

# FCC Part 15B TEST REPORT

S T S

A

B

Report No.: STS2002026E01

Issued for

**DTEN** Inc

97 E. Brokaw Road, Suite180, San Jose, CA 95112

Product Name:	DTEN ON
Brand Name:	DTEN
Model Name:	DBA0455
Series Model:	N/A
FCC ID:	2AQ7Q-DBA0455
Test Standard:	FCC 47 CFR Part 15: Subpart B

Any reproduction of this document must be done in full. No single part of this document may be reproduced wit permission from STS, All Test Data Presented in this report is only applicable to presented Test sample. AL

Shenzhen STS Test Services Co., Ltd. A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China TEL: +86-755 3688 6288 FAX: +86-755 3688 6277 E-mail:sts@stsapp.com



Page 2 of 27

Report No.: STS2002026E01

#### **TEST RESULT CERTIFICATION**

Applicant's Name:	DTEN Inc
Address	97 E. Brokaw Road, Suite180, San Jose, CA 95112
Manufacture's Name	DTEN Inc
Address	97 E. Brokaw Road, Suite180, San Jose, CA 95112
Product Description	
Product Name:	DTEN ON
Brand Name:	DTEN
Model Name	DBA0455
Series Model	N/A
Standards	FCC 47 CFR Part 15: Subpart B
Test Procedure::	ANSI C63.4-2014

This device described above has been tested by STS, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

This report shall not be reproduced except in full, without the written approval of STS, this document may be altered or revised by STS, personal only, and shall be noted in the revision of the document.

Date of Issue ...... 07 Apr. 2020

Test Result..... Pass

Mickey Der Compiled by : (Mickey Deng) **Technical Manager** (Chopin Xiao) Authorized Signatory :

(Vita Li)

Shenzhen STS Test Services Co., Ltd.

A 1/F, Building B, Zhuoke Science Park. No. 190 Chongeing Road, HepingShegu, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China Tel: +86-765 3686 6288 Fax:+86-755 3688 6277 Http://www.steapp.com E-mail: sts@steapp.com

Report No.: STS2002026E01



Page 3 of 27

# **Table of Contents**

1. SUMMARY OF THE TEST RESULTS	5
1.1 TEST FACTORY	5
1.2 MEASUREMENT UNCERTAINTY	5
2. GENERAL INFORMATION	6
2.1 GENERAL DESCRIPTION OF THE EUT	6
2.2 DESCRIPTION OF THE TEST MODES	8
2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF THE SYSTEM	TESTED8
2.4 DESCRIPTION OF THE SUPPORT UNITS	9
2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS	10
3. EMC EMISSION TEST	11
3.1 CONDUCTED EMISSION MEASUREMENT	11
3.2 RADIATED EMISSION MEASUREMENT	15
4. PHOTOS OF THE TEST SETUP	26

A 1/F, Building B, Zhucke Science Park. No. 190 Chongoing Road, HepingShaqu, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China Tel: +86-755 3686 6288 Fax +96-755 3688 6277 Http://www.stsapp.com E-mail: sts@stsapp.com



Page 4 of 27

Report No.: STS2002026E01

# **Revision History**

Rev.	Issue Date	Report No.	Effect Page	Contents
00	07 Apr. 2020	STS2002026E01	ALL	Initial Issue



Shenzhen STS Test Services Co., Ltd.

1

A 1/F, Building B, Zhuoke Science Park. No. 190 Chongoing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Gusing Dong, Chine Tel: +88-765 3686 6288 Fax.+86-755 3688 6277 Http://www.stsapp.com E-mail: sts@stsapp.com



# 1. SUMMARY OF THE TEST RESULTS

Test procedures according to the technical standards:

EMISSION					
Standard Item Result Remarks					
	Conducted Emission	PASS	Meet Class B limit		
FCC 47 CFR Part 15: Subpart B	Radiated Emission	PASS	Meet Class B limit		

NOTE:

(1) "N/A" denotes test is not applicable in this Test Report

# 1.1 TEST FACTORY

Company Name:	SHENZHEN STS TEST SERVICES CO.,LTD.	
Address:	A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China	
Telephone:	+86-755 3688 6288	
Fax:	+86-755 3688 6277	
	FCC test Firm Registration Number: 625569	
Registration No.:	Registration No.: IC test Firm Registration Number: 12108A	
	A2LA Certificate No.: 4338.01	

## **1.2 MEASUREMENT UNCERTAINTY**

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 %  $^{\circ}$ 

No.	Item	Uncertainty
1	Conducted Emission (9KHz-150KHz)	±3.37dB
2	Conducted Emission (150KHz-30MHz)	±3.83dB
3	All emissions,radiated(<1G) 30MHz-1000MHz	±5.6dB
4	All emissions,radiated(>1G) 1GHz-6GHz	±5.5dB
5	All emissions,radiated(>1G) 6GHz-18GHz	±5.8dB



Page 6 of 27

Report No.: STS2002026E01

# 2. GENERAL INFORMATION

# 2.1 GENERAL DESCRIPTION OF THE EUT

Product Name	DTEN ON	DTEN ON					
Brand Name	DTEN	DTEN					
Model Name	DBA0455	DBA0455					
Series Model	N/A						
Product Differences	N/A						
	The EUT is	s a DTEN ON					
Product Description	combination processing telecommu	ITE equipment having a primary function of either (or a combination of) entry, storage, display, retrieval, transmission, processing, switching, or control of data and/or telecommunication messages and which may be equipped with one or more ports typically for information transfer.					
		2.4GHz IEEE 802 11b/g/n(HT20):2412~2462MHz					
		2.4GHz IEEE 802 11n(HT40):2422~2452MHz					
	WLAN	5GHz IEEE 802.11a/n/ac(20MHz): 5180~5825MHz					
Frequency Bands		5GHz IEEE 802.11n/ac(40MHz): 5190~5795MHz					
		5GHz IEEE 802.11ac(80MHz): 5210~5775MHz					
	Bluetooth	2402~ 2480MHz					
		2.4GHz: 802.11b(DSSS):CCK,DQPSK,DBPSK					
		802.11g(OFDM):BPSK,QPSK,16-QAM,64-QAM					
		802.11n(OFDM):BPSK,QPSK,16-QAM,64-QAM					
		5GHz: 802.11a(OFDM):					
	WLAN	BPSK,QPSK,16-QAM,64-QAM					
		802.11n(OFDM):					
Modulation Mode		BPSK,QPSK,16-QAM,64-QAM					
		802.11ac(OFDM):					
		BPSK,QPSK,16-QAM,64-QAM,256-QAM					
		BT(1Mbps): GFSK					
	Bluetooth	BT EDR(2Mbps): π/4-DQPSK					
		BT EDR(3Mbps): 8DPSK					
	BLE	GFSK					

Shenzhen STS Test Services Co., Ltd.

A 1/F, Building B, Zhucke Science Park, No. 190 Chongoing Road, HepingShegu, Fuyong Sub-Diatrict, Bao'an Diatrict, Shenzhen, Guang Dong, China Tel: +86-755 3688 6289 Fax:+86-755 3688 6277 Http://www.stsapp.com E-mail: sts@stsapp.com



Page 7 of 27

Report No.: STS2002026E01

	Input: Outpu	ut:	240V~ 5			ecification ( th	压输出现格)
Power Rating		Output Channel 输出通道	Output Rated Voltage Mitt 하는 면15	Voltage Regulation 电压调整中	Min. current 版小电流	Rated current 網定也流	Peak current 邮告信电话
		STB	+5V	±5%	0.03A	1.0A	2.0A
		V5	+8V	±5%	U.1A	2.6A	3.04
		V12	*12V	±10%	0.1A	3.0A	4.0A
		V19	+19V	±10%	0.1A	5.0A	6.5A
		V24	+24V	±10%	0.1A	1.04	1.2A
Hardware Version Number	N/A						
Software Version Number	1.0.0	.8					

Note: For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.



Shenzhen STS Test Services Co., Ltd.

A 1/F, Building B, Zhuoke Science Park. No. 190 Chongoing Road, HepingShequ, Fuyong Sub-Diatrici, Bao'an Diatrici, Shenzhen, Guang Dong, Chine Tel: +86-755 3686 6288 Fax:+86-755 3686 6277 Http://www.stsapp.com E-mail: sts@stsapp.com



## 2.2 DESCRIPTION OF THE TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	HDMI + BT Link + WLAN Link(2.4G) + LAN + USB Play + Camera
Mode 2	HDMI + BT Link + WLAN Link(5G) + LAN + USB Play + Camera

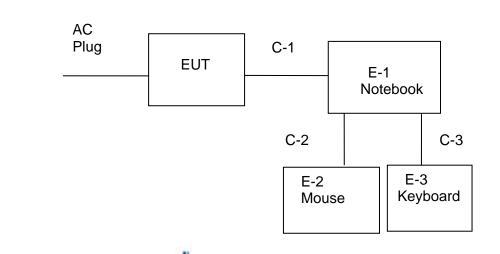
For Conducted Test		
Final Test Mode	Description	
Mode 1	HDMI + BT Link + WLAN Link + LAN + USB Play + Camera	

	For Radiated Test
Final Test Mode	Description
Mode 1	HDMI + BT Link + WLAN Link + LAN + USB Play + Camera

## Note:

- 1. For conducted emission test, test mode 1 was the worst case and only this mode was presented in this report.
- 2. For radiated emission test, test mode 1 was the worst case and only this mode was presented in this report.
- 3. We have be tested for all avaiable U.S. voltage and frequencies (For 120V, 50/60Hz) for which the device is capable of operation.

# 2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF THE SYSTEM TESTED



Shenzhen STS Test Services Co., Ltd.

A 1/F, Beilding B, Zhuoke Science Park, No. 190 Chongoing Road, HepingShaqu, Fuyong Sub-District,Beo'an District, Shenzhen, Guang Dong, Chine Tel: +88-755 3688 6288 Fax:+98-755 3688 6277 Http://www.stsapp.com E-mail: sts@stsapp.com Page 9 of 27



## 2.4 DESCRIPTION OF THE 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.

### Accessories equipment

Item	·	Equipment	Mfr/Brand	Model/Type No.
N/A		N/A	N/A	N/A

## Auxiliary equipment

Item	Equipment	Mfr/Brand	Model/Type No.
E-1	Notebook	LENOVO	IdeaPad S410
E-2	Keyboard	Acer	SK-9624
E-3	Mouse	HP	MODGUO

## Cable

Item	Туре	Shielded Type	Ferrite Core	Length
C-1	HDMI Cable	Shielded	NO	130cm
C-2	USB Cable (FTP)	Shielded	NO	180cm
C-3	USB Cable (FTP)	Shielded	NO	180cm

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in  $\[$  Length  $\]$  column.
- (3) "YES" is means "shielded" "with core"; "NO" is means "unshielded" "without core".
- (4) PC is the FCC DOC is approved.

A 1/F, Building B, Zhuoke Science Park. No.190 Chongqing Roed, HepingShegu, Fuyong Sub-Diatrict, Beo'an Diatrict, Shenzhen, Guang Dong, Chine Tel: +86-755 3686 6288 Fax:+86-755 3686 6277 Http://www.stsapp.com E-mail:sts@stsapp.com



# 2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

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.

# Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
EMI Test Receiver	R&S	ESCI	101427	2019.10.09	2020.10.08
Bi-log Antenna	TESEQ	CBL6111D	34678	2017.11.02	2020.11.01
Horn Antenna	SCHWARZB ECK	BBHA 9120D	9120D-1343	2018.10.19	2021.10.18
Pre-amplifier(1G-26. 5G)	Agilent	8449B	3008A02383	2019.10.11	2020.10.10
Pre-amplifier(0.1M-3 GHz)	EM	EM330	060665	2019.10.09	2020.10.08
Spectrum Analyzer	Agilent	N9020A	MY49100060	2019.10.09	2020.10.08
RE Cable (9K-1G)	N/A	R01	N/A	2019.10.12	2020.10.11
RE Cable (1G-26G)	N/A	R02	N/A	2019.10.12	2020.10.11
Temperature & Humidity	Mieo	HH660	N/A	2019.10.12	2020.10.11
Horn Antenna(18-40GHz)	A-INFO	LB-180400-KF	J211020657	2018.03.11	2021.03.10
Testing Software EZ-EMC(Ver.STSLAB-03A1 RE)					

## **Conduction Test equipment**

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until	
EMI Test Receiver	R&S	ESCI	101427	2019.10.09	2020.10.08	
LISN	R&S	ENV216	101242	2019.10.09	2020.10.08	
LISN	ETS	3810/2NM	00023625	2019.10.09	2020.10.08	
Absorbing Clamp	R&S	MDS-21	100668	2019.10.09	2020.10.08	
CE Cable	N/A	N/A C01 N/A 2019.10.12 2020.10.11				
Temperature & Humidity	Mieo HH660 N/A 2019.10.12 2020.10.11					
Testing Software	EZ-EMC(Ver.STSLAB-03A1 CE)					

A 1/F, Building B, Zhucke Science Park. No. 190 Chongqing Road, HepingShequ, Fuyong Sub-Diatrict, Beo'an Diatrict, Shenzhen, Guang Dong, Chine Tel: +88-755 3688 6288 Fax:+86-755 3688 6277 Http://www.stsapp.com E-mail: sts@stsapp.com Page 11 of 27



## Report No.: STS2002026E01

# 3. EMC EMISSION TEST

# 3.1 CONDUCTED EMISSION MEASUREMENT

# 3.1.1 POWER LINE CONDUCTED EMISSION Limits

	Conducted Emission Limits (dBuV)					
FREQUENCY (MHz)	Clas	ss A	Class B			
	Quasi-peak	Average	Quasi-peak	Average		
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *		
0.50 -5.0	73.00	60.00	56.00	46.00		
5.0 -30.0	73.00	60.00	60.00	50.00		

Note:

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

## The following table is the setting of the receiver

Receiver Parameters	Setting	
Attenuation	10 dB	
Start Frequency	0.15 MHz	
Stop Frequency	30 MHz	
IF Bandwidth	9 kHz	

Page 12 of 27



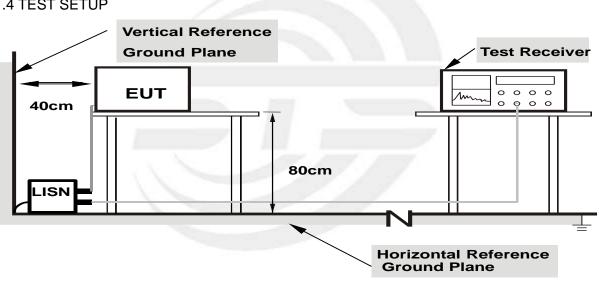
## 3.1.2 TEST PROCEDURE

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 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.
- 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. For the actual test configuration, please refer to the related Item –EUT Test Photos.

## **3.1.3 DEVIATION FROM TEST STANDARD**

No deviation

## 3.1.4 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 from other units and other metal planes

## 3.1.5 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.



# 3.1.6 TEST RESULTS

Temperature:	<b>21.4</b> ℃	Relative Humidity:	57%
Phase:	L	Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz	Test Date:	2020.03.16

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1900	29.10	20.54	49.64	64.04	-14.40	QP
2	0.1900	20.38	20.54	40.92	54.04	-13.12	AVG
3	0.4220	20.05	20.21	40.26	57.41	-17.15	QP
4	0.4220	12.87	20.21	33.08	47.41	-14.33	AVG
5	0.9340	20.91	20.05	40.96	56.00	-15.04	QP
6	0.9340	13.38	20.05	33.43	46.00	-12.57	AVG
7	1.6140	22.18	19.73	41.91	56.00	-14.09	QP
8	1.6140	10.77	19.73	30.50	46.00	-15.50	AVG
9	4.3940	22.23	20.34	42.57	56.00	-13.43	QP
10	4.3940	6.58	20.34	26.92	46.00	-19.08	AVG
11	9.5980	30.40	20.53	50.93	60.00	-9.07	QP
12	9.5980	17.58	20.53	38.11	50.00	-11.89	AVG

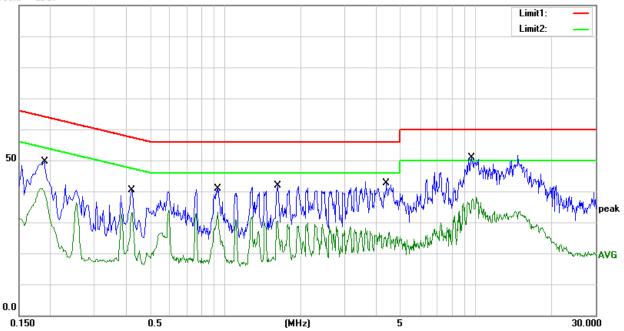
#### Remark:

1. All readings are Quasi-Peak and Average values

2. Margin = Result (Result = Reading + Factor)–Limit

3. Factor = Insertion loss + Cable loss

100.0 dBuV



Shenzhen STS Test Services Co., Ltd.

A 1/F, Building B, Zhuoke Science Park. No.190 Chongeing Road, HepingShegu, Fuyong Sub-Diatrict, Bao'an Diatrict, Shenzhen, Guang Dong, China Tel: +88-755 3688 6288 Fax +98-755 3688 6277 Http://www.stsapp.com E-mail: sts@stsapp.com



# Page 14 of 27 Report No.: STS2002026E01

Temperature:	<b>21.4</b> ℃	Relative Humidity:	57%
Phase:	Ν	Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz	Test Date:	2020.03.16

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1820	26.98	20.54	47.52	64.39	-16.87	QP
2	0.1820	19.60	20.54	40.14	54.39	-14.25	AVG
3	0.4220	18.43	20.21	38.64	57.41	-18.77	QP
4	0.4220	11.45	20.21	31.66	47.41	-15.75	AVG
5	0.9460	20.40	20.04	40.44	56.00	-15.56	QP
6	0.9460	11.28	20.04	31.32	46.00	-14.68	AVG
7	3.6300	22.85	20.25	43.10	56.00	-12.90	QP
8	3.6300	6.80	20.25	27.05	46.00	-18.95	AVG
9	9.5980	31.89	20.53	52.42	60.00	-7.58	QP
10	9.5980	16.41	20.53	36.94	50.00	-13.06	AVG
11	15.1340	29.10	20.70	49.80	60.00	-10.20	QP
12	15.1340	11.80	20.70	32.50	50.00	-17.50	AVG

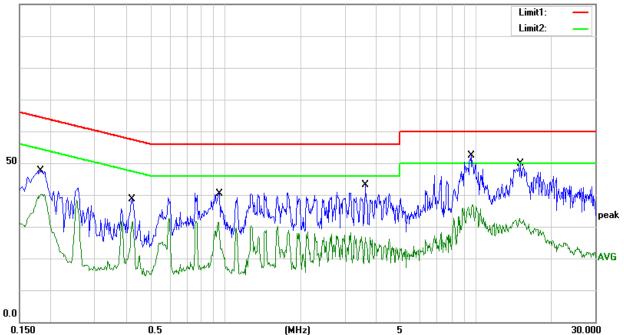
Remark:

1. All readings are Quasi-Peak and Average values

2. Margin = Result (Result = Reading + Factor)-Limit

3. Factor = Insertion loss + Cable loss

100.0 dBuV



Note: The test voltage is 100-240V, both of which have assessment tests, and the worst test data is in the report.

A 1/F, Building B, Zhucke Science Park. No. 190 Chongoing Road, HepingShegu, Fuyong Sub-Diatrict, Beo'an Diatrict, Shenzhen, Guang Dong, Chine Tel: +86-755 3686 6288 Fax:+86-755 3688 6277 Http://www.stsapp.com E-mail: sts@stsapp.com Page 15 of 27



## 3.2 RADIATED EMISSION MEASUREMENT

#### 3.2.1 Radiated Emission Limits

Class A: ITE that meets the conditions for Class A operation defined in Section 2.2 shall comply with the Class A radiated limits set out in Table 4 determined at a distance of 3 metres.

#### Class A Radiated Limits Below 1 GHz:

Frequencies	Class A (dBµV/m)	
(MHz)	Quasi-peak	
30~88	49.5	
88~216	53.9	
216~960	56.9	
960~1000	60	

Class B: ITE that does not meet the conditions for Class A operation shall comply with the Class B radiated limits set out in Table 5 determined at a distance of 3 metres.

#### Class B Radiated Limits Below 1 GHz:

Frequencies	Class B (dBµV/m)	
(MHz)	Quasi-peak	
30~88	40	
88~216	43.5	
216~960	46	
960~1000	54	

#### In case the emission 109(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

A 1/F, Building B, Zhuoke Science Park, No.190 Chongoing Road, HepingShegu, Fayong Sub-District, Bao'an District, Shenzhen, Guang Dong, Chine Tel: +86-755 3688 6288 Fax:+86-755 3688 6277 Http://www.stsapp.com E-mail: sts@stsapp.com



Page 16 of 27

# LIMITS OF RADIATED EMISSION MEASUREMENT

FREQUENCY (MHz)	Class A (dBuV/m) (at 3M)		Class B (dBuV/m) (at 3M)		
FREQUENCE (MILZ)	PEAK	AVERAGE	PEAK	AVERAGE	
Above 1000	80 60		74	54	

Note:

- (1) The limit for radiated test was performed in the following: FCC PART 15B.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m) = 20log Emission level (uV/m).

# FREQUENCY RANGE OF THE RADIATED MEASUREMENT (For unintentional radiators)

Highest frequency generated or Upper			
frequency of measurement used in the device	Range (MHz)		
or on which the device operates or tunes			
(MHz)			
Below 1.705	30		
1.705 – 108	1000		
108 – 500	2000		
500 – 1000	5000		
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower		

Shenzhen STS Test Services Co., Ltd.

A 1/F, Building B, Zhucke Science Park, No.190 Chongeing Roed, HepingShegu, Fuyong Sub-District, Beo'an District, Shenzhen, Guang Dong, Chine Tel: +88-755 3688 6288 Fax:+86-755 3688 6277 Http://www.stsapp.com E-mail: sts@stsapp.com



Page 17 of 27 Report No.: STS2002026E01

Spectrum Parameter	Setting	
Attenuation	Auto	
Detector	Peak	
Start Frequency	1000 MHz(Peak/AV)	
Stop Frequency	5th harmonic (Peak/AV)	
RB / VB (emission in restricted	30MHz to 1000MHz: 100 KHz / 300 KHz	
band)	Above 1000MHz: 1 MHz / 3 MHz	

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	30MHz to 1000MHz: 100 KHz / 300 KHz
	Above 1000MHz: 1 MHz / 3 MHz

#### 3.2.2 TEST PROCEDURE

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. EUT as the center to the edge of the auxiliary device, the distance from the maximum edge to the center of the antenna is 3 meters.
- c. The height of antenna is varied from 1 meter to 4 meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1GHz.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note: Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

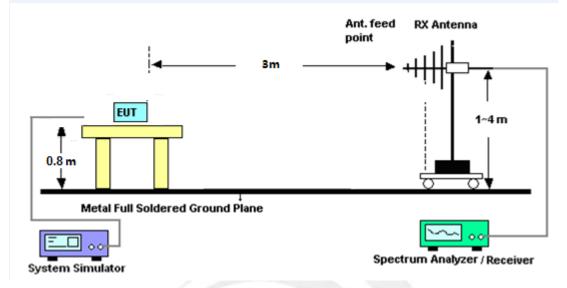
## 3.2.3 DEVIATION FROM TEST STANDARD

No deviation

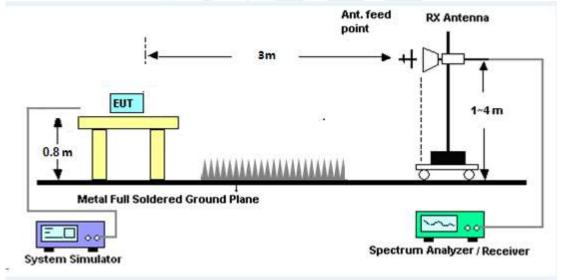


# 3.2.4 TEST SETUP

#### (A) Radiated Emission Test-Up Frequency Below 1 GHz



(B) Radiated Emission Test-Up Frequency Above 1GHz



## 3.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the following during the testing.



# 3.2.6 TEST RESULTS

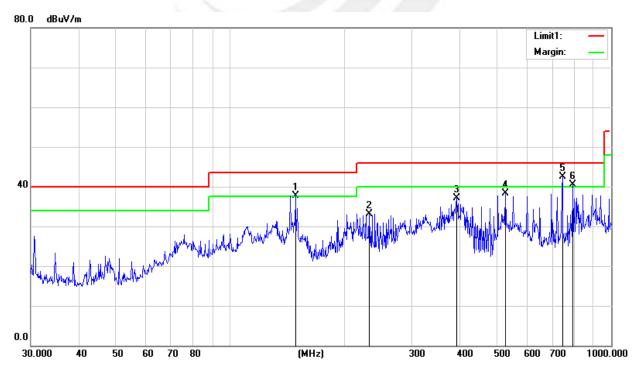
## 30MHz -1000MHz

Temperature:	<b>22.2</b> ℃	Relative Humidity:	43%
Phase:	Horizontal	Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz	Test Date:	2020.01.16

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	148.3610	54.35	-16.66	37.69	43.50	-5.81	QP
2	231.7178	54.67	-21.61	33.06	46.00	-12.94	QP
3	393.4723	51.81	-14.65	37.16	46.00	-8.84	QP
4	528.2458	50.45	-12.16	38.29	46.00	-7.71	QP
5	744.8661	52.95	-10.38	42.57	46.00	-3.43	QP
6	793.3960	51.65	-11.09	40.56	46.00	-5.44	QP

## Remark:

- 1. All readings are Quasi-Peak
- 2. Margin = Result (Result = Reading + Factor)-Limit
- 3. Factor= Cable Loss +Antenna Factor-Amplifier Gain



Shenzhen STS Test Services Co., Ltd.

A 1/F, Building B, Zhuoke Science Park. No.190 Chongqing Road, HepingShaqu, Fuyong Sub-District, Bac/an District, Shenzhen, Guang Dong, China Tel: +88-755 3688 6288 Fax:+86-755 3688 6277 Http://www.stsapp.com E-mail: sts@stsapp.com



# Page 20 of 27 Report No.: STS2002026E01

Temperature:	<b>22.2℃</b>	Relative Humidity:	43%
Phase:	Vertical	Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz	Test Date:	2020.01.16

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.6376	46.99	-11.53	35.46	40.00	-4.54	QP
2	111.3468	55.36	-19.82	35.54	43.50	-7.96	QP
3	144.0095	54.14	-17.17	36.97	43.50	-6.53	QP
4	414.7223	51.91	-14.00	37.91	46.00	-8.09	QP
5	480.5276	54.72	-14.79	39.93	46.00	-6.07	QP
6	744.8660	47.91	-10.38	37.53	46.00	-8.47	QP

## Remark:

- 1. All readings are Quasi-Peak
- 2. Margin = Result (Result = Reading + Factor)-Limit
- 3. Factor= Cable Loss +Antenna Factor-Amplifier Gain

#### 80.0 dBuV/m



A 1/F, Building B, Zhuoke Science Park. No. 190 Chongoing Road, HepingShaqu, Fuyong Sub-Diatrict,Bao'an Diatrict, Shenzhen, Guang Dong, Chine Tel: +88-755 3688 6288 Fax +98-755 3688 6277 Http://www.stsapp.com E-mail:sts@staapp.com



(1 GHz to 18GHz.)

Temperature:	<b>25.3</b> ℃	Relative Humidity:	53%
Phase:	Horizontal	Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz	Test Date:	2020.01.16

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	1000.000	65.82	-4.65	61.17	74.00	-12.83	Peak
2	1000.000	46.29	-4.65	41.64	54.00	-12.36	AVG
3	1595.000	60.85	-2.43	58.42	74.00	-15.58	Peak
4	1595.000	41.59	-2.43	39.16	54.00	-14.84	AVG
5	2972.000	62.76	2.11	64.87	74.00	-9.13	Peak
6	2972.000	47.51	2.11	49.62	54.00	-4.38	AVG
7	6457.000	44.98	9.73	54.71	74.00	-19.29	Peak
8	6457.000	32.15	9.73	41.88	54.00	-12.12	AVG
9	13240.000	43.60	15.45	59.05	74.00	-14.95	Peak
10	13240.000	32.30	15.45	47.75	54.00	-6.25	AVG
11	18000.000	37.96	24.57	62.53	74.00	-11.47	Peak
12	18000.000	25.50	24.57	50.07	54.00	-3.93	AVG

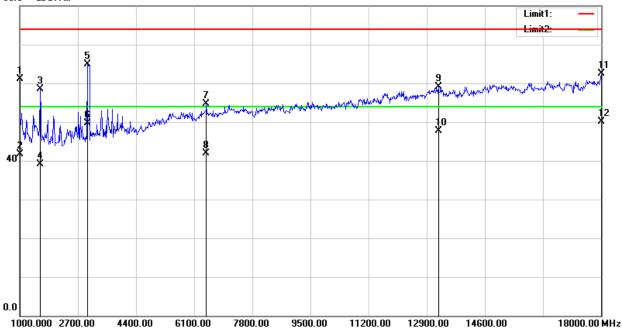
#### Remark:

1. All readings are Peak and Average values

2. Margin = Result (Result = Reading + Factor)–Limit

3. Factor= Cable Loss +Antenna Factor-Amplifier Gain

80.0 dBuV/m



A 1/F, Building B, Zhuoke Science Park, No.190 Chongoing Road, HepingShegu, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China Tel: +86-755 3686 6288 Fax:+86-755 3688 6277 Http://www.stsapp.com E-mail: sts@stsapp.com



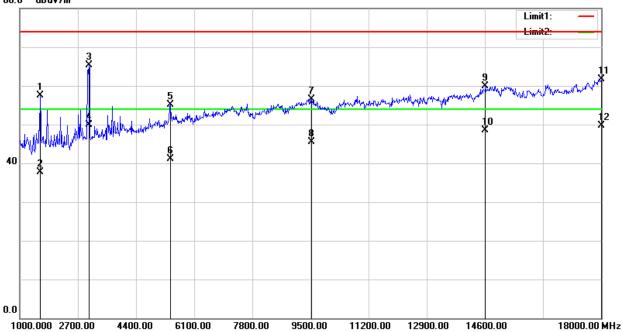
# Page 22 of 27 Report No.: STS2002026E01

Temperature:	<b>25.3℃</b>	Relative Humidity:	53%
Phase:	Vertical	Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz	Test Date:	2020.01.16

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	1595.000	59.96	-2.43	57.53	74.00	-16.47	Peak
2	1595.000	40.13	-2.43	37.70	54.00	-16.30	AVG
3	3023.000	63.16	2.22	65.38	74.00	-8.62	Peak
4	3023.000	47.71	2.22	49.93	54.00	-4.07	AVG
5	5403.000	47.82	7.21	55.03	74.00	-18.97	Peak
6	5403.000	33.97	7.21	41.18	54.00	-12.82	AVG
7	9534.000	42.88	13.66	56.54	74.00	-17.46	Peak
8	9534.000	31.79	13.66	45.45	54.00	-8.55	AVG
9	14617.000	41.79	18.12	59.91	74.00	-14.09	Peak
10	14617.000	30.48	18.12	48.60	54.00	-5.40	AVG
11	18000.000	37.17	24.57	61.74	74.00	-12.26	Peak
12	18000.000	25.15	24.57	49.72	54.00	-4.28	AVG

#### Remark:

- 1. All readings are Peak and Average values
- 2. Margin = Result (Result = Reading + Factor)-Limit
- 3. Factor= Cable Loss +Antenna Factor-Amplifier Gain
- 80.0 dBuV/m



A 1/F, Beliding B, Zhuoke Science Perk. No.190 Chongqing Roed, HepingShegu, Fuyong Sub-District, Beo'an District, Shenzhen, Guang Dong, Chine Tel: +88-755 3688 6288 Fax:+86-755 3688 6277 Http://www.stsapp.com E-mail: sts@stsapp.com



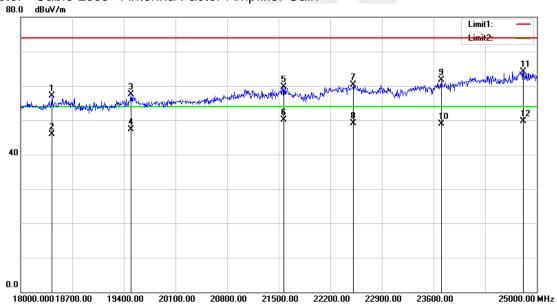
(18 GHz to 25GHz.)

Temperature:	<b>24.1</b> ℃	Relative Humidity:	44%
Phase:	Horizontal	Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz	Test Date:	2020.01.16

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	18427.000	32.24	24.87	57.11	74.00	-16.89	Peak
2	18427.000	20.95	24.87	45.82	54.00	-8.18	AVG
3	19498.000	31.79	25.64	57.43	74.00	-16.57	Peak
4	19498.000	21.66	25.64	47.30	54.00	-6.70	AVG
5	21570.000	35.03	24.72	59.75	74.00	-14.25	Peak
6	21570.000	25.29	24.72	50.01	54.00	-3.99	AVG
7	22515.000	35.97	24.41	60.38	74.00	-13.62	Peak
8	22515.000	24.61	24.41	49.02	54.00	-4.98	AVG
9	23705.000	37.03	24.77	61.80	74.00	-12.20	Peak
10	23705.000	24.20	24.77	48.97	54.00	-5.03	AVG
11	24818.000	39.15	24.96	64.11	74.00	-9.89	Peak
12	24818.000	24.66	24.96	49.62	54.00	-4.38	AVG

## Remark:

- 1. All readings are Peak and Average values
- 2. Margin = Result (Result = Reading + Factor)–Limit
- 3. Factor= Cable Loss +Antenna Factor-Amplifier Gain



A 1/F, Building B, Zhuoke Science Park. No. 190 Chongeing Road, HepingShaqu, Fuyong Sub-Diatrict, Beo'an Diatrict, Shenzhen, Guang Dong, Chine Tel: +86-755 3688 6288 Fax +96-755 3688 6277 Http://www.stsapp.com E-mail: sts@stsapp.com



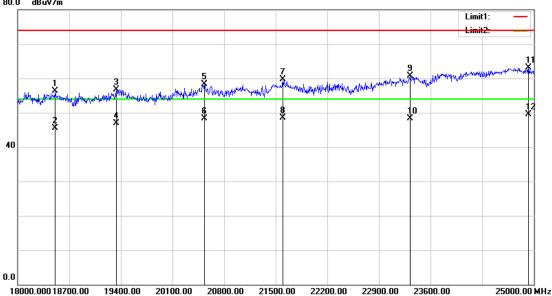
## Page 24 of 27 Report No.: STS2002026E01

Temperature:	<b>24.1</b> ℃	Relative Humidity:	44%
Phase:	Vertical	Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz	Test Date:	2020.01.16

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	18511.000	31.55	24.73	56.28	74.00	-17.72	Peak
2	18511.000	20.79	24.73	45.52	54.00	-8.48	AVG
3	19337.000	31.52	25.22	56.74	74.00	-17.26	Peak
4	19337.000	21.59	25.22	46.81	54.00	-7.19	AVG
5	20534.000	33.33	24.94	58.27	74.00	-15.73	Peak
6	20534.000	23.32	24.94	48.26	54.00	-5.74	AVG
7	21598.000	34.99	24.71	59.70	74.00	-14.30	Peak
8	21598.000	23.73	24.71	48.44	54.00	-5.56	AVG
9	23320.000	36.09	24.67	60.76	74.00	-13.24	Peak
10	23320.000	23.69	24.67	48.36	54.00	-5.64	AVG
11	24930.000	38.09	24.96	63.05	74.00	-10.95	Peak
12	24930.000	24.55	24.96	49.51	54.00	-4.49	AVG

#### Remark:

- 1. All readings are Peak and Average values
- 2. Margin = Result (Result = Reading + Factor)-Limit
- 3. Factor= Cable Loss +Antenna Factor-Amplifier Gain
  - 80.0 dBuV/m



#### Notes:

- 1. Measuring frequencies from 1 GHz to 25GHz.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode of the emission shown in Actual FS column.

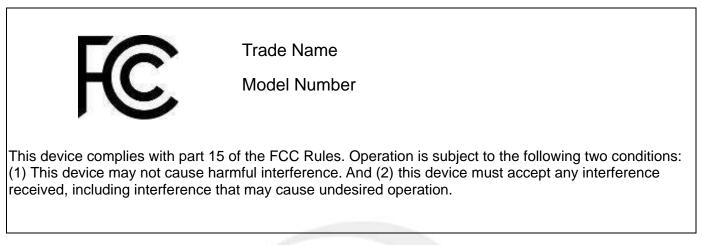
A 1/F, Building B, Zhuoke Science Park. No.190 Chongring Road, HepingShequ, Fuyong Sub-District,Beo'an District, Shenzhen, Guang Dong, Chine Tel: +88-765 3686 6288 Fax:+86-756 3688 6277 Http://www.stsapp.com E-mail: sts@stsapp.com



Page 25 of 27

Report No.: STS2002026E01

# SAMPLE OF THE LABEL





Shenzhen STS Test Services Co., Ltd.

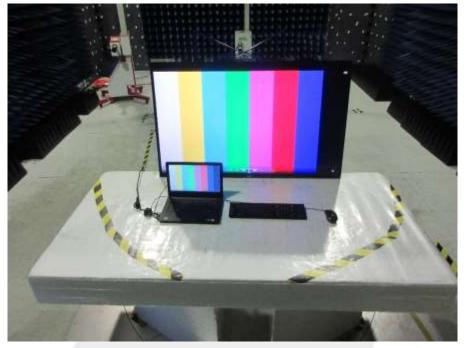
A 1/F, Building B, Zhuoke Science Park. No. 190 Chongoing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shanzhen, Guang Dong, China Tel: +86-755 3686 6288 Fax:+86-755 3686 6277 Http://www.stsapp.com E-mail: sts@stsapp.com



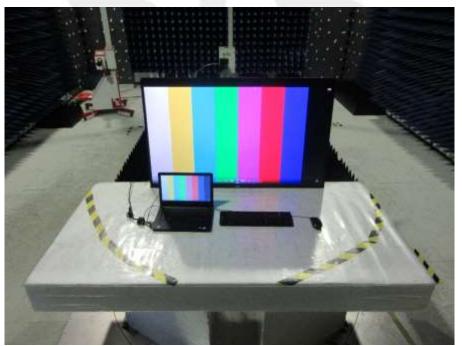
# 4. PHOTOS OF THE TEST SETUP

### **Radiated Measurement Photo**

30MHz-1GHz



Above 1GHz



Shenzhen STS Test Services Co., Ltd.

A 1/F, Building B, Zhuoke Science Park. No. 190 Chongqing Road, HepingShegu, Fuyong Sut-Diatrict, Bao'an Diatrict, Shenzhen, Guang Dong, China Tel: +88-755 3688 6288 Fax:+86-755 3688 6277 Http://www.stsapp.com E-mail: sts@stsapp.com



# Page 27 of 27

# **Conducted Measurement Photo**



\*\*\*\*\*\*END OF THE REPORT\*\*\*\*\*

Shenzhen STS Test Services Co., Ltd.

A 1/F, Building B, Zhuoke Science Perk, No.190 Chongqing Road, HepingShequ, Fuyong Sub-Diatrict,Bao'an Diatrict, Shenzhen, Guang Dong, Chine Tel: +88-755 3688 6288 Fax +98-755 3688 6277 Http://www.stsapp.com E-mail: sts@stsapp.com