FCC 47 CFR PART 15 SUBPART C
INDUSTRY CANADA RSS-210 ISSUE 8

CERTIFICATION TEST REPORT

FOR

Fibar Roller Shutter 2

MODEL NUMBER: FGR222

FCC ID: 2AA9MFGR222
IC: 20430-FGR222

REPORT NUMBER: 10935761

ISSUE DATE: January 14, 2016

Prepared for
Fibar Group sp. z.o.o
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Revision History

Rev.	Issue Date	Revisions	Revised By
--	January 14, 2016	Initial Issue	V Sabalvaro

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Fibar Group S.A.
Ul. Lotnicza 1
60-421 Poznań, Poland

EUT DESCRIPTION: Radio controlled home automation

MODEL: FGR222

SERIAL NUMBER: Not Serialized

DATE TESTED: October 22 – December 28, 2015

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C	Pass
INDUSTRY CANADA RSS-210 Issue 8 Annex A2.9	Pass
INDUSTRY CANADA RSS-GEN Issue 4	Pass

UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL LLC based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For
UL LLC By:

Bart Mucha
Staff Engineer

UL LLC

Tested By:

Vincent Sabalvaro
EMC WISE Engineer
Consumer Technology
UL LLC

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2013, FCC CFR 47 Part 2, FCC CFR 47 Part 15, RSS-GEN Issue 4, and RSS-210 Issue 8.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 333 Pfingsten Road, Northbrook, IL 60062 USA.

UL NBK is accredited by NVLAP, Laboratory Code 100414-0. The full scope of accreditation can be viewed at http://ts.nist.gov

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Sample Calculations
Radiated Field Strength and Conducted Emissions data contained within this report is calculated on the following basis:
Field Strength (dBuV/m) = Meter Reading (dBuV) + AF (dB/m) - Gain (dB) + Cable Loss (dB)
Conducted Voltage (dBuV) = Meter Reading (dBuV) + Cable Loss (dB) + LISN IL (dB)
Conducted Current (dBuA) = Meter Reading (dBuV) + Cable Loss (dB) - Transducer Factor (dBohms)

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4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test	Range	Equipment	Uncertainty k=2
Radiated Emissions	30-200MHz	Bicon 10m Horz	4.27dB
Radiated Emissions	30-200MHz	Bicon 10m Vert	4.28dB
Radiated Emissions	200-1000MHz	LogP 10m Horz	3.33dB
Radiated Emissions	200-1000MHz	LogP 10m Vert	3.39dB
Radiated Emissions	30-200MHz	Bicon 3m Horz	3.30dB
Radiated Emissions	30-130MHz	Bicon 3m Vert	4.84dB
Radiated Emissions	130-200MHz	Bicon 3m Vert	4.94dB
Radiated Emissions	200-1000MHz	LogP 3m Horz	3.46dB
Radiated Emissions	200-1000MHz	LogP 3m Vert	4.98dB
Radiated Emissions	1-6GHz	Horn	5.02dB
Radiated Emissions	6-18GHz	Horn	5.34dB
Radiated Emissions	18-26GHz	Horn	6.60dB
Conducted Ant Port	30MHz-26GHz	Spectrum Analyzer	2.94

Uncertainty figures are valid to a confidence level of 95%.

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a 916MHz transceiver. It is AC powered. The transmitter utilizes Z-wave technologies to communicate with other devices for home automation

The radio device is manufactured by Fibar Group.

5.2. MAXIMUM OUTPUT E-FIELD STRENGTH

The transmitter has a maximum output peak E-field as follows:

Frequency Range (MHz)	Mode	Output QP E-field Strength (dBuV/m)
908.4 - 916	TX	93.80

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a quarter-wave monopole copper antenna wire soldered to pcb and lead out of the case.

5.4. WORST-CASE CONFIGURATION AND MODE

The EUT, Roller Shutter 2, was set in worst axis as found in preliminary testing. Y-axis is the worst axis.

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5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Momentary Switch	-	-	Not Serialized	N/A

I/O CABLES

I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
0	Enclosure	-	Non-Electrical	-	-	None
1	AC	2	Wire	AC	>3m	None
2	Load	2	Wire	AC	>3m	Output
3	Switch	2	Wire	AC	>3m	Control Input

TEST SETUP

The EUT is programmed for continuous TX mode

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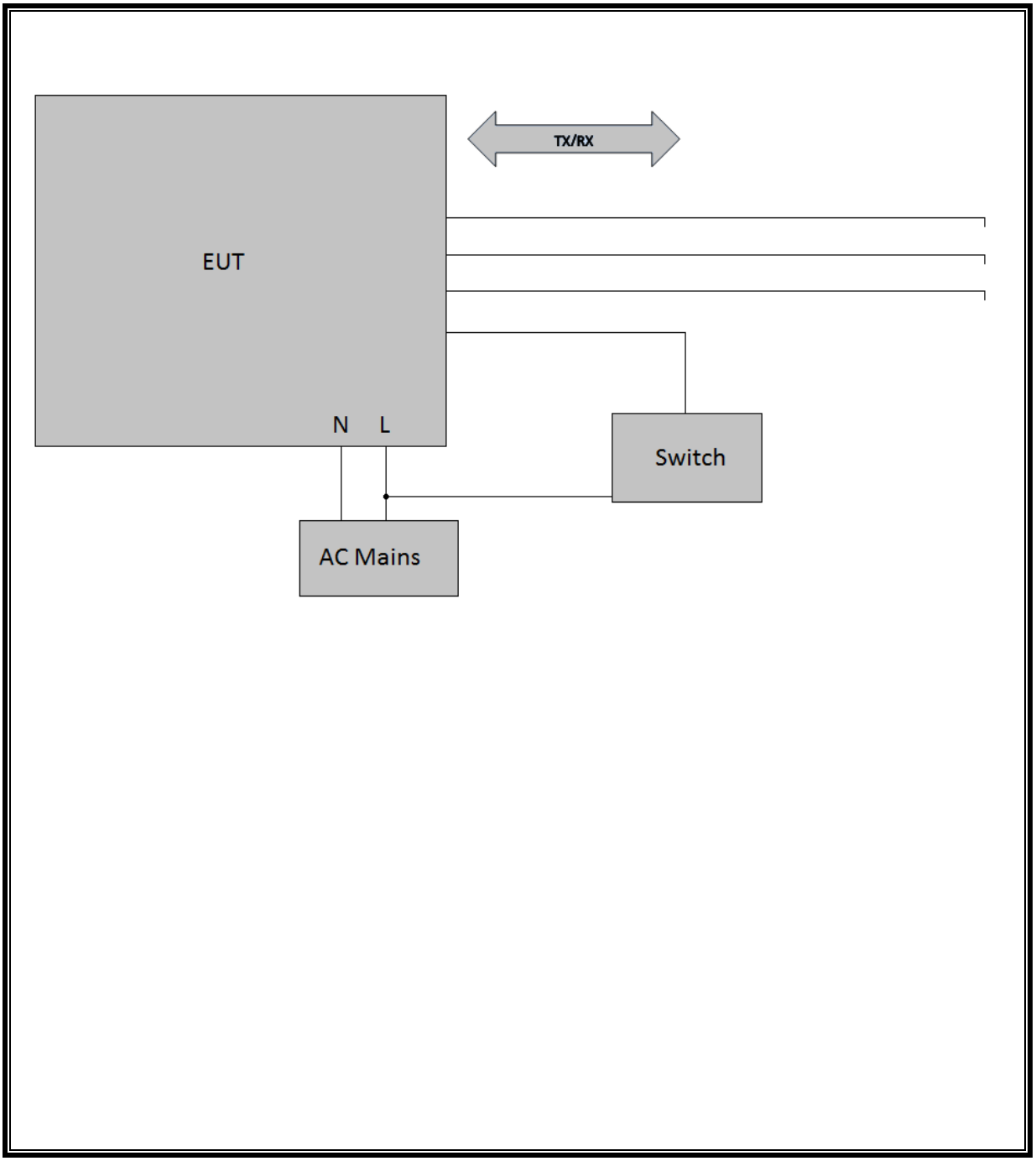
SETUP DIAGRAM FOR TESTS



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SETUP FOR DIGITAL DEVICE TESTS

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Momentary Switch	-	-	-	-
Resistive Load	-	-	-	-

I/O CABLES

I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
0	Enclosure	-	Non-Electrical	-	-	None
1	AC	2	Wire	AC	>3m	None
2	Load	1	Wire	AC	>3m	None
3	Switch	3	Wire	AC	>3m	None

TEST SETUP

The EUT is configured with a resistive load and connected to the device. The size of the load had little to no measurable effect on the emissions observed so long as it conformed to the requirements of the device.

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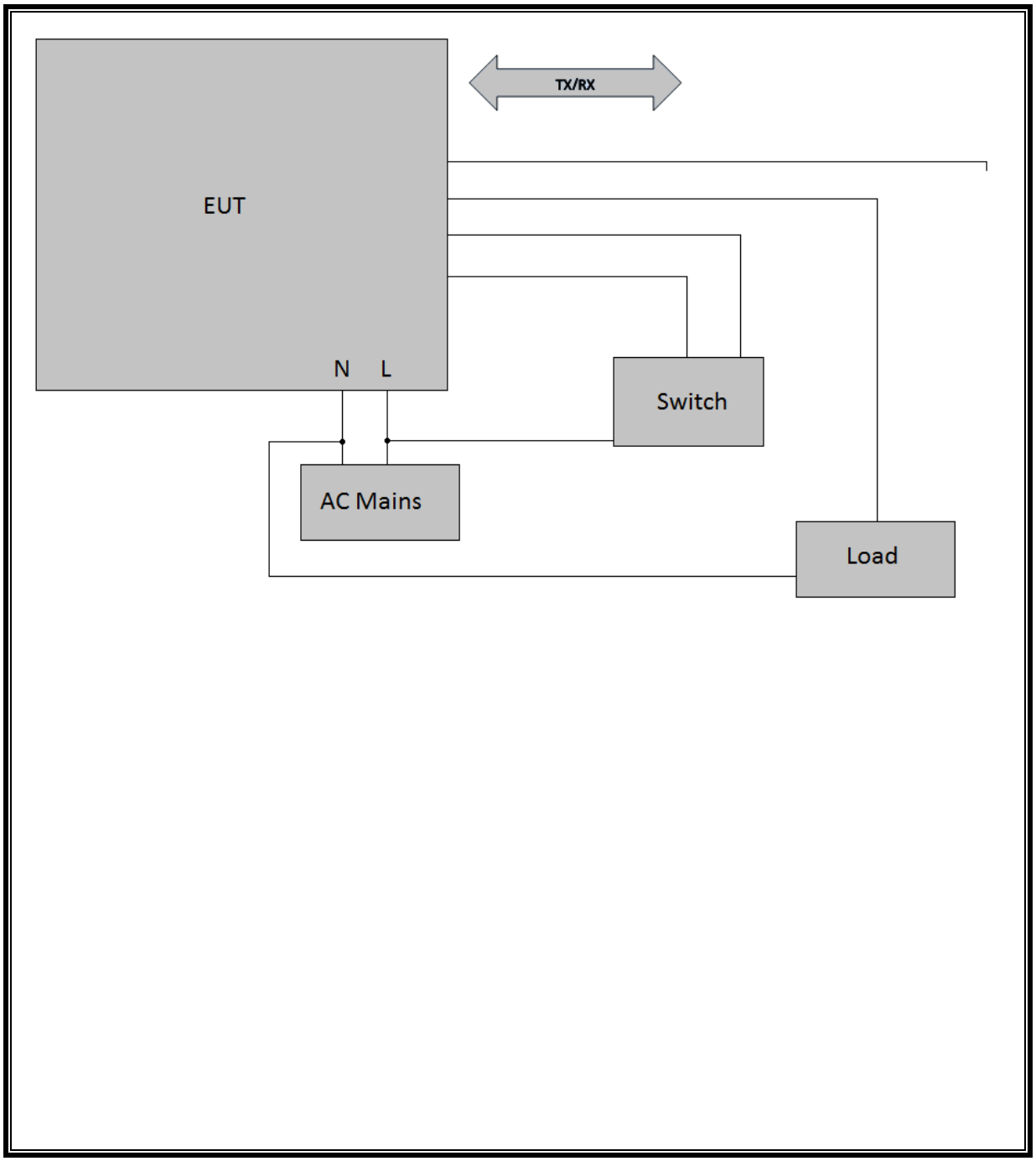
SETUP DIAGRAM FOR DIGITAL DEVICE TESTS



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6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment List					
Description	**Manufacturer**	**Model**	**T No.**	**Cal Date**	**Cal Due**
Radiated Software	UL	UL EMC	Ver 9.5, July 22, 2014		
Conducted Software	UL	UL EMC	Ver 9.5, May 17 2012		
EMI Test Receiver	Rohde & Schwarz	ESR	EMC4377	4/20/2015	4/20/2016
Transient Limiter	Electro-Metrics	EM7600-2	EMC4224	N/A	N/A
HighPass Filter	Solar Electronics	2803-150	EMC4327	N/A	N/A
Attenuator	HP	8494B	2831A0083	N/A	N/A
LISN - L1	Solar	8602-50-TS-50-N	EMC4052	1/15/2015	1/15/2016
LISN - L2	Solar	8602-50-TS-50-N	EMC4064	1/9/2015	1/9/2016
Signal Analyzer	Agilent	PXA	EMC4360	12/19/2014	12/31/2015
Near Field Probe	EMCO	7405	1270	N/A	N/A
Test Receiver	Rhode & Schwarz	ESCI	EMC4328	12/18/2014	12/31/2015
Log-P Antenna	Chase	UPA6109	EMC4258	4/27/2015	4/27/2016
Bicon Antenna	Electro-Metrics	VBA6106A	EMC4323	12/18/2014	12/31/2015
Loop Antenna	EMCO	6502/1	EMC4026	4/20/2015	4/20/2016
Antenna Array	UL	BOMS	EMC4276	12/1/2014	12/31/2015
Test Receiver	Rhode & Schwarz	ESU	EMC4323	12/16/2014	12/31/2015

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7. TEST RESULTS

7.1. 20 dB AND 99% BANDWIDTH

7.1.1. LIMITS

None; for reporting purposes only.

7.1.2. TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the Occupied bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

7.1.3. RESULTS

Channel	Frequency (MHz)	20 dB Bandwidth (kHz)	99% Bandwidth (kHz)
Low	908.4	85.31	88.494
Middle	908.44	98.03	95.049
High	916	183.6	132.91

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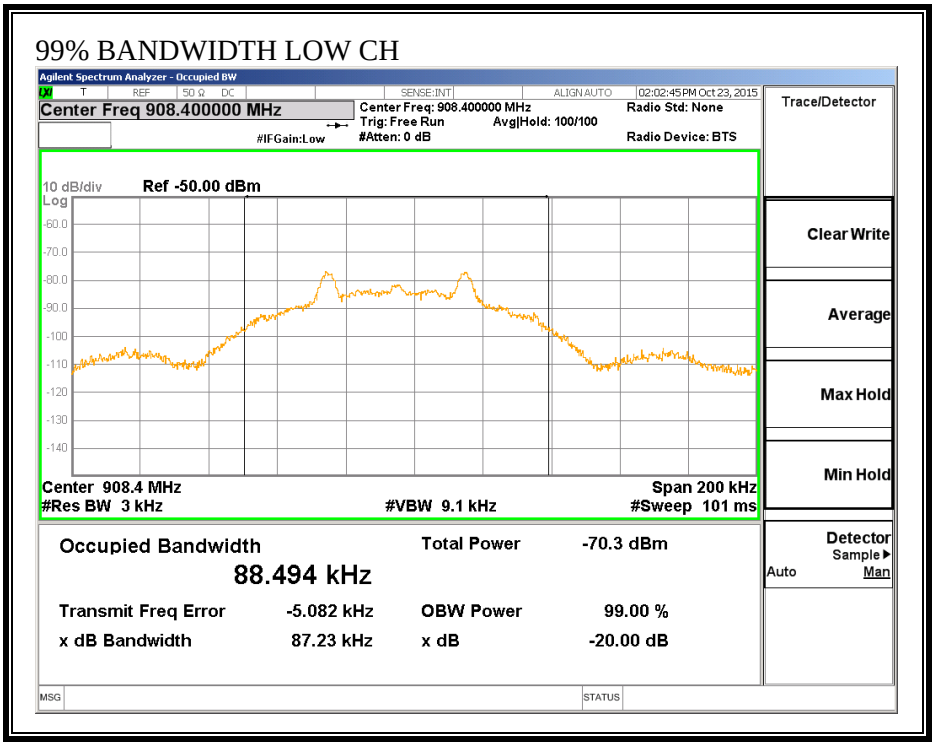
7.1.4. 99% BANDWIDTH



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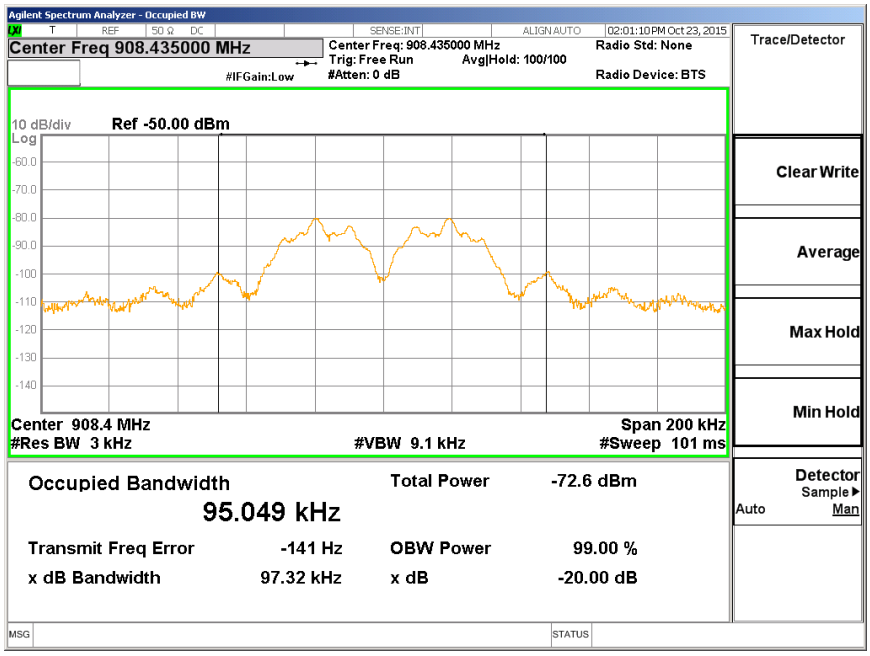
99% BANDWIDTH MID CH



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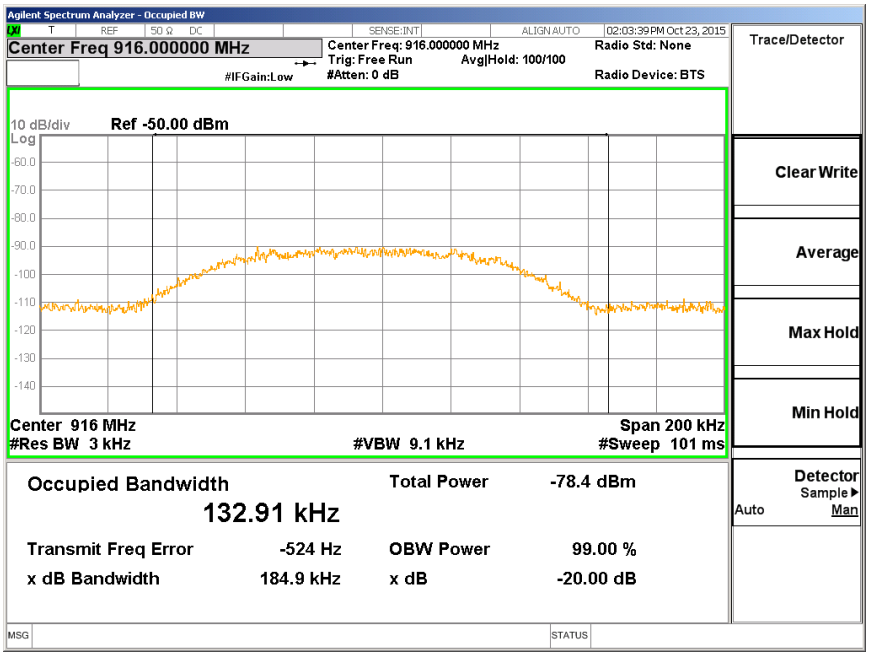
99% BANDWIDTH HIGH CH



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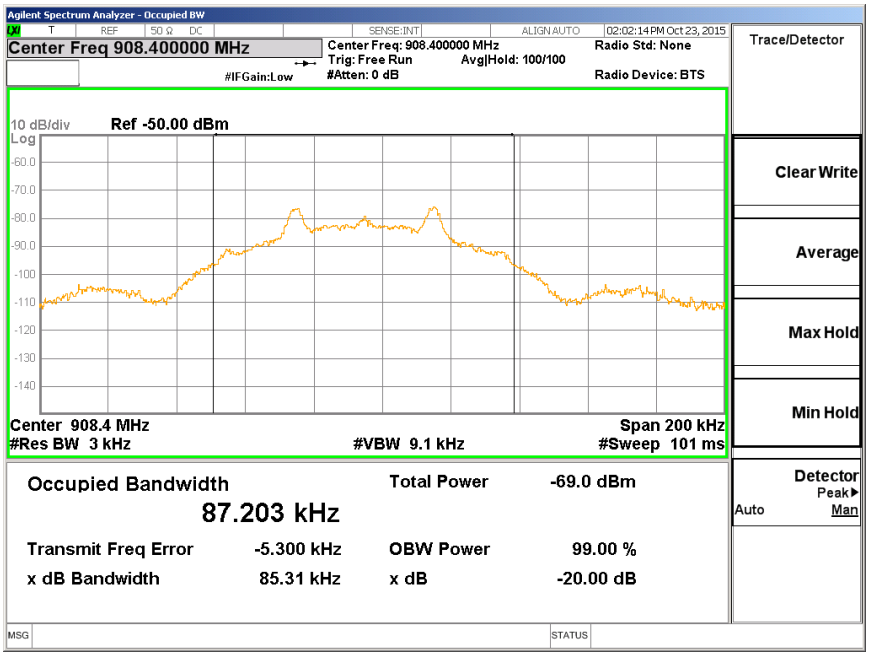
7.1.5. 20dB BANDWIDTH

20dB BANDWIDTH LOW CH



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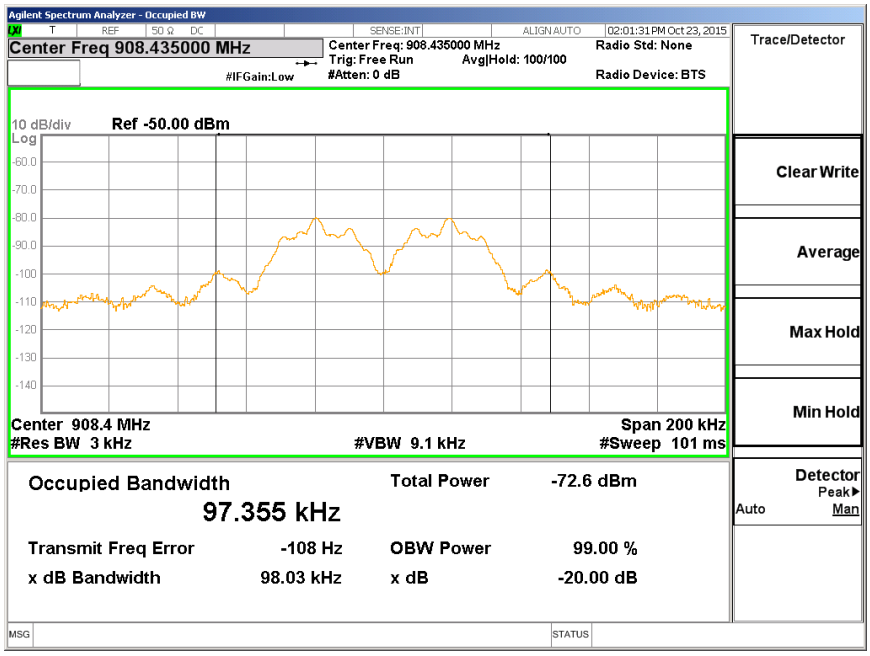
20dB BANDWIDTH MID CH



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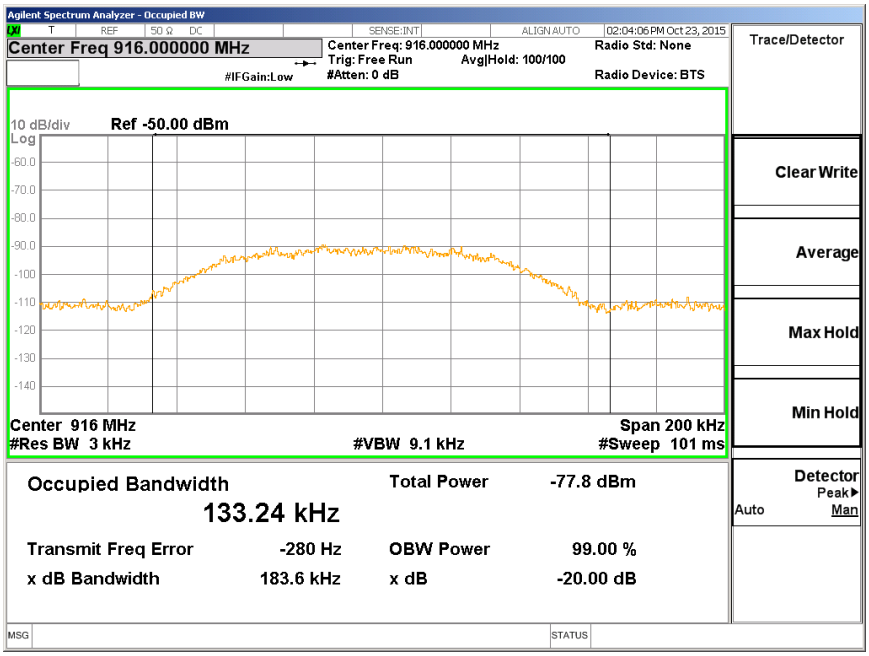
20dB BANDWIDTH HIGH CH



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7.2. RADIATED EMISSIONS

LIMIT

IC RSS-210, A2.9
FCC 15.249

Operation within the bands 902–928 MHz, 2400–2483.5 MHz, 5725–5875 MHZ, and 24.0–24.25 GHz.
(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:

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902–928 MHz	50	500
2400–2483.5 MHz	50	500
5725–5875 MHz	50	500
24.0–24.25 GHz	250	2500

(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 § 15.209, whichever is the lesser attenuation.

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009–0.490	2400/F(kHz)	300
0.490–1.705	24000/F(kHz)	30
1.705–30.0	30	30
30–88	100 **	3
88–216	150 **	3
216–960	200 **	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54–72 MHz, 76–88 MHz, 174–216 MHz or 470–806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§15.231 and 15.241.

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RESULTS

C63.10 sect. 4.1.4.2.3(e) Average voltage measurements using spectrum analyzer reduced video bandwidth

PK: RBW 1MHz, VBW 1MHz
AV: RBW 1MHz, VBW 10Hz

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7.2.1. FUNDAMENTAL FREQUENCY RADIATED EMISSION

Fibar
Roller Shutter 2
TX Fundamentals, Power Setting: -8dBm
120Vac 60Hz

Test Frequency (MHz)	Meter Reading (dBuV)	Detector	Antenna Factor (dB/m)	Gain/Loss (dBm)	Corrected Reading dB(uVolts/ meter)	TX PK Limit	Margin (dB)	TX Avg Limit	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
908.3745	58.61	Pk	23.3	10.3	92.21	114	-21.79	94	-	131	101	H
908.3745	58.4	Qp	23.3	10.3	92	114	-	94	-2	131	101	H
908.3745	58.13	Pk	23.3	10.3	91.73	114	-22.27	94	-	258	107	V
908.3745	58.08	Qp	23.3	10.3	91.68	114	-	94	-2.32	258	107	V
908.456	60.4	Pk	23.3	10.3	94	114	-20	94	-	301	151	H
908.456	60.2	Qp	23.3	10.3	93.8	114	-	94	-0.2	301	151	H
908.456	56.79	Pk	23.3	10.3	90.39	114	-23.61	94	-	278	109	V
908.456	56.9	Qp	23.3	10.3	90.5	114	-	94	-3.5	278	109	V
915.9655	59.74	Pk	23.4	10.3	93.44	114	-20.56	94	-	255	153	H
915.9655	59.99	Qp	23.4	10.3	93.69	114	-	94	-0.31	255	153	H
915.968	54.48	Pk	23.4	10.3	88.18	114	-25.82	94	-	154	199	V
915.968	54.66	Qp	23.4	10.3	88.36	114	-	94	-5.64	154	199	V

Pk - Peak detector
Qp - Quasi-Peak detector

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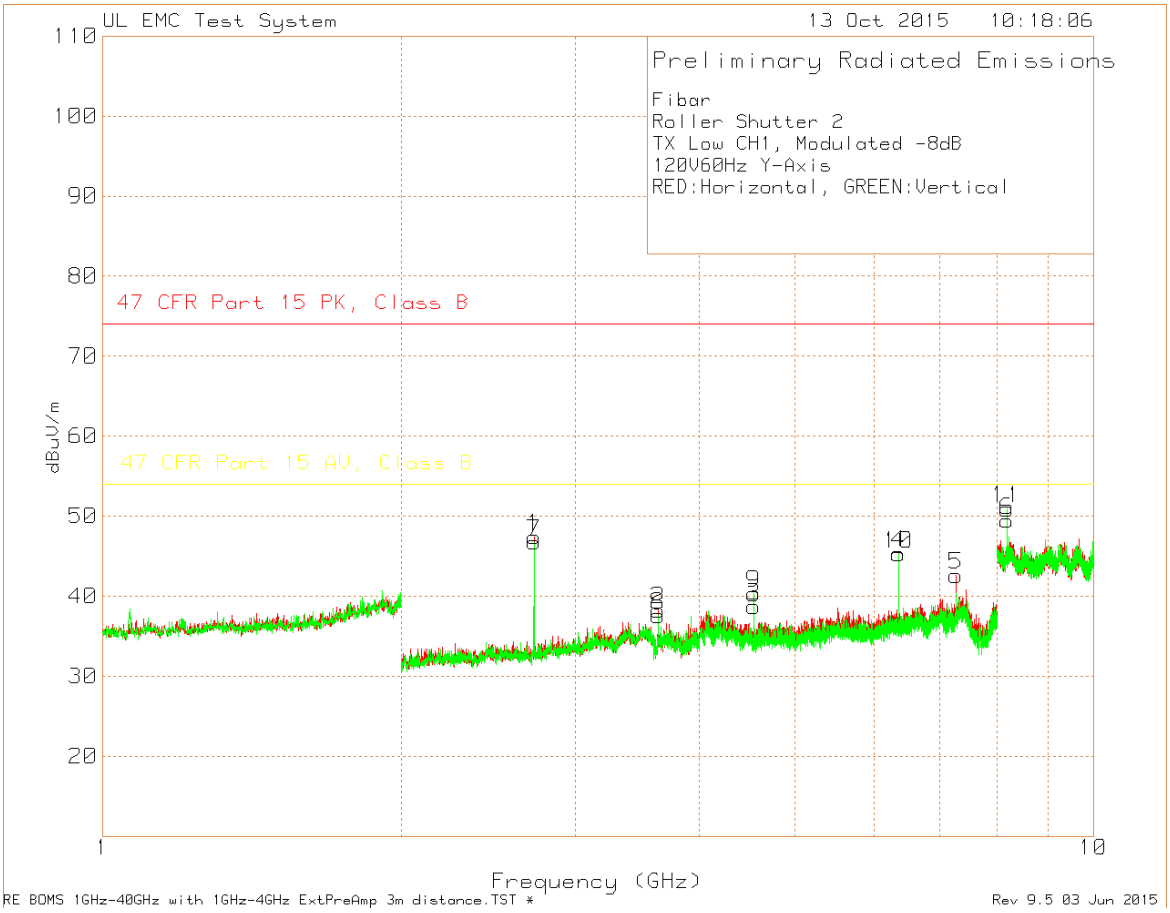
7.2.2. HARMONICS AND SPURIOUS EMISSIONS ABOVE 1GHz

Transmitter Low Channel - PLOT



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Transmitter Low Channel - DATA

Fibar
Roller Shutter 2
TX Low CH1, Modulated -8dB
120V60Hz Y-Axis
RED:Horizontal, GREEN:Vertical
Trace Markers

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	Antenna Factor (dBm)	Gain/Loss (dBm)	Corrected Reading dB(uVolts/meter)	Pk Limit	Margin (dB)	Avg Limit	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	2.725	76.67	Pk	22.1	-51.3	47.44	74	-26.56	54	-6.56	0-360	100	H
2	3.634	65.37	Pk	23.3	-50.4	38.3	74	-35.7	54	-15.7	0-360	150	H
3	4.542	62.88	Pk	27.8	-52	38.73	74	-35.27	54	-15.27	0-360	149	H
4	6.359	63.18	Pk	29.2	-47	45.35	74	-28.65	54	-8.65	0-360	149	H
5	7.268	58.5	Pk	30.2	-46.1	42.59	74	-31.41	54	-11.41	0-360	149	H
6	8.176	61.39	Pk	36.3	-48.2	49.46	74	-24.54	54	-4.54	0-360	100	H
7	2.725	75.98	Pk	22.1	-51.3	46.75	74	-27.25	54	-7.25	0-360	100	V
8	3.634	64.65	Pk	23.3	-50.4	37.58	74	-36.42	54	-16.42	0-360	100	V
9	4.542	64.49	Pk	27.8	-52	40.34	74	-33.66	54	-13.66	0-360	150	V
10	6.359	63.08	Pk	29.2	-47	45.25	74	-28.75	54	-8.75	0-360	150	V
11	8.176	62.86	Pk	36.3	-48.2	50.93	74	-23.07	54	-3.07	0-360	100	V

Measurements

Test Frequency (MHz)	Meter Reading (dBuV)	Detector	Antenna Factor (dBm)	Gain/Loss (dBm)	Corrected Reading dB(uVolts/meter)	Pk Limit	Margin (dB)	Avg Limit	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
8.1754	65.31	Pk	36.3	-48.3	53.35	74	-20.65	-	-	20	100	H
8.1755	59.03	Av	36.3	-48.3	47.08	-	-	54	-6.92	20	100	H
8.1754	66.4	Pk	36.3	-48.3	54.44	74	-19.56	-	-	130	100	V
8.1755	59.52	Av	36.3	-48.3	47.57	-	-	54	-6.43	130	100	V

Pk - Peak detector
Av - Average detection

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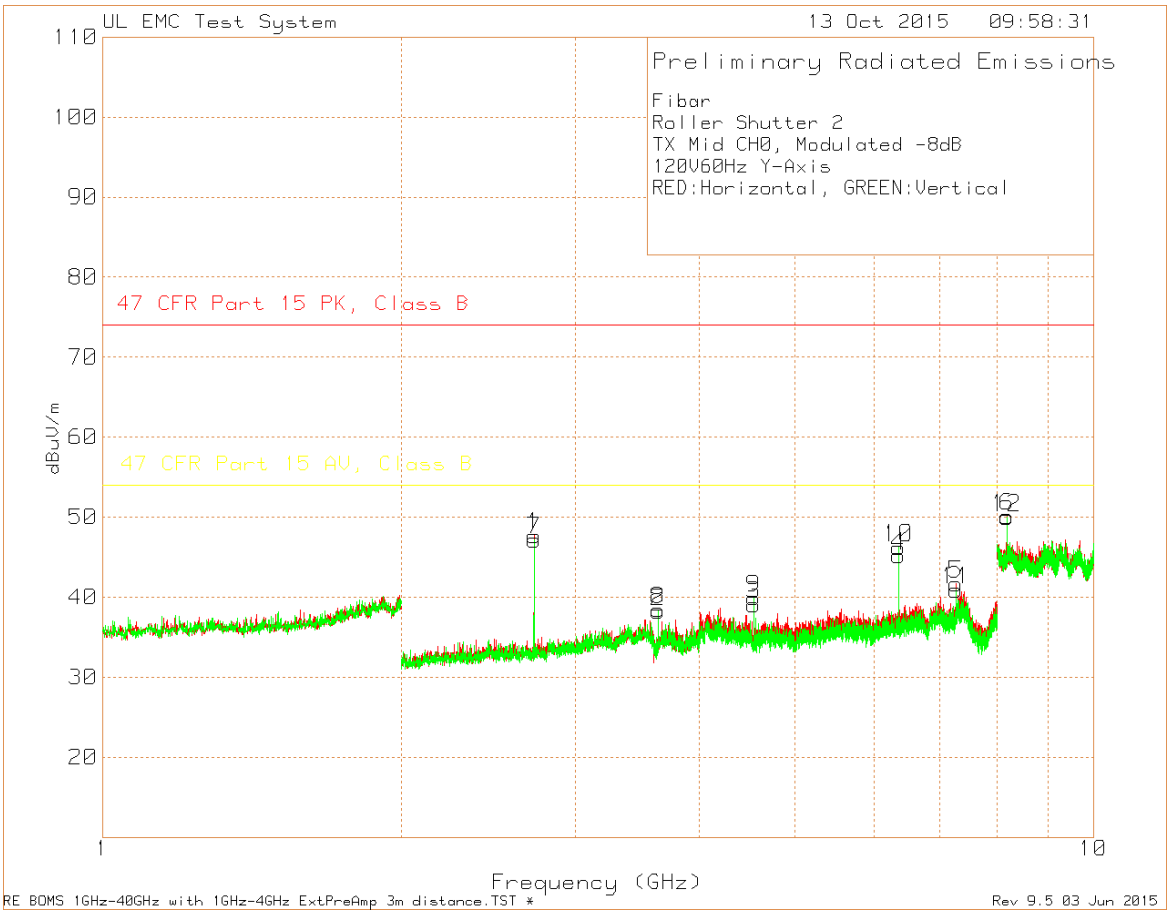
Transmitter Mid Channel - PLOT



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Transmitter Mid Channel - DATA

Fibar
Roller Shutter 2
TX Mid CH0, Modulated -8dB
120V60Hz Y-Axis
RED:Horizontal, GREEN:Vertical
Trace Markers

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	Antenna Factor (dBm)	Gain/Loss (dBm)	Corrected Reading dB(uVolts/meter)	Pk Limit	Margin (dB)	Avg Limit	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	2.725	76.91	Pk	22.1	-51.3	47.68	74	-26.32	54	-6.32	0-360	100	H
2	3.634	65.3	Pk	23.3	-50.4	38.23	74	-35.77	54	-15.77	0-360	100	H
3	4.542	63.25	Pk	27.8	-52	39.1	74	-34.9	54	-14.9	0-360	100	H
4	6.359	63.03	Pk	29.2	-47	45.2	74	-28.8	54	-8.8	0-360	149	H
5	7.268	57.57	Pk	30.2	-46.1	41.66	74	-32.34	54	-12.34	0-360	100	H
6	8.176	62.04	Pk	36.3	-48.2	50.11	74	-23.89	54	-3.89	0-360	100	H
7	2.725	76.37	Pk	22.1	-51.3	47.14	74	-26.86	54	-6.86	0-360	100	V
8	3.634	65.5	Pk	23.3	-50.4	38.43	74	-35.57	54	-15.57	0-360	100	V
9	4.542	64.06	Pk	27.8	-52	39.91	74	-34.09	54	-14.09	0-360	150	V
10	6.359	64.03	Pk	29.2	-47	46.2	74	-27.8	54	-7.8	0-360	150	V
11	7.268	56.83	Pk	30.2	-46.1	40.92	74	-33.08	54	-13.08	0-360	100	V
12	8.176	61.89	Pk	36.3	-48.2	49.96	74	-24.04	54	-4.04	0-360	100	V

Measurements

Test Frequency (MHz)	Meter Reading (dBuV)	Detector	Antenna Factor (dBm)	Gain/Loss (dBm)	Corrected Reading dB(uVolts/meter)	Pk Limit	Margin (dB)	Avg Limit	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
8.1762	65.49	Pk	36.3	-48.2	53.57	74	-20.43	-	-	16	100	H
8.1759	59.11	Av	36.3	-48.2	47.17	-	-	54	-6.83	16	100	H
8.1762	66.15	Pk	36.3	-48.2	54.23	74	-19.77	-	-	130	100	V
8.1759	59.62	Av	36.3	-48.2	47.69	-	-	54	-6.31	130	100	V

Pk - Peak detector
Av - Average detection

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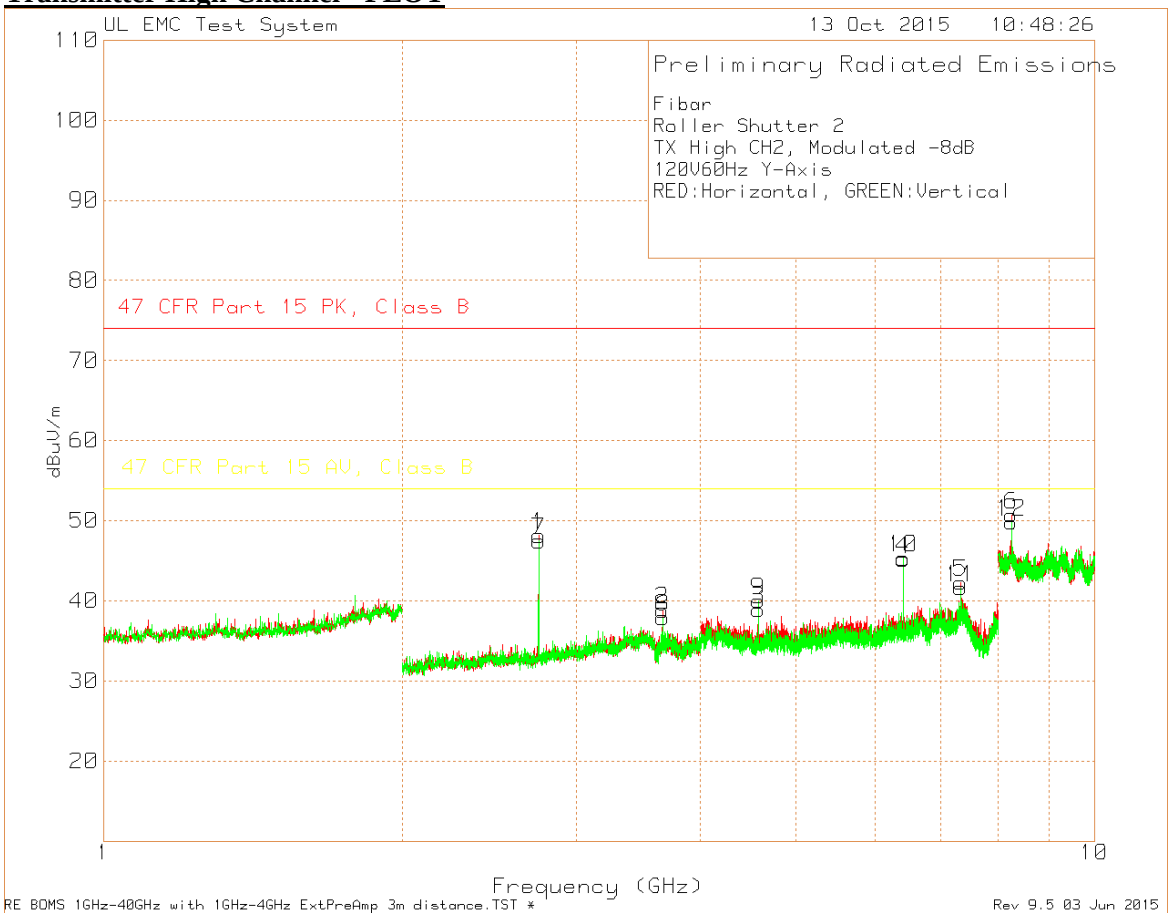
Transmitter High Channel - PLOT



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Transmitter High Channel - DATA

Fibar
Roller Shutter 2
TX High CH2, Modulated -8dB
120V60Hz Y-Axis
RED:Horizontal, GREEN:Vertical
Trace Markers

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	Antenna Factor (dBm)	Gain/Loss (dBm)	Corrected Reading dB(uVolts/meter)	Pk Limit	Margin (dB)	Avg Limit	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	2.748	77.3	Pk	22.1	-51.2	48.16	74	-25.84	54	-5.84	0-360	100	H
2	3.664	65.05	Pk	23.4	-49.6	38.86	74	-35.14	54	-15.14	0-360	150	H
3	4.58	63.04	Pk	27.7	-51.8	38.9	74	-35.1	54	-15.1	0-360	100	H
4	6.412	63.2	Pk	29.2	-47.2	45.18	74	-28.82	54	-8.82	0-360	149	H
5	7.329	57.56	Pk	30.7	-46	42.31	74	-31.69	54	-11.69	0-360	100	H
6	8.244	61.36	Pk	36.4	-47	50.73	74	-23.27	54	-3.27	0-360	100	H
7	2.748	76.65	Pk	22.1	-51.2	47.51	74	-26.49	54	-6.49	0-360	100	V
8	3.665	64.13	Pk	23.4	-49.6	37.96	74	-36.04	54	-16.04	0-360	150	V
9	4.58	64.18	Pk	27.7	-51.8	40.04	74	-33.96	54	-13.96	0-360	100	V
10	6.413	63.34	Pk	29.2	-47.2	45.32	74	-28.68	54	-8.68	0-360	150	V
11	7.329	56.87	Pk	30.7	-46	41.62	74	-32.38	54	-12.38	0-360	100	V
12	8.244	60.46	Pk	36.4	-47	49.83	74	-24.17	54	-4.17	0-360	100	V

Measurements

Test Frequency (MHz)	Meter Reading (dBuV)	Detector	Antenna Factor (dBm)	Gain/Loss (dBm)	Corrected Reading dB(uVolts/meter)	Pk Limit	Margin (dB)	Avg Limit	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
2.7478	77.57	Pk	22.1	-51.2	48.43	74	-25.57	-	-	73	100	H
2.748	76.27	Av	22.1	-51.2	47.13	-	-	54	-6.87	73	100	H
8.2442	65.22	Pk	36.4	-47	54.59	74	-19.41	-	-	25	100	H
8.244	58.56	Av	36.4	-47	47.93	-	-	54	-6.07	25	100	H
8.244	65.44	Pk	36.4	-47	54.81	74	-19.19	-	-	129	100	V
8.2439	57.78	Av	36.4	-47	47.16	-	-	54	-6.84	129	100	V

Pk - Peak detector
Av - Ave

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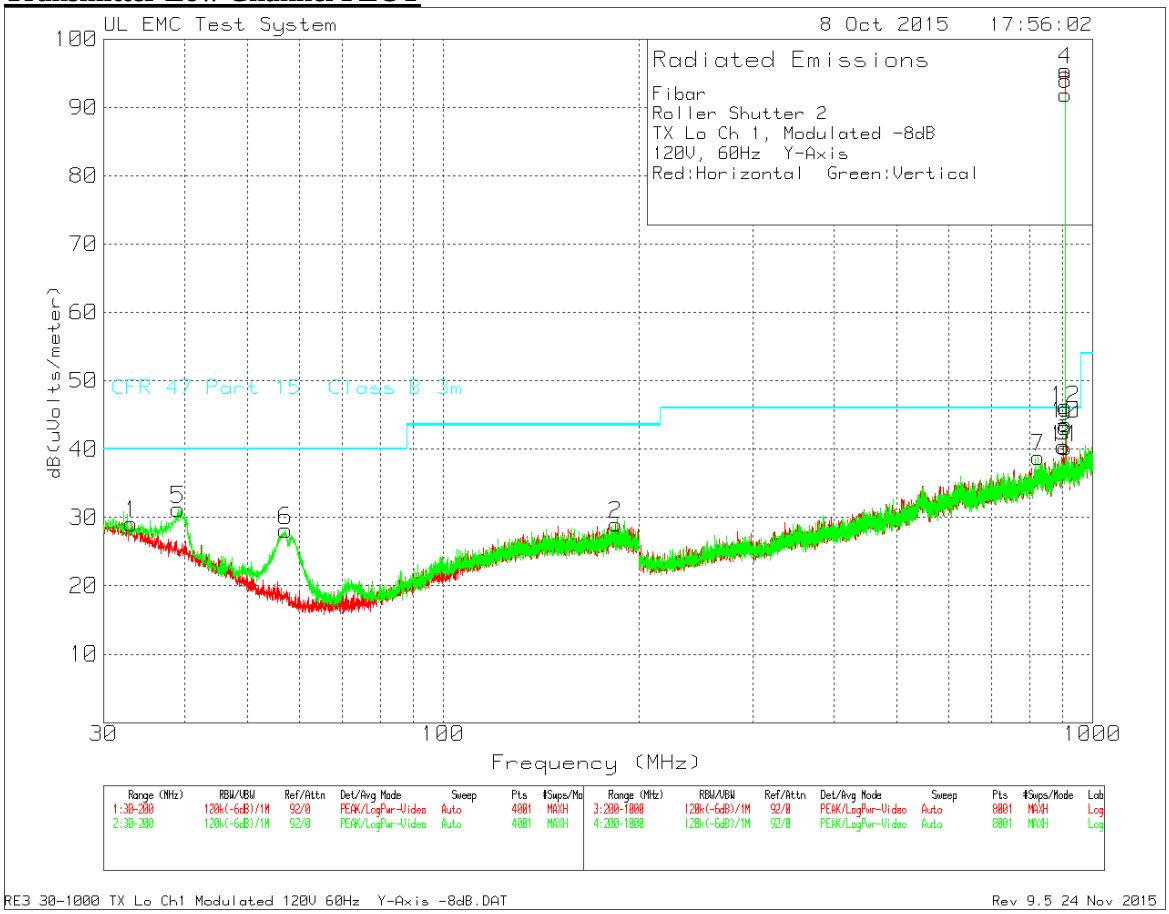
7.2.3. SPURIOUS EMISSIONS BELOW 1 GHz

SPURIOUS EMISSIONS 30 TO 1000 MHz

Transmitter Low Channel PLOT



All visible emissions are at least 6dB below the limit or under the noise floor, therefore no further measurement needed.

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Transmitter Low Channel - Data

Fibar
Roller Shutter 2
TX Lo Ch 1, Modulated -8dB
120V, 60Hz Y-Axis
Red:Horizontal Green:Vertical

Marker No.	Test Frequency (MHz)	Meter Reading dBuV	Detector	Antenna Factor dB/m	Cable Gain/Loss dBm	10m to 3m Factor dB	Corrected Reading dB(uVolts/ meter)	Qpk Limit	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	33.1025	32.03	Pk	16.8	-30.2	10.5	29.13	40	-10.87	0-360	248	H
2	184.3175	31.64	Pk	16.1	-29.2	10.5	29.04	43.52	-14.48	0-360	248	H
5	39.0525	36.5	Pk	14.3	-30.1	10.5	31.2	40	-8.8	0-360	101	V
6	57.2425	41.03	Pk	6.7	-30.1	10.5	28.13	40	-11.87	0-360	251	V
3	901.6	33.22	Pk	23	-26.3	10.5	40.42	46.02	-5.6	0-360	101	H
4	908.5	88.68	Pk	23.1	-26.8	10.5	95.48	46.02	49.46	0-360	101	H
9	907.8	36.52	Pk	23.1	-26.9	10.5	43.22	46.02	-2.8	0-360	101	H
10	909.1	36.71	Pk	23.2	-26.8	10.5	43.61	46.02	-2.41	0-360	101	H
7	825	32.32	Pk	22.6	-26.6	10.5	38.82	46.02	-7.2	0-360	302	V
8	908.4	85.08	Pk	23.1	-26.8	10.5	91.88	46.02	45.86	0-360	199	V
11	907.9	33.52	Pk	23.1	-26.9	10.5	40.22	46.02	-5.8	0-360	199	V
12	908.9	39	Pk	23.2	-26.8	10.5	45.9	46.02	-0.12	0-360	199	V

Pk - Peak detector

All visible emissions are at least 6dB below the limit or under the noise floor, therefore no further measurement needed.

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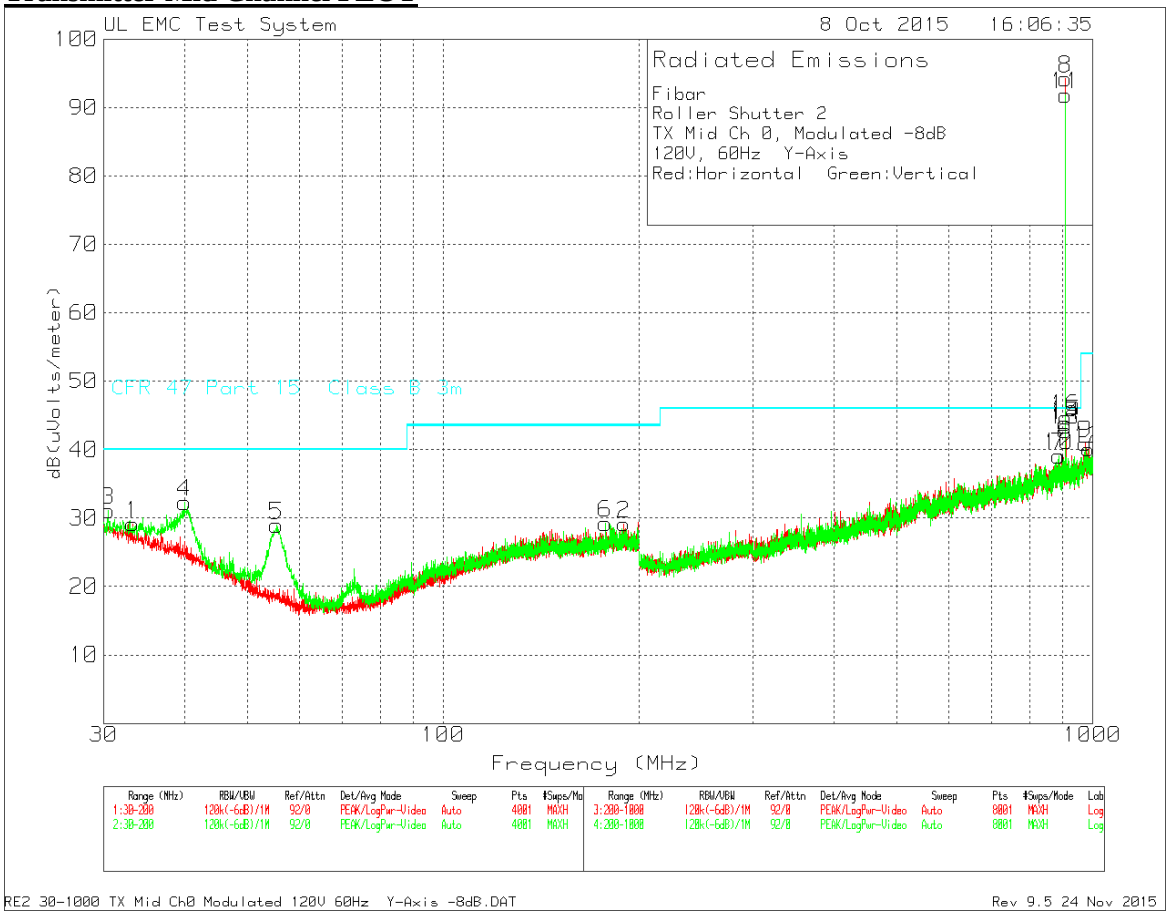
Transmitter Mid Channel PLOT



All visible emissions are at least 6dB below the limit or under the noise floor, therefore no further measurement needed.

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Transmitter Mid Channel - Data

Fibar
Roller Shutter 2
TX Mid Ch 0, Modulated -8dB
120V, 60Hz Y-Axis
Red:Horizontal Green:Vertical

Marker No.	Test Frequency (MHz)	Meter Reading dBuV	Detector	Antenna Factor dB/m	Cable Gain/Loss dBm	10m to 3m Factor dB	Corrected Reading dB(uVolts/ meter)	Qpk Limit	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	33.2725	32.18	Pk	16.7	-30.2	10.5	29.18	40	-10.82	0-360	399	H
2	189.8	31.75	Pk	16	-29.1	10.5	29.15	43.52	-14.37	0-360	248	H
3	30.4675	32.81	Pk	18	-30.2	10.5	31.11	40	-8.89	0-360	101	V
4	39.9875	38.11	Pk	13.9	-30.2	10.5	32.31	40	-7.69	0-360	101	V
5	55.3725	41.26	Pk	7.3	-30.1	10.5	28.96	40	-11.04	0-360	251	V
6	177.815	32.37	Pk	15.8	-29.4	10.5	29.27	43.52	-14.25	0-360	399	V
7	886.5	31.92	Pk	22.8	-26.1	10.5	39.12	46.02	-6.9	0-360	399	H
8	908.5	87.4	Pk	23.1	-26.8	10.5	94.2	46.02	48.18	0-360	102	H
9	974.8	31.51	Pk	24.2	-25.3	10.5	40.91	53.97	-13.06	0-360	299	H
13	907.9	36.12	Pk	23.1	-26.9	10.5	42.82	46.02	-3.2	0-360	102	H
14	909.1	36.59	Pk	23.2	-26.8	10.5	43.49	46.02	-2.53	0-360	102	H
10	887.4	32	Pk	22.8	-26.2	10.5	39.1	46.02	-6.92	0-360	199	V
11	908.5	85.05	Pk	23.1	-26.8	10.5	91.85	46.02	45.83	0-360	199	V
12	985.2	30.57	Pk	23.8	-24.8	10.5	40.07	53.97	-13.9	0-360	399	V
15	908	37.18	Pk	23.1	-26.9	10.5	43.88	46.02	-2.14	0-360	399	V
16	909	37.82	Pk	23.2	-26.8	10.5	44.72	46.02	-1.3	0-360	399	V

Pk - Peak detector

All visible emissions are at least 6dB below the limit or under the noise floor, therefore no further measurement needed.

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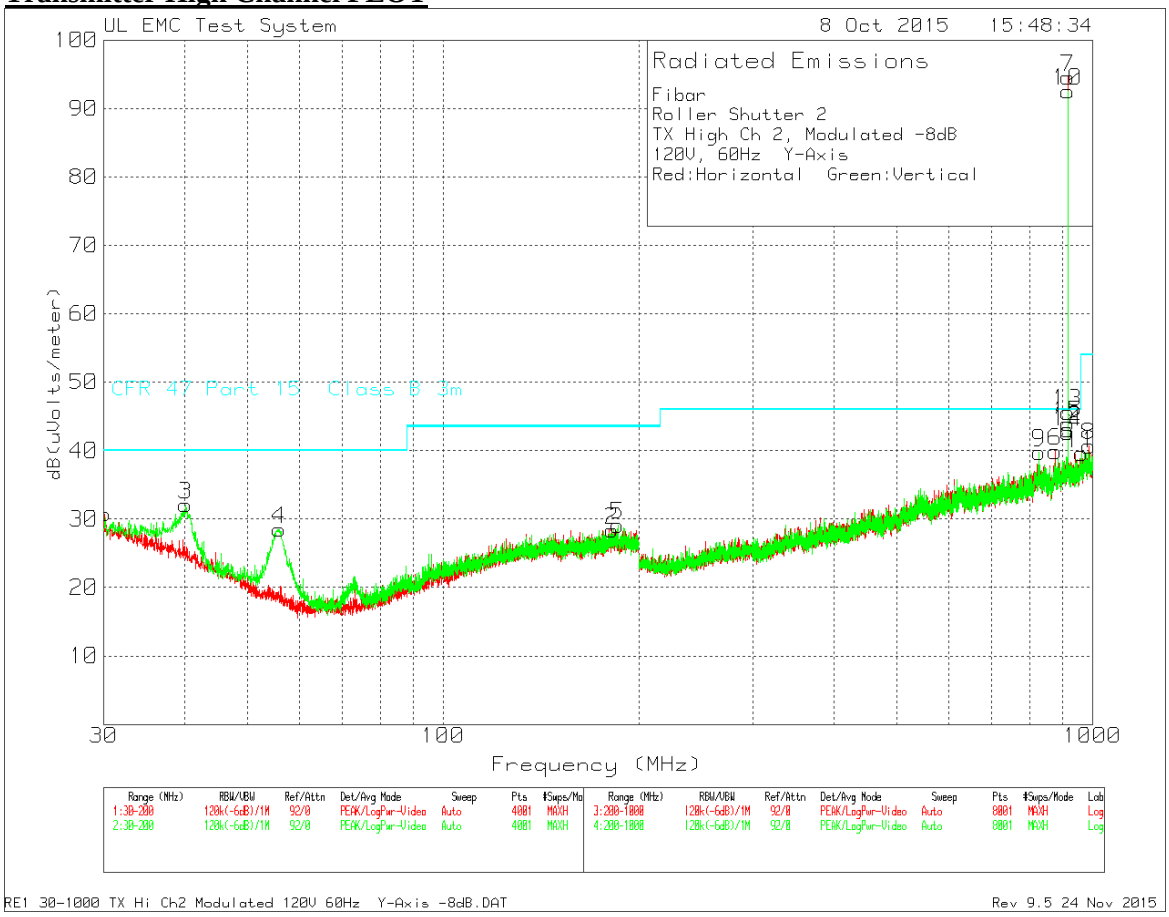
Transmitter High Channel PLOT



All visible emissions are at least 6dB below the limit or under the noise floor, therefore no further measurement needed.

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Transmitter High Channel - Data

Fibar
Roller Shutter 2
TX High Ch 2, Modulated -8dB
120V, 60Hz Y-Axis
Red:Horizontal Green:Vertical

Marker No.	Test Frequency (MHz)	Meter Reading dBuV	Detector	Antenna Factor dB/m	Cable Gain/Loss dBm	10m to 3m Factor dB	Corrected Reading dB(uVolts/ meter)	Qpk Limit	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	30.085	32.25	Pk	18.2	-30.2	10.5	30.75	40	-9.25	0-360	102	H
2	182.065	31.19	Pk	16	-29.3	10.5	28.39	43.52	-15.13	0-360	398	H
3	40.115	37.99	Pk	13.8	-30.2	10.5	32.09	40	-7.91	0-360	102	V
4	55.925	41.11	Pk	7	-30.1	10.5	28.51	40	-11.49	0-360	248	V
5	185.6775	31.81	Pk	16	-29.2	10.5	29.11	43.52	-14.41	0-360	102	V
6	875.6	33.31	Pk	22.7	-26.6	10.5	39.91	46.02	-6.11	0-360	100	H
7	916.1	87.27	Pk	23	-26.2	10.5	94.57	46.02	48.55	0-360	299	H
8	987	30.99	Pk	23.8	-24.6	10.5	40.69	53.97	-13.28	0-360	100	H
12	915.6	35.67	Pk	23	-26.1	10.5	43.07	46.02	-2.95	0-360	100	H
13	916.5	38.33	Pk	23	-26.2	10.5	45.63	46.02	-0.39	0-360	100	H
9	827.6	33.04	Pk	22.5	-26.3	10.5	39.74	46.02	-6.28	0-360	299	V
10	916	85.23	Pk	23	-26.2	10.5	92.53	46.02	46.51	0-360	199	V
11	961.2	31.48	Pk	23.5	-25.9	10.5	39.58	53.97	-14.39	0-360	299	V
14	915.6	35.31	Pk	23	-26.1	10.5	42.71	46.02	-3.31	0-360	199	V
15	916.4	36.67	Pk	23	-26.2	10.5	43.97	46.02	-2.05	0-360	199	V

Pk - Peak detector

All visible emissions are at least 6dB below the limit or under the noise floor, therefore no further measurement needed.

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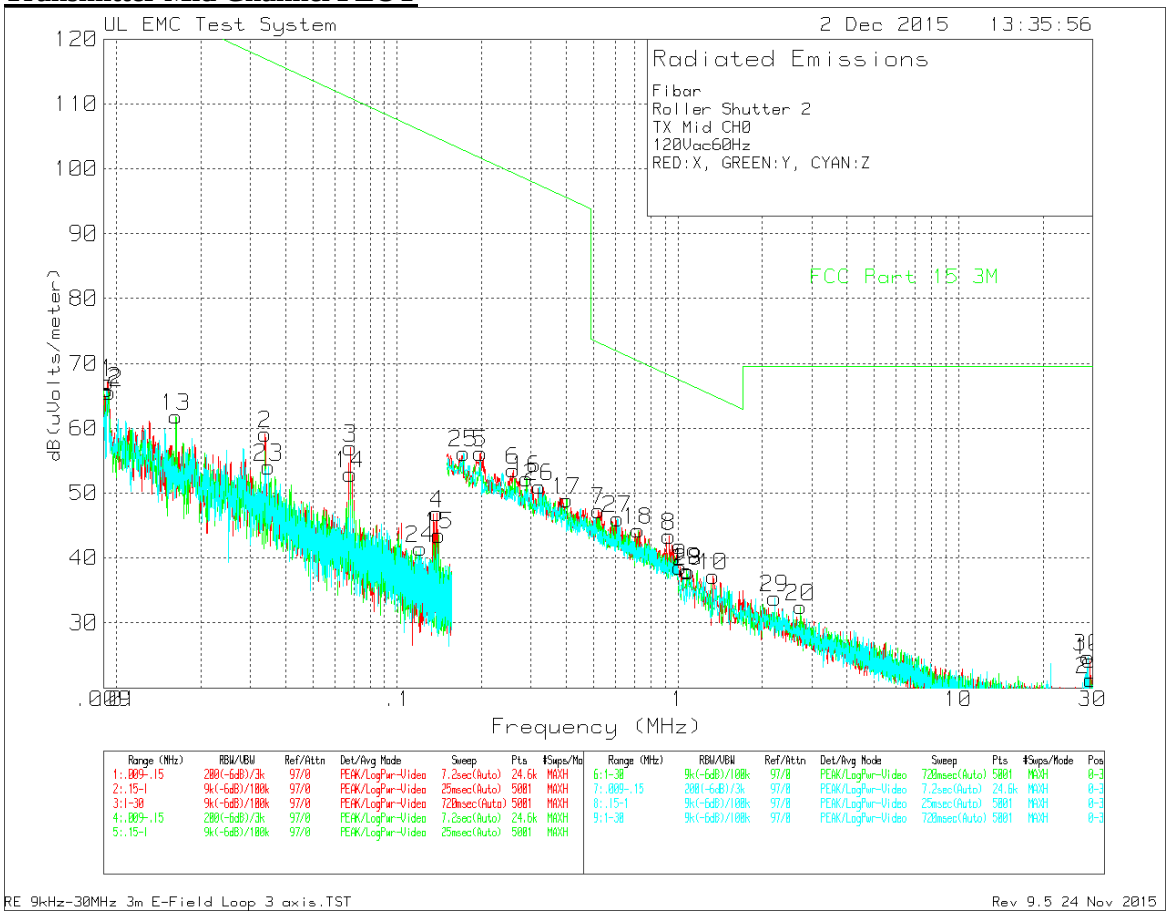
SPURIOUS EMISSIONS 9 kHz TO 30 MHz

Transmitter Mid Channel PLOT



All visible emissions are at least 6dB below the limit or under the noise floor, therefore no further measurement needed.

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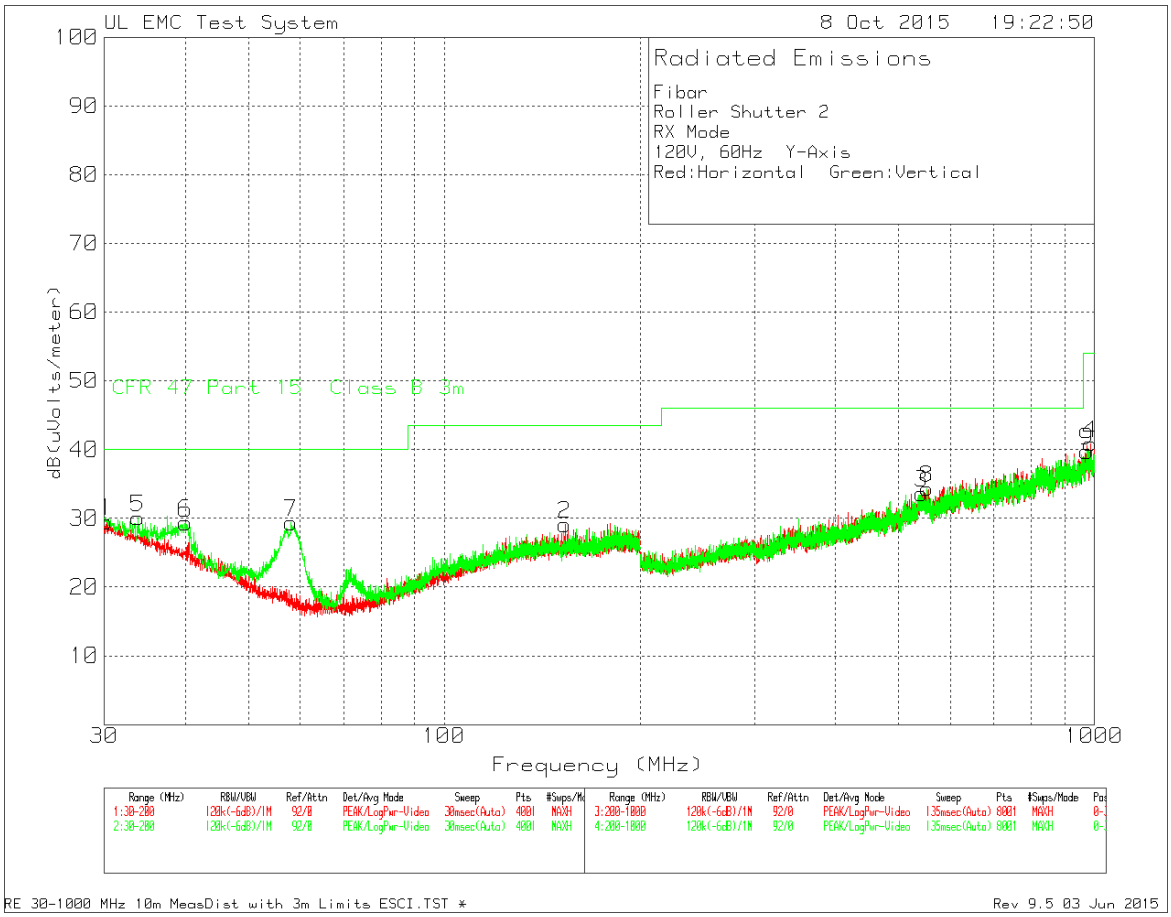
7.2.4. SPURIOUS EMISSIONS Transmitter RX

Transmitter RX Radiated Emissions 30 MHz – 1000MHz



All visible emissions are at least 6dB below the limit or under the noise floor, therefore no further measurement needed.

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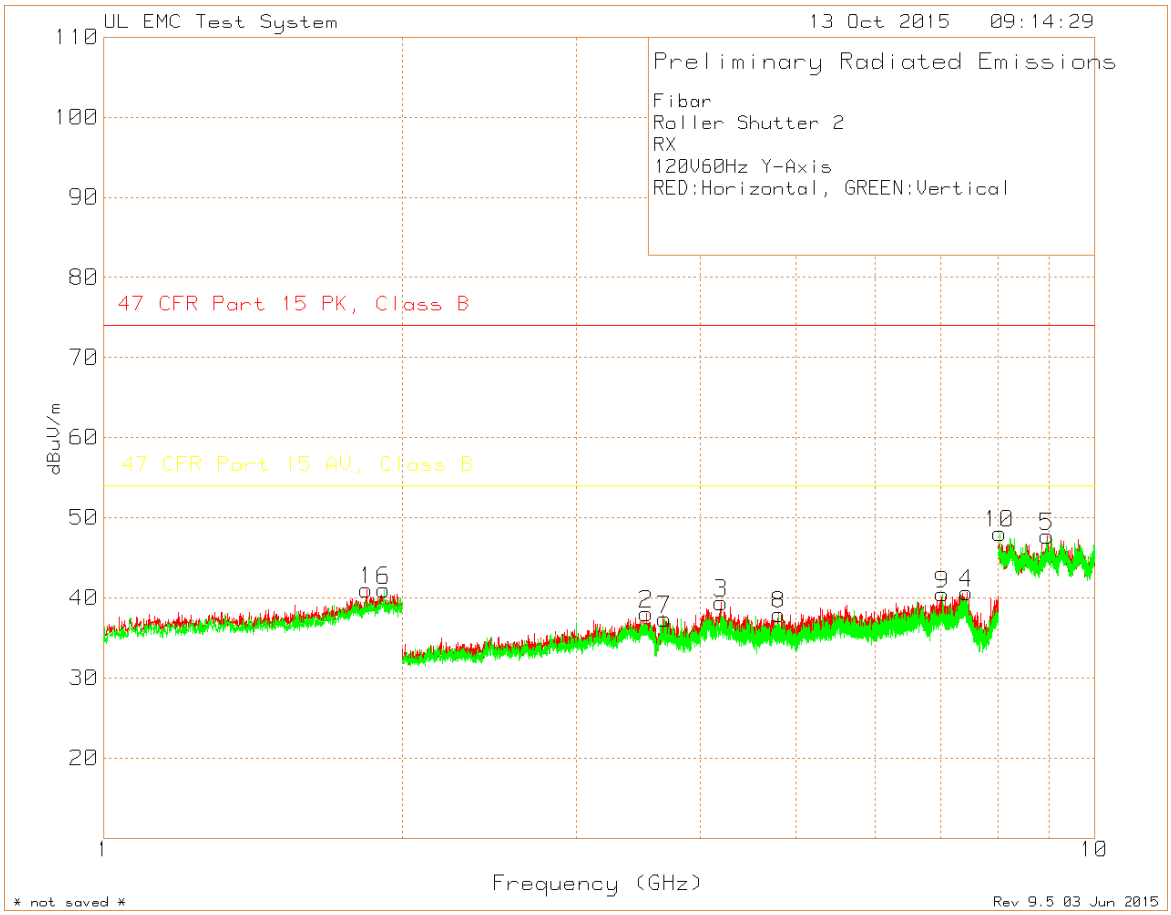
Transmitter RX Radiated Emissions 1 GHz – 10GHz



All visible emissions are at least 6dB below the limit or under the noise floor, therefore no further measurement needed.

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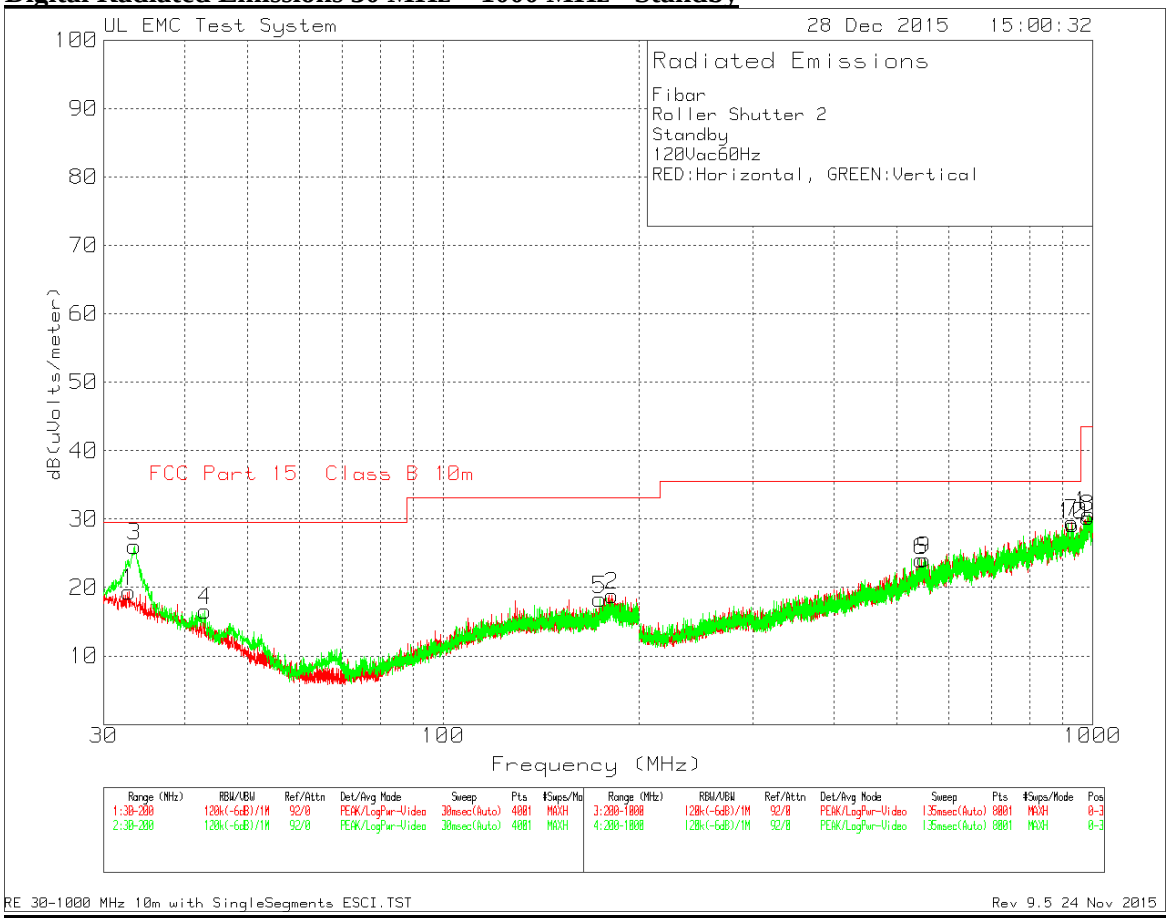
7.2.5. Digital Radiated Emissions

Digital Radiated Emissions 30 MHz – 1000 MHz - Standby



Fibar
Roller Shutter 2
Standby
120Vac60Hz
RED:Horizontal, GREEN:Vertical

Test Frequency (MHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Cable Gain/Loss dBm	Corrected Reading dB(uVolts/ meter)	Class B 10m Limit	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
33.5435	35.03	Qp	16.8	-30.2	21.63	29.55	-7.92	21	101	V

Qp - Quasi-Peak detector

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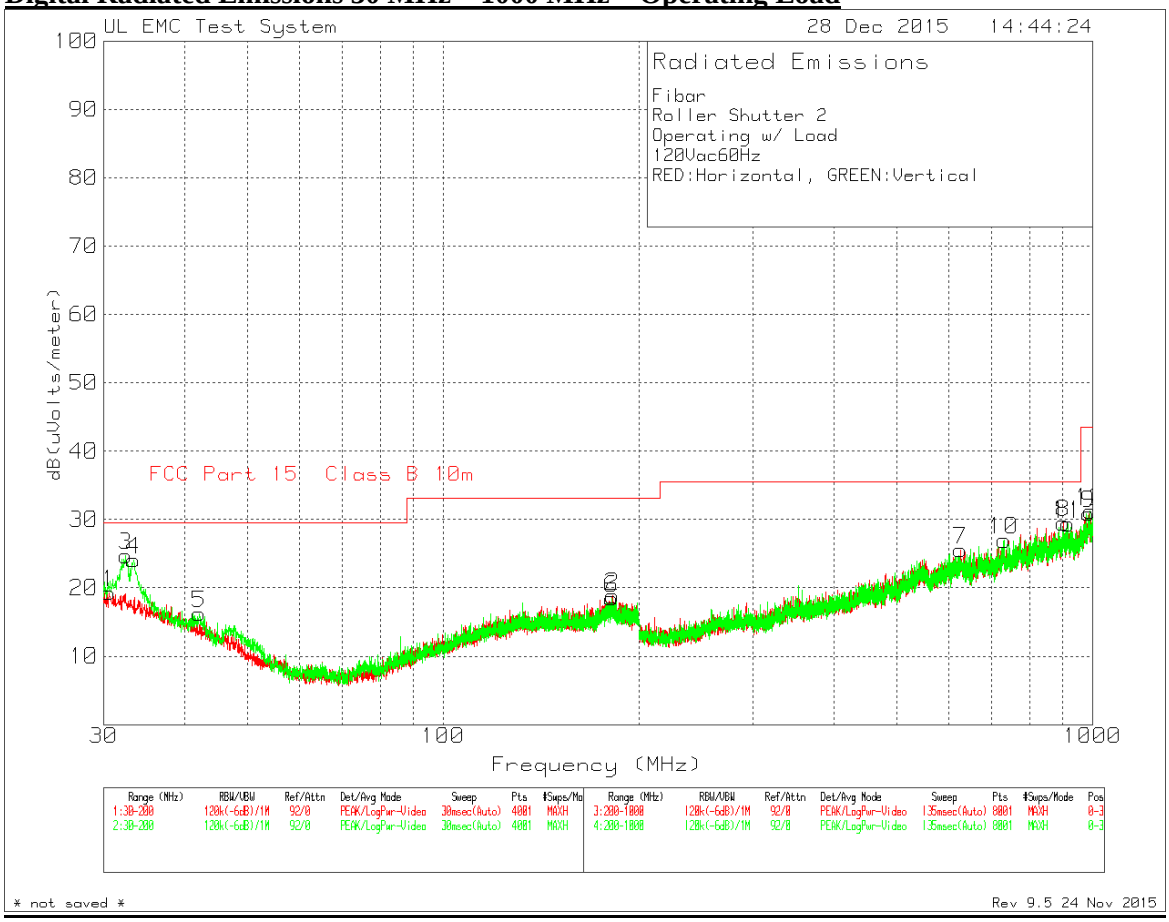
Digital Radiated Emissions 30 MHz – 1000 MHz – Operating Load



Fibar
Roller Shutter 2
Operating w/ Load
120Vac60Hz
RED:Horizontal, GREEN:Vertical

Test Frequency (MHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Cable Gain/Loss dBm	Corrected Reading dB(uVolts/ meter)	Class B 10m Limit	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
32.41875	32.72	Qp	17.2	-30.2	19.72	29.55	-9.83	265	102	V
33.33278	33.01	Qp	16.9	-30.2	19.71	29.55	-9.84	19	101	V

Qp - Quasi-Peak detector

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7.3. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 8.8

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4.

The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

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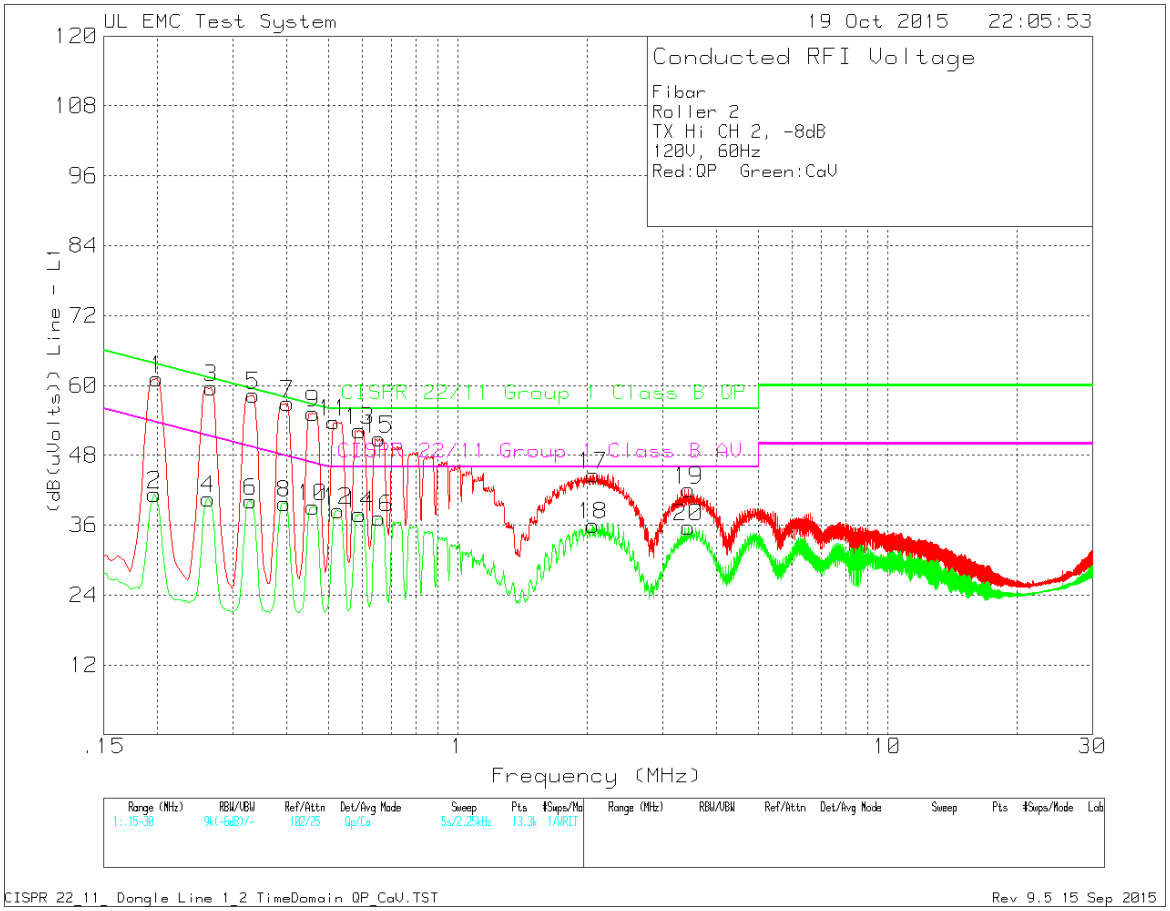
7.3.1. AC POWER LINE CONDUCTED EMISSIONS Transmitter

LINE 1 PLOT – TX Mode



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LINE 1 DATA – TX Mode

Fibar
Roller 2
TX Hi CH 2, -8dB
120V, 60Hz
Red:QP Green:CaV

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	LISN 1 Factors dBm	Cable Gain/Loss dbm	Corrected Reading dB(uVolts)	Class B QP Limit	Margin (dB)	Class B AV Limit	Margin (dB)
1	0.1995	49.64	Qp	0.1	11.4	61.14	63.63	-2.49	-	-
2	0.19725	29.78	Ca	0.1	11.4	41.28	-	-	53.73	-12.45
3	0.267	48.44	Qp	0.1	11.1	59.64	61.21	-1.57	-	-
4	0.2625	29.38	Ca	0.1	11.1	40.58	-	-	51.35	-10.77
5	0.3345	47.44	Qp	0.1	10.8	58.34	59.34	-1	-	-
6	0.33	29.27	Ca	0.1	10.8	40.17	-	-	49.45	-9.28
7	0.402	46.13	Qp	0.1	10.7	56.93	57.81	-0.88	-	-
8	0.39525	28.99	Ca	0.1	10.7	39.79	-	-	47.95	-8.16
9	0.4605	44.47	Qp	0.1	10.7	55.27	56.68	-1.41	-	-
10	0.4605	28.35	Ca	0.1	10.7	39.15	-	-	46.68	-7.53
11	0.5145	43.01	Qp	0.1	10.6	53.71	56	-2.29	-	-
12	0.52687	27.81	Ca	0.1	10.6	38.51	-	-	46	-7.49
13	0.591	41.58	Qp	0.1	10.6	52.28	56	-3.72	-	-
14	0.591	27.22	Ca	0.1	10.6	37.92	-	-	46	-8.08
15	0.65625	40.12	Qp	0.1	10.6	50.82	56	-5.18	-	-
16	0.65625	26.57	Ca	0.1	10.6	37.27	-	-	46	-8.73
17	2.067	33.98	Qp	0.1	10.6	44.68	56	-11.32	-	-
18	2.06475	25.32	Ca	0.1	10.6	36.02	-	-	46	-9.98
19	3.444	31.29	Qp	0.1	10.7	42.09	56	-13.91	-	-
20	3.44175	24.92	Ca	0.1	10.7	35.72	-	-	46	-10.28

Qp - Quasi-Peak detector
Ca - CISPR Average

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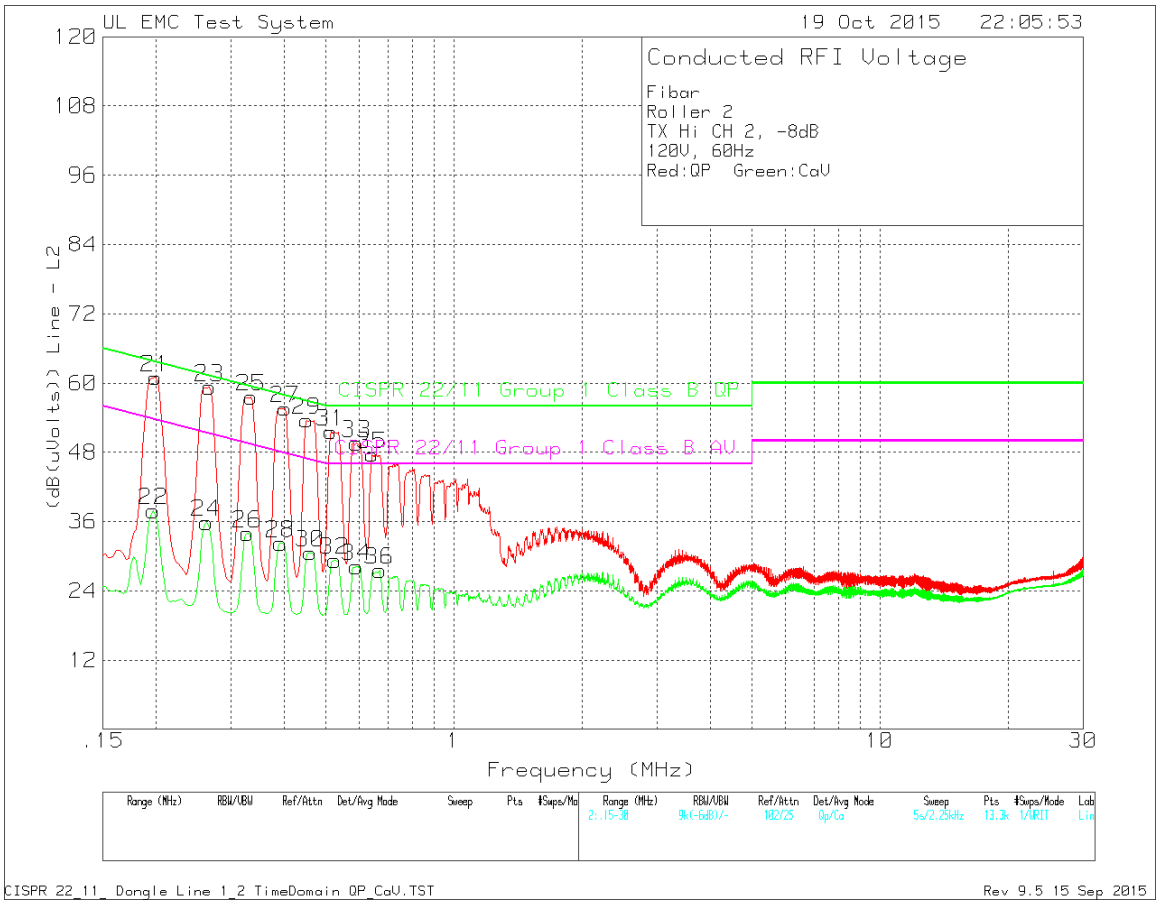
LINE 2 PLOT – TX Mode



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LINE 2 DATA – TX Mode

Fibar
Roller 2
TX Hi CH 2, -8dB
120V, 60Hz
Red:QP Green:CaV

Marker No.	Test Frequency (MHz)	Meter Reading(dBuV)	Detector	LISN 2 Factors dBm	Cable Gain/Loss dbm	Corrected Reading dB(uVolts)	Class B QP Limit	Margin (dB)	Class B AV Limit	Margin (dB)
21	0.1995	49.36	Qp	0.1	11.5	60.96	63.63	-2.67	-	-
22	0.19725	26.32	Ca	0.1	11.5	37.92	-	-	53.73	-15.81
23	0.267	47.95	Qp	0.1	11.2	59.25	61.21	-1.96	-	-
24	0.2625	24.55	Ca	0.1	11.2	35.85	-	-	51.35	-15.5
25	0.3345	46.59	Qp	0.1	10.9	57.59	59.34	-1.75	-	-
26	0.32775	22.94	Ca	0.1	10.9	33.94	-	-	49.51	-15.57
27	0.402	44.73	Qp	0.1	10.8	55.63	57.81	-2.18	-	-
28	0.39187	21.31	Ca	0.1	10.8	32.21	-	-	48.02	-15.81
29	0.4515	42.66	Qp	0.1	10.8	53.56	56.85	-3.29	-	-
30	0.4605	19.71	Ca	0.1	10.8	30.61	-	-	46.68	-16.07
31	0.5145	40.78	Qp	0.1	10.7	51.58	56	-4.42	-	-
32	0.52575	18.5	Ca	0.1	10.7	29.3	-	-	46	-16.7
33	0.591	38.79	Qp	0.1	10.7	49.59	56	-6.41	-	-
34	0.591	17.43	Ca	0.1	10.7	28.23	-	-	46	-17.77
35	0.64275	36.82	Qp	0.1	10.7	47.62	56	-8.38	-	-
36	0.66975	16.76	Ca	0.1	10.7	27.56	-	-	46	-18.44

Qp - Quasi-Peak detector
Ca - CISPR Average

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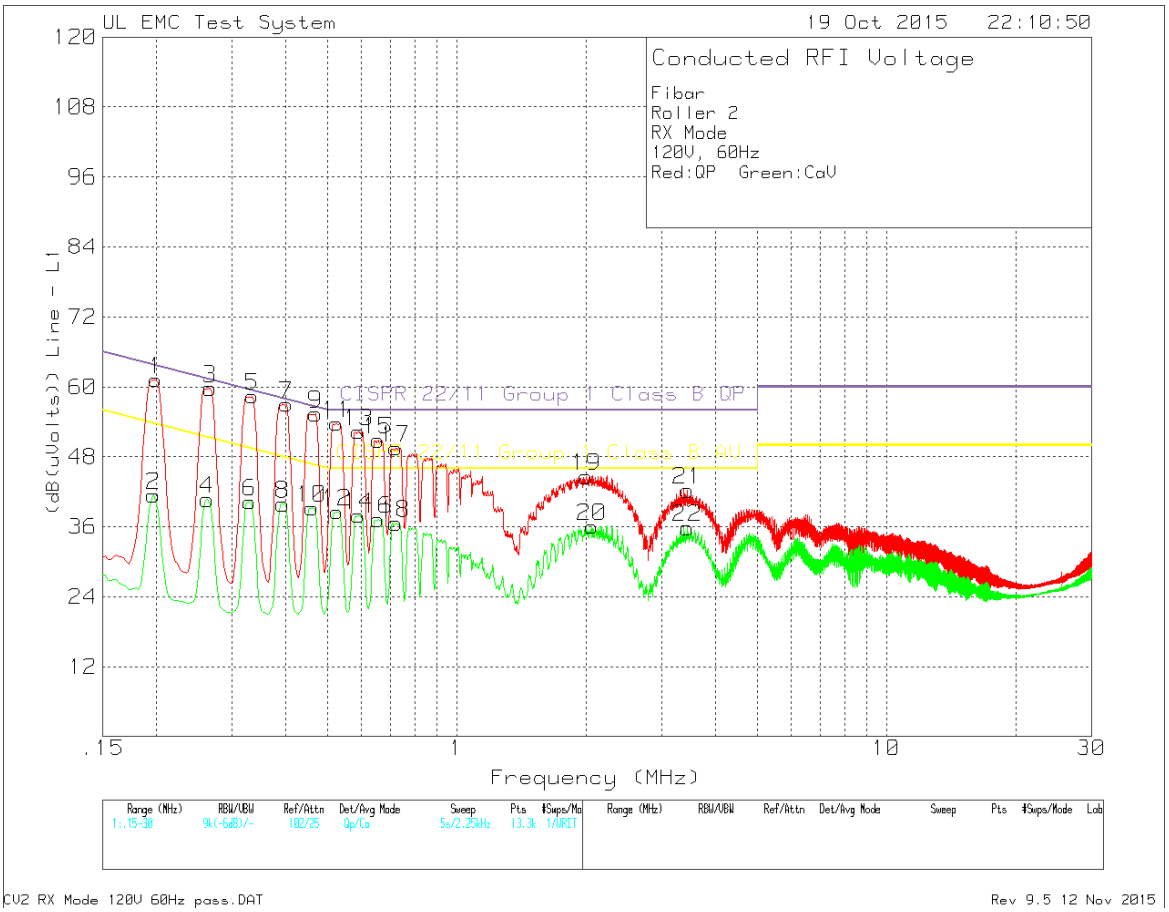
LINE 1 RESULTS – RX Mode



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LINE 1 DATA – RX Mode

Fibar
Roller 2
RX Mode
120V, 60Hz
Red:QP Green:CaV

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	LISN 1 Factors dBm	Cable Gain/Loss dbm	Corrected Reading dB(uVolts)	Class B QP Limit	Margin (dB)	Class B AV Limit	Margin (dB)
1	0.1995	49.75	Qp	0.1	11.4	61.25	63.63	-2.38	-	-
2	0.19725	29.92	Ca	0.1	11.4	41.42	-	-	53.73	-12.31
3	0.267	48.53	Qp	0.1	11.1	59.73	61.21	-1.48	-	-
4	0.2625	29.52	Ca	0.1	11.1	40.72	-	-	51.35	-10.63
5	0.3345	47.52	Qp	0.1	10.8	58.42	59.34	-0.92	-	-
6	0.33	29.38	Ca	0.1	10.8	40.28	-	-	49.45	-9.17
7	0.402	46.22	Qp	0.1	10.7	57.02	57.81	-0.79	-	-
8	0.39412	29.07	Ca	0.1	10.7	39.87	-	-	47.98	-8.11
9	0.4695	44.54	Qp	0.1	10.7	55.34	56.52	-1.18	-	-
10	0.4605	28.43	Ca	0.1	10.7	39.23	-	-	46.68	-7.45
11	0.52575	43.06	Qp	0.1	10.6	53.76	56	-2.24	-	-
12	0.52687	27.88	Ca	0.1	10.6	38.58	-	-	46	-7.42
13	0.591	41.62	Qp	0.1	10.6	52.32	56	-3.68	-	-
14	0.591	27.27	Ca	0.1	10.6	37.97	-	-	46	-8.03
15	0.65625	40.16	Qp	0.1	10.6	50.86	56	-5.14	-	-
16	0.65625	26.59	Ca	0.1	10.6	37.29	-	-	46	-8.71
17	0.7215	38.83	Qp	0.1	10.6	49.53	56	-6.47	-	-
18	0.7215	25.89	Ca	0.1	10.6	36.59	-	-	46	-9.41
19	2.00175	33.92	Qp	0.1	10.6	44.62	56	-11.38	-	-
20	2.06475	25.39	Ca	0.1	10.6	36.09	-	-	46	-9.91
21	3.444	31.49	Qp	0.1	10.7	42.29	56	-13.71	-	-
22	3.44175	25.05	Ca	0.1	10.7	35.85	-	-	46	-10.15

Qp - Quasi-Peak detector
Ca - CISPR Average

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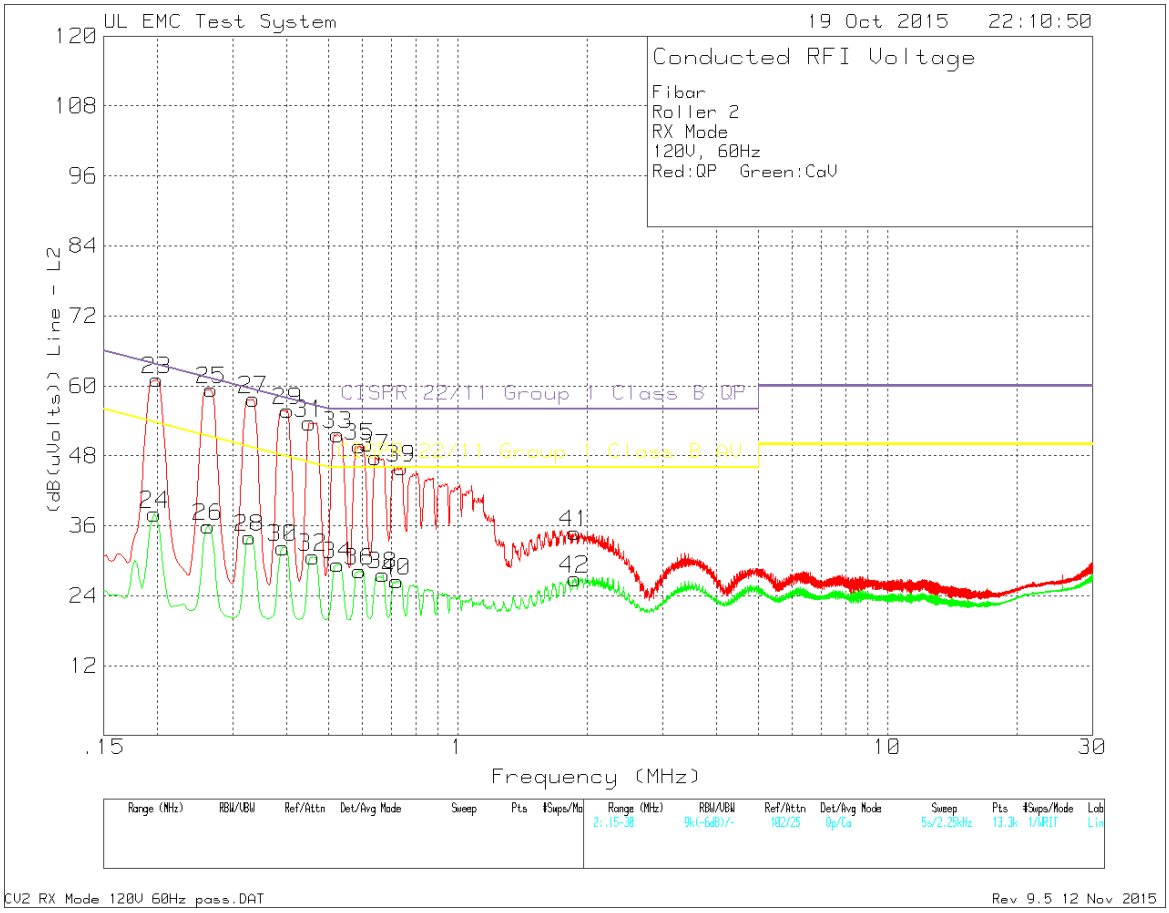
LINE 2 RESULTS – RX Mode



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LINE 2 DATA – RX Mode

Fibar
Roller 2
RX Mode
120V, 60Hz
Red:QP Green:CaV

Marker No.	Test Frequency (MHz)	Meter Reading(dBuV)	Detector	LISN 2 Factors dBm	Cable Gain/Loss dbm	Corrected Reading (dB(uVolts))	Class B QP Limit	Margin (dB)	Class B AV Limit	Margin (dB)
23	0.1995	49.46	Qp	0.1	11.5	61.06	63.63	-2.57	-	-
24	0.19725	26.41	Ca	0.1	11.5	38.01	-	-	53.73	-15.72
25	0.267	48.07	Qp	0.1	11.2	59.37	61.21	-1.84	-	-
26	0.2625	24.62	Ca	0.1	11.2	35.92	-	-	51.35	-15.43
27	0.3345	46.71	Qp	0.1	10.9	57.71	59.34	-1.63	-	-
28	0.32775	23.03	Ca	0.1	10.9	34.03	-	-	49.51	-15.48
29	0.402	44.87	Qp	0.1	10.8	55.77	57.81	-2.04	-	-
30	0.39187	21.39	Ca	0.1	10.8	32.29	-	-	48.02	-15.73
31	0.4515	42.75	Qp	0.1	10.8	53.65	56.85	-3.2	-	-
32	0.4605	19.76	Ca	0.1	10.8	30.66	-	-	46.68	-16.02
33	0.52575	40.84	Qp	0.1	10.7	51.64	56	-4.36	-	-
34	0.52575	18.54	Ca	0.1	10.7	29.34	-	-	46	-16.66
35	0.591	38.89	Qp	0.1	10.7	49.69	56	-6.31	-	-
36	0.591	17.46	Ca	0.1	10.7	28.26	-	-	46	-17.74
37	0.64275	36.89	Qp	0.1	10.7	47.69	56	-8.31	-	-
38	0.66975	16.82	Ca	0.1	10.7	27.62	-	-	46	-18.38
39	0.7395	35.13	Qp	0.1	10.7	45.93	56	-10.07	-	-
40	0.7215	15.72	Ca	0.1	10.7	26.52	-	-	46	-19.48
41	1.8735	24	Qp	0.1	10.7	34.8	56	-21.2	-	-
42	1.87125	16.13	Ca	0.1	10.7	26.93	-	-	46	-19.07

Qp - Quasi-Peak detector
Ca - CISPR Average

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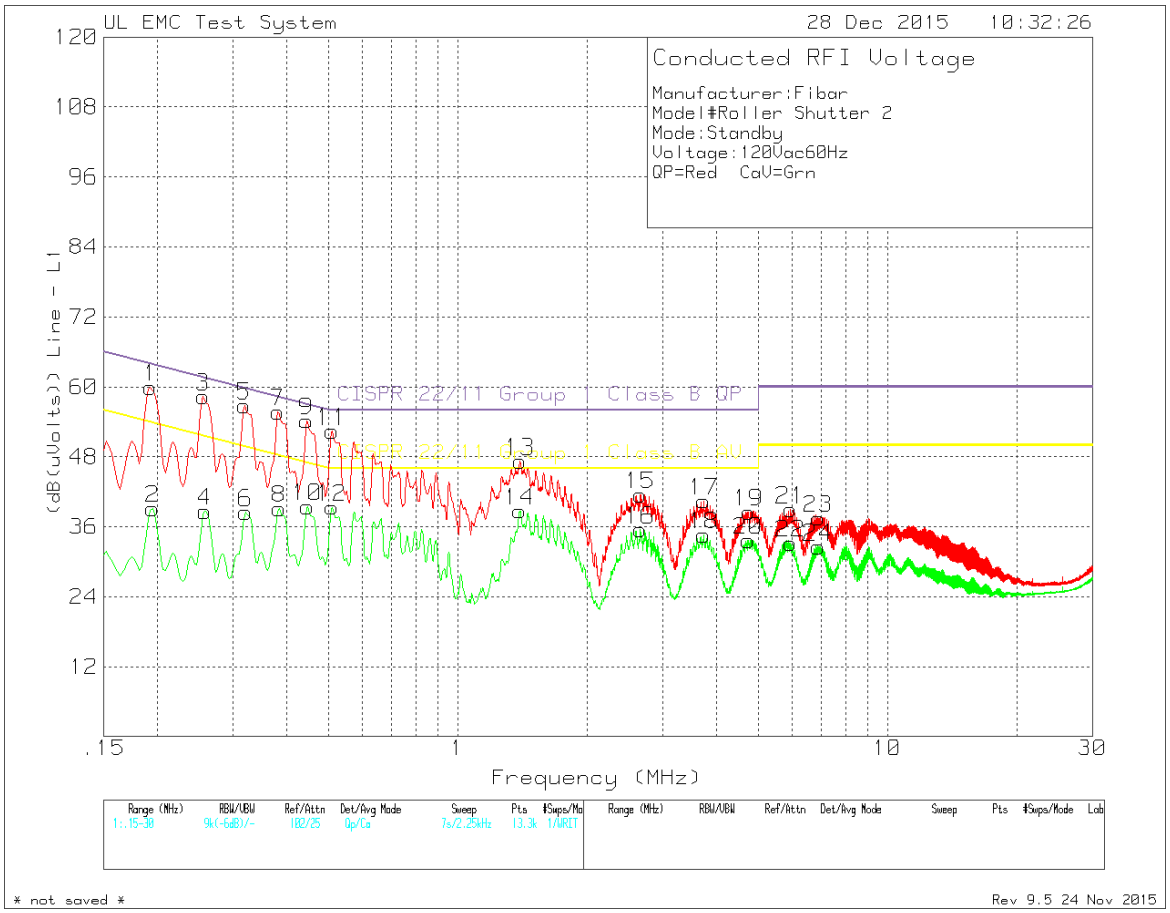
7.3.2. AC POWER LINE CONDUCTED EMISSIONS - Digital

LINE 1 PLOT – Digital Stanby



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LINE 1 DATA – Digital Stanby

Model#Roller Shutter 2
Mode:Standby
Voltage:120Vac60Hz
QP=Red CaV=Grn

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	LISN 1 Factor dBm	Cable Gain/Loss dBm	Corrected Reading dB(uVolts)	Class B QP Limit	Margin (dB)	Class B AV Limit	Margin (dB)
1	0.19275	48.34	Qp	0.1	11.5	59.94	63.92	-3.98	-	-
2	0.195	27.53	Ca	0.1	11.5	39.13	-	-	53.82	-14.69
3	0.25575	47.02	Qp	0.1	11.2	58.32	61.57	-3.25	-	-
4	0.258	27.47	Ca	0.1	11.1	38.67	-	-	51.5	-12.83
5	0.31875	45.86	Qp	0.1	10.8	56.76	59.74	-2.98	-	-
6	0.321	27.58	Ca	0.1	10.8	38.48	-	-	49.68	-11.2
7	0.38175	44.91	Qp	0.1	10.7	55.71	58.24	-2.53	-	-
8	0.384	28.34	Ca	0.1	10.7	39.14	-	-	48.19	-9.05
9	0.44475	43.38	Qp	0.1	10.7	54.18	56.97	-2.79	-	-
10	0.447	28.64	Ca	0.1	10.7	39.44	-	-	46.93	-7.49
11	0.51	41.7	Qp	0.1	10.6	52.4	56	-3.6	-	-
12	0.51	28.68	Ca	0.1	10.6	39.38	-	-	46	-6.62
13	1.3965	36.54	Qp	0.1	10.6	47.24	56	-8.76	-	-
14	1.39425	28.03	Ca	0.1	10.6	38.73	-	-	46	-7.27
15	2.66213	30.79	Qp	0.1	10.6	41.49	56	-14.51	-	-
16	2.65875	24.82	Ca	0.1	10.6	35.52	-	-	46	-10.48
17	3.73875	29.63	Qp	0.1	10.7	40.43	56	-15.57	-	-
18	3.73875	23.84	Ca	0.1	10.7	34.64	-	-	46	-11.36
19	4.75125	27.7	Qp	0.1	10.7	38.5	56	-17.5	-	-
20	4.7445	22.89	Ca	0.1	10.7	33.69	-	-	46	-12.31
21	5.9505	28.04	Qp	0.1	10.8	38.94	60	-21.06	-	-
22	5.95275	22.33	Ca	0.1	10.8	33.23	-	-	50	-16.77
23	6.9045	26.49	Qp	0.2	10.8	37.49	60	-22.51	-	-
24	6.9	21.55	Ca	0.2	10.8	32.55	-	-	50	-17.45

Qp - Quasi-Peak detector
Ca - CISPR Average detection

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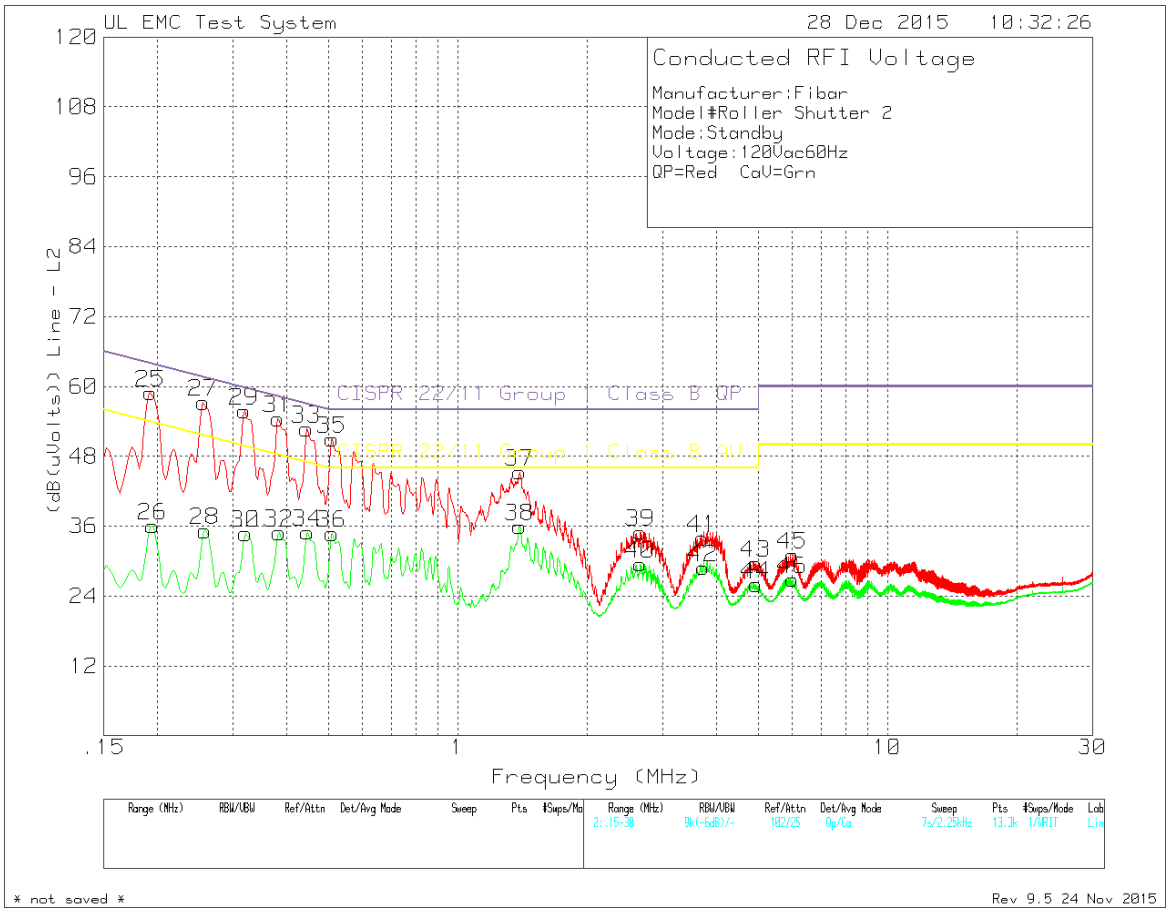
LINE 2 PLOT – Digital Stanby



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LINE 2 DATA – Digital Stanby

Manufacturer:Fibar
Model#Roller Shutter 2
Mode:Standby
Voltage:120Vac60Hz
QP=Red CaV=Grn

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	LISN 2 Factor dBm	Cable Gain/Loss dBm	Corrected Reading dB(uVolts)	Class B QP Limit	Margin (dB)	Class B AV Limit	Margin (dB)
25	0.19275	47.22	Qp	0.1	11.6	58.92	63.92	-5	-	-
26	0.195	24.36	Ca	0.1	11.6	36.06	-	-	53.82	-17.76
27	0.25575	45.9	Qp	0.1	11.3	57.3	61.57	-4.27	-	-
28	0.258	23.94	Ca	0.1	11.2	35.24	-	-	51.5	-16.26
29	0.31875	44.8	Qp	0.1	10.9	55.8	59.74	-3.94	-	-
30	0.321	23.75	Ca	0.1	10.9	34.75	-	-	49.68	-14.93
31	0.38175	43.45	Qp	0.1	10.9	54.45	58.24	-3.79	-	-
32	0.384	24	Ca	0.1	10.8	34.9	-	-	48.19	-13.29
33	0.44475	41.82	Qp	0.1	10.8	52.72	56.97	-4.25	-	-
34	0.447	24.06	Ca	0.1	10.8	34.96	-	-	46.93	-11.97
35	0.51	40.15	Qp	0.1	10.7	50.95	56	-5.05	-	-
36	0.51	23.99	Ca	0.1	10.7	34.79	-	-	46	-11.21
37	1.39425	34.51	Qp	0.1	10.7	45.31	56	-10.69	-	-
38	1.39425	25.15	Ca	0.1	10.7	35.95	-	-	46	-10.05
39	2.661	24.16	Qp	0.1	10.7	34.96	56	-21.04	-	-
40	2.65875	18.69	Ca	0.1	10.7	29.49	-	-	46	-16.51
41	3.70725	23.03	Qp	0.1	10.8	33.93	56	-22.07	-	-
42	3.723	18	Ca	0.1	10.8	28.9	-	-	46	-17.1
43	4.938	18.76	Qp	0.1	10.8	29.66	56	-26.34	-	-
44	4.94475	15.07	Ca	0.1	10.8	25.97	-	-	46	-20.03
45	6.01575	19.98	Qp	0.2	10.9	31.08	60	-28.92	-	-
46	6.01575	15.76	Ca	0.2	10.9	26.86	-	-	50	-23.14

Qp - Quasi-Peak detector
Ca - CISPR Average detection

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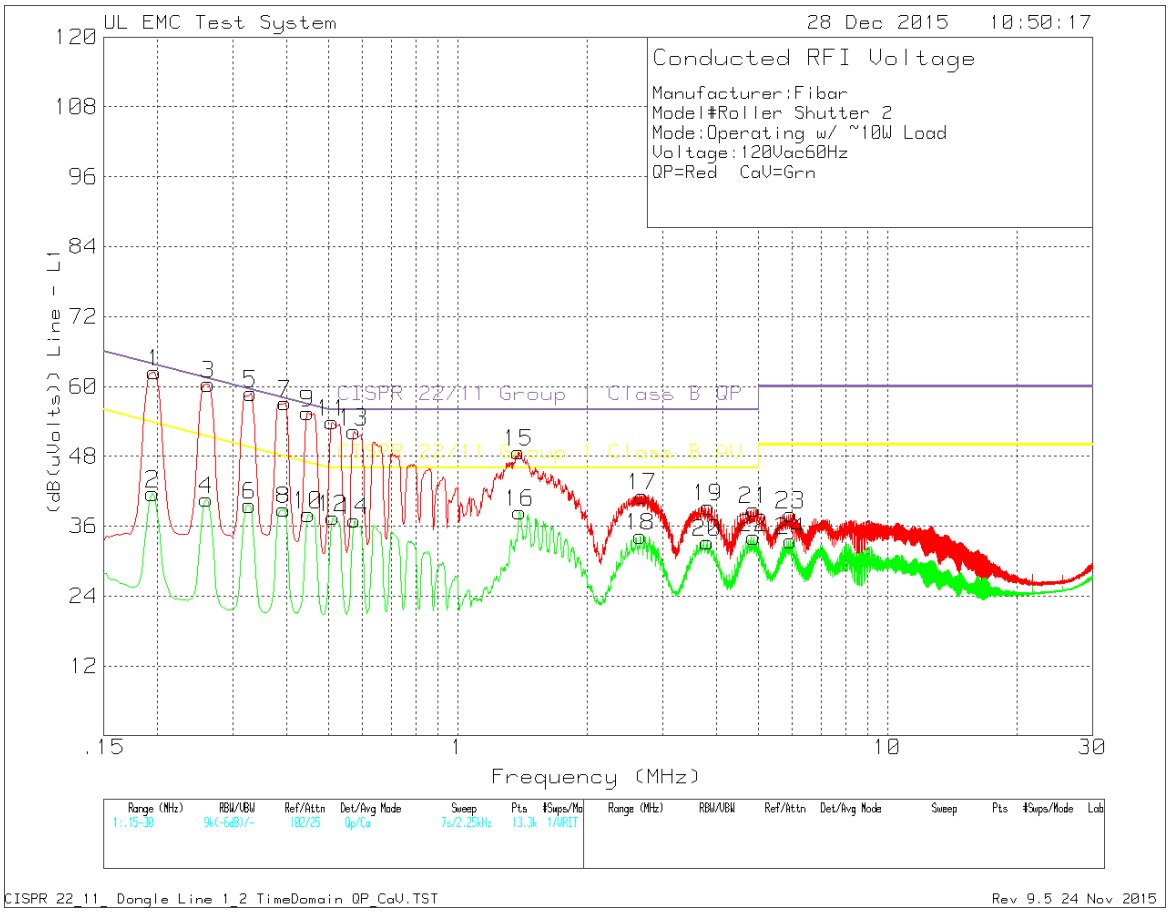
LINE 1 PLOT – Digital Operating Load



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LINE 1 DATA – Digital Operating Load

Manufacturer:Fibar
Model#Roller Shutter 2
Mode:Operating w/ Load
Voltage:120Vac60Hz
QP=Red CaV=Grn

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	LISN 1 Factor dBm	Cable Gain/Loss dBm	Corrected Reading dB(uVolts)	Class B QP Limit	Margin (dB)	Class B AV Limit	Margin (dB)
1	0.19725	50.97	Qp	0.1	11.4	62.47	63.73	-1.26	-	-
2	0.195	30.02	Ca	0.1	11.5	41.62	-	-	53.82	-12.2
3	0.2625	49.2	Qp	0.1	11.1	60.4	61.35	-0.95	-	-
4	0.26025	29.43	Ca	0.1	11.1	40.63	-	-	51.42	-10.79
5	0.33	47.91	Qp	0.1	10.8	58.81	59.45	-0.64	-	-
6	0.32775	28.74	Ca	0.1	10.8	39.64	-	-	49.51	-9.87
7	0.39637	46.39	Qp	0.1	10.7	57.19	57.93	-0.74	-	-
8	0.39412	28.07	Ca	0.1	10.7	38.87	-	-	47.98	-9.11
9	0.447	44.69	Qp	0.1	10.7	55.49	56.93	-1.44	-	-
10	0.44925	27.22	Ca	0.1	10.7	38.02	-	-	46.89	-8.87
11	0.51	43.17	Qp	0.1	10.6	53.87	56	-2.13	-	-
12	0.51225	26.78	Ca	0.1	10.6	37.48	-	-	46	-8.52
13	0.573	41.53	Qp	0.1	10.6	52.23	56	-3.77	-	-
14	0.57525	26.29	Ca	0.1	10.6	36.99	-	-	46	-9.01
15	1.38525	38.01	Qp	0.1	10.6	48.71	56	-7.29	-	-
16	1.39425	27.73	Ca	0.1	10.6	38.43	-	-	46	-7.57
17	2.68575	30.47	Qp	0.1	10.6	41.17	56	-14.83	-	-
18	2.65875	23.59	Ca	0.1	10.6	34.29	-	-	46	-11.71
19	3.82425	28.5	Qp	0.1	10.7	39.3	56	-16.7	-	-
20	3.80625	22.44	Ca	0.1	10.7	33.24	-	-	46	-12.76
21	4.88175	28.08	Qp	0.1	10.7	38.88	56	-17.12	-	-
22	4.88175	23.3	Ca	0.1	10.7	34.1	-	-	46	-11.9
23	5.9505	27.1	Qp	0.1	10.8	38	60	-22	-	-
24	5.9505	22.63	Ca	0.1	10.8	33.53	-	-	50	-16.47

Qp - Quasi-Peak detector
Ca - CISPR Average detection

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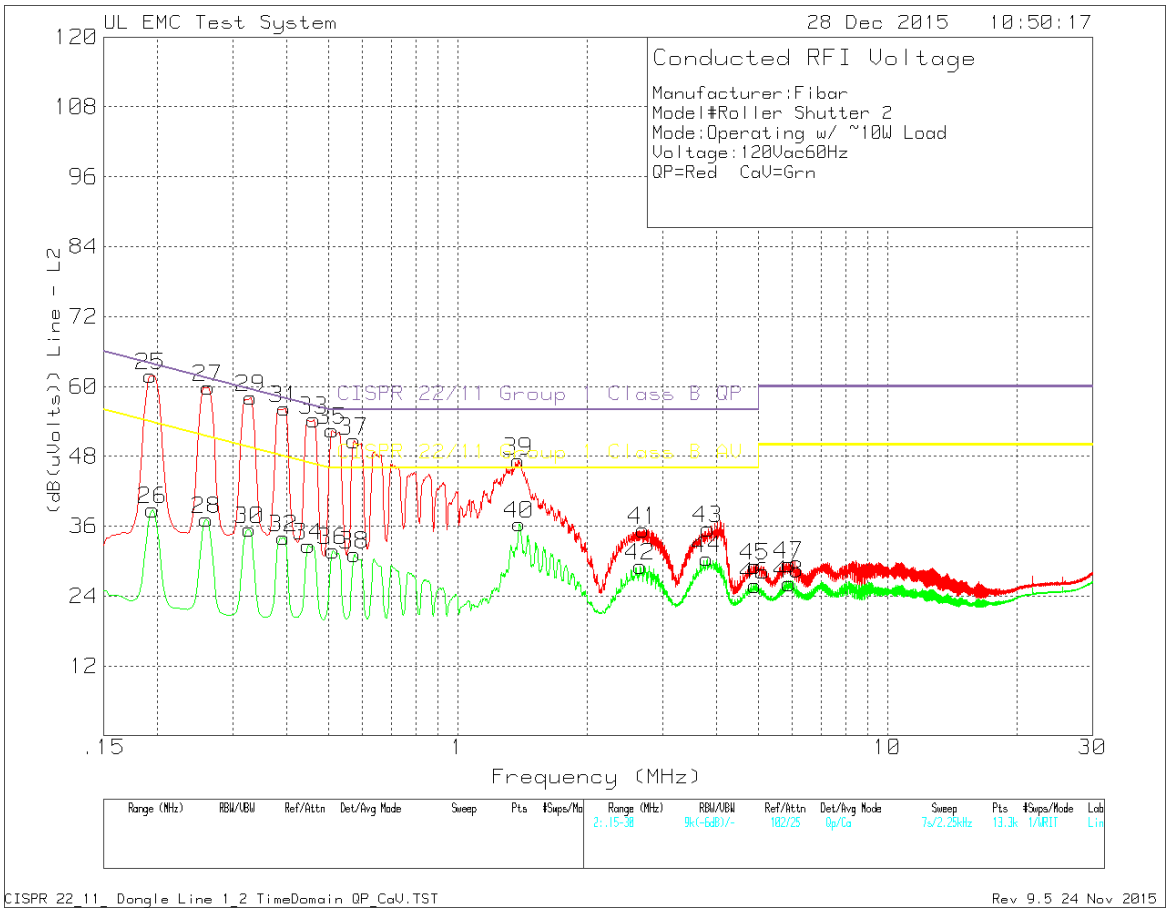
LINE 2 PLOT – Digital Operating Load



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LINE 2 DATA – Digital Operating Load

Manufacturer:Fibar
Model#Roller Shutter 2
Mode:Operating w/ Load
Voltage:120Vac60Hz
QP=Red CaV=Grn

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	LISN 2 Factor dBm	Cable Gain/Loss dBm	Corrected Reading dB(uVolts)	Class B QP Limit	Margin (dB)	Class B AV Limit	Margin (dB)
25	0.19275	50.14	Qp	0.1	11.6	61.84	63.92	-2.08	-	-
26	0.195	27.14	Ca	0.1	11.6	38.84	-	-	53.82	-14.98
27	0.2625	48.54	Qp	0.1	11.2	59.84	61.35	-1.51	-	-
28	0.26025	25.85	Ca	0.1	11.2	37.15	-	-	51.42	-14.27
29	0.33	47.09	Qp	0.1	10.9	58.09	59.45	-1.36	-	-
30	0.32775	24.45	Ca	0.1	10.9	35.45	-	-	49.51	-14.06
31	0.39525	45.33	Qp	0.1	10.8	56.23	57.95	-1.72	-	-
32	0.393	23.14	Ca	0.1	10.8	34.04	-	-	48	-13.96
33	0.46275	43.37	Qp	0.1	10.8	54.27	56.64	-2.37	-	-
34	0.44925	21.77	Ca	0.1	10.8	32.67	-	-	46.89	-14.22
35	0.51	41.66	Qp	0.1	10.7	52.46	56	-3.54	-	-
36	0.51225	20.99	Ca	0.1	10.7	31.79	-	-	46	-14.21
37	0.573	39.87	Qp	0.1	10.7	50.67	56	-5.33	-	-
38	0.57525	20.32	Ca	0.1	10.7	31.12	-	-	46	-14.88
39	1.383	36.45	Qp	0.1	10.7	47.25	56	-8.75	-	-
40	1.38975	25.58	Ca	0.1	10.7	36.38	-	-	46	-9.62
41	2.7015	24.55	Qp	0.1	10.7	35.35	56	-20.65	-	-
42	2.65875	18.33	Ca	0.1	10.7	29.13	-	-	46	-16.87
43	3.82425	24.67	Qp	0.1	10.8	35.57	56	-20.43	-	-
44	3.80175	19.53	Ca	0.1	10.8	30.43	-	-	46	-15.57
45	4.92225	18.26	Qp	0.1	10.8	29.16	56	-26.84	-	-
46	4.92225	14.95	Ca	0.1	10.8	25.85	-	-	46	-20.15
47	5.901	18.31	Qp	0.2	10.9	29.41	60	-30.59	-	-
48	5.901	15.04	Ca	0.2	10.9	26.14	-	-	50	-23.86

Qp - Quasi-Peak detector
Ca - CISPR Average detection

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