

# **FCC Test Report**

Report No.: AGC02399180201FE04

FCC ID : 2ACG9-MINI3

**APPLICATION PURPOSE**: Original Equipment

**PRODUCT DESIGNATION**: Tablet pc

BRAND NAME : Vantec

MODEL NAME : mini3

**CLIENT** : Conedera S.A.

**DATE OF ISSUE** : Apr. 10, 2018

**STANDARD(S)** FCC Part 15.247

**TEST PROCEDURE(S)** KDB 558074 D01 DTS Meas Guidance v04

**REPORT VERSION**: V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

# **CAUTION:**

This report shall not be reproduced except in full without the written permission of the test laboratory and shall not be quoted out of context.



The results spound this jest report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by XCC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at attp://www.ago.go.tt.com.

Attestation of Global Compliance

Tel: +86-755 2908 1955 Fax: +86-755 2600 8484 E-mail: agc@agc-cert.com @ 400 089 2118 Add: 2/F., Building 2, No.1-4, Chaxi Sanwei Technical Industrial Park, Gushu, Xixiang, Baoan District, Shenzhen, Guangdong China



Page 2 of 42

# **Report Revise Record**

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0		Apr. 10, 2018	Valid	Original Report

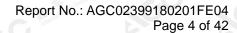
The results shown this jest report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by KGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.agc.gett.com.



# TABLE OF CONTENTS

1. VERIFICATION OF CONFORMITY	
2. GENERAL INFORMATION	5
2.1. PRODUCT DESCRIPTION	6
2.2. TABLE OF CARRIER FREQUENCYS	
2.3. IEEE 802.11N MODULATION SCHEME	
2.4. RELATED SUBMITTAL(S) / GRANT (S)	7
2.5. TEST METHODOLOGY	8
2.6. SPECIAL ACCESSORIES	8
2.7. EQUIPMENT MODIFICATIONS	8
3. MEASUREMENT UNCERTAINTY	9
4. DESCRIPTION OF TEST MODES	10
5. SYSTEM TEST CONFIGURATION	11
5.1. CONFIGURATION OF EUT SYSTEM	11
5.2. EQUIPMENT USED IN EUT SYSTEM	11
5.3. SUMMARY OF TEST RESULTS	11
6. TEST FACILITY	12
7. OUTPUT POWER	13
7.1. MEASUREMENT PROCEDURE	13
7.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	13
7.3. LIMITS AND MEASUREMENT RESULT	14
8. 6DB BANDWIDTH	16
8.1. MEASUREMENT PROCEDURE	16
8.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	16
8.3. LIMITS AND MEASUREMENT RESULTS	17
9. CONDUCTED SPURIOUS EMISSION	20
9.1. MEASUREMENT PROCEDURE	20
9.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	20
9.3. MEASUREMENT EQUIPMENT USED	20
9.4. LIMITS AND MEASUREMENT RESULT	21
10. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY	28
10.1 MEASUREMENT PROCEDURE	28
10.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	
10.3 MEASUREMENT EQUIPMENT USED	28
10.4 LIMITS AND MEASUREMENT RESULT	
44 DADIATED EMICCION	The Complian

The results shown in this jest report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at attp://www.agc.gett.com.





11.1. MEASUREMENT PROCEDURE	32
11.2. TEST SETUP	33
11.3. LIMITS AND MEASUREMENT RESULT	34
11.4. TEST RESULT	35
12. BAND EDGE EMISSION	38
12.1. MEASUREMENT PROCEDURE	
12.2. TEST SET-UP	38
12.3. RADIATED TEST RESULT	39
12.4. CONDUCTED TEST RESULT	40
APPENDIX A: PHOTOGRAPHS OF TEST SETUP	42

The results shown this jest report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by KGE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.agc.gett.com.



Page 5 of 42

# 1. VERIFICATION OF CONFORMITY

SEN CO. SIN SAME
Conedera S.A.
ALBORADA 10 ETAPA AVE. BENJAMIN CARRION C.C.LA ROTONDA LOCAT 2 Guayaquil Ecuador
SHENZHEN SUNGWORLD ELECTRONICS CO., LIMITED
4#, North Zone, Shangxue Ind. park, Bantian, Long Gang Dist., Shenzhen, China.
Tablet pc
Vantec
mini3
Mar. 15, 2018~Apr. 10, 2018
None
Normal
AGCRT-US-BGN/RF

# We hereby certify that:

The above equipment was tested by Attestation of Global Compliance(Shenzhen) Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with requirement of FCC Part 15 Rules requirement.

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

Tested By	donjon strang	
C Manufacture College Co.	Donjon Huang(Huang Dongyang)	Apr. 10, 2018
Reviewed By	Borexie	Manager of County Company
seation of Circles 1	Bart Xie(Xie Xiaobin)	Apr. 10, 2018

The results spowfil this jest report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by 40°C, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at attp://www.ago.go.tt.com.



Page 6 of 42

# 2. GENERAL INFORMATION

# 2.1. PRODUCT DESCRIPTION

The EUT is designed as "Tablet pc". It is designed by way of utilizing the DSSS and OFDM technology to achieve the system operation.

A major technical description of EUT is described as following

71 major teermiear description	on of Eor is described as following
Operation Frequency	2.412 GHz~2.462GHz
Output Dawar	IEEE 802.11b: <b>15.25</b> dBm, IEEE 802.11g: <b>13.24</b> dBm;
Output Power	IEEE 802.11n(20): <b>12.96</b> dBm,IEEE 802.11n(40): <b>12.47</b> dBm
Modulation	DSSS(DBPSK/DQPSK/CCK);OFDM(BPSK/QPSK/16-QAM/64-QAM)
Number of channels	11 Channels (IEEE802.11(20)b/g/n)& 9 Channels (IEEE802.11(40)n)
Hardware Version	E706W02
Software Version	N/A @ # ###
Antenna Designation	PIFA Antenna
Antenna Gain	1.0dBi
Power Supply	DC3.7V by Built-in Li-ion Battery

# 2.2. TABLE OF CARRIER FREQUENCYS

Frequency Band	Channel Number	Frequency
	(a) Francis Com	2412 MHZ
The selected Compiler.	2 20	2417 MHZ
Mestalion of Allestalion	3	2422 MHZ
	4 The transfer of the same of	2427 MHZ
不 极 测	S 5 American S 5 American S S S S S S S S S S S S S S S S S S S	2432 MHZ
2400~2483.5MHZ		2437 MHZ
CC TO	7	2442 MHZ
	#8 mg	2447 MHZ
The transfer of the same of th	Thomas 9 man and a cook	2452 MHZ
The Compliance & State Soliton of Global	10	2457 MHZ
	11	2462 MHZ

Note: For 20MHZ bandwidth system use Channel 1 to Channel 11

For 802.11n 40MHZ bandwidth system use Channel 3 to Channel 9.

The results spowford this jest report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at attp://www.agc.gent.com.



Page 7 of 42

# 2.3. IEEE 802.11N MODULATION SCHEME

MCS Index	Nss	Modulation	R	NBPSC	NBPSC NCBPS		NDBPS		Da rate(I 800)	Mbps)
				201	20MHz	40MHz	20MHz	40MHz	20MHz	40MHz
0	1	BPSK	1/2	1	52	108	26	54	6.5	13.5
1	, 1 <sup>11</sup>	QPSK	1/2	2	104	216	52	108	13.0	27.0
2	Jobal Compile	QPSK	3/4	2	104	216	78	162	19.5	40.5
3	1	16-QAM	1/2	4	208	432	104	216	26.0	54.0
4	(1	16-QAM	3/4	4	208	432	156	324	39.0	81.0
5	1	64-QAM	2/3	6	312	648	208	432	52.0	108.0
6	# 15 of C	64-QAM	3/4	8 6 not click	312	648	234	489	58.5	121.5
7	Attest	64-QAM	5/6	6	312	648	260	540	65.0	135.0

Symbol	Explanation
NSS MAN	Number of spatial streams
R	Code rate
NBPSC	Number of coded bits per single carrier
NCBPS	Number of coded bits per symbol
NDBPS	Number of data bits per symbol
GI	Guard interval

# 2.4. RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: 2ACG9-MINI3** filing to comply with the FCC Part 15 requirements.

The results spoured this jest report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by XOC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at attp://www.ago.go.tt.com.



Page 8 of 42

#### 2.5. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10 (2013). Radiated testing was performed at an antenna to EUT distance 3 meters.

Others testing (listed at item 5.3) was performed according to the procedures in FCC Part 15.247 rules KDB 558074 D01 DTS Means Guidance v04.

#### 2.6. SPECIAL ACCESSORIES

Refer to section 5.2.

#### 2.7. EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

The results spowed this jest report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by XOC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at attp://www.ago.gott.com.



Page 9 of 42

# 3. MEASUREMENT UNCERTAINTY

- -Uncertainty of Conducted Emission, Uc=±3.2dB
- Uncertainty of Radiated Emission below 1GHz, Uc±3.9dB
- Uncertainty of Radiated Emission above 1GHz, Uc ± 4.8dB

The results spound this jest report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by (GC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at a true; //www.agc gent.com.



Page 10 of 42

# 4. DESCRIPTION OF TEST MODES

		TEST MODE DESCRIPTIO	N	
- 7 <sup>11</sup>	® Mar Sannal Clabal Co	Low channel TX	EG "	-60
The Compliant	CC ATTERNA	Middle channel TX		
Attestation Attestation	10	High channel TX	lin:	The Compliance
		Normal operating	The Manual Compliants	® ## Gration of Gran
	The state of the s		Low channel TX  Middle channel TX  High channel TX	Middle channel TX High channel TX

#### Note:

Transmit by 802.11b with Date rate (1/2/5.5/11)

Transmit by 802.11g with Date rate (6/9/12/18/24/36/48/54)

Transmit by 802.11n (20MHz) with Date rate (6.5/13/19.5/26/39/52/58.5/65)

Transmit by 802.11n (40MHz) with Date rate (13.5/27/40.5/54/81/108/121.5/135)

#### Note:

- The EUT has been set to operate continuously on the lowest, middle and highest operation frequency Individually, and the eut is operating at its maximum duty cycle>or equal 98%
- 2. All modes under which configure applicable have been tested and the worst mode test data recording in the test report, if no other mode data.
- 3. For Radiated Emission, 3axis were chosen for testing for each applicable mode

The results spound this jest report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by XOC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at attp://www.ago.go.tt.com.



Page 11 of 42

# 5. SYSTEM TEST CONFIGURATION

# **5.1. CONFIGURATION OF EUT SYSTEM**

Configure:

EUT	<b>G</b> **	Accessory

#### **5.2. EQUIPMENT USED IN EUT SYSTEM**

Equipment	ent Model No. ID or Spe		cification Remark	
Tablet pc	mini3	2ACG9-MINI3	EUT	
Battery	347095	DC3.7V/ 2000mAh	Accessory	
	Tablet pc	Tablet pc mini3	Tablet pc mini3 2ACG9-MINI3	

Note: All the accessories have been used during the test in conduction emission test.

# **5.3. SUMMARY OF TEST RESULTS**

FCC Rules	Description Of Test	Result
§15.247	Output Power	Compliant
§15.247	6 dB Bandwidth	Compliant
§15.247	Conducted Spurious Emission	Compliant
§15.247	Maximum Conducted Output Power SPECTRAL Density	Compliant
§15.209	Radiated Emission	Compliant
§15.247	Band Edges	Compliant
§15.207	Line Conduction Emission	N/A

Note: Customer delivery without adapters. So Power Line Conduction Emission RESULT is N/A.

The results spowford this jest report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at attp://www.agc.gett.com.



Page 12 of 42

# 6. TEST FACILITY

Site	Attestation of Global Compliance (Shenzhen) Co., Ltd			
Location	1-2F., Bldg.2, No.1-4, Chaxi Sanwei Technical Industrial Park, Gushu, Xixiang, Bao'an District B112-B113, Bldg.12, Baoan Bldg Materials Center, No.1 of Xixiang Inner Ring Road, Baoan District, Shenzhen 518012			
NVLAP LAB CODE	600153-0			
Designation Number	CN5028			
Description	Attestation of Global Compliance(Shenzhen) Co., Ltd is accredited by National Voluntary Laboratory Accreditation program, NVLAP Code 600153-0			

# **ALL TEST EQUIPMENT LIST**

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	Jun.20, 2017	Jun.19, 2018
EXA Signal Analyzer	Aglient	N9010A	MY53470504	Dec.08, 2017	Dec.07, 2018
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Sep.20, 2017	Sep.19, 2018
preamplifier	ChengYi	EMC184045SE	980508	Sep.15, 2017	Sep.14, 2018
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	May.18, 2017	May.17, 2019
Broadband Preamplifier	SCHWARZBECK	BBV 9718	9718-205	Jun.20, 2017	Jun.19, 2018
ANTENNA	SCHWARZBECK	VULB9168	D69250	Sep.28, 2017	Sep.27, 2018
SIGNAL ANALYZER	Agilent	N9020A	MY52090123	Sep. 21, 2017	Sep. 20, 2018
USB Wideband Power Sensor	Agilent	U2021XA	MY54110007	Sep. 21, 2017	Sep. 20, 2018
LOOP ANTENNA	A.H	SAS-562B	® Trot Globa	Mar.01,2018	Feb.28,2020

The results shown this jest report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at attp://www.agc.cett.com.



Page 13 of 42

# 7. OUTPUT POWER

# 7.1. MEASUREMENT PROCEDURE

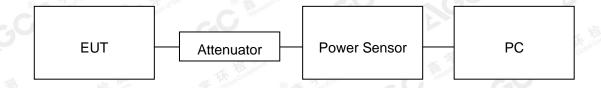
For max average conducted output power test:

- 1. Connect EUT RF output port to power probe through an RF attenuator.
- 2. Connect the power probe to the PC.
- 3. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 4. Record the maximum power from the software.

Note: The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

# 7.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

# **AVERAGE POWER SETUP**



The results spowfil this jest report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by 40°C, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at attp://www.ago.go.tt.com.



Page 14 of 42

# 7.3. LIMITS AND MEASUREMENT RESULT

TEST ITEM	OUTPUT POWER	The Compliance	(® Allestation of All	(S) Attention of Co.	CG Mesanon
TEST MODE	802.11b with data rate 1	ijion al G			

Frequency (GHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	15.25	30	Pass
2.437	14.90	30	Pass
2.462	15.20	30	Pass

TEST ITEM	OUTPUT POWER			· To Paramote (6)
TEST MODE	802.11g with data rate 6	The Manual and	® M. Jon of Global Company	O Martin of Golden Co.

Frequency (GHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	11.21	30	Pass
2.437	13.24	30	Pass
2.462	12.72	30	Pass

TEST ITEM	OUTPUT POWER	® Attestation of Globa	CC N
TEST MODE	802.11n 20 with data rate 6.5		

Frequency (GHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	11.13	30	Pass
2.437	12.96	30	Pass
2.462	12.58	30	Pass

The results shown this jest report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by KGE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.agc.gett.com.



Page	15	of	42
------	----	----	----

TEST ITEM	OUTPUT POWER	© Marie de Corball	® # Jation of Global Con	© Allestation of C
TEST MODE	802.11n 40 with data rate 13.5	CO . CO		

Frequency (GHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.422	12.47	30	Pass
2.437	12.42	30	Pass
2.452	12.28	30	Pass

The results shown this jest report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by KGE, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.agc.gett.com.



Page 16 of 42

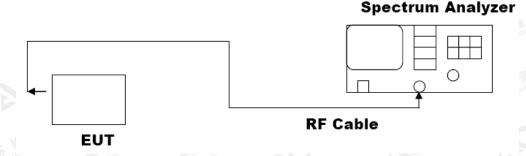
# 8. 6dB BANDWIDTH

# **8.1. MEASUREMENT PROCEDURE**

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 3. Set SPA Centre Frequency = Operation Frequency, RBW= 100 KHz, VBW ≥ 3 × RBW.
- 4. Set SPA Trace 1 Max hold, then View.

Note: The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

# 8.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



The results spowford this jest report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by XOC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at attp://www.ago.go.tt.com.



Page 17 of 42

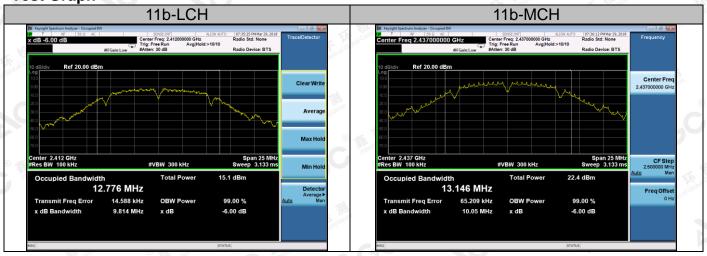
# 8.3. LIMITS AND MEASUREMENT RESULTS

Mode	Channel	6dB Bandwidth [MHz]	Verdict
11b	© LCH	9.814	PASS
	MCH	10.05	PASS
	HCH	10.04	PASS
11g	LCH The state of t	15.13	PASS
	MCH	15.13	PASS
	HCH	15.10	PASS
11nHT20	LCH	15.13	PASS
	MCH	15.13	PASS
	HCH	15.91	PASS
11nHT40	LCH	35.17	PASS
	MCH	35.16	PASS
	HCH	35.16	PASS

The results shown this jest report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at attp://www.agc.cett.com.



**Test Graph** 

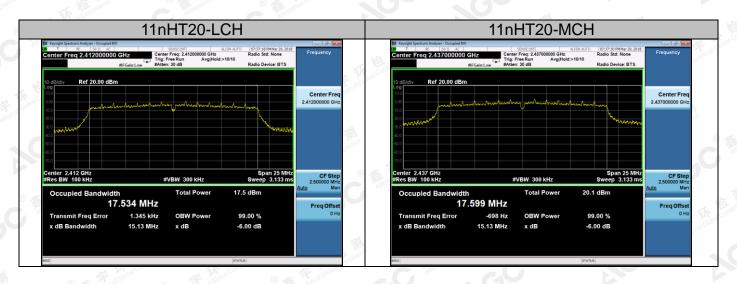


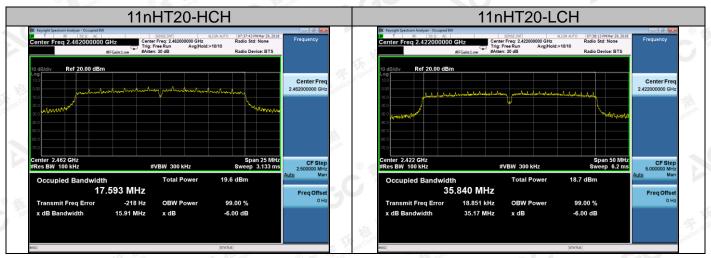


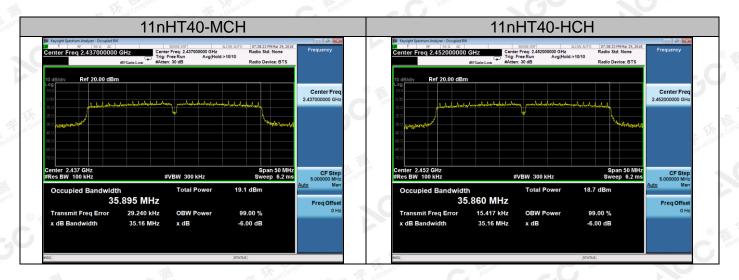


The results spound this jest report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by XCC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at a true www.ago-gent.com.









The results specified this jest report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by AGC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at attraction.



Page 20 of 42

# 9. CONDUCTED SPURIOUS EMISSION

#### 9.1. MEASUREMENT PROCEDURE

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2, Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 3. Set SPA Trace 1 Max hold, then View.

**Note:** The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements. Owing to satisfy the requirements of the number of measurement points, we set the RBW=1MHz, VBW>RBW, scan up through 10th harmonic, and consider the tested results as the worst case, if the tested results conform to the requirement, we can deem that the real tested results(set the RBW=100KHz, VBW>RBW) are conform to the requirement.

# 9.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The same as described in section 8.2.

#### 9.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6.

The results spowford this jest report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by XOC, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at attp://www.ago.go.tt.com.