EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
FCC ID: UJ7-FASTX-WIRE

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Electromagnetic Compatibility

EMC Report

for

Product Description: Integrated Wireless Bezel, Wireless Gateway Adapter

Model: X - Wire

Applicant: Fast Inc.

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EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
FCC ID: UJ7-FASTX-WIRE

Test Report Number: Prübericht Nr.	**30661157.001 Fast X-Wire.doc**	**Test Report Summary**

Applicant: Auftraggeber	Fast Inc. 905 Honeyspot Road Stratford, CT 06615-7147	Tel: (203) 380-3510 Fax: (203) 377-8187 Email: svreeland@fastinc.com	Stan Vreeland
Type of Equipment: Gegenstand der Prüfung	Integrated Wireless Bezel, Wireless Gateway Adapter		
Model Number: Bezeichnung:	X - Wire	**Trademark:** Ursprungszeichen	(FAST.)
Standards: Prufgrundlage	See details below	**Date of testing:**	May 17-18, 2006

Standard Number	Description	Severity Level or Limit	Minimum Acceptable Performance Criteria	Summary Result
FCC Part 15.249	Operation within the abnds 902-928 MHz, 2400-2483.5MHz, 5725-5875MHz and 24.0-24.25GHz	As per section 15.249 a)	NA	**Complied**
FCC Part 15.207	Conducted Limits	As per section 15.207a)	NA	**Complied**
FCC Part 15.209	Radiated Emissions Limtis; general requirements	As per section 15.209 a)	NA	**Complied**
FCC Part 15.215 (c)	Frequency Stability	Containment of 20dB bandwith between 2400 and 2483.5	NA	**Complied**

Place of Test: Prüfort

TUV Rheinland of North America
12 Commerce Road,
Newtown, CT 06470 USA
E-mail: info-new@tuv.com Phone: (203) 426-0888
Web:http://www..tuv.com Fax: (203) 429-4009

Test Result: Prüfergebnis Unit presented for testing complied with criteria shown above. Additional Information is contained in the following pages.

Tested By: Der Sachverständige	**Dieter Baldamus**	**Checked By:** geprüft	**Bruce Fagley**
			
August 14, 2007		August 14, 2007	
Date, Signature Datum, Unterschrift		**Date, Signature** Datum, Unterschrift	

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1. Table of Contents

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2. Measuring Equipment Used

Manufacturer	Model	Serial Number	Calibrated	Calibration Period (Months)
California Instruments	5001iX-CTS-EOS-OMNI-411-413-160-5073	HK53766	08/12/05	12
Emco	3115	9402-4226	08/30/05	12
Emco	3146, 200 - 1000 MHz	9309-3689	03/30/06	12
Emco	3108	2234	08/03/05	12
Schaffner	CBL6112B	2539	03/11/05	12
Hewlett Packard	HP 8546A, 85460A	3330A00125, 3325A00134	03/13/06	12
Schwarzbeck	NSLK 8126A (4 x 25A)	8126277	02/28/06	12

2.1 Traceability

All measurement equipment calibrations are traceable to NIST or where calibration is performed outside the United States, to equivalent nationally recognized standards organizations.

2.2 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

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2.3 Measurement Uncertainty

☐	The estimated combined standard uncertainty for ESD immunity measurements is ± 4.1%.
☐	The estimated combined standard uncertainty for radiated immunity measurements is ± 2.7dB.
☐	The estimated combined standard uncertainty for EFT fast transient immunity measurements is ± 5.8%.
☐	The estimated combined standard uncertainty for surge immunity measurements is ± 8.0%.
☐	The estimated combined standard uncertainty for conducted immunity measurements is ± 1.5dB.
☐	The estimated combined standard uncertainty for power frequency magnetic field immunity measurements is ± 0.58%.
☐	The estimated combined standard uncertainty for voltage variation and interruption measurements is ± 4.3%.
☐	The estimated combined standard uncertainty for damped oscillatory wave immunity measurements is ± 8.7%.
☒	The estimated combined standard uncertainty for radiated emissions measurements is ± 1.6 dB.
☒	The estimated combined standard uncertainty for conducted emissions measurements is ± 1.2dB.
☐	The estimated combined standard uncertainty for harmonic current and flicker measurements is ± 11.6%.

2.4 Location of original data

The original copies of all test data taken during actual testing were attached at Appendix B of this report and delivered to the applicant. A copy has been retained in the TUV Rheinland file for certification follow-up purposes.

2.5 Status of facility used for testing

The TUV Rheinland of North America EMC test facility located at 12 Commerce Road, Newtown, CT, USA is listed on the US Federal Communications Commission list of facilities approved to perform measurements and has been audited and found acceptable by TUV Rheinland GmbH, Cologne, Germany, a competent body in the European Union.

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EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
FCC ID: UJ7-FASTX-WIRE

2.6 Software and templates

✔	Description	Type *	Version	File Name	Date	Author
☐	95/54/EC Broad Band measurement	ET	20050413	Car-Broad.xlt	13-Apr-05	Baldamus
☐	95/54/EC Narrow Band measurement	ET	20050413	Car-Narr.xlt	13-Apr-05	Baldamus
☐	FCC 15.109(b) Class A radiated emissions	ET	20050413	REFCC15A.xlt	13-Apr-05	Baldamus
☐	FCC 15.109(a) Class B radiated emissions	ET	20050413	REFCC15B.xlt	13-Apr-05	Baldamus
☐	FCC 18.03 (a) Conducted Emissions on mains	ET	20050413	CEFCC18.03a.xlt		
☐	EN55103, Conducted emissions for Signal & Control Ports, DC Power Ports, Environment E4	ET	20050413	CE103IO.xlt	13-Apr-05	Baldamus
☐	EN55103, Conducted emissions, as above except for use with Current Clamp	ET	20050413	CE_Clamp103-I.xlt	13-Apr-05	Baldamus
☐	EN55013, Antenna Terminal Voltage	ET	20050413	ANT_TERM20.xlt	13-Apr-05	Baldamus
☐	EN55022 / FCC 15.107(b) Class A conducted emissions	ET	20050413	CE22_A.xlt	13-Apr-05	Baldamus
☐	EN55022 / FCC 15.107(a) Class B conducted emissions	ET	20050413	CE22_B.xlt	13-Apr-05	Baldamus
☐	EN55022A Conducted emissions for Telecom Class A	ET	20050413	CE22A_TELCO.xlt	13-Apr-05	Baldamus
☐	EN55022B Conducted emissions for Telecom Class B	ET	20050413	CE22B_TELCO.xlt	13-Apr-05	Baldamus
☐	EN55022A Conducted emissions for Telecom Class A for Category 5 Lan	ET	20050413	CE22A_TELCO_ CAT5.xlt	13-Apr-05	Baldamus
☐	EN55022B Conducted emissions for Telecom Class B for Category 5 Lan	ET	20050413	CE22B_TELCO_ CAT5.xlt	13-Apr-05	Baldamus
☐	EN55011 Class A conducted emissions Group 1	ET	20050413	CE11_1A.xlt	13-Apr-05	Baldamus
☐	EN55011 Class A conducted emissions Group 1	ET	20050413	CE11_2A.xlt	13-Apr-05	Baldamus
☐	EN55011 Class B conducted emissions Group 1	ET	20050413	CE11_1B.xlt	13-Apr-05	Baldamus
☐	EN55011 Class B conducted emissions Group 1	ET	20050413	CE11_2B.xlt	13-Apr-05	Baldamus
☐	EN55014 Conducted emissions	ET	20050413	CE14-1.xlt	13-Apr-05	Baldamus
☐	EN55103-1 Magnetic Fields Emissions	ET	20050413	MagF55103.xlt	13-Apr-05	Baldamus
☐	EN55014 Disturbance Power Measurements for Household and Similar Equipments	ET	20050413	DP14-1.xlt	13-Apr-05	Baldamus
☐	CISPR12 Radiated Emissions	ET	20050413	CISPR12.xlt	13-Apr-05	Baldamus
☐	EN55022 / FCC 15.109(g) Class A Radiated Emissions	ET	20050413	RE22_1A.xlt	13-Apr-05	Baldamus
☐	EN55022 / FCC 15.109(g) Class B Radiated Emissions	ET	20050413	RE22_1B.xlt	13-Apr-05	Baldamus
☐	EN55011 Class A Group 1 Radiated Emissions test	ET	20050413	RE11_1A.xlt	13-Apr-05	Baldamus
☐	EN55011 Class B Group 1 Radiated Emissions test	ET	20050413	RE11_1B.xlt	13-Apr-05	Baldamus
☐	EN55011 Class A Group 1 Radiated Emissions test	ET	20050413	RE11_2A.xlt	13-Apr-05	Baldamus
☐	EN55011 Class B Group 1 Radiated Emissions test	ET	20050413	RE11_2B.xlt	13-Apr-05	Baldamus
☐	IEC 61000-4-3 Radiated immunity test	V	020322V/H3	RI_PLAY1.vee	22-Mar-02	Gaudette
☐	IEC 61000-4-3 Radiated immunity field setup	V	19990906	RI_CAL1.vee	06-Aug-99	Dwyer
☐	IEC 61000-4-4 Burst (Fast Transient) test	CE	Ver 3.0	CEWARE32	1998	Keytek
☐	IEC 61000-4-4 Burst (Fast Transient) test	S	Ver 2.31 c	WinModula	2004	Schaffner
☐	IEC 61000-4-5 Surge test	CE	Ver 3.0	CEWARE32	1998	Keytek
☐	IEC 61000-4-5 Surge test	S	Ver 2.31 c	WinModula	2004	Schaffner
☐	IEC 61000-4-6 Conducted immunity test	V	19990915	CI-PLAY1.vee	15-Sep-99	Dwyer
☐	IEC 61000-4-6 Conducted immunity test field setup	V	19980220	CI_CAL.vee	20-Feb-98	Dwyer
☐	IEC 61000-4-11 Voltage dip/short Interruptions	CE	Ver 3.0	CEWARE32	1998	Keytek
☐	IEC 61000-4-11 Voltage dip/short Interruptions	S	Ver 2.31 c	WinModula	2004	Schaffner
☐	IEC 61000-3-2 Harmonics	CI	CTS 3.0.19	Iec1000-3-2	04-Apr-04	Cal. Inst.
☐	IEC 61000-3-3 Flicker	CI	CTS 3.0.19	Iec1000-3-3	04-Apr-04	Cal. Inst.

* ET = Excel Template, V = Agilent (HP) Vee Program, S= Schaffner Program, CI = California Instruments, H= Haefely Trench, CE= CE Master Program

As decribed in QP 090923

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3. Test Plan

Refer to the test plan at appendix A.

4. Description of Equipment Tested

4.1 General Description of Equipment

See General Description of the Equipment in the test plan at appendix A.

5. Equipment Specifications

5.1 Technical Data

See Equipment Specifications in the test plan at Appendix A.

5.2 Physical Data

See Equipment Specifications in the test plan at Appendix A.

6. Reason for this Test

New Product

7. Configuration and Mode of Operation

7.1 Configuration

See Configuration in the test plan at appendix A.

7.2 Mode of Operation

See Mode of Operation in the test plan at appendix A.

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8. Performance Criteria

8.1 Pass Criteria

For emissions tests, the EUT is considered to pass a test or standard if the measured level is less than or equal to the applicable limit.

For immunity tests, the EUT is considered to pass a test if it meets the minimum performance criteria described in the test plan.

8.2 Fail Criteria

For emissions tests, the EUT is considered to fail a test or standard if the measured level is greater than the applicable limit.

For immunity tests, the EUT is considered to fail a test if it does not meet the minimum performance criteria described in the test plan.

The details of the performance criteria used for immunity assessment are contained in the test plan at Appendix A.

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9. Operation within the bands 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHz, and 24.0-24.25 GHz.

9.1.1 Test Basis

FCC part 15.249

9.1.2 Test Specifications

2400-2483.5 MHz.....	Fundamental 50 mV/m (94dBµV/m) AVG Harmonics 500 µV/m (54dBµV/m) AVG

9.1.3 Test Procedure

The test of the fundamental and the harmonics emissions were performed using the procedures of ANSI C63.4: 2003. Cables configuration, controls and modes of operation were manipulated to obtain the maximum emissions level.

The emissions testing was first performed at a distance of 3 meters in the semi-anechoic chamber in order to identify the specific frequencies at which measurement should be made in the OATS. The EUT was then taken for measurement at 3 meters in OATS for a final measurement.

The frequency range from 2.4 GHz to 24,000 GHz was investigated. The lowest, middle and highest frequency were selected to perform this test.

The input voltage was varied between 85% and115% of the nominal value.

The antenna is fixed and internal to the PCB board and therefore can not be modified.

The photographs at appendix B show the worst-case emissions configuration.

9.1.4 Deviations from Standard Test Procedures

None

9.1.5 Test Results

All final radiated emissions measurements were below (in compliance) the limits specified in the standard.

The result of the preliminary (semi-anechoic chamber), final (OATS) measurements and the maximum emissions measurements as well as the field strength and all correction factor calculation are shown in a tables.

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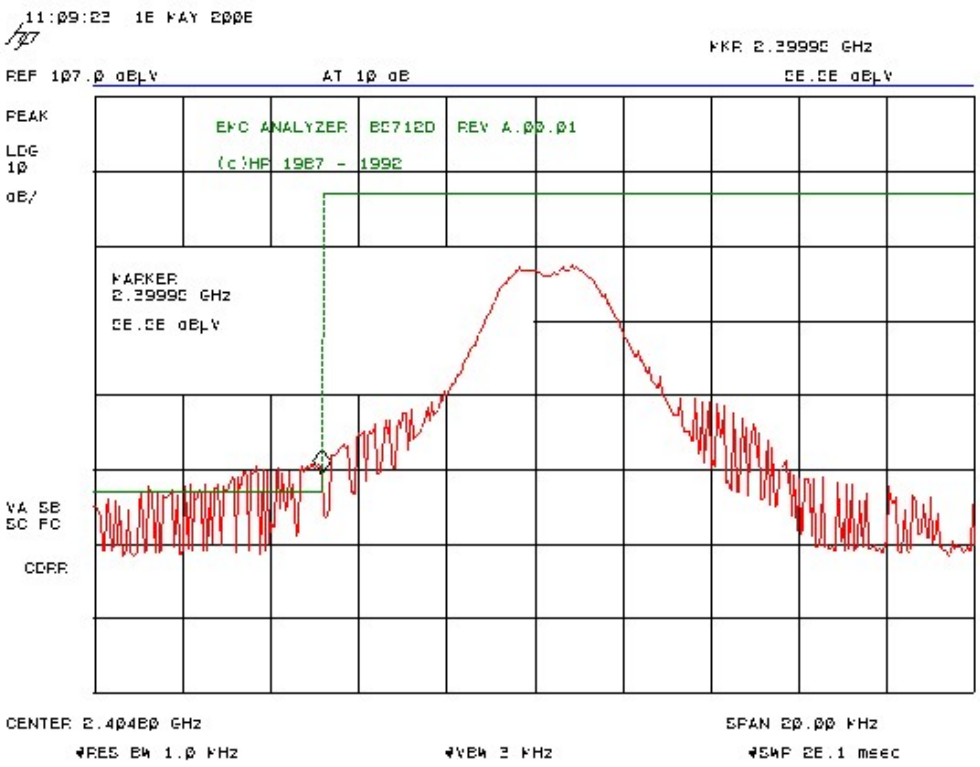
EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
FCC ID: UJ7-FASTX-WIRE

9.1.6 Test Plots and Tables

NOTES:

Emission Measurement
Fundamental - Lower Frequency
(See tables for final test)



Measurement shows level using peak detector and 1MHz Resolution BW

ANTENNA/COUPLER:

☐ 9124 Bicon	☐ 3109 Bicon	☐ CBL6140 X-Wing	☐ NNB-4/63TL LISN
☐ 3146 Log Per	☐ 3115 Horn	☐ MDS–21 Clamp	☐ NNB-4/200X LISN
☒ 3106 Horn	☐ CBL6112B Bilog	☐ NSLK 8126 LISN	☐ Other_____

MEAS TYPE:	POLARIZATION:	DISTANCE:	LOCATION:
☒ Radiated Prescan	☒ Vertical	☒ 3 Meter	☐ OATS
☐ Radiated Final	☒ Horizontal	☐ 10 Meter	☒ Semi-Anechoic
☐ Conducted	☐ Line	☐ ____Meter	☐ Shielded Room
☐ Disturbance Power	☐ Neutral	☐ NA	☐ Factory Floor
☐ Other_____	☐ NA		☐ Other_____

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EUT: Integrated Wireless Bezel, Gateway Adapter
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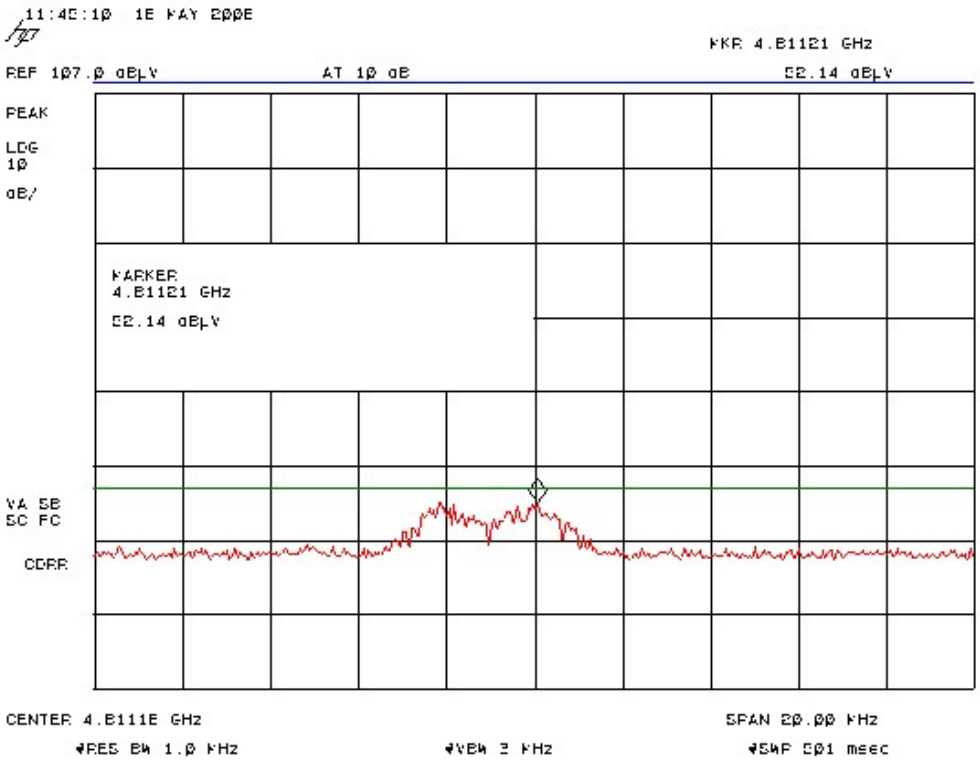
NOTES:

Emission Measurement
2nd Harmonic - Lower Frequency
(See tables for final test)



Measurement shows level using peak detector and 1MHz Resolution BW

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☐ 3146 Log Per	☐ 3115 Horn	☐ MDS–21 Clamp	☐ NNB-4/200X LISN
☒ 3106 Horn	☐ CBL6112B Bilog	☐ NSLK 8126 LISN	☐ Other_____

MEAS TYPE:	POLARIZATION:	DISTANCE:	LOCATION:
☒ Radiated Prescan	☒ Vertical	☒ 3 Meter	☐ OATS
☐ Radiated Final	☒ Horizontal	☐ 10 Meter	☒ Semi-Anechoic
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Model: X-Wire
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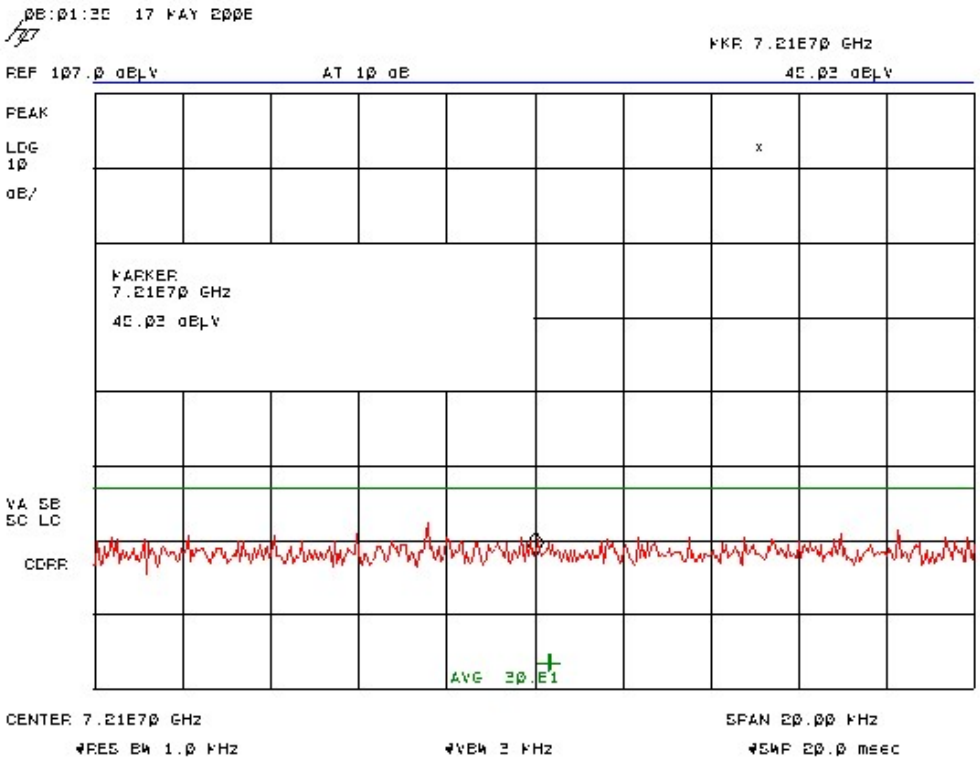
NOTES:

Emission Measurement
3rd Harmonic - Lower Frequency
(See tables for final test)



Measurement shows level using peak detector and 1MHz Resolution BW

ANTENNA/COUPLER:

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☐ 3146 Log Per	☐ 3115 Horn	☐ MDS–21 Clamp	☐ NNB-4/200X LISN
☒ 3106 Horn	☐ CBL6112B Bilog	☐ NSLK 8126 LISN	☐ Other_____

MEAS TYPE:	POLARIZATION:	DISTANCE:	LOCATION:
☒ Radiated Prescan	☒ Vertical	☒ 3 Meter	☐ OATS
☐ Radiated Final	☒ Horizontal	☐ 10 Meter	☒ Semi-Anechoic
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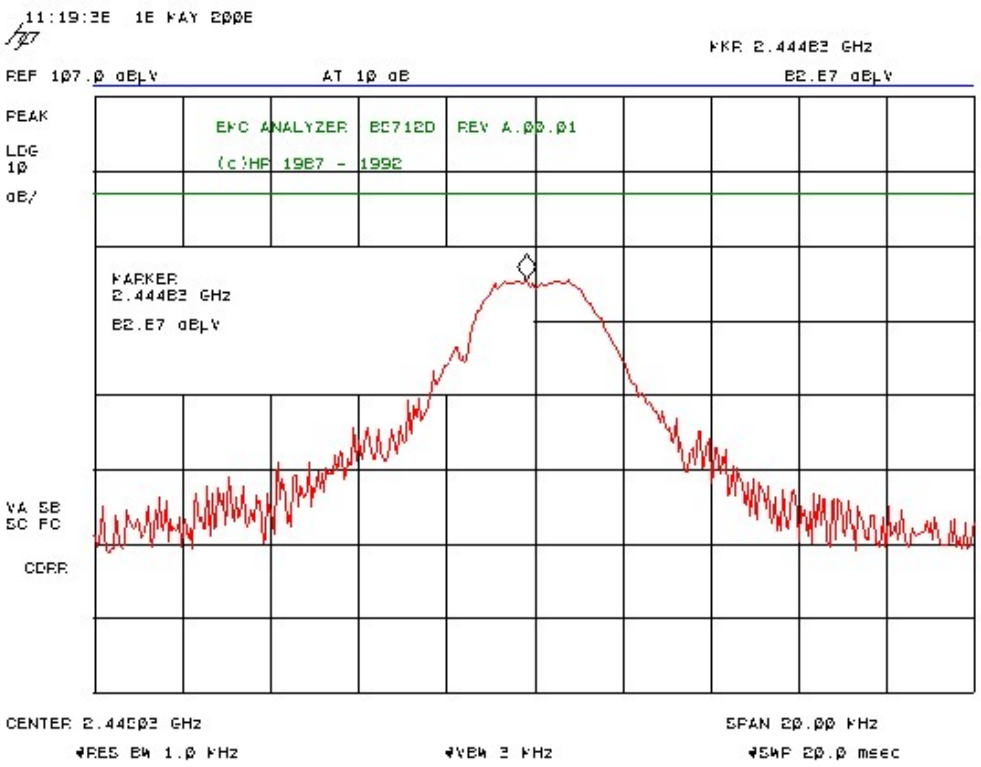
NOTES:

Emission Measurement
Fundamental – Middle frequency
(See tables for final test)



Measurement shows level using peak detector and 1MHz Resolution BW

ANTENNA/COUPLER:

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☐ 3146 Log Per	☐ 3115 Horn	☐ MDS–21 Clamp	☐ NNB-4/200X LISN
☒ 3106 Horn	☐ CBL6112B Bilog	☐ NSLK 8126 LISN	☐ Other_____

MEAS TYPE:	POLARIZATION:	DISTANCE:	LOCATION:
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☐ Radiated Final	☒ Horizontal	☐ 10 Meter	☒ Semi-Anechoic
☐ Conducted	☐ Line	☐ ____Meter	☐ Shielded Room
☐ Disturbance Power	☐ Neutral	☐ NA	☐ Factory Floor
☐ Other_____	☐ NA		☐ Other_____

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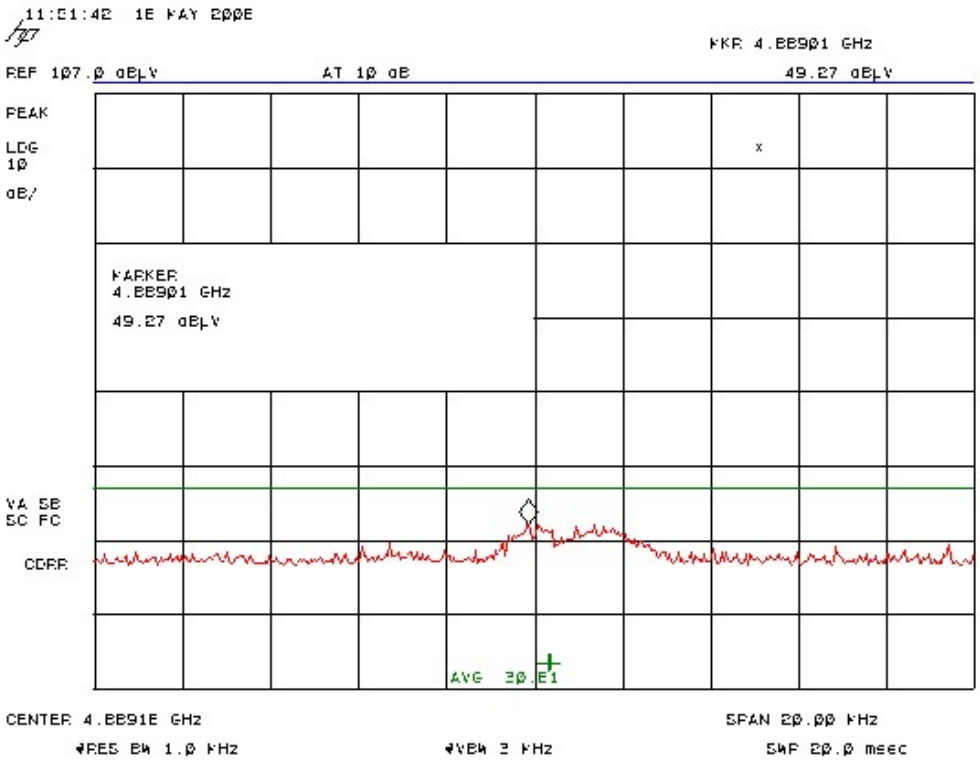
NOTES:

Emission Measurement
2nd Harmonic- Middle Frequency
(See tables for final test)



Measurement shows level using peak detector and 1MHz Resolution BW

ANTENNA/COUPLER:

☐ 9124 Bicon	☐ 3109 Bicon	☐ CBL6140 X-Wing	☐ NNB-4/63TL LISN
☐ 3146 Log Per	☐ 3115 Horn	☐ MDS–21 Clamp	☐ NNB-4/200X LISN
☒ 3106 Horn	☐ CBL6112B Bilog	☐ NSLK 8126 LISN	☐ Other_____

MEAS TYPE:	POLARIZATION:	DISTANCE:	LOCATION:
☒ Radiated Prescan	☒ Vertical	☒ 3 Meter	☐ OATS
☐ Radiated Final	☒ Horizontal	☐ 10 Meter	☒ Semi-Anechoic
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☐ Disturbance Power	☐ Neutral	☐ NA	☐ Factory Floor
☐ Other_____	☐ NA		☐ Other_____

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Model: X-Wire
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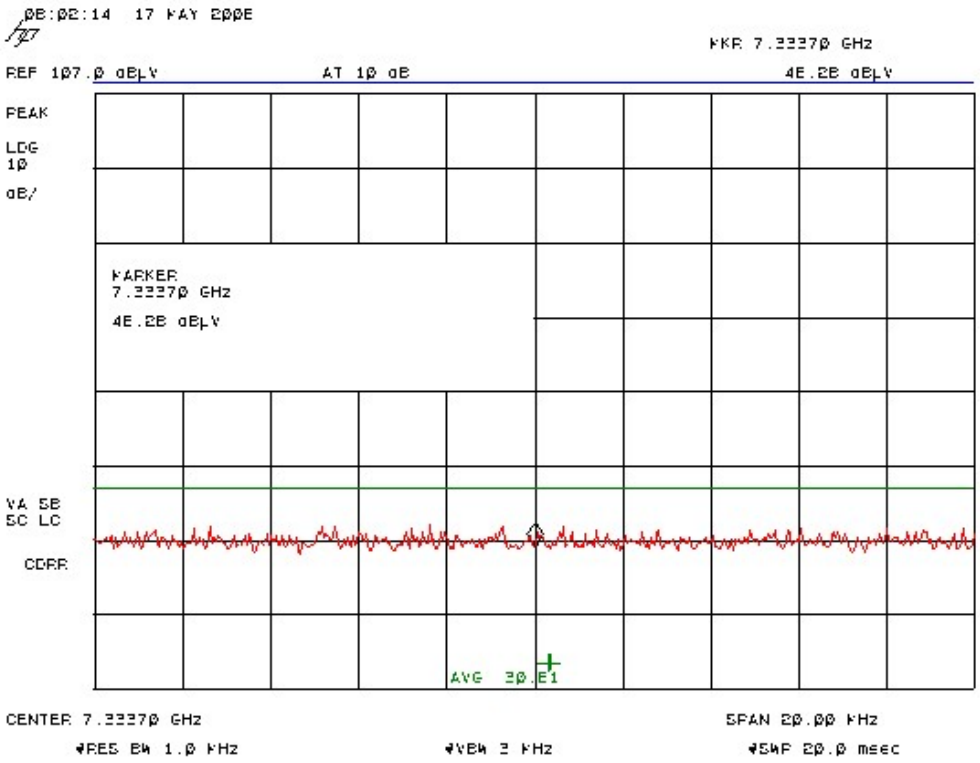
NOTES:

Emission Measurement
3rd Harmonic – Middle Frequency
(See tables for final test)



Measurement shows level using peak detector and 1MHz Resolution BW

ANTENNA/COUPLER:

☐ 9124 Bicon	☐ 3109 Bicon	☐ CBL6140 X-Wing	☐ NNB-4/63TL LISN
☐ 3146 Log Per	☐ 3115 Horn	☐ MDS–21 Clamp	☐ NNB-4/200X LISN
☒ 3106 Horn	☐ CBL6112B Bilog	☐ NSLK 8126 LISN	☐ Other_____

MEAS TYPE:	POLARIZATION:	DISTANCE:	LOCATION:
☒ Radiated Prescan	☒ Vertical	☒ 3 Meter	☐ OATS
☐ Radiated Final	☒ Horizontal	☐ 10 Meter	☒ Semi-Anechoic
☐ Conducted	☐ Line	☐ ____Meter	☐ Shielded Room
☐ Disturbance Power	☐ Neutral	☐ NA	☐ Factory Floor
☐ Other_____	☐ NA		☐ Other_____

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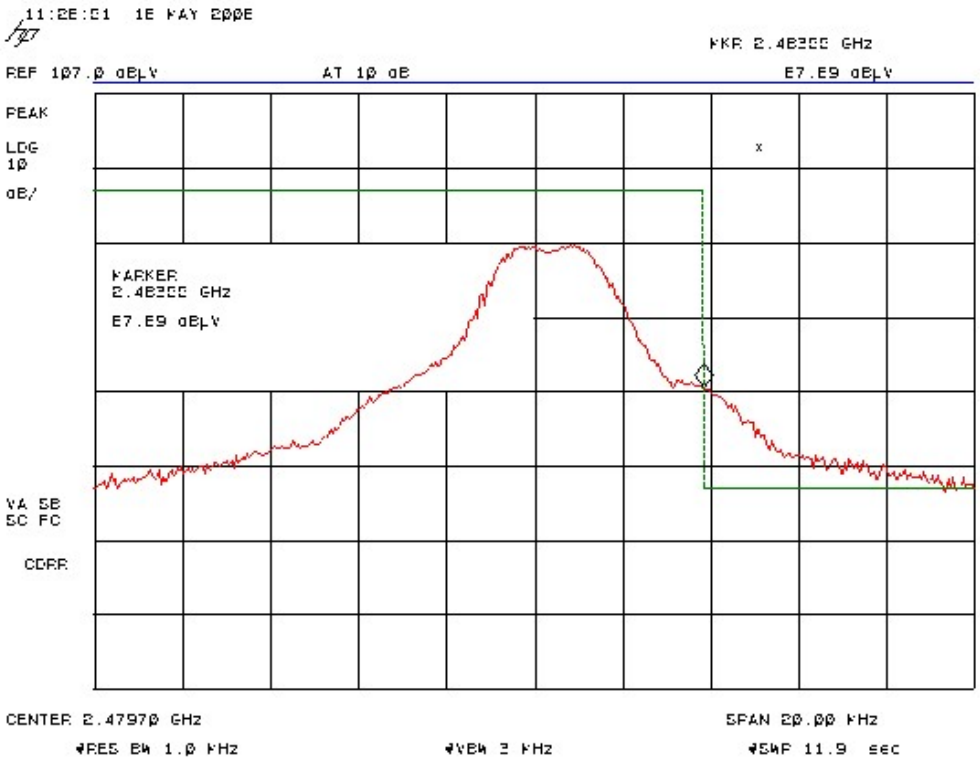
TÜVRheinland®
Precisely Right.

EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
FCC ID: UJ7-FASTX-WIRE

NOTES:

Emission Measurement
Fundamental - Higher Frequency
(See tables for final test)



Measurement shows level using peak detector and 1MHz Resolution BW

ANTENNA/COUPLER:

☐ 9124 Bicon	☐ 3109 Bicon	☐ CBL6140 X-Wing	☐ NNB-4/63TL LISN
☐ 3146 Log Per	☐ 3115 Horn	☐ MDS–21 Clamp	☐ NNB-4/200X LISN
☒ 3106 Horn	☐ CBL6112B Bilog	☐ NSLK 8126 LISN	☐ Other_____

MEAS TYPE:	POLARIZATION:	DISTANCE:	LOCATION:
☒ Radiated Prescan	☒ Vertical	☒ 3 Meter	☐ OATS
☐ Radiated Final	☒ Horizontal	☐ 10 Meter	☒ Semi-Anechoic
☐ Conducted	☐ Line	☐ ____Meter	☐ Shielded Room
☐ Disturbance Power	☐ Neutral	☐ NA	☐ Factory Floor
☐ Other_____	☐ NA		☐ Other_____

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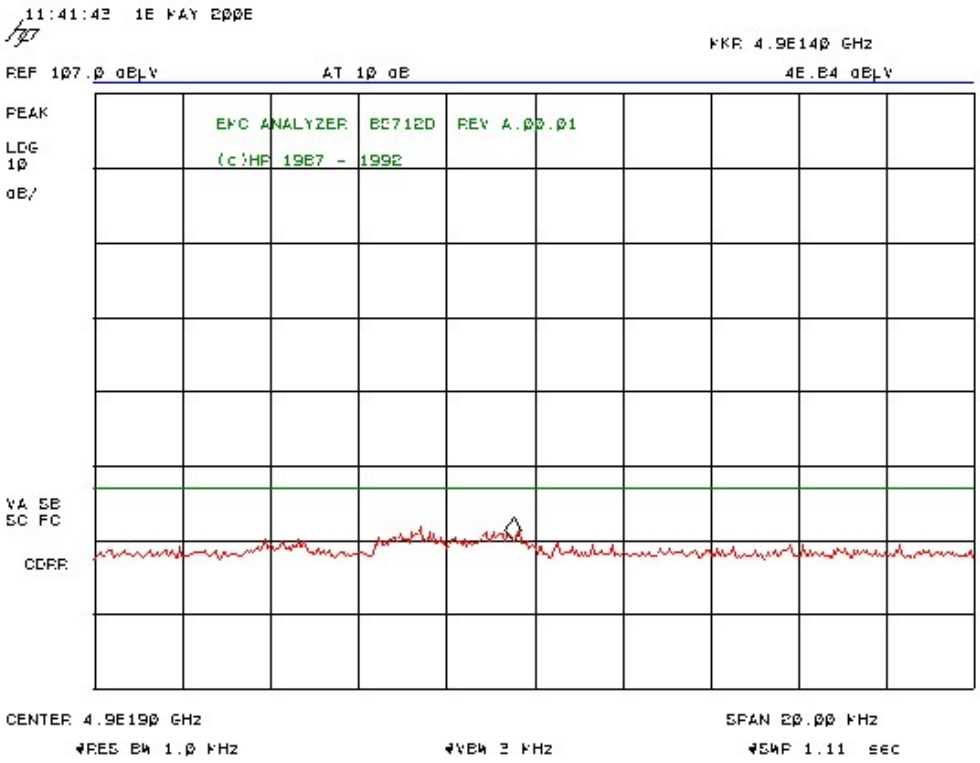
TÜVRheinland®
Precisely Right.

EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
FCC ID: UJ7-FASTX-WIRE

NOTES:

Emission Measurement
2nd Harmonic- Middle Frequency
(See tables for final test)



Measurement shows level using peak detector and 1MHz Resolution BW

ANTENNA/COUPLER:

☐ 9124 Bicon	☐ 3109 Bicon	☐ CBL6140 X-Wing	☐ NNB-4/63TL LISN
☐ 3146 Log Per	☐ 3115 Horn	☐ MDS–21 Clamp	☐ NNB-4/200X LISN
☒ 3106 Horn	☐ CBL6112B Bilog	☐ NSLK 8126 LISN	☐ Other_____

MEAS TYPE:	POLARIZATION:	DISTANCE:	LOCATION:
☒ Radiated Prescan	☒ Vertical	☒ 3 Meter	☐ OATS
☐ Radiated Final	☒ Horizontal	☐ 10 Meter	☒ Semi-Anechoic
☐ Conducted	☐ Line	☐ ____Meter	☐ Shielded Room
☐ Disturbance Power	☐ Neutral	☐ NA	☐ Factory Floor
☐ Other_____	☐ NA		☐ Other_____

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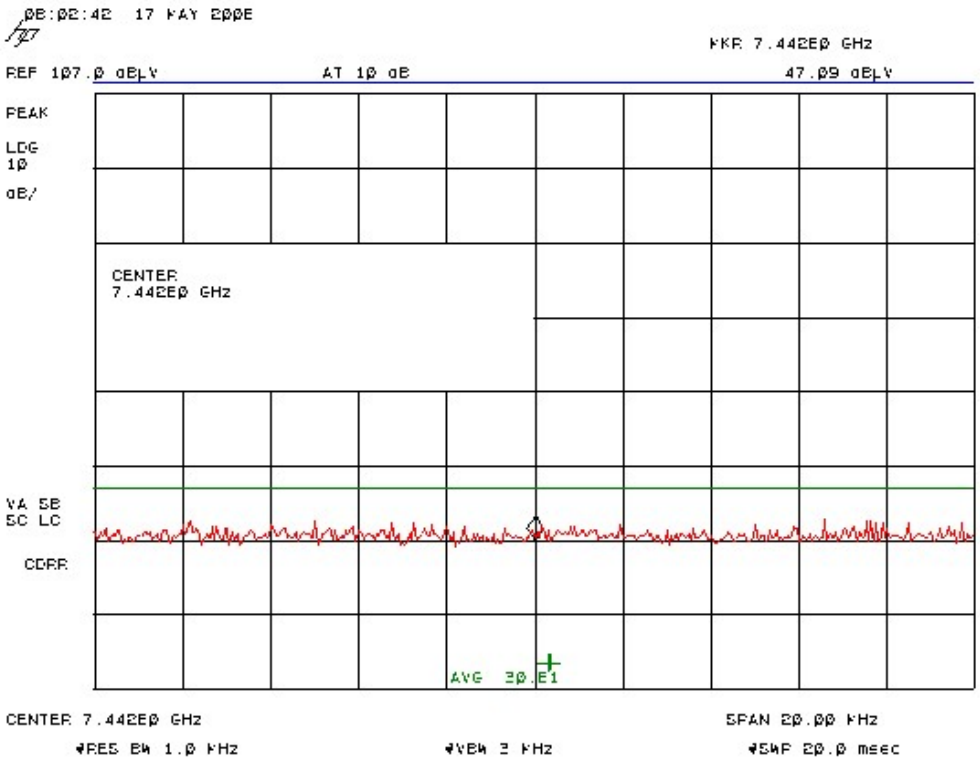
TÜVRheinland®
Precisely Right.

EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
FCC ID: UJ7-FASTX-WIRE

NOTES:

Emission Measurement
3rd Harmonic – Middle Frequency
(See tables for final test)



Measurement shows level using peak detector and 1MHz Resolution BW

ANTENNA/COUPLER:

☐ 9124 Bicon	☐ 3109 Bicon	☐ CBL6140 X-Wing	☐ NNB-4/63TL LISN
☐ 3146 Log Per	☐ 3115 Horn	☐ MDS–21 Clamp	☐ NNB-4/200X LISN
☒ 3106 Horn	☐ CBL6112B Bilog	☐ NSLK 8126 LISN	☐ Other_____

MEAS TYPE:	POLARIZATION:	DISTANCE:	LOCATION:
☒ Radiated Prescan	☒ Vertical	☒ 3 Meter	☐ OATS
☐ Radiated Final	☒ Horizontal	☐ 10 Meter	☒ Semi-Anechoic
☐ Conducted	☐ Line	☐ ____Meter	☐ Shielded Room
☐ Disturbance Power	☐ Neutral	☐ NA	☐ Factory Floor
☐ Other_____	☐ NA		☐ Other_____

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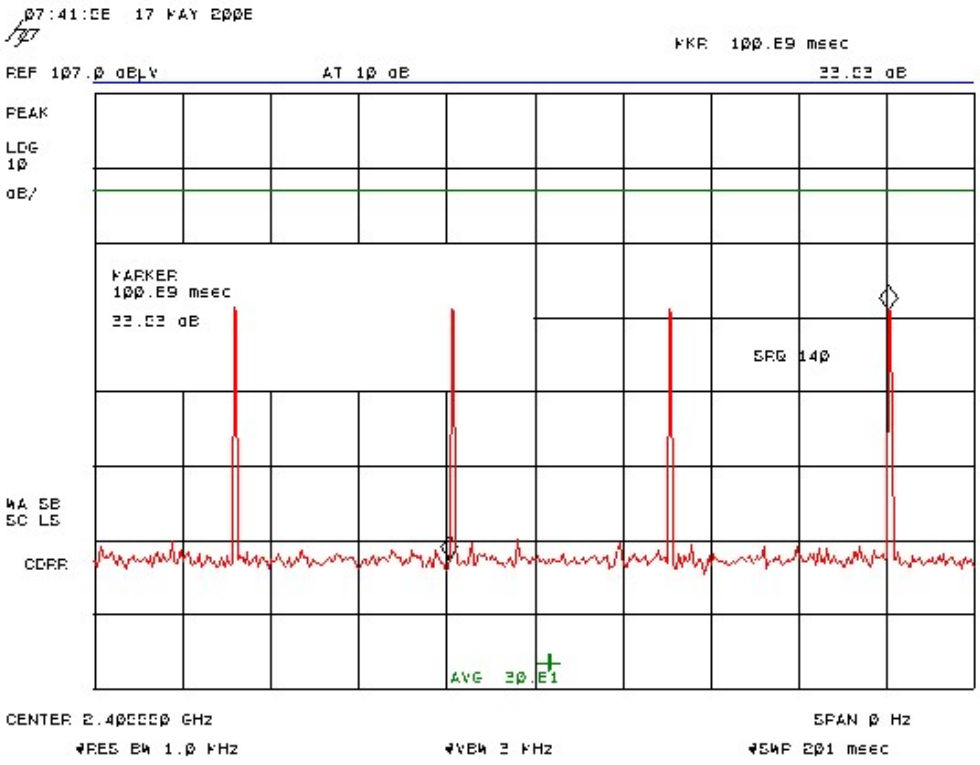
TÜVRheinland®
Precisely Right.

EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
FCC ID: UJ7-FASTX-WIRE

NOTES:

Emission Measurement
Spread Spectrum Averaging Readings
(See tables for final test and calculation procedure)



Measurement shows level using peak detector and 1MHz Resolution BW

ANTENNA/COUPLER:

☐ 9124 Bicon	☐ 3109 Bicon	☐ CBL6140 X-Wing	☐ NNB-4/63TL LISN
☐ 3146 Log Per	☐ 3115 Horn	☐ MDS–21 Clamp	☐ NNB-4/200X LISN
☒ 3106 Horn	☐ CBL6112B Bilog	☐ NSLK 8126 LISN	☐ Other_____

MEAS TYPE:	POLARIZATION:	DISTANCE:	LOCATION:
☒ Radiated Prescan	☒ Vertical	☒ 3 Meter	☐ OATS
☐ Radiated Final	☒ Horizontal	☐ 10 Meter	☒ Semi-Anechoic
☐ Conducted	☐ Line	☐ ____Meter	☐ Shielded Room
☐ Disturbance Power	☐ Neutral	☐ NA	☐ Factory Floor
☐ Other_____	☐ NA		☐ Other_____

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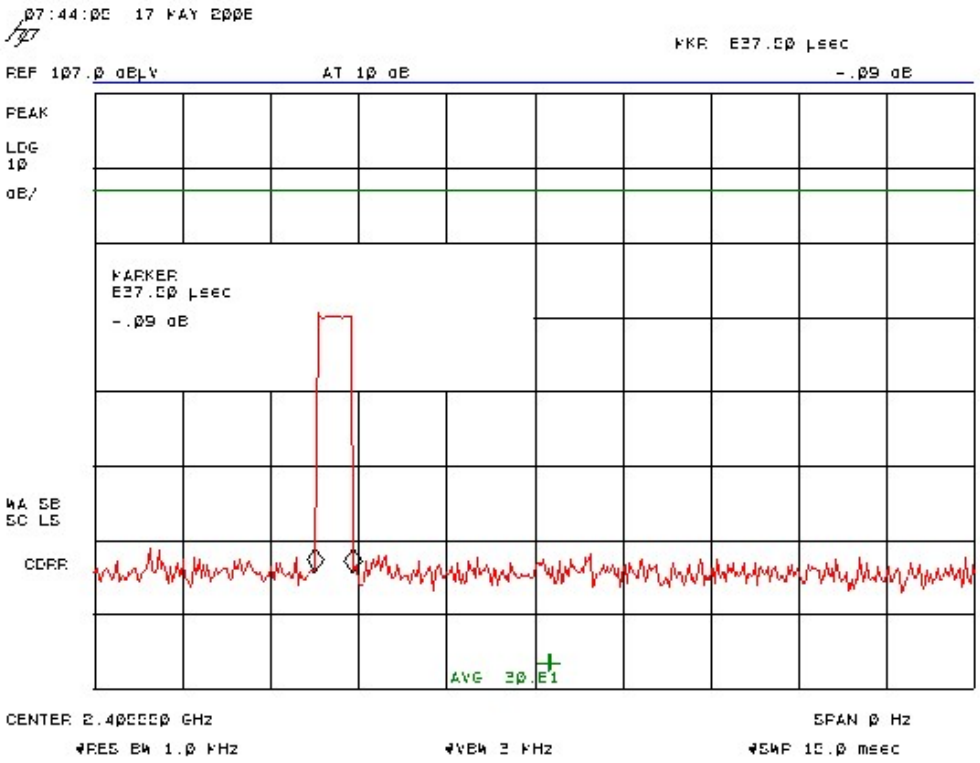
EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
FCC ID: UJ7-FASTX-WIRE

NOTES:

Emission Measurement
Spread Spectrum Averaging Readings
(See tables for final test and calculation procedure)



Measurement shows level using peak detector and 1MHz Resolution BW

ANTENNA/COUPLER:

☐ 9124 Bicon	☐ 3109 Bicon	☐ CBL6140 X-Wing	☐ NNB-4/63TL LISN
☐ 3146 Log Per	☐ 3115 Horn	☐ MDS–21 Clamp	☐ NNB-4/200X LISN
☒ 3106 Horn	☐ CBL6112B Bilog	☐ NSLK 8126 LISN	☐ Other_____

MEAS TYPE:	POLARIZATION:	DISTANCE:	LOCATION:
☒ Radiated Prescan	☒ Vertical	☒ 3 Meter	☐ OATS
☐ Radiated Final	☒ Horizontal	☐ 10 Meter	☒ Semi-Anechoic
☐ Conducted	☐ Line	☐ ____Meter	☐ Shielded Room
☐ Disturbance Power	☐ Neutral	☐ NA	☐ Factory Floor
☐ Other_____	☐ NA		☐ Other_____

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EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
FCC ID: UJ7-FASTX-WIRE

Radiated Emissions Measurements														
Standard:	47 CFR 15.249					Prescan/Final:	Final			Date:	5/17/2006			
Device Tested:	FAST - X Wire					Distance:	3.0m			File:	06051701.xls			
		Measured Level												
Meas #	Freq (GHz)	Peak	Average (see Note)	Antenna + Cable Correction Factor + 30dB Amplifier (NOT included in	Peak Limit (+20dB of Average Limit)	Average Limit	Peak Δ (Peak + Correction Factors - Limit)	Average Δ (Average + Correction Factors - Limit)	Result	Polarization	Angle (degrees)	Antenna Height (meters)	Comment	
Lower Channel														
1	2.4059	91.87	53.98	11.40	114.00	94.00	-10.73	-28.62	Complied	Vertical	10	1.20		
2	2.4000	65.76	27.87	11.40	74.00	54.00	3.16	-14.73	Complied	Vertical	14	1.25	at bandedge	
3	4.8110	51.06	13.17	12.28	74.00	54.00	-10.66	-28.55	Complied	Vertical	5	1.20	2nd Harmonic	
4	7.2141	52.29	14.40	15.00	74.00	54.00	-6.71	-24.60	Complied	Vertical	358	1.10	3rd Harmonic	
Middle Channel														
5	2.4455	87.78	49.89	11.40	114.00	94.00	-14.82	-32.71	Complied	Vertical	359	1.00		
6	4.8888	53.08	15.19	12.93	74.00	54.00	-7.99	-25.88	Complied	Vertical	1	1.20	2nd Harmonic	
7	7.3369	50.57	12.68	15.00	74.00	54.00	-8.43	-26.32	Complied	Vertical	356	1.24	3rd Harmonic	
High Channel														
8	2.4805	86.41	48.52	11.40	114.00	94.00	-16.19	-34.08	Complied	Vertical	359	1.15		
9	2.4835	67.47	29.58	11.40	74.00	54.00	4.87	-13.02	Complied	Vertical	16	1.10	at bandedge	
12	4.9591	46.67	8.78	12.90	74.00	54.00	-14.43	-32.32	Complied	Vertical	10	1.00	2nd Harmonic	
13	7.4414	47.09	9.20	15.00	74.00	54.00	-11.91	-29.80	Complied	Vertical	15	1.00	3rd Harmonic	
Tested by:														
TUV Rheinland of North America, Inc. 12 Commerce Road Newtown, CT 06470 Tel:(203) 426-0888 Fax: (203) 426-4009														
Note: Average Values were calculated based on the duty cycle of the transmission frequency														
Average Value = 20 Log of (Peak Value (in mV)* Masured Duty cycle proportion)														
where Measured Duty Cycle Propotion is 0.6375msec*2/100ms= 1.275%														

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9.2 Conducted Emissions

9.2.1 Test Basis

FCC part 15.207

9.2.2 Test Specifications

As Per section 15.207 (a)

9.2.3 Test Procedure

Conducted emissions tests were performed using the procedures of ANSI C63.4 including methods for signal maximizations and EUT configuration. The photos included with the report show the EUT in its maximized configuration. The frequency range from 0.15 to 30 MHz was investigated for conducted emissions.

Conducted emissions were performed AC120V/60Hz

Conducted Emissions measurements were performed in the shielded room using procedures specified in the test plan and standard. The photographs at appendix C show the worst-case emissions configuration.

9.2.4 Deviations from Standard Test Procedures

None

9.2.5 Test Results

All conducted emissions, were below (in compliance with) the limits specified in section a). The results of the conducted emissions measurements and the maximum emissions are shown in a table.

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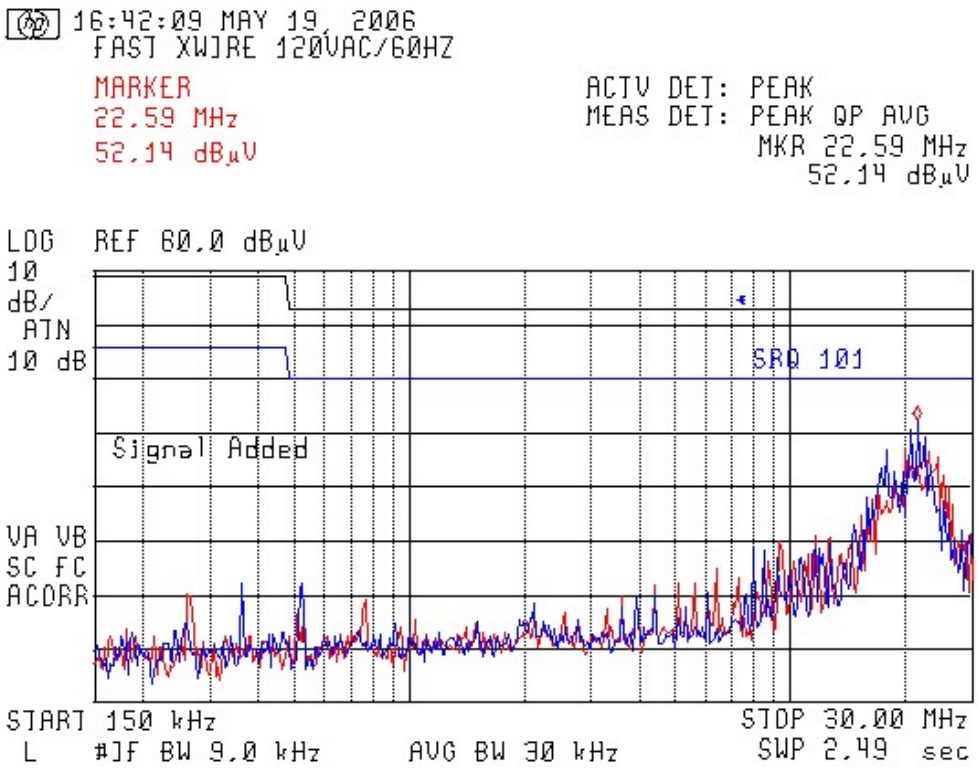
EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
FCC ID: UJ7-FASTX-WIRE

9.2.6 Test Plots and Tables

NOTES:

Conducted Emissions
Conducted Emissions at: 120V/60Hz



Measurement shows level using peak detector and 9kHz Resolution BW

ANTENNA/COUPLER:

☐ 9124 Bicon	☐ 3109 Bicon	☐ CBL6140 X-Wing	☐ NNB-4/63TL LISN
☐ 3146 Log Per	☐ 3115 Horn	☐ MDS–21 Clamp	☐ NNB-4/200X LISN
☐ 3106 Horn	☐ CBL6112B Bilog	☒ NSLK 8126 LISN	☐ Other_____

MEAS TYPE:	POLARIZATION:	DISTANCE:	LOCATION:
☐ Radiated Prescan	☐ Vertical	☐ 3 Meter	☐ OATS
☐ Radiated Final	☐ Horizontal	☐ 10 Meter	☐ Semi-Anechoic
☒ Conducted	☒ Line	☐ ____Meter	☒ Shielded Room
☐ Disturbance Power	☒ Neutral	☒ NA	☐ Factory Floor
☐ Other_____	☐ NA		☐ Other_____

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EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
FCC ID: UJ7-FASTX-WIRE

Conducted Emissions Measurements														
Standard:	FCC Part 15.207								***Date:***	5/17/2006				
Device Tested:	Russound - ST 2 (FM Tuner) - 230V/50Hz								***File: .xls***	06051703.xls				
Signal Num	Freq	Peak Amp	QP Amp	Avg Amp	QP Limit	Avg Limit	Conductor	QP Δ	QP Result	Avg Δ	Average Result	Mode		
	MHz	dBuV	dBuV	dBuV	dBuV	dBuV		dB		dB				
1	0.2662	30.69	28.83	18.21	61.24	51.24	Line	-32.41	Complied	-33.03	Complied			
2	0.4044	27.61	20.82	1.02	57.76	47.76	Line	-36.94	Complied	-46.74	Complied			
3	0.5315	26.14	24.05	13.31	56.00	46.00	Line	-31.95	Complied	-32.69	Complied			
4	22.2934	53.29	48.80	31.40	60.00	50.00	Line	-11.20	Complied	-18.60	Complied			
5	0.2659	30.82	28.93	18.30	61.24	51.24	Neutral	-32.31	Complied	-32.94	Complied			
6	0.3855	23.69	22.36	4.23	58.16	48.16	Neutral	-35.80	Complied	-43.93	Complied			
7	0.5307	26.29	24.61	13.88	56.00	46.00	Neutral	-31.39	Complied	-32.12	Complied			
8	0.8071	19.79	11.69	2.73	56.00	46.00	Neutral	-44.31	Complied	-43.27	Complied			
9	4.0003	28.49	26.67	25.23	56.00	46.00	Neutral	-29.33	Complied	-20.77	Complied			
10	22.5597	53.18	49.00	31.25	60.00	50.00	Neutral	-11.00	Complied	-18.75	Complied			
Tested by:	Dieter Baldamus													
TUV Rheinland of North America, Inc. 12 Commerce Road Newtown, CT 06470 Tel:(203) 426-0888 Fax: (203) 426-4009												CE22_B.xlt Revised 10MAR03		

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9.3 Radiated Emissions

9.3.1 Test Basis

FCC part 15.209

9.3.2 Test Specifications

As Per section 15.207 (a)

9.3.3 Test Procedure

Radiated emissions tests were performed using the procedures of ANSI C63.4 including methods for signal maximizations and EUT configuration.

The frequency range from 30MHz to 24,000 GHz was investigated for radiated emissions.

Radiated emissions testing was first performed at a distance of 3 meters in the semi-anechoic chamber in order to identify the specific frequencies at which measurement should be made in the OATS. The EUT was then taken for measurements at 10 meters in OATS. The results of both tests can be found in appendix B.

Frequencies in the restricted bands of operation as stated in the FCC Part 15.205.

The photographs at appendix C show the worst-case emissions configuration.

9.3.4 Deviations from Standard Test Procedures

None

9.3.5 Test Results

All final radiated emissions measurements were below (in compliance) the limits specified in section 15.209. No emissions were found above 10MHz.

The result of the preliminary (semi-anechoic chamber), final (OATS) measurements and the maximum emissions measurements are shown in a tables.

Plots and the tabulated data are at Appendix B.

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EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
FCC ID: UJ7-FASTX-WIRE

9.3.6 Test Plots and Tables

NOTES:

Radiated Emissions Prescan
30MHz-300MHz

Measurement shows level using peak detector and 120k Resolution BW

ANTENNA/COUPLER:

☐ 9124 Bicon	☒ 3109 Bicon	☐ CBL6140 X-Wing	☐ NNB-4/63TL LISN
☐ 3146 Log Per	☐ 3115 Horn	☐ MDS–21 Clamp	☐ NNB-4/200X LISN
☒ 3106 Horn	☐ CBL6112B Bilog	☐ NSLK 8126 LISN	☐ Other_____

MEAS TYPE:	POLARIZATION:	DISTANCE:	LOCATION:
☒ Radiated Prescan	☒ Vertical	☒ 3 Meter	☐ OATS
☐ Radiated Final	☒ Horizontal	☐ 10 Meter	☒ Semi-Anechoic
☐ Conducted	☐ Line	☐ ____Meter	☐ Shielded Room
☐ Disturbance Power	☐ Neutral	☐ NA	☐ Factory Floor
☐ Other_____	☐ NA		☐ Other_____

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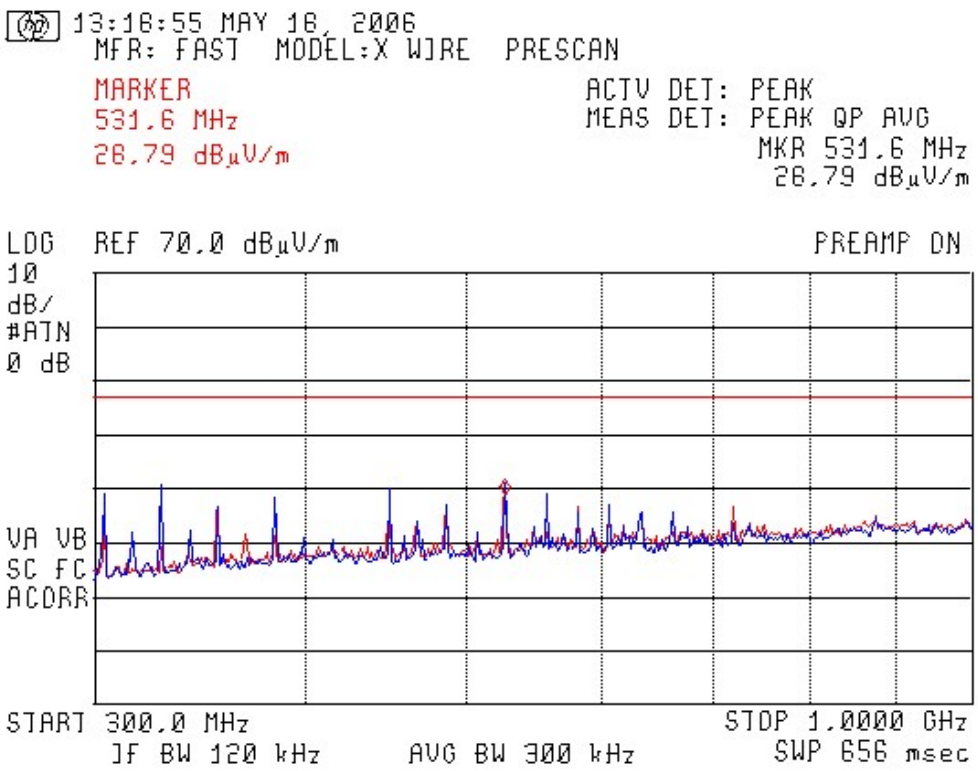
TÜVRheinland®
Precisely Right.

EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
FCC ID: UJ7-FASTX-WIRE

NOTES:

Radiated Emissions Prescan
300MHz-1000MHz



Measurement shows level using peak detector and 120kHz Resolution BW

ANTENNA/COUPLER:

☐ 9124 Bicon	☐ 3109 Bicon	☐ CBL6140 X-Wing	☐ NNB-4/63TL LISN
☒ 3146 Log Per	☐ 3115 Horn	☐ MDS–21 Clamp	☐ NNB-4/200X LISN
☐ 3106 Horn	☐ CBL6112B Bilog	☐ NSLK 8126 LISN	☐ Other_____

MEAS TYPE:	POLARIZATION:	DISTANCE:	LOCATION:
☒ Radiated Prescan	☒ Vertical	☒ 3 Meter	☐ OATS
☐ Radiated Final	☒ Horizontal	☐ 10 Meter	☒ Semi-Anechoic
☐ Conducted	☐ Line	☐ ____Meter	☐ Shielded Room
☐ Disturbance Power	☐ Neutral	☐ NA	☐ Factory Floor
☐ Other_____	☐ NA		☐ Other_____

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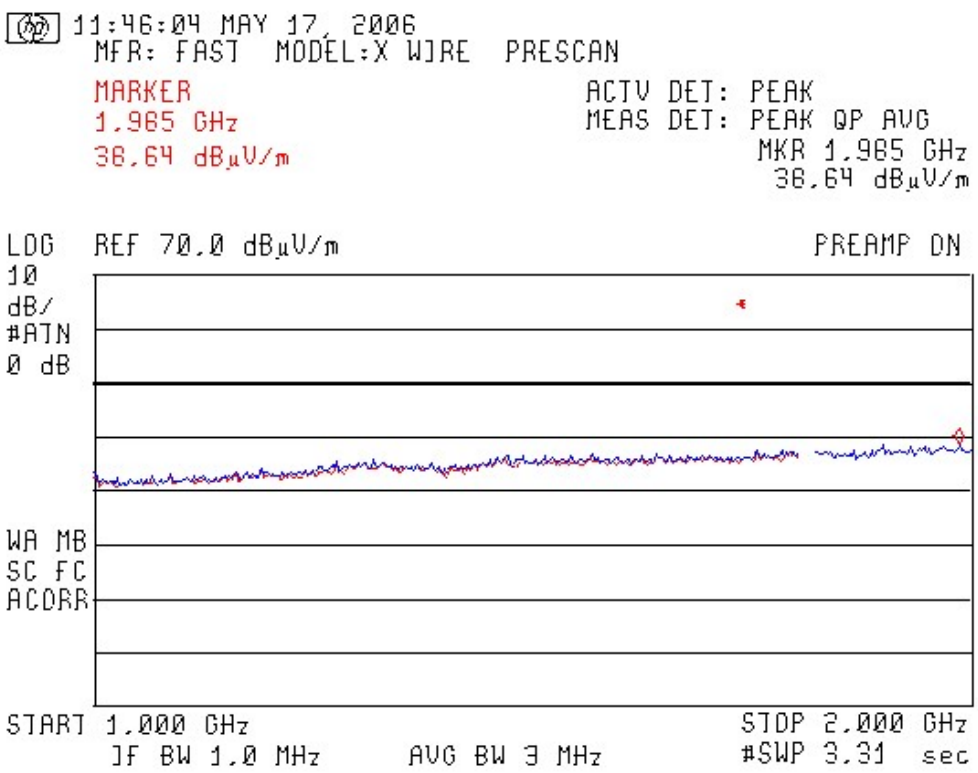
EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
FCC ID: UJ7-FASTX-WIRE

NOTES:

Radiated Emissions Prescan
1GHz- 2GHz



Measurement shows level using peak detector and 1MHz Resolution BW

ANTENNA/COUPLER:

☐ 9124 Bicon	☒ 3109 Bicon	☐ CBL6140 X-Wing	☐ NNB-4/63TL LISN
☐ 3146 Log Per	☐ 3115 Horn	☐ MDS–21 Clamp	☐ NNB-4/200X LISN
☒ 3106 Horn	☐ CBL6112B Bilog	☐ NSLK 8126 LISN	☐ Other_____

MEAS TYPE:	POLARIZATION:	DISTANCE:	LOCATION:
☒ Radiated Prescan	☒ Vertical	☒ 3 Meter	☐ OATS
☐ Radiated Final	☒ Horizontal	☐ 10 Meter	☒ Semi-Anechoic
☐ Conducted	☐ Line	☐ ____Meter	☐ Shielded Room
☐ Disturbance Power	☐ Neutral	☐ NA	☐ Factory Floor
☐ Other_____	☐ NA		☐ Other_____

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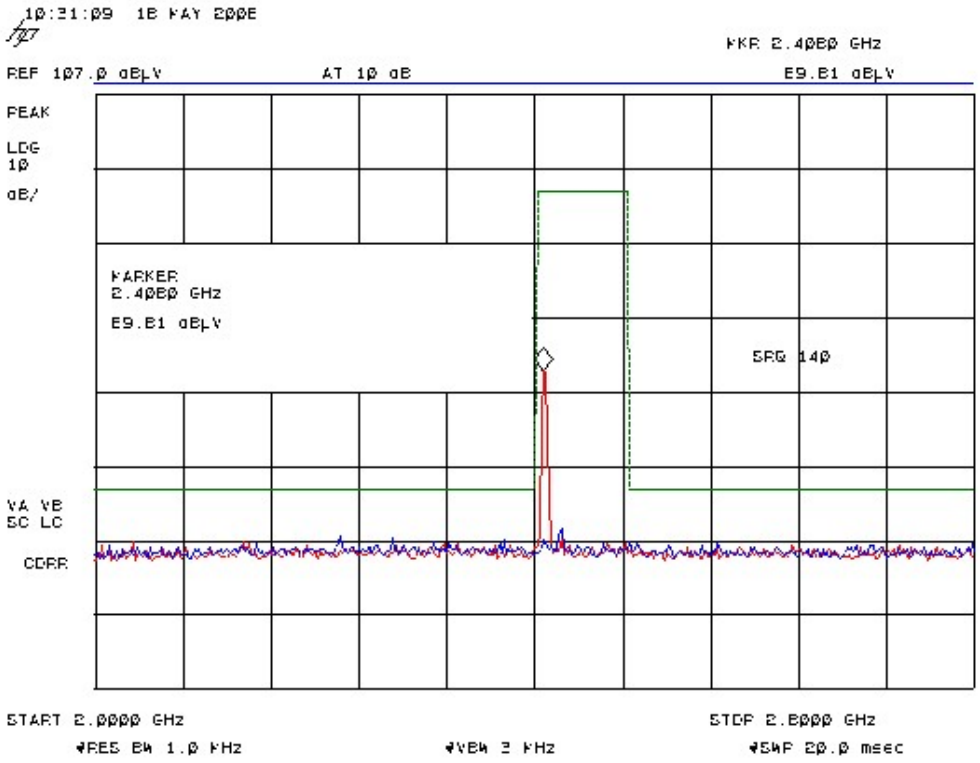
EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
FCC ID: UJ7-FASTX-WIRE

NOTES:

Radiated Emissions Prescan
2.5GHz- 2.8GHz

GHz



Measurement shows level using peak detector and 1MHz Resolution BW

ANTENNA/COUPLER:

☐ 9124 Bicon	☒ 3109 Bicon	☐ CBL6140 X-Wing	☐ NNB-4/63TL LISN
☐ 3146 Log Per	☐ 3115 Horn	☐ MDS–21 Clamp	☐ NNB-4/200X LISN
☒ 3106 Horn	☐ CBL6112B Bilog	☐ NSLK 8126 LISN	☐ Other_____

MEAS TYPE:	POLARIZATION:	DISTANCE:	LOCATION:
☒ Radiated Prescan	☒ Vertical	☒ 3 Meter	☐ OATS
☐ Radiated Final	☒ Horizontal	☐ 10 Meter	☒ Semi-Anechoic
☐ Conducted	☐ Line	☐ ____Meter	☐ Shielded Room
☐ Disturbance Power	☐ Neutral	☐ NA	☐ Factory Floor
☐ Other_____	☐ NA		☐ Other_____

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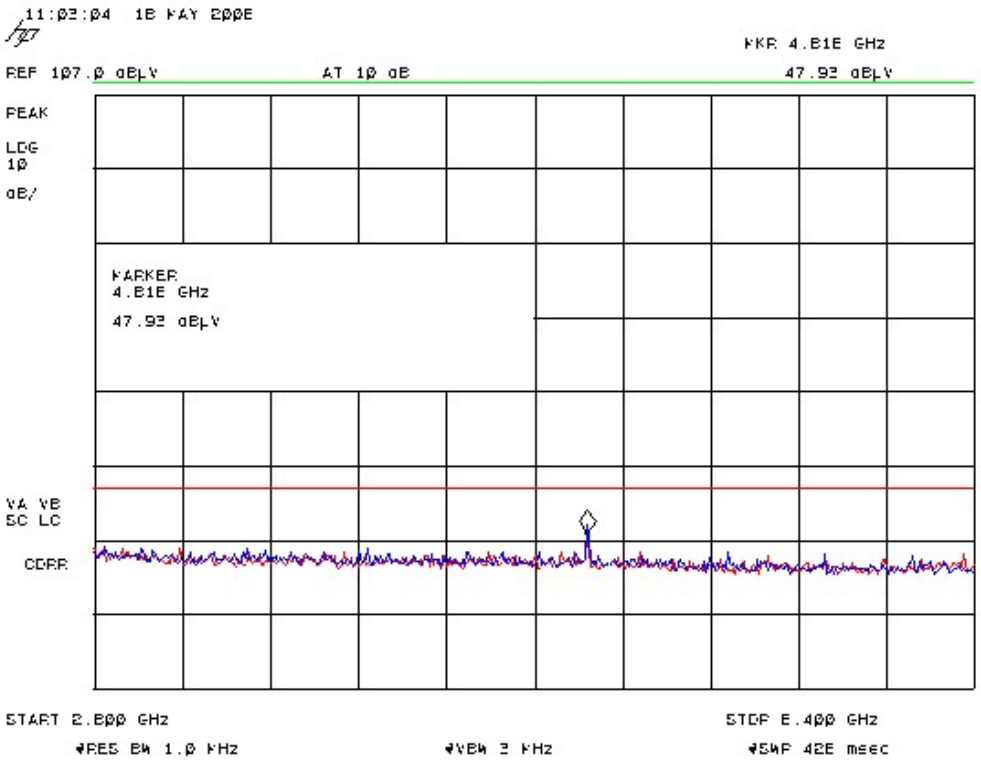
EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
FCC ID: UJ7-FASTX-WIRE

NOTES:

Radiated Emissions Prescan
2.8GHz- 6.4GHz



Measurement shows level using peak detector and 1MHz Resolution BW

ANTENNA/COUPLER:

☐ 9124 Bicon	☒ 3109 Bicon	☐ CBL6140 X-Wing	☐ NNB-4/63TL LISN
☐ 3146 Log Per	☐ 3115 Horn	☐ MDS–21 Clamp	☐ NNB-4/200X LISN
☒ 3106 Horn	☐ CBL6112B Bilog	☐ NSLK 8126 LISN	☐ Other_____

MEAS TYPE:	POLARIZATION:	DISTANCE:	LOCATION:
☒ Radiated Prescan	☒ Vertical	☒ 3 Meter	☐ OATS
☐ Radiated Final	☒ Horizontal	☐ 10 Meter	☒ Semi-Anechoic
☐ Conducted	☐ Line	☐ ____Meter	☐ Shielded Room
☐ Disturbance Power	☐ Neutral	☐ NA	☐ Factory Floor
☐ Other_____	☐ NA		☐ Other_____

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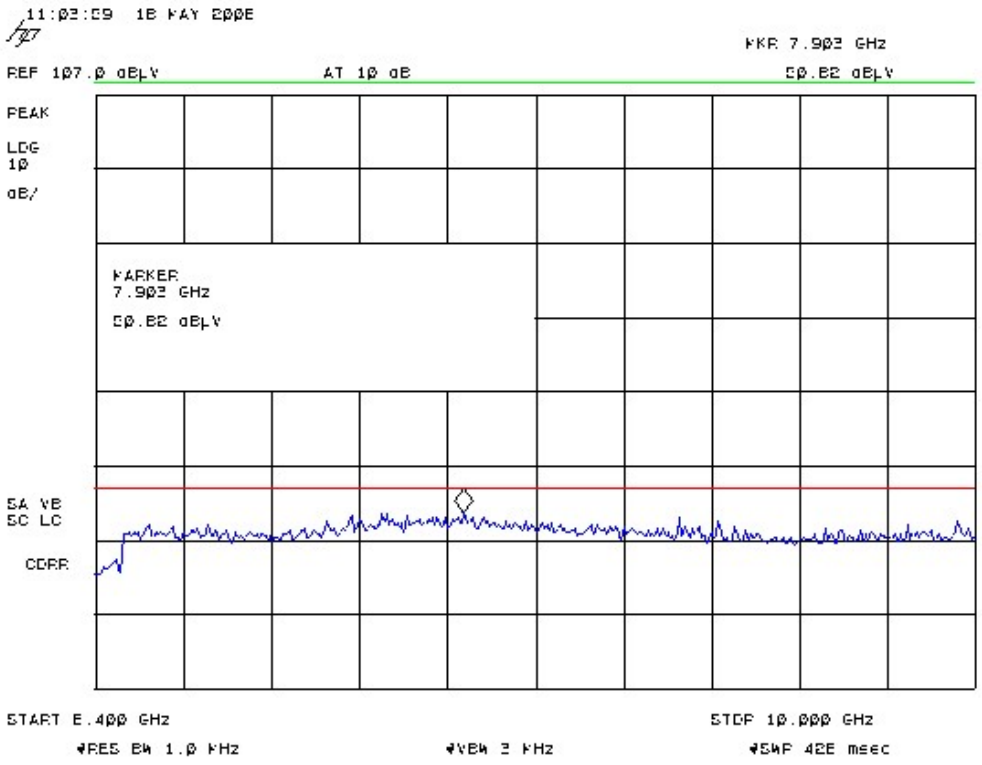
EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
FCC ID: UJ7-FASTX-WIRE

NOTES:

Radiated Emissions Prescan
6.4GHz- 10GHz



Measurement shows level using peak detector and 1MHz Resolution BW

ANTENNA/COUPLER:			
☐ 9124 Bicon	☒ 3109 Bicon	☐ CBL6140 X-Wing	☐ NNB-4/63TL LISN
☐ 3146 Log Per	☐ 3115 Horn	☐ MDS–21 Clamp	☐ NNB-4/200X LISN
☒ 3106 Horn	☐ CBL6112B Bilog	☐ NSLK 8126 LISN	☐ Other_____

MEAS TYPE:	POLARIZATION:	DISTANCE:	LOCATION:
☒ Radiated Prescan	☒ Vertical	☒ 3 Meter	☐ OATS
☐ Radiated Final	☒ Horizontal	☐ 10 Meter	☒ Semi-Anechoic
☐ Conducted	☐ Line	☐ ____Meter	☐ Shielded Room
☐ Disturbance Power	☐ Neutral	☐ NA	☐ Factory Floor
☐ Other_____	☐ NA		☐ Other_____

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9.4 Frequency Stability

9.4.1 Test Basis

FCC part 15.215

9.4.2 Test Specifications

As Per section 15.215 (c)

9.4.3 Test Procedure

The EUT was placed in an environmental temperature test chamber, supplied with the AC power adapter and a small receiving antenna connected to a spectrum analyzer which is located outside the chamber.

The temperature is raised ti the highest remperature specified and allowed sufficient time to stabilize. While mainting a constant temperature inside the environmental chamber, the carrier signal was measured after 40 minutes. The process is repeated for the lowest temperature specified and with 10 degrees centigrade increments between extremes thereafter.

9.4.4 Deviations from Standard Test Procedures

None

9.4.5 Test Results

Temperature °C	Low Channel Frequency (2402MHz)		High Channel Frequency (2480MHz)		Results
	-20dB freq	ΔBE MHz	-20dB freq	ΔBE MHz	
0	2401.6847	1.6847	2480.3247	3.1753	**Complied**
10	2401.1645	1.1645	2480.3287	3.1713	**Complied**
20	2401.5457	1.5457	2480.3195	3.1805	**Complied**
30	2041.6558	1.6558	2480.3264	3.1736	**Complied**

Note: Low Band Edge (BE) = 2400MHz
High Band Edge (BE) = 2483.5MHz

All emissions, were within (in compliance with) the limits specified in the standard

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EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
FCC ID: UJ7-FASTX-WIRE

APPENDIX A: TEST PLAN

Electro-Magnetic Compatibility (EMC)
Test Plan for
Product Description: Integrated Wireless Bezel, Wireless Gateway Adapter
Model: X - Wire
Applicant: Fast Inc.

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EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
FCC ID: UJ7-FASTX-WIRE

10. TEST PLAN SUMMARY

Product Description:	Integrated Wireless Bezel, Wireless Gateway Adapter
Model:	X - Wire
Serial Number:	Not Serialized
Applicant:	Fast Inc. 905 Honeyspot Road Stratford, CT 06615-7147
Contact:	Stan Vreeland Telephone: (203) 380-3510 Fax: (203) 377-8187 e-mail: svreeland@fastinc.com

10.1 Test Pan Overview

Standard Number	Description	Severity Level or Limit	Minimum Acceptable Performance Criteria
FCC Part 15.249	Operation within the abnds 902-928 MHz, 2400-2483.5MHz, 5725-5875MHz and 24.0-24.25GHz	As per section 15.249 a)	NA
FCC Part 15.207	Conducted Limits	As per section 15.207a)	NA
FCC Part 15.209	Radiated Emissions Limtis; general requirements	As per section 15.209 a)	NA
FCC Part 15.215 (c)	Frequency Stability	Containment of 20dB bandwith between 2400 and 2483.5	NA

10.2 Miscellaneous Information:

This test plan is intended to cover the EMC Directive requirements for the X - Wire when used in an light industrial environment.

This test plan is intended for use by the manufacturer for making a Declaration of Conformity. It is not intended for use with a Technical Construction File. This test plan does not constitute authorization for the use of any TUV Rheinland test mark. A copy of this test plan is kept on file by TUV Rheinland, Newtown CT

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10.3 General Description of the EUT

(FAST.) Xwire products allow foodservice operators to connect multiple appliances and timers efficiently for synchronizing food equipment and monitoring inventory levels, energy consumption and usage levels. They can be used to link together existing (FAST.) equipped appliances and timers and other communications-enabled appliances, either controlled by kitchen automation software or just connected point-to-point.

10.4 Equipment Specifications

10.4.1 Technical Data

Input Voltage Rating:	24 VAC (from 120V/24VAC transformer)
Input Current Rating:	1.67 Amps Max
Frequency Rating	50Hz
Power Rating:	40 Watts
Voltage and frequency of supply during test:	120V/60Hz

10.4.2 Physical Data

EUT Dimensions:	5 cm (W) x 5 cm (D) x 12 cm (H)
EUT Weight:	0.1 kg

EUT tested will be Configured as shown in the following diagram:

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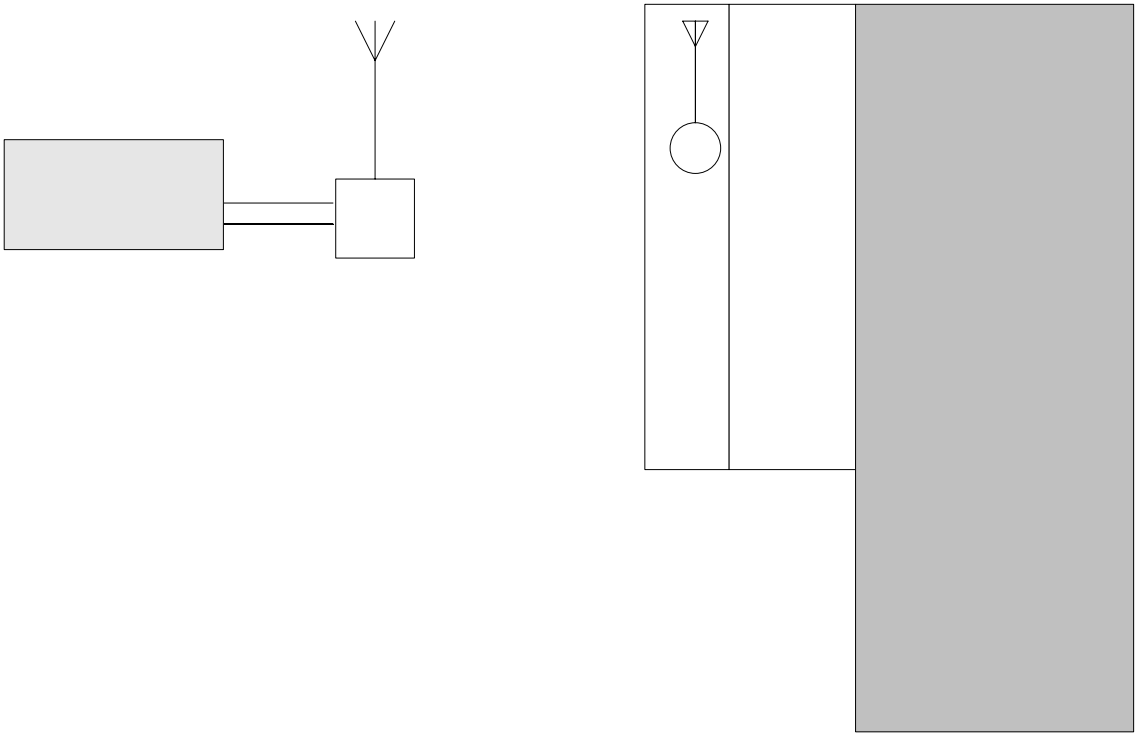
10.5 Configuration and Mode of Operation

10.5.1 Configuration

FAST X-Wire System Block Diagram



Cable	Description	Shielding	Length	Tested
1	Mains Cable	No	1.2m	Yes
2	Controller cables	No	0.3m	No
3	Receiver Mains	No	1.2m	No

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10.5.2 Mode of operation

The FAST Inc. X-Wire system is intended to be used as a wireless data collection system. Each system consists of a X-Wire Wireless Gateway device and one or more X-Wire bezel or universal units attached to an appliance controller. The Gateway device may be attached to a computer via a USB connection. The appliance connected devices communicate information back to the Gateway regarding number of cooks performed, times, temperature or any other available information about the appliance to which it is connected. The computer can then extract that data from the Gateway to be formatted and stored in a database. (See Block Diagram below)

Each device in the system contains the same transceiver circuitry. The transceiver consists of an 802.15.4 compliant RF transceiver operating at 2.4 GHz IEEE designed for low-power and low-voltage applications. The antenna implemented in all devices is an inverted F type that is embedded into the printed circuit board. A separate microcontroller is connected to the transceiver to run the application specific firmware.

During the test, the EUT was turned on sending a constant signal to a receiver. The transmitter has a switch were three channels can be selected these channels were set to the lowest, middle and highes frequency between 2400 GHz abnd 2483.5 MHz. Each of these channels were tested for compliance.

10.5.3 Descriptions of performance criteria specific to EUT for Immunity assessment

No Immunity testing is required by FCC

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EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
FCC ID: UJ7-FASTX-WIRE

10.6 *Emissions Test Plan*

Standard(s) to be applied: ☒ FCC part 15 Section 15.249

Sections:

(a) Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

2400-2483.5 MHz.....	Fundamental frequency 50mV/m (94dBµV/m) Fundamental Harmonics 500µV/m (54dBµV/m)

(b) Fixed, point-to-point operation as referred to in this paragraph shall be limited to systems employing a fixed transmitter transmitting to a fixed remote location. Point-to-multipoint systems, omnidirectional applications, and multiple co-located intentional radiators transmitting the same information are not allowed.

(c) Field strength limits are specified at a distance of 3 meters.

(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Sec. 15.209, whichever is the lesser attenuation.

(e) As shown in Sec. 15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a) and (b) of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For point-to-point operation under paragraph (b) of this section, the peak field strength shall not exceed 2500 millivolts/meter (128dBµV/m) at 3 meters along the antenna azimuth.

(f) Parties considering the manufacture, importation, marketing or operation of equipment under this section should also note the requirement in Sec. 15.37(d).

Antenna Distance:	Testing for radiated emissions shall be done at 3 meters in the Open Area Test Site (OATS).
Fundamental Frequency Range:	2,400 GHz to 2,483.5 MHz
Additional Information:	A preliminary scan of the emissions will be performed in the 3m semi-anechoic chamber.

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10.7 Conducted Emissions Test Plan

Standard(s) to be applied: ☒ FCC part 15 Section 15.207(a)

Test Ports: Mains ☒ Telecom ☐

Additional Information: Test to be performed at 230V/50Hz for EN compliance and at 120V/60Hz for FCC compliance

10.8 *Radiated Emissions Test Plan*

Standard(s) to be applied: ☒ FCC part 15.209 as per section (a) and section 15.249 (e)

Antenna Distance: Testing for radiated emissions shall be done at 10 meters in the Open Area Test Site (OATS).

Frequency range: Shall be tested up to 24GHz.

Additional Information: A preliminary scan of the emissions will be performed in the 3m semi-anechoic chamber.

10.9 *Frequency Stability*

Standard(s) to be applied: ☒ FCC part 15.215 as per section (c)

Testing temperature: ☒ 0°C ☒10°C ☒20°C ☒30°C

Frequency range: Shall be tested at -20dB of lower (2402 MHz) and higher frequency (2480MHz)

Additional Information: None

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APPENDIX B: PHOTOGRAPHS

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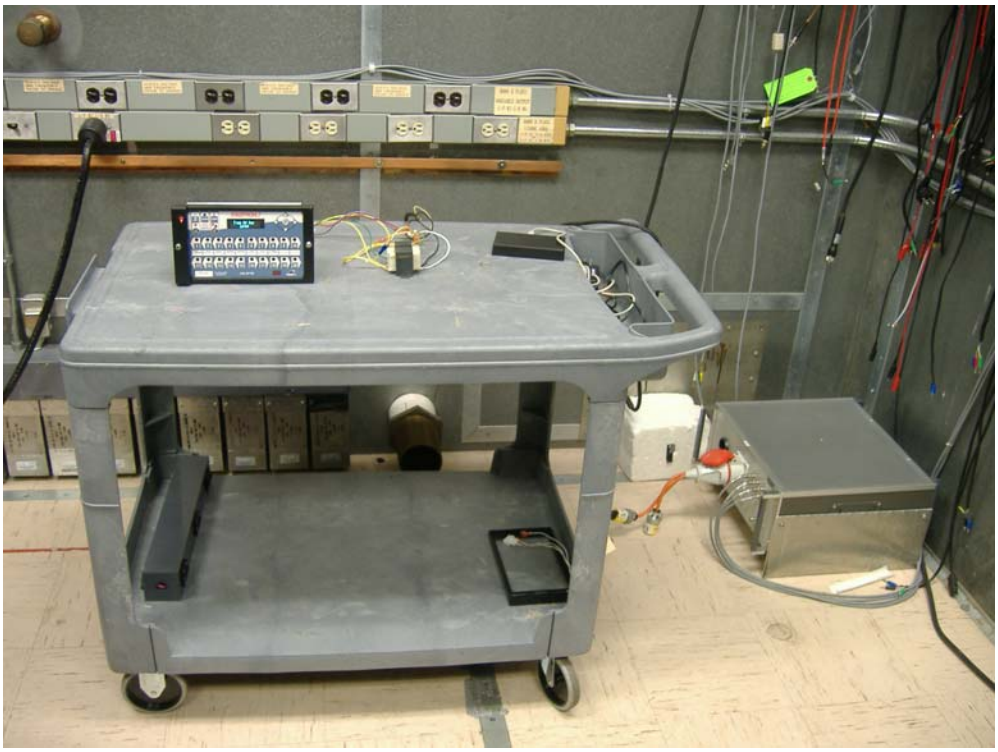
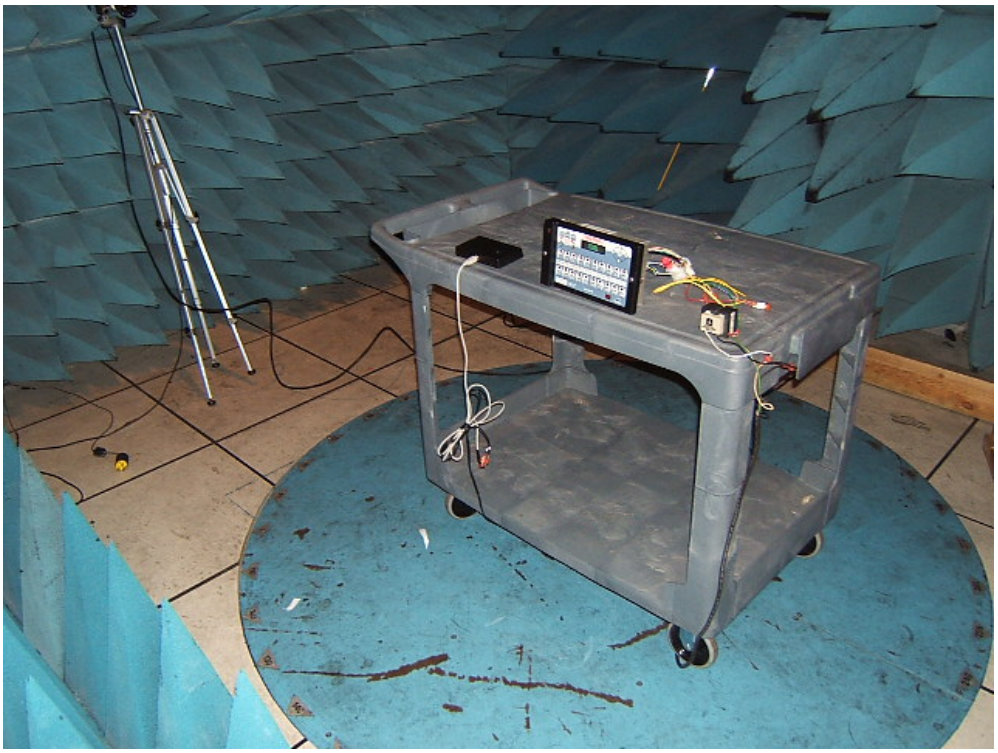
EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
FCC ID: UJ7-FASTX-WIRE

Set up for Conducted Emissions Test



Setup for Radiated emissions Prescan in Anechoic Chamber



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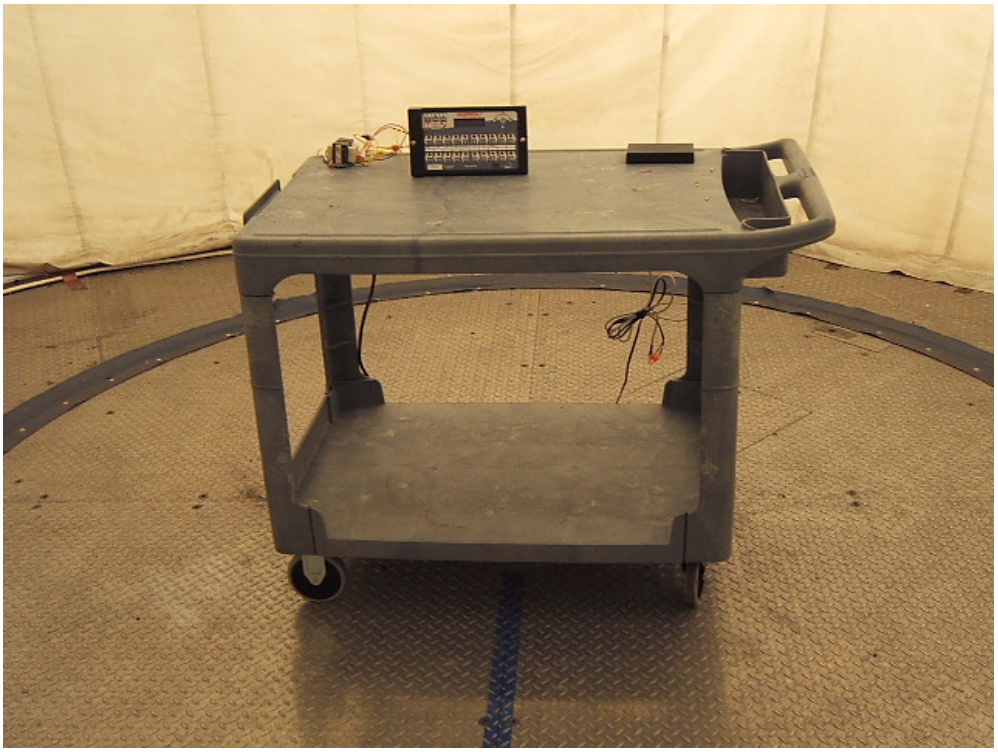
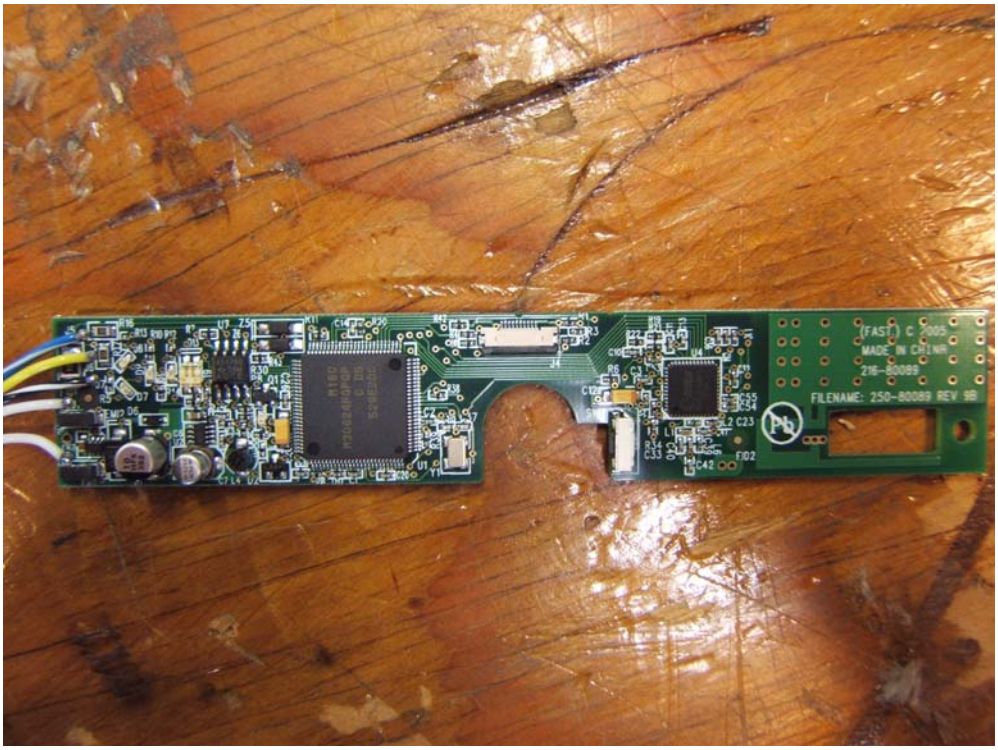
EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
FCC ID: UJ7-FASTX-WIRE

Setup for Radiated emissions on 10 meter OATS – Final test



Internal View Fast Wireless Bezel or Unviersal



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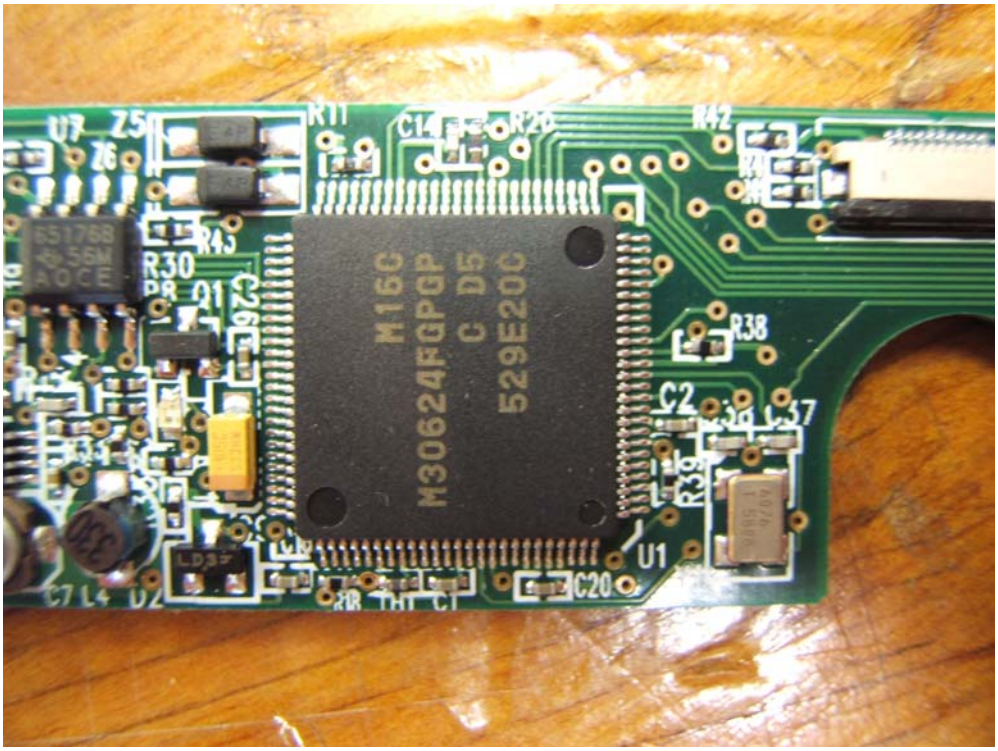
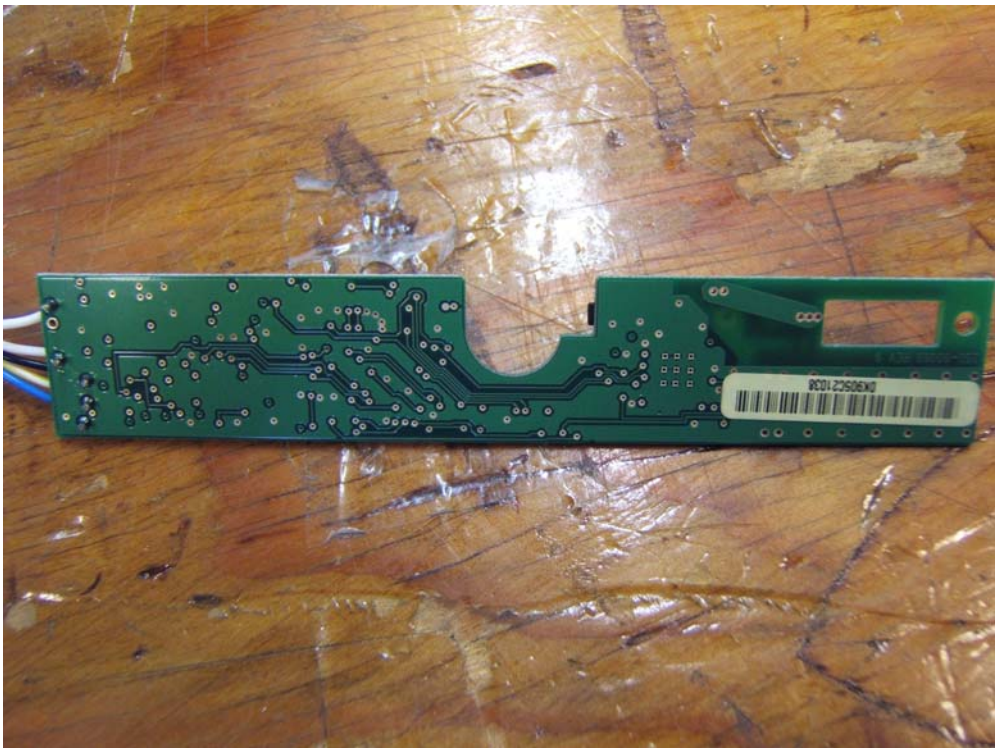
EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
FCC ID: UJ7-FASTX-WIRE

Internal View
Fast Wireless Bezel or Unviersal



Internal View
Fast Wireless Bezel or Unviersal



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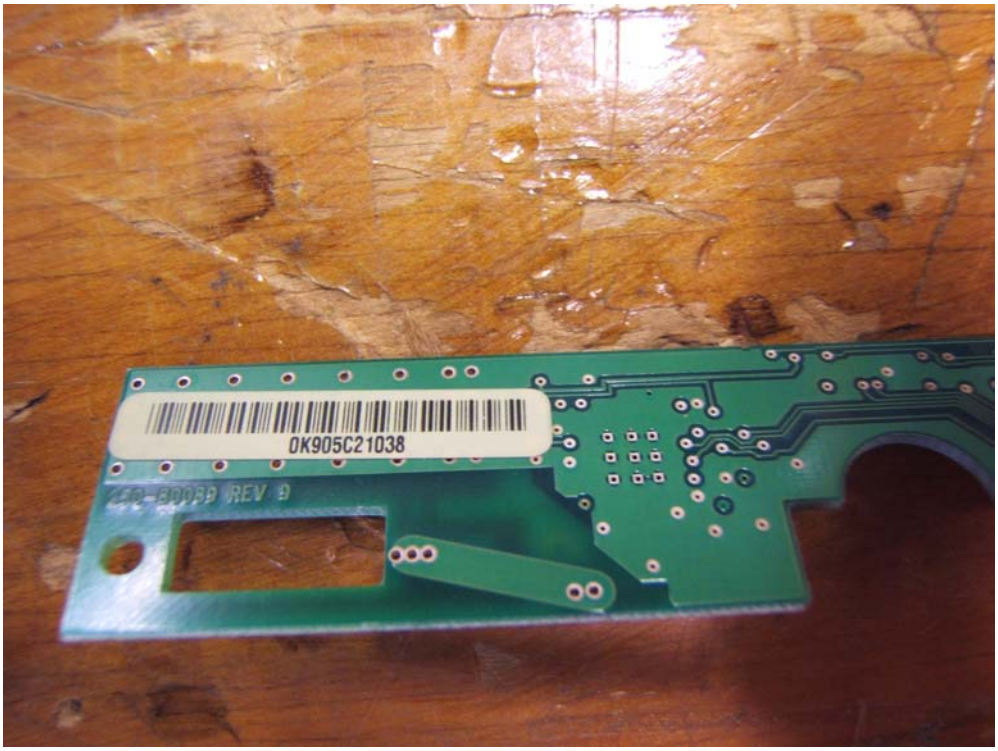
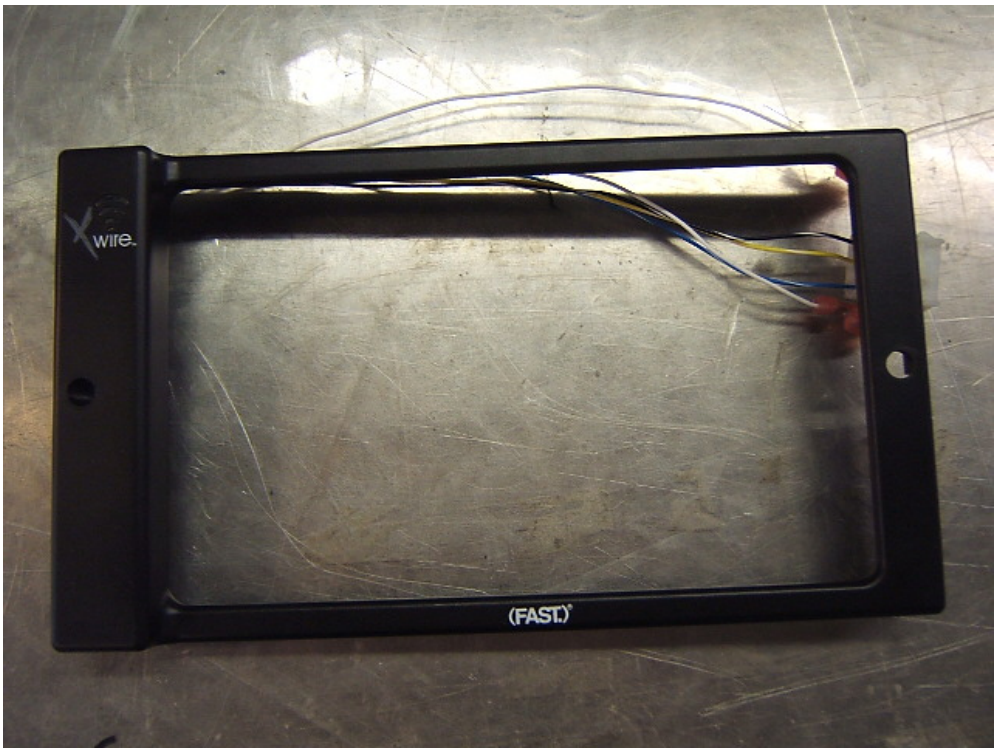
EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
FCC ID: UJ7-FASTX-WIRE

Internal view
Fast Wireless Bezel or
Unviersal



Internal View
Fast Wireless Bezel or
Unviersal



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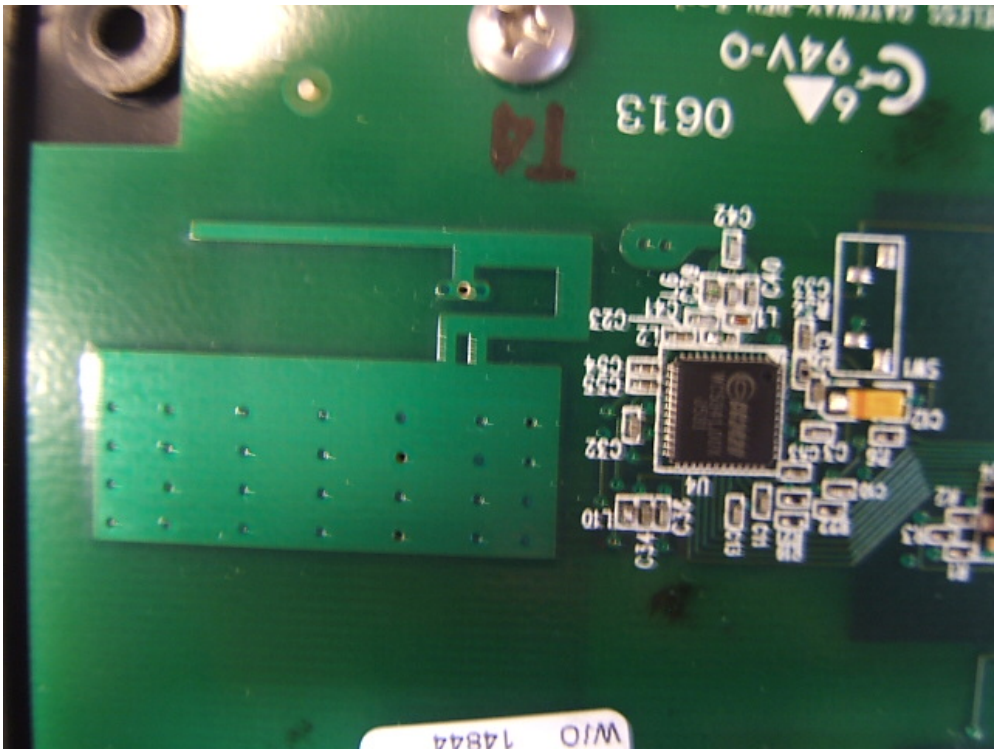
EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
FCC ID: UJ7-FASTX-WIRE

Internal View
Fast Wireless Gateway
216-80097-XX

Internal View
Fast Wireless Gateway
216-80097-XX



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EUT: Integrated Wireless Bezel, Gateway Adapter
Model: X-Wire
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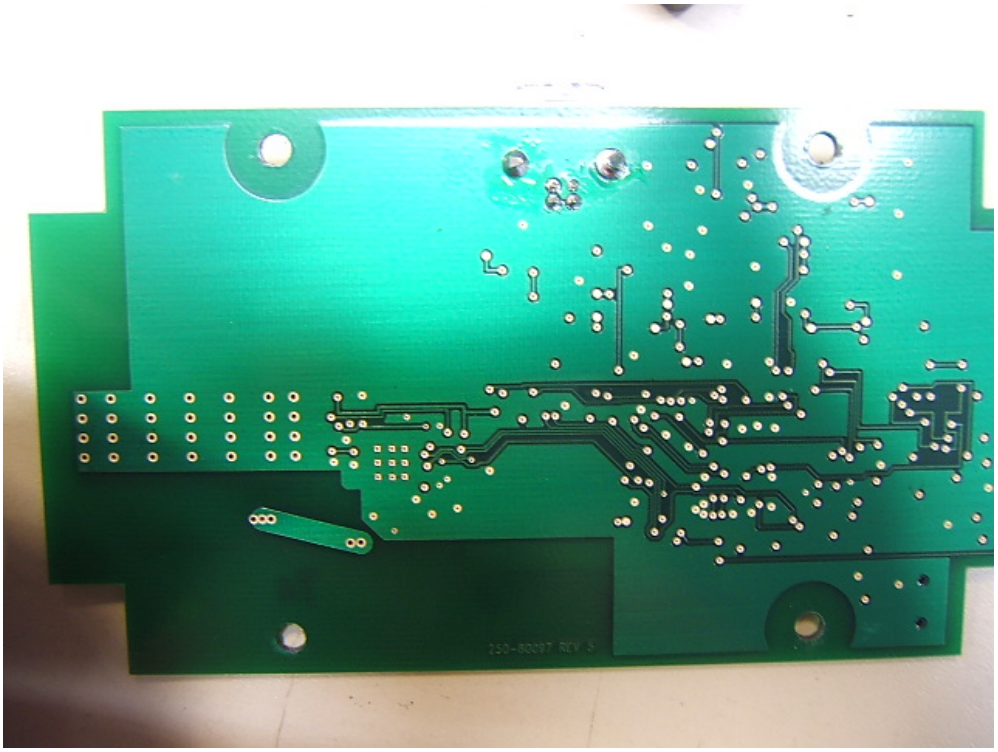
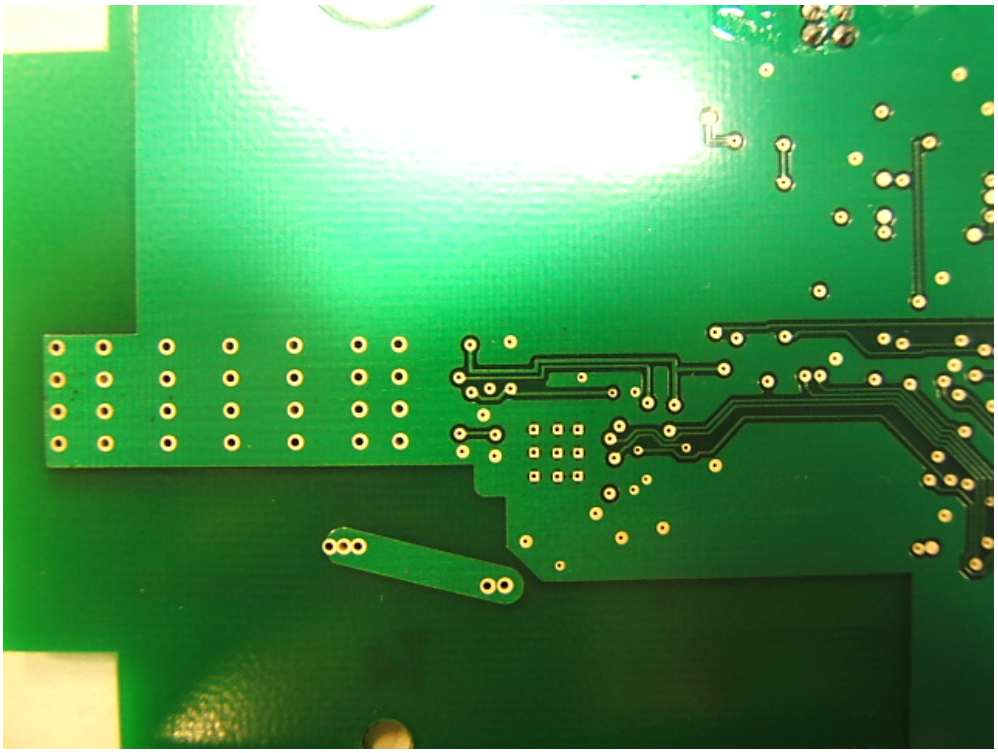
Internal View
Fast Wireless Gateway
216-80097-XX



Internal View
Fast Wireless Gateway
216-80097-XX



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