

FCC Part 15C Test Report

FCC ID: ZUE16000

Product Name:	Chorus
Trademark:	N/A
Model Name :	16000-01
Prepared For :	WOW Tech Canada Ltd.
Address :	330-1130 Morrison Drive, OTTAWA, Canada, K2H 9N6
Prepared By :	Shenzhen BCTC Testing Co., Ltd.
Address :	BCTC Building & 1-2F, East of B Building, Pengzhou Industrial, Fuyuan 1st Road, Qiaotou Community, Fuyong Street, Bao'an District, Shenzhen, China
Test Date:	Nov. 08, 2019 – Nov. 15, 2019
Date of Report :	Nov. 15, 2019
Report No.:	BCTC-FY191006438E

TEST RESULT CERTIFICATION

Applicant's name : WOW Tech Canada Ltd.

Address : 330-1130 Morrison Drive, OTTAWA, Canada, K2H 9N6

Manufacture's Name : WOW Tech Canada Ltd.

Address : 330-1130 Morrison Drive, OTTAWA, Canada, K2H 9N6

Product description

Product name : Chorus

Model and/or type reference : 16000-01

Serial Model : N/A

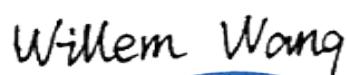
Test Standards : FCC Part15.249

ANSI C63.10-2013

This device described above has been tested by BCTC, 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 BCTC, this document may be altered or revised by BCTC, personal only, and shall be noted in the revision of the document.

Prepared by(Engineer): Willem Wang



Reviewer(Supervisor): Eric Yang

Approved(Manager): Zero Zhou

Table of Contents

	Page
1 . SUMMARY OF TEST RESULTS	5
1.1 TEST FACILITY	6
1.2 MEASUREMENT UNCERTAINTY	6
2 . GENERAL INFORMATION	7
2.1 GENERAL DESCRIPTION OF EUT	7
2.2 DESCRIPTION OF TEST MODES	8
2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	9
2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)	9
2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS	10
3 . EMC EMISSION TEST	12
3.1 CONDUCTED EMISSION MEASUREMENT	12
3.1.1 POWER LINE CONDUCTED EMISSION LIMITS	12
3.1.2 TEST PROCEDURE	12
3.1.3 DEVIATION FROM TEST STANDARD	12
3.1.4 TEST SETUP	13
3.1.5 EUT OPERATING CONDITIONS	13
3.1.6 TEST RESULTS	14
3.2 RADIATED EMISSION MEASUREMENT	16
3.2.1 RADIATED EMISSION LIMITS	16
3.2.2 TEST PROCEDURE	17
3.2.3 DEVIATION FROM TEST STANDARD	17
3.2.4 TEST SETUP	18
3.2.5 EUT OPERATING CONDITIONS	19
3.2.6 TEST RESULTS (BETWEEN 9KHZ – 30 MHZ)	20
3.2.7 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)	21
3.2.8 TEST RESULTS (ABOVE 1000 MHZ)	23
4 . 100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE	25
4.1 DEVIATION FROM STANDARD	25
4.2 TEST SETUP	25
4.3 EUT OPERATION CONDITIONS	25
4.4 TEST RESULTS	25
5 . BANDWIDTH TEST	30
5.1 APPLIED PROCEDURES / LIMIT	30
5.1.1 TEST PROCEDURE	30

Table of Contents

	Page
5.1.2 DEVIATION FROM STANDARD	30
5.1.3 TEST SETUP	30
5.1.4 EUT OPERATION CONDITIONS	30
5.1.5 TEST RESULTS	31
6 . ANTENNA REQUIREMENT	33
6.1 STANDARD REQUIREMENT	33
6.2 EUT ANTENNA	33
7 . EUT TEST PHOTO	34
8 . PHOTO OF THE EUT	36

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.249) , Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	N/A	
15.249 (a)(2)	20dB Bandwidth	PASS	
15.249	Fundamental &Radiated Spurious Emission Measurement	PASS	
15.205	Band Edge Emission	PASS	
15.203	Antenna Requirement	PASS	

NOTE:

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

1.1 TEST FACILITY

Shenzhen BCTC Testing Co., Ltd.

Add. : BCTC Building & 1-2F, East of B Building, Pengzhou Industrial, Fuyuan 1st Road, Qiaotou Community, Fuyong Street, Bao'an District, Shenzhen, China

FCC Test Firm Registration Number: 712850

IC Registered No.: 23583

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** %.

No.	Item	Uncertainty
1	3m chamber Radiated spurious emission(30MHz-1GHz)	$U=4.3\text{dB}$
2	3m chamber Radiated spurious emission(1GHz-18GHz)	$U=4.5\text{dB}$
3	3m chamber Radiated spurious emission(18GHz-40GHz)	$U=3.34\text{dB}$
4	Conducted Adjacent channel power	$U=1.38\text{dB}$
5	Conducted output power uncertainty Above 1G	$U=1.576\text{dB}$
6	Conducted output power uncertainty below 1G	$U=1.28\text{dB}$
7	humidity uncertainty	$U=5.3\%$
8	Temperature uncertainty	$U=0.59\text{ }^{\circ}\text{C}$

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Chorus	
Trade Name	N/A	
Model Name	16000-01	
Serial Model	N/A	
Model Difference	N/A	
Product Description	The EUT is a Chorus	
	Operation Frequency:	917.1-917.7MHz
	Modulation Type:	GFSK
	Number Of Channel	4CH
	Antenna Designation:	Please see Note 3.
	Antenna Gain (dBi)	0dBi
Channel List	Please refer to the Note 2.	
Power	DC 3.7V from Battery	
Connecting I/O Port(s)	Please refer to the User's Manual	

Note:

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

2.

Channel List for 917.1-917.7MHz	
Channel	Frequency (MHz)
01	917.1
02	917.3
03	917.5
04	917.7

3.

Table for Filed Antenna

An.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
A	N/A	N/A	Internal antenna	N/A	0	

2.2 DESCRIPTION OF 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.

For All Mode	Description	Modulation Type
Mode 1	CH01	GFSK
Mode 2	CH04	
Mode 3	Link mode(Conducted Emission and Radiated emission)	

Note:

- (1) The measurements are performed at the highest, middle, lowest available channels.
- (2) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Conducted Emission Test



Radiated Spurious Emission



2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

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.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	Chorus	N/A	16000-01	N/A	EUT

Item	Shielded Type	Ferrite Core	Length	Note

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.

2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	Agilent	E4407B	MY45109572	Jun. 13, 2019	Jun. 12, 2020
2	Test Receiver (9kHz-7GHz)	R&S	ESR7	101154	Jun. 13, 2019	Jun. 12, 2020
3	Bilog Antenna (30MHz-3GHz)	SCHWARZB ECK	VULB9163	VULB9163-9 42	Jun. 22, 2019	Jun. 21, 2020
4	Horn Antenna (1GHz-18GHz)	SCHWARZB ECK	BBHA9120D	1541	Jun. 22, 2019	Jun. 21, 2020
5	Horn Antenna (18GHz-40GHz)	SCHWARZB ECK	BBHA9170	822	Jun. 22, 2019	Jun. 21, 2020
6	Amplifier (9KHz-6GHz)	SCHWARZB ECK	BBV9744	9744-0037	Jun. 25, 2019	Jun. 24, 2020
7	Amplifier (0.5GHz-18GHz)	SCHWARZB ECK	BBV9718	9718-309	Jun. 25, 2019	Jun. 24, 2020
8	Amplifier (18GHz-40GHz)	MITEQ	TTA1840-35 -HG	2034381	Jun. 17, 2019	Jun. 16, 2020
9	Loop Antenna (9KHz-30MHz)	SCHWARZB ECK	FMZB1519B	014	Jul. 02, 2019	Jul. 01, 2020
10	RF cables1 (9kHz-30MHz)	Huber+Suhna r	9kHz-30MHz	B1702988-00 08	Jun. 25, 2019	Jun. 24, 2020
11	RF cables2 (30MHz-1GHz)	Huber+Suhna r	30MHz-1GHz	1486150	Jun. 25, 2019	Jun. 24, 2020
12	RF cables3 (1GHz-40GHz)	Huber+Suhna r	1GHz-40GHz	1607106	Jun. 25, 2019	Jun. 24, 2020
13	Power Meter	Keysight	E4419B	\	Jun. 17, 2019	Jun. 16, 2020
14	Power Sensor (AV)	Keysight	E9 300A	\	Jun. 17, 2019	Jun. 16, 2020
15	Signal Analyzer 20kHz-26.5GHz	KEYSIGHT	N9020A	MY49100060	Jun. 13, 2019	Jun. 12, 2020
16	Test Receiver 9kHz-40GHz	Aglient	FSP40	100550	Jun. 13, 2019	Jun. 12, 2020
17	D.C. Power Supply	LongWei	TPR-6405D	\	\	\
18	Software	Frad	EZ-EMC	FA-03A2 RE	\	\

Conduction Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Test Receiver	R&S	ESR3	102075	Jun. 13, 2019	Jun. 12, 2020
2	LISN	SCHWARZBECK	NSLK8127	8127739	Jun. 13, 2019	Jun. 12, 2020
3	LISN	R&S	ENV216	101375	Jun. 13, 2019	Jun. 12, 2020
4	RF cables	Huber+Suhner	9kHz-30MHz	B1702988-00 08	Jun. 25, 2019	Jun. 24, 2020
5	Software	Frad	EZ-EMC	EMC-CON 3A1	\	\

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Limit (dBuV)		Standard
	Quasi-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

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

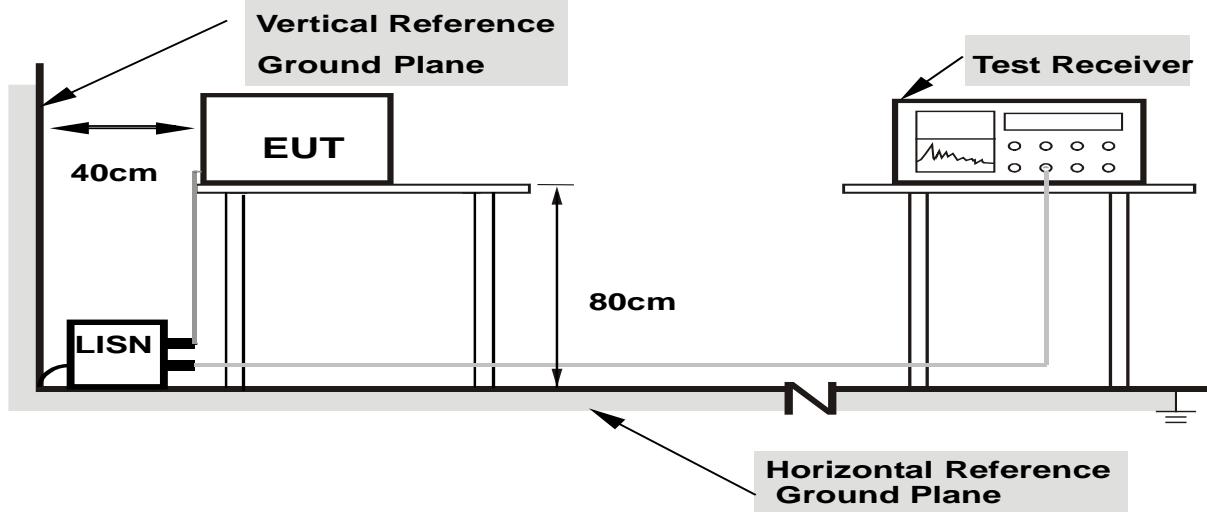
3.1.2 TEST PROCEDURE

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN 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. LISN at least 80 cm from nearest part of EUT chassis.
- e. 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:

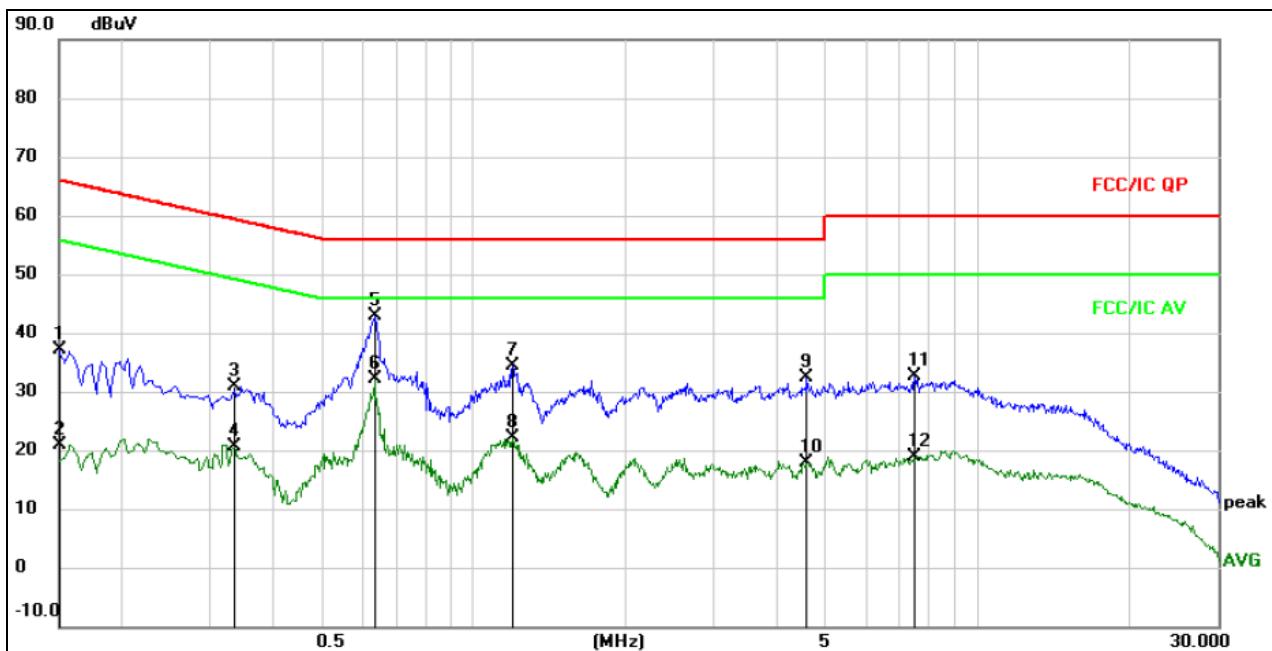
1. Support units were connected to second LISN.
2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

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

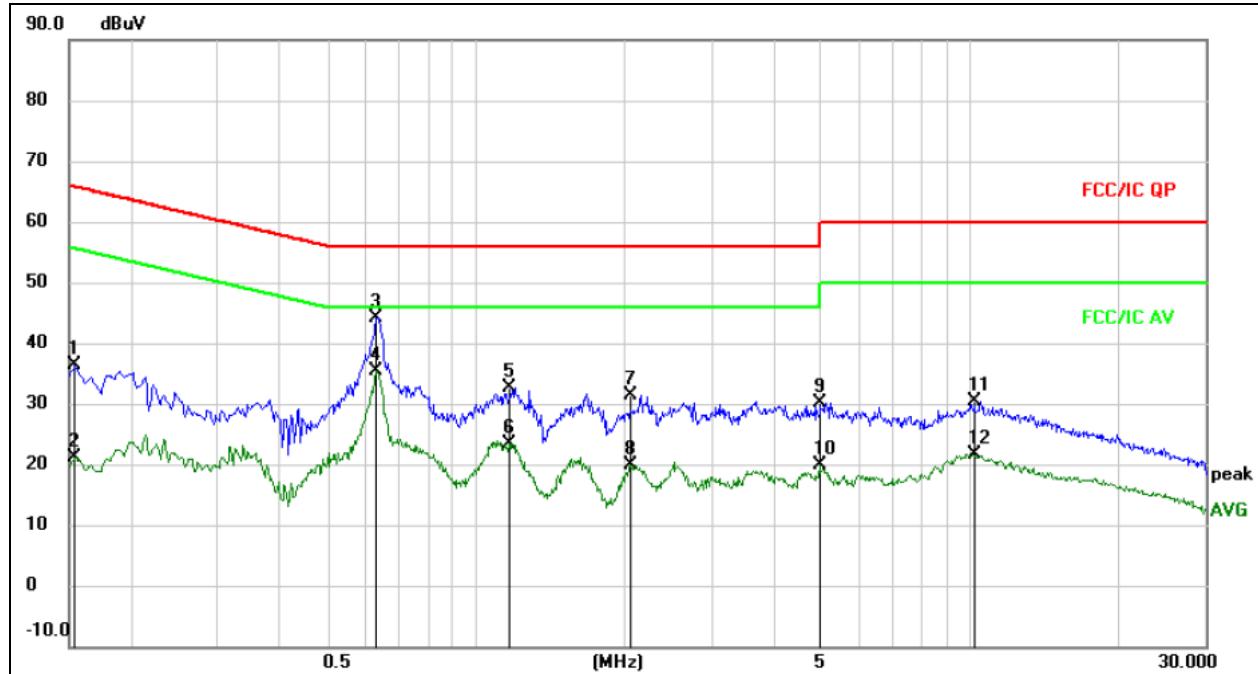
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Phase :	L
Test Voltage :	AC 120V/60Hz	Test Mode :	Mode 5


Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		0.1500	27.49	9.52	37.01	66.00	-28.99	QP	
2		0.1500	11.34	9.52	20.86	56.00	-35.14	AVG	
3		0.3339	21.21	9.55	30.76	59.35	-28.59	QP	
4		0.3339	11.08	9.55	20.63	49.35	-28.72	AVG	
5	*	0.6340	32.96	9.88	42.84	56.00	-13.16	QP	
6		0.6340	22.13	9.88	32.01	46.00	-13.99	AVG	
7		1.1940	24.70	9.57	34.27	56.00	-21.73	QP	
8		1.1940	12.48	9.57	22.05	46.00	-23.95	AVG	
9		4.5858	22.58	9.77	32.35	56.00	-23.65	QP	
10		4.5858	8.14	9.77	17.91	46.00	-28.09	AVG	
11		7.4939	22.85	9.72	32.57	60.00	-27.43	QP	
12		7.4939	9.26	9.72	18.98	50.00	-31.02	AVG	

Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Phase :	N
Test Voltage :	AC 120V/60Hz	Test Mode :	Mode 5


Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		0.1539	26.75	9.52	36.27	65.79	-29.52	QP	
2		0.1539	11.69	9.52	21.21	55.79	-34.58	AVG	
3		0.6300	34.21	9.89	44.10	56.00	-11.90	QP	
4 *		0.6300	25.55	9.89	35.44	46.00	-10.56	AVG	
5		1.1700	22.96	9.57	32.53	56.00	-23.47	QP	
6		1.1700	13.81	9.57	23.38	46.00	-22.62	AVG	
7		2.0620	21.87	9.59	31.46	56.00	-24.54	QP	
8		2.0620	10.38	9.59	19.97	46.00	-26.03	AVG	
9		4.9580	20.37	9.80	30.17	56.00	-25.83	QP	
10		4.9580	9.99	9.80	19.79	46.00	-26.21	AVG	
11		10.1660	20.69	9.69	30.38	60.00	-29.62	QP	
12		10.1660	11.89	9.69	21.58	50.00	-28.42	AVG	

3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902-928 MHz	50	500
2400-2483.5 MHz	50	500
5725-5875 MHz	50	500
24.0-24.25 GHz	250	2500

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Limit (dB _B V/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

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 (dB_BV/m)=20log Emission level (uV/m).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

- The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

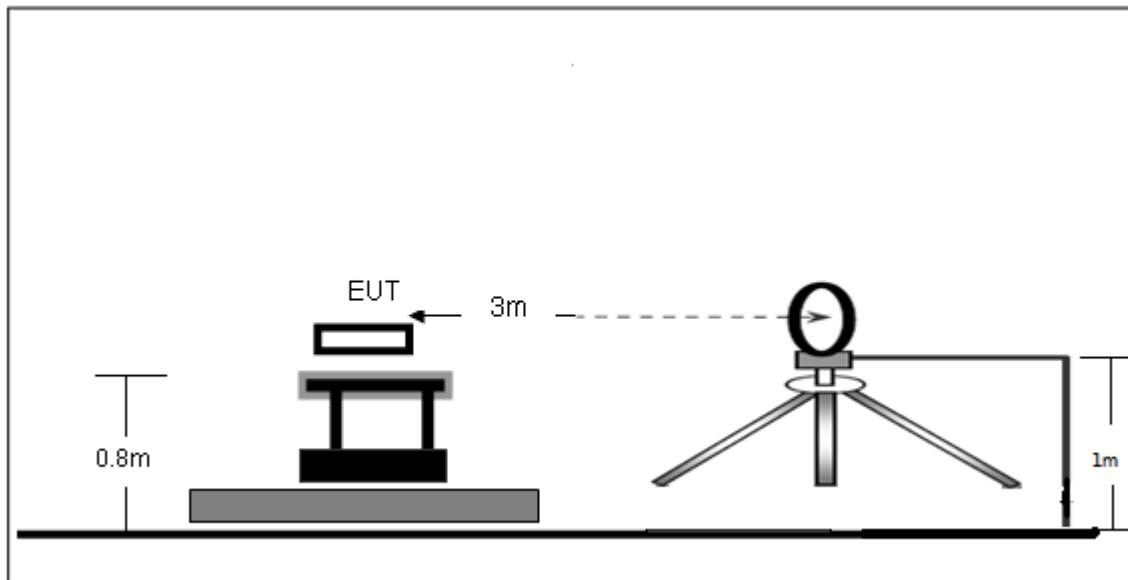
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

3.2.3 DEVIATION FROM TEST STANDARD

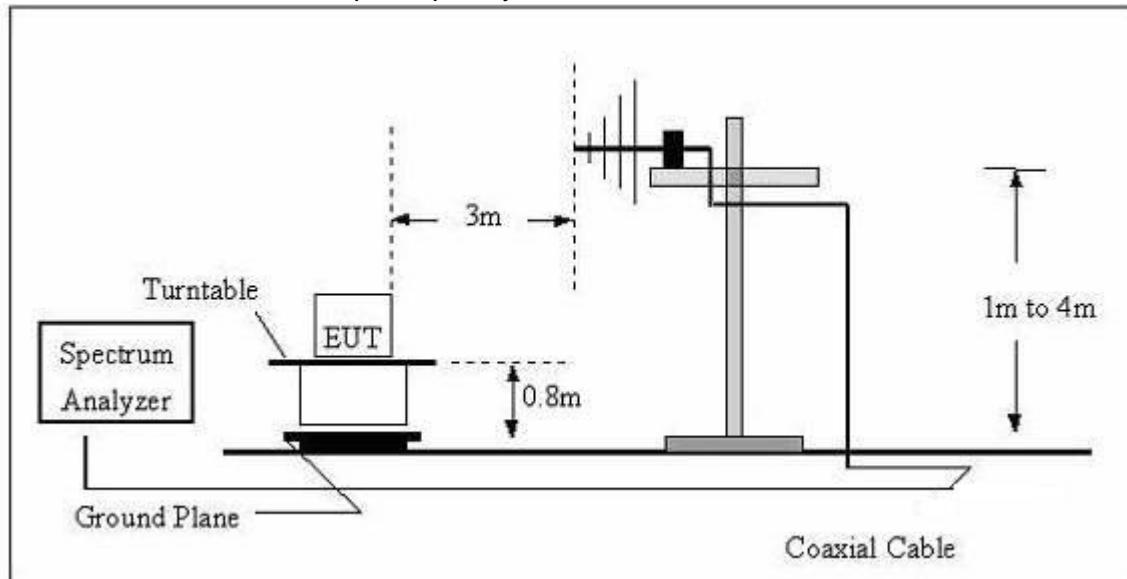
No deviation

3.2.4 TEST SETUP

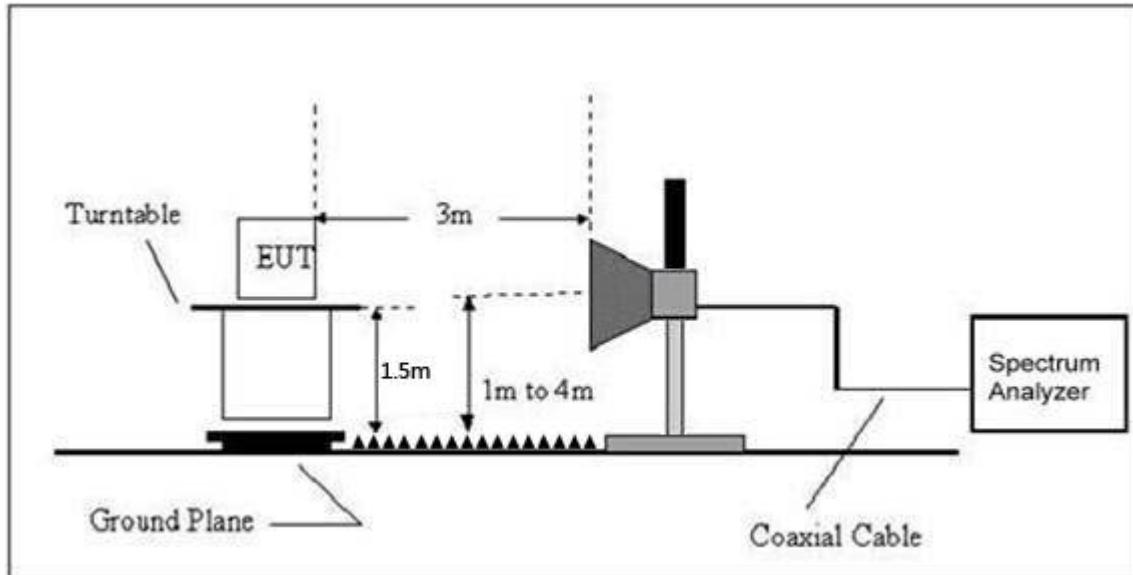
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) 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 follows during the testing.

3.2.6 TEST RESULTS (BETWEEN 9KHZ – 30 MHZ)

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101kPa	Test Voltage :	DC 3.7V
Test Mode :	Mode 3	Polarization :	--

Freq. (MHz)	Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	State
--	--	--	--	P/F
--	--	--	--	PASS

NOTE:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor = $40 \log (\text{specific distance}/\text{test distance})$ (dB);

Limit line = specific limits(dBuV) + distance extrapolation factor.

3.2.7 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)

Temperature :	26°C	Relative Humidity :	54%
Pressure :	101kPa	Polarization :	Horizontal
Test Voltage :	DC 3.7V		
Test Mode :	Mode 3		

Frequency (MHz)	Meter Reading (dB μ V)	Factor (dB)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector Type
60.2801	26.96	-15.97	10.99	40.00	-29.01	QP
106.7587	26.18	-16.72	9.46	43.50	-34.04	QP
185.7882	40.10	-17.21	22.89	43.50	-20.61	QP
250.3012	34.67	-15.14	19.53	46.00	-26.47	QP
315.4808	32.81	-13.18	19.63	46.00	-26.37	QP
396.2415	30.86	-11.18	19.68	46.00	-26.32	QP
917.1699	94.98	-1.37	93.61	94.00	-0.39	QP

Remark:
 Factor = Antenna Factor + Cable Loss – Pre-amplifier.
 All interfaces was connected, and TX mode

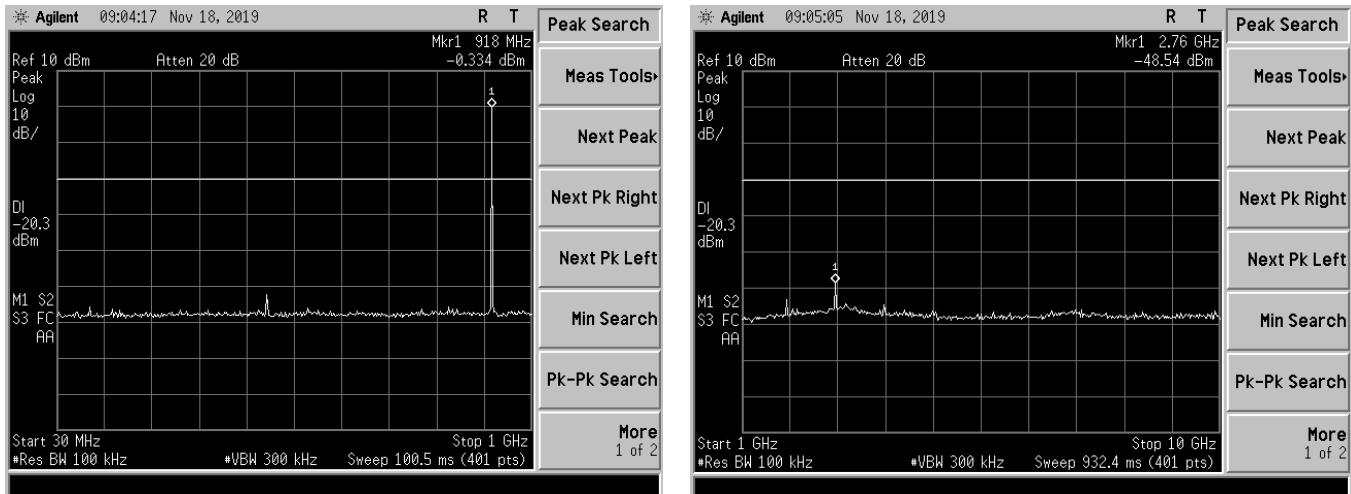
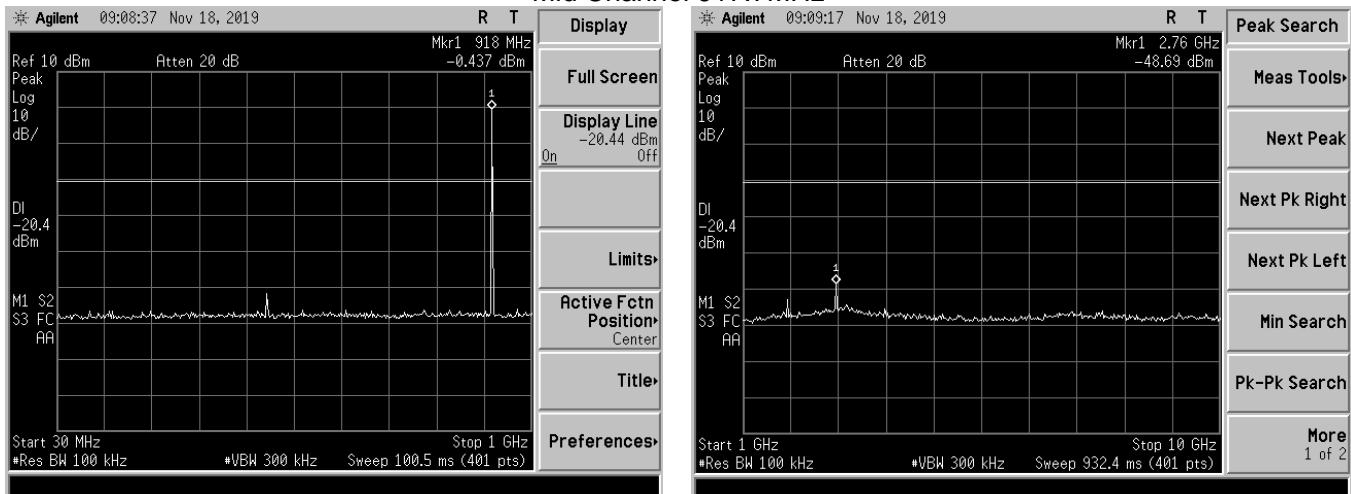
Temperature :	26°C	Relative Humidity :	54%
Pressure :	101kPa	Polarization :	Vertical
Test Voltage :	DC 3.7V		
Test Mode :	Mode 3		

Frequency (MHz)	Meter Reading (dB μ V)	Factor (dB)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector Type
30.9619	36.84	-17.10	19.74	40.00	-20.26	QP
37.0248	36.15	-15.98	20.18	40.00	-19.82	QP
45.6948	35.83	-15.09	20.74	40.00	-19.26	QP
93.1132	35.83	-17.53	18.30	43.50	-25.20	QP
191.0738	35.69	-16.87	18.82	43.50	-24.68	QP
737.0714	23.21	-4.55	18.66	46.00	-27.34	QP
917.0298	97.04	-1.37	92.67	94.00	-1.33	QP

Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.
All interfaces was connected, and TX mode

3.2.8 TEST RESULTS (ABOVE 1000 MHZ)

Normal Voltage							
Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
917.1MHz							
V	1820.60	59.54	-3.57	55.97	74.00	-18.03	Pk
V	1820.60	45.02	-3.57	41.45	54.00	-12.55	AV
V	2730.90	59.12	-3.84	55.28	74.00	-18.72	Pk
V	2730.90	43.72	-3.84	39.88	54.00	-14.12	AV
V	3641.20	60.81	-4.59	56.22	74.00	-17.78	Pk
V	3641.20	44.1	-4.59	39.51	54.00	-14.49	AV
H	1820.60	60.77	-3.62	57.15	74.00	-16.85	Pk
H	1820.60	43.85	-3.62	40.23	54.00	-13.77	AV
H	2730.90	60.46	-3.93	56.53	74.00	-17.47	Pk
H	2730.90	39.73	-3.93	35.8	54.00	-18.2	AV
H	3641.20	58.09	-3.57	54.52	74.00	-19.48	Pk
H	3641.20	38.94	-3.57	35.37	54.00	-18.63	AV
917.3MHz							
V	1820.60	59.34	-3.57	55.77	74.00	-18.23	Pk
V	1820.60	44.81	-3.57	41.24	54.00	-12.76	AV
V	2730.90	58.53	-3.84	54.69	74.00	-19.31	Pk
V	2730.90	43.75	-3.84	39.91	54.00	-14.09	AV
V	3641.20	57.98	-4.59	53.39	74.00	-20.61	Pk
V	3641.20	42.27	-4.59	37.68	54.00	-16.32	AV
H	1820.60	58.72	-3.62	55.1	74.00	-18.9	Pk
H	1820.60	40.80	-3.62	37.18	54.00	-16.82	AV
H	2730.90	59.40	-3.93	55.47	74.00	-18.53	Pk
H	2730.90	44.55	-3.93	40.62	54.00	-13.38	AV
H	3641.20	59.34	-3.57	55.77	74.00	-18.23	Pk
H	3641.20	43.12	-3.57	39.55	54.00	-14.45	AV
917.7MHz							
V	1820.60	57.7	-3.57	54.13	74.00	-19.87	Pk
V	1820.60	43.52	-3.57	39.95	54.00	-14.05	AV
V	2730.90	57.49	-3.84	53.65	74.00	-20.35	Pk
V	2730.90	40.91	-3.84	37.07	54.00	-16.93	AV
V	3641.20	58.76	-4.59	54.17	74.00	-19.83	Pk
V	3641.20	44.05	-4.59	39.46	54.00	-14.54	AV
H	1820.60	59.5	-3.62	55.88	74.00	-18.12	Pk
H	1820.60	42.37	-3.62	38.75	54.00	-15.25	AV
H	2730.90	57.52	-3.93	53.59	74.00	-20.41	Pk
H	2730.90	43.33	-3.93	39.4	54.00	-14.6	AV
H	3641.20	57.59	-3.57	54.02	74.00	-19.98	Pk
H	3641.20	41.98	-3.57	38.41	54.00	-15.59	AV
Remark:							
Absolute Level= ReadingLevel+ Factor, Margin= Limit- Absolute Level							
Other harmonics emissions are lower than 20dB below the allowable limit.							

CONDUCTED EMISSION MEASUREMENT
Low Channel 917.1MHz

Mid Channel 917.7MHz


4. 100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE APPLICABLE STANDARD

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation

TEST PROCEDURE

- a) Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- b) Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
- c) i) VBW for Peak, Quasi-peak, or Average Detector Function: $3 \times \text{RBW}$
- d) Repeat above procedures until all measured frequencies were complete.

Note:

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

4.1 DEVIATION FROM STANDARD

No deviation.

4.2 TEST SETUP

4.3 EUT OPERATION CONDITIONS

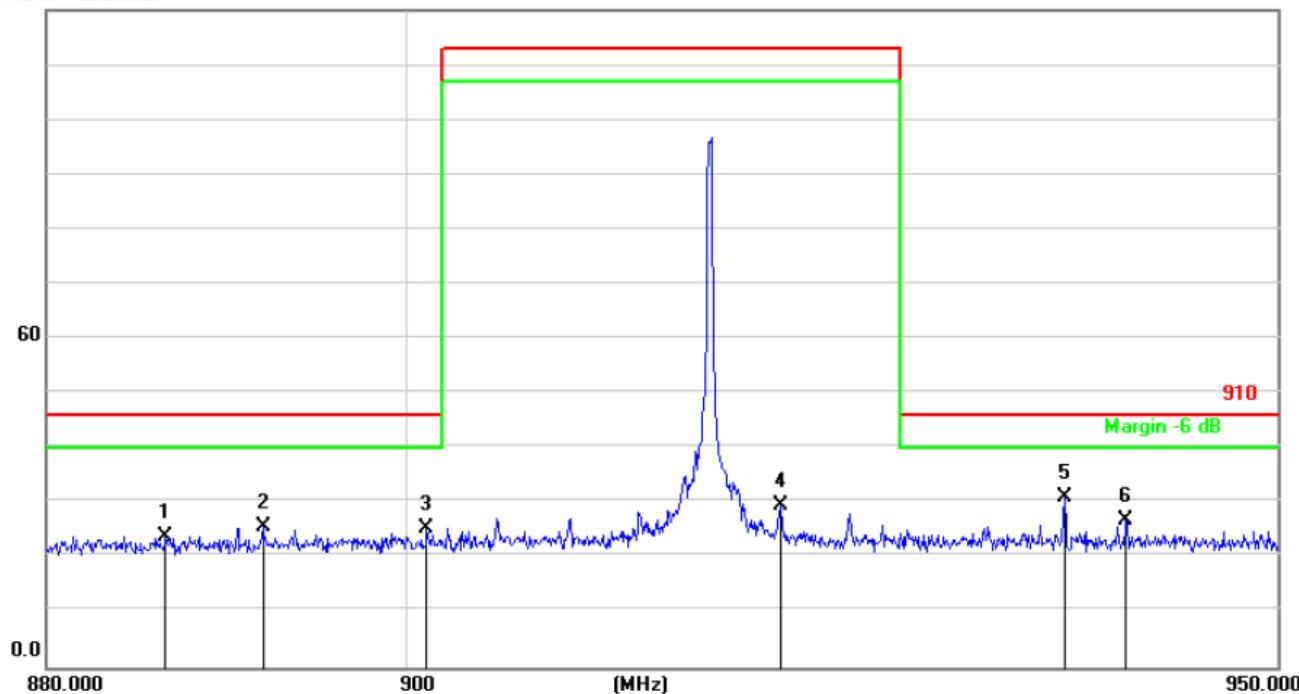
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

4.4 TEST RESULTS

Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101 kPa	Test Voltage :	DC 3.7V
Test Mode :	Mode 1		

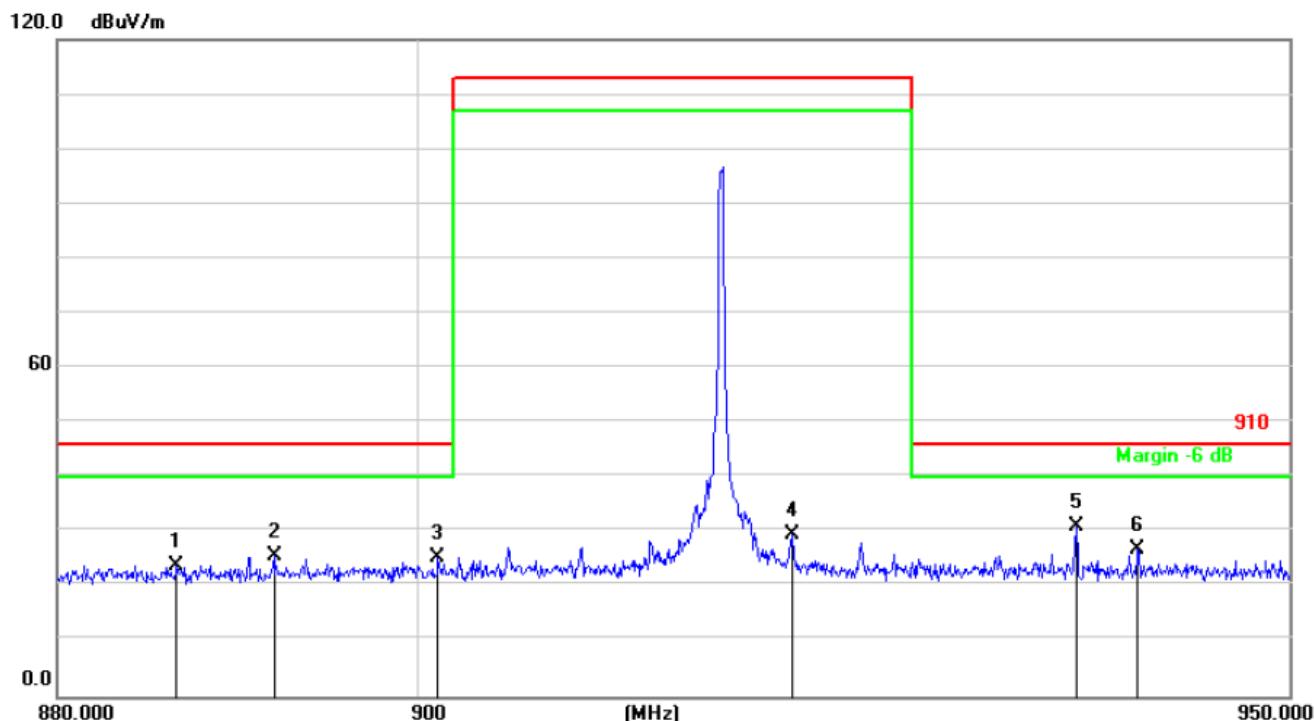
917.1MHz Horizontal

120.0 dBuV/m



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector
			Level	Factor	ment			
		MHz	dBuV	dB	dBuV/m	dB/m	dB	
1		886.5800	25.68	-1.77	23.91	46.00	-22.09	Peak
2		891.9700	27.42	-1.66	25.76	46.00	-20.24	Peak
3		901.0700	26.88	-1.49	25.39	46.00	-20.61	Peak
4		921.1600	31.00	-1.33	29.67	113.0	-83.33	Peak
5	*	937.5400	32.34	-1.21	31.13	46.00	-14.87	Peak
6		941.1100	27.97	-1.18	26.79	46.00	-19.21	Peak

917.1MHz Vertical

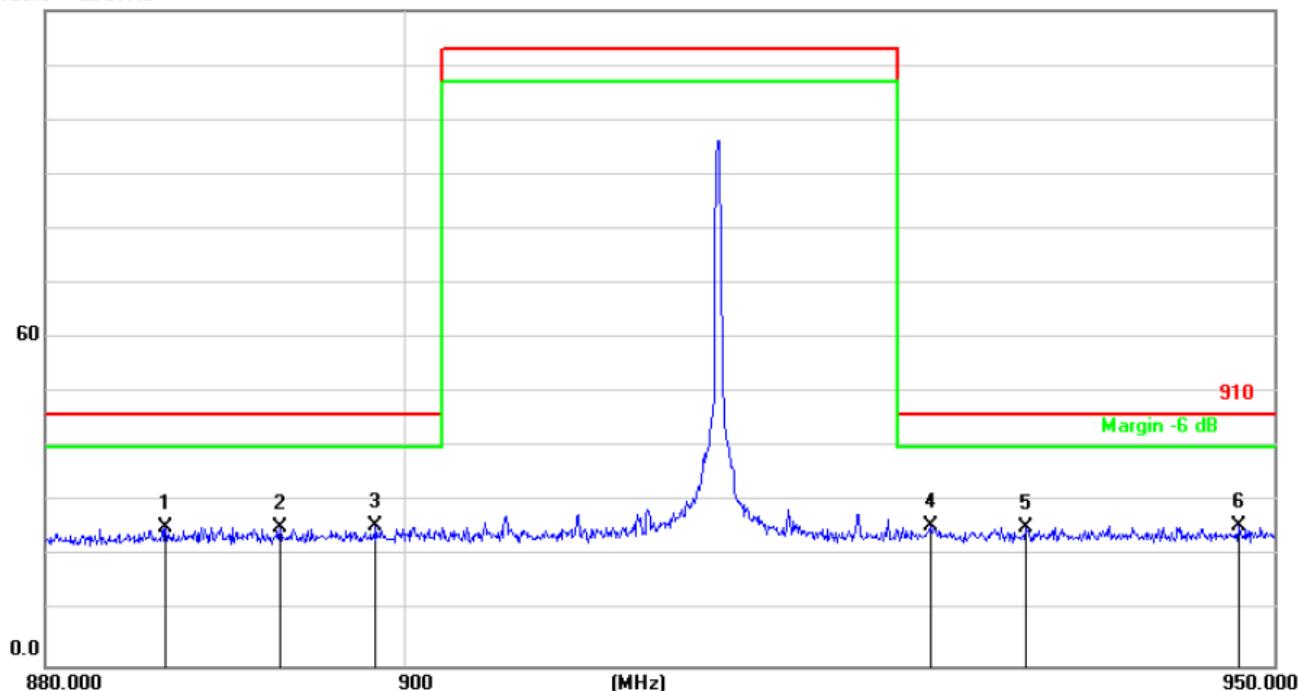


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		886.5800	25.68	-1.77	23.91	46.00	-22.09	Peak
2		891.9700	27.42	-1.66	25.76	46.00	-20.24	Peak
3		901.0700	26.88	-1.49	25.39	46.00	-20.61	Peak
4		921.1600	31.00	-1.33	29.67	113.0	-83.33	Peak
5	*	937.5400	32.34	-1.21	31.13	46.00	-14.87	Peak
6		941.1100	27.97	-1.18	26.79	46.00	-19.21	Peak

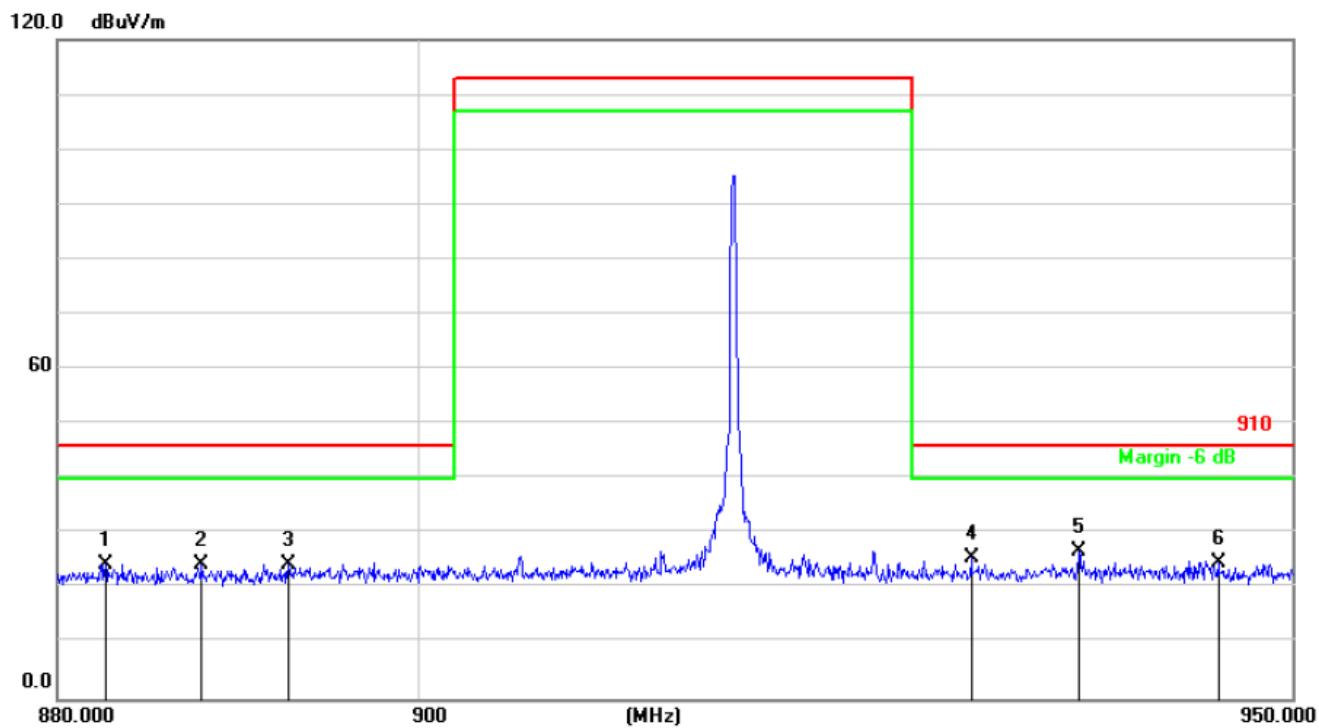
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101 kPa	Test Voltage :	DC 3.7V
Test Mode :	Mode 2		

917.7MHz Horizontal

120.0 dBuV/m



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Over Detector
1		886.6500	27.22	-1.77	25.45	46.00	-20.55	Peak
2		893.0200	26.91	-1.64	25.27	46.00	-20.73	Peak
3		898.3400	27.13	-1.53	25.60	46.00	-20.40	Peak
4	*	929.9100	27.07	-1.27	25.80	46.00	-20.20	Peak
5		935.4400	26.72	-1.22	25.50	46.00	-20.50	Peak
6		947.9000	26.64	-1.13	25.51	46.00	-20.49	Peak

917.7MHz Vertical


No.	Mk.	Freq. MHz	Reading Level	Correct Factor	Measure- ment	Limit	Over	Detector
			dBuV	dB	dBuV/m	dB/m	dB	
1		882.6600	26.44	-1.85	24.59	46.00	-21.41	Peak
2		887.9800	26.31	-1.75	24.56	46.00	-21.44	Peak
3		892.7400	26.09	-1.65	24.44	46.00	-21.56	Peak
4		931.3100	26.85	-1.26	25.59	46.00	-20.41	Peak
5	*	937.5400	28.16	-1.21	26.95	46.00	-19.05	Peak
6		945.6600	25.84	-1.14	24.70	46.00	-21.30	Peak

5. BANDWIDTH TEST

5.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.249) , Subpart C			
Section	Test Item	Frequency Range (MHz)	Result
15.249	Bandwidth	902~928	PASS

5.1.1 TEST PROCEDURE

1. Set resolution bandwidth (RBW) = 1-5% or DTS BW, not to exceed 100 kHz.
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP



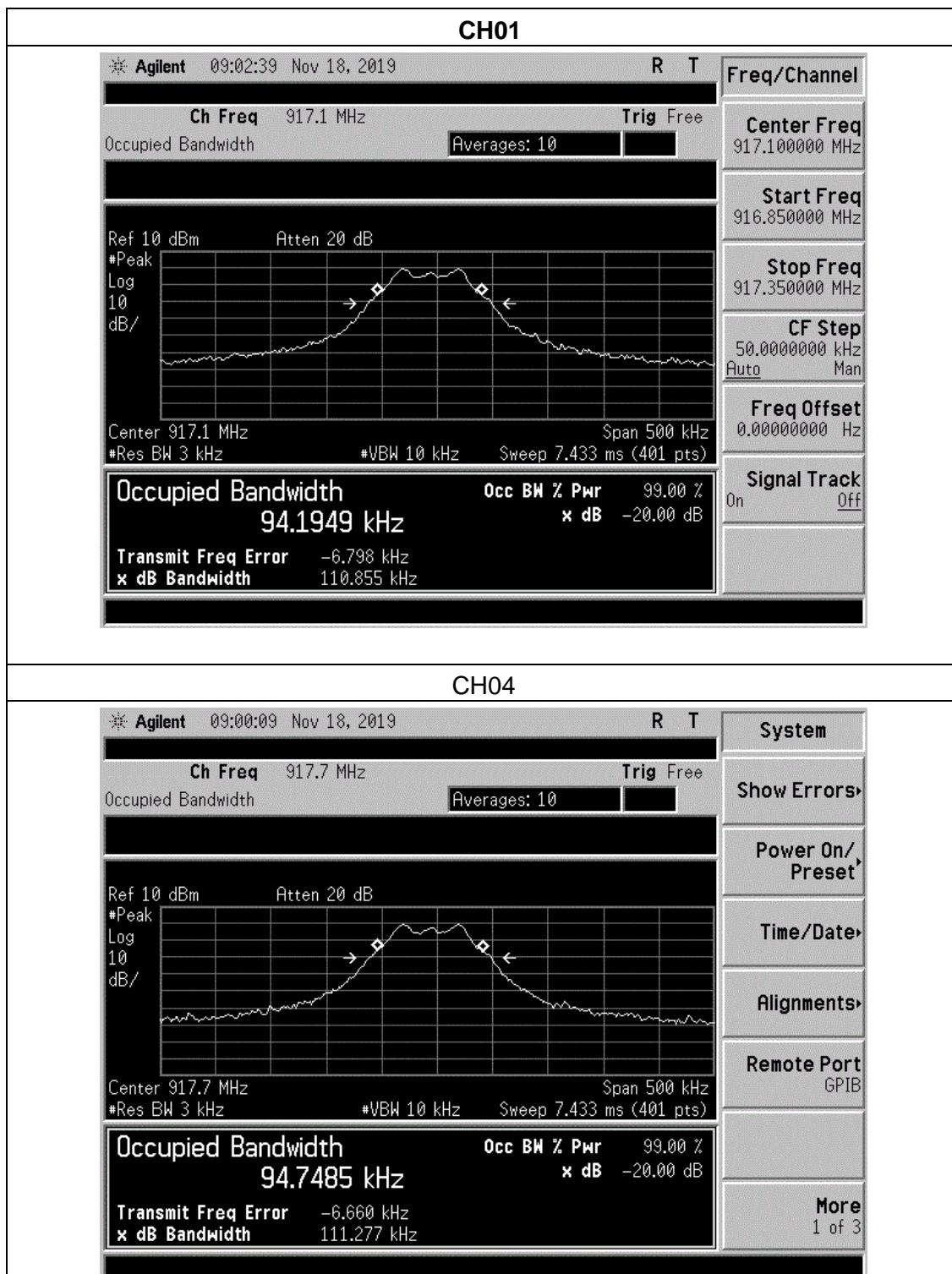
5.1.4 EUT OPERATION CONDITIONS

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

5.1.5 TEST RESULTS

Temperature :	26°C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 3.7V
Test Mode :	TX Mode		

Channel	Frequency (MHz)	20dB bandwidth (MHz)
01	917.1	0.111
04	917.7	0.111



6. ANTENNA REQUIREMENT

6.1 STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 15.203: 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.

6.2 EUT ANTENNA

The EUT antenna is Internal antenna. It comply with the standard requirement.

7. EUT TEST PHOTO

Radiated Measurement Photos



Conducted Measurement Photos



8. PHOTO OF THE EUT







***** END OF REPORT *****