

12. AC Power Line Conducted Emission Test

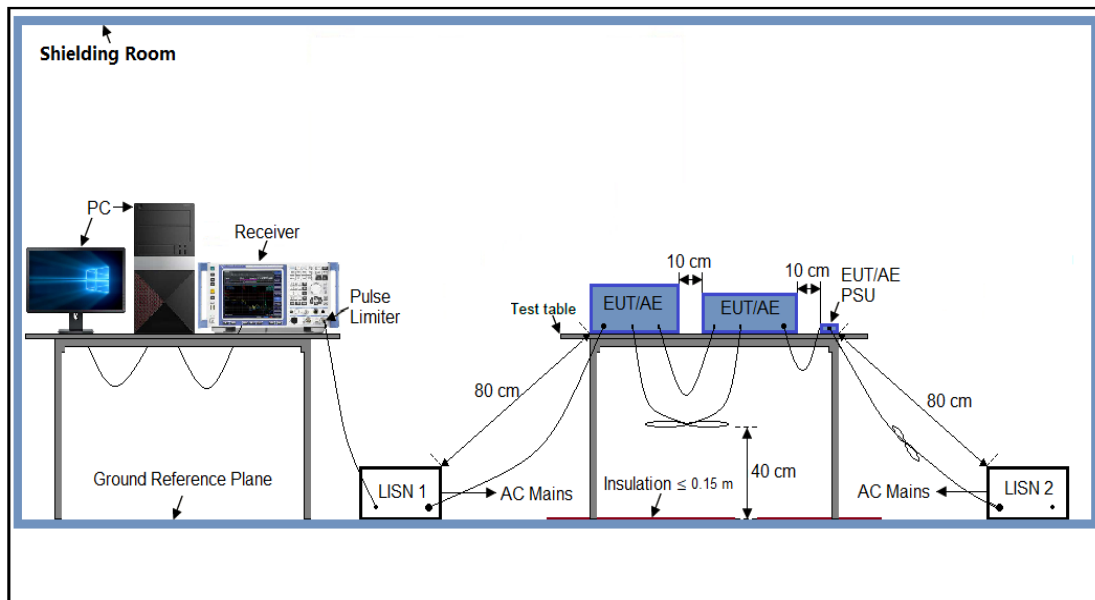
12.1 Measurement Limit

Frequency	Maximum RF Line Voltage	
	Q.P. (dBμV)	Average (dBμV)
150kHz~500kHz	66-56	56-46
500kHz~5MHz	56	46
5MHz~30MHz	60	50

Note:

1. The lower limit shall apply at the transition frequency.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz

12.2 Measurement Setup (Block Diagram of Configuration)



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12.3 Preliminary Procedure of Line Conducted Emission Test

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
2. Support equipment, if needed, was placed as per ANSI C63.10.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
4. All support equipment received AC120V/60Hz power from a LISN, if any.
5. The EUT received DC 5V power from adapter which received AC120V/60Hz power from a LISN.
6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.
9. The test mode(s) were scanned during the preliminary test.

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

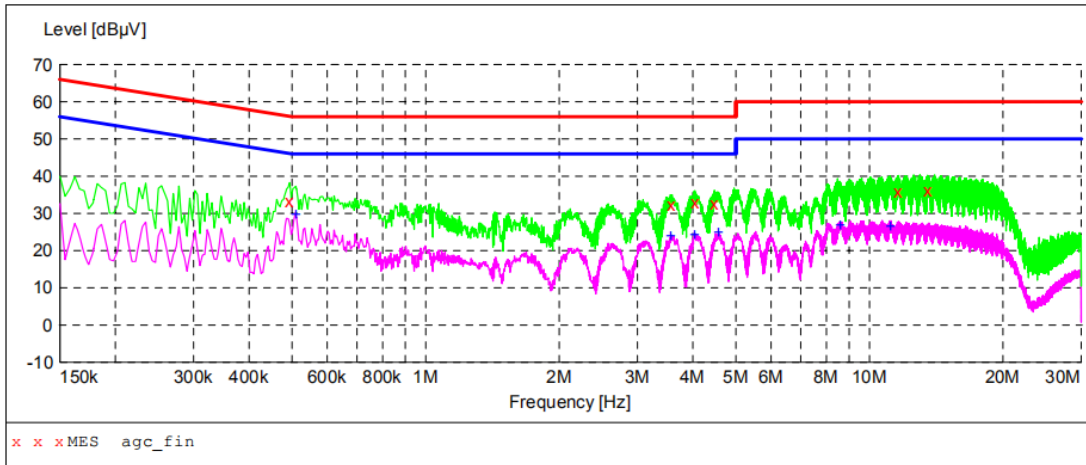
12.4 Final Procedure of Line Conducted Emission Test

1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less – 2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
3. The test data of the worst case condition(s) was reported on the Summary Data page.

12.5 Measurement Results

AC Power Line Conducted Emission Test

Test Mode	Mode 1	LISN Line	Hot Side
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MEASUREMENT RESULT: "agc_fin"

2020/09/08 14:03

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line
0.494000	33.20	11.3	56	22.9	QP	L1
3.590000	32.30	11.4	56	23.7	QP	L1
4.042000	32.90	11.4	56	23.1	QP	L1
4.474000	32.70	11.4	56	23.3	QP	L1
11.610000	35.90	11.7	60	24.1	QP	L1
13.514000	36.00	11.9	60	24.0	QP	L1

MEASUREMENT RESULT: "agc_fin2"

2020/09/08 14:03

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line
0.510000	29.70	11.3	46	16.3	AV	L1
3.570000	23.80	11.4	46	22.2	AV	L1
4.042000	24.20	11.4	46	21.8	AV	L1
4.586000	24.80	11.4	46	21.2	AV	L1
8.594000	26.70	11.6	50	23.3	AV	L1
11.178000	26.60	11.7	50	23.4	AV	L1

RESULT: Pass

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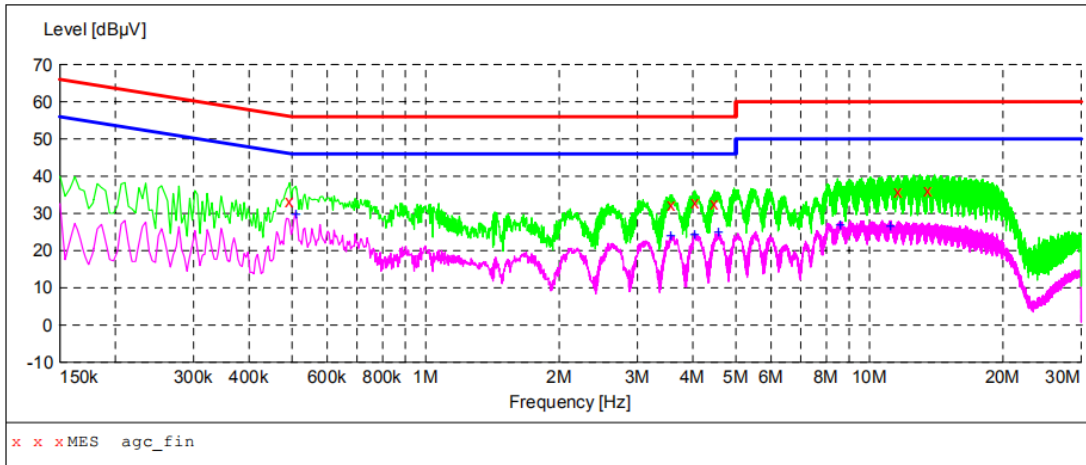
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AC Power Line Conducted Emission Test

Test Mode	Mode 1	LISN Line	Neutral Side
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MEASUREMENT RESULT: "agc_fin"

2020/09/08 14:03

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line
0.494000	33.20	11.3	56	22.9	QP	L1
3.590000	32.30	11.4	56	23.7	QP	L1
4.042000	32.90	11.4	56	23.1	QP	L1
4.474000	32.70	11.4	56	23.3	QP	L1
11.610000	35.90	11.7	60	24.1	QP	L1
13.514000	36.00	11.9	60	24.0	QP	L1

MEASUREMENT RESULT: "agc_fin2"

2020/09/08 14:03

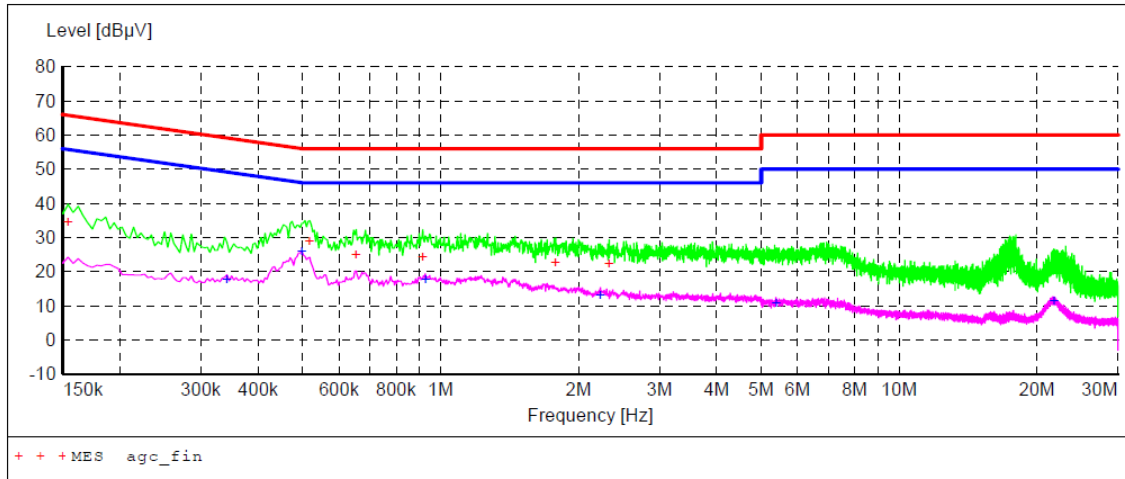
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line
0.510000	29.70	11.3	46	16.3	AV	L1
3.570000	23.80	11.4	46	22.2	AV	L1
4.042000	24.20	11.4	46	21.8	AV	L1
4.586000	24.80	11.4	46	21.2	AV	L1
8.594000	26.70	11.6	50	23.3	AV	L1
11.178000	26.60	11.7	50	23.4	AV	L1

RESULT: PASS

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AC Power Line Conducted Emission Test

Test Mode	Mode 4	LISN Line	Hot Side
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**MEASUREMENT RESULT: "agc_fin"**

2024/9/18 9:48

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line
0.154000	34.70	6.1	66	31.1	QP	L1
0.518000	29.00	6.2	56	27.0	QP	L1
0.654000	25.20	6.2	56	30.8	QP	L1
0.914000	24.50	6.2	56	31.5	QP	L1
1.782000	22.90	6.2	56	33.1	QP	L1
2.330000	22.50	6.3	56	33.5	QP	L1

MEASUREMENT RESULT: "agc_fin2"

2024/9/18 9:48

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line
0.342000	18.00	6.1	49	31.2	AV	L1
0.498000	26.00	6.1	46	20.0	AV	L1
0.926000	17.80	6.2	46	28.2	AV	L1
2.230000	13.30	6.3	46	32.7	AV	L1
5.386000	10.90	6.4	50	39.1	AV	L1
21.730000	11.60	7.4	50	38.4	AV	L1

RESULT: Pass

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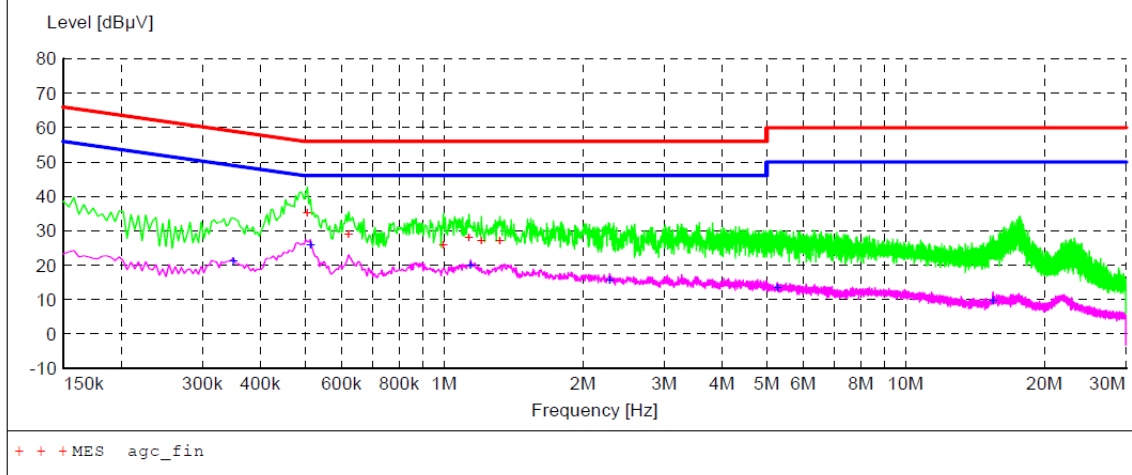
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AC Power Line Conducted Emission Test

Test Mode	Mode 4	LISN Line	Neutral Side
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**MEASUREMENT RESULT: "agc_fin"**

2024/9/18 9:45

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line
0.506000	35.20	6.2	56	20.8	QP	N
0.622000	28.80	6.2	56	27.2	QP	N
0.998000	25.70	6.2	56	30.3	QP	N
1.134000	28.00	6.2	56	28.0	QP	N
1.206000	26.90	6.2	56	29.1	QP	N
1.322000	27.00	6.2	56	29.0	QP	N

MEASUREMENT RESULT: "agc_fin2"

2024/9/18 9:45

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line
0.350000	21.00	6.1	49	28.0	AV	N
0.514000	25.70	6.2	46	20.3	AV	N
1.142000	19.70	6.2	46	26.3	AV	N
2.286000	15.60	6.3	46	30.4	AV	N
5.274000	13.20	6.4	50	36.8	AV	N
15.466000	9.70	6.9	50	40.3	AV	N

RESULT: PASS

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Appendix I: Photographs of Test Setup

Refer to the Report No.: AGC01689240814AP01

Appendix II: Photographs of Test EUT

Refer to the Report No.: AGC01689240814AP02

-----End of Report-----

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