

Antenna Test Report

Report No.: E4/2016/30010

Test Plan: Non-compliance with ISO17025

Applicant Name: Trek Bicycle Corporation

Manufacturer Name: Trek Bicycle Corporation

Product Name: ION 350RT

Model Number: 531328

**Measurements performed at
SGS Taiwan Ltd.**

Hwaya District, Taiwan

Issued Date: April 01, 2016

	Name	Date & Signature
Prepared by:	Shawn Yen Sr. Engineer	<i>Shawn Yen</i> April 01, 2016
Approved by:	Dragon Wu Asst. Manager	<i>Dragon Wu</i> April 01, 2016

Distribution

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SGS Taiwan Ltd.

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Measurement System Information

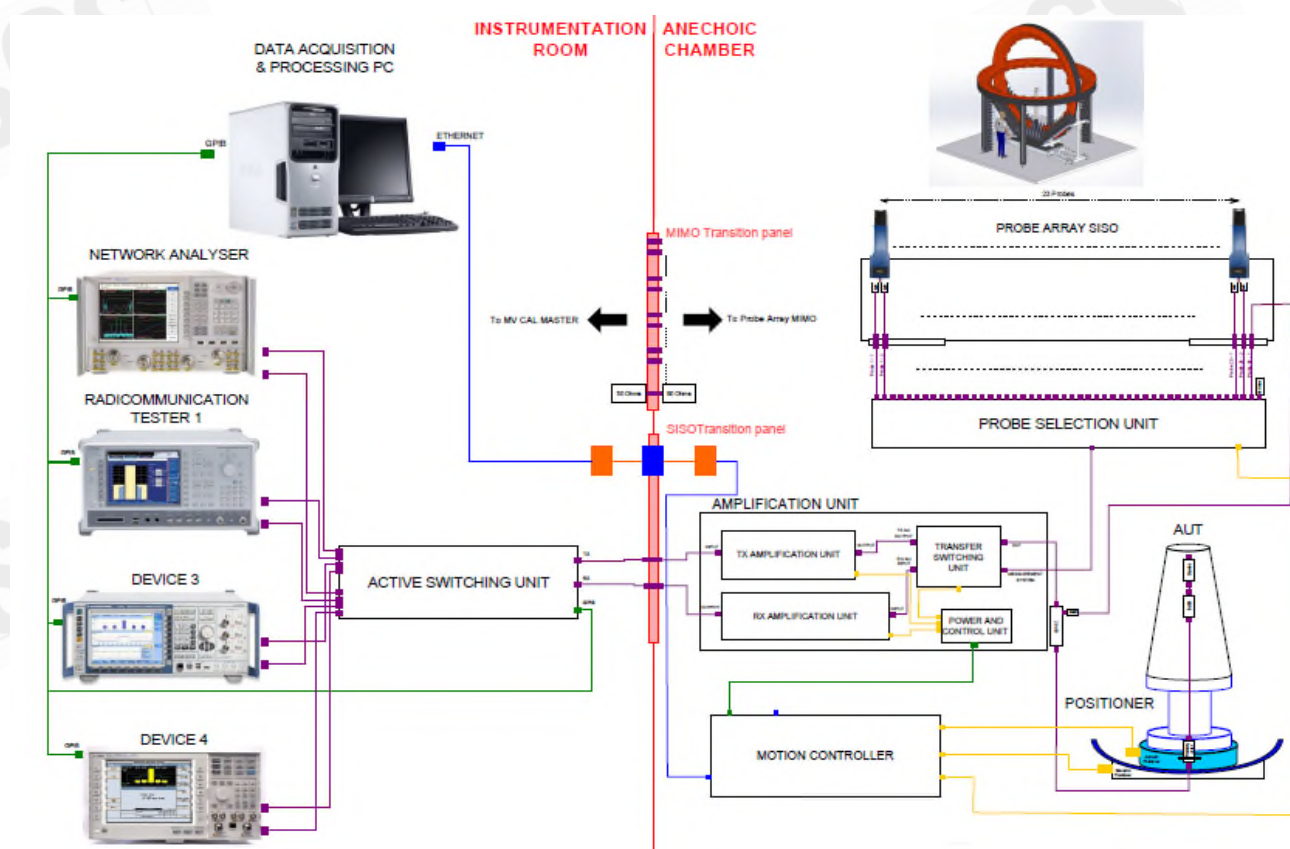
General Information

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-L)
- Base Station Simulator: Anritsu MT8820C (or R&S CMU200)
- Network Analyzer: Agilent E5071C



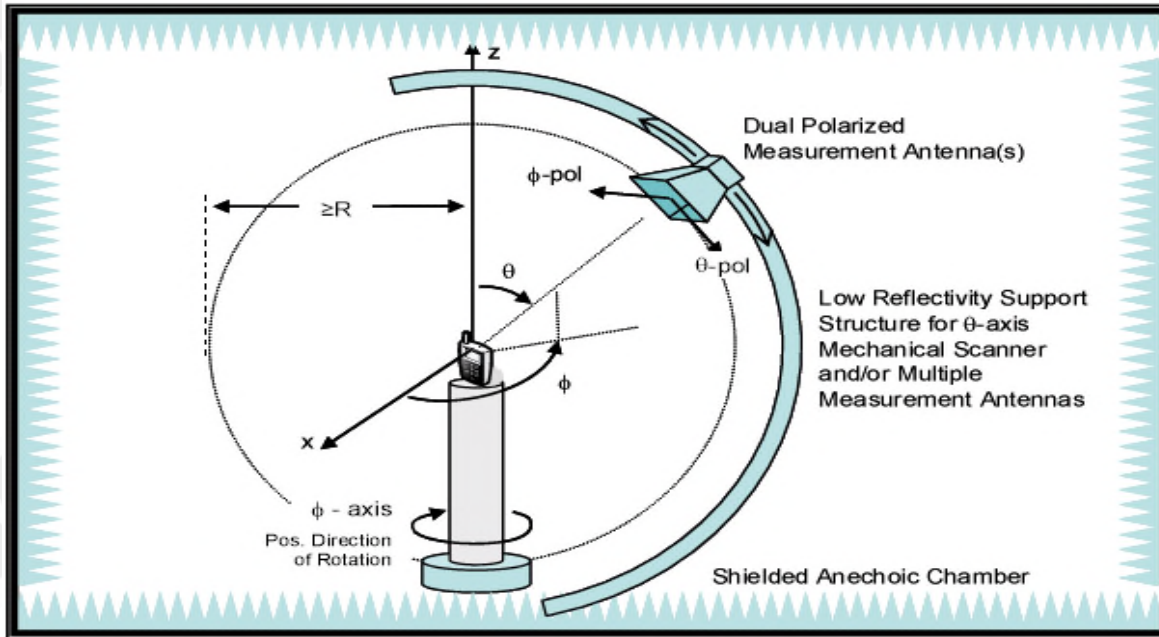
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Measurements are performed in a Satimo **Stargate-24-L** with the StarAct interface for a base station simulator. The **Stargate-24-L** has 23 probe antennas mounted with equal spacing on a circular arch. Electronic switching of the probe antennas provides outstanding measurement speed. The geometry of the setup, with only a Styrofoam column within 1.6 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.

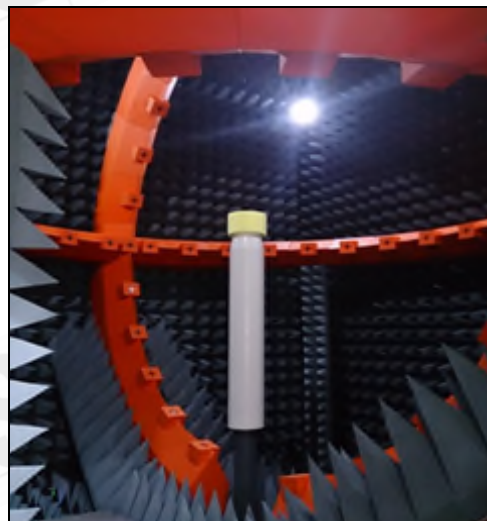
Typical Setup for Satimo Stargate-24-L:



Instruments View



Inside View



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Testing Laboratory: Identification of the Responsible Test Laboratory.

- **OTA Laboratory:**
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Telephone: +886 2 2299 3279
Fax: +886 2 2298 0488
Internet: <http://www.tw.sgs.com>
- **Testing Location:**
No. 2, Keji 1st Rd., Hwaya Technology Park, Guishan District, Taoyuan City, Taiwan 33383.

Details of Applicant:

Applicant's name:	Trek Bicycle Corporation
Applicant's address:	801 West Madison Street, Waterloo, WI 53594 USA
Contact person:	Jeff Jambois
Telephone:	920-478-2191
Fax:	N/A
E-mail:	Jeff_Jambois@trekbikes.com

Details of Manufacturer:

Manufacturer's name:	Trek Bicycle Corporation
Manufacturer's address:	801 West Madison Street, Waterloo, WI 53594 USA
Contact person:	Jeff Jambois
Telephone:	920-478-2191
Fax:	N/A
E-mail:	Jeff_Jambois@trekbikes.com

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Details of EUT:

Device Description:	ION 350RT
Device Manufacturer:	Trek Bicycle Corporation
Device Model:	531328
Hardware Version:	1.3V
Software Version:	N/A
Frequency Range:	2400MHz ~ 2500MHz Step size: 10MHz
Antenna Type:	Internal antenna

Duration of Tests:

Sample Receive Date:	2016-03-21
Test Starting Date:	2016-03-22
Test Ending Date:	2016-03-22
Report Issued Date:	2016-04-01

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

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List of Equipment

Equipment Summary Sheet

Equipment Description	Manufacturer	Identification no.	Current calibration date	Next calibration date
Universal Radio Communication tester	Anritsu	MT8820C	2015/10/13	2016/10/13
Network Analyzer	Agilent	E5071C	2015/10/16	2016/10/16
Dual Ridge Horn	Satimo	SH600	2015/03/25	2016/03/25
Stargate-24-L probe array	Satimo	Stargate-24-L	2015/11/16	2016/11/16
Measurement software	Satimo	SPM V1.5.5	N/A	N/A

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Antenna Gain and Efficiency

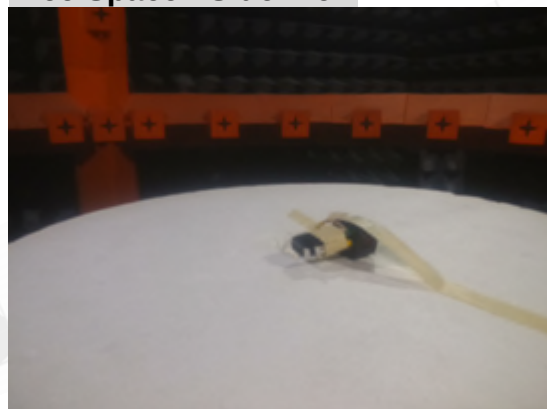
531328			
Freq(MHz)	Peak. dBi	Efficiency	Average . dBi
2400.00	-1.04	29.84%	-5.25
2410.00	-0.53	31.09%	-5.07
2420.00	-0.20	33.27%	-4.78
2430.00	-0.06	35.77%	-4.47
2440.00	0.49	38.55%	-4.14
2450.00	0.93	40.57%	-3.92
2460.00	1.27	41.60%	-3.81
2470.00	1.25	41.58%	-3.81
2480.00	1.28	42.01%	-3.77
2490.00	1.52	42.02%	-3.77
2500.00	1.69	41.76%	-3.79

Test Setup

Free Space - Front View



Free Space - Side View



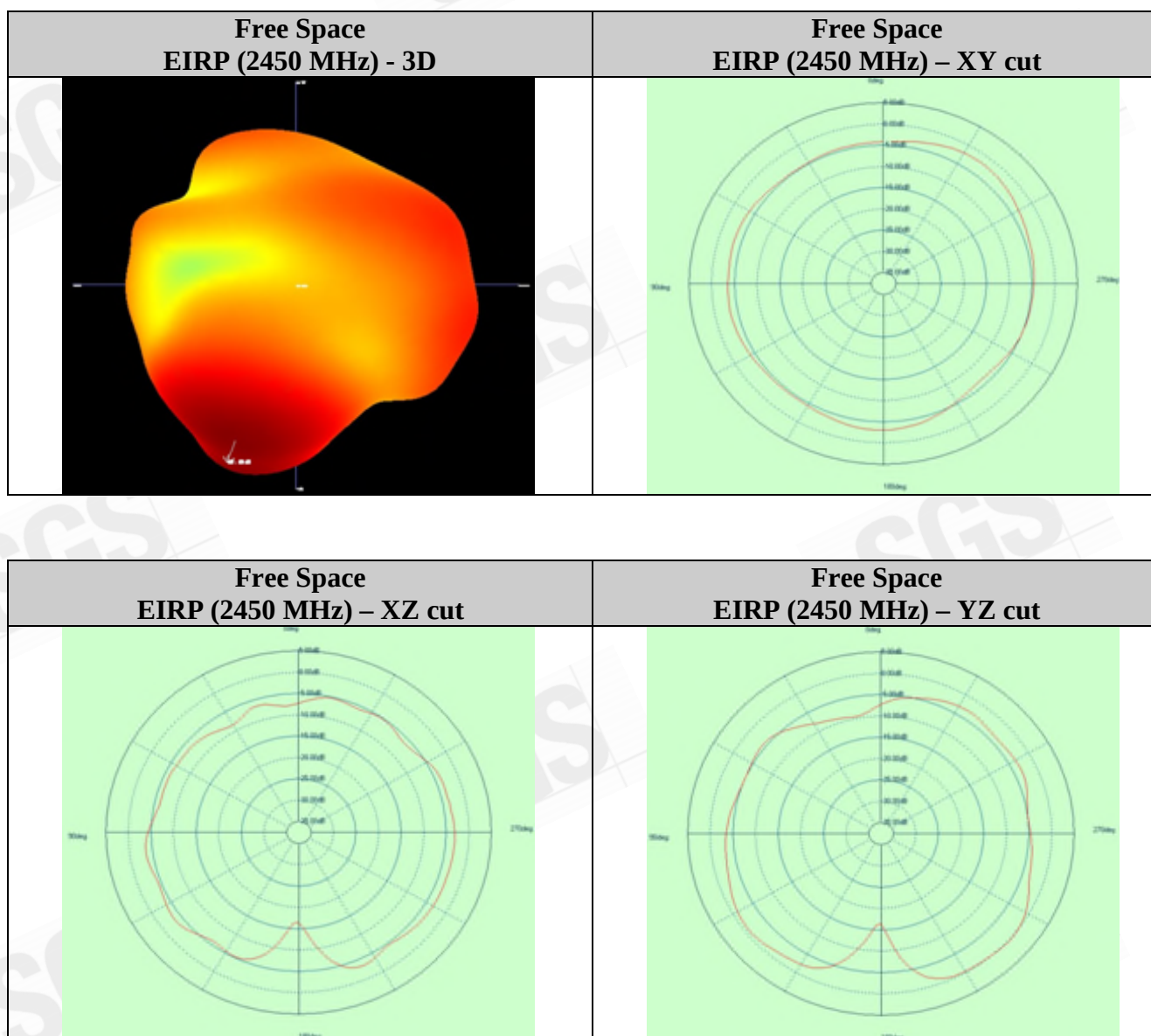
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Antenna 3D Plot Matrix

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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