



FCC Radio Test Report

FCC ID: VJA-RJ1302

This report concerns (check one): ⊠Original Grant □Class II Change

Project No. : 1608276

Equipment: Mini PCI Radio Module, 1x1,IEEE 802.11 b/g /n,902 MHz

Model Name: RJ-1302

Applicant: RAJANT CORPORATION

Address : 400 EAST KING STREET, MALVERN PA 19355

Date of Receipt : Sep. 01, 2016

Date of Test : Sep. 01, 2016 ~ Nov. 29, 2016

Issued Date : Nov. 30, 2016 Tested by : BTL Inc.

Testing Engineer : Kush

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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.

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REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCCP-1-1608276	Original Issue.	Nov. 30, 2016

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1. CERTIFICATION

Equipment : Mini PCI Radio Module, 1x1,IEEE 802.11 b/g /n,902 MHz

Brand Name: VIZMONET Model Name: RJ-1302

Applicant : RAJANT CORPORATION Manufacturer : VIZMONET PTE LTD

Address : 21, WOODLANDS CLOSE, #08-37, PRIMZ BIZ HUB, SINGAPORE 737 854

Date of Test : Sep. 01, 2016 ~ Nov. 29, 2016

Test Sample: Engineering Sample

Standard(s): FCC Part15, Subpart C (15.247)

ANSI C63.10-2013

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-1-1608276) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

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2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

Applied Standard(s): FCC 47 CFR Part15 (15.247), Subpart C					
Standard(s) Section	Test Item	Judgment	Remark		
15.207	Conducted Emission	PASS			
15.247(d)	Antenna conducted Spurious Emission	PASS			
15.247(a)(2)	6dB Bandwidth	PASS			
15.247(b)(3)	Peak Output Power	PASS			
15.247(e)	Power Spectral Density	PASS			
15.203	Antenna Requirement	PASS			
15.209/15.205	Transmitter Radiated Emissions	PASS			
15.247(d)	Band Edge Emissions	PASS			

Note:

(1)" N/A" denotes test is not applicable in this test report

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2.1 TEST FACILITY

The test facilities used to collect the test data in this report:

Conducted emission Test:

C05: (FCC RN:965108; FCC DN:TW1082)

No. 68-1, Ln. 169, Sec.2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

Radiated emission Test (Below 1 GHz):

CB15: (FCC RN:674415; FCC DN:TW0659; IC Assigned Code:20088-2)

No. 68-1, Ln. 169, Sec.2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

Radiated emission Test (Above 1 GHz):

CB15: (FCC RN:674415; FCC DN:TW0659; IC Assigned Code:20088-2)

No. 68-1, Ln. 169, Sec.2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

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2.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. The BTL measurement uncertainty is less than the CISPR 16-4-2 U_{cispr} requirement.

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

A. Conducted emission test:

Test Site	Method	Measurement Frequency Range	U,(dB)
C05	CISPR	150 kHz ~ 30MHz	3.06

B. Radiated emission test:

Test Site	Method	Measurement Frequency Range	U,(dB)
CB15	CISPR	9kHz ~ 150kHz	2.96
(3m)	CISPR	150kHz ~ 30MHz	2.74

Test Site	Method	Measurement Frequency Range	Ant.	U,(dB)
CB15 CISPR	30MHz ~ 200MHz	V	4.76	
	30MHz ~ 200MHz	Н	4.28	
(3m)	CIOPK	200MHz ~ 1,000MHz	V	5.08
		200MHz ~ 1,000MHz	Н	4.50

Test Site	Method	Measurement Frequency Range	Ant.	U,(dB)
CB15 CISPR	1GHz ~ 6GHz	V	4.48	
	CICDD	1GHz ~ 6GHz	Н	4.50
(3m)	CIOPR	6GHz ~ 18GHz	V	4.30
		6GHz ~ 18GHz	Н	4.14

Our calculated Measurement Instrumentation Uncertainty is shown in the tables above. These are our U_{lab} values in CISPR 16-4-2 terminology.

Since Table 1 of CISPR 16-4-2 has values of measurement instrumentation uncertainty, called U_{CISPR}, as follows:

Conducted Disturbance (mains port) - 150 kHz - 30 MHz: 3.6 dB Radiated Disturbance (electric field strength on an open area test site or alternative test site) - 30 MHz - 1000 MHz: 5.2 dB

It can be seen that our U_{lab} values are smaller than U_{CISPR} .

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

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3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	Mini PCI Radio Module, 1x1,IEEE 802.11 b/g /n,902 MHz			
Brand Name	VIZMONET			
Model Name	RJ-1302			
Model Difference	N/A			
Output Power (Max.)	Operating Frequency	902 MHz to 928 MHz		
	Modulation Technology	802.11b:DSSS 802.11g:OFDM 802.11n:OFDM		
	Bit Rate of Transmitter 802.11b: 11/5.5/2/1 Mbps 802.11g: 54/48/36/24/18/12/9/6 Mbps 802.11n: MSC0~MSC7			
	Channel Bandwidth	907MHz: 5/10 MHz 912MHz: 5/10/20 MHz 917MHz: 5/10/20 MHz 922MHz: 5/10 MHz		
	Output Power (Max.) 802.11b: 29.57 dBm 802.11g: 29.86 dBm 802.11n(20MHz): 29.67 dBm			
Power Source	Supplied from host system.			

Note:

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

2.

Channel List						
Channel	Channel Frequency (MHz) Channel Frequency (MHz) Frequency (MHz)					
01	907	03	917			
02	912	04	922			

3. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Cable loss (min.)	Gain (dBi)
1	RAJANT	KMA-915-5-NF	Dipole	Type N (female)	0	5

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3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	TX B-20MHZ MODE CHANNEL 02/03
Mode 2	TX G-5/10MHZ MODE CHANNEL 01/02/03/04
Mode 3	TX G-20MHZ MODE CHANNEL 02/03
Mode 4	TX N-20MHZ MODE CHANNEL 02/03
Mode 5	TX Mode-5/10MHZ
Mode 6	TX Mode-20MHZ

The EUT system operated these modes were found to be the worst case during the pre-scanning test as following:

For Conducted Test		
Final Test Mode	Description	
Mode 5	TX Mode-5/10MHZ	
Mode 6	TX Mode-20MHZ	

For Radiated Test		
Final Test Mode	Description	
Mode 1	TX B-20MHZ MODE CHANNEL 02/03	
Mode 2	TX G-5/10MHZ MODE CHANNEL 01/02/03/04	
Mode 3	TX G-20MHZ MODE CHANNEL 02/03	
Mode 4	TX N-20MHZ MODE CHANNEL 02/03	

Note:

- (1) The measurements are performed at the high, middle, low available channels.
- (2) 802.11b mode: DBPSK (1Mbps)
 - 802.11g mode: OFDM (6Mbps)
 - 802.11n HT20 mode: BPSK (6.5Mbps)
 - For radiated emission tests, the highest output powers were set for final test.
- (3) For radiated below 1G test, the 802.11g is found to be the worst case and recorded.
- (4) The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.
- (5) The EUT was pre-tested on the positioned of each 3 axis. The worst case was found positioned on X-plane. Therefore only the test data of this X-plane was used for radiated emission measurement test.

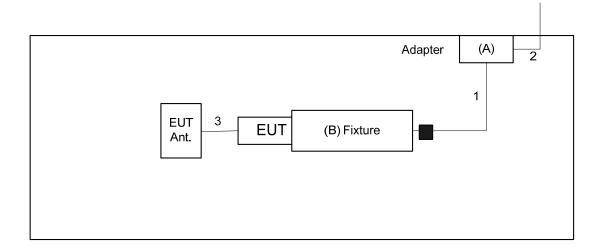
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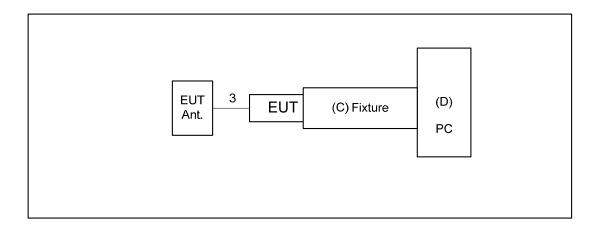


3.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Mode 2 and 5



Mode 1, 3, 4 and 6



Ferrite core

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3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID/IC	Series No.
Α	Adapter	DVE	DSA-0421S-24	N/A	N/A
В	RFID Fixture	N/A	N/A	N/A	N/A
С	RFID Fixture	N/A	N/A	N/A	N/A
D	PC	N/A	N/A	N/A	N/A

Item	Shielded Type	Ferrite Core	Length	Note
1	NO	YES	0.8m	Power Cable
2	NO	NO	1.0m	Power Cable
3	NO	NO	0.15m	Data Cable

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4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 POWER LINE CONDUCTED EMISSION LIMITS (Frequency Range 150KHz-30MHz)

Fraguency of Emission (MHz)	Conducted Limit (dBµV)	
Frequency of Emission (MHz)	Quasi-peak	Average
0.15 -0.5	66 to 56*	56 to 46*
0.50 -5.0	56	46
5.0 -30.0	60	50

Note:

(1) The limit of " * " decreases with the logarithm of the frequency

(2) 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

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

4.1.2 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 equipments 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.

4.1.3 DEVIATION FROM TEST STANDARD

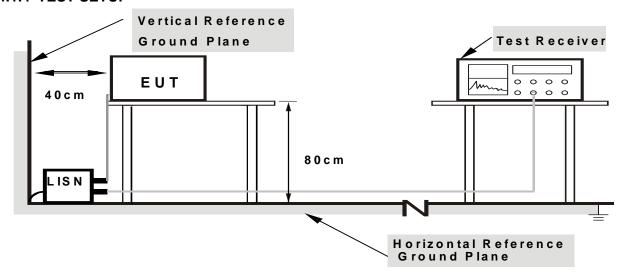
No deviation

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4.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

4.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical function (as a customer would normally use it), EUT was programmed to be in continuously transmitting/receiving data or hopping on mode.

4.1.6 EUT TEST CONDITIONS

Temperature: 25°C Relative Humidity: 55% Test Voltage: AC 120V/60Hz

4.1.7 TEST RESULTS

Please refer to the Attachment A.

Remark:

- (1) All readings are QP Mode value unless otherwise stated AVG in column of Note. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform in this case, a "*" marked in AVG Mode column of Interference Voltage Measured.
- (2) Measuring frequency range from 150KHz to 30MHz.

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4.2 RADIATED EMISSION MEASUREMENT

4.2.1 RADIATED EMISSION LIMITS (Frequency Range 9KHz -1000MHz)

20dBc in any 100 kHz bandwidth outside the operating frequency band. 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.

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
960~1000	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

Fraguency (MHz)	dB(uV/m) (at 3 meters)	
Frequency (MHz)	Peak	Average
Above 1000	74	54

Notes:

- (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

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW	4 Mile / 4 Mile for Dook 4 Mile / 40He for Average
(emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

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Spectrum Receiver Parameter	Setting	
Attenuation	Auto	
Start ~ Stop Frequency	9KHz ~90KHz for PK/AVG detector	
Start ~ Stop Frequency	90KHz ~110KHz for QP detector	
Start ~ Stop Frequency	110KHz ~490KHz for PK/AVG detector	
Start ~ Stop Frequency	490KHz ~30MHz for QP detector	
Start ~ Stop Frequency	30MHz~1000MHz for QP detector	

4.2.2 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 1GHz)
- 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 1GHz)
- c. The height of the equipment or of the substitution antenna shall be 0.8 m 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 1GHz.
- 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 1GHz)
- 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 1GHz)
- i. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.2.3 DEVIATION FROM TEST STANDARD

No deviation

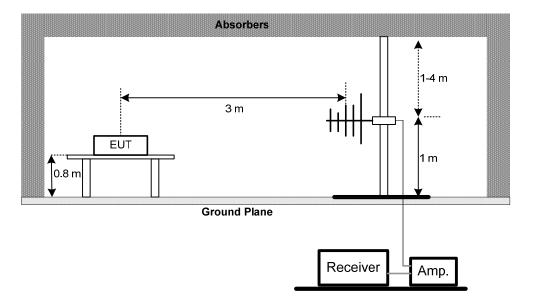
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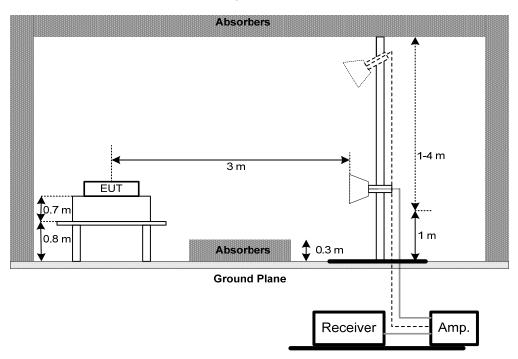


4.2.4 TEST SETUP

(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(B) Radiated Emission Test Set-Up Frequency Above 1 GHz

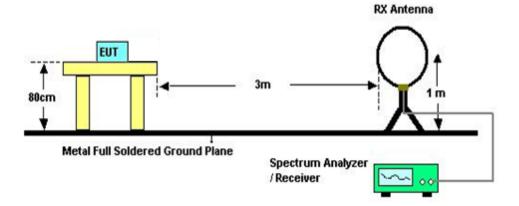


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(C) For radiated emissions below 30MHz



4.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **4.1.5** unless otherwise a special operating condition is specified in the follows during the testing

4.2.6 EUT TEST CONDITIONS

Temperature: 25°C Relative Humidity: 65% Test Voltage: AC 120V/60Hz

4.2.7 TEST RESULTS (9KHZ TO 30MHZ)

Please refer to the Attachment 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.

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4.2.8 TEST RESULTS (30MHZ TO 1000 MHZ)

Please refer to the Attachment C.

Remark:

- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz; SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz.
- (2) 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.
- (3) Measuring frequency range from 30MHz to 1000MHz.
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table.

4.2.9 TEST RESULTS (ABOVE 1000 MHZ)

Please refer to the Attachment D.

Remark:

- (1) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission
- (2) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (3) EUT Orthogonal Axis:
 - "X" denotes Laid on Table; "Y" denotes Vertical Stand; "Z" denotes Side Stand
- (4) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna
- (5) No limit: This is fundamental signal, the judgment is not applicable. For fundamental signal judgment was referred to Peak output test.

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5. BANDWIDTH TEST

5.1 APPLIED PROCEDURES

FCC Part15 (15.247) , Subpart C				
Section Test Item Frequency Range (MHz)				
15.247(a)(2)	Bandwidth	902-928		

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

5.3 DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP

EUT	SPECTRUM
	ANALYZER

5.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.5 unless otherwise a special operating condition is specified in the follows during the testing.

5.6 EUT TEST CONDITIONS

Temperature: 25°C Relative Humidity: 55% Test Voltage: AC 120V/60Hz

5.7 TEST RESULTS

Please refer to the Attachment E

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6. PEAK OUTPUT POWER TEST

6.1 APPLIED PROCEDURES

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Peak Output Power	1 Watt or 30dBm	902-928	PASS

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. The maximum peak conducted output power was performed in accordance with method 9.1.2 of FCC KDB 558074 D01 DTS Meas Guidance v03r05.

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP

EUT	SPECTRUM
	ANALYZER

6.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.5 unless otherwise a special operating condition is specified in the follows during the testing.

6.6 EUT TEST CONDITIONS

Temperature: 25°C Relative Humidity: 55% Test Voltage: AC 120V/60Hz

6.7 TEST RESULTS

Please refer to the Attachment F

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7. ANTENNA CONDUCTED SPURIOUS EMISSION

7.1 APPLIED PROCEDURES

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 measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

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. Spectrum Setting: RBW= 100KHz, VBW=100KHz, Sweep time = Auto.
- c. Offset=antenna gain+cable loss

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP

EUT	SPECTRUM
	ANALYZER

7.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.5 unless otherwise a special operating condition is specified in the follows during the testing.

7.6 EUT TEST CONDITIONS

Temperature: 25°C Relative Humidity: 55% Test Voltage: AC 120V/60Hz

7.7 TEST RESULTS

Please refer to the Attachment G

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8. POWER SPECTRAL DENSITY TEST

8.1 APPLIED PROCEDURES

FCC Part15 (15.247) , Subpart C					
Section	Test Item	Limit	Frequency Range (MHz)	Result	
15.247(e)	Power Spectral Density	8 dBm (in any 3KHz)	902-928	PASS	

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=3KHz, VBW=10KHz, 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: 25°C Relative Humidity: 55% Test Voltage: AC 120V/60Hz

8.7 TEST RESULTS

Please refer to the Attachment H.

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9. MEASUREMENT INSTRUMENTS LIST

	Conducted Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until	
1	TWO-LINE V-NETWORK	R&S	ENV216	101050	Jan. 26, 2017	
2	Test Cable	TIMES	CFD300-NL	C02	Jun. 15, 2017	
3	EMI Test Receiver	R&S	ESR7	101433	Dec. 10, 2016	
4	Measurement Software	EZ	EZ_EMC (Version NB-03A)	N/A	N/A	

	Radiated Emission Measurement						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until		
1	Trilog-Broadband Antenna	Schwarzbeck	VULB9168-3 52	9168-352	Feb. 04, 2017		
2	Horn Antenna	Schwarzbeck	BBHA 9120	D-546	Nov. 05, 2017		
3	Pre-Amplifier	HP	8447D	2944A08891	Mar. 09 2017		
4	Pre-Amplifier	Agilent	8449B	3008A02331	Jan. 24, 2017		
5	Test Cable	EMCI	EMC8D-NM- NM-8000	150301	Mar. 09, 2017		
6	Test Cable	EMCI	EMC104-SM- SM-2500	150303	Mar. 09, 2017		
7	Test Cable	EMCI	EMC104-NM- SM-1000	150304	Mar. 09, 2017		
8	Test Cable	EMCI	EMC104-SM- SM-5000	150302	Mar. 29, 2017		
9	Test Cable	EMCI	EMC104-SM- SM-800	150305	Mar. 29, 2017		
10	EXA Spectrum Analyzer	Agilent	N9010A	MY5222099 0	Feb. 24, 2017		
11	EMI Test Receiver	Agilent	N9038A	MY5121021 5	Jan. 08, 2017		
12	Loop Antenna	EMCO	6502	00042960	Nov. 06. 2016		

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	Bandwidth				
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Jan. 18, 2017

Peak Output Power					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Jan. 18, 2017

	Antenna Conducted Spurious Emission					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until	
1	Spectrum Analyzer	R&S	FSP-40	100129	Jan. 18, 2017	

Power Spectral Density						
Ite	em	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
	1	Spectrum Analyzer	R&S	FSP-40	100129	Jan. 18, 2017

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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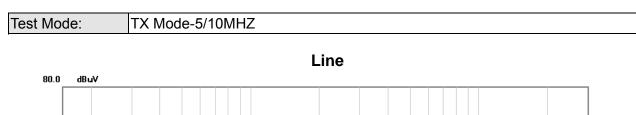


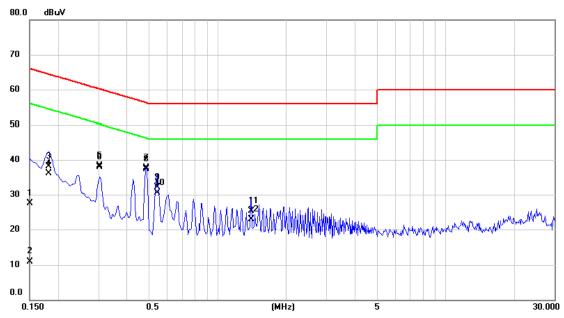
ATTACHMENT A - CONDUCTED EMISSION

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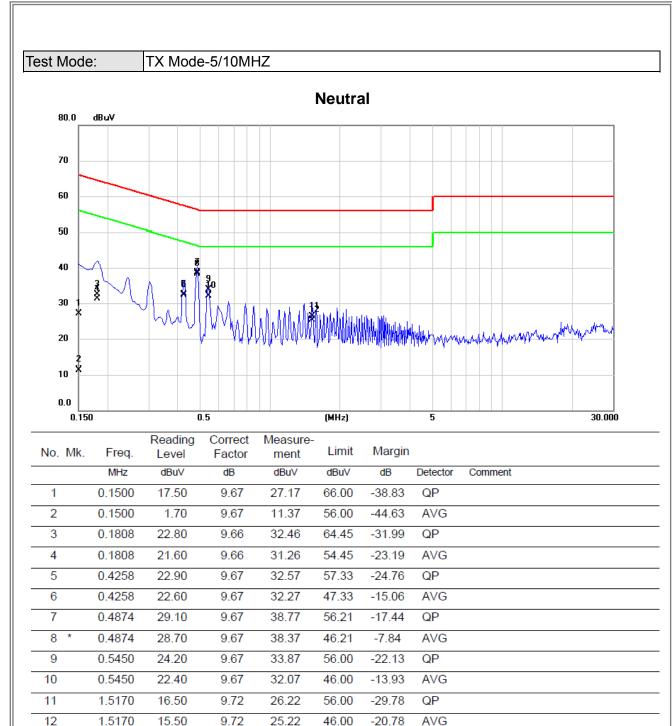


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBu∀	dB	Detector	Comment
1		0.1500	17.90	9.66	27.56	66.00	-38.44	QP	
2		0.1500	1.30	9.66	10.96	56.00	-45.04	AVG	
3		0.1822	28.40	9.66	38.06	64.38	-26.32	QP	
4		0.1822	26.40	9.66	36.06	54.38	-18.32	AVG	
5		0.3040	28.60	9.66	38.26	60.13	-21.87	QP	
6		0.3040	28.30	9.66	37.96	50.13	-12.17	AVG	
7		0.4867	28.00	9.67	37.67	56.22	-18.55	QP	
8	*	0.4867	27.70	9.67	37.37	46.22	-8.85	AVG	
9		0.5450	22.50	9.67	32.17	56.00	-23.83	QP	
10		0.5450	20.90	9.67	30.57	46.00	-15.43	AVG	
11		1.4000	15.60	9.69	25.29	56.00	-30.71	QP	
12		1.4000	13.30	9.69	22.99	46.00	-23.01	AVG	

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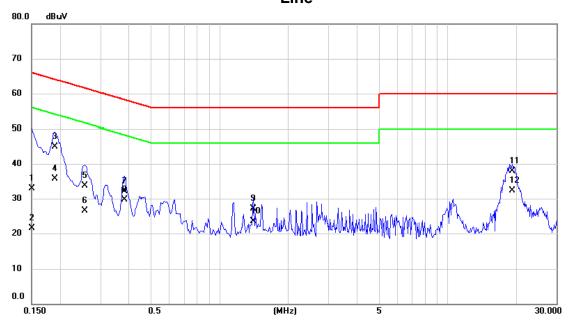




Test Mode: TX Mode-20MHZ

Line

80.0 dBuV



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	23.20	9.66	32.86	66.00	-33.14	QP	
2		0.1500	11.90	9.66	21.56	56.00	-34.44	AVG	
3		0.1906	35.30	9.66	44.96	64.01	-19.05	QP	
4		0.1906	26.00	9.66	35.66	54.01	-18.35	AVG	
5		0.2550	24.10	9.66	33.76	61.59	-27.83	QP	
6		0.2550	16.80	9.66	26.46	51.59	-25.13	AVG	
7		0.3824	22.50	9.66	32.16	58.23	-26.07	QP	
8		0.3824	20.10	9.66	29.76	48.23	-18.47	AVG	
9		1.4000	17.50	9.69	27.19	56.00	-28.81	QP	
10		1.4000	13.90	9.69	23.59	46.00	-22.41	AVG	
11		19.1500	28.00	9.97	37.97	60.00	-22.03	QP	
12	*	19.1500	22.40	9.97	32.37	50.00	-17.63	AVG	

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11

12

19.2500

19.2500

30.80

27.10

9.97

9.97

40.77

37.07

60.00

50.00

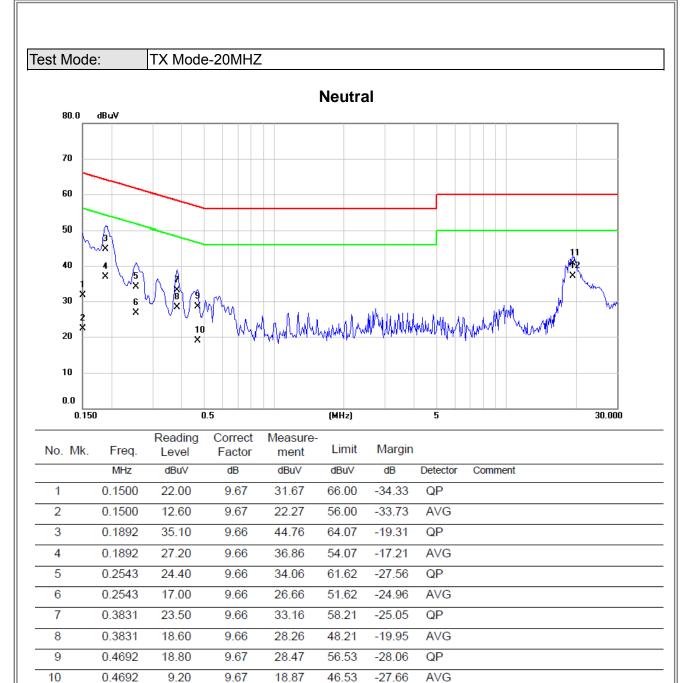
-19.23

-12.93

QP

AVG





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ATTACHMENT B - RADIATED EMISSION (9KHZ-30MHZ)

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0.0395

1 *

42.02

14.05

56.07

126.32

-70.25

peak





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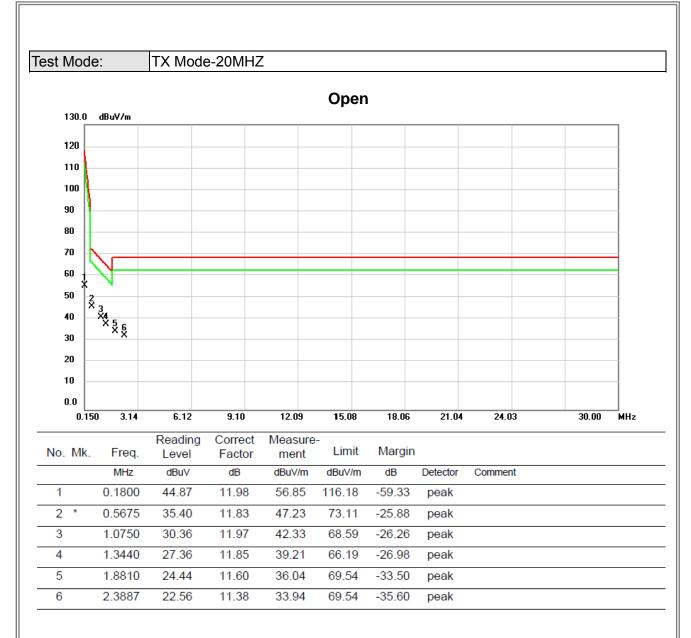




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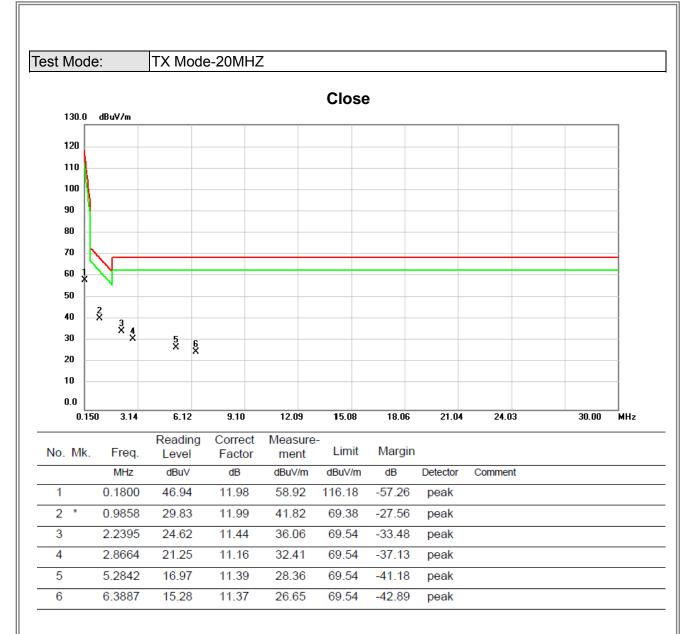




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Report No.: BTL-FCCP-1-1608276 Page 51 of 153



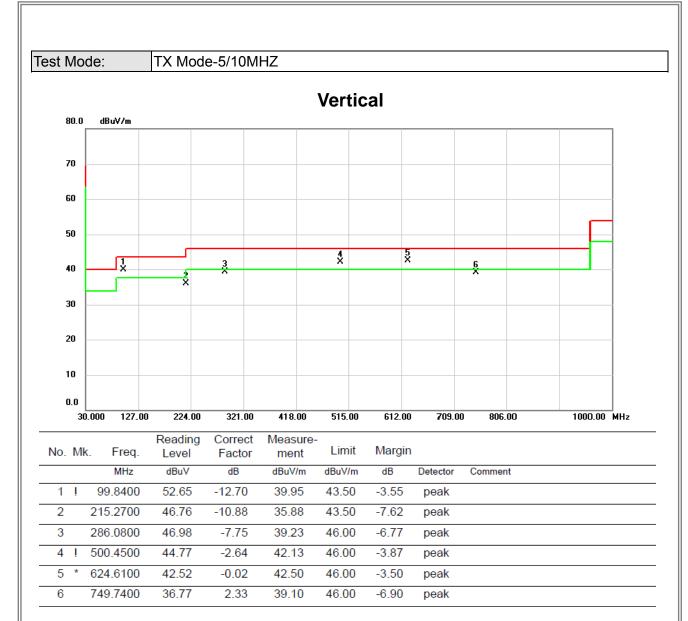


TTACHMENT C - RADIATED EMISSION (30MHZ TO 1000MHZ)

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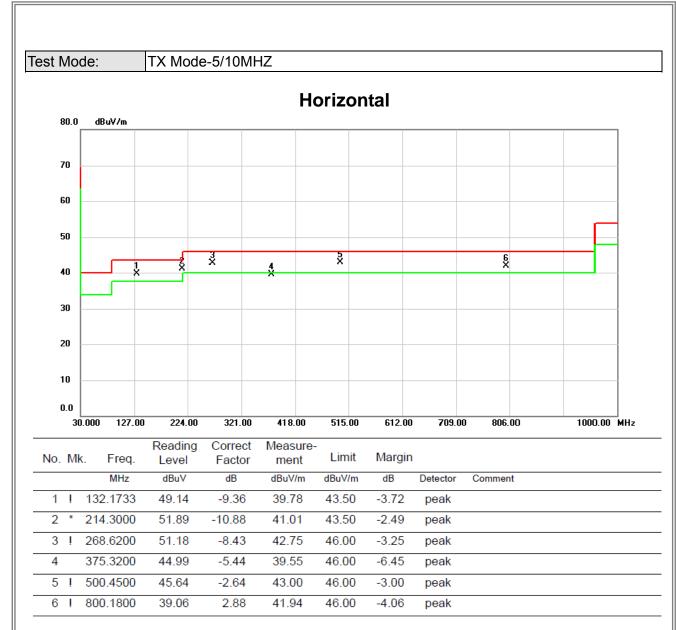




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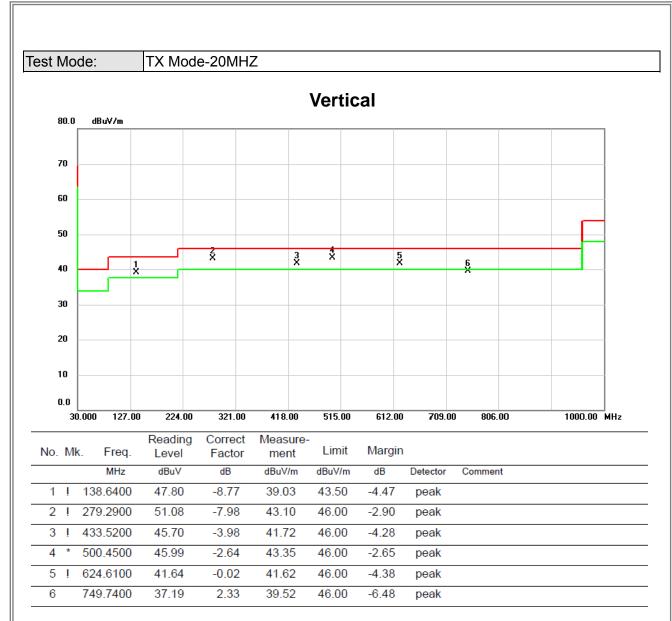




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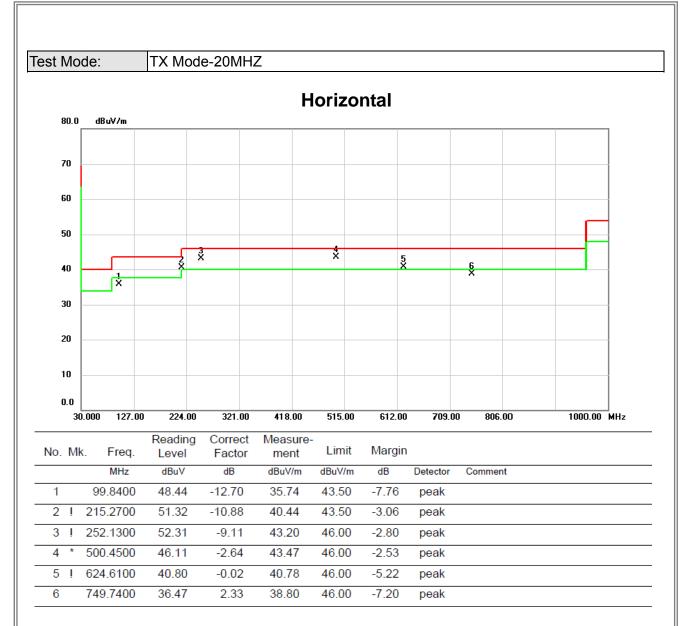




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ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)

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Vertical 130.0 dBuV/m 120 110 100 90 80 70 60 50 40 30 20 10.0 862.000 872.00 882.00 892.00 902.00 912.00 922.00 932.00 942.00 962.00 MHz

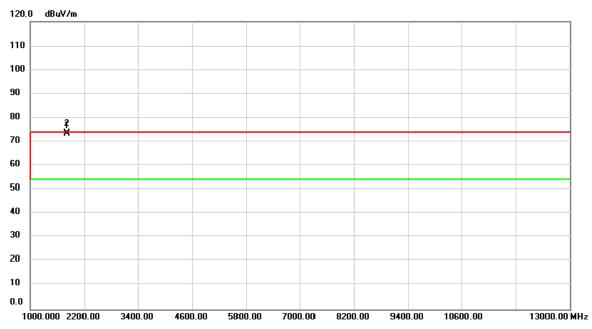
	No.	Mł	۲.	Freq.	Reading Level		Measure- ment	Limit	Margin		
				MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
Ī	1	*	912	2.0000	88.67	31.79	120.46	46.00	74.46	peak	No Limit
	2	Χ	912	2.0000	78.30	31.79	110.09	46.00	64.09	AVG	No Limit

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Vertical



No.	Mk.	. Freq.			Measure- ment		Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1824.000	92.17	-18.62	73.55	100.46	-26.91	peak	
2	*	1824.000	91.89	-18.62	73.27	90.09	-16.82	AVG	

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Orthogonal Axis: X

Test Mode: TX B-20MHZ MODE 912 MHz

Horizontal



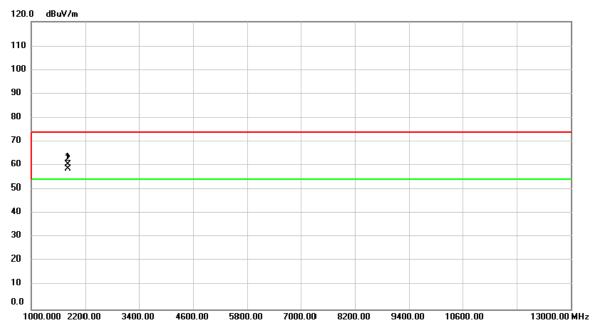
No.	Mk	. Freq.	_	Correct Factor	Measure- ment	Limit	Margin			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	*	912.0000	82.58	31.79	114.37	46.00	68.37	peak	No Limit	
2	X	912.0000	72.77	31.79	104.56	46.00	58.56	AVG	No Limit	

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Horizontal

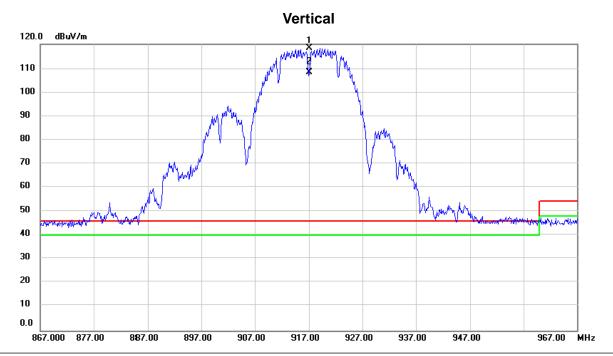


No	. N	Λk.	Freq.			Measure- ment		Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		18	324.000	78.97	-18.62	60.35	94.37	-34.02	peak	
2	*	18	324.000	77.40	-18.62	58.78	84.56	-25.78	AVG	

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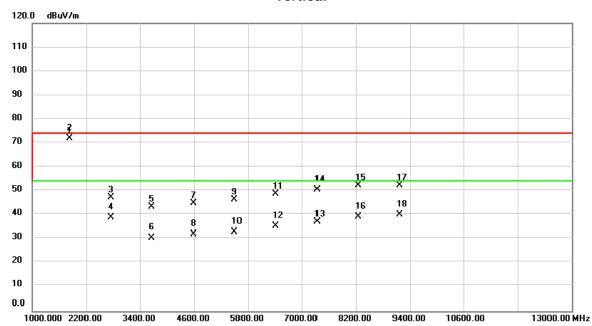
No.	Mk	. Freq.	_		Measure- ment		Margin		
		MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	917.0000	86.54	31.86	118.40	46.00	72.40	peak	No Limit
2	X	917.0000	76.63	31.86	108.49	46.00	62.49	AVG	No Limit

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Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	,	1833.900	90.48	-18.58	71.90	98.40	-26.5	peak	
2	*	1833.900	90.45	-18.58	71.87	88.49	-16.62	AVG	
3		2751.000	62.11	-14.85	47.26	74.00	-26.74	peak	
4		2751.000	53.69	-14.85	38.84	54.00	-15.16	AVG	
5	;	3668.000	56.25	-12.90	43.35	74.00	-30.65	peak	
6	,	3668.000	43.49	-12.90	30.59	54.00	-23.41	AVG	
7	4	4585.000	55.57	-10.86	44.71	74.00	-29.29	peak	
8	4	4585.000	42.95	-10.86	32.09	54.00	-21.91	AVG	
9	,	5502.000	55.99	-9.79	46.20	98.40	-52.20	peak	
10	;	5502.000	42.74	-9.79	32.95	88.49	-55.54	AVG	
11	(6419.000	55.39	-6.67	48.72	98.40	-49.68	peak	
12	(6419.000	41.85	-6.67	35.18	88.49	-53.31	AVG	
13		7336.000	41.03	-3.85	37.18	74.00	-36.82	peak	

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Vertical

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
14	7	336.000	54.38	-3.85	50.53	54.00	-3.47	AVG	
15	8	253.000	53.24	-0.98	52.26	74.00	-21.74	peak	
16	8	253.000	40.22	-0.98	39.24	54.00	-14.76	AVG	
17	9	170.000	51.72	0.61	52.33	74.00	-21.67	peak	
18	9	170.000	39.48	0.61	40.09	54.00	-13.91	AVG	

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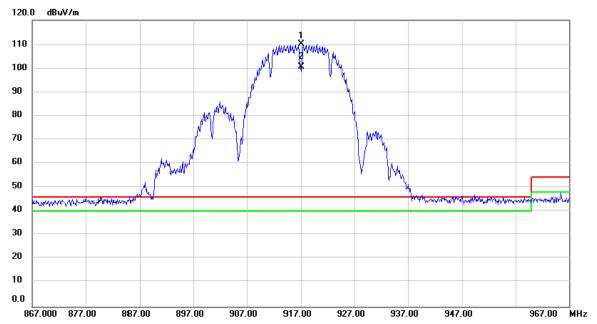




Orthogonal Axis: X

Test Mode: TX B-20MHZ MODE 917 MHz

Horizontal



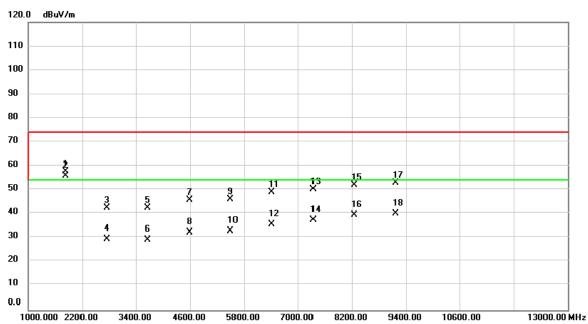
	No.	Mk	. Freq.	_	Correct Factor	Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
Ī	1	*	917.0000	78.52	31.86	110.38	46.00	64.38	peak	No Limit
	2	X	917.0000	68.89	31.86	100.75	46.00	54.75	AVG	No Limit

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Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	,	1834.000	76.31	-18.58	57.73	90.38	-32.65	peak	
2	* .	1834.000	74.40	-18.58	55.82	80.75	-24.93	AVG	
3	2	2751.000	57.40	-14.85	42.55	74.00	-31.45	peak	
4	2	2751.000	44.48	-14.85	29.63	54.00	-24.37	AVG	
5	,	3668.000	55.22	-12.90	42.32	74.00	-31.68	peak	
6	,	3668.000	42.09	-12.90	29.19	54.00	-24.81	AVG	
7	4	4585.000	56.56	-10.86	45.70	74.00	-28.30	peak	
8	4	4585.000	43.25	-10.86	32.39	54.00	-21.61	AVG	
9	ļ	5502.000	55.73	-9.79	45.94	90.38	-44.47	peak	
10	ļ	5502.000	42.70	-9.79	32.91	80.75	-47.84	AVG	
11	(6419.000	55.65	-6.67	48.98	90.38	-41.40	peak	
12	(6419.000	42.08	-6.67	35.41	80.75	-45.34	AVG	
13		7336.000	54.22	-3.85	50.37	74.00	-23.63	peak	

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Horizontal

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
14	7	336.000	41.15	-3.85	37.30	54.00	-16.70	AVG	
15	8	253.000	53.03	-0.98	52.05	74.00	-21.95	peak	
16	8	253.000	40.31	-0.98	39.33	54.00	-14.67	AVG	
17	9	170.000	52.24	0.61	52.85	74.00	-21.15	peak	
18	9	170.000	39.58	0.61	40.19	54.00	-13.81	AVG	

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Vertical 120.0 dBuV/m 110 100 90 80 70 60 50 40 30 20 10 0.0 857.000 867.00 877.00 887.00 897.00 907.00 917.00 927.00 937.00 957.00 MHz

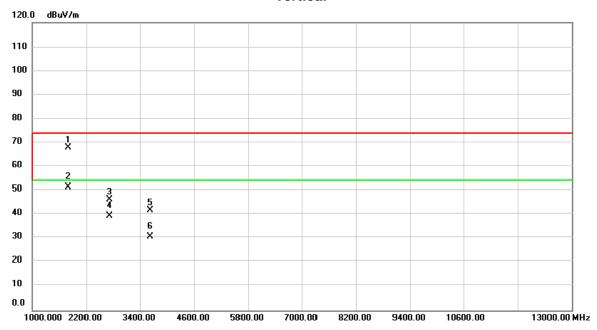
No.	Mk	. Fr		Reading Level		Measure- ment	Limit	Margin		
		M	ΗZ	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	907.00	000	83.20	23.19	106.39	46.00	60.39	peak	No Limit
2	X	907.00	000	73.93	23.19	97.12	46.00	51.12	AVG	No Limit

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Vertical



	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1		1814.000	86.64	-18.64	68.00	86.39	-18.36	peak	
	2	*	1814.000	70.13	-18.64	51.49	77.12	-25.63	AVG	
	3		2721.000	61.17	-14.97	46.20	74.00	-27.80	peak	
-	4		2721.000	54.48	-14.97	39.51	54.00	-14.49	AVG	
	5		3628.000	54.80	-13.04	41.76	74.00	-32.24	peak	
	6		3628.000	43.74	-13.04	30.70	54.00	-23.30	AVG	
-										

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10 0.0

857.000 867.00

877.00

887.00



Orthogonal Axis: X
Test Mode: TX G-5MHZ MODE 907 MHz

Horizontal 120.0 dBuV/m 110 90 80 70 60 50 40 30

No.	Mk	c. Freq.			Measure- ment		Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	907.0000	75.96	24.28	100.24	46.00	54.24	peak	No Limit
2	Χ	907.0000	66.52	24.28	90.80	46.00	44.80	AVG	No Limit

907.00

917.00

927.00

897.00

937.00

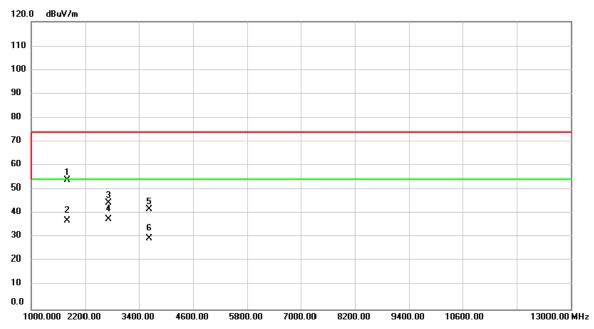
957.00 MHz

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Horizontal



	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	1	814.000	72.35	-18.64	53.71	80.24	-26.53	peak	
_	2	1	814.000	55.79	-18.64	37.15	70.80	-33.65	AVG	
_	3	2	721.000	59.39	-14.97	44.42	74.00	-29.58	peak	
_	4	* 2	721.000	52.50	-14.97	37.53	54.00	-16.47	AVG	
	5	3	628.000	54.76	-13.04	41.72	74.00	-32.28	peak	
_	6	3	628.000	42.50	-13.04	29.46	54.00	-24.54	AVG	
_										

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Vertical 120.0 dBuV/m 110 100 90 80 70 60 50 to proper many to the said of 40 30 20 10 0.0 862.000 872.00 882.00 892.00 902.00 912.00 922.00 932.00 942.00 962.00 MHz

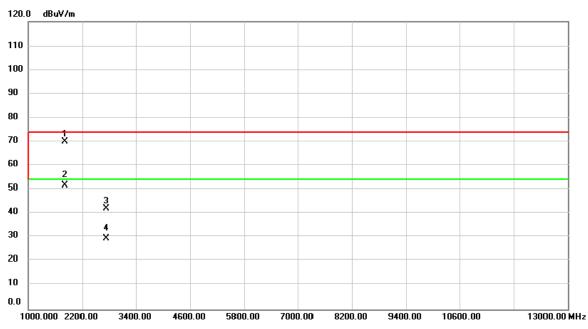
	No.	Mk	. Freq.	_		Measure- ment		Margin		
			MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	*	912.0000	83.11	22.98	106.09	46.00	60.09	peak	No Limit
_	2	X	912.0000	74.27	22.98	97.25	46.00	51.25	AVG	No Limit

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Vertical

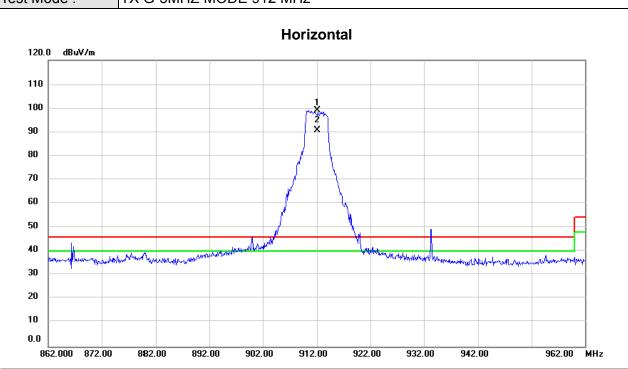


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1824.000	88.62	-18.62	70.00	86.09	-16.09	peak	
2	*	1824.000	70.28	-18.62	51.66	77.25	-25.59	AVG	
3		2736.000	57.01	-14.91	42.10	74.00	-31.90	peak	
4		2736.000	44.33	-14.91	29.42	54.00	-24.58	AVG	

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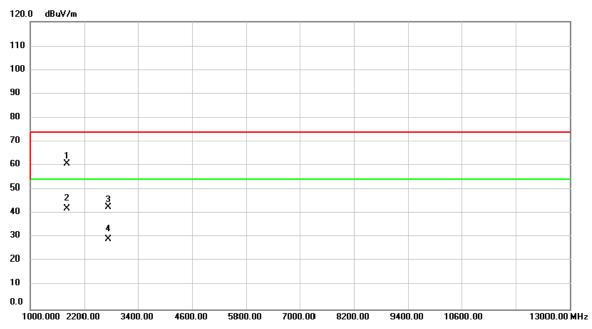
No.	Mk	. Freq.	_		Measure- ment		Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	912.0000	74.93	24.10	99.03	46.00	53.03	peak	No Limit
2	X	912.0000	66.59	24.10	90.69	46.00	44.69	AVG	No Limit

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Horizontal

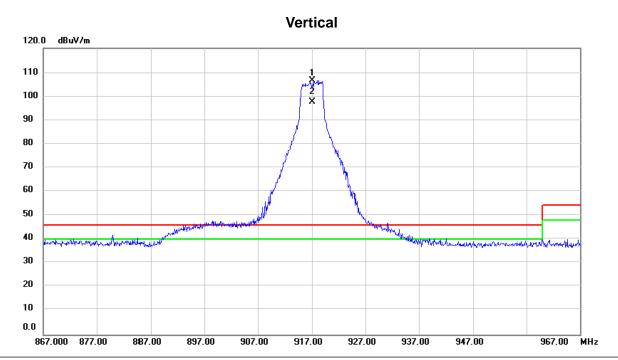


-	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
_	1	1	1824.000	79.38	-18.62	60.76	79.03	-18.27	peak	
	2	* 1	1824.000	60.81	-18.62	42.19	70.69	-28.50	AVG	
	3	2	2736.000	57.52	-14.91	42.61	74.00	-31.39	peak	
_	4	2	2736.000	44.02	-14.91	29.11	54.00	-24.89	AVG	

Report No.: BTL-FCCP-1-1608276 Page 75 of 153







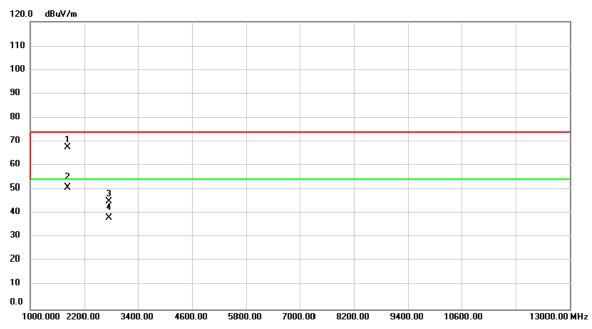
	No.	Mk	. Freq.	_		Measure- ment		Margin		
			MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	*	917.0000	83.22	23.39	106.61	46.00	60.61	peak	No Limit
_	2	X	917.0000	74.41	23.39	97.80	46.00	51.80	AVG	No Limit

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Vertical

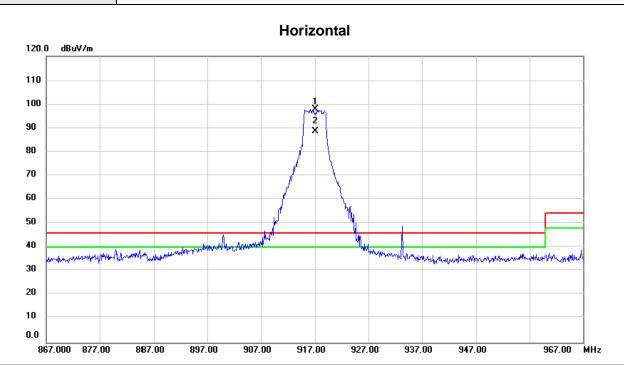


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	,	1834.000	86.38	-18.58	67.80	86.61	-18.81	peak	
2	*	1834.000	69.48	-18.58	50.90	77.80	-26.9	AVG	
3	- :	2751.000	59.88	-14.85	45.03	74.00	-28.97	peak	
4	:	2751.000	53.07	-14.85	38.22	54.00	-15.78	AVG	

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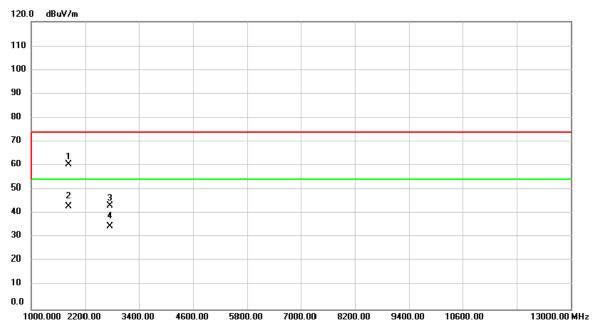
No.	Mk	. Freq.			Measure- ment		Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	917.0000	74.30	23.67	97.97	46.00	51.97	peak	No Limit
2	X	917.0000	65.10	23.67	88.77	46.00	42.77	AVG	No Limit

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Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1834.000	78.91	-18.58	60.33	77.97	-17.64	peak	
2	*	1834.000	61.75	-18.58	43.17	68.77	-25.60	AVG	
3		2751.000	58.20	-14.85	43.35	74.00	-30.65	peak	
4		2751.000	49.48	-14.85	34.63	54.00	-19.37	AVG	

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Vertical 120.0 dBuV/m 110 100 90 80 70 60 50 40 30 20 10 0.0 872.000 882.00 892.00 902.00 912.00 922.00 932.00 942.00 952.00 972.00 MHz

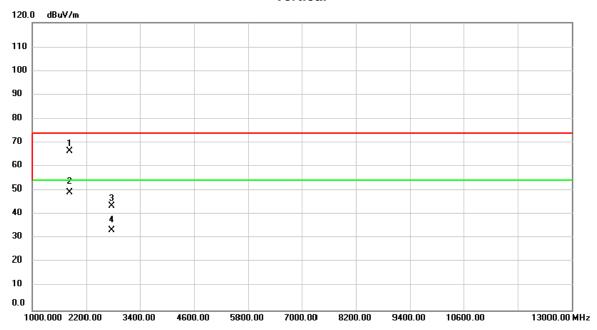
	No.	Mk	. Freq.	_	Correct Factor	Measure- ment		Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	*	922.0000	82.66	24.52	107.18	46.00	61.18	peak	No Limit
_	2	X	922.0000	73.62	24.52	98.14	46.00	52.14	AVG	No Limit

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Vertical



-	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
_	1	1	1844.000	85.16	-18.56	66.60	87.18	-20.58	peak	
	2	* 1	1844.000	67.85	-18.56	49.29	78.14	-28.85	AVG	
	3	2	2766.000	58.59	-14.79	43.80	74.00	-30.20	peak	
	4	2	2766.000	48.14	-14.79	33.35	54.00	-20.65	AVG	

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0.0

872.000 882.00

892.00

902.00

912.00



972.00 MHz

Orthogonal Axis: X
Test Mode: TX G-5MHZ MODE 922 MHz

Horizontal 120.0 dBuV/m 110 90 80 70 60 50 40 10

No.	Mk	. Freq.	Reading Level		Measure- ment		Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	922.0000	74.25	23.09	97.34	46.00	51.34	peak	No Limit
2	Χ	922.0000	65.17	23.09	88.26	46.00	42.26	AVG	No Limit

922.00

932.00

942.00

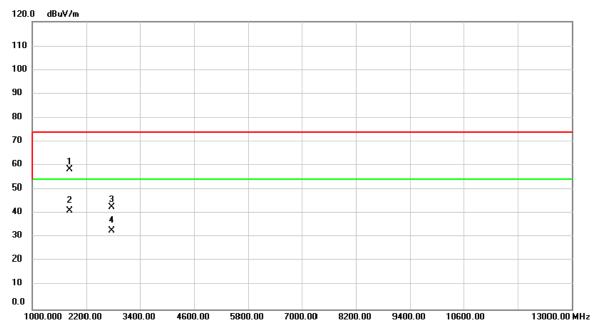
952.00

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Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	1	1844.000	76.90	-18.56	58.34	77.34	-19.00	peak	
2	* /	1844.000	59.96	-18.56	41.40	68.26	-26.86	AVG	
3	2	2766.000	57.69	-14.79	42.90	74.00	-31.10	peak	
4	2	2766.000	47.73	-14.79	32.94	54.00	-21.06	AVG	

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Vertical 120.0 dBuV/m 110 100 90 80 70 60 50 40 30 20 10 0.0 857.000 867.00 877.00 887.00 897.00 907.00 917.00 927.00 937.00 957.00 MHz

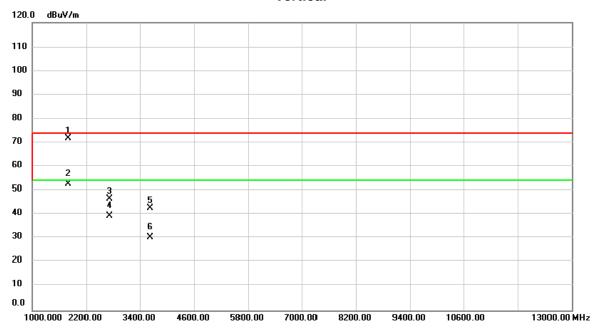
	No.	Mk	c. Freq.	_		Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
_	1	*	907.0000	79.93	23.19	103.12	46.00	57.12	peak	No Limit
	2	X	907.0000	71.23	23.19	94.42	46.00	48.42	AVG	No Limit

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Vertical



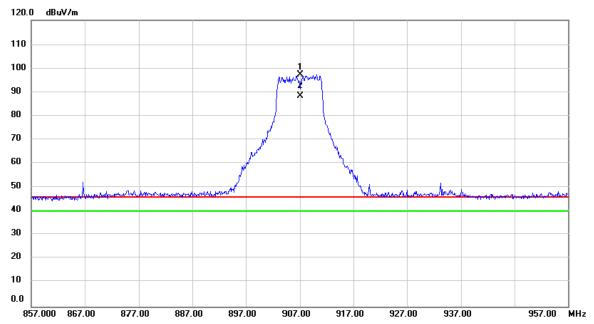
	No.	Mk	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
-			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1		1814.000	90.48	-18.64	71.84	83.12	-11.28	peak	
	2	*	1814.000	71.34	-18.64	52.70	74.42	-21.72	AVG	
-	3		2721.000	61.70	-14.97	46.73	74.00	-27.27	peak	
-	4		2721.000	54.32	-14.97	39.35	54.00	-14.65	AVG	
-	5		3628.000	55.69	-13.04	42.65	74.00	-31.35	peak	
-	6		3628.000	43.58	-13.04	30.54	54.00	-23.46	AVG	
-										

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Horizontal



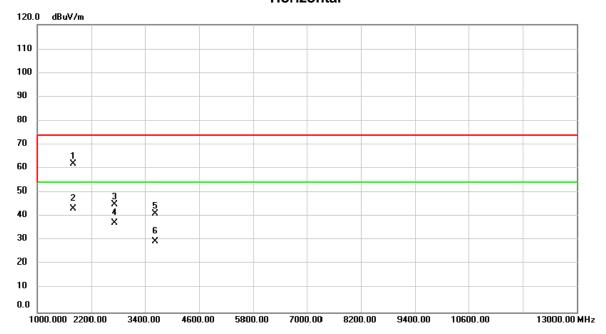
	No.	Mk	c. Freq.	Reading Level		Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
Ī	1	*	907.0000	72.97	24.28	97.25	46.00	51.25	peak	No Limit
	2	X	907.0000	64.17	24.28	88.45	46.00	42.45	AVG	No Limit

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Horizontal



	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1		1814.000	80.62	-18.64	61.98	77.25	-15.27	peak	
	2	*	1814.000	61.98	-18.64	43.34	68.45	-25.11	AVG	
	3		2721.000	60.10	-14.97	45.13	74.00	-28.87	peak	
-	4		2721.000	52.21	-14.97	37.24	54.00	-16.76	AVG	
	5	;	3628.000	54.15	-13.04	41.11	74.00	-32.89	peak	
	6	;	3628.000	42.54	-13.04	29.50	54.00	-24.50	AVG	
-										

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Vertical 120.0 dBuV/m 110 100 90 80 70 60 50 40 30 20 10 0.0 862.000 872.00 882.00 892.00 902.00 912.00 922.00 932.00 942.00 962.00 MHz

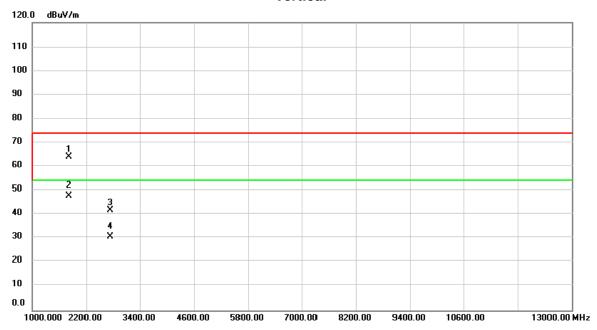
No.	Mk	c. Freq.	_		Measure- ment		Margin			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	*	912.0000	80.76	22.98	103.74	46.00	57.74	peak	No Limit	
2	X	912.0000	71.83	22.98	94.81	46.00	48.81	AVG	No Limit	

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Vertical



	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
_			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	,	1824.000	82.60	-18.62	63.98	83.74	-19.76	peak	
	2	* /	1824.000	66.47	-18.62	47.85	74.81	-26.96	AVG	
	3	2	2736.000	56.91	-14.91	42.00	74.00	-32.00	peak	
	4	2	2736.000	45.68	-14.91	30.77	54.00	-23.23	AVG	

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Horizontal 120.0 dBuV/m 110 100 90 80 70 60 50 40 30 20 10 0.0 862.000 872.00 962.00 MHz 882.00 892.00 902.00 912.00 922.00 932.00 942.00

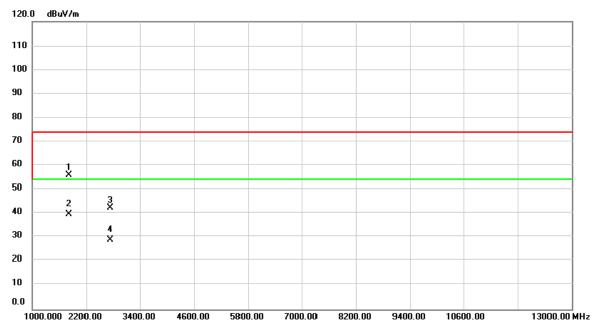
	No.	Mk	. Freq.	Reading Level		Measure- ment		Margin		
_			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	*	912.0000	73.42	24.10	97.52	46.00	51.52	peak	No Limit
_	2	X	912.0000	62.97	24.10	87.07	46.00	41.07	AVG	No Limit

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Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1824.000	74.57	-18.62	55.95	77.52	-21.57	peak	
2	*	1824.000	58.39	-18.62	39.77	67.07	-27.30	AVG	
3		2736.000	57.47	-14.91	42.56	74.00	-31.44	peak	
4		2736.000	43.99	-14.91	29.08	54.00	-24.92	AVG	

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Vertical 120.0 dBuV/m 110 100 90 80 70 60 50 40 30 20 10 0.0 867.000 877.00 887.00 897.00 907.00 917.00 927.00 937.00 947.00 967.00 MHz

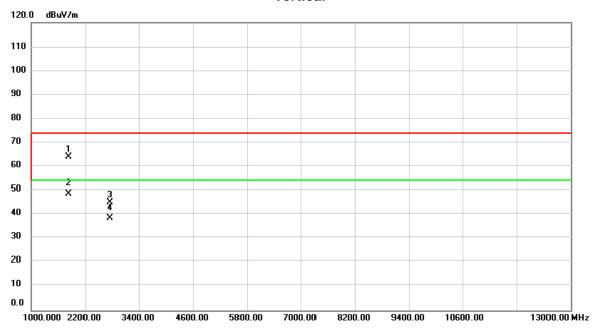
	No.	Mk	. Freq.	_		Measure- ment		Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	*	917.0000	81.45	23.39	104.84	46.00	58.84	peak	No Limit
_	2	X	917.0000	72.82	23.39	96.21	46.00	50.21	AVG	No Limit

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Vertical



	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	1	1834.000	82.70	-18.58	64.12	84.84	-20.72	peak	
	2	*	1834.000	67.33	-18.58	48.75	76.21	-27.46	AVG	
	3	2	2751.000	60.12	-14.85	45.27	74.00	-28.73	peak	
_	4	2	2751.000	53.44	-14.85	38.59	54.00	-15.41	AVG	

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10 0.0

867.000 877.00

887.00

897.00



Orthogonal Axis: X
Test Mode: TX G-10MHZ MODE 917 MHz

Horizontal 120.0 dBuV/m 1100 90 80 70 60 40 30

	No.	Mk	. Freq.	Reading Level		Measure- ment		Margin		
_			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	*	917.0000	73.24	23.67	96.91	46.00	50.91	peak	No Limit
	2	X	917.0000	63.18	23.67	86.85	46.00	40.85	AVG	No Limit

917.00

927.00

937.00

907.00

947.00

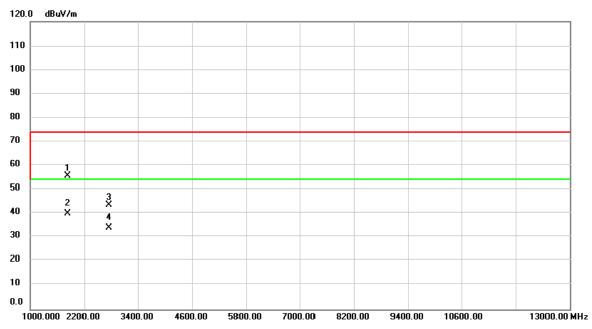
967.00 MHz

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Horizontal

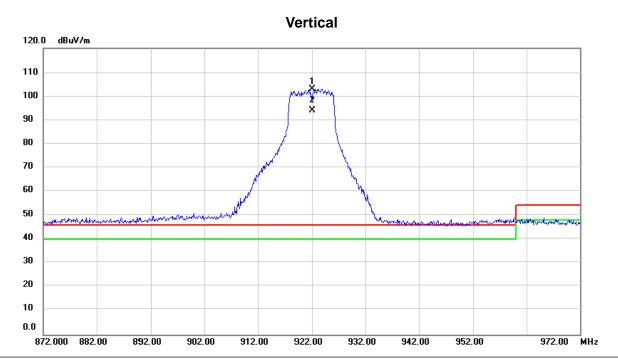


-	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
_	1	1	1834.000	74.25	-18.58	55.67	76.91	-21.24	peak	
	2	* /	1834.000	58.53	-18.58	39.95	66.85	-26.90	AVG	
	3	2	2751.000	58.49	-14.85	43.64	74.00	-30.36	peak	
_	4	2	2751.000	48.99	-14.85	34.14	54.00	-19.86	AVG	

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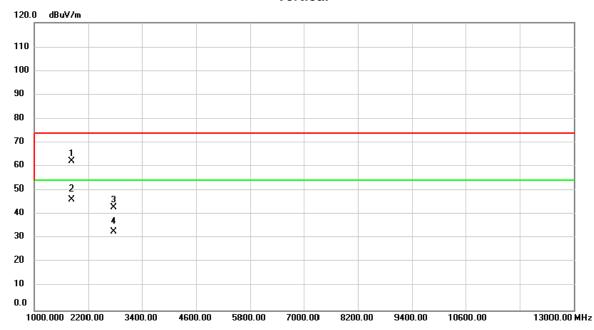
	No.	Mk	. Freq.	_	Correct Factor	Measure- ment		Margin		
			MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	*	922.0000	80.07	23.09	103.16	46.00	57.16	peak	No Limit
_	2	X	922.0000	71.09	23.09	94.18	46.00	48.18	AVG	No Limit

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Vertical



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1844.000	80.76	-18.56	62.20	83.16	-20.96	peak	
2	*	1844.000	64.93	-18.56	46.37	74.18	-27.81	AVG	
3		2766.000	57.79	-14.79	43.00	74.00	-31.00	peak	
4		2766.000	47.57	-14.79	32.78	54.00	-21.22	AVG	

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872.000 882.00

892.00

902.00

912.00



972.00 MHz

Orthogonal Axis: X
Test Mode: TX G-10MHZ MODE 922 MHz

Horizontal 120.0 dBuV/m 110 100 90 80 70 60 50 40 menter and menter and the manufacture and the 30 20 10 0.0

No.	Mk	c. Freq.	Reading Level		Measure- ment		Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	922.0000	72.12	23.09	95.21	46.00	49.21	peak	No Limit
2	X	922.0000	63.24	23.09	86.33	46.00	40.33	AVG	No Limit

922.00

932.00

942.00

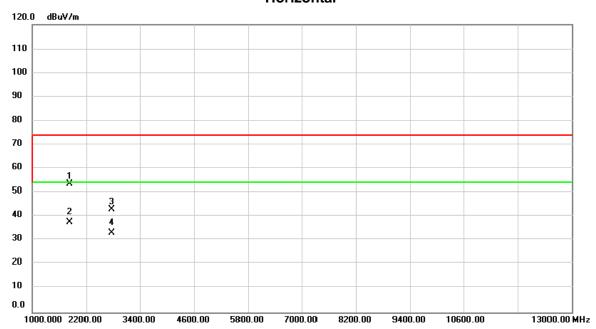
952.00

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Horizontal



_	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1		1844.000	72.14	-18.56	53.58	75.21	-21.63	peak	
	2	*	1844.000	56.19	-18.56	37.63	66.33	-28.70	AVG	
	3		2766.000	57.74	-14.79	42.95	74.00	-31.05	peak	
	4		2766.000	47.94	-14.79	33.15	54.00	-20.85	AVG	

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Vertical 120.0 dBuV/m 110 100 90 80 70 60 50 40 30 20 10 0.0 862.000 872.00 882.00 892.00 902.00 912.00 922.00 932.00 942.00 962.00 MHz

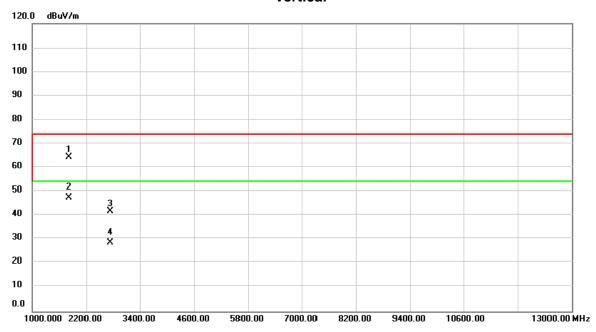
	No.	Mk	. Freq.	_	Correct Factor	Measure- ment		Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	*	912.0000	79.71	31.79	111.50	46.00	65.50	peak	No Limit
_	2	X	912.0000	70.53	31.79	102.32	46.00	56.32	AVG	No Limit

Report No.: BTL-FCCP-1-1608276 Page 100 of 153





Vertical



_	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1		1824.000	83.04	-18.62	64.42	91.50	-27.08	peak	
	2	* .	1824.000	66.07	-18.62	47.45	82.32	-34.87	AVG	
	3	2	2736.000	56.83	-14.91	41.92	74.00	-32.08	peak	
	4	2	2736.000	43.57	-14.91	28.66	54.00	-25.34	AVG	

Report No.: BTL-FCCP-1-1608276 Page 101 of 153



0.0

862.000 872.00

882.00

892.00

902.00



962.00 MHz

Orthogonal Axis: X
Test Mode: TX G-20MHZ MODE 912 MHz

Horizontal 120.0 dBuV/m 110 90 80 70 60 50 40 10

N	lo.	Mk	. Freq.			Measure- ment		Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	*	912.0000	74.61	31.79	106.40	46.00	60.40	peak	No Limit
	2	Χ	912.0000	65.09	31.79	96.88	46.00	50.88	AVG	No Limit

912.00

922.00

932.00

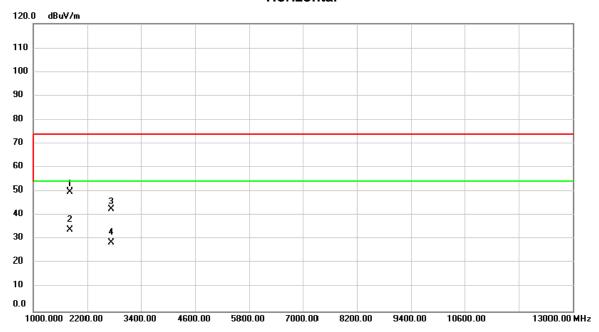
942.00

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Horizontal



No.	Mk	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1824.000	68.62	-18.62	50.00	86.40	-36.40	peak	
2	*	1824.000	52.55	-18.62	33.93	76.88	-42.95	AVG	
3		2736.000	57.72	-14.91	42.81	74.00	-31.19	peak	
4		2736.000	43.64	-14.91	28.73	54.00	-25.27	AVG	

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Vertical 120.0 dBuV/m 110 100 90 80 70 60 50 40 30 20 10 0.0 867.000 877.00 887.00 897.00 907.00 917.00 927.00 937.00 947.00 967.00 MHz

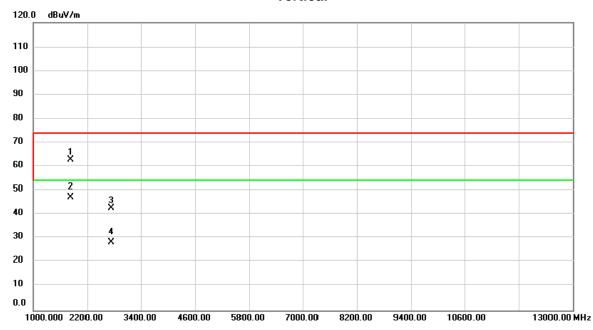
No.	Mk	. F	req.	Reading Level		Measure- ment	Limit	Margin		
		ı	ИHZ	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	917.0	0000	80.39	31.86	112.25	46.00	66.25	peak	No Limit
2	X	917.0	0000	71.10	31.86	102.96	46.00	56.96	AVG	No Limit

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Vertical



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1834.000	81.30	-18.58	62.72	92.25	-29.53	peak	
2	*	1834.000	65.79	-18.58	47.21	82.95	-35.74	AVG	
3		2741.000	57.62	-14.89	42.73	74.00	-31.27	peak	
4		2741.000	43.13	-14.89	28.24	54.00	-25.76	AVG	

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Horizontal 120.0 dBuV/m 110 100 90 80 70 60 50 المتعادية المتعادية والمتعادية والمتعادة والمتعادية وال 40 30 20 10 0.0 867.000 877.00 967.00 MHz 887.00 897.00 907.00 917.00 937.00 947.00

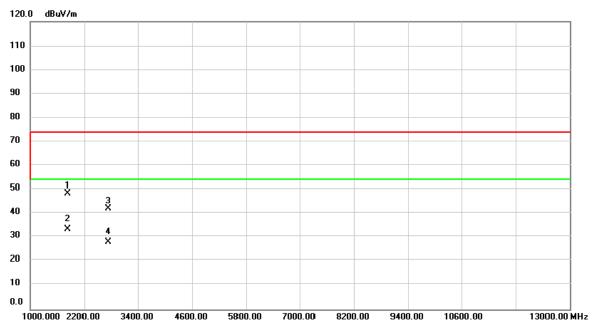
	No.	Mk	. Fre		ding Corr /el Fac	ect Meas tor mer		Margin			
_			MH	z dBı	uV dB	3 dBuV/	/m dBuV/m	dB	Detector	Comment	
	1	*	917.00	00 74.	74 31.8	36 106.6	60 46.00	60.60	peak	No Limit	
	2	Χ	917.00	00 65.	40 31.8	36 97.2	46.00	51.26	AVG	No Limit	

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Horizontal



No	o. Mi	k. Freq.	Reading Level		Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
-	1	1834.000	67.17	-18.58	48.59	86.60	-38.01	peak	
2	2 *	1834.000	51.99	-18.58	33.41	77.26	-43.85	AVG	
	3	2741.000	57.10	-14.89	42.21	74.00	-31.79	peak	
4	1	2741.000	43.09	-14.89	28.20	54.00	-25.80	AVG	

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Vertical 120.0 dBuV/m 110 100 90 80 70 60 50 manyan marin da pangan panda da pangan pangan 40 30 20 10 0.0 862.000 872.00 882.00 892.00 902.00 912.00 922.00 932.00 942.00 962.00 MHz

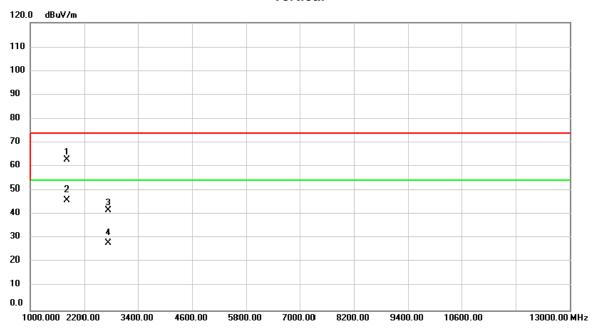
N	lo.	Mk	i. F	req.	Reading Level		Measure- ment	Limit	Margin		
				MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	*	912.	0000	79.69	31.79	111.48	46.00	65.48	peak	No Limit
	2	X	912.	0000	70.13	31.79	101.92	46.00	55.92	AVG	No Limit

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Vertical

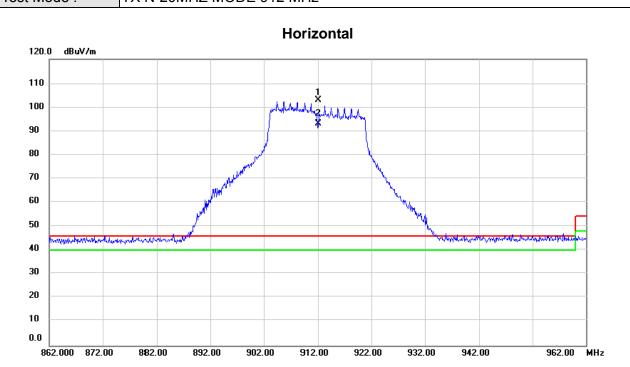


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1824.000	81.49	-18.62	62.87	91.48	-28.61	peak	
2	*	1824.000	64.79	-18.62	46.17	81.92	-35.75	AVG	
3		2736.000	56.66	-14.91	41.75	74.00	-32.25	peak	
4		2736.000	43.07	-14.91	28.16	54.00	-25.84	AVG	

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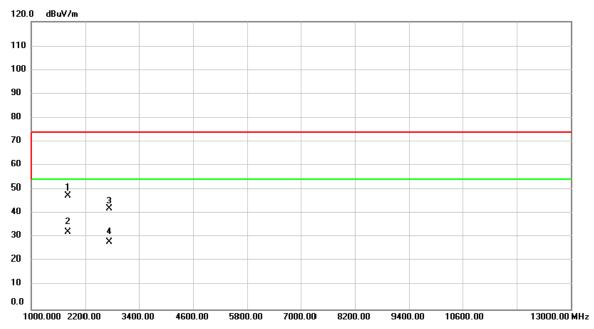
No.	Mk	. Freq.	Reading Level		Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	912.0000	71.17	31.79	102.96	46.00	56.96	peak	No Limit
2	X	912.0000	61.42	31.79	93.21	46.00	47.21	AVG	No Limit

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Horizontal



	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
_			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1		1824.000	66.03	-18.62	47.41	82.95	-35.54	peak	
	2	*	1824.000	50.75	-18.62	32.13	73.21	-41.08	AVG	
	3		2736.000	56.99	-14.91	42.08	74.00	-31.92	peak	
_	4		2736.000	43.09	-14.91	28.18	54.00	-25.82	AVG	

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Vertical 120.0 dBuV/m 110 100 90 80 70 60 50 40 30 20 10 0.0 867.000 877.00 887.00 897.00 907.00 917.00 927.00 937.00 947.00 967.00 MHz

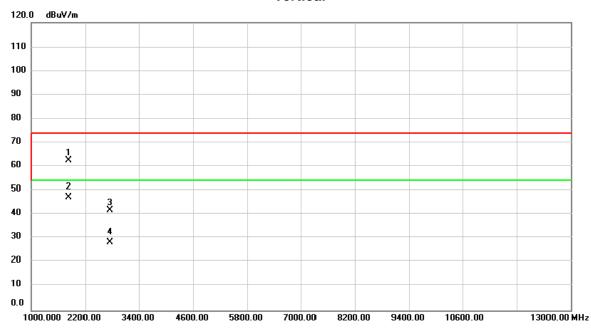
	No.	Mk	. Freq.	_		Measure- ment		Margin		
			MHz	dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	1	*	917.0000	80.67	31.86	112.53	46.00	66.53	peak	No Limit
_	2	X	917.0000	71.13	31.86	102.99	46.00	56.99	AVG	No Limit

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Vertical



-	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
_	1	1	1834.000	81.21	-18.58	62.63	92.53	-29.9	peak	
	2	* 1	1834.000	65.92	-18.58	47.34	82.99	-35.65	AVG	
	3	2	2751.000	56.66	-14.85	41.81	74.00	-32.19	peak	
_	4	2	2751.000	43.07	-14.85	28.22	54.00	-25.78	AVG	

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Horizontal 120.0 dBuV/m 110 100 90 80 70 60 50 40 30 20 10 0.0 867.000 877.00 917.00 967.00 MHz 887.00 897.00 907.00 937.00 947.00

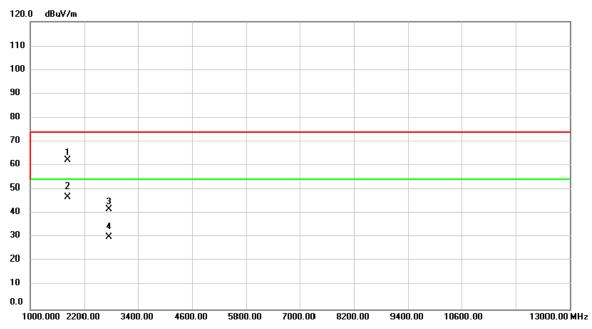
	No.	Mk	. Freq.	Reading Level		Measure- ment		Margin		
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
-	1	*	917.0000	74.34	31.86	106.20	46.00	60.20	peak	No Limit
_	2	Χ	917.0000	64.67	31.86	96.53	46.00	50.53	AVG	No Limit

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Horizontal



No.	Mk.	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1834.000	80.74	-18.58	62.16	86.20	-24.04	peak	
2	*	1834.000	65.39	-18.58	46.81	76.53	-29.72	AVG	
3		2751.000	56.65	-14.85	41.80	74.00	-32.20	peak	
4		2751.000	44.92	-14.85	30.07	54.00	-23.93	AVG	

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ATTACHMENT E - BANDWIDTH

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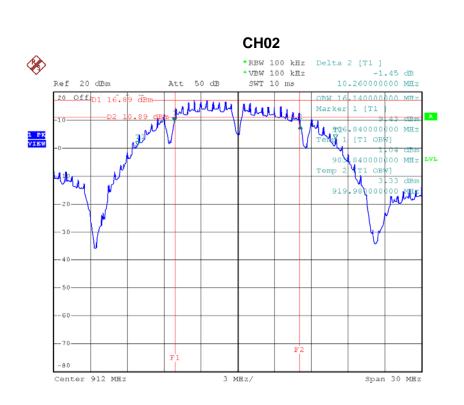
Test Mode: TX B-20MHZ MODE CHANNEL 02/03

Frequency	6dB Bandwidth	99% Occupied BW	Test Result
(MHz)	(MHz)	(MHz)	rest ivesuit
912	10.26	16.14	Complies
917	11.70	16.32	Complies

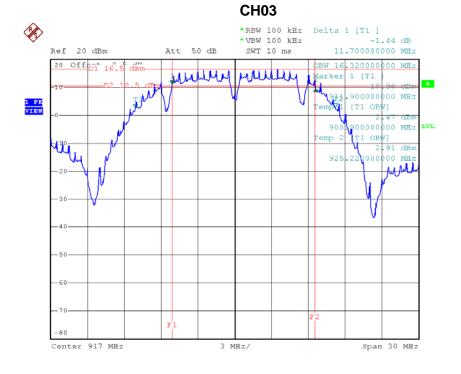
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Date: 18.JUL.2016 13:05:45



Date: 25.JUL.2016 13:21:11

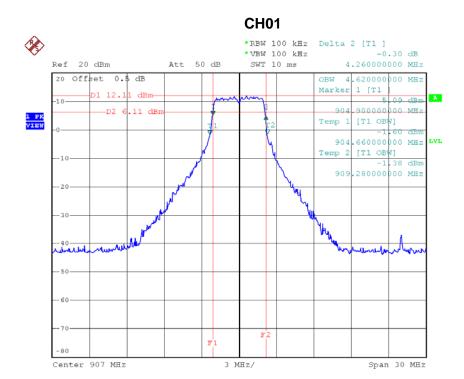
Report No.: BTL-FCCP-1-1608276 Page 118 of 153





Test Mode: TX G-5MHZ MODE CHANNEL 01/02/04

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Test Result
907	4.26	4.62	Complies
912	4.26	4.62	Complies
922	4.20	4.62	Complies

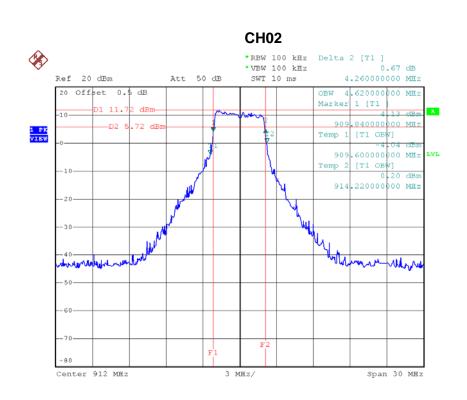


Date: 18.JUL.2016 15:04:59

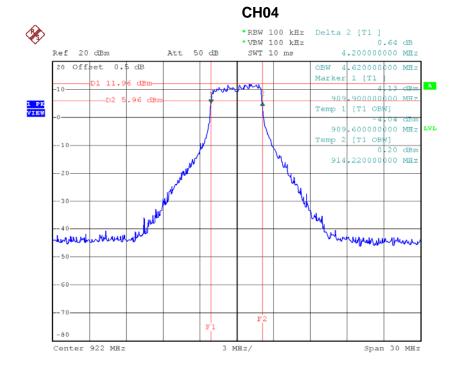
Report No.: BTL-FCCP-1-1608276 Page 119 of 153







Date: 18.JUL.2016 15:14:09



Date: 18.JUL.2016 15:18:10

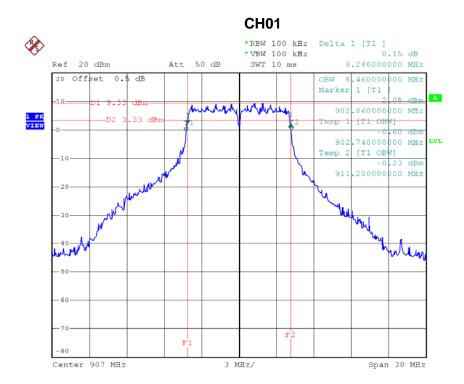
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Test Mode: TX G-10MHZ MODE CHANNEL 01/02/04

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Test Result
907	8.28	8.46	Complies
912	8.22	8.52	Complies
922	8.28	8.34	Complies

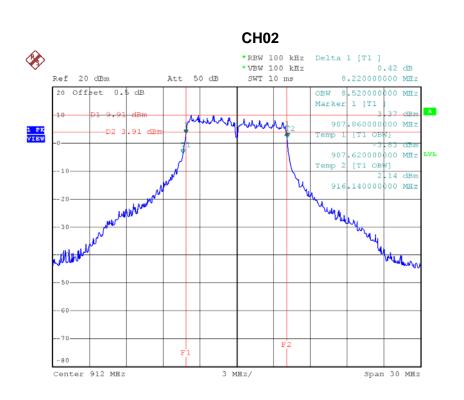


Date: 18.JUL.2016 14:58:50

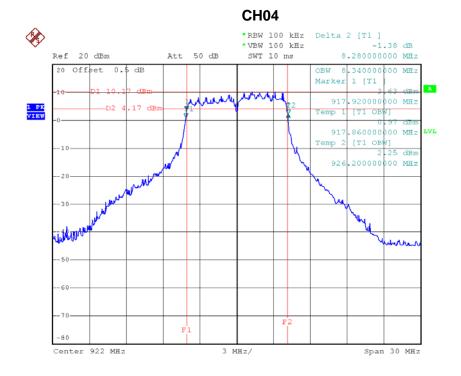
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Date: 18.JUL.2016 14:53:02



Date: 18.JUL.2016 14:48:14

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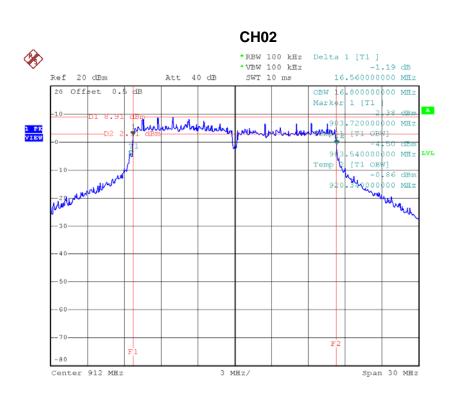
Test Mode: TX G-20MHZ MODE CHANNEL 02/03

Frequency	6dB Bandwidth	99% Occupied BW	Test Result	
(MHz)	(MHz)	(MHz)	rest Result	
912	16.56	16.80	Complies	
917	16.68	16.80	Complies	

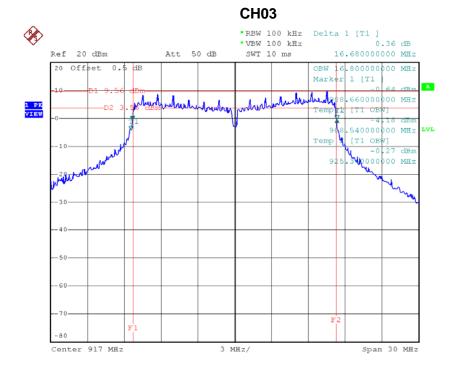
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Date: 18.JUL.2016 14:02:14

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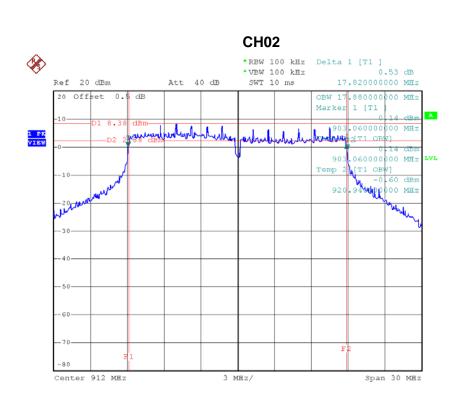
Test Mode: TX N-20MHZ MODE CHANNEL 02/03

Frequency	6dB Bandwidth	99% Occupied BW	Test Result
(MHz)	(MHz)	(MHz)	rest ivesuit
912	17.82	17.88	Complies
917	17.70	17.88	Complies

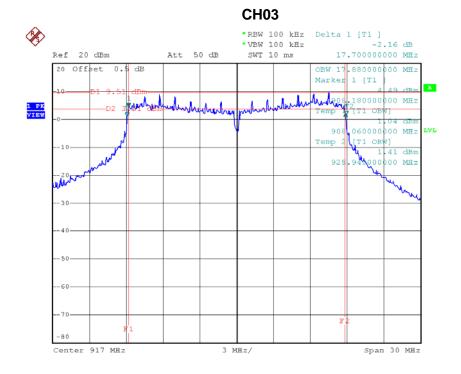
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Date: 18.JUL.2016 12:51:06



Date: 18.JUL.2016 12:47:48





ATTACHMENT F - PEAK OUTPUT POWER				

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Test Mode: TX B-20MHZ MODE CHANNEL 02/03

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (Watt)	Max. Limit (dBm)	Max. Limit (Watt)	Test Result
912	29.38	0.8670	30.00	1.0000	Complies
917	29.57	0.9057	30.00	1.0000	Complies

Test Mode: TX G-5MHZ MODE CHANNEL 01/02/03/04

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (Watt)	Max. Limit (dBm)	Max. Limit (Watt)	Test Result
907	26.91	0.4909	30.00	1.0000	Complies
912	29.40	0.8710	30.00	1.0000	Complies
917	29.20	0.8318	30.00	1.0000	Complies
922	29.36	0.8630	30.00	1.0000	Complies

Test Mode: TX G-10MHZ MODE CHANNEL 01/02/03/04

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (Watt)	Max. Limit (dBm)	Max. Limit (Watt)	Test Result
907	26.44	0.4406	30.00	1.0000	Complies
912	29.32	0.8551	30.00	1.0000	Complies
917	29.12	0.8166	30.00	1.0000	Complies
922	29.57	0.9057	30.00	1.0000	Complies

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Test Mode: TX G-20MHZ MODE CHANNEL 02/03

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (Watt)	Max. Limit (dBm)	Max. Limit (Watt)	Test Result
912	29.86	0.9683	30.00	1.0000	Complies
917	29.56	0.9036	30.00	1.0000	Complies

Test Mode: TX N-20MHZ MODE CHANNEL 02/03

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (Watt)	Max. Limit (dBm)	Max. Limit (Watt)	Test Result
912	27.78	0.5998	30.00	1.0000	Complies
917	29.67	0.9268	30.00	1.0000	Complies

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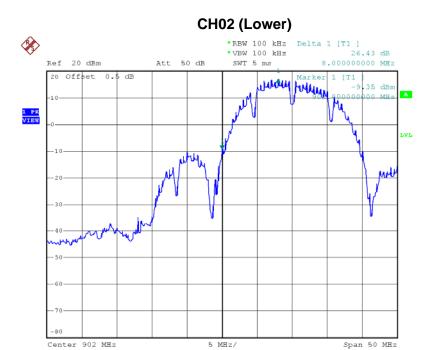
ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION

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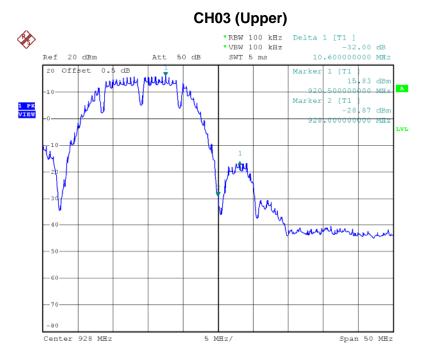








Date: 18.JUL.2016 13:11:57



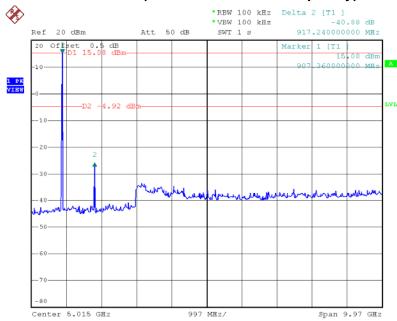
Date: 18.JUL.2016 13:23:30

Report No.: BTL-FCCP-1-1608276 Page 131 of 153



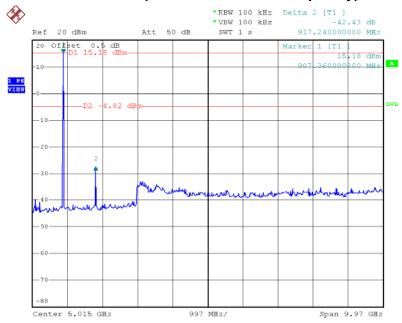






Date: 18.JUL.2016 13:16:19

CH03 (10 Harmonic of the frequency)



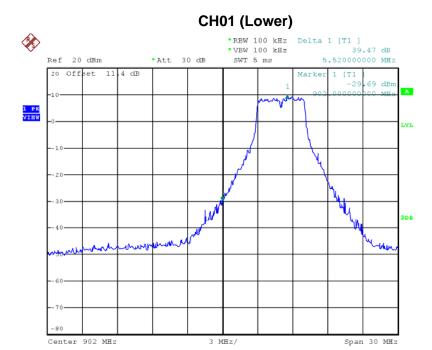
Date: 18.JUL.2016 13:18:54

Report No.: BTL-FCCP-1-1608276 Page 132 of 153

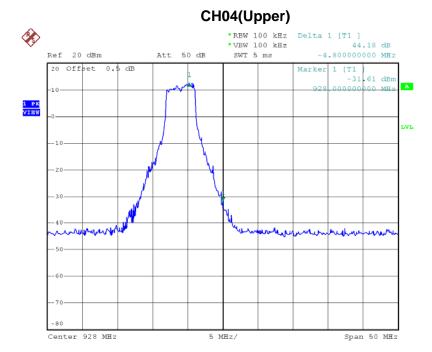








Date: 28.NOV.2016 22:54:28



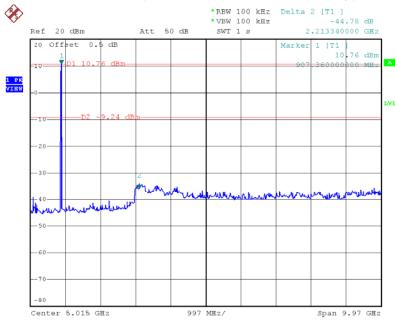
Date: 18.JUL.2016 15:19:43

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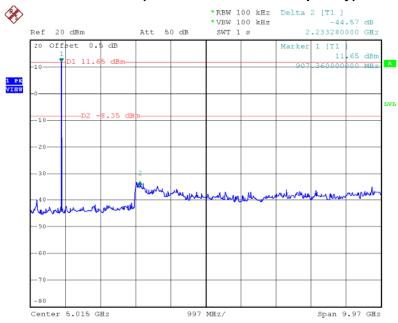






Date: 18.JUL.2016 15:09:28

CH02 (10 Harmonic of the frequency)



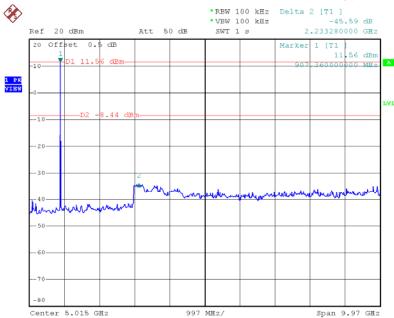
Date: 18.JUL.2016 15:11:51

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Date: 18.JUL.2016 15:21:24

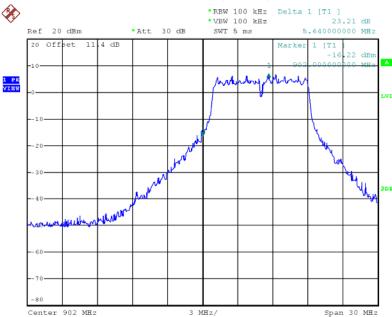
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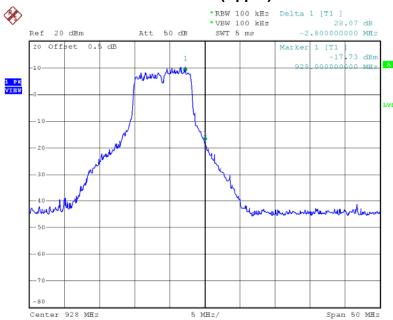
Test Mode: TX G-10MHZ MODE CHANNEL 01/02/04

CH01 (Lower) *RBW 100 kHz



Date: 28.NOV.2016 22:59:29

CH04(Upper)



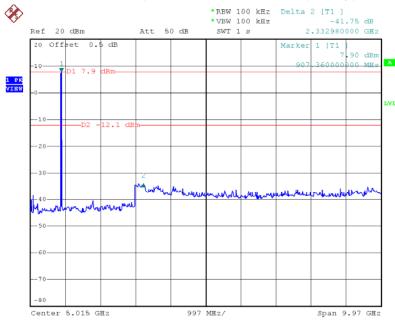
Date: 18.JUL.2016 14:42:15

Report No.: BTL-FCCP-1-1608276 Page 136 of 153



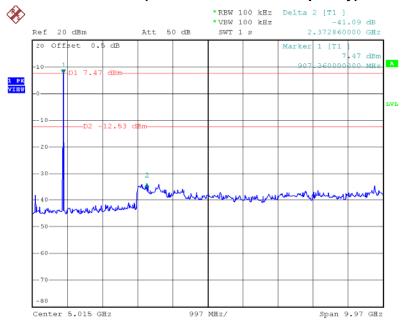






Date: 18.JUL.2016 14:37:08

CH02 (10 Harmonic of the frequency)



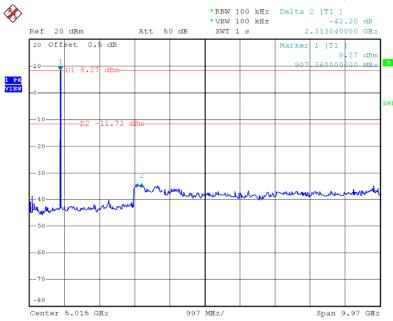
Date: 18.JUL.2016 14:55:02

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CH04 (10 Harmonic of the frequency)



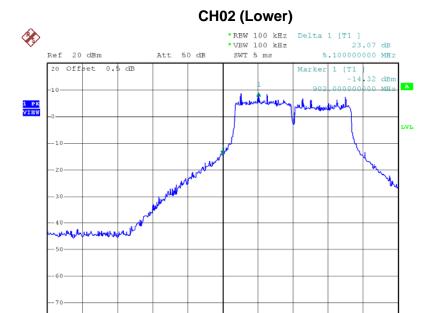
Date: 18.JUL.2016 14:44:08

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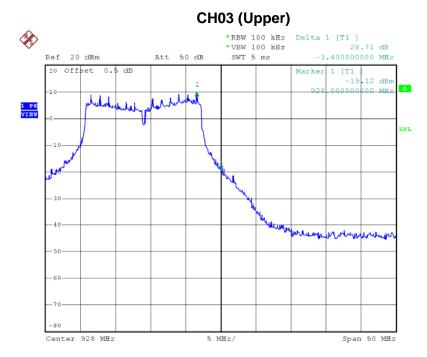


5 MHz/

Span 50 MHz

Date: 18.JUL.2016 13:49:41

Center 902 MHz



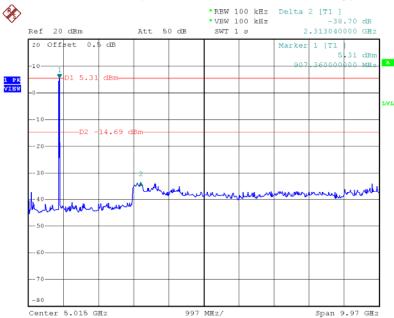
Date: 18.JUL.2016 13:58:46

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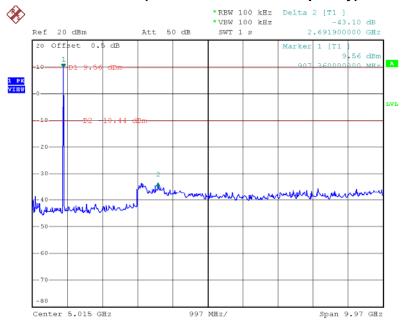






Date: 18.JUL.2016 13:54:45

CH03 (10 Harmonic of the frequency)



Date: 18.JUL.2016 13:56:53

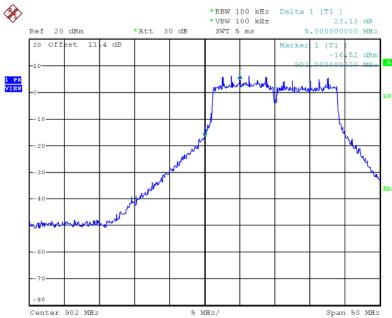
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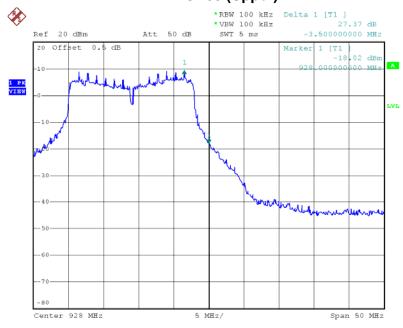


CH02 (Lower)



Date: 29.NOV.2016 01:27:10

CH03 (Upper)



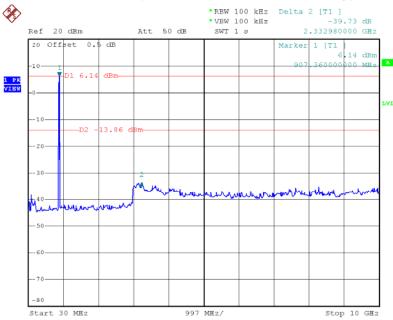
Date: 18.JUL.2016 13:27:07

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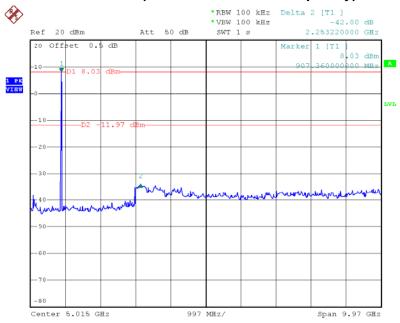






Date: 18.JUL.2016 13:34:34

CH03 (10 Harmonic of the frequency)



Date: 18.JUL.2016 13:31:13

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ATTACHMENT H - POWER SPECTRAL DENSITY

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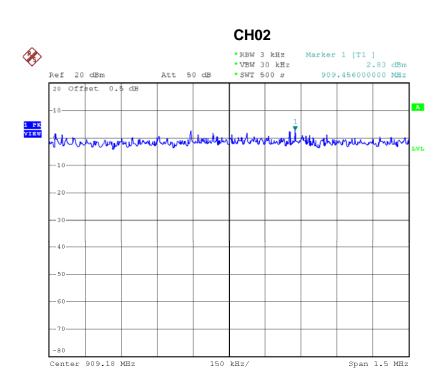
Test Mode: TX B-20MHZ MODE CHANNEL 02/03

Frequency (MHz)			Max. Limit (dBm/3kHz)	Result
912	2.83	1.92	8.00	Complies
917	1.43	1.39	8.00	Complies

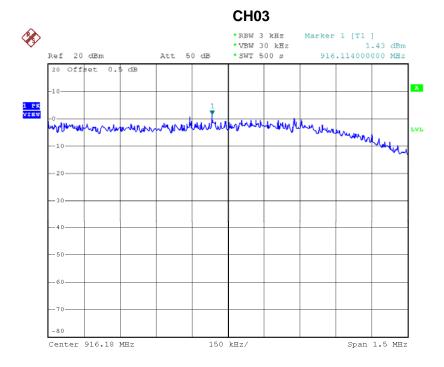
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Date: 25.JUL.2016 10:34:23



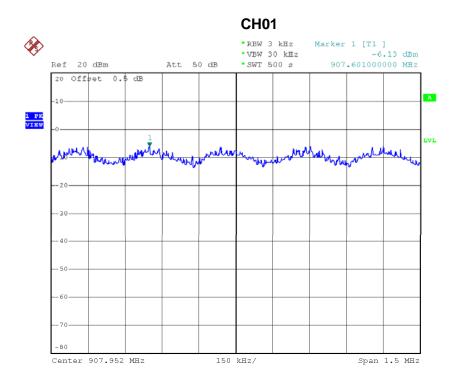
Date: 25.JUL.2016 10:42:36





Test Mode: TX G-5MHZ MODE CHANNEL 01/02/04

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
907	-6.13	0.24	8.00	Complies
912	-6.10	0.25	8.00	Complies
922	-4.32	0.37	8.00	Complies

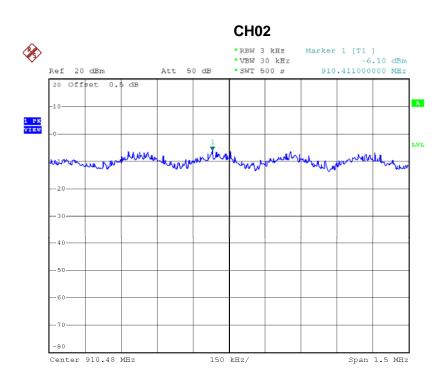


Date: 25.JUL.2016 11:03:38

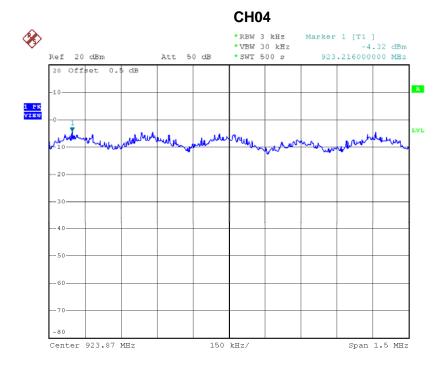
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Date: 25.JUL.2016 11:00:37



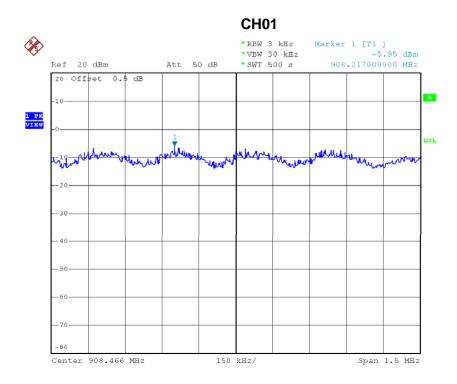
Date: 25.JUL.2016 10:58:49





Test Mode: TX G-10MHZ MODE CHANNEL 01/02/04

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
907	-5.95	0.25	8.00	Complies
912	-5.80	0.26	8.00	Complies
922	-3.87	0.41	8.00	Complies

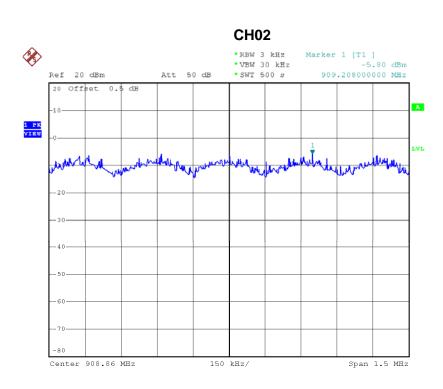


Date: 25.JUL.2016 10:53:33

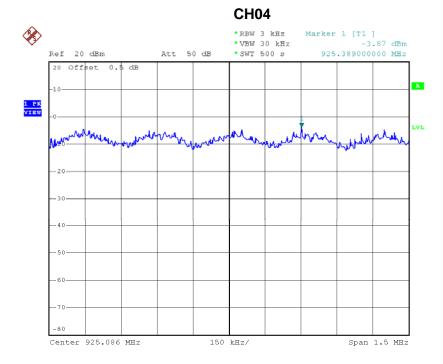
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Date: 25.JUL.2016 10:51:20



Date: 25.JUL.2016 10:56:29





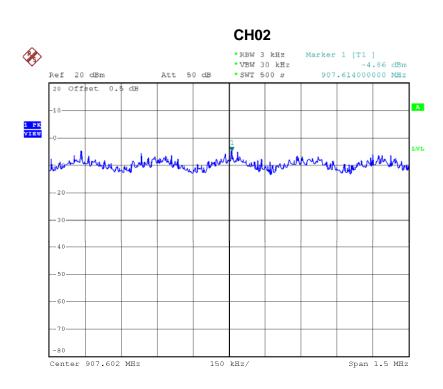
Test Mode:	ITX G-20MHZ MODE CHANNEL 02/03	
rest woode	IIX (3-20101012 101011)E CHANNEL U2/U3	

	Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
Ī	912	-4.86	0.33	8.00	Complies
Ī	917	-5.84	0.26	8.00	Complies

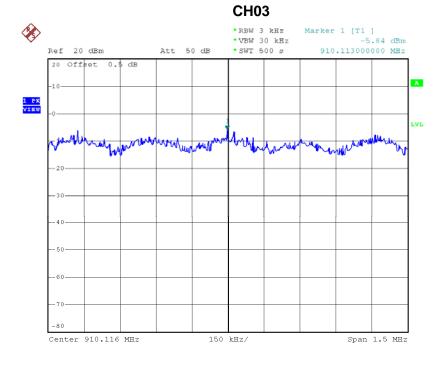
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Date: 25.JUL.2016 10:49:06



Date: 25.JUL.2016 10:46:30





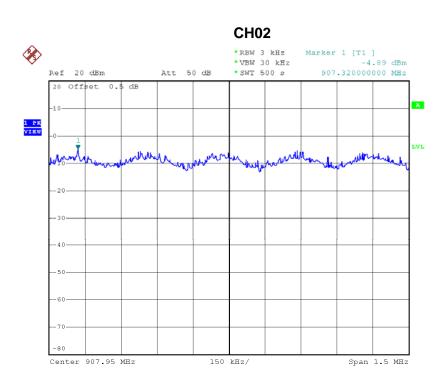
Test Mode: TX N-20MHZ MODE CHANNEL 02/03

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
912	-4.89	0.32	8.00	Complies
917	-3.31	0.47	8.00	Complies

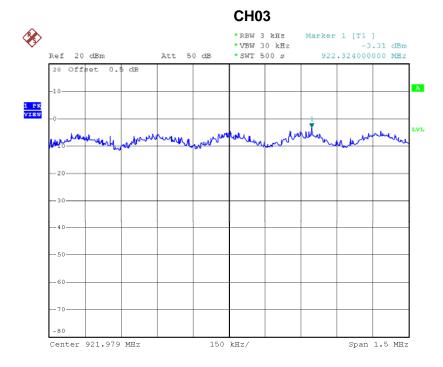
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Date: 25.JUL.2016 11:09:02



Date: 25.JUL.2016 11:21:02