



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

CERTIFICATION TEST REPORT

FOR

Fibaro Home Center Lite

MODEL NUMBER: FGHCL-001

**FCC ID: 2AA9MFGHCL002
IC: 20430-FGHCL002**

REPORT NUMBER: 11309562A

ISSUE DATE: October 31, 2016

Prepared for
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NVLAP Lab code: 100414-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	September 22, 2016	Initial Issue	V Sabalvaro
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1. ATTESTATION OF TEST RESULTS

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

EUT DESCRIPTION: FIBARO Home Center Lite

MODEL: FGHCL-001

SERIAL NUMBER: Non-serialized

DATE TESTED: July 6 – October 31, 2016

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:

Tested By:



Bart Mucha
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EMC WISE Engineer
Consumer Technology
UL LLC

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2013, 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)

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
Conducted Emissions	150k-30MHz	LISN	3.65dB
Radiated Emissions	9k-30MHz	H-Field Loop	3.15dB
Radiated Emissions	30-200MHz	Bicon 3m Horz	3.64dB
Radiated Emissions	30-200MHz	Bicon 3m Vert	5.10dB
Radiated Emissions	200-1000MHz	LogP 3m Horz	4.00dB
Radiated Emissions	200-1000MHz	LogP 3m Vert	5.36dB
Radiated Emissions	30-200MHz	Bicon 10m Horz	4.48dB
Radiated Emissions	30-200MHz	Bicon 10m Vert	4.49dB
Radiated Emissions	200-1000MHz	LogP 10m Horz	3.79dB
Radiated Emissions	200-1000MHz	LogP 10m Vert	3.84dB
Radiated Emissions	1-18GHz	Horn	4.32dB
Conducted Ant Port	30MHz-26GHz	Spectrum Analyzer	2.94dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a 908.4MHz and 908.42MHz transceiver. It is AC powered into a DC power supply. The transmitter utilizes Z-wave technologies to control and communicate with other devices for home automation.

The device is manufactured by Fibar Group S.A.

5.2. MAXIMUM OUTPUT E-FIELD STRENGTH

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

Frequency Range (MHz)	Mode	Output QPK E-field Strength (dBuV/m)
908.4 - 908.42	TX	87.56

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a rubber portable type whip antenna, with a maximum gain of 3dBi. The antenna uses a special Reversed SMA in order to ensure unique coupling between antenna circuitry and the external antenna.

5.4. WORST-CASE CONFIGURATION AND MODE

For radiated emissions, the worst-case configuration was determined to be the transmitting channel with the highest measured output power.

The EUT was set in worst axis and antenna position, as found in preliminary testing. Z-axis is the worst axis with the antenna positioned horizontally..

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Power Supply		KSAS0121200100HU	-	-
Router	Lynksys	E2000	-	-
Switch	Netgear	GS108T	-	-
Laptop	HP	15-G023CL	-	-

I/O CABLES

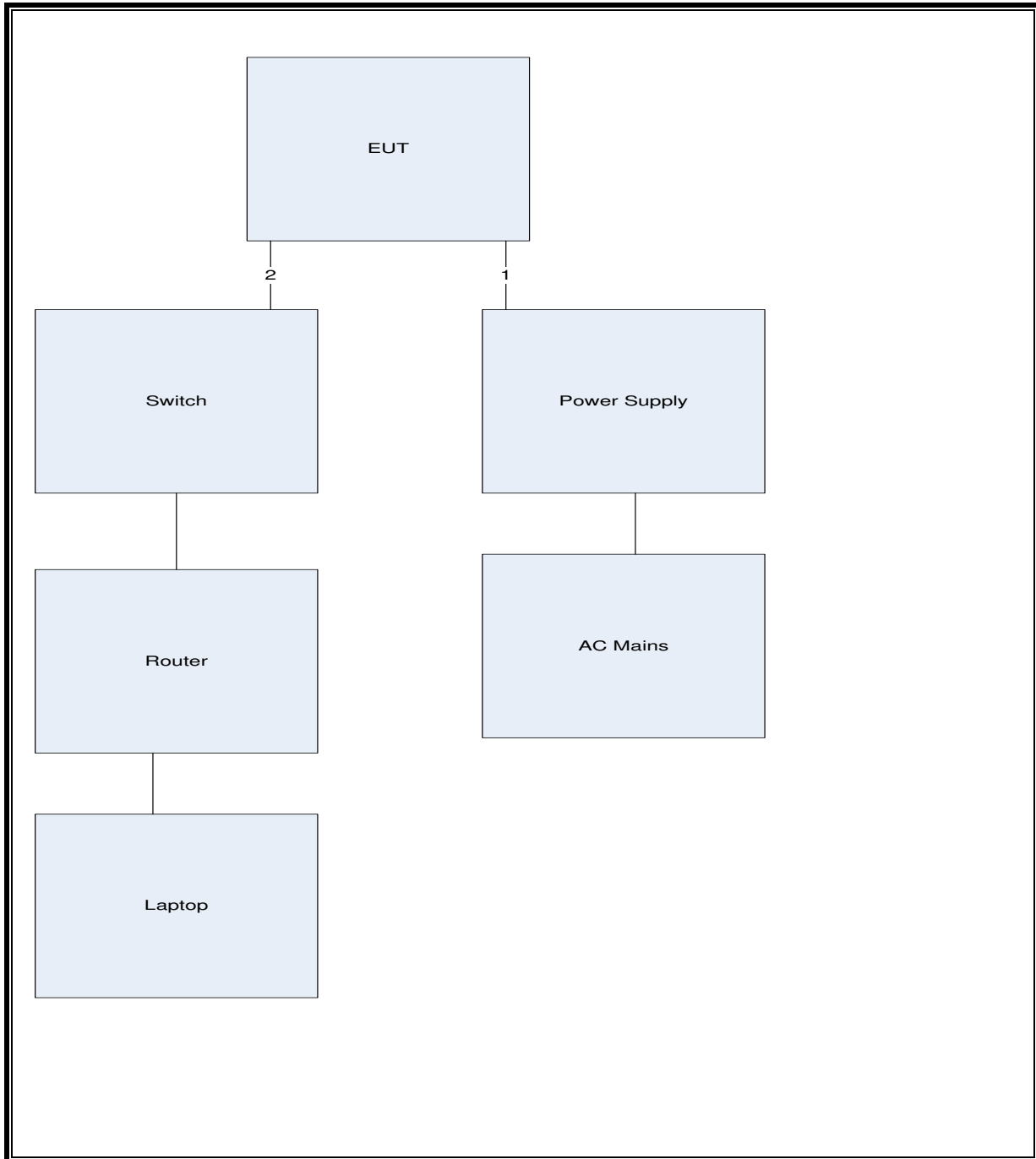
I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
0	Enclosure	-	Non-Electrical	-	-	None
1	DC	1	Wire	DC	<3m	None
2	Ethernet	1	Wire	Data	>3m	None
3	AC	2	Wire	AC	>3m	None

TEST SETUP

The EUT is a standalone product. EUT sample was connected to laptop and a ping communication was established. Ethernet speed of 100mbps was considered worst case from preliminary testing.

For Radiated Emissions testing, the network support equipment were located remotely away from the testing chamber and antennae.

SETUP DIAGRAM FOR DIGITAL DEVICE TESTS



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, Nov, 2015		
Conducted Software	UL	UL EMC	Ver 9.5, Nov 2015		
EMI Test Receiver	Rohde & Schwarz	ESR	EMC4377	4/26/2016	4/30/2017
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	2/16/2016	2/28/2017
LISN - L2	Solar	8602-50-TS-50-N	EMC4064	2/16/2016	2/28/2017
Loop Antenna	ETS-Lindgren	6502	SN 201021	7/22/2016	7/31/2017
Signal Analyzer	Agilent	PXA	EMC4360	1/8/2016	1/31/2017
Test Receiver	Rhode & Schwarz	ESCI	EMC4328	11/18/2015	11/30/2016
Log-P Antenna	Chase	UPA6109	EMC4313	1/22/2016	1/31/2017
Bicon Antenna	Chase	UPA6106A	EMC4078	12/28/2015	12/31/2016
Antenna Array	UL	BOMS	EMC4276	12/1/2015	12/31/2016
Test Receiver	Rhode & Schwarz	ESU	EMC4323	1/2/2016	1/31/2017

7. TEST RESULTS

7.1. 20 dB AND 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

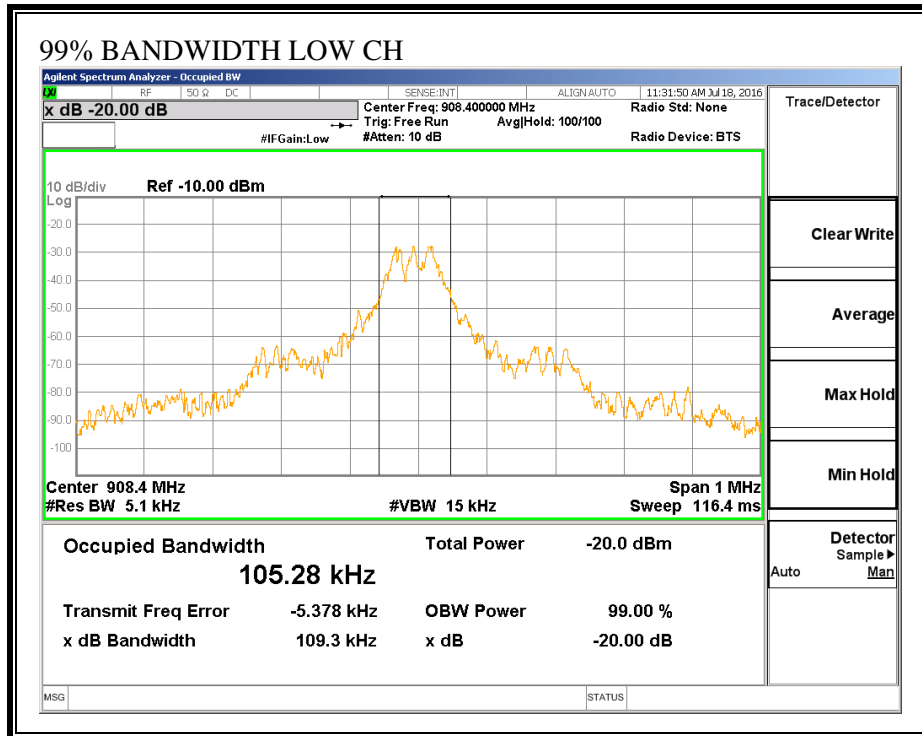
TEST PROCEDURE

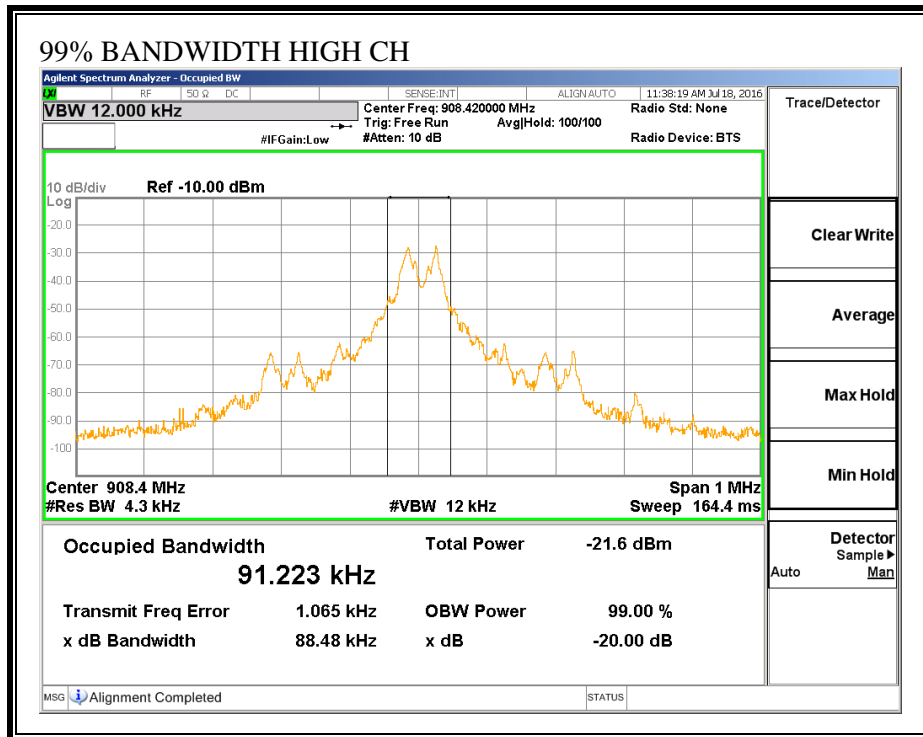
The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 5% of the Occupied bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

RESULTS

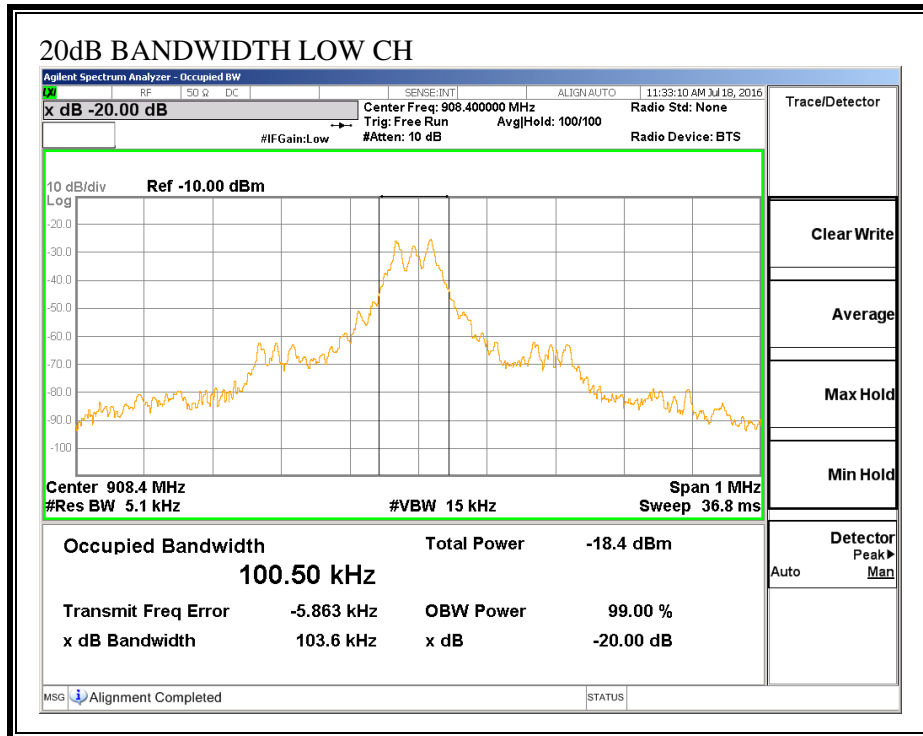
Channel	Frequency (MHz)	20 dB Bandwidth (kHz)	99% Bandwidth (kHz)
Low	908.4	103.6	105.28
High	908.42	89.1	91.223

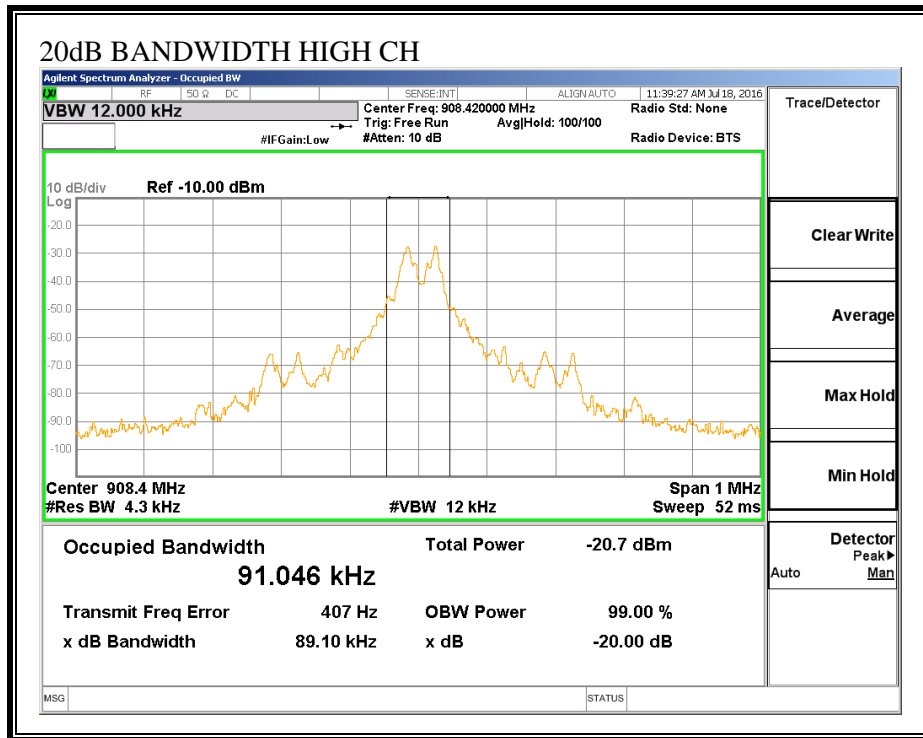
99% BANDWIDTH





20dB BANDWIDTH





7.1. 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.

RESULTS

7.1.1. FUNDAMENTAL FREQUENCY RADIATED EMISSION

Fibar
 Home Center Lite
 TX
 120V 60Hz

Radiated Emission Data

Test Frequency (MHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Path dB	Corrected Reading dB(uVolts/meter)	PK Limit	PK Margin (dB)	QP Limit	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
Low CH												
908.3909	55.37	Pk	23.1	9.5	87.97	114	-26.03	-	-	330	102	H
908.39438	54.96	Qp	23.1	9.5	87.56	-	-	94	-6.44	330	102	H
908.3857	48.07	Pk	23.1	9.5	80.67	114	-33.33	-	-	256	176	V
908.39438	47.53	Qp	23.1	9.5	80.13	-	-	94	-13.87	256	176	V
High CH												
908.3935	46.34	Pk	23.1	9.5	78.94	114	-35.06	-	-	288	171	V
908.39206	45.82	Qp	23.1	9.5	78.42	-	-	94	-15.58	288	171	V
908.3972	54.18	Pk	23.1	9.5	86.78	114	-27.22	-	-	330	101	H
908.39819	53.87	Qp	23.1	9.5	86.47	-	-	94	-7.53	330	101	H

Pk - Peak detector
 Qp - Quasi-Peak detector

7.1.2. HARMONICS AND SPURIOUS EMISSIONS ABOVE 1GHz

Transmitter Low Channel



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

Transmitter Low Channel - DATA

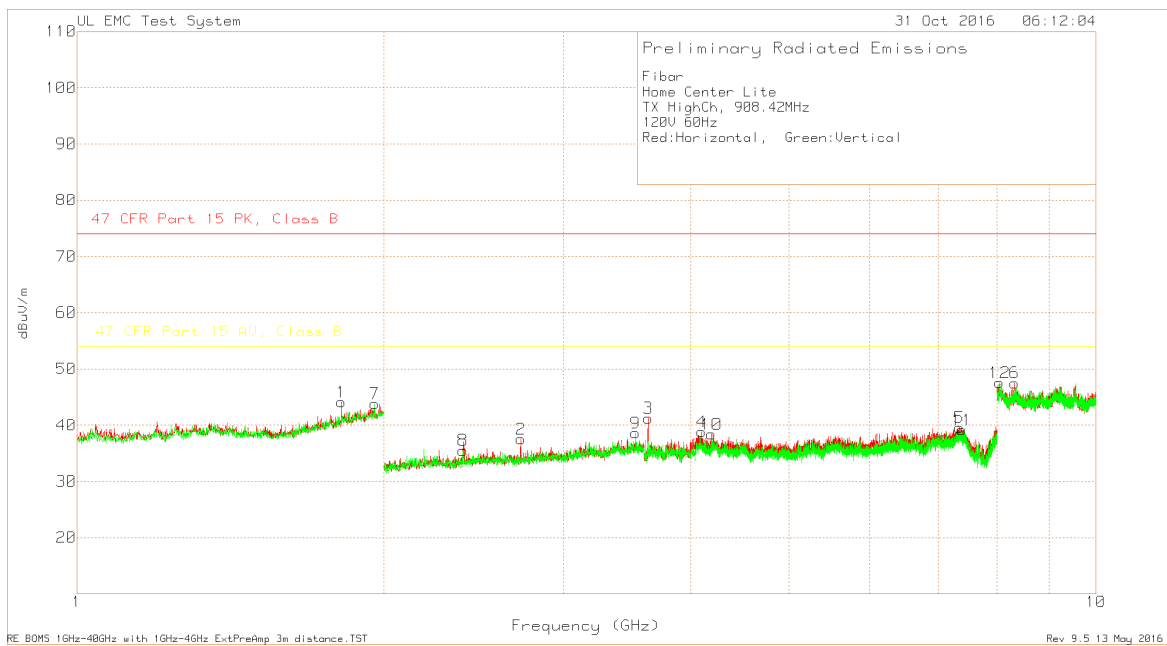
Fibar
 Home Center Lite
 TX LowCh, 908.4MHz
 120V 60Hz
 Red:Horizontal, Green:Vertical

Marker No.	Test Frequency (GHz)	Meter		Antenna		Corrected		AV			Height [cm]	Polarity	
		Reading (dBuV)	Detector	Factor dB/m	Path (dB)	Reading dBuV/m	PK Limit dBuV/m	PK Margin (dB)	AV Limit dBuV/m	Margin (dB)			Azimuth [Degs]
1	1.817	68.45	Pk	30.4	-54.78	44.07	74	-29.93	54	-9.93	0-360	100	H
2	2.393	72.05	Pk	21.8	-51.09	42.76	74	-31.24	54	-11.24	0-360	150	H
3	3.634	66.62	Pk	23.3	-49.87	40.05	74	-33.95	54	-13.95	0-360	150	H
4	7.39	56.26	Pk	31.1	-46.92	40.44	74	-33.56	54	-13.56	0-360	148	H
5	8.063	58.33	Pk	36.2	-46.6	47.93	74	-26.07	54	-6.07	0-360	150	H
6	1.998	65.94	Pk	31.8	-54.01	43.73	74	-30.27	54	-10.27	0-360	150	V
7	2.394	67.25	Pk	21.8	-51.09	37.96	74	-36.04	54	-16.04	0-360	150	V
8	3.716	64.74	Pk	23.6	-49.89	38.45	74	-35.55	54	-15.55	0-360	100	V
9	7.32	55.41	Pk	30.6	-46.01	40	74	-34	54	-14	0-360	100	V
10	8.011	58.25	Pk	36.1	-46.99	47.36	74	-26.64	54	-6.64	0-360	100	V

Pk - Peak detector

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

Transmitter High Channel - PLOT



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

Transmitter High Channel - DATA

Fibar
 Home Center Lite
 TX HighCh, 908.42MHz
 120V 60Hz
 Red:Horizontal, Green:Vertical

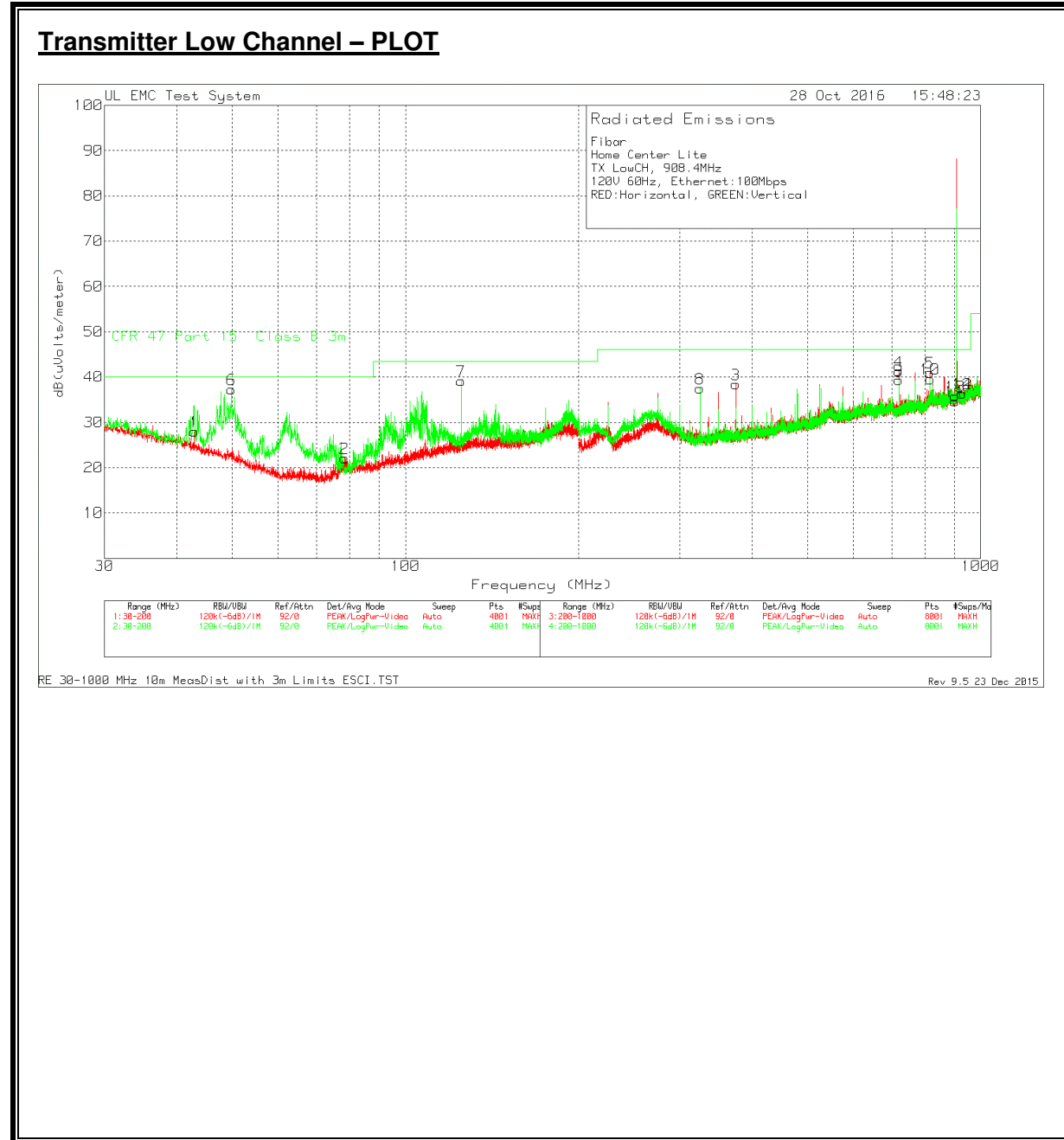
Marker No.	Test Frequency (GHz)	Meter		Antenna		Corrected		PK		AV		Azimuth [Degs]	Height [cm]	Polarity
		Reading (dBuV)	Detector	Factor dB/m	Path (dB)	Reading dBuV/m	PK Limit dBuV/m	Margin (dB)	AV Limit dBuV/m	Margin (dB)				
1	1.817	68.47	Pk	30.4	-54.78	44.09	74	-29.91	54	-9.91	0-360	150	H	
2	2.725	66.41	Pk	22.1	-50.96	37.55	74	-36.45	54	-16.45	0-360	149	H	
3	3.634	67.82	Pk	23.3	-49.87	41.25	74	-32.75	54	-12.75	0-360	100	H	
4	4.101	61.88	Pk	28.4	-51.48	38.8	74	-35.2	54	-15.2	0-360	101	H	
5	7.347	55.01	Pk	30.8	-46.24	39.57	74	-34.43	54	-14.43	0-360	101	H	
6	8.324	58.5	Pk	36.5	-47.48	47.52	74	-26.48	54	-6.48	0-360	100	H	
7	1.959	66.57	Pk	31.5	-54.23	43.84	74	-30.16	54	-10.16	0-360	150	V	
8	2.392	64.83	Pk	21.8	-51.1	35.53	74	-38.47	54	-18.47	0-360	150	V	
9	3.534	65.22	Pk	23.4	-50.03	38.59	74	-35.41	54	-15.41	0-360	100	V	
10	4.195	61.58	Pk	28.3	-51.47	38.41	74	-35.59	54	-15.59	0-360	100	V	
11	7.389	54.94	Pk	31.1	-46.88	39.16	74	-34.84	54	-14.84	0-360	100	V	
12	8.045	58.05	Pk	36.2	-46.67	47.58	74	-26.42	54	-6.42	0-360	150	V	

Pk - Peak detector

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

7.1.3. BELOW 1 GHz

SPURIOUS EMISSIONS 30 TO 1000 MHz



Transmitter Low Channel – DATA

Fibar

Home Center Lite

TX LowCH, 908.4MHz

120V 60Hz, Ethernet:100Mbps

RED:Horizontal, GREEN:Vertical

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Antenna Factor (dB/m)	Antenna Path (dB)	10M to 3M Factor (dB)	Corrected Reading (dB(uVolts/meter))	QP		Azimuth [Degs]	Height [cm]	Polarity
							QP Limit (dBuV/m)	Margin (dB)			
1	42.9625	34.13 Pk	13.3	-30	10.5	27.93	40	-12.07	0-360	248	H
2	78.4075	34.43 Pk	7.1	-29.9	10.5	22.13	40	-17.87	0-360	99	H
6	49.8475	46.27 Pk	10.5	-30	10.5	37.27	40	-2.73	0-360	102	V
7	125.03	44.65 Pk	13.7	-29.7	10.5	39.15	43.52	-4.37	0-360	102	V
3	375	41.3 Pk	15.1	-28.5	10.5	38.4	46.02	-7.62	0-360	199	H
4	720	37.76 Pk	20.3	-27.3	10.5	41.26	46.02	-4.76	0-360	99	H
5	816	35.76 Pk	22.5	-27.8	10.5	40.96	46.02	-5.06	0-360	299	H
11	902	29.45 Pk	22.7	-28	10.5	34.65	46.02	-11.37	0-360	299	H
12	928	30.75 Pk	22.7	-27.6	10.5	36.35	46.02	-9.67	0-360	399	H
8	325	41.58 Pk	14.1	-28.7	10.5	37.48	46.02	-8.54	0-360	102	V
9	720	35.87 Pk	20.3	-27.3	10.5	39.37	46.02	-6.65	0-360	199	V
10	816.1	34.36 Pk	22.5	-27.8	10.5	39.56	46.02	-6.46	0-360	199	V
13	902	30.59 Pk	22.7	-28	10.5	35.79	46.02	-10.23	0-360	102	V
14	928	30.79 Pk	22.7	-27.6	10.5	36.39	46.02	-9.63	0-360	302	V

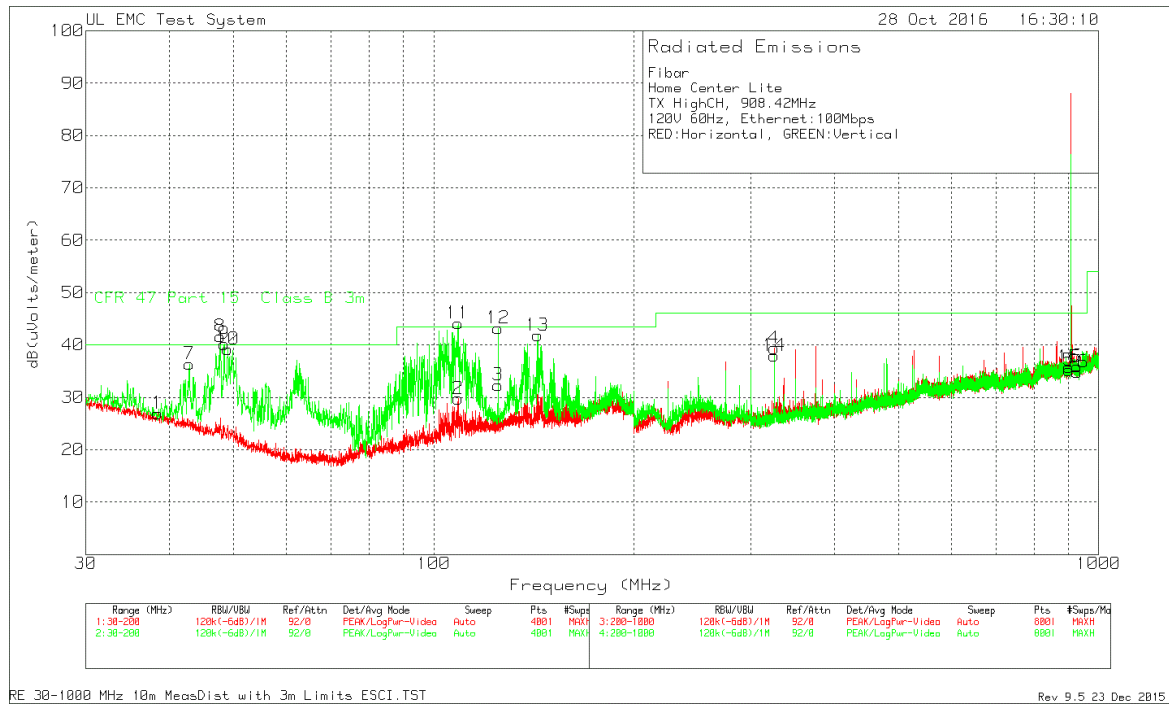
Pk - Peak detector

Radiated Emission Data

Test Frequency (MHz)	Meter Reading (dBuV)	Antenna Factor (dB/m)	Antenna Path (dB)	10M to 3M Factor (dB)	Corrected Reading (dB(uVolts/meter))	QP		Azimuth [Degs]	Height [cm]	Polarity
						QP Limit (dBuV/m)	Margin (dB)			
49.6075	38.91 Qp	10.6	-30	10.5	30.01	40	-9.99	160	137	V
124.79	27.34 Qp	13.7	-29.7	10.5	21.84	43.52	-21.68	68	258	V
108.555	44.17 Qp	11.9	-29.8	10.5	36.77	43.52	-6.75	230	109	V
124.79	27.67 Qp	13.7	-29.7	10.5	22.17	43.52	-21.35	339	102	V
143.1075	36.53 Qp	14.1	-29.6	10.5	31.53	43.52	-11.99	291	157	V
719.76	25.38 Qp	20.3	-27.3	10.5	28.88	46.02	-17.14	228	111	H
815.76	25.88 Qp	22.5	-27.8	10.5	31.08	46.02	-14.94	53	340	H
909.06	26.85 Qp	23.1	-27.6	10.5	32.85	46.02	-13.17	10	354	H

Qp - Quasi-Peak detector

Transmitter High Channel – PLOT



Transmitter High Channel – DATA

Fibar
 Home Center Lite
 TX HighCH, 908.42MHz
 120V 60Hz, Ethernet:100Mbps
 RED:Horizontal, GREEN:Vertical

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Antenna Factor dB/m	Path dB	10M to Corrected		QP		Azimuth [Degs]	Height [cm]	Polarity
					3M Factor dB	Reading dB(uVolts/meter)	Limit dBuV/m	Margin (dB)			
1	38.4575	31.5 Pk	14.9	-30	10.5	26.9	40	-13.1	0-360	252	H
2	108.8375	37.15 Pk	11.9	-29.8	10.5	29.75	43.52	-13.77	0-360	398	H
3	124.9875	37.82 Pk	13.7	-29.7	10.5	32.32	43.52	-11.2	0-360	398	H
7	42.92	42.57 Pk	13.3	-30	10.5	36.37	40	-3.63	0-360	101	V
8	47.8075	49.83 Pk	11.3	-30	10.5	41.63	40	1.63	0-360	101	V
9	48.445	48.7 Pk	11	-30	10.5	40.2	40	0.2	0-360	101	V
10	49.04	47.88 Pk	10.8	-30	10.5	39.18	40	-0.82	0-360	101	V
11	108.795	51.52 Pk	11.9	-29.8	10.5	44.12	43.52	0.6	0-360	101	V
12	125.03	48.67 Pk	13.7	-29.7	10.5	43.17	43.52	-0.35	0-360	101	V
13	143.3475	46.82 Pk	14.1	-29.6	10.5	41.82	43.52	-1.7	0-360	101	V
4	325	43.49 Pk	14.1	-28.7	10.5	39.39	46.02	-6.63	0-360	302	H
5	902	29.99 Pk	22.7	-28	10.5	35.19	46.02	-10.83	0-360	399	H
6	928	30.3 Pk	22.7	-27.6	10.5	35.9	46.02	-10.12	0-360	302	H
14	325	42.08 Pk	14.1	-28.7	10.5	37.98	46.02	-8.04	0-360	102	V
15	902	30.58 Pk	22.7	-28	10.5	35.78	46.02	-10.24	0-360	199	V
16	928	29.17 Pk	22.7	-27.6	10.5	34.77	46.02	-11.25	0-360	102	V

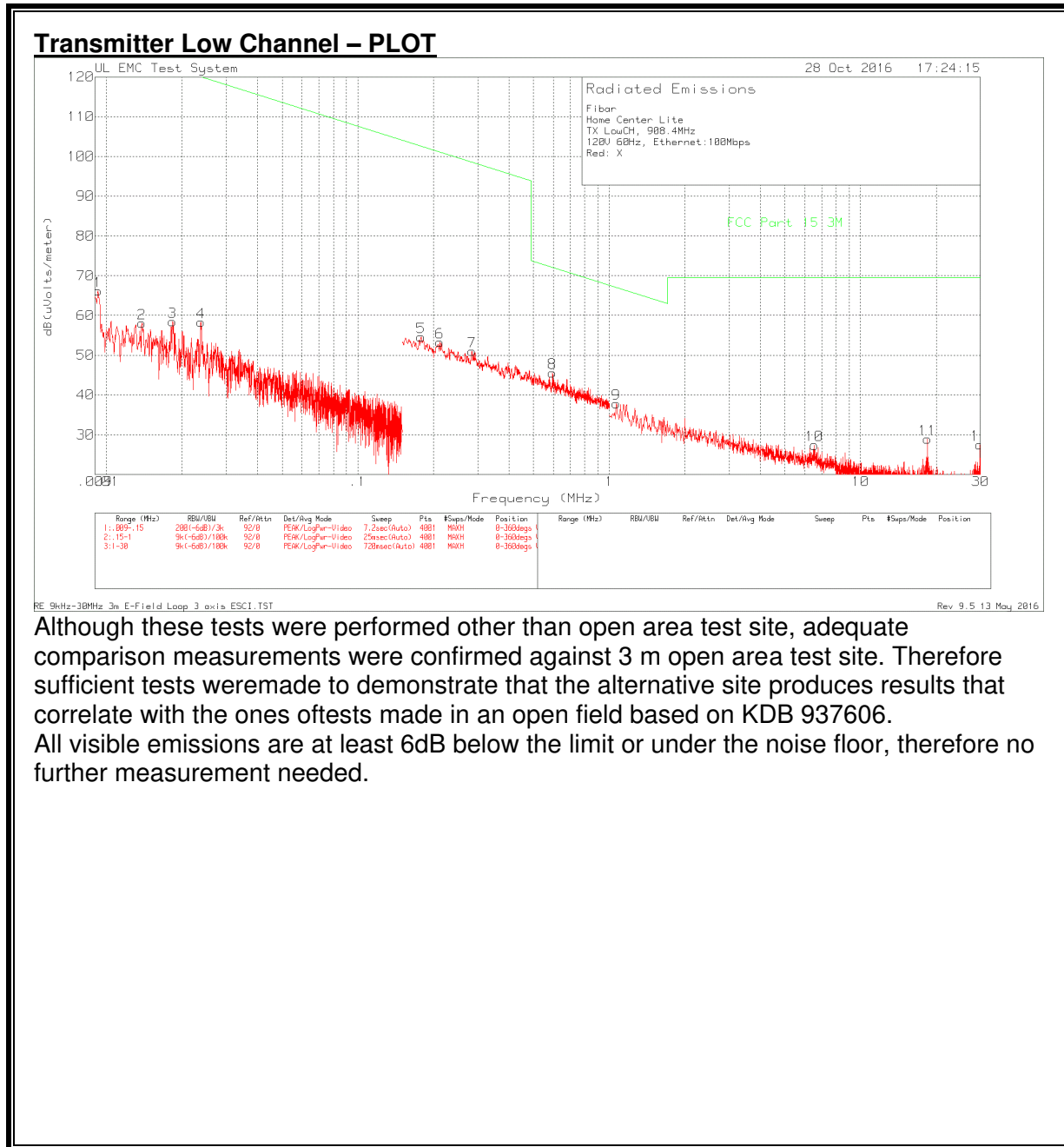
Pk - Peak detector

Radiated Emission Data

Test Frequency (MHz)	Meter Reading (dBuV)	Antenna Factor dB/m	Path dB	10M to Corrected		QP		Azimuth [Degs]	Height [cm]	Polarity
				3M Factor dB	Reading dB(uVolts/meter)	Limit dBuV/m	Margin (dB)			
42.9589	39.01 Qp	13.3	-30	10.5	32.81	40	-7.19	99	111	V
48.0475	36.58 Qp	11.2	-30	10.5	28.28	40	-11.72	199	164	V
48.205	37.59 Qp	11.1	-30	10.5	29.19	40	-10.81	56	115	V
48.8	39.36 Qp	10.9	-30	10.5	30.76	40	-9.24	216	108	V
108.555	44.17 Qp	11.9	-29.8	10.5	36.77	43.52	-6.75	230	109	V
124.79	27.67 Qp	13.7	-29.7	10.5	22.17	43.52	-21.35	339	102	V
143.1075	36.53 Qp	14.1	-29.6	10.5	31.53	43.52	-11.99	291	157	V
909.06	26.85 Qp	23.1	-27.6	10.5	32.85	46.02	-13.17	10	354	H

Qp - Quasi-Peak detector

SPURIOUS EMISSIONS 9k TO 30 MHz



Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 3 m open area test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 937606. All visible emissions are at least 6dB below the limit or under the noise floor, therefore no further measurement needed.

Transmitter Low Channel – DATA

Fibar
 Home Center Lite
 TX LowCH, 908.4MHz
 120V 60Hz, Ethernet:100Mbps
 Red: X

Marker No.	Test Frequency (MHz)	Meter		Antenna		Corrected Reading dB(uVolts/m eter)	AV Limit dBuV/m	AV Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
		Reading (dBuV)	Detector	Factor dBm	Path dB						
1	0.009245	43.99	Pk	22.2	0	66.19	128.27	-62.08	0-360	157	V
2	0.01383	38.56	Pk	19.5	0	58.06	124.77	-66.71	0-360	157	V
3	0.01831	41.18	Pk	17.3	0	58.48	122.33	-63.85	0-360	157	V
4	0.023735	42.44	Pk	15.9	0	58.34	120.08	-61.74	0-360	157	V
5	0.17854	43.25	Pk	11.3	0	54.55	102.56	-48.01	0-360	157	V
6	0.2122	41.92	Pk	11.3	0	53.22	101.07	-47.85	0-360	157	V
7	0.2844	39.67	Pk	11.3	0	50.97	98.52	-47.55	0-360	157	V
8	0.59496	34.28	Pk	11.3	0	45.58	72.11	-26.53	0-360	157	V
9	1.06525	26.28	Pk	11.4	0.1	37.78	67.06	-29.28	0-360	157	V
10	6.56075	16.08	Pk	11.2	0.1	27.38	69.54	-42.16	0-360	157	V
11	18.487	19.28	Pk	9.4	0.2	28.88	69.54	-40.66	0-360	157	V
12	29.86225	19.18	Pk	8	0.3	27.48	69.54	-42.06	0-360	157	V

Pk - Peak detector

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

7.2. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 7.2.2

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

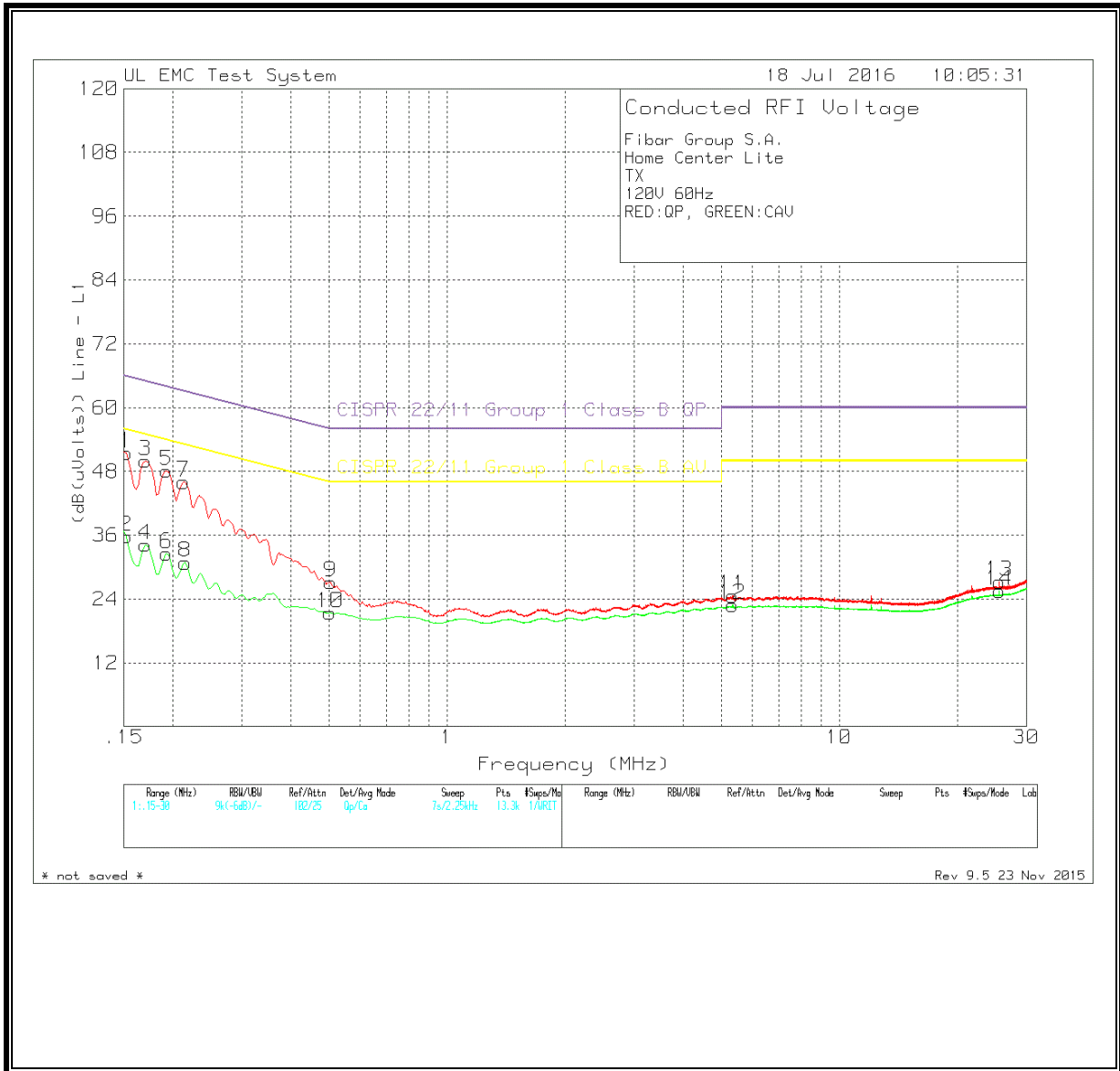
The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.10:2013

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

LINE 1 PLOT – TX Mode



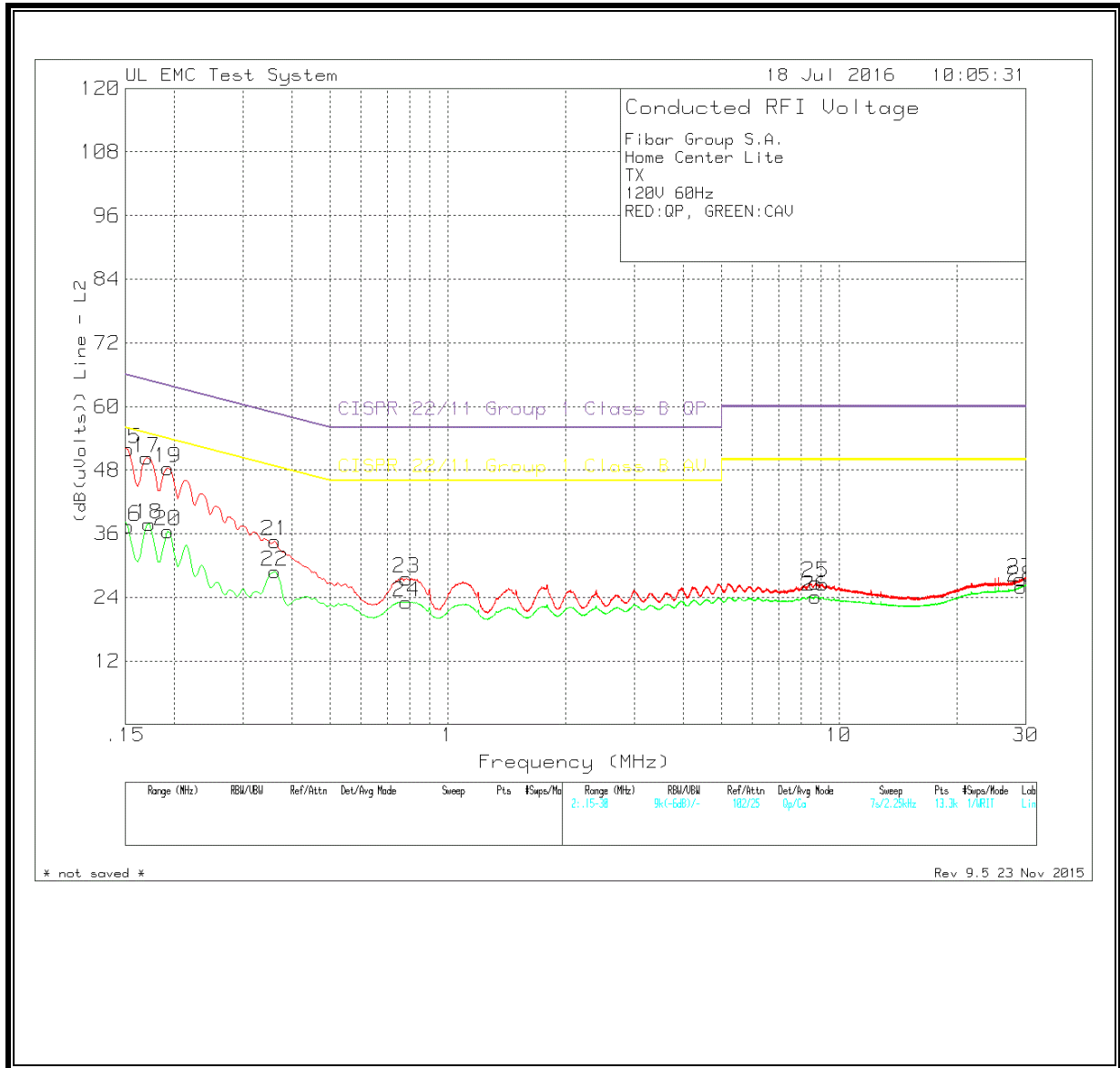
LINE 1 DATA – TX Mode

Fibar Group S.A.
 Home Center Lite
 TX
 120V 60Hz
 Trace Markers

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	LISN Factor dBm	Path dBm	Corrected Reading (dB(uVolts))	QP Limit	QP Margin (dB)	AV Limit	AV Margin (dB)
Range 1: Line - L1 .15 - 30MHz										
1	0.15225	37.77	Qp	0.1	13.6	51.47	65.88	-14.41	-	-
2	0.15225	22.07	Ca	0.1	13.6	35.77	-	-	55.88	-20.11
3	0.17025	37.81	Qp	0.1	12.1	50.01	64.95	-14.94	-	-
4	0.17025	21.99	Ca	0.1	12.1	34.19	-	-	54.95	-20.76
5	0.19275	36.5	Qp	0.1	11.5	48.1	63.92	-15.82	-	-
6	0.19275	20.95	Ca	0.1	11.5	32.55	-	-	53.92	-21.37
7	0.213	34.47	Qp	0.1	11.4	45.97	63.09	-17.12	-	-
8	0.21525	19.37	Ca	0.1	11.4	30.87	-	-	53	-22.13
9	0.5055	16.49	Qp	0	10.7	27.19	56	-28.81	-	-
10	0.50325	10.72	Ca	0	10.7	21.42	-	-	46	-24.58
11	5.34975	13.73	Qp	0	10.9	24.63	60	-35.37	-	-
12	5.3475	11.98	Ca	0	10.9	22.88	-	-	50	-27.12
13	25.59975	14.36	Qp	0	12.9	27.26	60	-32.74	-	-
14	25.59975	12.66	Ca	0	12.9	25.56	-	-	50	-24.44

Qp - Quasi-Peak detector
 Ca - CISPR Average detection

LINE 2 PLOT – TX Mode



LINE 2 DATA – TX Mode

Fibar Group S.A.
 Home Center Lite
 TX
 120V 60Hz
 Trace Markers

Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	LISN Factor dBm	Corrected Path Reading dBm (dB(uVolts))	QP Limit	QP Margin (dB)	AV Limit	AV Margin (dB)
Range 2: Line - L2 .15 - 30MHz									
15	0.15225	37.65	Qp	0.1	14.2	51.95	65.88 -13.93	-	-
16	0.15225	23.07	Ca	0.1	14.2	37.37	-	55.88	-18.51
17	0.17025	37.63	Qp	0.1	12.6	50.33	64.95 -14.62	-	-
18	0.1725	25.23	Ca	0.1	12.5	37.83	-	54.84	-17.01
19	0.19275	36.26	Qp	0.1	12	48.36	63.92 -15.56	-	-
20	0.19275	24.41	Ca	0.1	12	36.51	-	53.92	-17.41
21	0.3615	23.33	Qp	0	11.3	34.63	58.69 -24.06	-	-
22	0.3615	17.61	Ca	0	11.3	28.91	-	48.69	-19.78
23	0.7845	16.49	Qp	0	11.1	27.59	56 -28.41	-	-
24	0.7845	12.01	Ca	0	11.1	23.11	-	46	-22.89
25	8.72025	14.86	Qp	0.1	11.8	26.76	60 -33.24	-	-
26	8.70225	12.24	Ca	0.1	11.8	24.14	-	50	-25.86
27	29.1165	13.9	Qp	-0.1	13.6	27.4	60 -32.6	-	-
28	29.22225	12.46	Ca	-0.1	13.6	25.96	-	50	-24.04

Qp - Quasi-Peak detector
 Ca - CISPR Average detection