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Job Number:	1001358989
Project Number:	11CA14755A
File Number:	MC16433
Date:	May 19, 2011
Model:	LRA1721/XX & LRD 1730/XX

Electromagnetic Compatibility Test Report

For

Philips Lighting Electronics N. A.

Test Report Details

Tests Performed By:	**Underwriters Laboratories Inc.** **333 Pfingsten Rd.** **Northbrook, IL 60062**
Tests Performed For:	**Philips Lighting Electronics N. A.** **10275 West Higgins Road** **Rosemont, IL 60018**
Applicant Contact: Phone: E-mail:	**Richard Haring** **(847) 390-5195** **richard.haring@philips.com**
Test Report Date:	**May 19, 2011**
Product Type:	**Wireless Wall Switch**
Product standards	**FCC Part 15, Subpart B**
Model Number:	**LRA1721/XX & LRD1730/XX**
EUT Category:	**Lighting Products**
Testing Start Date:	**March 29, 2011**
Date Testing Complete:	**April 14, 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 model LRA1721/xx is a push operated wall-mount light switch intended for installation in series with the ungrounded side of a supply circuit. The model LRA1721 controls a light via a push button switch or wirelessly in conjunction with the LRA1743/xx PIR occupancy and model LRM1760/xx PIR occupancy/daylight photocell sensors.

The model LRD1730/xx is a push operated wall-mount light switch and dimmer intended for installation in series with the ungrounded side of a supply circuit. The model LRA1730 controls a light via a push button switch or wirelessly in conjunction with the LRA1743/xx PIR occupancy and model LRM1760/xx PIR occupancy/daylight photocell sensors.

1.2 Device Configuration During Test

1.2.1 Equipment Used During Test:

Use	Product Type	Manufacturer	Model	Comments
EUT	Switch	Philips Lighting Electronics N. A.	LRA1721/00 LRA1721/01	00 – White Color 01 – Almond Color
EUT	Dimmer	Philips Lighting Electronics N. A.	LRD1730/00 LRD1730/01	

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	Y	N	None
2	Antenna	-	N	N	None

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 Power Interface:

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

1.3 EUT Configurations

Mode #	Description
1	EUT was configured on 80cm wooden table and connected to LISNs. The AC output of the switch was not terminated into a load.
2	EUT was configured on 80cm Styrofoam with cable routed vertically into a power source. The AC output of the switch was not terminated into a load
3	EUT was configured on bench top with it's RF output connected directly into a measuring device (Oscilloscope or Spectrum Analyzer)

1.4 EUT Operation Modes

Mode #	Description
1	EUT was set to continuously transmit on a single channel with full output power.
2	EUT was set to receive on a single channel. This is also considered as standby mode.
3	EUT was loaded with normal software. A multiple attempts were made to create a link between different devices (other switch and a sensor) to produce the worst case duty cycle factor.

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

Product is considered Class A per Part 15, Subpart B

Standard Number	Standard Name	Standard Date
FCC Part 15, Subpart B & 15.247	Code of Federal Regulations, Part 15, Radio Frequency Devices	2010
RSS-210, Issue 8	License-Exempt Radio Apparatus (All Frequency Bands): Category I Equipment	December 2010
RSS-Gen, Issue 3	General Requirements and Information for the Certification of Certification of Radio Apparatus	December 2010

2.4 Results Summary

Requirement – Test	References	Result (Compliant / Non-Compliant)*
Conducted Emissions - Mains	47 CFR Part 15.107, 15.207 RSS-Gen 7.2.4	Compliant
Radiated Emissions - Digital	47 CFR Part 15.209 RSS-Gen 7.2.3	Compliant
Spurious Emissions (Antenna Conducted and Radiated)	47 CFR Part 15.247(d) RSS-210, A8.5 RSS-Gen 7.2.5	Compliant
Bandedge Compliance	47 CFR Part 15.247(d) RSS-210, A8.5	Compliant
Duty Cycle and Duty Cycle Factor	47 CFR Part 15.35(c) RSS-Gen 4.5	Compliant
6dB Bandwidth	47 CFR Part 15.247(a)(2) RSS-210, A8.2(a)	Compliant
Peak Power	47 CFR Part 15.247(b)(3) RSS-210, A8.4(4)	Compliant
Power Spectral Density	47 CFR Part 15.247(e) RSS-210, A8.2(b)	Compliant
99% Occupied Bandwidth	RSS-Gen, 4.6.1	Compliant

Test Engineer:

Reviewer:

Vahan Pilibosian (Ext.42319)
Senior Project Engineer
International EMC Services
Conformity Assessment Services-

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Senior Project Engineer
International EMC Services
Conformity Assessment Services

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

---------- Canada ----------

Industry Canada	Spectrum Management and Telecommunications Radio Standards Specifications

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

Measurement Uncertainty

Test	Uncertainty, k=2
Conducted Emissions	0.3 dB
Radiated Emissions	1.2 dB

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 – 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. The EUT was placed approximately 80cm above horizontal ground plane and 40cm from the vertical ground plane (+/- 10%).

Basic Standard	47 CFR Part 15.107, 15.207 RSS-Gen 7.2.4	
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

Limits - Class A

Frequency (MHz)	Limit (dBµV)	
	Quasi-Peak	Average
0.15-0.5	79	66
0.5-30	73	60

Supplementary information: EUT is not for residential use therefore it will never be connected to public utility. All emissions recorded are product of the SMPS used within the device and are not product of the transmitter.

Table 1 Conducted Emissions EUT Configuration Settings

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

Supplementary information: None

Table 2 Conducted Emissions Test Equipment

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due Date
EMI Test Receiver	Rohde & Schwarz	ESCI	EMC4328	Dec 29 2010	Dec 29 2011
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	2831A00838	N/A	N/A
LISN - L1	Solar	8602-50-TS-50-N	EMC4052	Jan 6 2011	Jan 6 2012
LISN - L2	Solar	8602-50-TS-50-N	EMC4064	Jan 6 2011	Jan 6 2012
FILE USED FOR TESTING					
CISPR 22_11 w_ Dongle Line 1and2.TST					

Figure 1 Test Setup for Conducted Emissions

Figure 2 Conducted Emissions Graph – Switch – Low Channel

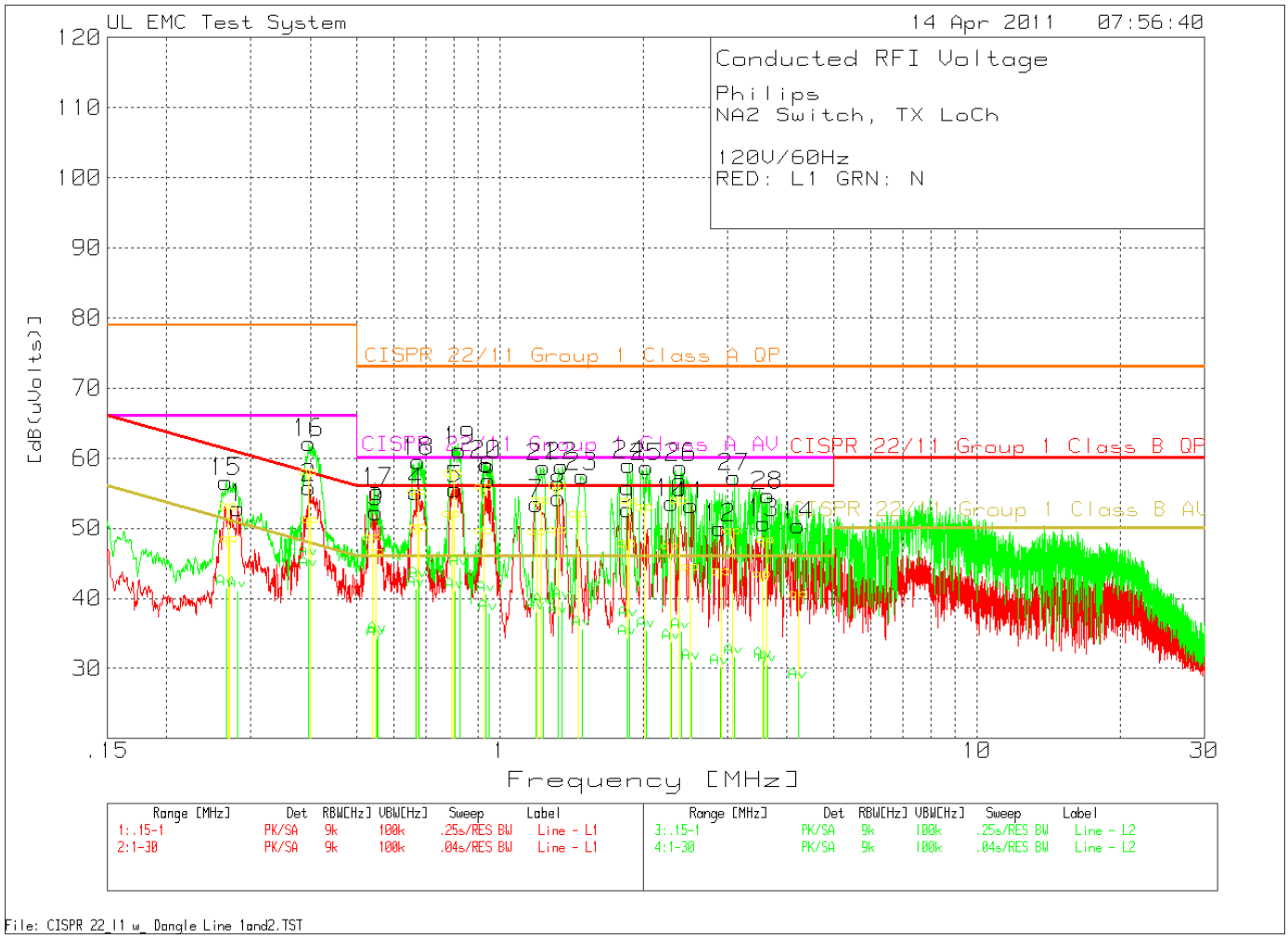


Figure 3 Conducted Emissions Graph – Switch – Middle Channel

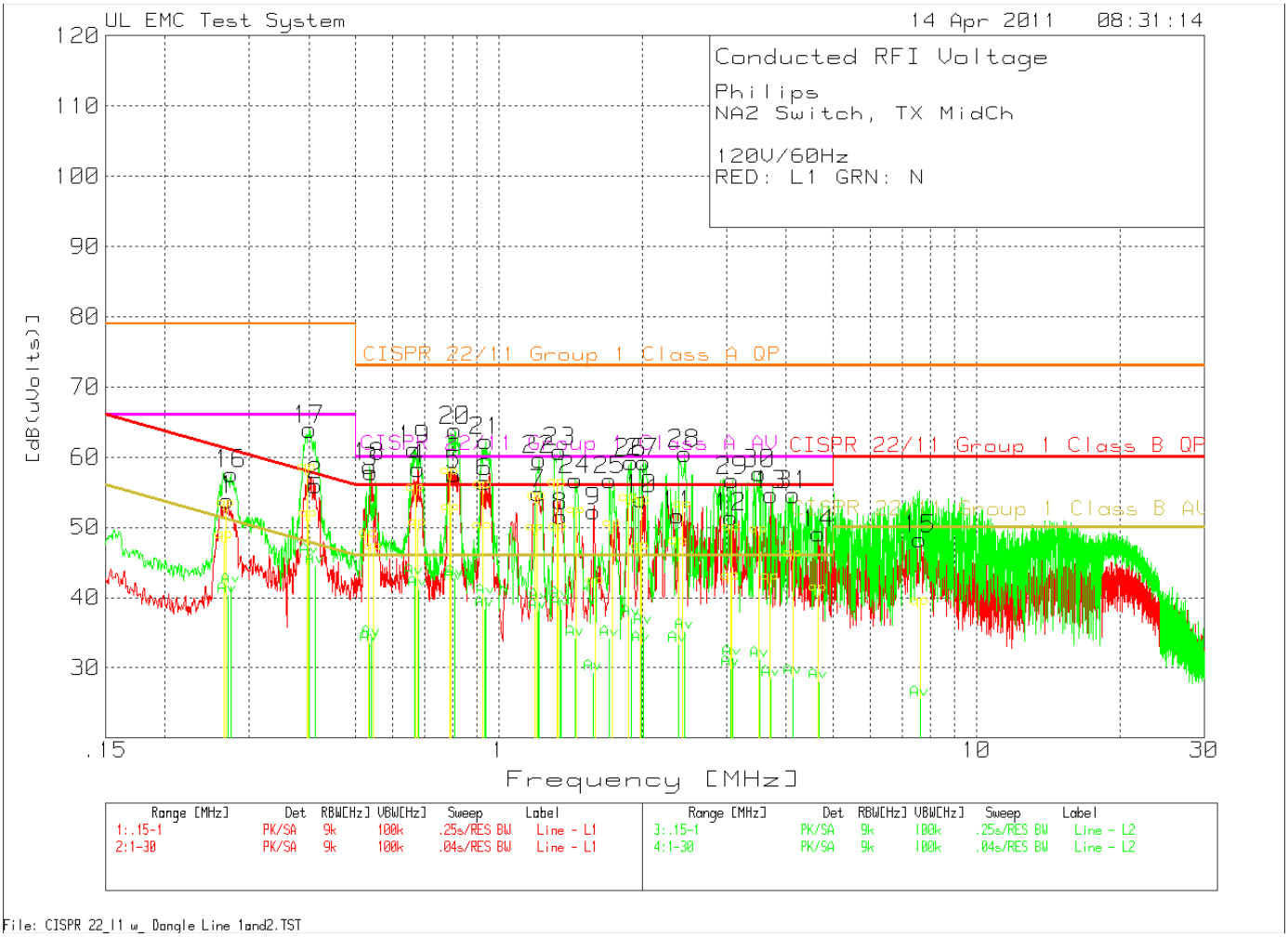


Figure 4 Conducted Emissions Graph – Switch – High Channel

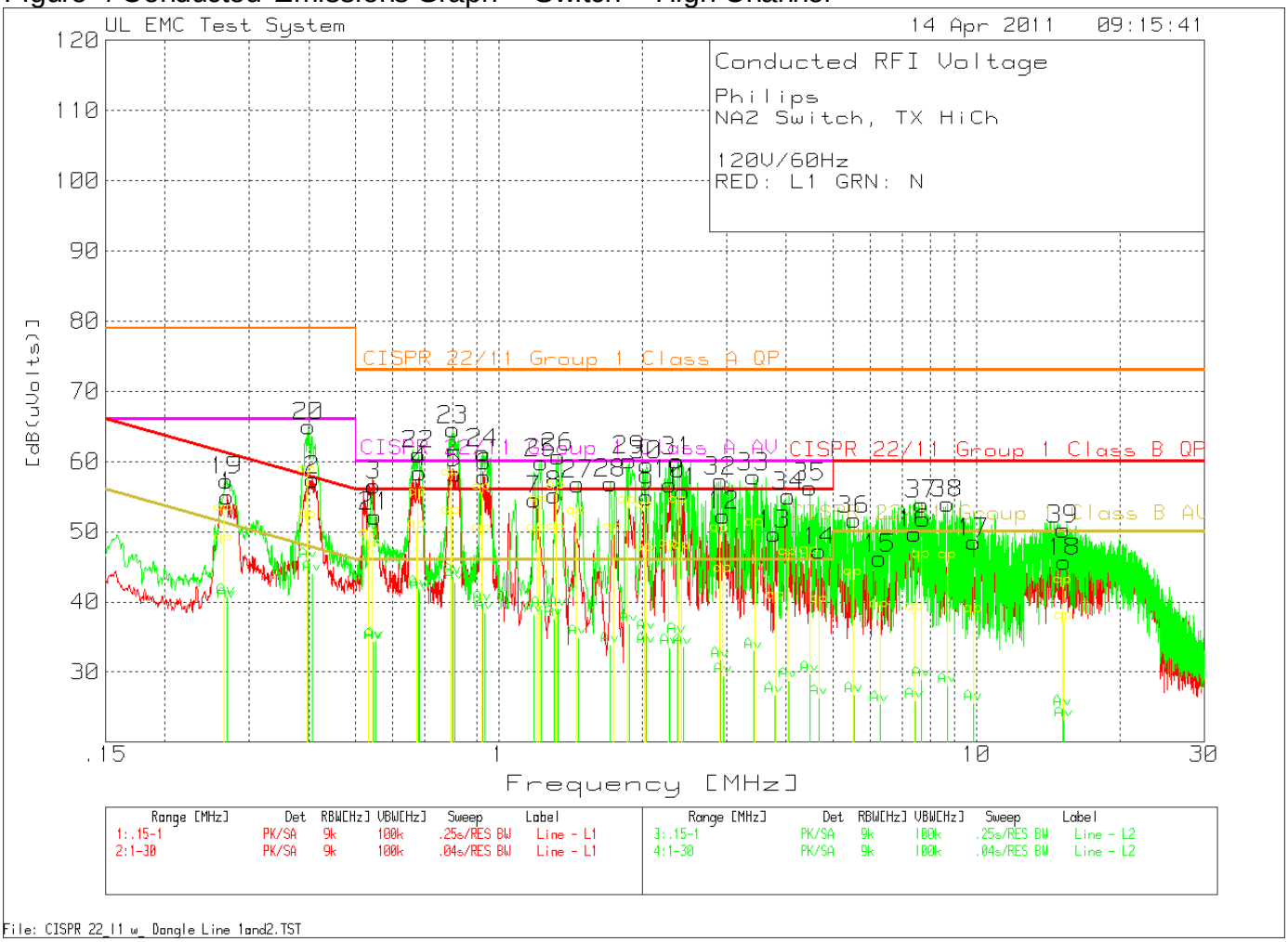


Table 3 Conducted Emissions Data Points – Switch – Low Channel

Philips
NA2 Switch, TX LoCh
120V/60Hz
RED: L1 GRN: N

No.	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 .15 - 1MHz												
1	.28168	41.09	PK	.8	11	52.89	79	66	60.8	50.8	-	-
					Margin [dB]		-26.11	-13.11	-7.91	2.09	-	-
2	.39765	44.52	PK	.5	10.8	55.82	79	66	57.9	47.9	-	-
					Margin [dB]		-23.18	-10.18	-2.08	7.92	-	-
3	.55058	41.43	PK	.3	10.6	52.33	73	60	56	46	-	-
					Margin [dB]		-20.67	-7.67	-3.67	6.33	-	-
4	.66739	44.19	PK	.3	10.6	55.09	73	60	56	46	-	-
					Margin [dB]		-17.91	-4.91	-.91	9.09	-	-
5	.8046	44.77	PK	.2	10.6	55.57	73	60	56	46	-	-
					Margin [dB]		-17.43	-4.43	-.43	9.57	-	-
6	.94605	46.06	PK	.2	10.6	56.86	73	60	56	46	-	-
					Margin [dB]		-16.14	-3.14	.86	10.86	-	-
Line - L1 1 - 30MHz												
7	1.19125	42.69	PK	.2	10.6	53.49	73	60	56	46	-	-
					Margin [dB]		-19.51	-6.51	-2.51	7.49	-	-
8	1.32454	43.54	PK	.2	10.6	54.34	73	60	56	46	-	-
					Margin [dB]		-18.66	-5.66	-1.66	8.34	-	-
9	1.85192	41.89	PK	.2	10.6	52.69	73	60	56	46	-	-
					Margin [dB]		-20.31	-7.31	-3.31	6.69	-	-
10	2.29237	42.82	PK	.2	10.6	53.62	73	60	56	46	-	-
					Margin [dB]		-19.38	-6.38	-2.38	7.62	-	-
11	2.51839	42.49	PK	.2	10.6	53.29	73	60	56	46	-	-
					Margin [dB]		-19.71	-6.71	-2.71	7.29	-	-
12	2.89508	39.22	PK	.2	10.6	50.02	73	60	56	46	-	-
					Margin [dB]		-22.98	-9.98	-5.98	4.02	-	-
13	3.57314	39.84	PK	.2	10.7	50.74	73	60	56	46	-	-
					Margin [dB]		-22.26	-9.26	-5.26	4.74	-	-
14	4.22222	39.52	PK	.2	10.7	50.42	73	60	56	46	-	-
					Margin [dB]		-22.58	-9.58	-5.58	4.42	-	-
Line - L2 .15 - 1MHz												
15	.26639	44.61	PK	.8	11.2	56.61	79	66	61.2	51.2	-	-
					Margin [dB]		-22.39	-9.39	-4.59	5.41	-	-
16	.39723	50.78	PK	.5	10.9	62.18	79	66	57.9	47.9	-	-
					Margin [dB]		-16.82	-3.82	4.28	14.28	-	-
17	.55355	44.2	PK	.3	10.7	55.2	73	60	56	46	-	-
					Margin [dB]		-17.8	-4.8	-.8	9.2	-	-
18	.67461	48.63	PK	.2	10.7	59.53	73	60	56	46	-	-
					Margin [dB]		-13.47	-.47	3.53	13.53	-	-
19	.82286	50.22	PK	.2	10.7	61.12	73	60	56	46	-	-
					Margin [dB]		-11.88	1.12	5.12	15.12	-	-
20	.93586	48.21	PK	.2	10.7	59.11	73	60	56	46	-	-
					Margin [dB]		-13.89	-.89	3.11	13.11	-	-
Line - L2 1 - 30MHz												
21	1.23182	47.81	PK	.2	10.7	58.71	73	60	56	46	-	-
					Margin [dB]		-14.29	-1.29	2.71	12.71	-	-
22	1.34772	47.94	PK	.2	10.7	58.84	73	60	56	46	-	-
					Margin [dB]		-14.16	-1.16	2.84	12.84	-	-
23	1.48681	46.59	PK	.1	10.7	57.39	73	60	56	46	-	-
					Margin [dB]		-15.61	-2.61	1.39	11.39	-	-
24	1.86351	48.25	PK	.1	10.7	59.05	73	60	56	46	-	-
					Margin [dB]		-13.95	-.95	3.05	13.05	-	-
25	2.03158	47.92	PK	.1	10.7	58.72	73	60	56	46	-	-
					Margin [dB]		-14.28	-1.28	2.72	12.72	-	-
26	2.39668	47.85	PK	.1	10.7	58.65	73	60	56	46	-	-
					Margin [dB]		-14.35	-1.35	2.65	12.65	-	-
27	3.09792	46.36	PK	.1	10.8	57.26	73	60	56	46	-	-
					Margin [dB]		-15.74	-2.74	1.26	11.26	-	-
28	3.64269	43.77	PK	.1	10.8	54.67	73	60	56	46	-	-
					Margin [dB]		-18.33	-5.33	-1.33	8.67	-	-

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

Philips
NA2 Switch, TX LoCh
120V/60Hz
RED: L1 GRN: N

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										
.27033	35.52 QP	.8	11.1	47.42	79	66	61.11	51.11	-	-
			Margin [dB]:		-31.58	-18.58	-13.69	-3.69	-	-
.40028	38.9 QP	.5	10.8	50.2	79	66	57.85	47.85	-	-
			Margin [dB]:		-28.8	-15.8	-7.65	2.35	-	-
.54827	34.71 QP	.3	10.6	45.61	73	60	56	46	-	-
			Margin [dB]:		-27.39	-14.39	-10.39	-.39	-	-
.67507	38.21 QP	.3	10.6	49.11	73	60	56	46	-	-
			Margin [dB]:		-23.89	-10.89	-6.89	3.11	-	-
.79149	40.16 QP	.3	10.6	51.06	73	60	56	46	-	-
			Margin [dB]:		-21.94	-8.94	-4.94	5.06	-	-
.92399	37.77 QP	.2	10.6	48.57	73	60	56	46	-	-
			Margin [dB]:		-24.43	-11.43	-7.43	2.57	-	-
1.19393	37.66 QP	.2	10.6	48.46	73	60	56	46	-	-
			Margin [dB]:		-24.54	-11.54	-7.54	2.46	-	-
1.32185	37.94 QP	.2	10.6	48.74	73	60	56	46	-	-
			Margin [dB]:		-24.26	-11.26	-7.26	2.74	-	-
1.85033	36.02 QP	.2	10.6	46.82	73	60	56	46	-	-
			Margin [dB]:		-26.18	-13.18	-9.18	.82	-	-
2.27843	35.64 QP	.2	10.6	46.44	73	60	56	46	-	-
			Margin [dB]:		-26.56	-13.56	-9.56	.44	-	-
2.50703	32.61 QP	.2	10.6	43.41	73	60	56	46	-	-
			Margin [dB]:		-29.59	-16.59	-12.59	-2.59	-	-
2.91098	31.99 QP	.2	10.6	42.79	73	60	56	46	-	-
			Margin [dB]:		-30.21	-17.21	-13.21	-3.21	-	-
3.5586	31.54 QP	.2	10.7	42.44	73	60	56	46	-	-
			Margin [dB]:		-30.56	-17.56	-13.56	-3.56	-	-
4.22753	28.69 QP	.2	10.7	39.59	73	60	56	46	-	-
			Margin [dB]:		-33.41	-20.41	-16.41	-6.41	-	-
Line - L2										
.26982	40.1 QP	.8	11.2	52.1	79	66	61.12	51.12	-	-
			Margin [dB]:		-26.9	-13.9	-9.02	.98	-	-
.39766	45.64 QP	.5	10.9	57.04	79	66	57.9	47.9	-	-
			Margin [dB]:		-21.96	-8.96	-.86	9.14	-	-
.54054	36.75 QP	.3	10.7	47.75	73	60	56	46	-	-
			Margin [dB]:		-25.25	-12.25	-8.25	1.75	-	-
.67099	43.15 QP	.3	10.7	54.15	73	60	56	46	-	-
			Margin [dB]:		-18.85	-5.85	-1.85	8.15	-	-
.79918	45.9 QP	.2	10.7	56.8	73	60	56	46	-	-
			Margin [dB]:		-16.2	-3.2	.8	10.8	-	-
.92609	43.96 QP	.2	10.7	54.86	73	60	56	46	-	-
			Margin [dB]:		-18.14	-5.14	-1.14	8.86	-	-
1.22136	42.06 QP	.2	10.7	52.96	73	60	56	46	-	-
			Margin [dB]:		-20.04	-7.04	-3.04	6.96	-	-
1.32283	44.05 QP	.2	10.7	54.95	73	60	56	46	-	-
			Margin [dB]:		-18.05	-5.05	-1.05	8.95	-	-
1.46209	40.2 QP	.1	10.7	51	73	60	56	46	-	-
			Margin [dB]:		-22	-9	-5	5	-	-
1.8703	42.11 QP	.1	10.7	52.91	73	60	56	46	-	-
			Margin [dB]:		-20.09	-7.09	-3.09	6.91	-	-
2.00781	41.12 QP	.1	10.7	51.92	73	60	56	46	-	-
			Margin [dB]:		-21.08	-8.08	-4.08	5.92	-	-
2.3752	42.14 QP	.1	10.7	52.94	73	60	56	46	-	-
			Margin [dB]:		-20.06	-7.06	-3.06	6.94	-	-
3.0781	37.67 QP	.1	10.8	48.57	73	60	56	46	-	-
			Margin [dB]:		-24.43	-11.43	-7.43	2.57	-	-
3.62006	36.36 QP	.1	10.8	47.26	73	60	56	46	-	-
			Margin [dB]:		-25.74	-12.74	-8.74	1.26	-	-

PK - Peak detector
QP - Quasi-Peak detector

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

Philips
NA2 Switch, TX LoCh
120V/60Hz
RED: L1 GRN: N

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										
.27033	29.1 Av	.8	11.1	41	79	66	61.11	51.11	-	-
			Margin [dB]:		-38	-25	-20.11	-10.11	-	-
.40028	32.67 Av	.5	10.8	43.97	79	66	57.85	47.85	-	-
			Margin [dB]:		-35.03	-22.03	-13.88	-3.88	-	-
.54827	23.22 Av	.3	10.6	34.12	73	60	56	46	-	-
			Margin [dB]:		-38.88	-25.88	-21.88	-11.88	-	-
.67507	30.33 Av	.3	10.6	41.23	73	60	56	46	-	-
			Margin [dB]:		-31.77	-18.77	-14.77	-4.77	-	-
.79149	30.01 Av	.3	10.6	40.91	73	60	56	46	-	-
			Margin [dB]:		-32.09	-19.09	-15.09	-5.09	-	-
.92399	26.99 Av	.2	10.6	37.79	73	60	56	46	-	-
			Margin [dB]:		-35.21	-22.21	-18.21	-8.21	-	-
1.19393	27.13 Av	.2	10.6	37.93	73	60	56	46	-	-
			Margin [dB]:		-35.07	-22.07	-18.07	-8.07	-	-
1.32185	26.51 Av	.2	10.6	37.31	73	60	56	46	-	-
			Margin [dB]:		-35.69	-22.69	-18.69	-8.69	-	-
1.85033	23.45 Av	.2	10.6	34.25	73	60	56	46	-	-
			Margin [dB]:		-38.75	-25.75	-21.75	-11.75	-	-
2.27843	22.78 Av	.2	10.6	33.58	73	60	56	46	-	-
			Margin [dB]:		-39.42	-26.42	-22.42	-12.42	-	-
2.50703	19.97 Av	.2	10.6	30.77	73	60	56	46	-	-
			Margin [dB]:		-42.23	-29.23	-25.23	-15.23	-	-
2.91098	19.28 Av	.2	10.6	30.08	73	60	56	46	-	-
			Margin [dB]:		-42.92	-29.92	-25.92	-15.92	-	-
3.5586	20.14 Av	.2	10.7	31.04	73	60	56	46	-	-
			Margin [dB]:		-41.96	-28.96	-24.96	-14.96	-	-
4.22753	17.16 Av	.2	10.7	28.06	73	60	56	46	-	-
			Margin [dB]:		-44.94	-31.94	-27.94	-17.94	-	-
Line - L2										
.26982	29.32 Av	.8	11.2	41.32	79	66	61.12	51.12	-	-
			Margin [dB]:		-37.68	-24.68	-19.8	-9.8	-	-
.39766	34.16 Av	.5	10.9	45.56	79	66	57.9	47.9	-	-
			Margin [dB]:		-33.44	-20.44	-12.34	-2.34	-	-
.54054	23.64 Av	.3	10.7	34.64	73	60	56	46	-	-
			Margin [dB]:		-38.36	-25.36	-21.36	-11.36	-	-
.67099	31.53 Av	.3	10.7	42.53	73	60	56	46	-	-
			Margin [dB]:		-30.47	-17.47	-13.47	-3.47	-	-
.79918	33.35 Av	.2	10.7	44.25	73	60	56	46	-	-
			Margin [dB]:		-28.75	-15.75	-11.75	-1.75	-	-
.92609	29.57 Av	.2	10.7	40.47	73	60	56	46	-	-
			Margin [dB]:		-32.53	-19.53	-15.53	-5.53	-	-
1.22136	27.83 Av	.2	10.7	38.73	73	60	56	46	-	-
			Margin [dB]:		-34.27	-21.27	-17.27	-7.27	-	-
1.32283	28.61 Av	.2	10.7	39.51	73	60	56	46	-	-
			Margin [dB]:		-33.49	-20.49	-16.49	-6.49	-	-
1.46209	24.75 Av	.1	10.7	35.55	73	60	56	46	-	-
			Margin [dB]:		-37.45	-24.45	-20.45	-10.45	-	-
1.8703	26.1 Av	.1	10.7	36.9	73	60	56	46	-	-
			Margin [dB]:		-36.1	-23.1	-19.1	-9.1	-	-
2.00781	24.54 Av	.1	10.7	35.34	73	60	56	46	-	-
			Margin [dB]:		-37.66	-24.66	-20.66	-10.66	-	-
2.3752	24.37 Av	.1	10.7	35.17	73	60	56	46	-	-
			Margin [dB]:		-37.83	-24.83	-20.83	-10.83	-	-
3.0781	20.63 Av	.1	10.8	31.53	73	60	56	46	-	-
			Margin [dB]:		-41.47	-28.47	-24.47	-14.47	-	-
3.62006	19.51 Av	.1	10.8	30.41	73	60	56	46	-	-
			Margin [dB]:		-42.59	-29.59	-25.59	-15.59	-	-

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

Table 4 Conducted Emissions Data Points – Switch – Middle Channel

Philips
NA2 Switch, TX MidCh
120V/60Hz
RED: L1 GRN: N

No.	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 .15 - 1MHz												
1	.27022	41.98	PK	.8	11.1	53.88	79	66	61.1	51.1	-	-
					Margin [dB]		-25.12	-12.12	-7.22	2.78	-	-
2	.41252	44.78	PK	.5	10.7	55.98	79	66	57.6	47.6	-	-
					Margin [dB]		-23.02	-10.02	-1.62	8.38	-	-
3	.54038	46.99	PK	.3	10.6	57.89	73	60	56	46	-	-
					Margin [dB]		-15.11	-2.11	1.89	11.89	-	-
4	.67759	47.42	PK	.3	10.6	58.32	73	60	56	46	-	-
					Margin [dB]		-14.68	-1.68	2.32	12.32	-	-
5	.80672	46.73	PK	.2	10.6	57.53	73	60	56	46	-	-
					Margin [dB]		-15.47	-2.47	1.53	11.53	-	-
6	.93416	45.61	PK	.2	10.6	56.41	73	60	56	46	-	-
					Margin [dB]		-16.59	-3.59	.41	10.41	-	-
7	1.20863	44.01	PK	.2	10.6	54.81	73	60	56	46	-	-
					Margin [dB]		-18.19	-5.19	-1.19	8.81	-	-
8	1.34772	40.75	PK	.2	10.6	51.55	73	60	56	46	-	-
					Margin [dB]		-21.45	-8.45	-4.45	5.55	-	-
9	1.57954	41.49	PK	.2	10.6	52.29	73	60	56	46	-	-
					Margin [dB]		-20.71	-7.71	-3.71	6.29	-	-
10	1.98521	43.24	PK	.2	10.6	54.04	73	60	56	46	-	-
					Margin [dB]		-18.96	-5.96	-1.96	8.04	-	-
11	2.3735	40.93	PK	.2	10.6	51.73	73	60	56	46	-	-
					Margin [dB]		-21.27	-8.27	-4.27	5.73	-	-
12	3.06315	40.65	PK	.2	10.6	51.45	73	60	56	46	-	-
					Margin [dB]		-21.55	-8.55	-4.55	5.45	-	-
13	3.71803	43.72	PK	.2	10.7	54.62	73	60	56	46	-	-
					Margin [dB]		-18.38	-5.38	-1.38	8.62	-	-
14	4.67426	38.21	PK	.2	10.7	49.11	73	60	56	46	-	-
					Margin [dB]		-23.89	-10.89	-6.89	3.11	-	-
15	7.61831	37.1	PK	.3	10.9	48.3	73	60	60	50	-	-
					Margin [dB]		-24.7	-11.7	-11.7	-1.7	-	-
Line - L2 .15 - 1MHz												
16	.27489	45.7	PK	.8	11.1	57.6	79	66	61	51	-	-
					Margin [dB]		-21.4	-8.4	-3.4	6.6	-	-
17	.40147	52.54	PK	.5	10.9	63.94	79	66	57.8	47.8	-	-
					Margin [dB]		-15.06	-2.06	6.14	16.14	-	-
18	.53656	47.67	PK	.3	10.7	58.67	73	60	56	46	-	-
					Margin [dB]		-14.33	-1.33	2.67	12.67	-	-
19	.66484	50.06	PK	.3	10.7	61.06	73	60	56	46	-	-
					Margin [dB]		-11.94	1.06	5.06	15.06	-	-
20	.81012	52.9	PK	.2	10.7	63.8	73	60	56	46	-	-
					Margin [dB]		-9.2	3.8	7.8	17.8	-	-
21	.93841	51.41	PK	.2	10.7	62.31	73	60	56	46	-	-
					Margin [dB]		-10.69	2.31	6.31	16.31	-	-
22	1.21443	48.76	PK	.2	10.7	59.66	73	60	56	46	-	-
					Margin [dB]		-13.34	-.34	3.66	13.66	-	-
23	1.34193	49.88	PK	.2	10.7	60.78	73	60	56	46	-	-
					Margin [dB]		-12.22	.78	4.78	14.78	-	-
24	1.44624	45.95	PK	.1	10.7	56.75	73	60	56	46	-	-
					Margin [dB]		-16.25	-3.25	.75	10.75	-	-
25	1.70703	45.89	PK	.1	10.7	56.69	73	60	56	46	-	-
					Margin [dB]		-16.31	-3.31	.69	10.69	-	-
26	1.89249	48.46	PK	.1	10.7	59.26	73	60	56	46	-	-
					Margin [dB]		-13.74	-.74	3.26	13.26	-	-
27	2.00839	48.49	PK	.1	10.7	59.29	73	60	56	46	-	-
					Margin [dB]		-13.71	-.71	3.29	13.29	-	-
28	2.44884	49.72	PK	.1	10.7	60.52	73	60	56	46	-	-
					Margin [dB]		-12.48	.52	4.52	14.52	-	-
29	3.08054	45.77	PK	.1	10.8	56.67	73	60	56	46	-	-
					Margin [dB]		-16.33	-3.33	.67	10.67	-	-
30	3.51519	46.77	PK	.1	10.8	57.67	73	60	56	46	-	-
					Margin [dB]		-15.33	-2.33	1.67	11.67	-	-
31	4.13529	43.72	PK	.1	10.8	54.62	73	60	56	46	-	-
					Margin [dB]		-18.38	-5.38	-1.38	8.62	-	-

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

Philips
NA2 Switch, TX MidCh
120V/60Hz
RED: L1 GRN: N

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 .15 - 1MHz										
.26617	36.06 QP	.8	11.1	47.96	79	66	61.24	51.24	-	-
			Margin [dB]:		-31.04	-18.04	-13.28	-3.28	-	-
.39972	39.69 QP	.5	10.8	50.99	79	66	57.86	47.86	-	-
			Margin [dB]:		-28.01	-15.01	-6.87	3.13	-	-
.54616	35.43 QP	.3	10.6	46.33	73	60	56	46	-	-
			Margin [dB]:		-26.67	-13.67	-9.67	.33	-	-
.67612	38.87 QP	.3	10.6	49.77	73	60	56	46	-	-
			Margin [dB]:		-23.23	-10.23	-6.23	3.77	-	-
.79294	41 QP	.3	10.6	51.9	73	60	56	46	-	-
			Margin [dB]:		-21.1	-8.1	-4.1	5.9	-	-
.92374	38.53 QP	.2	10.6	49.33	73	60	56	46	-	-
			Margin [dB]:		-23.67	-10.67	-6.67	3.33	-	-
Line - L1 1 - 30MHz										
1.19176	38.19 QP	.2	10.6	48.99	73	60	56	46	-	-
			Margin [dB]:		-24.01	-11.01	-7.01	2.99	-	-
1.32925	38.27 QP	.2	10.6	49.07	73	60	56	46	-	-
			Margin [dB]:		-23.93	-10.93	-6.93	3.07	-	-
1.58863	30.64 QP	.2	10.6	41.44	73	60	56	46	-	-
			Margin [dB]:		-31.56	-18.56	-14.56	-4.56	-	-
1.976	35.56 QP	.2	10.6	46.36	73	60	56	46	-	-
			Margin [dB]:		-26.64	-13.64	-9.64	.36	-	-
2.37233	36.26 QP	.2	10.6	47.06	73	60	56	46	-	-
			Margin [dB]:		-25.94	-12.94	-8.94	1.06	-	-
3.05335	31.25 QP	.2	10.6	42.05	73	60	56	46	-	-
			Margin [dB]:		-30.95	-17.95	-13.95	-3.95	-	-
3.69983	31.14 QP	.2	10.7	42.04	73	60	56	46	-	-
			Margin [dB]:		-30.96	-17.96	-13.96	-3.96	-	-
4.66262	29.51 QP	.2	10.7	40.41	73	60	56	46	-	-
			Margin [dB]:		-32.59	-19.59	-15.59	-5.59	-	-
7.61502	27.28 QP	.3	10.9	38.48	73	60	60	50	-	-
			Margin [dB]:		-34.52	-21.52	-21.52	-11.52	-	-
Line - L2 .15 - 1MHz										
.26875	40.43 QP	.8	11.2	52.43	79	66	61.16	51.16	-	-
			Margin [dB]:		-26.57	-13.57	-8.73	1.27	-	-
.39754	46.14 QP	.5	10.9	57.54	79	66	57.9	47.9	-	-
			Margin [dB]:		-21.46	-8.46	-.36	9.64	-	-
.53243	37.1 QP	.3	10.7	48.1	73	60	56	46	-	-
			Margin [dB]:		-24.9	-11.9	-7.9	2.1	-	-
.67039	43.67 QP	.3	10.7	54.67	73	60	56	46	-	-
			Margin [dB]:		-18.33	-5.33	-1.33	8.67	-	-
.79068	46.1 QP	.2	10.7	57	73	60	56	46	-	-
			Margin [dB]:		-16	-3	1	11	-	-
.92398	44.18 QP	.2	10.7	55.08	73	60	56	46	-	-
			Margin [dB]:		-17.92	-4.92	-.92	9.08	-	-
Line - L2 1 - 30MHz										
1.2037	42.62 QP	.2	10.7	53.52	73	60	56	46	-	-
			Margin [dB]:		-19.48	-6.48	-2.48	7.52	-	-
1.32217	44.51 QP	.2	10.7	55.41	73	60	56	46	-	-
			Margin [dB]:		-17.59	-4.59	-.59	9.41	-	-
1.4492	40.62 QP	.1	10.7	51.42	73	60	56	46	-	-
			Margin [dB]:		-21.58	-8.58	-4.58	5.42	-	-
1.72804	38.76 QP	.1	10.7	49.56	73	60	56	46	-	-
			Margin [dB]:		-23.44	-10.44	-6.44	3.56	-	-
1.86929	42.44 QP	.1	10.7	53.24	73	60	56	46	-	-
			Margin [dB]:		-19.76	-6.76	-2.76	7.24	-	-
1.98748	41.98 QP	.1	10.7	52.78	73	60	56	46	-	-
			Margin [dB]:		-20.22	-7.22	-3.22	6.78	-	-
2.42349	41.48 QP	.1	10.7	52.28	73	60	56	46	-	-
			Margin [dB]:		-20.72	-7.72	-3.72	6.28	-	-
3.06794	38.13 QP	.1	10.8	49.03	73	60	56	46	-	-
			Margin [dB]:		-23.97	-10.97	-6.97	3.03	-	-
3.50239	37.84 QP	.1	10.8	48.74	73	60	56	46	-	-
			Margin [dB]:		-24.26	-11.26	-7.26	2.74	-	-
4.1373	34.4 QP	.1	10.8	45.3	73	60	56	46	-	-
			Margin [dB]:		-27.7	-14.7	-10.7	-.7	-	-

PK - Peak detector
QP - Quasi-Peak detector
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

Philips
NA2 Switch, TX MidCh
120V/60Hz
RED: L1 GRN: N

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 .15 - 1MHz											
.26617	28.34	Av	.8	11.1	40.24	79	66	61.24	51.24	-	-
				Margin [dB]:		-38.76	-25.76	-21	-11	-	-
.39972	33.06	Av	.5	10.8	44.36	79	66	57.86	47.86	-	-
				Margin [dB]:		-34.64	-21.64	-13.5	-3.5	-	-
.54616	23.17	Av	.3	10.6	34.07	73	60	56	46	-	-
				Margin [dB]:		-38.93	-25.93	-21.93	-11.93	-	-
.67612	30.24	Av	.3	10.6	41.14	73	60	56	46	-	-
				Margin [dB]:		-31.86	-18.86	-14.86	-4.86	-	-
.79294	31.19	Av	.3	10.6	42.09	73	60	56	46	-	-
				Margin [dB]:		-30.91	-17.91	-13.91	-3.91	-	-
.92374	27.42	Av	.2	10.6	38.22	73	60	56	46	-	-
				Margin [dB]:		-34.78	-21.78	-17.78	-7.78	-	-
Line - L1 1 - 30MHz											
1.19176	27.1	Av	.2	10.6	37.9	73	60	56	46	-	-
				Margin [dB]:		-35.1	-22.1	-18.1	-8.1	-	-
1.32925	27.45	Av	.2	10.6	38.25	73	60	56	46	-	-
				Margin [dB]:		-34.75	-21.75	-17.75	-7.75	-	-
1.58863	18.42	Av	.2	10.6	29.22	73	60	56	46	-	-
				Margin [dB]:		-43.78	-30.78	-26.78	-16.78	-	-
1.976	22.46	Av	.2	10.6	33.26	73	60	56	46	-	-
				Margin [dB]:		-39.74	-26.74	-22.74	-12.74	-	-
2.37233	22.42	Av	.2	10.6	33.22	73	60	56	46	-	-
				Margin [dB]:		-39.78	-26.78	-22.78	-12.78	-	-
3.05335	18.99	Av	.2	10.6	29.79	73	60	56	46	-	-
				Margin [dB]:		-43.21	-30.21	-26.21	-16.21	-	-
3.69983	17.39	Av	.2	10.7	28.29	73	60	56	46	-	-
				Margin [dB]:		-44.71	-31.71	-27.71	-17.71	-	-
4.66262	17.05	Av	.2	10.7	27.95	73	60	56	46	-	-
				Margin [dB]:		-45.05	-32.05	-28.05	-18.05	-	-
7.61502	14.26	Av	.3	10.9	25.46	73	60	60	50	-	-
				Margin [dB]:		-47.54	-34.54	-34.54	-24.54	-	-
Line - L2 .15 - 1MHz											
.26875	29.56	Av	.8	11.2	41.56	79	66	61.16	51.16	-	-
				Margin [dB]:		-37.44	-24.44	-19.6	-9.6	-	-
.39754	34.34	Av	.5	10.9	45.74	79	66	57.9	47.9	-	-
				Margin [dB]:		-33.26	-20.26	-12.16	-2.16	-	-
.53243	22.32	Av	.3	10.7	33.32	73	60	56	46	-	-
				Margin [dB]:		-39.68	-26.68	-22.68	-12.68	-	-
.67039	31.77	Av	.3	10.7	42.77	73	60	56	46	-	-
				Margin [dB]:		-30.23	-17.23	-13.23	-3.23	-	-
.79068	31.71	Av	.2	10.7	42.61	73	60	56	46	-	-
				Margin [dB]:		-30.39	-17.39	-13.39	-3.39	-	-
.92398	29.09	Av	.2	10.7	39.99	73	60	56	46	-	-
				Margin [dB]:		-33.01	-20.01	-16.01	-6.01	-	-
Line - L2 1 - 30MHz											
1.2037	28.4	Av	.2	10.7	39.3	73	60	56	46	-	-
				Margin [dB]:		-33.7	-20.7	-16.7	-6.7	-	-
1.32217	28.68	Av	.2	10.7	39.58	73	60	56	46	-	-
				Margin [dB]:		-33.42	-20.42	-16.42	-6.42	-	-
1.4492	23.24	Av	.1	10.7	34.04	73	60	56	46	-	-
				Margin [dB]:		-38.96	-25.96	-21.96	-11.96	-	-
1.72804	23.22	Av	.1	10.7	34.02	73	60	56	46	-	-
				Margin [dB]:		-38.98	-25.98	-21.98	-11.98	-	-
1.86929	26.15	Av	.1	10.7	36.95	73	60	56	46	-	-
				Margin [dB]:		-36.05	-23.05	-19.05	-9.05	-	-
1.98748	25	Av	.1	10.7	35.8	73	60	56	46	-	-
				Margin [dB]:		-37.2	-24.2	-20.2	-10.2	-	-
2.42349	24.26	Av	.1	10.7	35.06	73	60	56	46	-	-
				Margin [dB]:		-37.94	-24.94	-20.94	-10.94	-	-
3.06794	20.39	Av	.1	10.8	31.29	73	60	56	46	-	-
				Margin [dB]:		-41.71	-28.71	-24.71	-14.71	-	-
3.50239	20.15	Av	.1	10.8	31.05	73	60	56	46	-	-
				Margin [dB]:		-41.95	-28.95	-24.95	-14.95	-	-
4.1373	17.65	Av	.1	10.8	28.55	73	60	56	46	-	-
				Margin [dB]:		-44.45	-31.45	-27.45	-17.45	-	-

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

Table 5 Conducted Emissions Data Points – Switch – High Channel

Philips
NA2 Switch, TX HiCh
120V/60Hz
RED: L1 GRN: N

No.	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 .15 - 1MHz											
1	.26979	43.12 PK	.8	11.1	55.02	79	66	61.1	51.1	-	-
				Margin [dB]		-23.98	-10.98	-6.08	3.92	-	-
2	.407	46.1 PK	.5	10.8	57.4	79	66	57.7	47.7	-	-
				Margin [dB]		-21.6	-8.6	-.3	9.7	-	-
3	.54718	45.68 PK	.3	10.6	56.58	73	60	56	46	-	-
				Margin [dB]		-16.42	-3.42	.58	10.58	-	-
4	.68226	47.56 PK	.3	10.6	58.46	73	60	56	46	-	-
				Margin [dB]		-14.54	-1.54	2.46	12.46	-	-
5	.808	47.49 PK	.2	10.6	58.29	73	60	56	46	-	-
				Margin [dB]		-14.71	-1.71	2.29	12.29	-	-
6	.93246	47.07 PK	.2	10.6	57.87	73	60	56	46	-	-
				Margin [dB]		-15.13	-2.13	1.87	11.87	-	-
7	1.18545	43.76 PK	.2	10.6	54.56	73	60	56	46	-	-
				Margin [dB]		-18.44	-5.44	-1.44	8.56	-	-
8	1.30715	44.4 PK	.2	10.6	55.2	73	60	56	46	-	-
				Margin [dB]		-17.8	-4.8	-.8	9.2	-	-
9	2.03737	44.11 PK	.2	10.6	54.91	73	60	56	46	-	-
				Margin [dB]		-18.09	-5.09	-1.09	8.91	-	-
10	2.28078	45.94 PK	.2	10.6	56.74	73	60	56	46	-	-
				Margin [dB]		-16.26	-3.26	.74	10.74	-	-
11	2.43146	44.89 PK	.2	10.6	55.69	73	60	56	46	-	-
				Margin [dB]		-17.31	-4.31	-.31	9.69	-	-
12	2.95304	41.5 PK	.2	10.6	52.3	73	60	56	46	-	-
				Margin [dB]		-20.7	-7.7	-3.7	6.3	-	-
13	3.77598	38.76 PK	.2	10.7	49.66	73	60	56	46	-	-
				Margin [dB]		-23.34	-10.34	-6.34	3.66	-	-
14	4.69165	36.38 PK	.2	10.7	47.28	73	60	56	46	-	-
				Margin [dB]		-25.72	-12.72	-8.72	1.28	-	-
15	6.27378	35.09 PK	.3	10.8	46.19	73	60	60	50	-	-
				Margin [dB]		-26.81	-13.81	-13.81	-3.81	-	-
16	7.43285	38.54 PK	.3	10.9	49.74	73	60	60	50	-	-
				Margin [dB]		-23.26	-10.26	-10.26	-.26	-	-
17	9.86691	37.12 PK	.4	11	48.52	73	60	60	50	-	-
				Margin [dB]		-24.48	-11.48	-11.48	-1.48	-	-
18	15.27978	34.21 PK	.3	11.2	45.71	73	60	60	50	-	-
				Margin [dB]		-27.29	-14.29	-14.29	-4.29	-	-

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

No.	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 - L2 .15 - 1MHz												
19	.26894	45.29	PK	.8	11.2	57.29	79	66	61.2	51.2	-	-
					Margin [dB]		-21.71	-8.71	-3.91	6.09	-	-
20	.39935	53.63	PK	.5	10.9	65.03	79	66	57.9	47.9	-	-
					Margin [dB]		-13.97	-.97	7.13	17.13	-	-
21	.55058	41.18	PK	.3	10.7	52.18	73	60	56	46	-	-
					Margin [dB]		-20.82	-7.82	-3.82	6.18	-	-
22	.67929	50.12	PK	.2	10.7	61.02	73	60	56	46	-	-
					Margin [dB]		-11.98	1.02	5.02	15.02	-	-
23	.80162	53.63	PK	.2	10.7	64.53	73	60	56	46	-	-
					Margin [dB]		-8.47	4.53	8.53	18.53	-	-
24	.92651	50.33	PK	.2	10.7	61.23	73	60	56	46	-	-
					Margin [dB]		-11.77	1.23	5.23	15.23	-	-
25	1.22602	48.93	PK	.2	10.7	59.83	73	60	56	46	-	-
					Margin [dB]		-13.17	-.17	3.83	13.83	-	-
26	1.33034	49.77	PK	.2	10.7	60.67	73	60	56	46	-	-
					Margin [dB]		-12.33	.67	4.67	14.67	-	-
27	1.46363	45.98	PK	.1	10.7	56.78	73	60	56	46	-	-
					Margin [dB]		-16.22	-3.22	.78	10.78	-	-
28	1.71283	46.1	PK	.1	10.7	56.9	73	60	56	46	-	-
					Margin [dB]		-16.1	-3.1	.9	10.9	-	-
29	1.8751	49.38	PK	.1	10.7	60.18	73	60	56	46	-	-
					Margin [dB]		-12.82	.18	4.18	14.18	-	-
30	2.03737	48.74	PK	.1	10.7	59.54	73	60	56	46	-	-
					Margin [dB]		-13.46	-.46	3.54	13.54	-	-
31	2.36191	49.3	PK	.1	10.7	60.1	73	60	56	46	-	-
					Margin [dB]		-12.9	.1	4.1	14.1	-	-
32	2.91247	46.41	PK	.1	10.7	57.21	73	60	56	46	-	-
					Margin [dB]		-15.79	-2.79	1.21	11.21	-	-
33	3.41667	46.93	PK	.1	10.8	57.83	73	60	56	46	-	-
					Margin [dB]		-15.17	-2.17	1.83	11.83	-	-
34	4.04257	44.17	PK	.1	10.8	55.07	73	60	56	46	-	-
					Margin [dB]		-17.93	-4.93	-.93	9.07	-	-
35	4.48301	45.31	PK	.2	10.8	56.31	73	60	56	46	-	-
					Margin [dB]		-16.69	-3.69	.31	10.31	-	-
36	5.54357	40.59	PK	.2	10.9	51.69	73	60	60	50	-	-
					Margin [dB]		-21.31	-8.31	-8.31	1.69	-	-
37	7.67626	42.6	PK	.3	11	53.9	73	60	60	50	-	-
					Margin [dB]		-19.1	-6.1	-6.1	3.9	-	-
38	8.69624	42.5	PK	.4	11.1	54	73	60	60	50	-	-
					Margin [dB]		-19	-6	-6	4	-	-
39	15.18126	38.61	PK	.4	11.3	50.31	73	60	60	50	-	-
					Margin [dB]		-22.69	-9.69	-9.69	.31	-	-

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

Philips
NA2 Switch, TX HiCh
120V/60Hz
RED: L1 GRN: N

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 .15 - 1MHz										
.26511	36.27 QP	.8	11.1	48.17	79	66	61.27	51.27	-	-
			Margin [dB]:		-30.83	-17.83	-13.1	-3.1	-	-
.39735	40.21 QP	.5	10.8	51.51	79	66	57.91	47.91	-	-
			Margin [dB]:		-27.49	-14.49	-6.4	3.6	-	-
.54343	36.57 QP	.3	10.6	47.47	73	60	56	46	-	-
			Margin [dB]:		-25.53	-12.53	-8.53	1.47	-	-
.67265	39.17 QP	.3	10.6	50.07	73	60	56	46	-	-
			Margin [dB]:		-22.93	-9.93	-5.93	4.07	-	-
.79546	41.2 QP	.3	10.6	52.1	73	60	56	46	-	-
			Margin [dB]:		-20.9	-7.9	-3.9	6.1	-	-
.92332	38.72 QP	.2	10.6	49.52	73	60	56	46	-	-
			Margin [dB]:		-23.48	-10.48	-6.48	3.52	-	-
Line - L1 1 - 30MHz										
1.19917	38.74 QP	.2	10.6	49.54	73	60	56	46	-	-
			Margin [dB]:		-23.46	-10.46	-6.46	3.54	-	-
1.32041	38.94 QP	.2	10.6	49.74	73	60	56	46	-	-
			Margin [dB]:		-23.26	-10.26	-6.26	3.74	-	-
2.0242	36.01 QP	.2	10.6	46.81	73	60	56	46	-	-
			Margin [dB]:		-26.19	-13.19	-9.19	.81	-	-
2.26955	36.58 QP	.2	10.6	47.38	73	60	56	46	-	-
			Margin [dB]:		-25.62	-12.62	-8.62	1.38	-	-
2.41544	36.3 QP	.2	10.6	47.1	73	60	56	46	-	-
			Margin [dB]:		-25.9	-12.9	-8.9	1.1	-	-
2.94084	32.97 QP	.2	10.6	43.77	73	60	56	46	-	-
			Margin [dB]:		-29.23	-16.23	-12.23	-2.23	-	-
3.79781	29.02 QP	.2	10.7	39.92	73	60	56	46	-	-
			Margin [dB]:		-33.08	-20.08	-16.08	-6.08	-	-
4.67996	28.49 QP	.2	10.7	39.39	73	60	56	46	-	-
			Margin [dB]:		-33.61	-20.61	-16.61	-6.61	-	-
6.27415	27.61 QP	.3	10.8	38.71	73	60	60	50	-	-
			Margin [dB]:		-34.29	-21.29	-21.29	-11.29	-	-
7.42829	27.16 QP	.3	10.9	38.36	73	60	60	50	-	-
			Margin [dB]:		-34.64	-21.64	-21.64	-11.64	-	-
9.86205	26.66 QP	.4	11	38.06	73	60	60	50	-	-
			Margin [dB]:		-34.94	-21.94	-21.94	-11.94	-	-
15.26453	25.55 QP	.3	11.2	37.05	73	60	60	50	-	-
			Margin [dB]:		-35.95	-22.95	-22.95	-12.95	-	-

PK - Peak detector
QP - Quasi-Peak detector

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

Philips
NA2 Switch, TX HiCh
120V/60Hz
RED: L1 GRN: N

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 - L2 .15 - 1MHz										
.26503	40.46 QP	.8	11.2	52.46	79	66	61.27	51.27	-	-
			Margin [dB]:		-26.54	-13.54	-8.81	1.19	-	-
.39701	46.5 QP	.5	10.9	57.9	79	66	57.92	47.92	-	-
			Margin [dB]:		-21.1	-8.1	-.02	9.98	-	-
.53434	37.79 QP	.3	10.7	48.79	73	60	56	46	-	-
			Margin [dB]:		-24.21	-11.21	-7.21	2.79	-	-
.67677	43.75 QP	.2	10.7	54.65	73	60	56	46	-	-
			Margin [dB]:		-18.35	-5.35	-1.35	8.65	-	-
.79341	46.58 QP	.2	10.7	57.48	73	60	56	46	-	-
			Margin [dB]:		-15.52	-2.52	1.48	11.48	-	-
.92224	44.57 QP	.2	10.7	55.47	73	60	56	46	-	-
			Margin [dB]:		-17.53	-4.53	-.53	9.47	-	-
Line - L2 1 - 30MHz										
1.21258	42.85 QP	.2	10.7	53.75	73	60	56	46	-	-
			Margin [dB]:		-19.25	-6.25	-2.25	7.75	-	-
1.31874	44.76 QP	.2	10.7	55.66	73	60	56	46	-	-
			Margin [dB]:		-17.34	-4.34	-.34	9.66	-	-
1.45072	41.25 QP	.1	10.7	52.05	73	60	56	46	-	-
			Margin [dB]:		-20.95	-7.95	-3.95	6.05	-	-
1.73236	38.93 QP	.1	10.7	49.73	73	60	56	46	-	-
			Margin [dB]:		-23.27	-10.27	-6.27	3.73	-	-
1.85962	42.74 QP	.1	10.7	53.54	73	60	56	46	-	-
			Margin [dB]:		-19.46	-6.46	-2.46	7.54	-	-
2.01539	42.02 QP	.1	10.7	52.82	73	60	56	46	-	-
			Margin [dB]:		-20.18	-7.18	-3.18	6.82	-	-
2.37364	42.79 QP	.1	10.7	53.59	73	60	56	46	-	-
			Margin [dB]:		-19.41	-6.41	-2.41	7.59	-	-
2.90066	38.73 QP	.1	10.7	49.53	73	60	56	46	-	-
			Margin [dB]:		-23.47	-10.47	-6.47	3.53	-	-
3.43002	39.46 QP	.1	10.8	50.36	73	60	56	46	-	-
			Margin [dB]:		-22.64	-9.64	-5.64	4.36	-	-
4.03787	35.26 QP	.1	10.8	46.16	73	60	56	46	-	-
			Margin [dB]:		-26.84	-13.84	-9.84	.16	-	-
4.47202	35.37 QP	.2	10.8	46.37	73	60	56	46	-	-
			Margin [dB]:		-26.63	-13.63	-9.63	.37	-	-
5.51996	32.19 QP	.2	10.9	43.29	73	60	60	50	-	-
			Margin [dB]:		-29.71	-16.71	-16.71	-6.71	-	-
7.66365	34.51 QP	.3	11	45.81	73	60	60	50	-	-
			Margin [dB]:		-27.19	-14.19	-14.19	-4.19	-	-
8.71202	34.2 QP	.4	11.1	45.7	73	60	60	50	-	-
			Margin [dB]:		-27.3	-14.3	-14.3	-4.3	-	-
15.19935	30.47 QP	.4	11.3	42.17	73	60	60	50	-	-
			Margin [dB]:		-30.83	-17.83	-17.83	-7.83	-	-

PK - Peak detector
QP - Quasi-Peak detector

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

Philips
NA2 Switch, TX HiCh
120V/60Hz
RED: L1 GRN: N

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 .15 - 1MHz										
.26511	28.2 Av	.8	11.1	40.1	79	66	61.27	51.27	-	-
			Margin [dB]:		-38.9	-25.9	-21.17	-11.17	-	-
.39735	32.6 Av	.5	10.8	43.9	79	66	57.91	47.91	-	-
			Margin [dB]:		-35.1	-22.1	-14.01	-4.01	-	-
.54343	23.3 Av	.3	10.6	34.2	73	60	56	46	-	-
			Margin [dB]:		-38.8	-25.8	-21.8	-11.8	-	-
.67265	30.42 Av	.3	10.6	41.32	73	60	56	46	-	-
			Margin [dB]:		-31.68	-18.68	-14.68	-4.68	-	-
.79546	31.78 Av	.3	10.6	42.68	73	60	56	46	-	-
			Margin [dB]:		-30.32	-17.32	-13.32	-3.32	-	-
.92332	27.6 Av	.2	10.6	38.4	73	60	56	46	-	-
			Margin [dB]:		-34.6	-21.6	-17.6	-7.6	-	-
Line - L1 1 - 30MHz										
1.19917	27.22 Av	.2	10.6	38.02	73	60	56	46	-	-
			Margin [dB]:		-34.98	-21.98	-17.98	-7.98	-	-
1.32041	26.71 Av	.2	10.6	37.51	73	60	56	46	-	-
			Margin [dB]:		-35.49	-22.49	-18.49	-8.49	-	-
2.0242	22.78 Av	.2	10.6	33.58	73	60	56	46	-	-
			Margin [dB]:		-39.42	-26.42	-22.42	-12.42	-	-
2.26955	22.62 Av	.2	10.6	33.42	73	60	56	46	-	-
			Margin [dB]:		-39.58	-26.58	-22.58	-12.58	-	-
2.41544	22.63 Av	.2	10.6	33.43	73	60	56	46	-	-
			Margin [dB]:		-39.57	-26.57	-22.57	-12.57	-	-
2.94084	18.58 Av	.2	10.6	29.38	73	60	56	46	-	-
			Margin [dB]:		-43.62	-30.62	-26.62	-16.62	-	-
3.79781	15.67 Av	.2	10.7	26.57	73	60	56	46	-	-
			Margin [dB]:		-46.43	-33.43	-29.43	-19.43	-	-
4.67996	15.34 Av	.2	10.7	26.24	73	60	56	46	-	-
			Margin [dB]:		-46.76	-33.76	-29.76	-19.76	-	-
6.27415	14.17 Av	.3	10.8	25.27	73	60	60	50	-	-
			Margin [dB]:		-47.73	-34.73	-34.73	-24.73	-	-
7.42829	14.62 Av	.3	10.9	25.82	73	60	60	50	-	-
			Margin [dB]:		-47.18	-34.18	-34.18	-24.18	-	-
9.86205	14.06 Av	.4	11	25.46	73	60	60	50	-	-
			Margin [dB]:		-47.54	-34.54	-34.54	-24.54	-	-
15.26453	11.6 Av	.3	11.2	23.1	73	60	60	50	-	-
			Margin [dB]:		-49.9	-36.9	-36.9	-26.9	-	-

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

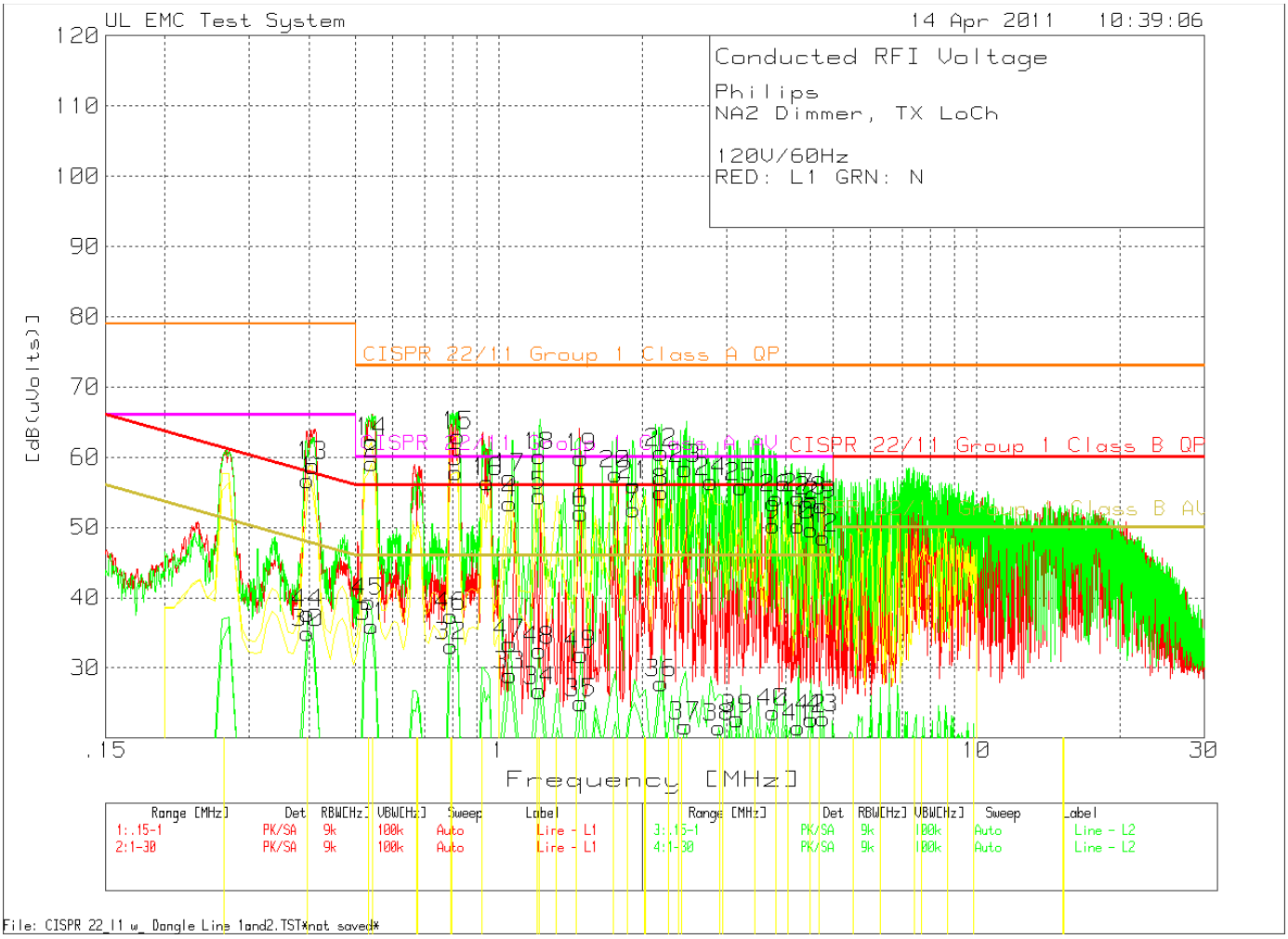
Philips
NA2 Switch, TX HiCh
120V/60Hz
RED: L1 GRN: N

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 - L2 .15 - 1MHz										
.26503	28.63 Av	.8	11.2	40.63	79	66	61.27	51.27	-	-
			Margin [dB]:		-38.37	-25.37	-20.64	-10.64	-	-
.39701	34.34 Av	.5	10.9	45.74	79	66	57.92	47.92	-	-
			Margin [dB]:		-33.26	-20.26	-12.18	-2.18	-	-
.53434	23.33 Av	.3	10.7	34.33	73	60	56	46	-	-
			Margin [dB]:		-38.67	-25.67	-21.67	-11.67	-	-
.67677	30.85 Av	.2	10.7	41.75	73	60	56	46	-	-
			Margin [dB]:		-31.25	-18.25	-14.25	-4.25	-	-
.79341	32.63 Av	.2	10.7	43.53	73	60	56	46	-	-
			Margin [dB]:		-29.47	-16.47	-12.47	-2.47	-	-
.92224	28.73 Av	.2	10.7	39.63	73	60	56	46	-	-
			Margin [dB]:		-33.37	-20.37	-16.37	-6.37	-	-
Line - L2 1 - 30MHz										
1.21258	27.91 Av	.2	10.7	38.81	73	60	56	46	-	-
			Margin [dB]:		-34.19	-21.19	-17.19	-7.19	-	-
1.31874	28.02 Av	.2	10.7	38.92	73	60	56	46	-	-
			Margin [dB]:		-34.08	-21.08	-17.08	-7.08	-	-
1.45072	24.04 Av	.1	10.7	34.84	73	60	56	46	-	-
			Margin [dB]:		-38.16	-25.16	-21.16	-11.16	-	-
1.73236	22.92 Av	.1	10.7	33.72	73	60	56	46	-	-
			Margin [dB]:		-39.28	-26.28	-22.28	-12.28	-	-
1.85962	25.94 Av	.1	10.7	36.74	73	60	56	46	-	-
			Margin [dB]:		-36.26	-23.26	-19.26	-9.26	-	-
2.01539	24.75 Av	.1	10.7	35.55	73	60	56	46	-	-
			Margin [dB]:		-37.45	-24.45	-20.45	-10.45	-	-
2.37364	24.26 Av	.1	10.7	35.06	73	60	56	46	-	-
			Margin [dB]:		-37.94	-24.94	-20.94	-10.94	-	-
2.90066	20.78 Av	.1	10.7	31.58	73	60	56	46	-	-
			Margin [dB]:		-41.42	-28.42	-24.42	-14.42	-	-
3.43002	21.95 Av	.1	10.8	32.85	73	60	56	46	-	-
			Margin [dB]:		-40.15	-27.15	-23.15	-13.15	-	-
4.03787	17.78 Av	.1	10.8	28.68	73	60	56	46	-	-
			Margin [dB]:		-44.32	-31.32	-27.32	-17.32	-	-
4.47202	18.59 Av	.2	10.8	29.59	73	60	56	46	-	-
			Margin [dB]:		-43.41	-30.41	-26.41	-16.41	-	-
5.51996	15.5 Av	.2	10.9	26.6	73	60	60	50	-	-
			Margin [dB]:		-46.4	-33.4	-33.4	-23.4	-	-
7.66365	17.52 Av	.3	11	28.82	73	60	60	50	-	-
			Margin [dB]:		-44.18	-31.18	-31.18	-21.18	-	-
8.71202	16.47 Av	.4	11.1	27.97	73	60	60	50	-	-
			Margin [dB]:		-45.03	-32.03	-32.03	-22.03	-	-
15.19935	13.01 Av	.4	11.3	24.71	73	60	60	50	-	-
			Margin [dB]:		-48.29	-35.29	-35.29	-25.29	-	-

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

Figure 5 Conducted Emissions Graph – Dimmer – Low Channel



* The upper Red and Green trace is the peak scan data. The lower Yellow and Green trace is the Quasi-Peak and Average Scan data. In all cases the average level is well under the applicable limit.

Figure 6 Conducted Emissions Graph – Dimmer – Middle Channel

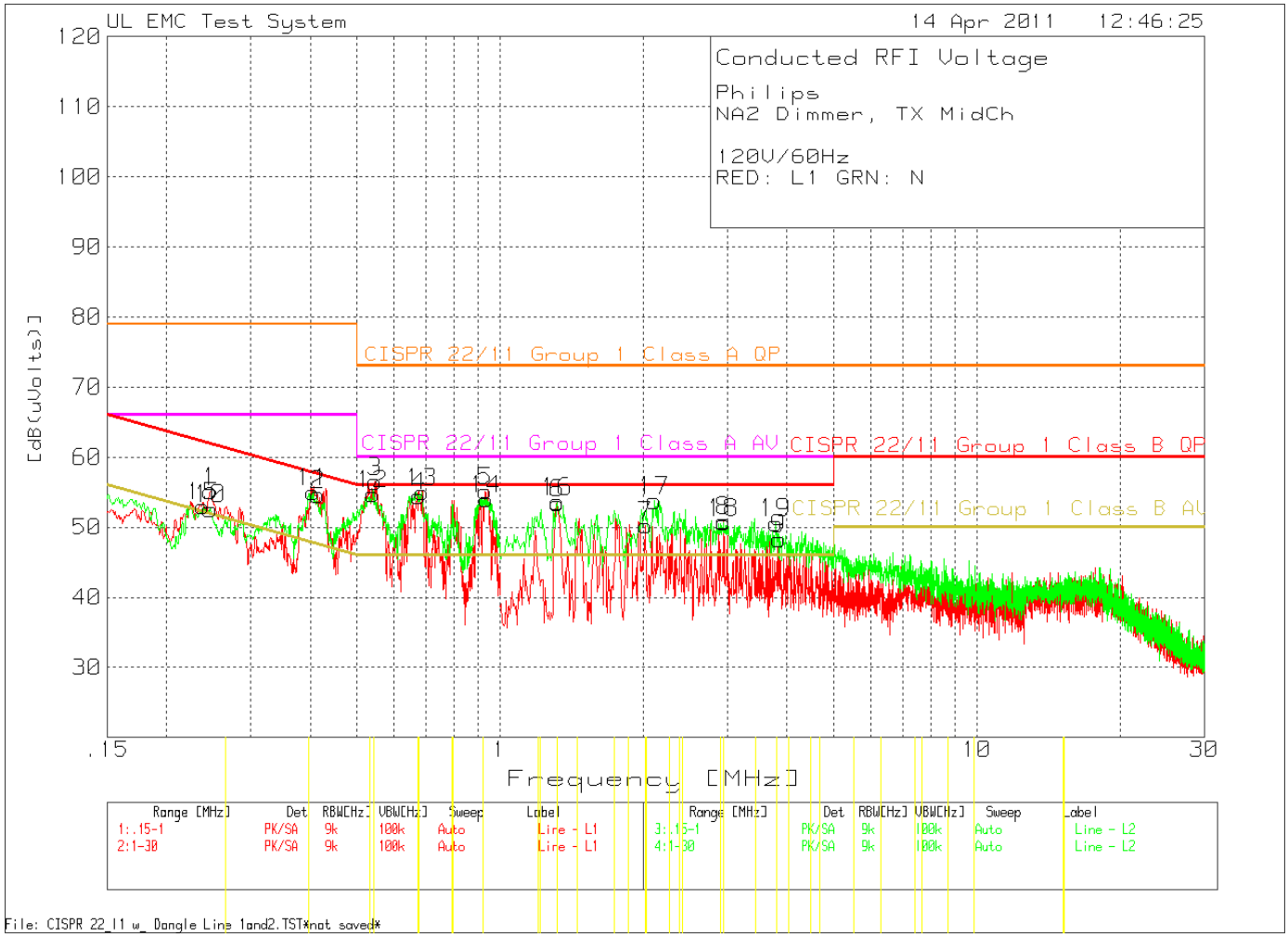


Figure 7 Conducted Emissions Graph – Dimmer – High Channel

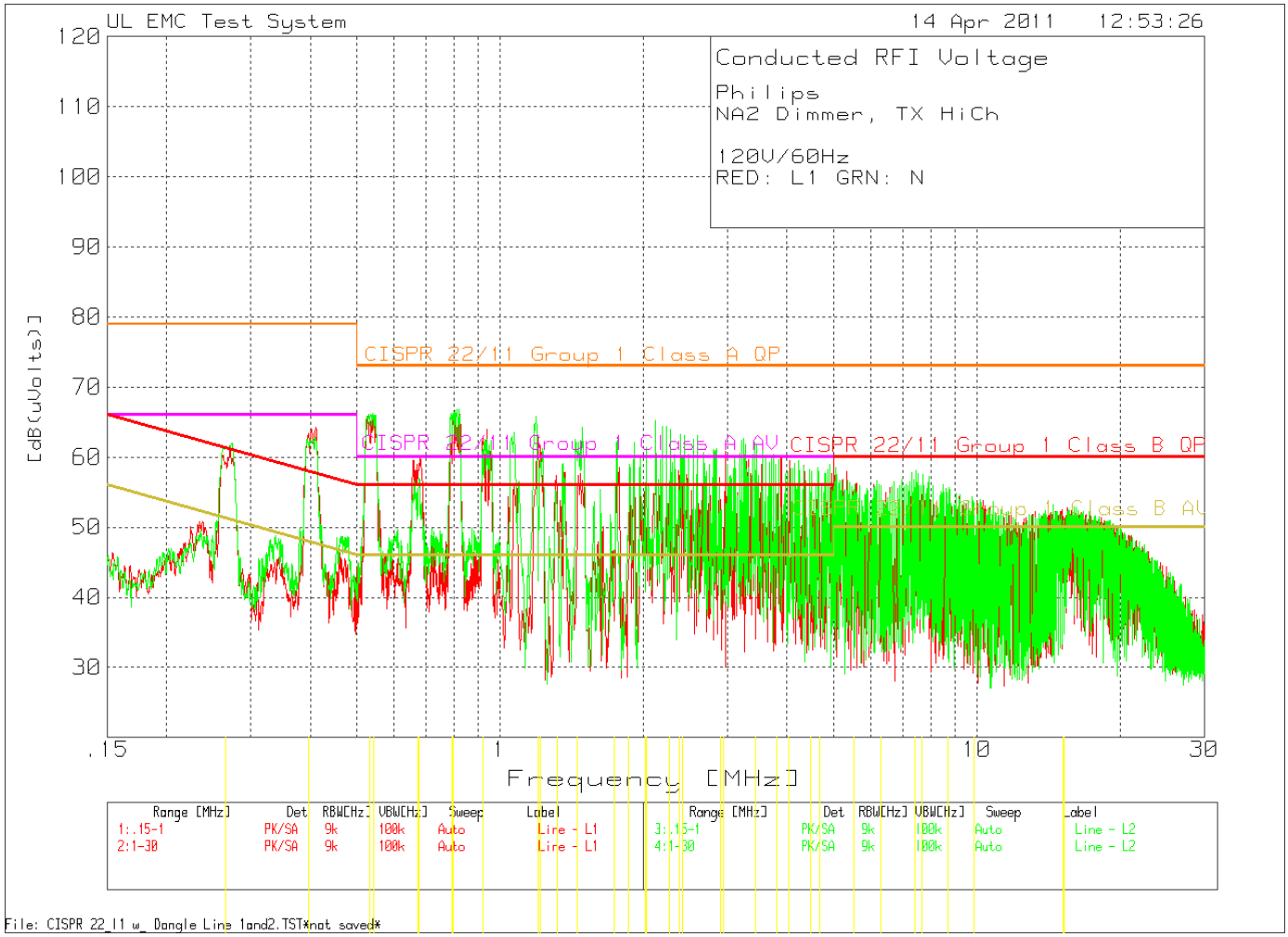


Table 6 Conducted Emissions Data Points – Dimmer – Low Channel

Philips
NA2 Dimmer, TX LoCh
120V/60Hz
RED: L1 GRN: N

No.	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 .15 - 1MHz											
1	.398	45.4 QP	.5	10.8	56.7	79	66	57.9	47.9	-	-
				Margin [dB]		-22.3	-9.3	-1.2	8.8	-	-
2	.542	48.21 QP	.3	10.6	59.11	73	60	56	46	-	-
				Margin [dB]		-13.89	-.89	3.11	13.11	-	-
3	.812	47.06 QP	.2	10.6	57.86	73	60	56	46	-	-
				Margin [dB]		-15.14	-2.14	1.86	11.86	-	-
30	.398	23.64 Av	.5	10.8	34.94	79	66	57.9	47.9	-	-
				Margin [dB]		-44.06	-31.06	-22.96	-12.96	-	-
31	.542	25.02 Av	.3	10.6	35.92	73	60	56	46	-	-
				Margin [dB]		-37.08	-24.08	-20.08	-10.08	-	-
32	.794	22.22 Av	.3	10.6	33.12	73	60	56	46	-	-
				Margin [dB]		-39.88	-26.88	-22.88	-12.88	-	-
Line - L1 1 - 30MHz											
4	1.054	42.65 QP	.2	10.6	53.45	73	60	56	46	-	-
				Margin [dB]		-19.55	-6.55	-2.55	7.45	-	-
5	1.216	43.68 QP	.2	10.6	54.48	73	60	56	46	-	-
				Margin [dB]		-18.52	-5.52	-1.52	8.48	-	-
6	1.486	41.25 QP	.2	10.6	52.05	73	60	56	46	-	-
				Margin [dB]		-20.95	-7.95	-3.95	6.05	-	-
7	1.918	41.79 QP	.2	10.6	52.59	73	60	56	46	-	-
				Margin [dB]		-20.41	-7.41	-3.41	6.59	-	-
8	2.188	44.17 QP	.2	10.6	54.97	73	60	56	46	-	-
				Margin [dB]		-18.03	-5.03	-1.03	8.97	-	-
9	3.754	39.4 QP	.2	10.7	50.3	73	60	56	46	-	-
				Margin [dB]		-22.7	-9.7	-5.7	4.3	-	-
10	4.24	39.37 QP	.2	10.7	50.27	73	60	56	46	-	-
				Margin [dB]		-22.73	-9.73	-5.73	4.27	-	-
11	4.51	38.79 QP	.2	10.7	49.69	73	60	56	46	-	-
				Margin [dB]		-23.31	-10.31	-6.31	3.69	-	-
12	4.78	37.63 QP	.2	10.7	48.53	73	60	56	46	-	-
				Margin [dB]		-24.47	-11.47	-7.47	2.53	-	-
33	1.054	18.14 Av	.2	10.6	28.94	73	60	56	46	-	-
				Margin [dB]		-44.06	-31.06	-27.06	-17.06	-	-
34	1.216	15.93 Av	.2	10.6	26.73	73	60	56	46	-	-
				Margin [dB]		-46.27	-33.27	-29.27	-19.27	-	-
35	1.486	14.21 Av	.2	10.6	25.01	73	60	56	46	-	-
				Margin [dB]		-47.99	-34.99	-30.99	-20.99	-	-
36	2.188	17.03 Av	.2	10.6	27.83	73	60	56	46	-	-
				Margin [dB]		-45.17	-32.17	-28.17	-18.17	-	-
37	2.458	10.9 Av	.2	10.6	21.7	73	60	56	46	-	-
				Margin [dB]		-51.3	-38.3	-34.3	-24.3	-	-
38	2.89	10.71 Av	.2	10.6	21.51	73	60	56	46	-	-
				Margin [dB]		-51.49	-38.49	-34.49	-24.49	-	-
39	3.16	11.93 Av	.2	10.6	22.73	73	60	56	46	-	-
				Margin [dB]		-50.27	-37.27	-33.27	-23.27	-	-
40	3.754	12.78 Av	.2	10.7	23.68	73	60	56	46	-	-
				Margin [dB]		-49.32	-36.32	-32.32	-22.32	-	-
41	4.24	10.59 Av	.2	10.7	21.49	73	60	56	46	-	-
				Margin [dB]		-51.51	-38.51	-34.51	-24.51	-	-
42	4.51	11.8 Av	.2	10.7	22.7	73	60	56	46	-	-
				Margin [dB]		-50.3	-37.3	-33.3	-23.3	-	-
43	4.78	11.88 Av	.2	10.7	22.78	73	60	56	46	-	-
				Margin [dB]		-50.22	-37.22	-33.22	-23.22	-	-

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

Philips
NA2 Dimmer, TX LoCh
120V/60Hz
RED: L1 GRN: N

No.	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 - L2 .15 - 1MHz												
13	.407	47.47	QP	.4	10.9	58.77	79	66	57.7	47.7	-	-
					Margin [dB]		-20.23	-7.23	1.07	11.07	-	-
14	.542	51.18	QP	.3	10.7	62.18	73	60	56	46	-	-
					Margin [dB]		-10.82	2.18	6.18	16.18	-	-
15	.821	52.14	QP	.2	10.7	63.04	73	60	56	46	-	-
					Margin [dB]		-9.96	3.04	7.04	17.04	-	-
16	.947	45.55	QP	.2	10.7	56.45	73	60	56	46	-	-
					Margin [dB]		-16.55	-3.55	.45	10.45	-	-
44	.398	26.37	Av	.5	10.9	37.77	79	66	57.9	47.9	-	-
					Margin [dB]		-41.23	-28.23	-20.13	-10.13	-	-
45	.533	28.42	Av	.3	10.7	39.42	73	60	56	46	-	-
					Margin [dB]		-33.58	-20.58	-16.58	-6.58	-	-
46	.794	26.45	Av	.2	10.7	37.35	73	60	56	46	-	-
					Margin [dB]		-35.65	-22.65	-18.65	-8.65	-	-
Line - L2 1 - 30MHz												
17	1.054	46.17	QP	.2	10.7	57.07	73	60	56	46	-	-
					Margin [dB]		-15.93	-2.93	1.07	11.07	-	-
18	1.216	49.26	QP	.2	10.7	60.16	73	60	56	46	-	-
					Margin [dB]		-12.84	.16	4.16	14.16	-	-
19	1.486	49.1	QP	.1	10.7	59.9	73	60	56	46	-	-
					Margin [dB]		-13.1	-.1	3.9	13.9	-	-
20	1.756	46.77	QP	.1	10.7	57.57	73	60	56	46	-	-
					Margin [dB]		-15.43	-2.43	1.57	11.57	-	-
21	1.918	45.25	QP	.1	10.7	56.05	73	60	56	46	-	-
					Margin [dB]		-16.95	-3.95	.05	10.05	-	-
*22	2.188	49.83	QP	.1	10.7	60.63	73	60	56	46	-	-
					Margin [dB]		-12.37	.63	4.63	14.63	-	-
23	2.458	47.55	QP	.1	10.7	58.35	73	60	56	46	-	-
					Margin [dB]		-14.65	-1.65	2.35	12.35	-	-
24	2.782	45.7	QP	.1	10.7	56.5	73	60	56	46	-	-
					Margin [dB]		-16.5	-3.5	.5	10.5	-	-
25	3.214	44.87	QP	.1	10.8	55.77	73	60	56	46	-	-
					Margin [dB]		-17.23	-4.23	-.23	9.77	-	-
26	3.808	43.22	QP	.1	10.8	54.12	73	60	56	46	-	-
					Margin [dB]		-18.88	-5.88	-1.88	8.12	-	-
27	4.24	43.29	QP	.1	10.8	54.19	73	60	56	46	-	-
					Margin [dB]		-18.81	-5.81	-1.81	8.19	-	-
28	4.51	42.81	QP	.2	10.8	53.81	73	60	56	46	-	-
					Margin [dB]		-19.19	-6.19	-2.19	7.81	-	-
29	4.726	42.04	QP	.2	10.9	53.14	73	60	56	46	-	-
					Margin [dB]		-19.86	-6.86	-2.86	7.14	-	-
47	1.054	22.54	Av	.2	10.7	33.44	73	60	56	46	-	-
					Margin [dB]		-39.56	-26.56	-22.56	-12.56	-	-
48	1.216	21.56	Av	.2	10.7	32.46	73	60	56	46	-	-
					Margin [dB]		-40.54	-27.54	-23.54	-13.54	-	-
49	1.486	21.1	Av	.1	10.7	31.9	73	60	56	46	-	-
					Margin [dB]		-41.1	-28.1	-24.1	-14.1	-	-

* See comment under the Low channel Plot.

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

Table 7 Conducted Emissions Data Points – Dimmer – Middle Channel

Philips
NA2 Dimmer, TX MidCh
120V/60Hz
RED: L1 GRN: N

No.	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 .15 - 1MHz											
1	.24685	42.91 PK	.9	11.3	55.11	79	66	61.9	51.9	-	-
				Margin [dB]		-23.89	-10.89	-6.79	3.21	-	-
2	.41486	43.42 PK	.5	10.7	54.62	79	66	57.6	47.6	-	-
				Margin [dB]		-24.38	-11.38	-2.98	7.02	-	-
3	.54675	45.6 PK	.3	10.6	56.5	73	60	56	46	-	-
				Margin [dB]		-16.5	-3.5	.5	10.5	-	-
4	.67589	43.54 PK	.3	10.6	54.44	73	60	56	46	-	-
				Margin [dB]		-18.56	-5.56	-1.56	8.44	-	-
5	.93118	44.34 PK	.2	10.6	55.14	73	60	56	46	-	-
				Margin [dB]		-17.86	-4.86	-.86	9.14	-	-
Line - L1 1 - 30MHz											
6	1.31875	42.6 PK	.2	10.6	53.4	73	60	56	46	-	-
				Margin [dB]		-19.6	-6.6	-2.6	7.4	-	-
7	2.01998	39.44 PK	.2	10.6	50.24	73	60	56	46	-	-
				Margin [dB]		-22.76	-9.76	-5.76	4.24	-	-
8	2.94145	40.08 PK	.2	10.6	50.88	73	60	56	46	-	-
				Margin [dB]		-22.12	-9.12	-5.12	4.88	-	-
9	3.85132	37.41 PK	.2	10.7	48.31	73	60	56	46	-	-
				Margin [dB]		-24.69	-11.69	-7.69	2.31	-	-
Line - L2 .15 - 1MHz											
10	.24685	40.31 PK	.9	11.4	52.61	79	66	61.9	51.9	-	-
				Margin [dB]		-26.39	-13.39	-9.29	.71	-	-
11	.40572	43.71 PK	.4	10.9	55.01	79	66	57.7	47.7	-	-
				Margin [dB]		-23.99	-10.99	-2.69	7.31	-	-
12	.54081	43.69 PK	.3	10.7	54.69	73	60	56	46	-	-
				Margin [dB]		-18.31	-5.31	-1.31	8.69	-	-
13	.68651	44.11 PK	.2	10.7	55.01	73	60	56	46	-	-
				Margin [dB]		-17.99	-4.99	-.99	9.01	-	-
14	.93543	43.08 PK	.2	10.7	53.98	73	60	56	46	-	-
				Margin [dB]		-19.02	-6.02	-2.02	7.98	-	-
15	.23836	40.51 PK	1	11.5	53.01	79	66	62.2	52.2	-	-
				Margin [dB]		-25.99	-12.99	-9.19	.81	-	-
Line - L2 1 - 30MHz											
16	1.31875	42.75 PK	.2	10.7	53.65	73	60	56	46	-	-
				Margin [dB]		-19.35	-6.35	-2.35	7.65	-	-
17	2.10691	42.97 PK	.1	10.7	53.77	73	60	56	46	-	-
				Margin [dB]		-19.23	-6.23	-2.23	7.77	-	-
18	2.94724	39.87 PK	.1	10.7	50.67	73	60	56	46	-	-
				Margin [dB]		-22.33	-9.33	-5.33	4.67	-	-
19	3.78757	39.7 PK	.1	10.8	50.6	73	60	56	46	-	-
				Margin [dB]		-22.4	-9.4	-5.4	4.6	-	-

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

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

Table 8 Conducted Emissions Data Points – Dimmer – High Channel

Philips
NA2 Dimmer, TX HiCh
120V/60Hz
RED: L1 GRN: N

No.	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 .15 - 1MHz										
1	.533	47.43 QP	.4	10.6	58.43	73	60	56	46	-	-
				Margin [dB]		-14.57	-1.57	2.43	12.43	-	-
2	.803	47.3 QP	.3	10.6	58.2	73	60	56	46	-	-
				Margin [dB]		-14.8	-1.8	2.2	12.2	-	-
3	.956	42.6 QP	.2	10.6	53.4	73	60	56	46	-	-
				Margin [dB]		-19.6	-6.6	-2.6	7.4	-	-
19	.533	25.48 Av	.4	10.6	36.48	73	60	56	46	-	-
				Margin [dB]		-36.52	-23.52	-19.52	-9.52	-	-
20	.794	22.69 Av	.3	10.6	33.59	73	60	56	46	-	-
				Margin [dB]		-39.41	-26.41	-22.41	-12.41	-	-
21	.938	15.9 Av	.2	10.6	26.7	73	60	56	46	-	-
				Margin [dB]		-46.3	-33.3	-29.3	-19.3	-	-
Line - L1 1 - 30MHz										
4	1.054	43.86 QP	.2	10.6	54.66	73	60	56	46	-	-
				Margin [dB]		-18.34	-5.34	-1.34	8.66	-	-
5	1.216	45.29 QP	.2	10.6	56.09	73	60	56	46	-	-
				Margin [dB]		-16.91	-3.91	.09	10.09	-	-
6	1.486	44.61 QP	.2	10.6	55.41	73	60	56	46	-	-
				Margin [dB]		-17.59	-4.59	-.59	9.41	-	-
7	1.756	40.86 QP	.2	10.6	51.66	73	60	56	46	-	-
				Margin [dB]		-21.34	-8.34	-4.34	5.66	-	-
8	2.134	44.14 QP	.2	10.6	54.94	73	60	56	46	-	-
				Margin [dB]		-18.06	-5.06	-1.06	8.94	-	-
9	2.404	42.92 QP	.2	10.6	53.72	73	60	56	46	-	-
				Margin [dB]		-19.28	-6.28	-2.28	7.72	-	-
10	3.376	38.87 QP	.2	10.7	49.77	73	60	56	46	-	-
				Margin [dB]		-23.23	-10.23	-6.23	3.77	-	-
22	1.054	20.3 Av	.2	10.6	31.1	73	60	56	46	-	-
				Margin [dB]		-41.9	-28.9	-24.9	-14.9	-	-
23	1.216	18.06 Av	.2	10.6	28.86	73	60	56	46	-	-
				Margin [dB]		-44.14	-31.14	-27.14	-17.14	-	-
24	1.486	17.49 Av	.2	10.6	28.29	73	60	56	46	-	-
				Margin [dB]		-44.71	-31.71	-27.71	-17.71	-	-
25	2.026	11.97 Av	.2	10.6	22.77	73	60	56	46	-	-
				Margin [dB]		-50.23	-37.23	-33.23	-23.23	-	-
26	2.134	16.87 Av	.2	10.6	27.67	73	60	56	46	-	-
				Margin [dB]		-45.33	-32.33	-28.33	-18.33	-	-
27	2.404	15.66 Av	.2	10.6	26.46	73	60	56	46	-	-
				Margin [dB]		-46.54	-33.54	-29.54	-19.54	-	-
28	3.376	11.96 Av	.2	10.7	22.86	73	60	56	46	-	-
				Margin [dB]		-50.14	-37.14	-33.14	-23.14	-	-

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

Philips
NA2 Dimmer, TX HiCh
120V/60Hz
RED: L1 GRN: N

No.	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 - L2 .15 - 1MHz												
11	.533	51.6	QP	.3	10.7	62.6	73	60	56	46	-	-
					Margin [dB]		-10.4	2.6	6.6	16.6	-	-
12	.794	50	QP	.2	10.7	60.9	73	60	56	46	-	-
					Margin [dB]		-12.1	.9	4.9	14.9	-	-
13	.956	45.7	QP	.2	10.7	56.6	73	60	56	46	-	-
					Margin [dB]		-16.4	-3.4	.6	10.6	-	-
29	.542	29.96	Av	.3	10.7	40.96	73	60	56	46	-	-
					Margin [dB]		-32.04	-19.04	-15.04	-5.04	-	-
30	.812	27.51	Av	.2	10.7	38.41	73	60	56	46	-	-
					Margin [dB]		-34.59	-21.59	-17.59	-7.59	-	-
31	.929	20.14	Av	.2	10.7	31.04	73	60	56	46	-	-
					Margin [dB]		-41.96	-28.96	-24.96	-14.96	-	-
Line - L2 1 - 30MHz												
14	1.054	49.02	QP	.2	10.7	59.92	73	60	56	46	-	-
					Margin [dB]		-13.08	-.08	3.92	13.92	-	-
15	1.216	47.79	QP	.2	10.7	58.69	73	60	56	46	-	-
					Margin [dB]		-14.31	-1.31	2.69	12.69	-	-
16	1.486	46.73	QP	.1	10.7	57.53	73	60	56	46	-	-
					Margin [dB]		-15.47	-2.47	1.53	11.53	-	-
17	1.864	47.77	QP	.1	10.7	58.57	73	60	56	46	-	-
					Margin [dB]		-14.43	-1.43	2.57	12.57	-	-
18	2.134	48.28	QP	.1	10.7	59.08	73	60	56	46	-	-
					Margin [dB]		-13.92	-.92	3.08	13.08	-	-
32	1.054	22.61	Av	.2	10.7	33.51	73	60	56	46	-	-
					Margin [dB]		-39.49	-26.49	-22.49	-12.49	-	-
33	1.216	22.13	Av	.2	10.7	33.03	73	60	56	46	-	-
					Margin [dB]		-39.97	-26.97	-22.97	-12.97	-	-
34	1.486	19.48	Av	.1	10.7	30.28	73	60	56	46	-	-
					Margin [dB]		-42.72	-29.72	-25.72	-15.72	-	-
35	1.864	19.99	Av	.1	10.7	30.79	73	60	56	46	-	-
					Margin [dB]		-42.21	-29.21	-25.21	-15.21	-	-
36	2.134	20.05	Av	.1	10.7	30.85	73	60	56	46	-	-
					Margin [dB]		-42.15	-29.15	-25.15	-15.15	-	-
37	2.458	16.15	Av	.1	10.7	26.95	73	60	56	46	-	-
					Margin [dB]		-46.05	-33.05	-29.05	-19.05	-	-

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

4.1 Test Conditions and Results – RADIATED EMISSIONS Receiver Mode

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	FCC Part 15, Subpart B	
UL LPG	80-EM-S0029	
	Frequency range	Measurement Point
Fully configured sample scanned over the following frequency range	30MHz – 13GHz	(10 meter or 3 meter)

Limits - Class A

Frequency (MHz)	Limit (dBµV/m)	
	Quasi-Peak	Average
30-88	39.08	NA
88-216	43.52	NA
216-960	46.44	NA
960-1000	49.54	NA
Above 1GHz	NA	60 (at 3-meter)

Limits - Class 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 1GHz	NA	54 (at 3-meter)

Supplementary information: None

Table 9 Radiated Emissions EUT Configuration Settings

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

Table 10 Radiated Emissions Test Equipment

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
EMI Test Receiver	Rohde & Schwarz	ESU	EMC4323	Dec. 30, 2010	Dec. 31, 2011
Bicon Antenna	Chase	VBA6106A	EMC4078	Dec. 2, 2010	Dec. 31, 2011
Log-P Antenna	Chase	UPA6109	EMC4313	June 1, 2010	June, 30, 2011
Spectrum Analyzer	Rhode & Schwarz	FSEK	EMC4182	Dec. 28, 2010	Dec. 30, 2011
Antenna Array	UL	BOMS	EMC4276	Oct. 21, 2010	Oct. 21, 2011

Figure 8 Test setup for Radiated Emissions

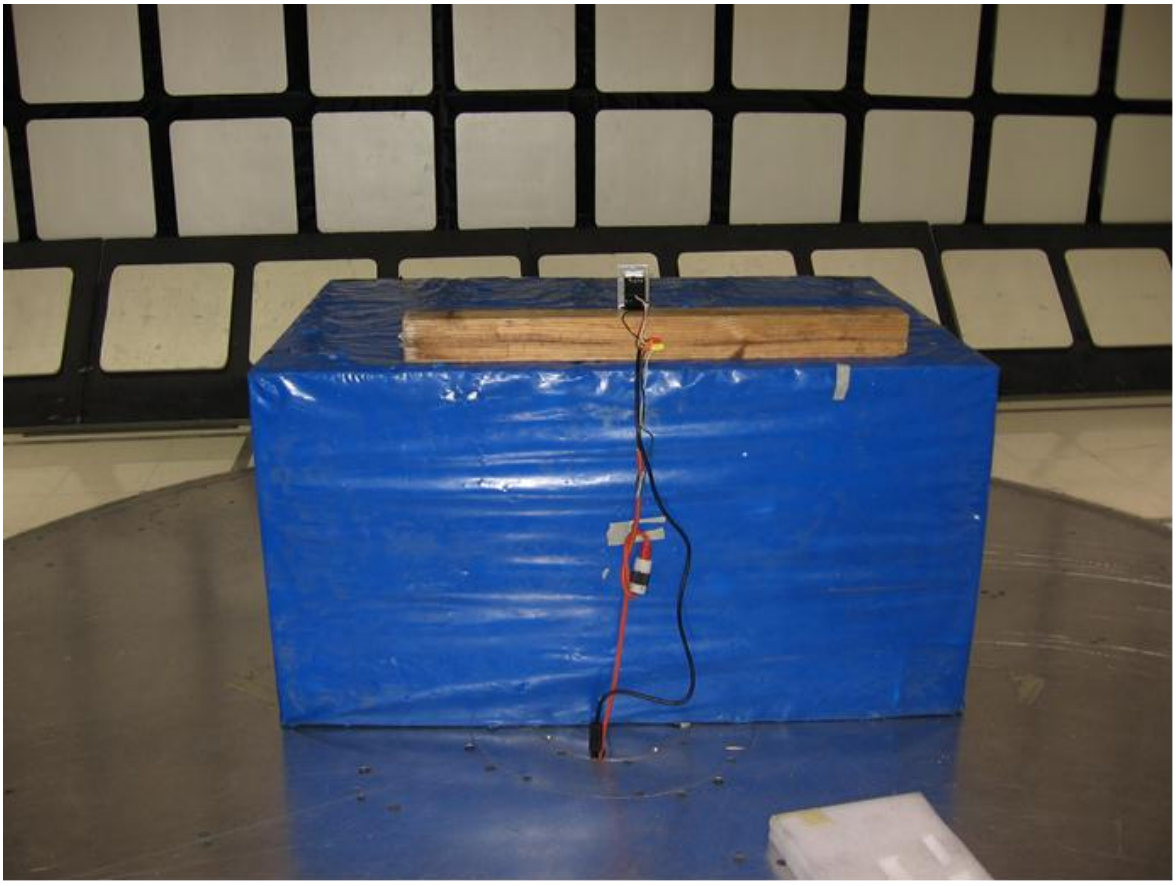


Figure 9 Radiated Emissions Graph 30MHz – 1GHz, Switch

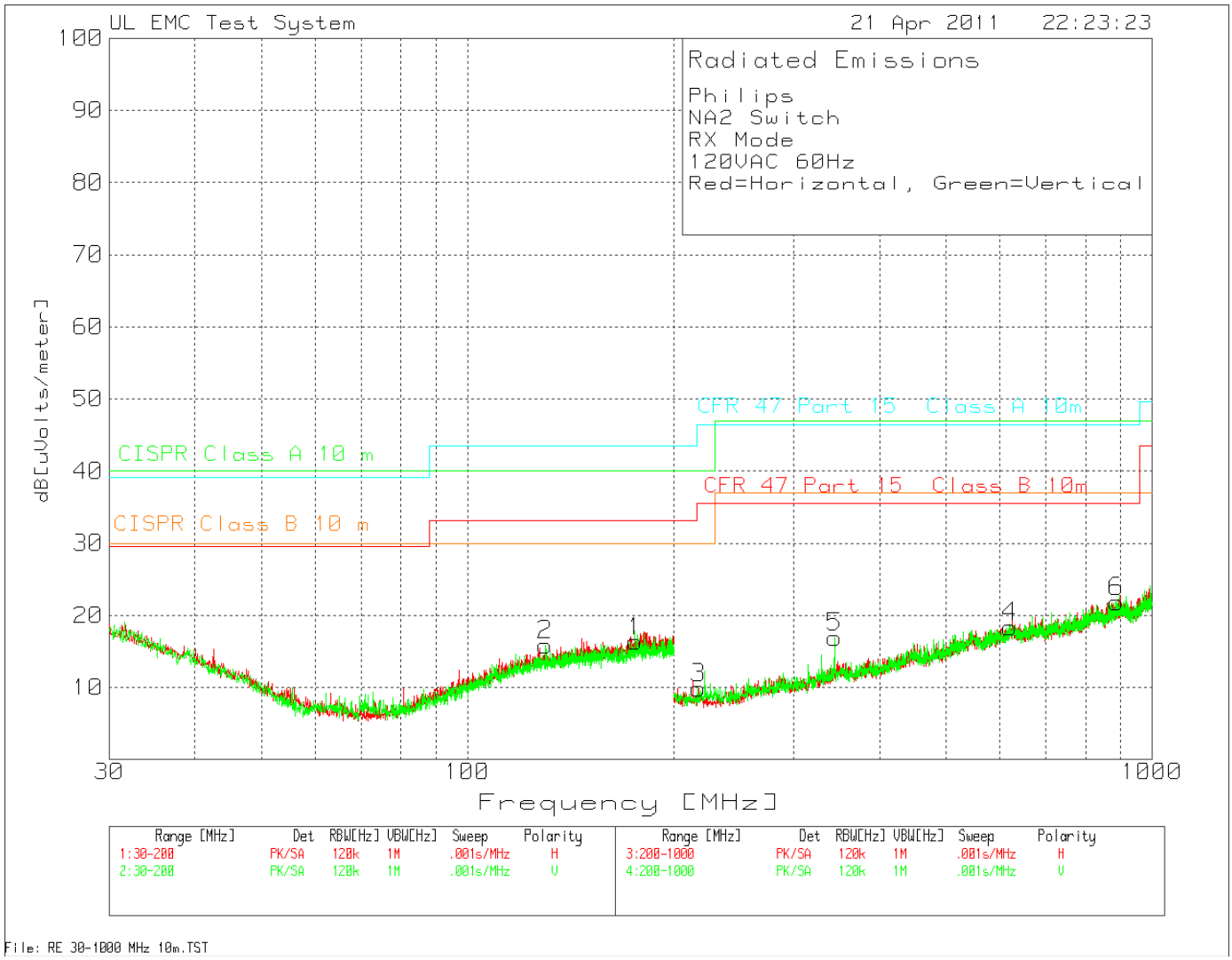


Table 11 Radiated Emissions Data Points 30MHz – 1GHz, Switch

Philips
NA2 Switch
RX Mode
120VAC 60Hz
Red=Horizontal, Green=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
Bicon Horizonta 30 - 200MHz											
1	176.1269	30.73 PK	-29.9	15.5	16.33	40	30	43.5	33.1	-	-
		Height:100 Horz		Margin [dB]		-23.67	-13.67	-27.17	-16.77	-	-
Bicon Vertical 30 - 200MHz											
2	130.1649	31.86 PK	-30	14	15.86	40	30	43.5	33.1	-	-
		Height:100 Vert		Margin [dB]		-24.14	-14.14	-27.64	-17.24	-	-
LogP Horizontal 200 - 1000MHz											
3	217.8548	32.26 PK	-33.2	10.8	9.86	40	30	46.4	35.6	-	-
		Height:401 Horz		Margin [dB]		-30.14	-20.14	-36.54	-25.74	-	-
4	620.7861	29.26 PK	-31.3	20.4	18.36	47	37	46.4	35.6	-	-
		Height:401 Horz		Margin [dB]		-28.64	-18.64	-28.04	-17.24	-	-
LogP Vertical 200 - 1000MHz											
5	343.6376	34.66 PK	-32.5	14.8	16.96	47	37	46.4	35.6	-	-
		Height:203 Vert		Margin [dB]		-30.04	-20.04	-29.44	-18.64	-	-
6	887.8081	30.69 PK	-31.7	22.9	21.89	47	37	46.4	35.6	-	-
		Height:300 Vert		Margin [dB]		-25.11	-15.11	-24.51	-13.71	-	-

LIMIT 1: CISPR Class A 10 m
LIMIT 2: CISPR Class B 10 m
LIMIT 3: CFR 47 Part 15 Class A 10m
LIMIT 4: CFR 47 Part 15 Class B 10m

PK - Peak detector

Figure 10 Radiated Emissions Graph 1GHz – 13GHz, Switch

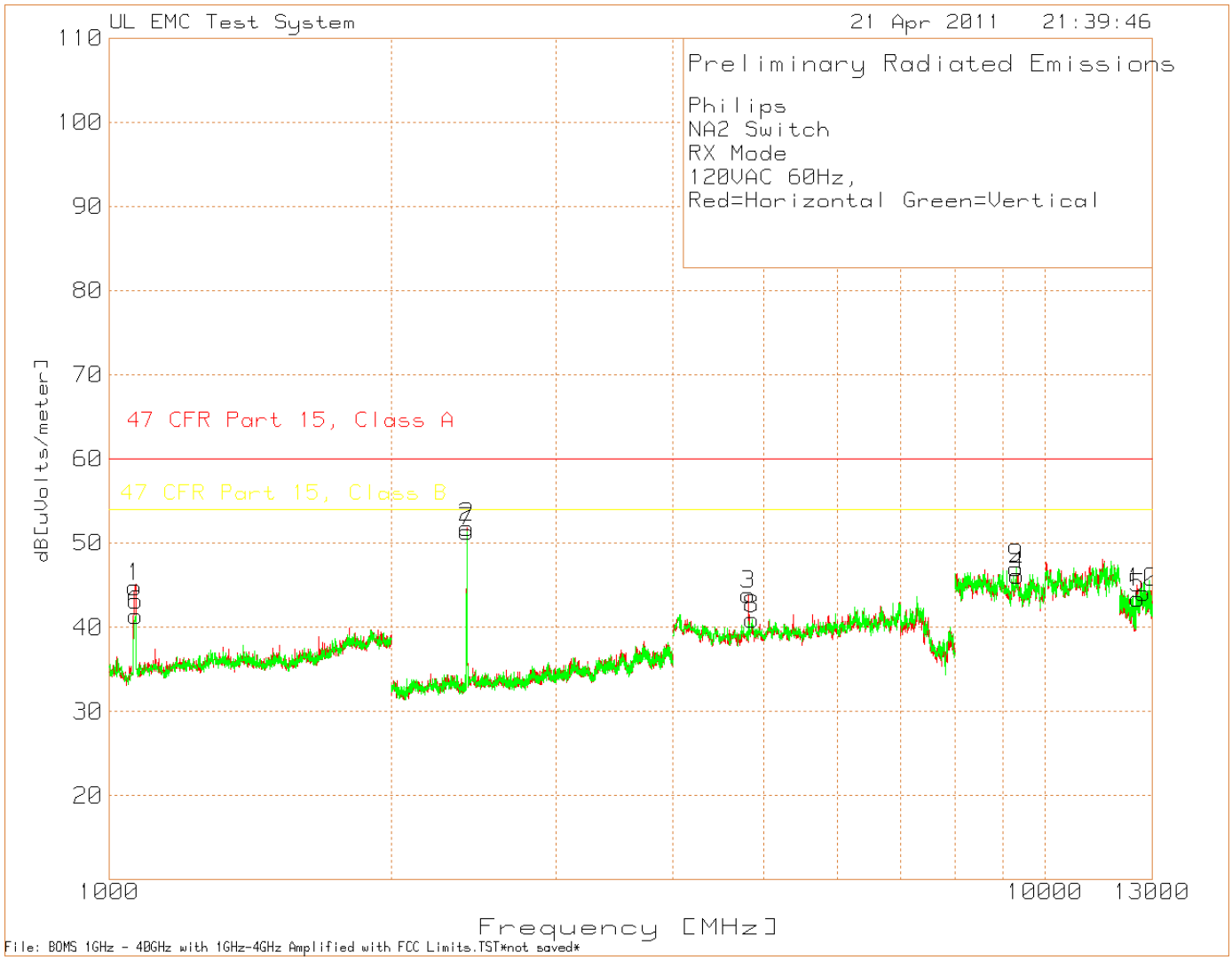


Table 12 Radiated Emissions Data Points 1GHz – 13GHz, Switch

Philips												
NA2 Switch												
RX Mode												
120VAC 60Hz,												
Red=Horizontal Green=Vertical												
Marker	Test	Meter	Detector	Gain/Loss	Transducer	Level	Limit 1	Margin 1[dB]	Limit 2	Margin 2[dB]	Height [cm]	Polarity
Number	Frequency	Reading	Type	Factor	Factor	dB[uVolts/meter]						
	[MHz]	[dB(uV)]		[dB]	[dB]							
1	1065.065	77.06	PK	-56.31	24	44.75	60	-15.25	54	-9.25	99	Horz
2	2409.606	80.96	PK	-50.89	21.8	51.87	60	-8.13	54	-2.13	99	Horz
3	4820.821	66.89	PK	-50.75	27.7	43.84	60	-16.16	54	-10.16	100	Horz
4	9325.325	58.18	PK	-48.47	36.4	46.11	60	-13.89	54	-7.89	200	Horz
5	12561.562	48.42	PK	-44.39	39.4	43.43	60	-16.57	54	-10.57	150	Horz
6	1066.066	73.65	PK	-56.28	24	41.37	60	-18.63	54	-12.63	150	Vert
7	2409.606	80.42	PK	-50.89	21.8	51.33	60	-8.67	54	-2.67	100	Vert
8	4860.861	63.33	PK	-50.11	27.7	40.92	60	-19.08	54	-13.08	200	Vert
9	9313.313	59.03	PK	-48.42	36.4	47.01	60	-12.99	54	-6.99	200	Vert
10	12736.737	47.07	PK	-42.57	39.6	44.1	60	-15.9	54	-9.9	200	Vert
LIMIT 1: 47 CFR Part 15, Class A												
LIMIT 2: 47 CFR Part 15, Class B												
PK - Peak detector												

Figure 11 Radiated Emissions Graph 30MHz – 1GHz, Dimmer

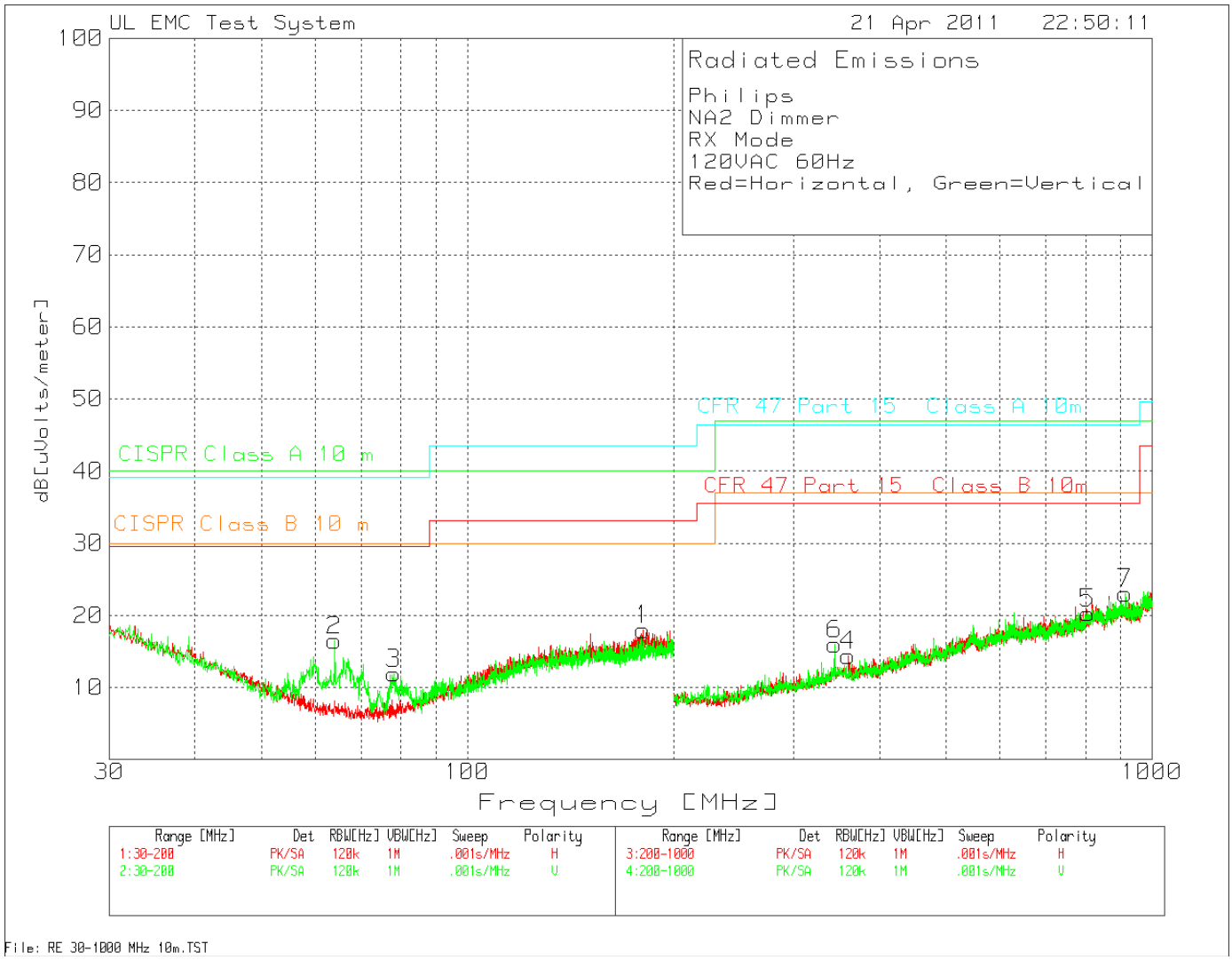


Table 13 Radiated Emissions Data Points 30MHz – 1GHz, Dimmer

Philips
NA2 Dimmer
RX Mode
120VAC 60Hz
Red=Horizontal, Green=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
Bicon Horizonta 30 - 200MHz											
1	180.4598	32.06 PK	-29.8	15.7	17.96	40	30	43.5	33.1	-	-
		Height:250 Horz		Margin [dB]		-22.04	-12.04	-25.54	-15.14	-	-
Bicon Vertical 30 - 200MHz											
2	63.983	40.37 PK	-30.2	6.3	16.47	40	30	39.1	29.6	-	-
		Height:100 Vert		Margin [dB]		-23.53	-13.53	-22.63	-13.13	-	-
3	78.1709	35.33 PK	-30.2	6.8	11.93	40	30	39.1	29.6	-	-
		Height:100 Vert		Margin [dB]		-28.07	-18.07	-27.17	-17.67	-	-
LogP Horizontal 200 - 1000MHz											
4	360.1599	32.18 PK	-32.5	14.7	14.38	47	37	46.4	35.6	-	-
		Height:399 Horz		Margin [dB]		-32.62	-22.62	-32.02	-21.22	-	-
5	805.1965	29.8 PK	-31.4	21.9	20.3	47	37	46.4	35.6	-	-
		Height:202 Horz		Margin [dB]		-26.7	-16.7	-26.1	-15.3	-	-
LogP Vertical 200 - 1000MHz											
6	343.6376	33.64 PK	-32.5	14.8	15.94	47	37	46.4	35.6	-	-
		Height:99 Vert		Margin [dB]		-31.06	-21.06	-30.46	-19.66	-	-
7	914.1905	31.31 PK	-31.5	23.2	23.01	47	37	46.4	35.6	-	-
		Height:301 Vert		Margin [dB]		-23.99	-13.99	-23.39	-12.59	-	-

LIMIT 1: CISPR Class A 10 m
LIMIT 2: CISPR Class B 10 m
LIMIT 3: CFR 47 Part 15 Class A 10m
LIMIT 4: CFR 47 Part 15 Class B 10m

PK - Peak detector

Figure 12 Radiated Emissions Graph 1GHz – 13GHz, Dimmer

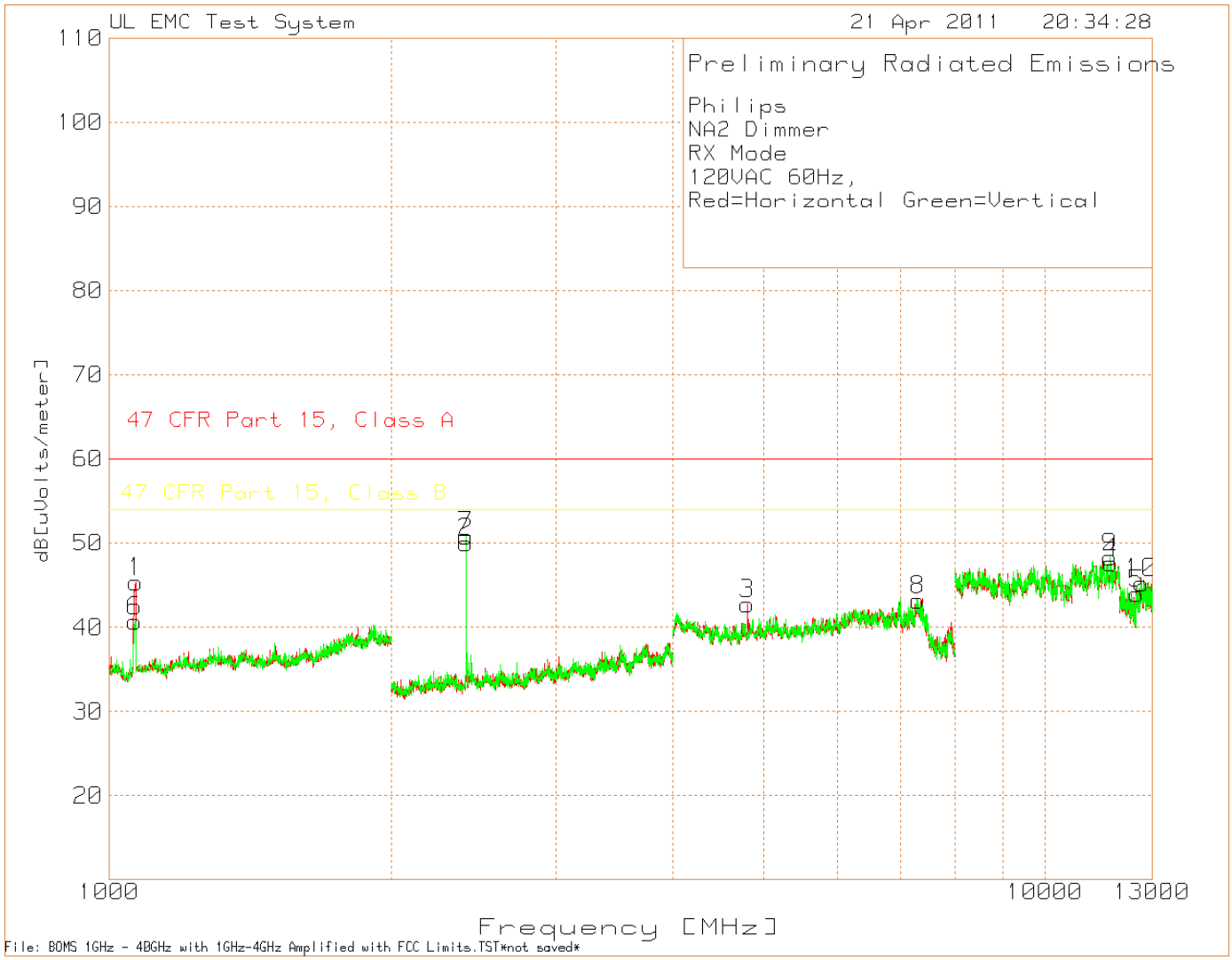


Table 14 Radiated Emissions Data Points 1GHz – 13GHz, Dimmer

Philips												
NA2 Dimmer												
RX Mode												
120VAC 60Hz,												
Red=Horizontal Green=Vertical												
Marker	Test	Meter	Detector	Gain/Loss	Transducer	Level	Limit 1	Margin 1[dB]	Limit 2	Margin 2[dB]	Height [cm]	Polarity
Number	Frequency	Reading	Type	Factor	Factor	dB[uVolts/meter]						
	[MHz]	[dB(uV)]		[dB]	[dB]							
1	1066.066	77.63	PK	-56.28	24	45.35	60	-14.65	54	-8.65	100	Horz
2	2404.27	79.24	PK	-51.03	21.8	50.01	60	-9.99	54	-3.99	100	Horz
3	4808.539	66.12	PK	-51.05	27.7	42.77	60	-17.23	54	-11.23	100	Horz
4	11762.508	56.08	PK	-46.27	37.8	47.61	60	-12.39	54	-6.39	150	Horz
5	12537.538	48.51	PK	-43.96	39.4	43.95	60	-16.05	54	-10.05	150	Horz
6	1064.064	73.08	PK	-56.34	24	40.74	60	-19.26	54	-13.26	150	Vert
7	2405.604	80.05	PK	-50.99	21.8	50.86	60	-9.14	54	-3.14	150	Vert
8	7314.209	58.03	PK	-45.41	30.6	43.22	60	-16.78	54	-10.78	100	Vert
9	11722.482	57.52	PK	-46.95	37.7	48.27	60	-11.73	54	-5.73	150	Vert
10	12664.665	47.91	PK	-42.15	39.5	45.26	60	-14.74	54	-8.74	150	Vert
LIMIT 1: 47 CFR Part 15, Class A												
LIMIT 2: 47 CFR Part 15, Class B												
PK - Peak detector												

4.2 Test Conditions and Results – SPURIOUS EMISSIONS (Antenna Conducted and Radiated)

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 7.2.5	
	Frequency range	Measurement Point
Fully configured sample scanned over the following frequency range	30MHz – 1GHz	10 meter distance and / or antenna port
Fully configured sample scanned over the following frequency range	1GHz – 25GHz	3 meter distance and / or antenna port

Limits (Antenna Conducted)

All emissions must be 20dB below the level of the fundamental frequency.

Limits (Radiated – Restricted Bands Only)

Frequency (MHz)	Limit (dBµV/m)		
	Quasi-Peak	Average	
	General Emissions	Fundamental	Spurious
30 – 88	29.54	-	-
88 – 216	33.06	-	-
216-960	35.56	-	-
960-1000	43.52	-	-
1,000-25,000	-	-	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).

Table 15 SPURIOUS EMISSIONS EUT Configuration Settings

Power Interface Mode #	EUT Configurations Mode #	EUT Operation Mode #
1	2 & 3	1
Supplementary information: None		

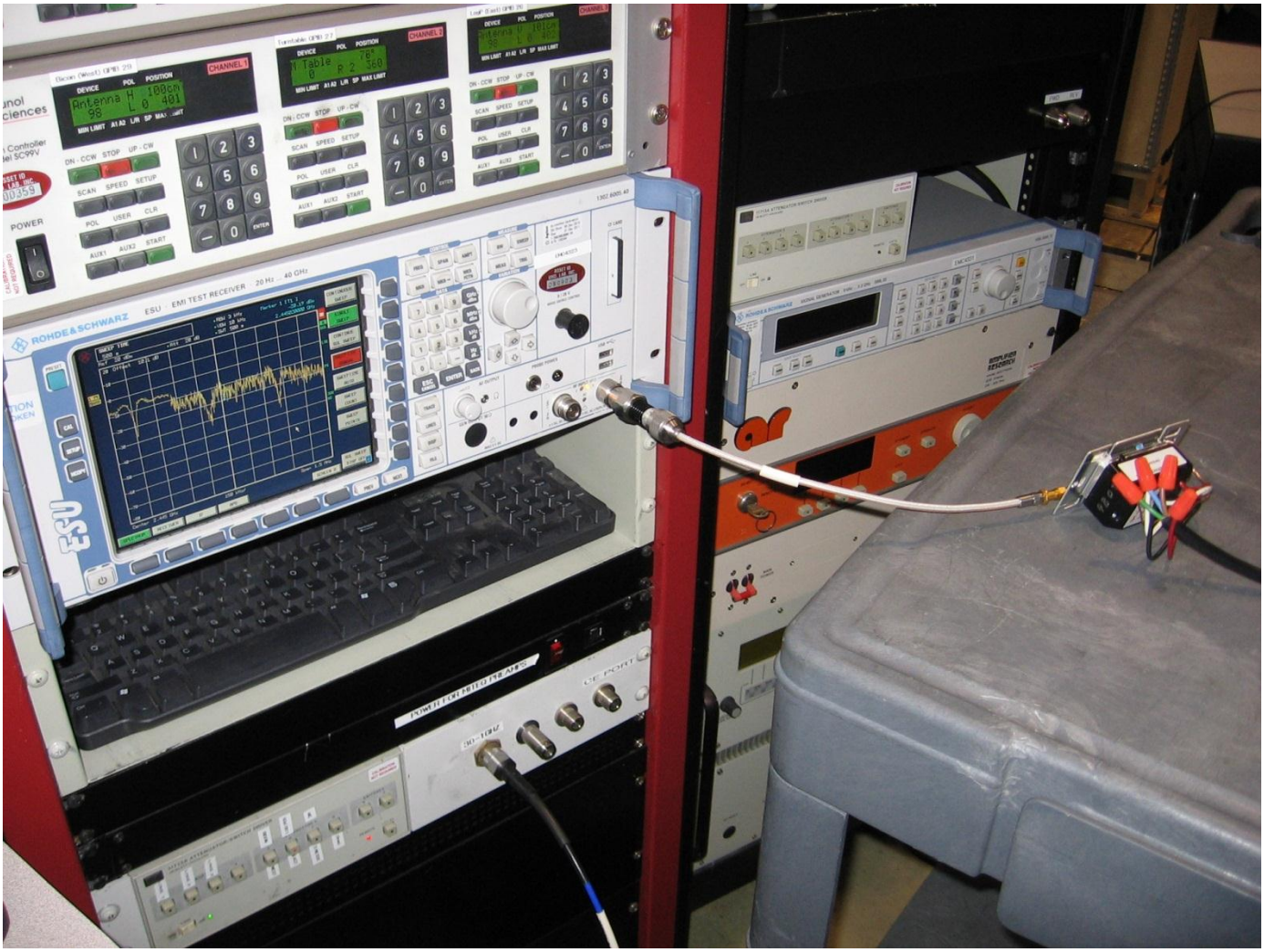
Table 16 SPURIOUS CONDUCTED EMISSIONS Test Equipment

Test Equipment Used					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum analyzer	Rhode & Schwartz	ESU	EMC4323	Dec. 30, 2010	Dec. 31, 2011
Attenuator w/ Cable	Mini Circuits	BW-N10W5	None	N/A	N/A

Table 17 SPURIOUS RADIATED EMISSIONS Test Equipment

Test Equipment Used					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum analyzer	Rhode & Schwartz	ESU	EMC4323	Dec. 30, 2010	Dec. 31, 2011
Bicon Antenna	Chase	VBA6106A	EMC4078	Dec. 2, 2010	Dec. 31, 2011
Log-P Antenna	Chase	UPA6109	EMC4313	June 1, 2010	June, 30, 2011
Spectrum Analyzer	Rhode & Schwartz	FSEK	EMC4182	Dec. 28, 2010	Dec. 30, 2011
Antenna Array	UL	BOMS	EMC4276	Oct. 21, 2010	Oct. 21, 2011

Test setup for SPURIOUS EMISSIONS – Antenna conducted



Test setup for SPURIOUS EMISSIONS – Radiated

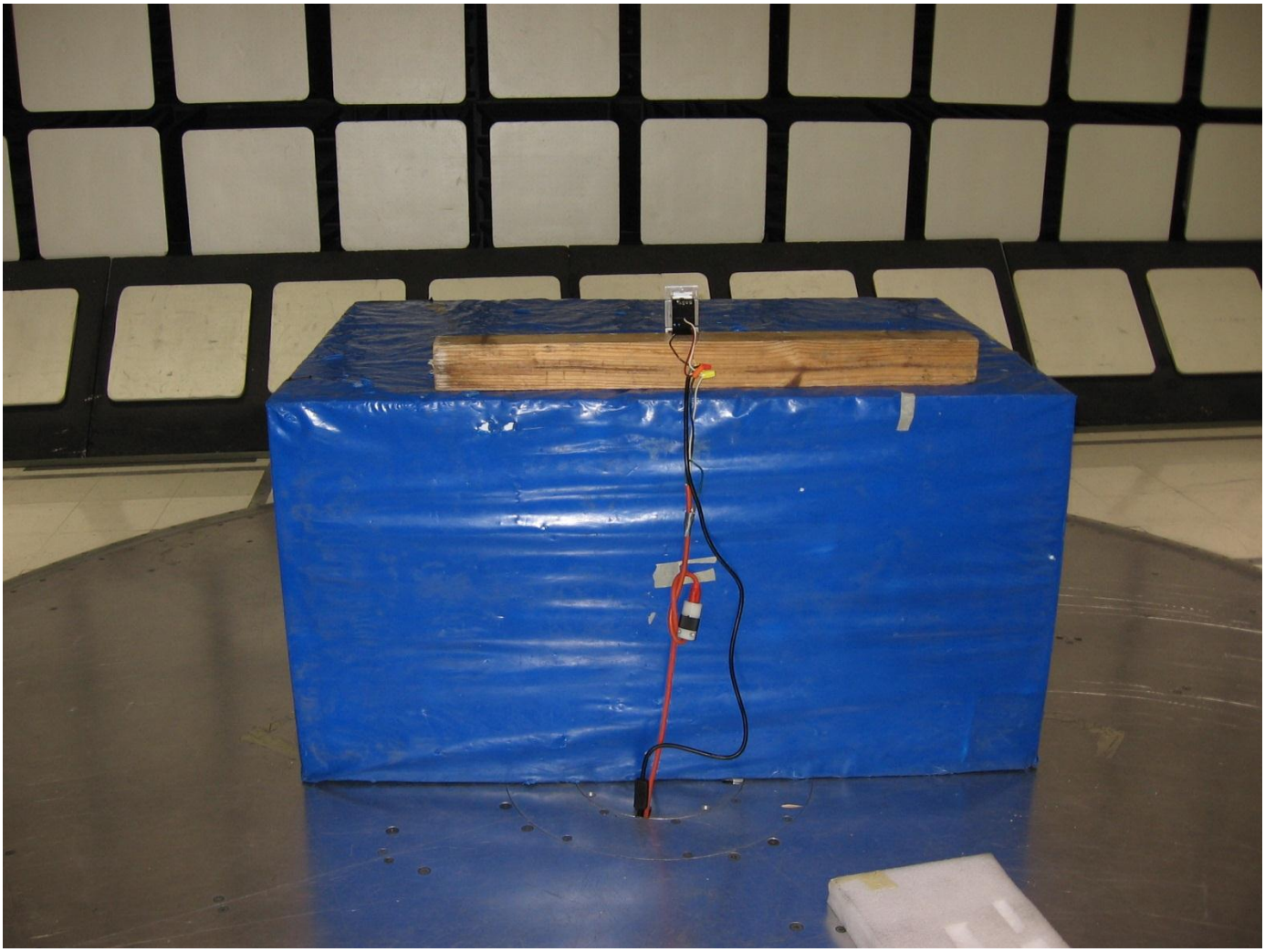
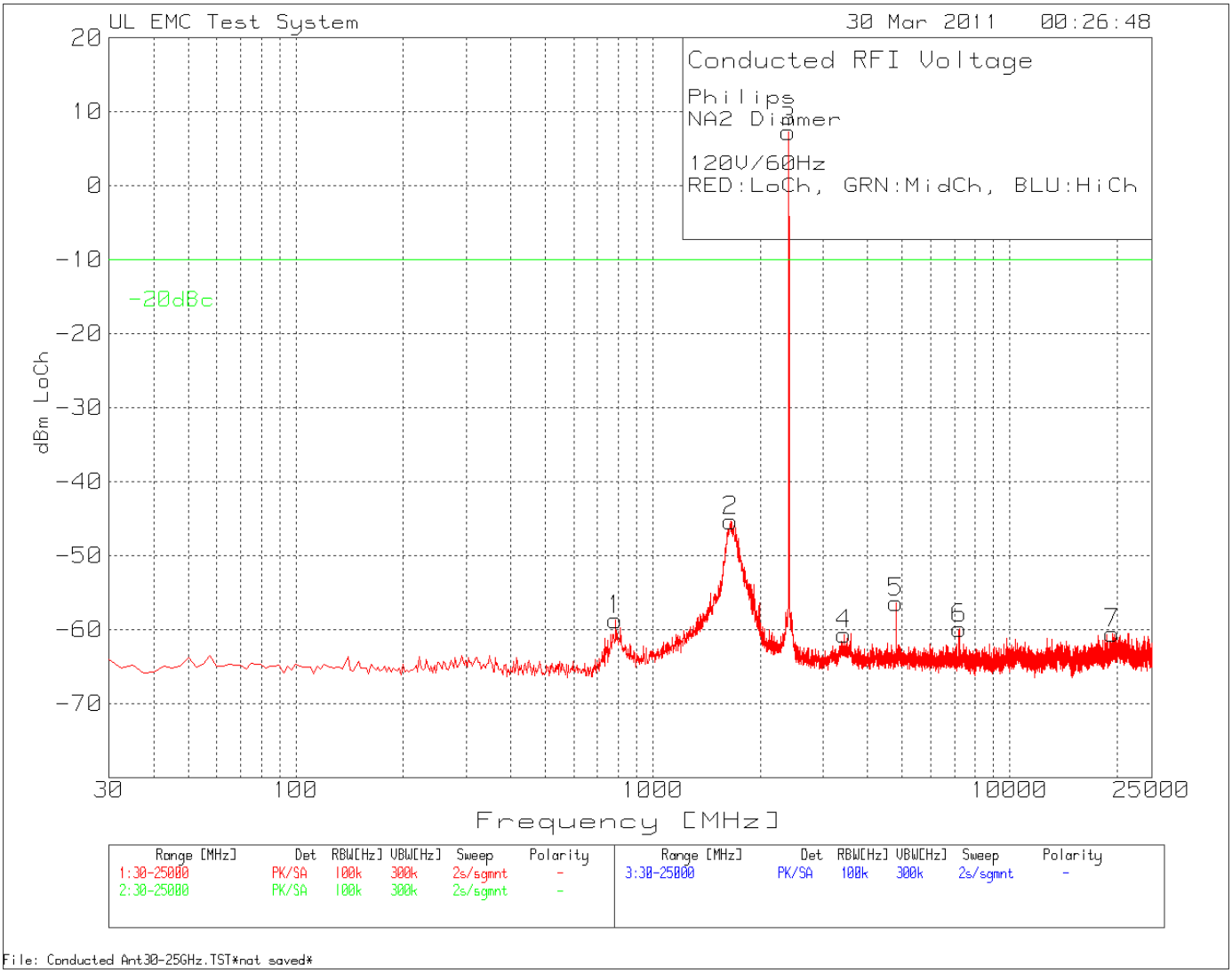
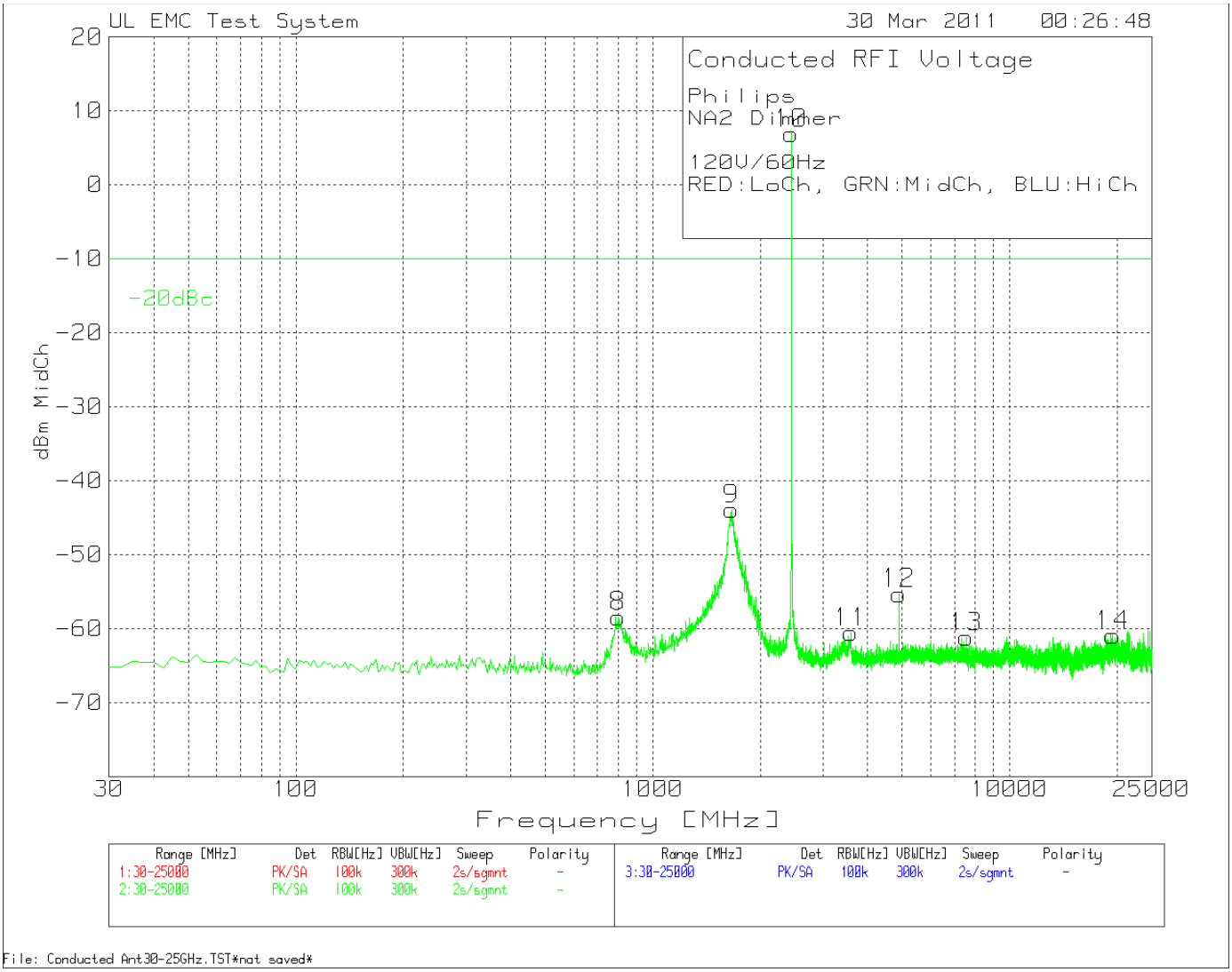


Figure 13 30MHz-25GHz Antenna Port Spurious Emissions Plots TX Mode, Low, Middle and High Channels.




UL EMC Test System
30 Mar 2011 00:26:48
Conducted RFI Voltage
Philips
NA2 Dimmer
120V/60Hz
RED:LoCh, GRN:MidCh, BLU:HiCh
-20dBc
dBm MidCh
20
10
0
-10
-20
-30
-40
-50
-60
-70
30
100
1000
10000
25000
Frequency [MHz]
Range [MHz] Det RBW[Hz] VBW[Hz] Sweep Polarity
1:30-25000 PK/SA 100k 300k 2s/sgmnt -
2:30-25000 PK/SA 100k 300k 2s/sgmnt -
Range [MHz] Det RBW[Hz] VBW[Hz] Sweep Polarity
3:30-25000 PK/SA 100k 300k 2s/sgmnt -
File: Conducted Ant30-25GHz.TST*not saved*

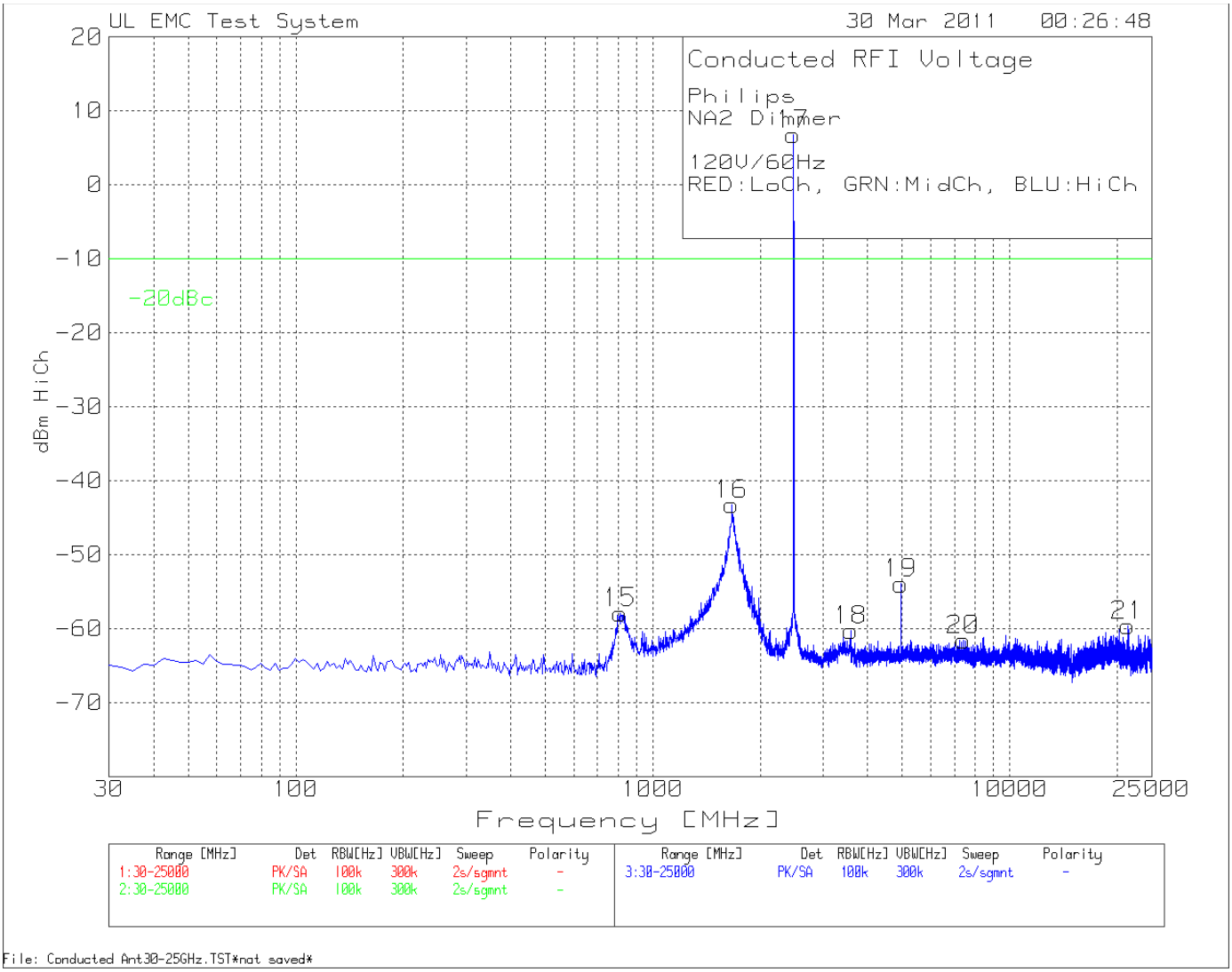

UL EMC Test System
30 Mar 2011 00:26:48
Conducted RFI Voltage
Philips
NA2 Dimmer
120V/60Hz
RED:LoCh, GRN:MidCh, BLU:HiCh
-20dBc
dBm HiCh
20
10
0
-10
-20
-30
-40
-50
-60
-70
30
100
1000
10000
25000
Frequency [MHz]
15
16
17
18
19
20
21
Range [MHz] Det RBW[Hz] VBW[Hz] Sweep Polarity
1:30-25000 PK/SA 100k 300k 2s/sgmnt -
2:30-25000 PK/SA 100k 300k 2s/sgmnt -
Range [MHz] Det RBW[Hz] VBW[Hz] Sweep Polarity
3:30-25000 PK/SA 100k 300k 2s/sgmnt -
File: Conducted Ant30-25GHz.TST*not saved*

Table 18 Antenna Port Conducted Spurious Emissions 30MHz - 25GHz, Low Channel, Middle Channel and High Channel

Philips								
NA2 Dimmer								
120V/60Hz								
RED:LoCh, GRN:MidCh, BLU:HiCh								
Marker	Test	Meter	Detector	Gain/Loss	Transducer	Level	Limit 1	Margin 1[dB]
Number	Frequency	Reading	Type	Factor	Factor	dBm		
	[MHz]	[dB(uV)]		[dB]	[dB]			
LoCh 30 - 25000MHz								
1	785.9107	38.24	PK	-107	10.1	-58.66	-10	-48.66
2	1651.591	51.58	PK	-107	10.1	-45.32	-10	-35.32
3	2405.006	104.24	PK	-107	10	7.24	NA	NA
4	3435.34	36.1	PK	-107	10.3	-60.6	-10	-50.6
5	4807.455	40.48	PK	-107	10.2	-56.32	-10	-46.32
6	7214.894	36.77	PK	-107	10.4	-59.83	-10	-49.83
7	19446.676	34.46	PK	-107	12	-60.54	-10	-50.54
MidCh 30 - 25000MHz								
8	798.3845	38.52	PK	-107	10.1	-58.38	-10	-48.38
9	1661.57	53.04	PK	-107	10.1	-43.86	-10	-33.86
10	2444.923	103.77	PK	-107	10.1	6.87	NA	NA
11	3592.51	36.26	PK	-107	10.2	-60.54	-10	-50.54
12	4887.287	41.44	PK	-107	10.3	-55.26	-10	-45.26
13	7539.212	35.28	PK	-107	10.6	-61.12	-10	-51.12
14	19454.16	34.19	PK	-107	11.9	-60.91	-10	-50.91
HiCh 30 - 25000MHz								
15	810.8582	39.04	PK	-107	10.1	-57.86	-10	-47.86
16	1666.559	53.7	PK	-107	10.1	-43.2	-10	-33.2
17	2479.849	103.63	PK	-107	10.1	6.73	NA	NA
18	3590.015	36.51	PK	-107	10.2	-60.29	-10	-50.29
19	4959.635	42.75	PK	-107	10.3	-53.95	-10	-43.95
20	7426.948	35.17	PK	-107	10.3	-61.53	-10	-51.53
21	21472.417	35.45	PK	-107	11.9	-59.65	-10	-49.65
LIMIT 1: -20dBc								
PK - Peak detector								
File: Conducted Ant30-25GHz.TST*not saved*								

* - Fundamental frequency, not subject to limit

Figure 14 Radiated Spurious Emissions below 1GHz, Low Channel - Switch

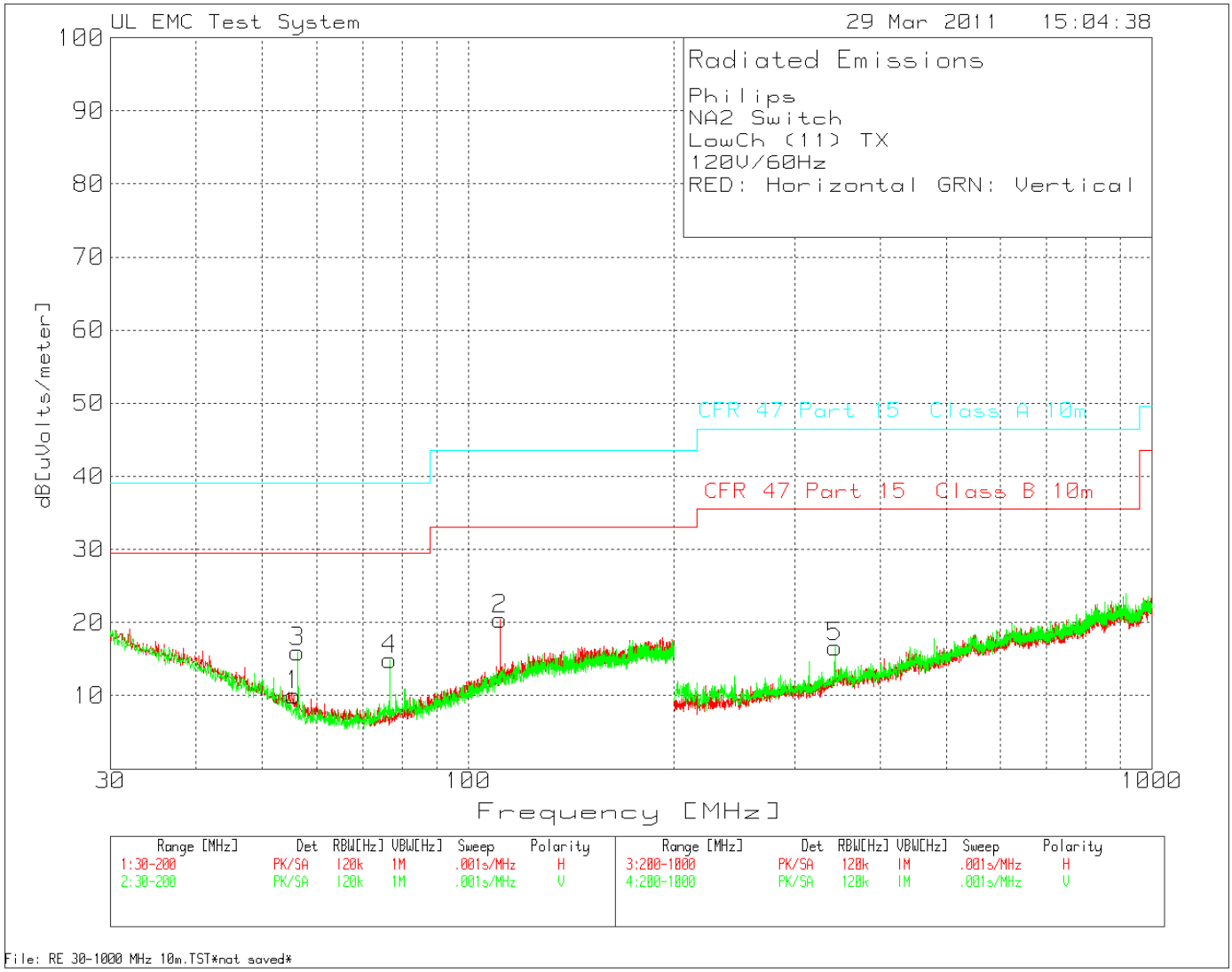


Figure 15 Radiated Spurious Emissions above 1GHz, Low Channel - Switch

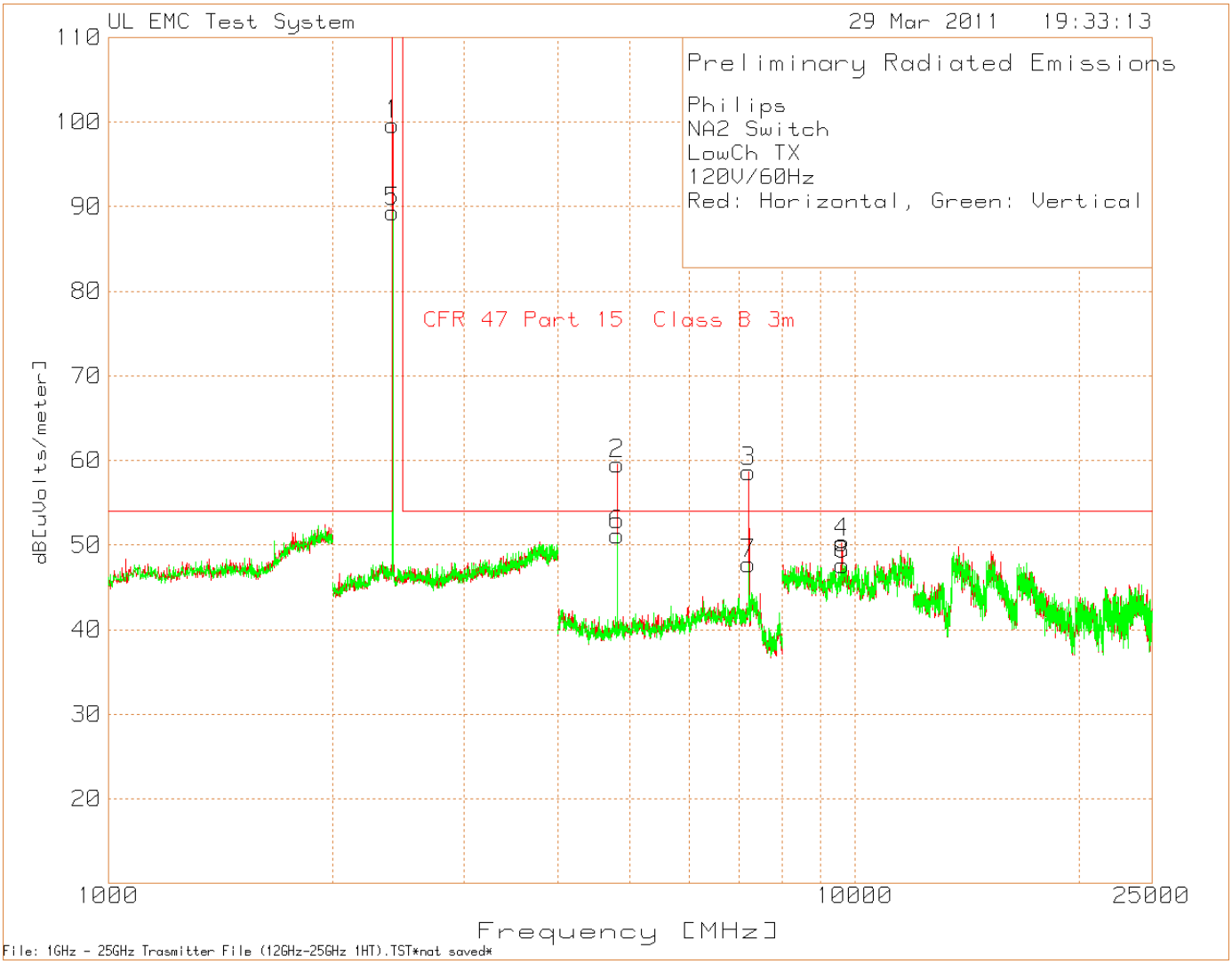


Table 19 Radiated Spurious Emissions below 1GHz, Low Channel - Switch

Philips
NA2 Switch
LowCh (11) TX
120V/60Hz
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	55.4873	32.28 PK	-30.2	8	10.08	-	-	39.1	29.6	-	-
		Height:100 Horz		Margin [dB]		-	-	-29.02	-19.52	-	-
2	111.3043	38.14 PK	-29.9	12.2	20.44	-	-	43.5	33.1	-	-
		Height:100 Horz		Margin [dB]		-	-	-23.06	-12.66	-	-
3	56.3368	38.57 PK	-30.2	7.6	15.97	-	-	39.1	29.6	-	-
		Height:100 Vert		Margin [dB]		-	-	-23.13	-13.63	-	-
4	76.7266	38.45 PK	-30.2	6.7	14.95	-	-	39.1	29.6	-	-
		Height:100 Vert		Margin [dB]		-	-	-24.15	-14.65	-	-
5	343.6376	34.26 PK	-32.5	14.8	16.56	-	-	46.4	35.6	-	-
		Height:99 Vert		Margin [dB]		-	-	-29.84	-19.04	-	-

LIMIT 3: CFR 47 Part 15 Class A 10m
LIMIT 4: CFR 47 Part 15 Class B 10m
PK - Peak detector

Table 20 Radiated Spurious Emissions above 1GHz, Low Channel - Switch

Philips												
NA2 Switch												
LowCh TX												
120V/60Hz												
Red: Horizontal, Green: Vertical												
Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dBuV/m	Limit 1	Margin 1[dB]	Height [cm]	Polarity		
1	2404.404	73.63	PK	4.27	21.8	99.7	NA	NA	100	Horz		
2	4811.207	82.9	PK	-51.03	27.7	59.57	54	5.57	100	Horz		
3	7218.145	75.48	PK	-46.62	29.8	58.66	54	4.66	150	Horz		
4	9617.078	62.59	PK	-48.77	36.4	50.22	54	-3.78	100	Horz		
5	2404.404	63.31	PK	4.27	21.8	89.38	NA	NA	150	Vert		
6	4811.207	74.48	PK	-51.03	27.7	51.15	54	-2.85	149	Vert		
7	7215.477	64.6	PK	-46.63	29.8	47.77	54	-6.23	149	Vert		
8	9622.415	59.88	PK	-48.59	36.4	47.69	54	-6.31	150	Vert		
Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dBuV/m	DC dB	Level w DC dBuV/m	Limit 1	Margin 1[dB]	Azimuth [degs]	Height [cm]	Polarity
4810.7996	83.49	PK	-51.03	27.7	60.16	0	60.16	74	-13.84	147	101	Horz
4810.8176	77.72	LnAv	-51.03	27.7	54.39	-10.4	43.99	54	-10.01	147	101	Horz
4808.6984	74.23	PK	-51.05	27.7	50.88	0	50.88	74	-23.12	168	161	Vert
4808.8547	67.13	LnAv	-51.04	27.7	43.79	-10.4	33.39	54	-20.61	168	161	Vert
7216.2465	78.15	PK	-46.63	29.8	61.32	0	61.32	74	-12.68	171	176	Horz
7216.0421	71.5	LnAv	-46.64	29.8	54.66	-10.4	44.26	54	-9.74	171	176	Horz
7216.1743	67.11	PK	-46.64	29.8	50.27	0	50.27	74	-23.73	151	161	Vert
7213.3367	58.07	LnAv	-46.54	29.8	41.33	-10.4	30.93	54	-23.07	151	161	Vert
LIMIT 1: CFR	47 Part 15 Class B 3m											
PK - Peak detector												
LnAv - Linear average detector												
File: 1GHz -	25GHz Trasmitter File (12GHz-25GHz 1HT).TST*not saved*											

Figure 16 Radiated Spurious Emissions below 1GHz, Middle Channel - Switch

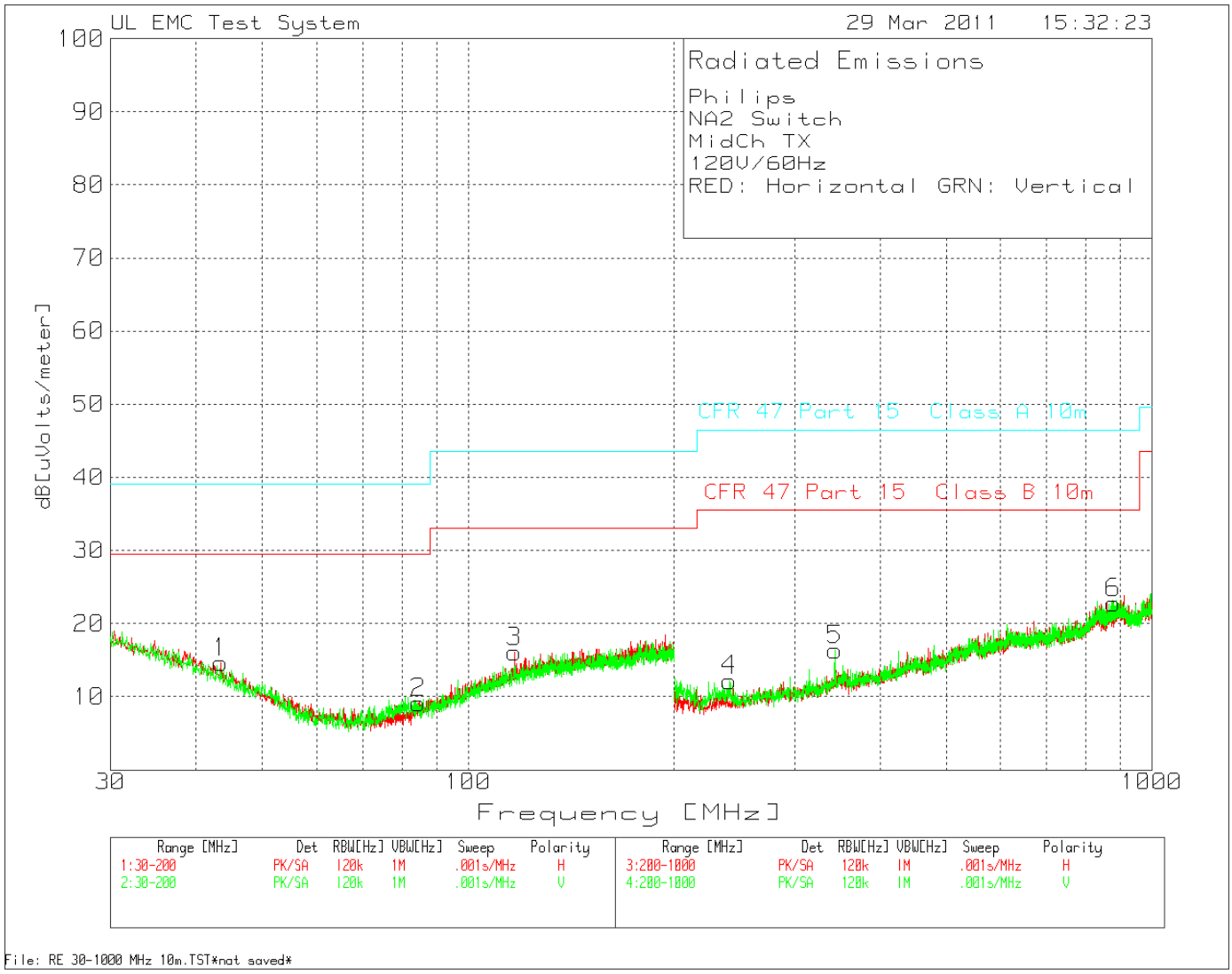


Figure 17 Radiated Spurious Emissions above 1GHz, Middle Channel - Switch

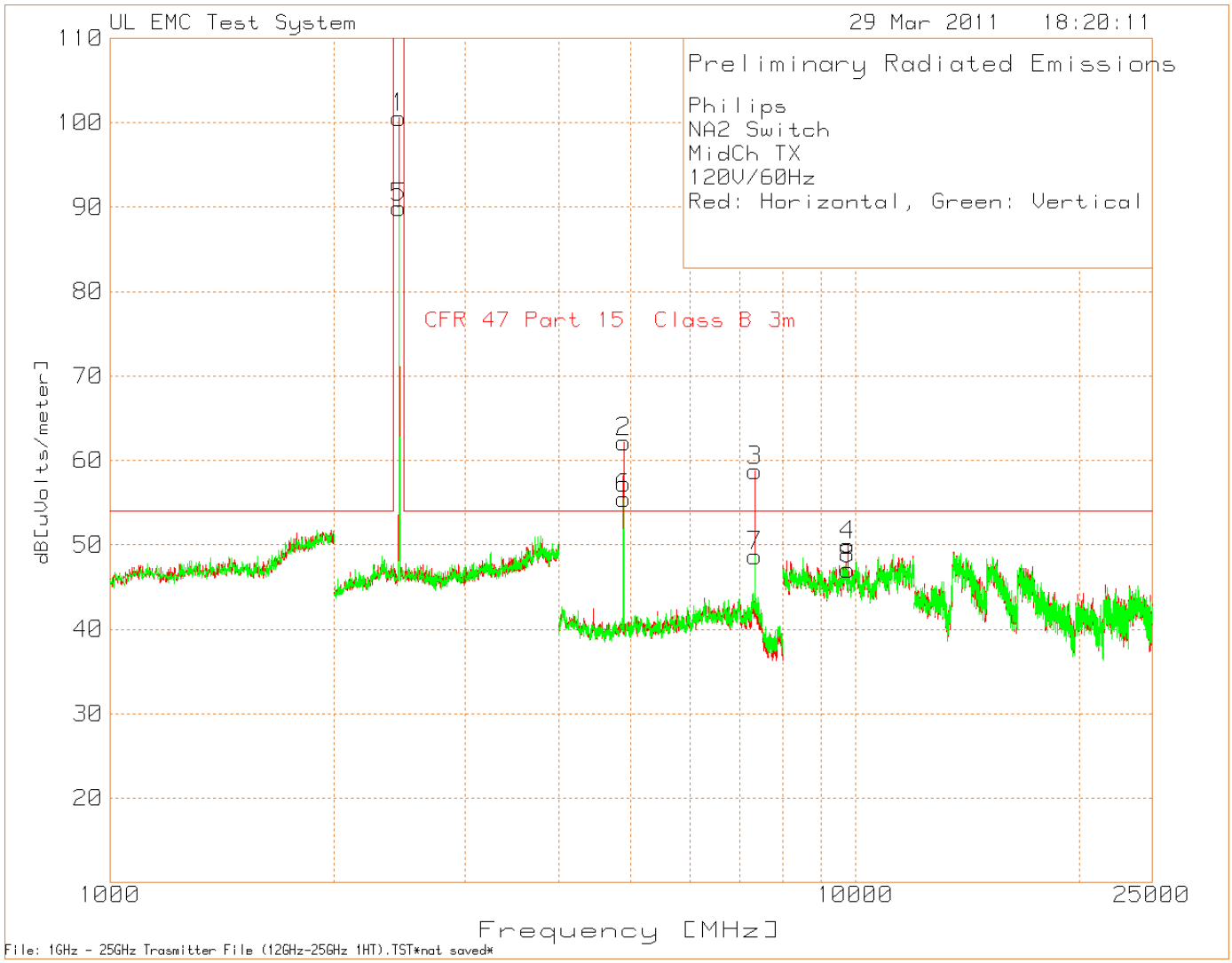


Table 21 Radiated Spurious Emissions below 1GHz, Middle Channel - Switch

Philips
NA2 Switch
MidCh TX
120V/60Hz
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	43.5082	32.29 PK	-30.3	12.6	14.59	-	-	39.1	29.6	-	-
		Height:249 Horz		Margin [dB]		-	-	-24.51	-15.01	-	-
2	84.6277	31.18 PK	-30.1	8	9.08	-	-	39.1	29.6	-	-
		Height:100 Horz		Margin [dB]		-	-	-30.02	-20.52	-	-
3	116.9115	32.99 PK	-29.9	13	16.09	-	-	43.5	33.1	-	-
		Height:249 Horz		Margin [dB]		-	-	-27.41	-17.01	-	-
4	240.7728	34.01 PK	-33.1	11.3	12.21	-	-	46.4	35.6	-	-
		Height:101 Vert		Margin [dB]		-	-	-34.19	-23.39	-	-
5	343.6376	34.02 PK	-32.5	14.8	16.32	-	-	46.4	35.6	-	-
		Height:101 Vert		Margin [dB]		-	-	-30.08	-19.28	-	-
6	879.014	31.93 PK	-31.7	22.6	22.83	-	-	46.4	35.6	-	-
		Height:201 Vert		Margin [dB]		-	-	-23.57	-12.77	-	-

LIMIT 3: CFR 47 Part 15 Class A 10m
LIMIT 4: CFR 47 Part 15 Class B 10m
PK - Peak detector

Table 22 Radiated Spurious Emissions above 1GHz, Middle Channel - Switch

Philips												
NA2 Switch												
MidCh TX												
120V/60Hz												
Red: Horizontal, Green: Vertical												
Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dBuV/m	Limit 1	Margin 1[dB]	Height [cm]	Polarity		
1	2444.444	74.37	PK	4.3	21.9	100.57	NA	NA	100	Horz		
2	4888.592	85.13	PK	-50.65	27.7	62.18	54	8.18	100	Horz		
3	7335.557	74.13	PK	-46.03	30.7	58.8	54	4.8	100	Horz		
4	9777.185	63.27	PK	-49.71	36.4	49.96	54	-4.04	150	Horz		
5	2444.444	63.71	PK	4.3	21.9	89.91	NA	NA	150	Vert		
6	4888.592	78.44	PK	-50.65	27.7	55.49	54	1.49	100	Vert		
7	7335.557	64.01	PK	-46.03	30.7	48.68	54	-5.32	150	Vert		
8	9778.519	60.41	PK	-49.71	36.4	47.1	54	-6.9	150	Vert		
Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dBuV/m	DC dB	Level w DC dBuV/m	Limit 1	Margin 1[dB]	Azimuth [degs]	Height [cm]	Polarity
4890.802	86.03	PK	-50.7	27.7	63.03	0	63.03	74	-10.97	229	100	Horz
4890.8621	80.32	LnAv	-50.7	27.7	57.32	-10.4	46.92	54	-7.08	229	100	Horz
4890.7178	79.37	PK	-50.7	27.7	56.37	0	56.37	74	-17.63	179	123	Vert
4890.8301	73.19	LnAv	-50.7	27.7	50.19	-10.4	39.79	54	-14.21	179	123	Vert
7333.2505	76.08	PK	-45.97	30.7	60.81	0	60.81	74	-13.19	172	135	Horz
7333.479	69.39	LnAv	-45.98	30.7	54.11	-10.4	43.71	54	-10.29	172	135	Horz
7336.1723	64.99	PK	-46.05	30.7	49.64	0	49.64	74	-24.36	132	129	Vert
7336.0701	55.75	LnAv	-46.05	30.7	40.4	-10.4	30	54	-24	132	129	Vert
LIMIT 1: CFR	47 Part 15 Class B 3m											
PK - Peak detector												
LnAv - Linearaverage detector												
File: 1GHz -	25GHz Trasmitter File (12GHz-25GHz 1HT).TST*not saved*											

Figure 18 Radiated Spurious Emissions below 1GHz, High Channel - Switch

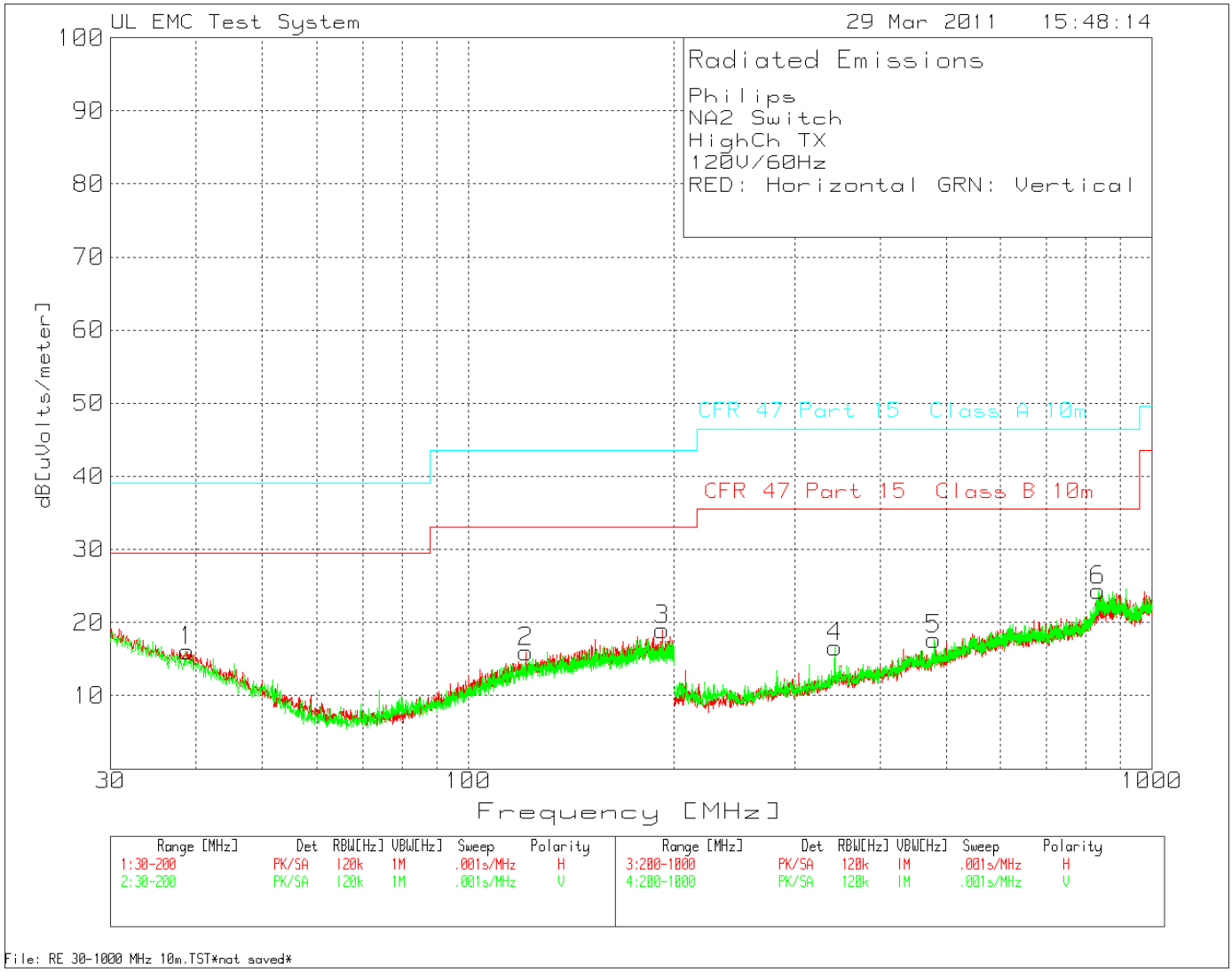


Figure 19 Radiated Spurious Emissions above 1GHz, High Channel – Switch

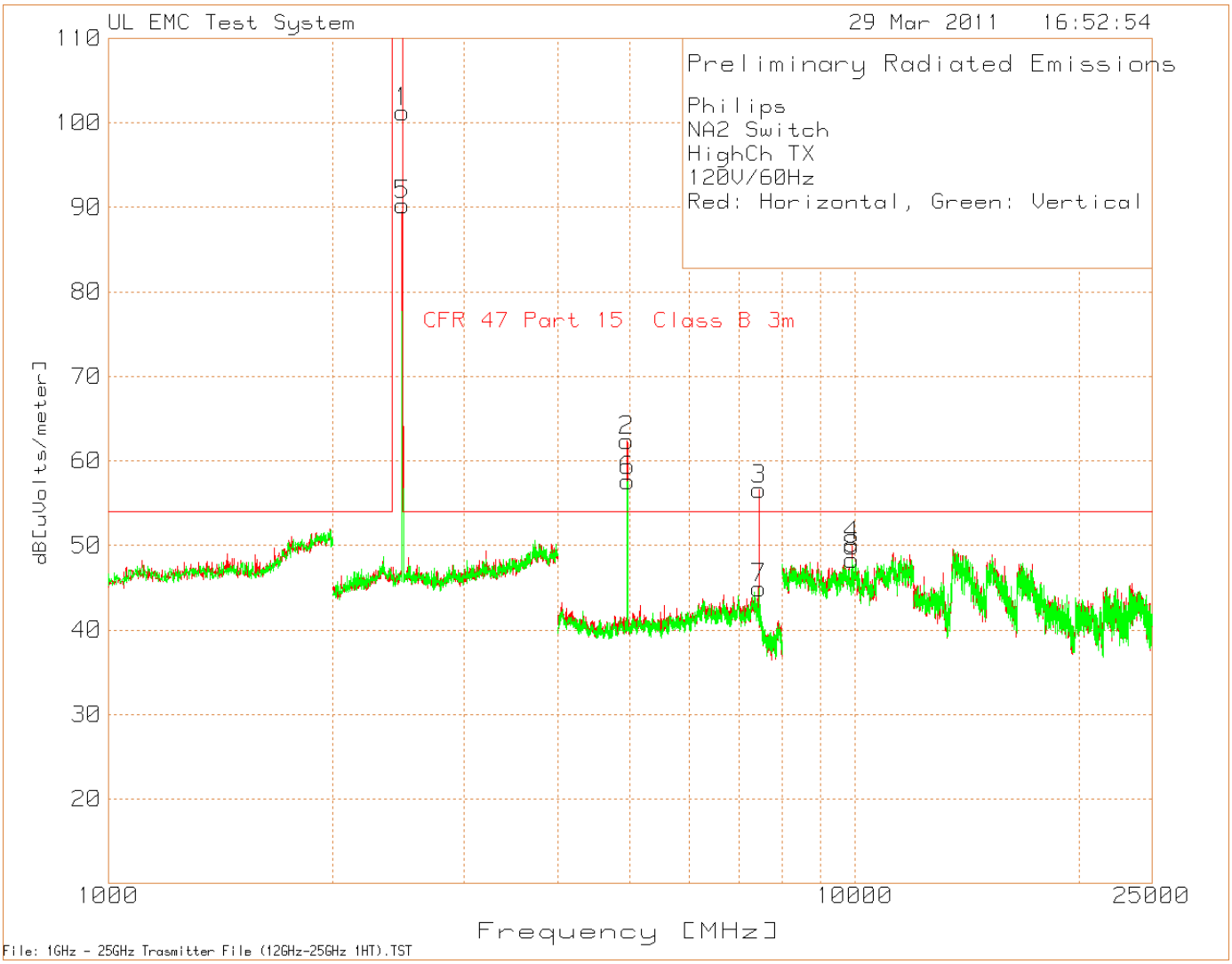


Table 23 Radiated Spurious Emissions below 1GHz, High Channel – Switch

Philips
NA2 Switch
HighCh TX
120V/60Hz
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	38.8356	31.82 PK	-30.3	14.6	16.12	-	-	39.1	29.6	-	-
		Height:249 Horz		Margin [dB]		-	-	-22.98	-13.48	-	-
2	121.5842	32.61 PK	-30	13.4	16.01	-	-	43.5	33.1	-	-
		Height:249 Horz		Margin [dB]		-	-	-27.49	-17.09	-	-
3	192.099	32.92 PK	-29.9	15.9	18.92	-	-	43.5	33.1	-	-
		Height:249 Horz		Margin [dB]		-	-	-24.58	-14.18	-	-
4	343.6376	34.32 PK	-32.5	14.8	16.62	-	-	46.4	35.6	-	-
		Height:101 Vert		Margin [dB]		-	-	-29.78	-18.98	-	-
5	480.0799	32.1 PK	-31.8	17.4	17.7	-	-	46.4	35.6	-	-
		Height:101 Vert		Margin [dB]		-	-	-28.7	-17.9	-	-
6	835.0433	33.34 PK	-31.5	22.5	24.34	-	-	46.4	35.6	-	-
		Height:402 Vert		Margin [dB]		-	-	-22.06	-11.26	-	-

LIMIT 3: CFR 47 Part 15 Class A 10m
LIMIT 4: CFR 47 Part 15 Class B 10m
PK - Peak detector

Table 24 Radiated Spurious Emissions above 1GHz, High Channel - Switch

Philips												
NA2 Switch												
HighCh TX												
120V/60Hz												
Red: Horizontal, Green: Vertical												
Marker	Test	Meter	Detector	Gain/Loss	Transducer	Level	Limit 1	Margin 1[dB]	Height [cm]	Polarity		
Number	Frequency	Reading	Type	Factor	Factor	dBuV/m						
	[MHz]	[dB(uV)]		[dB]	[dB]							
1	2480.48	75.33	PK	3.93	22	101.26	NA	NA	150	Horz		
2	4957.972	85.14	PK	-50.59	27.8	62.35	54	8.35	100	Horz		
3	7439.626	72.93	PK	-46.88	30.6	56.65	54	2.65	149	Horz		
4	9918.612	62.64	PK	-49.08	36.4	49.96	54	-4.04	100	Horz		
5	2480.48	64.37	PK	3.93	22	90.3	NA	NA	150	Vert		
6	4960.64	80.38	PK	-50.58	27.8	57.6	54	3.6	100	Vert		
7	7442.295	61.25	PK	-46.84	30.5	44.91	54	-9.09	100	Vert		
8	9918.612	61.03	PK	-49.08	36.4	48.35	54	-5.65	100	Vert		
Test	Meter	Detector	Gain/Loss	Transducer	Level	DC	Level w DC	Limit 1	Margin 1[dB]	Azimuth [degs]	Height [cm]	Polarity
Frequency	Reading	Type	Factor	Factor	dBuV/m							
[MHz]	[dB(uV)]		[dB]	[dB]		dB	dBuV/m					
4958.8367	85.41	PK	-50.59	27.8	62.62	0	62.62	74	-11.38	222	103	Horz
4958.8908	79.83	LnAv	-50.59	27.8	57.04	-10.4	46.64	54	-7.36	222	103	Horz
4958.8186	80.84	PK	-50.59	27.8	58.05	0	58.05	74	-15.95	180	111	Vert
4958.8908	74.77	LnAv	-50.59	27.8	51.98	-10.4	41.58	54	-12.42	180	111	Vert
7438.2325	74.64	PK	-46.89	30.6	58.35	0	58.35	74	-15.65	236	123	Horz
7438.4609	68.46	LnAv	-46.89	30.6	52.17	-10.4	41.77	54	-12.23	236	123	Horz
7438.2685	64.86	PK	-46.89	30.6	48.57	0	48.57	74	-25.43	183	126	Vert
7438.3768	54.73	LnAv	-46.89	30.6	38.44	-10.4	28.04	54	-25.96	183	126	Vert
LIMIT 1: CFR	47 Part 15 Class B 3m											
PK - Peak detector												
LnAv - Linear average detector												
File: 1GHz -25GHz Trasmitter File (12GHz-25GHz 1HT).TST												

Figure 20 Radiated Spurious Emissions below 1GHz, Low Channel – Dimmer

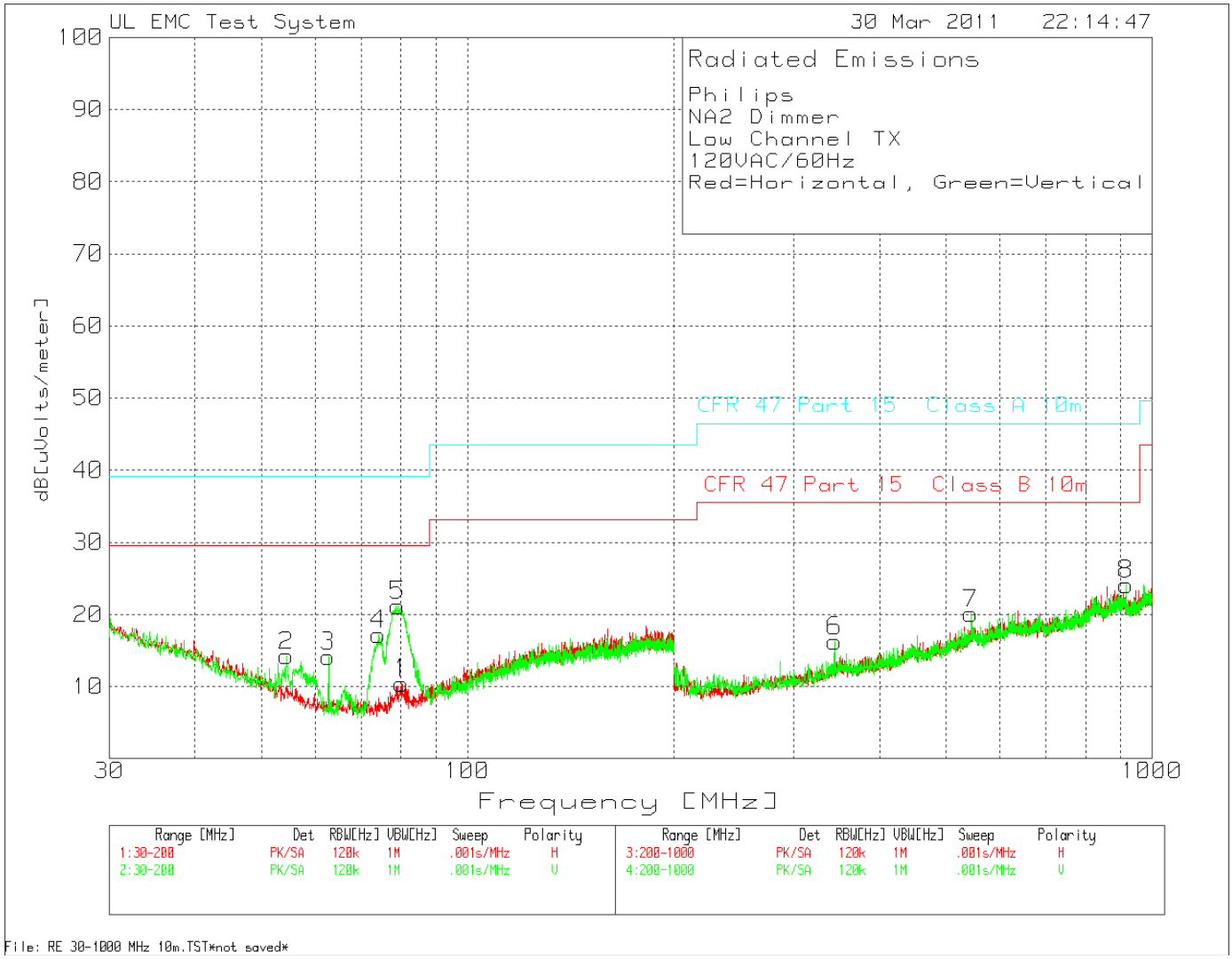


Figure 21 Radiated Spurious Emissions above 1GHz, Low Channel - Dimmer

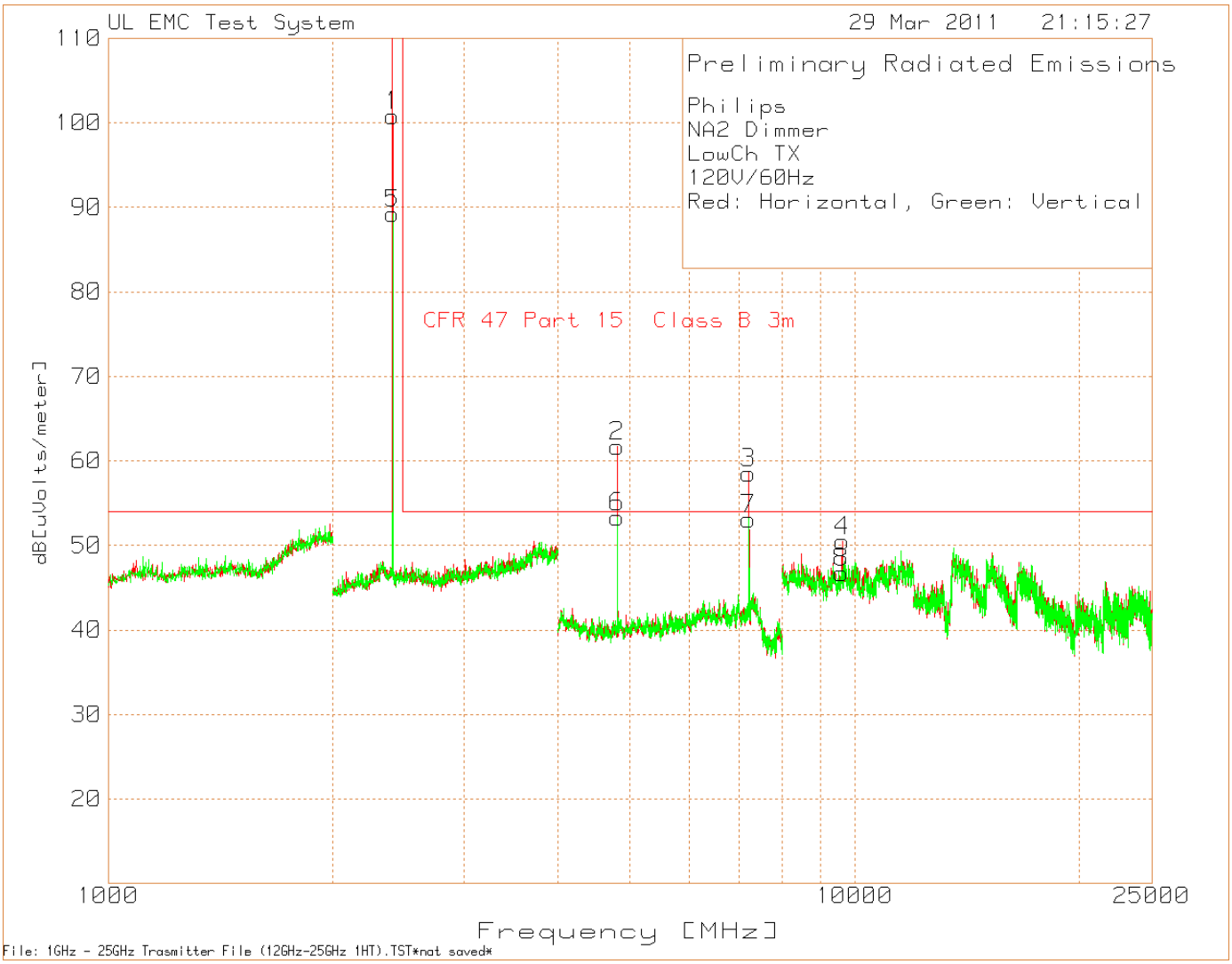


Table 25 Radiated Spurious Emissions below 1GHz, Low Channel – Dimmer

Philips												
NA2 Dimmer												
Low Channel TX												
120VAC/60Hz												
Red=Horizontal, Green=Vertical												
Marker	Test	Meter	Detector	Gain/Loss	Transduce	Level	Limit 3	Margin 3[(	Limit 4	Margin 4[(	Height [cn	Polarity
Number	Frequency	Reading	Type	Factor	Factor	dB[uVolts/meter]						
	[MHz]	[dB(uV)]		[dB]	[dB]							
1	80.1249	33.42	PK	-30.1	7.1	10.42	39.1	-28.68	29.6	-19.18	400	Horz
2	54.4678	36.11	PK	-30.2	8.3	14.21	39.1	-24.89	29.6	-15.39	100	Vert
3	62.6237	37.87	PK	-30.2	6.5	14.17	39.1	-24.93	29.6	-15.43	100	Vert
4	74.1779	41	PK	-30.2	6.4	17.2	39.1	-21.9	29.6	-12.4	100	Vert
5	79.1904	44.35	PK	-30.2	7	21.15	39.1	-17.95	29.6	-8.45	100	Vert
6	343.6376	33.98	PK	-32.5	14.8	16.28	46.4	-30.12	35.6	-19.32	101	Vert
7	544.0373	32.25	PK	-31.6	19.4	20.05	46.4	-26.35	35.6	-15.55	402	Vert
8	916.5889	32.71	PK	-31.7	23.1	24.11	46.4	-22.29	35.6	-11.49	301	Vert
LIMIT 3: CFR 47 Part 15 Class A 10m												
LIMIT 4: CFR 47 Part 15 Class B 10m												
PK - Peak detector												

Table 26 Radiated Spurious Emissions above 1GHz, Low Channel - Dimmer

Philips											
NA2 Dimmer											
LowCh TX											
120V/60Hz											
Red: Horizontal, Green: Vertical											
Marker	Test	Meter	Detector	Gain/Loss	Transducer	Level	Limit 1	Margin 1[dB]	Height [cm]	Polarity	
Number	Frequency	Reading	Type	Factor	Factor	dBuV/m					
	[MHz]	[dB(uV)]		[dB]	[dB]						
1	2404.404	74.75	PK	4.27	21.8	100.82	NA	NA	150	Horz	
2	4811.207	85.03	PK	-51.03	27.7	61.7	54	7.7	100	Horz	
3	7218.145	75.35	PK	-46.62	29.8	58.53	54	4.53	100	Horz	
4	9622.415	62.65	PK	-48.59	36.4	50.46	54	-3.54	100	Horz	
5	2404.404	63.13	PK	4.27	21.8	89.2	NA	NA	149	Vert	
6	4811.207	76.61	PK	-51.03	27.7	53.28	54	-0.72	149	Vert	
7	7218.145	69.96	PK	-46.62	29.8	53.14	54	-0.86	149	Vert	
8	9595.73	59.41	PK	-49.06	36.4	46.75	54	-7.25	100	Vert	

Test	Meter	Detector	Gain/Loss	Transducer	Level	DC Correction	Level with DC	Limit 1	Margin 1[dB]	Azimuth [degs]	Height [cm]	Polarity
Frequency	Reading	Type	Factor	Factor	dBuV/m							
[MHz]	[dB(uV)]		[dB]	[dB]		dB	dBuV/m					
4810.8293	84.78	PK	-51.03	27.7	61.45	0	61.45	74	-12.55	149	110	Horz
4810.8473	79.18	LnAv	-51.03	27.7	55.85	-10.4	45.45	54	-8.55	149	110	Horz
7216.2014	76.62	PK	-46.63	29.8	59.79	0	59.79	74	-14.21	179	125	Horz
7216.0752	69.79	LnAv	-46.64	29.8	52.95	-10.4	42.55	54	-11.45	179	125	Horz
4810.8066	77.07	PK	-51.03	27.7	53.74	0	53.74	74	-20.26	187	148	Vert
4810.8367	70.51	LnAv	-51.03	27.7	47.18	-10.4	36.78	54	-17.22	187	148	Vert
7216.1794	71.59	PK	-46.63	29.8	54.76	0	54.76	74	-19.24	144	141	Vert
7215.9749	64.09	LnAv	-46.64	29.8	47.25	-10.4	36.85	54	-17.15	144	141	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m												
PK - Peak detector												
LnAv - Linear Average detector												
File: 1GHz - 25GHz Trasmitter File (12GHz-25GHz 1HT).TST*not saved*												

Figure 22 Radiated Spurious Emissions below 1GHz, Middle Channel - Dimmer

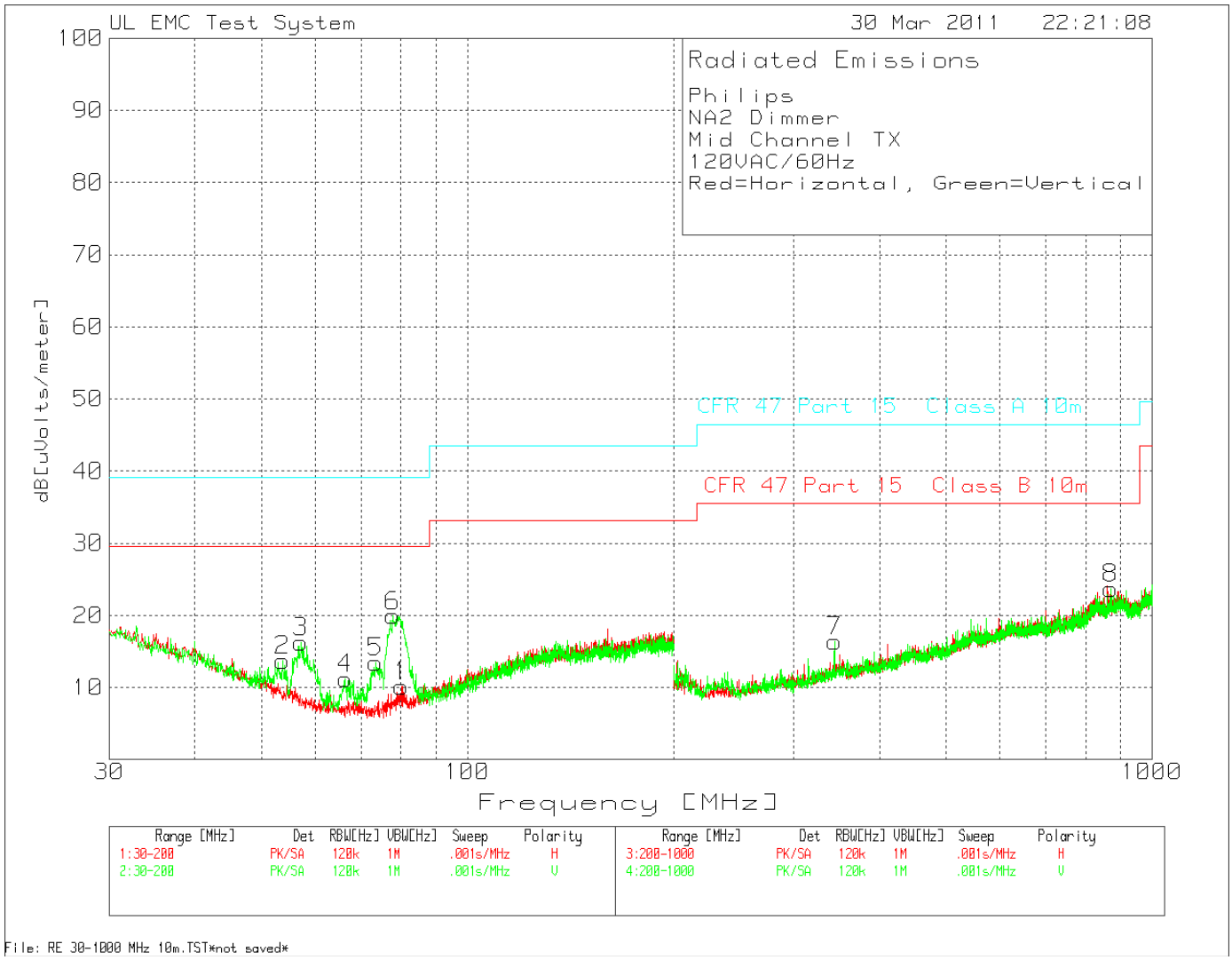


Figure 23 Radiated Spurious Emissions above 1GHz, Middle Channel – Dimmer

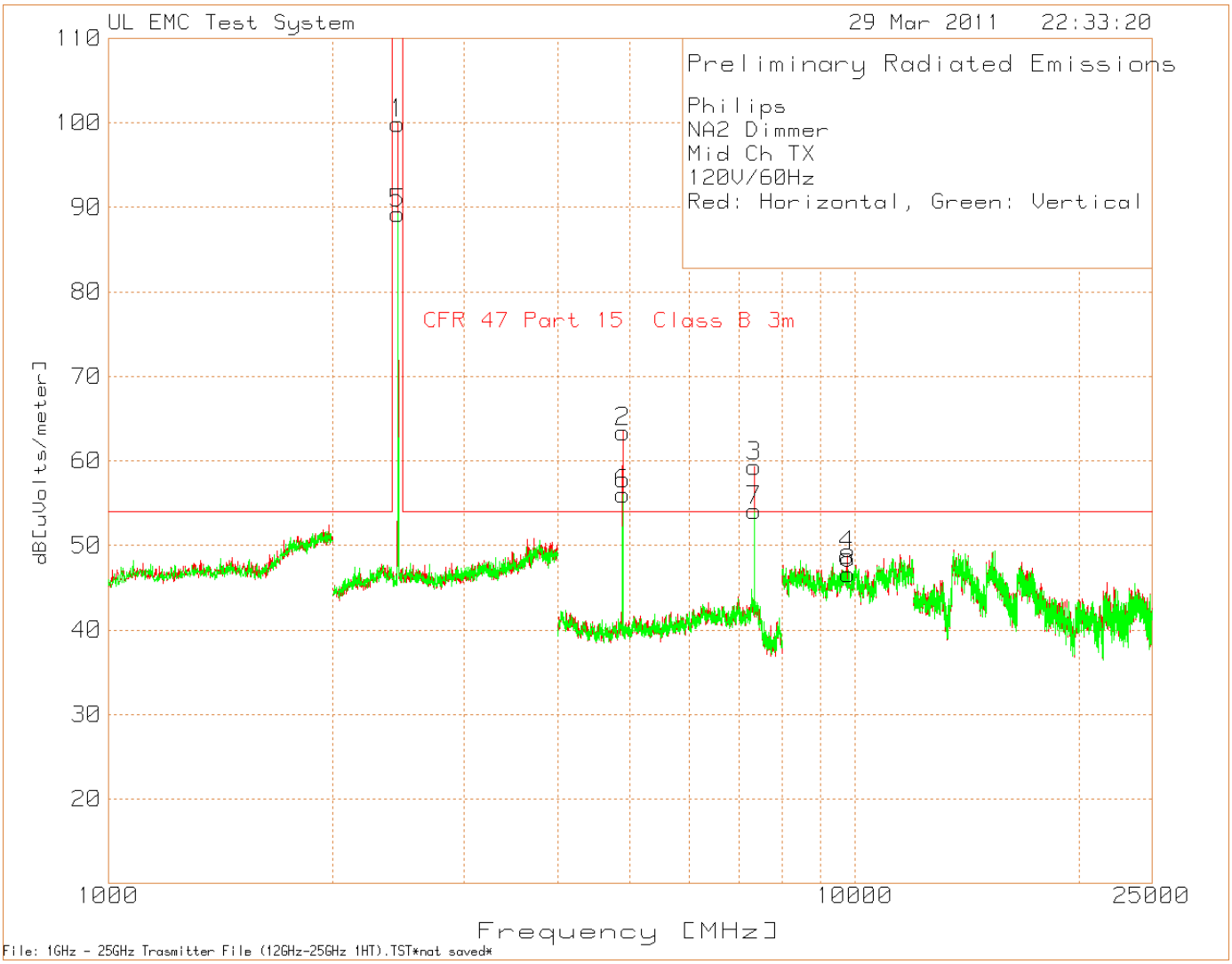


Table 27 Radiated Spurious Emissions below 1GHz, Middle Channel - Dimmer

Philips												
NA2 Dimmer												
Mid Channel TX												
120VAC/60Hz												
Red=Horizontal, Green=Vertical												
Marker	Test	Meter	Detector	Gain/Loss	Transducer	Level	Limit 3	Margin 3[dB]	Limit 4	Margin 4[dB]	Height [cm]	Polarity
Number	Frequency	Reading	Type	Factor	Factor	dB[uVolts/meter]						
	[MHz]	[dB(uV)]		[dB]	[dB]							
1	80.04	33.17	PK	-30.1	7.1	10.17	39.1	-28.93	29.6	-19.43	400	Horz
2	53.7031	35.51	PK	-30.3	8.5	13.71	39.1	-25.39	29.6	-15.89	100	Vert
3	57.1864	39.06	PK	-30.2	7.4	16.26	39.1	-22.84	29.6	-13.34	100	Vert
4	66.3618	35.22	PK	-30.2	6.2	11.22	39.1	-27.88	29.6	-18.38	100	Vert
5	73.4133	37.29	PK	-30.2	6.4	13.49	39.1	-25.61	29.6	-16.11	100	Vert
6	77.7461	43.31	PK	-30.2	6.8	19.91	39.1	-19.19	29.6	-9.69	100	Vert
7	343.6376	34.05	PK	-32.5	14.8	16.35	46.4	-30.05	35.6	-19.25	200	Vert
8	870.2199	32.55	PK	-31.5	22.7	23.75	46.4	-22.65	35.6	-11.85	200	Vert
LIMIT 3: CFR 47 Part 15 Class A 10m												
LIMIT 4: CFR 47 Part 15 Class B 10m												
PK - Peak detector												

Table 28 Radiated Spurious Emissions above 1GHz, Middle Channel - Dimmer

Philips											
NA2 Dimmer											
Mid Ch TX											
120V/60Hz											
Red: Horizontal, Green: Vertical											
Marker	Test	Meter	Detector	Gain/Loss	Transducer	Level	Limit 1	Margin 1[dB]	Height [cm]	Polarity	
Number	Frequency	Reading	Type	Factor	Factor	dBuV/m					
	[MHz]	[dB(uV)]		[dB]	[dB]						
1	2444.444	73.74	PK	4.3	21.9	99.94	NA	NA	100	Horz	
2	4888.592	86.32	PK	-50.65	27.7	63.37	54	9.37	100	Horz	
3	7338.225	74.78	PK	-46.1	30.7	59.38	54	5.38	150	Horz	
4	9777.185	62.15	PK	-49.71	36.4	48.84	54	-5.16	150	Horz	
5	2444.444	63.1	PK	4.3	21.9	89.3	NA	NA	149	Vert	
6	4891.261	79.08	PK	-50.71	27.7	56.07	54	2.07	100	Vert	
7	7335.557	69.42	PK	-46.03	30.7	54.09	54	0.09	150	Vert	
8	9798.532	59.41	PK	-49.2	36.4	46.61	54	-7.39	150	Vert	
Test	Meter	Detector	Gain/Loss	Transducer	Level	DC Correction	Level with DC	Limit 1	Margin 1[dB]	Azimuth [degs]	Height [cm]	Polarity
Frequency	Reading	Type	Factor	Factor	dBuV/m							
[MHz]	[dB(uV)]		[dB]	[dB]		dB	dBuV/m					
4890.8587	86.8	PK	-50.7	27.7	63.8	0	63.8	74	-10.2	226	101	Horz
4890.8166	81.21	LnAv	-50.7	27.7	58.21	-10.4	47.81	54	-6.19	226	101	Horz
7336.1733	76.05	PK	-46.05	30.7	60.7	0	60.7	74	-13.3	231	123	Horz
7335.999	69.4	LnAv	-46.04	30.7	54.06	-10.4	43.66	54	-10.34	231	123	Horz
4890.8026	79.68	PK	-50.7	27.7	56.68	0	56.68	74	-17.32	178	102	Vert
4890.8267	73.52	LnAv	-50.7	27.7	50.52	-10.4	40.12	54	-13.88	178	102	Vert
7336.1393	72.52	PK	-46.05	30.7	57.17	0	57.17	74	-16.83	137	138	Vert
7336.0671	65.28	LnAv	-46.05	30.7	49.93	-10.4	39.53	54	-14.47	137	138	Vert
LIMIT 1: CFR 47 Part 15 Class B 3m												
PK - Peak detector												
LnAv - Linear Average detector												
File: 1GHz - 25GHz Trasmitter File (12GHz-25GHz 1HT).TST*not saved*												

Figure 24 Radiated Spurious Emissions below 1GHz, High Channel – Dimmer

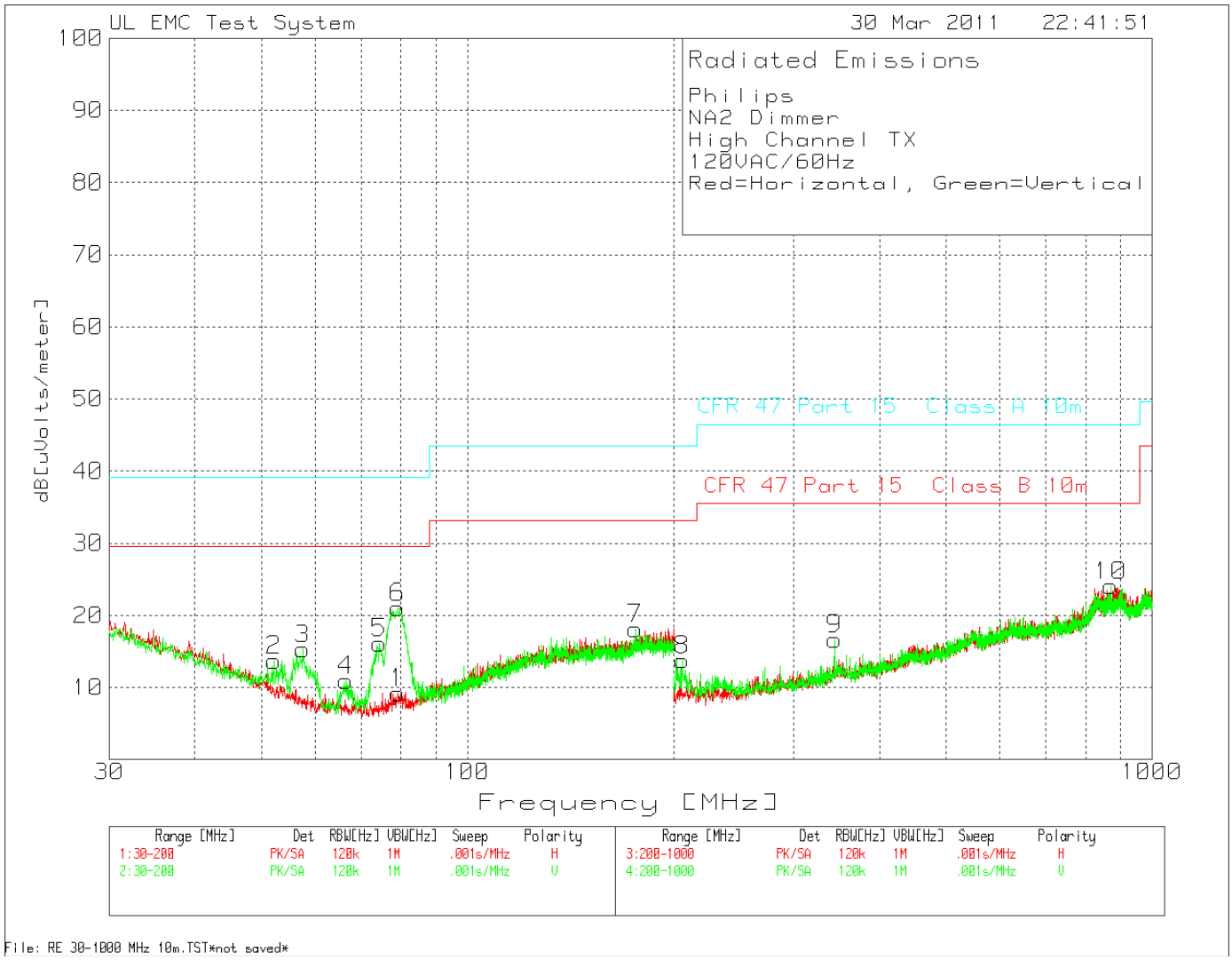


Figure 25 Radiated Spurious Emissions above 1GHz, High Channel – Dimmer

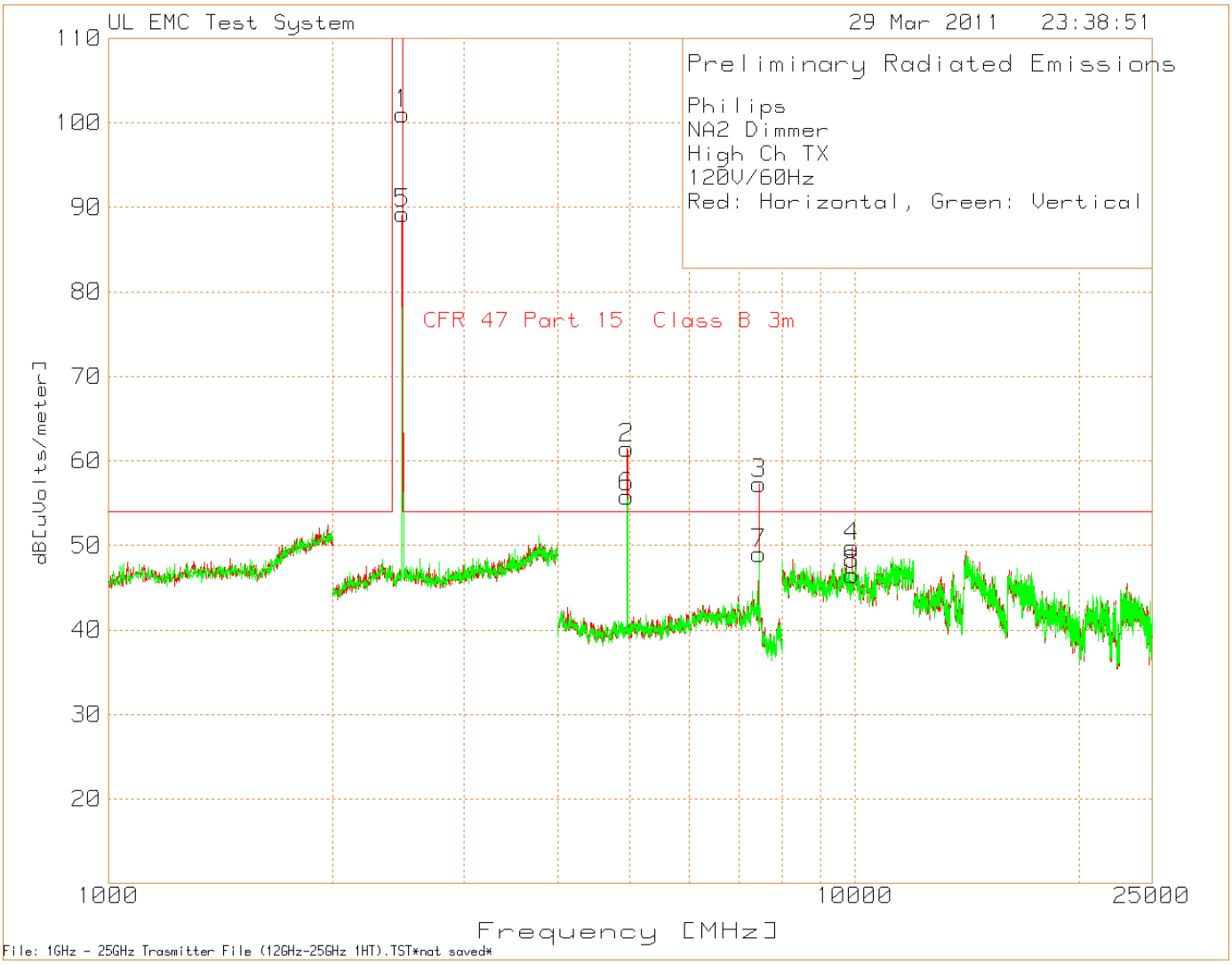


Table 29 Radiated Spurious Emissions below 1GHz, High Channel – Dimmer

Philips												
NA2 Dimmer												
High Channel TX												
120VAC/60Hz												
Red=Horizontal, Green=Vertical												
Marker	Test	Meter	Detector	Gain/Loss	Transducer	Level	Limit 3	Margin 3[dB]	Limit 4	Margin 4[dB]	Height [cm]	Polarity
Number	Frequency	Reading	Type	Factor	Factor	dB[uVolts/meter]						
	[MHz]	[dB(uV)]		[dB]	[dB]							
1	79.1904	32.42	PK	-30.2	7	9.22	39.1	-29.88	29.6	-20.38	250	Horz
2	52.1739	34.84	PK	-30.2	9.1	13.74	39.1	-25.36	29.6	-15.86	100	Vert
3	57.4413	38.07	PK	-30.2	7.4	15.27	39.1	-23.83	29.6	-14.33	100	Vert
4	66.4468	34.91	PK	-30.2	6.2	10.91	39.1	-28.19	29.6	-18.69	100	Vert
5	74.3478	39.91	PK	-30.2	6.4	16.11	39.1	-22.99	29.6	-13.49	100	Vert
6	79.1054	44.29	PK	-30.2	7	21.09	39.1	-18.01	29.6	-8.51	100	Vert
7	176.2119	32.57	PK	-29.9	15.5	18.17	43.5	-25.33	33.1	-14.93	100	Vert
8	205.8628	35.89	PK	-33.3	11.2	13.79	43.5	-29.71	33.1	-19.31	99	Vert
9	343.6376	34.4	PK	-32.5	14.8	16.7	46.4	-29.7	35.6	-18.9	99	Vert
10	870.7528	32.94	PK	-31.6	22.7	24.04	46.4	-22.36	35.6	-11.56	200	Vert
LIMIT 3: CFR 47 Part 15 Class A 10m												
LIMIT 4: CFR 47 Part 15 Class B 10m												
PK - Peak detector												

Table 30 Radiated Spurious Emissions above 1GHz, High Channel - Dimmer

Philips												
NA2 Dimmer												
High Ch TX												
120V/60Hz												
Red: Horizontal, Green: Vertical												
Marker	Test	Meter	Detector	Gain/Loss	Transducer	Level	Limit 1	Margin 1[dB]	Height [cm]	Polarity		
Number	Frequency	Reading	Type	Factor	Factor	dBuV/m						
	[MHz]	[dB(uV)]		[dB]	[dB]							
1	2480.48	75.15	PK	3.93	22	101.08	NA	NA	100	Horz		
2	4957.972	84.25	PK	-50.59	27.8	61.46	54	7.46	100	Horz		
3	7439.626	73.56	PK	-46.88	30.6	57.28	54	3.28	100	Horz		
4	9918.612	62.49	PK	-49.08	36.4	49.81	54	-4.19	150	Horz		
5	2478.478	63.3	PK	3.96	22	89.26	NA	NA	150	Vert		
6	4957.972	78.55	PK	-50.59	27.8	55.76	54	1.76	100	Vert		
7	7439.626	65.34	PK	-46.88	30.6	49.06	54	-4.94	100	Vert		
8	9910.607	59.17	PK	-49.06	36.4	46.51	54	-7.49	100	Vert		
Test	Meter	Detector	Gain/Loss	Transducer	Level	DC Correction	Level with DC	Limit 1	Margin 1[dB]	Azimuth [degs]	Height [cm]	Polarity
Frequency	Reading	Type	Factor	Factor	dBuV/m							
[MHz]	[dB(uV)]		[dB]	[dB]		dB	dBuV/m					
4958.8727	84.86	PK	-50.59	27.8	62.07	0	62.07	74	-11.93	219	103	Horz
4958.8727	79.21	LnAv	-50.59	27.8	56.42	-10.4	46.02	54	-7.98	219	103	Horz
7438.1533	77.13	PK	-46.9	30.6	60.83	0	60.83	74	-13.17	225	120	Horz
7438.484	70.53	LnAv	-46.89	30.6	54.24	-10.4	43.84	54	-10.16	225	120	Horz
4958.8006	79.07	PK	-50.59	27.8	56.28	0	56.28	74	-17.72	178	100	Vert
4958.8848	72.94	LnAv	-50.59	27.8	50.15	-10.4	39.75	54	-14.25	178	100	Vert
7438.2435	71.6	PK	-46.89	30.6	55.31	0	55.31	74	-18.69	127	174	Vert
7438.478	64.01	LnAv	-46.89	30.6	47.72	-10.4	37.32	54	-16.68	127	174	Vert
LIMIT 1: CFR 47 Part 15 Class B 3m												
PK - Peak detector												
LnAv - Linear Average detector												
File: 1GHz - 25GHz Trasmitter File (12GHz-25GHz 1HT).TST*not saved*												

4.3 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	Antenna Conducted

Limits	
Measurement Type	
Conducted	Antenna Conducted – 20dB below the fundamental
Radiated	Must meet the restricted band limit adjacent to the bandedge.
Supplementary information: None	

Table 31 Band Edge Compliance EUT Configuration Settings

Power Interface Mode #	EUT Configurations Mode #	EUT Operation Mode #
1	2 & 3	1
Supplementary information: None		

Table 32 Bandedge CONDUCTED EMISSIONS Test Equipment

Test Equipment Used					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum analyzer	Rhode & Schwartz	ESU	EMC4323	Dec. 30, 2010	Dec. 31, 2011
Attenuator w/ Cable	Mini Circuits	BW-N10W5	None	N/A	N/A

Table 33 Bandedge RADIATED EMISSIONS Test Equipment

Test Equipment Used					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum analyzer	Rhode & Schwartz	ESU	EMC4323	Dec. 30, 2010	Dec. 31, 2011
Bicon Antenna	Chase	VBA6106A	EMC4078	Dec. 2, 2010	Dec. 31, 2011
Log-P Antenna	Chase	UPA6109	EMC4313	June 1, 2010	June, 30, 2011
Spectrum Analyzer	Rhode & Schwartz	FSEK	EMC4182	Dec. 28, 2010	Dec. 30, 2011
Antenna Array	UL	BOMS	EMC4276	Oct. 21, 2010	Oct. 21, 2011

Figure 26 Test setup for Band Edge Compliance – Conducted

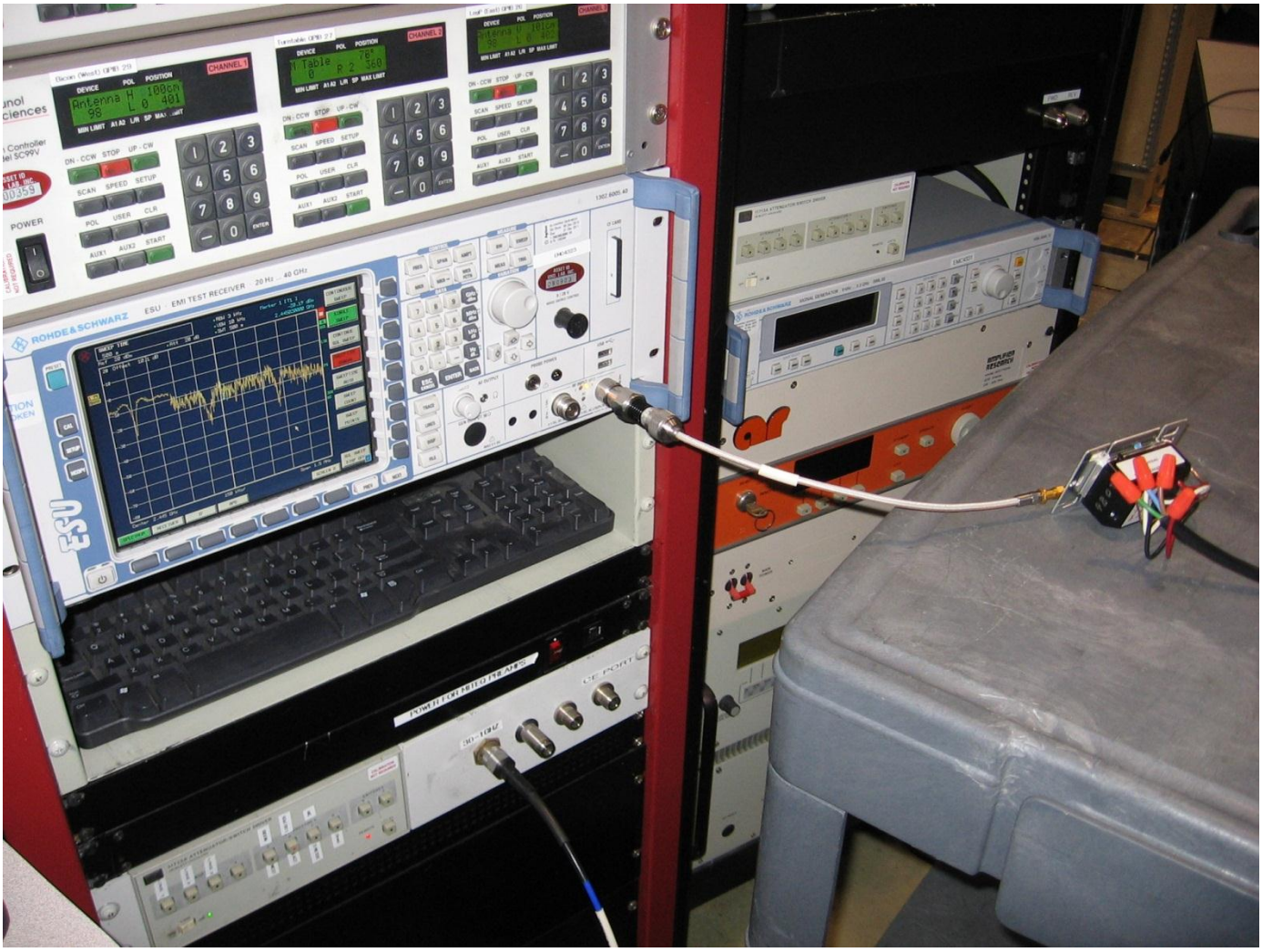


Figure 27 Test setup for Band Edge Compliance – Radiated

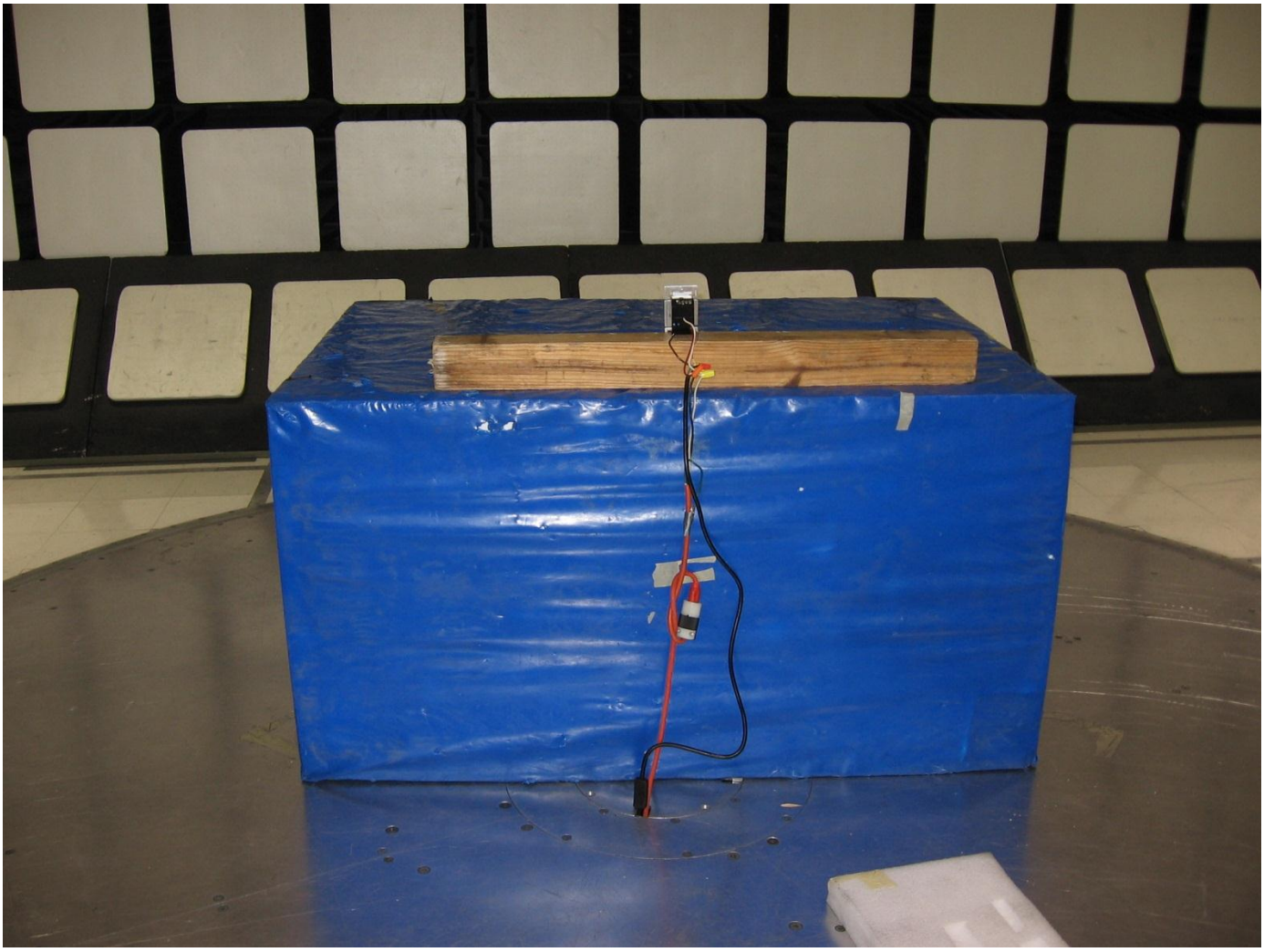
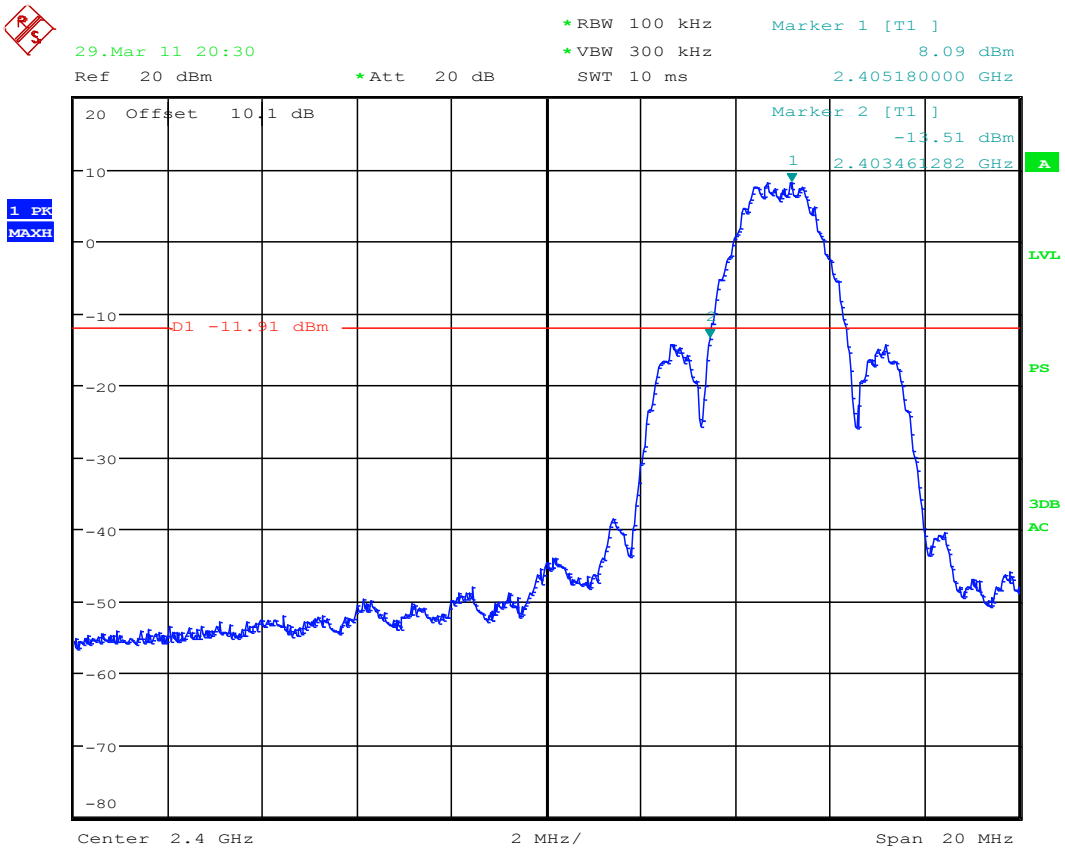
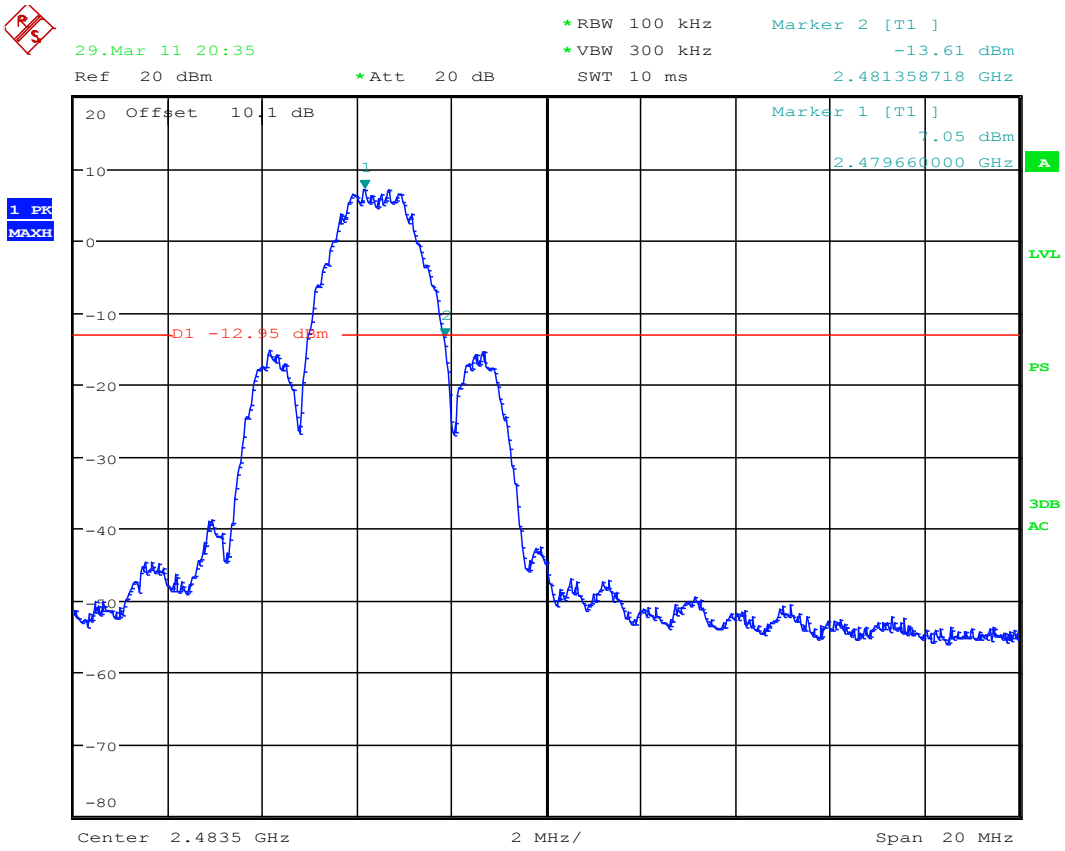


Figure 28 Antenna Conducted Band Edge Compliance Graph



Date: 29.MAR.2011 20:30:49



Date: 29.MAR.2011 20:35:17

Figure 29 Radiated Band Edge Compliance Graph – Dimmer - Low channel - Peak

Figure 30 Radiated Band Edge Compliance Graph – Dimmer - Low channel - Average

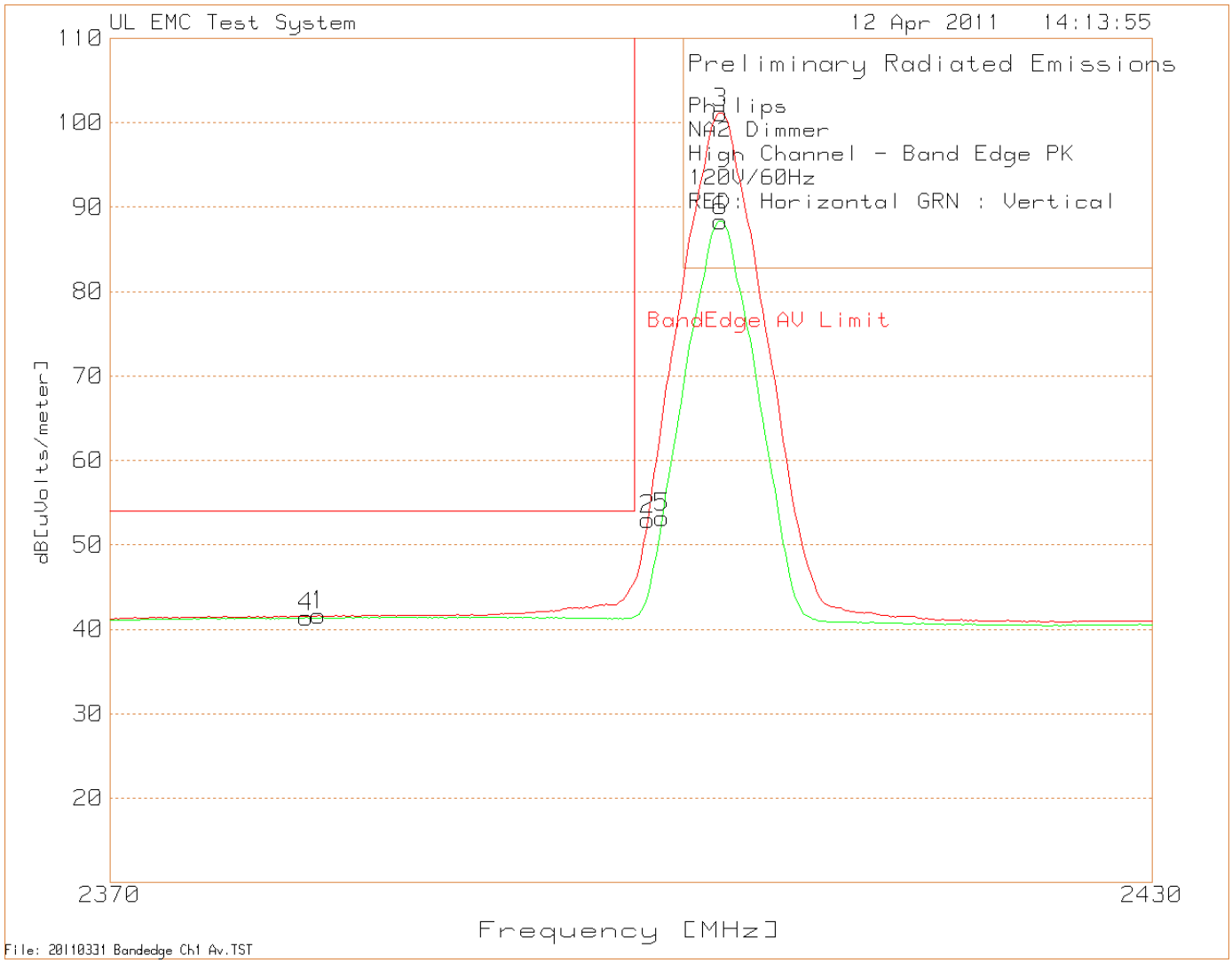


Figure 31 Radiated Band Edge Compliance Graph – Dimmer - High Channel - Peak

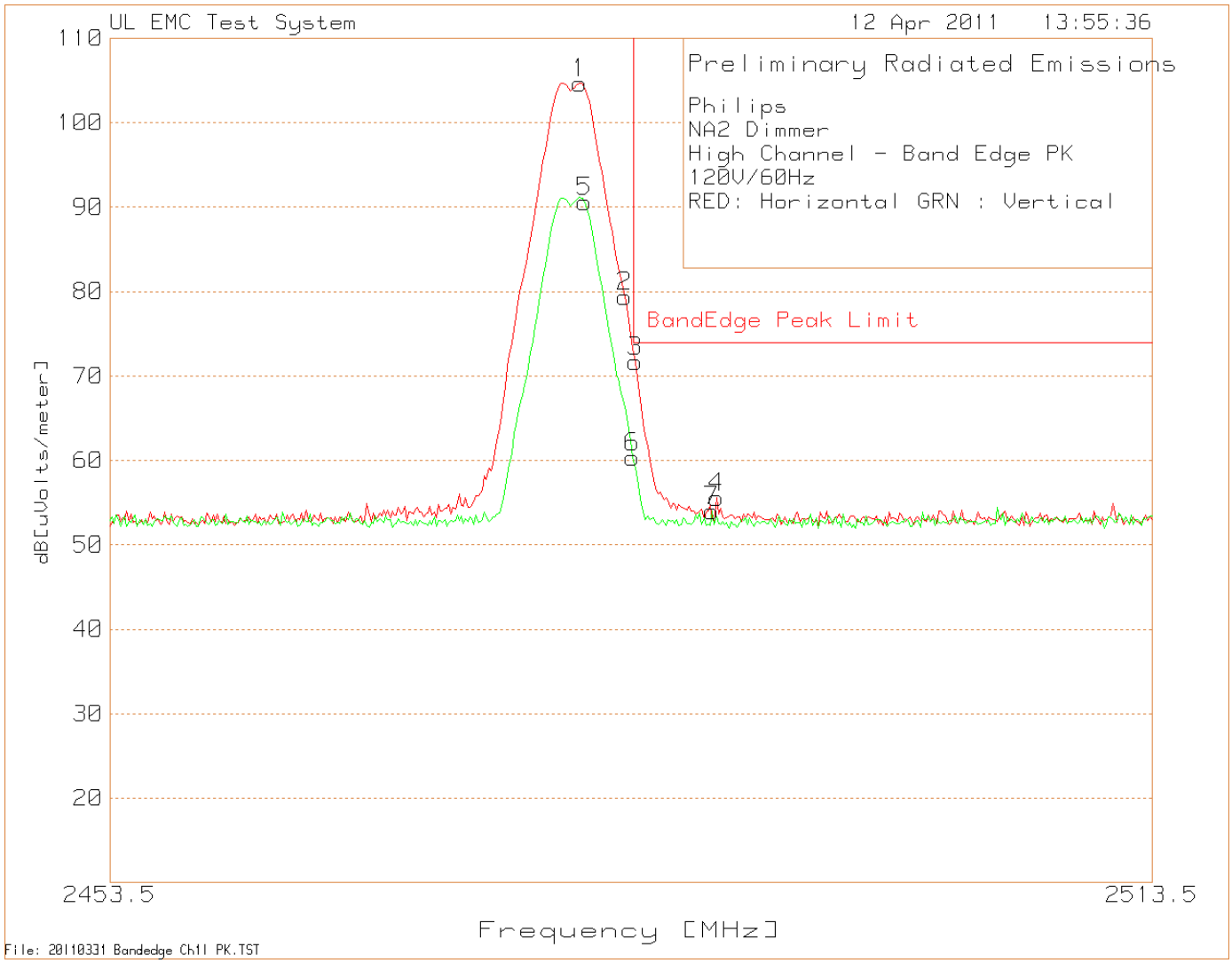


Figure 32 Radiated Band Edge Compliance Graph – Dimmer - High Channel - Average

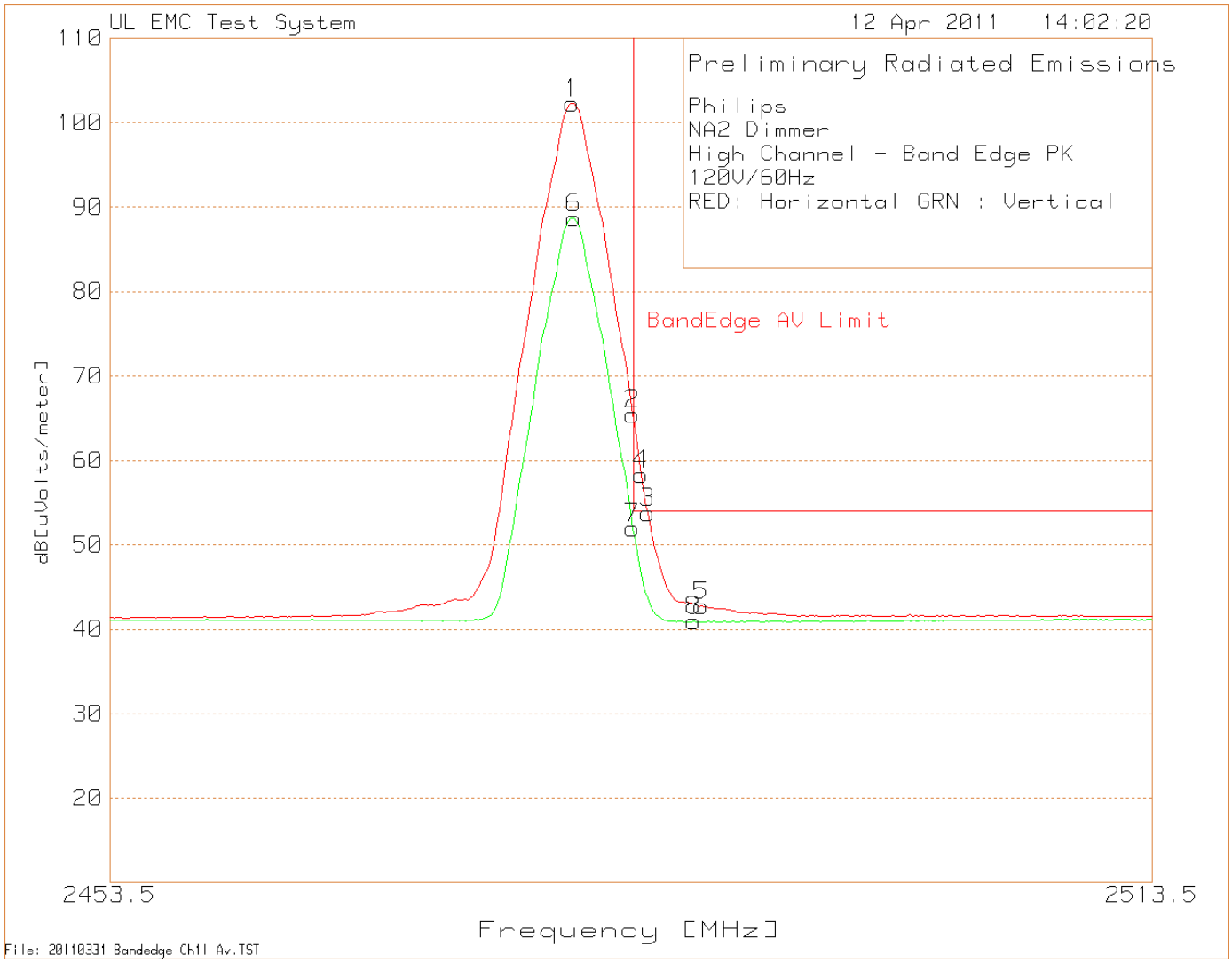


Figure 33 Radiated Band Edge Compliance Graph – Dimmer - Horizontal Marker - Delta Capture

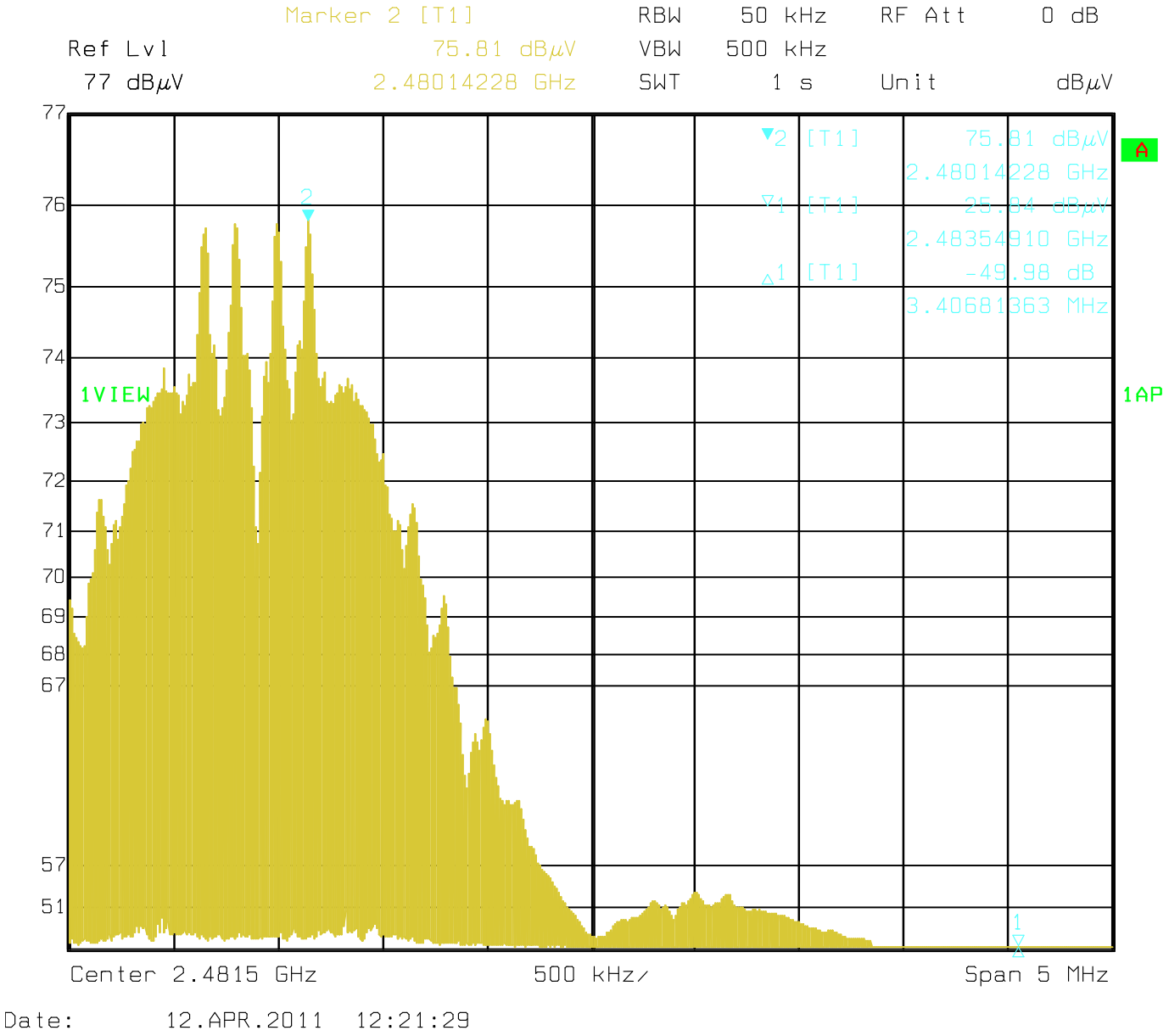


Table 34 Radiated Band Edge Compliance Data Points – Dimmer – Low Channel

Low Channel

Philips										
NA2 Dimmer										
Low Channel - Bandedge										
120VAC/60Hz										
Red=Horizontal, Green=Vertical										
Marker	Test	Meter	Detector	Gain/Loss	Transducer	Level	Limit 1	Margin 1[dB]	Height [cm]	Polarity
Number	Frequency	Reading	Type	Factor	Factor	dBuV/m				
	[MHz]	[dB(uV)]		[dB]	[dB]					
1	2405.07	73.56	PK	4.25	21.8	99.61	NA	NA	100	Horz
2	2402.545	50.23	PK	4.31	21.8	76.34	NA	NA	150	Horz
3	2401.703	25.99	PK	4.33	21.8	52.12	NA	NA	100	Horz
4	2400.02	22.35	PK	4.37	21.8	48.52	NA	NA	100	Horz
5	2399.739	21.08	PK	4.38	21.8	47.26	54	-6.74	150	Horz
6	2393.287	19.16	PK	4.53	21.8	45.49	54	-8.51	150	Horz
7	2405.351	61.63	PK	4.25	21.8	87.68	NA	NA	100	Vert
8	2402.545	38.42	PK	4.31	21.8	64.53	NA	NA	149	Vert
9	2401.703	19.66	PK	4.33	21.8	45.79	NA	NA	100	Vert
10	2400.02	19.71	PK	4.37	21.8	45.88	NA	NA	149	Vert
11	2399.739	19.88	PK	4.38	21.8	46.06	54	-7.94	149	Vert
12	2394.97	19.43	PK	4.49	21.8	45.72	54	-8.28	100	Vert
LIMIT 1: CFR 47 Part 15 Class B 3m										
PK - Peak detector										
File: 1GHz - 25GHz Trasmitter File (12GHz-25GHz 1HT).TST*not saved*										

Table 35 Radiated Band Edge Compliance Data Points – Dimmer – High Channel

Philips																
NA2 Dimmer																
High Channel - Bandedge																
120VAC/60Hz																
Red=Horizontal, Green=Vertical																
Marker	Test	Meter	Detector	Gain/Loss	Transducer	Level	Limit 1	Margin	Height	Polarity						
Number	Frequenc	Reading	Type	Factor	Factor	dBuV/m										
	[MHz]	[dB(uV)]		[dB]	[dB]			dB	cm							
1	2480.26	74.25	PK	3.93	22	100.18	N/A	N/A	100	Horz						
2	2482.51	49.58	PK	3.9	22	75.48	N/A	N/A	150	Horz						
3	2483.35	28.91	PK	3.89	22.1	54.9	N/A	N/A	150	Horz						
4	2483.63	27.57	PK	3.89	22.1	53.56	54	-0.44	100	Horz						
5	2484.75	24.7	PK	3.87	22.1	50.67	54	-3.33	150	Horz						
6	2486.71	20.71	PK	3.84	22.1	46.65	54	-7.35	100	Horz						
7	2479.7	63.43	PK	3.94	22	89.37	N/A	N/A	150	Vert						
8	2482.22	40.26	PK	3.91	22	66.17	N/A	N/A	150	Vert						
9	2483.35	20.65	PK	3.89	22.1	46.64	N/A	N/A	150	Vert						
10	2483.63	19.99	PK	3.89	22.1	45.98	54	-8.02	100	Vert						
11	2484.75	19.87	PK	3.87	22.1	45.84	54	-8.16	150	Vert						
12	2486.71	19.11	PK	3.84	22.1	45.05	54	-8.95	100	Vert						
Bandedge Measurements using Marker-Deltal Method																
	Test	Meter	Detector	Gain/Loss	Transducer	Level	DC	Level w/	Limit	Margin	Azimuth	Height	Polarity	Delta Measured	Fund - Delta	Margin
	Frequenc	Reading	Type	Factor	Factor		Factor	DC						between	Bandedge	
	[MHz]	[dB(uV)]		[dB]	[dB]	dBuV/m	dB	dBuV/m	dBuV/m	dB	degrs	cm		Fund & Edge	Level	dB
	2 - 4GHz 2000 - 4000MHz													dB	dBuV/m	
	2480.38	80.74	PK	3.93	22	106.67	0	106.67	74	32.67	34	130	Horz	-49.98	56.69	-17.31
	2479.96	78.59	LnAv	3.94	22	104.53	-10.4	94.13	54	40.13	34	130	Horz	-49.98	44.15	-9.85

Figure 34 Radiated Band Edge Compliance Graph – Switch - Low channel - Peak

Figure 35 Radiated Band Edge Compliance Graph – Switch - Low channel - Average

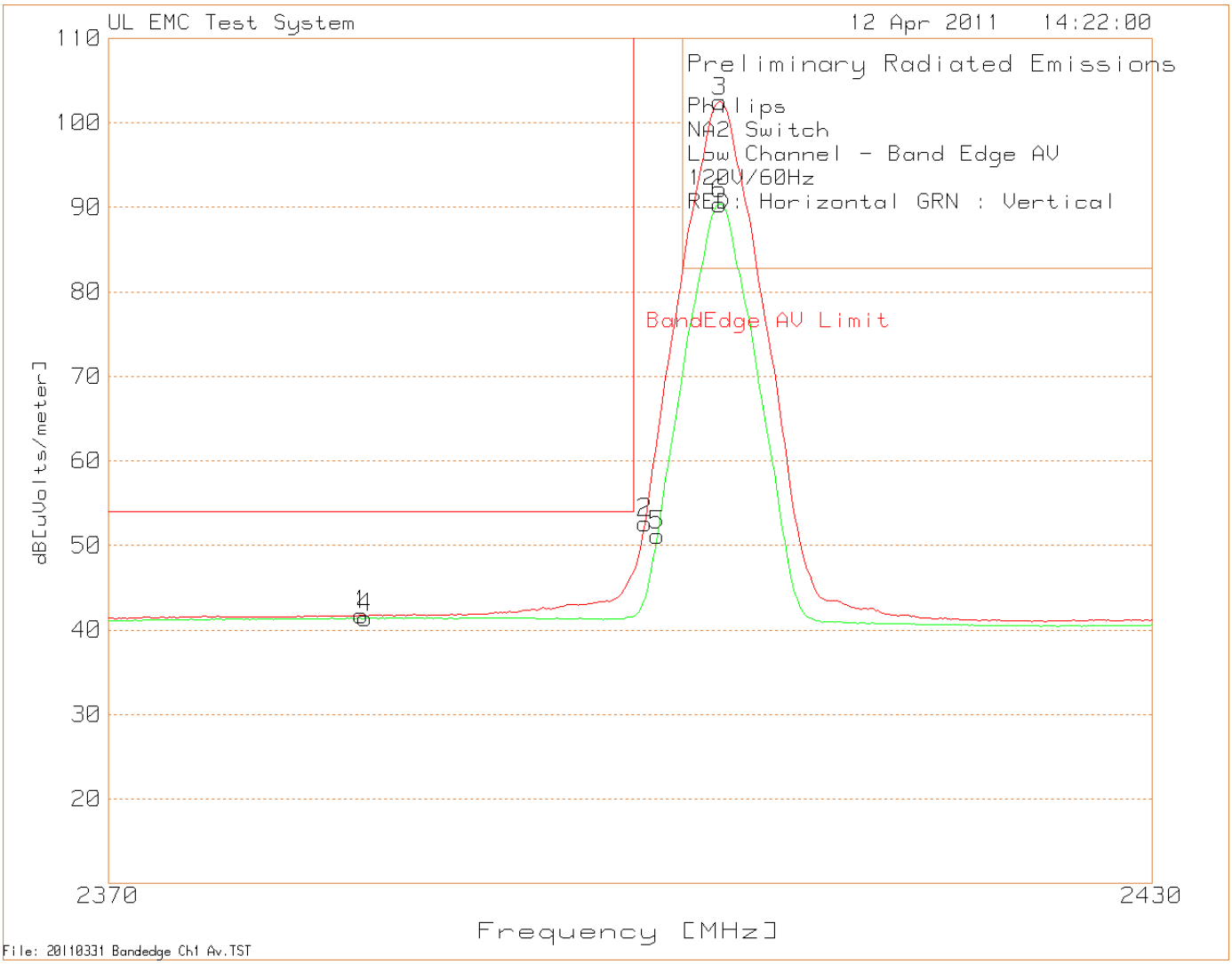


Figure 36 Radiated Band Edge Compliance Graph – Switch - High Channel - Peak

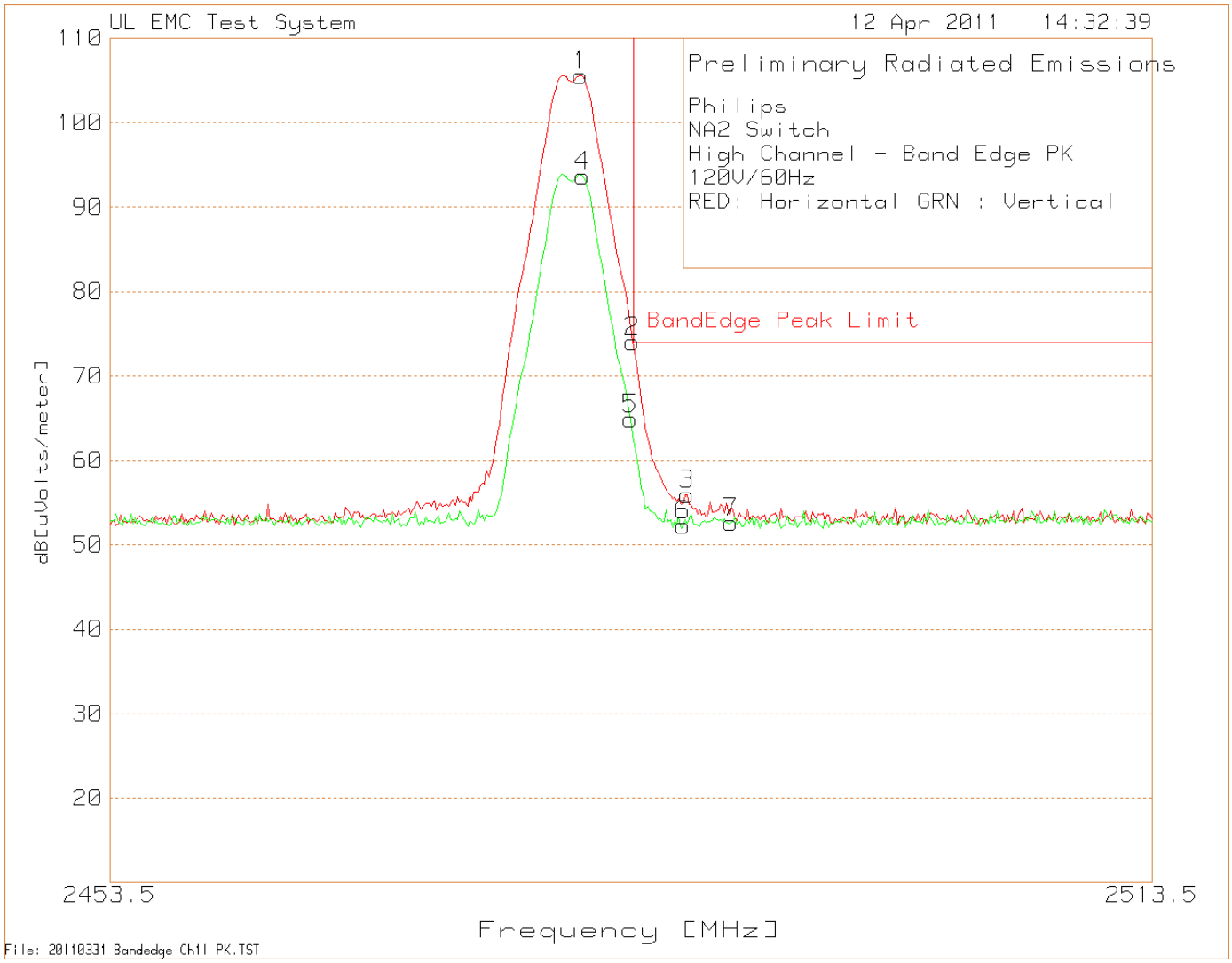


Figure 37 Radiated Band Edge Compliance Graph – Switch - High Channel - Average

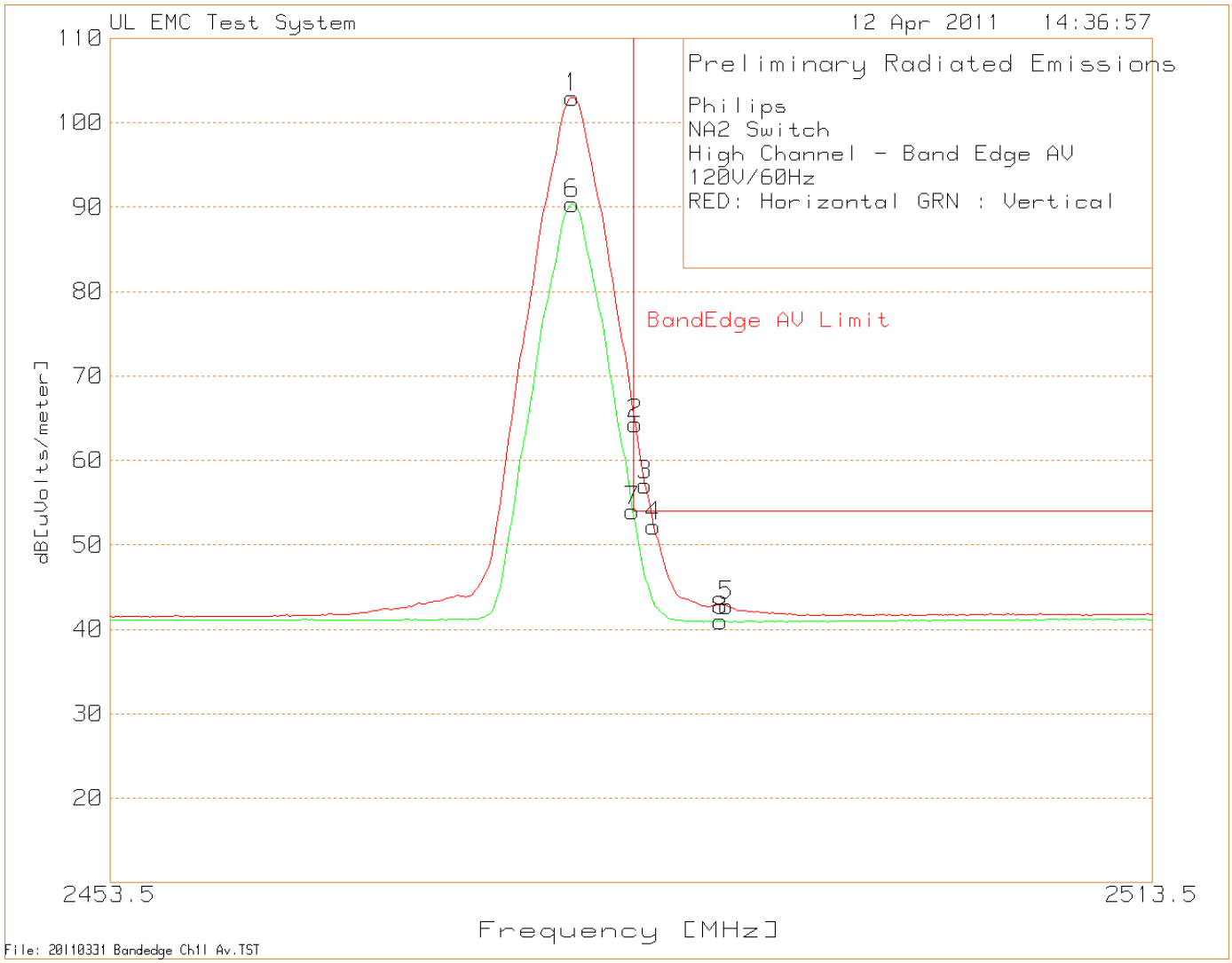


Figure 38 Radiated Band Edge Compliance Graph – Switch - Horizontal Delta Capture

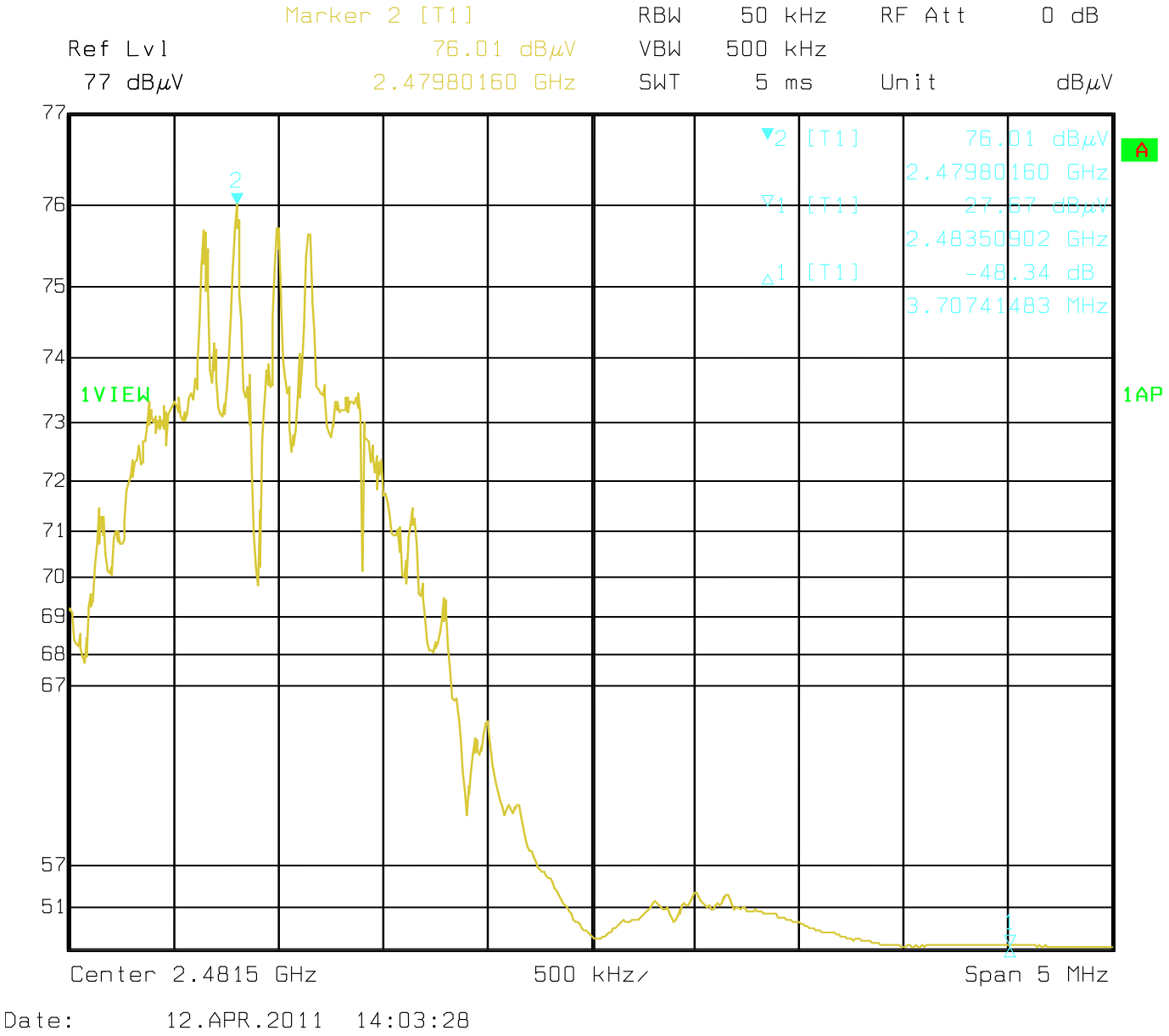


Table 36 Radiated Band Edge Compliance Data Points – Switch – Low Channel

Low Channel

Philips										
NA2 Switch										
Low Channel - Bandedge										
120VAC/60Hz										
Red=Horizontal, Green=Vertical										
Marker	Test	Meter	Detector	Gain/Loss	Transducer	Level	Limit 1	Margin 1[dB]	Height [cm]	Polarity
Number	Frequency	Reading	Type	Factor	Factor	dBuV/m				
	[MHz]	[dB(uV)]		[dB]	[dB]					
1	2405.351	73.95	PK	4.25	21.8	100	NA	NA	150	Horz
2	2402.826	50.4	PK	4.31	21.8	76.51	NA	NA	150	Horz
3	2400.862	20.26	PK	4.35	21.8	46.41	NA	NA	150	Horz
4	2400.02	22.18	PK	4.37	21.8	48.35	NA	NA	100	Horz
5	2399.739	21.19	PK	4.38	21.8	47.37	54	-6.63	100	Horz
6	2393.848	20.43	PK	4.52	21.8	46.75	54	-7.25	150	Horz
7	2405.351	63.96	PK	4.25	21.8	90.01	NA	NA	150	Vert
8	2402.545	40.27	PK	4.31	21.8	66.38	NA	NA	150	Vert
9	2400.862	18.96	PK	4.35	21.8	45.11	NA	NA	100	Vert
10	2400.02	20	PK	4.37	21.8	46.17	NA	NA	100	Vert
11	2399.739	18.74	PK	4.38	21.8	44.92	54	-9.08	150	Vert
12	2393.848	20.15	PK	4.52	21.8	46.47	54	-7.53	100	Vert
LIMIT 1: CFR 47 Part 15 Class B 3m										
PK - Peak detector										
File: 1GHz - 25GHz Trasmitter File (12GHz-25GHz 1HT).TST*not saved*										

Table 37 Radiated Band Edge Compliance Data Points - Switch - High Channel

Philips																
NA2 Switch																
High Channel - Bandedge																
120VAC/60Hz																
Red=Horizontal, Green=Vertical																
Marker	Test	Meter	Detector	Gain/Loss	Transducer	Level	Limit	Margin	Height	Polarity						
Number	Frequenc	Reading	Type	Factor	Factor											
	[MHz]	[dB(uV)]		[dB]	[dB]	dBuV/m	dBuV/m	dB	cm							
1	2479.7	75.1	PK	3.94	22	101.04	N/A	N/A	100	Horz						
2	2482.22	52.15	PK	3.91	22	78.06	N/A	N/A	100	Horz						
3	2483.35	27.78	PK	3.89	22.1	53.77	N/A	N/A	150	Horz						
4	2483.63	28.12	PK	3.89	22.1	54.11	54	0.11	100	Horz						
5	2483.91	21.4	PK	3.88	22.1	47.38	54	-6.62	100	Horz						
6	2485.03	23.73	PK	3.87	22.1	49.7	54	-4.3	100	Horz						
7	2479.7	63.57	PK	3.94	22	89.51	N/A	N/A	150	Vert						
8	2482.22	41.87	PK	3.91	22	67.78	N/A	N/A	150	Vert						
9	2483.35	20.73	PK	3.89	22.1	46.72	N/A	N/A	100	Vert						
10	2483.63	21.26	PK	3.89	22.1	47.25	54	-6.75	100	Vert						
11	2483.91	18.46	PK	3.88	22.1	44.44	54	-9.56	100	Vert						
12	2484.75	20.9	PK	3.87	22.1	46.87	54	-7.13	100	Vert						
Bandedge Measurements using Marker-Deltal Method																
	Test	Meter	Detector	Gain/Loss	Transducer	Level	DC	Level /w	Limit	Margin	Azimuth	Height	Polarity	Delta Measure	Fund - Delta	Margin
	Frequenc	Reading	Type	Factor	Factor		Factor	DC						between	Bandedge	
	[MHz]	[dB(uV)]		[dB]	[dB]	dBuV/m	dB	dBuV/m	dBuV/m	dB	degs	cm		Fund & Edge	Level	dB
														dB	dBuV/m	
	2479.4	80.4	PK	3.95	22	106.35	0	106.35	74	32.35	34	130	Horz	-48.34	58.01	-15.99
	2479.95	78.13	LnAv	3.94	22	104.07	-10.4	93.67	54	39.67	34	130	Horz	-48.34	45.33	-8.67

4.4 Test Conditions and Results – Duty Cycle Correction

Test Description	Unless otherwise specified, *e.g.* Section 15.255(b), when the radiated emission limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value. The exact method of calculating the average field strength shall be submitted with any application for certification or shall be retained in the measurement data file for equipment subject to notification or verification.
Basic Standard	47 CFR Part 15.35(c) RSS-Gen 4.5

Table 38 Duty Cycle Configuration Settings

Power Interface Mode #	EUT Configurations Mode #	EUT Operation Mode #
1	3	3
Supplementary information: Duty cycle also measured/calculated for use in radiated spurious measurements. The EUT is using digital modulation technique. However, the TX time is very short thus the Duty cycle correction can be used. Multiple attempts were made to capture the Duty Cycle and worst case data is presented in this report.		

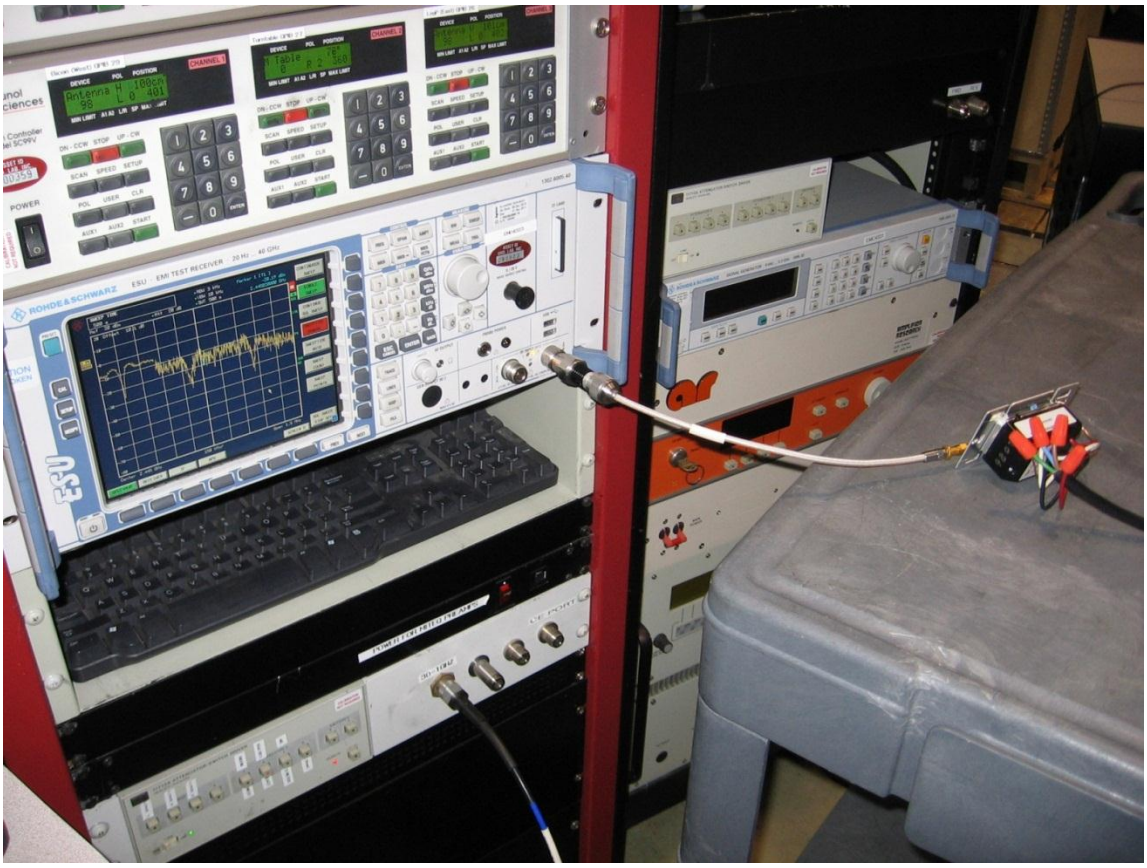
Table 39 Duty Cycle Test Equipment

Test Equipment Used					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
EMI Test Receiver	Rohde & Schwarz	ESU	EMC4323	Dec. 30, 2010	Dec. 31, 2011
Cable with Attenuator	Pasternack	10dB	none	N/A	N/A
RF Detector	Alan	9128/50D1	none	N/A	N/A
Digital Oscilloscope	Agilent	54845A	EMC4207	Dec. 29, 2010	Dec. 31, 2011

Table 40 Duty Cycle Results

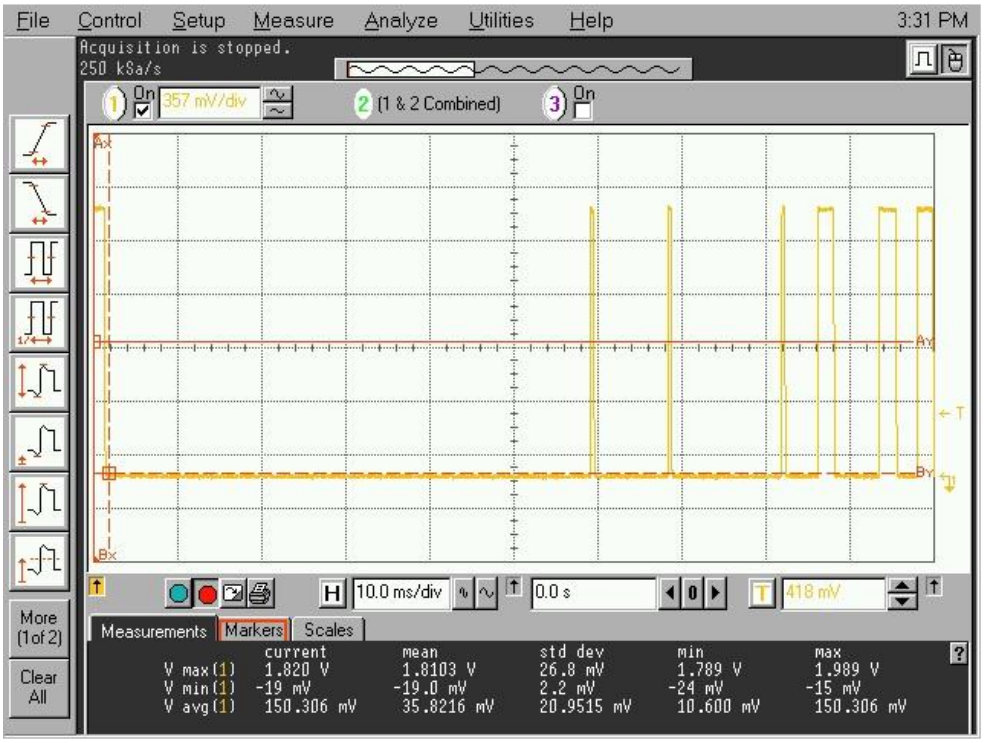
Mode	V(max-min)	V(avg)	Duty Cycle Correction (dB) $20\times\log(\frac{V(avg)}{V(\max-\min)})$
TX Linking with devices, Low Channel	1.839	0.150306	-21.75dB
Supplementary information: Because of the nature of how the switch communicates with another switch or a sensor multiple attempts were made to capture the worst case duty cycle. Since its not possible to predict the area where the worst case duty cycle will be present, using a spectrum analyzer in zero span with 100mS sweep was not practical. Instead, a digital storage oscilloscope with RF detector was used. The oscilloscope would not allow for multiple markers to be placed on the trace therefore the voltage (max-min) and voltage average values were used. In addition based on documentation provided by the manufacturer the worst case duty cycle correction possible with these devices is equal to -10.4dB and this value is used for all margin calculations where applicable.			

Test Setup for Duty Cycle



Representative Photo Only – the EUT was connected to oscilloscope with RF detector in place of the attenuator.

Figure 39 Dwell Time Graphs



Acquisition
Sampling mode real time Configuration 8GSa/s
Memory depth manual Memory depth 65536pts
Sampling rate manual Sampling rate 250 kSa/s
Averaging off
9-bit BW Filter on Interpolation on

Channel 1
Scale 357 mV/div Offset 857 mV Coupling DC Impedance 1M Ohm
Attenuation 1.000 : 1 Atten units ratio Skew 0.0 s
Ext adapter None Ext coupler None
Ext gain 1.00E+00 Ext offset 0.0E+00

Time base
Scale 10.0 ms/div Position 0.0 s Reference left

Trigger
Mode edge Sweep triggered
Hysteresis normal Holdoff time 60 ns Coupling DC
Source channel 1 Trigger level 418 mV Slope rising

Measure

	current	mean	std dev	min	max
V max(1)	1.820 V	1.8103 V	26.8 mV	1.789 V	1.989 V
V min(1)	-19 mV	-19.0 mV	2.2 mV	-24 mV	-15 mV
V avg(1)	150.306 mV	35.8216 mV	20.9515 mV	10.600 mV	150.306 mV

Marker

	current	mean		X	Y
V max(1)	1.820 V	1.8103 V	A——(1) =	0.0 s	904 mV
V min(1)	-19 mV	-19.0 mV	B---(1) =	1.81818 ms	18 mV
V avg(1)	150.306 mV	35.8216 mV	Δ =	1.81818 ms	-886 mV
			1/ΔX =	550.000 Hz	

4.5 Test Conditions and Results – 6dB BANDWIDTH

Test Description	Systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.
Basic Standard	47 CFR Part 15.247(a)(2) RSS-210, A8.2(a)

Table 41 6dB Bandwidth Configuration Settings

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

Table 42 6dB Bandwidth Test Equipment

Test Equipment Used					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum analyzer	Rhode & Schwartz	ESU	EMC4323	Dec. 30, 2010	Dec. 31, 2011
Attenuator w/ Cable	Mini Circuits	BW-N10W5	None	N/A	N/A

Table 43 6dB Bandwidth Results

Mode	Channel	6dB Bandwidth
TX	Low	1.62MHz
	Middle	1.62MHz
	High	1.62MHz

Test Setup for 6dB Bandwidth

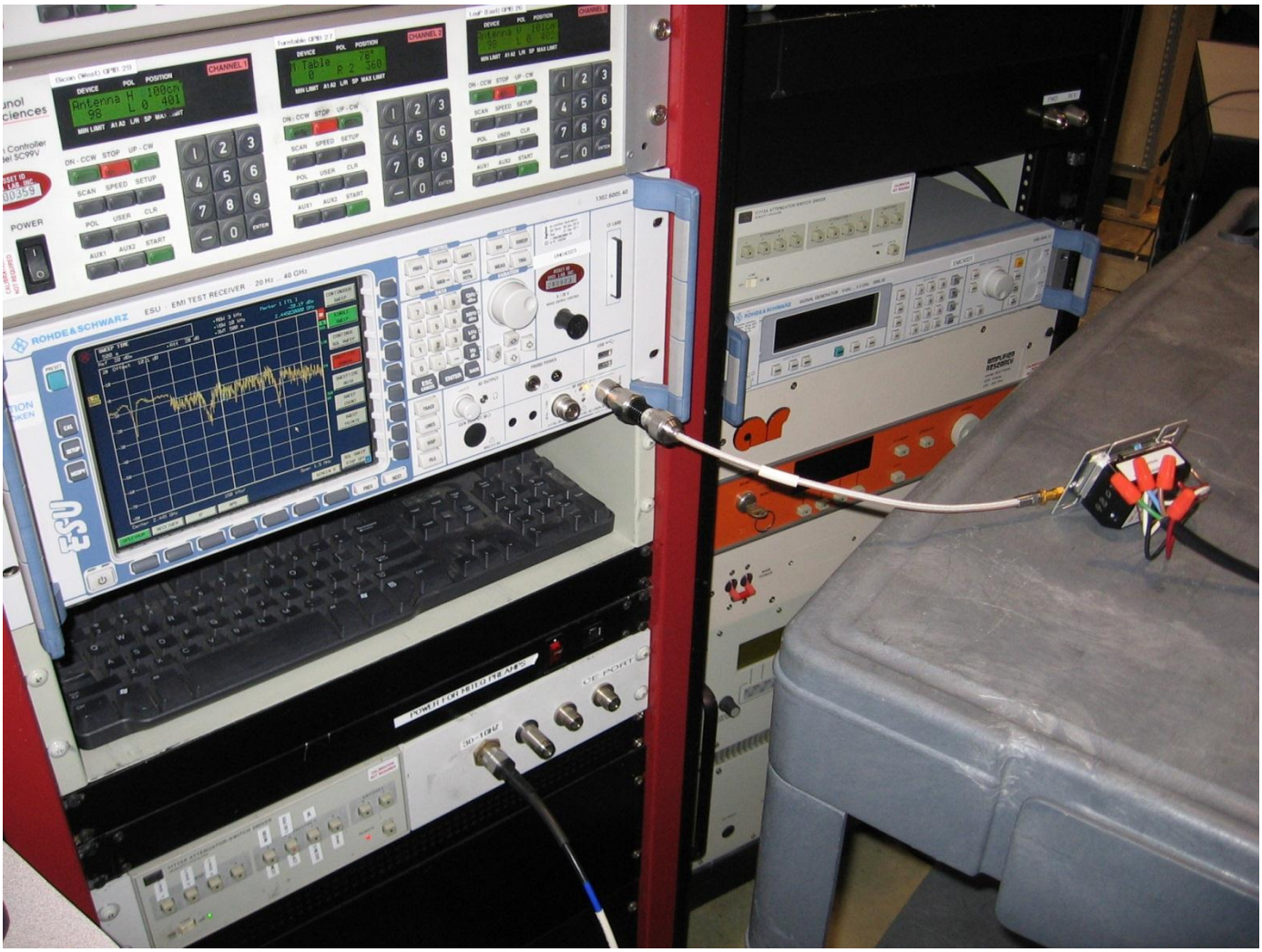
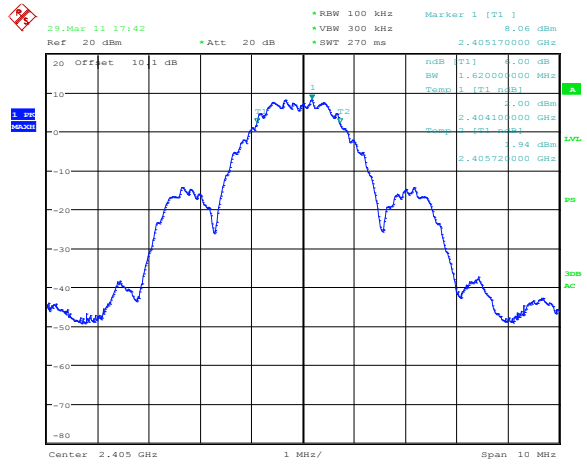
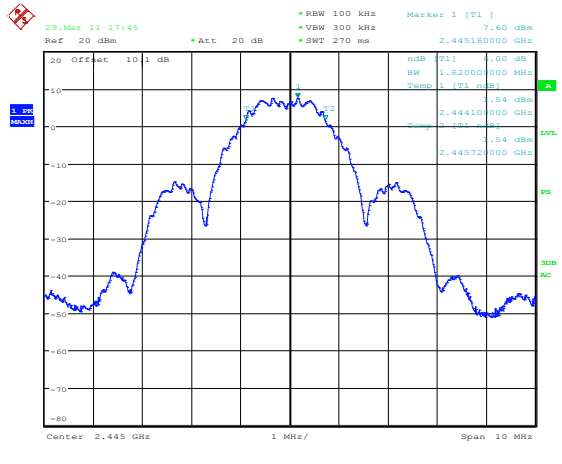


Figure 40 6dB Bandwidth Graphs

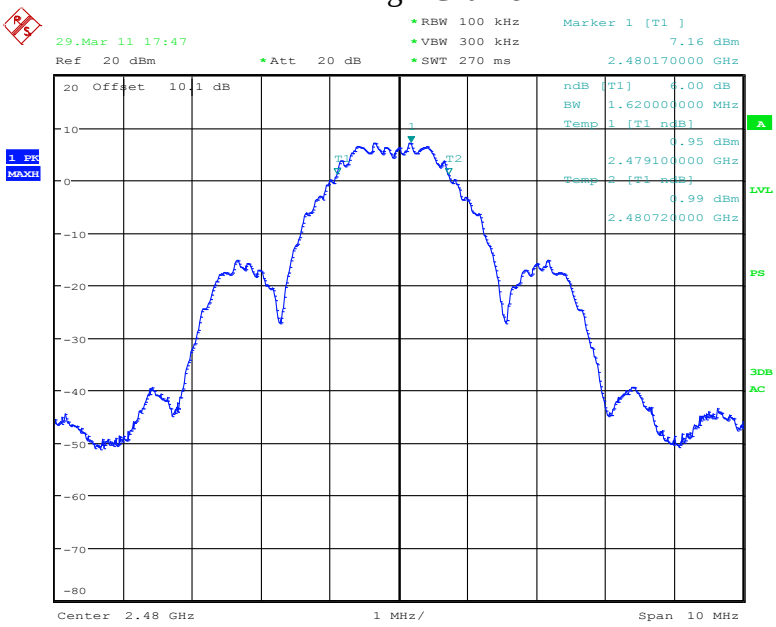
Low Channel



Middle Channel



High Channel



4.6 Test Conditions and Results – MAXIMUM PEAK OUTPUT POWER

Test Description	For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt.	
Basic Standard	47 CFR Part 15.247(b)(3) RSS-210, A8.4(4)	
	Frequency range	Measurement Point
Fully configured sample scanned over the following frequency range	2400MHz –2483.5MHz	Antenna Conducted
Limits		
Frequency (MHz)	Limit mW	
	Peak	
2400 – 2483.5	1,000	
Supplementary information: None		

Table 44 Maximum Peak Output Power EUT Configuration Settings

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

Table 45 Maximum Peak Output Power Test Equipment

Test Equipment Used					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum analyzer	Rhode & Schwartz	ESU	EMC4323	Dec. 30, 2010	Dec. 31, 2011
Attenuator w/ Cable	Mini Circuits	BW-N10W5	None	N/A	N/A

Table 46 Maximum Peak Output Power Results

Channel	Declared Antenna Gain (dBi)	Limit (dBm)	Power dBm	Power W
Low Channel	5.38	30	11.64	0.0146
Middle Channel	4.33	30	11.22	0.0132
High Channel	3.93	30	10.75	0.0119

Figure 41 Test setup for Maximum Peak Output Power

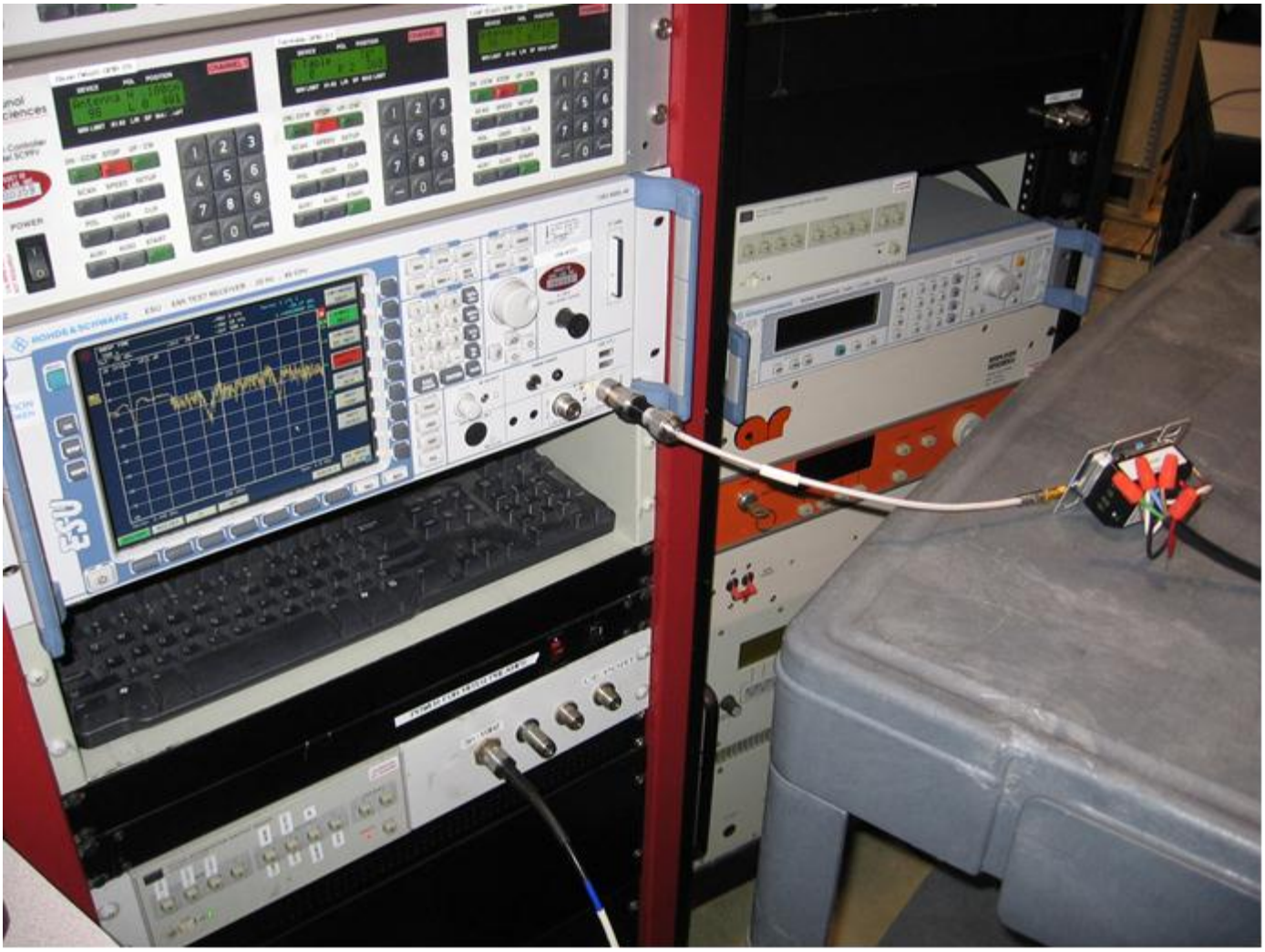
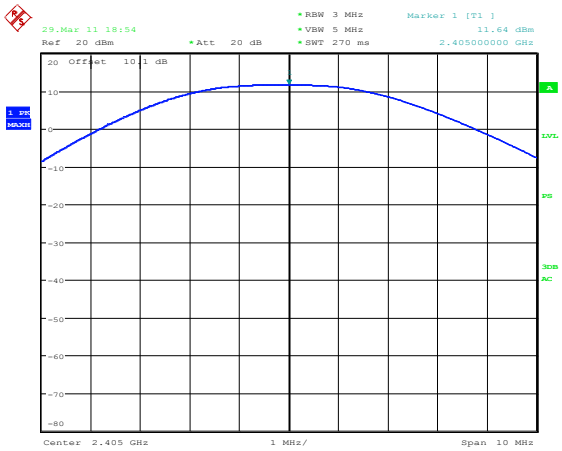


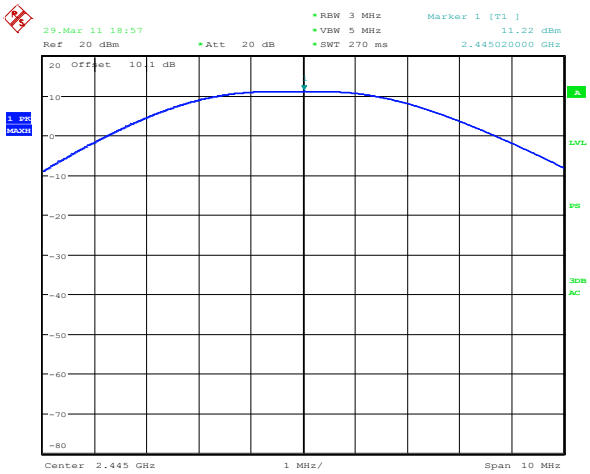
Figure 42 Maximum Peak Output Power Graph

Low Channel



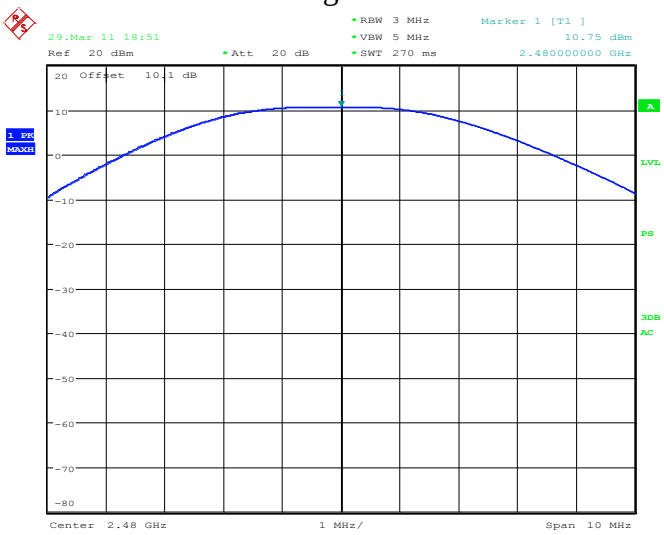
Date: 29.MAR.2011 18:54:53

Middle Channel



Date: 29.MAR.2011 18:58:00

High Channel



Date: 29.MAR.2011 18:51:45

4.7 Test Conditions and Results – POWER SPECTRAL DENSITY

Test Description	For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.	
Basic Standard	47 CFR Part 15.247(e) RSS-210, A8.2(b)	
	Frequency range	Measurement Point
Fully configured sample scanned over the following frequency range	2400MHz –2483.5MHz	Antenna Conducted
Limits		
Frequency (MHz)	Limit mW	
	Peak	
2400 – 2483.5	8dBm (0.00631mW)	
Supplementary information: None		

Table 47 Power Spectral Density EUT Configuration Settings

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

Table 48 Power Spectral Density Test Equipment

Test Equipment Used					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum analyzer	Rhode & Schwartz	ESU	EMC4323	Dec. 30, 2010	Dec. 31, 2011
Attenuator w/ Cable	Mini Circuits	BW-N10W5	None	N/A	N/A

Table 49 Power Spectral Density Power Results

Channel	Limit (dBm)	Power Density dBm
Low Channel	8	-2.76
Middle Channel	8	-3.02
High Channel	8	-3.86

Figure 43 Test setup for Power Spectral Density

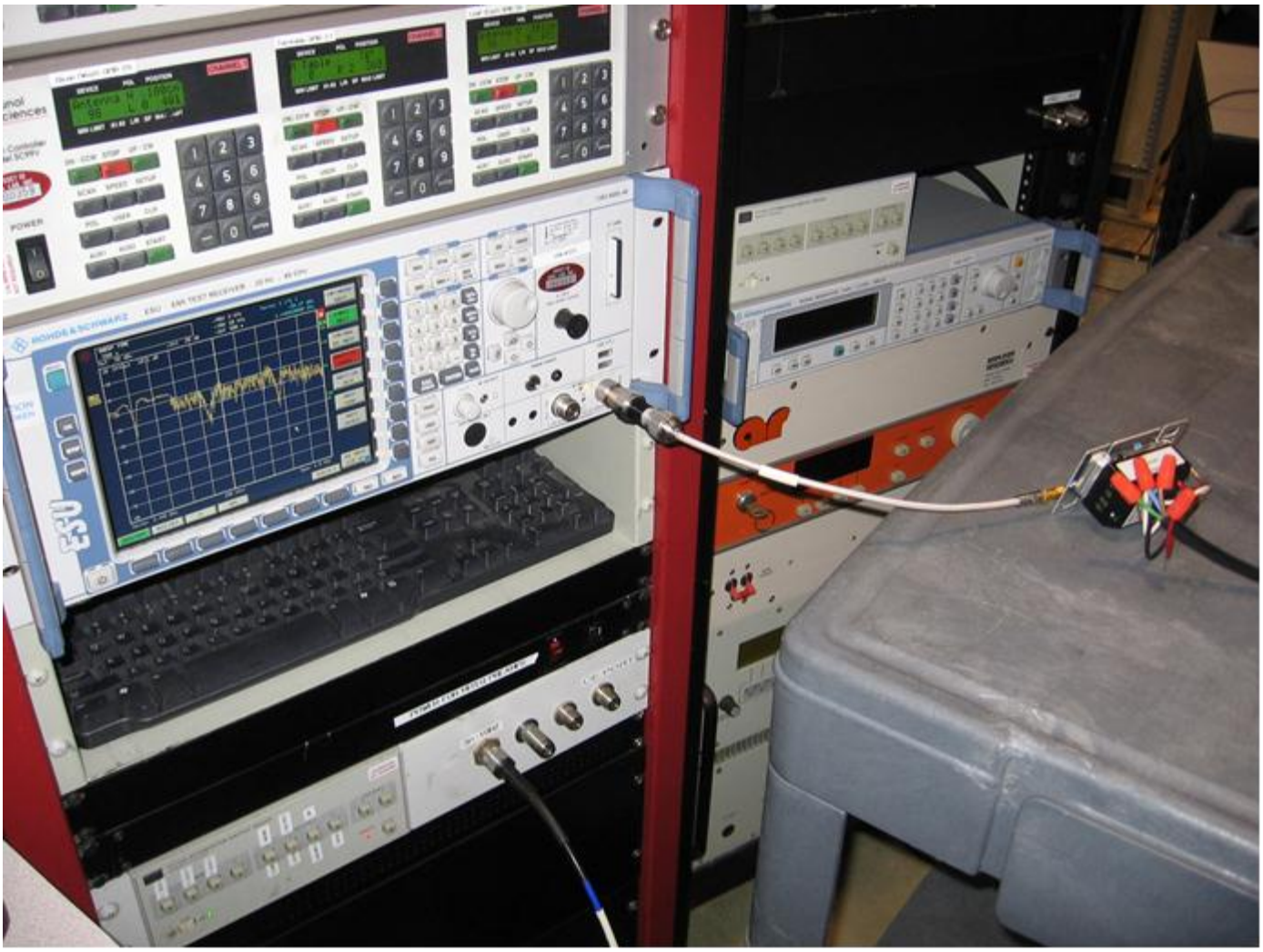
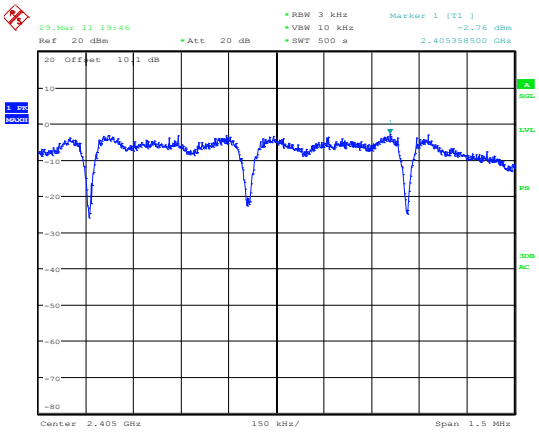
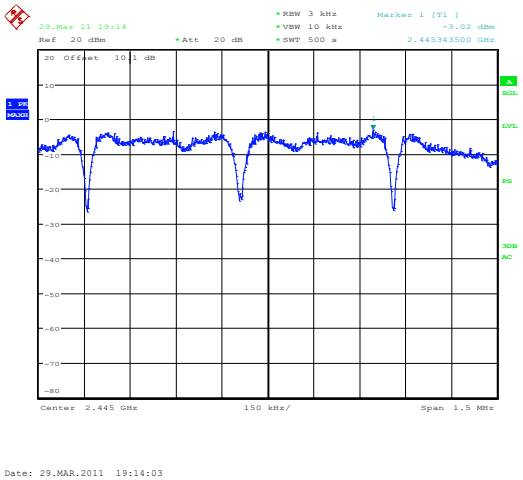


Figure 44 Power Spectral Density Graphs

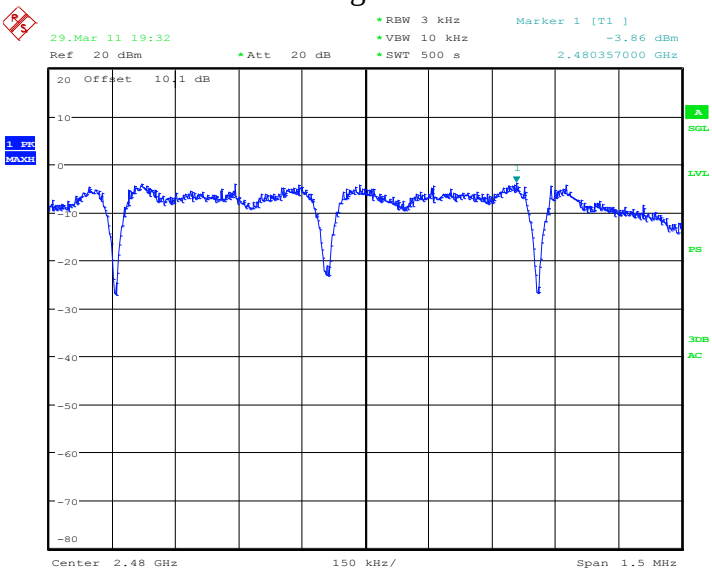
Low Channel



Middle Channel



High Channel



4.8 Test Conditions and Results – 99% Power BANDWIDTH

Test Description	When an occupied bandwidth value is not specified in the applicable RSS, the transmitted signal bandwidth to be reported is to be its 99% emission bandwidth, as calculated or measured.
Basic Standard	RSS-Gen, 4.6.1

Table 50 99% Power Bandwidth Configuration Settings

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

Table 51 99% Power Bandwidth Test Equipment

Test Equipment Used					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum analyzer	Rhode & Schwartz	ESU	EMC4323	Dec. 30, 2010	Dec. 31, 2011
Attenuator w/ Cable	Mini Circuits	BW-N10W5	None	N/A	N/A

Table 52 99% Power Bandwidth Results

Mode	Channel	99% Power Bandwidth
TX	Low	2.6MHz
	Middle	2.6MHz
	High	2.6MHz

Test Setup for 99% Power Bandwidth

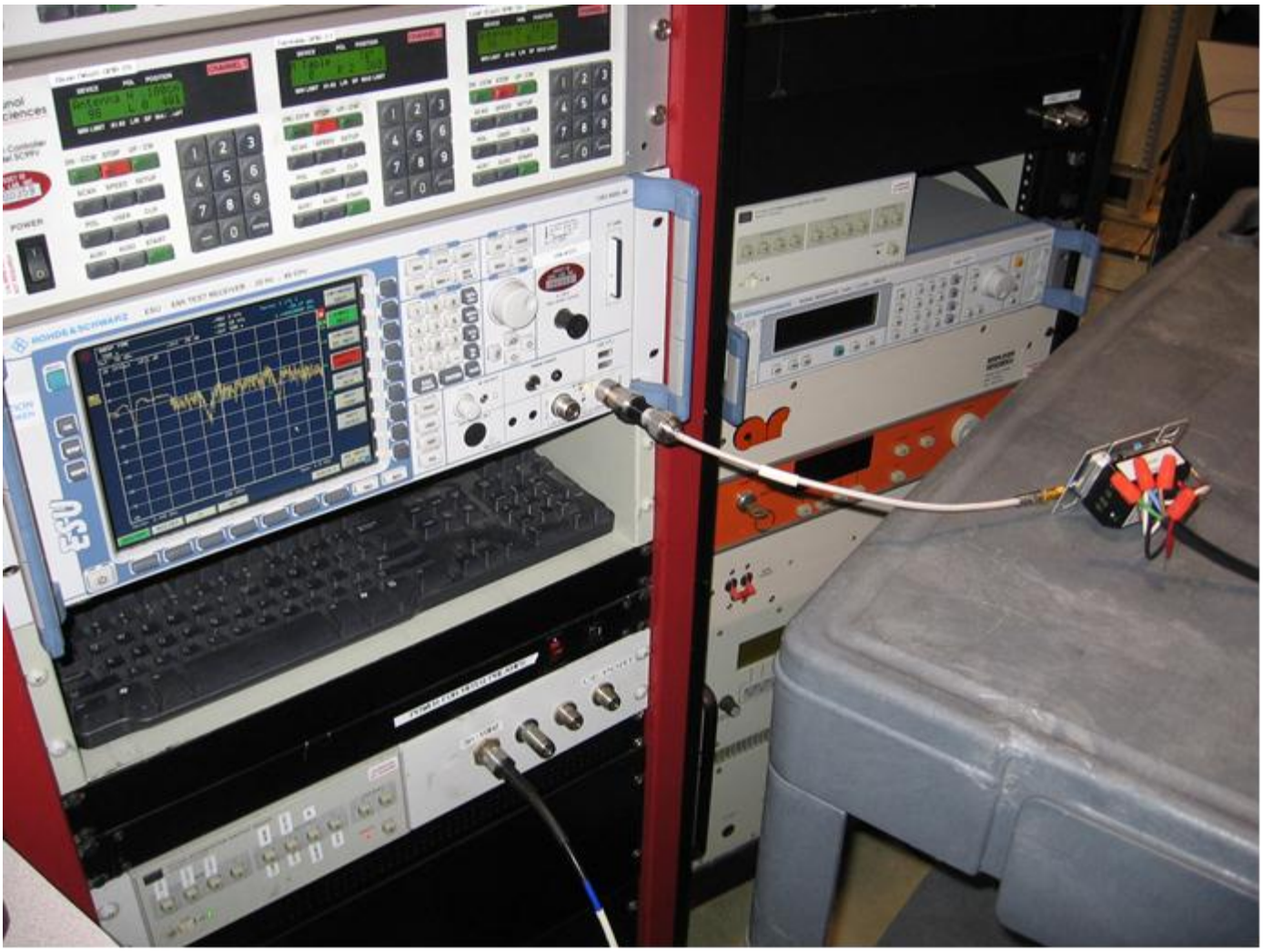
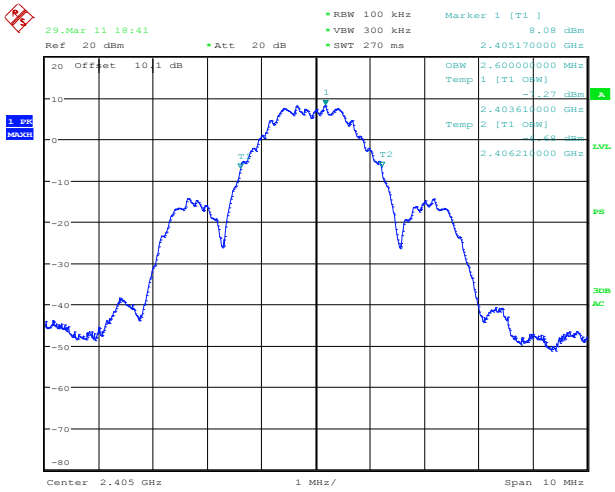


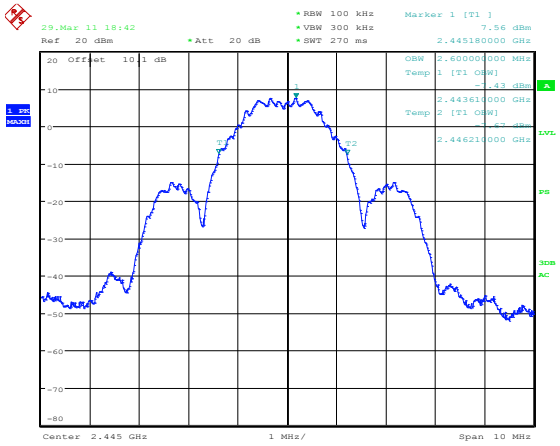
Figure 45 99% Power Bandwidth Graphs

Low Channel



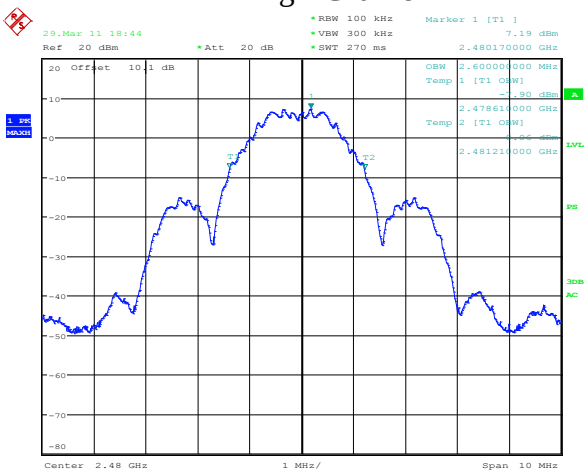
Date: 29.MAR.2011 18:41:12

Middle Channel



Date: 29.MAR.2011 18:42:09

High Channel



Date: 29.MAR.2011 18:44:49

5.0 IMMUNITY TEST RESULTS

Immunity testing was not conducted nor is required by the standard.

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 89/336/EEC, Article 10 (2). 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