

Product Name: Smart Wire-Free Security Camera	Report No: FCC022022-5385RF1
Product Model: Tapo C400	Security Classification: Open
Version: V1.0	Total Page:80

TIRT Testing Report



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FCC Radio Test Report

FCC ID: 2AXJ4C400

This report concerns: Original Grant

Project No. : 022022-5385

Equipment: Smart Wire-Free Security Camera

Brand Name : tp-link
Test Model : Tapo C400
Series Model : N/A

Series Model : N/A
Applicant : TP-Link Corporation Limited

Address : Room 901, 9/F., New East Ocean Centre, 9 Science Museum Road,

Tsim Sha Tsui, Kowloon, Hong Kong

Manufacturer : TP-Link Corporation Limited

Address : Room 901, 9/F., New East Ocean Centre, 9 Science Museum Road,

Tsim Sha Tsui, Kowloon, Hong Kong

Date of Test : 2022.09.05-2022.10.12

Issued Date : 2022.10.20 Report Version : V1.0

Test Sample : Engineering Sample No.: 20220713018147 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
FCC022022-5385RF1	V1.0	Original Report.	2022.10.20	Valid



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	Judgment	Remark		
15.207	AC Power Line Conducted Emissions	APPENDIX A	PASS			
15.247(d) 15.205(a) 15.209(a)	Radiated Emissions	APPENDIX B APPENDIX C APPENDIX D	PASS			
15.247(a)(2)	Bandwidth	APPENDIX E	PASS			
15.247(b)(3)	Maximum Output Power	APPENDIX F	PASS			
15.247(d)	Conducted Spurious Emissions	APPENDIX G	PASS			
15.247(e)	Power Spectral Density	APPENDIX H	PASS			
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.



1.1 TEST LOCATION

Company:	Shenzhen Branch of Beijing TIRT Technology Service Co.,Ltd
Address:	Plant 3, Gongjindianzi, Shatian, Kengzi Street, Pingshan District, Shenzhen, Guangdong, 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	±142.12kHz
RF power conducted	±0.74dB
RF power radiated	±3.25dB
Spurious emissions, conducted	±1.78dB
Spurious emissions, radiated (30MHz~1GHz)	±4.6dB
Spurious emissions, radiated (1GHz ~ 18GHz)	±4.9dB
Conduction Emissions(150kHz~30MHz)	±3.1dB
Humidity	±4.6%
Temperature	±0.7°C
Time	±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	26°C	56%	AC 120V/60Hz	Stone Tang
Radiated Emissions-9kHz to 30 MHz	25°C	55%	AC 120V/60Hz	Stone Tang
Radiated Emissions-30MHz to 1000MHz	23°C	53%	AC 120V/60Hz	Stone Tang
Radiated Emissions-Above 1000MHz	23°C	53%	AC 120V/60Hz	Stone Tang
Bandwidth	23°C	54%	AC 120V/60Hz	Stone Tang
Maximum Output Power	23°C	54%	AC 120V/60Hz	Stone Tang
Conducted Spurious Emissions	23°C	54%	AC 120V/60Hz	Stone Tang
Power Spectral Density	23°C	54%	AC 120V/60Hz	Stone Tang



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Smart Wire-Free Security Camera
Brand Name	tp-link
Test Model	Tapo C400
Series Model	N/A
Model Difference(s)	N/A
Software Version	N/A
Hardware Version	N/A
Power Source	1# DC Voltage supplied from AC adapter. Model: A8-501000 2# Battery supplied. Model: Tapo A100
Power Rating	1# I/P: 100-240V~ 50/60Hz 0.2A; O/P: DC5V 1A 2# DC 3.7V, 5200mAh
Operation Frequency	2412 MHz ~ 2462 MHz
Modulation Type	IEEE 802.11b: DSSS IEEE 802.11g: OFDM IEEE 802.11n: OFDM
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 72.2 Mbps
Maximum Output Power	IEEE 802.11b: 19.82 dBm (0.0959 W)

Note:

2. Channel List:

Official Liot	•						
	CH01 - CH11 for IEEE 802.11b, IEEE 802.11g, IEEE 802.11n(HT20)						
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	tp-link	N/A	Internal	N/A	0

Note:

1) The antenna gain is provided by the manufacturer.

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



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 G Mode Channel 06
Mode 5	TX B Mode Channel 01/02/06/10/11
Mode 6	TX G Mode Channel 01/02/06/10/11
Mode 7	TX N(HT20) Mode Channel 01/02/06/10/11

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

AC power line conducted emissions test			
Final Test Mode Description			
Mode 4	TX G Mode Channel 06		

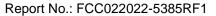
Radiated emissions test - Below 1GHz			
Final Test Mode	Description		
Mode 4	TX G Mode Channel 06		

Radiated emissions test- Above 1GHz			
Final Test Mode	Description		
Mode 5	TX B Mode Channel 01/02/06/10/11		
Mode 6	TX G Mode Channel 01/02/06/10/11		
Mode 7	TX N(HT20) Mode Channel 01/02/06/10/11		

Conducted test				
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			

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 IEEE 802.11b channel 11 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) For radiated emission above 1 GHz test, the polarization of Vertical and Hoizontal are evaluated, the worst case is Vertical and recorded.

2.3 PARAMETERS OF TEST SOFTWARE

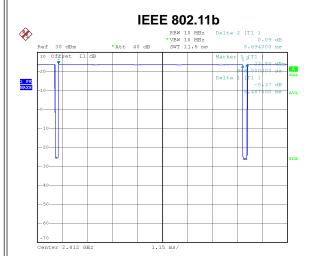
Test Software Version	1.0.0 Build 220812 Rel.55891		
Frequency (MHz)	2412	2437	2462
IEEE 802.11b	21	21	23
IEEE 802.11g	1F	24	26
IEEE 802.11n(HT20)	1F	26	28





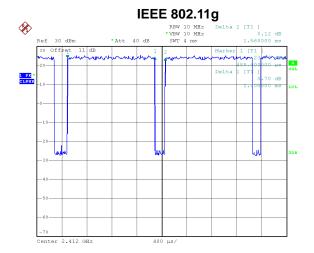
2.4 DUTY CYCLE

If duty cycle is \geq 98 %, duty factor is not required. If duty cycle is < 98 %, duty factor shall be considered. The output power = measured power + duty factor.



Date: 8.SEP.2022 15:43:28

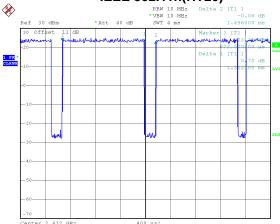
Duty cycle = 8.487 ms / 8.694 ms = 97.62% Duty Factor = 10 log(1/Duty cycle) = 0.10



Date: 8.SEP.2022 15:44:01

Duty cycle = 1.400 ms / 1.568 ms = 89.29% Duty Factor = 10 log(1/Duty cycle) = 0.49





Date: 8.SEP.2022 15:44:28

Duty cycle = 1.312 ms / 1.496 ms = 87.70% Duty Factor = 10 log(1/Duty cycle) = 0.57

NOTE:

For IEEE 802.11b:

For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 118Hz.

For IEEE 802.11g:

For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 714Hz.

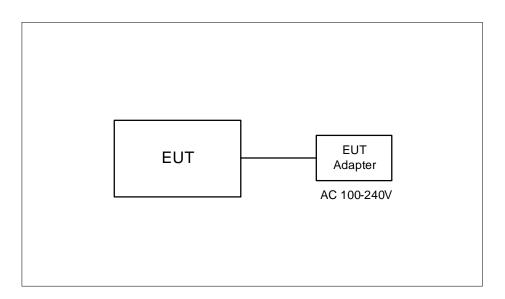
For IEEE 802.11n(HT20):

For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 762Hz.

(Remark: The video bandwidth of the spectrum analyzer was set to 1kHz during the test.)



2.5 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



2.6 SUPPORT UNITS

Support Equipment					
Item	Cable Type	Shielded Type	Ferrite Core	Length	
1	DC Cable	NO	NO	0.5m	



3. AC POWER LINE CONDUCTED EMISSIONS

3.1 LIMIT

Fraguency of Emission (MHz)	Limit (dBμV)		
Frequency of Emission (MHz)	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:

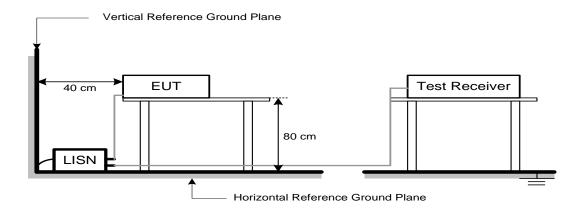
Receiver Parameters	Setting	
Start Frequency	0.15 MHz	
Stop Frequency	30 MHz	
IF Bandwidth	9 kHz	

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), then the 15.209(a) and 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)	
Frequency (Wiriz)	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

- a. 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)
- b. 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)
- c. 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.
- d. 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).
- e. 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.
- f. 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.
- g. 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)
- h. 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)
- i. 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	1 MHz / 3 MHz for PK value	
(Emission in restricted band)	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	

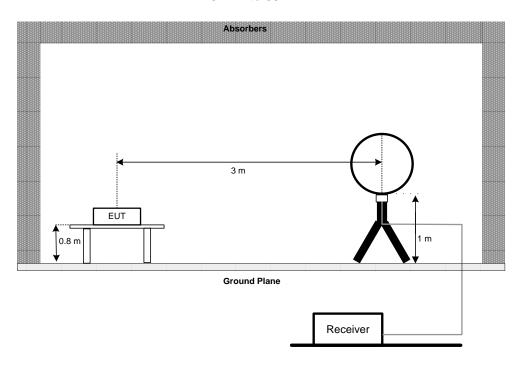


4.3 DEVIATION FROM TEST STANDARD

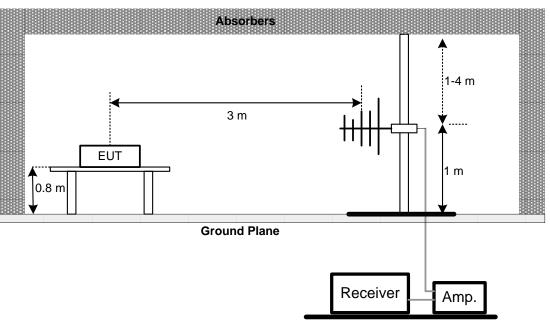
No deviation.

4.4 TEST SETUP

9 kHz to 30 MHz

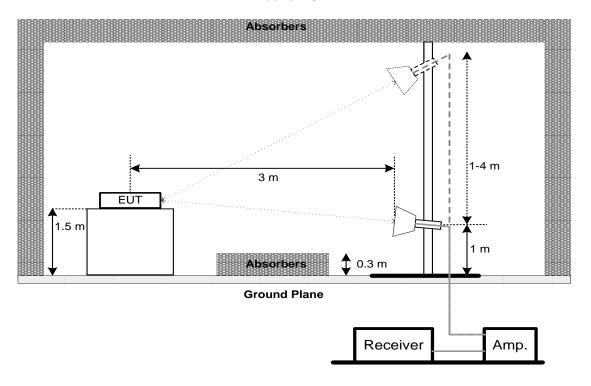


30 MHz to 1 GHz





Above 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 (specific distance / 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.

4.8 TEST RESULTS - ABOVE 1000 MHZ

Please refer to the APPENDIX D.

Remark:

(1) No limit: This is fundamental signal, the judgment is not applicable. For fundamental signal judgment was referred to Peak output test.



5. BANDWIDTH

5.1 LIMIT

Section	Test Item	Limit
FOC 4F 247(a)(2)	6 dB Bandwidth Minimum 500 kHz	
FCC 15.247(a)(2)	99% Emission Bandwidth	-

5.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- b. The following table is the setting of the spectrum analyzer:

For 6 dB Bandwidth:

or o ab barrawiatir.	
Spectrum Parameters	Setting
Span Frequency	> Measurement Bandwidth
RBW	100 kHz
VBW	300 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

For 99% Emission Bandwidth:

Of OO70 Enflocion Bandwidth				
Spectrum Parameters	Setting			
Span Frequency	Between 1.5 times and 5.0 times the OBW			
RBW	300 kHz			
VBW	1 MHz			
Detector	Peak			
Trace	Max Hold			
Sweep Time	Auto			

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 E.



6. MAXIMUM OUTPUT POWER & E.I.R.P.

6.1 LIMIT

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

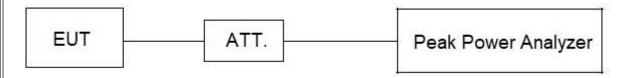
6.2 TEST PROCEDURE

- a. The EUT was directly connected to the peak power analyzer and antenna output port as show in the block diagram below.
- b. 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.

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.6 TEST RESULTS

Please refer to the APPENDIX F.



7. CONDUCTED SPURIOUS EMISSIONS

7.1 LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak Output Power limits. If the transmitter complies with the Output Power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required.

7.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- b. The following table is the setting of the spectrum analyzer:

For Emission Level:

Spectrum Parameters	Setting
Start Frequency	30 MHz
Stop Frequency	26.5 GHz
RBW	100 kHz
VBW	300 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

For Reference Level:

i di Nelelelle Level.	
Spectrum Parameters	Setting
Span Frequency	≥1.5 times the bandwidth
RBW	100 kHz
VBW	300 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP



7.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.6 TEST RESULTS

Please refer to the APPENDIX G.



8. POWER SPECTRAL DENSITY

8.1 LIMIT

Section	Test Item	Limit	
FCC 15.247(e)	Power Spectral Density	8 dBm	
	Fower Spectral Delisity	(in any 3 kHz)	

8.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- b. The following table is the setting of the spectrum analyzer:

Spectrum Parameters	Setting
Span Frequency	25 MHz
RBW	3 kHz
VBW	10 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

8.3 DEVIATION FROM STANDARD

No deviation.

8.4 TEST SETUP



8.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

8.6 TEST RESULTS

Please refer to the APPENDIX H.



9. MEASUREMENT INSTRUMENTS LIST

No.	Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EMI Receiver	Rohde&Schwarz	ESCI	1166.5950.03	2022/11/09
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	N/A	2022/11/09
5	ECSI RF IN RF Cable	Rohde&Schwarz	Sapre sm	N/A	2022/11/09
6	EMI Receiver	Rohde&Schwarz	ESR7	102013	2022/11/09
7	Spectrum analyzer	Rohde&Schwarz	FSV30	103741	2022/11/09
8	Spectrum analyzer	KEYSIGHT	N9010A-44	MY51440158	2022/11/09
9	Integral Antenna	Schwarzbeck	VULB 9163	VULB 9163-361	2022/11/20
10	Integral Antenna	Schwarzbeck	BBHA 9120D	BBHA 9120D 1201	2022/11/20
11	Integral Antenna	Schwarzbeck	BBHA 9170	9170#685	2022/11/20
12	Preamplifier	Schwarzbeck	BBV9745	#78	2022/11/09
13	Preamplifier	Schwarzbeck	BBV9721	9721-019	2022/11/09
14	Preamplifier	RF System/UK	TRLA-0101 80G50B	22062101	2023/07/20
15	ECSI RF IN RF Cable	Rohde&Schwarz	AP-X1	N/A	2022/11/09
16	ECSI RF IN RF Cable	HAOXUN	Z-108	N/A	2022/11/09
17	RF Cable	ZDECL	ZT40-2.92J -2.92J-6M	18124358	2023/07/20
18	Spectrum Analyzer	Agilent	N9010A	MY51440158	2022/11/09
19	Spectrum Analyzer	Agilent	N9010A	MY52221119	2022/11/09
20	EMI Receiver	Rohde&Schwarz	ESU	100184	2023/07/20
21	Temp&Humidity Recorder	Anymetre	JR900	N/A	2022/11/03
22	Temp&Humidity Chamber	ETOMA	NTH1100-3 0A	16080628	2022/11/03
23	Filter	STI	STI15-9845	N/A	N/A
24	Filter	STI	5.1G	N/A	N/A
25	Filter	STI	STI15-9845	N/A	N/A
26	Testing Software	EZ-EMC	TW-03A2	N/A	N/A

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

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

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[&]quot;*" calibration period of equipment list is three year.



10. EUT TEST PHOTO

AC Power Line Conducted Emissions Test Photos



Radiated Emissions Test Photos

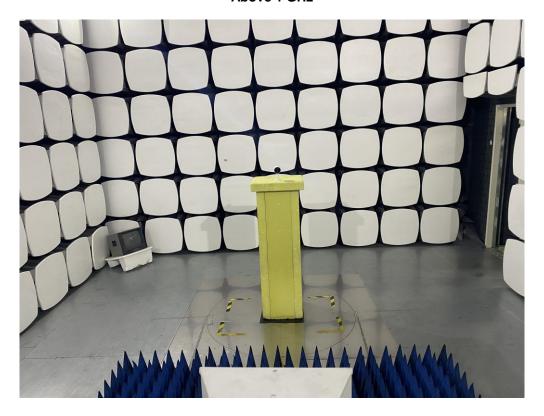
30 MHz to 1 GHz





Radiated Emissions Test Photos

Above 1 GHz



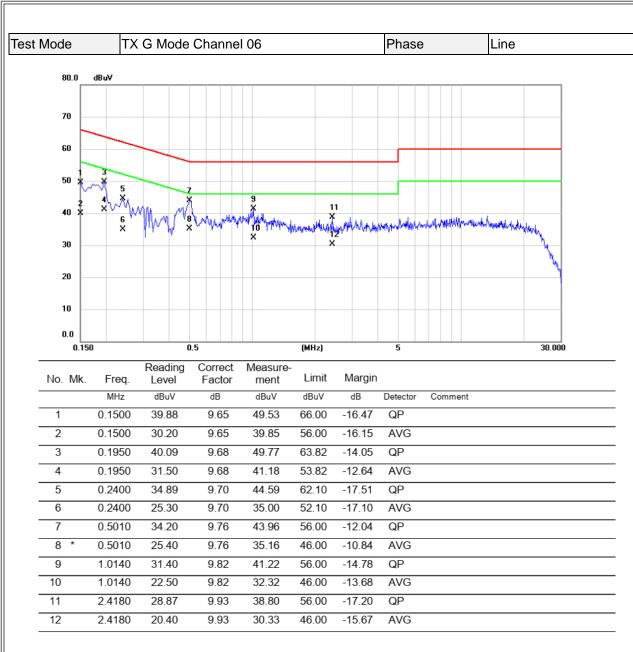
Conducted Test Photos





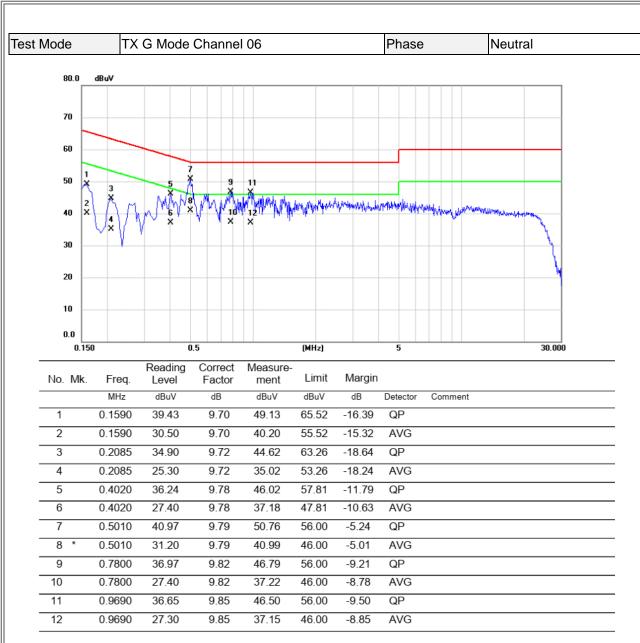
APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS





- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.
- (3) The test result has included the cable loss.





- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.
- (3) The test result has included the cable loss.



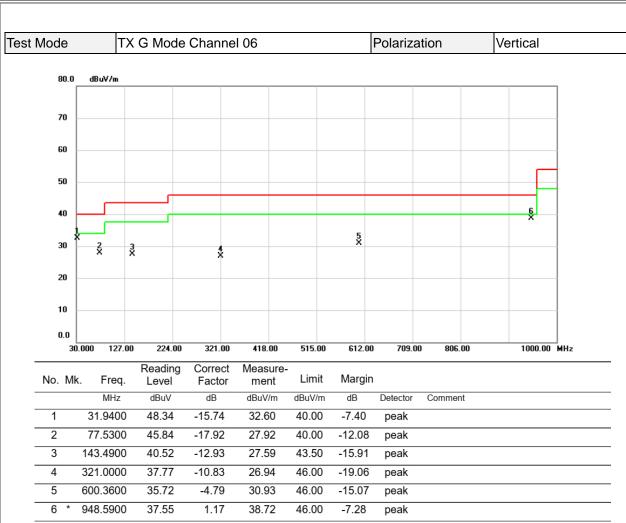
APPENDIX B - RADIATED EMISSION - 9 KHZ TO 30 MHZ

Radiated emission: 9KHz-30MHz
The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.
There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.



APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 MHZ

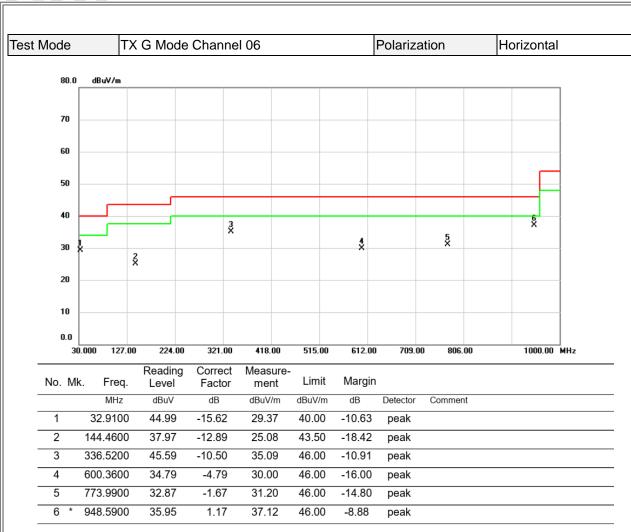




- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.

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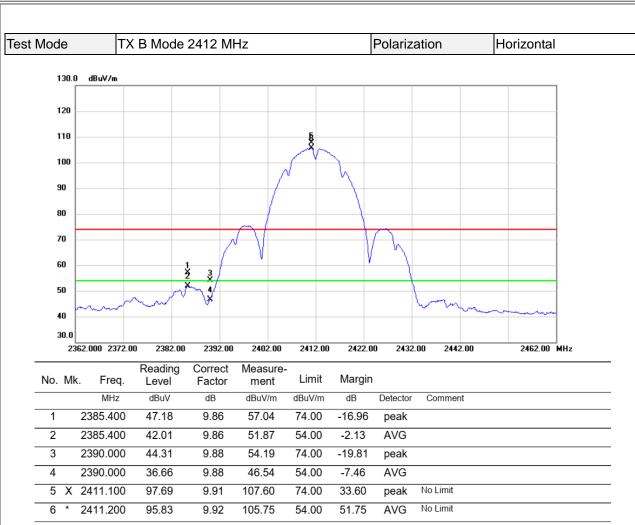


- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.



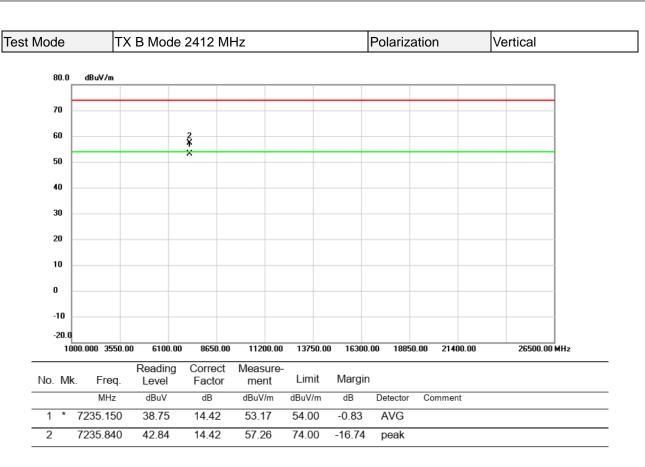
APPENDIX D - RADIATED EMISSION- ABOVE 1000 MHZ





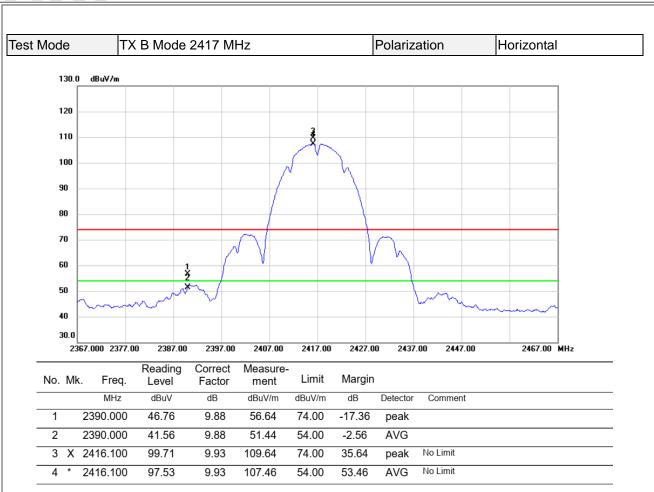
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





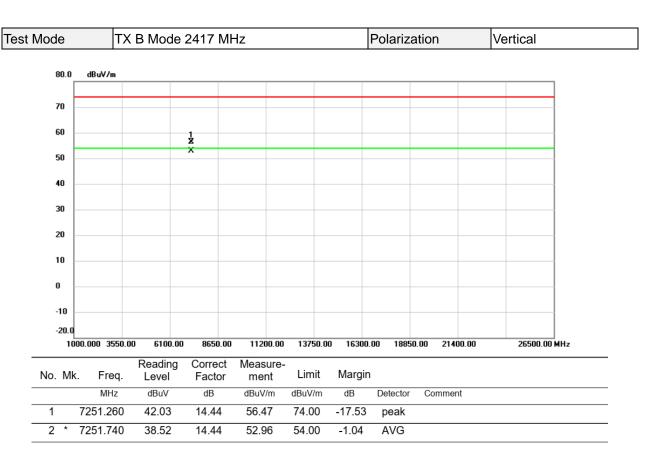
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





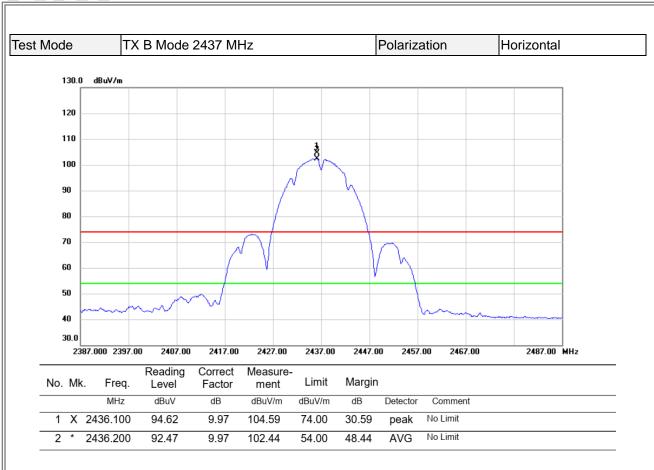
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





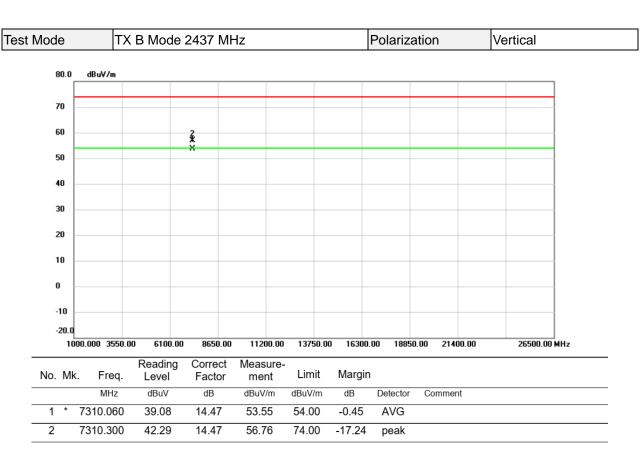
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





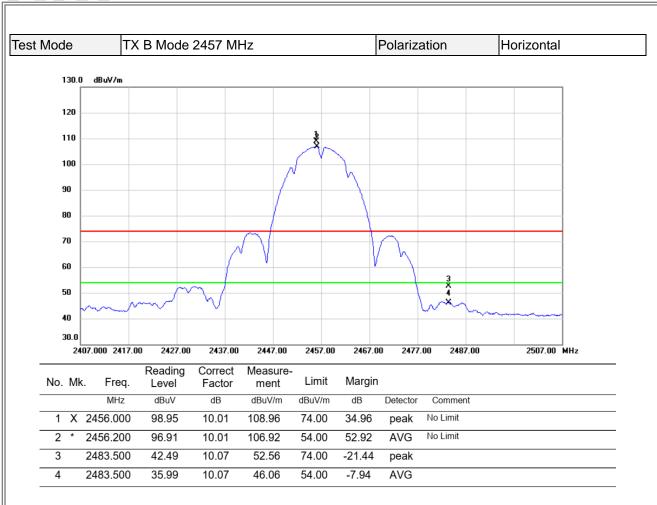
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





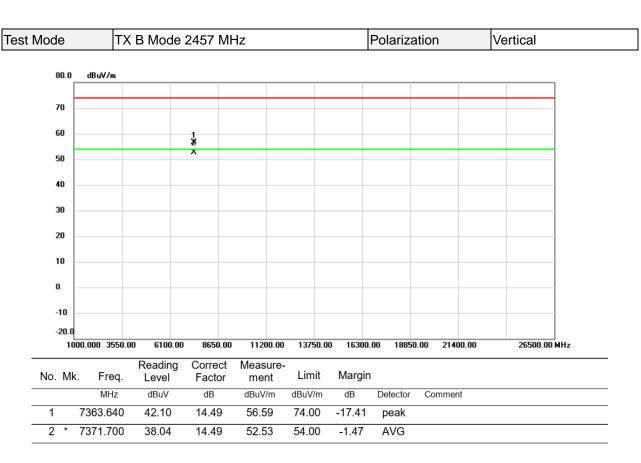
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





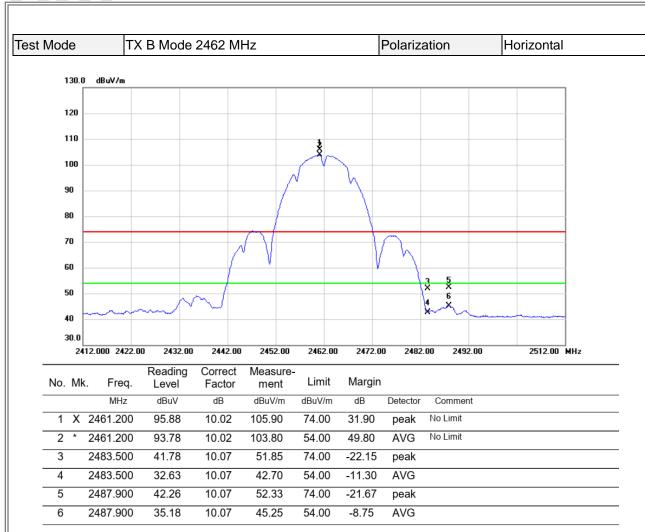
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





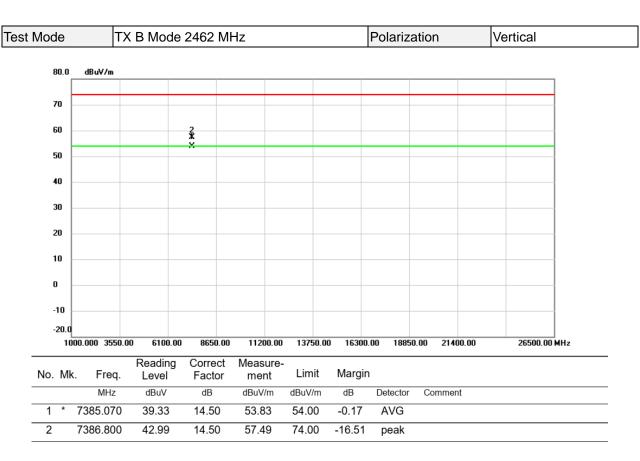
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





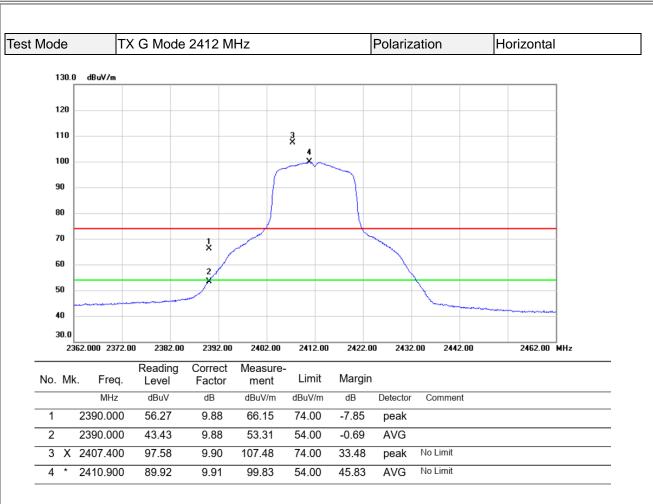
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





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

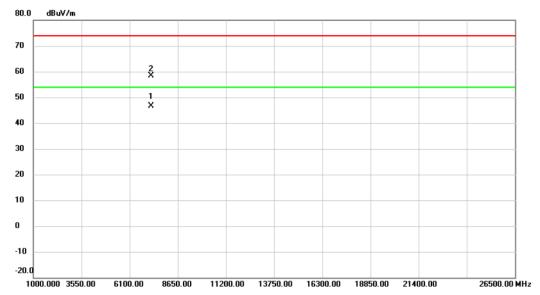




- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.



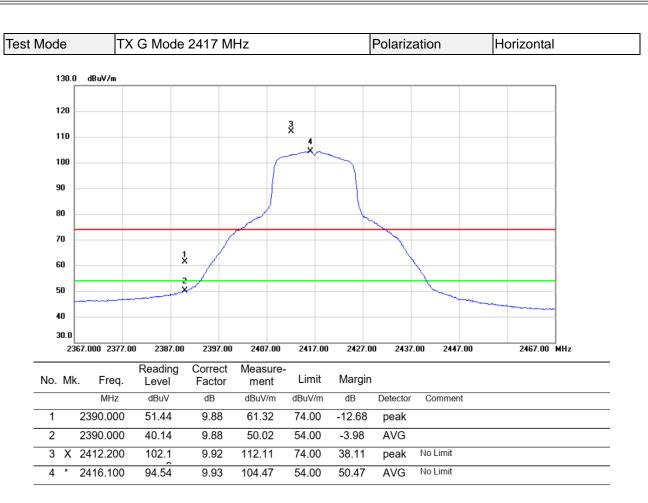




No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	7235.010	32.15	14.42	46.57	54.00	-7.43	AVG	
2		7235.650	44.04	14.42	58.46	74.00	-15.54	peak	

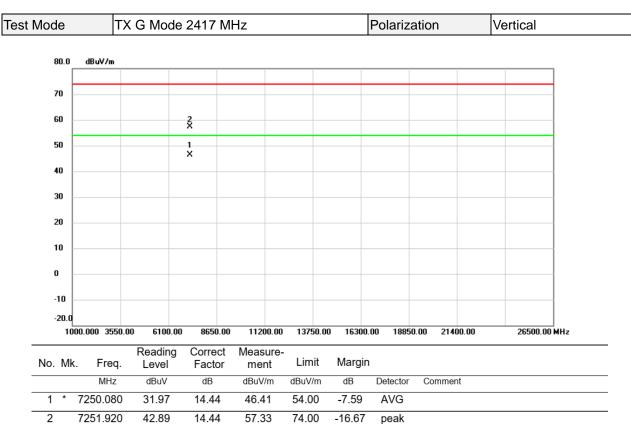
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





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

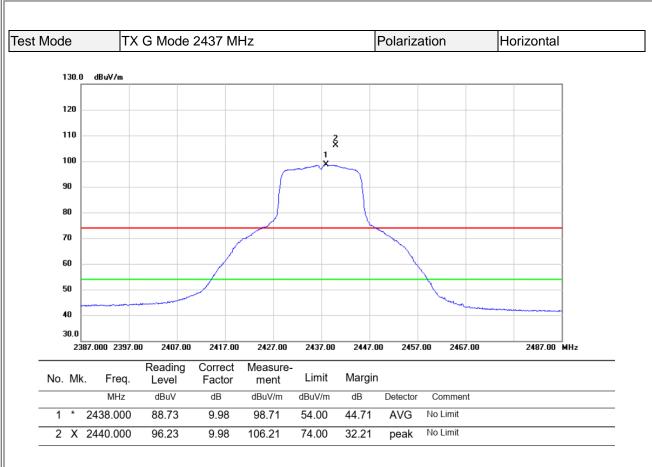




peak

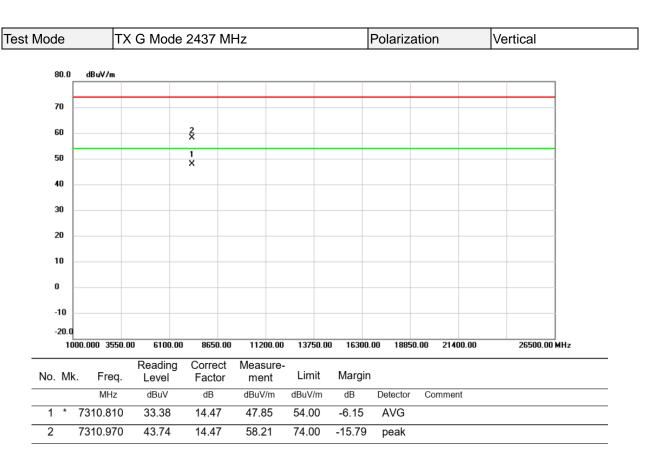
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





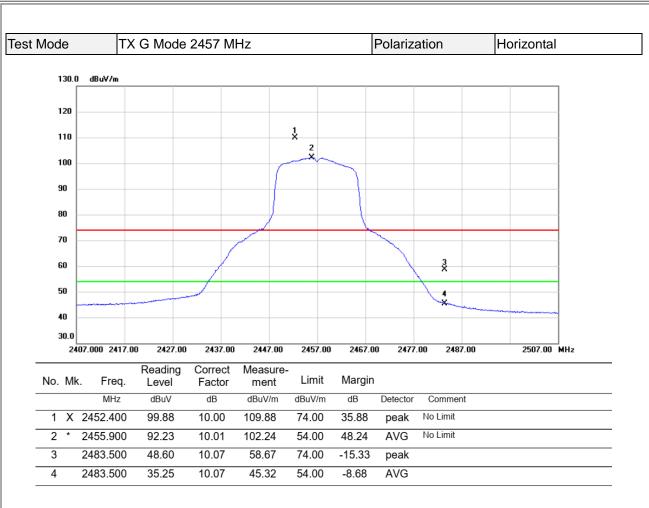
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





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

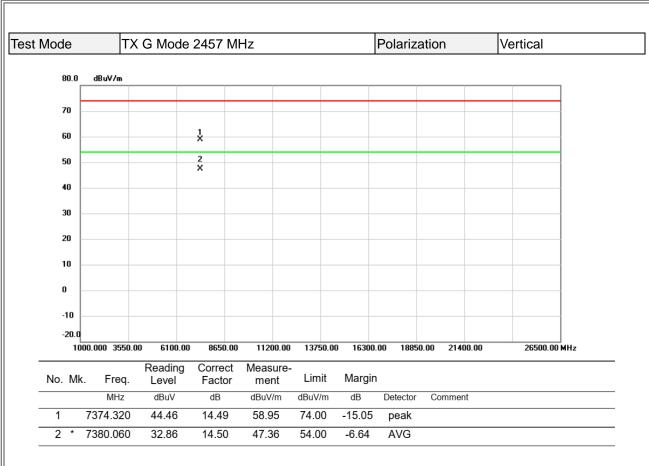




- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.

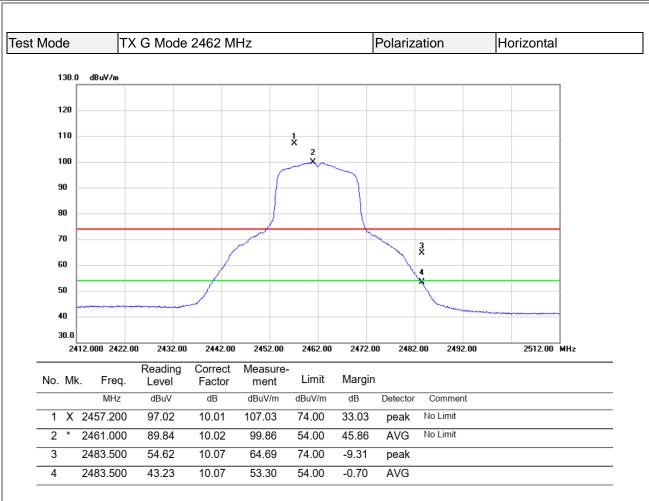
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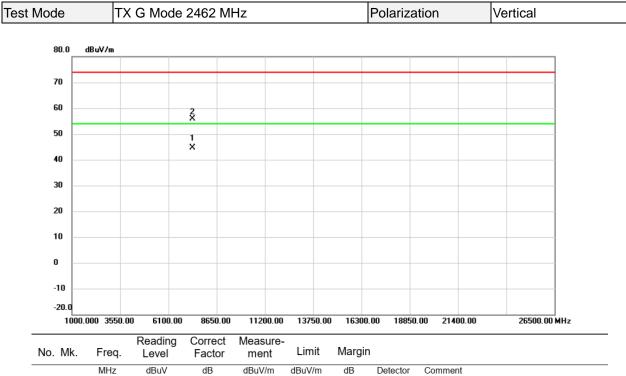
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





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





2

7385.330

7389.760

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

14.50

14.50

44.66

55.80

54.00

74.00

-9.34

-18.20

AVG

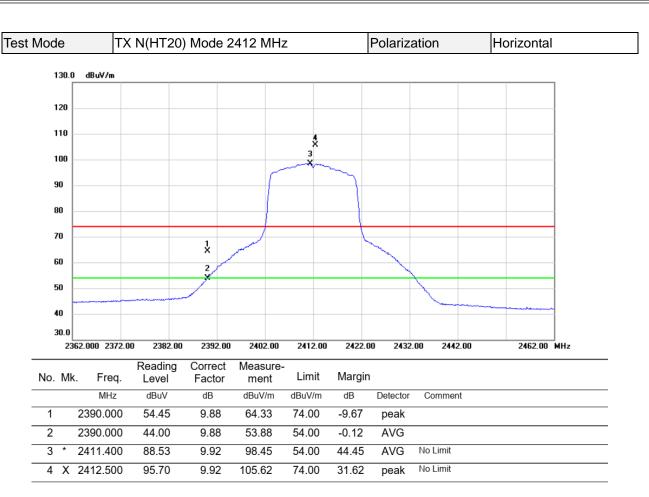
peak

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

30.16

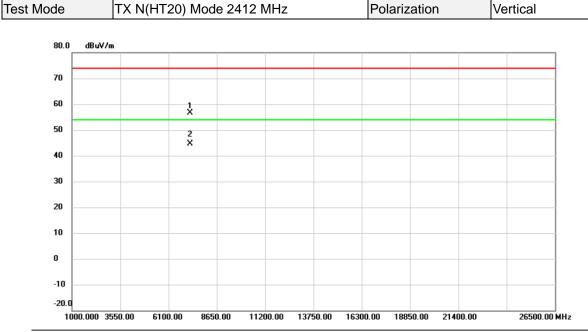
41.30





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

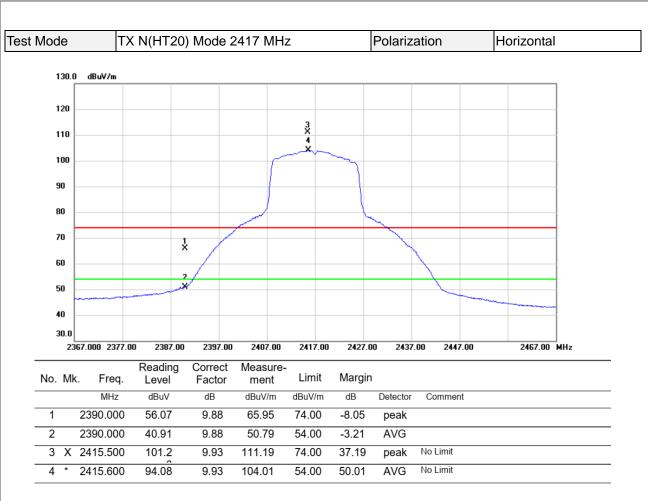




No.	Mł	c. Freq.		Correct Factor	Measure- ment		Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		7232.770	42.11	14.42	56.53	74.00	-17.47	peak	
2	*	7235.940	30.23	14.42	44.65	54.00	-9.35	AVG	

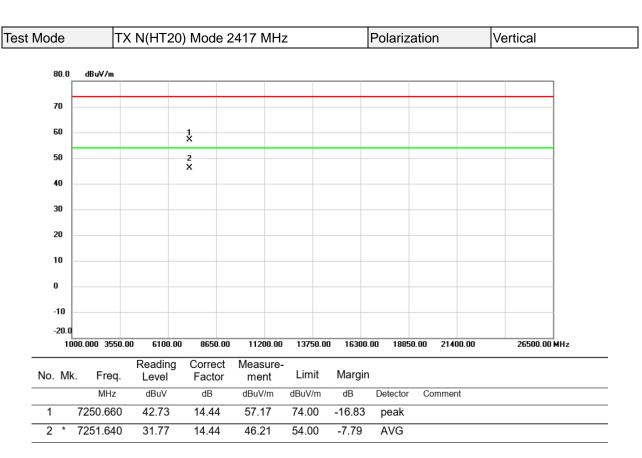
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





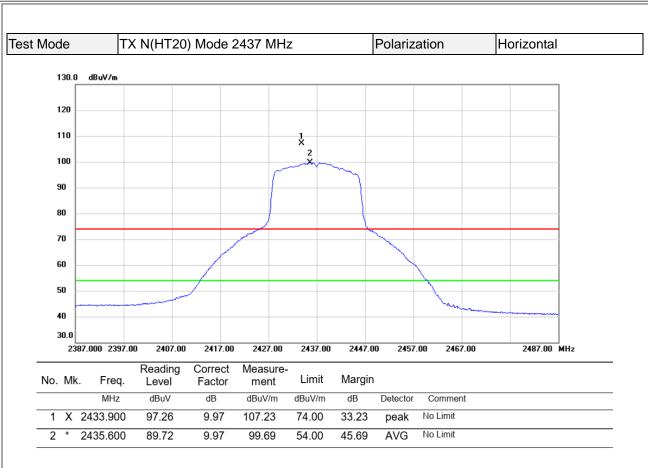
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





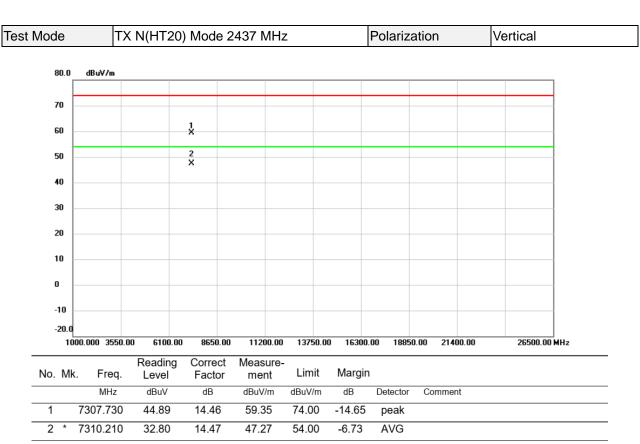
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





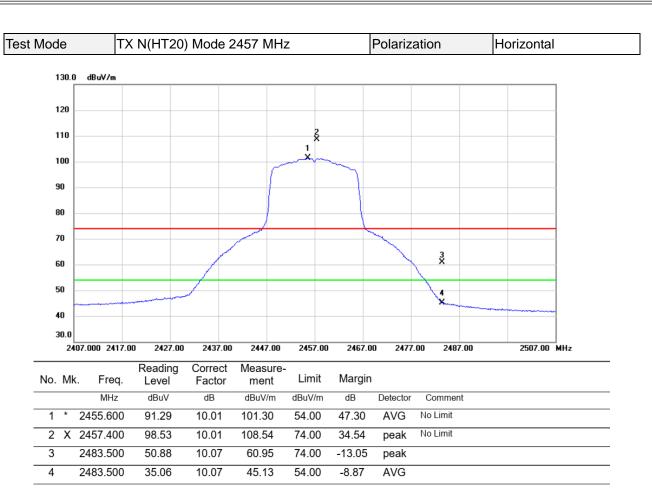
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





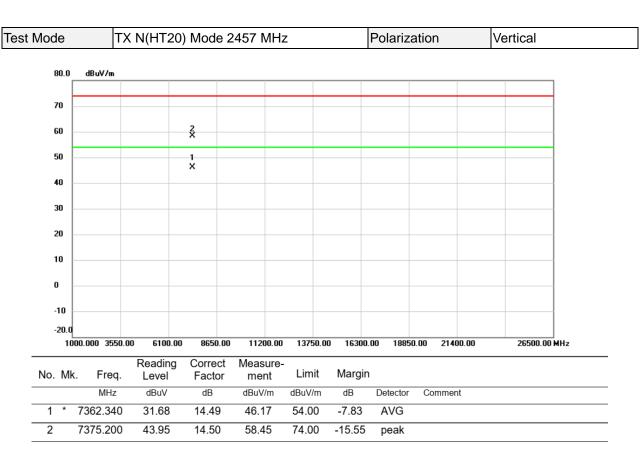
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





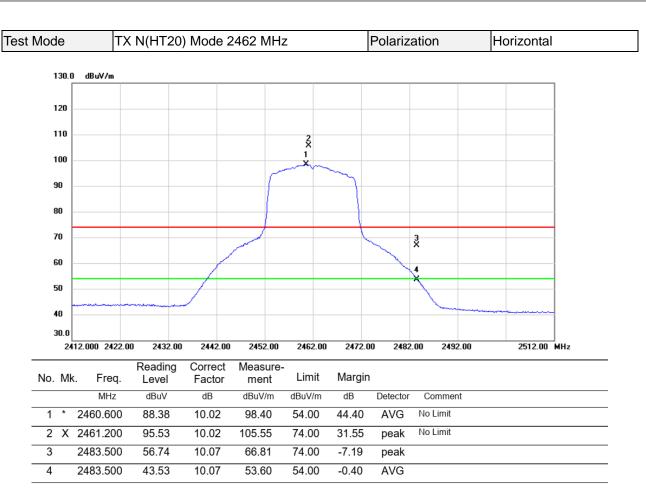
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





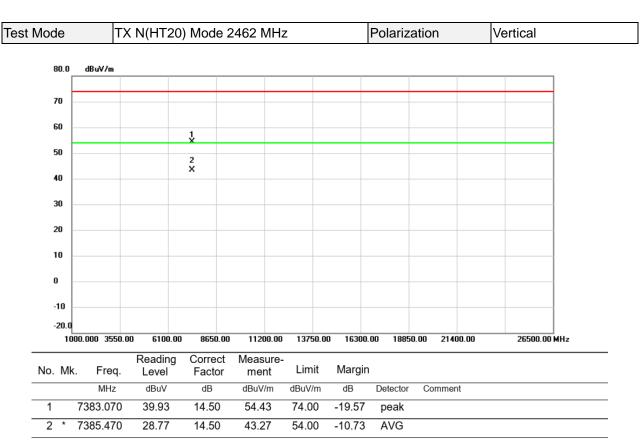
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





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





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

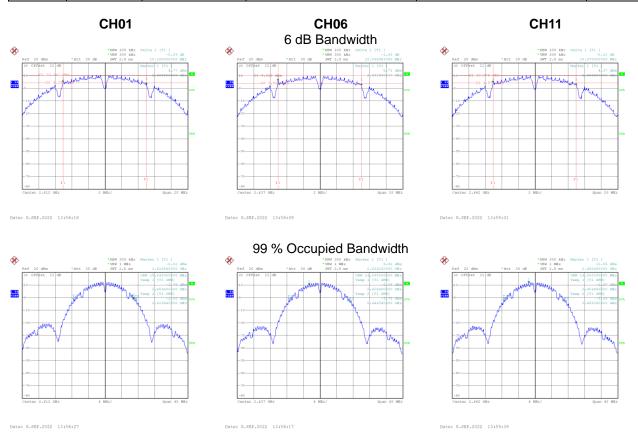


APPENDIX E - BANDWIDTH	



Test Mode	TX B Mode
1001111040	1712 111040

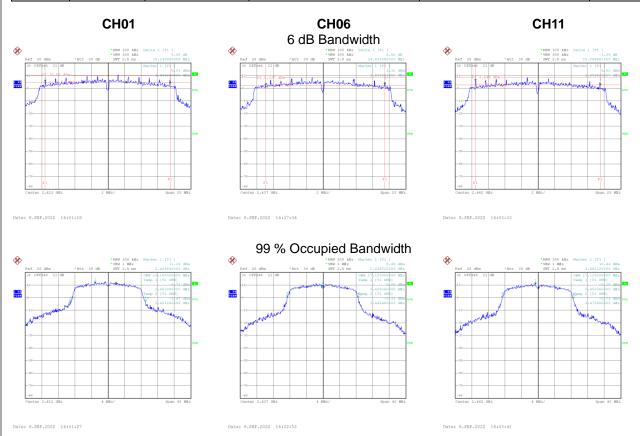
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Result
01	2412	10.100	15.040	0.5	Complies
06	2437	10.100	14.880	0.5	Complies
11	2462	10.070	14.880	0.5	Complies





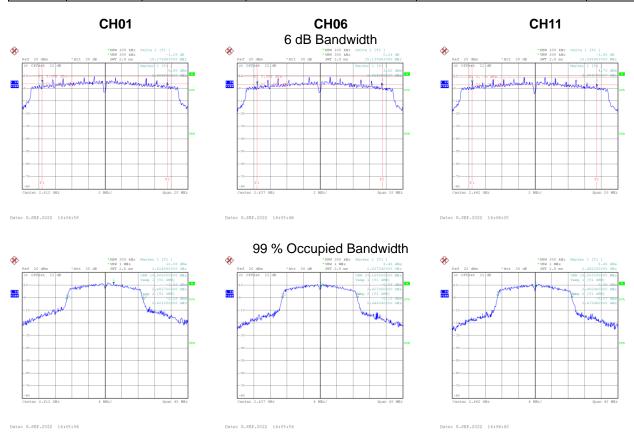
	Test Mode	TX G Mode
ı	100t Wiodo	I A O IVIOGO

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Result
01	2412	15.140	18.160	0.5	Complies
06	2437	14.438	17.120	0.5	Complies
11	2462	15.100	17.120	0.5	Complies





Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Result
01	2412	15.180	18.560	0.5	Complies
06	2437	15.140	18.160	0.5	Complies
11	2462	15.100	18.000	0.5	Complies





APPENDIX F - MAXIMUM AVERAGE OUTPUT POWER





Test Mode TX B Mode

Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	18.73	0.10	18.83	30.00	1.0000	Complies
06	2437	18.79	0.10	18.89	30.00	1.0000	Complies
11	2462	19.43	0.10	19.53	30.00	1.0000	Complies

Test Mode TX G Mode

Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	18.03	0.49	18.52	30.00	1.0000	Complies
06	2437	19.33	0.49	19.82	30.00	1.0000	Complies
11	2462	19.07	0.49	19.56	30.00	1.0000	Complies

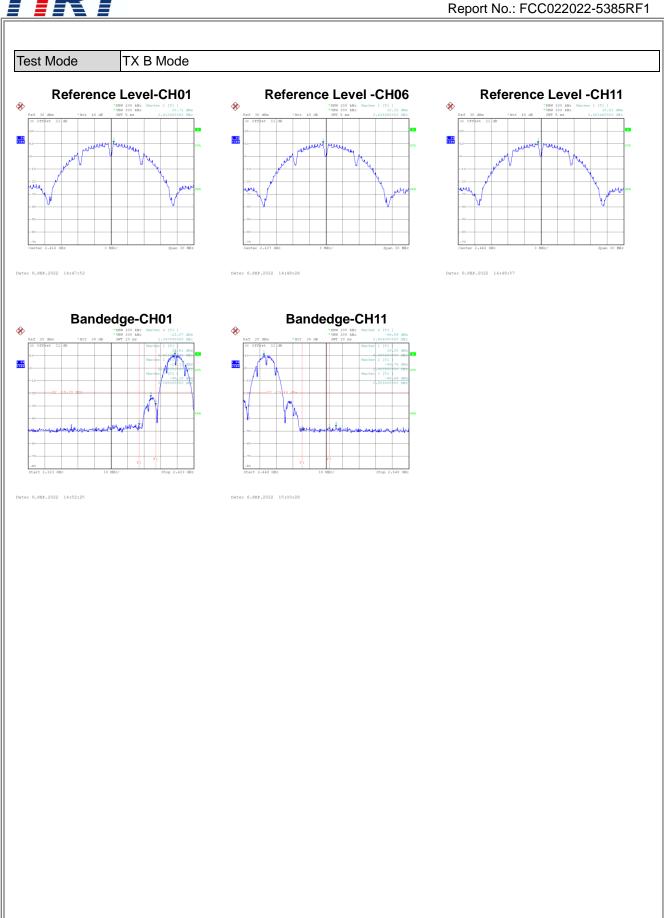
Test Mode TX N(HT20) Mode

Channel	Frequency (MHz)	Output Power (dBm)	Duty Factor	Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	17.06	0.57	17.63	30.00	1.0000	Complies
06	2437	19.13	0.57	19.70	30.00	1.0000	Complies
11	2462	19.01	0.57	19.58	30.00	1.0000	Complies

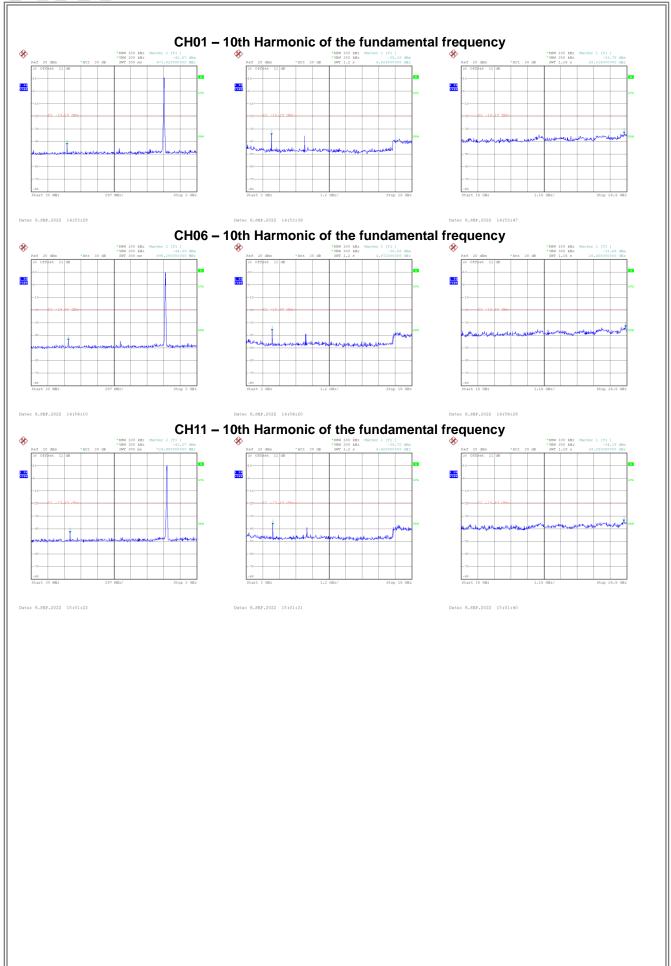


APPENDIX G - CONDUCTED SPURIOUS EMISSIC	DNS

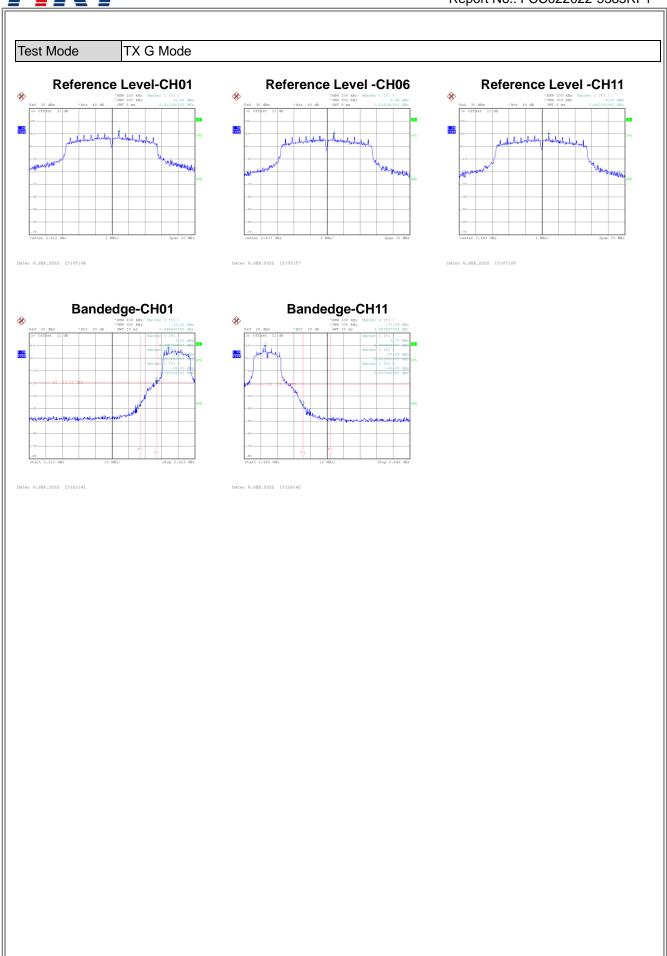




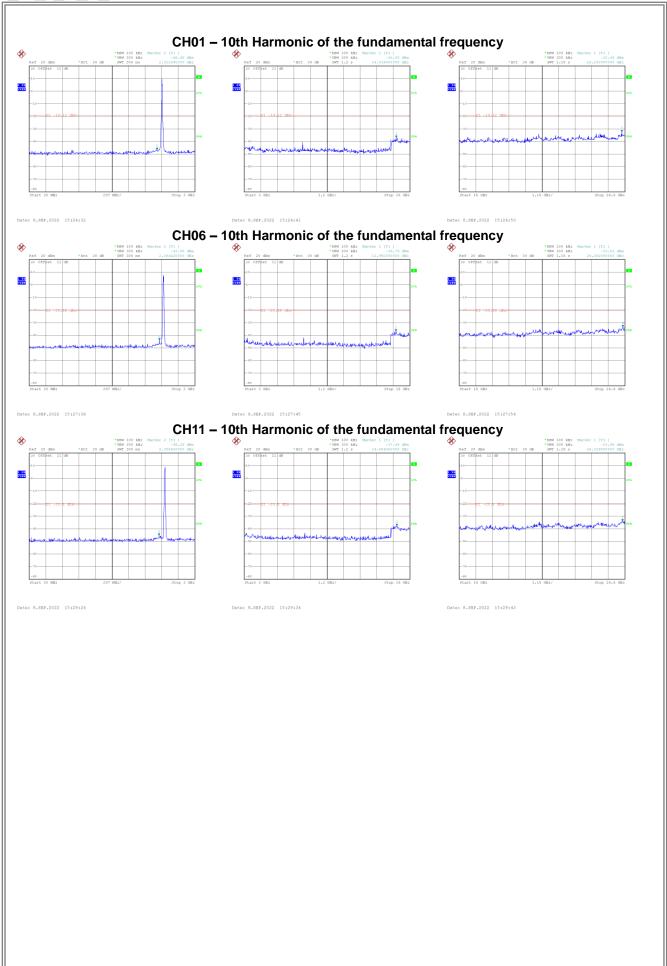




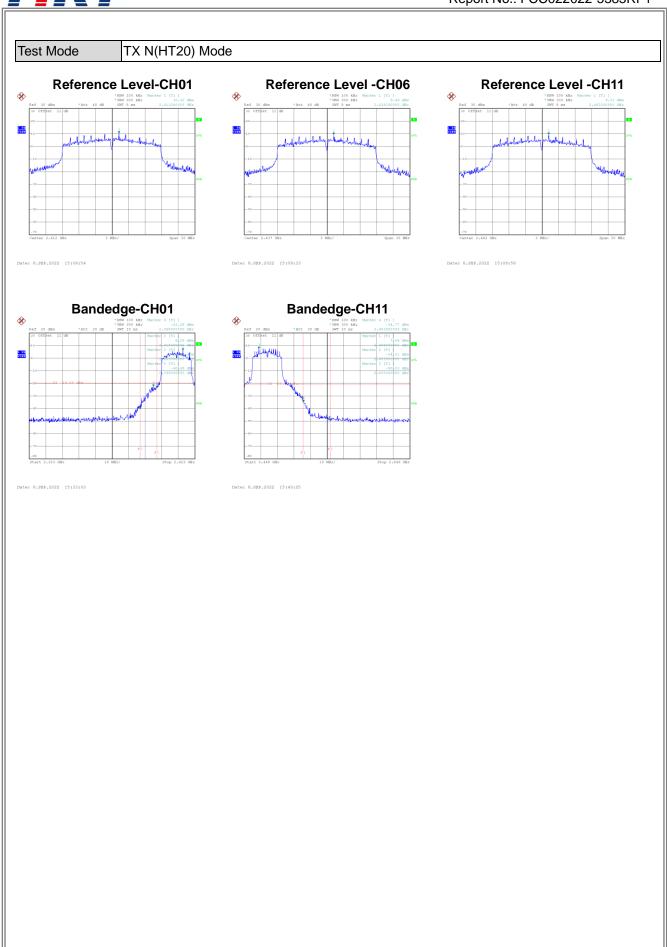




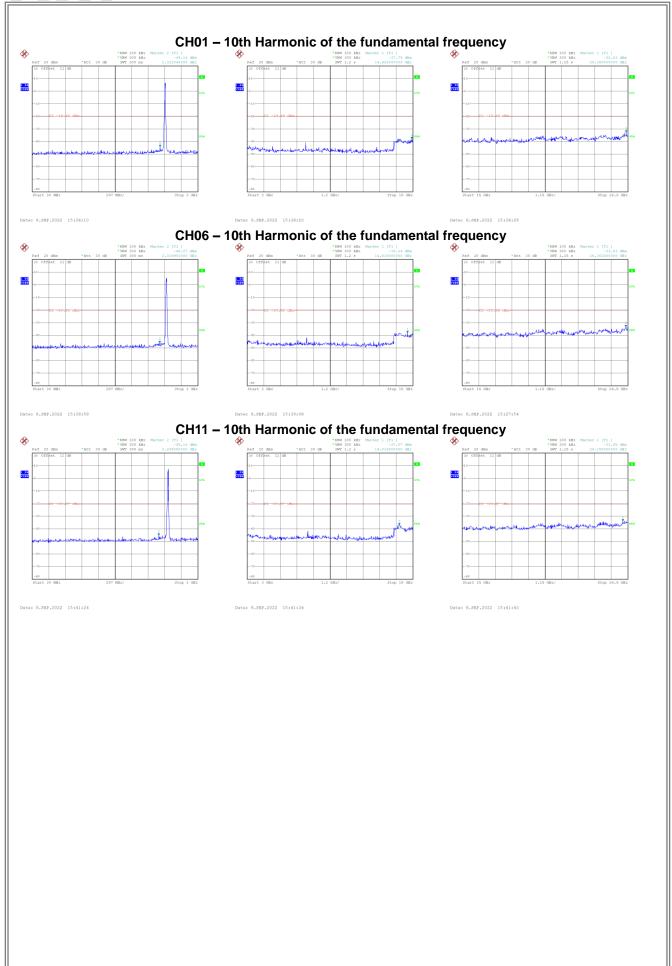












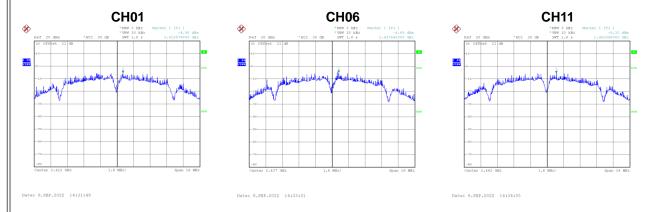


APPENDIX H - POWER SPECT	TRAL DENSITY



	Test Mode	TX B Mode
ı	TEST MICHE	I I V D IVIOUE

Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
01	2412	-4.95	8	Complies
06	2437	-4.69	8	Complies
11	2462	-5.32	8	Complies



Tact Mada	ITY G Modo
Lest Mode	IX G Mode

Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
01	2412	-6.03	8	Complies
06	2437	-8.32	8	Complies
11	2462	-8.48	8	Complies





Test Mode	TX N(HT20) Mode
1001111000	1174 14(111 = 0) 1110 40

Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Max. Limit (dBm/3kHz)	Result
01	2412	-6.07	8	Complies
06	2437	-6.87	8	Complies
11	2462	-6.42	8	Complies

