



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

Compliance Test Report for FCC

Report Number		ESTF150603-013			
Applicant	Company name	MobitechPlus Inc.			
	Address	32-5 Songwol-Dong Jongno-Gu, Seoul, 110-101, Korea			
	Telephone	82-2-730-3723			
Product	Product name	PC Camera			
	Model No.	MW1350	Manufacturer	MobitechPlus Inc.	
	Serial No.	NONE	Country of origin	KOREA	
Test date	2006-02-10 ~ 2006-03-30		Date of issue	30-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	<input checked="" type="checkbox"/> Conducted Emission	<input type="checkbox"/> Class A	<input checked="" type="checkbox"/> Class B	Test result	OK
	<input checked="" type="checkbox"/> Radiated Emission	<input type="checkbox"/> Class A	<input checked="" type="checkbox"/> Class B	Test result	OK
Measurement facility registration number		94696			
Tested by	Engineer J.H.Kim 				
Reviewed by	Engineering Manager J.M.Yang 				
Abbreviation	OK, Pass = Passed, Fail = Failed, N/A = not applicable				
<p>* Note</p> <p>-The Basic model is MW1350. Multi models are MW1350RIC,MW1350FIC,MW1350BIC,MW1350BVT,MW1350MVT,MW1350MNZ, MW1350MNS,MW1350NXX and MW1350WIC</p> <p>- Basic model and Muti models are same product,only color of the product is different.</p> <p>- This test report is not permitted to copy partly without our permission</p> <p>- This test result is dependent on only equipment to be used</p> <p>- This test result based on a single evaluation of one sample of the above mentioned</p>					

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
7. Photographs of test setup	12
8. Photographs of EUT	14

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



ESTECH Co., Ltd.

Rm 1015, World Venture Center 11,
426-5 Gasan-dong, Guncheon-gu,
Seoul, 158-803, Korea



**Electromagnetic
Interference
Test Report**

2. Description of EUT

2.1 Summary of Equipment Under Test

NONE : PC Camera
 Model Number : MW1350
 Serial Number : NONE
 Manufacturer : MobitechPlus Inc.
 Country of origin : KOREA
 Rating : Supplied from PC
 Receipt Date : 2005-12-19

2.2 General descriptions of EUT

Item	MW-201	MW-202
Sensor	1/4" CMOS	
Pixels	33 mega Pixels	
Resolution	VGA(640 X 480)	
Lens	F=2.8, f=4.5	
Focus	2.0cm~ Infinity	
FPS	30FPS(CIF), 15FPS(VGA)	
Functions	Automatic Exposure, Auto White balance, auto COMS reset level control	
Interface	USB 1.1	
Snap-shot	support	
Mic	-	Built-in

Item	MW-201 MW-202
O/S	Windows 98, Windows 98SE, Windows ME, Windows 2000, Windows XP
CPU	Above the Pentium III 800MHz
MEMORY	Above 256M
HDD	200M surplus space (in case of installing the software)
VGA	Above the 600 x 600 x 24bit
USB	Need IBM or compatible PC which has more than 1 surplus port

Item	MW-850	FMW-1350
Sensor	1/4" CMOS	1/2" CMOS
Pixels	33 mega Pixels	130 mega Pixels
Resolution	VGA(640 X 480)	XVGA(1280 x 1024)
Lens	F=2.8, f=4.5	F=2.8, f=4.5
Focus	2.0cm~ Infinity	
FPS	30FPS(VGA)	30FPS(VGA), 15FPS(XVGA)
Functions	Automatic Exposure, Auto White balance, auto COMS reset level control	
Interface	USB 2.0	
Mic	Built-in Mic	
Snap-shot	support	

Item	MW-850 MW-1350
O/S	Windows 2000, Windows XP
CPU	Above the Pentium III 800MHz
MEMORY	Above 256M
HDD	200M surplus space (in case of installing the software)
VGA	Above the 600 x 600 x 24bit
USB	Need IBM or compatible PC which has more than 1 surplus port

Using Freq. : 24.576MHz,12MHz



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)

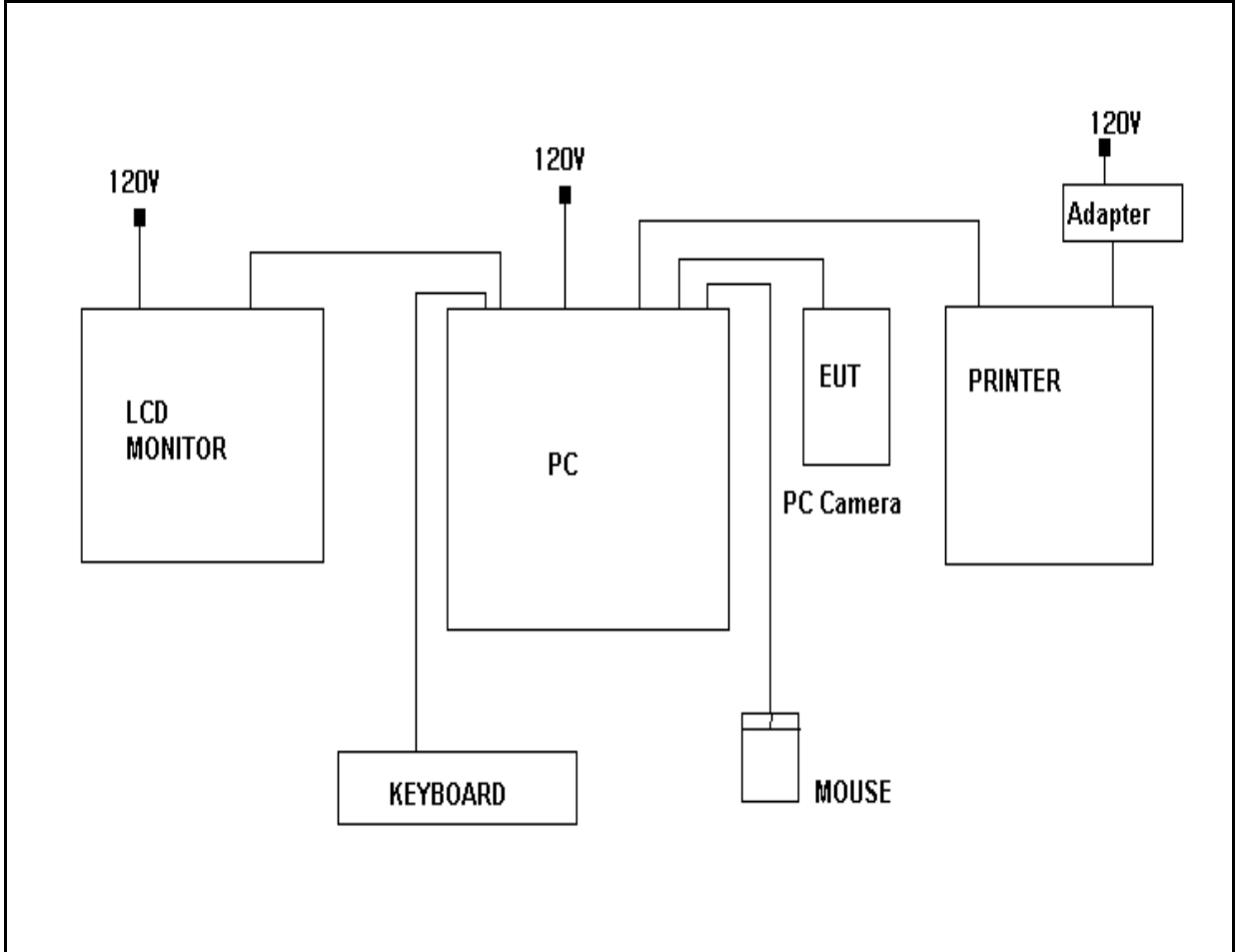
This standard sets forth uniform methods of measurement of radio-frequency (RF) signals and noise emitted from both unintentional and intentional emitters of RF energy in the frequency range 9 kHz to 40 GHz. Methods for the measurement of radiated and AC power-line conducted radio noise are covered and may be applied to any such equipment unless otherwise specified by individual equipment requirements. These methods cover measurement of certain 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, the picture produced by PC Camera was displayed on the monitor.

4.2 Configuration and Peripherals



4.3 EUT and Support equipment

Equipment Name	Model Name	S/N	Manufacturer	Remark (FCC ID)
PC Camera	MW1350	NONE	MobitechPlus Inc.	EUT
Personal Computer	DCSM	85RFJ1S	Dell Asia Pacific Sdn	-
LCD Monitor	1704FPTt	0W4916	Dell Asia Pacific Sdn	-
Mouse	Wheel Mouse Optical USB	2896557-6	Microsoft	-
Keyboard	SKG-220C	TAKL217007P	MONTEREY INTERNATIONAL CORP.	-
Printer	C6414J	TH18M149P2	HP	-
Adapter	C6409-60152	C1H1413	YOKOGAWA	-

4.4 Cable Connecting

Start Equipment		End Equipment		Cable Standard		Remark
Name	I/O port	Name	I/O port	Length	Shielded	
PC Camera	USB	PC	USB	2	Y	
PC	USB	Keyboard	USB	2	Y	
PC	USB	Mouse	USB	2	Y	
PC	USB	Printer	USB	2	Y	
PC	Video	LCD Monitor	Video	2	Y	
Printer	Power	Adapter	Power	2	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 °C
 Humidity (%) : 36 %

5.3 Test data

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)
60.09	9.10	V	1.0	12.67	1.3	40.0	23.02	16.98
79.26	16.10	H	2.4	9.94	1.4	40.0	27.44	12.56
82.31	20.30	H	2.3	8.82	1.4	40.0	30.55	9.45
143.28	12.80	H	1.6	13.39	1.9	43.5	28.06	15.44
167.67	14.00	V	1.0	13.94	2.0	43.5	29.94	13.56
201.20	16.70	H	1.2	10.41	2.2	43.5	29.27	14.23
216.00	16.00	H	1.1	10.72	2.3	43.5	29.00	14.50
243.88	16.80	H	1.1	11.80	2.5	46.0	31.06	14.94
264.03	23.00	H	1.0	12.22	2.7	46.0	37.87	8.13
301.82	15.00	H	1.0	13.23	2.9	46.0	31.11	14.89
344.51	15.40	H	1.0	14.19	3.1	46.0	32.70	13.30
350.61	16.50	H	1.0	14.31	3.1	46.0	33.95	12.05
456.07	10.90	H	1.0	16.45	3.6	46.0	30.97	15.03
480.07	22.00	H	1.0	16.89	3.8	46.0	42.69	3.31
504.09	9.60	H	1.0	17.12	3.9	46.0	30.58	15.42
600.00	5.60	H	1.0	19.16	4.4	46.0	29.12	16.88
648.09	9.80	H	1.0	19.60	4.5	46.0	33.93	12.07
744.11	10.70	H	1.0	21.08	4.9	46.0	36.71	9.29
816.14	10.70	V	1.0	21.87	5.2	46.0	37.81	8.19
888.12	14.50	H	1.0	22.44	5.5	46.0	42.44	3.56
Remark	H : Horizontal, V : Vertical							

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) : 21 °C
 Humidity (%) : 42 %

6.3 Test data

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 μ V)
0.15	0.10	0.0	N	66.00	37.70	37.80	56.00	36.62	36.72
0.20	0.10	0.0	N	63.74	48.09	48.22	53.74	47.06	47.19
0.21	0.10	0.0	N	63.37	36.63	36.77	53.37	35.75	35.89
0.24	0.10	0.1	N	61.99	39.59	39.75	51.99	38.89	39.05
0.29	0.10	0.1	N	60.55	34.51	34.70	50.55	32.57	32.76
0.33	0.10	0.1	N	59.43	37.69	37.91	49.43	36.65	36.87
0.40	0.10	0.1	N	57.96	34.68	34.93	47.96	33.39	33.64
0.99	0.10	0.2	N	56.00	30.31	30.61	46.00	–	–
5.63	0.22	0.3	N	60.00	33.34	33.89	50.00	–	–
6.20	0.23	0.4	N	60.00	35.83	36.42	50.00	–	–
8.57	0.28	0.5	H	60.00	33.69	34.47	50.00	–	–
12.69	0.35	0.7	H	60.00	32.61	33.67	50.00	–	–
20.60	0.73	0.8	H	60.00	33.35	34.89	50.00	–	–
Remark	H : Hot Line, N : Neutral Line								



ESTECH Co., Ltd.

Rm 1015, World Venture Center 11,
426-5 Gasan-dong, Guncheon-gu,
Seoul, 158-803, Korea



**Electromagnetic
Interference
Test Report**

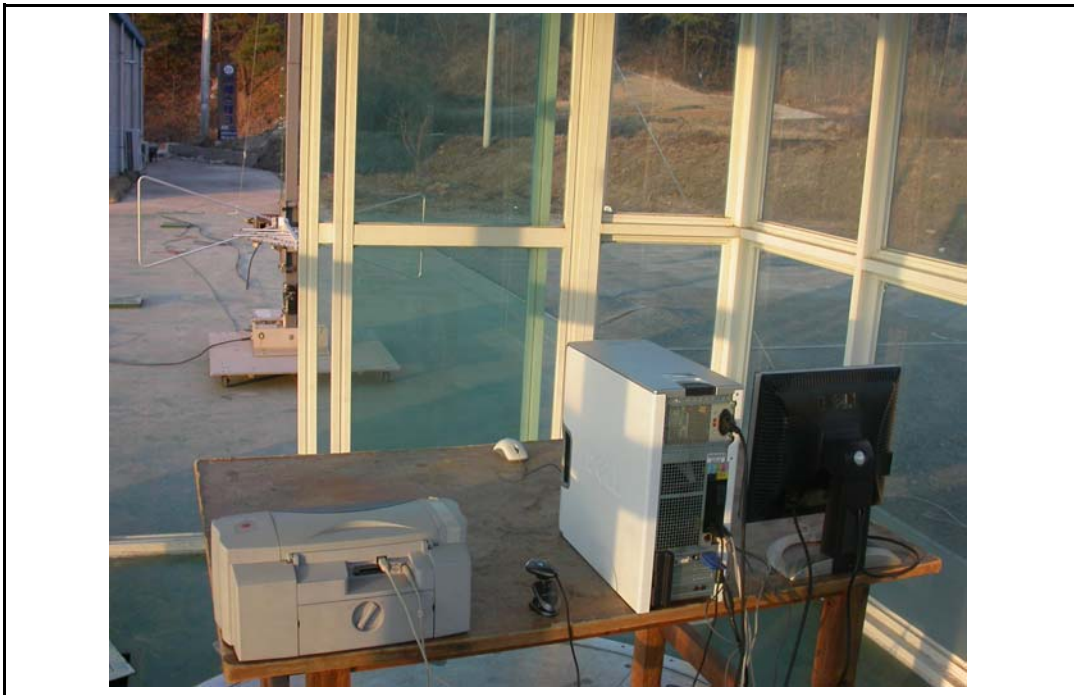
7. Photographs of test setup

7.1 Setup for Radiated Test : 30 ~ 1000 MHz

[Front]



[Rear]

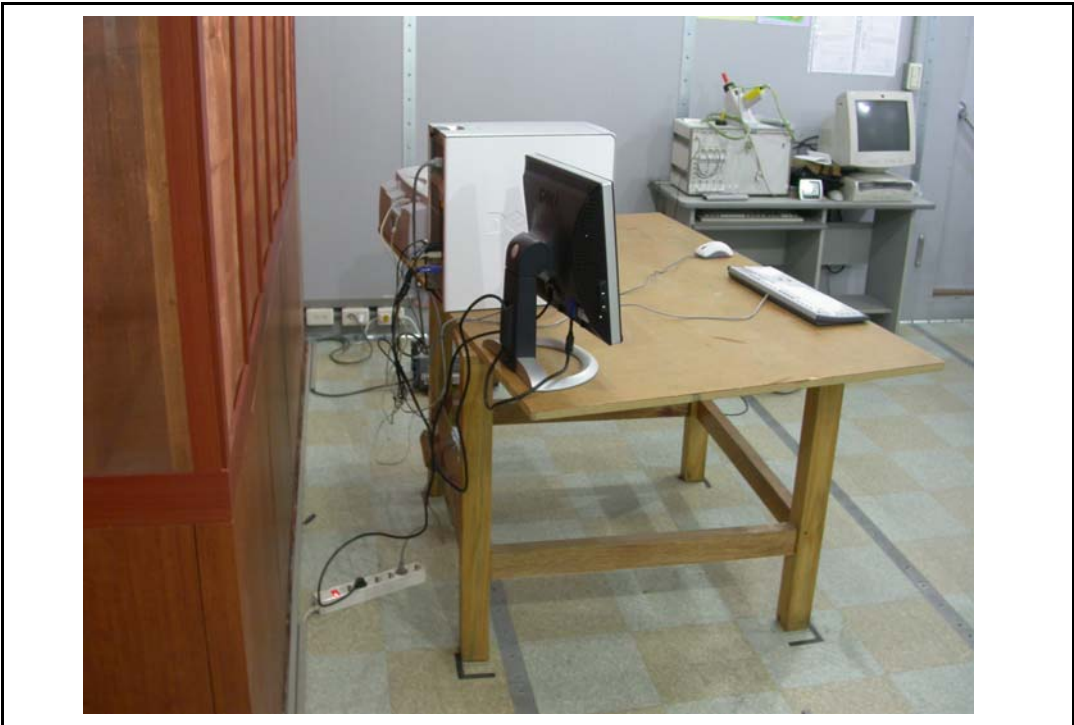


7.2 Setup for Conducted Test : 0.15 ~ 30 MHz

[Front]



[Rear]



8. Photographs of EUT

[Front]



[Rear]



Appendix 1. Spectral diagram

*HOT



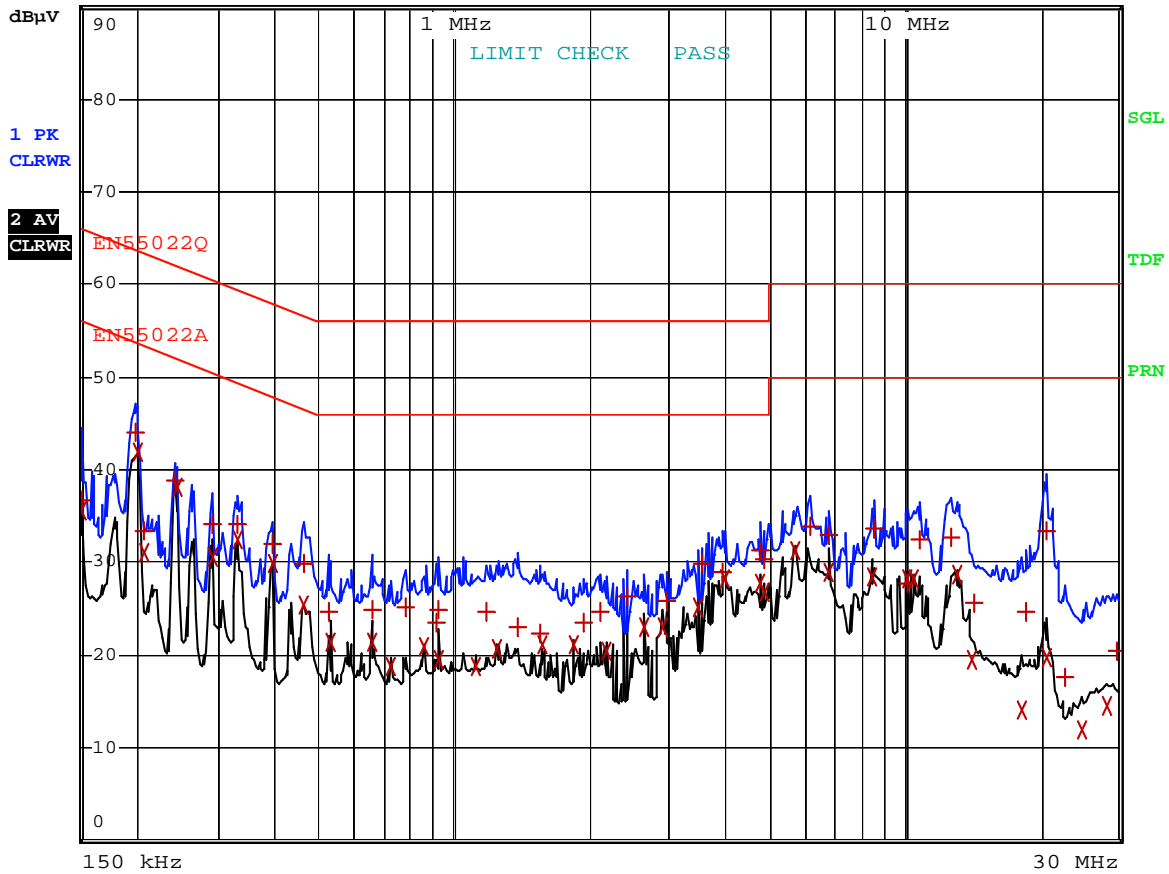
ESTECH

RBW 9 kHz

MT 1 s

Att 10 dB

PREAMP OFF



Comment: MW1350xxx HOT

Date: 30.MAR.2006 18:07:35

*NEUTRAL



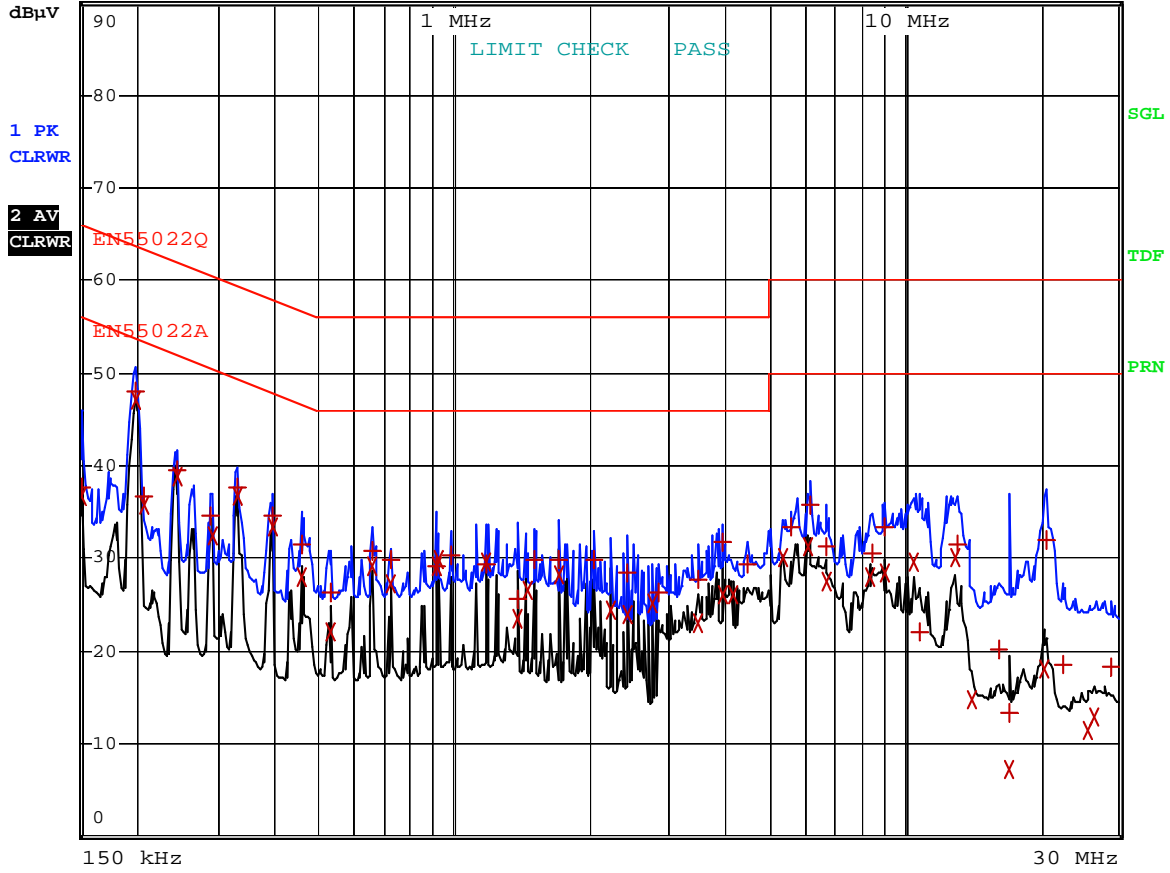
ESTECH

RBW 9 kHz

MT 1 s

Att 10 dB

PREAMP OFF



Comment: MW1350xxx NEUTRAL
Date: 30.MAR.2006 17:49:01