

Galileo

LTE Main, Aux & Wi-Fi/BT/BLE

Passive Antenna Performance

Descriptions

In this report, the LTE Main, Aux & BT/BLE/Wi-Fi antennas' performance is shared.

Following performance is highlighted:

- Return-Loss
- Total Efficiency
- Peak Gain

LTE Main & Aux Antenna

Model Name: LTE Main & Aux Antenna

Part Number: CWT0040P

Antenna Supplier: California WireTech (M) Sdn. Bhd

Factory address: No 12, Jalan Cassia Selatan 3/1 Taman Perindustrian Bata Kawan 14100 Bandar Cassia, Penang, Malaysia

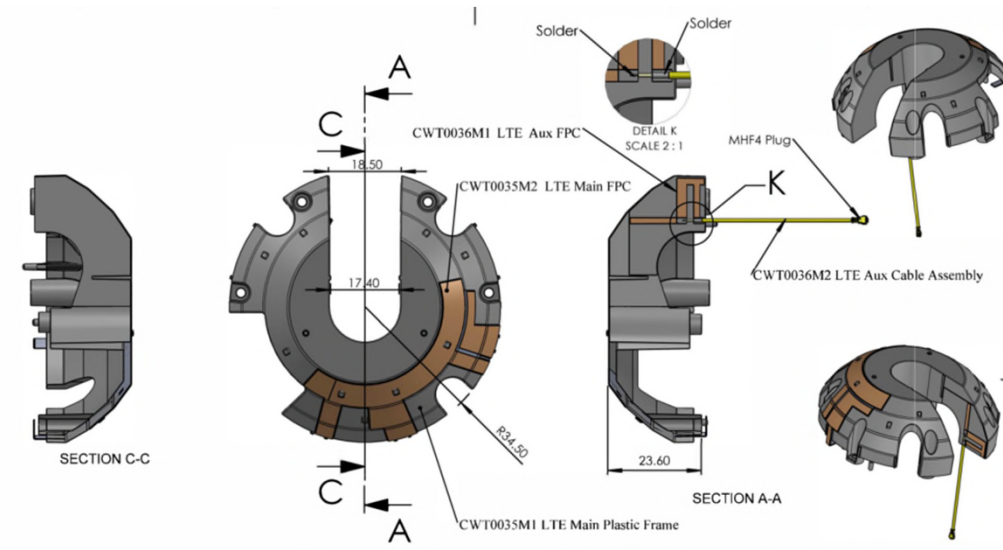
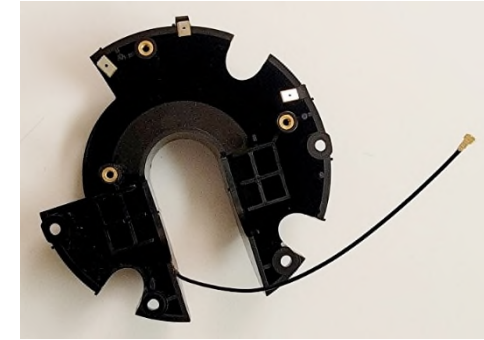
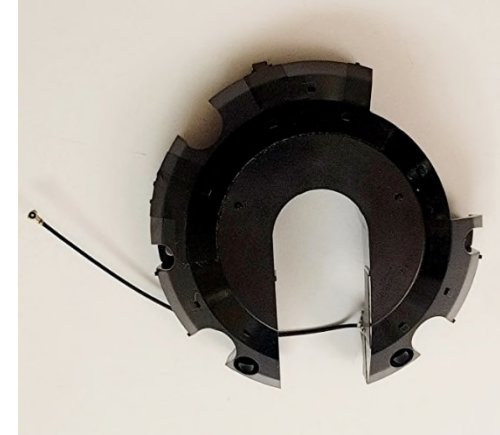
Antenna Type for LTE Main: Monopole

Low Band Max Peak Gain: 4.6 dBi

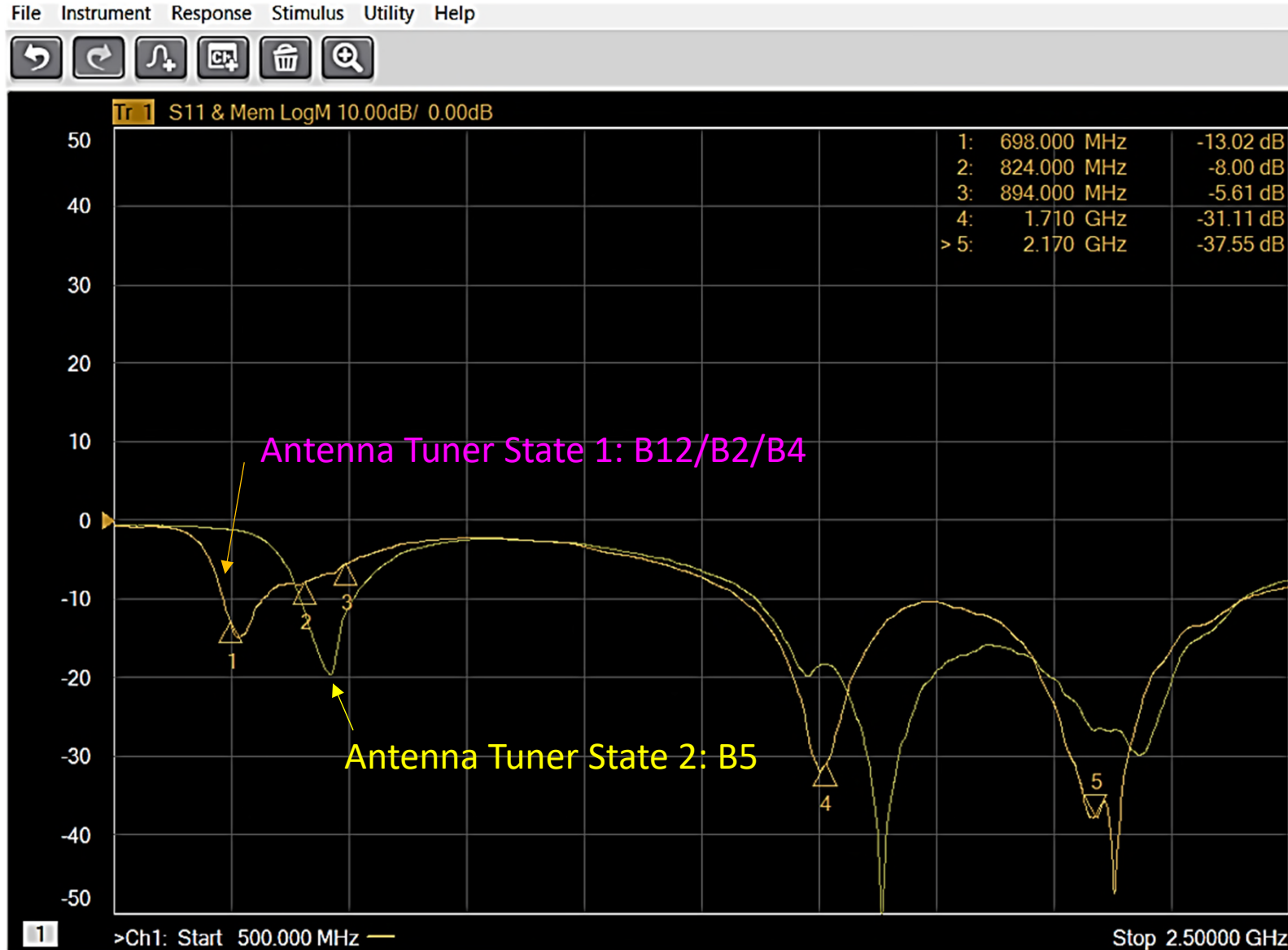
High Band Max Peak Gain: 5.3 dBi

Antenna Type for LTE Aux: Inverted-F Antenna (IFA)

High Band Max Peak Gain: - 1.1 dBi



LTE Main Antenna Return-Loss



LTE Main Antenna Total Efficiency & Peak Gain

Antenna Tuner State 1:
B12/B2/B4

Freq(MHz)	Peak. dBi	Efficiency	Average . dBi
680.00	1.23	53.02%	-2.76
690.00	1.25	55.99%	-2.52
700.00	2.21	65.04%	-1.87
710.00	2.50	66.70%	-1.76
720.00	2.27	65.06%	-1.87
730.00	2.13	62.98%	-2.01
740.00	1.90	63.54%	-1.97
750.00	2.03	62.61%	-2.03
760.00	2.20	58.06%	-2.36
770.00	2.40	56.67%	-2.47
780.00	2.29	54.90%	-2.60
790.00	1.97	54.94%	-2.60
800.00	2.13	58.22%	-2.35
810.00	2.36	54.96%	-2.60
820.00	2.74	56.09%	-2.51
830.00	2.74	53.98%	-2.68
840.00	2.05	44.19%	-3.55
850.00	2.61	49.42%	-3.06
860.00	2.90	54.57%	-2.63
870.00	3.56	58.91%	-2.30
880.00	4.33	61.96%	-2.08
890.00	4.58	64.12%	-1.93
900.00	4.65	66.86%	-1.75

Antenna Tuner State 2:
B5

Freq(MHz)	Peak. dBi	Efficiency	Average . dBi
1710.00	3.78	56.69%	-2.46
1720.00	3.71	56.48%	-2.48
1730.00	3.50	54.88%	-2.61
1740.00	3.51	55.47%	-2.56
1750.00	3.69	58.63%	-2.32
1760.00	3.55	59.45%	-2.26
1770.00	3.07	56.87%	-2.45
1780.00	2.80	57.27%	-2.42
1790.00	2.77	55.41%	-2.56
1800.00	3.07	56.27%	-2.50
1810.00	3.38	58.15%	-2.35
1820.00	3.78	58.42%	-2.33
1830.00	3.96	57.01%	-2.44
1840.00	4.27	64.69%	-1.89
1850.00	4.25	60.25%	-2.20
1860.00	4.35	57.57%	-2.40
1870.00	4.17	54.94%	-2.60
1880.00	3.78	53.20%	-2.74
1890.00	3.48	52.25%	-2.82
1900.00	3.41	51.12%	-2.91
1910.00	3.71	50.81%	-2.94
1920.00	4.10	49.59%	-3.05
1930.00	4.35	48.99%	-3.10
1940.00	4.43	49.91%	-3.02
1950.00	4.47	51.39%	-2.89
1960.00	4.72	52.86%	-2.77
1970.00	4.81	53.18%	-2.74
1980.00	5.12	55.22%	-2.58
1990.00	4.98	56.35%	-2.49
2000.00	5.28	60.45%	-2.19
2010.00	5.31	65.77%	-1.82
2020.00	5.15	67.24%	-1.72
2030.00	4.87	68.74%	-1.63
2040.00	4.66	69.20%	-1.60
2050.00	4.63	69.27%	-1.59
2060.00	4.60	68.52%	-1.64
2070.00	4.79	68.81%	-1.62
2080.00	4.72	66.77%	-1.75
2090.00	4.63	63.69%	-1.96
2100.00	4.72	62.53%	-2.04
2110.00	4.78	62.04%	-2.07
2120.00	4.89	63.11%	-2.00
2130.00	4.82	64.46%	-1.91
2140.00	4.77	66.00%	-1.80
2150.00	4.78	66.97%	-1.74
2160.00	4.51	66.46%	-1.77
2170.00	4.12	65.25%	-1.85

LTE Aux Total Efficiency & Gain

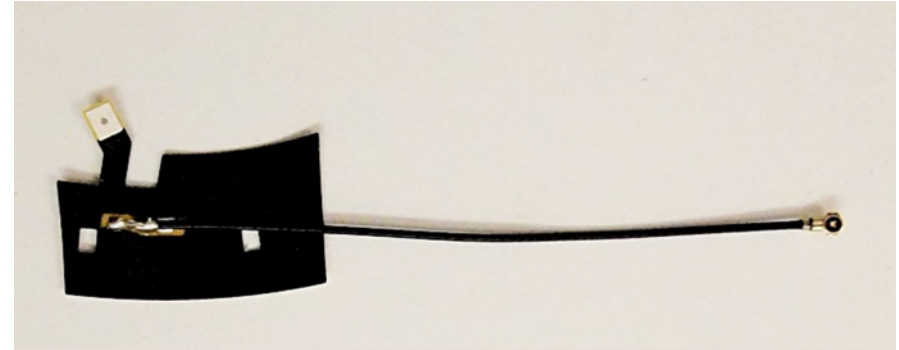
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
1930	-11.0	8.0	-7.0
1940	-10.4	9.1	-6.3
1950	-9.8	10.4	-5.6
1960	-9.2	11.9	-5.0
1970	-8.8	13.2	-4.1
1980	-8.4	14.5	-3.3
1990	-7.9	16.1	-2.8
2000	-7.5	17.7	-2.3
2010	-7.2	19.0	-1.8
2020	-7.1	19.5	-1.5
2030	-6.9	20.4	-1.3
2040	-6.8	20.7	-1.3
2050	-6.6	21.6	-1.1
2060	-6.6	21.8	-1.2
2070	-6.7	21.4	-1.4
2080	-6.9	20.6	-1.7
2090	-6.9	20.5	-1.7
2100	-6.8	21.1	-1.7
2110	-6.7	21.4	-1.7
2120	-6.7	21.4	-1.9
2130	-6.7	21.4	-2.0
2140	-6.7	21.4	-2.2
2150	-6.6	21.7	-2.3
2160	-6.6	22.0	-2.2
2170	-6.5	22.4	-2.3

Wi-Fi 0 Antenna

Model Name: Wi-Fi 0 Antenna

Part Number: CWT0037P

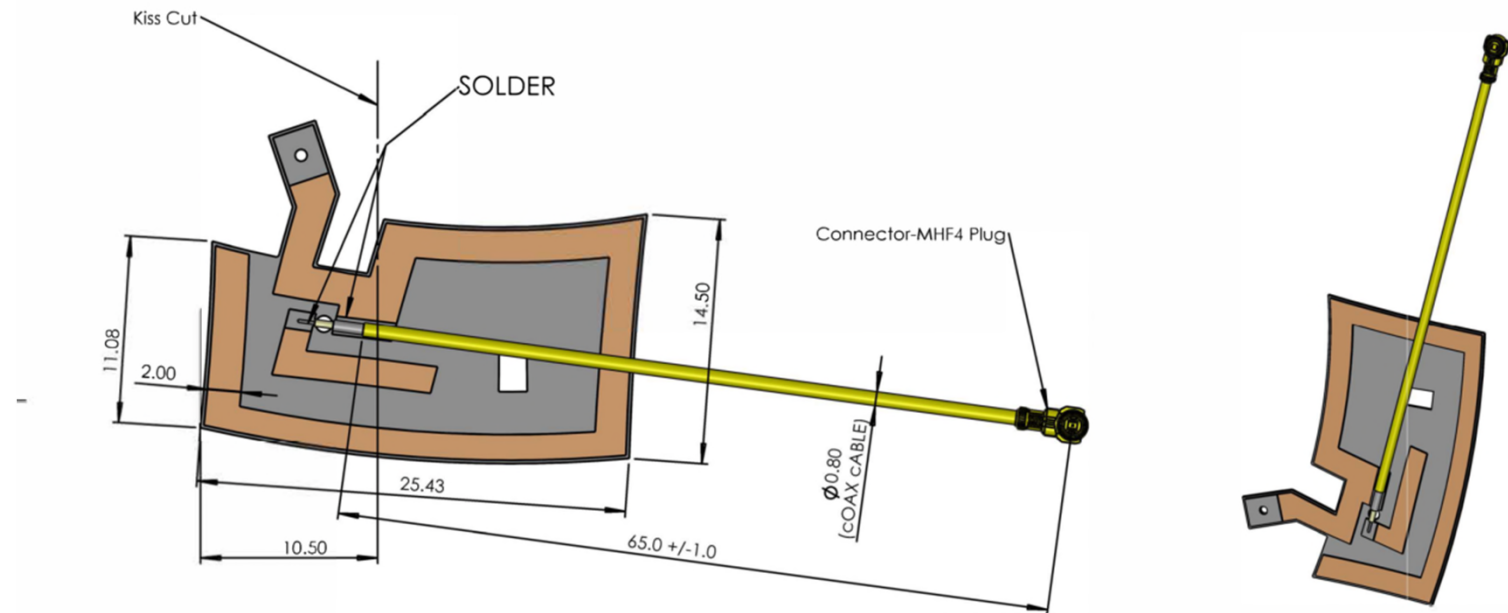
Antenna Supplier: California WireTech (M) Sdn. Bhd



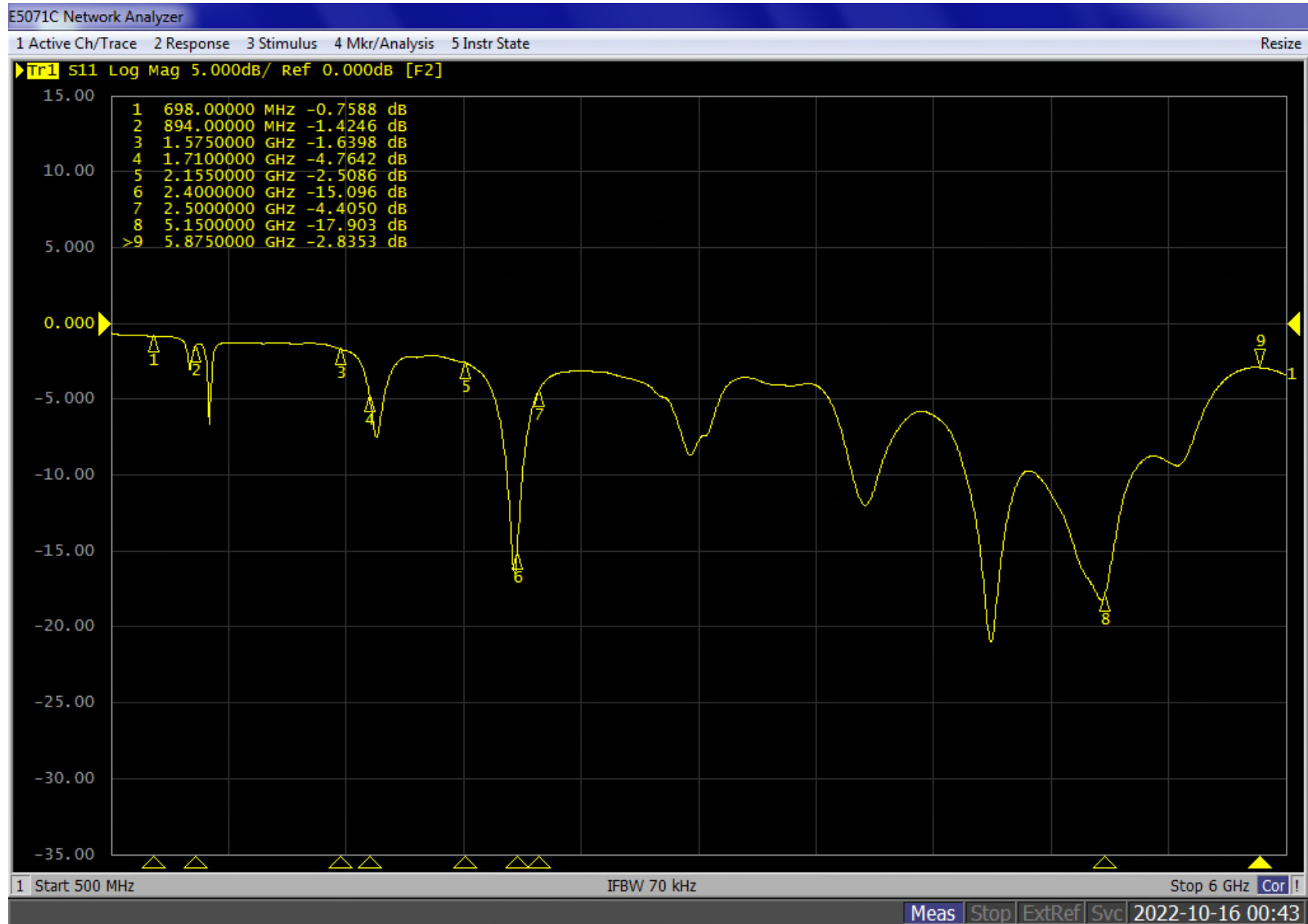
Antenna Type: Inverted-F Antenna (IFA)

Low Band Max Peak Gain: 1.7 dBi

High Band Max Peak Gain: 4.4 dBi



Wi-Fi 0 Return-Loss



Wi-Fi 0 Total Efficiency & Gain

Frequency (MHz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
2400	-4.3	37.5	1.7
2410	-4.8	33.3	1.0
2420	-5.2	30.1	0.4
2430	-5.6	27.3	-0.1
2440	-6.1	24.6	-0.6
2450	-6.5	22.3	-1.0
2460	-6.9	20.6	-1.4
2470	-7.3	18.7	-1.9
2480	-7.7	17.1	-2.3
2490	-8.0	15.9	-2.7
2500	-8.2	15.0	-3.0
2510	-8.2	15.0	-3.0
2520	-8.6	13.9	-3.4
2530	-8.8	13.2	-3.6
2540	-9.0	12.5	-4.0
2550	-9.3	11.9	-4.3

Frequency (MHz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
5000	-2.9	51.6	4.4
5050	-3.1	49.3	4.0
5100	-3.0	49.7	4.4
5150	-3.3	47.0	4.4
5200	-3.4	45.6	3.8
5250	-3.6	44.1	2.6
5300	-3.6	43.7	2.0
5350	-3.6	43.8	1.8
5400	-3.4	45.5	2.2
5450	-3.4	45.7	2.1
5500	-3.4	45.4	2.2
5550	-3.5	45.1	2.0
5600	-3.9	40.9	0.9
5650	-4.5	35.7	1.2
5700	-5.6	27.8	0.6
5750	-6.3	23.3	0.4
5800	-6.8	20.9	0.1
5850	-7.2	19.1	0.1
5900	-7.6	17.4	-0.4
5950	-7.8	16.7	-0.6
6000	-7.8	16.5	-1.1

Wi-Fi 1 Antenna

Model Name: Wi-Fi 1 Antenna

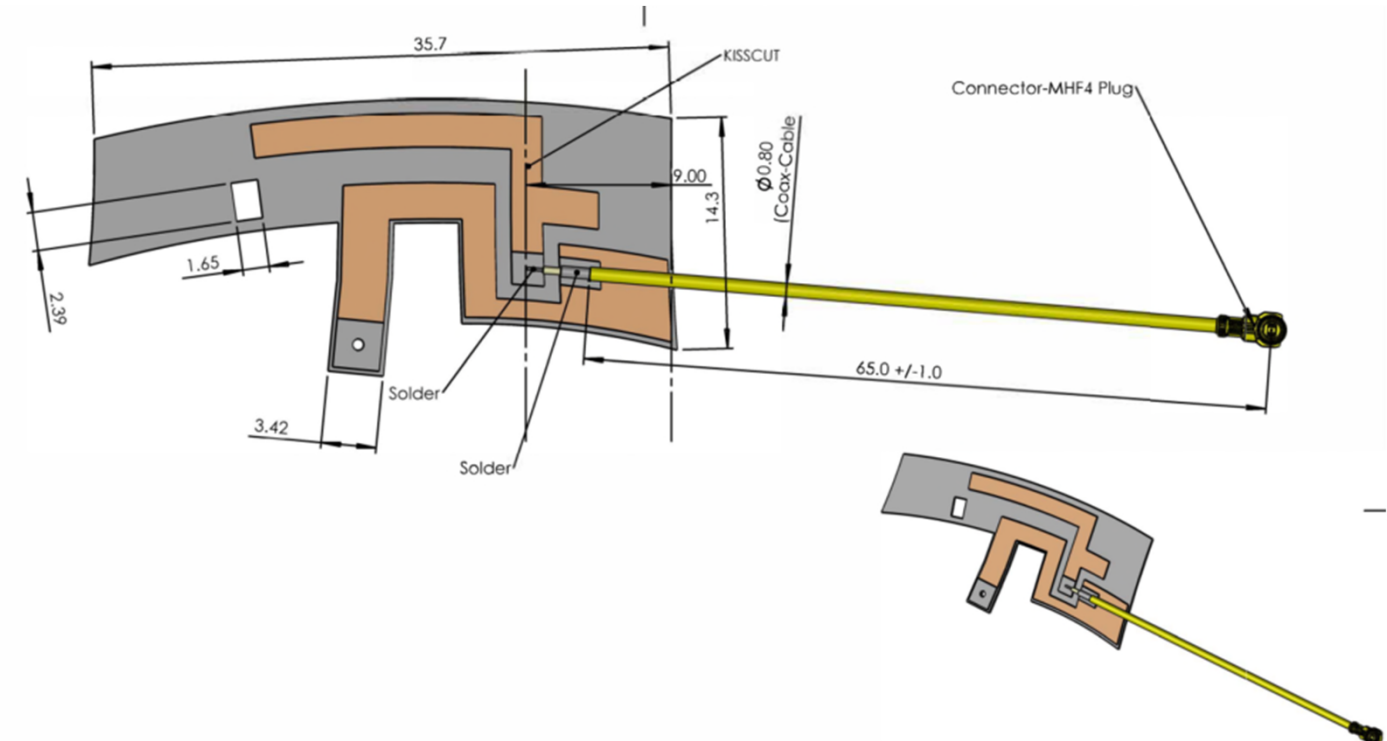
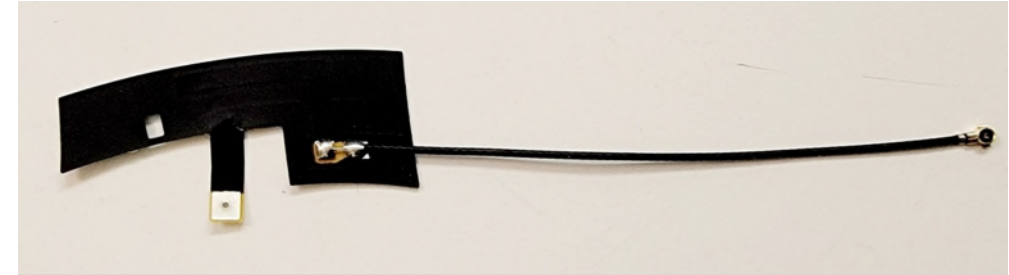
Part Number: CWT0038P

Antenna Supplier: California WireTech (M) Sdn. Bhd

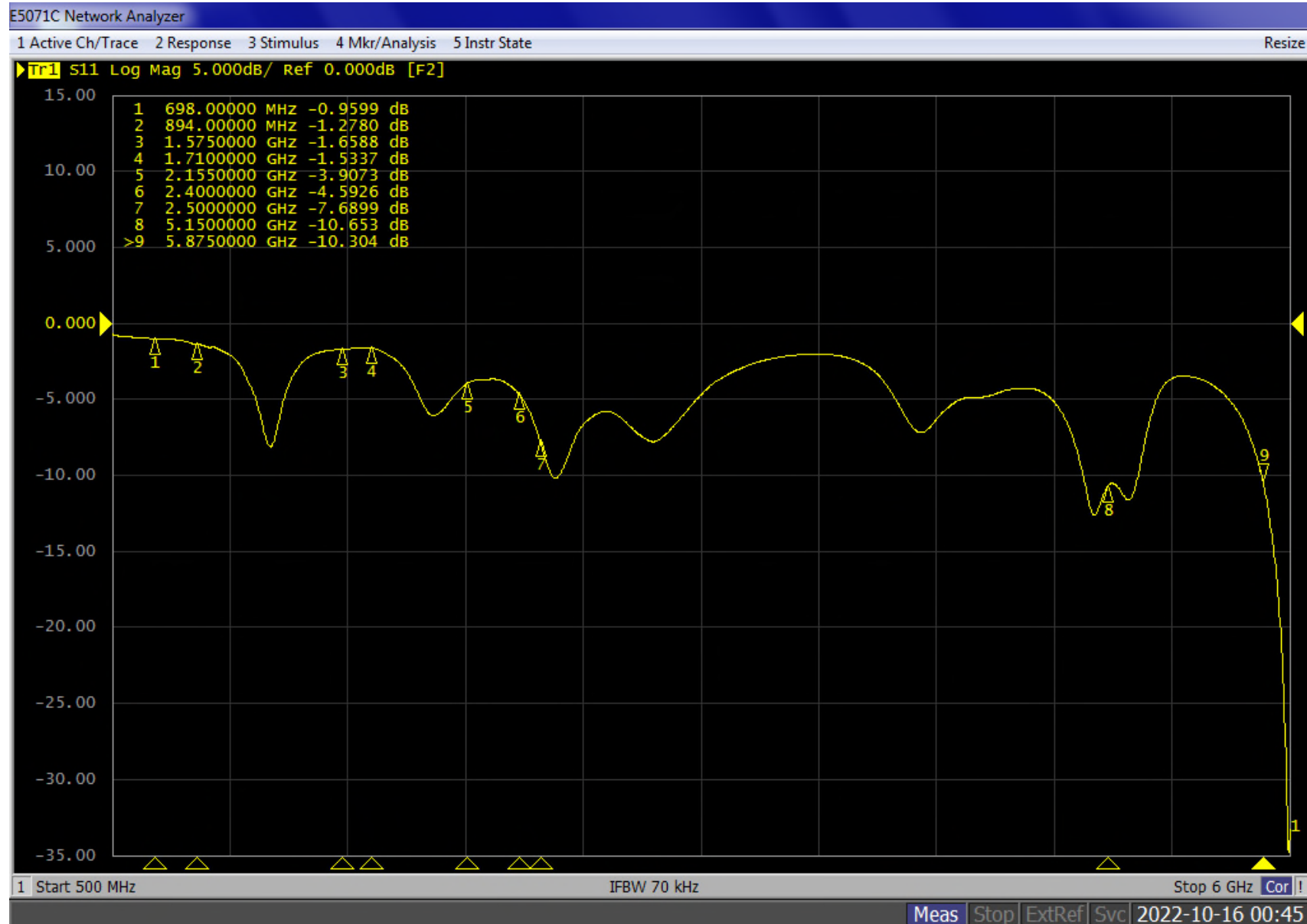
Antenna Type: Inverted-F Antenna (IFA)

Low Band Max Peak Gain: 0.8 dBi

High Band Max Peak Gain: 5.6 dBi



Wi-Fi 1 Return-Loss



Wi-Fi 1 Total Efficiency & Gain

Frequency (MHz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
2400	-5.9	25.5	0.3
2410	-5.9	25.8	0.4
2420	-5.8	26.5	0.5
2430	-5.6	27.8	0.7
2440	-5.5	28.4	0.6
2450	-5.2	29.9	0.8
2460	-5.1	30.9	0.7
2470	-4.9	32.1	0.7
2480	-4.8	33.1	0.7
2490	-4.6	34.5	0.6
2500	-4.4	36.4	0.7

Frequency (MHz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
5000	-3.0	50.3	4.8
5050	-2.9	51.3	4.4
5100	-2.8	53.0	3.8
5150	-2.9	51.2	3.9
5200	-2.8	52.4	4.9
5250	-2.7	53.2	5.5
5300	-3.0	49.7	5.6
5350	-3.7	42.9	4.8
5400	-4.3	36.8	3.7
5450	-5.0	31.4	3.7
5500	-5.2	30.1	3.2
5550	-5.1	31.0	3.9
5600	-5.0	31.9	3.5
5650	-4.6	34.7	4.1
5700	-4.6	34.6	4.2
5750	-4.3	37.6	4.7
5800	-3.6	43.3	5.1
5850	-3.2	47.6	5.4
5900	-2.8	51.9	5.5
5950	-2.4	56.9	5.3
6000	-2.4	57.2	4.9