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# TEST REPORT

Product Trade mark Model/Type reference

Serial Number

Report Number

FCC ID

Date of Issue

Test Standards

Test result

- Digital Night Vision
- : Sytong
- : HT60
- : N/A
- EED32M80106501
- 2AYFSHT60202012
- Jan. 06, 2021
- : 47 CFR Part 15Subpart C
- PASS

Prepared for:

Shenzhen Shi Yutong Technology Co. LTD Lianjian Science and Technology Industrial Park, Dalang Street, Longhua District, Shenzhen city , China

Prepared by:

Centre Testing International Group Co., Ltd. Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China TEL: +86-755-3368 3668 FAX: +86-755-3368 3385

ompiled/by Reviewed by: Acron Vita. he Vito he Aaron Ma David Wang Jan. 06, 2021 Date: David Wang Report Seal Check No:4059031220







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2 Version

	Version No.		Date	(3)	Description	on	
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## 3 Test Summary





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Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15 Subpart C Section 15.203/15.247 (c)	ANSI C63.10-2013	PASS
AC Power Line Conducted Emission	47 CFR Part 15 Subpart C Section 15.207	ANSI C63.10-2013	PASS
Conducted Peak Output Power	47 CFR Part 15 Subpart C Section 15.247 (b)(3)	ANSI C63.10-2013	PASS
6dB Occupied Bandwidth	47 CFR Part 15 Subpart C Section 15.247 (a)(2)	ANSI C63.10-2013	PASS
Power Spectral Density	47 CFR Part 15 Subpart C Section 15.247 (e)	ANSI C63.10-2013	PASS
Band-edge for RF Conducted Emissions	47 CFR Part 15 Subpart C Section 15.247(d)	ANSI C63.10-2013	PASS
RF Conducted Spurious Emissions	47 CFR Part 15 Subpart C Section 15.247(d)	ANSI C63.10-2013	PASS
Radiated Spurious Emissions	47 CFR Part 15 Subpart C Section 15.205/15.209	ANSI C63.10-2013	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15 Subpart C Section 15.205/15.209	ANSI C63.10-2013	PASS

Remark:

Test according to ANSI C63.4-2014 & ANSI C63.10-2013.

Company Name and Address shown on Report, the sample(s) and sample Information was/ were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.





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#### 5.1.3 For Conducted Emissions test setup Conducted Emissions setup



## 5.2 Test Environment

	-			
Operating Environment:		S	I A A A A A A A A A A A A A A A A A A A	e
Temperature:	23.0 °C			
Humidity:	54 % RH			1000
Atmospheric Pressure:	1010mbar	0	0	
100 m	157.7	107		

## 5.3 Test Condition

Test channel:

Test Made		RF Channel				
Test Mode	TX/RX	Low(L)	Middle(M)	High(H)		
000 44b/c/c/UT00)		Channel 1	Channel 6	Channel11		
802.11b/g/n(H120)	2412MHZ ~2462 MHZ	2412MHz	2437MHz	2462MHz		
Transmitting mode:	Keep the EUT in transmitting mode with all kind of modulation and all kind of data rate.					

#### Test mode:

Pre-scan under all rate at lowest channel 1

Through Pre-scan, 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20).





## 6 General Information

## 6.1 Client Information

Applicant:	Shenzhen Shi Yutong Technology Co. LTD
Address of Applicant:	Lianjian Science and Technology Industrial Park, Dalang Street, Longhua District, Shenzhen city , China
Manufacturer:	Shenzhen Shi Yutong Technology Co. LTD
Address of Manufacturer:	Lianjian Science and Technology Industrial Park, Dalang Street, Longhua District, Shenzhen city , China
Factory:	Shenzhen Shi Hui Tong Technology Co. LTD
Address of Factory:	Lianjian Science and Technology Industrial Park, Dalang Street, Longhua District, Shenzhen city , China

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## 6.2 General Description of EUT

Product Name:	Digital Night Vision		
Model No.(EUT):	HT60		
Trade mark:	Sytong		(2)
EUT Supports Radios application:	IEEE 802.11 b/g/n(HT20): 2412MHz to 2462MHz		G
Power Supply:	DC 5V		
Sample Received Date:	Dec. 04, 2020	12	
Sample tested Date:	Dec. 04, 2020 to Dec. 18, 2020	$( \land )$	

## 6.3 Product Specification subjective to this standard

Operatio	n Frequency:	cy: IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz					
Channel Numbers: IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels							
Channel	Separation:	5MHz	6		6		6
Type of I	/pe of Modulation: IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g :OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20) : OFDM (64QAM, 16QAM,QPSK,BPSK)						iκ)
Test Pov	ver Grade:	Referen	nce Table				
Test Soft	tware of EUT:	Secure	CRT	0.	)	(G)	/
Antenna Type and Gain: Type: PCB Antenna Gain:0 dBi							
Test Volt Operatio	age: on Frequency e	DC 5V ach of chan	DC 5V h of channel(802 11b/g/n HT20)				
Chann el	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		









## 6.4 Description of Support Units

The EUT has been tested with associated equipment below.

Associated equipment name		Manufacture	model	S/N serial number	Supplied by	Certification
AE1	Notebook	DELL	DELL 3490	D245DX2	DELL	CE&FCC
	(2)	\		(		

## 6.5 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385 No tests were sub-contracted. FCC Designation No.: CN1164



## 6.7 Abnormalities from Standard Conditions

None.

None.

## 6.8 Other Information Requested by the Customer

None.

## 6.9 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Radio Frequency	7.9 x 10 <sup>-8</sup>
2	PE power conducted	0.46dB (30MHz-1GHz)
-	RF power, conducted	0.55dB (1GHz-18GHz)
	Dedicted Sources emission test	4.3dB (30MHz-1GHz)
3	Radiated Spurious emission test	4.5dB (1GHz-12.75GHz)
4	Conduction omission	3.5dB (9kHz to 150kHz)
4	Conduction emission	3.1dB (150kHz to 30MHz)
5	Temperature test	0.64°C
6	Humidity test	3.8%
7	DC power voltages	0.026%









## 7 Equipment List

16.71	LC.	27. J.	10.3	10	
		RF test s	system		
Equipment	Manufacturer	Mode No.	Serial Number	Cal. Date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
Spectrum Analyzer	Keysight	N9010A	MY54510339	02-17-2020	02-16-2021
Signal Generator	Keysight	N5182B	MY53051549	02-17-2020	02-16-2021
Temperature/ Humidity Indicator	biaozhi	HM10	1804186	06-29-2020	06-28-2021
High-pass filter	Sinoscite	FL3CX03WG18N M12-0398-002	$( \circ )$		9
High-pass filter	MICRO- TRONICS	SPA-F-63029-4			
DC Power	Keysight	E3642A	MY56376072	02-17-2020	02-16-2021
PC-1	Lenovo	R4960d		07	
BT&WI-FI Automatic control	R&S	OSP120	101374	02-17-2020	02-16-2021
RF control unit	JS Tonscend	JS0806-2	158060006	02-17-2020	02-16-2021
BT&WI-FI Automatic test software	JS Tonscend	JS1120-3	C	(	5)

	and Ch. Western	and G Press		and the second second			
Conducted disturbance Test							
Equipment	Manufacturer	Model No.	Serial Number	Cal. date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)		
Receiver	R&S	ESCI	100435	04-28-2020	04-27-2021		
Temperature/ Humidity Indicator	Defu	TH128		/	62		
LISN	R&S	ENV216	100098	03-05-2020	03-04-2021		
Barometer	changchun	DYM3	1188				







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	3M S	Semi/full-anecho	ic Chamber		
Equipment	Manufacturer	Model No.	Serial Number	Cal. date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
3M Chamber & Accessory Equipment	трк	SAC-3		05-24-2019	05-23-2022
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	9163-618	05-16-2020	05-15-2021
Loop Antenna	Schwarzbeck	FMZB 1519B	1519B- 076	04-25-2018	04-24-2021
Receiver	R&S	ESCI7	100938- 003	10-16-2020	10-15-2021
Multi device Controller	maturo	NCD/070/107 11112	( <del>2</del> 3)		$(\mathcal{A})$
Temperature/ Humidity Indicator	Shanghai qixiang	HM10	1804298	06-29-2020	06-28-2021
Cable line	Fulai(7M)	SF106	5219/6A		
Cable line	Fulai(6M)	SF106	5220/6A		
Cable line	Fulai(3M)	SF106	5216/6A	1	
Cable line	Fulai(3M)	SF106	5217/6A	()	









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3M full-anechoic Chamber							
Equipment	Manufacturer	anufacturer Model No. Se		Cal. date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)		
RSE Automatic test software	JS Tonscend	JS36-RSE	10166				
Receiver	Keysight	N9038A	MY57290136	03-05-2020	03-04-2021		
Spectrum Analyzer	Keysight	N9020B	MY57111112	03-05-2020	03-04-2021		
Spectrum Analyzer	Keysight	N9030B	MY57140871	03-05-2020	03-04-2021		
TRILOG Broadband Antenna	Schwarzbeck	VULB 9163	9163-1148	04-25-2018	04-24-2021		
Horn Antenna	Schwarzbeck	BBHA 9170	9170-832	04-25-2018	04-24-2021		
Horn Antenna	ETS- LINDGREN	3117	00057407	07-10-2018	07-09-2021		
Preamplifier	EMCI	EMC184055SE	980597	05-20-2020	05-19-2021		
Preamplifier	EMCI	EMC001330	980563	04-22-2020	04-21-2021		
Preamplifier	JS Tonscend	980380	EMC051845 SE	01-09-2020	01-08-2021		
Temperature/ Humidity Indicator	biaozhi	GM1360	EE1186631	04-27-2020	04-26-2021		
Fully Anechoic Chamber	TDK	FAC-3		01-17-2018	01-16-2021		
Filter bank	JS Tonscend	JS0806-F	188060094	04-10-2018	04-09-2021		
Cable line	Times	SFT205-NMSM- 2.50M	394812-0001				
Cable line	Times	SFT205-NMSM- 2.50M	394812-0002		<u> </u>		
Cable line	Times	SFT205-NMSM- 2.50M	394812-0003				
Cable line	Times	SFT205-NMSM- 2.50M	393495-0001		/		
Cable line	Times	EMC104-NMNM- 1000	SN160710	Ð			
Cable line	Times	SFT205-NMSM- 3.00M	394813-0001				
Cable line	Times	SFT205-NMNM- 1.50M	381964-0001		<u> </u>		
Cable line	Times	SFT205-NMSM- 7.00M	394815-0001		(S))		
Cable line	Times	HF160-KMKM- 3.00M	393493-0001				







## 8 Radio Technical Requirements Specification

#### Reference documents for testing:

No.	Identity	Document Title
1	FCC Part15C	Subpart C-Intentional Radiators
2	ANSI C63.10-2013	American National Standard for Testing Unlicesed Wireless Devices
est R	esults List:	

#### Test Requirement Test method Test item Verdict Note Part15C Section ANSI C63.10 **Conducted Peak Output Power** PASS Appendix A) 15.247 (b)(3) Part15C Section ANSI C63.10 PASS 6dB Occupied Bandwidth Appendix B) 15.247 (a)(2) Part15C Section Band-edge for RF Conducted PASS ANSI C63.10 Appendix C) Emissions 15.247(d) Part15C Section **RF** Conducted Spurious ANSI C63.10 PASS Appendix D) Emissions 15.247(d) Part15C Section ANSI C63.10 **Power Spectral Density** PASS Appendix E) 15.247 (e) Part15C Section ANSI C63.10 Antenna Requirement PASS Appendix F) 15.203/15.247 (c) AC Power Line Conducted Part15C Section ANSI C63.10 PASS Appendix G) 15.207 Emission Restricted bands around Part15C Section fundamental frequency PASS ANSI C63.10 Appendix H) 15.205/15.209 (Radiated Emission) Part15C Section PASS ANSI C63.10 **Radiated Spurious Emissions** Appendix I) 15.205/15.209







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EUT DUTY CYCLE

R	esult Table		$(\mathcal{A})$	(25)		(3)
	Test Mode	Antenna	Channel	Duty Cycle [%]	Limit	Verdict
	_	Ant1	2412	97.91		PASS
13	11B	Ant1	2437	97.91		PASS
6	)	Ant1	2462	97.91	<u>)</u>	PASS
$\sim$	-	Ant1	2412	89.16		PASS
	11G	Ant1	2437	89.16		PASS
		Ant1	2462	89.51		PASS
	S	Ant1	2412	87.98		PASS
	11N20SISO	Ant1	2437	87.98		PASS
		Ant1	2462	87.60		PASS























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#### Test Graph









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## Appendix A): Conducted Peak Output Power

### Test Limit

According to §15.247(b)(3),

#### Peak output power:

For systems using digital modulation in the 2400-2483.5 MHz: 1 Watt(30 dBm), base on the use of antennas with directional gain not exceed 6 dBi. If transmitting antennas of directional gain greater than 6dBi are used the peak output power the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.



Antenna not exceed 6 dBi: 30dBm
 Antenna with DG greater than 6 dBi:
 [Limit = 30 - (DG - 6)]
 Point-to-point operation:

#### Average output power: For reporting purposes only.

#### **Test Procedure**

Test method Refer as KDB 558074 D01.

- 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.

**Test Setup** 







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## **Test Result**

			9.7	
Mode	Channel	Conducted Peak Output Power [dBm]	Verdict	
11B	LCH	7.37	PASS	
11B	МСН	7.89	PASS	
11B	нсн	6.95	PASS	
11G	LCH	6.90	PASS	
11G	МСН	7.97	PASS	
11G	НСН	6.72	PASS	
11N20SISO	LCH	6.76	PASS	
11N20SISO	МСН	8.15	PASS	
11N20SISO	нсн	7.46	PASS	























## Appendix B): 6dB Occupied Bandwidth

## Test Limit

According to §15.247(a)(2),

### 6 dB Bandwidth :

Limit	Shall be at least 500kHz	S

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

### **Test Procedure**

Test method Refer as KDB 558074 D01 and ANSI C63.10: 2013 clause 6.9.2,

- 1. The EUT RF output connected to the spectrum analyzer by RF cable.
- 2. Setting maximum power transmit of EUT
- 3. SA set RBW =100KHz , VBW = 300KHz and Detector = Peak, to measurement 6dB 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 6 dB Bandwidth and 99% Bandwidth. in the test report.

#### **Test Setup**







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**Test Result** 

Mode	Channel	6dB Bandwidth [MHz]	99% OBW [MHz]	Verdict
11B	LCH	9.320	11.541	PASS
11B	МСН	9.120	11.565	PASS
11B	НСН	9.360	11.561	PASS
11G	LCH	16.560	16.746	PASS
11G	МСН	16.520	16.765	PASS
11G	НСН	16.520	16.817	PASS
11N20SISO	LCH	17.800	17.821	PASS
11N20SISO	МСН	17.760	17.845	PASS
11N20SISO	НСН	17.840	17.808	PASS



























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Occupied Bandwidth(99%)







# (A)

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# (d)

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## Appendix C): Band-edge for RF Conducted Emissions

#### Test Limit

According to §15.247(d),

In any 100 kHz bandwidth outside the authorized frequency band,

Non-restricted bands shall be attenuated at least 20 dB/30 dB relative to the maximum PSD level in 100 kHz by RF conducted or a radiated measurement which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

#### **Test Procedure**

Test method Refer as KDB 558074 D01.

- 1. EUT RF output port connected to the SA by RF cable, and the path loss was compensated to result.
- SA setting, RBW=100kHz, VBW=300kHz, Detector=Peak, Trace mode = max hold, SWT = Auto.
- 3. In any 100 kHz bandwidth outside the authorized frequency band, shall be attenuated at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when conducted power procedure is used. f the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.









**Result Table** 

Test Mode	Antenna	Ch Name	Channel	Ref Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
440	A	Low	2412	-1.81	-45.66	<=-31.81	PASS
118	Ant1	High	2462	-2.47	-45.67	<=-32.47	PASS
110	A 14	Low	2412	-4.84	-45.02	<=-34.84	PASS
11G	Anti	High	2462	-9.90	-45.13	<=-39.9	PASS
441000100	Ant1	Low	2412	-4.40	-43.01	<=-34.4	PASS
11N20SISO		High 🤇	2462	-3.64	-45.75	<=-33.64	PASS









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## **Appendix D): RF Conducted Spurious Emissions**

## Test Limit

According to §15.247(d),

In any 100 kHz bandwidth outside the authorized frequency band,

Non-restricted bands shall be attenuated at least 20 dB/30 dB relative to the maximum PSD level in 100 kHz by RF conducted or a radiated measurement which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

### **Test Procedure**

Test method Refer as KDB 558074 D01.



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

- SA setting, RBW=100kHz, VBW=300kHz, Detector=Peak, Trace mode = max hold, SWT = Auto.
- 3. In any 100 kHz bandwidth outside the authorized frequency band, shall be attenuated at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when conducted power procedure is used. f the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.









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#### **Result Table**

( C.N.)	C		(23)		(cN)		
Test Mode Ante	enna Channel	Freq Range [Mhz]	Ref Level [dBm]	Result [dBm]	Limit [dBm]	Verdict	
1		Reference	-1.84	-1.84		PASS	
	2412	30~1000	30~1000	-57.681	<=-21.837	PASS	
		1000~26500	1000~26500	-50.041	<=-21.837	PASS	
		Reference	-1.53	-1.53		PASS	
11B An	it1 2437	30~1000	30~1000	-58.258	<=-21.527	PASS	
	6	1000~26500	1000~26500	-49.192	<=-21.527	PASS	
		Reference	-2.52	-2.52		PASS	
	2462	30~1000	30~1000	-57.584	<=-22.515	PASS	
		1000~26500	1000~26500	-49.247	<=-22.515	PASS	
2		Reference	-4.83	-4.83		PASS	
	2412	30~1000	30~1000	-57.835	<=-24.834	PASS	
~		1000~26500	1000~26500	-49.664	<=-24.834	PASS	
(E)	(c	Reference	-3.39	-3.39		PASS	
11G An	it1 2437	30~1000	30~1000	-58.279	<=-23.388	PASS	
		1000~26500	1000~26500	-49.707	<=-23.388	PASS	
		Reference	-9.94	-9.94		PASS	
	2462	30~1000	30~1000	-57.652	<=-29.935	PASS	
		1000~26500	1000~26500	-48.854	<=-29.935	PASS	
		Reference	-4.42	-4.42		PASS	
	2412	30~1000	30~1000	-57.241	<=-24.417	PASS	
6	6	1000~26500	1000~26500	-49.704	<=-24.417	PASS	
		Reference	-3.61	-3.61		PASS	
11N20SISO An	it1 2437	30~1000	30~1000	-57.126	<=-23.607	PASS	
		1000~26500	1000~26500	-49.084	<=-23.607	PASS	
		Reference	-3.64	-3.64		PASS	
	2462	30~1000	30~1000	-57.545	<=-23.644	PASS	
10		1000~26500	1000~26500	-49.592	<=-23.644	PASS	



Hotline: 400-6788-333

















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## Appendix E): Power Spectral Density

#### Test Limit

According to §15.247(e),

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.



### **Test Procedure**

Test method Refer as KDB 558074 D01.

- 1. The EUT RF output connected to the spectrum analyzer by RF cable.
- 2. Setting maximum power transmit of EUT
- 3. SA set RBW = 3kHz, VBW = 30kHz, Span = 1.5 times DTS Bandwidth (6 dB BW), Detector = Peak, Sweep Time = Auto and Trace = Max hold.
- 4. The path loss was compensated to the results for each measurement by SA.
- 5. Mark the maximum level.
- 6. Measure and record the result of power spectral density. in the test report.

#### **Test Setup**







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### **Result Table**

(38)		(25) (25)	
Mode	Channel	Power Spectral Density [dBm]	Verdict
11B	LCH	-18.83	PASS
11B	МСН	-18.15	PASS
11B	НСН	-17.06	PASS
11G	LCH	-21.55	PASS
11G	МСН	-20.09	PASS
11G	НСН	-16.3	PASS
11N20SISO	LCH	-19.33	PASS
11N20SISO	МСН	-18.81	PASS
11N20SISO	НСН	-18.83	PASS

































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### **Test Graph**















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CTI 华测检测 CENTRE TESTING INTERMATIONAL

Report No. :EED32M80106501



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## Appendix F): Antenna Requirement

#### 15.203 requirement:

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, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

#### 15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.



The antenna is PCB Antenna . The best case gain of the antenna is 0 dBi.







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## Appendix G): AC Power Line Conducted Emission

Test Procedure:	Test frequency range :150KHz-	30MHz	$(\mathcal{S})$				
	1) The mains terminal disturbance voltage test was conducted in a shielded room.						
	2) The EUT was connected to Stabilization Network) which power cables of all other under the unit being measured. A power cables to a single LIS	AC power source to the provides a $50\Omega/5$ units of the EUT we ound reference plane multiple socket outle SN provided the rating	hrough a LISN 1 (Li i0μH + 5Ω linear im re connected to a so e in the same way as t strip was used to co g of the LISN was no	ne Impedance pedance. The econd LISN 2, the LISN 1 for onnect multiple t exceeded.			
	3) The tabletop EUT was place reference plane. And for fluc horizontal ground reference	ced upon a non-met oor-standing arrange plane,	allic table 0.8m abo ment, the EUT was	ve the ground placed on the			
	4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2						
	5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.						
Limit:				_			
6.	Erequency range (MHz)	Limit (	dBµV)				
		Quasi-peak	Average				
	0.15-0.5	66 to 56*	56 to 46*				
	0.5-5	56	46	(a)			
S	5-30	60	50	(Gr)			
	<ul> <li>* The limit decreases linearly w to 0.50 MHz.</li> <li>NOTE : The lower limit is applic</li> </ul>	ith the logarithm of the state	ne frequency in the ra	ange 0.15 MHz			

#### **Measurement Data**

An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.









No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1500	49.29	9.87	59.16	66.00	-6.84	peak	
2		0.1590	33.40	9.87	43.27	55.52	-12.25	AVG	
3		0.2038	41.41	9.88	51.29	63.45	-12.16	peak	
4		0.2174	26.58	9.90	36.48	52.92	-16.44	AVG	
5		0.2444	39.21	9.96	49.17	61.95	-12.78	peak	
6		0.2444	24.11	9.96	34.07	51.95	-17.88	AVG	
7		1.3467	29.84	9.82	39.66	56.00	-16.34	peak	
8		1.3467	20.48	9.82	30.30	46.00	-15.70	AVG	
9		2.3054	26.07	9.79	35.86	56.00	-20.14	peak	
10		2.3233	16.43	9.79	26.22	46.00	-19.78	AVG	
11		14.7568	25.78	9.92	35.70	60.00	-24.30	peak	
12		15.0630	17.47	9.93	27.40	50.00	-22.60	AVG	
			13.9.1		1.1	1.2.1			18.2 / 18.2











No	. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin			
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment	
1	*	0.1500	46.46	9.87	56.33	66.00	-9.67	peak		
2	()	0.1544	26.35	9.87	36.22	55.76	-19.54	AVG		
3	8	0.1923	25.92	9.87	35.79	53.94	-18.15	AVG		
4	ă.	0.2017	38.22	9.87	48.09	63.54	-15.45	peak		
5		0.4560	19.28	9.96	29.24	46.77	-17.53	AVG		
6	1	0.4919	26.27	9.95	36.22	56.14	-19.92	peak		
7	정	1.3693	32.92	9.82	42.74	56.00	-13.26	peak		
8	ŝ.	1.4053	25.00	9.81	34.81	46.00	-11.19	AVG		
9	Å.	5.1764	9.57	9.78	19.35	50.00	-30.65	AVG		
10		5.3925	18.71	9.78	28.49	60.00	-31.51	peak		
11		14.4644	10.93	9.91	20.84	50.00	-29.16	AVG		
12	8	16.8270	20.63	9.94	30.57	60.00	-29.43	peak		
			1.000						1.87%	1.57%.21

#### Notes:

- 1. The following Quasi-Peak and Average measurements were performed on the EUT:
- 2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.







# Appendix H): Restricted bands around fundamental frequency (Radiated)

Receiver Setup:	Frequency	Detector	RBW	VBW	Remark				
	30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak				
	4	Peak	1MHz	3MHz	Peak				
	Above 1GHz	Peak	1MHz	10Hz	Average				
Test Procedure:	<ul> <li>Below 1GHz test procedure as below:</li> <li>Test method Refer as KDB 558074 D01</li> <li>a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.</li> <li>b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</li> <li>c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical</li> </ul>								
(CT)	<ul> <li>d. For each suspected emission, the EUT was arranged to its worst case and there the antenna was tuned to heights from 1 meter to 4 meters and the rotatable was turned from 0 degrees to 360 degrees to find the maximum reading.</li> <li>e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li> <li>f. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulatio for lowest and highest channel</li> </ul>								
	<ul> <li>Above 1GHz test procedure as below:</li> <li>g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber change form table 0.8 meter to 1.5 meter( Above 18GHz the distance is 1 meter and table is 1.5 meter).</li> <li>h. Test the EUT in the lowest channel , the Highest channel</li> <li>i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case.</li> <li>j. Repeat above procedures until all frequencies measured was complete.</li> </ul>								
Limit:	Frequency	Limit (dBµV	/m @3m)	Rei	mark				
	30MHz-88MHz	40.0	)	Quasi-pe	eak Value				
	88MHz-216MHz	43.	5 (2	Quasi-pe	eak Value				
(C)	216MHz-960MHz	46.0	) (©	Quasi-pe	eak Value				
	960MHz-1GHz	54.0	)	Quasi-pe	eak Value	k Value			
		54.0	)	Averag	ge Value				
	ADOVE IGHZ	74.0	74.0 Peak Value						
(C)	(G <sup>*</sup> )	6	1	G					





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#### Test plot as follows:





NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-43.12	49.63	52.13	74.00	21.87	Pass	Horizontal
2	2412.9099	32.28	13.36	-43.12	76.33	78.85	74.00	-4.85	Pass	Horizontal
6	•)	6	S)		$(\mathcal{S})$		6	)		(23)









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