



FCC Radio Test Report

FCC ID: KA2WR920VA1-1

This report concerns: Original Grant

Project No. : 1901H008A

Equipment : CPE

Test Model : DWR-920V

Series Model : N/A

Applicant: D-Link Corporation

Address: No.289, Xinhu 3rd Rd., Neihu District, Taipei 11494,

Taiwan

Date of Receipt : Mar. 19, 2019

Date of Test : Mar. 19, 2019~Apr. 18, 2019

Issued Date : May. 29, 2019

Tested by : BTL Inc.

Testing Engineer :

(Thomas Yu)

Technical Manager

(Krain Wu)

Authorized Signatory

(James Chiu)

BTL INC.

No. 29, Jintang Road, Tangzhen Industry Park, Pudong New Area, Shanghai 201210,China

TEL: +86-021-61765666



Certificate # 5123.03





Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, A2LA, or any agency of the U.S. Government.

This report is the confidential property of the client. As a mutual protection to the clients, the public and ourselves, the test report shall not be reproduced, except in full, without our written approval.

BTL's laboratory quality assurance procedures are in compliance with the **ISO/IEC 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

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.

Report No.: BTL-FCCP-4-1901H008A

Page 2 of 118 Report Version: R01





Table of Contents Pa	age
REPORT ISSUED HISTORY	6
1. GENERAL SUMMARY	7
2 . SUMMARY OF TEST RESULTS	8
2.1 TEST FACILITY	9
2.2 MEASUREMENT UNCERTAINTY	9
3 . GENERAL INFORMATION	10
3.1 GENERAL DESCRIPTION OF EUT	10
3.2 DESCRIPTION OF TEST MODES	11
3.3 PARAMETERS OF TEST SOFTWARE	13
3.4 DUTY CYCLE	14
3.5 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	15
3.6 SUPPORT UNITS	15
4 . AC POWER LINE CONDUCTED EMISSIONS TEST	16
4.1 LIMIT	16
4.2 TEST PROCEDURE	16
4.3 DEVIATION FROM TEST STANDARD	16
4.4 TEST SETUP	17
4.5 EUT OPERATION CONDITIONS	17
4.6 EUT TEST CONDITIONS	17
4.7 TEST RESULTS	17
5 . RADIATED EMISSIONS TEST	18
5.1 LIMIT	18
5.2 TEST PROCEDURE	19
5.3 DEVIATION FROM TEST STANDARD	19
5.4 TEST SETUP	20
5.5 EUT OPERATION CONDITIONS	21
5.6 EUT TEST CONDITIONS	21
5.7 TEST RESULTS - 9 KHZ TO 30 MHZ	21
5.8 TEST RESULTS - 30 MHZ TO 1000 MHZ	21
5.9 TEST RESULTS - ABOVE 1000 MHZ	21
6 . BANDWIDTH TEST	22
6.1 LIMIT	22
6.2 TEST PROCEDURE	22





Table of Contents	Page
6.3 DEVIATION FROM STANDARD	22
6.4 TEST SETUP	22
6.5 EUT OPERATION CONDITIONS	22
6.6 EUT TEST CONDITIONS	22
6.7 TEST RESULTS	22
7 . MAXIMUM OUTPUT POWER TEST	23
7.1 LIMIT	23
7.2 TEST PROCEDURE	23
7.3 DEVIATION FROM STANDARD	23
7.4 TEST SETUP	23
7.5 EUT OPERATION CONDITIONS	23
7.6 EUT TEST CONDITIONS	23
7.7 TEST RESULTS	23
8. CONDUCTED SPURIOUS EMISSIONS	24
8.1 LIMIT	24
8.2 TEST PROCEDURE	24
8.3 DEVIATION FROM STANDARD	24
8.4 TEST SETUP	24
8.5 EUT OPERATION CONDITIONS	24
8.6 EUT TEST CONDITIONS	24
8.7 TEST RESULTS	24
9 . POWER SPECTRAL DENSITY TEST	25
9.1 LIMIT	25
9.2 TEST PROCEDURE	25
9.3 DEVIATION FROM STANDARD	25
9.4 TEST SETUP	25
9.5 EUT OPERATION CONDITIONS	25
9.6 EUT TEST CONDITIONS	25
9.7 TEST RESULTS	25
10 . MEASUREMENT INSTRUMENTS LIST	26
11 . EUT TEST PHOTO	28
APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS	32
APPENDIX B - RADIATED EMISSION - 9 KHZ TO 30 MHZ	35





Table of Contents	Page
APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 MHZ	40
APPENDIX D - RADIATED EMISSION- ABOVE 1000 MHZ	43
APPENDIX E - BANDWIDTH	92
APPENDIX F - MAXIMUM OUTPUT POWER	96
APPENDIX G - CONDUCTED SPURIOUS EMISSIONS	102
APPENDIX H - POWER SPECTRAL DENSITY	113

Report No.: BTL-FCCP-4-1901H008A

Page 5 of 118 Report Version: R01





REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	May. 05, 2019
R01	Revised report to address TCB's comments.	May. 29, 2019

Report No.: BTL-FCCP-4-1901H008A

Page 6 of 118 Report Version: R01





1. GENERAL SUMMARY

Equipment : CPE Brand Name : D-Link Test Model : DWR-920V

Series Model: N/A

Applicant : D-Link Corporation Manufacturer : D-Link Corporation

Address : No.289, Xinhu 3rd Rd., Neihu District, Taipei 11494, Taiwan

Date of Test : Mar. 19, 2019~Apr. 18, 2019

Test Sample: Engineering Sample No.: B190301797 Standard(s): FCC Part15, Subpart C (15.247)

ANSI C63.10-2013

558074 D01 15.247 Meas Guidance v05r02

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

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-4-1901H008A) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of A2LA according to the ISO/IEC 17025 quality assessment standard and technical standard(s).

Test results included in this report are only for the WLAN 2.4 GHz part.

Report No.: BTL-FCCP-4-1901H008A

Page 7 of 118 Report Version: R01



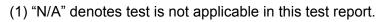


2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

Applied Standard(s): FCC Part15 (15.247) , 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 15.209	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



Report No.: BTL-FCCP-4-1901H008A

Page 8 of 118 Report Version: R01





2.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No. 29, Jintang Road, Tangzhen Industry Park, Pudong New Area, Shanghai 201210, China

BTL's Test Firm Registration Number for FCC: 476765

BTL's Designation Number for FCC: CN1241

2.2 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. Conducted Measurement:

Test Site	Method	Measurement Frequency Range	U,(dB)
SH-C01	CISPR	150 kHz ~ 30MHz	± 2.26

B. Radiated emissions test:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)	
		9 KHz~30 MHz	V	3.79	
		9 KHz~30 MHz	Н	3.57	
		30 MHz~200 MHz	V	4.04	
	H-CB01 CISPR		30 MHz~200 MHz	Η	3.76
CH CD01		200 MHz~1,000 MHz	V	4.24	
SH-CBUT		200 MHz~1,000 MHz	Ι	3.84	
		1 GHz~18 GHz	V	4.46	
		1 GHz~18 GHz 18 GHz~40 GHz	1 GHz~18 GHz	Ι	4.40
			18 GHz~40 GHz	V	3.95
		18 GHz~40 GHz	Ι	3.95	

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

Report No.: BTL-FCCP-4-1901H008A

Page 9 of 118 Report Version: R01





3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	CPE			
Brand Name	D-Link			
Test Model	DWR-920V			
Series Model	N/A			
Model Difference(s)	N/A			
Software Version	A1			
Hardware Version	01.01			
Power Source	DC voltage supplied from AC/DC adapter.			
Fower Source	Model: AMS135-1201000FU			
Power Rating	I/P:100-240V~, 50/60Hz, 0.5A O/P:12V== 1.0A			
Operation Frequency	2412 MHz ~ 2462 MHz			
	IEEE 802.11b: DSSS			
Modulation Type	IEEE 802.11g: OFDM			
	IEEE 802.11n: OFDM			
D'' D / CT '''	IEEE 802.11b: 11/5.5/2/1 Mbps			
Bit Rate of Transmitter	IEEE 802.11g: 54/48/36/24/18/12/9/6 Mbps			
	IEEE 802.11n: up to 300 Mbps			
Maying up Output Dayer	IEEE 802.11b: 16.44 dBm (0.0441 W)			
Maximum Output Power Non-Beamforming	IEEE 802.11g: 21.85 dBm (0.1531 W) IEEE 802.11n (HT20): 22.10 dBm (0.1622 W)			
Non-Beamonning	IEEE 802.1111 (11120): 22.10 dBitt (0.1022 W)			
Maximum Output Power	IEEE 802.11n (HT40): 23.43 dBm (0.2213 W)			
Beamforming	IEEE 802.11n (HT40): 21.40 dBm (0.1400 W)			
Doarmorning				

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 802.11b, 802.11g, 802.11n(20 MHz) CH03 - CH09 for 802.11n(40 MHz)						
Channel Frequency (MHz) Channel Frequency (MHz) Channel Frequency (MHz) Channel Frequency (MHz)							
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	80	2447	11	2462
03	2422	06	2437	09	2452		

Report No.: BTL-FCCP-4-1901H008A

Page 10 of 118 Report Version: R01





3. Antenna Specification:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain
7 111.	Bialia	Woderranie	7 titterina Type	Connector	(dBi)
1	N/A	N/A	PCB	N/A	1
2	N/A	N/A	PCB	N/A	1

Note:

This EUT supports MIMO 2X2, any transmit signals are correlated with each other. Then,

- Directional gain = $10\log[(10^{G1/20}+10^{G2/20}+...10^{GN/20})^2/N]dBi$. So, (1) For Non Beamforming function, Directional gain= $10\log[(10^{3.14/20}+10^{3.40/20})^2/2]dBi$ =4.01. The output power limit is 30-4.01+6=31.99, the power density limit is 17-4.01+6=18.99.
- (2) For Beamforming function, Beamforming Gain: 2dBi. So, Directional gain=1+2=3dBi. Then, the output power limit is 30-3+6=33, the power density limit is 17-3+6=20.

4. Table for Antenna Configuration:

Operating Mode TX Mode	1TX	2TX
802.11b	V (Ant. 1)	-
802.11g	V (Ant. 1)	-
802.11n(20MHz)	-	V (Ant. 1+ Ant. 2)
802.11n(40MHz)	-	V (Ant. 1+ Ant. 2)

3.2 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-20 MHz Mode Channel 01/06/11		
Mode 4	TX N-40 MHz Mode Channel 03/06/09		





Following mode(s) as (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 B Mode Channel 06			

Radiated emissions 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-20 MHz Mode Channel 01/06/11		
Mode 4	TX N-40 MHz 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-20 MHz Mode Channel 01/06/11		
Mode 4	TX N-40 MHz Mode Channel 03/06/09		

NOTE:

- (1) The measurements are performed at the high, middle, low available channels.
- (2) 802.11b mode: DBPSK (1 Mbps)
 - 802.11g mode: OFDM (6 Mbps)
 - 802.11n HT20 mode : BPSK (13 Mbps) 802.11n HT40 mode : BPSK (27 Mbps)
 - For radiated emission tests, the highest output powers were set for final test.
- (3) For radiated emission below 1 GHz test, the IEEE 802.11b is found to be the worst case and recorded.
- (4) For radiated emission above 1 GHz test, 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.

Report No.: BTL-FCCP-4-1901H008A

Page 12 of 118 Report Version: R01





3.3 PARAMETERS OF TEST SOFTWARE

Non-Beamforming

Test Software	ADB		
Test Frequency (MHz)	2412	2437	2462
IEEE 802.11b	34	30	32
IEEE 802.11g	40	36	38
IEEE 802.11n (HT20)	33/33	30/33	31/31
Test Frequency (MHz)	2422	2437	2452
IEEE 802.11n (HT40)	35/37	34/36	34/37

Beamforming

Test Software	ADB		
Test Frequency (MHz)	2412	2437	2462
IEEE 802.11n (HT20)	33/33	30/33	31/31
Test Frequency (MHz)	2422	2437	2452
IEEE 802.11n (HT40)	35/37	34/36	34/37

Report No.: BTL-FCCP-4-1901H008A

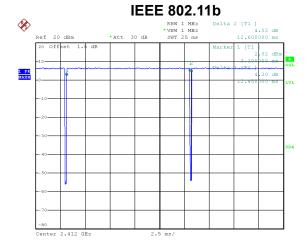
Page 13 of 118 Report Version: R01

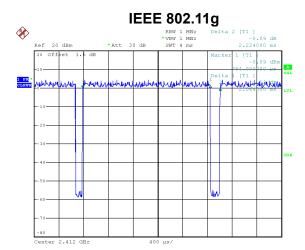




3.4 DUTY CYCLE

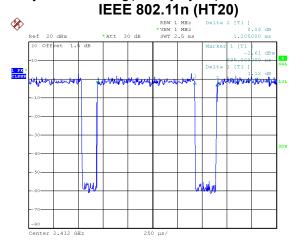
If duty cycle is \geq 98 %, duty factor is not required. If duty cycle is \leq 98 %, duty factor shall be considered.





Date: 26.MAR.2019 14:08:08

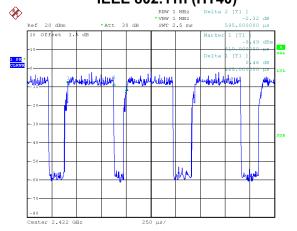
Duty cycle = 12.450 ms / 12.600 ms = 98.81% Duty Factor=10log(1/Duty cycle)=0.05



Duty cycle = 2.064 ms / 2.224 ms = 92.81% Duty Factor=10log(1/Duty cycle)=0.32 IEEE 802.11n (HT40)

Date: 26.MAR.2019 14:08:46

Date: 26.MAR.2019 14:17:43



Date: 26.MAR.2019 14:09:16

Duty cycle = 0.980 ms / 1.205 ms = 81.33% Duty Factor=10log(1/Duty cycle)=0.90 Duty cycle = 0.465 ms / 0.595 ms = 78.15% Duty Factor=10log(1/Duty cycle)=1.07

NOTE:

For IEEE 802.11g and 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 1 kHz (Duty cycle < 98%).

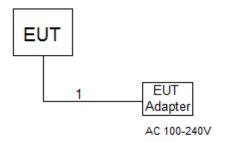
For IEEE 802.11n (HT40):

For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 2 kHz (Duty cycle < 98%).





3.5 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



3.6 SUPPORT UNITS

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.
-	-	-	-	-

Item	Shielded Type	Ferrite Core	Length	Note
1	NO	NO	1.2m	DC Cable

Report No.: BTL-FCCP-4-1901H008A

Page 15 of 118 Report Version: R01





4. AC POWER LINE CONDUCTED EMISSIONS TEST

4.1 LIMIT

Fraguency of Emission (MHz)	Limit (d	BμV)
Frequency of Emission (MHz)	Quasi-peak	Average
0.15 - 0.50	66 to 56*	56 - 46*
0.50 - 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.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

4.2 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.

4.3 DEVIATION FROM TEST STANDARD

No deviation

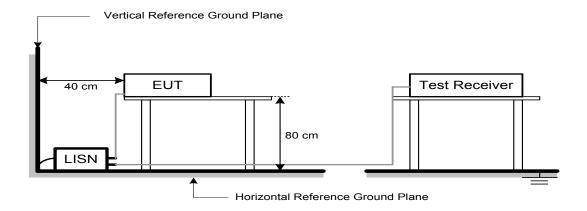
Report No.: BTL-FCCP-4-1901H008A

Page 16 of 118 Report Version: R01





4.4 TEST SETUP



4.5 EUT OPERATION CONDITIONS

The EUT was placed on the test table and programmed in normal function.

4.6 EUT TEST CONDITIONS

Temperature: 25°C Relative Humidity: 53% Test Voltage: AC 120V/60Hz

4.7 TEST RESULTS

Please refer to the APPENDIX A.





5. RADIATED EMISSIONS TEST

5.1 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)	Band edge/ Harmonic at 3m (dBµV/m)		Harmonic at 1.5m (dBμV/m)	
()	Peak	Average	Peak	Average
Above 1000	74	54	80 (Note 5)	60(Note 5)

NOTE:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).
- (4) The test result calculated as following: Measurement Value = Reading Level + Correct Factor Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use) Margin Level = Measurement Value - Limit Value

Report No.: BTL-FCCP-4-1901H008A

Page 18 of 118 Report Version: R01





Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW	1 MHz / 3 MHz for Peak,
(Emission in restricted band)	1 MHz / 1/T for Average

Receiver Parameter	Setting	
Attenuation	Auto	
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	

5.2 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 or 1.5m 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 1GHz)
- 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.

5.3 DEVIATION FROM TEST STANDARD

No deviation

Report No.: BTL-FCCP-4-1901H008A

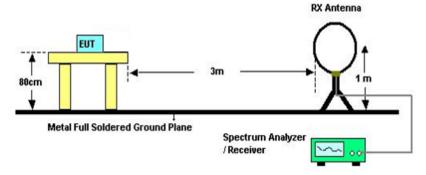
Page 19 of 118 Report Version: R01



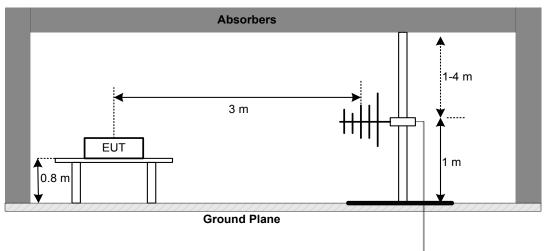




9 kHz-30 MHz



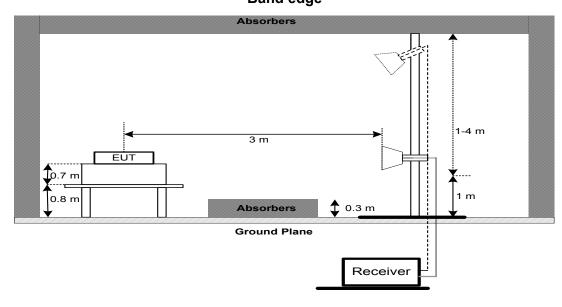
30 MHz to 1 GHz



Above 1 GHz Band edge

Receiver

Amp.



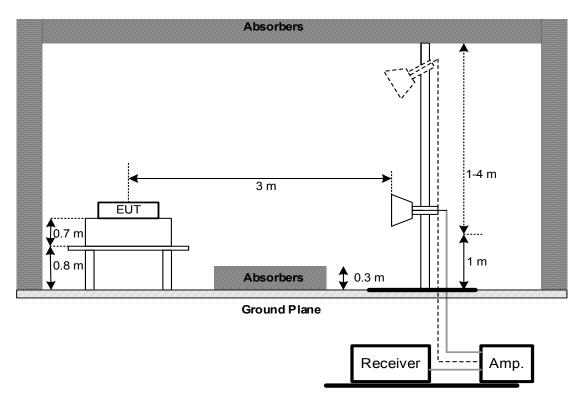
Report No.: BTL-FCCP-4-1901H008A

Page 20 of 118 Report Version: R01





Harmonic



5.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.6 EUT TEST CONDITIONS

Temperature: 18.4°C Relative Humidity: 53% Test Voltage: AC 120V/60Hz

5.7 TEST RESULTS - 9 KHZ TO 30 MHZ

Please refer to the APPENDIX B

Remark:

- (1) The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
- (2) Distance extrapolation factor = 40 log (specific distance / test distance) (dB).
- (3) Limit line = specific limits (dBuV) + distance extrapolation factor.

5.8 TEST RESULTS - 30 MHZ TO 1000 MHZ

Please refer to the APPENDIX C.

5.9 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.





6. BANDWIDTH TEST

6.1 LIMIT

FCC Part15 (15.247) , Subpart C				
Section Test Item Limit				
45.047(-)(0)	6 dB Bandwidth	Minimum 500 kHz		
15.247(a)(2)	99% Emission Bandwidth	-		

6.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- b. Spectrum Setting: RBW= 100 kHz, VBW=300 kHz, Sweep time = 2.5 ms.
- c. The bandwidth was performed in accordance with method 11.8 of ANSI C63.10-2013.

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP

EUT	SPECTRUM	
	ANALYZER	

6.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.6 EUT TEST CONDITIONS

Temperature: 21°C Relative Humidity: 54% Test Voltage: AC 120V/60Hz

6.7 TEST RESULTS

Please refer to the APPENDIX E.

Report No.: BTL-FCCP-4-1901H008A

Page 22 of 118 Report Version: R01





7. MAXIMUM OUTPUT POWER TEST

7.1 LIMIT

FCC Part15 (15.247) , Subpart C					
Section Test Item Limit					
15.247(b)(3) Maximum Output Power 1 Watt or 30dBm					

7.2 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 11.9.2.3 of ANSI C63.10-2013 and FCC KDB 662911 D01 v02r01 Multiple Transmitter Output.

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP

EUT	Power Meter
	1 5 WEI WICKET

7.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.6 EUT TEST CONDITIONS

Temperature: 21°C Relative Humidity: 54% Test Voltage: AC 120V/60Hz

7.7 TEST RESULTS

Please refer to the APPENDIX F.

Report No.: BTL-FCCP-4-1901H008A

Page 23 of 118 Report Version: R01





8. CONDUCTED SPURIOUS EMISSIONS

8.1 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. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

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. Spectrum Setting: RBW= 100 kHz, VBW=300 kHz, Sweep time = Auto.

8.3 DEVIATION FROM STANDARD

No deviation.

8.4 TEST SETUP

EUT	SPECTRUM		
	ANALYZER		

8.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

8.6 EUT TEST CONDITIONS

Temperature: 21°C Relative Humidity: 54% Test Voltage: AC 120V/60Hz

8.7 TEST RESULTS

Please refer to the APPENDIX G.

Report No.: BTL-FCCP-4-1901H008A

Page 24 of 118 Report Version: R01





9. POWER SPECTRAL DENSITY TEST

9.1 LIMIT

FCC Part15 (15.247) , Subpart C					
Section Test Item Limit					
15.247(e)	Power Spectral Density	8 dBm (in any 3 kHz)			

9.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- b. Spectrum Setting: RBW=3 kHz, VBW=10 kHz, Sweep time = Auto.
- c. The Power Spectral Density was performed in accordance with method 11.10.2 of ANSI C63.10-2013.

9.3 DEVIATION FROM STANDARD

No deviation.

9.4 TEST SETUP

EUT	SPECTRUM		
	ANALYZER		

9.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

9.6 EUT TEST CONDITIONS

Temperature: 21°C Relative Humidity: 54% Test Voltage: AC 120V/60Hz

9.7 TEST RESULTS

Please refer to the APPENDIX H.

Report No.: BTL-FCCP-4-1901H008A

Page 25 of 118 Report Version: R01





10. MEASUREMENT INSTRUMENTS LIST

	AC Power Line Conducted Emissions				
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Line Impedance Stabilisation Network	Schwarzbeck	NNLK 8121	8121-822	Mar. 29, 2020
2	TWO-LINE V-NETWORK	R&S	ENV216	101340	Nov. 20, 2020
3	EMI Test Receiver	R&S	ESCI	100082	Mar. 29, 2020
4	50Ω coaxial switch	Anritsu	MP59B	6201750902	Jul. 17, 2019
5	Cable	10m	EMCRG400-BM- NM-10000	170628	Jun. 10, 2019
6	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	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	EMCI	EMCI LPA600	275	Mar. 29, 2020	
2	Cable	N/A	EMCRG400-BM- NM-10000	170628	Jun. 10, 2019	
3	MXE EMI Receiver	Keysight	N9038A	MY57150106	Mar. 29, 2020	
4	Measurement Software	Farad	EZ-EMC Ver.BTL-2ANT-1	N/A	N/A	

	Radiated Emissions - 30 MHz to 1 GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until	
1	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	719	Mar. 29, 2020	
2	Pre-Amplifier	emci	EMC9135	980400	Mar. 29, 2020	
3	MXE EMI Receiver	Keysight	N9038A	MY57150106	Mar. 29, 2020	
4	Attenuator	emci	EMCI-N-6-06	AT-N0644	Mar. 29, 2020	
5	Cable	7m	EMC104-SM-SM- 7000	170330	Jun. 10, 2019	
6	Cable	1m	EMC104-SM-SM- 1000	170331	Jun. 10, 2019	
7	Cable	3.5m	EMC104-SM-NM- 3500	170621	Jun. 10, 2019	
8	Measurement Software	Farad	EZ-EMC Ver.BTL-2ANT-1	N/A	N/A	

Report No.: BTL-FCCP-4-1901H008A

Page 26 of 118 Report Version: R01





	Radiated Emissions - Above 1 GHz								
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until				
1	Double-Ridged Waveguide Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-1787	Mar. 29, 2020				
2	Double-Ridged Waveguide Horn Antenna	ETS-Lindgren	3116C	00203919	Mar. 29, 2020				
3	Pre-Amplifier	emci	EMC012645SE	980421	Mar. 29, 2020				
4	Pre-Amplifier	emci	EMC184045SE	980409	Mar. 29, 2020				
5	EXA Spectrum Analyzer	Keysight	Keysight N9010A		Mar. 29, 2020				
6	MXE EMI Receiver	Keysight	N9038A	MY56400088	Mar. 29, 2020				
7	Cable	7m	EMC104-SM-SM- 7000	170330	Jun. 10, 2019				
8	Cable	1m	EMC104-SM-SM- 1000	170331	Jun. 10, 2019				
9	Cable	3.5m	EMC104-SM-NM- 3500	170621	Jun. 10, 2019				
10	Cable 0.8m		EMC102-SM-SM- 800	170335	Jun. 10, 2019				
11	Cable	Cable 6m		170336	Jun. 10, 2019				
12	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A				

	Bandwidth								
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until				
1	Spectrum Analyzer	R&S	FSP40	100626	Mar. 29, 2020				

	Peak Output Power									
Item	Kind of Equipment	Serial No.	Calibrated until							
1	Power Meter	Keysight	8990B	MY51000507	Jul. 27, 2019					
2	Pulse Power Sensor	Keysight	N1923A	MY58310003	Aug. 07, 2019					

Antenna Conducted Spurious Emissions									
Item	Kind of Equipment	Serial No.	Calibrated until						
1	Spectrum Analyzer	R&S	FSP40	100626	Mar. 29, 2020				

Power Spectral Density								
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until			
1	Spectrum Analyzer	R&S	FSP40	100626	Mar. 29, 2020			

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

All calibration period of equipment list is one year.

Report No.: BTL-FCCP-4-1901H008A

Page 27 of 118 Report Version: R01





11. EUT TEST PHOTO





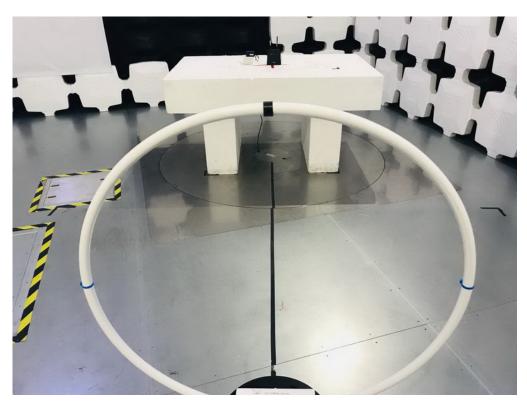


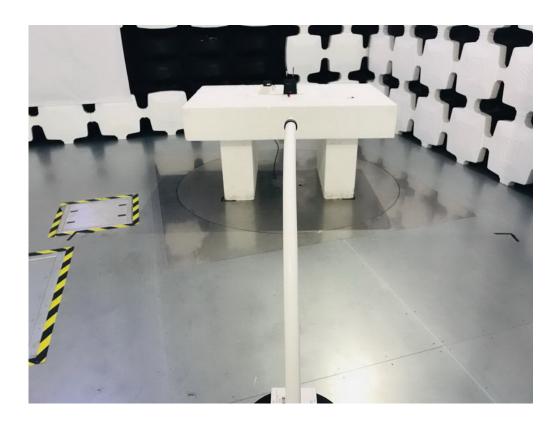




Radiated Emissions Test Photos

9 kHz to 30 MHz



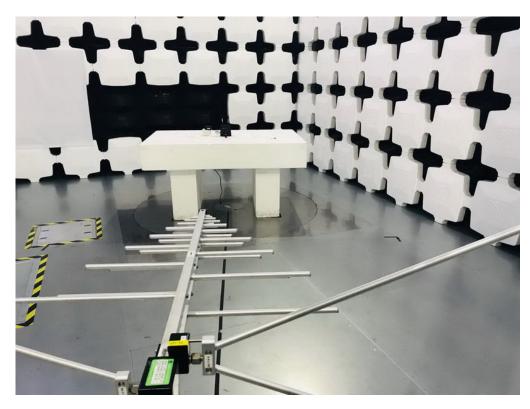


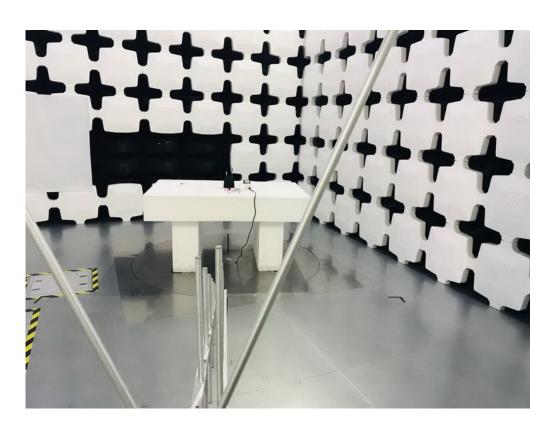




Radiated Emissions Test Photos

30 MHz to 1 GHz





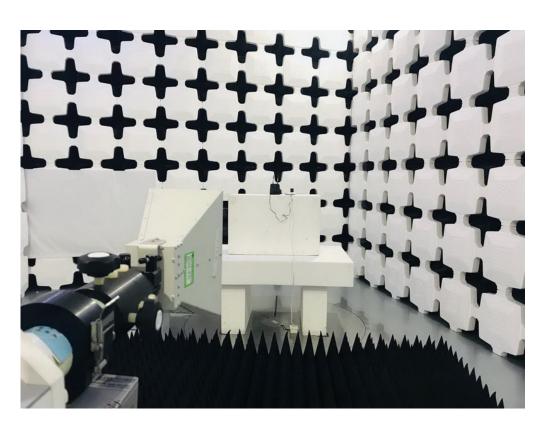




Radiated Emissions Test Photos

Above 1 GHz









APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS

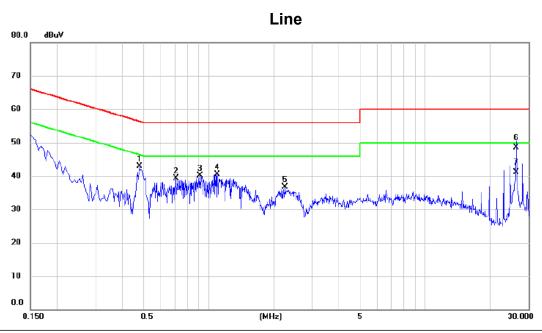
Report No.: BTL-FCCP-4-1901H008A

Page 32 of 118 Report Version: R01





Test Mode: TX B Mode Channel 06



No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0.4785	33.01	9.99	43.00	56.37	-13.37	peak	
2	0.7080	29.27	9.99	39.26	56.00	-16.74	peak	
3	0.9104	30.15	9.98	40.13	56.00	-15.87	peak	
4	1.0950	30.41	10.11	40.52	56.00	-15.48	peak	
5	2.2470	26.61	10.02	36.63	56.00	-19.37	peak	
6	26.4030	37.68	10.92	48.60	60.00	-11.40	QP	
7 *	26.4030	30.10	10.92	41.02	50.00	-8.98	AVG	

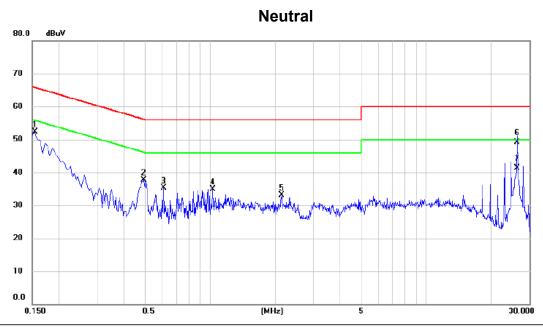
REMARKS:

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





Test Mode: TX B Mode Channel 06



No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0.1544	42.57	9.79	52.36	65.76	-13.40	peak	
2	0.4920	27.77	9.92	37.69	56.13	-18.44	peak	
3	0.6090	25.30	10.00	35.30	56.00	-20.70	peak	
4	1.0274	24.89	9.99	34.88	56.00	-21.12	peak	
5	2.1433	22.97	10.15	33.12	56.00	-22.88	peak	
6	26.4030	38.36	10.81	49.17	60.00	-10.83	QP	
7 *	26.4030	30.50	10.81	41.31	50.00	-8.69	AVG	

REMARKS:

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





APPENDIX B - RADIATED EMISSION - 9 KHZ TO 30 MHZ

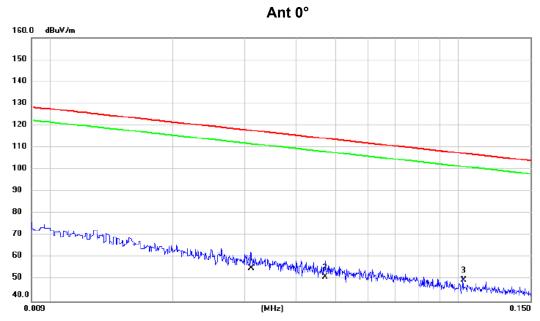
Report No.: BTL-FCCP-4-1901H008A

Page 35 of 118 Report Version: R01





Test Mode: TX B MODE CHANNEL 06



No. Mk.	Freq.			Measure- ment		Margin		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	0.0311	-14.10	69.37	55.27	117.75	-62.48	AVG	
2	0.0472	-13.70	64.90	51.20	114.13	-62.93	AVG	
3 *	0.1027	-8.10	57.84	49.74	107.38	-57.64	QP	

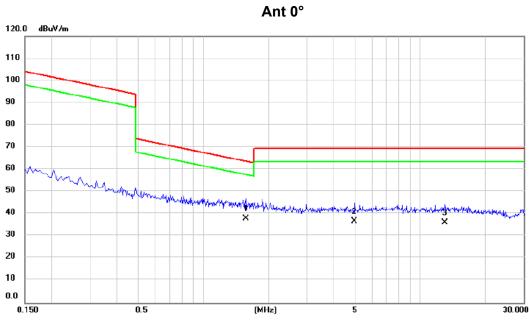
REMARKS:

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





Test Mode: TX B MODE CHANNEL 06



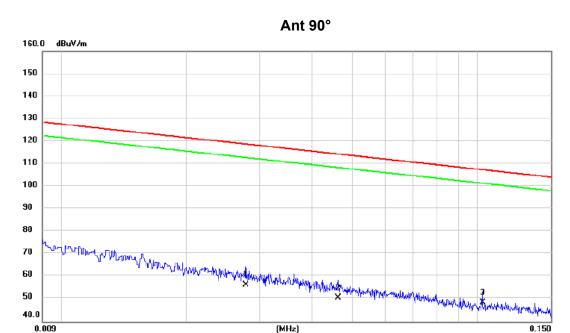
No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	1.5765	-2.00	39.82	37.82	63.65	-25.83	QP	
2		4.9785	-1.10	37.70	36.60	69.54	-32.94	QP	
3		13.0065	-1.70	37.97	36.27	69.54	-33.27	QP	

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





Test Mode: TX B MODE CHANNEL 06



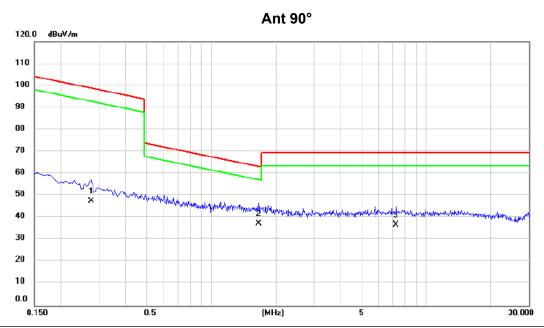
No. Mk.	Freq.			Measure- ment		Margin		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	0.0278	-13.90	70.27	56.37	118.72	-62.35	AVG	
2	0.0462	-14.50	65.15	50.65	114.31	-63.66	AVG	
3 *	0.1027	-9.20	57.84	48.64	107.38	-58.74	QP	

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





Test Mode: TX B MODE CHANNEL 06



	No. Mk	. Freq.		Correct Factor	Measure- ment	Limit	Margin		
-		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
-	1	0.2760	-2.00	49.52	47.52	98.79	-51.27	AVG	
-	2 *	1.6665	-2.40	39.60	37.20	63.17	-25.97	QP	
-	3	7.2375	-0.90	37.78	36.88	69.54	-32.66	QP	

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





APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 MHZ

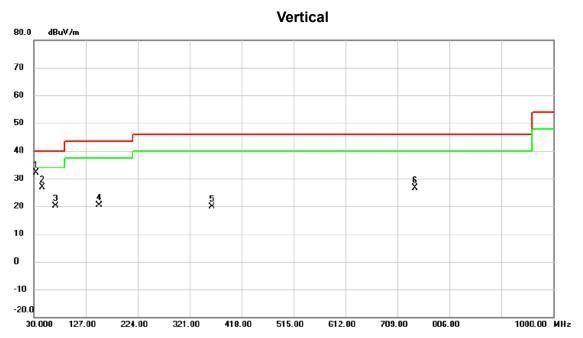
Report No.: BTL-FCCP-4-1901H008A

Page 40 of 118 Report Version: R01





Test Mode: TX B MODE CHANNEL 06



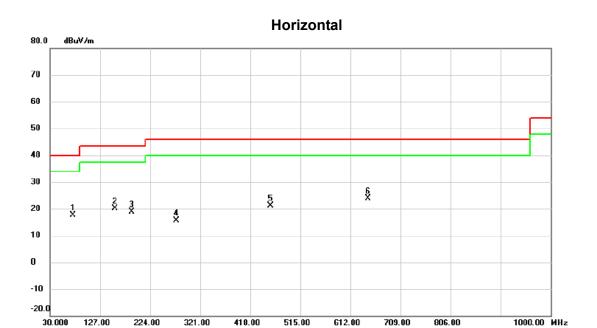
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	34.3650	49.44	-17.40	32.04	40.00	-7.96	peak	
2		45.5200	43.97	-17.15	26.82	40.00	-13.18	peak	
3		70.2550	39.91	-19.86	20.05	40.00	-19.95	peak	
4		152.2200	36.08	-15.61	20.47	43.50	-23.03	peak	
5		362.7100	33.94	-14.15	19.79	46.00	-26.21	peak	
6		742.4650	34.69	-8.16	26.53	46.00	-19.47	peak	

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





Test Mode: TX B MODE CHANNEL 06



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		74.6200	37.98	-20.38	17.60	40.00	-22.40	peak	
2		156.1000	35.75	-15.71	20.04	43.50	-23.46	peak	
3		188.5950	38.16	-19.18	18.98	43.50	-24.52	peak	
4		274.4400	32.77	-17.11	15.66	46.00	-30.34	peak	
5		457.2850	33.42	-12.36	21.06	46.00	-24.94	peak	
6	*	646.9200	33.11	-9.29	23.82	46.00	-22.18	peak	

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





APPENDIX D - RADIATED EMISSION- ABOVE 1000 MHZ

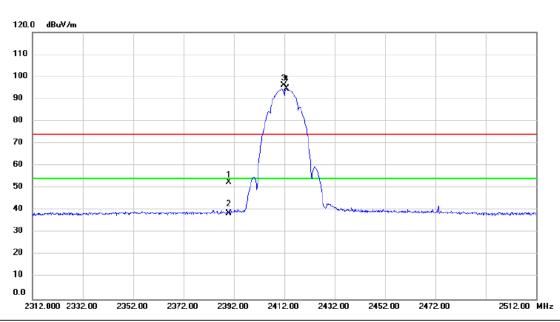
Report No.: BTL-FCCP-4-1901H008A

Page 43 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX B Mode 2412 MHz



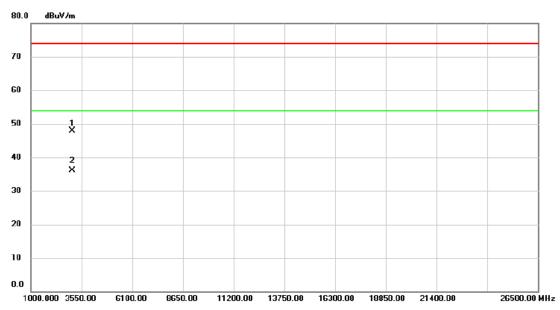
No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	20.81	31.79	52.60	74.00	-21.40	peak	
2		2390.000	6.83	31.79	38.62	54.00	-15.38	AVG	
3	X	2411.800	64.18	31.85	96.03	74.00	22.03	peak	No Limit
4	*	2413.000	62.80	31.85	94.65	54.00	40.65	AVG	No Limit

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





Orthogonal Axis	X
Test Mode:	TX B Mode 2412 MHz



No.	Mk	. Freq.			Measure- ment		Margin		
		MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		3083.260	63.28	-15.35	47.93	74.00	-26.07	peak	
2	*	3083.740	51.53	-15.35	36.18	54.00	-17.82	AVG	

REMARKS:

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

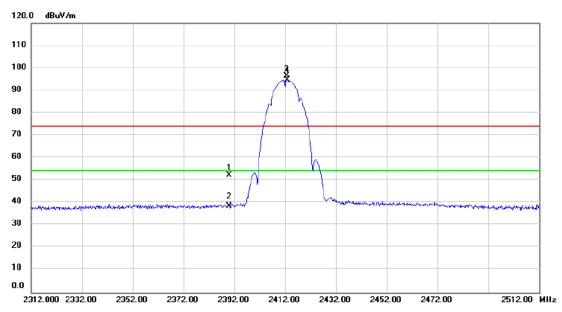
Report No.: BTL-FCCP-4-1901H008A

Page 45 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX B Mode 2412 MHz



No.	Mk	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	20.61	31.79	52.40	74.00	-21.60	peak	
2		2390.000	6.84	31.79	38.63	54.00	-15.37	AVG	
3	X	2412.600	64.75	31.85	96.60	74.00	22.60	peak	No Limit
4	*	2412.800	62.87	31.85	94.72	54.00	40.72	AVG	No Limit

REMARKS:

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

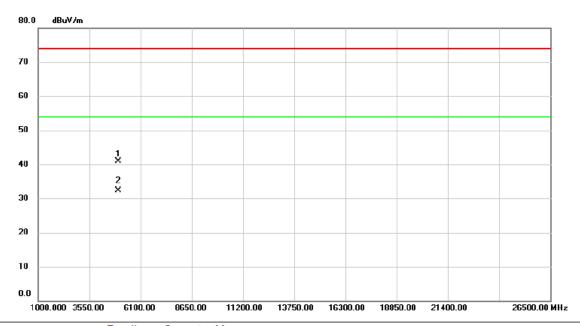
Report No.: BTL-FCCP-4-1901H008A

Page 46 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX B Mode 2412 MHz



No.	M	۸k.	Freq.			Measure- ment		Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		49	99.740	50.96	-9.99	40.97	74.00	-33.03	peak	
2	*	50	00.020	42.30	-9.99	32.31	54.00	-21.69	AVG	

REMARKS:

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

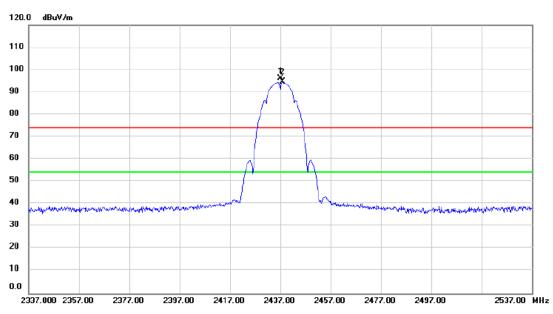
Report No.: BTL-FCCP-4-1901H008A

Page 47 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX B Mode 2437 MHz



No.	M	₹.	Freq.			Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	243	37.000	64.32	31.92	96.24	74.00	22.24	peak	No Limit
2	*	243	37.800	62.68	31.93	94.61	54.00	40.61	AVG	No Limit

REMARKS:

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

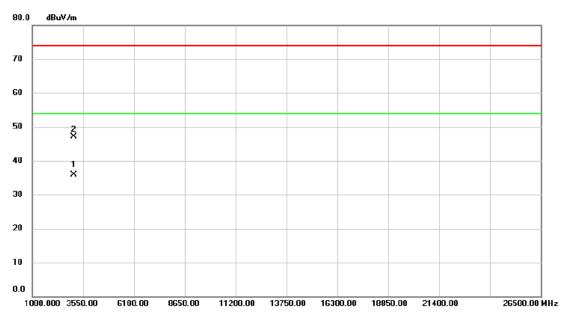
Report No.: BTL-FCCP-4-1901H008A

Page 48 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX B Mode 2437 MHz



No.	No. Mk. Freq		Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	30	83.400	51.26	-15.35	35.91	54.00	-18.09	AVG	
2		30	88.600	62.44	-15.35	47.09	74.00	-26.91	peak	

REMARKS:

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

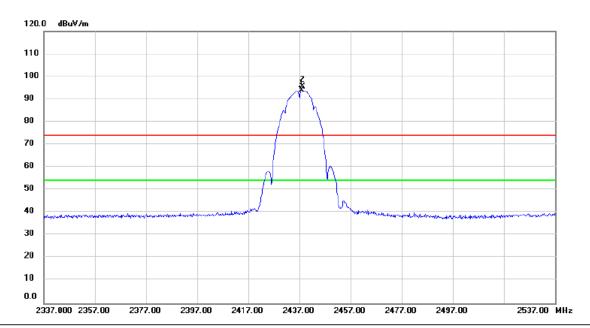
Report No.: BTL-FCCP-4-1901H008A

Page 49 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX B Mode 2437 MHz



	No.	Mk	. Freq.	Reading Level		Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	X	2438.000	62.10	31.93	94.03	74.00	20.03	peak	No Limit
Ī	2	*	2438.200	63.52	31.93	95.45	74.00	21.45	peak	No Limit

REMARKS:

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

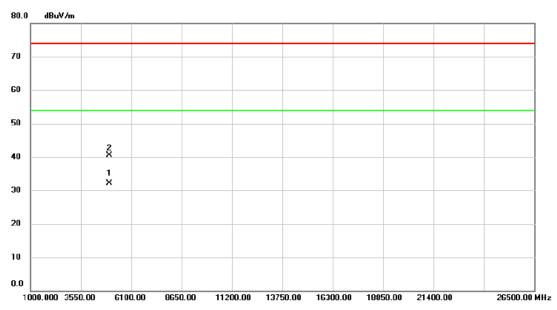
Report No.: BTL-FCCP-4-1901H008A

Page 50 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX B Mode 2437 MHz



No.	М	K .	Freq.			Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	499	9.940	42.18	-9.99	32.19	54.00	-21.81	AVG	
2		500	0.040	50.56	-9.99	40.57	74.00	-33.43	peak	

REMARKS:

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

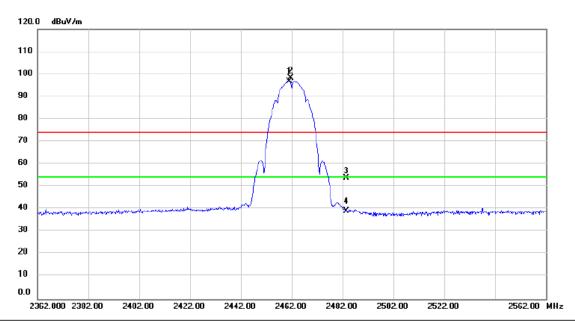
Report No.: BTL-FCCP-4-1901H008A

Page 51 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX B Mode 2462 MHz



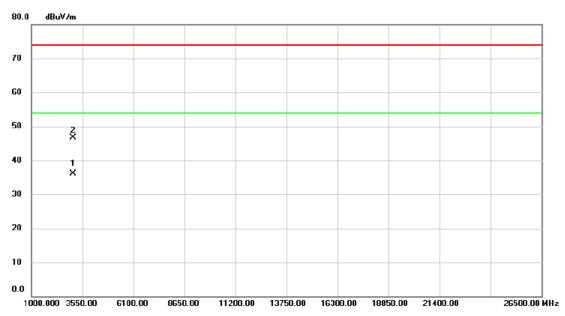
	No.	Mk	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
Ī			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
_	1	*	2461.000	64.88	31.99	96.87	54.00	42.87	AVG	No Limit
Ī	2	Χ	2461.600	66.40	31.99	98.39	74.00	24.39	peak	No Limit
-	3		2483.500	21.75	32.05	53.80	74.00	-20.20	peak	
	4		2483.500	7.19	32.05	39.24	54.00	-14.76	AVG	
_										·

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





Orthogonal Axis	X
Test Mode:	TX B Mode 2462 MHz



No.	М	k. F		Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		N	ИНZ	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	3082	.000	51.36	-15.35	36.01	54.00	-17.99	AVG	
2		3083	.400	62.07	-15.35	46.72	74.00	-27.28	peak	

REMARKS:

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

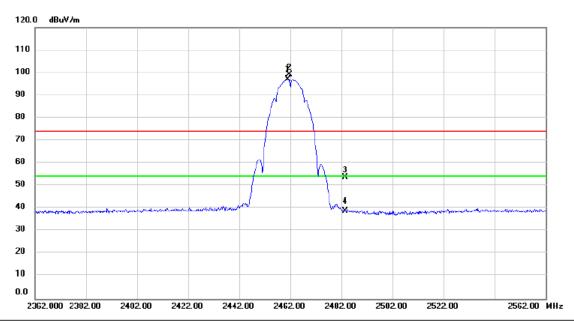
Report No.: BTL-FCCP-4-1901H008A

Page 53 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX B Mode 2462 MHz



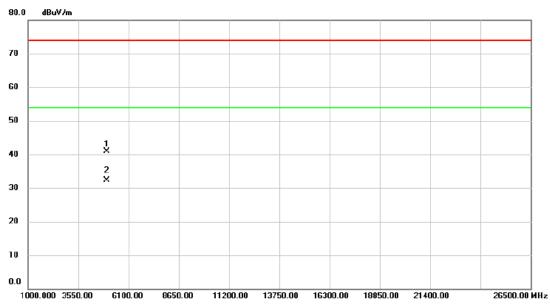
No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2461.000	65.03	31.99	97.02	54.00	43.02	AVG	No Limit
2	Χ	2461.600	67.07	31.99	99.06	74.00	25.06	peak	No Limit
3		2483.500	21.75	32.05	53.80	74.00	-20.20	peak	
4		2483.500	6.69	32.05	38.74	54.00	-15.26	AVG	

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





Orthogonal Axis	X
Test Mode:	TX B Mode 2462 MHz



No.	Mk.	Freq.			Measure- ment		Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5000.100	50.98	-9.99	40.99	74.00	-33.01	peak	
2	*	5000.100	42.34	-9.99	32.35	54.00	-21.65	AVG	

REMARKS:

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

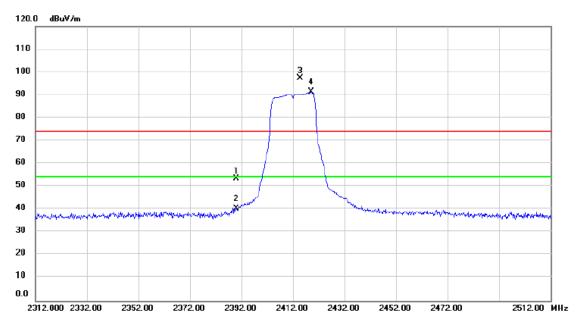
Report No.: BTL-FCCP-4-1901H008A

Page 55 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX G Mode 2412 MHz



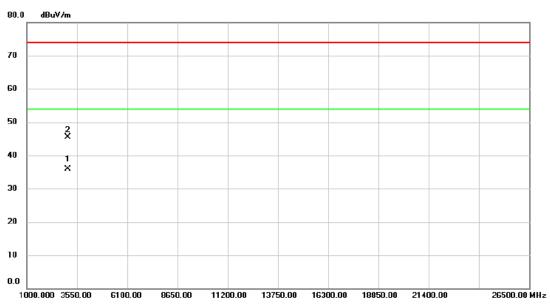
No	. MI	k. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	21.73	31.79	53.52	74.00	-20.48	peak	
2		2390.000	8.65	31.79	40.44	54.00	-13.56	AVG	
3	X	2414.800	65.51	31.86	97.37	74.00	23.37	peak	No Limit
4	*	2419.200	59.36	31.87	91.23	54.00	37.23	AVG	No Limit

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





Orthogonal Axis	X
Test Mode:	TX G Mode 2412 MHz



No.	М	k.	Freq.			Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	30	81.700	51.30	-15.35	35.95	54.00	-18.05	AVG	
2		30	083.700	60.87	-15.35	45.52	74.00	-28.48	peak	

REMARKS:

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

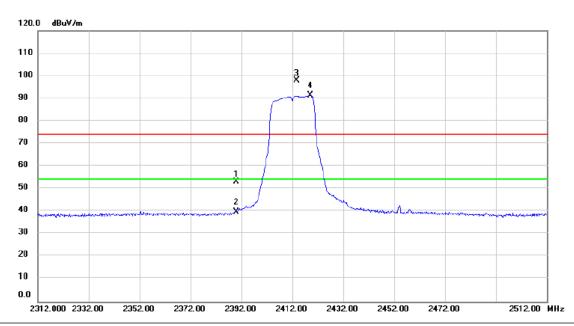
Report No.: BTL-FCCP-4-1901H008A

Page 57 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX G Mode 2412 MHz



	No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
-			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1		2390.000	21.50	31.79	53.29	74.00	-20.71	peak	
	2		2390.000	7.83	31.79	39.62	54.00	-14.38	AVG	
-	3	Χ	2413.800	66.21	31.85	98.06	74.00	24.06	peak	No Limit
	4	*	2419.200	59.54	31.87	91.41	54.00	37.41	AVG	No Limit

REMARKS:

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

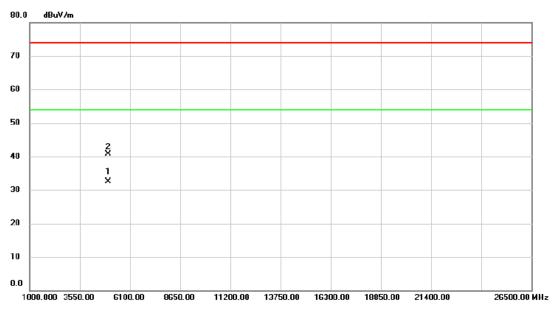
Report No.: BTL-FCCP-4-1901H008A

Page 58 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX G Mode 2412 MHz



No.	Mi	k. Freq.		Correct Factor	Measure- ment		Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	5000.000	42.44	-9.99	32.45	54.00	-21.55	AVG	
2		5000.200	50.69	-9.99	40.70	74.00	-33.30	peak	

REMARKS:

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

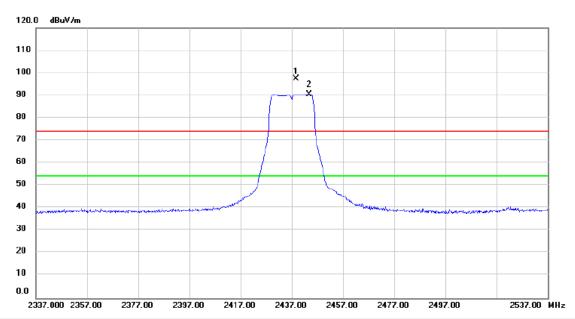
Report No.: BTL-FCCP-4-1901H008A

Page 59 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX G Mode 2437 MHz



No.	М	k.	Freq.	Reading Level		Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	24	38.800	65.54	31.93	97.47	74.00	23.47	peak	No Limit
2	*	24	43.800	58.62	31.94	90.56	54.00	36.56	AVG	No Limit

REMARKS:

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

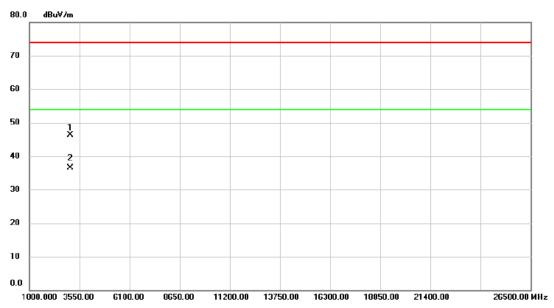
Report No.: BTL-FCCP-4-1901H008A

Page 60 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX G Mode 2437 MHz



No.	M	k. l	Freq.			Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		3081	1.800	61.62	-15.35	46.27	74.00	-27.73	peak	
2	*	3084	1.900	51.86	-15.35	36.51	54.00	-17.49	AVG	

REMARKS:

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

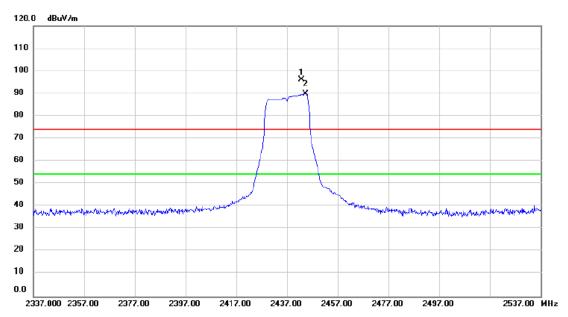
Report No.: BTL-FCCP-4-1901H008A

Page 61 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX G Mode 2437 MHz



No.	М	lk.	Freq.			Measure- ment		Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	Х	24	442.800	64.27	31.94	96.21	74.00	22.21	peak	No Limit
2	*	24	444.400	57.83	31.94	89.77	54.00	35.77	AVG	No Limit

REMARKS:

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

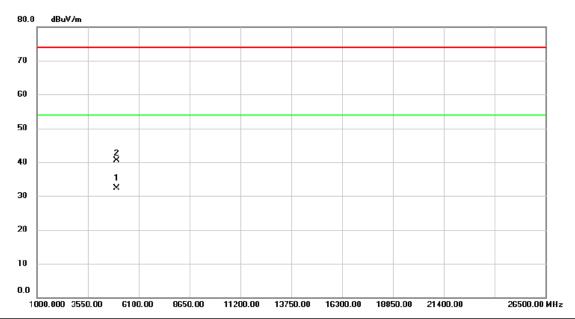
Report No.: BTL-FCCP-4-1901H008A

Page 62 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX G Mode 2437 MHz



No.	Mk	c. Freq.		Correct Factor	Measure- ment		Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	5000.100	42.27	-9.99	32.28	54.00	-21.72	AVG	
2		5000.200	50.45	-9.99	40.46	74.00	-33.54	peak	

REMARKS:

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

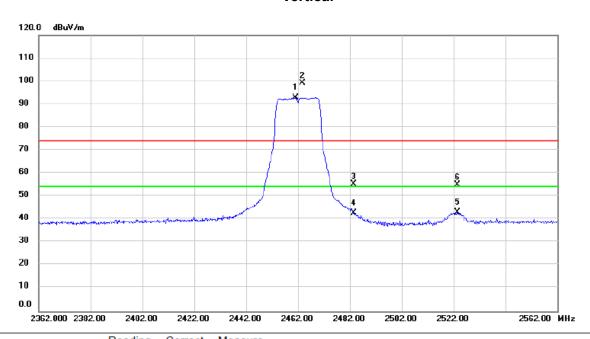
Report No.: BTL-FCCP-4-1901H008A

Page 63 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX G Mode 2462 MHz



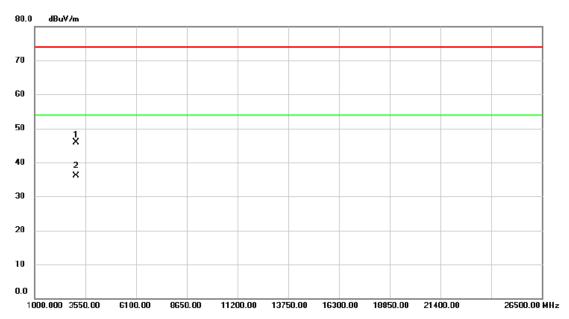
	No.	Mk	. Freq.	Reading Level	Factor	Measure- ment	Limit	Margin		
_			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
-	1	*	2461.000	60.74	31.99	92.73	54.00	38.73	AVG	No Limit
	2	Χ	2463.800	67.14	31.99	99.13	74.00	25.13	peak	No Limit
	3		2483.500	23.28	32.05	55.33	74.00	-18.67	peak	
-	4		2483.500	10.81	32.05	42.86	54.00	-11.14	AVG	
-	5		2523.400	10.80	32.16	42.96	54.00	-11.04	AVG	
	6		2523.500	22.82	32.16	54.98	74.00	-19.02	peak	

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





Orthogonal Axis	X
Test Mode:	TX G Mode 2462 MHz



No. Mk.		k. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		3079.500	61.19	-15.35	45.84	74.00	-28.16	peak	
2	*	3083.300	51.44	-15.35	36.09	54.00	-17.91	AVG	

REMARKS:

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

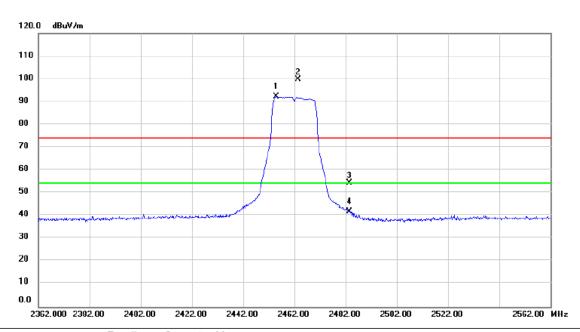
Report No.: BTL-FCCP-4-1901H008A

Page 65 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX G Mode 2462 MHz



	No.	M	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
•			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	*	2455.000	60.17	31.97	92.14	54.00	38.14	AVG	No Limit
	2	X	2463.600	67.90	31.99	99.89	74.00	25.89	peak	No Limit
	3		2483.500	22.34	32.05	54.39	74.00	-19.61	peak	
•	4		2483.500	9.80	32.05	41.85	54.00	-12.15	AVG	

REMARKS:

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

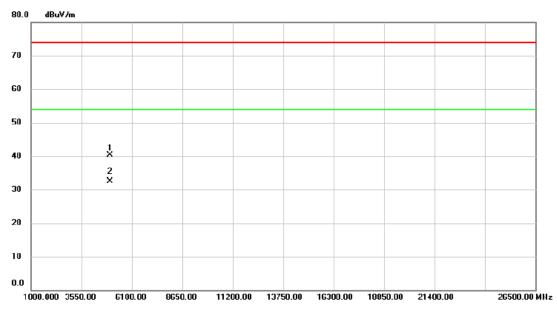
Report No.: BTL-FCCP-4-1901H008A

Page 66 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX G Mode 2462 MHz



No.	Mk	c. Freq.			Measure- ment		Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4991.500	50.28	-10.03	40.25	74.00	-33.75	peak	
2	*	5000.000	42.40	-9.99	32.41	54.00	-21.59	AVG	

REMARKS:

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

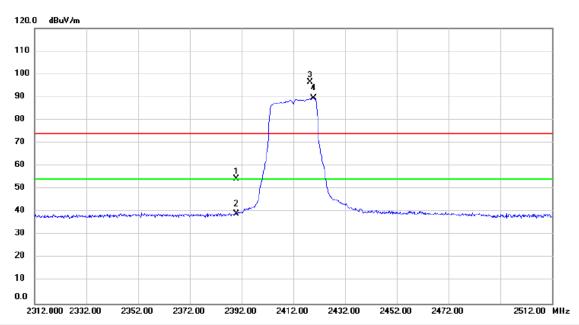
Report No.: BTL-FCCP-4-1901H008A

Page 67 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX N-20M Mode 2412 MHz



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	22.62	31.79	54.41	74.00	-19.59	peak	
2		2390.000	7.27	31.79	39.06	54.00	-14.94	AVG	
3	X	2418.600	64.62	31.87	96.49	74.00	22.49	peak	No Limit
4	*	2419.800	57.61	31.88	89.49	54.00	35.49	AVG	No Limit

REMARKS:

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

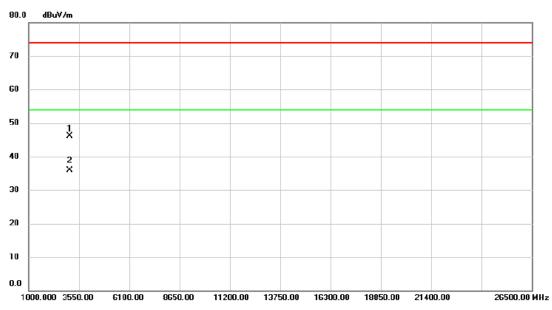
Report No.: BTL-FCCP-4-1901H008A

Page 68 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX N-20M Mode 2412 MHz



No.	. Mi	k. Freq.	Reading Level		Measure- ment		Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		3082.200	61.52	-15.35	46.17	74.00	-27.83	peak	
2	*	3084.000	51.30	-15.35	35.95	54.00	-18.05	AVG	

REMARKS:

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

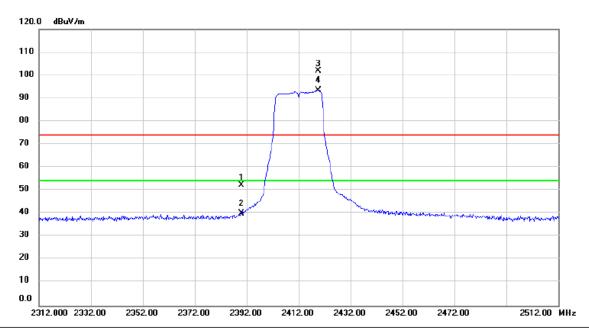
Report No.: BTL-FCCP-4-1901H008A

Page 69 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX N-20M Mode 2412 MHz



No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	20.63	31.79	52.42	74.00	-21.58	peak	
2		2390.000	8.37	31.79	40.16	54.00	-13.84	AVG	
3	X	2419.600	70.03	31.88	101.91	74.00	27.91	peak	No Limit
4	*	2419.600	61.46	31.88	93.34	54.00	39.34	AVG	No Limit

REMARKS:

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

Report No.: BTL-FCCP-4-1901H008A

Page 70 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX N-20M Mode 2412 MHz



	No.	Mk	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
-			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
_	1	*	5000.000	42.06	-9.99	32.07	54.00	-21.93	AVG	
_	2		5000.200	51.71	-9.99	41.72	74.00	-32.28	peak	

REMARKS:

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

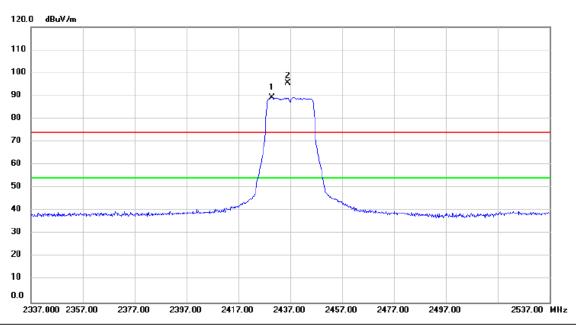
Report No.: BTL-FCCP-4-1901H008A

Page 71 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX N-20M Mode 2437 MHz



No.	М	lk.	Freq.	Reading Level		Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	24	29.800	57.45	31.90	89.35	54.00	35.35	AVG	No Limit
2	X	24	36.000	63.78	31.91	95.69	74.00	21.69	peak	No Limit

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





Orthogonal Axis	X
Test Mode:	TX N-20M Mode 2437 MHz



No.	Mk	. Freq.			Measure- ment		Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		3081.200	62.28	-15.35	46.93	74.00	-27.07	peak	
2	*	3083.100	51.77	-15.35	36.42	54.00	-17.58	AVG	

REMARKS:

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

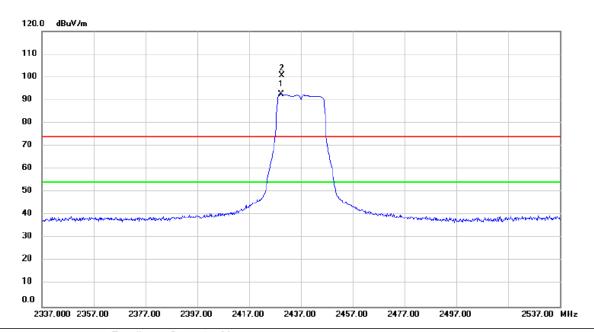
Report No.: BTL-FCCP-4-1901H008A

Page 73 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX N-20M Mode 2437 MHz



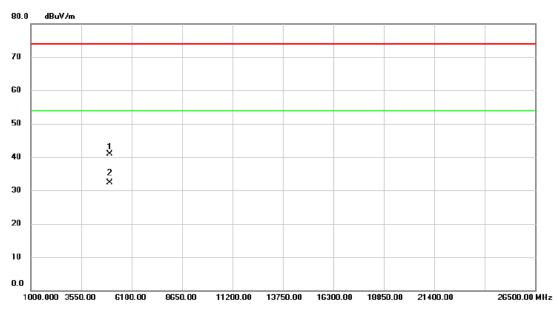
ı	No.	Mk	c. Freq.	Reading Level		Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	*	2429.400	60.59	31.90	92.49	54.00	38.49	AVG	No Limit
	2	X	2429.600	68.68	31.90	100.58	74.00	26.58	peak	No Limit

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





Orthogonal Axis	X
Test Mode:	TX N-20M Mode 2437 MHz



N	No. Mk.		Freq.	Reading Level		Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1		4999.800	50.91	-9.99	40.92	74.00	-33.08	peak	
	2	*	5000.100	42.22	-9.99	32.23	54.00	-21.77	AVG	

REMARKS:

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

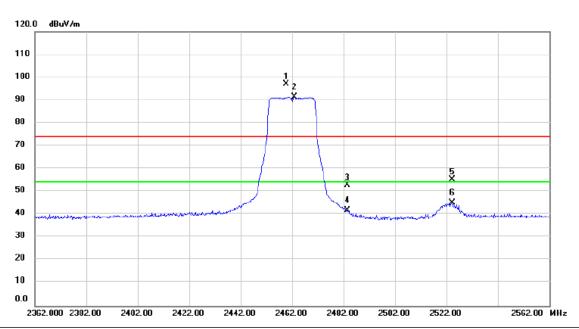
Report No.: BTL-FCCP-4-1901H008A

Page 75 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX N-20M Mode 2462 MHz



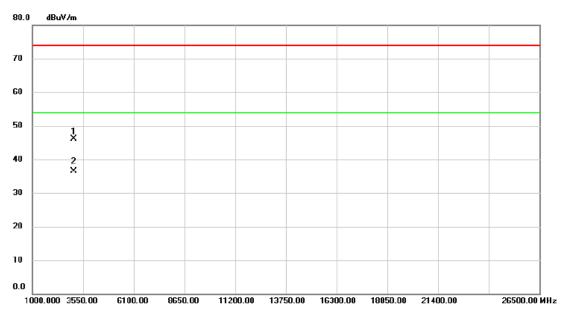
No.	M	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2459.800	65.21	31.99	97.20	74.00	23.20	peak	No Limit
2	*	2463.000	59.45	31.99	91.44	54.00	37.44	AVG	No Limit
3		2483.500	21.04	32.05	53.09	74.00	-20.91	peak	
4		2483.500	9.65	32.05	41.70	54.00	-12.30	AVG	
5		2524.200	23.12	32.17	55.29	74.00	-18.71	peak	
6		2524.200	13.06	32.17	45.23	54.00	-8.77	AVG	

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





Orthogonal Axis	X
Test Mode:	TX N-20M Mode 2462 MHz



No.	No. Mk.		. Freq.	Reading Level		Measure- ment		Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1			3082.400	61.40	-15.35	46.05	74.00	-27.95	peak	
2	1	*	3082.700	51.87	-15.35	36.52	54.00	-17.48	AVG	

REMARKS:

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

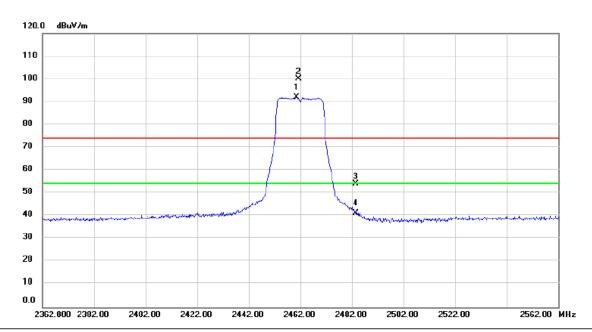
Report No.: BTL-FCCP-4-1901H008A

Page 77 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX N-20M Mode 2462 MHz



No.	Mk	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2460.600	59.88	31.99	91.87	54.00	37.87	AVG	No Limit
2	X	2461.400	68.08	31.99	100.07	74.00	26.07	peak	No Limit
3		2483.500	21.96	32.05	54.01	74.00	-19.99	peak	
4		2483.500	9.33	32.05	41.38	54.00	-12.62	AVG	

REMARKS:

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

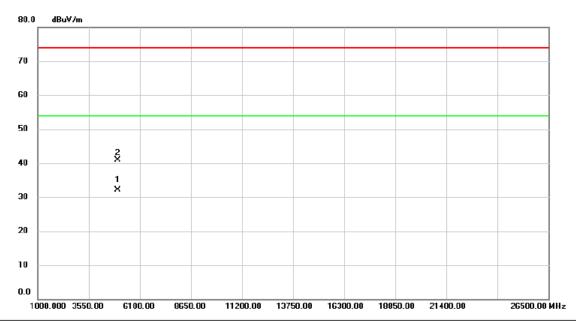
Report No.: BTL-FCCP-4-1901H008A

Page 78 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX N-20M Mode 2462 MHz



No.	Mk. Freq.		Reading Corr Freq. Level Fac			Measure- ment Limit		Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	500	0.000	42.16	-9.99	32.17	54.00	-21.83	AVG	
2		500	0.300	50.91	-9.99	40.92	74.00	-33.08	peak	

REMARKS:

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

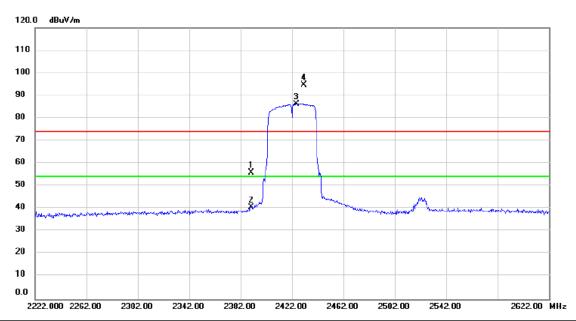
Report No.: BTL-FCCP-4-1901H008A

Page 79 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX N-40M Mode 2422MHz



No.	Mk	. Freq.	Reading Level		Measure- ment	Limit	Margin		
		MHz	dBu∨	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	24.18	31.79	55.97	74.00	-18.03	peak	
2		2390.000	8.96	31.79	40.75	74.00	-33.25	peak	
3	X	2425.600	54.48	31.89	86.37	74.00	12.37	peak	No Limit
4	*	2431.600	62.84	31.91	94.75	74.00	20.75	peak	No Limit

REMARKS:

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

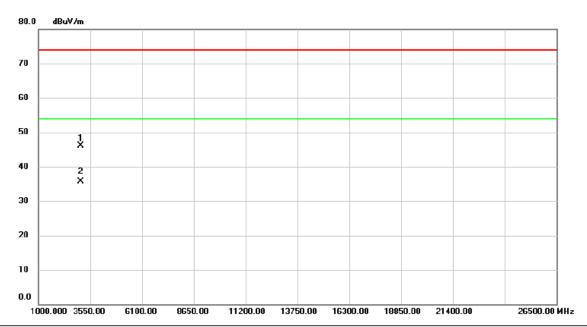
Report No.: BTL-FCCP-4-1901H008A

Page 80 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX N-40M Mode 2422MHz



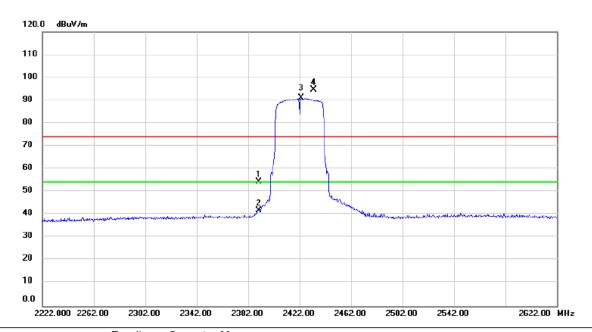
No).	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	1		3080.500	61.42	-15.35	46.07	74.00	-27.93	peak	
2	2	*	3082.000	51.15	-15.35	35.80	54.00	-18.20	AVG	

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





Orthogonal Axis	X
Test Mode:	TX N-40M Mode 2422MHz



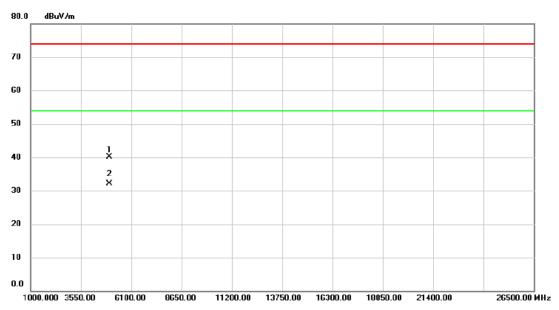
No. Mk.		c. Freq.	Reading Level			Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	22.67	31.79	54.46	74.00	-19.54	peak	
2		2390.000	9.98	31.79	41.77	74.00	-32.23	peak	
3	*	2423.200	59.15	31.88	91.03	54.00	37.03	AVG	No Limit
4	X	2433.200	62.82	31.91	94.73	74.00	20.73	peak	No Limit

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





Orthogonal Axis	X
Test Mode:	TX N-40M Mode 2422MHz



No.	Mk	k. Freq.			Measure- ment		Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5000.000	50.12	-9.99	40.13	74.00	-33.87	peak	
2	*	5000.100	42.12	-9.99	32.13	54.00	-21.87	AVG	

REMARKS:

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

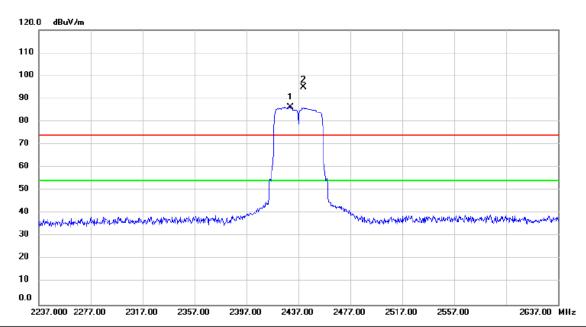
Report No.: BTL-FCCP-4-1901H008A

Page 83 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX N-40M Mode 2437 MHz



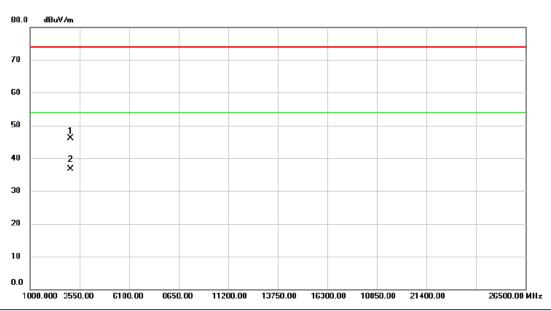
No	١.	Mk.	Freq.			Measure- ment		Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		*	2431.000	54.39	31.91	86.30	54.00	32.30	AVG	No Limit
2)	Χ	2441.000	62.96	31.93	94.89	74.00	20.89	peak	No Limit

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





	X
Test Mode:	TX N-40M Mode 2437 MHz



No.	Mk	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		3080.200	61.54	-15.35	46.19	74.00	-27.81	peak	
2	*	3083.300	51.99	-15.35	36.64	54.00	-17.36	AVG	

REMARKS:

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

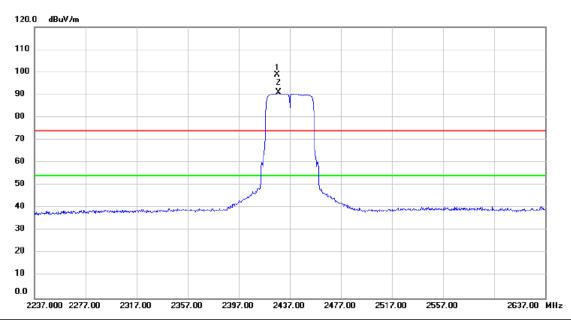
Report No.: BTL-FCCP-4-1901H008A

Page 85 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX N-40M Mode 2437 MHz



No.	M	1k.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	Х	(24	127.000	67.03	31.89	98.92	74.00	24.92	peak	No Limit
2	*	24	128.200	59.04	31.90	90.94	54.00	36.94	AVG	No Limit

REMARKS:

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

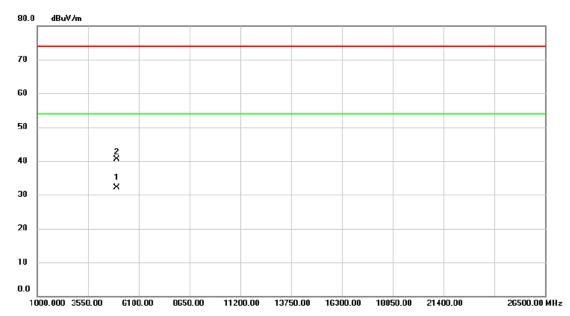
Report No.: BTL-FCCP-4-1901H008A

Page 86 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX N-40M Mode 2437 MHz



	No. Mk.		k. Freq.		Correct Factor	Measure- ment	Limit	Margin		
-			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
_	1	*	5000.000	42.16	-9.99	32.17	54.00	-21.83	AVG	
_	2		5000.200	50.47	-9.99	40.48	74.00	-33.52	peak	

REMARKS:

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

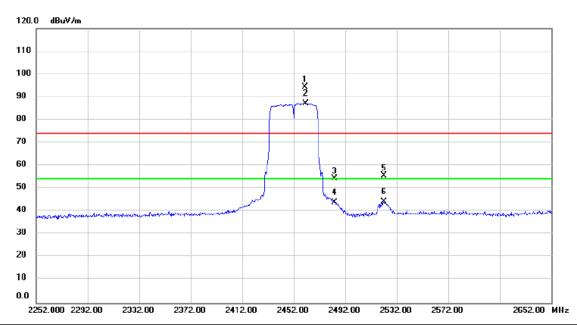
Report No.: BTL-FCCP-4-1901H008A

Page 87 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX N-40M Mode 2452 MHz



No.	MI	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	Χ	2460.800	62.44	31.99	94.43	74.00	20.43	peak	No Limit
2	*	2461.200	55.20	31.99	87.19	54.00	33.19	AVG	No Limit
3		2483.500	22.37	32.05	54.42	74.00	-19.58	peak	
4		2483.500	11.81	32.05	43.86	54.00	-10.14	AVG	
5		2522.000	23.47	32.16	55.63	74.00	-18.37	peak	
6		2522.000	12.11	32.16	44.27	54.00	-9.73	AVG	

REMARKS:

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

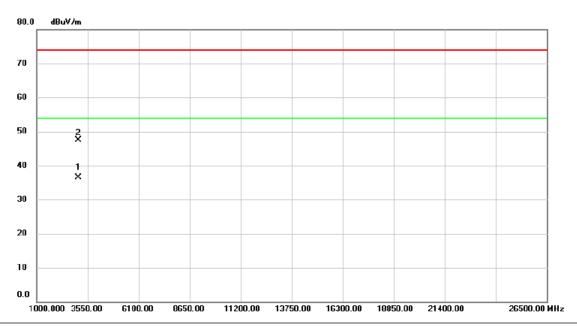
Report No.: BTL-FCCP-4-1901H008A

Page 88 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX N-40M Mode 2452 MHz



ı	No.	Mk	c. Freq.			Measure- ment		Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	*	3082.900	51.81	-15.35	36.46	54.00	-17.54	AVG	
	2		3086.100	62.94	-15.35	47.59	74.00	-26.41	peak	

REMARKS:

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

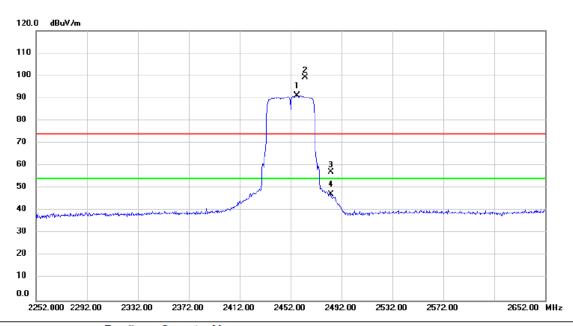
Report No.: BTL-FCCP-4-1901H008A

Page 89 of 118 Report Version: R01





Orthogonal Axis	X
Test Mode:	TX N-40M Mode 2452 MHz



No	No. Mk.		. Freq.	Reading Level		Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	1	*	2456.800	59.09	31.98	91.07	54.00	37.07	AVG	No Limit
2	2	X	2463.600	67.15	31.99	99.14	74.00	25.14	peak	No Limit
3			2483.500	25.00	32.05	57.05	74.00	-16.95	peak	
4			2483.500	15.32	32.05	47.37	54.00	-6.63	AVG	

REMARKS:

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

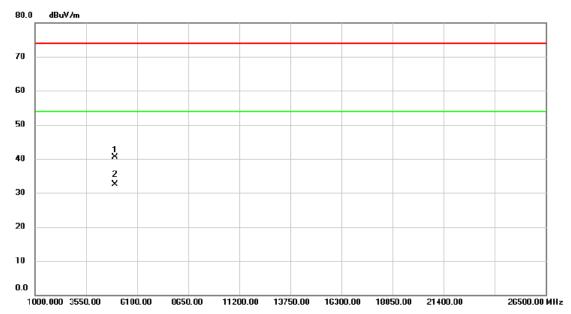
Report No.: BTL-FCCP-4-1901H008A

Page 90 of 118 Report Version: R01





	X
Test Mode:	TX N-40M Mode 2452 MHz



No.	Mk.	. Freq.			Measure- ment		Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		4999.900	50.53	-9.99	40.54	74.00	-33.46	peak	
2	*	5000.000	42.44	-9.99	32.45	54.00	-21.55	AVG	

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





APPENDIX E - BA	NDWIDTH

Report No.: BTL-FCCP-4-1901H008A

Page 92 of 118 Report Version: R01

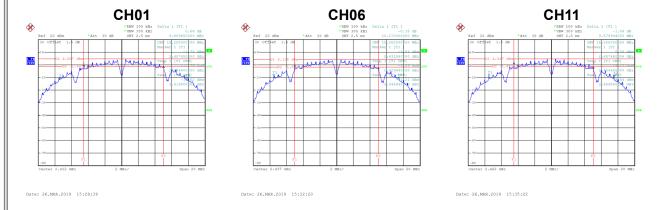




Non-Beamforming

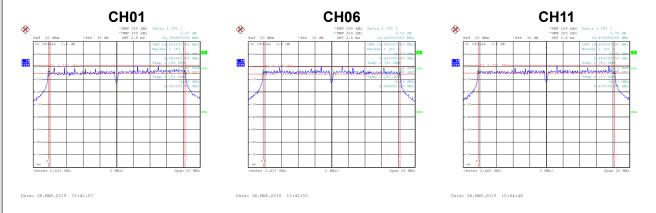
Test Mode	TX B Mode
100t Wodo	I I / L I IVIO GO

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Emission Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
01	2412	9.61	15.20	500	Complies
06	2437	10.07	15.00	500	Complies
11	2462	9.58	15.08	500	Complies



Test Mode	TX G Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Emission Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
01	2412	16.40	16.52	500	Complies
06	2437	16.42	16.48	500	Complies
11	2462	16.44	16.48	500	Complies







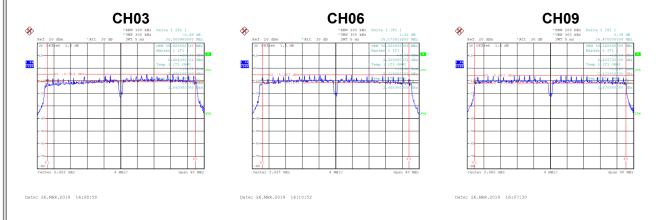
Test Mode	TX N (H	IT20) Mode

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Emission Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
01	2412	17.47	17.72	500	Complies
06	2437	17.66	17.68	500	Complies
11	2462	17.63	17.72	500	Complies



Test Mode	TXN	(HT40)) Mode
I COL IVIOUC		(11170	, iviouc

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Emission Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
03	2422	35.59	35.92	500	Complies
06	2437	35.28	36.00	500	Complies
09	2452	36.47	36.16	500	Complies

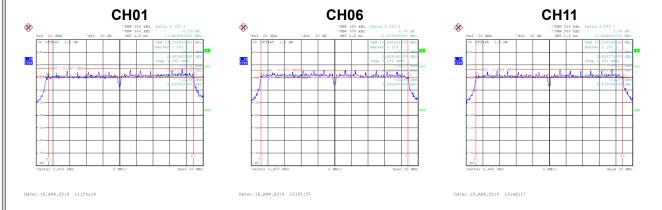






Beamforming

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Emission Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result	
01	2412	17.41	17.72	500	Complies	
06	2437	17.68	17.68	500	Complies	
11	2462	17.65	17.72	500	Complies	



Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Emission Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
03	2422	35.80	35.92	500	Complies
06	2437	35.51	36.00	500	Complies
09	2452	35.76	36.16	500	Complies







APPENDIX F - MAXIMUM OUTPUT POWER

Report No.: BTL-FCCP-4-1901H008A

Page 96 of 118 Report Version: R01





Non-Beamforming

Test Mode	TX B Mode
	1.71 - 11.000

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	16.30	0.0427	30.00	1.0000	Complies
06	2437	16.44	0.0441	30.00	1.0000	Complies
11	2462	16.33	0.0430	30.00	1.0000	Complies

Test Mode	TX G Mode	
-----------	-----------	--

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	21.53	0.1422	30.00	1.0000	Complies
06	2437	21.85	0.1531	30.00	1.0000	Complies
11	2462	21.73	0.1489	30.00	1.0000	Complies

Report No.: BTL-FCCP-4-1901H008A

Page 97 of 118 Report Version: R01





Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	18.23	0.0665	30.00	1.0000	Complies
06	2437	18.50	0.0708	30.00	1.0000	Complies
11	2462	18.10	0.0646	30.00	1.0000	Complies

Test Mode TX N (HT20) Mode_Ant. 2

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	19.40	0.0871	30.00	1.0000	Complies
06	2437	19.61	0.0914	30.00	1.0000	Complies
11	2462	18.92	0.0780	30.00	1.0000	Complies

Test Mode TX N (HT20) Mode_Total

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	21.86	0.1535	30.00	1.0000	Complies
06	2437	22.10	0.1622	30.00	1.0000	Complies
11	2462	21.54	0.1426	30.00	1.0000	Complies

Report No.: BTL-FCCP-4-1901H008A

Page 98 of 118 Report Version: R01





Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	21.86	0.1535	30.00	1.0000	Complies
06	2437	22.10	0.1622	30.00	1.0000	Complies
09	2452	21.54	0.1426	30.00	1.0000	Complies

Test Mode TX N (HT40) Mode_Ant. 2

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	21.15	0.1303	30.00	1.0000	Complies
06	2437	20.60	0.1148	30.00	1.0000	Complies
09	2452	21.25	0.1334	30.00	1.0000	Complies

Test Mode TX N (HT40) Mode_Total

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	23.45	0.2213	30.00	1.0000	Complies
06	2437	23.09	0.2037	30.00	1.0000	Complies
09	2452	23.37	0.2173	30.00	1.0000	Complies

Report No.: BTL-FCCP-4-1901H008A

Page 99 of 118 Report Version: R01





Beamforming

IEST MODE I \ IN (I I I ZU) MODE AIT. I	Test Mode	TX N (HT2	0) Mode_Ant. 1
---	-----------	-----------	----------------

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	17.52	0.0565	30.00	1.0000	Complies
06	2437	17.86	0.0611	30.00	1.0000	Complies
11	2462	17.51	0.0564	30.00	1.0000	Complies

Test Mode	TX N (HT2	20) Mode_Ant. 2
-----------	-----------	-----------------

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	18.73	0.0746	30.00	1.0000	Complies
06	2437	18.96	0.0787	30.00	1.0000	Complies
11	2462	18.39	0.0690	30.00	1.0000	Complies

Test Mode	TX N (HT20) Mode_Total
-----------	------------------------

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	21.18	0.1312	30.00	1.0000	Complies
06	2437	21.46	0.1400	30.00	1.0000	Complies
11	2462	20.98	0.1253	30.00	1.0000	Complies

Report No.: BTL-FCCP-4-1901H008A

Page 100 of 118 Report Version: R01





Test Mode	TX N (HT40) Mode Ant. 1

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	18.68	0.0738	30.00	1.0000	Complies
06	2437	18.69	0.0740	30.00	1.0000	Complies
09	2452	18.49	0.0706	30.00	1.0000	Complies

Test Mode TX N (HT40) Mode_Ant. 2

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	20.39	0.1094	30.00	1.0000	Complies
06	2437	20.18	0.1042	30.00	1.0000	Complies
09	2452	20.55	0.1135	30.00	1.0000	Complies

Test Mode TX N (HT40) Mode_Total

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	22.63	0.1832	30.00	1.0000	Complies
06	2437	22.51	0.1782	30.00	1.0000	Complies
09	2452	22.65	0.1841	30.00	1.0000	Complies

Report No.: BTL-FCCP-4-1901H008A

Page 101 of 118 Report Version: R01





APPENDIX G - CONDUCTED SPURIOUS EMISSIONS						

Report No.: BTL-FCCP-4-1901H008A

Page 102 of 118 Report Version: R01





