# **Radio Test Report**

Report No.:CTA231207002W02

Issued for

Chongqing Huiye lot Technology Co., Ltd.

No.4 Of No.6 Comprehensive Tax Avenue, Shapingba Districh, Chongqing, China

Product Name: Disp

**Display Instrument** 

Brand Name:

нигуа

Model Name: B06U

Series Model(s): B06C

FCC ID: 2A5B3-B06

Test Standards: F

FCC Part15.247

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the ShenZhen CTA Test Services Co., Ltd.



Shenzhen CTA Testing Technology Co., Ltd.

Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China

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## Report No.: CTA231207002W02

## **TEST REPORT**

Applicant's Name:	Chongqing Huiye lot	Technology Co., Ltd.		
Address:	No.4 Of No.6 Compre Chongqing, China	ehensive Tax Avenue,	, Shapingba Districh,	
Manufacturer's Name				
Address:	No.4 Of No.6 Compre Chongqing, China	ehensive Tax Avenue,	, Shapingba Districh,	
Product Description				
Product Name:				
Brand Name:		CTATESTING		
Model Name:	B06U			
Series Model(s):	B06C		CTATESTING	
Test Standards	FCC Part15.247			
Test Procedure:	ANSI C63.10-2013			
This device described above ha test (EUT) is in compliance with identified in the report. The test results presented in thi reproduced, except in full, witho <b>Date of Test</b>	the FCC requirement s report relate only to ut the written approva	s. And it is applicable the object tested. This	only to the tested sample s report shall not be A Test Services Co., Ltd.	
Date of receipt of test item	22 Nov. 20	23		
Date (s) of performance of tests.		23 ~ 29 Nov. 2023		
Date of Issue		23		
Test Result	Pass			
Testing Engi	neer :	Zoey Con	CTA TESTING	
		(Zoey Cao)	GIN CIT	
Technical Ma	anager :	Anny Wen		
Authorized S	STING	(Amy Wen)		
Authorized S	Signatory :	Eric Wang	ESTING	
		(Eric Wang)		
			CTAT	

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Report No.

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TESTING

Issue Date

29 Nov. 2023

Rev.

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Initial Issue

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		CTATES	ring	ra testing
CTA TESTIN	G GA CTATE	STING	CTATESTING	
		CAN CTATES	ring	ATESTING
GM CTATESTIN	G CTATE	STING	CTATESTING	
ATESTING	TING			Cen-

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## 1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards: KDB 558074 D01 15.247 Meas Guidance v05r02.

		FCC Part 15.247,Subpart C			
	Standard Section	Test Item	Judgment	Remark	TE
	15.207	Conducted Emission	PASS	- 6	K CTATE
TESTI	15.247 (a)(2)	6dB Bandwidth	PASS	-	
CTATESTI	15.247 (b)(3)	Output Power	PASS		
	15.209	Radiated Spurious Emission	<sup>3</sup> PASS		
	15.247 (d)	Conducted Spurious & Band Edge Emission	PASS		NG
	15.247 (e)	Power Spectral Density	PASS	CTATE	
	15.205	Restricted bands of operation	PASS		
	Part 15.247(d)/ Part 15.209(a)	Band Edge Emission	PASS		
	15.203	Antenna Requirement	PASS		
CN		at is not applicable in this Test Report. Fording to ANSI C63.10-2013.	CTATESTIN	G	TATE

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## **1.1 TEST FACTORY**

Shenzhen CTA Testing Technology Co., Ltd.

Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an CTA TESTING District, Shenzhen, China

FCC test Firm Registration Number: 517856

IC test Firm Registration Number: 27890

A2LA Certificate No.: 6534.01

IC CAB ID: CN0127

1.2 MEASUREMENT UNCERTAINTY The reported uncertainty of a standard The reported uncertainty of measurement  $y \pm U$ , where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

Range       30~1000MHz       1~18GHz	Measurement Uncertainty 4.06 dB
	4.06 dB
1~18GHz	
	5.14 dB
18-40GHz	5.38 dB
0.15~30MHz	2.14 dB
30MHz~18GHz	0.55 dB
/	0.57 dB
/	1.1%
30~1000MHz	4.10 dB
1~18GHz	4.32 dB
18-40GHz	5.54 dB
	0.15~30MHz 30MHz~18GHz / / 30~1000MHz 1~18GHz

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## 2. GENERAL INFORMATION

## 2.1 GENERAL DESCRIPTION OF THE EUT

		-6511		-
	Product Name	Display Instrument		
	Brand Name		CTATES.	TE
	Model Name	B06U	G	CTATE
	Series Model(s)	B06C	C.	V
CTATESTINC	Model Difference	The functional difference is that B06U communicates with the external controller through the UART interface, while B06C communicates with the external controller through the CAN interface. Choose one of the two.		
		The EUT is a Displa	av Instrument	G
		Operation Frequency:	2402~2480 MHz	
		Modulation Type:	GFSK	
		Radio Technology:	BLE	
	Product Description	Bluetooth Configuration:	LE(Support 1M PHY)	
GAN C		Number Of Channel:	40	
		Antenna Type:	PCB	
		Antenna Gain (dBi)	-4.9 dBi	
		C/r		
	Channel List	Please refer to the	Note 3.	CTATE
	Rating	Input: 12V-60V==24	4	
CTATESTING	Hardware version number	B06_MB_PCB_V1.03		
	Software version number	N/A		
	Connecting I/O Port(s)	Please refer to the	Note 1.	
		. 1		-

Note:

- 1. For a more detailed features description, please refer to the manufacturer's specifications or the User Manual.
- 2. The antenna information refer the manufacturer provide report, applicable only to the tested sample identified in the report. Due to the incorrect antenna information, a series of problems such as the accuracy of the test results will be borne by the customer.

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CTATES

			Fage 9 of	05	Report	NO.: CTA231	207002000
TATES			Chan	nel List			
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequenc y (MHz)
00	2402	10 C	2422	20	2442	30	2462
01	2404	11	2424	21	2444	31	2464
02	2406	12	2426	22	2446	32	2466
03	2408	13	2428	23	2448	33	2468
04	2410	14	2430	24	2450	34	2470
05	2412	15	2432	25	2452	35	2472
000	2414	16	2434	26	2454	36	2474
07	2416	17	2436	27	2456	37	2476
08	2418	18	2438	28	2458	38	2478
09	2420	19	2440	29	2460	39	2480

## 2.2 DESCRIPTION OF THE TEST MODES

For conducted test items and radiated spurious emissions Each of these EUT operation mode(s) or test configuration mode(s) mentioned below was evaluated respectively.

Description	Data/Modulation
TX CH00(2402MHz)	1 Mbps/GFSK
TX CH19(2440MHz)	1 Mbps/GFSK
TX CH39(2480MHz)	1 Mbps/GFSK
	TX CH00(2402MHz) TX CH19(2440MHz)

## Note:

(1) We tested for all available U.S. voltage and frequencies (For 120V, 50/60Hz and 240V, 50/60Hz) for which the device is capable of operation, and the worst case of 120V/ 60Hz is shown in the report.

## For AC Conducted Emission

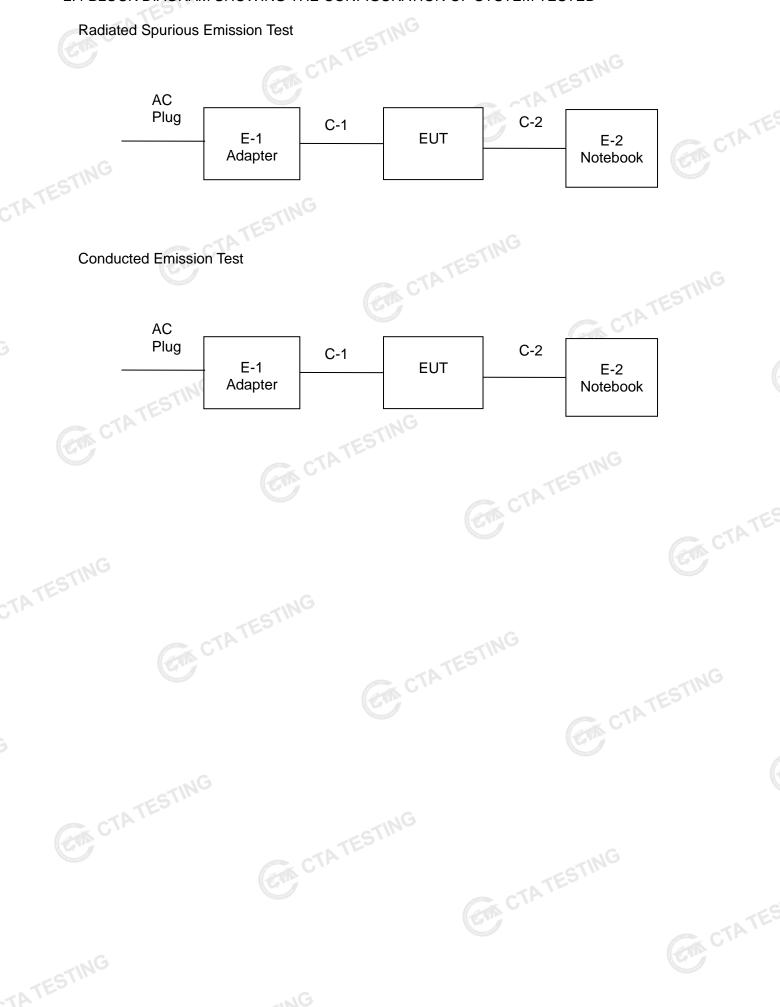
STING	Test Case	
AC Conducted Emission	Mode 4 : Keeping BT TX	
GUL	STING	
3 TEST SOFTWARE AND POWER LEVE	TATES	

## 2.3 TEST SOFTWARE AND POWER LEVEL

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level.

RF Function	Туре	Mode Or Modulation type	ANT Gain(dBi)	Power Class	Software For Testing
BLE	BLE	GFSK	-4.9	3	BK32xx RF Test_V2.1.4
CTATEST					

Page 10 of 63Report No.: CTA231207002W022.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



### Report No.: CTA231207002W02 Page 11 of 63 2.5 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Necessary accessories						
Item	Equipment	Mfr/Brand	Model/Type No.	Length	Note	
				G		
<u> </u>				•	(-CT)	

ING			Support units		C.
Item	Equipment	Mfr/Brand	Model/Type N	No. Length	Note
	Adapter	HUAWEI	HW-050450C	00 N/A	N/A
	Personal computer	DELL	Inspiron 14-34	467 N/A	N/A
	USB Cable	N/A	N/A	150cm	NO STIN
					CTA CTA
		Adapter Personal computer	Adapter HUAWEI   Personal DELL   USB Cable N/A	Item Equipment Mfr/Brand Model/Type N   Adapter HUAWEI HW-050450C   Personal computer DELL Inspiron 14-34   USB Cable N/A N/A	ItemEquipmentMfr/BrandModel/Type No.LengthAdapterHUAWEIHW-050450C00N/APersonal computerDELLInspiron 14-3467N/AUSB CableN/AN/A150cm

Note:

- (1) For detachable type I/O cable should be specified the length in cm in <sup>C</sup>Length<sub>2</sub> column.
- (2) "YES" is means "with core"; "NO" is means "without core". cans

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## 2.6 EQUIPMENTS LIST

Test Equipment	Manufacturer	Model No.	Equipment No.	Calibration Date	Calibration Due Date	
LISN	R&S	ENV216	CTA-308	2023/08/02	2024/08/01	
LISN	R&S	ENV216	CTA-314	2023/08/02	2024/08/01	
EMI Test Receiver	R&S	ESPI	CTA-307	2023/08/02	2024/08/01	
EMI Test Receiver	R&S	ESCI	CTA-306	2023/08/02	2024/08/01	
Spectrum Analyzer	Agilent	N9020A	CTA-301	2023/08/02	2024/08/01	
Spectrum Analyzer	R&S	FSP C	CTA-337	2023/08/02	2024/08/01	
Vector Signal generator	Agilent	N5182A	CTA-305	2023/08/02	2024/08/01	
Analog Signal Generator	R&S	SML03	CTA-304	2023/08/02	2024/08/01	
WIDEBAND RADIO COMMUNICATIO N TESTER	CMW500	R&S	CTA-302	2023/08/02	2024/08/01	
Temperature and humidity meter	Chigo	ZG-7020	CTA-326	2023/08/02	2024/08/01	
Ultra-Broadband Antenna	Schwarzbeck	VULB9163	CTA-310	2023/10/17	2024/10/16	
Horn Antenna	Schwarzbeck	BBHA 9120D	CTA-309	2023/10/13	2024/10/12	
Loop Antenna	Zhinan	ZN30900C	CTA-311	2023/10/17	2024/10/16	
Horn Antenna	Beijing Hangwei Dayang	OBH100400	CTA-336	2021/08/07	2024/08/06	
Amplifier	Schwarzbeck	BBV 9745	CTA-312	2023/08/02	2024/08/01	
Amplifier	Taiwan chengyi	EMC051845B	CTA-313	2023/08/02	2024/08/01	
Directional coupler	NARDA	4226-10	CTA-303	2023/08/02	2024/08/01	
High-Pass Filter	XingBo	XBLBQ-GTA18	CTA-402	2023/08/02	2024/08/01	
High-Pass Filter	S XingBo	XBLBQ-GTA27	CTA-403	2023/08/02	2024/08/01	
Automated filter bank	Tonscend	JS0806-F	CTA-404	2023/08/02	2024/08/01	
Power Sensor	Agilent	U2021XA	CTA-405	2023/08/02	2024/08/01	
Amplifier	Schwarzbeck	BBV9719	CTA-406	2023/08/02	2024/08/01	
	LISN LISN EMI Test Receiver EMI Test Receiver Spectrum Analyzer Spectrum Analyzer Vector Signal generator Vector Signal generator Analog Signal Generator WIDEBAND RADIO COMMUNICATIO N TESTER Temperature and humidity meter Ultra-Broadband ANDIO COMMUNICATIO N TESTER Temperature and humidity meter Ultra-Broadband Antenna Horn Antenna Horn Antenna Horn Antenna Horn Antenna Directional coupler High-Pass Filter High-Pass Filter	LISNR&SLISNR&SEMI Test ReceiverR&SEMI Test ReceiverR&SSpectrum AnalyzerAgilentSpectrum AnalyzerR&SVector Signal generatorR&SVector Signal GeneratorR&SWIDEBAND RADIO COMMUNICATIO N TESTERCMW500WIDEBAND RADIO COMMUNICATIO N TESTERChigoUltra-Broadband AntennaSchwarzbeckHorn AntennaSchwarzbeckHorn AntennaBeijing Hangwei DayangAmplifierSchwarzbeckAmplifierSchwarzbeckMigh-Pass FilterXingBoHigh-Pass Filter bankXingBoAutomated filter bankTonscendPower SensorAgilent	LISNR&SENV216LISNR&SENV216EMI Test ReceiverR&SESPIEMI Test ReceiverR&SESCISpectrum AnalyzerAgilentN9020ASpectrum AnalyzerR&SFSPVector Signal generatorAgilentN5182AMIDEBAND RADIO COMMUNICATIO N TESTERCMW500R&STemperature and humidity meterChigoZG-7020Utra-Broadband AntennaSchwarzbeckBBHA 9120DLoop AntennaSchwarzbeckBBHA 9120DLoop AntennaSchwarzbeckBBHA 9120DAmplifierSchwarzbeckBBHA 9120DLoop AntennaSchwarzbeckBBU 9745Horn AntennaBeijing Hangwei DayangOBH100400Horn AntennaSchwarzbeckBBU 9745High-Pass FilterXingBoXBLBQ-GTA18High-Pass FilterXingBoXBLBQ-GTA18High-Pass FilterTonscendJS0806-FPower SensorAgilentU2021XA	Test EquipmentWanthacturerNoder No.No.LISNR&SENV216CTA-308LISNR&SENV216CTA-314EMI Test ReceiverR&SESPICTA-307EMI Test ReceiverR&SESCICTA-306Spectrum AnalyzerAgilentN9020ACTA-301Spectrum AnalyzerR&SFSPCTA-307Vector Signal generatorAgilentN5182ACTA-305Analog Signal GeneratorR&SSML03CTA-304WIDEBAND RADIO COMMUNICATIO N TESTERCMW500R&SCTA-302Temperature and humidity meterChigoZG-7020CTA-310Ultra-Broadband AntennaSchwarzbeckVULB9163CTA-310Horn AntennaSchwarzbeckBBHA 9120DCTA-309Loop AntennaZhinanZN30900CCTA-312AmplifierSchwarzbeckBBV 9745CTA-312AmplifierTaiwan chengyiEMC051845BCTA-312AmplifierXingBoXBLBQ-GTA18CTA-402High-Pass FilterXingBoXBLBQ-GTA27CTA-404Power SensorAgilentU2021XACTA-404	Test EquipmentManufacturerWoder No.No.DateLISNR&SENV216CTA-3082023/08/02LISNR&SENV216CTA-3142023/08/02EMI Test ReceiverR&SESPICTA-3072023/08/02EMI Test ReceiverR&SESCICTA-3062023/08/02Spectrum AnalyzerAgilentN9020ACTA-3012023/08/02Spectrum AnalyzerAgilentN9020ACTA-3012023/08/02Spectrum AnalyzerR&SFSPCTA-3372023/08/02Vector Signal generatorAgilentN5182ACTA-3042023/08/02WIDEBAND RADD COMWUNICATIO N TESTERCMW500R&SCTA-3022023/08/02WIDEBAND RADD COMWUNICATIO N TESTERChigoZG-7020CTA-3262023/08/02Uitra-Broadband AntennaSchwarzbeckBBHA 9120DCTA-3092023/10/17Horn AntennaSchwarzbeckBBHA 9120DCTA-3142023/08/02Juog AntennaZhinanZN30900CCTA-3122023/08/02AmplifierSchwarzbeckBBV 9745CTA-3122023/08/02AmplifierTaiwan chengyiCMC51845BCTA-3032023/08/02High-Pass FilterXingBoXBLBO-GTA18CTA-4042023/08/02High-Pass FilterXingBoXBLBO-GTA27CTA-4042023/08/02Automated filter bankTonscendJS0806-FCTA-4042023/08/02Automated filter bankAgilentU2021XACTA-	

<sup>o</sup>

CTATESTING

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Test Equipment	Manufacturer	Model No.	Version number	Calibration Date	Calibration Due Date		
EMI Test Software	Tonscend	TS®JS32-RE	5.0.0.2	N/A	N/A		
EMI Test Software	Tonscend	TS®JS32-CE	5.0.0.1	N/A	N/A		
RF Test Software	Tonscend	TS®JS1120-3	3.1.65	N/A	N/A		
RF Test Software	Tonscend	TS®JS1120	3.1.46	N/A	N/A		
	TESTING		. 6				
	CTATESTING		TESTING				

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## **3. EMC EMISSION TEST**

## 3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION LIMITS

The radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table.

	A CONTRACTOR OF			
		Conducted Emiss	sion limit (dBuV)	TE
	FREQUENCY (MHz)	Quasi-peak	Average	K CTA '
	0.15 -0.5	66 - 56 *	56 - 46 *	
TESI	0.50 -5.0	56.00	46.00	
CIP	5.0 -30.0	60.00	50.00	
1	Note:	-1G		-

- (1) The tighter limit applies at the band edges.
- (2) The limit of "\*" marked band means the limitation decreases linearly with the CTATES logarithm of the frequency in the range.

## The following table is the setting of the receiver

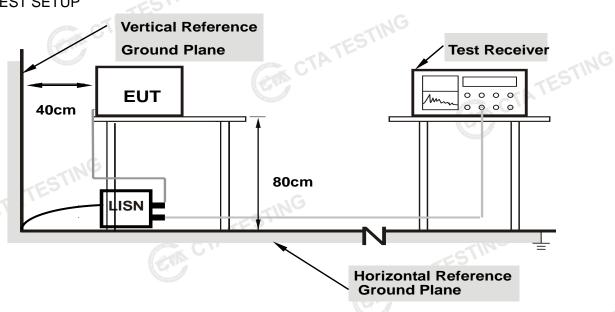
Recei	ver Parameters	Setting	
TESTIN	Attenuation	10 dB	
Sta	art Frequency	0.15 MHz	
Sto	pp Frequency	30 MHz	
IF	- Bandwidth	9 kHz	
		CA C	CTATE

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## 3.2 TEST PROCEDURE

- a. The EUT is 0.8 m from the horizontal ground plane and 0.4 m from the vertical ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments are powered from additional LISN(s). The LISN provides 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- CTATES c I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN is at least 80 cm from the nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item -EUT Test Photos.
- 3.3 TEST SETUP



Note: 1. Support units were connected to second LISN.

2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes support units.

## 3.4 EUT OPERATING CONDITIONS

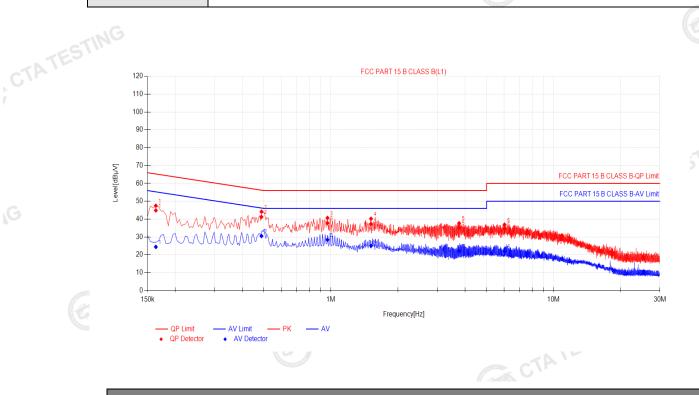
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data. CTATESTING

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## 3.5 TEST RESULTS

Temperature:	26.2(C)	Relative Humidity:	54%RH	
Test Voltage:	AC 120V/60Hz	Phase:	LGTING	
Test Mode:	Mode 4	ATA -	(ED.	
Describe:	B06U	G		TATES
TING			GM	Gv



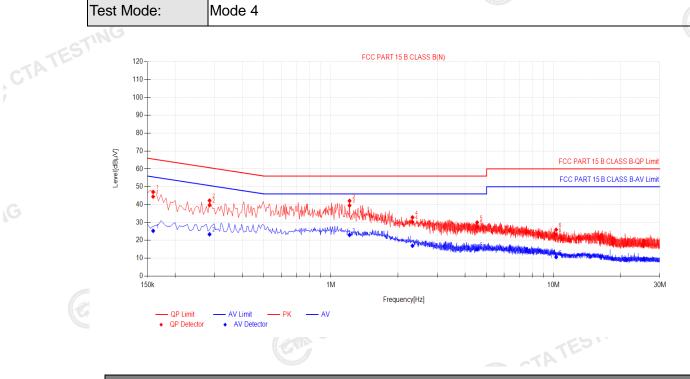
	Final	Data Lis	st										& CTATES
1	NO.	Freq. [MHz]	Factor (dB)	QP Readingid <u>B</u>	QP Value IdByVJ	QP Limit IdBUVJ	QP Margin (dB)	AV Reading IdBuVJ	AV Velue Igieutoj	AV Limit IdiBuMJ	AV Margin [dB]	Verdict	1
	1	0.1635	10.50	34.38	44.88	65.28	20.40	13.94	24.44	55.28	30.84	PASS	]
	2	0.4875	10.50	30.75	41.25	56.21	14.96	20.02	30.52	46.21	15.69	PASS	
	3	0.9645	10.50	27.26	37.76	56.00	18.24	17.95	28.45	46.00	17.55	PASS	
	4	1.5135	10.50	26.79	37.29	56.00	18.71	14.59	25.09	46.00	20.91	PASS	
	5	3.7635	10.50	24.68	35.18	56.00	20.82	11.71	22.21	46.00	23.79	PASS	
	6	6.018	10.50	23.99	34.49	60.00	25.51	11.47	21.97	50.00	28.03	PASS	J G
2).	Facto	QP Value r (dB)=ins argin(dB)	sertion l	oss of Ll	SN (dB)	+ Cable	e loss (c	,				ATESI	1.4
4).	AVMa	rgin(dB) =	= AV Lin	nit (dBµ∖	/) - AV V	/alue (dE	3μV)						

- 2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
- 3). QPMargin(dB) = QP Limit (dB $\mu$ V) QP Value (dB $\mu$ V)
- , = AL 4). AVMargin(dB) = AV Limit (dBµV) - AV Value (dBµV)

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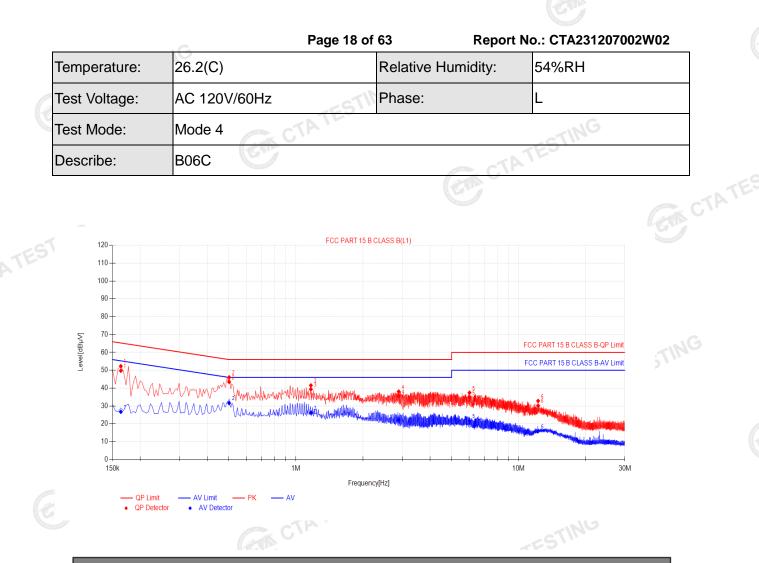
# ATESTING

	NG Pa	ge 17 of 63 R	eport No.: CTA2312070	002W02
CTATEST				
Temperature:	26.2(C)	Relative Humidit	ty: 54%RH	
Test Voltage:	AC 120V/60Hz	Phase:	N	
Test Mode:	Mode 4			GTA CTA



l Data Lis	st										S CTATES
Freq. [MHz]	Factor (dB)	QP Readingid <u>B</u>	QP Value MBUVJ	QP Limit IdBUVJ	QP Margin (dB)	AV Reading IdBu\J	AV Value MBUVJ	AV Limit IdBuVJ	AV Margin (dB)	Verdict	i Cirr
0.159	10.50	33.97	44.47	65.52	21.05	14.81	25.31	55.52	30.21	PASS	]
0.285	10.50	29.19	39.69	60.67	20.98	12.87	23.37	50.67	27.30	PASS	]
1.212	10.50	29.01	39.51	56.00	16.49	12.51	23.01	46.00	22.99	PASS	]
2.3235	10.50	19.75	30.25	56.00	25.75	6.45	16.95	46.00	29.05	PASS	
4.533	10.50	16.97	27.47	56.00	28.53	4.40	14.90	46.00	31.10	PASS	]
10.266	10.50	12.73	23.23	60.00	36.77	0.13	10.63	50.00	39.37	PASS	
or (dB)=in largin(dB)	sertion l = QP Li	oss of Ll imit (dBµ	ISN (dB IV) - QF	) + Cabl Value (	e loss (d dBµV)					ATEST	
	Freq. [MHz] 0.159 0.285 1.212 2.3235 4.533 10.265 QP Value or (dB)=in largin(dB)	[MHz]     [55]       0.159     10.50       0.285     10.50       1.212     10.50       2.3235     10.50       4.533     10.50       10.265     10.50       QP Value (dBµV):       or (dB)=insertion I       largin(dB) = QP L	$\begin{tabular}{ c c c c c } \hline Freq. & Factor & Reading/dB, \\ \hline Reading/dB, $	$\begin{tabular}{ c c c c c c c } \hline Freq. & $$$$ $$$$ $$$$ $$$$$$$$$$$$$$$$$$$$$	$\begin{tabular}{ c c c c c c } \hline $P$ & $$ $$ $$ $$ $$ $$ $$ $$ $$ $$ $$ $$ $	$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$

- 2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
- 3). QPMargin(dB) = QP Limit (dB $\mu$ V) QP Value (dB $\mu$ V)
- 4). AVMargin(dB) = AV Limit (dBµV) AV Value (dBµV) CTA TESTING

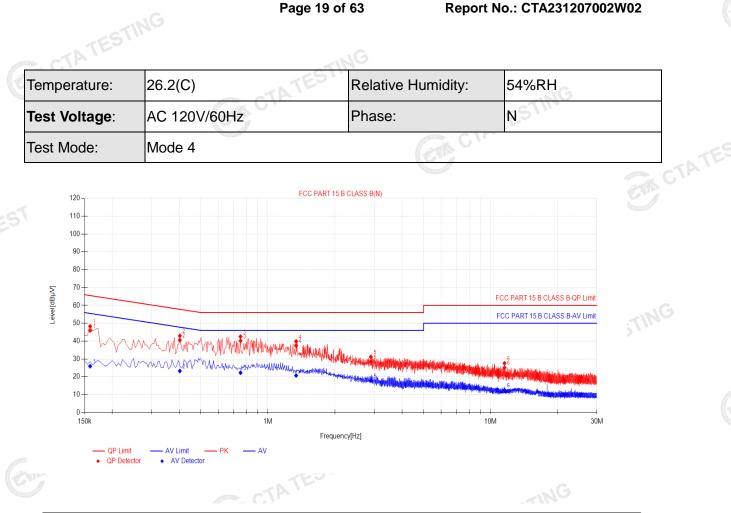


1 0.1 2 0. 3 1.	(MHz) [dB) 1.1635 10.50 0.501 10.50 1.167 10.50 2.395 10.50	800 39.24 32.97 28.87	49.74 43.47	65.28	(dB) 15.54	16.24	10884VJ 26.74	KIBUWI	(dB)		& CTATE
2 0. 3 1.	0.501 10.50	32.97			15.54	16.24	29.74				
3 1.	1.167 10.50		43.47	56.00			400.14	55.28	28.54	PASS	5
		28.87		36.00	12.53	21.14	31.64	46.00	14.36	PASS	
4 2	40.00	_	39.37	56.00	16.63	15.73	26.23	45.00	19.77	PASS	
	2.895 10.50	25.13	35.63	56.00	20.37	11.65	22.15	46.00	23.85	PASS	
5 6.	6.018 10.50	24.35	34.85	60.00	25.15	11.13	21.63	50.00	28.37	PASS	
6 12	2.2325 10.50	19.66	30.16	60.00	29.84	5.46	15.96	50.00	34.04	PASS	
Factor (dE QPMargin	Value (dBµV B)=insertion n(dB) = QP n(dB) = AV L	loss of Ll Limit (dBµ	SN (dB) V) - QP	+ Cable Value (d	e loss (d dBµV)					ATEST	

- 2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
- 3). QPMargin(dB) = QP Limit (dB $\mu$ V) QP Value (dB $\mu$ V)
- 4). AVMargin(dB) = AV Limit (dB $\mu$ V) AV Value (dB $\mu$ V)

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Final	Data Lis	;t										
NO.	Freq. [MHz]	Factor (dB)	QP Readingid <u>B</u>	QP Value MBUVJ	QP Limit IdBuVJ	QP Margin (dB)	AV Reading IdBuVJ	AV Value IgiBuVJ	AV Limit IdBuVJ	AV Margin (dB)	Verdict	CTATES
1	0.159	10.50	35.44	45.94	65.52	19.58	15.45	25.95	55.52	29.57	PASS	
2	0.402	10.50	30.07	40.57	57.81	17.24	12.77	23.27	47.81	24.54	PASS	
3	0.753	10.50	29.65	40.15	56.00	15.85	11.77	22.27	46.00	23.73	PASS	
4	1.338	10.50	26.98	37.48	56.00	18.52	10.24	20.74	46.00	25.26	PASS	
5	2.8995	10.50	17.99	28.49	56.00	27.51	7.44	17.94	46.00	28.06	PASS	]
6	11.5395	10.50	14.63	25.13	60.00	34.87	2.10	12.60	50.00	37.40	PASS	]

Note:1).QP Value (dBµV)= QP Reading (dBµV)+ Factor (dB)

2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)

3). QPMargin(dB) = QP Limit (dB $\mu$ V) - QP Value (dB $\mu$ V)

4). AVMargin(dB) = AV Limit (dB $\mu$ V) - AV Value (dB $\mu$ V)

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## 4. RADIATED EMISSION MEASUREMENT

## **4.1 RADIATED EMISSION LIMITS**

In any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the Restricted band specified on Part15.205(a)&209(a) limit in the table and according to ANSI C63.10-2013 below has to be followed.

## LIMITS OF RADIATED EMISSION MEASUREMENT (Frequency Range 9kHz-1000MHz)

Field Strength	Measurement Distance	
(micorvolts/meter)	(meters)	
2400/F(KHz)	300	
24000/F(KHz)	30	
30	30	
100	3	
150	3	
200	3 155	
500	3	
	(micorvolts/meter) 2400/F(KHz) 24000/F(KHz) 30 100 150 200	(micorvolts/meter)(meters)2400/F(KHz)30024000/F(KHz)303030100315032003

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	(dBuV/m) (at 3M)		
	PEAK	AVERAGE	
Above 1000	TES 74	54	
Notoo		.163	

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

LIMIT	S OF RESTRIC	TED FREQUENCY BANI	DS	
FREQU	JENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (GHz)
0.0	90-0.110	16.42-16.423	399.9-410	4.5-5.15
0.4	95-0.505	16.69475-16.69525	608-614	5.35-5.46
2.17	35-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.1	25-4.128	25.5-25.67	1300-1427	8.025-8.5
4.177	25-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.207	25-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.2	15-6.218	74.8-75.2	1660-1710	10.6-12.7
6.267	75-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.311	75-6.31225	123-138	2200-2300	14.47-14.5
8.2	91-8.294	149.9-150.05	2310-2390	15.35-16.2
8.3	62-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.376	25-8.38675	156.7-156.9	3 2690-2900	22.01-23.12
8.414	25-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.	29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.519	75-12.52025	240-285	3345.8-3358	36.43-36.5
12.576	75-12.57725	322-335.4	3600-4400	Above 38.6
13	.36-13.41		Cirk Cirk	
		•	C.	(A)

For Radiated Emission CTA TESTING

		TESI
Page 21 of 63	Report No.: CTA2312070	02W02
	Setting	
-ING	Auto	
TESIN	Peak/QP/AV	
9 KI	Hz/150KHz(Peak/QP/AV)	
150	KHz/30MHz(Peak/QP/AV)	
200H;	z (From 9kHz to 0.15MHz)/	-07
9KHz	(From 0.15MHz to 30MHz);	CTA CTA
200H;	z (From 9kHz to 0.15MHz)/	Contraction
9KHz	(From 0.15MHz to 30MHz)	
	Setting	
	9 Ki 150H 200H 9KHz 200H	Setting     Auto     Peak/QP/AV     9 KHz/150KHz(Peak/QP/AV)     150KHz/30MHz(Peak/QP/AV)     200Hz (From 9kHz to 0.15MHz)/     9KHz (From 0.15MHz to 30MHz);     200Hz (From 9kHz to 0.15MHz)/     9KHz (From 0.15MHz to 30MHz);     200Hz (From 9kHz to 0.15MHz)/     9KHz (From 0.15MHz to 30MHz);

Spectrum Parameter	Setting	
Attenuation	Auto	
Detector	Peak/QP	
Start Frequency	30 MHz(Peak/QP)	
Stop Frequency	1000 MHz (Peak/QP)	
RB / VB (emission in restricted band)	120 KHz / 300 KHz	
TEST		

	Spectrum Parameter	Setting	
	Attenuation	Auto	
	Detector	Peak/AV	
	Start Frequency	1000 MHz(Peak/AV)	
	Stop Frequency	10th carrier hamonic(Peak/AV)	TATE
	RB / VB (emission in restricted	1 MHz / 3 MHz(Peak)	51
-51	band)	1 MHz/1/T MHz(AVG)	
Fo	r Restricted band		
Deter	Spectrum Parameter	Setting	
	Detector	Peak/AV	
	Chart/Stop Exeguation	Lower Band Edge: 2310 to 2410 MHz	
	Start/Stop Frequency	Upper Band Edge: 2475 to 2500 MHz	
		1 MHz / 3 MHz(Peak)	
	RB / VB		

1 MHz/1/T MHz(AVG)

GA CTATESTING