

Antenna Test Report

Report No.: EO/2012/10020

Test Plan: Non-compliance with ISO17025

Applicant Name: Delta Electronics, INC.

Manufacturer Name: Delta Electronics, INC.

Product Name: PCB type antenna

Model Number: GIB0x

Measurements performed at

SGS Taiwan Ltd.

Taipei, Taiwan

Issued Date: February 01, 2012

	Name	Date & Signature	Distribution
Prepared by:	Dragon Wu Supervisor	<i>Dragon Wu</i> February 01, 2012	
Approved by:	Nick Hsu Supervisor	<i>Nick Hsu</i> February 01, 2012	

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Measurement System Information

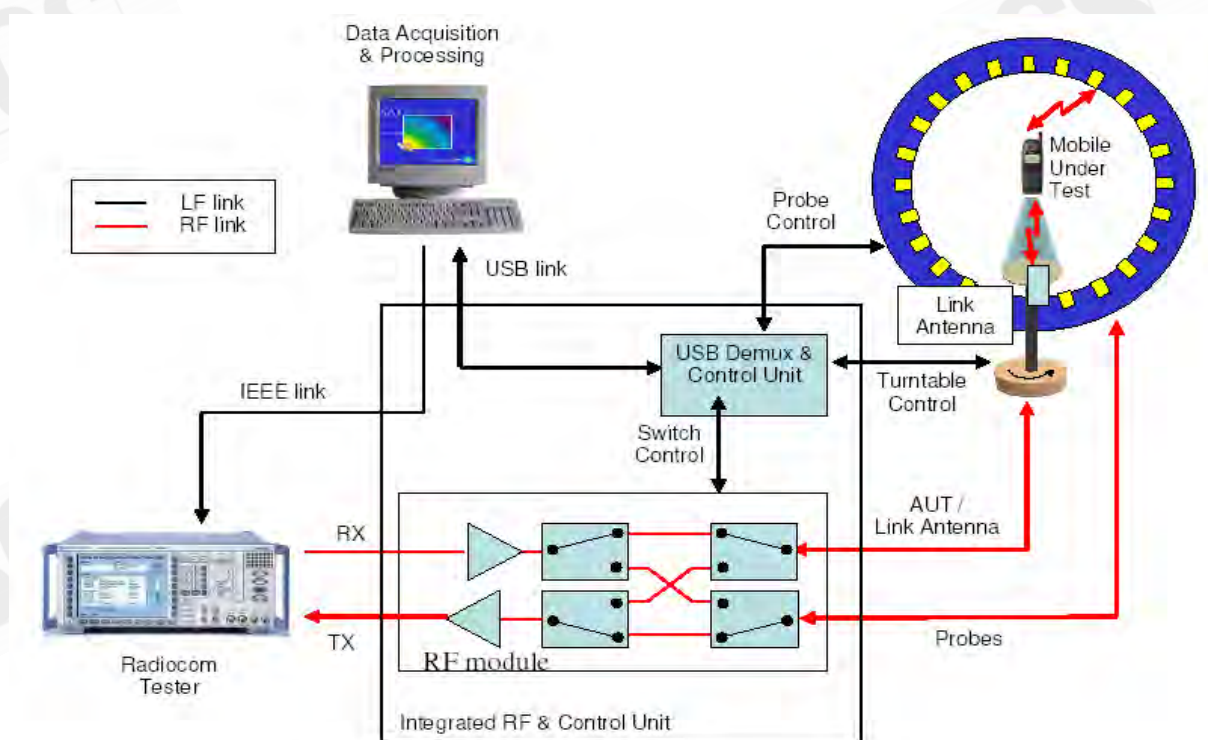
General Information

Testing Condition:

- Temperature: $22 \pm 3^\circ\text{C}$
- Humidity: $< 80\%$

Measurement Facility:

- Measurement Chamber: Satimo 3D fully anechoic chamber and its measuring system (Stargate-24)
- Base Station Simulator: Agilent E5515C (or R&S CMU200)
- Network Analyzer: Agilent E5071C



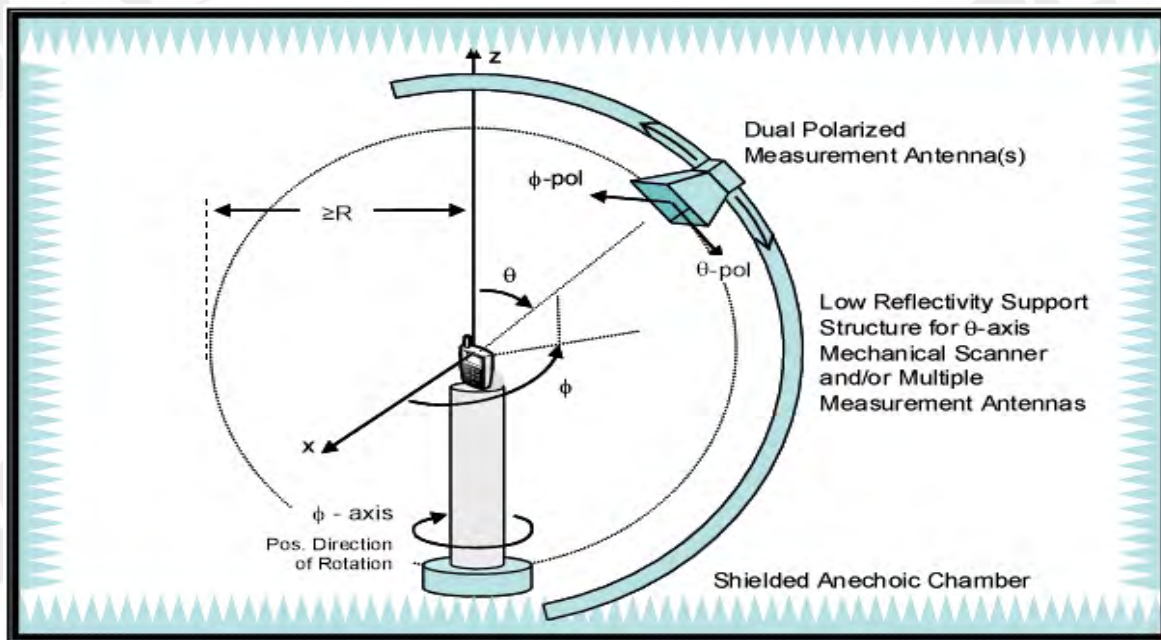
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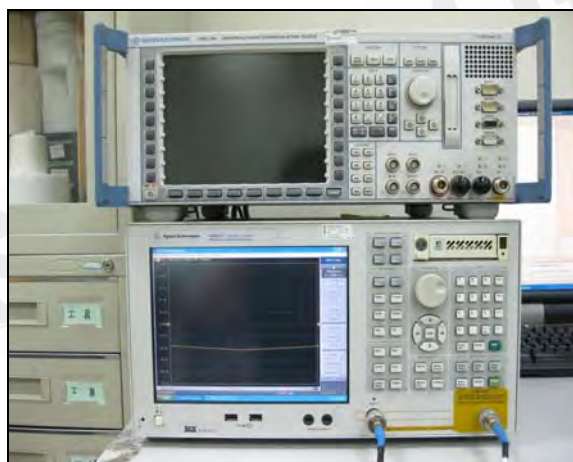
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Measurements are performed in a Satimo **Stargate-24** with the StarAct interface for a base station simulator. The **Stargate-24** has 23 probe antennas mounted with equal spacing on a circular arch. Electronic switching of the probe antennas provides outstanding measurement speed. The geometry of the setup, with only a Styrofoam column within 1.2 meters of the EUT, ensures minimum interference and low ripple on the measured radiation patterns. The DUT is placed on top of the pedestal, in the center of the system.

Typical Setup for Satimo Stargate-24:



Instruments View



Inside View



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Testing Laboratory: Identification of the Responsible Test Laboratory.**● OTA Laboratory:**

SGS Taiwan Ltd. Electronics & Communication Laboratory

5F, No.134, Wu Kung Road, Wuku Industrial zone, Taipei County, Taiwan 248, R.O.C.

Telephone: +886 2 2299 3279

Fax: +886 2 2298 0488

Internet: <http://www.sgs.com>**Details of Applicant:**

Applicant's name:	Delta Electronics, INC.
Applicant's address:	250 Shangying Road, Guishan Industrial Zone, Taoyuan County33341, Taiwan, R.O.C
Contact person:	Fred. Wang & Supervisor
Telephone:	886-3-359-1968 Ext.2987
Fax:	886-3-359-1991
E-mail:	fred.wang@delta.com.tw

Details of Manufacturer:

Manufacturer's name:	Delta Electronics, INC.
Manufacturer's address:	250 Shangying Road, Guishan Industrial Zone, Taoyuan County33341, Taiwan, R.O.C
Contact person:	Fred. Wang & Supervisor
Telephone:	886-3-359-1968 Ext.2987
Fax:	886-3-359-1991
E-mail:	fred.wang@delta.com.tw

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Details of EUT:

Device Description:	PCB type antenna
Device Manufacturer:	Delta Electronics, INC.
Device Model:	GIB0x
Hardware Version:	N/A
Software Version:	N/A
IMEI:	N/A
FCC ID:	N/A
Frequency Range:	2400MHz ~ 2500MHz Step size: 10MHz
Antenna Type:	Internal antenna

Duration of Tests:

Sample Receive Date:	2012-01-20
Test Starting Date:	2012-01-30
Test Ending Date:	2012-01-30
Report Issued Date:	2012-02-01

Photographs of EUT:**Front View****Back View**

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Equipment Summary Sheet

Equipment Description	Manufacturer	Identification no.	Current calibration date	Next calibration date
Universal Radio Communication tester	Rohde & Schwarz	CMU200	2011/04/01	2012/04/01
Network Analyzer	Agilent	E5071C	2012/01/11	2013/01/11
Dual Ridge Horn	Satimo	SH800	2011/07/15	2012/07/15
Stargate-24 probe array	Satimo	Stargate-24	2011/08/20	2012/08/20
Measurement software	Satimo	SPM 1.3.2.1	N/A	N/A

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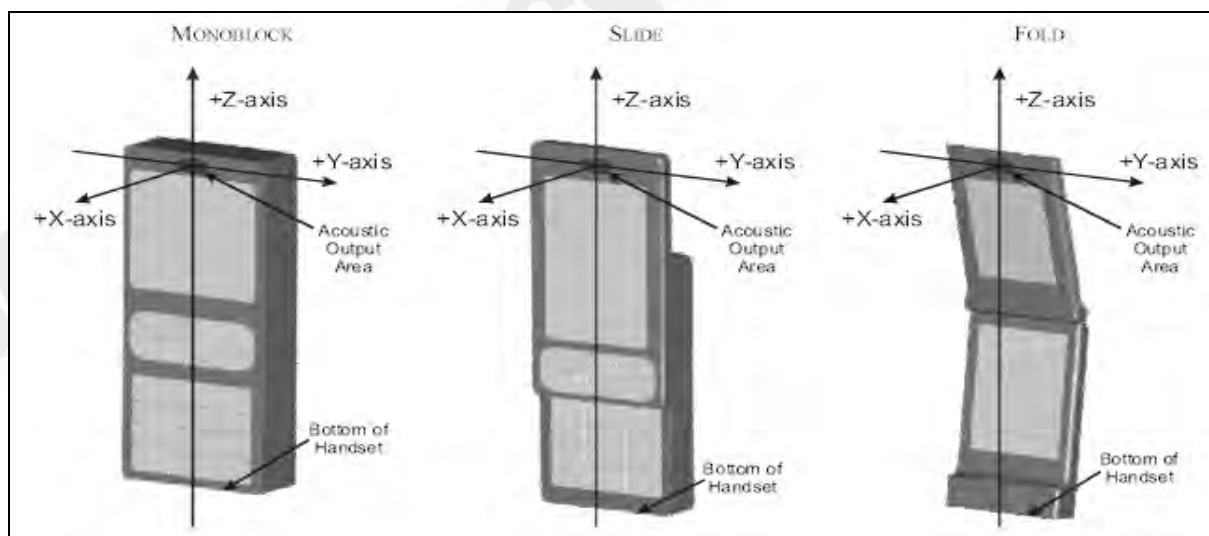
Antenna Gain and Efficiency

Frequency	Peak. dBi	Efficiency	Average . dBi
2400000000	-3.58	18.01%	-7.44
2410000000	-3.55	18.36%	-7.36
2420000000	-3.47	18.91%	-7.23
2430000000	-3.32	19.18%	-7.17
2440000000	-3.15	19.17%	-7.17
2450000000	-3.06	19.33%	-7.14
2460000000	-3.06	19.67%	-7.06
2470000000	-3.18	19.21%	-7.16
2480000000	-3.27	18.87%	-7.24
2490000000	-3.50	18.29%	-7.38
2500000000	-3.71	17.65%	-7.53

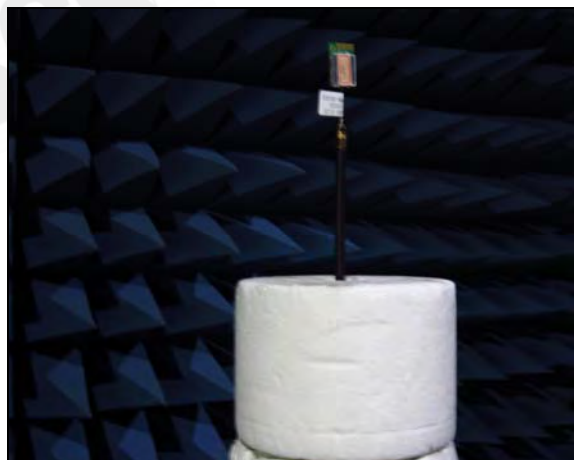
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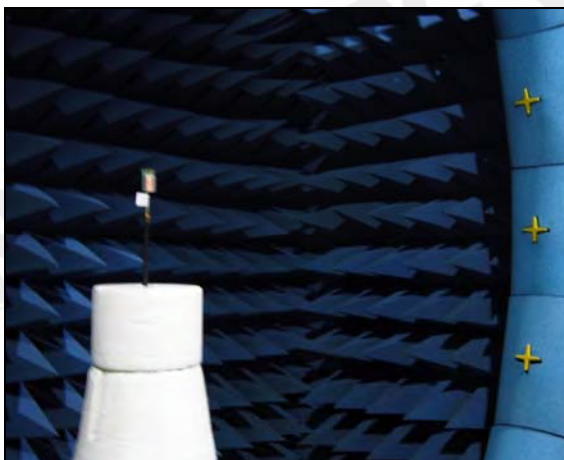
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Free Space - Front View



Free Space - Side View



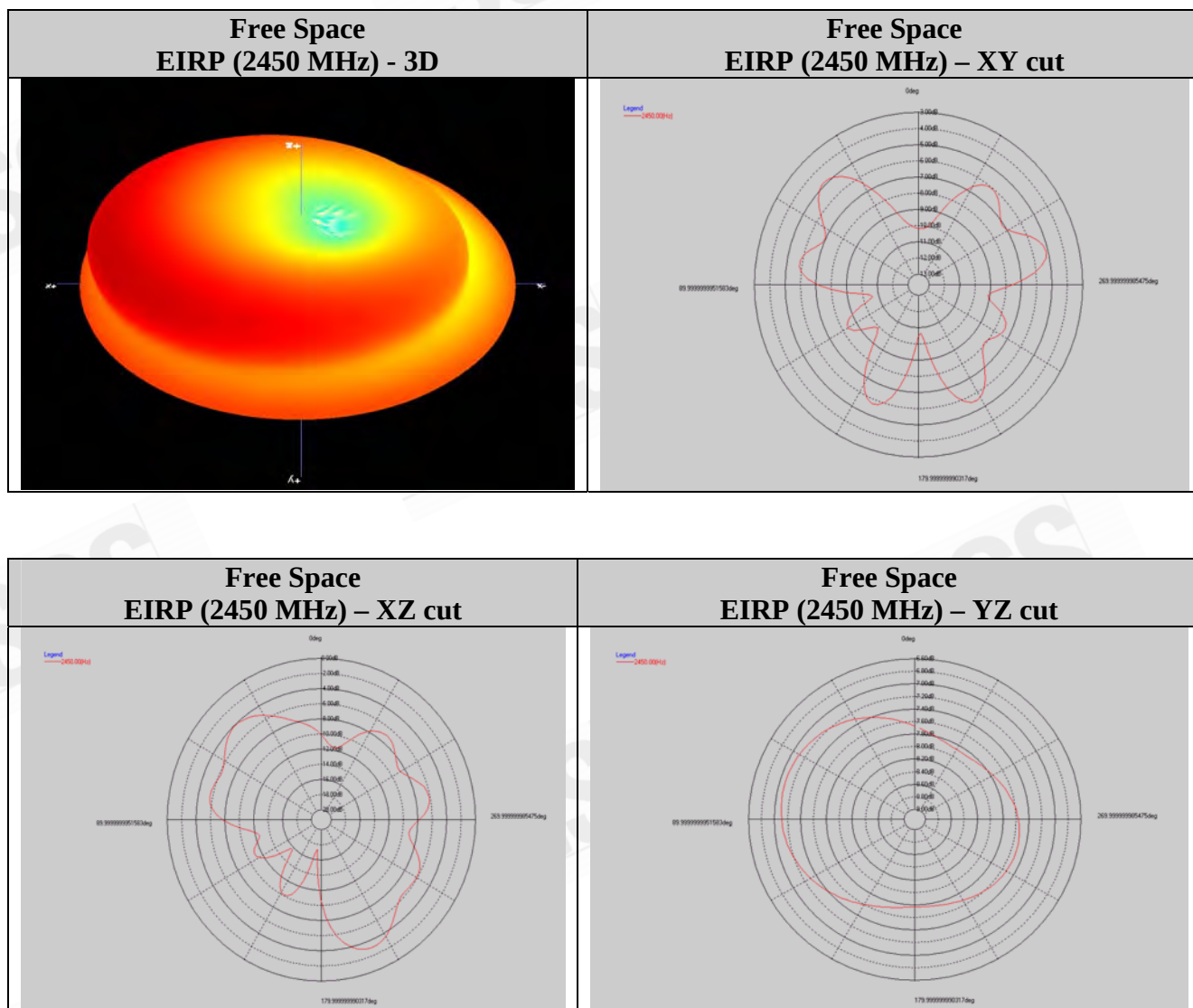
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Antenna 3D Plot Matrix

All plots in this section show the total EIRP ($EIRP_{\theta} + EIRP_{\phi}$) with the +x-axis pointing out of the page, +y-axis pointing right, and +z-axis pointing up.



End of Report

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