FCC 47 CFR PART 15 SUBPART B TEST REPORT SHENZHEN DOME TECHNOLOGY CO., LTD. Car DVR

Model No.: A305, A307

Prepared for Address	 SHENZHEN DOME TECHNOLOGY CO., LTD. 5th Flr, Huanan Electric Power Building, No.2050 Shennan Middle Road, Futian District, Shenzhen City, China
Prepared by Address Tel Fax Web Mail	 Shenzhen LCS Compliance Testing Laboratory Ltd. 1/F., Xingyuan Industrial Park, Tongda Road, Bao'an Avenue, Bao'an District, Shenzhen, Guangdong, China (+86)755-82591330 (+86)755-82591332 www.LCS-cert.com webmaster@LCS-cert.com
Date of receipt of test sample Number of tested samples Serial number Date of Test Date of Report	 March 24, 2017 1 Prototype March 24, 2017 ~ April 21, 2017 April 21, 2017

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd. Page 1 of 18 SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD. FCC ID: 2ALJ7-A307-A305 Report No.: LCS170324020AE

F	FCC TEST REPORT CC 47 CFR PART 15 SUBPART B
Report Reference No	: LCS170324020AE
Date Of Issue	: April 21, 2017
Testing Laboratory Name	: Shenzhen LCS Compliance Testing Laboratory Ltd.
Address	 1/F., Xingyuan Industrial Park, Tongda Road, Bao'an Avenue, Bao'an District, Shenzhen, Guangdong, China
Testing Location/ Procedure	[:] Full application of Harmonised standards
	Partial application of Harmonised standards
	Other standard testing method \Box
Applicant's Name	: SHENZHEN DOME TECHNOLOGY CO., LTD.
Address	: 5th Flr, Huanan Electric Power Building, No.2050 Shennan Middle Road, Futian District, Shenzhen City, China
Test Specification	
Standard	: FCC 47 CFR Part 15 Subpart B, ANSI C63.4 -2014
Test Report Form No	: LCSEMC-1.0
TRF Originator	: Shenzhen LCS Compliance Testing Laboratory Ltd.
Master TRF	: Dated 2011-03
This publication may be reproduce SHENZHEN LCS COMPLIANCE owner and source of the materia LTD. takes no responsibility for a	CE TESTING LABORATORY LTD. All rights reserved. ced in whole or in part for non-commercial purposes as long as the E TESTING LABORATORY LTD. is acknowledged as copyright al. SHENZHEN LCS COMPLIANCE TESTING LABORATORY and will not assume liability for damages resulting from the reader's naterial due to its placement and context.
Test Item Description	: Car DVR
Model/ Type Reference	: A305, A307
Trade Mark	: N/A
Ratings	: DC 12-24V, 3W
Result	: Positive

Compiled by:

'n yle

Kyle Yin/ File administrator

Supervised by: Som

Approved by:

Gavin Liang/ Manager

Glin Lu/ Technique principal

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd. Page 2 of 18

SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD. FCC ID	2 2ALJ7-A307-A305 Report No.: LCS170324020AE
--	--

FCC -- TEST REPORT

Test Report No.: LCS170324020AE

April 21, 2017

Date of issue

Type / Model	: A305, A307
EUT	: Car DVR
Applicant	: SHENZHEN DOME TECHNOLOGY CO., LTD.
Address	: 5th Flr, Huanan Electric Power Building, No.2050 Shennan
	Middle Road, Futian District, Shenzhen City, China
Telephone	: /
Fax	: /
Manufacturer	: SHENZHEN DOME TECHNOLOGY CO., LTD.
Address	: 5th Flr, Huanan Electric Power Building, No.2050 Shennan
	Middle Road, Futian District, Shenzhen City, China
Telephone	
Fax	: /
Factory	DONGGUAN KAKA ELECTRONIC TECHNOLOGY
Address	: NO.395, Huanshi East Road, Shitanpu, Tangxia Town,
	Dongguan City, Guangdong, China 523717
Telephone	
Fax	: /

Test Result according to the standards on page 5: **Positive**

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Revision History

Revision	Issue Date	Revisions	Revised By
00	April 21, 2017	Initial Issue	Gavin Liang

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd. Page 4 of 18

TABLE OF CONTENTS

Test Report Description	Page
1. SUMMARY OF STANDARDS AND RESULTS	6
1.1. Description of Standards and Results	6
1.2. Special Accessories	
1.3. Description of Test Modes	6
2. GENERAL INFORMATION	
2.1. Description of Device (EUT)	7
2.2. Description of Test Facility	
2.3. Statement of the measurement uncertainty	
2.4. Measurement Uncertainty	8
3. POWER LINE CONDUCTED EMISSION MEASUREMENT	9
3.1. Test Equipment	9
3.2.Block Diagram of Test Setup	
3.3.Test Standard	9
3.4.EUT Configuration on Test	9
3.5. Operating Condition of EUT	10
3.6.Test Procedure	
3.7.Test Results	10
4. RADIATED EMISSION MEASUREMENT	13
4.1. Test Equipment	13
4.1. Block Diagram of Test Setup	
4.2. Radiated Emission Limit (Class B)	13
4.3. EUT Configuration on Measurement	
4.4. Operating Condition of EUT	
4.5. Test Procedure	
4.6. Radiated Emission Noise Measurement Result	14
5. PHOTOGRAPH	18
6. EXTERNAL AND INTERNAL PHOTOS OF THE EUT	18

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd. Page 5 of 18

1. SUMMARY OF STANDARDS AND RESULTS

1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION				
Description of Test Item	Standard	Limits	Results	
Conducted disturbance at mains terminals	FCC 47 CFR Part 15 Subpart B	Class B	PASS	
Radiated disturbance	FCC 47 CFR Part 15 Subpart B	Class B	PASS	
Conducted disturbance at Antenna terminals	FCC 47 CFR Part 15 Subpart B		N/A	
N/A is an abbreviation for Not Applicable.				

1.2. Special Accessories

Equipment	Manufacturer	Model No.	Serial No.	shielded/ unshielded	Notes
PC	Lenovo	Ideapad	A131101550	/	DOC
Power adapter	Lenovo	CPA-A090	36200414	unshielded	DOC
Keyboard	DELL	SK-8120	6248965	/	DOC
Mouse	HP	HM01	48585211	/	DOC
Laser printer	brother	HL-2140	E65602L0J13 1945	/	DOC

1.3. Description of Test Modes

The EUT has been tested under operating condition.

This test was performed with EUT in X, Y, Z position and the worst case was found when EUT in X position.

AC conducted emission pre-test at both at power adapter and power from PC modes, recorded worst case;

There was 4 test Modes. TM1 to TM3 were shown below:

TM1: Operate in WIFI + Camera mode.

TM2: Exchange data with PC

TM3: Idle mode

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT	: Car DVR
Trade Mark	: PIPO
Model Number	: A305, A307
Model Declaration	: All models are identical in design except some slightly change for non-transmitter portion.
Test Model	: A305, A307
Power Supply	: DC 12-24V, 3W;

2.2. Description of Test Facility

Site Description	
EMC Lab.	: CNAS Registration Number. is L4595.
	FCC Registration Number. is 899208.
	Industry Canada Registration Number. is 9642A-1.
	ESMD Registration Number. is ARCB0108.
	UL Registration Number. is 100571-492.
	TUV SUD Registration Number. is SCN1081.
	TUV RH Registration Number. is UA 50296516-001

2.3. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the LCS quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd. Page 7 of 18

Test Item	Frequency Range	Expanded uncertainty (Ulab)	Expanded uncertainty (Ucispr)	
Conducted Emission	Level accuracy (9kHz to 150kHz) (150kHz to 30MHz)	± 2.63 dB ± 2.35 dB	± 4.0 dB ± 3.6 dB	
Radiated Emission	Level accuracy (9kHz to 30MHz)	± 3.68 dB	N/A	
Radiated Emission	Level accuracy (30MHz to 1000MHz)	± 3.48 dB	± 5.2 dB	
Radiated Emission	Level accuracy (above 1000MHz)	± 3.90 dB	N/A	

2.4. Measurement Uncertainty

(1) Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus.

(2) The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor of k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

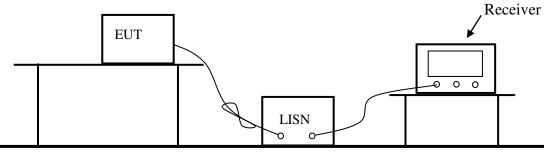
3. POWER LINE CONDUCTED EMISSION MEASUREMENT

3.1. Test Equipment

The following test equipments are used during the power line conducted measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESR 7	101181	2016-06-18
2	10dB Attenuator	SCHWARZBECK	MTS-IMP136	261115-001-00 32	2016-06-18
3	Artificial Mains	ROHDE & SCHWARZ	ENV216	101288	2016-06-18
4	EMI Test Software	AUDIX	E3	N/A	N/A
5	ISN	SCHWARZBECK	NTFM 8158	NTFM 8158 0120	2016-06-18

3.2.Block Diagram of Test Setup



Ground

3.3.Test Standard

Power Line Conducted Emission Limits (Class B)

Frequency			Limit (dBµV)				
(MHz)			Quasi-peak Level Average Level				
0.15	~	0.50	66.0 ~ 56.0 *	56.0 ~ 46.0 *			
0.50	2	5.00	56.0 46.0				
5.00	~	30.00	60.0 50.0				
NOTE1-The lower limit shall apply at the transition frequencies.							
NOTE2-The limit decreases linearly with the logarithm of the frequency in							
the range 0.15MHz to 0.50MHz.							

3.4.EUT Configuration on Test

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd. Page 9 of 18

3.5. Operating Condition of EUT

3.4.1.Setup the EUT as shown on Section 3.2

3.4.2. Turn on the power of all equipments.

3.4.3.Let the EUT work in measuring mode and measure it.

3.6.Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC/ANSI C63.4-2014 on Conducted Emission Measurement.

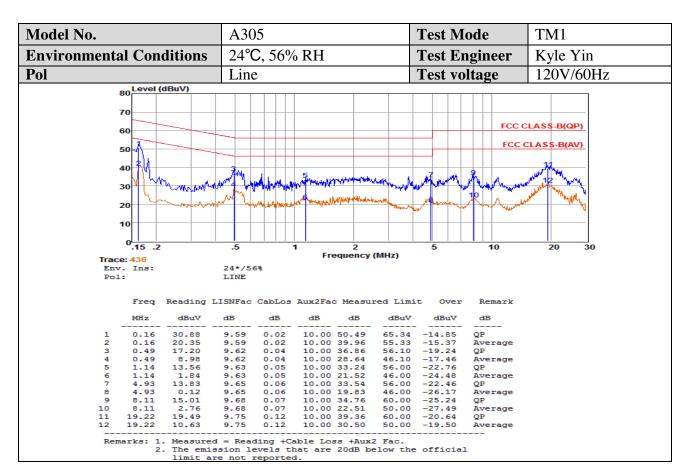
The bandwidth of the test receiver is set at 9kHz.

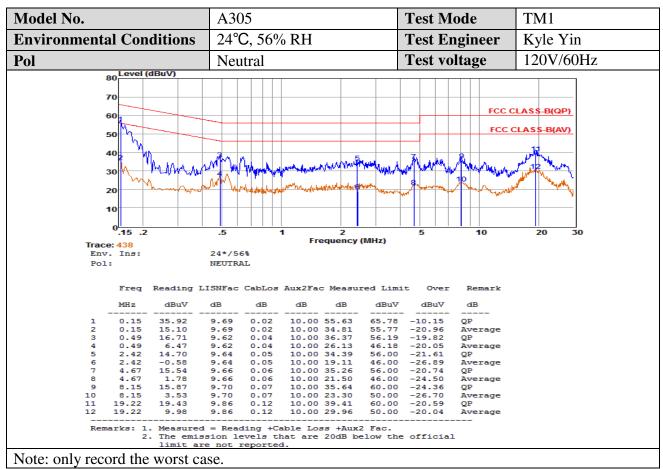
The frequency range from 150kHz to 30MHz is investigated

3.7.Test Results

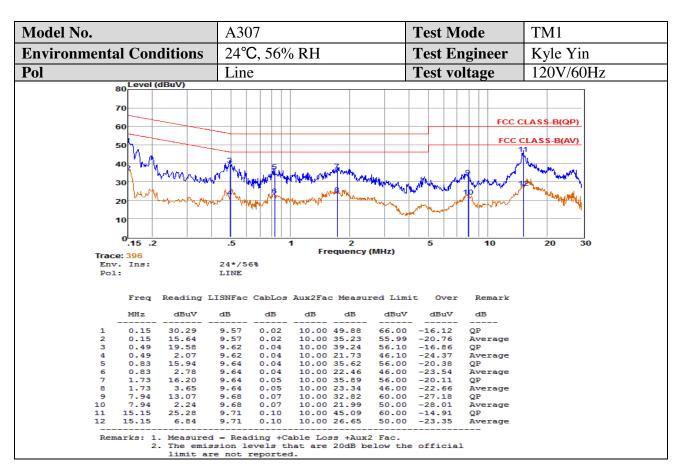
PASS.

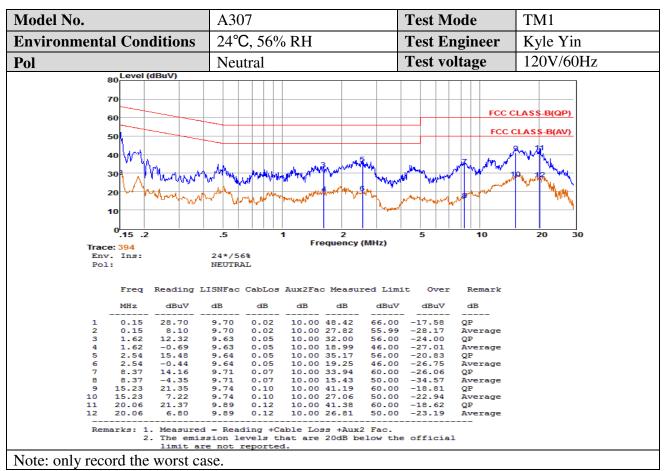
The test result please refer to the next page.





This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd. Page 11 of 18





This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd. Page 12 of 18

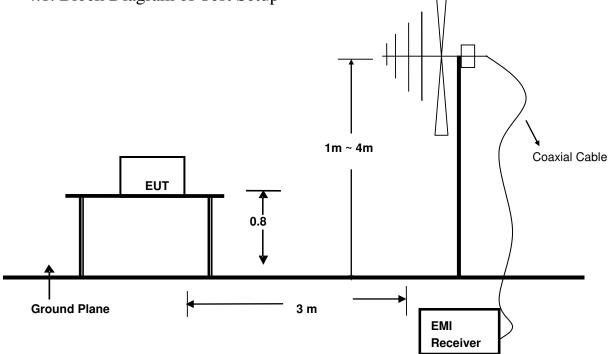
4. RADIATED EMISSION MEASUREMENT

4.1. Test Equipment

The following test equipments are used during the radiated emission measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2016-06-18
2	EMI Test Receiver	ROHDE & SCHWARZ	ESR 7	101181	2016-06-18
3	Log per Antenna	SCHWARZBECK	VULB9163	9163-470	2016-04-18
4	EMI Test Software	AUDIX	E3	N/A	2016-06-18
5	Positioning Controller	MF	MF-7082	/	2016-06-18

4.1. Block Diagram of Test Setup



4.2. Radiated Emission Limit (Class B)

FREQUENCY	DISTANCE	FIELD STRENGTHS LIMIT				
MHz	Meters	μV/m	$dB(\mu V)/m$			
30 ~ 88	3	100	40			
88 ~ 216	3	150	43.5			
216 ~ 960	3	200	46			
960 ~ 1000	3	500	54			
Remark : (1) Emission level (dB)V = 20 log Emission levelV/m						

Remark : (1) Emission level (dB) μ V = 20 log Emission level μ V/m

(2) The smaller limit shall apply at the cross point between two frequency bands.

(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd. Page 13 of 18

4.3. EUT Configuration on Measurement

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

4.4. Operating Condition of EUT

4.5.1.Setup the EUT as shown in Section 4.2.4.5.2.Let the EUT work in test mode (on) and measure it.

4.5. Test Procedure

EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated by-log antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2014 on radiated emission measurement.

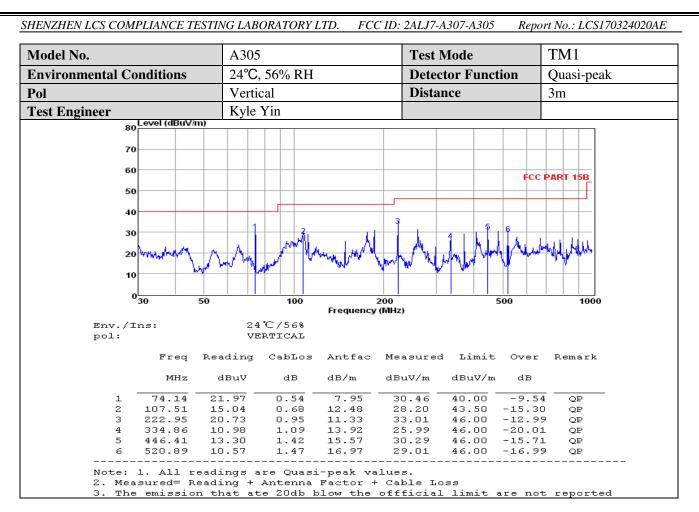
The bandwidth of the EMI test receiver is set at 120kHz, 1000kHz.

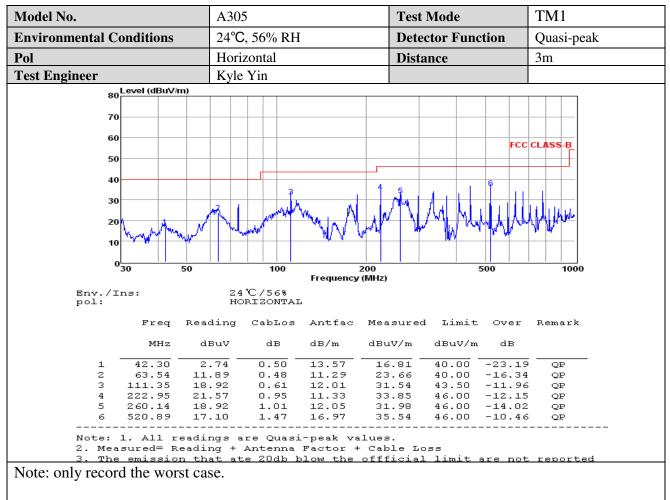
The frequency range from 30MHz to 1000MHz is checked.

4.6. Radiated Emission Noise Measurement Result

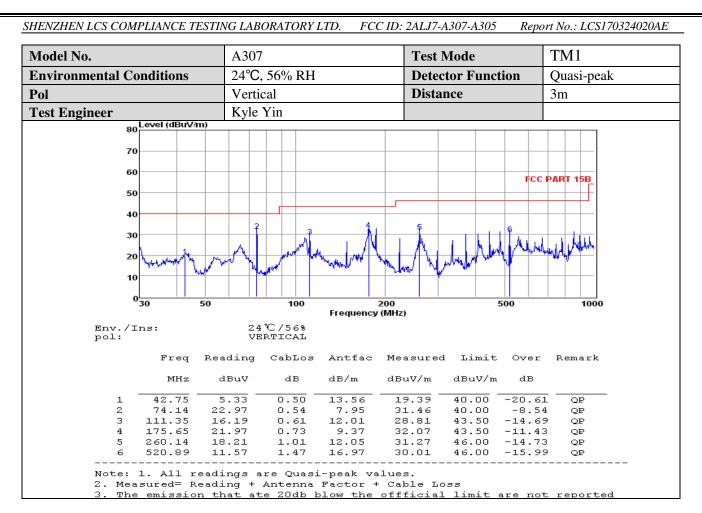
PASS.

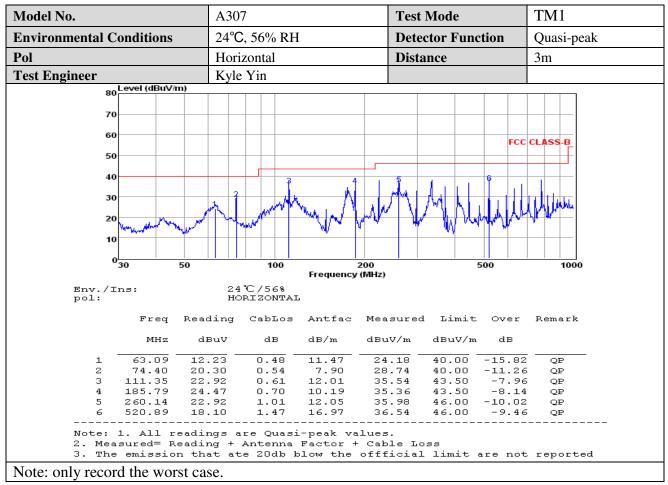
The scanning waveforms please refer to the next page.





This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd. Page 15 of 18





This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd. Page 16 of 18

 SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD.
 FCC ID: 2ALJ7-A307-A305
 Report No.: LCS170324020AE

Model No.	A305	Test Mode	TM1
Environmental Conditions	24°C, 56% RH	Distance	3m
Test Engineer	Kyle Yin	Test date:	April 12, 2017

Frequency	Emission Level dBµV/m		Limits dBµV/m		Margin dBµV/m		Polarization
MHz	Peak	AV	Peak	AV	Peak	AV	
1324.96	48.32	37.59	74.00	54.00	-25.68	-16.41	Н
1963.62	51.90	39.12	74.00	54.00	-22.10	-14.88	Н
2258.80	48.49	38.55	74.00	54.00	-25.51	-15.45	Н
3252.86	56.16	45.29	74.00	54.00	-17.84	-8.71	Н
4851.20	57.76	42.80	74.00	54.00	-16.24	-11.20	Н
5261.82	53.47	41.82	74.00	54.00	-20.53	-12.18	Н
1419.74	48.87	36.16	74.00	54.00	-25.13	-17.84	V
1829.60	51.27	40.18	74.00	54.00	-22.73	-13.82	V
2963.02	47.45	39.03	74.00	54.00	-26.55	-14.97	V
3562.01	55.88	46.01	74.00	54.00	-18.12	-7.99	V
4480.53	56.15	46.26	74.00	54.00	-17.85	-7.74	V
5945.12	55.17	42.63	74.00	54.00	-18.83	-11.37	V

Model No.	A307	Test Mode	TM1	
Environmental Conditions	24°C, 56% RH	Distance	3m	
Test Engineer	Kyle Yin	Test date:	April 12, 2017	

Frequency MHz	Emission Level dBµV/m		Limits dBµV/m		Margin dBµV/m		Polarization
MITIZ	Peak	AV	Peak	AV	Peak	AV	
1324.91	48.47	37.69	74.00	54.00	-25.53	-16.31	Н
1963.55	51.73	39.24	74.00	54.00	-22.27	-14.76	Н
2258.68	48.20	38.76	74.00	54.00	-25.80	-15.24	Н
3252.96	56.16	45.53	74.00	54.00	-17.84	-8.47	Н
4851.28	57.60	43.07	74.00	54.00	-16.40	-10.93	Н
5261.87	53.63	42.08	74.00	54.00	-20.37	-11.92	Н
1419.93	49.00	36.38	74.00	54.00	-25.00	-17.62	V
1829.65	51.25	39.88	74.00	54.00	-22.75	-14.12	V
2963.15	47.26	39.29	74.00	54.00	-26.74	-14.71	V
3562.20	56.06	45.74	74.00	54.00	-17.94	-8.26	V
4480.71	56.18	46.30	74.00	54.00	-17.82	-7.70	V
5944.99	55.27	42.72	74.00	54.00	-18.73	-11.28	V

Notes:

1. Measuring frequencies from **9 KHz~5th harmonic of working frequency**, No emission found between lowest internal used/generated frequency to 30MHz.

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd. Page 17 of 18

5. PHOTOGRAPH

Please refer to separated files for Test Setup Photos of the EUT.

6. EXTERNAL AND INTERNAL PHOTOS OF THE EUT

Please refer to separated files for Test Setup Photos of the EUT.

-----THE END OF TEST REPORT-----

This report shall not be reproduced except in full, without the written approval of Shenzhen LCS Compliance Testing Laboratory Ltd. Page 18 of 18