Prüfbericht-Nr.: *Test Report No.:*	**50088175 002**	**Auftrags-Nr.:** *Order No.:*	114062897	Seite 1 von 39 *Page 1 of 39*
Kunden-Referenz-Nr.: *Client Reference No.:*	N/A	**Auftragsdatum:** *Order date:*	March 3, 2017	
Auftraggeber: *Client:*	Beijing TPCast Technologies Limited Company.,, Room 301-09, 3rd Floor, No. 22 Building, No.1 Yard, 1st Street of Wuliqiao, Chaoyang District, Beijing .			
Prüfgegenstand: *Test item:*	HMD Receiver			
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	RX-1			
Auftrags-Inhalt: *Order content:*	FCC/IC Test report			
Prüfgrundlage: *Test specification:*	FCC 47CFR Part 15: Subpart C Section 12.255 RSS-210 Issue 9 Annex J			

Wareneingangsdatum: *Date of receipt:*	05/17/2017
Prüfmuster-Nr.: *Test sample No.:*	A000530292-003
Prüfzeitraum: *Testing period:*	21-Jun-2017 - 23-Sep-2017
Ort der Prüfung: *Place of testing:*	EMC/RF Laboratory Taipei
Prüflaboratorium: *Testing laboratory:*	TUV Rheinland Taiwan Ltd.
Prüfergebnis*: *Test result*:*	Pass

Report date / *tested by:*			**kontrolliert von** / *reviewed by:*		
2017-10-20	Sam Kuo / Project Engineer		2017-10-20	Arvin Ho/Vice General Manager	
Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*	**Datum** *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

Sonstiges / *Other:*

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
Legend:	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

TEST SUMMARY

5.1.1 ANTENNA REQUIREMENT
RESULT: Passed

5.1.2 OUTPUT POWER EIRP
RESULT: Passed

5.1.3 OUTPUT POWER CONDUCTED
RESULT: Passed

5.1.4 6DB BANDWIDTH AND 99% BANDWIDTH
RESULT: Passed

5.1.5 FREQUENCY STABILITY
RESULT: Passed

5.1.6 SPURIOUS EMISSION FREQUENCY RANGE 30MHZ TO 40 GHZ
RESULT: Passed

5.1.7 SPURIOUS EMISSION FREQUENCY RANGE 40 GHZ TO 200 GHZ
RESULT: Passed

5.2.1 MAINS CONDUCTED EMISSIONS
RESULT: Passed

Contents

1. General Remarks

1.1 Complementary Materials

The following attachments are integral parts of this test report:

Appendix P: Photo Documentation internal view
(File Name: 50088175 001 APPENDIX P)

Appendix D: Test Result of Radiated Emissions
(File Name: 50088175 001 APPENDIX D)

Test Specifications

The following standards were applied.

Table 1: Applied Standard and Test Levels

Radio
FCC CFR47 Part 15: Subpart C Section 12.255 RSS-210 Issue 9 Annex J ANSI C63.10:2013

2. Test Sites

2.1 Test Laboratory

TUV Rheinland Taiwan Ltd.
Taichung Branch Office

No.9, Lane 36, Minsheng Rd., Sec. 3, Daya District,
Taichung City 428
Taiwan (R.O.C.)

2.2 Test Facility

TUV Rheinland Taiwan Ltd.
Taipei Office

11F. No.758, Sec. 4, Bade Rd., Songshan Dist.
Taipei City 105
Taiwan (R.O.C.)

FCC RegistrationNo.: 340738
IC Canada Registration No.: 9465A-1
TAF Accredited NCC Test Lab. No.:0759
TAF ISO17025 Certification effective periods: 2016-Jul-1st to 2019-Jun-30th

TAF
Testing Laboratory
0759

2.3 List of Test and Measurement Instruments

Table 2: List of Test and Measurement Equipment

Kind of Equipment	Manu-facturer	Type	S/N	Last Calibration	Next Calibration	Used for test items
Spectrum Analyzer	Keysight	N9010A	MY52221334	06/01/2016	06/01/2018	6dB Bandwidth, Output Power, Power Density, Cond. Spurious Emissions, Rad. Spurious Emission
Harm. Mixer, 40-60 GHz	OML	WR-19	1601 1801	NCR	NCR	Spurious Emission and Frequency Band Edge
Harm. Mixer, 50-75 GHz	Keysight / VDI	N9029AV15	US54250104	NCR	NCR	Spurious Emission and Frequency Band Edge
Harm. Mixer, 75-110 GHz	Keysight / VDI	N9029AV10	US53250005	NCR	NCR	Spurious Emission and Frequency Band Edge
Harm. Mixer, 90-140 GHz	Keysight / VDI	N9029AV08	US53250003	NCR	NCR	Spurious Emission and Frequency Band Edge
Harm. Mixer, 140-220 GHz	Keysight / VDI	N9029AV05	US53250002	NCR	NCR	Spurious Emission and Frequency Band Edge
RF Detector	Millitech	DET-15RPFW0	065	NCR	NCR	Fundamental Power
Low Pass Filter, 10 MHz	Woken	WFIL-L10F	WR366WC2B1	NCR	NCR	Fundamental Power
Pre-Amplifier	Spacek Labs	SLV-20-4	16E12	NCR	NCR	Fundamental Power
Oscilloscope	Tektronix	TDS430A	B060509	NCR	NCR	Fundamental Power
Power Meter	Keysight	N1911A	MY56020004	06/14/2016	06/14/2018	Fundamental Power
Power Sensor coax 50GHz	Keysight	8487D	MY55500010	06/14/2016	06/14/2018	Fundamental Power
Power Sensor Waveguide 50-75 GHz	Keysight	V8486A	MY56110003	06/14/2016	06/14/2018	Fundamental Power
Waveguide Attenuator	Millitech	FXA-15-R20GN	682	NCR	NCR	Fundamental Power
Waveguide Attenuator	Millitech	FXA-15-R10GN	683	NCR	NCR	Fundamental Power
Signal Generator	Keysight	E8257D	SG53400472	06/08/2016	06/08/2018	Spurious Emissions by Substitution
Source 50-75 GHz	Keysight / VDI	E8257DV15	US54250110	NCR	NCR	Spurious Emissions by Substitution
Source 75-110 GHz	Keysight / VDI	E8257DV10	US53250015	NCR	NCR	Spurious Emissions by Substitution
Source 90-140 GHz	Keysight / VDI	E8257DV08	US53250005	NCR	NCR	Spurious Emissions by Substitution
Source 140-220 GHz	Keysight / VDI	E8257DV05	US53250004	NCR	NCR	Spurious Emissions by Substitution
Power Meter	VDI	PM5	361V	06/13/2016	06/13/2018	Spurious

75GHz -220 GHz						Emissions by Substitution
Test Software	Farad	EZ_EMC	Ver. TUV3A1	N/A	N/A	Spurious Emission
EMI Test Receiver	R&S	ESR7	101062	2016/09/12	2017/09/12	Spurious Emission and Frequency Band Edge
Spectrum Analyzer	R&S	FSV 40	100921	2017/05/02	2018/05/01	6dB Bandwidth, Output Power, Power Density, Cond. Spurious Emissions, Rad. Spurious Emission
Spectrum Analyzer	Agilent	N9010A	MY53470241	2017/05/23	2018/05/22	6dB Bandwidth, Output Power, Power Density, Cond. Spurious Emissions, Rad. Spurious Emission
Preamplifier (30MHz -1GHz)	HP	8447F	2805A03335	2016/07/29	2017/07/29	Spurious Emission and Frequency Band Edge
Preamplifier (18 GHz -40 GHz)	COM-POWER	PAM-840	461257	2016/12/01	2017/12/01	Spurious Emission and Frequency Band Edge
Pre-Amplifier (1GHz~18GHz)	EM Electronics	EM01G18G	060558	2016/11/17	2017/11/17	Spurious Emission and Frequency Band Edge
Bilog Antenna	TESEQ	CBL6111D	29802	8/10/2016	8/10/2017	Spurious Emission and Frequency Band Edge
Horn Antenna	ETS-Lindgren	3117	138160	5/25/2017	5/25/2018	Spurious Emission and Frequency Band Edge
Horn Antenna (18GHz~40GHz)	COM-POWER	AH-840	101031	11/22/2016	11/22/2017	Spurious Emission and Frequency Band Edge
Loop Antenna	Schwarzbeck	FMZB 1513	1513-076	6/14/2017	6/14/2018	Spurious Emission and Frequency Band Edge
EMI Test Receiver	R&S	ESCI7	100797	2016/12/30	2017/12/30	Mains Spurious Emission
LISN (1 phase)	R&S	ENV216	101243	6/18/2017	6/18/2018	Mains Spurious Emission
LISN	R&S	ENV216	101262	2016/06/16	2017/06/16	Mains Spurious Emission

2.4 Traceability

All measurement equipment calibrations are traceable to NML(Taiwan)/NIST(USA) or where calibration is performed outside Taiwan, to equivalent nationally recognized standards organizations.

2.5 Calibration

Equipment requiring calibration is calibrated periodically in a suitably accredited Calibration Lab. Additionally all equipment is verified for proper performance on a regular schedule using in house standards or comparisons.

2.6 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements .

Table 3: Emission Measurement Uncertainty

Parameter	Uncertainty
Radio Frequency	± 1 x 10^{-7}
Radiated emission of transmitter, valid up to 40 GHz	± 6 dB
Radiated emission, 40 - 132 GHz	± 6 dB
Temperature	± 1 ºC
Humidity	± 5 %
DC and low frequency voltages	±3 %

3. General Product Information

3.1 Product Function and Intended Use

The HMD (Head Mounted Display) Receiver unit is part of the TPCAST wireless high-definition AV-transfer system where a PC transmitter unit transfers audio and video signal from a PC through the TPCAST wireless high-definition transfer protocol to the HMD receiver. The HMD unit receives wireless signals from PC transmitter unit on a HRP Wideband Channel, and converts them to audio and video signals which is fed into the helmet display.
The HMD unit transmits acknowledgement and network control signals back to the PC transmitter unit on an LRP Narrowband Channel. The center frequencies of the HRP Wideband Channel and the LRP Narrowband Channel can be the same. Thus the Wideband AV signals and the Narrow Band LRP channels are TD-multplexed.

The HMD receiver unit contains a SiBEAM SiI6312 WirelessHD RF Receiver module.
This module has the capability to set the LRP narrowband channel not only to the center frequency of the HRP channel, but also to 4 alternative frequency positions within the HRP channel Bandwidth Range.

This device was tested on the outermost possible LRP channels 60.163 GHz and 62.957GHz.

For details refer to the User Guide, Data Sheet and Circuit Diagram.

3.2 System Details and Ratings

Table 4: Basic Information of EUT

Item	EUT information
Kind of Equipment	HMD Receiver
Type Designation	RX-1
Brand Name	TPCAST
FCC ID	2AL8N-RX001
Canada ID	22801-RX001
Canada HVIN	F3

Table 5: Technical Specification of EUT

Technical Specification	Value
Operating Frequency range of the Module	60.163 - 62.957GHz
Number of LRP Channels possible by Module Firmware	10
Operating Frequencies of this HMD unit	60.48 - 62.64GHz
Number of LRP Channels used by Firmware of this HMD unit	2
Operation Voltage	5 Vdc (through USB port)
Modulation	BPSK
Antenna gain	12 dBi

3.3 Independent Operation Modes

Basic operation modes are:

A. Transmitting
    1. Low channel
    2. High channel

3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.5 Submitted Documents

- Circuit Diagram
- Instruction Manual
- Rating Label
- Technical Description

4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

The equipment under test (EUT) was configured to measure its maximum power level, according to the instructions of the Manufacturer.

4.2 Test Operation and Test Software

Setup for testing: Test samples are provided with a USB interface which makes it possible to control them through a test software installed on a notebook computer.

This software was running on the laptop computer connected to the EUT. It was used to enable the operation modes listed in section 3.3 as appropriate.

The samples were used as follows:
Radiation: A000530292-003

Full test was applied on all test modes, but only worst case was shown

4.3 Special Accessories and Auxiliary Equipment

The product has been tested together with the following additional accessories:

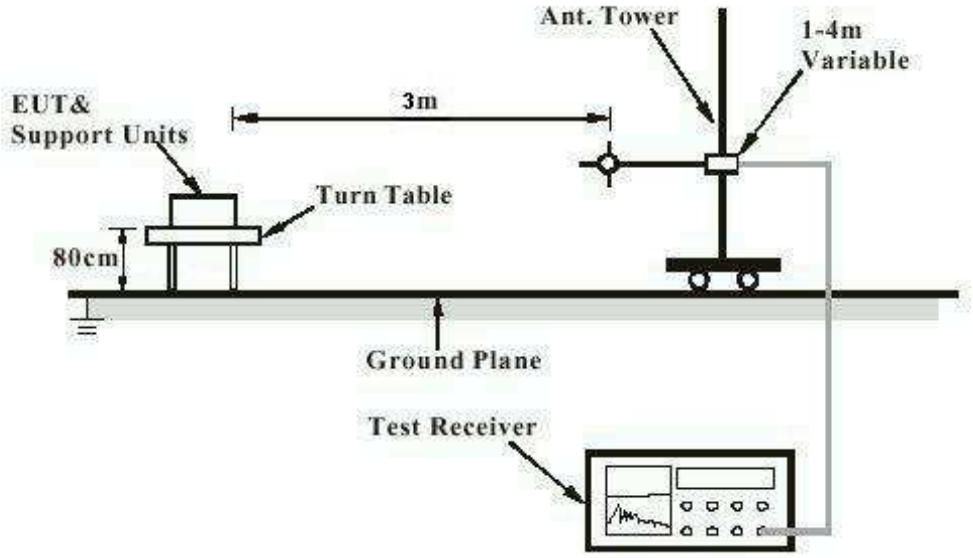
Description	Manufacturer	Model No.	Serial No.
Notebook(EMC-06)	Lenovo	TP00048A	PB-0F8B2

4.4 Countermeasures to achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Constructional Data Form or the Technical Construction File. No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test 30 MHz to 40 GHz



Note: Measurements in the range 1 GHz to 40 GHz are done with a table height of 1.5m

Diagram of Measurement Equipment Configuration for Mains Conduction Measurement (if applicable)

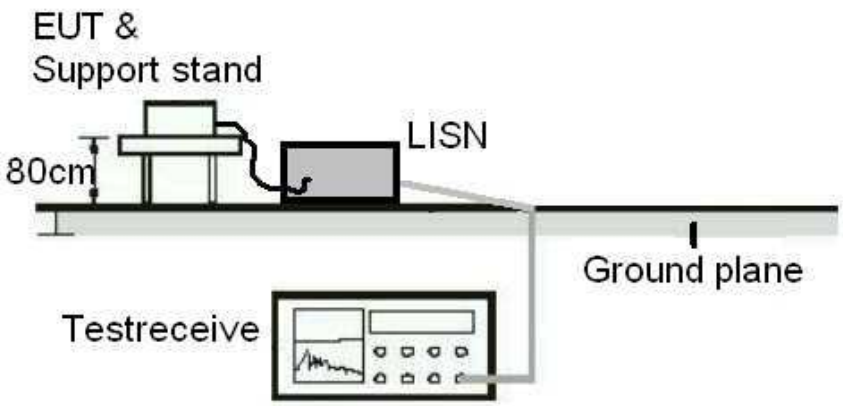
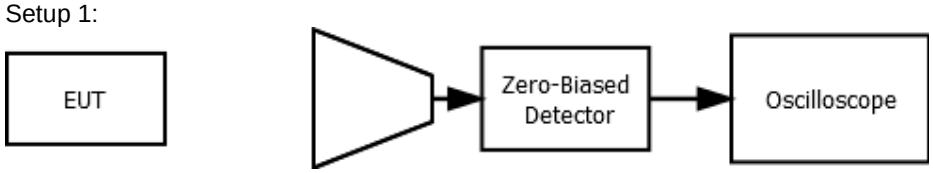
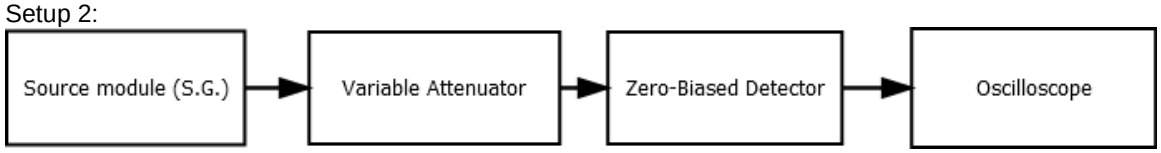


Diagram of Measurement Equipment Configuration for Conducted Transmitter Measurement

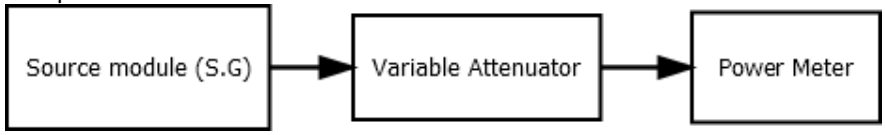
Setup 1:



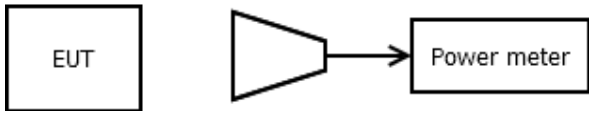
Setup 2:



Setup 3:



Setup 4: (for Average EIRP measurement)



5. Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT: **Passed**

Test standard	:	LP0002(2016): 2.2, 3.10.1, (3) FCC Part 12.255(b)(4), Part 15.203 and RSS-Gen 8.3
Requirement	:	use of approved antennas only

According to the manufacturer declaration, the EUT has an antenna with a directional gain of 12 dBi. The antenna is a antenna array with no possibility of replacement with a non-approved antenna by the end-user. Therefore, the EUT is considered to comply with this provision.

Refer to EUT photo for details.

5.1.2 Output Power EIRP

RESULT: **Passed**

Test standard	:	LP0002(2016): 3.10.1, (2) FCC Part 15.255(b)(3), RSS-210 Annex J.2.2
Basic standard	:	ANSI C63.10:2013,
Kind of test site	:	Shielded room

Test setup

Test Channel	:	Low/ Middle/ High
Operation Mode	:	A
Ambient temperature	:	20-24 °C
Relative humidity	:	50-65 %
Atmospheric pressure	:	100-103 kPa

Limit
§ 15.255(b)(1)(i) Except as indicated in paragraph (b)(1)(ii) of this section, the average power of any emission shall not exceed 40 dBm and the peak power of any emission shall not exceed 43 dBm.

As the HMD Device is the AV-Signal Receiving Unit, the EUT only transmits acknowledgement and network control signals back to the PC transmitter unit on an LRP Narrowband Channel.

The EUT is measured in a test mode configuration in which it transmits quasi-omnidirectional beacon signals of 250us duration on a fixed 25% duty cycle.

For beacon transmissions, the EUT switches through all possible antenna patterns in a sequence, with a switching rate of 500ns. Average EIRP is measured directly using a power sensor with correction for the fixed duty cycle. Peak EIRP is measured with a wideband detector. Since the beacon transmission contains all possible antenna patterns, the peak EIRP measured during the beacon corresponds to the peak EIRP of the strongest antenna pattern.

Table 6: Test result of Peak and Average Output Power for Beacon signal

Average EIRP :

Duty cycle: 0.25 Distance: 0.3 m

Channel Plan (GHz)	Test Freq. (GHz)	Power Measured (dBm)		Horn Antenna Gain (dBi)	Path loss (dB)	Average EIRP (dBm)		Total EIRP (dBm)	EIRP Limit (dBm)
		H	V			H	V		AV
Channel 2 LRP: 60.16-60.80	60.16	-30.5	-30.73	21	-57.58	12.10	11.87	14.99	40
	60.48	-30.8	-30.91		-57.62	11.84	11.73	14.80	40
	60.8	-31.53	-30.32		-57.67	11.16	12.37	14.82	40
Channel 3 LRP: 62.32-62.96	62.32	-32.36	-32.13		-57.88	10.54	10.77	13.67	40
	62.64	-32.91	-32.92		-57.93	10.04	10.03	13.04	40
	62.96	-32.67	-32.02		-57.97	10.32	10.97	13.67	40

Peak EIRP:

Distance: 0.5m

Channel Plan (GHz)	Test Freq. (GHz)	DSO (mV)		Power Measured (dBm)		EMeas (dBuV/m) (note1)		EIRP (dBm) (note2)		Total EIRP (dBm)	EIRP Limit (dBm)
		H	V	H	V	H	V	H	V	(Both polarizations)	Peak
Channel 2 LRP: 60.16-60.80	60.16	41.2	58.8	-20.84	-18.08	131.00	133.76	20.28	23.04	24.89	43
	60.48	31.8	42	-21.31	-18.46	130.58	133.43	19.86	22.71	24.52	43
	60.8	21.3	25	-21.09	-19.96	130.85	131.98	20.13	21.26	23.74	43
Channel 3 LRP: 62.32-62.96	62.32	18.1	21.4	-21.22	-20.14	130.93	132.01	20.21	21.29	23.79	43
	62.64	27.4	31.4	-18.55	-18.23	133.64	133.96	22.92	23.24	26.10	43
	62.96	46.8	55.6	-20.12	-19.06	132.12	133.18	21.40	22.46	24.97	43

note1 - Emeas= 126.8 – 20log(λ) + Power measured – Measurement Antenna Gain
note2 - EIRP= Emeas + 20log(Measurements distance) – 104.7
note3 - λ = 300/Frequency(MHz)

5.1.3 Output Power conducted

RESULT: **Passed**

Test standard	:	LP0002(2016): 3.10.1, (2) FCC Part 12.255(b)(3), RSS-210 Annex J.4
Basic standard	:	ANSI C63.10:2013,
Limit	:	500 mW
Kind of test site	:	Shielded room

Test setup

Test Channel	:	Low/ Middle/ High
Operation Mode	:	A

Ambient temperature	:	20-24 °C
Relative humidity	:	50-65 %
Atmospheric pressure	:	100-103 kPa

Limit
§ 15.255(d) Except as specified paragraph (e)(1) of this section, the peak transmitter conducted output power shall not exceed 500 mW. Depending on the gain of the antenna, it may be necessary to operate the intentional radiator using a lower peak transmitter output power in order to comply with the EIRP limits specified in paragraph (b) of this section

Table 7: Test result of Peak Output Power of Beacon signal

Channel Plan (GHz)	Test Freq. (GHz)	EIRP (dBm)	Max. Ant. Gain (dBi)	Peak Power (dBm)	Peak Power (mW)	6dBc BW (MHz)	Peak Power Limit (mW)
Channel 2 LRP: 60.16-60.80	60.16	24.89	12	12.89	19.45	89.9	449.5
	60.48	24.52	12	12.52	17.88	90.37	463
	60.8	23.74	12	11.74	14.92	90.42	456
Channel 3 LRP: 62.32-62.96	62.32	23.79	12	11.79	15.11	90.32	441.5
	62.64	26.10	12	14.10	25.69	90.51	448.5
	62.96	24.97	12	12.97	19.82	89.76	456

Remark:
1.Peak power = EIRP - G(dBi) ,where: G(dBi) is gain of EUT antenna.
2.limit of peak power :6dB BW >100MHz = 500mW , ≤ 100MHz =500mW*(BW/100)

5.1.4 6dB Bandwidth and 99% Bandwidth

RESULT: **Passed**

Test standard	:	LP0002(2016): 3.10.1, (5) FCC Part 12.255(a)(2), RSS-210 Annex J.4(a)
Basic standard	:	ANSI C63.10:2013,
Kind of test site	:	Shielded room

Test setup

Test Channel	:	Low/ Middle/ High
Operation Mode	:	A

Ambient temperature	:	20-24°C
Relative humidity	:	50-65%
Atmospheric pressure	:	100-103 kPa

Limit
§ 15.255(e)(1) Transmitters with an emission bandwidth of less than 100 MHz must limit their peak transmitter conducted output power to the product of 500 mW times their emission bandwidth divided by 100 MHz.

Table 8: Test result of 6dB Bandwidth

Channel 2 LRP

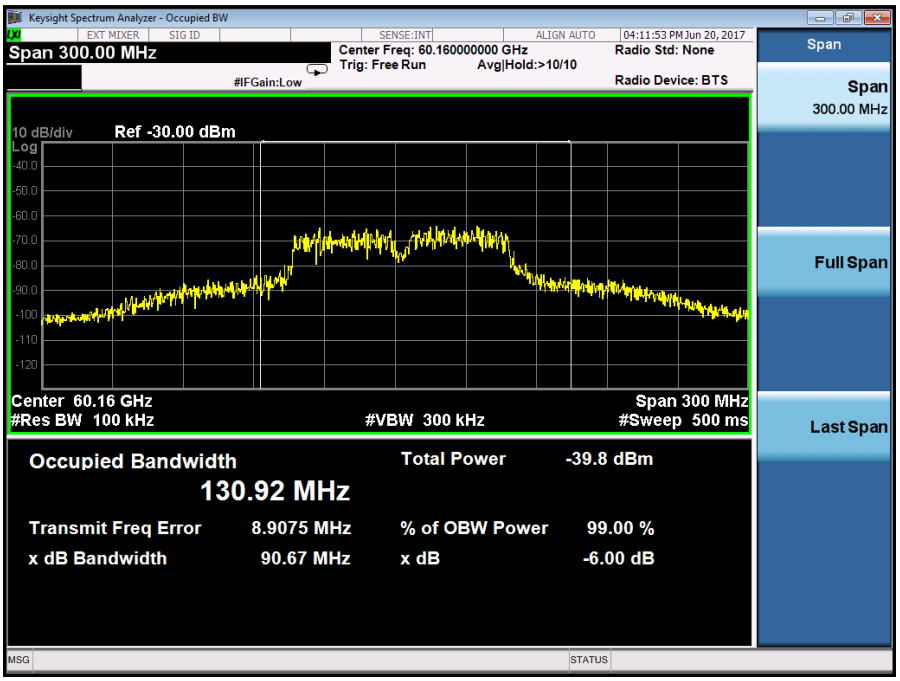
Channel	Channel Frequency (GHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)
Low Channel	60.16	90.67	148.26	208.9
Mid Channel	60.48	90.67	155.06	233.6
High Channel	60.8	90.45	140.54	209.8

Channel 3 LRP

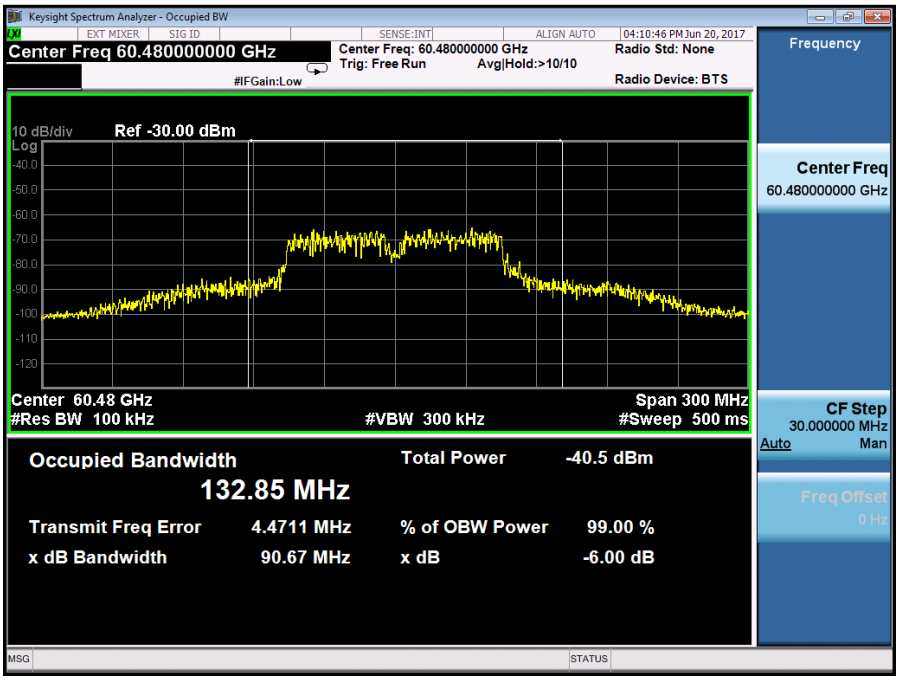
Channel	Channel Frequency (GHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)
Low Channel	60.32	90.88	125.39	199.5
Mid Channel	60.64	90.83	116.74	199.1
High Channel	60.96	90.99	150.48	223.4

Test Plot of 6dB Bandwidth

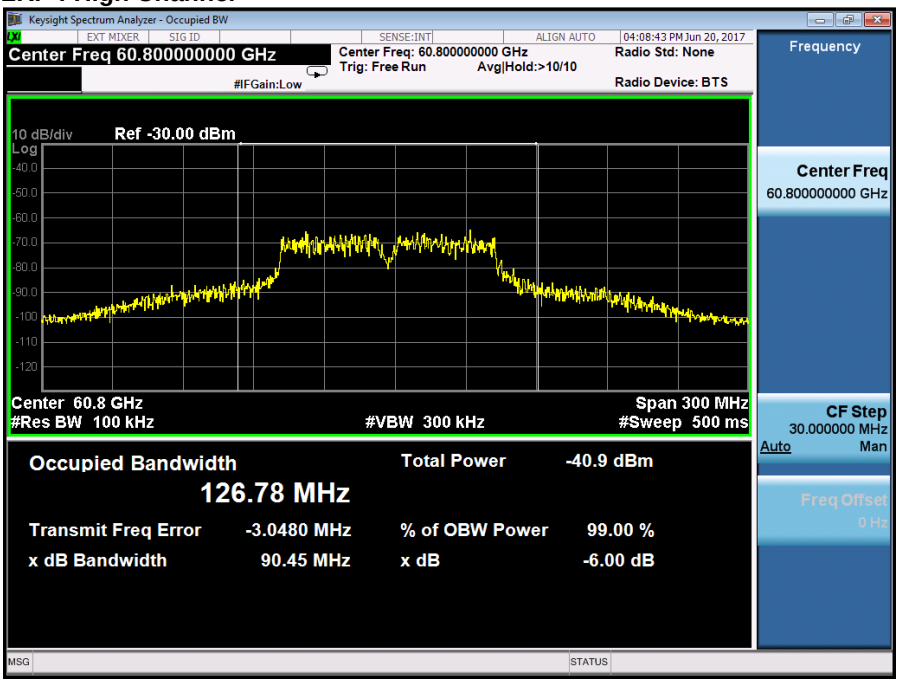
Channel 2 LRP : Low Channel



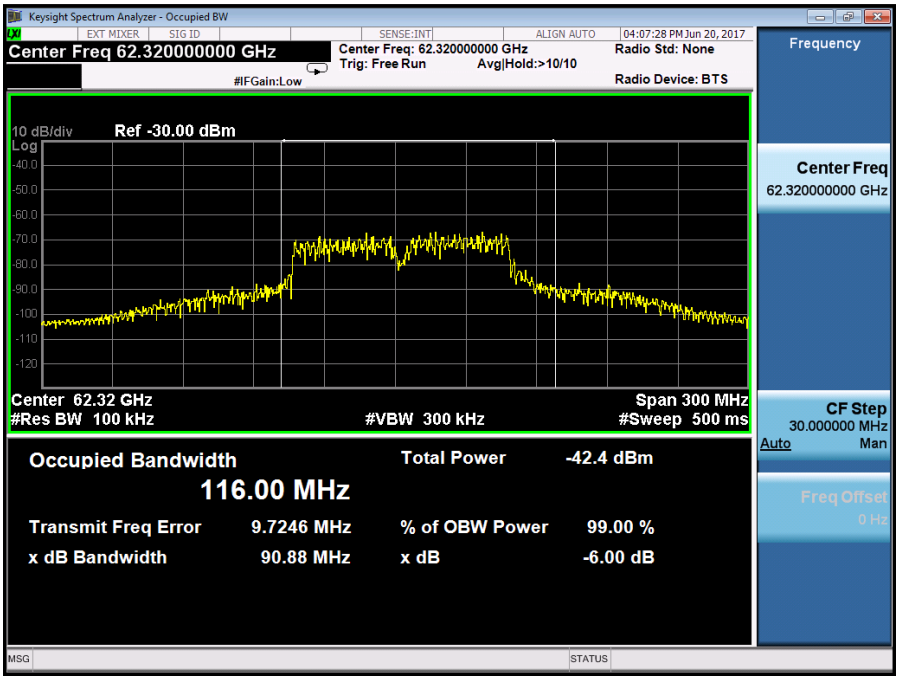
Channel 2 LRP : Middle Channel



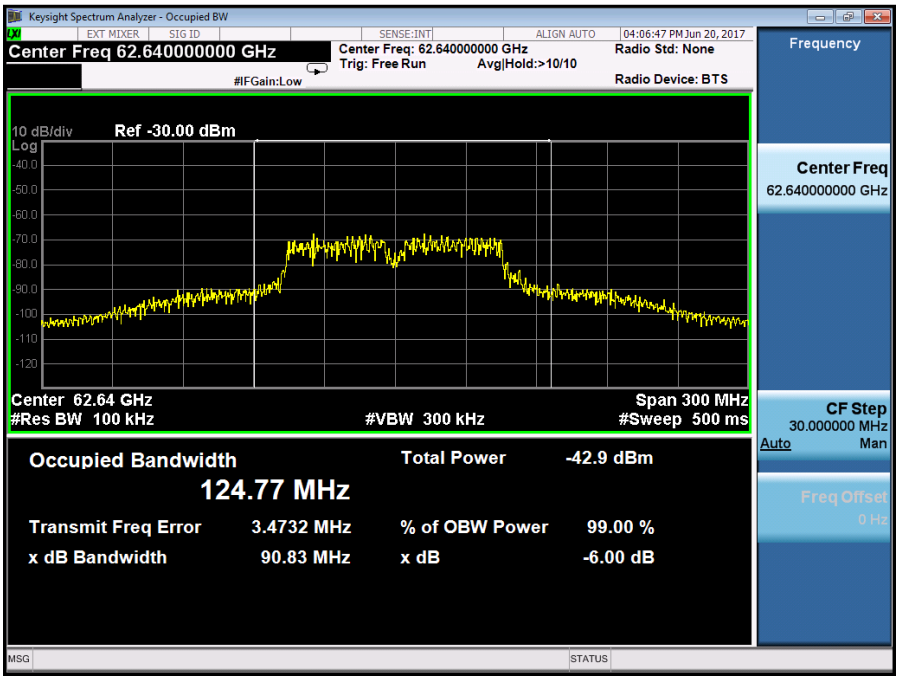
Channel 2 LRP : High Channel



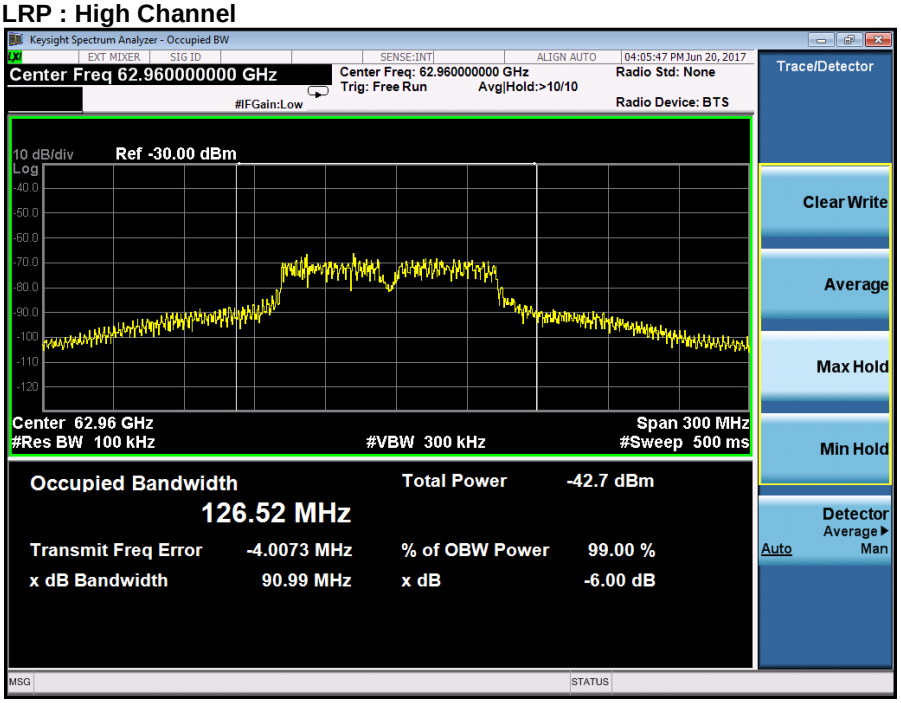
Channel 3 LRP : Low Channel



Channel 3 LRP : Middle Channel

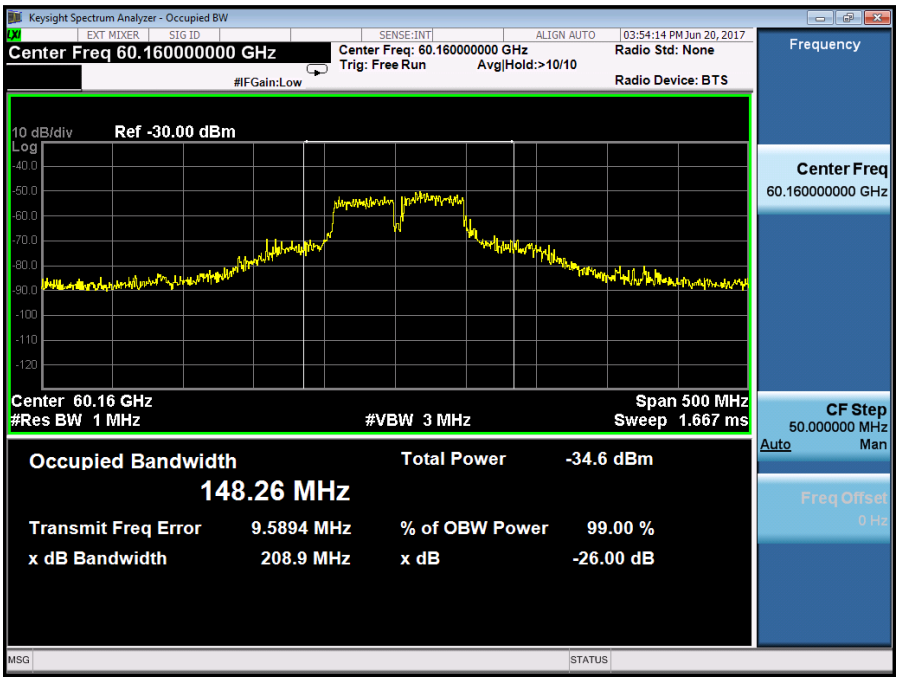


Channel 3 LRP : High Channel

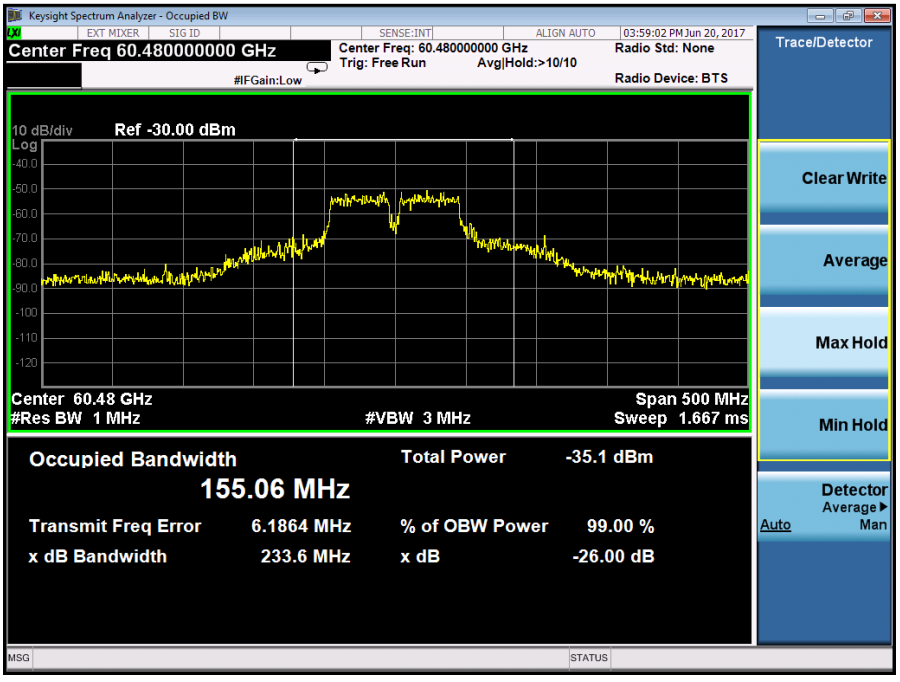


Test Plot of 99% Bandwidth

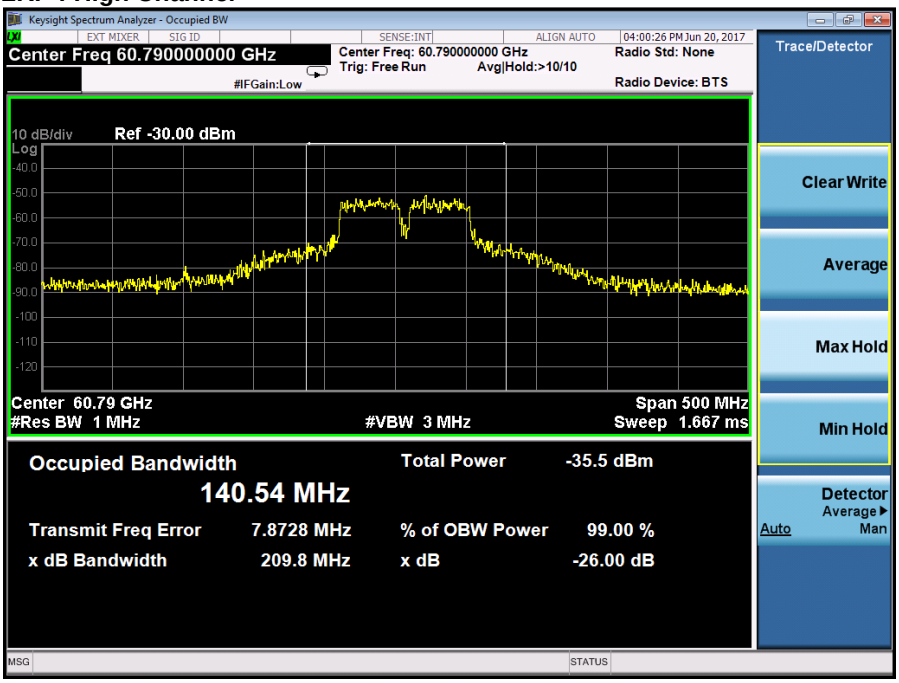
Channel 2 LRP : Low Channel



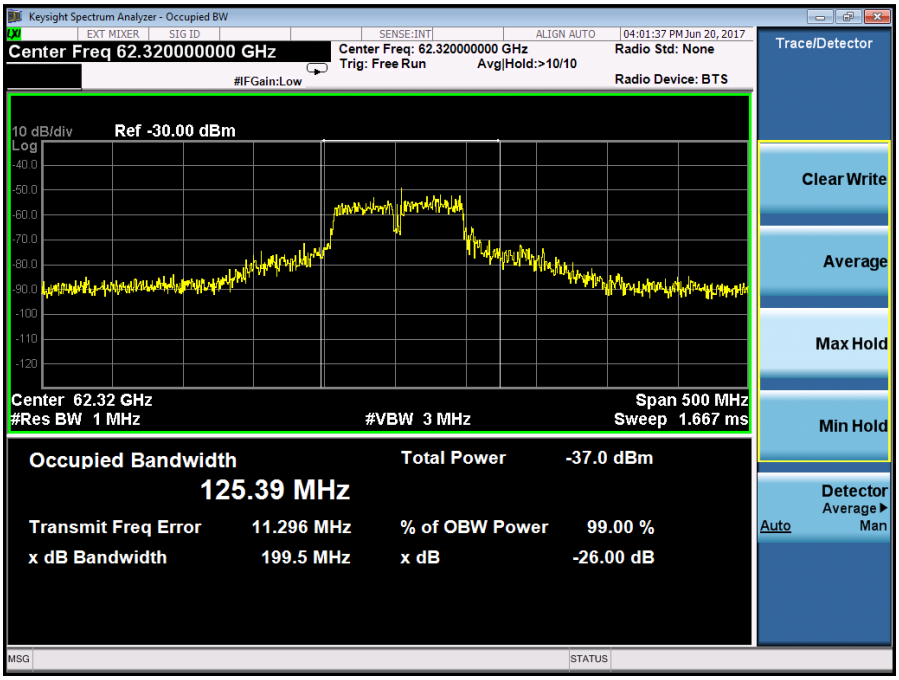
Channel 2 LRP : Middle Channel



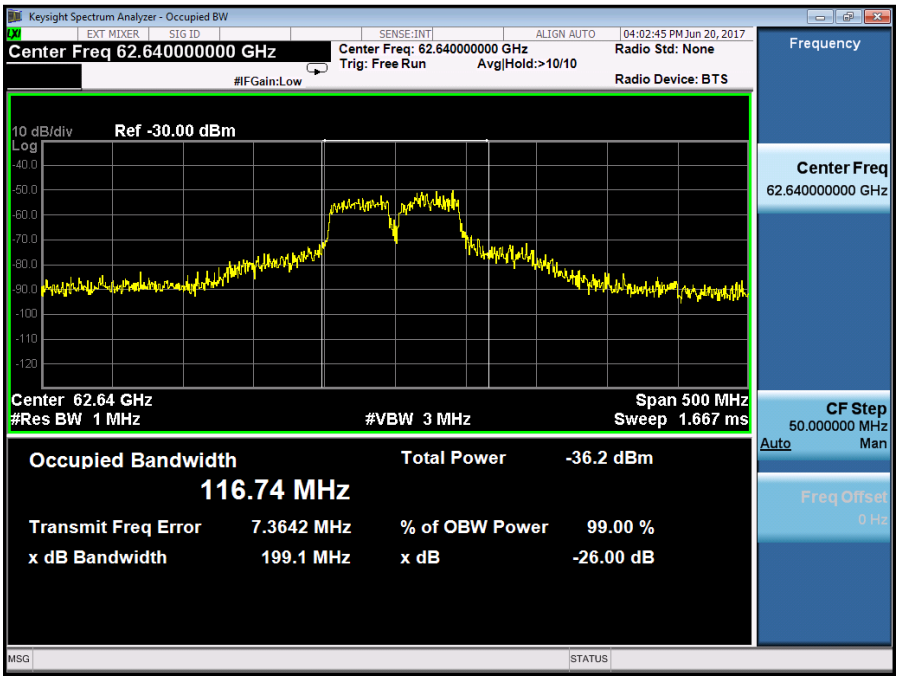
Channel 2 LRP : High Channel



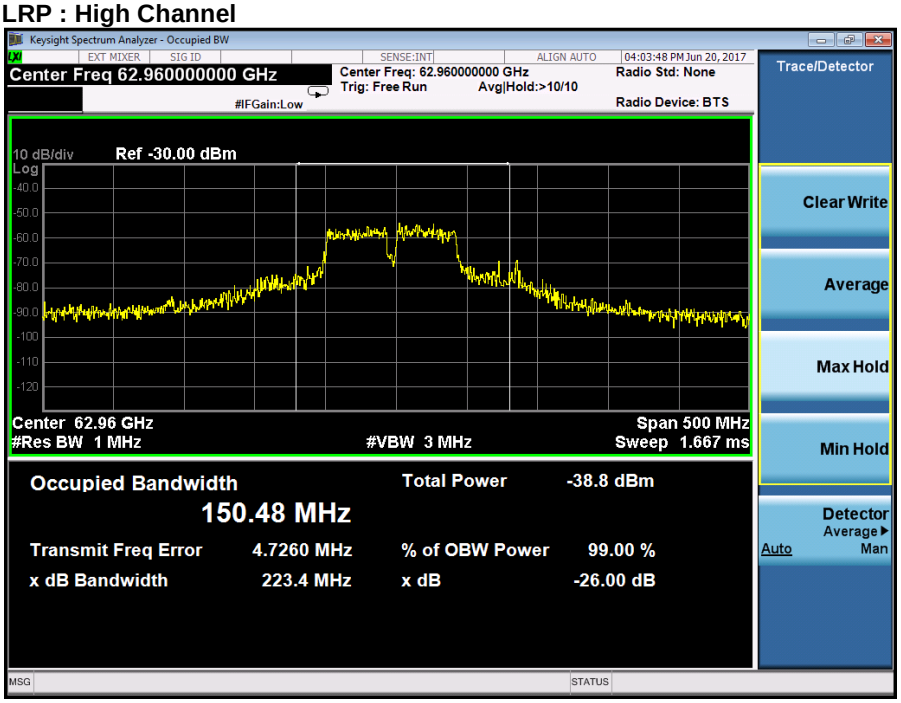
Channel 3 LRP : Low Channel



Channel 3 LRP : Middle Channel



Channel 3 LRP : High Channel



5.1.5 Frequency Stability

RESULT: **Passed**

Test standard	:	LP0002(2016) 3.2.1(3) FCC Part 15. 255(e) RSS-210 Annex J.6
Basic standard	:	ANSI C63.10:2013
Kind of test site	:	Shielded room

Test setup

Test Frequency	:	60482 GHz
Operation Mode	:	A
Relative humidity	:	50-65 %
Atmospheric pressure	:	100-103 kPa

Limit:
§ 15.255 (e) Frequency stability. Fundamental emissions must be contained within the frequency bands specified in this section during all conditions of operation. Equipment is presumed to operate over the temperature range -20 to +50 degrees Celsius with an input voltage variation of 85% to 115% of rated input voltage

Table 9: Test result of Frequency Stability

Temperature	Voltage	Measured Frequency	Delta Frequency	Limit
(°C)	(V)	(MHz)	(kHz)	(+/- kHz)
50	5	60481.997082	-1.97	Within Band
40	5	60481.998351	-0.70	Within Band
30	5	60481.993430	-5.62	Within Band
20	5	60481.999054	0.00	Within Band
10	5	60481.993285	-5.77	Within Band
0	5	60481.990101	-8.95	Within Band
-10	5	60482.008395	9.34	Within Band
-20	5	60482.003959	4.91	Within Band

Temperature	Voltage	Measured Frequency	Delta Frequency	Limit
(°C)	(V)	(MHz)	(kHz)	(+/- kHz)
20	5.75	60481.991069	-6.51	Within Band
20	5	60481.997579	0.00	Within Band
20	4.25	60482.006727	9.15	Within Band

5.1.6 Spurious Emission frequency range 30MHz to 40 GHz

RESULT: **Passed**

Test standard	:	FCC part 12.255(d), FCC 15.205, FCC 15.209, RSS-210 4.1 and RSS-Gen 8.9 LP0002(2016): 3.10.1, (5)
Basic standard	:	ANSI C63.10:2013
Limits	:	Radiated emissions which fall in the restricted bands, as defined in FCC 15.205(a) and RSS-Gen i4, 8.9 (Table 6), must comply with the radiated emission limits specified in FCC 15.209(a) and RSS-Gen i4, 8.9 (Table 4 and 5). Radiated emissions which fall in the restricted bands, as defined in LP0002(2016): 2.7 , must comply with the radiated emission limits specified in LP0002(2016): 2.8 Emission radiated outside the specified frequency bands must comply with the radiated emission limits specified in FCC 15.209(a) and FCC 15.249(a), RSS-Gen i4, 8.9 (Table 4 and 5) Emission radiated outside the specified frequency bands must comply with the radiated emission limits specified in LP0002(2016): 2.8
Kind of test site	:	3m Semi-Anechoic Chamber

Test setup

Test Channel	:	Low/ Middle/ High
Operation mode	:	A

Remark: Testing was carried out within frequency range 30MHz to 40 GHz.

For details refer to Appendix D.

Testing was carried out within frequency range 30MHz to the tenth harmonic. For details refer to Appendix D. The Radiated Emissions testing was performed in the X, Y and Z axis orientation. The worst-case Axis orientation is recorded in this test report. Due to the small size of the product and that there are no inductive components of significant size, 9kHz to 30MHz frequency range is not tested based on technical judgment.

5.1.7 Spurious Emission frequency range 40 GHz to 200 GHz

RESULT: **Passed**

Test standard	:	FCC part 12.255(d), FCC 15.205, FCC 15.209, RSS-210 J.3, RSS-210 J.5 and RSS-Gen 8.9 LP0002(2016): 3.10.1, (5)
Basic standard	:	ANSI C63.10:2013
Limits	:	Radiated emissions which fall in the restricted bands, as defined in FCC 15.205(a) and RSS-Gen i4, 8.9 (Table 6), must comply with the radiated emission limits specified in FCC part 12.255(d) and RSS-Gen i4, 8.9 (Table 4 and 5).
Kind of test site	:	3m Semi-Anechoic Chamber

Test setup

Test Channel	:	Low/ Middle/ High
Operation mode	:	A

Table 10: Test result of LRP Channels in the Band of HR2: 60.16-60.80

Low LRP Channel **60.16 GHz**

Frequency (GHz)	Measurement Distance (m)	Measured Power (dBm)	Rx Antenna Gain (dBi)	EIRP (dBm)
45.11	0.5	-53.565	24	-18.06
EIRP (W)	**Specification Distance (m)**	**Power Density (W/cm^2)**	**Power Density (pW/cm^2)**	**Limit (pW/cm^2)**
0.00001564	3	0.000000138	13.83	90

Middle LRP Channel **60.48 GHz**

Frequency (GHz)	Measurement Distance (m)	Measured Power (dBm)	Rx Antenna Gain (dBi)	EIRP (dBm)
44.52	0.5	-53.358	24	-17.97
EIRP (W)	**Specification Distance (m)**	**Power Density (W/cm^2)**	**Power Density (pW/cm^2)**	**Limit (pW/cm^2)**
0.00001597	3	0.000000141	14.12	90

High LRP Channel 60.80

Frequency (GHz)	Measurement Distance (m)	Measured Power (dBm)	Rx Antenna Gain (dBi)	EIRP (dBm)
45.68	0.5	-53.671	24	-18.06
EIRP (W)	**Specification Distance (m)**	**Power Density (W/cm^2)**	**Power Density (pW/cm^2)**	**Limit (pW/cm^2)**
0.00001565	3	0.000000138	13.84	90

Table 11: Test result of LRP Channels in the Band of HR3: 62.32-62.96

Low LRP Channel **62.32 GHz**

Frequency (GHz)	Measurement Distance (m)	Measured Power (dBm)	Rx Antenna Gain (dBi)	EIRP (dBm)
45.14	0.5	-53.691	24	-18.18
EIRP (W)	**Specification Distance (m)**	**Power Density (W/cm^2)**	**Power Density (pW/cm^2)**	**Limit (pW/cm^2)**
0.00001521	3	0.000000134	13.45	90

Middle LRP Channel **62.64 GHz**

Frequency (GHz)	Measurement Distance (m)	Measured Power (dBm)	Rx Antenna Gain (dBi)	EIRP (dBm)
45.15	0.5	-53.172	24	-17.66
EIRP (W)	**Specification Distance (m)**	**Power Density (W/cm^2)**	**Power Density (pW/cm^2)**	**Limit (pW/cm^2)**
0.00001715	3	0.000000152	15.16	90

High LRP Channel **62.96 GHz**

Frequency (GHz)	Measurement Distance (m)	Measured Power (dBm)	Rx Antenna Gain (dBi)	EIRP (dBm)
45.13	0.5	-53.469	24	-17.96
EIRP (W)	**Specification Distance (m)**	**Power Density (W/cm^2)**	**Power Density (pW/cm^2)**	**Limit (pW/cm^2)**
0.00001600	3	0.000000141	14.15	90

5.2 Mains Emissions

5.2.1 Mains Conducted Emissions

RESULT: **Passed**

Test standard	:	FCC Part 15.207 FCC Part 15.107 RSS-Gen 8.8 LP0002: 2.3
Limits	:	Mains Conducted emissions as defined in above test standards must comply with the mains conducted emission limits specified
Kind of test site	:	Shielded Room

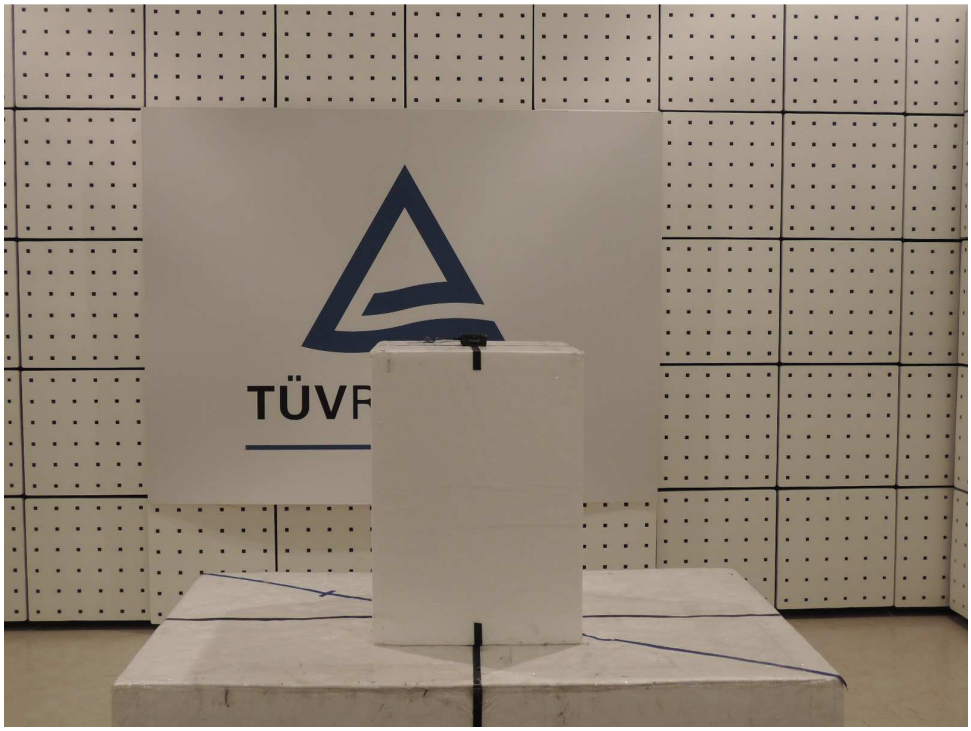
Test setup

Test Channel	:	Low
Operation mode	:	A

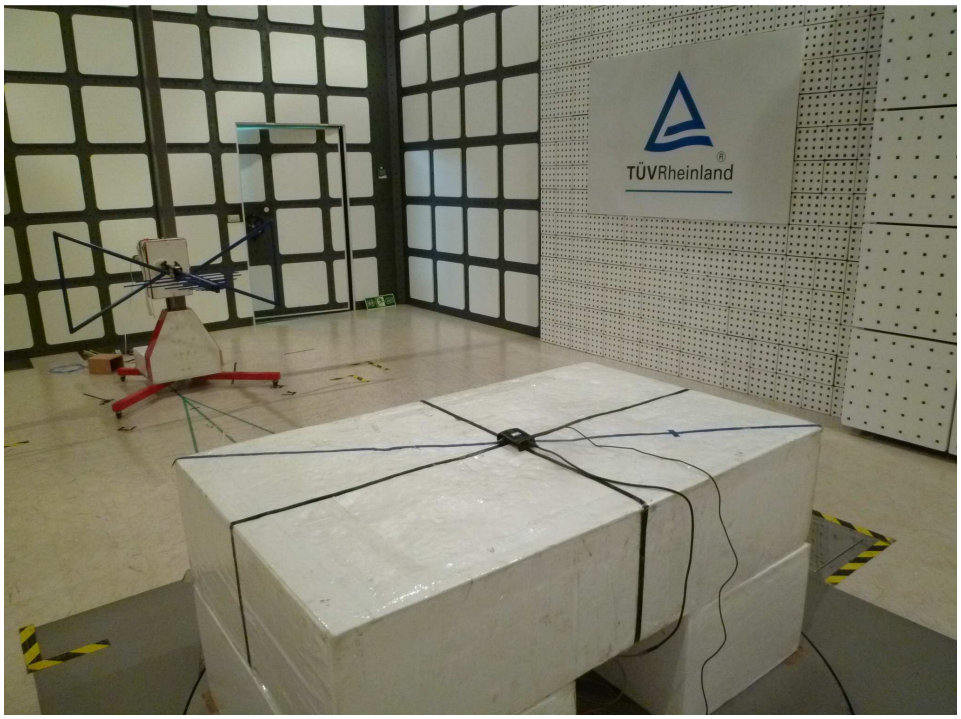
Remark: For details refer to Appendix D.

6. Photographs of the Test Set-Up

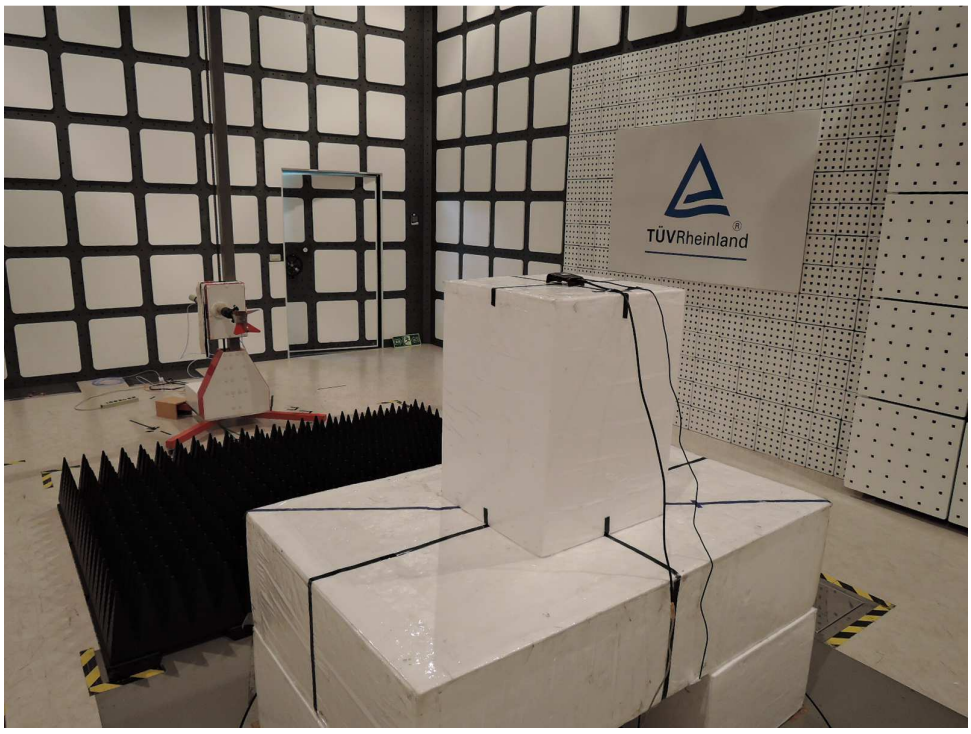
Photograph 1: Set-up for Spurious Emissions (Front View)



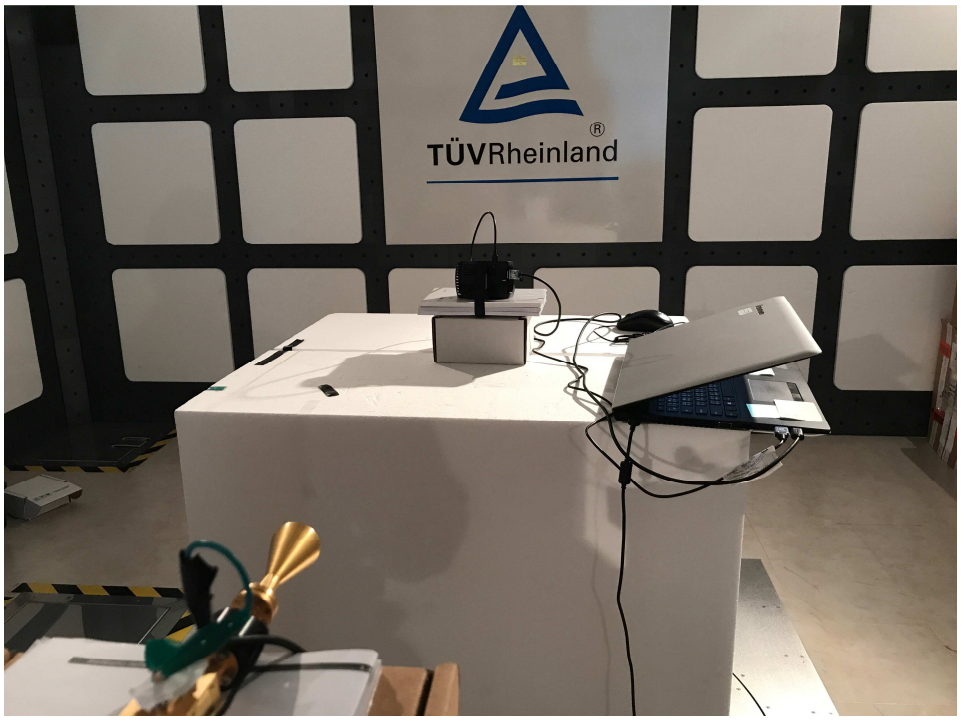
Photograph 2: Set-up for Spurious Emissions (Back View 1)



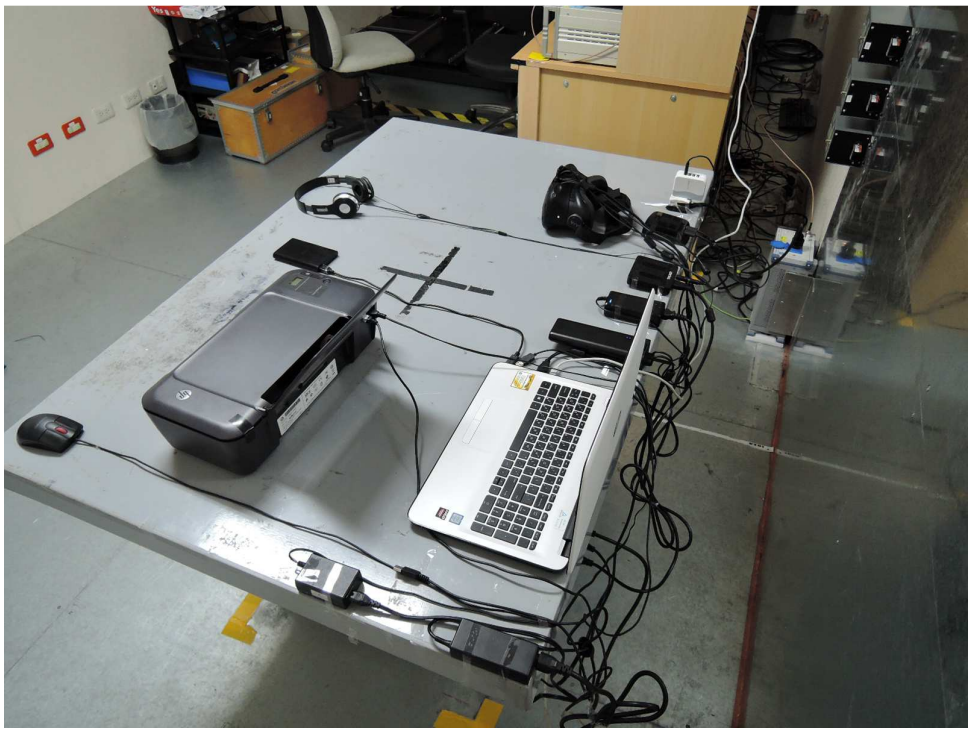
Photograph 3: Set-up for Spurious Emissions (Back View 2)



Photograph 4: Set-up for Spurious Emissions (Above 40GHz)



Photograph 5: Set-up for for Mains Conducted testing Back



Photograph 6: Set-up for for Mains Conducted testing Front

7. List of Tables

8. List of Photographs