

FCC ID: 2ALSZ-CL3500C Report No.: T190304E02-RP



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# RADIO TEST REPORT FCC 47 CFR PART 15 SUBPART C

FCC Part 15.247
Photocontroller
CIMCON
iSLC3500-C
Pass

The test Result was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were given in ANSI C63.10: 2013 and compliance standards.

The test results of this report relate only to the tested sample (EUT) identified in this report.

The test Report of full or partial shall not copy. Without written approval of Compliance Certification Services Inc.(Wugu Laboratory)

Approved by:

Komil Ison

Kevin Tsai Deputy Manager

Tested by:

Dally. Hong

Dally Hong Engineer

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部分複製。

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# **Revision History**

Rev.	Issue Date	Revisions	Revised By
00	April 23, 2019	Initial Issue	Allison Chen



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# 1. GENERAL INFORMATION

# **1.1 EUT INFORMATION**

Applicant	CIMCON Lighting, Inc. 35 Crosby Drive,Bedford, MA 01730, USA						
Manufacturer	CIMCON Lighting, Inc. 35 Crosby Drive,Bedford, MA 01730, USA						
Equipment	Photocontro	oller					
Model No.	iSLC3500-0	)					
Model Discrepancy	N/A						
Trade Name	CIMCON						
Received Date	March 4, 20	)19					
Date of Test	March 13 ~	April 16, 201	9				
Output Power(W)	Zigbee: 0.6	397					
Power Operation	120Vac, 60	Hz					
	Channel	Frequency	Channel	Frequency	Channel	Frequency	
	0	902.4	22	911.2	44	920	
	2	902.8	23	911.0	40	920.4	
	2	903.2	24	912	40	920.0	
	4	904	26	912.8	48	921.6	
	5	904.4	27	913.2	49	922	
	6	904.8	28	913.6	50	922.4	
	7	905.2	29	914	51	922.8	
	8	905.6	30	914.4	52	923.2	
Channel List	9	906	31	914.8	53	923.6	
	10	906.4	32	915.2	54	924	
	11	906.8	33	915.6	55	924.4	
	12	907.2	34	916	56	924.8	
	13	907.6	35	916.4	57	925.2	
	14	908	36	916.8	58	925.6	
	15	908.4	37	917.2	59	926	
	16	908.8	38	917.6	60	926.4	
	10	909.2	39	910	62	920.0	
	10	909.0 Q10	40 <u>4</u> 1	918.8	63	927.6	
	20	910.4	42	919.2		021.0	
21 910.8 43 919.6							

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# **1.2 EUT CHANNEL INFORMATION**

Frequency Range	Zigbee: 902.4 ~ 927.6MHz		
Modulation Type	Zigbee: FHSS		
Number of channel	64 Channels		

#### Remark:

Refer as ANSI C63.10: 2013 clause 5.6.1 Table 4 test channels

Number of frequencies to be tested					
Frequency range in which device operates	Number of frequencies	Location in frequency range of operation			
1 MHz or less	1	Middle			
1 MHz to 10 MHz	2	1 near top and 1 near bottom			
More than 10 MHz	3	1 near top, 1 near middle, and 1 near bottom			

# **1.3 ANTENNA INFORMATION**

Antenna Type	<ul> <li>□ PIFA</li> <li>□ PCB</li> <li>□ Dipole</li> <li>□ Coils</li> <li>☑ Monopole</li> </ul>
Antenna Gain	2 dBi
Antenna connector	SMA Male RP



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# **1.4 MEASUREMENT UNCERTAINTY**

PARAMETER	UNCERTAINTY
AC Powerline Conducted Emission	+/- 1.2575
Emission bandwidth, 20dB bandwidth	+/- 0.0014
RF output power, conducted	+/- 1.14
Power density, conducted	+/- 1.40
3M Semi Anechoic Chamber / 30M~200M	+/- 4.12
3M Semi Anechoic Chamber / 200M~1000M	+/- 4.68
3M Semi Anechoic Chamber / 1G~8G	+/- 5.18
3M Semi Anechoic Chamber / 8G~18G	+/- 5.47
3M Semi Anechoic Chamber / 18G~26G	+/- 3.81
3M Semi Anechoic Chamber / 26G~40G	+/- 3.87

#### Remark:

1. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2

2. ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report.

# **1.5 FACILITIES AND TEST LOCATION**

All measurement facilities used to collect the measurement data are located at

No.11, Wugong 6th Rd., Wugu Dist., New Taipei City 24891, Taiwan. (R.O.C.)

Test site	Test Engineer	Remark
AC Conduction Room	Dally Hong	-
Radiation	Dally Hong	-
RF Conducted	Dally Hong	-

**Remark:** The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.



# **1.6 INSTRUMENT CALIBRATION**

RF Conducted Test Site						
Name of Equipment         Manufacturer         Model         Serial Number         Calibration Date         Calibration Due						
Power Meter	Anritsu	ML2495A	1149001	02/12/2019	02/11/2020	
Power Seneor	Anritsu	MA2491A	030982	02/12/2019	02/11/2020	
Signal Analyzer	R&S	FSV 40	101073	09/27/2018	09/26/2019	

Wugu 966 Chamber A							
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due		
Band Reject Filters	MICRO TRONICS	BRM 50702	120	02/26/2019	02/25/2020		
Bilog Antenna	Sunol Sciences	JB3	A030105	07/13/2018	07/12/2019		
Cable	HUBER SUHNER	SUCOFLE X 104PEA	25157	02/26/2019	02/25/2020		
Cable	HUBER SUHNER	SUCOFLE X 104PEA	20995	02/26/2019	02/25/2020		
Digital Thermo-Hygro Meter	WISEWIND	1206	D07	01/30/2019	01/29/2020		
double Ridged Guide Horn Antenna	ETC	MCTD 1209	DRH13M02003	08/20/2018	08/19/2019		
Loop Ant	COM-POWER	AL-130	121051	03/22/2019	03/21/2020		
Pre-Amplifier	EMEC	EM330	060609	02/26/2019	02/25/2020		
Pre-Amplifier	HP	8449B	3008A00965	02/26/2019	02/25/2020		
PSA Series Spectrum Analyzer	Agilent	E4446A	MY46180323	05/31/2018	05/30/2019		
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R	N.C.R		
Controller	CCS	CC-C-1F	N/A	N.C.R	N.C.R		
Turn Table	CCS	CC-T-1F	N/A	N.C.R	N.C.R		
Software	e3 6.11-20180413						

Conducted Emission Room # B						
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due	
CABLE	EMCI	CFD300-NL	CERF	06/29/2018	06/28/2019	
EMI Test Receiver	R&S	ESCI	100064	07/24/2018	07/23/2019	
LISN	SCHWARZBECK	NSLK 8127	8127-541	01/31/2019	01/30/2020	
LISN	SCHAFFNER	NNB 41	03/10013	02/13/2019	02/12/2020	
Software	EZ-EMC(CCS-3A1-CE)					

**Remark:** Each piece of equipment is scheduled for calibration once a year.



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# **1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT**

	EUT Accessories Equipment					
No.	Equipment	Brand	Model	Series No.	FCC ID	
	N/A					

Support Equipment						
No.	Equipment	Brand	Model	Series No.	FCC ID	
1	NB(L)	Toshiba	PORTEGE R30-A	N/A	PD97260H	

# **1.8 TEST METHODOLOGY AND APPLIED STANDARDS**

The test methodology, setups and results comply with all requirements in accordance with ANSI C63.10:2013, FCC Part 2, FCC Part 15.247.



# 2. TEST SUMMERY

FCC Standard Section	Report Section	Test Item	Result
15.203	1.3	Antenna Requirement	Pass
15.207(a)	5.1	AC Conducted Emission	Pass
15.247(a)(1)	5.2	20 dB Bandwidth	Pass
-	5.2	Occupied Bandwidth (99%)	-
15.247(b)(2)	5.3	Output Power Measurement	Pass
15.247(a)(1)	5.4	Frequency Separation	Pass
15.247(a)(1)(i)	5.5	Number of Hopping	Pass
15.247(d)	5.6	Conducted Band Edge	Pass
15.247(d)	5.6	Conducted Emission	Pass
15.247(a)(1)(i)	5.7	Time of Occupancy	Pass
15.247(d)	5.8	Radiation Band Edge	Pass
15.247(d)	5.8	Radiation Spurious Emission	Pass

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# 3. DESCRIPTION OF TEST MODES

## **3.1 THE WORST MODE OF OPERATING CONDITION**

Operation mode	902.4 MHz ~ 927.6 MHz
Test Channel Frequencies	1.Lowest Channel : 902.4MHz 2.Middle Channel : 915.2MHz 3.Highest Channel : 927.6MHz

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# 3.2 THE WORST MODE OF MEASUREMENT

AC Power Line Conducted Emission			
Test ConditionAC Power line conducted emission for line and neutral			
Power supply Mode	120Vac / 60Hz		
Worst Mode	🖂 Mode 1 🗌 Mode 2 🗌 Mode 3 🗌 Mode 4		

Radiated Emission Measurement Above 1G				
Test Condition	Band edge, Emission for Unwanted and Fundamental			
Power supply Mode	120Vac / 60Hz			
Worst Mode	🖂 Mode 1 🗌 Mode 2 🗌 Mode 3 🗌 Mode 4			
Worst Position	<ul> <li>Placed in fixed position.</li> <li>Placed in fixed position at X-Plane (E2-Plane)</li> <li>Placed in fixed position at Y-Plane (E1-Plane)</li> <li>Placed in fixed position at Z-Plane (H-Plane)</li> </ul>			
Worst Polarity	Horizontal 🛛 Vertical			

Radiated Emission Measurement Below 1G				
Test Condition Radiated Emission Below 1G				
Power supply Mode	120Vac / 60Hz			
Worst Mode	Mode 1 🗌 Mode 2 🗌 Mode 3 🗌 Mode 4			

Remark:

1. The worst mode was record in this test report.

2. EUT pre-scanned in three axis ,X,Y, Z and two polarity, Horizontal and Vertical for radiated measurement. The worst case(X-Plane and Vertical) were recorded in this report

3. AC power line conducted emission and for below 1G radiation emission were performed the EUT transmit at the highest output power channel as worse case.



# 4. EUT DUTY CYCLE

Duty Cycle				
Configuration	TX ON (ms)	TX ALL (ms)	Duty Cycle (%)	
Zigbee	16.6700	30.5000	54.66%	





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# 5. TEST RESULT

# 5.1 AC POWER LINE CONDUCTED EMISSION

# 5.1.1 Test Limit

According to §15.207(a),

Frequency Range	Limits(dBµV)			
(MHz)	Quasi-peak	Average		
0.15 to 0.50	66 to 56*	56 to 46*		
0.50 to 5	56	46		
5 to 30	60	50		

\* Decreases with the logarithm of the frequency.

## 5.1.2 Test Procedure

Test method Refer as ANSI C63.10: 2013 clause 6.2,

- 1. The EUT was placed on a non-conducted table, which is 0.8m above horizontal ground plane and 0.4m above vertical ground plane.
- 2. EUT connected to the line impedance stabilization network (LISN)
- 3. Receiver set RBW of 9kHz and Detector Peak, and note as quasi-peak and average.
- 4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5. Recorded Line for Neutral and Line.

# 5.1.3 Test Setup



# 5.1.4 Test Result PASS



# Test Data

Test Mode			Mode	1	Т	emp/Hur	n	24(°0	C)/ 50%	RH
Test Voltage 120Vac / 60Hz		60Hz	Test Date		•	March 13, 201		019		
Pha	ase		Line		Te	st Engine	er	Da	Ily Hon	g
80.0 d	BuV			4 5				Limit1: Limit2:	6	
-20		0.5			2)	5			30.000	
Frequency (MHz)	Quasi Peak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
0.3060	42.66	37.13	0.16	42.82	37.29	60.08	50.08	-17.26	-12.79	Pass
0.6140	37.50	33.25	0.16	37.66	33.41	56.00	46.00	-18.34	-12.59	Pass
0.9300	35.30	29.26	0.18	35.48	29.44	56.00	46.00	-20.52	-16.56	Pass
1.2340	31.51	25.91	0.19	31.70	26.10	56.00	46.00	-24.30	-19.90	Pass
1.8540	29.31	23.31	0.22	29.53	23.53	56.00	46.00	-26.47	-22.47	Pass
28.7420	31.97	24.07	0.95	32.92	25.02	60.00	50.00	-27.08	-24.98	Pass



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# 5.2 20dB BANDWIDTH AND OCCUPIED BANDWIDTH (99%)

## 5.2.1 Test Limit

According to §15.247(a) (1),

#### 20 dB Bandwidth :

For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

**Occupied Bandwidth(99%)** : For reporting purposes only.

## 5.2.2 Test Procedure

Test method Refer as Section 8.1 and ANSI C63.10: 2013 clause 7.8.7,

- 1. The EUT RF output connected to the spectrum analyzer by RF cable.
- 2. Setting maximum power transmit of EUT
- 3. SA set RBW =30kHz, VBW = 100kHz and Detector = Peak, to measurement 20dB Bandwidth.
- 4. SA set RBW = 1% ~ 5% OBW, VBW = three times the RBW and Detector = Peak, to measurement 99% Bandwidth.
- 5. Measure and record the result of 20 dB Bandwidth and 99% Bandwidth. in the test report.

## 5.2.3 Test Setup





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## 5.2.4 Test Result

Test mode: 902.4 MHz ~ 927.6 MHz					
Channel	Frequency (MHz)	OBW(99%) (MHz)	20dB BW (MHz)		
Low	902.4	0.2127	0.2344		
Mid	915.2	0.2083	0.2388		
High	927.6	0.2127	0.2431		



# <u>Test Data</u>

# 20 dB Bandwidth



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## 99% Bandwidth





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# 5.3 OUTPUT POWER MEASUREMENT

## 5.3.1 Test Limit

According to §15.247(b)(2).

#### Peak output power :

#### FCC

For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section.

	Antenna not exceed 6 dBi : 30dBm
Limit	Antenna with DG greater than 6 dBi : 24dBm
	[Limit = 30 - (DG - 6)]

Average output power : For reporting purposes only.

#### **5.3.2 Test Procedure**

- 1. The EUT RF output connected to the power meter by RF cable.
- 2. Setting maximum power transmit of EUT.
- 3. The path loss was compensated to the results for each measurement.
- 4. Measure and record the result of Peak output power and Average output power. in the test report.

## 5.3.3 Test Setup





## 5.3.4 Test Result

#### Peak output power :

		Zi	igbee			
Config.	СН	Freq. (MHz)	Power Setting	PK Power (dBm)	PK Power (W)	Limit (dBm)
	0	902.4	30	27.98	0.6281	
Zigbee	32	915.2	30	28.06	0.6397	30
	63	927.6	30	28.04	0.6368	

#### Average output power :

Zigbee							
Config.	СН	Power Setting	Freq. (MHz)	AV Power (dBm)			
	0	30	902.4	27.92			
Zigbee	32	30	915.2	28.03			
	63	30	927.6	28.03			

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# 5.4 FREQUENCY SEPARATION

## 5.4.1 Test Limit

According to §15.247(a)(1),

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

#### 5.4.2 Test Procedure

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. EUT RF output port connected to the SA by RF cable.
- 3. Set the spectrum analyzer as RBW = 100kHz, VBW = 300kHz, Sweep = auto. Max hold, mark 3 peaks of hopping channel and record the 3 peaks frequency

## 5.4.3 Test Setup



## 5.4.4 Test Result

	Test mode: 902.4 MHz ~ 927.6 MHz						
Channel	Frequency (MHz)	Channel Separation (MHz)	Channel Separation Limits (MHz)	Result			
Low	902.4	0.3951	0.156	PASS			
Mid	915.2	0.4038	0.159	PASS			
High	927.6	0.4038	0.162	PASS			



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## Test Data



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# 5.5 NUMBER OF HOPPING

## 5.5.1 Test Limit

According to §15.247(a)(1)(i)

For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

# 5.5.2 Test Procedure

Test method Refer as ANSI C63.10: 2013 clause 7.8.3

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. EUT RF output port connected to the SA by RF cable.
- 3. Set spectrum analyzer Start Freq. = 902.0 MHz, Stop Freq. = 928.0 MHz, RBW =100KHz, VBW = 300KHz.
- 4. Max hold, view and count how many channel in the band.

# 5.5.3 Test Setup





# 5.5.4 Test Result

	Number of Hopping							
Mode	Frequency (MHz)	Hopping Channel Number	Hopping Channel Number Limits	Result				
FHSS	902.4-927.6	64	50	Pass				

# Test Data





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# 5.6 CONDUCTED BANDEDGE AND SPURIOUS EMISSION

## 5.6.1 Test Limit

According to §15.247(d),

Limit -20 dBc

## 5.6.2 Test Procedure

1. EUT RF output port connected to the SA by RF cable, and the path loss was compensated to result.

2. SA setting, RBW=100kHz, VBW=300kHz, Detector=Peak, Trace mode = max hold, SWT = Auto.

3. The Band Edge at 902.0MHz and 928.0MHz are investigated with normal hopping mode.

#### 5.6.3 Test Setup





## 5.6.4 Test Result

#### Test Data



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# 5.7 TIME OF OCCUPANCY (DWELL TIME)

## 5.7.1 Test Limit

According to §15.247(a)(1)(i),

For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

## 5.7.2 Test Procedure

1. EUT RF output port connected to the SA by RF cable.

2. Set center frequency of spectrum analyzer = operating frequency.

3. Set the spectrum analyzer as RBW, VBW=1MHz, Sweep = 1 ms

## 5.7.3 Test Setup



# 5.7.4 Test Result

Time of O	Fime of Occupancy (Dwell Time)									
Mode	Frequency (MHz)	Pulse Time Per Hopping (ms)	Minimum Number of Hopping Freq.	Average time of occupancy (s)	Dwell Time Limits (s)	Result				
FHSS	915.2	12.7667	24	0.306401	0.4	Pass				



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## Test Data





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# 5.8 RADIATION BANDEDGE AND SPURIOUS EMISSION

## 5.8.1 Test Limit

FCC according to §15.247(d), §15.209 and §15.205,

In any 100 kHz bandwidth outside the authorized frequency band, all harmonic and spurious must be least 20 dB below the highest emission level with the authorized frequency band. Radiation emission which fall in the restricted bands must also follow the FCC section 15.209 as below limit in table.

#### Below 30 MHz

Frequency	Field Strength (microvolts/m)	Magnetic H-Field (microamperes/m)	Measurement Distance (metres)
9-490 kHz	2,400/F (F in kHz)	2,400/F (F in kHz)	300
490-1,705 kHz	24,000/F (F in kHz)	24,000/F (F in kHz)	30
1.705-30 MHz	30	N/A	30

#### Above 30 MHz

Frequency	Field Strength microvolts/m at 3 metres (watts, e.i.r.p.)			
(MHZ)	Transmitters	Receivers		
30-88	100 (3 nW)	100 (3 nW)		
88-216	150 (6.8 nW)	150 (6.8 nW)		
216-960	200 (12 nW)	200 (12 nW)		
Above 960	500 (75 nW)	500 (75 nW)		

Remark:

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.



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## 5.8.2 Test Procedure

1. The EUT is placed on a turntable, Above 1 GHz is 1.5m and below 1 GHz is 0.8m above ground plane. The EUT Configured un accordance with ANSI C63.10: 2013, and the EUT set in a continuous mode.

2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. And EUT is set 3m away from the receiving antenna, which is scanned from 1m to 4m above the ground plane to find out the highest emissions. Measurement are made polarized in both the vertical and the horizontal positions with antenna.

3. Span shall wide enough to full capture the emission measured. The SA from 9kHz to 26.5GHz set to the low, Mid and High channels with the EUT transmit.

4. The SA setting following :

- (1) Below 1G : RBW = 100kHz, VBW ≥ 3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.
- (2) Above 1G:
  - (2.1) For Peak measurement : RBW = 1MHz, VBW ≥ 3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.
  - (2.2) For Average measurement : RBW = 1MHz, VBW

If Duty Cycle  $\geq$  98%, VBW=10Hz.

'If Duty Cycle < 98%, VBW≥1/T.

Configuration	Duty Cycle (%)	T(ms)	1/T (kHz)	VBW Setting
Zigbee	56.44%	16.6700	0.060	62Hz

Remark:

- Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.
- 2. No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).



# 5.8.3 Test Setup <u>9kHz ~ 30MHz</u>

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## <u> 30MHz ~ 1GHz</u>





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## Above 1 GHz





# 5.8.4 Test Result

#### Below 1G Test Data

Test Mode	e: Zigt	bee Mode-L	ow CH	Temp/Hu	m	20(°C)	/ 61%RH
Test Item	1	30MHz-1GHz		Test Date		April 16, 2019	
Polarize		Vertical		Test Engineer		Dally Hong	
Detector		Peak		Test Volta	ige	120Va	ic / 60Hz
120 Level (dBuV/m	)						
90							
70							
50	2 1	4					
30		5				6	
10							
30	224.	418.	Frequency (M	612. Hz)		806.	1000
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/n	Lim ) (dBuV	it //m)	Margin (dB)	Remark
95.96	50.93	-13.95	36.98	43.5	50	-6.52	Peak
151.25	45.04	-9.90	35.14	43.5	50	-8.36	Peak
264.74	50.49	-8.95	41.54	46.0	00	-4.46	Peak
311.30	42.68	-7.86	34.82	46.0	00	-11.18	Peak
430.61	33.18	-4.47	28.71	46.0	00	-17.29	Peak
827.34	25.62	3.25	28.87	46.0	00	-17.13	Peak

Note: No emission found between lowest internal used/generated frequency to 30MHz(9KHz~30MHz)



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<b>—</b> ( <b>)</b>			<u></u>	-	4.1			
lest Mode	e: Zigt	bee Mode-L	.ow CH	Iemp	/Hum	20(°C)/	/ 61%RF	
Test Item	1	30MHz-1GHz Test Date		April 1	6, 2019			
Polarize		Horizonta	al 🛛	Test Ei	ngineer	Dally	Dally Hong	
Detector		Peak		lest v	oltage	120Va	ic / 60Hz	
120 Level (dBuV/m	)							
110								
90								
70								
10								
50								
1 2	3	4 5						
30		6						
10								
0 <u>30</u>	224.	418.	Frequency (N	612. /Hz)		806.	100	
Frequency	Reading	Correct	Resul	t	Limit	Margin	Demen	
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Resul (dBuV/r	t n) (d	Limit JBuV/m)	Margin (dB)	Remark	
Frequency (MHz) 56.19	Reading (dBuV) 51.89	Correct Factor (dB/m) -15.96	Resul (dBuV/r 35.93	t m) (c	Limit JBuV/m) 40.00	Margin (dB) -4.07	Remarl Peak	
Frequency (MHz) 56.19 95.96	Reading (dBuV) 51.89 51.70	Correct Factor (dB/m) -15.96 -13.95	Resul (dBuV/r 35.93 37.75	t m) (c 3	Limit #BuV/m) 40.00 43.50	Margin (dB) -4.07 -5.75	Remari Peak Peak	
Frequency (MHz) 56.19 95.96 225.94	Reading (dBuV)           51.89           51.70           50.00	Correct Factor (dB/m) -15.96 -13.95 -11.07	Resul (dBuV/r 35.93 37.75 38.93	t m) (a 3 5	Limit JBuV/m) 40.00 43.50 46.00	Margin (dB) -4.07 -5.75 -7.07	Remari Peak Peak Peak	
Frequency (MHz) 56.19 95.96 225.94 311.30	Reading (dBuV)           51.89           51.70           50.00           41.58	Correct Factor (dB/m) -15.96 -13.95 -11.07 -7.86	Resul (dBuV/r 35.93 37.75 38.93 33.72	t (c 3) (c 3) 5 3) 2)	Limit 3BuV/m) 40.00 43.50 46.00 46.00	Margin (dB) -4.07 -5.75 -7.07 -12.28	Remarl Peak Peak Peak Peak	
Frequency (MHz) 56.19 95.96 225.94 311.30 359.80	Reading (dBuV)           51.89           51.70           50.00           41.58           38.43	Correct Factor (dB/m) -15.96 -13.95 -11.07 -7.86 -6.59	Resul (dBuV/r 35.93 37.75 38.93 33.72 31.84	t (c 3) 5) 3) 2) 1	Limit 40.00 43.50 46.00 46.00 46.00	Margin (dB) -4.07 -5.75 -7.07 -12.28 -14.16	Remark Peak Peak Peak Peak	
Frequency (MHz) 56.19 95.96 225.94 311.30 359.80	Reading (dBuV)           51.89           51.70           50.00           41.58           38.43           22.46	Correct Factor (dB/m) -15.96 -13.95 -11.07 -7.86 -6.59	Resul (dBuV/r 35.93 37.75 38.93 33.72 31.84	t (( 3) 5 3 2 4	Limit dBuV/m) 40.00 43.50 46.00 46.00 46.00	Margin (dB) -4.07 -5.75 -7.07 -12.28 -14.16	Remarl Peak Peak Peak Peak Peak	



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Test Mod	e: Zig	bee Mode-N	/lid CH	Temp/Hum	20(°C)	/ 61%RH	
Test Iten	า	30MHz-1GHz		Test Date	April 2	April 16, 2019	
Polarize	<u>,</u>	Vertical		Test Engineer	Dally	Dally Hong	
Detector	r	Peak		Test Voltage	120Va	ac / 60Hz	
120 Level (dBuV/m 110 90 70 50 2 30 1 10	1) 	5 6					
0 <mark>30</mark>	224.	418.		612.	806.	1000	
				-,			
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m	Limit ) (dBuV/m)	Margin (dB)	Remark	
Frequency (MHz) 34.85	Reading (dBuV) 32.69	Correct Factor (dB/m) -5.52	Result (dBuV/m 27.17	Limit (dBuV/m) 40.00	Margin (dB) -12.83	Remark Peak	
Frequency (MHz) 34.85 95.96	Reading (dBuV) 32.69 49.81	Correct Factor (dB/m) -5.52 -13.95	Result (dBuV/m 27.17 35.86	) Limit (dBuV/m) 40.00 43.50	Margin (dB) -12.83 -7.64	Remark Peak Peak	
Frequency (MHz) 34.85 95.96 151.25	Reading (dBuV)           32.69           49.81           47.16	Correct Factor (dB/m) -5.52 -13.95 -9.90	Result (dBuV/m 27.17 35.86 37.26	) Limit (dBuV/m) 40.00 43.50 43.50	Margin (dB) -12.83 -7.64 -6.24	Remark Peak Peak Peak	
Frequency (MHz) 34.85 95.96 151.25 264.74	Reading (dBuV)           32.69           49.81           47.16           50.41	Correct Factor (dB/m) -5.52 -13.95 -9.90 -8.95	Result (dBuV/m 27.17 35.86 37.26 41.46	) Limit (dBuV/m) 40.00 43.50 43.50 46.00	Margin (dB) -12.83 -7.64 -6.24 -4.54	Remark Peak Peak Peak Peak	
Frequency (MHz)         34.85         95.96         151.25         264.74         311.30	Reading (dBuV)           32.69           49.81           47.16           50.41           40.82	Correct Factor (dB/m) -5.52 -13.95 -9.90 -8.95 -7.86	Result (dBuV/m 27.17 35.86 37.26 41.46 32.96	) Limit (dBuV/m) 40.00 43.50 43.50 43.50 46.00 46.00	Margin (dB) -12.83 -7.64 -6.24 -6.24 -4.54 -13.04	Remark Peak Peak Peak Peak Peak	

Note: No emission found between lowest internal used/generated frequency to 30MHz(9KHz~30MHz)



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lest Mode	: Zigi	bee Mode-N	Лid CH	Te	emp/Hu	m	20(°C)/	/ 61%RF
Test Item		30MHz-1G	Hz	Т	est Dat	e	April 1	6, 2019
Polarize		Horizonta	al 🛛	Tes	t Engin	eer	Dally	/ Hong
Detector		Peak		Te	st Volta	ge	120Va	c / 60Hz
120 Level (dBuV/m) 110	) 							
90								
70								
50	4							
30		5	6					
10								
0 <u>30</u>	224.	418.	Frequency (N	612 IH7)	2.		806.	100
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Resul (dBuV/r	t n)	Lim (dBuV	it '/m)	Margin (dB)	Remar
Frequency (MHz) 34.85	Reading (dBuV) 40.14	Correct Factor (dB/m) -5.52	Resul (dBuV/r 34.62	t n)	Lim (dBuV 40.0	it //m) )0	Margin (dB) -5.38	Remar
Frequency (MHz) 34.85 95.96	Reading (dBuV) 40.14 51.57	Correct Factor (dB/m) -5.52 -13.95	Resul (dBuV/r 34.62 37.62	t n) 2	Lim (dBuV 40.0 43.5	it //m) 00	Margin (dB) -5.38 -5.88	Remar Peak Peak
Frequency (MHz) 34.85 95.96 144.46	Reading (dBuV)           40.14           51.57           45.15	Correct Factor (dB/m) -5.52 -13.95 -9.92	Resul (dBuV/r 34.62 37.62 35.23	t n)	Lim (dBuV 40.0 43.5 43.5	it //m) 00 50	Margin (dB) -5.38 -5.88 -8.27	Remar Peak Peak Peak
Frequency (MHz) 34.85 95.96 144.46 240.49	Reading (dBuV)           40.14           51.57           45.15           50.47	Correct Factor (dB/m) -5.52 -13.95 -9.92 -10.25	Resul (dBuV/) 34.62 37.62 35.23 40.22	t n)	Lim (dBuV 40.0 43.5 43.5 43.5	it //m) 50 50 00	Margin (dB) -5.38 -5.88 -8.27 -5.78	Remar Peak Peak Peak Peak
Frequency (MHz)         34.85         95.96         144.46         240.49         335.55	Reading (dBuV)           40.14           51.57           45.15           50.47           41.69	Correct Factor (dB/m) -5.52 -13.95 -9.92 -10.25 -7.18	Resul (dBuV/i 34.62 37.62 35.23 40.22 34.51	t n)	Lim (dBuV 40.0 43.5 43.5 43.5 46.0 46.0	it /m) 00 50 50 00 00	Margin (dB) -5.38 -5.88 -8.27 -5.78 -11.49	Remar Peak Peak Peak Peak Peak



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Test Mod	e: Ział	bee Mode-H	liah CH	Temp/Hum	1 20(°C	)/ 61%RH
Test Iten	<u>ן</u>	30MHz-1G	Hz	Test Date	April	16, 2019
Polarize	-	Vertical		Test Engine	er Dal	ly Hong
Detecto	r	Peak		Test Voltag	e 120V	ac / 60Hz
120 Level (dBuV/n 110 90 70 50 30	) 	4 5				
10 0 30	224.	418.	Frequency (M	612. Hz)	806.	1000
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/n	Limit 1) (dBuV/n	Margin n) (dB)	Remark
Frequency (MHz) 56.19	Reading (dBuV) 51.95	Correct Factor (dB/m) -15.96	Result (dBuV/n 35.99	n) Limit (dBuV/n 40.00	n) Margin (dB) -4.01	Remark Peak
Frequency (MHz) 56.19 95.96	Reading (dBuV) 51.95 51.25	Correct Factor (dB/m) -15.96 -13.95	Result (dBuV/n 35.99 37.30	n) Limit (dBuV/n 40.00 43.50	n) Margin (dB) -4.01 -6.20	Remark Peak Peak
Frequency (MHz) 56.19 95.96 240.49	Reading (dBuV)           51.95           51.25           50.04	Correct Factor (dB/m) -15.96 -13.95 -10.25	Result (dBuV/n 35.99 37.30 39.79	n) Limit (dBuV/n 40.00 43.50 46.00	n) Margin (dB) -4.01 -6.20 -6.21	Remark Peak Peak Peak
Frequency (MHz) 56.19 95.96 240.49 311.30	Reading (dBuV)           51.95           51.25           50.04           41.76	Correct Factor (dB/m) -15.96 -13.95 -10.25 -7.86	Result (dBuV/n 35.99 37.30 39.79 33.90	n) Limit (dBuV/n 40.00 43.50 46.00 46.00	n) Margin (dB) -4.01 -6.20 -6.21 -12.10	Remark Peak Peak Peak Peak
Frequency (MHz) 56.19 95.96 240.49 311.30 359.80	Reading (dBuV)           51.95           51.25           50.04           41.76           38.84	Correct Factor (dB/m) -15.96 -13.95 -10.25 -7.86 -6.59	Result (dBuV/n 35.99 37.30 39.79 33.90 32.25	n) Limit (dBuV/n 40.00 43.50 46.00 46.00 46.00	n) Margin (dB) -4.01 -6.20 -6.21 -12.10 -13.75	Remark Peak Peak Peak Peak Peak

Note: No emission found between lowest internal used/generated frequency to 30MHz(9KHz~30MHz)



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Test Mode	e: Zigł	bee Mode-H	ligh CH	Temp	p/Hum	20(°C)/	/ 61%RH
Test Item		30MHz-1G	Hz	Test	Date	April 1	6, 2019
Polarize		Horizonta	al	Test E	ngineer	Dally	/ Hong
Detector		Peak		Test \	√oltage	120Va	c / 60Hz
120 Level (dBuV/m 110 90 90 90 90 90 90 90 90 90 90 90 90 90	) 3 4 1 224.	5 6 6 418.	Frequency (N	612. IHZ)		806.	1000
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Resul (dBuV/r	t n) (	Limit dBuV/m)	Margin (dB)	Remark
· · /				5 40.00		-6.85	Peak
55.22	49.15	-16.00	33.15	)	40.00	0.00	
55.22 95.96	49.15 51.50	-16.00 -13.95	33.15 37.55	;	43.50	-5.95	Peak
55.22 95.96 151.25	49.15 51.50 46.09	-16.00 -13.95 -9.90	33.15 37.55 36.19	5 ; )	43.50 43.50	-5.95 -7.31	Peak Peak
55.22 95.96 151.25 240.49	49.15 51.50 46.09 49.74	-16.00 -13.95 -9.90 -10.25	33.15 37.55 36.19 39.49	) ) )	43.50 43.50 46.00	-5.95 -7.31 -6.51	Peak Peak Peak
55.22 95.96 151.25 240.49 311.30	49.15 51.50 46.09 49.74 43.51	-16.00 -13.95 -9.90 -10.25 -7.86	33.15 37.55 36.19 39.49 35.65	5 5 9 9	43.50 43.50 46.00 46.00	-5.95 -7.31 -6.51 -10.35	Peak Peak Peak Peak



#### Above 1G Test Data (1G ~ 3G)

			I				
Test Mode	): 	Low CH		Те	mp/Hum	20(	°C)/ 61%RH
Test Item		Harmonie	C	Te	est Date	Mai	rch 19, 2019
Polarize		Vertical		Test	t Engineer	· D	ally Hong
Detector	Pe	eak and Ave	erage	Tes	st Voltage	120	0Vac / 60Hz
120 Level (dBuV/m) 110		2				4	
10 0 1000	1400.	1800.	Frequency (N	2200 /Hz)	D.	2600.	3000
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Resul (dBuV/r	t n)	Limit (dBuV/m)	Margi (dB)	n Remark
1804.80	-	-15.56	38.72	2	54.00	-15.2	8 Peak
1804.80	64.94	-10.66	54.28	3	74.00	-19.7	2 Average
2707.20	-	-15.56	44.46	6	54.00	-9.54	l Peak
2707.20	67.89	-7.87	60.02	2	74.00	-13.9	8 Average
N/A							
Remark:	<u> </u>						



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Test Item         Harmonic         Test Date         March 19, 201           Polarize         Horizontal         Test Engineer         Dally Hong           Detector         Peak and Average         Test Voltage         120Vac / 60Hz           120         evel (dBuV/m)	Test Item Polarize Detector	Pe	Harmonic Horizonta ak and Ave	c all strage	Tes Te	Fest Date St Enginee Ist Voltage	er e	March Dally 120Va	19, 2019 y Hong ic / 60Hz
Polarize         Horizontal         Test Engineer         Dally Hong           120         Peak and Average         Test Voltage         120Vac / 60Hz           120	Polarize Detector	Pe	Horizonta		Tes Te	st Enginee st Voltage	er e	Dally 120Va	y Hong ic / 60Hz
Detector         Peak and Average         Test Voltage         120Vac / 60H:           120	Detector	Pe	eak and Ave		Te	est Voltage	•	120Va	<u>ac / 60Hz</u>
Image: constraint of the second se	120 Level (dBuV/m) 110 90								
ID       Id <th< td=""><td>70           50           30</td><td></td><td>2</td><td></td><td></td><td></td><td></td><td>4</td><td></td></th<>	70           50           30		2					4	
Image: Prequency (MHz)         Reading (dBuV)         Correct Factor (dB/m)         Result (dBuV/m)         Limit (dBuV/m)         Margin (dB)         Remark           1804.80         -         -15.56         39.17         54.00         -14.83         Average           1804.80         65.39         -10.66         54.73         74.00         -19.27         Peak           2707.20         -         -15.56         42.09         54.00         -11.91         Average           N/A         -         -15.56         57.65         74.00         -16.35         Peak	10								
1000       1400.       1800.       2200.       2000.       300.         Frequency (MHz)       Reading (dBuV)       Correct Factor (dB/m)       Result (dBuV/m)       Limit (dBuV/m)       Margin (dB)       Remark         1804.80       -       -15.56       39.17       54.00       -14.83       Average         1804.80       65.39       -10.66       54.73       74.00       -19.27       Peak         2707.20       -       -15.56       42.09       54.00       -11.91       Average         2707.20       65.52       -7.87       57.65       74.00       -16.35       Peak         N/A       -       -       -       -       -       -       -       -         N/A       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       <	0	1400	4000		220		20		2000
1804.80         -         -15.56         39.17         54.00         -14.83         Average           1804.80         65.39         -10.66         54.73         74.00         -19.27         Peak           2707.20         -         -15.56         42.09         54.00         -11.91         Average           2707.20         65.52         -7.87         57.65         74.00         -16.35         Peak           N/A	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Frequency (N Resul (dBuV/ı	IHz) t m)	Limit (dBuV/m	)	Margin (dB)	Remark
1804.80         65.39         -10.66         54.73         74.00         -19.27         Peak           2707.20         -         -15.56         42.09         54.00         -11.91         Average           2707.20         65.52         -7.87         57.65         74.00         -16.35         Peak           N/A	1804.80	-	-15.56	39.17	7	54.00		-14.83	Average
2707.20         -         -15.56         42.09         54.00         -11.91         Average           2707.20         65.52         -7.87         57.65         74.00         -16.35         Peak           N/A	1804.80	65.39	-10.66	54.73	3	74.00		-19.27	Peak
2707.20         65.52         -7.87         57.65         74.00         -16.35         Peak           N/A	2707.20	-	-15.56	42.09	)	54.00		-11.91	Average
N/A	2707.20	65.52	-7.87	57.65	5	74.00		-16.35	Peak
	N/A								

Remark:



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Test Mode	e:	Mid CH			mp/Hu	m	20(°	20(°C)/ 61%RH		
Test Item	1 IIII	Harmonic	2	Te	est Dat	e	Marc	ch 19, 2019		
Polarize		Vertical		Test	t Engin	eer	Da	ally Hong		
Detector	·   Pe	eak and Ave	erage	Tes	st Volta	ge	120	Vac / 60Hz		
120 Level (dBuV/m 110	)									
90										
70										
50		2						•		
30										
10										
0 <mark></mark>	1400.	1800.	I	2200	0.		2600.	3000		
			Frequency (N	NHz)						
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Resul (dBuV/	t m)	Lim (dBuV	it //m)	Margin (dB)	Remark		
1830.40	-	-15.56	29.9	1	54.0	)0	-24.09	Average		
1830.40	56.11	-10.64	45.47	7	74.0	)0	-28.53	Peak		
2745.60	-	-15.56	44.39	54.00		)0	-9.61	Average		
2745.60	67.90	-7.95	59.95	5	74.0	)0	-14.05	Peak		
N/A										

Remark:



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Te	est Mode	:		Mid Cl	4	-	Temp/Hu	ım	20(	°C)/	61%RH
T	Test Item			Harmor	nic		Test Da	te	Mar	ch '	19, 2019
	Polarize			Horizon	tal	Te	est Engir	neer	D	ally	Hong
[	Detector		Pe	eak and A	verage	Т	est Volta	age	120	)Va	c / 60Hz
120 <mark>-1</mark>	evel (dBuV/m)										
90-											
70										4	
50					2					3	
30											
10											
0 <sup>L</sup> 1(	000	140	)0.	18	DO.	2	200.		2600.		3000
_		_		-		, (		_		_	
Fred (1	quency VHz)	Rea (dB	ding SuV)	Correct Factor (dB/m)	Res (dBu	sult V/m)	Lim (dBu\	nit //m)	Margir (dB)	١	Remark
18	30.40		-	-15.56	34	.60	54.	00	-19.40	)	Average
18	30.40	60	.80	-10.64	50	.16	74.	00	-23.84	1	Peak
27	45.60		-	-15.56	43	.06	54.	00	-10.94		Average
27	45.60	66	.57	-7.95	58	.62	74.	00	-15.38	3	Peak
I	N/A										
							1				
		1									



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Test Mo	ode:		High CH	ł	Tei	mp/Hum	20(°C)	/ 61%RH
Test Ite	em		Harmoni	С	Te	est Date	March	19, 2019
Polari	ze		Vertical		Test	Engineer	Dall	y Hong
Detect	or	Pe	ak and Av	erage	Tes	t Voltage	120Va	ac / 60Hz
120 Level (dBu	V/m)							
90								
70							4	
50				2			3	
30								
10								
0 <mark>1000</mark>	14	00.	1800	). Frequency (I	2200 MHz)		2600.	3000
Frequency (MHz)	Rea (dE	iding BuV)	Correct Factor (dB/m)	Resul (dBuV/	lt m)	Limit (dBuV/m)	Margin (dB)	Remark
1855.20		-	-15.56	29.7	7	54.00	-24.23	Average
1855.20	55	.92	-10.59	45.33	3	74.00	-28.67	Peak
2782.80		-	-15.56	45.0	1	54.00	-8.99	Average
2782.80	68	.85	-8.28	60.5	7	74.00	-13.43	Peak
N/A								
emark:				1			1	



Test Mo	de:		High CH	l	Ter	mp/Hum	20(°C),	/ 61%RH
Test Ite	m		Harmoni	С	Te	st Date	March	19, 2019
Polariz	e		Horizonta	al	Test	Engineer	Dally	y Hong
Detect	or	Pea	k and Ave	erage	Tes	t Voltage	120Va	ac / 60Hz
120 Level (dBu\ 110 90 70 70	//m)							
50				2			3	
30				1				
10								
0 <mark></mark>	1400	).	1800	Frequency (I	2200	•	2600.	3000
				Trequency (n				
Frequency (MHz)	Read (dBu	ling JV)	Correct Factor (dB/m)	Resul (dBuV/	t m)	Limit (dBuV/m)	Margin (dB)	Remark
	2015.56 27					00.05	A	
1855.20	-		-15.56	27.35	5	54.00	-26.65	Average
1855.20 1855.20	- 53.5	50	-15.56 -10.59	27.3t	5	54.00 74.00	-26.65	Peak
1855.20 1855.20 2782.80	- 53.:	50	-15.56 -10.59 -15.56	27.3 42.9 40.54	5 1 1	54.00 74.00 54.00	-26.65 -31.09 -13.46	Peak Average
1855.20 1855.20 2782.80 2782.80	53.4 64.5	50	-15.56 -10.59 -15.56 -8.28	27.3 42.9 40.5 56.10	5 1 1 )	54.00 74.00 54.00 74.00	-26.65 -31.09 -13.46 -17.90	Average Peak Average Peak
1855.20 1855.20 2782.80 2782.80 N/A	53.4 64.5	50 38	-15.56 -10.59 -15.56 -8.28	27.3 42.9 40.5 56.10	5 1 1 1 )	54.00 74.00 54.00 74.00	-26.65 -31.09 -13.46 -17.90	Average Peak Average Peak



Test Mode	<b>:</b>	Low CH	-	Temp/Hum	20(°C)	/ 61%RH
Test Item		Harmonie	C	Test Date	April '	16, 2019
Polarize		Vertical	Te	est Engineer	Dally	y Hong
Detector	Pe	eak and Ave	erage T	est Voltage	120Va	ac / 60Hz
120 Level (dBuV/m)	)					
90						
70						
50	2	4				
30						
10						
03000	4400.	5800.	7 Frequency (MHz)	200.	8600.	10000
Frequency	Reading	Correct	Result	Limit	Margin	Bomark
(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Keillark
3609.60	56.25	-6.15	50.10	74.00	-23.90	Peak
4512.00	-	-15.56	42.42	54.00	-11.58	Average
4512.00	62.88	-4.90	57.98	74.00	-16.02	Peak
5414.40	51.72	-3.60	48.12	74.00	-25.88	Peak
	+					
N/A						

## Above 1G Test Data (3G ~ 10G)

Remark:



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Test Mode	ə:	Low CH		Temp/ŀ	łum	20(°C)/	/ 61%RH
Test Item	1	Harmonic	2	Test D	ate	April 1	16, 2019
Polarize		Horizonta	ıl	Test Eng	jineer	Dally	y Hong
Detector	· Pe	eak and Ave	erage	Test Vo	tage	120Va	ic / 60Hz
120 Level (dBuV/m 110 90 70 70 1 70 1 70 1 70 1 70 1 70 1	I) 	3					
10							
0 <mark>3000</mark>	4400.	5800.	Frequency (M	7200. Hz)	1	8600.	10000
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/r	n) (dB	imit uV/m)	Margin (dB)	Remark
3609.60	56.13	-6.15	49.98	74	1.00	-24.02	Peak
4512.00	56.00	-4.90	51.10	74	4.00	-22.90	Peak
5414.40	56.04	-3.60	52.44	. 74	1.00	-21.56	Peak
N/A							
N/A							

Remark:



Test Mode	:	Mid CH		Temp/H	um	20(°C)	/ 61%RH
Test Item		Harmoni	c	Test Da	te	April 1	16, 2019
Polarize		Vertical		Test Engi	neer	Dally	y Hong
Detector		Peak and Ave	erage	Test Volt	age	120Va	ic / 60Hz
120 Level (dBuV/m) 110 90 70 70 70 70 70 70 70 70 70 70 70 70 70	2						
10							
3000	4400.	5800.	Frequency (M	7200. Hz)		8600.	10000
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/n	n) (dBu	nit V/m)	Margin (dB)	Remark
3660.80	50.04	-4.47	45.57	74.	00	-28.43	Peak
4576.00	51.39	-4.92	46.47	74.	00	-27.53	Peak
5491.20	46.31	-3.97	42.34	74.	00	-31.66	Peak
N/A							
omark:							



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Test M	ode:		Mid CH		Т	emp/Hu	Im	20(°C)	/ 61%RH
Test Item		Harmonic			Test Date			April 16, 2019	
Polarize		Horizontal			Test Engineer		Dally Hong		
Detector		Pe	Peak and Average			est Volta	ige	120Vac / 60Hz	
120 Level (dB	uV/m)								
90									
70									
50		2	3						
30									
10									
0 <mark>3000</mark>	44	00.	5800	Frequency (I	72 MHz)	200.		8600.	10000
Frequenc (MHz)	y Rea	ading BuV)	Correct Factor	Resul (dBuV/	lt m)	Lim (dBu\	it //m)	Margin (dB)	Remark
3660.80	) 53	3.77	-4.47	49.30	)	74.(	00	-24.70	Peak
4576.00	) 57	7.89	-4.92	52.9	7	74.(	00	-21.03	Peak
5491.20	) 46	6.63	-3.97	42.6	6	74.(	00	-31.34	Peak
N/A									

Remark:



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-	Test Mode	•		Hiah Cl	 H	Te	emp/Hum	20(°C)	/ 61%RH	
	Test Item		Harmonic			Т	est Date		April 16, 2019	
	Polarize		Vertical			Tes	t Engineer	Dall	Dally Hong	
	Detector		Peak and Average			Tes	st Voltage	120Va	120Vac / 60Hz	
120 110 90 70 50 30	Level (dBuV/m)		2	3						
10										
0	3000	4400	D.	580	0. Frequency (I	720 MHz)	0.	8600.	10000	
Fre	equency (MHz)	Read (dBu	ling JV)	Correct Factor (dB/m)	Resu (dBuV/	lt m)	Limit (dBuV/m)	Margin (dB)	Remark	
3	710.40	50.	02	-1.51	48.5	1	74.00	-25.49	Peak	
4	638.00	52.	17	-4.99	47.1	8	74.00	-26.82	Peak	
5	565.60	42.	06	-3.14	38.9	2	74.00	-35.08	Peak	
	N/A									
Rema	ark:							•		



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Test Item       Polarize       Detector       Performance       120       Level (dBuV/m)       90       70	Harmonie Horizonta eak and Ave	c al >rage	Test Da Test Engir Test Volta	te neer age	April 1 Dally 120Va	6, 2019 / Hong c / 60Hz
Polarize Detector Pe	Horizonta	al erage	Test Engir Test Volta	age	Dally 120Va	/ Hong c / 60Hz
Detector         Pe           120         Level (dBuV/m)           110	eak and Ave		Test Volta	age	120Va	<u>c / 60Hz</u>
120 Level (dBuV/m) 110 90 70						
90 70						
90 70 110						
90						
70						
70						
50 2	3					
30						
5000 4400.	5600.	Frequency (N	7200. ЛН <b>z</b> )		8000.	10000
Frequency Reading (MHz) (dBuV)	Correct Resul Factor (dBuV/		t Limit m) (dBuV/m)		Margin (dB)	Remark
3710.40 52.06	-1.51	50.55	74.00		-23.45	Peak
4638.00 54.13	-4.99	49.14	4 74.	00	-24.86	Peak
5565.60 41.62	-3.14	38.48	3 74.	00	-35.52	Peak
N/A						
						L

--End of Test Report--