

Winmate Inc.
AntennaSpecification

Project :M140TG
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1. Wi-Fi Main Antenna Specification

Winmate Part Number: 90RF0500001V

1.1. Electrical Characteristics

Frequency(MHz): 2400-2500 / 5150-7150

SWR: $\leq 1.45@2400-2500\text{MHz}$

$\leq 2.25@5150-7150\text{MHz}$

Return Loss: $\leq -19.84\text{dB}@2400-2500\text{MHz}$

$\leq -13.8\text{dB}@5150-7150\text{MHz}$

Peak Gain: $1.89\text{dBi}@2400-2500\text{MHz}$

$3.48\text{dBi}@5150-7150\text{MHz}$

Impedance: 50ohm

Polarization: Linear

1.2. Mechanical Characteristics

Cable: 50Ω φ 0.81 RF cable

Connector: MHF4

PCB: FR4 /Thickness 0.8mm

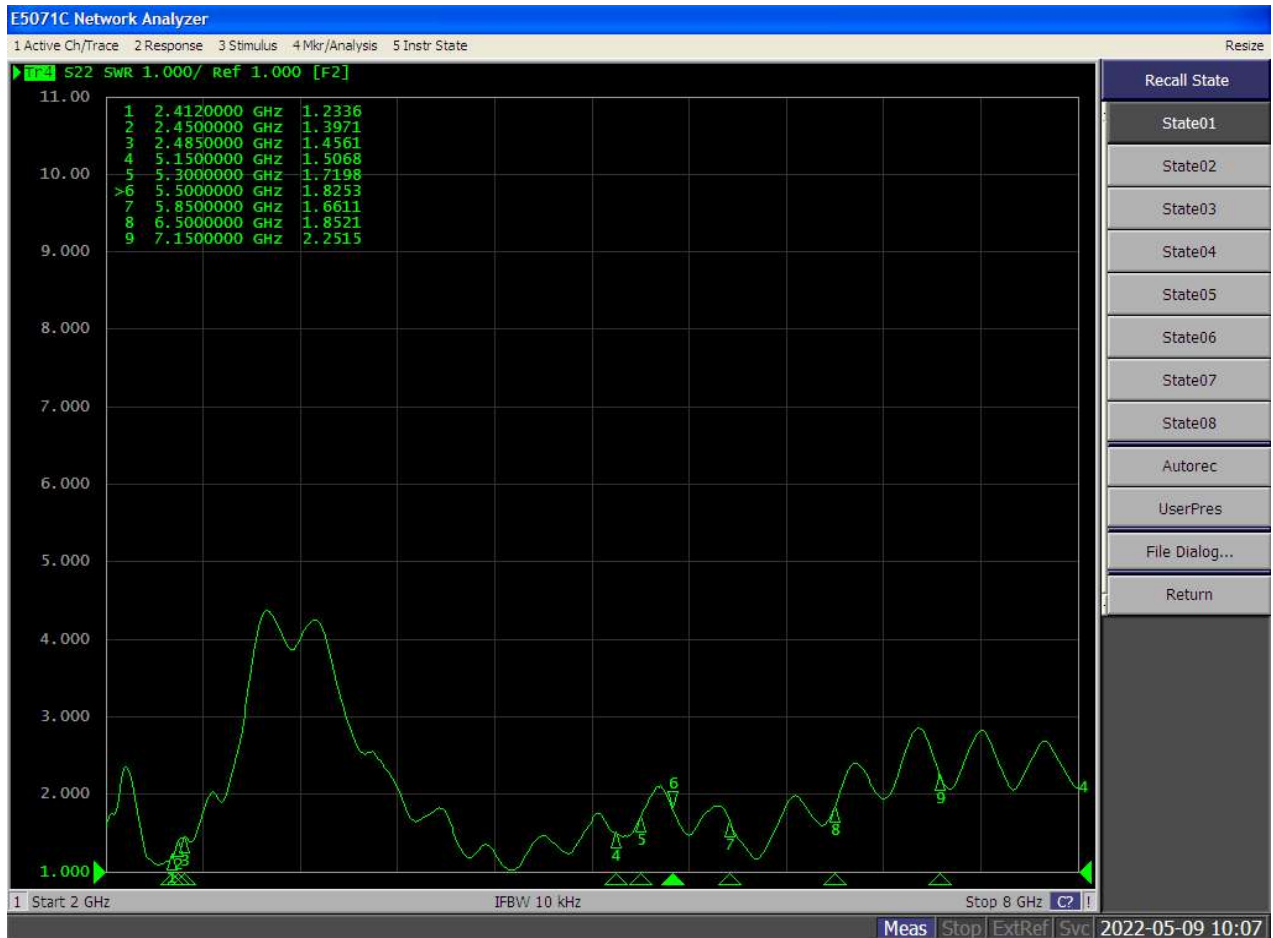
Type:Dipole

1.3. Environmental Characteristics

Operating Temperature: -30°C to 80°C

1.4. RF Performance Characteristics

1.4.1. SWR



1.4.2. Return Loss



1.4.3. Gain / Efficiency

Frequency	2400	2427	2450	2472	2500	5150	5250	5350	5470	5540
Directivity (dBi)	5.90	6.09	5.84	5.50	5.46	7.01	6.94	7.56	7.68	8.04
Efficiency (dB)	-4.42	-4.20	-4.04	-4.06	-4.14	-4.26	-4.41	-4.93	-5.02	-4.80
Efficiency (%)	36.11	38.01	39.42	39.28	38.52	37.47	36.24	32.15	31.46	33.12
Peak Gain (dBi)	1.47	1.89	1.80	1.44	1.31	2.75	2.53	2.64	2.66	3.24

Frequency	5600	5725	5850	5925	6000					
Directivity (dBi)	8.17	8.06	8.35	8.15	8.21					
Efficiency (dB)	-4.69	-4.61	-4.36	-4.22	-4.14					
Efficiency (%)	33.96	34.60	36.66	37.87	38.55					
Peak Gain (dBi)	3.48	3.45	3.26	3.20	3.22					

2. WiFi AuxAntenna Specification

Winmate Part Number:90RF0600001J

2.1. Electrical Characteristics

Frequency(MHz): 2400-2500 / 5150-7150

SWR: $\leq 1.76@2400-2500\text{MHz}$

$\leq 2.14@5150-7150\text{MHz}$

Return Loss: $\leq -14.9@2400-2500\text{MHz}$

$\leq -13.3\text{dB}@5150-7150\text{MHz}$

Peak Gain: 1.41dBi@2400-2500MHz

3.33dBi@5150-7150MHz

Impedance: 50ohm

Polarization: Linear

2.2. Mechanical Characteristics

Cable: 50Ω φ 0.81 RF cable

Connector: MHF4

PCB: FR4 /Thickness 0.4mm

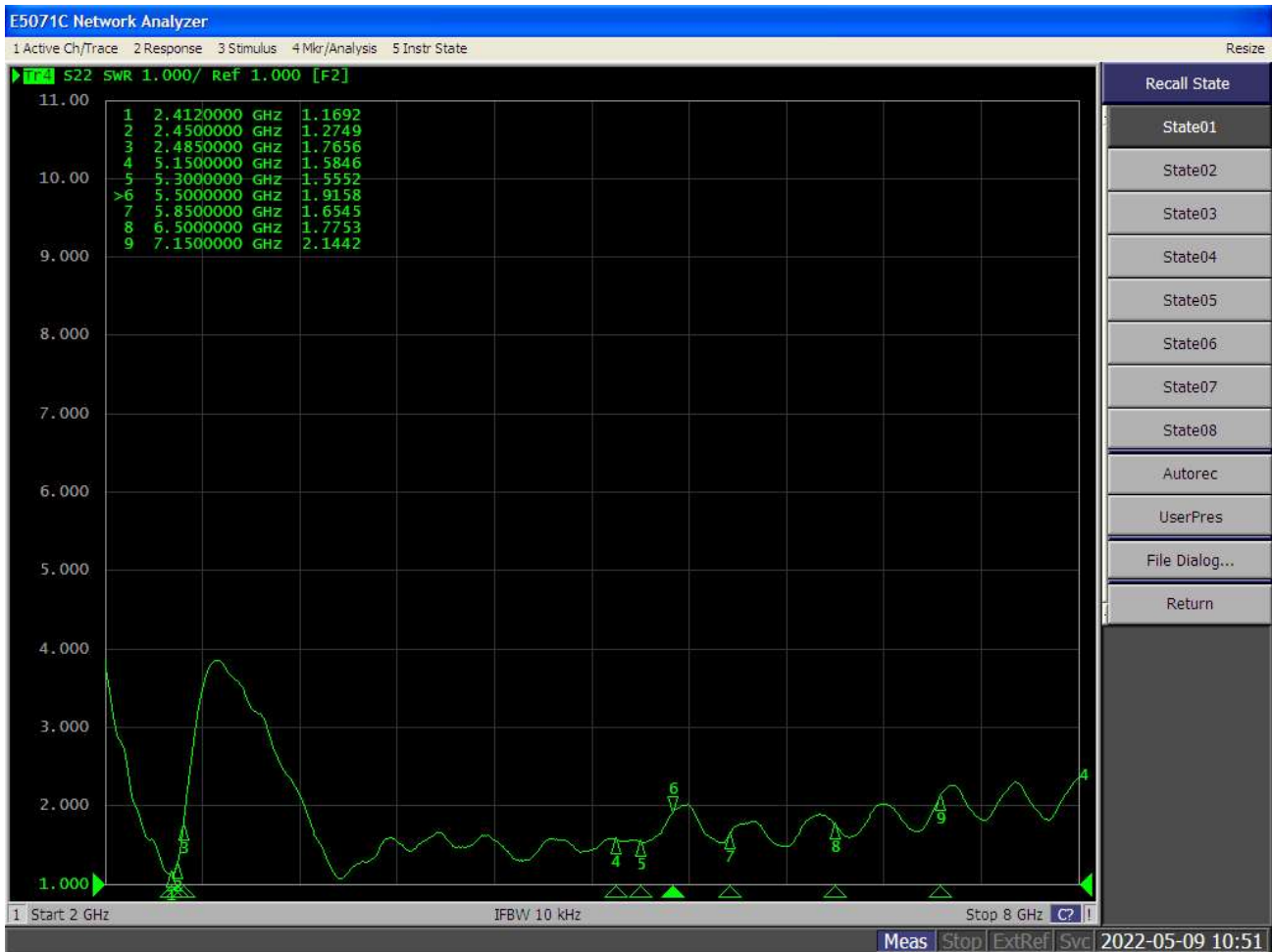
Type:Dipole

2.3. Environmental Characteristics

Operating Temperature: -30°C to 80°C

2.4. RF Performance Characteristics

2.4.1 SWR



2.4.2 Return Loss



2.4.3. Gain / Efficiency

Frequency	2400	2427	2450	2472	2500	5150	5250	5350	5470	5540
Directivity (dBi)	5.49	5.30	5.31	5.06	5.37	6.30	5.88	5.49	7.28	6.78
Efficiency (dB)	-4.08	-4.23	-4.54	-4.92	-5.45	-3.58	-3.89	-3.96	-3.95	-4.06
Efficiency (%)	39.07	37.78	35.17	32.22	28.53	43.88	40.82	40.17	40.32	39.29
Peak Gain (dBi)	1.41	1.07	0.77	0.14	-0.08	2.72	1.98	1.53	3.33	2.73

Frequency	5600	5725	5850	5925	6000					
Directivity (dBi)	6.17	6.37	6.51	6.21	6.09					
Efficiency (dB)	-4.32	-4.20	-3.77	-3.89	-3.91					
Efficiency (%)	36.96	37.98	41.96	40.79	40.69					
Peak Gain (dBi)	1.85	2.17	2.74	2.32	2.19					