



FCC CFR47 PART 15 SUBPART B & C

CERTIFICATION TEST REPORT

FOR

Tri Band CDMA Mobile Phone with WiFi/Bluetooth

MODEL NUMBER: C5215

FCC ID: V65C5215

REPORT NUMBER: 13U14946-3

ISSUE DATE: 2013- 04-22

Prepared for
KYOCERA COMMUNICATIONS, INC
9520 TOWNE CENTER DRIVE
SAN DIEGO, CA 92121, USA

Prepared by
UL LLC
1285 WALT WHITMAN RD.
MELVILLE, NY 11747, U.S.A.
TEL: (631) 271-6200
FAX: (877) 854-3577



NVLAP LAB CODE 100255-0

Revision History

| Rev. | Issue Date | Revisions | Revised By |
|------|------------|------------------------------|---------------|
| -- | 2013-04-15 | Initial Issue | Joseph Danisi |
| 1 | 2013-04-22 | Remove Industry Canada Rules | Joseph Danisi |

TABLE OF CONTENTS

| | |
|--|-----------|
| 1. ATTESTATION OF TEST RESULTS | 4 |
| 2. TEST METHODOLOGY | 5 |
| 3. FACILITIES AND ACCREDITATION | 5 |
| 4. CALIBRATION AND UNCERTAINTY | 5 |
| 4.1. MEASURING INSTRUMENT CALIBRATION | 5 |
| 4.2. SAMPLE CALCULATION | 5 |
| 4.3. MEASUREMENT UNCERTAINTY..... | 5 |
| 5. EQUIPMENT UNDER TEST | 6 |
| 5.1. DESCRIPTION OF EUT | 6 |
| 5.2. DESCRIPTION OF AVAILABLE ANTENNAS | 6 |
| 5.3. SOFTWARE AND FIRMWARE..... | 6 |
| 5.4. WORST-CASE CONFIGURATION AND MODE..... | 6 |
| 5.1. DESCRIPTION OF TEST SETUP..... | 7 |
| 6. TEST AND MEASUREMENT EQUIPMENT | 9 |
| 7. RADIATED TEST RESULTS..... | 11 |
| 7.1. LIMITS AND PROCEDURE | 11 |
| 8. RADIATED TEST RESULTS..... | 12 |
| 8.1. LIMITS AND PROCEDURE | 12 |
| 8.1. TRANSMITTER ABOVE 1 GHz | 13 |
| 8.1.1. ENHANCED DATA RATE 8PSK MODULATION | 13 |
| 8.1.2. BASIC DATA RATE GFSK MODULATION | 24 |
| 8.2. WORST-CASE BELOW 1 GHz..... | 33 |
| 9. AC POWER LINE CONDUCTED EMISSIONS..... | 35 |
| 10. SETUP PHOTOS | 41 |

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: KYOCERA COMMUNICATIONS, INC
8611 BALBOA AVENUE
SAN DIEGO, CA 92123, U.S.A

EUT DESCRIPTION: Tri Band CDMA Mobile Phone with WiFi/Bluetooth

MODEL: C5215

DATE TESTED: 2013-03-29 to 2013-04-04

| APPLICABLE STANDARDS | |
|--------------------------|--------------|
| STANDARD | TEST RESULTS |
| CFR 47 Part 15 Subpart C | Pass |

UL LLC tested the above equipment in accordance with the requirements set forth in the above standards, using test results reported in the test report documents referenced below and/or documentation furnished by the applicant. All indications of Pass/Fail in this report are opinions expressed by UL LLC based on interpretations of these calculations. The results show that the equipment is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation, as described by the referenced documents. This document may not be altered or revised in any way unless done so by UL LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For UL By:



Name: Bob DeLisi
Title: WiSE Principal Engineer
UL LLC

Tested By:



Name: Joseph Danisi
Title: WiSE Project Lead
UL LLC

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4, FCC CFR 47 Part 2, FCC CFR 47 Part 15.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 1285 Walt Whitman Rd. Melville, NY 11747, USA.

UL Melville is accredited by NVLAP, Laboratory Code 100255-0. The full scope of accreditation can be viewed at <http://ts.nist.gov/standards/scopes/1002550.htm>.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

$$\begin{aligned} \text{Field Strength (dBuV/m)} &= \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \\ &\text{Cable Loss (dB)} - \text{Preamp Gain (dB)} \\ 36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} &= 28.9 \text{ dBuV/m} \end{aligned}$$

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

| PARAMETER | UNCERTAINTY |
|---------------------------------------|-------------|
| Conducted Disturbance, 0.15 to 30 MHz | ± 3.3 dB |
| Radiated Disturbance, 30 to 1000 MHz | ± 4.00 dB |
| Radiated Emissions, 1-6GHz | ±5.44, k=2 |

Uncertainty figures are valid to a confidence level of 95%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a Bluetooth featured Tri Band CDMA Mobile Phone with WiFi/Bluetooth phone that is manufactured by Kyocera.

5.2. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a dipole (internal) antenna, with a maximum gain of -1.0 dBi.

5.3. SOFTWARE AND FIRMWARE

The test utility software used during testing was FCC Test Application version 0.110CR

5.4. WORST-CASE CONFIGURATION AND MODE

The worst-case channel is determined as the channel with the highest output power. Therefore Radiated and Conducted emissions were performed with EUT set to transmit at the channel determined as worst case.

The fundamental of the EUT was investigated in three orthogonal orientations X, Y, Z, it was determined that X orientation was worst-case; therefore, all final Radiated testing was performed with the EUT in X orientation.

5.1. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

| PERIPHERAL SUPPORT EQUIPMENT LIST | | | | |
|-----------------------------------|--------------|-----------|---------------|--------|
| Description | Manufacturer | Model | Serial Number | FCC ID |
| AC/DC Adaptor | Kyocera | SCP-31ADT | N/A | N/A |
| Headset | N/A | N/A | N/A | N/A |

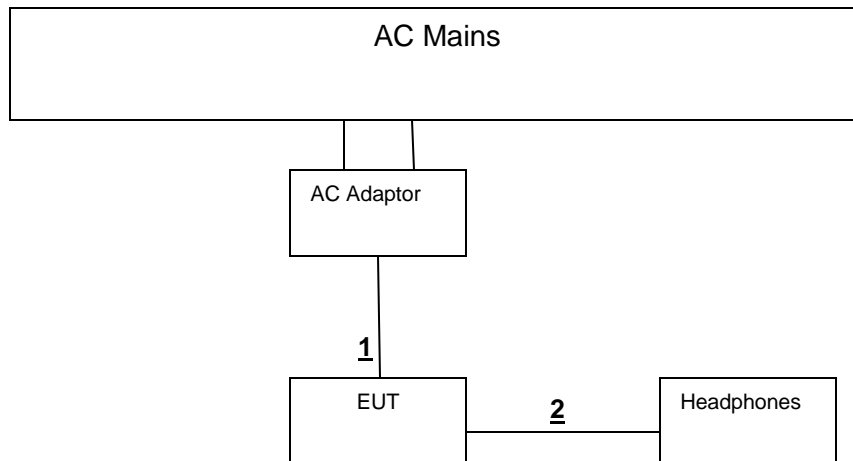
I/O CABLES

| I/O CABLE LIST | | | | | | |
|----------------|------|----------------------|----------------|------------|--------------|---------|
| Cable No. | Port | # of Identical Ports | Connector Type | Cable Type | Cable Length | Remarks |
| 1 | Mic | 1 | Earphone | Unsheilded | 1.5m | N/A |

TEST SETUP

The EUT is set up to transmit continuously

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

| Radiated Emissions | | | | | |
|------------------------------------|-----------------|-------------------|------------|------------|--------------|
| Description | Manufacturer | Model | Identifier | Cal Date | Cal Due Date |
| 30-1000MHz | | | | | |
| EMI Receiver | Rohde & Schwarz | ESIB26 | ME5B-081 | 2013-01-29 | 2014-01-31 |
| Log-P Antenna | Schaffner | UPA6109 | 44068 | 2013-04-03 | 2014-04-03 |
| Bicon Antenna | Schaffner | VBA6106A | 54 | 2013-04-03 | 2014-04-03 |
| Bias Tee | Miteq | AM-1523-7687 | 44392 | N/A | N/A |
| Bias Tee | Miteq | AM-1523-7687 | 44393 | N/A | N/A |
| Preamp | Miteq | AM-3A-000110-7687 | 44391 | N/A | N/A |
| Preamp | Miteq | AM-3A-000110-7687 | 44394 | N/A | N/A |
| Switch Driver | HP | 11713A | ME7A-627 | N/A | N/A |
| System Controller | Sunol Sciences | SC99V | 44396 | N/A | N/A |
| Camera Controller | Panasonic | WV-CU254 | 44395 | N/A | N/A |
| RF Switch Box | UL | 1 | 44398 | N/A | N/A |
| Measurement Software | UL | Version 9.5 | 44740 | N/A | N/A |
| Multimeter | Fluke | 83III | ME5B-305 | N/A | N/A |
| Above 1GHz (Band Optimized System) | | | | | |
| EMI Receiver | Rohde & Schwarz | ESIB40 | 34968 | | |
| Horn Antenna (1-2 GHz) | ETS | 3161-01 (26°)** | 51442 | 2008-03-28 | See * below |
| Horn Antenna (2-4 GHz) | ETS | 3161-02 (22°)** | 48107 | 2007-09-27 | See * below |
| Horn Antenna (4-8 GHz) | ETS | 3161-03 (22°)** | 48106 | 2007-09-27 | See * below |
| Horn Antenna (8-12 GHz) | ETS | 3160-07 (26°)** | 8933 | 2008-11-24 | See * below |
| Horn Antenna (12-18 GHz) | ETS | 3160-08 (26°)** | 8932 | 2007-09-27 | See * below |
| Horn Antenna (18-26.5 GHz) | ETS | 3160-09 (27°)** | 8947 | 2007-09-26 | See * below |
| Horn Antenna (26.5-40 GHz) | ETS | 3160-10 (27°)** | 73004 | 2007-09-26 | See * below |
| Signal Path Controller | HP | 11713A | 50250 | N/A | N/A |
| Gain Controller | HP | 11713A | 50251 | N/A | N/A |
| RF Switch / Preamp Fixture | UL | BOMS1 | 50249 | N/A | N/A |
| System Controller | UL | BOMS2 | 50252 | N/A | N/A |
| Measurement Software | UL | Version 9.5 | 44740 | N/A | N/A |
| Temp/Humidity/Pressure Meter | Cole Parmer | 99760-00 | 43734 | 2012-03-13 | 2014-03-13 |
| Multimeter | Fluke | 83V | 43443 | 2013-01-28 | 2014-01-31 |

| Radiated Emissions | | | | | |
|--|--------------|-------|------------|----------|--------------|
| Description | Manufacturer | Model | Identifier | Cal Date | Cal Due Date |
| <p>* - Note: As allowed by the calibration standard ANSI C63.4 Section 4.4.2, standard gain horns need only a one-time calibration. Only if physical damage occurs will the horn antenna require re-calibration.</p> <p>Gain standard horn antennas (sometimes called standard gain horn antennas) need not be calibrated beyond that which is provided by the manufacturer unless they are damaged or deterioration is suspected, or they are used at a distance closer than $2D^2/\lambda$. Gain standard horn antennas have gains that are fixed by their dimensions and dimensional tolerances.</p> <p>** - Number in parentheses denotes antenna beam width.</p> | | | | | |

| Conducted Emissions | | | | | |
|------------------------------|-----------------|------------------|------------|------------|--------------|
| Description | Manufacturer | Model | Identifier | Cal Date | Cal Due Date |
| Conducted Emissions – GP 1 | | | | | |
| EMI Receiver | Rohde & Schwarz | ESCI 7 | 75141 | 2013-01-30 | 2014-01-31 |
| LISN | Solar | 9252-50-R-24-BNC | ME5A-636 | 2013-02-01 | 2014-02-28 |
| Switch Driver | HP | 11713A | 44397 | N/A | N/A |
| RF Switch Box | UL | 4 | 44404 | N/A | N/A |
| Measurement Software | UL | Version 9.5 | 44736 | N/A | N/A |
| Temp/Humidity/Pressure Meter | Cole Parmer | 99760-00 | 43734 | 2012-03-13 | 2014-03-13 |
| Multimeter | Fluke | 83V | 43443 | 2013-01-28 | 2014-01-31 |

7. RADIATED TEST RESULTS

7.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

| Frequency Range (MHz) | Field Strength Limit (uV/m) at 3 m | Field Strength Limit (dBuV/m) at 3 m |
|-----------------------|------------------------------------|--------------------------------------|
| 30 - 88 | 100 | 40 |
| 88 - 216 | 150 | 43.5 |
| 216 - 960 | 200 | 46 |
| Above 960 | 500 | 54 |

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.4. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 1 MHz for peak measurements and 10KHz for average measurements worst case.

The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

8. RADIATED TEST RESULTS

8.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

| Frequency Range (MHz) | Field Strength Limit (uV/m) at 3 m | Field Strength Limit (dBuV/m) at 3 m |
|-----------------------|------------------------------------|--------------------------------------|
| 30 - 88 | 100 | 40 |
| 88 - 216 | 150 | 43.5 |
| 216 - 960 | 200 | 46 |
| Above 960 | 500 | 54 |

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.4. The EUT is set to transmit in a continuous mode.

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For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

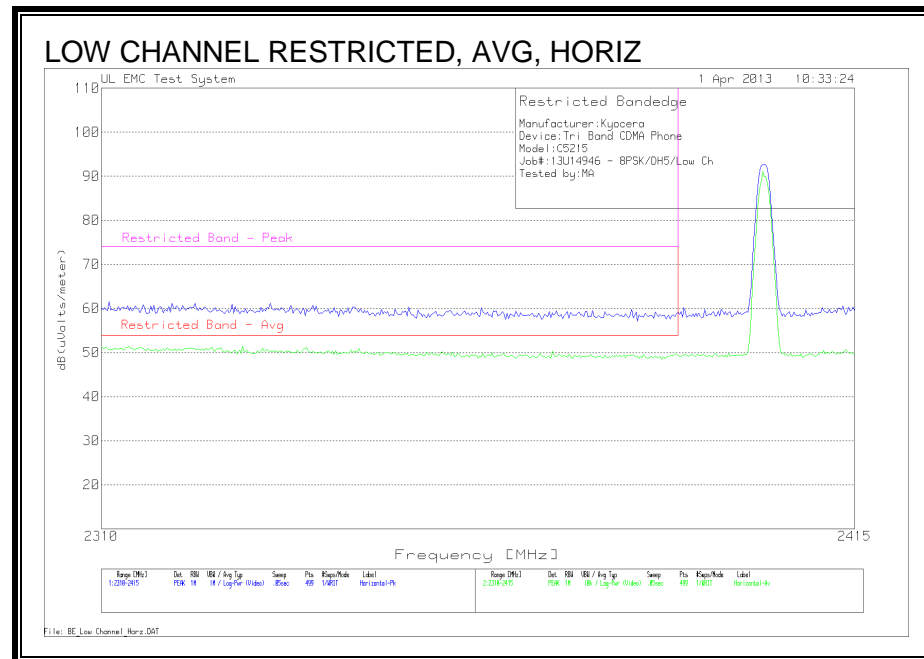
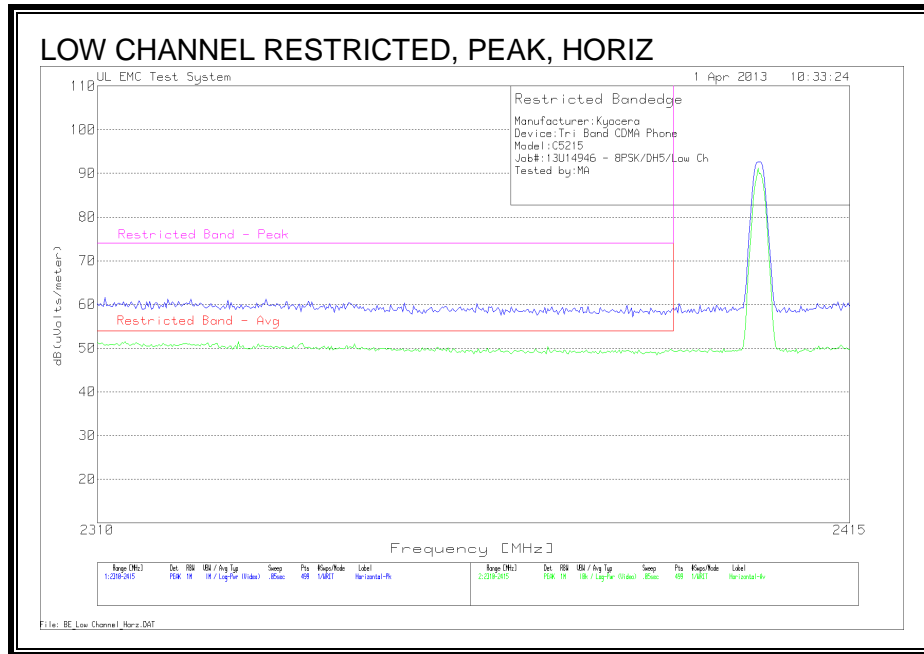
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

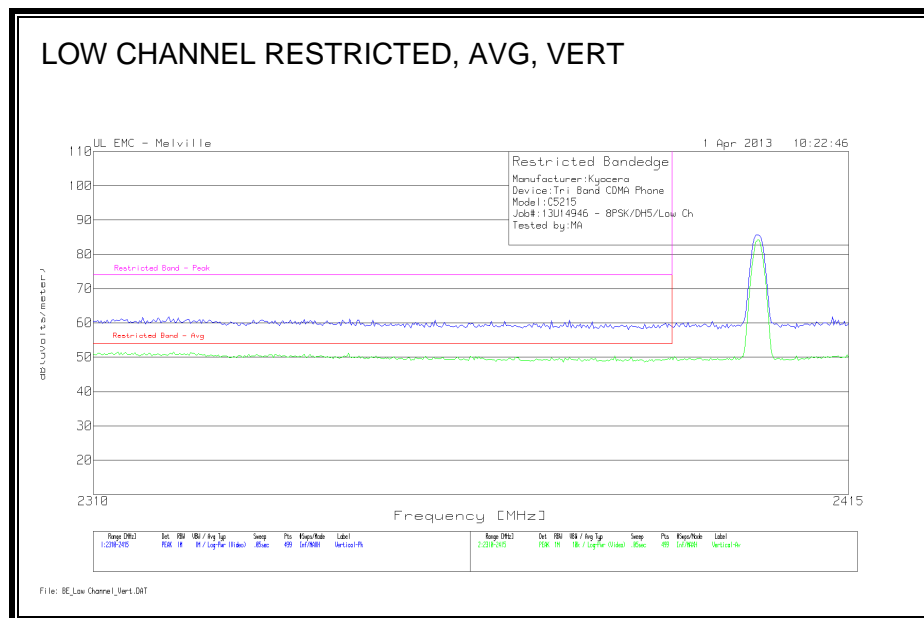
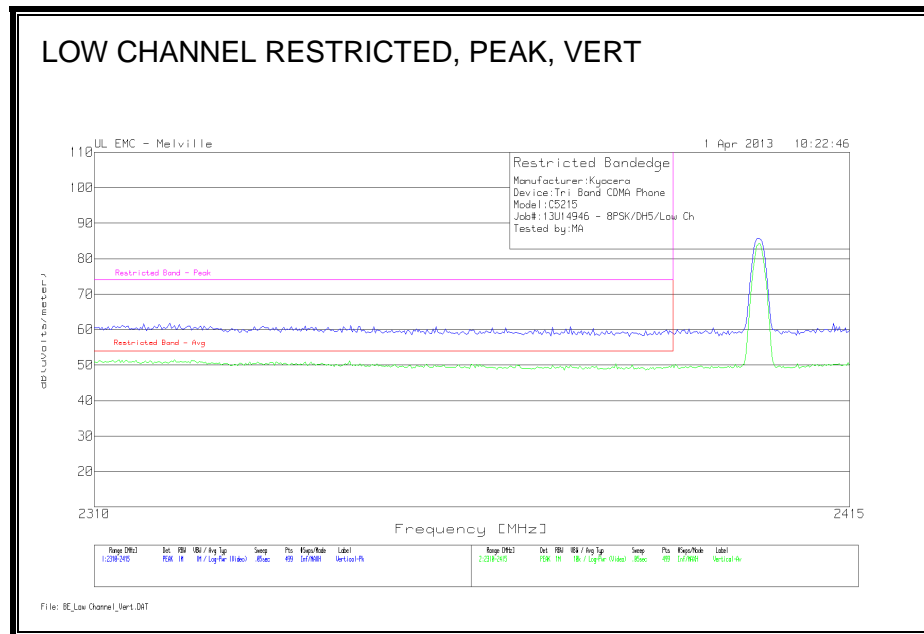
8.1. TRANSMITTER ABOVE 1 GHz

8.1.1. ENHANCED DATA RATE 8PSK MODULATION

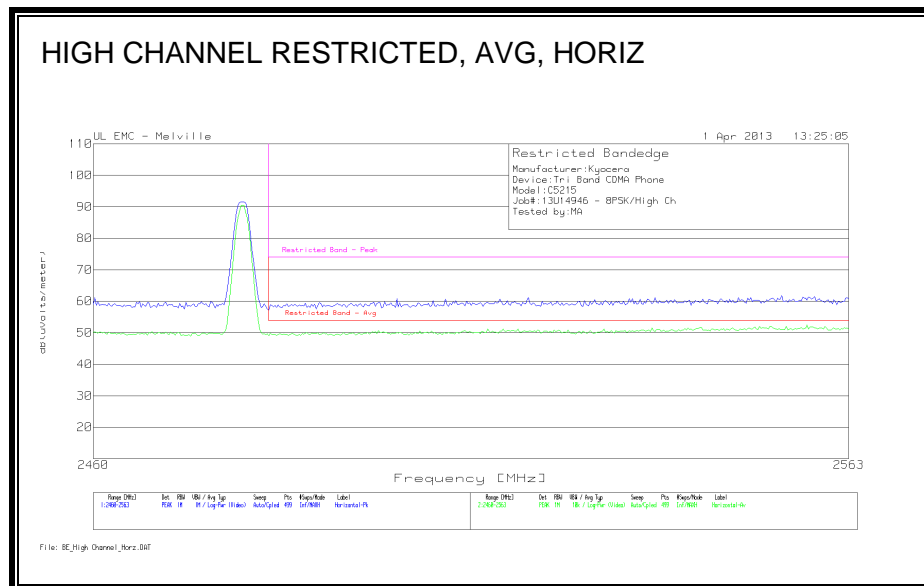
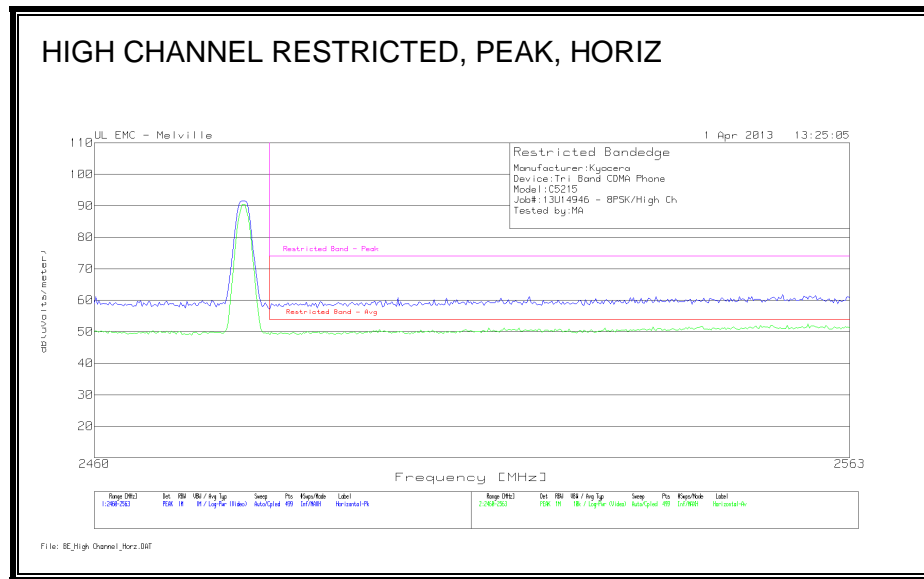
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



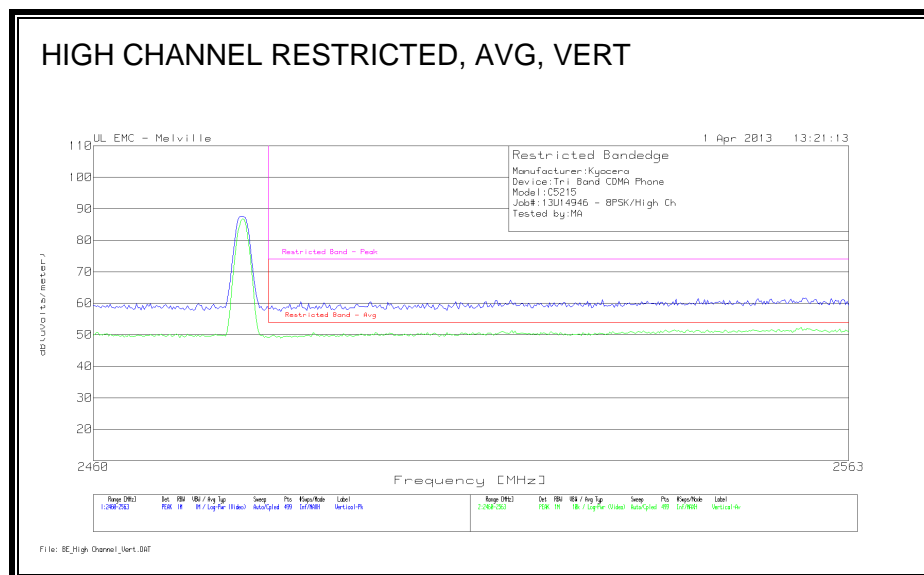
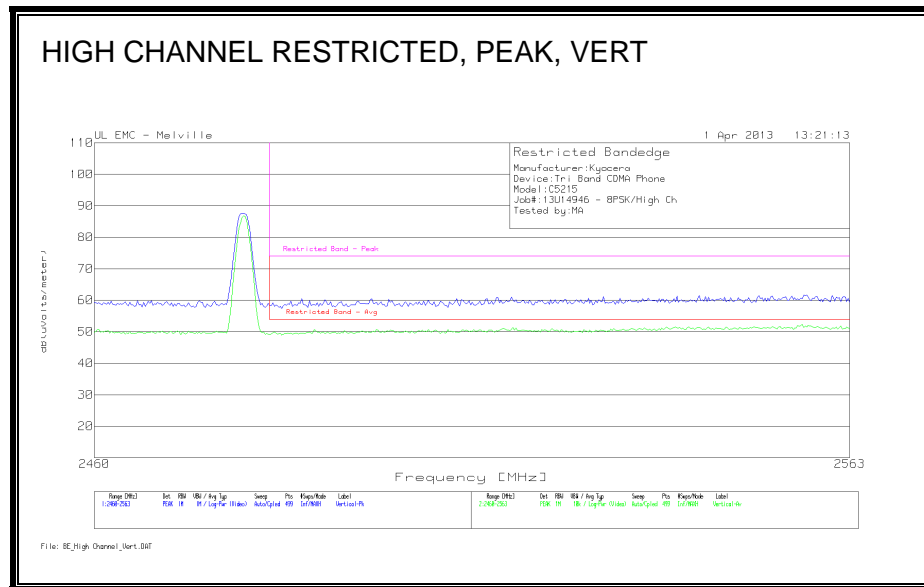
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



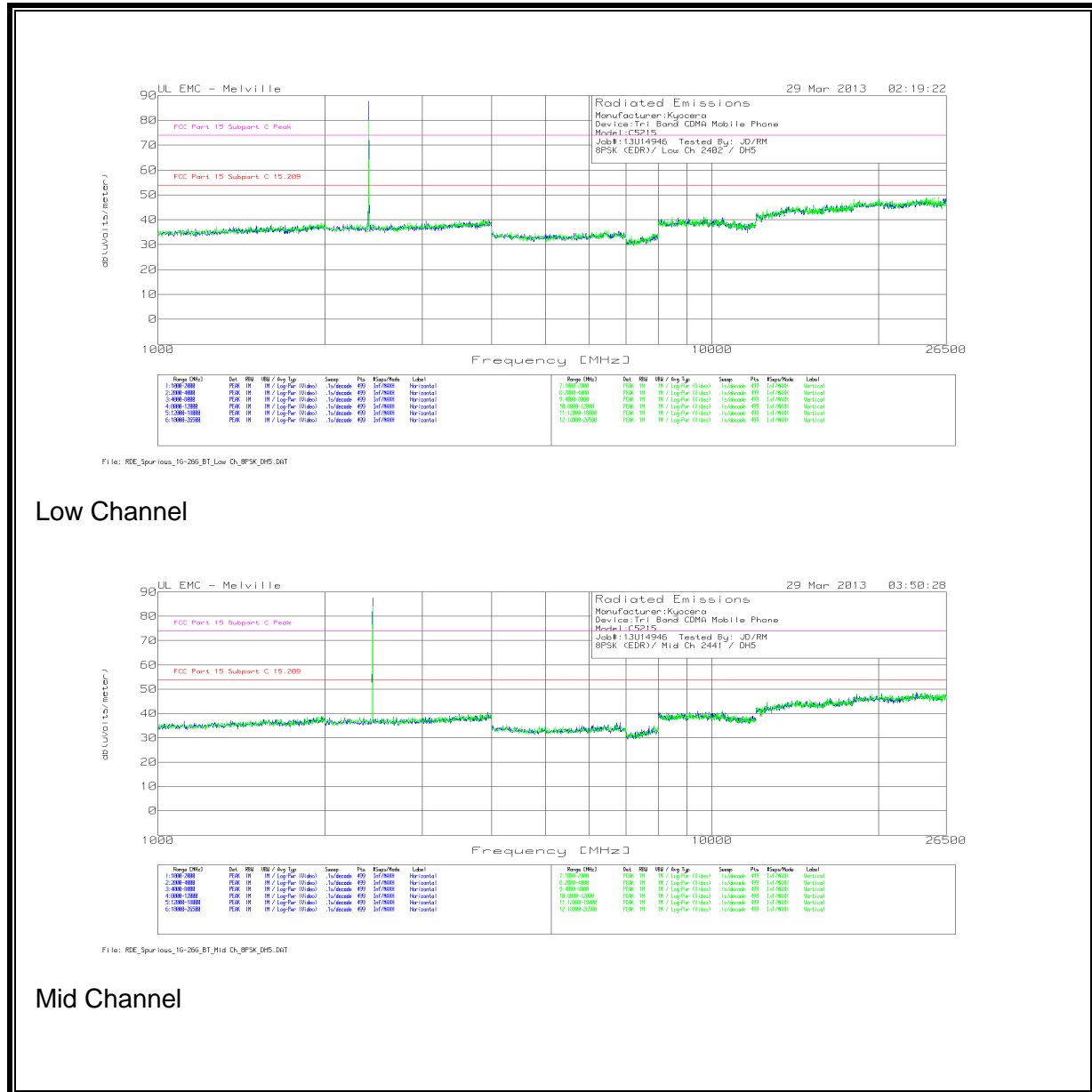
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)



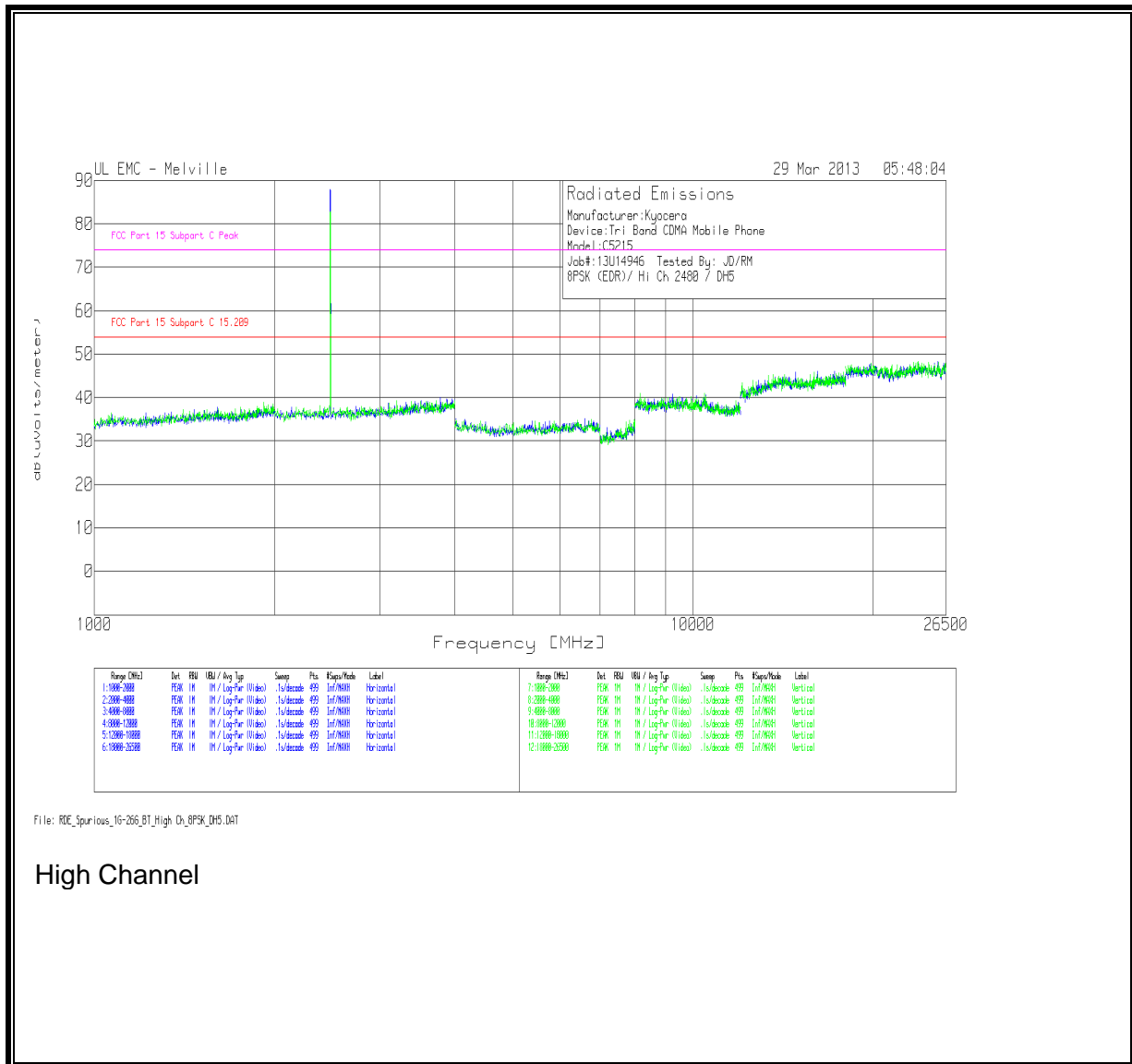
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



HARMONICS AND SPURIOUS EMISSIONS



HARMONICS AND SPURIOUS EMISSIONS CONT.



DATA LOW CHANNEL

Manufacturer: Kyocera

Device: Tri Band CDMA Mobile Phone

Model: C5215

Job#:13U14946 Tested By: JD/RM

8PSK (EDR)/ Low Ch. 2402 / DH5

Horizontal 4000 - 8000MHz

| Test Frequency | Meter Reading | Detector | AF-48106(dBm) | BOMS Factor [dB] | dB(uVolts/meter) | FCC Part 15 Subpart C 15.209 | Margin (dB) | FCC Part 15 Subpart C Peak | Margin (dB) | Azimuth [Degs] | Height [cm] | Polarity |
|----------------|---------------|----------|---------------|------------------|------------------|------------------------------|-------------|----------------------------|-------------|----------------|-------------|----------|
| 4804 | 63.19 | PK | 27.1 | -53.31 | 36.98 | 54 | -17.02 | 74 | -37.02 | 270 | 136 | Horz |
| 4804 | 50.32 | LnAv | 27.1 | -53.31 | 24.11 | 54 | -29.89 | 74 | -49.89 | 270 | 136 | Horz |
| 4804 | 63.06 | PK | 27.1 | -53.31 | 36.85 | 54 | -17.15 | 74 | -37.15 | 318 | 210 | Vert |
| 4804 | 50.35 | LnAv | 27.1 | -53.31 | 24.14 | 54 | -29.86 | 74 | -49.86 | 318 | 210 | Vert |

Horizontal 12000 - 18000MHz

| Test Frequency | Meter Reading | Detector | AF-8932(dBm) | BOMS Factor [dB] | dB(uVolts/meter) | FCC Part 15 Subpart C 15.209 | Margin (dB) | FCC Part 15 Subpart C Peak | Margin (dB) | Azimuth [Degs] | Height [cm] | Polarity |
|----------------|---------------|----------|--------------|------------------|------------------|------------------------------|-------------|----------------------------|-------------|----------------|-------------|----------|
| 12010 | 58.42 | PK | 37.2 | -49.26 | 46.36 | 54 | -7.64 | 74 | -27.64 | 290 | 326 | Horz |
| 12010 | 44.94 | LnAv | 37.2 | -49.26 | 32.88 | 54 | -21.12 | 74 | -41.12 | 290 | 326 | Horz |
| 12010 | 58.28 | PK | 37.2 | -49.26 | 46.22 | 54 | -7.78 | 74 | -27.78 | 199 | 243 | Vert |
| 12010 | 44.95 | LnAv | 37.2 | -49.26 | 32.89 | 54 | -21.11 | 74 | -41.11 | 199 | 243 | Vert |

PK - Peak detector

QP - Quasi-Peak detector

LnAv - Linear Average detector

DATA MID. CHANNEL

Manufacturer: Kyocera

Device: Tri Band CDMA Mobile Phone

Model:C5215

Job#:13U14946 Tested By: JD/RM

8PSK (EDR)/ Mid Ch 2441 / DH5

Horizontal 4000 - 8000MHz

| Test | Meter | | AF- | BOMS | | FCC Part | | FCC Part | | Azimuth | Height | |
|-----------|---------|----------|-------|--------|------------------|----------|--------|----------|--------|---------|--------|----------|
| Frequency | Reading | Detector | 48106 | Factor | dB(uVolts/meter) | 15 | Margin | 15 | Margin | [Degs] | [cm] | Polarity |
| | | | (dBm) | [dB] | | Subpart | (dB) | Subpart | (dB) | | | |
| | | | | | | C 15.209 | | C Peak | | | | |
| 4882 | 63 | PK | 27.2 | -53.28 | 36.92 | 54 | -17.08 | 74 | -37.08 | 246 | 321 | Horz |
| 4882 | 50.23 | LnAv | 27.2 | -53.28 | 24.15 | 54 | -29.85 | 74 | -49.85 | 246 | 321 | Horz |
| 4882 | 62.16 | PK | 27.2 | -53.28 | 36.08 | 54 | -17.92 | 74 | -37.92 | 346 | 347 | Vert |
| 4882 | 50.02 | LnAv | 27.2 | -53.28 | 23.94 | 54 | -30.06 | 74 | -50.06 | 346 | 347 | Vert |
| 7323 | 59.04 | PK | 28 | -52.37 | 34.67 | 54 | -19.33 | 74 | -39.33 | 178 | 115 | Horz |
| 7323 | 46.76 | LnAv | 28 | -52.37 | 22.39 | 54 | -31.61 | 74 | -51.61 | 178 | 115 | Horz |
| 7323 | 60.22 | PK | 28 | -52.37 | 35.85 | 54 | -18.15 | 74 | -38.15 | 210 | 212 | Vert |
| 7323 | 47.31 | LnAv | 28 | -52.37 | 22.94 | 54 | -31.06 | 74 | -51.06 | 210 | 212 | Vert |

PK - Peak detector

QP - Quasi-Peak detector

LnAv - Linear Average detector

LgAv - Log Average detector

Manufacturer: Kyocera

Device: Tri Band CDMA Mobile Phone

Model:C5215

Job#:13U14946 Tested By: JD/RM

8PSK (EDR)/ Mid Ch 2441 / DH5

Horizontal 2000 - 4000MHz

Horizontal 12000 - 18000MHz

| Test | Meter | | AF- | BOMS | | FCC Part | | FCC Part | | Azimuth | Height | |
|-----------|---------|----------|------|--------|------------------|------------------|--------|----------------|--------|---------|--------|----------|
| Frequency | Reading | Detector | 8932 | Factor | dB(uVolts/meter) | 15 | Margin | 15 | Margin | [Degs] | [cm] | Polarity |
| 12205 | 57.49 | PK | 37.2 | -48.52 | 46.17 | Subpart C 15.209 | (dB) | Subpart C Peak | (dB) | | | |
| 12205 | 44.77 | LnAv | 37.2 | -48.52 | 33.45 | 54 | -7.83 | 74 | -27.83 | 58 | 307 | Horz |
| 12205 | 58 | PK | 37.2 | -48.52 | 46.68 | 54 | -20.55 | 74 | -40.55 | 58 | 307 | Horz |
| 12205 | 44.83 | LnAv | 37.2 | -48.52 | 33.51 | 54 | -7.32 | 74 | -27.32 | 101 | 168 | Vert |
| 12205 | | | | | | 54 | -20.49 | 74 | -40.49 | 101 | 168 | Vert |

PK - Peak detector

QP - Quasi-Peak detector

LnAv - Linear Average detector

LgAv - Log Average detector

DATA HIGH CHANNEL

Manufacturer: Kyocera

Device: Tri Band CDMA Mobile Phone

Model:C5215

Job#:13U14946 Tested By: JD/RM

8PSK (EDR)/ Hi Ch 2480 / DH5

Horizontal 2000 - 4000MHz

| Test Frequency | Meter Reading | Detector | AF- 48106 | BOMS Factor [dB] | dB(uVolts/met er) | FCC Part 15 Subpart C 15.209 | Margin (dB) | FCC Part 15 Subpart C Peak | Margin (dB) | Azimuth [Degs] | Height [cm] | Polarity |
|-------------------|------------------|----------|--------------|---------------------|----------------------|---------------------------------------|----------------|-------------------------------------|----------------|-------------------|----------------|----------|
| 4960 | 63.82 | PK | 27.3 | -53.13 | 37.99 | 54 | -16.01 | 74 | -36.01 | 267 | 236 | Horz |
| 4960 | 51.32 | LnAv | 27.3 | -53.13 | 25.49 | 54 | -28.51 | 74 | -48.51 | 267 | 236 | Horz |
| 4960 | 63.34 | PK | 27.3 | -53.13 | 37.51 | 54 | -16.49 | 74 | -36.49 | 154 | 247 | Vert |
| 4960 | 50.38 | LnAv | 27.3 | -53.13 | 24.55 | 54 | -29.45 | 74 | -49.45 | 154 | 247 | Vert |

PK - Peak detector

QP - Quasi-Peak detector

LnAv - Linear Average detector

LgAv - Log Average detector

Manufacturer: Kyocera

Device: Tri Band CDMA Mobile Phone

Model:C5215

Job#:13U14946 Tested By: JD/RM

8PSK (EDR)/ Hi Ch 2480 / DH5

Horizontal 4000 - 8000MHz

| Test Frequency | Meter Reading | Detector | AF- 48106 | BOMS Factor [dB] | dB(uVolts/meter) | FCC Part 15 | Margin (dB) | FCC Part 15 | Margin (dB) | Azimuth [Degs] | Height [cm] | Polarity |
|-------------------|------------------|----------|--------------|---------------------|------------------|---------------------|----------------|-------------------|----------------|-------------------|----------------|----------|
| | | | | | | Subpart C 15.209 | | Subpart C Peak | | | | |
| 7440 | 61.27 | PK | 28.1 | -52.13 | 37.24 | 54 | -16.76 | 74 | -36.76 | 138 | 278 | Horz |
| 7440 | 48.68 | LnAv | 28.1 | -52.13 | 24.65 | 54 | -29.35 | 74 | -49.35 | 138 | 278 | Horz |
| 7440 | 62.8 | PK | 28.1 | -52.13 | 38.77 | 54 | -15.23 | 74 | -35.23 | 201 | 144 | Vert |
| 7440 | 50.12 | LnAv | 28.1 | -52.13 | 26.09 | 54 | -27.91 | 74 | -47.91 | 201 | 144 | Vert |

Horizontal 12000 - 18000MHz

| Test Frequency | Meter Reading | Detector | AF- 8932 | BOMS Factor [dB] | dB(uVolts/meter) | FCC Part 15 | Margin (dB) | FCC Part 15 | Margin (dB) | Azimuth [Degs] | Height [cm] | Polarity |
|-------------------|------------------|----------|-------------|---------------------|------------------|---------------------|----------------|-------------------|----------------|-------------------|----------------|----------|
| | | | | | | Subpart C 15.209 | | Subpart C Peak | | | | |
| 12400 | 57.55 | PK | 37.2 | -48.94 | 45.81 | 54 | -8.19 | 74 | -28.19 | 265 | 114 | Horz |
| 12400 | 45.08 | LnAv | 37.2 | -48.94 | 33.34 | 54 | -20.66 | 74 | -40.66 | 265 | 114 | Horz |
| 12400 | 57.84 | PK | 37.2 | -48.94 | 46.1 | 54 | -7.9 | 74 | -27.9 | 277 | 277 | Vert |
| 12400 | 45.02 | LnAv | 37.2 | -48.94 | 33.28 | 54 | -20.72 | 74 | -40.72 | 277 | 277 | Vert |

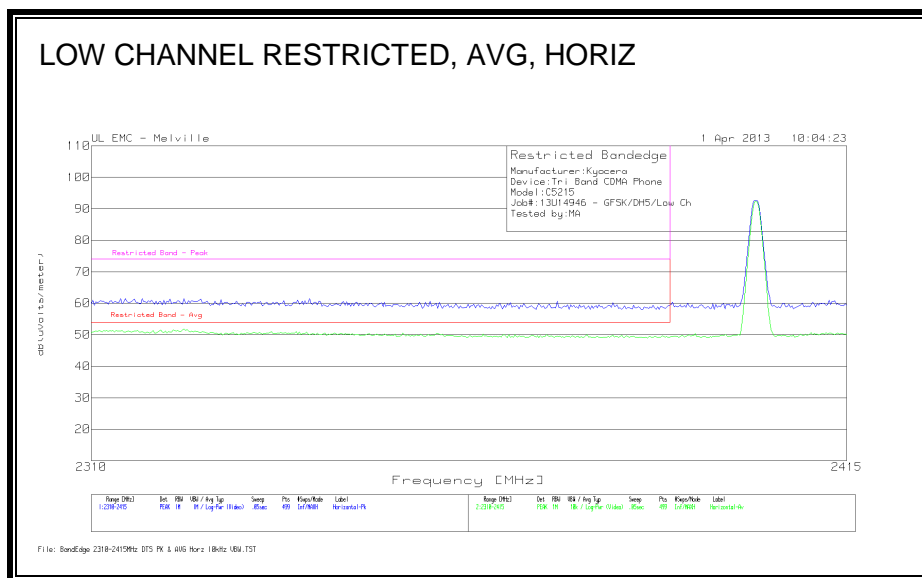
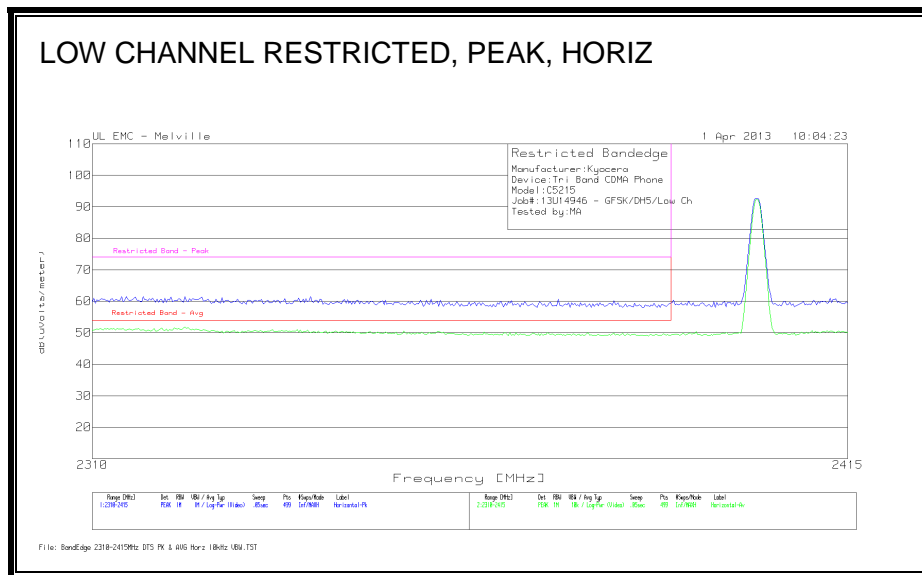
PK - Peak detector

QP - Quasi-Peak detector

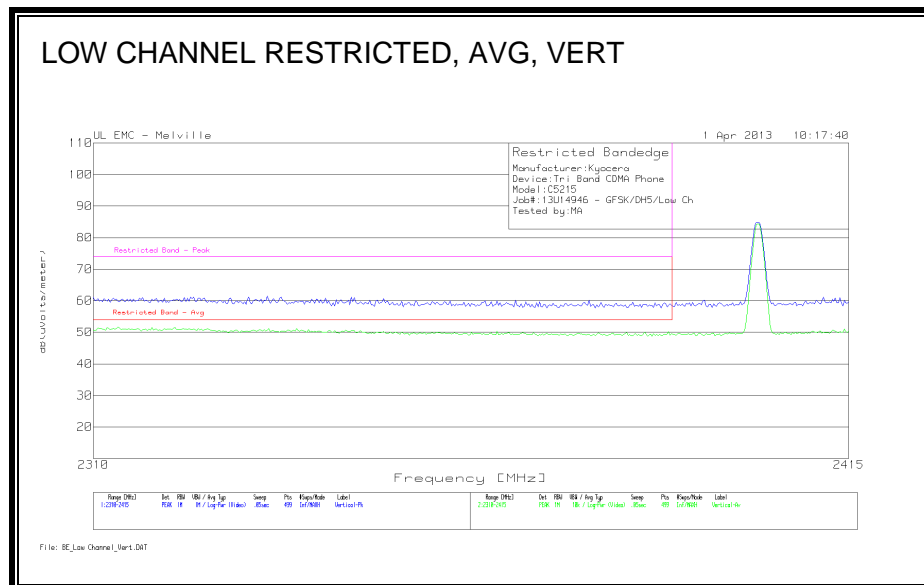
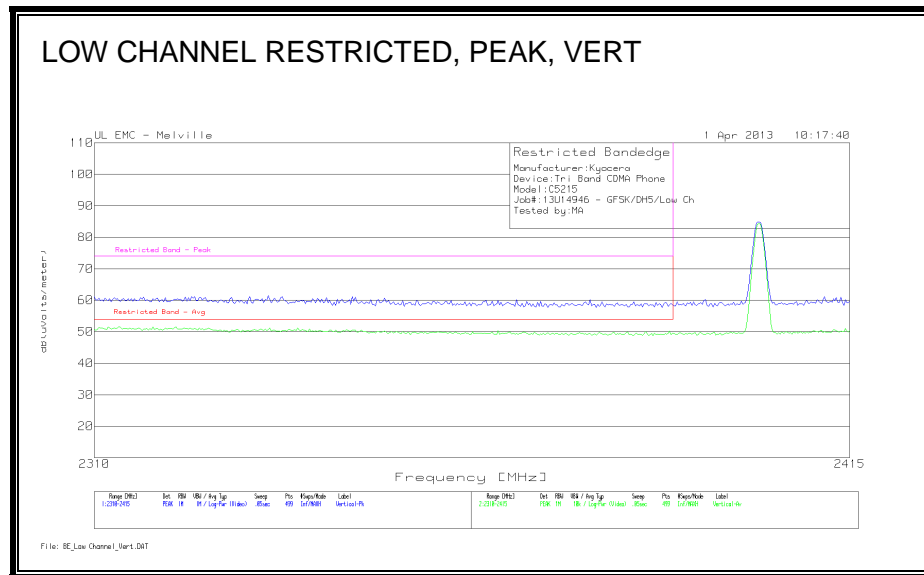
LnAv - Linear Average detector

8.2 BASIC DATA RATE GFSK MODULATION

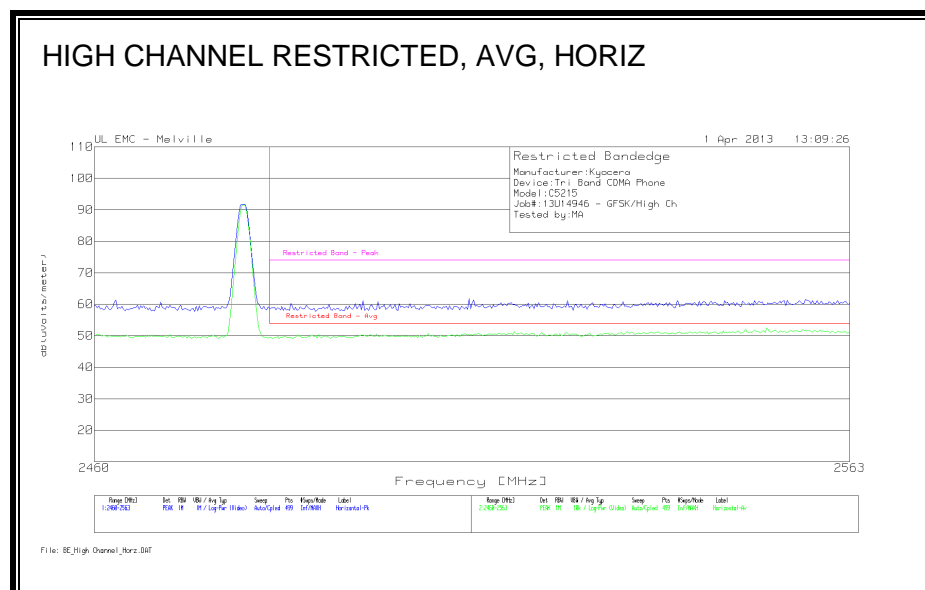
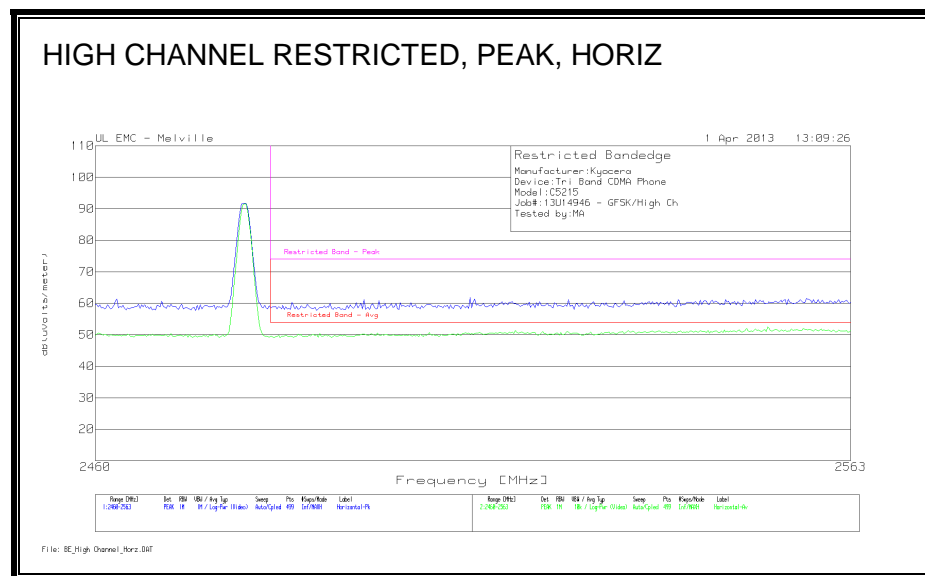
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



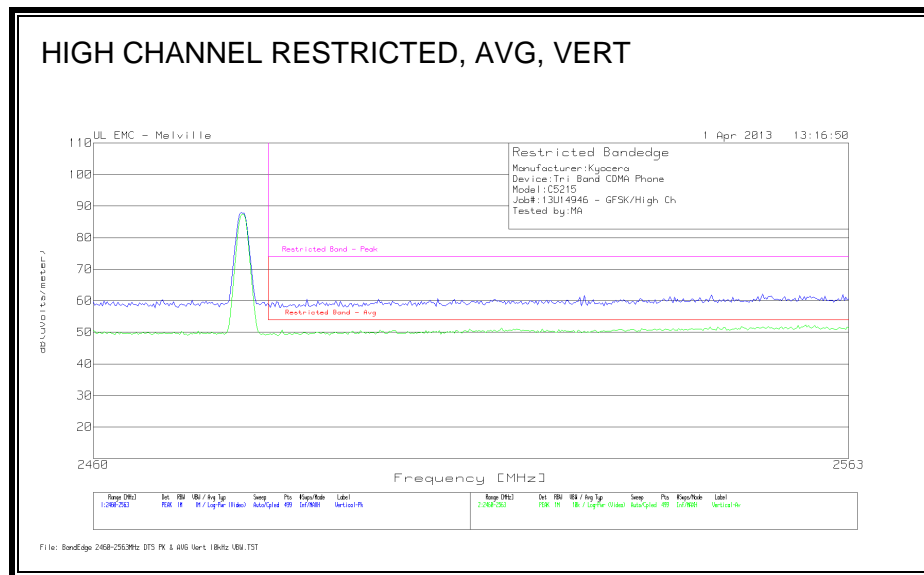
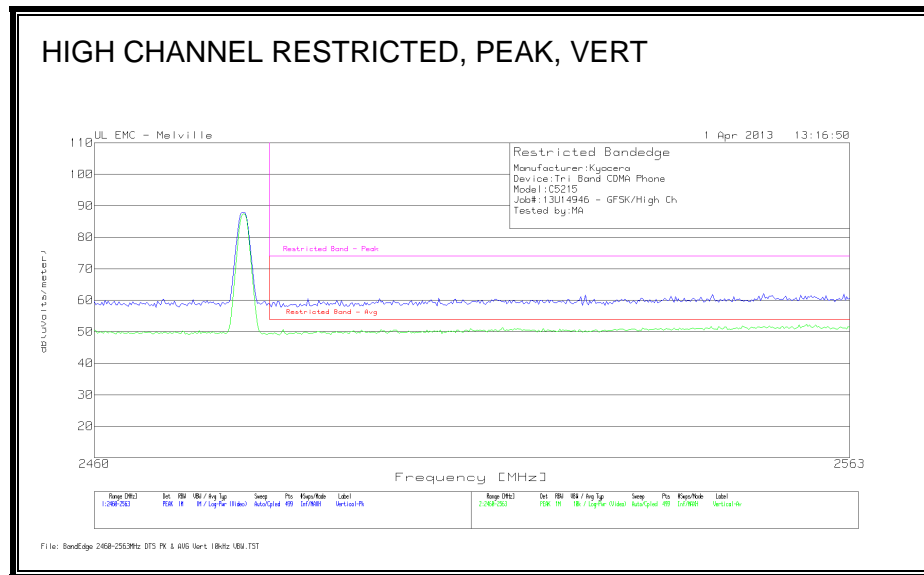
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



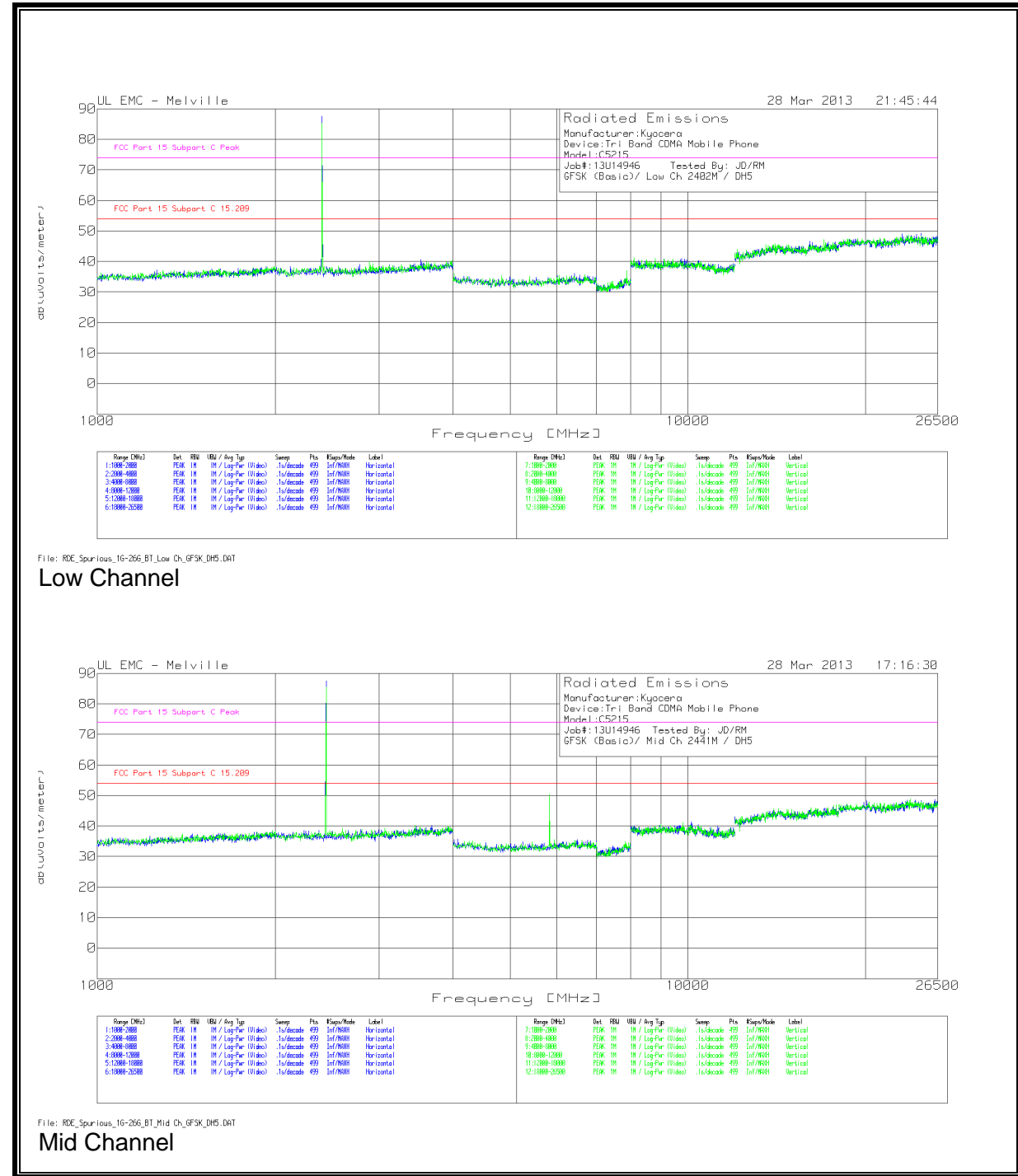
HIGH CHANNEL RESTRICTED, PEAK, HORIZ



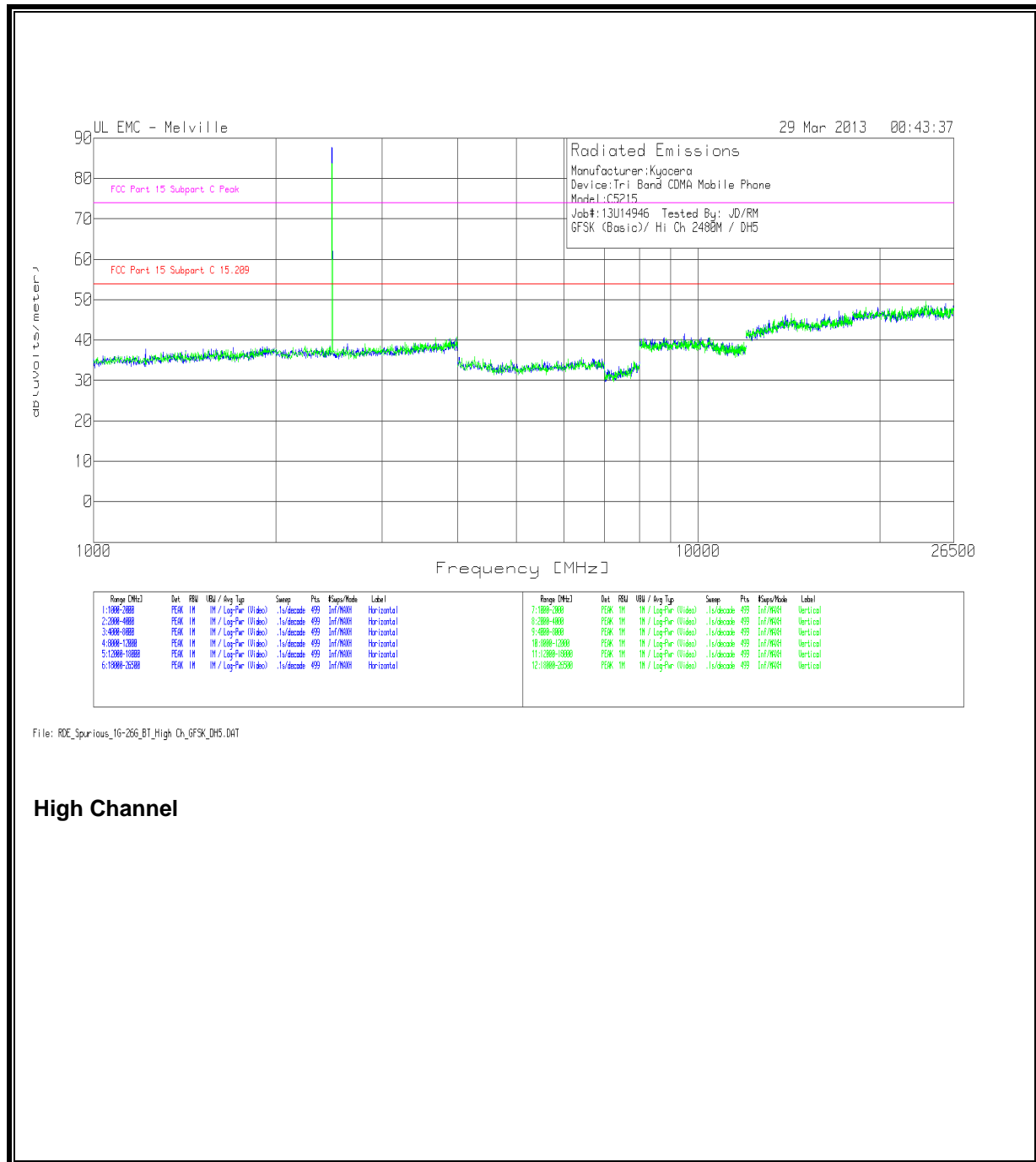
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



HARMONICS AND SPURIOUS EMISSIONS



HARMONICS AND SPURIOUS EMISSIONS



DATA LOW CHANNEL

Manufacturer: Kyocera

Device: Tri Band CDMA Mobile Phone

Model: C5215

Job#: 13U14946 Tested By: JD/RM

GFSK (Basic)/ Low Ch 2402M / DH5

Horizontal 4000 - 8000MHz

| Test Frequency | Meter Reading | Detector | AF-48106 (dbm) | BOMS Factor [dB] | dB(uVolts/meter) | FCC Part 15 Subpart C 15.209 | Margin (dB) | FCC Part 15 Subpart C Peak | Margin (dB) | Azimuth [Degs] | Height [cm] | Polarity |
|----------------|---------------|----------|----------------|------------------|------------------|------------------------------|-------------|----------------------------|-------------|----------------|-------------|----------|
| 4804 | 62.84 | PK | 27.1 | -53.31 | 36.63 | 54 | -17.37 | 74 | -37.37 | 333 | 141 | Horz |
| 4804 | 50.44 | LnAv | 27.1 | -53.31 | 24.23 | 54 | -29.77 | 74 | -49.77 | 333 | 141 | Horz |
| 4804 | 63.49 | PK | 27.1 | -53.31 | 37.28 | 54 | -16.72 | 74 | -36.72 | 296 | 265 | Vert |
| 4804 | 50.56 | LnAv | 27.1 | -53.31 | 24.35 | 54 | -29.65 | 74 | -49.65 | 296 | 265 | Vert |

Horizontal 12000 - 18000MHz

| Test Frequency | Meter Reading | Detector | AF-8932 (dbm) | BOMS Factor [dB] | dB(uVolts/meter) | FCC Part 15 Subpart C 15.209 | Margin (dB) | FCC Part 15 Subpart C Peak | Margin (dB) | Azimuth [Degs] | Height [cm] | Polarity |
|----------------|---------------|----------|---------------|------------------|------------------|------------------------------|-------------|----------------------------|-------------|----------------|-------------|----------|
| 12010 | 58.71 | PK | 37.2 | -49.26 | 46.65 | 54 | -7.35 | 74 | -27.35 | 237 | 187 | Horz |
| 12010 | 45.12 | LnAv | 37.2 | -49.26 | 33.06 | 54 | -20.94 | 74 | -40.94 | 237 | 187 | Horz |
| 12010 | 58.36 | PK | 37.2 | -49.26 | 46.3 | 54 | -7.7 | 74 | -27.7 | 174 | 230 | Vert |
| 12010 | 45.14 | LnAv | 37.2 | -49.26 | 33.08 | 54 | -20.92 | 74 | -40.92 | 174 | 230 | Vert |

PK - Peak detector

QP - Quasi-Peak detector

LnAv - Linear Average detector

LgAv - Log Average detector

Av - Average detector

CAV - CISPR Average detector

RMS - RMS detection

CRMS - CISPR RMS detection

DATA MID CHANNEL

Manufacturer: Kyocera

Device: Tri Band CDMA Mobile Phone

Model:C5215

Job#:13U14946 Tested By: JD/RM

GFSK (Basic)/ Mid Ch 2441M / DH5

Horizontal 4000 - 8000MHz

| Test Frequency | Meter Reading | Detector | AF-48106 (dbm) | BOMS Factor [dB] | dB(uVolts /meter) | FCC Part 15 Subpart C 15.209 | Margin (dB) | FCC Part 15 Subpart C Peak | Margin (dB) | Azimuth [Degs] | Height [cm] | Polarity |
|----------------|---------------|----------|----------------|------------------|-------------------|------------------------------|-------------|----------------------------|-------------|----------------|-------------|----------|
| 5827.66 | 61.22 | PK | 27.6 | -52.53 | 36.29 | 54 | -17.71 | 74 | -37.71 | 3 | 231 | Vert |
| 5827.66 | 49.73 | LnAv | 27.6 | -52.53 | 24.8 | 54 | -29.2 | 74 | -49.2 | 3 | 231 | Vert |
| 4882 | 64.32 | PK | 27.2 | -53.28 | 38.24 | 54 | -15.76 | 74 | -35.76 | 159 | 223 | Horz |
| 4882 | 52.21 | LnAv | 27.2 | -53.28 | 26.13 | 54 | -27.87 | 74 | -47.87 | 159 | 223 | Horz |
| 4882 | 62.95 | PK | 27.2 | -53.28 | 36.87 | 54 | -17.13 | 74 | -37.13 | 76 | 292 | Vert |
| 4882 | 50.91 | LnAv | 27.2 | -53.28 | 24.83 | 54 | -29.17 | 74 | -49.17 | 76 | 292 | Vert |
| 7323 | 60.15 | PK | 28 | -52.37 | 35.78 | 54 | -18.22 | 74 | -38.22 | 143 | 339 | Horz |
| 7323 | 47.04 | LnAv | 28 | -52.37 | 22.67 | 54 | -31.33 | 74 | -51.33 | 143 | 339 | Horz |
| 7323 | 60.66 | PK | 28 | -52.37 | 36.29 | 54 | -17.71 | 74 | -37.71 | 164 | 174 | Vert |
| 7323 | 47.77 | LnAv | 28 | -52.37 | 23.4 | 54 | -30.6 | 74 | -50.6 | 164 | 174 | Vert |

Horizontal 12000 - 18000MHz

| Test Frequency | Meter Reading | Detector | AF-8932 (dbm) | BOMS Factor [dB] | dB(uVolts/ meter) | FCC Part 15 Subpart C 15.209 | Margin (dB) | FCC Part 15 Subpart C Peak | Margin (dB) | Azimuth [Degs] | Height [cm] | Polarity |
|----------------|---------------|----------|---------------|------------------|-------------------|------------------------------|-------------|----------------------------|-------------|----------------|-------------|----------|
| 12205 | 58 | PK | 37.2 | -48.52 | 46.68 | 54 | -7.32 | 74 | -27.32 | 278 | 360 | Horz |
| 12205 | 44.75 | LnAv | 37.2 | -48.52 | 33.43 | 54 | -20.57 | 74 | -40.57 | 278 | 360 | Horz |
| 12205 | 58.31 | PK | 37.2 | -48.52 | 46.99 | 54 | -7.01 | 74 | -27.01 | 239 | 266 | Vert |
| 12205 | 44.74 | LnAv | 37.2 | -48.52 | 33.42 | 54 | -20.58 | 74 | -40.58 | 239 | 266 | Vert |

PK - Peak detector

QP - Quasi-Peak detector

LnAv - Linear Average detector

LgAv - Log Average detector

Av - Average detector

CAV - CISPR Average detector

RMS - RMS detection

DATA HIGH CHANNEL

Manufacturer: Kyocera

Device: Tri Band CDMA Mobile Phone

Model:C5215

Job#:13U14946 Tested By: JD/RM

GFSK (Basic)/ Hi Ch 2480M / DH5

Horizontal 4000 - 8000MHz

| Test Frequency | Meter Reading | Detector | AF-48106 (dbm) | BOMS Factor [dB] | dB(uVolts /meter) | FCC Part 15 Subpart C 15.209 | Margin (dB) | FCC Part 15 Subpart C Peak | Margin (dB) | Azimuth [Degs] | Height [cm] | Polarity |
|----------------|---------------|----------|----------------|------------------|-------------------|------------------------------|-------------|----------------------------|-------------|----------------|-------------|----------|
| 4960 | 64.86 | PK | 27.3 | -53.13 | 39.03 | 54 | -14.97 | 74 | -34.97 | 152 | 390 | Horz |
| 4960 | 53.19 | LnAv | 27.3 | -53.13 | 27.36 | 54 | -26.64 | 74 | -46.64 | 152 | 390 | Horz |
| 4960 | 63.57 | PK | 27.3 | -53.13 | 37.74 | 54 | -16.26 | 74 | -36.26 | 227 | 300 | Vert |
| 4960 | 51.67 | LnAv | 27.3 | -53.13 | 25.84 | 54 | -28.16 | 74 | -48.16 | 227 | 300 | Vert |
| 7440 | 61.15 | PK | 28.1 | -52.13 | 37.12 | 54 | -16.88 | 74 | -36.88 | 148 | 204 | Horz |
| 7440 | 48.93 | LnAv | 28.1 | -52.13 | 24.9 | 54 | -29.1 | 74 | -49.1 | 148 | 204 | Horz |
| 7440 | 62.4 | PK | 28.1 | -52.13 | 38.37 | 54 | -15.63 | 74 | -35.63 | 207 | 123 | Vert |
| 7440 | 52.14 | LnAv | 28.1 | -52.13 | 28.11 | 54 | -25.89 | 74 | -45.89 | 207 | 123 | Vert |

Horizontal 12000 - 18000MHz

| Test Frequency | Meter Reading | Detector | AF-8932 (dbm) | BOMS Factor [dB] | dB(uVolts/meter) | FCC Part 15 Subpart C 15.209 | Margin (dB) | FCC Part 15 Subpart C Peak | Margin (dB) | Azimuth [Degs] | Height [cm] | Polarity |
|----------------|---------------|----------|---------------|------------------|------------------|------------------------------|-------------|----------------------------|-------------|----------------|-------------|----------|
| 12400 | 57.71 | PK | 37.2 | -48.94 | 45.97 | 54 | -8.03 | 74 | -28.03 | 272 | 180 | Horz |
| 12400 | 44.92 | LnAv | 37.2 | -48.94 | 33.18 | 54 | -20.82 | 74 | -40.82 | 272 | 180 | Horz |
| 12400 | 57.63 | PK | 37.2 | -48.94 | 45.89 | 54 | -8.11 | 74 | -28.11 | 286 | 322 | Vert |
| 12400 | 44.84 | LnAv | 37.2 | -48.94 | 33.1 | 54 | -20.9 | 74 | -40.9 | 286 | 322 | Vert |

PK - Peak detector

QP - Quasi-Peak detector

LnAv - Linear Average detector

LgAv - Log Average detector

Av - Average detector

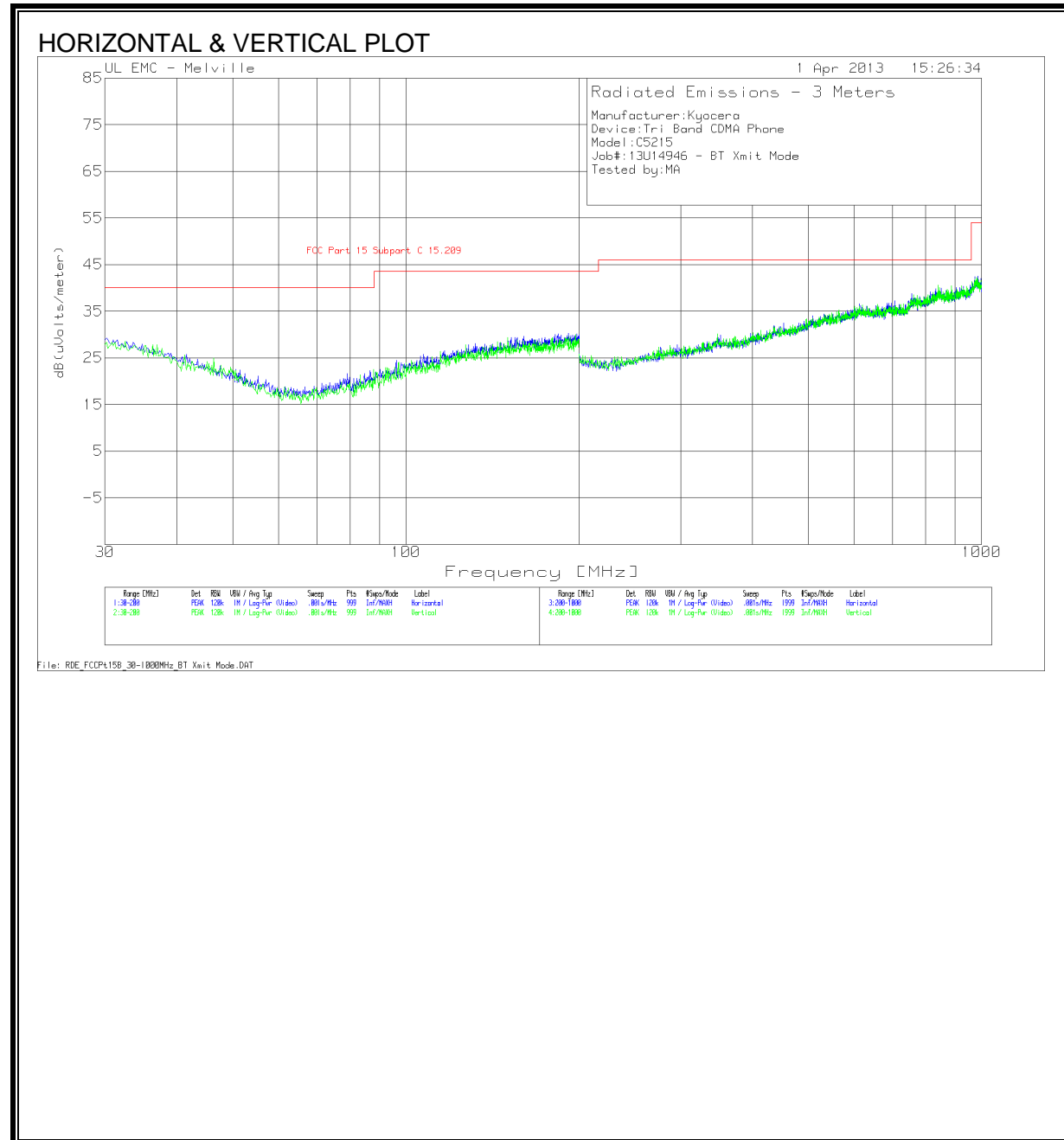
CAV - CISPR Average detector

RMS - RMS detection

CRMS - CISPR RMS detection

8.2. WORST-CASE BELOW 1 GHz

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL AND VERTICAL).



SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL AND HORIZONTAL)

Manufacturer: Kyocera

Device: Tri Band CDMA Phone

Model:C5215

Job#:13U14946 - BT Xmit Mode

Tested by: MA

Horizontal 30 - 200MHz

| Marker No. | Test Frequency | Meter Reading | Detector | AF-43441 (dB/m) | GL-3M | dB(uVolts/meter) | FCC Part 15 Subpart C 15.209 | Margin (dB) | Azimuth [Degs] | Height [cm] | Polarity |
|------------|----------------|---------------|----------|-----------------|-------|------------------|------------------------------|-------------|----------------|-------------|----------|
| 1 | 32.7227 | 11.64 | PK | 16.8 | 0 | 28.44 | 40 | -11.56 | 88 | 200 | Horz |
| 2 | 41.5716 | 12.15 | PK | 13.5 | 0.1 | 25.75 | 40 | -14.25 | 1 | 100 | Horz |
| 3 | 190.6406 | 13.08 | PK | 15.7 | 0.9 | 29.68 | 43.5 | -13.82 | 60 | 300 | Horz |

Horizontal 200 - 1000MHz

| Marker No. | Test Frequency | Meter Reading | Detector | AF-44067 (dB/m) | GL-3M | dB(uVolts/meter) | FCC Part 15 Subpart C 15.209 | Margin (dB) | Azimuth [Degs] | Height [cm] | Polarity |
|------------|----------------|---------------|----------|-----------------|-------|------------------|------------------------------|-------------|----------------|-------------|----------|
| 4 | 706.2531 | 15.21 | PK | 20.2 | 1.8 | 37.21 | 46 | -8.79 | 358 | 400 | Horz |
| 5 | 759.8799 | 14.19 | PK | 21.6 | 2 | 37.79 | 46 | -8.21 | 15 | 200 | Horz |
| 6 | 983.5918 | 14.69 | PK | 24.6 | 2.2 | 41.49 | 54 | -12.51 | 81 | 300 | Horz |
| 7 | 814.7074 | 15.02 | PK | 22.1 | 2.1 | 39.22 | 46 | -6.78 | 9 | 400 | Horz |

Vertical 200 - 1000MHz

| Marker No. | Test Frequency | Meter Reading | Detector | AF-44067 (dB/m) | GL-3M | dB(uVolts/meter) | FCC Part 15 Subpart C 15.209 | Margin (dB) | Azimuth [Degs] | Height [cm] | Polarity |
|------------|----------------|---------------|----------|-----------------|-------|------------------|------------------------------|-------------|----------------|-------------|----------|
| 8 | 660.2301 | 14.51 | PK | 20 | 2 | 36.51 | 46 | -9.49 | 328 | 400 | Vert |

PK - Peak detector

QP - Quasi-Peak detector

LnAv - Linear Average detector

9. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

| Frequency of Emission (MHz) | Conducted Limit (dBuV) | |
|-----------------------------|------------------------|-----------------------|
| | Quasi-peak | Average |
| 0.15-0.5 | 66 to 56 [*] | 56 to 46 [*] |
| 0.5-5 | 56 | 46 |
| 5-30 | 60 | 50 |

^{*} Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4.

The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

PASS

6 WORST EMISSIONS

Manufacturer: Kyocera

Device: Tri Band CDMA Mobile Phone

Model:C5215 Bluetooth

Job#:13U14946

Tested by: CD/MA

Line 1 .15 - 1MHz

| Marker No. | Test Frequency | Meter Reading | Detector | 47367 L1 (dB) | 8447D Preamp (dB) | (dB(uVolts)) | FCC Part 15 Subpart C QPk | Margin | FCC Part 15 Subpart C Avg | Margin |
|------------|----------------|---------------|----------|---------------|-------------------|--------------|---------------------------|--------|---------------------------|--------|
| 1 | 0.17862 | 64.31 | PK | 10.9 | -27.2 | 48.01 | 64.5 | -16.49 | 54.5 | -6.49 |
| 2 | 0.39255 | 55.32 | PK | 10.3 | -28 | 37.62 | 58 | -20.38 | 48 | -10.38 |
| 3 | 0.78692 | 49.53 | PK | 10.2 | -28.2 | 31.53 | 56 | -24.47 | 46 | -14.47 |

Line 1 1 - 30MHz

| Marker No. | Test Frequency | Meter Reading | Detector | 47367 L1 (dB) | 8447D Preamp (dB) | (dB(uVolts)) | FCC Part 15 Subpart C QPk | Margin | FCC Part 15 Subpart C Avg | Margin |
|------------|----------------|---------------|----------|---------------|-------------------|--------------|---------------------------|--------|---------------------------|--------|
| 4 | 1.45573 | 48.85 | PK | 10.1 | -28.3 | 30.65 | 56 | -25.35 | 46 | -15.35 |
| 5 | 5.68022 | 47.58 | PK | 10.2 | -28.3 | 29.48 | 60 | -30.52 | 50 | -20.52 |
| 6 | 1.22425 | 48.89 | PK | 10.1 | -28.3 | 30.69 | 56 | -25.31 | 46 | -15.31 |

Neutral .15 - 1MHz

| Marker No. | Test Frequency | Meter Reading | Detector | 47367 L1 (dB) | 8447D Preamp (dB) | (dB(uVolts)) | FCC Part 15 Subpart C QPk | Margin | FCC Part 15 Subpart C Avg | Margin |
|------------|----------------|---------------|----------|---------------|-------------------|--------------|---------------------------|--------|---------------------------|--------|
| 7 | 0.16039 | 65.63 | PK | 11.1 | -27 | 49.73 | 65.4 | -15.67 | 55.4 | -5.67 |
| 8 | 0.40676 | 53.53 | PK | 10.3 | -28.1 | 35.73 | 57.7 | -21.97 | 47.7 | -11.97 |
| 9 | 0.89865 | 65.73 | PK | 10.2 | -28.2 | 47.73 | 56 | -8.27 | 46 | 1.73 |

PK - Peak detector

QP - Quasi-Peak detector

LnAv - Linear Average detector

LgAv - Log Average detector

Av - Average detector

Manufacturer: Kyocera
Device: Tri Band CDMA Mobile Phone
Model:C5215 Bluetooth
Job#:13U14946
Tested by: CD/MA

Neutral 1 - 30MHz

| Marker No. | Test Frequency | Meter Reading | Detector | 47367 L1 (dB) | 8447D Preamp (dB) | (dB(uVolts)) | FCC Part 15 Subpart | Margin | FCC Part 15 Subpart | Margin |
|---------------|-------------------|------------------|----------|------------------|-------------------------|--------------|---------------------------|--------|---------------------------|--------|
| | | | | | | | C QPk | | C Avg | |
| 10 | 12.38588 | 45.7 | PK | 10.4 | -28.3 | 27.8 | 60 | -32.2 | 50 | -22.2 |
| 11 | 15.2649 | 42.4 | PK | 10.4 | -28.3 | 24.5 | 60 | -35.5 | 50 | -25.5 |
| 12 | 22.93989 | 47.11 | PK | 10.6 | -28.3 | 29.41 | 60 | -30.59 | 50 | -20.59 |

PK - Peak detector

QP - Quasi-Peak detector

LnAv - Linear Average detector

LgAv - Log Average detector

Av - Average detector

Manufacturer: Kyocera

Device: Tri Band CDMA Mobile Phone

Model:C5215 Bluetooth

Job#:13U14946

Tested by: CD/MA

Line 1 .15 - 1MHz

| Test | Meter | | 47367 | 8447D | | FCC Part 15 | | FCC | |
|-----------|---------|----------|---------|-------------|--------------|---------------|--------|-----------------------|--------|
| Frequency | Reading | Detector | L1 [dB] | Preamp [dB] | (dB(uVolts)) | Subpart C QPk | Margin | Part 15 Subpart C Avg | Margin |
| 0.17783 | 44.14 | Av | 11 | -27.2 | 27.94 | 64.59 | -36.65 | 54.59 | -26.65 |
| 0.3938 | 42.09 | Av | 10.3 | -28 | 24.39 | 57.98 | -33.59 | 47.98 | -23.59 |
| 0.78754 | 40.69 | Av | 10.2 | -28.2 | 22.69 | 56 | -33.31 | 46 | -23.31 |

Line 1 1 - 30MHz

| Test | Meter | | 47367 | 8447D | | FCC Part 15 | | FCC | |
|-----------|---------|----------|---------|-------------|--------------|---------------|--------|-----------------------|--------|
| Frequency | Reading | Detector | L1 [dB] | Preamp [dB] | (dB(uVolts)) | Subpart C QPk | Margin | Part 15 Subpart C Avg | Margin |
| 1.47756 | 40.89 | Av | 10.1 | -28.3 | 22.69 | 56 | -33.31 | 46 | -23.31 |
| 5.70534 | 40.59 | Av | 10.2 | -28.3 | 22.49 | 60 | -37.51 | 50 | -27.51 |
| 1.21842 | 40.49 | Av | 10.2 | -28.3 | 22.39 | 56 | -33.61 | 46 | -23.61 |

Neutral .15 - 1MHz

| Test | Meter | | 47367 | 8447D | | FCC Part 15 | | FCC | |
|-----------|---------|----------|---------|-------------|--------------|---------------|--------|-----------------------|--------|
| Frequency | Reading | Detector | L1 [dB] | Preamp [dB] | (dB(uVolts)) | Subpart C QPk | Margin | Part 15 Subpart C Avg | Margin |
| 0.15909 | 46.3 | Av | 11.1 | -27 | 30.4 | 65.51 | -35.11 | 55.51 | -25.11 |
| 0.40673 | 40.89 | Av | 10.3 | -28.1 | 23.09 | 57.71 | -34.62 | 47.71 | -24.62 |
| 0.90005 | 40.69 | Av | 10.2 | -28.2 | 22.69 | 56 | -33.31 | 46 | -23.31 |

Neutral 1 - 30MHz

| Test | Meter | | 47367 | 8447D | | FCC Part 15 | | FCC | |
|-----------|---------|----------|---------|-------------|--------------|---------------|--------|-----------------------|--------|
| Frequency | Reading | Detector | L1 [dB] | Preamp [dB] | (dB(uVolts)) | Subpart C QPk | Margin | Part 15 Subpart C Avg | Margin |
| 12.3851 | 40.59 | Av | 10.4 | -28.3 | 22.69 | 60 | -37.31 | 50 | -27.31 |
| 15.2975 | 40.99 | Av | 10.4 | -28.3 | 23.09 | 60 | -36.91 | 50 | -26.91 |
| 22.9661 | 40.79 | Av | 10.6 | -28.3 | 23.09 | 60 | -36.91 | 50 | -26.91 |

PK - Peak detector

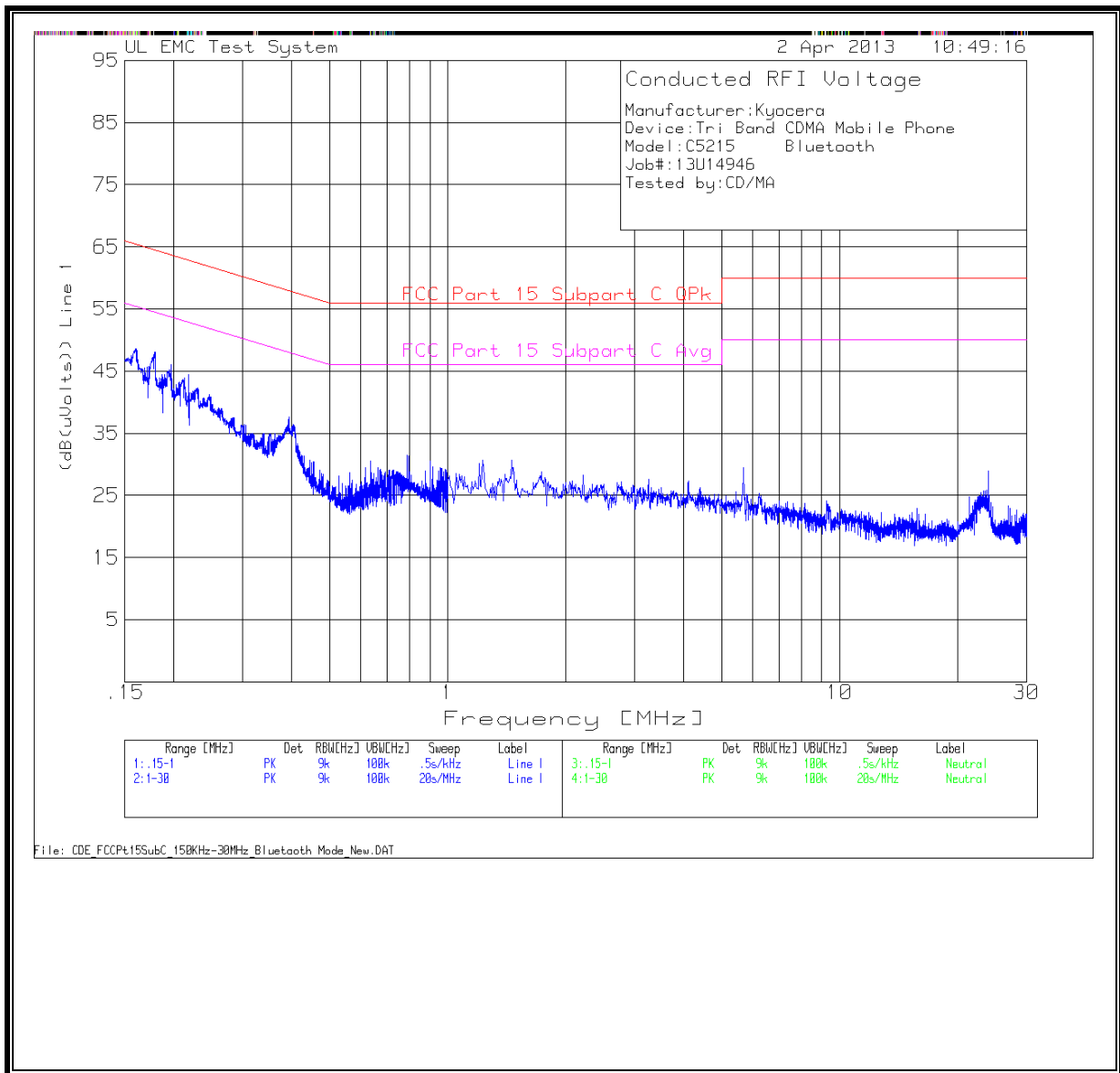
QP - Quasi-Peak detector

LnAv - Linear Average detector

LgAv - Log Average detector

Av - Average detector

LINE 1 RESULTS



LINE 2 RESULTS

