

ACTIVE 3D ANTENNA PATTERN MEASUREMENTS



Build	Thor
Serial Number	138118
Customer	Ademco, Inc.
Address	Conner
Customer Project	None
Tested By	Andrew Rucinski
Test Run Description	138118 - Ant B - 903 MHz

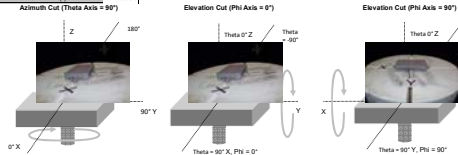
Work Order	ACR00022
Date	2/9/2022
Temperature	22.3 °C
Relative Humidity	25.0% RH
Bar Pressure	1005.3 mbars
Job Site	MMVIO

COMMENTS

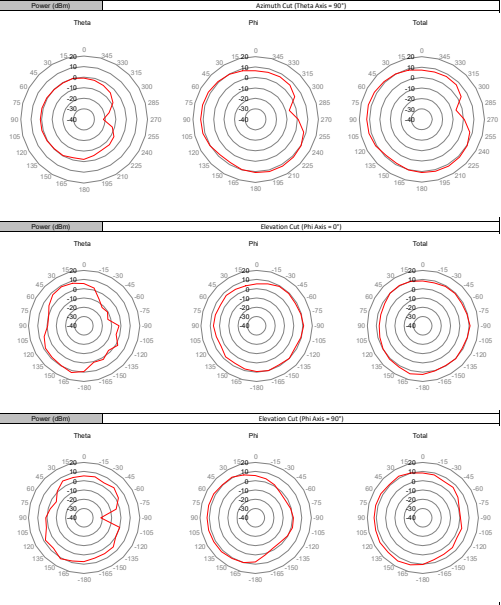
Antenna B

3D PATTERN DATA

Frequency (MHz)	903
Ant. Port Input Pwr. (dBm)	11.00
Tot. Rad. Pwr. (dBm)	10.02
Peak ERP (dBm)	14.25
Directivity (dBi)	4.23
Efficiency (dB)	-0.96
Efficiency (%)	79.75
Gain (dBi)	3.25
Average Gain (dB)	-0.96
E-Plane 3 dB BW (°)	108.00



POLAR PLOTS



		Elevation Cuts				Azimuth Cuts						
Angle	Theta	Phi	Total	Angle	Theta	Phi	Total	Angle	Theta	Phi	Total	
Theta Angle (°)	0	90	0	0	0	90	0	0	0	90	0	
Power (dBm)	5.57	5.58	5.59	-2.57	8.58	8.58	0	0	0.76	6.54	7.28	0
-15	2.35	5.75	6.74	3.69	8.08	7.85	-15	345	1.79	6.36	6.98	345
-30	-7.27	3.3	8.82	1.22	9.02	5.39	-30	330	-0.07	6.85	7.27	330
-45	-12.29	5.72	9.21	-1.98	9.24	6.4	-45	315	-4.73	6.35	6.67	315
-60	-10.5	2.73	8.54	-2.48	8.59	3.87	-60	300	-8.42	3.35	3.63	300
-75	-13.31	4.04	9.32	-0.95	9.35	0.78	-75	285	-15.27	4.73	4.16	285
-90	-2.25	-21.76	10.61	0.76	10.83	0.79	-90	270	-21.76	0.76	0.79	270
-105	4	-0.21	9.88	1.21	9.58	3.57	-105	255	-12.27	7.41	7.46	255
-120	2.17	-0.15	7.98	-0.28	8.99	2.8	-120	240	-7.49	10.21	10.28	240
-135	-2.62	4.63	10.05	-2.39	10.28	5.42	-135	225	-6.06	11.36	11.34	225
-150	1.72	4.59	8.47	-2.22	9.3	5.41	-150	210	-4.22	11.58	11.66	210
-165	0.82	5.24	10.12	1.44	10.06	6.76	-165	195	-4.42	11.49	11.6	195
-180	9.36	7.1	9.34	7.63	12.36	10.38	-180	180	-2.35	10.61	10.63	180
-195	12.05	8.4	8.4	10.08	11.65	12.33	-195	165	-2.21	9.75	10.02	165
-210	9.58	10.86	6.48	10.8	11.31	13.84	-210	150	0.59	7.77	8.56	150
-225	8.47	6.55	7.23	11.87	10.9	12.89	-225	135	0.41	7.89	8.49	135
-240	8.22	8.09	3.96	11.93	9.6	13.43	-240	120	0.45	10.38	10.8	120
-255	4.83	1.99	4.78	12.23	7.82	12.62	-255	105	1.25	11.95	12.31	105
-270	0.76	1.41	6.54	12.52	7.28	12.84	-270	90	1.41	12.52	12.84	90
-285	-0.53	-2.29	5.99	12.36	6.86	12.5	-285	75	1.22	12.49	12.8	75
-300	3.83	-5.52	4.81	12.05	7.66	12.13	-300	60	0.72	11.88	12.2	60
-315	4.746	0.85	6.32	10.52	9.84	10.95	-315	45	-0.06	10.87	11.2	45
-330	8.6	5.97	5.39	10.49	10.29	11.81	-330	30	-0.09	9.74	10.17	30
-345	7.83	5.03	4.64	8.24	9.53	9.94	-345	15	0.18	8.12	8.76	15
-360	9.53	9.04	9.53	9.04	9.53	9.04	-360	0	-0.76	6.54	7.28	0

ACTIVE 3D ANTENNA PATTERN MEASUREMENTS



EUT	Thor
Serial Number	138118
Customer	Ademco, Inc.
Address	Conroe
Customer Project	None
Tested By	Andrew Ruggel
Test Date/Description	1/30/18 Ant A - 903 MHz

Work Order	ACEM0022
Date	2/9/2018
Temperature	22.3 °C
Relative Humidity	26.0% RH
Bar Pressure	1016.3 mbars
Job Site	MN 10

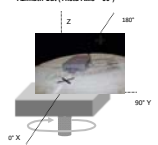
COMMENTS

Antenna A

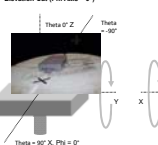
3D PATTERN DATA

Frequency (MHz)	903
Ant. Port Input Pwr. (dBm)	11.00
Tot. Rad. Pwr. (dBm)	9.45
Peak ERP (dBm)	12.50
Directivity (dB)	3.05
Efficiency (dB)	-1.65
Efficiency (%)	68.98
Gain (dB)	1.50
Average Gain (dB)	-1.65
E-Plane 3 dB BW (1)	89.00

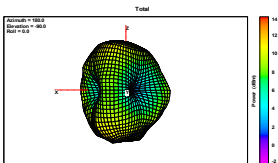
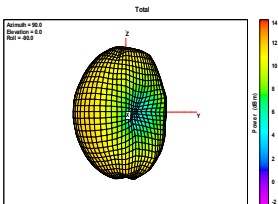
Azimuth Cut (Theta Axis = 90°)



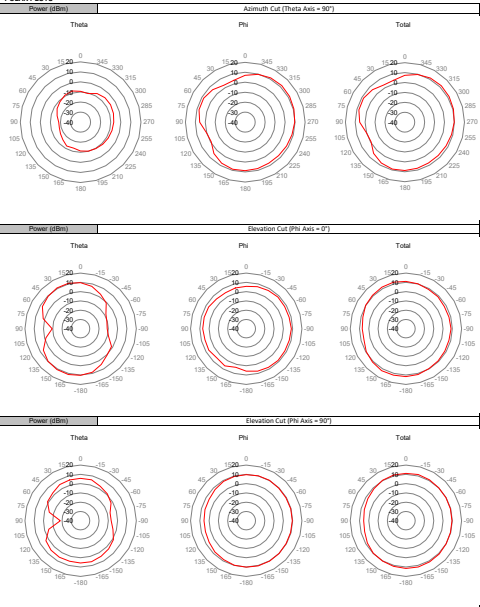
Elevation Cut (Phi Axis = 0°)



Elevation Cut (Phi Axis = 90°)



POLAR PLOTS



Angle Theta Angle (°)	Elevation Cuts					Azimuth Cuts						
	Theta		Phi	Total	Index	Theta		Phi	Total	Index		
	0	90	0	90	0	0	90	0	90	0		
Power (dBm)	dBm Power	dBm Power	dBm Power	dBm Power	dBm	dBm Power	dBm Power	dBm Power	dBm Power	dBm		
0	8.61	5.65	5.65	9.61	11.08	11.08	0	-9.33	7.02	7.12	0	
-15	7.31	5.62	6.9	10.13	10.12	11.44	-15	345	-10.58	9.74	9.79	345
30	2.97	2.69	7.6	10.25	8.89	10.96	30	330	-7.1	11.32	11.39	330
-45	-0.92	0.96	8.1	9.65	8.79	10.2	-45	315	-5.61	11.87	11.95	315
60	-4.41	-1.95	7.78	9.54	7.88	9.84	60	300	-5.45	11.5	11.59	300
-75	-10.56	-7.05	7.99	9.66	8.05	9.75	-75	285	-6.15	10.64	10.73	285
90	-11.23	-7	8.59	9.65	8.63	9.74	90	270	-7	9.65	9.74	270
-105	-4.82	-1.82	8.08	9.53	8.17	9.72	-105	255	-7.88	8.67	8.77	255
120	-1.56	0.89	8.1	9.57	8.55	10.12	120	240	-8.2	7.86	7.97	240
-135	0.37	2.94	8.51	10.05	9.13	10.82	-135	225	-8.83	7.39	7.49	225
150	4.57	4.23	8.15	10.35	9.73	11.3	150	210	-9.64	7.52	7.6	210
-165	8.75	5.83	7.41	10.42	11.14	11.71	-165	195	-10.16	8.15	8.22	195
180	10.17	5.59	5.8	10.07	11.52	11.39	180	180	-11.23	8.59	8.63	180
-195	11.24	5.35	3.2	9.68	11.87	11.04	-195	165	-13.17	8.87	8.9	165
210	10.97	5.59	6.26	8.56	12.23	10.33	210	150	-12.6	7.43	7.47	150
-225	9.67	5.07	4.65	7.73	10.86	9.61	135	135	-15.12	4.44	4.49	135
240	6.33	3.15	6.47	6.26	9.41	7.88	120	120	-17	-0.7	-0.6	120
-255	-1.36	4.51	5.99	5.58	6.72	5.98	105	105	-18.24	0.26	0.32	105
270	-9.33	-18.2	7.02	5.59	7.12	5.61	90	90	-18.2	5.59	5.61	90
-285	1.7	-5.01	6.87	6.11	8.03	6.43	75	75	-15.72	8	8.02	75
300	7.65	1.06	6.75	6.11	10.23	7.29	60	60	-13.06	8.12	8.16	60
-315	9.34	2.37	5.33	7.56	10.8	8.71	45	45	-11.18	6.09	6.17	45
330	10.77	5	4.82	8.87	11.75	10.17	30	30	-9.08	2.82	3.09	30
-345	10.67	5.5	5.43	9.44	11.81	10.91	15	15	-7.91	3.46	3.76	15