

## ANT016008LCD1575MA1

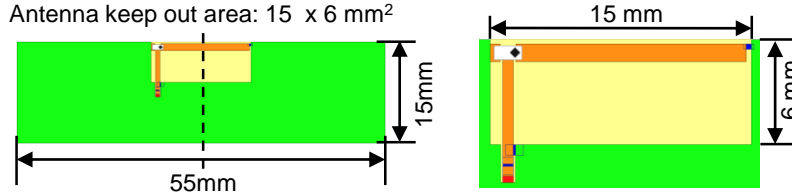


Dimensions (mm)

L	W	T
1.60	0.80	0.40
±0.10	±0.10	Max.

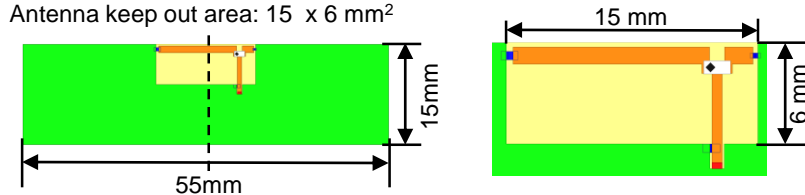
## EVALUATION BOARD FOR SINGLE BAND (GPS)

Antenna Location: Center  
Board size: 55 x 15 x 1 mm<sup>2</sup>  
Antenna keep out area: 15 x 6 mm<sup>2</sup>

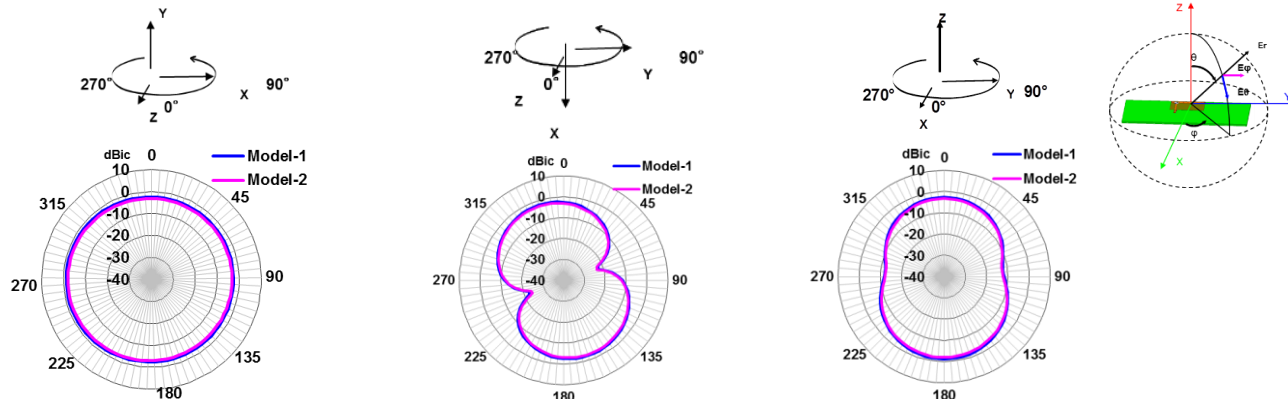


## EVALUATION BOARD FOR DUAL BAND (GPS & 2.4GHz)

Antenna Location: Center  
Board size: 55 x 15 x 1 mm<sup>2</sup>  
Antenna keep out area: 15 x 6 mm<sup>2</sup>



## RHCP RADIATION PATTERN EXAMPLE DATA @1.575GHz



	Model-1	Model-2
Average[dBic]	-2.10	-2.83
Maximum[dBic]	-1.16	-1.95
Minimum[dBic]	-2.65	-3.42

	Model-1	Model-2
Average[dBic]	-5.13	-5.76
Maximum[dBic]	-2.00	-2.64
Minimum[dBic]	-22.79	-23.99

	Model-1	Model-2
Average[dBic]	-4.55	-5.24
Maximum[dBic]	-1.17	-1.95
Minimum[dBic]	-12.08	-12.64

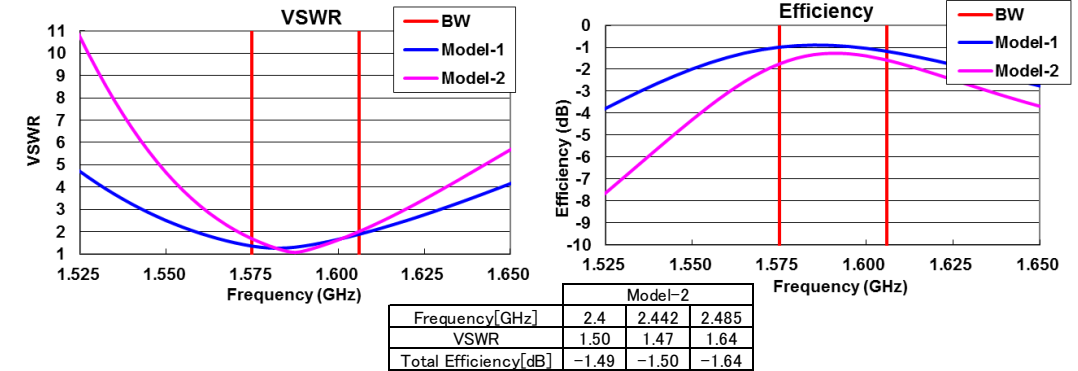
## Z-axis Direction Upper Hemisphere Average Gain

	Model-1	Model-2
Z-X cut	-2.1	-2.8
Z-Y cut	-5.2	-5.8
Total	-3.4	-4.1

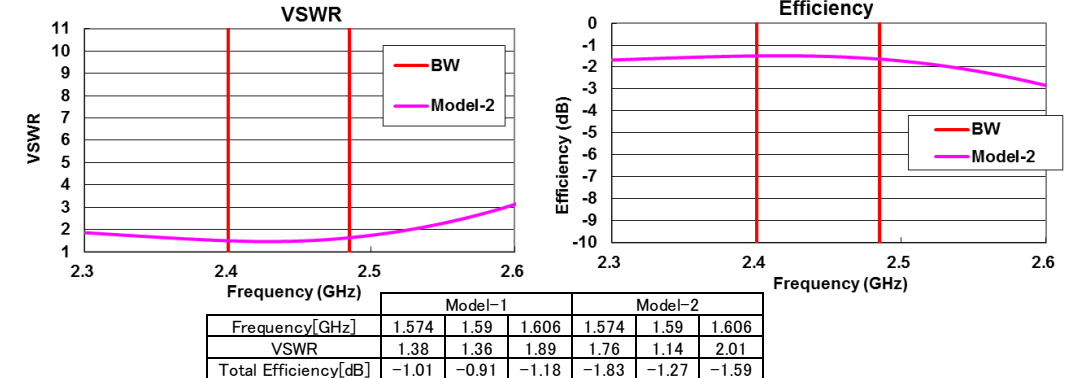
Unit: dBic

## VSWR & EFFICIENCY (SIMULATION RESULTS)

### GPS + GLONASS BAND



### 2.4GHz ISM BAND



## ANT016008LCD1575MA1

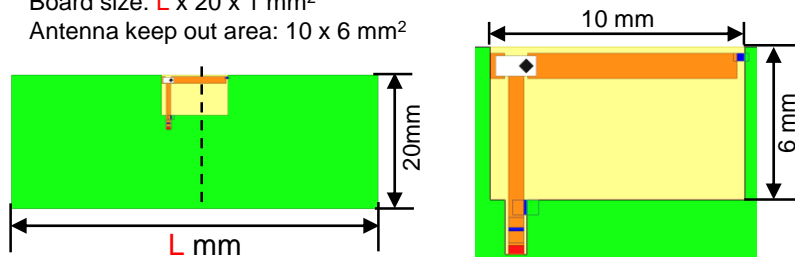


### Dimensions (mm)

L	W	T
1.60	0.80	0.40
±0.10	±0.10	Max.

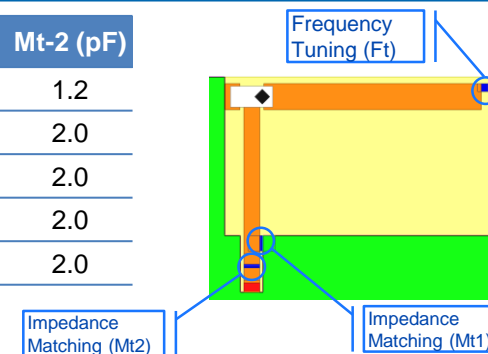
## EVALUATION BOARD

Antenna Location: Center  
Board size: L x 20 x 1 mm<sup>2</sup>  
Antenna keep out area: 10 x 6 mm<sup>2</sup>

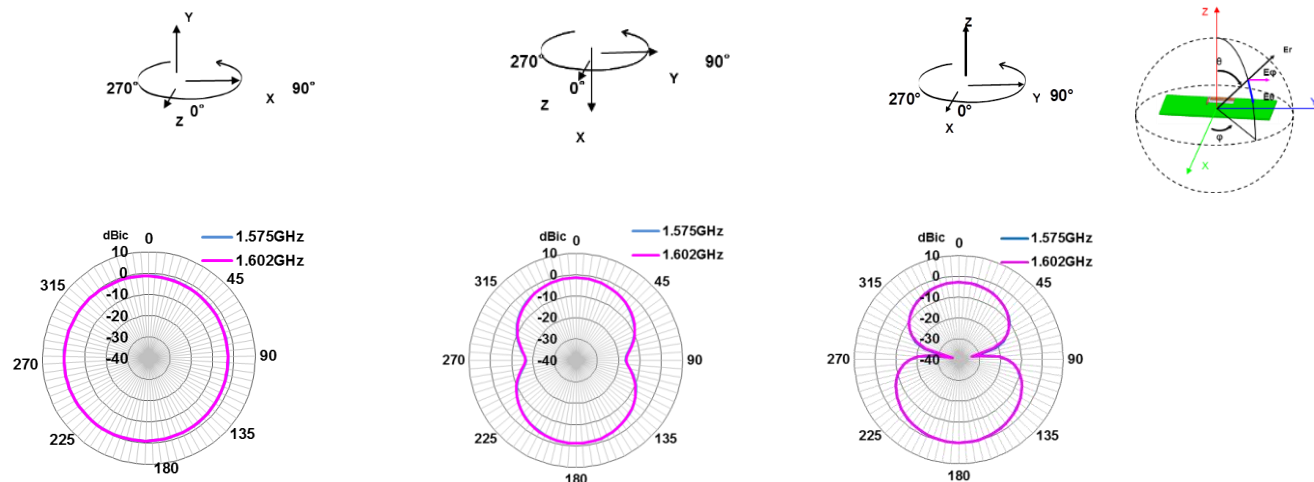


## TUNING COMPONENTS

	Ft (pF)	Mt-1 (pF)	Mt-2 (pF)
L = 40mm	3.6	-	1.2
L = 60mm	3.0	0.5	2.0
L = 80mm	4.0	1.5	2.0
L = 100mm	5.0	0.8	2.0
L = 120mm	5.2	0.2	2.0



## RHCP RADIATION PATTERN EXAMPLE DATA (MEASUREMENT L=80mm)

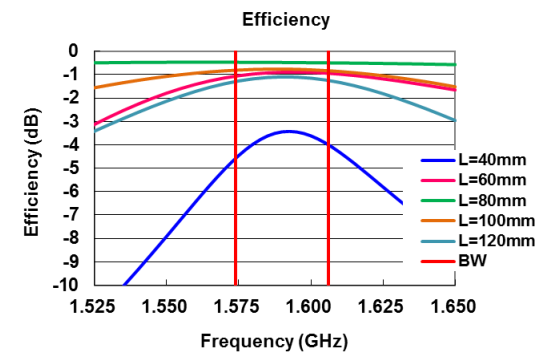
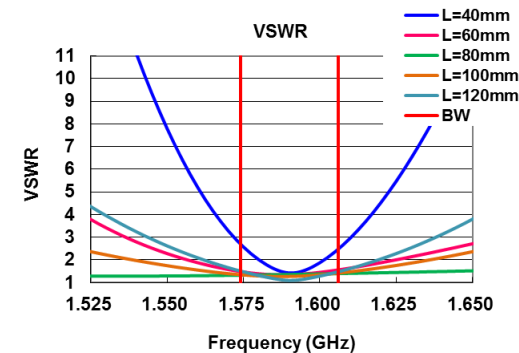


	1.575GHz	1.602GHz
Average[dBic]	-1.2	-1.2
Maximum[dBic]	-0.1	-0.1
Minimum[dBic]	-2.8	-2.9

	1.575GHz	1.602GHz
Average[dBic]	-4.5	-4.5
Maximum[dBic]	-1.1	-1.1
Minimum[dBic]	-16.7	-16.5

	1.575GHz	1.602GHz
Average[dBic]	-4.5	-4.5
Maximum[dBic]	-0.1	-0.1
Minimum[dBic]	-34.5	-36.9

## VSWR & EFFICIENCY (SIMULATION RESULTS)



Item	GPS band						Glonass band					
	VSWR			Efficiency			VSWR			Efficiency		
Frequency(GHz)	1.574	1.575	1.576	1.574	1.575	1.576	1.598	1.602	1.606	1.598	1.602	1.606
L=40mm	2.7	2.6	2.4	-4.6	-4.5	-4.4	1.7	2.1	2.5	-3.5	-3.7	-4.0
L=60mm	1.5	1.5	1.4	-1.1	-1.0	-1.0	1.4	1.5	1.6	-0.9	-0.9	-0.9
L=80mm	1.3	1.3	1.3	-0.5	-0.5	-0.5	1.4	1.4	1.4	-0.5	-0.5	-0.5
L=100mm	1.3	1.3	1.3	-0.8	-0.8	-0.8	1.3	1.4	1.4	-0.8	-0.8	-0.8
L=120mm	1.5	1.5	1.4	-1.3	-1.3	-1.3	1.2	1.3	1.5	-1.1	-1.2	-1.2

## ANT016008LCD1575MA1

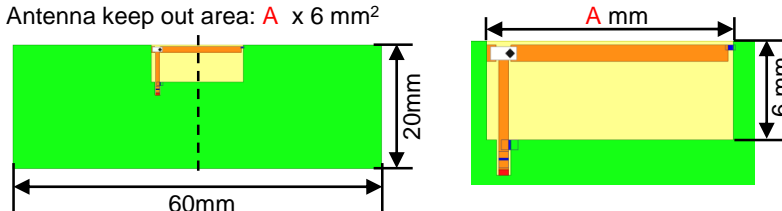


Dimensions (mm)

L	W	T
1.60	0.80	0.40
±0.10	±0.10	Max.

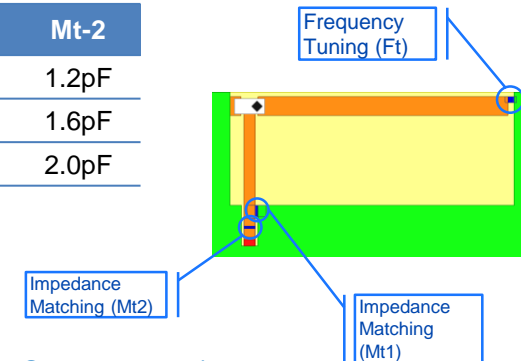
## EVALUATION BOARD

Antenna Location: Center  
 Board size: 60 x 20 x 1 mm<sup>2</sup>  
 Antenna keep out area: A x 6 mm<sup>2</sup>

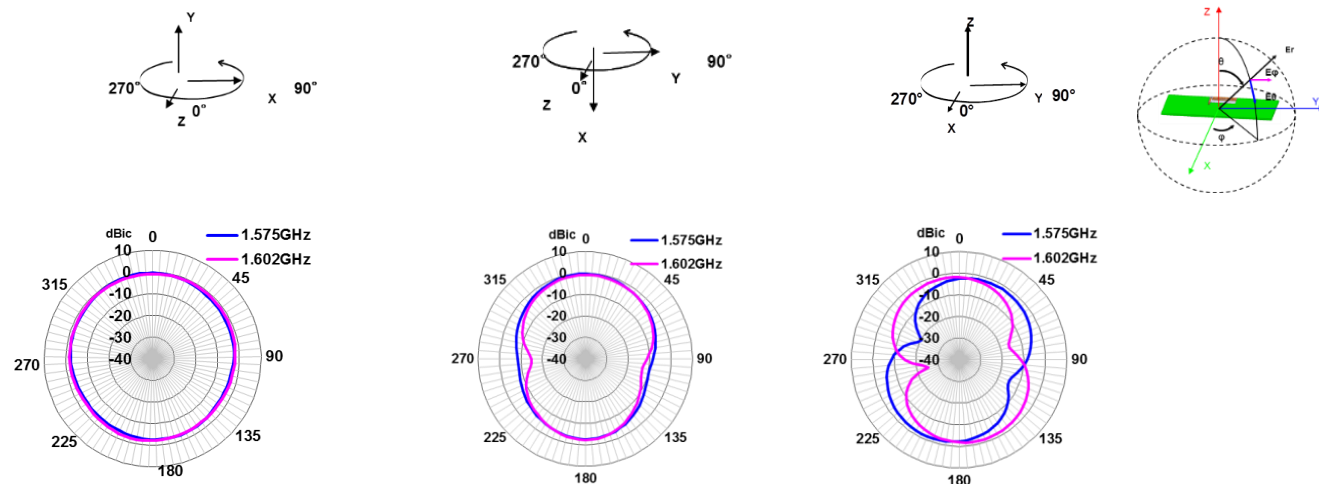


## TUNING COMPONENTS

	Ft	Mt-1	Mt-2
A = 5 mm	1.8nH	-	1.2pF
A = 10 mm	2.7pF	-	1.6pF
A = 15 mm	1.1pF	-	2.0pF



## RHCP RADIATION PATTERN EXAMPLE DATA (MEASUREMENT A= 15mm)

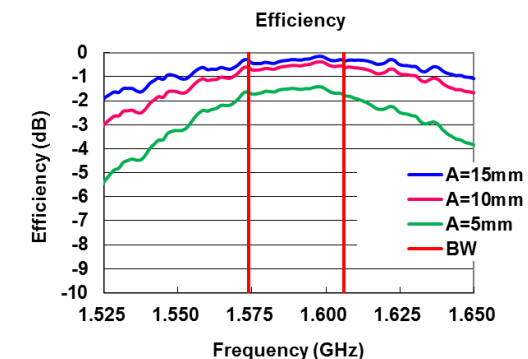
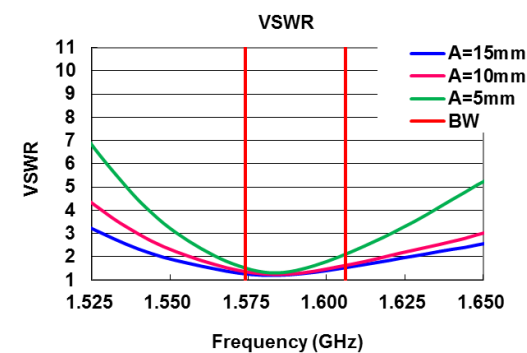


	1.575GHz	1.602GHz
Average[dBic]	-2.10	-1.74
Maximum[dBic]	-0.33	-0.70
Minimum[dBic]	-3.63	-3.19

	1.575GHz	1.602GHz
Average[dBic]	-3.81	-4.48
Maximum[dBic]	-0.35	-0.82
Minimum[dBic]	-9.62	-14.92

	1.575GHz	1.602GHz
Average[dBic]	-4.51	-4.49
Maximum[dBic]	-1.67	-1.44
Minimum[dBic]	-20.34	-25.18

## VSWR & EFFICIENCY (MEASUREMENT)



Item	GPS band						Glonass band					
	VSWR			Efficiency			VSWR			Efficiency		
Frequency(GHz)	1.574	1.575	1.576	1.574	1.575	1.576	1.598	1.602	1.606	1.598	1.602	1.606
A=15mm	1.26	1.25	1.23	-0.34	-0.43	-0.45	1.37	1.44	1.53	-0.15	-0.33	-0.32
A=10mm	1.36	1.34	1.32	-0.63	-0.71	-0.72	1.42	1.53	1.63	-0.38	-0.56	-0.59
A=5mm	1.52	1.48	1.44	-1.66	-1.72	-1.72	1.70	1.90	2.11	-1.42	-1.66	-1.76

## ANT016008LCD1575MA1

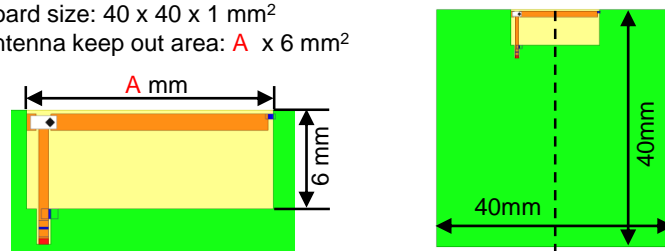


Dimensions (mm)

L	W	T
1.60	0.80	0.40
±0.10	±0.10	Max.

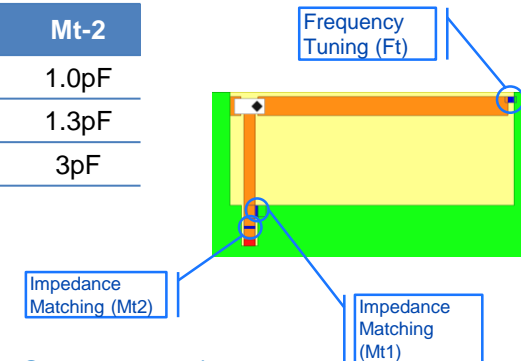
## EVALUATION BOARD

Antenna Location: Center  
 Board size: 40 x 40 x 1 mm<sup>2</sup>  
 Antenna keep out area: A x 6 mm<sup>2</sup>

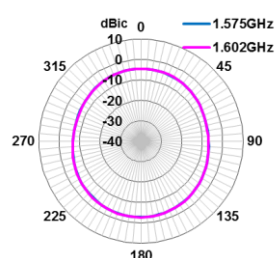
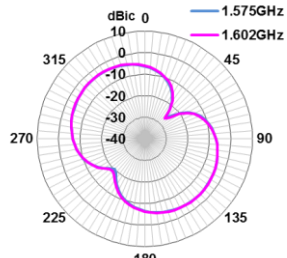
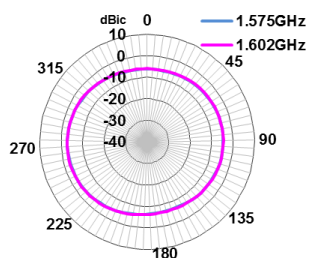
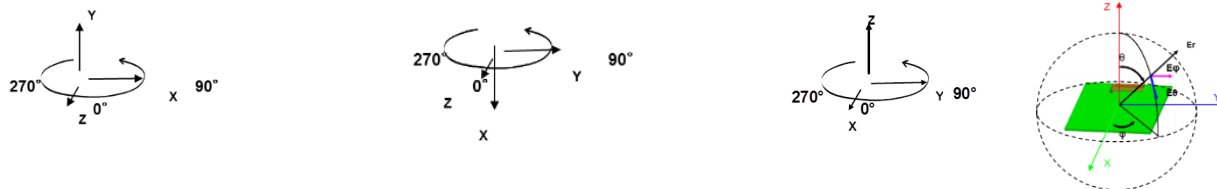


## TUNING COMPONENTS

	Ft	Mt-1	Mt-2
A = 5 mm	2.2nH	-	1.0pF
A = 10 mm	3.8pF	-	1.3pF
A = 15 mm	1.4pF	-	3pF



## RHCP RADIATION PATTERN EXAMPLE DATA (MEASUREMENT A= 15mm)

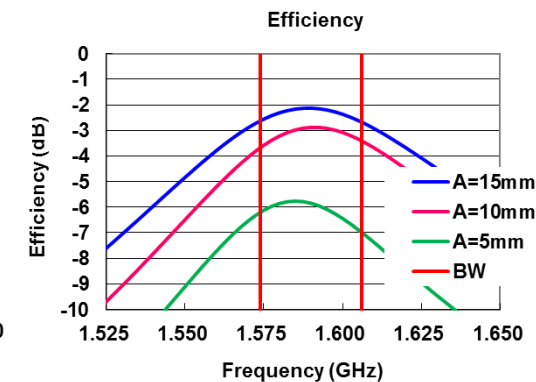
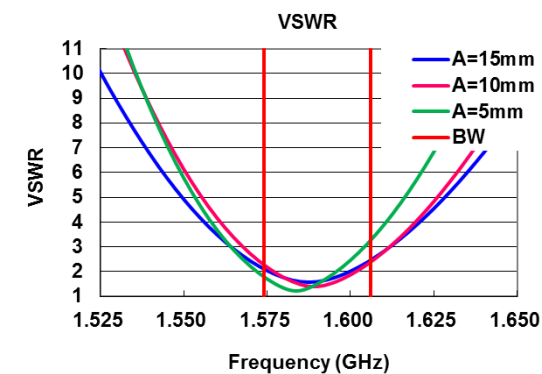


	1.575GHz	1.602GHz
Average[dBic]	-4.7	-4.5
Maximum[dBic]	-2.8	-2.7
Minimum[dBic]	-6.7	-6.5

	1.575GHz	1.602GHz
Average[dBic]	-6.5	-6.4
Maximum[dBic]	-3.4	-3.3
Minimum[dBic]	-26.4	-26.7

	1.575GHz	1.602GHz
Average[dBic]	-4.9	-4.8
Maximum[dBic]	-2.8	-2.7
Minimum[dBic]	-7.0	-7.1

## VSWR & EFFICIENCY (MEASUREMENT)



Item	GPS band						Glonass band					
	VSWR			Efficiency			VSWR			Efficiency		
Frequency(GHz)	1.574	1.575	1.576	1.574	1.575	1.576	1.598	1.602	1.606	1.598	1.602	1.606
A=15mm	2.1	2.0	2.0	-2.6	-2.6	-2.5	1.9	2.2	2.5	-2.3	-2.5	-2.7
A=10mm	2.3	2.2	2.1	-3.7	-3.6	-3.5	1.7	2.0	2.4	-3.0	-3.2	-3.4
A=5mm	1.8	1.7	1.6	-6.2	-6.1	-6.1	2.2	2.7	3.3	-6.3	-6.6	-7.0

## ANT016008LCD1575MA1

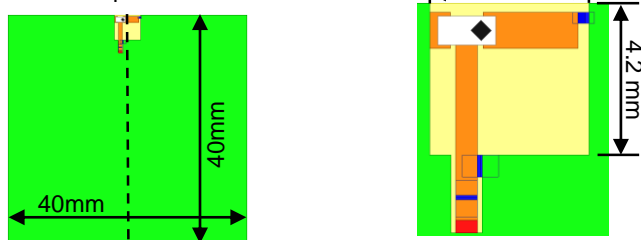


### Dimensions (mm)

L	W	T
1.60	0.80	0.40
±0.10	±0.10	Max.

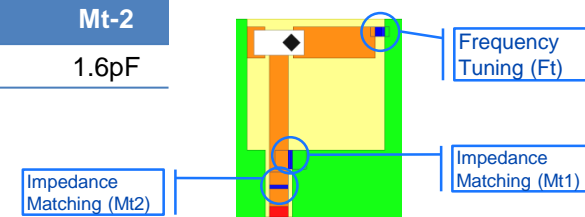
## EVALUATION BOARD

Antenna Location: Center  
 Board size: 40 x 40 x 1 mm<sup>2</sup>  
 Antenna keep out area: 4.4 x 4.2 mm<sup>2</sup>

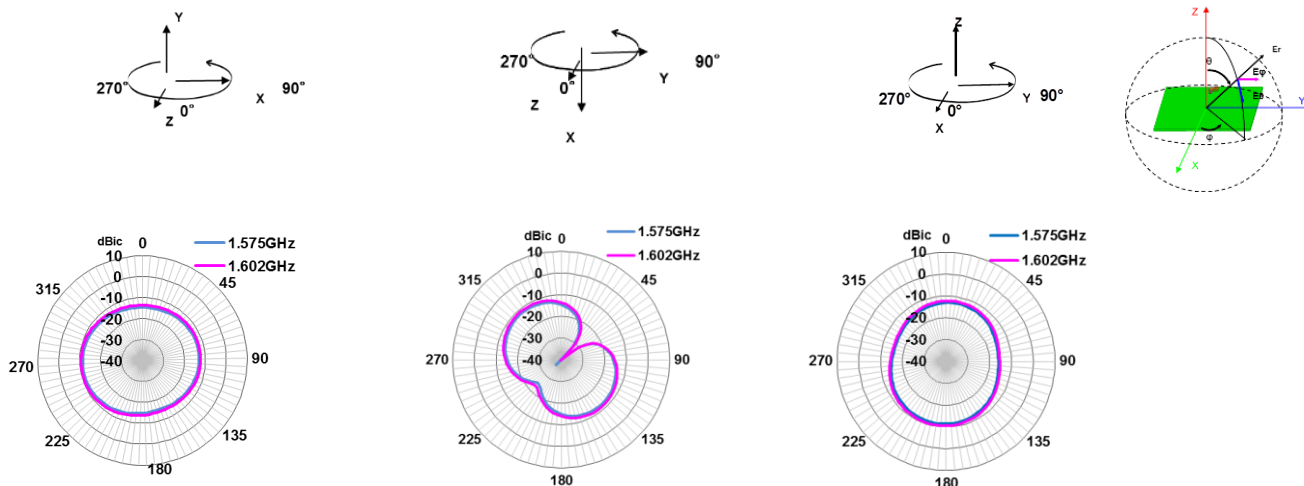


## TUNING COMPONENTS

ANT Area	Ft	Mt-1	Mt-2
4.2 x 4.4 mm	4.5nH	-	1.6pF



## RHCP RADIATION PATTERN EXAMPLE DATA (MEASUREMENT A= 15mm)

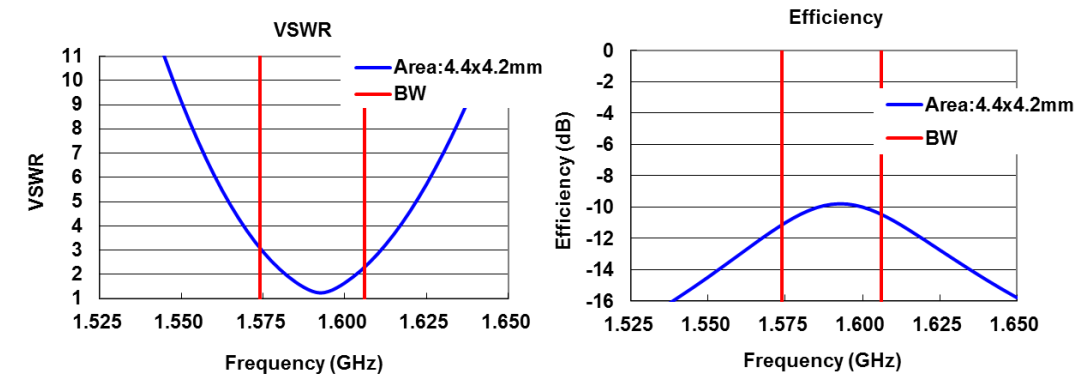


	1.575GHz	1.602GHz
Average[dBic]	-13.2	-12.3
Maximum[dBic]	-11.4	-10.5
Minimum[dBic]	-15.3	-14.3

	1.575GHz	1.602GHz
Average[dBic]	-15.1	-14.2
Maximum[dBic]	-11.9	-11.0
Minimum[dBic]	-43.4	-40.3

	1.575GHz	1.602GHz
Average[dBic]	-13.5	-12.7
Maximum[dBic]	-11.3	-10.4
Minimum[dBic]	-16.0	-15.4

## VSWR & EFFICIENCY (MEASUREMENT)



Item	GPS band						Glonass band					
	VSWR			Efficiency			VSWR			Efficiency		
Frequency(GHz)	1.574	1.575	1.576	1.574	1.575	1.576	1.598	1.602	1.606	1.598	1.602	1.606
Area:4.4x4.2mm	3.1	2.9	2.8	-11.1	-11.0	-10.9	1.5	1.8	2.3	-9.9	-10.2	-10.5