FCC Radio Test Report

Equipment	: V-JET
Brand Name	: WISEJET
Model No.	: V-JET10-T
FCC ID	: 2ALI9V-JET10
Standard	: 47 CFR FCC Part 15.255
Applicant	: WiseJet Inc. 9F, Nano Fab Center, 291 Daehak-ro Yuseong-gu, Daejun , South Korea
Manufacturer	: WiseJet Inc. 9F, Nano Fab Center, 291 Daehak-ro Yuseong-gu, Daejun , South Korea

The product sample received on Mar. 07, 2017 and completely tested on Apr. 17, 2017. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013, 47 CFR FCC Part 15.255 and Millimeter Wave Test Procedures and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Cliff Chang
SPORTON INTERNATIONAL INC.

Testing Laboratory
1190

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Summary of Test Result

Standard Requirements and Conformance Test Specifications				
Report Clause	**Ref. Std. Clause**	**Description**	**Result**	**Remark**
3.1	FCC 15.207	AC Power Conducted Emissions	Complied	-
3.2	FCC 15.255(d)	Occupied Bandwidth	Complied	-
3.3	FCC 15.255(b)(1)	EIRP Power	Complied	-
3.4	FCC 15.255(d)	Peak Conducted Power	Complied	-
3.5	FCC 15.255(c)	Transmitter Spurious Emissions	Complied	-
3.6	FCC 15.255(e)	Frequency Stability	Complied	-
3.7	FCC 15.255(a),(g)	Operation Restriction and Group Installation	Complied	-

Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR730730	Rev. 01	Initial issue of report	Apr. 26, 2017

1 General Description

1.1 Information

1.1.1 The Channel Plan(s)

Frequency Range	57~71 GHz
The Channel Plan(s)	
Low-rate PHY (LRP) Band	Channel 2 LRP: 60.16-60.80 GHz Channel 3 LRP: 62.32-62.96 GHz
LRP Channel List	Channel 2 LRP: 60.16-60.80 GHz: 60.16 +n x 0.16 (n=0, 1, 2, 3, 4) GHz Channel 3 LRP: 62.32-62.96 GHz: 62.32 +n x 0.16 (n=0, 1, 2, 3, 4) GHz
Middle-rate PHY (MRP) Band	Channel 2 MRP: 60.48 GHz Channel 3 MRP: 62.64 GHz

1.1.2 Transmit Operating Modes

The Different Transmit Operating Modes
☒ Operating mode 1: Smart Antenna Systems - with beam forming
☐ Operating mode 2: Smart Antenna Systems - without beam forming
☐ Operating mode 3: Single Antenna Equipment

1.1.3 Antenna Information

Antenna Information		
☐ Equipment placed on the market without antennas		
☒ Integral antenna		
Integral antenna gain	5 dBi for LRP	9 dBi for MRP
	☐ Temporary RF connector provided	
	☒ No temporary RF connector provided	
☐ External antenna (dedicated antennas)		
	☐ Single power level with corresponding antenna(s)	
	☐ Multiple power settings and corresponding antenna(s)	

1.1.4 Power Levels

Worst Power Levels for LRP			
Applicable power levels	☐ Conducted ☒ EIRP		
Antenna gain	5 dBi		
Frequency (GHz)	Highest setting (P_{high}): (dBm)		
	Modulation	AV Power	Peak Power
62.32	BPSK	11.19	17.24

Worst Power Levels for MRP			
Applicable power levels	☐ Conducted ☒ EIRP		
Antenna gain	9 dBi		
Frequency (GHz)	Highest setting (P_{high}): (dBm)		
	Modulation	AV Power	Peak Power
60.48	QPSK	5.19	5.31

1.1.5 Extreme Operating

The Extreme Operating Temperature Range that Apply to the Equipment			
☐ -20 °C to +50 °C			
☒ 0 °C to +50°C			
☐ Other:			
EUT Power Type	From Power Adapter		
Supply Voltage	☐ AC	State AC voltage	V
Supply Voltage	☒ DC	State DC voltage 5	V

1.1.6 Equipment Use Condition

Equipment Use Condition
☐ Fixed field disturbance sensors at 61-61.5GHz
☐ Except fixed field disturbance sensors at 61-61.5GHz
☒ Except fixed field disturbance sensors

1.1.7 User Condition

Intended Operation
☒ Indoor only
☐ Outdoor only

1.2 Additional Information Provided by the Submitter

1.2.1 Modulation

Modulation	
The LRP modulation is BPSK. The MRP modulation is QPSK.	
Can the transmitter operate un-modulated:	☒ Yes ☐ No

1.2.2 Duty Cycle

Duty Cycle			Duty Cycle Factor
The transmitter is intended for	LRP	24.42 %	6.12
	MRP	97.21 %	0.12

1.3 Accessories

N/A

1.4 Support Equipment

For AC Power Conducted Emissions test:

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	NB*2	DELL	E6430	DoC
2	Fixture	N/A	N/A	N/A
3	LCD Monitor	DELL	1704FPTt	DoC
4	RX driver	V-JET	V-JET-R	6705A-SIISK63101

For Transmitter Spurious Emissions (below 1 GHz) test:

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	NB*2	DELL	E4300	DoC
2	Fixture	N/A	N/A	N/A
3	RX driver	V-JET	V-JET-R	6705A-SIISK63101
4	LCD Monitor	DELL	1704FPTt	DoC

For Other test:

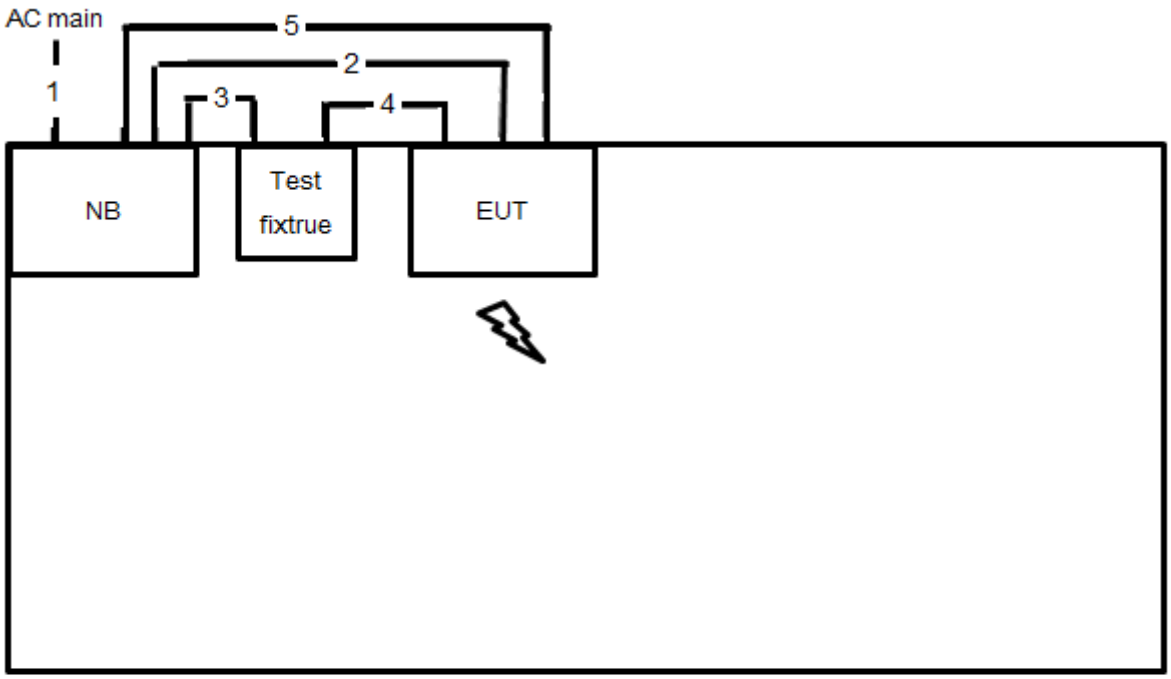
Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	NB	DELL	E4300	DoC
2	Fixture	N/A	N/A	N/A

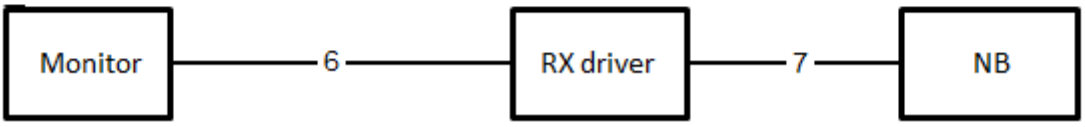
1.5 EUT Operation during Test

High Definition Audio / Video in the 1080p format was sent from the transmitter device to the receiver device via the wireless link.

1.6 Test Setup Diagram

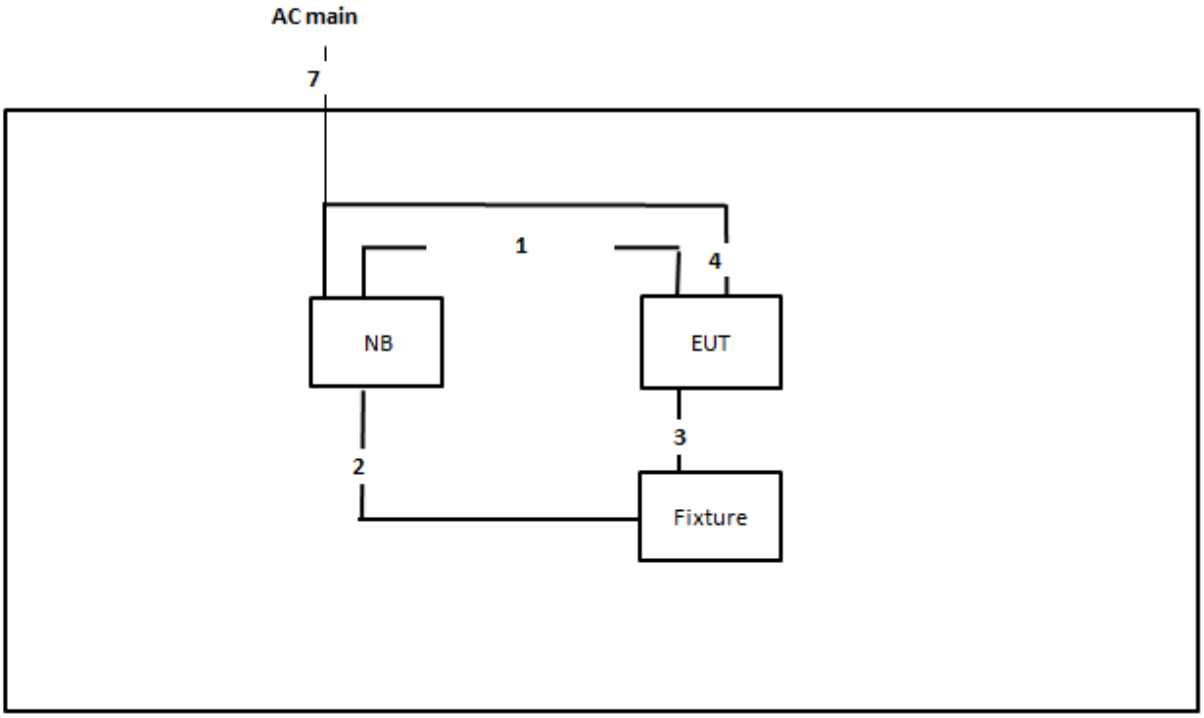
Test Setup Diagram - AC Power Conducted Emissions

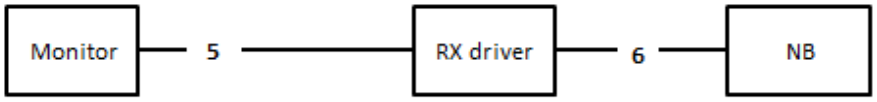




Item	Connection	Shielded	Length
1	Power cable	No	2.6m
2	USB cable	Yes	1.2m
3	USB cable	Yes	1.2m
4	Fixture cable	No	0.1m
5	HDMI cable	Yes	1.8m
6	HDMI cable	Yes	1.8m
7	USB cable	No	1.2m

Test Setup Diagram - Transmitter Spurious Emissions





Item	Connection	Shielded	Length
1	USB cable	Yes	1.2m
2	USB cable	Yes	1.2m
3	Fixture cable	No	0.1m
4	HDMI cable	Yes	1.8m
5	HDMI cable	Yes	1.8m
6	USB cable	Yes	1.2m
7	Power cable	No	2.6m

1.7 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR FCC Part 15.255
- ANSI C63.10-2013 Section 9. “Procedures for testing millimeter-wave systems”

1.8 Testing Location

Testing Location				
☐	HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.		
		TEL : 886-3-327-3456	FAX : 886-3-327-0973	
☒	JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C.		
		TEL : 886-3-656-9065	FAX : 886-3-656-9085	
Test Site No.				
CO02-CB		03CH01-CB		TH01-CB

2 Test Configuration of Equipment under Test

2.1 Test Channel Frequencies

Nominal Channel Bandwidth			
Channel Plan (GHz)	**Low Channel (GHz)**	**Middle Channel (GHz)**	**High Channel (GHz)**
Channel 2 LRP: 60.16-60.80	60.16	60.48	60.80
Channel 2 MRP: 60.48	-	60.48	-
Channel 3 LRP: 62.32-62.96	62.32	62.64	62.96
Channel 3 MRP: 62.64	-	62.64	-

2.2 Conformance Tests and Related Test Frequencies

Test Item	**Test Frequencies (GHz) Channel Plan 2&3**	
	LRP	**MRP**
AC Power Conducted Emissions	CTX	
Occupied Bandwidth	60.16, 60.48, 60.80 & 62.32, 62.64, 62.96	60.48 & 62.64
EIRP Power	60.16, 60.48, 60.80 & 62.32, 62.64, 62.96	60.48 & 62.64
Peak Conducted Power	60.16, 60.48, 60.80 & 62.32, 62.64, 62.96	60.48 & 62.64
Transmitter Spurious Emissions (below 1 GHz)	CTX	
Transmitter Spurious Emissions (1 GHz-40 GHz)	60.16, 60.48, 60.80 & 62.32, 62.64, 62.96	-
Transmitter Spurious Emissions (above 40 GHz)	60.16, 60.48, 60.80 & 62.32, 62.64, 62.96	60.48 & 62.64
Frequency Stability	Un-Modulation	

2.3 Far Field Boundary Calculations

The far-field boundary is given as:

far field = (2 * L^2) / λ

where:

L = Largest Antenna Dimension, including the reflector, in meters

λ = wavelength in meters

Far Field (m)				
Frequency (GHz)	**L (m)**	**Lambda (m)**	**d(Far Field) (m)**	**d(Far Field) (cm)**
60.16	0.02	0.0049867	0.160	16.04
60.48	0.02	0.0049603	0.161	16.13
60.80	0.02	0.0049342	0.162	16.21
62.32	0.02	0.0048139	0.166	16.62
62.64	0.02	0.0047893	0.167	16.70
62.96	0.02	0.0047649	0.168	16.79

3 Transmitter Test Result

3.1 AC Power Conducted Emissions

3.1.1 Limit of AC Power Conducted Emissions

AC Power Conducted Emissions Limit		
Frequency Emission (MHz)	**Quasi-Peak**	**Average**
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50
Note: * Decreases with the logarithm of the frequency.		

3.1.2 Measuring Instruments

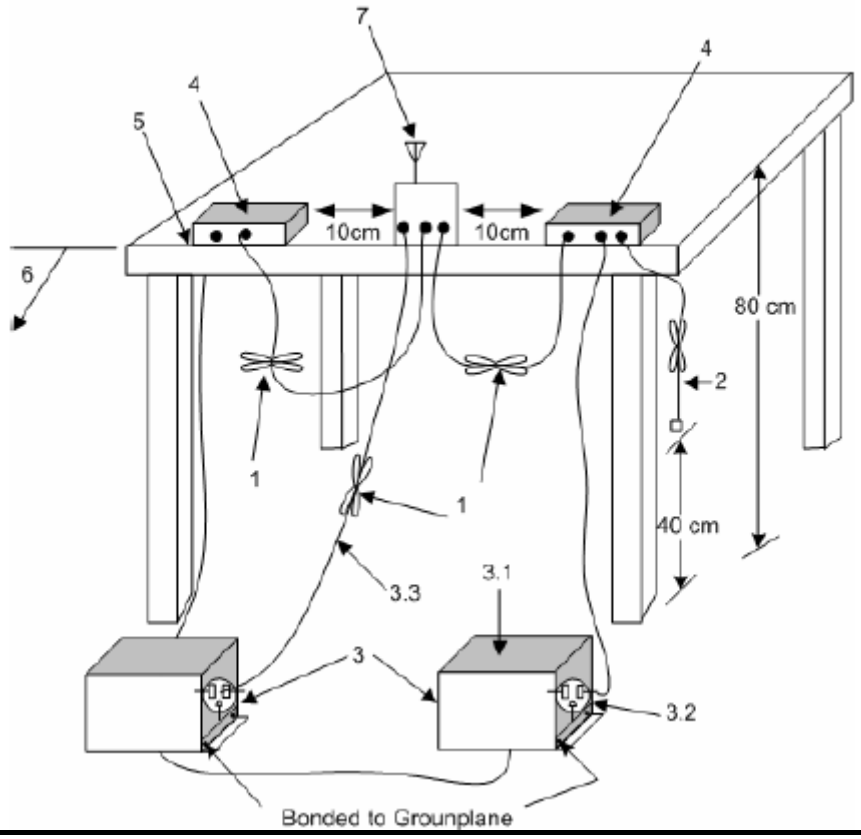
Refer a measuring instruments list in this test report.

3.1.3 Test Procedures

Method of measurement: Refer as ANSI C63.10-2013, clause 6.2.

3.1.4 Test Setup

AC Power Conducted Emissions



AC Power Conducted Emissions
1. 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 cm to 40 cm long (see ANSI C63.10, clause 6.2.3.2).
2. I/O cables that are not connected to an accessory 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 (see ANSI C63.10, clause 6.2.2).
3. EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 ohm loads. LISN can be placed on top of, or immediately beneath, reference ground plane (see ANSI C63.10, clauses 6.2.2 and 6.2.3).
3.1. All other equipment powered from additional LISN(s).
3.2. A multiple-outlet strip can be used for multiple power cords of non-EUT equipment.
3.3. LISN at least 80 cm from nearest part of EUT chassis.
4. Non-EUT components of EUT system being tested.
5. Rear of EUT, including peripherals, shall all be aligned and flush with edge of tabletop (see ANSI C63.10, clause 6.2.3.2).
6. Edge of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane (see ANSI C63.10, clause 6.2.2 for options).
7. Antenna may be integral or detachable. If detachable, the antenna shall be attached for this test.

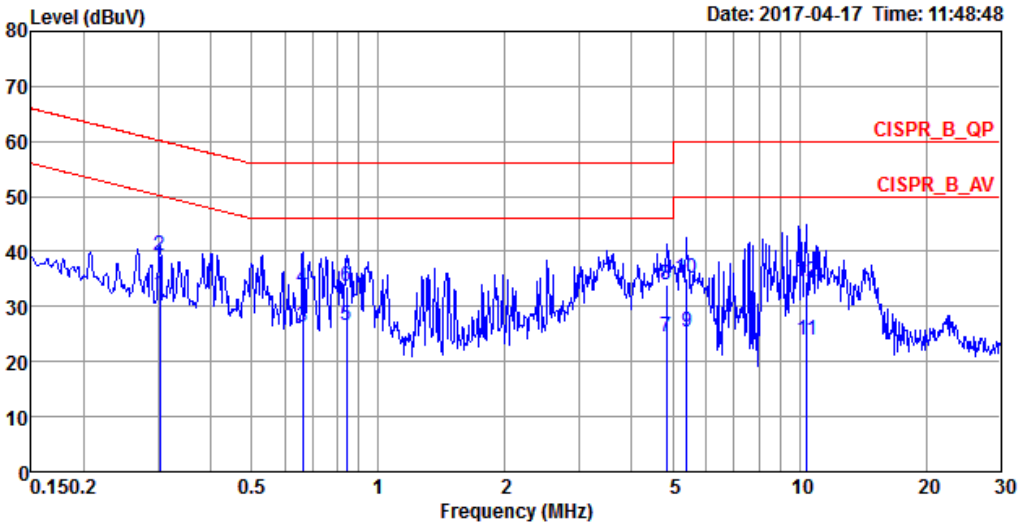
3.1.5 Test Result of AC Power Conducted Emissions

Test Conditions	see ANSI C63.10, clause 5.11
Test Setup	see ANSI C63.10, clause 6.2.3

NOTE 1: If equipment having different channel plan and nominal channel bandwidth modes (see test report clause 1.1.1), the measurements are uninfluenced by different channel plan and nominal channel bandwidth modes, may not need to be repeated for all modes. If equipment having different transmit operating modes (see test report clause 1.1.2), the measurements are uninfluenced by different transmit operating modes, may not need to be repeated for all the operating modes. Similar, if the equipment supports different modulations and/or data rates, the measurements described in ANSI C63.10, clause 5.12 may not need to be repeated for all these modulations and data rates. Simple comparison of engineering test across all operating modes, modulations and data rates may need to be performed to define the worse case combination to be used for the conformance testing.

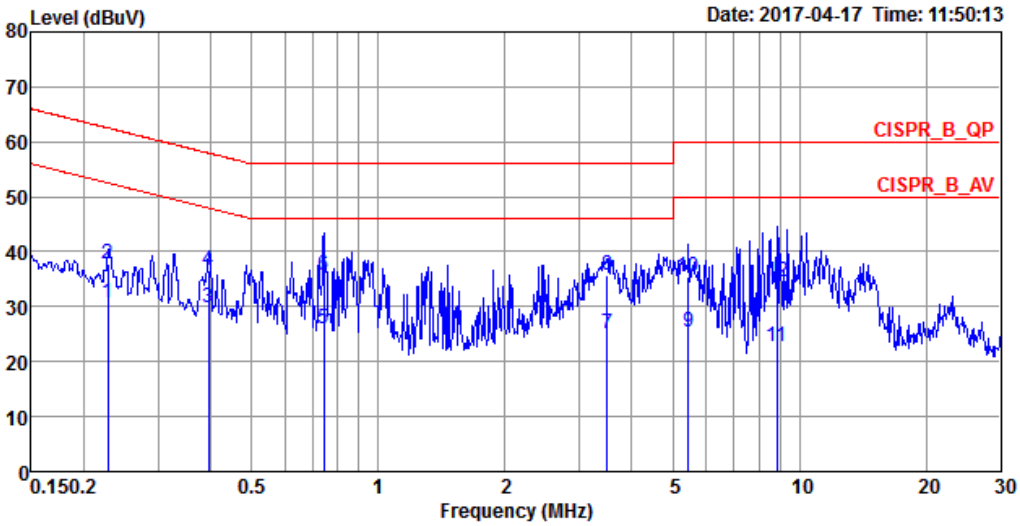
NOTE 2: “>20dB” means the tables in this clause should only list values of spurious emissions that exceed the level of 20 dB below the applicable limit, see ANSI C63.4, clause 10.1.8.1.

Temp	23°C	Humidity	60%
Test Engineer	Kane Liu	Phase	Line
Configuration	CTX		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.3035	32.20	-17.95	50.15	22.25	9.91	0.04	Average	LINE
2	0.3035	39.21	-20.94	60.15	29.26	9.91	0.04	QP	LINE
3	0.6613	26.40	-19.60	46.00	16.42	9.93	0.05	Average	LINE
4	0.6613	33.22	-22.78	56.00	23.24	9.93	0.05	QP	LINE
5	0.8393	26.65	-19.35	46.00	16.65	9.95	0.05	Average	LINE
6	0.8393	33.73	-22.27	56.00	23.73	9.95	0.05	QP	LINE
7	4.8224	24.38	-21.62	46.00	14.27	9.97	0.14	Average	LINE
8	4.8224	33.98	-22.02	56.00	23.87	9.97	0.14	QP	LINE
9	5.3900	25.33	-24.67	50.00	15.20	9.99	0.14	Average	LINE
10	5.3900	35.20	-24.80	60.00	25.07	9.99	0.14	QP	LINE
11	10.3972	23.80	-26.20	50.00	13.54	10.07	0.19	Average	LINE
12	10.3972	34.51	-25.49	60.00	24.25	10.07	0.19	QP	LINE

Temp	23°C	Humidity	60%
Test Engineer	Kane Liu	Phase	Neutral
Configuration	CTX		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.2280	30.83	-21.69	52.52	20.80	9.98	0.05	Average	NEUTRAL
2	0.2280	37.79	-24.73	62.52	27.76	9.98	0.05	QP	NEUTRAL
3	0.3955	29.93	-18.02	47.95	19.93	9.96	0.04	Average	NEUTRAL
4	0.3955	36.70	-21.25	57.95	26.70	9.96	0.04	QP	NEUTRAL
5	0.7430	26.12	-19.88	46.00	16.09	9.98	0.05	Average	NEUTRAL
6	0.7430	35.72	-20.28	56.00	25.69	9.98	0.05	QP	NEUTRAL
7	3.4906	25.15	-20.85	46.00	14.97	10.06	0.12	Average	NEUTRAL
8	3.4906	35.58	-20.42	56.00	25.40	10.06	0.12	QP	NEUTRAL
9	5.4474	25.40	-24.60	50.00	15.15	10.11	0.14	Average	NEUTRAL
10	5.4474	35.40	-24.60	60.00	25.15	10.11	0.14	QP	NEUTRAL
11	8.8223	22.65	-27.35	50.00	12.32	10.15	0.18	Average	NEUTRAL
12	8.8223	34.46	-25.54	60.00	24.13	10.15	0.18	QP	NEUTRAL

3.2 Occupied Bandwidth

3.2.1 Limit of Occupied Bandwidth

6dBc Bandwidth (see Note 1)	None
26dBc Bandwidth	None
99% Occupied Bandwidth (see Note 2)	None

NOTE 1: The 6dBc bandwidth is the frequency bandwidth of the signal power at the -6 dBc points when measured with a 100 kHz resolution bandwidth. These measurements shall also be performed at normal test conditions.

NOTE 2: The 99% occupied bandwidth is the frequency bandwidth of the signal power at the 99% channel power of occupied bandwidth when resolution bandwidth should be approximately 1 % to 5 % of the occupied bandwidth (OBW). These measurements shall also be performed at normal test conditions.

3.2.2 Measuring Instruments

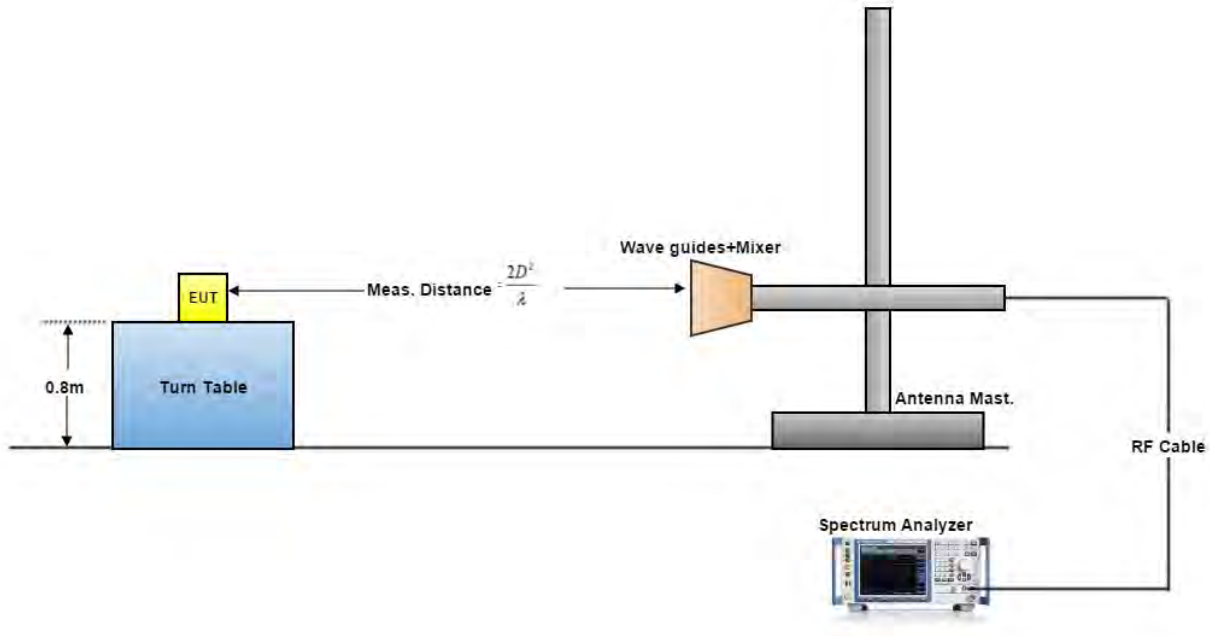
Refer a measuring instruments list in this test report.

3.2.3 Test Procedures

Method of measurement: Refer as ANSI C63.10-2013, clauses 6.9.2.

3.2.4 Test Setup

Occupied Channel Bandwidth



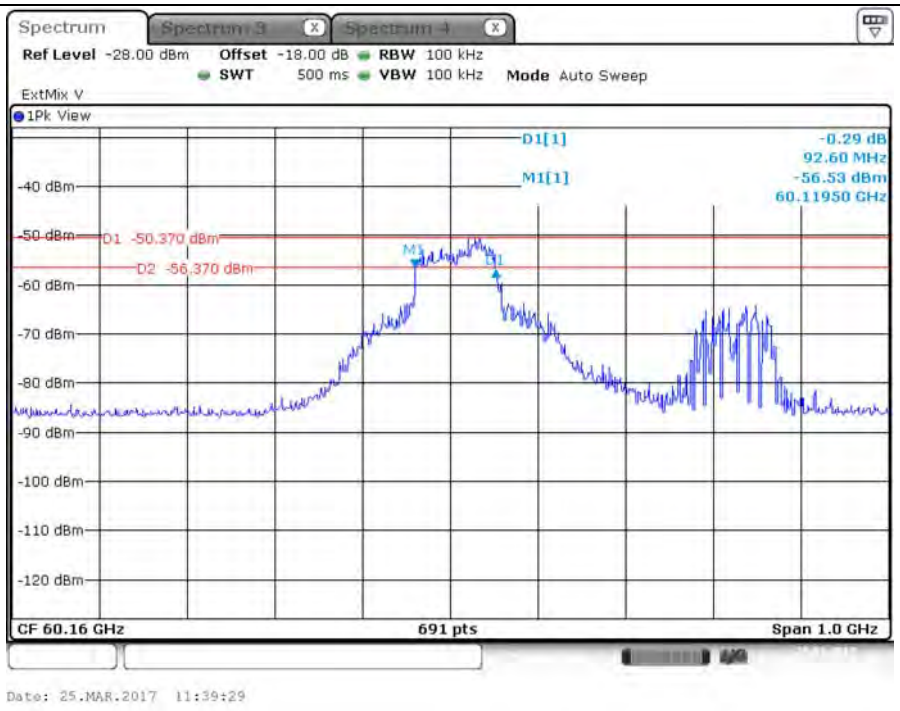
3.2.5 Test Result of Occupied Bandwidth

Test Conditions	see ANSI C63.10, clause 5.11
Test Setup	see ANSI C63.10, clause 6.9.2
NOTE: If equipment having different transmit operating modes (see test report clause 1.1.2), the measurements are uninfluenced by different transmit operating modes, may not need to be repeated for all the operating modes. Similar, if the equipment supports different modulations and/or data rates, the measurements described in ANSI C63.10, clause 5.11 may not need to be repeated for all these modulations and data rates. Simple comparison of engineering test across all operating modes, modulations and data rates may need to be performed to define the worse case combination to be used for the conformance testing. Refer as ANSI C63.10, clause 15, observe and record with plotted graphs or photographs the worst-case (i.e., widest) occupied bandwidth produced by these different modulation sources.	

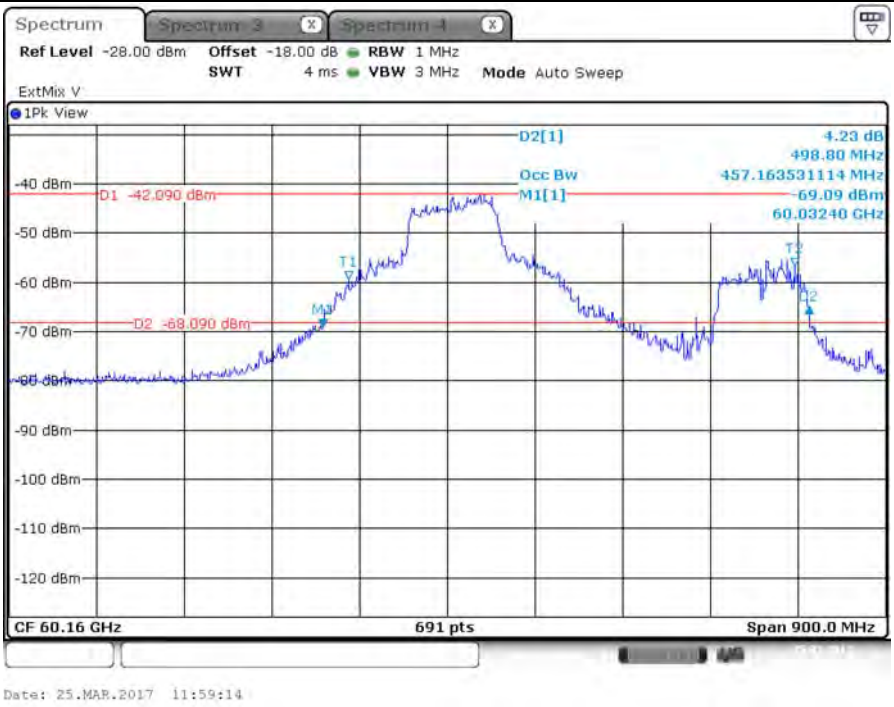
Temp	22℃	**Humidity**	54%		
Test Engineer	Steven Liang				
Test Results					
Channel Plan (GHz)	**Test Freq. (GHz)**	**6 dBc Bandwidth (MHz)**	**Occupied Bandwidth (MHz)**	**26 dBc Bandwidth (MHz)**	**Limit (MHz)**
Channel 2 LRP: 60.16-60.80	60.16	92.60	457.16	498.80	NA
	60.48	92.60	312.60	244.86	NA
	60.80	91.20	485.82	600.40	NA
Channel 3 LRP: 62.32-62.96	62.32	88.30	452.96	496.40	NA
	62.64	89.70	241.68	335.70	NA
	62.96	91.20	536.90	602.00	NA
Channel 2 MRP: 60.48	60.48	803.20	1070.91	1881.30	NA
Channel 3 MRP: 62.64	62.64	767.00	1432.70	2344.40	NA

3.2.5.1 Bandwidth Plots

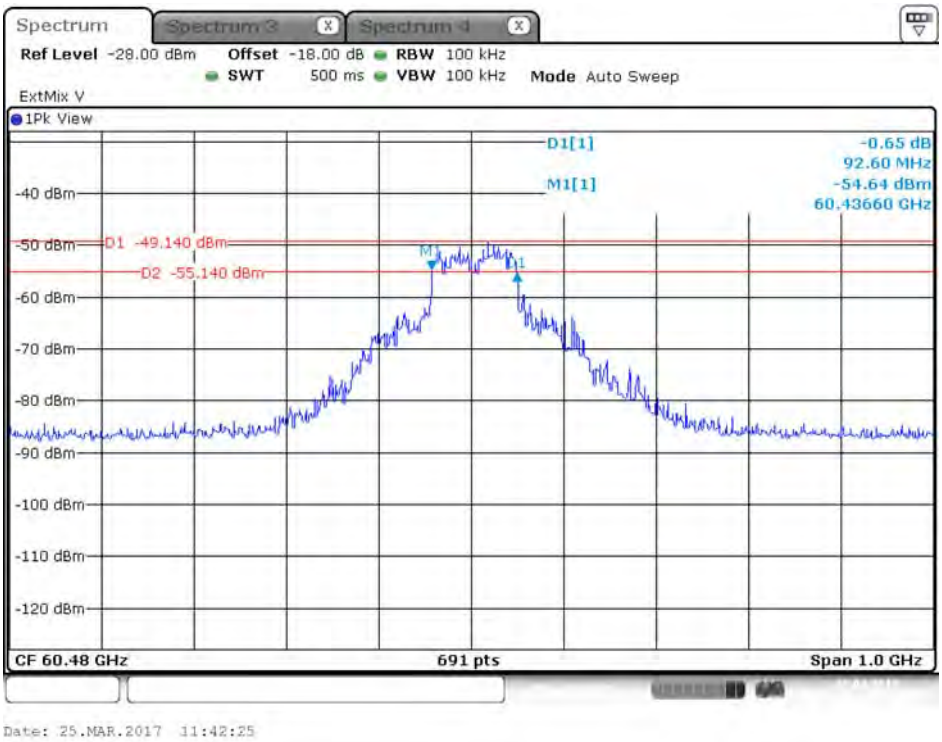
Channel Plan: Channel 2 LRP: 60.16-60.80 GHz
Test Frequency: 60.16 GHz
6 dBc Bandwidth



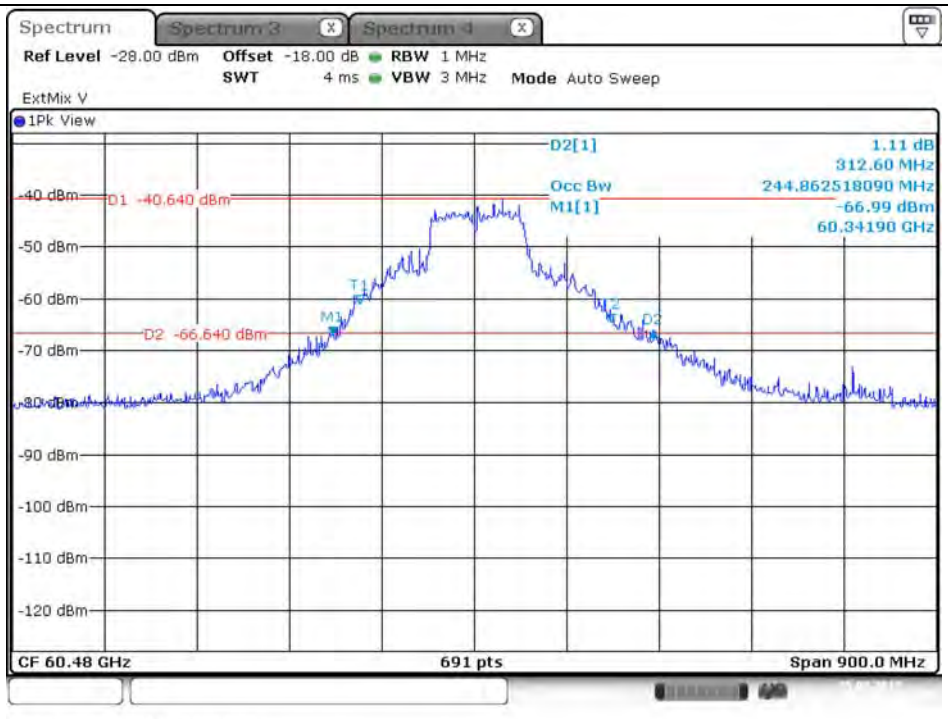
Occupied Bandwidth&26 dBc Bandwidth



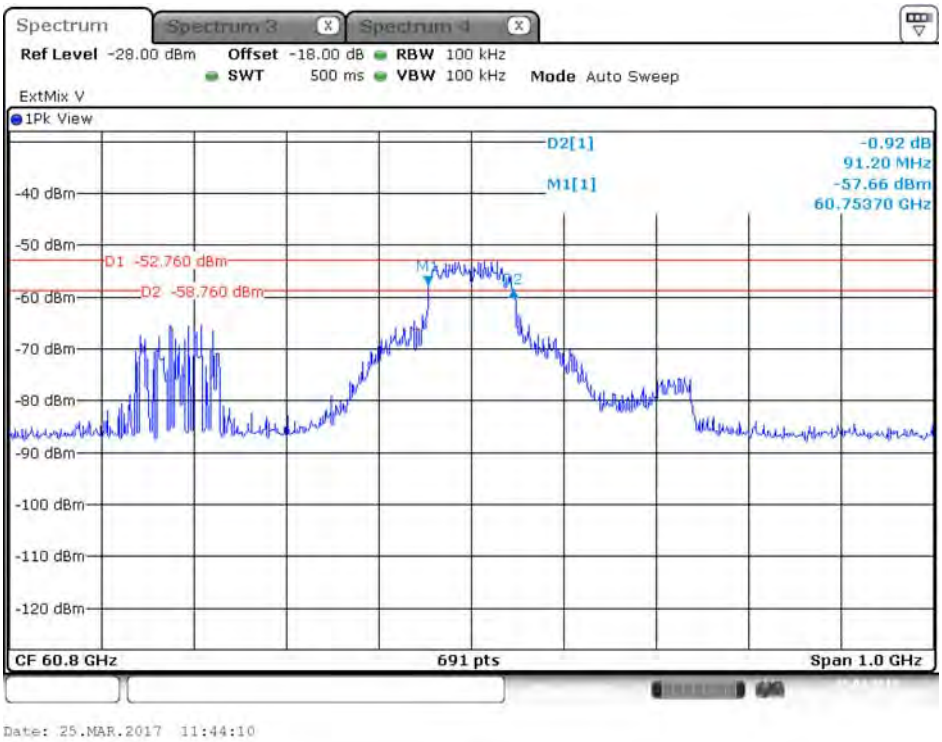
Test Frequency: 60.48 GHz
6 dBc Bandwidth



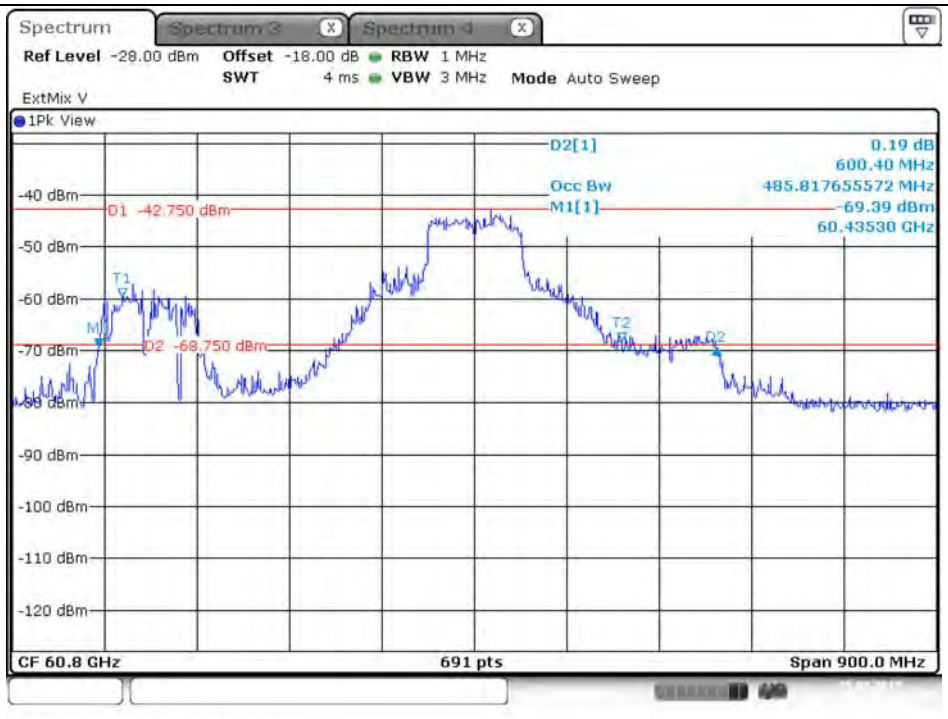
Occupied Bandwidth&26 dBc Bandwidth



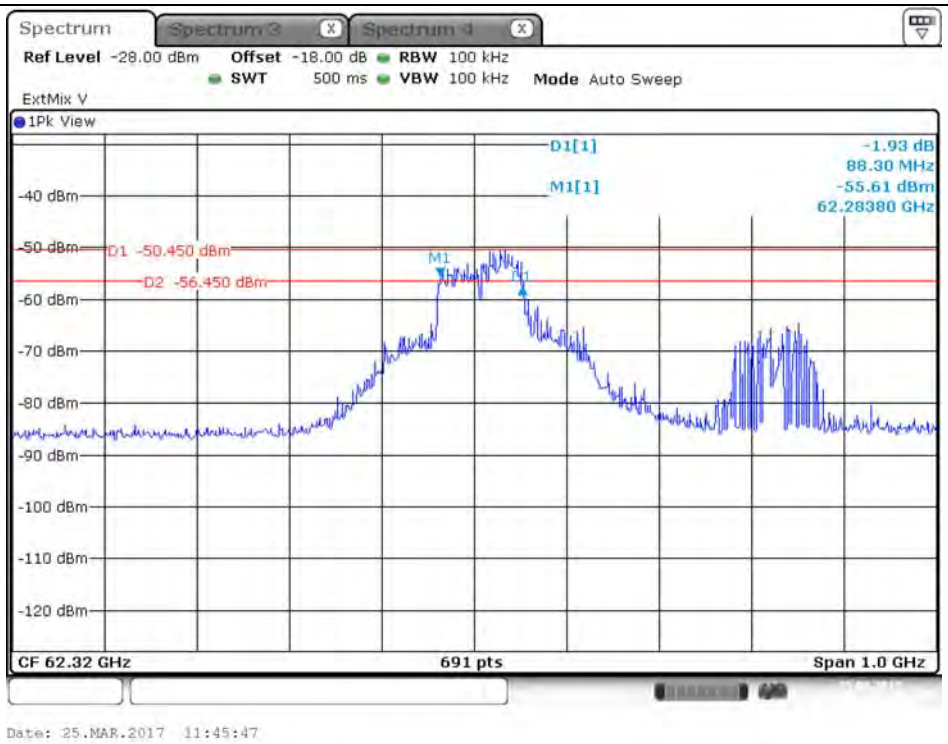
Test Frequency: 60.80 GHz
6 dBc Bandwidth



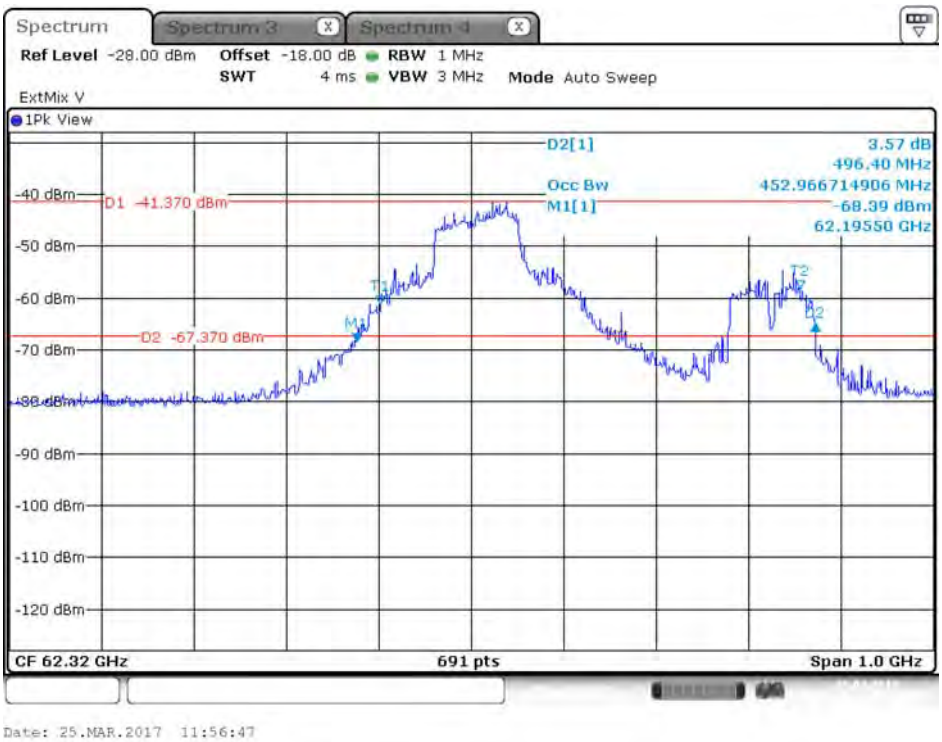
Occupied Bandwidth&26 dBc Bandwidth



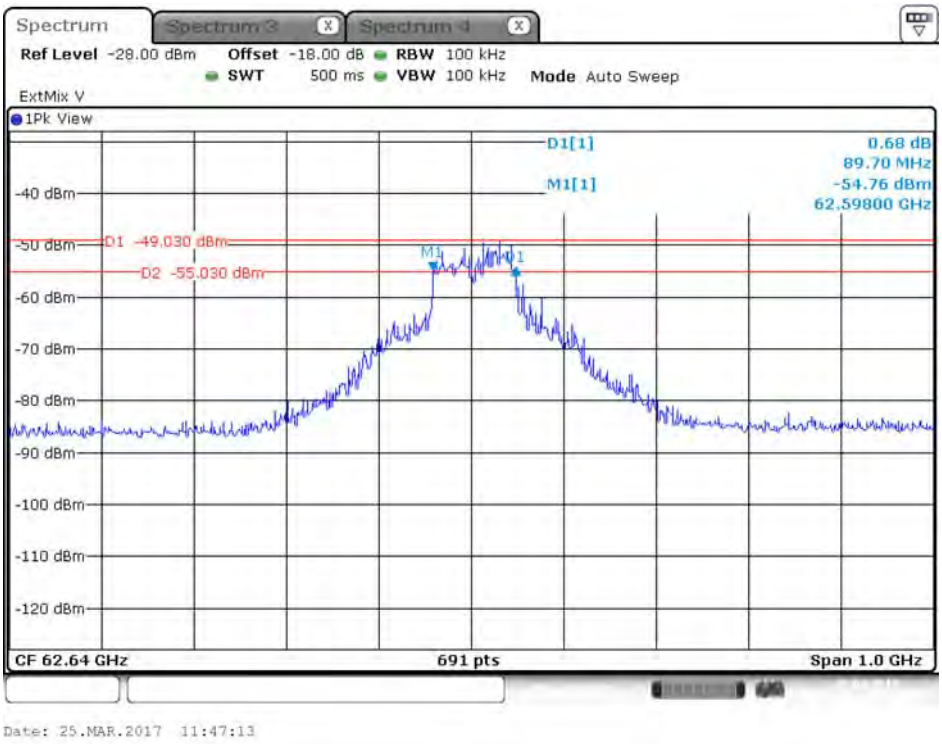
Channel Plan: Channel 3 LRP: 62.32-62.96 GHz
Test Frequency: 62.32 GHz
6 dBc Bandwidth



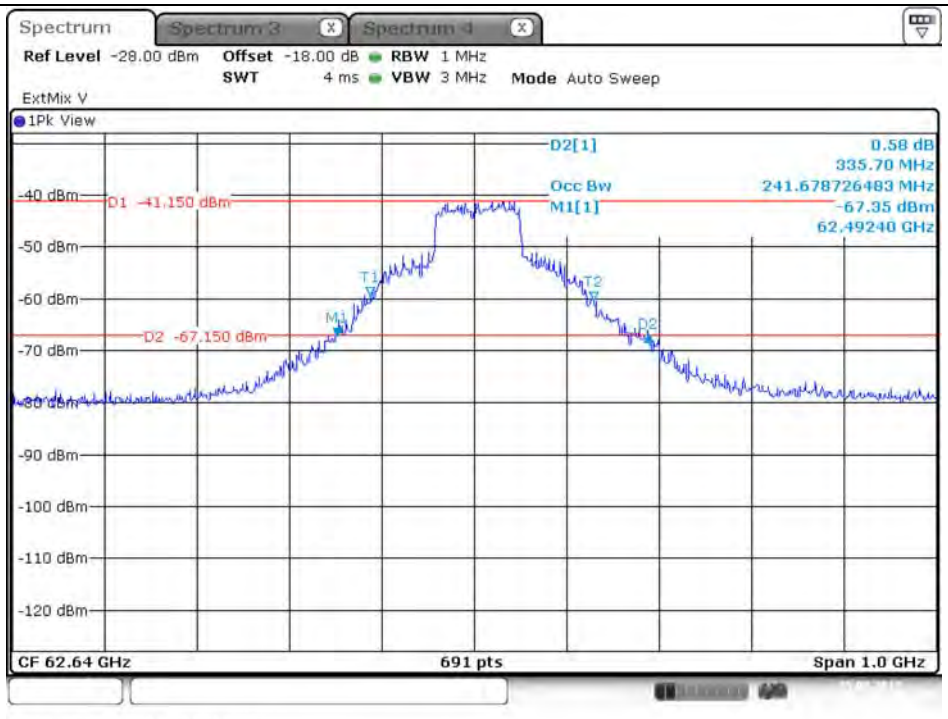
Occupied Bandwidth&26 dBc Bandwidth



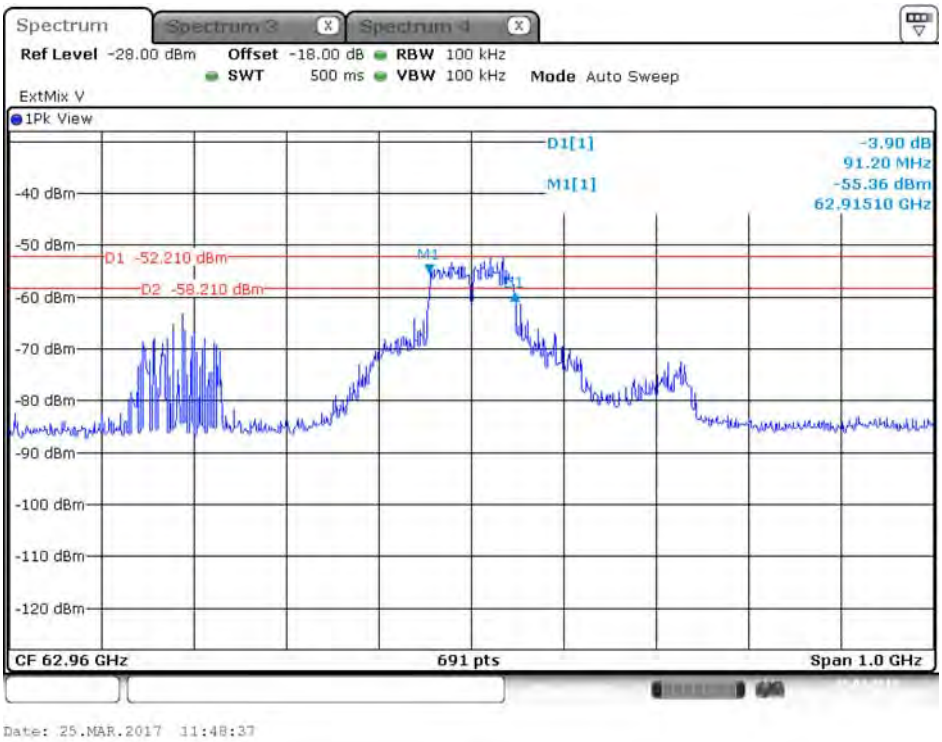
Test Frequency: 62.64 GHz
6 dBc Bandwidth



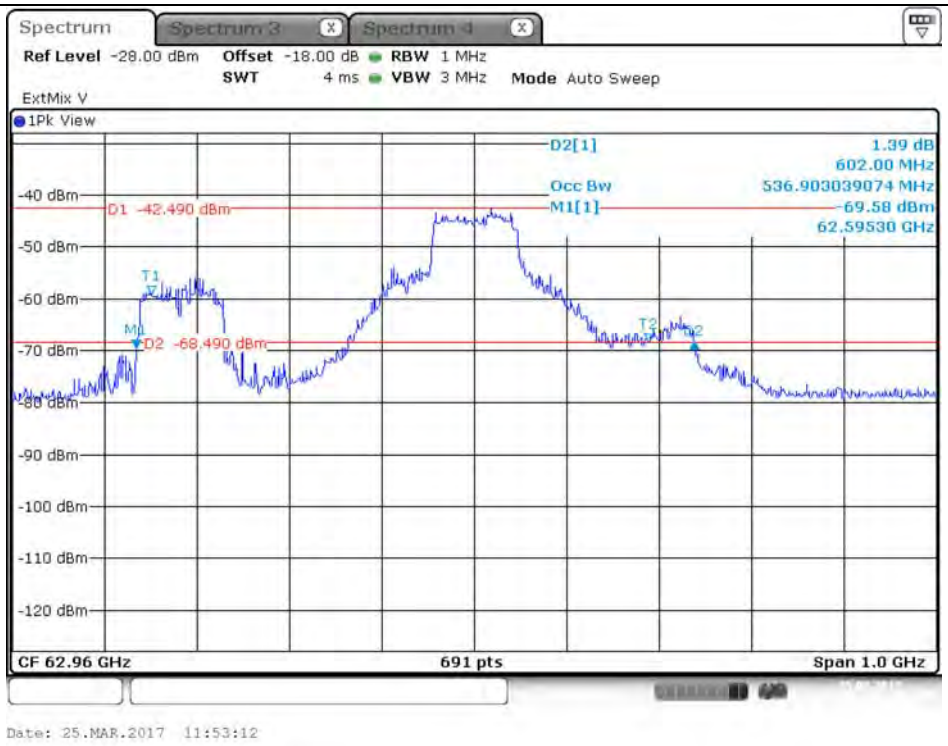
Occupied Bandwidth&26 dBc Bandwidth



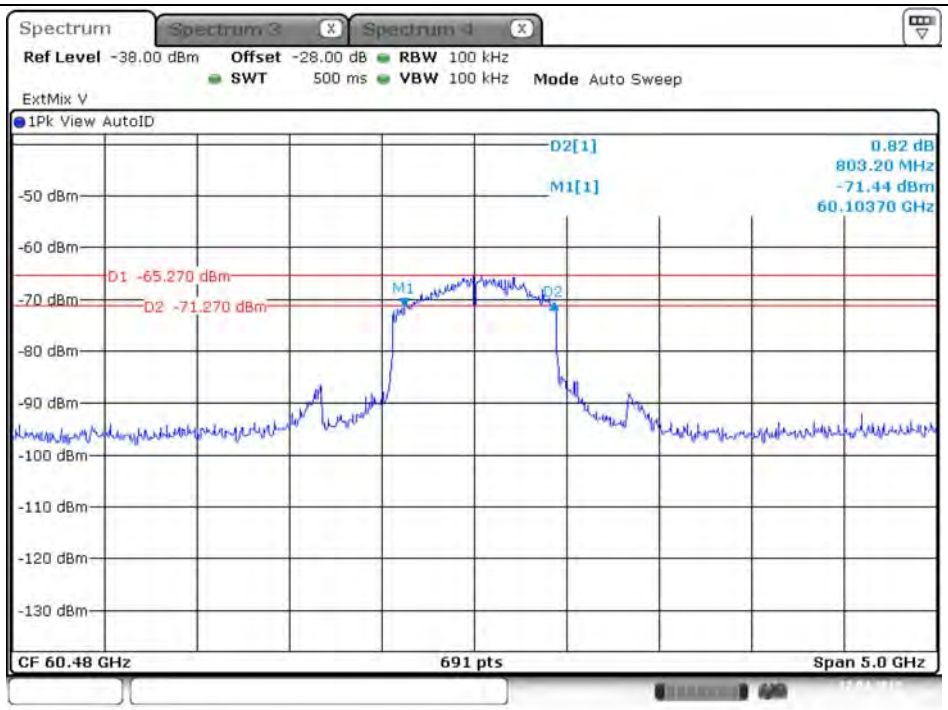
Test Frequency: 62.96 GHz
6 dBc Bandwidth



Occupied Bandwidth&26 dBc Bandwidth

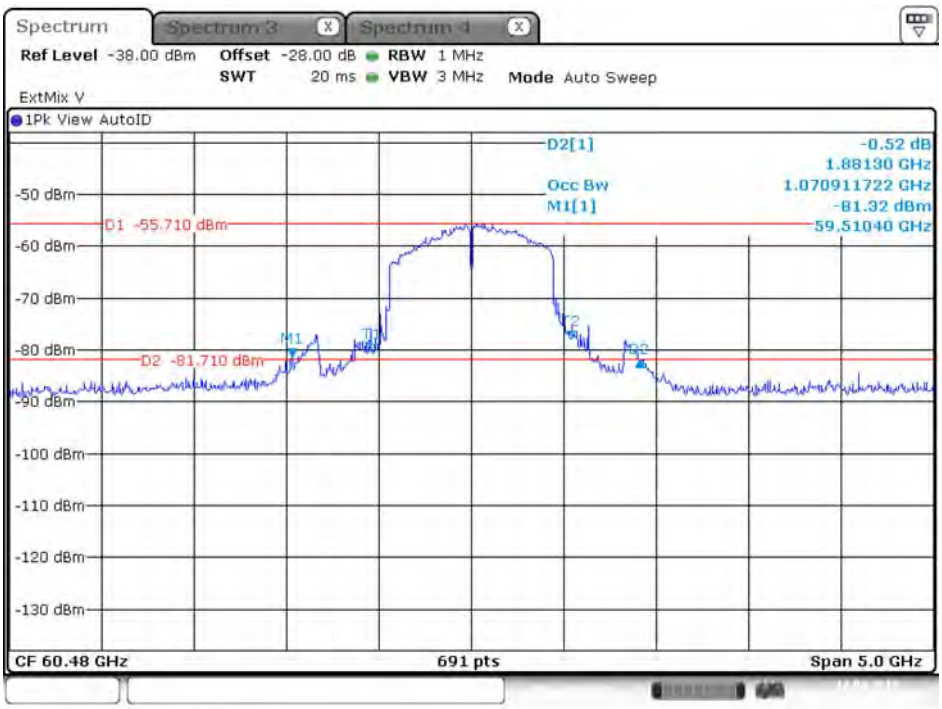


Channel Plan: Channel 2 MRP: 60.48 GHz
Test Frequency: 60.48 GHz
6 dBc Bandwidth



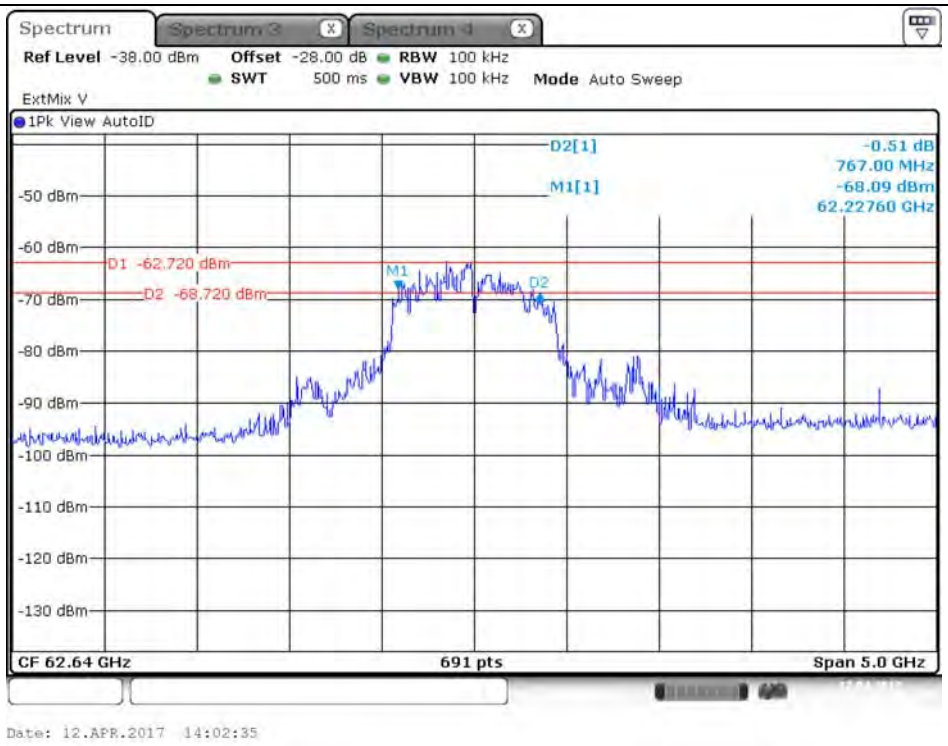
Date: 12.APR.2017 12:05:02

Occupied Bandwidth&26 dBc Bandwidth

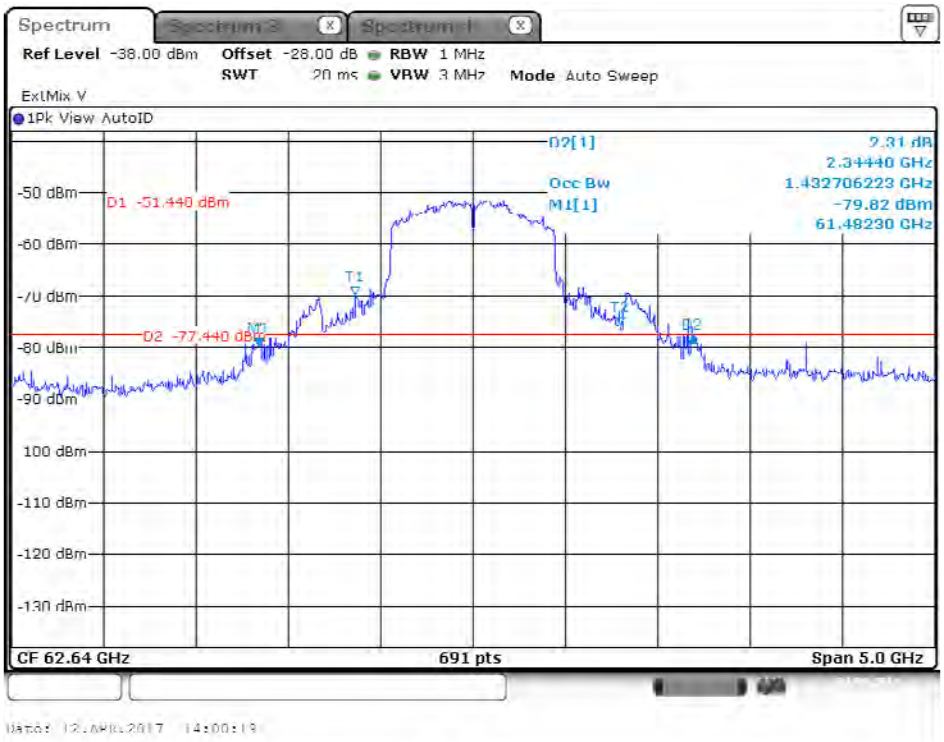


Date: 12.APR.2017 12:03:37

Channel Plan: Channel 3 MRP: 62.64 GHz
Test Frequency: 62.64 GHz
6 dBc Bandwidth



Occupied Bandwidth&26 dBc Bandwidth



3.3 EIRP Power

3.3.1 Limit of EIRP Power

EIRP Power Limit		
Use Condition	**EIRP Average Power**	**EIRP Peak Power**
Fixed field disturbance sensors at within the frequency band 61-61.5GHz	40 dBm	43 dBm
Fixed field disturbance sensors at outside of the band 61-61.5GHz	10 dBm	13 dBm
Except fixed field disturbance sensors at 61-61.5GHz	N/A	10 dBm
Except fixed field disturbance sensors(indoor)	40 dBm	43 dBm
Except fixed field disturbance sensors(outdoor)	82 dBm	85 dBm

NOTE: For the applicable limit, see FCC 15.255 (b)

3.3.2 Measuring Instruments

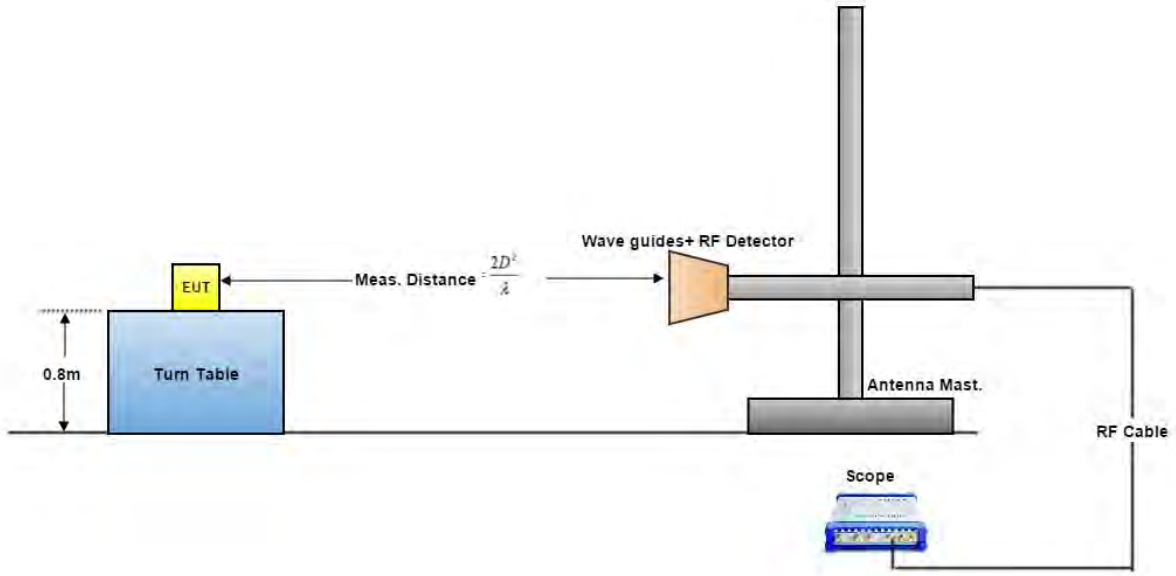
Refer a measuring instruments list in this test report.

3.3.3 Test Procedures

Method of measurement: Refer as ANSI C63.10-2013 clause 9.3 & 9.5.

3.3.4 Test Setup

EIPR Power



3.3.5 Test Result of EIRP Power

Test Conditions	see ANSI C63.10, clause 5.11 & clause 9
Test Setup	see ANSI C63.10, clause 9.11

NOTE: If the equipment supports different modulations and/or data rates, the measurements described in ANSI C63.10, clause 5.11 may not need to be repeated for all these modulations and data rates. Simple comparison of engineering test across all operating modes, modulations and data rates may need to be performed to define the worst case combination to be used for the conformance testing.

3.3.5.1 Test Result of EIRP Power

Temp	22℃				Humidity		54%			
Test Engineer	Steven Liang				Test Distance		0.5			
Test Results										
Channel Plan (GHz)	Test Freq. (GHz)	DSO (mV)		Power Measured (dBm)		E_{Meas} (dBuV/m)		EIRP (dBm)		EIRP Limit (dBm) (note 1)	
		Peak	AV	Peak	AV	Peak	AV	Peak	AV	Peak	AV
Channel 2 LRP: 60.16-60.80	60.16	6.13	2.14	-23.61	-29.61	126.23	120.23	15.41	9.41	43	40
	60.48	9.14	2.64	-21.84	-27.88	128.05	122.01	17.23	11.19	43	40
	60.80	6.11	2.09	-23.66	-29.74	126.28	120.20	15.46	9.38	43	40
Channel 3 LRP: 62.32-62.96	62.32	5.62	1.99	-24.71	-30.48	125.44	119.67	14.62	8.85	43	40
	62.64	9.06	2.44	-22.13	-28.41	128.06	121.78	17.24	10.96	43	40
	62.96	5.81	2.01	-24.35	-30.56	125.89	119.68	15.07	8.86	43	40
Channel 2 MRP: 60.48	60.48	0.89	0.87	-33.89	-34.01	116.00	115.88	5.18	5.06	43	40
Channel 3 MRP: 62.64	62.64	0.84	0.81	-34.06	-34.18	116.13	116.01	5.31	5.19	43	40

The measured power level is converted to EIRP using the Friis equation:

For radiated emissions, calculate the field strength (E) in dBµV/meter.

$E = 126.8 – 20\log(\lambda) + P - G$

where:

E : is the field strength of the emission at the measurement distance, in dBµV/m

P : is the power measured at the output of the test antenna, in dBm

λ : is the wavelength of the emission under investigation [300/fMHz], in m

G : is the gain of the test antenna, in dBi For radiated emissions, calculate the EIRP (dBm). If the measurement was performed in the far field, calculate the EIRP.

EIRP = E-meas +20log(d-meas)-104.7

where:

EIRP : is the equivalent isotopically radiated power, in dBm

E-meas. : is the field strength of the emission at the measurement distance, in dBµV/m

d-meas. : is the measurement distance, in m

NOTE 1: For the applicable limit, see FCC 15.255 (b)

3.4 Peak Conducted Power

3.4.1 Limit of Peak Conducted Power

Peak Conducted Power Limit	
6dBc Bandwidth	**Peak Conducted Power (note 1)**
> 100MHz	500mW
≤ 100MHz	500mW x (BW/100) (see note 2)
NOTE 1: For the applicable limit, see FCC 15.255(d)	
NOTE 2: BW= 6dB bandwidth (measured at RBW 100kHz)	

3.4.2 Measuring Instruments

Refer a measuring instruments list in this test report.

3.4.3 Test Procedures

Method of measurement: Refer as ANSI C63.10-2013, clause 9.5

3.4.4 Test Result of Peak Conducted Power

Test Conditions	see ANSI C63.10, clause 5.11 & clause 9
Test Setup	see ANSI C63.10, clause 9.11
NOTE: If the equipment supports different modulations and/or data rates, the measurements described in ANSI C63.10, clause 5.11 may not need to be repeated for all these modulations and data rates. Simple comparison of engineering test across all operating modes, modulations and data rates may need to be performed to define the worst case combination to be used for the conformance testing.	

3.4.4.1 Peak Conducted Power

Temp	22℃	Humidity	54%
Test Engineer	Steven Liang		
Test Date	Mar. 24, 2017~Apr. 12, 2017		

Test Results

Channel Plan (GHz)	Test Freq. (GHz)	EIRP (dBm)	Max. Ant. Gain (dBi)	Peak Power (dBm) (note1)	Peak Power (mW)	6dBc BW (MHz) (note2)	Peak Power Limit (mW) (note3)
Channel 2 LRP: 60.16-60.80	60.16	15.41	5	10.41	10.998	92.60	463.00
	60.48	17.23	5	12.23	16.708	92.60	463.00
	60.80	15.46	5	10.46	11.105	91.20	456.00
Channel 3 LRP: 62.32-62.96	62.32	14.62	5	9.62	9.161	88.30	441.50
	62.64	17.24	5	12.24	16.765	89.70	448.50
	62.96	15.07	5	10.07	10.158	91.20	456.00
Channel 2 MRP: 60.48	60.48	5.18	9	-3.82	0.415	803.20	500.00
Channel 3 MRP: 62.64	62.64	5.31	9	-3.69	0.428	767.00	500.00

NOTE 1: Because EUT used for the integral antenna without temporary RF connector provided. Therefore peak conducted power is equal to EIRP power subtract the antenna gain.

NOTE 2: For the 6dBc bandwidth, see test report clause 3.2.5.

NOTE 3: For the applicable limit, see FCC 15.255(d)

NOTE 4: For radiated emission measurements, calculate conducted transmitter output power P(cond)(dBm)

P(cond) = EIRP - G(dBi)

where:

G(dBi) is gain of EUT antenna.

3.5 Transmitter Spurious Emissions

3.5.1 Limit of Transmitter Spurious Emissions

Frequency Range	Limit
Radiated emissions below 40 GHz	FCC 15.209
Radiated emissions above 40 GHz – 200GHz	90 pW/cm^2 @ 3 m (Equivalent EIRP 102 μW, -9.91dBm)
NOTE 1: For the applicable limit, see FCC 15.255(c) NOTE 2: Spurious emissions shall not exceed the level of the fundamental emission.	

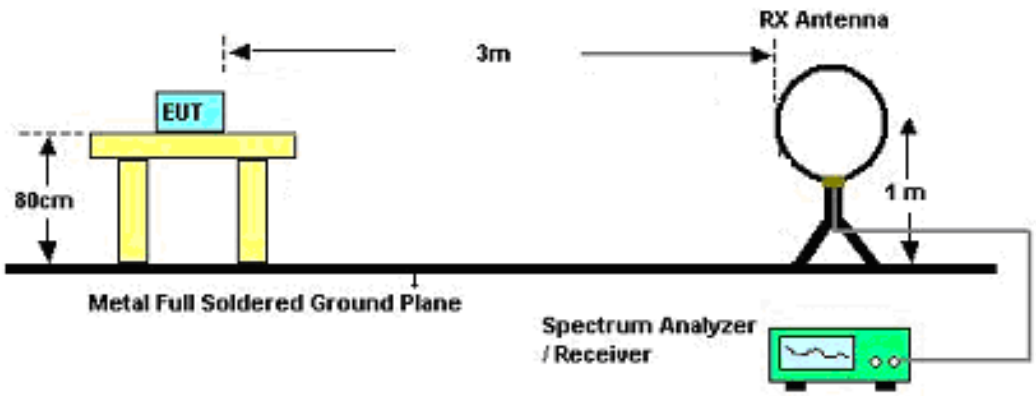
3.5.2 Test Procedures

Method of measurement: Refer as ANSI C63.10-2013, clause 9.12

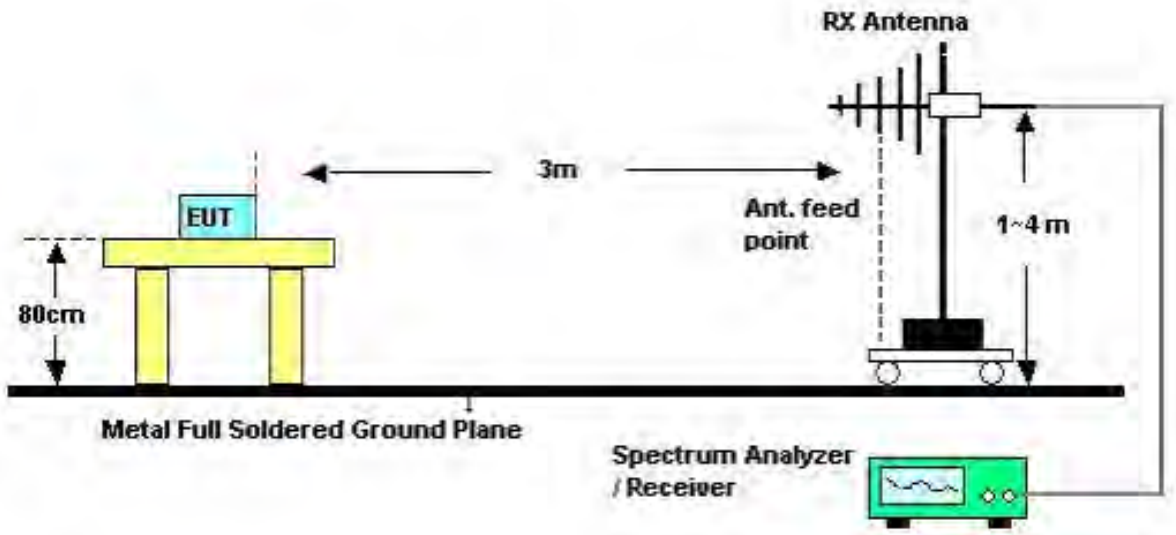
3.5.3 Test Setup

Transmitter Spurious Emissions

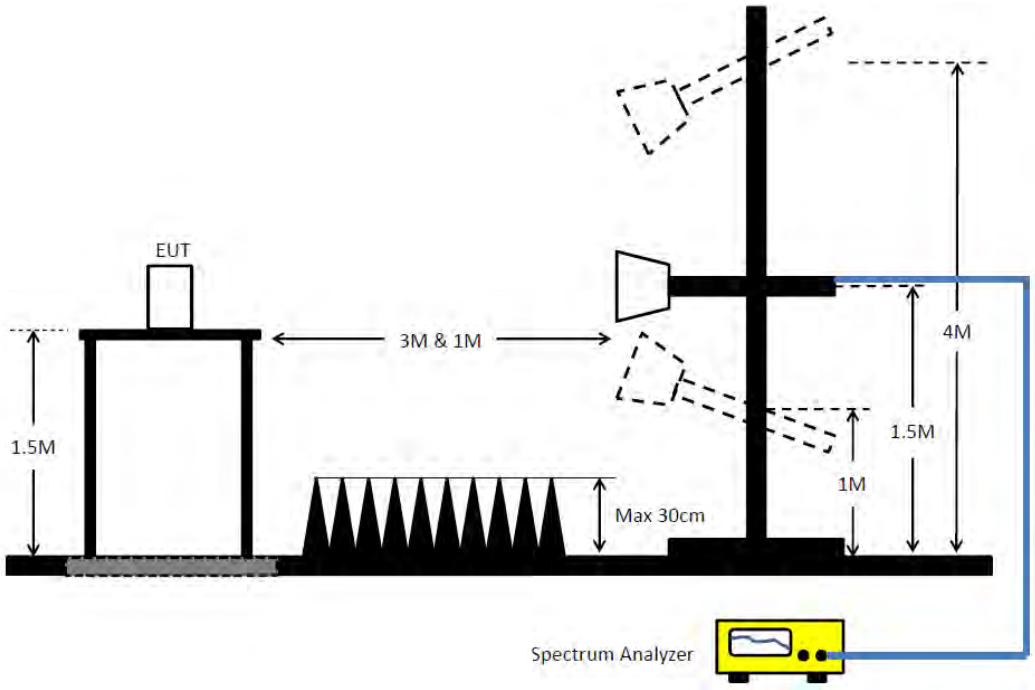
9kHz ~30MHz

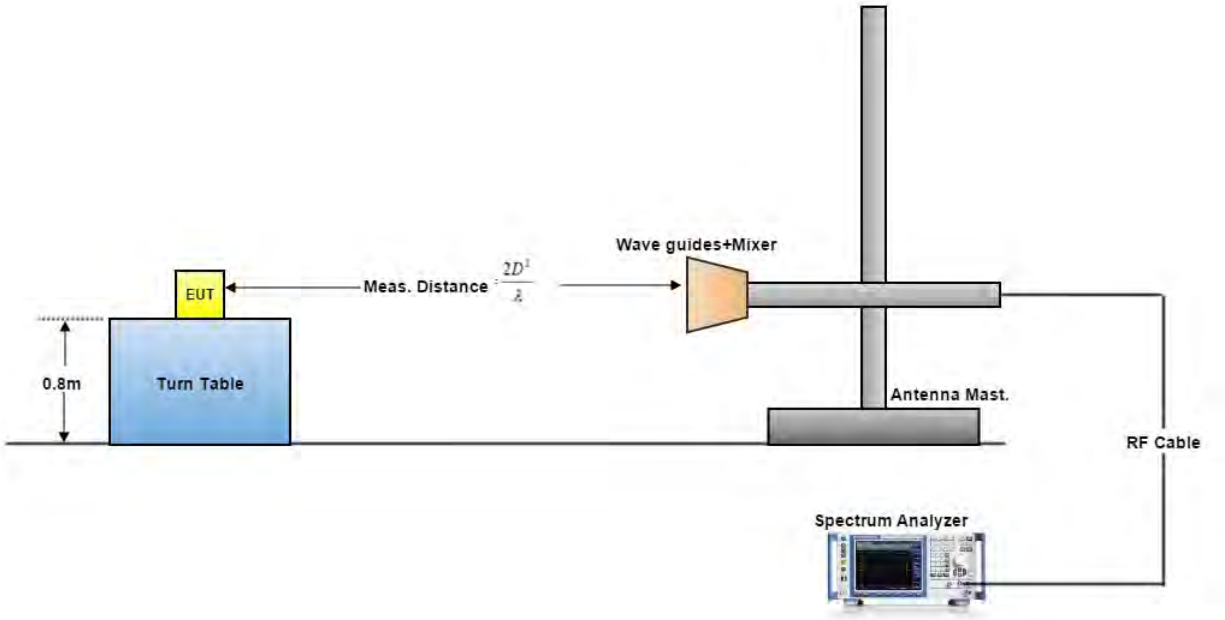


30MHz~1GHz



1GHz ~40GHz



Above 40GHz


A measuring distance of at 3 m shall be used for measurements at frequencies up to 15 GHz. For frequencies above 15 GHz, any suitable measuring distance may be used. The measurement distance is chosen up to far field distance, depending on the test system noise floor for detecting spurious emission signals. Then above 15 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade from spec. distance (3 m) to measurement distance. Distance extrapolation factor = 20 log (spec. distance [3 m] / measurement distance [N m]) (dB) .The measurements described in ANSI C63.10, clause 7.8.6. If the emission cannot be detected at 1 m, reduce the RBW to increase system sensitivity. Note the value. If the emission still cannot be detected, move the horn closer to the EUT, noting the distance at which a measurement is made.

3.5.4 Test Result of Transmitter Spurious Emissions

Test Conditions	see ANSI C63.10, clause 5.11 & clause 9
Test Setup	see ANSI C63.10, clause 9.12 、9.13
NOTE: If equipment having different channel plan and nominal channel bandwidth modes (see test report clause 1.1.1), the measurements are uninfluenced by different channel plan and nominal channel bandwidth modes, may not need to be repeated for all modes.	

3.5.4.1 Test Result of Transmitter Spurious Emissions (Below 30MHz)

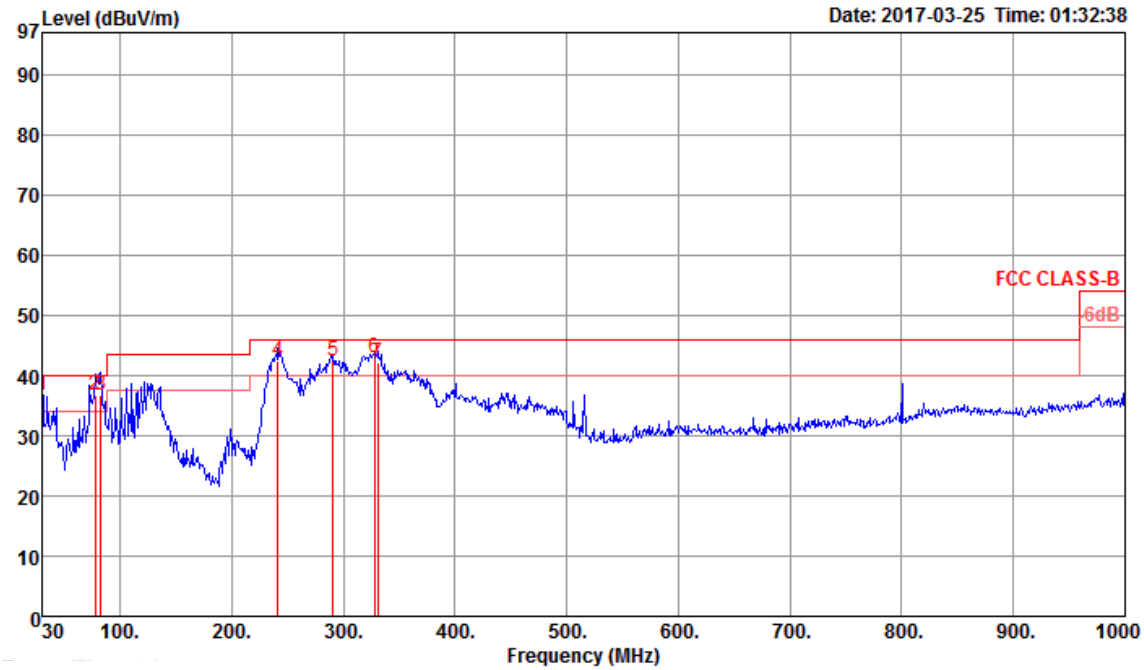
All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

3.5.4.2 Test Result of Transmitter Spurious Emissions

Test Plan: Channel 2 LRP: 60.16-60.80

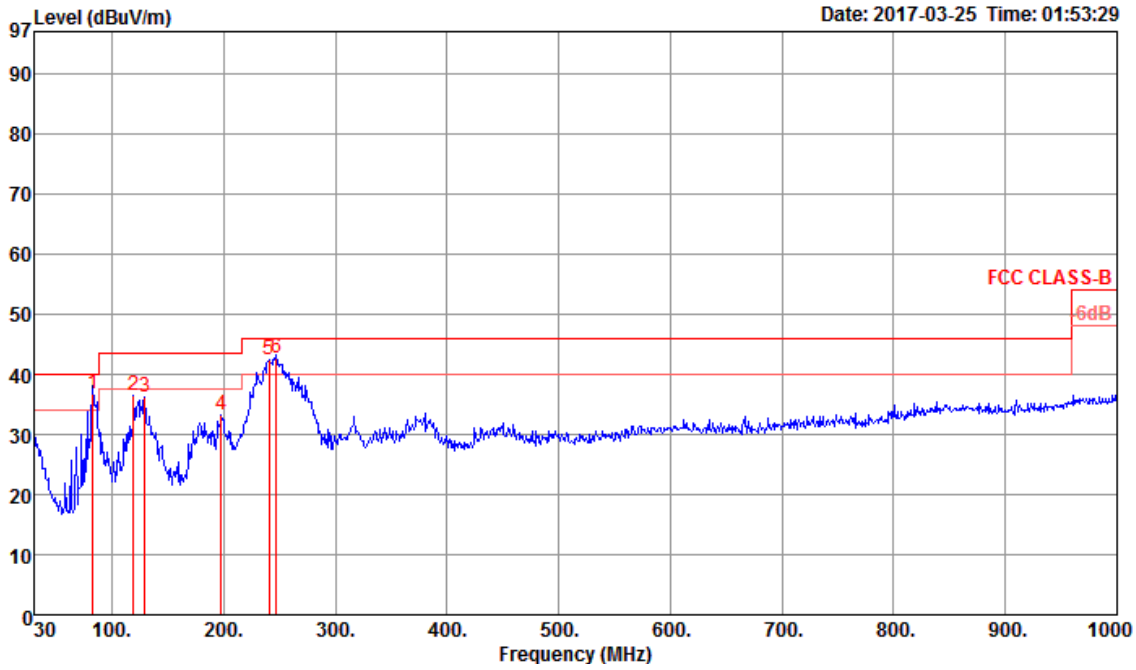
Temp	24°C	**Humidity**	54%
Test Engineer	Steven Liang	**Test Distance**	3 m
Test Range	30 MHz – 1000 MHz	**Test Configuration**	CTX

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	30.00	36.83	40.00	-3.17	38.83	2.10	25.50	29.60	100	203	QP	VERTICAL
2	77.53	36.64	40.00	-3.36	50.98	2.21	12.89	29.44	200	236	QP	VERTICAL
3	82.38	36.62	40.00	-3.38	50.28	2.22	13.54	29.42	300	147	QP	VERTICAL
4	241.46	42.49	46.00	-3.51	50.96	2.58	18.03	29.08	125	74	QP	VERTICAL
5	290.93	42.38	46.00	-3.62	49.58	2.74	19.42	29.36	200	332	QP	VERTICAL
6	327.79	42.89	46.00	-3.11	48.94	2.89	20.40	29.34	125	321	QP	VERTICAL
7	330.70	42.17	46.00	-3.83	48.14	2.90	20.46	29.33	125	256	QP	VERTICAL

Horizontal

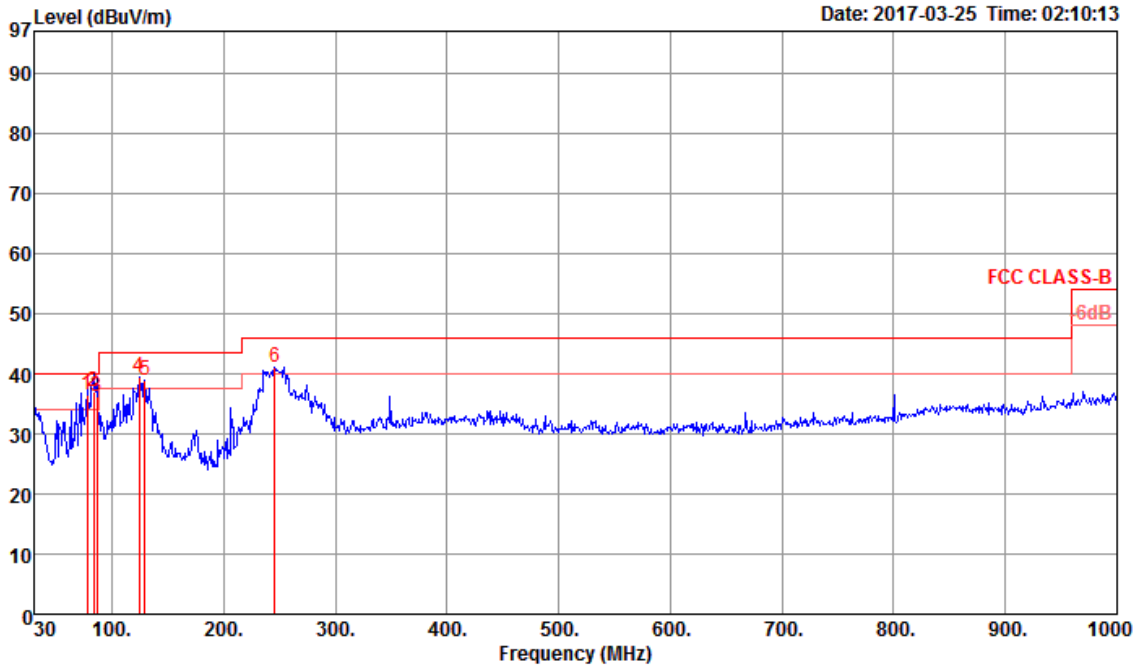


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	82.38	36.69	40.00	-3.31	50.35	2.22	13.54	29.42	100	244	QP	HORIZONTAL
2	119.24	36.47	43.50	-7.03	45.14	2.30	18.29	29.26	125	185	Peak	HORIZONTAL
3	128.94	36.09	43.50	-7.41	44.79	2.30	18.21	29.21	125	321	Peak	HORIZONTAL
4	197.81	33.36	43.50	-10.14	43.67	2.50	16.04	28.85	200	249	Peak	HORIZONTAL
5	240.49	42.41	46.00	-3.59	50.93	2.58	17.97	29.07	200	360	Peak	HORIZONTAL
6	247.28	42.63	46.00	-3.37	50.65	2.59	18.50	29.11	200	360	QP	HORIZONTAL

Test Plan: Channel 3 LRP: 62.32-62.96

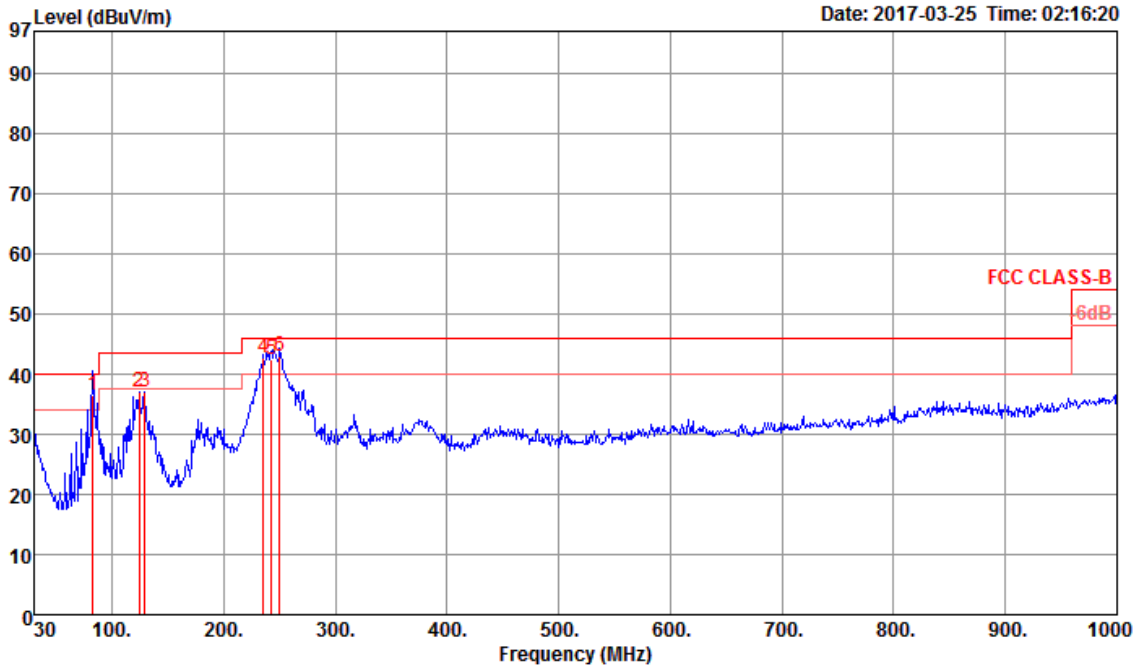
Temp	24°C	**Humidity**	54%
Test Engineer	Steven Liang	**Test Distance**	3 m
Test Range	30 MHz – 1000 MHz	**Test Configuration**	CTX

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	77.53	36.56	40.00	-3.44	50.90	2.21	12.89	29.44	100	163	QP	VERTICAL
2	83.35	36.91	40.00	-3.09	50.42	2.21	13.70	29.42	125	302	QP	VERTICAL
3	86.26	36.14	40.00	-3.86	49.10	2.20	14.25	29.41	100	219	QP	VERTICAL
4	124.09	39.34	43.50	-4.16	48.02	2.30	18.26	29.24	200	334	Peak	VERTICAL
5	128.94	39.00	43.50	-4.50	47.70	2.30	18.21	29.21	100	189	Peak	VERTICAL
6	245.34	41.17	46.00	-4.83	49.39	2.58	18.30	29.10	125	113	Peak	VERTICAL

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	82.38	36.41	40.00	-3.59	50.07	2.22	13.54	29.42	125	333	QP	HORIZONTAL
2	124.09	36.99	43.50	-6.51	45.67	2.30	18.26	29.24	200	285	Peak	HORIZONTAL
3	128.94	37.07	43.50	-6.43	45.77	2.30	18.21	29.21	200	197	Peak	HORIZONTAL
4	235.64	42.65	46.00	-3.35	51.64	2.57	17.48	29.04	200	188	QP	HORIZONTAL
5	242.43	42.49	46.00	-3.51	50.89	2.58	18.10	29.08	100	157	QP	HORIZONTAL
6	250.19	42.90	46.00	-3.10	50.74	2.59	18.70	29.13	100	53	QP	HORIZONTAL

Test Plan: Channel 2 LRP: 60.16-60.80

Temp	24°C	**Humidity**	54%
Test Engineer	Steven Liang	**Test Distance**	3 m
Test Range	1 GHz – 18 GHz	**Test Freq. (GHz)**	60.16
Test Date	Mar. 24, 2017~Apr. 12, 2017		

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	1812.50	37.14	54.00	-16.86	41.40	3.61	26.72	34.59	275	350	Average	VERTICAL
2	1812.52	43.13	74.00	-30.87	47.39	3.61	26.72	34.59	275	350	Peak	VERTICAL
3	12534.28	42.74	54.00	-11.26	28.06	10.09	38.94	34.35	113	245	Average	VERTICAL
4	12535.60	56.27	74.00	-17.73	41.59	10.09	38.94	34.35	113	245	Peak	VERTICAL

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	1812.43	34.87	54.00	-19.13	39.13	3.61	26.72	34.59	201	53	Average	HORIZONTAL
2	1812.50	42.31	74.00	-31.69	46.57	3.61	26.72	34.59	201	53	Peak	HORIZONTAL
3	12533.04	55.58	74.00	-18.42	40.90	10.09	38.94	34.35	107	298	Peak	HORIZONTAL
4	12534.48	42.57	54.00	-11.43	27.89	10.09	38.94	34.35	107	298	Average	HORIZONTAL

Temp	24°C	**Humidity**	54%
Test Engineer	Steven Liang	**Test Distance**	1 m
Test Range	18 GHz – 26.5 GHz	**Test Freq. (GHz)**	60.16
Test Date	Mar. 24, 2017~Apr. 12, 2017		

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	20054.25	45.93	63.54	-17.61	44.95	15.39	37.62	52.03	183	241	Average	VERTICAL
2	20054.25	55.14	83.54	-28.40	54.16	15.39	37.62	52.03	183	241	Peak	VERTICAL

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	20054.29	55.86	83.54	-27.68	54.88	15.39	37.62	52.03	195	306	Peak	HORIZONTAL
2	20054.56	44.78	63.54	-18.76	43.80	15.39	37.62	52.03	195	306	Average	HORIZONTAL

Temp	24°C	Humidity	54%
Test Engineer	Steven Liang	Test Distance	1 m
Test Range	26.5 GHz – 40 GHz	Test Freq. (GHz)	60.16
Test Date	Mar. 24, 2017~Apr. 12, 2017		

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	34669.51	62.69	83.54	-20.85	56.04	18.50	41.23	53.08	153	246	Peak	VERTICAL
2	34670.38	50.83	63.54	-12.71	44.18	18.50	41.23	53.08	153	246	Average	VERTICAL

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	34669.51	62.13	83.54	-21.41	55.48	18.50	41.23	53.08	226	148	Peak	HORIZONTAL
2	34671.54	50.70	63.54	-12.84	44.05	18.50	41.23	53.08	226	148	Average	HORIZONTAL

Temp	24°C	Humidity	54%
Test Engineer	Steven Liang	Test Distance	3 m
Test Range	1 GHz – 18 GHz	Test Freq. (GHz)	60.48
Test Date	Mar. 24, 2017~Apr. 12, 2017		

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	1812.48	36.83	54.00	-17.17	41.09	3.61	26.72	34.59	280	357	Average	VERTICAL
2	1812.52	42.60	74.00	-31.40	46.86	3.61	26.72	34.59	280	357	Peak	VERTICAL
3	12533.27	42.60	54.00	-11.40	27.92	10.09	38.94	34.35	193	224	Average	VERTICAL
4	12535.46	56.03	74.00	-17.97	41.35	10.09	38.94	34.35	193	224	Peak	VERTICAL

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	1812.44	34.99	54.00	-19.01	39.25	3.61	26.72	34.59	201	53	Average	HORIZONTAL
2	1812.44	42.34	74.00	-31.66	46.60	3.61	26.72	34.59	201	53	Peak	HORIZONTAL
3	12532.30	55.45	74.00	-18.55	40.84	10.09	38.94	34.42	144	85	Peak	HORIZONTAL
4	12533.27	42.42	54.00	-11.58	27.74	10.09	38.94	34.35	144	85	Average	HORIZONTAL

Temp	24°C	Humidity	54%
Test Engineer	Steven Liang	Test Distance	1 m
Test Range	18 GHz – 26.5 GHz	Test Freq. (GHz)	60.48
Test Date	Mar. 24, 2017~Apr. 12, 2017		

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	20159.82	56.42	83.54	-27.12	55.50	15.30	37.66	52.04	161	275	Peak	VERTICAL
2	20160.47	44.72	63.54	-18.82	43.80	15.30	37.66	52.04	161	275	Average	VERTICAL

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	20159.34	55.10	83.54	-28.44	54.18	15.30	37.66	52.04	183	169	Peak	HORIZONTAL
2	20160.59	44.49	63.54	-19.05	43.57	15.30	37.66	52.04	183	169	Average	HORIZONTAL

Temp	24°C	Humidity	54%
Test Engineer	Steven Liang	Test Distance	1 m
Test Range	26.5 GHz – 40 GHz	Test Freq. (GHz)	60.48
Test Date	Mar. 24, 2017~Apr. 12, 2017		

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	32455.77	62.82	83.54	-20.72	53.37	18.34	40.48	49.37	164	257	Peak	VERTICAL
2	32455.80	50.85	63.54	-12.69	41.40	18.34	40.48	49.37	164	257	Average	VERTICAL

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	32455.16	61.55	83.54	-21.99	52.10	18.34	40.48	49.37	218	142	Peak	HORIZONTAL
2	32455.34	50.61	63.54	-12.93	41.16	18.34	40.48	49.37	218	142	Average	HORIZONTAL

Temp	24°C	Humidity	54%
Test Engineer	Steven Liang	Test Distance	3 m
Test Range	1 GHz – 18 GHz	Test Freq. (GHz)	60.80
Test Date	Mar. 24, 2017~Apr. 12, 2017		

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	1812.32	42.45	74.00	-31.55	46.71	3.61	26.72	34.59	276	357	Peak	VERTICAL
2	1812.46	36.89	54.00	-17.11	41.15	3.61	26.72	34.59	276	357	Average	VERTICAL
3	12530.55	55.72	74.00	-18.28	41.11	10.09	38.94	34.42	218	102	Peak	VERTICAL
4	12532.23	42.28	54.00	-11.72	27.67	10.09	38.94	34.42	218	102	Average	VERTICAL

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	1812.39	41.97	74.00	-32.03	46.23	3.61	26.72	34.59	202	52	Peak	HORIZONTAL
2	1812.40	34.96	54.00	-19.04	39.22	3.61	26.72	34.59	202	52	Average	HORIZONTAL
3	12532.77	42.32	54.00	-11.68	27.64	10.09	38.94	34.35	195	223	Average	HORIZONTAL
4	12533.45	56.26	74.00	-17.74	41.58	10.09	38.94	34.35	195	223	Peak	HORIZONTAL

Temp	24°C	**Humidity**	54%
Test Engineer	Steven Liang	**Test Distance**	1 m
Test Range	18 GHz – 26.5 GHz	**Test Freq. (GHz)**	60.80
Test Date	Mar. 24, 2017~Apr. 12, 2017		

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	20265.80	42.11	63.54	-21.43	41.23	15.23	37.70	52.05	176	238	Average	VERTICAL
2	20265.87	55.53	83.54	-28.01	54.65	15.23	37.70	52.05	176	238	Peak	VERTICAL

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	20265.35	55.25	83.54	-28.29	54.37	15.23	37.70	52.05	239	137	Peak	HORIZONTAL
2	20265.58	41.77	63.54	-21.77	40.89	15.23	37.70	52.05	239	137	Average	HORIZONTAL

Temp	24°C	Humidity	54%
Test Engineer	Steven Liang	Test Distance	1 m
Test Range	26.5 GHz – 40 GHz	Test Freq. (GHz)	60.80
Test Date	Mar. 24, 2017~Apr. 12, 2017		

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	35206.28	62.23	83.54	-21.31	55.59	18.37	41.50	53.23	188	156	Peak	VERTICAL
2	35206.48	50.26	63.54	-13.28	43.62	18.37	41.50	53.23	188	156	Average	VERTICAL

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	35206.14	49.90	63.54	-13.64	43.26	18.37	41.50	53.23	248	316	Average	HORIZONTAL
2	35206.52	61.03	83.54	-22.51	54.39	18.37	41.50	53.23	248	316	Peak	HORIZONTAL

Test Plan: Channel 3 LRP: 62.32-62.96

Temp	24°C	**Humidity**	54%
Test Engineer	Steven Liang	**Test Distance**	3 m
Test Range	1 GHz – 18 GHz	**Test Freq. (GHz)**	62.32
Test Date	Mar. 24, 2017~Apr. 12, 2017		

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	1812.32	43.22	74.00	-30.78	47.48	3.61	26.72	34.59	277	357	Peak	VERTICAL
2	1812.46	37.01	54.00	-16.99	41.27	3.61	26.72	34.59	277	357	Average	VERTICAL
3	12531.85	42.56	54.00	-11.44	27.95	10.09	38.94	34.42	230	35	Average	VERTICAL
4	12531.85	55.56	74.00	-18.44	40.95	10.09	38.94	34.42	230	35	Peak	VERTICAL

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	1812.47	35.64	54.00	-18.36	39.90	3.61	26.72	34.59	192	33	Average	HORIZONTAL
2	1812.70	42.63	74.00	-31.37	46.89	3.61	26.72	34.59	192	33	Peak	HORIZONTAL
3	12530.51	42.41	54.00	-11.59	27.80	10.09	38.94	34.42	217	114	Average	HORIZONTAL
4	12533.00	55.61	74.00	-18.39	40.93	10.09	38.94	34.35	217	114	Peak	HORIZONTAL

Temp	24°C	Humidity	54%
Test Engineer	Steven Liang	Test Distance	1 m
Test Range	18 GHz – 26.5 GHz	Test Freq. (GHz)	62.32
Test Date	Mar. 24, 2017~Apr. 12, 2017		

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	20770.18	54.91	83.54	-28.63	53.77	15.26	37.69	51.81	178	237	Peak	VERTICAL
2	20779.88	41.78	63.54	-21.76	40.60	15.28	37.69	51.79	178	237	Average	VERTICAL

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	20770.26	54.68	83.54	-28.86	53.54	15.26	37.69	51.81	263	195	Peak	VERTICAL
2	20779.30	40.56	63.54	-22.98	39.38	15.28	37.69	51.79	263	195	Average	VERTICAL

Temp	24°C	Humidity	54%
Test Engineer	Steven Liang	Test Distance	1 m
Test Range	26.5 GHz – 40 GHz	Test Freq. (GHz)	62.32
Test Date	Mar. 24, 2017~Apr. 12, 2017		

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	33279.66	50.44	63.54	-13.10	41.55	18.47	40.97	50.55	258	177	Average	VERTICAL
2	33280.38	63.43	83.54	-20.11	54.54	18.47	40.97	50.55	258	177	Peak	VERTICAL

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	33279.26	49.88	63.54	-13.66	40.99	18.47	40.97	50.55	167	286	Average	HORIZONTAL
2	33280.75	62.69	83.54	-20.85	53.80	18.47	40.97	50.55	167	286	Peak	HORIZONTAL

Temp	24°C	Humidity	54%
Test Engineer	Steven Liang	Test Distance	3 m
Test Range	1 GHz – 18 GHz	Test Freq. (GHz)	62.64
Test Date	Mar. 24, 2017~Apr. 12, 2017		

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	1812.46	37.10	54.00	-16.90	41.36	3.61	26.72	34.59	279	354	Average	VERTICAL
2	1812.49	40.24	74.00	-33.76	44.50	3.61	26.72	34.59	279	354	Peak	VERTICAL
3	12532.97	41.31	54.00	-12.69	26.63	10.09	38.94	34.35	175	219	Average	VERTICAL
4	12533.09	55.33	74.00	-18.67	40.65	10.09	38.94	34.35	175	219	Peak	VERTICAL

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	1812.50	35.46	54.00	-18.54	39.72	3.61	26.72	34.59	117	31	Average	HORIZONTAL
2	1812.67	40.26	74.00	-33.74	44.52	3.61	26.72	34.59	117	31	Peak	HORIZONTAL
3	12532.40	55.80	74.00	-18.20	41.12	10.09	38.94	34.35	153	262	Peak	HORIZONTAL
4	12533.83	42.19	54.00	-11.81	27.51	10.09	38.94	34.35	153	262	Average	HORIZONTAL

Temp	24°C	Humidity	54%
Test Engineer	Steven Liang	Test Distance	1 m
Test Range	18 GHz – 26.5 GHz	Test Freq. (GHz)	62.64
Test Date	Mar. 24, 2017~Apr. 12, 2017		

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	20884.04	42.15	63.54	-21.39	40.83	15.36	37.65	51.69	223	168	Average	VERTICAL
2	20884.35	55.32	83.54	-28.22	54.00	15.36	37.65	51.69	223	168	Peak	VERTICAL

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	20884.18	41.65	63.54	-21.89	40.33	15.36	37.65	51.69	173	309	Average	HORIZONTAL
2	20884.55	53.99	83.54	-29.55	52.67	15.36	37.65	51.69	173	309	Peak	HORIZONTAL

Temp	24°C	Humidity	54%
Test Engineer	Steven Liang	Test Distance	1 m
Test Range	26.5 GHz – 40 GHz	Test Freq. (GHz)	62.64
Test Date	Mar. 24, 2017~Apr. 12, 2017		

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	31482.58	50.05	63.54	-13.49	40.25	18.23	40.20	48.63	186	317	Average	VERTICAL
2	31482.82	63.17	83.54	-20.37	53.37	18.23	40.20	48.63	186	317	Peak	VERTICAL

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	31482.52	61.95	83.54	-21.59	52.15	18.23	40.20	48.63	143	229	Peak	HORIZONTAL
2	31482.88	49.48	63.54	-14.06	39.68	18.23	40.20	48.63	143	229	Average	HORIZONTAL

Temp	24°C	Humidity	54%
Test Engineer	Steven Liang	Test Distance	3 m
Test Range	1 GHz – 18 GHz	Test Freq. (GHz)	62.96
Test Date	Mar. 24, 2017~Apr. 12, 2017		

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	1812.27	42.61	74.00	-31.39	46.87	3.61	26.72	34.59	277	358	Peak	VERTICAL
2	1812.42	36.84	54.00	-17.16	41.10	3.61	26.72	34.59	277	358	Average	VERTICAL
3	12531.49	42.20	54.00	-11.80	27.59	10.09	38.94	34.42	157	245	Average	VERTICAL
4	12534.67	55.95	74.00	-18.05	41.27	10.09	38.94	34.35	157	245	Peak	VERTICAL

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	1812.33	40.19	74.00	-33.81	44.45	3.61	26.72	34.59	131	58	Peak	HORIZONTAL
2	1812.46	34.92	54.00	-19.08	39.18	3.61	26.72	34.59	131	58	Average	HORIZONTAL
3	12532.27	42.08	54.00	-11.92	27.47	10.09	38.94	34.42	257	179	Average	HORIZONTAL
4	12534.99	56.02	74.00	-17.98	41.34	10.09	38.94	34.35	257	179	Peak	HORIZONTAL

Temp	24°C	Humidity	54%
Test Engineer	Steven Liang	Test Distance	1 m
Test Range	18 GHz – 26.5 GHz	Test Freq. (GHz)	62.96
Test Date	Mar. 24, 2017~Apr. 12, 2017		

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	20980.27	42.10	63.54	-21.44	40.64	15.45	37.61	51.60	182	65	Average	VERTICAL
2	20980.39	55.50	83.54	-28.04	54.04	15.45	37.61	51.60	182	65	Peak	VERTICAL

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	20980.18	43.32	63.54	-20.22	41.86	15.45	37.61	51.60	165	217	Average	HORIZONTAL
2	20980.86	55.25	83.54	-28.29	53.79	15.45	37.61	51.60	165	217	Peak	HORIZONTAL

Temp	24°C	Humidity	54%
Test Engineer	Steven Liang	Test Distance	1 m
Test Range	26.5 GHz – 40 GHz	Test Freq. (GHz)	62.96
Test Date	Mar. 24, 2017~Apr. 12, 2017		

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	33209.60	64.94	83.54	-18.60	55.98	18.44	40.93	50.41	158	238	Peak	VERTICAL
2	33210.49	51.61	63.54	-11.93	42.65	18.44	40.93	50.41	158	238	Average	VERTICAL

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	33209.23	64.47	83.54	-19.07	55.51	18.44	40.93	50.41	219	138	Peak	HORIZONTAL
2	33210.33	50.36	63.54	-13.18	41.40	18.44	40.93	50.41	219	138	Average	HORIZONTAL

Test Plan: Channel 2 MRP: 60.48

Temp	24°C	**Humidity**	54%
Test Engineer	Steven Liang	**Test Distance**	3 m
Test Range	1 GHz – 18 GHz	**Test Freq. (GHz)**	60.48
Test Date	Mar. 24, 2017~Apr. 12, 2017		

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	1812.37	41.78	74.00	-32.22	46.04	3.61	26.72	34.59	115	167	Peak	VERTICAL
2	1812.45	35.15	54.00	-18.85	39.41	3.61	26.72	34.59	115	167	Average	VERTICAL
3	12532.32	42.23	54.00	-11.77	27.62	10.09	38.94	34.42	207	312	Average	VERTICAL
4	12533.16	55.88	74.00	-18.12	41.20	10.09	38.94	34.35	207	312	Peak	VERTICAL

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	1812.46	35.57	54.00	-18.43	39.83	3.61	26.72	34.59	172	32	Average	HORIZONTAL
2	1812.62	42.41	74.00	-31.59	46.67	3.61	26.72	34.59	172	32	Peak	HORIZONTAL
3	12532.24	42.21	54.00	-11.79	27.60	10.09	38.94	34.42	234	129	Average	HORIZONTAL
4	12532.63	55.50	74.00	-18.50	40.82	10.09	38.94	34.35	234	129	Peak	HORIZONTAL

Temp	24°C	Humidity	54%
Test Engineer	Steven Liang	Test Distance	1 m
Test Range	18 GHz – 26.5 GHz	Test Freq. (GHz)	60.48
Test Date	Mar. 24, 2017~Apr. 12, 2017		

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	20160.33	42.04	63.54	-21.50	41.12	15.30	37.66	52.04	182	274	Average	VERTICAL
2	20160.35	54.07	83.54	-29.47	53.15	15.30	37.66	52.04	182	274	Peak	VERTICAL

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	20160.59	41.81	63.54	-21.73	40.89	15.30	37.66	52.04	163	105	Average	HORIZONTAL
2	20160.71	53.52	83.54	-30.02	52.60	15.30	37.66	52.04	163	105	Peak	HORIZONTAL

Temp	24°C	Humidity	54%
Test Engineer	Steven Liang	Test Distance	1 m
Test Range	26.5 GHz – 40 GHz	Test Freq. (GHz)	60.48
Test Date	Mar. 24, 2017~Apr. 12, 2017		

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	33853.38	63.05	83.54	-20.49	54.99	18.71	41.03	51.68	161	208	Peak	VERTICAL
2	33853.45	50.69	63.54	-12.85	42.63	18.71	41.03	51.68	161	208	Average	VERTICAL

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	33853.14	49.76	63.54	-13.78	41.70	18.71	41.03	51.68	199	88	Average	HORIZONTAL
2	33853.43	62.17	83.54	-21.37	54.11	18.71	41.03	51.68	199	88	Peak	HORIZONTAL

Test Plan: Channel 3 MRP: 62.64

Temp	24°C	**Humidity**	54%
Test Engineer	Steven Liang	**Test Distance**	3 m
Test Range	1 GHz – 18 GHz	**Test Freq. (GHz)**	62.64
Test Date	Mar. 24, 2017~Apr. 12, 2017		

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	1812.37	43.46	74.00	-30.54	47.72	3.61	26.72	34.59	278	349	Peak	VERTICAL
2	1812.49	37.48	54.00	-16.52	41.74	3.61	26.72	34.59	278	349	Average	VERTICAL
3	12532.63	42.21	54.00	-11.79	27.53	10.09	38.94	34.35	152	223	Average	VERTICAL
4	12532.97	55.52	74.00	-18.48	40.84	10.09	38.94	34.35	152	223	Peak	VERTICAL

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	1812.41	41.76	74.00	-32.24	46.02	3.61	26.72	34.59	202	54	Peak	HORIZONTAL
2	1812.42	34.88	54.00	-19.12	39.14	3.61	26.72	34.59	202	54	Average	HORIZONTAL
3	12532.60	42.29	54.00	-11.71	27.61	10.09	38.94	34.35	127	328	Average	HORIZONTAL
4	12533.46	55.21	74.00	-18.79	40.53	10.09	38.94	34.35	127	328	Peak	HORIZONTAL

Temp	24°C	Humidity	54%
Test Engineer	Steven Liang	Test Distance	1 m
Test Range	18 GHz – 26.5 GHz	Test Freq. (GHz)	62.64
Test Date	Mar. 24, 2017~Apr. 12, 2017		

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	20213.18	42.03	63.54	-21.51	41.13	15.27	37.68	52.05	187	245	Average	VERTICAL
2	20213.53	55.40	83.54	-28.14	54.50	15.27	37.68	52.05	187	245	Peak	VERTICAL

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	20213.36	41.80	63.54	-21.74	40.90	15.27	37.68	52.05	231	345	Average	HORIZONTAL
2	20213.87	55.51	83.54	-28.03	54.61	15.27	37.68	52.05	231	345	Peak	HORIZONTAL

Temp	24°C	Humidity	54%
Test Engineer	Steven Liang	Test Distance	1 m
Test Range	26.5 GHz – 40 GHz	Test Freq. (GHz)	62.64
Test Date	Mar. 24, 2017~Apr. 12, 2017		

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	32689.63	63.45	83.54	-20.09	54.10	18.38	40.61	49.64	185	237	Peak	VERTICAL
2	32690.09	49.93	63.54	-13.61	40.58	18.38	40.61	49.64	185	237	Average	VERTICAL

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	32689.57	62.88	83.54	-20.66	53.53	18.38	40.61	49.64	207	113	Peak	HORIZONTAL
2	32690.12	49.38	63.54	-14.16	40.03	18.38	40.61	49.64	207	113	Average	HORIZONTAL

Temp	24°C	Humidity	54%
Test Engineer	Steven Liang	Test Date	Mar. 24, 2017~Apr. 12, 2017
Test Range	40GHz – 200GHz		

Test Plan: Channel 2 LRP: 60.16-60.80

Test Frequency (GHz)	Rx Antenna Gain (dBi)	Measurement Distance (m)	Read Worse Frequency (GHz)	Read Level (dBm)
60.16	23	0.5	40.13	-75.32
EIRP (dBm)	**Specification Distance (m)**	**Power Density (pW/m^2)**	**Limit (pW/cm^2)**	**Test Result**
-39.83	3	0.0920	90.00	Complied

Test Frequency (GHz)	Rx Antenna Gain (dBi)	Measurement Distance (m)	Read Worse Frequency (GHz)	Read Level (dBm)
60.48	23	0.5	40.48	-76.82
EIRP (dBm)	**Specification Distance (m)**	**Power Density (pW/m^2)**	**Limit (pW/cm^2)**	**Test Result**
-41.25	3	0.0662	90.00	Complied

Test Frequency (GHz)	Rx Antenna Gain (dBi)	Measurement Distance (m)	Read Worse Frequency (GHz)	Read Level (dBm)
60.80	23	0.5	40.41	-74.67
EIRP (dBm)	**Specification Distance (m)**	**Power Density (pW/m^2)**	**Limit (pW/cm^2)**	**Test Result**
-39.12	3	0.1083	90.00	Complied

Test Plan: Channel 3 LRP: 62.32-62.96

Test Frequency (GHz)	Rx Antenna Gain (dBi)	Measurement Distance (m)	Read Worse Frequency (GHz)	Read Level (dBm)
62.32	23	0.5	40.69	-75.17
EIRP (dBm)	**Specification Distance (m)**	**Power Density (pW/m^2)**	**Limit (pW/cm^2)**	**Test Result**
-39.56	3	0.0979	90.00	Complied

Test Frequency (GHz)	Rx Antenna Gain (dBi)	Measurement Distance (m)	Read Worse Frequency (GHz)	Read Level (dBm)
62.64	23	0.5	40.25	-76.72
EIRP (dBm)	**Specification Distance (m)**	**Power Density (pW/m^2)**	**Limit (pW/cm^2)**	**Test Result**
-41.20	3	0.0670	90.00	Complied

Test Frequency (GHz)	Rx Antenna Gain (dBi)	Measurement Distance (m)	Read Worse Frequency (GHz)	Read Level (dBm)
62.96	23	0.5	40.44	-76.47
EIRP (dBm)	**Specification Distance (m)**	**Power Density (pW/m^2)**	**Limit (pW/cm^2)**	**Test Result**
-40.91	3	0.0717	90.00	Complied

Test Plan: Channel 2 MRP: 60.48

Test Frequency (GHz)	Rx Antenna Gain (dBi)	Measurement Distance (m)	Read Worse Frequency (GHz)	Read Level (dBm)
60.48	23	0.5	40.49	-76.24
EIRP (dBm)	**Specification Distance (m)**	**Power Density (pW/m^2)**	**Limit (pW/cm^2)**	**Test Result**
-40.67	3	0.0757	90.00	Complied

Test Plan: Channel 3 MRP: 62.64

Test Frequency (GHz)	Rx Antenna Gain (dBi)	Measurement Distance (m)	Read Worse Frequency (GHz)	Read Level (dBm)
62.64	23	0.5	40.57	-74.25
EIRP (dBm)	**Specification Distance (m)**	**Power Density (pW/m^2)**	**Limit (pW/cm^2)**	**Test Result**
-38.66	3	0.1202	90.00	Complied

3.6 Frequency Stability

3.6.1 Limit of Frequency Stability

Frequency Stability	Limit
Refer as FCC 15.255(e) and ANSI C63.10-2013, clause 9.14	within the frequency bands
Note: These measurements shall also be performed at normal and extreme test conditions.	

3.6.2 Measuring Instruments

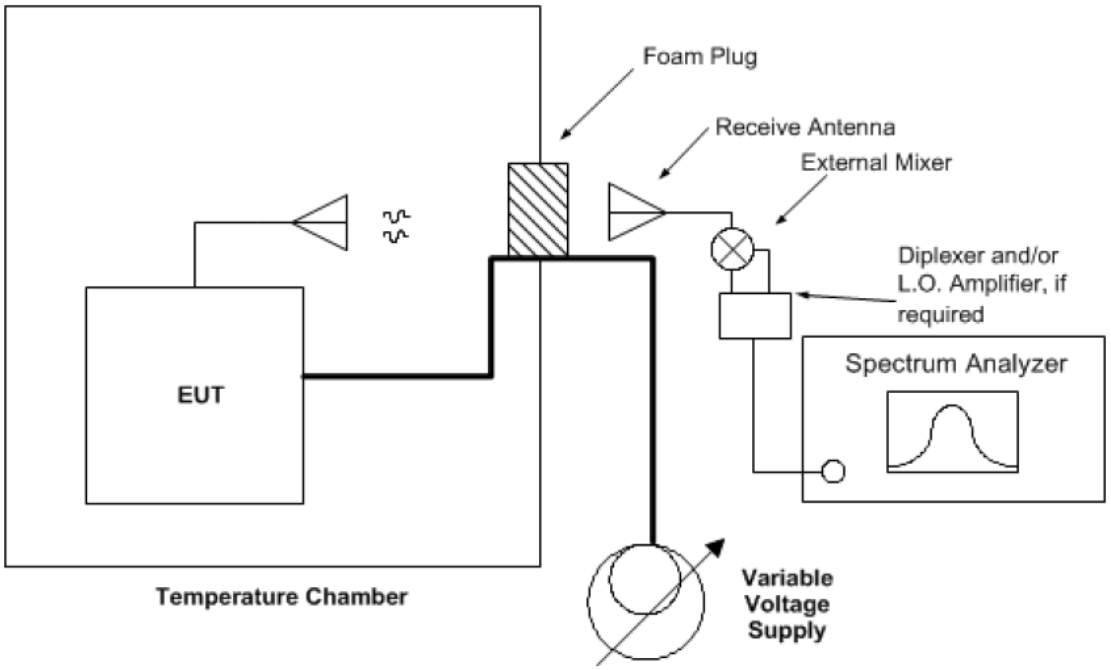
Refer a measuring instruments list in this test report.

3.6.3 Test Procedures

Method of measurement: Refer as ANSI C63.10-2013, clauses 9.14.

3.6.4 Test Setup

Frequency Stability



3.6.5 Test Result of Frequency Stability

Test Conditions	see ANSI C63.10, clause 5.11 & clause 9
Test Setup	see ANSI C63.10, clause 9.14
NOTE: If equipment having different channel plan and nominal channel bandwidth modes (see test report clause 1.1.1), the measurements are uninfluenced by different channel plan and nominal channel bandwidth modes, may not need to be repeated for all modes.	

3.6.5.1 Frequency Stability with Respect to Ambient Temperature

Frequency Stability with Respect to Ambient Temperature			
Temp	22℃	**Humidity**	54%
Test Engineer	Steven Liang	**Test Date**	Mar. 24, 2017~Apr. 12, 2017
Test Results			
Test Temperature (°C)	**Measured Frequency (MHz)**	**Delta Frequency (kHz)**	**Limit (±kHz)**
0	60486.5337	12.3	Within band
10	60486.5294	8.0	Within band
20	60486.5214	Reference	Within band
30	60486.5323	10.9	Within band
40	60486.5257	4.3	Within band
50	60486.5313	5.6	Within band
NOTE: 1. For the applicable limit, see FCC 15.255(e). 2. The manufacturer's specified temperature range of 0 to 50°C.			

3.6.5.2 Frequency Stability When Varying Supply Voltage

Frequency Stability When Varying Supply Voltage			
Temp	22℃	**Humidity**	54%
Test Engineer	Steven Liang	**Test Date**	Mar. 24, 2017~Apr. 12, 2017
Test Results			
Test Voltage: (Vdc)	**Measured Frequency (MHz)**	**Delta Frequency (kHz)**	**Limit (±kHz)**
4.25	60486.5215	0.10	Within band
5	60486.5214	Reference	Within band
5.75	60486.5212	-0.20	Within band
NOTE: For the applicable limit, see FCC 15.255(e).			

3.7 Operation Restriction and Group Installation

3.7.1 Limit of Operation Restriction and Group Installation

Item	Limit
Operation Restriction	Operation is not permitted for the following products: ♦ Equipment used on aircraft or satellites. (Refer as FCC 15.255 (a)) ♦ Field disturbance sensors, including vehicle radar systems, unless the field disturbance sensors are employed for fixed operation. (Refer as FCC 15.255 (a))
Group Installation	Operation is not permitted for the following products: ♦ External phase-locking (Refer as FCC 15.255 (g)))

3.7.2 Result of Operation Restriction

Manufacturer declares that EUT will not been used on aircraft or satellites. Then user manual will include a statement to caution EUT is not permitted for used on aircraft or satellites. EUT is a wireless video area network (WVAN) for the connection of consumer electronic (CE) audio and video devices.

3.7.3 Result of Group Installation

The frequency, amplitude and phase of the transmit signal are set within the EUT. There are no external phase-locking inputs or any other means of combining two or more units together to realize a beam-forming array.

4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
LISN	Schwarzbeck	NSLK 8127	8127650	9kHz ~ 30MHz	Nov. 23, 2016	Conduction (CO02-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Nov. 15, 2016	Conduction (CO02-CB)
EMI Receiver	Agilent	N9038A	MY52260140	9kHz ~ 8.4GHz	Jan. 16, 2017	Conduction (CO02-CB)
COND Cable	Woken	Cable	01	0.15MHz ~ 30MHz	Nov. 30, 2016	Conduction (CO02-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	Conduction (CO02-CB)
Pulse Limiter	Schwarzbeck	VTSD 9561F	9561-F073	9kHz ~ 30MHz	Sep. 29, 2016	Conduction (CO02-CB)
BILOG ANTENNA with 6dB Attenator	TESEQ & EMCI	CBL6112D & N-6-06	37880 & AT-N0609	20MHz ~ 2GHz	Aug. 30, 2016	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Nov. 10, 2016	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 25, 2016	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10991	0.1MHz ~ 1.3GHz	Mar. 13, 2017	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 16, 2017	Radiation (03CH01-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jun. 28, 2016	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Nov. 21, 2016	Radiation (03CH01-CB)
EMI Test	R&S	ESCS	100355	9kHz ~ 2.75GHz	May 16, 2016	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-16+17	N/A	30 MHz ~ 1 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16+17	N/A	1 GHz ~ 18 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#1	N/A	18GHz ~ 40 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#2	N/A	18GHz ~ 40 GHz	Oct. 24, 2016	Radiation (03CH01-CB)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 16, 2016*	Radiation (03CH01-CB)
Mixer	OML	M19HW/A	U91113-1	40 ~ 60 GHz	Sep. 09, 2015*	Radiation (03CH01-CB)
Mixer	OML	M15HW/A	V91113-1	50 ~ 75 GHz	Sep. 14, 2015*	Radiation (03CH01-CB)
Mixer	OML	M12HW/A	E91113-1	60 ~ 90 GHz	Sep. 17, 2015*	Radiation (03CH01-CB)
Mixer	OML	M08HW/A	F91113-1	90 ~ 140 GHz	Sep. 21, 2015*	Radiation (03CH01-CB)
Mixer	OML	M05HW/A	G91113-1	140 ~ 220 GHz	Sep. 24, 2015*	Radiation (03CH01-CB)
Standard Horn Antenna	Custom Microwave	M19RH	U91113-A	40 ~ 60 GHz	Sep. 09, 2015*	Radiation (03CH01-CB)
Standard Horn Antenna	Custom Microwave	M15RH	V91113-A	50 ~ 75 GHz	Sep. 14, 2015*	Radiation (03CH01-CB)
Standard Horn Antenna	Custom Microwave	M12RH	E91113-A	60 ~ 90 GHz	Sep. 17, 2015*	Radiation (03CH01-CB)
Standard Horn Antenna	Custom Microwave	M08RH	F91113-A	90 ~ 140 GHz	Sep. 21, 2015*	Radiation (03CH01-CB)
Standard Horn Antenna	Custom Microwave	M05RH	G91113-A	140 ~ 220 GHz	Sep. 24, 2015*	Radiation (03CH01-CB)
Detector	Millitech	DET-15-RPFW0	#A16473(038)	50 ~ 75 GHz	Dec. 29, 2015*	Conducted (TH01-CB)
Pico Scope	Pico	Pico Scope 6402C	CX372/002	N/A	Jul. 06, 2016	Radiation (03CH01-CB)
Temp. and Humidity Chamber	Ten Billion	TTH-D3SP	TBN-931011	-30~100 degree	Jun. 03, 2016	Conducted (TH01-CB)

Note: Calibration Interval of instruments listed above is one year.

"*" Calibration Interval of instruments listed above is two years.

NCR means Non-Calibration required.

5 Measurement Uncertainty

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.2 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Radiated Emission (40GHz ~ 220GHz)	4.7 dB	Confidence levels of 95%
Temperature	0.7°C	Confidence levels of 95%