FCC PART 15B, CLASS B

MEASUREMENT AND TEST REPORT

For

Autel Intelligent Tech. Corp., Ltd.

6th - 10th Floor, Bldg. B1, Zhiyuan, Xueyuan Rd., Xili, Nanshan, Shenzhen, 518055, China

FCC ID: WQ8MAXISYSMS908S

Report Type:	**Product Type:**
Original Report	AUTOMOTIVE DIAGNOSTIC & ANALYSIS SYSTEM

Report Number: RSZ170419010-00A

Report Date: 2017-08-04

Reviewed By: Oscar Ye Engineer

Prepared By:

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Autel Intelligent Tech. Corp., Ltd.'s* product, model number: *MaxiSys MS908S (FCC ID: WQ8MAXISYSMS908S)* in this report was a *AUTOMOTIVE DIAGNOSTIC & ANALYSIS SYSTEM,* which was measured approximately: 30 cm (L) x22 cm (W) x 5 cm (H), rated with input voltage: DC12V from adapter. The highest operation frequency is 5825MHz.

Adapter information:
Model: GME36A-120300FDS
Input: 100-240V~ 50/60Hz 1.2A
Output: 12V, 3.0A

Notes: This series products model: MaxiSys MS908S Pro, MaxiSys ADAS, MaxiSys CV and MaxiSys MS908S are identical; they have the identical schematics, only named differently. Model MaxiSys MS908S was selected for fully testing, the detailed information can be referred to the declaration which was stated and guaranteed by the applicant.

** All measurement and test data in this report was gathered from production sample serial number 1700757 (Assigned by BACL, Kunshan). The EUT supplied by the applicant was received on 2017-04-19.*

Objective

This test report is prepared on behalf of *Autel Intelligent Tech. Corp., 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 DTS&DSS and Part 15E NII submissions with FCC ID: WQ8MAXISYSMS908S.

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

Bay Area Compliance Laboratories Corp. (Kunshan) has been accredited to ISO/IEC 17025 by CNAS(Lab code: L9963). And accredited to ISO/IEC 17025 by A2LA(Lab code: 4323.01), the FCC Designation No. CN1185 under the KDB 974614 D01.

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.

Bay Area Compliance Laboratories Corp. (Kunshan) was registered with ISED Canada under ISED Canada Registration Number 3062E.

SYSTEM TEST CONFIGURATION (FCC §15.27)

Justification

The system was configured for testing in normal condition.

EUT Exercise Software

" BurnIn test v5.3" exercise software was used.

Equipment Modifications

No modification was made to the EUT tested.

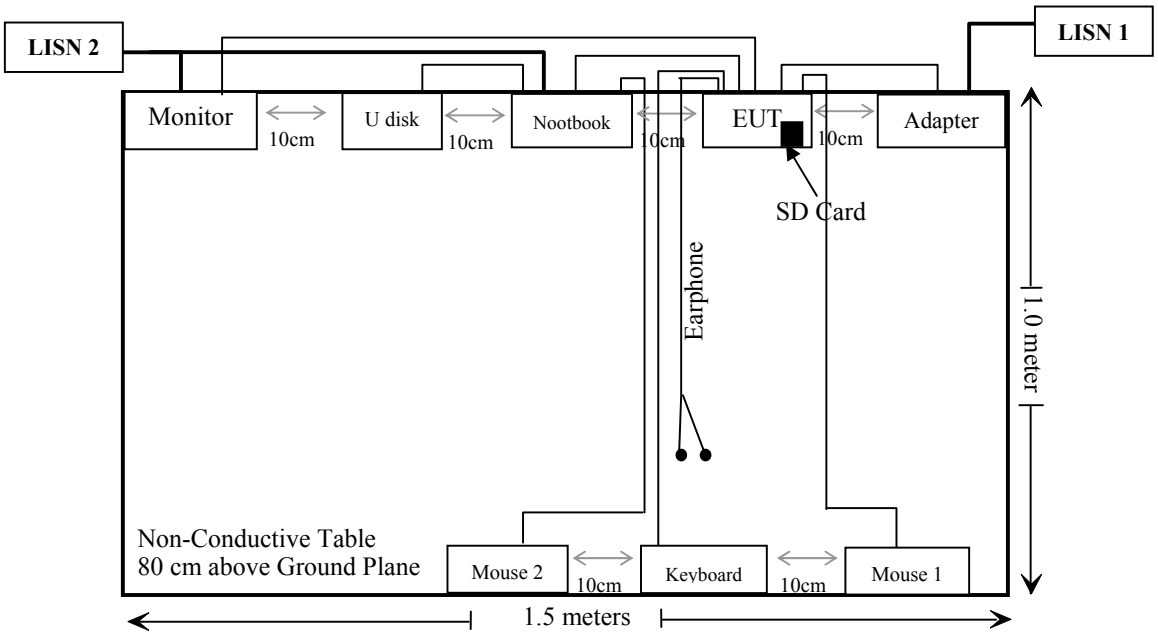
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Lenovo	Notebook	T400	R8-LXAXE 09/12
DELL	Mouse 1	MOC5UO	G1900NKD
Lenovo	Adapter	92P1158	PA-1650-161
Fulai	Monitor	GL-J2120X	N/A
Kingston	U disk	4 GB	N/A
DELL	Mouse 2	ACIRR50	G617D6CC
DELL	Keyboard	A850	FBVRF6598046FE

External I/O Cable

Cable Description	Length (m)	From/Port	To
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	Mouse	EUT
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	EUT
Un-shielding Detachable AC Cable	1.5	Notebook	LISN 2
Shielding Detachable HDMI Cable	1.2	EUT	Monitor
Un-Shielding Detachable USB Cable	1.2	EUT	Keyboard
Un-shielding Detachable AC Cable	1.5	Monitor	LISN 2

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results
§15.107	AC Line Conducted Emissions	Compliance
§15.109	Radiated 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	Pre-Amplifier	330	171377	2016-12-12	2017-12-11
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

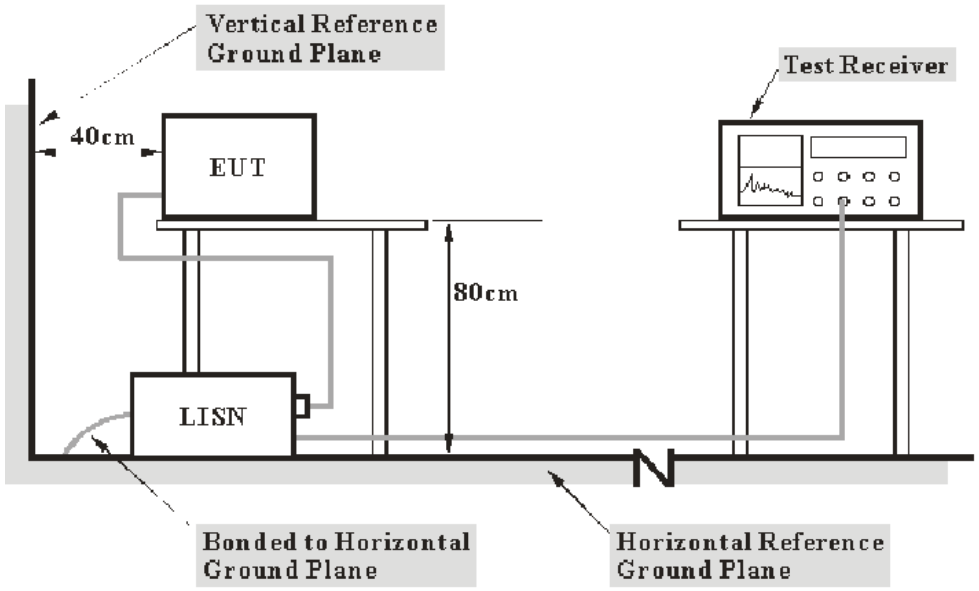
*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI)

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 ANSI C63.4-2014. The related limit was specified in FCC Part 15.107 Class B.

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

Corrected Factor & Margin Calculation

The Corrected factor is calculated by adding LISN 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 7dB 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,

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

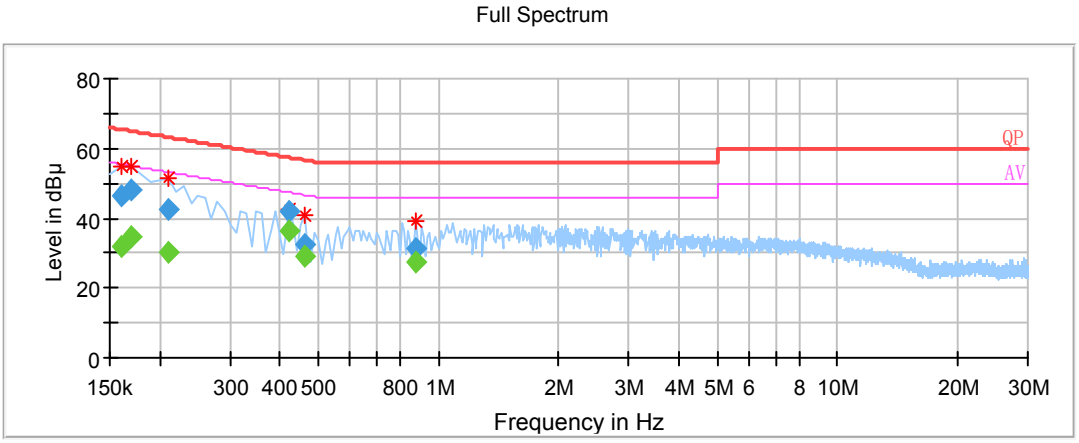
Environmental Conditions

Temperature:	23 ℃
Relative Humidity:	54 %
ATM Pressure:	101.0 kPa

The testing was performed by Layne Li on 2017-05-05.

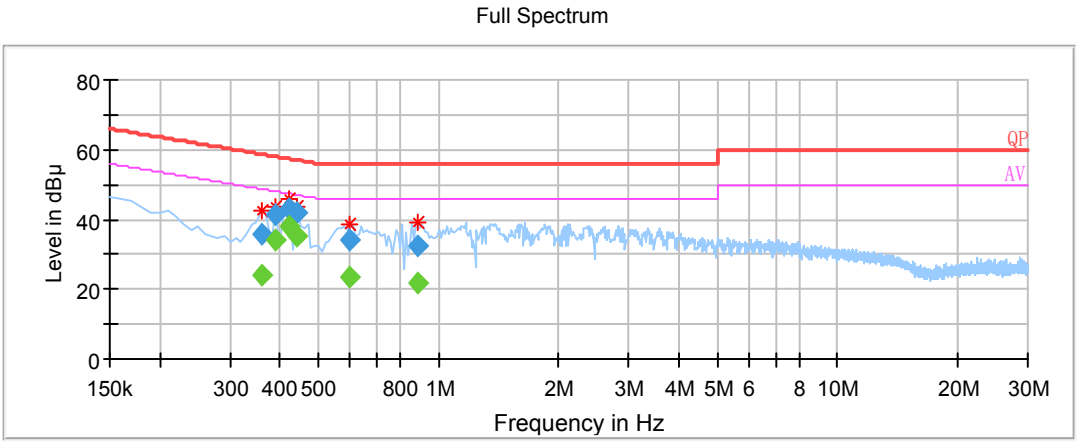
Tested mode: downloading & playing

AC 120V/60 Hz, Line



Frequency (MHz)	QuasiPeak (dBµV)	Average (dB µ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.160000	---	31.90	9.000	L1	10.0	23.56	55.46	Compliance
0.160000	46.71	---	9.000	L1	10.0	18.75	65.46	Compliance
0.170000	---	34.60	9.000	L1	10.0	20.36	54.96	Compliance
0.170000	47.85	---	9.000	L1	10.0	17.11	64.96	Compliance
0.210000	---	30.15	9.000	L1	10.0	23.06	53.21	Compliance
0.210000	42.30	---	9.000	L1	10.0	20.91	63.21	Compliance
0.420000	---	36.40	9.000	L1	10.1	11.05	47.45	Compliance
0.420000	42.01	---	9.000	L1	10.1	15.44	57.45	Compliance
0.460000	---	29.22	9.000	L1	10.1	17.47	46.69	Compliance
0.460000	32.24	---	9.000	L1	10.1	24.45	56.69	Compliance
0.880000	---	27.14	9.000	L1	9.9	18.86	46.00	Compliance
0.880000	31.35	---	9.000	L1	9.9	24.65	56.00	Compliance

AC 120V/60 Hz, Neutral



Frequency (MHz)	QuasiPeak (dBµV)	Average (dB µ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.360000	---	23.83	9.000	N	10.1	24.90	48.73	Compliance
0.360000	36.00	---	9.000	N	10.1	22.73	58.73	Compliance
0.390000	---	33.95	9.000	N	10.1	14.11	48.06	Compliance
0.390000	41.48	---	9.000	N	10.1	16.58	58.06	Compliance
0.420000	---	37.85	9.000	N	10.1	9.60	47.45	Compliance
0.420000	42.85	---	9.000	N	10.1	14.60	57.45	Compliance
0.440000	---	35.18	9.000	N	10.1	11.88	47.06	Compliance
0.440000	42.08	---	9.000	N	10.1	14.98	57.06	Compliance
0.600000	---	23.53	9.000	N	10.0	22.47	46.00	Compliance
0.600000	34.22	---	9.000	N	10.0	21.78	56.00	Compliance
0.890000	---	21.67	9.000	N	10.0	24.33	46.00	Compliance
0.890000	32.37	---	9.000	N	10.0	23.63	56.00	Compliance

Note:

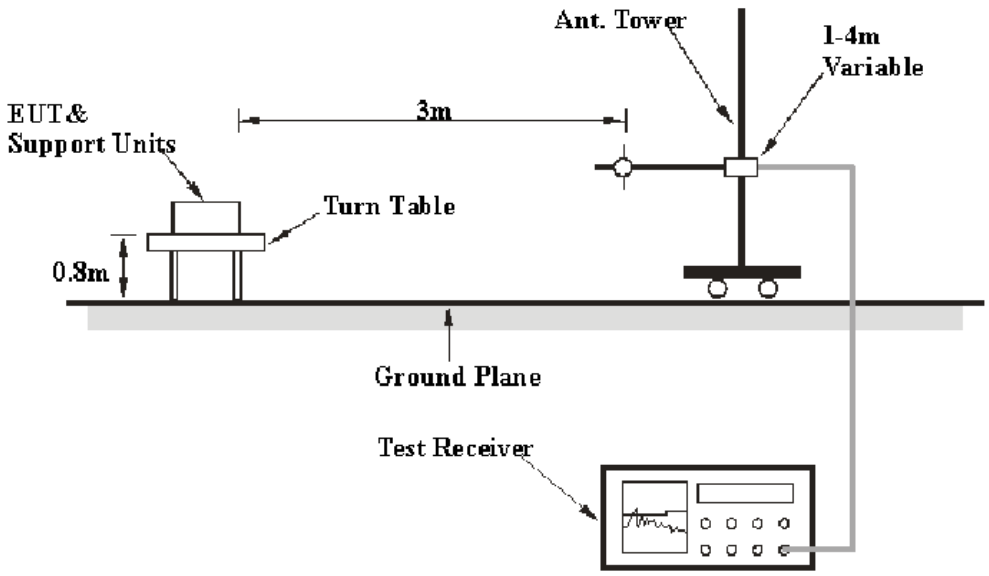
1) Corrected Amplitude = Reading + Correction Factor
2) Correction Factor = LISN VDF + Cable Loss + Transient Limiter Attenuation
3) Margin = Limit – Corrected Amplitude

FCC §15.109 - RADIATED EMISSIONS

Applicable Standard

According to FCC§15.109

Test System Setup



The radiated emission tests were performed in the 3 meters chamber test site.

EMI Test Receiver Setup

According to FCC 15.33 requirements, the EUT system was measured from 30 MHz to 30 GHz.

During the radiated emission test, the EMI test receiver Setup 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	1 MHz	3 MHz	-	Peak
Above 1 GHz	1 MHz	10 Hz	-	Average

Test Procedure

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

All final data was recorded in the Quasi-peak detection mode for below 1 GHz, and Peak and Average for 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 7dB means the emission is 7dB 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

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level complies 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:	23 ℃
Relative Humidity:	54 %
ATM Pressure:	101.0 kPa

The testing was performed by Layne Li on 2017-06-05.

Tested mode: downloading & playing

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)
37.26	27.48	QP	222	1.0	V	4.34	31.82	40.00	8.18
123.21	25.98	QP	195	1.0	V	0.77	26.75	43.50	16.75
136.61	27.93	QP	212	1.1	V	0.30	28.23	43.50	15.27
319.98	43.97	QP	65	3.1	H	0.90	44.87	46.00	1.13
418.03	38.68	QP	211	1.0	V	2.99	41.67	46.00	4.33
705.59	19.87	QP	101	1.1	H	8.58	28.45	46.00	17.55
1487.50	43.51	PK	156	1.3	H	-9.46	34.05	74	39.96
1487.50	29.90	Ave.	156	1.3	H	-9.46	20.44	54	33.57
1200.07	44.52	PK	320	2.0	V	-11.25	33.27	74	40.74
1200.07	33.33	Ave.	320	2.0	V	-11.25	22.08	54	31.93

Note:

1) Corrected Amplitude = Meter Reading + Correction Factor
2) Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain
3) Margin = Limit – Corrected Amplitude
4) The emission more than20dB below the limit was not required to be recorded.

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