

Mountain Telecommunications, Inc.

1430 W. Broadway Rd, Suite 206
Tempe, AZ 85282

Experimental Special Temporary Authorization Six-Month Progress Report

Call Sign: WD2XMB

File No: 0007-EX-AL-2004

Submitted November 2, 2005

Experimental Special Temporary Authorization
Six-Month Progress Report
WB9XVP

Introduction

This Six Month Progress Report (the "Report") is submitted for the Cottonwood, Arizona broadband over power lines ("BPL") experimental special temporary authorization (WB9XVP, File No. 0136-EX-ST-2004) (the "Authorization") issued to Electric Broadband LLC (the "Licensee").

Purpose of the Experiment

The purpose of the experiment for which the Authorization was granted was to test an operational BPL system in Cottonwood, Arizona using equipment designed and manufactured by Mitsubishi Electric Power Products. The Licensee's goal was to test the equipment for compliance with Federal Communications Commission ("FCC" or the "Commission") rules and to determine performance and customer acceptance of high-speed Internet access services provided over area power lines.

The participants in the experiment believe that BPL offers great potential to value consumers as a competitive, high-quality, broadband access service. In addition, it holds promise for areas currently underserved with telephone and Internet services because it utilizes infrastructure that already exists in most places.

Description of the Experiment

The equipment used is from Mitsubishi Electric Power Systems, Inc. The experimental equipment in use consists of:

- 10 Medium Voltage (MV) Nodes each comprised of (1) an MV Head-end card, (2) MV CPE card, and (3) Low Voltage (LV) Head-end card;
- 7 CPE devices used by 7 trial participants (both residential and small businesses); and
- Capacitive and Inductive couplers on the MV and LV (non-experimental equipment).
- The experiment was designed to be in compliance with Section 15.109 of the Commission's rules.

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Participants

There are three primary participants in the experiment. These are: Mountain Telecommunications, Inc., Mitsubishi Electric Power Products Inc., and APS. Together, these companies bring significant technical, business and service expertise to bear in this experimental trial. The following provides additional information on each participant.

Mountain Telecommunications, Inc.

Mountain Telecommunications Inc. (MTI) is Arizona's premier local phone company providing enhanced services throughout the state of Arizona. MTI, headquartered in Scottsdale Arizona, is the only Arizona Competitive Local Exchange Carrier (CLEC) who solely serves the state of Arizona and provides local voice, data, long distance and Internet services for businesses throughout Metropolitan Phoenix & Tucson and in 10 rural Arizona communities. MTI is responsible for system operations for the experiment.

Mitsubishi Electric Power Systems, Inc.

Mitsubishi Electric Power Products, Inc. (MEPPI) is responsible for US marketing, sales and support of Mitsubishi Electric BPL products, and is beginning trials with several US electric utilities. MEPPI is also a leading provider of electrical and electronic equipment, systems and services to electric utilities, industrial companies, and the rail transportation industry. MEPPI is the equipment vendor for this experiment.

APS

APS, Arizona's largest and longest-serving electricity utility, serves about 931,500 customers in 11 of the state's 15 counties. With headquarters in Phoenix, APS is the largest subsidiary of Pinnacle West Capital Corp. (NYSE: PNW). APS' role in this experiment is limited to allowing the experiment to operate on APS infrastructure. In addition, APS has conducted independent testing related to the interference claims that have been filed.

Amateur Radio Interference Claims

MTI has worked with the local Amateur group in the Cottonwood area and as a result have completely satisfied all previous complaints. Additionally, no new complaints have been filed and MTI meets regularly with the Cottonwood area amateurs to make sure they find the characteristics our BPL trial acceptable.

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Part 15 Compliance Testing: Results of Mitsubishi FCC Part 15 Certification Testing

The following Spectral Analysis was conducted in June 2005 by Mitsubishi in Cottonwood, AZ. The tests were specifically done as a first step and initial effort toward certifying the Mitsubishi BPL hardware as Part 15 compliant. Only 4 of 9 nodes were tested during this battery of tests as the additional nodes were being used in lab testing and were not in operation in the field at the time. The missing nodes will be brought back on line in the near future and be included in future reports. The tests were conducted at the following locations (+/- 10M due to GPS accuracy) and will be referred to by the BPL NODE NAME associated with the locations throughout this document:

<u>BPL NODE NAME</u>	<u>LAT</u>	<u>LONG</u>
Sawmill First Pole Mount	34.72861	-112.00165
Sawmill Second Pole Mount	34.7286	-112.00266
Sawmill First Pad Mount	34.72932	-112.0033
Sawmill Second Pad Mount	34.72959	-112.00346

All tests were performed using the following equipment:

- 1) Advantest R3132 9 kHz through 3 GHz Spectrum Analyzer
 - a. Calibrated 5/2004
- 2) EMCO 6502 25" Magnetic Loop Antenna for frequencies 10kHz-30MHz
 - a. Calibrated 10/2004

All test results were analyzed using the following software tools:

- 1) Dell Latitude D600 running Windows XP Pro
- 2) SoftPlot Measurement Presentation Software for GPIB Instruments
 - a. version 5.0.79
 - b. Connected to Advantest R3132 via Serial Cable

All measurements were taken using the following guidelines:

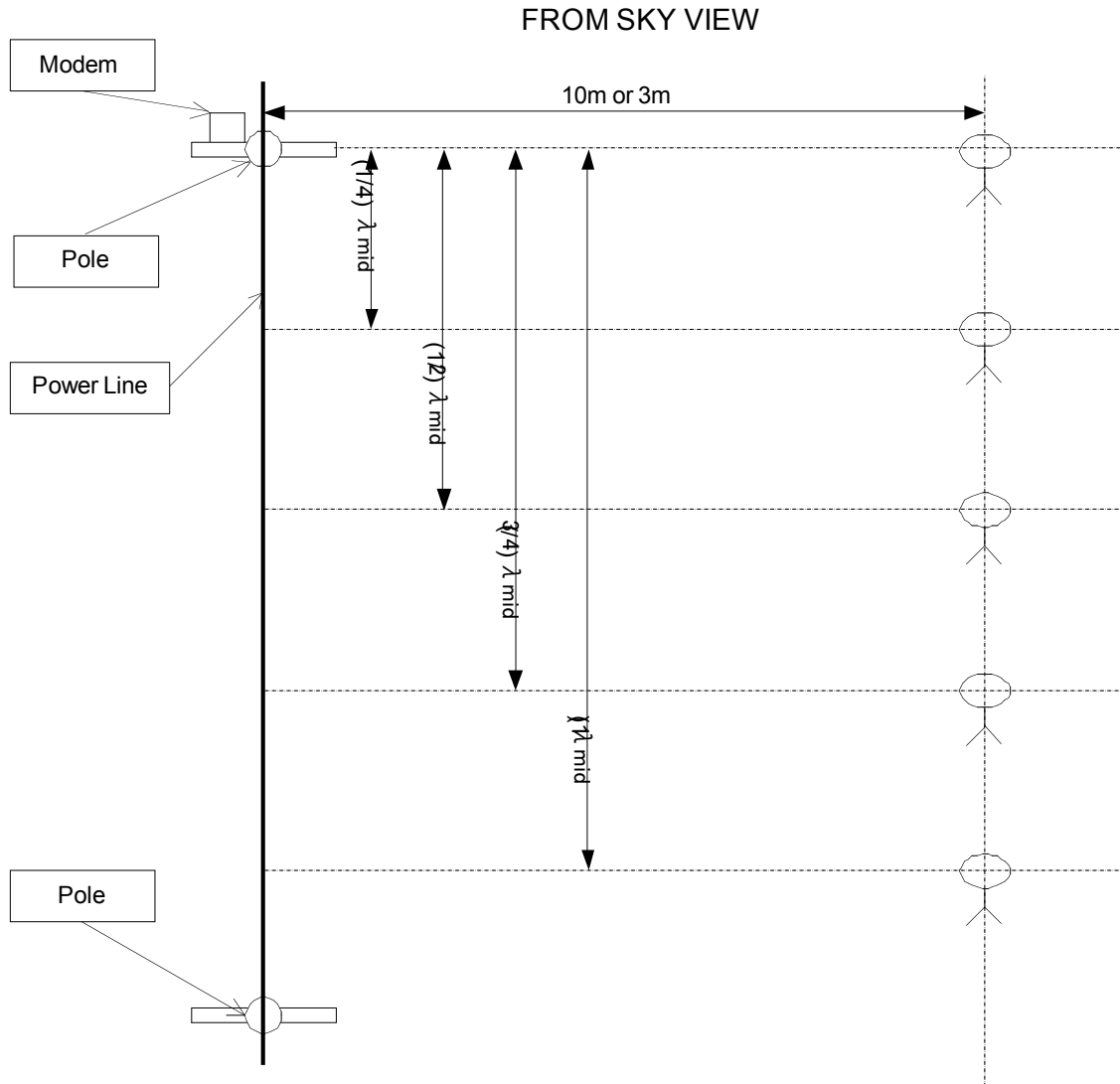
Overview of Testing Procedure

- 1) All test were performed in a manner consistent with instructions in the recently revised FCC Part 15 rules
 - a. Diagrams depicting test setup and methodology will precede the test results for each location

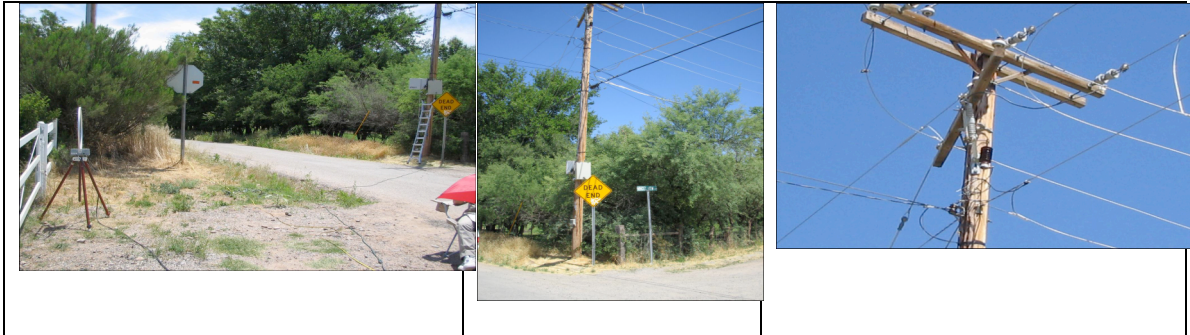
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Test Results

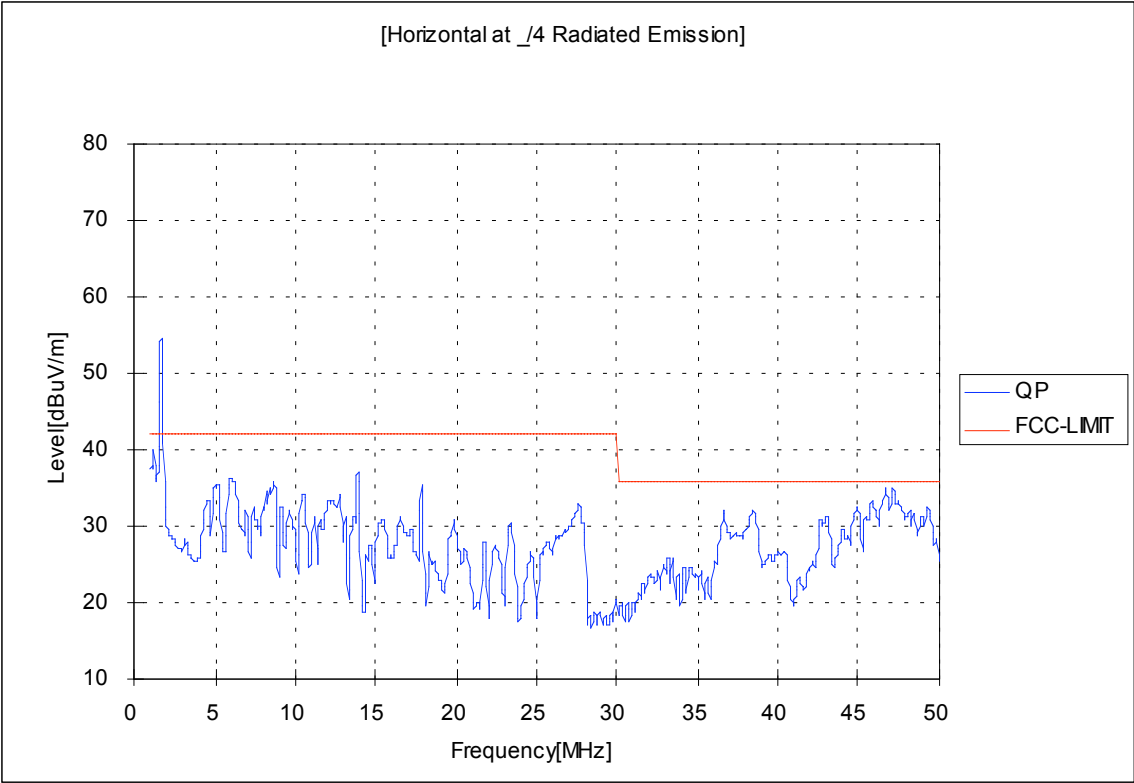
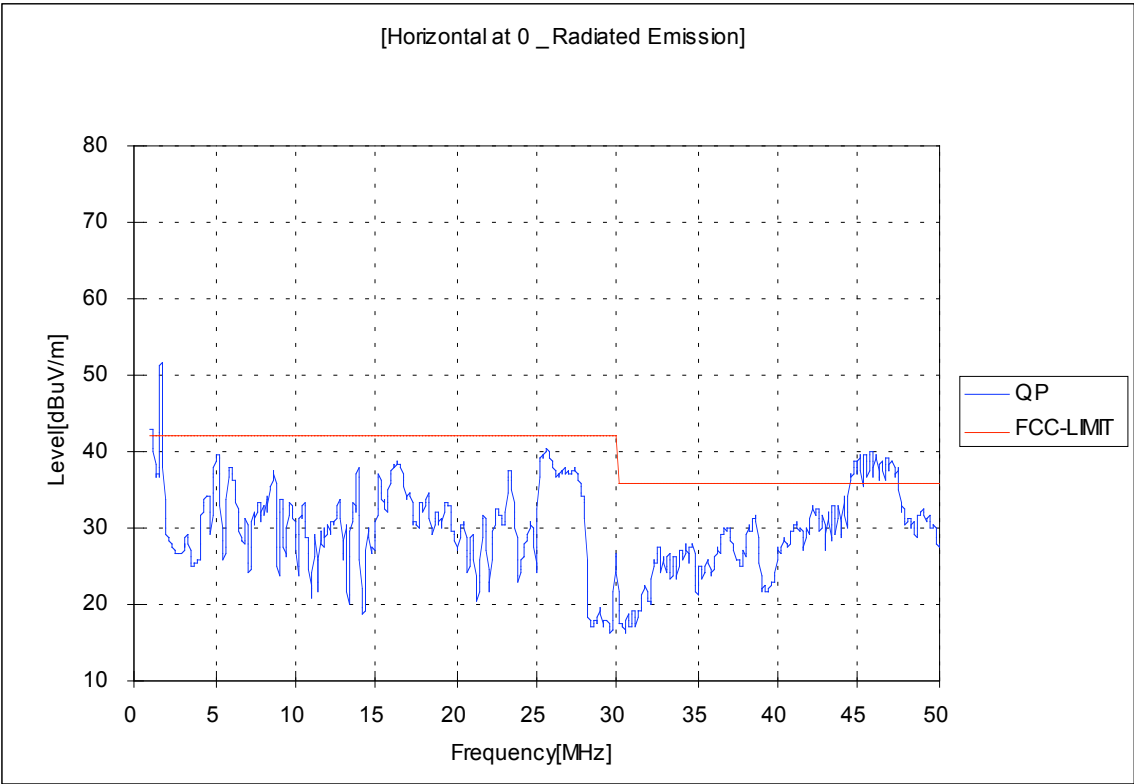
1) Test setup and results from **Sawmill Node 1**



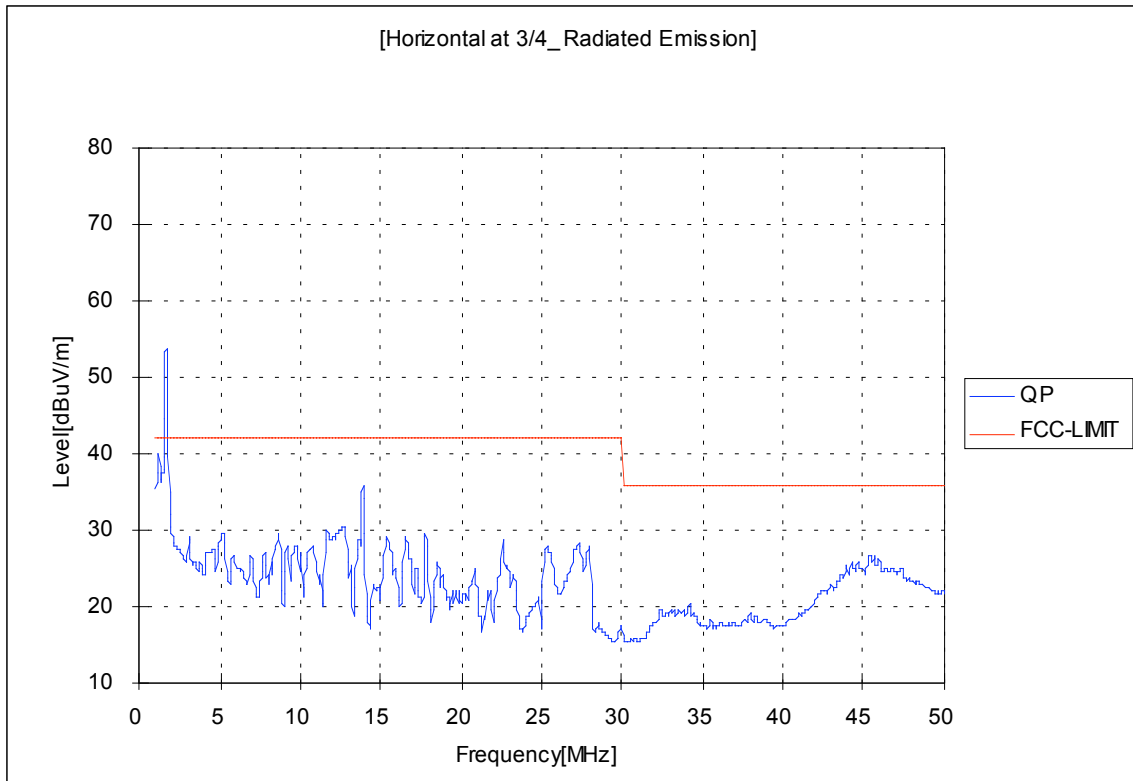
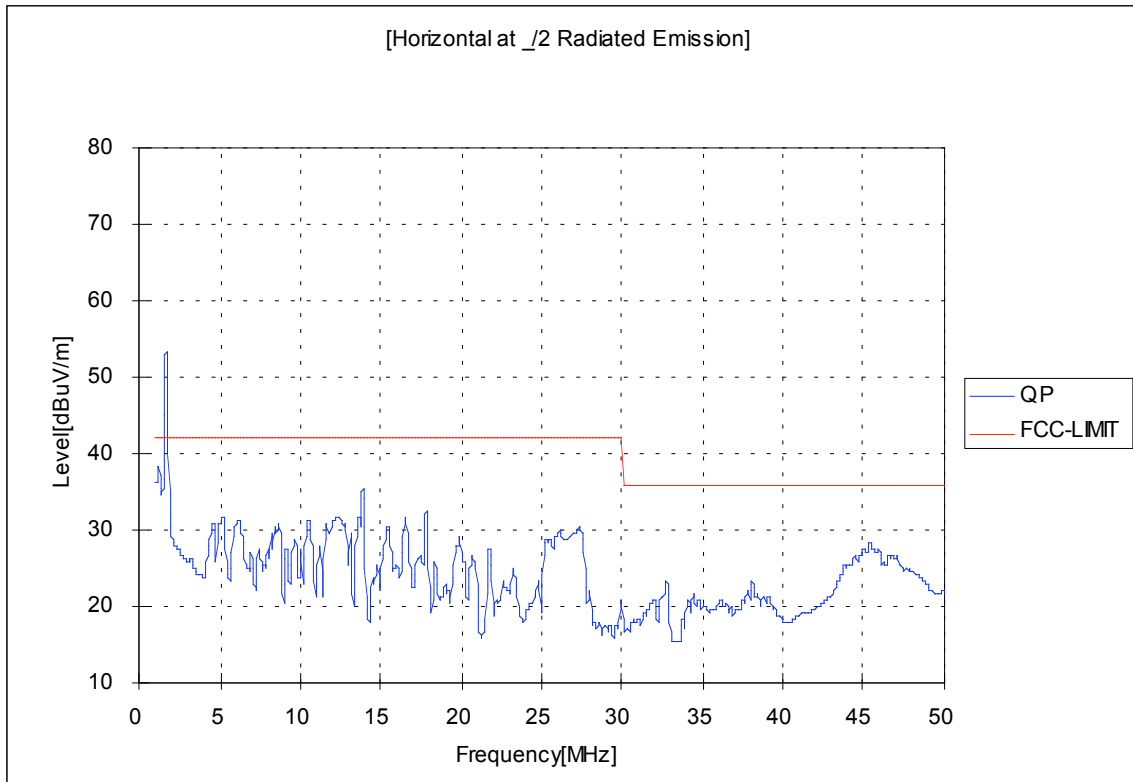
Photos of Node Under test – Sawmill Node 1



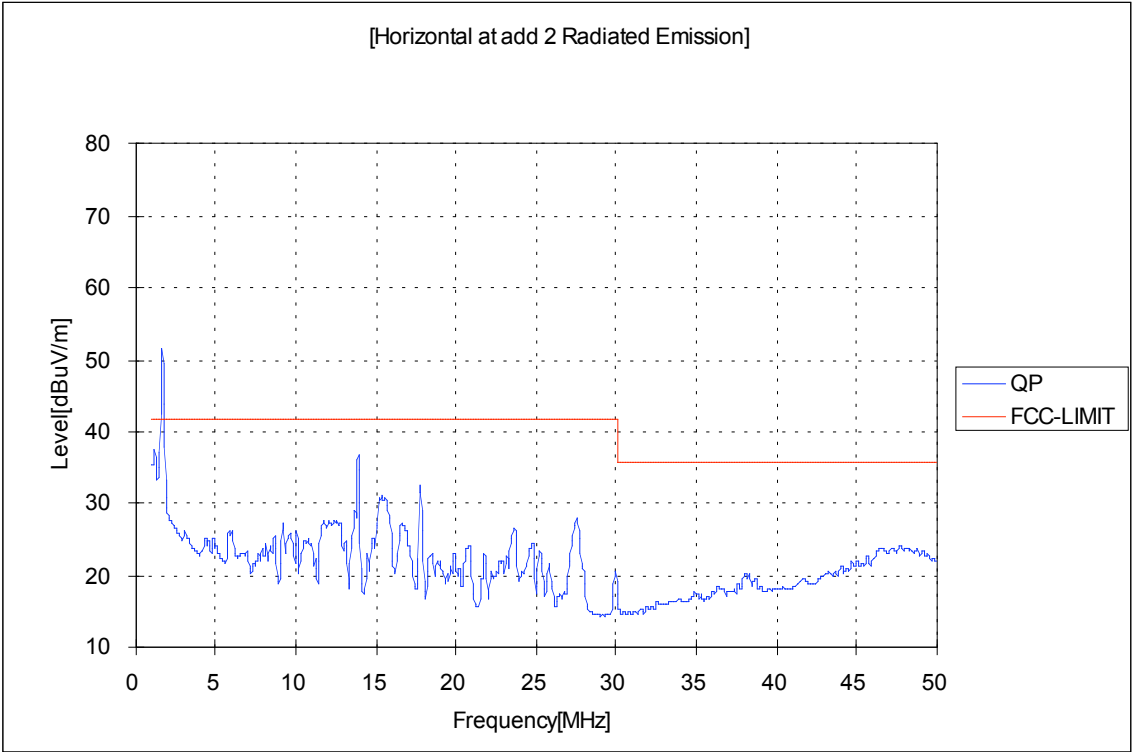
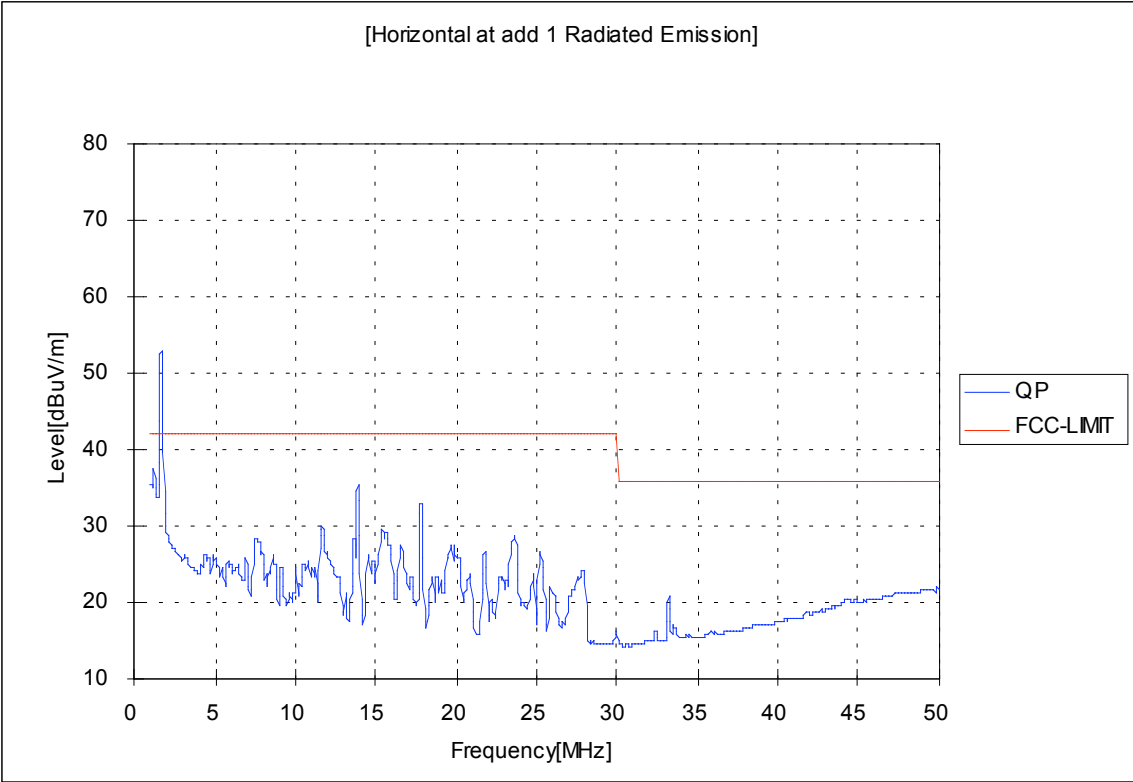
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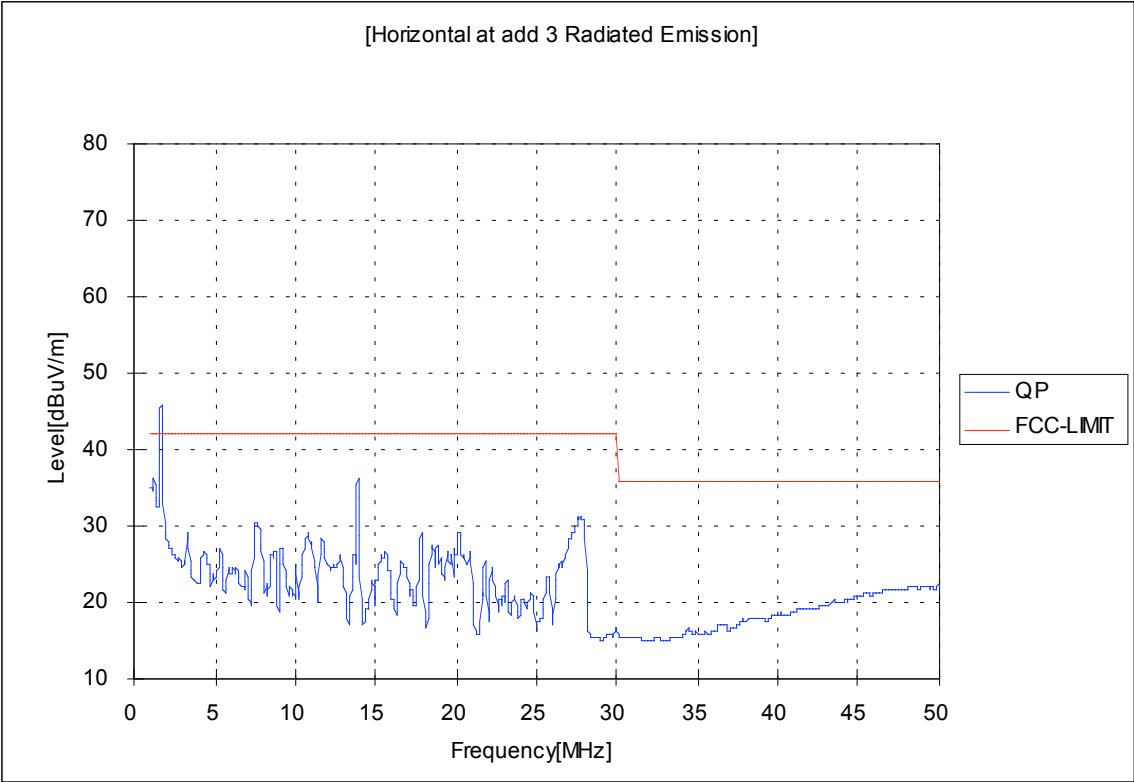
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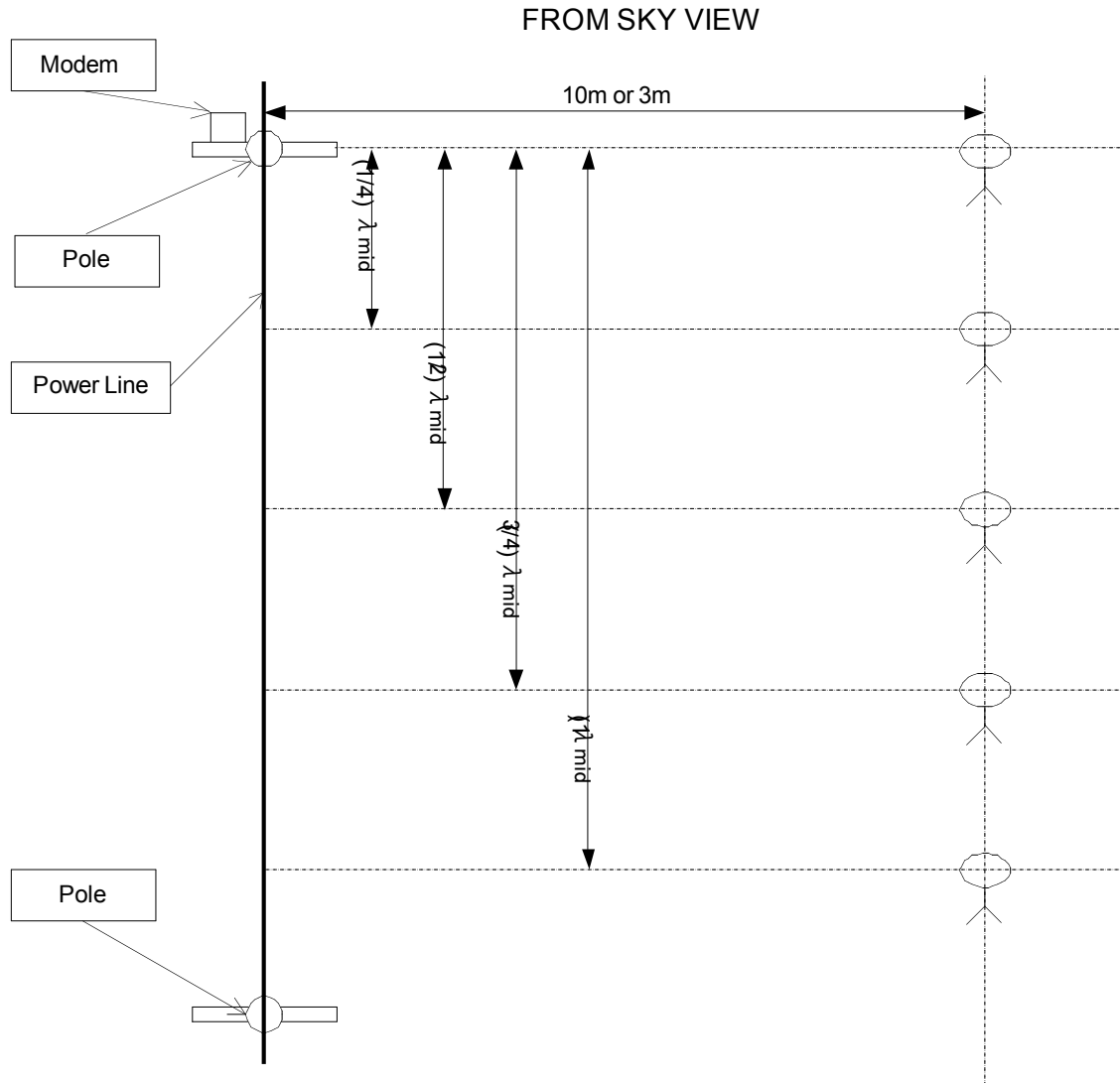
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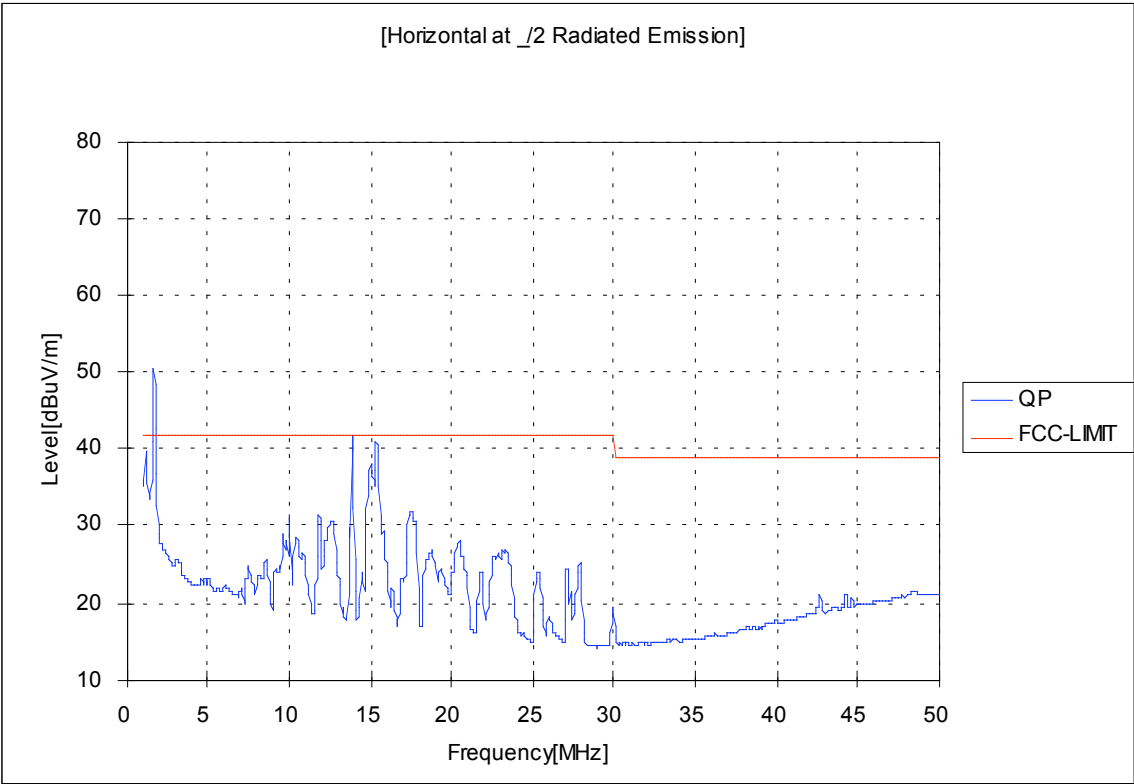
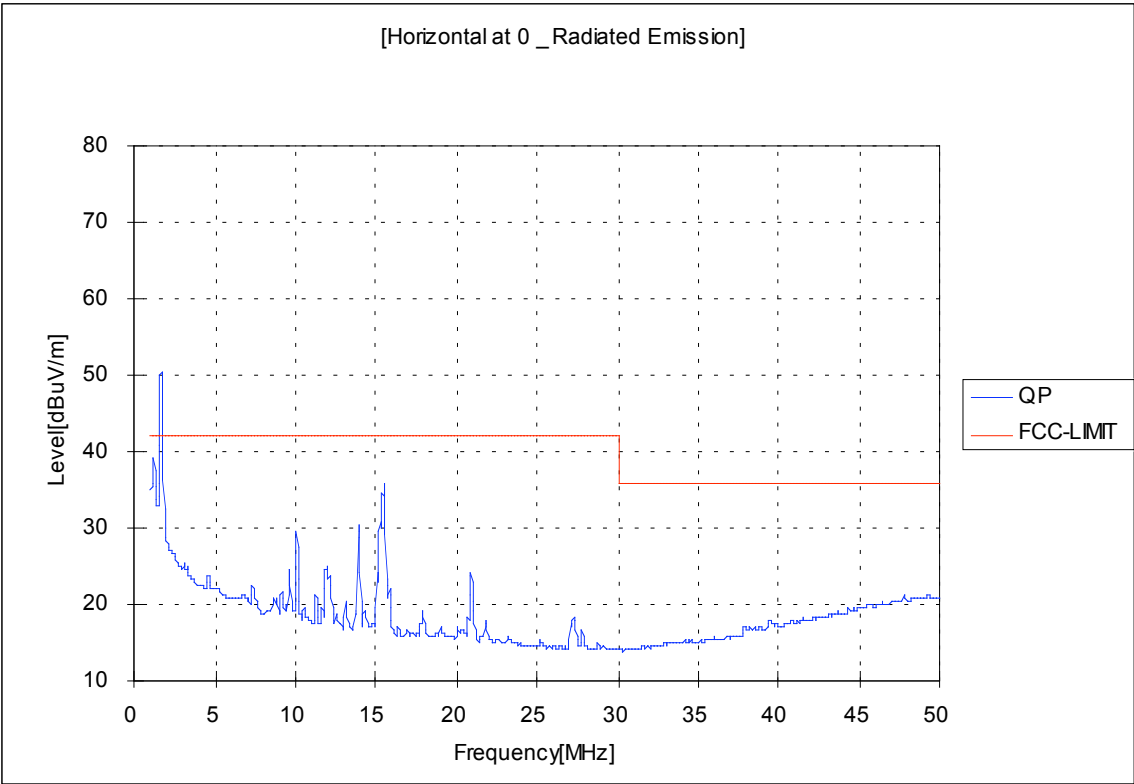
2) Test setup and results from Sawmill Node 2



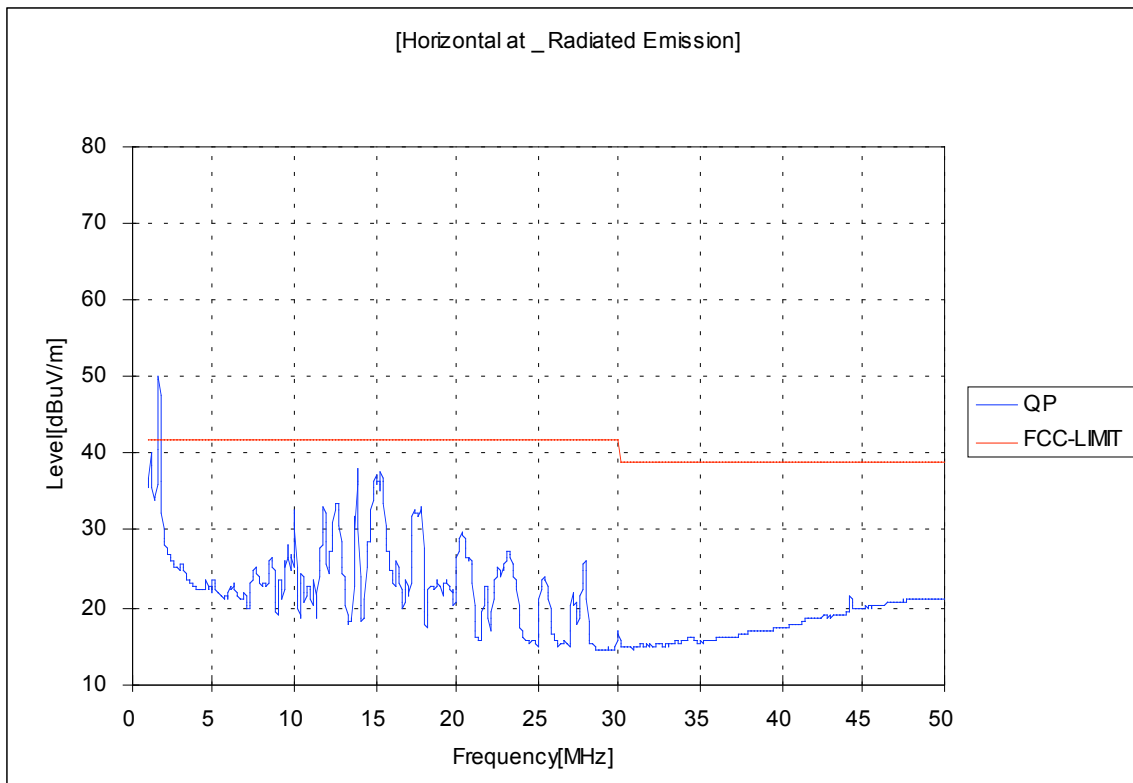
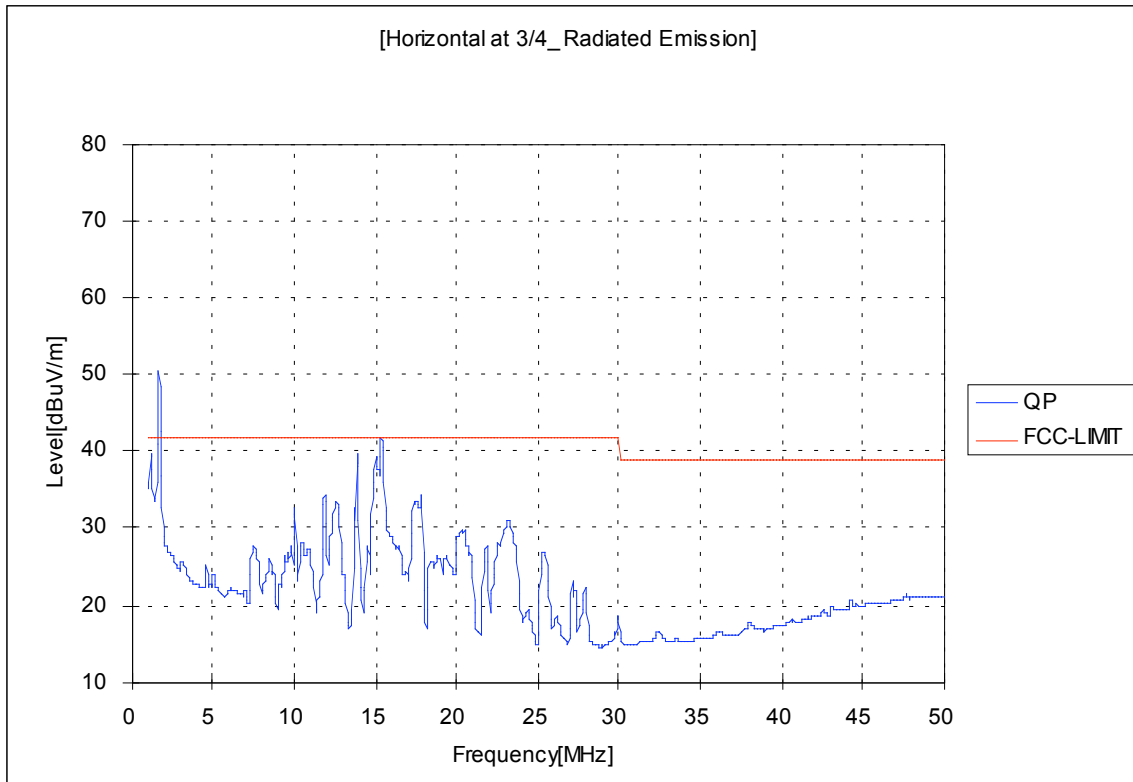
Photos of Node Under test – Sawmill Node 2



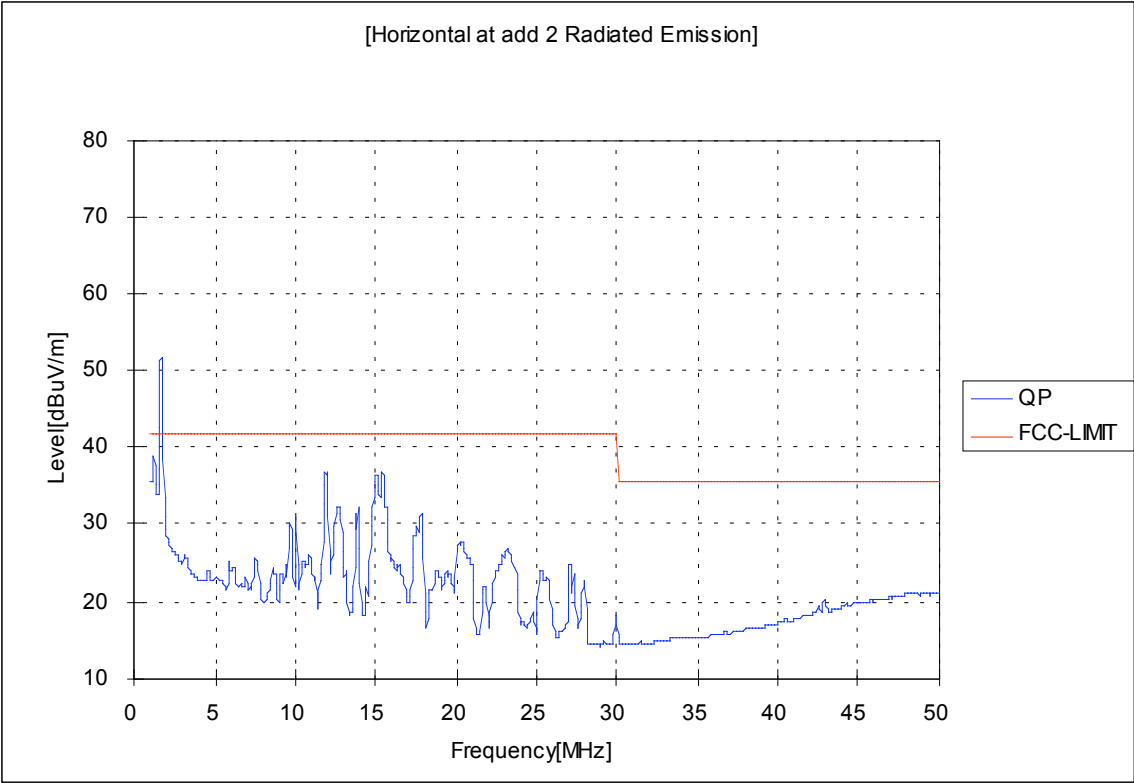
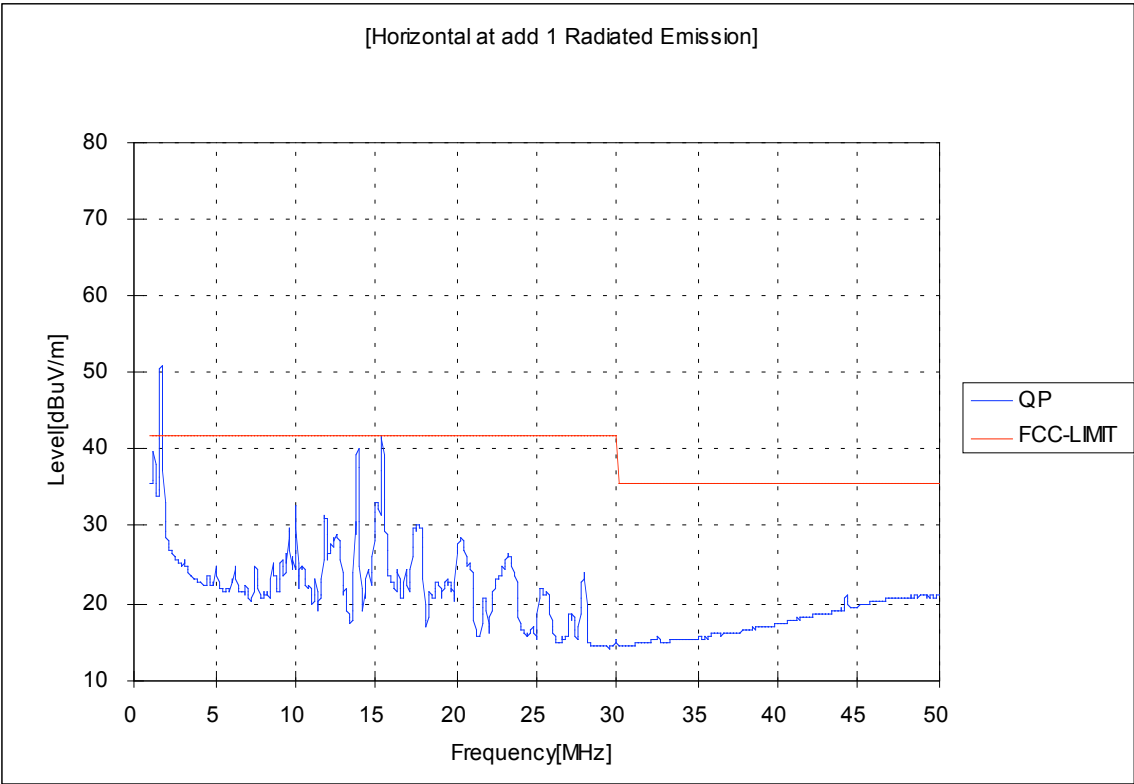
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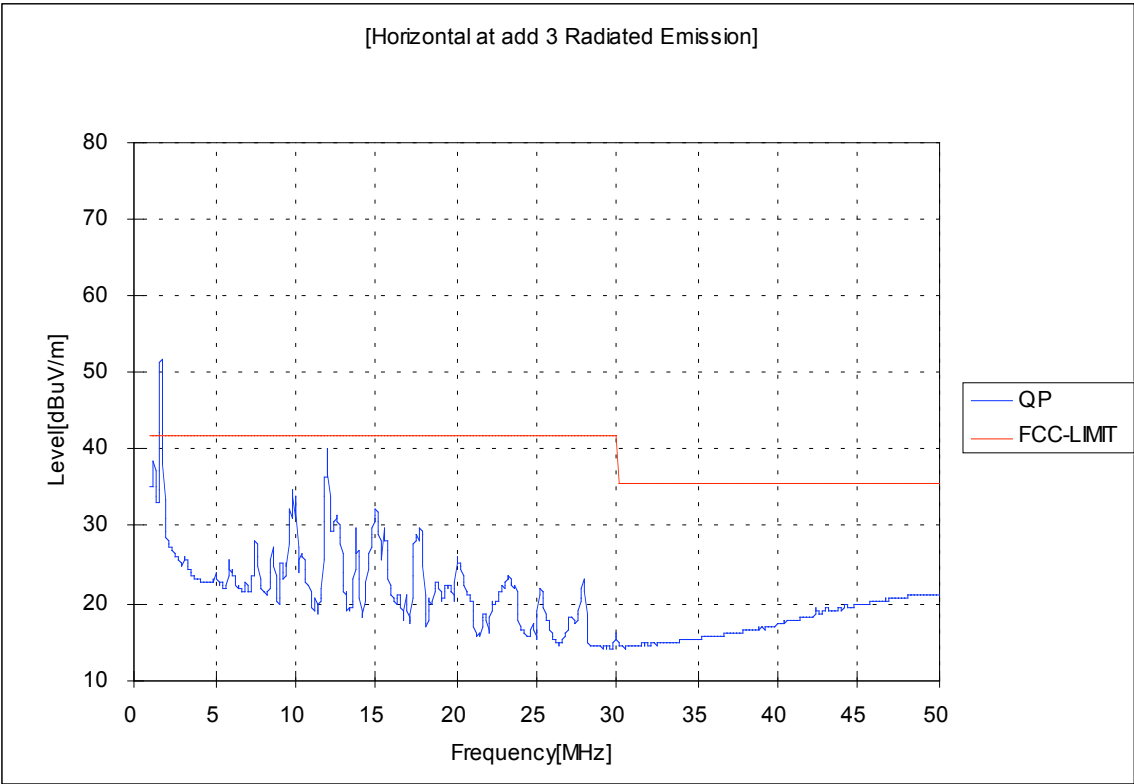
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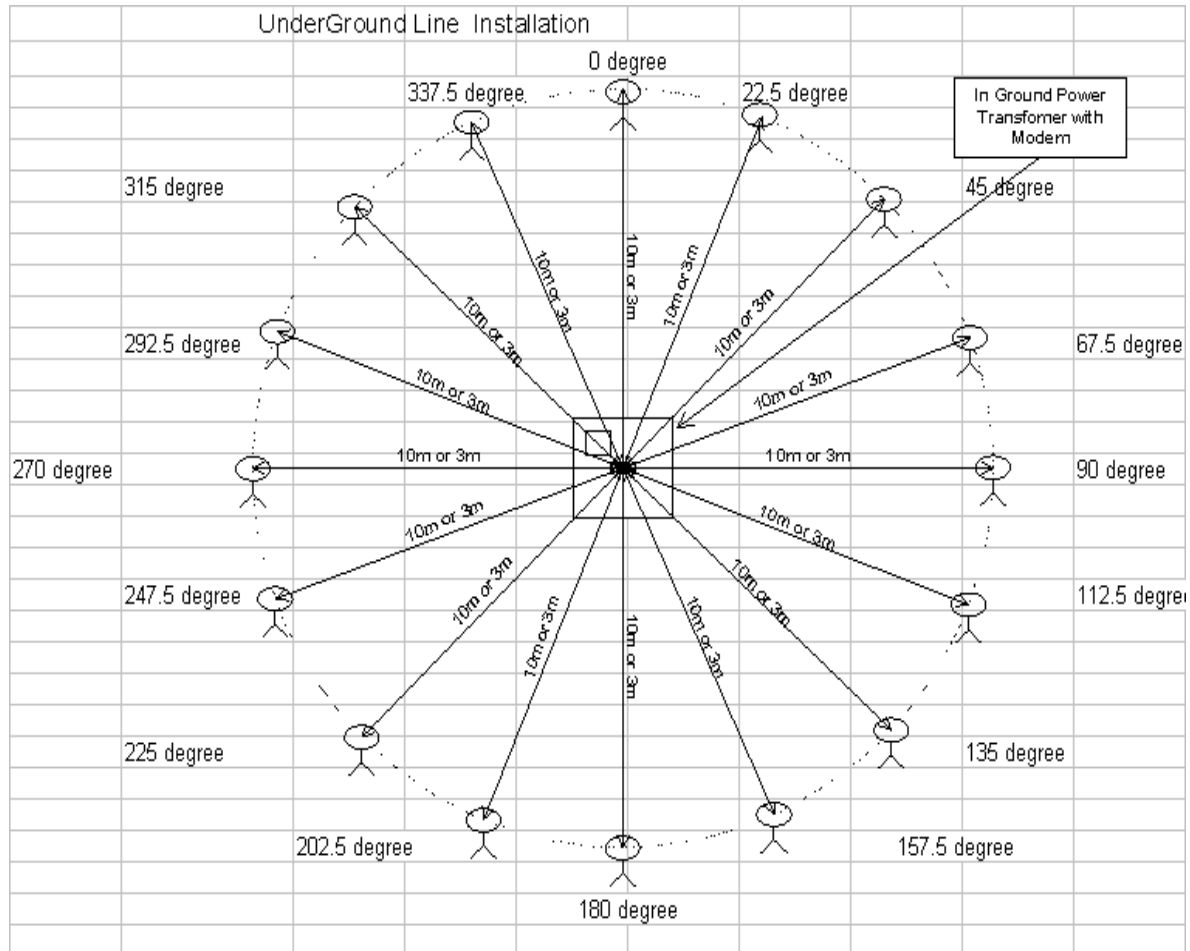
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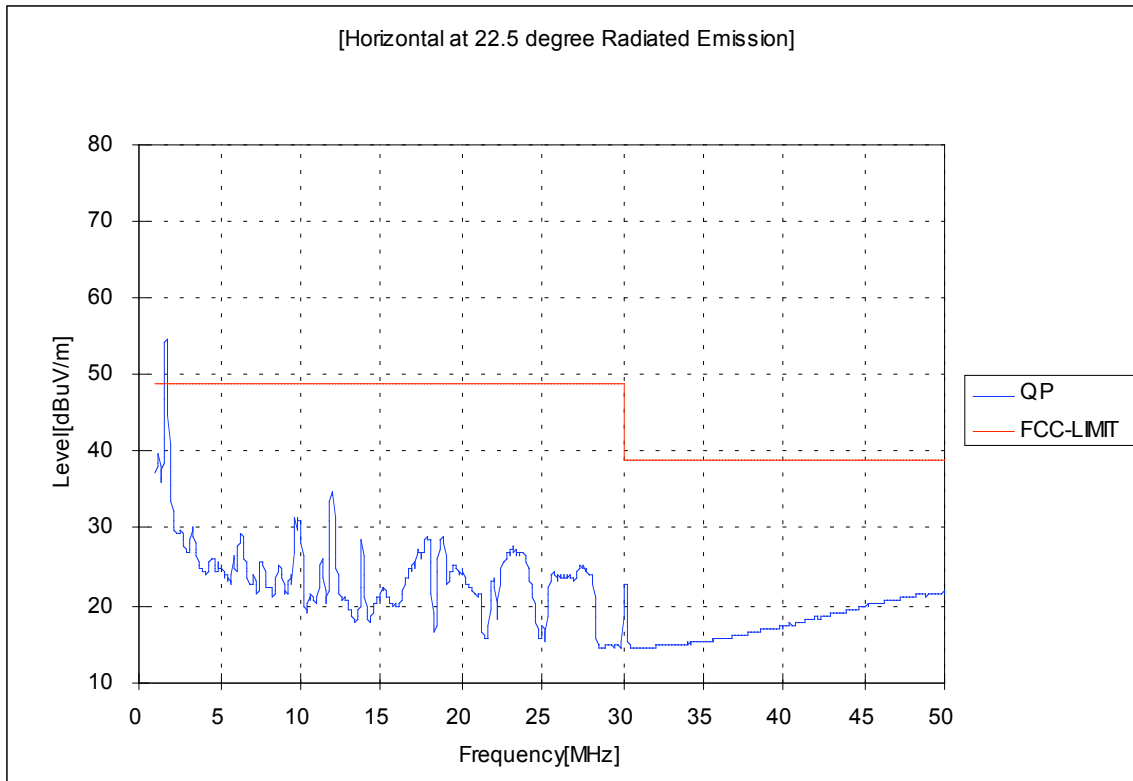
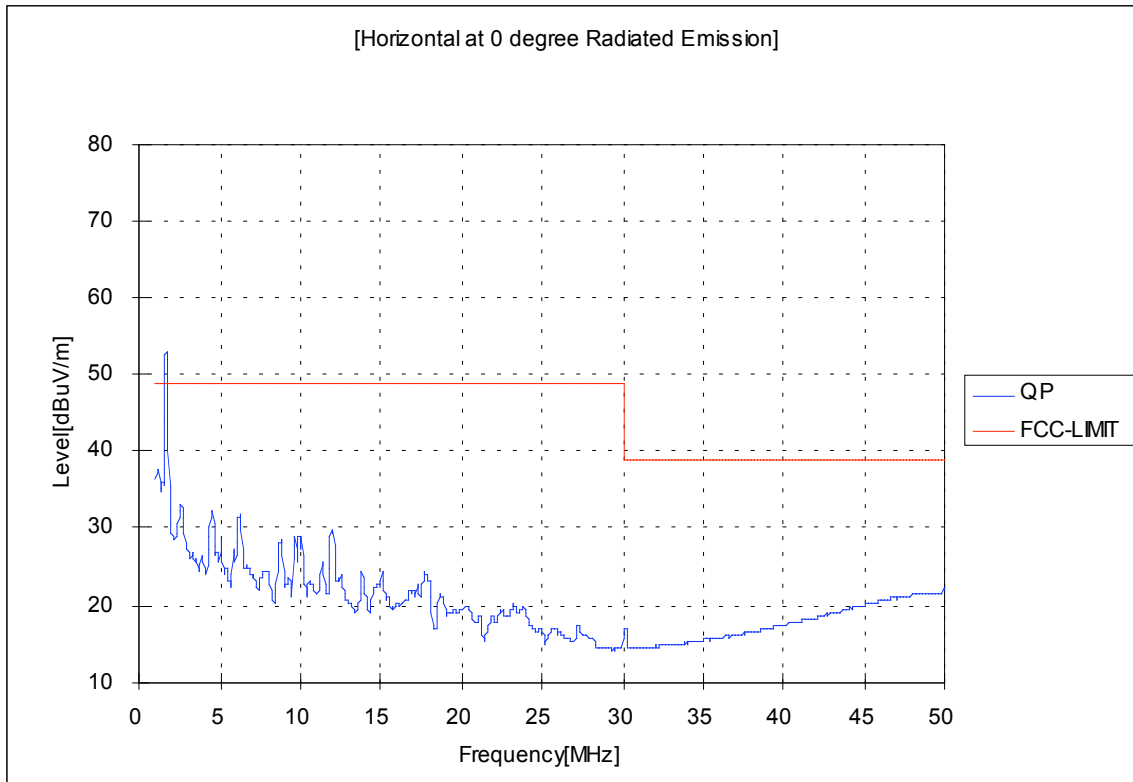
3) Test setup and results from Sawmill Node 3



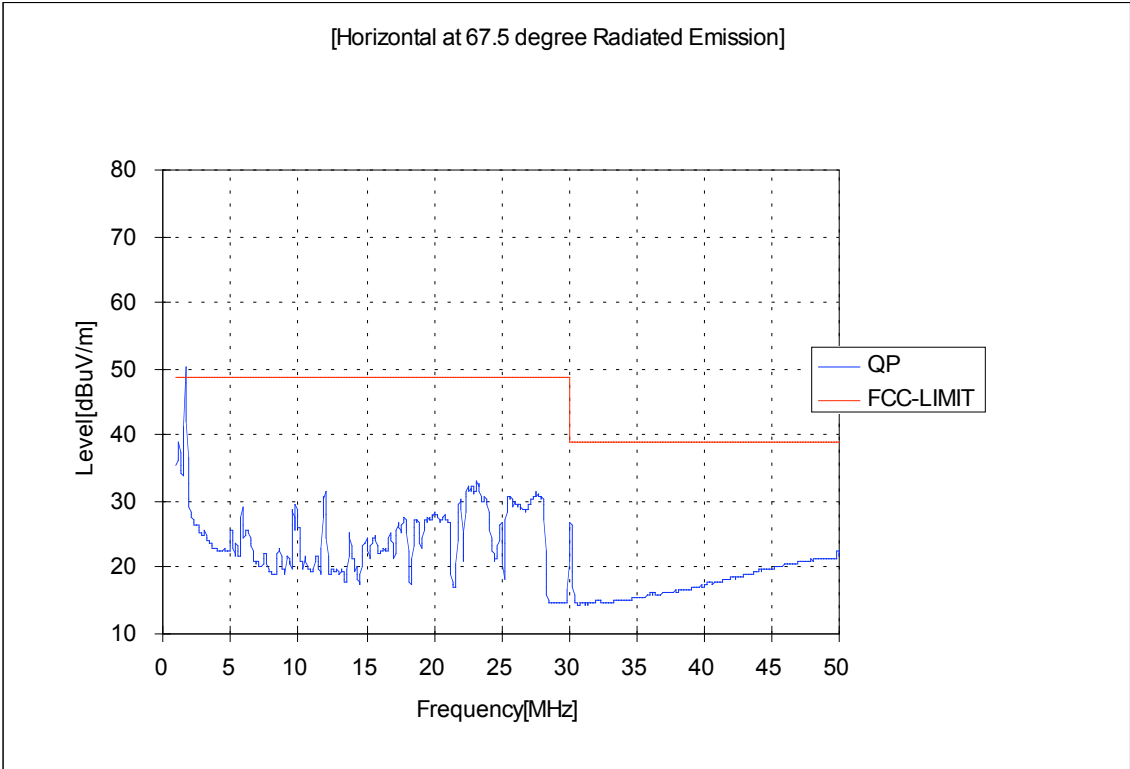
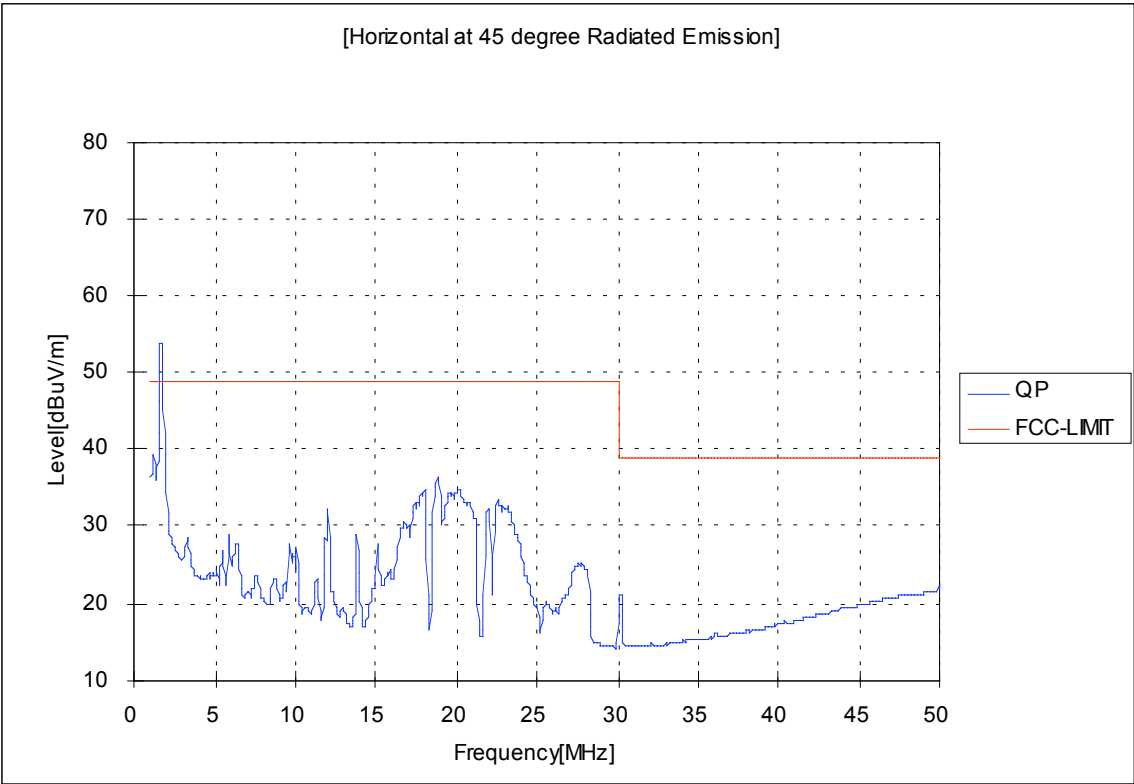
Photos of Node Under test – Sawmill Node 3



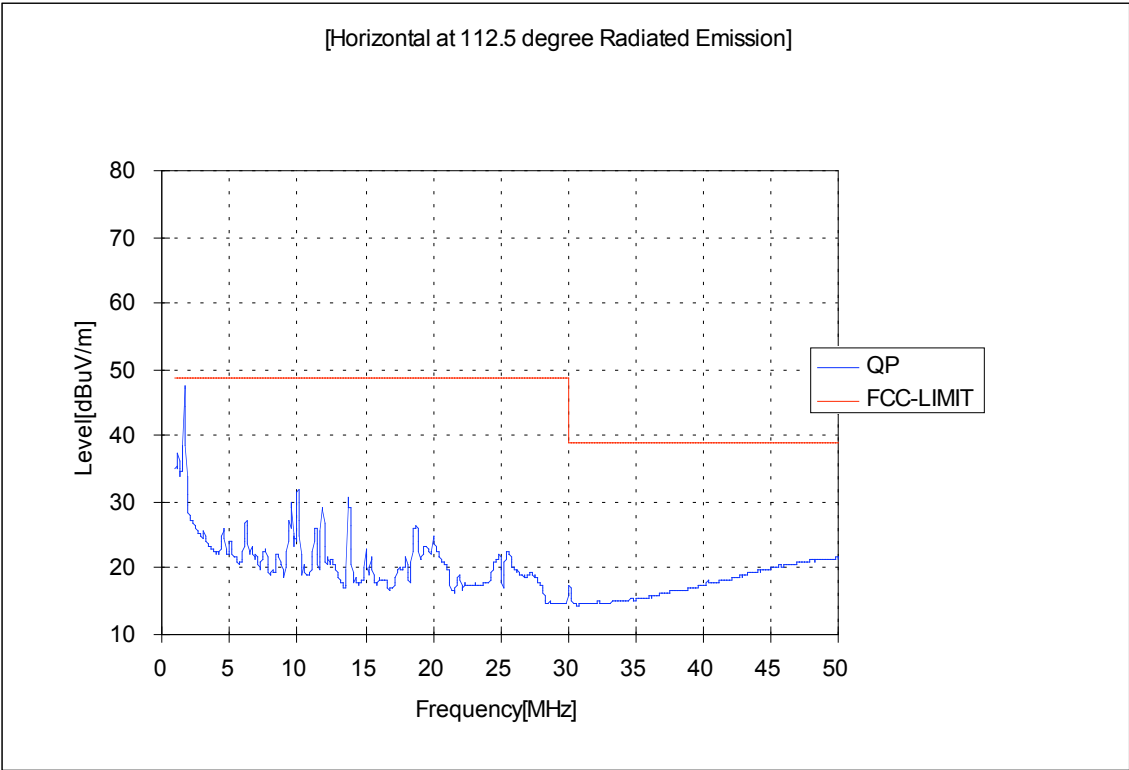
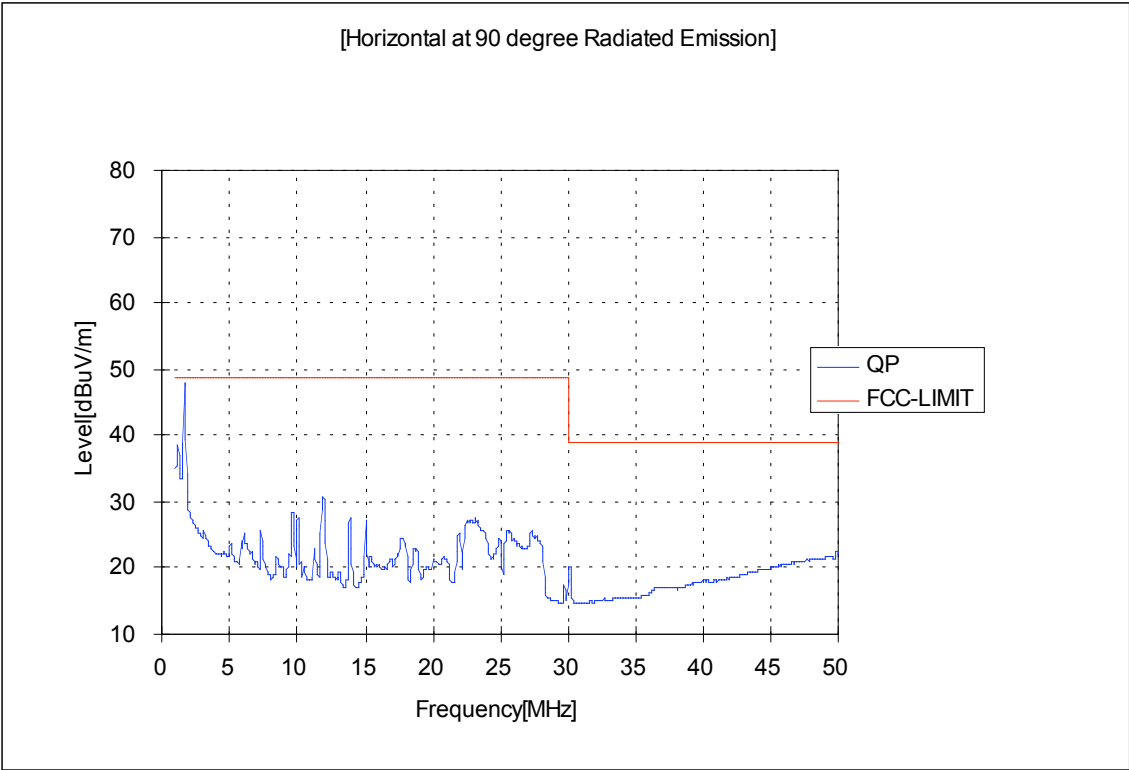
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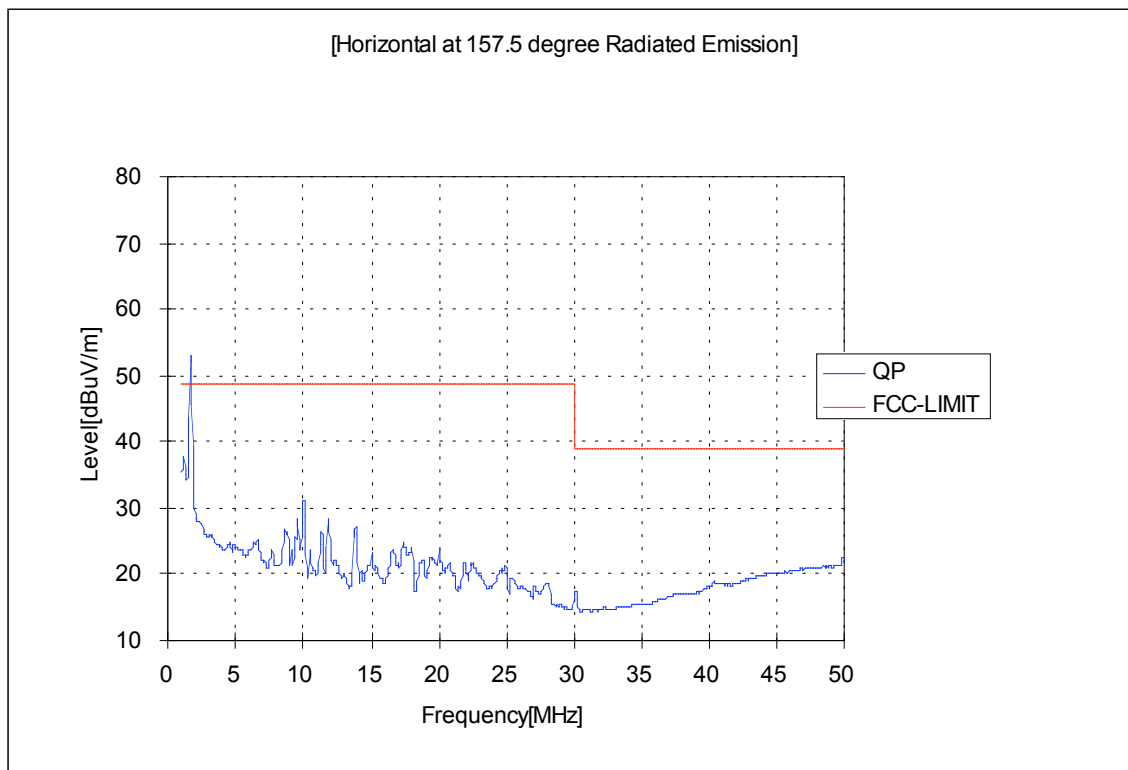
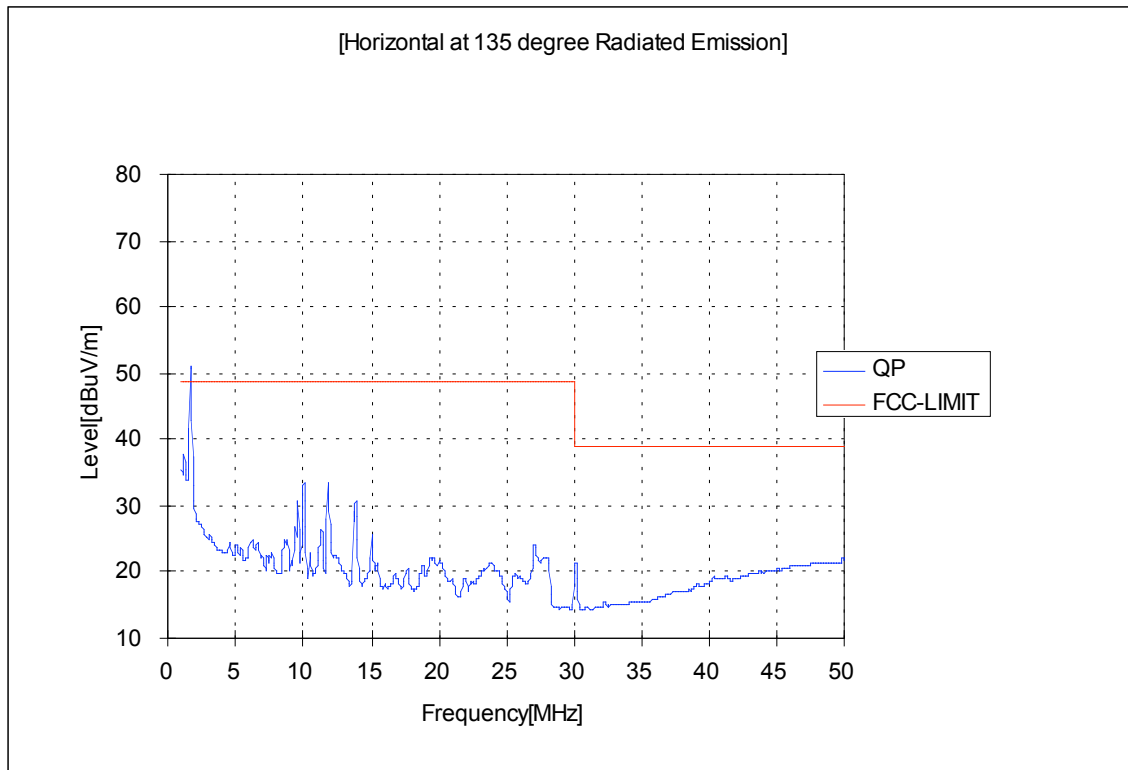
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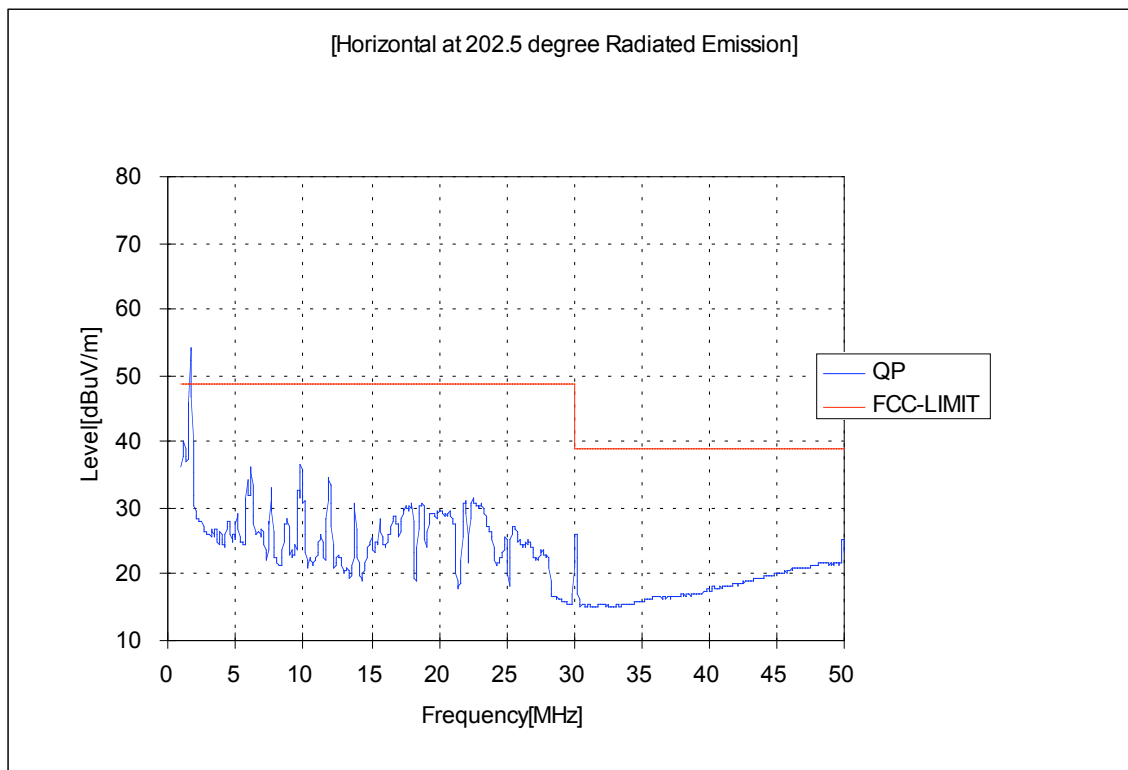
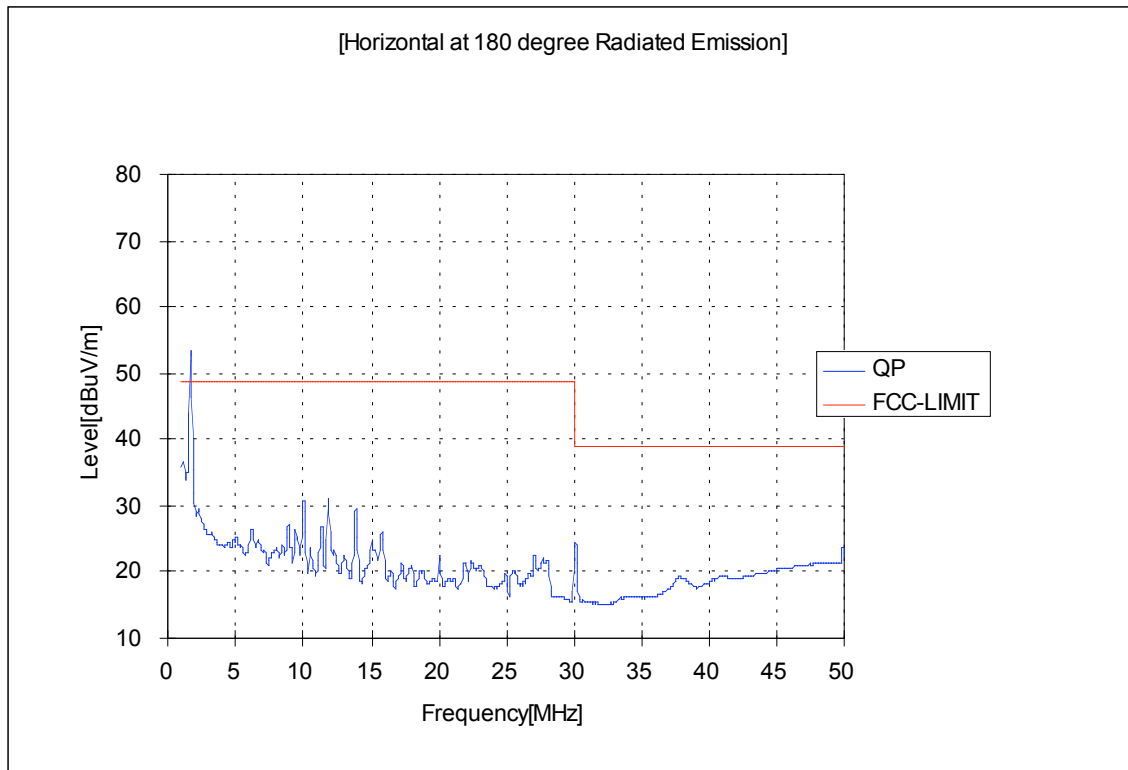
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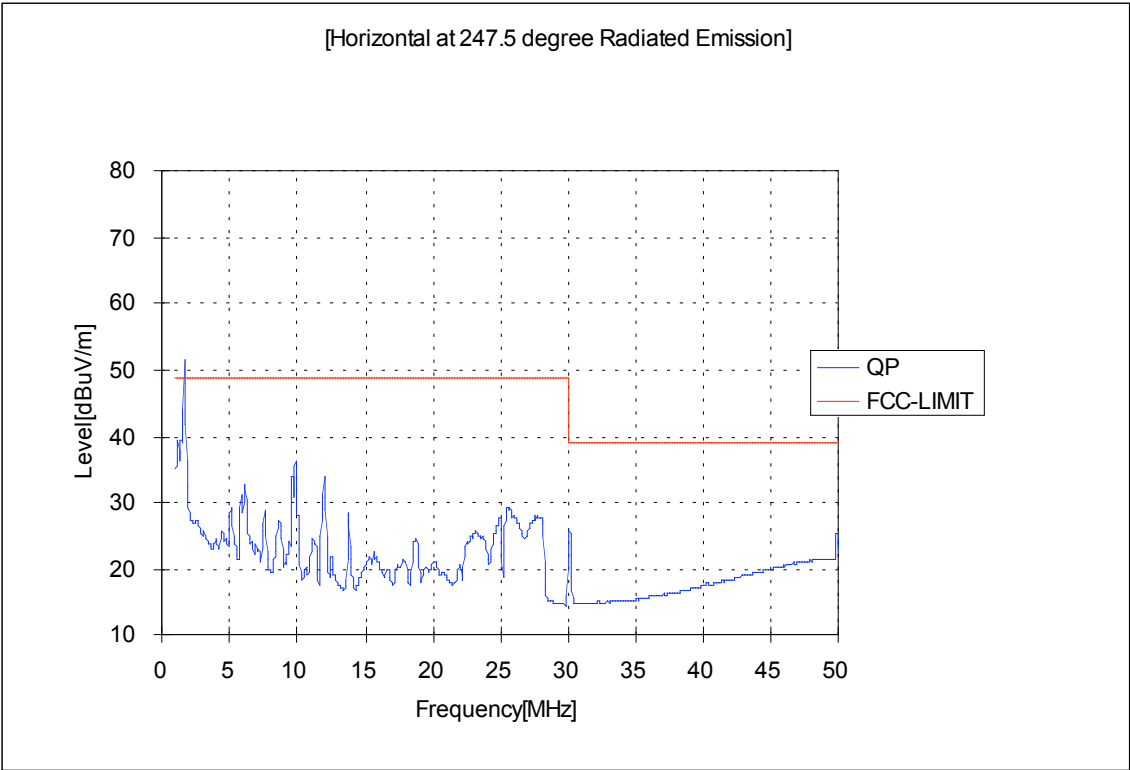
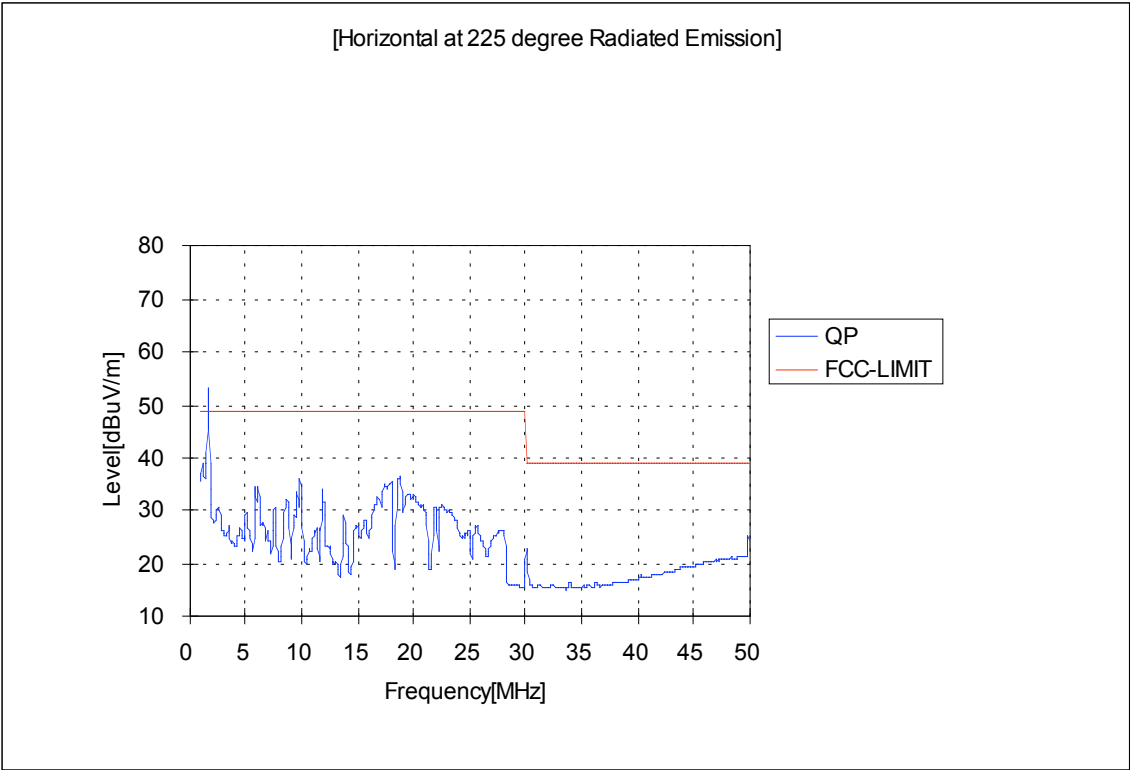
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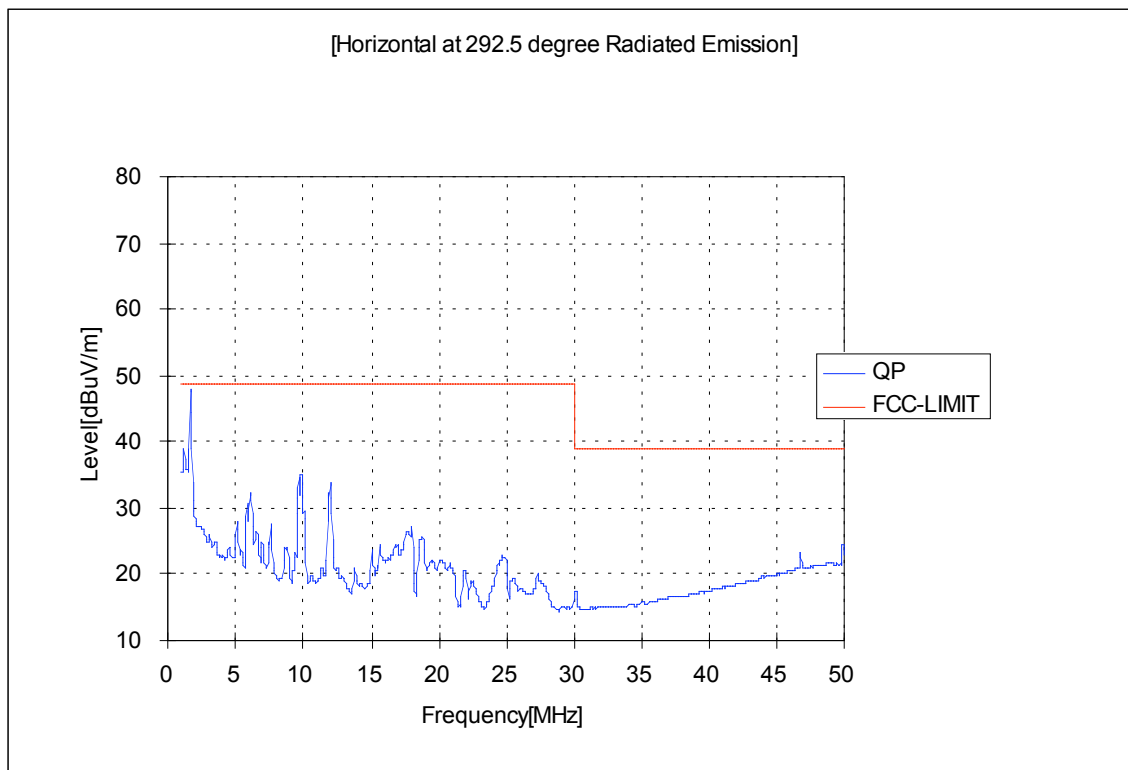
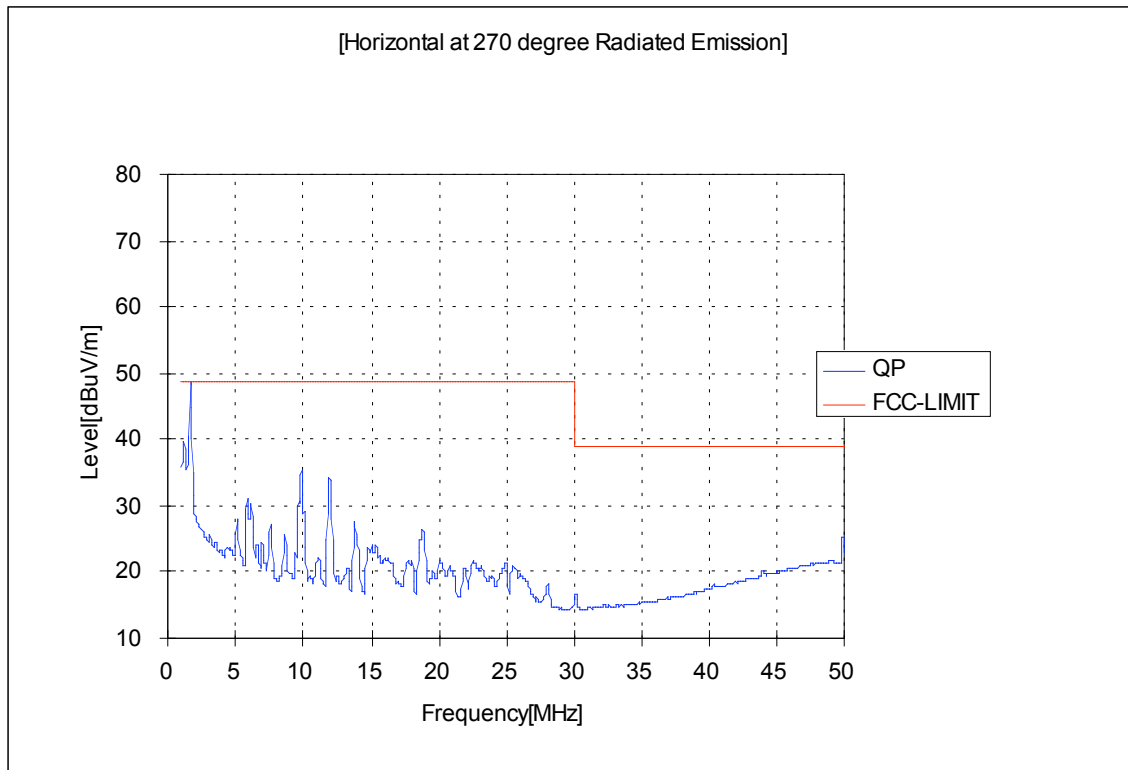
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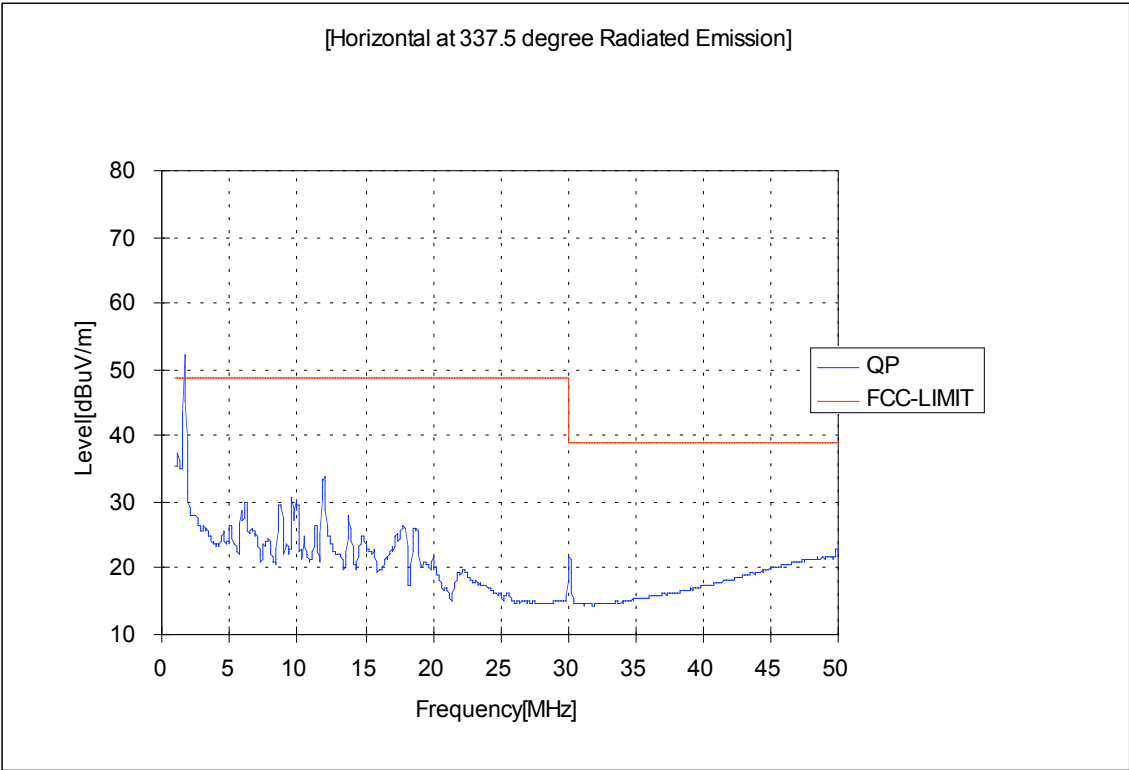
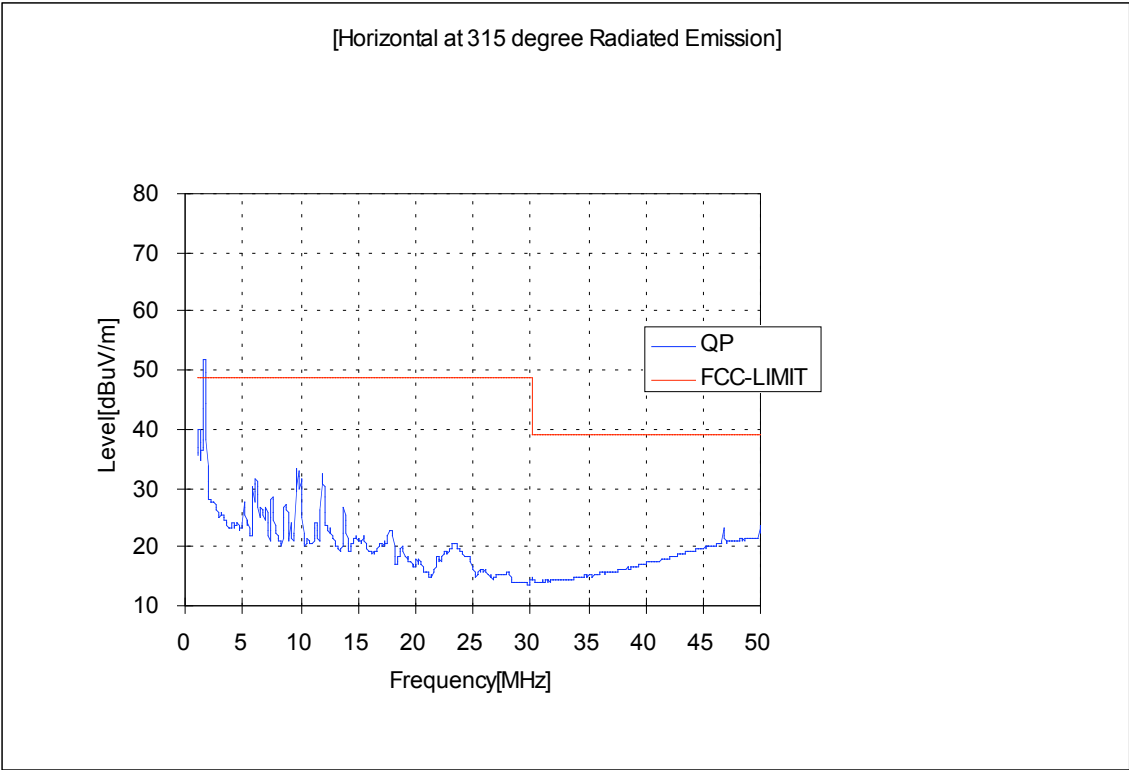
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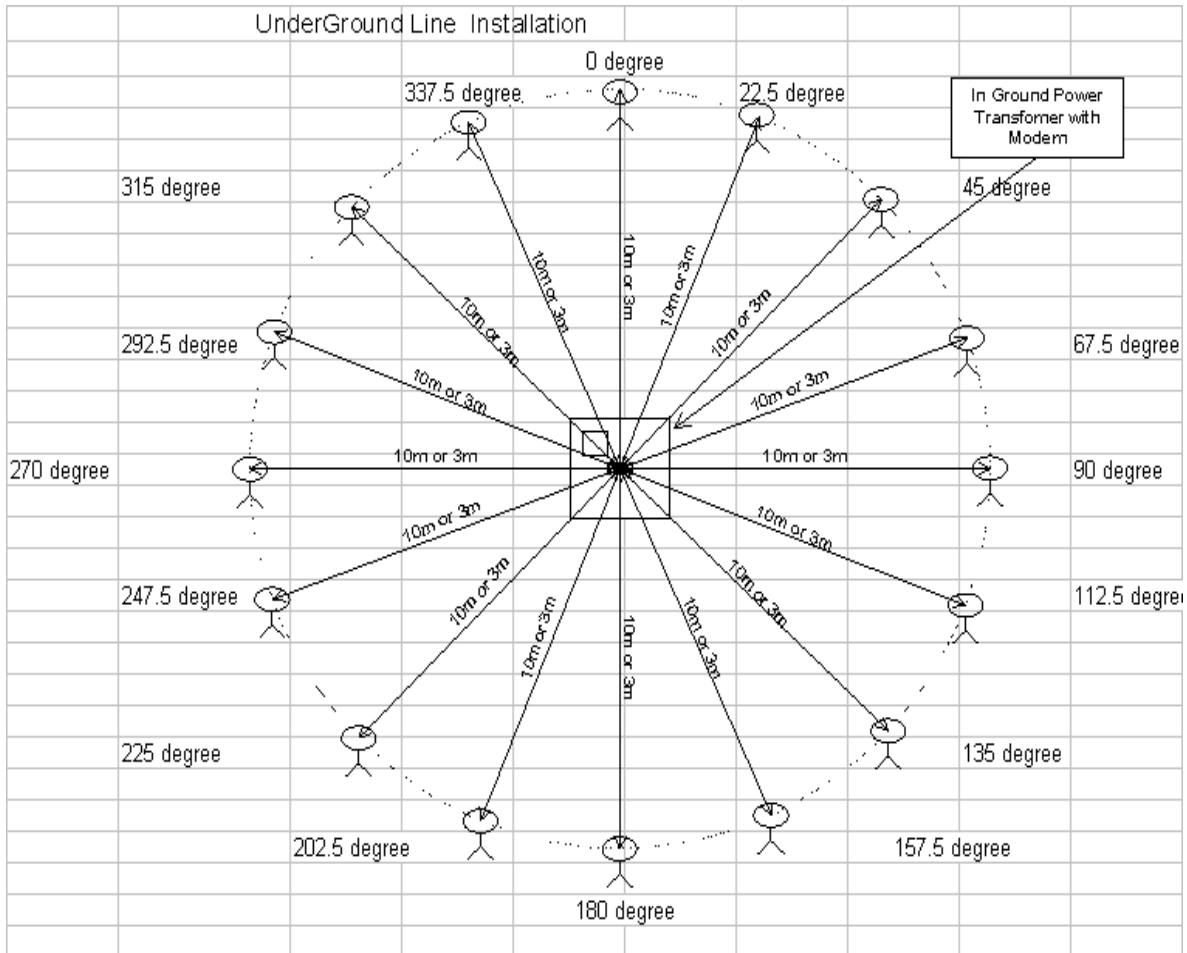
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Test Results

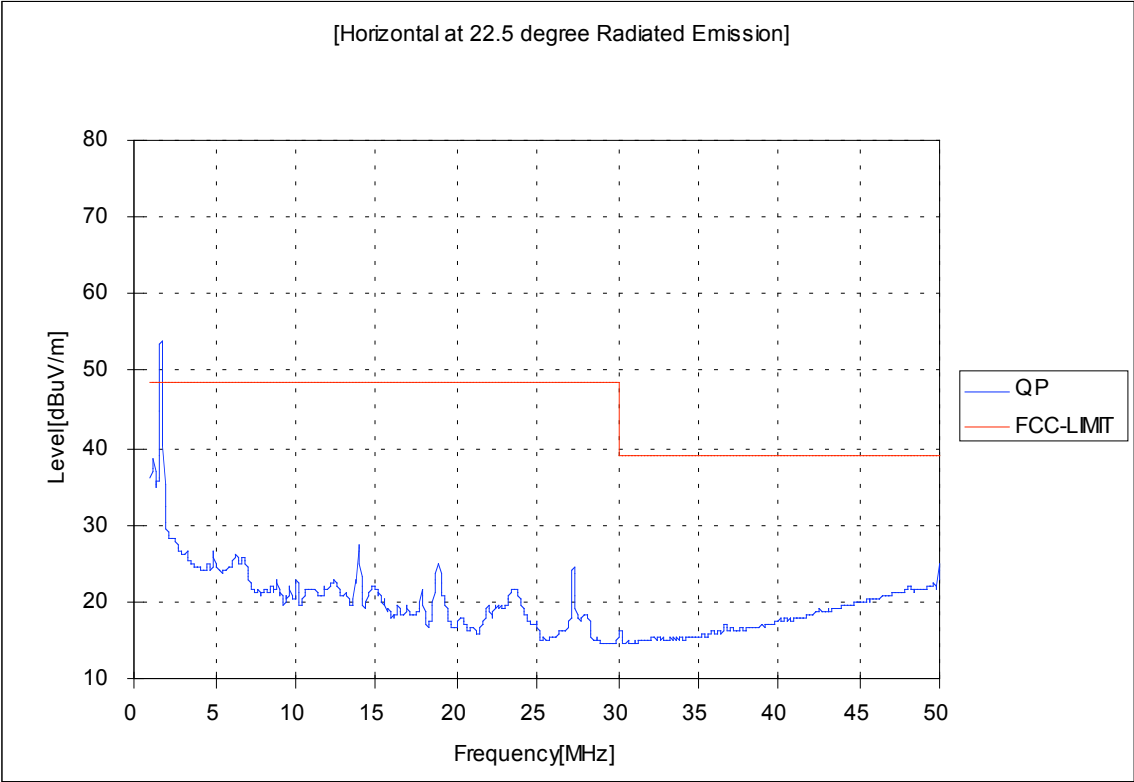
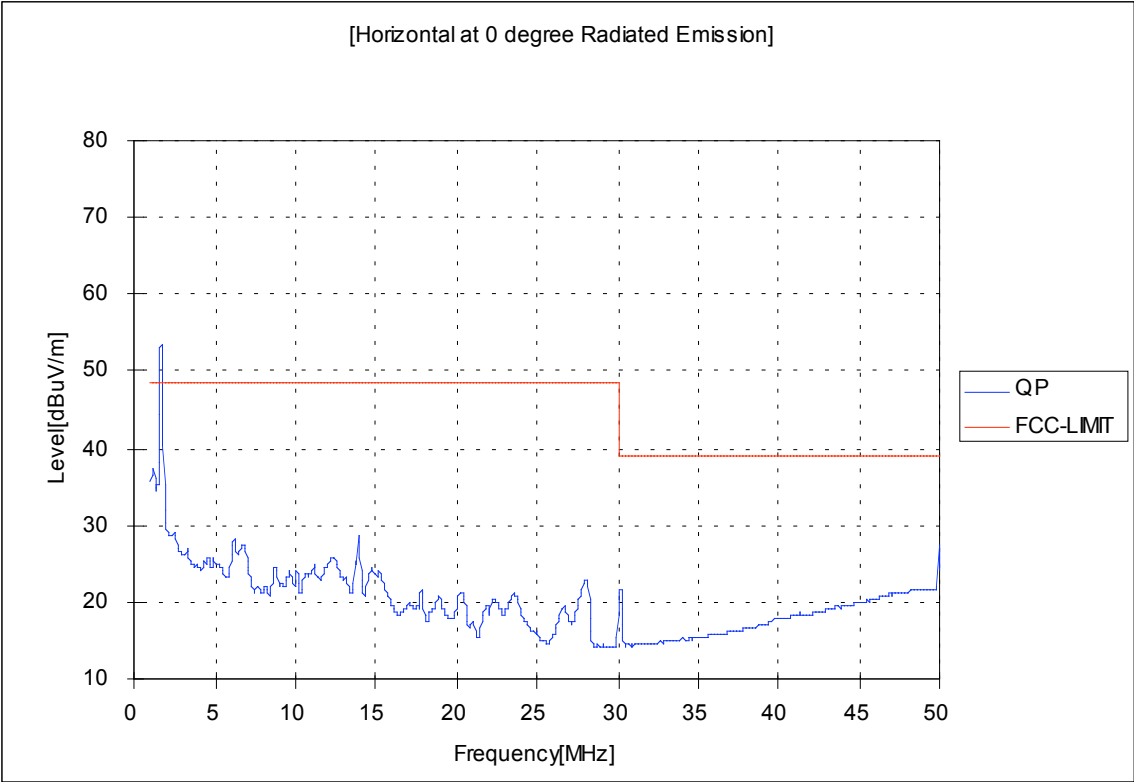
4) Test setup and results from Sawmill Node 4



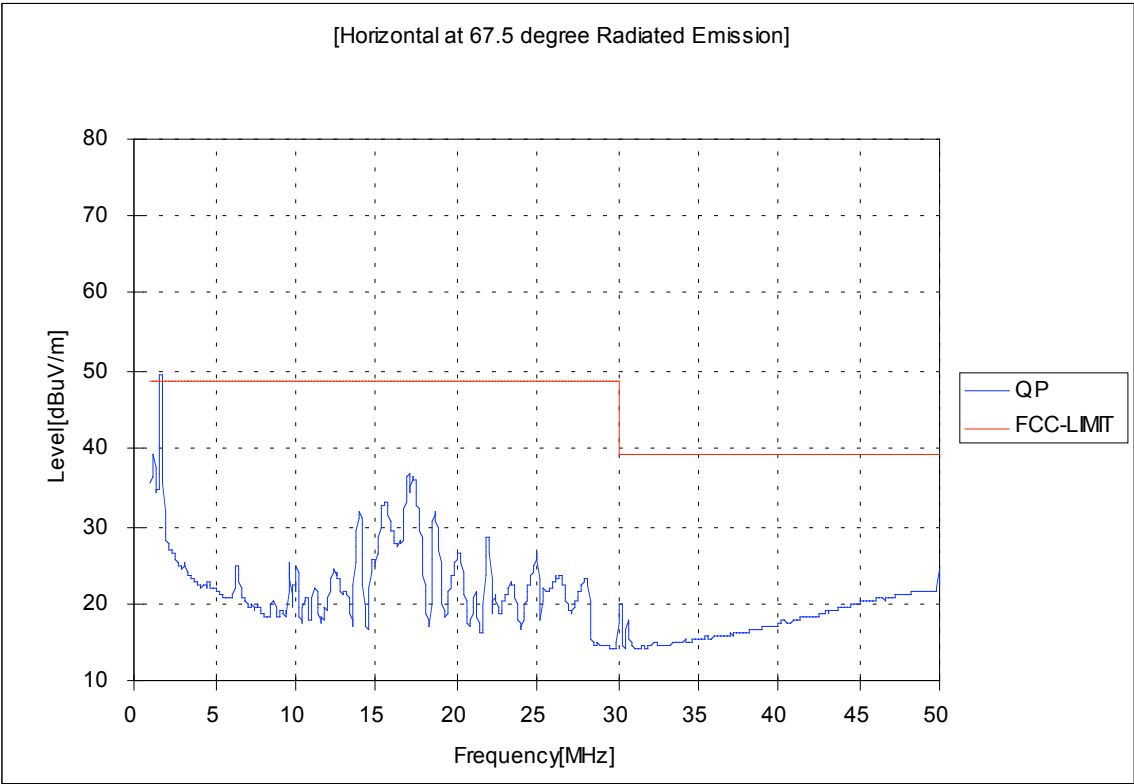
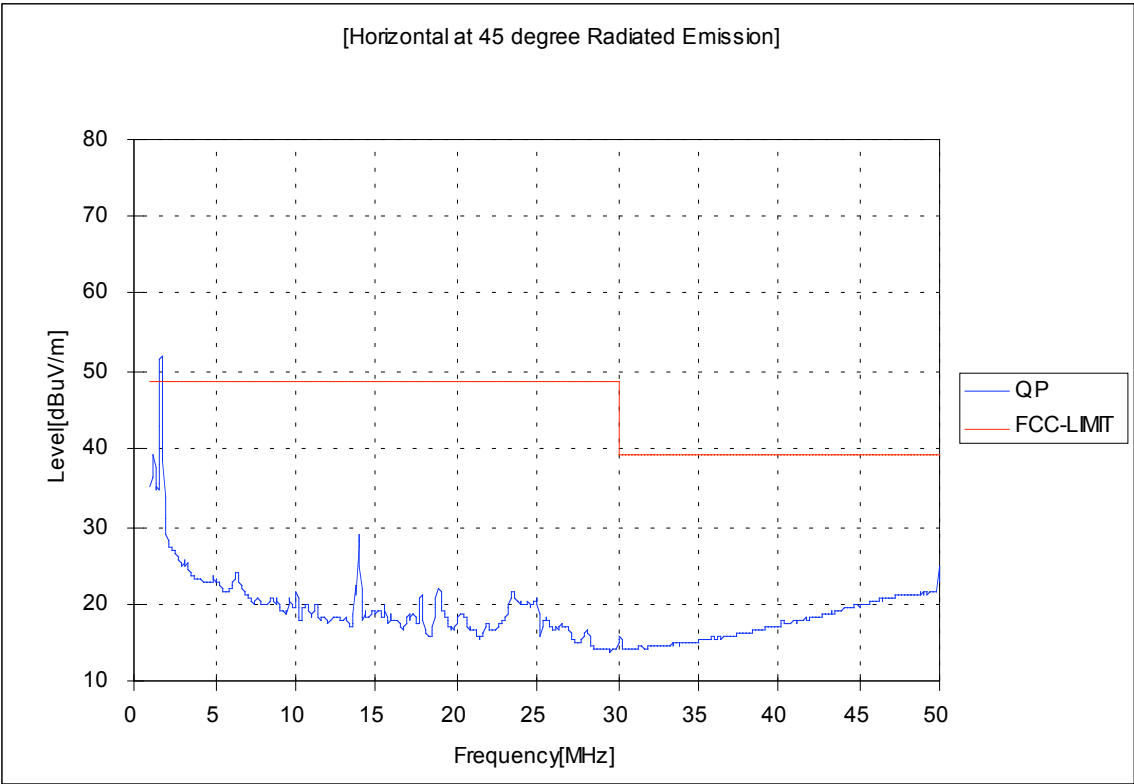
Photos of Node Under test – Sawmill Node 4



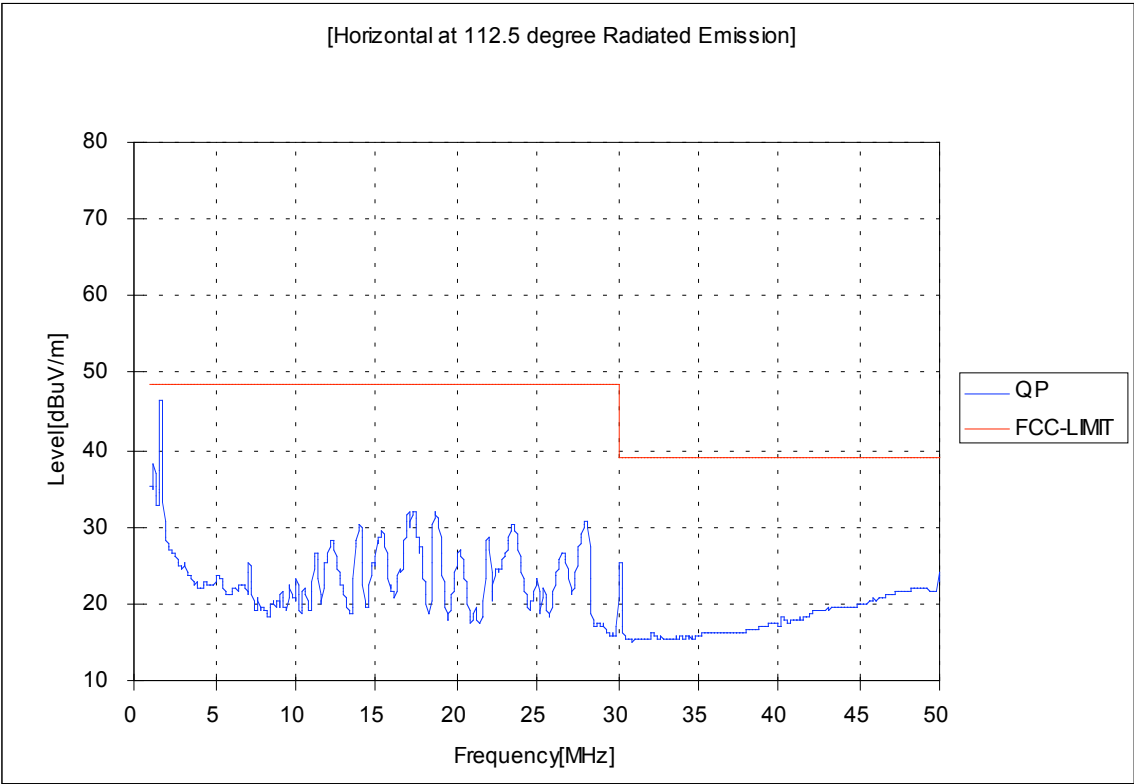
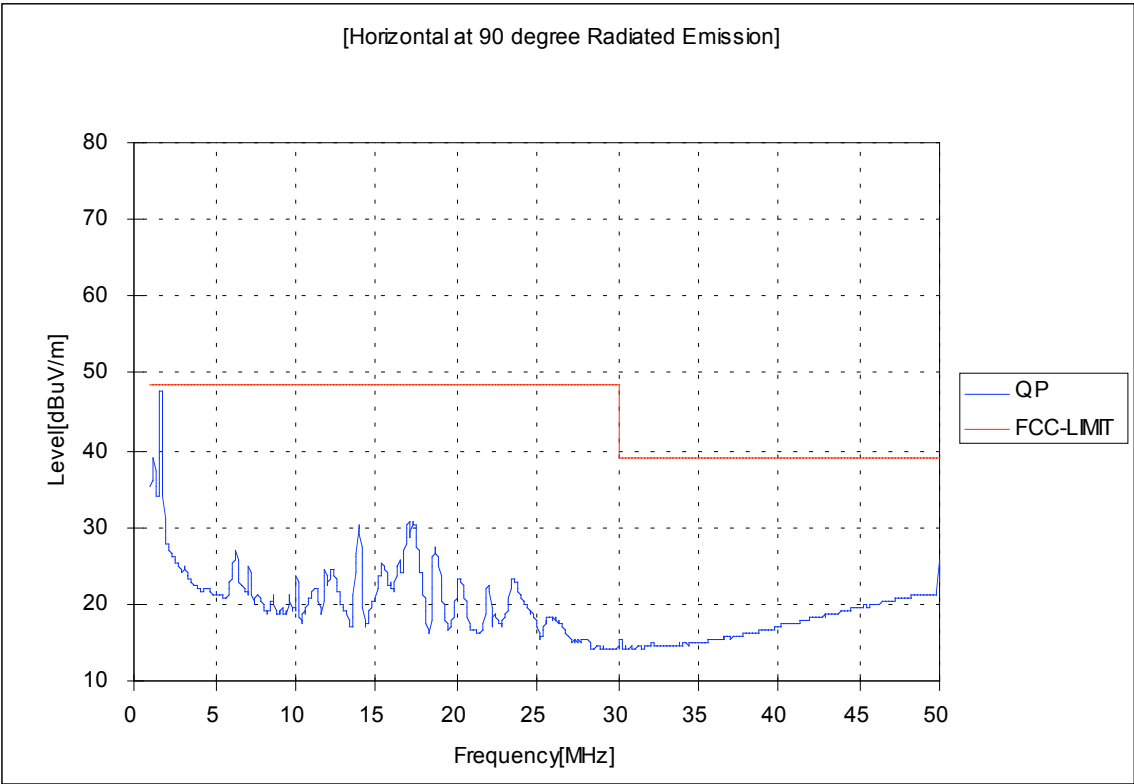
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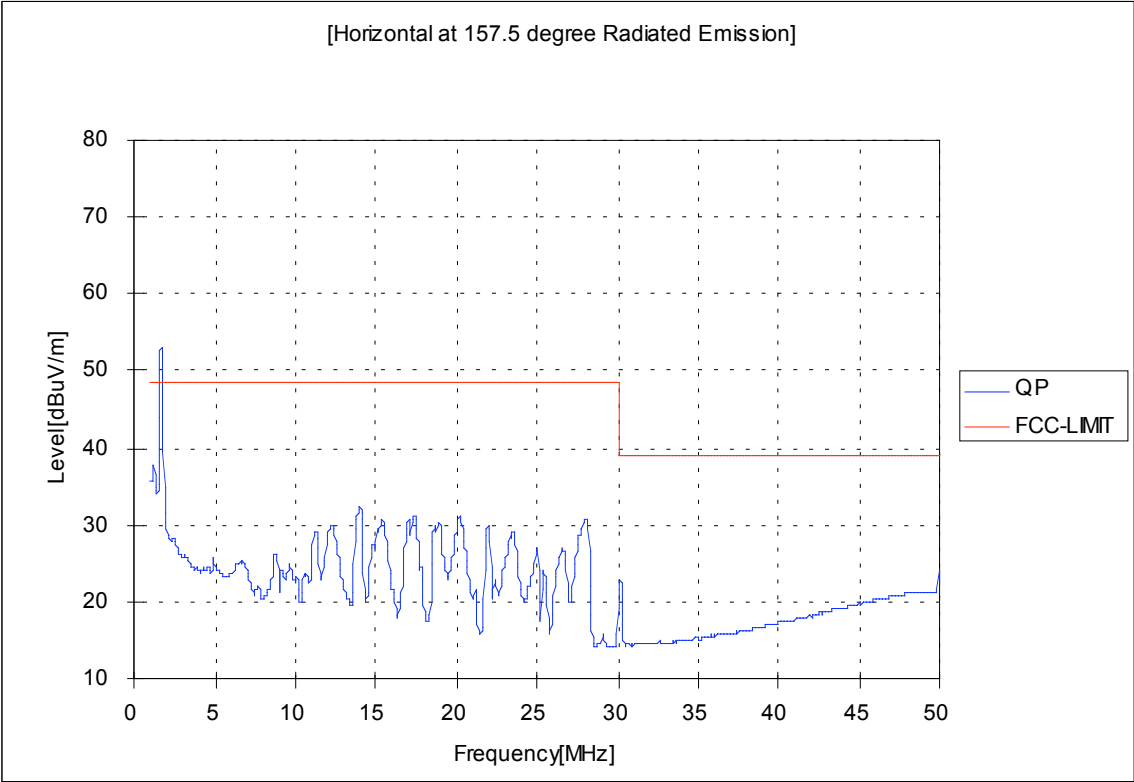
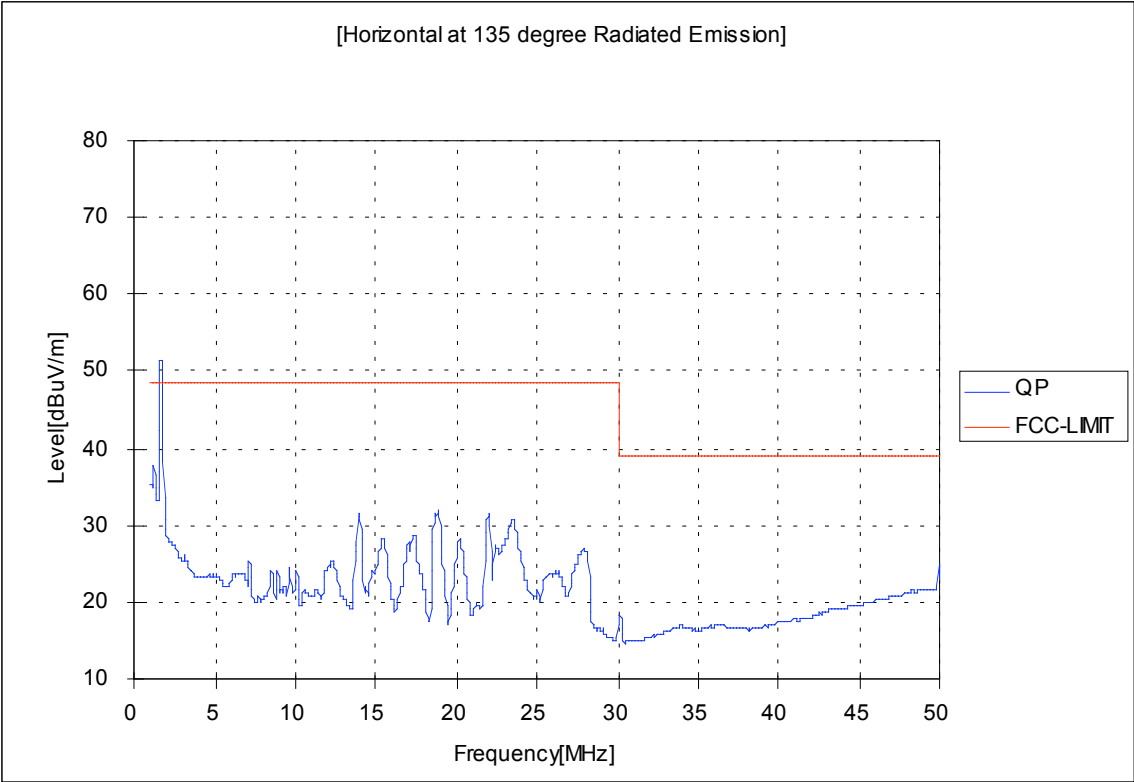
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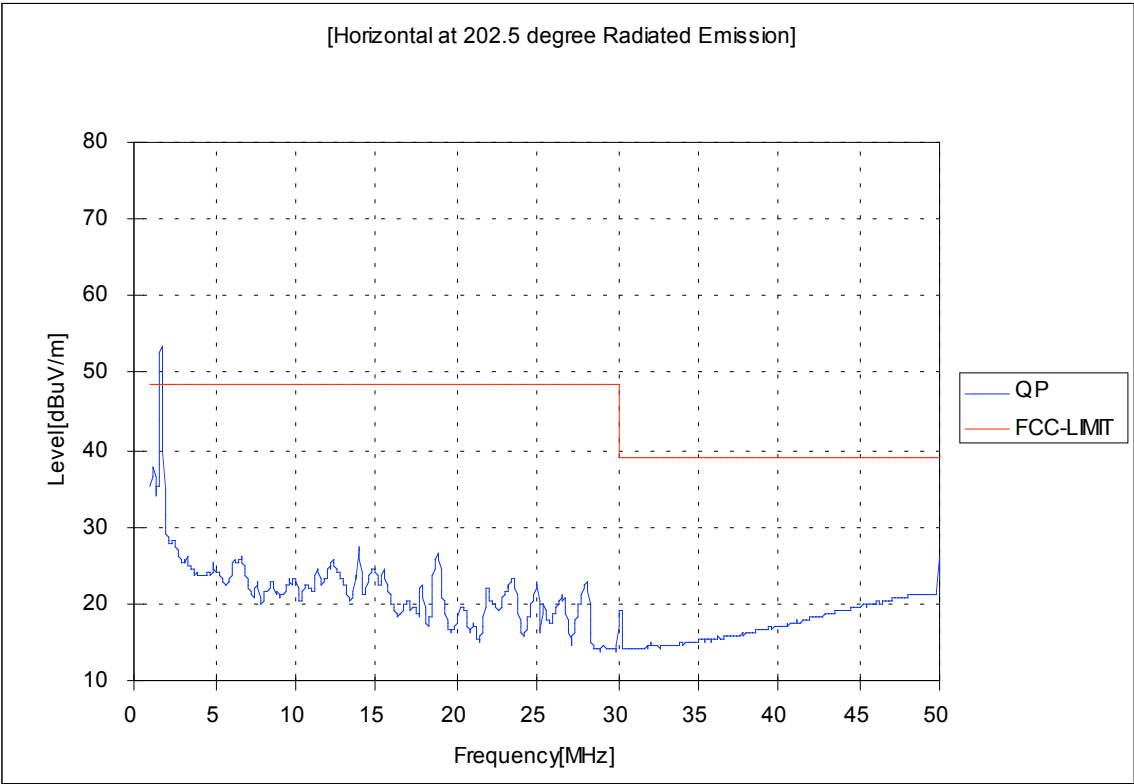
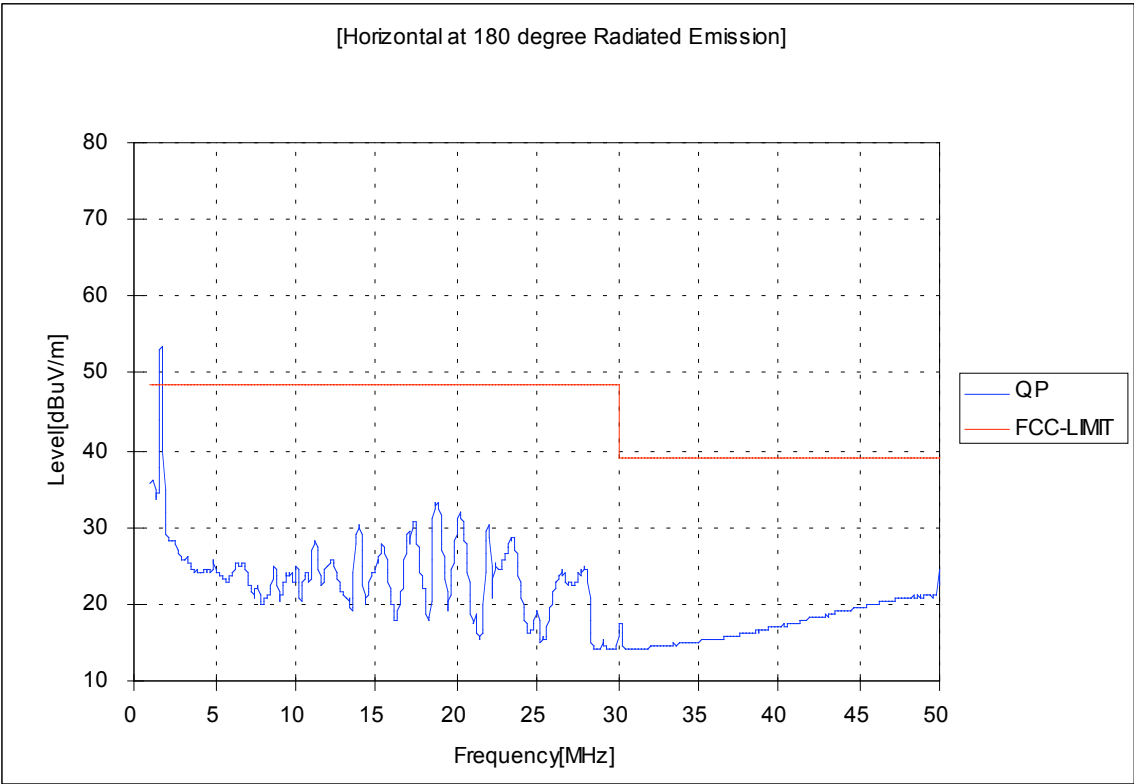
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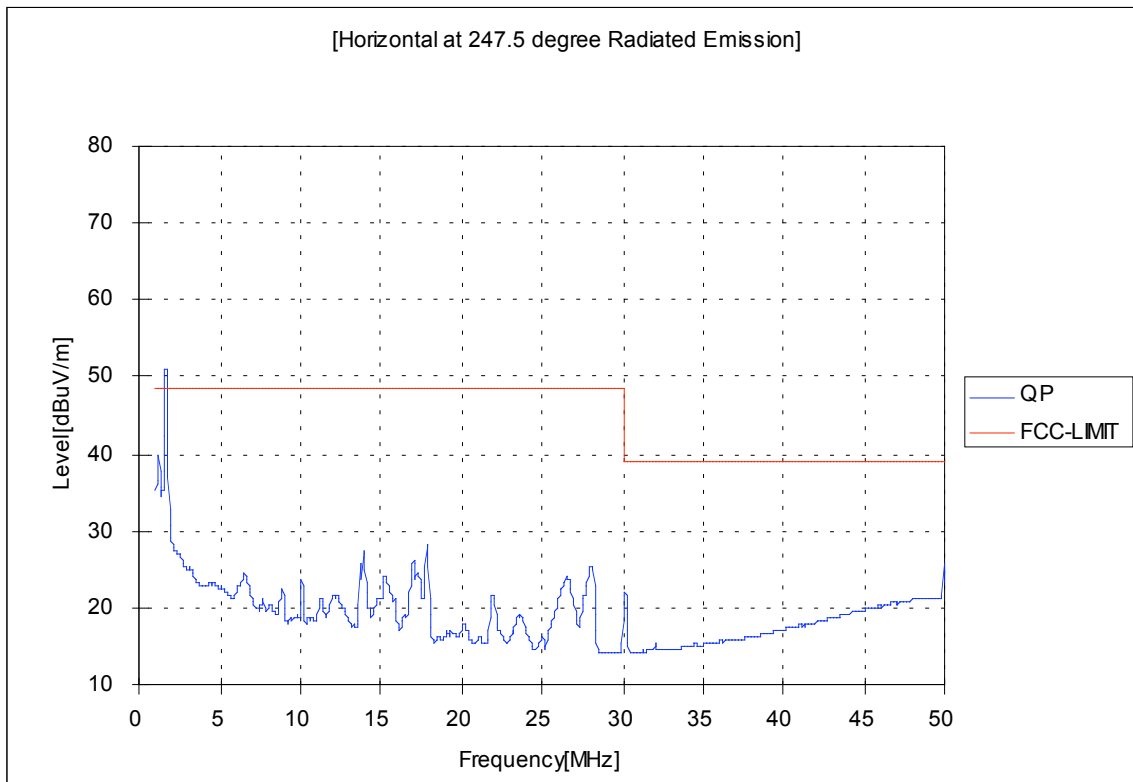
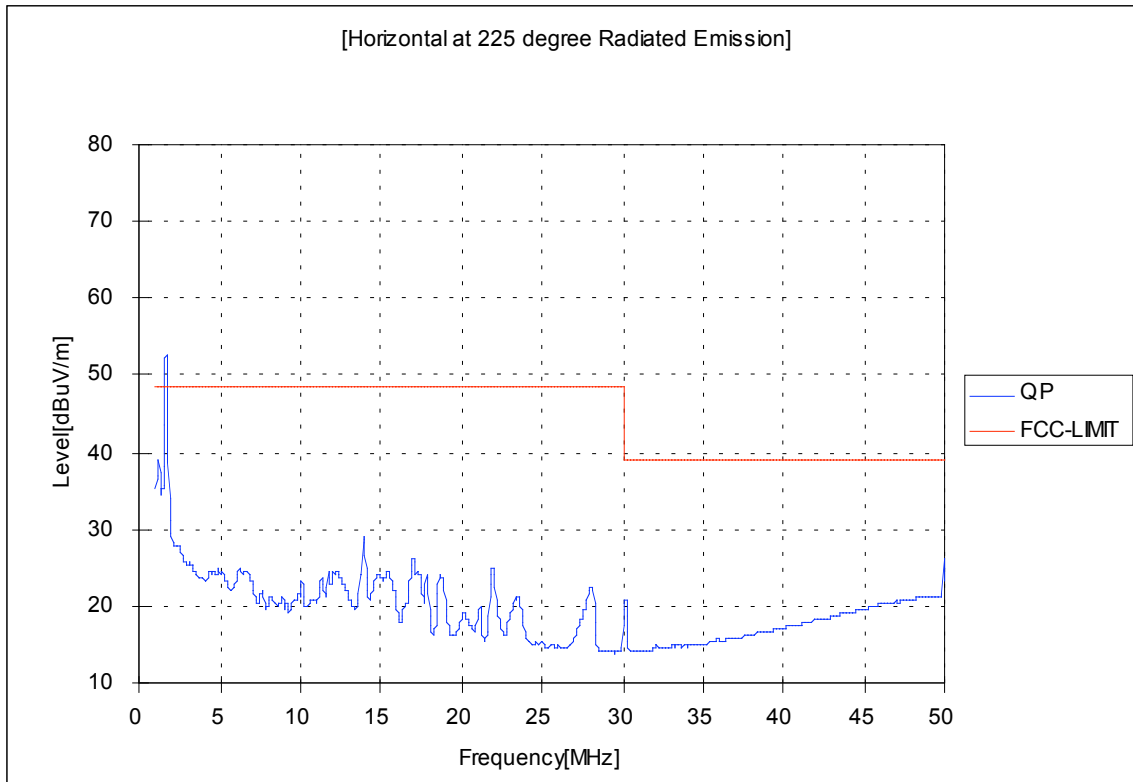
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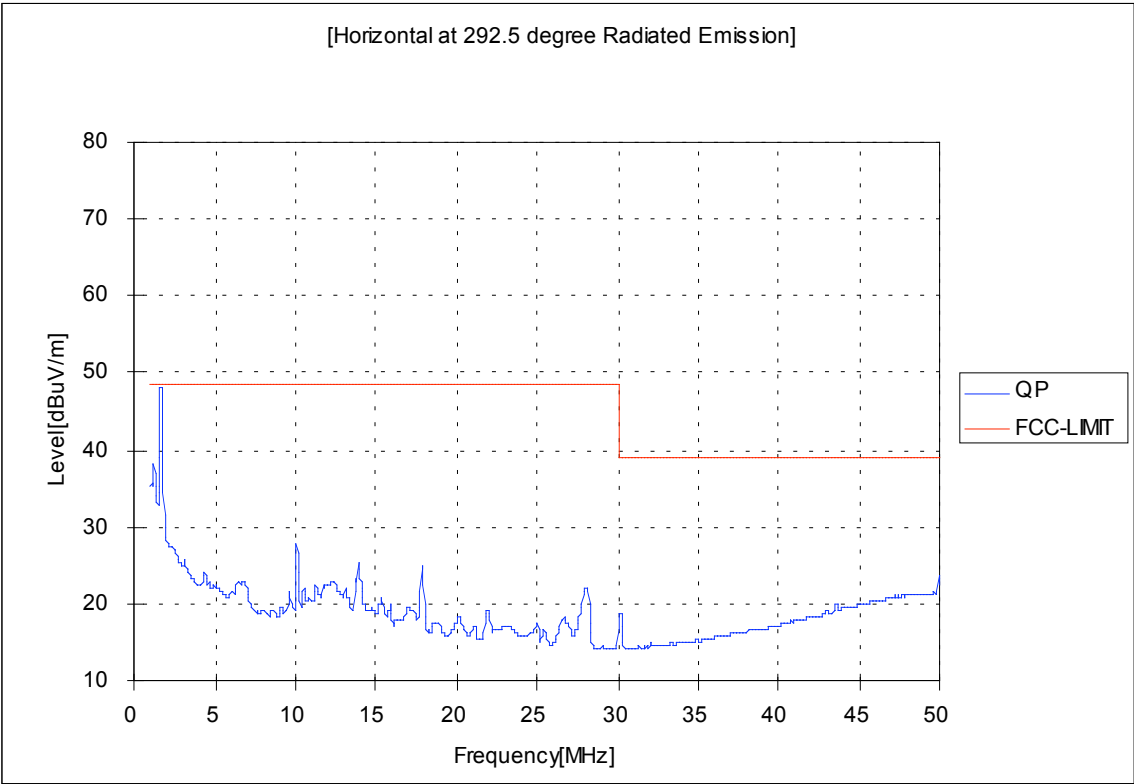
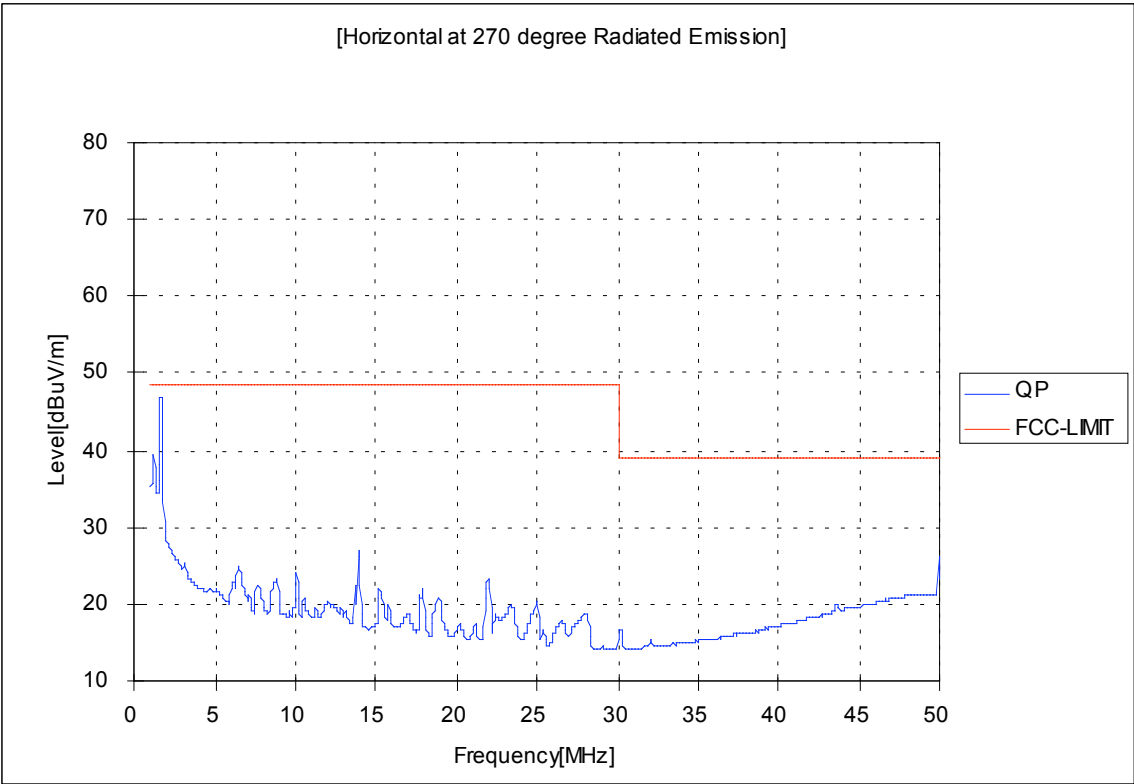
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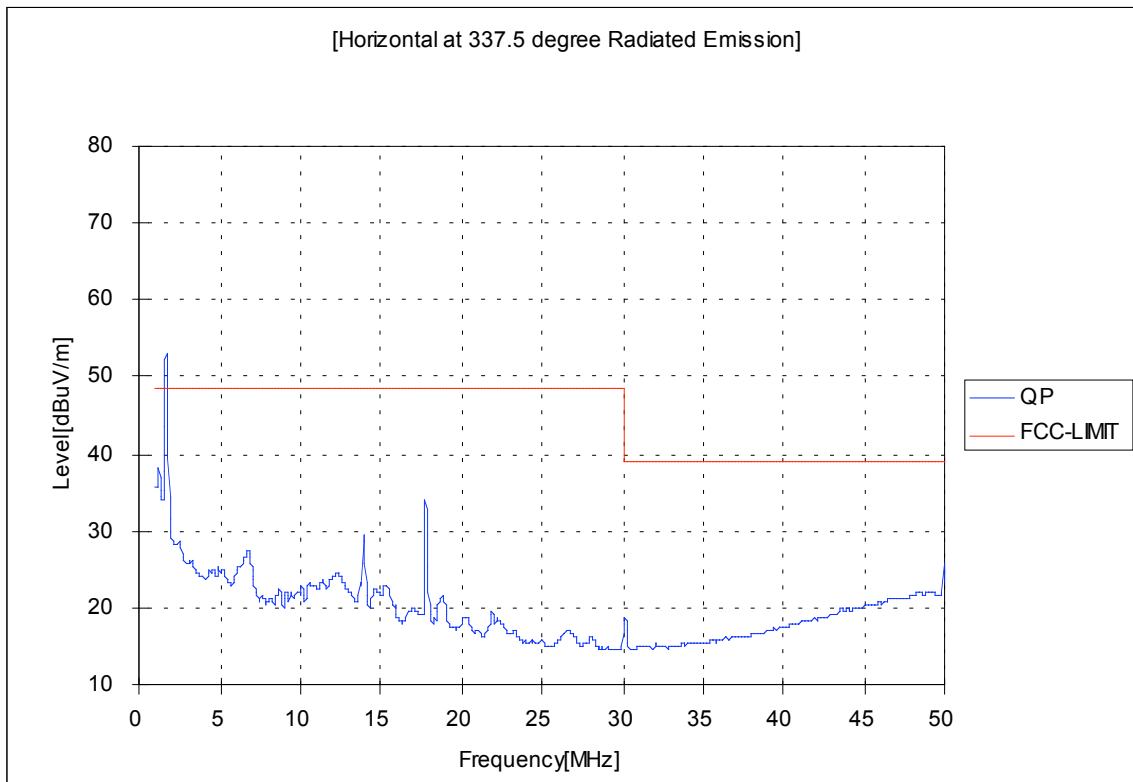
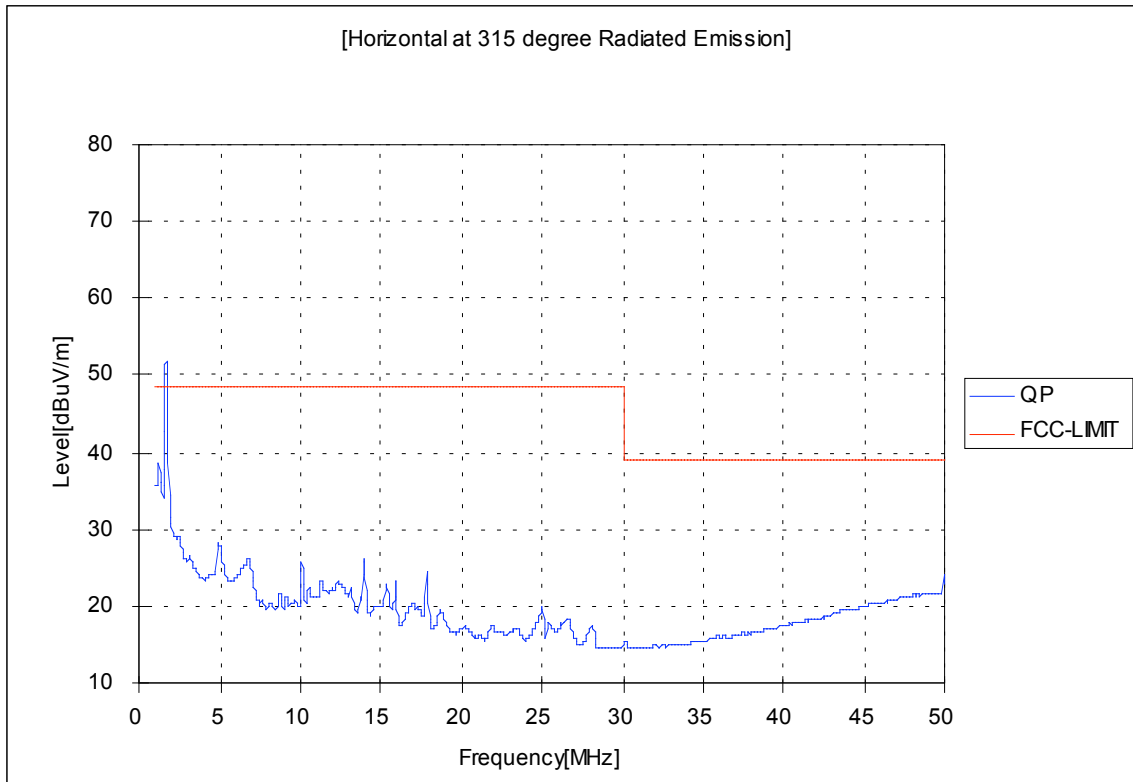
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Trial Participant Response

Customer response to this trial operation has been highly positive and enthusiastic. In the customers' opinions the system provides excellent service far surpassing available alternatives. There have been no customer complaints and many are interested in the technology as a permanent service solution.

Current Operation and Further Testing

At the present time, with retuning and frequency notching, the system is both compliant and non-interfering based on the above-described tests. Experiment findings include:

- The system is operating in compliance with FCC regulations where as required.
- The new generation of hardware has provides us with even finer control over notching and tuning of the RF characteristics and as a result no new complaints form the local HAM clubs have been posted;
- As anticipated, the system is nearly invisible when using buried facilities; and
- "Customer" response has been highly complimentary and enthusiastic. In the customers' opinions the system provides excellent service far surpassing available alternatives.

We continue to learn from the Cottonwood, AZ trial and it further (more importantly) serves as a real world lab for Mitsubishi to deploy and test new BPL products.

We are in process of scheduling RF immunity testing with the local HAM group. This testing will give us the opportunity to see what, if any, effect high power RF transmissions from the HAM gear will have on the BPL network. We hope to be able to report these test results in our next filing.

Conclusion

As the discussion above indicates, the Cottonwood, Arizona BPL experiment has been highly successful to date and should continue to be a source of significant data regarding this important technology.