

TEST REPORT

Applicant:	Cross Point B.V.
Address of Applicant:	Waanderweg 12, Emmen, 7812 HZ, Netherlands
Manufacturer:	Cross Point B.V.
Address of Manufacturer:	Waanderweg 12, Emmen, 7812 HZ, Netherlands
Product name:	ARGUS AM Concealed System
Model:	ARGUS AM Floor System
Rating(s):	Input: 115Vac, 0.7A, 50-60Hz/ 230Vac, 0.35A, 50-60Hz Output: 32.5Vdc, 1.6A (For power supply) Input: 32.5Vdc, 1.2A (For main)
Trademark:	Cross Point
Standards:	47 CFR PART 15 Subpart C
FCC ID:	N9G-CP511ARGFS
Data of Receipt:	2019-04-10
Date of Test:	2019-04-10~2019-05-15
Date of Issue:	2019-05-16
Test Result	Pass*

* In the configuration tested, the test item complied with the standards specified above.

Authorized for issue by:**Test by:**

May.16, 2019 Eleven Liang
Project Engineer




May.16, 2019

Pauler Li 
Project Engineer

Date Name/Position Signature

Date Name/Position Signature

Possible test case verdicts:

test case does not apply to the test object ..: N/A

test object does meet the requirement.....: P (Pass)

test object does not meet the requirement..: F (Fail)

Testing Laboratory information:

Testing Laboratory Name: ITL Co., Ltd.

Address.....: No.8, JinQianLing street 5, DongHuan Road, Huangjiang Town, Dongguan, China.

Testing location : Same as above

Tel : 0086-769-39001678

Fax : 0086-20-62824387

E-mail : itl@i-testlab.com

General remarks:

The test results presented in this report relate only to the object tested.

The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.

This report would be invalid test report without all the signatures of testing technician and approver.

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

General product information:

/

1 Test Summary

Test	Test Requirement	Test method	Result
Antenna Requirement	FCC PART 15 section 15.203	FCC PART 15 section 15.203	PASS
Radiated Emission	FCC PART 15 section 15.209	ANSI C 63.10	PASS
Emission Bandwidth	FCC PART 15 section 15.215(c)	ANSI C 63.10	PASS
Conducted Emission	FCC PART 15 section 15.207	ANSI C 63.10	PASS

Remark:

N/A: because the device is battery operated.
EUT: In this whole report EUT means Equipment Under Test.
Tx: In this whole report Tx (or tx) means Transmitter.
Rx: In this whole report Rx (or rx) means Receiver.
RF: In this whole report RF means Radio Frequency.
ANSI C63.10: the detail version is ANSI C63.10:2013 in the whole report.

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3 General Information

3.1 Client Information

Applicant: Cross Point B.V.
Address of Applicant: Waanderweg 12, Emmen, 7812 HZ, Netherlands

3.2 General Description of E.U.T.

Name: ARGUS AM Concealed System
Model No.: ARGUS AM Floor System
Trade Mark: Cross Point
Operating Frequency: 58kHz
Type of Modulation: Acousto Magnetic
Function: ARGUS AM Floor system
Antenna Type: External antenna
Antenna gain: -18 dBi

3.3 Details of E.U.T.

EUT Power Supply: AC 120V, 60Hz
Test mode: 58kHz working
Power cord: /

3.4 Description of Support Units

The EUT has been tested as an independent unit for fixed frequency by testing lab.

3.5 Test Location

All tests were performed at:

ITL Co., Ltd.

No.8, JinQianLing street 5, DongHuan Road, Huangjiang Town, Dongguan, China.

0086-769-39001678

itl@i-testlab.com

No tests were sub-contracted.

3.6 Deviation from Standards

Biconical and log periodic antennas were used instead of dipole antennas.

3.7 Abnormalities from Standard Conditions

None.

3.8 Other Information Requested by the Customer

None.

3.9 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- CNAS Lab code:L9342
- FCC Designation No.:CN5035
- IC Registration NO.: 12593A
- NVLAP LAB CODE: 600199-0

3.10 Measurement Uncertainty

The below measurement uncertainties given below are based on a 95% confidence level (base on a coverage factor (k=2).)

Parameter	Uncertainty
Radio frequency	$\pm 1.06 \times 10^{-7}$
total RF power, conducted	1.37 dB
RF power density , conducted	2.89 dB
All emissions, radiated	± 3.35 dB
Temperature	± 0.23 °C
Humidity	± 0.3 %
DC and low frequency voltages	± 0.3 %

4 Instruments Used during Test

No.	Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due
ITL-114	Spectrum Analyzer	Agilent	N9010A	MY51250936	2019/01/28	2020/01/27
ITL-154	EMI test receiver 9kHz to 26.5GHz	R&S	ESR26	101257	2019/01/29	2020/01/28
ITL-116	Pre Amplifier	HP	8447F	3113A05905	2019/01/28	2020/01/27
ITL-117	Wideband Amplifier Super Ultra	Mini-circuits	ZVA-183- S+	469101134	2019/01/28	2020/01/27
ITL-164	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	9168-0844	2017/11/16	2020/11/16
ITL-110	Horn Antenna	A-INFOMW	JXTXLB- 10180-N	J2031090612 133	2019/01/28	2020/01/27
ITL-102	EMI Test receiver	R&S	ESCI	100910	2018/06/19	2019/06/18
ITL-103	Two-line v- network	R&S	ENV216	100120	2018/06/19	2019/06/18
ITL-115	50Ω Coaxial Cable	Mini-circuits	CBL	C001	2018/06/19	2019/06/18
ITL-100	Semi-Anechoic chamber	ETS•Lindgren	FACT3 2.0	CT09015	2018/12/29	2021/12/28
ITL-101	Shielded Room	ETS•Lindgren	8*4*3	CT09010	2018/01/27	2021/01/26
ITL-168	Power Meter	R&S	NRVS	838246/026	2018/09/28	2019/09/27
ITL-163	Active Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-062	2017/11/16	2020/11/16

5 Test Results

5.1 Antenna Requirement

According to FCC Part 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

Test Result

This requirement does not apply to intentional radiators that must be professionally installed (§ 15.203 Antenna requirement).

5.2 Radiated Emissions

Test Requirement: FCC Part 15 C section 209(a)

Test Method: ANSI C63.10

Operating Environment:

Temperature: 25.0 °C Humidity: 50 % RH Atmospheric Pressure: 101 kPa

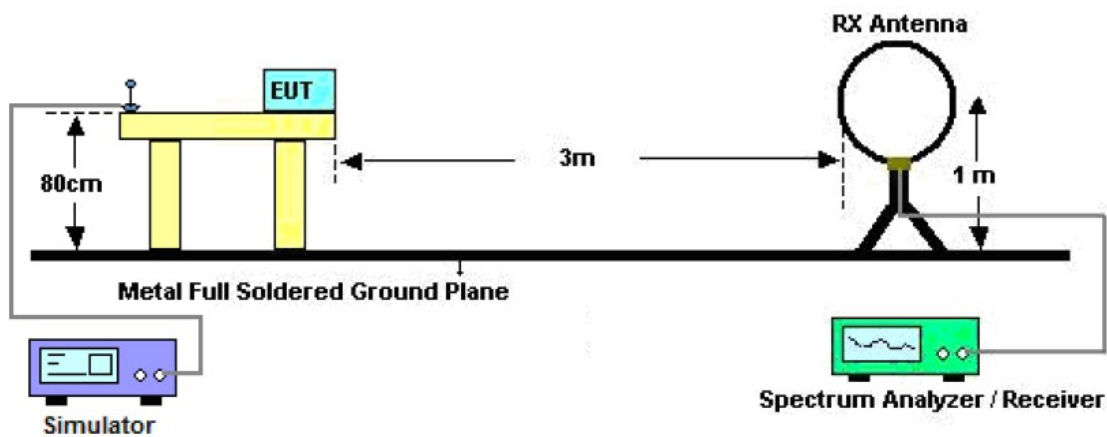
Test Status: Test the transmitter in continuous transmitting mode.

Limit: The field strength of emissions from intentional radiators operated under this Section shall not exceed the following:

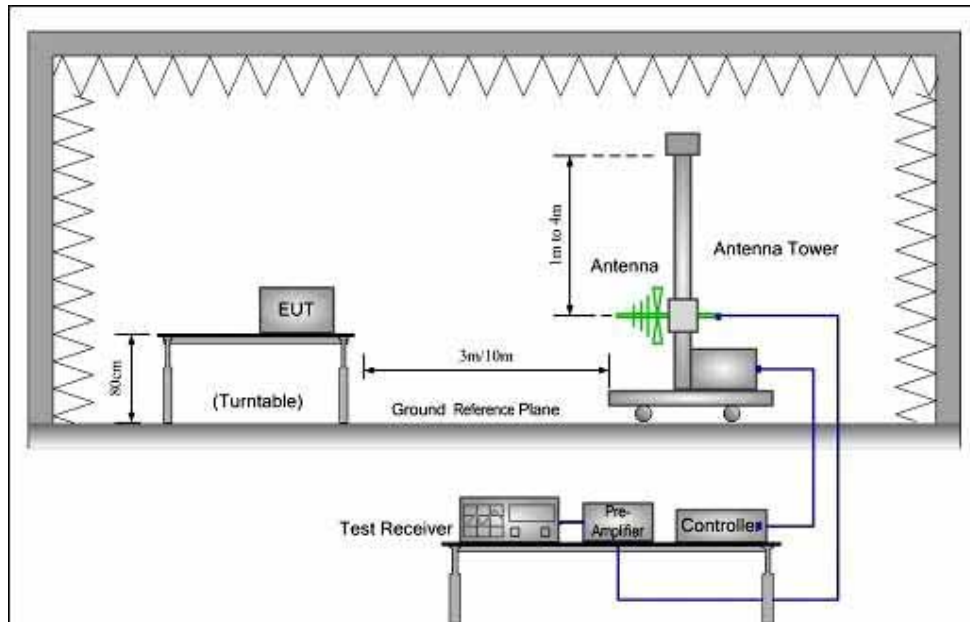
Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	$2400/F(\text{kHz})$	300	$10000 * 2400/F(\text{kHz})$	$20\log^{(2400/F(\text{kHz}))} + 80$
0.490 ~ 1.705	$24000/F(\text{kHz})$	30	$100 * 24000/F(\text{kHz})$	$20\log^{(24000/F(\text{kHz}))} + 40$
1.705 ~ 30	30	30	$100 * 30$	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

Test Configuration:

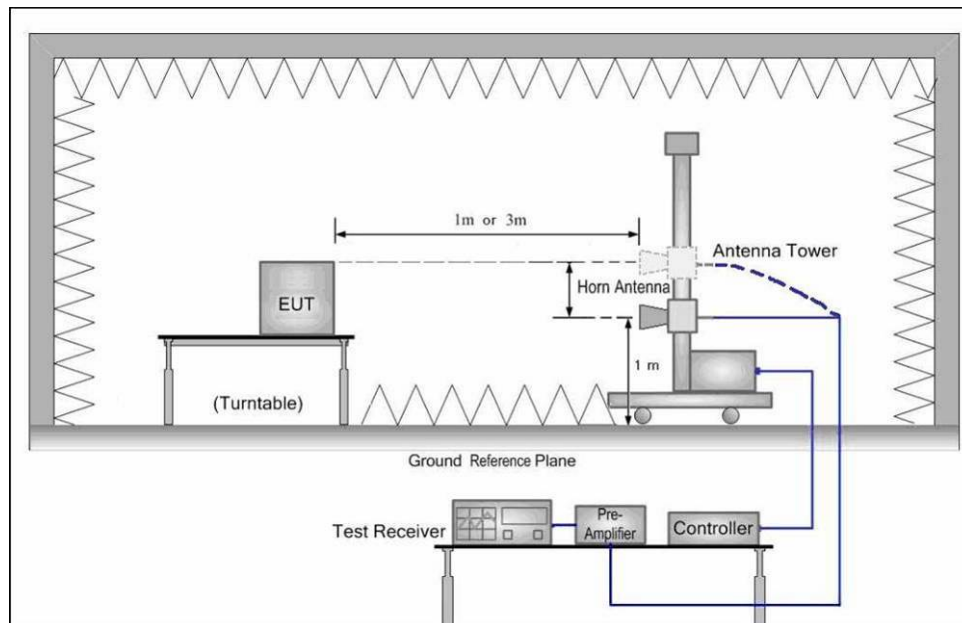
1) 9 kHz to 30 MHz emissions:



2) 30 MHz to 1 GHz emissions:



3) 1 GHz to 40 GHz emissions:



Test Procedure:

1) 9 kHz to 30 MHz emissions:

For testing performed with the loop antenna. The centre of the loop was positioned 1 m above the ground and positioned with its plane vertical at the special distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane.

2) 30 MHz to 1 GHz emissions:

For testing performed with the bi-log type antenna. The measurement is performed with the EUT rotated 360°, the antenna height scanned between 1m and 4m, and the antenna rotated to repeat the measurement for both the horizontal and vertical antenna polarizations.

3) 1 GHz to 40 GHz emissions:

Test site with RF absorbing material covering the ground plane that met the site validation criterion called out in CISPR 16-1-4:2007 was used to perform radiated emission test above 1 GHz.

For testing performed with the horn antenna. The measurement is performed with the EUT rotated 360°, the antenna height scanned between 1m and 4m, and the antenna rotated to repeat the measurement for both the horizontal and vertical antenna polarizations.

The field strength of radiation emission was measured in the following position: EUT stand-up position (Y axis), lie-down position (X, Z axis). The worst case of X axis was reported.

Detector: Resolution bandwidth for Peak and Quasi-Peak value:

200 Hz for 9 kHz to 150 kHz

9 kHz for 150 kHz to 30 MHz

120 kHz for 30 MHz to 1GHz

1 MHz for above 1 GHz,

VBW $\geq$ RBW

Sweep = auto

Detector function = peak

Trace = max hold

For AV value:

Average = Peak value + 20log (Duty cycle)

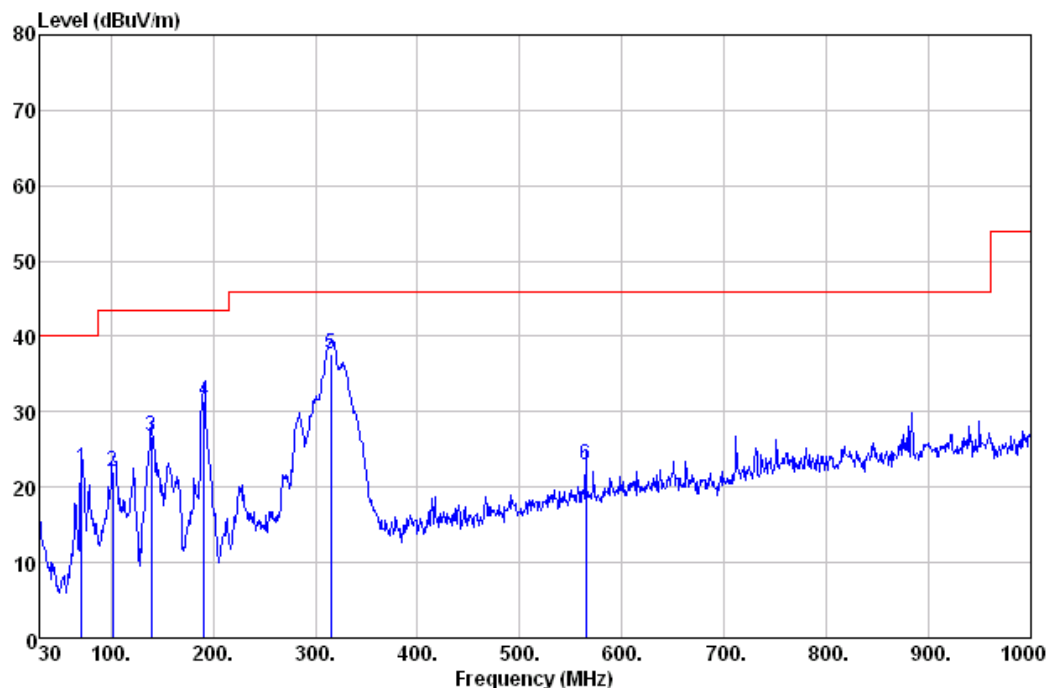
9kHz~30MHz Test result

The Low frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not report

30 MHz~1 GHz Spurious Emissions .Quasi-Peak Measurement

Horizontal:

Peak scan

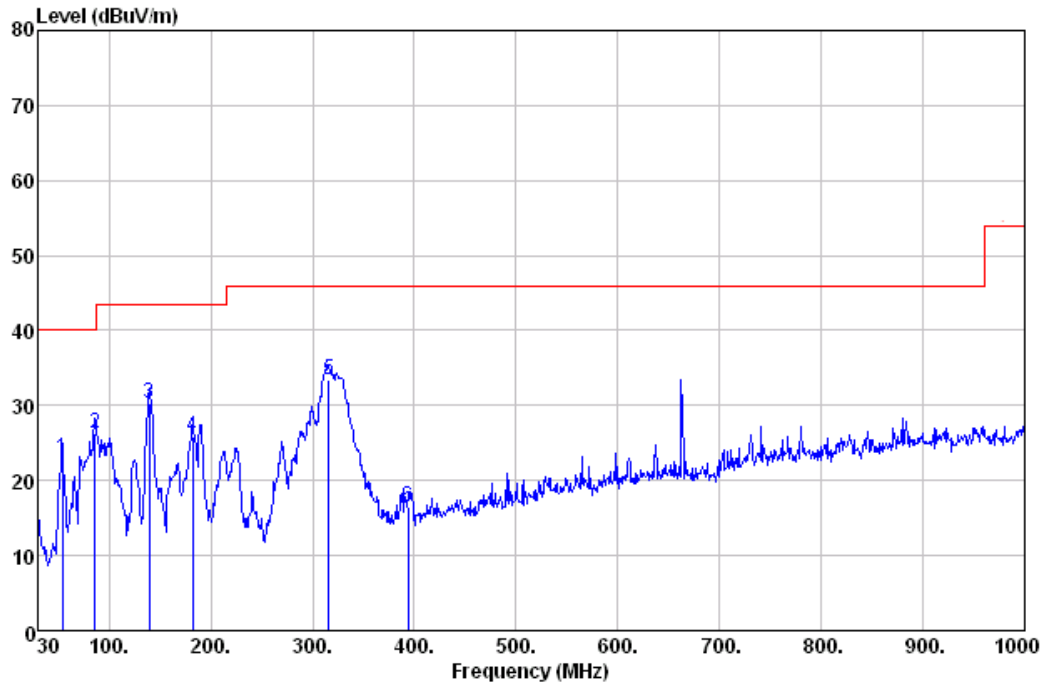


No.	Freq MHz	Read Level dBuV	Antenna Factor dB	Cable Loss dB	Preamp Factor dB	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Pol/Phase	Remark
1	71.710	42.68	7.10	0.99	28.26	22.51	40.00	-17.49	HORIZONTAL	QP
2	101.780	40.88	8.66	1.18	28.76	21.96	43.50	-21.54	HORIZONTAL	QP
3	139.610	46.09	7.40	1.41	28.21	26.69	43.50	-16.81	HORIZONTAL	QP
4	191.020	48.64	8.66	1.66	27.63	31.33	43.50	-12.17	HORIZONTAL	QP
5	315.180	49.44	13.66	2.18	27.54	37.74	46.00	-8.26	HORIZONTAL	QP
6	564.470	29.31	19.44	2.96	28.78	22.93	46.00	-23.07	HORIZONTAL	QP

Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

Vertical:

Peak scan



No.	Freq MHz	Read Level dBuV	Antenna Factor dB	Cable Loss dB	Preamp Factor dB	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Pol/Phase	Remark
1	54.250	42.89	7.67	0.84	28.42	22.98	40.00	-17.02	VERTICAL	QP
2	86.260	45.75	7.75	1.08	28.29	26.29	40.00	-13.71	VERTICAL	QP
3	139.610	49.78	7.40	1.41	28.21	30.38	43.50	-13.12	VERTICAL	QP
4	182.290	43.65	8.29	1.62	27.75	25.81	43.50	-17.69	VERTICAL	QP
5	316.150	45.00	13.68	2.18	27.53	33.33	46.00	-12.67	VERTICAL	QP
6	393.750	26.79	15.61	2.43	28.25	16.58	46.00	-29.42	VERTICAL	QP

Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

Note: Testing is carried out with frequency range 9kHz to the tenth harmonics, which above 4^h Harmonics are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured. The measurements greater than 20dB below the limit from 9kHz to 30MHz.

The fundamental frequency is 58kHz the fundamental and spurious emissions radiated limit base on the operating frequency 58kHz.

5.3 Emission Bandwidth

Test Requirement: FCC Part 15 C section 15.215 (c)
Test Method: ANSI C63.10:
Test Status: Test in transmitting mode at lowest and highest channel.
Operating Environment:
Temperature: 25.0 °C Humidity: 50 % RH Atmospheric Pressure: 101 kPa
Requirements:

According to 15.215 (c), intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

Method of measurement: The useful radiated emission from the EUT was detected by the spectrum analyzer with peak detector. Record the 20 dB bandwidth of the carrier.

According to the ANSI 63.10-2013, the emission bandwidth test method as follows.

Set span = 60kHz, centered on a transmitting channel

RBW ≥ 1% 20dB Bandwidth, VBW ≥ RBW

Sweep = auto

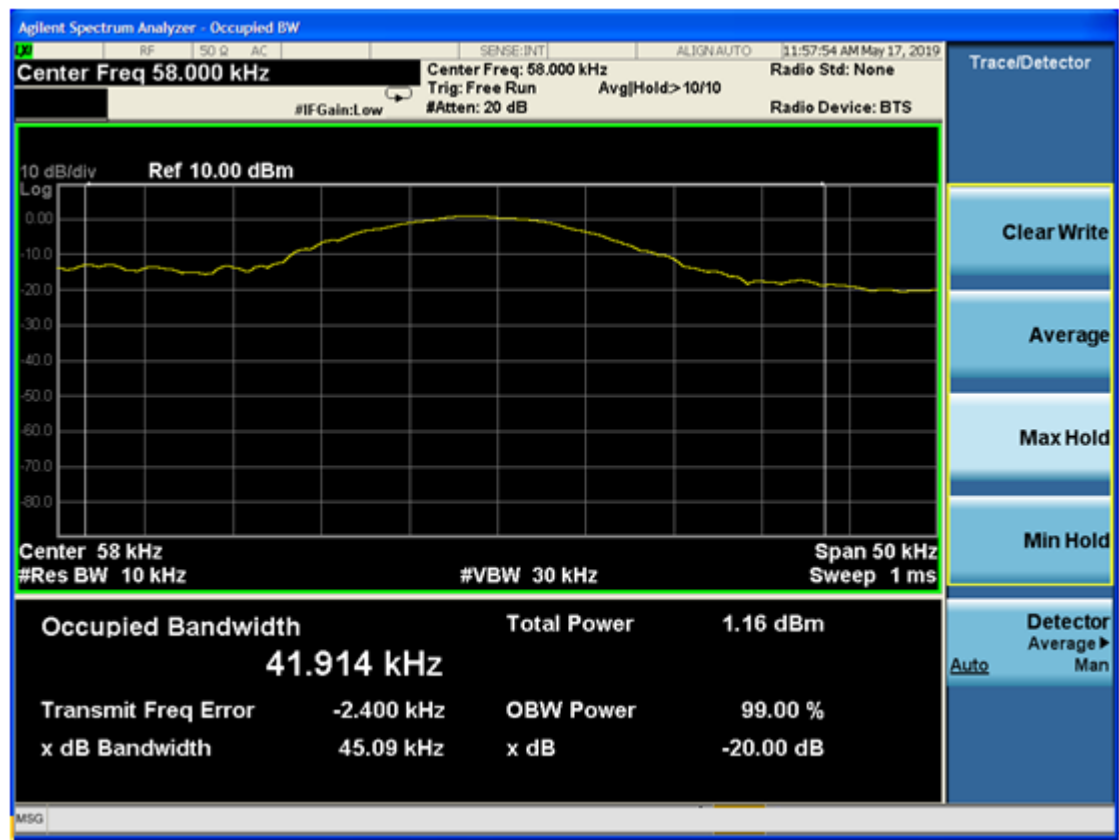
Detector function = peak

Trace = max hold

Test result:

Test Frequency kHz	20dB Bandwidth kHz
58	45.09

Test plot:



5.4 Conducted Emissions at Mains Terminals 150 kHz to 30MHz

Test Requirement: FCC Part 15 C section 15.207

Test Method: ANSI C63.10

Operating Environment:

Temperature: 25.0 °C Humidity: 50 % RH Atmospheric Pressure: 101 kPa

Frequency Range: 150 kHz to 30 MHz

Detector: Peak for pre-scan (9 kHz Resolution Bandwidth)

Test Limit

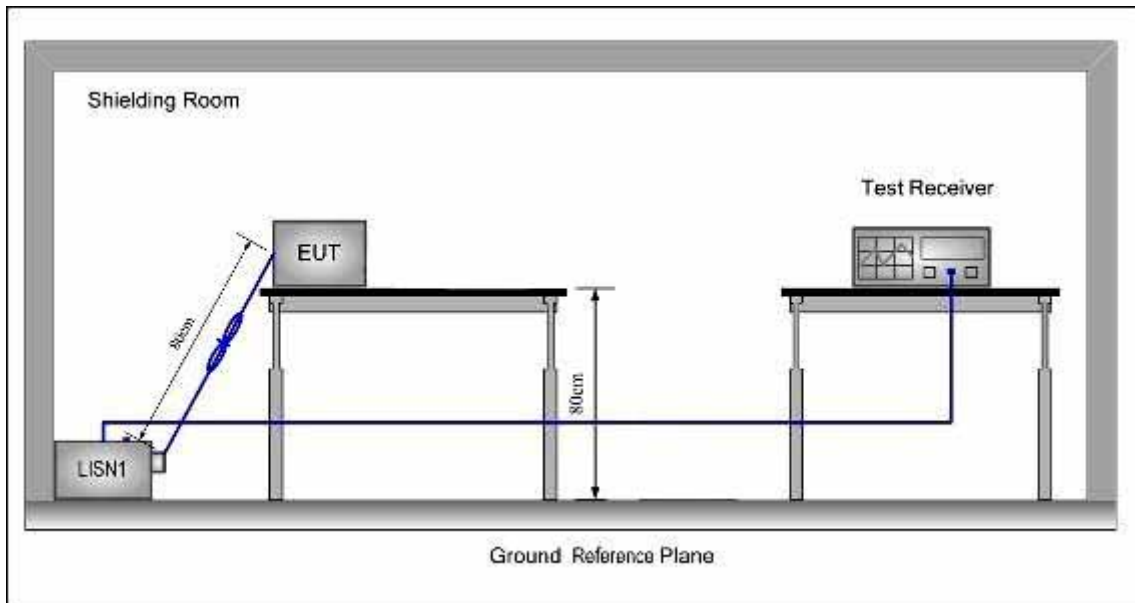
Limits for conducted disturbance at the mains ports of class B

Frequency Range (MHz)	Class B Limit dB(μV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50
NOTE 1 The limit decreases linearly with the logarithm of the frequency in the range 0,15 MHz to 0,50 MHz.		

EUT Operation:

Test in normal operating mode. For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage.

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, channels and antenna ports (if EUT with antenna diversity architecture).

Test Configuration:**Test procedure:**

1. The mains terminal disturbance voltage test was conducted in a shielded room.
2. The EUT was connected to AC power source through a LISN (Line Impedance Stabilization Network) which provides a $50\Omega/50\mu\text{H} + 5\Omega$ linear impedance. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
3. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.
4. The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT..

Measurement Data

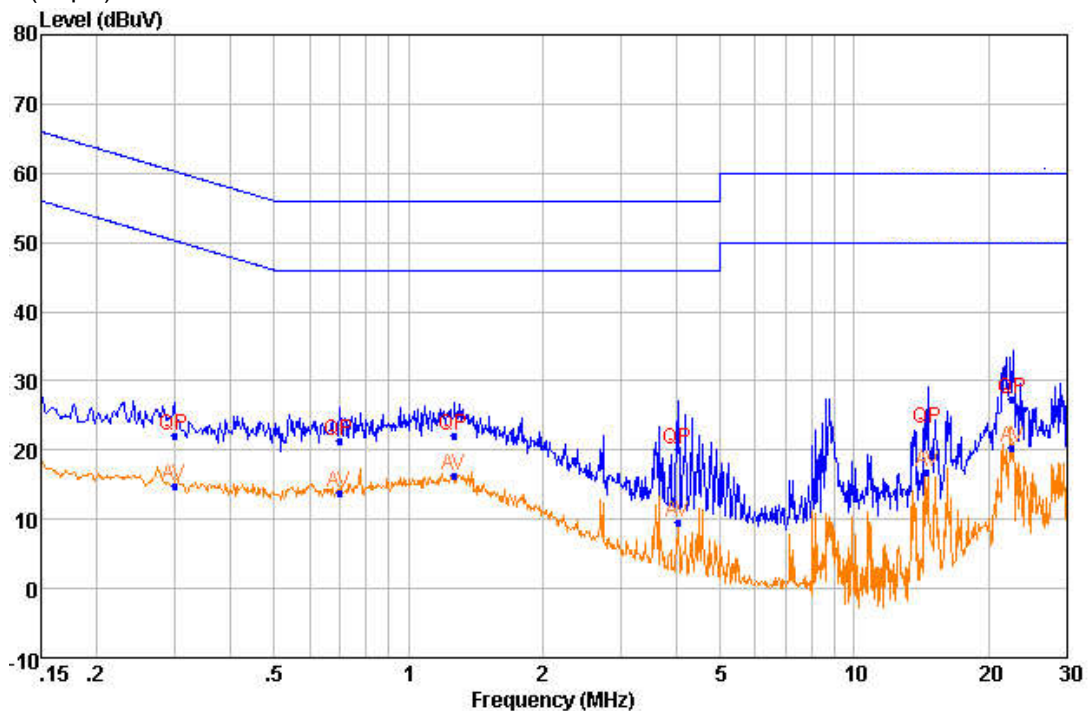
An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected. For EUT the communicating was worst case mode.

The following Quasi-Peak and Average measurements were performed on the EUT Live line

Peak Scan:

Level (dBμV)



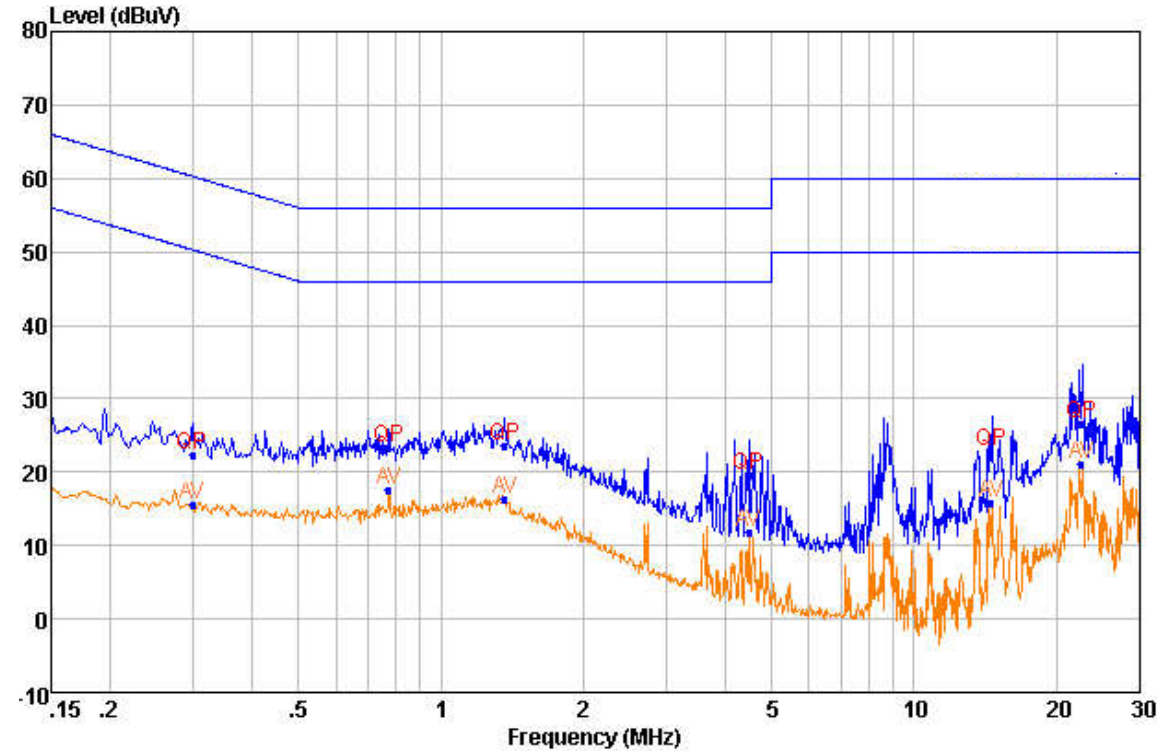
Quasi-peak and Average measurement

NO.	Freq MHz	Level dBμV	Remark	LISN Factor dB	Cable Loss dB	Limit Line dBμV	Margin dB
1	0.299	22.20	QP	9.45	0.24	60.28	-38.08
2	0.299	14.80	Average	9.45	0.24	50.28	-35.48
3	0.699	21.31	QP	9.27	0.29	56.00	-34.69
4	0.699	13.87	Average	9.27	0.29	46.00	-32.13
5	1.266	22.01	QP	9.29	0.32	56.00	-33.99
6	1.266	16.37	Average	9.29	0.32	46.00	-29.63
7	4.020	20.05	QP	9.30	0.39	56.00	-35.95
8	4.020	9.59	Average	9.30	0.39	46.00	-36.41
9	14.562	23.04	QP	9.36	0.46	60.00	-36.96
10	14.562	16.78	Average	9.36	0.46	50.00	-33.22
11	22.610	27.42	QP	9.73	0.48	60.00	-32.58
12	22.610	20.35	Average	9.73	0.48	50.00	-29.65

Neutral Line

Peak Scan:

Level (dBμV)



Quasi-peak and Average measurement

NO.	Freq MHz	Level dBμV	Remark	LISN Factor dB	Cable Loss dB	Limit Line dBμV	Margin dB
1	0.299	22.29	QP	9.37	0.24	60.28	-37.99
2	0.299	15.56	Average	9.37	0.24	50.28	-34.72
3	0.774	23.25	QP	9.36	0.29	56.00	-32.75
4	0.774	17.47	Average	9.36	0.29	46.00	-28.53
5	1.364	23.68	QP	9.38	0.32	56.00	-32.32
6	1.364	16.43	Average	9.38	0.32	46.00	-29.57
7	4.467	19.68	QP	9.43	0.39	56.00	-36.32
8	4.467	11.75	Average	9.43	0.39	46.00	-34.25
9	14.562	22.83	QP	9.65	0.46	60.00	-37.17
10	14.562	15.94	Average	9.65	0.46	50.00	-34.06
11	22.610	26.62	QP	9.84	0.48	60.00	-33.38
12	22.610	21.14	Average	9.84	0.48	50.00	-28.86

-- End of test report --