Underwriters Laboratories Inc.
333 Pfingsten Rd.
Northbrook, IL 60062

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(847) 272-8800

Job Number: 10U13596

Date: January 27, 2011

Model: S1310 (Copper)

Electromagnetic Compatibility Test Report

For

Kyocera Wireless Corp.

Test Report Details

Tests Performed By:	**Underwriters Laboratories Inc. 333 Pfingsten Rd. Northbrook, IL 60062**
Tests Performed For:	**Kyocera Wireless Corp. 10300 Campus Point Drive San Diego, CA 92121, USA**
Applicant Contact: Phone: E-mail:	
Test Report Date:	
Product Type:	
Product standards	**FCC Part 15, Subpart C, 15.247 (d)**
Model Number:	**S1310**
Sample Serial Number:	
EUT Category:	**Frequency Hopping Spread Spectrum Transmitter**
Testing Start Date:	**January 24, 2011**
Date Testing Complete:	**January 26, 2011**
Overall Results:	**Compliant**

Report Directory

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 EUT (Equipment Under Test) is a multiband cellphone with Bluetooth transceiver.

1.2 Device Configuration During Test

1.2.1 Equipment Used During Test:

Use	Product Type	Manufacturer	Model	Comments
EUT	Cellphone with Transceiver	Kyocera	S1310	None
AE	Laptop Computer	Dell	PP18L	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	USB / Power	I/O & DC	N	Y	None
2	Headset	Audio	N	N	None
3	Laptop PS	AC/DC	N	N	PS Model: PA-1900-02D

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:

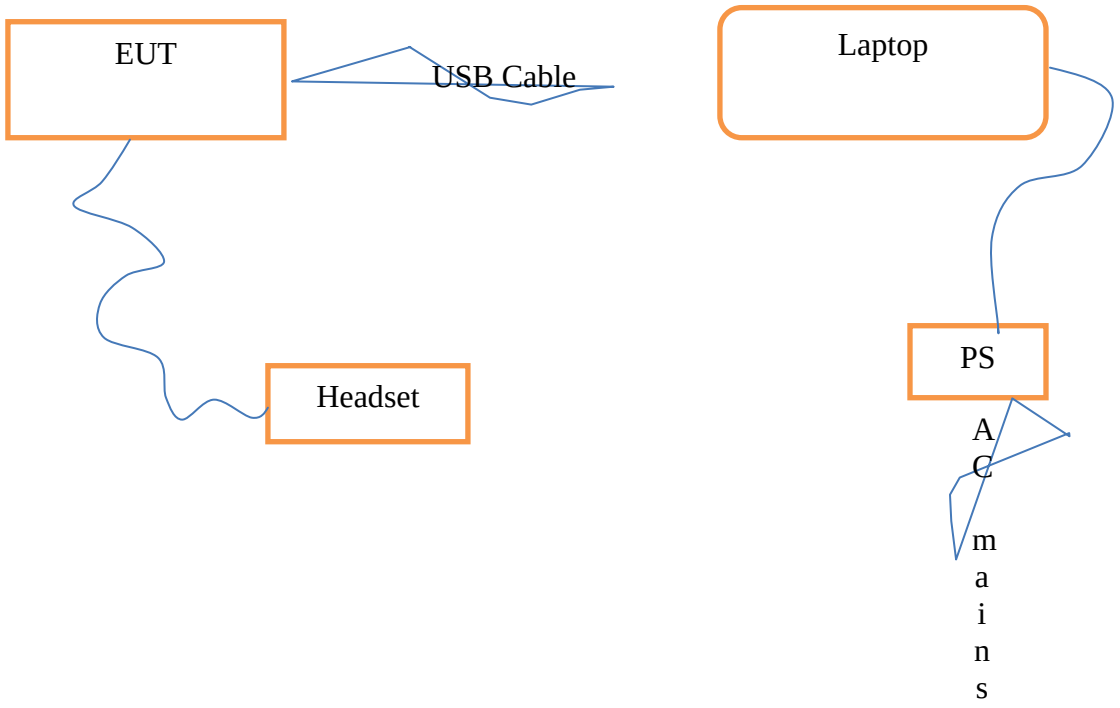
Frequency (MHz)	Description
19.2	Internal oscillator

1.2.4 Power Interface:

Mode # /Rated	Voltage (V)	Current (A)	Power (W)	Frequency (DC/AC-Hz)	Phases (#)	Comments
1	3.6	-	-	DC	-	Battery

1.3 Block Diagram:

The diagram below illustrates the configuration of the equipment above.



1.4 EUT Configurations

Mode #	Description
1	EUT setup on 80cm support connected to laptop computer via USB cable. The headset adapter was connected to EUT.

1.5 EUT Operation Modes

Mode #	Description
1	Transmitting on Low, Middle, and High channels in Basic Rate (GFSK)
2	transmitting on Low, Middle, and High channels in EDR (8PSK)
3	EUT powered on, digital mode

2.0 Summary

The tests listed in the Summary of Testing section of this report have been performed and the results recorded by Underwriters Laboratories Inc. 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

2.3 Reference Standards

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

2.4 Results Summary

This product is considered Class B

Requirement – Test	Result (Compliant / Non-Compliant)*
Radiated Spurious Emissions	Compliant
Radiated Band-edge Emissions	Compliant
Radiated Emissions - Digital	Compliant

Test Engineer:

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

Reviewer:

International EMC Services
Conformity Assessment Services

Any information and documentation involving UL Mark services are provided on behalf of Underwriters Laboratories Inc. (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 B, Radio Frequency Devices

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

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 – RADIATED SPURIOUS EMISSIONS

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-meter or 3-meter as noted. 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	47 CFR Part 15	
UL LPG	80-EM-S0029	
	Frequency range	Measurement Point
Fully configured sample scanned over the following frequency range	30MHz – 1GHz	10 meter distance
	1GHz – 25GHz	3 meter distance

Limits

Frequency (MHz)	Limit (dBµV/m)	
	Quasi-Peak	Average
30 – 88	29.54	-
88 – 216	33.04	-
216 - 960	35.54	-
960 - 1000	43.54	-
1000 - 25000	74-Peak	54

Supplementary information: Portable transmitters are to be checked in 3 orthogonal axis. Limits are applicable only to frequencies in the restricted bands.

Table 1 Radiated Emissions EUT Configuration Settings

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

Table 2 Radiated Emissions Test Equipment

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due Date
EMI Test Receiver	Rohde & Schwarz	ESU	EMC4323	Jan 2010	Jan 2011
Bicon Antenna	Electro-Metrics	EM6912A	EMC4070	Jun 2010	Jun 2011
Log-P Antenna	Chase	UPA6109	EMC4313	Jun 2010	Jun 2011
Spectrum Analyzer	Rhode & Schwarz	FSEK	EMC4182	Jan 2010	Jan 2011
Antenna Array	UL	BOMS	EMC4276	Jan 2010	Jan 2011

Figure 1 Radiated Emissions 30MHz – 1000MHz Graphs, GFSK, Mid Channel, X-Axis

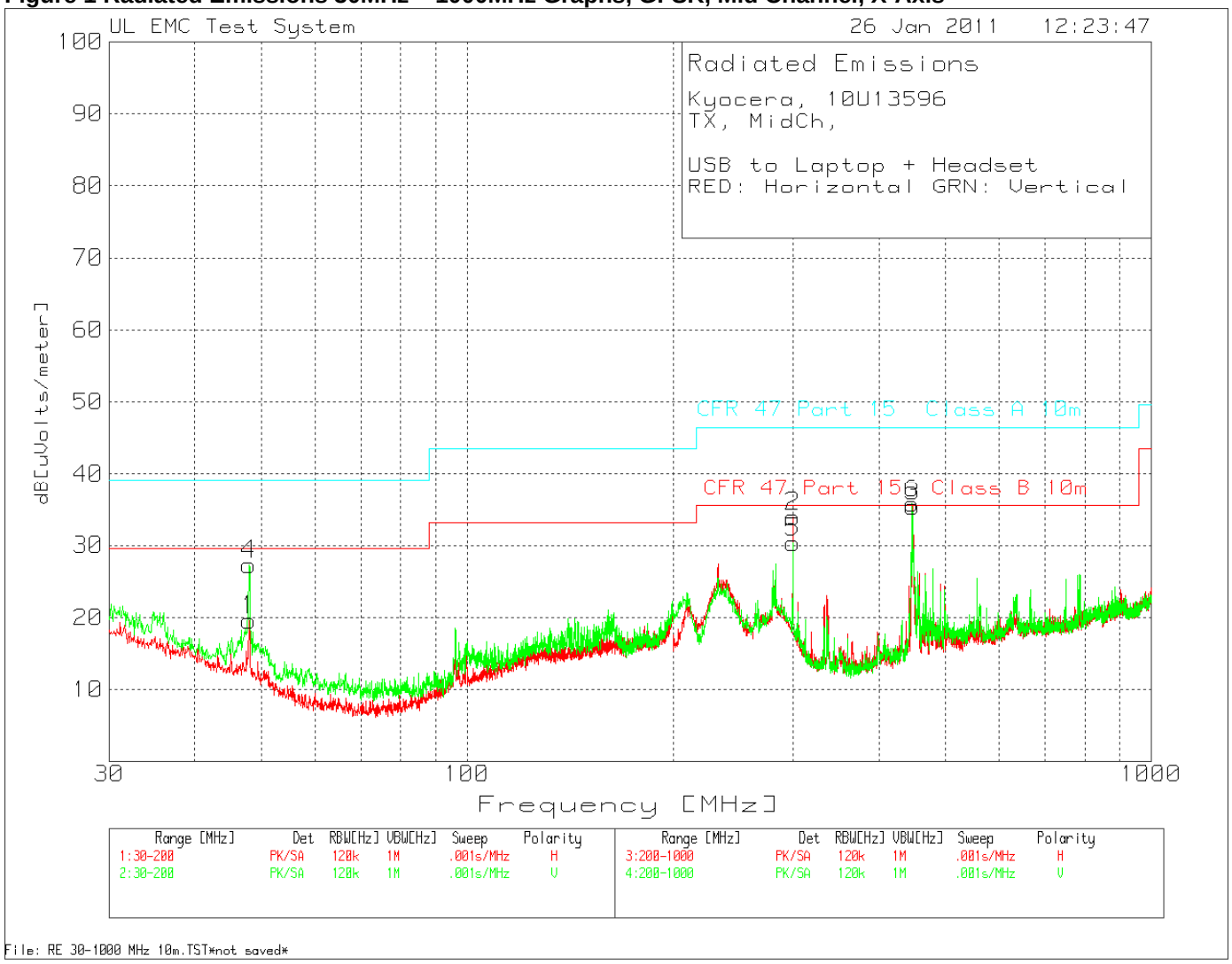


Table 3 Radiated Emissions 30MHz – 1000MHz Data Points, GFSK, Mid Channel, X-Axis

Kyocera, 10U13596
TX, MidCh,
USB to Laptop + Headset
RED: Horizontal GRN: Vertical

No.	Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit:1	2	3	4	5	6
1	48.011	39.1 PK	-30.2	10.7	19.6	-	-	39.1	29.6	-	-
		Height:400 Horz		Margin [dB]		-	-	-19.5	-10	-	-
4	48.011	46.79 PK	-30.2	10.7	27.29	-	-	39.1	29.6	-	-
		Height:100 Vert		Margin [dB]		-	-	-11.81	-2.31	-	-
2	299.4004	53.67 PK	-32.8	13.1	33.97	-	-	46.4	35.6	-	-
		Height:300 Horz		Margin [dB]		-	-	-12.43	-1.63	-	-
3	448.6342	50.24 PK	-31.9	17	35.34	-	-	46.4	35.6	-	-
		Height:200 Horz		Margin [dB]		-	-	-11.06	-.26	-	-
5	299.4004	50.02 PK	-32.8	13.1	30.32	-	-	46.4	35.6	-	-
		Height:100 Vert		Margin [dB]		-	-	-16.08	-5.28	-	-
6	447.5683	50.53 PK	-31.8	17	35.73	-	-	46.4	35.6	-	-
		Height:400 Vert		Margin [dB]		-	-	-10.67	.13	-	-

Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit:1	2	3	4	5	6
48.06	45.5 QP	-30.2	10.7	26	-	-	39.1	29.6	-	-
Azimuth: 35	Height:100 Vert		Margin [dB]:		-	-	-13.1	-3.6	-	-
299.4584	42.23 QP	-32.8	13.1	22.53	-	-	46.4	35.6	-	-
Azimuth: 1	Height:172 Vert		Margin [dB]:		-	-	-23.87	-13.07	-	-
299.4584	48.94 QP	-32.8	13.1	29.24	-	-	46.4	35.6	-	-
Azimuth: 154	Height:258 Horz		Margin [dB]:		-	-	-17.16	-6.36	-	-
448.6227	41.93 QP	-31.9	17	27.03	-	-	46.4	35.6	-	-
Azimuth: 242	Height:191 Horz		Margin [dB]:		-	-	-19.37	-8.57	-	-
447.5807	41.05 QP	-31.8	17	26.25	-	-	46.4	35.6	-	-
Azimuth: 205	Height:354 Vert		Margin [dB]:		-	-	-20.15	-9.35	-	-

LIMIT 3: CFR 47 Part 15 Class A 10m
LIMIT 4: CFR 47 Part 15 Class B 10m

PK - Peak detector
QP - Quasi-Peak detector

Figure 2 Radiated Emissions Graphs, GFSK, Low Channel, X-Axis

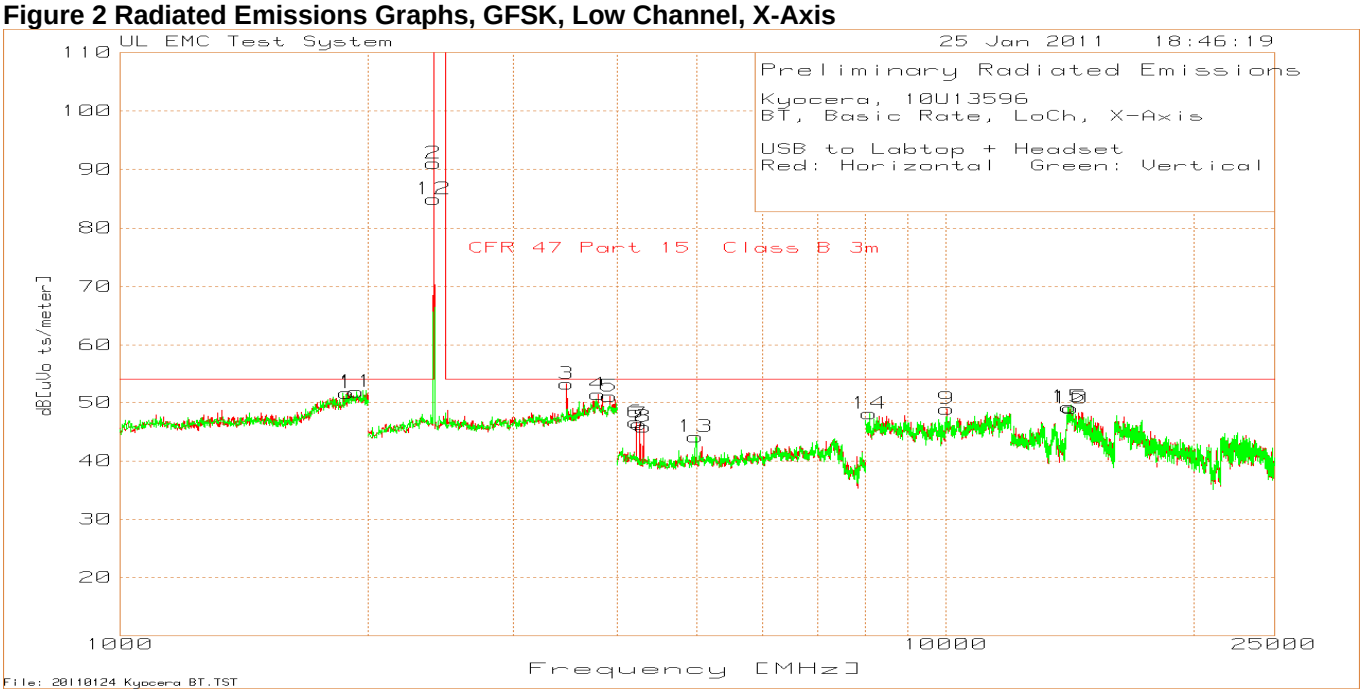


Table 4 Radiated Emissions Data Points, GFSK, Low Channel, X-Axis

Kyocera, 10U13596
BT, Basic Rate, LoCh, X-Axis
USB to Labtop + Headset
Red: Horizontal Green: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	1883.768	20.58	PK	3.59	27.5	51.67	54	-2.33	Horz
2	2400.802	64.87	PK	4.35	21.8	91.02			Horz
*3	3478.958	24.83	PK	4.89	23.5	53.22	54	-.78	Horz
4	3795.591	21.49	PK	5.84	24.1	51.43	54	-2.57	Horz
5	3919.84	21.35	PK	5.84	23.9	51.09	54	-2.91	Horz
6	4220.22	69.72	PK	-51.43	28.3	46.59	54	-7.41	Horz
7	4264.264	69.96	PK	-51.86	28.2	46.3	54	-7.7	Horz
8	4308.308	69.85	PK	-52.14	28.1	45.81	54	-8.19	Horz
9	10038.038	60.17	PK	-47.66	36.4	48.91	54	-5.09	Horz
10	14177.452	45.9	PK	-36.79	39.9	49.01	54	-4.99	Horz
11	1935.872	20.74	PK	3.53	27.6	51.87	54	-2.13	Vert
12	2400.802	58.83	PK	4.35	21.8	84.98			Vert
13	4976.977	67.09	PK	-50.74	27.8	44.15	54	-9.85	Vert
14	8080.08	59.89	PK	-48.03	36.2	48.06	54	-5.94	Vert
15	14085.39	46.52	PK	-37.13	39.9	49.29	54	-4.71	Vert

* Frequency outside of restricted band – limit does not apply
LIMIT 1: CFR 47 Part 15 Class B 3m
PK - Peak detector

Figure 3 Radiated Emissions Graphs, GFSK, Low Channel, Y-Axis

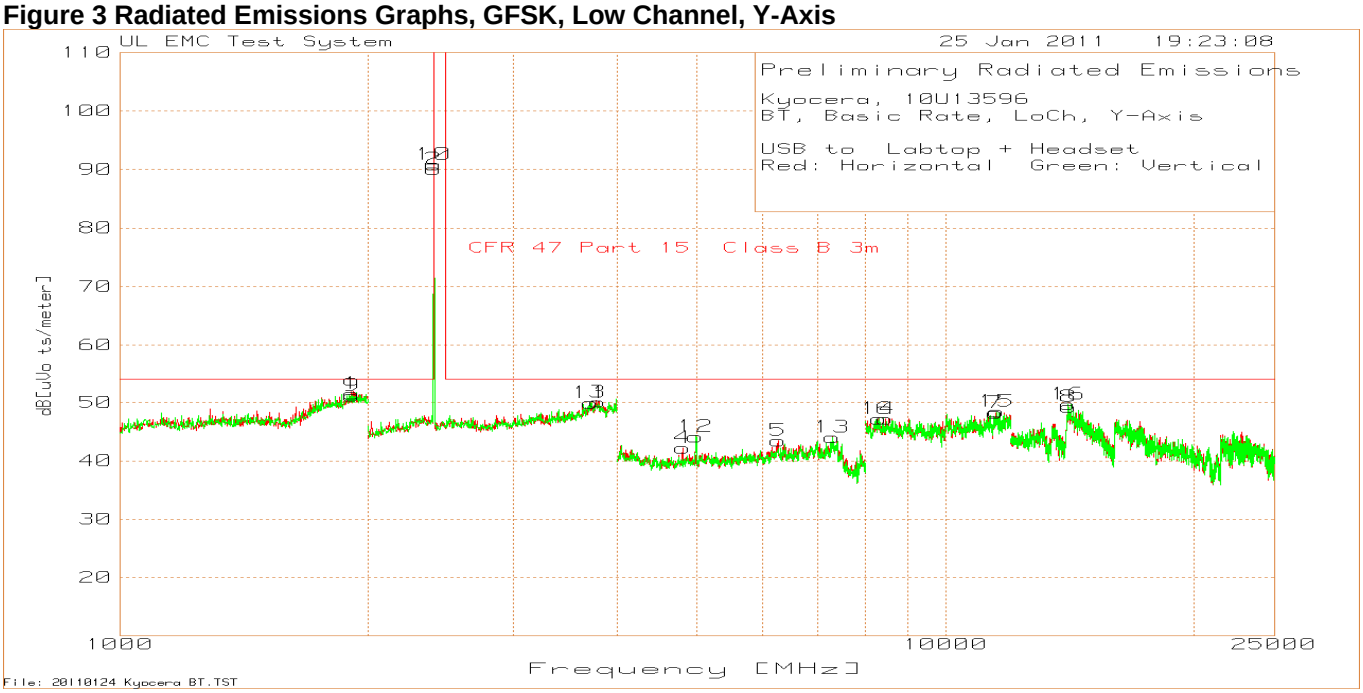


Table 5 Radiated Emissions Data Points, GFSK, Low Channel, Y-Axis

Kyocera, 10U13596
BT, Basic Rate, LoCh, Y-Axis
USB to Labtop + Headset
Red: Horizontal Green: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	1913.828	20.35	PK	3.55	27.6	51.5	54	-2.5	Horz
2	2400.802	63.93	PK	4.35	21.8	90.08			Horz
3	3799.599	20.3	PK	5.69	24.1	50.09	54	-3.91	Horz
4	4804.805	65.63	PK	-51.07	27.7	42.26	54	-11.74	Horz
5	6266.266	61.32	PK	-47.03	29.2	43.49	54	-10.51	Horz
6	8448.448	60.07	PK	-49.44	36.6	47.23	54	-6.77	Horz
7	11487.487	57.77	PK	-46.67	37.1	48.2	54	-5.8	Horz
8	14093.396	46.76	PK	-37.43	39.9	49.23	54	-4.77	Horz
9	1909.82	20.02	PK	3.5	27.6	51.12	54	-2.88	Vert
10	2400.802	64.7	PK	4.35	21.8	90.85			Vert
11	3719.439	20.27	PK	6.06	23.6	49.93	54	-4.07	Vert
12	4984.985	67.3	PK	-50.93	27.8	44.17	54	-9.83	Vert
13	7291.291	58.44	PK	-44.8	30.4	44.04	54	-9.96	Vert
14	8296.296	58.75	PK	-48.07	36.5	47.18	54	-6.82	Vert
15	11539.54	57.03	PK	-45.75	37.2	48.48	54	-5.52	Vert
16	14081.388	46.88	PK	-37.08	39.9	49.7	54	-4.3	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

Figure 4 Radiated Emissions Graphs, GFSK, Low Channel, Z-Axis

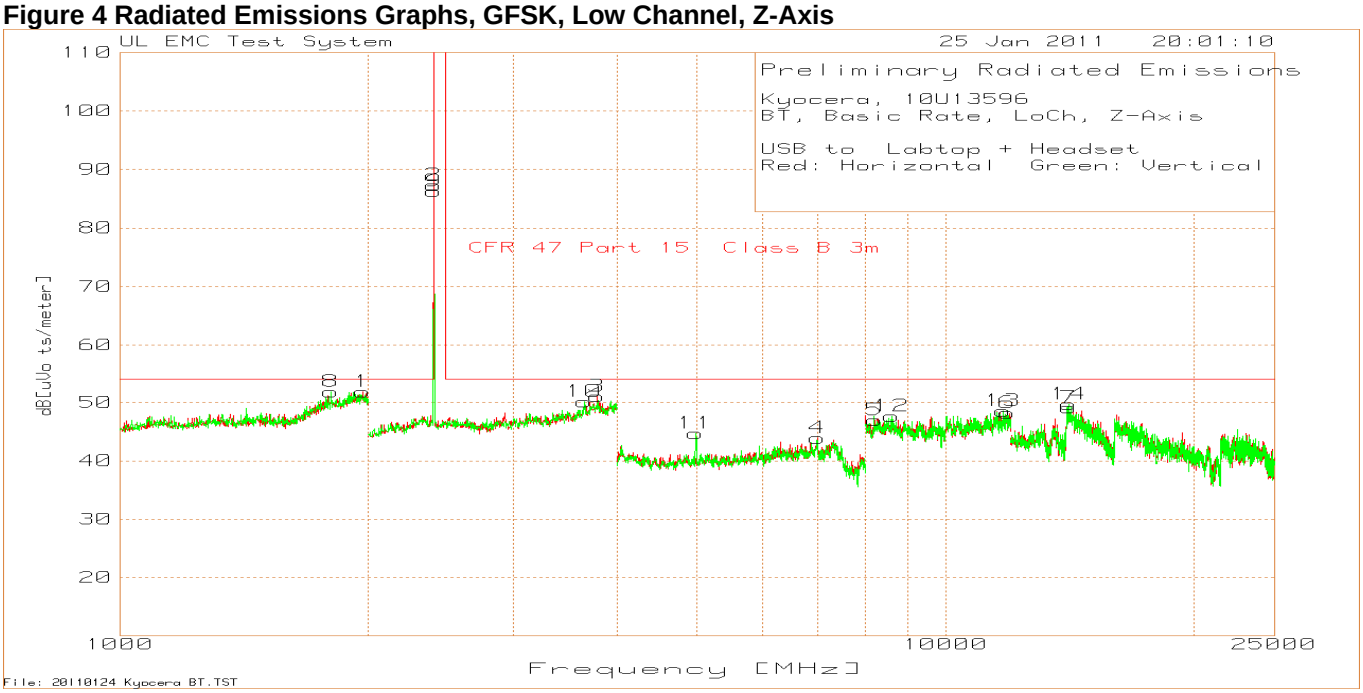


Table 6 Radiated Emissions Data Points, GFSK, Low Channel, Z-Axis

Kyocera, 10U13596
BT, Basic Rate, LoCh, Z-Axis
USB to Labtop + Headset
Red: Horizontal Green: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	1967.936	20.8	PK	3.51	27.5	51.81	54	-2.19	Horz
2	2400.802	61.14	PK	4.35	21.8	87.29			Horz
3	3787.575	21.25	PK	5.8	24	51.05	54	-2.95	Horz
4	6990.991	59.66	PK	-45.06	29.3	43.9	54	-10.1	Horz
5	8216.216	58.44	PK	-47.84	36.4	47	54	-7	Horz
6	11891.892	56.63	PK	-46.03	37.6	48.2	54	-5.8	Horz
7	14101.401	47.25	PK	-37.99	39.9	49.16	54	-4.84	Horz
8	1803.607	21.27	PK	3.44	27.1	51.81	54	-2.19	Vert
9	2400.802	60.19	PK	4.35	21.8	86.34			Vert
10	3655.311	21.06	PK	5.73	23.4	50.19	54	-3.81	Vert
11	4980.981	67.77	PK	-50.84	27.8	44.73	54	-9.27	Vert
12	8600.601	60.46	PK	-49.28	36.5	47.68	54	-6.32	Vert
13	11755.756	57.13	PK	-46.38	37.8	48.55	54	-5.45	Vert
14	14097.398	47.48	PK	-37.73	39.9	49.65	54	-4.35	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m
PK - Peak detector

Figure 5 Radiated Emissions Graphs, GFSK, Mid Channel, X-Axis

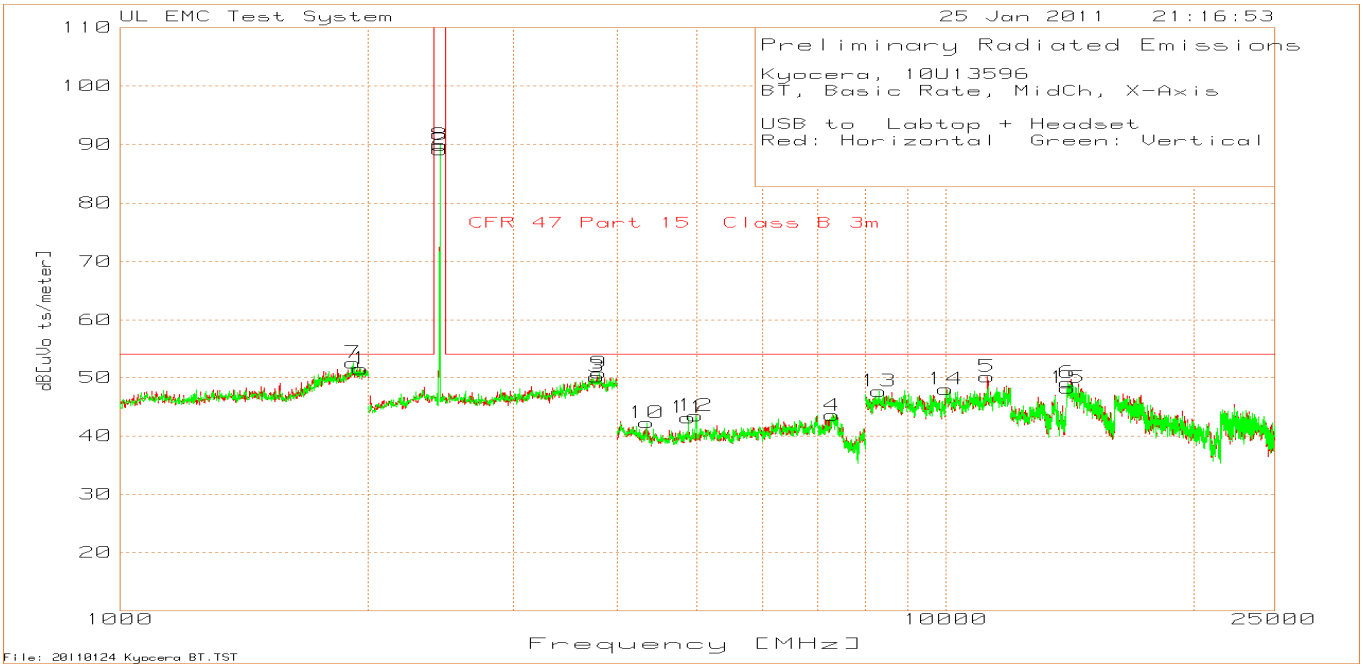


Table 7 Radiated Emissions Data Points, GFSK, Mid Channel, X-Axis

Kyocera, 10U13596
BT, Basic Rate, MidCh, X-Axis
USB to Labtop + Headset
Red: Horizontal Green: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	1955.912	20.59	PK	3.45	27.5	51.54	54	-2.46	Horz
2	2440.882	63.07	PK	4.18	21.9	89.15			Horz
3	3787.575	20.4	PK	5.8	24	50.2	54	-3.8	Horz
4	7299.299	58.23	PK	-45.11	30.4	43.52	54	-10.48	Horz
5	11247.247	59.44	PK	-46.12	36.8	50.12	54	-3.88	Horz
6	14069.38	46.8	PK	-37.55	39.9	49.15	54	-4.85	Horz
7	1915.832	21.4	PK	3.56	27.6	52.56	54	-1.44	Vert
8	2440.882	63.9	PK	4.18	21.9	89.98			Vert
9	3807.615	21.27	PK	5.4	24.1	50.77	54	-3.23	Vert
10	4344.344	65.87	PK	-51.7	28.1	42.27	54	-11.73	Vert
11	4880.881	65.93	PK	-50.53	27.7	43.1	54	-10.9	Vert
12	4988.989	66.66	PK	-50.97	27.8	43.49	54	-10.51	Vert
13	8304.304	59.38	PK	-48.24	36.5	47.64	54	-6.36	Vert
14	10022.022	58.73	PK	-47.11	36.4	48.02	54	-5.98	Vert
15	14069.38	45.92	PK	-37.55	39.9	48.27	54	-5.73	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

Figure 6 Radiated Emissions Graphs, GFSK, Mid Channel, Y-Axis

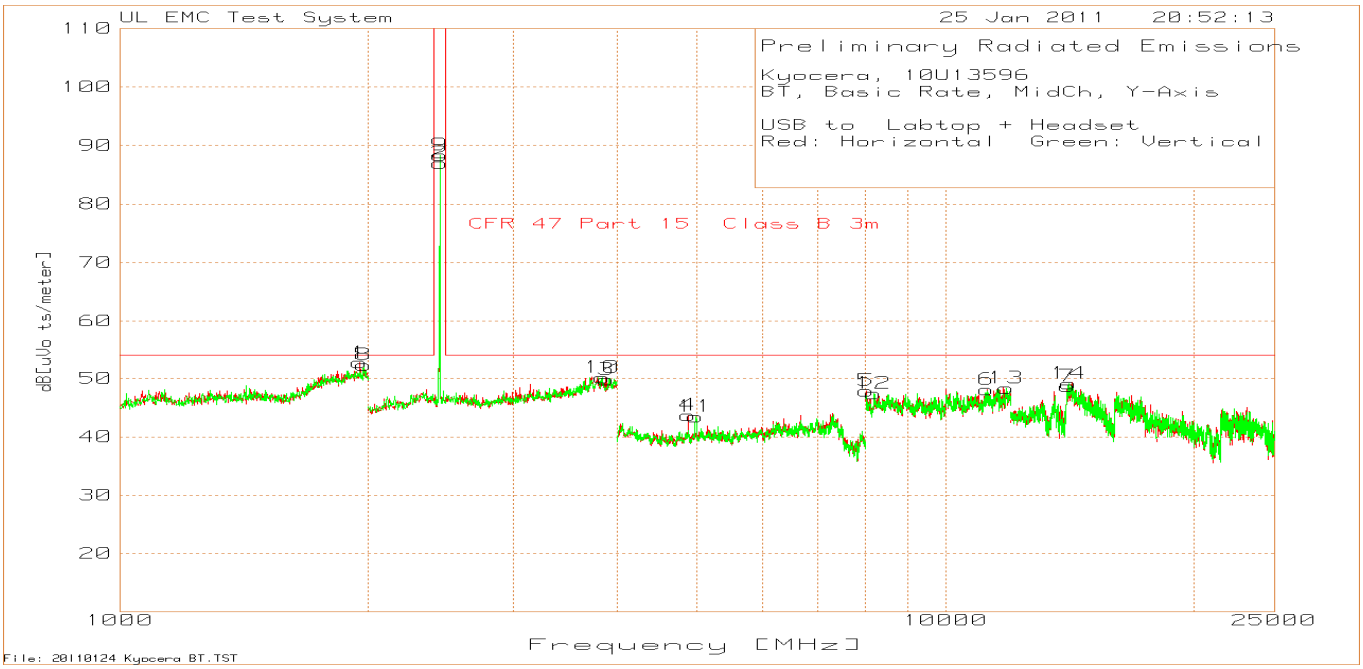


Table 8 Radiated Emissions Data Points, GFSK, Mid Channel, Y-Axis

Kyocera, 10U13596
BT, Basic Rate, MidCh, Y-Axis
USB to Labtop + Headset
Red: Horizontal Green: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	1953.908	21.73	PK	3.47	27.5	52.7	54	-1.3	Horz
2	2440.882	60.88	PK	4.18	21.9	86.96			Horz
3	3891.784	20.97	PK	5.01	23.8	49.78	54	-4.22	Horz
4	4880.881	66.53	PK	-50.53	27.7	43.7	54	-10.3	Horz
5	8020.02	58.8	PK	-47.05	36.1	47.85	54	-6.15	Horz
6	11215.215	57.28	PK	-45.86	36.7	48.12	54	-5.88	Horz
7	14077.385	45.96	PK	-37.16	39.9	48.7	54	-5.3	Horz
8	1973.948	21.17	PK	3.63	27.5	52.3	54	-1.7	Vert
9	2440.882	62.25	PK	4.18	21.9	88.33			Vert
10	3843.687	20.65	PK	5.54	24	50.19	54	-3.81	Vert
11	4988.989	66.67	PK	-50.97	27.8	43.5	54	-10.5	Vert
12	8184.184	59.36	PK	-48.25	36.3	47.41	54	-6.59	Vert
13	11851.852	56.27	PK	-45.62	37.7	48.35	54	-5.65	Vert
14	14089.393	46.41	PK	-37.17	39.9	49.14	54	-4.86	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

Figure 7 Radiated Emissions Graphs, GFSK, Mid Channel, Z-Axis

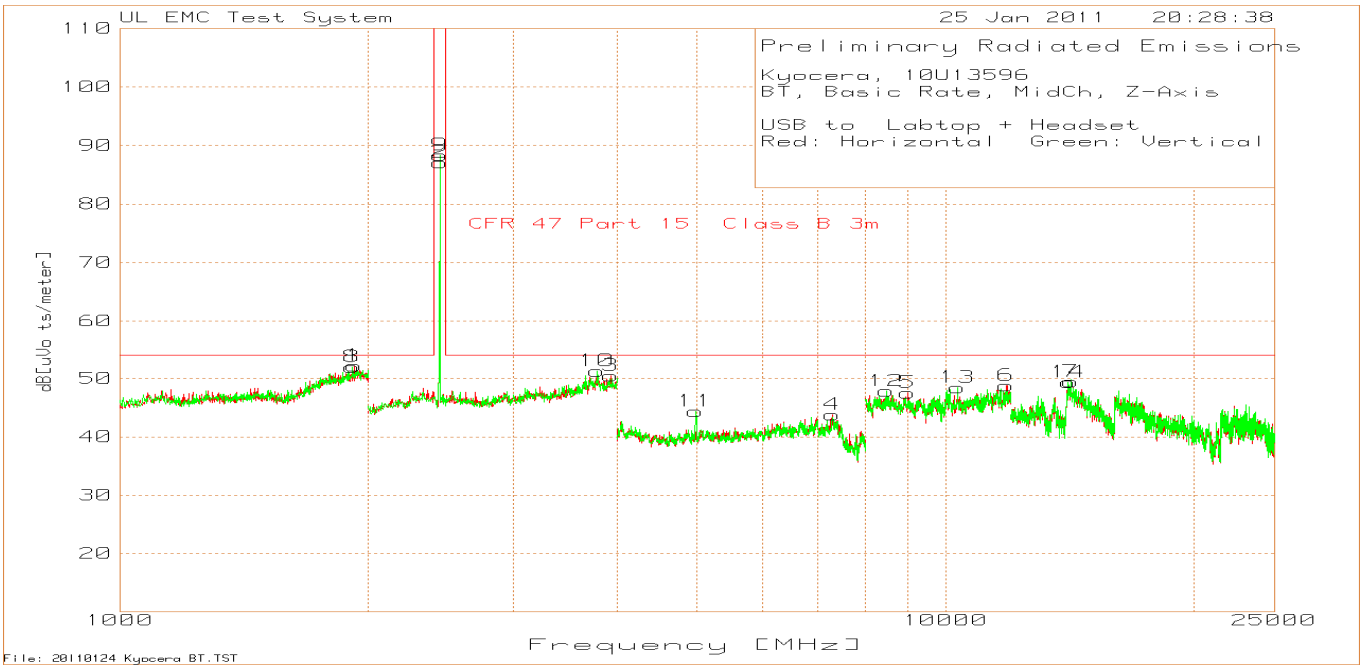


Table 9 Radiated Emissions Data Points, GFSK, Mid Channel, Z-Axis

Kyocera, 10U13596
BT, Basic Rate, MidCh, Z-Axis
USB to Labtop + Headset
Red: Horizontal Green: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	1925.852	20.99	PK	3.6	27.6	52.19	54	-1.81	Horz
2	2440.882	61.01	PK	4.18	21.9	87.09			Horz
3	3927.856	20.74	PK	5.71	24	50.45	54	-3.55	Horz
4	7291.291	58.25	PK	-44.8	30.4	43.85	54	-10.15	Horz
5	9005.005	59.93	PK	-48.49	36.1	47.54	54	-6.46	Horz
6	11855.856	56.71	PK	-45.59	37.7	48.82	54	-5.18	Horz
7	14193.462	46.6	PK	-37.05	39.9	49.45	54	-4.55	Horz
8	1913.828	20.79	PK	3.55	27.6	51.94	54	-2.06	Vert
9	2440.882	62.23	PK	4.18	21.9	88.31			Vert
10	3787.575	21.45	PK	5.8	24	51.25	54	-2.75	Vert
11	4976.977	67.32	PK	-50.74	27.8	44.38	54	-9.62	Vert
12	8484.484	59.93	PK	-48.8	36.7	47.83	54	-6.17	Vert
13	10346.346	59.28	PK	-47.04	36.2	48.44	54	-5.56	Vert
14	14081.388	46.55	PK	-37.08	39.9	49.37	54	-4.63	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

Figure 8 Radiated Emissions Graphs, GFSK, High Channel, X-Axis

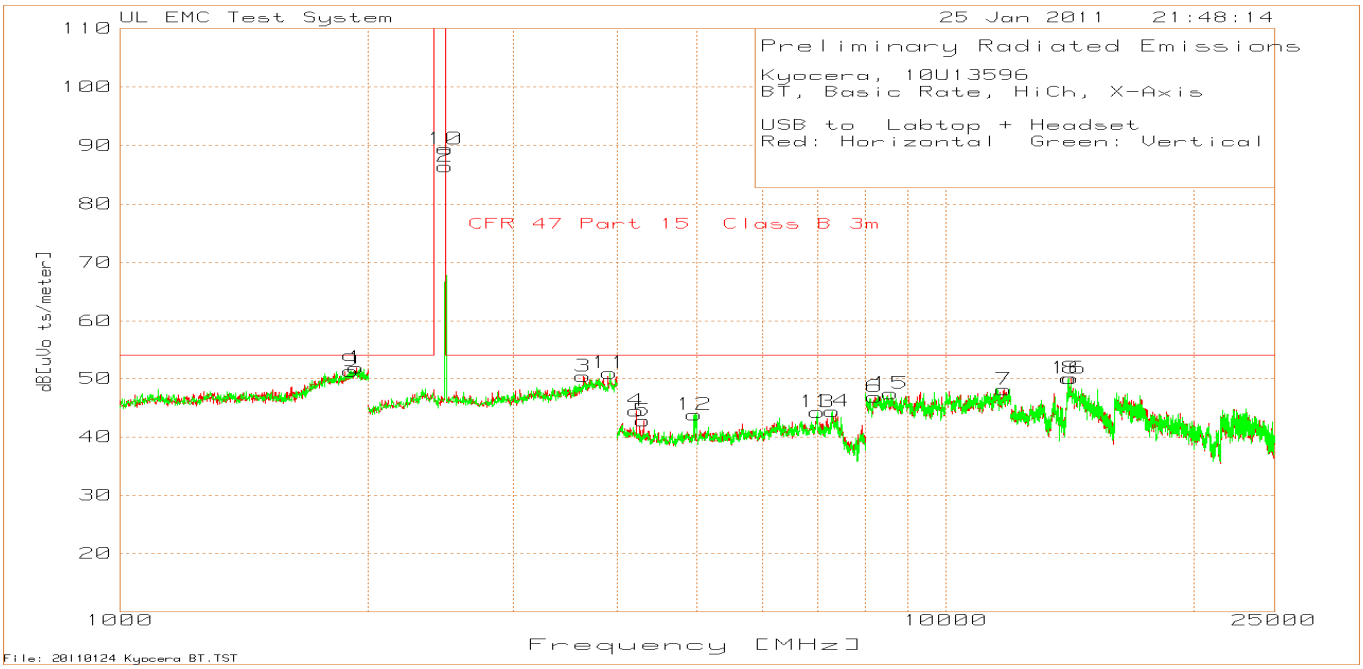


Table 10 Radiated Emissions Data Points, GFSK, High Channel, X-Axis

Kyocera, 10U13596
BT, Basic Rate, HiCh, X-Axis
USB to Labtop + Headset
Red: Horizontal Green: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	1933.868	20.7	PK	3.53	27.6	51.83	54	-2.17	Horz
2	2480.962	60.47	PK	3.92	22	86.39			Horz
3	3643.287	21.55	PK	5.57	23.3	50.42	54	-3.58	Horz
4	4220.22	67.64	PK	-51.43	28.3	44.51	54	-9.49	Horz
5	4304.304	66.9	PK	-52.17	28.1	42.83	54	-11.17	Horz
6	8212.212	58.31	PK	-47.83	36.4	46.88	54	-7.12	Horz
7	11775.776	56.9	PK	-46.64	37.8	48.06	54	-5.94	Horz
8	14177.452	46.88	PK	-36.79	39.9	49.99	54	-4.01	Horz
9	1907.816	20.17	PK	3.48	27.6	51.25	54	-2.75	Vert
10	2480.962	63.5	PK	3.92	22	89.42			Vert
11	3919.84	21.25	PK	5.84	23.9	50.99	54	-3.01	Vert
12	4960.961	66.59	PK	-50.58	27.8	43.81	54	-10.19	Vert
13	6990.991	60	PK	-45.06	29.3	44.24	54	-9.76	Vert
14	7287.287	58.8	PK	-44.84	30.4	44.36	54	-9.64	Vert
15	8592.593	60.34	PK	-49.46	36.5	47.38	54	-6.62	Vert
16	14097.398	47.83	PK	-37.73	39.9	50	54	-4	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

Figure 9 Radiated Emissions Graphs, GFSK, High Channel, Y-Axis

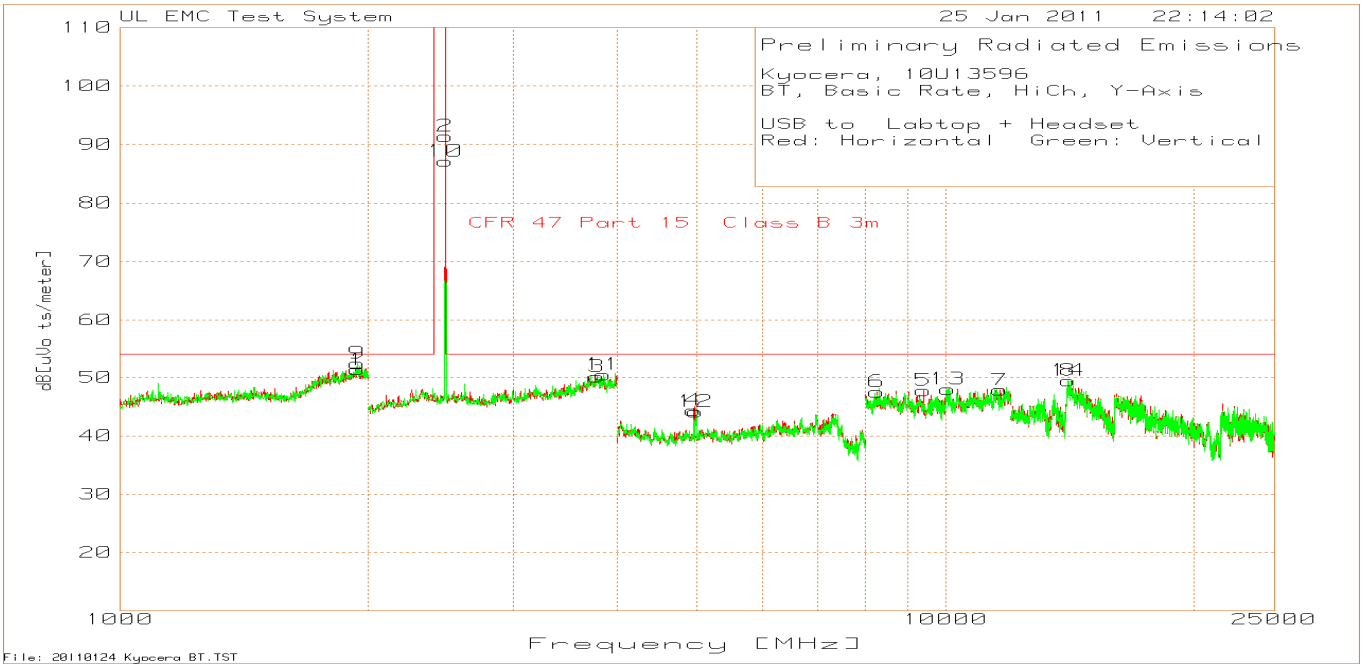


Table 11 Radiated Emissions Data Points, GFSK, High Channel, Y-Axis

Kyocera, 10U13596
BT, Basic Rate, HiCh, Y-Axis
USB to Labtop + Headset
Red: Horizontal Green: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	1939.88	20.31	PK	3.53	27.5	51.34	54	-2.66	Horz
2	2476.954	65.38	PK	3.98	22	91.36			Horz
3	3779.559	20.4	PK	5.79	24	50.19	54	-3.81	Horz
4	4956.957	67.18	PK	-50.6	27.8	44.38	54	-9.62	Horz
5	9405.405	60.79	PK	-49.47	36.4	47.72	54	-6.28	Horz
6	8260.26	59.07	PK	-47.96	36.4	47.51	54	-6.49	Horz
7	11639.64	56	PK	-45.67	37.5	47.83	54	-6.17	Horz
8	14081.388	46.64	PK	-37.08	39.9	49.46	54	-4.54	Horz
9	1937.876	21.25	PK	3.53	27.6	52.38	54	-1.62	Vert
10	2480.962	61.23	PK	3.92	22	87.15			Vert
11	3847.695	20.8	PK	5.69	24	50.49	54	-3.51	Vert
12	4976.977	67.11	PK	-50.74	27.8	44.17	54	-9.83	Vert
13	10066.066	60.09	PK	-48.38	36.3	48.01	54	-5.99	Vert
14	14081.388	46.62	PK	-37.08	39.9	49.44	54	-4.56	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

Figure 10 Radiated Emissions Graphs, GFSK, High Channel, Z-Axis

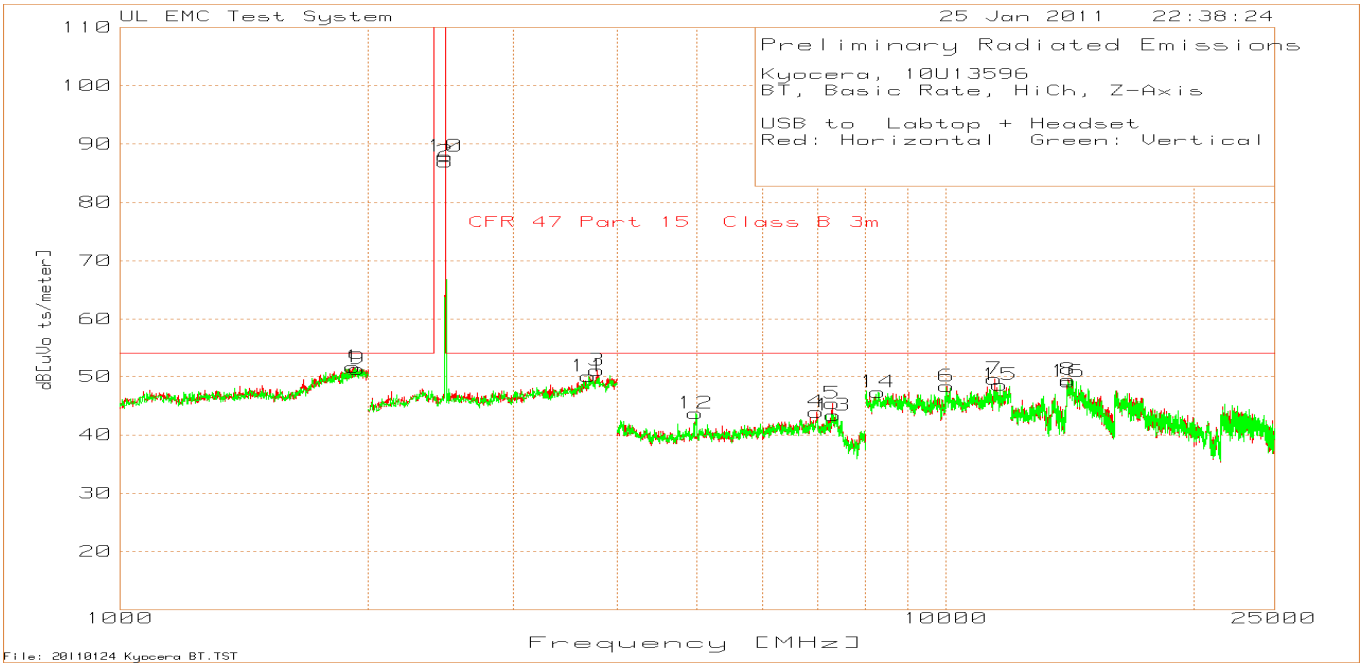


Table 12 Radiated Emissions Data Points, GFSK, High Channel, Z-Axis

Kyocera, 10U13596
BT, Basic Rate, HiCh, Z-Axis
USB to Labtop + Headset
Red: Horizontal Green: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	1919.84	20.49	PK	3.58	27.6	51.67	54	-2.33	Horz
2	2480.962	61.1	PK	3.92	22	87.02			Horz
3	3783.567	21.28	PK	5.76	24	51.04	54	-2.96	Horz
4	6986.987	59.76	PK	-45.12	29.3	43.94	54	-10.06	Horz
5	7287.287	59.86	PK	-44.84	30.4	45.42	54	-8.58	Horz
6	10030.03	59.27	PK	-47.34	36.4	48.33	54	-5.67	Horz
7	11463.463	58.86	PK	-46.39	37.1	49.57	54	-4.43	Horz
8	14081.388	46.62	PK	-37.08	39.9	49.44	54	-4.56	Horz
9	1937.876	20.19	PK	3.53	27.6	51.32	54	-2.68	Vert
10	2480.962	61.95	PK	3.92	22	87.87			Vert
11	3695.391	21.17	PK	5.38	23.5	50.05	54	-3.95	Vert
12	4988.989	66.9	PK	-50.97	27.8	43.73	54	-10.27	Vert
13	7311.311	58.08	PK	-45.23	30.5	43.35	54	-10.65	Vert
14	8292.292	58.88	PK	-48.09	36.5	47.29	54	-6.71	Vert
15	11647.648	56.82	PK	-45.77	37.5	48.55	54	-5.45	Vert
16	14081.388	46.3	PK	-37.08	39.9	49.12	54	-4.88	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

Figure 11 Radiated Emissions Graphs, 8PSK, Low Channel, X-Axis

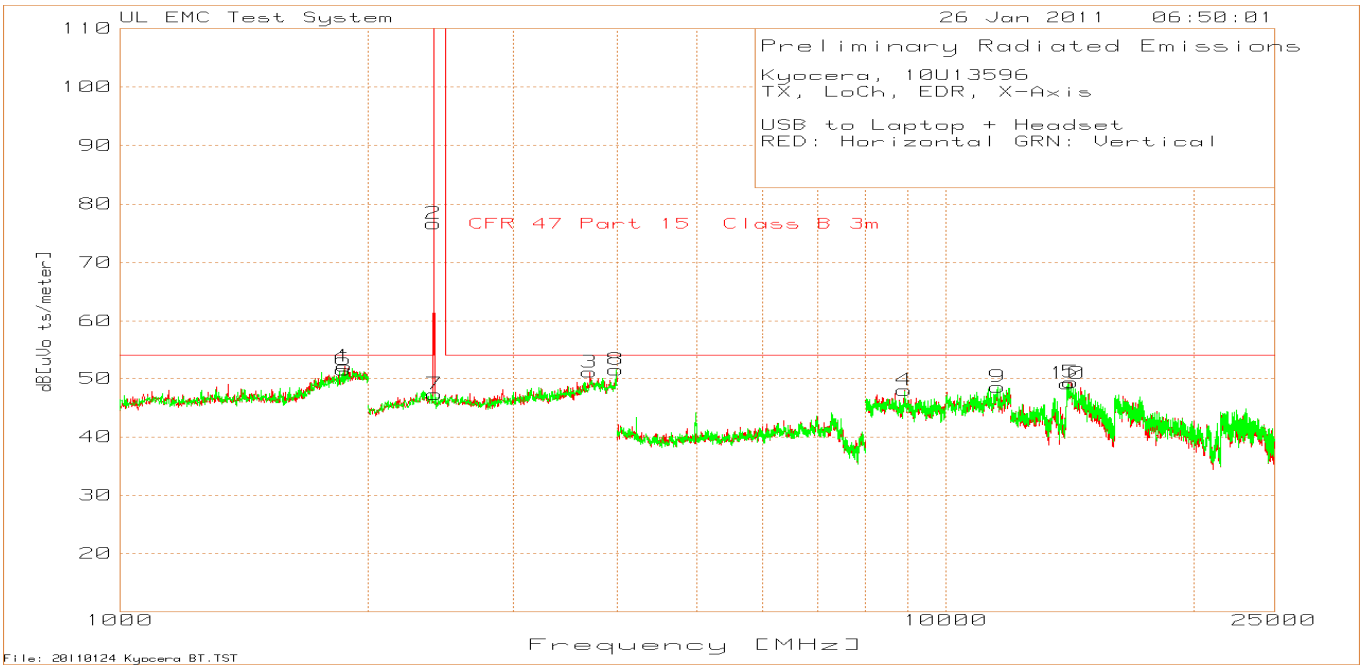


Table 13 Radiated Emissions Data Points, 8PSK, Low Channel, X-Axis

Kyocera, 10U13596
TX, LoCh, EDR, X-Axis
USB to Laptop + Headset
RED: Horizontal GRN: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	1873.747	21.16	PK	3.57	27.4	52.13	54	-1.87	Horz
2	2400.802	50.5	PK	4.35	21.8	76.65			Horz
3	3711.423	21.64	PK	5.87	23.6	51.11	54	-2.89	Horz
4	8924.925	60.57	PK	-48.68	36.1	47.99	54	-6.01	Horz
5	14197.465	46.64	PK	-37.16	39.9	49.38	54	-4.62	Horz
6	1869.739	20.62	PK	3.53	27.4	51.55	54	-2.45	Vert
7	2408.818	21.37	PK	4.17	21.8	47.34			Vert
8	3987.976	21.94	PK	5.29	24.3	51.53	54	-2.47	Vert
9	11555.556	57.17	PK	-45.94	37.3	48.53	54	-5.47	Vert
10	14077.385	46.35	PK	-37.16	39.9	49.09	54	-4.91	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

Figure 12 Radiated Emissions Graphs, 8PSK, Low Channel, Y-Axis

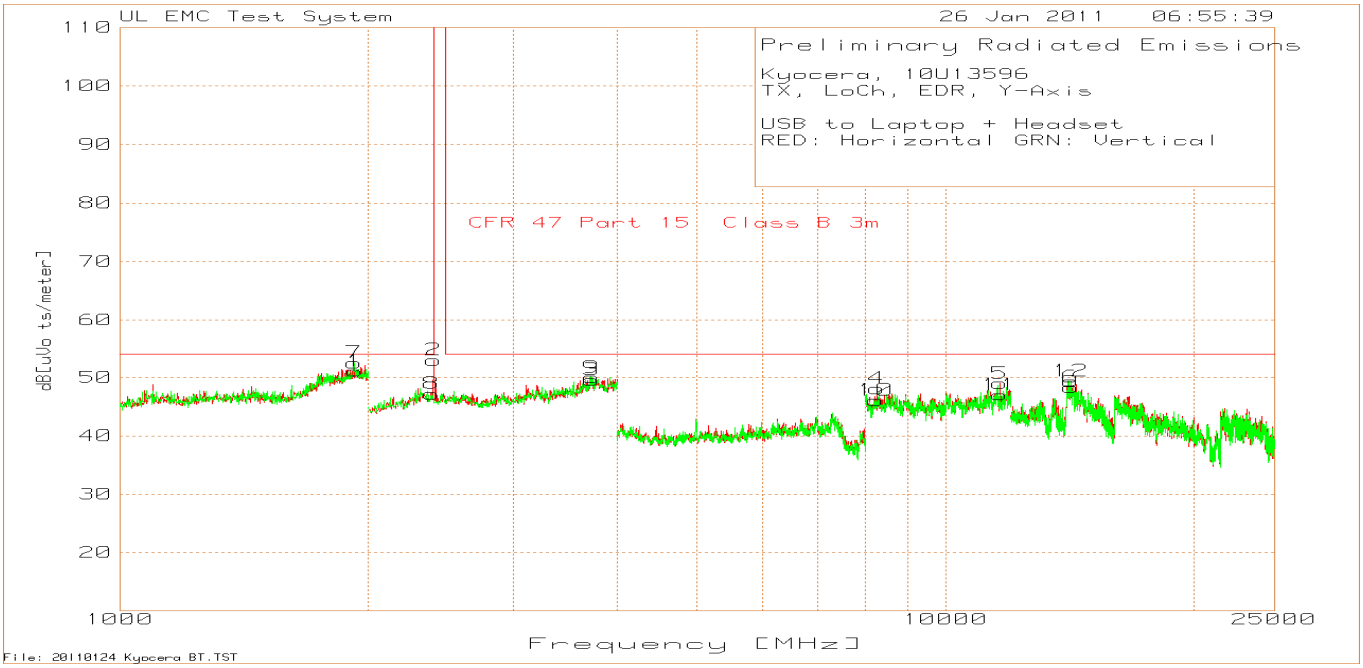


Table 14 Radiated Emissions Data Points, 8PSK, Low Channel, Y-Axis

Kyocera, 10U13596
TX, LoCh, EDR, Y-Axis
USB to Laptop + Headset
RED: Horizontal GRN: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	1927.856	19.93	PK	3.58	27.6	51.11	54	-2.89	Horz
2	2400.802	26.79	PK	4.35	21.8	52.94			Horz
3	3727.455	20.04	PK	5.89	23.7	49.63	54	-4.37	Horz
4	8268.268	59.56	PK	-47.85	36.4	48.11	54	-5.89	Horz
5	11639.64	57.13	PK	-45.67	37.5	48.96	54	-5.04	Horz
6	14177.452	45.2	PK	-36.79	39.9	48.31	54	-5.69	Horz
7	1921.844	21.29	PK	3.6	27.6	52.49	54	-1.51	Vert
8	2384.77	20.92	PK	4.45	21.8	47.17	54	-6.83	Vert
9	3731.463	20.5	PK	5.78	23.7	49.98	54	-4.02	Vert
10	8228.228	57.6	PK	-47.93	36.4	46.07	54	-7.93	Vert
11	11631.632	55.32	PK	-45.79	37.5	47.03	54	-6.97	Vert
12	14173.449	46.35	PK	-36.86	39.9	49.39	54	-4.61	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

Figure 13 Radiated Emissions Graphs, 8PSK, Low Channel, Z-Axis

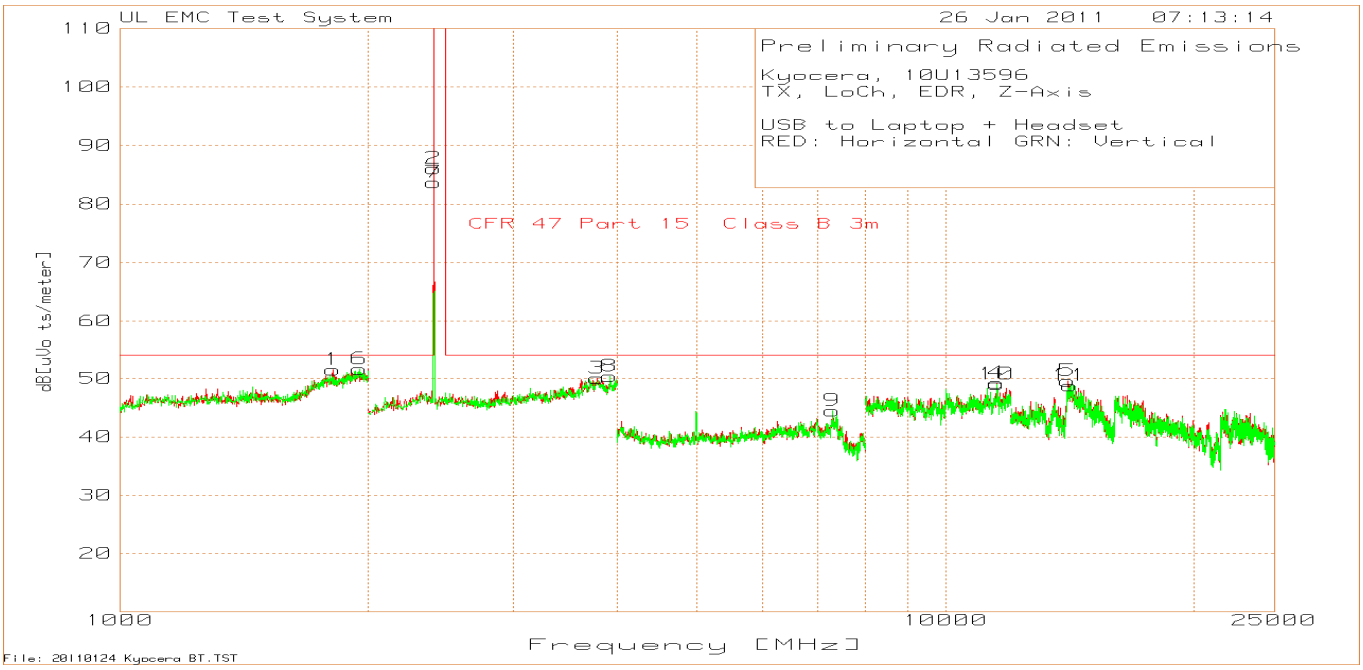


Table 15 Radiated Emissions Data Points, 8PSK, Low Channel, Z-Axis

Kyocera, 10U13596
TX, LoCh, EDR, Z-Axis
USB to Laptop + Headset
RED: Horizontal GRN: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	1811.623	20.93	PK	3.49	27.1	51.52	54	-2.48	Horz
2	2400.802	59.93	PK	4.35	21.8	86.08			Horz
3	3783.567	20.31	PK	5.76	24	50.07	54	-3.93	Horz
4	11547.548	57.86	PK	-45.83	37.2	49.23	54	-4.77	Horz
5	14077.385	46.8	PK	-37.16	39.9	49.54	54	-4.46	Horz
6	1953.908	20.62	PK	3.47	27.5	51.59	54	-2.41	Vert
7	2400.802	57.5	PK	4.35	21.8	83.65			Vert
8	3923.848	20.6	PK	5.84	23.9	50.34	54	-3.66	Vert
9	7295.295	59.03	PK	-44.96	30.4	44.47	54	-9.53	Vert
10	11535.536	57.53	PK	-45.75	37.2	48.98	54	-5.02	Vert
11	14125.417	47.58	PK	-38.68	39.9	48.8	54	-5.2	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

Figure 14 Radiated Emissions Graphs, 8PSK, Mid Channel, X-Axis

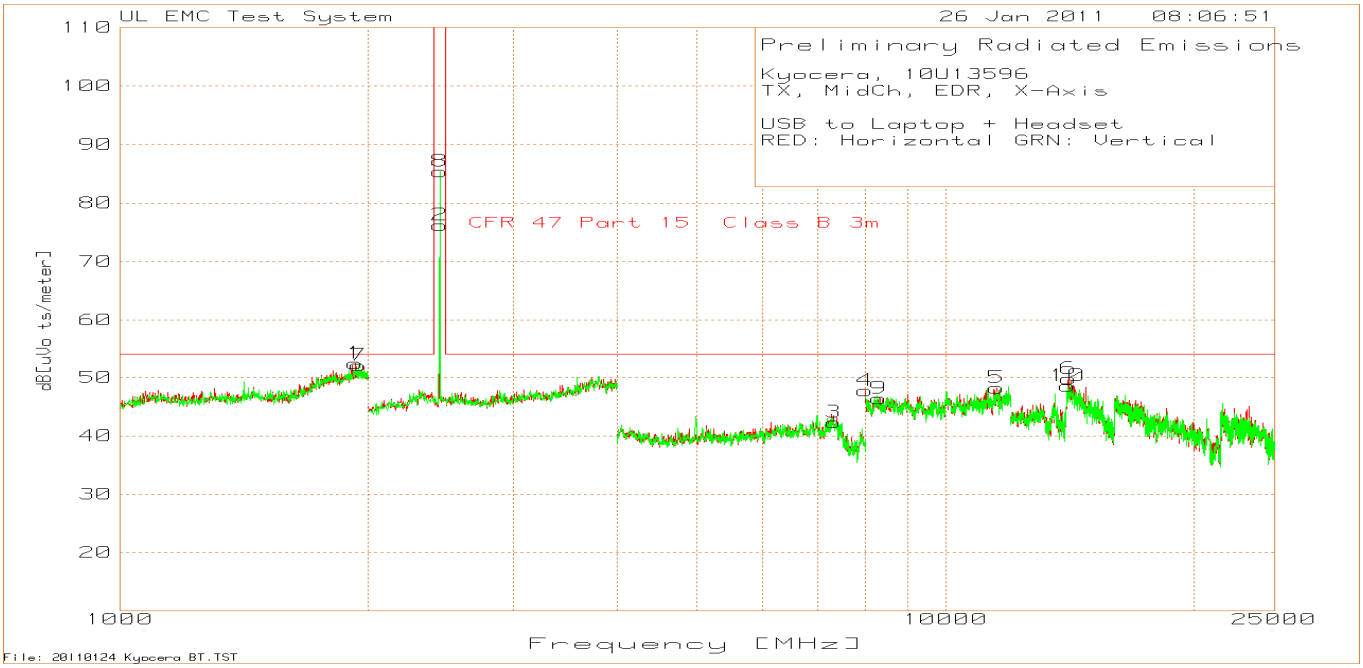


Table 16 Radiated Emissions Data Points, 8PSK, Mid Channel, X-Axis

Kyocera, 10U13596
TX, MidCh, EDR, X-Axis
USB to Laptop + Headset
RED: Horizontal GRN: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	1931.864	21.31	PK	3.55	27.6	52.46	54	-1.54	Horz
2	2440.882	50.15	PK	4.18	21.9	76.23			Horz
3	7327.327	57.54	PK	-45.92	30.7	42.32	54	-11.68	Horz
4	8000	58.39	PK	-46.68	36.1	47.81	54	-6.19	Horz
5	11539.54	56.78	PK	-45.75	37.2	48.23	54	-5.77	Horz
6	14085.39	47.01	PK	-37.13	39.9	49.78	54	-4.22	Horz
7	1943.888	21	PK	3.54	27.5	52.04	54	-1.96	Vert
8	2440.882	59.27	PK	4.18	21.9	85.35			Vert
9	8304.304	58.11	PK	-48.24	36.5	46.37	54	-7.63	Vert
10	14077.385	45.86	PK	-37.16	39.9	48.6	54	-5.4	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

Figure 15 Radiated Emissions Graphs, 8PSK, Mid Channel, Y-Axis

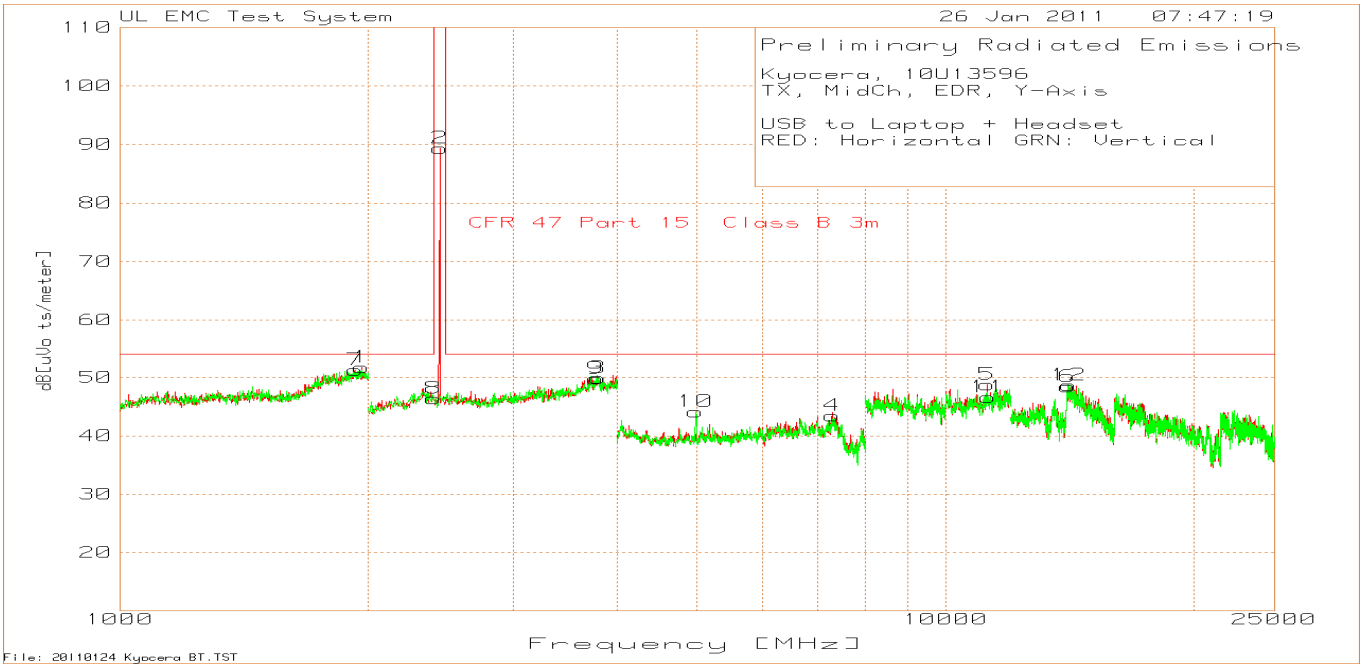


Table 17 Radiated Emissions Data Points, 8PSK, Mid Channel, Y-Axis

Kyocera, 10U13596
TX, MidCh, EDR, Y-Axis
USB to Laptop + Headset
RED: Horizontal GRN: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	1963.928	20.71	PK	3.48	27.5	51.69	54	-2.31	Horz
2	2440.882	63.28	PK	4.18	21.9	89.36			Horz
3	3791.583	20.06	PK	5.85	24	49.91	54	-4.09	Horz
4	7287.287	57.9	PK	-44.84	30.4	43.46	54	-10.54	Horz
5	11243.243	57.98	PK	-45.98	36.8	48.8	54	-5.2	Horz
6	14077.385	45.75	PK	-37.16	39.9	48.49	54	-5.51	Horz
7	1931.864	20.18	PK	3.55	27.6	51.33	54	-2.67	Vert
8	2400.802	20.22	PK	4.35	21.8	46.37			Vert
9	3771.543	20.2	PK	5.74	23.9	49.84	54	-4.16	Vert
10	4976.977	67.1	PK	-50.74	27.8	44.16	54	-9.84	Vert
11	11275.275	57.18	PK	-47.32	36.8	46.66	54	-7.34	Vert
12	14121.414	47.36	PK	-38.62	39.9	48.64	54	-5.36	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

Figure 16 Radiated Emissions Graphs, 8PSK, Mid Channel, Z-Axis

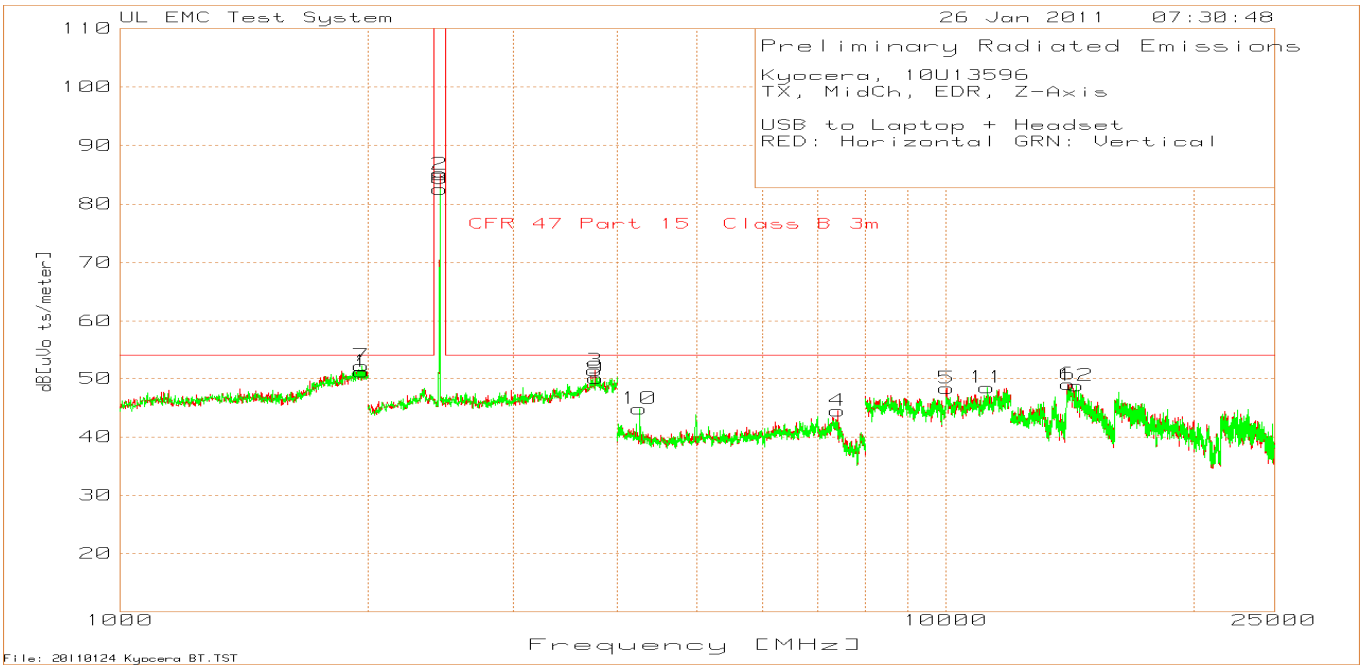


Table 18 Radiated Emissions Data Points, 8PSK, Mid Channel, Z-Axis

Kyocera, 10U13596
TX, MidCh, EDR, Z-Axis
USB to Laptop + Headset
RED: Horizontal GRN: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	1965.932	20.14	PK	3.48	27.5	51.12	54	-2.88	Horz
2	2440.882	58.97	PK	4.18	21.9	85.05			Horz
3	3767.535	22	PK	5.5	23.9	51.4	54	-2.6	Horz
4	7403.403	59.95	PK	-46.59	31.1	44.46	54	-9.54	Horz
5	10042.042	59.75	PK	-47.83	36.4	48.32	54	-5.68	Horz
6	14081.388	46.23	PK	-37.08	39.9	49.05	54	-4.95	Horz
7	1965.932	21.26	PK	3.48	27.5	52.24	54	-1.76	Vert
8	2440.882	56.52	PK	4.18	21.9	82.6			Vert
9	3775.551	20.26	PK	5.81	24	50.07	54	-3.93	Vert
10	4264.264	68.48	PK	-51.86	28.2	44.82	54	-9.18	Vert
11	11231.231	57.38	PK	-45.74	36.8	48.44	54	-5.56	Vert
12	14377.585	45.86	PK	-36.9	39.8	48.76	54	-5.24	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

Figure 17 Radiated Emissions Graphs, 8PSK, High Channel, X-Axis

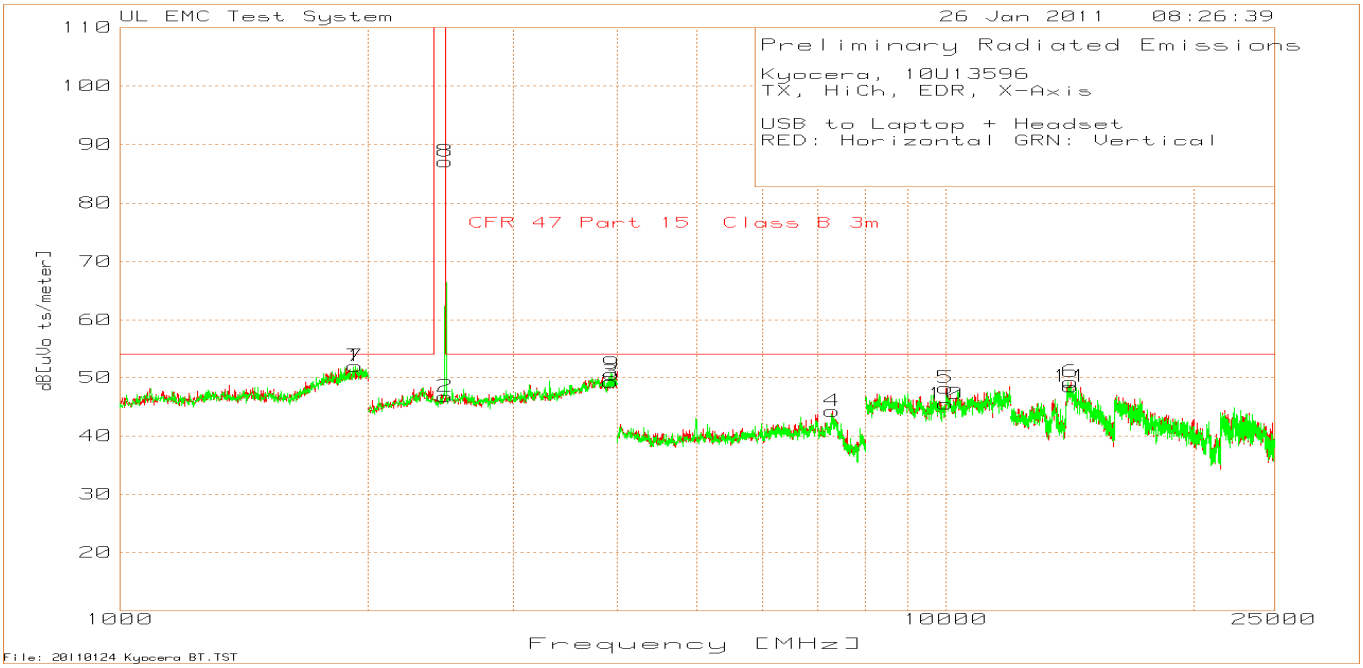


Table 19 Radiated Emissions Data Points, 8PSK, High Channel, X-Axis

Kyocera, 10U13596
TX, HiCh, EDR, X-Axis
USB to Laptop + Headset
RED: Horizontal GRN: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	1927.856	20.8	PK	3.58	27.6	51.98	54	-2.02	Horz
2	2476.954	20.79	PK	3.98	22	46.77			Horz
3	3935.872	19.76	PK	5.46	24	49.22	54	-4.78	Horz
4	7287.287	58.74	PK	-44.84	30.4	44.3	54	-9.7	Horz
5	10022.022	58.9	PK	-47.11	36.4	48.19	54	-5.81	Horz
6	14177.452	46.1	PK	-36.79	39.9	49.21	54	-4.79	Horz
7	1927.856	20.75	PK	3.58	27.6	51.93	54	-2.07	Vert
8	2480.962	61.13	PK	3.92	22	87.05			Vert
9	3947.896	21.32	PK	5.21	24.1	50.63	54	-3.37	Vert
10	9997.998	56.95	PK	-47.9	36.4	45.45	54	-8.55	Vert
11	14177.452	45.39	PK	-36.79	39.9	48.5	54	-5.5	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

Figure 18 Radiated Emissions Graphs, 8PSK, High Channel, Y-Axis

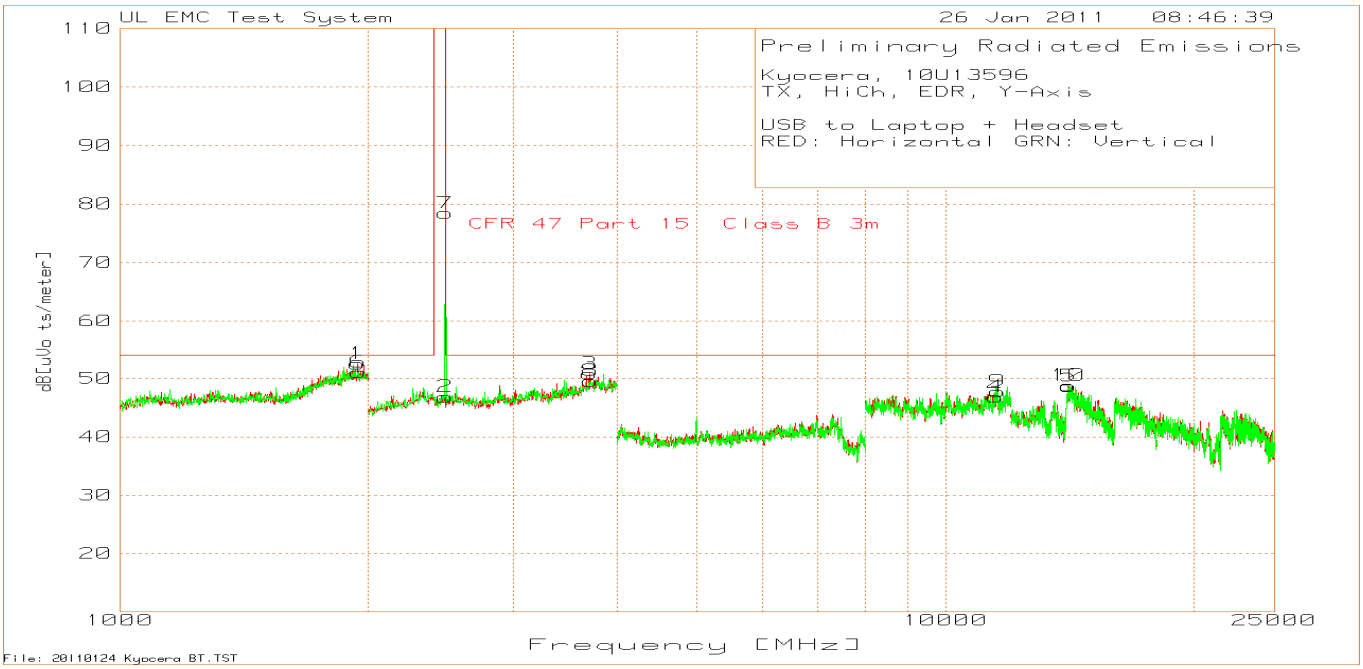


Table 20 Radiated Emissions Data Points, 8PSK, High Channel, Y-Axis

Kyocera, 10U13596
TX, HiCh, EDR, Y-Axis
USB to Laptop + Headset
RED: Horizontal GRN: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	1941.884	21.53	PK	3.54	27.5	52.57	54	-1.43	Horz
2	2476.954	20.89	PK	3.98	22	46.87			Horz
3	3711.423	21.31	PK	5.87	23.6	50.78	54	-3.22	Horz
4	11515.516	56.25	PK	-46.44	37.1	46.91	54	-7.09	Horz
5	14085.39	45.91	PK	-37.13	39.9	48.68	54	-5.32	Horz
6	1943.888	20	PK	3.54	27.5	51.04	54	-2.96	Vert
7	2476.954	52.45	PK	3.98	22	78.43			Vert
8	3715.431	20.03	PK	5.97	23.6	49.6	54	-4.4	Vert
9	11559.56	56.44	PK	-46	37.3	47.74	54	-6.26	Vert
10	14081.388	45.94	PK	-37.08	39.9	48.76	54	-5.24	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

Figure 19 Radiated Emissions Graphs, 8PSK, High Channel, Z-Axis

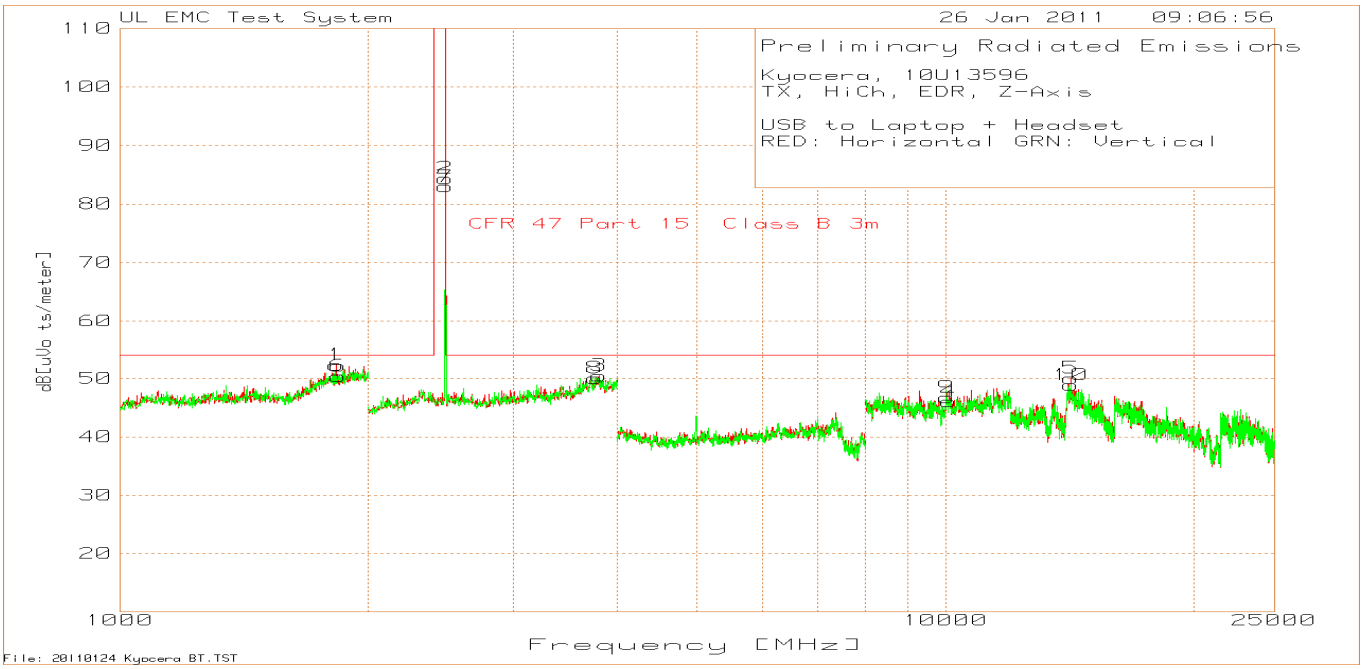


Table 21 Radiated Emissions Data Points, 8PSK, High Channel, Z-Axis

Kyocera, 10U13596
TX, HiCh, EDR, Z-Axis
USB to Laptop + Headset
RED: Horizontal GRN: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	1831.663	21.61	PK	3.51	27.2	52.32	54	-1.68	Horz
2	2476.954	58.43	PK	3.98	22	84.41			Horz
3	3803.607	20.88	PK	5.55	24.1	50.53	54	-3.47	Horz
4	10090.09	58.42	PK	-48.65	36.3	46.07	54	-7.93	Horz
5	14181.454	47.01	PK	-36.86	39.9	50.05	54	-3.95	Horz
6	1839.679	19.72	PK	3.4	27.3	50.42	54	-3.58	Vert
7	2476.954	56.98	PK	3.98	22	82.96			Vert
8	3763.527	20.84	PK	5.27	23.9	50.01	54	-3.99	Vert
9	10030.03	57.71	PK	-47.34	36.4	46.77	54	-7.23	Vert
10	14177.452	45.74	PK	-36.79	39.9	48.85	54	-5.15	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

4.2 Test Conditions and Results – BAND EDGE COMPLIANCE

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	
	Frequency range	Measurement Point
Fully configured sample scanned over the following frequency range	2400MHz – 2483.5MHz	Radiated

Limits	
Measurement Type	
Radiated	Radiated only required if emissions are in the restricted band
Supplementary information: None	

Table 22 Band Edge Compliance EUT Configuration Settings

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

Table 23 Band Edge Compliance Test Equipment

Test Equipment Used					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due Date
EMI Test Receiver	Rohde & Schwarz	ESU	EMC4323	Jan 2010	Jan 2011
Bicon Antenna	Electro-Metrics	EM6912A	EMC4070	Jun 2010	Jun 2011
Log-P Antenna	Chase	UPA6109	EMC4313	Jun 2010	Jun 2011
Spectrum Analyzer	Rhode & Schwarz	FSEK	EMC4182	Jan 2010	Jan 2011
Antenna Array	UL	BOMS	EMC4276	Jan 2010	Jan 2011

Figure 20 Radiated Emissions Band-edge Graph, GFSK, Low Channel, X-Axis

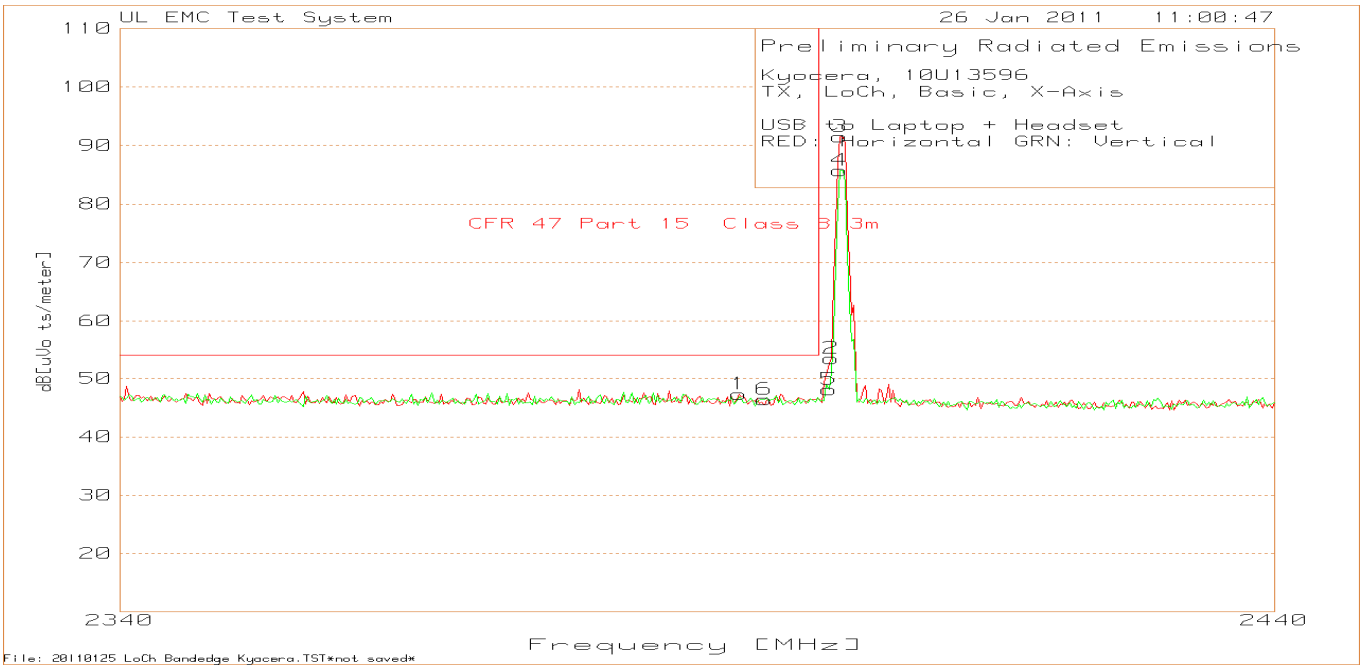


Table 24 Radiated Emissions Band-edge Data Points, GFSK, Low Channel, X-Axis

Kyocera, 10U13596
TX, LoCh, Basic, X-Axis
USB to Laptop + Headset
RED: Horizontal GRN: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	2393.106	20.93	PK	4.54	21.8	47.27	54	-6.73	Horz
2	2401.122	27.31	PK	4.35	21.8	53.46			Horz
3	2401.924	65.38	PK	4.33	21.8	91.51			Horz
4	2401.924	59.65	PK	4.33	21.8	85.78			Vert
5	2400.922	21.98	PK	4.35	21.8	48.13			Vert
6	2395.311	20.11	PK	4.48	21.8	46.39	54	-7.61	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

Figure 21 Radiated Emissions Band-edge Graph, GFSK, Low Channel, Y-Axis

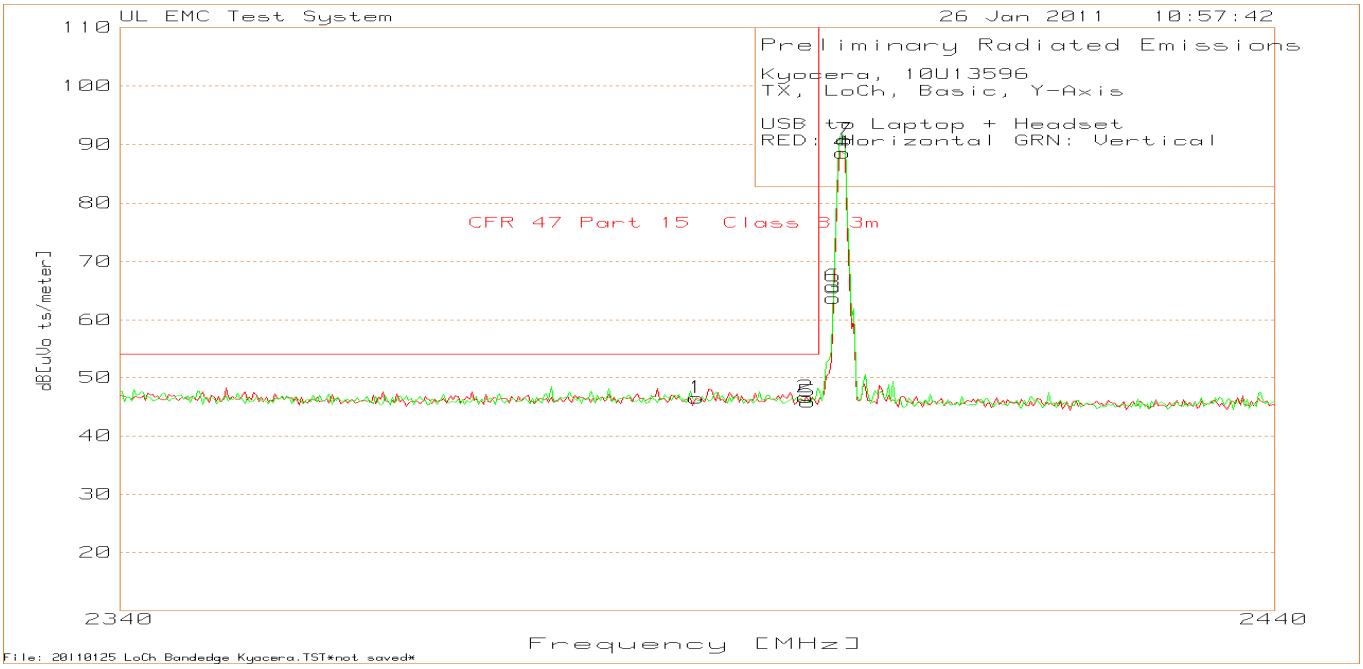


Table 25 Radiated Emissions Band-edge Data Points, GFSK, Low Channel, Y-Axis

Kyocera, 10U13596
TX, LoCh, Basic, Y-Axis
USB to Laptop + Headset
RED: Horizontal GRN: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	2389.499	20.21	PK	4.53	21.8	46.54	54	-7.46	Horz
2	2398.918	20.41	PK	4.4	21.8	46.61	54	-7.39	Horz
3	2401.323	37.62	PK	4.34	21.8	63.76			Horz
4	2402.124	62.46	PK	4.32	21.8	88.58			Horz
5	2399.118	19.61	PK	4.39	21.8	45.8	54	-8.2	Vert
6	2401.323	39.64	PK	4.34	21.8	65.78			Vert
7	2402.325	64.76	PK	4.32	21.8	90.88			Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

Figure 22 Radiated Emissions Band-edge Graph, GFSK, Low Channel, Z-Axis

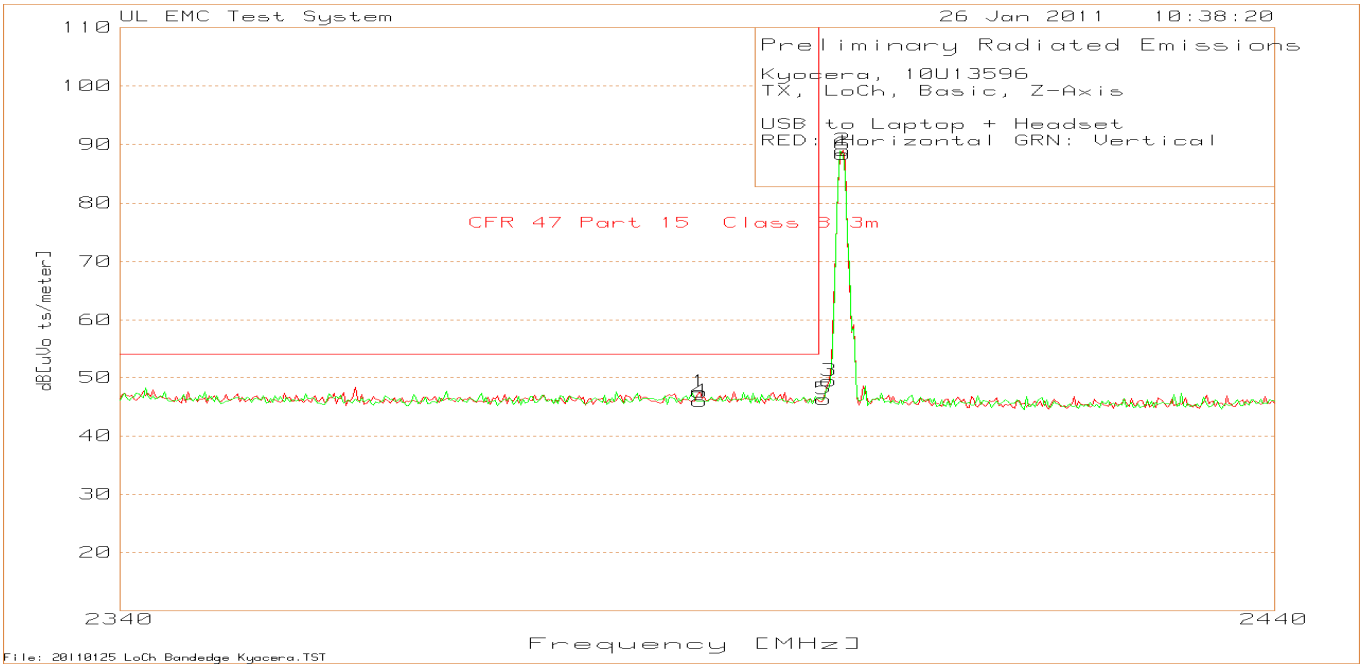


Table 26 Radiated Emissions Band-edge Data Points, GFSK, Low Channel, Z-Axis

Kyocera, 10U13596
TX, LoCh, Basic, Z-Axis
USB to Laptop + Headset
RED: Horizontal GRN: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	2389.699	21.18	PK	4.53	21.8	47.51	54	-6.49	Horz
2	2402.124	62.86	PK	4.32	21.8	88.98			Horz
3	2400.922	23.29	PK	4.35	21.8	49.44			Horz
4	2389.699	19.64	PK	4.53	21.8	45.97	54	-8.03	Vert
5	2400.521	20.15	PK	4.36	21.8	46.31			Vert
6	2402.124	62.24	PK	4.32	21.8	88.36			Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

Figure 23 Radiated Emissions Band-edge Graph, GFSK, High Channel, X-Axis

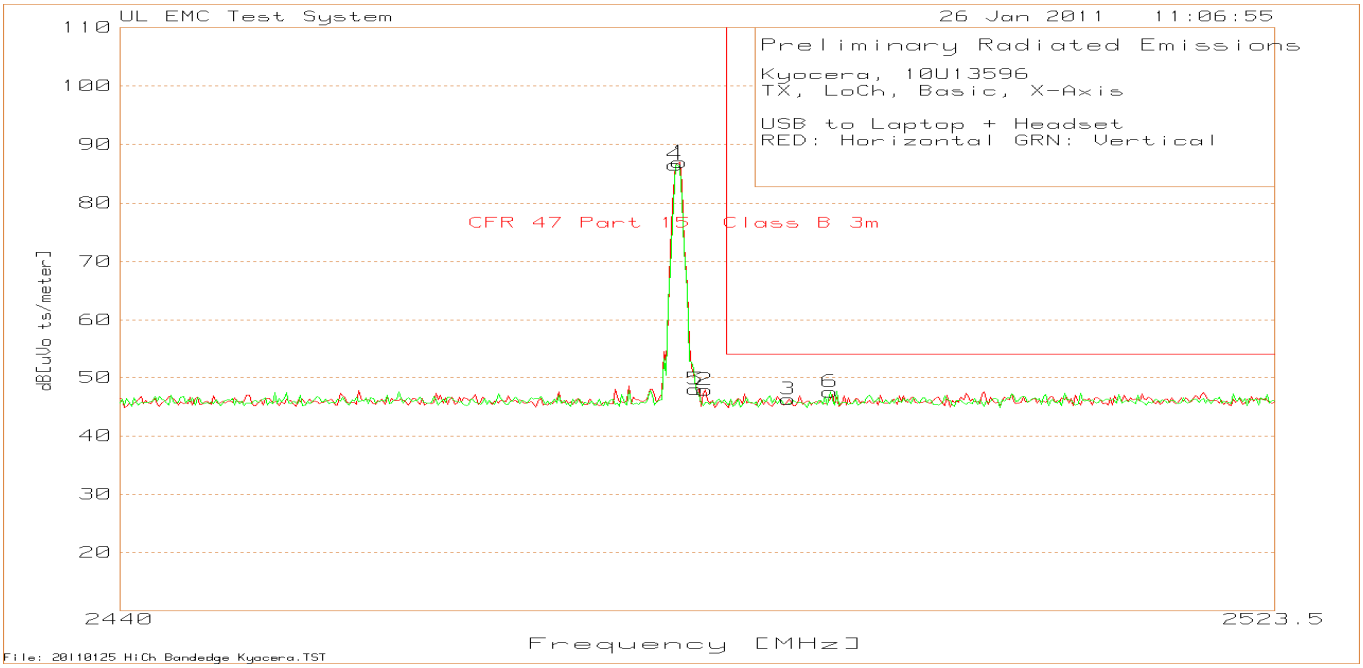


Table 27 Radiated Emissions Band-edge Data Points, GFSK, High Channel, X-Axis

Kyocera, 10U13596
TX, LoCh, Basic, X-Axis
USB to Laptop + Headset
RED: Horizontal GRN: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	2480.16	61.09	PK	3.94	22	87.03			Horz
2	2482.001	22.02	PK	3.91	22	47.93			Horz
3	2488.025	20.37	PK	3.84	22.1	46.31	54	-7.69	Horz
4	2479.826	60.59	PK	3.94	22	86.53			Vert
5	2481.332	22.03	PK	3.92	22	47.95			Vert
6	2491.037	21.61	PK	3.85	22.1	47.56	54	-6.44	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

Figure 24 Radiated Emissions Band-edge Graph, GFSK, High Channel, Y-Axis

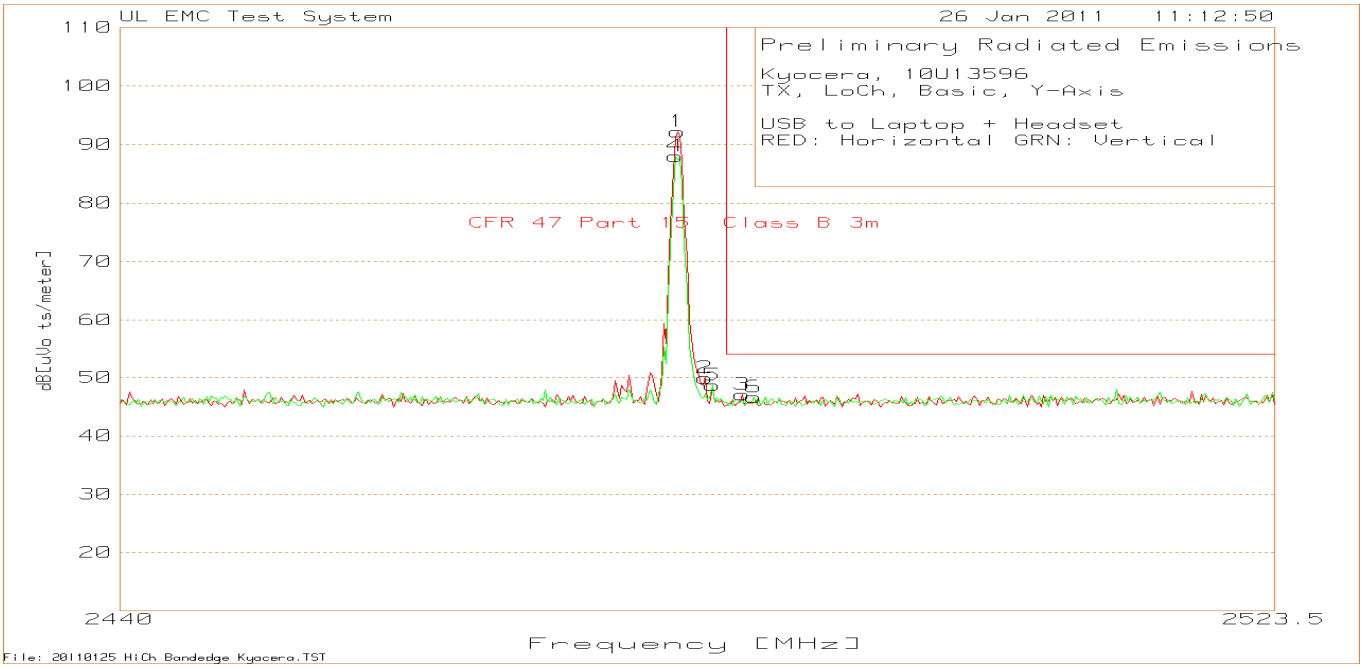


Table 28 Radiated Emissions Band-edge Data Points, GFSK, High Channel, Y-Axis

Kyocera, 10U13596
TX, LoCh, Basic, Y-Axis
USB to Laptop + Headset
RED: Horizontal GRN: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	2479.993	66.3	PK	3.94	22	92.24			Horz
2	2482.001	24.03	PK	3.91	22	49.94			Horz
3	2484.678	21.09	PK	3.87	22.1	47.06	54	-6.94	Horz
4	2479.826	62.08	PK	3.94	22	88.02			Vert
5	2482.503	22.78	PK	3.9	22	48.68			Vert
6	2485.515	20.66	PK	3.86	22.1	46.62	54	-7.38	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

Figure 25 Radiated Emissions Band-edge Graph, GFSK, High Channel, Z-Axis

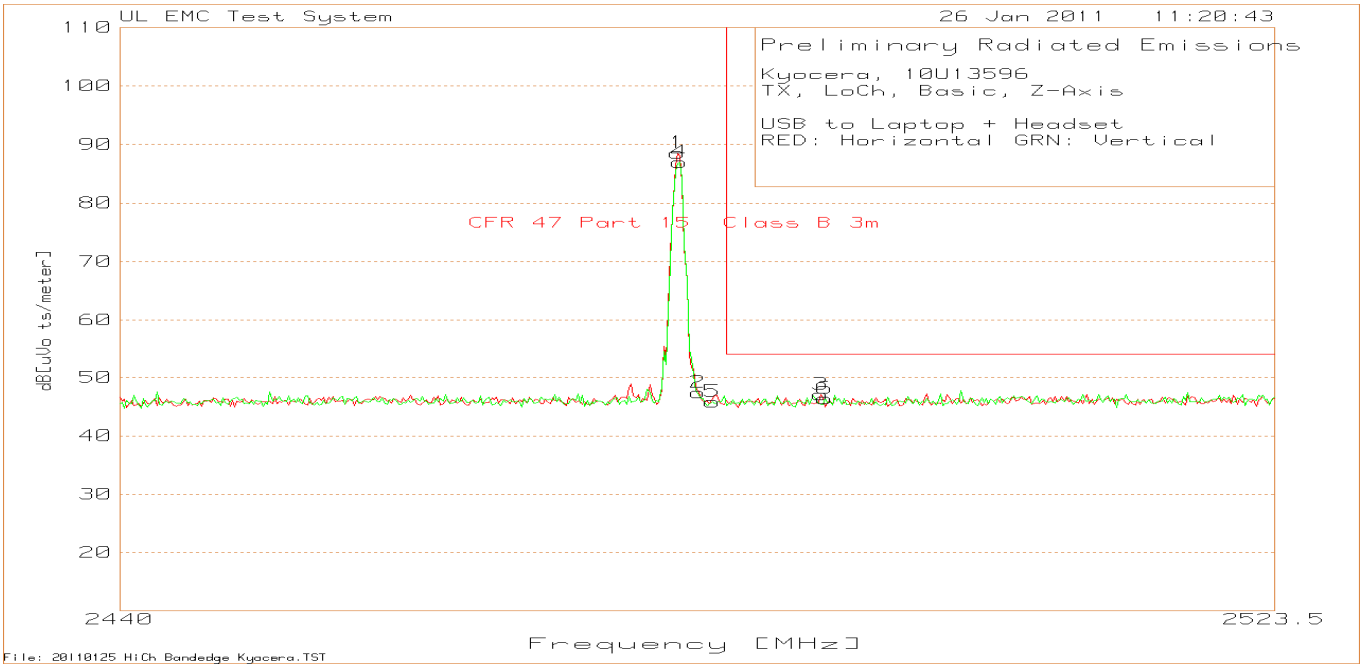


Table 29 Radiated Emissions Band-edge Data Points, GFSK, High Channel, Z-Axis

Kyocera, 10U13596
TX, LoCh, Basic, Z-Axis
USB to Laptop + Headset
RED: Horizontal GRN: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	2479.993	62.6	PK	3.94	22	88.54			Horz
2	2481.499	21.48	PK	3.92	22	47.4			Horz
3	2490.368	21.1	PK	3.85	22.1	47.05	54	-6.95	Horz
4	2480.16	61.05	PK	3.94	22	86.99			Vert
5	2482.503	19.91	PK	3.9	22	45.81			Vert
6	2490.702	20.41	PK	3.85	22.1	46.36	54	-7.64	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

Figure 26 Radiated Emissions Band-edge Graph, 8PSK, Low Channel, X-Axis

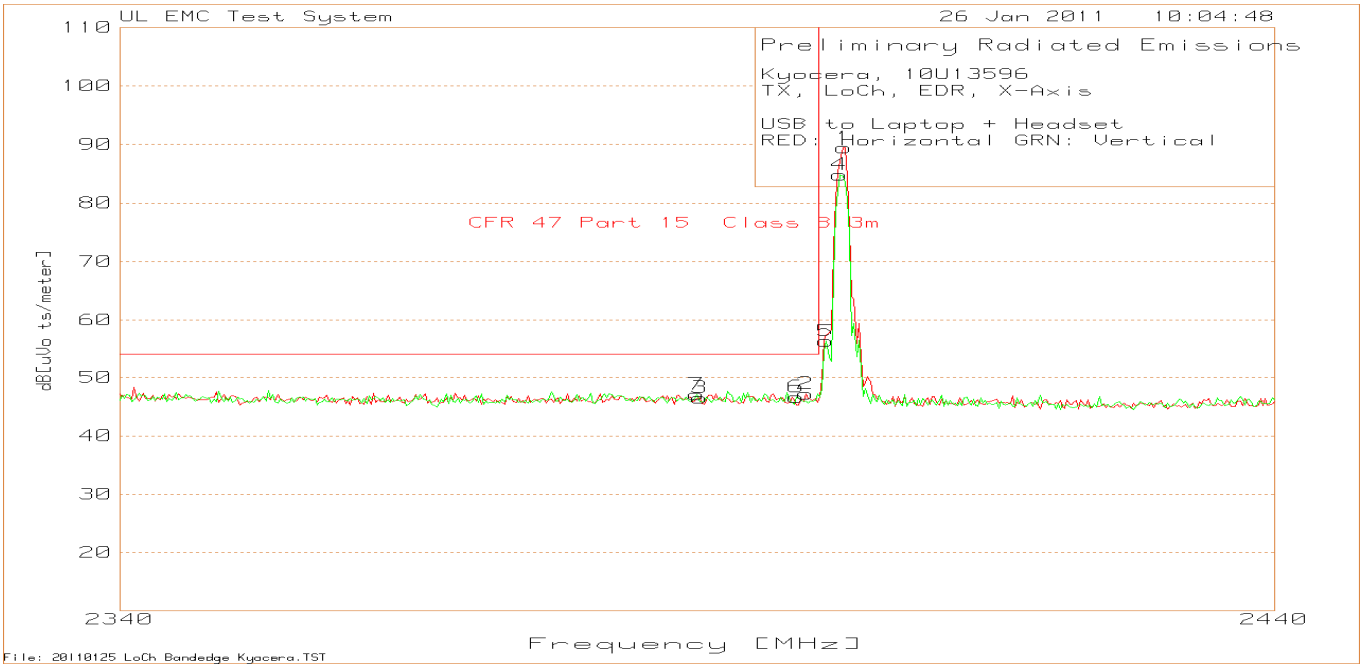


Table 30 Radiated Emissions Band-edge Data Points, 8PSK, Low Channel, X-Axis

Kyocera, 10U13596
TX, LoCh, EDR, X-Axis
USB to Laptop + Headset
RED: Horizontal GRN: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	2402.224	63.3	PK	4.32	21.8	89.42			Horz
2	2398.918	21.02	PK	4.4	21.8	47.22	54	-6.78	Horz
3	2389.699	20.15	PK	4.53	21.8	46.48	54	-7.52	Horz
4	2401.924	58.66	PK	4.33	21.8	84.79			Vert
5	2400.721	30.09	PK	4.36	21.8	56.25			Vert
6	2398.116	20.38	PK	4.42	21.8	46.6	54	-7.4	Vert
7	2389.499	20.72	PK	4.53	21.8	47.05	54	-6.95	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

Figure 27 Radiated Emissions Band-edge Graph, 8PSK, Low Channel, Y-Axis

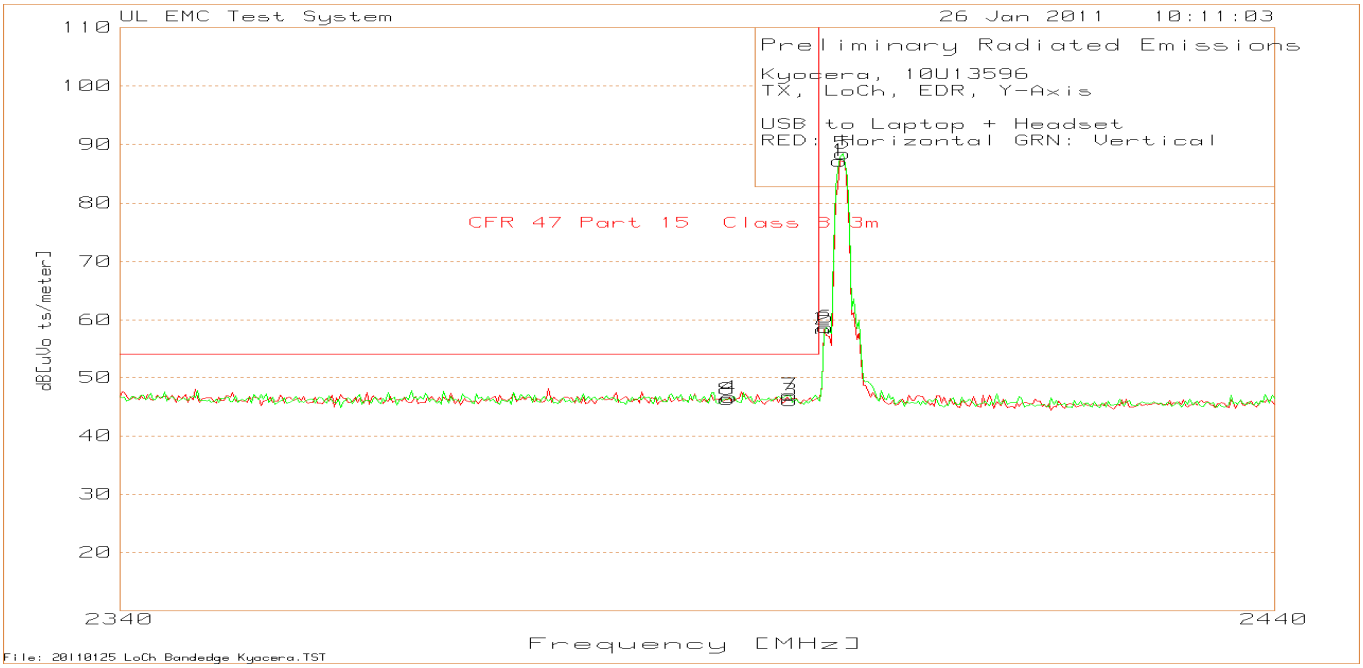


Table 31 Radiated Emissions Band-edge Data Points, 8PSK, Low Channel, Y-Axis

Kyocera, 10U13596
TX, LoCh, EDR, Y-Axis
USB to Laptop + Headset
RED: Horizontal GRN: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	2401.924	61.06	PK	4.33	21.8	87.19			Horz
2	2400.521	32.3	PK	4.36	21.8	58.46			Horz
3	2397.515	19.88	PK	4.43	21.8	46.11	54	-7.89	Horz
4	2392.305	20.22	PK	4.56	21.8	46.58	54	-7.42	Horz
5	2402.124	62.33	PK	4.32	21.8	88.45			Vert
6	2400.721	32.56	PK	4.36	21.8	58.72			Vert
7	2397.515	20.79	PK	4.43	21.8	47.02	54	-6.98	Vert
8	2392.104	19.88	PK	4.56	21.8	46.24	54	-7.76	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

Figure 28 Radiated Emissions Band-edge Graph, 8PSK, Low Channel, Z-Axis

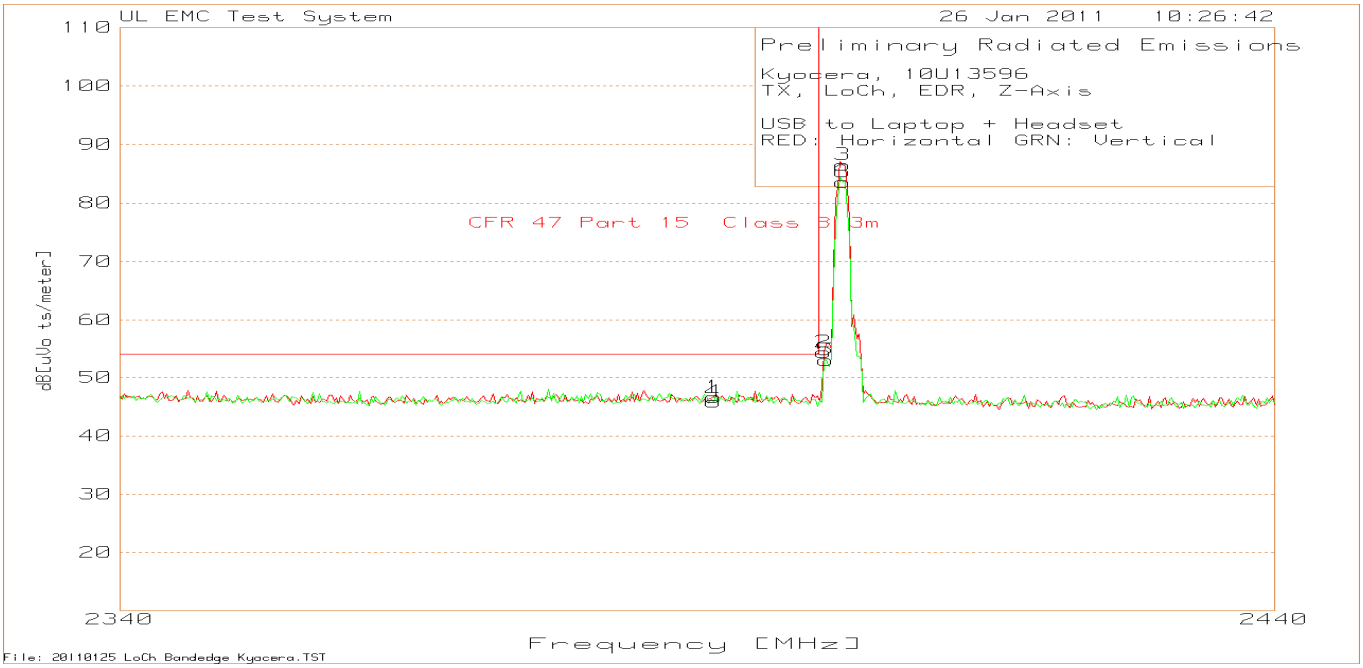


Table 32 Radiated Emissions Band-edge Data Points, 8PSK, Low Channel, Z-Axis

Kyocera, 10U13596
TX, LoCh, EDR, Z-Axis
USB to Laptop + Headset
RED: Horizontal GRN: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	2390.902	20.3	PK	4.55	21.8	46.65	54	-7.35	Horz
2	2400.521	28.22	PK	4.36	21.8	54.38			Horz
3	2402.124	60.37	PK	4.32	21.8	86.49			Horz
4	2390.902	19.5	PK	4.55	21.8	45.85	54	-8.15	Vert
5	2400.721	26.83	PK	4.36	21.8	52.99			Vert
6	2402.124	57.44	PK	4.32	21.8	83.56			Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

Figure 29 Radiated Emissions Band-edge Graph, 8PSK, High Channel, X-Axis

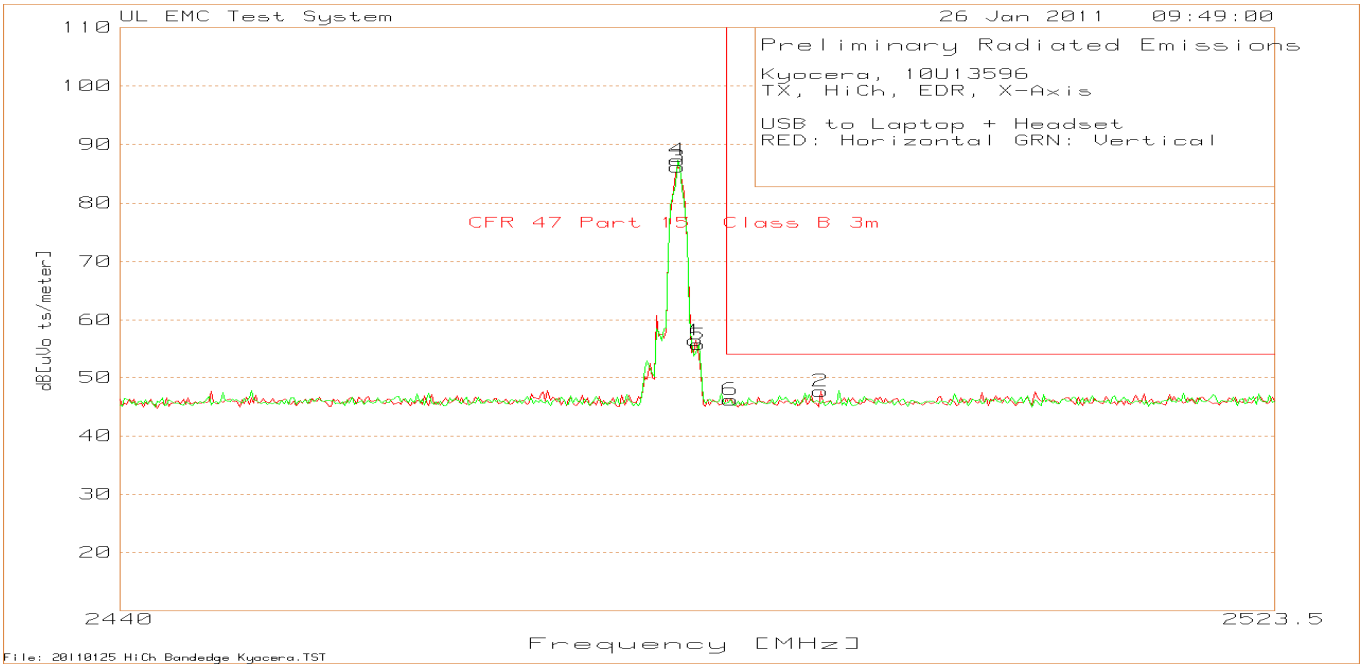


Table 33 Radiated Emissions Band-edge Data Points, 8PSK, High Channel, X-Axis

Kyocera, 10U13596
TX, HiCh, EDR, X-Axis
USB to Laptop + Headset
RED: Horizontal GRN: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	2481.332	30.46	PK	3.92	22	56.38			Horz
2	2490.368	21.71	PK	3.85	22.1	47.66	54	-6.34	Horz
3	2479.993	60.29	PK	3.94	22	86.23			Horz
4	2479.993	61.34	PK	3.94	22	87.28			Vert
5	2481.499	29.79	PK	3.92	22	55.71			Vert
6	2483.842	20.24	PK	3.88	22.1	46.22	54	-7.78	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

Figure 30 Radiated Emissions Band-edge Graph, 8PSK, High Channel, Y-Axis

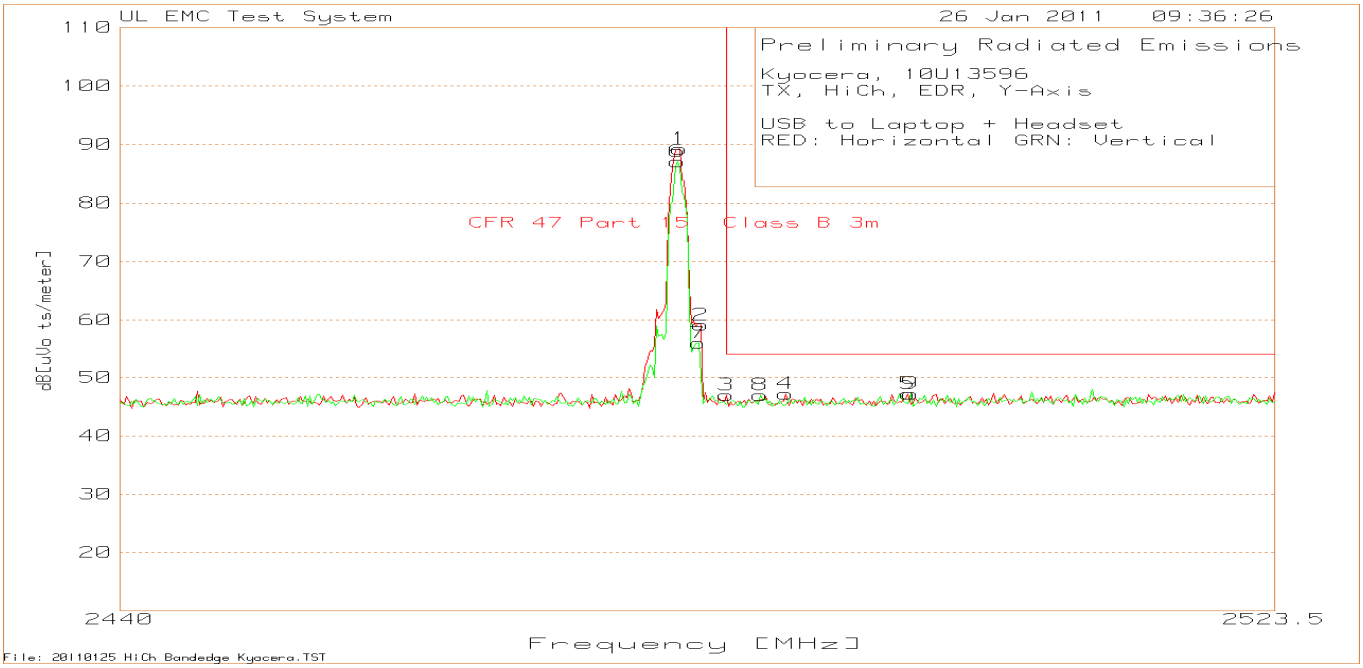


Table 34 Radiated Emissions Band-edge Data Points, 8PSK, High Channel, Y-Axis

Kyocera, 10U13596
TX, HiCh, EDR, Y-Axis
USB to Laptop + Headset
RED: Horizontal GRN: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	2480.16	63.3	PK	3.94	22	89.24			Horz
2	2481.666	33.25	PK	3.91	22	59.16			Horz
3	2483.507	21	PK	3.89	22.1	46.99	54	-7.01	Horz
4	2487.858	21.23	PK	3.83	22.1	47.16	54	-6.84	Horz
5	2496.726	21.2	PK	3.89	22.1	47.19	54	-6.81	Horz
6	2479.993	61.14	PK	3.94	22	87.08			Vert
7	2481.499	30.04	PK	3.92	22	55.96			Vert
8	2486.017	21.05	PK	3.85	22.1	47	54	-7	Vert
9	2496.894	21.17	PK	3.89	22.1	47.16	54	-6.84	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

Figure 31 Radiated Emissions Band-edge Graph, 8PSK, High Channel, Z-Axis

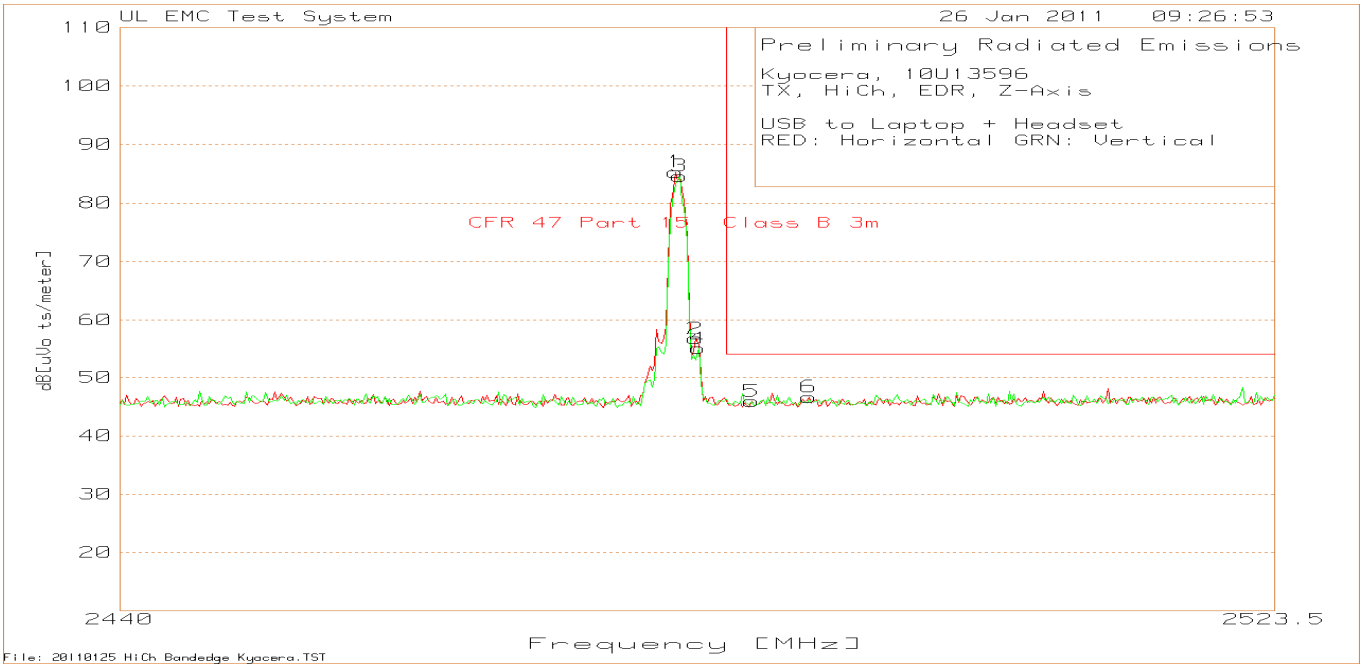


Table 35 Radiated Emissions Band-edge Data Points, 8PSK, High Channel, Z-Axis

Kyocera, 10U13596
TX, HiCh, EDR, Z-Axis
USB to Laptop + Headset
RED: Horizontal GRN: Vertical

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit 1	Margin 1[dB]	Polarity
1	2479.826	59.34	PK	3.94	22	85.28			Horz
2	2481.332	30.8	PK	3.92	22	56.72			Horz
5	2485.348	19.94	PK	3.86	22.1	45.9	54	-8.1	Horz
6	2489.531	20.73	PK	3.84	22.1	46.67	54	-7.33	Horz
3	2480.16	58.68	PK	3.94	22	84.62			Vert
4	2481.499	29.11	PK	3.92	22	55.03			Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

PK - Peak detector

4.3 Test Conditions and Results – DIGITAL RADIATED EMISSIONS

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-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	(10 meter distance)

Limits - Class B

Frequency (MHz)	Limit (dBµV/m)	
	Quasi-Peak	Average
30 - 88	29.54	NA
88 - 216	33.04	NA
216 - 960	35.54	NA
960 - 1000	43.54	NA
Above 960 (FCC)	NA	54 (at 3-meter)

Supplementary information: None

Table 36 Radiated Emissions EUT Configuration Settings

Power Interface Mode #	EUT Configurations Mode #	EUT Operation Mode #
1	1	3

Supplementary information: None

Table 37 Radiated Emissions Test Equipment

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due Date
EMI Test Receiver	Rohde & Schwarz	ESU	EMC4323	Jan 2010	Jan 2011
Bicon Antenna	Electro-Metrics	EM6912A	EMC4070	Jun 2010	Jun 2011
Log-P Antenna	Chase	UPA6109	EMC4313	Jun 2010	Jun 2011
Spectrum Analyzer	Rhode & Schwarz	FSEK	EMC4182	Jan 2010	Jan 2011
Antenna Array	UL	BOMS	EMC4276	Jan 2010	Jan 2011

Figure 32 Radiated Emissions Graph

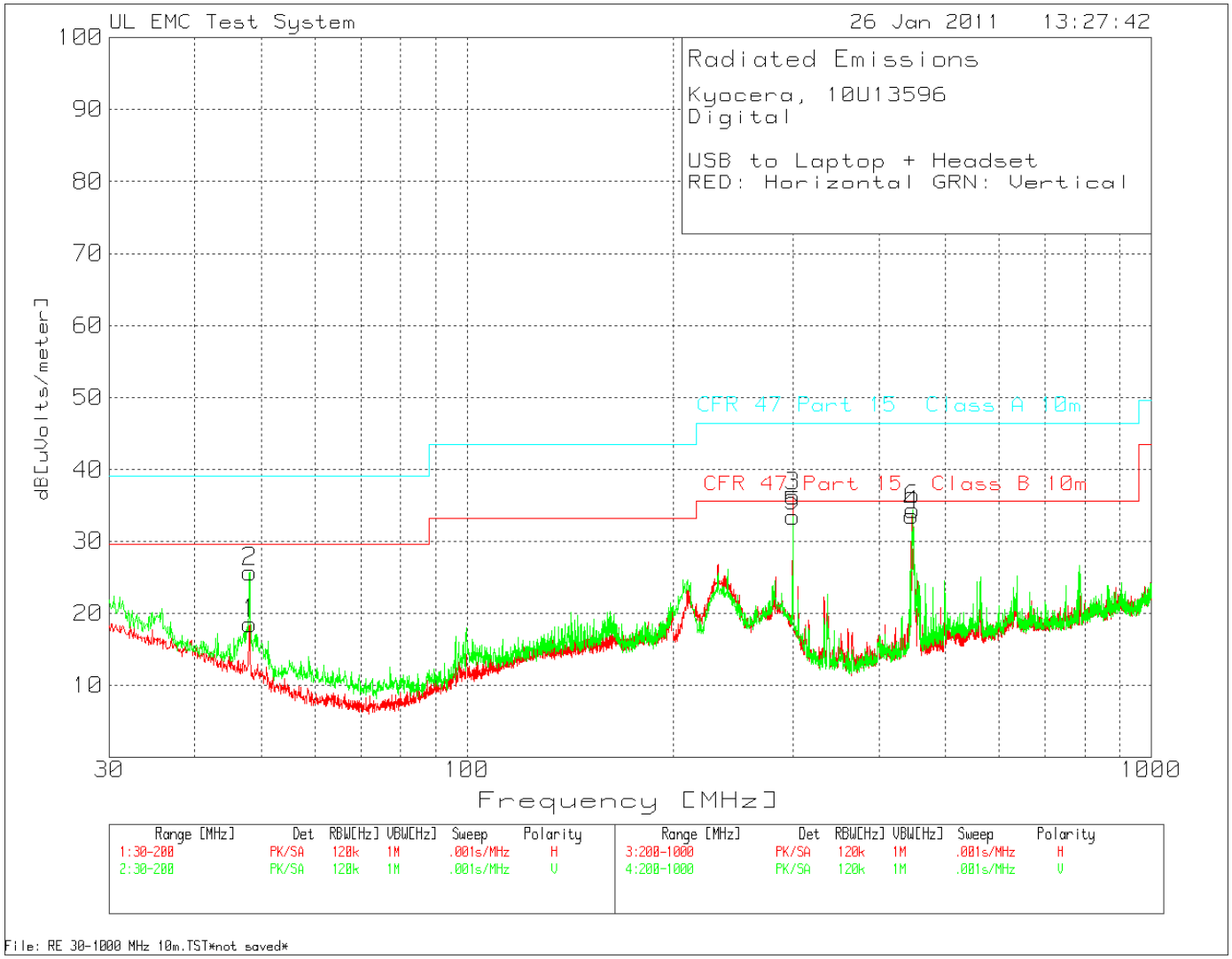


Table 38 Radiated Emissions Data Points

Kyocera, 10U13596
Digital
USB to Laptop + Headset
RED: Horizontal GRN: Vertical

No.	Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit:1	2	3	4	5	6
1	48.096	38 PK	-30.2	10.7	18.5	-	-	39.1	29.6	-	-
		Height:399 Horz		Margin [dB]		-	-	-20.6	-11.1	-	-
2	48.096	45.2 PK	-30.2	10.7	25.7	-	-	39.1	29.6	-	-
		Height:100 Vert		Margin [dB]		-	-	-13.4	-3.9	-	-
3	299.4004	55.9 PK	-32.8	13.1	36.2	-	-	46.4	35.6	-	-
		Height:402 Horz		Margin [dB]		-	-	-10.2	.6	-	-
4	447.0353	48.29 PK	-31.8	17	33.49	-	-	46.4	35.6	-	-
		Height:202 Horz		Margin [dB]		-	-	-12.91	-2.11	-	-
5	299.4004	53.11 PK	-32.8	13.1	33.41	-	-	46.4	35.6	-	-
		Height:100 Vert		Margin [dB]		-	-	-12.99	-2.19	-	-
6	447.8348	49.26 PK	-31.9	17	34.36	-	-	46.4	35.6	-	-
		Height:400 Vert		Margin [dB]		-	-	-12.04	-1.24	-	-

Frequency [MHz]	Test Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit:1	2	3	4	5	6
48.113	43.88 QP	-30.2	10.7	24.38	-	-	39.1	29.6	-	-
Azimuth: 59	Height:100 Vert		Margin [dB]:		-	-	-14.72	-5.22	-	-
299.46	46.88 QP	-32.8	13.1	27.18	-	-	46.4	35.6	-	-
Azimuth: 310	Height:251 Horz		Margin [dB]:		-	-	-19.22	-8.42	-	-
299.46	48.16 QP	-32.8	13.1	28.46	-	-	46.4	35.6	-	-
Azimuth: 344	Height:100 Vert		Margin [dB]:		-	-	-17.94	-7.14	-	-
448.176	46.91 QP	-31.9	17	32.01	-	-	46.4	35.6	-	-
Azimuth: 212	Height:356 Vert		Margin [dB]:		-	-	-14.39	-3.59	-	-
448.176	35.8 QP	-31.9	17	20.9	-	-	46.4	35.6	-	-
Azimuth: 310	Height:319 Horz		Margin [dB]:		-	-	-25.5	-14.7	-	-

LIMIT 3: CFR 47 Part 15 Class A 10m
LIMIT 4: CFR 47 Part 15 Class B 10m

PK - Peak detector
QP - Quasi-Peak detector

5.0 IMMUNITY TEST RESULTS

Immunity testing was not conducted nor requested.

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/ts/htdocs/210/214/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.

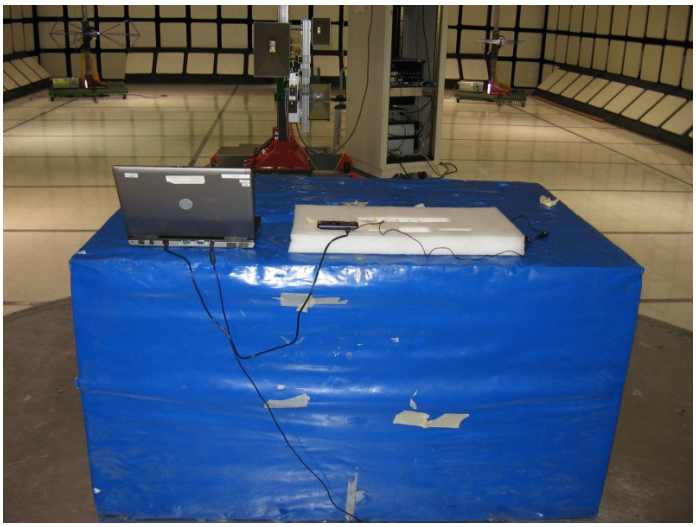
ICASA: ICASA (Independent Communications Authority of South Africa) has appointed UL as a Designated Test Laboratory to test Telecommunications equipment for type approval in compliance with CISPR 22 to assist in fulfilling its mandate under section 54(1) of the Telecommunications Act, 1996 (Act 103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

Appendix B – Test Setup Photos


Radiated X-Axis Configuration


Radiated Y-AxisConfiguration



Radiated Z-Axis Configuration