BM180 & BP30 Wifi/BT ANT spec

1. ANT 3D Gain & Eff

No.	Freq.[MHz]		θ-Pol(H)						φ-Pol(V)						PwrSum				
			Eff.[%]	Avg.[dBi]	Peak[dBi]	θ[deg]	φ[deg]		Eff.[%]	Avg.[dBi]	Peak[dBi]	θ[deg]	φ[deg]		Eff.[%]	Avg.[dBi]	Peak[dBi]	θ[deg]	φ[deg]
1	2400		41.3	-3.84	2.31	150	165		7.56	-11.22	1.45	180	270		48.85	-3.11	2.87	150	240
2	2440		39.6	-4.02	2.19	150	165		7.47	-11.27	1.29	180	255		47.08	-3.27	2.85	150	240
3	2480		38.25	-4.17	2.32	150	165		7.62	-11.18	1.77	180	270		45.87	-3.38	3	150	255
4	5150		15.09	-8.21	-2.52	150	285		13.43	-8.72	-1.86	180	285		28.51	-5.45	0.56	150	300
5	5500		5.43	-12.65	-4.32	75	240		6.83	-11.65	-2.66	30	315		12.27	-9.11	-2	30	315
6	5825		8	-10.97	-2.7	15	0		7.35	-11.34	-2.86	45	15		15.35	-8.14	-0.94	90	30
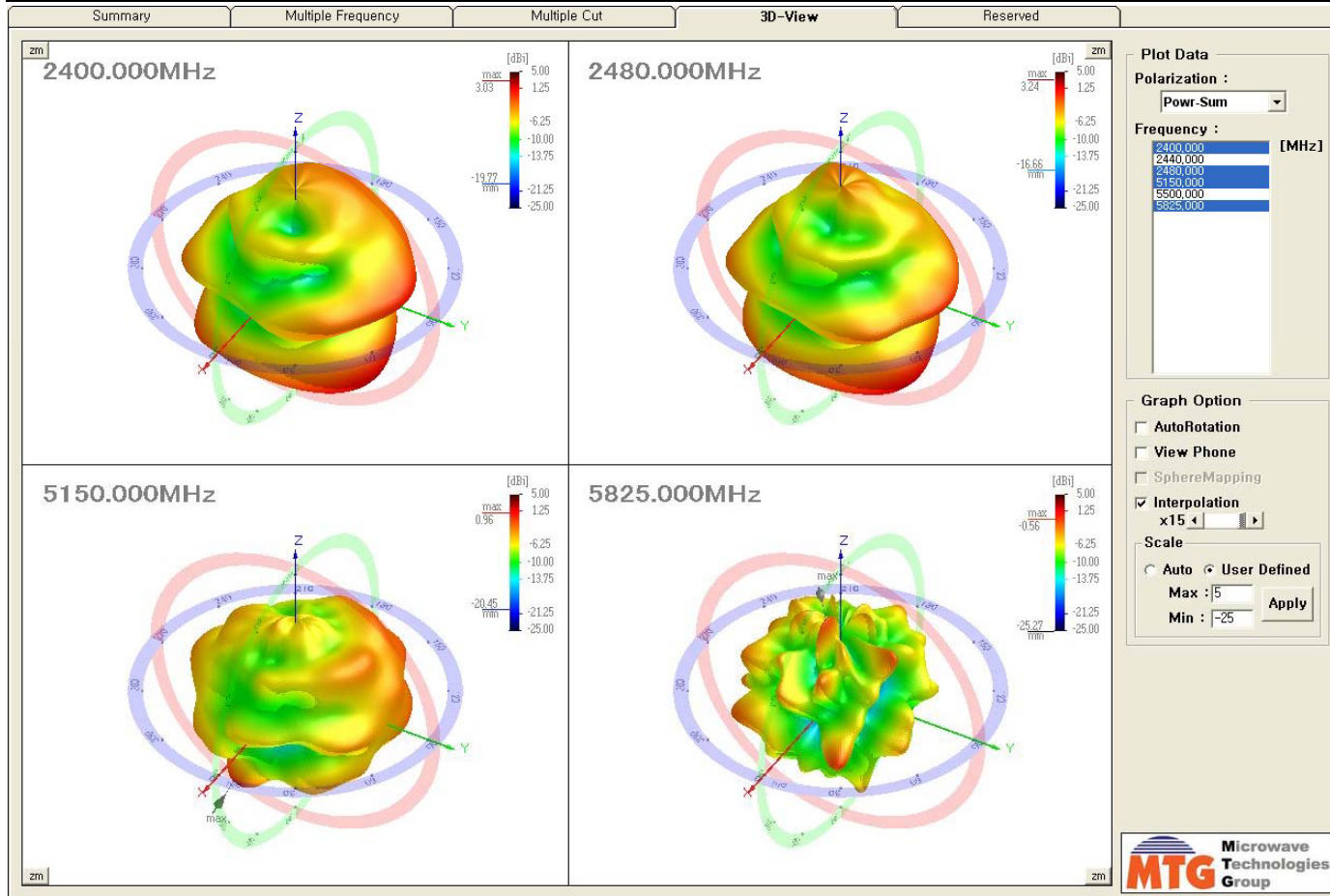
2. V.S.W.R

Frequency(Ghz)	2.4	2.44	2.48	5.15	5.5	5.825
V.S.W.R	1.4799	1.6337	1.85321	2.2561	10.681	13.144
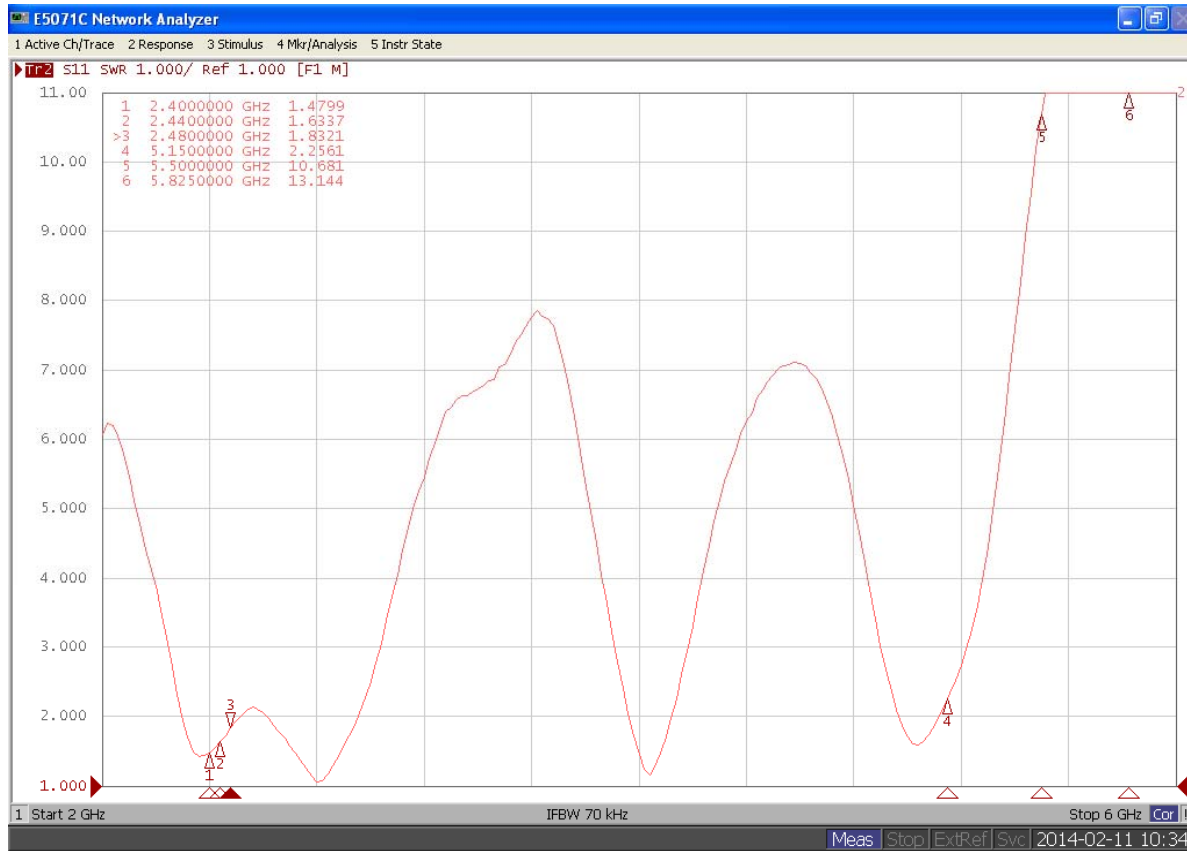
3. ANT 2D E1(V) pattern

No.	Freq.[MHz]	φ-Pol(V) Avg.[dBi]	Peak[dBi]	θ[deg]	Null[dBi]	θ[deg]
1	2400	-11.17	-5.9	-170	-25.94	-160
2	2440	-10.94	-4.48	140	-25.13	90
3	2480	-11.19	-4.64	140	-24.31	-30
4	5150	-1.41	5.18	-60	-19.18	-130
5	5500	-3.01	2.7	-60	-19.64	-70
6	5825	-3.41	2.92	-30	-15.16	60
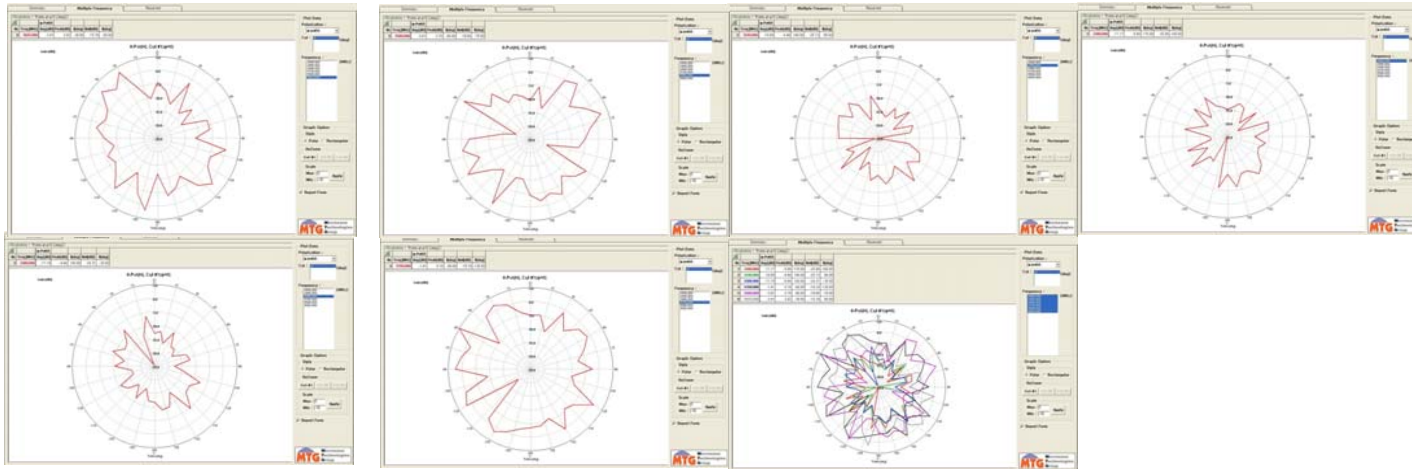
4. ANT 2D E2(V) pattern

No.	Freq.[MHz]	φ-Pol(V) Avg.[dBi]	Peak[dBi]	θ[deg]	Null[dBi]	θ[deg]
1	2400	-6.19	1.31	-180	-21.22	80
2	2440	-5.6	2.4	-180	-22.99	-80
3	2480	-5.47	2.59	-180	-43.55	120
4	5150	-2.46	2.99	-150	-19.14	0
5	5500	-2.67	3.34	-150	-26.86	-2.1
6	5825	-2.1	3.07	-140	-19.19	120
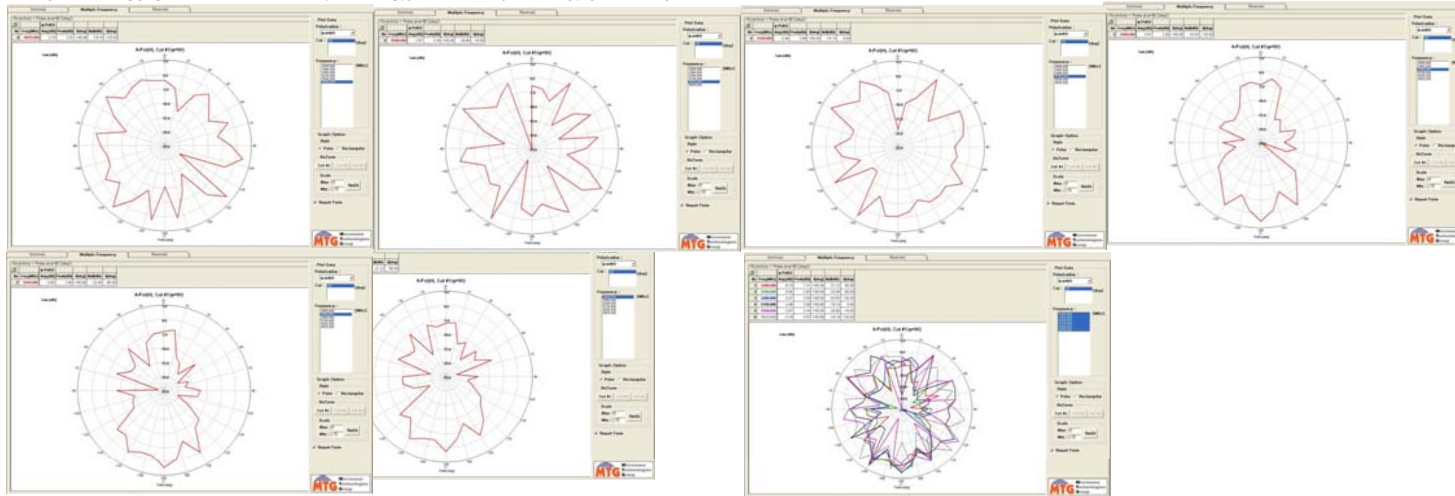
5. ANT 2D H pattern

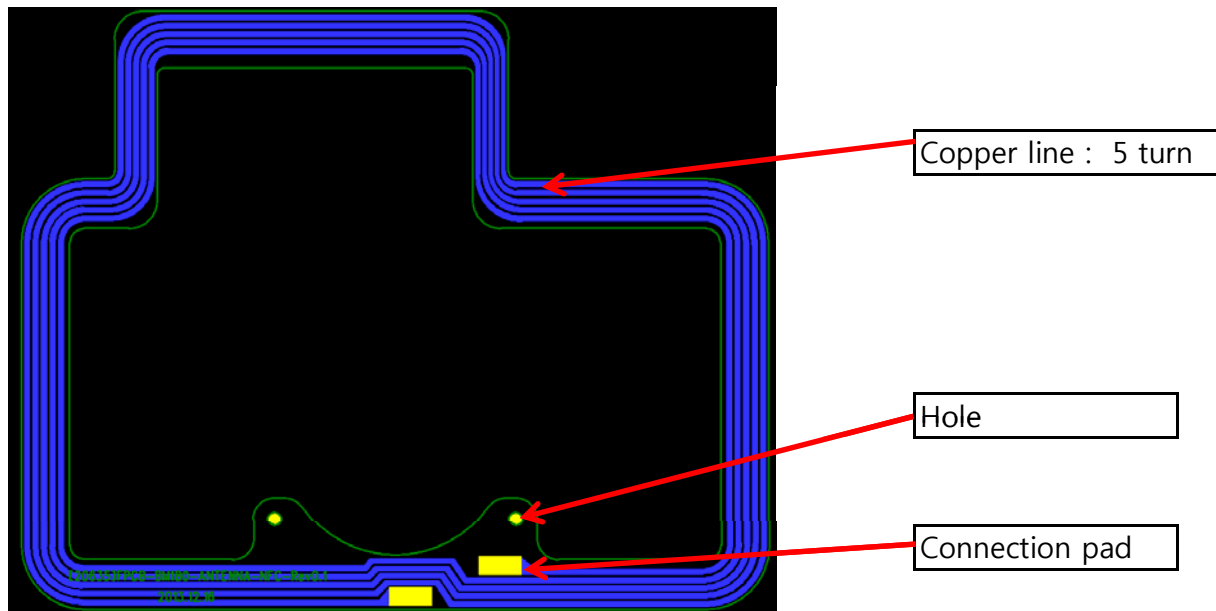| No.	Freq.[MHz]	Avg.[dBi]	Peak[dBi]	θ[deg]	Null[dBi]	θ[deg]
1	2400	-3.94	-1	100	-9.27	340
2	2440	-3.59	-1	90	-8.34	340
3	2480	-3.57	-1.15	100	-7.34	340
4	5150	-7.86	-3.19	70	-13.83	330
5	5500	-12.49	-5.6	110	-23.53	10
6	5825	-8.65	-1.34	110	-30.94	40
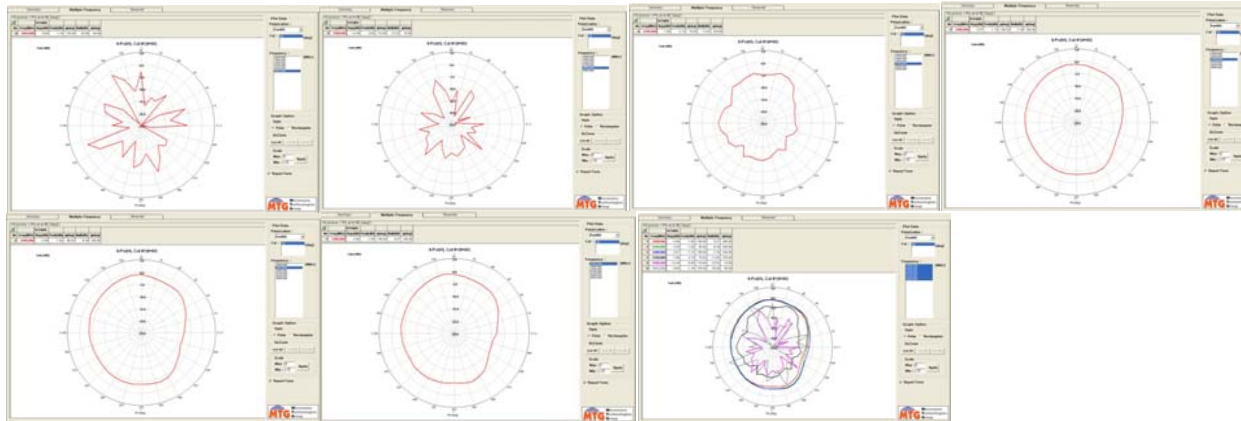
BM180 & BP30 RFID ANT spec

1. Frequecy : 13.56Mhz(HF)

2. Type : FPCB - single side

3. Laminated spec

CS COVERLAY	COVERLAY	13		13
	ADHESIVE	15		15
1L FCCL (BASE)	COPPER	12		
	POLYIMIDE	13		13
TAPE	Double Tape	50		

4. shape & copper line

Copper line : 5 turn

Hole

Connection pad

PIDION®
by Bluebird

Edge 1

5.7mm   5.7mm

62mm   63mm

6.6mm   WIFI ANTENNA   GPS   3.4mm

Front View

Edge 2

134.3mm   134.3mm

Edge 3

PIDION®
by Bluebird

Edge 1

26.9mm   16.9mm

11.3mm   NFC   11.4mm

Front View

Edge 4   Edge 2

92.3mm

Edge 3