ESTECH Co., Ltd.
Rm 1015, World Venture Center II,
426-5 Gasan-dong, Guncheon-gu,
Seoul, 158-803, Korea

Electromagnetic Interference Test Report

Test Report for FCC

FCC ID:BEJ50PZ850UA

Report Number		ESTF151105-003		
Applicant	Company name	LG Electronics USA		
	Address	1000 Sylvan Avenue Englewood Cliffs, NJ 07632		
	Telephone	847-941-8373		
Product	Product name	PLASMA TV/MONITOR		
	Model name	50PZ850-UA	Manufacturer	LG Electronics Inc.
	Serial number	NONE	Country of origin	KOREA
Test date		25-May-11	Date of issue	30-May-11
Testing location		ESTECH Co., Ltd. 97-1 Hoiuk-Ri Majang-Myon, Icheon-city, KyungKi-Do, Korea		
Standard		FCC PART 15 (2010) & ICES-003 , ANSI C 63.4 2003		
Test item	■ Conducted Emission	□ Class A ■ Class B	Test result	OK
	■ Radiated Emission	□ Class A ■ Class B	Test result	OK
Measurement facility registration number		94696		
Tested by		Engineer H.K.LEE (Signature)		
Reviewed by		Engineering Manager J.M.Yang (Signature)		
Abbreviation		OK, Pass = Complied, Fail = Failed, N/A = not applicable		

* Note

- This test report is not permitted to copy partly without our permission
- This test result is dependent on only equipment to be used
- This test result based on a single evaluation of one sample of the above mentioned

Contents

1. Laboratory Information

1.1 General

This EUT (Equipment Under Test) has been shown to be capable of compliance with the applicable technical standards and is tested in accordance with the measurement procedures as indicated in this report.ESTECH Lab attests to accuracy of test data. All measurement reported herein were performed by ESTECH Co., Ltd.

ESTECH Lab assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

1.2 Test Lab.

Corporation Name : ESTECH Co., Ltd.

Head Office : Rm 1015, World Venture Center II, 426-5, Gasan-dong, Geumcheon-gu, Seoul, Korea
(Safety & Telecom. Test Lab)

EMC Test Lab : 97-1, Hoeok-ri, Majang-myun, Ichion-city, Kyonggi-do, South Korea

1.3 Official Qualification(s)

KCC : Granted Accreditation from Ministry of Information & Communication for EMC, Safety and Telecommunication

KOLAS : Accredited Lab By Korea Laboratory Accreditation Schema base on CENELEC requirements

FCC : Filed Laboratory at Federal Communications Commission

VCCI : Granted Accreditation from Voluntary Control Council for Interference from ITE

2. Description of EUT

2.1 Summary of Equipment Under Test

Product Name : PLASMA TV/MONITOR
Model Number : 50PZ850-UA
Serial Number : NONE
Manufacturer : LG Electronic Inc.
Country of origin : KOREA
Rating : AC (100 - 240) V , (50 - 60) Hz
Receipt Date : 13-May-11
X-tal list(s) : 4 kHz , 24 MHz , 25 MHz x 2 ea

2.2 General descriptions of EUT

SPECIFICATIONS

Product specifications may be changed without prior notice due to upgrade of product functions.

Television System		NTSC-M, ATSC, 64 & 256 QAM
Program Coverage		VHF 2-13, UHF 14-69, CATV 1-135, DTV 2-69, CADTV 1-135
External Antenna Impedance		75 Ω
Environment condition	Operating Temperature	0 - 40 °C
	Operating Humidity	Less than 80 %
	Storage Temperature	-20 - 60 °C
	Storage Humidity	Less than 85 %

MODELS		50PZ850 (50PZ850-UA)	60PZ850 (60PZ850-UA) / 60PZ850U (60PZ850U-UA)
Dimensions (W x H x D)	With stand	1168.7 mm x 777.0 mm x 349.2 mm (46.0 inch x 30.5 inch x 13.7 inch)	1387.1 mm x 920.5 mm x 395.6 mm (54.6 inch x 36.2 inch x 15.5 inch)
	Without stand	1168.7 mm x 712.2 mm x 52.5 mm (46.0 inch x 28.0 inch x 2.0 inch)	1387.1 mm x 834.9 mm x 52.5 mm (54.6 inch x 32.8 inch x 2.0 inch)
Weight	With stand	30.1 kg (66.3 lbs)	42.0 kg (92.5 lbs)
	Without stand	28.1 kg (61.9 lbs)	38.5 kg (84.8 lbs)
Current Value / Power consumption		3.3 A / 330 W	4.6 A / 460 W
Power requirement		AC100 - 240 V ~ 50 / 60 Hz	

3. Test Standards

Test Standard : FCC PART 15 (2010) & ICES-003

TThis Standard sets out the regulations under which an intentional, unintentional, or incidental radiator may be operated without an individual license. It also contains the technical specifications, administrative requirements and other conditions relating to the marketing of Part 15 devices.

Test Method : ANSI C 63.4 (2003)

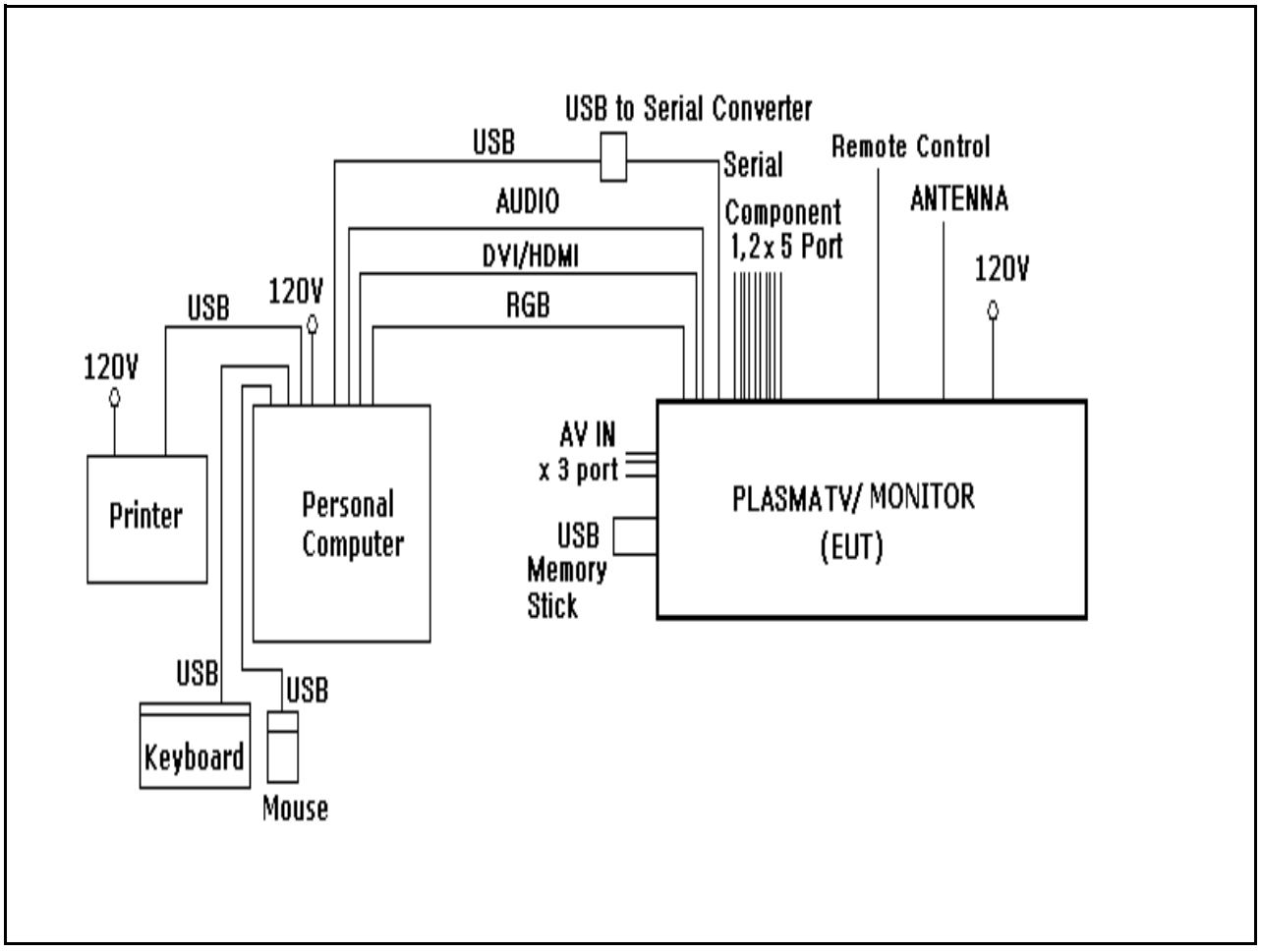
This standard sets forth uniform methods of measurement of radio-frequency (RF) signals and noise emitted from both unintentional and intentional emitters of RF energy in the frequency range 9 kHz to 40 GHz. Methods for the measurement of radiated and AC power-line conducted radio noise are covered and may be applied to any such equipment unless otherwise specified by individual equipment requirements. These methods cover measurement of certain decides that deliberately radiate energy, such as intentional emitters, but does not cover licensed transmitters. This standard is not intended for certification/approval of avionic equipment or for industrial, scientific, and medical (ISM) equipment These method apply to the measurement of individual units or systems comprised of multiple units

4. Measurement Condition

4.1 EUT Operation.

* The EUT was in the following operation mode during all testing
* The operational conditions of the EUT was determined by the manufacturer according to the typical use of the EUT with respect to the expected hightest level of emission
* After setting as test arrangment diagram, we tested the EUT under continuous displaying "H" character and playing Audio out /Video

4.2 Configuration and Peripherals



4.3 EUT and Support equipment

Equipment Name	Model	S/N	Manufacturer	Remark (FCC ID)
PLASMA TV/MONITOR	50PZ850-UA	NONE	LG Electronics Inc.	EUT
Personal Computer	DCMF	6RKPHBX	Dell Inc.	-
Keyboard	NY419AA	CNB006B304	HEWLETT-PACKARD COMPANY	-
Mouse	MO56UOA	507064327	Dell Asia Pacific Sdn.	-
Printer	SNPRB-0921-04	NONE	HEWLETT-PACKARD COMPANY	-
Adapter	0957-2269	H246DZ0K8K01L	ASTEC ELECTRONICS (LUODING) Co., LTD	-
USB Memory Stick	NONE	NONE	NONE	-
USB to Serial Converter	NONE	NONE	NONE	-

4.4 Cable Connecting

Start Equipment		End Equipment		Cable Standard		Remark
Name	I/O port	Name	I/O port	Length	Shielded	
PLASMA TV/MONITOR	RGB	Personal Computer	RGB	2	Y	
PLASMA TV/MONITOR	HDMI	Personal Computer	DVI	2	Y	
PLASMA TV/MONITOR	Audio	Personal Computer	Audio	2	N	
PLASMA TV/MONITOR	Component1 x 5 port	-	-	2	N	
PLASMA TV/MONITOR	Component2 x 5 port	-	-	2	N	
PLASMA TV/MONITOR	AV-IN x 3 port	-	-	2	N	
PLASMA TV/MONITOR	Remote Control	-	-	2	N	
PLASMA TV/MONITOR	USB	USB Memory Stick	USB	-	-	
PLASMA TV/MONITOR	Serial	USB to Serial Converter	Serial	2	N	
PLASMA TV/MONITOR	Antenna	-	-	2	Y	
Personal computer	USB	Keyboard	USB	2	Y	
Personal computer	USB	Mouse	USB	2	Y	
Personal computer	USB	Printer	USB	2	Y	
Personal computer	USB	USB to Serial Converter	USB	1	Y	
Printer	Power	Adapter	-	2	N	

5. Measurement of radiated disturbance

Above 30 MHz Electric Field strength was measured in accordance with FCC Part 15 (2010) & ICES-003. The test setup was made according to ANSI C 63.4 (2003) on an open test site, which allows a 3m distance measurement. The EUT was placed in the center of wooden turntable. The height of this table was 0.8 m. The measurement was conducted with both horizontal and vertical antenna polarization. The turntable has fully rotated. For further description of the configuration refer to the picture of the test setup.

5.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
TEST Receiver	ESVS10	Rohde & Schwarz	838562/002	27-Jan-12
Spectrum Analyzer	R3273	ADVANTEST	110600592	27-Jan-12
LogBicon Antenna	VULB 9168	Schwarzbeck	237	15-Sep-11
Amplifier	8447F	HP	2805A02972	27-Jan-12
Turn Table	2087	EMCO	2129	-
Antenna Mast	2070-01	EMCO	9702-203	-
ANT Mast Controller	2090	EMCO	1535	-
Turn Table Controller	2090	EMCO	1535	-

5.2 Environmental Condition

Test Place : Open site(3m)

HDMI mode

Temperature (°C) : 21 ℃

Humidity (%) : 51 % R.H.

RGB mode

Temperature (°C) : 20 ℃

Humidity (%) : 53 % R.H.

5.3 Test data (HDMI MODE)

Test Date : 25-May-11 Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dBμV/m)	Result (dBμV/m)	Margin (dB)
48.00	22.60	H	4.0	12.93	1.2	40.0	36.71	-3.29
56.26	21.20	H	4.0	12.50	1.3	40.0	34.99	-5.01
120.02	27.30	V	1.0	10.37	1.9	43.5	39.57	-3.93
140.15	14.00	H	2.4	12.12	2.1	43.5	28.25	-15.25
168.00	21.70	H	1.8	12.26	2.4	43.5	36.33	-7.17
190.84	16.70	H	1.4	10.31	2.6	43.5	29.58	-13.92
196.62	18.40	H	1.3	9.74	2.6	43.5	30.75	-12.75
218.11	19.30	H	1.0	10.26	2.8	46.0	32.41	-13.59
240.47	14.90	H	1.3	11.32	3.1	46.0	29.33	-16.67
312.04	14.20	H	1.6	14.25	3.8	46.0	32.26	-13.74
347.82	14.10	H	1.0	15.14	4.1	46.0	33.32	-12.68
360.01	13.00	H	1.0	15.44	4.2	46.0	32.66	-13.34
427.52	19.30	H	1.0	17.23	4.9	46.0	41.47	-4.53
465.50	9.00	H	1.0	18.32	5.2	46.0	32.57	-13.43
549.27	15.40	V	1.3	20.52	6.3	46.0	42.21	-3.79

Remark	H : Horizontal, V : Vertical TEST MODE : Resolution1 920*1 080 (60Hz) at HDMI mode (Worse Case) *CL = Cable Loss-Amplifier Gain(In case of above 1 000 Mhz) *CL = Cable Loss(In case of below 1 000 Mhz) *The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120KHz for Quasi-peak detection at frequency below 1GHz. *After connect with ferrite cores to RGB cable,tested radiated emission.

5.3 Test data (RGB MODE)

Test Date : 25-May-11 Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dBμV/m)	Result (dBμV/m)	Margin (dB)
46.70	22.60	V	1.0	12.86	1.2	40.0	36.63	-3.37
62.28	22.10	H	4.0	11.90	1.3	40.0	35.35	-4.65
120.02	28.20	H	2.6	10.37	1.9	43.5	40.47	-3.03
134.04	17.40	H	2.5	11.59	2.0	43.5	31.04	-12.46
168.00	22.30	H	1.5	12.26	2.4	43.5	36.93	-6.57
217.88	26.00	V	1.5	10.25	2.8	46.0	39.09	-6.91
233.46	27.80	H	1.3	10.99	3.0	46.0	41.83	-4.17
240.03	17.50	H	1.1	11.30	3.1	46.0	31.90	-14.10
326.82	24.40	V	1.0	14.62	3.9	46.0	42.95	-3.05
360.03	18.20	V	1.0	15.44	4.2	46.0	37.86	-8.14
373.51	19.60	H	1.0	15.77	4.4	46.0	39.82	-6.18
558.93	12.20	H	1.0	20.76	6.5	46.0	39.46	-6.54
960.02	11.80	H	1.0	26.06	9.5	54.0	47.36	-6.64

Remark	H : Horizontal, V : Vertical TEST MODE : Resolution1 920*1 080(60Hz) at RGB mode (Worse Case) *CL = Cable Loss-Amplifier Gain(In case of above 1 000 Mhz) *CL = Cable Loss(In case of below 1 000 Mhz) *The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120KHz for Quasi-peak detection at frequency below 1GHz. *After connect with ferrite cores to RGB cable,tested radiated emission.

6. Measurement of conducted disturbance

The continuous disturbance voltage of AC Mains in the frequency from 0.15 MHz to 30 MHz was measured in accordance to FCC Part 15 (2010) & ICES-003. The test setup was made according to ANSI C 63.4 (2003) in a shielded. The EUT was placed on a non-conductive table at least 0.8 m above the ground plan. A grounded vertical reference plane was positioned in a distance of 0.4 m from the EUT. The distance from the EUT to other metal surfaces was at least 0.8 m. The EUT was only earthen by its power cord through the line impedance stabilizing network. The power cord has been bundled to a length of 1.0 m. The test receiver with Quasi Peak detector complies with CISPR 16.

6.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
LISN	ESH3-Z5	Rohde & Schwarz	838979/010	27-Jan-12
LISN	ENV216	Rohde & Schwarz	101231	13-Aug-11
TEST Receiver	ESPI7	Rohde & Schwarz	100185	24-Aug-11
Pulse Limiter	ESH3Z2	Rohde & Schwarz	NONE	27-Jan-12

6.2 Environmental Condition

Test Place : Shield Room
Temperature (°C) : 22 ℃
Humidity (%) : 50 % R.H.

6.3 Test data

Test Date : 25-May-11

Frequency (MHz)	Correction Factor		Line (H/N)	Quasi-peak Value			Average Value		
	Lisn (dB)	Cable (dB)		Limit (dBμV)	Reading (dBμV)	Result (dBμV)	Limit (dBμV)	Reading (dBμV)	Result (dB)
0.15	-0.01	0.2	H	66.00	44.50	44.72	56.00	35.89	36.11
0.16	0.00	0.2	N	65.67	40.91	41.13	55.67	31.73	31.95
0.18	0.02	0.2	N	64.35	41.50	41.74	54.35	31.99	32.23
0.20	0.03	0.2	H	63.82	42.72	42.96	53.82	34.52	34.76
0.28	0.10	0.2	H	60.94	37.03	37.32	50.94	30.70	30.99
0.36	0.11	0.2	N	58.64	47.52	47.81	48.64	31.72	32.01
0.73	0.17	0.2	N	56.00	48.68	49.07	46.00	32.93	33.32
0.94	0.24	0.2	N	56.00	45.86	46.34	46.00	34.29	34.77
1.09	0.24	0.3	N	56.00	41.73	42.22	46.00	27.67	28.16
1.64	0.58	0.3	N	56.00	43.65	44.54	46.00	27.30	28.19
2.36	0.40	0.4	N	56.00	43.97	44.75	46.00	28.30	29.08
2.73	0.52	0.4	N	56.00	45.93	46.86	46.00	29.94	30.87
11.75	1.68	1.0	N	60.00	48.46	51.18	50.00	30.60	33.32
12.91	1.61	1.1	H	60.00	53.24	55.97	50.00	36.29	39.02
13.09	1.60	1.1	N	60.00	54.42	57.15	50.00	36.05	38.78
13.63	1.57	1.2	N	60.00	48.68	51.42	50.00	32.55	35.29
15.81	1.59	1.3	N	60.00	41.34	44.22	50.00	24.40	27.28
17.51	1.51	1.4	H	60.00	41.11	43.97	50.00	23.57	26.43
Remark	H : Hot Line, N : Neutral Line								

7. Photographs of test setup

7.1 Setup for Radiated Test : 30 MHz ~ 1 000 MHz

[Front]

[Rear]

7.2 Setup for Conducted Test : 0.15 MHz ~ 30 MHz

[Front]

[Rear]

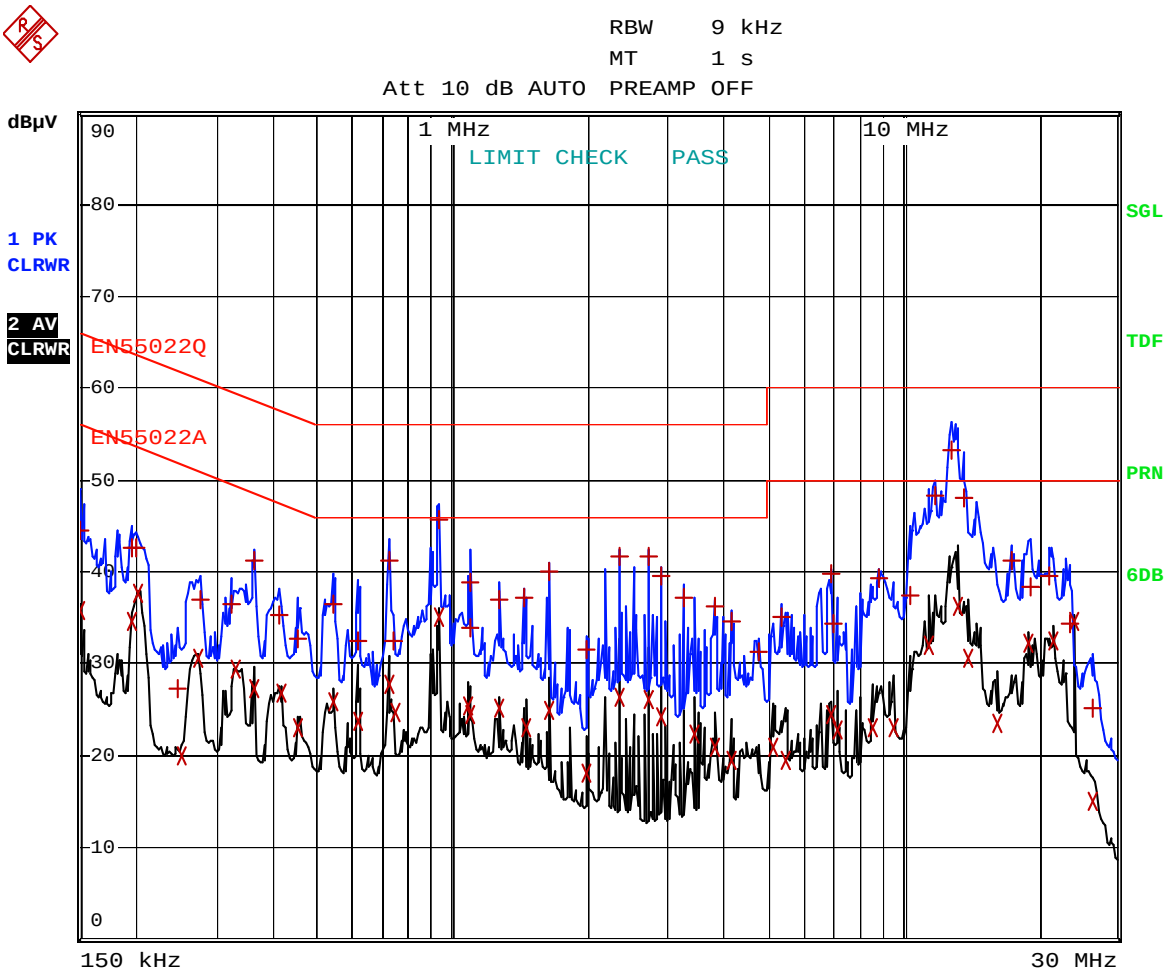
8. Photographs of EUT

[Front]

[Rear]

Appendix 1. Spectral diagram

*HOT



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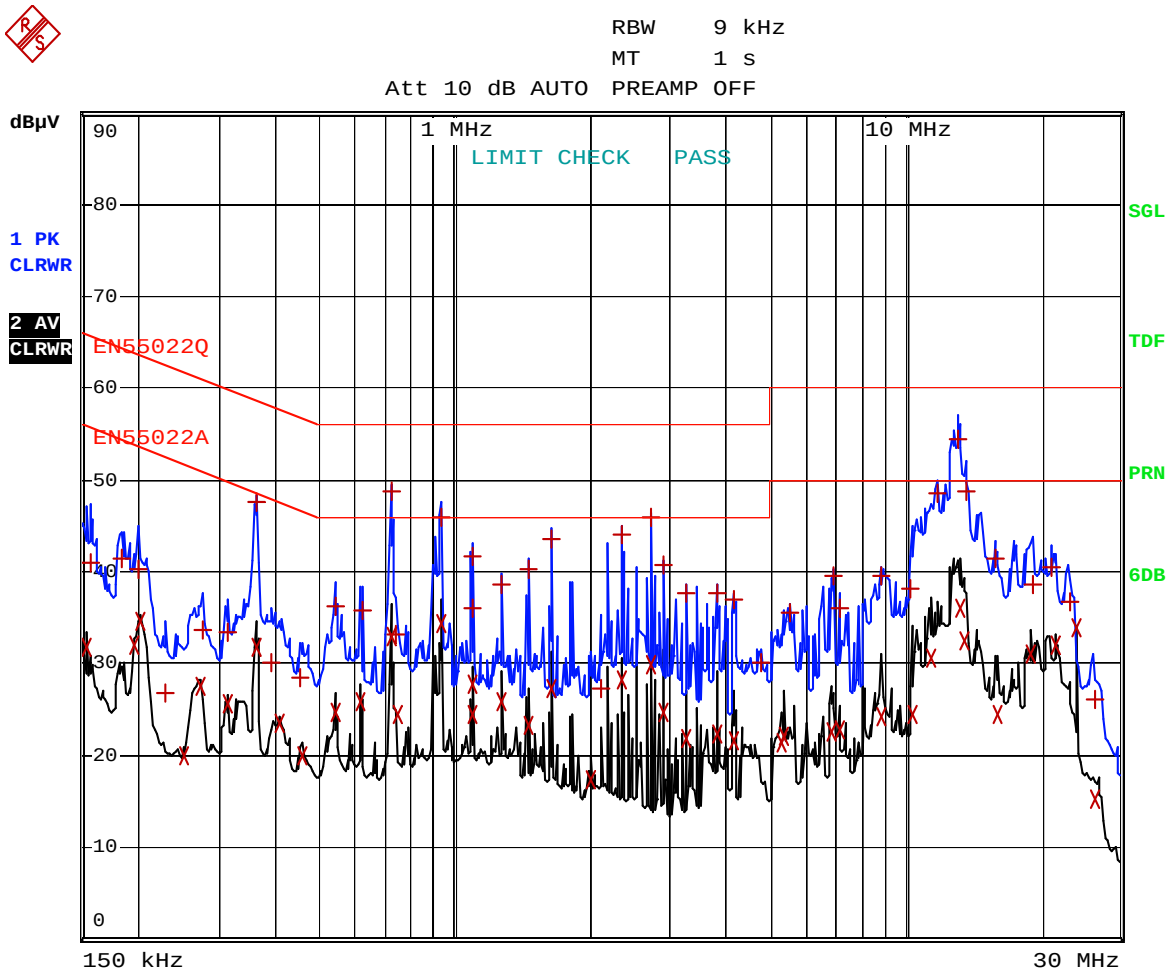
*NEUTRAL



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