

ADT - SD-PIR09

Antenna Test Report

June. 11, 2026

Arthur Huang

Antenna Design Department

Introduction

- This report presents the passive antenna performance for SW-PIR09
- Sercomm customize the Z-Wave (915MHz) antenna for SW-PIR09

Antenna Details

Item	Part number	Connector	Spec	Quantity	Polarization	Ant No.
1	61721MN00B	N/A	N/A	1	Linear	Ant.1

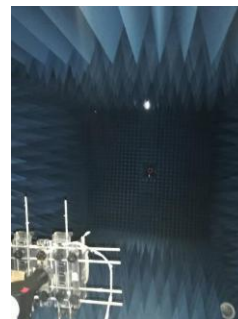
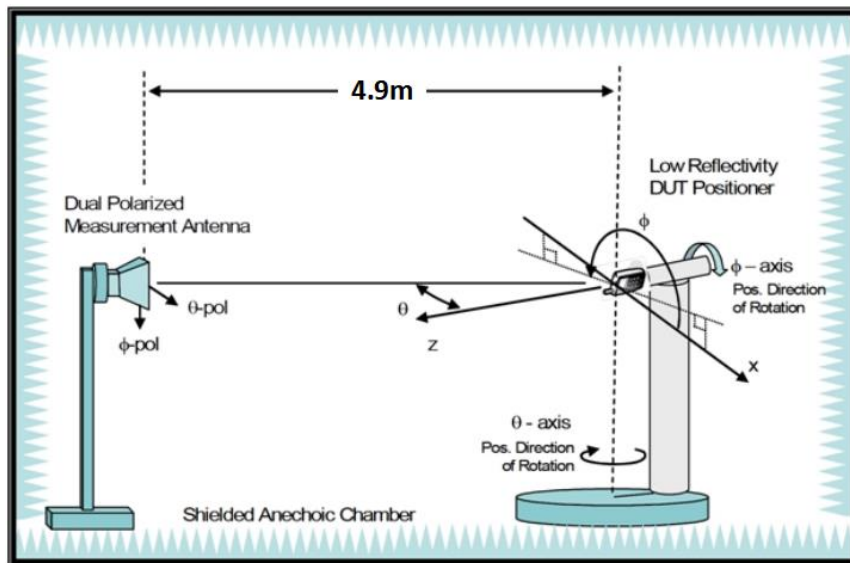
Ant No.	Operating Band	Type	Material	Feeding	Polarization
Ant.1	915MHz	Pifa	Metal	Trace	Linear

Test Information

Item	Description
Brand Name	ADT
Equipment	MOTIONZW60R0-29-WH
Test Location	8F, No. 3-1, YuanQu St. Taipei, Taiwan 115 R.O.C.
Test Condition	Radiation
Test Engineer	Arthur Huang, Sercomm
Test Environment	ETS-Lindgren AMS-8500 Antenna Measurement Chamber
Test Date	June 11, 2026
Measurement control	EMQuest V1.09

Test Configuration

ETS-Lindgren AMS-8500 antenna measurement system with a size of $7.32(L) \times 3.66(W) \times 3.66(H)$ m³ is used for antenna performance test, which is based on the great-circle test method defined by CTIA. The multi-axis positioning system (MAPS) rotates the DUT around two orthogonal axes for full spherical coverage.



ETS-Lindgren AMS-8500



Final Proposal For:

Customer: Sercomm Corporation

Product: AMS-8500 Antenna Measurement System

Application: Radiated Wireless Antenna Measurements over the frequency range from 700 MHz to 10 GHz

Proposal Number: 009-14-0078183R3

Submission Date: 11, June, 2014



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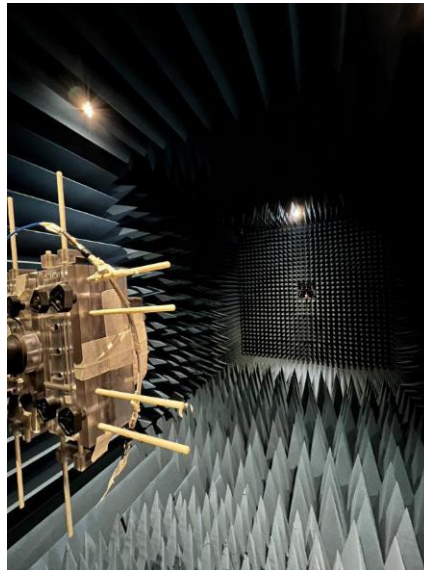


Lab Code: 20021212-00

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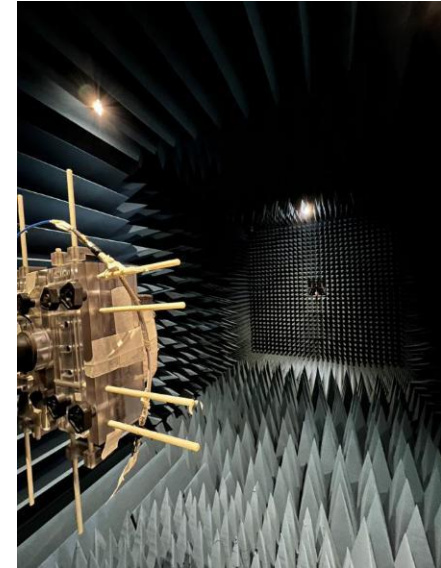
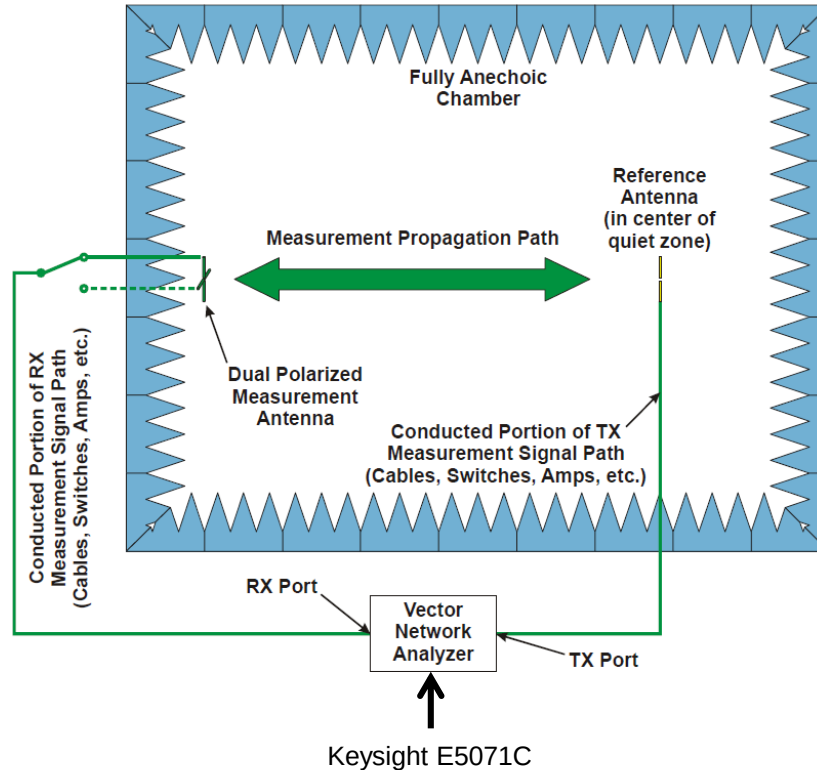
Test Setup & Procedure

1. Fix the DUT on the dielectric support structure and connect the feeding cable to the antenna used for test
2. Set measurement parameters such as frequency range and sampling angle
3. Perform test and then get far-field data (radiation pattern, gain, efficiency)



Test Equipment & Calibration

Network analyzer and reference antennas are used for calibration. Path loss and cable loss for different frequency bands can be checked and calculated.



Test Equipment & Calibration

Instrument	Brand	Characteristics	Model No.	Serial No.	Calibration Date	Calibration Due Date
Precision Sleeve Dipole	ETS-Lindgren	700 MHz ~ 900 MHz	3126-700	00169715	Nov. 21, 2024	Nov. 21, 2025
Precision Sleeve Dipole	ETS-Lindgren	900 MHz ~ 1000 MHz	3126-900	00169592	Nov. 21, 2024	Nov. 21, 2025
Precision Sleeve Dipole	ETS-Lindgren	1400 MHz ~ 1700 MHz	3126-1550	00164599	Nov. 21, 2024	Nov. 21, 2025
Precision Sleeve Dipole	ETS-Lindgren	1700 MHz ~ 2000 MHz	3126-1850	00169588	Nov. 21, 2024	Nov. 21, 2025
Precision Sleeve Dipole	ETS-Lindgren	2000 MHz ~ 2300 MHz	3126-2150	00169593	Nov. 21, 2024	Nov. 21, 2025
Precision Sleeve Dipole	ETS-Lindgren	2300 MHz ~ 2700 MHz	3126-2500	00169597	Nov. 21, 2024	Nov. 21, 2025
Precision Sleeve Dipole	ETS-Lindgren	3000 MHz ~ 4000 MHz	3126-3500	00239652	Nov. 21, 2024	Nov. 21, 2025
Precision Sleeve Dipole	ETS-Lindgren	4000 MHz ~ 5000 MHz	3126-4500	00239796	Nov. 21, 2024	Nov. 21, 2025
Precision Sleeve Dipole	ETS-Lindgren	5000 MHz ~ 6000 MHz	3126-5500	00169728	Nov. 21, 2024	Nov. 21, 2025
Precision Sleeve Dipole	ETS-Lindgren	6000 MHz ~ 7200 MHz	3126-6500	00235488	Nov. 21, 2024	Nov. 21, 2025
Horn Antenna	SCHWARZBECK	1 GHz ~ 18 GHz	BBHA 9120D	BBHA 9120D-1294	Sep. 7, 2024	Sep. 7, 2025
EMQuest Antenna Measurement Software	ETS-Lindgren	Control chamber system	EMQ-100	1437	Non-Calibration Required	Non-Calibration Required
VNA	Keysight	9 KHz ~ 8.5 GHz	E5071C	MY46316900	July 15, 2024	July 15, 2025

Peak Gain & Efficiency

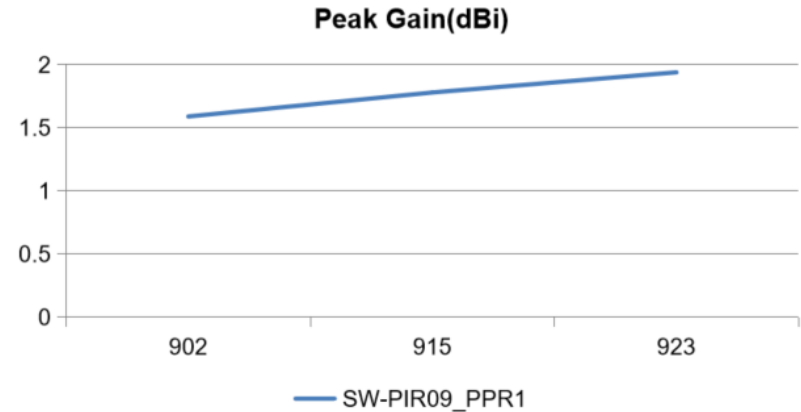
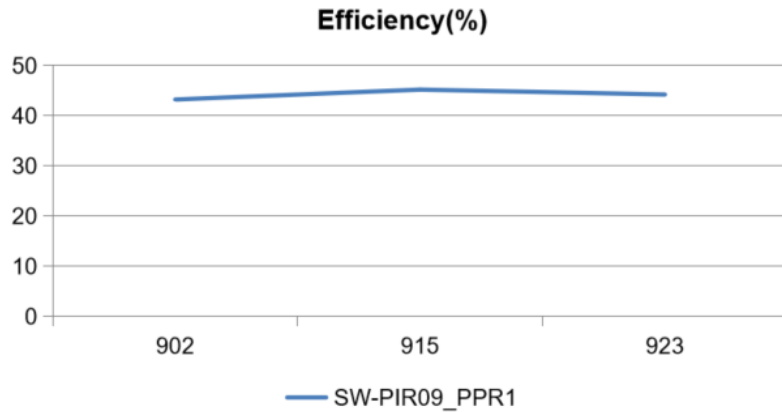
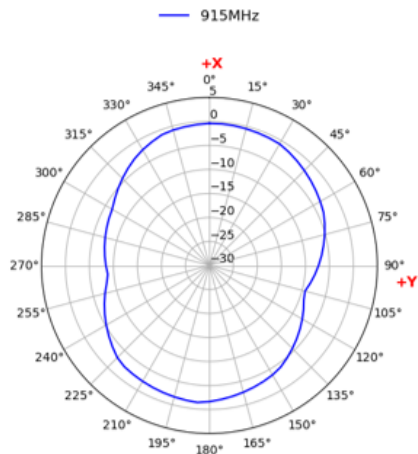


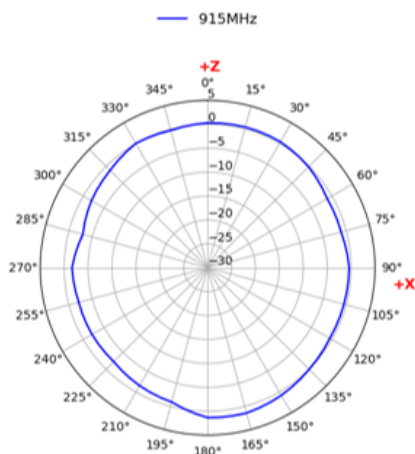
Table		
Frequency (MHz)	Z-Wave	
	Efficiency (%)	Peak Gain (dBi)
902	43.24	1.59
915	45.22	1.78
928	44.24	1.94

System Coverage - Z-Wave @915MHz

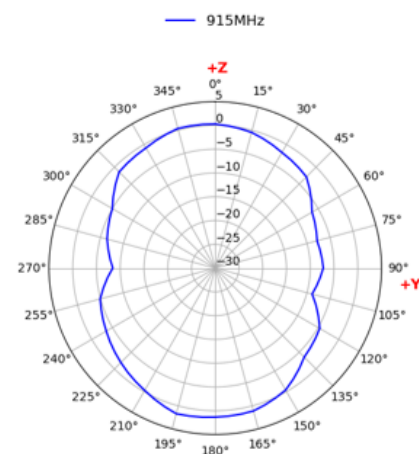
XY plane



XZ plane



YZ plane



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