


Product Name: Set Top Box	Report No: FCC022022-05523RF1
Product Model: UIW4060MDC	Security Classification: Open
Version: V1.0	Total Page: 35

## TIRT Testing Report



Prepared By:	Checked By:	Approved By:	
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Stone Tang	Randy Lv	Daniel Chen	

# FCC Radio Test Report

## FCC ID: G95-UIW4060

**This report concerns: Class II Permissive Change**

**Equipment** : Set Top Box  
**Brand Name** : Technicolor  
**Test Model** : UIW4060MDC  
**Series Model** : UIW4060BRC, UIW4060ARM, UIW4060ABB, UIW4060xxxx (where x can be alphanumeric, -, or blank, for marketing strategy)  
**Applicant** : Technicolor Connected Home USA LLC  
**Address** : 4855 Peachtree Industrial Blvd, Suite 200, Norcross, GA 30092, USA  
**Manufacturer** : Technicolor Connected Home USA LLC  
**Address** : 4855 Peachtree Industrial Blvd, Suite 200, Norcross, GA 30092, USA  
**Date of Receipt** : 2022.10.12  
**Date of Test** : 2022.10.13 ~ 2022.10.24  
**Issued Date** : 2022.10.24  
**Report Version** : V1.0  
**Test Sample** : Engineering Sample No.: 20220421018668  
**Standard(s)** : FCC CFR Title 47, Part 15, Subpart C  
FCC KDB 558074 D01 15.247 Meas Guidance v05r02  
ANSI C63.10-2013

- The test result referred exclusively to the presented test model /sample.
- Without written approval of TIRT Inc. the test report shall not reproduced except in full.

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### REPORT ISSUED HISTORY

Report No.	Version	Description	Issued Date	Note
FCC022022-05523RF1	V1.0	Compared with original report(BTL-FCCP-3-2204C001), UIW4060MDC Hardware modification: PCB version change from LAB4 to LAB4A. Please see the following table for details. So, the AC Power Line Conducted Emissions, Radiated Emissions the worst case have been re-evaluated. In this report only updated the test results for AC Power Line Conducted Emissions, Radiated Emissions below 1GHz, Maximum Output Power, other are kept the same	2022.10.24	Valid

Change ID	Layout changes move from LAB4 version to LAB4A version
1	Add second source IC: minor adjustment of PCB footprint:(support of Wayon WP250152T3-B)
2	Move IR cell footprint to improve soldering quality.

## 1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC CFR Title 47, Part 15, Subpart C			
Standard(s) Section	Test Item	Test Result	Remark
15.207	AC Power Line Conducted Emissions	PASS	-----
15.247(d) 15.205(a) 15.209(a)	Radiated Emissions	PASS	Note(3)
15.247(a)(2)	Bandwidth	PASS	Note(3)
15.247(b)(3)	Maximum Output Power	PASS	-----
15.247(d)	Conducted Spurious Emissions	PASS	Note(3)
15.247(e)	Power Spectral Density	PASS	Note(3)
15.203	Antenna Requirement	PASS	Note(2)

Note:

- (1) "N/A" denotes test is not applicable in this test report.
- (2) The device what use a permanently attached antenna were considered sufficient to comply with the provisions of 15.203.
- (3) For test item: Radiated Emissions above 1GHz, Bandwidth, Conducted Spurious Emissions and Power Spectral Density, Please refer to original report(BTL-FCCP-3-2204C001).

## 1.1 TEST LOCATION

Company:	Beijing TIRT Technology Service Co.,Ltd Shenzhen
Address:	101, 3 # Factory Building, Gongjin Electronics, Shatin Community, Kengzi Street, Pingshan District, Shenzhen City, Guangdong province, China
CNAS Registration Number:	CNAS L14158
A2LA Registration Number	6049.01
Telephone:	+86-0755-27087573

## 1.2 MEASUREMENT UNCERTAINTY

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

The TIRT measurement uncertainty as below table:

Uncertainty	
Parameter	Uncertainty
Occupied Channel Bandwidth	$\pm 142.12$ kHz
RF power conducted	$\pm 0.74$ dB
RF power radiated	$\pm 3.25$ dB
Spurious emissions, conducted	$\pm 1.78$ dB
Spurious emissions, radiated (30MHz~1GHz)	$\pm 4.6$ dB
Spurious emissions, radiated (1GHz ~ 18GHz)	$\pm 4.9$ dB
Conduction Emissions(150kHz~30MHz)	$\pm 3.1$ dB
Humidity	$\pm 4.6\%$
Temperature	$\pm 0.7^{\circ}\text{C}$
Time	$\pm 1.25\%$

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

## 1.3 TEST ENVIRONMENT CONDITIONS

Test Item	Temperature	Humidity	Test Voltage	Tested By
AC Power Line Conducted Emissions	24. 3°C	52%	AC 120V/60Hz	Stone Tang
Radiated Emissions-9kHz to 30 MHz	24. 6°C	55%	AC 120V/60Hz	Stone Tang
Radiated Emissions-30 MHz to 1000 MHz	24. 6°C	55%	AC 120V/60Hz	Stone Tang
Maximum Output Power	24. 2°C	55%	DC 12V	Stone Tang

## 2. GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

Equipment	Set Top Box
Brand Name	Technicolor
Test Model	UIW4060MDC
Series Model	UIW4060BRC, UIW4060ARM, UIW4060ABB, UIW4060xxxx (where x can be alphanumeric, -, or blank, for marketing strategy)
Model Difference(s)	All models are same, except model's name for marketing strategy.
Software Version	UIW4060TVO HC 1.0
Hardware Version	LAB4A
Power Source	DC voltage supplied from AC adapter. 1#Brand / Model: MOSO / MSA-C1500CS12.0-18G-US 2#Brand / Model: HONOR / ADS-12BP-12 12012EPCU-LV
Power Rating	1# I/P: 100-120V~ 50/60Hz 0.6A max. O/P: 12.0V $\overline{=}$ 1.5A 2# I/P: 100-120V~ 50/60Hz Max. 0.4A O/P: 12V $\overline{=}$ 1.0A
Operation Frequency	2412 MHz ~ 2462 MHz
Modulation Type	IEEE 802.11b: DSSS IEEE 802.11g: OFDM IEEE 802.11n: OFDM IEEE 802.11ax: OFDMA
Bit Rate of Transmitter	IEEE 802.11b: 11/5.5/2/1 Mbps IEEE 802.11g: 54/48/36/24/18/12/9/6 Mbps IEEE 802.11n: up to 144.4 Mbps IEEE 802.11ax: up to 286.8 Mbps
Maximum Output Power _Non Beamforming	IEEE 802.11n(HT20): 21.73 dBm (0.1489 W)
Maximum Output Power _Beamforming	IEEE 802.11n(HT20): 21.42 dBm (0.1387 W)

Note:

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



## 2. Channel List:

CH01 - CH11 for IEEE 802.11b, IEEE 802.11g, IEEE 802.11n(HT20), IEEE 802.11ax(HE20)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452		

## 3. Antenna Specification:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	Internal	N/A	3.00
2	N/A	N/A	Internal	N/A	4.06

Note:

1) For CDD: Directional Gain=2.46 dBi

$$DirectionalGain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

where

Each antenna is driven by no more than one spatial stream;

$N_{SS}$  = the number of independent spatial streams of data;

$N_{ANT}$  = the total number of antennas

$g_{j,k} = 10^{G_k/20}$  if the  $k$ th antenna is being fed by spatial stream  $j$ , or zero if it is not;

$G_k$  is the gain in dBi of the  $k$ th antenna.

2) For TXBF: Directional Gain= $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}]$ =4.89dBi.

3) The antenna gain is provided by the manufacturer.

## 4. For Non Beamforming:

Operating Mode	TX Mode	2TX
IEEE 802.11b		V(Ant. 1 + Ant. 2)
IEEE 802.11g		V(Ant. 1 + Ant. 2)
IEEE 802.11n(HT20)		V(Ant. 1 + Ant. 2)
IEEE 802.11ax(HE20)		V(Ant. 1 + Ant. 2)

## For Beamforming:

Operating Mode	TX Mode	2TX
IEEE 802.11n(HT20)		V(Ant. 1 + Ant. 2)
IEEE 802.11ax(HE20)		V(Ant. 1 + Ant. 2)

## 2.2 DESCRIPTION OF TEST MODES

The test system was pre-tested based on the consideration of all possible combinations of EUT operation mode.

Pretest Mode	Description
Mode 1	TX B Mode Channel 01/06/11
Mode 2	TX G Mode Channel 01/06/11
Mode 3	TX N(HT20) Mode Channel 01/06/11
Mode 4	TX AX(HE20) Mode Channel 01/06/11
Mode 5	TX N(HT20) Mode Channel 06

Following mode(s) was (were) found to be the worst case(s) and selected for the final test.

AC power line conducted emissions test_Non Beamforming	
Final Test Mode	Description
Mode 5	TX N(HT20) Mode Channel 06

Radiated emissions test - Below 1GHz_Non Beamforming	
Final Test Mode	Description
Mode 5	TX N(HT20) Mode Channel 06

Maximun Output Power test_Non Beamforming	
Final Test Mode	Description
Mode 1	TX B Mode Channel 01/06/11
Mode 2	TX G Mode Channel 01/06/11
Mode 3	TX N(HT20) Mode Channel 01/06/11
Mode 4	TX AX(HE20) Mode Channel 01/06/11

Maximun Output Power test_ Beamforming	
Final Test Mode	Description
Mode 3	TX N(HT20) Mode Channel 01/06/11
Mode 4	TX AX(HE20) Mode Channel 01/06/11

**NOTE:**

- (1) All the bit rate of transmitter have been tested and found the lowest rate is found to be the worst case and recorded.
- (2) For AC power line conducted emissions and radiated emission below 1 GHz test, the TX N(HT20) Mode Channel 06 is found to be the worst case and recorded.
- (3) For radiated emission above 1 GHz test, the spurious points of 1GHz~26.5GHz have been pre-tested and in this report only recorded the worst case. The remaining spurious points are all below the limit value of 20dB.
- (4) The measurements for Output Power are tested, the Non Beamforming and Beamforming are recorded in the report. The worst case is Non Beamforming and only the worst case is documented for other test items.
- (5) For AC power line conducted emissions and radiated emissions below 1 GHz test, all adapters had been pre-tested and in this report only recorded the worst case.
- (6) IEEE 802.11ax mode only supports full RU, so only the full RU is evaluated and measured inside report.
- (7) For AC power line conducted emissions test, the prototype is tested with or without the monitor, and in this report only recorded the worst case(tested with monitor).

### 2.3 PARAMETERS OF TEST SOFTWARE

#### Non Beamforming

Test Software Version	IPOP V4.0.0.0		
Frequency (MHz)	2412	2437	2462
IEEE 802.11b	70	71	70
IEEE 802.11g	54	72	59
IEEE 802.11n(HT20)	54	71	58
IEEE 802.11ax(HE20)	50	69	59

#### Beamforming

Test Software Version	IPOP V4.0.0.0		
Frequency (MHz)	2412	2437	2462
IEEE 802.11n(HT20)	53	70	57
IEEE 802.11ax(HE20)	49	68	58

### 2.4 SUPPORT UNITS

Support Equipment				
No.	Equipment	Brand Name	Model Name	Remarks
1	HDMI Cable	/	/	0.9m/6m,Unshielding
2	Loudspeaker box	SA-A4	SOAIY	/
3	USB disk	/	Kingston	/
4	Displayer	T24S-28	LENOVO	M032004854IT
5	Lan Cable	/	/	10m,Unshielding
6	Optical fiber Cable	/	/	10m,Unshielding

### 3. AC POWER LINE CONDUCTED EMISSIONS

#### 3.1 LIMIT

Frequency of Emission (MHz)	Limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56*	56 to 46*
0.5 - 5.0	56	46
5.0 - 30.0	60	50

NOTE:

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

#### 3.2 TEST PROCEDURE

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item -EUT Test Photos.

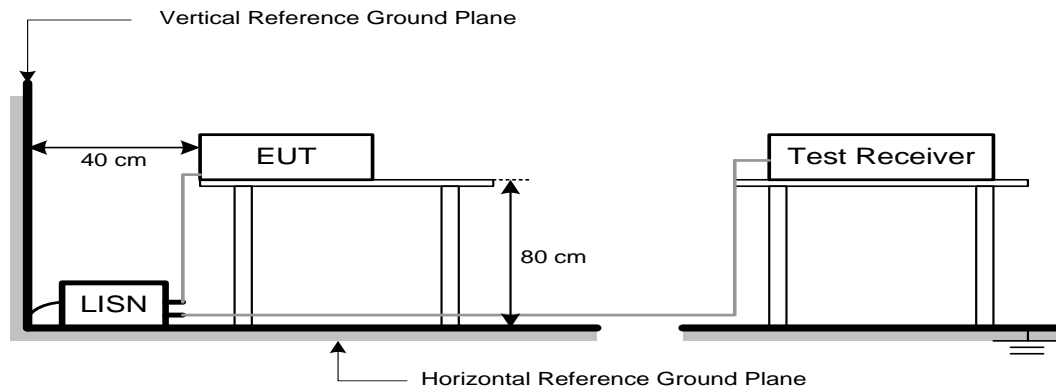
The following table is the setting of the receiver:

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

#### 3.3 DEVIATION FROM TEST STANDARD

No deviation.

### 3.4 TEST SETUP



### 3.5 EUT OPERATION CONDITIONS

EUT was programmed to be in continuously transmitting mode.

### 3.6 TEST RESULTS

Please refer to the APPENDIX A.

## 4. RADIATED EMISSIONS

### 4.1 LIMIT

In case the emission fall within the restricted band specified on 15.205(a) and RSS-Gen 8.10, then the 15.209(a) and RSS-Gen 8.9 limit in the table below has to be followed.

#### LIMITS OF RADIATED EMISSION MEASUREMENT (9 kHz-1000 MHz)

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

#### LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000 MHz)

Frequency (MHz)	(dBuV/m at 3 m)	
	Peak	Average
Above 1000	74	54

#### NOTE:

- (1) The limit for radiated test was performed according to FCC CFR Title 47, Part 15, Subpart C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

## 4.2 TEST PROCEDURE

- The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1 GHz)
- The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1 GHz)
- The height of the equipment or of the substitution antenna shall be 0.8m or 1.5m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
- The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.
- The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.  
(below 1 GHz)
- All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform. (above 1 GHz)
- For the actual test configuration, please refer to the related Item -EUT Test Photos.

The following table is the setting of the receiver:

Spectrum Parameters	Setting
Start ~ Stop Frequency	9 kHz~150 kHz for RBW 200 Hz
Start ~ Stop Frequency	0.15 MHz~30 MHz for RBW 9 kHz
Start ~ Stop Frequency	30 MHz~1000 MHz for RBW 100 kHz

Spectrum Parameters	Setting
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	1 MHz / 3 MHz for PK value 1 MHz / 1/T Hz for AVG value

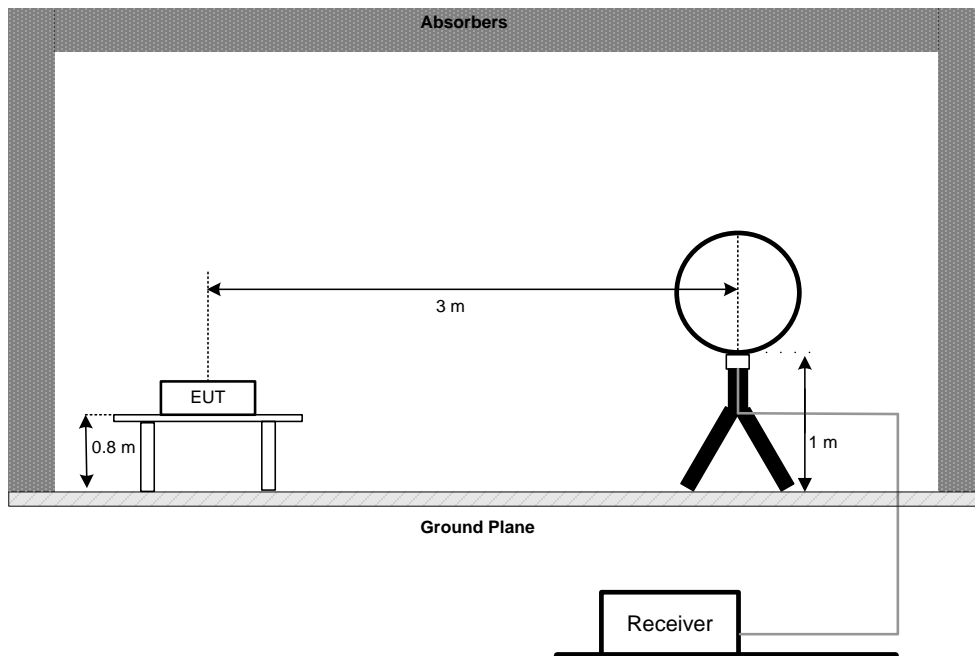
Receiver Parameters	Setting
Start ~ Stop Frequency	9 kHz~90 kHz for PK/AVG detector
Start ~ Stop Frequency	90 kHz~110 kHz for QP detector
Start ~ Stop Frequency	110 kHz~490 kHz for PK/AVG detector
Start ~ Stop Frequency	490 kHz~30 MHz for QP detector
Start ~ Stop Frequency	30 MHz~1000 MHz for QP detector
Start ~ Stop Frequency	1 GHz~26.5 GHz for PK/AVG detector

### 4.3 DEVIATION FROM TEST STANDARD

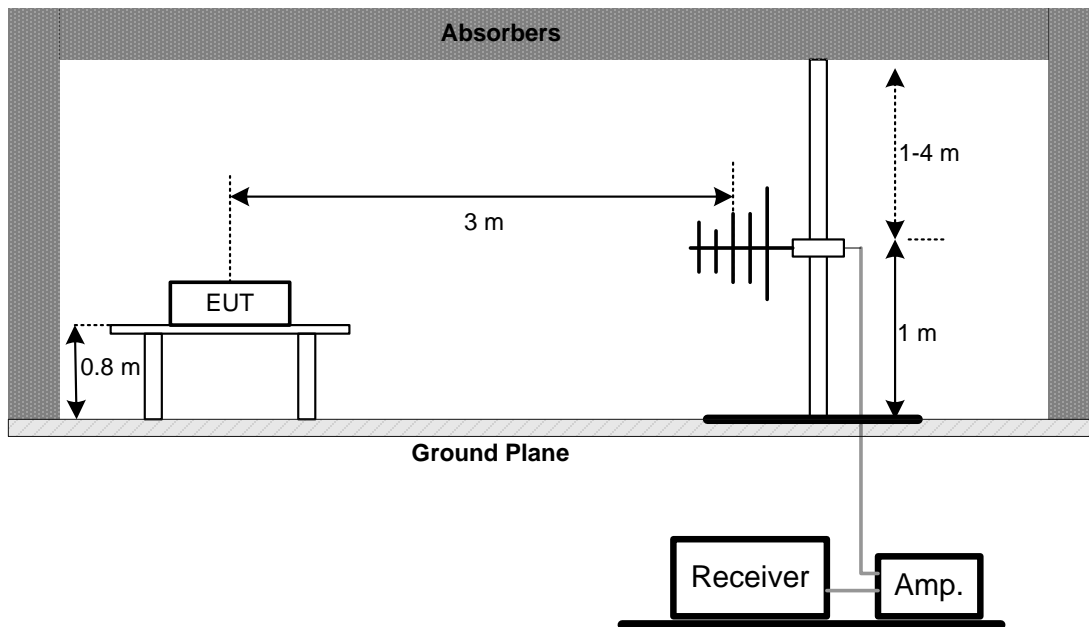
No deviation.

### 4.4 TEST SETUP

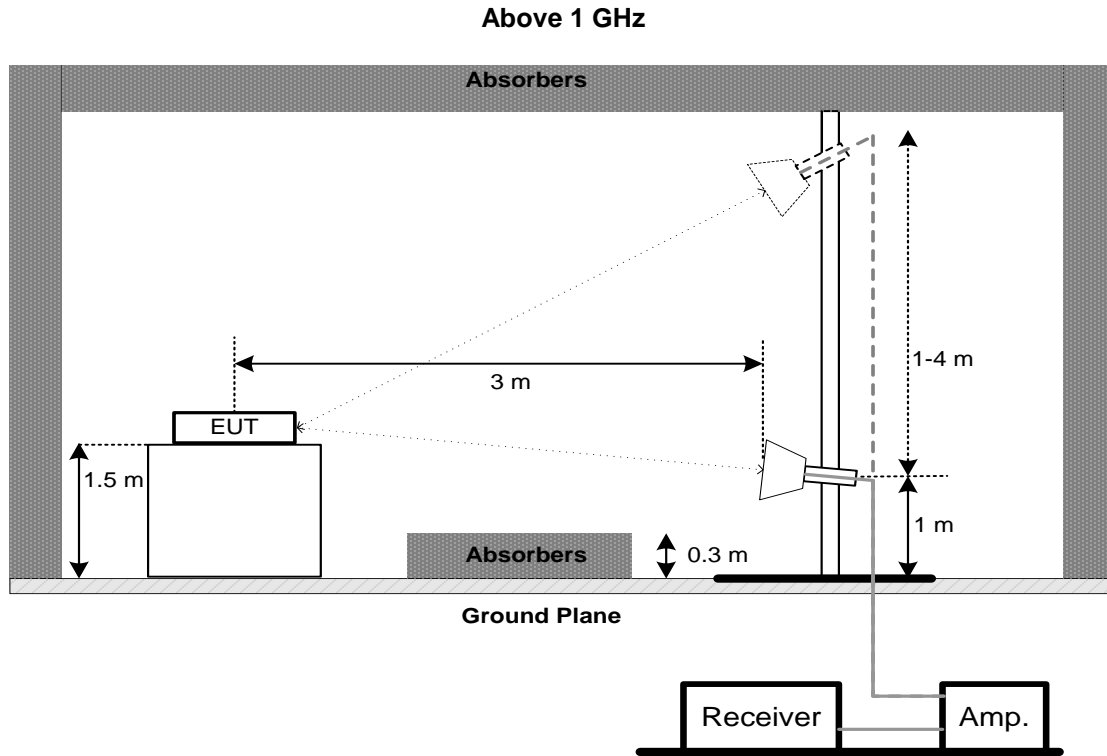
#### 9 kHz to 30 MHz



#### 30 MHz to 1 GHz







#### 4.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

#### 4.6 TEST RESULTS - 9 KHZ TO 30 MHZ

Please refer to the APPENDIX B.

Remark:

- (1) Distance extrapolation factor =  $40 \log (\text{specific distance} / \text{test distance})$  (dB).
- (2) Limit line = specific limits (dBuV) + distance extrapolation factor.

#### 4.7 TEST RESULTS - 30 MHZ TO 1000 MHZ

Please refer to the APPENDIX C.

Remark:

- (1) Worst case for 2# adapter was recored

## 5. MAXIMUM OUTPUT POWER & E.I.R.P.

### 5.1 LIMIT

Section	Test Item	Limit
FCC 15.247(b)(3)	Maximum Output Power	1.0000 Watt or 30.00 dBm

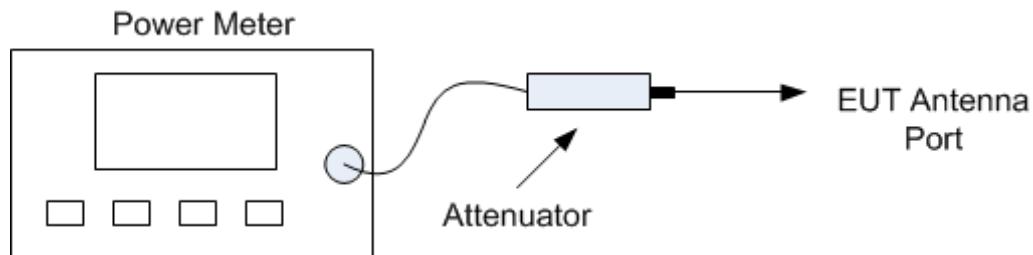
### 5.2 TEST PROCEDURE

- The EUT was directly connected to the power meter and antenna output port as show in the block diagram below.
- The maximum conducted output power was performed in accordance with method 11.9.2.3.1 (for AVG power) of ANSI C63.10-2013 and FCC KDB 662911 D01 v02r01 Multiple Transmitter Output.

### 5.3 DEVIATION FROM STANDARD

No deviation.

### 5.4 TEST SETUP



### 5.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

### 5.6 TEST RESULTS

Please refer to the APPENDIX D.

## 6. MEASUREMENT INSTRUMENTS LIST

No.	Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EMI Receiver	Rohde&Schwarz	ESCI	1166.5950.03	2022/11/16
2	AMN	Rohde&Schwarz	ENV216	3560.6550.05	2022/11/09
3	AMN	Schwarzbeck	NSLK8127	#829	2022/11/09
4	ECSI RF IN RF Cable	Rohde&Schwarz	RP-X1	\	2022/11/18
5	ECSI RF IN RF Cable	Rohde&Schwarz	Sapre sm	\	2022/11/09
6	EMI Receiver	Rohde&Schwarz	ESR7	102013	2022/11/09
7	Spectrum analyzer	Rohde&Schwarz	FSV30	103741	2022/11/09
8	EMI receiver	Rohde&Schwarz	ESU	100184	2023/07/20
9	Spectrum analyzer	KEYSIGHT	N9010A-44	MY51440158	2022/11/09
10	Loop Antenna*	Schwarzbeck	FMZB1519B	00029	2025/07/03
11	Integral Antenna	Schwarzbeck	VULB 9163	VULB 9163-361	2022/11/09
12	Integral Antenna	Schwarzbeck	BBHA 9120D	BBHA 9120D 1201	2022/11/09
13	Integral Antenna	Schwarzbeck	BBHA 9170	9170#685	2022/11/09
14	Preamplifier	CD Systems Inc	PAP-03036-30	85060000	2022/11/09
15	Preamplifier	Schwarzbeck	BBV9721	9721-019	2022/11/09
16	Preamplifier	emci	EMC012645 SE	980417	2022/11/09
17	ECSI RF IN RF Cable	Rohde&Schwarz	AP-X1	\	2022/11/09
18	Spectrum Analyzer	Agilent	N9010A	MY52221119	2022/11/09
19	Power Collection Unit	Tonscend	JS0806-2	188060134	2022/11/09
20	Tonscend Test System	Tonscend	2.6.77.0518	NA	NA
21	10dB Attenuator	Tonscend	10dB	NA	NA
22	Temp&Humidity Recorder	Anymetre	JR900	NA	2022/11/03
23	Temp&Humidity Chamber	ETOMA	NTH1100-30 A	16080628	2022/11/03
24	Filter	STI	STI15-9845	N/A	N/A
25	Filter	STI	5.1G	N/A	N/A
26	Filter	STI	STI15-9845	N/A	N/A
27	Testing Software	EZ-EMC	TW-03A2	N/A	N/A

Remark: "N/A" denotes no model name, serial no. or calibration specified.

"\*\*" calibration period of equipment list is three year.

Except \* item, all calibration period of equipment list is one year.

## 7. EUT TEST PHOTO

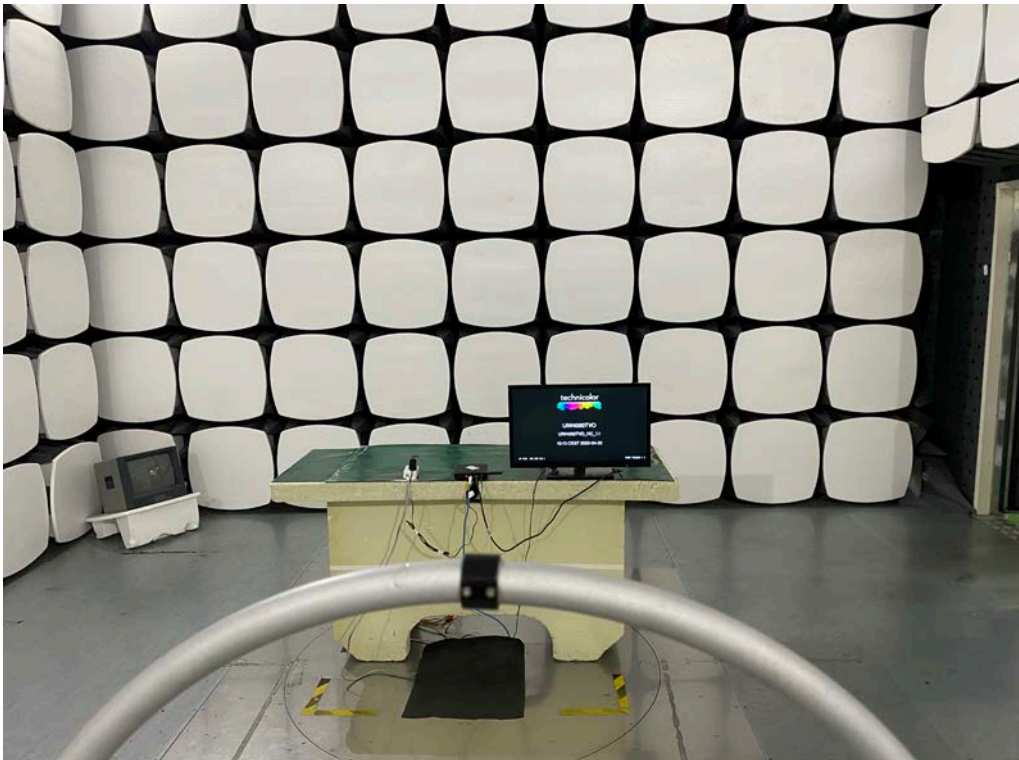
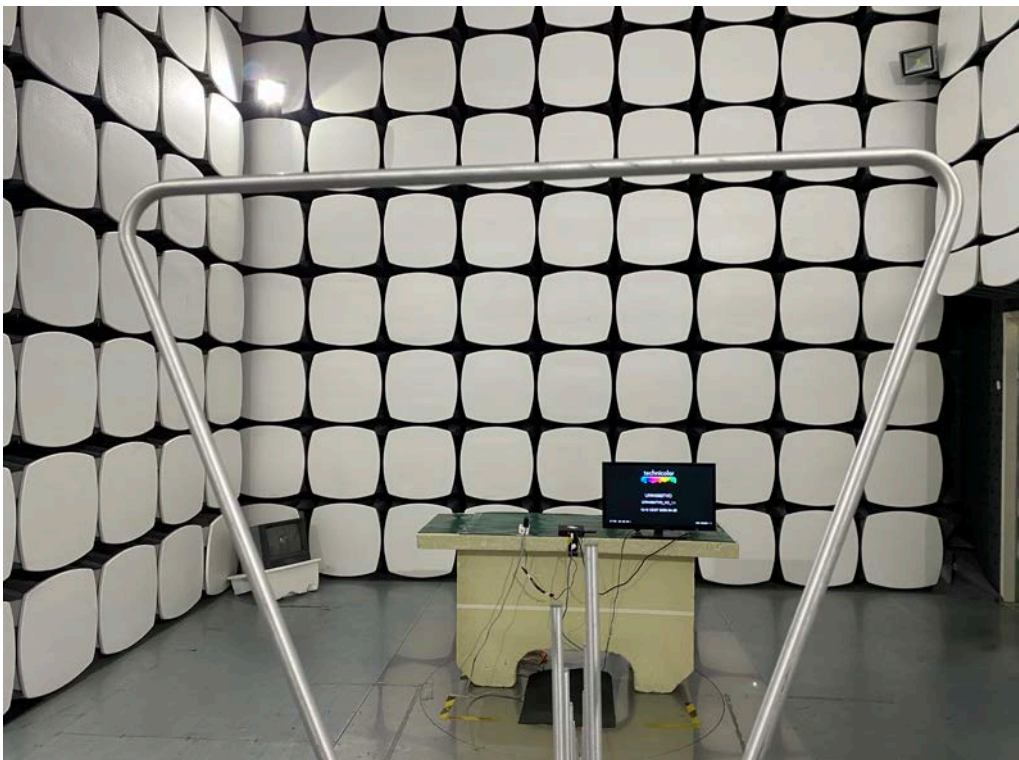
### AC Power Line Conducted Emissions Test Photos



### Conducted Test Photos

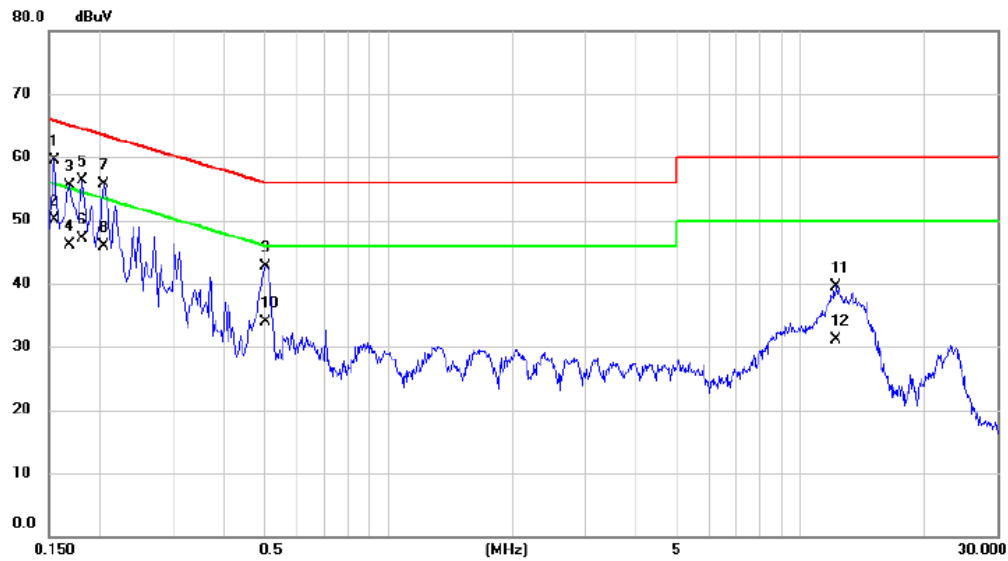




**Radiated Emissions Test Photos****9 kHz to 30 MHz****30 MHz to 1000 MHz**

## **APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS**

Test Mode	TX N(HT20) Mode Channel 06	Phase	Line
-----------	----------------------------	-------	------



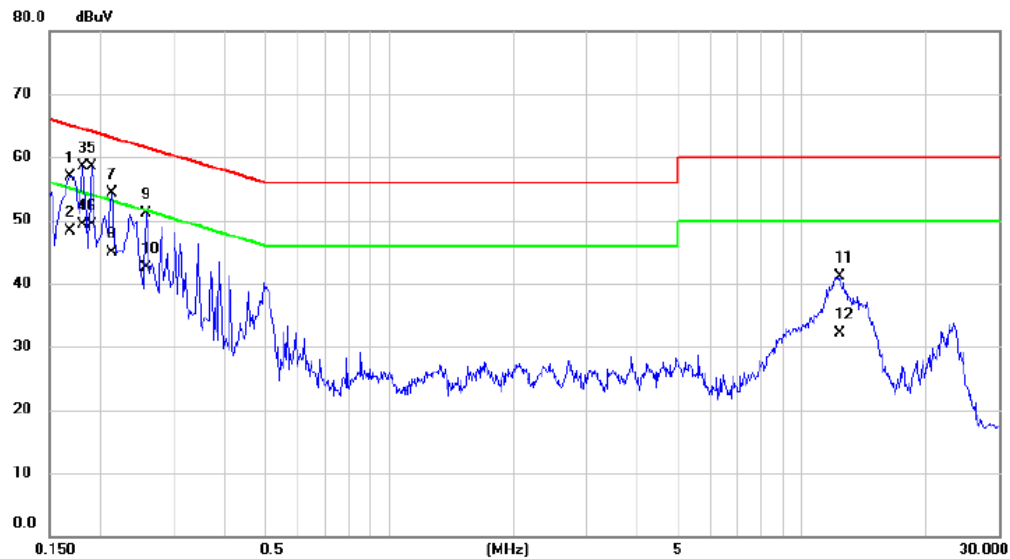
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1545	49.94	9.66	59.60	65.75	-6.15	QP	
2	*	0.1545	40.50	9.66	50.16	55.75	-5.59	AVG	
3		0.1680	45.87	9.67	55.54	65.06	-9.52	QP	
4		0.1680	36.40	9.67	46.07	55.06	-8.99	AVG	
5		0.1815	46.57	9.67	56.24	64.42	-8.18	QP	
6		0.1815	37.50	9.67	47.17	54.42	-7.25	AVG	
7		0.2040	45.95	9.69	55.64	63.45	-7.81	QP	
8		0.2040	36.20	9.69	45.89	53.45	-7.56	AVG	
9		0.5055	33.02	9.76	42.78	56.00	-13.22	QP	
10		0.5055	24.10	9.76	33.86	46.00	-12.14	AVG	
11		12.2145	29.07	10.53	39.60	60.00	-20.40	QP	
12		12.2145	20.50	10.53	31.03	50.00	-18.97	AVG	

# REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX N(HT20) Mode Channel 06	Phase	Neutral
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No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1680	47.22	9.71	56.93	65.06	-8.13	QP	
2		0.1680	38.50	9.71	48.21	55.06	-6.85	AVG	
3		0.1815	48.81	9.71	58.52	64.42	-5.90	QP	
4		0.1815	39.50	9.71	49.21	54.42	-5.21	AVG	
5		0.1905	48.70	9.73	58.43	64.01	-5.58	QP	
6	*	0.1905	39.50	9.73	49.23	54.01	-4.78	AVG	
7		0.2130	44.51	9.73	54.24	63.09	-8.85	QP	
8		0.2130	35.20	9.73	44.93	53.09	-8.16	AVG	
9		0.2580	41.32	9.75	51.07	61.50	-10.43	QP	
10		0.2580	32.70	9.75	42.45	51.50	-9.05	AVG	
11		12.3585	30.64	10.55	41.19	60.00	-18.81	QP	
12		12.3585	21.60	10.55	32.15	50.00	-17.85	AVG	

# REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.



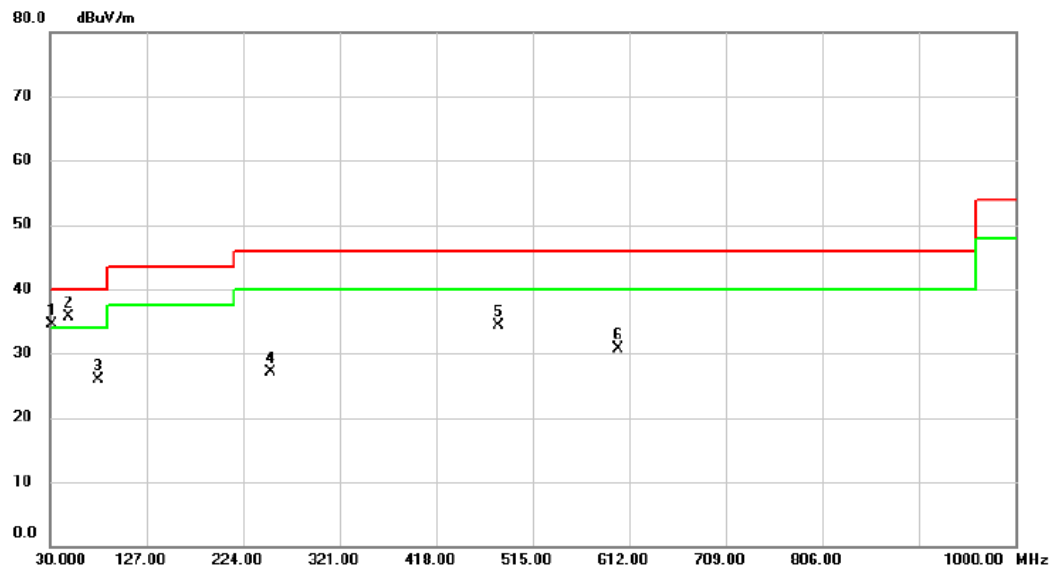
**APPENDIX B - RADIATED EMISSION - 9 KHZ TO 30 MHZ**

Test Mode	TX N(HT20) Mode Channel 06
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The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

## **APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 MHZ**

Test Mode	TX N(HT20) Mode Channel 06	Polarization	Vertical
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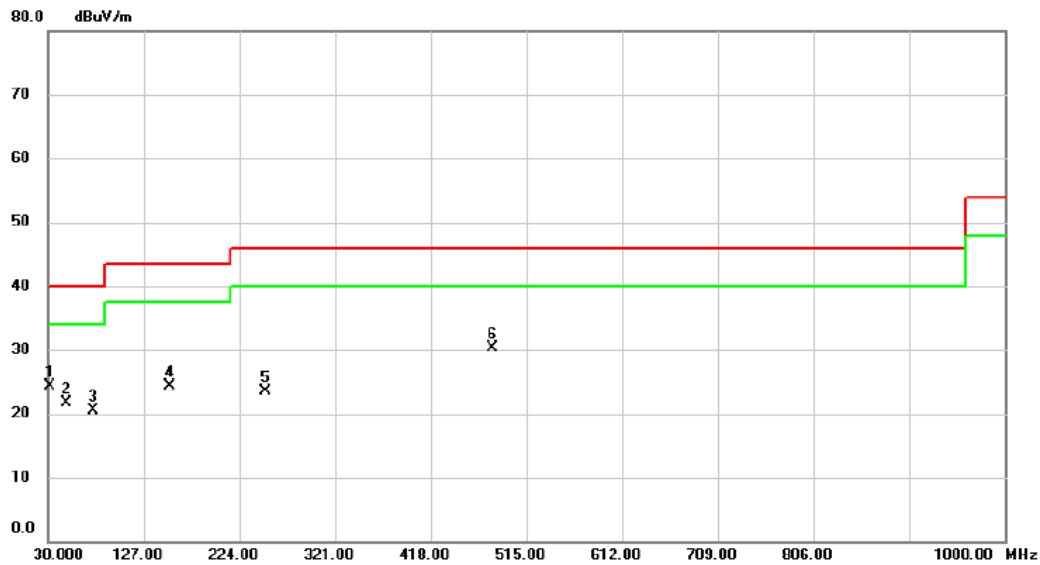
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	!	31.9400	50.15	-15.74	34.41	40.00	-5.59	peak	
2	*	48.4300	49.93	-14.29	35.64	40.00	-4.36	peak	
3		78.5000	44.10	-18.12	25.98	40.00	-14.02	peak	
4		252.1300	40.31	-13.12	27.19	46.00	-18.81	peak	
5		480.0800	41.44	-7.12	34.32	46.00	-11.68	peak	
6		600.3600	35.51	-4.79	30.72	46.00	-15.28	peak	

# REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX N(HT20) Mode Channel 06	Polarization	Horizontal
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No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	31.9400	40.06	-15.74	24.32	40.00	-15.68	peak	
2		48.4300	35.94	-14.29	21.65	40.00	-18.35	peak	
3		75.5900	37.98	-17.53	20.45	40.00	-19.55	peak	
4		153.1900	37.09	-12.72	24.37	43.50	-19.13	peak	
5		250.1900	36.77	-13.17	23.60	46.00	-22.40	peak	
6		480.0800	37.35	-7.12	30.23	46.00	-15.77	peak	

# REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

## APPENDIX D - MAXIMUM AVERAGE OUTPUT POWER

### Non Beamforming

Test Mode	TX B Mode_Ant. 1
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Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	18.42	0.00	18.42	30.00	1.0000	Complies
06	2437	18.64	0.00	18.64	30.00	1.0000	Complies
11	2462	18.54	0.00	18.54	30.00	1.0000	Complies

Test Mode	TX B Mode_Ant. 2
-----------	------------------

Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	18.54	0.00	18.54	30.00	1.0000	Complies
06	2437	18.57	0.00	18.57	30.00	1.0000	Complies
11	2462	18.29	0.00	18.29	30.00	1.0000	Complies

Test Mode	TX B Mode_Total
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Channel	Frequency (MHz)	Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	21.49	30.00	1.0000	Complies
06	2437	21.62	30.00	1.0000	Complies
11	2462	21.43	30.00	1.0000	Complies

Test Mode	TX G Mode_Ant. 1
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Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	14.23	0.00	14.23	30.00	1.0000	Complies
06	2437	18.56	0.00	18.56	30.00	1.0000	Complies
11	2462	16.23	0.00	16.23	30.00	1.0000	Complies

Test Mode	TX G Mode_Ant. 2
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Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	14.12	0.00	14.12	30.00	1.0000	Complies
06	2437	18.41	0.00	18.41	30.00	1.0000	Complies
11	2462	16.08	0.00	16.08	30.00	1.0000	Complies

Test Mode	TX G Mode_Total
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Channel	Frequency (MHz)	Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	17.19	30.00	1.0000	Complies
06	2437	21.50	30.00	1.0000	Complies
11	2462	19.17	30.00	1.0000	Complies

Test Mode	TX N(HT20) Mode_Ant. 1
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Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	14.18	0.00	14.18	30.00	1.0000	Complies
06	2437	18.74	0.00	18.74	30.00	1.0000	Complies
11	2462	15.62	0.00	15.62	30.00	1.0000	Complies

Test Mode	TX N(HT20) Mode_Ant. 2
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Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	14.06	0.00	14.06	30.00	1.0000	Complies
06	2437	18.69	0.00	18.69	30.00	1.0000	Complies
11	2462	15.53	0.00	15.53	30.00	1.0000	Complies

Test Mode	TX N(HT20) Mode_Total
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Channel	Frequency (MHz)	Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	17.13	30.00	1.0000	Complies
06	2437	21.73	30.00	1.0000	Complies
11	2462	18.59	30.00	1.0000	Complies



Test Mode	TX AX(HE20) Mode_Ant. 1
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Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	13.32	0.10	13.42	30.00	1.0000	Complies
06	2437	18.72	0.10	18.82	30.00	1.0000	Complies
11	2462	15.15	0.10	15.25	30.00	1.0000	Complies

Test Mode	TX AX(HE20) Mode_Ant. 2
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Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	13.24	0.10	13.34	30.00	1.0000	Complies
06	2437	18.35	0.10	18.45	30.00	1.0000	Complies
11	2462	15.53	0.10	15.63	30.00	1.0000	Complies

Test Mode	TX AX(HE20) Mode_Total
-----------	------------------------

Channel	Frequency (MHz)	Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	16.39	30.00	1.0000	Complies
06	2437	21.65	30.00	1.0000	Complies
11	2462	18.45	30.00	1.0000	Complies

### Beamforming

Test Mode	TX N(HT20) Mode_Ant. 1
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Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	13.90	0.00	13.90	30.00	1.0000	Complies
06	2437	18.43	0.00	18.43	30.00	1.0000	Complies
11	2462	15.32	0.00	15.32	30.00	1.0000	Complies

Test Mode	TX N(HT20) Mode_Ant. 2
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Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	13.77	0.00	13.77	30.00	1.0000	Complies
06	2437	18.39	0.00	18.39	30.00	1.0000	Complies
11	2462	15.24	0.00	15.24	30.00	1.0000	Complies

Test Mode	TX N(HT20) Mode_Total
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Channel	Frequency (MHz)	Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	16.85	30.00	1.0000	Complies
06	2437	21.42	30.00	1.0000	Complies
11	2462	18.29	30.00	1.0000	Complies

Test Mode	TX AX(HE20) Mode_Ant. 1
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Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	13.02	0.10	13.12	30.00	1.0000	Complies
06	2437	18.44	0.10	18.54	30.00	1.0000	Complies
11	2462	14.87	0.10	14.97	30.00	1.0000	Complies

Test Mode	TX AX(HE20) Mode_Ant. 2
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Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	12.95	0.10	13.05	30.00	1.0000	Complies
06	2437	18.04	0.10	18.14	30.00	1.0000	Complies
11	2462	15.23	0.10	15.33	30.00	1.0000	Complies

Test Mode	TX AX(HE20) Mode_Total
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Channel	Frequency (MHz)	Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	16.09	30.00	1.0000	Complies
06	2437	21.35	30.00	1.0000	Complies
11	2462	18.16	30.00	1.0000	Complies

**End of Test Report**