FCC PART 15B, CLASS B

TEST REPORT

For

Amgoo Telecom Co., Ltd.

3/F, Block R2-A(North),Gaoxin S.Ave.4th,Hi-Tech Industrial Park, Nanshan District, Shenzhen, China

FCC ID: UOSAM520

Report Type:	Product Type:
Original Report	3G Smart Phone

Report Number:	RSZ170523004-00A
Report Date:	2017-06-17
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Note: This test report is prepared for the customer shown above and for the equipment described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp.

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Amgoo Telecom Co., Ltd.'s* product, model number: *AM520 (FCC ID: UOSAM520)* in this report is a *3G Smart Phone* which was measured approximately: 4.4cm (L) * 7.3 cm (W) * 1.0 cm (H), rated with input voltage: DC 3.8 V battery or DC 5.0V from adapter.The highest operating frequency is 2480MHz.

Adapter Information:
Model: CH5
Input: AC 100-240V, 50/60Hz, 0.2A
Output: DC 5.0V, 1000mA

** All measurement and test data in this report was gathered from production sample serial number: 1701087 (Assigned by BACL, Kunshan). The EUT supplied by the applicant was received on 2017-05-25.*

Objective

This test report is prepared on behalf of *Amgoo Telecom Co., Ltd.* in accordance with Part 2-Subpart J, Part 15-Subparts A and B of the Federal Communication Commissions rules.

The objective of the manufacturer is to determine the compliance of the EUT with FCC Part 15 B.

Related Submittal(s)/Grant(s)

FCC Part 15.247 DSS/DTS and Part 22H & 24E &27 PCE submissions with FCC ID: UOSAM520.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

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		±3.26 dB
Radiated emission	30MHz~1GHz	±5.91dB
	Above 1G	±4.92dB

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.

Test site at Bay Area Compliance Laboratories Corp. (Kunshan) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on November 06, 2014. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2014.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 815570. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in a manufacturer testing fashion.

EUT operation mode: Downloading (data transfer with computer)

EUT Exercise Software

“ BurnIn test v5.3” exercise software was used.

Special Accessories

No special accessory.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

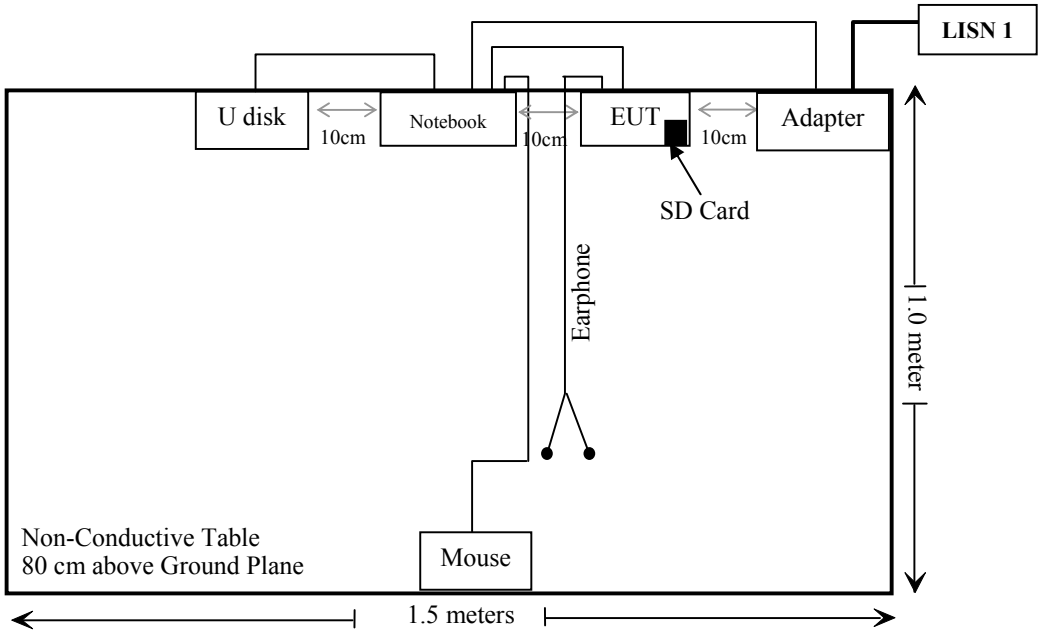
Manufacturer	Description	Model	Serial Number
DELL	Notebook	E6410	GYXJ3A00 JSD2
DELL	Mouse	MOC5UO	G1900NKD
DELL	Adapter	LA90PM130	CN-06C3W2-72438-6BT-194A-A03
Kingston	U disk	4 GB	N/A

External I/O Cable

Cable Description	Length (m)	From/Port	To
Un-Shielding Detachable USB Cable	1.5	Notebook	U disk
Un-Shielding Detachable USB Cable	1.5	Notebook	Mouse
Un-shielding Detachable USB Cable	1.0	EUT	Notebook
Un-shielding Detachable AC Cable	0.9	Adapter	LISN 1
Un-shielding Un-detachable DC Cable	0.9	Adapter	Notebook

Block Diagram of Test Setup

For Conducted Emission:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results
§15.107	AC Line Conducted Emissions	Compliance
§15.109	Radiated Spurious Emissions	Compliance

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
AC Line Conducted Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESCS30	834115/007	2016-11-25	2017-11-25
Rohde & Schwarz	LISN	ESH3-Z5	862770/011	2016-10-10	2017-10-10
Rohde & Schwarz	Pulse limiter	ESH3-Z2	879940/0058	2016-06-19	2017-06-18
MICRO-COAX	Coaxial line	UFB-293B-1-0480-50X50	97F0173	2016-09-08	2017-09-08
Rohde & Schwarz	CE Test software	EMC 32	V 09.10.0	NCR	NCR
Radiated Emission Test					
Sonoma Instrunent	Amplifier	330	171377	2016-10-21	2017-10-21
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2016-11-25	2017-11-25
Sunol Sciences	Broadband Antenna	JB3	A090314-2	2016-01-09	2019-01-08
Narda	Pre-amplifier	AFS42-00101800	2001270	2016-09-08	2017-09-08
EMCO	Horn Antenna	3116	00084159	2016-10-18	2019-10-17
Rohde & Schwarz	Signal Analyzer	FSIQ26	100048	2016-11-25	2017-11-25
ETS	Horn Antenna	3115	6229	2016-01-11	2019-01-10
R&S	Auto test Software	EMC32	V 09.10.0	NCR	NCR
haojintech	Coaxial Cable	Cable-1	001	2016-12-12	2017-12-12
haojintech	Coaxial Cable	Cable-2	002	2016-12-12	2017-12-12
haojintech	Coaxial Cable	Cable-3	003	2016-12-12	2017-12-12
MICRO-COAX	Coaxial Cable	Cable-4	004	2016-12-12	2017-12-12
MICRO-COAX	Coaxial Cable	Cable-5	005	2016-12-12	2017-12-12

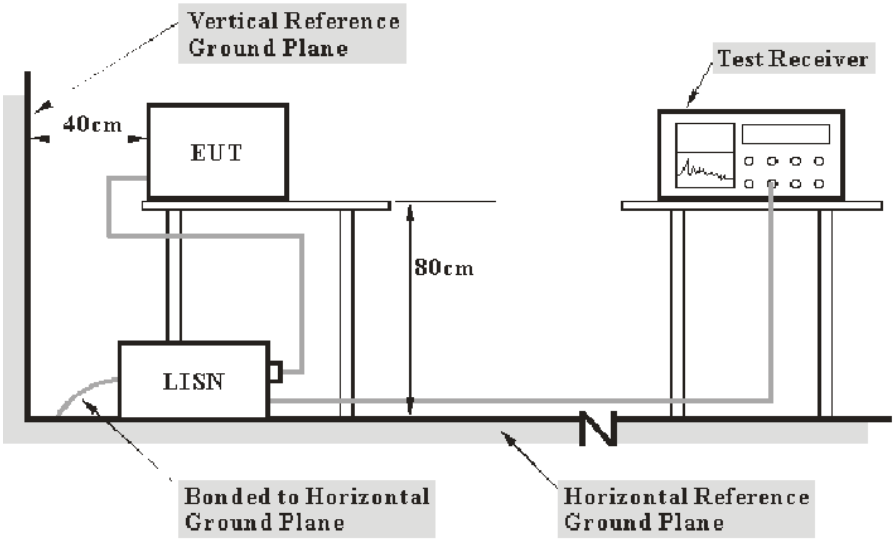
*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI)

FCC §15.107 – AC LINE CONDUCTED EMISSIONS

Applicable Standard

According to FCC §15.107

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The measurement procedure of EUT setup is according with per ANSI C63.4-2014. The related limit was specified in FCC Part 15.107 Class B.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

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

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Corrected Factor & Margin Calculation

The Corrected factor is calculated by adding LISN/ISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation. The basic equation is as follows:

Correction Factor = LISN VDF + Cable Loss + Transient Limiter Attenuation

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

Margin = Limit – Corrected Amplitude

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.107.

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level is in compliance with the limit if

$$L_m + U_{(Lm)} \leq L_{lim} + U_{cispr}$$

In BACL, $U_{(Lm)}$ is less than U_{cispr}, if L_m is less than L_{lim}, it implies that the EUT complies with the limit.

Test Data

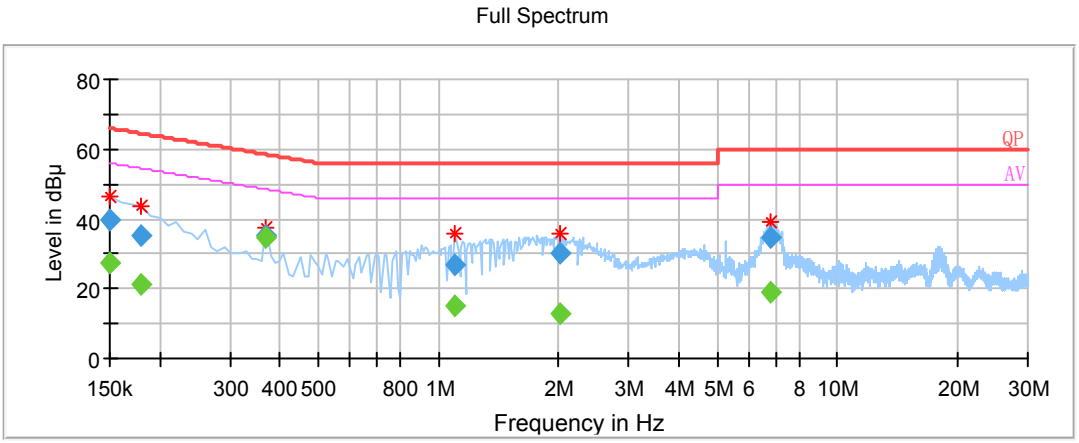
Environmental Conditions

Temperature:	25 ℃
Relative Humidity:	46 %
ATM Pressure:	101.0 kPa

The testing was performed by Layne Li on 2017-06-01.

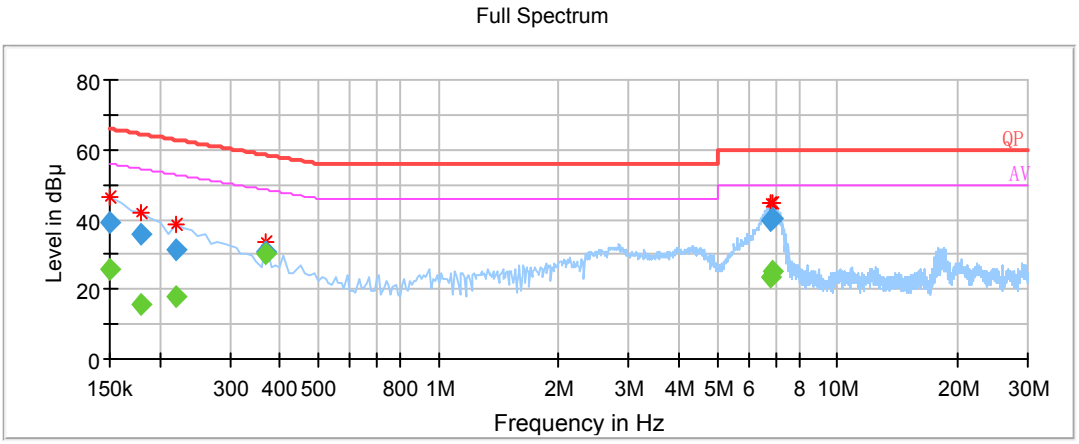
EUT Operation Mode: Downloading

AC 120V/60 Hz, Line



Frequency (MHz)	QuasiPeak (dBµV)	Average (dB µ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.150000	---	27.33	9.000	L1	10.1	28.67	56.00	Compliance
0.150000	39.75	---	9.000	L1	10.1	26.25	66.00	Compliance
0.180000	---	21.06	9.000	L1	10.0	33.43	54.49	Compliance
0.180000	35.50	---	9.000	L1	10.0	28.99	64.49	Compliance
0.370000	---	34.58	9.000	L1	10.0	13.92	48.50	Compliance
0.370000	35.44	---	9.000	L1	10.0	23.06	58.50	Compliance
1.100000	---	14.92	9.000	L1	9.9	31.08	46.00	Compliance
1.100000	27.08	---	9.000	L1	9.9	28.92	56.00	Compliance
2.020000	---	12.63	9.000	L1	9.9	33.37	46.00	Compliance
2.020000	30.25	---	9.000	L1	9.9	25.75	56.00	Compliance
6.810000	---	19.01	9.000	L1	10.0	30.99	50.00	Compliance
6.810000	34.91	---	9.000	L1	10.0	25.09	60.00	Compliance

AC 120V/60 Hz, Neutral



Frequency (MHz)	QuasiPeak (dBµV)	Average (dB µ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.150000	---	25.79	9.000	N	10.1	30.21	56.00	Compliance
0.150000	39.39	---	9.000	N	10.1	26.61	66.00	Compliance
0.180000	---	15.74	9.000	N	10.1	38.75	54.49	Compliance
0.180000	35.78	---	9.000	N	10.1	28.71	64.49	Compliance
0.220000	---	18.08	9.000	N	10.1	34.74	52.82	Compliance
0.220000	31.08	---	9.000	N	10.1	31.74	62.82	Compliance
0.370000	---	30.40	9.000	N	10.1	18.10	48.50	Compliance
0.370000	30.80	---	9.000	N	10.1	27.70	58.50	Compliance
6.800000	---	23.54	9.000	N	9.9	26.46	50.00	Compliance
6.800000	39.81	---	9.000	N	9.9	20.19	60.00	Compliance
6.850000	---	25.30	9.000	N	9.9	24.70	50.00	Compliance
6.850000	40.35	---	9.000	N	9.9	19.65	60.00	Compliance

Note:

1) Corrected Amplitude = Reading + Correction Factor
2) Correction Factor = LISN VDF + Cable Loss + Transient Limiter Attenuation
3) Margin = Limit – Corrected Amplitude

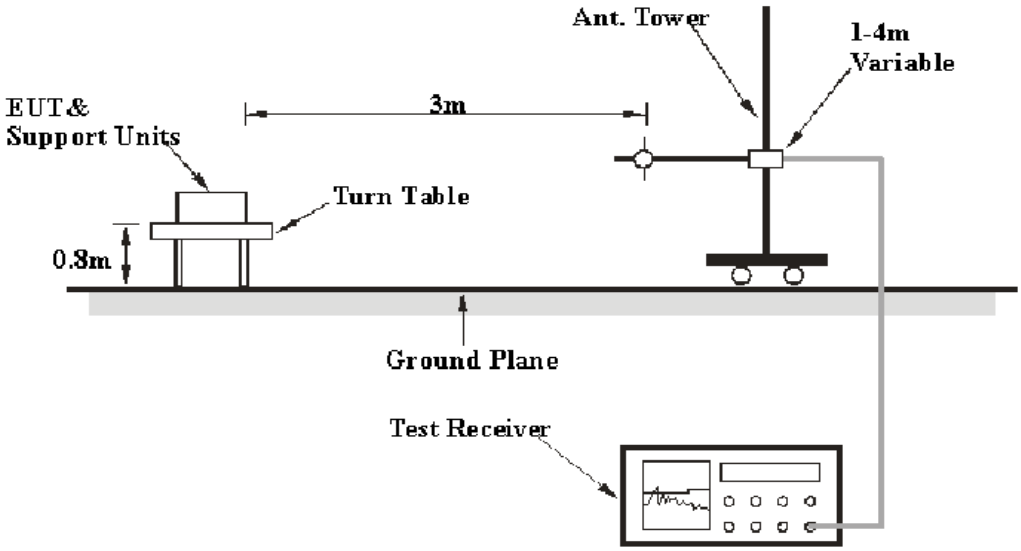
FCC §15.109 - RADIATED SPURIOUS EMISSIONS

Applicable Standard

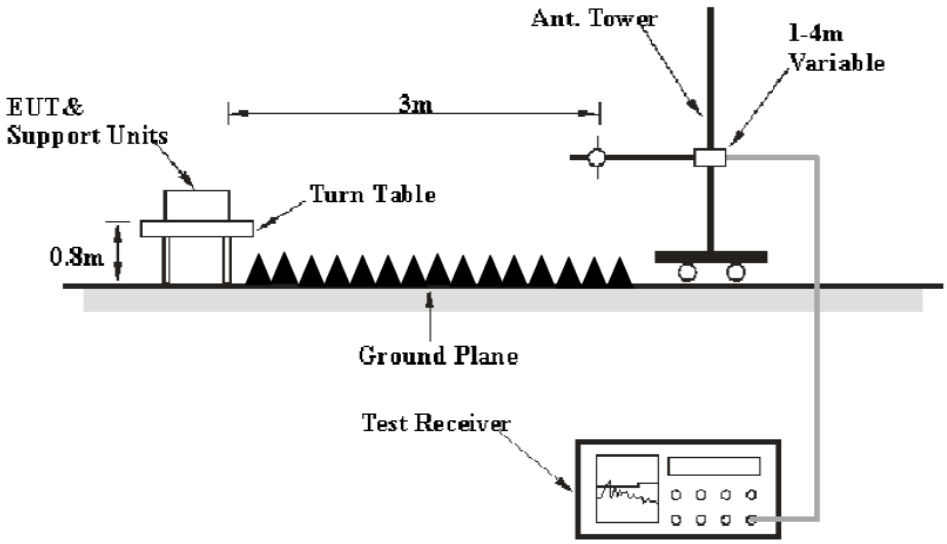
FCC §15.109

EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2014. The specification used was the FCC Part 15.109 Class B limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 12.4 GHz.

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

Frequency Range	RBW	Video B/W	IF B/W	Detector
30 MHz – 1000 MHz	100 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1MHz	3 MHz	/	PK
	1MHz	10 Hz	/	Ave.

Test Procedure

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

All data was recorded in the Quasi-peak detector mode from 30 MHz to 1 GHz and PK and average detector modes for frequencies above 1 GHz.

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 = Meter Reading + Antenna Factor + Cable Loss - Amplifier Gain

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

Margin = Limit – Corrected Amplitude

Test Results Summary

According to the data in the following table, the EUT complied with the FCC §15.109 Class B.

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level is in compliance with the limit if

$$L_m + U_{(Lm)} \leq L_{lim} + U_{cispr}$$

In BACL, $U_{(Lm)}$ is less than U_{cispr}, if L_m is less than L_{lim}, it implies that the EUT complies with the limit.

Test Data

Environmental Conditions

Temperature:	26 ℃
Relative Humidity:	54 %
ATM Pressure:	101.0 kPa

The testing was performed by Layne Li on 2017-06-11.

EUT operation mode: Downloading

30 MHz – 12.4GHz:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15B	
	Reading (dBμV)	Detector (PK/QP/Ave.)		Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
46.59	24.63	QP	71	1.2	V	-2.52	22.11	40.00	17.89
52.77	31.42	QP	0	1.2	V	-5.52	25.90	40.00	14.10
61.89	27.19	QP	71	1.1	V	-6.02	21.17	40.00	18.83
168.01	40.89	QP	27	1.1	V	-1.07	39.82	43.50	3.68
191.97	36.77	QP	322	1.1	V	-1.34	35.43	43.50	8.07
298.69	37.71	QP	21	3.0	V	0.20	37.91	46.00	8.09
1330.26	59.44	PK	185	1.8	V	-10.66	48.78	74	25.22
1330.26	43.28	AV	185	1.8	V	-10.66	32.62	54	21.38
1542.57	58.90	PK	115	1.6	V	-9.46	49.44	74	24.56
1542.57	42.54	AV	115	1.6	V	-9.46	33.08	54	20.92

Note:
1) Correction Factor=Antenna factor (RX) + cable loss – amplifier factor
2) Corrected Amplitude = Correction Factor + Reading
3) Margin = Limit - Corrected Amplitude

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