

FCC Radio Test Report

FCC ID: X7D-IP04227

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

Project No. Equipment Model Name Applicant Address	: : : : :	1410C191 AC1200 Wireless Dual Band Gigabit Router A2004NS; IP04227 ZIONCOM ELECTRONICS (SHENZHEN) LTD. Building A1~A2, Lantian Science and Technology Park, Xinyu Road Xinqiao Henggang Block Shajing Street, Baoan District, Shenzhen City, China
Date of Receipt Date of Test Issued Date Tested by	:	Oct. 23, 2014 Oct. 23, 2014~ Nov. 10, 2014 Nov. 12, 2014 BTL Inc.
Testing Engineer		: David Mao (David Mao)
Technical Manag	er	: (Leo Hung)

BTL INC.

Authorized Signatory

No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.

(Steven Lu)

TEL: +86-769-8318-3000 FAX: +86-769-8319-6000

Report No.: BTL-FCCP-1-1410C191 Page 1 of 166



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 the standards traceable to National Measurement Laboratory (NML) of R.O.C, or National Institute of Standards and Technology (NIST) of U.S.A.

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.

BTL's reports must not be used by the client to claim product endorsement by the authorities or any agency of the Government.

This report is the confidential property of the client. As a mutual protection to the clients, the public and **BTL-self**, extracts from the test report shall not be reproduced except in full with **BTL**'s authorized written approval.

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

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.

Report No.: BTL-FCCP-1-1410C191 Page 2 of 166



Table of Contents	Page
1 . CERTIFICATION	6
2 . SUMMARY OF TEST RESULTS	7
2.1 TEST FACILITY	8
2.2 MEASUREMENT UNCERTAINTY	8
3 . GENERAL INFORMATION	9
3.1 GENERAL DESCRIPTION OF EUT	9
3.2 DESCRIPTION OF TEST MODES	11
3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING	12
3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTE	ED 13
3.5 DESCRIPTION OF SUPPORT UNITS	13
4 . EMC EMISSION TEST	14
4.1 CONDUCTED EMISSION MEASUREMENT	14
4.1.1 POWER LINE CONDUCTED EMISSION LIMITS 4.1.2 TEST PROCEDURE	14 14
4.1.2 TEST PROCEDURE 4.1.3 DEVIATION FROM TEST STANDARD	14
4.1.4 TEST SETUP	15
4.1.5 EUT OPERATING CONDITIONS 4.1.6 EUT TEST CONDITIONS	15 15
4.1.7 TEST RESULTS	15
4.2 RADIATED EMISSION MEASUREMENT	16
4.2.1 RADIATED EMISSION LIMITS	16
4.2.2 TEST PROCEDURE 4.2.3 DEVIATION FROM TEST STANDARD	17 17
4.2.4 TEST SETUP	17
4.2.5 EUT OPERATING CONDITIONS	18
4.2.6 EUT TEST CONDITIONS	18
4.2.7 TEST RESULTS (9KHZ TO 30MHZ) 4.2.8 TEST RESULTS (BETWEEN 30MHZ TO 1000 MHZ)	19 19
4.2.9 TEST RESULTS (ABOVE 1000 MHZ)	19
5 . BANDWIDTH TEST	20
5.1 APPLIED PROCEDURES	20
5.1.1 TEST PROCEDURE 5.1.2 DEVIATION FROM STANDARD	20
5.1.2 DEVIATION FROM STANDARD 5.1.3 TEST SETUP	20 20
5.1.4 EUT OPERATION CONDITIONS	20
5.1.5 EUT TEST CONDITIONS	20
5.1.6 TEST RESULTS	20

Report No.: BTL-FCCP-1-1410C191 Page 3 of 166



Table of Contents	Page
6 . MAXIMUM PEAK CONDUCTED OUTPUT POWER TEST 6.1 APPLIED PROCEDURES / LIMIT 6.1.1 TEST PROCEDURE	21 21 21
6.1.2 DEVIATION FROM STANDARD 6.1.3 TEST SETUP 6.1.4 EUT OPERATION CONDITIONS 6.1.5 EUT TEST CONDITIONS 6.1.6 TEST RESULTS	21 21 21 21 21
7 . ANTENNA CONDUCTED SPURIOUS EMISSION	22
7.1 APPLIED PROCEDURES / LIMIT 7.1.1 TEST PROCEDURE	22 22
7.1.2 DEVIATION FROM STANDARD 7.1.3 TEST SETUP	22 22
7.1.4 EUT OPERATION CONDITIONS	22
7.1.5 EUT TEST CONDITIONS 7.1.6 TEST RESULTS	22 22
8 . POWER SPECTRAL DENSITY TEST	23
8.1 APPLIED PROCEDURES / LIMIT	23
8.1.1 TEST PROCEDURE 8.1.2 DEVIATION FROM STANDARD	23 23
8.1.3 TEST SETUP	23
8.1.4 EUT OPERATION CONDITIONS 8.1.5 EUT TEST CONDITIONS	23 23
8.1.6 TEST CONDITIONS 8.1.6 TEST RESULTS	23
9 . MEASUREMENT INSTRUMENTS LIST	24
10 . EUT TEST PHOTO	26
ATTACHMENT A - CONDUCTED EMISSION	30
ATTACHMENT B - RADIATED EMISSION (9KHZ TO 30MHZ)	33
ATTACHMENT C - RADIATED EMISSION (30MHZ TO 1000MHZ)	35
ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)	42
ATTACHMENT E - BANDWIDTH	91
ATTACHMENT F - MAXIMUM PEAK CONDUCTED OUTPUT POWER	108
ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION	113
ATTACHMENT H - POWER SPECTRAL DENSITY	146

Report No.: BTL-FCCP-1-1410C191 Page 4 of 166



REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCCP-1-1410C191	Original Issue.	Nov. 12, 2014

Report No.: BTL-FCCP-1-1410C191 Page 5 of 166



1. CERTIFICATION

Equipment : AC1200 Wireless Dual Band Gigabit Router

Brand Name: TOTOLINK

Model Name: A2004NS; IP04227

Applicant : ZIONCOM ELECTRONICS (SHENZHEN) LTD. Manufacturer : ZIONCOM ELECTRONICS (SHENZHEN) LTD.

Address : Building A1~A2, Lantian Science and Technology Park, Xinyu Road Xinqiao

Henggang Block Shajing Street, Baoan District, Shenzhen City, China

Factory : ZIONCOM ELECTRONICS (SHENZHEN) LTD.

Address : Building A1~A2, Lantian Science and Technology Park, Xinyu Road Xinqiao

Henggang Block Shajing Street, Baoan District, Shenzhen City, China

Date of Test : Oct. 23, 2014~ Nov. 10, 2014 Test Sample : ENGINEERING SAMPLE

Standard(s): FCC Part15, Subpart C: 2013 (15.247) / ANSI C63.4-2009

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-1-1410C191) 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).

Report No.: BTL-FCCP-1-1410C191 Page 6 of 166



2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

Applied Standard(s): FCC Part15 (15.247), Subpart C: 2013					
Standard(s) Section FCC	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			

NOTE:

- (1)" N/A" denotes test is not applicable in this test report.
- (2) The test follows FCC KDB Publication No. 558074 D01 DTS Meas Guidance v03r02 (Measurement Guidelines of DTS)

Report No.: BTL-FCCP-1-1410C191 Page 7 of 166



2.1 TEST FACILITY

The test facilities used to collect the test data in this report is **DG-C02/DG-CB03** at the location of No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.523792 BTL's test firm number for FCC: 319330

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 reported uncertainty of measurement y \pm U,where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2,providing a level of confidence of approximately 95 % $^{\circ}$

A. Conducted Measurement:

Test Site	Method	Measurement Frequency Range	U,(dB)	NOTE
DG-C02	CISPR	150 KHz ~ 30MHz	1.94	

B. Radiated Measurement:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)	NOTE
		9KHz~30MHz	V	3.79	
		9KHz~30MHz	Н	3.57	
		30MHz ~ 200MHz	V	3.82	
		30MHz ~ 200MHz	Н	3.60	
DG-CB03	CISPR	200MHz ~ 1,000MHz	V	3.86	
DG-CB03	-CBU3 CISPR	200MHz ~ 1,000MHz	Н	3.94	
		1GHz~18GHz	V	3.12	
		1GHz~18GHz	Н	3.68	
		18GHz~40GHz	V	4.15	
		18GHz~40GHz	Н	4.14	_

Report No.: BTL-FCCP-1-1410C191 Page 8 of 166



3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	AC1200 Wireless Dual Band Gigabit Router		
Brand Name	TOTOLINK		
Model Name	A2004NS; IP04227		
Model Difference	Only differ in model name.		
	Operation Frequency	2412~2462 MHz	
Product Description	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 up to 300 Mbps	
	Output Power (Max.)	802.11b: 17.00dBm 802.11g: 21.29dBm 802.11n(20MHz): 21.53dBm 802.11n(40MHz): 21.64dBm	
Power Source	DC voltage supplied from AC/DC adapter. Manufacturer: SHENZHEN CITY HONGBEN ELECTRONICS CO., LTD Model:GT-WAAU12000200-302		
Power Rating	I/P: AC 100-240V 50/60Hz 0.8A O/P: DC 12V 2.0A		

Note:

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

Report No.: BTL-FCCP-1-1410C191 Page 9 of 166



2. Channel List:

	CH01 – CH11 for 802.11b, 802.11g, 802.11n(20MHz) CH03 – CH09 for 802.11n(40MHz)						
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452		

3. Table for Filed Antenna:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	Habour	H001-10165-B	Dipole	N/A	5.0	90mm
2		H001-10175-B	Dipole	N/A	5.0	140mm

Note:

(1) The EUT incorporates a MIMO function. Physically, the EUT provides two completed two transmitters and two receivers (2T2R), all transmit signals are completely uncorrelated, then, **Direction gain = G**_{ANT}, that is Directional gain=5.0.

4.

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

Report No.: BTL-FCCP-1-1410C191 Page 10 of 166



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 MODE CHANNEL 01/06/11
Mode 2	TX G MODE CHANNEL 01/06/11
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11
Mode 4	TX N-40MHZ MODE CHANNEL 03/06/09
Mode 5	TX MODE

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		

For Radiated 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-20MHZ MODE CHANNEL 01/06/11		
Mode 4	TX N-40MHZ MODE CHANNEL 03/06/09		

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 (13Mbps)
 - 802.11n HT40 mode: BPSK (27Mbps)
 - For radiated emission tests, the highest output powers were set for final test.
- (3) For radiated emission 30MHz-1GHz test, the 802.11b is found to be the worst case and recorded.
- (4) For radiated emission 9K-30MHz test, the TX B MODE 2412MHz is found to be the worst case and recorded.
- (5)The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.

Report No.: BTL-FCCP-1-1410C191 Page 11 of 166



3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

During testing, channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of WLAN

Test software version	MP TEST		
Frequency (MHz)	2412	2437	2462
802.11b	(39,39)	(39,39)	(39,40)
802.11g	(48,47)	(47,47)	(47,48)
802.11n (20MHz)	(48,47)	(48,47)	(47,49)
Frequency	2422	2437	2452
802.11n (40MHz)	(49,48)	(48,48)	(49,49)

Report No.: BTL-FCCP-1-1410C191 Page 12 of 166



3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

3.5 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.	Note
-	-	-	-	-	-	

Item	Shielded Type	Ferrite Core	Length	Note
-	-	-	-	

Report No.: BTL-FCCP-1-1410C191 Page 13 of 166



4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

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

Frequency of Emission (MHz)	Conducted Limit (dBµV)		
	Quasi-peak	Average	
0.15 -0.	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

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.

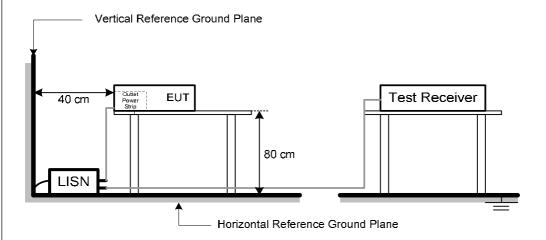
4.1.3 DEVIATION FROM TEST STANDARD

No deviation

Report No.: BTL-FCCP-1-1410C191 Page 14 of 166



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 plan

3.The impedance of the outlet power strip is within $\pm\,20\%$ limit values for the LISN impedance at the LISN terminals.

4.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

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.

Report No.: BTL-FCCP-1-1410C191 Page 15 of 166



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 RADIATED EMISSION LIMITS

20dB 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.

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

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)

Frequency (MHz)	(dBuV/m) (at 3 meters)	
r requericy (ivil 12)	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).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW	RBW 1MHz VBW 3MHz peak detector for Pk value
(Emission in restricted band)	RMS detector for AV value

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

Report No.: BTL-FCCP-1-1410C191 Page 16 of 166



4.2.2 TEST PROCEDURE

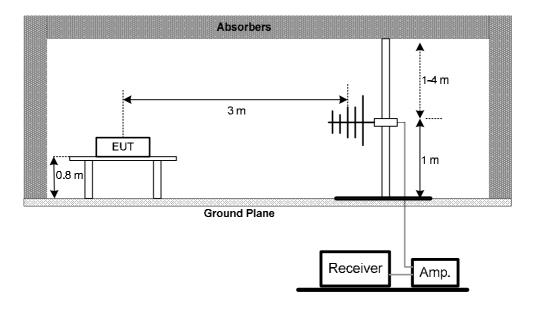
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter fully-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; 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. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.2.3 DEVIATION FROM TEST STANDARD

No deviation

4.2.4 TEST SETUP

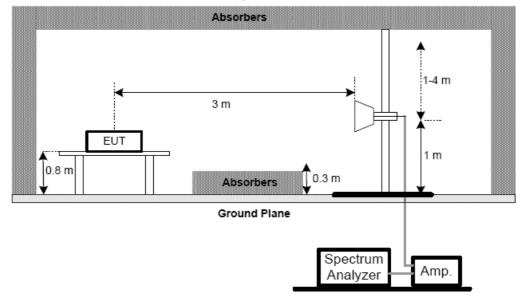
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



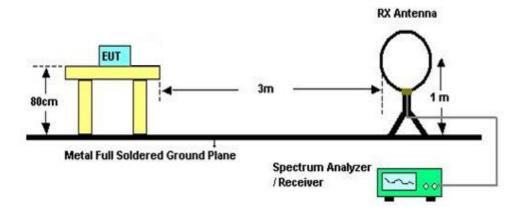
Report No.: BTL-FCCP-1-1410C191 Page 17 of 166



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



(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: 55% Test Voltage: AC 120V/60Hz

Report No.: BTL-FCCP-1-1410C191 Page 18 of 166



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.

4.2.8 TEST RESULTS (BETWEEN 30MHZ TO 1000 MHZ)

Please refer to the Attachment C.

4.2.9 TEST RESULTS (ABOVE 1000 MHZ)

Please refer to the Attachment D.

Remark:

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

Report No.: BTL-FCCP-1-1410C191 Page 19 of 166



5. BANDWIDTH TEST

5.1 Applied procedures

FCC Part15 (15.247) , Subpart C				
Section Test Item Frequency Range (MHz) Result				
15.247(a)(2) Bandwidth 2400-2483.5 PASS				

5.1.1 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 = 2.5 ms.

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP

EUT	SPECTRUM
	ANALYZER

5.1.4 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.

5.1.5 EUT TEST CONDITIONS

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

5.1.6 TEST RESULTS

Please refer to the Attachment E.

Report No.: BTL-FCCP-1-1410C191 Page 20 of 166



6. MAXIMUM PEAK CONDUCTED OUTPUT POWER TEST

6.1 Applied procedures / limit

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Maximum Output Power	1 Watt or 30dBm	2400-2483.5	PASS

6.1.1 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 peak conducted output power was performed in accordance with method 9.1.2 of FCC KDB 558074 D01 DTS Meas Guidance v03r02.

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP

EUT	Power Meter

6.1.4 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.

Transmit output power was measured while the host equipment supply voltage was varied from 85 % to 115 % of the nominal rated supply voltage. No change in transmit output power was observed.

6.1.5 EUT TEST CONDITIONS

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

6.1.6 TEST RESULTS

Please refer to the Attachment F.

Report No.: BTL-FCCP-1-1410C191 Page 21 of 166



7. ANTENNA CONDUCTED SPURIOUS EMISSION

7.1 Applied procedures / 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 measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

7.1.1 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.

7.1.2 DEVIATION FROM STANDARD

No deviation.

7.1.3 TEST SETUP



7.1.4 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.

7.1.5 EUT TEST CONDITIONS

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

7.1.6 TEST RESULTS

Please refer to the Attachment G.

Report No.: BTL-FCCP-1-1410C191 Page 22 of 166



8. POWER SPECTRAL DENSITY TEST

8.1 Applied procedures / limit

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)	2400-2483.5	PASS

8.1.1 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.

8.1.2 DEVIATION FROM STANDARD

No deviation.

8.1.3 TEST SETUP

EUT	SPECTRUM
	ANALYZER

8.1.4 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.

8.1.5 EUT TEST CONDITIONS

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

8.1.6 TEST RESULTS

Please refer to the Attachment H.

Report No.: BTL-FCCP-1-1410C191 Page 23 of 166



9. MEASUREMENT INSTRUMENTS LIST

		Conducted Emis	sion Measure	ment	
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	LISN	EMCO	3816/2	00052765	Mar. 29, 2015
2	LISN	R&S	ENV216	101447	Mar. 29, 2015
3	Test Cable	N/A	C_17	N/A	Mar. 14, 2015
4	EMI TEST RECEIVER	R&S	ESCS30	833364/017	Mar. 29, 2015
5	50Ω Terminator	SHX	TF2-3G-A	08122902	Mar. 29, 2015
6	Measurement Software	Farad	EZ-EMC Ver.NB-03A1 -01	N/A	N/A

	Radiated Emission Measurement				
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarbeck	VULB9160	9160-3232	Mar. 29, 2015
2	Amplifier	HP	8447D	2944A09673	Mar. 29, 2015
3	Receiver	AGILENT	N9038A	MY5213003 9	Sep. 30, 2015
4	Test Cable	N/A	C-01_CB03	N/A	Jul. 01, 2015
5	Controller	СТ	SC100	N/A	N/A
6	Antenna	ETS	3115	00075789	Mar. 29, 2015
7	Amplifier	Agilent	8449B	3008A02274	Mar. 29, 2015
8	Test Cable	HUBER+SUHNER	C-48	N/A	Apr. 30, 2015
9	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Feb. 22, 2015
10	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Feb. 22, 2015
11	Active Loop Antenna	R&S	HFH2-Z2	830749/020	Mar. 29, 2015
12	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Report No.: BTL-FCCP-1-1410C191 Page 24 of 166



		6dB Bandwidt	th Measureme	ent	
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 11, 2014

	Peak Output Power Measurement				
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	P-series Power meter	Agilent	N1911A	MY45100473	Mar. 29, 2015
2	Wireband Power sensor	Agilent	N1921A	MY51100041	Mar. 29, 2015

	Antenna Conducted Spurious Emission Measurement				
Item	tem Kind of Equipment Manufacturer Type No. Serial No. Calibrated un		Calibrated until		
1	1 Spectrum Analyzer R&S FSP 40 100185 Nov. 11, 2014				

		Power Spectral De	ensity Measur	rement	
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 11, 2014

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-1-1410C191 Page 25 of 166



10. EUT TEST PHOTO

Conducted Measurement Photos



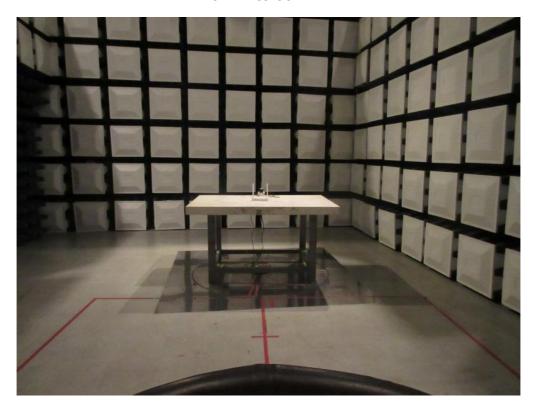


Report No.: BTL-FCCP-1-1410C191 Page 26 of 166



Radiated Measurement Photos

9KHz to 30MHz





Report No.: BTL-FCCP-1-1410C191 Page 27 of 166



Radiated Measurement Photos

30MHz to 1000MHz





Report No.: BTL-FCCP-1-1410C191 Page 28 of 166



Radiated Measurement Photos

Above 1000MHz





Report No.: BTL-FCCP-1-1410C191 Page 29 of 166



ATTACHMENT A - CONDUCTED EMISSION

Report No.: BTL-FCCP-1-1410C191 Page 30 of 166



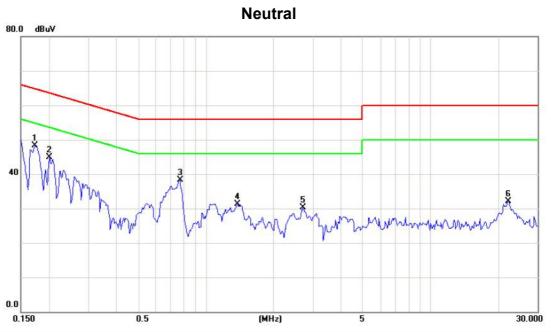


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1773	38.72	9.53	48.25	64.61	-16.36	peak	
2		0.2516	32.02	9.57	41.59	61.70	-20.11	peak	
3		0.5406	21.88	9.68	31.56	56.00	-24.44	peak	
4		0.7632	25.63	9.64	35.27	56.00	-20.73	peak	
5		2.3453	18.74	9.73	28.47	56.00	-27.53	peak	
6		21.9805	22.19	10.51	32.70	60.00	-27.30	peak	

Report No.: BTL-FCCP-1-1410C191 Page 31 of 166



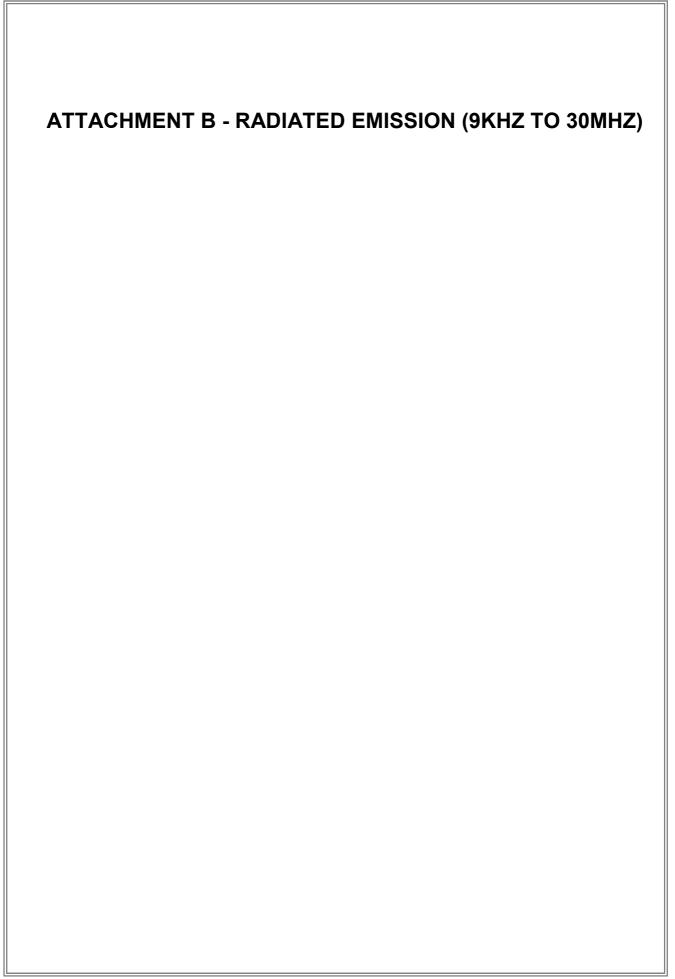




No. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1 *	0.1734	38.60	9.62	48.22	64.80	-16.58	peak	
2	0.2008	35.31	9.61	44.92	63.58	-18.66	peak	
3	0.7672	28.58	9.67	38.25	56.00	-17.75	peak	
4	1.3883	21.69	9.70	31.39	56.00	-24.61	peak	
5	2.7203	20.53	9.77	30.30	56.00	-25.70	peak	
6	22.2813	21.41	10.62	32.03	60.00	-27.97	peak	

Report No.: BTL-FCCP-1-1410C191 Page 32 of 166





Report No.: BTL-FCCP-1-1410C191 Page 33 of 166



Test Mode: TX B MODE 2412MHz

Freq.	Ant.	Reading(RA)	Corr.Factor(CF)	Measured(FS)	Limits(QP)	Margin	Note
(MHz)	0°/90°	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	Note
0.0091	0°	0.11	24.99	25.10	108.40	-83.31	AVG
0.0091	0°	8.55	24.99	33.54	128.40	-94.87	PEAK
0.0251	0°	1.24	23.98	25.22	99.61	-74.39	AVG
0.0251	0°	9.25	23.98	33.23	119.61	-86.38	PEAK
0.0316	0°	0.28	23.57	23.85	97.61	-73.77	AVG
0.0316	0°	8.64	23.57	32.21	117.61	-85.41	PEAK
0.0412	0°	2.30	22.96	25.26	95.31	-70.05	AVG
0.0412	0°	9.78	22.96	32.74	115.31	-82.57	PEAK
0.4820	0°	8.63	19.84	28.47	73.94	-45.47	QP
1.7364	0°	10.28	19.53	29.81	69.54	-39.73	QP

Freq.	Ant.	Reading(RA)	Corr.Factor(CF)	Measured(FS)	Limits(QP)	Margin	Note
(MHz)	0°/90°	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	NOIC
0.0092	90°	1.99	24.30	26.29	128.32	-102.03	AVG
0.0092	90°	12.57	24.30	36.87	148.32	-111.45	PEAK
0.0213	90°	1.78	24.22	26.00	121.04	-95.04	AVG
0.0213	90°	10.55	24.22	34.77	141.04	-106.27	PEAK
0.0317	90°	0.85	23.56	24.41	117.58	-93.17	AVG
0.0317	90°	9.41	23.56	32.97	137.58	-104.61	PEAK
0.0412	90°	0.26	22.96	23.22	115.31	-92.09	AVG
0.0412	90°	8.98	22.96	31.94	135.31	-103.37	PEAK
0.5341	90°	5.49	19.91	25.40	73.05	-47.65	QP
1.7289	90°	10.36	19.53	29.89	69.54	-39.65	QP

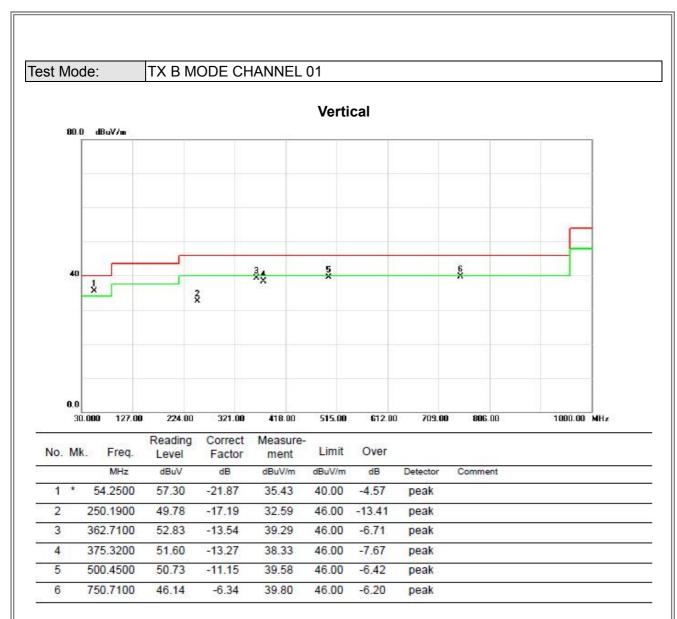
Report No.: BTL-FCCP-1-1410C191 Page 34 of 166



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

Report No.: BTL-FCCP-1-1410C191 Page 35 of 166





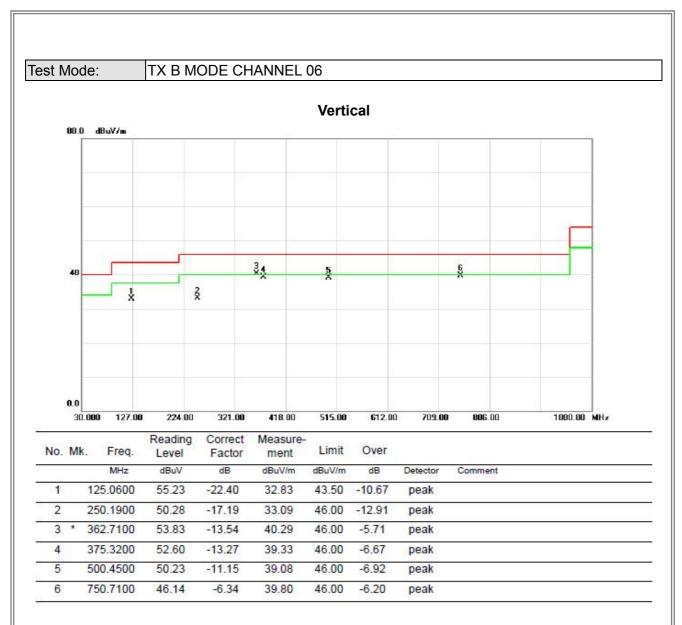
Report No.: BTL-FCCP-1-1410C191 Page 36 of 166





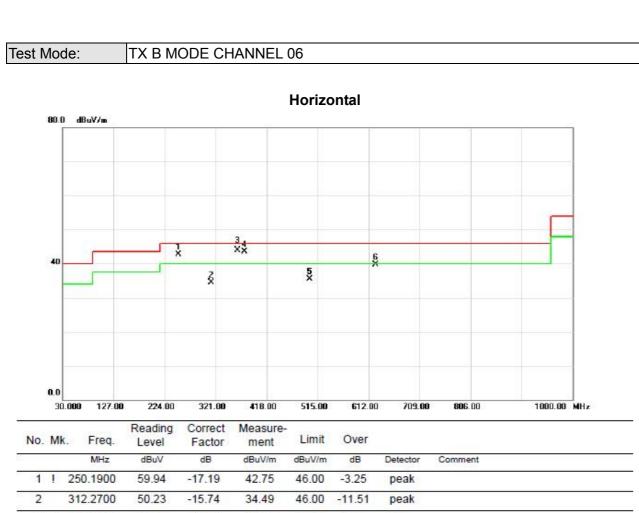
Report No.: BTL-FCCP-1-1410C191 Page 37 of 166





Report No.: BTL-FCCP-1-1410C191 Page 38 of 166

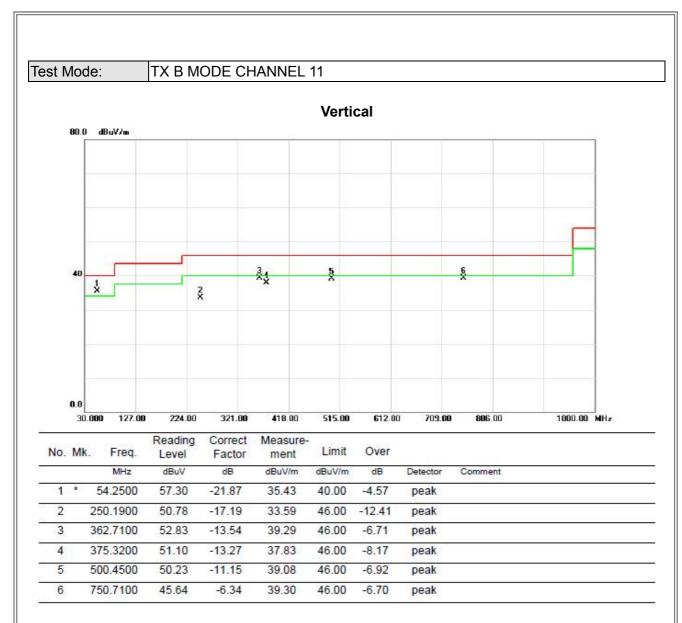




VU.	ININ	. I icq.	Level	Factor	ment	Cirrin	0,01		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	į.	250.1900	59.94	-17.19	42.75	46.00	-3.25	peak	
2		312.2700	50.23	-15.74	34.49	46.00	-11.51	peak	
3	*	362.7100	57.51	-13.54	43.97	46.00	-2.03	QP	
4	!	375.3200	56.71	-13.27	43.44	46.00	-2.56	peak	
5		500.4500	46.66	-11.15	35.51	46.00	-10.49	peak	
6		625.5800	48.20	-8.45	39.75	46.00	-6.25	peak	

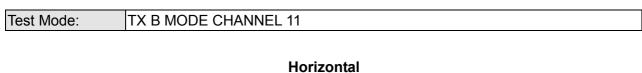
Report No.: BTL-FCCP-1-1410C191 Page 39 of 166





Report No.: BTL-FCCP-1-1410C191 Page 40 of 166







No.	Mk	. Freq.	Reading Level	Correct	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	į.	250.1900	60.44	-17.19	43.25	46.00	-2.75	peak	
2	*	362.7100	58.12	-13.54	44.58	46.00	-1.42	QP	
3	!	375.3200	57.71	-13.27	44.44	46.00	-1.56	peak	
4		500.4500	46.66	-11.15	35.51	46.00	-10.49	peak	
5		625.5800	47.70	-8.45	39.25	46.00	-6.75	peak	
6		750.7100	42.82	-6.34	36.48	46.00	-9.52	peak	

Report No.: BTL-FCCP-1-1410C191 Page 41 of 166

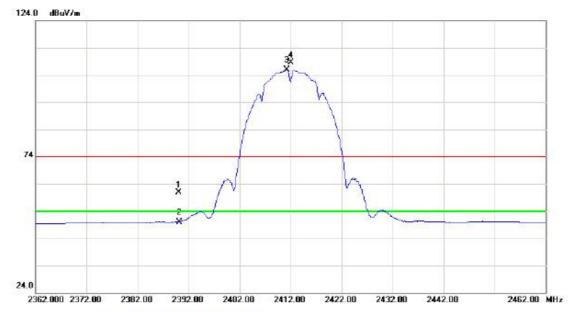


ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)

Report No.: BTL-FCCP-1-1410C191 Page 42 of 166



Vertical



Mk.	. Freq.	Reading Level	Correct	Measure- ment	Limit	Over			
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
	2390.000	27.46	33.54	61.00	74.00	-13.00	peak		
	2390.000	16.46	33.54	50.00	54.00	-4.00	AVG		
*	2411.200	72.35	33.57	105.92	54.00	51.92	AVG	no limit	
Х	2412.000	75.18	33.57	108.75	74.00	34.75	peak	no limit	
Х	2412.000		75.18	75.18 33.57	75.18 33.57 108.75	75.18 33.57 108.75 74.00	75.18 33.57 108.75 74.00 34.75	75.18 33.57 108.75 74.00 34.75 peak	75.18 33.57 108.75 74.00 34.75 peak no limit

Report No.: BTL-FCCP-1-1410C191 Page 43 of 166



Vertical

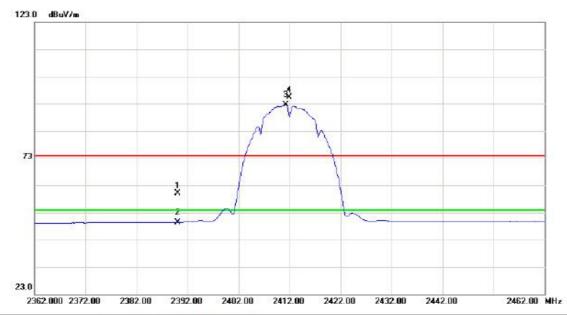


No.	М	k.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		48	24.000	48.70	3.62	52.32	74.00	-21.68	peak		
2	*	48	24.000	45.02	3.62	48.64	54.00	-5.36	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 44 of 166



Horizontal

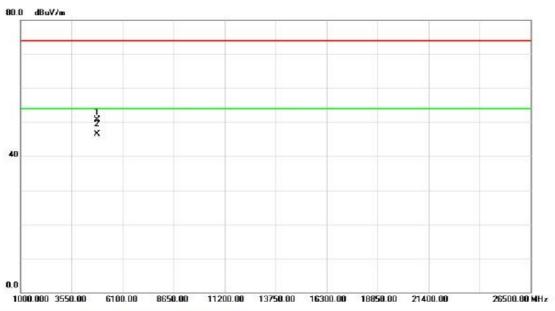


Mk	Κ.	Freq.	Level	Factor	ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
	23	90.000	26.54	33.54	60.08	74.00	-13.92	peak		
	23	90.000	15.92	33.54	49.46	54.00	-4.54	AVG		
*	24	11.200	59.09	33.57	92.66	54.00	38.66	AVG	no limit	
Х	24	11.900	61.75	33.57	95.32	74.00	21.32	peak	no limit	
	*	23 * 24	MHz 2390.000 2390.000	Mk. Freq. Level MHz dBuV 2390.000 26.54 2390.000 15.92 * 2411.200 59.09	Mk. Freq. Level Factor MHz dBuV dB 2390.000 26.54 33.54 2390.000 15.92 33.54 * 2411.200 59.09 33.57	Mk. Freq. Level Factor ment MHz dBuV dB dBuV/m 2390.000 26.54 33.54 60.08 2390.000 15.92 33.54 49.46 * 2411.200 59.09 33.57 92.66	Mk. Freq. Level Factor ment Limit MHz dBuV dB dBuV/m dBuV/m 2390.000 26.54 33.54 60.08 74.00 2390.000 15.92 33.54 49.46 54.00 * 2411.200 59.09 33.57 92.66 54.00	Mk. Freq. Level Factor ment Limit Over MHz dBuV dB dBuV/m dBuV/m dB dBuV/m dB 2390.000 26.54 33.54 60.08 74.00 -13.92 2390.000 15.92 33.54 49.46 54.00 -4.54 * 2411.200 59.09 33.57 92.66 54.00 38.66	Mk. Freq. Level Factor ment Limit Over MHz dBuV dB dBuV/m dBuV/m dB Detector 2390.000 26.54 33.54 60.08 74.00 -13.92 peak 2390.000 15.92 33.54 49.46 54.00 -4.54 AVG * 2411.200 59.09 33.57 92.66 54.00 38.66 AVG	Mk. Freq. Level Factor ment Limit Over MHz dBuV dB dBuV/m dB Detector Comment 2390.000 26.54 33.54 60.08 74.00 -13.92 peak 2390.000 15.92 33.54 49.46 54.00 -4.54 AVG * 2411.200 59.09 33.57 92.66 54.00 38.66 AVG no limit

Report No.: BTL-FCCP-1-1410C191 Page 45 of 166



Horizontal



No.	lo. Mk	k.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		48	324.130	47.05	3.62	50.67	74.00	-23.33	peak		
2	*	48	24.130	42.96	3.62	46.58	54.00	-7.42	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 46 of 166



Vertical 123.0 dBuV/m 123.0 dBuV/m 123.0 dBuV/m 23.0 2397.000 2397.00 2407.00 2417.00 2427.00 2437.00 2447.00 2457.00 2467.00 2487.00 MHz

No.	MI	k.	. Freq.	Level	Correct Factor	Measure- ment	Limit			
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	24	36.200	73.56	33.60	107.16	54.00	53.16	AVG	no limit
2	X	24	37.000	76.40	33.60	110.00	74.00	36.00	peak	no limit

Report No.: BTL-FCCP-1-1410C191 Page 47 of 166



Vertical

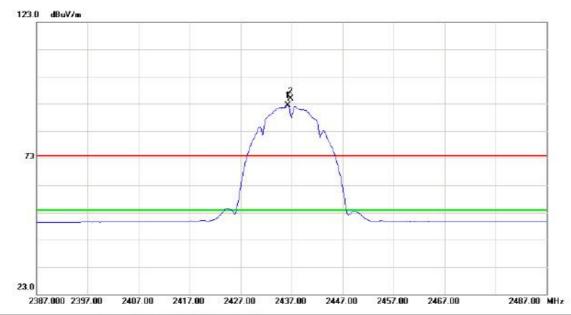


No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		4874.210	50.25	3.72	53.97	74.00	-20.03	peak		
2	*	4874.210	43.59	3.72	47.31	54.00	-6.69	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 48 of 166



Horizontal

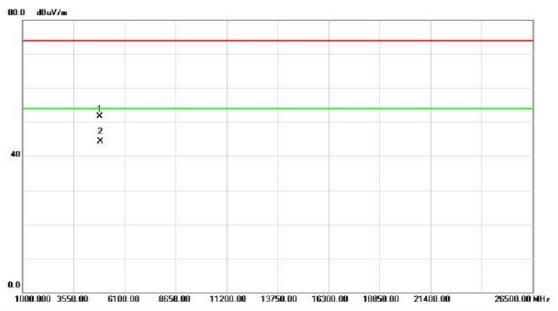


No.	М	k.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	*	243	36.200	58.70	33.60	92.30	54.00	38.30	AVG	no limit	
2	X	243	36.800	61.36	33.60	94.96	74.00	20.96	peak	no limit	

Report No.: BTL-FCCP-1-1410C191 Page 49 of 166



Horizontal

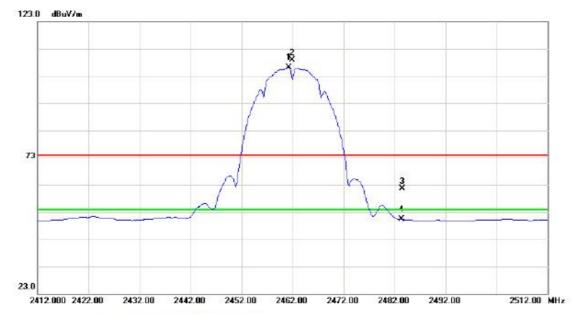


No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		4874.650	47.95	3.72	51.67	74.00	-22.33	peak		
2	*	4874.650	40.66	3.72	44.38	54.00	-9.62	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 50 of 166



Vertical



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	*	2461.200	72.56	33.63	106.19	54.00	52.19	AVG	no limit	
2	X	2461.900	75.36	33.63	108.99	74.00	34.99	peak	no limit	
3		2483.500	27.91	33.66	61.57	74.00	-12.43	peak		
4		2483.500	16.72	33.66	50.38	54.00	-3.62	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 51 of 166



Vertical

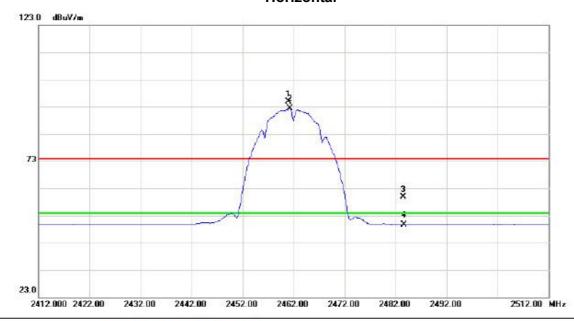


No.	М	k.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		49	24.120	49.84	3.80	53.64	74.00	-20.36	peak		
2	*	49	24.120	44.34	3.80	48.14	54.00	-5.86	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 52 of 166



Horizontal

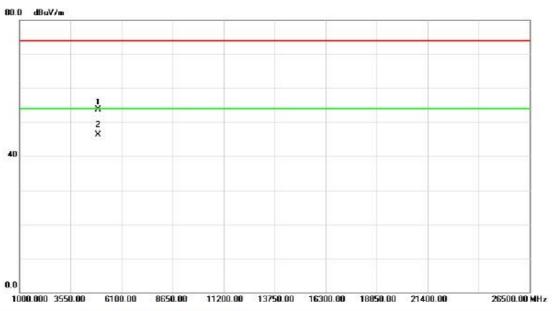


No.	Mk	K .	Freq.	Level	Factor	ment	Limit	Over			
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	X	24	61.000	61.35	33.63	94.98	74.00	20.98	peak	no limit	
2	*	24	61.200	58.67	33.63	92.30	54.00	38.30	AVG	no limit	
3		24	83.500	26.17	33.66	59.83	74.00	-14.17	peak		
4		24	83.500	15.97	33.66	49.63	54.00	-4.37	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 53 of 166



Horizontal

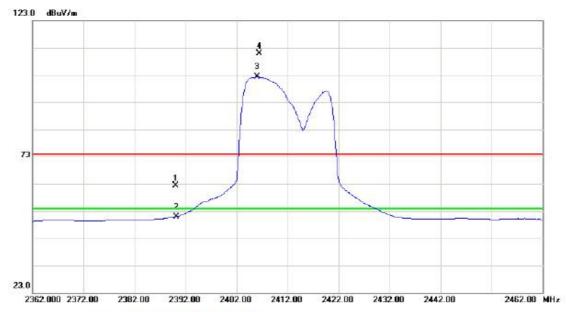


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		4924.100	49.94	3.80	53.74	74.00	-20.26	peak		
2	*	4924.100	42.51	3.80	46.31	54.00	-7.69	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 54 of 166



Vertical



No.	Mk	. Freq.	Reading Level	Correct Factor		Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		2390.000	28.84	33.54	62.38	74.00	-11.62	peak		
2		2390.000	17.44	33.54	50.98	54.00	-3.02	AVG		
3	*	2406.000	68.77	33.55	102.32	54.00	48.32	AVG	no limit	
4	X	2406.400	77.43	33.57	111.00	74.00	37.00	peak	no limit	

Report No.: BTL-FCCP-1-1410C191 Page 55 of 166



Vertical

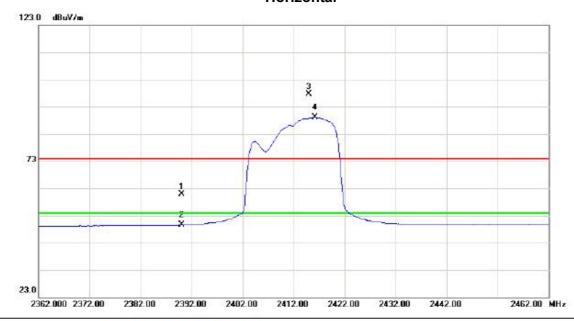


No.	Mk	. Freq.	Reading Level		Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		4824.150	47.72	3.62	51.34	74.00	-22.66	peak		
2	*	4824.150	38.76	3.62	42.38	54.00	-11.62	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 56 of 166



Horizontal

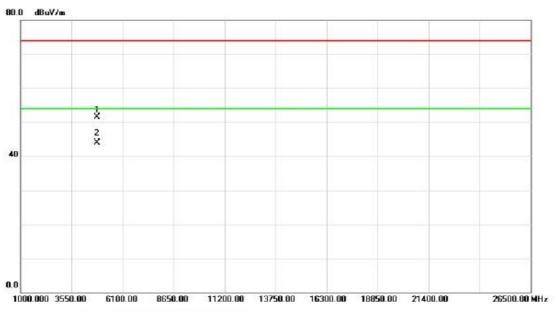


No.	M	k.	Freq.	Level	Factor	ment	Limit	Over			
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		23	90.000	27.24	33.54	60.78	74.00	-13.22	peak		
2		23	90.000	15.99	33.54	49.53	54.00	-4.47	AVG		
3	X	24	15.000	64.09	33.57	97.66	74.00	23.66	peak	no limit	
4	*	24	16.200	55.49	33.57	89.06	54.00	35.06	AVG	no limit	

Report No.: BTL-FCCP-1-1410C191 Page 57 of 166



Horizontal

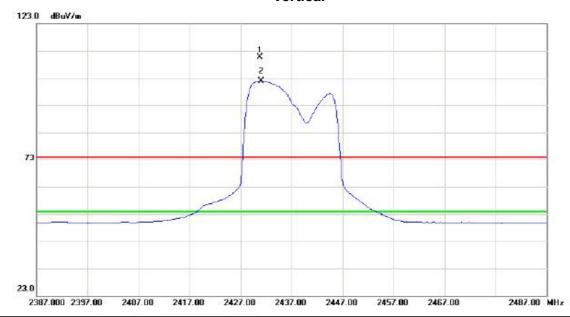


No.	М	k.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		48	324.670	47.85	3.62	51.47	74.00	-22.53	peak		
2	*	48	24.670	40.24	3.62	43.86	54.00	-10.14	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 58 of 166



Vertical

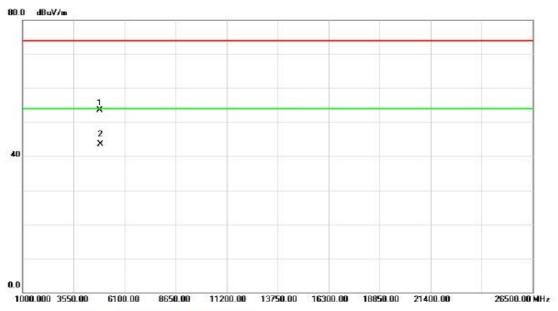


No.	М	k.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	X	24	30.800	77.04	33.59	110.63	74.00	36.63	peak	no limit	
2	*	24	31.000	68.30	33.59	101.89	54.00	47.89	AVG	no limit	

Report No.: BTL-FCCP-1-1410C191 Page 59 of 166



Vertical

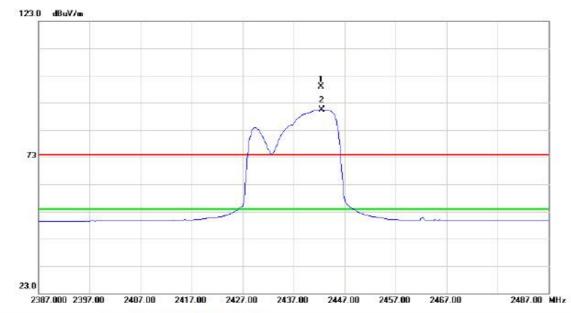


No.	M	k.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		48	74.010	49.69	3.72	53.41	74.00	-20.59	peak		
2	*	48	74.010	39.75	3.72	43.47	54.00	-10.53	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 60 of 166



Horizontal



No.	М	k.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	X	24	142.400	65.31	33.60	98.91	74.00	24.91	peak	no limit	
2	*	24	42.500	56.77	33.60	90.37	54.00	36.37	AVG	no limit	

Report No.: BTL-FCCP-1-1410C191 Page 61 of 166



Horizontal

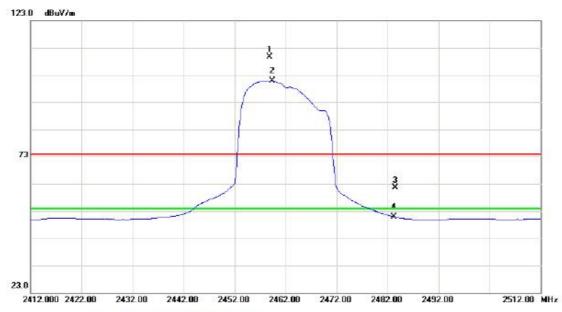


No.	MI	k.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		487	4.640	48.42	3.72	52.14	74.00	-21.86	peak		
2	*	4874	4.640	38.82	3.72	42.54	54.00	-11.46	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 62 of 166



Vertical

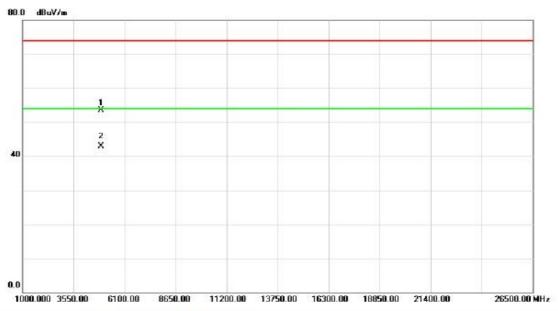


			Factor	ment	Limit	Over			
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
X	2458.900	76.02	33.63	109.65	74.00	35.65	peak	no limit	
*	2459.400	67.26	33.63	100.89	54.00	46.89	AVG	no limit	
	2483.500	28.08	33.66	61.74	74.00	-12.26	peak		
	2483.500	17.11	33.66	50.77	54.00	-3.23	AVG		
	*	X 2458.900	X 2458.900 76.02 * 2459.400 67.26 2483.500 28.08	X 2458.900 76.02 33.63 * 2459.400 67.26 33.63 2483.500 28.08 33.66	X 2458.900 76.02 33.63 109.65 * 2459.400 67.26 33.63 100.89 2483.500 28.08 33.66 61.74	X 2458.900 76.02 33.63 109.65 74.00 * 2459.400 67.26 33.63 100.89 54.00 2483.500 28.08 33.66 61.74 74.00	X 2458.900 76.02 33.63 109.65 74.00 35.65 * 2459.400 67.26 33.63 100.89 54.00 46.89 2483.500 28.08 33.66 61.74 74.00 -12.26	X 2458.900 76.02 33.63 109.65 74.00 35.65 peak * 2459.400 67.26 33.63 100.89 54.00 46.89 AVG 2483.500 28.08 33.66 61.74 74.00 -12.26 peak	X 2458.900 76.02 33.63 109.65 74.00 35.65 peak no limit * 2459.400 67.26 33.63 100.89 54.00 46.89 AVG no limit 2483.500 28.08 33.66 61.74 74.00 -12.26 peak

Report No.: BTL-FCCP-1-1410C191 Page 63 of 166



Vertical

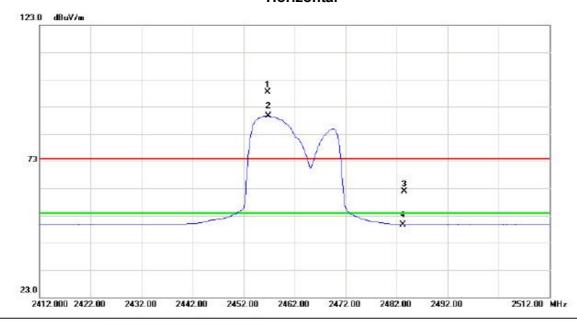


No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		4925.060	49.67	3.80	53.47	74.00	-20.53	peak		
2	*	4925.060	39.07	3.80	42.87	54.00	-11.13	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 64 of 166



Horizontal

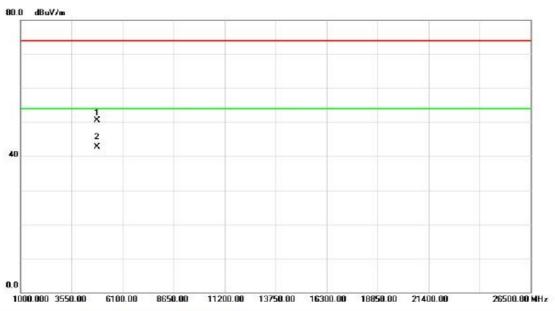


No.	Mk	. Freq.	Level	Factor	ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	X	2456.700	64.69	33.63	98.32	74.00	24.32	peak	no limit	
2	*	2456.800	55.96	33.63	89.59	54.00	35.59	AVG	no limit	
3		2483.500	28.27	33.66	61.93	74.00	-12.07	peak		
4		2483.500	16.07	33.66	49.73	54.00	-4.27	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 65 of 166



Horizontal

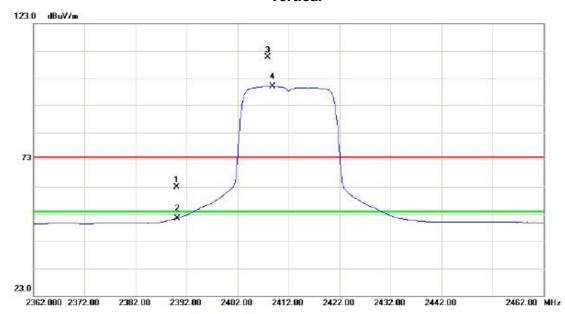


No.	М	k.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		48	324.660	46.85	3.62	50.47	74.00	-23.53	peak		
2	*	48	324.660	39.02	3.62	42.64	54.00	-11.36	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 66 of 166



Vertical

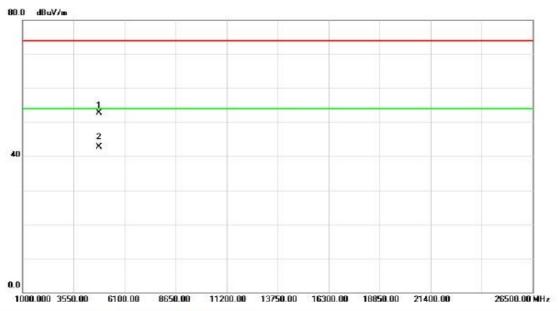


Mk	. Freq.	Reading Level	Correct	Measure- ment	Limit	Over			
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
	2390.000	29.28	33.54	62.82	74.00	-11.18	peak		
	2390.000	17.89	33.54	51.43	54.00	-2.57	AVG		
X	2407.900	77.08	33.57	110.65	74.00	36.65	peak	no limit	
*	2408.900	66.34	33.57	99.91	54.00	45.91	AVG	no limit	
	X	MHz 2390.000	MHz dBuV 2390.000 29.28 2390.000 17.89 X 2407.900 77.08	MHz dBuV dB 2390.000 29.28 33.54 2390.000 17.89 33.54 X 2407.900 77.08 33.57	MHz dBuV dB dBuV/m 2390.000 29.28 33.54 62.82 2390.000 17.89 33.54 51.43 X 2407.900 77.08 33.57 110.65	MHz dBuV dB dBuV/m dBuV/m 2390.000 29.28 33.54 62.82 74.00 2390.000 17.89 33.54 51.43 54.00 X 2407.900 77.08 33.57 110.65 74.00	MHz dBuV dB dBuV/m dBuV/m dB 2390.000 29.28 33.54 62.82 74.00 -11.18 2390.000 17.89 33.54 51.43 54.00 -2.57 X 2407.900 77.08 33.57 110.65 74.00 36.65	MHz dBuV dB dBuV/m dBuV/m dB Detector 2390.000 29.28 33.54 62.82 74.00 -11.18 peak 2390.000 17.89 33.54 51.43 54.00 -2.57 AVG X 2407.900 77.08 33.57 110.65 74.00 36.65 peak	MHz dBuV dB dBuV/m dBuV/m dB Detector Comment 2390.000 29.28 33.54 62.82 74.00 -11.18 peak 2390.000 17.89 33.54 51.43 54.00 -2.57 AVG X 2407.900 77.08 33.57 110.65 74.00 36.65 peak no limit

Report No.: BTL-FCCP-1-1410C191 Page 67 of 166



Vertical

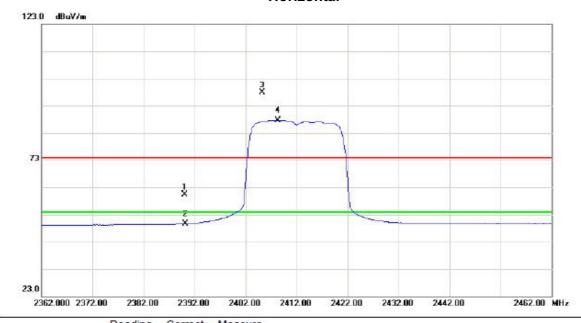


No.	М	k.	Freq.	Reading Level		Measure- ment	Limit	Over			
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		48	324.130	49.17	3.62	52.79	74.00	-21.21	peak		
2	*	48	24.130	39.05	3.62	42.67	54.00	-11.33	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 68 of 166



Horizontal



No.	M	k.	Freq.	Level	Factor	ment	Limit	Over			
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		23	90.000	26.92	33.54	60.46	74.00	-13.54	peak		
2		23	90.000	16.05	33.54	49.59	54.00	-4.41	AVG		
3	X	24	05.200	64.38	33.55	97.93	74.00	23.93	peak	no limit	
4	*	24	08.300	54.12	33.57	87.69	54.00	33.69	AVG	no limit	

Report No.: BTL-FCCP-1-1410C191 Page 69 of 166



Horizontal



No.	Mk	. Freq.	Reading Level		Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		4824.160	47.86	3.62	51.48	74.00	-22.52	peak		
2	*	4824.160	37.61	3.62	41.23	54.00	-12.77	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 70 of 166



123.0 dBuV/m 23.0

No.	M	k. Fre	eq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MH	lz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	*	2432.6	00	65.61	33.60	99.21	54.00	45.21	AVG	no limit	
2	X	2432.8	00	76.08	33.60	109.68	74.00	35.68	peak	no limit	

2437.00

2447.00

2457.00

2467.00

2487.00 MHz

2387.000 2397.00

2407.00

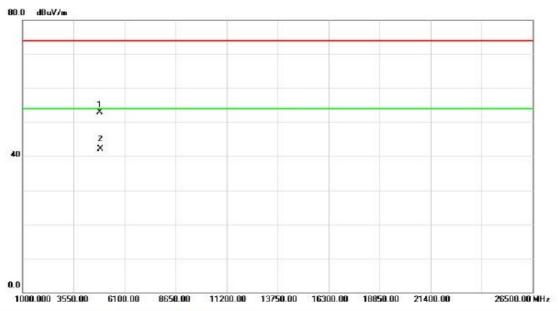
2417.00

2427.00

Report No.: BTL-FCCP-1-1410C191 Page 71 of 166



Vertical

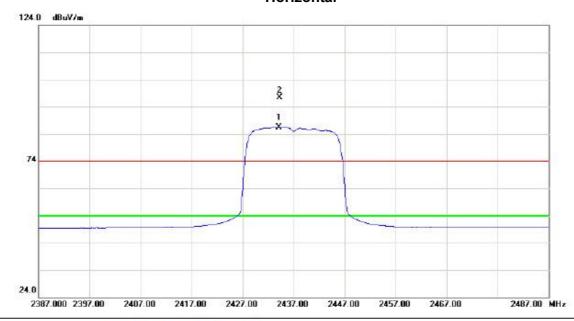


No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		4874.440	49.26	3.72	52.98	74.00	-21.02	peak		
2	*	4874.440	38.45	3.72	42.17	54.00	-11.83	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 72 of 166



Horizontal

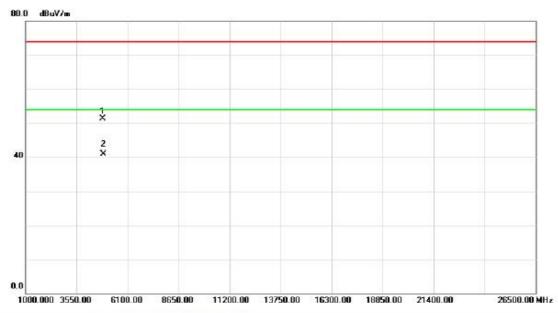


No.	Mk	c. Freq.	Reading Level		Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	*	2434.100	52.87	33.60	86.47	54.00	32.47	AVG	no limit	
2	X	2434.200	63.80	33.60	97.40	74.00	23.40	peak	no limit	

Report No.: BTL-FCCP-1-1410C191 Page 73 of 166



Horizontal

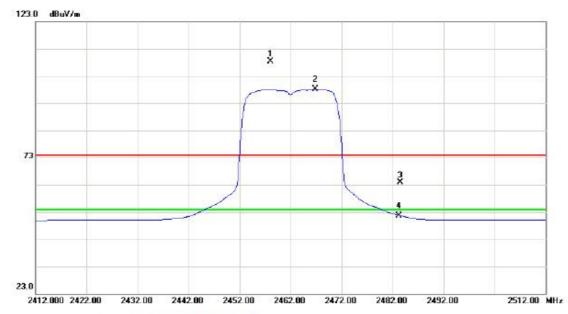


No.	Mk	c. Freq.		Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		4874.690	47.51	3.72	51.23	74.00	-22.77	peak		
2	*	4874.690	37.15	3.72	40.87	54.00	-13.13	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 74 of 166



Vertical



No.	M	c. Freq.	Reading Level	Correct	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	X	2458.100	74.79	33.63	108.42	74.00	34.42	peak	no limit	
2	*	2466.800	64.60	33.63	98.23	54.00	44.23	AVG	no limit	
3		2483.500	30.22	33.66	63.88	74.00	-10.12	peak		
4		2483.500	18.03	33.66	51.69	54.00	-2.31	AVG		
-		1000 CM - 4 V		11-14-20-0	2000000	2-A11-0-1-1	100000000000000000000000000000000000000			

Report No.: BTL-FCCP-1-1410C191 Page 75 of 166



Vertical

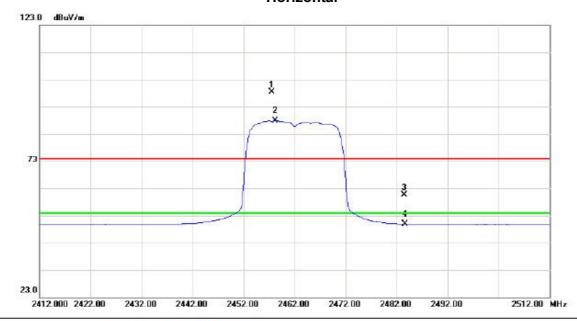


No.	М	k.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		49	25.570	49.84	3.80	53.64	74.00	-20.36	peak		
2	*	49	25.570	37.99	3.80	41.79	54.00	-12.21	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 76 of 166



Horizontal

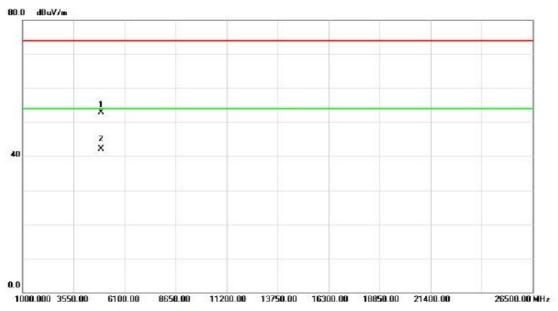


No.	Mk	k.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over			
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	X	24	57.500	64.87	33.63	98.50	74.00	24.50	peak	no limit	
2	*	24	58.200	54.25	33.63	87.88	54.00	33.88	AVG	no limit	
3		24	83.500	27.06	33.66	60.72	74.00	-13.28	peak		
4		24	83.500	16.18	33.66	49.84	54.00	-4.16	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 77 of 166



Horizontal

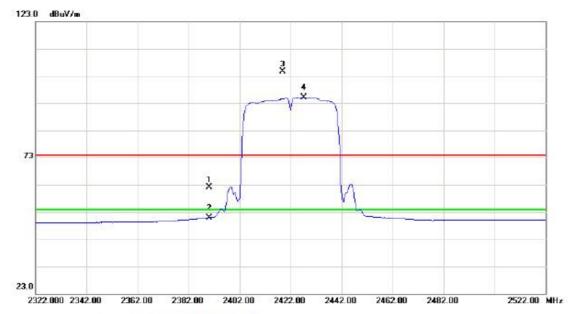


No.	М	k.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		49	26.130	49.07	3.80	52.87	74.00	-21.13	peak		
2	*	49	26.130	38.37	3.80	42.17	54.00	-11.83	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 78 of 166



Vertical

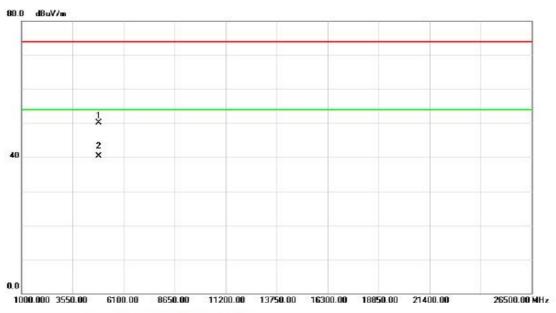


No.	M	k.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over			
8			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		23	90.000	28.66	33.54	62.20	74.00	-11.80	peak		
2		23	90.000	17.43	33.54	50.97	54.00	-3.03	AVG		
3	X	24	19.000	71.04	33.58	104.62	74.00	30.62	peak	no limit	
4	*	24	27.200	61.55	33.59	95.14	54.00	41.14	AVG	no limit	

Report No.: BTL-FCCP-1-1410C191 Page 79 of 166



Vertical

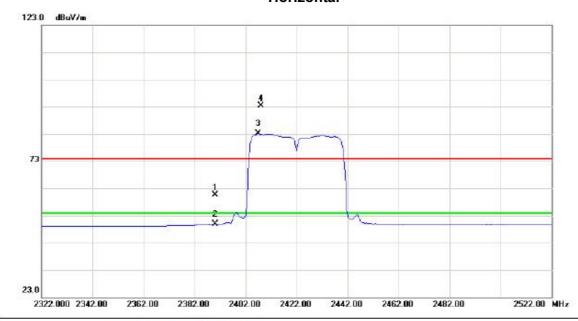


No.	М	k.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		48	45.690	46.47	3.66	50.13	74.00	-23.87	peak		
2	*	48	45.690	36.61	3.66	40.27	54.00	-13.73	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 80 of 166



Horizontal

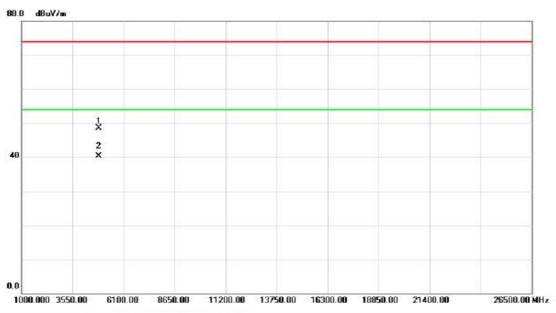


No.	Mk	K .	Freq.	Reading Level	Factor	Measure- ment	Limit	Over			
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		23	90.000	27.15	33.54	60.69	74.00	-13.31	peak		
2		23	90.000	16.26	33.54	49.80	54.00	-4.20	AVG		
3	*	24	07.000	49.50	33.57	83.07	54.00	29.07	AVG	no limit	
4	Х	24	08.000	59.83	33.57	93.40	74.00	19.40	peak	no limit	

Report No.: BTL-FCCP-1-1410C191 Page 81 of 166



Horizontal



No.	М	k.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		48	46.980	44.84	3.67	48.51	74.00	-25.49	peak		
2	*	48	46.980	36.65	3.67	40.32	54.00	-13.68	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 82 of 166



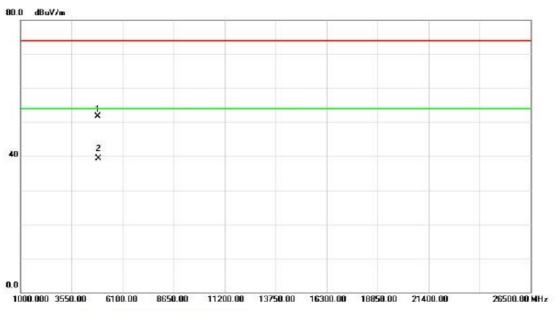
Vertical 123.0 dBuV/m 2 1 2 2 237.000 2357.00 2377.00 2397.00 2417.00 2437.00 2457.00 2497.00 2497.00 2537.00 MHz

No.	M	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	*	2428.000	61.41	33.59	95.00	54.00	41.00	AVG	no limit	
2	X	2429.200	70.66	33.59	104.25	74.00	30.25	peak	no limit	

Report No.: BTL-FCCP-1-1410C191 Page 83 of 166



Vertical

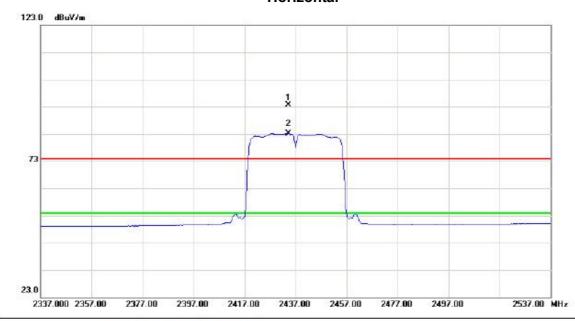


No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		4873.260	47.97	3.72	51.69	74.00	-22.31	peak		
2	*	4873.260	35.59	3.72	39.31	54.00	-14.69	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 84 of 166



Horizontal



No.	M	c. Freq.	Reading Level	Correct	Measure- ment	Limit	Over			
3		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	X	2434.200	59.99	33.60	93.59	74.00	19.59	peak	no limit	
2	*	2434.200	49.45	33.60	83.05	54.00	29.05	AVG	no limit	

Report No.: BTL-FCCP-1-1410C191 Page 85 of 166



Horizontal



No.	MI	k.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		48	75.490	46.54	3.72	50.26	74.00	-23.74	peak		
2	*	48	75.490	36.45	3.72	40.17	54.00	-13.83	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 86 of 166



Vertical 123.0 dBuV/m 2 2 2 23.0

No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	*	2447.000	61.44	33.61	95.05	54.00	41.05	AVG	no limit	
2	X	2455.400	71.29	33.62	104.91	74.00	30.91	peak	no limit	
3		2483.500	29.38	33.66	63.04	74.00	-10.96	peak		
4		2483.500	18.29	33.66	51.95	54.00	-2.05	AVG		

2452.00

2472.00

2492.00

2512.00

2552.00 MHz

2352.000 2372.00

2392.00

2412.00

2432.00

Report No.: BTL-FCCP-1-1410C191 Page 87 of 166



Vertical

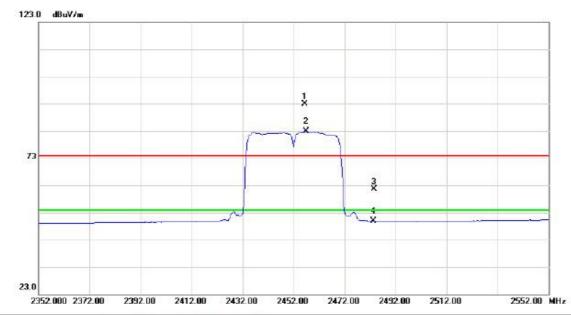


No.	М	k.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		49	06.970	45.98	3.77	49.75	74.00	-24.25	peak		
2	*	49	06.970	35.86	3.77	39.63	54.00	-14.37	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 88 of 166



Horizontal

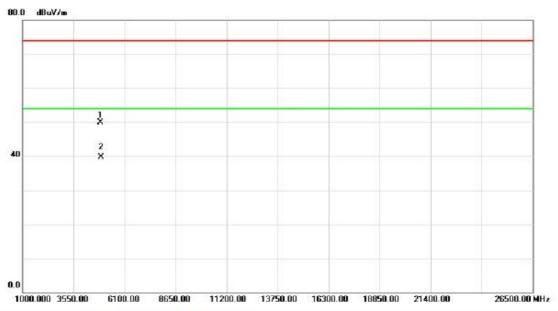


No.	Mi	۲.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over			
3			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	X	24	56.400	59.26	33.63	92.89	74.00	18.89	peak	no limit	
2	*	24	56.800	49.14	33.63	82.77	54.00	28.77	AVG	no limit	
3		24	83.500	28.02	33.66	61.68	74.00	-12.32	peak		
4		24	83.500	16.26	33.66	49.92	54.00	-4.08	AVG		
d and		1,111			1000000	100 B 100 C 100 C	2-411-0-1-1		-,		

Report No.: BTL-FCCP-1-1410C191 Page 89 of 166



Horizontal



No.	М	k.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		-	
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		49	05.140	46.11	3.77	49.88	74.00	-24.12	peak		
2	*	49	05.140	35.86	3.77	39.63	54.00	-14.37	AVG		

Report No.: BTL-FCCP-1-1410C191 Page 90 of 166



ATTACHMENT E - BANDWIDTH

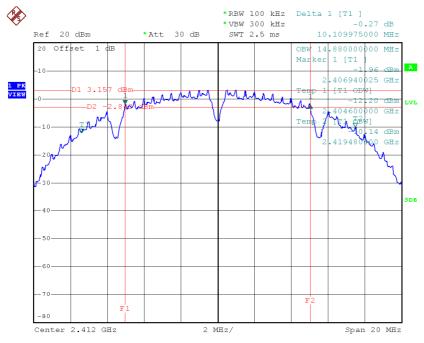
Report No.: BTL-FCCP-1-1410C191 Page 91 of 166



Test Mode: TX B Mode_CH01/06/11_ANT 1

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min . Limit (kHz)	Test Result
2412	10.11	14.88	500	Complies
2437	10.13	14.88	500	Complies
2462	10.11	14.84	500	Complies

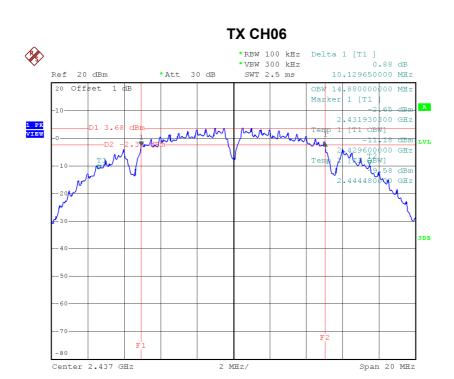
TX CH01



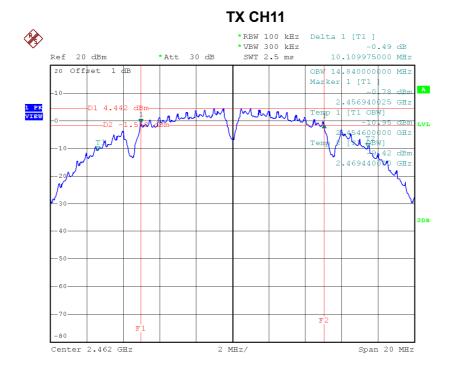
Date: 4.NOV.2014 02:18:13

Report No.: BTL-FCCP-1-1410C191 Page 92 of 166





Date: 4.NOV.2014 02:19:49



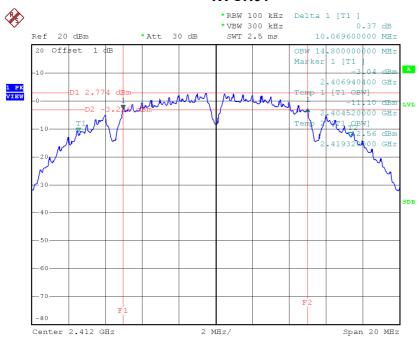
Date: 4.NOV.2014 02:21:24



Test Mode: TX B Mode_CH01/06/11_ANT 2

Frequency	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412 MHz	10.07	14.80	500	Complies
2437 MHz	10.15	14.76	500	Complies
2462 MHz	10.11	14.72	500	Complies

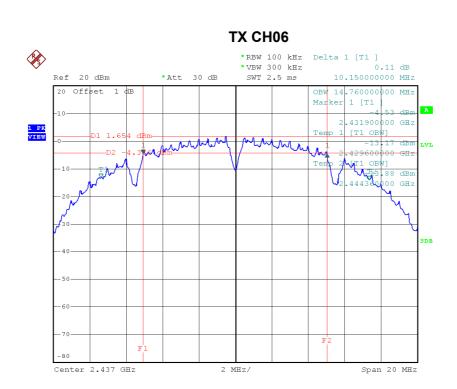
TX CH01



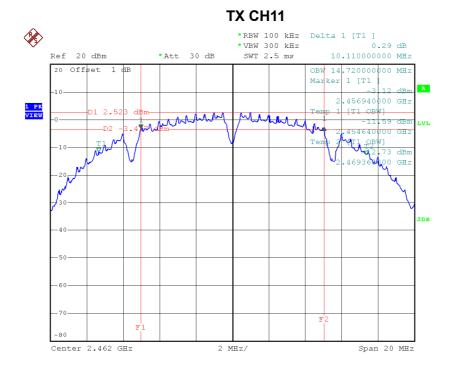
Date: 4.NOV.2014 02:51:29

Report No.: BTL-FCCP-1-1410C191 Page 94 of 166





Date: 4.NOV.2014 02:52:55



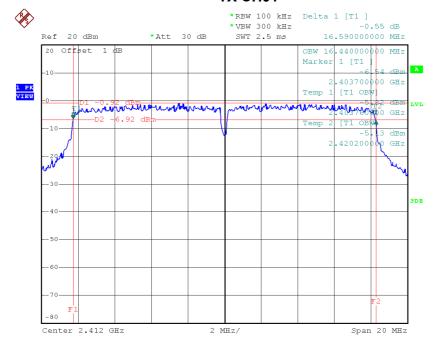
Date: 4.NOV.2014 02:54:08



Test Mode: TX G Mode_CH01/06/11_ANT 1

Fre quency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	16.59	16.44	500	Complies
2437	16.55	16.40	500	Complies
2462	16.59	16.44	500	Complies

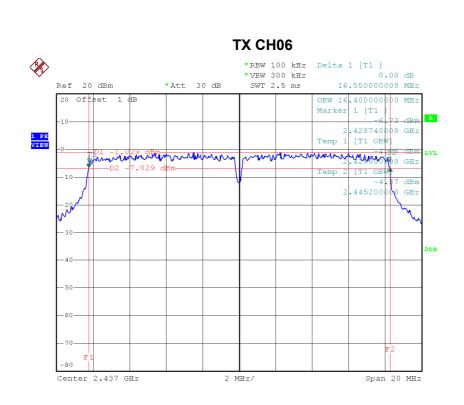
TX CH01



Date: 4.NOV.2014 02:22:45

Report No.: BTL-FCCP-1-1410C191 Page 96 of 166





Date: 4.NOV.2014 02:23:47

*REW 100 kHz Delta 1 [T1] *VBW 300 kHz -0.08 dB *Att 30 dB SWT 2.5 ms 16.590000000 MHz 20 Offset 1 dB OBW 16.440000000 MHz Marker 1 [T1 OBW 2.453700000 GHz Temp 1 [T1 OBW 2.45370000 GHz Temp 2 [T1 OBW 2.4537000 O GHz Temp 2 [T1 OBW 2.4537000 O GHz Temp 2 [T1 OBW 2.4537000 O GHz Temp 2 [T1 OBW 2.4507000 O GHz Temp 2 [T1 OBW 2.4507000 O GHz Temp 2 [T1 OBW 2.450700 O GHz Temp 2 [T1 OBW 2.450700

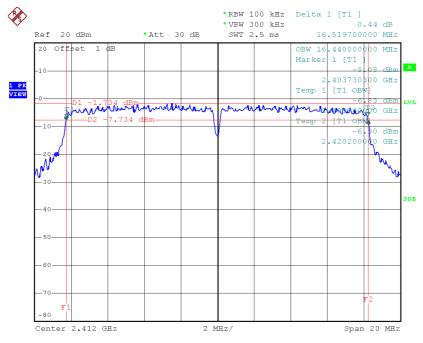
Date: 4.NOV.2014 02:24:55



Test Mode: TX G Mode_CH01/06/11_ANT 2

Frequency	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412 MHz	16.52	16.44	500	Complies
2437 MHz	16.59	16.44	500	Complies
2462 MHz	16.48	16.44	500	Complies

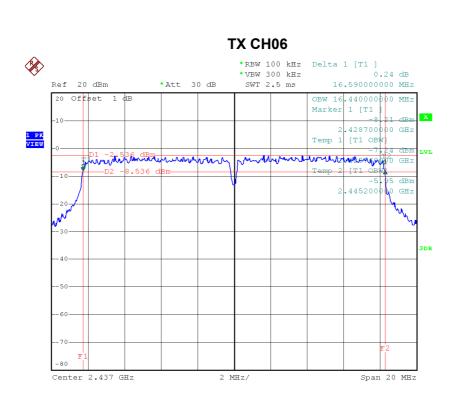
TX CH01



Date: 4.NOV.2014 02:55:14

Report No.: BTL-FCCP-1-1410C191 Page 98 of 166





Date: 4.NOV.2014 02:56:11

TX CH11 *RBW 100 kHz Delta 1 [T1] **P** 16.479675000 MHz Ref 20 dBm *Att 30 dB SWT 2.5 ms OBW 16.4400000000 MHz Marker 1 [T1] 20 Offset 1 dB .4537400<mark>25 GH</mark>z 1 PK VIEW [T1 OBW maranter we wanter. GH 2 Center 2.462 GHz Span 20 MHz

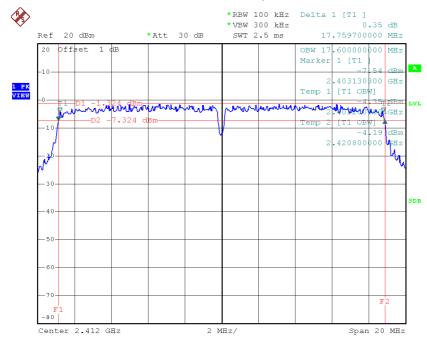
Date: 4.NOV.2014 02:57:01



Test Mode: TX N-20MHz Mode_CH01/06/11_ANT 1

Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min . Limit (kHz)	Test Result
2412	17.76	17.60	500	Complies
2437	17.76	17.60	500	Complies
2462	17.83	17.64	500	Complies

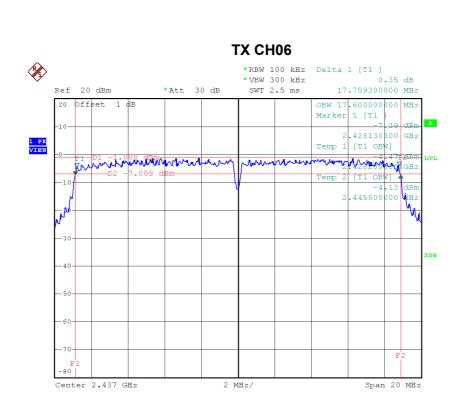
TX CH01



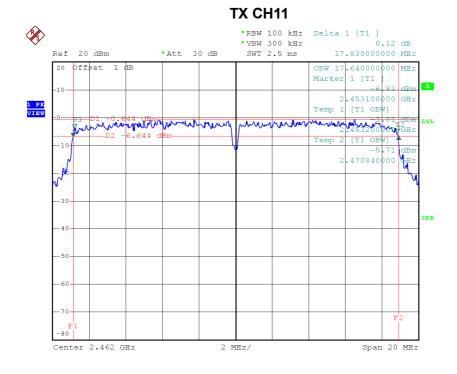
Date: 4.NOV.2014 02:26:12

Report No.: BTL-FCCP-1-1410C191 Page 100 of 166





Date: 4.NOV.2014 02:27:17



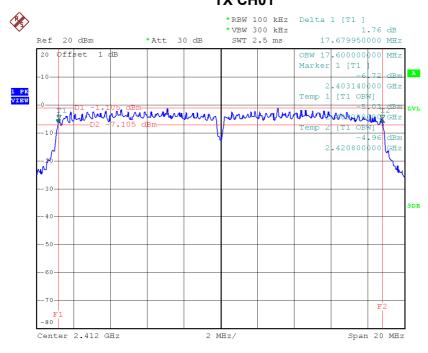
Date: 4.NOV.2014 02:28:05



Test Mode: TX N-20MHz Mode_CH01/06/11_ANT 2

Frequency	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412 MHz	17.68	17.60	500	Complies
2437 MHz	17.68	17.64	500	Complies
2462 MHz	17.67	17.64	500	Complies

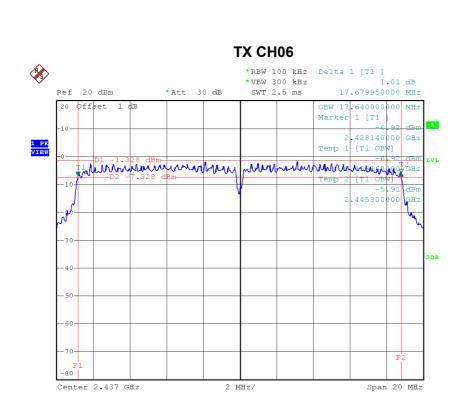
TX CH01



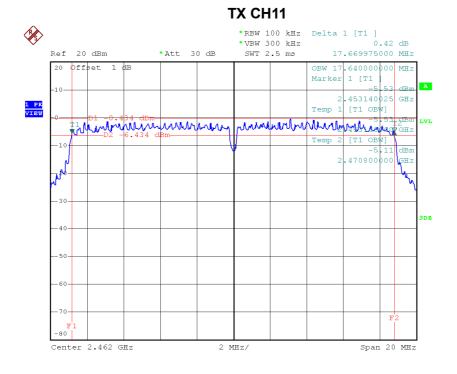
Date: 4.NOV.2014 02:58:52

Report No.: BTL-FCCP-1-1410C191 Page 102 of 166





Date: 4.NOV.2014 02:59:45



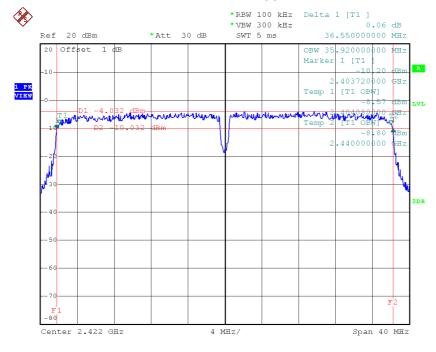
Date: 4.NOV.2014 03:00:41



Test Mode: TX N-40MHz Mode_CH03/06/09_ANT 1

Frequency	6dB Bandwidth	99% Occupied BW		Test Result
(MHz)	(MHz)	(MHz)	(kHz)	
2422	36.55	35.92	500	Complies
2437	36.40	36.00	500	Complies
2452	36.48	36.00	500	Complies

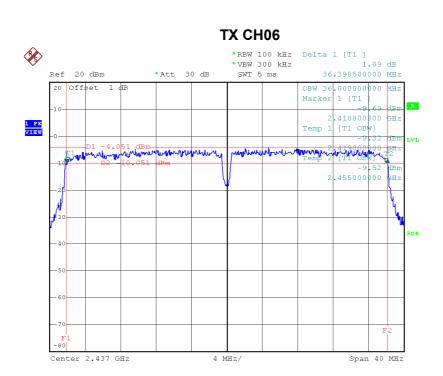
TX CH03



Date: 4.NOV.2014 02:29:19

Report No.: BTL-FCCP-1-1410C191 Page 104 of 166





Date: 4.NOV.2014 02:48:24

*RBW 100 kHz Delta 1 [T1] *VBW 300 kHz 0.72 dB Ref 20 dBm *Att 30 dB SWT 5 ms 36.479950000 MHz 20 Offset 1 dB OBW 36.00000000 MHz Marker 1 [T1 OBW] -0 D1 -3.285 dBm -40 D2 -9.285 dBm -40 D2 -9.285 dBm -40 D2 -9.285 dBm -40 D2 -9.285 dBm -40 D2 -70 F1 -800 Center 2.452 GHz 4 MHz/ Span 40 MHz

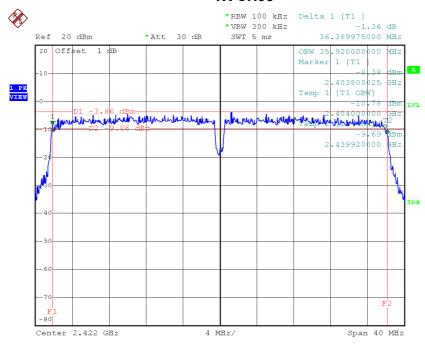
Date: 4.NOV.2014 02:49:32



Test Mode: TX N-40MHz Mode_CH03/06/09_ANT 2

Frequency	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2422 MHz	36.39	35.92	500	Complies
2437 MHz	36.41	36.00	500	Complies
2452 MHz	36.41	36.00	500	Complies

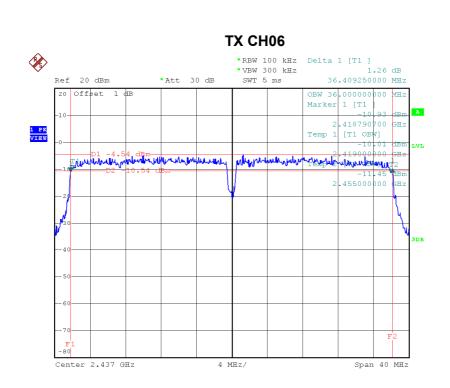
TX CH03



Date: 4.NOV.2014 03:01:50

Report No.: BTL-FCCP-1-1410C191 Page 106 of 166





Date: 4.NOV.2014 03:02:50

*RBW 100 kHz Delta 1 [T1] *VBW 300 kHz 0.51 dB Ref 20 dBm *Att 30 dB SWT 5 ms 36.408600000 MHz 20 Offset 1 dB OBW 36.000000000 MHz Marker 1 [T1 OBW] -10 06 dBm 2.433790700 GHz Temp 1 [T1 OBW] -10 13.832 dBm 2.43400000 GHz -10 18 dBm 2.470000000 GHz -2 470000000 GHz -2 470000000 GHz -2 470000000 GHz -2 50 Span 40 MHz Center 2.452 GHz 4 MHz/ Span 40 MHz

Date: 4.NOV.2014 03:03:43



ATTACHMENT F – MAXIMUM PEAK CONDUCTED OUTPUT POWER

Report No.: BTL-FCCP-1-1410C191 Page 108 of 166



Test Mode :TX B Mode_CH01/06/11_ANT 1

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	13.71	0.02	30.00	1.00	Complies
2437	13.54	0.02	30.00	1.00	Complies
2462	13.88	0.02	30.00	1.00	Complies

Test Mode :TX B Mode_CH01/06/11_ANT 2

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	14.16	0.03	30.00	1.00	Complies
2437	13.82	0.02	30.00	1.00	Complies
2462	14.09	0.03	30.00	1.00	Complies

Test Mode :TX B Mode_CH01/06/11_Total

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	16.95	0.05	30.00	1.00	Complies
2437	16.69	0.05	30.00	1.00	Complies
2462	17.00	0.05	30.00	1.00	Complies

Report No.: BTL-FCCP-1-1410C191 Page 109 of 166



Test Mode :TX G Mode_CH01/06/11_ANT 1

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	18.13	0.07	30.00	1.00	Complies
2437	17.82	0.06	30.00	1.00	Complies
2462	17.83	0.06	30.00	1.00	Complies

Test Mode :TX G Mode_CH01/06/11_ANT 2

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	18.43	0.07	30.00	1.00	Complies
2437	18.14	0.07	30.00	1.00	Complies
2462	17.99	0.06	30.00	1.00	Complies

Test Mode :TX G Mode_CH01/06/11_Total

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	21.29	0.13	30.00	1.00	Complies
2437	20.99	0.13	30.00	1.00	Complies
2462	20.92	0.12	30.00	1.00	Complies

Report No.: BTL-FCCP-1-1410C191 Page 110 of 166



Test Mode :TX N20 Mode_CH01/06/11_ANT 1

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	18.26	0.07	30.00	1.00	Complies
2437	18.21	0.07	30.00	1.00	Complies
2462	17.98	0.06	30.00	1.00	Complies

Test Mode :TX N20 Mode_CH01/06/11_ANT 2

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	18.77	0.08	30.00	1.00	Complies
2437	18.51	0.07	30.00	1.00	Complies
2462	18.78	0.08	30.00	1.00	Complies

Test Mode :TX N20 Mode_CH01/06/11_Total

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	21.53	0.14	30.00	1.00	Complies
2437	21.37	0.14	30.00	1.00	Complies
2462	21.41	0.14	30.00	1.00	Complies

Report No.: BTL-FCCP-1-1410C191 Page 111 of 166



Test Mode :TX N40 Mode_CH03/06/09_ANT 1

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2422	18.32	0.07	30.00	1.00	Complies
2437	17.90	0.06	30.00	1.00	Complies
2452	18.45	0.07	30.00	1.00	Complies

Test Mode :TX N40 Mode_CH03/06/09_ANT 2

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2422	18.91	0.08	30.00	1.00	Complies
2437	18.60	0.07	30.00	1.00	Complies
2452	18.74	0.07	30.00	1.00	Complies

Test Mode :TX N40 Mode_CH03/06/09_Total

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2422	21.64	0.15	30.00	1.00	Complies
2437	21.27	0.13	30.00	1.00	Complies
2452	21.61	0.14	30.00	1.00	Complies

Report No.: BTL-FCCP-1-1410C191 Page 112 of 166



ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION

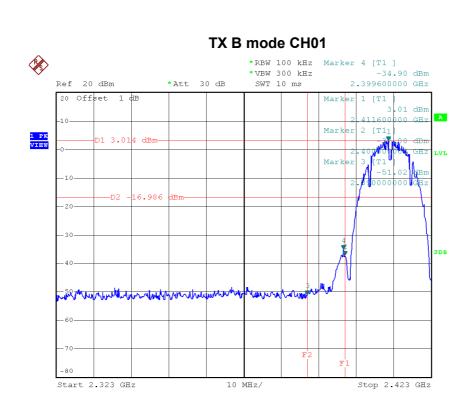
Report No.: BTL-FCCP-1-1410C191 Page 113 of 166

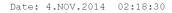


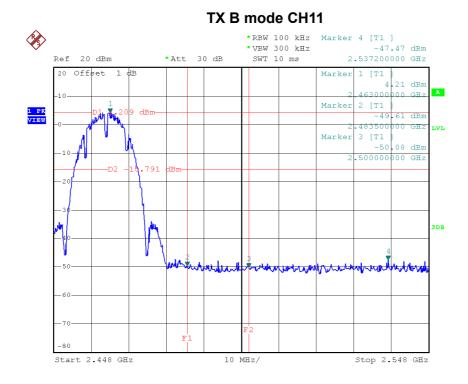
est Mode :	TX B Mode_ANT 1	

Report No.: BTL-FCCP-1-1410C191 Page 114 of 166







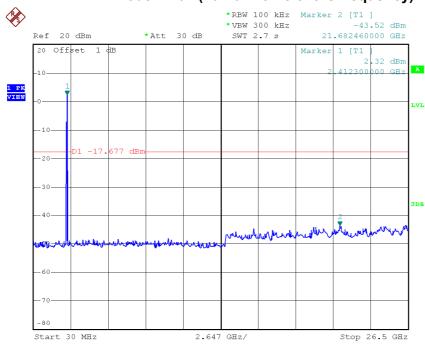


Report No.: BTL-FCCP-1-1410C191

Date: 4.NOV.2014 02:21:41

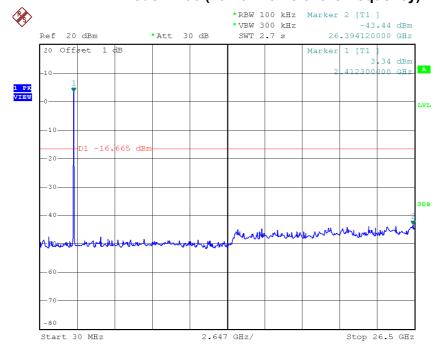






Date: 4.NOV.2014 02:18:23

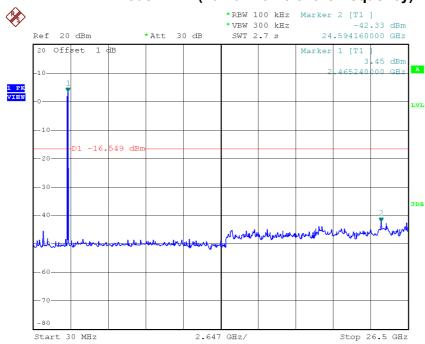
TX B mode CH06 (10 Harmonic of the frequency)



Date: 4.NOV.2014 02:19:59



TX B mode CH11 (10 Harmonic of the frequency)



Date: 4.NOV.2014 02:21:34

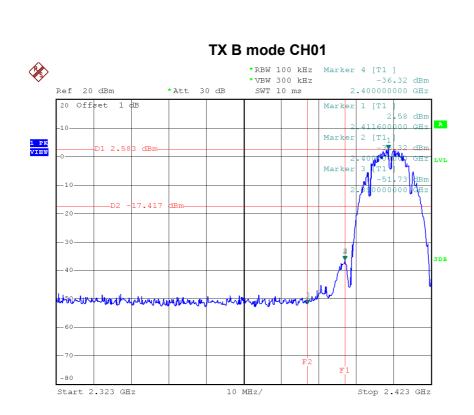
Report No.: BTL-FCCP-1-1410C191 Page 117 of 166



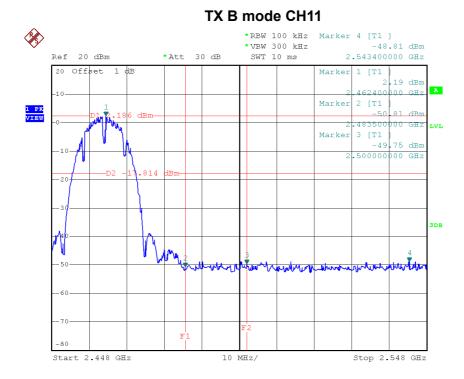
est Mode :	TX B Mode_ANT 2

Report No.: BTL-FCCP-1-1410C191 Page 118 of 166





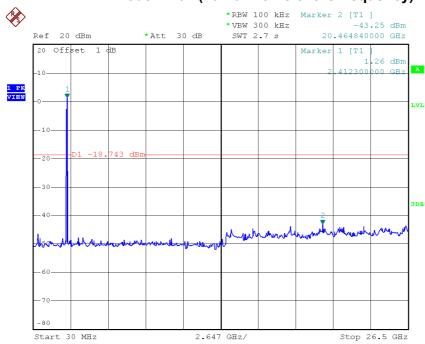
Date: 4.NOV.2014 02:51:47



Date: 4.NOV.2014 02:54:25

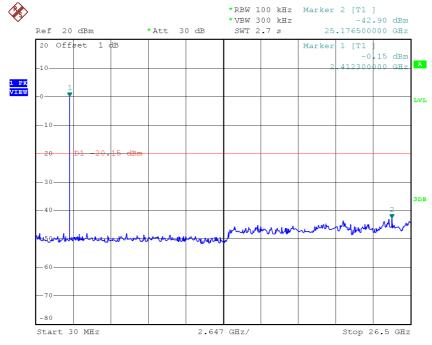






Date: 4.NOV.2014 02:51:40

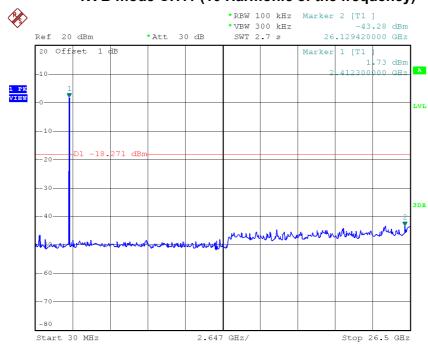
TX B mode CH06 (10 Harmonic of the frequency)



Date: 4.NOV.2014 02:53:05



TX B mode CH11 (10 Harmonic of the frequency)



Date: 4.NOV.2014 02:54:17

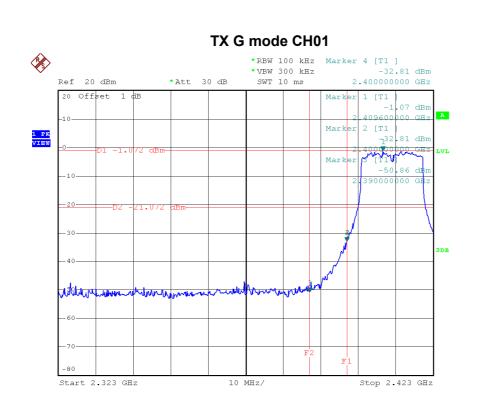
Report No.: BTL-FCCP-1-1410C191 Page 121 of 166



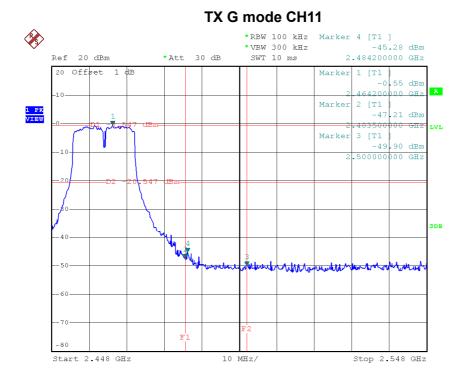
est Mode :	TX G Mode_ANT 1	

Report No.: BTL-FCCP-1-1410C191 Page 122 of 166





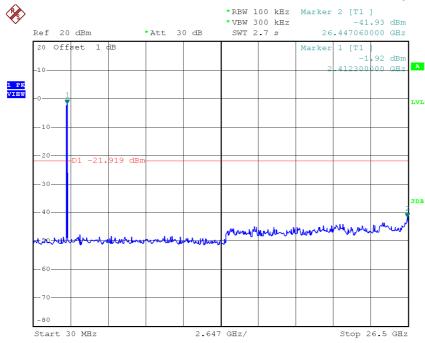




Date: 4.NOV.2014 02:25:12

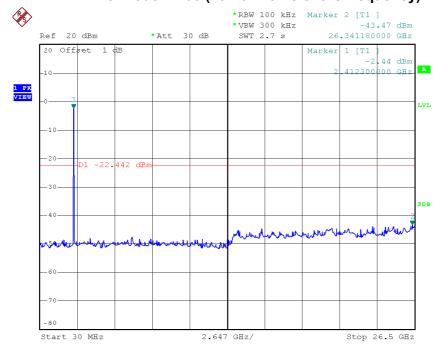






Date: 4.NOV.2014 02:22:55

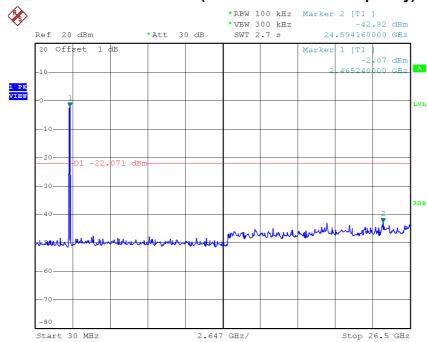
TX G mode CH06 (10 Harmonic of the frequency)



Date: 4.NOV.2014 02:23:57



TX G mode CH11 (10 Harmonic of the frequency)



Date: 4.NOV.2014 02:25:05

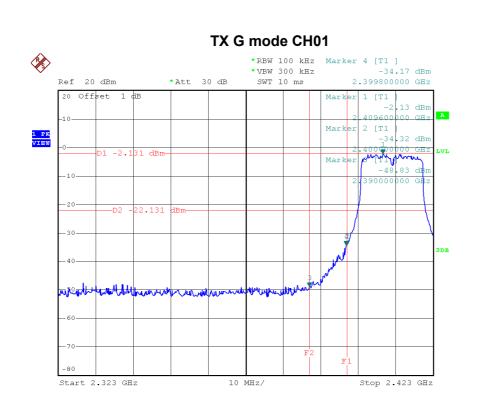
Report No.: BTL-FCCP-1-1410C191 Page 125 of 166



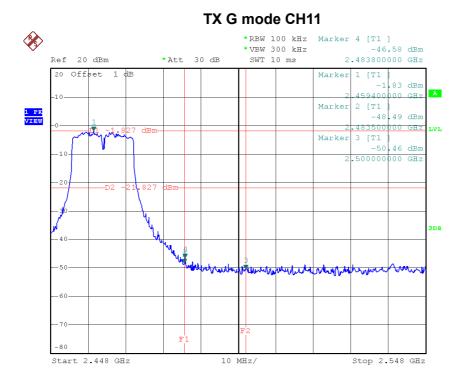
Test Mode:	TX G Mode_ANT 2

Report No.: BTL-FCCP-1-1410C191 Page 126 of 166





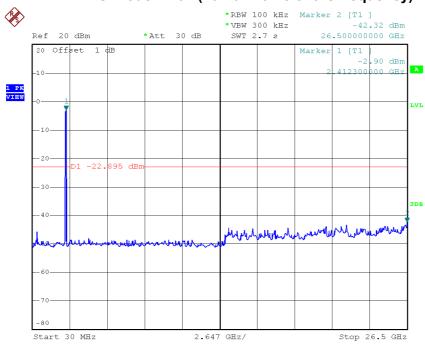
Date: 4.NOV.2014 02:55:31



Date: 4.NOV.2014 02:57:18

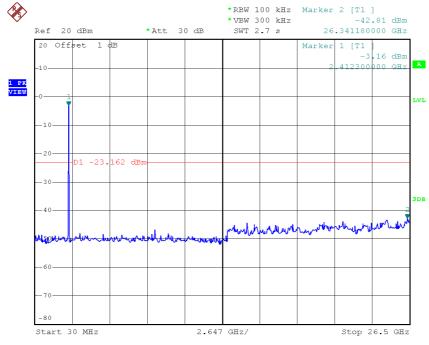






Date: 4.NOV.2014 02:55:24

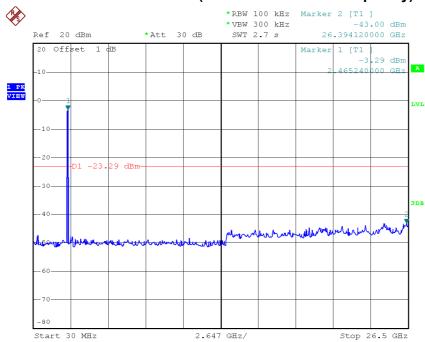
TX G mode CH06 (10 Harmonic of the frequency)



Date: 4.NOV.2014 02:56:22



TX G mode CH11 (10 Harmonic of the frequency)



Date: 4.NOV.2014 02:57:11

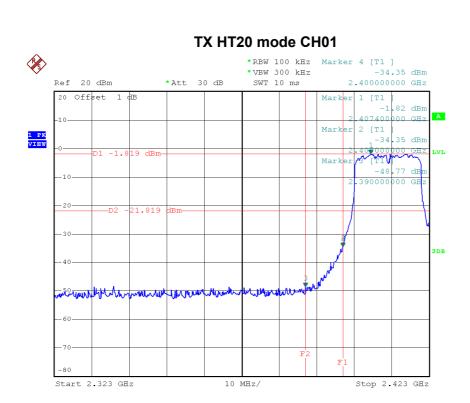
Report No.: BTL-FCCP-1-1410C191 Page 129 of 166



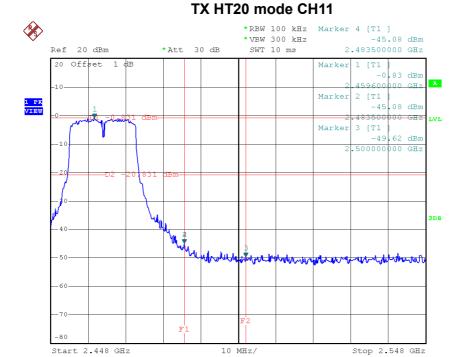
Test Mode :	TX N-20M Mode_ANT 1

Report No.: BTL-FCCP-1-1410C191 Page 130 of 166





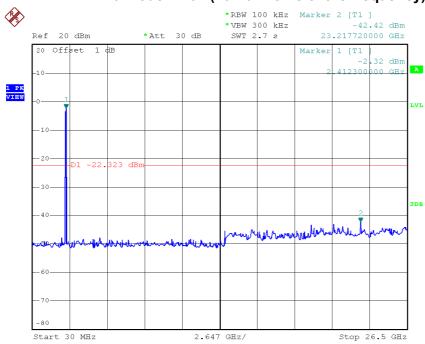
Date: 4.NOV.2014 02:26:29



Date: 4.NOV.2014 02:28:23

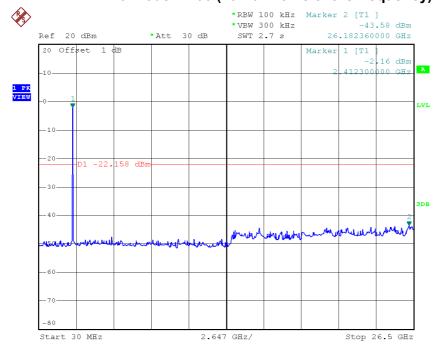






Date: 4.NOV.2014 02:26:22

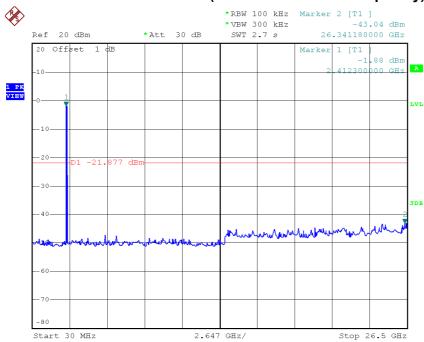
TX HT20 mode CH06 (10 Harmonic of the frequency)



Date: 4.NOV.2014 02:27:28







Date: 4.NOV.2014 02:28:15

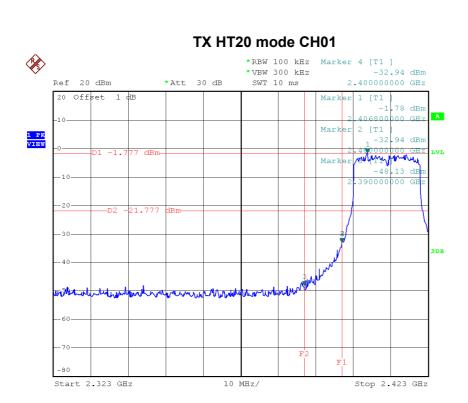
Report No.: BTL-FCCP-1-1410C191 Page 133 of 166



Test Mode :	TX N-20M Mode_ANT 2

Report No.: BTL-FCCP-1-1410C191 Page 134 of 166





Date: 4.NOV.2014 02:59:10

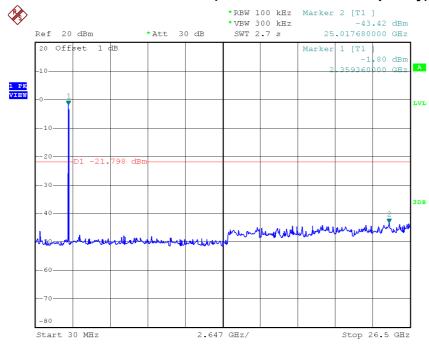
TX HT20 mode CH11 *RBW 100 kHz Marker 4 [T1] -44.49 dBm 2.484200000 GHz *VBW 300 kHz SWT 10 ms Ref 20 dBm *Att 30 dB 20 Offset 1 dB Marker 1 [T1] -1.14 dBm 465000000 GHZ Marker 2 [T1 1 PK VIEW -46.30 dBm 483500000 GHZ Marker 3 [T1 | -50.87 dBm 3DB

Date: 4.NOV.2014 03:00:58

Stop 2.548 GHz

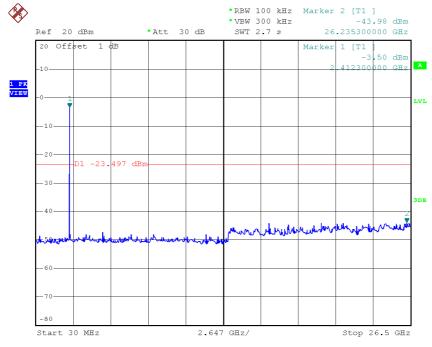






Date: 4.NOV.2014 02:59:03

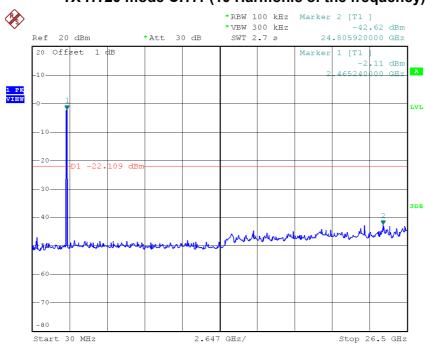
TX HT20 mode CH06 (10 Harmonic of the frequency)



Date: 4.NOV.2014 02:59:55







Date: 4.NOV.2014 03:00:51

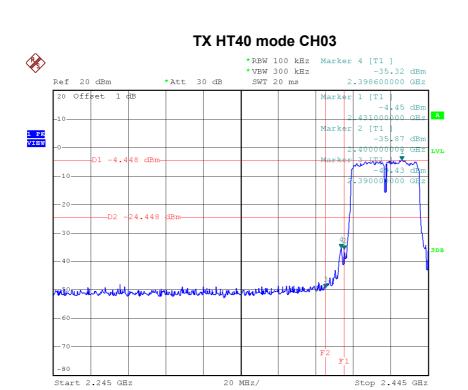
Report No.: BTL-FCCP-1-1410C191 Page 137 of 166



est Mode :	TX N-40M Mode_ANT 1

Report No.: BTL-FCCP-1-1410C191 Page 138 of 166





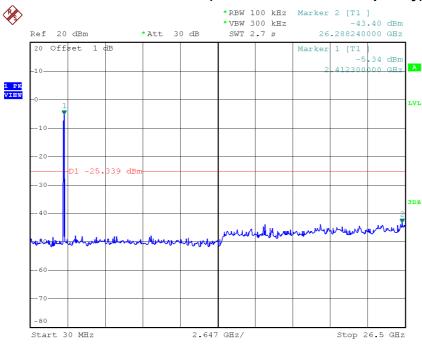
Date: 4.NOV.2014 02:29:36

TX HT40 mode CH09 *RBW 100 kHz Marker 4 [T1] -43.68 dBm 2.487200000 GHz *VBW 300 kHz *Att 30 dB SWT 20 ms Ref 20 dBm 20 Offset 1 dB Marker 1 [T1] -3.16 dBm 456400000 GHZ Marker 2 [T1] -47 72 dBm 1 PK VIEW .483500000 GHZ Marker -48.99 dBm 3DB Stop 2.63 GHz

Date: 4.NOV.2014 02:49:50

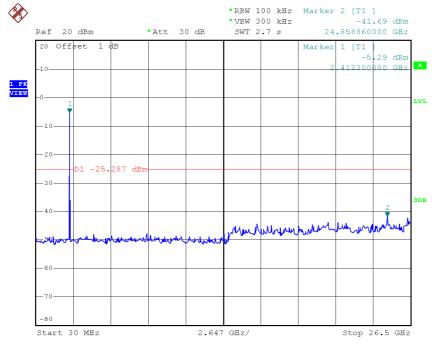






Date: 4.NOV.2014 02:29:29

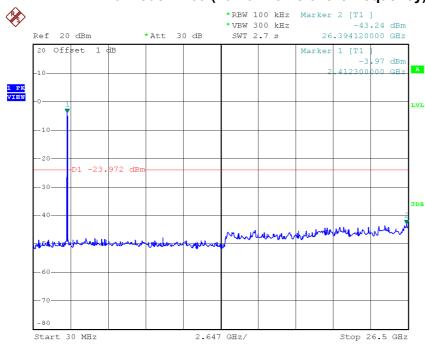
TX HT40 mode CH06 (10 Harmonic of the frequency)



Date: 4.NOV.2014 02:48:36







Date: 4.NOV.2014 02:49:42

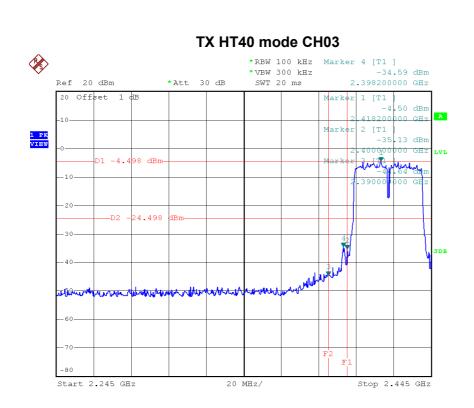
Report No.: BTL-FCCP-1-1410C191 Page 141 of 166



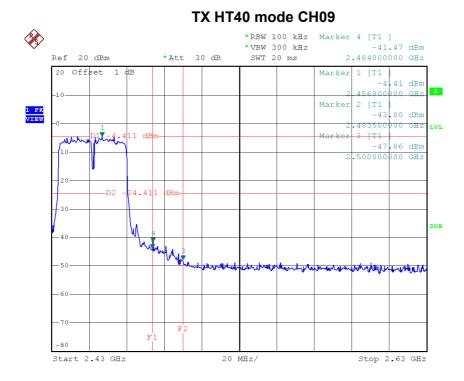
Test Mode :	TX N-40M Mode_ANT 2

Report No.: BTL-FCCP-1-1410C191 Page 142 of 166





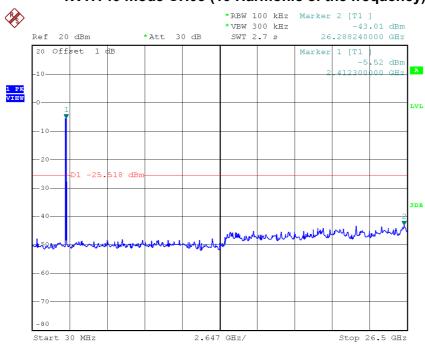




Date: 4.NOV.2014 03:04:00

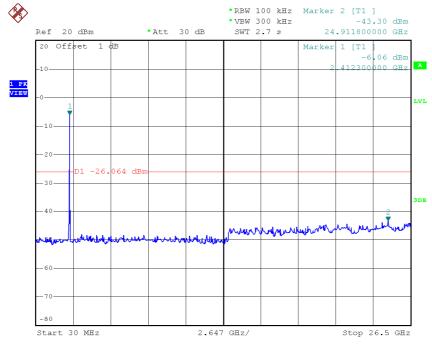






Date: 4.NOV.2014 03:02:01

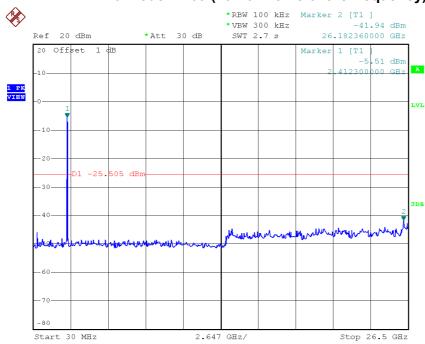
TX HT40 mode CH06 (10 Harmonic of the frequency)



Date: 4.NOV.2014 03:03:00







Date: 4.NOV.2014 03:03:53

Report No.: BTL-FCCP-1-1410C191 Page 145 of 166



ATTACHMENT H - POWER SPECTRAL DENSITY	

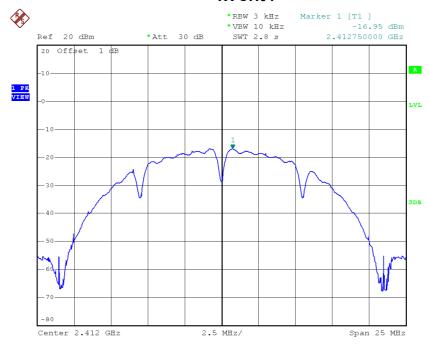
Report No.: BTL-FCCP-1-1410C191 Page 146 of 166



Test Mode :TX B Mode_CH01/06/11_ANT 1

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-16.95	0.02	8.00	Complies
2437	-16.45	0.02	8.00	Complies
2462	-15.72	0.03	8.00	Complies

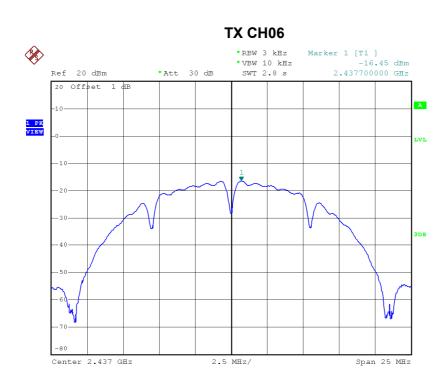
TX CH01



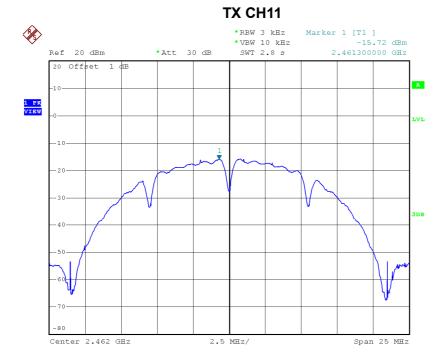
Date: 4.NOV.2014 02:18:39

Report No.: BTL-FCCP-1-1410C191 Page 147 of 166





Date: 4.NOV.2014 02:20:08



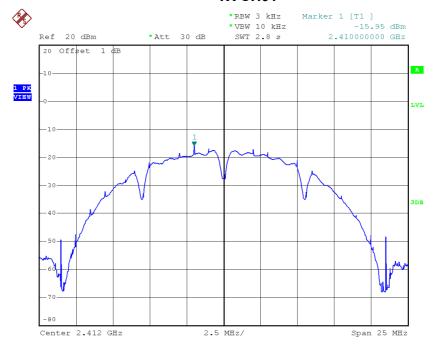
Date: 4.NOV.2014 02:21:50



Test Mode :TX B Mode_CH01/06/11_ANT 2

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-15.95	0.03	8.00	Complies
2437	-18.82	0.01	8.00	Complies
2462	-16.07	0.02	8.00	Complies

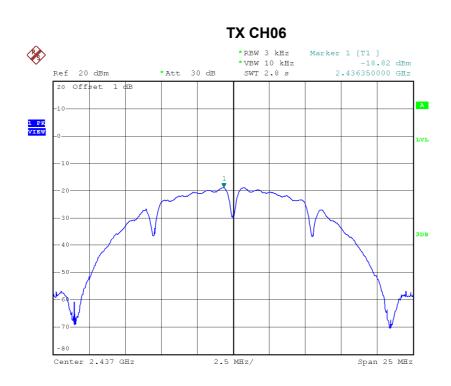
TX CH01



Date: 4.NOV.2014 02:51:55

Report No.: BTL-FCCP-1-1410C191 Page 149 of 166





Date: 4.NOV.2014 02:53:14

Date: 4.NOV.2014 02:54:33



Test Mode :TX B Mode_CH01/06/11_Total

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-13.41	0.05	8.00	Complies
2437	-14.46	0.04	8.00	Complies
2462	-12.88	0.05	8.00	Complies

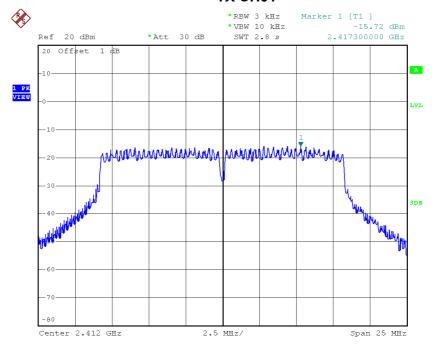
Report No.: BTL-FCCP-1-1410C191 Page 151 of 166



Test Mode :TX G Mode_CH01/06/11_ANT 1

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-15.72	0.03	8.00	Complies
2437	-15.75	0.03	8.00	Complies
2462	-15.01	0.03	8.00	Complies

TX CH01

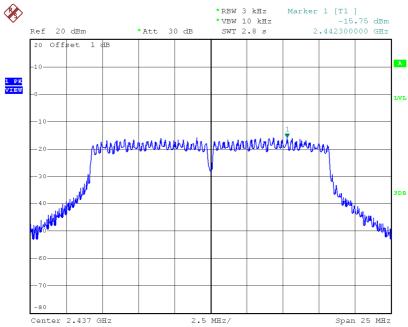


Date: 4.NOV.2014 02:23:11

Report No.: BTL-FCCP-1-1410C191 Page 152 of 166

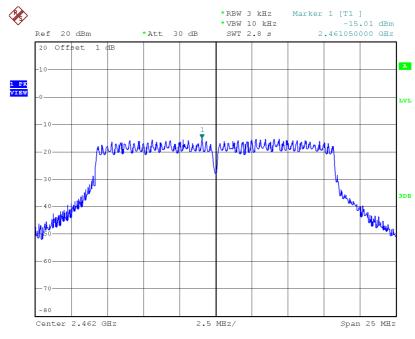






Date: 4.NOV.2014 02:24:05

TX CH11



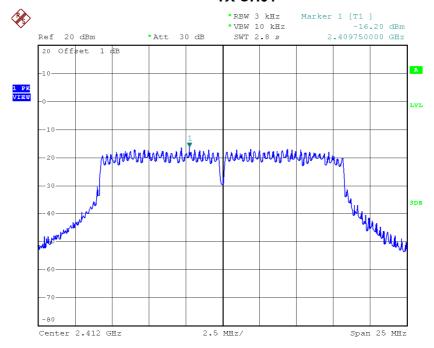
Date: 4.NOV.2014 02:25:21



Test Mode :TX G Mode_CH01/06/11_ANT 2

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-16.20	0.02	8.00	Complies
2437	-16.41	0.02	8.00	Complies
2462	-16.07	0.02	8.00	Complies

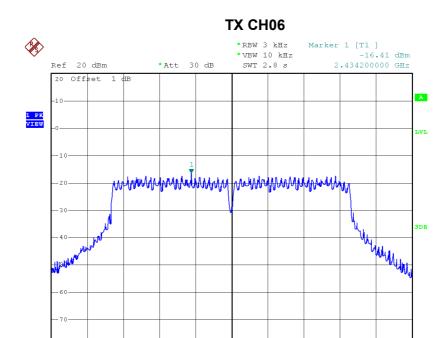
TX CH01



Date: 4.NOV.2014 02:55:40

Report No.: BTL-FCCP-1-1410C191 Page 154 of 166





2.5 MHz/

Span 25 MHz

Date: 4.NOV.2014 02:56:30

Center 2.437 GHz

Date: 4.NOV.2014 02:57:27



Test Mode :TX G Mode_CH01/06/11_Total

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-12.94	0.05	8.00	Complies
2437	-13.06	0.05	8.00	Complies
2462	-12.50	0.06	8.00	Complies

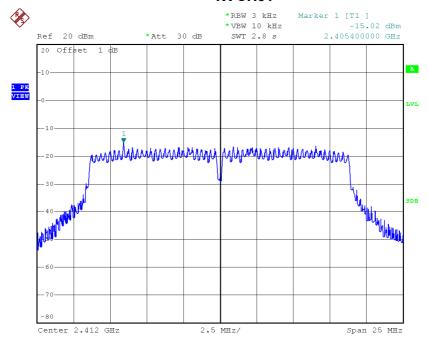
Report No.: BTL-FCCP-1-1410C191 Page 156 of 166



Test Mode: TX N-20M Mode_CH01/06/11_ANT 1

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-15.02	0.03	8.00	Complies
2437	-13.43	0.05	8.00	Complies
2462	-15.10	0.03	8.00	Complies

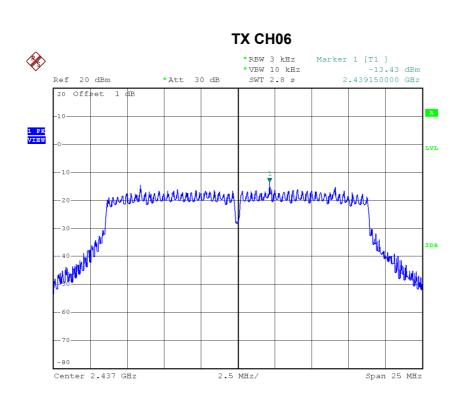
TX CH01



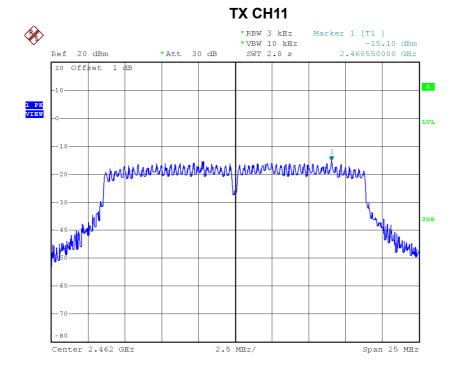
Date: 4.NOV.2014 02:26:38

Report No.: BTL-FCCP-1-1410C191 Page 157 of 166





Date: 4.NOV.2014 02:27:36



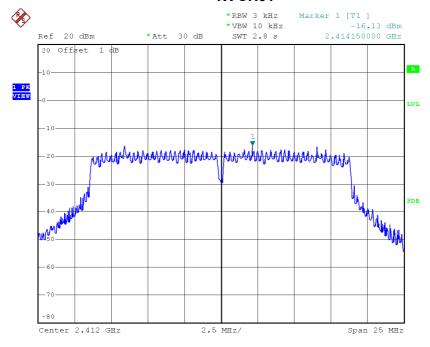
Date: 4.NOV.2014 02:28:31



Test Mode: TX N-20M Mode_CH01/06/11_ANT 2

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-16.13	0.02	8.00	Complies
2437	-16.22	0.02	8.00	Complies
2462	-15.80	0.03	8.00	Complies

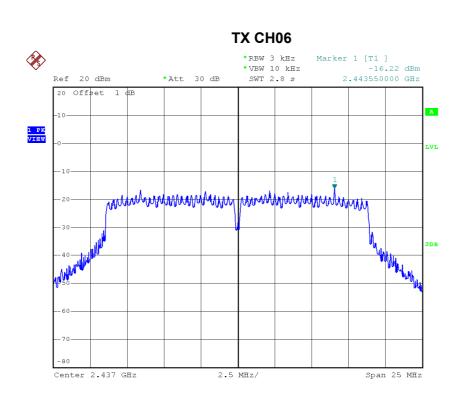
TX CH01



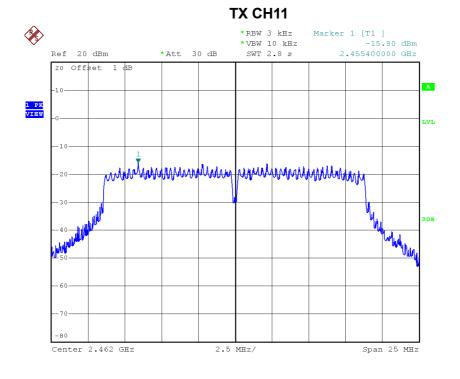
Date: 4.NOV.2014 02:59:19

Report No.: BTL-FCCP-1-1410C191 Page 159 of 166





Date: 4.NOV.2014 03:00:03



Date: 4.NOV.2014 03:01:07



Test Mode: TX N-20M Mode_CH01/06/11_Total

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-12.53	0.06	8.00	Complies
2437	-11.59	0.07	8.00	Complies
2462	-12.43	0.06	8.00	Complies

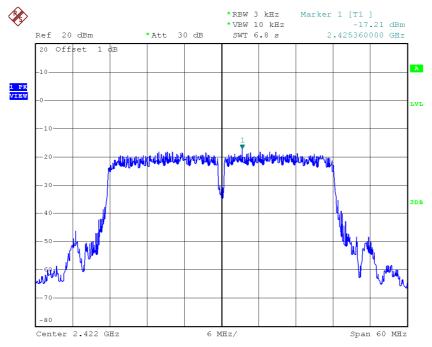
Report No.: BTL-FCCP-1-1410C191 Page 161 of 166



Test Mode: TX N-40M Mode_CH03/06/09_ANT 1

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2422	-17.21	0.02	8.00	Complies
2437	-18.52	0.01	8.00	Complies
2452	-15.11	0.03	8.00	Complies

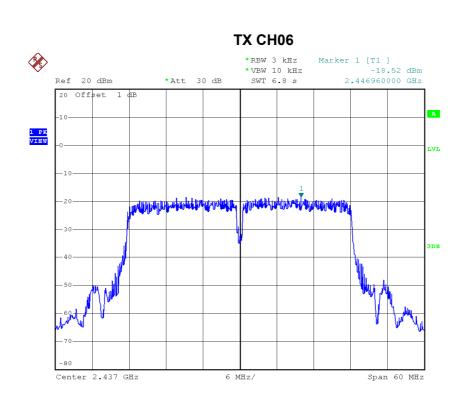
TX CH03



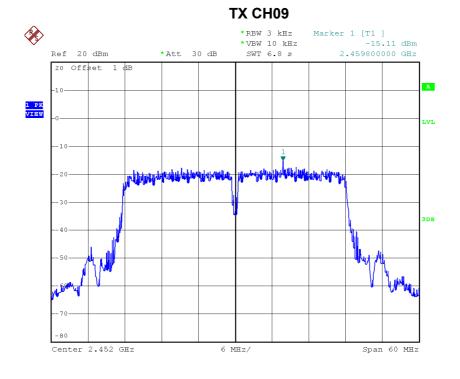
Date: 4.NOV.2014 02:29:48

Report No.: BTL-FCCP-1-1410C191 Page 162 of 166





Date: 4.NOV.2014 02:48:47



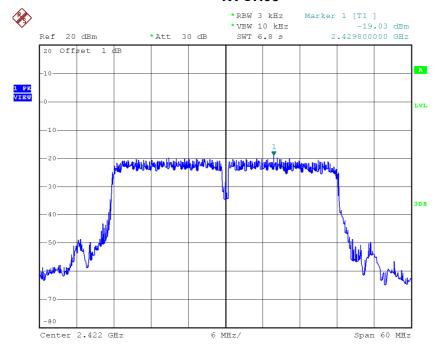
Date: 4.NOV.2014 02:50:01



Test Mode: TX N-40M Mode_CH03/06/09_ANT 2

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2422	-19.03	0.01	8.00	Complies
2437	-19.82	0.01	8.00	Complies
2452	-18.92	0.01	8.00	Complies

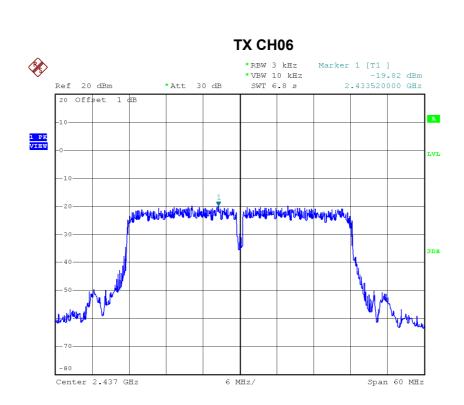
TX CH03



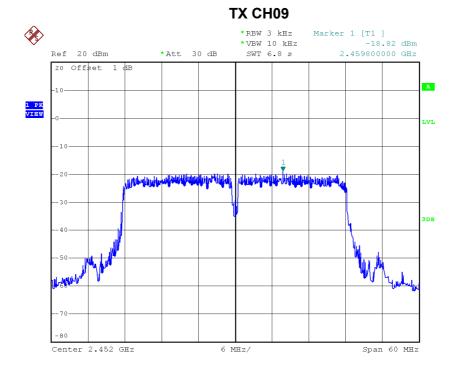
Date: 4.NOV.2014 03:02:20

Report No.: BTL-FCCP-1-1410C191 Page 164 of 166





Date: 4.NOV.2014 03:03:12



Date: 4.NOV.2014 03:04:11



Test Mode: TX N-40M Mode_CH03/06/09_Total

Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2422	-15.02	0.03	8.00	Complies
2437	-16.11	0.02	8.00	Complies
2452	-13.60	0.04	8.00	Complies

Report No.: BTL-FCCP-1-1410C191 Page 166 of 166