ESTECH Co., Ltd. Rm 1015, World Venture Center II, 426-5 Gasan-dong, Guncheon-gu, Seoul, 158-803, Korea	MIC KOLAS VCI FC	**Electromagnetic Interference Test Report**

Compliance Test Report for FCC

Report Number		ESTF150603-011		
Applicant	Company name	IBRIDGE CO., LTD.		
	Address	#15-15, Yeouido-Dong, Youngdeungpo-Gu, Seoul 150-872, Korea		
	Telephone	82-63-450-5573		
Product	Product name	LCD Monitor		
	Model No.	JL1720BM	Manufacturer	IBRIDGE CO., LTD.
	Serial No.	NONE	Country of origin	KOREA
Test date	2006-02-10 ~ 2006-03-21		Date of issue	22-Mar-06
Testing location	ESTECH. Co., Ltd. 97-1 Hoiuk-Ri Majang-Myon, Icheon-city, KyungKi-Do, Korea			
Standard	FCC PART 15 2005 , 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 J.H.Kim	(Signature)		
Reviewed by	Engineering Manager J.M.Yang	(Signature)		
Abbreviation	OK, Pass = Passed, 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

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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, Kor
(Safety & Telecom. Test Lab)

EMC Test Lab : 58-1 Osan-Ri, GaNam-Myon, YeoJoo-Gun, KyungKi-Do, Korea
97-1 Hoiuk-Ri Majang-Myon, Icheon-city, KyungKi-Do, Korea

1.3 Official Qualification(s)

MIC : 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

NONE : LCD Monitor
Model Number : JL1720BM
Serial Number : NONE
Manufacturer : IBRIDGE CO., LTD.
Country of origin : KOREA
Rating : INPUT:AC120V / 60Hz DC output 12V ,40W
Receipt Date : 2006-02-10

2.2 General descriptions of EUT

Specifications

JL1720/JL1910BM			
LCD Panel	Size	JL1720BM	17" Diagonal
		JL1910BM	19" Diagonal
	Display Size	JL1720BM	337.92mm (H) X 270.336mm (V)
		JL1910BM	376.32mm (H) X 301.056mm (V)
	Type	TFT active matrix	
	Pixel Pitch	JL1720BM	0.264mm X 0.264mm
		JL1910BM	0.294mm X 0.294mm
Viewing Angles	Left / Right	75° / 75°	
	Up / Down	75° / 60°	
Frequency	Horizontal Sync.	30~80 KHz	
	Vertical Sync.	55~75 Hz	
	Display Color	JL1720BM	16.2M colors
		JL1910BM	16.7M colors
	Surface Treatment	Anti-glare coating	
Contrast Ratio	Typ.	700:1	
Brightness	Typ.	300cd/m²	
Response Time	Typ.	8ms	
Compatibility	PC	IBM Pentium or PS/2 and compatibles (from VGA and DVI up to 1280X1024 @75 Hz, Progressive)	
Display Resolution	Max.	1280X1024@75 Hz, Progressive (1280X1024@60 Hz recommend)	
Connectors	Input Signal	15-pin D-Sub, 24-pin DVI-D	
	Power	Jack Type DC+12V In	
Power	Input	AC 100-240V, 50-60 Hz	
	Output	DC 12V	
	Consumption	JL1720BM	40 watts
		JL1910BM	50 watts
Audio	Input	Stereo 3pin	
	Output	3W X 2	
Operating	Temperature	32°F to 104°F (0°C to 40°C)	
	Humidity	20% RH to 80% RH (non condensing)	
	Altitude	To 10,000 feet (3,000m)	
Storage Conditions	Temperature	-13°F to 104°F (-25°C to 40°C)	
	Humidity	5% RH to 90% RH (non condensing)	
Dimension		JL1720BM	382 mm (W) X 390 mm (H) X 201 mm (D)
		JL1910BM	417 mm (W) X 407 mm (H) X 201 mm (D)
Weight	Net	JL1720BM	4.2Kg
		JL1910BM	5.0Kg

Mode		Resolution		Frequency		Pixel Clock Frequency [MHz]	Polarity [H/V]
		Horizontal [Dots]	Vertical [Lines]	Horizontal [KHz]	Vertical [Hz]		
VGA	M1	720	400	31.5	70	28.322	-/+
VESA	M2	640	480	31.5	60	25.175	-/-
	M3	640	480	37.5	75	31.500	-/-
	M4	800	600	37.9	60	40.000	+/+
	M5	800	600	46.9	75	49.500	+/+
	M6	1,024	768	48.4	60	65.000	-/-
	M7	1,024	768	60.0	75	78.750	+/+
	M8	1,280	1,024	64.0	60	108.000	+/+
	M9	1,280	1,024	80.0	75	135.000	+/+
MAC	M10	832	624	49.7	75	57.284	-/-

Using Freq. : 24MHz

3. Test Standards

Test Standard : FCC PART 15 (2005)

This 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)

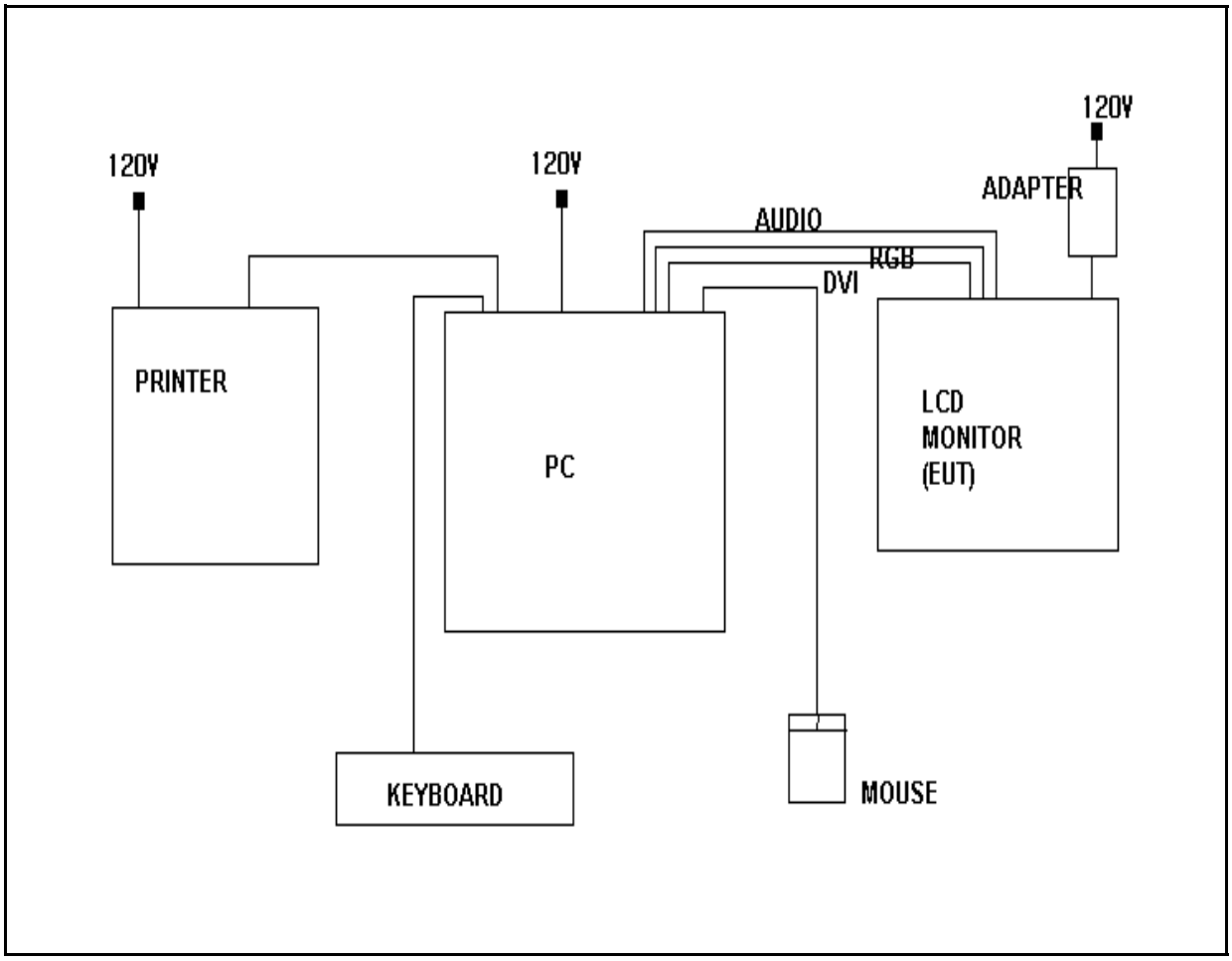
This standard sets forth uniform methods of measurement of radio-frequency (RF) signals and noise emitted from both unintentional and intentional emitters of RF energy in the frequency range 9 kHz to 40 GHz. Methods for the measurement of radiated and AC power-line conducted radio noise are covered and 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 seting 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 Name	S/N	Manufacturer	Remark (FCC ID)
LCD Monitor	JL1720BM	NONE	IBRIDGE CO., LTD.	EUT
AC ADAPTER	LSE0107A1240	A30539306981	LI SHIN INTERNATIONAL ENTERPRISE CORP.	-
PC	HP Pavilion m000	KRF35200YM	HP	-
KEYBOARD	SEM-DT35	32006557	Samsung Electro-mechanics Co., Ltd.,	-
MOUSE	M-S48a	HCA15118022	Logitech	-
PRINTER	LQ-570H	B1021095782	Trigem Computer Inc.	-

4.4 Cable Connecting

Start Equipment		End Equipment		Cable Standard		Remark
Name	I/O port	Name	I/O port	Length	Shielded	
LCD MONITOR	DVI	PC	DVI	1.5	Y	
LCD MONITOR	RGB	PC	RGB	1.5	Y	
LCD MONITOR	AUDIO-IN	PC	AUDIO-OUT	1.5	N	
PC	PS/2 MOUSE	MOUSE	PS/2 MOUSE	1.5	N	
PC	PS/2 KEYBOARD	KEYBOARD	PS/2 KEYBOARD	1.5	N	
PC	PARALLEL	PRINTER	PARALLEL	1.5	Y	
LCD MONITOR	POWER	ADAPTER	POWER	1	N	

5. Measurement of radiated disturbance

Above 30 MHz Electric Field strength was measured in accordance with FCC Part 15 (2005) & ANSI C 63.4 (2003). The test setup was made according to FCC Part 15 (2005) & 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 0.8m. 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 set-up.

5.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
TEST Receiver	ESPI7	Rohde & Schwarz	100185	2006. 8. 22
Spectrum Analyzer	R3261C	ADVANTEST	61720116	2006. 4. 10
LogBicon Antenna	VULB 9160	S/B	3107	2006. 5. 02
Horn Antenna	BBHA 9120 D	SCHWARZBECK	352	2006. 4. 06
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)

Temperature (°C) : 2 ℃

Humidity (%) : 44 %

5.3 Test data(1)

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)
41.76	11.20	H	2.4	12.73	1.1	40.0	25.03	-14.97
75.02	13.10	H	2.0	9.87	1.4	40.0	24.34	-15.66
87.44	12.70	H	2.0	8.73	1.5	40.0	22.92	-17.08
116.49	12.10	H	1.7	11.17	1.7	43.5	24.95	-18.55
162.41	10.80	H	1.6	13.90	2.0	43.5	26.66	-16.84
195.83	9.90	H	1.2	11.22	2.2	43.5	23.28	-20.22
216.00	13.70	V	1.1	10.72	2.3	43.5	26.70	-16.80
229.18	13.10	H	1.0	10.99	2.4	46.0	26.46	-19.54
264.01	17.00	H	1.0	12.22	2.7	46.0	31.87	-14.13
324.00	13.10	V	1.0	13.74	3.0	46.0	29.84	-16.16
372.00	9.80	V	1.0	14.66	3.2	46.0	27.66	-18.34
432.00	12.10	V	1.0	16.01	3.5	46.0	31.65	-14.35
540.00	13.30	H	1.0	17.68	4.1	46.0	35.04	-10.96
648.00	9.20	H	1.0	19.60	4.5	46.0	33.32	-12.68
Remark	H : Horizontal, V : Vertical TEST MODE ; Resolution 1280*1024 (75Hz) at DVI mode (Worse Case)							

5.4 Test data(2)

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)
33.34	13.40	V	1.0	12.27	0.9	40.0	26.61	-13.39
75.02	13.70	H	2.3	9.87	1.4	40.0	24.94	-15.06
111.95	13.20	H	1.8	11.10	1.7	43.5	25.95	-17.55
125.29	9.40	H	1.7	12.10	1.7	43.5	23.23	-20.27
196.95	13.40	H	1.6	11.24	2.2	43.5	26.81	-16.69
216.00	15.10	H	1.1	10.72	2.3	43.5	28.10	-15.40
229.01	13.50	H	1.0	10.98	2.4	46.0	26.85	-19.15
264.04	12.80	V	1.0	12.22	2.7	46.0	27.67	-18.33
300.07	10.20	H	1.0	13.19	2.9	46.0	26.26	-19.74
344.20	12.70	H	1.0	14.18	3.1	46.0	29.99	-16.01
432.00	9.20	H	1.0	16.01	3.5	46.0	28.75	-17.25
458.18	9.40	H	1.0	16.48	3.6	46.0	29.51	-16.49
540.00	6.60	H	1.0	17.68	4.1	46.0	28.34	-17.66
648.00	6.80	V	1.0	19.60	4.5	46.0	30.92	-15.08
Remark	H : Horizontal, V : Vertical TEST MODE ; Resolution 1280 * 1024 (60Hz) at RGB mode (Worse Case)							

6. Measurement of conducted disturbance

The continuous disturbance voltage of AC Mains in the frequency from 0.15 to 30 MHz was measured in accordance to FCC Part 15 (2005) & ANSI C 63.4 (2003) The test setup was made according to FCC Part 15 (2005) & ANSI C 63.4 (2003) in a shielded. The EUT was placed on a non-conductive table at least 80 above the ground plan. A grounded vertical reference plane was positioned in a distance of 40cm from the EUT. The distance from the EUT to other metal surfaces was at least 0.8m. 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 1.0m.. 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	2007. 2. 27
LISN	NNLA8120A	Schwarzbeck	NONE	2007. 2. 27
TEST Receiver	ESPI7	Rohde & Schwarz	100185	2006. 8. 22
Pulse Limiter	ESH3Z2	Rohde & Schwarz	NONE	2006. 6. 15

6.2 Environmental Condition

Test Place : Shield Room

Temperature (°C) : 20 ℃

Humidity (%) : 34 %

6.3 Test data

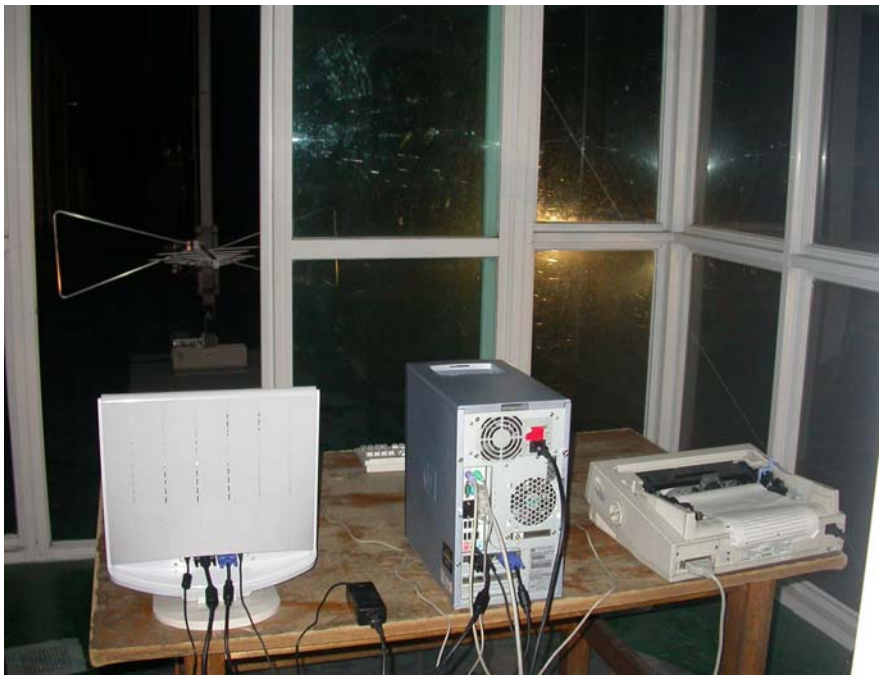
Frequency (MHz)	Correction Factor		Line (H/N)	Quasi-peak Value			Average Value		
	Lisn (dB)	Cable (dB)		Limit (dBμV)	Reading (dBμV)	Result (dBμV)	Limit (dBμV)	Reading (dBμV)	Result (dBμV)
0.15	0.10	0.0	H	66.00	43.94	44.04	56.00	26.21	26.31
0.21	0.10	0.0	H	63.21	51.78	51.92	53.21	41.63	41.77
0.28	0.10	0.1	H	60.82	43.51	43.70	50.82	34.96	35.15
0.35	0.10	0.1	H	58.96	39.26	39.49	48.96	31.85	32.08
0.42	0.10	0.2	H	57.45	34.04	34.30	47.45	27.02	27.28
0.48	0.10	0.2	H	56.34	33.11	33.40	46.34	29.95	30.24
0.55	0.10	0.2	H	56.00	30.88	31.18	46.00	28.16	28.46
0.69	0.10	0.2	H	56.00	32.32	32.62	46.00	29.27	29.57
0.83	0.10	0.2	H	56.00	31.49	31.79	46.00	28.10	28.40
1.04	0.10	0.2	H	56.00	31.28	31.58	46.00	28.13	28.43
4.07	0.17	0.3	H	56.00	32.84	33.31	46.00	-	-
4.27	0.18	0.3	N	56.00	34.17	34.65	46.00	-	-
6.88	0.25	0.4	N	60.00	32.04	32.68	50.00	-	-
7.36	0.26	0.4	N	60.00	31.95	32.63	50.00	-	-
11.77	0.34	0.7	N	60.00	31.88	32.89	50.00	-	-
24.87	0.94	0.9	N	60.00	36.23	38.07	50.00	28.17	30.01
24.92	0.95	0.9	H	60.00	35.83	37.67	50.00	-	-
29.08	1.15	0.9	N	60.00	32.07	34.12	50.00	24.60	26.65
Remark	H : Hot Line, N : Neutral Line								

7. Photographs of test setup

7.1 Setup for Radiated Test : 30 ~ 1000 MHz

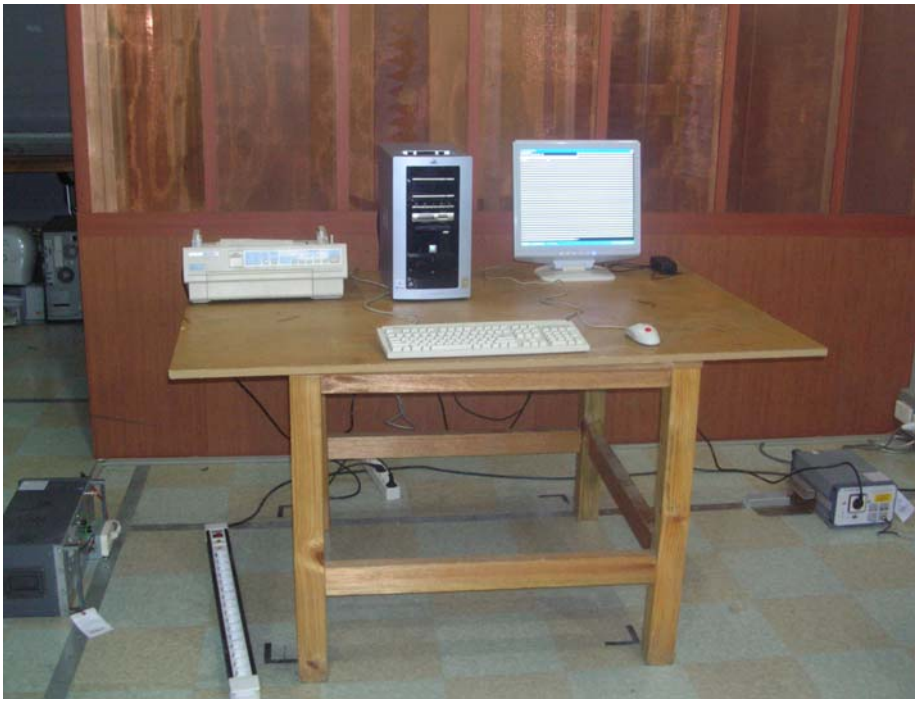
[Front]

[Rear]



7.2 Setup for Conducted Test : 0.15 ~ 30 MHz

[Front]



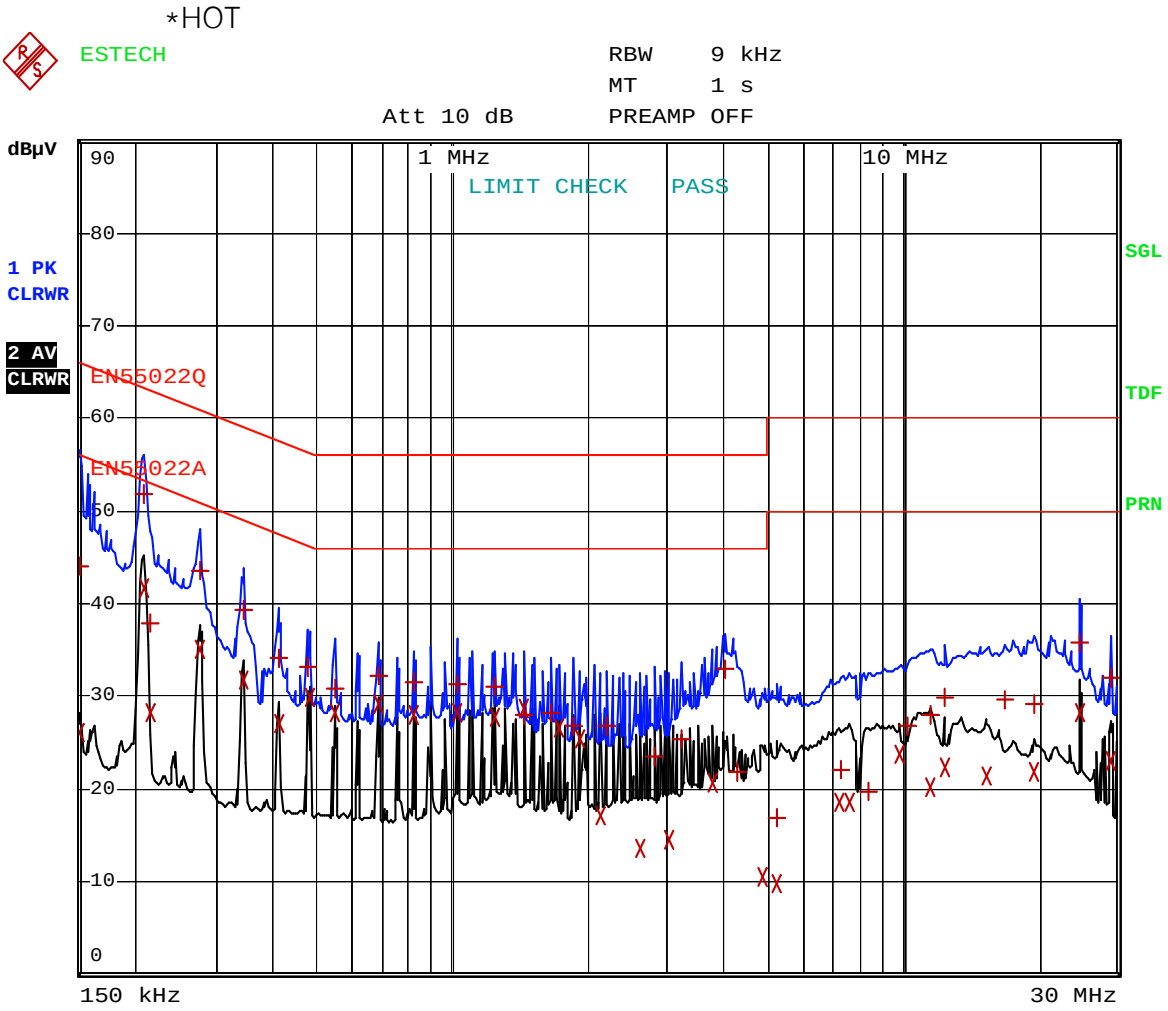
[Rear]

8. Photographs of EUT

[Front]

[Rear]

Appendix 1. Spectral diagram



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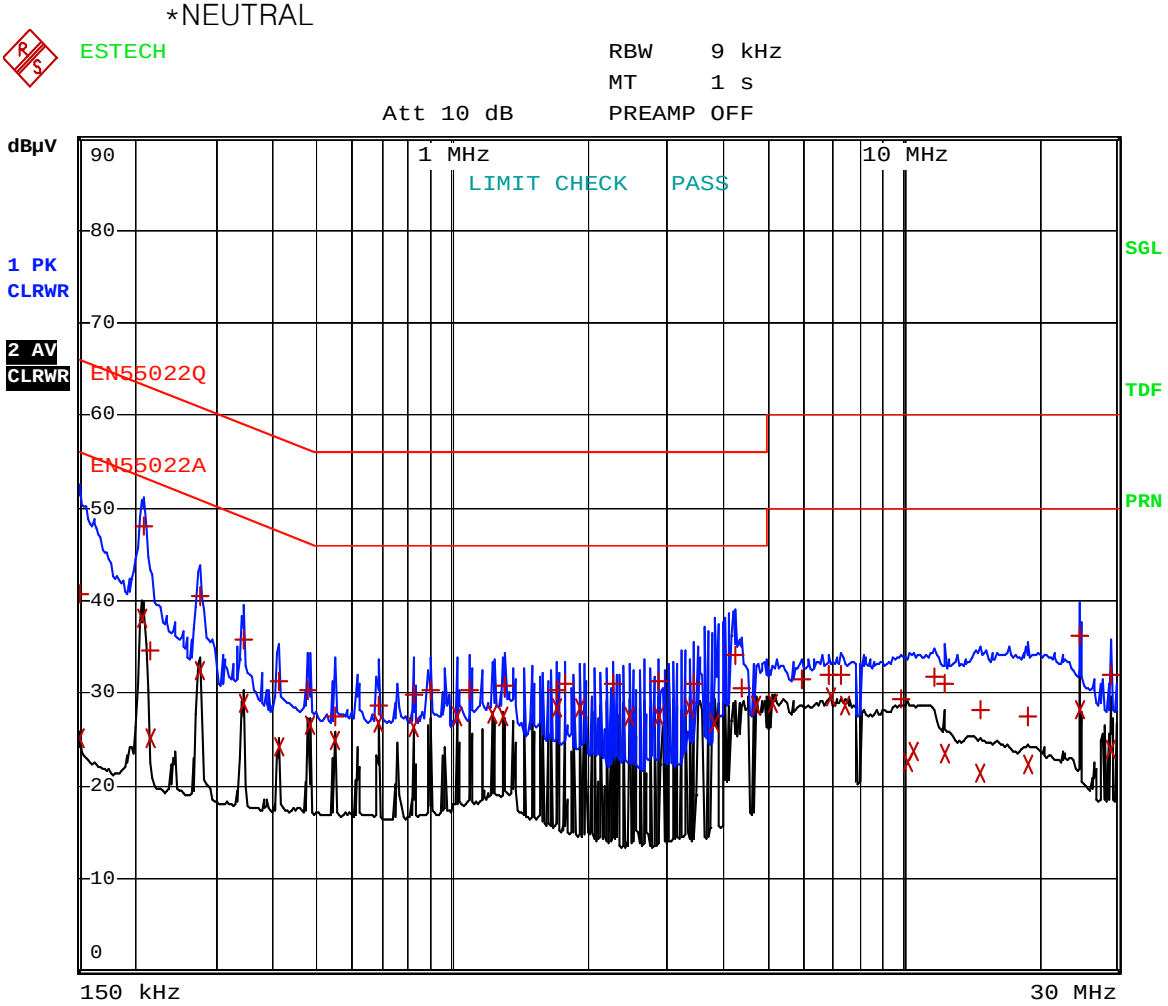

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