

FCC Radio Test Report FCC ID:KA2IR803B1

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

Project No. : 1408C111

Equipment : 1) Wireless AC750 Dual Band Router

2) Wireless AC750 Dual Band Easy Router

Model Name : 1) DIR-803

2) GO-RT-AC750

Applicant: D-Link Corporation

Address : No.289, Sinhu 3rd Rd., Neihu District, Taipei City

114, Taiwan, R.O.C.

Date of Receipt : Aug. 13, 2014

Date of Test : Aug. 13, 2014 ~ Aug. 29, 2014

Issued Date : Sep. 01, 2014

Tested by : BTL Inc.

Testing Engineer : Favid

(David Mao)

Technical Manager :

(Leo Huno)

Authorized Signatory

(Steven Lu)

BTL INC.

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

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

Report No.: BTL-FCCP-3-1408C111 Page 1 of 162



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-3-1408C111 Page 2 of 162



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 TES	STED 13
3.5 DESCRIPTION OF SUPPORT UNITS	14
4 . EMC EMISSION TEST	15
4.1 CONDUCTED EMISSION MEASUREMENT	15 45
4.1.1 POWER LINE CONDUCTED EMISSION LIMITS 4.1.2 TEST PROCEDURE	15 15
4.1.3 DEVIATION FROM TEST STANDARD	15
4.1.4 TEST SETUP 4.1.5 EUT OPERATING CONDITIONS	16 16
4.1.6 EUT TEST CONDITIONS	16
4.1.7 TEST RESULTS	16
4.2 RADIATED EMISSION MEASUREMENT	17
4.2.1 RADIATED EMISSION LIMITS 4.2.2 TEST PROCEDURE	17 18
4.2.3 DEVIATION FROM TEST STANDARD	18
4.2.4 TEST SETUP	19 20
4.2.5 EUT OPERATING CONDITIONS 4.2.6 EUT TEST CONDITIONS	20 20
4.2.7 TEST RESULTS (9K TO 30MHZ)	20
4.2.8 TEST RESULTS (BETWEEN 30 TO 1000 MHZ) 4.2.9 TEST RESULTS (ABOVE 1000 MHZ)	20 21
5 . BANDWIDTH TEST	22
5.1 APPLIED PROCEDURES	22
5.1.1 TEST PROCEDURE	22
5.1.2 DEVIATION FROM STANDARD	22
5.1.3 TEST SETUP 5.1.4 EUT OPERATION CONDITIONS	22 22
5.1.5 EUT TEST CONDITIONS	22
5.1.6 TEST RESULTS	22
6. MAXIMUM OUTPUT POWER TEST	23

Report No.: BTL-FCCP-3-1408C111 Page 3 of 162



Table of Contents	Page
6.1 APPLIED PROCEDURES / LIMIT 6.1.1 TEST PROCEDURE 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	23 23 23 23 23 23 23 23
7 . ANTENNA CONDUCTED SPURIOUS EMISSION	24
7.1 APPLIED PROCEDURES / LIMIT 7.1.1 TEST PROCEDURE 7.1.2 DEVIATION FROM STANDARD 7.1.3 TEST SETUP 7.1.4 EUT OPERATION CONDITIONS 7.1.5 EUT TEST CONDITIONS 7.1.6 TEST RESULTS	24 24 24 24 24 24 24
8 . POWER SPECTRAL DENSITY TEST	25
8.1 APPLIED PROCEDURES / LIMIT 8.1.1 TEST PROCEDURE 8.1.2 DEVIATION FROM STANDARD 8.1.3 TEST SETUP 8.1.4 EUT OPERATION CONDITIONS 8.1.5 EUT TEST CONDITIONS 8.1.6 TEST RESULTS	25 25 25 25 25 25 25 25
9. MEASUREMENT INSTRUMENTS LIST	26
ATTACHMENT A - CONDUCTED EMISSION	28
ATTACHMENT B - RADIATED EMISSION (9KHZ TO 30MHZ)	32
ATTACHMENT C - RADIATED EMISSION (30MHZ TO 1000MHZ)	35
ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)	43
ATTACHMENT E - BANDWIDTH	101
ATTACHMENT F - MAXIMUM OUTPUT POWER	114
ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION	118
ATTACHMENT H - POWER SPECTRAL DENSITY	146
10 . EUT PHOTO	159

Report No.: BTL-FCCP-3-1408C111 Page 4 of 162



REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCCP-3-1408C111	Original Issue.	Sep. 01, 2014

Report No.: BTL-FCCP-3-1408C111 Page 5 of 162



1. CERTIFICATION

Equipment : 1) Wireless AC750 Dual Band Router

2) Wireless AC750 Dual Band Easy Router

Brand Name: D-Link Model Name: 1) DIR-803

2) GO-RT-AC750

Applicant D-Link Corporation

Date of Test : Aug. 13, 2014 ~ Aug. 29, 2014 Test Item : ENGINEERING SAMPLE

Standard(s) : FCC Part15, Subpart C(15.247) / ANSI63.10 2013

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

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-3-1408C111) 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-3-1408C111 Page 6 of 162



2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

Applied Standard(s): FCC Part15 (15.247) , Subpart C			
Standard(s) Section 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-3-1408C111 Page 7 of 162



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, Dong Guan, 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	Ι	3.57		
		30MHz ~ 200MHz	V	3.82		
		30MHz ~ 200MHz	Ι	3.60		
DG-CB03	CISPR	200MHz ~ 1,000MHz	V	3.86		
DG-CB03	CISER	200MHz ~ 1,000MHz	Η	3.94		
		1GHz~18GHz	V	3.12		
		1GHz~18GHz	1GHz~18GHz	Ι	3.68	
		18GHz~40GHz	V	4.15		
		18GHz~40GHz	Н	4.14		

Report No.: BTL-FCCP-3-1408C111 Page 8 of 162



3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	Wireless AC750 Dual Band Router Wireless AC750 Dual Band Easy Router		
Brand Name	D-Link		
Model Name	1) DIR-803 2) GO-RT-AC750		
Model Difference	Only differ in model name		
	Operation Frequency	5745~5825 MHz	
	Modulation Technology	802.11a/n/ac:OFDM	
Product Description	Bit Rate of Transmitter	11a:6/9/12/18/24/36/48/54Mbps 11n:6.5 to 150Mbps 11ac(draft):6.5 to 433Mbps	
Troduct Description	802.11a: 23.27dBm 802.11n (20M): 23.28dBm 802.11n (40M): 23.76dBm 802.11ac (20M): 23.28 dBm 802.11ac (40M): 23.73 dBm 802.11ac (80M): 23.52 dBm		
Power Source	DC Voltage supplied from AC/DC adapter. #1 Brand/Model:D-Link/PSAC05A-050 #2 Brand/Model:D-Link/AMS20-0501000FU2		
Power Rating	#1 I/P: AC 100-240V~0.2A 50-60Hz 12-16VA O/P: DC 5V/1A #2 I/P: AC 100-240V~50/60Hz 0.2A/15VA O/P: DC 5V/1.0A		
Connecting I/O Port(s)	Please refer to the User's	Manual	

Note

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

Report No.: BTL-FCCP-3-1408C111 Page 9 of 162



2.

	802.11	a / 802.11n 2	20M / 802.11a	ac 20M	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	153	5765	157	5785
161	5805	165	5825		

802.11n 40M / 802.11ac 40M			
Channel Frequency (MHz) Channel Frequency (MHz)			
151	5755	159	5795

802.11ac 80M			
Channel	Frequency (MHz)		
155	5775		

3. Table for Filed Antenna

Ant.	Manufacturer	Model Name	Antenna Type	Gain (dBi)
1	Nienyi Industial Corp.	N/A	Dipole	4.1

Report No.: BTL-FCCP-3-1408C111 Page 10 of 162



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 A MODE CHANNEL 149/157/165
Mode 2	TX N-20MHZ MODE CHANNEL 149/157/165
Mode 3	TX N-40MHZ MODE CHANNEL 151/159
Mode 4	TX AC N20 Mode Channel 149/157/165
Mode 5	TX AC N40 Mode Channel 151/159
Mode 6	TX AC N80 Mode Channel 155
Mode 7	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 4	TX MODE	

For Radiated Test				
Final Test Mode Description				
Mode 1	TX A Mode Channel 149/157/165			
Mode 2	TX N20 Mode Channel 149/157/165			
Mode 3	TX N40 Mode Channel 151/159			
Mode 4	TX AC N20 Mode Channel 149/157/165			
Mode 5	TX AC N40 Mode Channel 151/159			
Mode 6	TX AC N80 Mode Channel 155			

Note:

(1) For radiated below 1G test, the 802.11a is found to be the worst case and recorded.

Report No.: BTL-FCCP-3-1408C111 Page 11 of 162



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	MTOOL		
Frequency	5745 MHz	5785 MHz	5825MHz
TX A Mode	54	58	61
TX N20 Mode	56	59	63
TX AC 20 Mode	56	59	62

Test software version	MTOOL		
Frequency	5755 MHz	5795MHz	
TX N40 Mode	60	63	
TX AC 40 Mode	61	63	

Test software version	MTOOL		
Frequency	5775 MHz		
TX AC 80 Mode	63		

Report No.: BTL-FCCP-3-1408C111 Page 12 of 162



3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED				
EUT				

Report No.: BTL-FCCP-3-1408C111



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	Series No.	Note
-	-	-	-	-	-	-

Item	Shielded Type	Ferrite Core	Length	Note
-	-	-		-

Report No.: BTL-FCCP-3-1408C111 Page 14 of 162



4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

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

Fraguency (MHz)	Class A (dBuV)		Class B (dBuV)		Standard	
Frequency (MHz)	Quasi-peak	Average	Quasi-peak	Average	Standard	
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	CISPR	
0.50 -5.0	73.00	60.00	56.00	46.00	CISPR	
5.0 -30.0	73.00	60.00	60.00	50.00	CISPR	
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	FCC	
0.50 -5.0	73.00	60.00	56.00	46.00	FCC	
5.0 -30.0	73.00	60.00	60.00	50.00	FCC	

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

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

4.1.2 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.

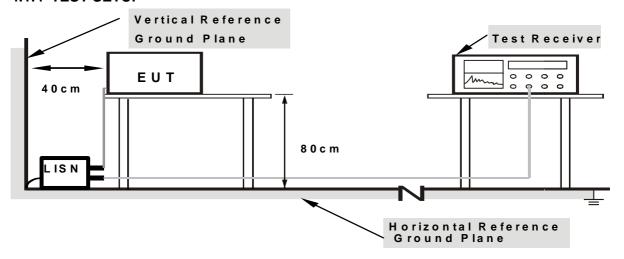
4.1.3 DEVIATION FROM TEST STANDARD

No deviation

Report No.: BTL-FCCP-3-1408C111 Page 15 of 162



4.1.4 TEST SETUP



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

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

4.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical 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.

Remark:

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

Report No.: BTL-FCCP-3-1408C111 Page 16 of 162



4.2 RADIATED EMISSION MEASUREMENT

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

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.

Frequency	Field Strength	Measurement Distance
(MHz)	(microvolts/meter)	(meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

Fraguency (MHz)	(dBuV/m) (at 3 meters)	
Frequency (MHz)	PEAK	AVERAGE
Above 1000	74	54

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW	AND In / AND In for Dook A MUIN / ADD In for Average
(Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average

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-3-1408C111 Page 17 of 162



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 STANDAR

No	deviation	

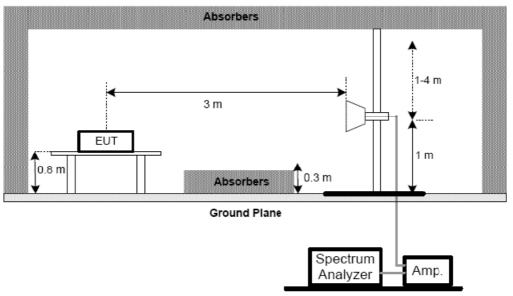
Report No.: BTL-FCCP-3-1408C111 Page 18 of 162



4.2.4 TEST SETUP

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

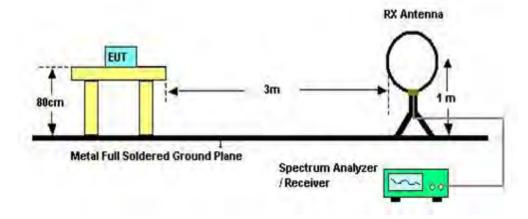
(B) Radiated Emission Test Set-Up Frequency Above 1 GHz



Report No.: BTL-FCCP-3-1408C111 Page 19 of 162



(C) For radiated emissions below 30MHz



4.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **4.1.6** 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

4.2.7 TEST RESULTS (9K TO 30MHZ)

Please refer to the Attachment B

4.2.8 TEST RESULTS (BETWEEN 30 TO 1000 MHZ)

Please refer to the Attachment C

Remark:

- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz; SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz.
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (3) Measuring frequency range from 30MHz to 1000MHz.
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table.

Report No.: BTL-FCCP-3-1408C111 Page 20 of 162



4.2.9 TEST RESULTS (ABOVE 1000 MHZ)

Please refer to the Attachment D.

Remark:

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission.
- (3) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (5) EUT Orthogonal Axis:
 - "X" denotes Laid on Table; "Y" denotes Vertical Stand; "Z" denotes Side Stand
- (6) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

Report No.: BTL-FCCP-3-1408C111 Page 21 of 162



5. BANDWIDTH TEST

5.1 Applied procedures

The first process of					
FCC Part15 (15.247), Subpart C					
Section	Frequency Range (MHz)	Result			
15.247(a)(2)	5725 - 5825	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 = Auto.

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 4.1.6 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-3-1408C111 Page 22 of 162



6. MAXIMUM 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	5725 - 5825	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 9.1.3 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 4.1.6 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-3-1408C111 Page 23 of 162



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 4.1.6 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-3-1408C111 Page 24 of 162



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)	5745 - 5825	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 4.1.6 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-3-1408C111 Page 25 of 162



9. MEASUREMENT INSTRUMENTS LIST

	Conducted Emission Measurement						
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		

	Radiated Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until	
1	Antenna	EMCO	3142C	00066462	Mar. 29, 2015	
2	Antenna	EMCO	3142C	00066464	Mar. 29, 2015	
3	Amplifier	Agilent	8447D	2944A11203	Nov. 11, 2014	
4	Amplifier	Agilent	8447D	2944A11204	Nov. 11, 2014	
5	Spectrum Analyzer	Agilent	E4443A	MY48250370	Nov. 11, 2014	
6	RF Pre-selector	Agilent	N9039A	MY46520201	Nov. 11, 2014	
7	Test Cable	N/A	Cable_5m_8m _15m	N/A	Jan. 14, 2015	
8	Test Cable	N/A	Cable_5m_11 m_15m	N/A	Jan. 14, 2015	
9	Spectrum Analyzer	Agilent	E4447A	MY48250208	Nov. 11, 2014	
10	RF Pre-selector	Agilent	N9039A	MY46520214	Nov. 11, 2014	
11	Multi-Device Controller	ETS-Lindgren	2090	N/A	N/A	
12	Horn Antenna	EMCO	3115	9605-4803	Mar. 29, 2015	
13	Amplifier	Agilent	8449B	3008A02584	Nov. 11, 2014	
14	Spectrum Analyzer	Agilent	E4447A	MY48250208	Nov. 11, 2014	
15	Test Cable	Huber+Suhner	SUCOFLEX_1 5m_4m	N/A	Jan. 14, 2015	
16	Multi-Device Controller	ETS-Lindgren	2090	N/A	N/A	
17	Broad-Band Horn Antenna (40G)	Schwarzbeck	BBHA 9170	9170319	Feb. 22, 2015	

? ?

Report No.: BTL-FCCP-3-1408C111 Page 26 of 162



	6dB Bandwidth Measurement						
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	Apr. 24, 2015		
2	Wireband Power sensor	Agilent	N1921A	MY51100041	Apr. 24,2015		

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

	Power Spectral Density Measurement						
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.

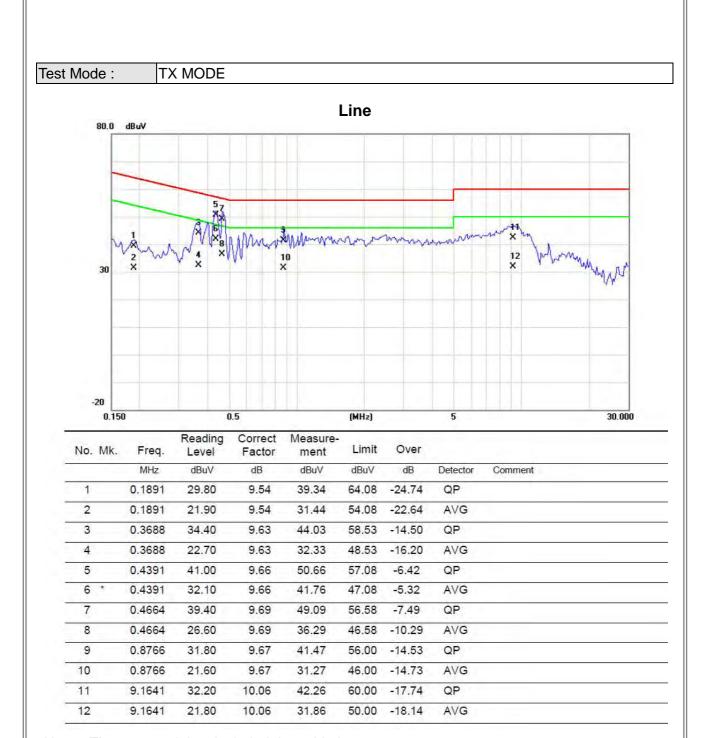
Report No.: BTL-FCCP-3-1408C111 Page 27 of 162



ATTACHMENT A - CONDUCTED EMISSION

Report No.: BTL-FCCP-3-1408C111 Page 28 of 162





Note: The test result has included the cable loss.

Report No.: BTL-FCCP-3-1408C111 Page 29 of 162



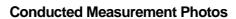


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1890	29.40	0.07	29.47	64.08	-34.61	QP	
2		0.1890	24.00	0.07	24.07	54.08	-30.01	AVG	
3		0.3648	35.10	0.09	35.19	58.62	-23.43	QP	
4		0.3648	28.20	0.09	28.29	48.62	-20.33	AVG	
5		0.4430	38.10	0.09	38.19	57.01	-18.82	QP	
6	*	0.4430	28.70	0.09	28.79	47.01	-18.22	AVG	
7		0.5835	34.80	0.11	34.91	56.00	-21.09	QP	
8		0.5835	26.90	0.11	27.01	46.00	-18.99	AVG	
9		0.8804	30.90	0.13	31.03	56.00	-24.97	QP	
10		0.8804	21.80	0.13	21.93	46.00	-24.07	AVG	
11		9.2577	30.50	0.48	30.98	60.00	-29.02	QP	
12		9.2577	22.40	0.48	22.88	50.00	-27.12	AVG	

Note: The test result has included the cable loss.

Report No.: BTL-FCCP-3-1408C111 Page 30 of 162









Report No.: BTL-FCCP-3-1408C111 Page 31 of 162



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

Report No.: BTL-FCCP-3-1408C111 Page 32 of 162



Test Mode	:	TX Mode
-----------	---	---------

Freq.	Ant.	Reading(RA)	Corr.Factor(CF)	Measured(FS)	Limits(QP)	Margin	Note
(MHz)	0°/90°	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	Note
0.0814	0°	-3.85	21.77	17.92	89.39	-71.47	AVG
0.0814	0°	2.51	21.77	24.28	109.39	-85.11	PEAK
0.1523	0°	-2.96	20.60	17.64	83.95	-66.31	AVG
0.1523	0°	1.97	20.60	22.57	103.95	-81.38	PEAK
0.1963	0°	-4.71	20.51	15.80	81.75	-65.95	AVG
0.1963	0°	1.12	20.51	21.63	101.75	-80.12	PEAK
0.2040	0°	-1.04	20.49	19.45	81.41	-61.96	AVG
0.2040	0°	2.96	20.49	23.45	101.41	-77.96	PEAK
3.6578	0°	8.24	18.97	27.21	69.54	-42.33	QP
18.8563	0°	5.37	17.56	22.93	69.54	-46.61	QP

Freq.	Ant.	Reading(RA)	Corr.Factor(CF)	Measured(FS)	Limits(QP)	Margin	Note
(MHz)	0°/90°	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	NOLE
0.0675	90°	-4.56	22.05	17.49	111.02	-93.53	AVG
0.0675	90°	0.89	22.05	22.94	131.02	-108.08	PEAK
0.1396	90°	-1.98	20.77	18.79	104.71	-85.92	AVG
0.1396	90°	0.25	20.77	21.02	124.71	-103.69	PEAK
0.1524	90°	-2.65	20.60	17.95	103.94	-86.00	AVG
0.1524	90°	0.04	20.60	20.64	123.94	-103.31	PEAK
0.1862	90°	-3.62	20.53	16.91	102.20	-85.30	AVG
0.1862	90°	-1.08	20.53	19.45	122.20	-102.76	PEAK
3.0047	90°	7.52	18.90	26.42	69.54	-43.12	QP
9.6475	90°	10.34	17.83	28.17	69.54	-41.37	QP

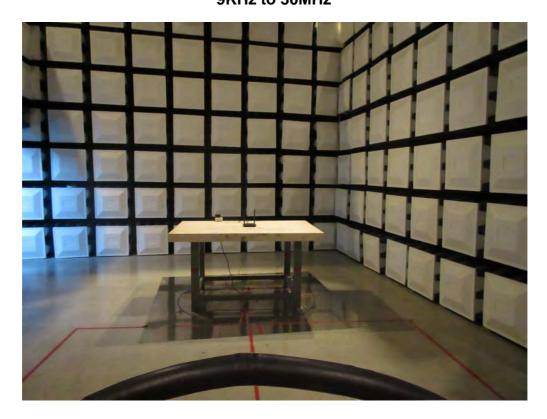
Remark:

- (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.

Report No.: BTL-FCCP-3-1408C111 Page 33 of 162



Radiated Measurement Photos 9KHz to 30MHz





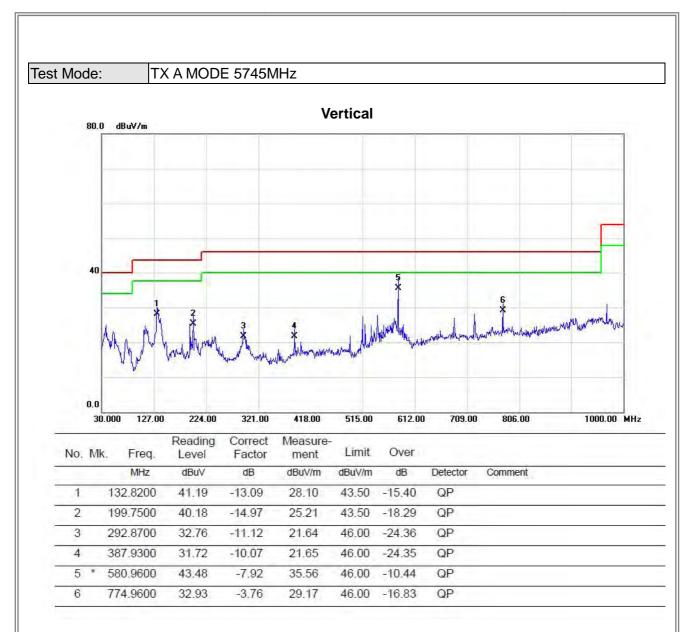
Report No.: BTL-FCCP-3-1408C111 Page 34 of 162



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

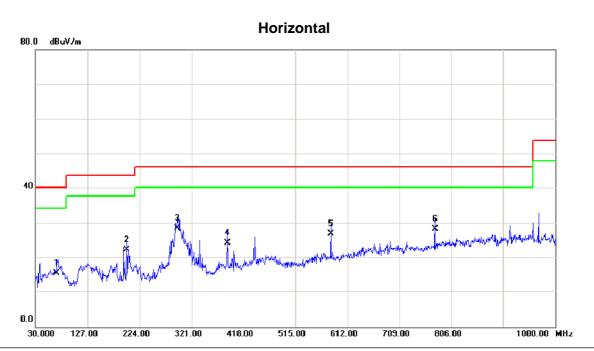
Report No.: BTL-FCCP-3-1408C111 Page 35 of 162







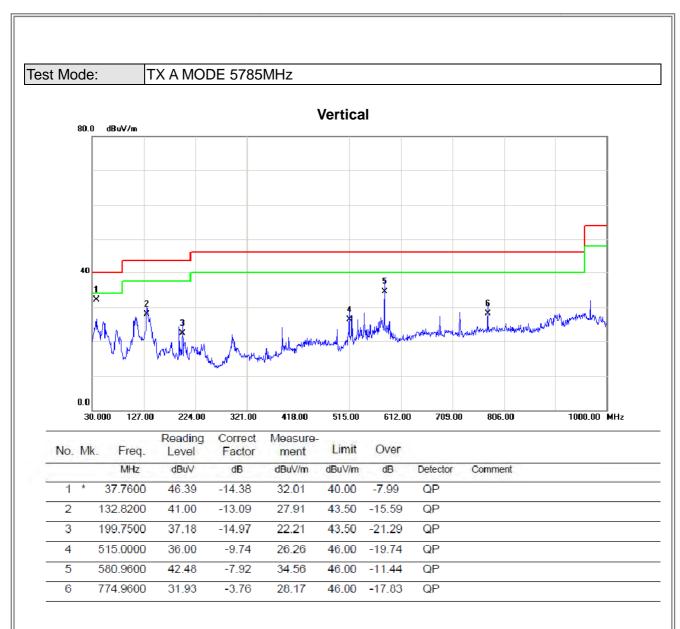




No.	Mk	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		69.7700	31.58	-16.22	15.36	40.00	-24.64	QP		
2		199.7500	37.07	-14.97	22.10	43.50	-21.40	QP		
3	*	294.8100	39.44	-11.09	28.35	46.00	-17.65	QP		
4		387.9300	34.17	-10.07	24.10	46.00	-21.90	QP		
5		580.9600	34.66	-7.92	26.74	46.00	-19.26	QP		
6		774.9600	31.86	-3.76	28.10	46.00	-17.90	QP		

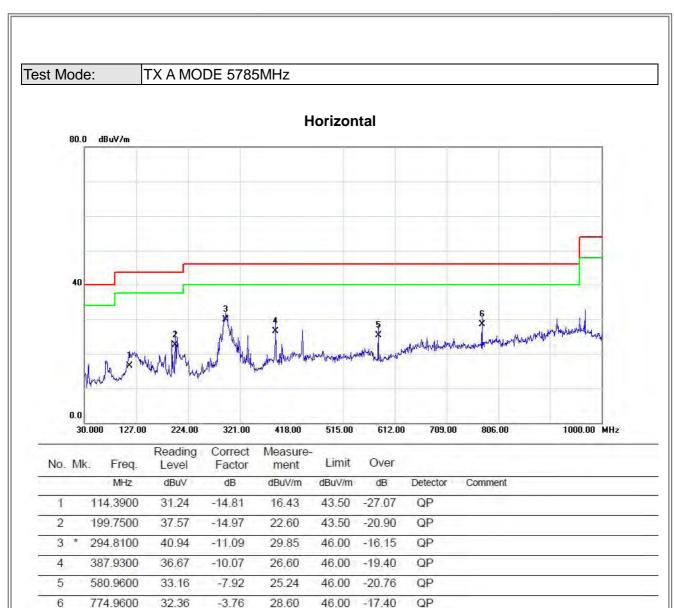
Report No.: BTL-FCCP-3-1408C111 Page 37 of 162





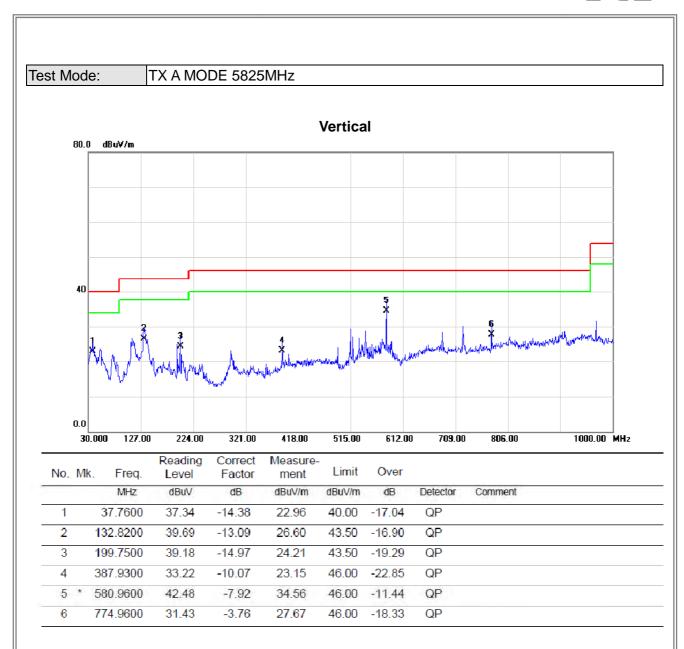
Report No.: BTL-FCCP-3-1408C111 Page 38 of 162





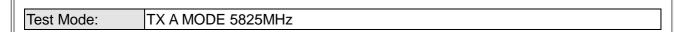
Report No.: BTL-FCCP-3-1408C111 Page 39 of 162

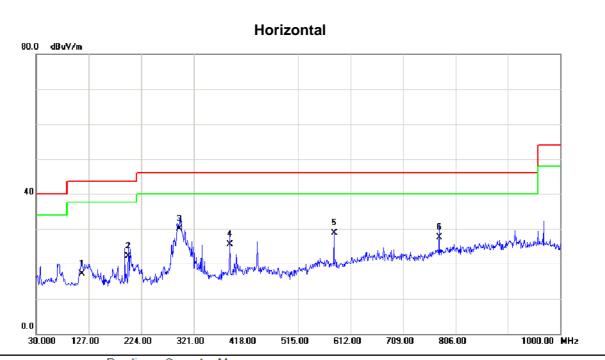




Report No.: BTL-FCCP-3-1408C111 Page 40 of 162







No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		114.3900	31.98	-14.81	17.17	43.50	-26.33	QP		
2		199.7500	37.07	-14.97	22.10	43.50	-21.40	QP		
3	*	294.8100	40.94	-11.09	29.85	46.00	-16.15	QP		
4	;	387.9300	35.67	-10.07	25.60	46.00	-20.40	QP		
5		580.9600	36.56	-7.92	28.64	46.00	-17.36	QP		
6		774.9600	31.36	-3.76	27.60	46.00	-18.40	QP		

Report No.: BTL-FCCP-3-1408C111 Page 41 of 162



Radiated Measurement Photos 30MHz to 1000MHz





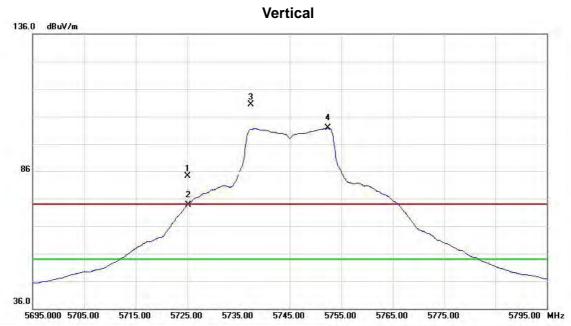
Report No.: BTL-FCCP-3-1408C111 Page 42 of 162



ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)

Report No.: BTL-FCCP-3-1408C111 Page 43 of 162



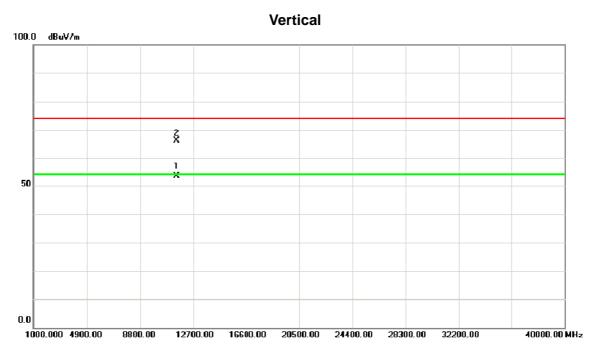


No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	Χ	5725.000	39.66	44.58	84.24	74.00	10.24	peak	
2	X	5725.000	29.10	44.58	73.68	54.00	19.68	AVG	
3	Χ	5737.400	65.80	44.64	110.44	74.00	36.44	peak	Fundamental frequency, no limit
4	*	5752.400	57.05	44.72	101.77	54.00	47.77	AVG	Fundamental frequency, no limit

Note: The band edge frequency Limit line= fundamental - 20dB

Report No.: BTL-FCCP-3-1408C111 Page 44 of 162



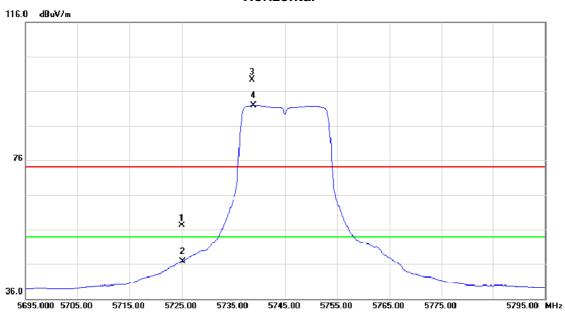


No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	*	11490.10	36.90	16.47	53.37	54.00	-0.63	AVG		
2		11490.20	49.78	16.47	66.25	74.00	-7.75	peak		

Report No.: BTL-FCCP-3-1408C111 Page 45 of 162



Horizontal



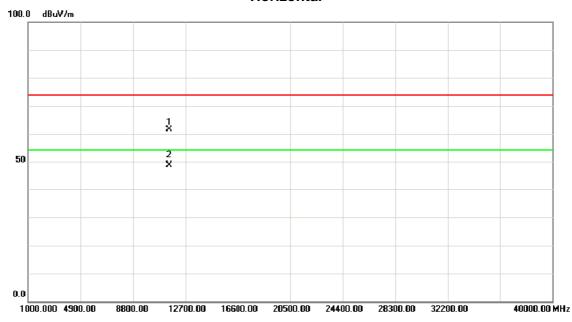
No.	M	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	₫B	Detector	Comment
1		5725.000	15.91	41.10	57.01	74.00	-16.99	peak	
2		5725.000	5.53	41.10	46.63	54.00	-7.37	AVG	
3	Х	5738.600	58.12	41.15	99.27	74.00	25.27	peak	Fundamental frequency, no limit
4	*	5738.900	50.71	41.15	91.86	54.00	37.86	AVG	Fundamental frequency, no limit

Note: The band edge frequency Limit line= fundamental - 20dB

Report No.: BTL-FCCP-3-1408C111 Page 46 of 162



Horizontal



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		11490.00	45.25	16.47	61.72	74.00	-12.28	peak		
2	*	11490.00	32.28	16.47	48.75	54.00	-5.25	AVG		

Report No.: BTL-FCCP-3-1408C111 Page 47 of 162



No.	M	r. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBu√	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	5777.900	55.64	41.31	96.95	54.00	42.95	AVG	Fundamental frequency, no limit
2	X	5778.600	62.94	41.32	104.26	74.00	30.26	peak	Fundamental frequency, no limit

Report No.: BTL-FCCP-3-1408C111 Page 48 of 162



No.	M	k. Freq.		Correct Factor	Measure- ment	Limit	Over		
		MHZ	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	×	11570.00	37.29	16.44	53.73	54.00	-0.27	AVG	
2		11570.50		16.44	66.03	74.00	-7.97	peak	

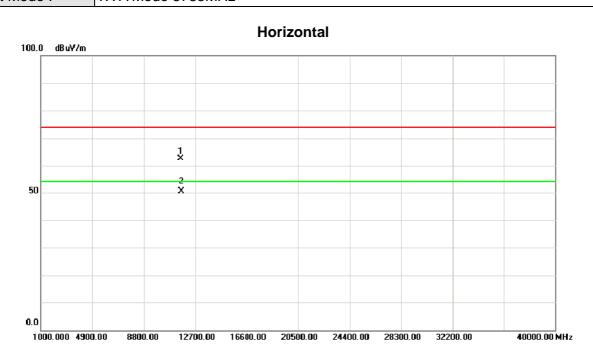
Report No.: BTL-FCCP-3-1408C111 Page 49 of 162



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5778.700	58.15	41.32	99.47	74.00	25.47	peak	Fundamental frequency, no limit
2	*	5788.900	51.21	41.36	92.57	54.00	38.57	AVG	Fundamental frequency, no limit

Report No.: BTL-FCCP-3-1408C111 Page 50 of 162

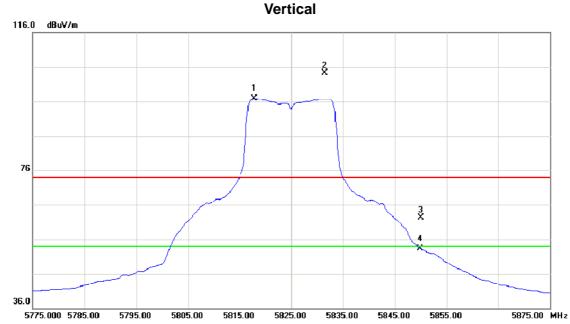




No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBu√	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		11570.30	46.12	16.44	62.56	74.00	-11.44	peak		
2	*	11570.30	33.89	16.44	50.33	54.00	-3.67	AVG		

Report No.: BTL-FCCP-3-1408C111 Page 51 of 162



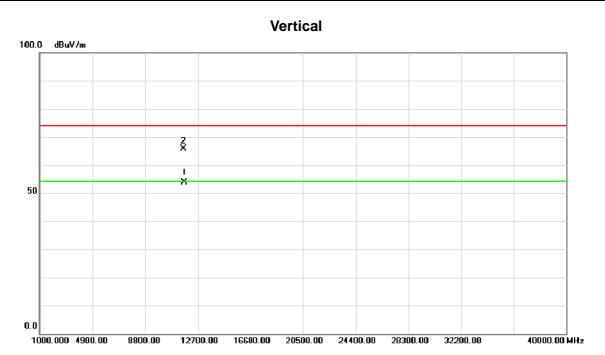


No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBu√	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	5817.800	55.42	41.48	96.90	54.00	42.90	AVG	Fundamental frequency, no limit
2	X	5831.400	62.84	41.54	104.38	74.00	30.38	peak	Fundamental frequency, no limit
3		5850.000	20.70	41.62	62.32	74.00	-11.68	peak	
4		5850.000	11.69	41.62	53.31	54.00	-0.69	AVG	

Note: The band edge frequency Limit line= fundamental - 20dB

Report No.: BTL-FCCP-3-1408C111 Page 52 of 162





No.	Mk.	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	×	11650.10	37.24	16.40	53.64	54.00	-0.36	AVG		
2		11650.70	49.57	16.40	65.97	74.00	-8.03	peak		

Report No.: BTL-FCCP-3-1408C111 Page 53 of 162



Horizontal 116.0 dBuV/m 76 38.0

No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBu√	dB	dBu\//m	dBuV/m	dB	Detector	Comment
1	¥	5831.200	52.99	41.54	94.53	54.00	40.53	AVG	Fundamental frequency, no limit
2	X	5831.600	59.86	41.54	101.40	74.00	27.40	peak	Fundamental frequency, no limit
3		5850.000	16.13	41.62	57.75	74.00	-16.25	peak	
4		5850.000	6.78	41.62	48.40	54.00	-5.60	AVG	

5825.00

5835.00

5855.00

5845.00

5875.00 MHz

Note: The band edge frequency Limit line= fundamental - 20dB

5795.00

5805.00

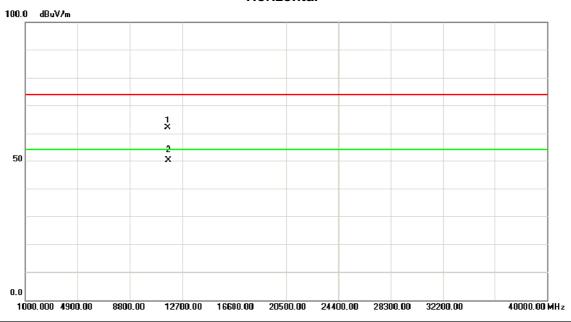
5815.00

5775.000 5785.00

Report No.: BTL-FCCP-3-1408C111 Page 54 of 162



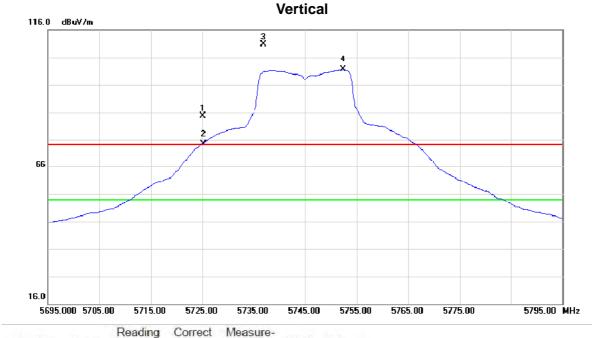
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11650.20	45.74	16.40	62.14	74.00	-11.86	peak	
2			33.67		50.07	54.00	-3.93	AVG	

Report No.: BTL-FCCP-3-1408C111 Page 55 of 162



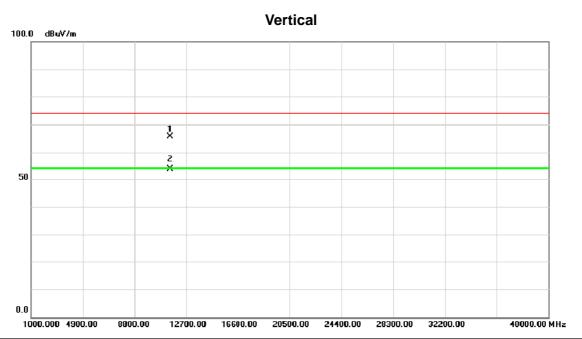


No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5725.000	40.05	44.58	84.63	74.00	10.63	peak	
2	X	5725.000	29.89	44.58	74.47	54.00	20.47	AVG	
3	X	5736.900	66.07	44.64	110.71	74.00	36.71	peak	Fundamental frequency, no limit
4	*	5752.400	56.82	44.72	101.54	54.00	47.54	AVG	Fundamental frequency, no limit

Note:The band edge frequency Limit line= fundamental - 20dB

Report No.: BTL-FCCP-3-1408C111 Page 56 of 162





No.	Mk.	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		11484.60	49.23	16.45	65.68	74.00	-8.32	peak		
2	*	11490.70	37.07	16.47	53.54	54.00	-0.46	AVG		

Report No.: BTL-FCCP-3-1408C111 Page 57 of 162



Horizontal 116.0 dBuV/m A A 3 3 4. 36.0 5695.000 5705.00 5715.00 5725.00 5735.00 5745.00 5755.00 5765.00 5775.00 5795.00 MHz

No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5725.000	24.31	41.10	65.41	74.00	-8.59	peak	
2		5725.000	8.39	41.10	49.49	54.00	-4.51	AVG	
3	*	5739.400	51.04	41.15	92.19	54.00	38.19	AVG	Fundamental frequency, no limit
4	X	5740.200	58.75	41.16	99.91	74.00	25.91	peak	Fundamental frequency, no limit

Note: The band edge frequency Limit line= fundamental - 20dB

Report No.: BTL-FCCP-3-1408C111 Page 58 of 162



40000.00 MHz

Orthogonal Axis: X
Test Mode: TX N20 Mode 5745MHz

Horizontal 100.0 dBuV/m

0.0

1000.000 4900.00

8800.00

No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11489.80	46.25	16.47	62.72	74.00	-11.28	peak	
_		11490.10	34.27	16.47	50.74	54.00	-3.26	AVG	

12700.00 16600.00 20500.00 24400.00 28300.00 32200.00

Report No.: BTL-FCCP-3-1408C111 Page 59 of 162



Vertical 116.0 dB uV/m 2 2 36.0 5735.000 5745.00 5755.00 5765.00 5775.00 5785.00 5805.00 5815.00 5835.00 MHz

No.	M	k.	. Freq.	Reading Level	Correct Factor		Limit	Over		
			MHz	dBuV	d₿	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	57	79.900	62.79	41.32	104.11	74.00	30.11	peak	Fundamental frequency, no limit
2	W	57	90.300	55.51	41.37	96.88	54.00	42.88	AVG	Fundamental frequency, no limit

Report No.: BTL-FCCP-3-1408C111 Page 60 of 162



40000.00 MHz

Orthogonal Axis: X
Test Mode: TX N20 Mode 5785MHz

No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		11564.50	49.97	16.45	66.42	74.00	-7.58	peak		
2	*	11570.80	36.92	16.44	53.36	54.00	-0.64	AVG		

24400.00 28300.00 32200.00

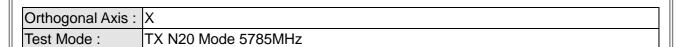
12700.00 16600.00 20500.00

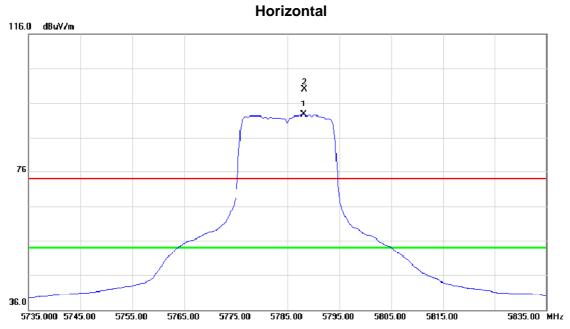
1000.000 4900.00

8800.00

Report No.: BTL-FCCP-3-1408C111 Page 61 of 162



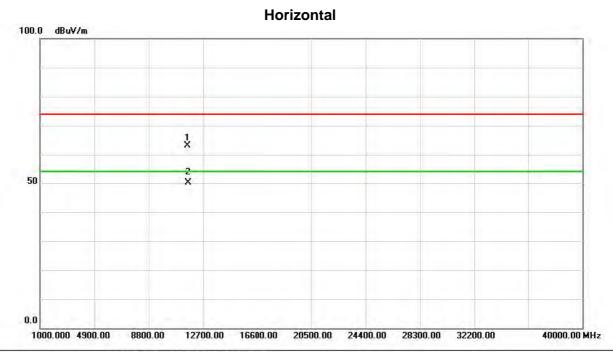




No.	Mk	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	*	5788.100	51.34	41.36	92.70	54.00	38.70	AVG	Fundamental frequency, no limit	
2	X	5788.200	58.46	41.36	99.82	74.00	25.82	peak	Fundamental frequency, no limit	

Report No.: BTL-FCCP-3-1408C111 Page 62 of 162

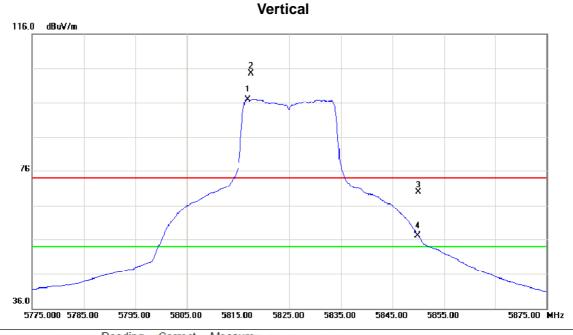




No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	- 1	11570.50	46.58	16.44	63.02	74.00	-10.98	peak	
2	*	11570.50	33.68	16.44	50.12	54.00	-3.88	AVG	

Report No.: BTL-FCCP-3-1408C111 Page 63 of 162



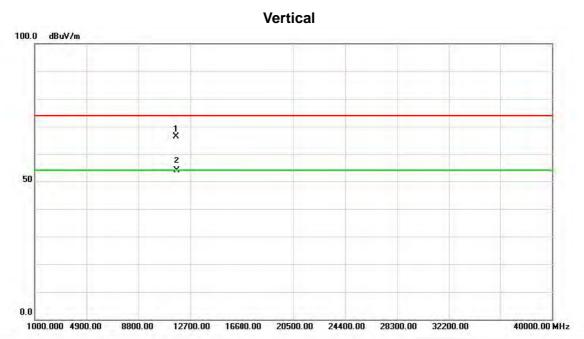


Mk	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
*	5816.900	55.48	41.47	96.95	54.00	42.95	AVG	Fundamental frequency, no limit
X	5817.600	63.09	41.48	104.57	74.00	30.57	peak	Fundamental frequency, no limit
	5850.000	28.08	41.62	69.70	74.00	-4.30	peak	
Х	5850.000	15.44	41.62	57.06	54.00	3.06	AVG	
	* X	MHz * 5816.900 X 5817.600 5850.000	Mk. Freq. Level MHz dBuV * 5816.900 55.48 X 5817.600 63.09 5850.000 28.08	Mk. Freq. Level Factor MHz dBuV dB * 5816.900 55.48 41.47 X 5817.600 63.09 41.48 5850.000 28.08 41.62	Mk. Freq. Level Factor ment MHz dBuV dB dBuV/m * 5816.900 55.48 41.47 96.95 X 5817.600 63.09 41.48 104.57 5850.000 28.08 41.62 69.70	Mk. Freq. Level Factor ment Limit MHz dBuV dB dBuV/m dBuV/m * 5816.900 55.48 41.47 96.95 54.00 X 5817.600 63.09 41.48 104.57 74.00 5850.000 28.08 41.62 69.70 74.00	Mk. Freq. Level Factor ment Limit Over MHz dBuV dB dBuV/m dBuV/m dB dBuV/m dB * 5816.900 55.48 41.47 96.95 54.00 42.95 X 5817.600 63.09 41.48 104.57 74.00 30.57 5850.000 28.08 41.62 69.70 74.00 -4.30	Mk. Freq. Level Factor ment Limit Over MHz dBuV dB dBuV/m dBuV/m dB Detector * 5816.900 55.48 41.47 96.95 54.00 42.95 AVG X 5817.600 63.09 41.48 104.57 74.00 30.57 peak 5850.000 28.08 41.62 69.70 74.00 -4.30 peak

Note: The band edge frequency Limit line= fundamental - 20dB

Report No.: BTL-FCCP-3-1408C111 Page 64 of 162

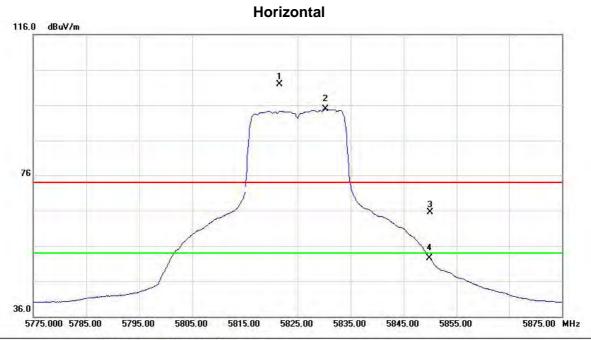




No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		11648.80	49.88	16.40	66.28	74.00	-7.72	peak		
2	*	11650.60	37.49	16.40	53.89	54.00	-0.11	AVG		

Report No.: BTL-FCCP-3-1408C111 Page 65 of 162





No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5821.600	60.31	41.50	101.81	74.00	27.81	peak	Fundamental frequency, no limit
2	*	5830.300	53.33	41.53	94.86	54.00	40.86	AVG	Fundamental frequency, no limit
3		5850.000	23.88	41.62	65.50	74.00	-8.50	peak	
4	4	5850.000	10.82	41.62	52.44	54.00	-1.56	AVG	

Note: The band edge frequency Limit line= fundamental - 20dB

Report No.: BTL-FCCP-3-1408C111 Page 66 of 162



Horizontal 100.0 dBuV/m



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11650.00	45.68	16.40	62.08	74.00	-11.92	peak	
2	*	11650.00	33.47	16.40	49.87	54.00	-4.13	AVG	

Report No.: BTL-FCCP-3-1408C111 Page 67 of 162



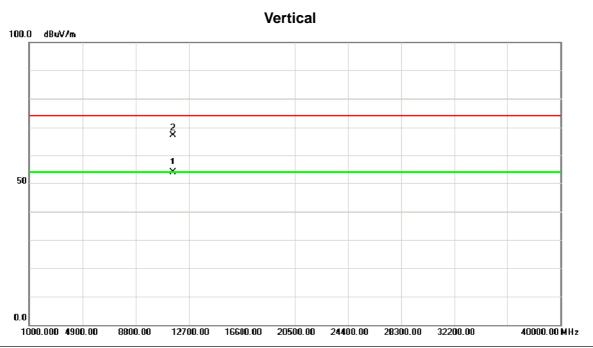
Vertical 136.0 dBuV/m 86 2 36.0 5655.000 5675.00 5695.00 5715.00 5735.00 5755.00 5795.00 5815.00 5855.00 MHz

No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5725.000	42.24	44.58	86.82	74.00	12.82	peak	
2	X	5725.000	31.04	44.58	75.62	54.00	21.62	AVG	
3	X	5739.600	64.02	44.65	108.67	74.00	34.67	peak	Fundamental frequency, no limit
4	*	5740.000	54.61	44.66	99.27	54.00	45.27	AVG	Fundamental frequency, no limit

Note: The band edge frequency Limit line= fundamental - 20dB

Report No.: BTL-FCCP-3-1408C111 Page 68 of 162

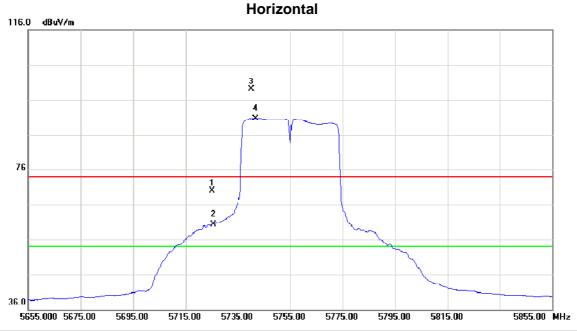




No.	Mk.	. Freq.			Measure- ment		Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	*	11507.00	37.28	16.48	53.76	54.00	-0.24	AVG		
2		11508.80	50.71	16.49	67.20	74.00	-6.80	peak		

Report No.: BTL-FCCP-3-1408C111 Page 69 of 162





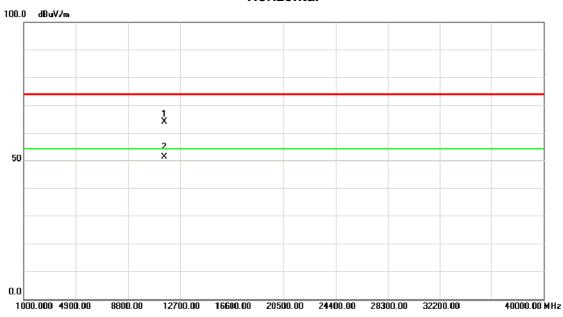
No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5725.000	28.81	41.10	69.91	74.00	-4.09	peak	
2	Χ	5725.000	19.28	41.10	60.38	54.00	6.38	AVG	
3	X	5740.200	57.94	41.16	99.10	74.00	25.10	peak	Fundamental frequency, no limit
4	*	5741.800	49.58	41.16	90.74	54.00	36.74	AVG	Fundamental frequency, no limit

Note: The band edge frequency Limit line= fundamental - 20dB

Report No.: BTL-FCCP-3-1408C111 Page 70 of 162



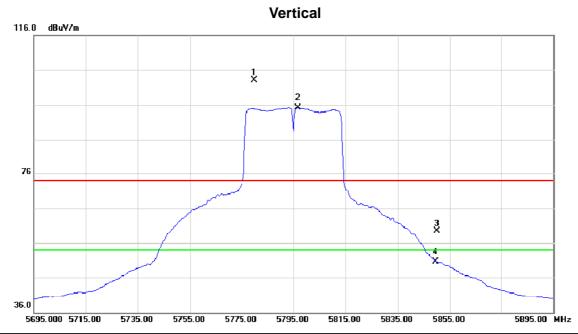
Horizontal



No.	Mk.	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11510.10	47.68	16.49	64.17	74.00	-9.83	peak	
2		11510.10	34.56	16.49	51.05	54.00	-2.95	AVG	

Report No.: BTL-FCCP-3-1408C111 Page 71 of 162



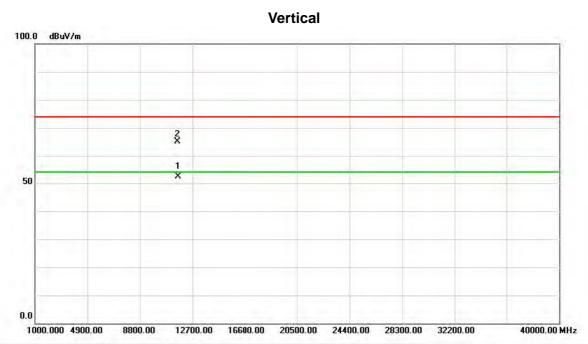


No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHZ	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5780.000	61.70	41.32	103.02	74.00	29.02	peak	Fundamental frequency, no limit
2	*	5796.600	53.64	41.40	95.04	54.00	41.04	AVG	Fundamental frequency, no limit
3		5850.000	17.87	41.62	59.49	74.00	-14.51	peak	
4		5850.000	8.88	41.62	50.50	54.00	-3.50	AVG	

Note: The band edge frequency Limit line= fundamental - 20dB

Report No.: BTL-FCCP-3-1408C111 Page 72 of 162

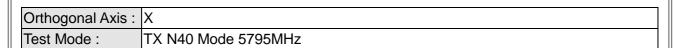


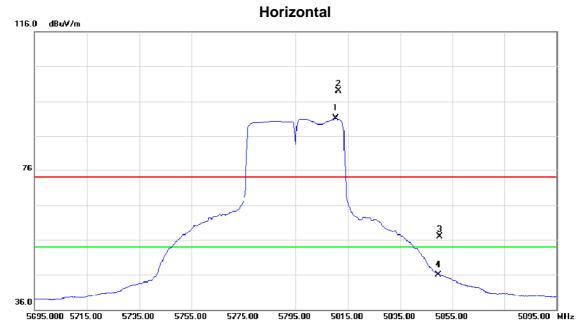


No.	Mk.	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBu∀/m	dB	Detector	Comment
1	*	11586.20	36.05	16.44	52.49	54.00	-1.51	AVG	
2		11586.40	48.69	16.44	65.13	74.00	-8.87	peak	

Report No.: BTL-FCCP-3-1408C111 Page 73 of 162







No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	5810.400	49.60	41.46	91.06	54.00	37.06	AVG	Fundamental frequency, no limit
2	X	5811.400	57.35	41.46	98.81	74.00	24.81	peak	Fundamental frequency, no limit
3		5850.000	15.29	41.62	56.91	74.00	-17.09	peak	
4		5850.000	4.20	41.62	45.82	54.00	-8.18	AVG	

Note: The band edge frequency Limit line= fundamental - 20dB

Report No.: BTL-FCCP-3-1408C111 Page 74 of 162



No.	Mk.	. Freq.	Reading Level		Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11589.70	45.24	16.43	61.67	74.00	-12.33	peak	
2	*	11589.70	33.97	16.43	50.40	54.00	-3.60	AVG	

Report No.: BTL-FCCP-3-1408C111 Page 75 of 162



Vertical 135.0 dBuV/m 85 85 85 85 8635.000 5705.00 5715.00 5725.00 5735.00 5745.00 5755.00 5765.00 5775.00 5795.00 MHz Reading Correct MeasureNo. Mk. Freq. Level Factor ment Limit Over

No.	M	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5725.000	39.68	44.58	84.26	74.00	10.26	peak	
2	X	5725.000	30.39	44.58	74.97	54.00	20.97	AVG	
3	X	5748.400	70.36	44.70	115.06	74.00	41.06	peak	Fundamental frequency, no limit
4	*	5752.400	57.32	44.72	102.04	54.00	48.04	AVG	Fundamental frequency, no limit

Note: The band edge frequency Limit line= fundamental - 20dB

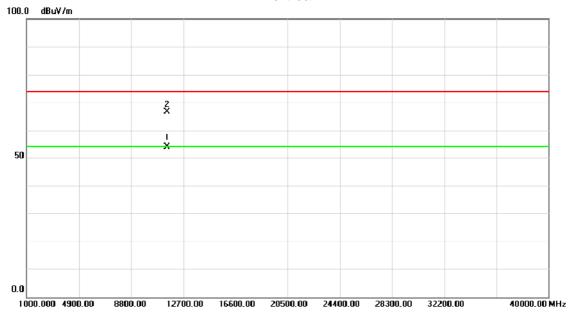
Report No.: BTL-FCCP-3-1408C111 Page 76 of 162



Orthogonal Axis: X

Test Mode: TX AC N20 Mode 5745MHz

Vertical



No.	Mk.	Freq.		Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	11490.70	37.06	16.47	53.53	54.00	-0.47	AVG	
2	,	11490.80	50.26	16.47	66.73	74.00	-7.27	peak	

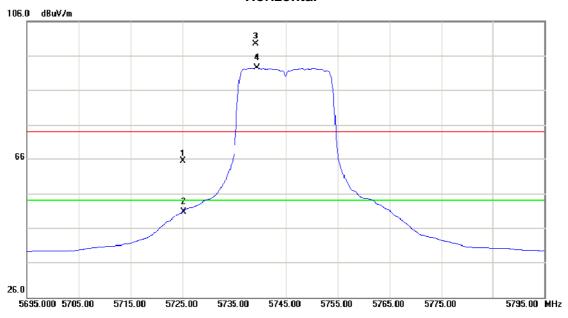
Report No.: BTL-FCCP-3-1408C111 Page 77 of 162



Orthogonal Axis: X

Test Mode: TX AC N20 Mode 5745MHz

Horizontal



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5725.000	24.12	41.10	65.22	74.00	-8.78	peak	
2		5725.000	9.69	41.10	50.79	54.00	-3.21	AVG	
3	Χ	5739.200	58.33	41.15	99.48	74.00	25.48	peak	Fundamental frequency, no limit
4	*	5739.500	51.34	41.15	92.49	54.00	38.49	AVG	Fundamental frequency, no limit

Note: The band edge frequency Limit line= fundamental - 20dB

Report No.: BTL-FCCP-3-1408C111 Page 78 of 162



Orthogonal Axis: X

Test Mode: TX AC N20 Mode 5745MHz

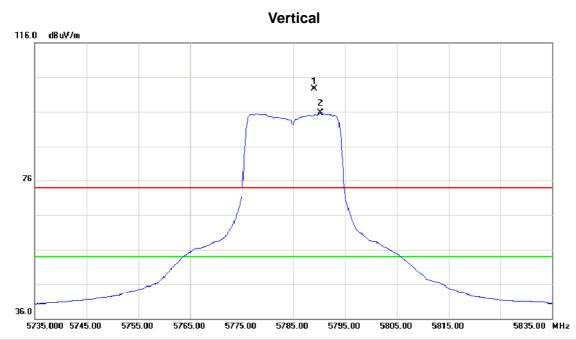




No.	Mk	. Freq.		Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11490.20	46.79	16.47	63.26	74.00	-10.74	peak	
2	*	11490.20	34.28	16.47	50.75	54.00	-3.25	AVG	

Report No.: BTL-FCCP-3-1408C111 Page 79 of 162





No.	MŁ	k. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	Χ	5789.100	61.37	41.36	102.73	74.00	28.73	peak	Fundamental frequency, no limit
2	*	5790.300	54.26	41.37	95.63	54.00	41.63	AVG	Fundamental frequency, no limit

Report No.: BTL-FCCP-3-1408C111 Page 80 of 162



No.	Mk.	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
-1		11565.10	50.18	16.45	66.63	74.00	-7.37	peak	
2	*	11568.80	37.02	16.44	53.46	54.00	-0.54	AVG	

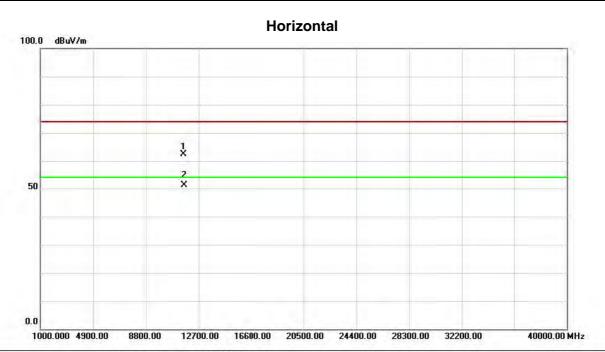
Report No.: BTL-FCCP-3-1408C111 Page 81 of 162



No.	Mk	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	Χ	5777.500	58.86	41.31	100.17	74.00	26.17	peak	Fundamental frequency, no limit
2	*	5788.000	51.34	41.36	92.70	54.00	38.70	AVG	Fundamental frequency, no limit

Report No.: BTL-FCCP-3-1408C111 Page 82 of 162

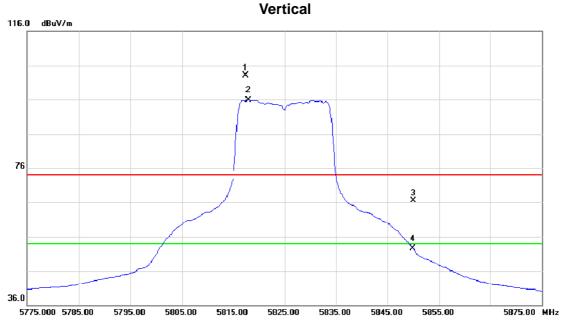




No.	Mk.	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11570.10	45.82	16.44	62.26	74.00	-11.74	peak	7
2	*	11570.10	34.71	16.44	51.15	54.00	-2.85	AVG	

Report No.: BTL-FCCP-3-1408C111 Page 83 of 162



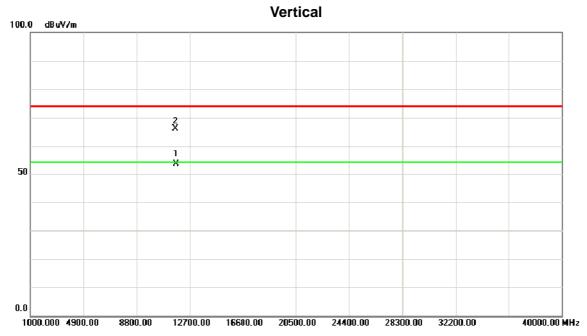


No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5817.500	61.71	41.48	103.19	74.00	29.19	peak	Fundamental frequency, no limit
2	*	5818.000	54.38	41.48	95.86	54.00	41.86	AVG	Fundamental frequency, no limit
3		5850.000	24.94	41.62	66.56	74.00	-7.44	peak	
4		5850.000	10.84	41.62	52.46	54.00	-1.54	AVG	

Note: The band edge frequency Limit line= fundamental - 20dB

Report No.: BTL-FCCP-3-1408C111 Page 84 of 162





No.	Mk	. Freq.	Reading Level		Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1	*	11649.00	36.99	16.40	53.39	54.00	-0.61	AVG		
2		11650.80	49.77	16.40	66.17	74.00	-7.83	peak		

Report No.: BTL-FCCP-3-1408C111 Page 85 of 162



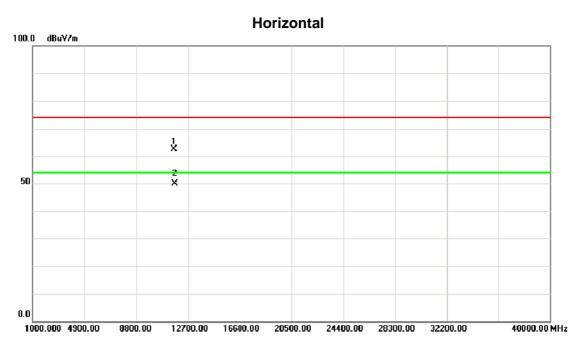
Horizontal 116.0 dBuV/m 76 2 36.0 5775.000 5795.00 5795.00 5895.00 5815.00 5825.00 5825.00 5825.00 5825.00 5825.00 5825.00 5825.00 5825.00 MHz

No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5829.200	60.16	41.53	101.69	74.00	27.69	peak	Fundamental frequency, no limit
2	ħ	5830.300	52.96	41.53	94.49	54.00	40.49	AVG	Fundamental frequency, no limit
3	1	5850.000	19.36	41.62	60.98	74.00	-13.02	peak	
4		5850.000	9.54	41.62	51.16	54.00	-2.84	AVG	

Note:The band edge frequency Limit line= fundamental - 20dB

Report No.: BTL-FCCP-3-1408C111 Page 86 of 162





No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		11650.00	46.24	16.40	62.64	74.00	-11.36	peak		
2	*	11650.00	33.58	16.40	49.98	54.00	-4.02	AVG		

Report No.: BTL-FCCP-3-1408C111 Page 87 of 162



Vertical 136.0 dBuV/m 4 3 3 3 4 5655.000 5675.00 5695.00 5715.00 5725.00 5775.00 5795.00 5815.00 5895.00 MHz

No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5725.000	40.51	44.58	85.09	74.00	11.09	peak	
2	X	5725.000	30.01	44.58	74.59	54.00	20.59	AVG	
3	*	5740.000	54.47	44.66	99.13	54.00	45.13	AVG	Fundamental frequency, no limit
4	X	5744.000	64.00	44.68	108.68	74.00	34.68	peak	Fundamental frequency, no limit

Note: The band edge frequency Limit line= fundamental - 20dB

Report No.: BTL-FCCP-3-1408C111 Page 88 of 162



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1		11508.80	50.79	16.49	67.28	74.00	-6.72	peak		
2		11510.80	37.28	16.48	53.76	54.00	-0.24	AVG		

Report No.: BTL-FCCP-3-1408C111 Page 89 of 162



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5725.000	30.40	41.10	71.50	74.00	-2.50	peak	
2	X	5725.000	20.53	41.10	61.63	54.00	7.63	AVG	
3	*	5741.800	49.95	41.16	91.11	54.00	37.11	AVG	Fundamental frequency, no limit
4	X	5744.000	58.16	41.17	99.33	74.00	25.33	peak	Fundamental frequency, no limit

Note: The band edge frequency Limit line= fundamental - 20dB

Report No.: BTL-FCCP-3-1408C111 Page 90 of 162