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Job Number:	12U14396-1
FCC ID	V65E4255
Date:	May 3, 2012
Model:	E4277

# Electromagnetic Compatibility Test Report

For

**KYOCERA Communications, Inc.**

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## Test Report Details

Tests Performed By: **UL LLC**  
**333 Pfingsten Rd.**  
**Northbrook, IL 60062**

Tests Performed For: **KYOCERA Communications, Inc.**  
**9520 Towne Centre Drive**  
**San Diego, CA 92121**

Applicant Contact: **Thuy To**  
Title: **Senior Regulatory Engineer**  
E-mail: **Thuy.to@kyocera.com**

Test Report Date: **May 3, 2012**

Product Type: **Cellphone with BlueTooth**

Product standards: **FCC Part 15, Subpart C, 15.247 (15.207 & 15.209 Only)**

Model Number: **E4277**

Sample Serial Number: **No Serial Number**

EUT Category: **Frequency Hopping Spread Spectrum Transceiver**

Testing Start Date: **April 25, 2012**

Date Testing Complete: **May 30, 2012**

**Overall Results:** **Compliant**

UL LLC reports apply only to the specific samples tested under stated test conditions. All samples tested were in good operating condition throughout the entire test program. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. UL LLC shall have no liability for any deductions, inferences or generalizations drawn by the client or others from UL LLC issued reports. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

This report may contain test results that are not covered by the NVLAP or A2LA accreditation. The scope of accreditation is limited to the specific tests that are listed on the NVLAP and/or A2LA websites referenced at the end of this report.

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## Report Revision History

Revision Date	Description	Revised By	Revision Reviewed By
None			

**1.0 G E N E R A L - Product Description****1.1 Equipment Description**

The equipment under test (EUT) is an cellphone with bluetooth
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**1.2 Device Configuration During Test****1.2.1 Equipment Used During Test:**

Use	Product Type	Manufacturer	Model	Comments
EUT	Cellphone with bluetooth	KYOCERA Communications, Inc.	E4522	None
EUT	Power Supply	Kyocera Corporation	SCP-31ADT	None
Note: EUT - Equipment Under Test, AE - Auxiliary/Associated Equipment, or SIM - Simulator (Not Subjected to Test)				

**1.2.2 Input/Output Ports:**

Port #	Name	Type*	Cable Max. >3m (Y/N)	Cable Shielded (Y/N)	Comments
0	Enclosure	N/E	—	—	None
1	Mains	AC	N	Y	Charger connected to phone
2	Headset	I/O	N	Y	Stereo Headset
Note: AC = AC Power Port      DC = DC Power Port      N/E = Non-Electrical I/O = Signal Input or Output Port (Not Involved in Process Control) TP = Telecommunication Ports					

**1.2.3 EUT Internal Operating Frequencies:**

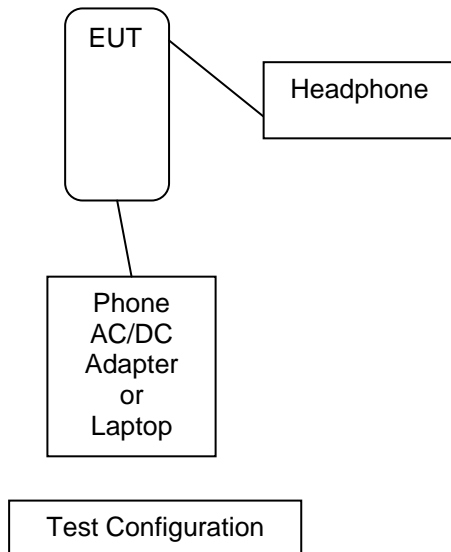
Frequency (MHz)	Description
19.2	TCXO
26	Bluetooth
200	BB

**1.2.4 Power Interface:**

Mode # /Rated	Voltage (V)	Current (A)	Power (W)	Frequency (DC/AC-Hz)	Phases (#)	Comments
1	120	-	-	AC-60	1	None
2	3.6	-	-	DC	-	Internal Battery

### 1.3 Block Diagram:

The diagram below illustrates the configuration of the equipment above.



**1.4 EUT Configurations**

Mode #	Description
1	EUT was configured on 80cm support, oriented in z-axis with charger and headset connected.

**1.5 EUT Operation Modes**

Mode #	Description
1	EUT set to transmit on either low, middle, or high channels individually
2	EUT set to transmit in hopping mode, DH5, BDR.
3	ETU set to receive, hopping

**1.6 Rational for EUT Configuration**

Mode #	Description
1	The selected EUT configuration was chosen to maximize emissions. Initial measurements were made in three axis, with and without headset and with and without charger. In addition data rate and modulation mode were varied. Thru this process it was determined that the worst case is Z-Axis with headset transmitting in DH5 with BDR. The charger did not make a difference therefore was left connect to keep the battery voltage constant for all testing.

## 2.0 Summary

The tests listed in the Summary of Testing section of this report have been performed and the results recorded by UL LLC in accordance with the procedures stated in each test requirement and specification. The applicant determined the list of tests performed were applicable to the Equipment Under Test. As a result, the subject product has been verified to comply or not comply as noted in the Summary of Testing with each test specification. The test results relate only to the items tested.

### 2.1 Deviations from standard test methods

None
------

### 2.2 Device Modifications Necessary for Compliance

None
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### 2.3 Reference Standards

Standard Number	Standard Name	Standard Date
FCC Part 15, Subpart C, 15.247	Code of Federal Regulations, Part 15, Radio Frequency Devices	2010

### 2.4 Results Summary

Requirement – Test	Result (Compliant / Non-Compliant)*
Spurious Emissions (Transmit Radiated Only)	Compliant
Radiated Emissions (Receive and Digital)	Compliant
Conducted Emissions	Compliant

Test Engineer:



Bartlomiej Mucha (Ext.41216)  
Staff Engineer  
International EMC Services  
Conformity Assessment Services

Reviewer:



Bartlomiej Mucha(Ext.41216)  
Senior Project Engineer  
International EMC Services  
Conformity Assessment Services

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

### 3.0 Calibration of Equipment Used for Measurement

All test equipment and test accessories are calibrated on a regular basis. The maximum time between calibrations is one year or the manufacturers' recommendation, whichever is less.

All test equipment calibrations are traceable to the National Institute of Standards and Technology (NIST); therefore, all test data recorded in this report is traceable to NIST.

### 4.0 EMISSIONS TEST RESULTS

The emissions tests were performed according to following regulations:

----- United States -----

Code of Federal Regulations Title 47	Part 15, Subpart C, Radio Frequency Devices
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Unless specified otherwise in the individual Methods, the tests shall be conducted under the following ambient conditions. Confirmation of these conditions shall be verified at the time the test is conducted.

Ambient Temperature, °C	22.5 ± 2.5	Relative Humidity, %	45 ± 15	Barometric Pressure, mBar	950 ± 150
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#### Sample Calculations

Radiated Field Strength and Conducted Emissions data contained within this report is calculated on the following basis:

Field Strength (dBuV/m) = Meter Reading (dBuV) + AF (dB/m) - Gain (dB) + Cable Loss (dB)

Conducted Voltage (dBuV) = Meter Reading (dBuV) + Cable Loss (dB) + LISN IL (dB)

Conducted Current (dBUA) = Meter Reading (dBuV) + Cable Loss (dB) - Transducer Factor (dBohms)

**4.1 Test Conditions and Results – SPURIOUS EMISSIONS (Radiated only)**

Test Description	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section15.205(c)).		
Basic Standard	47 CFR Part 15.247(d) RSS-210, A8.5 RSS-Gen 7.2.1 and 7.2.3		
	Frequency range	Measurement Point	
Fully configured sample scanned over the following frequency range	30MHz – 1GHz	10 meter distance	
Fully configured sample scanned over the following frequency range	1GHz – 25GHz	3 meter distance	
Limits (Radiated – Restricted Bands Only)			
Frequency (MHz)	Limit (dBµV/m)		
	Quasi-Peak	Peak	Average
30 – 88	29.54	-	-
88 – 216	33.06	-	-
216-960	35.56	-	-
960-1000	43.52	-	-
1,000-25,000	-	74	54
Supplementary information: Below 1GHz, spectrum was checked. All emissions related to the transmitter below 1GHz are not in the restricted band therefore only antenna conducted limits apply (20dB below the peak level of the fundamental). For frequencies below 1000MHz the limit was extrapolated to the distance of 10m.			

**Table 1 SPURIOUS EMISSIONS EUT Configuration Settings**

Power Interface Mode #	EUT Configurations Mode #	EUT Operation Mode #
1	1	1 & 2
Supplementary information: None		

**Table 2 SPURIOUS RADIATED EMISSIONS Test Equipment**

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due Date
EMI Test Receiver	Rohde & Schwarz	ESU	EMC4323	Dec 28 2011	Dec 31 2012
Bicon Antenna	Chase	VBA6106A	EMC4078	20120117	20130131
Log-P Antenna	Chase	UPA6109	EMC4313	20110929	20120629
Spectrum Analyzer	Rhode & Schwarz	FSEK	EMC4182	20111227	20121231
Antenna Array	UL	BOMS	EMC4276	20111227	20121231

Figure 1 Radiated Spurious Emissions below 1GHz, Hopping

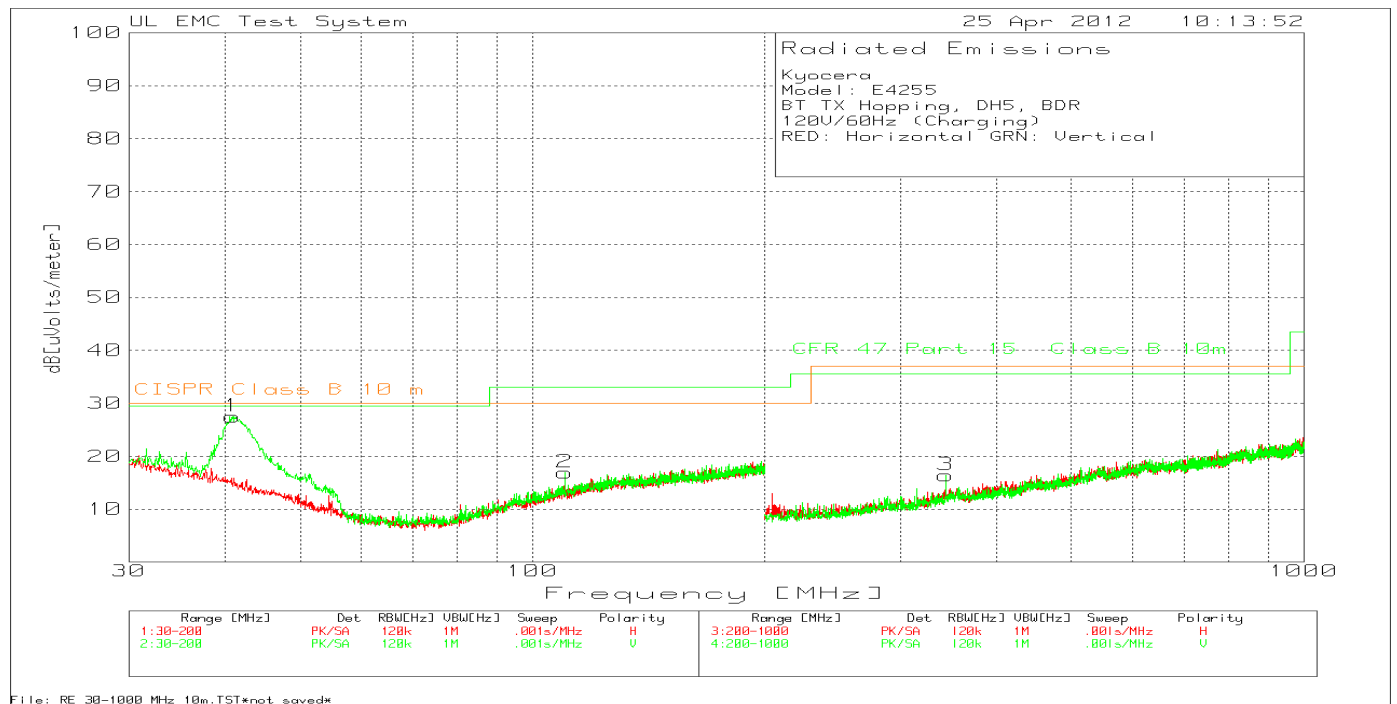


Table 3 Radiated Spurious Emissions below 1GHz, Hopping

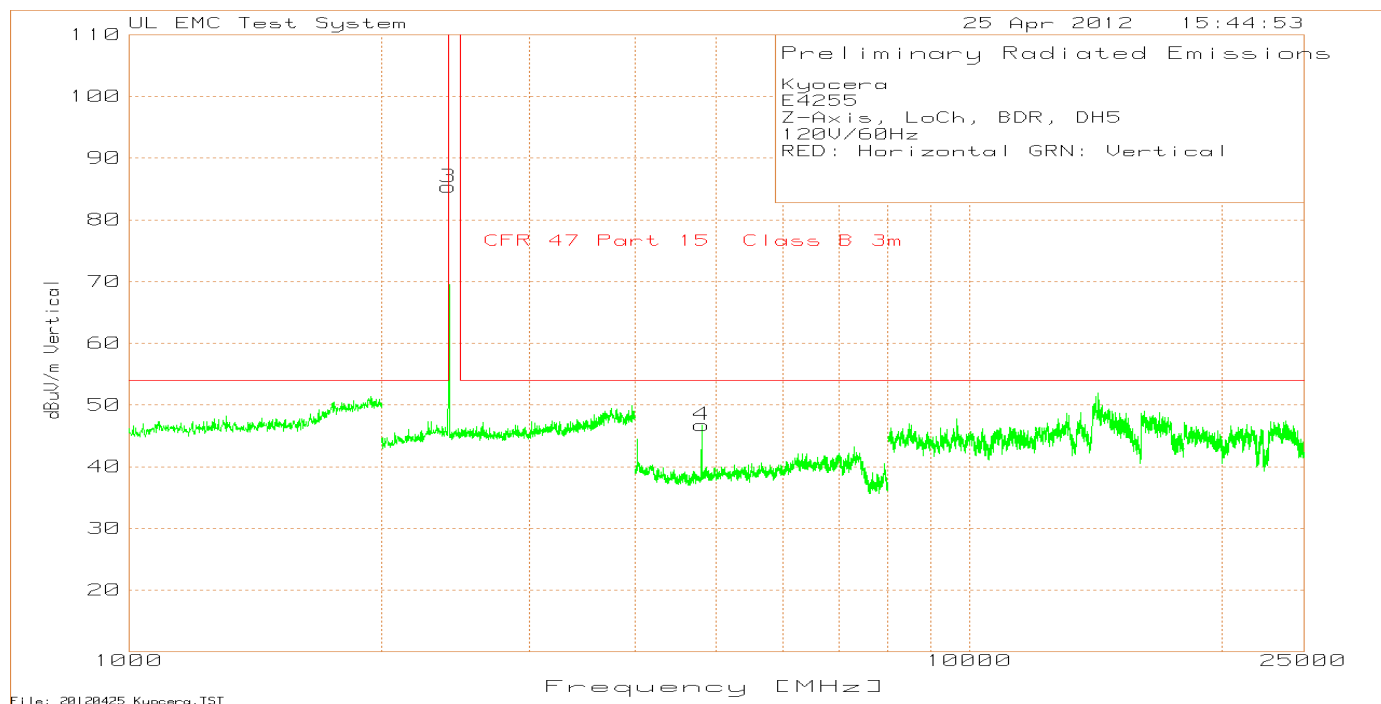
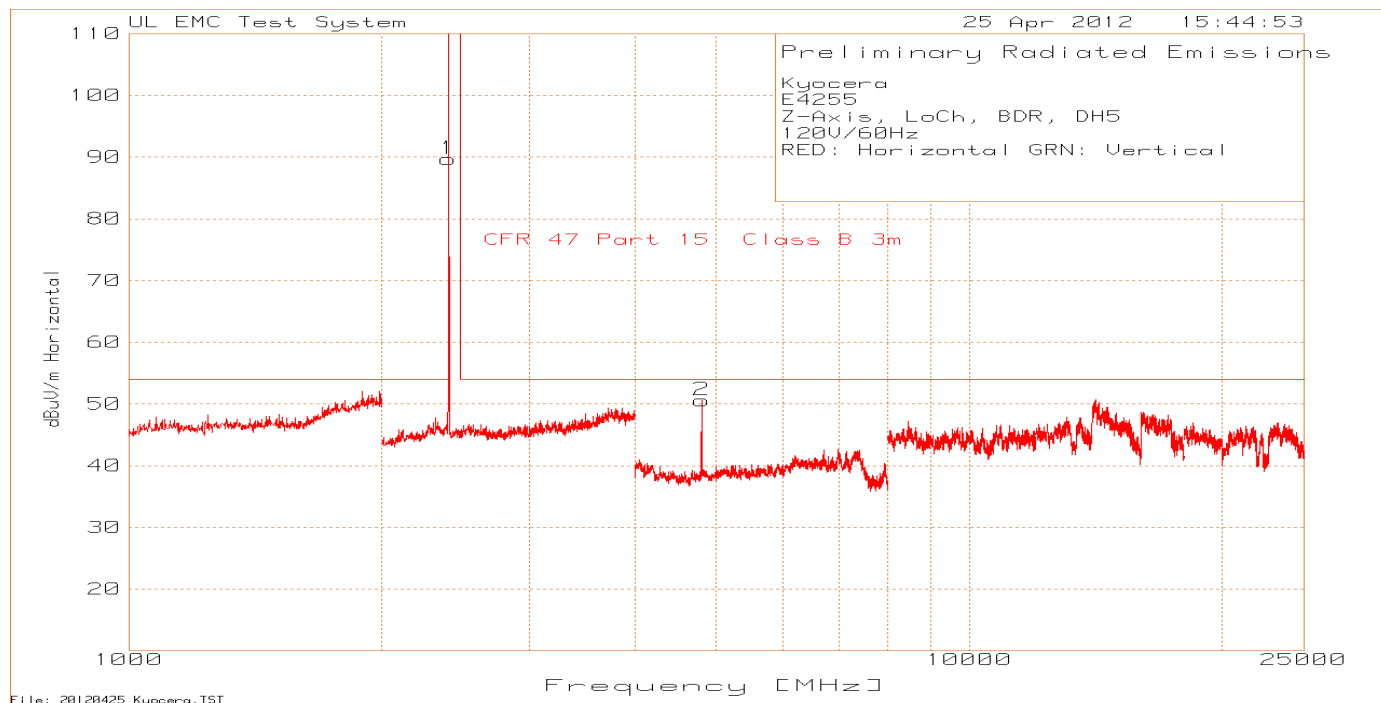
Kyocera  
 Model: E4255  
 BT TX Hopping, DH5, BDR  
 120V/60Hz (Charging)  
 RED: Horizontal GRN: Vertical

Test No.	Frequency [MHz]	Meter Reading [dB(uV)]	Transducer Factor [dB]	Gain/Loss Factor [dB]	Level dB[uVolts/meter]	Limit:1	2	3	4	5	6
1	40.8746	42.95 PK	13.8	-29.2	27.55	29.6	30	-	-	-	-
		Height:101 Vert		Margin [dB]		-2.05	-2.45	-	-	-	-
2	110.2849	34.25 PK	12.1	-29.4	16.95	33.1	30	-	-	-	-
		Height:101 Vert		Margin [dB]		-16.15	-13.05	-	-	-	-
3	343.6376	34.49 PK	14.5	-32.6	16.39	35.6	37	-	-	-	-
		Height:99 Vert		Margin [dB]		-19.21	-20.61	-	-	-	-

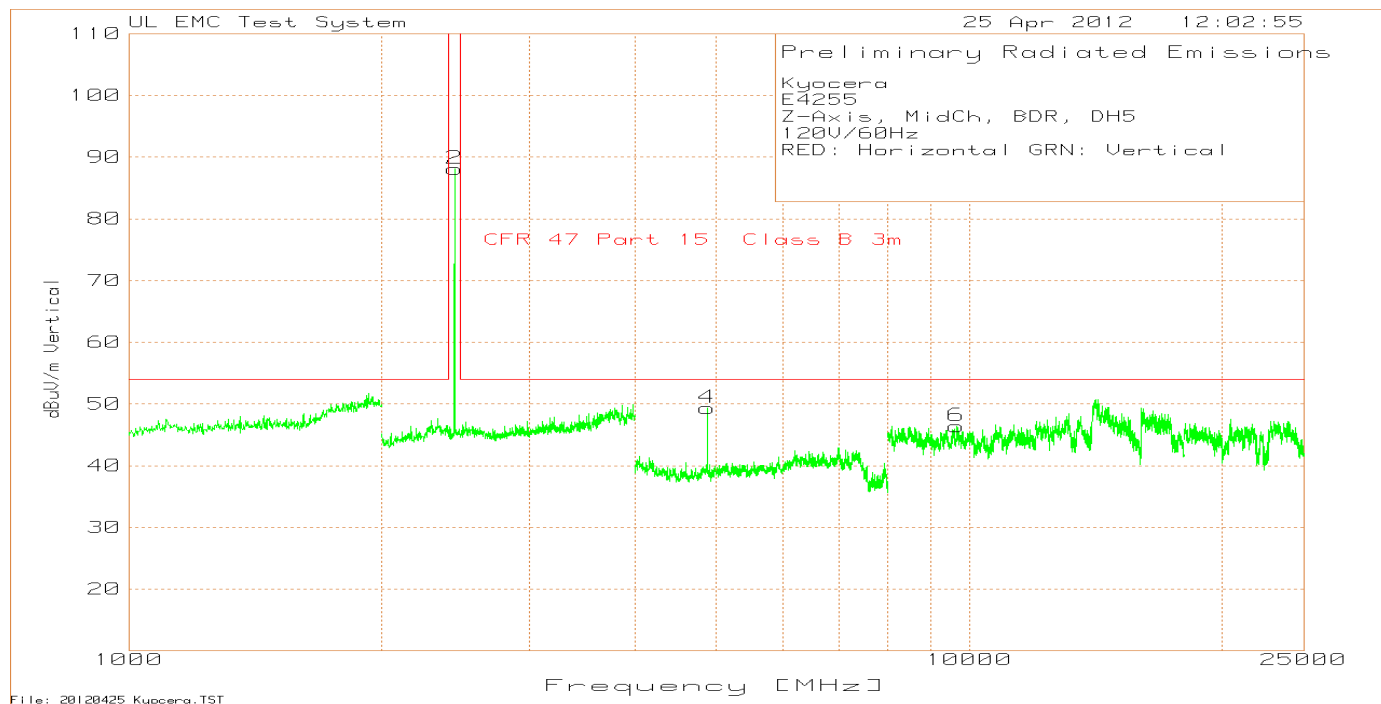
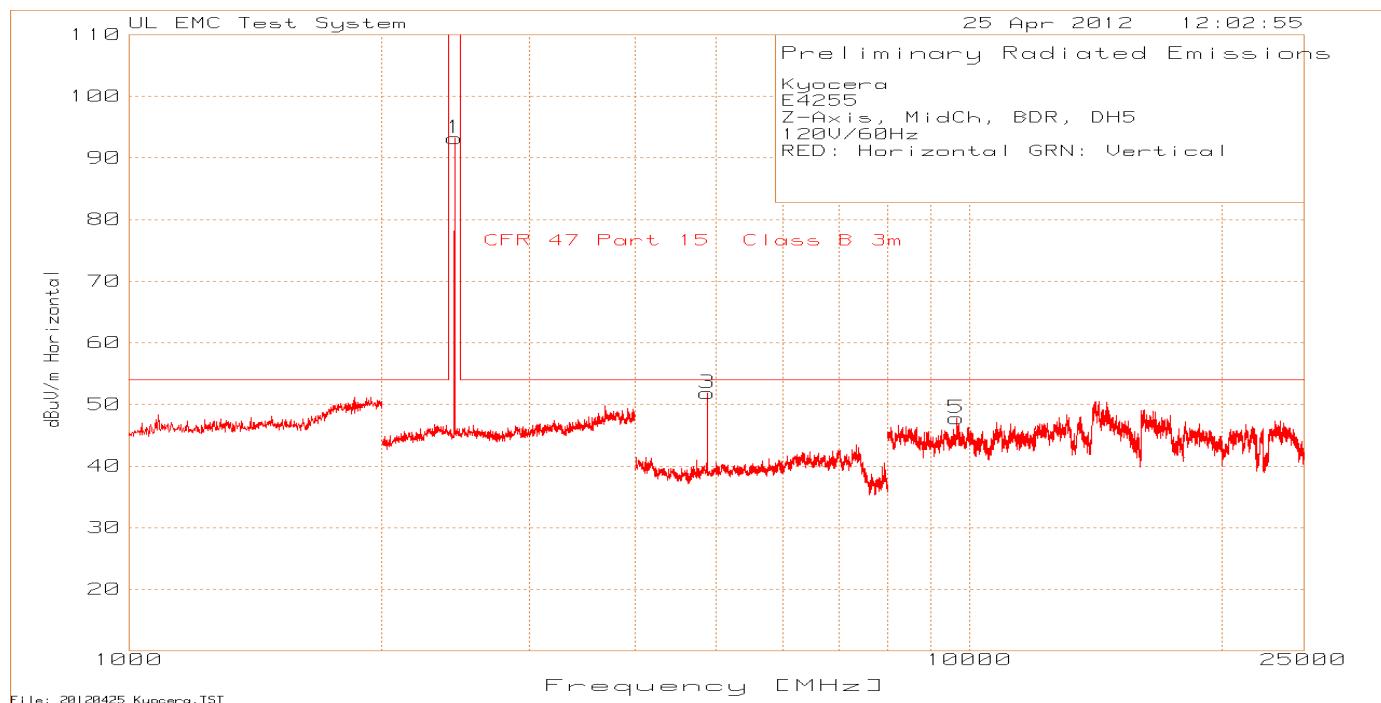
Test Frequency [MHz]	Meter Reading [dB(uV)]	Transducer Factor [dB]	Gain/Loss Factor [dB]	Level dB[uVolts/meter]	Limit:1	2	3	4	5	6
41.024	38.57 QP	13.7	-29.2	23.07	29.6	30	-	-	-	-
	Azimuth: 274	Height:101 Vert		Margin [dB]:		-6.53	-6.93	-	-	-

LIMIT 1: CFR 47 Part 15 Class B 10m  
 LIMIT 2: CISPR Class B 10m  
 PK - Peak detector  
 QP - Quasi-Peak detector

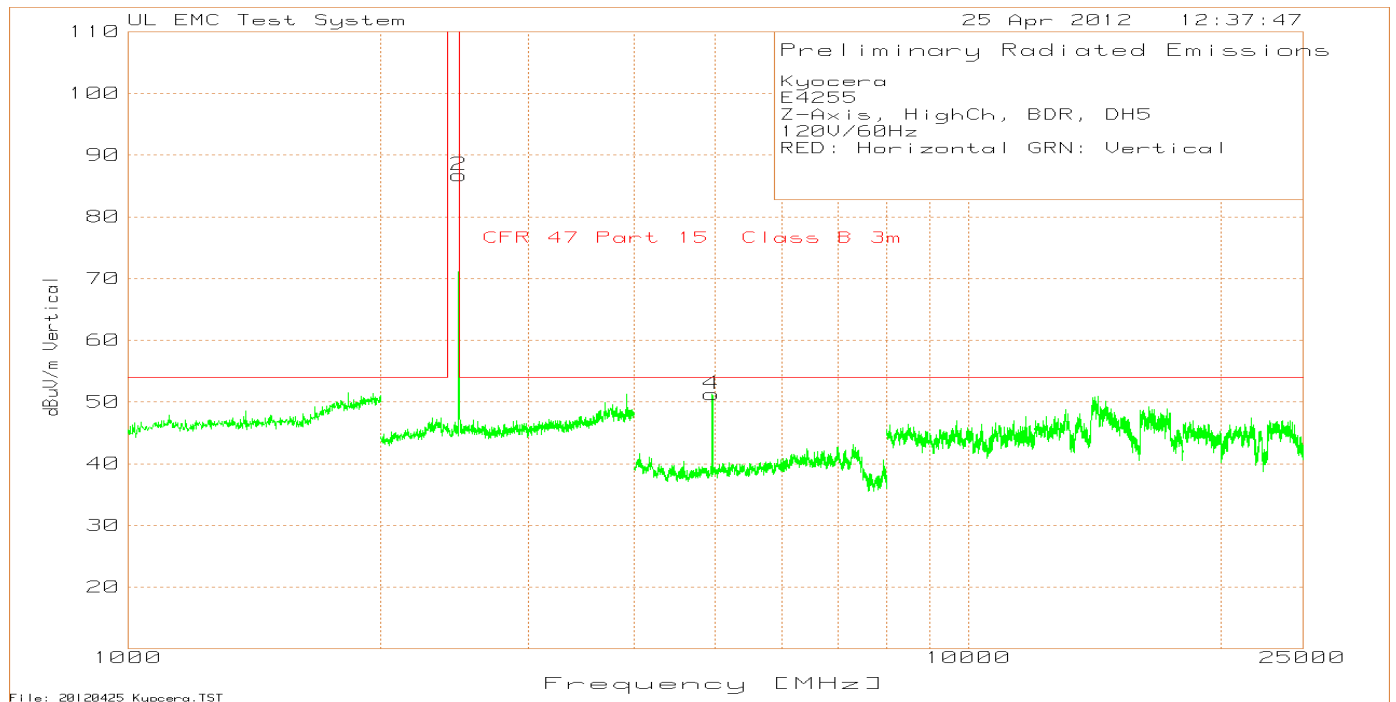
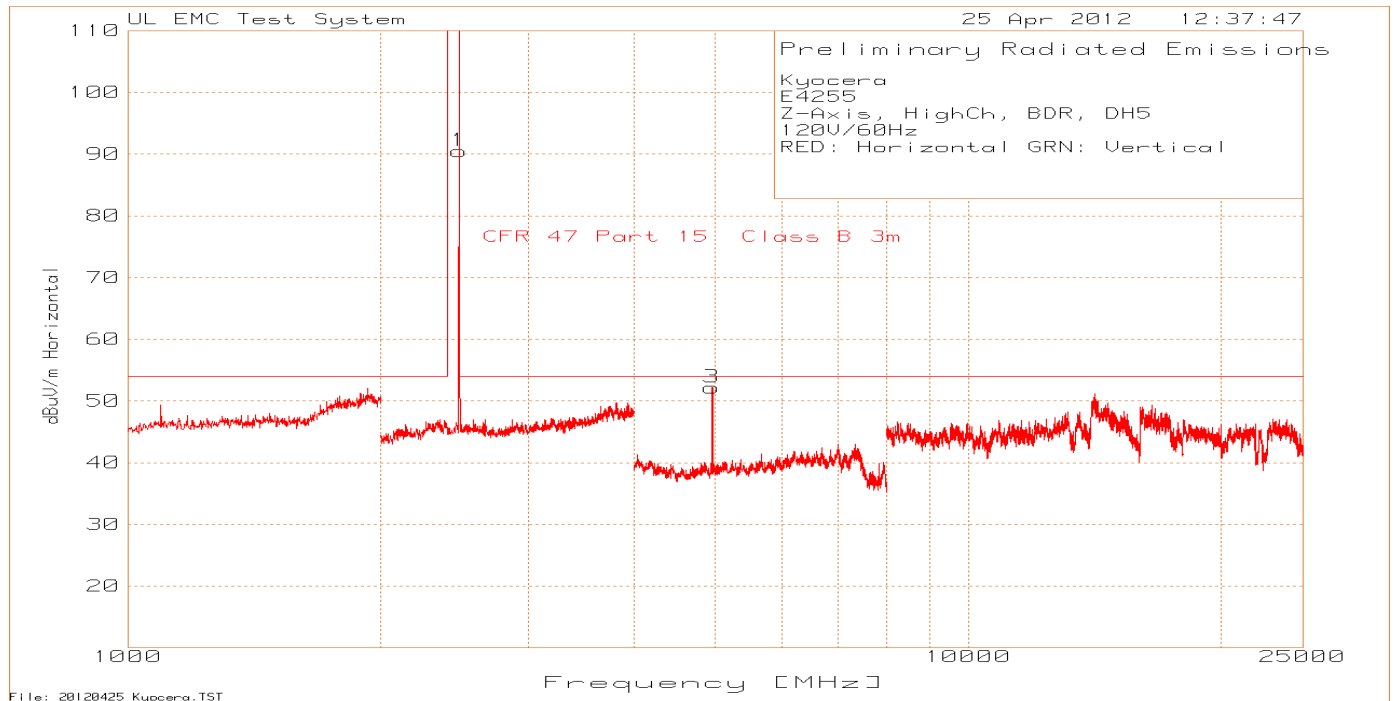
**Figure 2 Radiated Spurious Emissions above 1GHz, Low Channel**



**Figure 3 Radiated Spurious Emissions above 1GHz, Middle Channel**



**Figure 4 Radiated Spurious Emissions above 1GHz, High Channel**



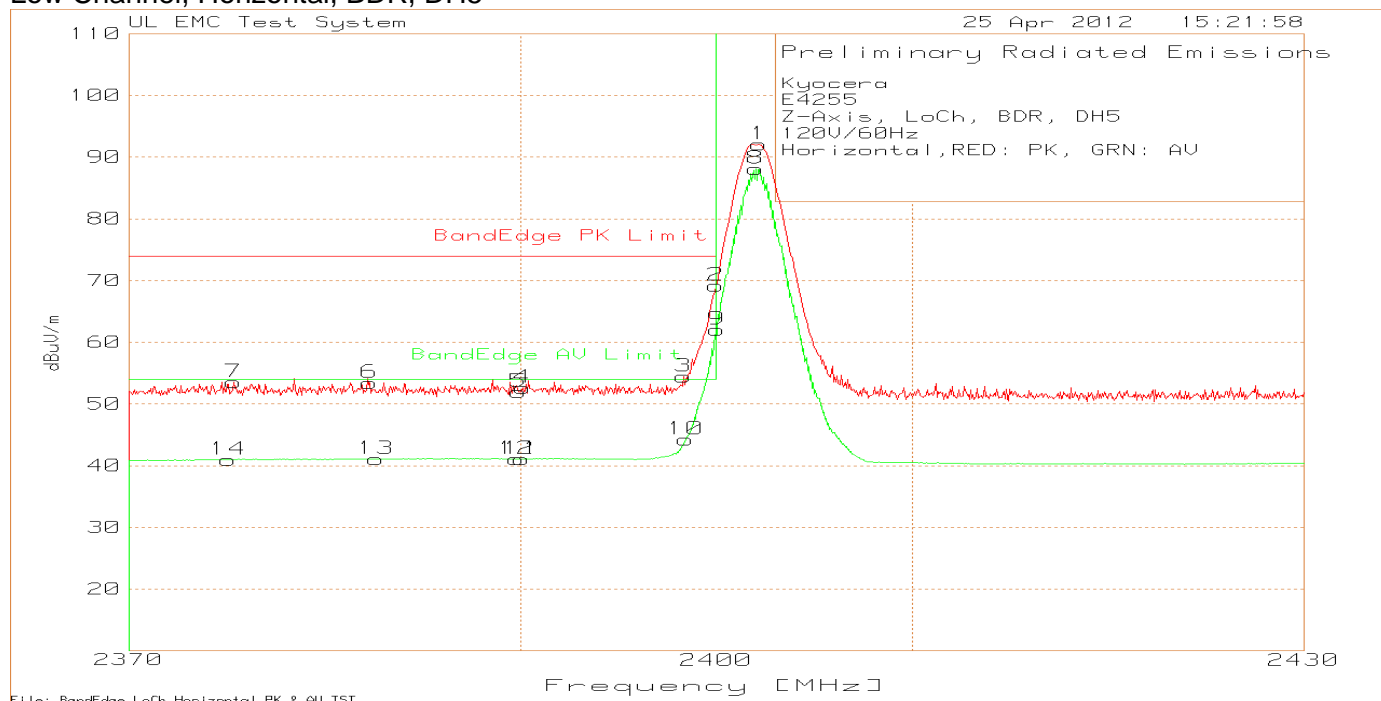


**Table 4 Radiated Spurious Emissions above 1GHz – Second Harmonic maximize measurements.**

Test Frequency MHz	Meter Reading dBuV	Detector	Antenna Factor dB	Path Loss/Gain dB	Level dBuV/m	Limit dBuV/m	Margin dB	Azimuth [Degr]	Height [cm]	Polarity
Middle Channel										
4881.6663	76.35	PK	27.7	-51.29	52.76	74	-21.24	20	100	Horz
4882.0331	71.77	LnAv	27.7	-51.31	48.16	54	-5.84	20	100	Horz
4881.6723	74.5	PK	27.7	-51.29	50.91	74	-23.09	24	100	Vert
4882.0451	69.47	LnAv	27.7	-51.31	45.86	54	-8.14	24	100	Vert
Low Channel										
4804.3517	75.27	PK	27.7	-51.36	51.61	74	-22.39	21	100	Horz
4804.0571	70.34	LnAv	27.7	-51.36	46.68	54	-7.32	21	100	Horz
4804.2976	72.85	PK	27.7	-51.36	49.19	74	-24.81	25	105	Vert
4804.0451	67.36	LnAv	27.7	-51.36	43.7	54	-10.3	25	105	Vert
High Channel										
4959.6543	77.33	PK	27.8	-51.48	53.65	74	-20.35	18	100	Horz
4960.015	73.11	LnAv	27.8	-51.47	49.44	54	-4.56	18	100	Horz
4960.3517	76.07	PK	27.8	-51.46	52.41	74	-21.59	21	100	Vert
4960.021	71.55	LnAv	27.8	-51.47	47.88	54	-6.12	21	100	Vert
PK - Peak detector LnAv - Linear Average detector										

**Figure 5 Radiated Band Edge Compliance Graph**

Low Channel, Horizontal, BDR, DH5



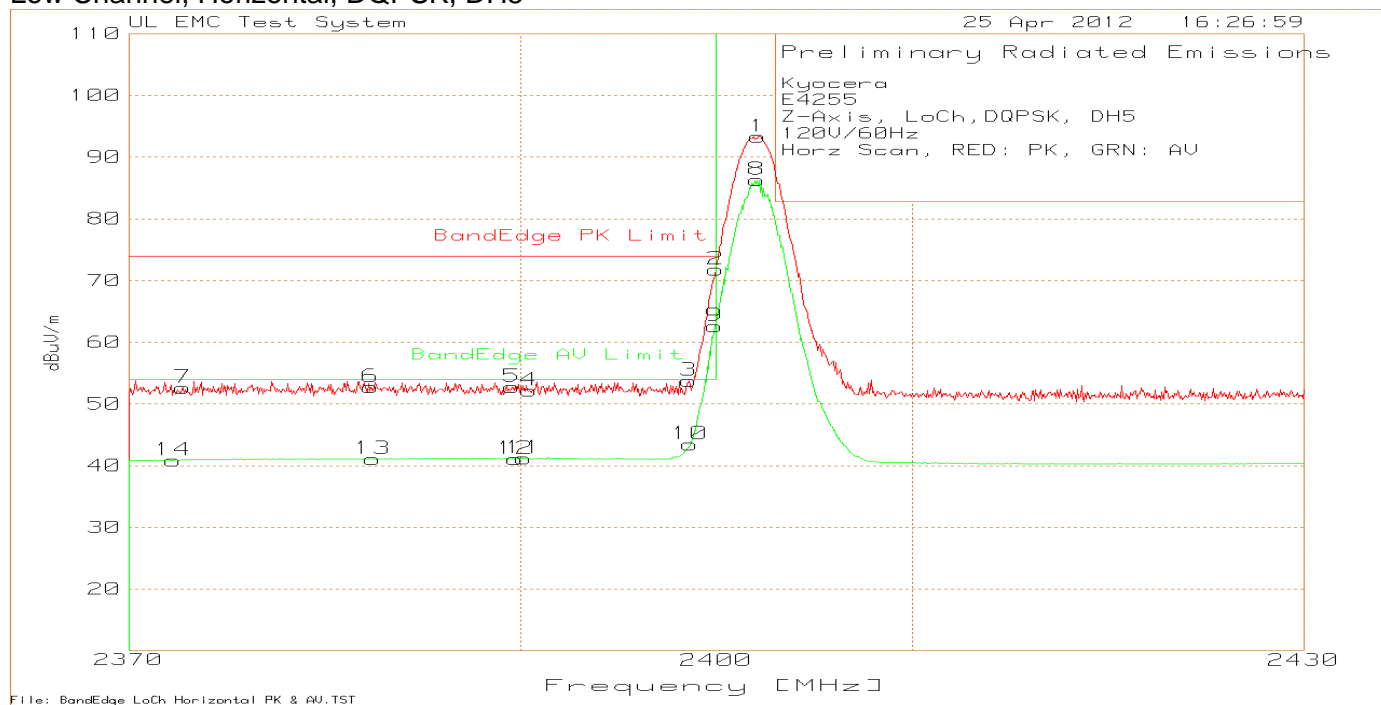
**Table 5 Radiated Band Edge Compliance Data Points**

Low Channel, Horizontal, BDR, DH5

Kyocera E4255 Z-Axis, LoCh, BDR, DH5 120V/60Hz Horizontal, RED: PK, GRN: AV									
Test Frequency	Meter Reading	Detector	Antenna Factor dB	Path Loss/Gain dB	Level dBuV/m	Band Edge PK Limit	Margin	Height [cm]	Polarity
2402.192	66.04	PK	21.8	4.26	92.1	-	-	100	Horz
2399.97	43.09	PK	21.8	4.31	69.2	-	-	100	Horz
2398.348	28.3	PK	21.8	4.35	54.45	-	-	100	Horz
2390.12	26.38	PK	21.8	4.48	52.66	-	-	150	Horz
2389.88	25.71	PK	21.8	4.48	51.99	74	-22.01	100	Horz
2382.312	27.29	PK	21.8	4.35	53.44	74	-20.56	150	Horz
2375.345	27.66	PK	21.8	4.14	53.6	74	-20.4	150	Horz
Test Frequency	Meter Reading	Detector	Antenna Factor dB	Path Loss/Gain dB	Level dBuV/m	Band Edge PK Limit	Margin	Height [cm]	Polarity
2402.012	62.09	AV	21.8	4.26	88.15	-	-	99	Horz
2400.03	35.94	AV	21.8	4.31	62.05	-	-	99	Horz
2398.468	18.14	AV	21.8	4.35	44.29	-	-	99	Horz
2390.09	14.83	AV	21.8	4.48	41.11	-	-	99	Horz
2389.82	14.84	AV	21.8	4.48	41.12	54	-12.88	99	Horz
2382.613	14.94	AV	21.8	4.35	41.09	54	-12.91	150	Horz
2375.105	15.07	AV	21.8	4.13	41	54	-13	150	Horz
PK - Peak detector AV - Average Sweep									

### Figure 6 Radiated Band Edge Compliance Graph

Low Channel, Horizontal, DQPSK, DH5



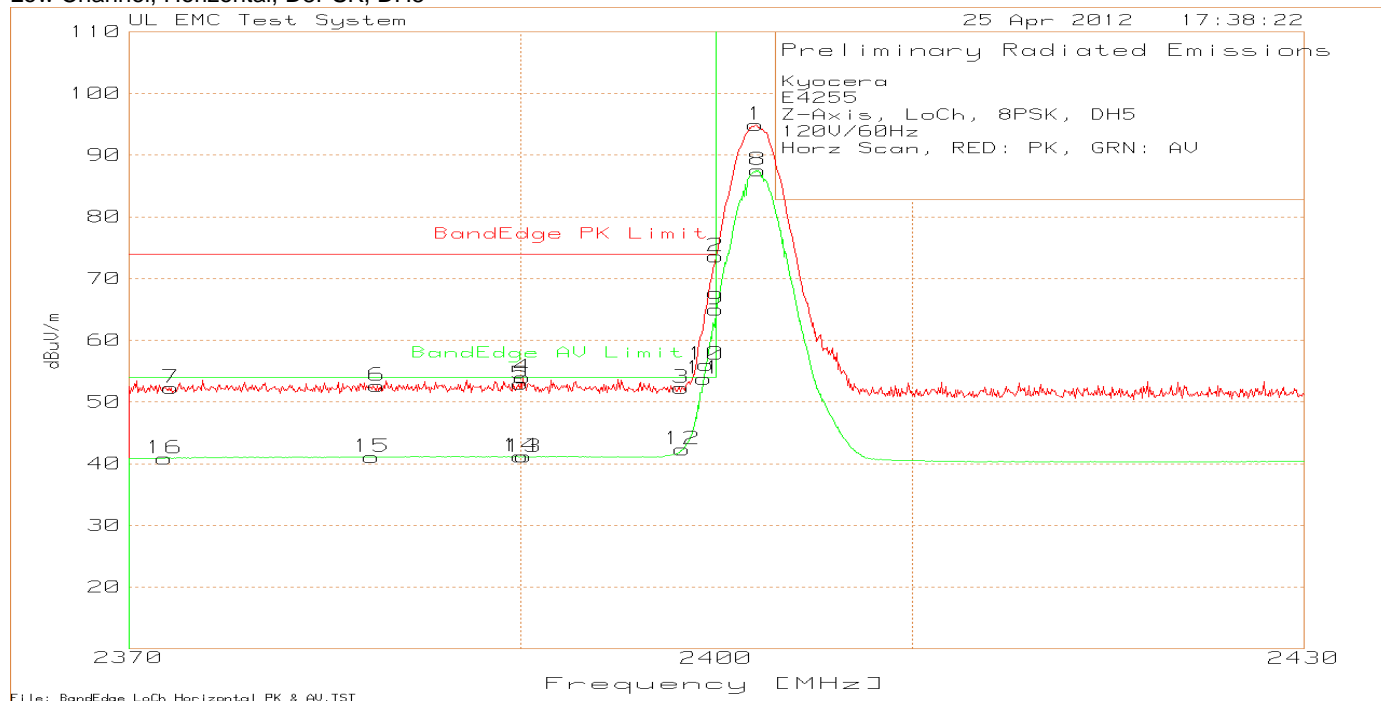
### Table 6 Radiated Band Edge Compliance Data Points

Low Channel, Horizontal, DQPSK, DH5

Kycocera E4255 Z-Axis, LoCh, QPSK, DH5 120V/60Hz Horz Scan, RED: PK, GRN: AV									
Test Frequency	Meter Reading	Detector	Antenna Factor dB	Path Gain/Loss dB	Level dBuV/m	BandEdge PK Limit	Margin	Height [cm]	Polarity
2402.132	67.22	PK	21.8	4.26	93.28	-	-	101	Horz
2399.97	45.65	PK	21.8	4.31	71.76	-	-	101	Horz
2398.589	27.59	PK	21.8	4.35	53.74	-	-	101	Horz
2390.48	25.87	PK	21.8	4.49	52.16	-	-	150	Horz
2389.58	26.44	PK	21.8	4.47	52.71	74	-21.29	150	Horz
2382.372	26.63	PK	21.8	4.35	52.78	74	-21.22	150	Horz
2372.763	26.79	PK	21.8	4.06	52.65	74	-21.35	150	Horz
Test Frequency	Meter Reading	Detector	Antenna Factor dB	Path Gain/Loss dB	Level dBuV/m	BandEdge AV Limit	Margin	Height [cm]	Polarity
2402.072	60.29	AV	21.8	4.26	86.35	-	-	100	Horz
2399.91	36.48	AV	21.8	4.31	62.59	-	-	100	Horz
2398.649	17.3	AV	21.8	4.34	43.44	-	-	100	Horz
2390.18	14.93	AV	21.8	4.48	41.21	-	-	100	Horz
2389.76	14.85	AV	21.8	4.48	41.13	54	-12.87	150	Horz
2382.492	14.94	AV	21.8	4.35	41.09	54	-12.91	100	Horz
2372.252	15.05	AV	21.8	4.04	40.89	54	-13.11	150	Horz
PK - Peak detector Av - Average Sweep									

**Figure 7 Radiated Band Edge Compliance Graph**

Low Channel, Horizontal, D8PSK, DH5



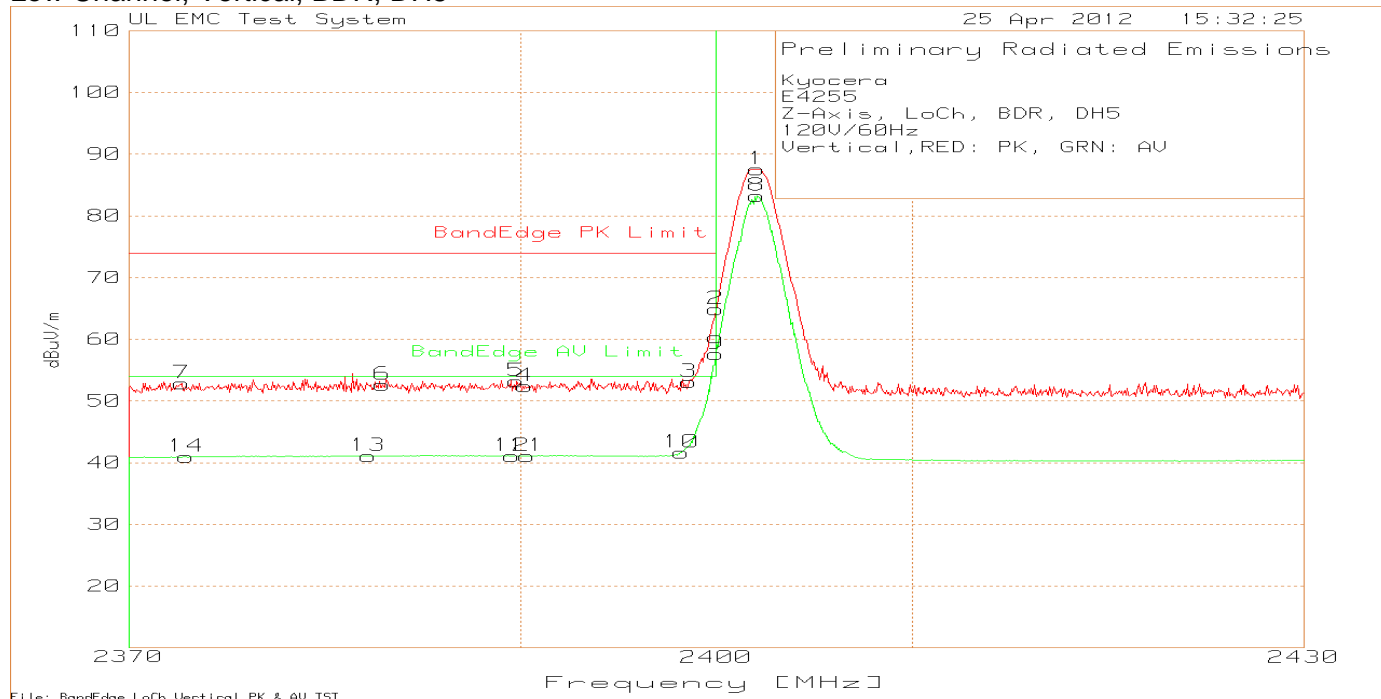
**Table 7 Radiated Band Edge Compliance Data Points**

Low Channel, Horizontal, D8PSK, DH5

Kyocera E4255 Z-Axis, LoCh, 8PSK, DH5 120V/60Hz Horz Scan, RED: PK, GRN: AV									
Test Frequency	Meter Reading	Detector	Antenna Factor dB	Path Loss/Gain dB	Level dBuV/m	BandEdge PK Limit	Margin	Height [cm]	Polarity
2402.012	68.82	PK	21.8	4.26	94.88	-	-	99	Horz
2399.97	47.52	PK	21.8	4.31	73.63	-	-	99	Horz
2398.228	26.12	PK	21.8	4.36	52.28	-	-	99	Horz
2390.12	27.71	PK	21.8	4.48	53.99	-	-	150	Horz
2390	26.65	PK	21.8	4.48	52.93	74	-21.07	99	Horz
2382.673	26.52	PK	21.8	4.35	52.67	74	-21.33	150	Horz
2372.162	26.51	PK	21.8	4.04	52.35	74	-21.65	99	Horz
Test Frequency	Meter Reading	Detector	Antenna Factor dB	Path Loss/Gain dB	Level dBuV/m	BandEdge AV Limit	Margin	Height [cm]	Polarity
2402.132	61.45	AV	21.8	4.26	87.51	-	-	99	Horz
2399.97	38.91	AV	21.8	4.31	65.02	-	-	99	Horz
2399.489	29.93	AV	21.8	4.32	56.05	-	-	99	Horz
2399.369	27.65	AV	21.8	4.33	53.78	-	-	99	Horz
2398.288	16.22	AV	21.8	4.35	42.37	-	-	99	Horz
2390.18	14.86	AV	21.8	4.48	41.14	-	-	99	Horz
2390	14.87	AV	21.8	4.48	41.15	54	-12.85	99	Horz
2382.432	14.95	AV	21.8	4.35	41.1	54	-12.9	99	Horz
2371.832	15.06	AV	21.8	4.03	40.89	54	-13.11	150	Horz
PK - Peak detector Av - Average Sweep									

## Figure 8 Radiated Band Edge Compliance Graph

Low Channel, Vertical, BDR, DH5



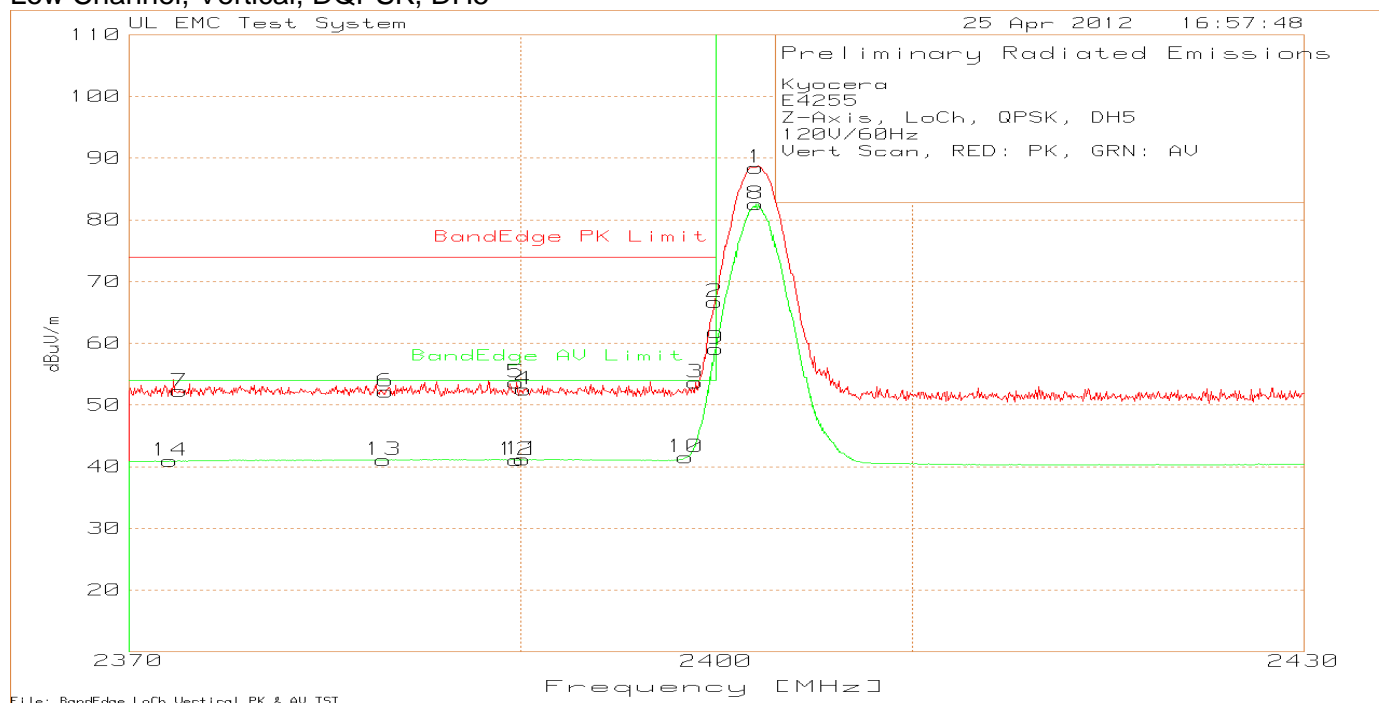
## Table 8 Radiated Band Edge Compliance Data Points

Low Channel, Vertical, BDR, DH5

Kyocera E4255 Z-Axis, LoCh, BDR, DH5 120V/60Hz Vertical, RED: PK, GRN: AV									
Test Frequency	Meter Reading	Detector	Antenna Factor dB	Path Loss/Gain dB	Level dBuV/m	BandEdge PK Limit	Margin	Height [cm]	Polarity
2402.072	61.48	PK	21.8	4.26	87.54	-	-	100	Vert
2399.97	38.76	PK	21.8	4.31	64.87	-	-	100	Vert
2398.589	26.96	PK	21.8	4.35	53.11	-	-	150	Vert
2390.24	26.14	PK	21.8	4.48	52.42	-	-	150	Vert
2389.82	26.97	PK	21.8	4.48	53.25	74	-20.75	100	Vert
2382.973	26.45	PK	21.8	4.36	52.61	74	-21.39	100	Vert
2372.703	26.98	PK	21.8	4.05	52.83	74	-21.17	150	Vert
Test Frequency	Meter Reading	Detector	Antenna Factor dB	Path Loss/Gain dB	Level dBuV/m	BandEdge AV Limit	Margin	Height [cm]	Polarity
2402.072	57.18	AV	21.8	4.26	83.24	-	-	100	Vert
2399.97	31.5	AV	21.8	4.31	57.61	-	-	100	Vert
2398.228	15.54	AV	21.8	4.36	41.7	-	-	100	Vert
2390.36	14.83	AV	21.8	4.49	41.12	-	-	150	Vert
2389.58	14.84	AV	21.8	4.47	41.11	54	-12.89	100	Vert
2382.222	14.93	AV	21.8	4.35	41.08	54	-12.92	150	Vert
2372.943	15.06	AV	21.8	4.06	40.92	54	-13.08	150	Vert
PK - Peak detector Av - Average detector									

**Figure 9 Radiated Band Edge Compliance Graph**

Low Channel, Vertical, DQPSK, DH5



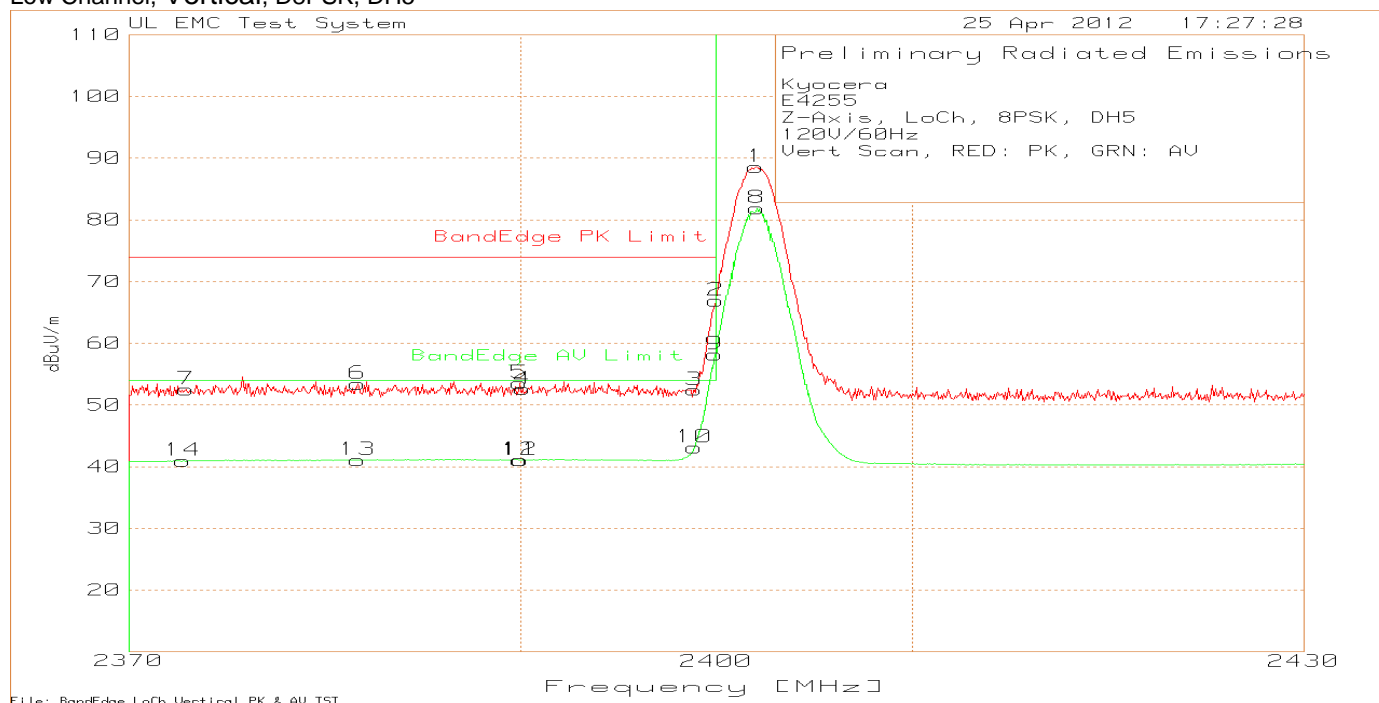
**Table 9 Radiated Band Edge Compliance Data Points**

Low Channel, Vertical, DQPSK, DH5

Kyocera E4255 Z-Axis, LoCh, QPSK, DH5 120V/60Hz Vert Scan, RED: PK, GRN: AV									
Test Frequency	Meter Reading	Detector	Antenna Factor dB	Path Loss/Gain dB	Level dBuV/m	BandEdge PK Limit	Margin	Height [cm]	Polarity
2402.012	62.42	PK	21.8	4.26	88.48	-	-	100	Vert
2399.91	40.62	PK	21.8	4.31	66.73	-	-	100	Vert
2398.949	27.56	PK	21.8	4.34	53.7	-	-	150	Vert
2390.18	26.2	PK	21.8	4.48	52.48	-	-	150	Vert
2389.82	27.36	PK	21.8	4.48	53.64	74	-20.36	100	Vert
2383.153	26	PK	21.8	4.36	52.16	74	-21.84	100	Vert
2372.583	26.4	PK	21.8	4.05	52.25	74	-21.75	150	Vert
Test Frequency	Meter Reading	Detector	Antenna Factor dB	Path Loss/Gain dB	Level dBuV/m	BandEdge AV Limit	Margin	Height [cm]	Polarity
2402.012	56.47	Av	21.8	4.26	82.53	-	-	101	Vert
2399.97	32.96	Av	21.8	4.31	59.07	-	-	101	Vert
2398.468	15.35	Av	21.8	4.35	41.5	-	-	101	Vert
2390.12	14.88	Av	21.8	4.48	41.16	-	-	150	Vert
2389.82	14.83	Av	21.8	4.48	41.11	54	-12.89	150	Vert
2383.003	14.97	Av	21.8	4.36	41.13	54	-12.87	101	Vert
2372.102	15.11	Av	21.8	4.03	40.94	54	-13.06	101	Vert
PK - Peak detector Av - Average detector									

**Figure 10 Radiated Band Edge Compliance Graph**

Low Channel, Vertical, D8PSK, DH5



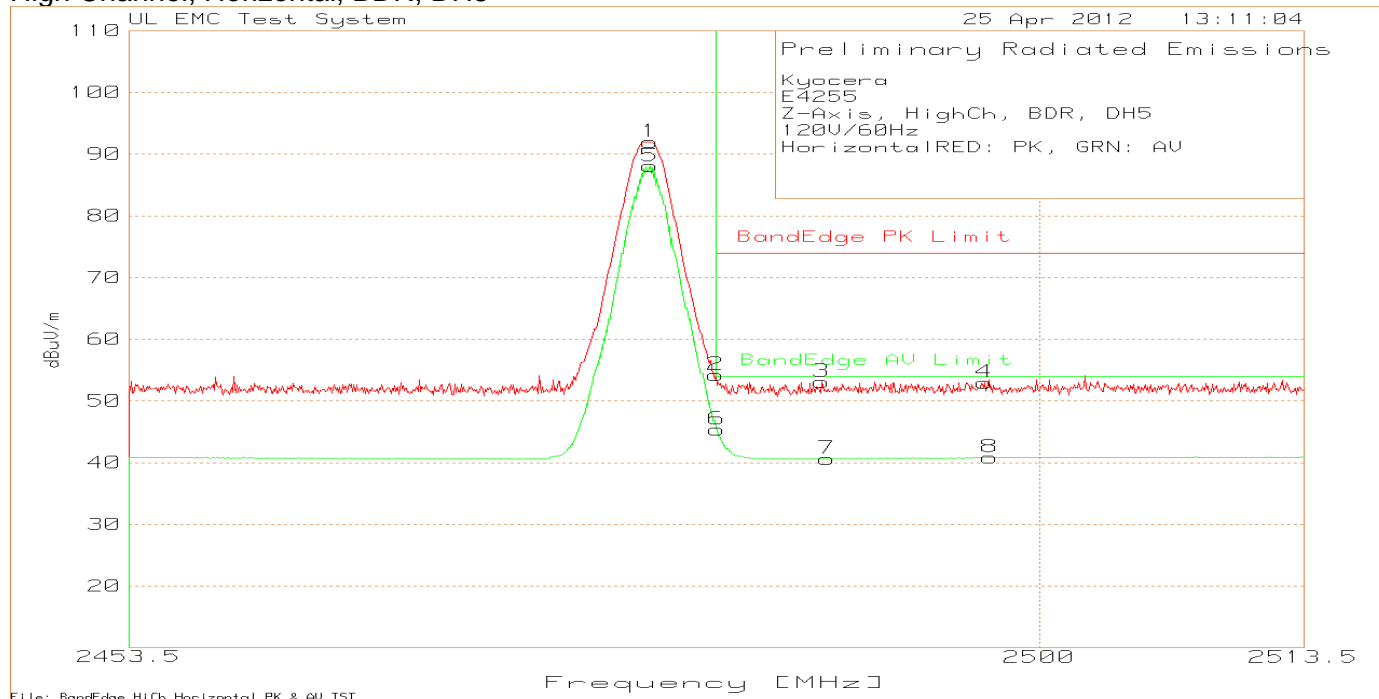
**Table 10 Radiated Band Edge Compliance Data Points**

Low Channel, Vertical, D8PSK, DH5

Kyocera E4255 Z-Axis, LoCh, 8PSK, DH5 120V/60Hz Vert Scan, RED: PK, GRN: AV									
Test Frequency	Meter Reading	Detector	Antenna Factor dB	Path Loss/Gain dB	Level dBuV/m	BandEdge PK Limit	Margin	Height [cm]	Polarity
2402.012	62.48	PK	21.8	4.26	88.54	-	-	100	Vert
2399.97	40.81	PK	21.8	4.31	66.92	-	-	100	Vert
2398.889	26.33	PK	21.8	4.34	52.47	-	-	150	Vert
2390.12	26.31	PK	21.8	4.48	52.59	-	-	150	Vert
2389.94	27.27	PK	21.8	4.48	53.55	74	-20.45	100	Vert
2381.712	27.28	PK	21.8	4.34	53.42	74	-20.58	100	Vert
2372.943	26.71	PK	21.8	4.06	52.57	74	-21.43	150	Vert
Test Frequency	Meter Reading	Detector	Antenna Factor dB	Path Loss/Gain dB	Level dBuV/m	BandEdge AV Limit	Margin	Height [cm]	Polarity
2402.072	55.81	Av	21.8	4.26	81.87	-	-	100	Vert
2399.91	32.11	Av	21.8	4.31	58.22	-	-	100	Vert
2398.889	16.98	Av	21.8	4.34	43.12	-	-	100	Vert
2390.03	14.83	Av	21.8	4.48	41.11	-	-	100	Vert
2389.94	14.84	Av	21.8	4.48	41.12	54	-12.88	150	Vert
2381.712	14.94	Av	21.8	4.34	41.08	54	-12.92	100	Vert
2372.763	15.07	Av	21.8	4.06	40.93	54	-13.07	100	Vert
PK - Peak detector Av - Average detector									

## Figure 11 Radiated Band Edge Compliance Graph

High Channel, Horizontal, BDR, DH5



## Table 11 Radiated Band Edge Compliance Data Points

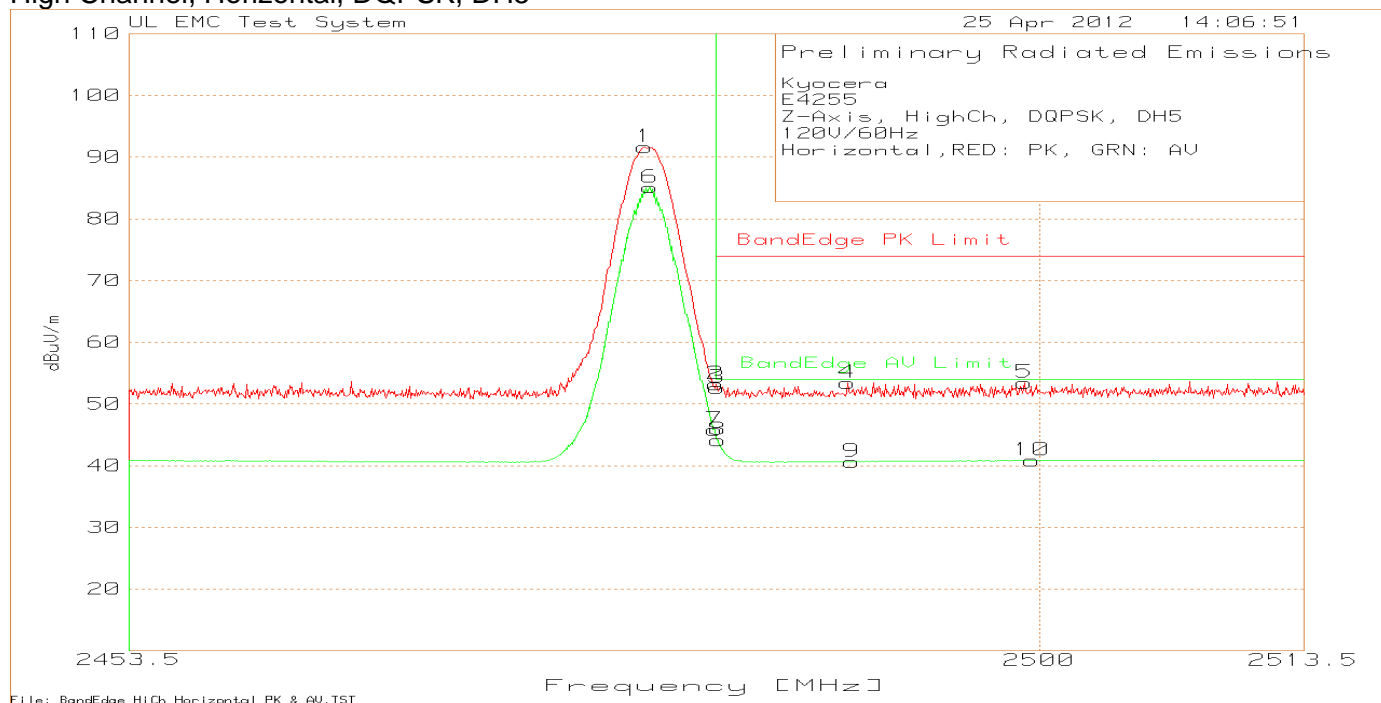
High Channel, Horizontal, BDR, DH5

Kyocera E4255 Z-Axis, HighCh, BDR, DH5 120V/60Hz HorizontalRED: PK, GRN: AV									
Test Frequency	Meter Reading	Detector	Antenna Factor dB	Path Loss/Gain dB	Level dBuV/m	BandEdge PK Limit	Margin	Height [cm]	Polarity
2480.137	66.19	PK	22	3.77	91.96	-	-	100	Horz
2483.47	28.37	PK	22.1	3.77	54.24	-	-	100	Horz
2488.875	27.22	PK	22.1	3.79	53.11	74	-20.89	100	Horz
2497.224	26.93	PK	22.1	3.92	52.95	74	-21.05	100	Horz
Test Frequency	Meter Reading	Detector	EMCO3161-02 S/N 99061052 3m UL [dB]	BOMS Factor [dB]	dBuV/m	BandEdge AV Limit	Margin	Height [cm]	Polarity
2480.107	62.29	Av	22	3.77	88.06	-	-	100	Horz
2483.53	19.54	Av	22.1	3.77	45.41	54	-8.59	100	Horz
2489.146	14.78	Av	22.1	3.79	40.67	54	-13.33	100	Horz
2497.464	14.8	Av	22.1	3.92	40.82	54	-13.18	150	Horz
PK - Peak detector Av - Average detector									



**Figure 12 Radiated Band Edge Compliance Graph**

High Channel, Horizontal, DQPSK, DH5



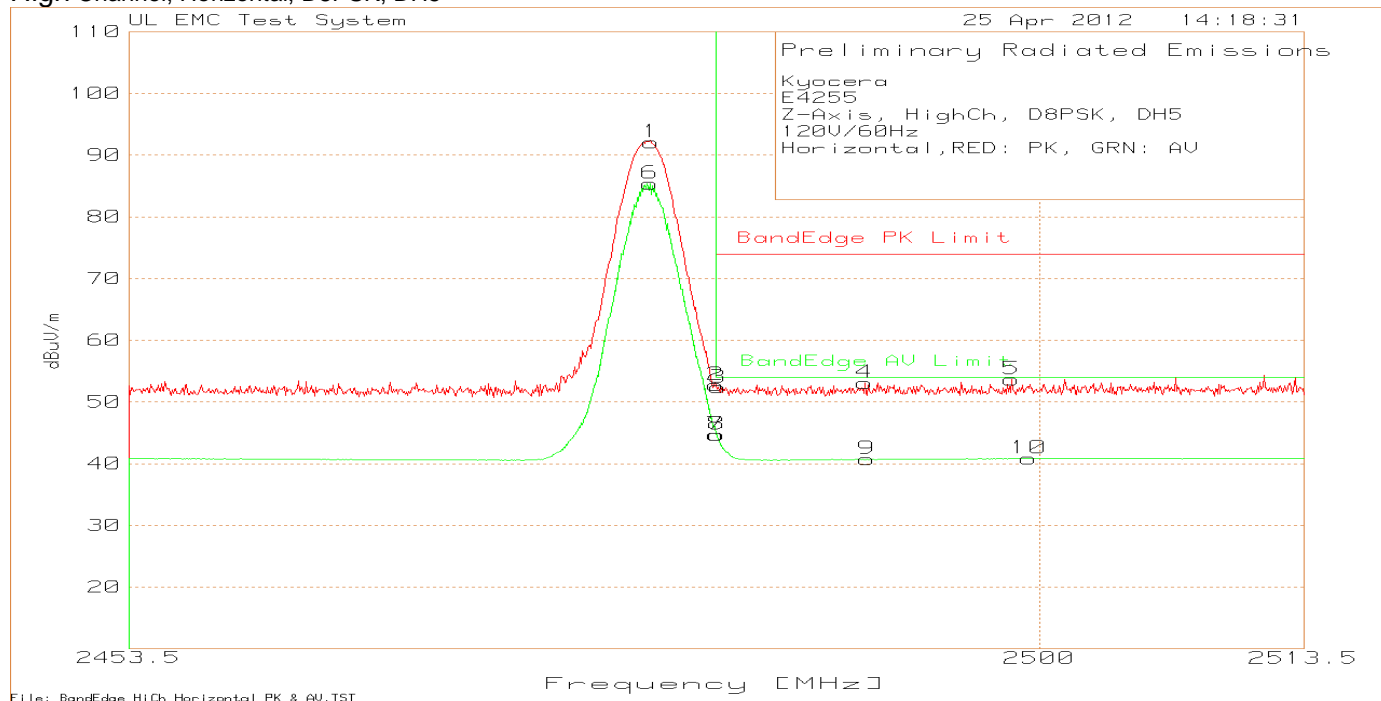
**Table 12 Radiated Band Edge Compliance Data Points**

High Channel, Horizontal, DQPSK, DH5

Kyocera E4255 Z-Axis, HighCh, DQPSK, DH5 120V/60Hz Horizontal, RED: PK, GRN: AV									
Test Frequency	Meter Reading	Detector	Antenna Factor dB	Path Loss/Gain dB	Level dBuV/m	BandEdge PK Limit	Margin	Height [cm]	Polarity
2479.836	65.85	PK	22	3.77	91.62	-	-	100	Horz
2483.47	27.36	PK	22.1	3.77	53.23	-	-	100	Horz
2483.53	26.79	PK	22.1	3.77	52.66	74	-21.34	100	Horz
2490.197	27.51	PK	22.1	3.81	53.42	74	-20.58	150	Horz
2499.266	27.41	PK	22.1	3.93	53.44	74	-20.56	150	Horz
Test Frequency	Meter Reading	Detector	Antenna Factor dB	Path Loss/Gain dB	Level dBuV/m	BandEdge AV Limit	Margin	Height [cm]	Polarity
2480.107	59.34	Av	22	3.77	85.11	-	-	100	Horz
2483.41	20.01	Av	22.1	3.77	45.88	-	-	100	Horz
2483.59	18.32	Av	22.1	3.77	44.19	54	-9.81	100	Horz
2490.437	14.76	Av	22.1	3.81	40.67	54	-13.33	100	Horz
2499.626	14.82	Av	22.1	3.93	40.85	54	-13.15	100	Horz
PK - Peak detector Av - Average detector									

**Figure 13 Radiated Band Edge Compliance Graph**

High Channel, Horizontal, D8PSK, DH5

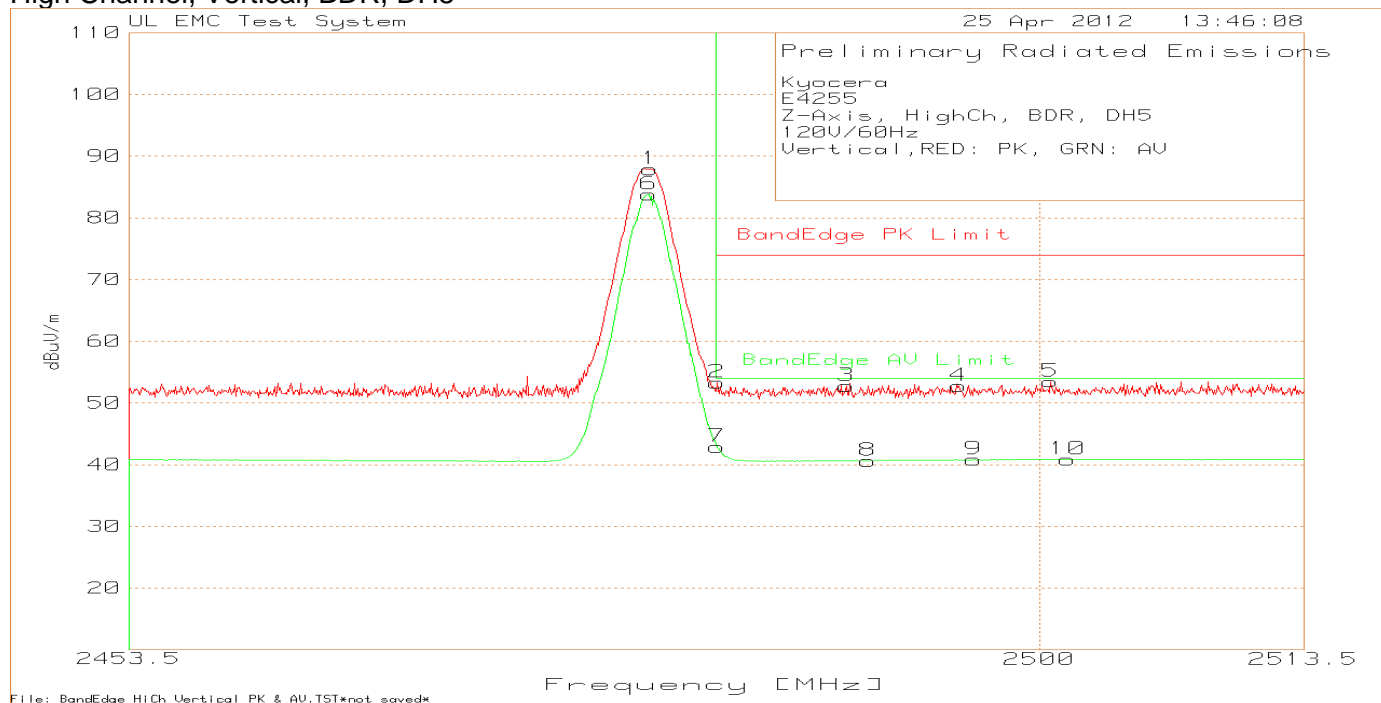


**Table 13 Radiated Band Edge Compliance Data Points**

High Channel, Horizontal, D8PSK, DH5

Kyocera E4255 Z-Axis, HighCh, D8PSK, DH5 120V/60Hz Horizontal, RED: PK, GRN: AV									
Test Frequency	Meter Reading	Detector	Antenna Factor dB	Path Loss/Gain dB	Level dBuV/m	BandEdge PK Limit	Margin	Height [cm]	Polarity
2480.167	66.34	PK	22	3.77	92.11	-	-	100	Horz
2483.47	26.86	PK	22.1	3.77	52.73	-	-	100	Horz
2483.59	26.49	PK	22.1	3.77	52.36	74	-21.64	100	Horz
2491.098	27.15	PK	22.1	3.82	53.07	74	-20.93	150	Horz
2498.605	27.63	PK	22.1	3.93	53.66	74	-20.34	150	Horz
Test Frequency	Meter Reading	Detector	Antenna Factor dB	Path Loss/Gain dB	dBuV/m	BandEdge AV Limit	Margin	Height [cm]	Polarity
2480.107	59.58	Av	22	3.77	85.35	-	-	99	Horz
2483.47	18.86	Av	22.1	3.77	44.73	-	-	99	Horz
2483.53	18.84	Av	22.1	3.77	44.71	54	-9.29	99	Horz
2491.218	14.79	Av	22.1	3.83	40.72	54	-13.28	150	Horz
2499.446	14.82	Av	22.1	3.93	40.85	54	-13.15	99	Horz
PK - Peak detector Av - Average detector									

**Figure 14 Radiated Band Edge Compliance Graph**  
High Channel, Vertical, BDR, DH5



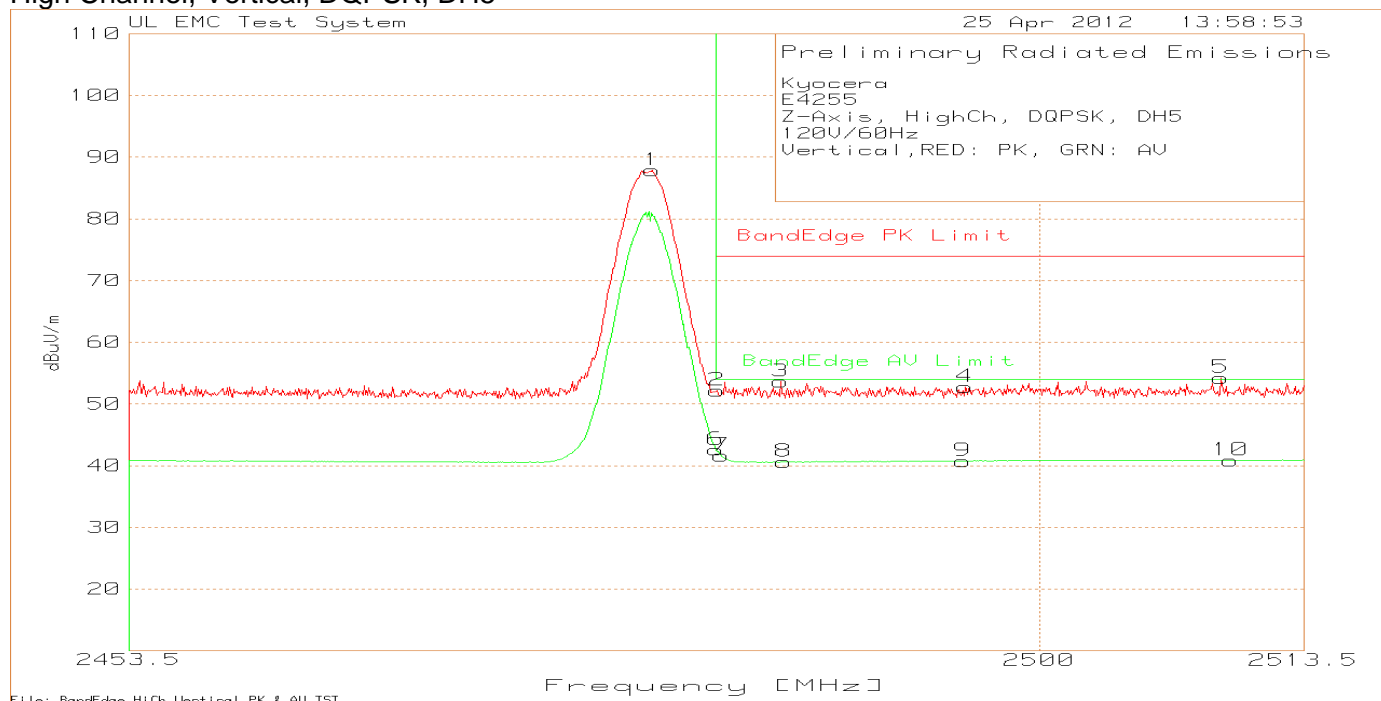
**Table 14 Radiated Band Edge Compliance Data Points**

High Channel, Vertical, BDR, DH5

Kyocera E4255 Z-Axis, HighCh, BDR, DH5 120V/60Hz Vertical, RED: PK, GRN: AV									
Test Frequency	Meter Reading	Detector	Antenna Factor dB	Path Loss/Gain dB	Level dBuV/m	BandEdge PK Limit	Margin	Height [cm]	Polarity
2480.107	62.14	PK	22	3.77	87.91	-	-	100	Vert
2483.53	27.42	PK	22.1	3.77	53.29	74	-20.71	100	Vert
2490.137	26.89	PK	22.1	3.81	52.8	74	-21.2	150	Vert
2495.902	26.77	PK	22.1	3.9	52.77	74	-21.23	100	Vert
2500.587	27.46	PK	22.1	3.93	53.49	74	-20.51	100	Vert
Test Frequency	Meter Reading	Detector	Antenna Factor dB	Path Loss/Gain dB	Level dBuV/m	BandEdge AV Limit	Margin	Height [cm]	Polarity
2480.047	58.06	Av	22	3.77	83.83	-	-	100	Vert
2483.53	16.99	Av	22.1	3.77	42.86	54	-11.14	100	Vert
2491.278	14.75	Av	22.1	3.83	40.68	54	-13.32	100	Vert
2496.683	14.8	Av	22.1	3.91	40.81	54	-13.19	150	Vert
2501.428	14.82	Av	22.1	3.92	40.84	54	-13.16	150	Vert
PK - Peak detector Av - Average detector									

**Figure 15 Radiated Band Edge Compliance Graph**

High Channel, Vertical, DQPSK, DH5



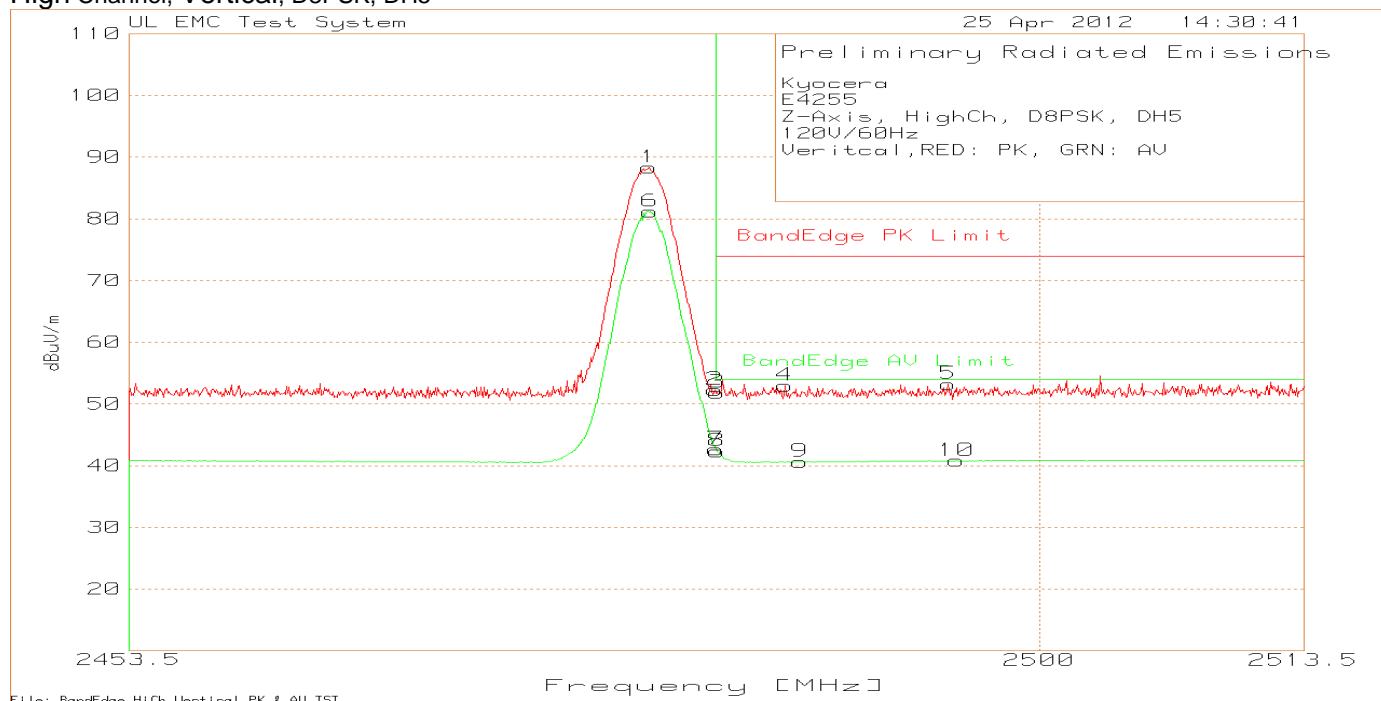
**Table 15 Radiated Band Edge Compliance Data Points**

High Channel, Vertical, DQPSK, DH5

Kyocera E4255 Z-Axis, HighCh, DQPSK, DH5 120V/60Hz Vertical, RED: PK, GRN: AV									
Test Frequency	Meter Reading	Detector	Antenna Factor dB	Path Loss/Gain dB	Level dBuV/m	BandEdge PK Limit	Margin	Height [cm]	Polarity
2480.227	62.07	PK	22	3.77	87.84	-	-	100	Vert
2483.53	26.3	PK	22.1	3.77	52.17	74	-21.83	100	Vert
2486.773	27.74	PK	22.1	3.77	53.61	74	-20.39	100	Vert
2496.203	26.71	PK	22.1	3.9	52.71	74	-21.29	150	Vert
2509.296	28.24	PK	22.1	3.9	54.24	74	-19.76	150	Vert
Test Frequency	Meter Reading	Detector	Antenna Factor dB	Path Loss/Gain dB	Level dBuV/m	BandEdge AV Limit	Margin	Height [cm]	Polarity
2483.47	16.74	Av	22.1	3.77	42.61	-	-	100	Vert
2483.77	15.73	Av	22.1	3.77	41.6	54	-12.4	100	Vert
2486.953	14.74	Av	22.1	3.77	40.61	54	-13.39	100	Vert
2496.083	14.76	Av	22.1	3.9	40.76	54	-13.24	100	Vert
2509.746	14.85	Av	22.1	3.91	40.86	54	-13.14	150	Vert
PK - Peak detector Av - Average detector									

**Figure 16 Radiated Band Edge Compliance Graph**

High Channel, Vertical, D8PSK, DH5



**Table 16 Radiated Band Edge Compliance Data Points**

High Channel, Vertical, D8PSK, DH5

Kyocera E4255 Z-Axis, HighCh, D8PSK, DH5 120V/60Hz Vertical, RED: PK, GRN: AV									
Test Frequency	Meter Reading	Detector	Antenna Factor dB	Path Loss/Gain dB	Level dBuV/m	BandEdge PK Limit	Margin	Height [cm]	Polarity
2480.047	62.52	PK	22	3.77	88.29	-	-	100	Vert
2483.41	26.4	PK	22.1	3.77	52.27	-	-	100	Vert
2483.53	25.99	PK	22.1	3.77	51.86	74	-22.14	100	Vert
2487.014	27.07	PK	22.1	3.77	52.94	74	-21.06	150	Vert
2495.362	27.19	PK	22.1	3.89	53.18	74	-20.82	150	Vert
Test Frequency	Meter Reading	Detector	Antenna Factor dB	Path Loss/Gain dB	Level dBuV/m	BandEdge AV Limit	Margin	Height [cm]	Polarity
2480.107	55.38	Av	22	3.77	81.15	-	-	100	Vert
2483.47	16.75	Av	22.1	3.77	42.62	-	-	100	Vert
2483.53	16.51	Av	22.1	3.77	42.38	54	-11.62	100	Vert
2487.764	14.73	Av	22.1	3.77	40.6	54	-13.4	100	Vert
2495.782	14.8	Av	22.1	3.9	40.8	54	-13.2	100	Vert
PK - Peak detector Av - Average detector									

**4.2 Test Conditions and Results – RADIATED EMISSIONS (Receive and Digital)**

Test Description	Measurements were made in a 10-meter semi-anechoic chamber that complies to CISPR 16/ANSI C63.4. Preliminary (peak) measurements were performed at an antenna to EUT separation distance of 10 and 3 meter. The EUT was rotated 360° about its azimuth with the receive antenna located at various heights in both horizontal and vertical polarities. Final measurements (quasi-peak or average as noted) were then performed by rotating the EUT 360° and adjusting the receive antenna height from 1 to 4-meters. All frequencies were investigated in both horizontal and vertical antenna polarity, where applicable.	
Basic Standard	FCC Part 15, Subpart B	
UL LPG	80-EM-S0029	
	Frequency range	Measurement Point
Fully configured sample scanned over the following frequency range	30MHz – 1GHz	10m measurement distance
	1GHz – 13GHz	3m measurement distance
<b>Limits - Class B</b>		
Frequency (MHz)	Limit (dBμV/m)	
	Quasi-Peak	Average
30 – 88	29.54	NA
88 – 216	33.06	NA
216 – 960	35.56	NA
960 - 1000	43.52	NA
Above 1000	NA	54 (at 3-meter)
Supplementary information: For frequency range of 30MHz to 1GHz the limit was extrapolated to actual measurement distance of 10 meters.		

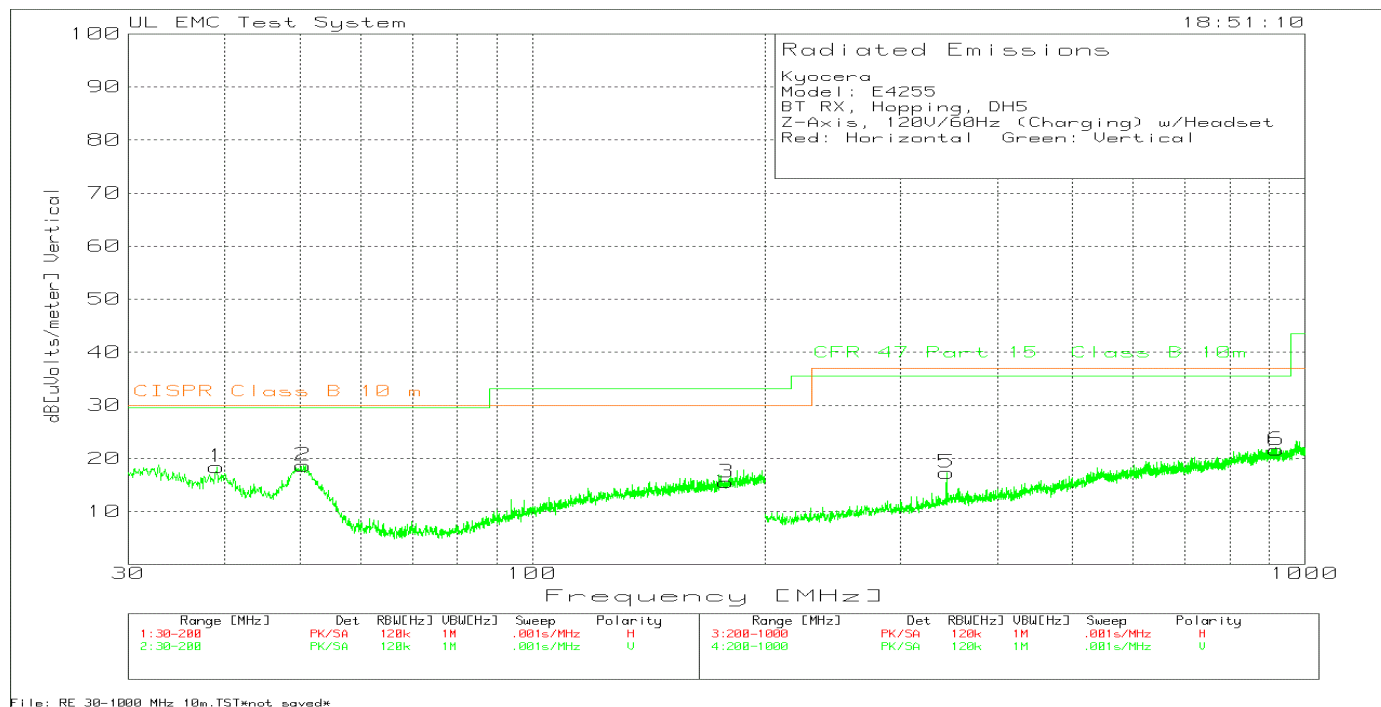
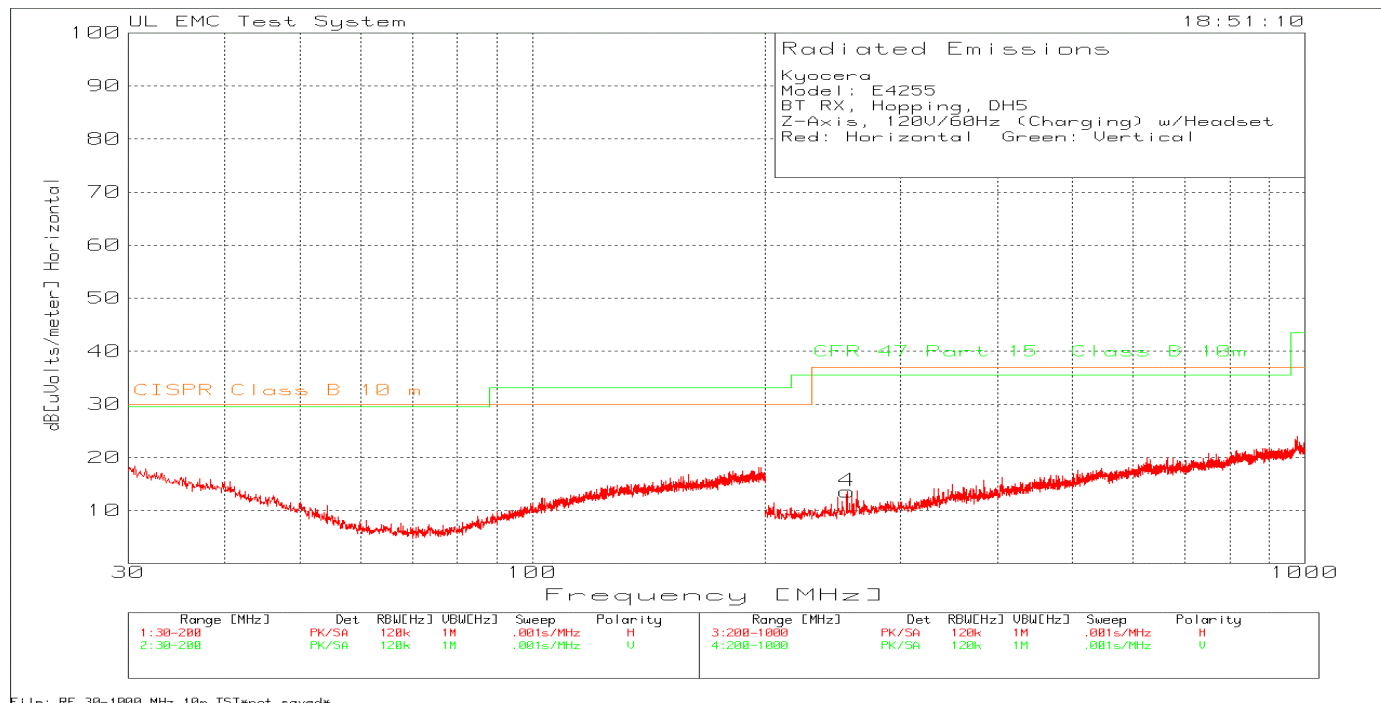
**Table 17 Radiated Emissions EUT Configuration Settings**

Power Interface Mode #	EUT Configurations Mode #	EUT Operation Mode #
1	1	3
Supplementary information: None		

**Table 18 Radiated Emissions Test Equipment**

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due Date
EMI Test Receiver	Rohde & Schwarz	ESU	EMC4323	Dec 28 2011	Dec 31 2012
Bicon Antenna	Chase	VBA6106A	EMC4078	20120117	20130131
Log-P Antenna	Chase	UPA6109	EMC4313	20110929	20120629
Spectrum Analyzer	Rhode & Schwarz	FSEK	EMC4182	20111227	20121231
Antenna Array	UL	BOMS	EMC4276	20111227	20121231

Figure 18 Radiated Emissions Graph 30MHz-1GHz



**Table 19 Radiated Emissions Data Points 30MHz – 1GHz**

Kyocera

Model: E4255

BT RX, Hopping, DH5

Z-Axis, 120V/60Hz (Charging) w/Headset

Red: Horizontal Green: Vertical

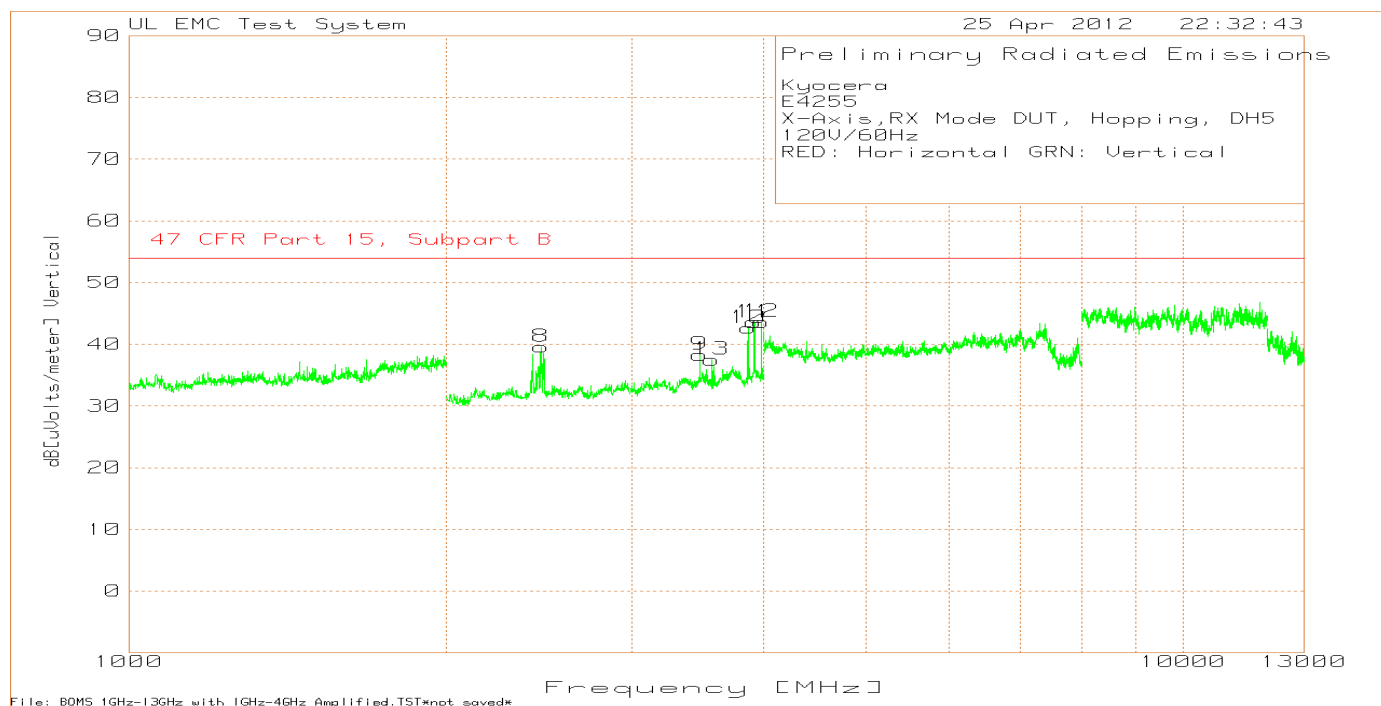
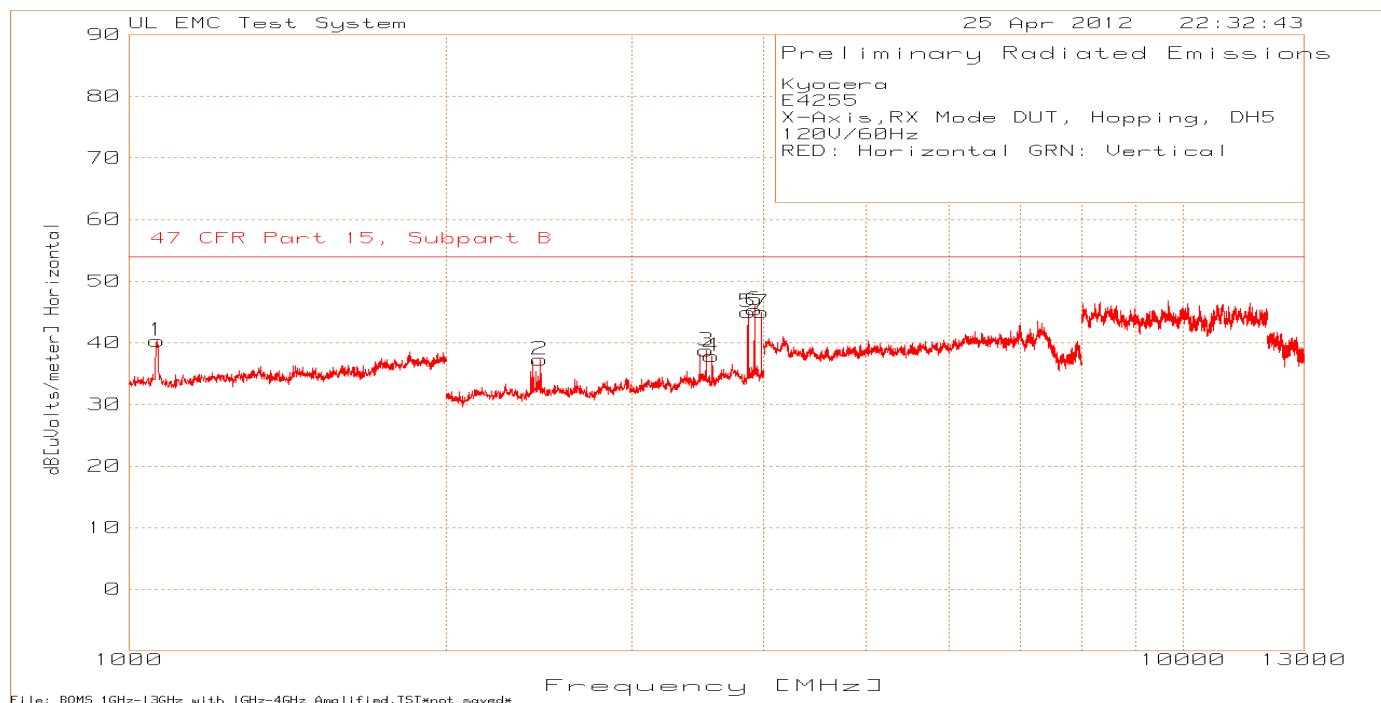
Test Frequency	Meter Reading	Detector	Antenna Factor dB	Path Loss/Gain dB	Level dBuV/m	CFR 47 Part 15 Class B 10m	Margin	CISPR Class B 10 m	Margin	Height [cm]	Polarity
39.0905	33.17	PK	14.6	-29.4	18.37	29.6	-11.23	30	-11.63	101	Vert
50.5597	38.22	PK	9.7	-29.3	18.62	29.6	-10.98	30	-11.38	101	Vert
178.5057	29.02	PK	15.7	-29.2	15.52	33.1	-17.58	30	-14.48	101	Vert
255.4297	34.56	PK	12.1	-33.1	13.56	35.6	-22.04	37	-23.44	299	Horz
343.6376	35.47	PK	14.5	-32.6	17.37	35.6	-18.23	37	-19.63	100	Vert
920.5863	30.73	PK	22.7	-31.8	21.63	35.6	-13.97	37	-15.37	399	Vert

PK - Peak detector

QP - Quasi-Peak detector



**Figure 19 Radiated Emissions Graph 1GHz-13GHz**



**Table 20 Radiated Emissions Data Points 1GHz-13GHz**

Kyocera E4255 X-Axis,RX Mode DUT, Hopping, DH5 120V/60Hz RED: Horizontal GRN: Vertical									
Test Frequency	Meter Reading	Detector	Antenna Factor dB	Path Loss/Gain dB	Level dBuV/m	47 CFR Part 15, Subpart B	Margin	Height [cm]	Polarity
1064.064	72.78	PK	24.2	-56.63	40.35	54	-13.65	101	Horz
2456.456	67.29	PK	22	-51.98	37.31	54	-16.69	99	Horz
3527.528	66.11	PK	23.4	-50.77	38.74	54	-15.26	99	Horz
3573.574	66.41	PK	23.3	-51.88	37.83	54	-16.17	99	Horz
3863.864	73.14	PK	23.9	-52.09	44.95	54	-9.05	99	Horz
3919.92	73.15	PK	23.9	-51.66	45.39	54	-8.61	99	Horz
3977.978	72.65	PK	24.3	-52.01	44.94	54	-9.06	99	Horz
2458.458	69.64	PK	22	-52.03	39.61	54	-14.39	101	Vert
3479.479	65.9	PK	23.5	-51.05	38.35	54	-15.65	150	Vert
3863.864	70.86	PK	23.9	-52.09	42.67	54	-11.33	150	Vert
3915.916	71.31	PK	23.9	-51.63	43.58	54	-10.42	150	Vert
3977.978	71.39	PK	24.3	-52.01	43.68	54	-10.32	101	Vert
3573.574	66.14	PK	23.3	-51.88	37.56	54	-16.44	150	Vert
PK - Peak detector									

**4.3 Test Conditions and Results – MAINS TERMINAL – CONDUCTED EMISSIONS**

Test Description	Measurements were made on a ground plane. All power was connected to the system through Artificial Mains Network (AMN). Conducted voltage measurements on mains lines were made at the output of the AMN.	
Basic Standard	FCC Part 15, Subpart B	
UL LPG	80-EM-S0026	
	Frequency range on each side of line	Measurement Point
Fully configured sample scanned over the following frequency range	150kHz to 30MHz	Mains
<b>Limits - Class B</b>		
Frequency (MHz)	Limit (dB $\mu$ V)	
	Quasi-Peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50
Supplementary information: Changing the operating mode between transmit, receive or just powered on does not change the emission profile.		

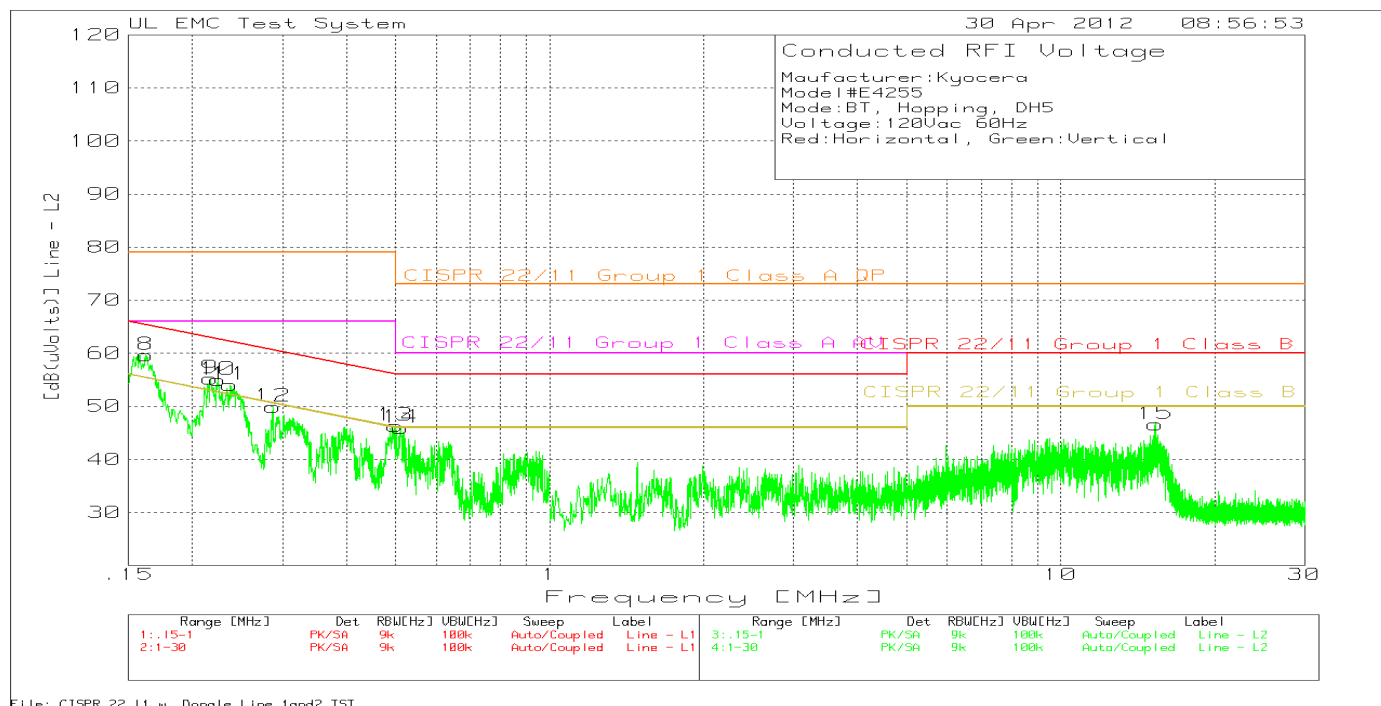
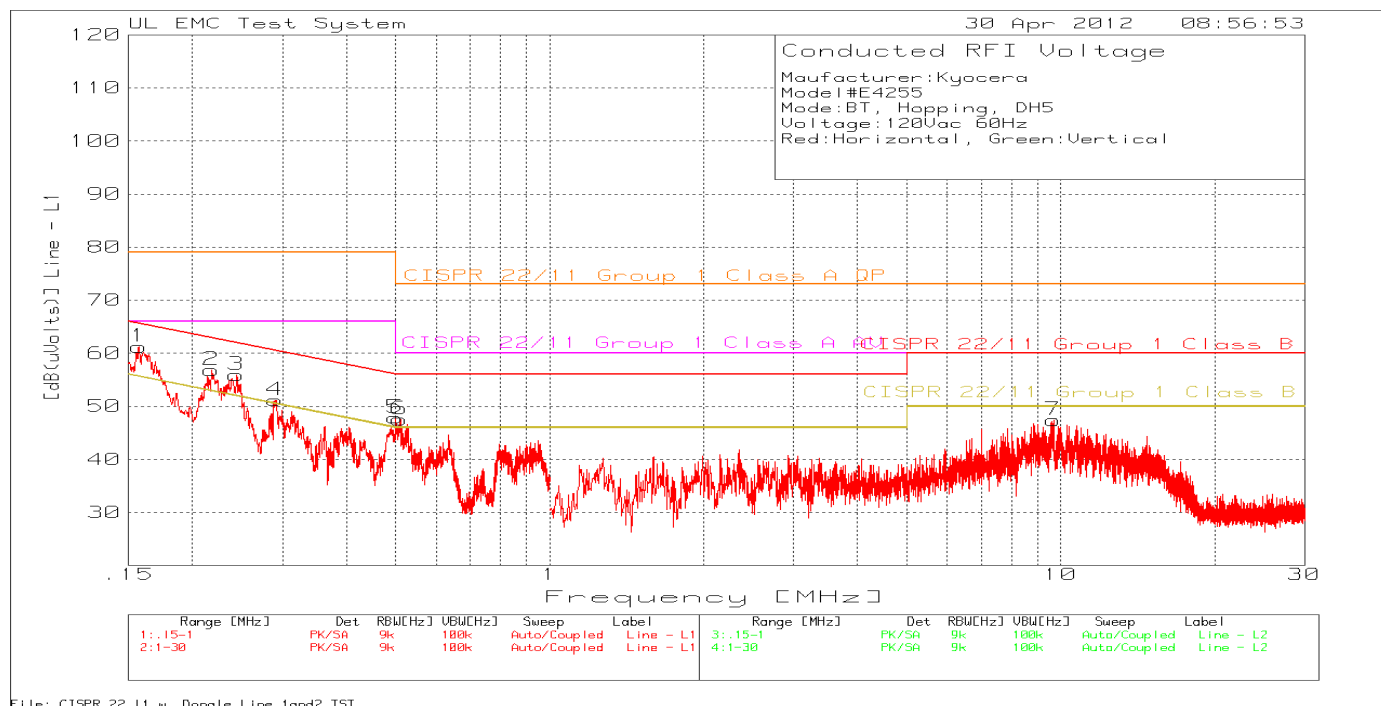
**Table 21 Conducted Emissions EUT Configuration Settings**

Power Interface Mode #	EUT Configurations Mode #	EUT Operation Mode #
1	1	3
Supplementary information: None		

**Table 22 Conducted Emissions Test Equipment**

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due Date
EMI Test Receiver	Rohde & Schwarz	ESCI	EMC4328	Dec 28 2011	Dec 31 2012
Transient Limiter	Electro-Metrics	EM7600-2	EMC4224	N/A	N/A
HighPass Filter	Solar Electronics	2803-150	885551	N/A	N/A
Attenuator	HP	8494B	2831A008 38	N/A	N/A
LISN - L1	Solar	8602-50-TS-50-N	EMC4052	Jan 6 2012	Jan 6 2013
LISN - L2	Solar	8602-50-TS-50-N	EMC4064	Jan 6 2012	Jan 6 2013

Figure 21 Conducted Emissions Graph



**Table 23 Conducted Emissions Data Points**

Manufacturer:Kyocera

Model#E4255

Mode:BT, Hopping, DH5

Voltage:120Vac 60Hz

Red:Horizontal, Green:Vertical

Test	Meter	Transducer	Gain/Loss	Level	Limit:1	2	3	4	5	6
No. Frequency	Reading	Factor	Factor	[dB(uVolts)]						
[MHz]	[dB(uV)]	[dB]	[dB]							
=====										
Line - L1										
1 .15701	48.41 PK	.1	12.7	61.21	79	66	65.6	55.6	-	-
			Margin [dB]		-17.79	-4.79	-4.39	5.61	-	-
2 .21816	45.38 PK	.1	11.4	56.88	79	66	62.9	52.9	-	-
			Margin [dB]		-22.12	-9.12	-6.02	3.98	-	-
3 .24407	44.67 PK	0	11.3	55.97	79	66	62	52	-	-
			Margin [dB]		-23.03	-10.03	-6.03	3.97	-	-
4 .29121	40.3 PK	0	10.9	51.2	79	66	60.5	50.5	-	-
			Margin [dB]		-27.8	-14.8	-9.3	.7	-	-
5 .49973	37.18 PK	0	10.7	47.88	79	66	56	46	-	-
			Margin [dB]		-31.12	-18.12	-8.12	1.88	-	-
6 .50843	36.9 PK	0	10.7	47.6	73	60	56	46	-	-
			Margin [dB]		-25.4	-12.4	-8.4	1.6	-	-
7 9.67429	36.37 PK	.1	11	47.47	73	60	60	50	-	-
			Margin [dB]		-25.53	-12.53	-12.53	-2.53	-	-
Line - L2										
8 .16232	46.9 PK	.1	12.6	59.6	79	66	65.3	55.3	-	-
			Margin [dB]		-19.4	-6.4	-5.7	4.3	-	-
9 .21689	43.67 PK	.1	11.5	55.27	79	66	62.9	52.9	-	-
			Margin [dB]		-23.73	-10.73	-7.63	2.37	-	-
10 .22453	43.52 PK	.1	11.4	55.02	79	66	62.6	52.6	-	-
			Margin [dB]		-23.98	-10.98	-7.58	2.42	-	-
11 .23727	42.6 PK	.1	11.4	54.1	79	66	62.2	52.2	-	-
			Margin [dB]		-24.9	-11.9	-8.1	1.9	-	-
12 .28738	38.97 PK	0	11	49.97	79	66	60.6	50.6	-	-
			Margin [dB]		-29.03	-16.03	-10.63	-.63	-	-
13 .49824	35.63 PK	0	10.7	46.33	79	66	56	46	-	-
			Margin [dB]		-32.67	-19.67	-9.67	.33	-	-
14 .51034	35.22 PK	0	10.7	45.92	73	60	56	46	-	-
			Margin [dB]		-27.08	-14.08	-10.08	-.08	-	-
15 15.29899	35.25 PK	.2	11.2	46.65	73	60	60	50	-	-
			Margin [dB]		-26.35	-13.35	-13.35	-3.35	-	-

LIMIT 1: CISPR 22/11 Group 1 Class A QP

LIMIT 2: CISPR 22/11 Group 1 Class A AV

LIMIT 3: CISPR 22/11 Group 1 Class B QP

LIMIT 4: CISPR 22/11 Group 1 Class B AV

Manufacturer:Kyocera

Model#E4255

Mode:BT, Hopping, DH5

Voltage:120Vac 60Hz

Red:Horizontal, Green:Vertical

Test	Meter	Transducer	Gain/Loss	Level	Limit:1	2	3	4	5	6
Frequency	Reading	Factor	Factor	[dB(uVolts)]						
[MHz]	[dB(uV)]	[dB]	[dB]							
=====										
Line - L1										
.15747	38.33 QP	.1	12.7	51.13	79	66	65.6	55.6	-	-
			Margin [dB]:		-27.87	-14.87	-14.47	-4.47	-	-
.21837	33.14 QP	.1	11.4	44.64	79	66	62.88	52.88	-	-
			Margin [dB]:		-34.36	-21.36	-18.24	-8.24	-	-
.24246	33.31 QP	0	11.3	44.61	79	66	62.01	52.01	-	-
			Margin [dB]:		-34.39	-21.39	-17.4	-7.4	-	-
.29196	30.08 QP	0	10.9	40.98	79	66	60.47	50.47	-	-
			Margin [dB]:		-38.02	-25.02	-19.49	-9.49	-	-
.49897	28.55 QP	0	10.7	39.25	79	66	56.02	46.02	-	-
			Margin [dB]:		-39.75	-26.75	-16.77	-6.77	-	-
.50821	28.15 QP	0	10.7	38.85	73	60	56	46	-	-
			Margin [dB]:		-34.15	-21.15	-17.15	-7.15	-	-
9.66279	26.24 QP	.1	11	37.34	73	60	60	50	-	-
			Margin [dB]:		-35.66	-22.66	-22.66	-12.66	-	-
Line - L2										
.16275	37.91 QP	.1	12.5	50.51	79	66	65.32	55.32	-	-
			Margin [dB]:		-28.49	-15.49	-14.81	-4.81	-	-
.21762	33.02 QP	.1	11.5	44.62	79	66	62.91	52.91	-	-
			Margin [dB]:		-34.38	-21.38	-18.29	-8.29	-	-
.22462	32.68 QP	.1	11.4	44.18	79	66	62.65	52.65	-	-
			Margin [dB]:		-34.82	-21.82	-18.47	-8.47	-	-
.23632	33.31 QP	.1	11.4	44.81	79	66	62.22	52.22	-	-
			Margin [dB]:		-34.19	-21.19	-17.41	-7.41	-	-
.28684	27.36 QP	0	11	38.36	79	66	60.62	50.62	-	-
			Margin [dB]:		-40.64	-27.64	-22.26	-12.26	-	-
.49732	27.39 QP	0	10.7	38.09	79	66	56.04	46.04	-	-
			Margin [dB]:		-40.91	-27.91	-17.95	-7.95	-	-
.50898	25.03 QP	0	10.7	35.73	73	60	56	46	-	-
			Margin [dB]:		-37.27	-24.27	-20.27	-10.27	-	-
15.2992	23.6 QP	.2	11.2	35	73	60	60	50	-	-
			Margin [dB]:		-38	-25	-25	-15	-	-

NOTE: "+" - Indicates an emission level in excess of the applicable limit (s).

PK - Peak detector

QP - Quasi-Peak detector

Av - average detection

LIMIT 1: CISPR 22/11 Group 1 Class A QP

LIMIT 2: CISPR 22/11 Group 1 Class A AV

LIMIT 3: CISPR 22/11 Group 1 Class B QP

LIMIT 4: CISPR 22/11 Group 1 Class B AV

Manufacturer:Kyocera  
 Model#E4255  
 Mode:BT, Hopping, DH5  
 Voltage:120Vac 60Hz  
 Red:Horizontal, Green:Vertical

Test Frequency [MHz]	Meter Reading [dB(uV)]	Transducer Factor [dB]	Gain/Loss Factor [dB]	Level [dB(uVolts)]	Limit:1	2	3	4	5	6
=====										
Line - L1										
.15747	19.34 Av	.1	12.7	32.14	79	66	65.6	55.6	-	-
			Margin [dB]:		-46.86	-33.86	-33.46	-23.46	-	-
.21837	16.72 Av	.1	11.4	28.22	79	66	62.88	52.88	-	-
			Margin [dB]:		-50.78	-37.78	-34.66	-24.66	-	-
.24246	18.15 Av	0	11.3	29.45	79	66	62.01	52.01	-	-
			Margin [dB]:		-49.55	-36.55	-32.56	-22.56	-	-
.29196	12.08 Av	0	10.9	22.98	79	66	60.47	50.47	-	-
			Margin [dB]:		-56.02	-43.02	-37.49	-27.49	-	-
.49897	20.4 Av	0	10.7	31.1	79	66	56.02	46.02	-	-
			Margin [dB]:		-47.9	-34.9	-24.92	-14.92	-	-
.50821	18.16 Av	0	10.7	28.86	73	60	56	46	-	-
			Margin [dB]:		-44.14	-31.14	-27.14	-17.14	-	-
9.66279	15.45 Av	.1	11	26.55	73	60	60	50	-	-
			Margin [dB]:		-46.45	-33.45	-33.45	-23.45	-	-
Line - L2										
.16275	17.35 Av	.1	12.5	29.95	79	66	65.32	55.32	-	-
			Margin [dB]:		-49.05	-36.05	-35.37	-25.37	-	-
.21762	13.91 Av	.1	11.5	25.51	79	66	62.91	52.91	-	-
			Margin [dB]:		-53.49	-40.49	-37.4	-27.4	-	-
.22462	15.22 Av	.1	11.4	26.72	79	66	62.65	52.65	-	-
			Margin [dB]:		-52.28	-39.28	-35.93	-25.93	-	-
.23632	15.69 Av	.1	11.4	27.19	79	66	62.22	52.22	-	-
			Margin [dB]:		-51.81	-38.81	-35.03	-25.03	-	-
.28684	7.72 Av	0	11	18.72	79	66	60.62	50.62	-	-
			Margin [dB]:		-60.28	-47.28	-41.9	-31.9	-	-
.49732	17.48 Av	0	10.7	28.18	79	66	56.04	46.04	-	-
			Margin [dB]:		-50.82	-37.82	-27.86	-17.86	-	-
.50898	13.95 Av	0	10.7	24.65	73	60	56	46	-	-
			Margin [dB]:		-48.35	-35.35	-31.35	-21.35	-	-
15.2992	8.62 Av	.2	11.2	20.02	73	60	60	50	-	-
			Margin [dB]:		-52.98	-39.98	-39.98	-29.98	-	-

NOTE: "+" - Indicates an emission level in excess of the  
 applicable limit (s).

PK - Peak detector  
 QP - Quasi-Peak detector  
 Av - average detection

LIMIT 1: CISPR 22/11 Group 1 Class A QP  
 LIMIT 2: CISPR 22/11 Group 1 Class A AV  
 LIMIT 3: CISPR 22/11 Group 1 Class B QP  
 LIMIT 4: CISPR 22/11 Group 1 Class B AV

## Appendix A

### Accreditations and Authorizations



NVLAP Lab code: 100414-0

NVLAP: The National Institute of Standards and Technology (NIST) administers the National Voluntary Laboratory Accreditation Program (NVLAP). NVLAP is comprised of laboratory accreditation programs (LAPs) which are established on the basis of requests and demonstrated need. Each LAP includes specific calibration and/or test standards and related methods and protocols assembled to satisfy the unique needs for accreditation in a field of testing or calibration. NVLAP accredits public and private laboratories based on evaluation of their technical qualifications and competence to carry out specific calibrations or tests. Accreditation criteria are established in accordance with the U.S. Code of Federal Regulations (CFR, Title 15, Part 285), NVLAP Procedures and General Requirements, and encompass the requirements of ISO/IEC 17025. For a full scope listing see <http://ts.nist.gov/standards/scopes/1004140.htm>



FCC: Details of the measurement facilities used for these tests have been filed with the Federal Communications Commission's Laboratory in Columbia, Maryland (Ref. No. 91044).



Industry Canada Industrie Canada

Industry of Canada: Accredited by Industry Canada for performance of radiated measurements. Our test site complies with RSP 100, Issue 7, Section 3.3. File #: IC 2180



VCCI: Accepted as an Associate Member to the VCCI. The measurement facilities detailed in this test report have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. Registration Nos.: Radiated Emissions R-621, Conducted Emissions C-642.





ICASA: ICASA (Independent Communications Authority of South Africa) has appointed UL as a Designated Test Laboratory to test Telecommunications equipment for type approval in compliance with CISPR 22 to assist in fulfilling its mandate under section 54(1) of the Telecommunications Act, 1996 (Act 103 of 1996).



NIST/CAB: Validated by the European Commission as a U.S. Conformity Assessment Body (CAB) of the U.S.-EU Mutual Recognition Agreement (MRA) for the Electromagnetic Compatibility - Council Directive 2004/108/EC, Annex III (2-3). Also validated for the Telecommunication Equipment-Council Directive 99/5/EC, Annex III and IV, Identification Number: 0983.

NIST/CAB: Provisioned to act as a U.S. Conformity Assessment Body (CAB) under Appendix B, Phase I Procedures, of the Asia Pacific Economic Cooperation (APEC) MRA between the American Institute in Taiwan (AIT) and the United States. Our laboratory is considered qualified to test equipment subject to the applicable EMC regulations of the Chinese Taipei Bureau of Standards, Metrology and Inspection (BSMI) which require testing to CNS 13438 (CISPR 22).

NIST/CAB: Recognized by the Infocomm Development Authority of Singapore (IDA) under the Asia Pacific Economic Cooperation Mutual Recognition Agreement (APEC MRA). Our laboratory is provisionally designated to act as a Conformity Assessment Body (CAB) under Appendix B, Phase I Procedures, of the APEC MRA. Our scope of designation includes IDA TS EMC (CISPR 22), IEC 61000-4-2, -4-3, -4-4, -4-5, and -4-6

