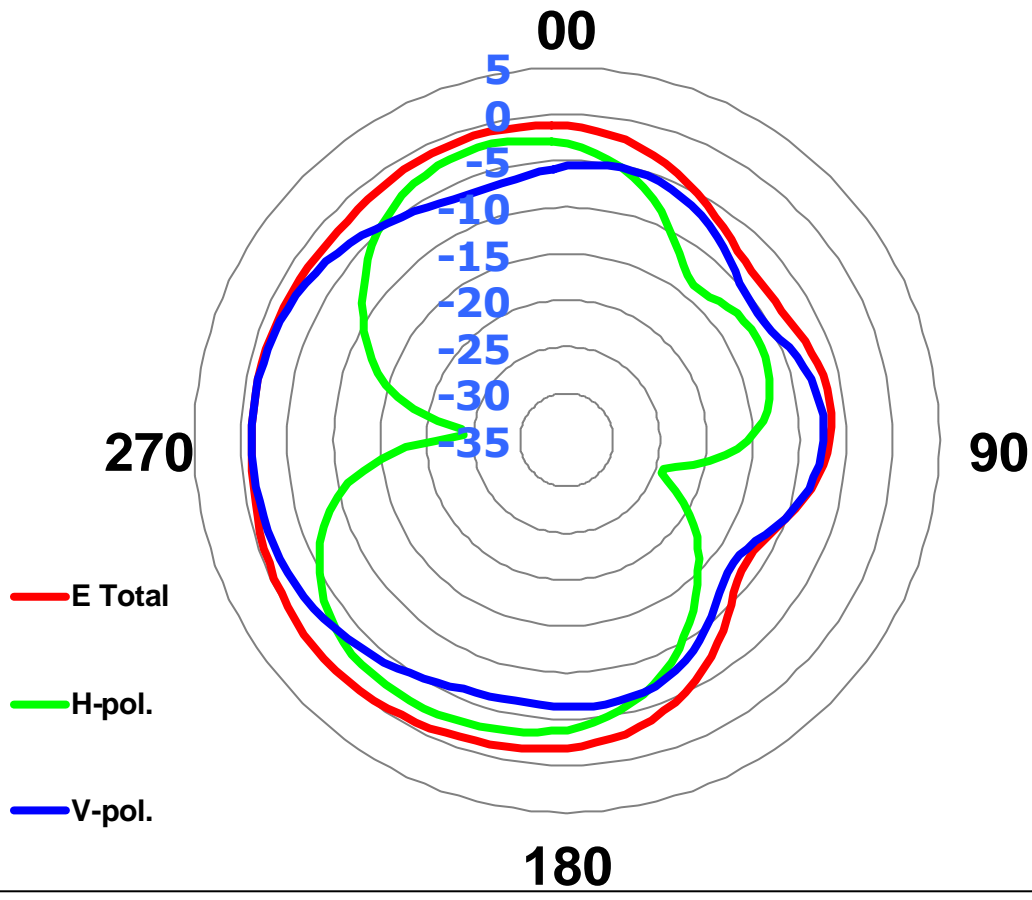


### Ant5 @ 845 MHz



	H-pol	V pol
Peak Gain	-2.18	-1.18

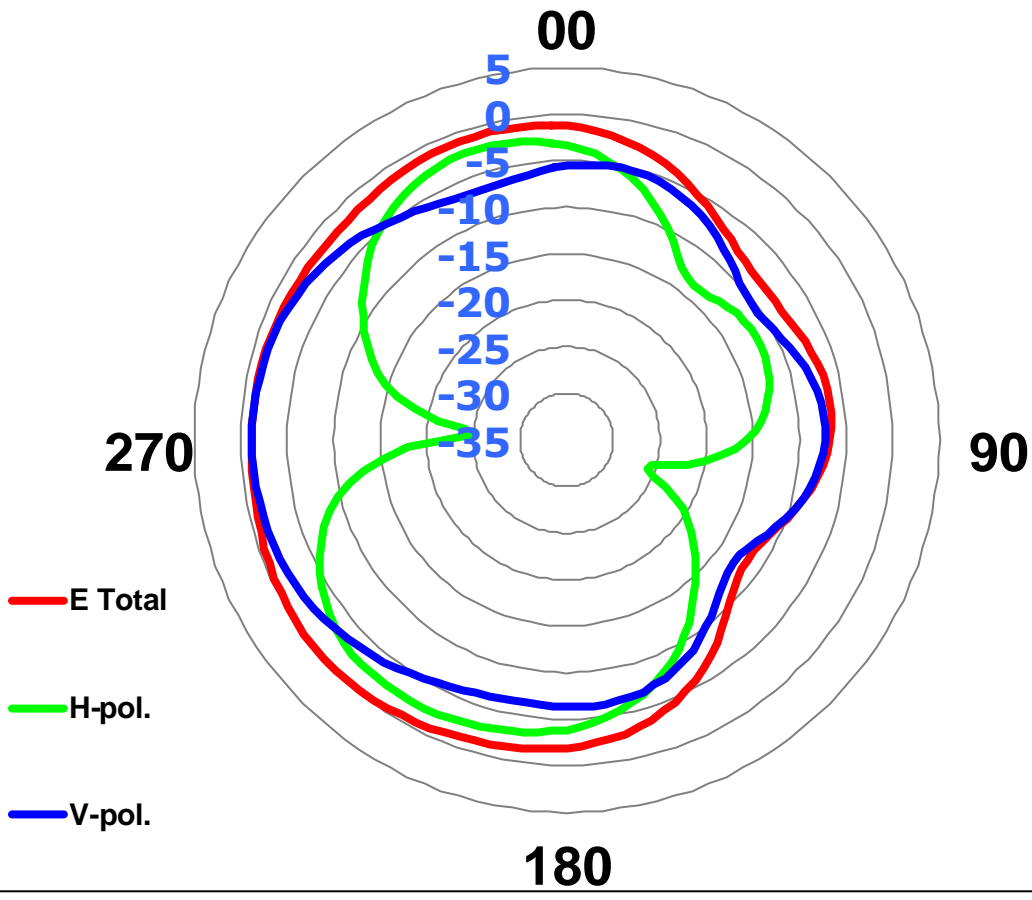
**Ant5 @ 847 MHz**



— E Total  
 — H-pol.  
 — V-pol.

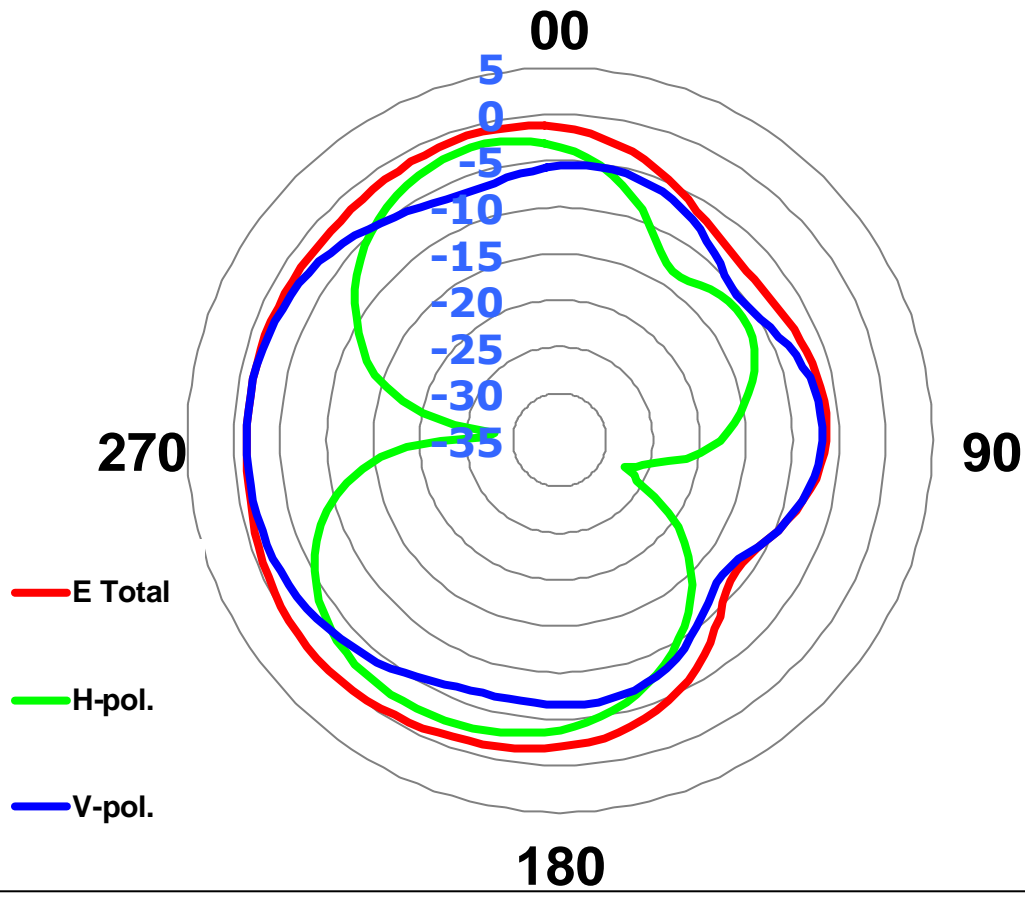
	H-pol	V pol
<b>Peak Gain</b>	<b>-2.23</b>	<b>-1.19</b>

### Ant5 @ 849 MHz



	H-pol	V pol
<b>Peak Gain</b>	<b>-2.24</b>	<b>-1.20</b>

**Ant5 @ 862 MHz**

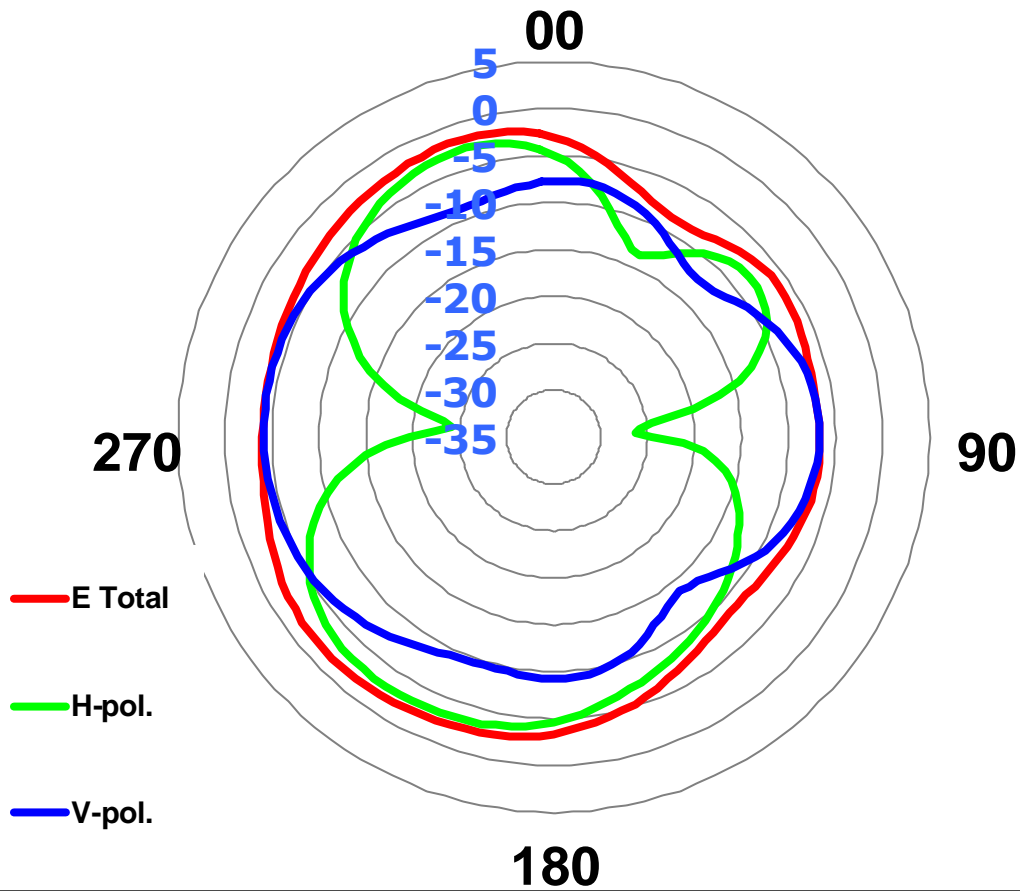


	H-pol	V pol
<b>Peak Gain</b>	<b>-2.23</b>	<b>-1.42</b>





### Ant5 @ 915 MHz

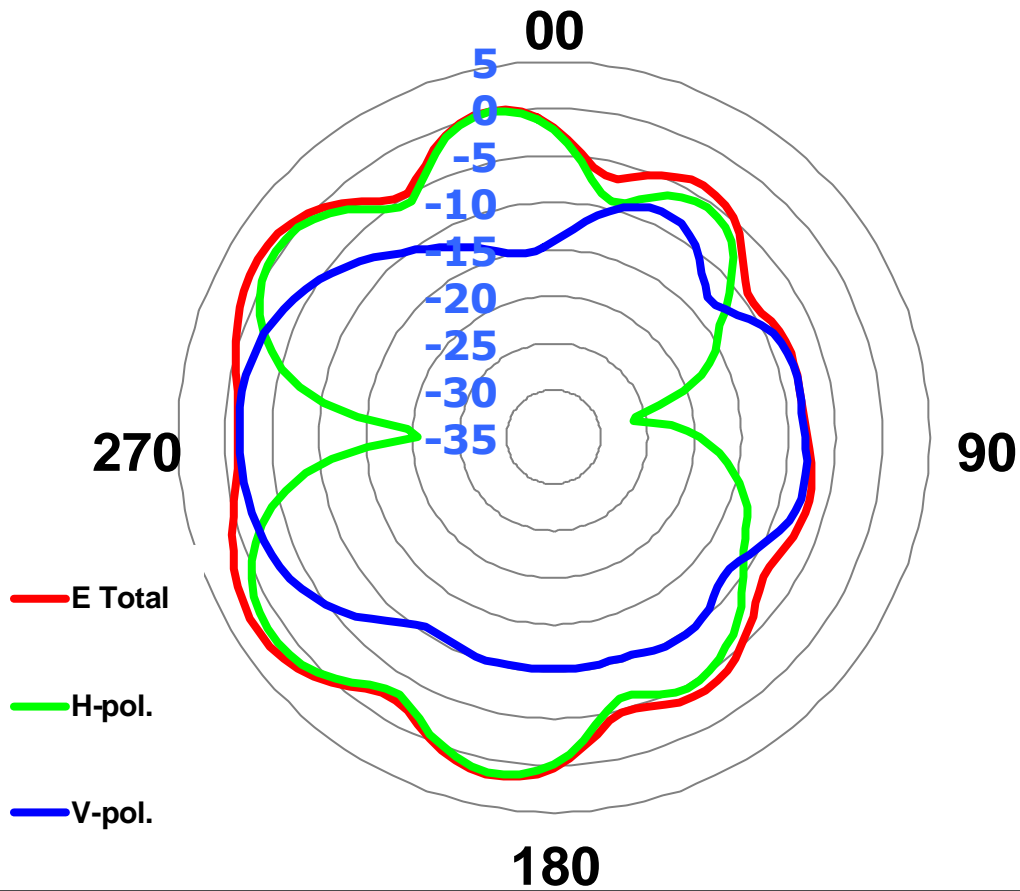


	<b>H-pol</b>	<b>V pol</b>
<b>Peak Gain</b>	<b>-2.81</b>	<b>-4.12</b>



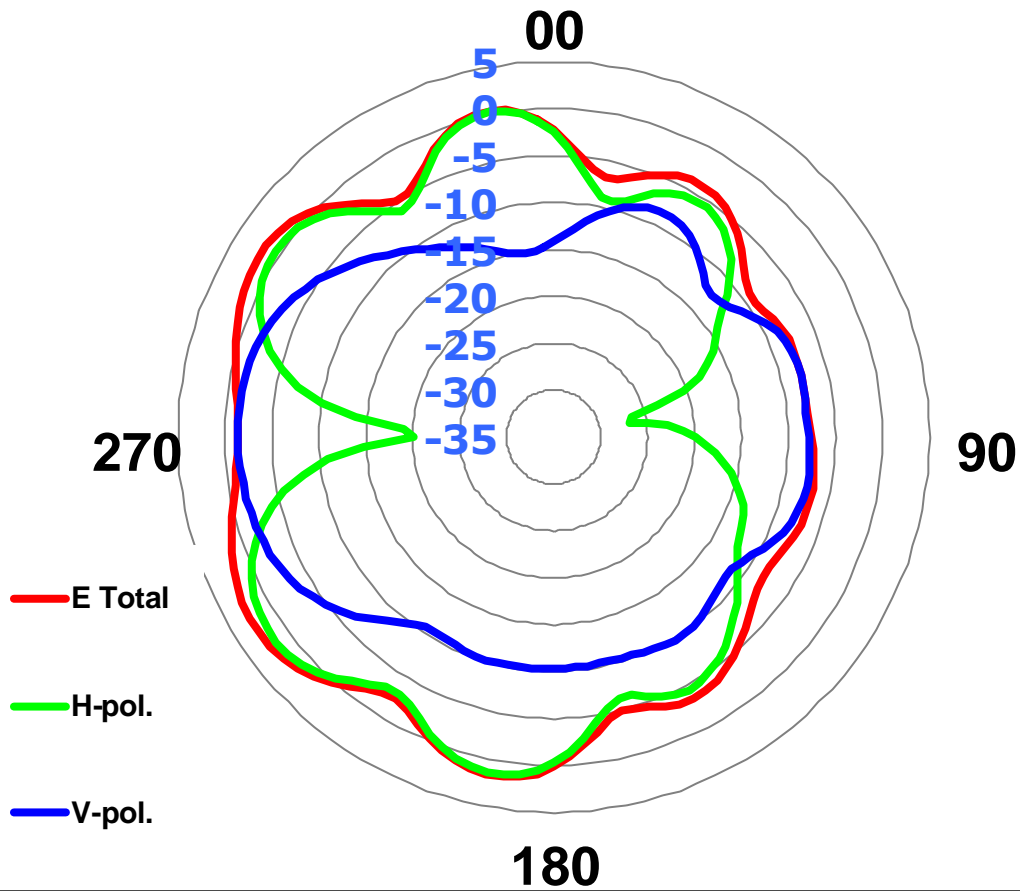


### Ant5 @ 1745 MHz



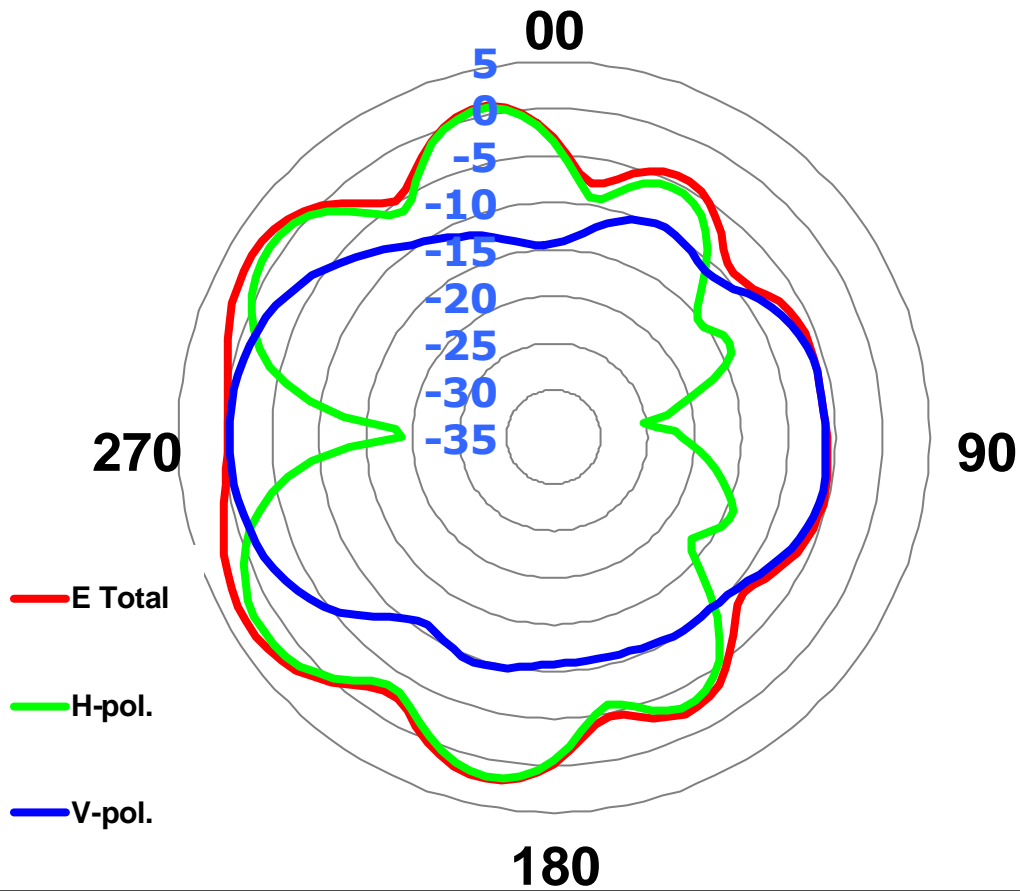
	H-pol	V pol
Peak Gain	1.68	-1.48

### Ant5 @ 1750 MHz



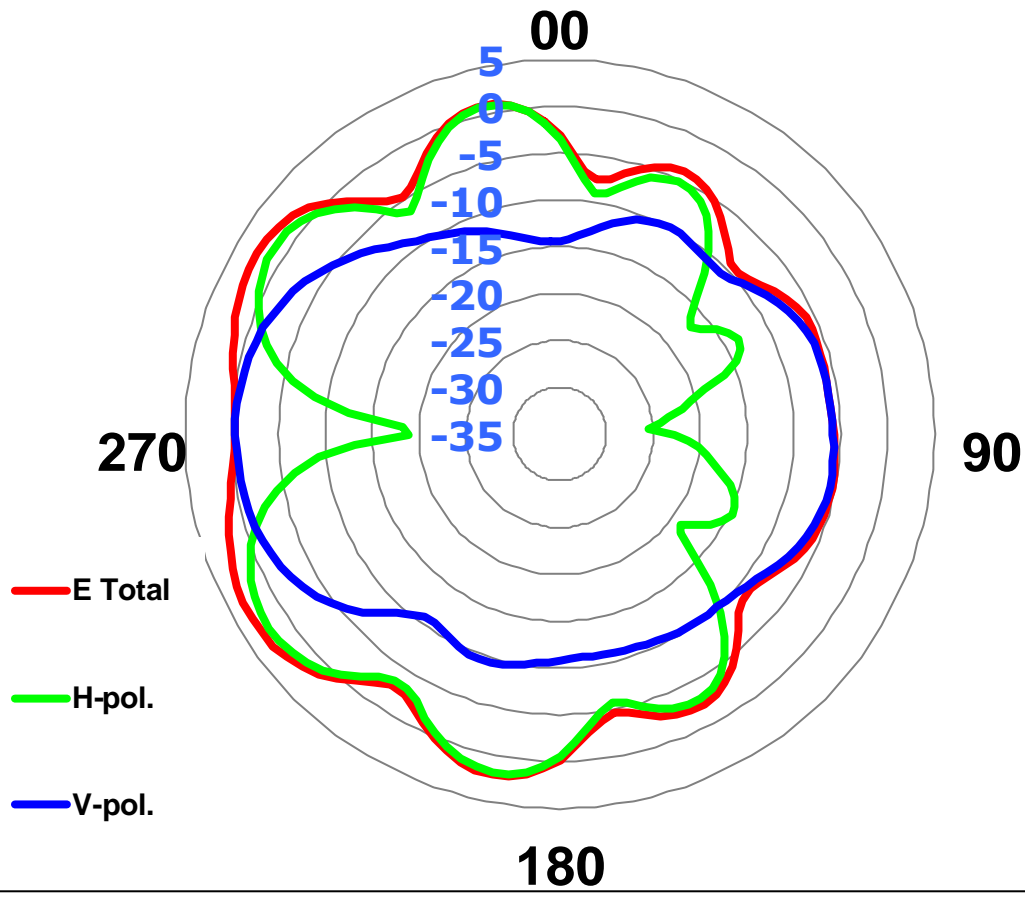
	H-pol	V pol
<b>Peak Gain</b>	<b>1.70</b>	<b>-1.38</b>

**Ant5 @ 1780 MHz**



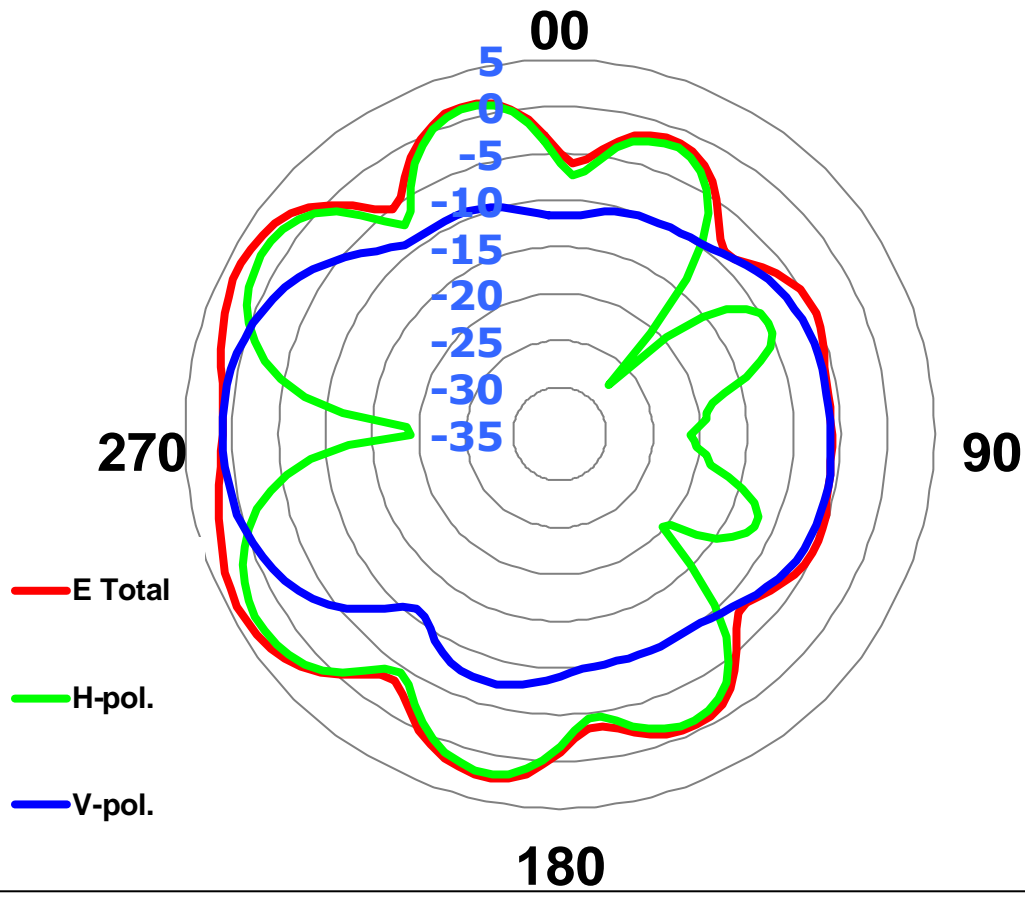
	H-pol	V pol
<b>Peak Gain</b>	<b>2.19</b>	<b>-0.43</b>

### Ant5 @ 1785 MHz



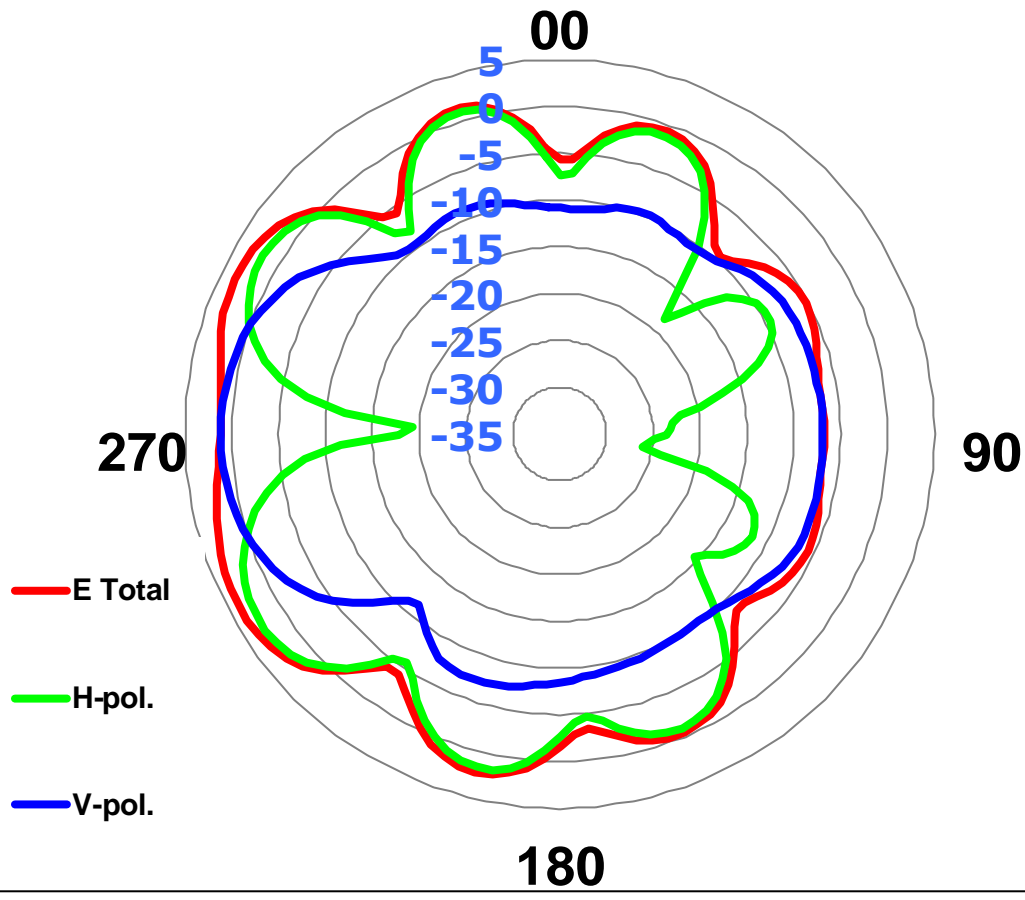
	H-pol	V pol
Peak Gain	2.28	-0.38

### Ant5 @ 1850 MHz



	H-pol	V pol
Peak Gain	2.83	1.00

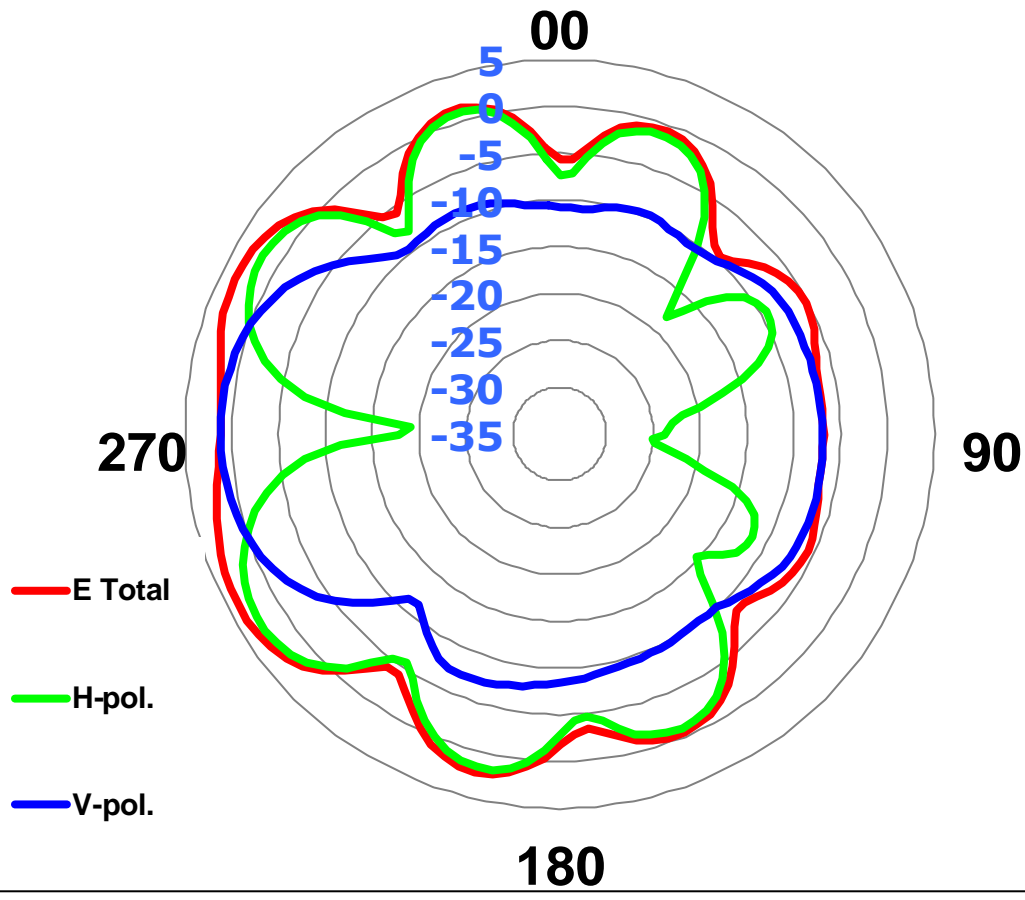
### Ant5 @ 1880 MHz



- E Total
- H-pol.
- V-pol.

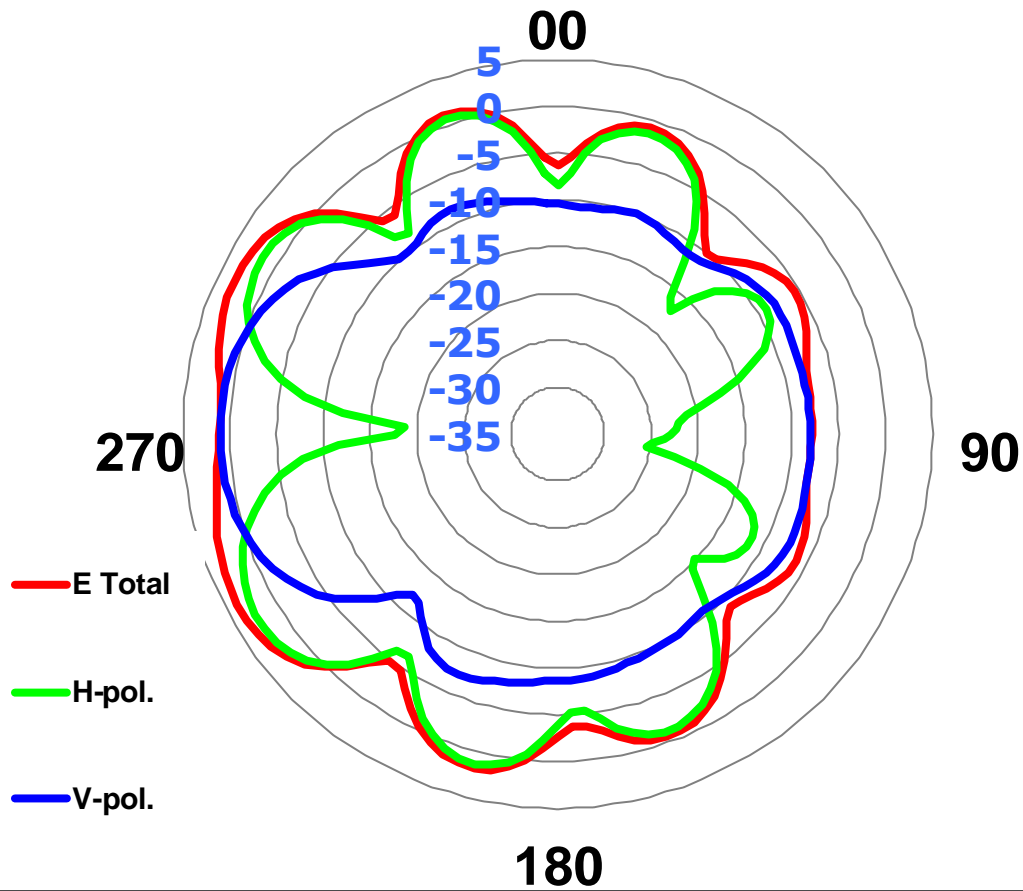
	H-pol	V pol
Peak Gain	2.77	1.18

### Ant5 @ 1882 MHz



	H-pol	V pol
<b>Peak Gain</b>	<b>2.78</b>	<b>1.19</b>

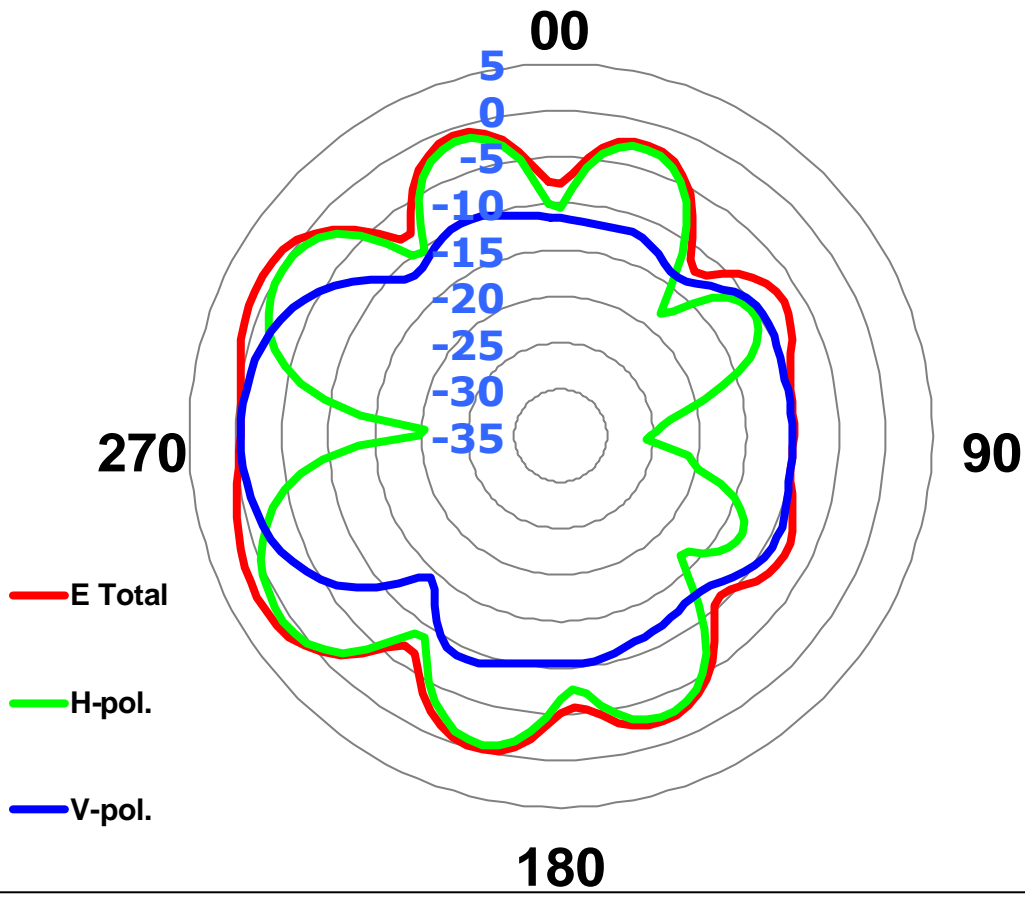
### Ant5 @ 1900 MHz



	H-pol	V pol
Peak Gain	2.62	1.05

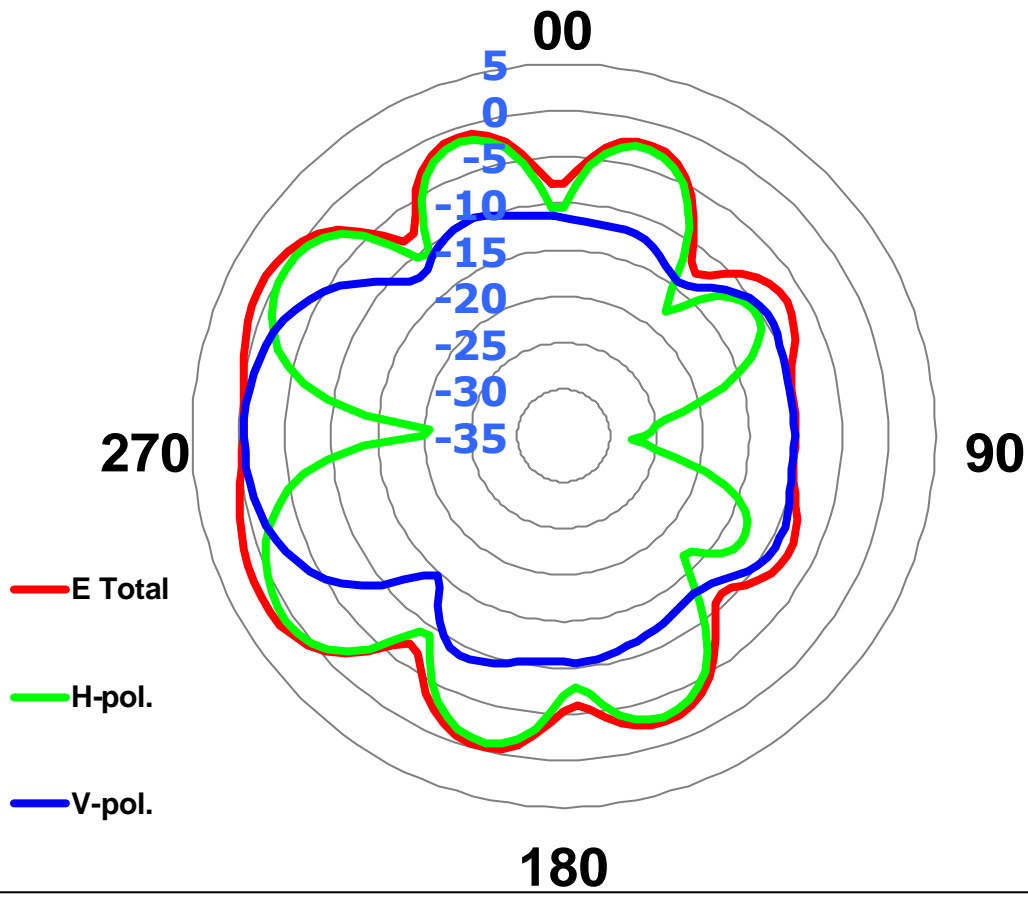


**Ant5 @ 1915 MHz**



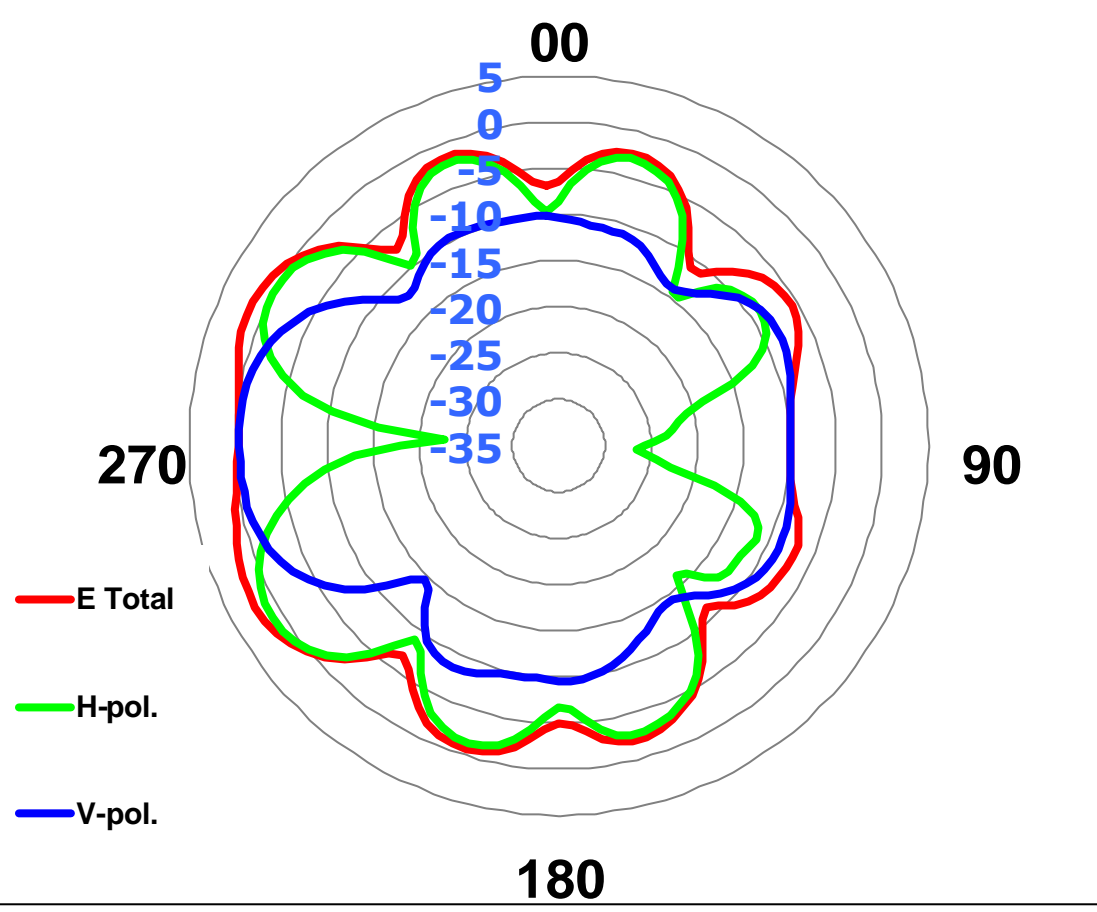
	H-pol	V pol
<b>Peak Gain</b>	<b>0.91</b>	<b>-0.59</b>

### Ant5 @ 1920 MHz



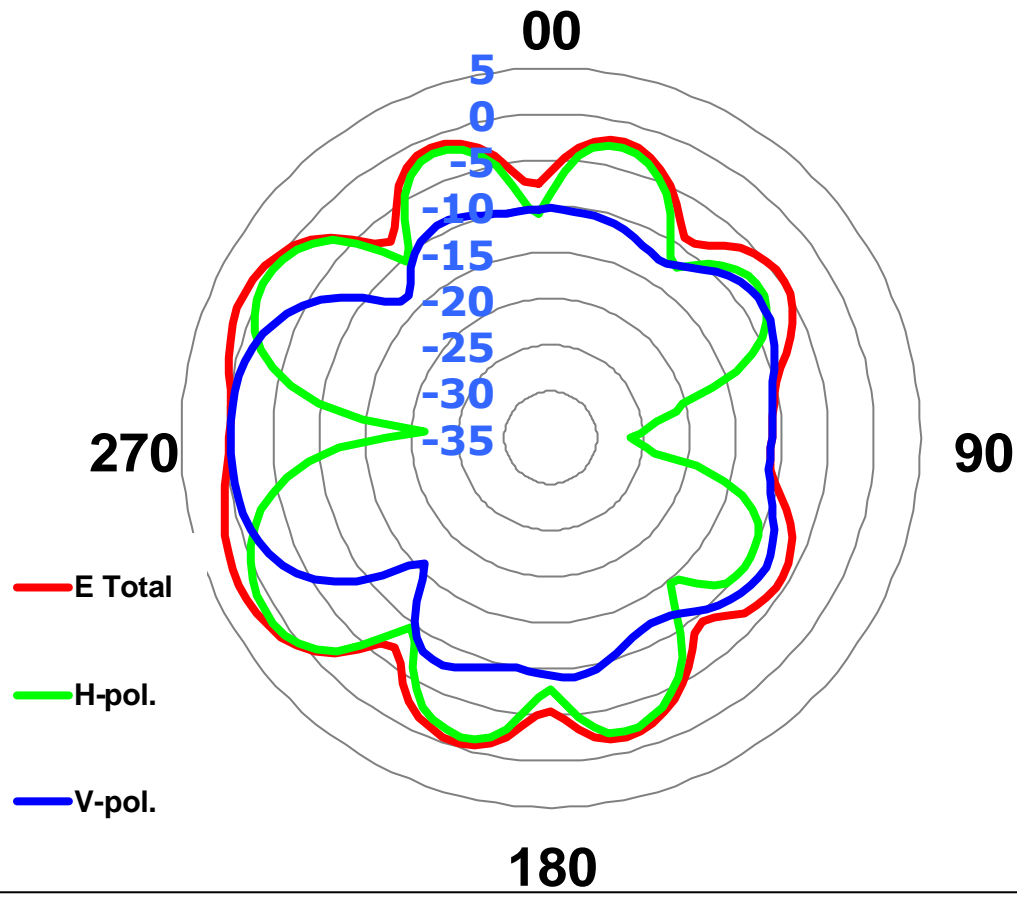
	H-pol	V pol
Peak Gain	0.84	-0.63

**Ant5 @ 1950 MHz**



	H-pol	V pol
<b>Peak Gain</b>	<b>1.16</b>	<b>-0.45</b>

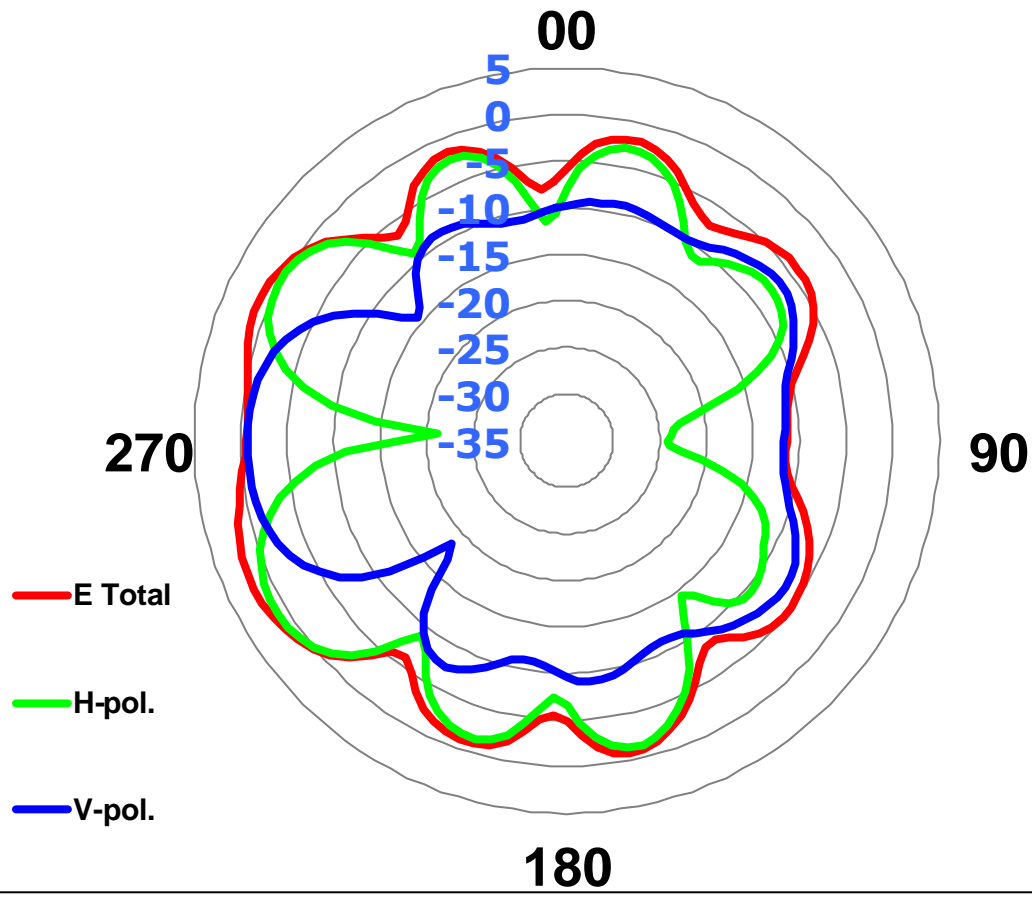
**Ant5 @ 1980 MHz**



— E Total  
 — H-pol.  
 — V-pol.

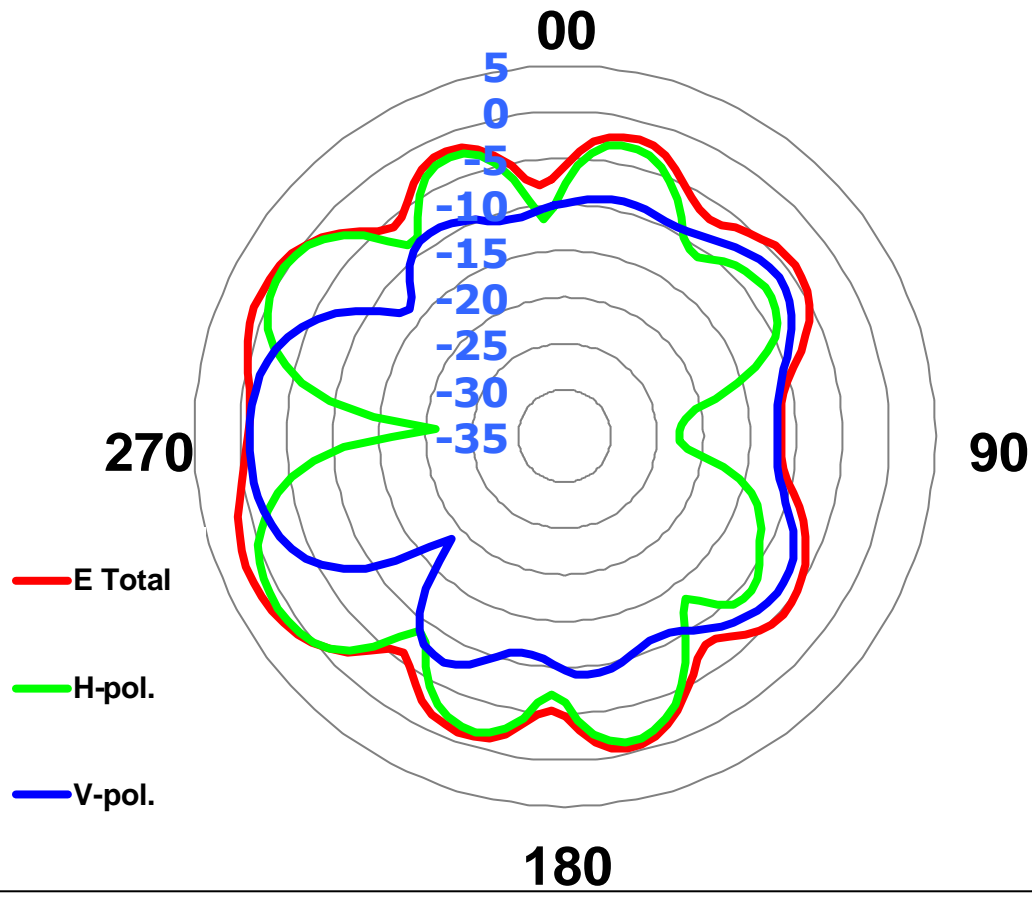
	H-pol	V pol
<b>Peak Gain</b>	<b>1.14</b>	<b>-0.34</b>

### Ant5 @ 2010 MHz



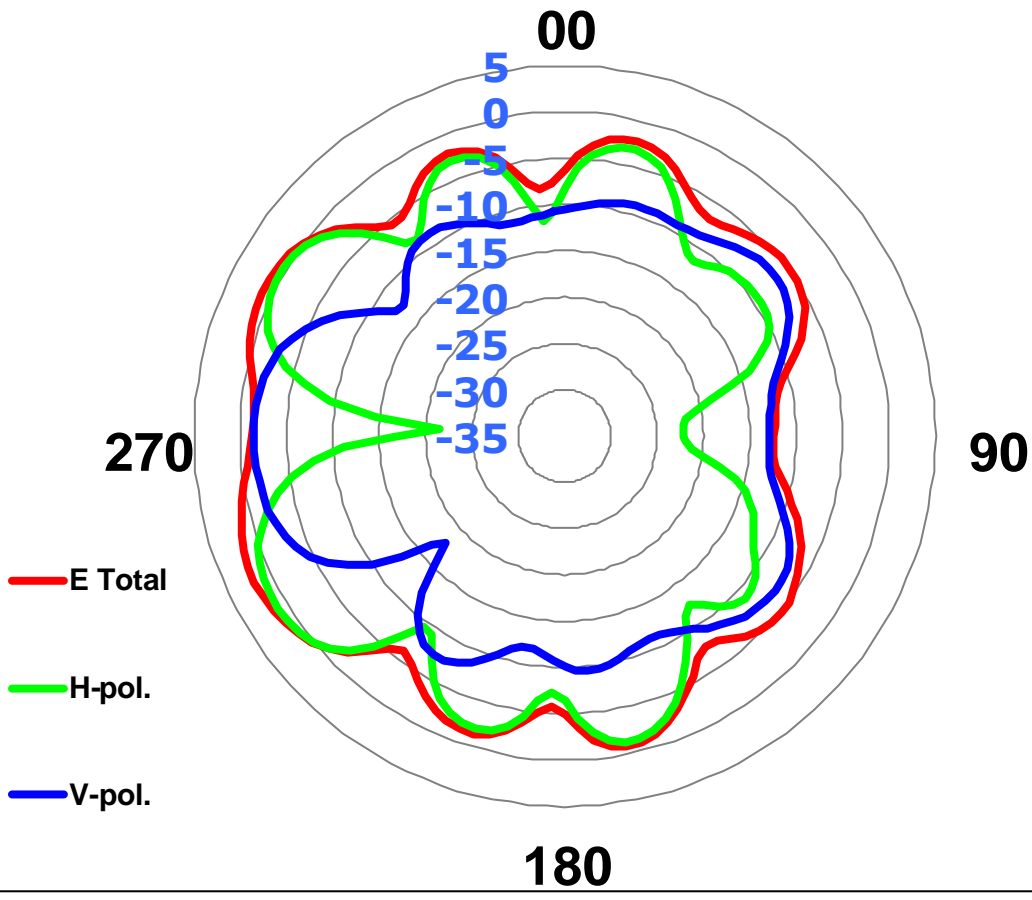
	H-pol	V pol
Peak Gain	1.03	-0.78

### Ant5 @ 2017 MHz



	H-pol	V pol
<b>Peak Gain</b>	<b>1.12</b>	<b>-1.00</b>

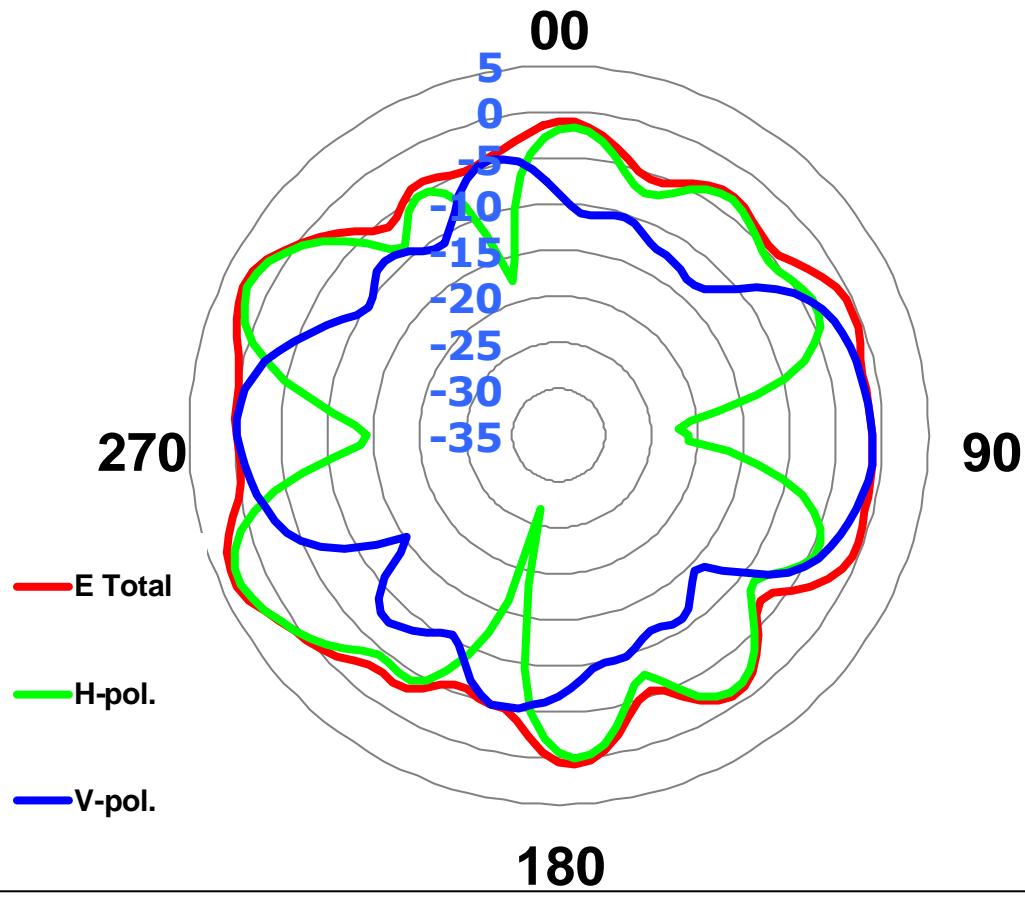
**Ant5 @ 2025 MHz**



- E Total
- H-pol.
- V-pol.

	H-pol	V pol
<b>Peak Gain</b>	<b>1.14</b>	<b>-1.45</b>

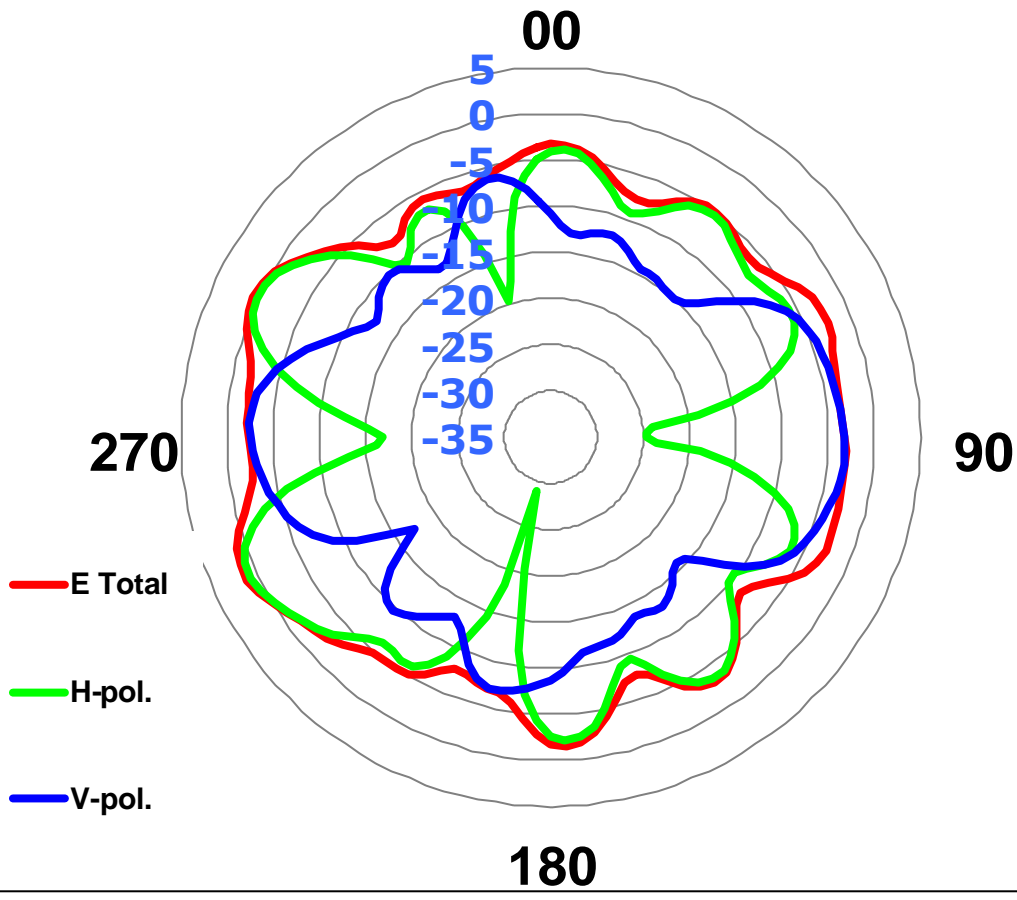
### Ant5 @ 2300 MHz



	H-pol	V pol
<b>Peak Gain</b>	<b>2.93</b>	<b>-0.22</b>

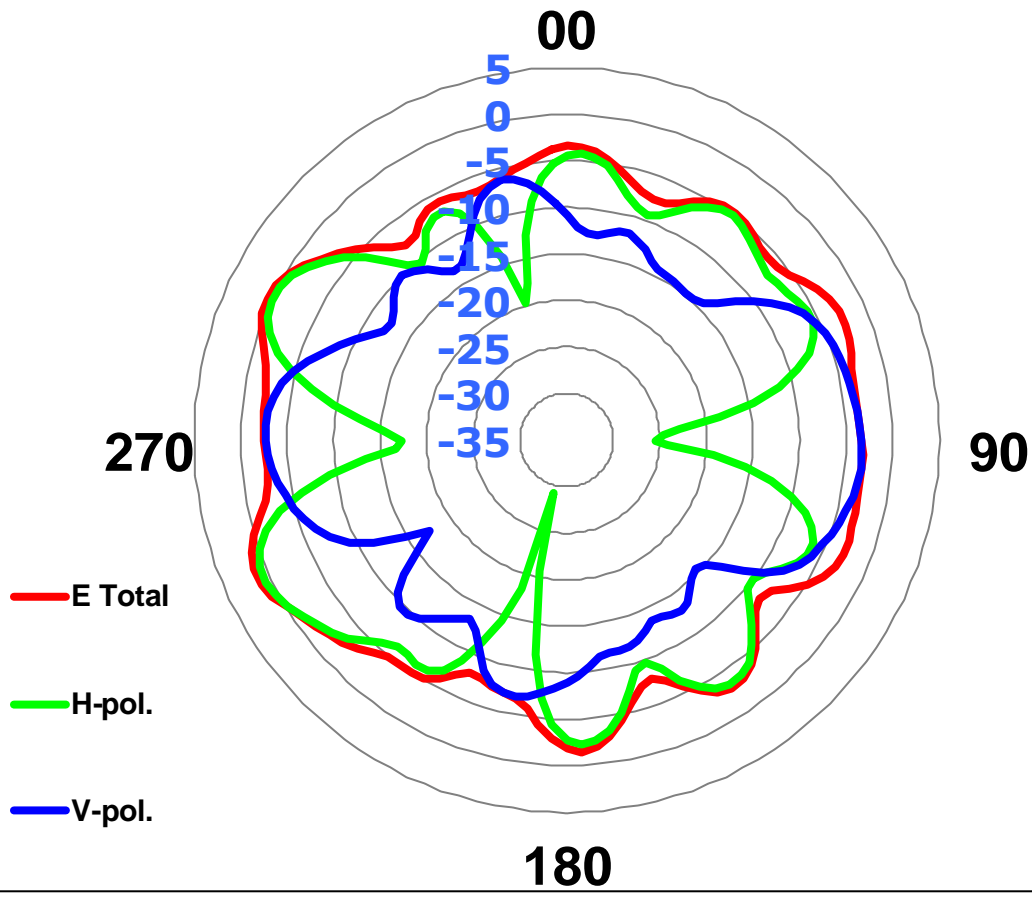


**Ant5 @ 2305 MHz**



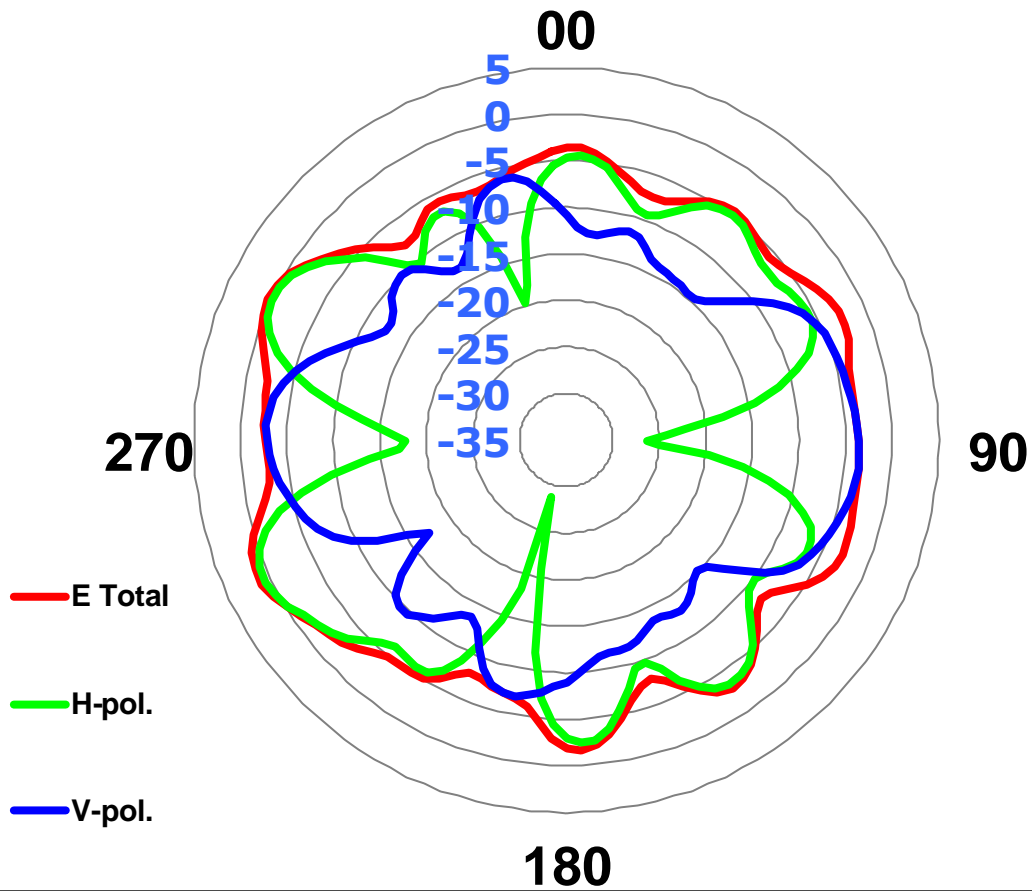
	H-pol	V pol
<b>Peak Gain</b>	<b>0.88</b>	<b>-2.40</b>

### Ant5 @ 2310 MHz



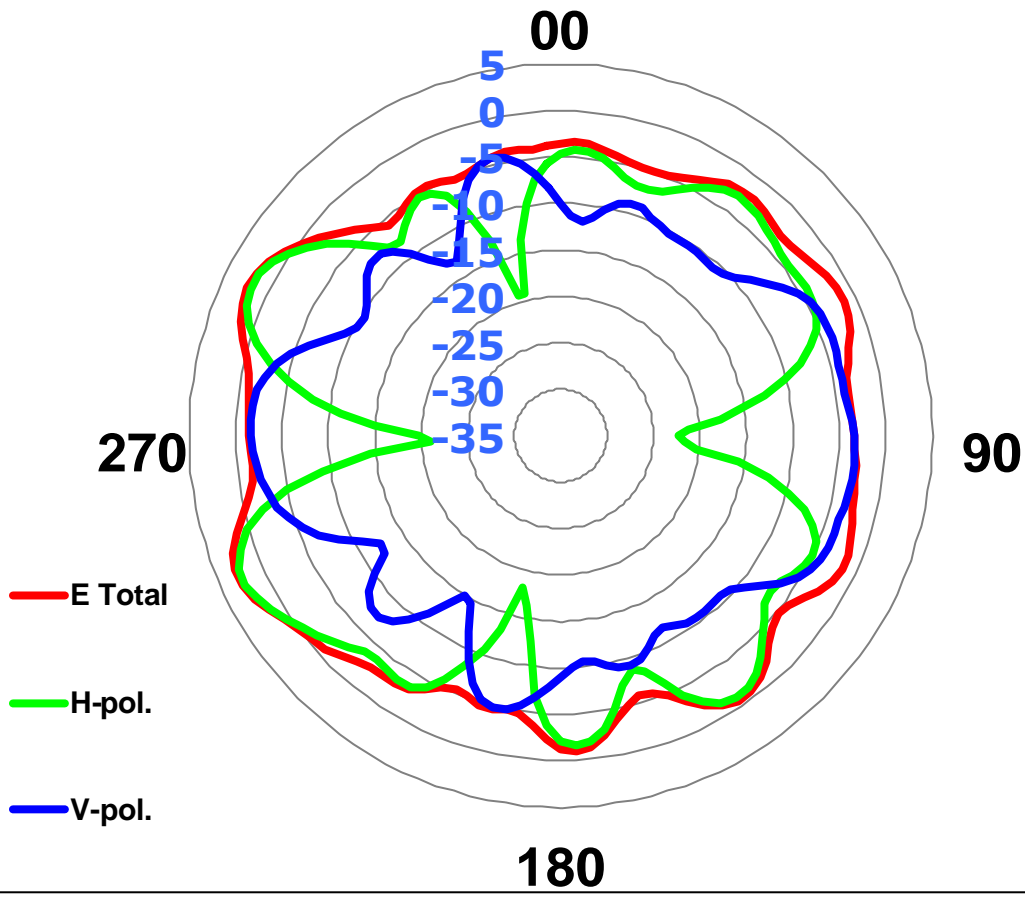
	H-pol	V pol
<b>Peak Gain</b>	<b>0.82</b>	<b>-2.59</b>

### Ant5 @ 2315 MHz



	H-pol	V pol
Peak Gain	0.78	-2.78

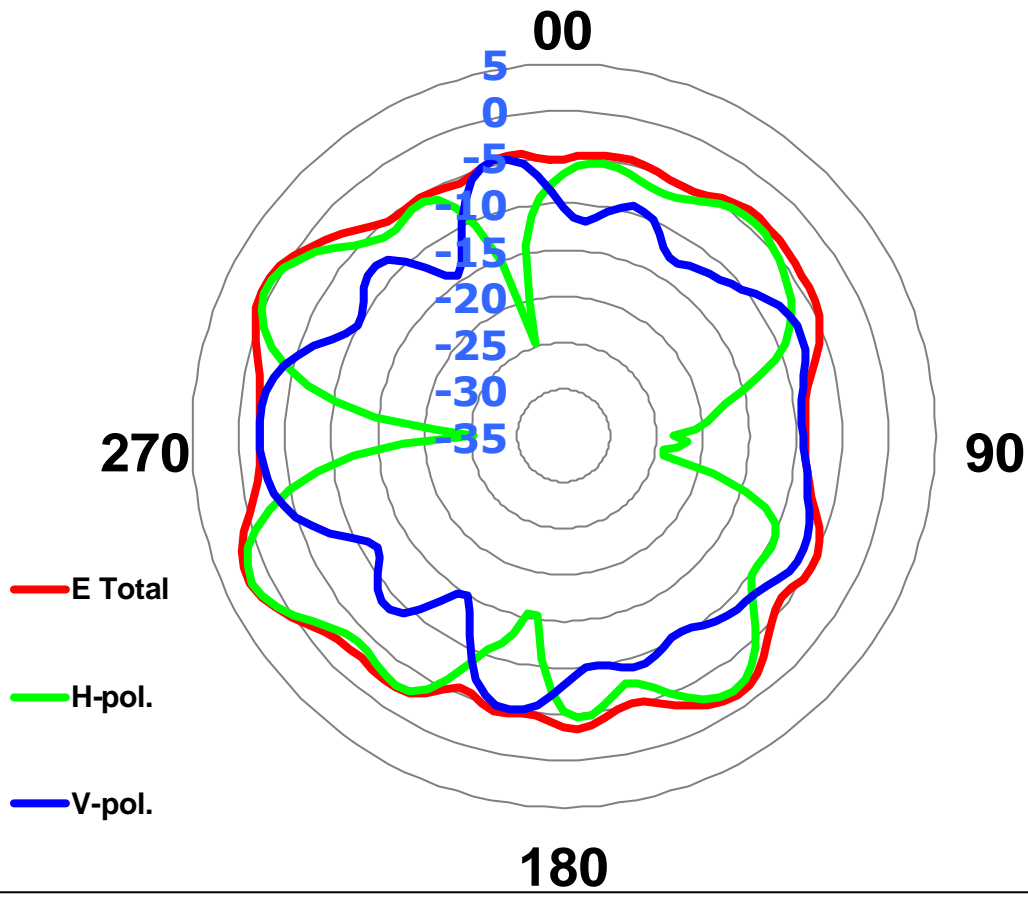
**Ant5 @ 2350 MHz**



- E Total
- H-pol.
- V-pol.

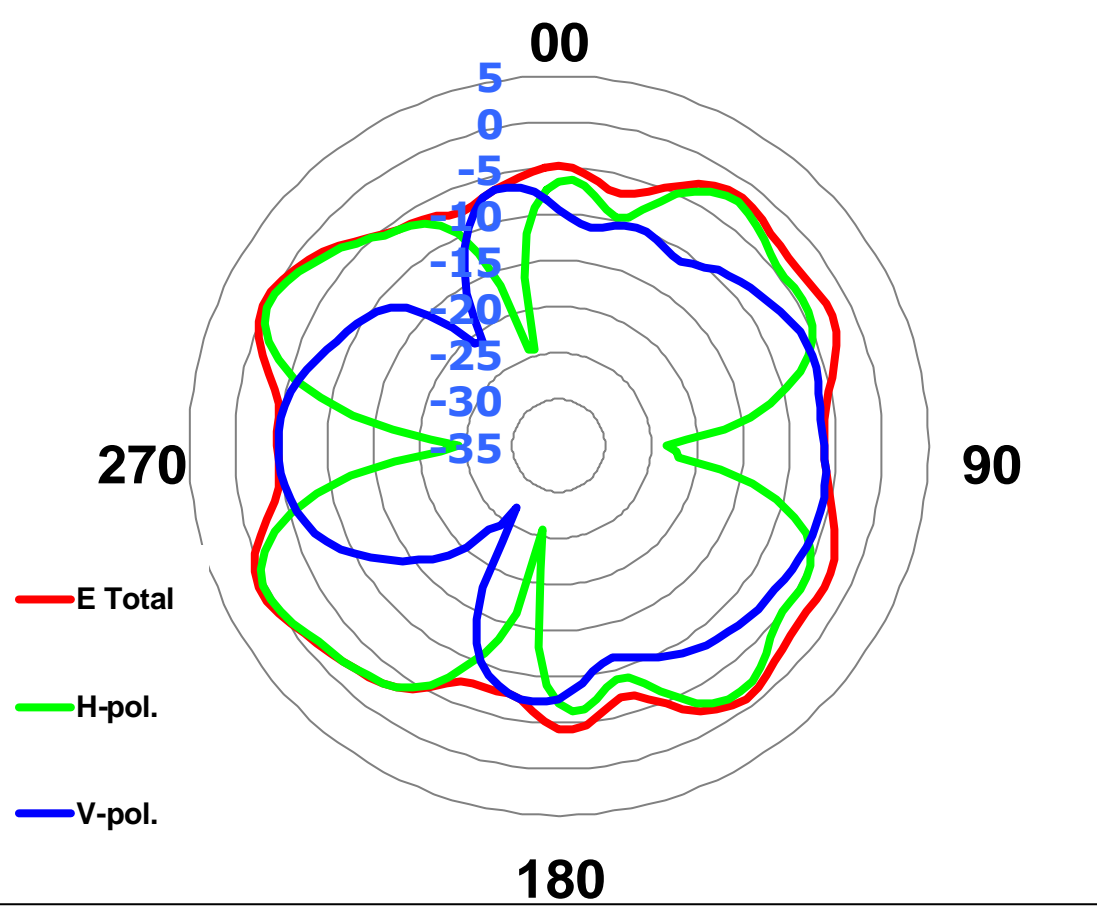
	H-pol	V pol
<b>Peak Gain</b>	<b>2.54</b>	<b>-1.53</b>

**Ant5 @ 2400 MHz**



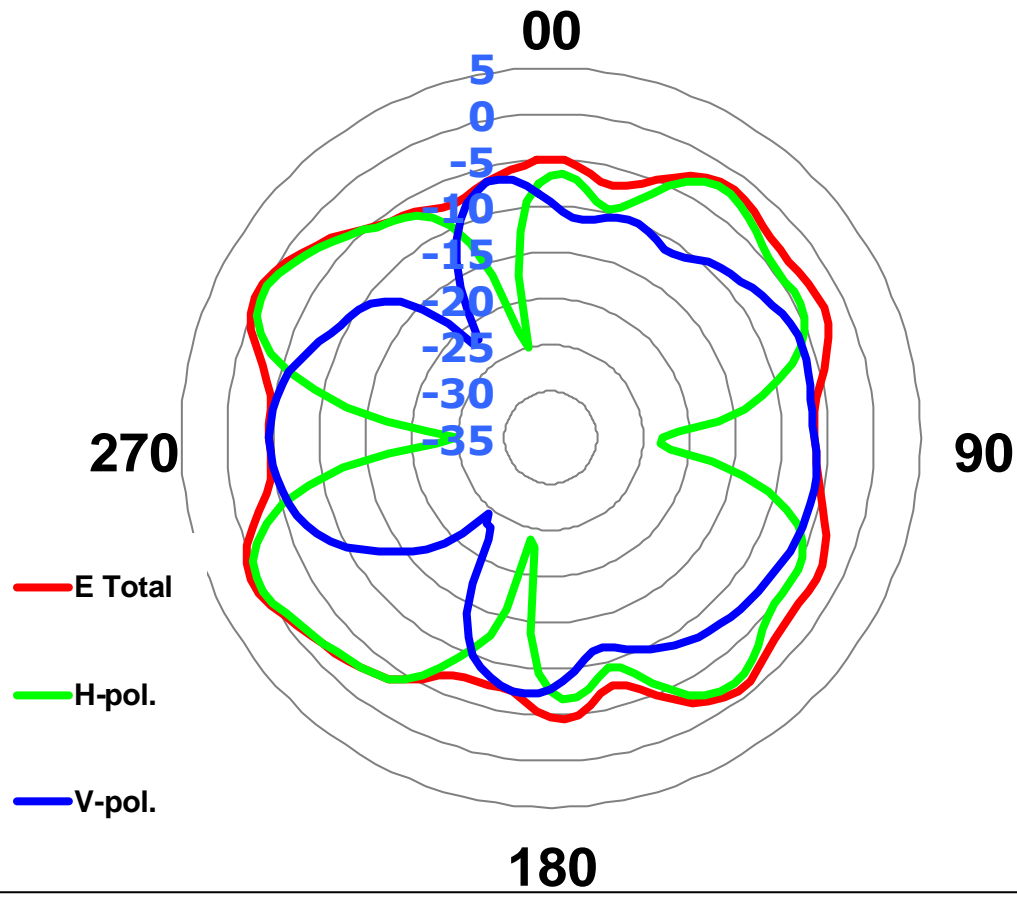
	H-pol	V pol
<b>Peak Gain</b>	<b>2.02</b>	<b>-2.24</b>

### Ant5 @ 2496 MHz



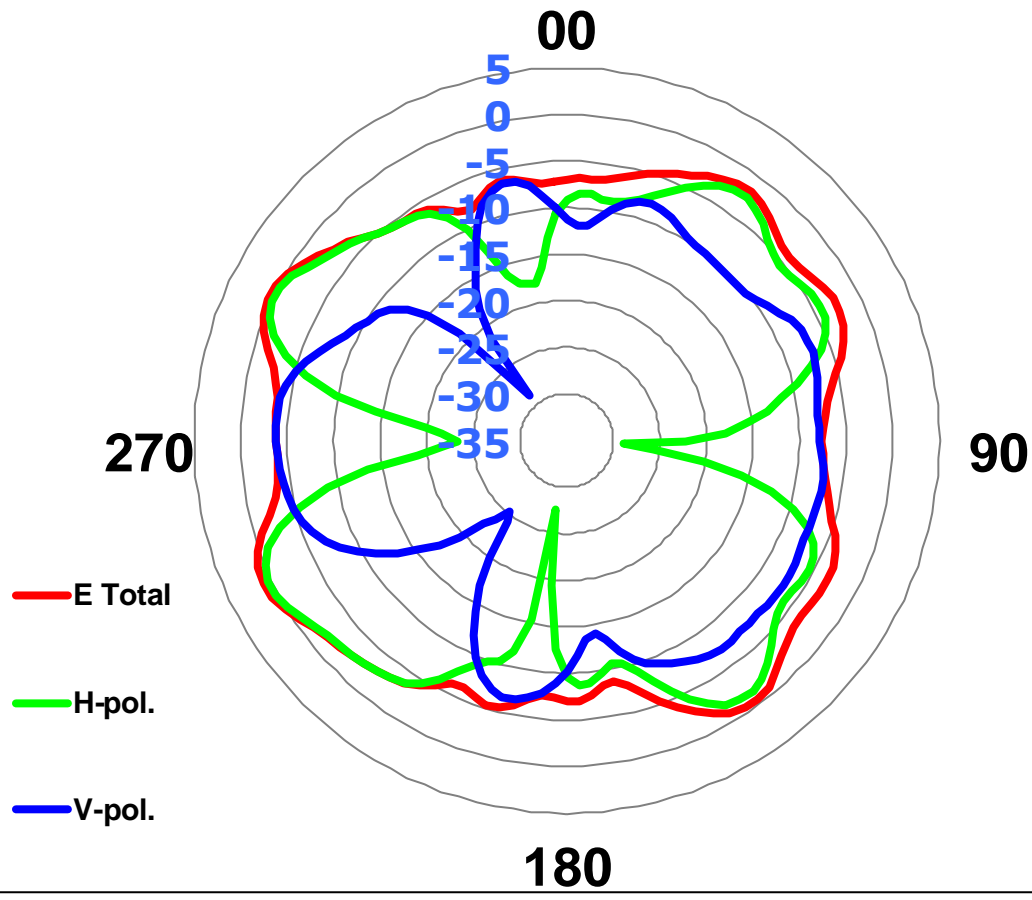
	H-pol	V pol
<b>Peak Gain</b>	<b>0.33</b>	<b>-4.62</b>

**Ant5 @ 2500 MHz**



	H-pol	V pol
<b>Peak Gain</b>	<b>0.28</b>	<b>-4.59</b>

**Ant5 @ 2535 MHz**

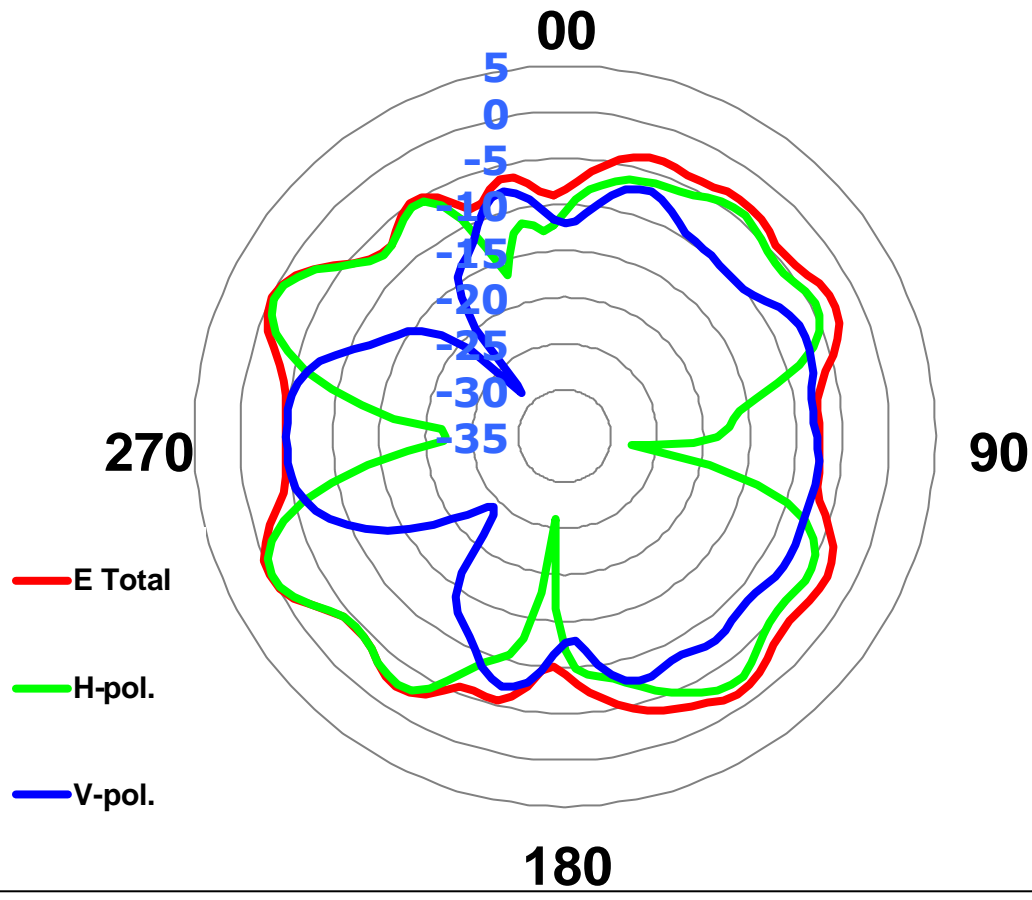


— E Total  
 — H-pol.  
 — V-pol.

	<b>H-pol</b>	<b>V pol</b>
<b>Peak Gain</b>	<b>0.47</b>	<b>-3.72</b>



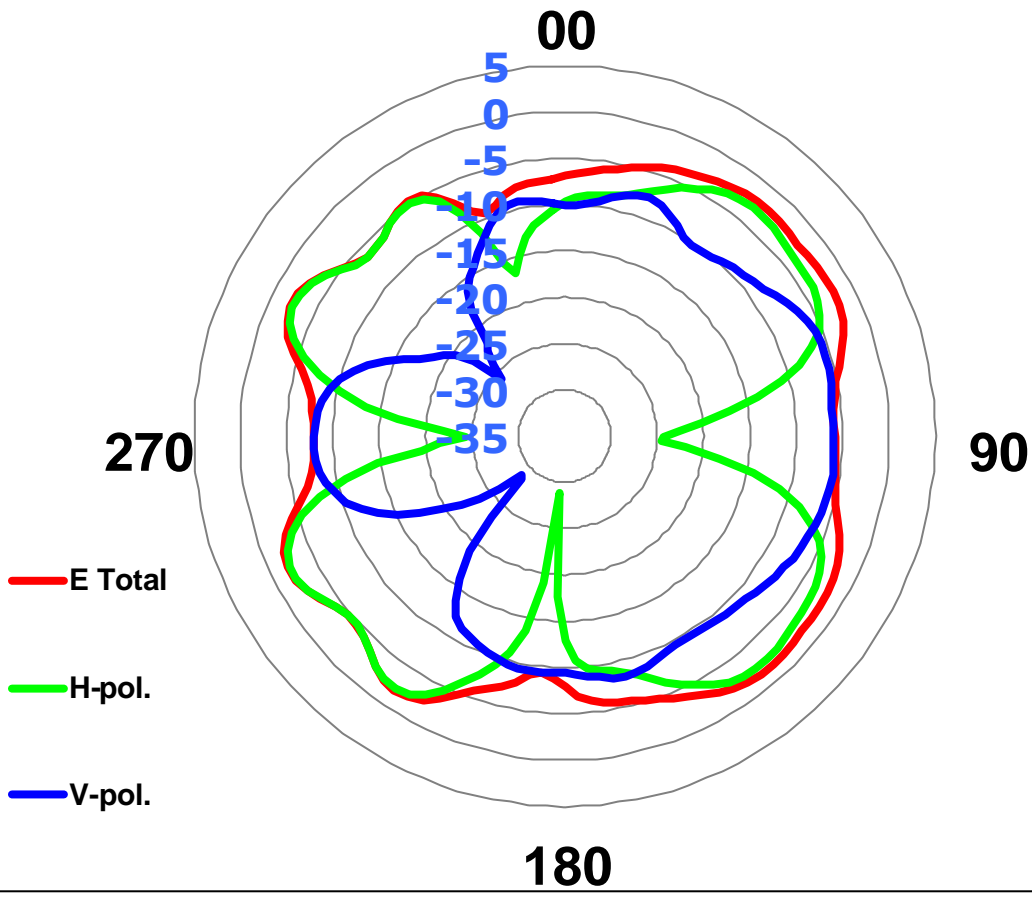
### Ant5 @ 2570 MHz



- E Total
- H-pol.
- V-pol.

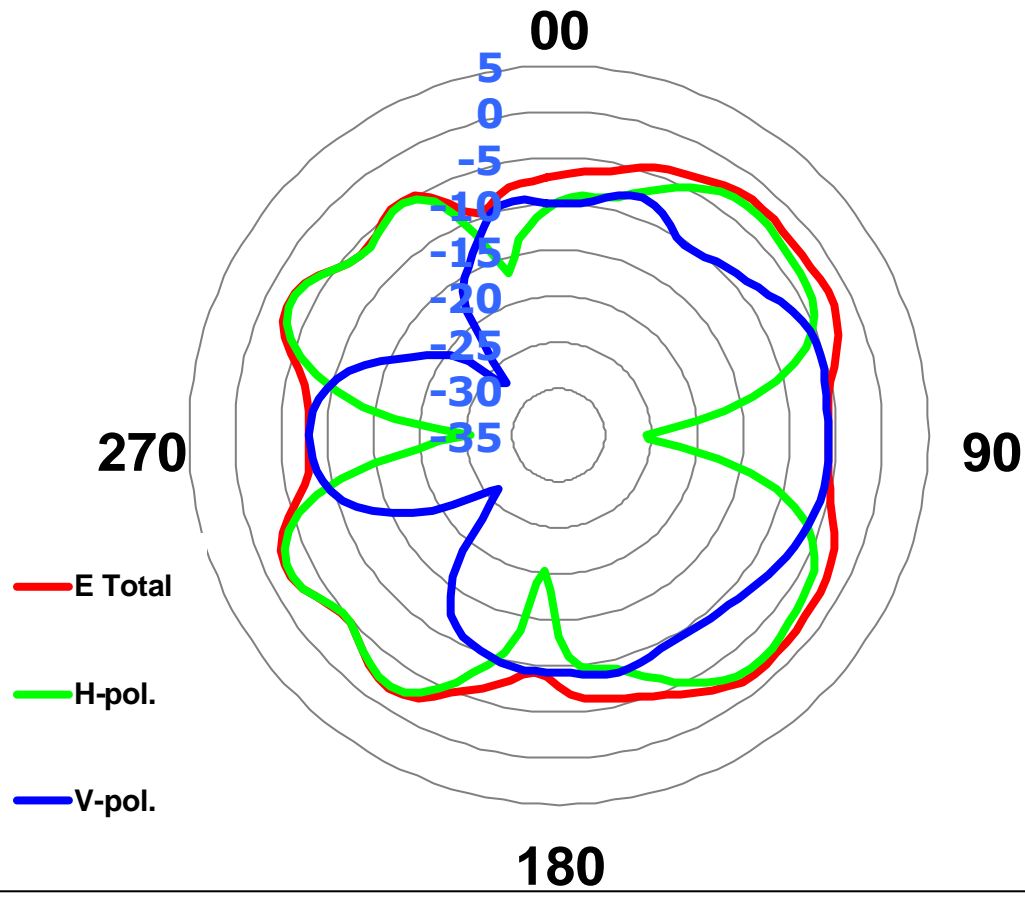
	H-pol	V pol
<b>Peak Gain</b>	<b>-0.04</b>	<b>-4.98</b>

### Ant5 @ 2593 MHz



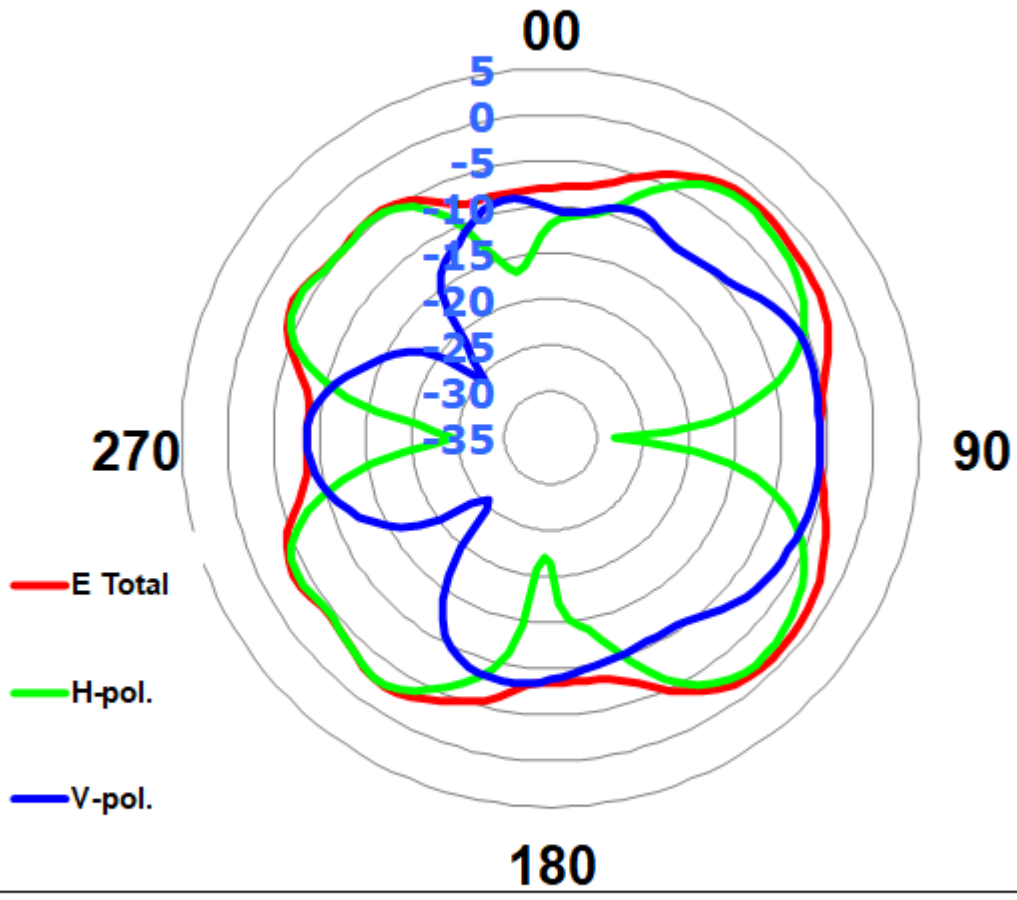
	H-pol	V pol
<b>Peak Gain</b>	<b>-2.15</b>	<b>-5.48</b>

**Ant5 @ 2595 MHz**



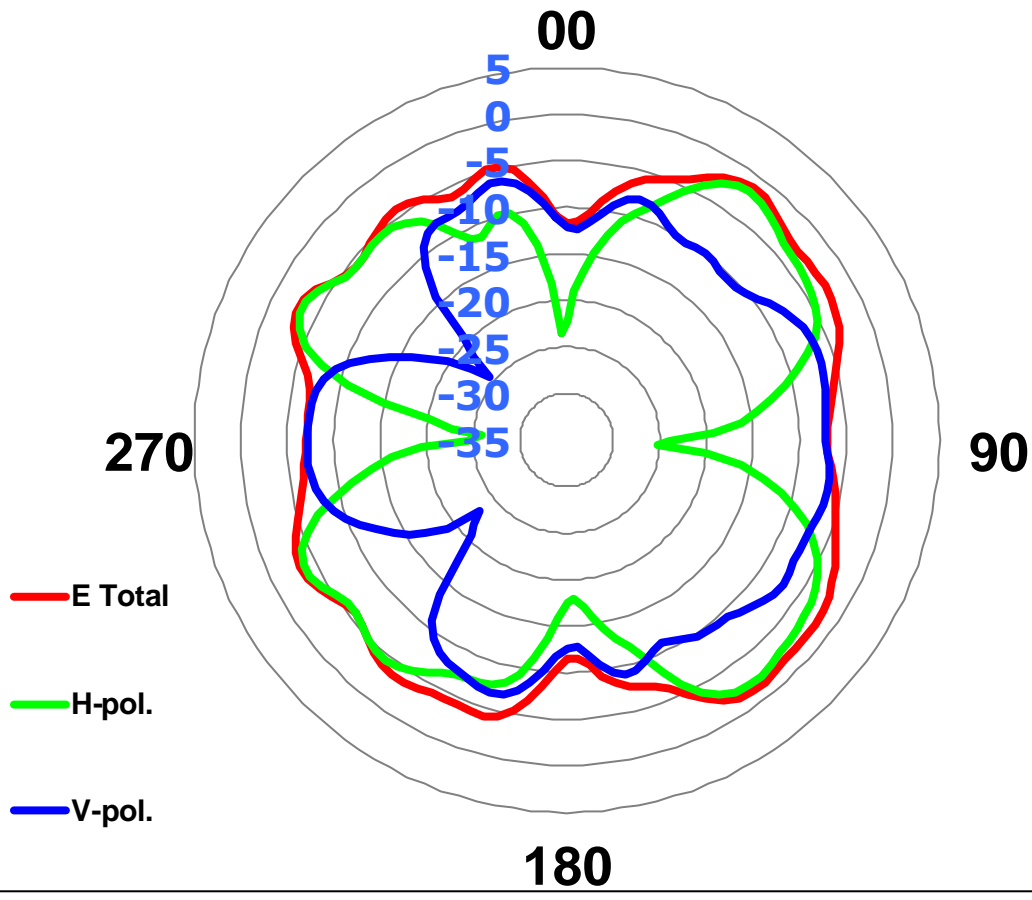
	H-pol	V pol
<b>Peak Gain</b>	<b>-2.27</b>	<b>-5.38</b>

### Ant5 @ 2620 MHz



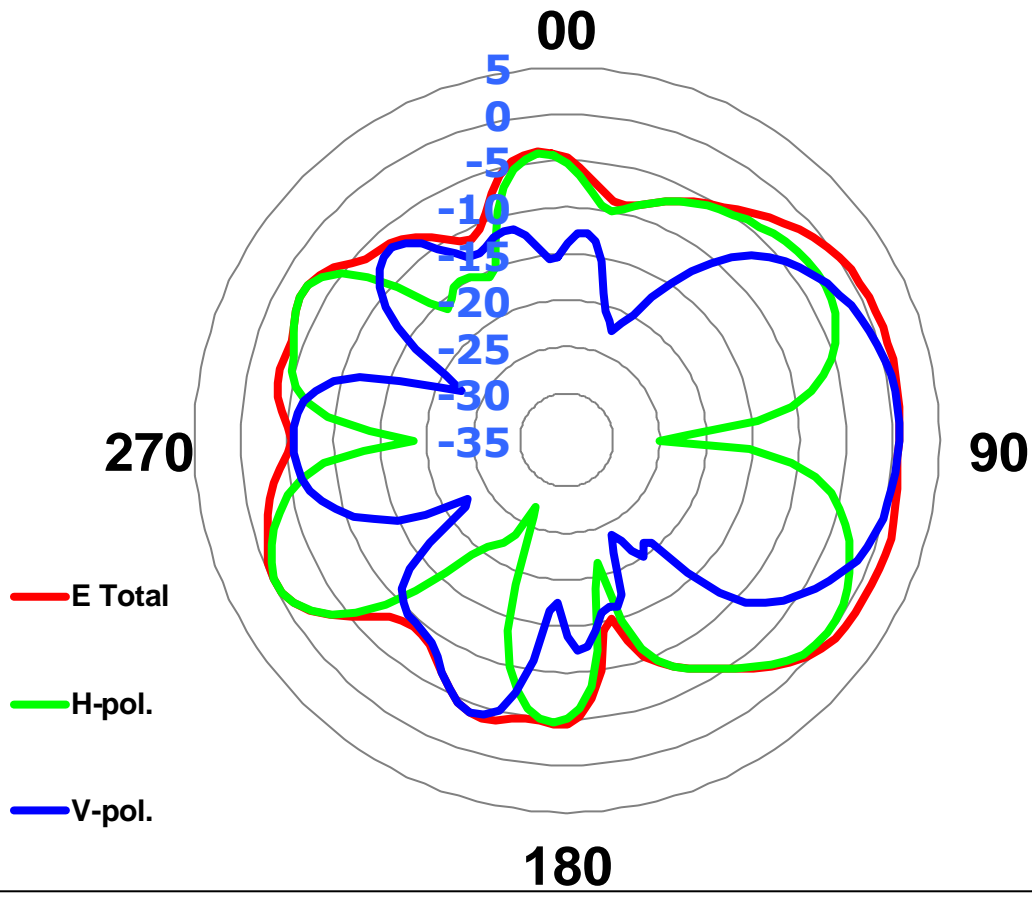
	H-pol	V pol
<b>Peak Gain</b>	<b>-1.82</b>	<b>-5.52</b>

### Ant5 @ 2690 MHz



	H-pol	V pol
<b>Peak Gain</b>	<b>-1.88</b>	<b>-6.27</b>

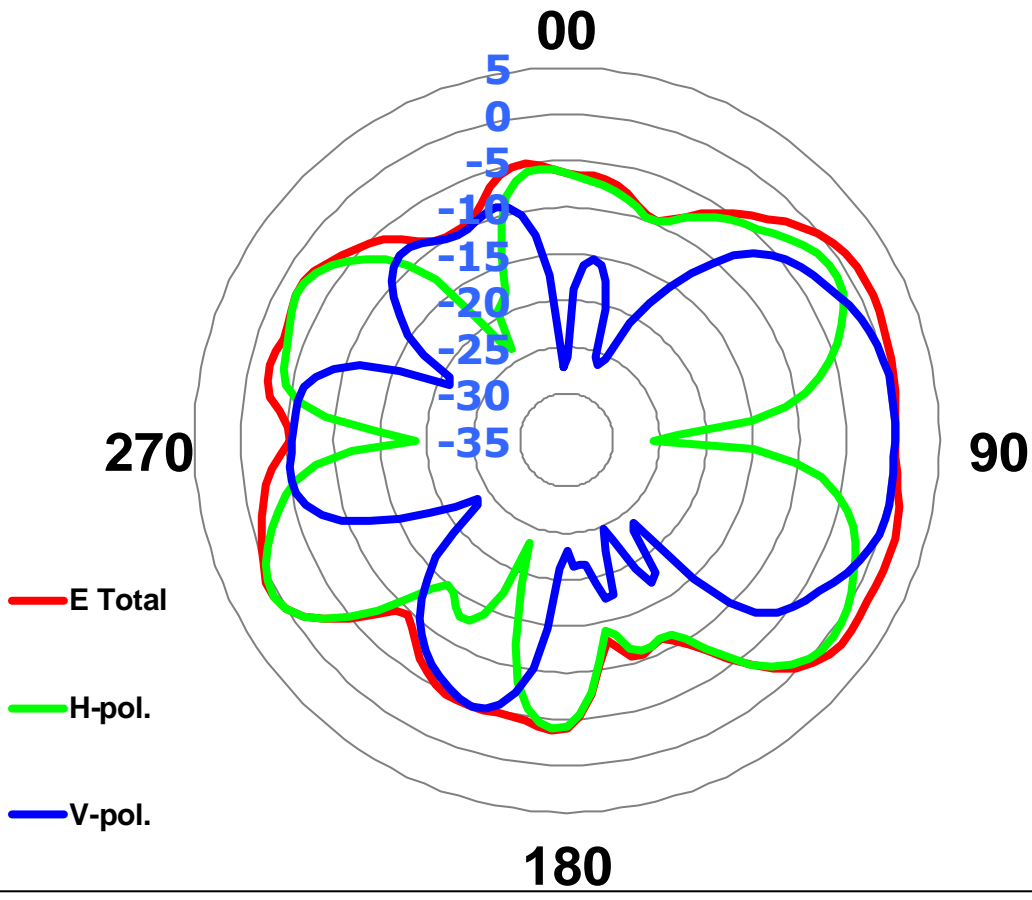
**Ant5 @ 3400 MHz**



- E Total
- H-pol.
- V-pol.

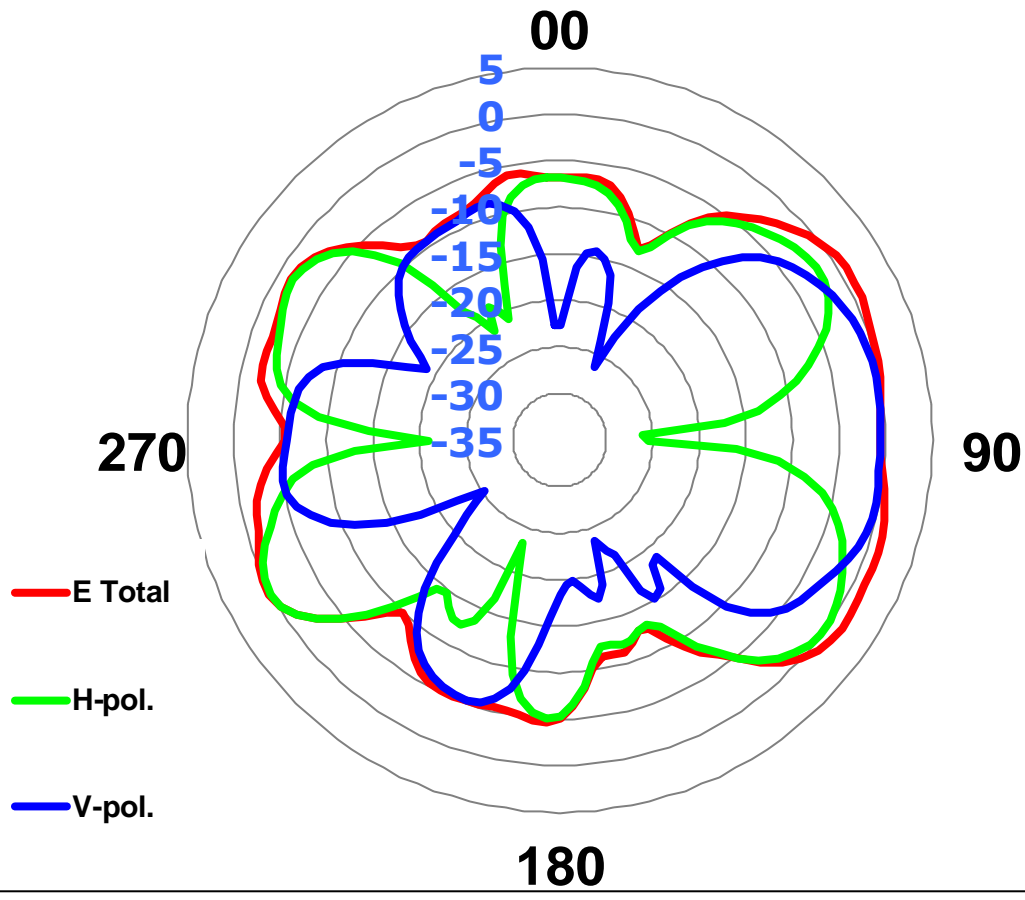
	H-pol	V pol
<b>Peak Gain</b>	<b>-0.16</b>	<b>0.72</b>

### Ant5 @ 3500 MHz



	H-pol	V pol
Peak Gain	0.64	0.32

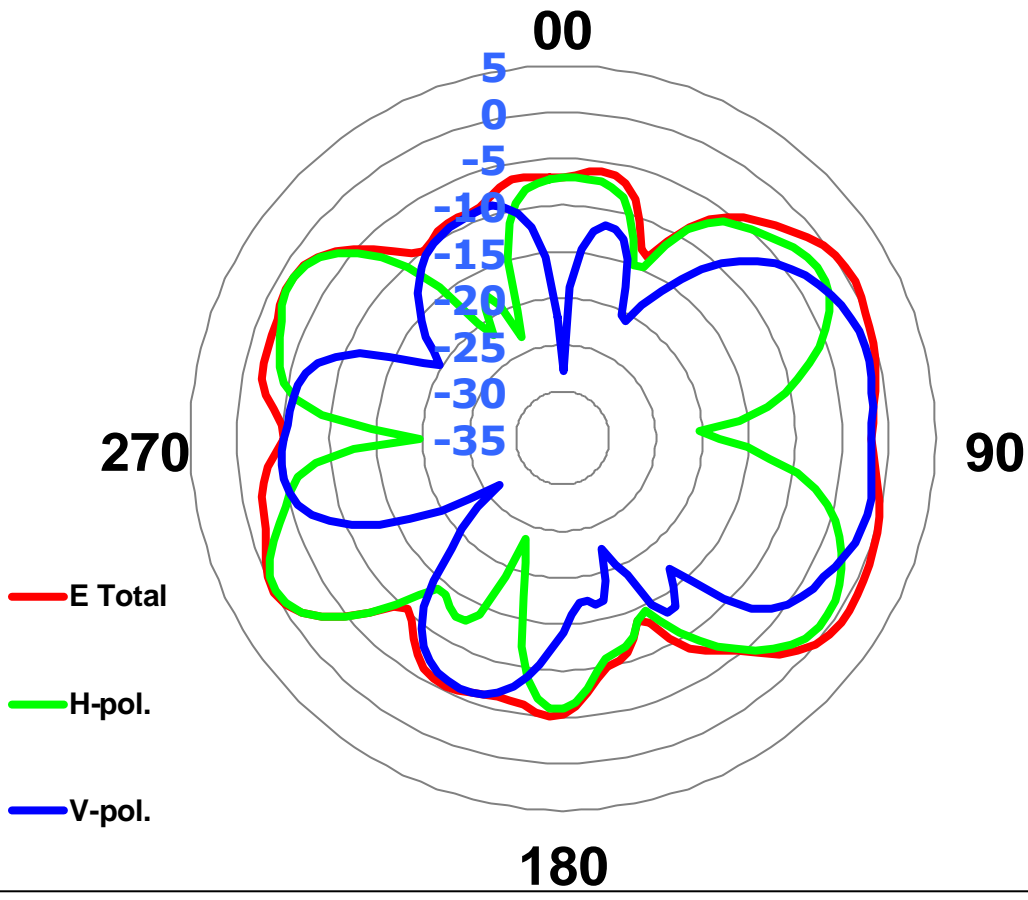
### Ant5 @ 3550 MHz



	H-pol	V pol
Peak Gain	0.21	-0.36

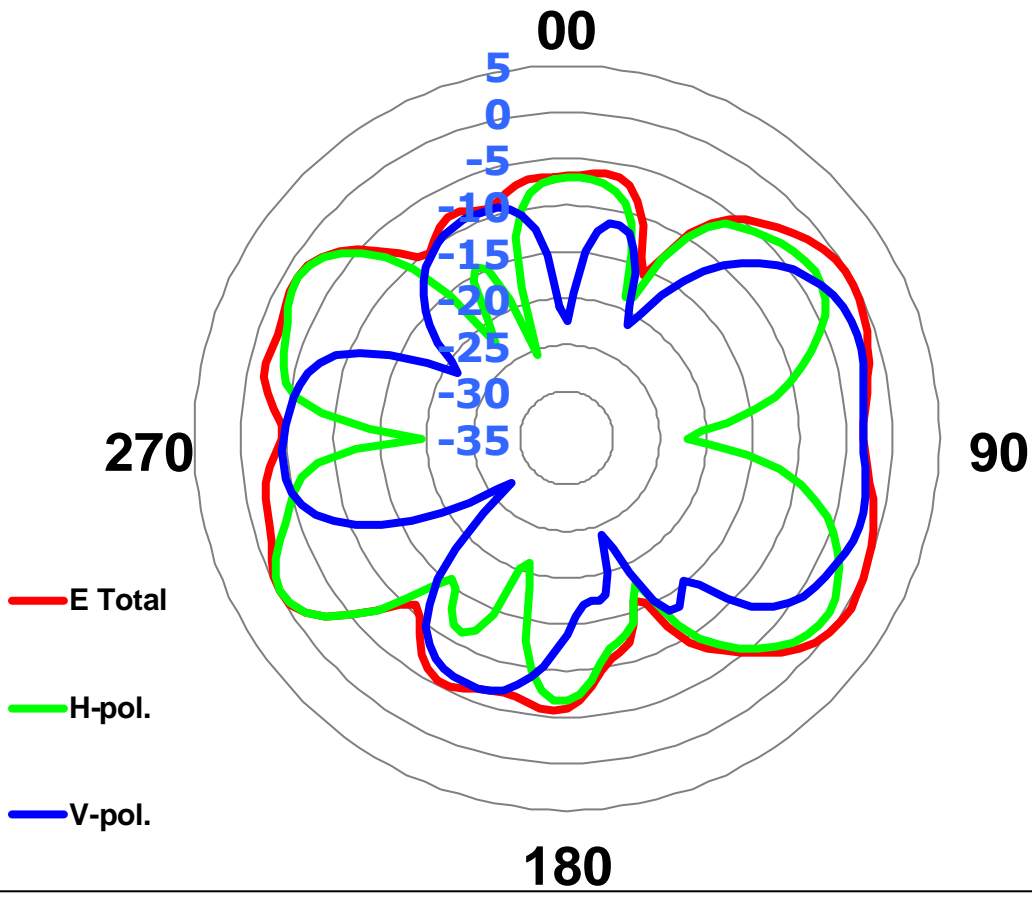


### Ant5 @ 3600 MHz



	H-pol	V pol
<b>Peak Gain</b>	<b>-0.04</b>	<b>-1.13</b>

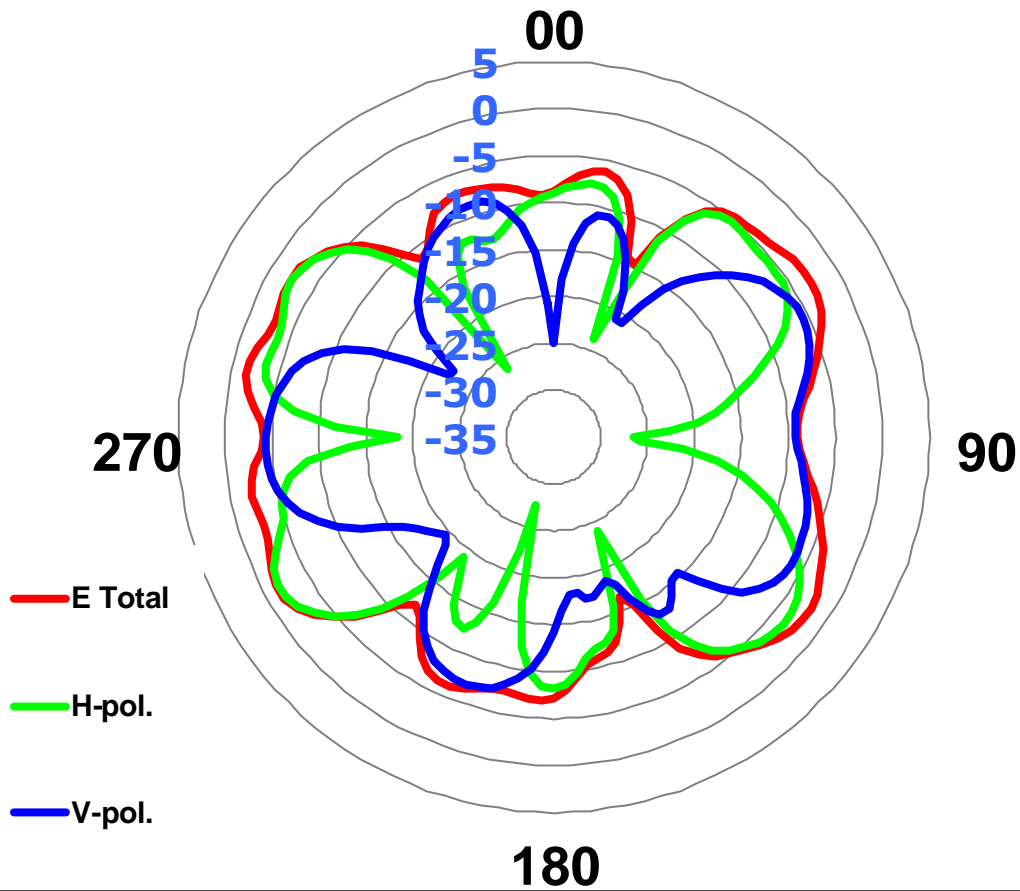
**Ant5 @ 3625 MHz**



— E Total  
 — H-pol.  
 — V-pol.

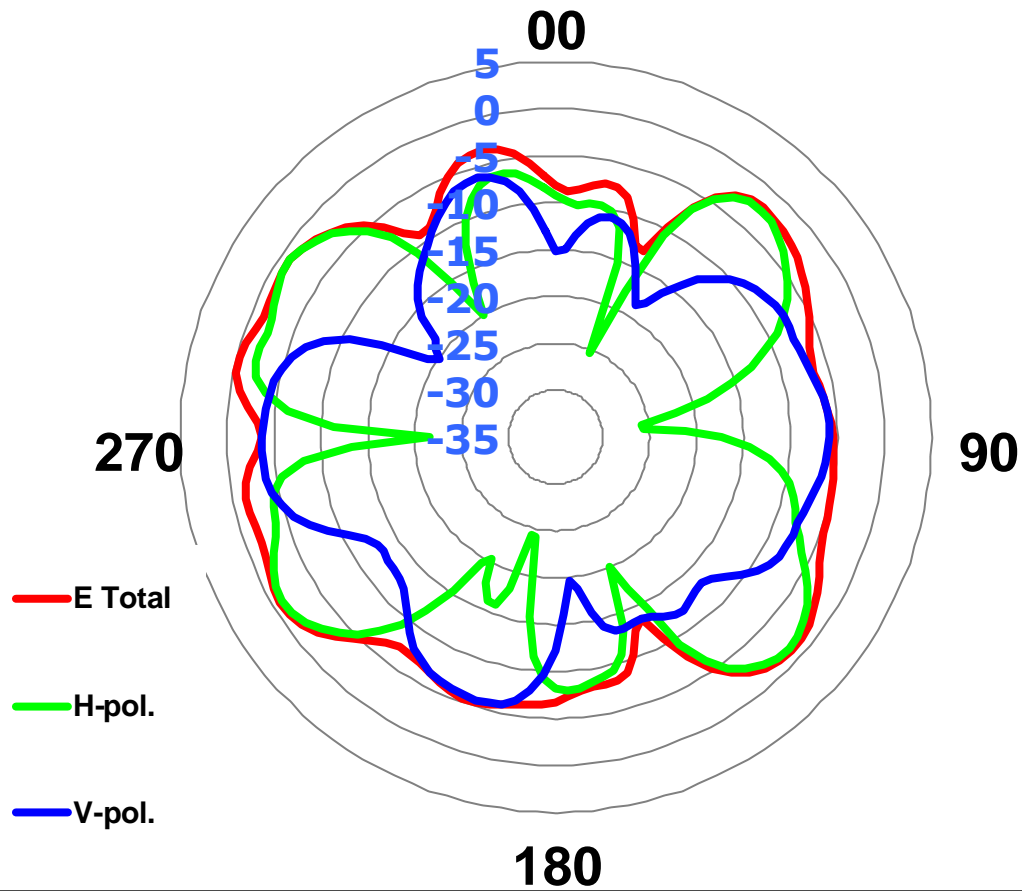
	H-pol	V pol
<b>Peak Gain</b>	<b>-0.11</b>	<b>-1.97</b>

### Ant5 @ 3700 MHz



	H-pol	V pol
<b>Peak Gain</b>	<b>-1.66</b>	<b>-4.32</b>

### Ant5 @ 3800 MHz



	H-pol	V pol
<b>Peak Gain</b>	<b>-1.05</b>	<b>-3.70</b>