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PSAS Propagation Test of the "WiFi" Cylindrical Patch Antenna

Design frequency: 2.422 GHz
Actual frequency: 2.293 GHz
Polarization: Vertical

Plots included in this PDF file:

Test Run #	Configuration	Rec. Ant.	Polarization
12	1 (rotated 180°)		V
11	1 (rotated 180°)		H
08	2		V
07	2		H
09	3		V
10	3		H

ABSOLUTE GAIN DATA SHEET

EUT:	WIFI	Work Order:	PTLD0001
Serial Number:		Date:	12/09/03
Customer:	Portland State Aerospace Society / PSU AESS	Temperature:	73
Attendees:	none	Humidity:	32%
Cust. Ref. No.:		Barometric Pressure:	30.18
Tested by:	Holly Ashkannejhad	Power:	N/A
		Job Site:	EV01

SAMPLE CALCULATIONS

COMMENTS

2.29328GHz. Antenna height = Rocket antenna height = 2.8m.

EUT OPERATING MODES

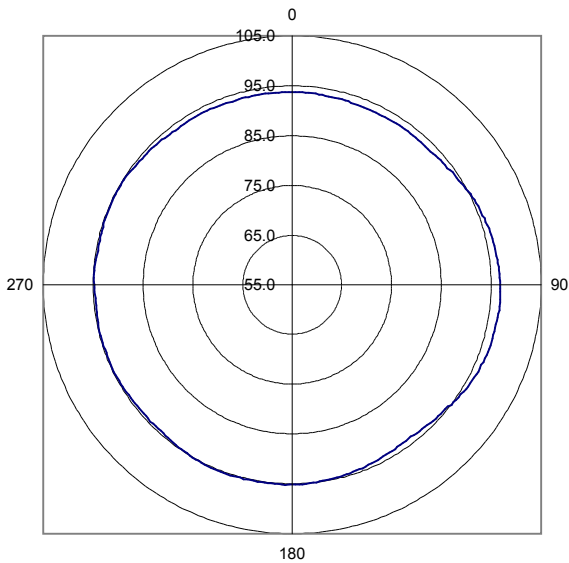
10dBm input power

	Test Distance (m)	Run #
	3	12

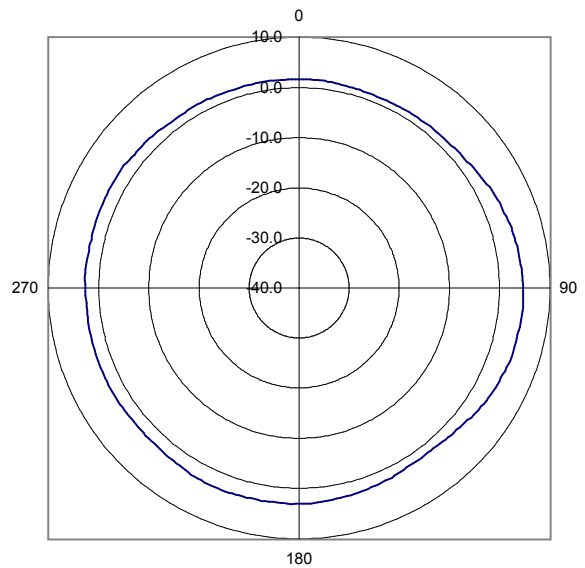
Other

Tested By:

Relative Gain of AUT



Absolute Gain of AUT



Frequency	2293.28
Absolute Gain of Reference Antenna (dBi)	9.66
Reference Antenna Relative Gain Max (dBuV/m)	101.80
AUT Relative Gain Max (dBuV/m)	96.90
Difference (Reference Antenna - AUT) (dB)	4.90
AUT Setup Loss (dB)	0.00
Maximum Absolute Gain of AUT (dBi)	4.76
Correction Factor (Convert From Relative to Absolute Gain) (dB)	92.14
Measurement Antenna Polarity	Vertical
Antenna Under Test (AUT) Polarity	Config 1

ABSOLUTE GAIN DATA SHEET

EUT:	WIFI	Work Order:	PTLD0001
Serial Number:		Date:	12/09/03
Customer:	Portland State Aerospace Society / PSU AESS	Temperature:	73
Attendees:	none	Humidity:	32%
Cust. Ref. No.:		Barometric Pressure:	30.18
Tested by:	Holly Ashkannejhad	Power:	N/A
		Job Site:	EV01

SAMPLE CALCULATIONS

COMMENTS

2.29328GHZ. Antenna height = Rocket antenna height = 2.8m.

EUT OPERATING MODES

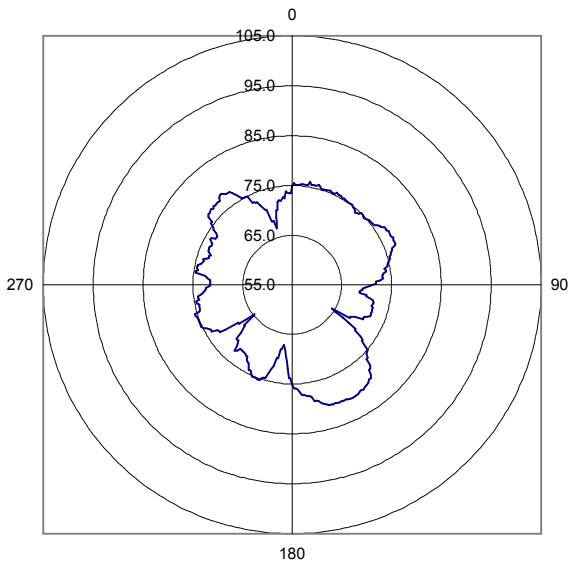
10dBm input power

	Test Distance (m)	Run #
	3	11

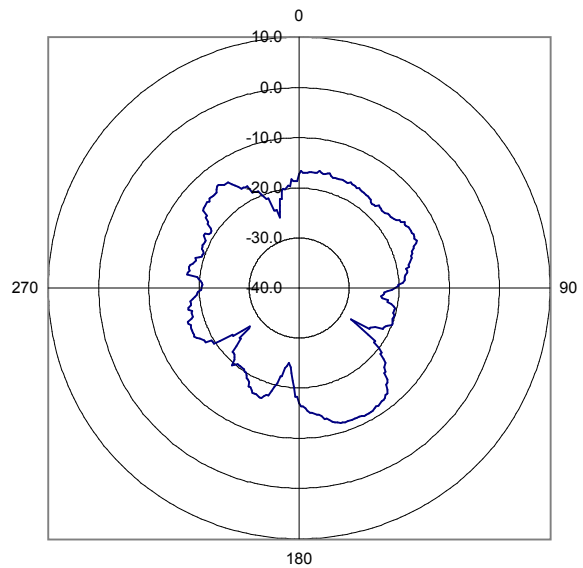
Other

Tested By: _____

Relative Gain of AUT



Absolute Gain of AUT



Frequency	2293.28
Absolute Gain of Reference Antenna (dBi)	9.66
Reference Antenna Relative Gain Max (dBuV/m)	101.80
AUT Relative Gain Max (dBuV/m)	80.70
Difference (Reference Antenna - AUT) (dB)	21.10
AUT Setup Loss (dB)	0.00
Maximum Absolute Gain of AUT (dBi)	-11.44
Correction Factor (Convert From Relative to Absolute Gain) (dB)	92.14
Measurement Antenna Polarity	Horizontal
Antenna Under Test (AUT) Polarity	config 1

ABSOLUTE GAIN DATA SHEET

EUT:	WIFI	Work Order:	PTLD0001
Serial Number:		Date:	12/09/03
Customer:	Portland State Aerospace Society / PSU AESS	Temperature:	73
Attendees:	none	Humidity:	32%
Cust. Ref. No.:		Barometric Pressure:	30.18
Tested by:	Holly Ashkannejhad	Power:	N/A
		Job Site:	EV01

SAMPLE CALCULATIONS

COMMENTS

2.29328GHZ. Antenna height = Rocket height = 1.77m.

EUT OPERATING MODES

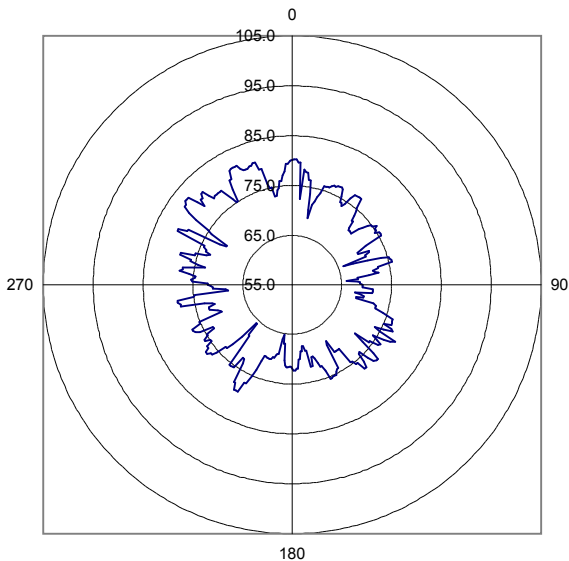
10dBm input power

	Test Distance (m)	Run #
	3	8

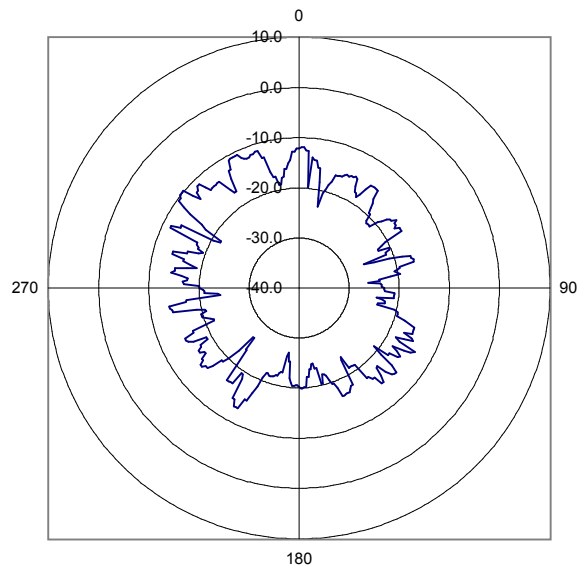
Other

Tested By:

**Relative
Gain of AUT**



**Absolute
Gain of AUT**



Frequency	2293.28
Absolute Gain of Reference Antenna (dBi)	9.66
Reference Antenna Relative Gain Max (dBuV/m)	101.80
AUT Relative Gain Max (dBuV/m)	82.30
Difference (Reference Antenna - AUT) (dB)	19.50
AUT Setup Loss (dB)	0.00
Maximum Absolute Gain of AUT (dBi)	-9.84
Correction Factor (Convert From Relative to Absolute Gain) (dB)	92.14
Measurement Antenna Polarity	Vertical
Antenna Under Test (AUT) Polarity	Config 2

ABSOLUTE GAIN DATA SHEET

EUT:	WIFI	Work Order:	PTLD0001
Serial Number:		Date:	12/09/03
Customer:	Portland State Aerospace Society / PSU AESS	Temperature:	73
Attendees:	none	Humidity:	32%
Cust. Ref. No.:		Barometric Pressure:	30.18
Tested by:	Holly Ashkannejhad	Power:	N/A
		Job Site:	EV01

SAMPLE CALCULATIONS

COMMENTS

2.29328GHZ. Antenna height = Rocket height = 1.77m.

EUT OPERATING MODES

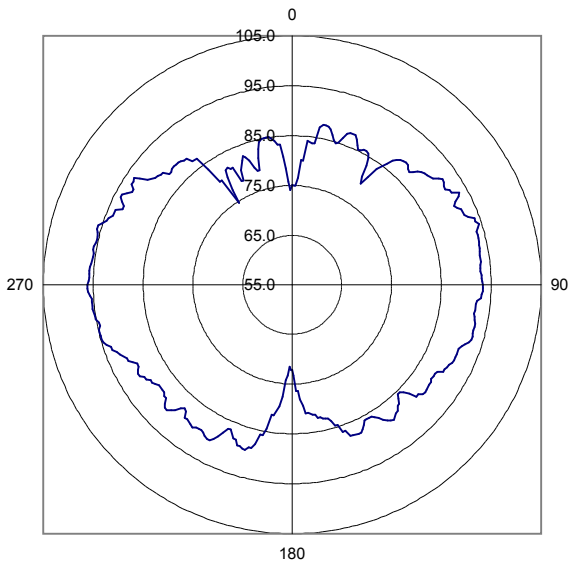
10dBm input power

	Test Distance (m)	Run #
	3	7

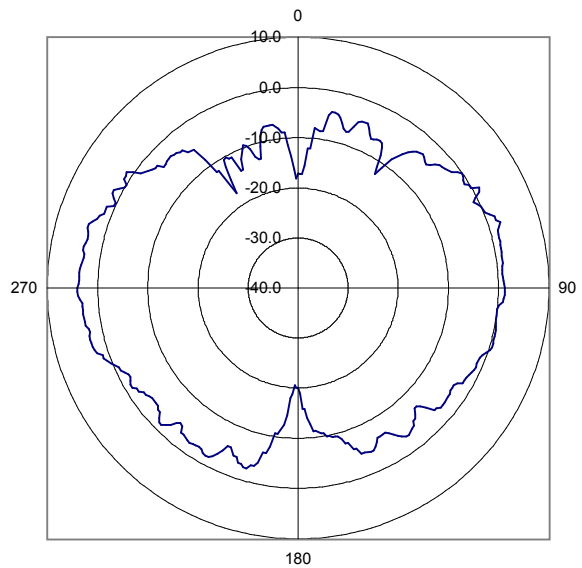
Other

Tested By: _____

Relative Gain of AUT



Absolute Gain of AUT



Frequency	2293.28
Absolute Gain of Reference Antenna (dBi)	9.66
Reference Antenna Relative Gain Max (dBuV/m)	101.80
AUT Relative Gain Max (dBuV/m)	96.10
Difference (Reference Antenna - AUT) (dB)	5.70
AUT Setup Loss (dB)	0.00
Maximum Absolute Gain of AUT (dBi)	3.96
Correction Factor (Convert From Relative to Absolute Gain) (dB)	92.14
Measurement Antenna Polarity	Horizontal
Antenna Under Test (AUT) Polarity	Config 2

ABSOLUTE GAIN DATA SHEET

EUT:	WIFI	Work Order:	PTLD0001
Serial Number:		Date:	12/09/03
Customer:	Portland State Aerospace Society / PSU AESS	Temperature:	73
Attendees:	none	Humidity:	32%
Cust. Ref. No.:		Barometric Pressure:	30.18
Tested by:	Holly Ashkannejhad	Power:	N/A
		Job Site:	EV01

SAMPLE CALCULATIONS

COMMENTS

2.29328GHZ. Antenna height = Rocket height = 1.77m.

EUT OPERATING MODES

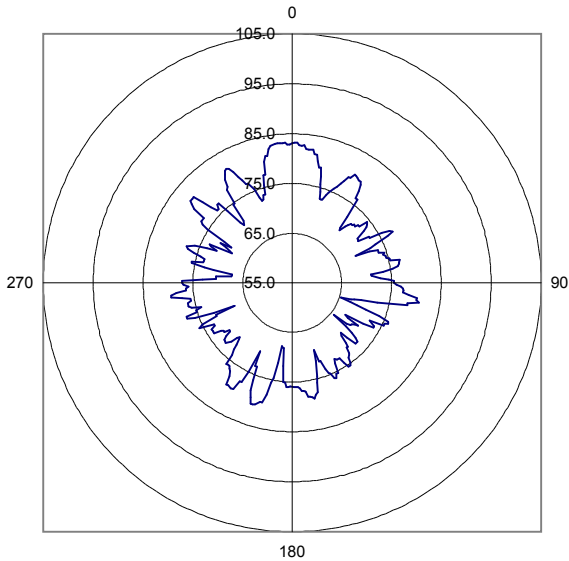
10dBm input power

	Test Distance (m)	Run #
	3	9

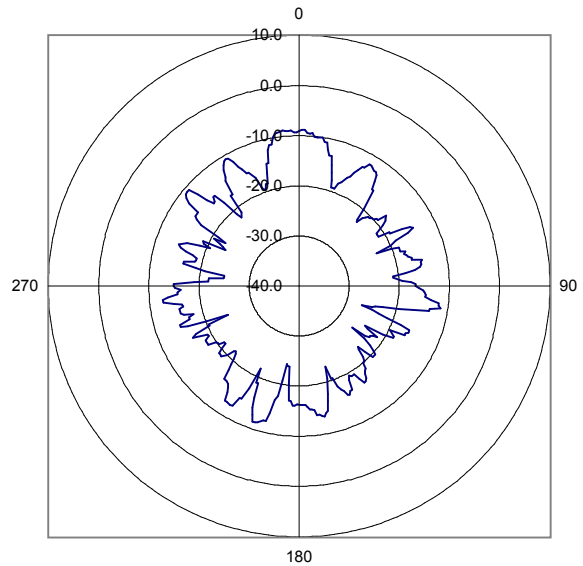
Other

Tested By:

**Relative
Gain of AUT**



**Absolute
Gain of AUT**



Frequency	2293.28
Absolute Gain of Reference Antenna (dBi)	9.66
Reference Antenna Relative Gain Max (dBuV/m)	101.80
AUT Relative Gain Max (dBuV/m)	83.20
Difference (Reference Antenna - AUT) (dB)	18.60
AUT Setup Loss (dB)	0.00
Maximum Absolute Gain of AUT (dBi)	-8.94
Correction Factor (Convert From Relative to Absolute Gain) (dB)	92.14
Measurement Antenna Polarity	Vertical
Antenna Under Test (AUT) Polarity	Config 3

ABSOLUTE GAIN DATA SHEET

EUT:	WIFI	Work Order:	PTLD0001
Serial Number:		Date:	12/09/03
Customer:	Portland State Aerospace Society / PSU AESS	Temperature:	73
Attendees:	none	Humidity:	32%
Cust. Ref. No.:		Barometric Pressure:	30.18
Tested by:	Holly Ashkannejhad	Power:	N/A
		Job Site:	EV01

SAMPLE CALCULATIONS

COMMENTS

2.29328GHZ. Antenna height = Rocket height = 1.77m.

EUT OPERATING MODES

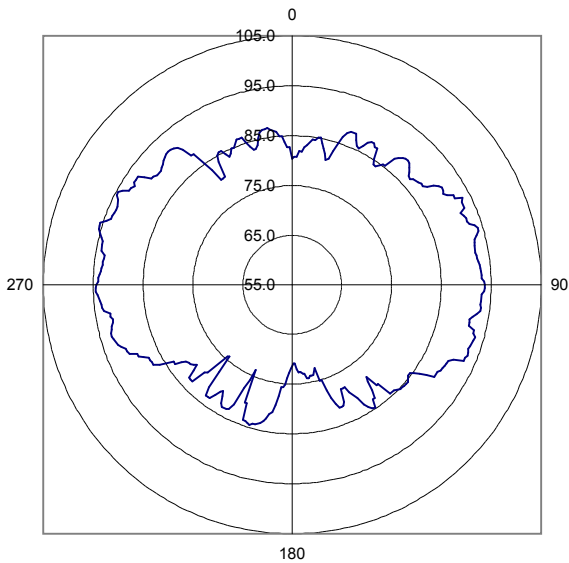
10dBm input power

	Test Distance (m)	Run #
	3	10

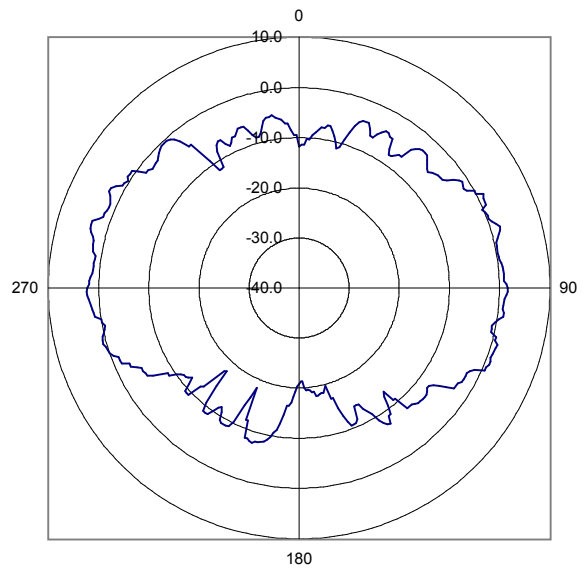
Other

Tested By: _____

Relative Gain of AUT



Absolute Gain of AUT



Frequency	2293.28
Absolute Gain of Reference Antenna (dBi)	9.66
Reference Antenna Relative Gain Max (dBuV/m)	101.80
AUT Relative Gain Max (dBuV/m)	95.50
Difference (Reference Antenna - AUT) (dB)	6.30
AUT Setup Loss (dB)	0.00
Maximum Absolute Gain of AUT (dBi)	3.36
Correction Factor (Convert From Relative to Absolute Gain) (dB)	92.14
Measurement Antenna Polarity	Horizontal
Antenna Under Test (AUT) Polarity	Config 3