

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.

This report contains a total of 33 pages and may be reproduced in full only. Partial reproduction may only be done with the written consent of CKC Laboratories, Inc.

TABLE OF CONTENTS

| | |
|---|----|
| Administrative Information | 3 |
| Test Report Information | 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 15 Subpart C..... | 7 |
| 15.207 AC Conducted Emissions..... | 7 |
| 15.225(a) RF Power Output | 14 |
| 15.225(d) Radiated Spurious Emissions..... | 19 |
| 15.225(e) Frequency Stability | 26 |
| RSS-210..... | 30 |
| Occupied Bandwidth..... | 30 |
| Supplemental Information | 32 |
| Measurement Uncertainty | 32 |
| Emissions Test Details..... | 32 |

ADMINISTRATIVE INFORMATION

Test Report Information

REPORT PREPARED FOR:

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

REPRESENTATIVE: Richard Fellows
Customer Reference Number: 130188

DATE OF EQUIPMENT RECEIPT:**DATE(S) OF TESTING:****REPORT PREPARED BY:**

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

Project Number: 94628

August 26, 2013

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: | IDTECH | Date: | 9/3/2013 |
| Specification: | 15.207 AC Mains - Quasi-peak | Time: | 3:38:30 PM |
| Work Order #: | 94628 | Sequence#: | 14 |
| Test Type: | Conducted Emissions | Tested By: | Eddie Mariscal |
| Equipment: | Vend III | | 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

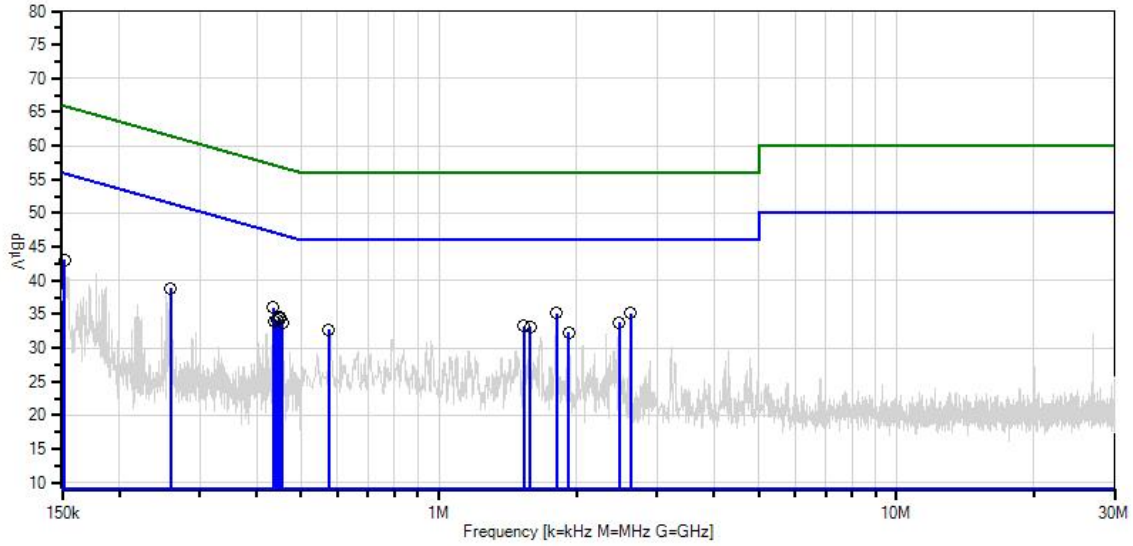
Measurement Data:

Reading listed by margin.

Test Lead: Black

| # | Freq MHz | Rdng dB μ V | T1 dB | T2 dB | T3 dB | T4 dB | Dist Table | Corr dB μ V | Spec dB μ V | 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
 — Readings
 × QP Readings
 ▼ Ambient
 — 1 - 15.207 AC Mains - Average
 — 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

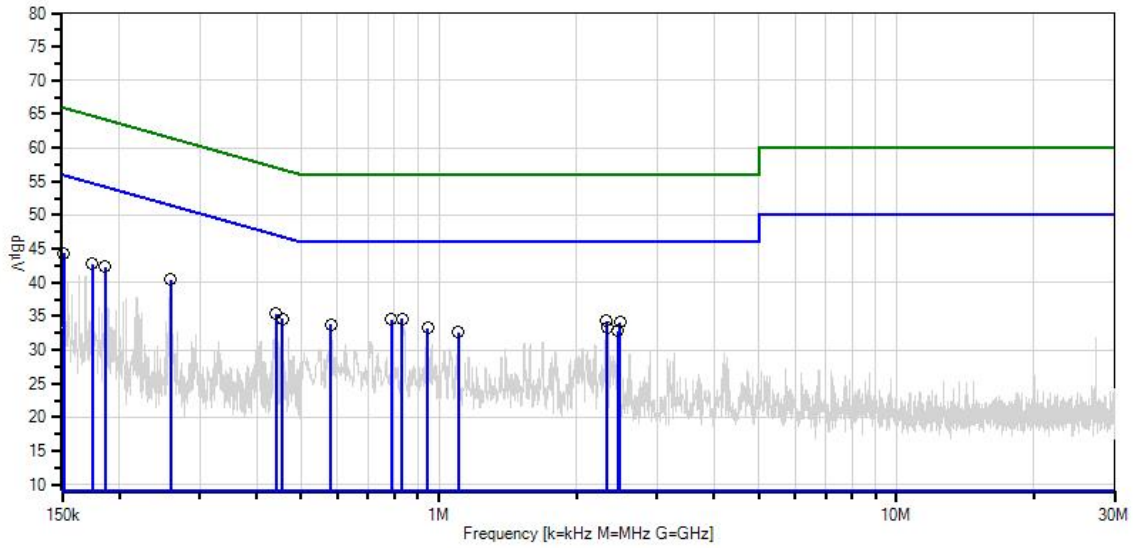
Humidity = 40%

Pressure = 97kPa

Ext Attn: 0 dB

| Measurement Data: | | Reading listed by margin. | | | | | | Test Lead: White | | | | |
|--------------------------|-------------|---------------------------|----------|----------|----------|----------|---------------|--------------------|--------------------|--------------|--------------|--|
| # | Freq MHz | Rdng dB μ V | T1 dB | T2 dB | T3 dB | T4 dB | Dist Table | Corr dB μ V | Spec dB μ V | 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
○ Peak Readings
* Average Readings
— Readings
× QP 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).

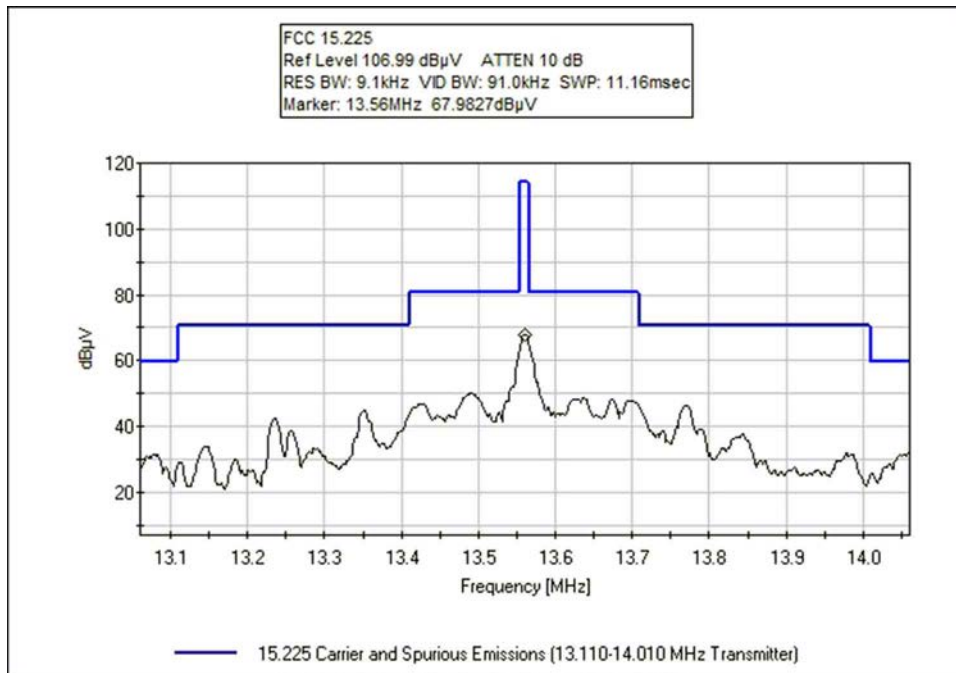
Highest Clock Freq: 90MHz
 Transmit Freq: 13.56 MHz
 Frequencies investigated: fundamental (13.56MHz)
 RBW = 9kHz; VBW = 30kHz
 Environmental Conditions:
 Temperature = 20°C
 Humidity = 40%
 Pressure = 97kPa

Ext Attn: 0 dB

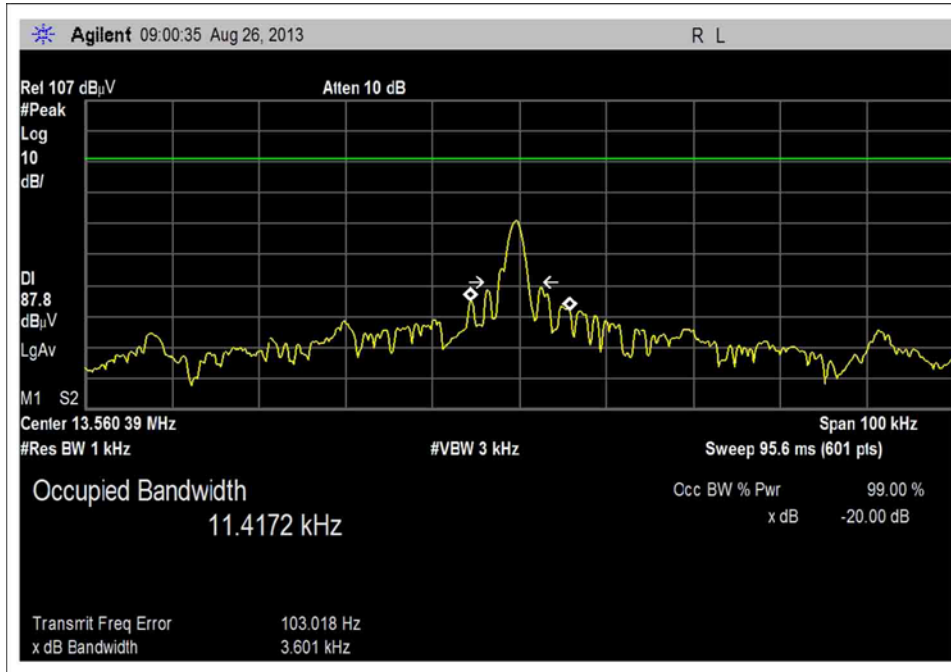
Measurement Data: Reading listed by margin. Test Distance: 10 Meters

| # | Freq MHz | Rdng dB μ V | T1 dB | T2 dB | T3 dB | dB | Dist Table | Corr dB μ V/m | Spec dB μ 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

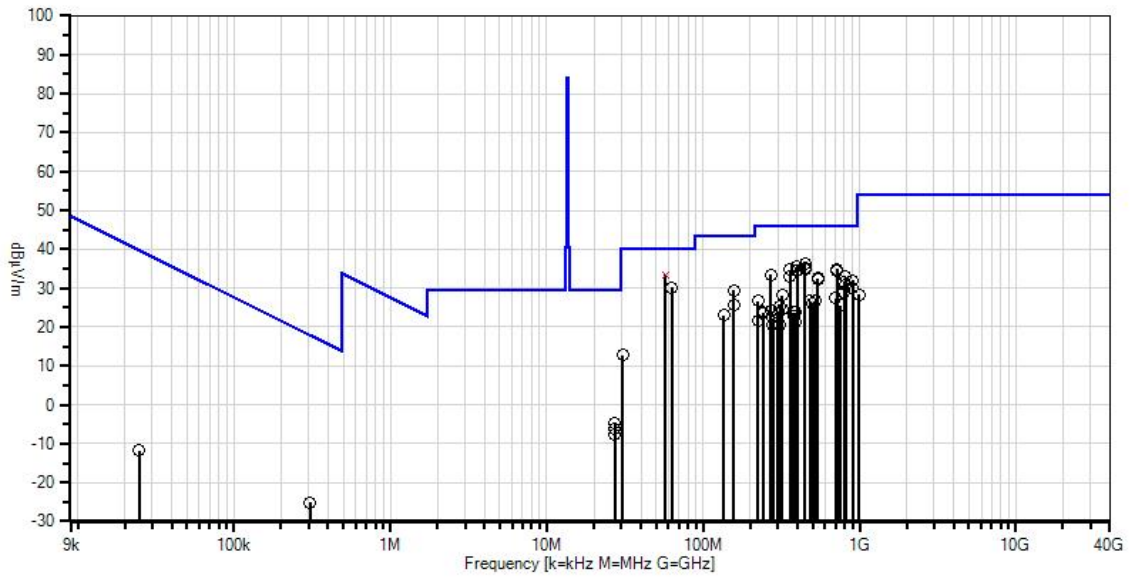
Ext Attn: 0 dB

| 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 QP | 55.6 | -30.5 +0.0 | +7.5 | +0.8 | +0.0 | +0.0 | 33.4 | 40.0 | -6.6 | Vert | |
| ^ | 57.095M | 60.6 | -30.5 +0.0 | +7.5 | +0.8 | +0.0 | +0.0 | 38.4 | 40.0 | -1.6 | Vert | |
| 3 | 450.020M | 46.9 | -29.9 +0.0 | +16.7 | +2.5 | +0.2 | +0.0 | 36.4 | 46.0 | -9.6 | Vert | |
| 4 | 62.895M | 52.7 | -30.4 +0.0 | +7.0 | +0.8 | +0.0 | +0.0 | 30.1 | 40.0 | -9.9 | Vert | |
| 5 | 400.011M | 47.2 | -29.7 +0.0 | +15.6 | +2.4 | +0.2 | +0.0 | 35.7 | 46.0 | -10.3 | Horiz | |
| 6 | 450.006M | 45.8 | -29.9 +0.0 | +16.7 | +2.5 | +0.2 | +0.0 | 35.3 | 46.0 | -10.7 | Horiz | |
| 7 | 450.027M | 45.4 | -29.9 +0.0 | +16.7 | +2.5 | +0.2 | +0.0 | 34.9 | 46.0 | -11.1 | Horiz | |
| 8 | 720.010M | 41.5 | -29.8 +0.0 | +19.6 | +3.3 | +0.3 | +0.0 | 34.9 | 46.0 | -11.1 | Horiz | |
| 9 | 360.013M | 47.2 | -29.5 +0.0 | +14.6 | +2.2 | +0.2 | +0.0 | 34.7 | 46.0 | -11.3 | Horiz | |
| 10 | 400.000M | 45.9 | -29.7 +0.0 | +15.6 | +2.4 | +0.2 | +0.0 | 34.4 | 46.0 | -11.6 | Vert | |
| 11 | 720.010M | 41.0 | -29.8 +0.0 | +19.6 | +3.3 | +0.3 | +0.0 | 34.4 | 46.0 | -11.6 | Vert | |
| 12 | 269.996M | 47.9 | -29.1 +0.0 | +12.6 | +1.9 | +0.2 | +0.0 | 33.5 | 46.0 | -12.5 | Horiz | |

| | | | | | | | | | | | |
|----|----------|------|---------------|-------|------|------|------|------|------|-------|-------|
| 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 |

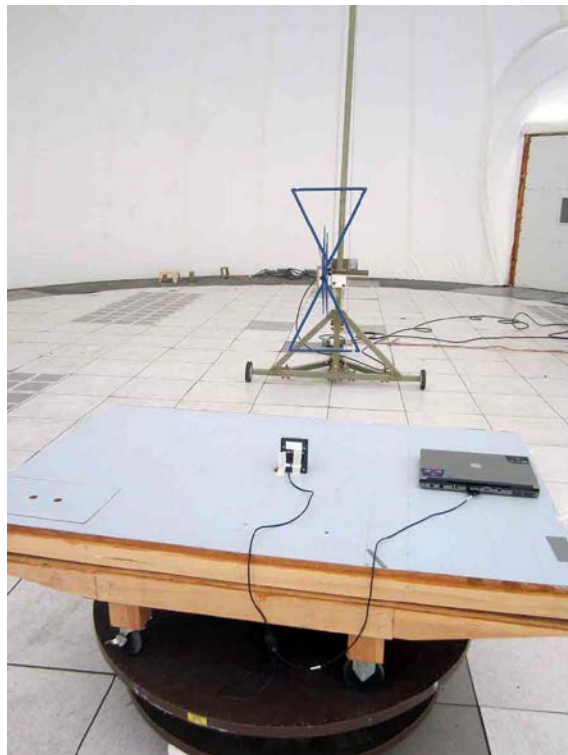
CKC Laboratories, Inc. Date: 8/26/2013 Time: 16:42:08 IDTECH WO#: 94628
 15.225 Carrier and Spurious Emissions (13.110-14.010 MHz Transmitter) Test Distance: 3 Meters Sequence#: 1
 Ext ATTN: 0 dB



— Readings
 × QP Readings
 ▼ Ambient
 ○ Peak Readings
 * Average Readings
 — 1 - 15.225 Carrier and Spurious Emissions (13.110-14.010 MHz Transmitter)

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** 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 |
|----|---------|---------------------|------------|------------------|--------------|
| | 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

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

| | | |
|---------------------------|-------------|------------|
| Device Model #: | IDVV-381131 | |
| Operating Voltage: | 120 | VAC |
| Frequency Limit: | 0.01 | % |

| 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 (±15%) | | | |
|----------------------------------|-------|----------|---------|
| 85% | 102.0 | 13.56003 | 0.00018 |
| 100% | 120 | 13.56003 | 0.00024 |
| 115% | 138.0 | 13.56003 | 0.00024 |

| | | | |
|--------------------------|--|--|----------------|
| Max Deviation (%) | | | 0.00098 |
| | | | PASS |

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 | Date: | 8/27/2013 |
| Specification: | RSS-210 | Time: | 14:46:03 |
| Work Order #: | 94628 | Sequence#: | 1 |
| Test Type: | Maximized Emissions | Tested By: | Eddie Mariscal |
| Equipment: | Vend III | | |
| Manufacturer: | IDTech | | |
| 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:

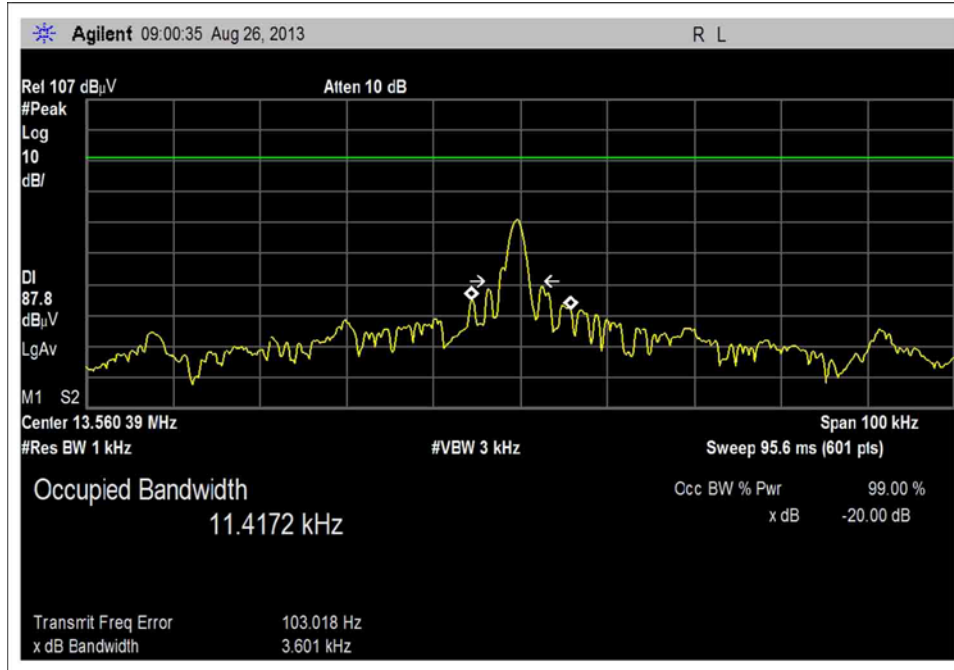
| Function | Manufacturer | Model # | S/N |
|-----------------|--------------------|------------|------------------|
| Laptop Computer | Dell | D630 | 3240302437 |
| AC adaptor | Global Power Corp. | 3A-161WP09 | GPWAC-15-09-2-VT |

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 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 | (dB μ V) |
| + | Antenna Factor | (dB) |
| + | Cable Loss | (dB) |
| - | Distance Correction | (dB) |
| - | Preamplifier Gain | (dB) |
| = | Corrected Reading | (dB μ V/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.