

FCC Radio Test Report

FCC ID: 2APPZ-X3SW

This report concerns: Original Grant

Project No.	:	2104C088
Equipment	:	IP Phone
Brand Name	:	Fanvil
Test Model	:	X3SW
Series Model	:	N/A
Applicant	:	Fanvil Technology Co., Ltd
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Date of Receipt	:	Apr. 13, 2021
Date of Test	:	Apr. 13, 2021 ~ May 11, 2021
Issued Date	:	May 20, 2021
Report Version	:	R00
Test Sample	:	Engineering Sample No.: DG2021041396 for conducted,
•		DG2021041395 for radiated.
Standard(s)	:	FCC CFR Title 47, Part 15, Subpart C
~ /		FCC KDB 558074 D01 15.247 Meas Guidance v05r02
		ANSI C63.10-2013

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

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Declaration

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The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective. Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.



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REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	May 20, 2021

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 FACILITY

The test facilities used to collect the test data in this report is at the location of No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China BTL's Test Firm Registration Number for FCC: 357015 BTL's Designation Number for FCC: CN1240

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 BTL measurement uncertainty as below table:

A. AC power line conducted emissions test:

Test Site	Method	Measurement Frequency Range	U, (dB)
DG-C02	CISPR	150kHz ~ 30MHz	2.68

B. Radiated emissions test:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)
	CISPR	9kHz ~ 30MHz	-	3.02
		30MHz ~ 200MHz	V	4.26
DG-CB03		30MHz ~ 200MHz	Н	3.38
		200MHz ~ 1,000MHz	V	3.98
		200MHz ~ 1,000MHz	Н	3.94
		1GHz ~ 6GHz	I	3.96
		6GHz ~ 18GHz	I	5.24
		18GHz ~ 26.5GHz	I	3.62
		26.5GHz ~ 40GHz	-	4.00

C. Other Measurement:

Test Item	Uncertainty
Bandwidth	±3.8 %
Maximum Output Power	±0.95 dB
Conducted Spurious Emission	±2.71 dB
Power Spectral Density	±0.86 dB
Temperature	±0.08 °C
Humidity	±1.5%

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	25°C	53%	AC 120V/60Hz	Gerry Zhao
Radiated Emissions-9kHz to 30 MHz	25°C	60%	AC 120V/60Hz	Hayden Chen
Radiated Emissions-30MHz to 1000MHz	26°C	52%	AC 120V/60Hz	Hayden Chen
Radiated Emissions-Above 1000MHz	26°C	52%	AC 120V/60Hz	Hayden Chen
Bandwidth	25°C	52%	DC 5V	Jesse Wang
Maximum Output Power	25°C	52%	DC 5V	Evan Yang
Conducted Spurious Emissions	25°C	52%	DC 5V	Jesse Wang
Power Spectral Density	25°C	52%	DC 5V	Jesse Wang



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	IP Phone
Brand Name	Fanvil
Test Model	X3SW
Series Model	N/A
Model Difference(s)	N/A
Power Source	DC voltage supplied from AC adapter. Manufacturer / Model: FRECOM / F05L5-050100SPAU
Power Rating	I/P: 100-240V~ 50/60Hz 0.2A O/P: 5V === 1A
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 150 Mbps
Maximum Output Power	IEEE 802.11n(HT20): 20.39 dBm (0.1094 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) CH03 - CH09 for IEEE 802.11n(HT40)							
Channel Frequency (MHz) Channel Frequency (MHz) Channel Frequency (MHz) Channel (MHz) Channel (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	P/N	Antenna Type	Connector	Gain (dBi)
	Dongguan YiJia Electronics				
1	Communication Technology	WIFI Antenna	Internal	N/A	3
	Co.,Ltd.				

Note: The antenna gain is provided by the manufacturer.

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 N(HT40) Mode Channel 03/06/09
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		
Final Test Mode Description		
Mode 5 TX N(HT20) Mode Channel 06		

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

Radiated emissions test- Above 1GHz		
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 N(HT40) Mode Channel 03/06/09	

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	
Mode 4	TX N(HT40) Mode Channel 03/06/09	





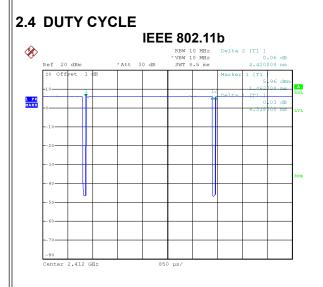
NOTE:

- (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.

2.3 PARAMETERS OF TEST SOFTWARE

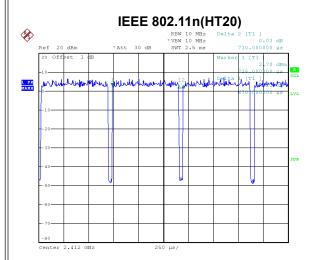
Test Software Version	N/A		
Frequency (MHz)	2412	2437	2462
IEEE 802.11b	-9	-8	-8
IEEE 802.11g	-10	-15	-14
IEEE 802.11n(HT20)	-11	-14	-12
Frequency (MHz)	2422	2437	2452
IEEE 802.11n(HT40)	-10	-16	-13

BIL



Date: 16.MAY.2021 09:27:54

Duty cycle = 4.318 ms / 4.420 ms = 97.69% Duty Factor = 10 log(1/Duty cycle) = 0.10



Date: 16.MAY.2021 09:32:15

Duty cycle = 0.670 ms / 0.710 ms = 94.37% Duty Factor = 10 log(1/Duty cycle) = 0.25

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 232 Hz.

For IEEE 802.11g:

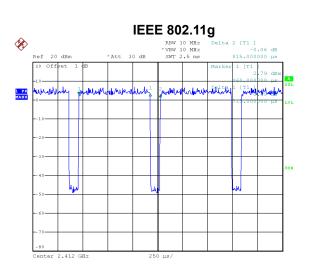
For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 1399 Hz.

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 1493 Hz.

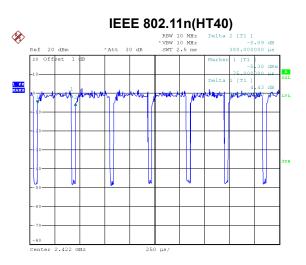
For IEEE 802.11n(HT40):

For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 2941 Hz.



Date: 16.MAY.2021 09:29:19

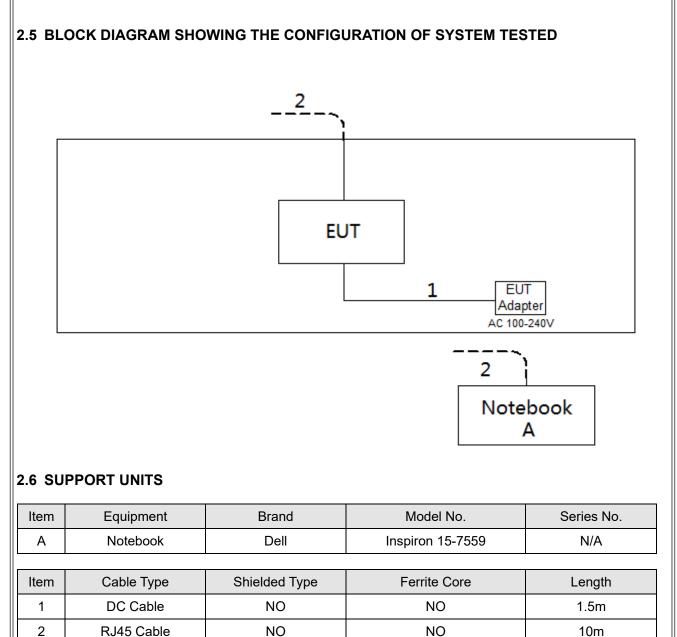
Duty cycle = 0.715 ms / 0.815 ms = 87.73% Duty Factor = 10 log(1/Duty cycle) = 0.57



Date: 16.MAY.2021 09:33:36

Duty cycle = 0.340 ms / 0.380 ms = 89.47% Duty Factor = 10 log(1/Duty cycle) = 0.48







3. AC POWER LINE CONDUCTED EMISSIONS

3.1 LIMIT

Frequency of Emission (MHz)	Limit (d	BμV)
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:

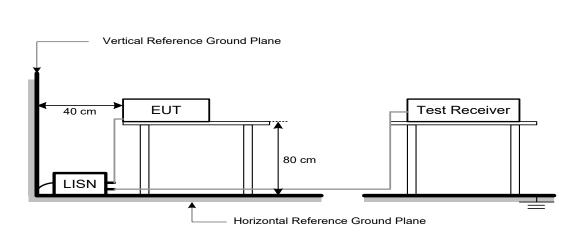
Receiver Parameters	Setting	
Start Frequency	0.15 MHz	
Stop Frequency	30 MHz	
IF Bandwidth	9 kHz	

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) limit in the table below has to be followed.

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

Frequency	Field Strength	Measurement Distance
(MHz)	(microvolts/meter)	(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 (MHz)	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:

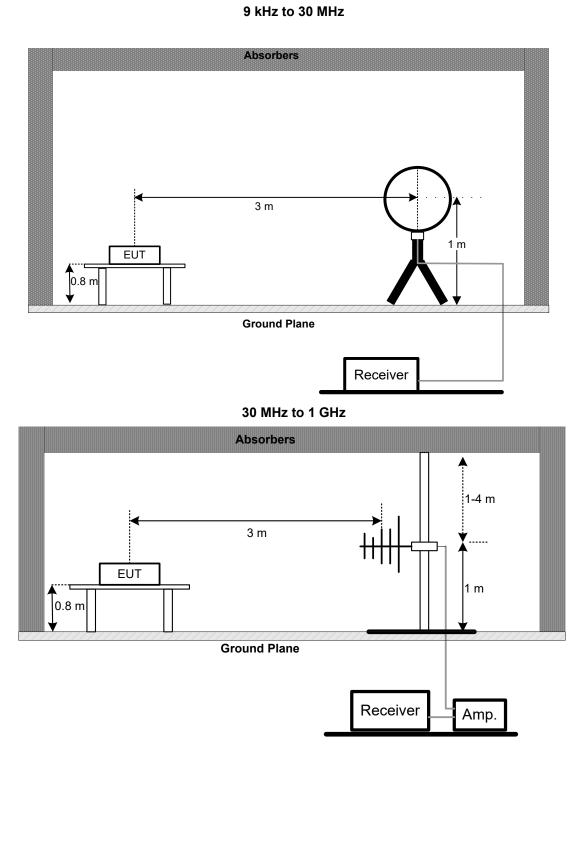
Spectrum Parameters	Setting	
Start ~ Stop Frequency	9 kHz~150 kHz for RBW 200 Hz	
Start ~ Stop Frequency	0.15 MHz~30 MHz for RBW 9 kHz	
Start ~ Stop Frequency	30 MHz~1000 MHz for RBW 100 kHz	
Spectrum Parameters	Setting	
Start Frequency	1000 MHz	
Stop Frequency	10th carrier harmonic	
RBW / VBW	1 MHz / 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.

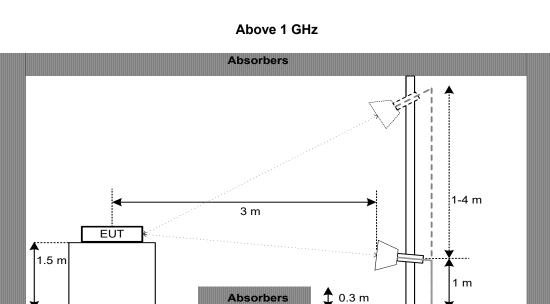
4.4 TEST SETUP





Amp.

BIL



Ground Plane

Receiver



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
FCC 15.247(a)(2)	6 dB Bandwidth	Minimum 500 kHz
	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:

Setting			
> Measurement Bandwidth			
100 kHz			
300 kHz			
Peak			
Max Hold			
Auto			

For 99% Emission Bandwidth:

Spectrum Parameters	Setting				
Span Frequency	Between 1.5 times and 5.0 times the OBW				
RBW	300 kHz For 20MHz 1 MHz For 40MHz				
VBW	1 MHz For 20MHz 3 MHz For 40MHz				
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

6.1 LIMIT

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

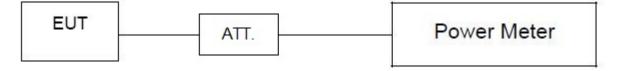
6.2 TEST PROCEDURE

- a. The EUT was directly connected to the power meter and antenna output port as show in the block diagram below.
- b. The maximum conducted output power was performed in accordance with method 11.9.1.3 of ANSI C63.10-2013.

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:

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			

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
	Power Spectral Density	8 dBm
FCC 15.247(e)	Power Spectral Density	(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 (20 MHz) / 60 MHz (40 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

	AC Power Line Conducted Emissions						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until		
1	EMI Test Receiver	R&S	ESCI	100382	Feb. 28, 2022		
2	LISN	EMCO	3816/2	52765	Feb. 27, 2022		
3	TWO-LINE V-NETWORK	R&S	ENV216	101447	Feb. 27, 2022		
4	50Ω Terminator	SHX	TF5-3	15041305	Feb. 27, 2022		
5	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A		
6	Cable	N/A	RG223	12m	Mar. 09, 2022		
7	643 Shield Room	ETS	6*4*3m	N/A	N/A		

	Radiated Emissions - 9 kHz to 30 MHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until	
1	Loop Antenna	EM	EM-6876-1	230	Apr. 28, 2022	
2	Cable	N/A	RG 213/U	N/A	May 29, 2021	
3	EMI Test Receiver	R&S	ESCI	100895	Feb. 27, 2022	
4	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A	
5	966 Chambe Room	RM	9*6*6m	N/A	Jul. 25, 2021	

	Radiated Emissions - 30 MHz to 1 GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until	
1	Antenna	Schwarzbeck	VULB9160	9160-3232	Mar. 15, 2022	
2	Amplifier	HP	8447D	2944A08742	Feb. 28, 2022	
3	Receiver	Agilent	N9038A	MY52130039	Jul. 25, 2021	
4	Cable	emci	LMR-400(30MHz-1 GHz)(8m+5m)	N/A	May 22, 2021	
5	Controller	СТ	SC100	N/A	N/A	
6	Controller	MF	MF-7802	MF780208416	N/A	
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A	
8	966 Chambe Room	RM	9*6*6m	N/A	Jul. 25, 2021	

	Radiated Emissions - Above 1 GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until	
1	Double Ridged Guide Antenna	ETS	3115	75789	May 12, 2021	
2	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Jul. 07, 2021	
3	Amplifier	Agilent	8449B	3008A02584	Jul. 25, 2021	
4	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Feb. 28, 2022	
5	Receiver	Agilent	N9038A	MY52130039	Jul. 25, 2021	
6	Controller	СТ	SC100	N/A	N/A	
7	Controller	MF	MF-7802	MF780208416	N/A	
8	Cable	N/A	EMC104-SM-SM-6 000	N/A	Oct. 16, 2021	
9	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A	
10	Filter	STI	STI15-9912	N/A	Jul. 25, 2021	
11	966 Chambe Room	RM	9*6*6m	N/A	Jul. 25, 2021	



Bandwidth & Conducted Spurious Emissions & Power Spectral Density					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Jul. 25, 2021
2	Attenuator	WOKEN	6SM3502	VAS1214NL	Feb. 07, 2022
3	RF Cable	Tongkaichuan	N/A	N/A	N/A
4	DC Block	Mini	N/A	N/A	N/A

	Maximum Output Power					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until	
1	Peak Power Analyzer	Keysight	8990B	MY51000506	Aug. 07, 2021	
2	Wideband power sensor	Keysight	N1923A	MY58310004	Jul. 25, 2021	
3	Attenuator	WOKEN	6SM3502	VAS1214NL	Feb. 07, 2022	
4	RF Cable	Tongkaichuan	N/A	N/A	N/A	

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

All calibration period of equipment list is one year.



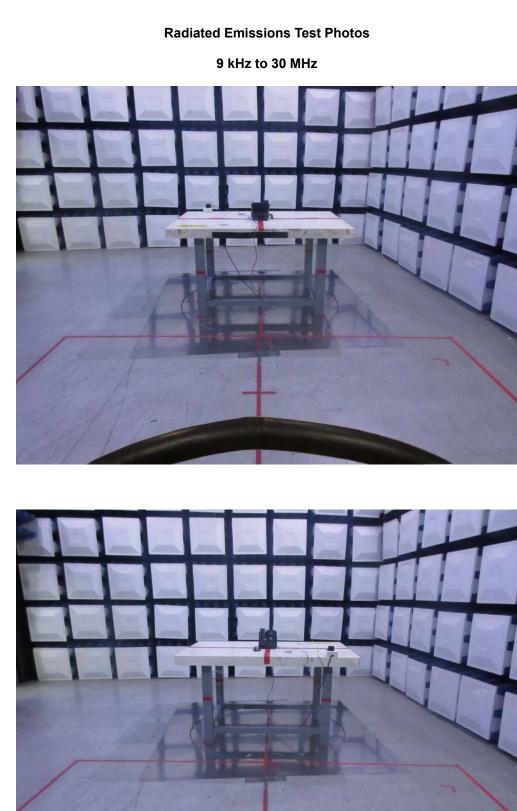
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AC Power Line Conducted Emissions Test Photos











Radiated Emissions Test Photos 30 MHz to 1 GHz





Radiated Emissions Test Photos Above 1 GHz 2 2

DOBREN



Conducted Test Photos

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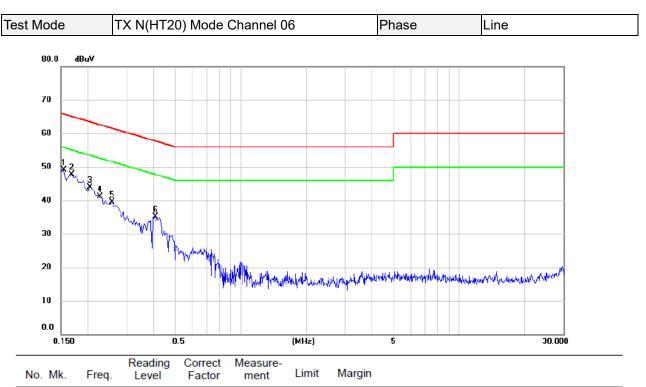






APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS

BIL

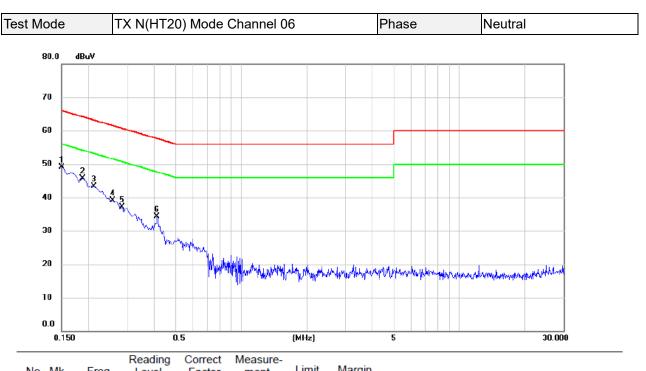


NO. 101.	ricq.	Level	racior	ment				
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1 *	0.1545	39.32	9.70	49.02	65.75	-16.73	peak	
2	0.1685	37.86	9.81	47.67	65.03	-17.36	peak	
3	0.2040	34.06	9.91	43.97	63.45	-19.48	peak	
4	0.2265	31.30	9.89	41.19	62.58	-21.39	peak	
5	0.2580	29.68	9.87	39.55	61.50	-21.95	peak	
6	0.4065	25.23	9.90	35.13	57.72	-22.59	peak	

REMARKS:

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

BIL



	MHz	dBuV	10					
			dB	dBuV	dBuV	dB	Detector	Comment
1 *	0.1500	39.36	9.74	49.10	66.00	-16.90	peak	
2	0.1874	35.78	9.96	45.74	64.15	-18.41	peak	
3	0.2117	33.33	10.00	43.33	63.14	-19.81	peak	
4	0.2580	29.10	9.98	39.08	61.50	-22.42	peak	
5	0.2833	27.20	10.00	37.20	60.72	-23.52	peak	
6	0.4110	24.33	10.07	34.40	57.63	-23.23	peak	

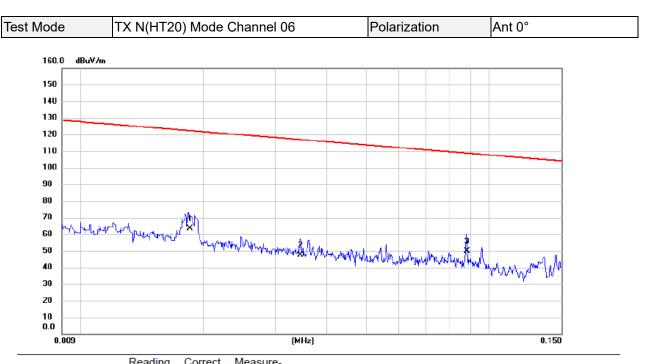
REMARKS:

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



APPENDIX B - RADIATED EMISSION - 9 KHZ TO 30 MHZ



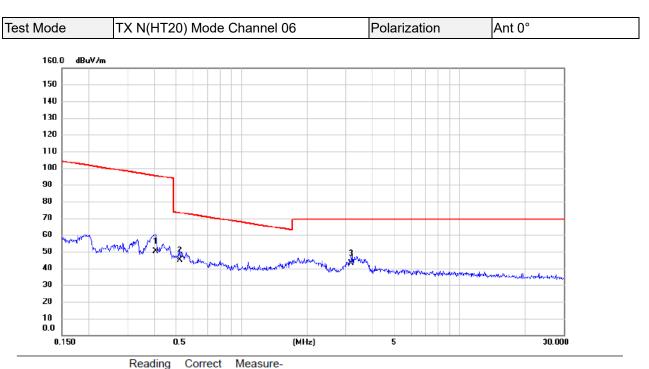


No. Mk.	Freq.			measure-		Margin		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	0.0185	49.91	13.68	63.59	122.26	-58.67	AVG	
2	0.0345	34.70	12.83	47.53	116.85	-69.32	AVG	
3	0.0881	37.25	12.65	49.90	108.71	-58.81	AVG	

REMARKS:

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

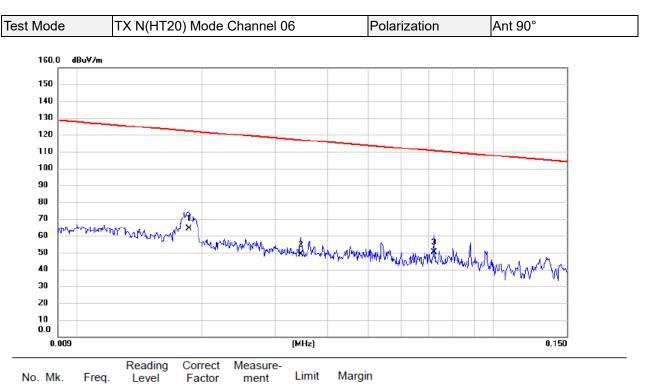




No. Mk.	Freq.	Level	Factor	ment	Limit	Margin		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	0.4040	38.08	12.25	50.33	95.48	-45.15	AVG	
2	0.5210	33.02	12.00	45.02	73.27	-28.25	QP	
3 *	3.1900	32.28	10.83	43.11	69.54	-26.43	QP	

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

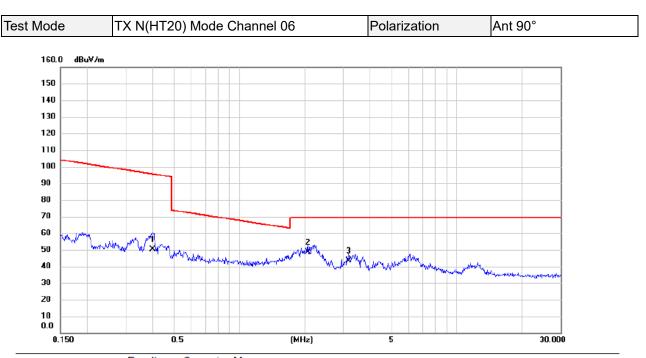




NO. 1018.	ricq.	Level	racior	ment				
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	0.0186	50.36	13.65	64.01	122.21	-58.20	AVG	
2	0.0345	36.36	12.83	49.19	116.85	-67.66	AVG	
3	0.0720	37.71	12.55	50.26	110.46	-60.20	AVG	

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





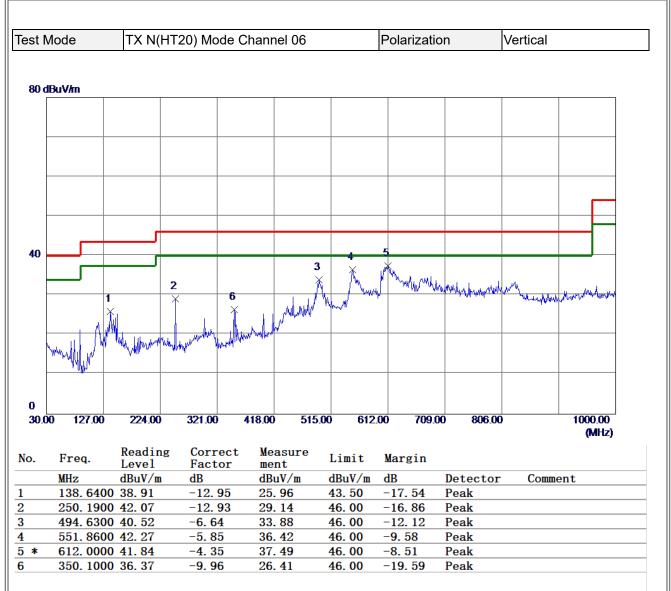
No. Mk.	Freq.	Reading Level		Measure- ment	Limit	Margin		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	0.3997	38.08	12.26	50.34	95.57	-45.23	AVG	
2 *	2.0660	37.25	11.27	48.52	69.54	-21.02	QP	
3	3.1900	32.40	10.83	43.23	69.54	-26.31	QP	

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



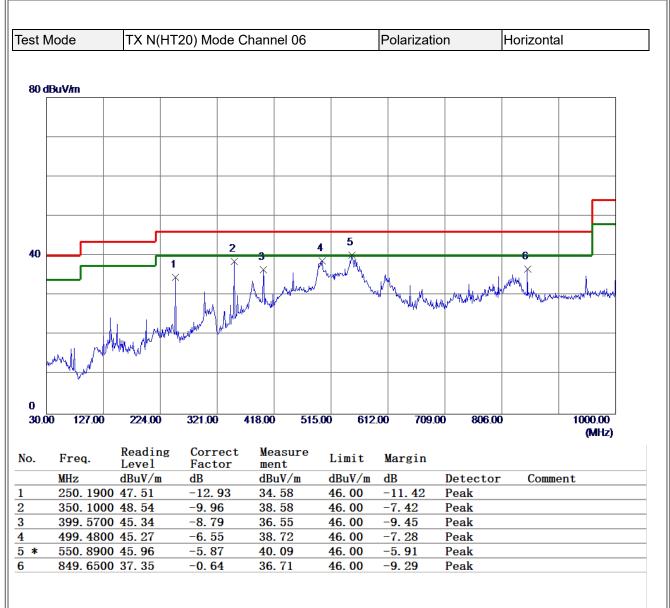
APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 MHZ





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

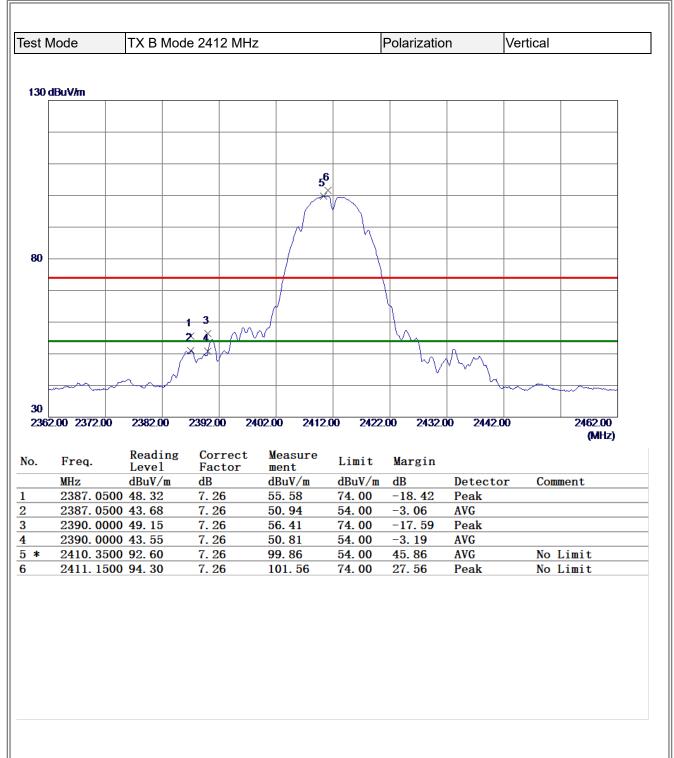




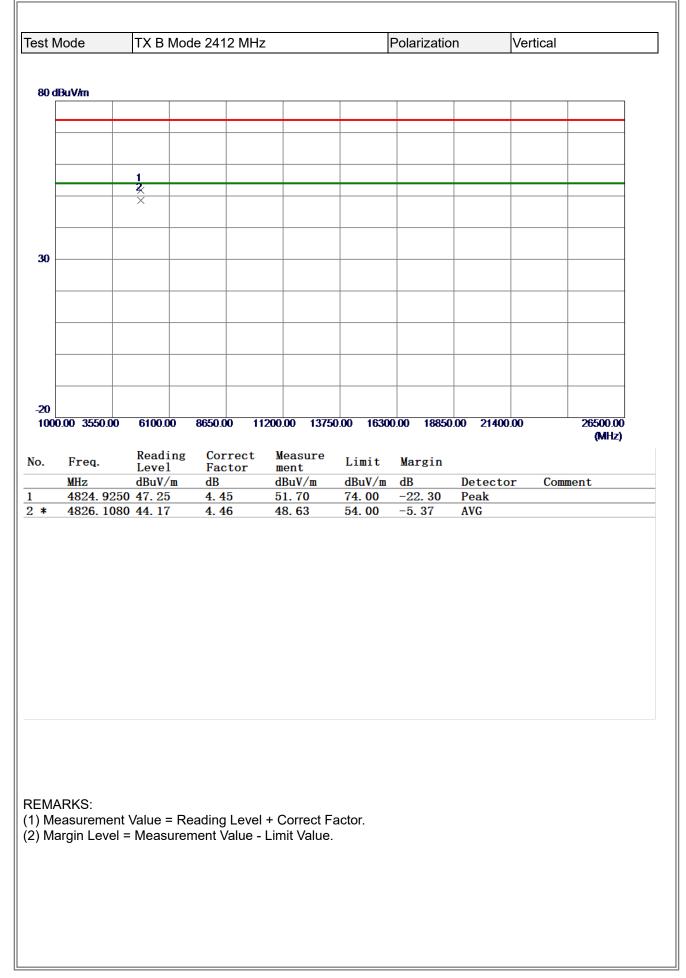
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.

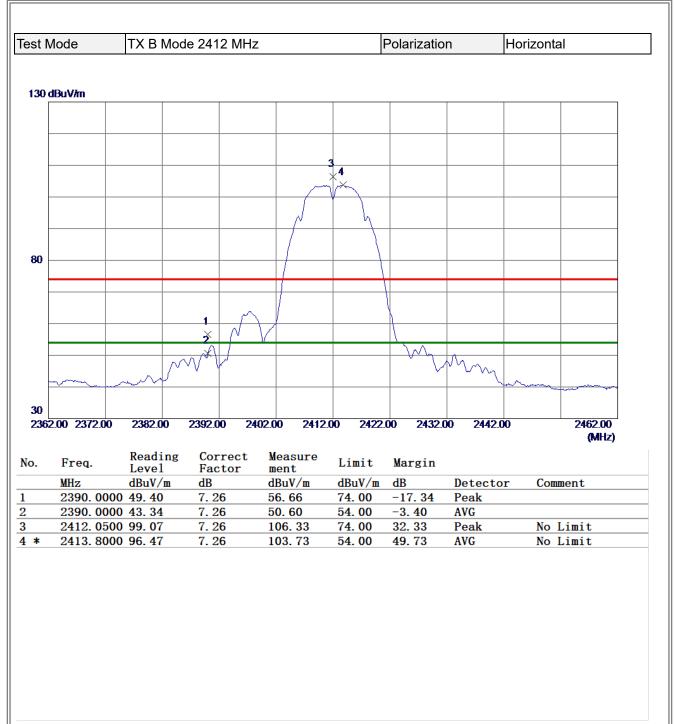


APPENDIX D - RADIATED EMISSION- ABOVE 1000 MHZ



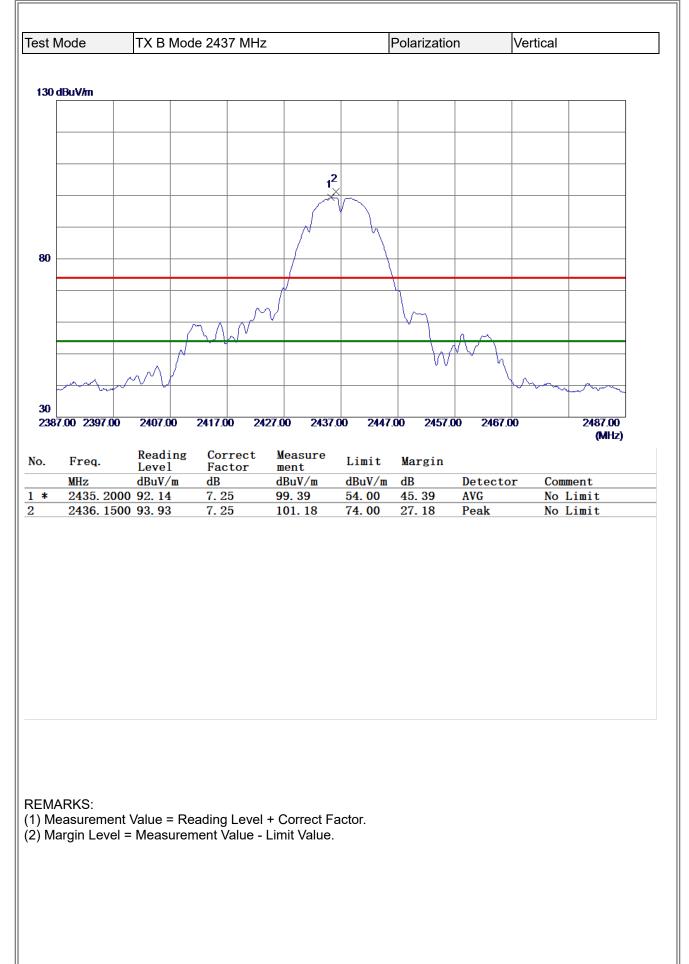
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.

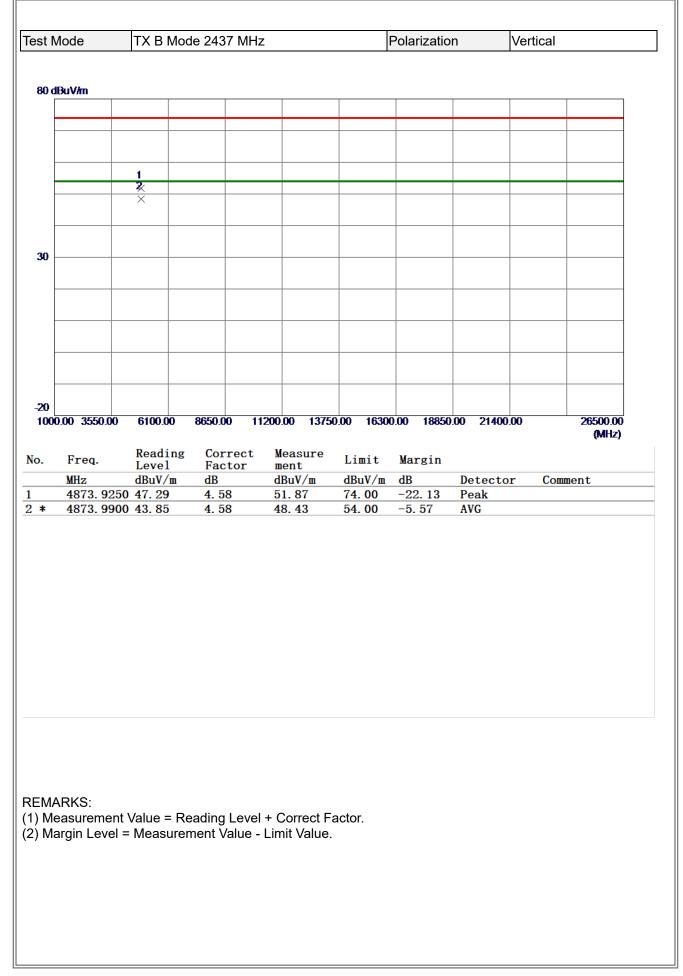


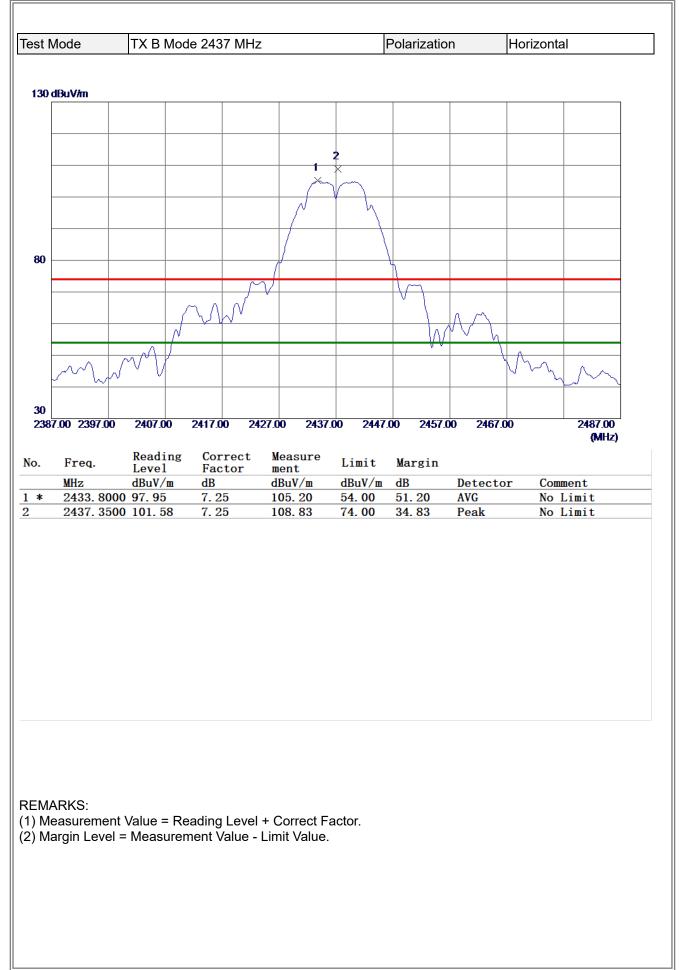


- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.

1621 1	Node	TX B M	ode 2412 M	MHz		Polarizatio	n	Horizont	al
		1.7.8 M				- Clanzato	-		
80.0	lBuV/m								
		2							
		2							
30									
-20	0.00 0550 05	0100 00	0050.00	44000 00	407000 100	0000			
100	0.00 3550.00	6100.00	8650.00	11200.00	13750.00 163	JULUU 18850		100	26500.00 (MHz)
No.	Freq.	Reading	g Corre	ct Meas		Margin			
		Level	Facto			101 8111			
	MHZ	dBuV/m	dB	dBuV	/m dBuV/m	dB	Detecto	or Con	ment
*	MHz 4824.001		dB 4.45	dBuV 50. 9	54.00	-3. 04	Detecto AVG	or Con	ment
*		9 46 . 51			54.00			or Con	ment
1 *	4824.001	9 46 . 51	4.45	50.9	54.00	-3. 04	AVG		

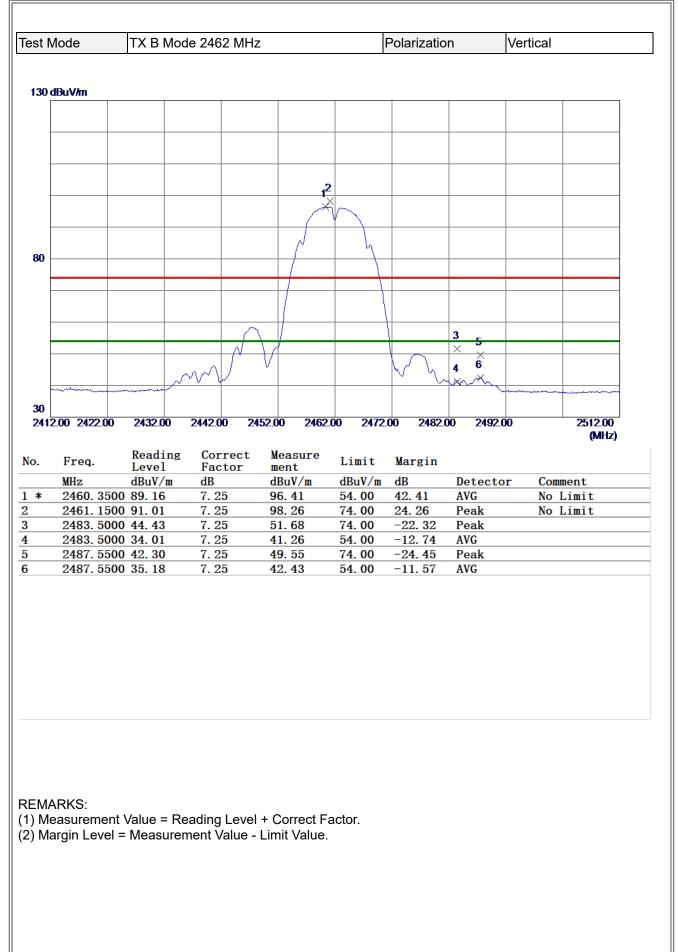


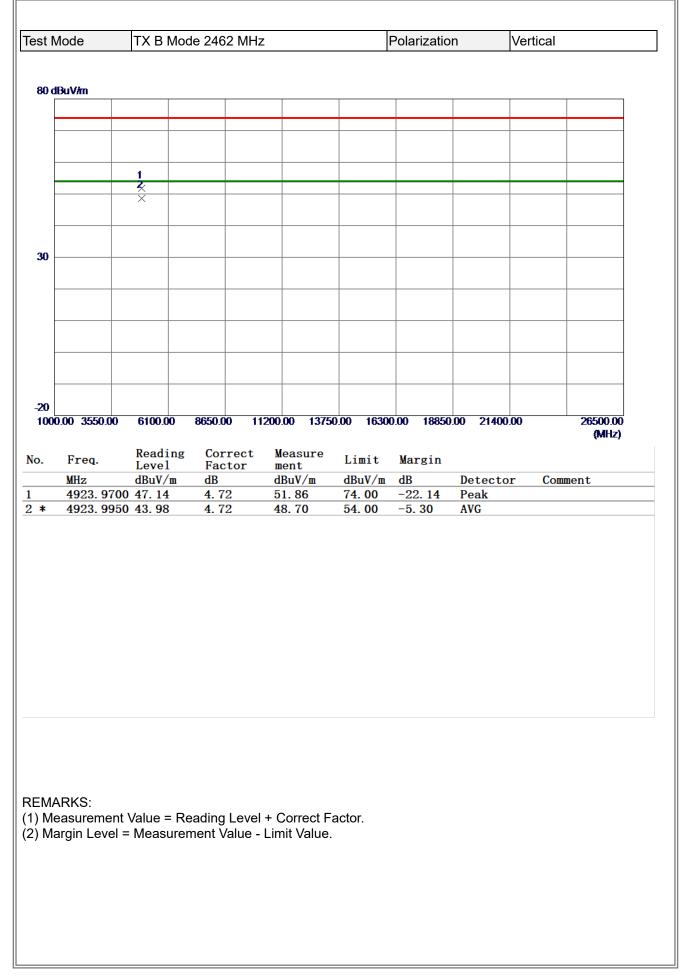


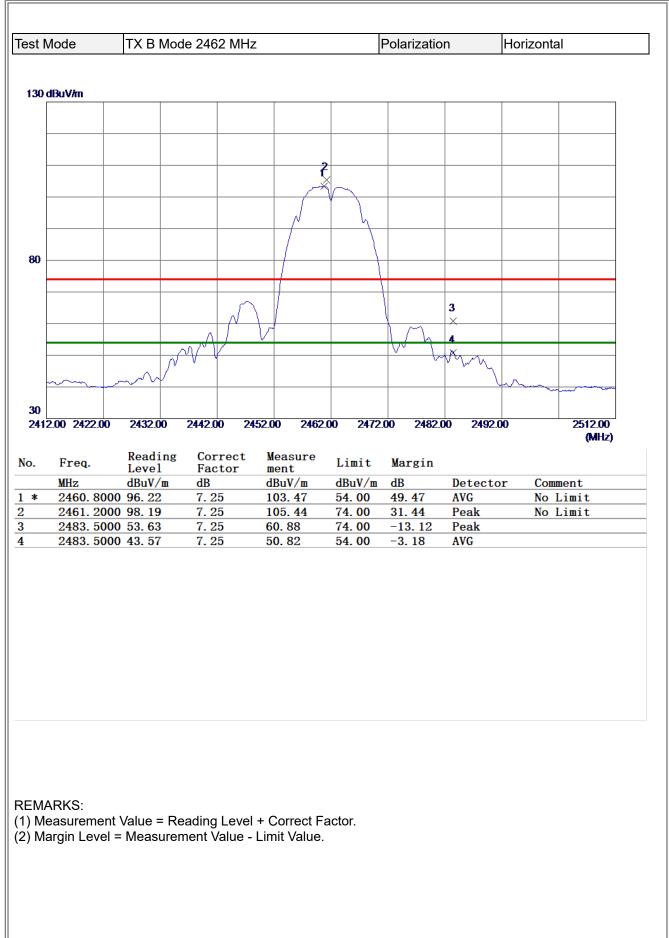


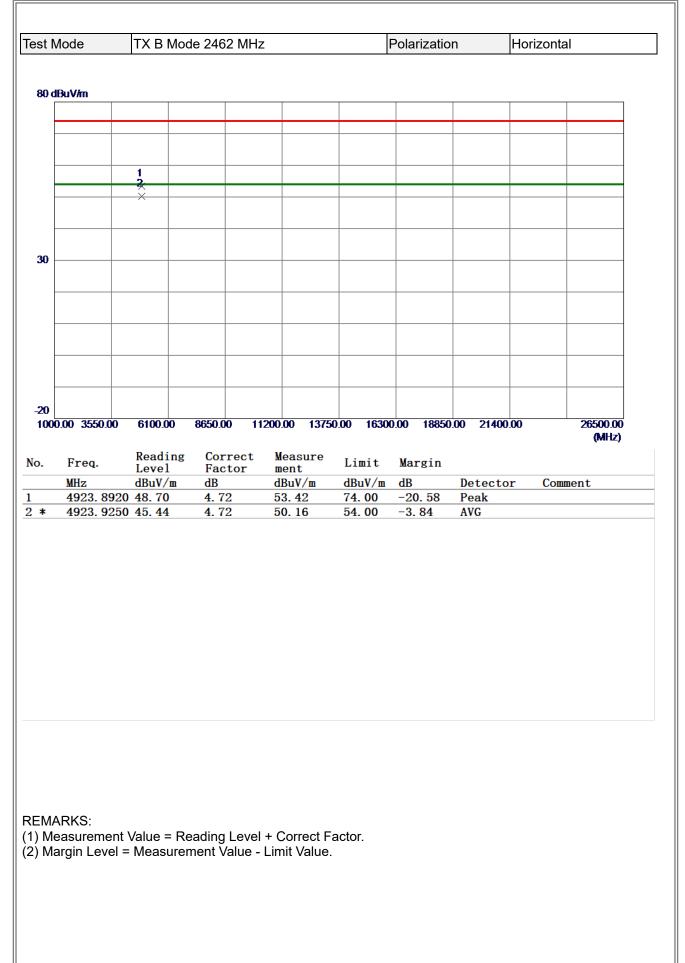
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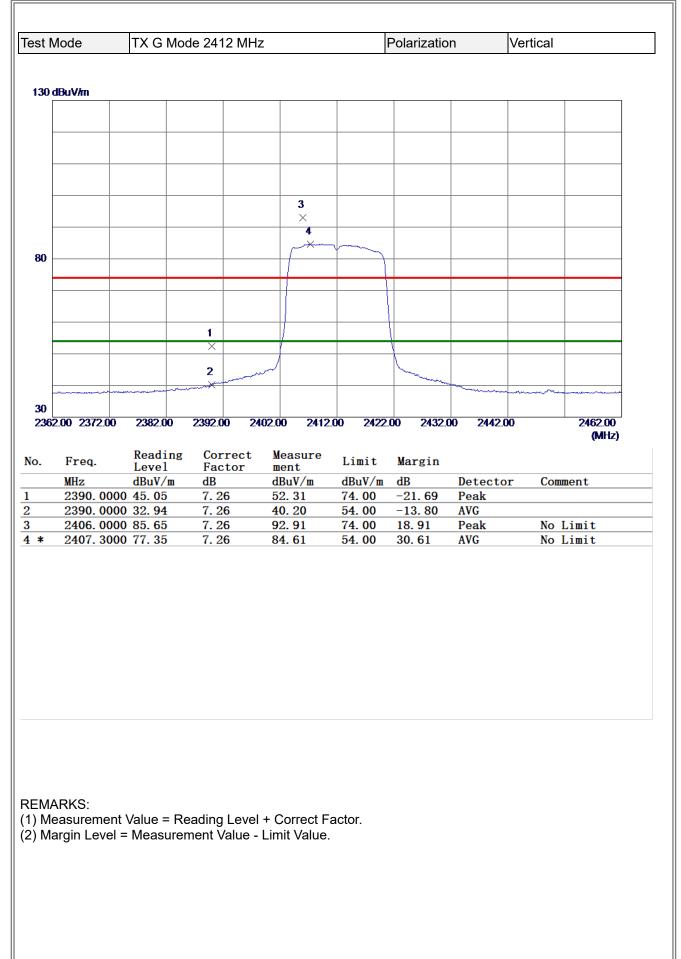
Mode	TX B Mo	de 2437 M	Hz		Polarizatio	n	Horizon	tal
dBuV/m								
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	2 ※							
00.00 3550.0	0 6100.00	8650.00	11200.00 1375	0.00 46300	100 10050	.00 21400	200	26500.00
00.00 3330.0	0 0100.00	0000.00	11200.00 157:	0.00 10300	0.00 10000	2140	.00	20300.00 (MHz)
Frea.	Reading	Correc	t Measure	Limit	Margin			
Freq. MHz	Level	Factor	ment	Limit dBuV/m	Margin dB	Detecto	or Co	mment
MHz 4873.96	Level dBuV/m 670 46.34	Factor dB 4.58	ment dBuV/m 50.92	dBuV/m 54.00	dB −3. 08	Detecto AVG	or Co	mment
MHz 4873.96	Level dBuV/m	Factor dB	ment dBuV/m	dBuV/m	dB		or Co	mment
MHz 4873.96	Level dBuV/m 670 46.34	Factor dB 4.58	ment dBuV/m 50.92	dBuV/m 54.00	dB −3. 08	AVG	or Co	mment
MHz 4873.96	Level dBuV/m 670 46.34	Factor dB 4.58	ment dBuV/m 50.92	dBuV/m 54.00	dB −3. 08	AVG	or Co	mment
MHz 4873.96	Level dBuV/m 670 46.34	Factor dB 4.58	ment dBuV/m 50.92	dBuV/m 54.00	dB −3. 08	AVG	or Co	mment
MHz 4873.96	Level dBuV/m 670 46.34	Factor dB 4.58	ment dBuV/m 50.92	dBuV/m 54.00	dB −3. 08	AVG	or Co	mment
MHz 4873.96 4874.04	Level dBuV/m 670 46.34	Factor dB 4.58	ment dBuV/m 50.92	dBuV/m 54.00	dB −3. 08	AVG	or Co	mment
MHz 4873.96 4874.04	Level <u>dBuV/m</u> 570 46. 34 400 47. 88 nt Value = R	Factor dB 4.58 4.58	ment dBuV/m 50. 92 52. 46	<u>dBuV/m</u> 54.00 74.00	dB −3. 08	AVG	or Co	mment
MHz 4873.96 4874.04	Level <u>dBuV/m</u> 570 46. 34 400 47. 88 nt Value = R	Factor dB 4.58 4.58	ment dBuV/m 50.92 52.46	<u>dBuV/m</u> 54.00 74.00	dB −3. 08	AVG	or Co	mment
MHz 4873.96 4874.04	Level <u>dBuV/m</u> 570 46. 34 400 47. 88 nt Value = R	Factor dB 4.58 4.58	ment dBuV/m 50. 92 52. 46	<u>dBuV/m</u> 54.00 74.00	dB −3. 08	AVG	or Co	mment
MHz 4873.96 4874.04	Level <u>dBuV/m</u> 570 46. 34 400 47. 88 nt Value = R	Factor dB 4.58 4.58	ment dBuV/m 50. 92 52. 46	<u>dBuV/m</u> 54.00 74.00	dB −3. 08	AVG	or Co	mment





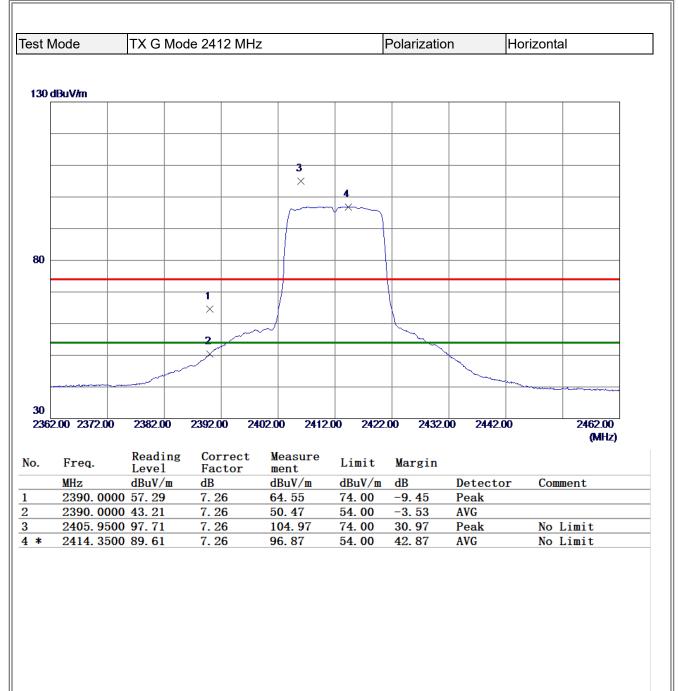






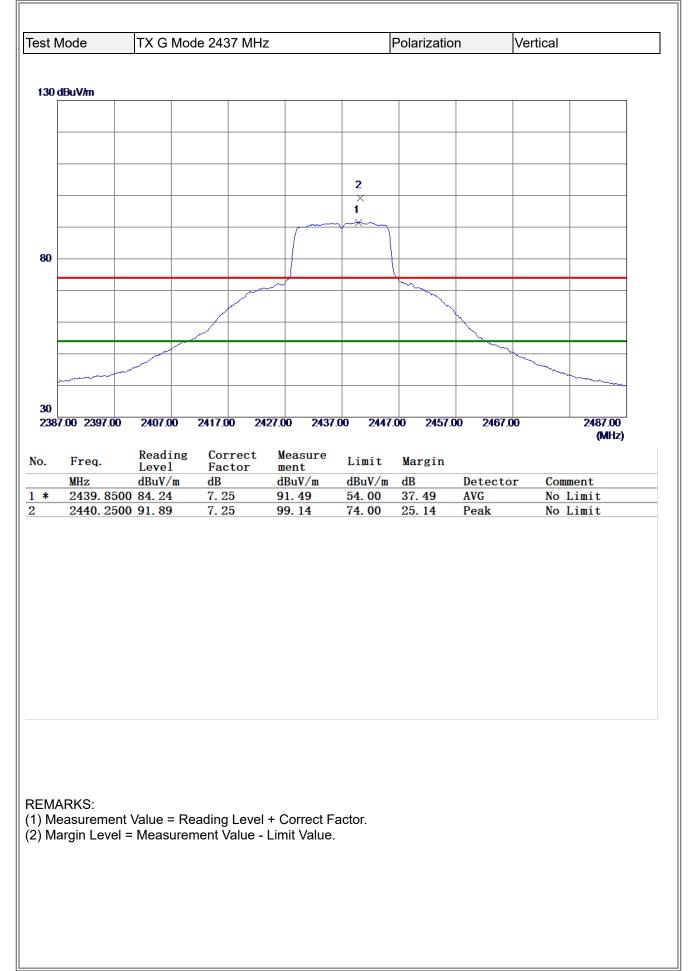
BTL

		de 2412 MH	Z		Polarizatio	on	Vertical	
dBuV/m								_
	2 ×							
	1							
	×							
00.00 3550	00 00000	0050.00	4000 00 4075	0.00 4030	0.00 40054	00 0440	0.00	26500.00
00.00 3330	.00 6100.00	8650.00 1	1200.00 1375	J.UU 1030	0.00 10650	J.UU 2140	0.00	2000.00 (MHz)
Freq.	Reading	Correct	Measure	Limit	Margin			
MHz	Level dBuV/m	Factor dB	ment dBuV/m	dBuV/m		Detect	or Cor	ment
4825.2	2670 28.68	4. 45	33.13			AVG		
				54.00	-20.87			
4825.3	3200 39.61	4. 45	44. 06	54.00 74.00	-20. 87 -29. 94	Peak		
4825. 3								



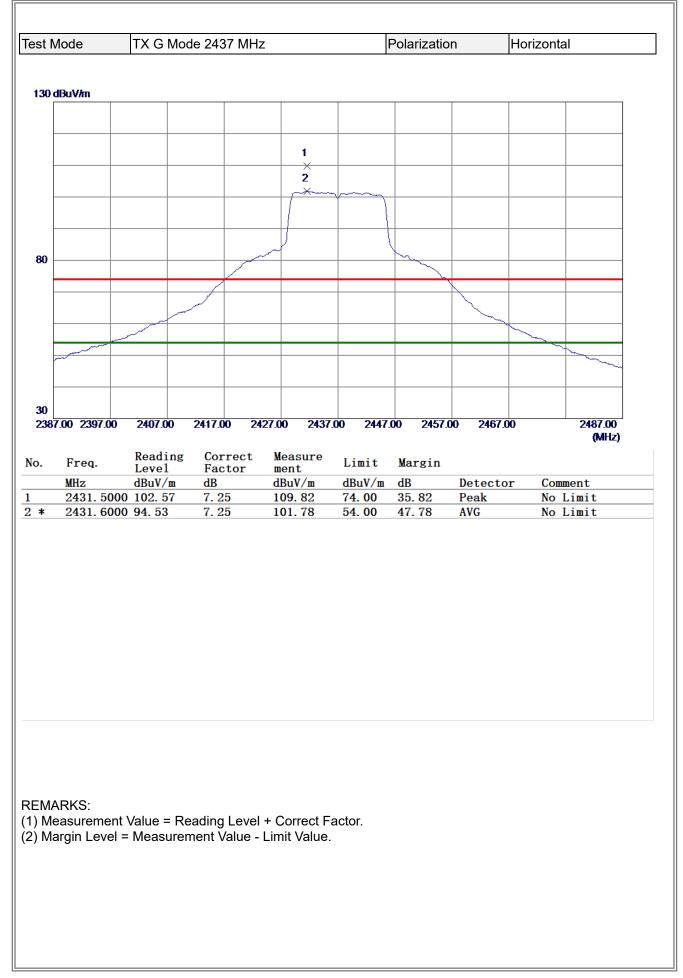
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.

	TX G M	ode 2412 M	Hz		Polarizatio	n	Horizont	al
) dBuV/m								
	2 ×							
	1							
	×							
1								
00.00 3550	.00 6100.00	8650.00	11200.00 1375	0.00 1630	0.00 18850	0.00 21400).00	26500.00 (MHz)
Freq.	Reading	g Correct		Limit	Margin			
MHz	Level dBuV/m	Factor dB	ment dBuV/m	dBuV/m		Detecto	or Com	ment
4823. 2	2350 28.71	4.45	33.16	54.00	-20.84	AVG		
4825. 5	5570 40.45	4.45	44. 90	74.00	-29.10	Peak		



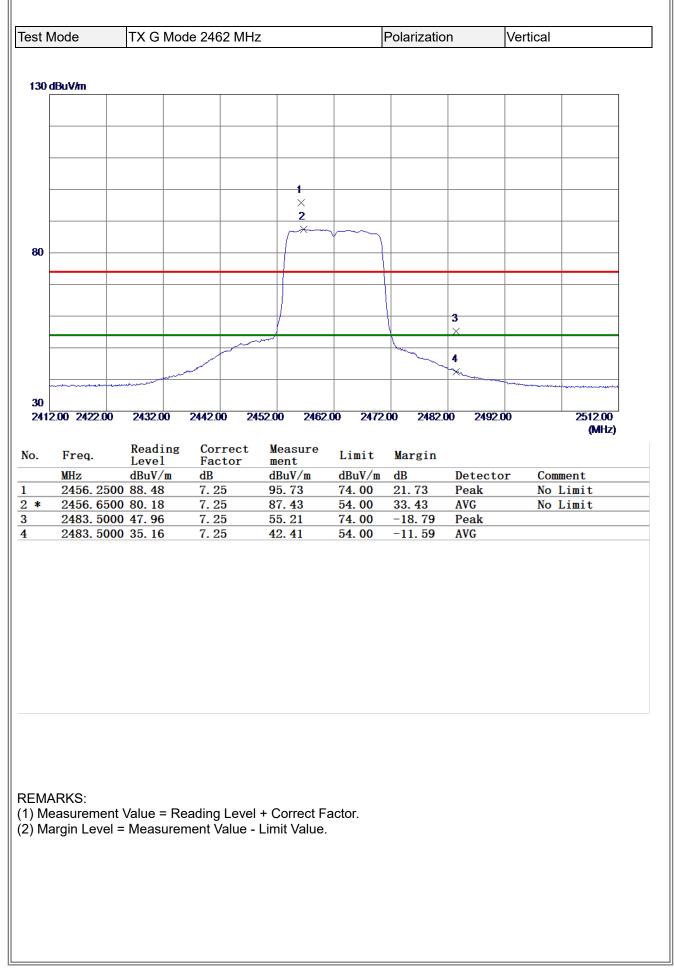
BTL

MHz dBuV/m dB dBuV/m dBuV/m dB Detector Comment * 4874.0330 39.57 4.58 44.15 54.00 -9.85 AVG	est M	lode	TX G M	lode 243	7 MHz			Polarizatio	n	Vertical	
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30 1 X Image: Constraint of the state of the sta											
X X Image: Contract Measure ment Limit Margin MHz dBuV/m dB dBuV/m dB Detector Comment											
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20	30										
MHz Buv/m B											
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MHz dBuV/m dB dBuV/m dB UV/m dB V/m dB <											
MHz Buv/m B											
1000.00 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 (MHz) p. Freq. Reading Level Correct Factor Measure ment Limit Margin MHz dBuV/m dB dBuV/m dBuV/m dB Detector Comment * 4874.0330 39.57 4.58 44.15 54.00 -9.85 AVG	-										
MHz dBuV/m dB dBuV/m dB dBuV/m dB Devent Comment * 4874.0330 39.57 4.58 44.15 54.00 -9.85 AVG											
MHz dBuV/m dB dBuV/m dB UV/m dB V/m dB M/m dB											
(MHz) Reading Level Correct Factor Measure ment Limit Margin MHz dBuV/m dB dBuV/m dBuV/m dB Detector Comment * 4874.0330 39.57 4.58 44.15 54.00 -9.85 AVG		00 2550.00	6100.00	9650 00) 1120	0 00 1275	0.00 1620	0.00 19950	00 2140	2.00	26500.00
MHz Level Factor ment Limit Margin MHz dBuV/m dB dBuV/m dBuV/m dB Detector Comment * 4874.0330 39.57 4.58 44.15 54.00 -9.85 AVG	1000		0100.00	00.00.00	<i>i</i> 1120	0.00 1513	0.00 1050	0.00 10000	.00 2140	5.00	
MHz dBuV/m dB dBuV/m dBuV/m dB Detector Comment * 4874.0330 39.57 4.58 44.15 54.00 -9.85 AVG											
* 4874. 0330 39. 57 4. 58 44. 15 54. 00 -9. 85 AVG).	Freq.	Readin	g Corr	rect		Limit	Margin			
4874. 9430 50. 32 4. 59 54. 91 74. 00 -19. 09 Peak).		Level	Fac	tor	ment			Detecto	or Co	mment
		MHz 4874.033	Level dBuV/m 30 39.57	Fac dB 4. 58	tor 3	ment dBuV/m 44.15	dBuV/m 54.00	dB -9.85	AVG	or Co	mment
	*	MHz 4874.033	Level dBuV/m 30 39.57	Fac dB 4. 58	tor 3	ment dBuV/m 44.15	dBuV/m 54.00	dB -9.85	AVG	or Co	mment
		MHz 4874.033	Level dBuV/m 30 39.57	Fac dB 4. 58	tor 3	ment dBuV/m 44.15	dBuV/m 54.00	dB -9.85	AVG	or Co	mment
	*	MHz 4874.033	Level dBuV/m 30 39.57	Fac dB 4. 58	tor 3	ment dBuV/m 44.15	dBuV/m 54.00	dB -9.85	AVG	or Co	mment
	*	MHz 4874.033	Level dBuV/m 30 39.57	Fac dB 4. 58	tor 3	ment dBuV/m 44.15	dBuV/m 54.00	dB -9.85	AVG	or Co	mment
	* ====================================	MHz 4874.03 4874.94	Leve1 dBuV/m 30 39.57 30 50.32	Fac dB 4. 58 4. 59	tor 3	ment dBuV/m 44.15 54.91	dBuV/m 54.00 74.00	dB -9.85	AVG	or Co	mment
) Measurement Value = Reading Level + Correct Factor.	* EMA	MHz 4874.03 4874.94	Leve1 dBuV/m 30 39. 57 30 50. 32	Fac dB 4. 58 4. 59	Level +	ment dBuV/m 44. 15 54. 91	<u>dBuV/m</u> 54.00 74.00	dB -9.85	AVG	or Co	mment
EMARKS:) Measurement Value = Reading Level + Correct Factor.) Margin Level = Measurement Value - Limit Value.) Me	MHz 4874.03 4874.94	Leve1 dBuV/m 30 39. 57 30 50. 32	Fac dB 4. 58 4. 59	Level +	ment dBuV/m 44. 15 54. 91	<u>dBuV/m</u> 54.00 74.00	dB -9.85	AVG	or Co	mment
) Measurement Value = Reading Level + Correct Factor.	* EMA	MHz 4874.03 4874.94	Leve1 dBuV/m 30 39. 57 30 50. 32	Fac dB 4. 58 4. 59	Level +	ment dBuV/m 44. 15 54. 91	<u>dBuV/m</u> 54.00 74.00	dB -9.85	AVG	or Co	mment
) Measurement Value = Reading Level + Correct Factor.	* EMA	MHz 4874.03 4874.94	Leve1 dBuV/m 30 39. 57 30 50. 32	Fac dB 4. 58 4. 59	Level +	ment dBuV/m 44. 15 54. 91	<u>dBuV/m</u> 54.00 74.00	dB -9.85	AVG	or Co	mment
) Measurement Value = Reading Level + Correct Factor.	* EMA	MHz 4874.03 4874.94	Leve1 dBuV/m 30 39. 57 30 50. 32	Fac dB 4. 58 4. 59	Level +	ment dBuV/m 44. 15 54. 91	<u>dBuV/m</u> 54.00 74.00	dB -9.85	AVG	or Co	mment
Measurement Value = Reading Level + Correct Factor.	*	MHz 4874.03 4874.94	Leve1 dBuV/m 30 39. 57 30 50. 32	Fac dB 4. 58 4. 59	Level +	ment dBuV/m 44. 15 54. 91	<u>dBuV/m</u> 54.00 74.00	dB -9.85	AVG	or Co	mment
Measurement Value = Reading Level + Correct Factor.	* MA Me	MHz 4874.03 4874.94	Leve1 dBuV/m 30 39. 57 30 50. 32	Fac dB 4. 58 4. 59	Level +	ment dBuV/m 44. 15 54. 91	<u>dBuV/m</u> 54.00 74.00	dB -9.85	AVG	or Co	mment



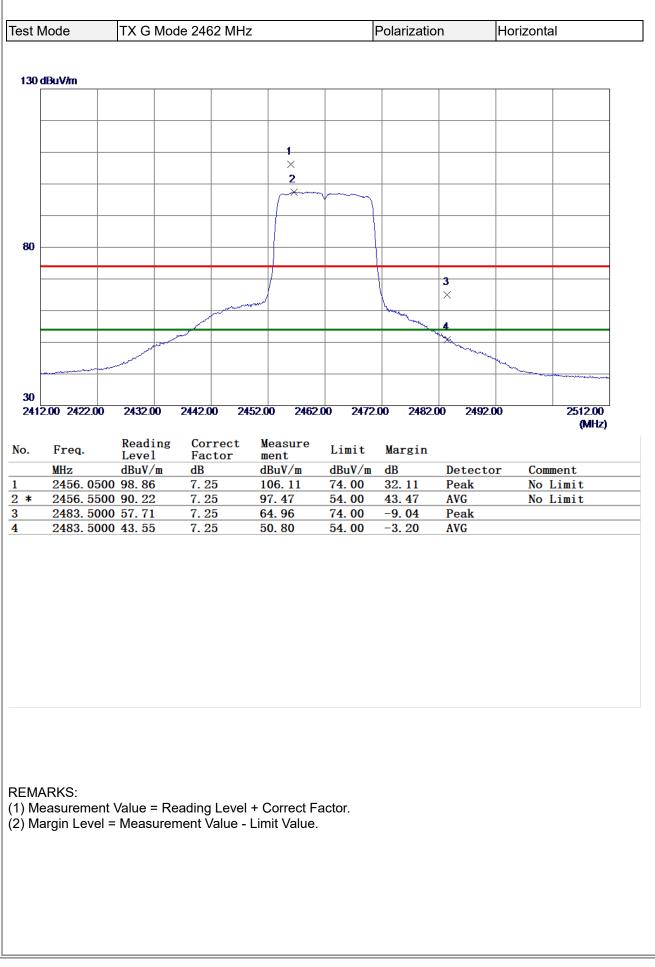
BTL

	lode	TX G Mo	de 2437 MI	Ηz		Polarizatio	n	Horizonta	I
10 d	BuV/m								
ŀ		1							
ŀ									
		2 ×							
-									
io									
+									
20									
	0.00 3550.00	6100.00	8650.00	11200.00 1375	0.00 1630	0.00 18850	0.00 21400).00	26500.00 (MHz)
	Freq.	Reading	Correct		Limit	Margin			
	MHz	Level dBuV/m	Factor dB	ment dBuV/m	dBuV/m		Detecto	or Com	nent
	4872.993	0 50.65	4. 58	55.23	74.00	-18.77	Peak		
*	4873.873	0 39.17	4. 58	43.75	54.00	-10. 25	AVG		



BTL

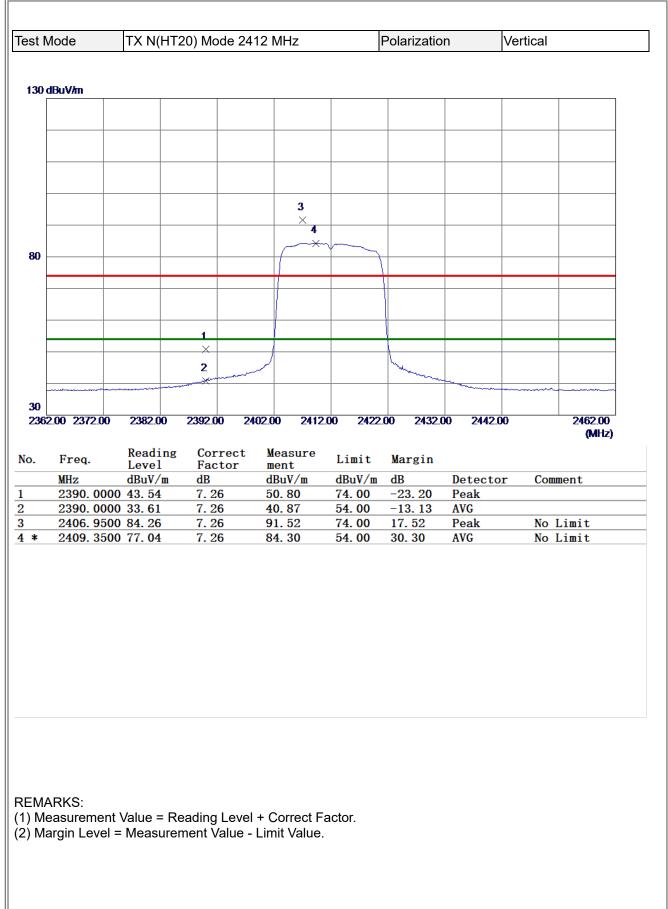
0 dBuV/m					
2 ×					
2 ×					
		1			
, 100.00 3550.00 6100.1	.00 8650.00 112	200.00 13750.00	16300.00 1885	0.00 21400.00	26500.00
D 1					(MHz)
Freq. Read Leve	1 Factor	шепс	mit Margin		
MHz dBuV/ 4923. 5730 39. 94			uV/m dB 00 -29.34	Detector Peak	Comment
4924. 2750 29. 03			00 -29.34	AVG	



BTL

	Node	TX G Mo	ode 2462 MH	lz		Polarizatio	on	Horizon	tal
80 c	lBuV/m								
		1							
		×							
		2							
30		×							
-20	0.00. 0550.01	0400.00	0050.00	4000.00 4075	00 4000	0.00 40051			00500.02
100	0.00 3550.00) 6100.00	8650.00 1	1200.00 1375	1030	0.00 18850	1.00 21400	00.00	26500.00 (MHz)
).	Freq.	Reading	Correct		Limit	Margin			
	MHz	Level dBuV/m	Factor dB	ment dBuV/m	dBuV/m		Detecto	or Cor	mment
		50 40. 14	4. 71	44. 85	74.00	-29.15	Peak	01 00	
*	4925.05	00 28.88	4.72	33.60	F 4 00				
				33.00	54.00	-20. 40	AVG		
				33.00	<u>54. 00</u>	-20. 40	AVG		

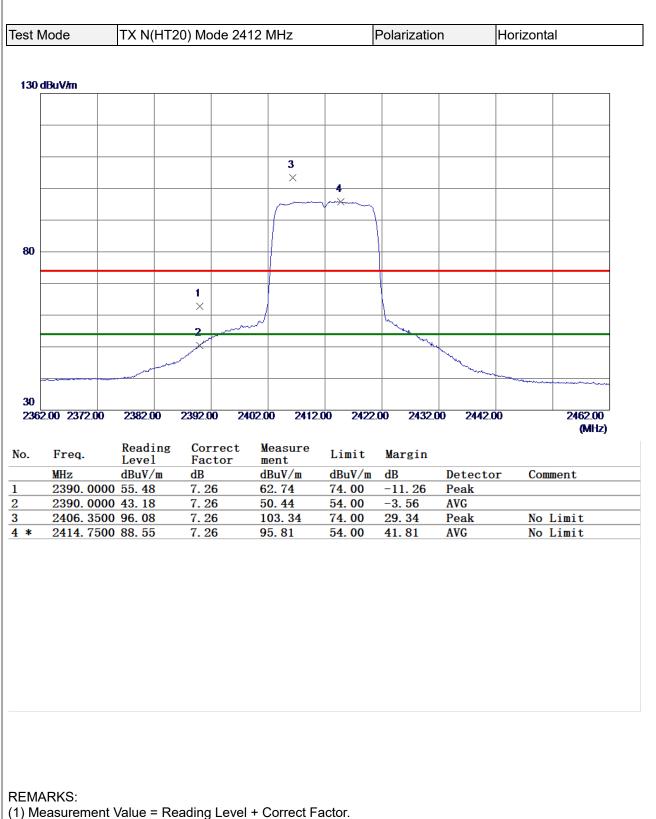






	lode	TX N(H	T20) Mc	de 241	2 MHz		Polarizatio	n	Vertical	
0 d	BuV/m									
+										
		2								
		×								
		1								
0		×								
ŀ										
+										
ŀ										
0										
	0.00 3550.00	6100.00	8650.0	0 112	200.00 1375	0.00 1630	0.00 18850	.00 21400	00.00	26500.00
		Readin	a Cor	rect	Measure					(MHz)
	Freq.	Level	Fac	tor	measure	Limit	Margin			
	MHz 4823-262	$\frac{\text{dBuV/m}}{0.28.69}$		5	dBuV/m	dBuV/m 54.00	dB -20.86	Detecto	or Con	ment
<u>k</u>	MHz 4823.262 4824.501	0 28.69	dB 4.4 4.4			dBuV/m 54.00 74.00	dB -20. 86 -29. 46	Detecto AVG Peak	or Con	nment
<u>د</u>	4823.262	0 28.69	4.4		dBuV/m 33.14	54.00	-20.86	AVG	or Con	nment
	4823.262	0 28.69	4.4		dBuV/m 33.14	54.00	-20.86	AVG	or Con	ment
-	4823.262	0 28.69	4.4		dBuV/m 33.14	54.00	-20.86	AVG	or Con	ment
	4823. 262 4824. 501	0 28.69	4.4		dBuV/m 33.14	54.00	-20.86	AVG	or Con	ment
MA	4823. 262 4824. 501	0 28. 69 9 40. 09	4. 4 4. 4	5 Level -	dBuV/m 33.14	54.00 74.00	-20.86	AVG	or Con	ment
MA	4823. 262 4824. 501	0 28. 69 9 40. 09	4. 4 4. 4	5 Level -	dBuV/m 33. 14 44. 54 + Correct Fa	54.00 74.00	-20.86	AVG		
MA	4823. 262 4824. 501	0 28. 69 9 40. 09	4. 4 4. 4	5 Level -	dBuV/m 33. 14 44. 54 + Correct Fa	54.00 74.00	-20.86	AVG	or Con	



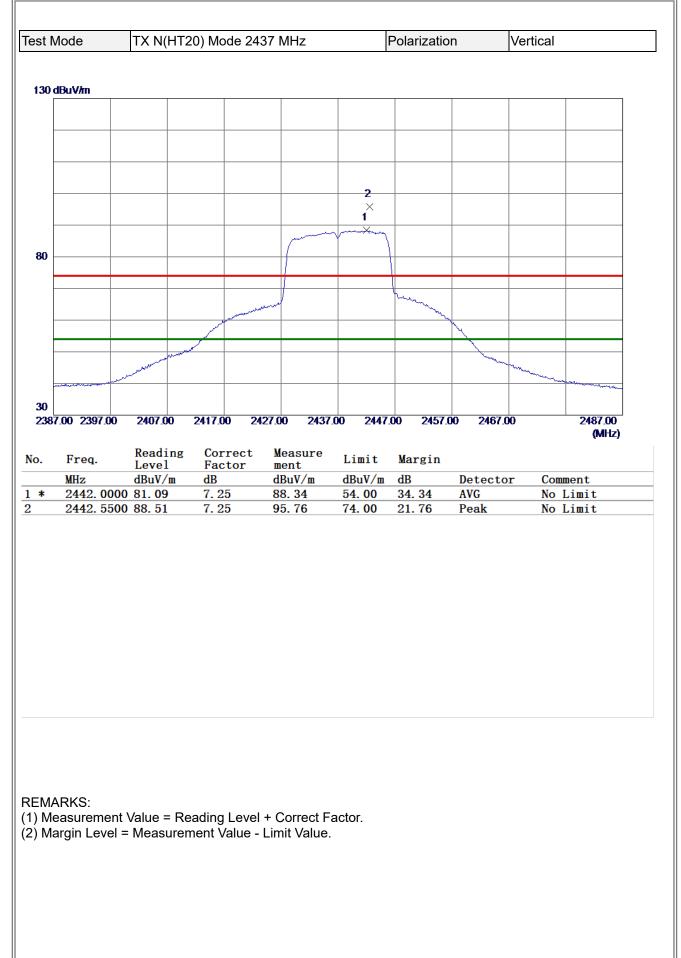


(2) Margin Level = Measurement Value - Limit Value.



est Mode		TX N(HT20) Mode 2412 MHz				Polarization		Horizontal	
0 d	lBuV/m						1		
		2 ×							
		1							
io i		×							
U									
20									
	0.00 3550.00	0 6100.00	8650.00 1	1200.00 1375	0.00 1630	0.00 18850	0.00 2140).00	26500.00 (MHz)
	Freq.	Reading Level	Correct		Limit	Margin			
	MHz	dBuV/m	Factor dB	ment dBuV/m	dBuV/m		Detecto	or Com	ment
*	4825.39	80 28.74	4.45	33.19	54.00	-20.81	AVG		
	4826 06								
	1020.00	30 40. 23	4. 46	44. 69	74.00	-29. 31	Peak		
		30 40.23	4. 46	44. 69	74.00	-29. 31	Peak		

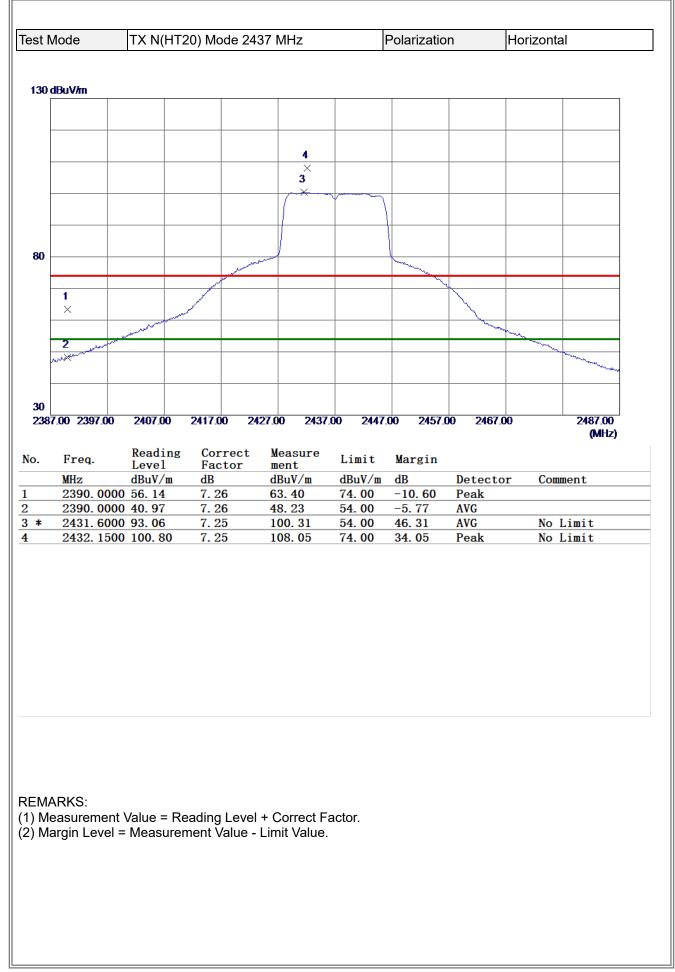






	IX N(HI	20) Mode 24	437 MHz		Polarizatio	n	Vertical	
dBuV/m						1	1	1
	1 ×							
	2							
	×							
0.00 3550	.00 6100.00	8650.00 1	1200.00 1375	0 00 1630	0.00 18850	00 21400	00	26500.00
								(MHz)
Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin			
			шепс					
MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detecto	or Co	mment
4873. 5	dBuV/m 5950 49.71	dB 4. 58	dBuV/m 54. 29	dBuV/m 74.00	-19.71	Detecto Peak	or Co	mment
4873. 5							or Cor	nment
4873. 5	5950 49.71	4. 58	54.29	74.00	-19.71	Peak	or Cor	nment

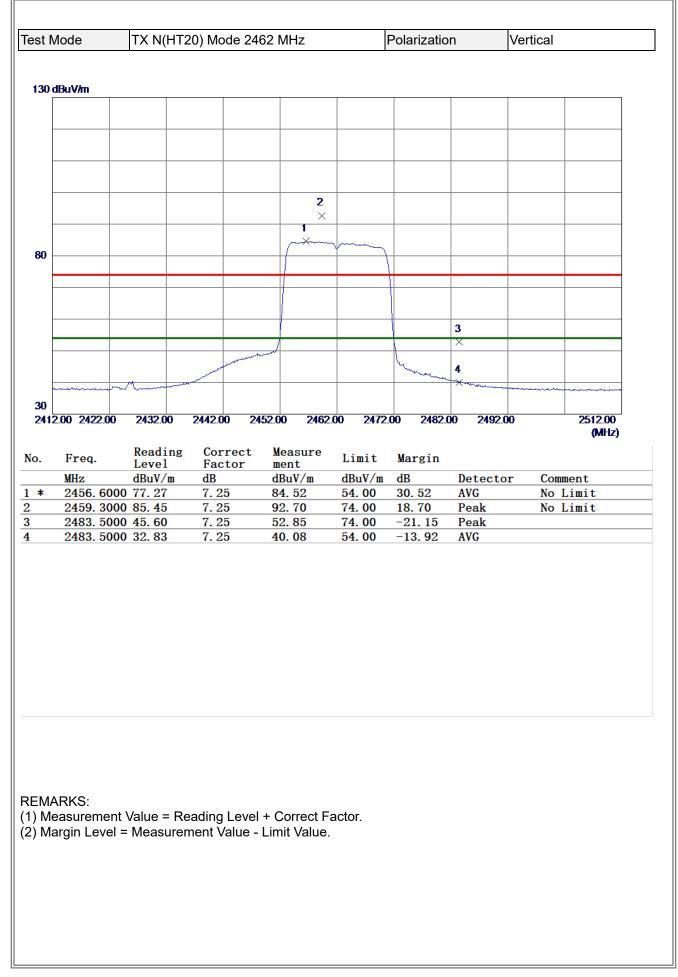






t Mode	TX N(HT	20) Mode 2	2437 MHz		Polarizatio	n	Horizoi	ntal
0 dBuV/m								
	2 ×							
30								
20								
1000.00 3550.	00 6100.00	8650.00	11200.00 1375	0.00 1630	0.00 18850	.00 21400	0.00	26500.00
								(MHz)
P	Reading	Correct						
o. Freq.	Lovol	Factor		Limit	Margin			
MHz	Level dBuV/m	Factor	t Measure ment dBuV/m			Detecto	or Co	omment
MHz * 4873.8	Leve1 dBuV/m 450 39.37	Factor dB 4.58	ment dBuV/m 43.95	dBuV/m 54.00	dB -10. 05	Detecto AVG	or Co	omment
MHz * 4873.8	Level dBuV/m	Factor dB	ment dBuV/m	dBuV/m	dB		or Co	omment
MHz * 4873.8	Leve1 dBuV/m 450 39.37	Factor dB 4.58	ment dBuV/m 43.95	dBuV/m 54.00	dB -10. 05	AVG	or Co	omment

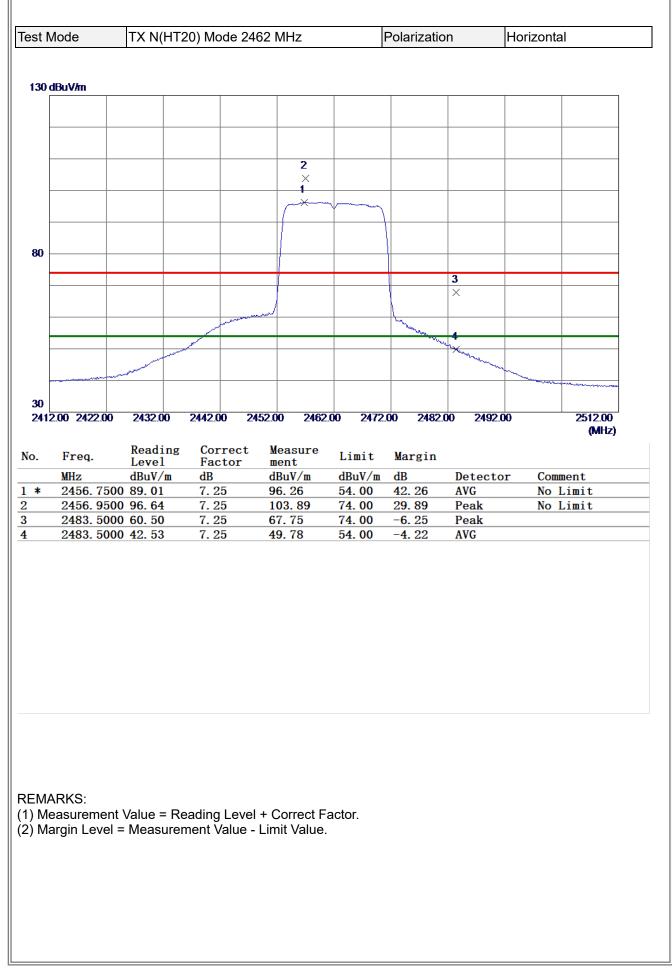






st Moo	de	TX N(HT	20) Mode 2	462 MHz		Polarizatio	n	Vertical	
30 dBu\	V/m								
		2 ×							
		1 ×							
30									
-									
20									
	3550.00	6100.00	8650.00	11200.00 1375	0.00 1630	0.00 18850	0.00 21400	0.00	26500.00 (MHz)
	Trog	Reading	Correct		Limit	Margin			
	Freq.	Level	Factor	ment	Limit	Margin	Detect		
M	Hz	Level dBuV/m	Factor dB	ment dBuV/m	dBuV/m	dB	Detecto	or Con	ment
M * 4		Level dBuV/m 0 28.94	Factor	ment			Detecto AVG Peak	or Con	ment
M * 4	(Hz 1922. 215	Level dBuV/m 0 28.94	Factor dB 4.71	ment dBuV/m 33.65	dBuV/m 54.00	dB -20. 35	AVG	or Con	ment







t Mod	е	TX N(H	T20) M	ode 24	462 MHz		Polarizatio	on	Horizo	ntal
0 dBuV/	łm									
		1 ×								
		2								
		×								
0										
_										
000.00	3550.00	6100.00	8650.	00 1	1200.00	13750.00 163	18850	00 21400	00	26500.00
000.00		0100.00			1200.00			2110		(MHz)
. Fı		Readin	0							
	rea		ig Col	rrect		re Limit	Margin			
	req.	Level	Fac	rrect ctor	ment			Detecto		ommont
MH	łz	Level dBuV/m	Fac dB	ctor	ment dBuV/	m dBuV/	n dB	Detecto Peak	or C	omment
MH 49		Level dBuV/m 39.58	Fac	ctor 71	ment	<u>m dBuV/1</u> 74.00	n dB -29.71		or C	omment
MH 49	lz)23. 0800	Level dBuV/m 39.58	Fac dB 4.7	ctor 71	ment dBuV/ 44.29	<u>m dBuV/1</u> 74.00	n dB -29.71	Peak	or C	omment

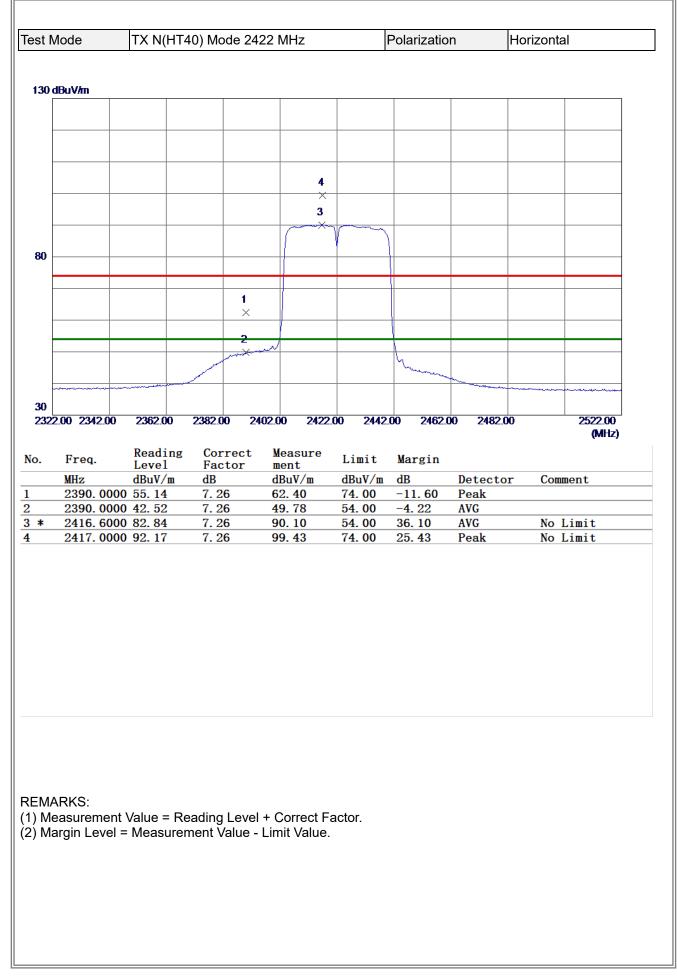


est l	Mode	TX N(HT	40) Mode 24	22 MHz		Polarizatio	n	Vertical	
130	dBuV/m								
				4					
				× 3					
80					7~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				
			1 X						
			2						
			man and the second the	~		human			
30									
232	2.00 2342.00	2362.00	2382.00 24	102.00 2422	2.00 2442	00 2462.0	00 2482.	00	2522.00
		Deediee	Comment	W					(MHz)
о.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin			
	MHz	dBuV/m	dB	dBuV/m	dBuV/m		Detecto	or Com	ient
	2390.000 2390.000		7.26	51. 41 41. 14	74.00 54.00	-22. 59 -12. 86	Peak AVG		
*	2410. 900	0 71.93	7.26	79.19	54.00	25. 19	AVG		.imit
	2411. 700	0 80.97	7.26	88.23	74.00	14.23	Peak	No I	.imit



		[40) Mode 24	22 MHz		Polarizatio	n	Vertical	
dBuV/m						1		
	1							
	×							
	2 ×							
0.00 3550	.00 6100.00	8650.00 1	1200.00 13750	0.00 1630	0.00 18850	0.00 21400	0.00	26500.00 (MHz)
Freq.	Reading	Correct	Measure	Limit	Margin			
MHz	Level dBuV/m	Factor dB	ment dBuV/m	dBuV/m		Detecto	or Com	nent
	5450 39.89		44. 39					
10101	5100 55.05	4.50	44. 59	74.00	-29.61	Peak		
	3630 29.07	4. 50	33. 58	74.00 54.00	-29.61 -20.42	Peak AVG		

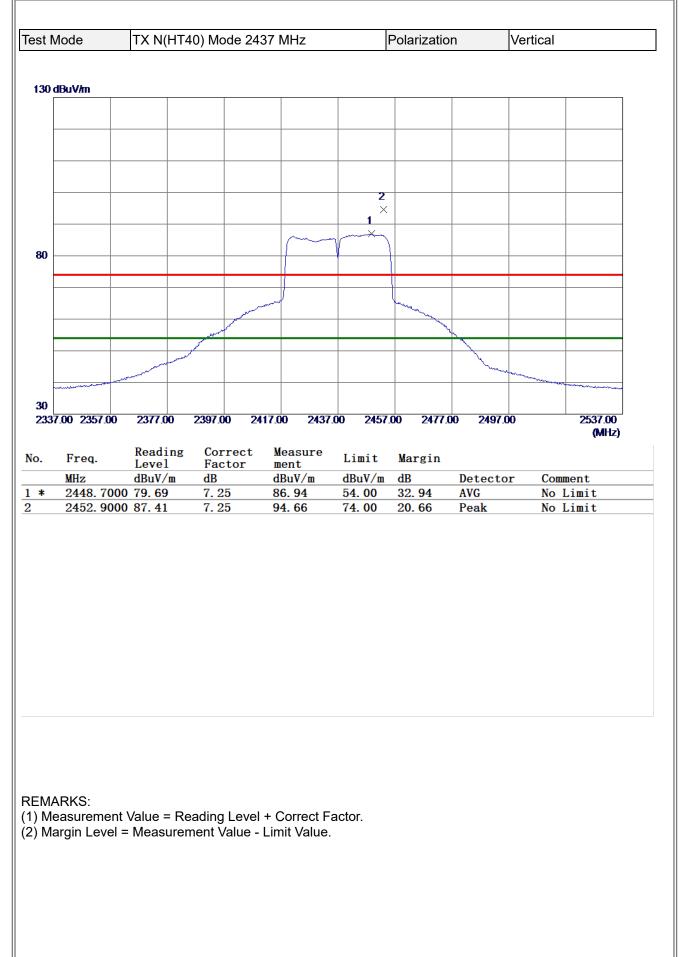






20 000.00 3550.00 6100. Road) 11200.00 1					
1 2 × 2 × 00.00 3550.00 6100. Freq. Read Leve	.00 8650.00						
X 2 X 00.00 3550.00 6100 Freq. Read Leve	.00 8650.00						
× 2 × 00.00 3550.00 6100. Freq. Read Leve	.00 8650.00						
2 2 × 00.00 3550.00 6100. Freq. Read Leve	.00 8650.00						
X 2 X 00.00 3550.00 6100. Freq. Read Leve	.00 8650.00						
× 2 × 0	.00 8650.00						
0 × 2 × 0 × 0 × 0 × 0 × 0 × 0 × 0 × 0 ×	.00 8650.00						
2 × × × × × × × × × × × × × × × × × × ×	.00 8650.00						
0 × × • • • • • • • • • • • • • • • • •	.00 8650.00						
0 000.00 3550.00 6100 . Freq. Read Leve	.00 8650.00						
00 <mark>0.00 3550.00 6100.</mark> . Freq. Read Leve	.00 8650.00) 11200 00 1					
000.00 3550.00 6100. Freq. Read	.00 8650.00) 11200 00 1					
. Freq. Read	.00 8650.00) 11200.00 1					
000.00 3550.00 6100. . Freq. Read Leve	.00 8650.00	11200 00 1					
00 <mark>0.00 3550.00 6100.</mark> . Freq. Read Leve	.00 8650.00) 11200.00 1					
000.00 3550.00 6100. . Freq. Read Leve	.00 8650.00) 11200.00 1					
000.00 3550.00 6100. . Freq. Read Leve	.00 8650.00) 11200.00 1					
00 <mark>0.00 3550.00 6100.</mark> . Freq. Read Leve	.00 8650.00	11200.00 1					
. Freq. Read Leve	.00 0000.00		3750.00 1630	0 00 19950	0.00 21400	00	26500.00
Leve		7 11200.00 1	13130.00 1030	JU.UU 10050	.00 21400		(MHz)
Leve	ling Corr	rect Measu	re Limit	Margin			
					Detecto		mmont
4845.8350 40.0		dBuV/1 44.55	n <u>dBuV/m</u> 74.00	dB -29.45	Detecto Peak	or co	omment
* 4846. 2270 29. 0			54.00	-20.46	AVG		

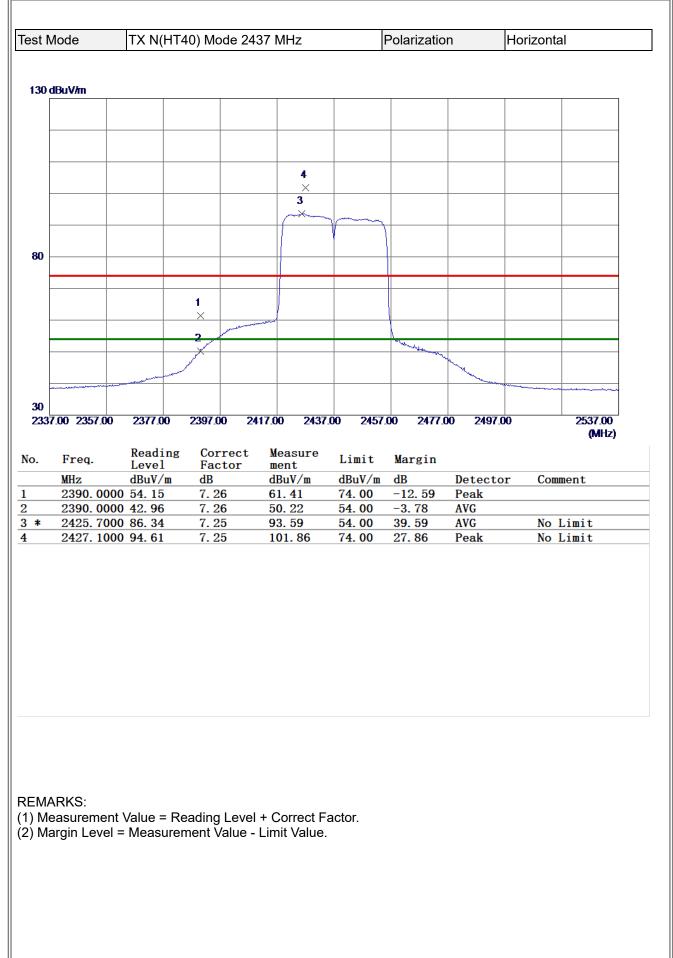






	IX N(H	T40) Mode 2	2437 MHz		Polarizatio	n	Vertical	
dBuV/m						1		
	1							
	X							
	2							
	×							
0.00 3550.	00 6100.00	8650.00	11200.00 1375	0.00 1630	0.00 18850	0.00 2140	0.00	26500.00
								(MHz)
Freq.	Reading Level	g Correct		Limit	Margin			
			mont		Margin			
MHz		Factor dB				Detecto	or Co	ment
	dBuV/m 820 41.58	dB 4. 58	dBuV/m 46.16	dBuV/m 74.00	dB -27.84	Detecto Peak	or Coi	nment
4873.6	dBuV/m	dB	dBuV/m	dBuV/m	dB		or Co	nment
4873.6	dBuV/m 820 41.58	dB 4. 58	dBuV/m 46.16	dBuV/m 74.00	dB -27. 84	Peak	or Cor	ment

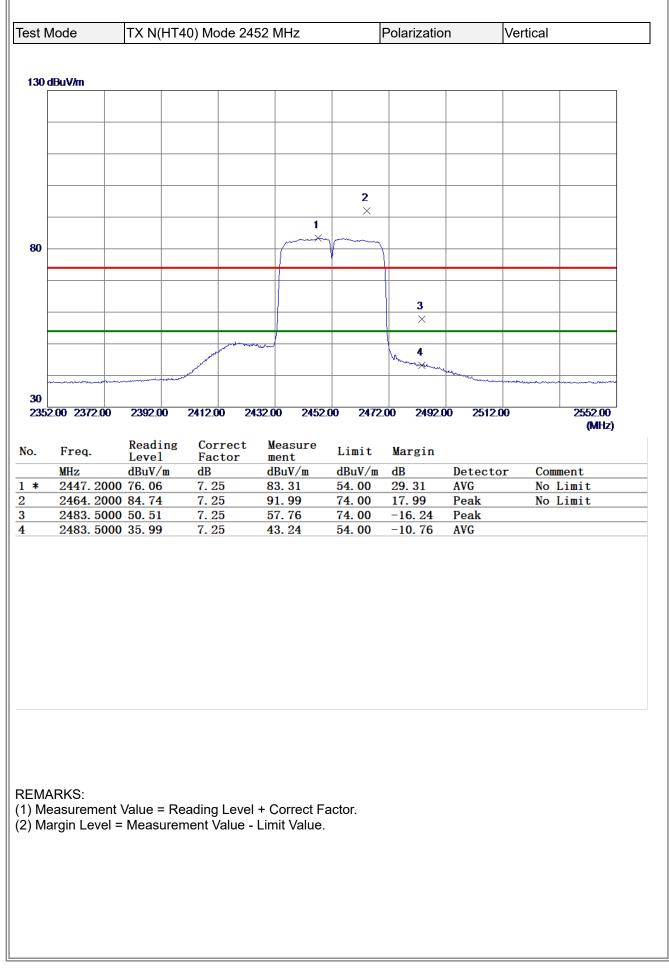






t Mode	TX N(H	T40) Mod	e 2437 MHz		Polarizatio	n	Horizon	tal
) dBuV/m								
	2							
	2 ×							
	1							
	×							
0								
0								
000.00 3550	.00 6100.00	8650.00	11200.00 137	50.00 1630	0.00 18850	.00 2140	0.00	26500.00
								(MHz)
Freq.	Readin	g Corre	ect Measure	Limit	Margin			
Freq.	Readin Level dBuV/m	Facto	ect Measure pr ment dBuV/m	Limit dBuV/m		Detecto	or Co	mment
MHz 4873.	Level dBuV/m 8420 30.14	Facto dB 4.58	or ment dBuV/m 34.72	dBuV/m 54. 00	dB -19. 28	AVG	or Co	mment
MHz ⊧ 4873.	Level dBuV/m	Factor dB	or ment dBuV/m	dBuV/m	dB		or Co	mment
MHz ⊧ 4873.	Level dBuV/m 8420 30.14	Facto dB 4.58	or ment dBuV/m 34.72	dBuV/m 54. 00	dB -19. 28	AVG	or Co	mment

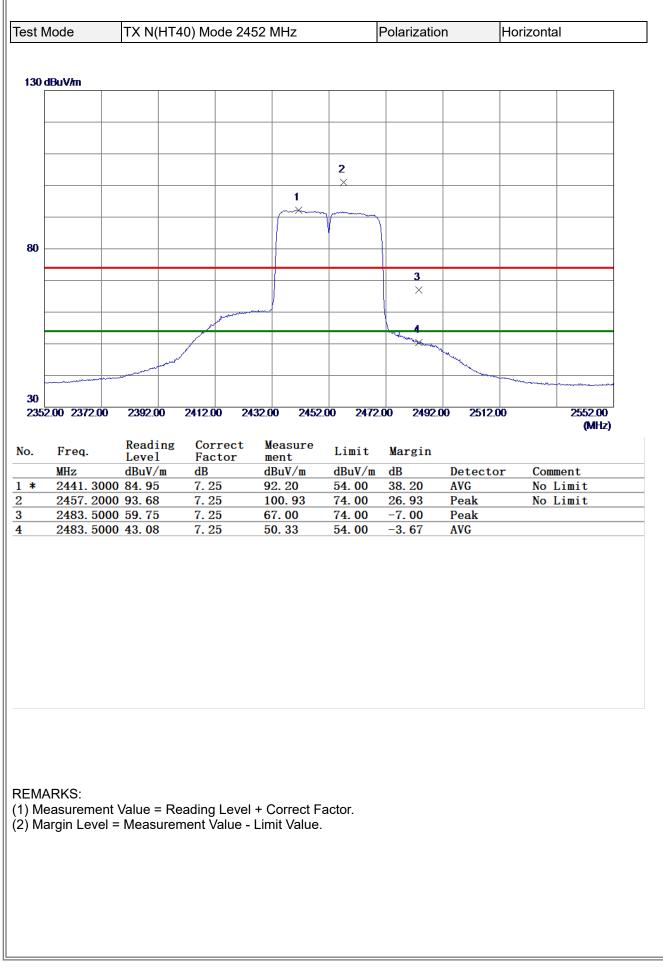
BL





	TX N(H1	「40) Mode 24	52 MHz		Polarizatio	n	Vertical	
dBuV/m	1							
	1							
	X							
	2							
	×							
) 00.00 3550.0	00 6100.00	8650.00 11	1200.00 1375	0.00 1630	0.00 18850	.00 2140	0.00	26500.00
								(MHz)
Freq.	Reading Level	g Correct Factor	Measure	Limit	Margin			
	Level				Margin			
MHz	dBuV/m	dB	ment dBuV/m	dBuV/m		Detect	or Co	ment
4904. 0	dBuV/m 000 39.70	dB 4.66	dBuV/m 44. 36	dBuV/m 74.00	dB -29. 64	Peak	or Co	nment
4904. 0	dBuV/m	dB	dBuV/m	dBuV/m	dB		or Col	nment
4904. 0	dBuV/m 000 39.70	dB 4.66	dBuV/m 44. 36	dBuV/m 74.00	dB -29. 64	Peak	or Co	nnent

BIL



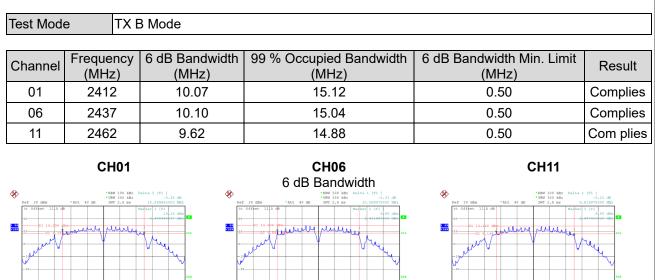


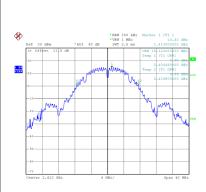
	TX N(HT	40) Mode 24	452 MHz		Polarizatio	n	Horizonta	l
dBuV/m								
	1							
	×							
	2							
	X							
			1000 00 1075					
00.00 3550.	00 6100.00	8650.00 1	1200.00 1375	0.00 1630	0.00 18850	.00 2140	0.00	26500.00 (MHz)
E	Reading	Correct						
	Reauting	Correct	Measure	Limit	Morgin			
Freq.	Level	Factor	ment	Limit	Margin	Detect	or Com	nont
MHz	Level dBuV/m	Factor dB	ment dBuV/m	dBuV/m	dB	Detecto Peak	or Com	nent
MHz 4904.0	Level	Factor	ment				or Com	oent
MHz 4904.0	Leve1 dBuV/m 000 39.80	Factor dB 4.66	ment dBuV/m 44.46	dBuV/m 74.00	dB -29. 54	Peak	or Com	nent



APPENDIX E - BANDWIDTH

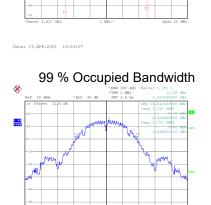


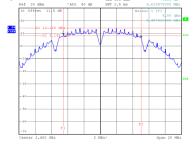




Date: 19.APR.2021 12:48:06

Date: 19.APR.2021 12:48:14







Date: 19.APR.2021 12:50:15

Date: 19.APR.2021 12:52:13

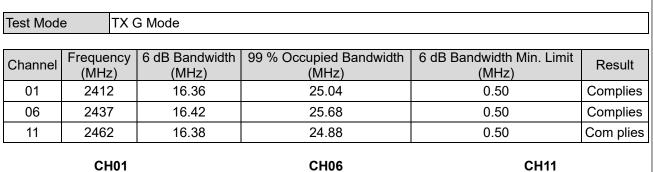
Date: 19.APR.2021 12:52:05

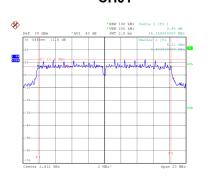
8

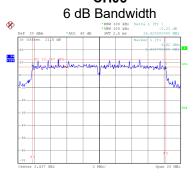
1 PR VERM

util

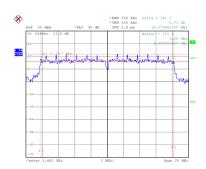


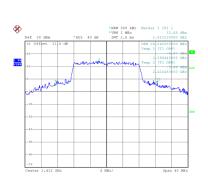


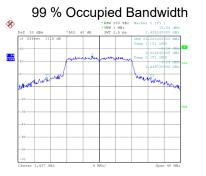


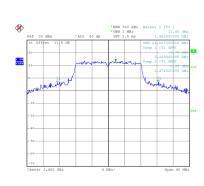


CH11









Date: 19.APR.2021 12:59:33

Date: 19.APR.2021 12:59:41

Date: 19.APR.2021 12:55:40

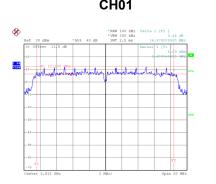
Date: 19.APR.2021 12:55:33

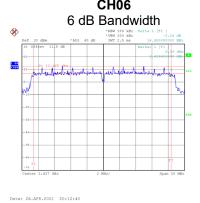
Date: 19.APR.2021 12:58:19

Date: 19.APR.2021 12:58:12

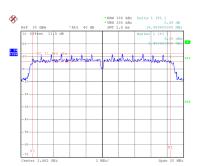


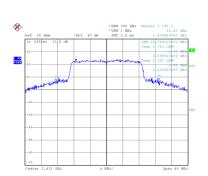
Test Mode	e TX N	N(HT20) Mode			
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Result
01	2412	16.88	25.36	0.50	Complies
06	2437	16.95	26.56	0.50	Complies
11	2462	16.99	26.16	0.50	Complies
	CH01		CH06	CH11	





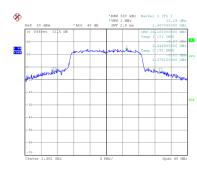
CH11





99 % Occupied Bandwidth Ø 1 28 Un Mallin . 34

Date: 26.APR.2021 20:12:20



Date: 26.APR.2021 20:14:05

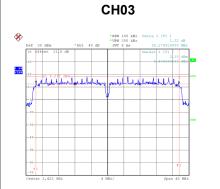
Date: 26.APR.2021 20:14:14

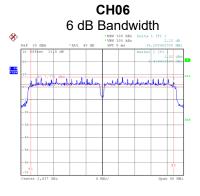
Date: 26.APR.2021 20:09:41

Date: 26.APR.2021 20:10:04



Test Mode TX N(HT40) Mode								
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Result			
03	2422	35.28	49.44	0.50	Complies			
06	2437	35.21	48.00	0.50	Complies			
09	2452	35.28	49.44	0.50	Complies			

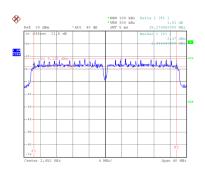


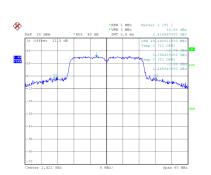


Date: 19.APR.2021 14:53:36

Date: 19.APR.2021 14:53:43

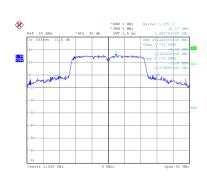
CH09





Date: 19.APR.2021 14:55:07

Date: 19.APR.2021 14:55:15



Date: 19.APR.2021 14:44:55

Date: 19.APR.2021 14:44:48



APPENDIX F - MAXIMUM OUTPUT POWER



Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	18.14	30.00	1.0000	Complie
06	2437	18.21	30.00	1.0000	Complie
11	2462	18.16	30.00	1.0000	Complie
est Mode	TX G Mode	•			
Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	20.15	30.00	1.0000	Complie
06	2437	20.37	30.00	1.0000	Complies
11	2462	20.28	30.00	1.0000	Complie
est Mode	TX N(HT20) Mode			
Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	20.22	30.00	1.0000	Complie
06	2437	20.39	30.00	1.0000	Complie
11	2462	20.08	30.00	1.0000	Complie
est Mode	TX N(HT40) Mode			
Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	20.11	30.00	1.0000	Complie
06	2437	20.23	30.00	1.0000	Complie
	2452	20.07	30.00	1.0000	Complie



APPENDIX G - CONDUCTED SPURIOUS EMISSIONS



