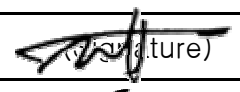


 ESTECH Co., Ltd. Rm. 1015, World Venture Center II, 426-5 Gasan-dong, Guncheon-gu, Seoul, 158-803, Korea	   		Electromagnetic Interference Test Report

Test Report for FCC

Report Number		ESTF150609-005			
Applicant	Company name	Hanbit Electronics Co., Ltd.			
	Address	414-5 Woncheon-Dong, Youngtong-Gu, Suwon-City, Kyoungki-Do, Korea			
	Telephone	82-2-2175-9916			
Product	Product name	Handheld Web Computer			
	Model No.	HPAW20256,HPAB20256, HPAP20256,PepperPad3	Manufacturer	Hanbit Electronics Co., Ltd.	
	Serial No.	NONE	Country of origin	KOREA	
Test date	2006-09-06 ~ 2006-09-08		Date of issue	13-Sep-06	
Testing location	ESTECH. Co., Ltd. 97-1 Hoiuk-Ri Majang-Myon, Icheon-city, KyungKi-Do, Korea				
Standard	FCC PART 15 2006 , 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	Manager Engineer J.M.Yang  (Signature)				
Abbreviation	OK, Pass = Passed, Fail = Failed, N/A = not applicable				
* Note - HPAW20256,HPAB20256,HPAP20256 and PepperPad3 are same product, Only color of the product is different. - 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	3
2. Description of EUT	4
3. Test Standards	5
4. Measurement condition	6
5. Measurement of radiated emission	8
5.1 Measurement equipment	8
5.2 Environmental conditions	8
5.3 Test data	9
6. Measurement of conducted emission	10
6.1 Measurement equipment	10
6.2 Environmental conditions	10
6.3 Test data	11

Appendix 1. Spectral diagram

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 : 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 : Handheld Web Computer
 Model Number : HPAW20256, HPAB20256, HPAP20256, PepperPad3
 Serial Number : NONE
 Manufacturer : Hanbit Electronics Co., Ltd.
 Country of origin : KOREA
 Rating : INPUT:AC120V / 60Hz ,DC OUTPUT:12V,3A
 Receipt Date : 21-Jul-06

Hardware Specifications

Processor • AMD LX800	Peripheral Jacks • USB 2.0 Host • USB Device • Stereo Headphone out • Component video out • Microphone in
Display • 7.0" 800x480 WBVGA TFT LCD	
Memory • 256 MB DDR SDRAM	Audio • Stereo Speakers • Built-In Microphone
Storage • 20 GB Harddrive	
Power • Rechargeable Battery • 110/220 AC power adapter	User Input • Resistive touch screen with stylus • Full split QWERTY keypad • Direction-pad • Scroll wheel • Video Camera
Wireless • Wi-Fi 802.11b/g/WEP/WPA • Bluetooth 2.0 • Dual IR emitters and IR receiver	Physical • 11.4" x 5.9" x 0.9" (290 x 149 x 23mm) • 2.2 lbs (985 grams)

Using Freq. : 13MHz, 14.318MHz, 24.576MHz, 27.48MHz

3. Test Standards

Test Standard : FCC PART 15 (2006)

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)

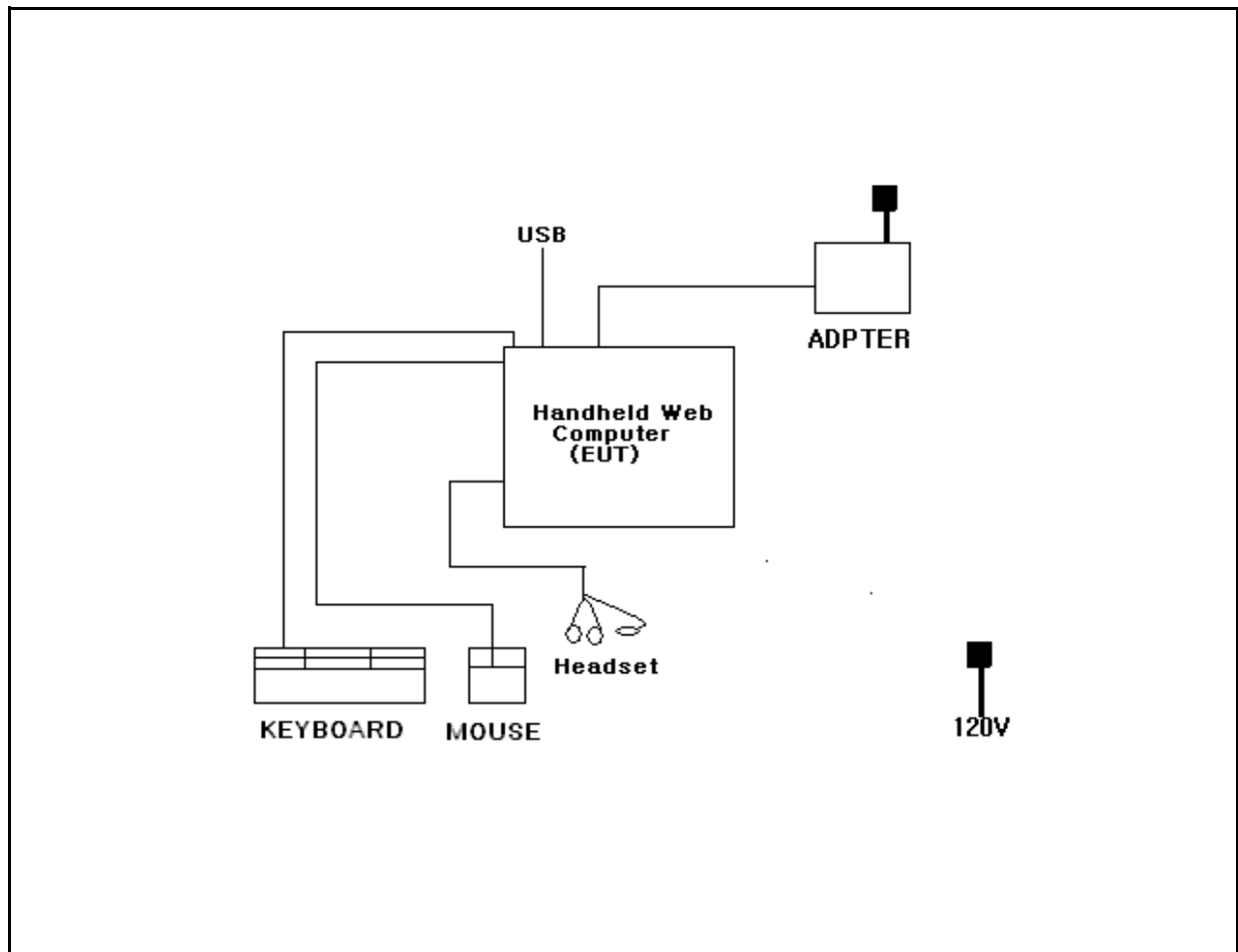
This standard sets forth uniform methods of measurement of radio-frequency (RF) signals and noise emitted from both unintentional and intentional emitters of RF energy in the frequency range 9 kHz to 40 GHz. Methods for the measurement of radiated and AC power-line conducted radio noise are covered and may be applied to any such equipment unless otherwise specified by individual equipment requirements. These methods cover measurement of certain devices 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 methods 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 highest level of emission
- * After setting as test arrangement 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)
Handheld Web Computer	HPAW20256,HPAB20256, HPAP20256,PepperPad3	NONE	Hanbit Electronics Co., Ltd.	EUT
ADAPTER	DSA-36W-1236	1806HB	Dee Van Electronics Co., Ltd.	
MOUSE	Wheel Mouse Optical	3902C693	Microsoft	
KEYBOARD	PKB-7000X	015090341942	SAMSUNG CORPORATION.	
HEADSET	CMC-909MV	NONE	COSY	

4.4 Cable Connecting

Start Equipment		End Equipment		Cable Standard		Remark
Name	I/O port	Name	I/O port	Length	Shielded	
Handheld Web Computer	USB	KEYBOARD	USB	2	Shielded	
Handheld Web Computer	USB	-	-	1	Shielded	Connected with ferrite core
Handheld Web Computer	POWER	ADAPTER	-	1	Unshielded	Connected with ferrite core
Handheld Web Computer	Speaker Out	Headset	-	1	Unshielded	
Handheld Web Computer	Mic In	Headset	-	1	Unshielded	
Keyboard	USB	MOUSE	USB	1	Shielded	Connected with ferrite core

5. Measurement of radiated disturbance

Above 30 MHz Electric Field strength was measured in accordance with FCC Part 15 (2006) & ANSI C 63.4 (2003). The test setup was made according to FCC Part 15 (2006) & 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 setup.

5.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
TEST Receiver	ESVS10	Rohde & Schwarz	838562/002	2007. 1. 23
Spectrum Analyzer	R3261C	ADVANTEST	61720116	2007. 4. 19
LogBicon Antenna	VULB 9160	Schwarzbeck	3142	2007. 5. 03
Amplifier	310N	Sonoma Instrument	185723	2006. 9. 23
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) : 25 °C
 Humidity (%) : 49 %

5.3 Test data

Test Date : 8-Sep-06

Measurement Distance : 3 m

Frequency (MHz)	Reading (dB μ V)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dB μ V/m)	Result (dB μ V/m)	Margin (dB)
48.00	20.60	V	1.0	12.78	1.1	40.0	34.51	-5.49
81.30	12.40	H	2.1	8.80	1.4	40.0	22.62	-17.38
109.12	13.10	H	1.9	10.40	1.6	43.5	25.14	-18.36
111.10	23.40	V	1.0	11.09	1.6	43.5	36.13	-7.37
120.00	20.00	H	1.7	12.03	1.7	43.5	33.73	-9.77
160.00	20.50	H	1.5	13.88	2.0	43.5	36.33	-7.17
180.00	18.10	V	1.0	12.44	2.1	43.5	32.60	-10.90
200.00	21.60	H	1.3	10.38	2.2	43.5	34.13	-9.37
208.87	23.80	H	1.3	10.60	2.2	43.5	36.60	-6.90
231.13	23.40	H	1.2	11.26	2.4	46.0	37.10	-8.90
266.61	21.00	H	1.1	12.28	2.7	46.0	35.94	-10.06
333.28	17.80	H	1.0	13.93	3.1	46.0	34.79	-11.21
383.91	19.10	H	1.0	14.97	3.3	46.0	37.35	-8.65
426.65	17.00	H	1.0	15.87	3.5	46.0	36.41	-9.59
499.85	19.10	H	1.0	17.06	3.8	46.0	39.99	-6.01
666.49	9.30	H	1.0	19.80	4.6	46.0	33.68	-12.32
791.84	7.30	H	1.0	21.70	5.1	46.0	34.13	-11.87
1082.83	47.83	H	1.0	24.04	-33.7	54.0	38.17	-15.83
1055.95	47.17	H	1.0	23.84	-33.7	54.0	37.31	-16.69
1166.06	50.83	H	1.2	24.29	-33.8	54.0	41.32	-12.68
1499.23	44.33	H	1.0	24.90	-33.7	54.0	35.53	-18.47
1999.63	41.67	H	1.0	25.89	-32.8	54.0	34.76	-19.24
Remark H : Horizontal, V : Vertical *CL = Cable Loss-Amplifier Gain(In case of above1000Mhz) *CL = Cable Loss(In case of below1000Mhz) *Checked in all 3 axis and the maximum measured data were reported. *Below 1000Mhz was applied QPeak Detector and above 1000Mhz was applied Average Detector. *The radiated emission isn't detected from above 2GHz.								

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 (2006) & ANSI C 63.4 (2003). The test setup was made according to FCC Part 15 (2006) & ANSI C 63.4 (2003) in a shielded. The EUT was placed on a non-conductive table at least 80 above the ground plane. 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	2007. 8. 24
Pulse Limiter	ESH3Z2	Rohde & Schwarz	NONE	2007. 6. 15

6.2 Environmental Condition

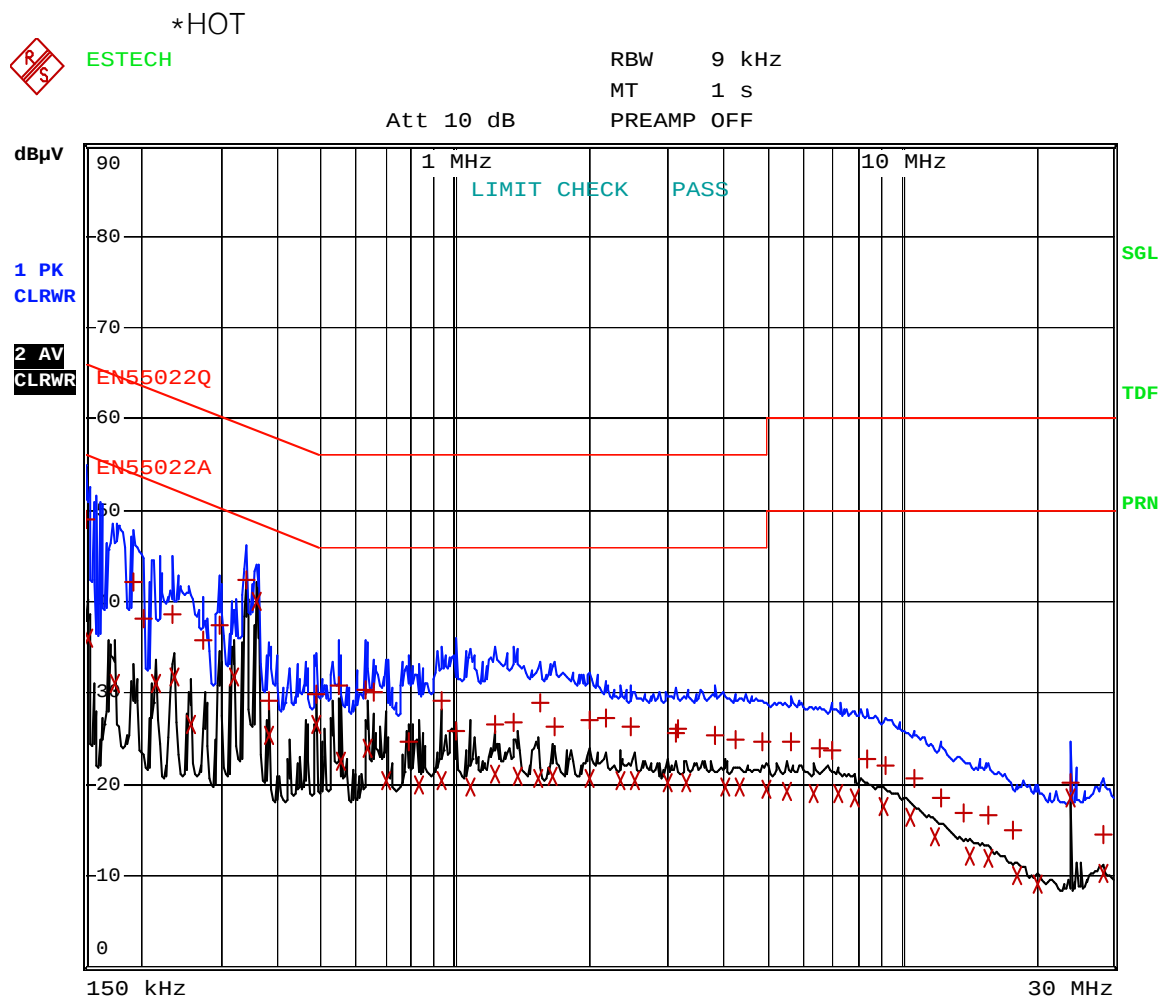
Test Place : Shield Room
 Temperature (°C) : 22°C
 Humidity (%) : 45%

6.3 Test data

Test Date : 6-Sep-06

Frequency (MHz)	Correction Factor		Line (H/N)	Quasi-peak Value			Average Value		
	Lisn (dB)	Cable (dB)		Limit (dB μ V)	Reading (dB μ V)	Result (dB μ V)	Limit (dB μ V)	Reading (dB μ V)	Result (dB)
0.15	0.07	0.0	H	66.00	49.00	49.07	56.00	35.94	36.01
0.17	0.07	0.0	N	64.86	43.23	43.31	54.86	33.96	34.04
0.19	0.07	0.0	H	63.99	42.26	42.36	53.99	—	—
0.20	0.07	0.0	N	63.78	38.53	38.63	53.78	31.58	31.68
0.20	0.07	0.0	H	63.61	38.21	38.31	53.61	—	—
0.23	0.07	0.1	H	62.31	38.52	38.65	52.31	31.07	31.20
0.26	0.07	0.1	N	61.59	34.86	35.00	51.59	—	—
0.30	0.07	0.1	H	60.33	37.42	37.59	50.33	—	—
0.33	0.07	0.1	N	59.40	40.05	40.24	49.40	36.98	37.17
0.34	0.07	0.1	H	59.20	42.47	42.66	49.20	40.04	40.23
0.36	0.07	0.1	N	58.84	43.19	43.39	48.84	41.76	41.96
0.38	0.07	0.1	N	58.26	32.60	32.81	48.26	29.02	29.23
0.55	0.07	0.2	N	56.00	31.35	31.62	46.00	29.76	30.03
0.55	0.07	0.2	H	56.00	30.77	31.04	46.00	22.49	22.76
0.64	0.08	0.2	H	56.00	30.26	30.54	46.00	23.88	24.16
Remark	H : Hot Line, N : Neutral Line								

Appendix 1. Spectral diagram



Comment: HANBIT_HPAW20256_HOT
Date: 6.SEP.2006 11:45:00

*NEUTRAL



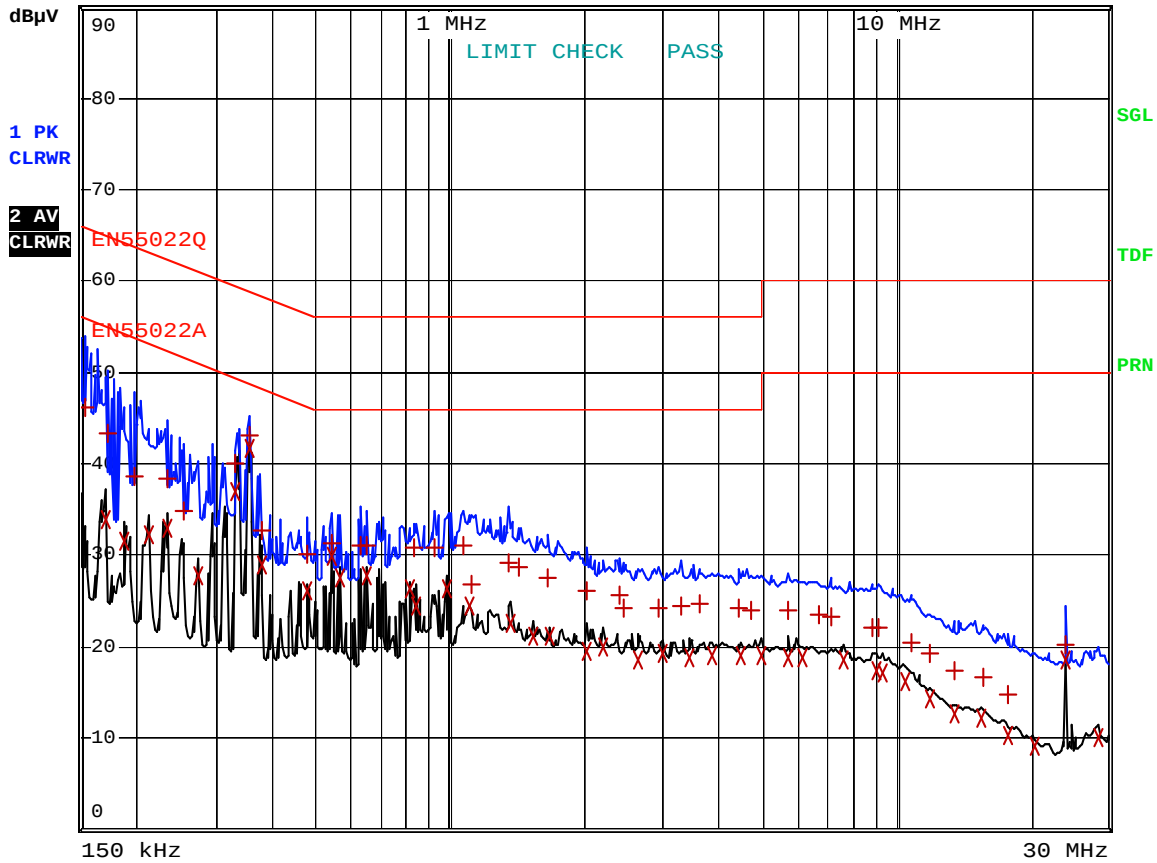
ESTECH

RBW 9 kHz

MT 1 s

PREAMP OFF

Att 10 dB



Comment: HANBIT_HPAW20256_NEUTRAL

Date: 6.SEP.2006 11:50:54