

# ID TECH Products

## TEST REPORT FOR

**Vend III**  
**Model: IDVV-381131**

### Tested To The Following Standards:

**FCC Part 15 Subpart C Sections**  
**15.207, 15.225**  
**and**  
**RSS-210 Issue 8**

**Report No.: 94628-11**

**Date of issue: September 11, 2013**



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.

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## ADMINISTRATIVE INFORMATION

### Test Report Information

**REPORT PREPARED FOR:**

ID TECH Products  
451 El Camino Real  
Santa Clara, CA 95050

**REPORT PREPARED BY:**

Morgan Tramontin  
CKC Laboratories, Inc.  
5046 Sierra Pines Drive  
Mariposa, CA 95338

REPRESENTATIVE: Richard Fellows  
Customer Reference Number: 130188

Project Number: 94628

**DATE OF EQUIPMENT RECEIPT:**

August 26, 2013

**DATE(S) OF TESTING:**

August 26 - September 3, 2013

### 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.

A handwritten signature in black ink that reads "Steve Behm".

**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.  
5046 Sierra Pines Drive  
Mariposa, CA 95338

## Software Versions

CKC Laboratories Proprietary Software	Version
EMITest Emissions	5.00.14
Immunity	5.00.07

## Site Registration & Accreditation Information

Location	CB #	TAIWAN	CANADA	FCC	JAPAN
Mariposa A	US0103	SL2-IN-E-1147R	3082A-2	90477	A-0136

## SUMMARY OF RESULTS

### Standard / Specification: FCC Part 15 Subpart C and RSS-210 Issue 8

Description	Test Procedure/Method	Results
Conducted Emissions	FCC Part 15 Subpart C Section 15.207	Pass
RF Power Output	FCC Part 15 Subpart C Section 15.225(a) / ANSI.C63.4	Pass
Radiated Spurious Emissions	FCC Part 15 Subpart C Section 15.225(d) / ANSI.C63.4	Pass
Frequency Stability	FCC Part 15 Subpart C Section 15.225 (e)/ ANSI C63.4 / ANSI C63.10	Pass
Occupied Bandwidth	RSS-210 Issue 8	Pass

## 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**

#### **Vend III**

Manuf: IDTech  
Model: IDVV-381131  
Serial: TT1322A006

### **PERIPHERAL DEVICES**

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

#### **AC adaptor**

Manuf: Global Power Corp.  
Model: 3A-161WP09  
Serial: GPWAC-15-09-2-VT

#### **Laptop Computer**

Manuf: Dell  
Model: D630  
Serial: 3240302437

## FCC PART 15 SUBPART C

This report contains EMC emissions test results under United States Federal Communications Commission (FCC) 47 CFR 15C requirements for Unlicensed Radio Frequency Devices, Subpart C - Intentional Radiators.

### 15.207 AC Conducted Emissions

#### Test Data Sheets

Test Location: CKC Laboratories, Inc. • 5046 Sierra Pines Drive • Mariposa, CA 95338 • 209-966-5240

Customer:	<b>IDTECH</b>	Date:	9/3/2013
Specification:	<b>15.207 AC Mains - Quasi-peak</b>	Time:	3:38:30 PM
Work Order #:	<b>94628</b>	Sequence#:	14
Test Type:	<b>Conducted Emissions</b>	Tested By:	Eddie Mariscal
Equipment:	<b>Vend III</b>		120V 60Hz
Manufacturer:	IDTech		
Model:	IDVV-381131		
S/N:	TT1322A006		

#### Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02660	Spectrum Analyzer	E4446A	8/23/2012	8/23/2014
T1	AN02609	High Pass Filter	HE9615-150K-50-720B	3/15/2012	3/15/2014
T2	ANMACOND	Cable		8/17/2012	8/17/2014
T3	ANP05624	Attenuator	PE7010-10	8/13/2012	8/13/2014
T4	AN00374	50uH LISN-Black Lead Amplitude (dB)	8028-TS-50-BNC	3/15/2013	3/15/2015
	AN00374	50uH LISN-White Lead Amplitude (dB)	8028-TS-50-BNC	3/15/2013	3/15/2015

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

Function	Manufacturer	Model #	S/N
Vend III*	IDTech	IDVV-381131	TT1322A006

#### Support Devices:

Function	Manufacturer	Model #	S/N
AC adaptor	Global Power Corp.	3A-161WP09	GPWAC-15-09-2-VT
Laptop Computer	Dell	D630	3240302437

**Test Conditions / Notes:**

EUT is placed at a height of 80cm atop a wooden, nonconductive turntable. EUT has two ports: a 10-pin RJ50 port and an Ethernet port. Power for EUT is being supplied through Global Power Corp AC adapter which supplies the splitter with 9VDC. RJ50 Port is supplied by this 9VDC via splitter. Ethernet port of splitter is terminated with data cable which is terminated by support Dell laptop. The EUT's Ethernet port is completely disabled with no firmware installed. LAN data transmission is disabled in this current design phase, thus no LAN data is being sent during testing.

Antenna removed and replacement 50 ohm load resistor installed.

Highest Clock Freq: 90 MHz

Transmit Freq: 13.56 MHz

Frequencies Investigated: 0.150-30MHz

RBW = 9kHz; VBW = 30kHz;

Environmental Conditions:

Temperature = 20°C

Humidity = 40%

Pressure = 97kPa

Ext Attn: 0 dB

**Measurement Data:**

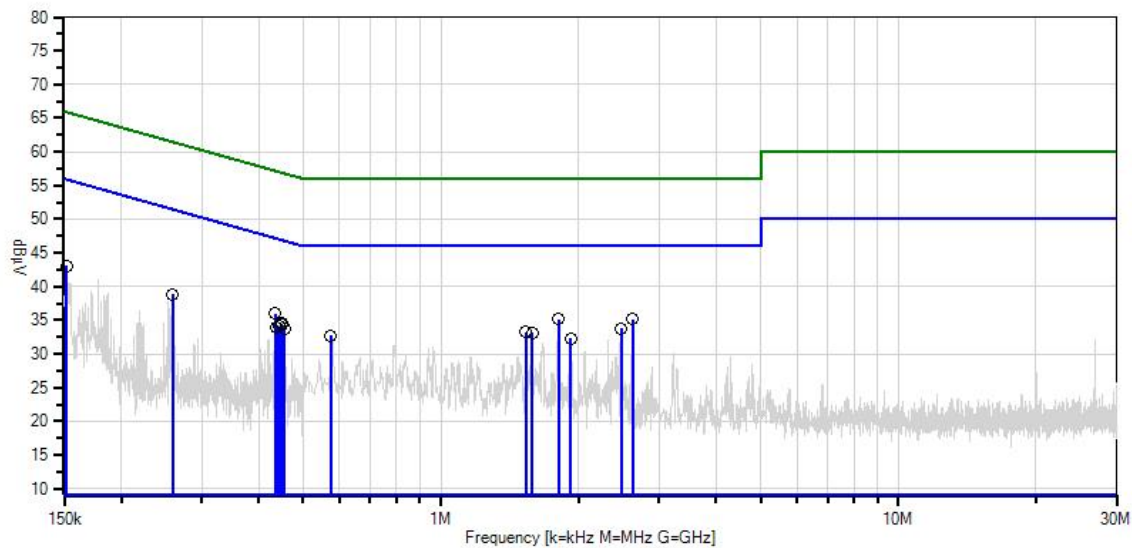
Reading listed by margin.

Test Lead: Black

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	1.807M	24.3	+0.2	+0.4	+9.9	+0.3	+0.0	35.1	46.0	-10.9	Black
2	2.628M	24.2	+0.1	+0.5	+10.0	+0.3	+0.0	35.1	46.0	-10.9	Black
3	434.900k	25.1	+0.2	+0.2	+10.0	+0.5	+0.0	36.0	47.2	-11.2	Black
4	2.483M	23.0	+0.1	+0.5	+9.9	+0.3	+0.0	33.8	46.0	-12.2	Black
5	448.200k	23.6	+0.2	+0.2	+10.0	+0.5	+0.0	34.5	46.9	-12.4	Black
6	259.550k	27.6	+0.2	+0.2	+10.0	+0.8	+0.0	38.8	51.4	-12.6	Black
7	449.600k	23.4	+0.2	+0.2	+10.0	+0.5	+0.0	34.3	46.9	-12.6	Black
8	1.535M	22.4	+0.2	+0.4	+10.0	+0.3	+0.0	33.3	46.0	-12.7	Black
9	151.750k	25.4	+6.1	+0.1	+10.0	+1.5	+0.0	43.1	55.9	-12.8	Black
10	442.600k	23.2	+0.2	+0.2	+10.0	+0.5	+0.0	34.1	47.0	-12.9	Black
11	1.584M	22.3	+0.2	+0.4	+9.9	+0.3	+0.0	33.1	46.0	-12.9	Black
12	454.850k	23.0	+0.2	+0.2	+10.0	+0.4	+0.0	33.8	46.8	-13.0	Black
13	437.700k	23.0	+0.2	+0.2	+10.0	+0.5	+0.0	33.9	47.1	-13.2	Black
14	575.145k	21.9	+0.2	+0.2	+10.0	+0.4	+0.0	32.7	46.0	-13.3	Black
15	1.923M	21.5	+0.2	+0.4	+9.9	+0.3	+0.0	32.3	46.0	-13.7	Black



CKC Laboratories, Inc. Date: 9/3/2013 Time: 3:38:30 PM IDTECH WO#: 94628  
 15.207 AC Mains - Quasi-peak Test Lead: Black 120V 60Hz Sequence#: 14 Ext ATTN: 0 dB



Sweep Data  
 ○ Peak Readings  
 \* Average Readings  
 — 1 - 15.207 AC Mains - Average  
 — Readings  
 × QP Readings  
 ▼ Ambient  
 — 2 - 15.207 AC Mains - Quasi-peak

Test Location: CKC Laboratories, Inc. • 5046 Sierra Pines Drive • Mariposa, CA 95338 • 209-966-5240

Customer: **IDTECH**  
 Specification: **15.207 AC Mains - Quasi-peak**  
 Work Order #: **94628**  
 Test Type: **Conducted Emissions**  
 Equipment: **Vend III**  
 Manufacturer: **IDTech**  
 Model: **IDVV-381131**  
 S/N: **TT1322A006**

Date: 9/3/2013  
 Time: 15:10:31  
 Sequence#: 12  
 Tested By: Eddie Mariscal  
 120V 60Hz

**Test Equipment:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02660	Spectrum Analyzer	E4446A	8/23/2012	8/23/2014
T1	AN02609	High Pass Filter	HE9615-150K-50-720B	3/15/2012	3/15/2014
T2	ANMACOND	Cable		8/17/2012	8/17/2014
T3	ANP05624	Attenuator	PE7010-10	8/13/2012	8/13/2014
	AN00374	50uH LISN-Black Lead Amplitude (dB)	8028-TS-50-BNC	3/15/2013	3/15/2015
T4	AN00374	50uH LISN-White Lead Amplitude (dB)	8028-TS-50-BNC	3/15/2013	3/15/2015

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

Function	Manufacturer	Model #	S/N
Vend III*	IDTech	IDVV-381131	TT1322A006

**Support Devices:**

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell	D630	3240302437
AC adaptor	Global Power Corp.	3A-161WP09	GPWAC-15-09-2-VT

**Test Conditions / Notes:**

EUT is placed at a height of 80cm atop a wooden, nonconductive turntable. EUT has two ports: a 10-pin RJ50 port and an Ethernet port. Power for EUT is being supplied through Global Power Corp AC adapter which supplies the splitter with 9VDC. RJ50 Port is supplied by this 9VDC via splitter. Ethernet port of splitter is terminated with data cable which is terminated by support Dell laptop. The EUT's Ethernet port is completely disabled with no firmware installed. LAN data transmission is disabled in this current design phase, thus no LAN data is being sent during testing.

Antenna removed and replacement 50 ohm load resistor installed.

Highest Clock Freq: 90 MHz

Transmit Freq: 13.56 MHz

Frequencies Investigated: 0.150-30MHz

RBW = 9kHz; VBW = 30kHz;

Environmental Conditions:

Temperature = 20°C

Humidity = 40%

Pressure = 97kPa

Ext Attn: 0 dB

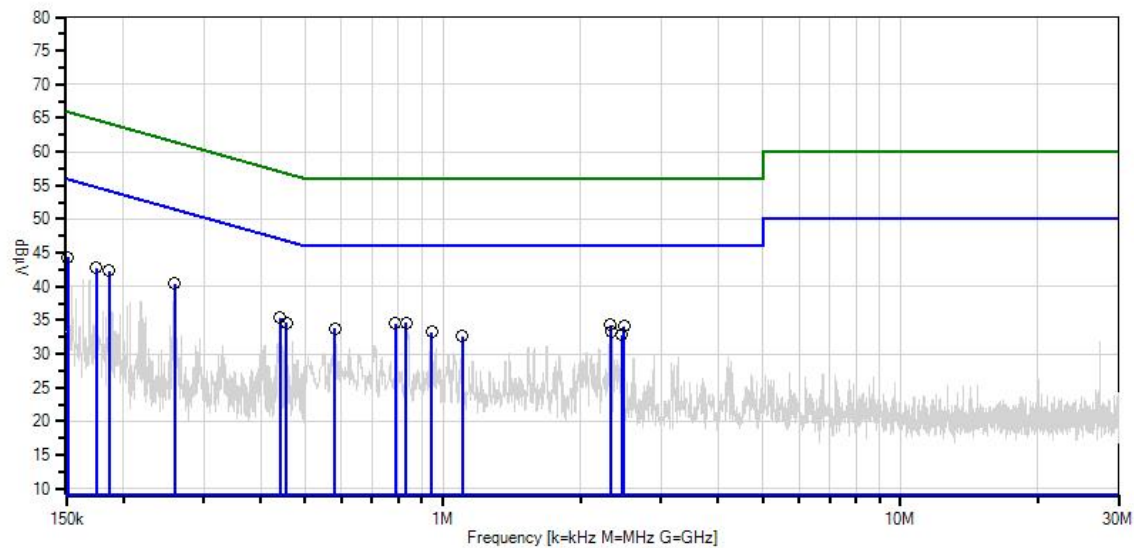
**Measurement Data:**

Reading listed by margin.

Test Lead: White

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	259.550k	29.2	+0.2	+0.2	+10.0	+0.8	+0.0	40.4	51.4	-11.0	White
2	832.090k	23.7	+0.2	+0.3	+10.0	+0.4	+0.0	34.6	46.0	-11.4	White
3	788.458k	23.6	+0.2	+0.3	+10.0	+0.4	+0.0	34.5	46.0	-11.5	White
4	151.399k	26.3	+6.4	+0.1	+10.0	+1.5	+0.0	44.3	55.9	-11.6	White
5	440.151k	24.5	+0.2	+0.2	+10.0	+0.5	+0.0	35.4	47.1	-11.7	White
6	2.325M	23.5	+0.1	+0.5	+9.9	+0.3	+0.0	34.3	46.0	-11.7	White
7	2.493M	23.3	+0.1	+0.5	+9.9	+0.3	+0.0	34.1	46.0	-11.9	White
8	186.399k	30.7	+0.3	+0.1	+10.0	+1.2	+0.0	42.3	54.2	-11.9	White
9	174.499k	31.0	+0.4	+0.1	+10.0	+1.3	+0.0	42.8	54.7	-11.9	White
10	454.851k	23.7	+0.2	+0.2	+10.0	+0.5	+0.0	34.6	46.8	-12.2	White
11	579.993k	23.0	+0.2	+0.2	+10.0	+0.4	+0.0	33.8	46.0	-12.2	White
12	943.595k	22.5	+0.2	+0.3	+10.0	+0.3	+0.0	33.3	46.0	-12.7	White
13	2.330M	22.4	+0.1	+0.5	+9.9	+0.3	+0.0	33.2	46.0	-12.8	White
14	2.459M	22.0	+0.1	+0.5	+9.9	+0.3	+0.0	32.8	46.0	-13.2	White
15	1.101M	21.8	+0.2	+0.3	+10.0	+0.3	+0.0	32.6	46.0	-13.4	White

CKC Laboratories, Inc. Date: 9/3/2013 Time: 15:10:31 IDTECH WO#: 94628  
 15.207 AC Mains - Quasi-peak Test Lead: White 120V 60Hz Sequence#: 12 Ext ATTN: 0 dB



— Sweep Data	— Readings
○ Peak Readings	× QP Readings
* Average Readings	▼ Ambient
— 1 - 15.207 AC Mains - Average	— 2 - 15.207 AC Mains - Quasi-peak

**Test Setup Photos**



## 15.225(a) RF Power Output

### Test Data

Test Location: CKC Laboratories, Inc. • 5046 Sierra Pines Drive • Mariposa, CA 95338 • 209-966-5240

Customer: **IDTECH**  
 Specification: **15.225 Carrier and Spurious Emissions (13.110-14.010 MHz Transmitter)**  
 Work Order #: **94628** Date: 8/27/2013  
 Test Type: **Maximized Emissions** Time: 14:46:03  
 Equipment: **Vend III** Sequence#: 1  
 Manufacturer: IDTech Tested By: Eddie Mariscal  
 Model: IDVV-381131  
 S/N: TT1322A006

#### Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00226	Loop Antenna	6502	3/28/2012	3/28/2014
T2	ANMACOND	Cable		8/17/2012	8/17/2014
T3	ANP06230	Cable	CXTA04A-50	8/16/2012	8/16/2014
	AN02660	Spectrum Analyzer	E4446A	8/23/2012	8/23/2014

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

Function	Manufacturer	Model #	S/N
Vend III*	IDTech	IDVV-381131	TT1322A006

#### Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell	D630	3240302437
AC adaptor	Global Power Corp.	3A-161WP09	GPWAC-15-09-2-VT

#### Test Conditions / Notes:

EUT is placed at a height of 80cm atop a wooden, nonconductive turntable. EUT has two ports: a 10-pin RJ50 port and an Ethernet port. Power for EUT is being supplied through Global Power Corp AC adaptor which supplies the splitter with 9VDC. RJ50 Port is supplied by this 9VDC via splitter. Ethernet port of splitter is terminated with data cable which is terminated by support Dell laptop. The EUT's Ethernet port is completely disabled with no firmware installed. LAN data transmission is disabled in this current design phase, thus no LAN data is being sent during testing.

Measurements made in accordance with 15.31(e). No change in radiated signal level detected when varying supply voltage from 85% (102VAC) to 115%(138VAC).

Highest Clock Freq: 90MHz  
 Transmit Freq: 13.56 MHz  
 Frequencies investigated: fundamental (13.56MHz)  
 RBW = 9kHz; VBW = 30kHz  
 Environmental Conditions:  
 Temperature = 20°C  
 Humidity = 40%  
 Pressure = 97kPa

Ext Attn: 0 dB

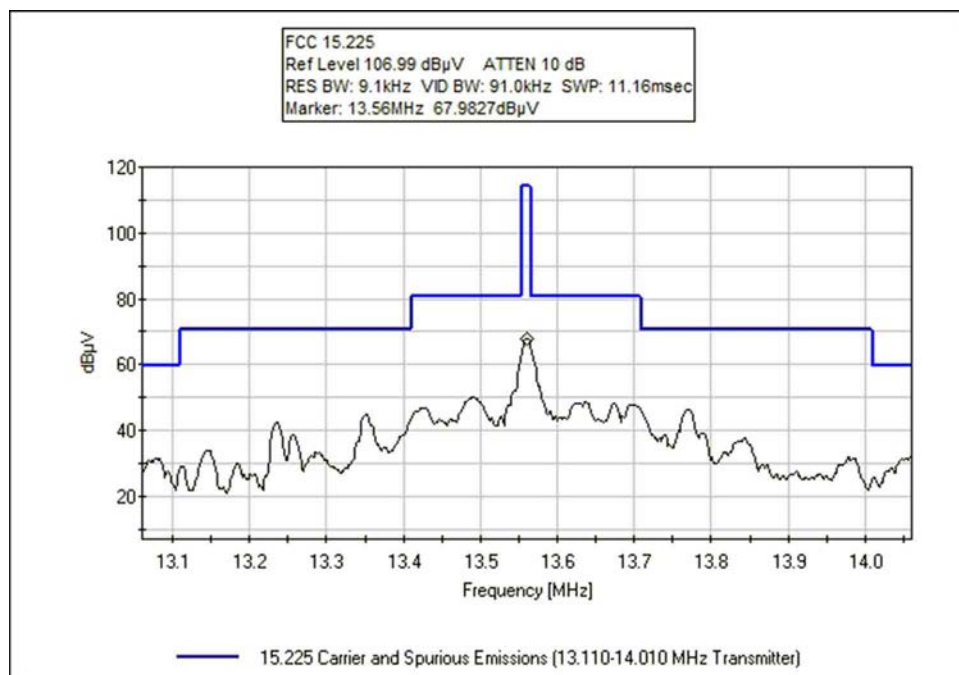
**Measurement Data:**

Reading listed by margin.

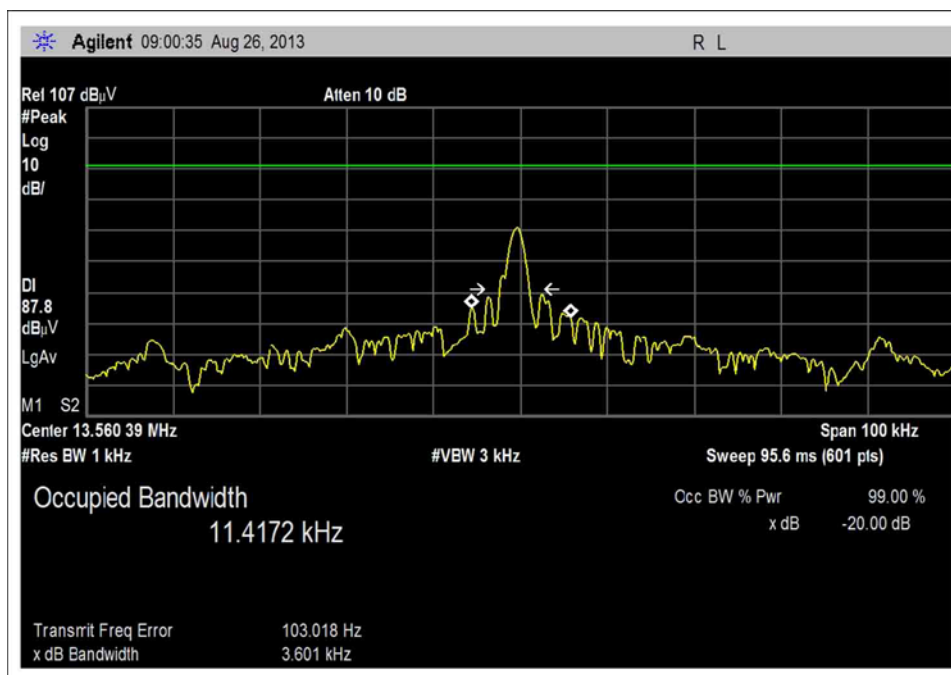
Test Distance: 10 Meters

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	T2 dB	T3 dB		Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	13.560M	48.8	+9.6	+1.1	+0.4		-19.1	40.8	84.0	-43.2	Vert
2	13.560M	40.7	+9.6	+1.1	+0.4		-19.1	32.7	84.0	-51.3	Horiz

**Mask**



### Occupied Bandwidth





**Test Setup Photos**



10 Meters





## 15.225(d) Radiated Spurious Emissions

### Test Data Sheets

Test Location: CKC Laboratories, Inc. • 5046 Sierra Pines Drive • Mariposa, CA 95338 • 209-966-5240

Customer: **IDTECH**  
 Specification: **15.225 Carrier and Spurious Emissions (13.110-14.010 MHz Transmitter)**  
 Work Order #: **94628** Date: 8/26/2013  
 Test Type: **Maximized Emissions** Time: 16:42:08  
 Equipment: **Vend III** Sequence#: 1  
 Manufacturer: IDTech Tested By: Eddie Mariscal  
 Model: IDVV-381131  
 S/N: TT1322A006

#### Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00062	Preamp	8447D	6/6/2012	6/6/2014
T2	AN01991	Biconilog Antenna	CBL6111C	3/14/2012	3/14/2014
T3	ANP06230	Cable	CXTA04A-50	8/16/2012	8/16/2014
	AN02660	Spectrum Analyzer	E4446A	8/23/2012	8/23/2014
T4	ANP05922	Cable	RG/214	8/15/2012	8/15/2014
T5	AN00226	Loop Antenna	6502	3/28/2012	3/28/2014

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

Function	Manufacturer	Model #	S/N
Vend III*	IDTech	IDVV-381131	TT1322A006

#### Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell	D630	3240302437
AC adaptor	Global Power Corp.	3A-161WP09	GPWAC-15-09-2-VT

### Test Conditions / Notes:

EUT is placed at a height of 80cm atop a wooden, nonconductive turntable. EUT has two ports: a 10-pin RJ50 port and an Ethernet port. Power for EUT is being supplied through Global Power Corp AC adapter which supplies the splitter with 9VDC. RJ50 Port is supplied by this 9VDC via splitter. Ethernet port of splitter is terminated with data cable which is terminated by support Dell laptop. The EUT's Ethernet port is completely disabled with no firmware installed. LAN data transmission is disabled in this current design phase, thus no LAN data is being sent during testing.

Measurements were made in accordance with 15.31(e). No change in radiated signal level was detected while varying the input voltage from 85% (120VAC) to 115% (138VAC).

Highest Clock Freq: 90MHz

Transmit Freq: 13.56 MHz

Frequencies investigated: .009-1000MHz

0.009-0.150MHz: RBW = 200Hz; VBW = 2kHz

0.150-30MHz: RBW = 9kHz; VBW = 30kHz

30-1000MHz: RBW = 120kHz; VBW = 1.2MHz

Environmental Conditions:

Temperature = 20°C

Humidity = 40%

Pressure = 97kPa

Ext Attn: 0 dB

### Measurement Data:

Reading listed by margin.

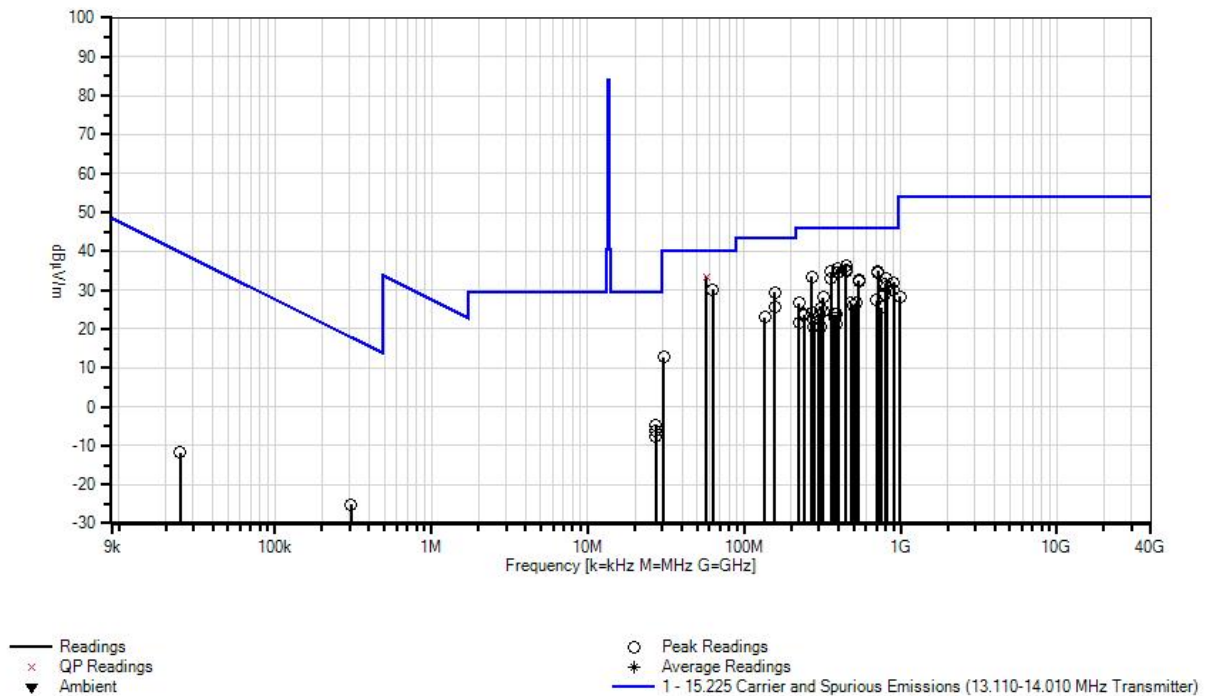
Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	57.095M	55.6	-30.5	+7.5	+0.8	+0.0	+0.0	33.4	40.0	-6.6	Vert
	QP		+0.0								
^	57.095M	60.6	-30.5	+7.5	+0.8	+0.0	+0.0	38.4	40.0	-1.6	Vert
			+0.0								
3	450.020M	46.9	-29.9	+16.7	+2.5	+0.2	+0.0	36.4	46.0	-9.6	Vert
			+0.0								
4	62.895M	52.7	-30.4	+7.0	+0.8	+0.0	+0.0	30.1	40.0	-9.9	Vert
			+0.0								
5	400.011M	47.2	-29.7	+15.6	+2.4	+0.2	+0.0	35.7	46.0	-10.3	Horiz
			+0.0								
6	450.006M	45.8	-29.9	+16.7	+2.5	+0.2	+0.0	35.3	46.0	-10.7	Horiz
			+0.0								
7	450.027M	45.4	-29.9	+16.7	+2.5	+0.2	+0.0	34.9	46.0	-11.1	Horiz
			+0.0								
8	720.010M	41.5	-29.8	+19.6	+3.3	+0.3	+0.0	34.9	46.0	-11.1	Horiz
			+0.0								
9	360.013M	47.2	-29.5	+14.6	+2.2	+0.2	+0.0	34.7	46.0	-11.3	Horiz
			+0.0								
10	400.000M	45.9	-29.7	+15.6	+2.4	+0.2	+0.0	34.4	46.0	-11.6	Vert
			+0.0								
11	720.010M	41.0	-29.8	+19.6	+3.3	+0.3	+0.0	34.4	46.0	-11.6	Vert
			+0.0								
12	269.996M	47.9	-29.1	+12.6	+1.9	+0.2	+0.0	33.5	46.0	-12.5	Horiz
			+0.0								

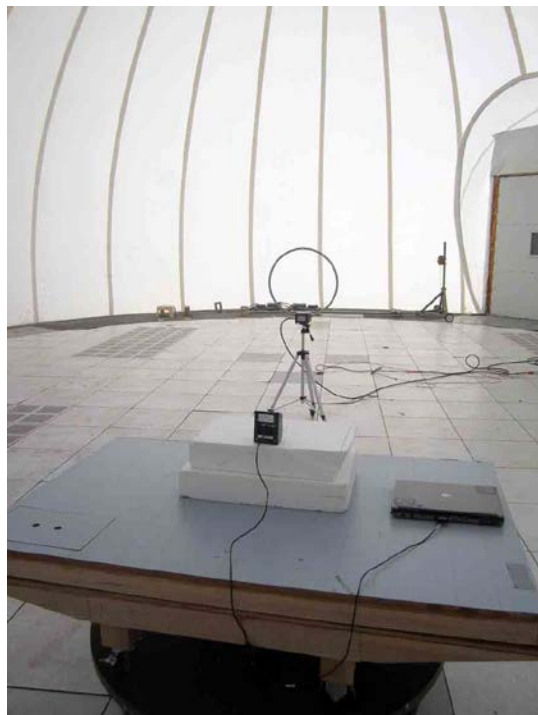
13	360.010M	45.5	-29.5 +0.0	+14.6	+2.2	+0.2	+0.0	33.0	46.0	-13.0	Vert
14	810.032M	37.9	-29.4 +0.0	+20.5	+3.6	+0.3	+0.0	32.9	46.0	-13.1	Horiz
15	540.011M	41.2	-30.1 +0.0	+18.3	+2.8	+0.3	+0.0	32.5	46.0	-13.5	Horiz
16	540.010M	41.0	-30.1 +0.0	+18.3	+2.8	+0.3	+0.0	32.3	46.0	-13.7	Vert
17	156.251M	47.4	-29.8 +0.0	+10.4	+1.4	+0.1	+0.0	29.5	43.5	-14.0	Horiz
18	900.029M	37.0	-29.1 +0.0	+19.8	+3.8	+0.4	+0.0	31.9	46.0	-14.1	Horiz
19	799.980M	36.5	-29.4 +0.0	+20.6	+3.6	+0.3	+0.0	31.6	46.0	-14.4	Vert
20	810.040M	36.0	-29.4 +0.0	+20.5	+3.6	+0.3	+0.0	31.0	46.0	-15.0	Vert
21	900.040M	35.2	-29.1 +0.0	+19.8	+3.8	+0.4	+0.0	30.1	46.0	-15.9	Vert
22	800.000M	33.8	-29.4 +0.0	+20.6	+3.6	+0.3	+0.0	28.9	46.0	-17.1	Horiz
23	320.019M	41.6	-29.3 +0.0	+13.6	+2.1	+0.2	+0.0	28.2	46.0	-17.8	Horiz
24	156.220M	43.6	-29.8 +0.0	+10.4	+1.4	+0.1	+0.0	25.7	43.5	-17.8	Vert
25	699.992M	34.3	-29.9 +0.0	+19.3	+3.3	+0.3	+0.0	27.3	46.0	-18.7	Vert
26	520.030M	35.6	-30.0 +0.0	+18.0	+2.8	+0.3	+0.0	26.7	46.0	-19.3	Vert
27	480.010M	36.6	-30.0 +0.0	+17.3	+2.6	+0.2	+0.0	26.7	46.0	-19.3	Vert
28	225.048M	43.4	-29.2 +0.0	+10.6	+1.7	+0.1	+0.0	26.6	46.0	-19.4	Horiz
29	500.010M	35.6	-30.0 +0.0	+17.7	+2.7	+0.2	+0.0	26.2	46.0	-19.8	Vert
30	760.000M	31.3	-29.6 +0.0	+20.1	+3.5	+0.3	+0.0	25.6	46.0	-20.4	Vert
31	135.600M	39.8	-30.0 +0.0	+11.8	+1.3	+0.1	+0.0	23.0	43.5	-20.5	Vert
32	309.083M	39.0	-29.2 +0.0	+13.3	+2.1	+0.2	+0.0	25.4	46.0	-20.6	Horiz
33	320.020M	37.8	-29.3 +0.0	+13.6	+2.1	+0.2	+0.0	24.4	46.0	-21.6	Vert
34	269.990M	38.7	-29.1 +0.0	+12.6	+1.9	+0.2	+0.0	24.3	46.0	-21.7	Vert
35	240.000M	39.4	-29.1 +0.0	+11.6	+1.8	+0.1	+0.0	23.8	46.0	-22.2	Vert
36	389.980M	35.4	-29.6 +0.0	+15.4	+2.3	+0.2	+0.0	23.7	46.0	-22.3	Horiz
37	380.000M	35.7	-29.6 +0.0	+15.1	+2.3	+0.2	+0.0	23.7	46.0	-22.3	Vert
38	240.009M	39.0	-29.1 +0.0	+11.6	+1.8	+0.1	+0.0	23.4	46.0	-22.6	Horiz

39	299.965M	37.3	-29.2 +0.0	+13.0	+2.0	+0.2	+0.0	23.3	46.0	-22.7	Vert
40	380.006M	34.7	-29.6 +0.0	+15.1	+2.3	+0.2	+0.0	22.7	46.0	-23.3	Horiz
41	279.990M	36.5	-29.1 +0.0	+12.7	+1.9	+0.2	+0.0	22.2	46.0	-23.8	Horiz
42	224.960M	38.4	-29.2 +0.0	+10.6	+1.7	+0.1	+0.0	21.6	46.0	-24.4	Vert
43	390.000M	33.1	-29.6 +0.0	+15.4	+2.3	+0.2	+0.0	21.4	46.0	-24.6	Vert
44	279.990M	34.9	-29.1 +0.0	+12.7	+1.9	+0.2	+0.0	20.6	46.0	-25.4	Vert
45	309.180M	34.2	-29.2 +0.0	+13.3	+2.1	+0.2	+0.0	20.6	46.0	-25.4	Vert
46	990.020M	31.3	-29.0 +0.0	+21.5	+4.1	+0.4	+0.0	28.3	54.0	-25.7	Vert
47	30.599M	25.1	-30.6 +0.0	+17.6	+0.6	+0.0	+0.0	12.7	40.0	-27.3	Vert
48	27.163M	28.0	+0.0 +6.8	+0.0	+0.5	+0.0	-40.0	-4.7	29.5	-34.2	Horiz
49	27.119M	26.5	+0.0 +6.8	+0.0	+0.5	+0.0	-40.0	-6.2	29.5	-35.7	Horiz
50	27.121M	25.2	+0.0 +6.8	+0.0	+0.5	+0.0	-40.0	-7.5	29.5	-37.0	Vert
51	306.600k	45.1	+0.0 +9.8	+0.0	+0.0	+0.0	-80.0	-25.1	17.9	-43.0	Vert
52	24.800k	55.7	+0.0 +12.5	+0.0	+0.0	+0.0	-80.0	-11.8	39.7	-51.5	Vert

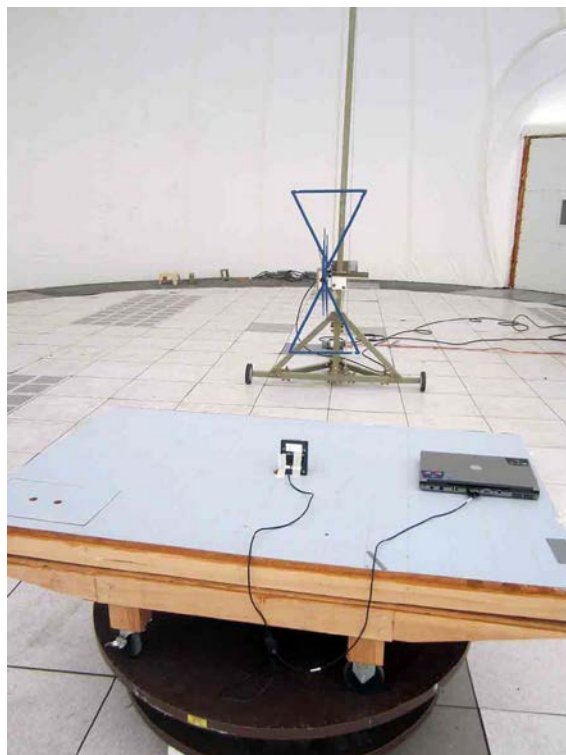
CKC Laboratories, Inc. Date: 8/26/2013 Time: 16:42:08 IDTECH WO#: 94628  
 15.225 Carrier and Spurious Emissions (13.110-14.010 MHz Transmitter) Test Distance: 3 Meters Sequence#: 1  
 Ext ATTN: 0 dB



**Test Setup Photos**







## 15.225(e) Frequency Stability

### Test Data

Test Location: CKC Laboratories, Inc. • 5046 Sierra Pines Drive • Mariposa, CA 95338 • 209-966-5240

Customer: **IDTECH**  
 Specification: **15.225 (e) Frequency Stability**  
 Work Order #: **94628**  
 Test Type: **Maximized Emissions**  
 Equipment: **Vend III**  
 Manufacturer: **IDTech**  
 Model: **IDVV-381131**  
 S/N: **TT1322A006**

Date: 8/27/2013  
 Time: 14:46:03  
 Sequence#: 1  
 Tested By: Eddie Mariscal

#### Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02660	Spectrum Analyzer	E4446A	8/23/2012	8/23/2014
	AN00170	Loop Antenna-dBuV	7334-1	3/15/2012	3/15/2014
	AN01879	Temperature Chamber	S-1.2 Min.	11/15/2012	11/15/2014
	AN02037	AC Power Supply	126	8/17/2012	8/17/2014
	AN02242	Thermometer	HH-26K	4/10/2012	4/10/2014

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

Function	Manufacturer	Model #	S/N
Vend III*	IDTech	IDVV-381131	TT1322A006

#### Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell	D630	3240302437
AC adaptor	Global Power Corp.	3A-161WP09	GPWAC-15-09-2-VT

***Test Conditions / Notes:***

Equipment is located in a temperature chamber. A loop antenna is set inside the chamber and connected to the spectrum analyzer via BNC coaxial cable. Voltage variations are performed using variable AC power supply and monitored using a digital volt meter. Enclosure temperature is monitored using a digital thermometer with a sensor attached directly to the case of the EUT. Measurements were taken two minutes after startup.

EUT has two ports: a 10-pin RJ50 port and an Ethernet port. Power for EUT is being supplied through Global Power Corp AC adapter which supplies the splitter with 9VDC. RJ50 Port is supplied by this 9VDC via splitter. Ethernet port of splitter is terminated with data cable which is terminated by support Dell laptop. The EUT's Ethernet port is completely disabled with no firmware installed. LAN data transmission is disabled in this current design phase, thus no LAN data is being sent during testing.

Highest Clock Freq: 90MHz

Transmit Freq: 13.56 MHz

Frequencies investigated: fundamental (13.56MHz)

RBW = 200Hz; VBW = 2kHz;

Environmental Conditions:

Humidity = 40%

Pressure = 97kPa

### Test Data

<b>Customer:</b>	ID Tech	
<b>WO#:</b>	94628	
<b>Date:</b>	27-Aug-13	
<b>Test Engineer:</b>	Eddie Mariscal	
<b>Test Specification</b>	FCC 15.225(e)	

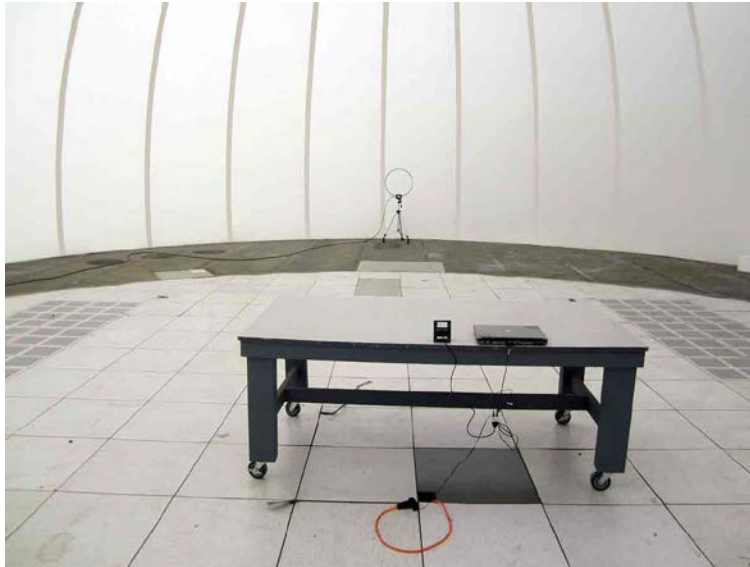
<b>Device Model #:</b>	IDVV-381131	
<b>Operating Voltage:</b>	120	<b>VAC</b>
<b>Frequency Limit:</b>	0.01	<b>%</b>

Temperature Variations			
		Freq (MHz)	Dev. (%)
Channel Frequency:		13.56	
Temp (C)	Voltage		
-20	120	13.56013	0.00092
-10	120	13.56013	0.00098
0	120	13.56013	0.00092
10	120	13.56008	0.00055
20	120	13.56003	0.00024
30	120	13.56000	0.00000
40	120	13.55998	0.00013
50	120	13.55998	0.00018

Voltage Variations ( $\pm 15\%$ )			
85%	102.0	13.56003	0.00018
100%	120	13.56003	0.00024
115%	138.0	13.56003	0.00024

<b>Max Deviation (%)</b>		<b>0.00098</b>
		<b>PASS</b>

**Test Setup Photos**



10 Meter



Temp Chamber

## RSS-210

### Occupied Bandwidth

#### Test Data

Test Location: CKC Laboratories, Inc. • 5046 Sierra Pines Drive • Mariposa, CA 95338 • 209-966-5240

Customer: **IDTECH**

Specification: **RSS-210**

Work Order #: **94628**

Date: 8/27/2013

Test Type: **Maximized Emissions**

Time: 14:46:03

Equipment: **Vend III**

Sequence#: 1

Manufacturer: IDTech

Tested By: Eddie Mariscal

Model: IDVV-381131

S/N: TT1322A006

#### Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN00226	Loop Antenna	6502	3/28/2012	3/28/2014
	ANMACOND	Cable		8/17/2012	8/17/2014
	ANP06230	Cable	CXTA04A-50	8/16/2012	8/16/2014
	AN02660	Spectrum Analyzer	E4446A	8/23/2012	8/23/2014

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

Function	Manufacturer	Model #	S/N
Vend III*	IDTech	IDVV-381131	TT1322A006

#### Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell	D630	3240302437
AC adaptor	Global Power Corp.	3A-161WP09	GPWAC-15-09-2-VT

#### Test Conditions / Notes:

EUT is placed at a height of 80cm atop a wooden, nonconductive table. EUT has two ports: a 10-pin RJ50 port and an Ethernet port. Power for EUT is being supplied through Global Power Corp AC adapter which supplies the splitter with 9VDC. RJ50 Port is supplied by this 9VDC via splitter. Ethernet port of splitter is terminated with data cable which is terminated by support Dell laptop. The EUT's Ethernet port is completely disabled with no firmware installed. LAN data transmission is disabled in this current design phase, thus no LAN data is being sent during testing.

Highest Clock Freq: 90MHz

Transmit Freq: 13.56 MHz

Frequencies investigated: fundamental (13.56MHz)

RBW = 1kHz; VBW = 3kHz

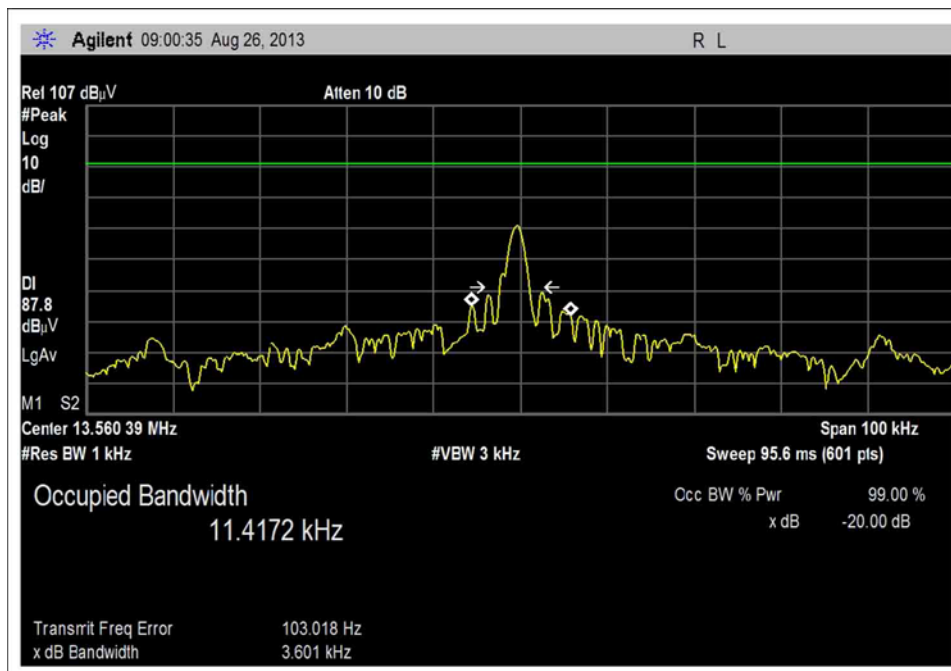
Environmental Conditions:

Temperature = 20°C

Humidity = 40%

Pressure = 97kPa

### Test Plots



### Test Setup Photos



10m

## 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 dB $\mu$ V/m, the spectrum analyzer reading in dB $\mu$ V 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 time is reduced.