

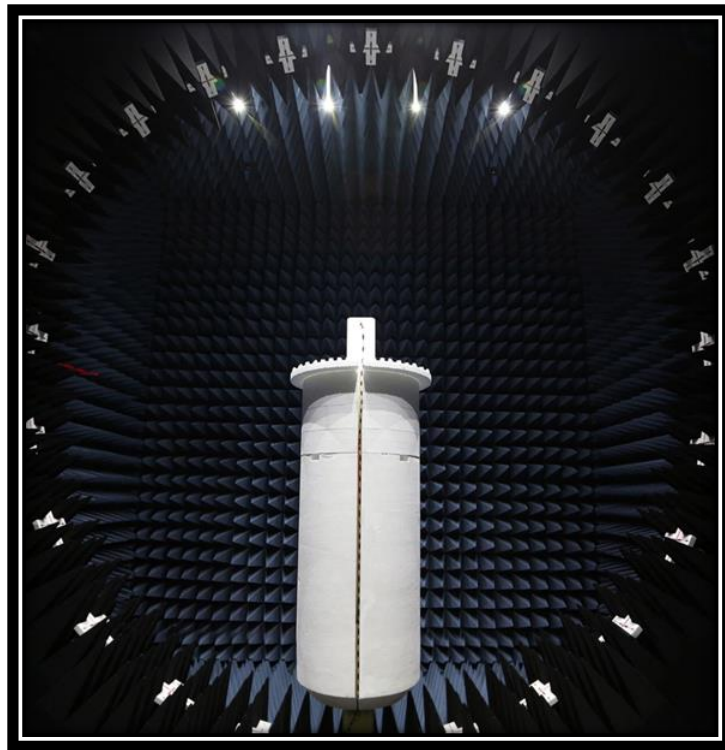


# element

**Ademco, Inc.**

**C7089R3013 Antenna**

**Report: ADEM0034 Rev 1, Issue Date: November 3, 2022**



# REVISION HISTORY



Revision Number	Description	Date (yyyy-mm-dd)	Page Number
01	Removed reference to A2LA and ILAC accreditation	2022-11-03	1

# ACCREDITATIONS AND AUTHORIZATIONS



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## United States

**FCC** - Designated by the FCC as a Telecommunications Certification Body (TCB). Certification chambers, Open Area Test Sites, and conducted measurement facilities are listed with the FCC.

**A2LA** - Each laboratory is accredited by A2LA to ISO / IEC 17025, and as a product certifier to ISO / IEC 17065 which allows Element to certify transmitters to FCC and IC specifications.

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## Canada

**ISED** - Recognized by Innovation, Science and Economic Development Canada as a Certification Body (CB) and as a CAB for the acceptance of test data.

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## European Union

**European Commission** – Recognized as an EU Notified Body validated for the EMCD and RED Directives.

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## United Kingdom

**BEIS** – Recognized by the UK as an Approved Body under the UK Radio Equipment and UK EMC Regulations.

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## Australia/New Zealand

**ACMA** - Recognized by ACMA as a CAB for the acceptance of test data.

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## Korea

**MSIT / RRA** - Recognized by KCC's RRA as a CAB for the acceptance of test data.

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## Japan

**VCCI** - Associate Member of the VCCI. Conducted and radiated measurement facilities are registered.

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## Taiwan

**BSMI** – Recognized by BSMI as a CAB for the acceptance of test data.

**NCC** - Recognized by NCC as a CAB for the acceptance of test data.

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## Singapore

**IDA** – Recognized by IDA as a CAB for the acceptance of test data.

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## Israel

**MOC** – Recognized by MOC as a CAB for the acceptance of test data.

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## Hong Kong

**OFCA** – Recognized by OFCA as a CAB for the acceptance of test data.

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## Vietnam

**MIC** – Recognized by MIC as a CAB for the acceptance of test data.

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## SCOPE

For details on the Scopes of our Accreditations, please visit:

[California](#)

[Minnesota](#)

[Oregon](#)

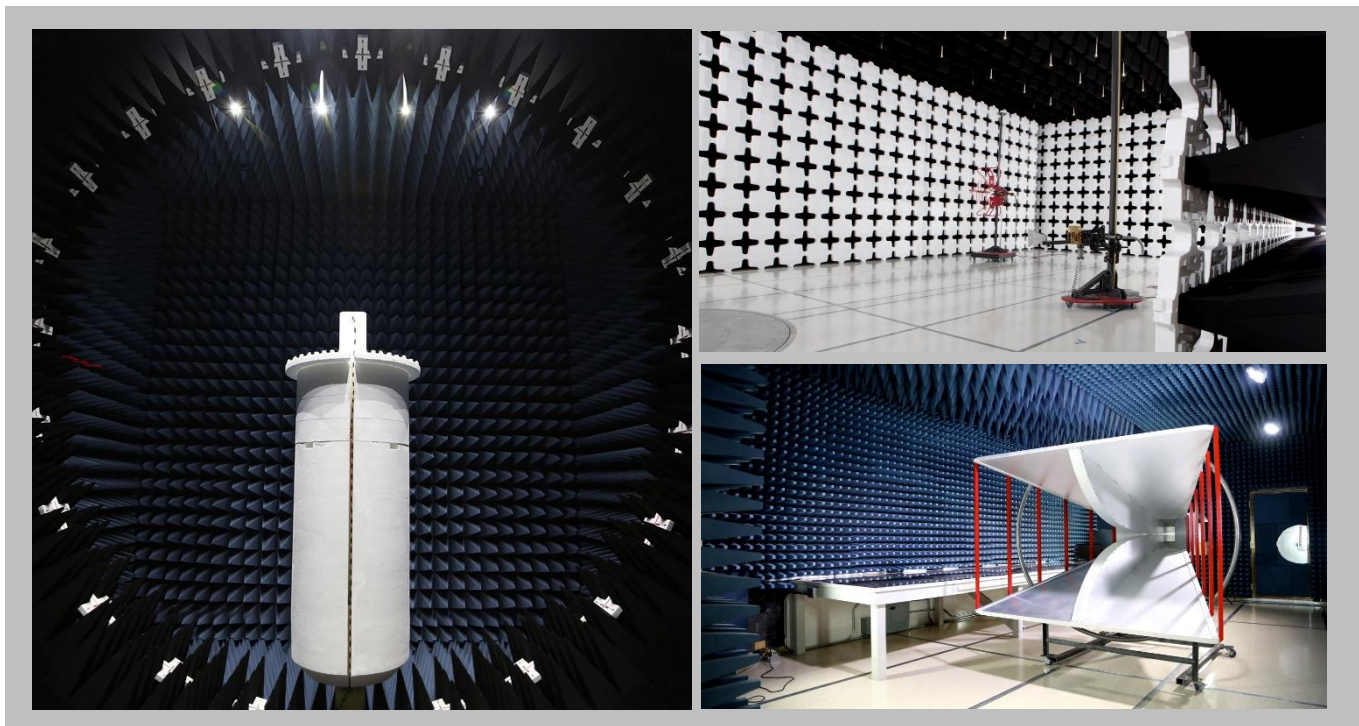
[Texas](#)

[Washington](#)

# FACILITIES



<b>California</b> Labs OC01-17 41 Tesla Irvine, CA 92618 (949) 861-8918	<b>Minnesota</b> Labs MN01-11 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	<b>Oregon</b> Labs EV01-12 6775 NE Evergreen Pkwy #400 Hillsboro, OR 97124 (503) 844-4066	<b>Texas</b> Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	<b>Washington</b> Labs NC01-05 19201 120 <sup>th</sup> Ave NE Bothell, WA 98011 (425)984-6600
<b>A2LA</b>				
Lab Code: 3310.04	Lab Code: 3310.05	Lab Code: 3310.02	Lab Code: 3310.03	Lab Code: 3310.06
<b>Innovation, Science and Economic Development Canada</b>				
2834B-1, 2834B-3	2834E-1, 2834E-3	2834D-1	2834G-1	2834F-1
<b>BSMI</b>				
SL2-IN-E-1154R	SL2-IN-E-1152R	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R
<b>VCCI</b>				
A-0029	A-0109	A-0108	A-0201	A-0110
<b>Recognized Phase I CAB for ISED, ACMA, BSMI, IDA, KCC/RRA, MIC, MOC, NCC, OFCA</b>				
US0158	US0175	US0017	US0191	US0157



# PRODUCT DESCRIPTION

## Client and Equipment Under Test (EUT) Information

Company Name:	Ademco, Inc.
Address:	251 Little Falls Drive
City, State, Zip:	Wilmington, DE 19808
Test Requested By:	Christian Fouth
EUT:	C7089R3013 Antenna
First Date of Test:	October 20, 2022
Last Date of Test:	October 20, 2022
Receipt Date of Samples:	October 20, 2022
Equipment Design Stage:	Prototype
Equipment Condition:	No Damage
Purchase Authorization:	Verified

## Information Provided by the Party Requesting the Test

### Functional Description of the EUT:

Battery powered wireless outdoor temperature and humidity sensor containing a 902-928 MHz radio with 1 antenna intended to operate outside of the house.

AUT description: Single PCB monopole antenna.



### Testing Objective:

To obtain 2D antenna pattern measurements and calculated antenna performance values (gain, efficiency, TRP, etc).

### Approved by:



Adam Bruno, Operations Manager

# PRODUCT DESCRIPTION



# MODIFICATIONS



## Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	2022-10-20	Antenna Plots	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

# POLAR PLOTS

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

## MODES OF OPERATION

Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline at Low 903 MHz, Mid 914.6 MHz and High 926.4 MHz frequencies.

## POWER SETTINGS INVESTIGATED

N/A

## CONFIGURATIONS INVESTIGATED

ADEM0034 - 1

## FREQUENCY RANGE INVESTIGATED

Start Frequency	903 MHz	Stop Frequency	926.4 MHz
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## SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Filter - Low Pass	Micro-Tronics	LPM50004	HHV	2022-07-22	2023-07-22
Attenuator	Fairview Microwave	SA18N-06	TZT	2022-09-13	2023-09-13
Generator - Signal	Keysight	N5171B-506	TEW	2021-05-07	2024-05-07
Antenna - Dipole	ETS Lindgren	3121D-DB4	ADVD	2020-06-04	2023-06-04
Cable	Northwest EMC	RE 9kHz - 1GHz	TXB	2022-06-10	2023-06-10
Antenna - Biconilog	ETS Lindgren	3143B	AYF	2022-09-02	2024-09-02

## TEST DESCRIPTION

The single antenna to be used with the EUT was tested. Low, mid and high channel frequencies were tested.

A reference scan was made with a reference ½ wave dipole antenna at 3m test distance. A signal generator was connected to the dipole antenna and cw signal was used to obtain a reference scan polar plot.

The AUT was then put into the chamber in place of the reference dipole. The AUT was connected to the signal generator using the same cable and connector setup. A polar plot was then done at the antenna height of maximum field strength. This plot was then compared to the reference ½ wave dipole antenna scan, and, using the antenna gain (dBi) of the reference ½ wave dipole antenna the absolute gain of the AUT was calculated.




# RELATIVE GAIN



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PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	21.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	28.2% RH	
<b>Serial Number:</b>	N/A	<b>Barometric Pres.:</b>	1018 mbar	
<b>Tested by:</b>	Brandon Hobbs			
<b>EUT:</b>	Reference Dipole Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>	None			
<b>Comments:</b>	Reference antenna			

Frequency (MHz) **903**

Maximum Amplitude (dBuV/m) **92.18736**

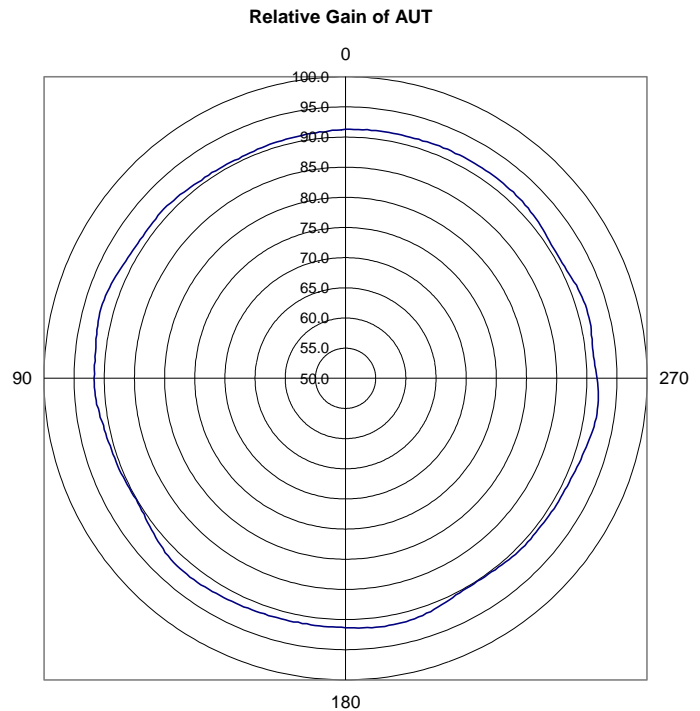
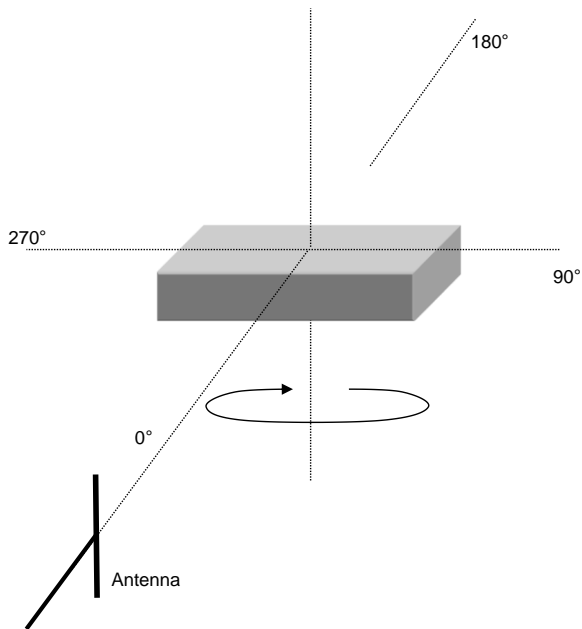
Azimuth at Maximum **74°**

Measurement Antenna Polarity **Vertical**  
Antenna Under Test (AUT) Polarity **Vertical**

Minimum Amplitude (dBuV/m) **90.08736**

Azimuth at Minimum **212°**

<b>Run #</b>	3	<b>Test Distance (m)</b>	3	<b>Antenna Height(s)</b>	2.08		
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# RELATIVE GAIN



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<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	21.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	28.2% RH	
<b>Serial Number:</b>	N/A	<b>Barometric Pres.:</b>	1018 mbar	
<b>Tested by:</b>	Brandon Hobbs			
<b>EUT:</b>	Reference Dipole Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>	None			
<b>Comments:</b>	Reference antenna			

Frequency (MHz) **914.6**

Maximum Amplitude (dBuV/m) **92.73418**

Azimuth at Maximum **264°**

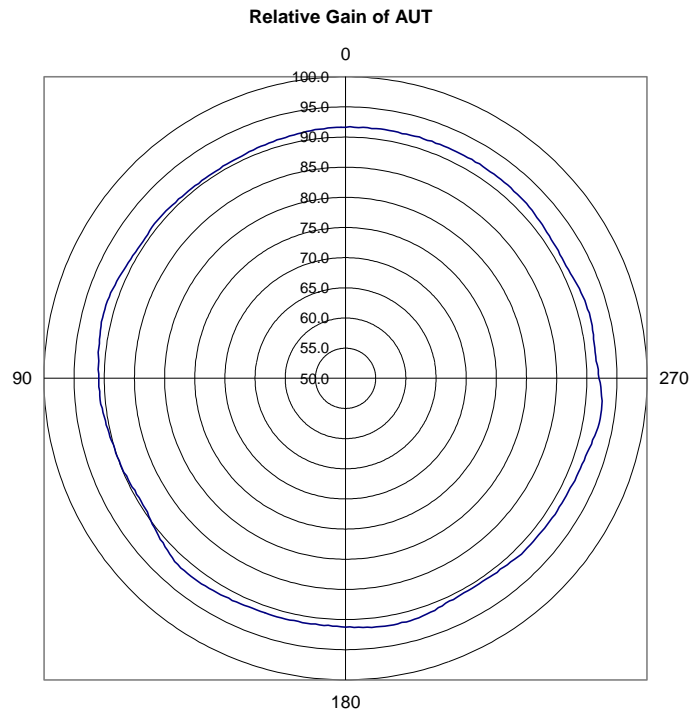
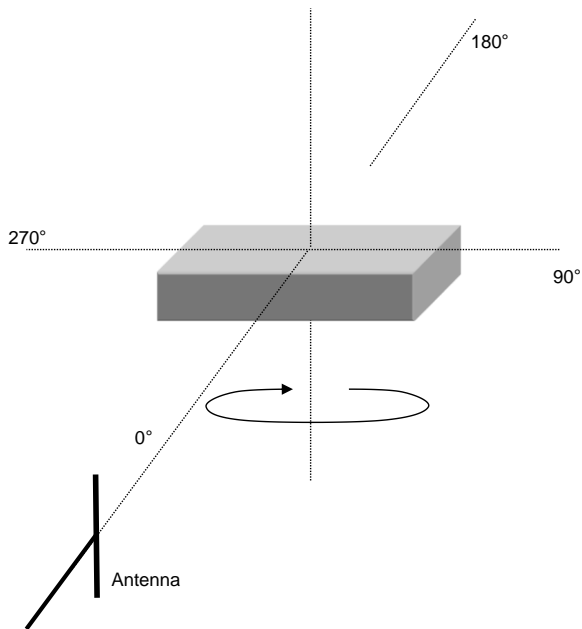
Measurement Antenna Polarity **Vertical**  
 Antenna Under Test (AUT) Polarity **Vertical**

Minimum Amplitude (dBuV/m) **89.53418**

Azimuth at Minimum **120°**

3 dB Beamwidth **350°**

<b>Run #</b>	4	<b>Test Distance (m)</b>	3	<b>Antenna Height(s)</b>	2.03	
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# RELATIVE GAIN



EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	21.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	28.2% RH	
<b>Serial Number:</b>	N/A	<b>Barometric Pres.:</b>	1018 mbar	
<b>Tested by:</b>	Brandon Hobbs			
<b>EUT:</b>	Reference Dipole Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>	None			
<b>Comments:</b>	Reference antenna			

Frequency (MHz) **926.4**

Maximum Amplitude (dBuV/m) **92.54727**

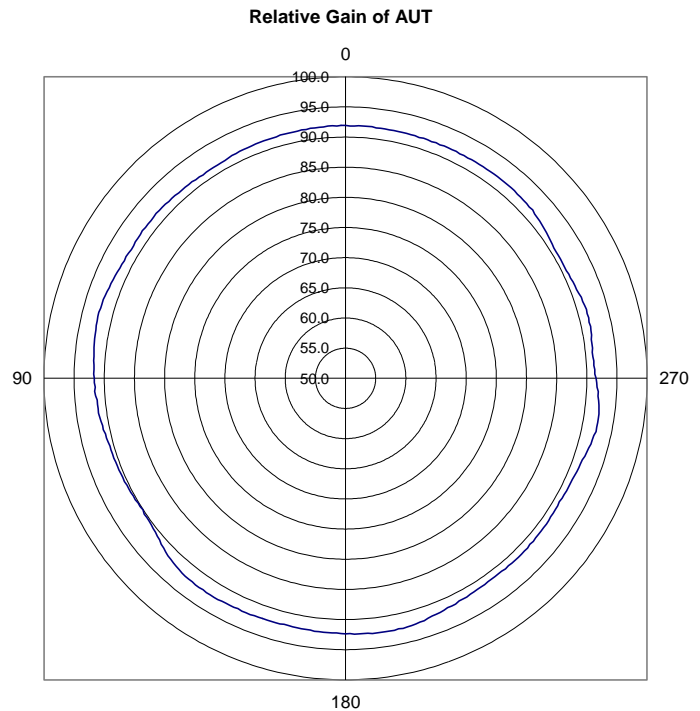
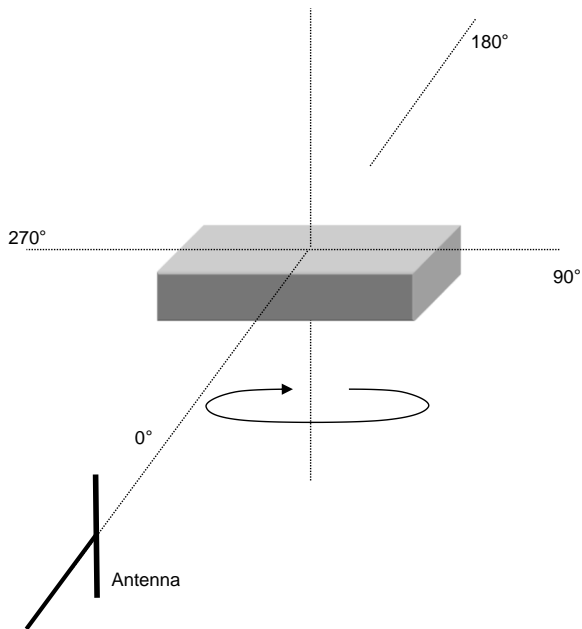
Azimuth at Maximum **192°**

Measurement Antenna Polarity **Vertical**  
Antenna Under Test (AUT) Polarity **Vertical**

Minimum Amplitude (dBuV/m) **90.04727**

Azimuth at Minimum **122°**

<b>Run #</b>	5	<b>Test Distance (m)</b>	3	<b>Antenna Height(s)</b>	2.02		
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# RELATIVE GAIN



EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	21.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	28.2% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>	None			
<b>Comments:</b>	None			

Frequency (MHz) **926.4**

Maximum Amplitude (dBuV/m) **97.44727**

Azimuth at Maximum **151°**

Measurement Antenna Polarity **Horizontal**

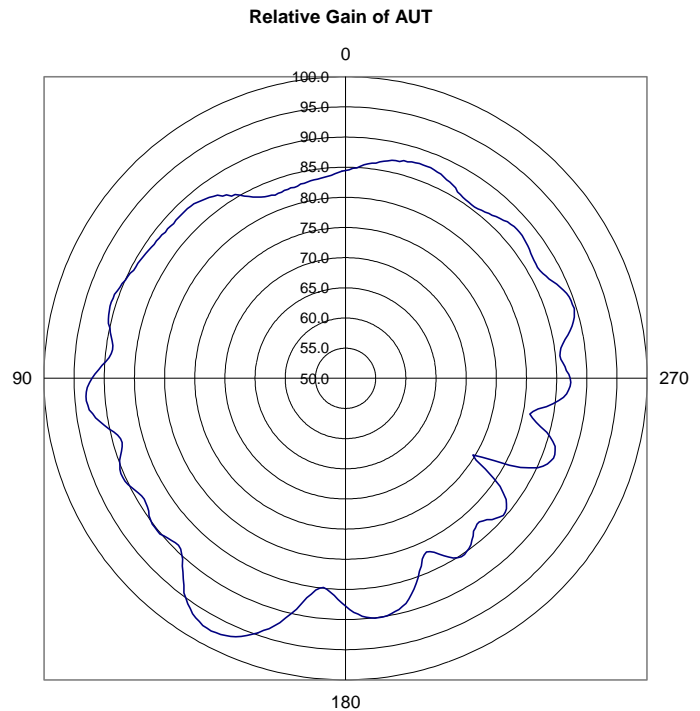
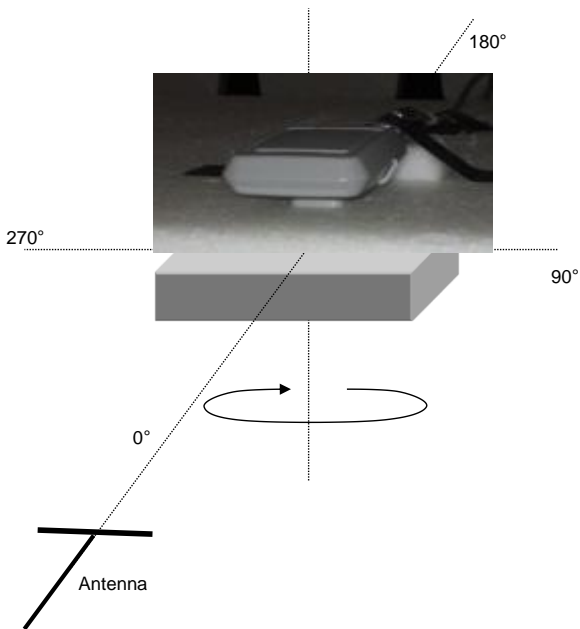
Minimum Amplitude (dBuV/m) **74.64727**

Antenna Under Test (AUT) Polarity **Horizontal**

Azimuth at Minimum **238°**

3 dB Beamwidth **20°**

<b>Run #</b>	6	<b>Test Distance (m)</b>	3	<b>Antenna Height(s)</b>	1.31		
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# ABSOLUTE GAIN



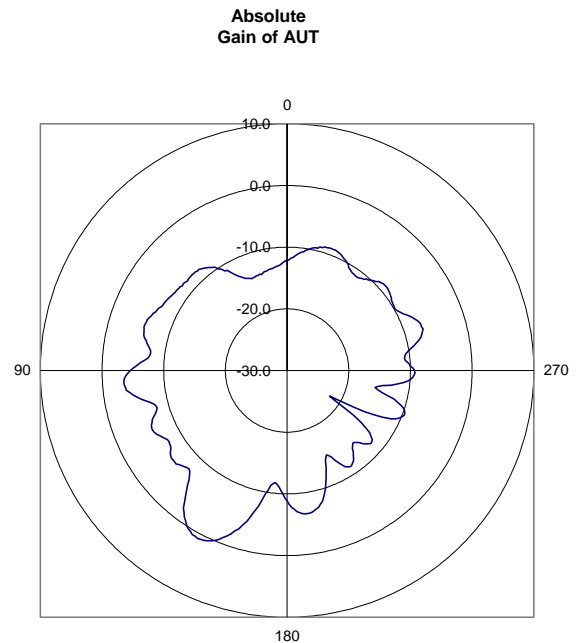
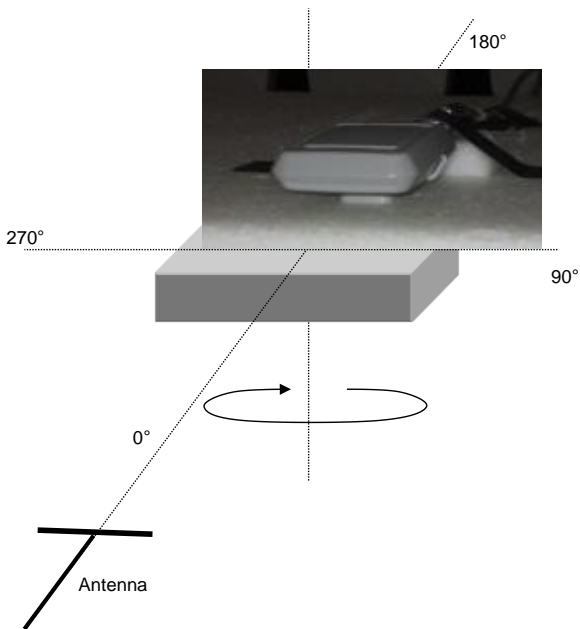
EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	21.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	28.2% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>	None			
<b>Comments:</b>	None			

Frequency	<b>926.4</b>	Absolute Gain of Reference Antenna (dBi)	0.83
Measurement Antenna Polarity	<b>Horizontal</b>	Reference Antenna Relative Gain Max (dBuV/m)	97.45
Antenna Under Test (AUT) Polarity	<b>Horizontal</b>	AUT Relative Gain Max (dBuV/m)	97.45
Maximum Absolute Gain of AUT (dBi)	<b>0.83</b>	Difference (Reference Antenna - AUT) (dB)	0.00
Average Absolute Gain of AUT (dBi)	<b>-9.09</b>	AUT Setup Loss (dB)	<b>0</b>
		Correction Factor (Convert Relative to Absolute Gain) (dB)	<b>96.62</b>
3 dB Beamwidth	<b>20°</b>		

Run #	Test Distance (m)	Antenna Height(s)	Results
			NA




# RELATIVE GAIN



EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency (MHz) **926.4**

Maximum Amplitude (dBuV/m) **91.34727**

Azimuth at Maximum **152°**

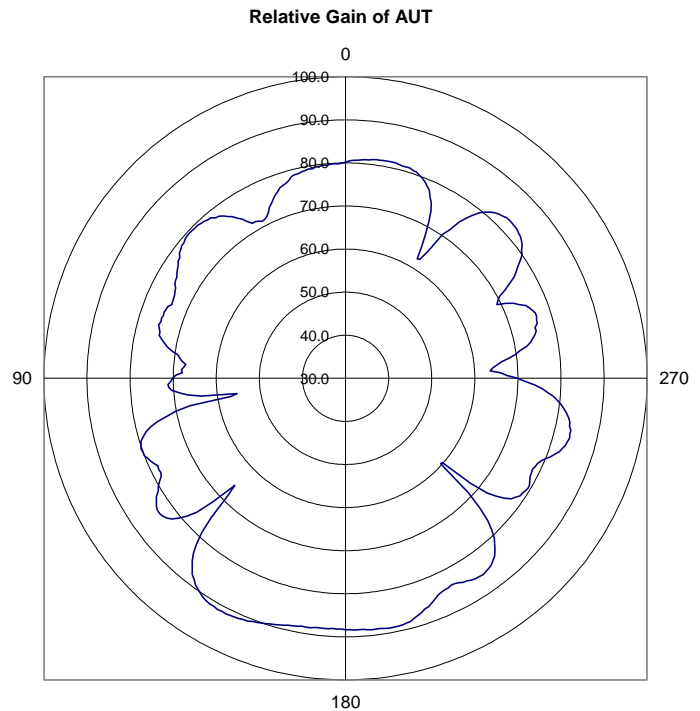
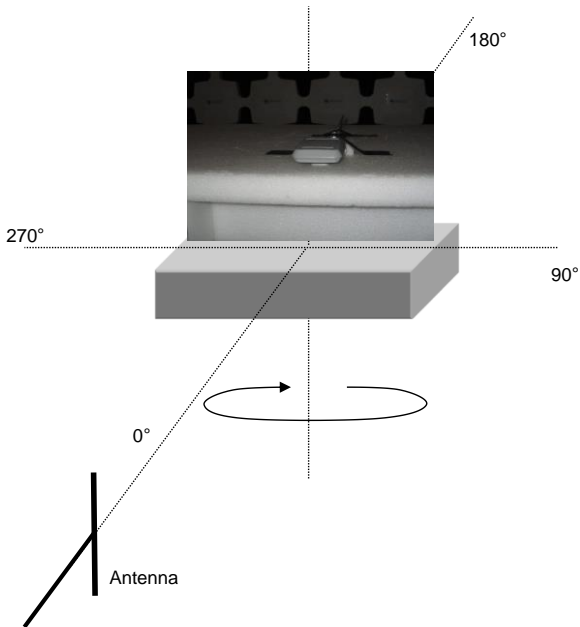
Measurement Antenna Polarity **Vertical**  
 Antenna Under Test (AUT) Polarity **Horizontal**

Minimum Amplitude (dBuV/m) **55.44727**

Azimuth at Minimum **97°**

3 dB Beamwidth **31°**

<b>Run #</b>	7	<b>Test Distance (m)</b>	3	<b>Antenna Height(s)</b>	1	
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# ABSOLUTE GAIN



EmiR5 2022.07.06.0

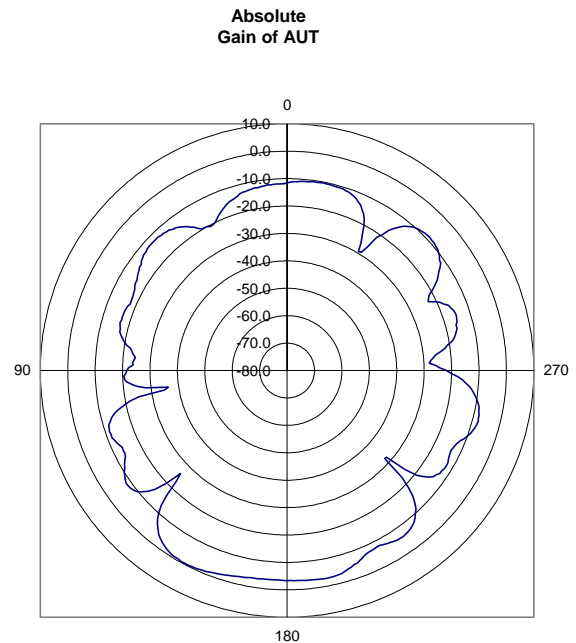
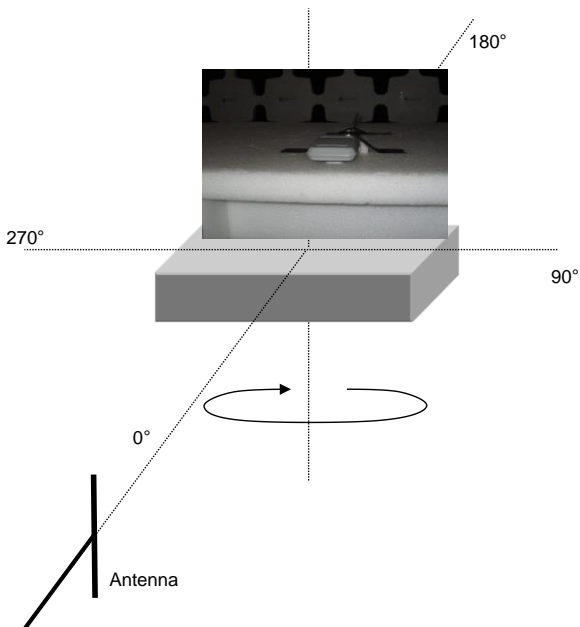
PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency	<b>926.4</b>	Absolute Gain of Reference Antenna (dBi)	0.83
Measurement Antenna Polarity	<b>Vertical</b>	Reference Antenna Relative Gain Max (dBuV/m)	92.55
Antenna Under Test (AUT) Polarity	<b>Horizontal</b>	AUT Relative Gain Max (dBuV/m)	91.35
Maximum Absolute Gain of AUT (dBi)	<b>-0.37</b>	Difference (Reference Antenna - AUT) (dB)	1.20
Average Absolute Gain of AUT (dBi)	<b>-12.79</b>	AUT Setup Loss (dB)	<b>0</b>
		Correction Factor (Convert Relative to Absolute Gain) (dB)	<b>91.72</b>

3 dB Beamwidth **31°**

Run #	Test Distance (m)	Antenna Height(s)	Results
			NA




# RELATIVE GAIN



EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency (MHz) **914.6**

Maximum Amplitude (dBuV/m) **90.73418**

Azimuth at Maximum **149°**

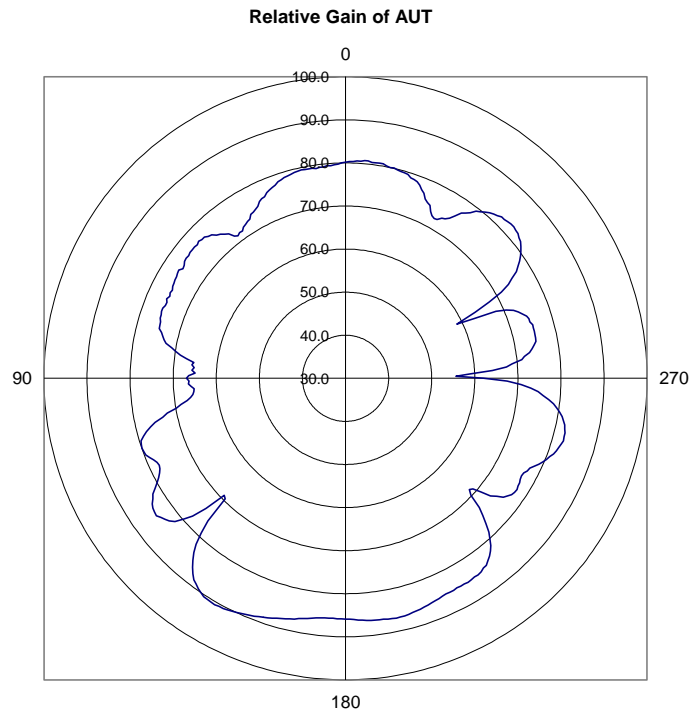
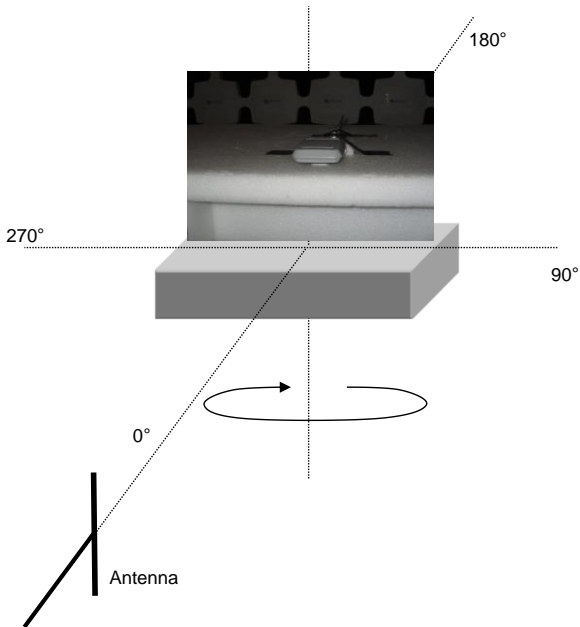
Measurement Antenna Polarity **Vertical**  
 Antenna Under Test (AUT) Polarity **Horizontal**

Minimum Amplitude (dBuV/m) **55.63418**

Azimuth at Minimum **270°**

3 dB Beamwidth **23°**

<b>Run #</b>	8	<b>Test Distance (m)</b>	3	<b>Antenna Height(s)</b>	1		
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# ABSOLUTE GAIN

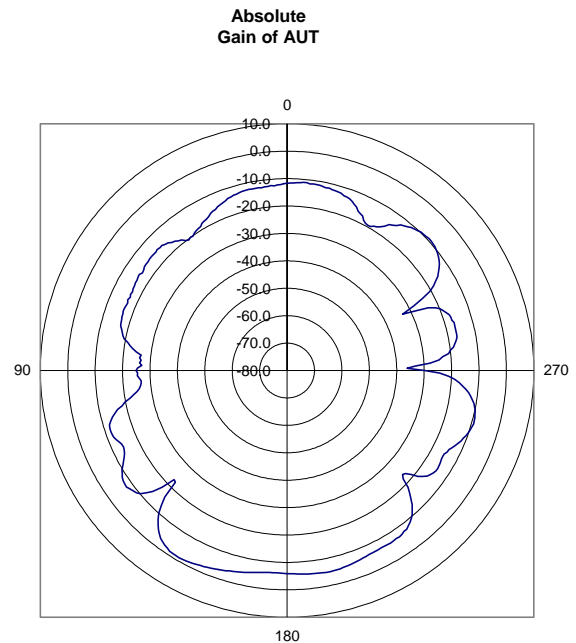
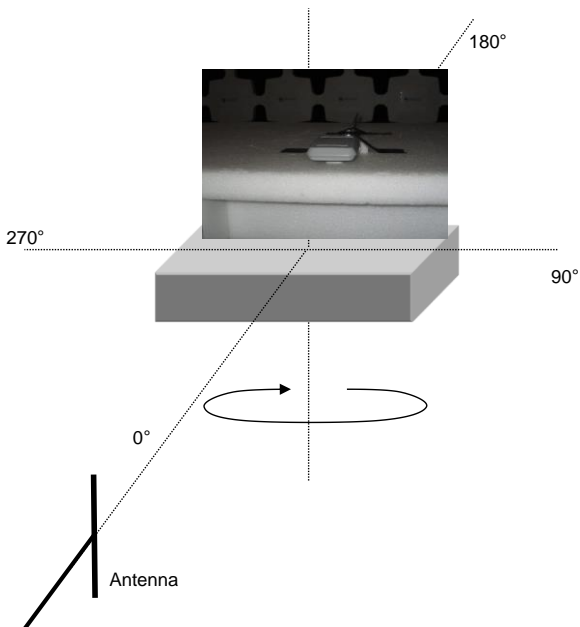


EmiR5 2022.07.06.0      PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency	<b>914.6</b>	Absolute Gain of Reference Antenna (dBi)	0.87
Measurement Antenna Polarity	<b>Vertical</b>	Reference Antenna Relative Gain Max (dBuV/m)	92.73
Antenna Under Test (AUT) Polarity	<b>Horizontal</b>	AUT Relative Gain Max (dBuV/m)	90.73
Maximum Absolute Gain of AUT (dBi)	<b>-1.13</b>	Difference (Reference Antenna - AUT) (dB)	2.00
Average Absolute Gain of AUT (dBi)	<b>-13.45</b>	AUT Setup Loss (dB)	<b>0</b>
		Correction Factor (Convert Relative to Absolute Gain) (dB)	<b>91.86</b>
3 dB Beamwidth	<b>23°</b>		

Run #	Test Distance (m)	Antenna Height(s)	Results
			NA




# RELATIVE GAIN



EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency (MHz) **914.6**

Maximum Amplitude (dBuV/m) **97.03418**

Azimuth at Maximum **150°**

Measurement Antenna Polarity **Horizontal**

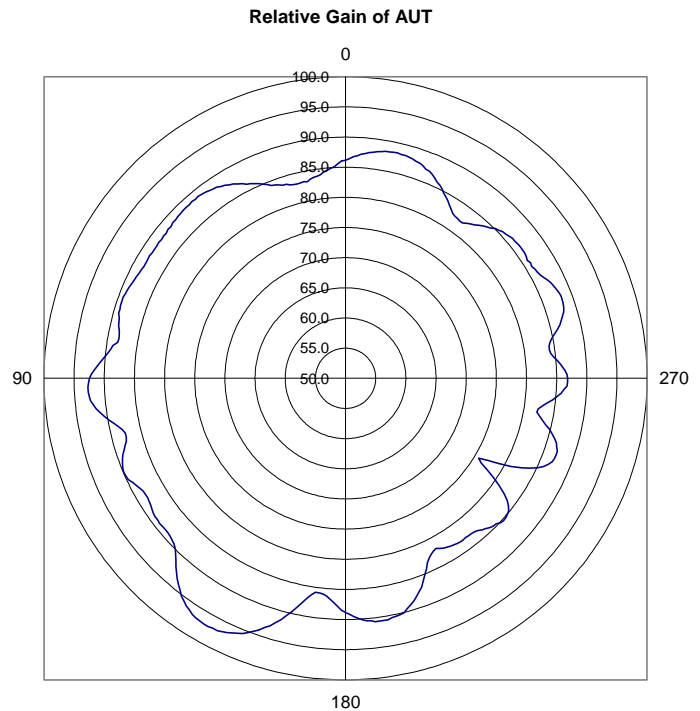
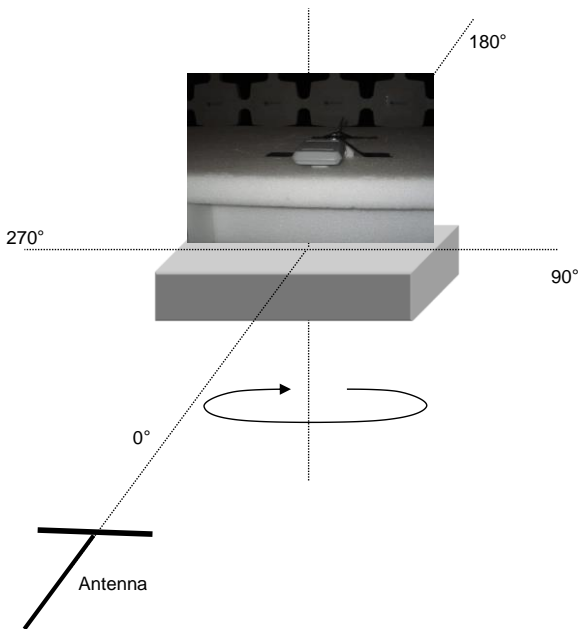
Minimum Amplitude (dBuV/m) **75.73418**

Antenna Under Test (AUT) Polarity **Horizontal**

Azimuth at Minimum **238°**

3 dB Beamwidth **21°**

<b>Run #</b>	9	<b>Test Distance (m)</b>	3	<b>Antenna Height(s)</b>	1.33	
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# ABSOLUTE GAIN



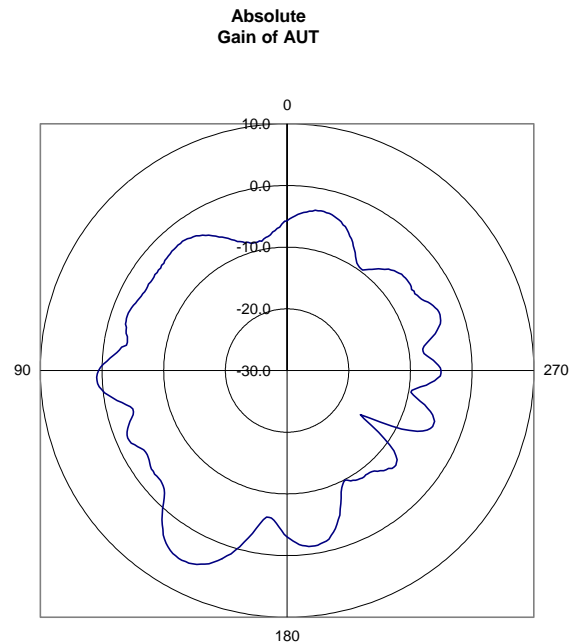
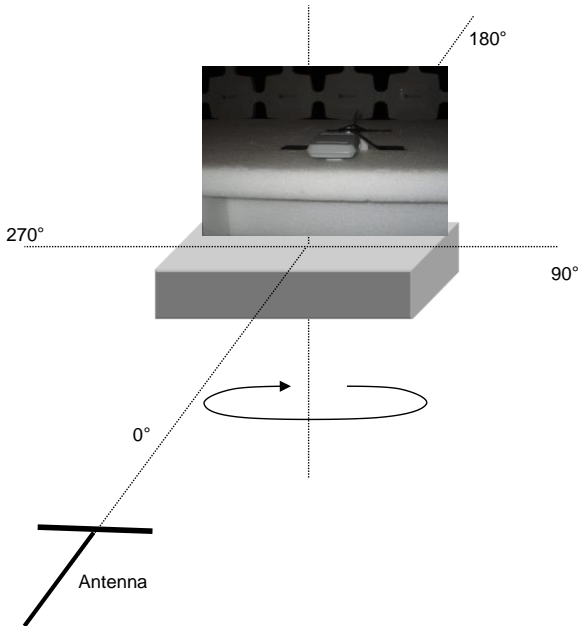
EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency	<b>914.6</b>	Absolute Gain of Reference Antenna (dBi)	0.87
Measurement Antenna Polarity	<b>Horizontal</b>	Reference Antenna Relative Gain Max (dBuV/m)	92.73
Antenna Under Test (AUT) Polarity	<b>Horizontal</b>	AUT Relative Gain Max (dBuV/m)	97.03
Maximum Absolute Gain of AUT (dBi)	<b>5.17</b>	Difference (Reference Antenna - AUT) (dB)	-4.30
Average Absolute Gain of AUT (dBi)	<b>-4.49</b>	AUT Setup Loss (dB)	<b>0</b>
		Correction Factor (Convert Relative to Absolute Gain) (dB)	<b>91.86</b>
3 dB Beamwidth	<b>21°</b>		

Run #	Test Distance (m)	Antenna Height(s)	Results
			NA




# RELATIVE GAIN



EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency (MHz) **903**

Maximum Amplitude (dBuV/m) **96.48736**

Azimuth at Maximum **151°**

Measurement Antenna Polarity **Horizontal**

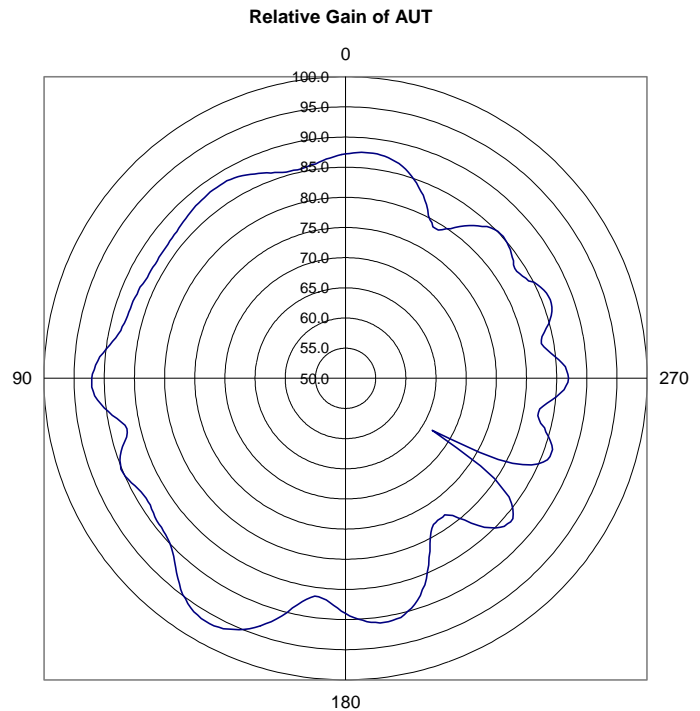
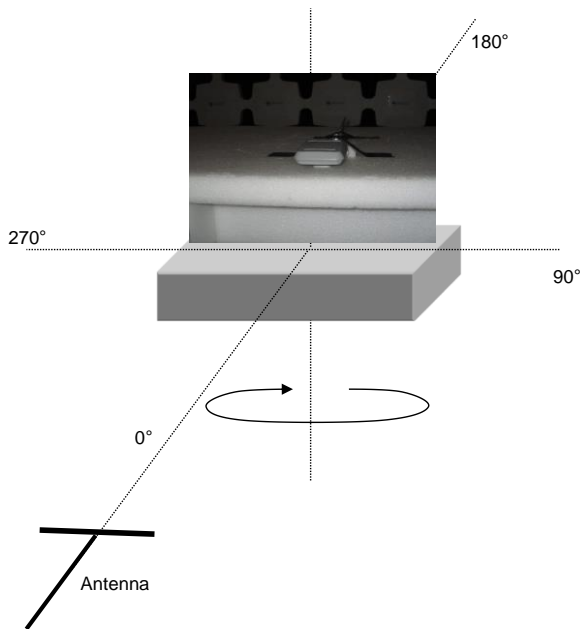
Minimum Amplitude (dBuV/m) **66.78736**

Antenna Under Test (AUT) Polarity **Horizontal**

Azimuth at Minimum **238°**

3 dB Beamwidth **21°**

<b>Run #</b>	10	<b>Test Distance (m)</b>	3	<b>Antenna Height(s)</b>	1.339		
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# ABSOLUTE GAIN



EmiR5 2022.07.06.0

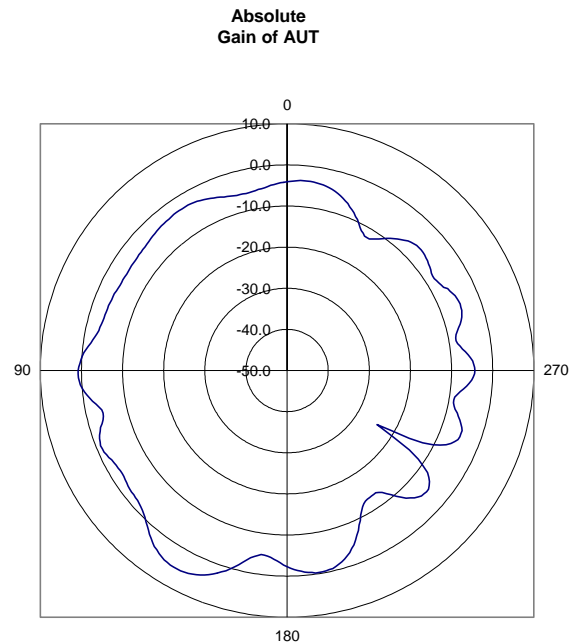
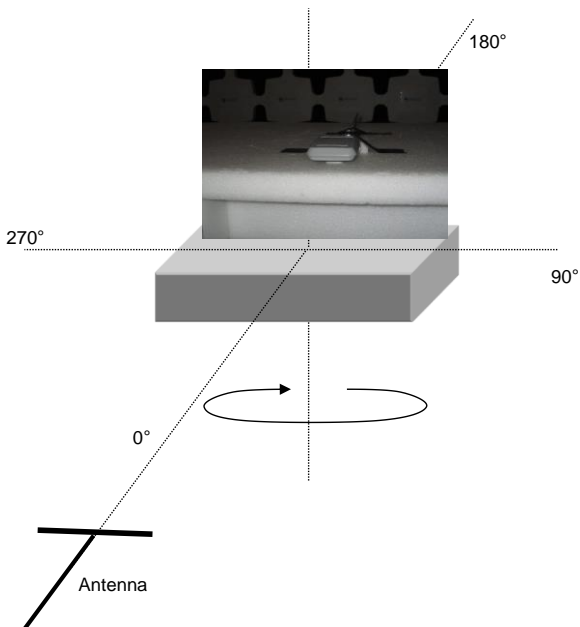
PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency	<b>903</b>	Absolute Gain of Reference Antenna (dBi)	0.9
Measurement Antenna Polarity	<b>Horizontal</b>	Reference Antenna Relative Gain Max (dBuV/m)	92.19
Antenna Under Test (AUT) Polarity	<b>Horizontal</b>	AUT Relative Gain Max (dBuV/m)	96.49
Maximum Absolute Gain of AUT (dBi)	<b>5.20</b>	Difference (Reference Antenna - AUT) (dB)	-4.30
Average Absolute Gain of AUT (dBi)	<b>-4.57</b>	AUT Setup Loss (dB)	<b>0</b>
		Correction Factor (Convert Relative to Absolute Gain) (dB)	<b>91.29</b>

3 dB Beamwidth **21°**

Run #	Test Distance (m)	Antenna Height(s)	Results
			NA




# RELATIVE GAIN



EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency (MHz) **903**

Maximum Amplitude (dBuV/m) **90.68736**

Azimuth at Maximum **148°**

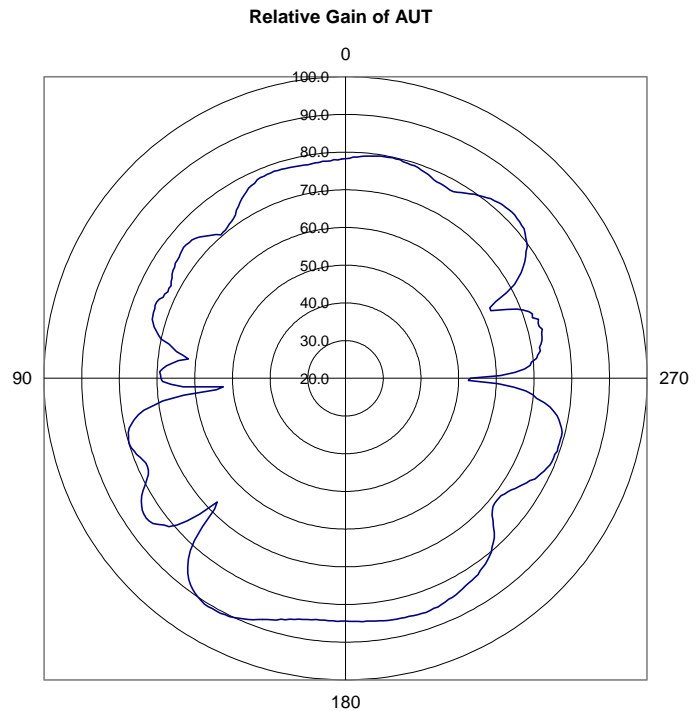
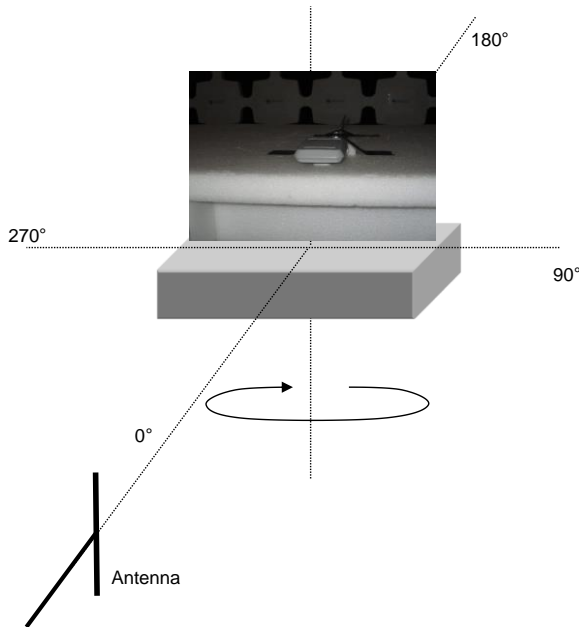
Measurement Antenna Polarity **Vertical**  
 Antenna Under Test (AUT) Polarity **Horizontal**

Minimum Amplitude (dBuV/m) **52.48736**

Azimuth at Minimum **93°**

3 dB Beamwidth **19°**

<b>Run #</b>	11	<b>Test Distance (m)</b>	3	<b>Antenna Height(s)</b>	1	
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# ABSOLUTE GAIN



EmiR5 2022.07.06.0

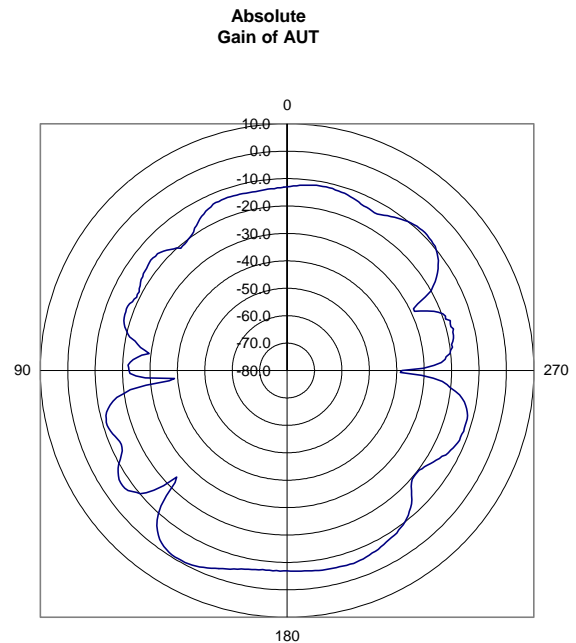
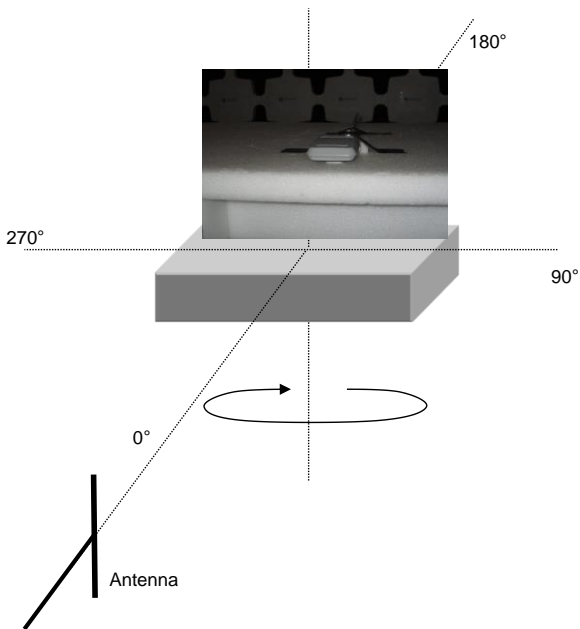
PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency	<b>903</b>	Absolute Gain of Reference Antenna (dBi)	0.9
Measurement Antenna Polarity	<b>Vertical</b>	Reference Antenna Relative Gain Max (dBuV/m)	92.19
Antenna Under Test (AUT) Polarity	<b>Horizontal</b>	AUT Relative Gain Max (dBuV/m)	90.69
Maximum Absolute Gain of AUT (dBi)	<b>-0.60</b>	Difference (Reference Antenna - AUT) (dB)	1.50
Average Absolute Gain of AUT (dBi)	<b>-13.75</b>	AUT Setup Loss (dB)	<b>0</b>
		Correction Factor (Convert Relative to Absolute Gain) (dB)	<b>91.29</b>

3 dB Beamwidth **19°**

Run #	Test Distance (m)	Antenna Height(s)	Results
			NA




# RELATIVE GAIN



EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency (MHz) **903**

Maximum Amplitude (dBuV/m) **92.08736**

Azimuth at Maximum **147°**

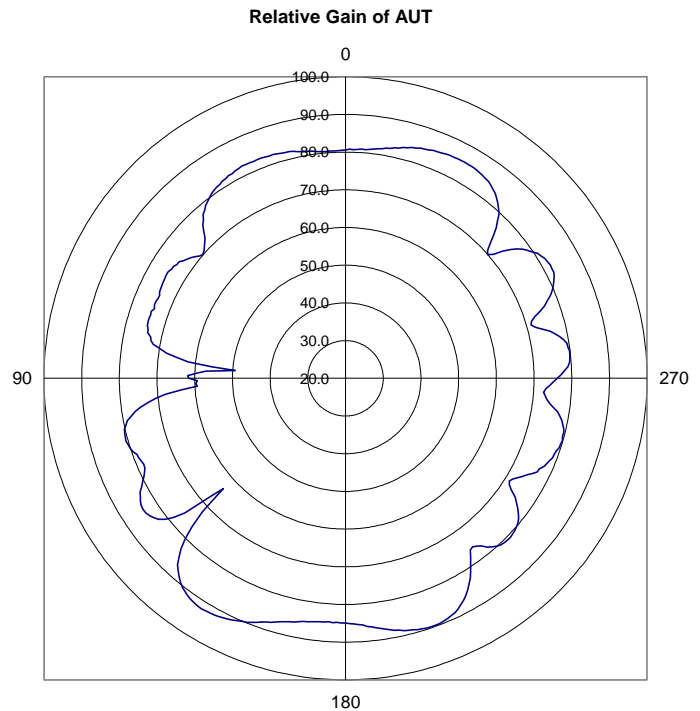
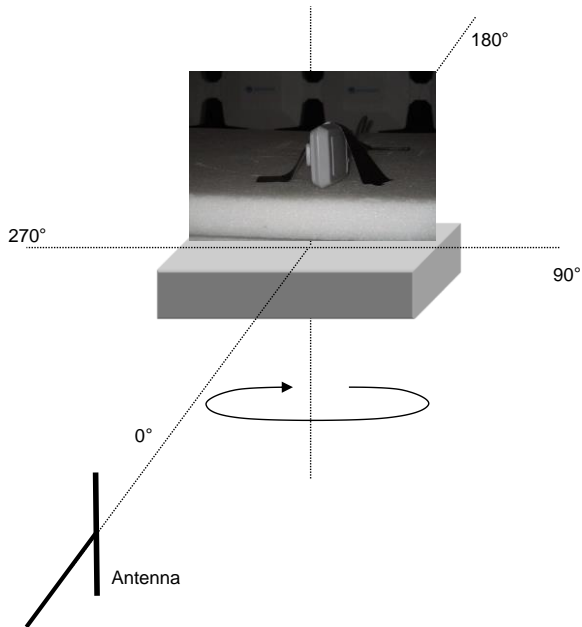
Measurement Antenna Polarity **Vertical**  
Antenna Under Test (AUT) Polarity **on Side**

Minimum Amplitude (dBuV/m) **49.38736**

Azimuth at Minimum **85°**

3 dB Beamwidth **20°**

<b>Run #</b>	12	<b>Test Distance (m)</b>	3	<b>Antenna Height(s)</b>	1		
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# ABSOLUTE GAIN



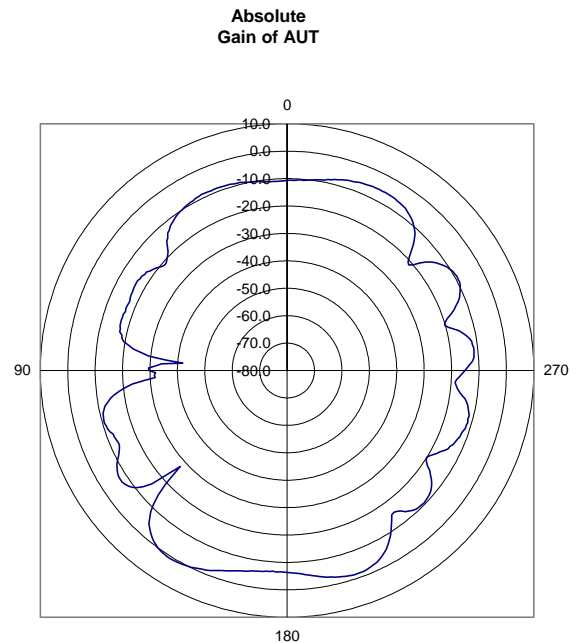
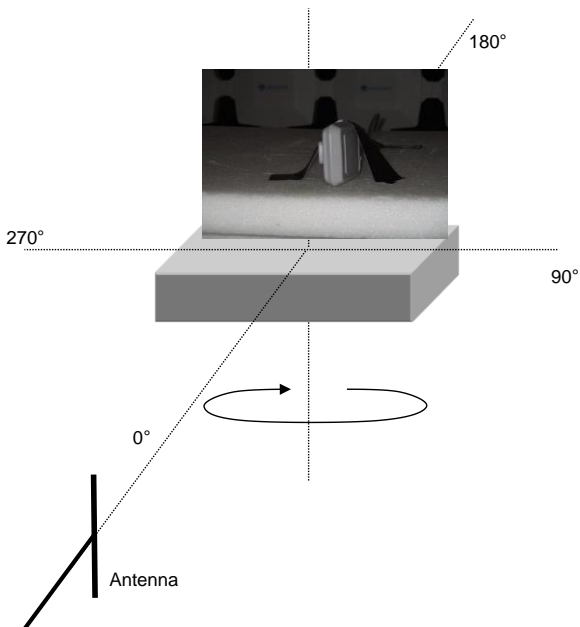
EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency	<b>903</b>	Absolute Gain of Reference Antenna (dBi)	0.9
Measurement Antenna Polarity	<b>Vertical</b>	Reference Antenna Relative Gain Max (dBuV/m)	92.19
Antenna Under Test (AUT) Polarity	<b>on Side</b>	AUT Relative Gain Max (dBuV/m)	92.09
Maximum Absolute Gain of AUT (dBi)	<b>0.80</b>	Difference (Reference Antenna - AUT) (dB)	0.10
Average Absolute Gain of AUT (dBi)	<b>-11.46</b>	AUT Setup Loss (dB)	<b>0</b>
		Correction Factor (Convert Relative to Absolute Gain) (dB)	<b>91.29</b>
3 dB Beamwidth	<b>20°</b>		

Run #	Test Distance (m)	Antenna Height(s)	Results
			NA




# RELATIVE GAIN



EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency (MHz) **903**

Maximum Amplitude (dBuV/m) **93.88736**

Azimuth at Maximum **193°**

Measurement Antenna Polarity **Horizontal**

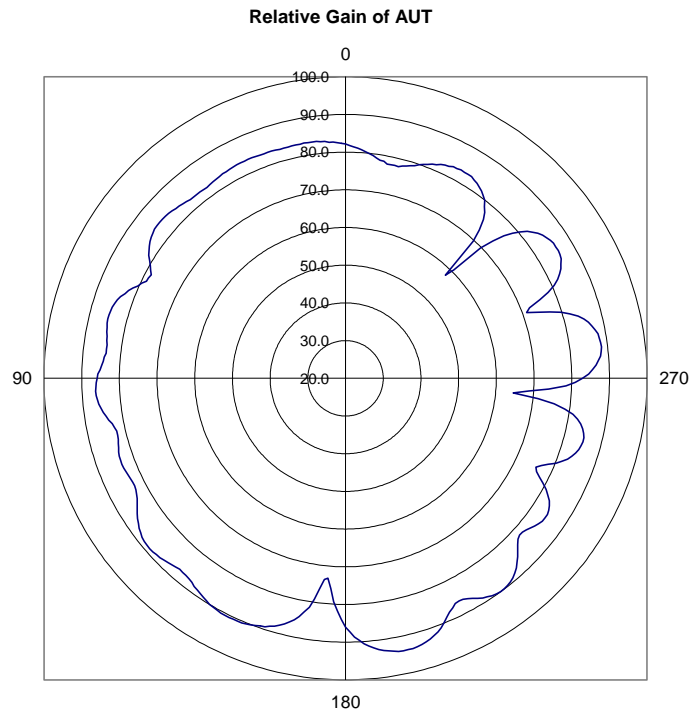
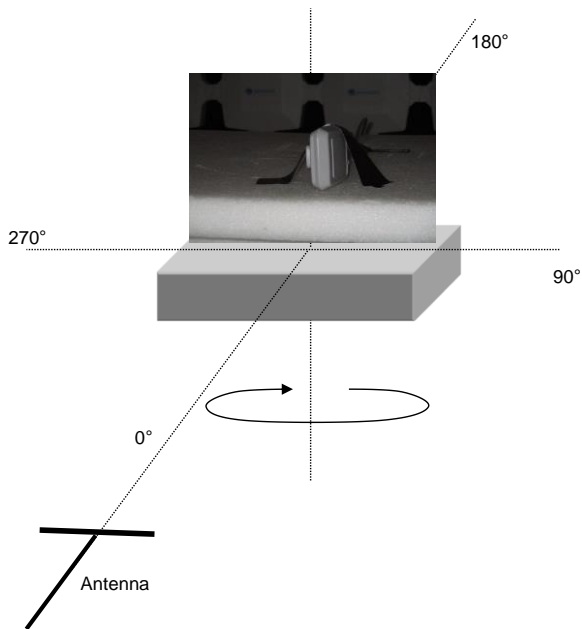
Minimum Amplitude (dBuV/m) **58.08736**

Antenna Under Test (AUT) Polarity **on Side**

Azimuth at Minimum **315°**

3 dB Beamwidth **17°**

<b>Run #</b>	13	<b>Test Distance (m)</b>	3	<b>Antenna Height(s)</b>	1		
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# ABSOLUTE GAIN



EmiR5 2022.07.06.0

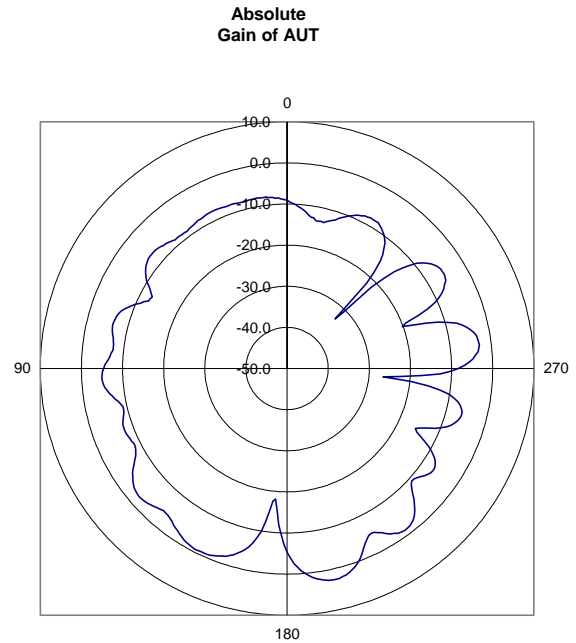
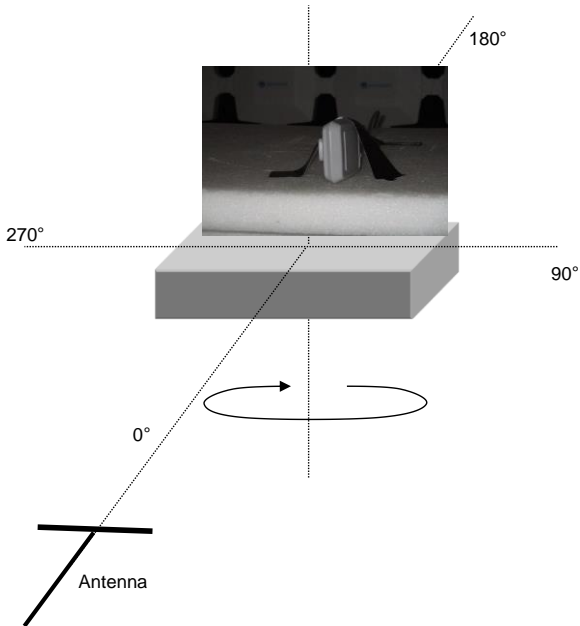
PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency	<b>903</b>	Absolute Gain of Reference Antenna (dBi)	0.9
Measurement Antenna Polarity	<b>Horizontal</b>	Reference Antenna Relative Gain Max (dBuV/m)	92.19
Antenna Under Test (AUT) Polarity	<b>on Side</b>	AUT Relative Gain Max (dBuV/m)	93.89
Maximum Absolute Gain of AUT (dBi)	<b>2.60</b>	Difference (Reference Antenna - AUT) (dB)	-1.70
Average Absolute Gain of AUT (dBi)	<b>-7.47</b>	AUT Setup Loss (dB)	<b>0</b>
		Correction Factor (Convert Relative to Absolute Gain) (dB)	<b>91.29</b>

3 dB Beamwidth **17°**

Run #	Test Distance (m)	Antenna Height(s)	Results
			NA




# RELATIVE GAIN



EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency (MHz) **914.6**

Maximum Amplitude (dBuV/m) **94.83418**

Azimuth at Maximum **152°**

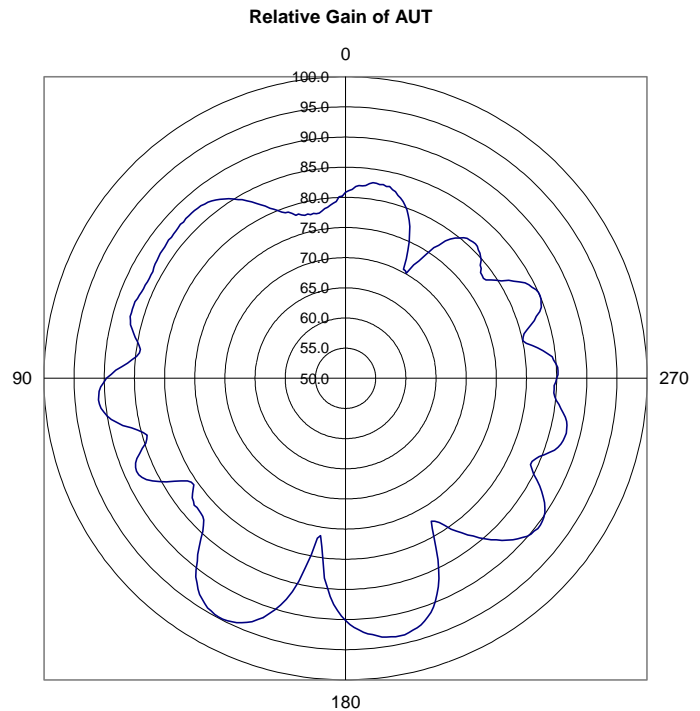
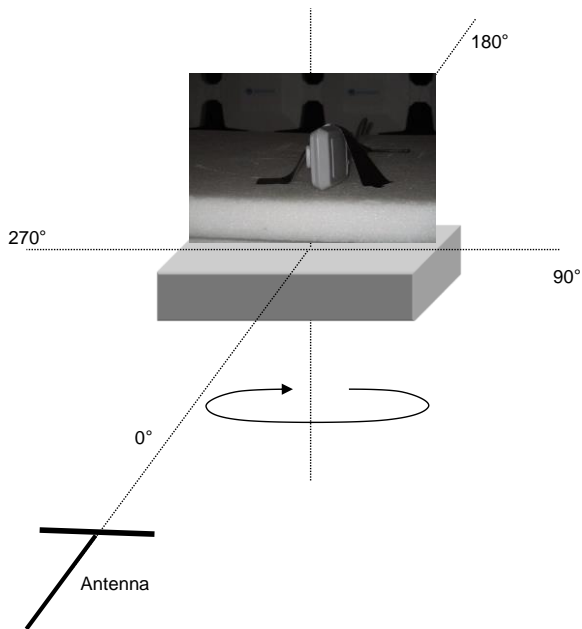
Measurement Antenna Polarity **Horizontal**  
 Antenna Under Test (AUT) Polarity **on Side**

Minimum Amplitude (dBuV/m) **70.13418**

Azimuth at Minimum **329°**

3 dB Beamwidth **19°**

<b>Run #</b>	14	<b>Test Distance (m)</b>	3	<b>Antenna Height(s)</b>	1.3		
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# ABSOLUTE GAIN



EmiR5 2022.07.06.0

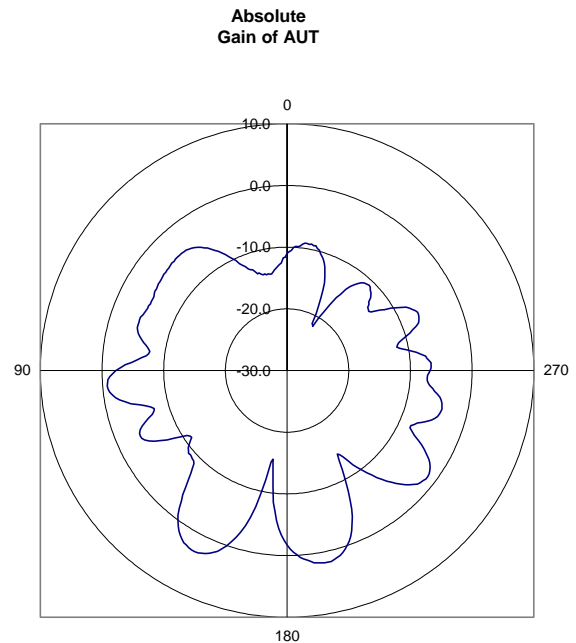
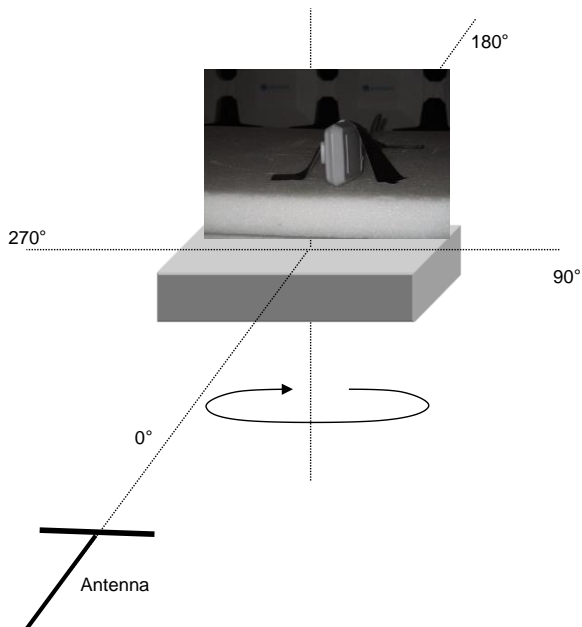
PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency	<b>914.6</b>	Absolute Gain of Reference Antenna (dBi)	0.87
Measurement Antenna Polarity	<b>Horizontal</b>	Reference Antenna Relative Gain Max (dBuV/m)	92.73
Antenna Under Test (AUT) Polarity	<b>on Side</b>	AUT Relative Gain Max (dBuV/m)	94.83
Maximum Absolute Gain of AUT (dBi)	<b>2.97</b>	Difference (Reference Antenna - AUT) (dB)	-2.10
Average Absolute Gain of AUT (dBi)	<b>-6.94</b>	AUT Setup Loss (dB)	<b>0</b>
		Correction Factor (Convert Relative to Absolute Gain) (dB)	<b>91.86</b>

3 dB Beamwidth **19°**

Run #	Test Distance (m)	Antenna Height(s)	Results
			NA




# RELATIVE GAIN



EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency (MHz) **914.6**

Maximum Amplitude (dBuV/m) **92.53418**

Azimuth at Maximum **147°**

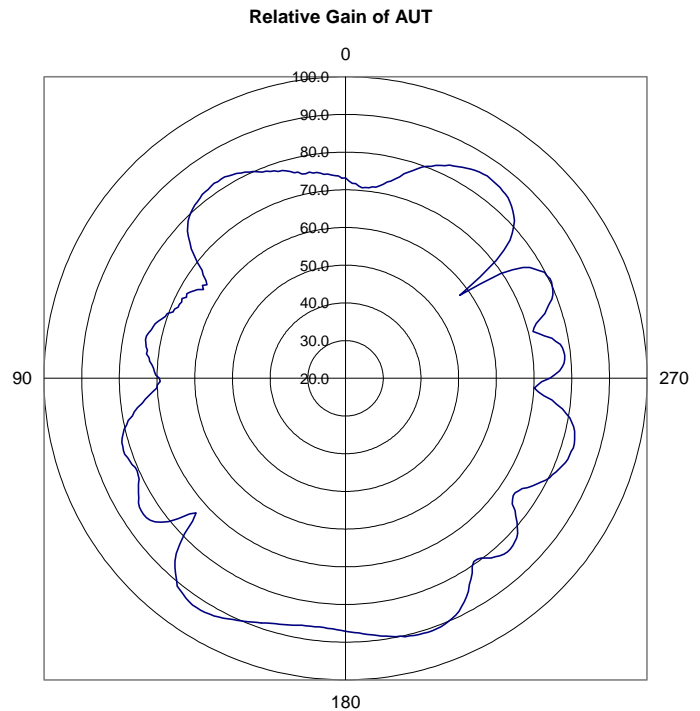
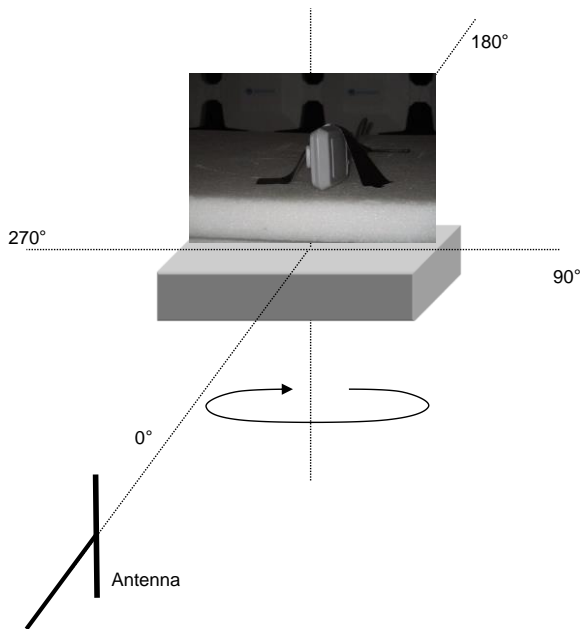
Measurement Antenna Polarity **Vertical**  
Antenna Under Test (AUT) Polarity **on Side**

Minimum Amplitude (dBuV/m) **57.43418**

Azimuth at Minimum **305°**

3 dB Beamwidth **20°**

<b>Run #</b>	15	<b>Test Distance (m)</b>	3	<b>Antenna Height(s)</b>	1.01		
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# ABSOLUTE GAIN



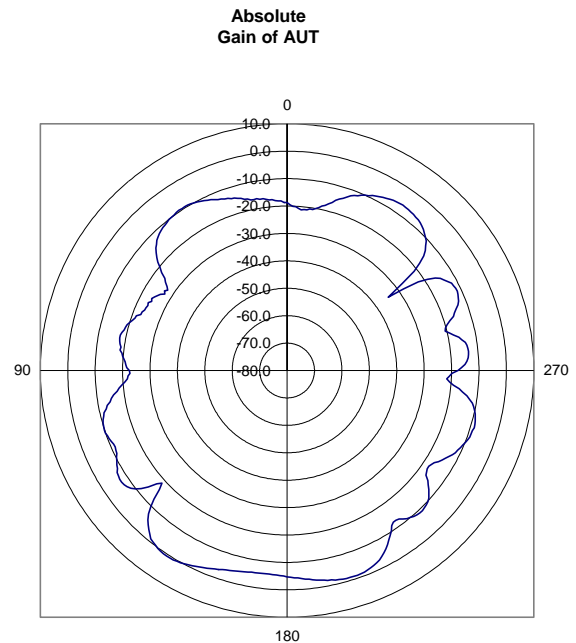
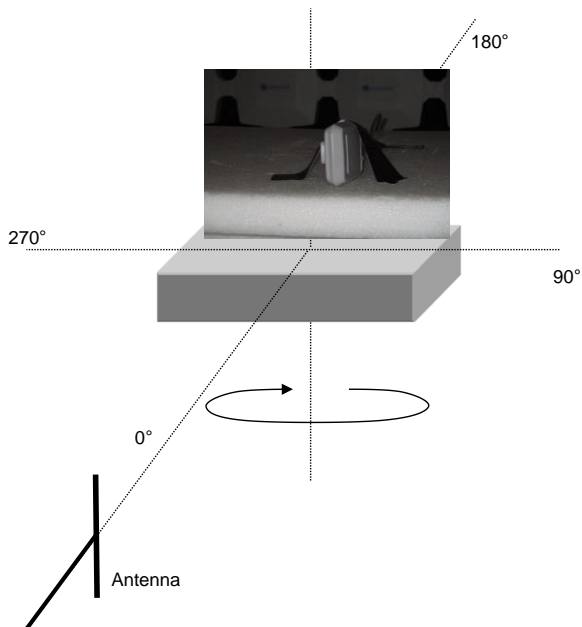
EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency	<b>914.6</b>	Absolute Gain of Reference Antenna (dBi)	0.87
Measurement Antenna Polarity	<b>Vertical</b>	Reference Antenna Relative Gain Max (dBuV/m)	92.73
Antenna Under Test (AUT) Polarity	<b>on Side</b>	AUT Relative Gain Max (dBuV/m)	92.53
Maximum Absolute Gain of AUT (dBi)	<b>0.67</b>	Difference (Reference Antenna - AUT) (dB)	0.20
Average Absolute Gain of AUT (dBi)	<b>-12.15</b>	AUT Setup Loss (dB)	<b>0</b>
		Correction Factor (Convert Relative to Absolute Gain) (dB)	<b>91.86</b>
3 dB Beamwidth	<b>20°</b>		

Run #	Test Distance (m)	Antenna Height(s)	Results
			NA




# RELATIVE GAIN



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<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency (MHz) **926.4**

Maximum Amplitude (dBuV/m) **93.04727**

Azimuth at Maximum **148°**

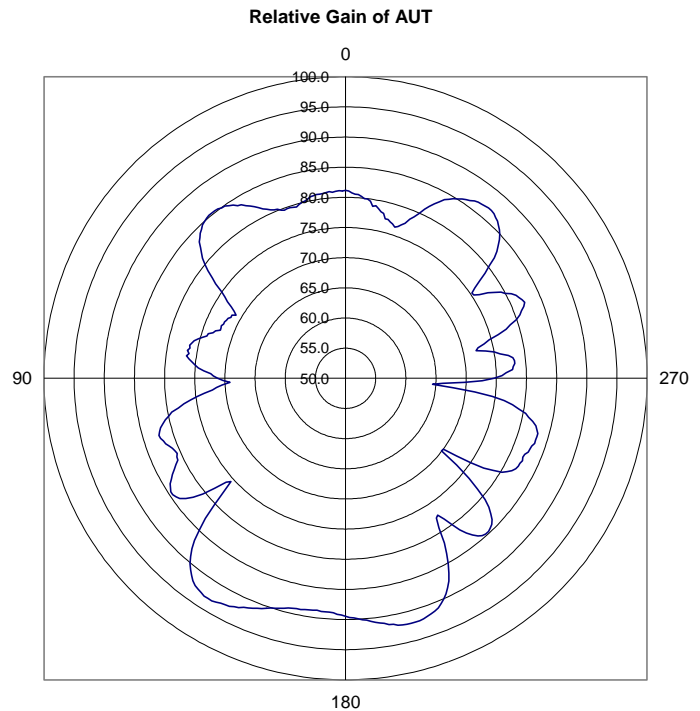
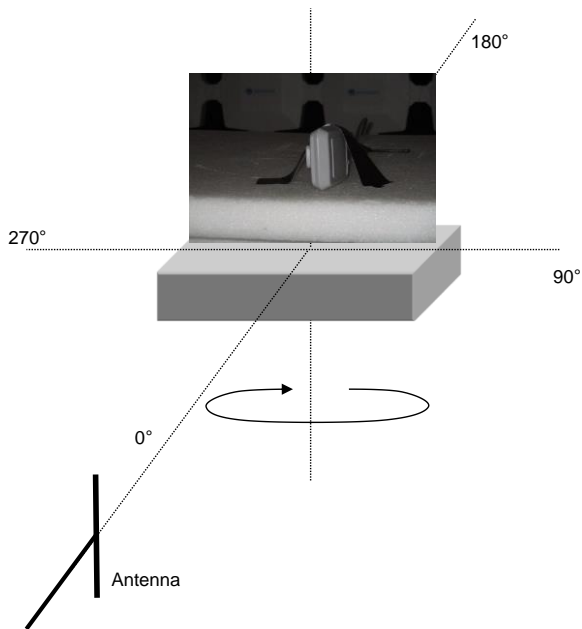
Measurement Antenna Polarity **Vertical**  
Antenna Under Test (AUT) Polarity **on Side**

Minimum Amplitude (dBuV/m) **64.44727**

Azimuth at Minimum **265°**

3 dB Beamwidth **23°**

<b>Run #</b>	16	<b>Test Distance (m)</b>	3	<b>Antenna Height(s)</b>	1		
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# ABSOLUTE GAIN



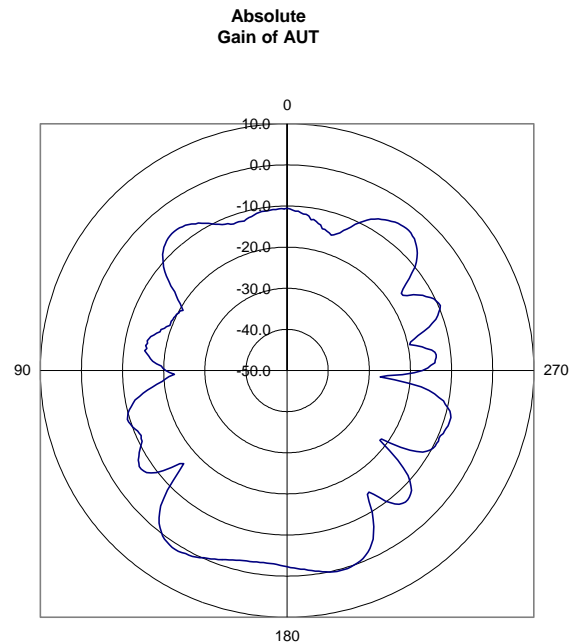
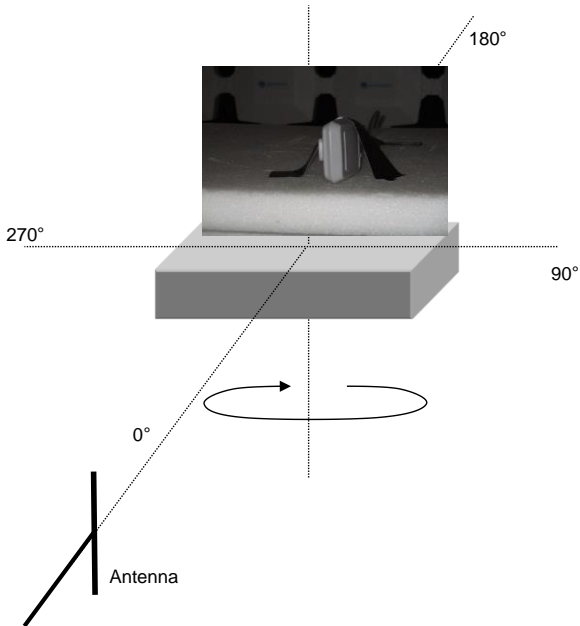
EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency	<b>926.4</b>	Absolute Gain of Reference Antenna (dBi)	0.83
Measurement Antenna Polarity	<b>Vertical</b>	Reference Antenna Relative Gain Max (dBuV/m)	92.55
Antenna Under Test (AUT) Polarity	<b>on Side</b>	AUT Relative Gain Max (dBuV/m)	93.05
Maximum Absolute Gain of AUT (dBi)	<b>1.33</b>	Difference (Reference Antenna - AUT) (dB)	-0.50
Average Absolute Gain of AUT (dBi)	<b>-10.06</b>	AUT Setup Loss (dB)	<b>0</b>
		Correction Factor (Convert Relative to Absolute Gain) (dB)	<b>91.72</b>
3 dB Beamwidth	<b>23°</b>		

Run #	Test Distance (m)	Antenna Height(s)	Results
			NA




# RELATIVE GAIN



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<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency (MHz) **926.4**

Maximum Amplitude (dBuV/m) **95.34727**

Azimuth at Maximum **153°**

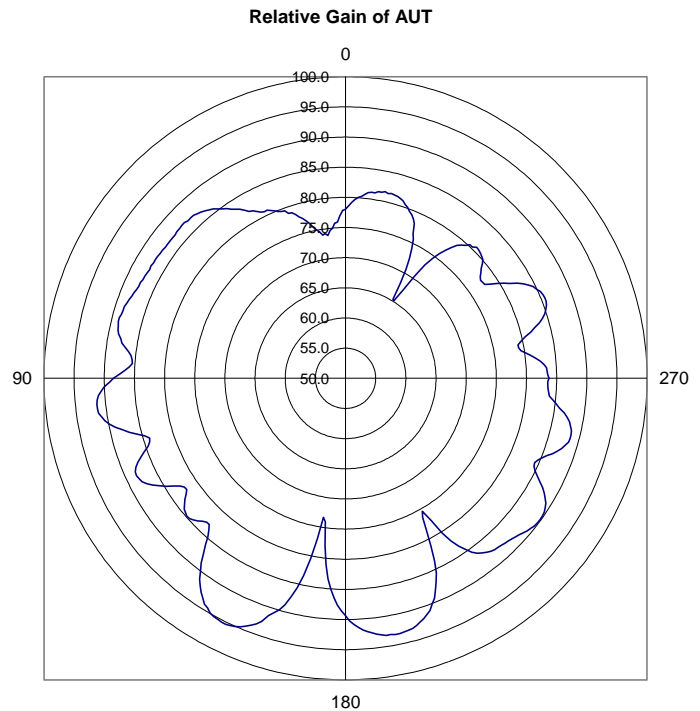
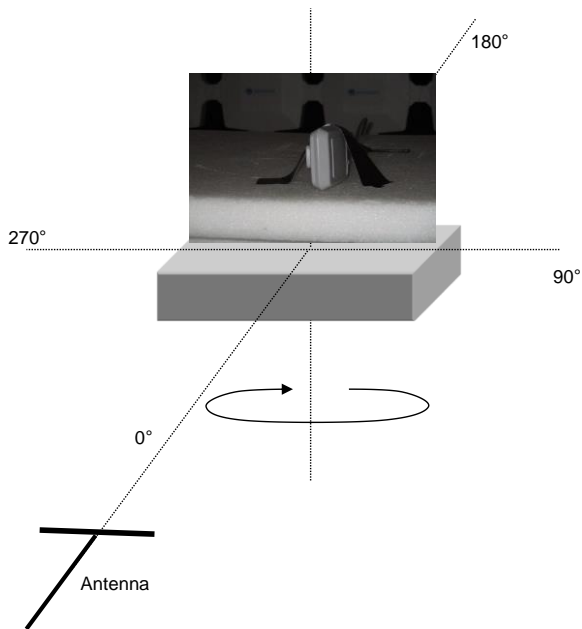
Measurement Antenna Polarity **Horizontal**  
Antenna Under Test (AUT) Polarity **on Side**

Minimum Amplitude (dBuV/m) **65.14727**

Azimuth at Minimum **327°**

3 dB Beamwidth **17°**

<b>Run #</b>	17	<b>Test Distance (m)</b>	3	<b>Antenna Height(s)</b>	1.28		
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# ABSOLUTE GAIN



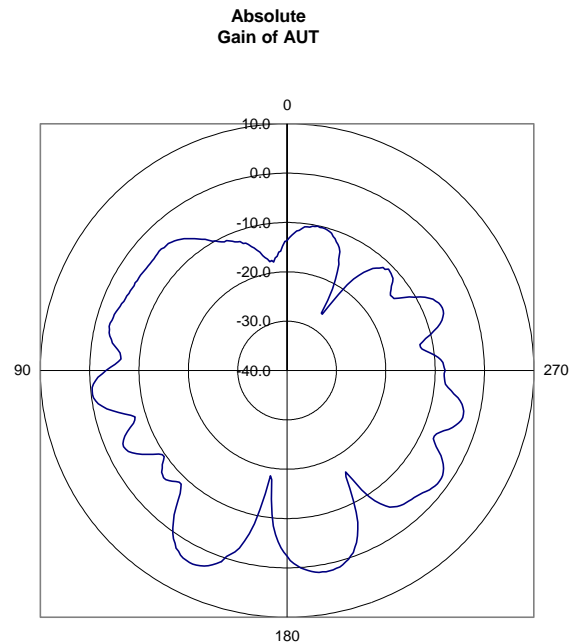
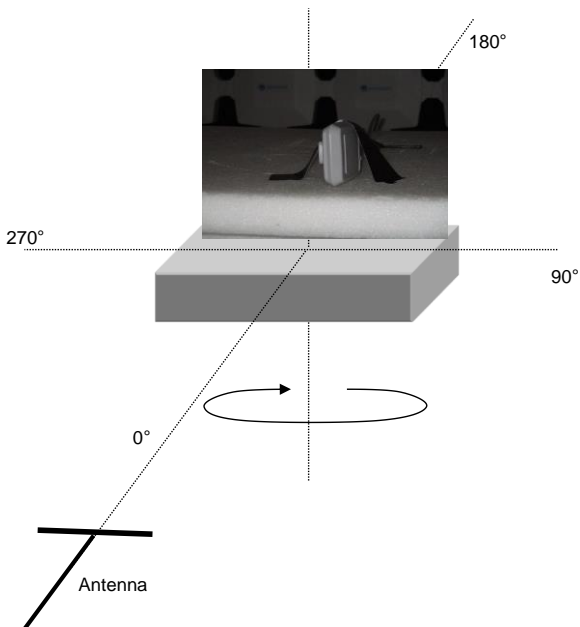
EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency	<b>926.4</b>	Absolute Gain of Reference Antenna (dBi)	0.83
Measurement Antenna Polarity	<b>Horizontal</b>	Reference Antenna Relative Gain Max (dBuV/m)	92.55
Antenna Under Test (AUT) Polarity	<b>on Side</b>	AUT Relative Gain Max (dBuV/m)	95.35
Maximum Absolute Gain of AUT (dBi)	<b>3.63</b>	Difference (Reference Antenna - AUT) (dB)	-2.80
Average Absolute Gain of AUT (dBi)	<b>-7.06</b>	AUT Setup Loss (dB)	<b>0</b>
		Correction Factor (Convert Relative to Absolute Gain) (dB)	<b>91.72</b>
3 dB Beamwidth	<b>17°</b>		

Run #	Test Distance (m)	Antenna Height(s)	Results
			NA




# RELATIVE GAIN



EmiR5 2022.07.06.0

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<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency (MHz) **926.4**

Maximum Amplitude (dBuV/m) **86.64727**

Azimuth at Maximum **153°**

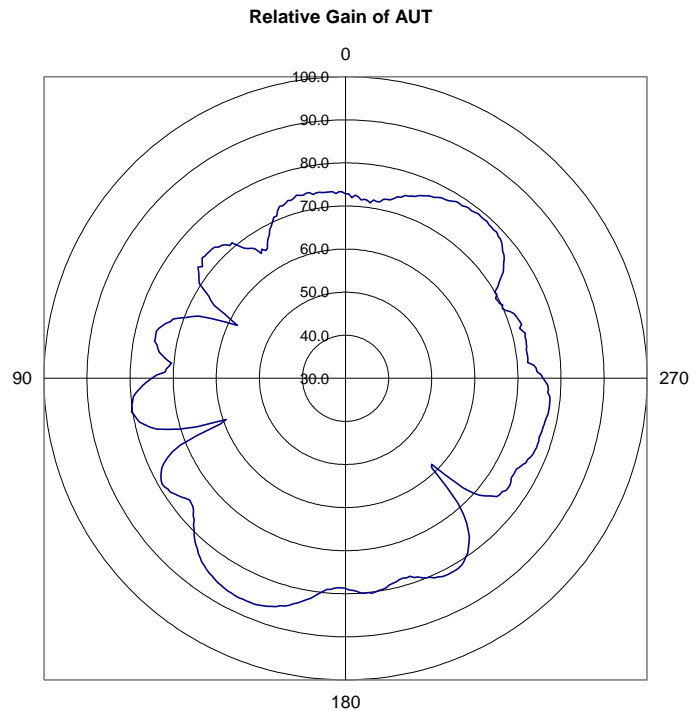
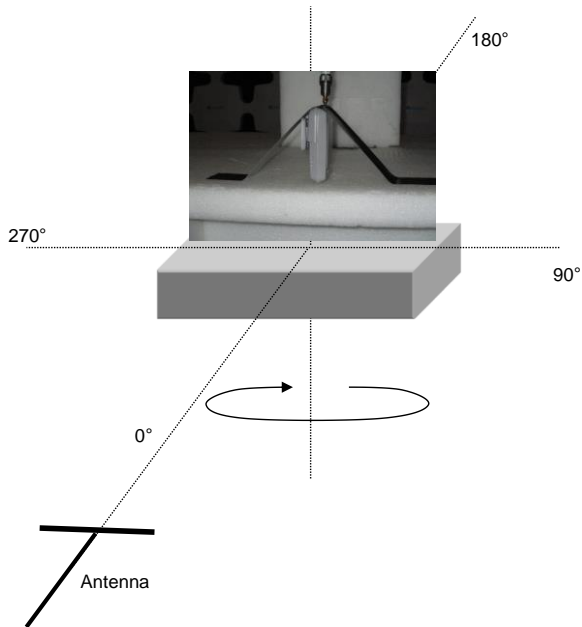
Measurement Antenna Polarity **Horizontal**  
 Antenna Under Test (AUT) Polarity **Vertical**

Minimum Amplitude (dBuV/m) **57.94727**

Azimuth at Minimum **63°**

3 dB Beamwidth **27°**

<b>Run #</b>	18	<b>Test Distance (m)</b>	3	<b>Antenna Height(s)</b>	1		
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# ABSOLUTE GAIN



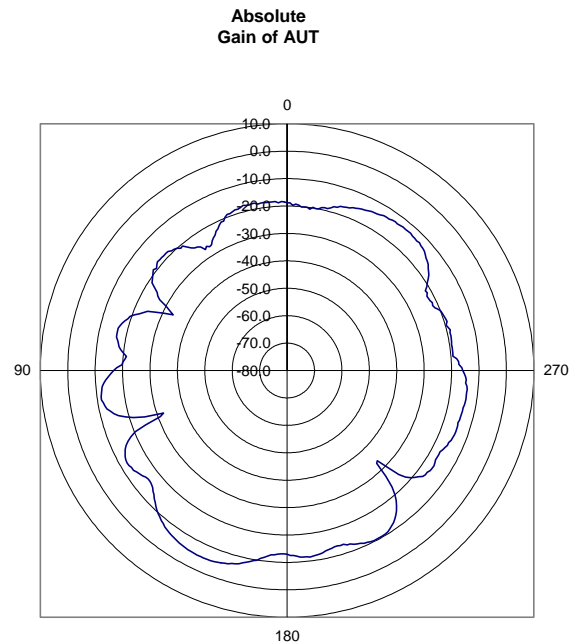
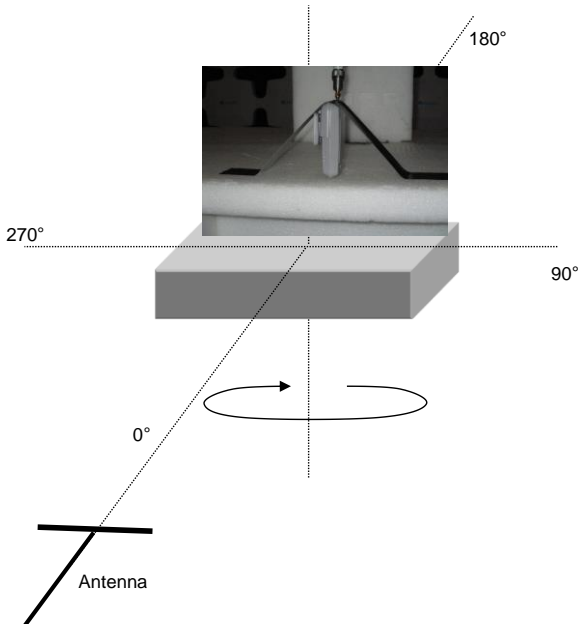
EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency	<b>926.4</b>	Absolute Gain of Reference Antenna (dBi)	0.83
Measurement Antenna Polarity	<b>Horizontal</b>	Reference Antenna Relative Gain Max (dBuV/m)	92.55
Antenna Under Test (AUT) Polarity	<b>Vertical</b>	AUT Relative Gain Max (dBuV/m)	86.65
Maximum Absolute Gain of AUT (dBi)	<b>-5.07</b>	Difference (Reference Antenna - AUT) (dB)	5.90
Average Absolute Gain of AUT (dBi)	<b>-16.25</b>	AUT Setup Loss (dB)	<b>0</b>
		Correction Factor (Convert Relative to Absolute Gain) (dB)	<b>91.72</b>
3 dB Beamwidth	<b>27°</b>		

Run #	Test Distance (m)	Antenna Height(s)	Results
			NA




# RELATIVE GAIN



EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency (MHz) **926.4**

Maximum Amplitude (dBuV/m) **95.04727**

Azimuth at Maximum **142°**

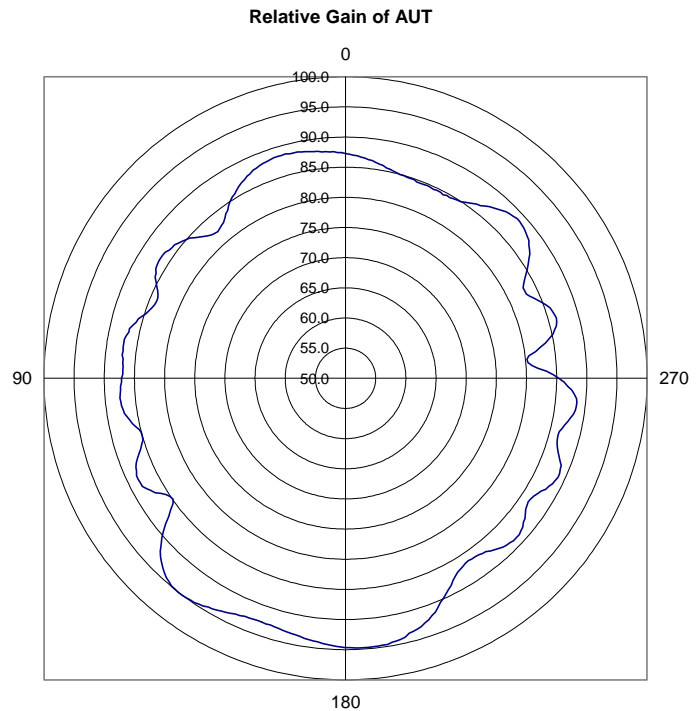
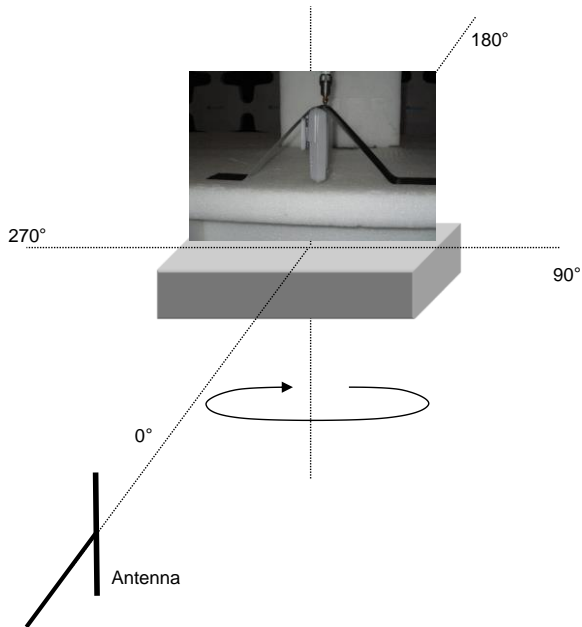
Measurement Antenna Polarity **Vertical**  
 Antenna Under Test (AUT) Polarity **Vertical**

Minimum Amplitude (dBuV/m) **80.24727**

Azimuth at Minimum **275°**

3 dB Beamwidth **67°**

<b>Run #</b>	19	<b>Test Distance (m)</b>	3	<b>Antenna Height(s)</b>	1.04	
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# ABSOLUTE GAIN



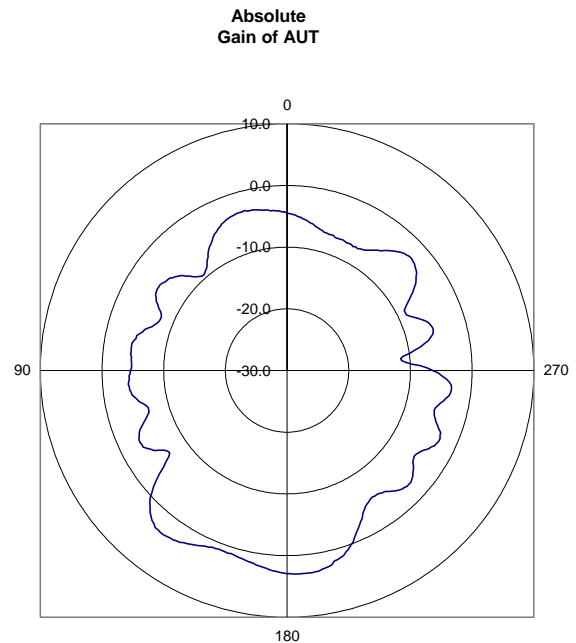
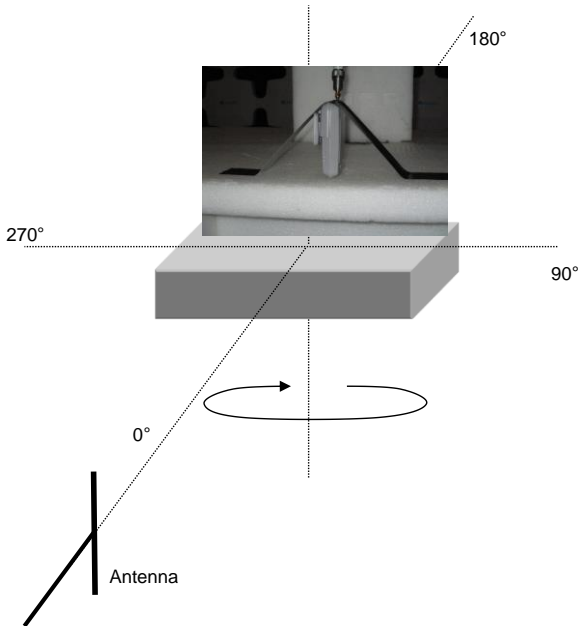
EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency	<b>926.4</b>	Absolute Gain of Reference Antenna (dBi)	0.83
Measurement Antenna Polarity	<b>Vertical</b>	Reference Antenna Relative Gain Max (dBuV/m)	92.55
Antenna Under Test (AUT) Polarity	<b>Vertical</b>	AUT Relative Gain Max (dBuV/m)	95.05
Maximum Absolute Gain of AUT (dBi)	<b>3.33</b>	Difference (Reference Antenna - AUT) (dB)	-2.50
Average Absolute Gain of AUT (dBi)	<b>-3.89</b>	AUT Setup Loss (dB)	<b>0</b>
		Correction Factor (Convert Relative to Absolute Gain) (dB)	<b>91.72</b>
3 dB Beamwidth	<b>67°</b>		

Run #	Test Distance (m)	Antenna Height(s)	Results
			NA




# RELATIVE GAIN



EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency (MHz) **914.6**

Maximum Amplitude (dBuV/m) **94.23418**

Azimuth at Maximum **143°**

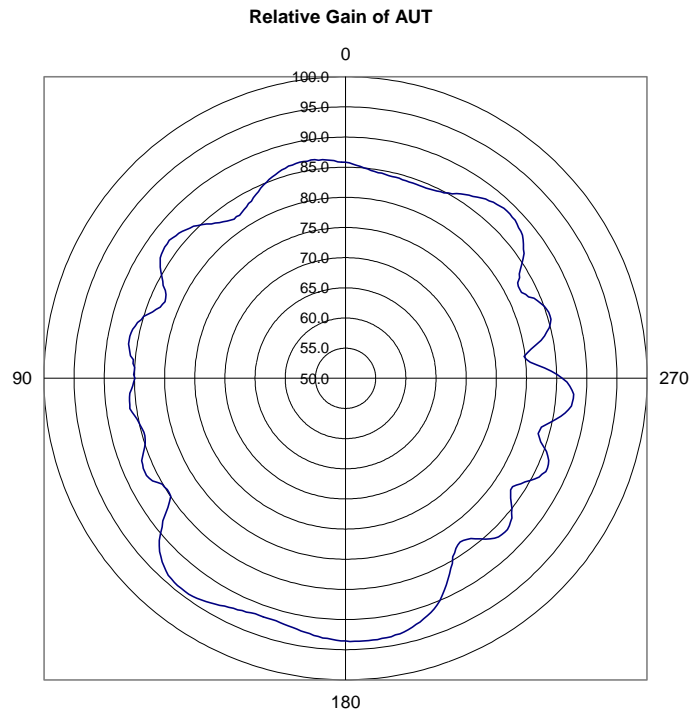
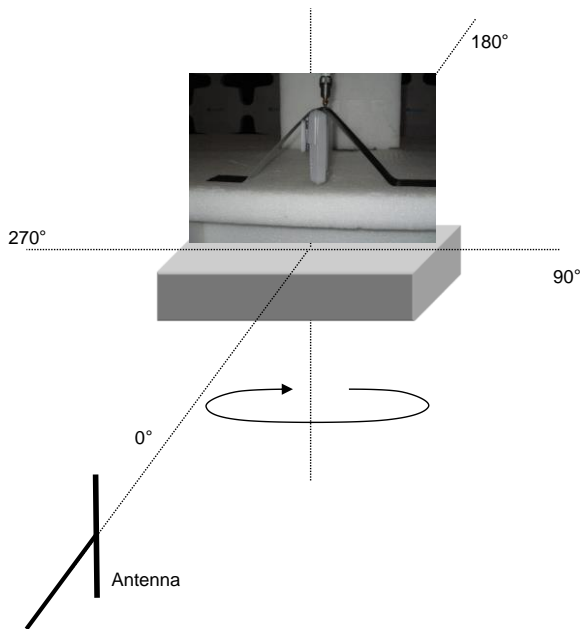
Measurement Antenna Polarity **Vertical**  
Antenna Under Test (AUT) Polarity **Vertical**

Minimum Amplitude (dBuV/m) **79.83418**

Azimuth at Minimum **276°**

3 dB Beamwidth **70°**

<b>Run #</b>	20	<b>Test Distance (m)</b>	3	<b>Antenna Height(s)</b>	1.04		
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# ABSOLUTE GAIN



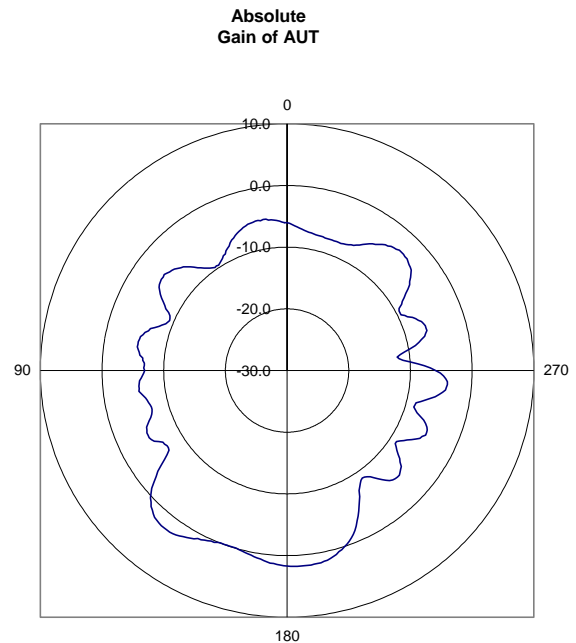
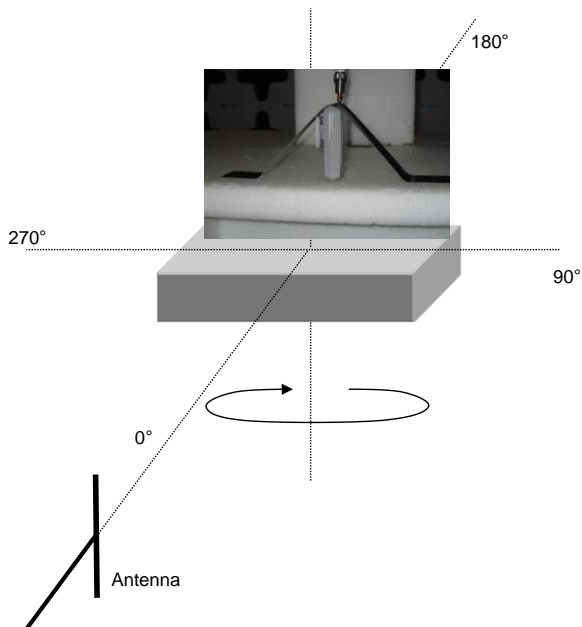
EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency	<b>914.6</b>	Absolute Gain of Reference Antenna (dBi)	0.87
Measurement Antenna Polarity	<b>Vertical</b>	Reference Antenna Relative Gain Max (dBuV/m)	92.73
Antenna Under Test (AUT) Polarity	<b>Vertical</b>	AUT Relative Gain Max (dBuV/m)	94.23
Maximum Absolute Gain of AUT (dBi)	<b>2.37</b>	Difference (Reference Antenna - AUT) (dB)	-1.50
Average Absolute Gain of AUT (dBi)	<b>-5.06</b>	AUT Setup Loss (dB)	<b>0</b>
		Correction Factor (Convert Relative to Absolute Gain) (dB)	<b>91.86</b>
3 dB Beamwidth	<b>70°</b>		

Run #	Test Distance (m)	Antenna Height(s)	Results
			NA




# RELATIVE GAIN



EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency (MHz) **914.6**

Maximum Amplitude (dBuV/m) **86.43418**

Azimuth at Maximum **154°**

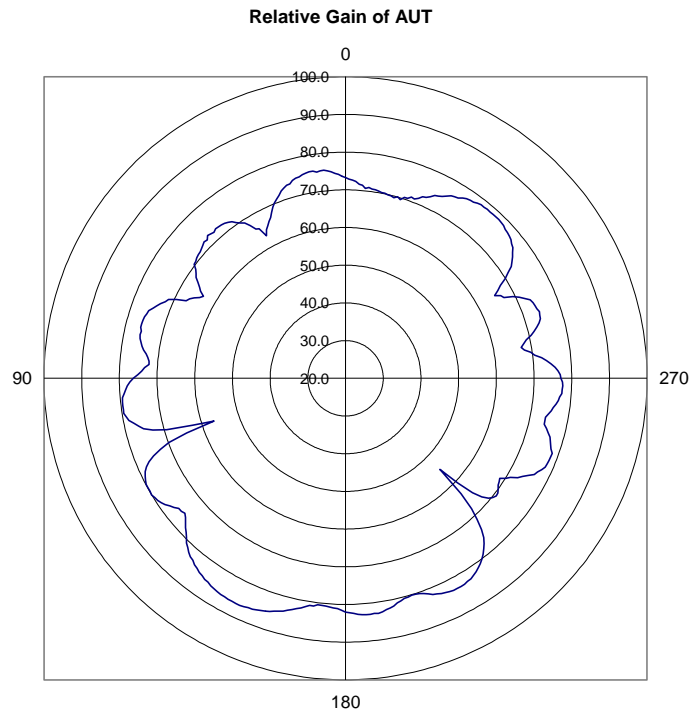
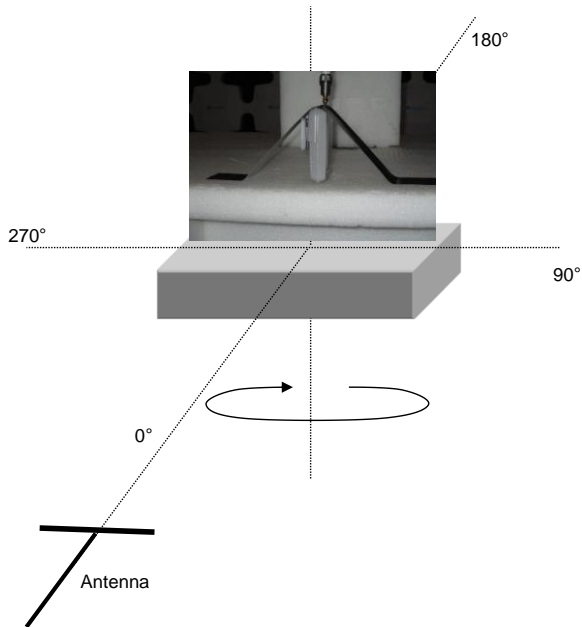
Measurement Antenna Polarity **Horizontal**  
Antenna Under Test (AUT) Polarity **Vertical**

Minimum Amplitude (dBuV/m) **54.83418**

Azimuth at Minimum **225°**

3 dB Beamwidth **26°**

<b>Run #</b>	21	<b>Test Distance (m)</b>	3	<b>Antenna Height(s)</b>	1.02	
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# ABSOLUTE GAIN



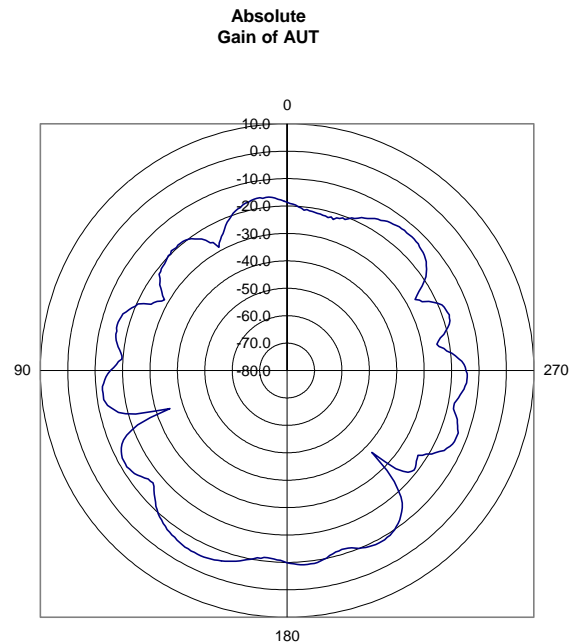
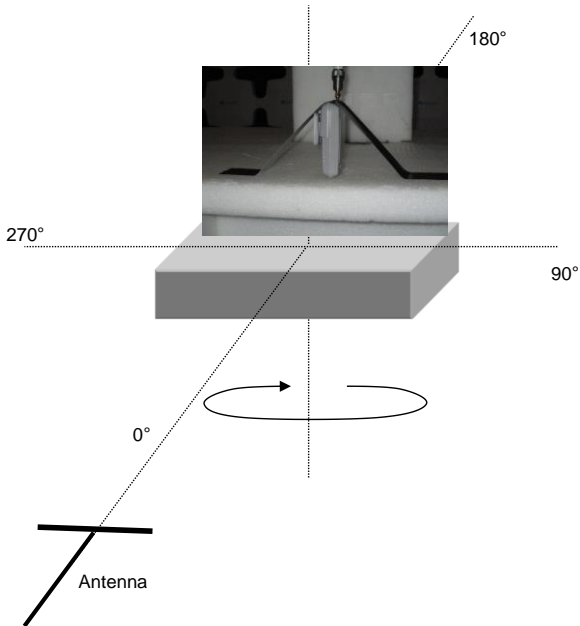
EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency	<b>914.6</b>	Absolute Gain of Reference Antenna (dBi)	0.87
Measurement Antenna Polarity	<b>Horizontal</b>	Reference Antenna Relative Gain Max (dBuV/m)	92.73
Antenna Under Test (AUT) Polarity	<b>Vertical</b>	AUT Relative Gain Max (dBuV/m)	86.43
Maximum Absolute Gain of AUT (dBi)	<b>-5.43</b>	Difference (Reference Antenna - AUT) (dB)	6.30
Average Absolute Gain of AUT (dBi)	<b>-16.36</b>	AUT Setup Loss (dB)	<b>0</b>
		Correction Factor (Convert Relative to Absolute Gain) (dB)	<b>91.86</b>
3 dB Beamwidth	<b>26°</b>		

Run #	Test Distance (m)	Antenna Height(s)	Results
			NA




# RELATIVE GAIN



EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency (MHz) **903**

Maximum Amplitude (dBuV/m) **88.38736**

Azimuth at Maximum **193°**

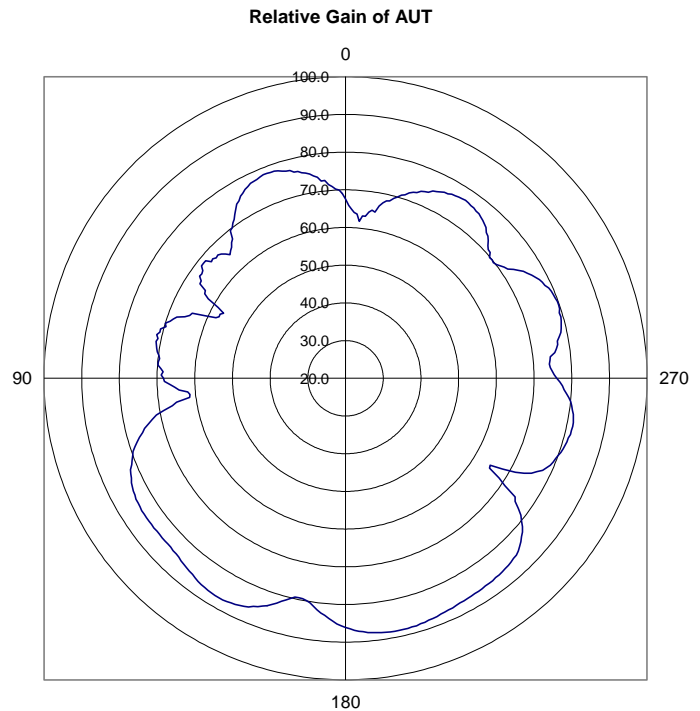
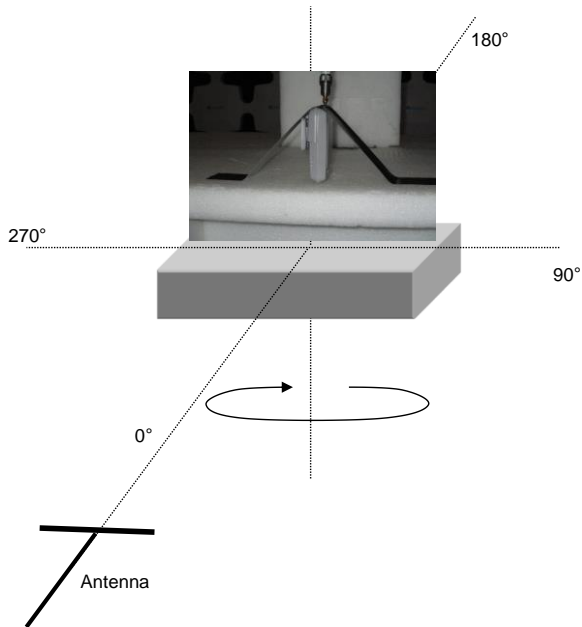
Measurement Antenna Polarity **Horizontal**  
Antenna Under Test (AUT) Polarity **Vertical**

Minimum Amplitude (dBuV/m) **56.68736**

Azimuth at Minimum **61°**

3 dB Beamwidth **45°**

<b>Run #</b>	22	<b>Test Distance (m)</b>	3	<b>Antenna Height(s)</b>	1.96		
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# ABSOLUTE GAIN



EmiR5 2022.07.06.0

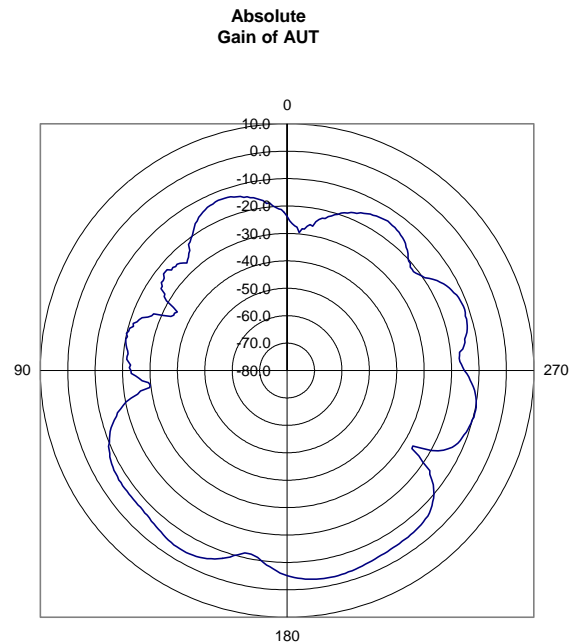
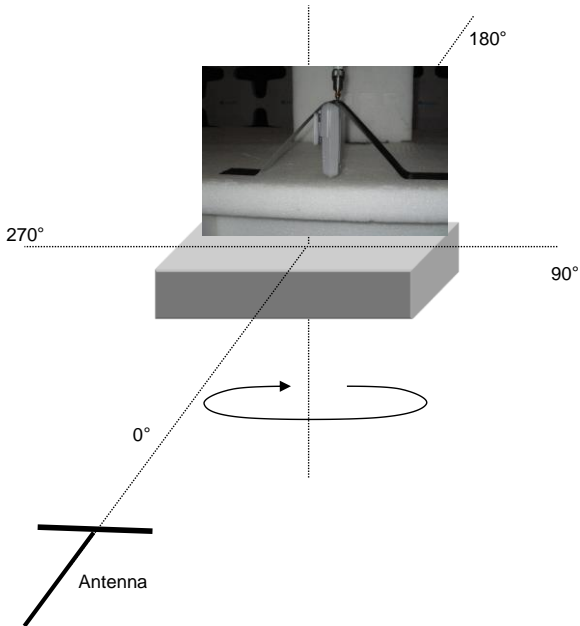
PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency	<b>903</b>	Absolute Gain of Reference Antenna (dBi)	0.9
Measurement Antenna Polarity	<b>Horizontal</b>	Reference Antenna Relative Gain Max (dBuV/m)	92.19
Antenna Under Test (AUT) Polarity	<b>Vertical</b>	AUT Relative Gain Max (dBuV/m)	88.39
Maximum Absolute Gain of AUT (dBi)	<b>-2.90</b>	Difference (Reference Antenna - AUT) (dB)	3.80
Average Absolute Gain of AUT (dBi)	<b>-14.45</b>	AUT Setup Loss (dB)	<b>0</b>
		Correction Factor (Convert Relative to Absolute Gain) (dB)	<b>91.29</b>

3 dB Beamwidth **45°**

Run #	Test Distance (m)	Antenna Height(s)	Results
			NA




# RELATIVE GAIN



EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency (MHz) **903**

Maximum Amplitude (dBuV/m) **93.68736**

Azimuth at Maximum **139°**

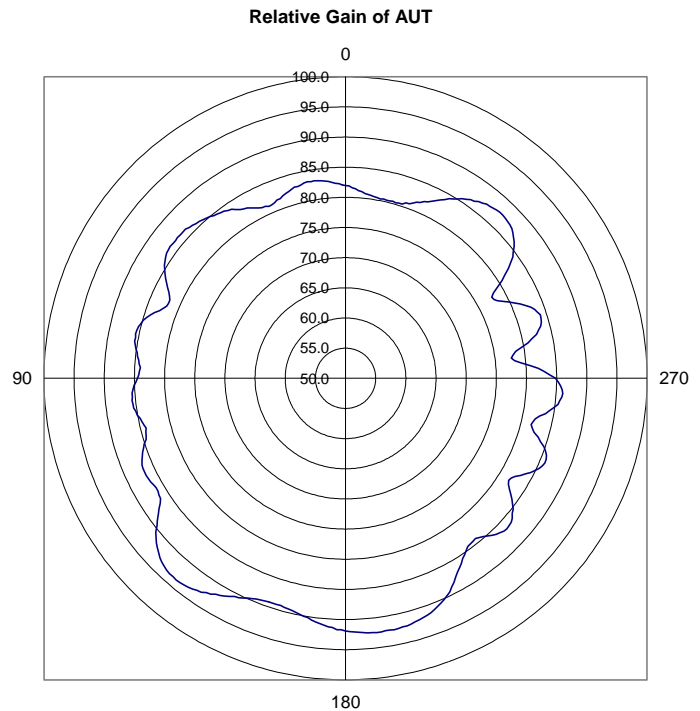
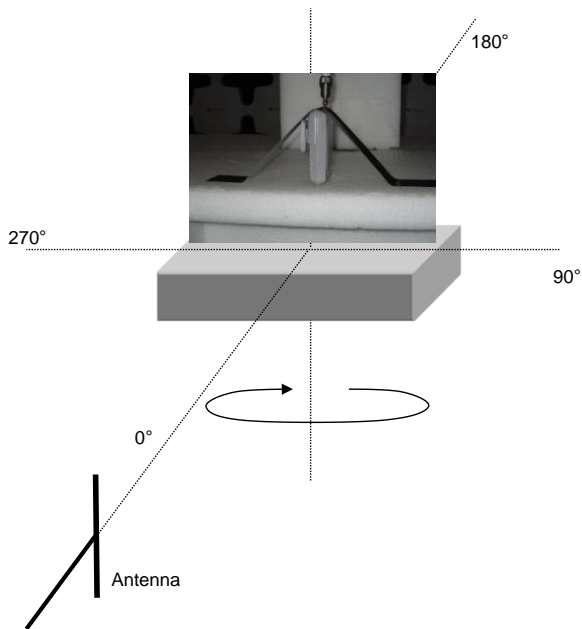
Measurement Antenna Polarity **Vertical**  
Antenna Under Test (AUT) Polarity **Vertical**

Minimum Amplitude (dBuV/m) **77.68736**

Azimuth at Minimum **298°**

3 dB Beamwidth **24°**

<b>Run #</b>	23	<b>Test Distance (m)</b>	3	<b>Antenna Height(s)</b>	1.129		
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# ABSOLUTE GAIN



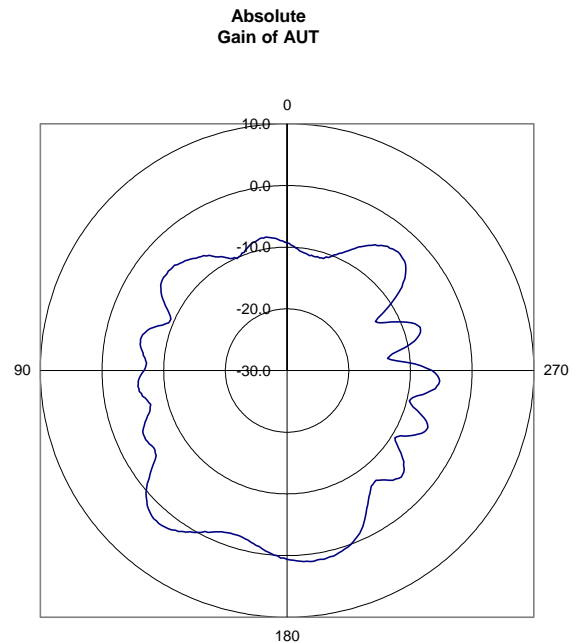
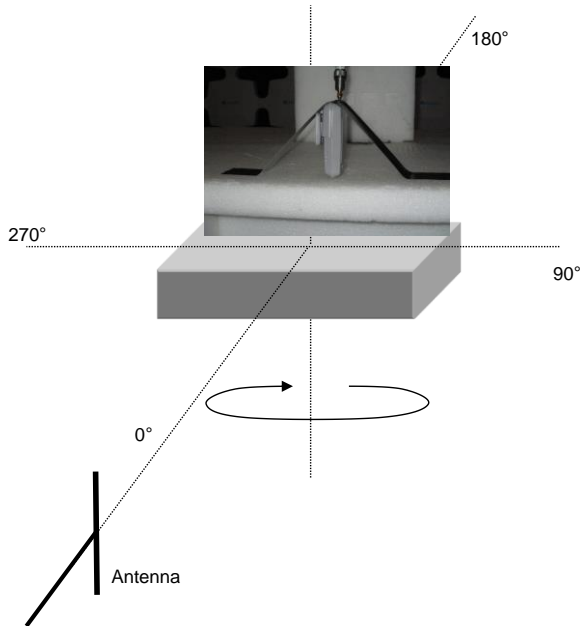
EmiR5 2022.07.06.0

PSA-ESCI 2022.08.23.0

<b>Work Order:</b>	ADEM0034	<b>Date:</b>	2022-10-20	
<b>Project:</b>	None	<b>Temperature:</b>	19.9 °C	
<b>Job Site:</b>	TX02	<b>Humidity:</b>	35.6% RH	
<b>Serial Number:</b>	DUT_0059	<b>Barometric Pres.:</b>	1018 mbar	
<b>EUT:</b>	C7089R3013 Antenna			
<b>Configuration:</b>	1			
<b>Customer:</b>	ADemco, Inc			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	N/A			
<b>Operating Mode:</b>	Transmitting a CW tone at 0 dBm from a Signal Generator, with a 6 dB attenuator inline			
<b>Deviations:</b>				
<b>Comments:</b>	None			

Frequency	<b>903</b>	Absolute Gain of Reference Antenna (dBi)	0.9
Measurement Antenna Polarity	<b>Vertical</b>	Reference Antenna Relative Gain Max (dBuV/m)	92.19
Antenna Under Test (AUT) Polarity	<b>Vertical</b>	AUT Relative Gain Max (dBuV/m)	93.69
Maximum Absolute Gain of AUT (dBi)	<b>2.40</b>	Difference (Reference Antenna - AUT) (dB)	-1.50
Average Absolute Gain of AUT (dBi)	<b>-5.71</b>	AUT Setup Loss (dB)	<b>0</b>
		Correction Factor (Convert Relative to Absolute Gain) (dB)	<b>91.29</b>
3 dB Beamwidth	<b>24°</b>		

Run #	Test Distance (m)	Antenna Height(s)	Results
			NA

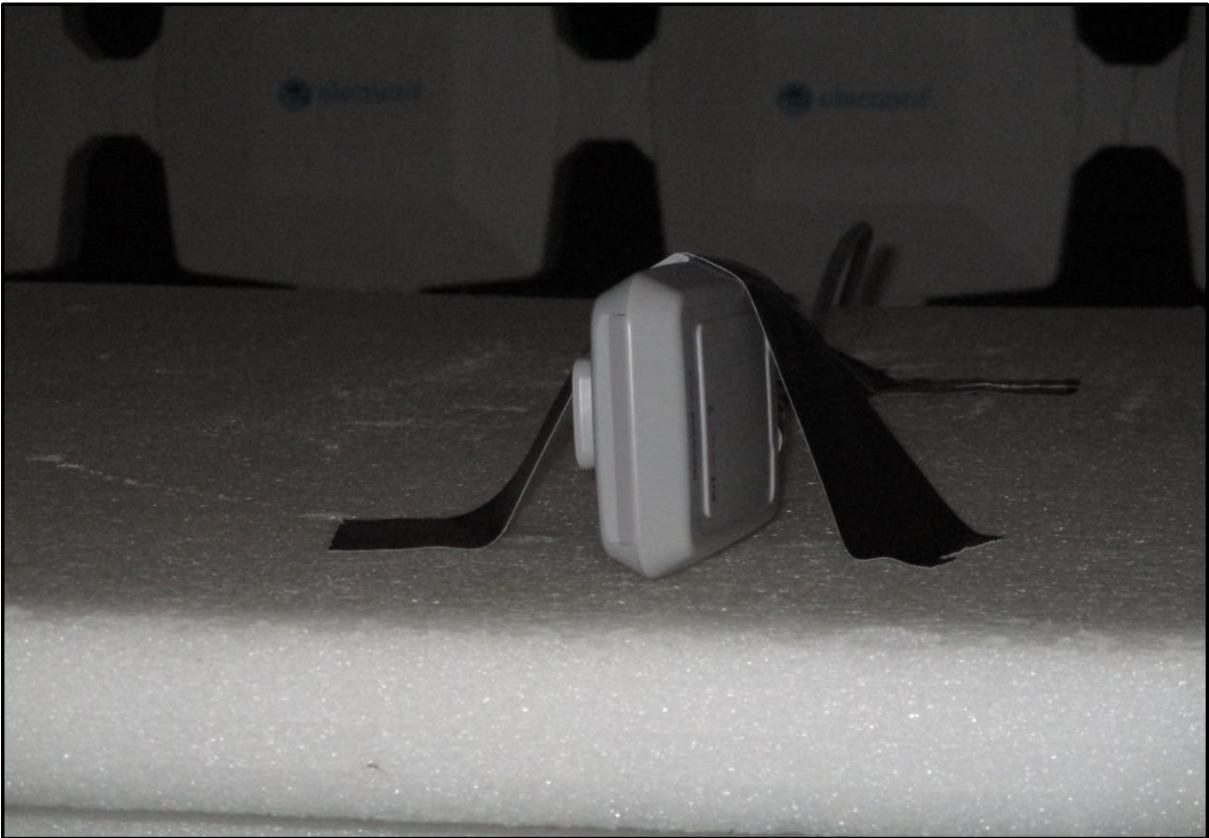




# POLAR PLOTS



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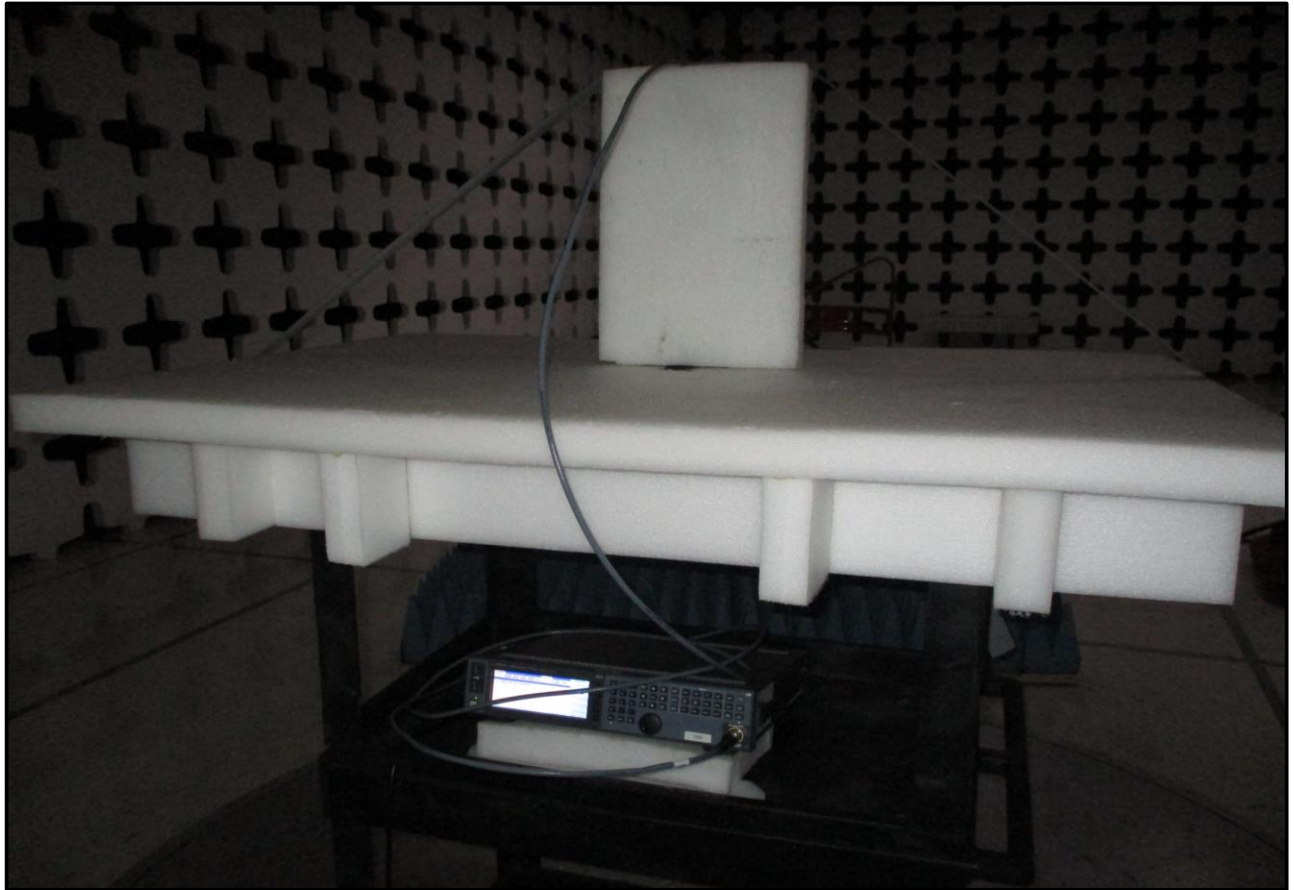
# POLAR PLOTS



PSA-ESCI 2022.08.23.0



# POLAR PLOTS



End of Test Report