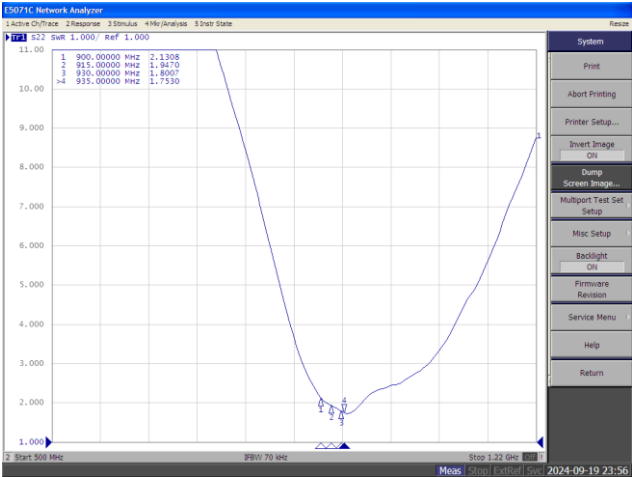


Gateway
T11013310

Frequency	900MHz	902MHz	904MHz	906MHz	908MHz	910MHz	912MHz	914MHz	916MHz	918MHz	920MHz	922MHz	924MHz	926MHz	928MHz	930MHz	932MHz	934MHz	935MHz
Horizontal+Vertical																			
Peak EIRP (dBi)	0.17	-0.19	-0.16	-0.15	-0.12	-0.05	-0.1	-0.08	-0.12	-0.14	-0.18	-0.18	-0.23	-0.28	-0.33	-0.37	-0.41	-0.43	-0.45
Directivity (dBi)	4.9	4.9	4.9	4.89	4.88	4.89	4.88	4.92	4.91	4.91	4.89	4.91	4.9	4.88	4.85	4.83	4.81	4.82	4.8
Efficiency (dB)	-4.73	-5.09	-5.06	-5.04	-5	-4.94	-4.98	-5	-5.03	-5.05	-5.07	-5.09	-5.13	-5.16	-5.18	-5.2	-5.22	-5.25	-5.25
Efficiency (%)	33.62	30.97	31.16	31.36	31.64	32.04	31.78	31.61	31.38	31.27	31.1	30.96	30.72	30.5	30.35	30.23	30.05	29.87	29.84
Gain (dBi)	0.17	-0.19	-0.16	-0.15	-0.12	-0.05	-0.1	-0.08	-0.12	-0.14	-0.18	-0.18	-0.23	-0.28	-0.33	-0.37	-0.41	-0.43	-0.45



902MHz
Horizontal+Vertical
Peak EIRP -0.19
Directivity 4.9
Efficiency (-5.09
Efficiency (30.97
Gain (dBi) -0.19

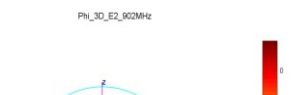
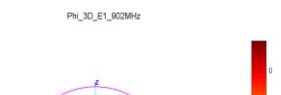
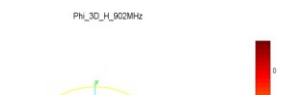
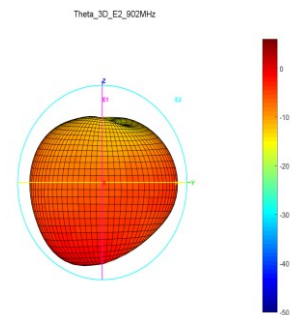
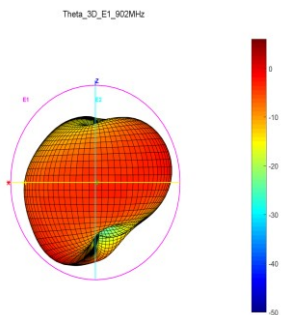
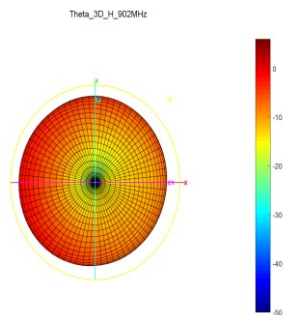
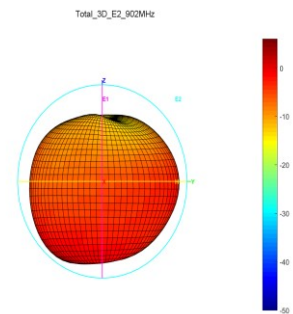
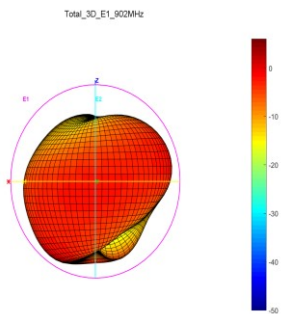
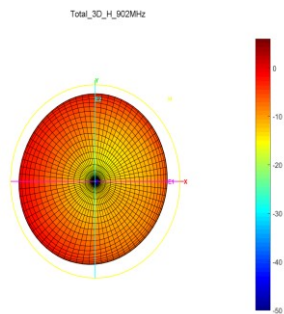
Horizontal
H Peak EIR -0.52
H Directivi 4.9
H Efficiency -5.09
H Efficiency 30.97
H Gain (dB -0.52

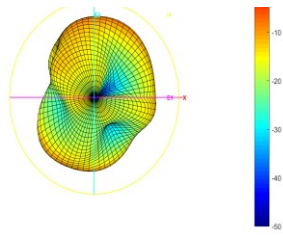
Vertical
V Peak EIR -2.1
V Directivi 4.9
V Efficiency -5.09
V Efficiency 30.97
V Gain (dB -2.1

Horizontal+Vertical												
Theta\Phi	0	30	60	90	120	150	180	210	240	270	300	330
0	-15.7	-16.42	-17.15	-18.39	-19.21	-18.04	-15.89	-14.85	-14.74	-14.88	-14.64	-15
30	-12.16	-13.66	-13.9	-11.61	-9.33	-8.64	-8.92	-9.81	-10.73	-10.98	-10.85	-10.94
60	-10.02	-9.92	-8.58	-6.27	-4.3	-3.05	-2.54	-2.85	-4.18	-6.79	-8.96	-9.27
90	-5.51	-4.37	-2.92	-2.24	-2.92	-3.62	-3.49	-2.6	-3.09	-5.04	-6.47	-6.4
120	-3.42	-3.28	-3.38	-4.04	-6.3	-10.32	-12.74	-7.29	-3.12	-1.92	-2.77	-3.41
150	-0.75	-1.91	-3.77	-6.68	-11.79	-17.14	-9.07	-4.08	-1.56	-0.46	-0.19	-0.3
180	-4.13	-4.11	-3.61	-2.87	-2.17	-1.52	-1.27	-1.2	-1.48	-1.96	-2.52	-3.21

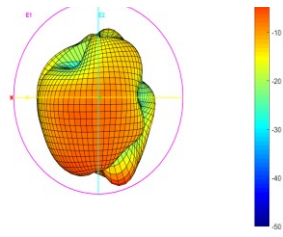
Horizontal												
Theta\Phi	0	30	60	90	120	150	180	210	240	270	300	330
0	-17.7	-20.5	-24.02	-23.47	-21.73	-23.13	-23.47	-20.27	-17.72	-16.51	-15.97	-16.43
30	-12.93	-13.68	-14.87	-13.6	-10.92	-9.7	-9.59	-10.26	-11.16	-11.35	-11.4	-11.76
60	-10.7	-10.32	-8.9	-7.08	-5	-3.3	-2.56	-2.88	-4.37	-6.98	-8.99	-9.72
90	-6.2	-5.27	-4.31	-3.54	-3.54	-3.67	-3.59	-3.1	-3.77	-5.34	-6.58	-6.82
120	-4.01	-4.32	-5.32	-6.72	-9.25	-12.19	-12.9	-9.96	-6.27	-4.12	-3.58	-3.6
150	-1.34	-4.12	-8.48	-16.13	-25.86	-17.78	-19.99	-18.26	-7.2	-2.61	-0.78	-0.52
180	-4.84	-6.37	-14.26	-13.24	-4.91	-1.86	-1.6	-3.59	-8.98	-16.89	-7.28	-4.24

Vertical												
Theta\Phi	0	30	60	90	120	150	180	210	240	270	300	330
0	-20.03	-18.57	-18.15	-20.01	-22.78	-19.64	-16.73	-16.32	-17.78	-19.94	-20.43	-20.51
30	-20.07	-38.47	-20.9	-15.97	-14.46	-15.27	-17.43	-19.86	-21.02	-21.8	-20.11	-18.6
60	-18.41	-20.39	-20.07	-13.96	-12.61	-15.54	-24.84	-24.28	-17.83	-20.54	-30.77	-19.32
90	-13.82	-11.63	-8.55	-8.08	-11.73	-22.8	-19.74	-12.21	-11.46	-16.8	-22.59	-16.73
120	-12.38	-10.03	-7.81	-7.41	-9.37	-14.89	-27.21	-10.66	-5.98	-5.93	-10.46	-17.01
150	-9.7	-5.9	-5.55	-7.2	-11.96	-25.81	-9.44	-4.25	-2.95	-4.53	-9.13	-13.47
180	-12.32	-8.02	-4	-3.29	-5.48	-12.74	-12.52	-4.95	-2.33	-2.1	-4.28	-9.93

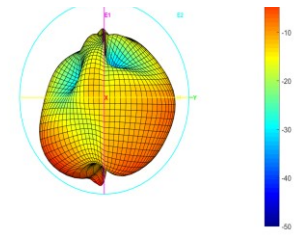




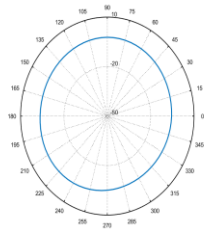
Total_Polar_H_902MHz



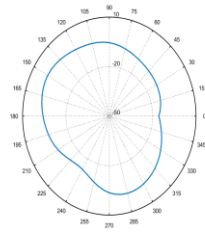
Total_Polar_E1_902MHz



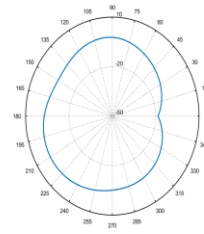
Total_Polar_E2_902MHz



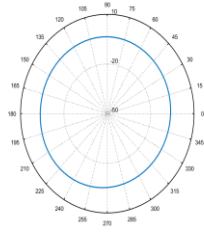
Theta_Polar_H_902MHz



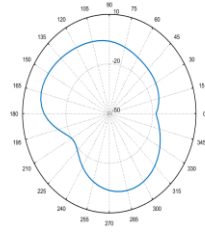
Theta_Polar_E1_902MHz



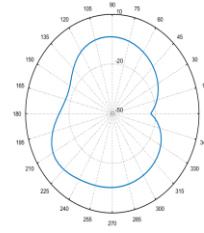
Theta_Polar_E2_902MHz



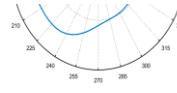
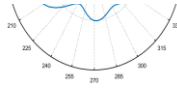
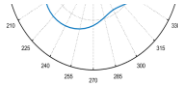
Phi_Polar_H_902MHz



Phi_Polar_E1_902MHz



Phi_Polar_E2_902MHz



912MHz

Horizontal+Vertical

Peak EIRP -0.1
Directivity 4.88
Efficiency (4.98
Efficiency (31.78
Gain (dBi) -0.1

Horizontal

H Peak EIR -0.48
H Directivi 4.88
H Efficiency 4.98
H Efficiency 31.78
H Gain (dB -0.48

Vertical

V Peak EIR -1.77
V Directivi 4.88
V Efficiency 4.98
V Efficiency 31.78
V Gain (dB -1.77

Horizontal+Vertical

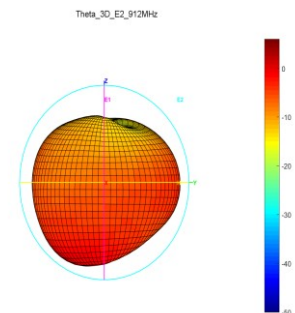
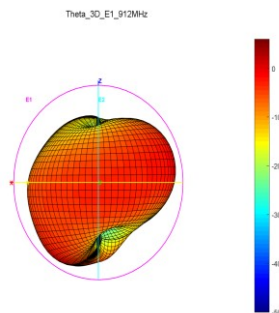
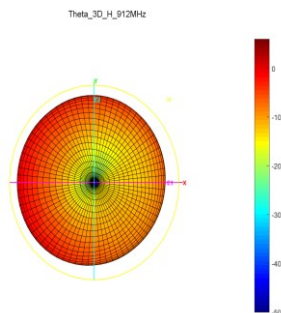
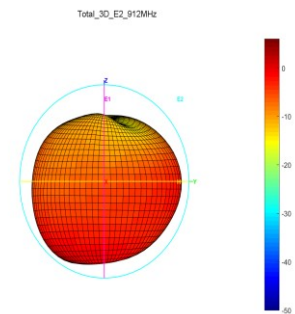
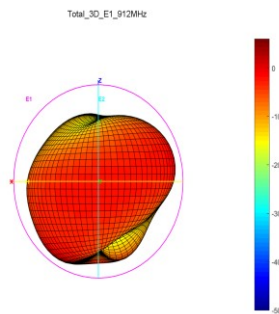
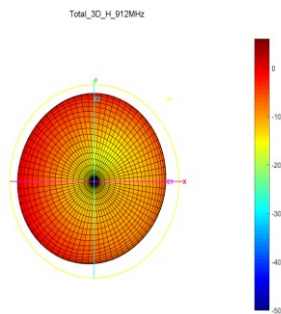
Theta\Phi	0	30	60	90	120	150	180	210	240	270	300	330
0	-14.72	-15.19	-15.98	-16.88	-17.46	-16.82	-15.03	-13.89	-13.68	-13.92	-13.92	-14.04
30	-12.01	-13.85	-15.33	-12.71	-10.05	-8.99	-9.2	-9.93	-10.63	-10.84	-10.72	-10.81
60	-10.46	-10.32	-8.69	-6.19	-4.08	-2.78	-2.27	-2.61	-4.04	-6.93	-9.02	-9.36
90	-5.69	-4.35	-2.72	-1.91	-2.43	-3.09	-3.04	-2.4	-3.14	-5.3	-6.84	-6.57
120	-3.45	-3.27	-3.2	-3.8	-5.94	-9.79	-11.96	-6.92	-2.95	-1.85	-2.81	-3.53
150	-0.76	-1.9	-3.76	-6.73	-11.95	-15.93	-8.44	-3.79	-1.38	-0.32	-0.1	-0.24
180	-3.87	-3.86	-3.34	-2.64	-1.87	-1.18	-0.86	-0.87	-1.14	-1.65	-2.15	-2.85

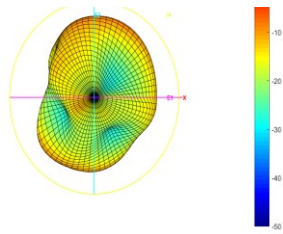
Horizontal

Theta\Phi	0	30	60	90	120	150	180	210	240	270	300	330
0	-16.5	-18.95	-23.15	-21.87	-19.37	-20.45	-22.83	-21.83	-18.44	-16.15	-15.16	-15.2
30	-13.09	-14.03	-15.8	-14.51	-11.56	-10.24	-10.16	-10.75	-11.4	-11.39	-11.36	-11.75
60	-11.16	-10.72	-9.05	-6.99	-4.74	-3.05	-2.31	-2.63	-4.19	-7.08	-9.08	-9.91
90	-6.53	-5.33	-4.07	-3.17	-3.01	-3.15	-3.12	-2.88	-3.78	-5.63	-7.04	-7.14
120	-4.12	-4.43	-5.26	-6.46	-8.74	-11.42	-12.15	-9.66	-6.21	-4.15	-3.71	-3.76
150	-1.38	-4.16	-8.59	-16.41	-23.89	-16.85	-18.9	-19.44	-7.22	-2.55	-0.73	-0.48
180	-4.57	-6.11	-13.98	-12.81	-4.48	-1.51	-1.23	-3.3	-8.92	-17.1	-6.88	-3.88

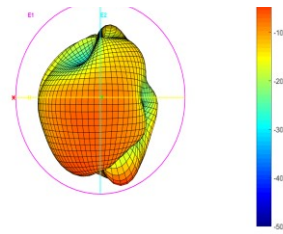
Vertical

Theta\Phi	0	30	60	90	120	150	180	210	240	270	300	330
0	-19.46	-17.56	-16.91	-18.54	-21.93	-19.29	-15.82	-14.65	-15.45	-17.88	-19.98	-20.32
30	-18.57	-27.79	-25.24	-17.4	-15.35	-15.01	-16.22	-17.6	-18.54	-20.02	-19.35	-17.93
60	-18.78	-20.88	-19.72	-13.94	-12.57	-15.11	-22.65	-26.55	-18.61	-21.6	-27.57	-18.59
90	-13.25	-11.29	-8.44	-7.91	-11.5	-21.91	-20.04	-12.29	-11.79	-16.6	-20.26	-15.66
120	-11.93	-9.57	-7.42	-7.2	-9.16	-14.82	-25.66	-10.23	-5.72	-5.72	-10.08	-16.29
150	-9.57	-5.81	-5.5	-7.23	-12.23	-23.1	-8.85	-3.91	-2.69	-4.28	-8.78	-12.94
180	-12.13	-7.78	-3.73	-3.08	-5.33	-12.66	-11.68	-4.53	-1.93	-1.77	-3.94	-9.61

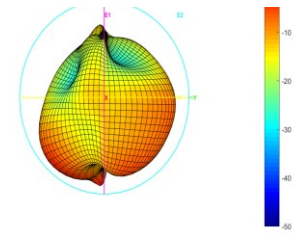




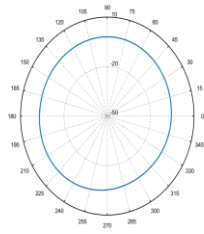
Total_Polar_H_912MHz



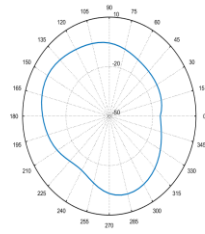
Total_Polar_E1_912MHz



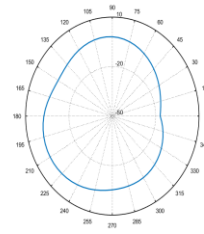
Total_Polar_E2_912MHz



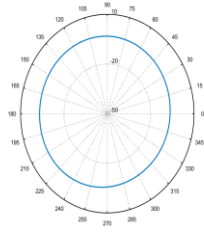
Theta_Polar_H_912MHz



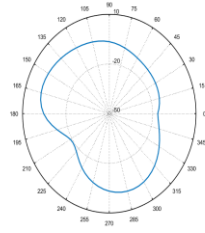
Theta_Polar_E1_912MHz



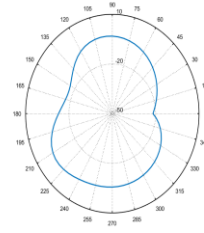
Theta_Polar_E2_912MHz



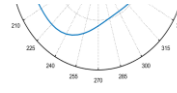
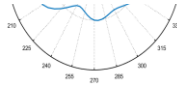
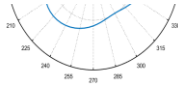
Phi_Polar_H_912MHz



Phi_Polar_E1_912MHz



Phi_Polar_E2_912MHz



922MHz
Horizontal+Vertical
Peak EIRP -0.18
Directivity 4.91
Efficiency (-5.09
Efficiency (30.96
Gain (dBi) -0.18

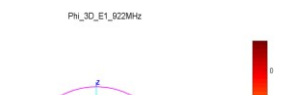
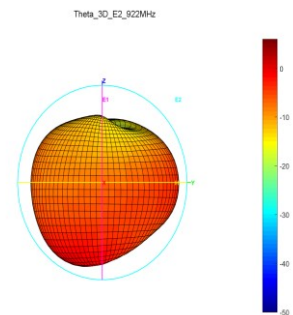
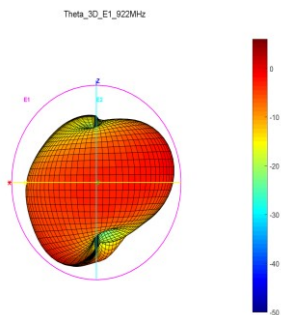
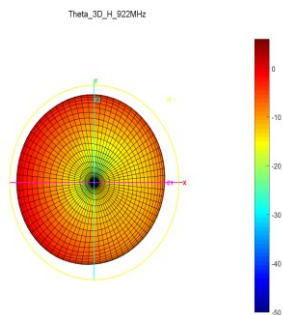
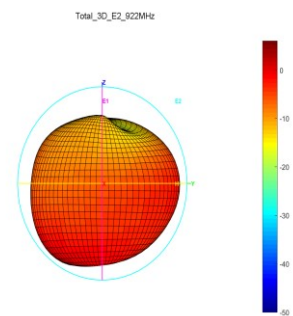
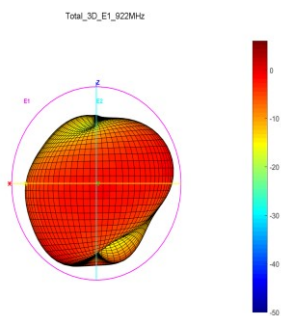
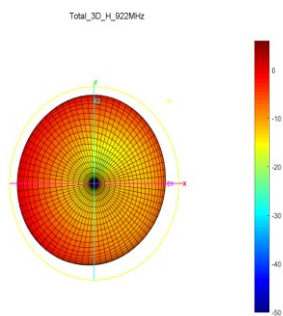
Horizontal
H Peak EIR -0.66
H Directivi 4.91
H Efficiency -5.09
H Efficiency 30.96
H Gain (dB -0.66

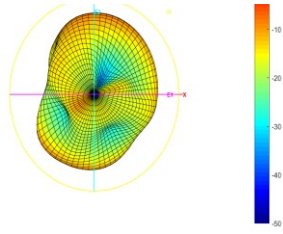
Vertical
V Peak EIR -1.62
V Directivi 4.91
V Efficiency -5.09
V Efficiency 30.96
V Gain (dB -1.62

Horizontal+Vertical												
Theta\Phi	0	30	60	90	120	150	180	210	240	270	300	330
0	-13.96	-14.23	-15.12	-15.94	-16.28	-15.72	-14	-12.99	-12.78	-13.31	-13.46	-13.41
30	-12.11	-14.17	-16.7	-14.51	-11.09	-9.61	-9.59	-10.22	-10.89	-10.97	-11.04	-11.07
60	-11.18	-10.93	-8.79	-6.21	-4.09	-2.73	-2.25	-2.67	-4.24	-7.31	-9.5	-9.89
90	-6.06	-4.59	-2.81	-1.8	-2.19	-2.8	-2.88	-2.47	-3.5	-5.9	-7.37	-7.05
120	-3.71	-3.48	-3.28	-3.78	-5.75	-9.44	-11.36	-6.79	-2.93	-1.92	-3.05	-3.87
150	-3.07	-2.18	-4.07	-7.13	-12.31	-14.97	-8.06	-3.64	-1.33	-0.32	-0.18	-0.4
180	-1.79	-3.8	-3.34	-2.62	-1.78	-1.05	-0.79	-0.82	-1.03	-1.49	-1.95	-2.7

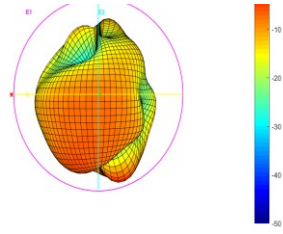
Horizontal												
Theta\Phi	0	30	60	90	120	150	180	210	240	270	300	330
0	-15.4	-17.76	-22.1	-20.63	-17.84	-17.95	-19.93	-22.1	-19.52	-16.52	-14.77	-14.38
30	-13.65	-14.79	-16.76	-15.62	-12.39	-10.93	-10.89	-11.46	-12.07	-11.78	-11.83	-12.17
60	-11.91	-11.31	-9.2	-7	-4.71	-2.98	-2.31	-2.69	-4.38	-7.44	-9.58	-10.54
90	-7.07	-5.65	-4.11	-2.99	-2.72	-2.86	-2.96	-2.94	-4.16	-6.33	-7.66	-7.71
120	-4.43	-4.73	-5.4	-6.4	-8.37	-10.84	-11.61	-9.61	-6.38	-4.44	-4.13	-4.15
150	-1.67	-4.51	-8.97	-16.66	-21.9	-16.2	-18.3	-20.67	-7.48	-2.71	-0.88	-0.66
180	-4.46	-5.97	-13.89	-12.4	-4.32	-1.36	-1.19	-3.33	-9.08	-16.78	-6.64	-3.73

Vertical												
Theta\Phi	0	30	60	90	120	150	180	210	240	270	300	330
0	-19.45	-16.77	-16.09	-17.74	-21.48	-19.69	-15.28	-13.56	-13.82	-16.13	-19.28	-20.42
30	-17.36	-22.96	-35.57	-20.95	-16.97	-15.43	-15.49	-16.28	-17.13	-18.64	-18.83	-17.57
60	-19.3	-21.76	-19.21	-14.05	-12.88	-15.21	-21.27	-26.73	-19.44	-22.67	-26.69	-18.49
90	-12.88	-11.27	-8.69	-8	-11.6	-21.69	-20.17	-12.37	-12.03	-16.19	-19.28	-15.56
120	-11.87	-9.5	-7.4	-7.22	-9.19	-15.03	-23.87	-9.99	-5.53	-5.48	-9.61	-16.05
150	-9.92	-5.99	-5.77	-7.64	-12.82	-21.05	-8.49	-3.72	-2.54	-4.05	-8.43	-12.69
180	-12.27	-7.85	-3.74	-3.1	-5.32	-12.67	-11.37	-4.39	-1.77	-1.62	-3.75	-9.49

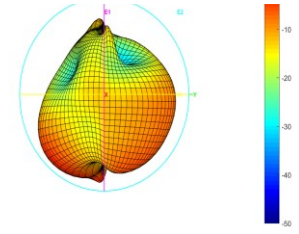




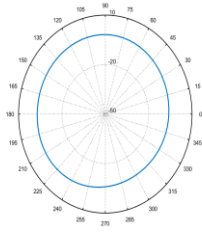
Total_Polar_H_922MHz



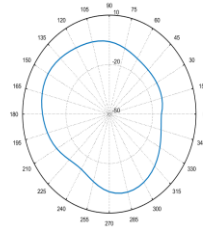
Total_Polar_E1_922MHz



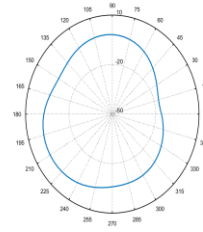
Total_Polar_E2_922MHz



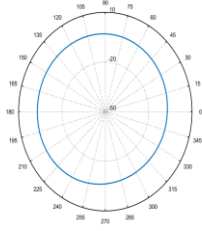
Theta_Polar_H_922MHz



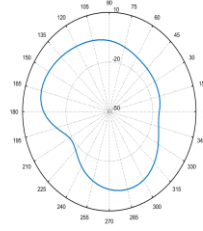
Theta_Polar_E1_922MHz



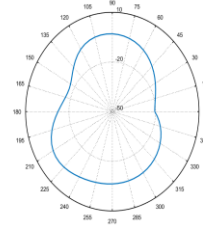
Theta_Polar_E2_922MHz



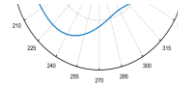
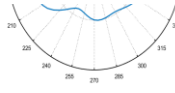
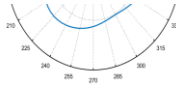
Phi_Polar_H_922MHz



Phi_Polar_E1_922MHz



Phi_Polar_E2_922MHz



ESPRESSIF SYSTEMS (SHANGHAI) CO., LTD.

Suite 204, Block 2, 690 Bibo Road, Zhang Jiang Hi-Tech Park, Shanghai, China 201203

Module: ESP32-WROOM-32E

Antenna Type: PCB Antenna

Maximum Antenna Gain: 3.4 dBi (Refer to Module ESP32-WROOM-32E Antenna Specification)