TESTING LABORATORY
CERTIFICATE#4323.01

FCC PART 15C

TEST REPORT

For

Dongguan Xing Yue Electronic co., Ltd

#98 LiWu Swan Industrial District, Qiao Tou Town, Dong Guan City, Guang Dong, China

FCC ID: 2ALCFXO-9679

Report Type:	Product Type:
Original Report	Mode Magnetic Wireless Mount Kit

Test Engineer:	Winnie Yang
Report Number:	RSHA181109005-00A
Report Date:	2018-11-23
Reviewed By:	Oscar Ye EMC Manager
Prepared By:	Bay Area Compliance Laboratories Corp. (Kunshan) No.248 Chenghu Road,Kunshan,Jiangsu province,China Tel: +86-0512-86175000 Fax: +86-0512-88934268 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant	Dongguan Xing Yue Electronic co., Ltd
Tested Model	XO-9679
Product Type	Mode Magnetic Wireless Mount Kit
Dimension	72mm(L)×72 mm(W)×68 mm(H)
Power Supply	DC 5.0V

**All measurement and test data in this report was gathered from production sample serial number: 20181109005. (Assigned by BACL, Kunshan). The EUT was received on 2018-11-09.*

Objective

This report is prepared on behalf of Dongguan Xing Yue Electronic co., Ltd in accordance with Part 2-Subpart J, Part 15-Subparts A and C of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205 and 15.209 rules.

Related Submittal(s)/Grant(s)

No Related Submittal(s)/Grant(s).

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Kunshan). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

Item		Uncertainty
AC Power Lines Conducted Emissions		3.19 dB
Radiated emission	9kHz~30MHz	3.19dB
	30MHz~1GHz	6.11dB
Temperature		1.0℃
Humidity		6%

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on the No.248 Chenghu Road, Kunshan, Jiangsu province, China.

Bay Area Compliance Laboratories Corp. (Kunshan) Lab is accredited to ISO/IEC 17025 by A2LA (Lab code: 4323.01) and the FCC designation No. CN1185 under the FCC KDB 974614 D01. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2014.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in a typical fashion (as normally used by a typical user)

Equipment Modifications

No modification was made to the EUT tested.

EUT Exercise Software

No Exercise Software was used.

Support Equipment List and Details

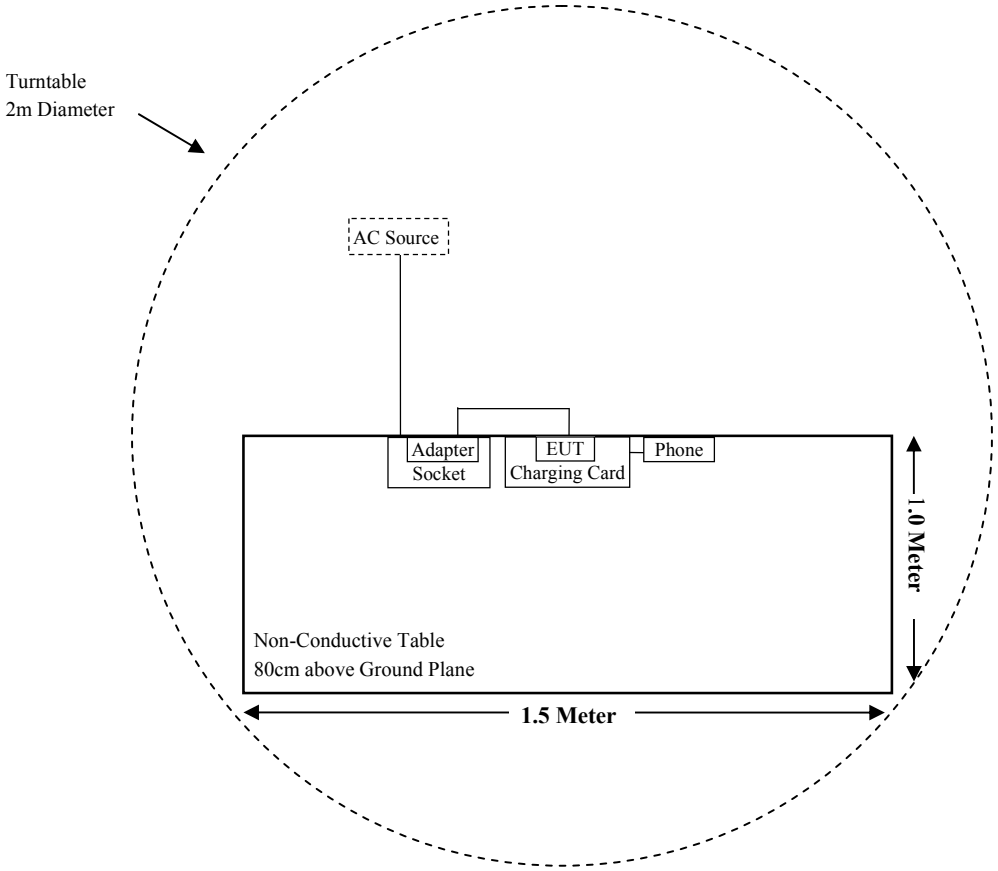
Manufacturer	Description	Model	Serial Number
SHENZHEN TIANYIN	Adapter	TPA-46B050100UU	/
Apple	Mobile Phone	Iphone6	/
Dongguan Xing Yue	Wireless Charging Card	iPhone 7/6 4.7inch	/
Apple	Mobile Phone	MQ8E2CH/A	FD3X40UEJCU0

External I/O Cable

Cable Description	Length (m)	From Port	To
USB Cable	0.8	EUT	Adapter

Block Diagram of Test Setup

For Radiated Emissions(Below 30MHz & Above 30MHz):



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307 & §1.1310	RF Exposure	Compliance
§15.203	Antenna Requirement	Compliance
§15.207 (a)	AC Line Conducted Emissions	Not applicable (NOTE 1)
§15.205, §15.209	Spurious Emissions	Compliance

NOTE 1:It is a Car Charger.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test（Chamber 1#）					
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2018-11-12	2019-11-11
Sunol Sciences	Broadband Antenna	JB3	A090413-1	2016-12-26	2019-12-25
Sonoma Instrunent	Pre-amplifier	310N	171205	2018-08-15	2019-08-14
Rohde & Schwarz	Auto test Software	EMC32	100361	/	/
MICRO-COAX	Coaxial Cable	Cable-8	008	2018-08-15	2019-08-14
MICRO-COAX	Coaxial Cable	Cable-9	009	2018-08-15	2019-08-14
MICRO-COAX	Coaxial Cable	Cable-10	010	2018-08-15	2019-08-14
Radiated Emission Test（Chamber 2#）					
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2018-11-12	2019-11-11
ETS-LINDGREN	PASSIVE LOOP	6512	108100	2016-01-09	2019-01-08
Sonoma Instrunent	Pre-amplifier	310N	185700	2018-08-15	2019-08-14
Rohde & Schwarz	Auto test Software	EMC32	100361	/	/
MICRO-COAX	Coaxial Cable	Cable-6	006	2018-08-15	2019-08-14
MICRO-COAX	Coaxial Cable	Cable-11	011	2018-08-15	2019-08-14
MICRO-COAX	Coaxial Cable	Cable-12	012	2018-08-15	2019-08-14
MICRO-COAX	Coaxial Cable	Cable-13	013	2018-08-15	2019-08-14
RF Exposure					
Narda	Electromagnetic Field Meter	ELT-400	N-0215	2018-02-22	2019-02-21
Narda	B field probe	ELT Probe 100cm^2	M-0658	2018-02-22	2019-02-21
ETS-Lindgren	Isotropic probe /	HI-6005	00069461	2016-02-29	2019-02-28

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC §1.1307& §1.1310 – RF EXPOSURE

Applicable Standard

FCC §1.1307 & 1.1310

According to the item 5.2 of KDB 680106 D01 RF Exposure Wireless Charging Apps v03: Inductive wireless power transfer applications that meet all of the following requirements are excluded from submitting an RF evaluation.

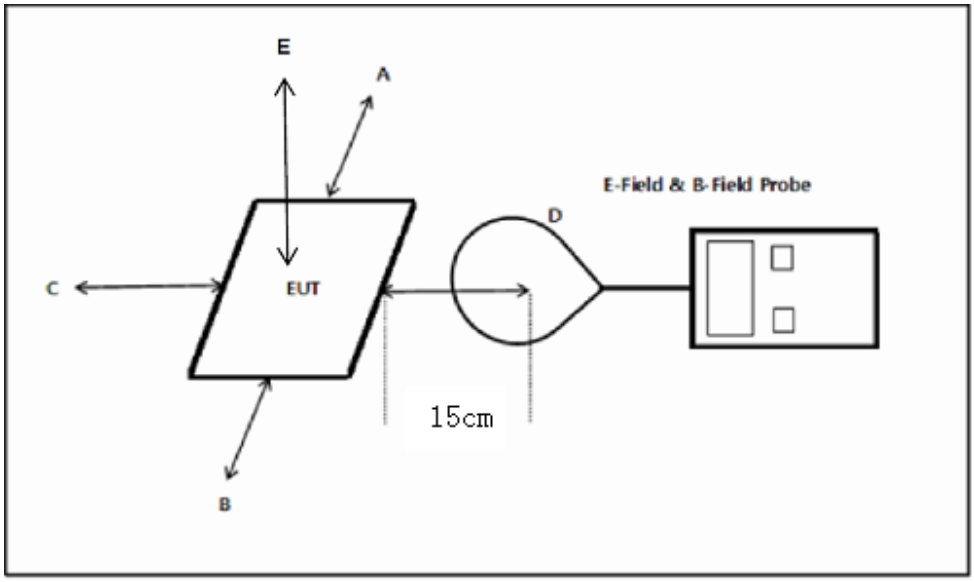
a) Power transfer frequency is less that 1 MHz.
b) Output power from each primary coil is less than or equal to 15 watts.
c) The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils.
d) Client device is placed directly in contact with the transmitter.
e) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).
f) The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.

Limits for Maximum Permissible Exposure (MPE)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (minutes)**
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	$*900/f^2$	6
30-300	61.4	0.163	1.0	6
300-1,500	/	/	f/300	6
1,500-100,000	/	/	5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	$*(180/f^2)$	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;

EUT Setup



Result

a) Power transfer frequency is less that 1 MHz.
Yes, the device operates in the frequency 110 kHz-300 kHz.

b) Output power from each primary coil is less than or equal to 15 watts.
Yes, the maximum output power of the primary coil is 4.5W<15W.

c) The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils..
Yes, the transfer system including a charging system with only single primary coils is to detect and allow only between individual of coils.

d) Client device is inserted in or placed directly in contact with the transmitter.
Yes, client device is placed directly in contact with the transmitter.

e) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).
Yes, this is a mobile device.

f) The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.
The EUT H-field Strength levels at 15cm and 20 cm above the top surface are less than 50% the MPE limit.

Test Data

Environmental Conditions

Temperature:	24.2℃
Relative Humidity:	51 %
ATM Pressure:	101.2 kPa

The testing was performed by Winnie Yang on 2018-11-22.

H-Filed Strength

Frequency Range (kHz)	Position A (A/m)	Position B (A/m)	Position C (A/m)	Position D (A/m)	Position E (A/m)	Limit Test (A/m)
110-300	0.179	0.185	0.199	0.163	0.412	1.63

E-Filed Strength

Frequency Range (kHz)	Position A (V/m)	Position B (V/m)	Position C (V/m)	Position D (V/m)	Position E (V/m)	Limit Test (V/m)
110-300	2.85	2.84	2.16	3.73	6.96	614

Note:

1: According with KDB 680106 D01 RF Exposure Wireless Charging Apps v03, Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614V/m and 1.63 A/m. Aggregate leakage fields at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.

2: The distance for position A, B, C, D are 15cm, the distance for position E is 20cm.

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

Antenna Connector Construction

The EUT has a loop antenna arrangement, which the antenna gain is 1.5dBi; fulfill the requirement of this section. Please refer to the EUT photos.

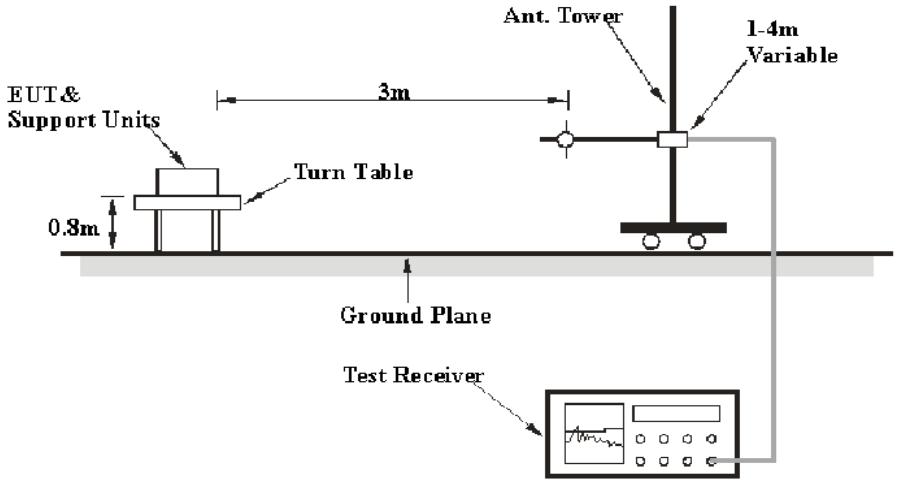
Result: Compliance.

FCC §15.209 & §15.205 - SPURIOUS EMISSIONS

Applicable Standard

FCC §15.209; §15.205;

EUT Setup



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209 and FCC 15.205 limits.

EMI Test Receiver Setup

The system was investigated from 9 kHz to1GHz.

During the radiated emission test, the EMI test receiver setup was set with the following configurations:

Frequency Range	RBW	Video B/W	Detector
9 kHz – 150 kHz	200 kHz	1 kHz	QP
150 kHz – 30MHz	9kHz	30kHz	QP
30 MHz – 1000 MHz	120 kHz	300 kHz	QP

Note: For the frequency bands 9-90 kHz and 110-490 kHz, the test was based on average detector.

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

The EUT is set 3 meter away from the testing antenna, which is varied from 1-4 meter, and the EUT is placed on a turntable, which is 0.8 meter above ground plane, the table shall be rotated for 360 degrees to find out the highest emission. The receiving antenna should be changed the polarization both of horizontal and vertical.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude (dBμV /m) = Meter Reading (dBμV) + Antenna Factor (dB/m) + Cable Loss (dB) - Amplifier Gain (dB)

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV /m)

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Title 47, Part 15, Subpart C, section 15.205 and 15.209.

Test Data

Environmental Conditions

Temperature:	24.2℃
Relative Humidity:	51 %
ATM Pressure:	101.2 kPa

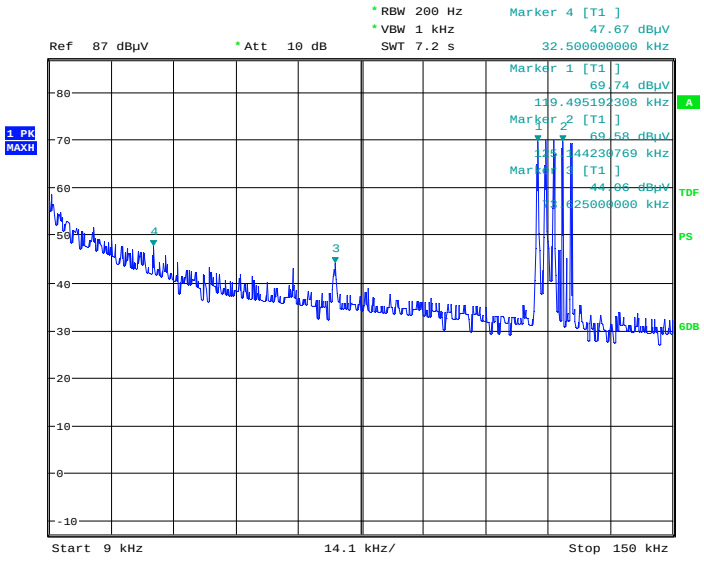
The testing was performed by Winnie Yang on 2018-11-20.

EUT operation mode: charging and communication

9kHz-30MHz:

*(Pre-scan in the X, Y and Z axes of orientation, the worst case **in X-axis of orientation** was recorded)*

9kHz-150kHz (PK)



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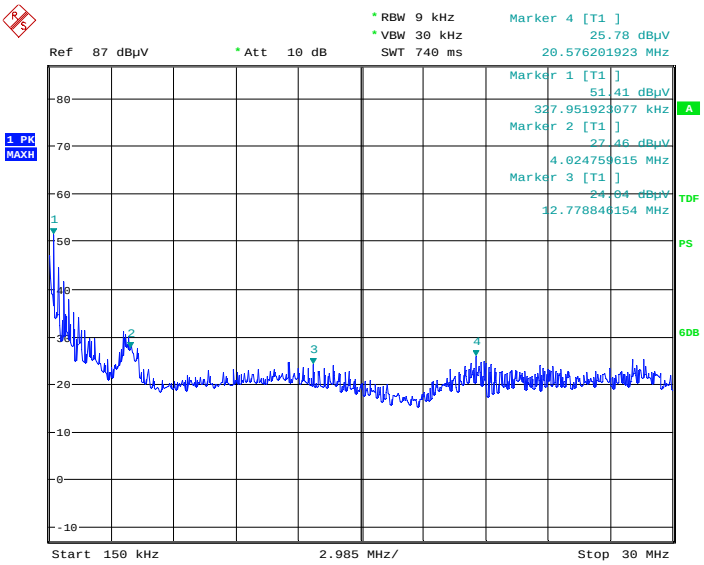
150kHz-30MHz (PK)



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9kHz-150kHz：

Indicated		PK/QP/Ave.	Corrected Factor (dB/m)	FCC Part 15.209	
Frequency (kHz)	Corrected Amplitude (dBμV/m) @3m			Limit (dBμV/m) @3m	Margin (dB)
32.50	47.67	PK	76.40	117.37	69.70
73.63	44.06	PK	69.89	110.26	66.20
119.50	69.74	PK	65.34	106.06	36.32
125.14	69.58	PK	65.00	105.66	36.08

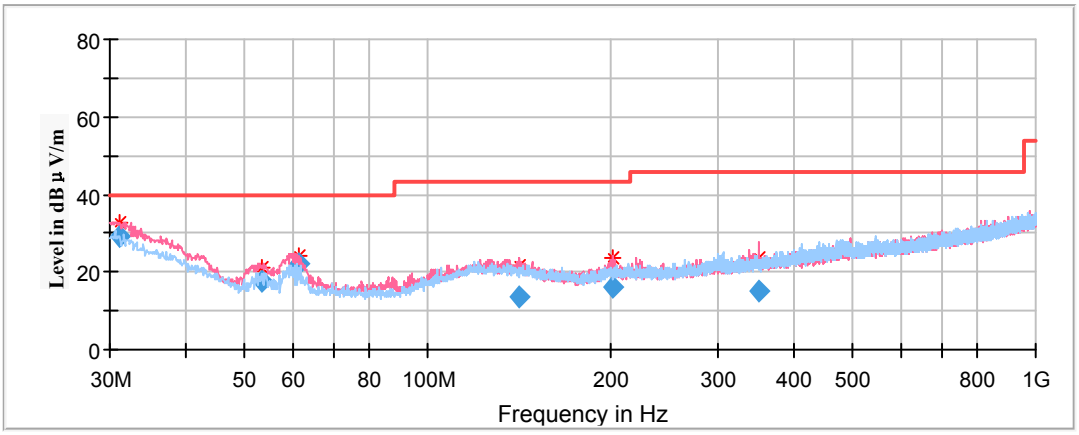
150kHz-30MHz

Indicated		PK/QP/Ave.	Corrected Factor (dB/m)	FCC Part 15.209	
Frequency (MHz)	Corrected Amplitude (dBμV/m) @3m			Limit (dBμV/m) @3m	Margin (dB)
0.33	51.41	PK	57.80	97.29	45.88
4.02	27.46	PK	38.20	69.54	42.08
12.78	24.04	PK	35.37	69.54	45.50
20.58	25.78	PK	34.79	69.54	43.76

Note:
Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
Corrected Amplitude (dBμV /m) = Corrected Factor (dB/m) + Reading (dBμV)
Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV /m)

30MHz-1GHz

*(Pre-scan in the X,Y and Z axes of orientation, the worst case **in X-axis of orientation** was recorded)*



Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	QuasiPeak (dB µ V/m)	Height (cm)	Polar (H/V)				
31.032600	28.99	101.0	V	299.0	-4.6	40.00	11.01
53.543700	17.41	199.0	V	347.0	-17.7	40.00	22.59
61.253200	22.21	101.0	V	25.0	-17.9	40.00	17.79
141.303450	13.34	101.0	V	93.0	-12.0	43.50	30.16
200.945300	16.17	101.0	V	25.0	-12.3	43.50	27.33
351.792050	14.87	101.0	V	142.0	-9.3	46.00	31.13

Note:
Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
Corrected Amplitude (dBµV /m) = Corrected Factor (dB/m) + Reading (dBµV)
Margin (dB) = Limit (dBµV/m) – Corrected Amplitude (dBµV /m)

******* END OF REPORT *******