BLUEGUIDEEMCLAB

TEST REPORT

File Number : EMC-333-2020
E.U.T. Name : iLine F PRO
Type: I3TF-MIC-G02-A
Serial n° tested: 20200313028

- **This report may not be reproduced other than in full except with a written approval of the issuing laboratory.**

- **Test results relate only to the items tested. Items under test are supplied by test requestor.**

Drafted by:	Verified by:	Approved by:
Test engineer	Technical manager	Operational manager
Harsha Madhusudhana	*Hendrik Meuleman*	*Ivan Malfait*
14/December/2020	14 Dec 2020	14 Dec - 2020

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File Number: EMC-333-2020

VERSION HISTORY

File Number /Version	Issued By	Revision Date	Approved By	Approval Date	Adapted Pages	Reason
EMC-333-2020	Harsha Madhusudhana	14/12/2020	Ivan Malfait	14/12/2020	All	Initial Issue

FCD-0367/4 QP-0017

File Number : EMC-333-2020

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(1) in front of the measurement = NOT under accreditation

FCD-0370/4 **QP-0017**

TEST-PLAN

File Number : EMC-333-2020

- Name and address details of the requestor / manufacturer:

Requestor company name : Ovizio Imaging Systems SA
Contact person : Mr. André Lebacq
Witness during testing : Mr. Jonathan Bonnevie
Requestor address : Rue du Bourdon 100 b2
1180 Uccle
Country : Belgium

Tel/Fax : +32 2 600 50 92
GSM : ----------
VAT Nr : BE0821 638 597

Is the requestor also the manufacturer? YES

Manufacturer company name : ----------
Manufacturer address : ----------

Country : ----------

Tel/Fax : ----------

- Order details:

Quotation Reference : BGEMC-20-548-V3
PO Number : PO2020/3266

- Logistics:

Date of arrival: 5/12/2020
Date of departure: 5/12/2020

- Product information:

Name : iLine F PRO
Type : I3TF-MIC-G02-A
firmware version : 1.1.4
Serial N° : 20200313028
Short description : The equipment is designed for the in-line monitoring of morphological cellular parameters via a closed loop disposable probe that can be sterilized.
Input voltage : 120V/60Hz AC from BGEMC to the external AC/DC adapter CUI Inc. - SDI-90-24U that is supplied with the device.

Trademarks : ----------
Brand : ----------

- Documentation provided:

User manual : NO

- Measurements according following standard(s):

The product is evaluated according to standard FCC Title 47.Part 15 for the below basic standards:

Emission

Enclosure Port	Radiated Emission	Section 15.109 (ANSI C63.4:2014) (30 MHz - 18 GHz, Class A)
Enclosure Port	Conducted Emission	Section 15.109 (ANSI C63.4:2014) (150MHz - 30MHz, Class A)

- Sampling method.

Applicable : NO
Sampling method : ----------
If YES how : ----------

- Subcontracting.

Applicable : NO
Test name : ----------
Name subcontractor : ----------

- Remarks and actions during measurements:

Warning message to be included in the user manual:

For a Class A digital device or peripheral, the instructions furnished to the user shall include the below statement:
Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Other Remarks :

The maximum clock frequency inside the device is 3GHz (i.e. max computer CPU clock)
EUT was running into stress conditions so that maximum power consumption is to be expected.

- Environmental conditions:

Testing has been performed in a controlled laboratory environment. The climatic conditions are maintained within the below indicated range. If a test requires more stringent environmental conditions, the actual measured values at the time of measurement will be indicated in the test report.

Ambient temperature: 18°C - 26°C **Relative air humidity**: 20% - 70%

Compliance assessment (Pass or Fail)

Compliance or non-compliance with a disturbance limit shall be determined in the following manner.

If U_{CAL} *is less than or equal to* U_{CISPR} *of Table 1 CISPR 16-4-2:2011 + AMD1:2014 + AMD2:2018, then:*
– compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
– non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If U_{CAL} *is greater than* U_{CISPR} *of Table 1 CISPR 16-4-2:2011 + AMD1:2014 + AMD2:2018, then:*
– compliance is deemed to occur if no measured disturbance level, increased by U_{Lab}, exceeds the disturbance limit;
– non-compliance is deemed to occur if any measured disturbance level, increased by U_{Lab}, exceeds the disturbance limit.

Uncertainty values at BGEMC laboratory

Radiated emission 3m distance EUT from antenna in the semi-anechoic chamber (SAC)

	Expanded measurement uncertainty		
Frequency range	**± U_{CAL} (dB)**	**± U_{CISPR} (dB)**	**± U_{Lab} (dB)**
30 ~ 200 MHz	**4,7**	**6,3**	**0**
200 ~ 1000 MHz	**4,5**	**6,3**	**0**
1 ~ 4,9 GHz	**4,9**	**5,2**	**0**
4,9 ~ 18 GHz	**5,2**	**5,5**	**0**

Conducted emission at AC mains using a V-AMN

	Expanded measurement uncertainty		
Frequency range	**± U_{CAL} (dB)**	**± U_{CISPR} (dB)**	**± U_{Lab} (dB)**
9 ~ 150 kHz	**3,4**	**3,8**	**0**
150 kHz ~ 30 MHz	**3,4**	**3,4**	**0**

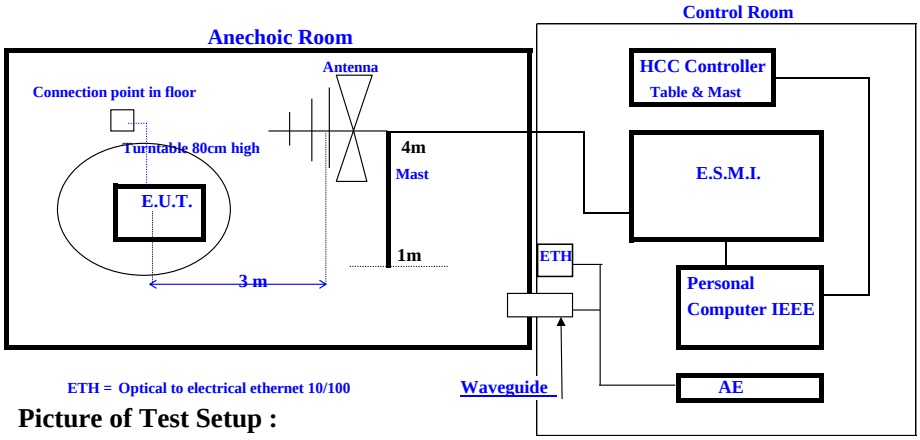
Overview of test results

Test name	Port	Basic standard	Standard used	Test result
Radiated Emission	Enclosure Port	FCC Title 47.Part 15	Section 15.109 (ANSI C63.4:2014)	PASS
Conducted Emission	AC Power Port	FCC Title 47.Part 15	Section 15.107 (ANSI C63.4:2014)	PASS

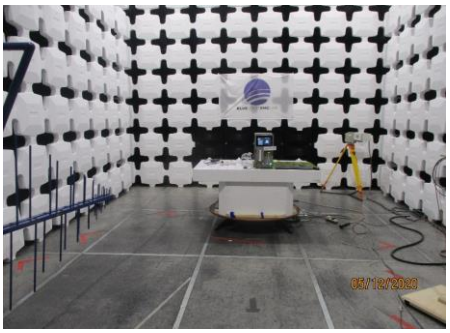
DRAWING AND/OR PICTURE OF TEST SETUP

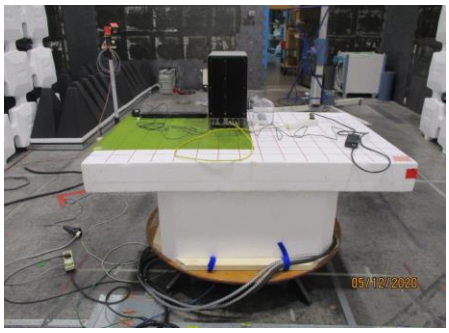
Test system : PEMC 01

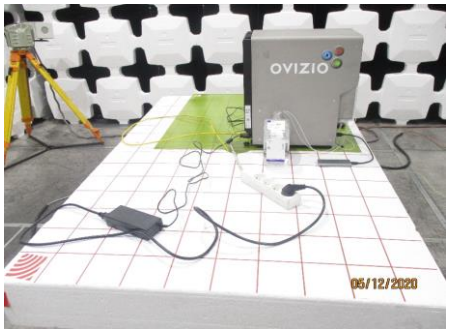
According standard N° : FCC15.109 Radiated Emissions

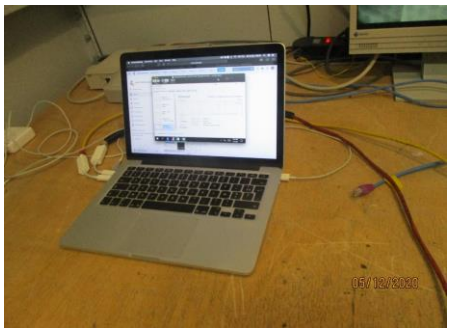


Picture of Test Setup :









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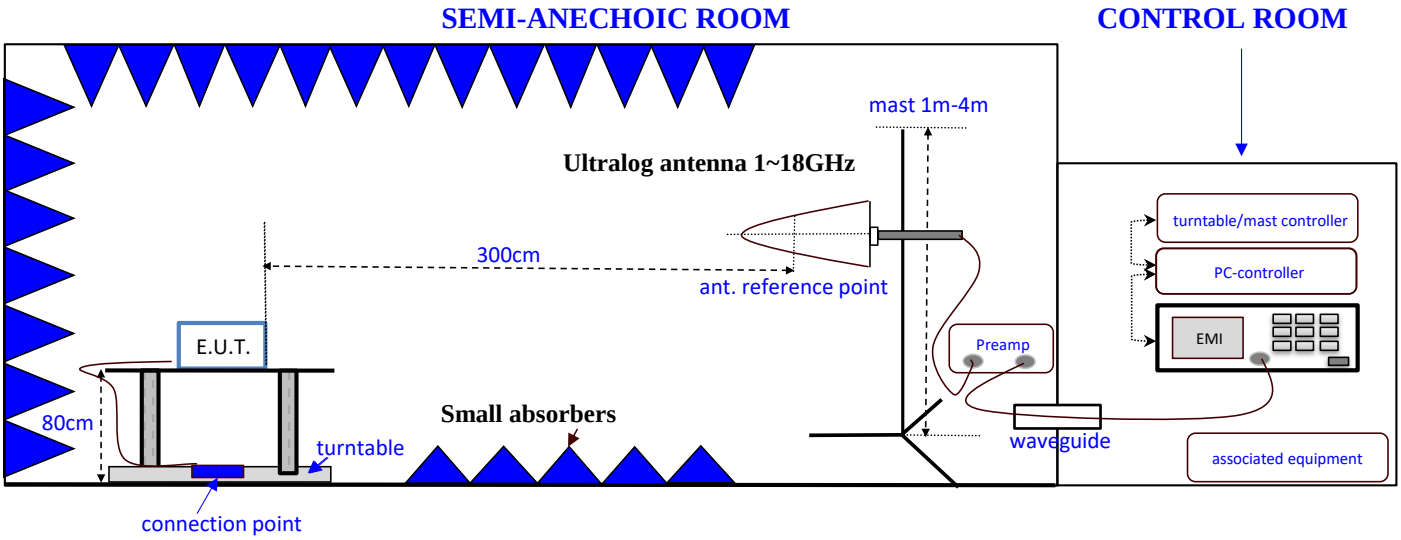
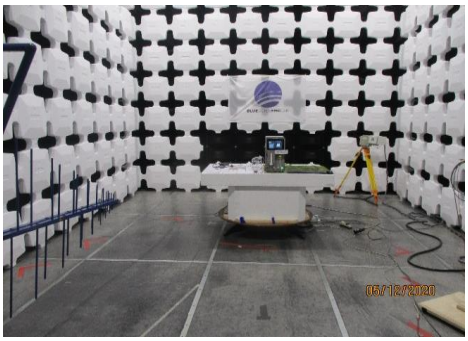
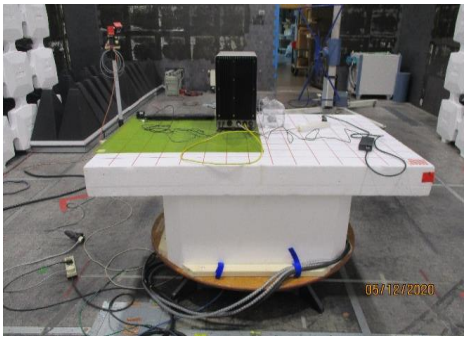
DRAWING AND/OR PICTURE OF TEST SETUP

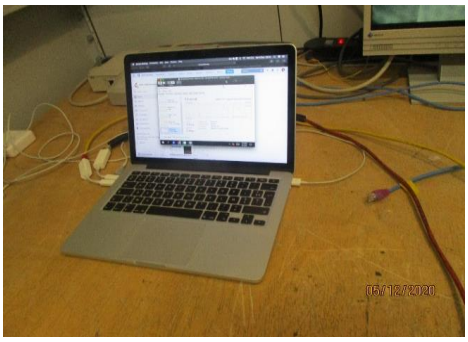
Test standard: **Radiated Emissions (1 ~ 18 GHz)**



Picture(s) of Test Setup :







File Number : EMC-333-2020

USED EQUIPMENT DURING MEASUREMENT

Test system : PEMC 01

Identification	Description	Type	Serial n°	Manufacturer	Date Last performed Calibration	Cal Interval	Certificat n°
PEMC 01-000K	Anechoic Room	Siemens-Matsushita	003-002-033-94	Siemens Matsushita Components	24 aug 20	36	EH-H25b/20
PEMC 01-001	Automatic turntable, wooden, d=1.2m	HCT12	835822/0006	Rohde & Schwarz	NA	NA	-
PEMC 01-002	Automatic antenna mast, mobile, h=4m	HCM	836622/0009	Rohde & Schwarz	NA	0	-
PEMC 01-003K	Bilog antenna 30 MHz-1GHz	CBL6111A	1556	Chase	23 jul 19	24	201902824.00 + 01
PEMC 01-014K	EMI test receiver 20 Hz - 26.5 GHz	ESMI	839699/0010 & 840498/004	Rohde & Schwarz	20 jul 20	12	202002011.00
PEMC 01-038K	Pre-amplifier A.R. 9 kHz - 2 GHz typ 29 dB	CPA9231A	3205 / 18564	Chase	09 mei 19	24	BGEMC2019050901.00
PEMC 01-049K	RF- Cable Mast-Bilog ant (AC CP2)	-		Rohde & Schwarz	09 mei 19	12	BGEMC2019050902.00
PEMC 01-075K	2.4 GHz Notch Filter	BRM50702-01	G038	Micro-Tronics	28 jul 20	12	202002458.00
PEMC 01-085	EMC32 Software Application	EMC32	Ver 10.50.40 or higher	Rohde & Schwarz	01 feb 18	84	------
BGEMC 02-010K	Microwave antenna 1-26,5GHz	HL025	100071	Rohde&Schwarz	16 jul 19	24	201902825.00
PEMC 01-094K	Pre-Amplifier 500MHz-18GHz	PAM-118A	18040057	Com-Power Corporation	27 mei 20	12	13 jan 99
PEMC 01-095K	Cable Pasternack PE3C0689-400cm	PE-P142LL	None	Pasternack	16 apr 19	24	BGEMC2019041601.01
PEMC 01-096K	Cable Pasternack PE3C0689-500cm	PE-P142LL	None	Pasternack	06 mei 19	24	BGEMC2019050601.01

File Number : EMC-333-2020

OVERVIEW TEST RESULTS

Test System : PEMC -01
According standard : FCC15.109 Radiated Emission

	Antenna Polarisation		Remarks	EUT configuration
	Horizontal	Vertical		
Test mode used				
Combined Horizontal & Vertical	X	X	----------	----------
Used test setup and EUT placement/mode				
1 30 ~ 1000MHz (Class A)	P	P	----------	
2 1 ~ 18 GHz (Class A)	P	P	----------	
3	----	----	----------	
4	----	----	----------	
5	----	----	----------	

Observations / remarks during testing

During the test the EUT is fully operational (stress mode active to maximize the emissions). A keyboard, mouse and external drive USB3 are connected. The EUT is remotely controlled via 2xEthernet (UTP CAT5E cable used). The EUT is controlled locally via the touchscreen.

The EUT has PASSED the test.

Measurement result clarifications

The reported radiated emission level (dBµV/m) in the "Final_result tables" on next pages should be interpreted as follows:
Level (dBµV/m) = Raw Value (dBµV) + Correction Factor (dB/m)

Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier Factor (dB)
Raw Value (dBµV) = level measured by the EMI receiver

Validation

✓ Hardware

✓ Software

Legend

P	= Test Pass	F	= Test Fail
--------	= Test not performed/input not used	X	= Used Input

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Radiated emission measurement

EUT Information

BGEMC number:	EMC-333-2020
EUT Name:	iLine F PRO
Manufacturer:	Ovizio Imaging Systems SA
Serial Number:	20200313028
Hardware Rev:	2.1.2
Software	N/A (stress test applied)
Comment:	T2: Stress operation
Mode	Keyboard, mouse, external drive USB3 & 2x Ethernet (UTP- CAT5E) connected;
Power Supply:	120V/60Hz AC to the external AC/DC adapter CUI Inc. - SDI-90-24U that is supplied with the device.
Standard used:	FCC sec 15. 109 (ANSI C63.4:2014) : Radiated emissions (30MHz -1GHz)
Operator:	Harsha Madhusudhana

Hardware Setup: EMI radiated\RE 30M-1G - [EMI radiated]

Subrange 1

Frequency Range:	30 MHz - 1 GHz
Receiver:	ESMI26 (PEMC 01-014K) [ESMI] @ GPIB0 (ADR 20), SN 0, FW 2.75 2.70 2.75
Signal Path:	ESMI26 (PEMC 01-014K)-CBL6111A 3m (PEMC 01-003K) FW 1.0 Correction Table: AC CP2 (X10) - RFIN2 (PEMC 01-079K) Correction Table: Preamp CPA9231A (PEMC 01-038K) Correction Table: Cable (PEMC 01-100K)
Antenna:	CBL6111A 3m (PEMC 01-003K) Correction Table (vertical): CBL6111A 3m (PEMC 01-003K) Correction Table (horizontal): CBL6111A 3m (PEMC 01-003K)
Antenna Tower:	HCM (PEMC 01-002) [HCM/RSM Antenna Tower] @ GPIB0 (ADR 15), SN 0, FW 1.06
Turntable:	HCT (PEMC 01-001) [HCT/RST Turntable] @ GPIB0 (ADR 15), SN 0, FW 1.06

EMI Auto Test Template: FCC 15.109 RE 30M-1G Class A

Hardware Setup:	RE 30M-1G
Measurement Type:	Open-Area-Test-Site (SAC/FAR)
Frequency Range:	30 MHz - 1 GHz
Graphics Level Range:	0 dBµV/m - 80 dBµV/m

Preview Measurements:

Sweep Test Template:	FCC 15.109 RE 30M-1G Pre

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESMI]					
30 MHz - 230 MHz	222,222 kHz	PK+	120 kHz	Coupled	0 dB
230 MHz - 1 GHz	855,556 kHz	PK+	120 kHz	Coupled	0 dB

Data Reduction:

Limit Line #1:	FCC 15.109 F 3M ClassA QP
Peak Search:	6 dB , Maximum Results: 24
Subrange Maxima:	0 Subranges , Maxima per Subrange: 1
Acceptance Offset:	-10 dB
Maximum Number of Results:	6

Frequency Zoom:

Zoom Scan Template:	FCC 15.109 RE 30M-1G Max

Adjustment:

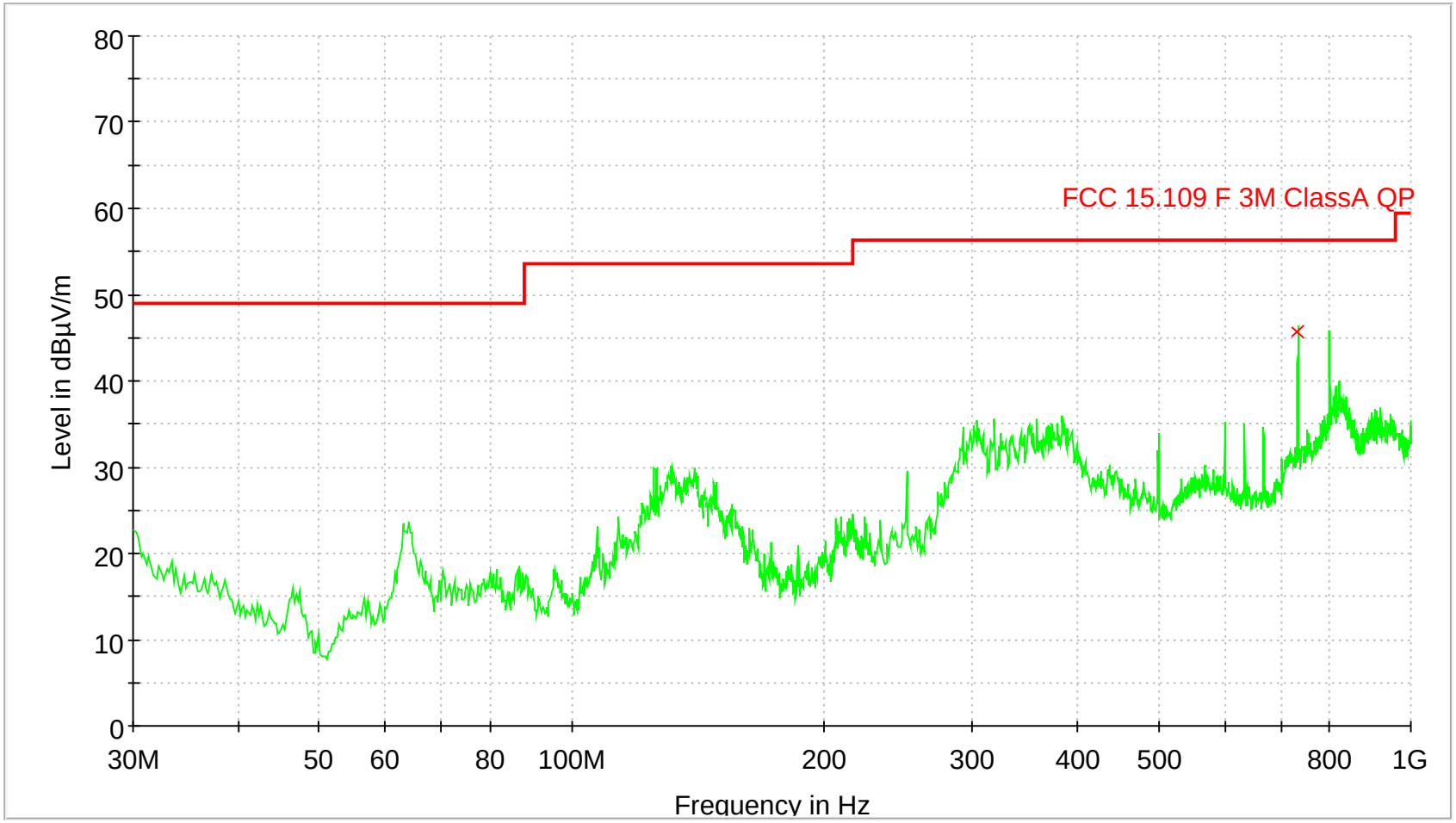
Template for Single Meas.:	FCC 15.109 RE 30M-1G Max

Final Measurements:

Template for Single Meas.:	FCC 15.109 RE 30M-1G Fin

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
Receiver: [ESMI]					
30 MHz - 1 GHz	40 kHz	QPK	120 kHz	1 s	0 dB

Full Spectrum



Preview Result 1-PK+ FCC 15.109 F 3M ClassA QP × Final_Result QPK

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
732.337778	45.67	56.40	10.73	1000.0	120.000	107.0	V	24.0	-4.6

Radiated emission measurement

EUT Information

BGEMC number:	EMC-333-2020
EUT Name:	iLine F PRO
Manufacturer:	Ovizio Imaging Systems SA
Serial Number:	20200313028
Hardware Rev:	2.1.2
Software	N/A (stress test applied)
Comment:	T3: Stress operation
Mode	Keyboard, mouse, external drive USB3 & 2x Ethernet (UTP-CAT5E) connected;
Power Supply:	120V/60Hz AC to the external AC/DC adapter CUI Inc. - SDI-90-24U that is supplied with the device.
Standard used:	FCC sec 15. 109 (ANSI C63.4:2014) : Radiated emissions (1GHz - 18GHz)
Operator:	Harsha Madhusudhana

EMI Auto Test Template: FCC 15.109 RE 1G-18G Class A

Hardware Setup:	RE 1G-26,5G
Measurement Type:	Open-Area-Test-Site (SAC/FAR)
Frequency Range:	1 GHz - 18 GHz
Graphics Level Range:	0 dBµV/m - 90 dBµV/m
Preview Measurements:	
Sweep Test Template:	FCC 15.109 RE 1G-26.5G Pre
Frequency Zoom:	
Zoom Scan Template:	FCC 15.109 RE 1G-26.5G Max
Adjustment:	
Template for Single Meas.:	FCC 15.109 RE 1G-26.5G Max
Final Measurements:	
Template for Single Meas.:	FCC 15.109 RE 1G-26.5G Fin

Hardware Setup: EMI radiated\RE 1G-26,5G - [EMI radiated]

Subrange 1

Frequency Range:	1 GHz - 18 GHz
Receiver:	ESMI26 (PEMC 01-014K) [ESMI] @ GPIB0 (ADR 20), SN 0, FW 2.75 2.70 2.75
Signal Path:	ESMI26 (PEMC 01-014K)-HL025 3m (BGEMC 02-010K) FW 1.0 Correction Table: Cable Pasternack PE330-550CM (BGEMC 02-021K) Correction Table: Preamp PAM-118A (PEMC 01-094K) Correction Table: Cable Pasternack PE3C0689-500CM (PEMC 01-096K)
Antenna:	HL025 3m (BGEMC 02-010K) Correction Table (vertical): HL025 3m (BGEMC 02-010K) Correction Table (horizontal): HL025 3m (BGEMC 02-010K)
Antenna Tower:	HCM (PEMC 01-002) [HCM/RSM Antenna Tower] @ GPIB0 (ADR 15), SN 0, FW 1.06
Turntable:	HCT (PEMC 01-001) [HCT/RST Turntable] @ GPIB0 (ADR 15), SN 0, FW 1.06

EMI Auto Test Template: FCC 15.109 RE 1G-18G Class A

Hardware Setup:	RE 1G-26,5G
Measurement Type:	Open-Area-Test-Site (SAC/FAR)
Frequency Range:	1 GHz - 18 GHz
Graphics Level Range:	0 dBµV/m - 90 dBµV/m

Preview Measurements:

Sweep Test Template: FCC 15.109 RE 1G-26.5G Pre

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESMI]					
1 GHz - 6 GHz	5,556 MHz	PK+	1 MHz	Coupled	0 dB
6 GHz - 18 GHz	13,333 MHz	PK+	1 MHz	Coupled	0 dB

Data Reduction:

Limit Line #1:	FCC 15.109 F 3M ClassA PK +1GHz
Limit Line #2:	FCC 15.109 F 3M ClassA AVG +1GHz
Peak Search:	6 dB , Maximum Results: 24
Subrange Maxima:	0 Subranges , Maxima per Subrange: 1
Maximum Number of Results:	6

Frequency Zoom:

Zoom Scan Template: FCC 15.109 RE 1G-26.5G Max

Adjustment:

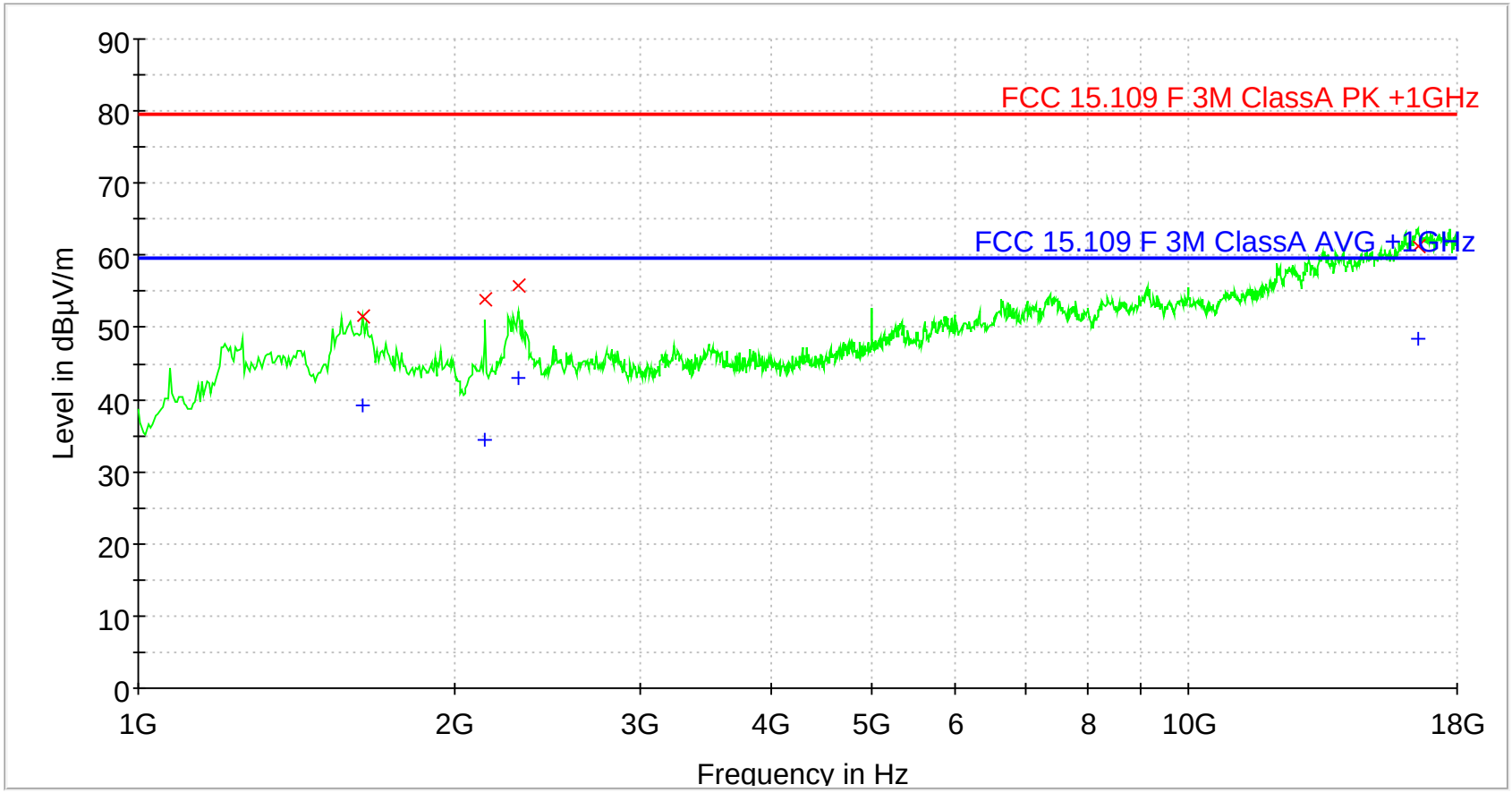
Template for Single Meas.: FCC 15.109 RE 1G-26.5G Max

Final Measurements:

Template for Single Meas.: FCC 15.109 RE 1G-26.5G Fin

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
Receiver: [ESMI]					
1 GHz - 6 GHz	400 kHz	PK+ ; AVG	1 MHz	1 s	0 dB
6 GHz - 18 GHz	400 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

Full Spectrum



Preview Result 1-PK+
FCC 15.109 F 3M ClassA AVG +1GHz
Final_Result AVG
FCC 15.109 F 3M ClassA PK +1GHz
Final_Result PK+

Final_Result_PK+

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1633.733333	51.44	79.50	28.06	1000.0	1000.000	193.0	H	309.0	-11.7
2133.288889	53.79	79.50	25.71	1000.0	1000.000	172.0	V	39.0	-10.3
2297.600000	55.89	79.50	23.61	1000.0	1000.000	100.0	H	323.0	-9.4
16498.666667	61.35	79.50	18.15	1000.0	1000.000	283.0	H	156.0	16.8

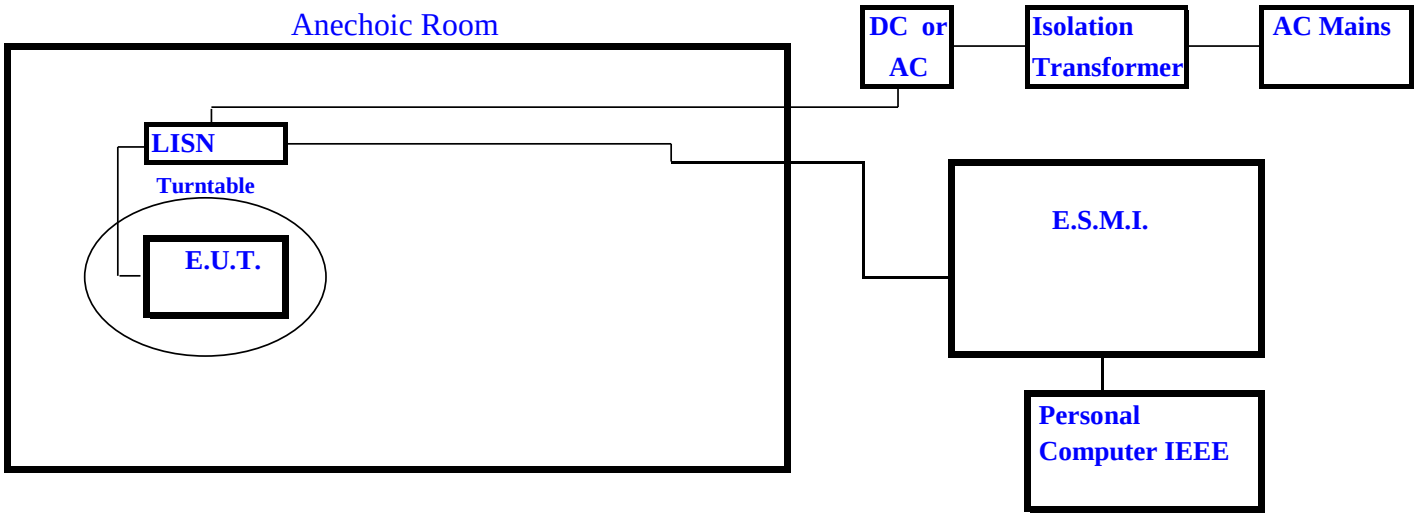
Final_Result_AVG

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1633.733333	39.22	59.50	20.28	1000.0	1000.000	193.0	H	309.0	-11.7
2133.288889	34.46	59.50	25.04	1000.0	1000.000	172.0	V	39.0	-10.3
2297.600000	43.07	59.50	16.43	1000.0	1000.000	100.0	H	323.0	-9.4
16498.666667	48.55	59.50	10.95	1000.0	1000.000	283.0	H	156.0	16.8

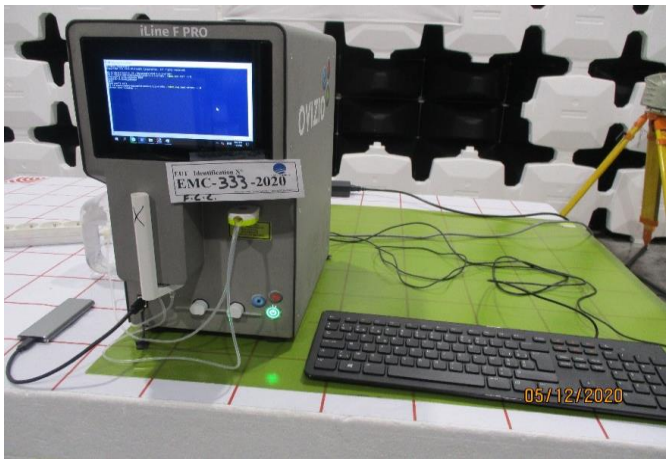
File Number : EMC-333-2020

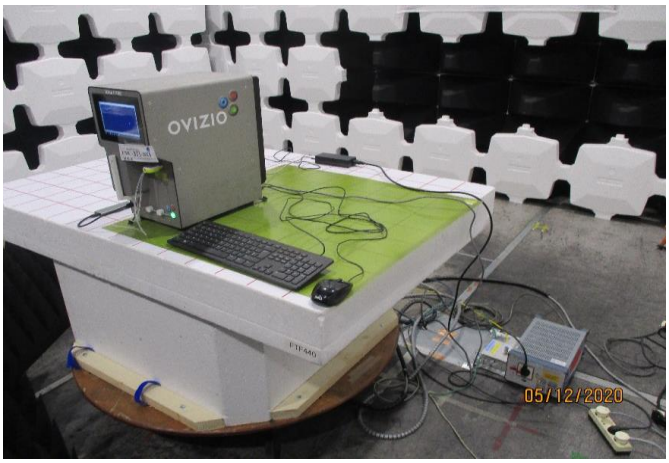
DRAWING AND/OR PICTURE OF TEST SETUP

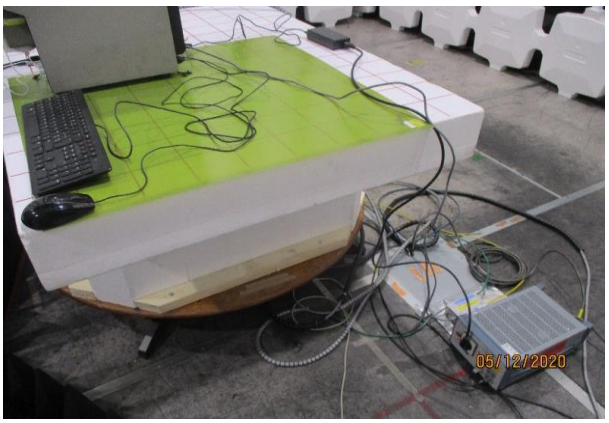
Test system : **PEMC 01 Conducted disturbances**
According standard N° : **FCC title 47.Part 15.107**



Picture of Test Setup :







FCD-0371/2 QP-0017

File Number : EMC-333-2020

USED EQUIPMENT DURING MEASUREMENT

Test system : PEMC 01

Identification	Description	Type	Serial n°	Manufacturer	Certificat n°
PEMC 01-000K	Anechoic Room	Siemens-Matsushita	003-002-033-94	Matsushita Components	201706854.00
PEMC 01-001	Automatic turntable, wooden, d=1.2m	HCT12	835822/0006	Rohde & Schwarz	-
PEMC 01-006K	LISN 9 KHz - 30 MHz 2 * 10A, TWO LINE V-NETWORK ESH3-Z5	ESH3-Z5	840730/001	Rohde & Schwarz	201902813.00
PEMC 01-014K	EMI test receiver 20 Hz - 26.5 GHz	ESMI	839699/0010 & 840498/004	Rohde & Schwarz	201902392.00
PEMC 01-030	RF Cabling RG 214-501 COAX 50 Ohm	TS-CABLRF1		Rohde & Schwarz	-
PEMC 01-069K	Transient Limiter 10 dB (150 kHz … 30 MHz)	HZ560	16981196	Hameg	201902842.00
PEMC 01-085	EMC32 Software Application	EMC32	Ver 10.50.40 or higher	Rohde & Schwarz	------

File Number : EMC-333-2020

OVERVIEW TEST RESULTS

Test System : PEMC 01
According standard : FCC title 47 Section 15.107 Conducted emission

	E.U.T.							
	I/O Connected					I/O Measured		
	AC input (120V / 60Hz)					AC input (120V / 60Hz)		
Conducted emissions 120V / 60Hz (Class A)	X	--	--	--	--	P	--	--

Observations / remarks during testing

During the test the EUT is fully operational (stress mode active to maximize the emissions). A keyboard, mouse and external drive USB3 are connected. The EUT is remotely controlled via 2xEthernet (UTP CAT5E cable used). The EUT is controlled locally via the touchscreen.
The EUT has PASSED the test.

Measurement result clarifications

The reported conducted emission levels (dBµV) in the "Final_Result tables" on next pages should be interpreted as follows:
The "Average and QuasiPeak Levels" (dBµV) = Raw Value (dBµV) + Correction Factor (dB)

Correction Factor (dB) = LISN Factor (dB) + Cable Factor (dB)
Raw Value (dBµV) = level measured by the EMI receiver

Legend

P	= Test Pass	F	= Test Fail
--	= Test not performed/input not used	X	= Used Input

= Validation

FCD-0373/3 QP-0017

Conducted emission measurement

EUT Information

BGEMC number:	EMC-333-2020
EUT Name:	iLine F PRO
Manufacturer:	Ovizio Imaging Systems SA
Serial Number:	20200313028
Hardware Rev:	2.1.2
Software	N/A (stress test applied)
Comment:	T10: Stress operation
Mode	Keyboard, mouse, external drive USB3 & 2x Ethernet (UTP-CAT5E) connected;
Power Supply:	120V/60Hz AC to the external AC/DC adapter CUI Inc. - SDI-90-24U that is supplied with the device
Standard used:	FCC sec 15. 109 (ANSI C63.4:2014) : (150kHz~30 MHz) Conducted emission measured on mains
Operator:	Harsha Madhusudhana

EMI Auto Test Template: FCC 15.107 CE 150k-30M Class A (L-N-PE)

Hardware Setup:	CE 150k-30M
Measurement Type:	2 Line LISN
Frequency Range:	150 kHz - 30 MHz
Graphics Level Range:	0 dBµV - 80 dBµV
Preview Measurements:	
Sweep Test Template:	FCC 15.107 CE 150k-30M Pre
Frequency Zoom:	
Zoom Scan Template:	FCC 15.107 CE 150k-30M Max
Final Measurements:	
Template for Single Meas.:	FCC 15.107 CE 150k-30M Fin

Hardware Setup: EMI conducted\CE 150k-30M - [EMI conducted]

Subrange 1

Frequency Range:	9 kHz - 150 kHz
Receiver:	ESMI26 (PEMC 01-014K) [ESMI] @ GPIB0 (ADR 20), SN 0, FW 2.75 2.70 2.75
Signal Path:	AC CP1 (X12) - RFIN1 (PEMC 01-080K) FW 1.0 Correction Table: AC CP1 (X12) - RFIN1 (PEMC 01-080K) Correction Table: CR LISN - RFIN1
LISN:	ESH3-Z5 (PEMC 01-082K) Correction Table (Line 0): LISN ESH3-Z5_N (PEMC 01-082K) Correction Table (Line 1): LISN ESH3-Z5_L1 (PEMC 01-082K)

Subrange 2

Frequency Range:	150 kHz - 30 MHz
Receiver:	ESMI26 (PEMC 01-014K) [ESMI] @ GPIB0 (ADR 20), SN 0, FW 2.75 2.70 2.75
Signal Path:	AC CP1 (X12) - RFIN1 (PEMC 01-080K) + Trans.Lim. FW 1.0

	Correction Table: AC CP1 (X12) - RFIN1 (PEMC 01-080K) Correction Table: CR LISN - RFIN1 Correction Table: Trans.Lim. HZ560 (PEMC 01-069K)
LISN:	ESH3-Z5 (PEMC 01-082K) Correction Table (Line 0): LISN ESH3-Z5_N (PEMC 01-082K) Correction Table (Line 1): LISN ESH3-Z5_L1 (PEMC 01-082K)

EMI Auto Test Template: FCC 15.107 CE 150k-30M Class A (L-N-PE)

Hardware Setup:	CE 150k-30M
Measurement Type:	2 Line LISN
Frequency Range:	150 kHz - 30 MHz
Graphics Level Range:	0 dBµV - 80 dBµV

Preview Measurements:

Sweep Test Template: FCC 15.107 CE 150k-30M Pre

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESMI]					
150 kHz - 2 MHz	2,056 kHz	PK+	9 kHz	2 s	0 dB
2 MHz - 30 MHz	31,111 kHz	PK+	9 kHz	2 s	0 dB

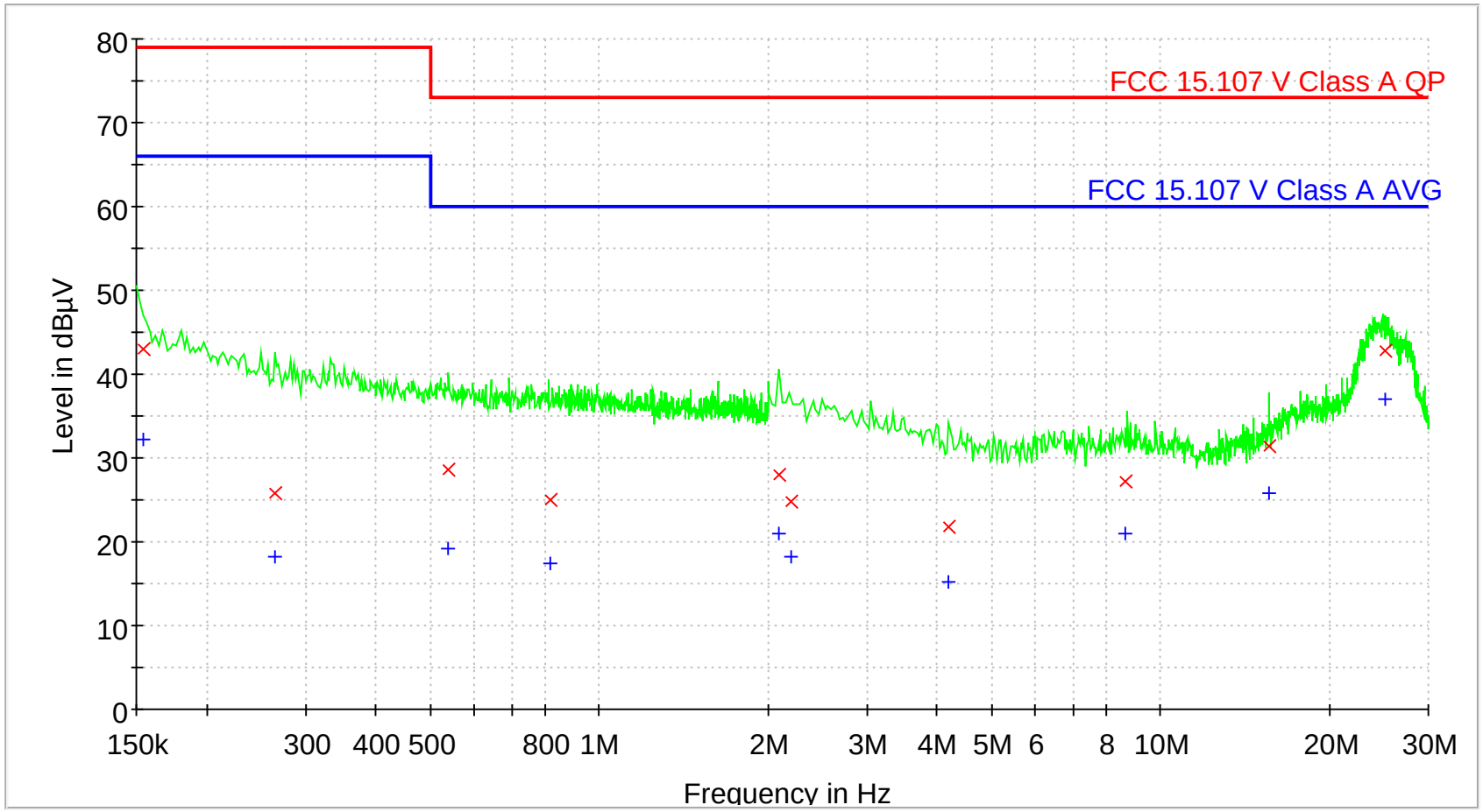
Frequency Zoom:

Zoom Scan Template: FCC 15.107 CE 150k-30M Max

Final Measurements:

Template for Single Meas.: FCC 15.107 CE 150k-30M Fin

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
Receiver: [ESMI]					
150 kHz - 30 MHz	4 kHz	QPK ; AVG	9 kHz	1 s	0 dB



Preview Result 1-PK+
FCC 15.107 V Class A AVG
Final_Result AVG
FCC 15.107 V Class A QP
Final_Result QPK

Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV)	DET 2 (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	PE	Corr. (dB)
0.154500	50.57	---	79.00	28.43	---	---	N	GND	10.4
0.264611	42.68	---	79.00	36.32	---	---	N	FLO	10.3
0.539151	40.30	---	73.00	32.70	---	---	N	FLO	10.2
0.821805	39.37	---	73.00	33.63	---	---	L1	FLO	10.2
2.088400	40.63	---	73.00	32.37	---	---	N	FLO	10.4
2.204801	37.71	---	73.00	35.29	---	---	N	GND	10.4
4.182800	34.11	---	73.00	38.89	---	---	N	GND	10.6
8.632800	35.63	---	73.00	37.37	---	---	N	GND	10.9
15.615601	37.72	---	73.00	35.28	---	---	N	GND	11.4
25.159600	47.27	---	73.00	25.74	---	---	N	GND	11.9

Final_Result_QPK

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	PE	Corr. (dB)
0.154500	43.08	79.00	35.92	1000.0	9.000	N	GND	10.4
0.264611	25.78	79.00	53.22	1000.0	9.000	N	FLO	10.3
0.539151	28.62	73.00	44.38	1000.0	9.000	N	FLO	10.2
0.821805	24.94	73.00	48.06	1000.0	9.000	L1	FLO	10.2
2.088400	28.00	73.00	45.00	1000.0	9.000	N	FLO	10.4
2.204801	24.85	73.00	48.15	1000.0	9.000	N	GND	10.4
4.182800	21.85	73.00	51.15	1000.0	9.000	N	GND	10.6
8.632800	27.23	73.00	45.77	1000.0	9.000	N	GND	10.9
15.615601	31.38	73.00	41.62	1000.0	9.000	N	GND	11.4
25.159600	42.72	73.00	30.29	1000.0	9.000	N	GND	11.9

Final_Result_AVG

Frequency (MHz)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	PE	Corr. (dB)
0.154500	32.19	66.00	33.81	1000.0	9.000	N	GND	10.4
0.264611	18.24	66.00	47.76	1000.0	9.000	N	FLO	10.3
0.539151	19.23	60.00	40.77	1000.0	9.000	N	FLO	10.2
0.821805	17.40	60.00	42.60	1000.0	9.000	L1	FLO	10.2
2.088400	21.06	60.00	38.94	1000.0	9.000	N	FLO	10.4
2.204801	18.15	60.00	41.85	1000.0	9.000	N	GND	10.4
4.182800	15.17	60.00	44.83	1000.0	9.000	N	GND	10.6
8.632800	21.08	60.00	38.92	1000.0	9.000	N	GND	10.9
15.615601	25.80	60.00	34.20	1000.0	9.000	N	GND	11.4
25.159600	37.08	60.00	22.93	1000.0	9.000	N	GND	11.9