

12. AC Power Line Conducted Emission

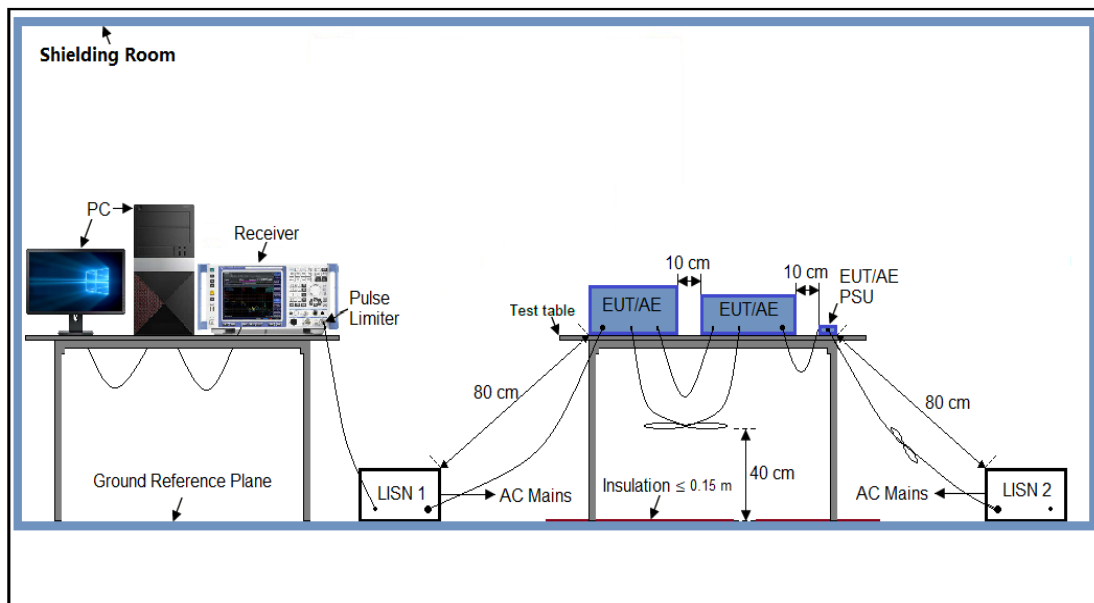
12.1 Measurement Limits

Frequency	Maximum RF Line Voltage	
	Q.P (dB μ V)	Average (dB μ V)
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 Block Diagram of Line Conducted Emission Test



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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

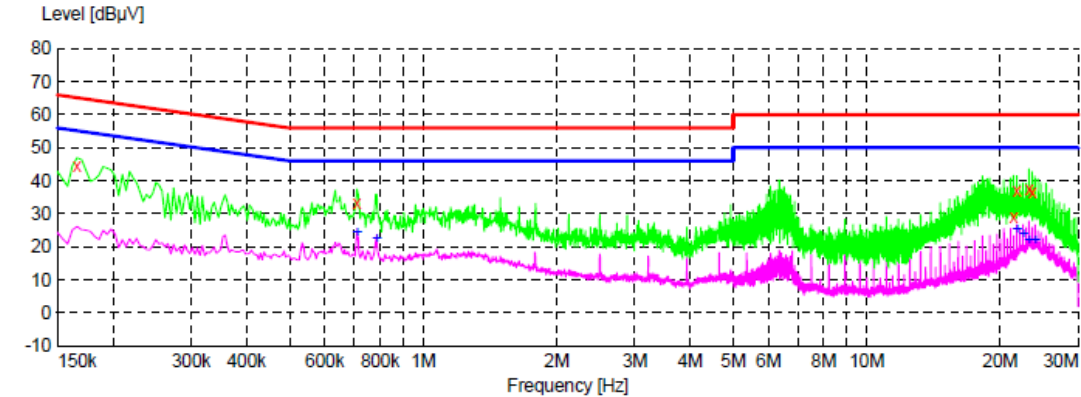
1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used 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 was reported on the Summary Data page.

12.5 Test Result of Line Conducted Emission Test

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AC Power Line Conducted Emission Test

Test Mode	Mode 1	LISN Line	Hot Side
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× × × MES agc_fin

MEASUREMENT RESULT: "agc_fin"

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Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line
0.166000	44.60	6.1	65	20.6	QP	L1
0.710000	33.10	6.2	56	22.9	QP	L1
21.430000	29.20	7.4	60	30.8	QP	L1
21.814000	36.90	7.4	60	23.1	QP	L1
23.238000	37.30	7.7	60	22.7	QP	L1
23.606000	36.70	7.7	60	23.3	QP	L1

MEASUREMENT RESULT: "agc_fin2"

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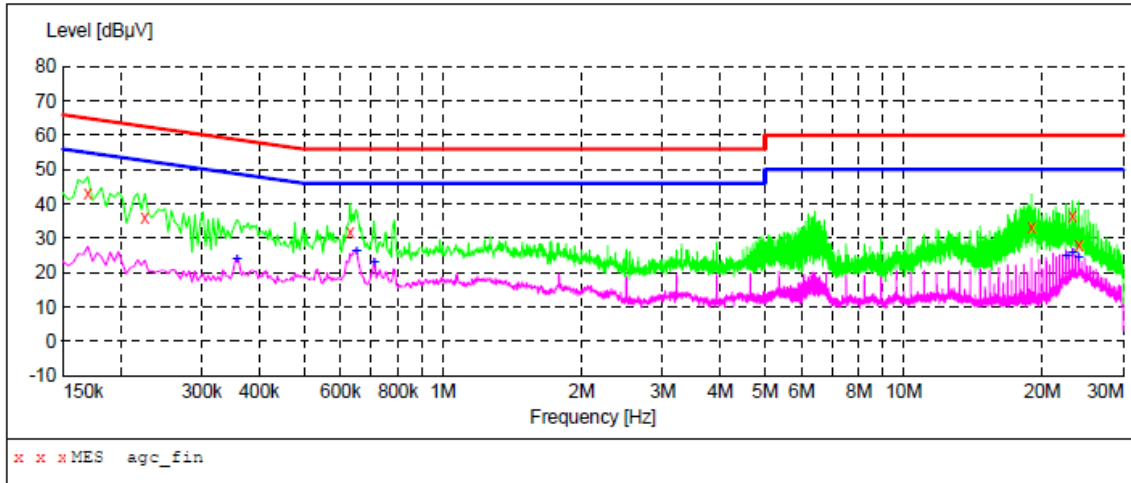
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line
0.710000	24.30	6.2	46	21.7	AV	L1
0.786000	22.30	6.2	46	23.7	AV	L1
21.818000	25.20	7.4	50	24.8	AV	L1
22.530000	24.00	7.6	50	26.0	AV	L1
23.238000	22.00	7.7	50	28.0	AV	L1
23.954000	22.10	7.8	50	27.9	AV	L1

RESULT: Pass

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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"

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Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line
0.170000	43.00	6.1	65	22.0	QP	N
0.226000	35.90	6.1	63	26.7	QP	N
0.630000	31.90	6.2	56	24.1	QP	N
18.954000	33.10	7.0	60	26.9	QP	N
23.250000	36.40	7.7	60	23.6	QP	N
23.978000	28.20	7.8	60	31.8	QP	N

MEASUREMENT RESULT: "agc_fin2"

2024/8/23 21:45

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line
0.358000	24.00	6.1	49	24.8	AV	N
0.650000	26.00	6.2	46	20.0	AV	N
0.710000	23.00	6.2	46	23.0	AV	N
22.538000	24.90	7.6	50	25.1	AV	N
23.250000	25.70	7.7	50	24.3	AV	N
23.970000	24.50	7.8	50	25.5	AV	N

RESULT: Pass

Note: All modes and antennas in the conducted emission test are pre-scanned. The 2.4G WIFI (Module: RTL8192FC) is evaluated as the worst data.

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Appendix I: Photographs of Test Setup

Refer to the Report No.: AGC08045240801AP02

Appendix II: Photographs of Test EUT

Refer to the Report No.: AGC08045240801AP03

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

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