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# FCC/IC Test Report
on

## Elevator Display System
## Model: EDU-700

| | |
|---|---|
| **Customer Name:** | Captivate Network |
| **Customer P.O.:** | 7418 |
| **Date of Report:** | February 8, 2013 |
| **Test Report No.:** | R-5650N-1, Rev. A |
| **Test Start Date:** | November 26, 2012 |
| **Test Finish Date:** | December 11, 2012 |
| **Test Technician:** | M. Seamans |
| **Branch Manager:** | S. Wentworth |
| **Laboratory Supervisor:** | T. Hannemann |
| **Report Prepared By:** | J. Ramsey |
| **Government Source Inspection:** | N/A |

## Certification and Signatures

We certify that this report is a true representation of the results obtained from the tests of the equipment stated. We further certify that the measurements shown in this report were made in accordance with the procedures indicated and vouch for the qualifications of all Retlif Testing Laboratories personnel taking them.

Scott Wentworth
Branch Manager
NVLAP Approved Signatory

Todd Hannemann
Laboratory Supervisor
iNARTE Certified Technician ATL-0255-T

**Non-Warranty Provision**
The testing services have been performed, findings obtained and reports prepared in accordance with generally accepted laboratory principles and practices. This warranty is in lieu of all others, either expressed or implied.

**Non-Endorsement**
This test report contains only findings and results arrived at after employing the specific test procedures and standards listed herein. It is not intended to constitute a recommendation, endorsement or certification of the product or material tested. This test report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.

## Revision History

Revisions to this document are listed below; the latest revised document supersedes all previous issues of this document.

| Revision | Date | Pages Affected |
|---|---|---|
| - | December 27, 2012 | Original Release |
| A | February 8, 2013 | Pages 52, 53, 54, 56, 57, 58 |

## Test Program Summary

| Applicant | | Manufacturer | |
|---|---|---|---|
| Name: | Captivate Network | Name: | Captivate Network |
| Address: | 2 Executive Dr. Suite 301 | Address: | 2 Executive Dr. Suite 301 |
| City, State, Zip: | Chelmsford, MA 01824 | City, State, Zip: | Chelmsford, MA 01824 |

**Test Specifications**:

FCC Rules and Regulations Part 15, Subpart C, Para. 15.247

Radio Standards Specification, RSS-210, Issue 8, December, 2010 and RSS-GEN, Issue 3, December 2010

**Test Procedure**:

ANSI C63.4:2003 & FCC Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under 15.247, 10/4/2012.

## Test Sample Description

**EUT:** Elevator Display Unit (Media Player) with LVDS Display

**Brandname:** Captivate Network

**System Model Number:** EDU-700

**FCC ID:** QGC-6F127021

**IC:** 10666A-7C127022

**Wireless Type:** Direct Sequence Spread Spectrum (DSSS) Transceiver

**Power Requirements:** 120 VAC, 60 Hz, Single Phase

**Frequency Band of Operation:** 2400 to 2483.5 MHz

**Antenna Type:** Nearson S131AM-2450R - ¼ Wave Dipole 2dBi

**Antenna Ports:** (2) Reverse Polarity SMA

**EUT Description/installation:**

The EUT is an Elevator Display Unit (Media Player) which is professionally installed in elevators for the purpose of showing messages/advertisements to elevator users. The EUT contains a 2.4GHz DSSS Wireless module which is used to communicate wirelessly with a network to receive programming information. The Display is mounted on the interior of the elevator with the EDU containing the wireless module mounted on the outside of the elevator directly opposite the display but behind the elevator panels. For testing purposes the installation was simulated by mounting the display to one side of a sheet metal panel and the EDU to the other side.

**EUT Components:**

| System Component | Model Number | Part Number | Manufacturer |
|---|---|---|---|
| Elevator Display Unit (Control Unit with Wireless Module) | EDU-700 | N/A | Captivate Network |
| 12” VGA Display | 12-VGA | 15-9017-539 | NLT Technologies |
| 12” LVDS Display | NL8060BC31-47 | A1A20030 | NLT Technologies |

**Support Equipment:**

| Description | Model Number | Part Number | Manufacturer |
|---|---|---|---|
| Ethernet Extender | N/A | 2172R/TB/EV1 | Patton |

## Tests Performed

The test methods performed on the Elevator Display Unit (Media Player) with LVDS Display are shown below:

| FCC Part 15, Subpart C | Industry Canada RSS-210 Issue 8, Dec. 2010 | Industry Canada RSS-GEN Issue 3, Dec. 2010 | Test Method |
|---|---|---|---|
| 15.247(a)(2) | A8.2(a) | N/A | 6dB Bandwidth |
| 15.247(b)(3) | A8.4(4) | N/A | Maximum Peak Conducted Output Power |
| 15.247(d) | A8.5 | N/A | Antenna Port, Out of Band Emissions |
| 15.247(e) | A8.2(b) | N/A | Antenna Port Peak Power Spectral Density |
| 15.247(d) 15.205(a)/15.209(a) | A8.5 | 7.2.2 | Transmitter Spurious Radiated Emissions/Restricted Bands/Bandedge 30 MHz to 25 GHz |
| 15.207(a) | N/A | 7.2.4 | Conducted Emissions, Power Leads, 150 kHz to 30 MHz |
| N/A | N/A | 6.1 | Receiver Spurious Radiated Emissions 30 MHz to 25 GHz |

## Requirements and Test Results

**Requirement:**

**FCC Section 15.247(a)(2) – 6dB Bandwidth**

Systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz bands. The minimum 6 dB bandwidths shall be at least 500 kHz.

**IC RSS-210, A8.2(a) – 6dB Bandwidth**

The minimum 6 dB bandwidth shall be at least 500 kHz.

- Results (Primary Port):
  The minimum 6 dB bandwidth measured 12.19 MHz which complies with the requirement that the Bandwidth be no less than 500 kHz.

- Results (Secondary Port):
  The minimum 6 dB bandwidth measured 12.31 MHz which complies with the requirement that the Bandwidth be no less than 500 kHz.

**Requirement:**

**FCC Sections 15.247(b)(3) – Peak Output Power**

The maximum peak conducted output power of the intentional radiator shall not exceed the following:

For systems using digital modulation in the 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antenna and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antenna and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

**Requirements and Test Results (con't)**

**IC RSS-210, A8.4(4) - Transmitter Output Power and e.i.r.p. Requirements**

For systems employing digital modulation techniques operating in the bands 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz, the maximum peak conducted output power shall not exceed 1 Watt. Except as provided in Section A8.4(5), the e.i.r.p. shall not exceed 4 Watts.

As an alternative to a peak power measurement, compliance can be based on a measurement of the maximum conducted output power (RSS-Gen).

- Results (Primary Port):
  The maximum peak output power on the primary port was measured and found to be 52.72 mW (17.22 dBm), in compliance with the specified limit of 1 watt.

- Results (Secondary Port):
  The maximum peak output power on the secondary port was measured and found to be 51.17 mW (17.09 dBm), in compliance with the specified limit of 1 watt.

- Results (Composite Power):
  The maximum peak output power on the primary port and the maximum peak output power on the secondary port were summed to find the maximum composite peak output power. The maximum composite peak output power was 280.60 mW, which was in compliance with the specified limit of 1 watt.

- Results (EIRP):
  The antenna's used with the EUT have a maximum gain of 2dBi (do not exceed 6dBi) and therefore the EIRP is in compliance with the de facto EIRP limit.

**Requirements and Test Results (con't)**

**Requirement:**

**FCC Section 15.247(d) - Out of Band Emissions**

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) must also comply with the radiated emissions limits specified in Section 15.209(a) (see Section 15.205(c)).

**IC RSS-210, A8.5 - Out of Band Emissions**

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the radio frequency power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under Section A8.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Tables 2 and 3 of RSS-210 is not required.

- Results:
  In any 100 kHz bandwidth outside the frequency band in which the intentional radiator was operating, the radio frequency power that was produced by the intentional radiator was at least 20 dB below that in the 100 kHz bandwidth within the band that contained the highest level of the desired power.

**Requirements and Test Results (con't)**

**FCC Section 15.247(d) - Radiated Spurious Emissions/Restricted Bands/Band Edge**

Emissions which fall into restricted bands, as defined in 15.205(a) must comply with the radiated emissions limits specified in 15.209(a) and shown below in Table 1. Emissions emanating from the EUT cabinet and cables must also comply with the radiated emissions limits. Radiated emissions measurements were also performed at the band edges to ensure band edge compliance.

**IC RSS-210, A8.5 - Radiated Spurious Emissions/Restricted Bands/Band Edge**

Emissions which fall into restricted bands, as defined in RSS-Gen, Para. 7.2.2 must comply with the radiated emissions limits specified in RSS Gen, Para. 7.2.5 and shown below in Table 1. Emissions emanating from the EUT cabinet and cables must also comply with the radiated emissions limits. Radiated emissions measurements were also performed at the band edges to ensure band edge compliance.

Table 1 - Radiated Emission Limits

| Frequency of Emission (MHz) | Field Strength (microvolts/meter) | Measurement Distance (meters) |
|---|---|---|
| 30 to 88 | 100 | 3 |
| 88 to 216 | 150 | 3 |
| 216 to 960 | 200 | 3 |
| Above 960 | 500 | 3 |

- Results:
  No EUT spurious emissions were observed in restricted bands. All spurious emissions were measured and found to be in compliance with the limits specified in 15.209(a)/RSS Gen Para. 7.2.5. Band edge emissions were also found to be in compliance with the limits specified in 15.209(a)/RSS Gen Para. 7.2.5.

**IC RSS-Gen, Par. 6.1 - Receiver Radiated Spurious Emissions**

Spurious emissions from receivers must comply with the radiated emissions limits specified in RSS-Gen, Para. 6.1 and shown above in Table 1.

- Results:
  No EUT receiver spurious emissions were observed within in 10dB of the specified limit.

**Requirements and Test Results (con't)**

**Requirement:**

**FCC Section 15.247(e) - Power Spectral Density**

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

**IC RSS-210, A8.2(b) – Power Spectral Density:**

The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission or over 1.0 second if the transmission exceeds 1.0 second duration. This power spectral density shall be determined in accordance with the provisions of Section A8.4(4); (i.e. the power spectral density shall be determined using the same method for determining the conducted output power).

- Results (Primary and Secondary Ports):
  The power spectral density conducted from the intentional radiator to the antenna was not greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density was determined in accordance with Section 15.247(b)(3), herein. The same method of determining the conducted output power was used to determine the power spectral density.

**Requirement:**

**FCC Section 15.207(a) - Conducted Limits**

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits shown in Table 2, as measured using a 50 µH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of the paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

**Requirements and Test Results (con't)**

**IC RSS-GEN, Section 7.2.2: Transmitter and Receiver AC Power Lines Conducted Emission Limits**

The purpose of this test is to measure unwanted radio frequency currents induced in any AC conductor external to the equipment which could conduct interference to other equipment via the AC electrical network.

Except when the requirements applicable to a given device state otherwise, for any license-exempt radio communication device equipped to operate from the public utility AC power supply, either directly or indirectly, the radio frequency voltage that is conducted back onto the AC power lines in the frequency range of 0.15 MHz to 30 MHz shall not exceed the limits shown in Table 2. The tighter limit applies at the frequency range boundaries.

The conducted emissions shall be measured with a 50 ohm/50 microhenry line impedance stabilization network.

Table 2 - Conducted Emission Limits

| **Frequency of Emission (MHz)** | **Conducted Limit (dBµV)** | |
|---|---|---|
| | Quasi-Peak | Average |
| 0.15 to 0.5 | 66 to 56* | 56 to 46* |
| 0.5 to 5 | 56 | 46 |
| 5 to 30 | 60 | 50 |
| *Decreases due to logarithm of the frequency | | |

- Results:
  The conducted emissions observed did not exceed the limits specified in Table 2.

# Equipment List

## 6 dB Bandwidth

| EN | Manufacturer | Description | Range | Model No. | Cal Date | Due Date |
|---|---|---|---|---|---|---|
| 4895 | AGILENT / HP | SPECTRUM ANALYZER | 9kHz - 22GHz | 8593EM | 10/24/2012 | 10/31/2013 |
| 5038 | FLUKE | 10DB ATTENUATOR | 10KHZ - 1GHZ | Y9304 | 10/22/2012 | 10/31/2013 |

## Antenna Port – Maximum Conducted Peak Power Output

| EN | Manufacturer | Description | Range | Model No. | Cal Date | Due Date |
|---|---|---|---|---|---|---|
| 1035 | BOONTON | POWER METER | 10 kHz - 100 GHz | 4232A | 9/6/2012 | 9/30/2013 |
| 4961 | NARDA | ATTENUATOR | DC - 18 GHz | 757C-30DB | 1/19/2012 | 1/31/2013 |
| 5030C | NARDA | 10DB ATTENUATOR | DC - 12.4 GHz | 757C-10 | 10/17/2012 | 10/31/2013 |
| 5059 | BOONTON | POWER SENSOR | 10 KHZ - 8 GHZ | 51011-EMC | 9/5/2012 | 9/30/2013 |

## Antenna Port, Out of Band Conducted Emissions

| EN | Manufacturer | Description | Range | Model No. | Cal Date | Due Date |
|---|---|---|---|---|---|---|
| 4895 | AGILENT / HP | SPECTRUM ANALYZER | 9kHz - 22GHz | 8593EM | 10/24/2012 | 10/31/2013 |
| 5038 | FLUKE | 10DB ATTENUATOR | 10KHZ - 1GHZ | Y9304 | 10/22/2012 | 10/31/2013 |

## Antenna Port, Peak Power Spectral Density

| EN | Manufacturer | Description | Range | Model No. | Cal Date | Due Date |
|---|---|---|---|---|---|---|
| 4895 | AGILENT / HP | SPECTRUM ANALYZER | 9kHz - 22GHz | 8593EM | 10/24/2012 | 10/31/2013 |
| 5038 | FLUKE | 10DB ATTENUATOR | 10KHZ - 1GHZ | Y9304 | 10/22/2012 | 10/31/2013 |

## Spurious Radiated Emissions, 30 MHz to 25 GHz

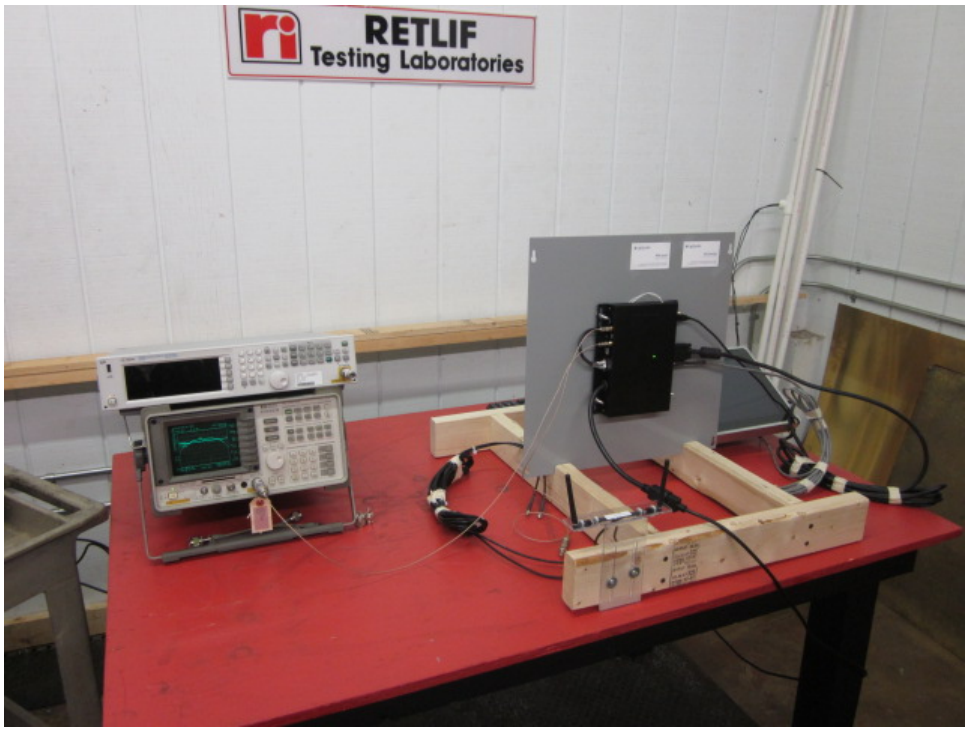
| EN | Manufacturer | Description | Range | Model No. | Cal Date | Due Date |
|---|---|---|---|---|---|---|
| 4029 | RETLIF | OPEN AREA TEST SITE | 3 / 10 Meters | RNH | 7/24/2012 | 7/24/2015 |
| 5053 | EMCO | BICONILOG ANTENNA | 26 MHz - 3 GHz | 3142C | 11/14/2011 | 12/31/2012 |
| R444 | AGILENT / HP | SPECTRUM ANALYZER | 100 Hz - 26.5 GHz | E7405A;A | 7/6/2012 | 7/6/2013 |
| 1232 | AGILENT / HP | PRE-AMPLIFIER | 1 - 26.5GHz | 8449B | 5/30/2012 | 5/31/2013 |
| 3258 | EMCO | DOUBLE RIDGED GUIDE ANTENNA | 1 GHZ - 18GHZ | 3115 | 2/24/2012 | 2/28/2013 |
| 3430 | MCS | HORN ANTENNA | 18 GHz - 26.5 GHz | K-5039 | 1/19/2012 | 1/31/2013 |

# Conducted Emissions, Power Leads, 150 kHz to 30 MHz

| EN | Manufacturer | Description | Range | Model No. | Cal Date | Due Date |
|---|---|---|---|---|---|---|
| 5038 | FLUKE | 10DB ATTENUATOR | 10KHZ - 1GHZ | Y9304 | 10/22/2012 | 10/31/2013 |
| 5070 | ROHDE & SCHWARZ | EMI TEST RECEIVER | 20 Hz - 40 GHz | ESIB40 | 11/6/2012 | 11/30/2013 |
| 5152 | GENERAL TECHNICS | Control Computer | | INDUSTRIAL PC | No Calibration Required | |
| 7032 | ROHDE & SCHWARZ | LINE IMPEDANCE STABILIZATION NETWORK | 9KHZ-30MHZ | ESH 3-Z5 | 1/16/2012 | 1/31/2013 |

**Test Photograph(s)**
**6 dB Bandwidth**
**FCC Part 15, Subpart C, Section 15.247(a)(2)**
**RSS-210, Section A8.2(a)**

## Test Photograph(s)
## 6dB Bandwidth



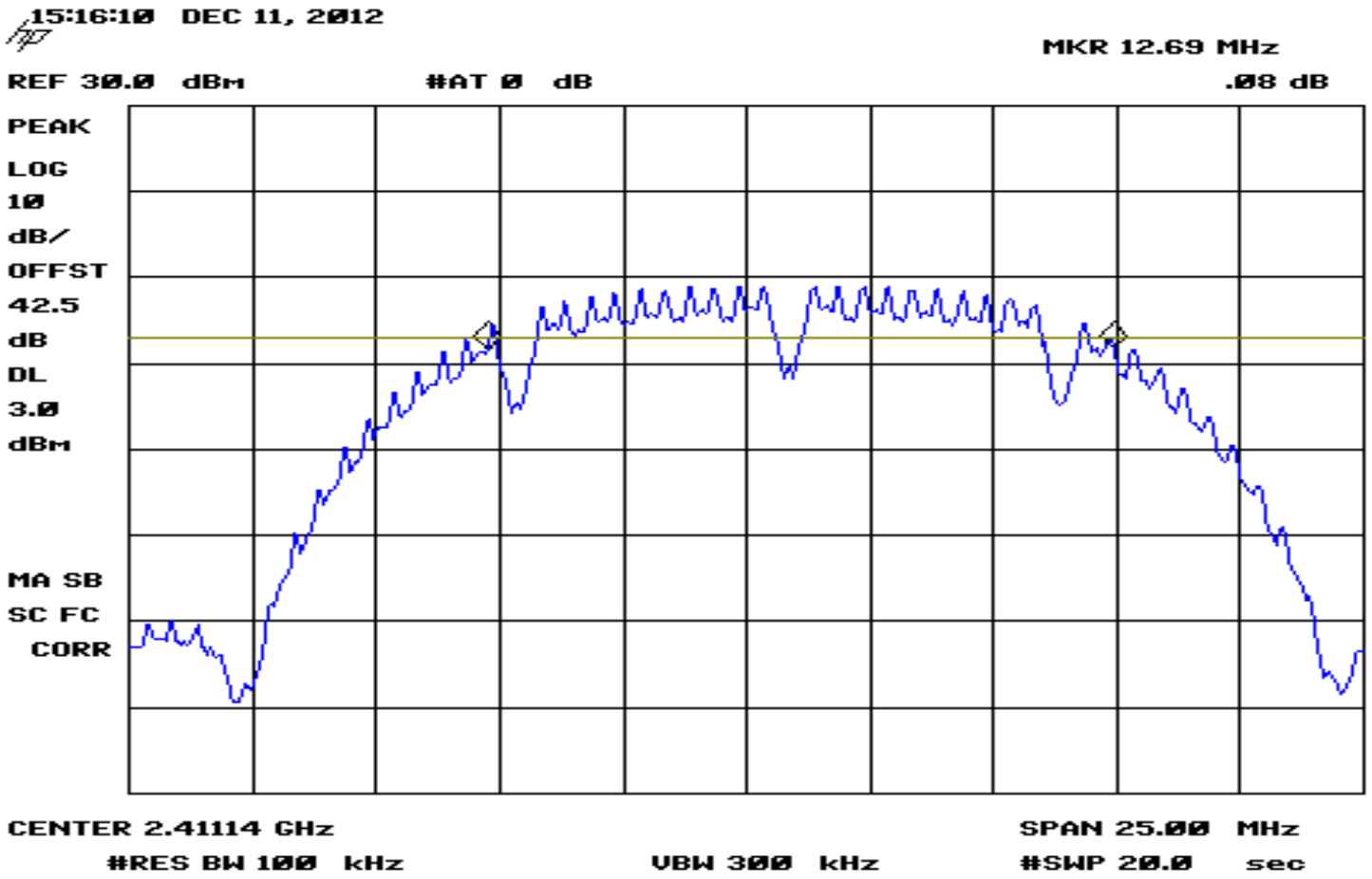

EUT Configuration

**6 dB Bandwidth**
**FCC Part 15, Subpart C, Section 15.247(a)(2)**
**RSS-210, Section A8.2(a)**
**Test Data**

# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

| | | | | | |
|---|---|---|---|---|---|
| **Test Method:** | **6 dB Bandwidth** | | | | |
| **Customer:** | Captivate Network | **Test Sample:** | Elevator Display Unit (Media Player) with LVDS Display | **Job No:** | R-5650N-1 |
| **Model No:** | EDU-700 | **Serial No:** | N/A | **Technician:** | T. Hannemann |
| **Test Specification:** | FCC Part 15, Subpart C | Paragraph: 15.247(a)(2) | | **Date:** | 12/11/2012 |
| **Operating Mode:** | Transmitting | | | | |
| **Notes:** | Port Tested: Primary Frequency Tested: Channel 1 2.41114 GHz 6dB Bandwidth: 12.69 MHz | | | | |

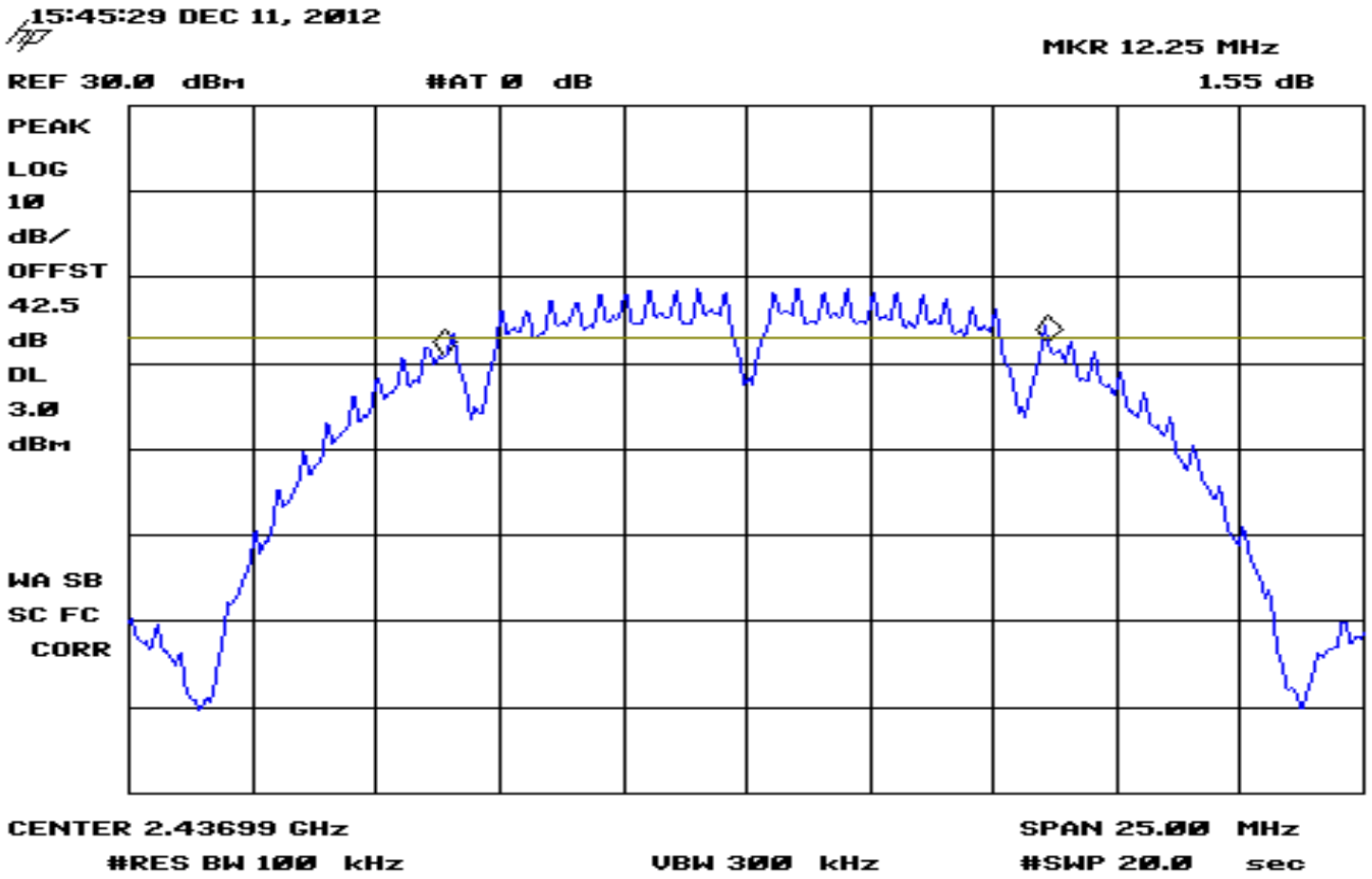



Data Sheet 1 of 3 **R-5650N-1**

# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

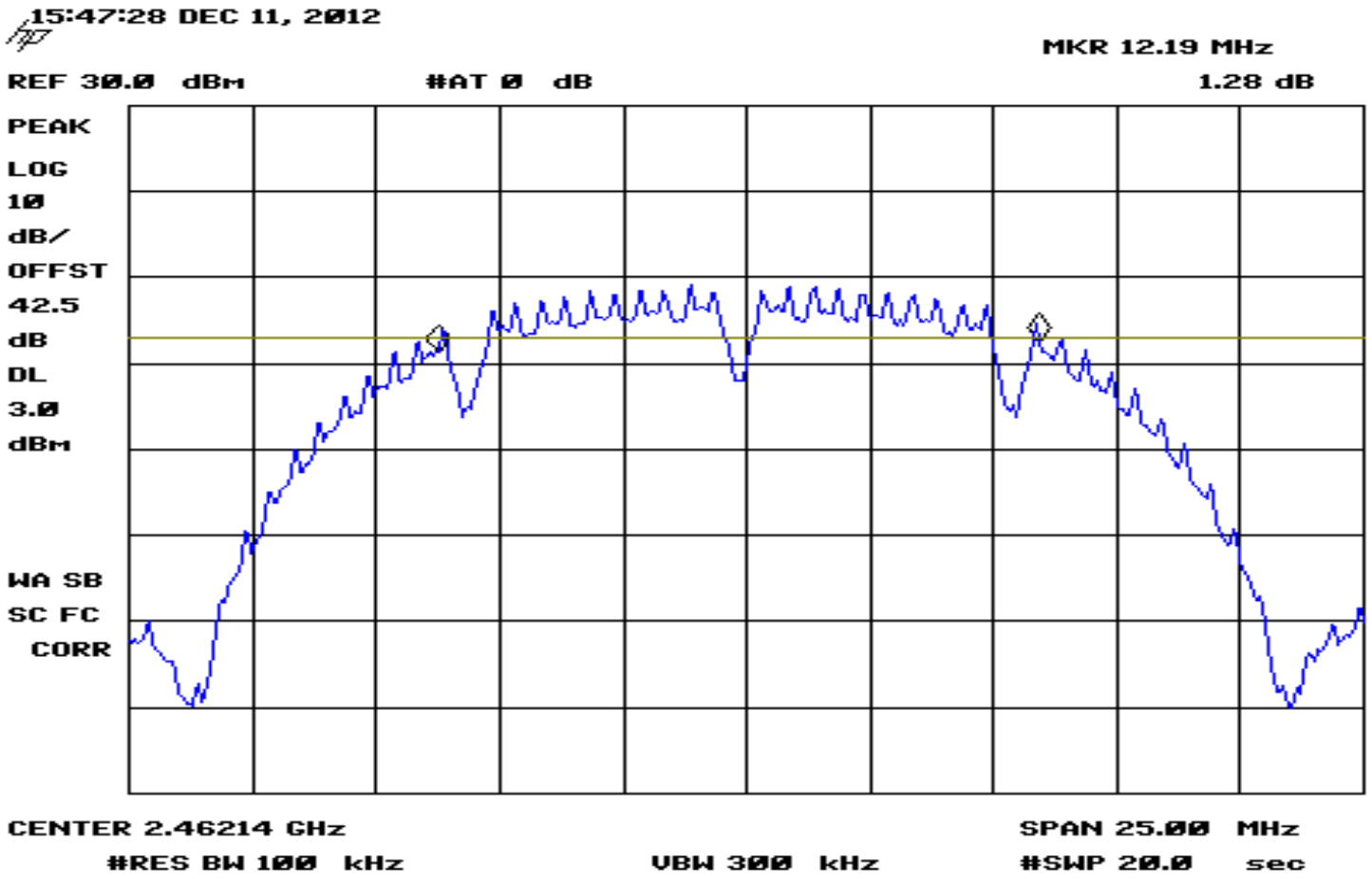
| | | | | | |
|---|---|---|---|---|---|
| **Test Method:** | **6 dB Bandwidth** | | | | |
| **Customer:** | Captivate Network | **Test Sample:** | Elevator Display Unit (Media Player) with LVDS Display | **Job No:** | R-5650N-1 |
| **Model No:** | EDU-700 | **Serial No:** | N/A | **Technician:** | T. Hannemann |
| **Test Specification:** | FCC Part 15, Subpart C | Paragraph: 15.247(a)(2) | | **Date:** | 12/11/2012 |
| **Operating Mode:** | Transmitting | | | | |
| **Notes:** | Port Tested: Primary Frequency Tested: Channel 11 2.43804 GHz 6dB Bandwitdh: 12.25 MHz | | | | |



# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

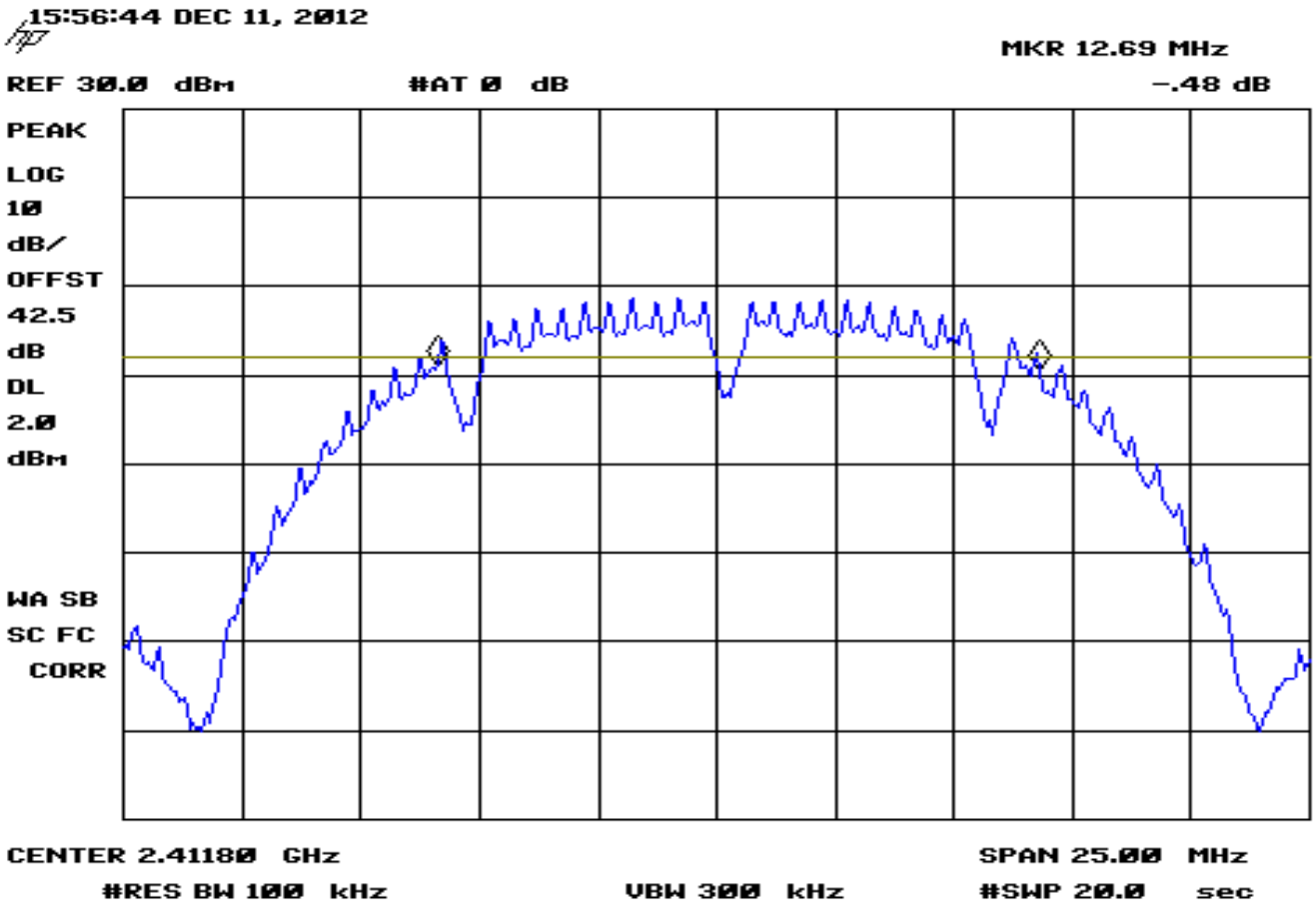
| | | | | | |
|---|---|---|---|---|---|
| **Test Method:** | **6 dB Bandwidth** | | | | |
| **Customer:** | Captivate Network | **Test Sample:** | Elevator Display Unit (Media Player) with LVDS Display | **Job No:** | R-5650N-1 |
| **Model No:** | EDU-700 | **Serial No:** | N/A | **Technician:** | T. Hannemann |
| **Test Specification:** | FCC Part 15, Subpart C | Paragraph: 15.247(a)(2) | | **Date:** | 12/11/2012 |
| **Operating Mode:** | Transmitting | | | | |
| **Notes:** | Port Tested: Primary Frequency Tested: Channel 11 2.46104 GHz 6dB Bandwidth: 12.19 MHz | | | | |



# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

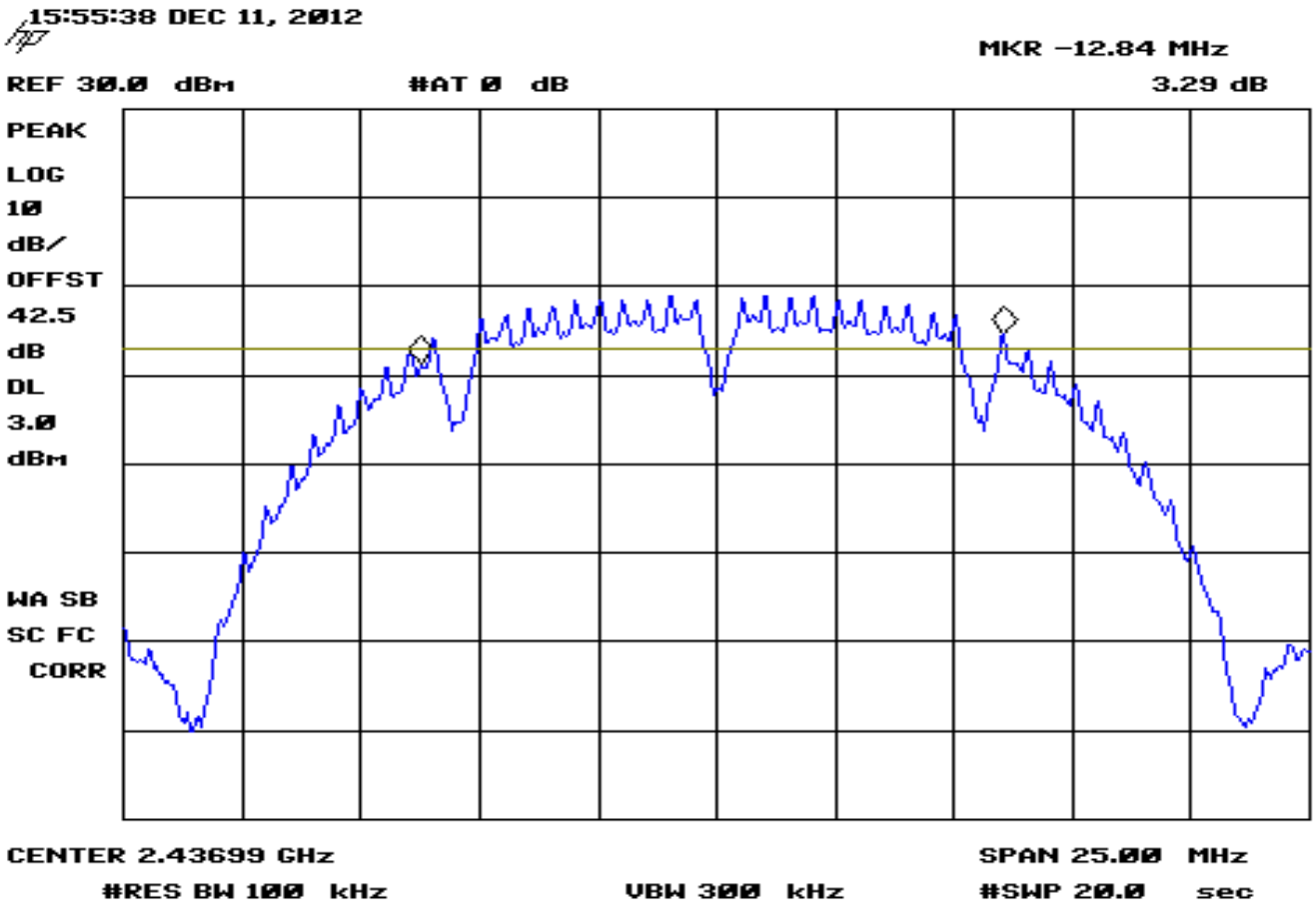
| | | | | | |
|---|---|---|---|---|---|
| **Test Method:** | **6 dB Bandwidth** | | | | |
| **Customer:** | Captivate Network | **Test Sample:** | Elevator Display Unit (Media Player) with LVDS Display | **Job No:** | R-5650N-1 |
| **Model No:** | EDU-700 | **Serial No:** | N/A | **Technician:** | T. Hannemann |
| **Test Specification:** | FCC Part 15, Subpart C | Paragraph: 15.247(a)(2) | | **Date:** | 12/11/2012 |
| **Operating Mode:** | Transmitting | | | | |
| **Notes:** | Port Tested: Secondary Frequency Tested: Channel 1 2.41114 GHz 6dB Bandwidth: 12.69 MHz | | | | |



# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

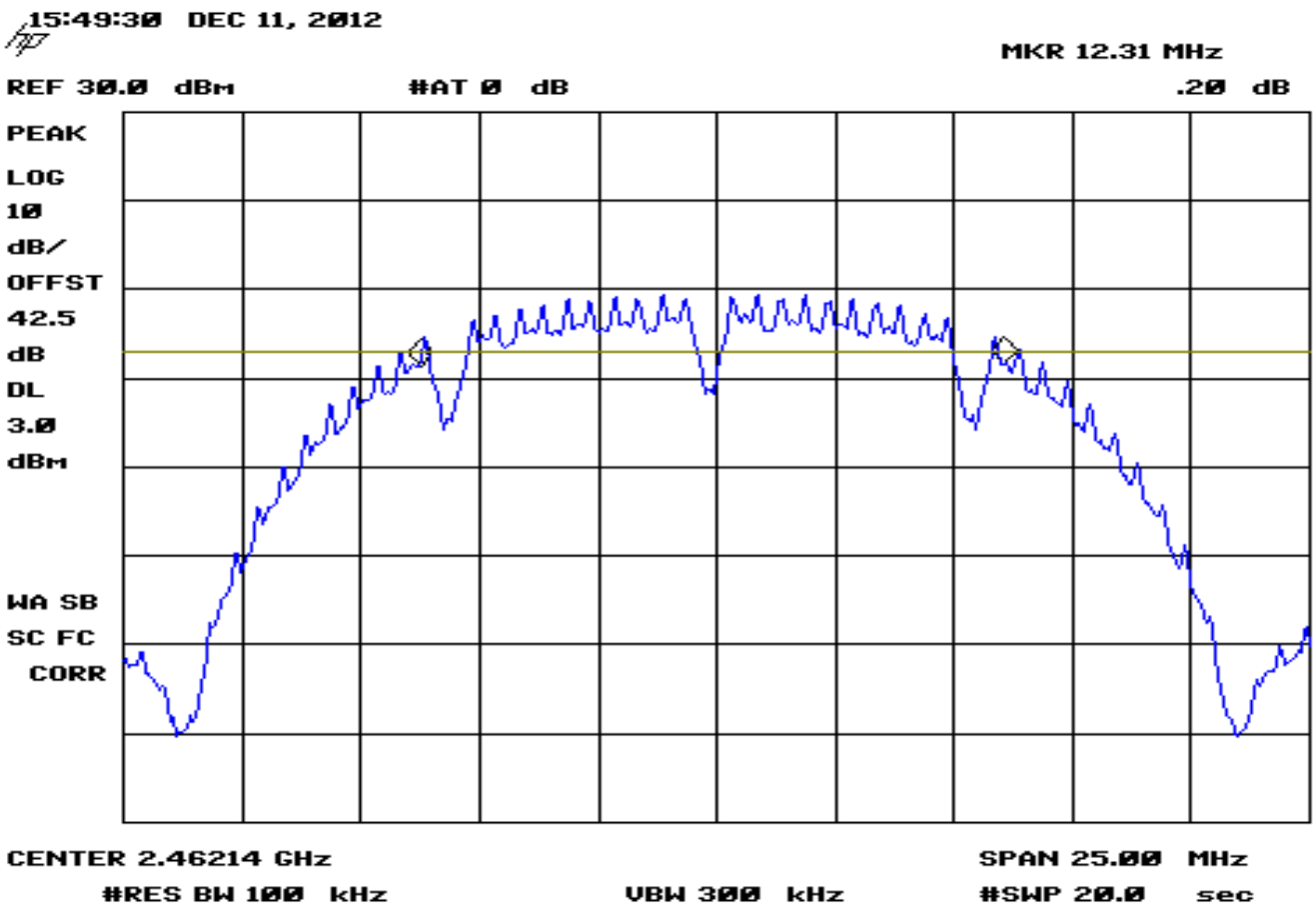
| | | | | | |
|---|---|---|---|---|---|
| **Test Method:** | **6 dB Bandwidth** | | | | |
| **Customer:** | Captivate Network | **Test Sample:** | Elevator Display Unit (Media Player) with LVDS Display | **Job No:** | R-5650N-1 |
| **Model No:** | EDU-700 | **Serial No:** | N/A | **Technician:** | T. Hannemann |
| **Test Specification:** | FCC Part 15, Subpart C | Paragraph: 15.247(a)(2) | | **Date:** | 12/11/2012 |
| **Operating Mode:** | Transmitting | | | | |
| **Notes:** | Port Tested: Secondary Frequency Tested: Channel 11 2.43804 GHz 6dB Bandwitdh: 12.84 MHz | | | | |



# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

| | | | | | |
|---|---|---|---|---|---|
| **Test Method:** | **6 dB Bandwidth** | | | | |
| **Customer:** | Captivate Network | **Test Sample:** | Elevator Display Unit (Media Player) with LVDS Display | **Job No:** | R-5650N-1 |
| **Model No:** | EDU-700 | **Serial No:** | N/A | **Technician:** | T. Hannemann |
| **Test Specification:** | FCC Part 15, Subpart C | Paragraph: 15.247(a)(2) | | **Date:** | 12/11/2012 |
| **Operating Mode:** | Transmitting | | | | |
| **Notes:** | Port Tested: Secondary Frequency Tested: Channel 11 2.46104 GHz 6dB Bandwidth: 12.31 MHz | | | | |



**Test Photograph(s)**
**Maximum Conducted Peak Power Output**
**FCC Part 15, Subpart C, Section 15.247(b)(3)**
**RSS-210, Section A8.4(4)**

## Test Photograph(s)
## Maximum Conducted Peak Power Output

Test Setup

**Maximum Conducted Peak Power Output**
**FCC Part 15, Subpart C, Section 15.247(b)(3)**
**RSS-210, Section A8.4(4)**
**Test Data**

# RETLIF TESTING LABORATORIES

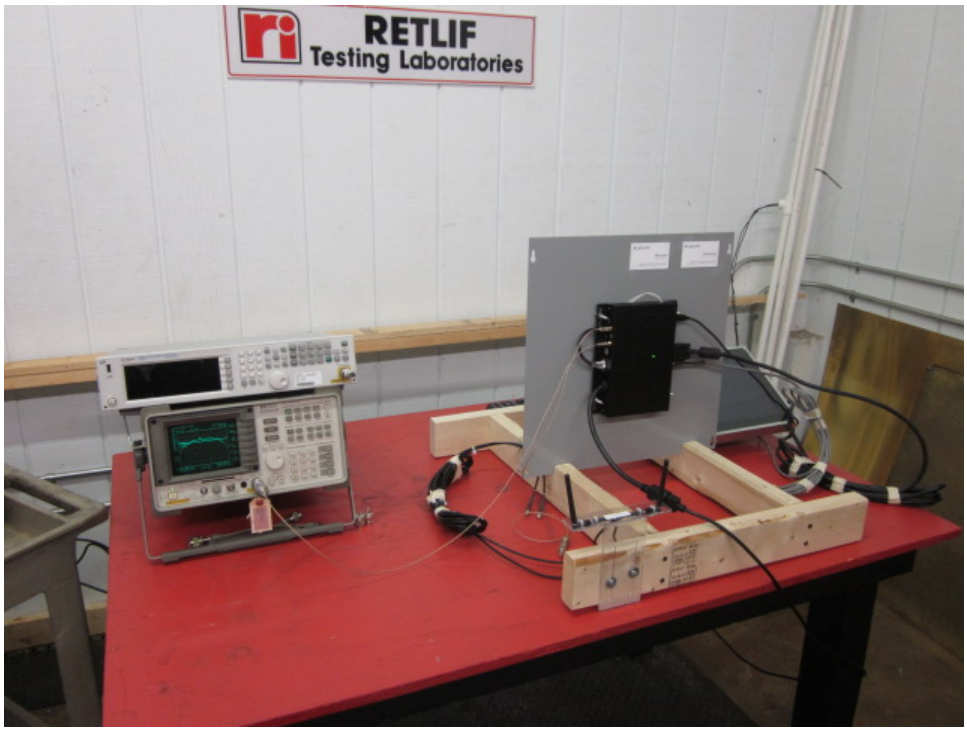
## EMISSIONS DATA SHEET

| | | | |
|---|---|---|---|
| **Test Method:** | **Peak Power Output** | | |
| **Customer** | Captivate Network | **Job No.** | R-5650N-1 |
| **Test Sample** | Elevator Display Unit (Media Player) with LVDS Display | | |
| **Model No.** | EDU-700 | **Serial No.** | N/A |
| **Test Specification:** | FCC Part 15 Subpart C<br>Paragraph: 15.247(b)(3) | | |
| **Operating Mode:** | Transmitting | | |
| **Technician:** | T. Hannemann | **Date:** | December 14, 2012 |
| **Notes:** | Power measured with a power meter and combined to show composite power of both ports. | | |

| Antenna Port | Channel | Frequency | Measured Level | Attenuator/ Cable Factor | Corrected Output | | Combined Output | Combined Output | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | GHz | dBm | dB | dBm | | dBm | Watts | | |
| Primary | 1 | 2.41194 | -25.28 | 42.50 | 17.22 | | 24.48 | 0.2806 | | |
| Secondary | 1 | 2.41194 | -25.41 | 42.50 | 17.09 | | 24.24 | | | |
| Primary | 6 | 2.43644 | -25.93 | 42.50 | 16.57 | | 23.31 | 0.2142 | | |
| Secondary | 6 | 2.43644 | -26.12 | 42.50 | 16.38 | | 22.97 | | | |
| Primary | 11 | 2.46214 | -25.51 | 42.50 | 16.99 | | 24.06 | 0.2548 | | |
| Secondary | 11 | 2.46214 | -25.62 | 42.50 | 16.88 | | 23.86 | | | |

**Test Photograph(s)**
**Antenna Port, Out of Band Conducted Emissions**
**FCC Part 15, Subpart C, Section 15.247(d)**
**RSS-210, Section A8.5**

**Test Photograph(s)**
**Antenna Port, Out of Band Conducted Emissions**




EUT Configuration

**Antenna Port, Out of Band Conducted Emissions**
**FCC Part 15, Subpart C, Section 15.247(d)**
**RSS-210, Section A8.5**
**Test Data**

# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

| | | | |
|---|---|---|---|
| **Test Method:** | **Antenna Port, Conducted Emissions 30 MHz - 25 GHz** | | |
| **Customer** | Captivate Network | **Job No.** | R-5650N-1 |
| **Test Sample** | Elevator Display Unit (Media Player) with LVDS Display | | |
| **Model No.** | EDU-700 | **Serial No.** | N/A |
| **Test Specification:** | FCC Part 15 Subpart C 15.247(d) | | |
| **Operating Mode:** | Channel 1 Transmitting at 2.41194 GHz | | |
| **Technician:** | M. Seamans | **Date:** | November 27, 2012 |
| **Notes:** | Port Tested: Primary | | |

| Test Frequency | | Uncorrected Reading | Cable Loss | Corrected Reading | | | | | | Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| MHz | | dBm | dB | dBm | | | | | | dBm |
| 30.00 | - | - | - | - | | | | | | -2.78 |
| \| | - | - | - | - | | | | | | \| |
| 73.00 | - | -51.0 | 0.45 | -50.52 | | | | | | \| |
| 75.13 | - | -52.6 | 0.45 | -52.15 | | | | | | \| |
| 149.60 | - | -52.3 | 0.95 | -51.36 | | | | | | \| |
| 187.40 | - | -60.4 | 1.05 | -59.38 | | | | | | \| |
| 240.00 | - | -61.5 | 1.15 | -60.32 | | | | | | \| |
| 451.50 | - | -37.2 | 1.50 | -35.72 | | | | | | \| |
| 457.00 | - | -51.5 | 1.50 | -49.97 | | | | | | \| |
| 1408.00 | - | -46.9 | 3.00 | -43.85 | | | | | | \| |
| 1660.00 | - | -30.8 | 3.10 | -27.70 | | | | | | \| |
| 4823.00 | - | -59.6 | 4.91 | -54.71 | | | | | | \| |
| 7240.00 | - | -52.6 | 5.35 | -47.22 | | | | | | \| |
| \| | - | - | - | - | | | | | | \| |
| \| | - | - | - | - | | | | | | \| |
| 25000.00 | - | - | - | - | | | | | | -2.78 |

In any 100 kHz bandwidth outside the frequency band in which the intentional radiater was operating, the radio frequency power that was produced by the intentional radiator was at least 20 dB below the highest level of the fundamental power output.

# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

| | | | |
|---|---|---|---|
| **Test Method:** | **Antenna Port, Conducted Emissions 30 MHz - 25 GHz** | | |
| **Customer** | Captivate Network | **Job No.** | R-5650N-1 |
| **Test Sample** | Elevator Display Unit (Media Player) with LVDS Display | | |
| **Model No.** | EDU-700 | **Serial No.** | N/A |
| **Test Specification:** | FCC Part 15 Subpart C 15.247(d) | | |
| **Operating Mode:** | Channel 6 Transmitting at 2.43644 GHz | | |
| **Technician:** | M. Seamans | **Date:** | November 27, 2012 |
| **Notes:** | Port Tested: Primary | | |

| Test Frequency | | Uncorrected Reading | Cable Loss | Corrected Reading | | | | | | Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| MHz | | dBm | dB | dBm | | | | | | dBm |
| 30.00 | - | - | - | - | | | | | | -3.43 |
| \| | - | - | - | - | | | | | | \| |
| 105.40 | - | -46.4 | 1.00 | -45.37 | | | | | | \| |
| 211.00 | - | -47.7 | 1.15 | -46.58 | | | | | | \| |
| 275.50 | - | -56.0 | 1.15 | -54.86 | | | | | | \| |
| 476.00 | - | -40.6 | 1.50 | -39.10 | | | | | | \| |
| 481.50 | - | -54.8 | 1.50 | -53.26 | | | | | | \| |
| 1451.00 | - | -43.9 | 3.00 | -40.88 | | | | | | \| |
| 1695.00 | - | -30.4 | 3.15 | -27.22 | | | | | | \| |
| 4874.00 | - | -65.8 | 4.95 | -60.85 | | | | | | \| |
| \| | - | - | - | - | | | | | | \| |
| \| | - | - | - | - | | | | | | \| |
| \| | - | - | - | - | | | | | | \| |
| \| | - | - | - | - | | | | | | \| |
| \| | - | - | - | - | | | | | | \| |
| 25000.00 | - | - | - | - | | | | | | -3.43 |

In any 100 kHz bandwidth outside the frequency band in which the intentional radiater was operating, the radio frequency power that was produced by the intentional radiator was at least 20 dB below the highest level of the fundamental power output.

# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

| | | | |
|---|---|---|---|
| **Test Method:** | **Antenna Port, Conducted Emissions 30 MHz - 25 GHz** | | |
| **Customer** | Captivate Network | **Job No.** | R-5650N-1 |
| **Test Sample** | Elevator Display Unit (Media Player) with LVDS Display | | |
| **Model No.** | EDU-700 | **Serial No.** | N/A |
| **Test Specification:** | FCC Part 15 Subpart C 15.247(d) | | |
| **Operating Mode:** | Channel 11 Transmitting at 2.46214 GHz | | |
| **Technician:** | M. Seamans | **Date:** | November 27, 2012 |
| **Notes:** | Port Tested: Primary | | |

| Test Frequency | | Uncorrected Reading | Cable Loss | Corrected Reading | | | | | | Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| MHz | | dBm | dB | dBm | | | | | | dBm |
| 30.00 | - | - | - | - | | | | | | -3.01 |
| \| | - | - | - | - | | | | | | \| |
| 272.80 | - | -50.0 | 1.15 | -48.81 | | | | | | \| |
| 311.00 | - | -56.4 | 1.15 | -55.28 | | | | | | \| |
| 495.50 | - | -60.3 | 1.50 | -58.82 | | | | | | \| |
| 502.50 | - | -43.0 | 1.50 | -41.49 | | | | | | \| |
| 530.00 | - | -45.0 | 1.50 | -43.50 | | | | | | \| |
| 1368.00 | - | -51.1 | 2.80 | -48.34 | | | | | | \| |
| 1493.00 | - | -53.6 | 3.00 | -50.56 | | | | | | \| |
| 1733.00 | - | -33.8 | 3.15 | -30.62 | | | | | | \| |
| 4926.00 | - | -67.0 | 4.95 | -62.09 | | | | | | \| |
| \| | - | - | - | - | | | | | | \| |
| \| | - | - | - | - | | | | | | \| |
| \| | - | - | - | - | | | | | | \| |
| \| | - | - | - | - | | | | | | \| |
| 25000.00 | - | - | - | - | | | | | | -3.01 |

In any 100 kHz bandwidth outside the frequency band in which the intentional radiater was operating, the radio frequency power that was produced by the intentional radiator was at least 20 dB below the highest level of the fundamental power output.

# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

| | | | |
|---|---|---|---|
| **Test Method:** | **Antenna Port, Conducted Emissions 30 MHz - 25 GHz** | | |
| **Customer** | Captivate Network | **Job No.** | R-5650N-1 |
| **Test Sample** | Elevator Display Unit (Media Player) with LVDS Display | | |
| **Model No.** | EDU-700 | **Serial No.** | N/A |
| **Test Specification:** | FCC Part 15 Subpart C 15.247(d) | | |
| **Operating Mode:** | Channel 1 Transmitting at 2.41194 GHz | | |
| **Technician:** | M. Seamans | **Date:** | November 28, 2012 |
| **Notes:** | Port Tested: Secondary | | |

| Test Frequency | | Uncorrected Reading | Cable Loss | Corrected Reading | | | | | | Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| MHz | | dBm | dB | dBm | | | | | | dBm |
| 30.00 | - | - | - | - | | | | | | -2.91 |
| \| | - | - | - | - | | | | | | \| |
| 73.00 | - | -51.0 | 0.45 | -50.52 | | | | | | \| |
| 75.13 | - | -52.6 | 0.45 | -52.15 | | | | | | \| |
| 149.60 | - | -52.3 | 0.95 | -51.36 | | | | | | \| |
| 187.40 | - | -60.4 | 1.05 | -59.38 | | | | | | \| |
| 240.00 | - | -61.5 | 1.15 | -60.32 | | | | | | \| |
| 451.50 | - | -37.2 | 1.50 | -35.72 | | | | | | \| |
| 457.00 | - | -51.5 | 1.50 | -49.97 | | | | | | \| |
| 1408.00 | - | -46.9 | 3.00 | -43.85 | | | | | | \| |
| 1660.00 | - | -30.8 | 3.10 | -27.70 | | | | | | \| |
| 4823.00 | - | -59.6 | 4.91 | -54.71 | | | | | | \| |
| 7240.00 | - | -52.6 | 5.35 | -47.22 | | | | | | \| |
| \| | - | - | - | - | | | | | | \| |
| \| | - | - | - | - | | | | | | \| |
| 25000.00 | - | - | - | - | | | | | | -2.91 |

In any 100 kHz bandwidth outside the frequency band in which the intentional radiater was operating, the radio frequency power that was produced by the intentional radiator was at least 20 dB below the highest level of the fundamental power output.

# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

| | | | |
|---|---|---|---|
| **Test Method:** | **Antenna Port, Conducted Emissions 30 MHz - 25 GHz** | | |
| **Customer** | Captivate Network | **Job No.** | R-5650N-1 |
| **Test Sample** | Elevator Display Unit (Media Player) with LVDS Display | | |
| **Model No.** | EDU-700 | **Serial No.** | N/A |
| **Test Specification:** | FCC Part 15 Subpart C 15.247(d) | | |
| **Operating Mode:** | Channel 6 Transmitting at 2.43644 GHz | | |
| **Technician:** | M. Seamans | **Date:** | November 28, 2012 |
| **Notes:** | Port Tested: Secondary | | |

| Test Frequency | | Uncorrected Reading | Cable Loss | Corrected Reading | | | | | | Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| MHz | | dBm | dB | dBm | | | | | | dBm |
| 30.00 | - | - | - | - | | | | | | -3.62 |
| \| | - | - | - | - | | | | | | \| |
| 105.40 | - | -46.4 | 1.00 | -45.37 | | | | | | \| |
| 211.00 | - | -47.7 | 1.15 | -46.58 | | | | | | \| |
| 275.50 | - | -56.0 | 1.15 | -54.86 | | | | | | \| |
| 476.00 | - | -40.6 | 1.50 | -39.10 | | | | | | \| |
| 481.50 | - | -54.8 | 1.50 | -53.26 | | | | | | \| |
| 1451.00 | - | -43.9 | 3.00 | -40.88 | | | | | | \| |
| 1695.00 | - | -30.4 | 3.15 | -27.22 | | | | | | \| |
| 4874.00 | - | -65.8 | 4.95 | -60.85 | | | | | | \| |
| \| | - | - | - | - | | | | | | \| |
| \| | - | - | - | - | | | | | | \| |
| \| | - | - | - | - | | | | | | \| |
| \| | - | - | - | - | | | | | | \| |
| \| | - | - | - | - | | | | | | \| |
| 25000.00 | - | - | - | - | | | | | | -3.62 |

In any 100 kHz bandwidth outside the frequency band in which the intentional radiater was operating, the radio frequency power that was produced by the intentional radiator was at least 20 dB below the highest level of the fundamental power output.

# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

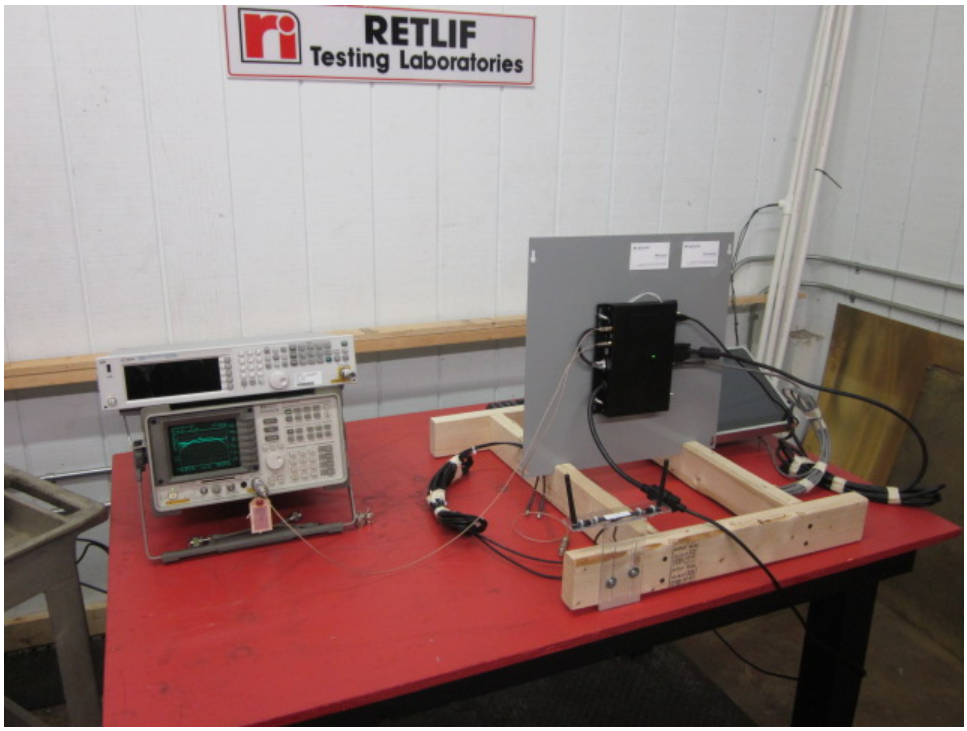
| | | | |
|---|---|---|---|
| **Test Method:** | **Antenna Port, Conducted Emissions 30 MHz - 25 GHz** | | |
| **Customer** | Captivate Network | **Job No.** | R-5650N-1 |
| **Test Sample** | Elevator Display Unit (Media Player) with LVDS Display | | |
| **Model No.** | EDU-700 | **Serial No.** | N/A |
| **Test Specification:** | FCC Part 15 Subpart C 15.247(d) | | |
| **Operating Mode:** | Channel 11 Transmitting at 2.46214 GHz | | |
| **Technician:** | M. Seamans | **Date:** | November 28, 2012 |
| **Notes:** | Port Tested: Secondary | | |

| Test Frequency | | Uncorrected Reading | Cable Loss | Corrected Reading | | | | | | Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| MHz | | dBm | dB | dBm | | | | | | dBm |
| 30.00 | - | - | - | - | | | | | | -3.12 |
| \| | - | - | - | - | | | | | | \| |
| 272.80 | - | -50.0 | 1.15 | -48.81 | | | | | | \| |
| 311.00 | - | -56.4 | 1.15 | -55.28 | | | | | | \| |
| 495.50 | - | -60.3 | 1.50 | -58.82 | | | | | | \| |
| 502.50 | - | -43.0 | 1.50 | -41.49 | | | | | | \| |
| 530.00 | - | -45.0 | 1.50 | -43.50 | | | | | | \| |
| 1368.00 | - | -51.1 | 2.80 | -48.34 | | | | | | \| |
| 1493.00 | - | -53.6 | 3.00 | -50.56 | | | | | | \| |
| 1733.00 | - | -33.8 | 3.15 | -30.62 | | | | | | \| |
| 4926.00 | - | -67.0 | 4.95 | -62.09 | | | | | | \| |
| \| | - | - | - | - | | | | | | \| |
| \| | - | - | - | - | | | | | | \| |
| \| | - | - | - | - | | | | | | \| |
| \| | - | - | - | - | | | | | | \| |
| 25000.00 | - | - | - | - | | | | | | -3.12 |

In any 100 kHz bandwidth outside the frequency band in which the intentional radiater was operating, the radio frequency power that was produced by the intentional radiator was at least 20 dB below the highest level of the fundamental power output.

**Test Photograph(s)**
**Antenna Port, Peak Power Spectral Density**
**FCC Part 15, Subpart C, Section 15.247(e)**
**RSS-210, Section A8.2(b)**

## Test Photograph(s)
## Antenna Port, Peak Power Spectral Density



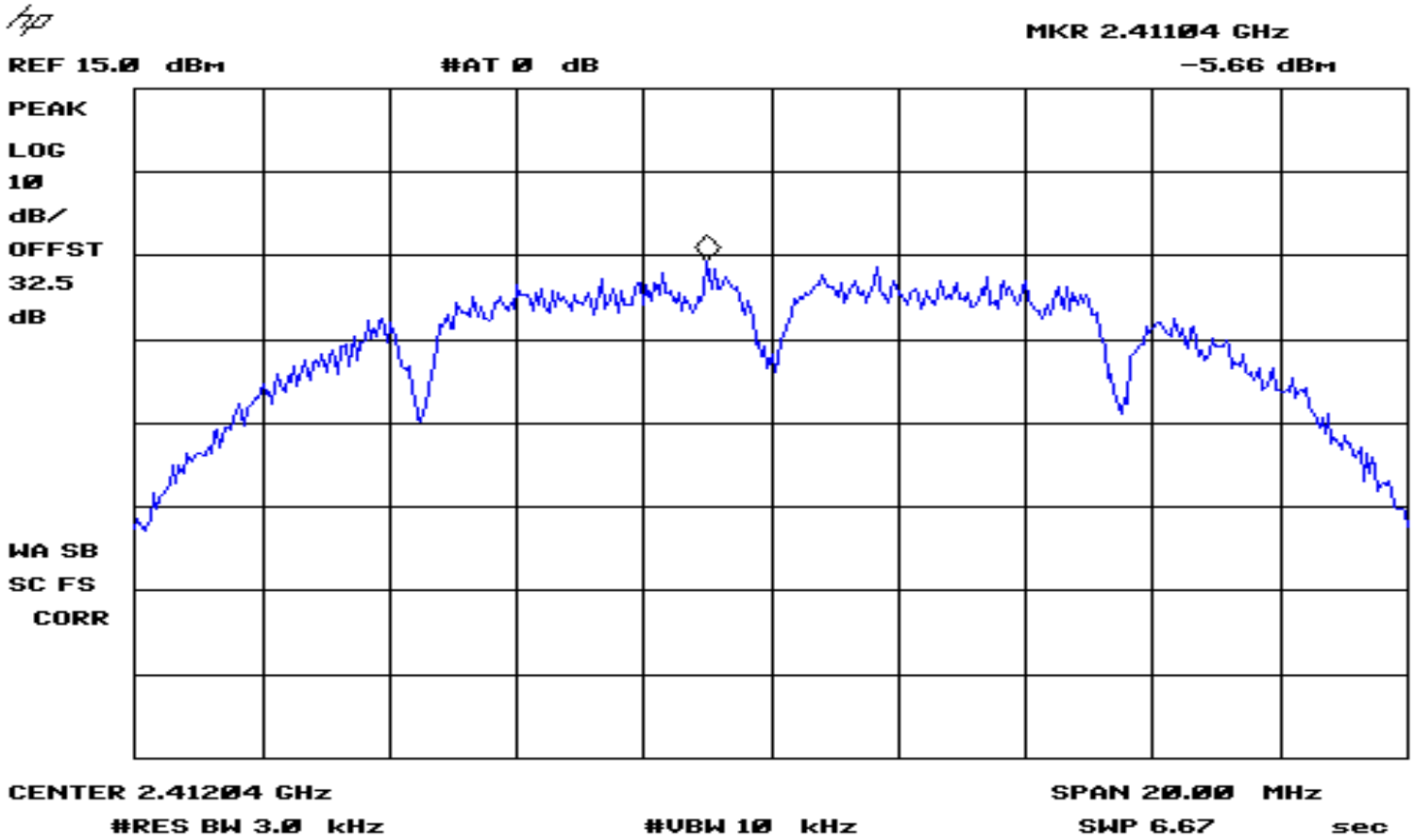

EUT Configuration

**Antenna Port, Peak Power Spectral Density**
**FCC Part 15, Subpart C, Section 15.247(e)**
**RSS-210, Section A8.2(b)**
**Test Data**

# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

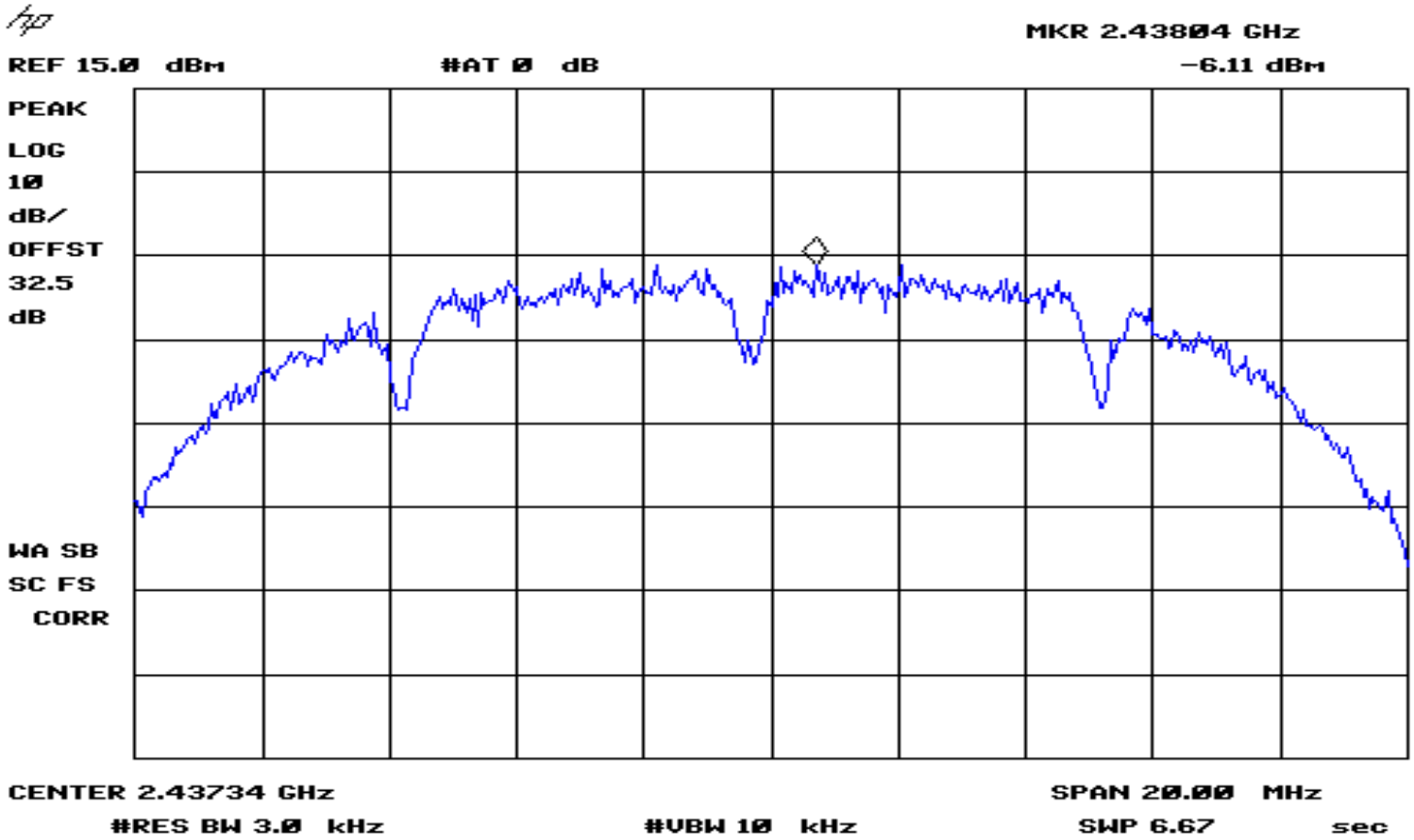
| | | | | | |
|---|---|---|---|---|---|
| **Test Method:** | **Power Density** | | | | |
| **Customer:** | Captivate Network | **Test Sample:** | Elevator Display Unit (Media Player) with LVDS Display | **Job No:** | R-5650N-1 |
| **Model No:** | EDU-700 | **Serial No:** | N/A | **Technician:** | T. Hannemann |
| **Test Specification:** | FCC Part 15, Subpart C | Paragraph: 15.247(e) | | **Date:** | 1/24/2013 |
| **Operating Mode:** | Transmitting | | | | |
| **Notes:** | Port Tested: Primary Channel 1 Transmitting at 2.41194 GHz Power Density: -5.66 dBm | | | | |



# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

| | | | | | |
|---|---|---|---|---|---|
| **Test Method:** | **Power Density** | | | | |
| **Customer:** | Captivate Network | **Test Sample:** | Elevator Display Unit (Media Player) with LVDS Display | **Job No:** | R-5650N-1 |
| **Model No:** | EDU-700 | **Serial No:** | N/A | **Technician:** | T. Hannemann |
| **Test Specification:** | FCC Part 15, Subpart C | Paragraph: 15.247(e) | | **Date:** | 1/24/2013 |
| **Operating Mode:** | Transmitting | | | | |
| **Notes:** | Port Tested: Primary Channel 6 Transmitting at 2.43644 GHz Power Density: -6.11 dBm | | | | |

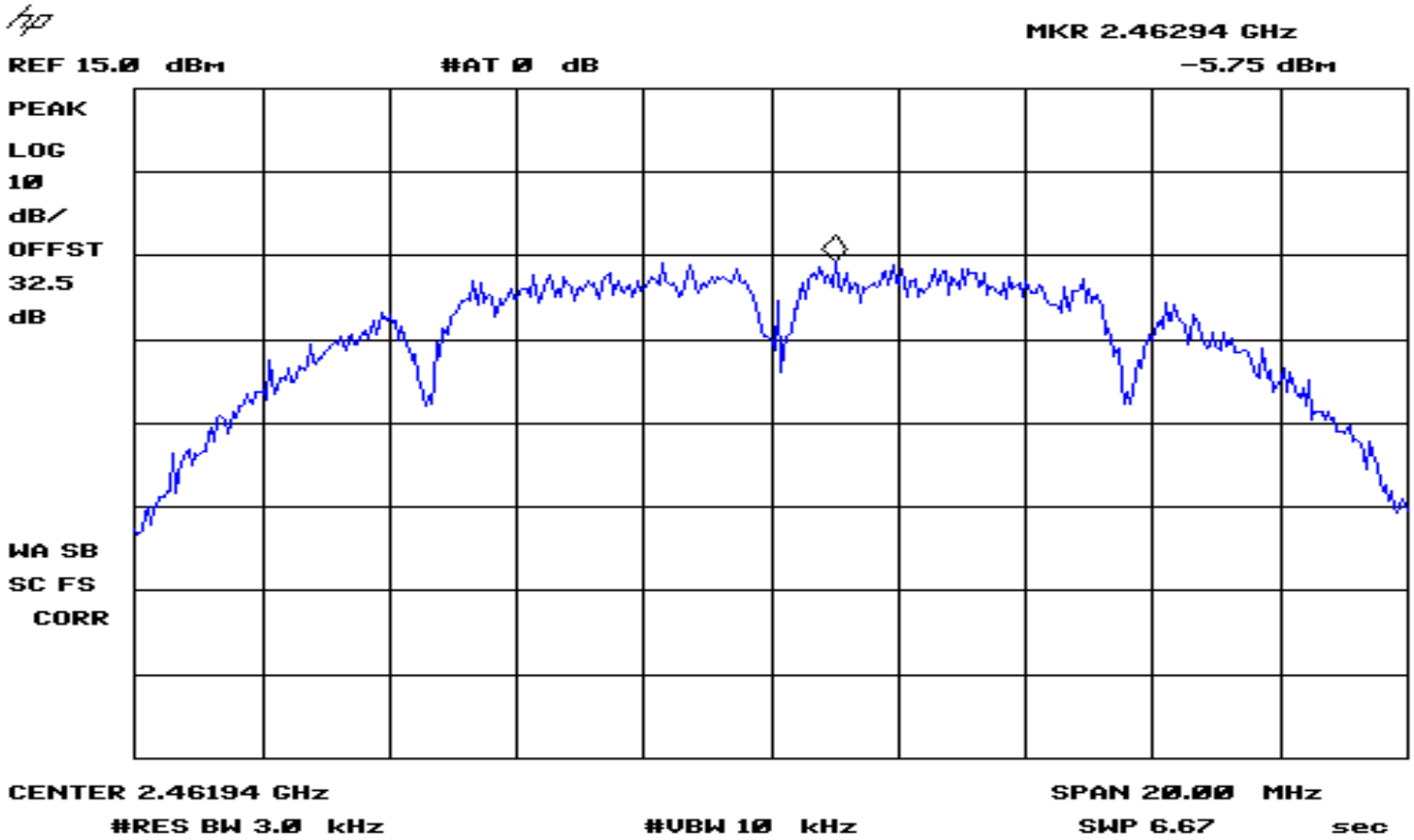



Data Sheet 2 of 3 **R-5650N-1**

# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

| | | | | | |
|---|---|---|---|---|---|
| **Test Method:** | **Power Density** | | | | |
| **Customer:** | Captivate Network | **Test Sample:** | Elevator Display Unit (Media Player) with LVDS Display | **Job No:** | R-5650N-1 |
| **Model No:** | EDU-700 | **Serial No:** | N/A | **Technician:** | T. Hannemann |
| **Test Specification:** | FCC Part 15, Subpart C | Paragraph: 15.247(e) | | **Date:** | 1/24/2013 |
| **Operating Mode:** | Transmitting | | | | |
| **Notes:** | Port Tested: Primary Channel 11 Transmitting at 2.46214 GHz Power Density: -5.75 dBm | | | | |

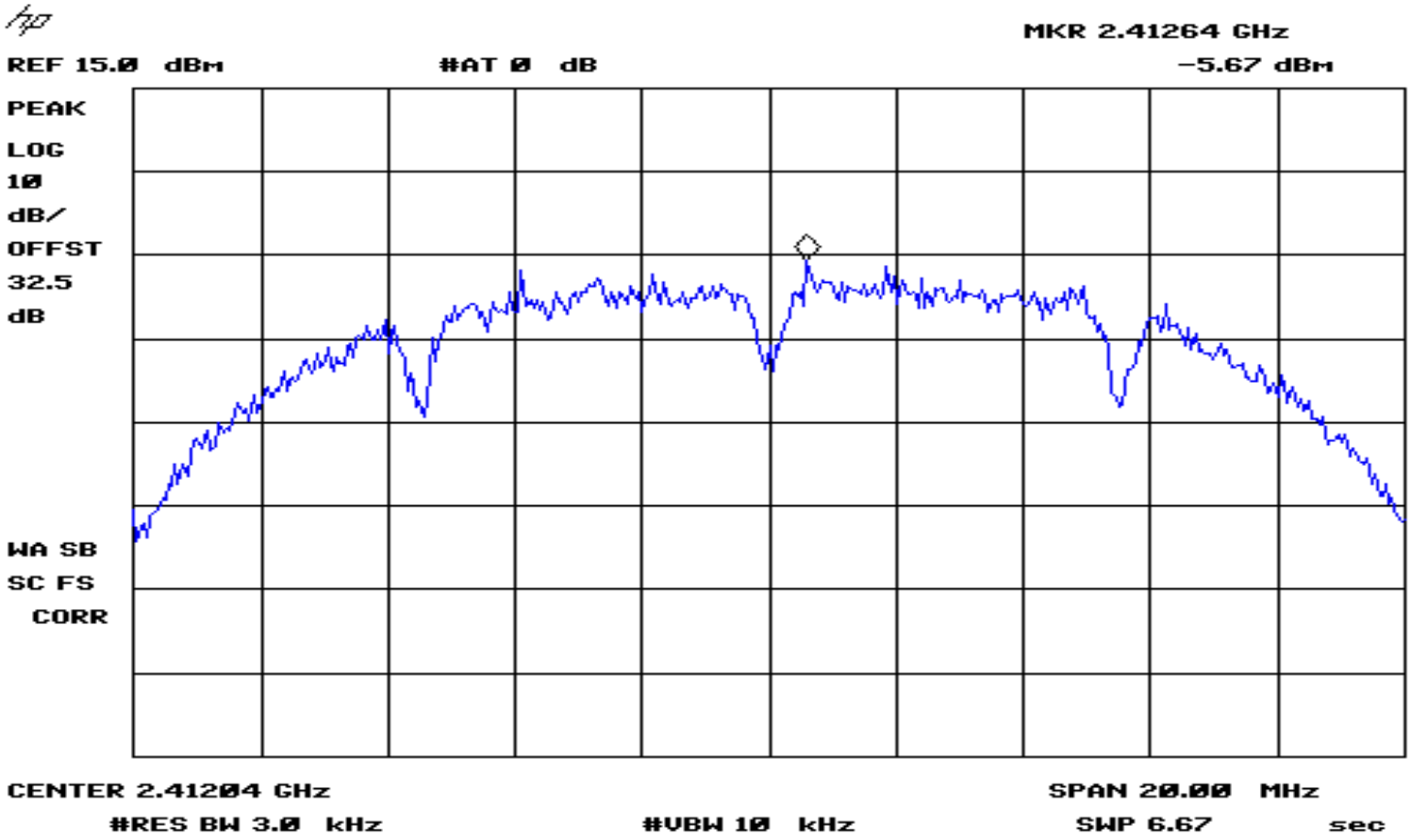



Data Sheet 3 of 3 **R-5650N-1**

# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

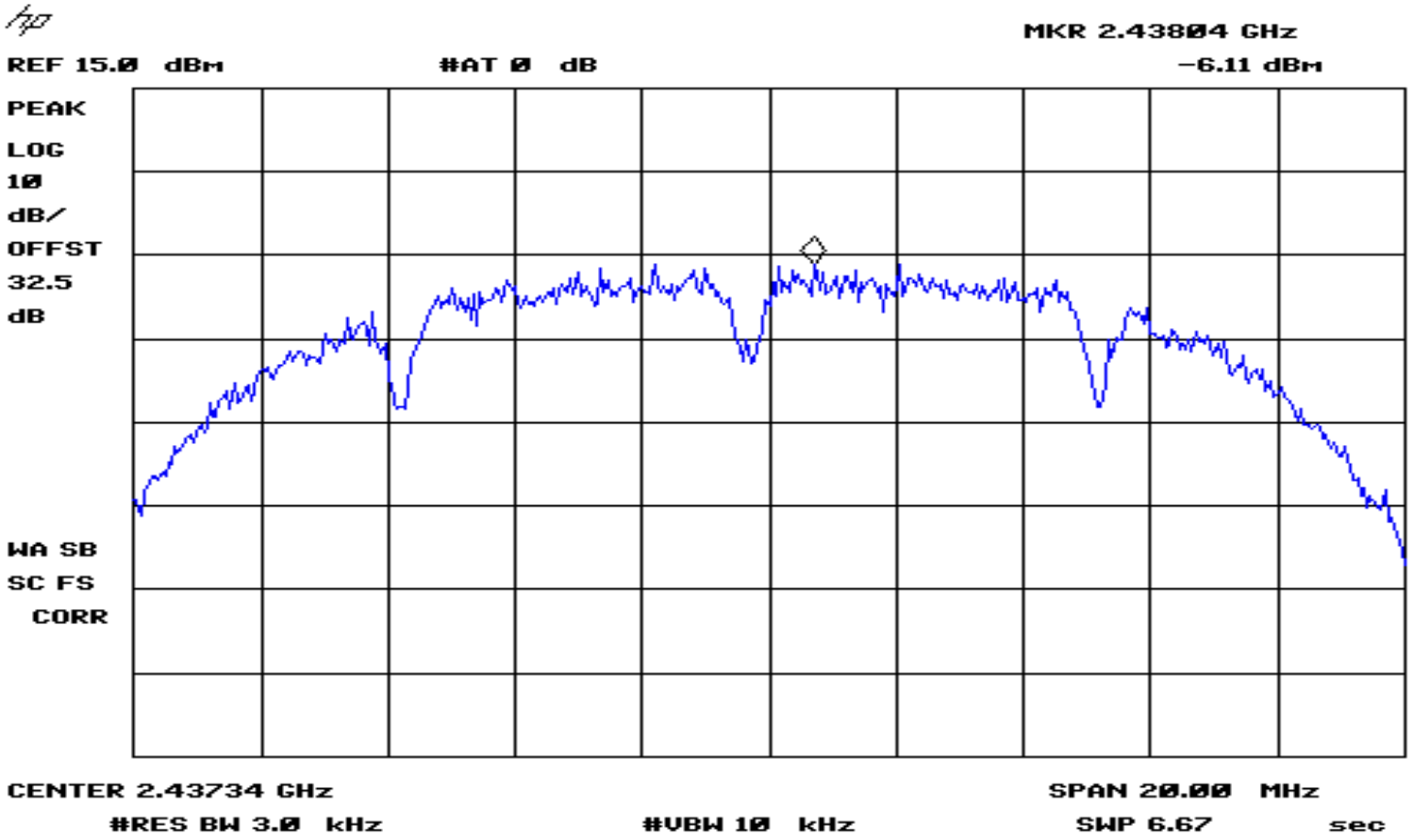
| | | | | | |
|---|---|---|---|---|---|
| **Test Method:** | **Power Density** | | | | |
| **Customer:** | Captivate Network | **Test Sample:** | Elevator Display Unit (Media Player) with LVDS Display | **Job No:** | R-5650N-1 |
| **Model No:** | EDU-700 | **Serial No:** | N/A | **Technician:** | T. Hannemann |
| **Test Specification:** | FCC Part 15, Subpart C | Paragraph: 15.247(e) | | **Date:** | 1/24/2013 |
| **Operating Mode:** | Transmitting | | | | |
| **Notes:** | Port Tested: Secondary Channel 1 Transmitting at 2.41194 GHz Power Density: -5.67 dBm | | | | |



# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

| | | | | | |
|---|---|---|---|---|---|
| **Test Method:** | **Power Density** | | | | |
| **Customer:** | Captivate Network | **Test Sample:** | Elevator Display Unit (Media Player) with LVDS Display | **Job No:** | R-5650N-1 |
| **Model No:** | EDU-700 | **Serial No:** | N/A | **Technician:** | T. Hannemann |
| **Test Specification:** | FCC Part 15, Subpart C | Paragraph: 15.247(e) | | **Date:** | 1/24/2013 |
| **Operating Mode:** | Transmitting | | | | |
| **Notes:** | Port Tested: Secondary Channel 6 Transmitting at 2.43644 GHz Power Density: -6.11 dBm | | | | |

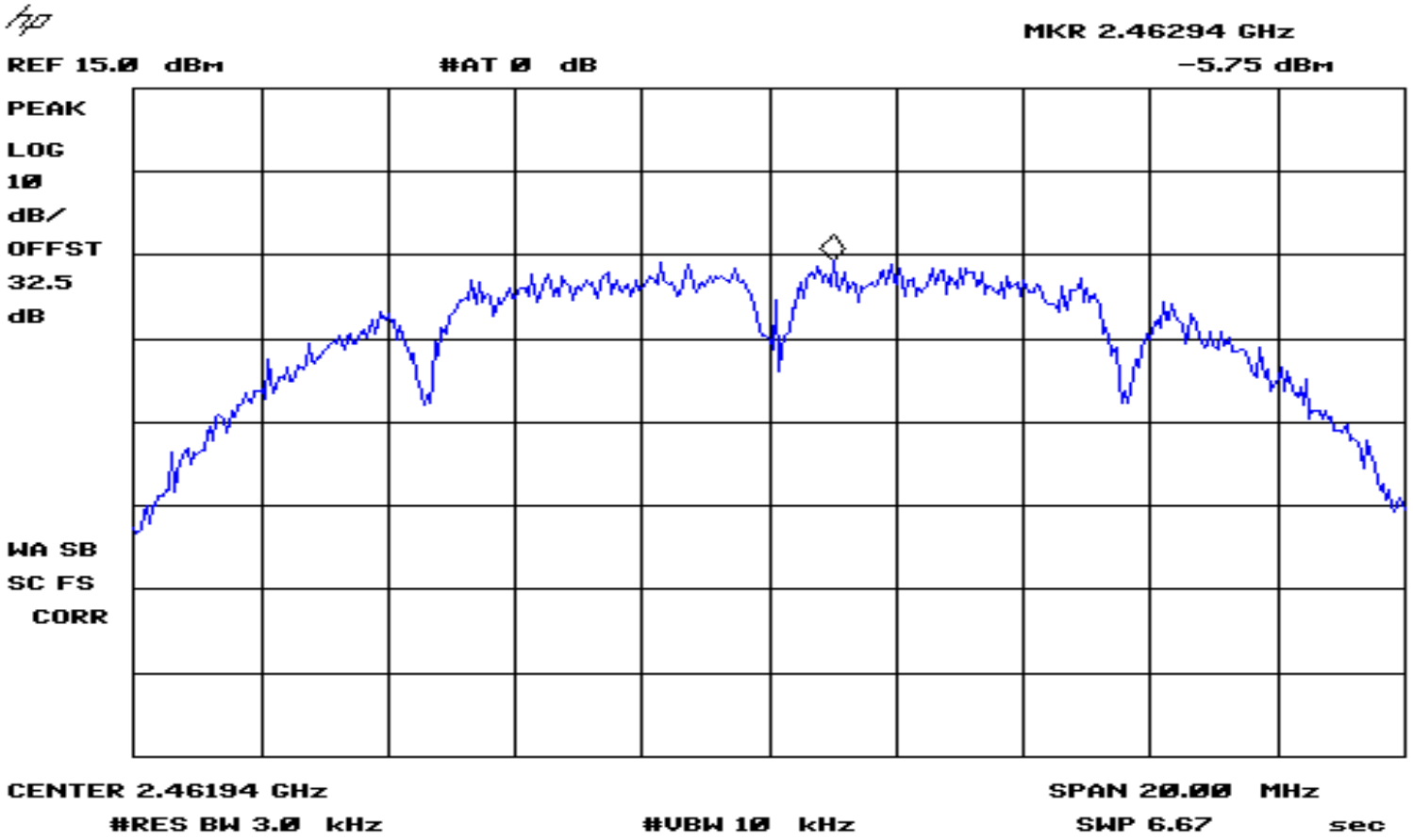



Data Sheet 2 of 3 **R-5650N-1**

# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

| | | | | | |
|---|---|---|---|---|---|
| **Test Method:** | **Power Density** | | | | |
| **Customer:** | Captivate Network | **Test Sample:** | Elevator Display Unit (Media Player) with LVDS Display | **Job No:** | R-5650N-1 |
| **Model No:** | EDU-700 | **Serial No:** | N/A | **Technician:** | T. Hannemann |
| **Test Specification:** | FCC Part 15, Subpart C | Paragraph: 15.247(e) | | **Date:** | 11/28/2012 |
| **Operating Mode:** | Transmitting | | | | |
| **Notes:** | Port Tested: Secondary Channel 11 Transmitting at 2.46214 GHz Power Density: -6.75 dBm | | | | |




Data Sheet 3 of 3 **R-5650N-1**

**Test Photograph(s)**
**FCC Part 15, Subpart C, Section 15.247(d)/15.205(a)/15.209(a)**
**RSS-210, Section A8.5/RSS-Gen, Section 7.2.2/RSS-Gen, Section 6.1**
**Spurious Radiated Emissions, 30 MHz to 25 GHz**

**Test Photograph(s)**
**Spurious Radiated Emissions**

EUT Configuration


Horizontal Antenna Polarization, 30 MHz to 1 GHz

## Test Photograph(s)
## Spurious Radiated Emissions


Vertical Antenna Polarization, 30 MHz to 1 GHz

## Test Photograph(s)
## Spurious Radiated Emissions


Horizontal Antenna Polarization, 1 to 18 GHz


Vertical Antenna Polarization, 1 to 18 GHz

**Test Photograph(s)**
**Radiated Emissions**


Horizontal Antenna Polarization, 18 to 25 GHz


Vertical Antenna Polarization, 18 to 25 GHz

**FCC Part 15, Subpart C, Section 15.247(d)/15.205(a)/15.209(a)**
**RSS-210, Section A8.5/RSS-Gen, Section 7.2.2/RSS-Gen, Section 6.1**
**Spurious Radiated Emissions, 30 MHz to 25 GHz**
**Test Data**

# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

| | | | |
|---|---|---|---|
| **Test Method:** | **Transmitter Spurious Emissions 30 MHz - 25 GHz** | | |
| **Customer** | Captivate Network | **Job No.** | R-5650N-1 |
| **Test Sample** | Elevator Display Unit (Media Player) with LVDS Display | | |
| **Model No.** | EDU-700 | **Serial No.** | N/A |
| **Test Specification:** | FCC Part 15 Subpart C 15.247(d) | | |
| **Operating Mode:** | Transmitting at 2.41296 GHz | | |
| **Technician:** | M. Seamans | **Date:** | November 28, 2012 |
| **Notes:** | Test Distance: 3 Meters Detector: Below 1 GHz Quasi-Peak and above 1 GHz Average | | |

| Test Frequency | Antenna Position | Turntable Position | Uncorrected Reading | Correction Factor | Corrected Reading | | | | | Limit at 3 Meters |
|---|---|---|---|---|---|---|---|---|---|---|
| MHz | (H/V) - Height | Degrees | dBuV | dB | dBuV/m | | | | | dBuV/m |
| 30.00 | - | - | - | - | - | | | | | 40.0 |
| \| | - | - | - | - | - | | | | | \| |
| 88.00 | - | - | - | - | - | | | | | 40.0 |
| 88.00 | - | - | - | - | - | | | | | 43.5 |
| \| | - | - | - | - | - | | | | | \| |
| 216.00 | - | - | - | - | - | | | | | 43.5 |
| 216.00 | - | - | - | - | - | | | | | 46.0 |
| \| | - | - | - | - | - | | | | | \| |
| 960.00 | - | - | - | - | - | | | | | 46.0 |
| 960.00 | - | - | - | - | - | | | | | 54.0 |
| \| | - | - | - | - | - | | | | | \| |
| 990.00 | V-1m | - | 0.12 | 29.15 | 29.27 | ** | | | | \| |
| 1050.00 | V-1m | - | 7.0 | 2.7 | 9.7 | ** | | | | \| |
| 1500.00 | V-1m | - | 5.6 | 9.9 | 15.5 | ** | | | | \| |
| 1683.00 | V-1m | 180.0 | 44.23 | -6.20 | 38.03 | | | | | \| |
| 4824.00 | V-1m | 180.0 | 51.75 | -13.50 | 38.25 | | | | | \| |
| 7233.42 | V-1m | - | 32.90 | -2.64 | 30.26 | * | | | | \| |
| 9644.56 | V-1m | - | 34.40 | -2.27 | 32.13 | * | | | | \| |
| \| | - | - | - | - | - | | | | | \| |
| v | - | - | - | - | - | | | | | v |
| 25000.00 | - | - | - | - | - | | | | | 54.0 |

*Measurement of noise floor at harmonic frequencies. No Harmonic emissions or spurious emissions observed.
**Measurement of noise floor in restricted band. No EUT emissions observed.

# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

| | | | |
|---|---|---|---|
| **Test Method:** | **Transmitter Spurious Emissions 30 MHz - 25 GHz** | | |
| **Customer** | Captivate Network | **Job No.** | R-5650N-1 |
| **Test Sample** | Elevator Display Unit (Media Player) with LVDS Display | | |
| **Model No.** | EDU-700 | **Serial No.** | N/A |
| **Test Specification:** | FCC Part 15 Subpart C<br>15.247 | | |
| **Operating Mode:** | Transmitting at 2.439925 GHz<br>Receiving | | |
| **Technician:** | M. Seamans | **Date:** | November 28, 2012 |
| **Notes:** | Test Distance: 3 Meters | | |

| Test Frequency | Antenna Position | Turntable Position | Uncorrected Reading | Correction Factor | Corrected Reading | | | | | Limit at 3 Meters |
|---|---|---|---|---|---|---|---|---|---|---|
| MHz | (H/V) - Height | Degrees | dBuV | dB | dBuV/m | | | | | dBuV/m |
| 30.00 | - | - | - | - | - | | | | | 40.0 |
| \| | - | - | - | - | - | | | | | \| |
| 88.00 | - | - | - | - | - | | | | | 40.0 |
| 88.00 | - | - | - | - | - | | | | | 43.5 |
| \| | - | - | - | - | - | | | | | \| |
| 216.00 | - | - | - | - | - | | | | | 43.5 |
| 216.00 | - | - | - | - | - | | | | | 46.0 |
| \| | - | - | - | - | - | | | | | \| |
| 960.00 | - | - | - | - | - | | | | | 46.0 |
| 960.00 | - | - | - | - | - | | | | | 54.0 |
| \| | - | - | - | - | - | | | | | \| |
| 990.00 | V-1m | - | 0.12 | 29.15 | 29.27 | ** | | | | \| |
| 1050.00 | V-1m | - | 7.0 | 2.7 | 9.7 | ** | | | | \| |
| 1500.00 | V-1m | - | 5.6 | 9.9 | 15.5 | ** | | | | \| |
| 4876.08 | V-1m | - | 33.62 | -13.50 | 22.82 | * | | | | \| |
| 7314.12 | V-1m | - | 33.30 | -2.21 | 31.09 | * | | | | \| |
| 9752.16 | V-1m | - | 34.40 | -2.22 | 32.19 | * | | | | \| |
| \| | - | - | - | - | - | | | | | \| |
| \| | - | - | - | - | - | | | | | \| |
| 25000.00 | - | - | - | - | - | | | | | 54.0 |

*Measurement of noise floor at harmonic frequencies. No Harmonic emissions or spurious emissions observed.
**Measurement of noise floor in restricted band. No EUT emissions observed.

# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

| | | | |
|---|---|---|---|
| **Test Method:** | **Transmitter Spurious Emissions 30 MHz - 25 GHz** | | |
| **Customer** | Captivate Network | **Job No.** | R-5650N-1 |
| **Test Sample** | Elevator Display Unit (Media Player) with LVDS Display | | |
| **Model No.** | EDU-700 | **Serial No.** | N/A |
| **Test Specification:** | FCC Part 15 Subpart C<br>15.247 | | |
| **Operating Mode:** | Transmitting at 2.48025 GHz<br>Receiving | | |
| **Technician:** | M. Seamans | **Date:** | November 28, 2012 |
| **Notes:** | Test Distance: 3 Meters | | |

| Test Frequency | Antenna Position | Turntable Position | Meter Reading | Correction Factor | Corrected Reading | | | | | Limit at 3 Meters |
|---|---|---|---|---|---|---|---|---|---|---|
| MHz | (H/V) - Height | Degrees | dBuV | dB | dBuV/m | | | | | dBuV/m |
| 30.00 | - | - | - | - | - | | | | | 40.0 |
| \| | - | - | - | - | - | | | | | \| |
| 88.00 | - | - | - | - | - | | | | | 40.0 |
| 88.00 | - | - | - | - | - | | | | | 43.5 |
| \| | - | - | - | - | - | | | | | \| |
| 216.00 | - | - | - | - | - | | | | | 43.5 |
| 216.00 | - | - | - | - | - | | | | | 46.0 |
| \| | - | - | - | - | - | | | | | \| |
| 960.00 | - | - | - | - | - | | | | | 46.0 |
| 960.00 | - | - | - | - | - | | | | | 54.0 |
| \| | - | - | - | - | - | | | | | \| |
| 990.00 | V-1m | - | 0.12 | 29.15 | 29.27 | ** | | | | \| |
| 1050.00 | V-1m | - | 7.0 | 2.7 | 9.7 | ** | | | | \| |
| 1500.00 | V-1m | - | 5.6 | 9.9 | 15.5 | ** | | | | \| |
| 4922.08 | V-1m | - | 35.80 | -13.67 | 22.13 | * | | | | \| |
| 7383.12 | V-1m | - | 32.90 | -2.21 | 30.69 | * | | | | \| |
| 9844.16 | V-1m | - | 33.70 | -1.97 | 31.73 | * | | | | \| |
| \| | - | - | - | - | - | | | | | \| |
| \| | - | - | - | - | - | | | | | \| |
| 25000.00 | - | - | - | - | - | | | | | 54.0 |

*Measurement of noise floor at harmonic frequencies. No Harmonic emissions or spurious emissions observed.
**Measurement of noise floor in restricted band. No EUT emissions observed.

# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

| | | | |
|---|---|---|---|
| **Test Method:** | **Band-edge Compliance** | | |
| **Customer** | Captivate Network | **Job No.** | R-5650N-1 |
| **Test Sample** | Elevator Display Unit (Media Player) with LVDS Display | | |
| **Model No.** | EDU-700 | **Serial No.** | N/A |
| **Test Specification:** | FCC Part 15 Subpart C 15.247(d) | | |
| **Operating Mode:** | Continuously Transmitting at band edge | | |
| **Technician:** | M. Seamans | **Date:** | November 28, 2012 |
| **Notes:** | Test Distance: 3 Meters<br>Average Detector | | |

| Test Frequency | Antenna Position | Turntable Position | Uncorrected Reading | Correction Factor | Corrected Reading | | | | | Limit at 3 Meters |
|---|---|---|---|---|---|---|---|---|---|---|
| MHz | (H/V) - Height | Degrees | dBuV | dB | dBuV/m | | | | | dBuV/m |
| 2400.00 | V-1m | 180.0 | 45.16 | -5.19 | 39.97 | | | | | 54.0 |
| 2483.50 | V-1m | 0.0 | 38.60 | -4.36 | 34.24 | | | | | 54.0 |

* Measurement represents the noise floor of the measurement instrument, as no EUT emissions were observed.

# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

| | | | |
|---|---|---|---|
| **Test Method:** | **Receiver Spurious Emissions 30 MHz - 25 GHz** | | |
| **Customer** | Captivate Network | **Job No.** | R-5650N-1 |
| **Test Sample** | Elevator Display Unit (Media Player) with LVDS Display | | |
| **Model No.** | EDU-700 | **Serial No.** | N/A |
| **Test Specification:** | RSS-Gen Para. 6.1 | | |
| **Operating Mode:** | Receiving signal at 2.41296 GHz | | |
| **Technician:** | M. Seamans | **Date:** | November 28, 2012 |
| **Notes:** | Test Distance: 3 Meters | | |

| Test Frequency | Antenna Position | Turntable Position | Uncorrected Reading | Correction Factor | Corrected Reading | | | | | Limit at 3 Meters |
|---|---|---|---|---|---|---|---|---|---|---|
| MHz | (H/V) - Height | Degrees | dBuV | dB | dBuV/m | | | | | dBuV/m |
| 30.00 | - | - | - | - | - | | | | | 40.0 |
| \| | - | - | - | - | - | | | | | \| |
| 35.00 | V-1m | 0.0 | 6.65 | 16.24 | 22.89 | * | | | | \| |
| \| | - | - | - | - | - | | | | | \| |
| 88.00 | - | - | - | - | - | | | | | 40.0 |
| 88.00 | - | - | - | - | - | | | | | 43.5 |
| \| | - | - | - | - | - | | | | | \| |
| 110.00 | V-1m | 0.0 | 4.82 | 10.03 | 14.85 | * | | | | \| |
| 195.00 | H-1m | 0.0 | 11.21 | 12.40 | 23.61 | * | | | | \| |
| 205.00 | H-1m | 0.0 | 6.43 | 12.32 | 18.75 | * | | | | \| |
| \| | - | - | - | - | - | | | | | \| |
| 216.00 | - | - | - | - | - | | | | | 43.5 |
| 216.00 | - | - | - | - | - | | | | | 46.0 |
| \| | - | - | - | - | - | | | | | \| |
| 600.00 | V-1m | 0.0 | -0.22 | 24.18 | 24.11 | * | | | | \| |
| \| | - | - | - | - | - | | | | | \| |
| 960.00 | - | - | - | - | - | | | | | 46.0 |
| 960.00 | - | - | - | - | - | | | | | 54.0 |
| \| | - | - | - | - | - | | | | | \| |
| 995.00 | H-1m | 0.0 | 0.12 | 29.15 | 29.27 | * | | | | \| |
| \| | - | - | - | - | - | | | | | \| |
| 25000.00 | - | - | - | - | - | | | | | 54.0 |

No emissions were observed above the noise floor of the test equipment which was a minimum of 10 dB below the specified limits throughout the frequency range. *This emission is not from the EUT. It is a measurement of minumum system sensitivity (noise floor).

Data Sheet 1 of 1 R-5650N-1

# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

| | | | |
|---|---|---|---|
| **Test Method:** | **Receiver Spurious Emissions 30 MHz - 25 GHz** | | |
| **Customer** | Captivate Network | **Job No.** | R-5650N-1 |
| **Test Sample** | Elevator Display Unit (Media Player) with LVDS Display | | |
| **Model No.** | EDU-700 | **Serial No.** | N/A |
| **Test Specification:** | RSS-Gen Para. 6.1 | | |
| **Operating Mode:** | Receiving signal at 2.46214 GHz | | |
| **Technician:** | M. Seamans | **Date:** | November 28, 2012 |
| **Notes:** | Test Distance: 3 Meters | | |

| Test Frequency | Antenna Position | Turntable Position | Uncorrected Reading | Correction Factor | Corrected Reading | | | | | Limit at 3 Meters |
|---|---|---|---|---|---|---|---|---|---|---|
| MHz | (H/V) - Height | Degrees | dBuV | dB | dBuV/m | | | | | dBuV/m |
| 30.00 | - | - | - | - | - | | | | | 40.0 |
| \| | - | - | - | - | - | | | | | \| |
| 35.00 | V-1m | 0.0 | 6.65 | 16.24 | 22.89 | * | | | | \| |
| \| | - | - | - | - | - | | | | | \| |
| 88.00 | - | - | - | - | - | | | | | 40.0 |
| 88.00 | - | - | - | - | - | | | | | 43.5 |
| \| | - | - | - | - | - | | | | | \| |
| 110.00 | V-1m | 0.0 | 4.82 | 10.03 | 14.85 | * | | | | \| |
| 195.00 | H-1m | 0.0 | 11.21 | 12.40 | 23.61 | * | | | | \| |
| 205.00 | H-1m | 0.0 | 6.43 | 12.32 | 18.75 | * | | | | \| |
| \| | - | - | - | - | - | | | | | \| |
| 216.00 | - | - | - | - | - | | | | | 43.5 |
| 216.00 | - | - | - | - | - | | | | | 46.0 |
| \| | - | - | - | - | - | | | | | \| |
| 600.00 | V-1m | 0.0 | -0.22 | 24.18 | 24.11 | * | | | | \| |
| \| | - | - | - | - | - | | | | | \| |
| 960.00 | - | - | - | - | - | | | | | 46.0 |
| 960.00 | - | - | - | - | - | | | | | 54.0 |
| \| | - | - | - | - | - | | | | | \| |
| 995.00 | H-1m | 0.0 | 0.12 | 29.15 | 29.27 | * | | | | \| |
| \| | - | - | - | - | - | | | | | \| |
| 25000.00 | - | - | - | - | - | | | | | 54.0 |

No emissions were observed above the noise floor of the test equipment which was a minimum of 10 dB below the specified limits throughout the frequency range. *This emission is not from the EUT. It is a measurement of minumum system sensitivity (noise floor).

Data Sheet 1 of 1 R-5650N-1

# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

| | | | |
|---|---|---|---|
| **Test Method:** | **Receiver Spurious Emissions 30 MHz - 25 GHz** | | |
| **Customer** | Captivate Network | **Job No.** | R-5650N-1 |
| **Test Sample** | Elevator Display Unit (Media Player) with LVDS Display | | |
| **Model No.** | EDU-700 | **Serial No.** | N/A |
| **Test Specification:** | RSS-Gen Para. 6.1 | | |
| **Operating Mode:** | Receiving signal at 2.43644 GHz | | |
| **Technician:** | M. Seamans | **Date:** | November 28, 2012 |
| **Notes:** | Test Distance: 3 Meters | | |

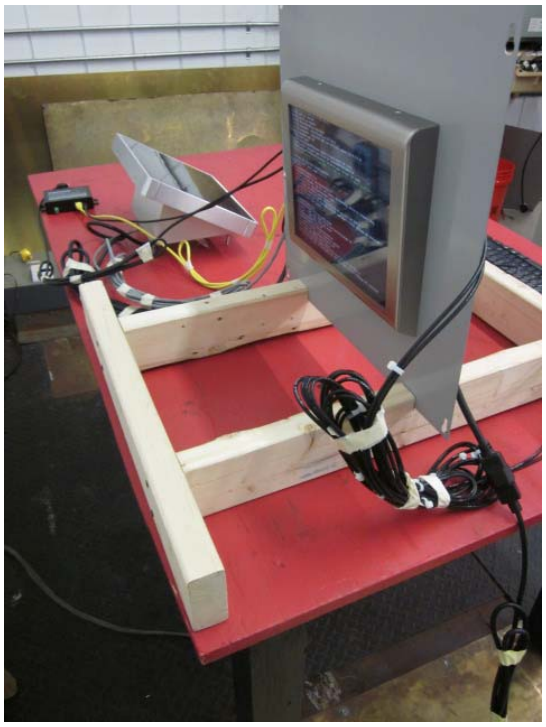
| Test Frequency | Antenna Position | Turntable Position | Uncorrected Reading | Correction Factor | Corrected Reading | | | | | Limit at 3 Meters |
|---|---|---|---|---|---|---|---|---|---|---|
| MHz | (H/V) - Height | Degrees | dBuV | dB | dBuV/m | | | | | dBuV/m |
| 30.00 | - | - | - | - | - | | | | | 40.0 |
| \| | - | - | - | - | - | | | | | \| |
| 35.00 | V-1m | 0.0 | 6.65 | 16.24 | 22.89 | * | | | | \| |
| \| | - | - | - | - | - | | | | | \| |
| 88.00 | - | - | - | - | - | | | | | 40.0 |
| 88.00 | - | - | - | - | - | | | | | 43.5 |
| \| | - | - | - | - | - | | | | | \| |
| 110.00 | V-1m | 0.0 | 4.82 | 10.03 | 14.85 | * | | | | \| |
| 195.00 | H-1m | 0.0 | 11.21 | 12.40 | 23.61 | * | | | | \| |
| 205.00 | H-1m | 0.0 | 6.43 | 12.32 | 18.75 | * | | | | \| |
| \| | - | - | - | - | - | | | | | \| |
| 216.00 | - | - | - | - | - | | | | | 43.5 |
| 216.00 | - | - | - | - | - | | | | | 46.0 |
| \| | - | - | - | - | - | | | | | \| |
| 600.00 | V-1m | 0.0 | -0.22 | 24.18 | 24.11 | * | | | | \| |
| \| | - | - | - | - | - | | | | | \| |
| 960.00 | - | - | - | - | - | | | | | 46.0 |
| 960.00 | - | - | - | - | - | | | | | 54.0 |
| \| | - | - | - | - | - | | | | | \| |
| 995.00 | H-1m | 0.0 | 0.12 | 29.15 | 29.27 | * | | | | \| |
| \| | - | - | - | - | - | | | | | \| |
| 25000.00 | - | - | - | - | - | | | | | 54.0 |

No emissions were observed above the noise floor of the test equipment which was a minimum of 10 dB below the specified limits throughout the frequency range. *This emission is not from the EUT. It is a measurement of minumum system sensitivity (noise floor).

Data Sheet 1 of 1 R-5650N-1

**Test Photograph(s)**
**FCC Part 15, Subpart C, Section 15.207(a)**
**RSS-GEN, Paragraph 7.2.4**
**Conducted Emissions, Power Leads, 150 kHz to 30 MHz**

## Test Photograph(s)
## Conducted Emissions



EUT Configuration

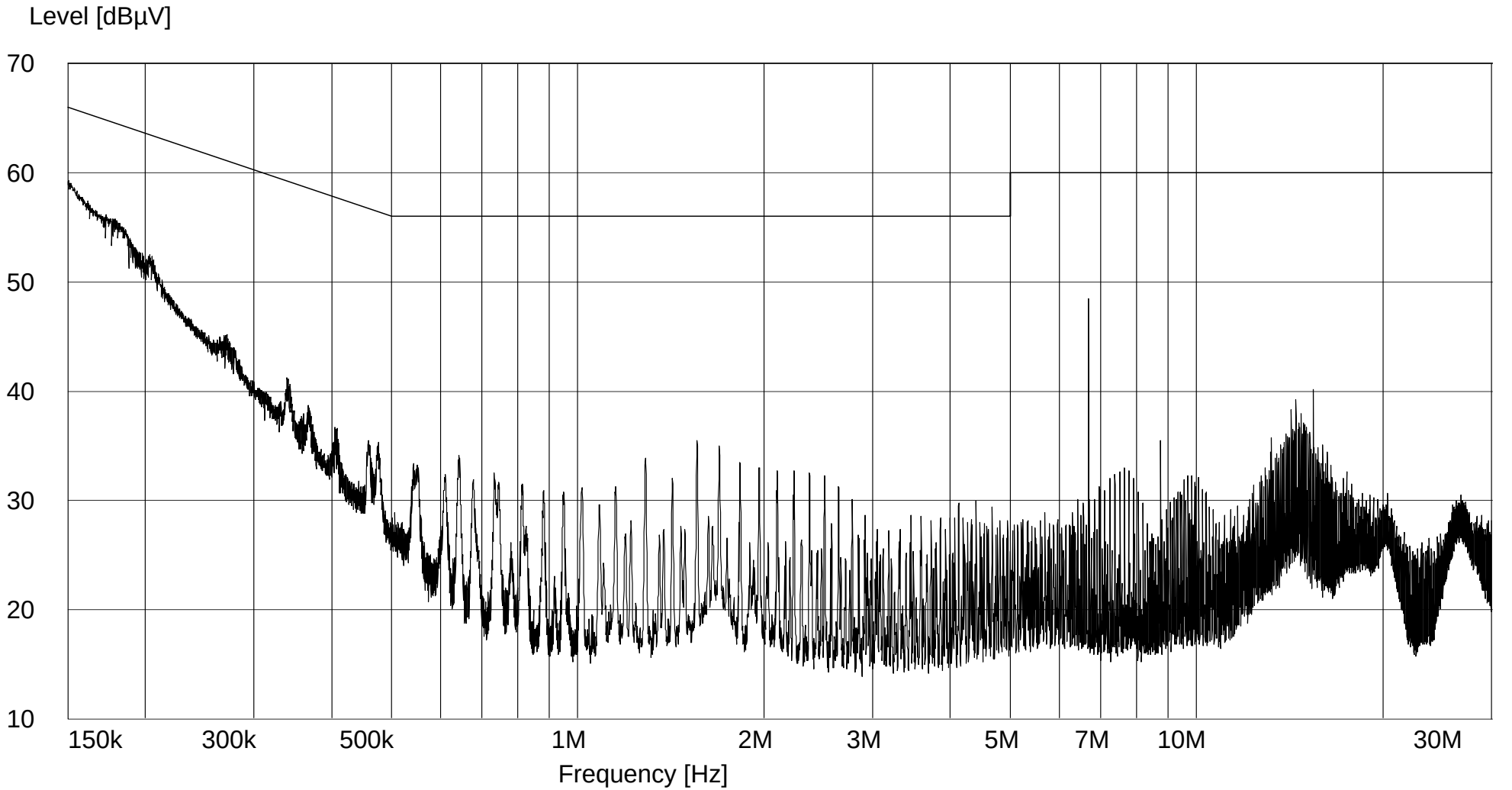

Test Setup

**Conducted Emissions, Power Leads, 150 kHz to 30 MHz**
**FCC Part 15, Subpart C, Section 15.207(a)**
**RSS-GEN, Paragraph 7.2.4**
**Test Data**

# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

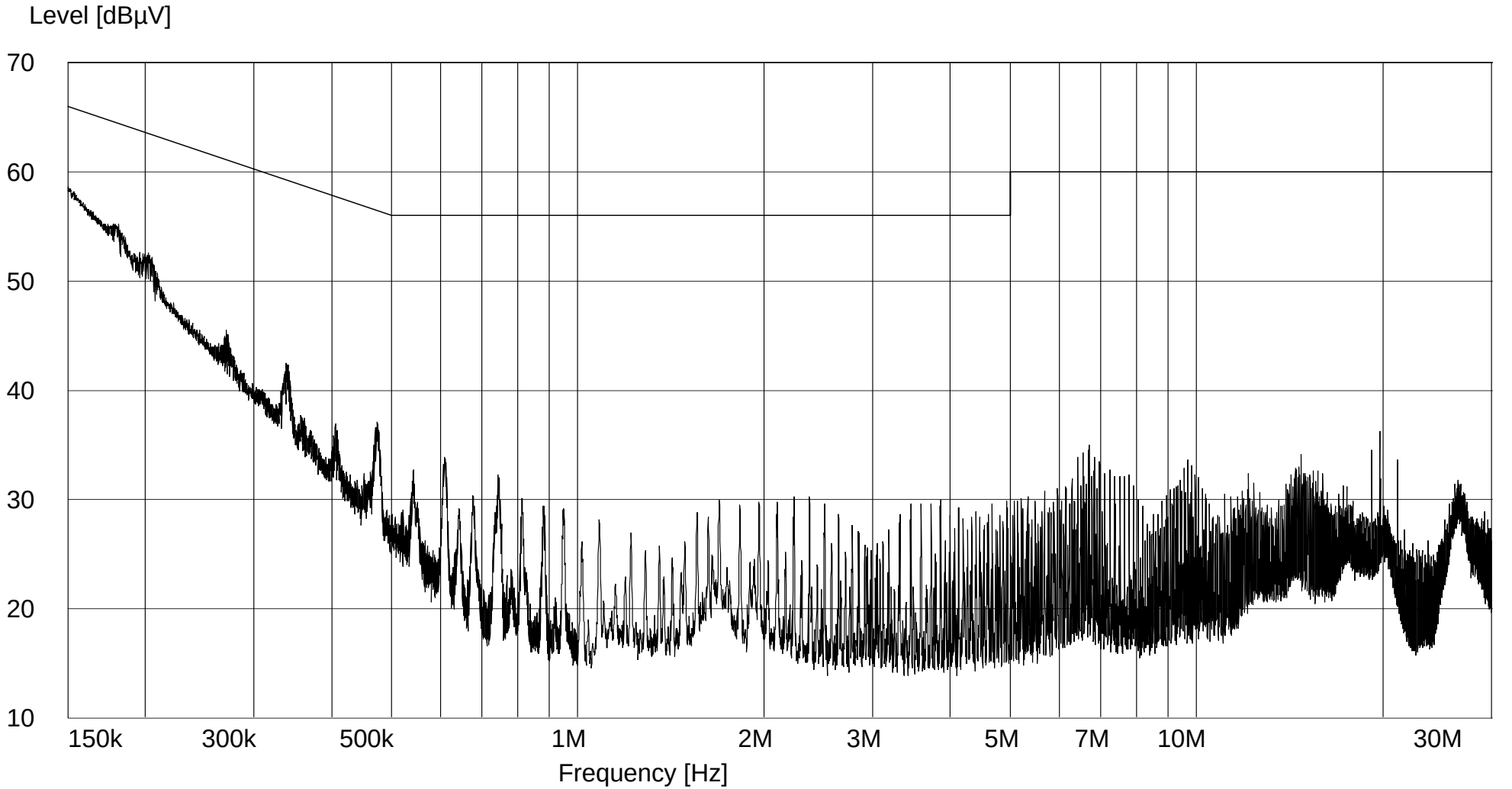
| | | | | | |
|---|---|---|---|---|---|
| **Test Method:** | **Conducted Emissions** | | | | |
| **Customer:** | Captivate Network | **Test Sample:** | Elevator Display Unit (Media Player) with LVDS Display | **Job No:** | R-5650N-1 |
| **Model No:** | EDU-700 | **Serial No:** | N/A | **Technician:** | M. Seamans |
| **Test Specification:** | FCC Part 15, Subpart C | | Paragraph: 15.207 | **Date:** | 11/27/2012 |
| **Operating Mode:** | Transmitting | | | | |
| **Notes:** | Lead Tested: 120 VAC 60 Hz Hot Peak Readings to Quasi-Peak Limits. | | | | |



# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

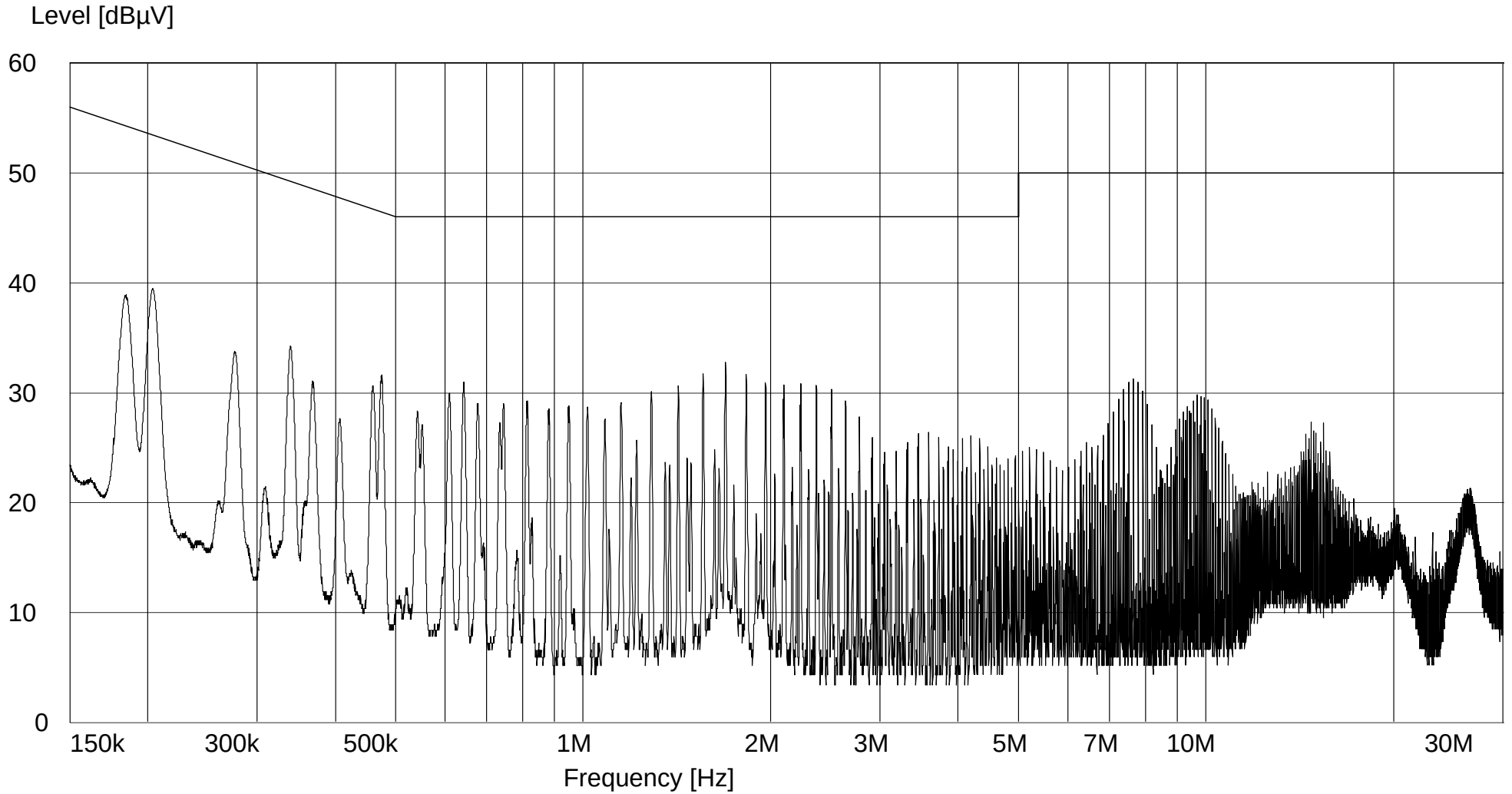
| | | | | | |
|---|---|---|---|---|---|
| **Test Method:** | **Conducted Emissions** | | | | |
| **Customer:** | Captivate Network | **Test Sample:** | Elevator Display Unit (Media Player) with LVDS Display | **Job No:** | R-5650N-1 |
| **Model No:** | EDU-700 | **Serial No:** | N/A | **Technician:** | M. Seamans |
| **Test Specification:** | FCC Part 15, Subpart C | Paragraph: 15.207 | | **Date:** | 11/27/2012 |
| **Operating Mode:** | Transmitting | | | | |
| **Notes:** | Lead Tested: 120 VAC 60 Hz Neutral Peak Readings to Quasi-Peak Limits. | | | | |



# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

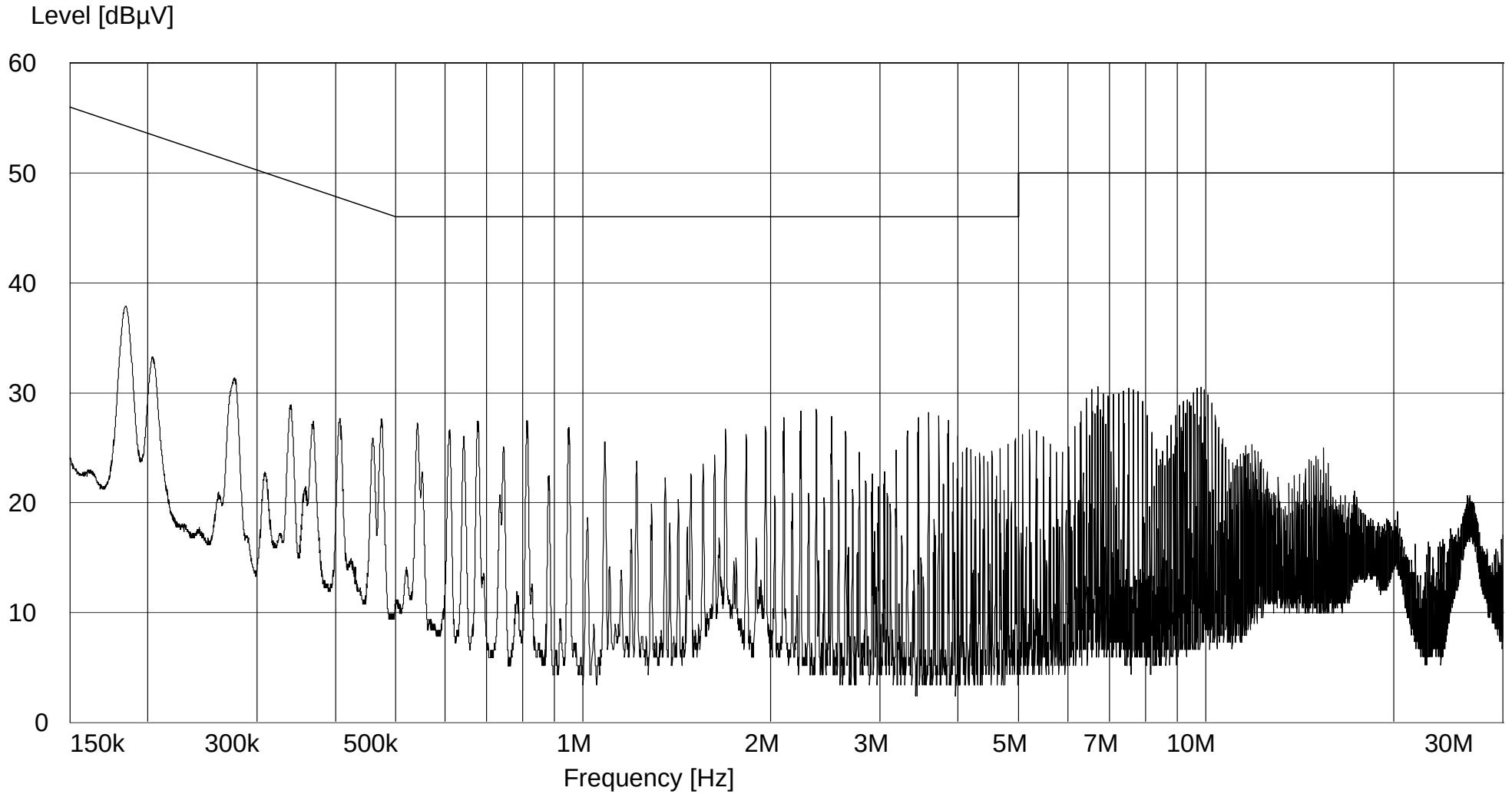
| | | | | | |
|---|---|---|---|---|---|
| **Test Method:** | **Conducted Emissions** | | | | |
| **Customer:** | Captivate Network | **Test Sample:** | Elevator Display Unit (Media Player) with LVDS Display | **Job No:** | R-5650N-1 |
| **Model No:** | EDU-700 | **Serial No:** | N/A | **Technician:** | M. Seamans |
| **Test Specification:** | FCC Part 15, Subpart C | Paragraph: 15.207 | | **Date:** | 11/27/2012 |
| **Operating Mode:** | Transmitting | | | | |
| **Notes:** | Lead Tested: 120 VAC 60 Hz Hot Average Readings to Average Limits. | | | | |



# RETLIF TESTING LABORATORIES

## EMISSIONS DATA SHEET

| | | | | | |
|---|---|---|---|---|---|
| **Test Method:** | **Conducted Emissions** | | | | |
| **Customer:** | Captivate Network | **Test Sample:** | Elevator Display Unit (Media Player) with LVDS Display | **Job No:** | R-5650N-1 |
| **Model No:** | EDU-700 | **Serial No:** | N/A | **Technician:** | M. Seamans |
| **Test Specification:** | FCC Part 15, Subpart C | | Paragraph: 15.207 | **Date:** | 11/27/2012 |
| **Operating Mode:** | Transmitting | | | | |
| **Notes:** | Lead Tested: 120 VAC 60 Hz Neutral Average Readings to Average Limits. | | | | |




Data Sheet 4 of 4 **R-5650N-1**