

**[Purpose]**

Measure the antenna characteristic of Laredo PB and Sweetwater, and compare with that of Austin.

- Austin : RXT9000-2703E
- Laredo PB : RXT9000-46xxE  
4 layer PCB/chip TDK antenna x2 (same configuration as Austin)
- Sweetwater : RXT9000-45xxE  
double sided PCB/pattern antenna

**[Measurement item]**

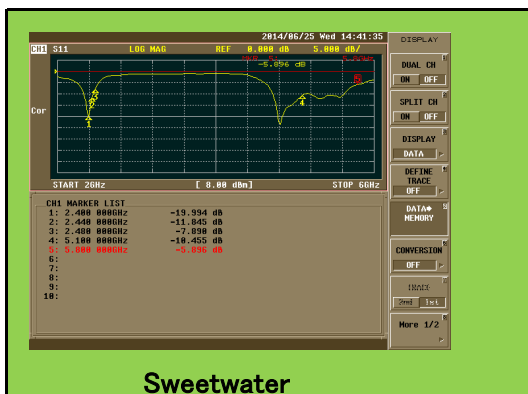
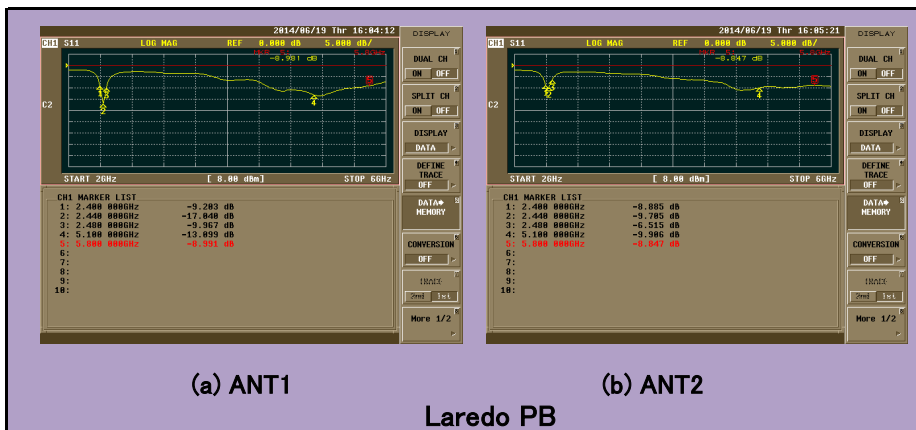
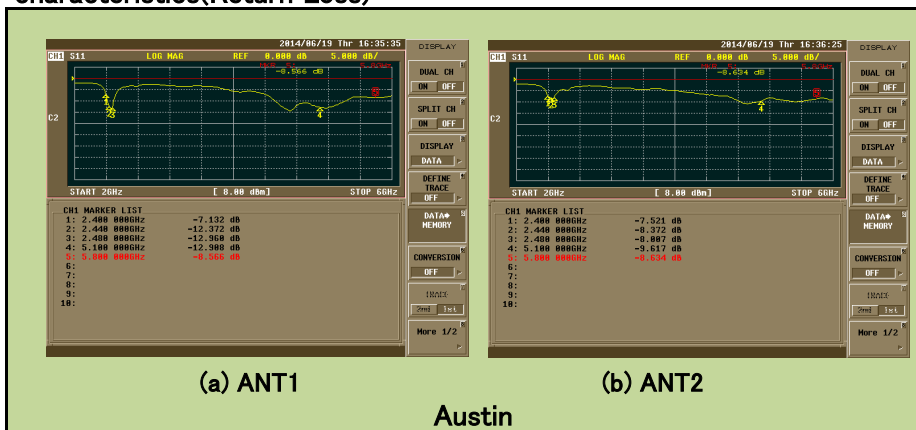
Return Loss(VSWR), Gain, Radiation pattern

**[Antenna characteristic of Laredo PB and Sweetwater]**

- Average Gain of Laredo PB is almost the same as Austin for both 2.4GHz and 5GHz.
  - Average Gain of Sweetwater is better than Austin for 2.4GHz and is almost same as Austin for 5GHz.
- \*Please refer to the following "Data" for detail.

**[Data]**

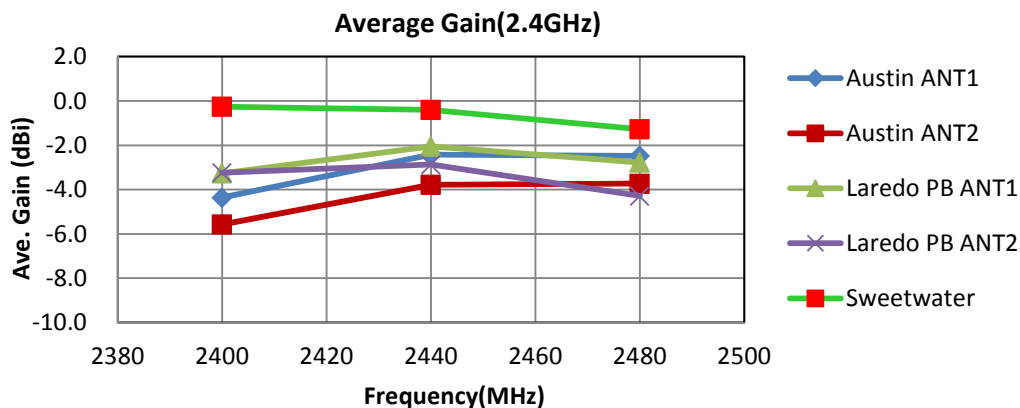
1. S11 characteristics(Return Loss)



2. Average Gain

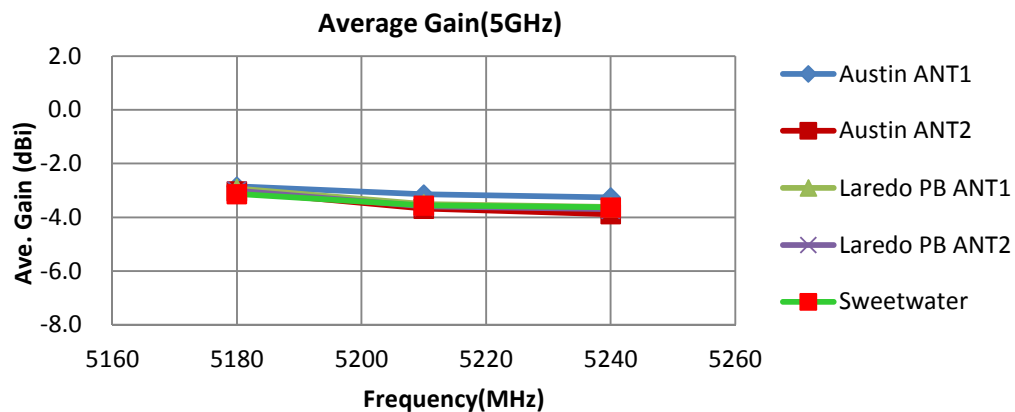
(2) -1 2.4GHz

Frequency (MHz)	Average Gain(dBi)				
	Austin		Laredo PB		Sweetwater
	ANT1	ANT2	ANT1	ANT2	
2400	-4.4	-5.6	-3.3	-3.2	-0.3
2440	-2.4	-3.8	-2.1	-2.9	-0.4
2480	-2.5	-3.7	-2.8	-4.3	-1.3



2-2 5GHz

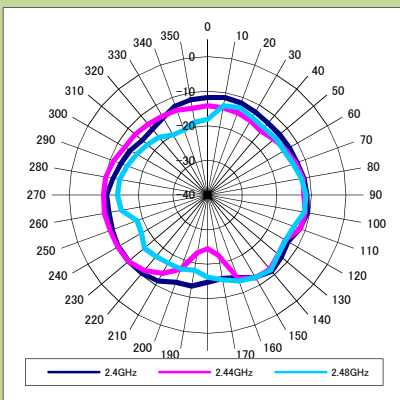
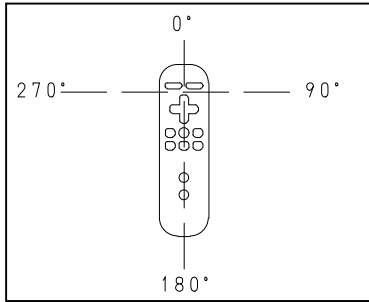
Frequency (MHz)	Average Gain(dBi)				
	Austin		Laredo PB		Sweetwater
	ANT1	ANT2	ANT1	ANT2	
5180	-2.8	-3.0	-2.9	-3.0	-3.1
5210	-3.1	-3.7	-3.5	-3.6	-3.6
5240	-3.3	-3.9	-3.6	-3.7	-3.6



### 3. Radiation Pattern

#### 3-1 2.4GHz

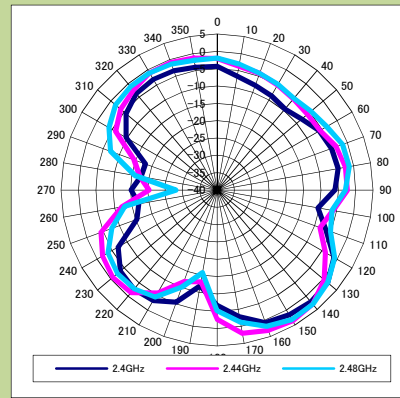
XY plane



Vertical

(dBi)	
Freq.	V_Ave.
2.4GHz	-12.20
2.44GHz	-12.77
2.48GHz	-14.75

(dBi)	
Freq.	V_Max.
2.4GHz	-10.17
2.44GHz	-9.71
2.48GHz	-11.63

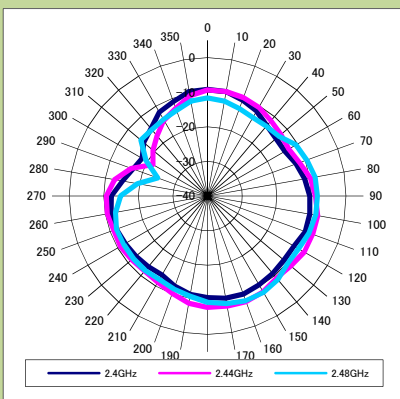


Horizontal

(dBi)	
Freq.	H_Ave.
2.4GHz	-4.03
2.44GHz	-2.31
2.48GHz	-2.36

(dBi)	
Freq.	H_Max.
2.4GHz	2.16
2.44GHz	3.63
2.48GHz	3.21

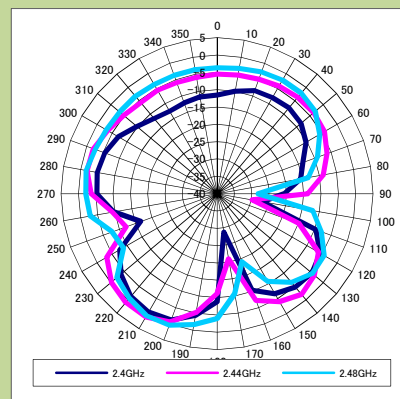
Austin ANT1



Vertical

(dBi)	
Freq.	V_Ave.
2.4GHz	-12.16
2.44GHz	-11.22
2.48GHz	-12.06

(dBi)	
Freq.	V_Max.
2.4GHz	-9.67
2.44GHz	-8.54
2.48GHz	-8.80

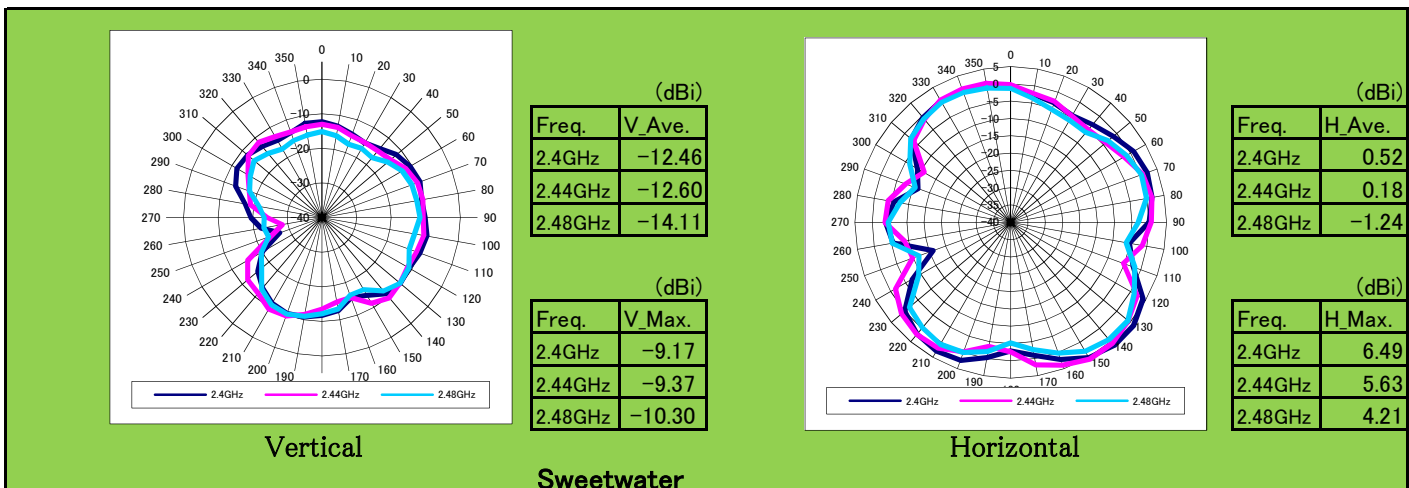
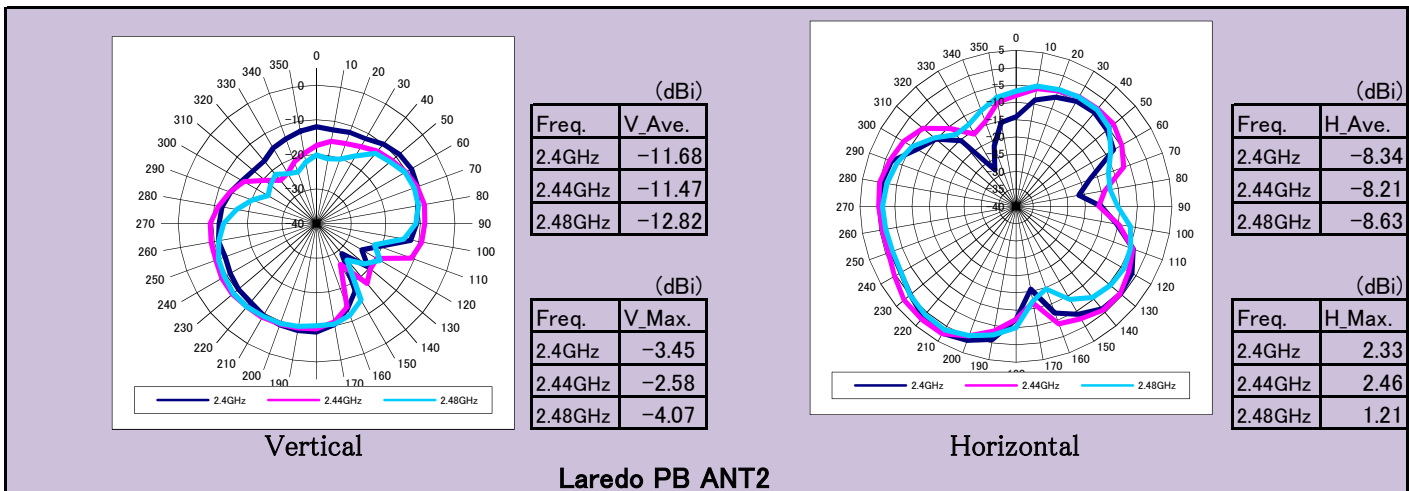
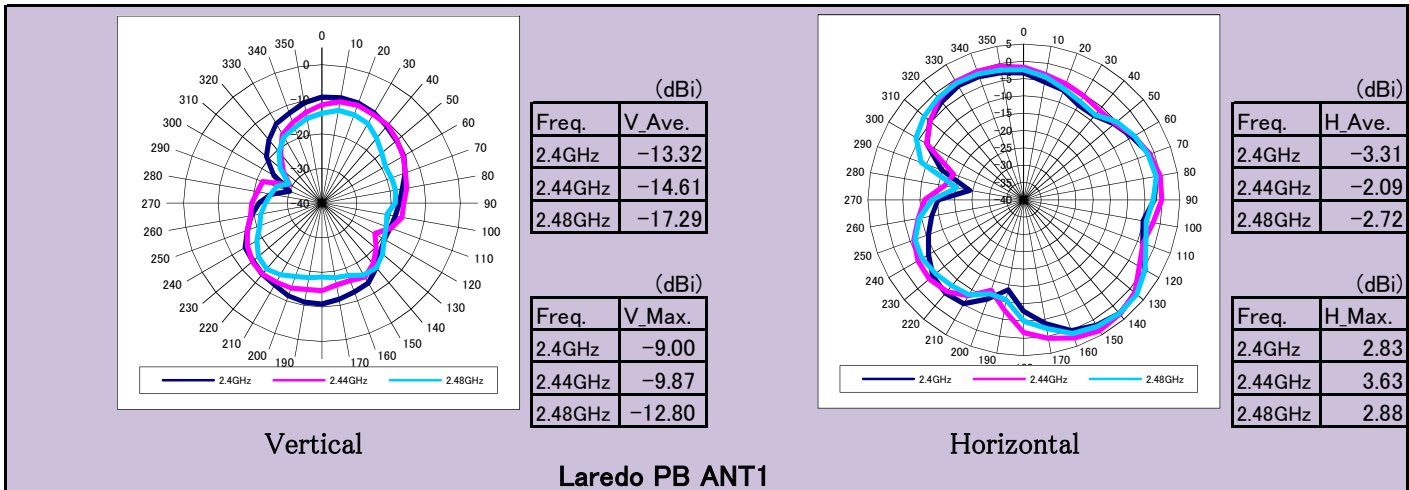
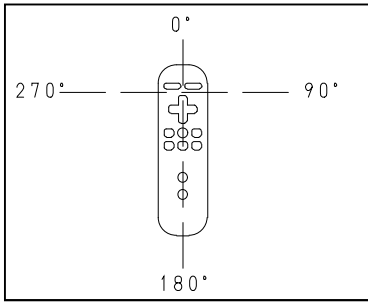


Horizontal

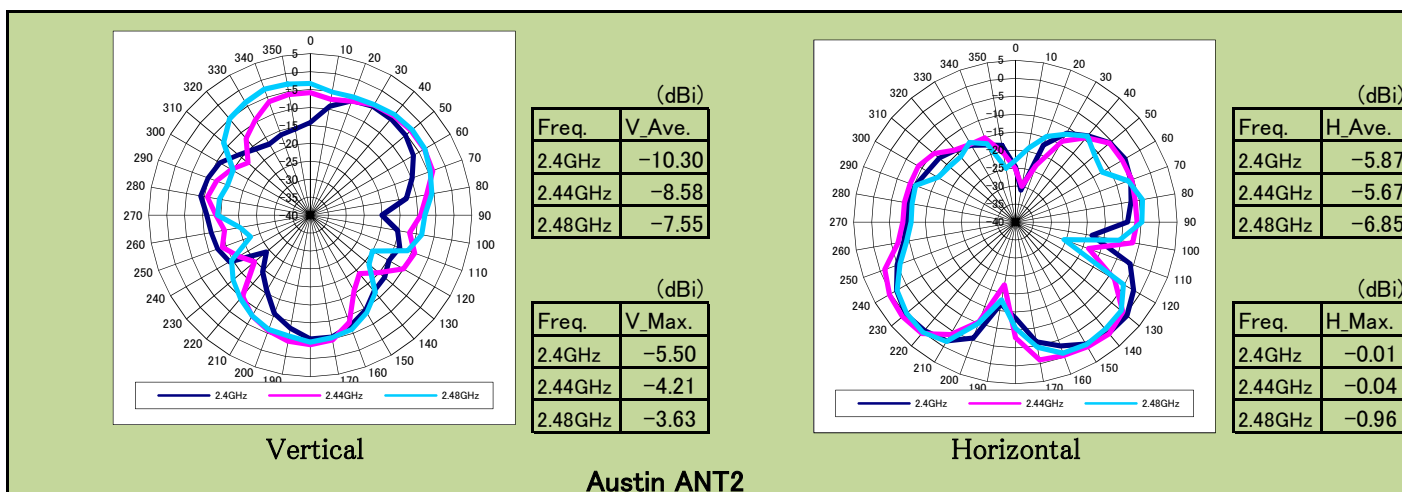
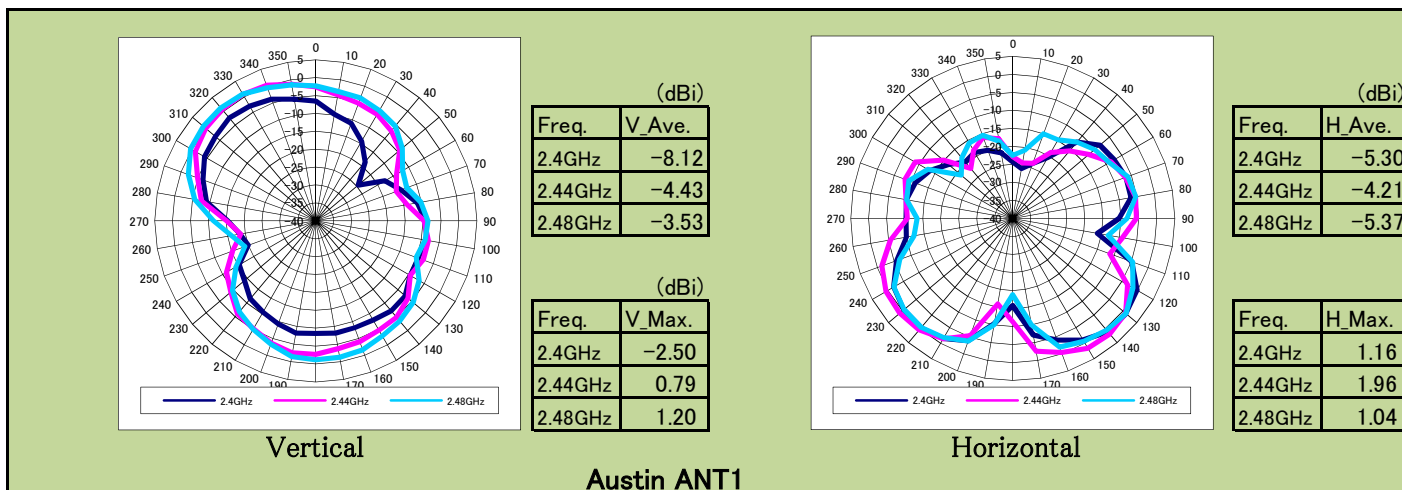
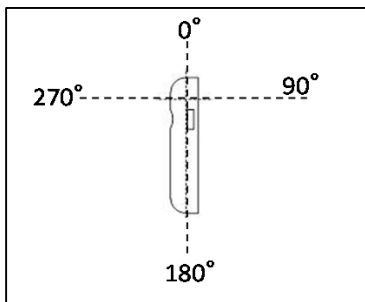
(dBi)	
Freq.	H_Ave.
2.4GHz	-7.37
2.44GHz	-5.15
2.48GHz	-4.74

(dBi)	
Freq.	H_Max.
2.4GHz	-1.01
2.44GHz	0.13
2.48GHz	-0.29

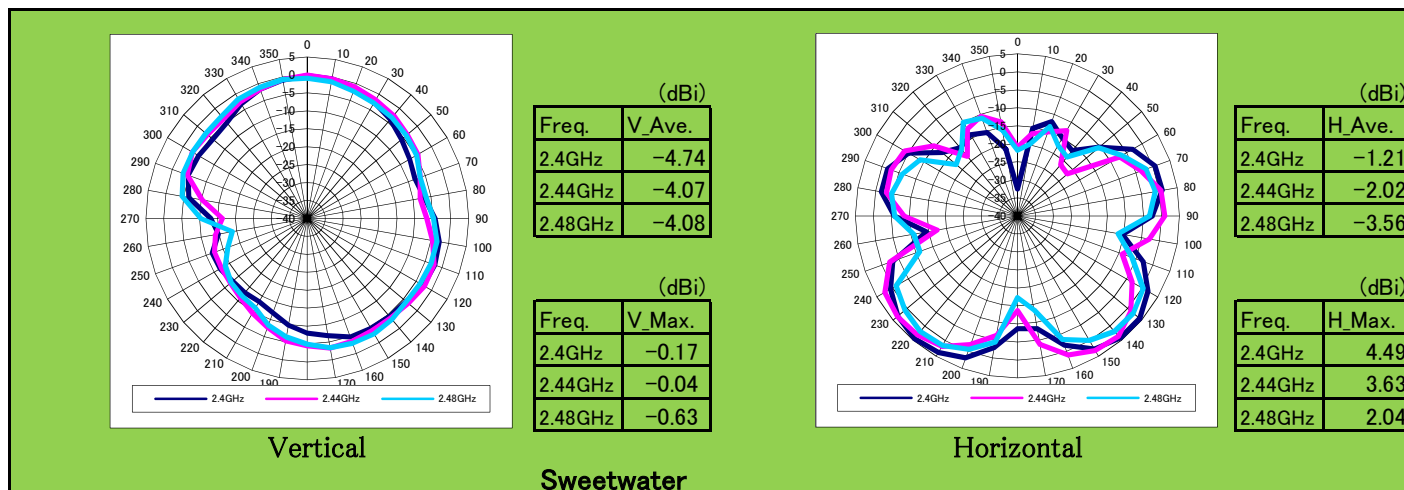
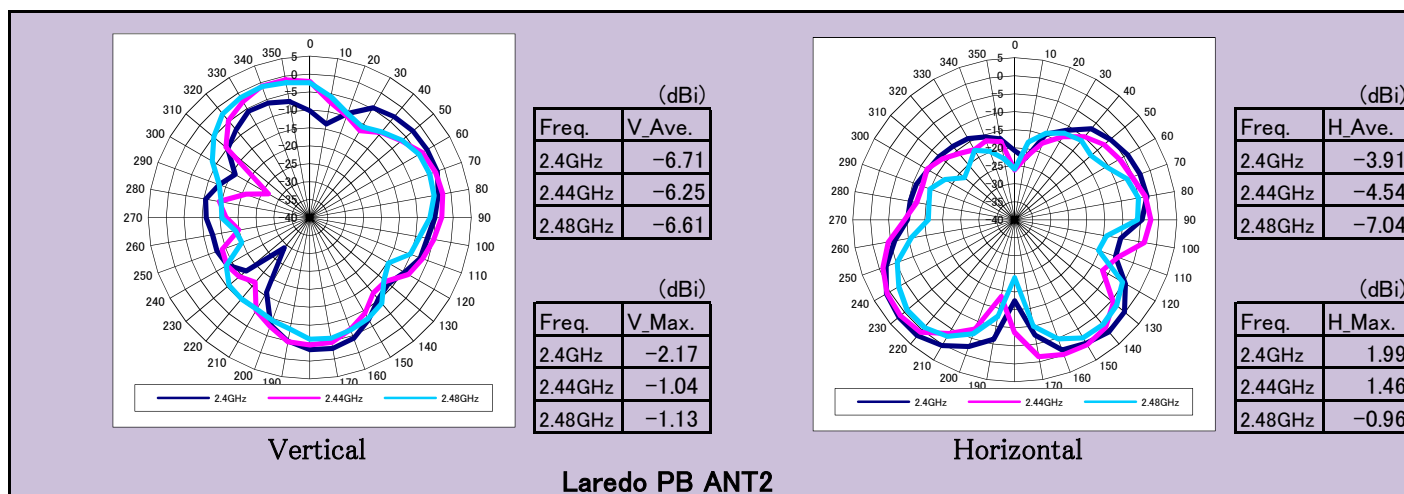
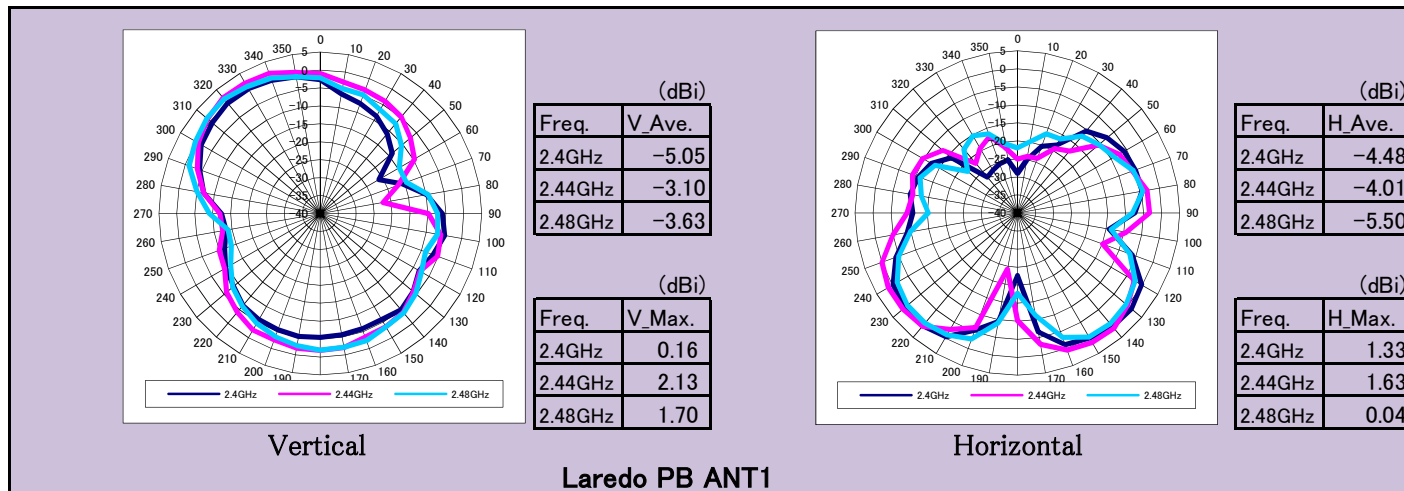
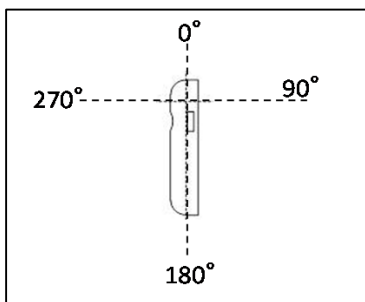
Austin ANT2

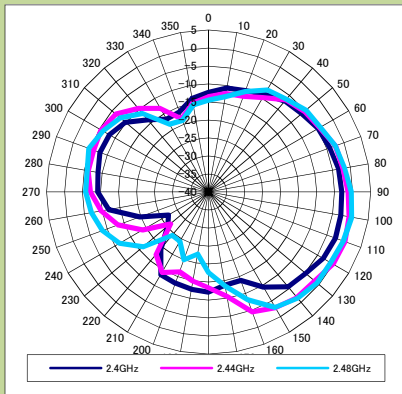
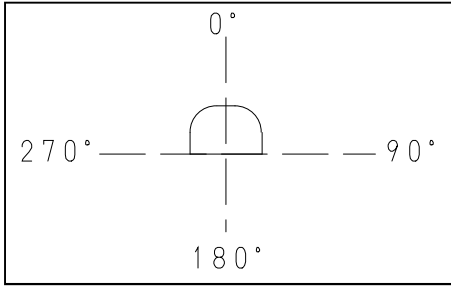


XZ plane



XZ plane



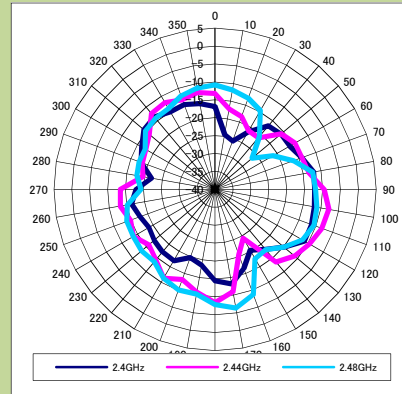


Vertical

(dBi)	
Freq.	V_Ave.
2.4GHz	-7.80
2.44GHz	-5.50
2.48GHz	-5.33

(dBi)	
Freq.	V_Max.
2.4GHz	-2.50
2.44GHz	0.29
2.48GHz	0.37

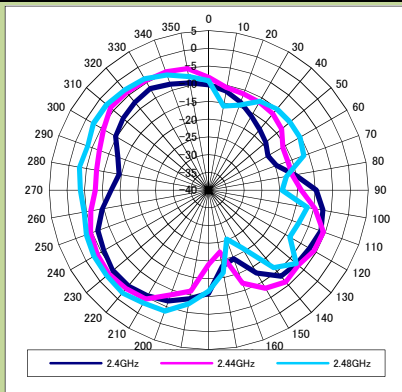
Austin ANT1



Horizontal

(dBi)	
Freq.	H_Ave.
2.4GHz	-15.50
2.44GHz	-12.84
2.48GHz	-12.54

(dBi)	
Freq.	H_Max.
2.4GHz	-11.17
2.44GHz	-7.70
2.48GHz	-6.29

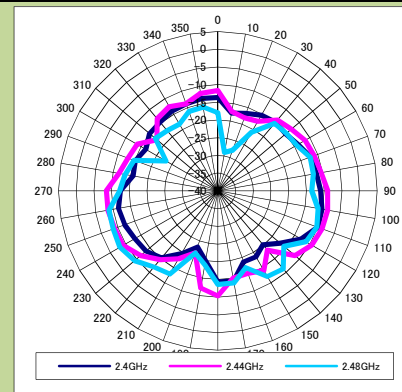


Vertical

(dBi)	
Freq.	V_Ave.
2.4GHz	-9.60
2.44GHz	-8.09
2.48GHz	-7.19

(dBi)	
Freq.	V_Max.
2.4GHz	-5.17
2.44GHz	-4.21
2.48GHz	-3.13

Austin ANT2

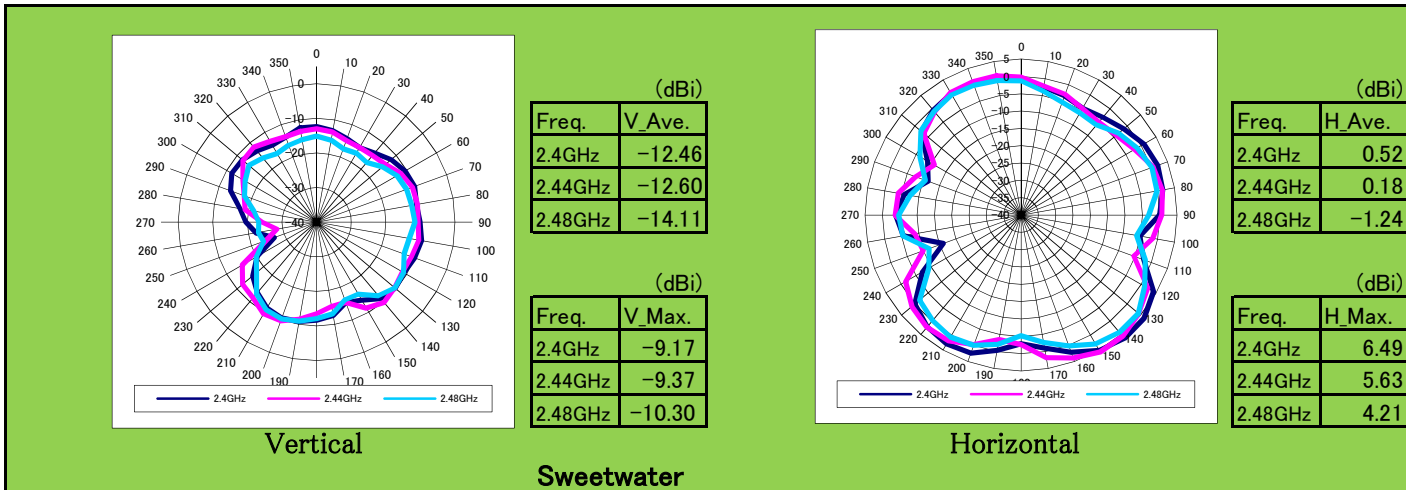
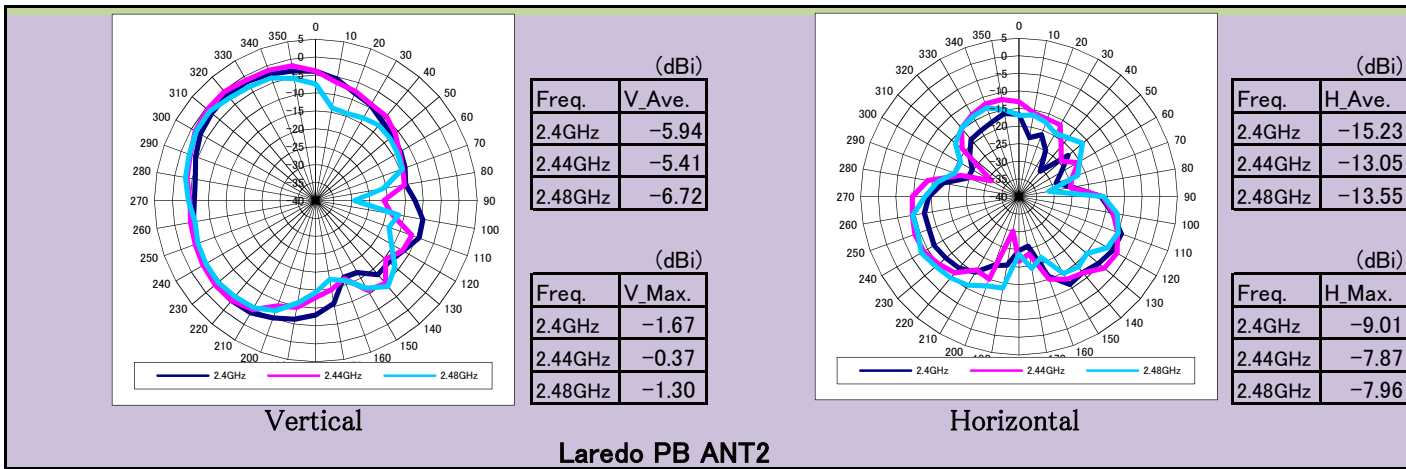
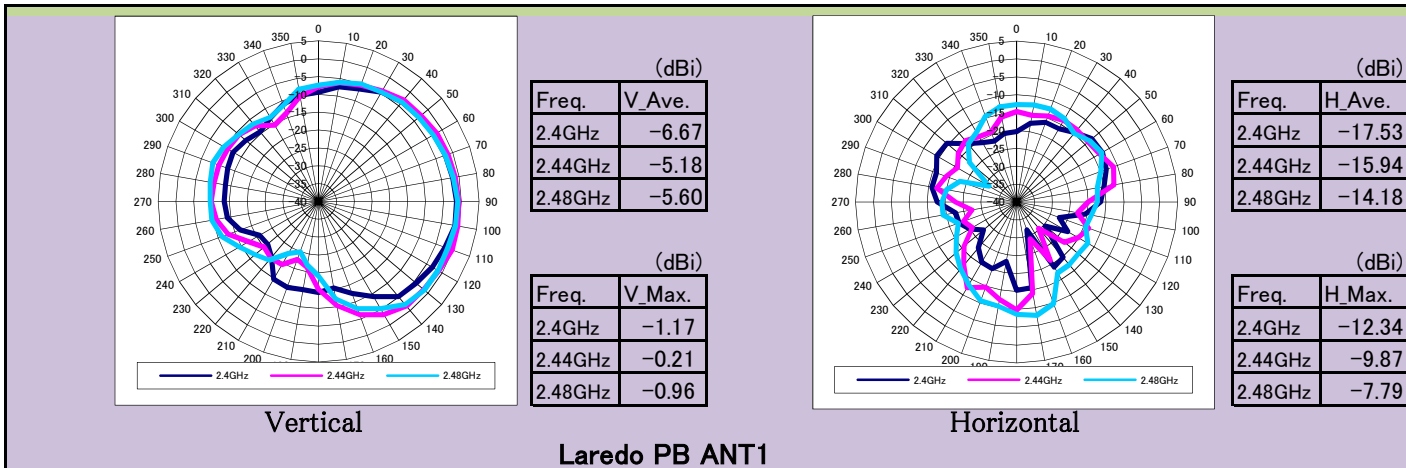
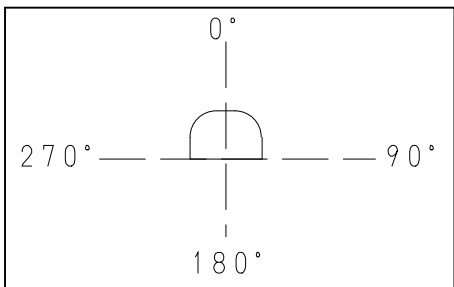


Horizontal

(dBi)	
Freq.	H_Ave.
2.4GHz	-14.55
2.44GHz	-12.86
2.48GHz	-14.21

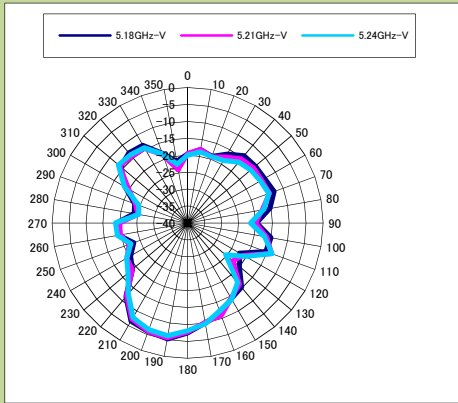
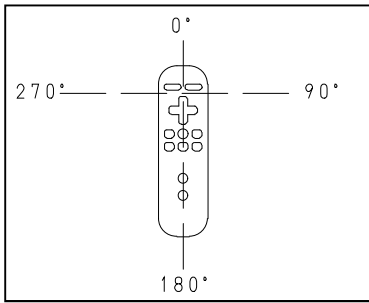
(dBi)	
Freq.	H_Max.
2.4GHz	-10.51
2.44GHz	-9.54
2.48GHz	-9.12

YZ plane





XY plane



Vertical

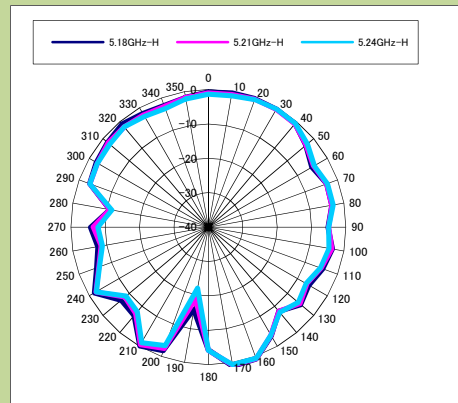
(dBi)

Freq.	V_Ave.
5180MHz	-12.91
5210MHz	-13.29
5240MHz	-13.62

(dBi)

Freq.	V_Max.
5180MHz	-2.68
5210MHz	-2.98
5240MHz	-3.18

Austin ANT1



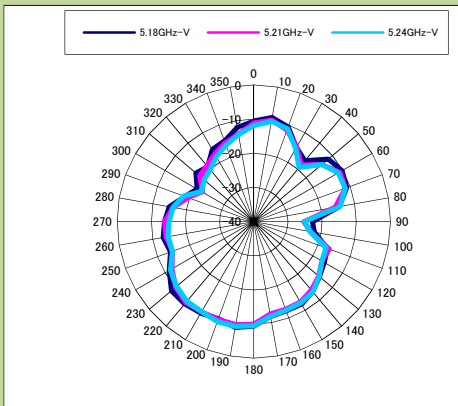
Horizontal

(dBi)

Freq.	H_Ave.
5180MHz	-2.68
5210MHz	-2.98
5240MHz	-3.18

(dBi)

Freq.	H_Max.
5180MHz	1.13
5210MHz	0.86
5240MHz	0.66



Vertical

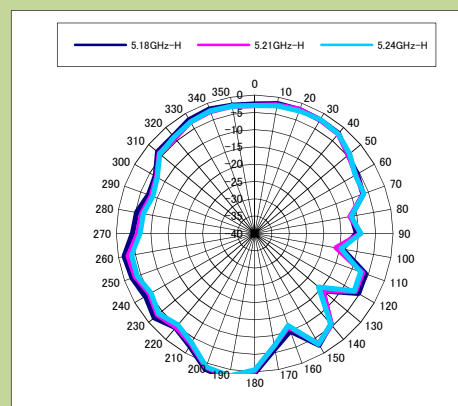
(dBi)

Freq.	V_Ave.
5180MHz	-12.28
5210MHz	-13.01
5240MHz	-13.02

(dBi)

Freq.	V_Max.
5180MHz	-8.54
5210MHz	-8.97
5240MHz	-8.84

Austin ANT2



Horizontal

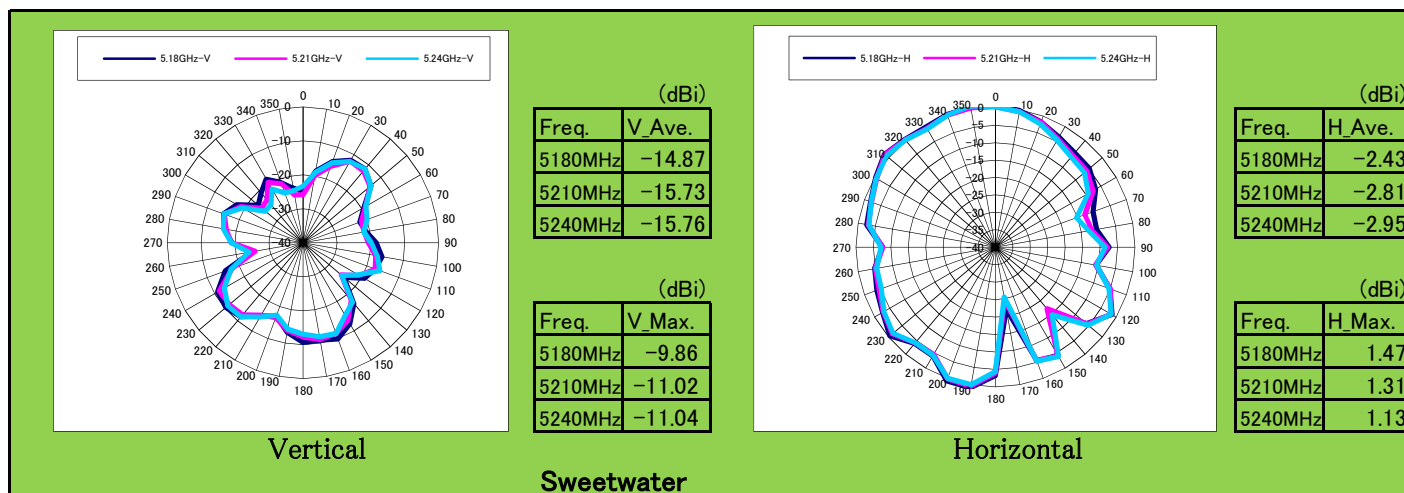
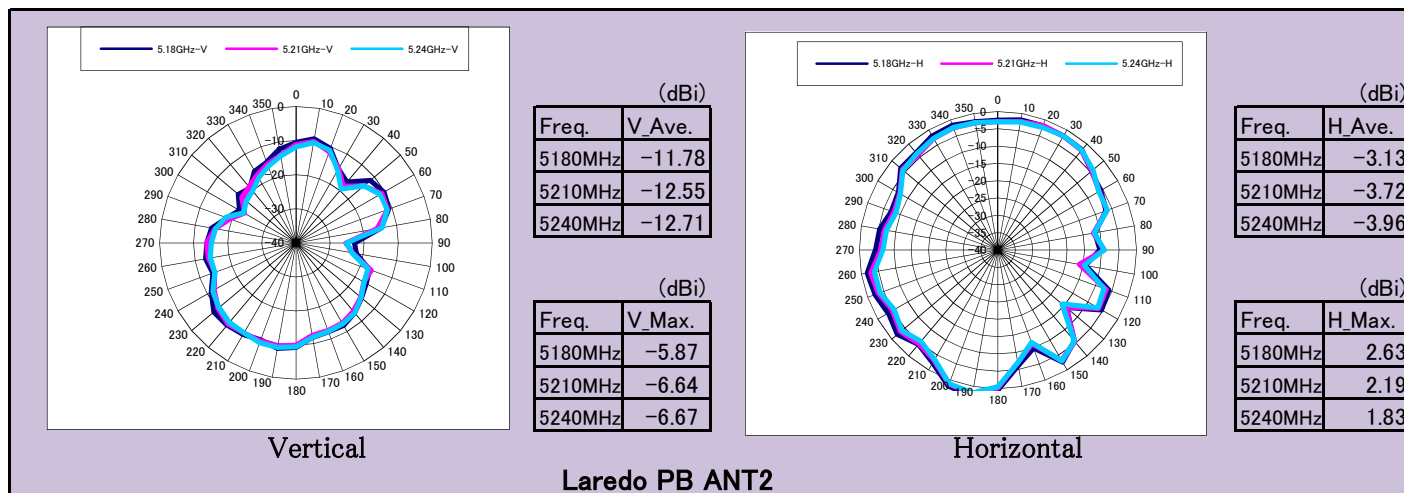
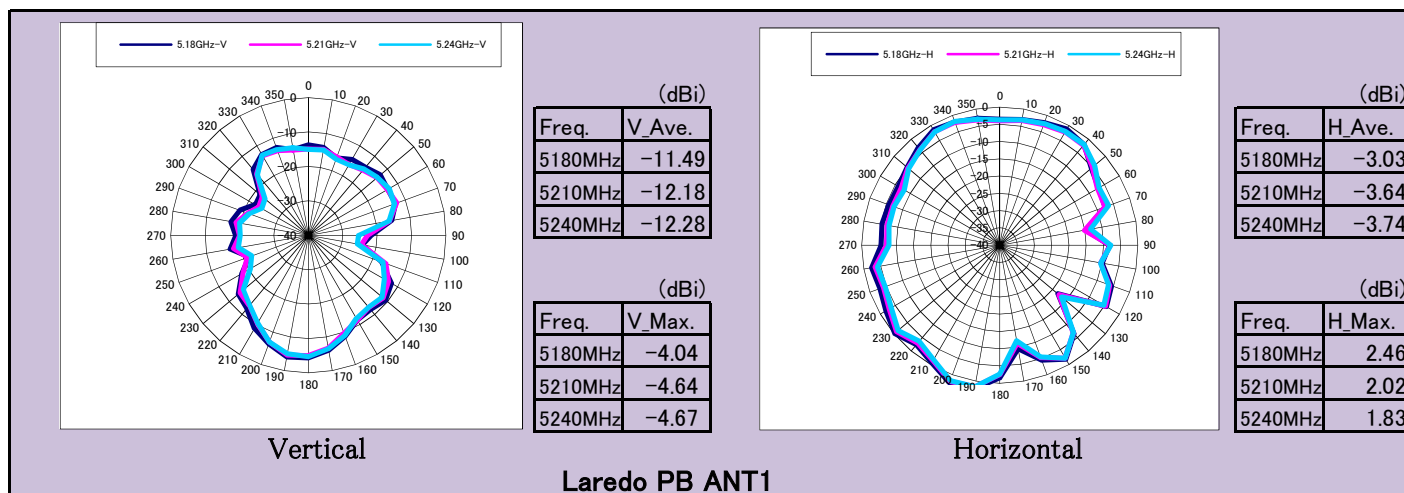
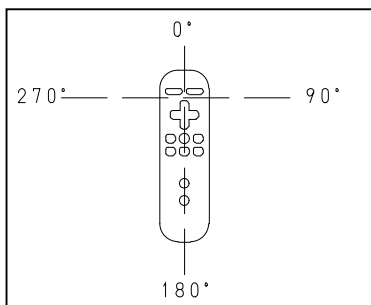
(dBi)

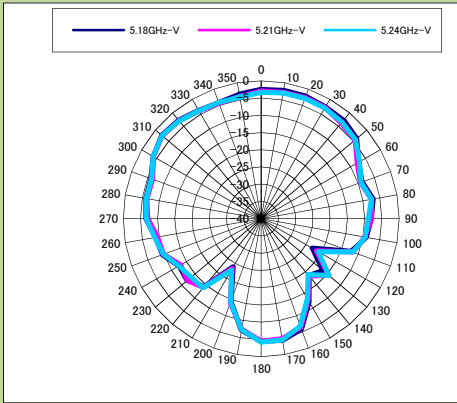
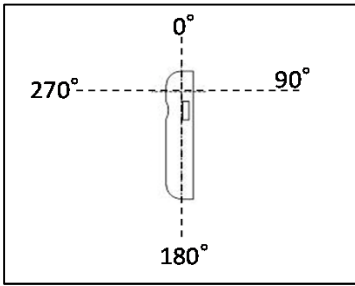
Freq.	H_Ave.
5180MHz	-3.13
5210MHz	-3.72
5240MHz	-3.96

(dBi)

Freq.	H_Max.
5180MHz	2.96
5210MHz	2.36
5240MHz	1.83

XY plane





Vertical

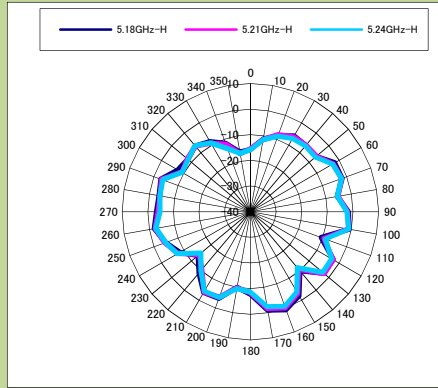
(dBi)

Freq.	V_Ave.
5180MHz	-5.85
5210MHz	-6.24
5240MHz	-6.20

(dBi)

Freq.	V_Max.
5180MHz	-2.21
5210MHz	-2.64
5240MHz	-2.50

Austin ANT1



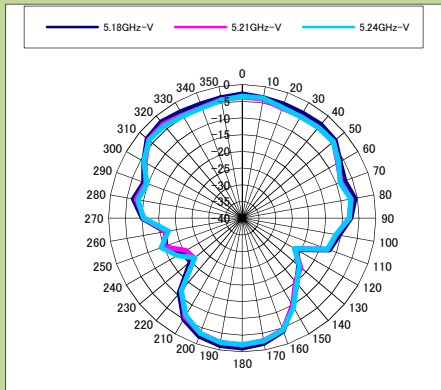
Horizontal

(dBi)

Freq.	H_Ave.
5180MHz	-4.58
5210MHz	-4.94
5240MHz	-5.28

(dBi)

Freq.	H_Max.
5180MHz	0.79
5210MHz	0.02
5240MHz	-0.67



Vertical

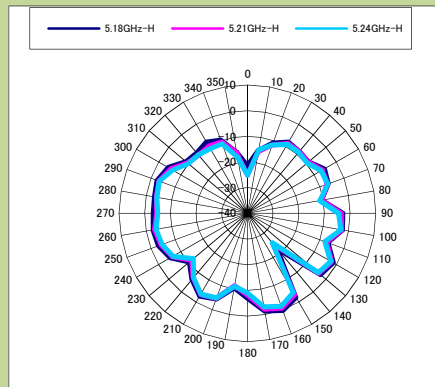
(dBi)

Freq.	V_Ave.
5180MHz	-5.31
5210MHz	-6.10
5240MHz	-6.15

(dBi)

Freq.	V_Max.
5180MHz	-1.21
5210MHz	-1.97
5240MHz	-2.17

Austin ANT2



Horizontal

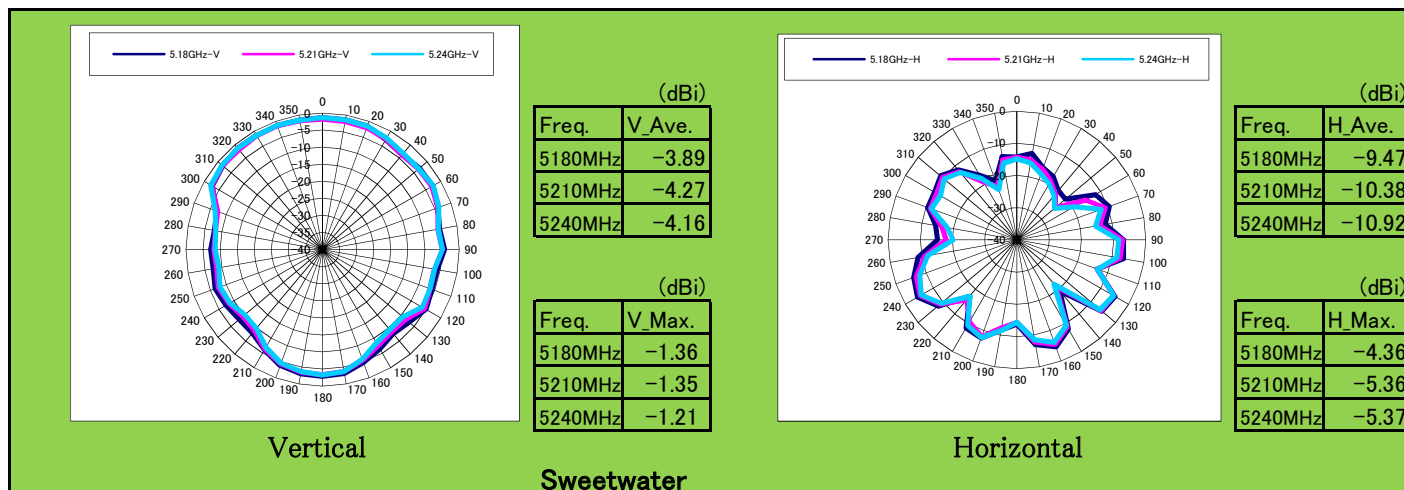
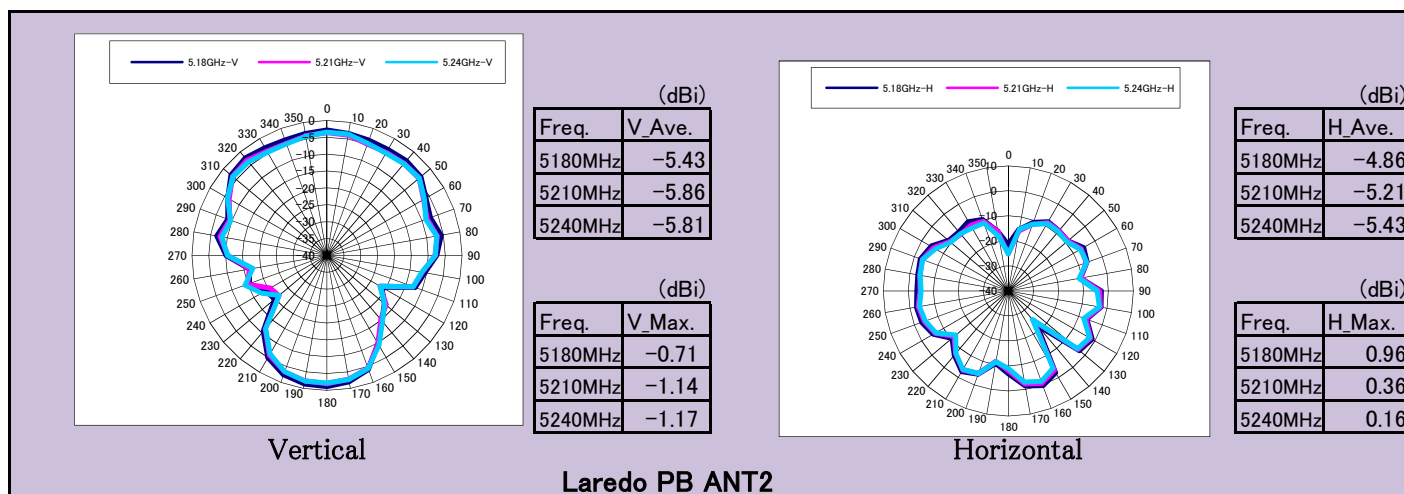
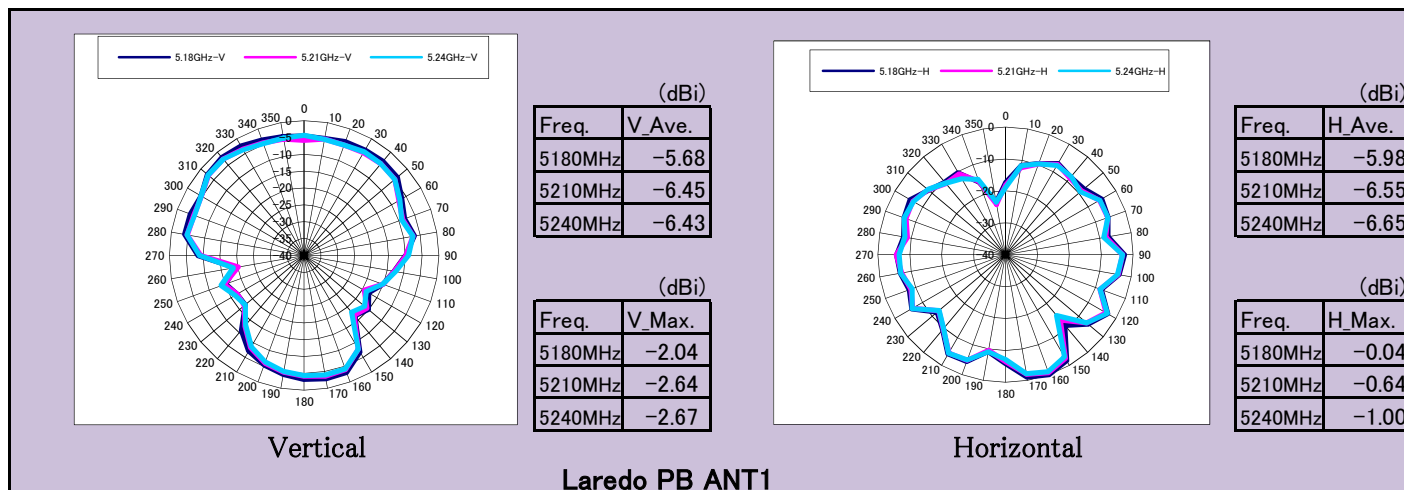
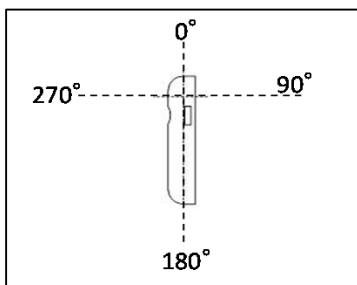
(dBi)

Freq.	H_Ave.
5180MHz	-5.03
5210MHz	-5.79
5240MHz	-6.30

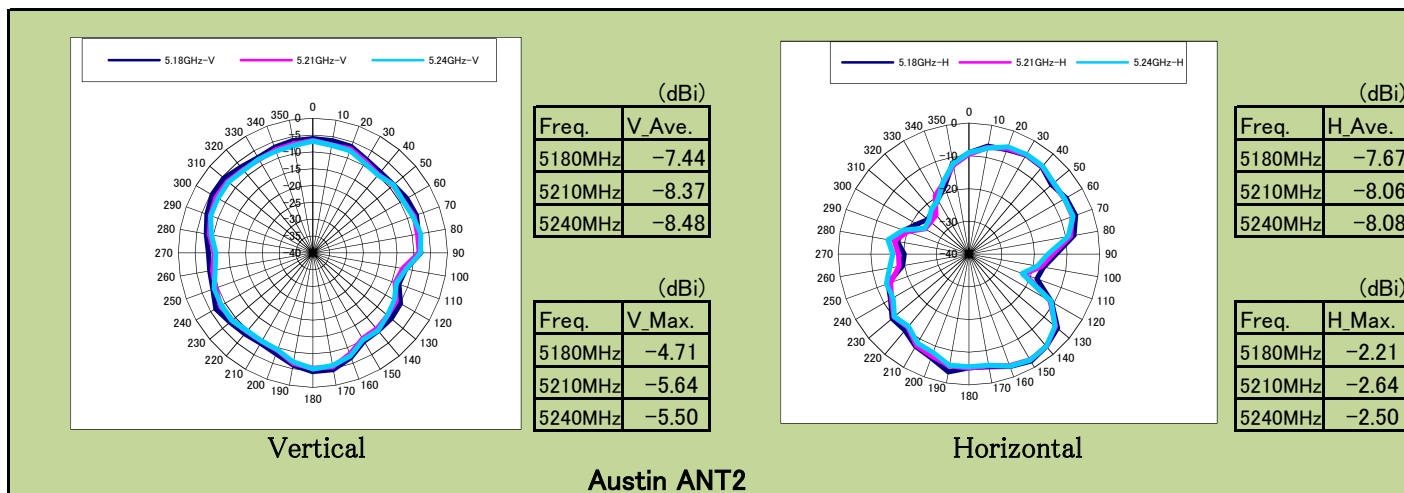
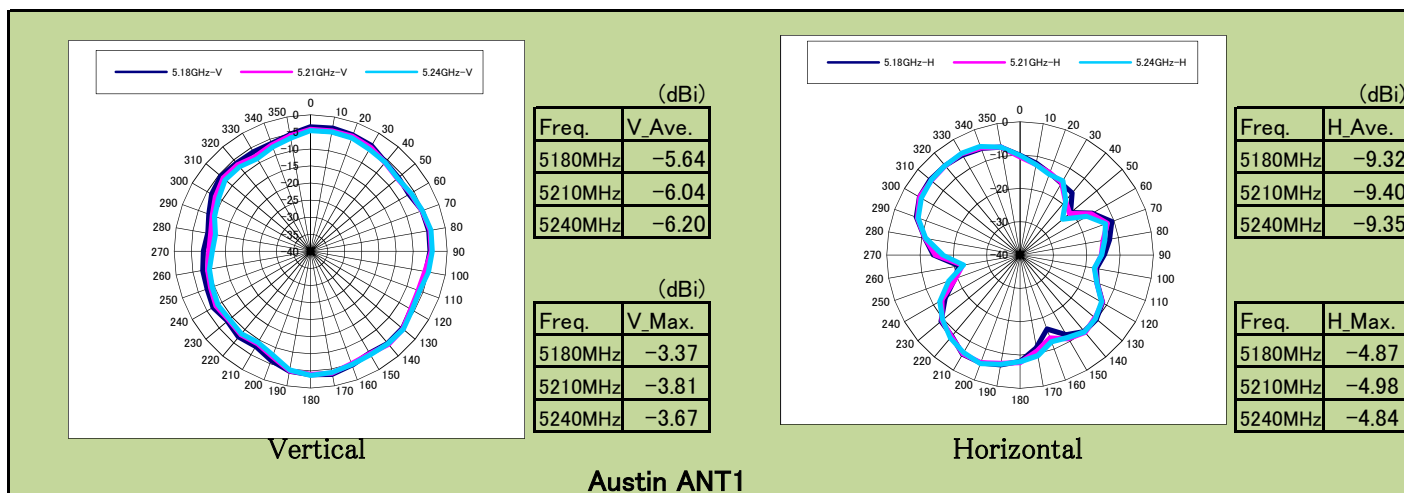
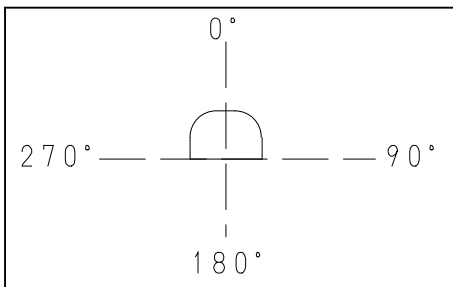
(dBi)

Freq.	H_Max.
5180MHz	0.29
5210MHz	-0.64
5240MHz	-1.50

XZ plane



YZ plane



YZ plane

