Cellphone-Mate, Inc.

ADDENDUM TO TEST REPORT 95252-8

Mobile Wideband Consumer Signal Booster
Model: TriFlex-2Go-A

Tested To The Following Standards:

FCC Part 27C

Report No.: 95252-8A

Date of issue: April 4, 2014

A2LA ACCREDITED
Testing Certificates:
803.01, 803.02, 803.05, 803.06

This test report bears the accreditation symbol indicating that the testing performed herein meets the test and reporting requirements of ISO/IEC 17025 under the applicable scope of EMC testing for CKC Laboratories, Inc.

We strive to create long-term, trust based relationships by providing sound, adaptive, customer first testing services. We embrace each of our customers' unique EMC challenges, not as an interruption to set processes, but rather as the reason we are in business.

TABLE OF CONTENTS

Administrative Information 3

Test Report Information 3

Revision History 3

Report Authorization 3

Test Facility Information 4

Software Versions 4

Site Registration & Accreditation Information 4

Summary of Results 5

Conditions During Testing 5

Equipment Under Test 6

Peripheral Devices 6

FCC Part 27 7

2.1049(I) Occupied Bandwidth 7

2.1051 / 27.53(c) / 27.53(f) / 27.53(g) Spurious Emissions at Antenna Terminals 15

2.1053 / 27.53(c) / 27.53(f) / 27.53(g) Field Strength of Spurious Radiation 20

2.1055 Frequency Stability 26

Supplemental Information 27

Measurement Uncertainty 27

Emissions Test Details 27

ADMINISTRATIVE INFORMATION

Test Report Information

REPORT PREPARED FOR:

Cellphone-Mate, Inc.
48346 Milmont Drive
Fremont, CA 94538

Representative: Hongtao Zhan
Customer Reference Number: CKC20140123

REPORT PREPARED BY:

Dianne Dudley
CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

Project Number: 95252

DATE OF EQUIPMENT RECEIPT: January 23, 2014
DATE(S) OF TESTING: January 30-February 10, 2014

Revision History

Original: Testing of Mobile Wideband Consumer Signal Booster, TriFlex-2Go-A to FCC Part 20, Section 20.21.
Addendum A: Replace readings data and plot in section 2.1053 / 27.53(c) / 27.53(f) / 27.53(g) Field Strength of Spurious Radiation.

Report Authorization

The test data contained in this report documents the observed testing parameters pertaining to and are relevant for only the sample equipment tested in the agreed upon operational mode(s) and configuration(s) as identified herein. Compliance assessment remains the client's responsibility. This report may not be used to claim product endorsement by A2LA or any government agencies. This test report has been authorized for release under quality control from CKC Laboratories, Inc.

Steve Behm
Director of Quality Assurance & Engineering Services
CKC Laboratories, Inc.

Test Facility Information

Our laboratories are configured to effectively test a wide variety of product types. CKC utilizes first class test equipment, anechoic chambers, data acquisition and information services to create accurate, repeatable and affordable test results.

TEST LOCATION(S):
CKC Laboratories, Inc.
110 Olinda Place
Brea, CA 92823

Software Versions

CKC Laboratories Proprietary Software	Version
EMITest Emissions	5.00.14

Site Registration & Accreditation Information

Location	CB #	TAIWAN	CANADA	FCC	JAPAN
Brea D	US0060	SL2-IN-E-1146R	3082D-2	100638	A-0147

SUMMARY OF RESULTS

Standard / Specification: FCC Part(s) 2 / 27C

Test Procedure/Method	Description	Results
2.1046	RF Power Output	NA[1]
2.1047	Modulation Characteristics	NA[1]
2.1049(I)	Occupied Bandwidth	Pass
2.1051 / 27.53(c) / 27.53(f) / 27.53(g)	Spurious Emissions at Antenna Terminals	Pass
2.1053 / 27.53(c) / 27.53(f) / 27.53(g)	Field Strength of Spurious Radiation	Pass
2.1055	Frequency Stability	NA[2]

NA[1] = A different standard applies, see applicable test report.
NA[2] = Not applicable. See the section in the report for the reason.

Conditions During Testing

This list is a summary of the conditions noted for or modifications made to the equipment during testing.

Summary of Conditions
None

EQUIPMENT UNDER TEST (EUT)

EQUIPMENT UNDER TEST

Mobile Wideband Consumer Signal Booster
Manuf: Cellphone-Mate, Inc.
Model: TriFlex-2Go-A
Serial: None

PERIPHERAL DEVICES

The EUT was tested with the following peripheral device(s):

Signal Generator
Manuf: Agilent
Model: E4433B
Serial: US40052164

Signal Generator
Manuf: Agilent
Model: E4433B
Serial: US40053279

Power Divider
Manuf: Anaren
Model: 44000
Serial: 0583

50 ohm Load
Manuf: Generic
Model: Generic
Serial: None

Power Supply
Manuf: SureCall
Model: GFP451DA-0945-1
Serial: 1211-0000323

Signal Generator
Manuf: Agilent
Model: E4438C
Serial: MY42081492

Programmer
Manuf: Cellphone-Mate, Inc.
Model: SureCall
Serial: None

Signal Generator
Manuf: Agilent
Model: E4438C
Serial: MY42081492

FCC PART 27

This report contains EMC emissions test results under United States Federal Communications Commission (FCC) requirements for licensed devices. 47 CFR Part 27: Miscellaneous Wireless Communication Services

2.1049(I) Occupied Bandwidth

Test Conditions / Setup

Test Location: CKC Laboratories • 110 Olinda Place • Brea, CA 92823 • 714-993-6112

Customer: **Cellphone-Mate, Inc.**
Specification: **47 CFR §2.1049(i) Occupied Bandwidth**
Work Order #: **95252** Date: 1/30/2014
Test Type: **Conducted Emissions** Time: 16:01:09
Equipment: **Mobile Wideband Consumer Signal Booster** Sequence#: 9
Manufacturer: Cellphone-Mate, Inc. Tested By: Don Nguyen
Model: TriFlex-2Go-A 120V 60Hz
S/N: NA

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03431	Attenuator	89-20-21	9/5/2013	9/5/2015
T2	AN02945	Cable	32022-2-2909K-36TC	10/30/2013	10/30/2015
T3	AN02672	Spectrum Analyzer	E4446A	9/4/2012	9/4/2014

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Mobile Wideband Consumer Signal Booster*	Cellphone-Mate, Inc.	TriFlex-2Go-A	NA

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	Agilent	E4433B	US40052164
Signal Generator	Agilent	E4438C	MY42081492
Power Supply	SureCall	GFP451DA-0945-1	1211-0000323

Test Conditions / Notes:

The equipment under test (EUT) is placed on the table top. EUT set at maximum gain. Signal generator is connected to input port of EUT. Output port of EUT is connected to spectrum analyzer via 20db attenuator and RF cable.
Evaluation performed at the Outside (Donor) and Inside (Server) antenna port.

Input and output screen captures where made at the center frequency of each of the following two bands:

UL 698-716
DL 728-746

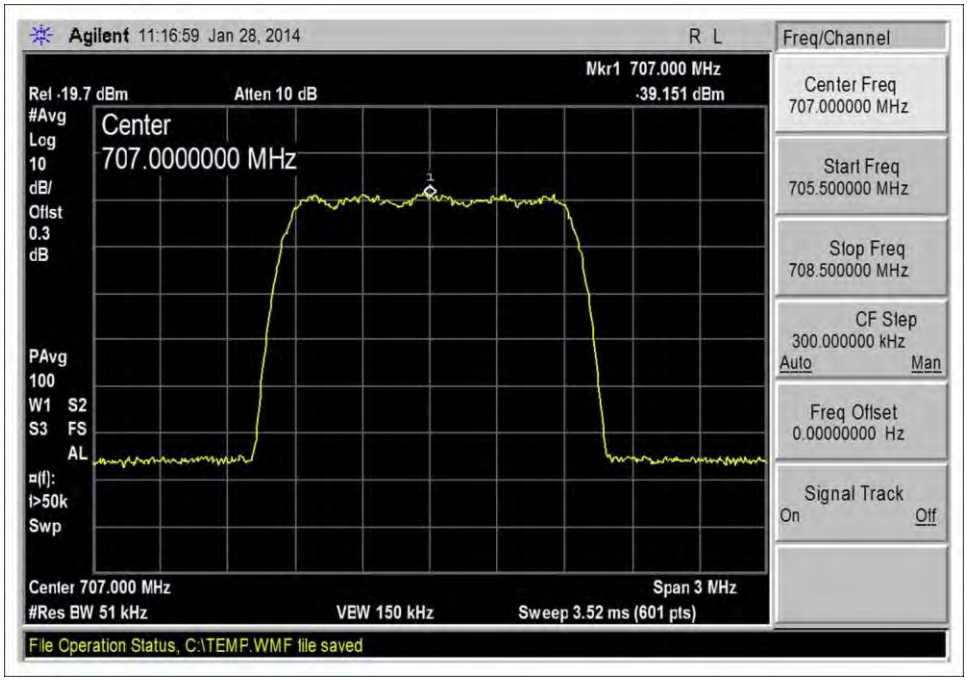
Carrier was modulated with GSM, CDMA, and LTE.

Test procedure: The test was performed in accordance with section 7.10 of the FCC Publication: 935210 D03 Wideband Consumer Signal Booster Measurement Guidance DR04-41516 January 21, 2014
Test environment conditions: 22°C, 31%, 100kPa

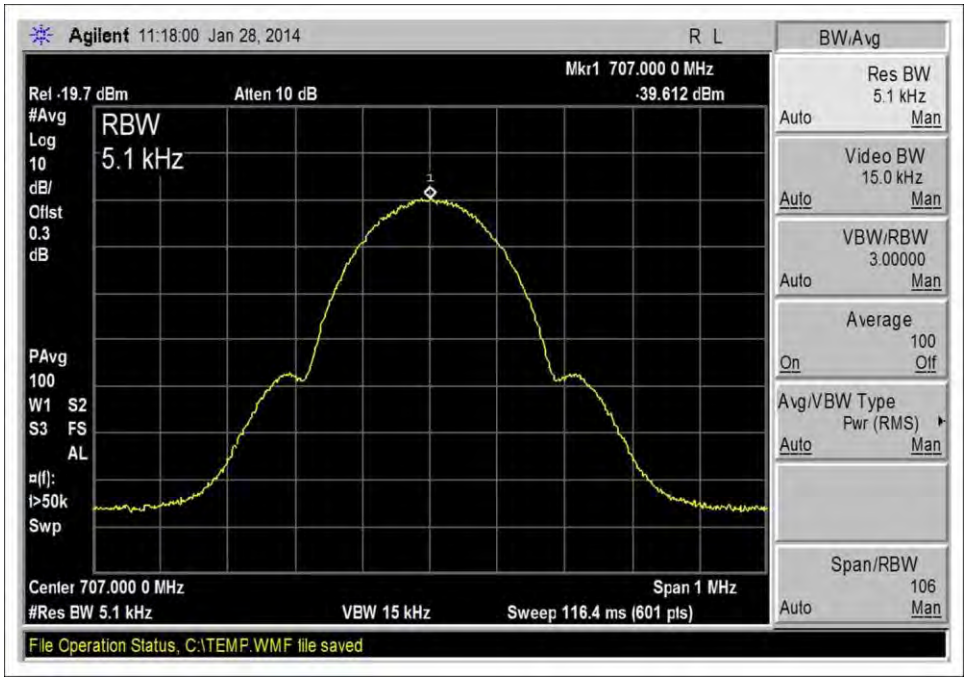
Temperature: 21°C, Humidity: 39%, Pressure: 100kPa

Site D

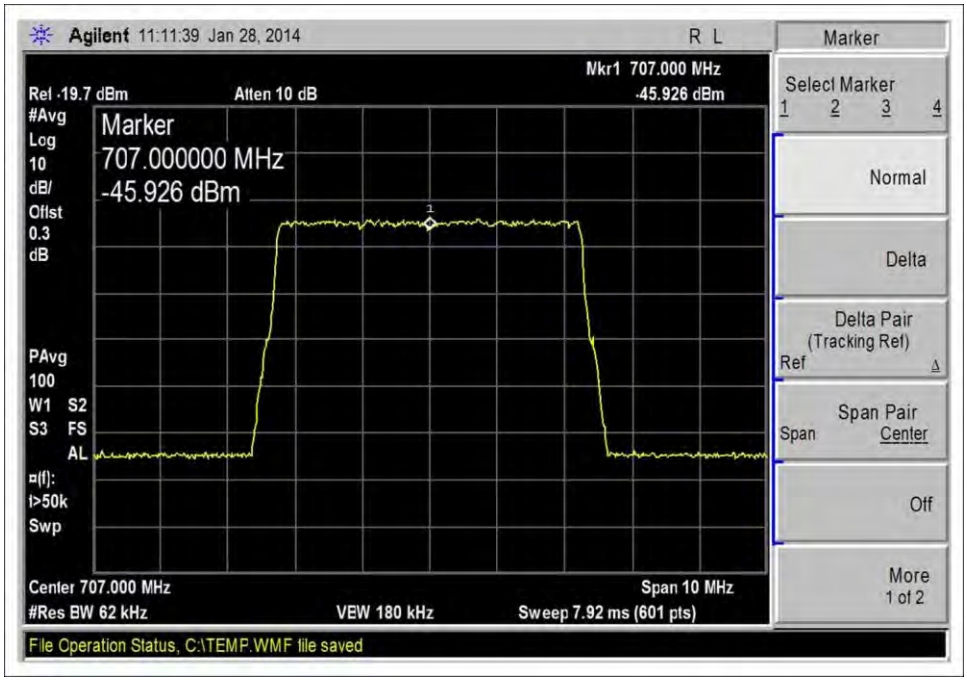
Test Data



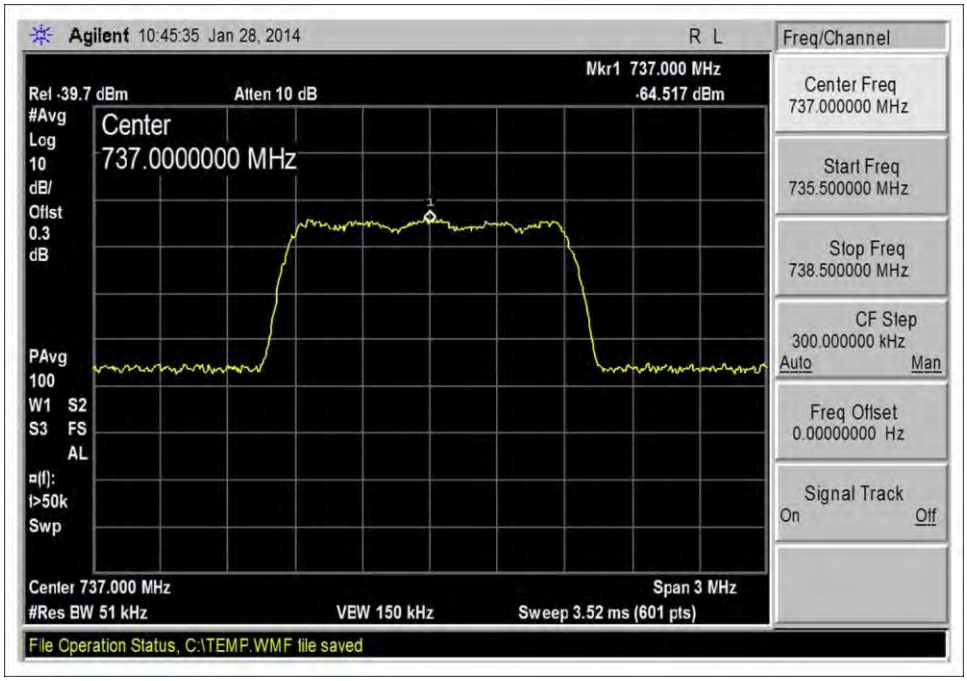
CDMA_UL 698-716_Input



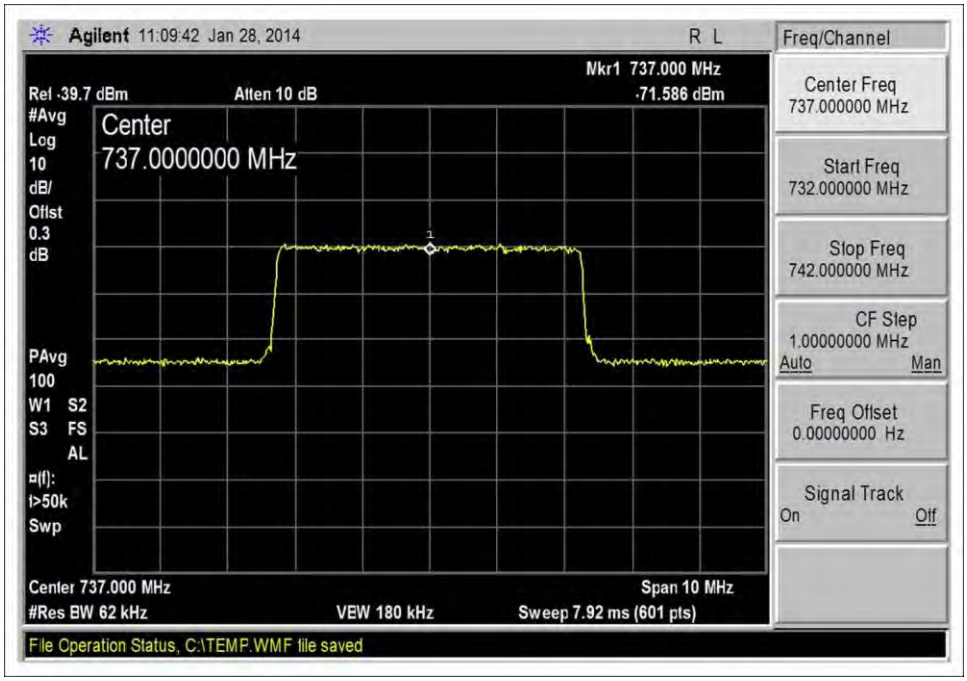
GSM_UL 698-716_Input



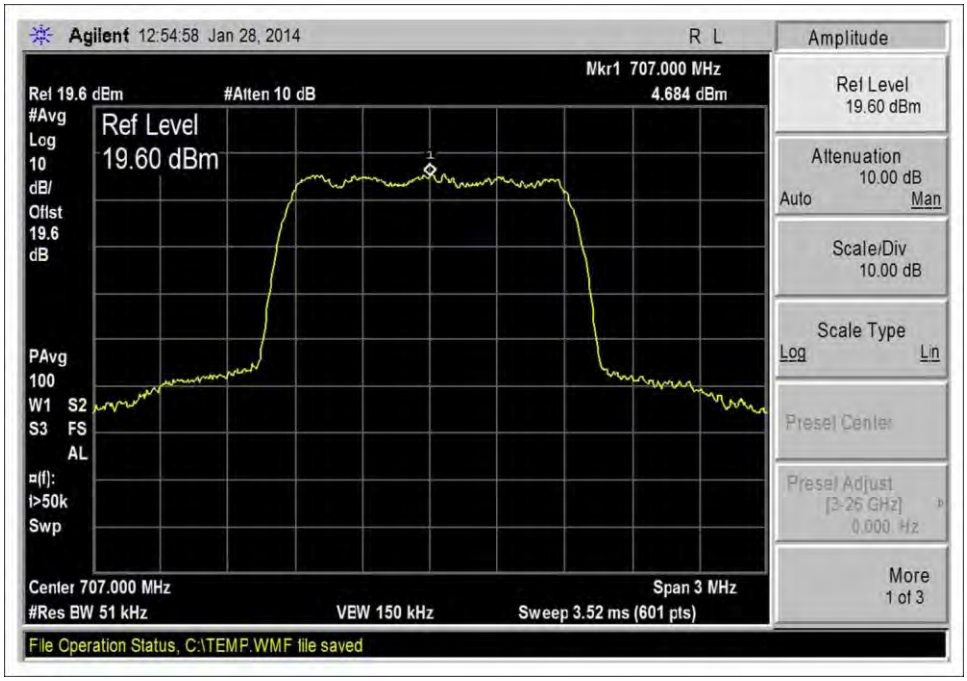
LTE_UL 698-716_Input



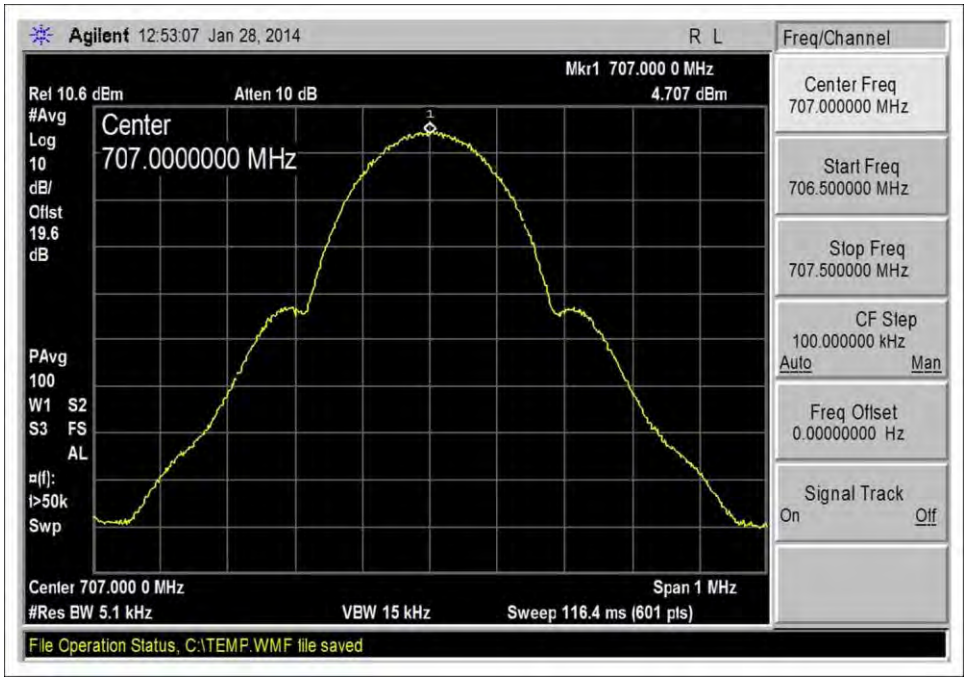
CDMA_DL 728-746_Input



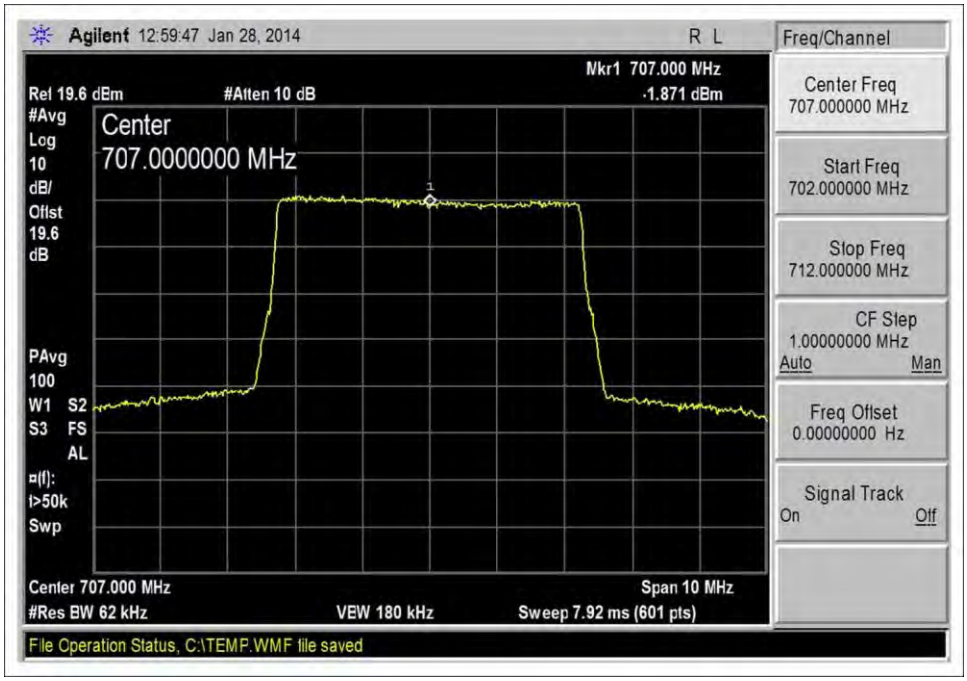
LTE_DL 728-746_Input



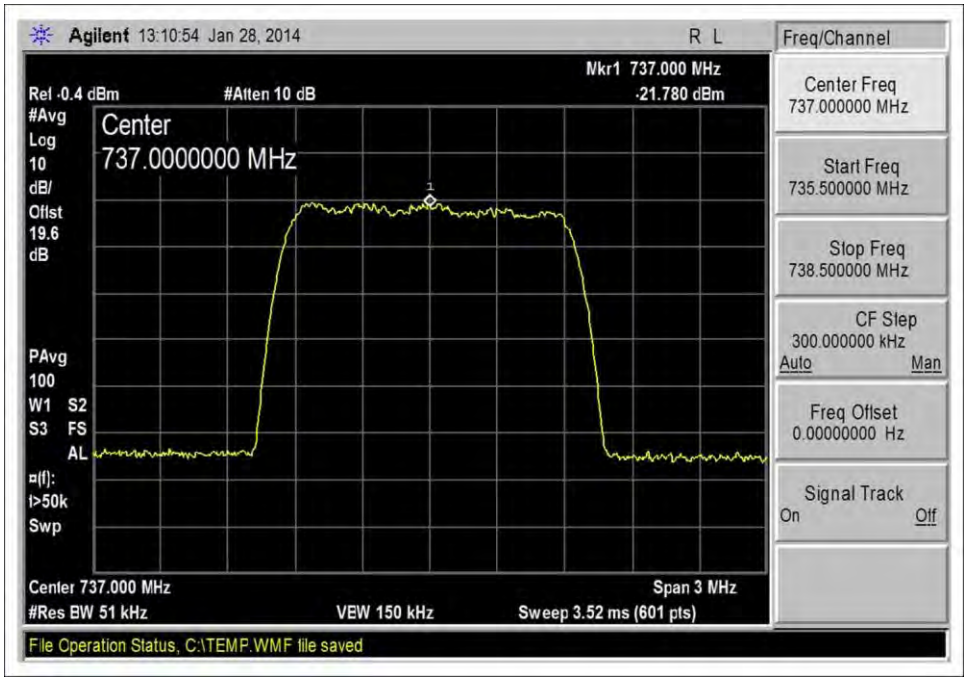
CDMA_UL 698-716_Output



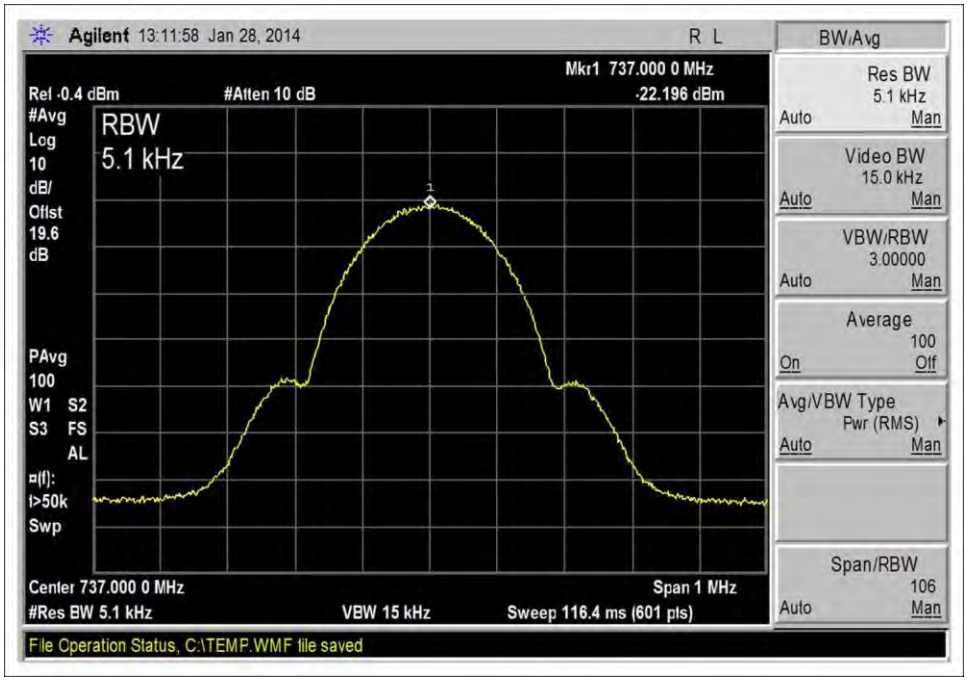
GSM_UL 698-716_Output



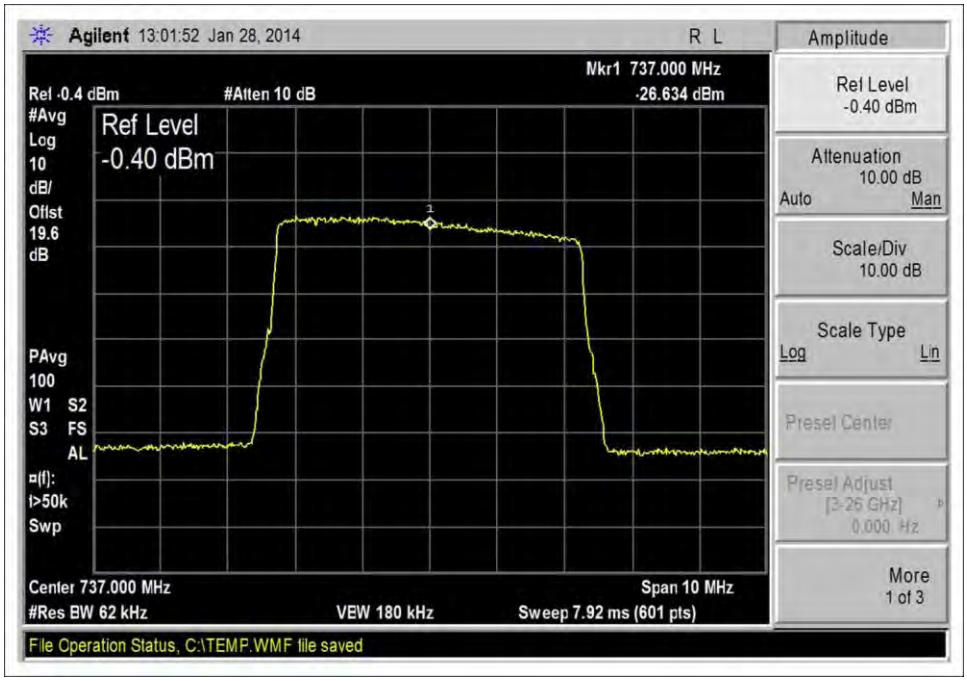
LTE_UL 698-716_Output



CDMA_DL 728-746_Output

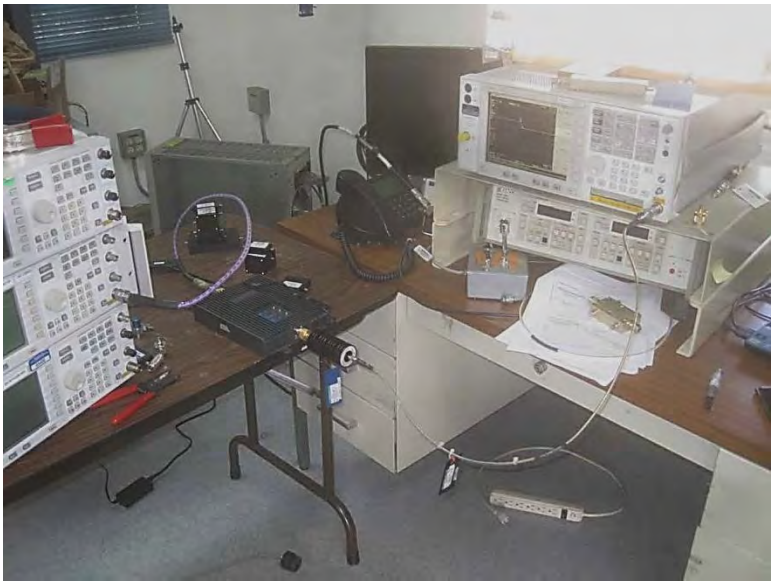


GSM_DL 728-746_Output



LTE_DL 728-746_Output

Test Setup Photo(s)



2.1051 / 27.53(c) / 27.53(f) / 27.53(g) Spurious Emissions at Antenna Terminals

Test Data

Test Location: CKC Laboratories • 110 Olinda Place • Brea, CA 92823 • 714-993-6112

Customer:	**Cellphone-Mate, Inc.**		
Specification:	**47 CFR §27.53(f) Spurious Emissions**		
Work Order #:	**95252**	Date:	1/30/2014
Test Type:	**Conducted Emissions**	Time:	16:01:09
Equipment:	**Mobile Wideband Consumer Signal Booster**	Sequence#:	9
Manufacturer:	Cellphone-Mate, Inc.	Tested By:	Don Nguyen
Model:	TriFlex-2Go-A		120V 60Hz
S/N:	NA		

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03431	Attenuator	89-20-21	9/5/2013	9/5/2015
T2	AN02945	Cable	32022-2-2909K-36TC	10/30/2013	10/30/2015
T3	AN02672	Spectrum Analyzer	E4446A	9/4/2012	9/4/2014

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Mobile Wideband Consumer Signal Booster*	Cellphone-Mate, Inc.	TriFlex-2Go-A	NA

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	Agilent	E4433B	US40052164
Power Supply	SureCall	GFP451DA-0945-1	1211-0000323

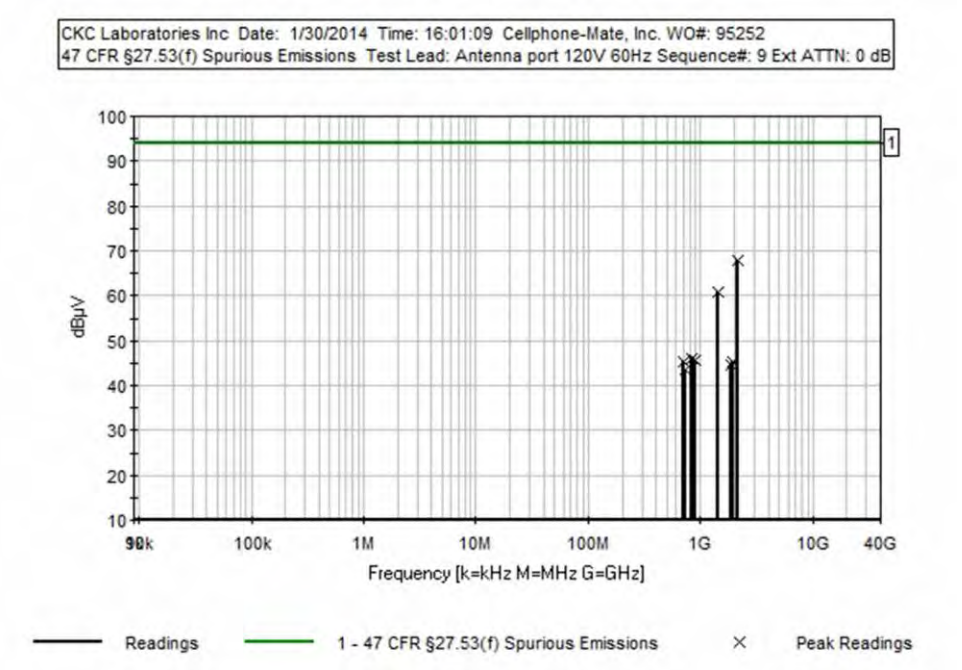
Test Conditions / Notes:

The equipment under test (EUT) is placed on the table top. EUT set at maximum gain. Signal generator is connected to input port of EUT. Output port of EUT is connected to spectrum analyzer via 20db attenuator and RF cable. Evaluation performed at the Outside (Donor) and Inside (Server) antenna port.
UL 698-716
DL 728-746
TXFreq = Center frequency of above listed bands.
Modulation: CW
Frequency range of measurement = 9kHz to 8 GHz.
9kHz-150 kHz, RBW=200 Hz, VBW=200Hz;150kHz-30MHz, RBW=9kHz,VBW=9kHz;30MHz-1000MHz, RBW=120kHz,VBW=120kHz;1000MHz-8000MHz, RBW=1MHz,VBW=1MHz
Test procedure: The test was performed in accordance with section 7.6 of the FCC Publication: 935210 D03 Wideband Consumer Signal Booster Measurement Guidance DR04-41516 January 21, 2014
Temperature: 21°C, Humidity: 39%, Pressure: 100kPa
Site D
No emission found when measuring downlink output port.

Ext Attn: 0 dB

Measurement Data: Reading listed by order taken. Test Lead: Antenna port

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	1413.370M	40.8	+19.3	+0.6	+0.0		+0.0	60.7	94.0 UL 698-716MHz	-33.3	Anten
2	2119.670M	47.5	+19.4	+0.8	+0.0		+0.0	67.7	94.0 UL 698-716MHz	-26.3	Anten
3	703.360M	25.6	+19.3	+0.3	+0.0		+0.0	45.2	94.0 Max Noise_UL 698-716, no input signal	-48.8	Anten
4	845.330M	26.4	+19.2	+0.3	+0.0		+0.0	45.9	94.0 Max Noise_UL 824-849, no input signal	-48.1	Anten
5	1869.400M	24.7	+19.3	+0.7	+0.0		+0.0	44.7	94.0 Max Noise_UL 1850-1910, no input signal	-49.3	Anten
6	735.920M	24.1	+19.2	+0.3	+0.0		+0.0	43.6	94.0 Max Noise_DL 728-746, no input signal	-50.4	Anten
7	882.080M	25.9	+19.3	+0.3	+0.0		+0.0	45.5	94.0 Max Noise_DL 869-894, no input signal	-48.5	Anten
8	1952.600M	25.2	+19.4	+0.7	+0.0		+0.0	45.3	94.0 Max Noise_DL 1930-1990, no input signal	-48.7	Anten


CKC Laboratories Inc Date: 1/30/2014 Time: 16:01:09 Cellphone-Mate, Inc. WO#: 95252
47 CFR §27.53(f) Spurious Emissions Test Lead: Antenna port 120V 60Hz Sequence#: 9 Ext ATTN: 0 dB
dBµV
100
90
80
70
60
50
40
30
20
10
1
90k
100k
1M
10M
100M
1G
10G
40G
Frequency [k=kHz M=MHz G=GHz]
Readings
1 - 47 CFR §27.53(f) Spurious Emissions
Peak Readings

LIMIT LINE FOR SPURIOUS CONDUCTED EMISSION

REQUIRED ATTENUATION = 43+10 LOG P DB

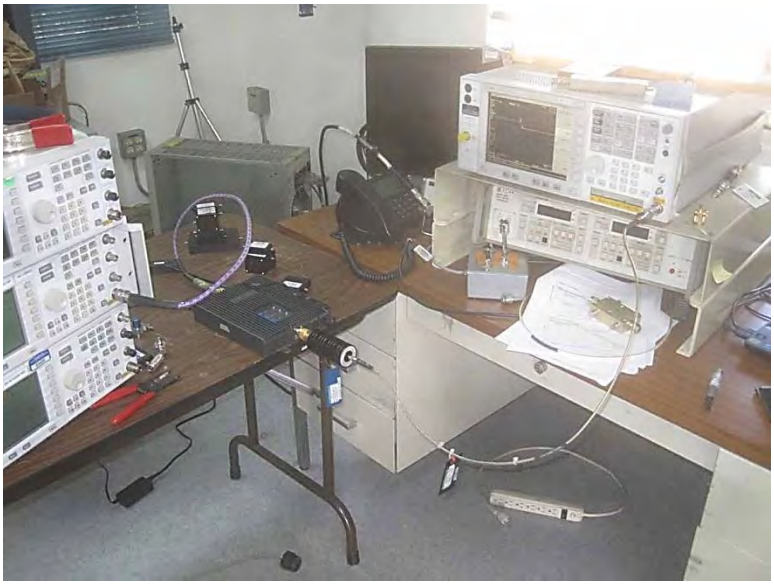
Limit line (dBuV) = V_{dBuv} - Attenuation

$$V_{dBuV} = 20 \text{ Log } \frac{V}{1 \text{ x } 10^{-6}}$$
$$= 20\left(\text{Log } V - \text{Log } 1 \text{ x } 10^{-6}\right)$$
$$= 20 \text{ Log } V - 20 \text{ Log} 1 \text{ x } 10^{-6}$$
$$= 20 \text{ Log } V - 20(-6)$$
$$= 20 \text{ Log } V + 120$$

$$\text{Attenuation} = 43 + 10 \text{ Log } P$$
$$= 43 + 10 \text{ Log } \frac{V^2}{R}$$
$$= 43 + 10\left(\text{Log } V^2 - \text{Log } R\right)$$
$$= 43 + 10\left(2 \text{ Log } V - \text{Log } R\right)$$
$$= 43 + 20 \text{ Log } V - 10 \text{ Log } R$$

Limit line = V_{dBuv} - Attenuation
= 20 Log V + 120 – (43 + 20 Log V – 10Log R)
= 20 Log V + 120 – 43 – 20 Log V + 10Log R
= 20 Log V + 120 – 43 – 20 Log V + 10Log R
= 120 – 43 + 10 Log 50 Note : R = 50 Ω
= 120 –43 + 16.897
= 94 dBuV at any power level

Test Setup Photo(s)



2.1053 / 27.53(c) / 27.53(f) / 27.53(g) Field Strength of Spurious Radiation

Test Conditions / Setup

Test Location: CKC Laboratories Inc. • 110 N Olinda Pl • Brea CA 92823 • 7149936112

Customer: **Cellphone-Mate, Inc.**
Specification: **47 CFR §27.53(f) Spurious Emissions**
Work Order #: **95252** Date: 1/30/2014
Test Type: **Maximized Emissions** Time: 12:47:59
Equipment: **Mobile Wideband Consumer Signal Booster** Sequence#: 8
Manufacturer: Cellphone-Mate, Inc. Tested By: Don Nguyen
Model: TriFlex-2Go-A
S/N: NA

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00010	Preamp	8447D	3/29/2012	3/29/2014
T2	AN00851	Biconilog Antenna	CBL6111C	5/16/2012	5/16/2014
T3	ANP05555	Cable	RG223/U	6/19/2012	6/19/2014
T4	ANP06360	Cable	L1-PNMNM-48	8/29/2012	8/29/2014
T5	ANP04382	Cable	LDF-50	8/30/2012	8/30/2014
T6	AN02672	Spectrum Analyzer	E4446A	9/4/2012	9/4/2014
	AN00787	Preamp	83017A	5/31/2013	5/31/2015
	AN01646	Horn Antenna	3115	4/13/2012	4/13/2014
	AN02945	Cable	32022-2-2909K-36TC	10/30/2013	10/30/2015
	AN00314	Loop Antenna	6502	6/29/2012	6/29/2014
	AN01413	Horn Antenna-ANSI C63.5 (dB/m)	84125-80008	11/9/2012	11/9/2014

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Mobile Wideband Consumer Signal Booster*	Cellphone-Mate, Inc.	TriFlex-2Go-A	NA

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	Agilent	E4433B	US40052164
Signal Generator	Agilent	E4433B	US40053279
Power Divider	Anaren	44000	0583
50 ohm Load	Generic	Generic	NA
Power Supply	SureCall	GFP451DA-0945-1	1211-0000323
Signal Generator	Agilent	E4438C	MY42081492
Programmer	Cellphone-Mate, Inc.	SureCall	NA

Test Conditions / Notes:

The equipment under test (EUT) is placed on the Styrofoam table top. EUT set at maximum gain.
Three remotely located signal generators are connected to power divider. The output of power divider is connected to input of EUT. Port GUI is terminated with supported programmer.

Evaluation of DL path was performed with signal fed into the Outside (Donor) antenna port while Inside (Server) antenna port terminated with 50 Ohm load.
Evaluation of UL path was performed with signal fed into the Inside (Server) antenna port while Outside (Donor) antenna port terminated with 50 Ohm load.

UL 698-716
DL 728-746

TXFreq = Center frequency of above listed bands.
Modulation: CW
Frequency range of measurement = 9 kHz to 8 GHz.
9kHz-150kHz, RBW=200Hz, VBW=200Hz;150kHz-30MHz, RBW=9kHz,VBW=9kHz;30MHz-1000MHz, RBW=120kHz,VBW=120kHz;1000MHz-20000MHz, RBW=1MHz,VBW=1MHz

Temperature: 19°C, Humidity: 39%, Pressure: 100kPa

Site D

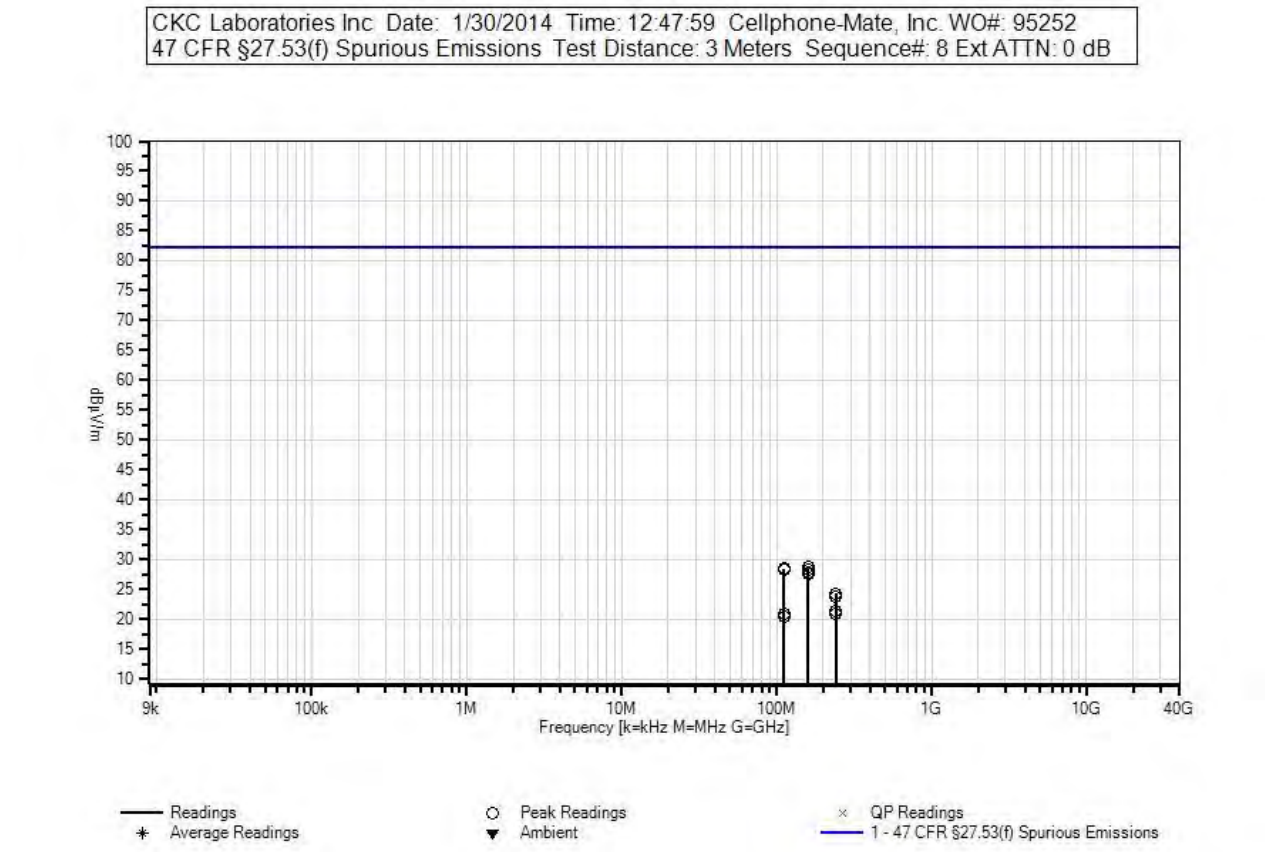
No emission above 1GHz was found.

Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2 T6	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	160.170M	42.6	-26.8 +1.5	+10.4 +0.0	+0.2	+0.8	+0.0	28.7	82.2 DL 728-746, 869-894, 1930-1990	-53.5	Horiz
2	111.670M	42.3	-26.9 +1.2	+11.0 +0.0	+0.2	+0.7	+0.0	28.5	82.2 UL 698-716, 824-849, 1850-1910	-53.7	Vert
3	160.170M	42.2	-26.8 +1.5	+10.4 +0.0	+0.2	+0.8	+0.0	28.3	82.2 UL 698-716, 824-849, 1850-1910	-53.9	Horiz
4	111.670M	42.1	-26.9 +1.2	+11.0 +0.0	+0.2	+0.7	+0.0	28.3	82.2 DL 728-746, 869-894, 1930-1990	-53.9	Vert
5	160.170M	41.8	-26.8 +1.5	+10.4 +0.0	+0.2	+0.8	+0.0	27.9	82.2 DL 728-746, 869-894, 1930-1990	-54.3	Vert
6	160.170M	41.5	-26.8 +1.5	+10.4 +0.0	+0.2	+0.8	+0.0	27.6	82.2 UL 698-716, 824-849, 1850-1910	-54.6	Vert
7	241.170M	35.7	-26.5 +1.8	+12.0 +0.0	+0.3	+1.0	+0.0	24.3	82.2 DL 728-746, 869-894, 1930-1990	-57.9	Vert

8	241.170M	35.1	-26.5 +1.8	+12.0 +0.0	+0.3	+1.0	+0.0	23.7	82.2	-58.5	Vert UL 698-716, 824-849, 1850-1910
9	241.170M	32.7	-26.5 +1.8	+12.0 +0.0	+0.3	+1.0	+0.0	21.3	82.2	-60.9	Horiz UL 698-716, 824-849, 1850-1910
10	241.170M	32.4	-26.5 +1.8	+12.0 +0.0	+0.3	+1.0	+0.0	21.0	82.2	-61.2	Horiz DL 728-746, 869-894, 1930-1990
11	111.670M	34.6	-26.9 +1.2	+11.0 +0.0	+0.2	+0.7	+0.0	20.8	82.2	-61.4	Horiz UL 698-716, 824-849, 1850-1910
12	111.670M	34.3	-26.9 +1.2	+11.0 +0.0	+0.2	+0.7	+0.0	20.5	82.2	-61.7	Horiz DL 728-746, 869-894, 1930-1990



Test Data

LIMIT LINE FOR SPURIOUS RADIATED EMISSION

REQUIRED ATTENUATION = 43+10 LOG P (DB)

For radiated spurious emission measured at 3 meter test distance,

Required attenuation = 43+10 Log $P_{t\ at\ 3\ meter}$ dB
Limit line (dBuV) = E_{dBuv} - Attenuation

E_{dBuv} = Measured field strength at 3 meter in dBuV/m

Power Density (Isotropic)

$$P_D = \frac{P_t}{4\pi r^2}$$

P_D = Power Density in Watts /m^2
Pt = Average Transmit Power
r = Test distance

Field Intensity E (V/m)

$$E = \sqrt{P_D \times 377}$$

$$E = \frac{\sqrt{P_t \times 377}}{4\pi r^2}$$

$$E = \sqrt{\frac{P_t \times 30}{r^2}}$$

$$P_t = \left(\frac{E^2 \text{ x } r^2}{30} \right)$$

10 Log P_t = 10 Log E^2 (V/m)+ 10 Log r^2 – 10 Log 30

10 Log P_t = 20 Log E (V/m) + 20 Log r – 10 Log 30

At 3 meter, r = 3 m

10 Log P_t = 20 Log E (V/m) + 20 Log 3 – 10 Log 30

10 Log P_t = 20 Log E (V/m) + 9.54 – 14.77

10 Log P_t = 20 Log E (V/m) - 5.23

Since 20 Log E (V/m) = 20 Log E (uV/m) –120

10 Log P_t = 20 Log E (uV/m) - 120 - 5.23

10 Log P_t = 20 Log E (uV/m) –125.23

Limit line (dBuV) at 3 meter = E_{dBuv} – Attenuation

= E_{dBuv} - (43+10 Log $P_{t \text{ at 3 meter}}$)

= E_{dBuv} - 43 - 10 Log $P_{t \text{ at 3 meter}}$

= E_{dBuv} - 43 – (20 Log E (uV/m) –125.23)

= E_{dBuv} - 43 - 20 Log E (uV/m) + 125.23

= E_{dBuv} - 20 Log E (uV/m) + 82.23

Since 20 Log E (uV/m) = E in dBuV/m

= ~~E_{dBuv}~~ - ~~E_{dBuv}~~ + 82.23

Radiated Emission limit 3 meter = 82.23 dBuV at any power level measured in dBuV

Test Setup Photo(s)

2.1055 Frequency Stability

Note: Not applicable because the EUT is an amplified device.

SUPPLEMENTAL INFORMATION

Measurement Uncertainty

Uncertainty Value	Parameter
4.73 dB	Radiated Emissions
3.34 dB	Mains Conducted Emissions
3.30 dB	Disturbance Power

The reported measurement uncertainties are calculated based on the worst case of all laboratory environments from CKC Laboratories, Inc. test sites. Only those parameters which require estimation of measurement uncertainty are reported. The reported worst case measurement uncertainty is less than the maximum values derived in CISPR 16-4-2. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k=2. Compliance is deemed to occur provided measurements are below the specified limits.

Emissions Test Details

TESTING PARAMETERS

Unless otherwise indicated, the following configuration parameters are used for equipment setup: The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. Cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the setup photographs. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables.

The emissions data was taken with a spectrum analyzer or receiver. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the table below. The corrected data was then compared to the applicable emission limits. Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in dBµV/m, the spectrum analyzer reading in dBµV was corrected by using the following formula. This reading was then compared to the applicable specification limit.

SAMPLE CALCULATIONS		
	Meter reading	(dBµV)
+	Antenna Factor	(dB)
+	Cable Loss	(dB)
-	Distance Correction	(dB)
-	Preamplifier Gain	(dB)
=	Corrected Reading	(dBµV/m)

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed were used to collect the emissions data. A spectrum analyzer or receiver was used for all measurements. Unless otherwise specified, the following table shows the measuring equipment bandwidth settings that were used in designated frequency bands. For testing emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used.

MEASURING EQUIPMENT BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
CONDUCTED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	>1 GHz	1 MHz

SPECTRUM ANALYZER/RECEIVER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the emissions tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "positive peak" detector mode. Whenever a "quasi-peak" or "average" reading was recorded, the measurement was annotated with a "QP" or an "Ave" on the appropriate rows of the data sheets. In cases where quasi-peak or average limits were employed and data exists for multiple measurement types for the same frequency then the peak measurement was retained in the report for reference, however the numbering for the affected row was removed and an arrow or carrot ("^") was placed in the far left-hand column indicating that the row above takes precedence for comparison to the limit. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

Peak

In this mode, the spectrum analyzer or receiver recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature called "peak hold," the measurement device had the ability to measure intermittent or low duty cycle transient emission peak levels. In this mode the measuring device made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

Quasi-peak measurements were taken using the quasi-peak detector when the true peak values exceeded or were within 2 dB of a quasi-peak specification limit. Additional QP measurements may have been taken at the discretion of the operator.

Average

Average measurements were taken using the average detector when the true peak values exceeded or were within 2 dB of an average specification limit. Additional average measurements may have been taken at the discretion of the operator. If the specification or test procedure requires trace averaging, then the averaging was performed using 100 samples or as required by the specification. All other average measurements are performed using video bandwidth averaging. To make these measurements, the test engineer reduces the video bandwidth on the measuring device until the modulation of the signal is filtered out. At this point the measuring device is set into the linear mode and the scan