



EMC - Test Report

Model : MP-K80

FCC ID PARM-P-K80

Product type MP3 PLAYER + FM TRANSMITTER

Serial No.

-

Applicant mpman.com, Inc.

Address 2nd Floor, ASEM Tower 159-1. Samsung-Dong, Kangnam-Ku, Seoul, KOREA

Manufacturer mpman.com, Inc.

Address 2nd Floor, ASEM Tower 159-1. Samsung-Dong, Kangnam-Ku, Seoul, KOREA

TX Frequency Range 106.7MHz – 107.9MHz

Test specification (Standard) : FCC Part15 Subpart B Class B , Subpart C

Test Result : In compliance

*Tested by
(Test engineer)*

*Reviewed by
(EMC Manager)*

2001-05-17 Young Joon, Park

Date

Name

Signature

2001-05-17 James, Hong

Date

Name

Signature

Definition : Applicable, : Not Applicable, **N/A** : Not Applicable, - : Not Applicable

The test result only responds to the tested sample.

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1. EUT description

Introduction

MP-K80 is a MP3 PLAYER + FM TRANSMITER.

Identification

Receipt date : 2001-03-19
Model : MP-K80
Manufacturer : mpman.com, Inc.
Address : 2nd Floor, ASEM Tower 159-1. Samsung-Dong, Kangnam-Ku, Seoul, KOREA
Contact person : Y. J. LEE
Telephone : +82 - 31 - 211 - 7092
Applicant : mpman.com, Inc.
Address : 2nd Floor, ASEM Tower 159-1. Samsung-Dong, Kangnam-Ku, Seoul, KOREA
Contact person : K. S. MOON

Peripheral Device Ports

Port name	Description
USB	DATA Download Port
EARPHONE	Connect to Earphone
DC 5.1V	Connect to Adaptor

Electrical rating

Input : DC 5.1V (Embedded Li-ion Rechargeable Battery)

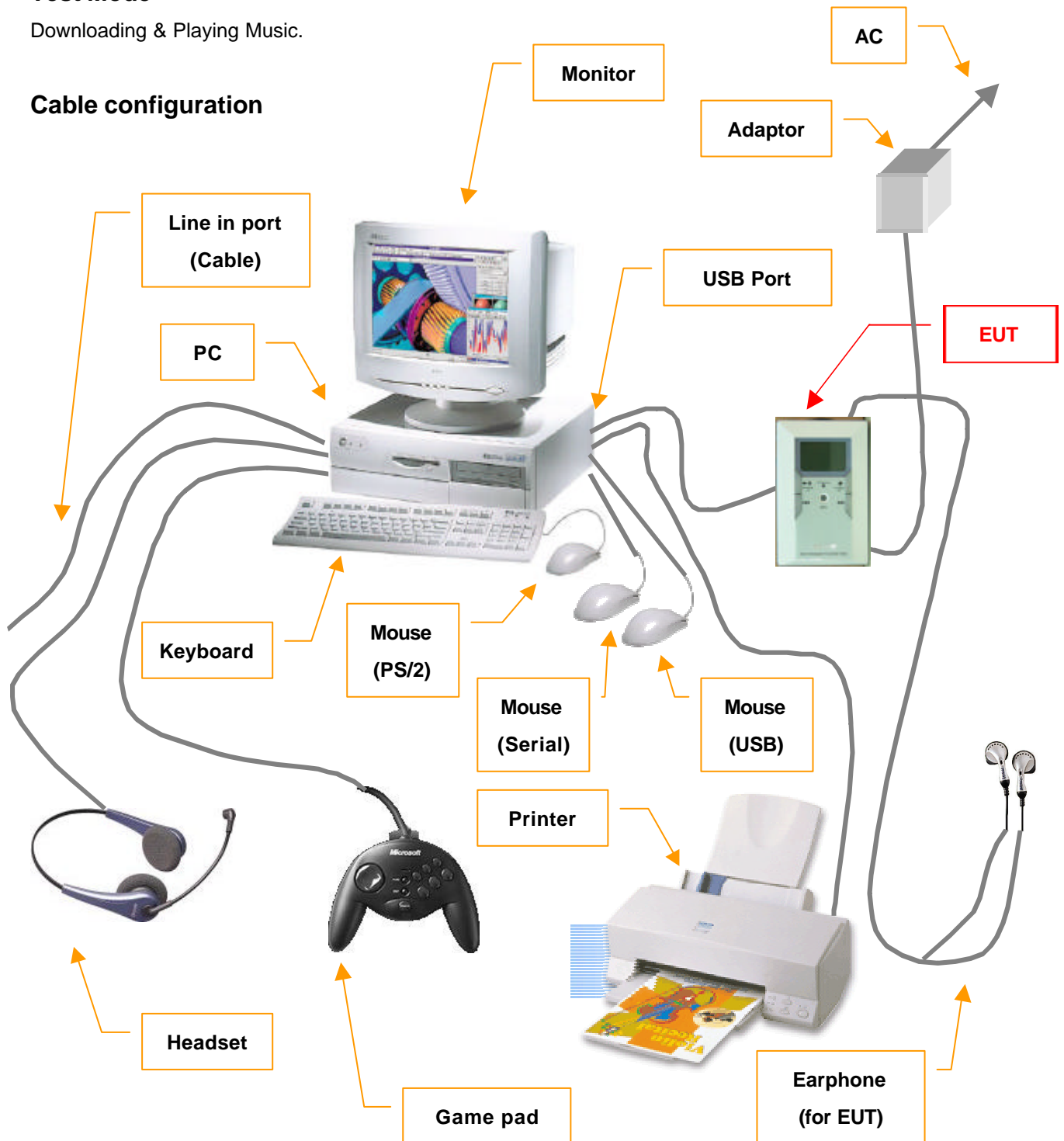
Output : -

2. Test Set-up

Test Mode

Downloading & Playing Music.

Cable configuration



**Cable description**

Port name (start / end)	Type	Length (m)	Remark
A EUT' s Earphone / Earphone	Unshielded	1.5	Connected Earphone
B EUT' s USB / PC' s USB	Unshielded	1.5	Connected to PC' s USB port
C EUT' s DC IN / Adaptor	Unshielded	1.5	Connected Adaptor
D PC' s Serial / Mouse	Unshielded	1.6	Connected Serial Mouse
E PC' s Parallel / Printer	Unshielded	1.6	Connected Printer
F PC' s Keyboard / Keyboard	Unshielded	1.6	Connected PS/2 Keyboard
G PC' s Mouse / Mouse	Unshielded	1.6	Connected PS/2 Mouse
H PC' s Sound (Speaker / Mic / Line in) / Headset & Cable	Unshielded	2.0	Connected Headset & Cable
I PC' s Game Port / Game pad	Unshielded	2.0	Connected Game pad
J PC' s Video / Monitor	Shielded (With Ferrite Core)	1.8	Connected Monitor

Auxiliary equipment

Description	Model name	Serial No.	Manufacturer	FCC ID or DOC
1 Earphone (for EUT)	-	-	-	N/A
2 Adaptor (for EUT)	STP045045E	-	SIGMA TELECOM	N/A
3 PC	DTPC-17	G1703009	HEWLETT PACKARD	DOC
4 Monitor	PG17HS	301661	SAMSUNG	DOC
5 Printer	Stylus COLOR 460	BWCE143331	EPSON	DOC
6 Keyboard	SK-2502C	M000351491	HEWLETT PACKARD	DOC
7 Mouse (PS/2)	M-S48	LZA84601000	LOGITECH	JNZ201213
8 Mouse (USB)	M-BB48	LZE93853176	LOGITECH	DOC
9 Mouse (Serial)	M-S48	LZA91153127	SOTEC	DZL211153
10 Game pad	Side Winder	03421317	Microsoft Corporation	DOC
11 Headset	Hi-sonic	-	-	N/A

Test software

Software name	Manufacturer	Version	Description
-	-	-	-



Measurement Procedures

Preliminary AC power line conducted emissions tests were performed shielded room. To find worst mode, several typical mode and typical cable position were tested.

Final AC power line conducted emissions test was performed shielded room.(location is same as Preliminary test)

Based on the preliminary tests of the EUT, final test was proceeded worst case test mode and cable configuration.

Preliminary radiated emissions test were performed anechoic chamber (Distance of antenna and EUT was 3m). To find worst mode, several typical mode and typical cable position were tested and peak level and frequency were recorded.

Final radiated emissions test was performed Open Area Test Site. Based on the preliminary tests of the EUT, final test was proceeded worst case test mode and cable configuration.

* Measurement procedures was In accordance with ANSI C63.4-1992 7.2.3, 7.2.4 and 8.3.1.1, 8.3.1.2



3. Test Result

Test summary

Test	Result	Remark
Emission test (EMI)		
Emissions from the intentional radiator #1 (200kHz Bandwidth)	Met	
Emissions from the intentional radiator #2 (Field Strength)	Met	
Emissions from the intentional radiator #3 (Spurious)	Met	
Radiated emission	Met	
Conducted emission	Met	

Measurement uncertainty (k=2)

150kHz~30MHz: ± 2.68 , 30MHz~300MHz: +4.58, -4.66, 300MHz ~ 1GHz: +3.78, -3.74

Uncertainty parameter was calculated according to 'NAMAS Publication NIS 80'

The tested MP-K80 fully meets the Requirements of ANSI C63.4-1992, when operated as described in this report.

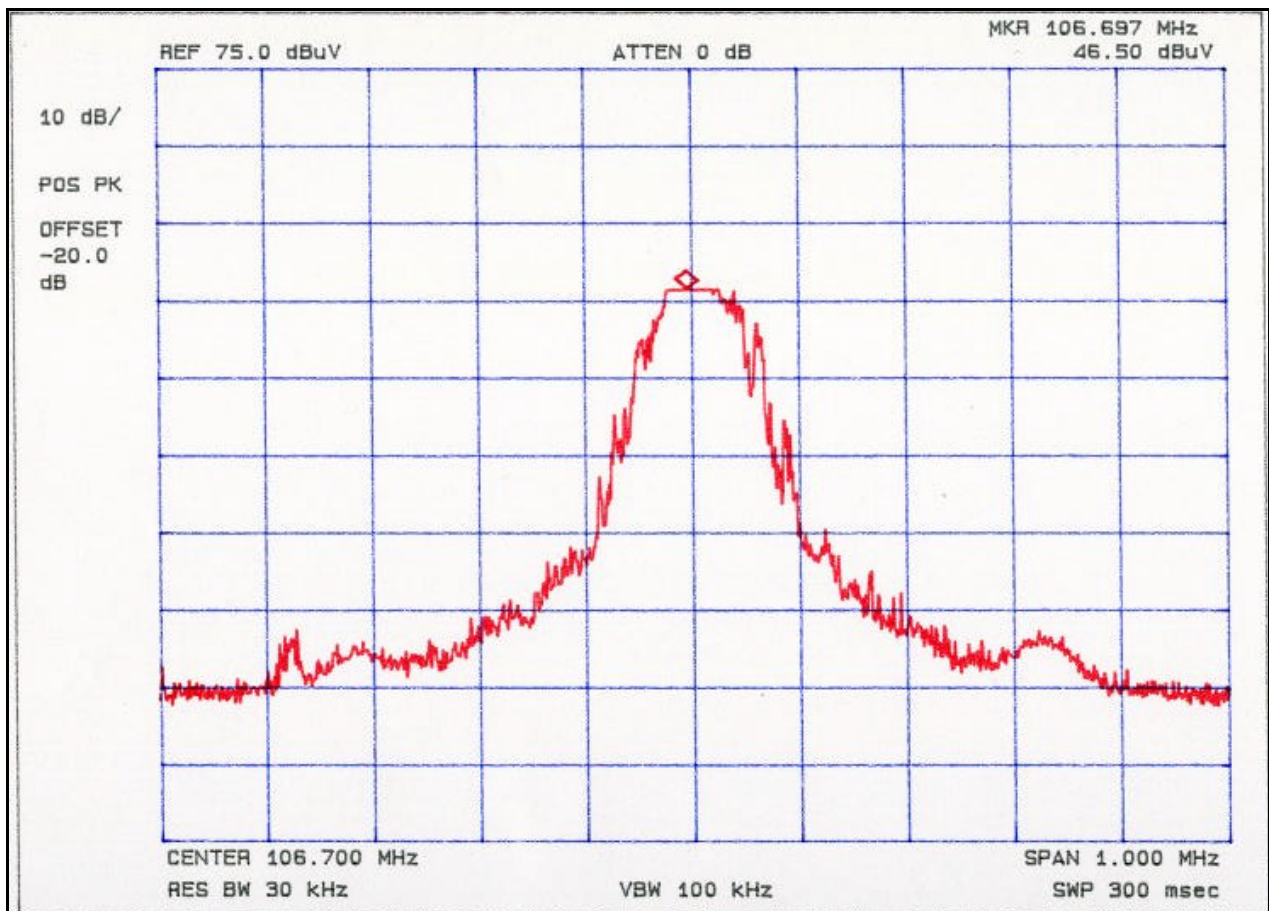


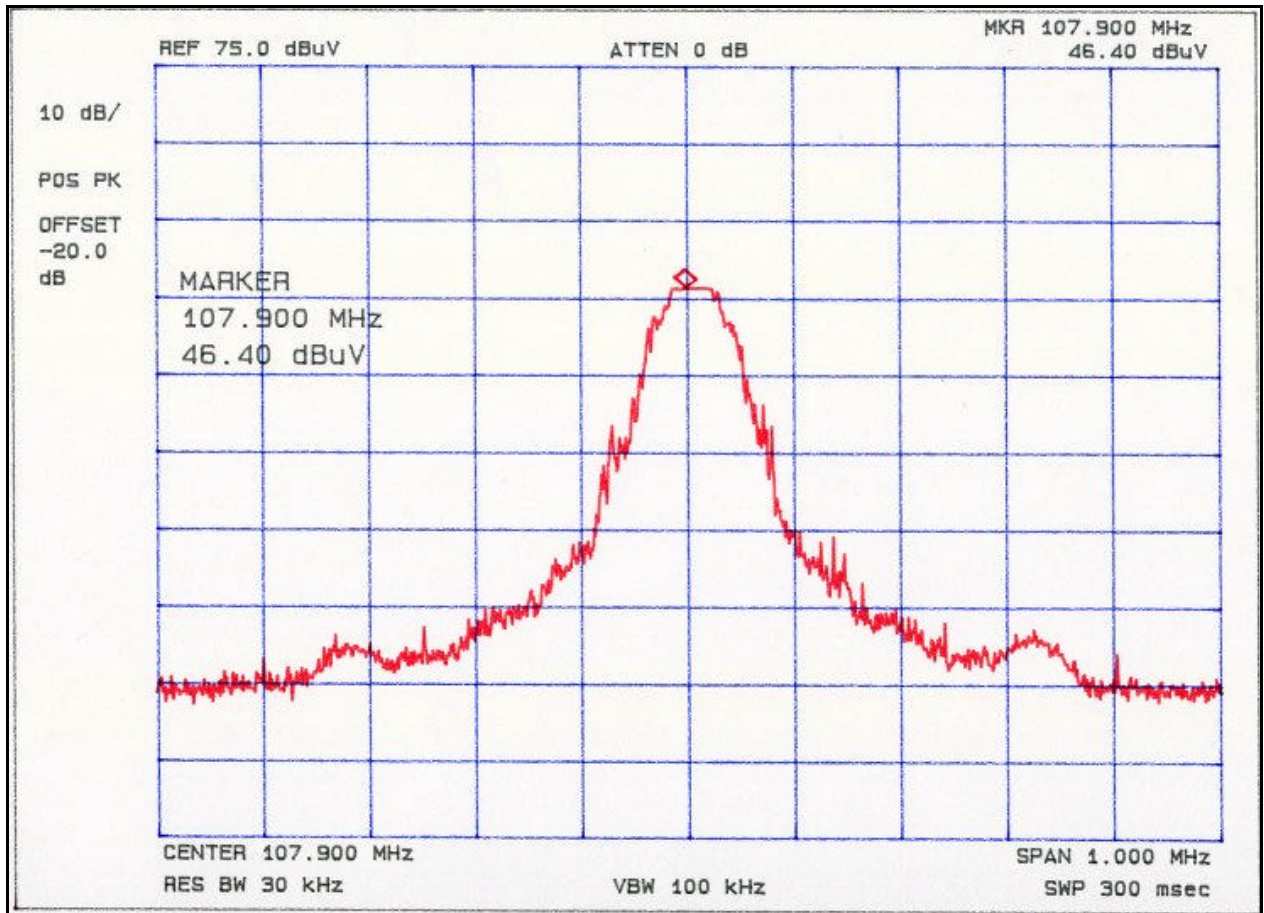
Emissions from the intentional radiator #1

Test result: **Met**
Reference Standard: **FCC Part15 Subpart C, Sec. 15.239 (a) 200kHz Bandwidth**
TX Frequency Range: 106.7MHz - 107.9MHz

Test and measurement equipment (Main equipment)

Model name	Manufacturer	Description	Serial No.
8568B	HP	Spectrum Analyzer	3217A05610







Emissions from the intentional radiator #2

Test result: Met

Date of testing : 2001-04-20

Ambient temperature: 20°C, Relative humidity: 35%, Atmospheric pressure: 1000hPa(mbar)

Test site type: Open area test site

Reference Standard: FCC Part15 Subpart C, Sec. 15.239 (b) Field Strength of Radiation

Test and measurement equipment (Main equipment)

Model name	Manufacturer	Description	Serial No.
3146	EMCO	Biconical antenna	9607-4567
3110B	EMCO	Log-periodic antenna	9607-2564
ESVS30	Rohde Schwarz	Field strength meter	826638/008
-	-	-	-

TX Frequency Range 106.7MHz - 107.9MHz

Instrument settings IF Band Width : 120KHz

Antenna distance 3m (From the EUT)

Test data sheet (Quasi-Peak reading)

Frequency [MHz]	Reading [dBuV/m]	Pol.	Height [m]	Correction Factor		Limits [dBuV/m]	Result [dBuV/m]	Margin [dB]
				Antenna	Cable			
106.70	30.2	H	2.0	10.65	1.10	48.0	41.95	6.05
106.70	31.0	V	1.0	10.65	1.10	48.0	42.75	5.25
107.90	30.9	H	2.0	10.65	1.10	48.0	42.65	5.35
107.90	30.4	V	1.0	10.65	1.10	48.0	42.15	5.85

Comment : 106.7MHz Low Frequency, 107.9MHz – High Frequency.

Y axis is produced the highest emission level.



Emissions from the intentional radiator #3

Test result: **Met**

Date of testing : 2001-04-20

Ambient temperature: 20°C, Relative humidity: 35%, Atmospheric pressure: 1000hPa(mbar)

Test site type: Open area test site

Reference Standard: **FCC Part15 Subpart C, Sec. 15.209 (c) Field Strength of Spurious Radiation**

Test and measurement equipment (Main equipment)

Model name	Manufacturer	Description	Serial No.
3146	EMCO	Biconical antenna	9607-4567
3110B	EMCO	Log-periodic antenna	9607-2564
ESVS30	Rohde Schwarz	Field strength meter	826638/008
-	-	-	-

TX Frequency Range 106.7MHz - 107.9MHz

Instrument settings IF Band Width : 120KHz

Antenna distance 3m (From the EUT)

Test data sheet (Quasi-Peak reading)

Frequency [MHz]	Reading [dBuV/m]	Pol.	Height [m]	Correction Factor		Limits [dBuV/m]	Result [dBuV/m]	Margin [dB]
				Antenna	Cable			
213.40	4.6	H	2.0	16.10	1.80	43.5	22.50	21.00
213.40	3.3	V	1.0	16.10	1.80	43.5	21.20	22.30
215.80	3.0	H	4.0	16.30	1.80	43.5	21.10	22.40
215.80	3.6	V	1.0	16.30	1.80	43.5	21.70	21.80
426.80	0.9	H	1.0	16.26	3.00	46.0	20.16	25.84
426.80	0.7	V	1.3	16.26	3.00	46.0	19.96	26.04
431.60	1.1	H	1.0	16.26	3.00	46.0	20.36	25.64
431.60	1.3	V	1.8	16.26	3.00	46.0	20.56	25.44

Comment : 106.7MHz Low Frequency, 107.9MHz – High Frequency



Radiated emission

Test result: **Met**

Date of testing : 2001-04-20

Ambient temperature: 20°C, Relative humidity: 35%, Atmospheric pressure: 1000hPa(mbar)

Test site type: Open area test site

Reference Standard: FCC Part15 Subpart B , Class B

Test and measurement equipment (Main equipment)

Model name	Manufacturer	Description	Serial No.
3146	EMCO	Biconical antenna	9607-4567
3110B	EMCO	Log-periodic antenna	9607-2564
ESVS30	Rohde Schwarz	Field strength meter	826638/008
-	-	-	-

Frequency Band 30MHz - 1000MHz

Antenna distance 3m (From the EUT)

Test data sheet

Frequency [MHz]	Reading [dBuV/m]	Pol.	Height [m]	Correction Factor		Limits [dBuV/m]	Result [dBuV/m]	Margin [dB]
				Antenna	Cable			
96.00	20.3	H	2.0	9.90	0.90	43.5	31.10	12.40
96.00	18.3	V	1.0	9.90	0.90	43.5	29.10	14.40
106.40	26.0	H	4.0	10.65	1.10	43.5	37.75	5.75
106.40	15.0	V	1.0	10.65	1.10	43.5	26.75	16.75
169.30	20.0	H	1.0	12.90	1.60	43.5	34.50	9.00
169.30	18.0	V	1.3	12.90	1.60	43.5	32.50	11.00
226.90	10.3	H	1.0	17.30	1.90	46.0	29.50	16.50
226.90	9.6	V	1.8	17.30	1.90	46.0	28.80	17.20
230.00	21.6	H	2.0	17.50	2.00	46.0	41.10	4.90
230.00	18.0	V	1.0	17.50	2.00	46.0	37.50	8.50

Comment : -



Conducted emission

Test result: **Met**

Date of testing : 2001-04-20

Ambient temperature: 22°C, Relative humidity: 38%, Atmospheric pressure: 999hPa(mbar)

Test site type: Shielded room

Reference Standard: FCC Part15 Subpart B , Class B

Test and measurement equipment (Main equipment)

Model name	Manufacturer	Description	Serial No.
3825/2	EMCO	LISN	9206-1971
ESHS30	Rohde Schwarz	Field strength meter	828144/002
-	-	-	-

Test data sheet

Frequency [MHz]	Correction Factor		Line	Quasi-peak				Average			
	LISN	Cable		Limit	Reading	Result	Margin	Limit	Reading	Result	Margin
				[dBuV]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dB]
0.54	0.3	0.1	H	48.0	36.6	37.0	11.0				
1.61	0.3	0.1	H	48.0	35.0	35.4	12.6				
1.81	0.3	0.1	H	48.0	37.9	38.3	9.7				
1.91	0.3	0.1	H	48.0	37.0	37.4	10.6				
1.93	0.3	0.1	N	48.0	37.3	37.7	10.3				
2.12	0.3	0.1	H	48.0	40.1	40.5	7.5				
2.23	0.3	0.1	H	48.0	34.7	35.1	12.9				
2.24	0.3	0.1	H	48.0	35.0	35.4	12.6				
24.42	0.5	0.4	N	48.0	34.2	35.1	12.9				
25.41	0.6	0.4	N	48.0	35.1	36.1	11.9				

Comment : -



Test data graphic

