



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 : QDMW10

Report Number		ESTF150711-001			
Applicant	Company name	ReignCom Co.,Ltd.			
	Address	14 Kamco Yangiae Tower, 949-3 Dogok 1-dong, Gangnam-gu, Seoul			
	Telephone	82-2-3019-1864			
Product	Product name	Network Terminal Unit			
	Model No.	W10	Manufacturer	Iriver Electronic Technology(China) Co.,Ltd	
	Serial No.	NONE	Country of origin	China	
Test date	2007-10-4 ~ 2007-10-18		Date of issue	2-Nov-07	
Testing location	ESTECH Co., Ltd. 97-1 Hoiuk-Ri Majang-Myon, Icheon-city, KyungKi-Do, Korea				
Standard	FCC PART 15 2007 , 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	Senior Engineer M. J. Song				
Reviewed by	Engineering Manager J.M.Yang				
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
- Memory capacity of the USB-Drive is used with 2GB and 4GB

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

2. Description of EUT

2.1 Summary of Equipment Under Test

Product name : Network Terminal Unit
 Model Number : W10
 Serial Number : NONE
 Manufacturer : Iriver Electronic Technology(China) Co.,Ltd
 Country of origin : China
 X-tal lists : 12MHz
 Receipt Date : 19-Sep-07

2.2 General descriptions of EUT

Main Process	CPU	TELECHIPS TCC7801	
Memory	SDRAM	32bit*4Bank*4Mbit = 64MByte SDRAM	
Audio	Codec	WOLFSON WM8960	
FM	Tuner	SILAB SI4702	
Display	Resolution	480 * RGB * 272	
	Size	66.24mm x 37.54mm (4.3 inch)	
	Color	18bit Colors	
	Backlight	6 WHITE LEDS	
Input Device	Key Assignment	Touch screen / joggle	
	Base Band & RF	NANORADIO NRX701 / NRX510, 802.11b&11g	
WIFI	Antenna	Internal	
Storage	NAND	Capacity	MLC 2GByte
USB	type	USB 2.0	



3. Test Standards

Test Standard : FCC PART 15 (2007)

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)

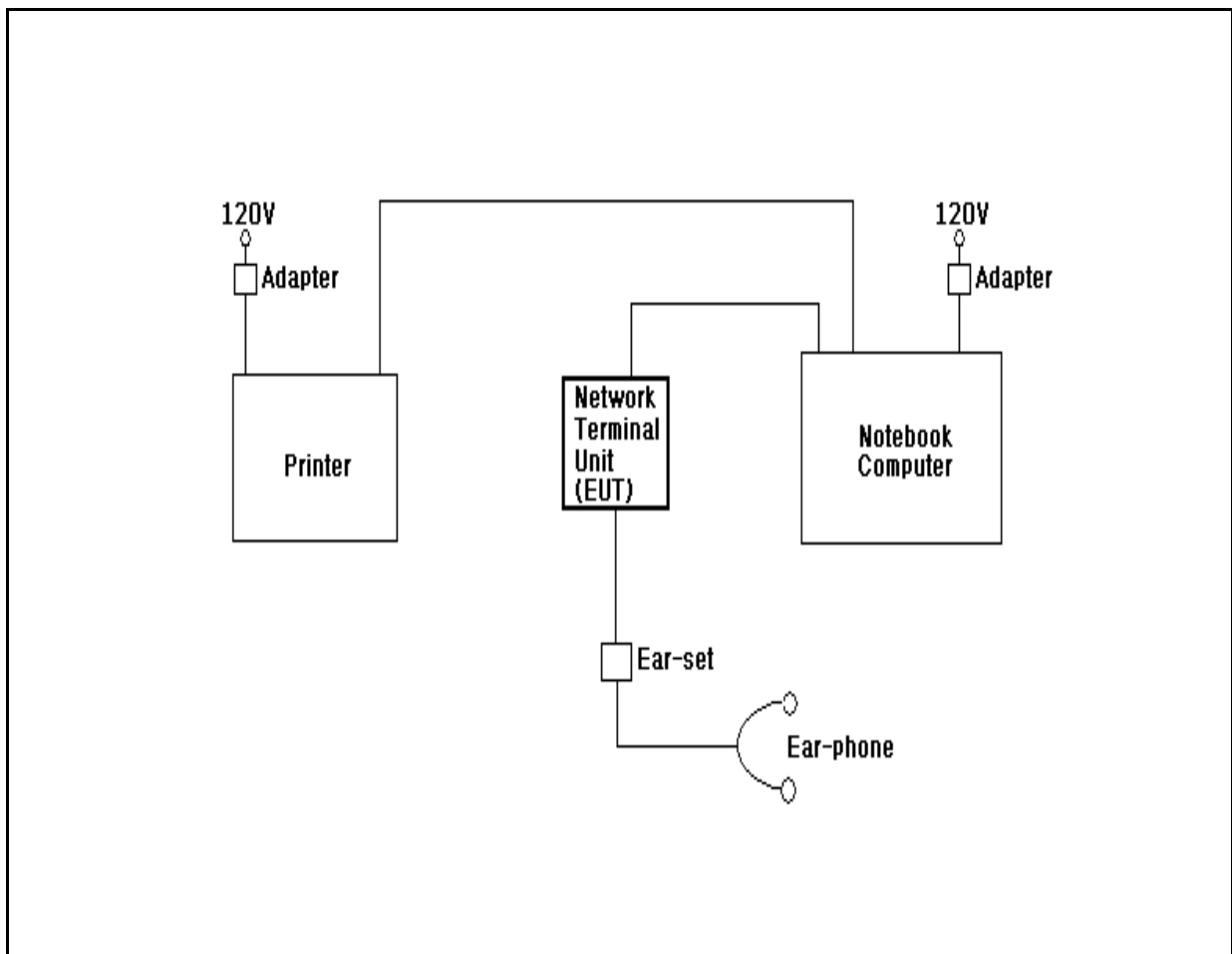
This standard sets forth uniform methods of measurement of radio-frequency (RF) signals and noise emitted from both unintentional and intentional emitters of RF energy in the frequency range 9 kHz to 40 GHz. Methods for the measurement of radiated and AC power-line conducted radio noise are covered and 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(Test mode : USB STORAGE MODE)

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 arrangment diagram, tested image data doing display on note pc monitor screen.
- * Transferred "H" character data between the Network Terminal Unit and note pc during the test.

4.2 Configuration and Peripherals

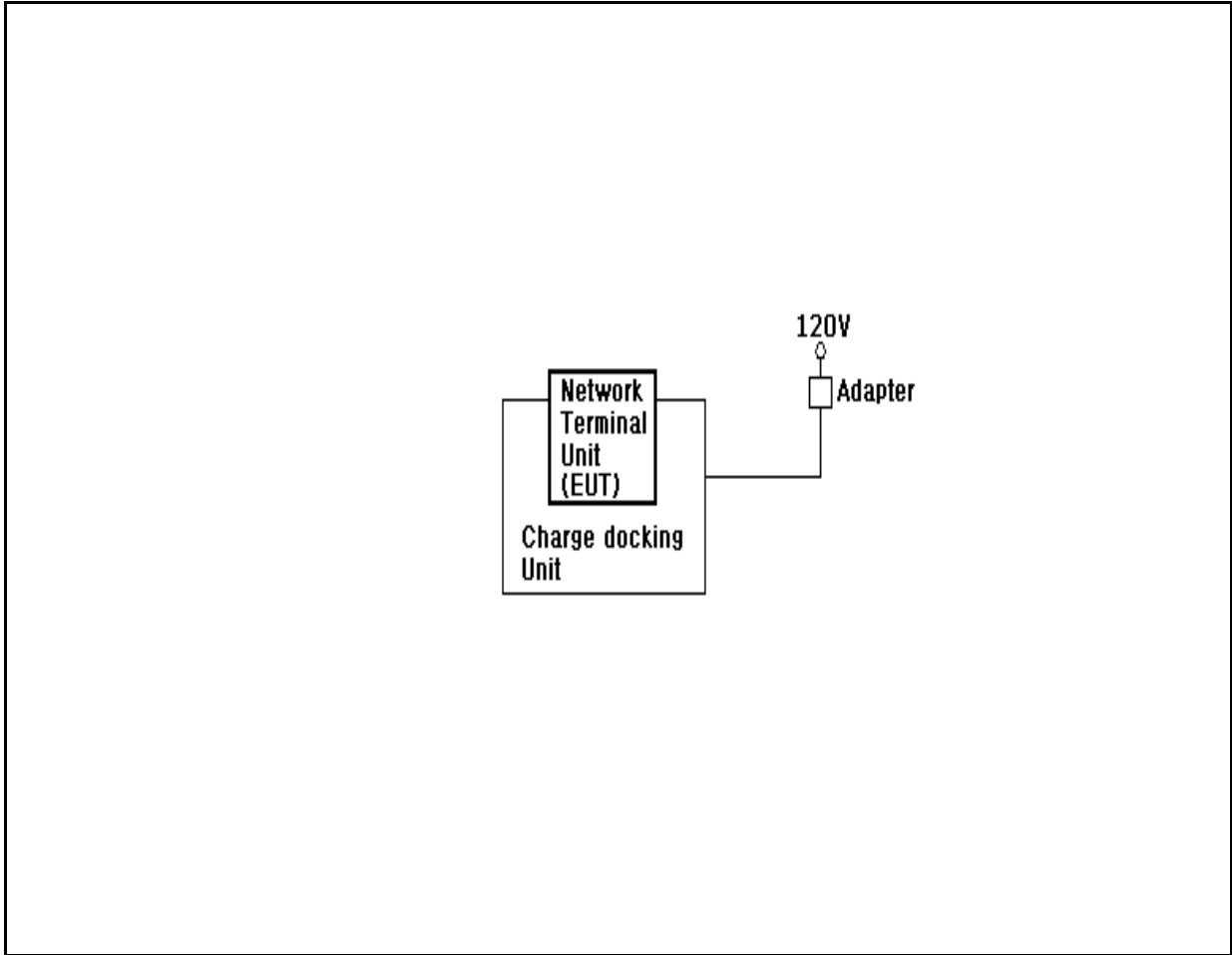


4. Measurement Condition(Test mode : SINGLE MP3 MODE)

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 playing Audio(mp3)

4.2 Configuration and Peripherals





ESTECH Co., Ltd.

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



**Electromagnetic
Interference
Test Report**

4.3 EUT and Support equipment (Test mode : USB STORAGE MODE)

Equipment Name	Model Name	S/N	Manufacturer	Remark (FCC ID)
Network Terminal Unit	W10	NONE	Iriver Electronic Technology(China) Co.,Ltd	EUT
Ear-set	NONE	NONE	Iriver	-
Earphone	NONE	NONE	Iriver	-
Notebook Computer	D400	NONE	Dell Asia Pacific Sdn.	-
ADAPTER	HP-OQ065B83	CN-0N2765-47890-441-0249	Hipro Electronics (Dongguan)Co.,Ltd.	-
PRINTER	MJC-5750	NA34BFFP313402V	SAMSUNG ELECTRONICS(SHANDDON G)DIGITAL PRINTING CO.,LTD.	-
ADAPTER	PA8040WB	0703016518	Bestec Electronics (DongGuan)Co.,Ltd.	-

4.4 Cable Connecting (Test mode : USB STORAGE MODE)

Start Equipment		End Equipment		Cable Standard		Remark
Name	I/O port	Name	I/O port	Length	Shielded	
Network Terminal Unit	USB	Notebook Computer	USB	1	Y	-
Network Terminal Unit	Sound-out	Ear-set	-	1	N	-
Ear-set	Ear-phone	Ear-phone	USB	1.5	N	-
Notebook Computer	USB	Printer	USB	2	Y	-
Notebook Computer	DC Power	Adapter	-	2	N	-
Printer	DC Power	Adapter	-	2	N	-

4.3 EUT and Support equipment (Test mode : SINGLE MP3 MODE)

Equipment Name	Model Name	S/N	Manufacturer	Remark (FCC ID)
Network Terminal Unit	W10	NONE	Iriver Electronic Technology(China) Co.,Ltd	EUT
ADAPTER	KSAC0500200W1US	NONE	Ktec	-
Charge docking Unit	NONE	NONE	NONE	-

4.4 Cable Connecting (Test mode : SINGLE MP3 MODE)

Start Equipment		End Equipment		Cable Standard		Remark
Name	I/O port	Name	I/O port	Length	Shielded	
Network Terminal Unit	-	Charge docking Unit	-	-	-	-
Charge docking Unit	DC Power	AC Adapter	-	2	N	-

5. Measurement of radiated disturbance (Test mode : USB STORAGE MODE)

Above 30 MHz Electric Field strength was measured in accordance with FCC Part 15 (2007) & ANSI C 63.4 (2003). The test setup was made according to FCC Part 15 (2007) & 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 (Test mode : USB STORAGE MODE)

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
TEST Receiver	ESPC	Rohde & Schwarz	845296/021	2008. 1. 23
Spectrum Analyzer	R3261C	ADVANTEST	61720116	2008. 4. 20
LogBicon Antenna	VULB 9160	Schwarzbeck	3142	2008. 5. 07
Amplifier	8447F	HP	2805A02972	2008. 6. 26
Spectrum Analyzer	8563E	HP	3623A05297	2008. 5. 06
PREAMPLIFIER	8449B	HP	3008A00581	2008. 5. 06
Horn Antenna	BBHA 9120 D	Schwarzbeck	469	2008. 3. 31
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 mode : USB STORAGE MODE)

Test Place : Open site(3m)
 Temperature (°C) : 20 °C
 Humidity (%) : 48 %

5. Measurement of radiated disturbance (Test mode : SINGLE MP3 MODE)

Above 30 MHz Electric Field strength was measured in accordance with FCC Part 15 (2007) & ANSI C 63.4 (2003). The test setup was made according to FCC Part 15 (2007) & 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 (Test mode : SINGLE MP3 MODE)

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
TEST Receiver	ESPC	Rohde & Schwarz	845296/021	2008. 1. 23
Spectrum Analyzer	R3261C	ADVANTEST	61720116	2008. 4. 20
LogBicon Antenna	VULB 9160	Schwarzbeck	3142	2008. 5. 07
Amplifier	8447F	HP	2805A02972	2008. 6. 26
Spectrum Analyzer	8563E	HP	3623A05297	2008. 5. 06
PREAMPLIFIER	8449B	HP	3008A00581	2008. 5. 06
Horn Antenna	BBHA 9120 D	Schwarzbeck	469	2008. 3. 31
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 mode : SINGLE MP3 MODE)

Test Place : Open site(3m)
 Temperature (°C) : 19 °C
 Humidity (%) : 68 %

5.3 Test data (Test mode : USB STORAGE MODE)

Test Date : 4-Oct-07

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)
110.15	16.50	H	1.7	10.27	1.6	43.5	28.40	-15.10
112.55	14.50	H	1.7	10.49	1.6	43.5	26.63	-16.87
147.24	11.60	V	1.0	12.79	1.8	43.5	26.20	-17.30
193.98	16.50	H	1.9	10.11	2.2	43.5	28.80	-14.70
221.22	16.80	H	1.4	10.42	2.4	46.0	29.63	-16.37
226.28	18.70	H	1.2	10.61	2.4	46.0	31.76	-14.24
240.05	28.40	H	1.6	11.14	2.5	46.0	42.06	-3.94
249.60	15.30	H	1.1	11.50	2.6	46.0	29.43	-16.57
270.03	10.40	H	1.0	12.16	2.7	46.0	25.29	-20.71
322.56	10.30	H	1.0	13.62	3.1	46.0	27.03	-18.97
324.17	10.80	H	1.0	13.65	3.1	46.0	27.58	-18.42
360.41	12.10	H	1.0	14.45	3.4	46.0	29.95	-16.05

Remark	H : Horizontal, V : Vertical *Checked in all 3 axis and the maximum measured data were reported. *CL = Cable Loss-Amplifier Gain(In case of above1000Mhz) *CL = Cable Loss(In case of below1000Mhz) *The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120KHz for Quasi-peak detection at frequency below 1GHz.
--------	--

5.3 Test data (Test mode : SINGLE MP3 MODE)

Test Date : 18-Oct-07

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)
34.65	10.10	V	1.0	11.06	1.0	40.0	22.14	-17.86
43.52	11.50	V	1.0	12.03	1.0	40.0	24.57	-15.43
43.80	11.90	V	1.0	12.06	1.0	40.0	25.01	-14.99
Remark	H : Horizontal, V : Vertical *Checked in all 3 axis and the maximum measured data were reported. *CL = Cable Loss-Amplifier Gain(In case of above1000Mhz) *CL = Cable Loss(In case of below1000Mhz) *The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120KHz for Quasi-peak detection at frequency below 1GHz.							

6. Measurement of conducted disturbance (Test mode : USB STORAGE MODE)

The continuous disturbance voltage of AC Mains in the frequency from 0.15 to 30 MHz was measured in accordance to FCC Part 15 (2007) & ANSI C 63.4 (2003) The test setup was made according to FCC Part 15 (2007) & ANSI C 63.4 (2003) in a shielded Room. 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 (Test mode : USB STORAGE MODE)

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
LISN	ESH3-Z5	Schwarzbeck	838979/010	2008. 2. 28
LISN	NNLA8120A	Schwarzbeck	8120161	2008. 2. 28
TEST Receiver	ESPI7	Rohde & Schwarz	100185	2008. 8. 27
Pulse Limiter	ESH3Z2	Rohde & Schwarz	NONE	-

6.2 Environmental Condition (Test mode : USB STORAGE MODE)

Test Place : Shielded Room
 Temperature (°C) : 22 °C
 Humidity (%) : 30 %

6. Measurement of conducted disturbance (Test mode : SINGLE MP3 MODE)

The continuous disturbance voltage of AC Mains in the frequency from 0.15 to 30 MHz was measured in accordance to FCC Part 15 (2007) & ANSI C 63.4 (2003) The test setup was made according to FCC Part 15 (2007) & ANSI C 63.4 (2003) in a shielded Room. 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 (Test mode : SINGLE MP3 MODE)

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
LISN	ESH3-Z5	Schwarzbeck	838979/010	2008. 2. 28
LISN	NNLA8120A	Schwarzbeck	8120161	2008. 2. 28
TEST Receiver	ESPI7	Rohde & Schwarz	100185	2008. 8. 27
Pulse Limiter	ESH3Z2	Rohde & Schwarz	NONE	-

6.2 Environmental Condition (Test mode : SINGLE MP3 MODE)

Test Place : Shielded Room
 Temperature (°C) : 21 °C
 Humidity (%) : 45 %

6.3 Test data (Test mode : USB STORAGE MODE)

Test Date : 4-Oct-07

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	0.17	0.0	N	66.00	38.80	39.01	56.00	26.26	26.47
0.19	0.13	0.0	N	64.04	39.41	39.59	54.04	25.86	26.04
0.21	0.12	0.1	H	63.13	34.54	34.71	53.13	24.34	24.51
0.22	0.12	0.1	N	63.01	35.32	35.49	53.01	23.66	23.83
0.24	0.12	0.1	N	62.20	33.68	33.86	52.20	24.27	24.45
0.45	0.14	0.1	H	56.91	36.53	36.76	46.91	35.52	35.75
0.57	0.15	0.1	H	56.00	21.30	21.56	46.00	19.59	19.85
0.90	0.22	0.1	N	56.00	34.95	35.32	46.00	33.71	34.08
1.18	0.26	0.2	N	56.00	29.08	29.51	46.00	23.00	23.43
3.58	0.34	0.4	N	56.00	34.60	35.31	46.00	31.80	32.51
4.64	0.37	0.5	H	56.00	36.51	37.34	46.00	35.52	36.35
4.85	0.38	0.5	H	56.00	37.59	38.44	46.00	35.65	36.50
5.69	0.41	0.5	H	60.00	35.19	36.12	50.00	30.29	31.22
6.53	0.44	0.6	H	60.00	29.25	30.25	50.00	26.64	27.64
6.74	0.45	0.6	N	60.00	29.57	30.59	50.00	27.03	28.05
7.38	0.48	0.6	N	60.00	26.88	27.96	50.00	26.13	27.21
7.46	0.49	0.6	H	60.00	27.57	28.66	50.00	26.90	27.99
12.29	0.73	0.8	N	60.00	29.42	31.00	50.00	29.18	30.76
Remark	H : Hot Line, N : Neutral Line								

6.3 Test data (Test mode : SINGLE MP3 MODE)

Test Date : 18-Oct-07

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	0.17	0.0	N	66.00	25.43	25.64	56.00	21.13	21.34
0.19	0.13	0.0	N	63.95	45.06	45.24	53.95	28.01	28.19
0.20	0.12	0.1	N	63.49	44.12	44.29	53.49	28.37	28.54
0.25	0.13	0.1	H	61.66	41.69	41.87	51.66	24.40	24.58
0.39	0.14	0.1	H	58.11	40.00	40.21	48.11	26.21	26.42
0.41	0.14	0.1	N	57.63	37.01	37.23	47.63	23.11	23.33
0.50	0.15	0.1	N	56.00	33.78	34.02	46.00	19.59	19.83
0.55	0.15	0.1	H	56.00	30.18	30.43	46.00	18.34	18.59
0.61	0.16	0.1	H	56.00	32.15	32.42	46.00	20.72	20.99
0.62	0.16	0.1	N	56.00	33.62	33.89	46.00	21.04	21.31
0.69	0.16	0.1	H	56.00	32.70	32.99	46.00	20.04	20.33
0.74	0.17	0.1	H	56.00	31.31	31.62	46.00	20.74	21.05
5.89	0.42	0.5	N	60.00	26.01	26.96	50.00	19.13	20.08
6.42	0.44	0.6	N	60.00	24.53	25.52	50.00	14.44	15.43
7.32	0.48	0.6	N	60.00	25.46	26.54	50.00	14.01	15.09
7.86	0.51	0.6	H	60.00	19.61	20.75	50.00	8.76	9.90
8.44	0.55	0.7	N	60.00	22.86	24.07	50.00	14.14	15.35
9.63	0.63	0.7	N	60.00	19.56	20.91	50.00	11.15	12.50
Remark	H : Hot Line, N : Neutral Line								

7. Photographs of test setup (Test mode : USB STORAGE MODE)

7.1 Setup for Radiated Test : 30 ~ 1000 MHz

[Front]



[Rear]



7. Photographs of test setup (Test mode : SINGLE MP3 MODE)

7.1 Setup for Radiated Test : 30 ~ 1000 MHz

[Front]

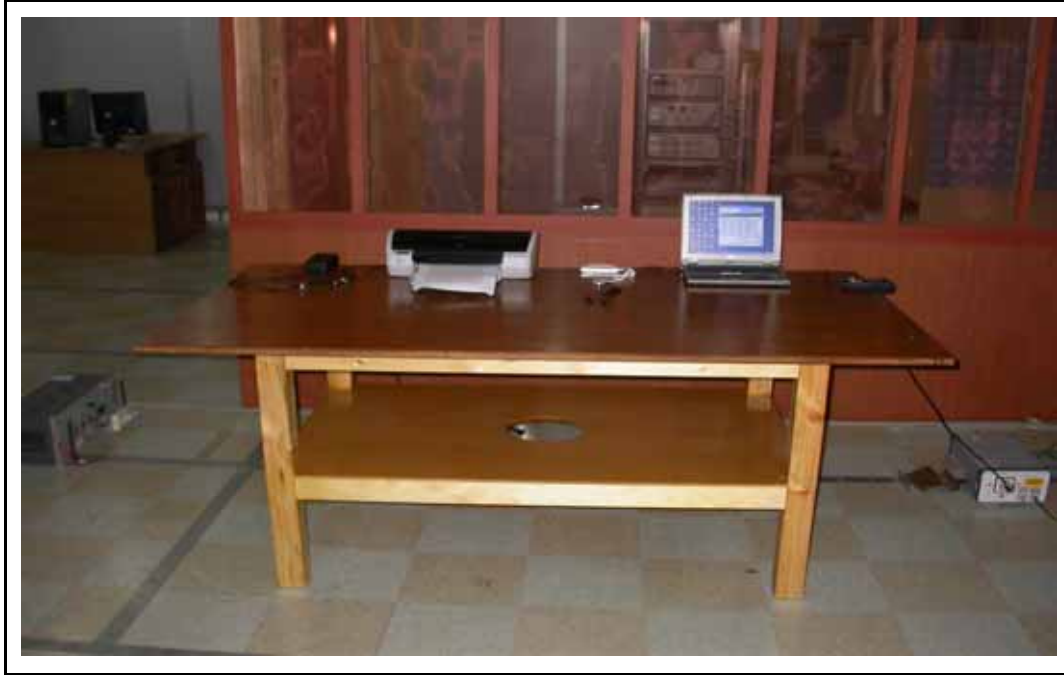


[Rear]



7.2 Setup for Conducted Test : 0.15 ~ 30 MHz (Test mode : USB STORAGE MODE)

[Front]



[Rear]



7.2 Setup for Conducted Test : 0.15 ~ 30 MHz (Test mode : SINGLE MP3 MODE)

[Front]



[Rear]

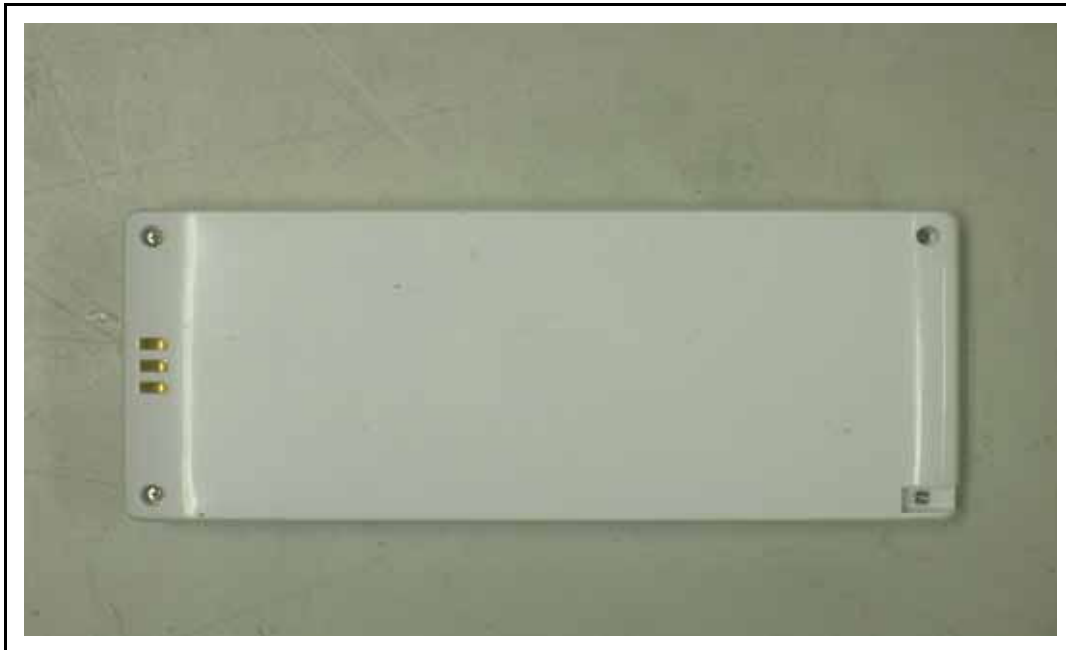


8. Photographs of EUT

[Front]



[Rear]



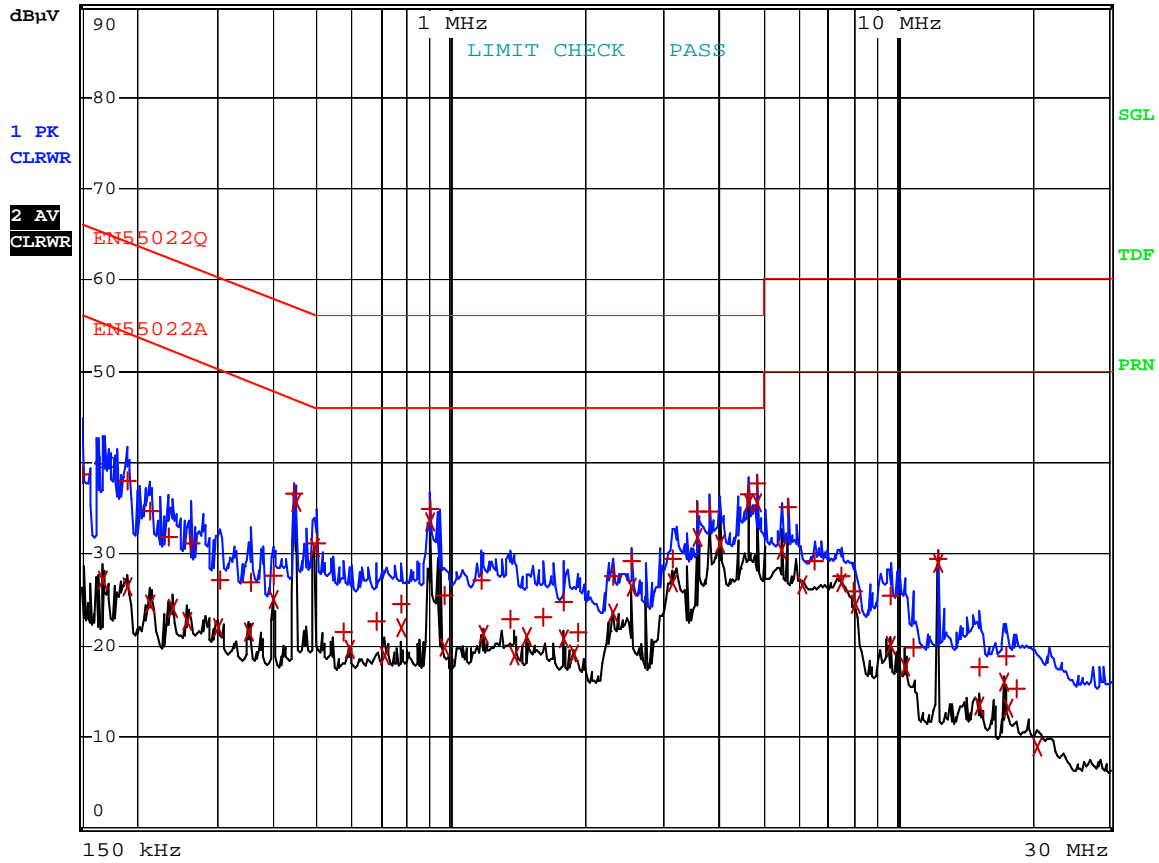
Appendix 1. Spectral diagram (Test mode : USB STORAGE MODE)

*HOT



RBW 9 kHz
MT 1 s

Att 10 dB AUTO PREAMP OFF



Comment: W10-HOT

Date: 4.OCT.2007 13:13:16

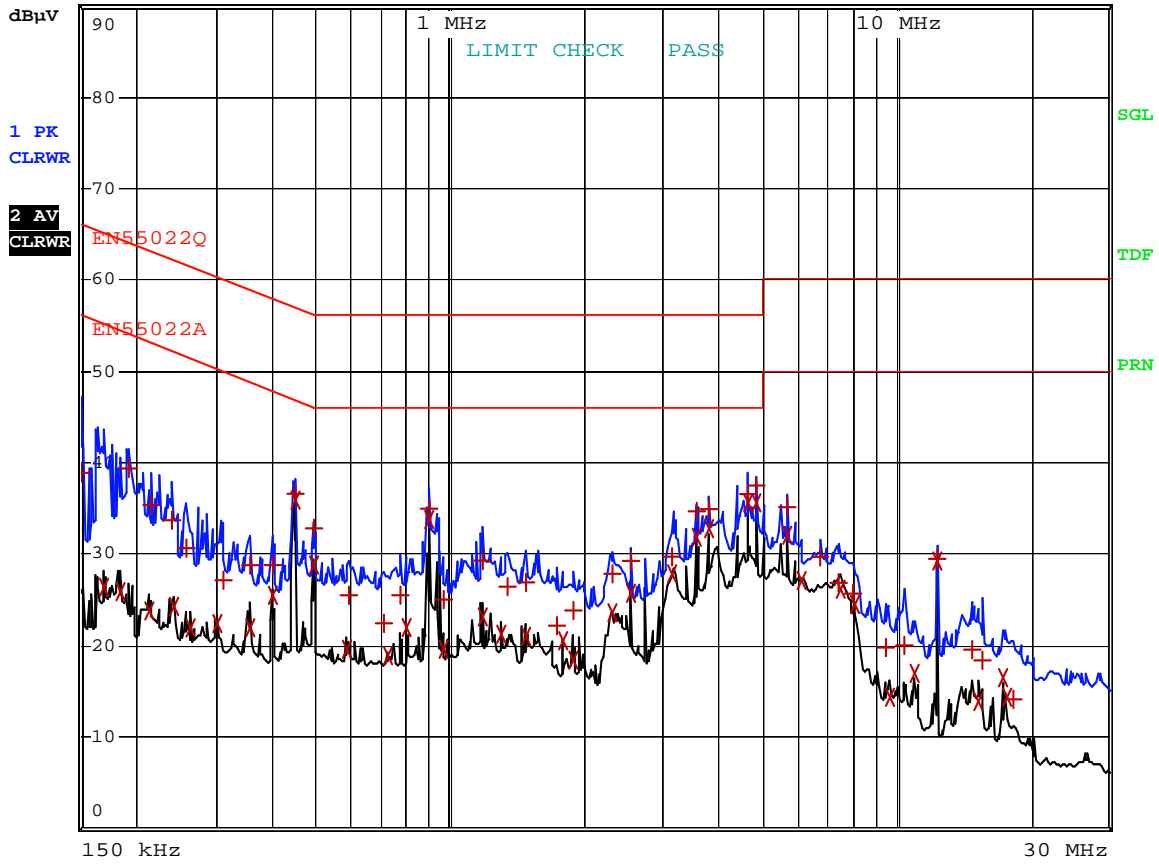
(Test mode : USB STORAGE MODE)

*NEUTRAL



RBW 9 kHz
MT 1 s

Att 10 dB AUTO PREAMP OFF



Comment: W10-NEUTRAL

Date: 4.OCT.2007 13:08:01

Appendix 1. Spectral diagram (Test mode : SINGLE MP3 MODE)

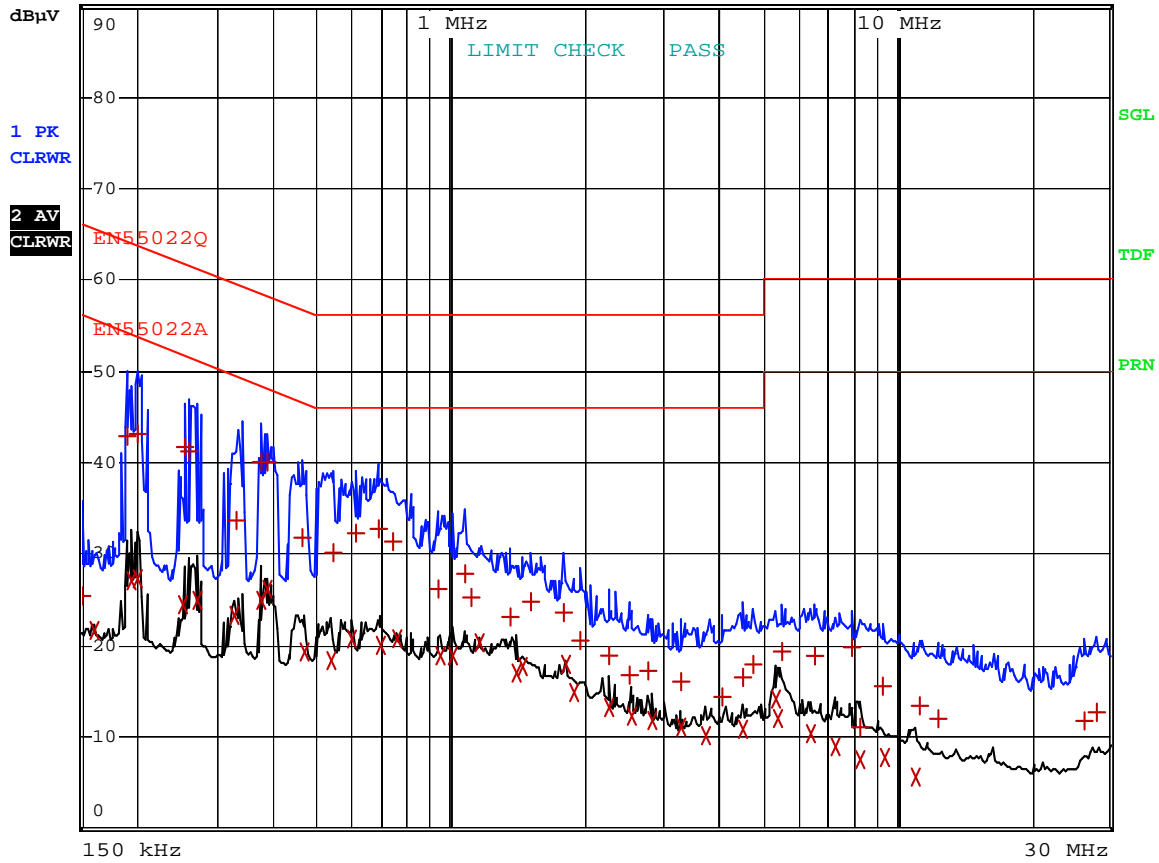
*HOT



RBW 9 kHz

MT 1 s

Att 10 dB AUTO PREAMP OFF



Comment: W10_SINGLE MODE_HOT
 Date: 18.OCT.2007 21:22:43

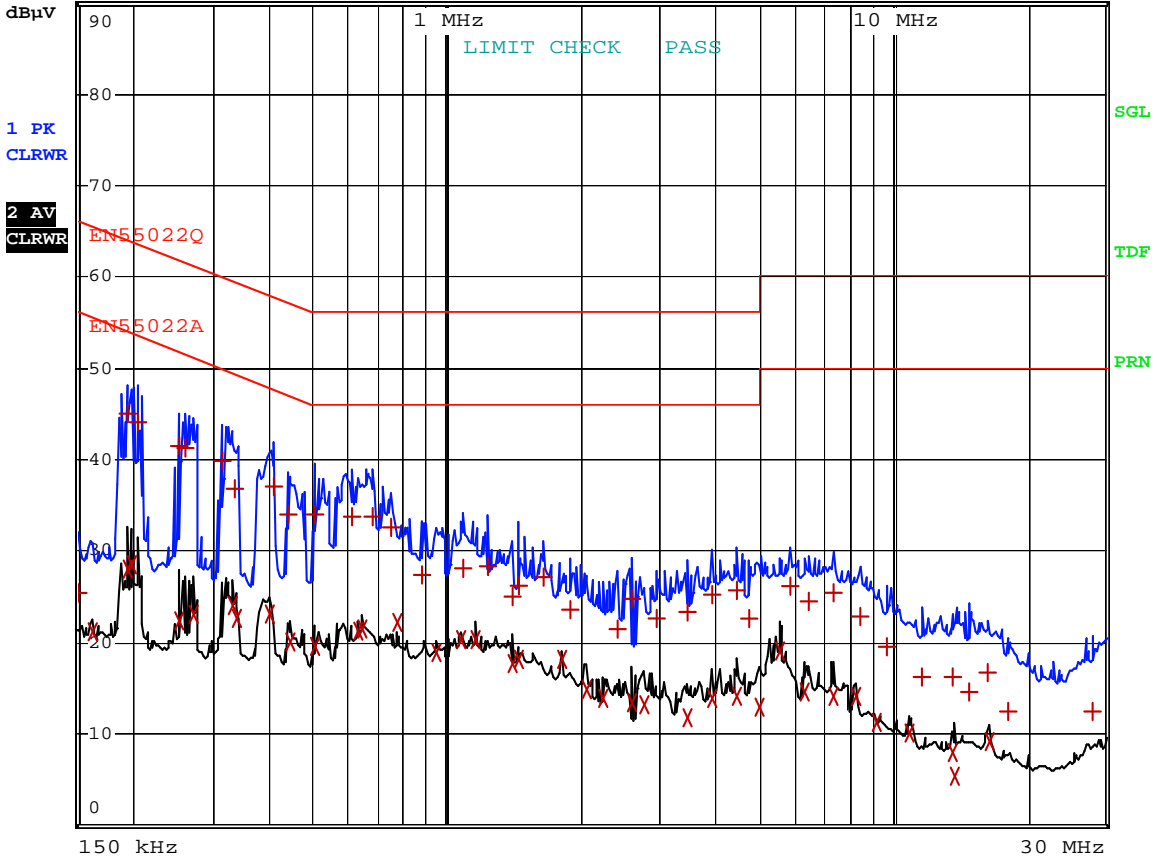
(Test mode : SINGLE MP3 MODE)

*NEUTRAL



RBW 9 kHz
MT 1 s

Att 10 dB AUTO PREAMP OFF



Comment: W10_SINGLE MODE_NEUTRAL
Date: 18.OCT.2007 21:29:59