



Antenna PERFORMANCE TEST REPORT

Product Name	VVK10
Applicant	Innocomm
Manufacturer	Innocomm
Test site	Innocomm
Model	Thor_VVK10
Antenna type	Monopole
Address	1F, No.6, Hsin Ann Rd., Hsinchu Science Park, Hsinchu 30078, Taiwan

Approved by	Reviewed by	Issued by
Taka Wei		Ella Lin

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1. INTRODUCTION

1.1 TEST EQUIPMENT

Passive Test:

Network Analyzer: R/S ZVB8 (9KHz ~ 8.5GHz)

Passive Chamber: Atenlab OTA 200

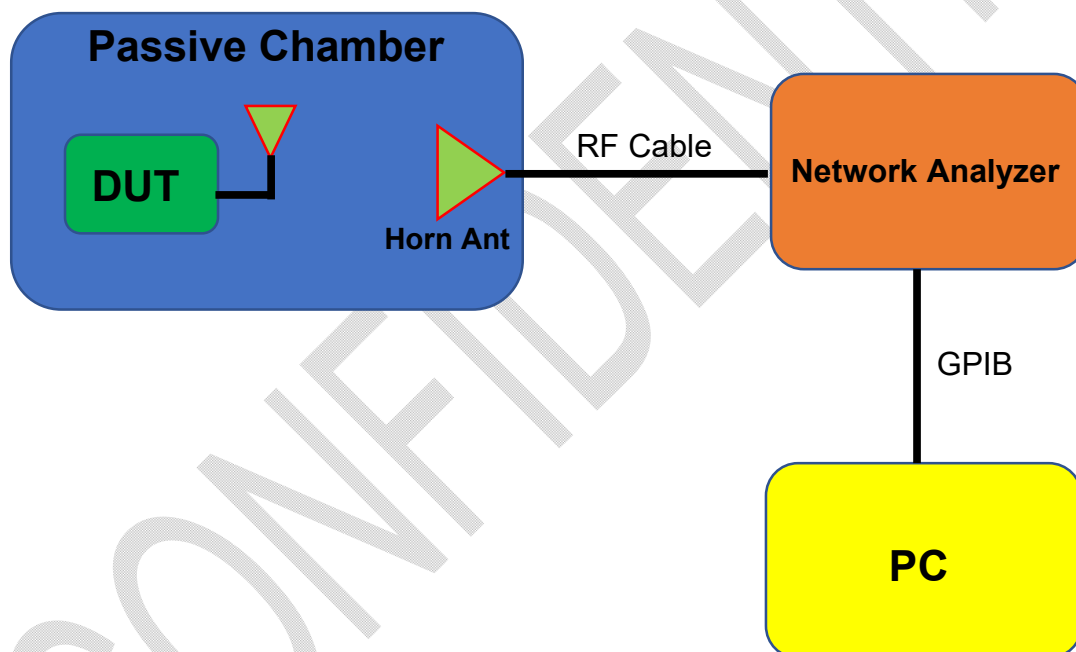
1.2 TEST CONDITION

Support Band: WiFi/BT 2.4G(2402MHz~2480MHz) WiFi 5G(4910MHz~5835MHz)

Sub-G (850MHz~928MHz)

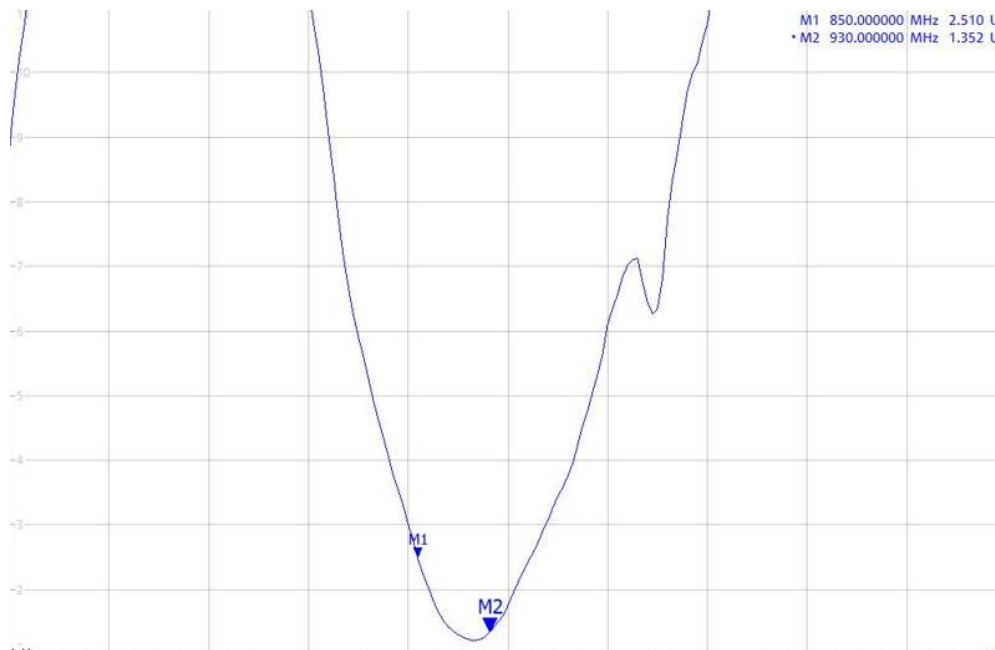
Temperature: 25°C

1.3 TEST SETUP AND ENVIRONMENTS

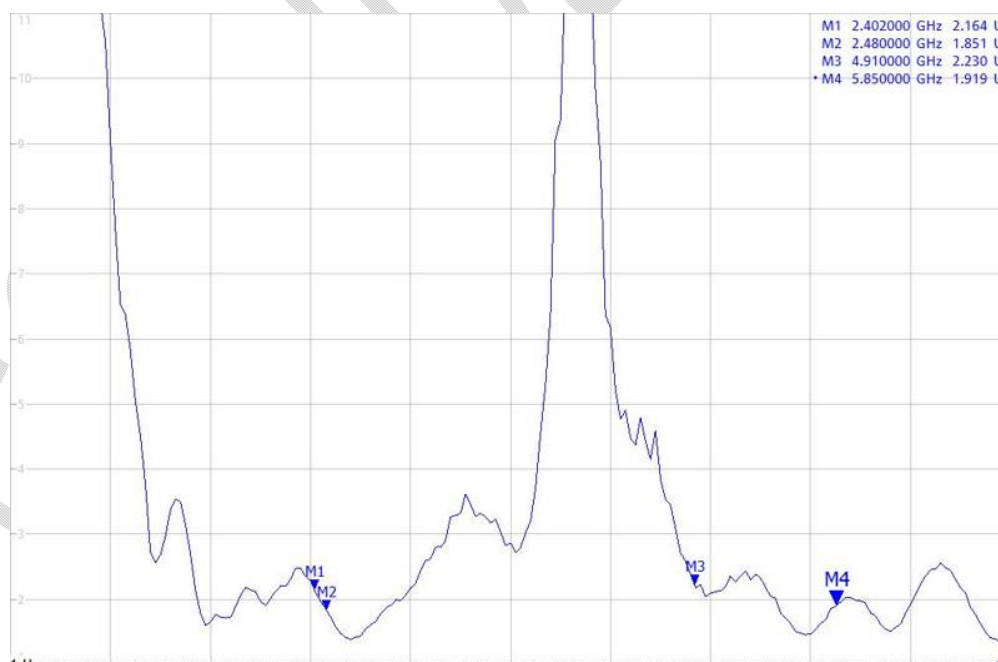


2. PASSIVE PERFORMANCE TEST

2.1 VSWR MEASUREMENT



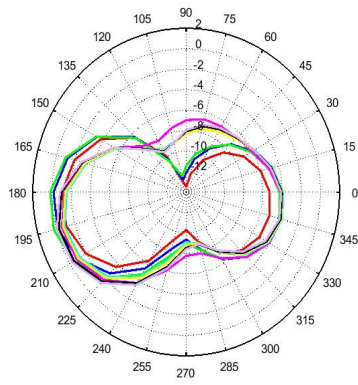
Sub-G (850MHz~928MHz)



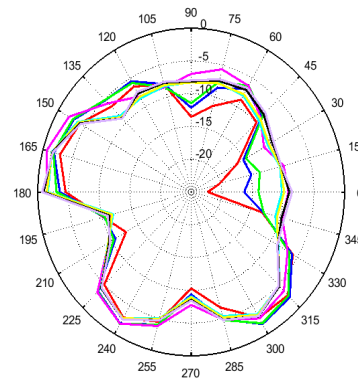
WiFi/BT 2.4G(2402MHz~2480MHz) WiFi 5G(4910MHz~5835MHz)

2.2 RADIATION PATTERN

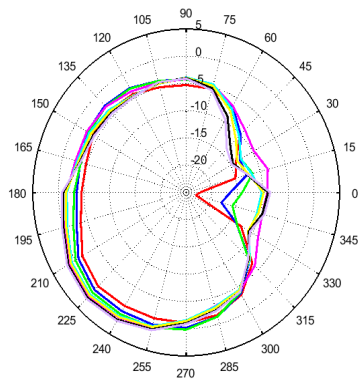
Total_Polar Graph_H_XY Plane



Total_Polar Graph_E2_YZ Plane



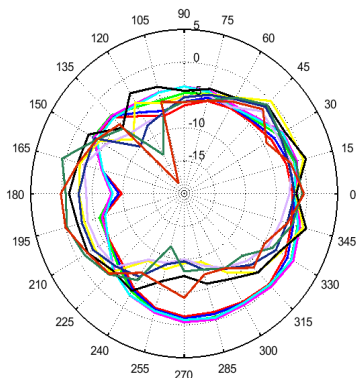
Total_Polar Graph_E1_XZ Plane



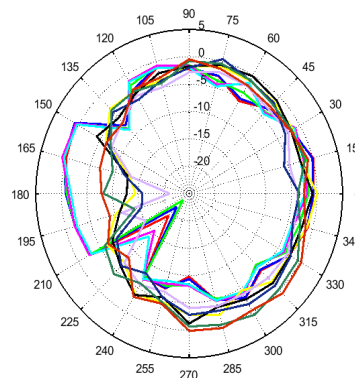
	Color	Freq./Chan.
1	Red	850MHz
2	Blue	863MHz
3	Green	868MHz
4	Magenta	902MHz
5	Cyan	917MHz
6	Yellow	920MHz
7	Black	925MHz
8	Purple	928MHz

Sub-G (850MHz~928MHz)

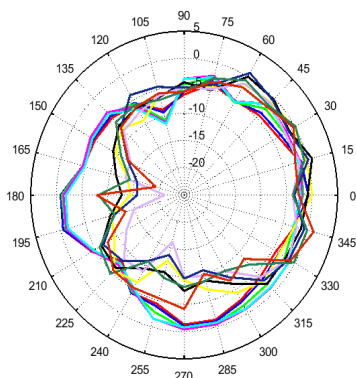
Total_Polar Graph_H_XY Plane



Total_Polar Graph_E1_XZ Plane



Total_Polar Graph_E2_YZ Plane



	Color	Freq./Chan.
1	Red	2.402GHz
2	Blue	2.412GHz
3	Green	2.442GHz
4	Cyan	2.472GHz
5	Magenta	2.482GHz
6	Yellow	4.91GHz
7	Black	5.05GHz
8	Purple	5.18GHz
9	Dark Blue	5.32GHz
10	Dark Green	5.62GHz
11	Dark Red	5.835GHz

WiFi/BT 2.4G(2402MHz~2480MHz) WiFi 5G(4910MHz~5835MHz)

2.3 AVERAGE EFFICIENCY PEAK GAIN

	Average efficiency (%)	Average Gain (dBi)	Peak Gain (dBi)
Sub-G	39.35	-4.06	1.6
	Average efficiency (%)	Average Gain (dBi)	Peak Gain (dBi)
WiFi/BT_2.4G	53.38	-2.74	2.7
WiFi_5G	46.39	-3.37	2.81

2.4 3D GAIN OF FREE SPACE(AVERAGE)

	VVK10		
	Frequency (MHz)	Gain (dBi)	Efficiency %
Sub-G 850MHz~928MHz	850M	-4.88	32.51
	863M	-4	39.81
	868M	-3.88	40.93
	902M	-3.57	43.95
	917M	-4.15	38.46
	920M	-4.11	38.82
	925M	-3.96	40.18
	928M	-3.96	40.18
	Frequency (MHz)	Gain (dBi)	Efficiency %
WiFi/BT 2402MHz~2482MHz	2402M	-3.26	47.21
	2412M	-2.99	50.23
	2442M	-2.68	53.95
	2472M	-2.27	59.29
	2482M	-2.5	56.23
WiFi 4910MHz~5835MHz	4910M	-3.03	49.77
	5050M	-2.82	52.24
	5180M	-4.51	35.4
	5320M	-3.52	44.46
	5620M	-2.99	50.23
	5835M	-3.35	46.24