



EMC COMPLIANCE TEST REPORT

for

Professional Stereo Compact Mixer

Trade Name : HPA
Model Number : M1022
Serial Number : N/A
Report Number : SZ060919B04-ET
Date : November 17, 2006
Regulations : See below

Applicable Standard(s) with amendments:

EN 55013: 2001+A1:2003
EN 61000-3-2: 2000
EN 61000-3-3: 1995+A1:2001
EN 55020: 2002+A1:2003

Prepared for :

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Prepared by :

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1 TEST RESULT CERTIFICATION

Equipment Under Test: Professional Stereo Compact Mixer
Trade Name: HPA
Model Number: M1022
Serial Number: N/A
EUT Powered during test: DC18V supplied by the adapter
Applicant: HANPIN PRO AUDIO CO.,LTD.
2ND FLOOR,FELIX HOUSE,24 DR.JOSEPH RIVIERE STREET,
PORT LOUIS,REPUBLIC OF MAURITIUS.
Manufacturer: HANCHIH ELECTRONICS(SHENZHEN)CO.,LTD.
FENG HUANG INDUSTRIAL DISTRICT F.H.ROAD 111#FUYONG
TOWN,BAOAN COUNTY,SHENZHEN CITY
Type of Test: EMC Directive 89/336/EEC for CE Marking
Technical Standards: EN 55013: 2001+A1:2003
EN 61000-3-2: 2000
EN 61000-3-3: 1995+A1:2001
EN 55020: 2002+A1:2003
Report Number: SZ060919B04-ET
Date of test: September 20~November 17, 2006
Deviation: None
Condition of Test Sample: Normal

The above equipment was tested by Compliance Certification Services (Shenzhen) Inc. for compliance with the requirements set forth in EMC Directive 89/336/EEC amended by 93/68/EEC and the Technical Standards mentioned above. This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment and the level of the immunity endurance of the equipment are within the compliance requirements.

The test results of this report relate only to the tested sample identified in this report.

Approved by:

Tested By: Veason Xie

Harris Lai / General Manager

Reviewed By:

Villian Xu / Assistant manager

COMPLIANCE CERTIFICATION
SERVICES (SHENZHEN) INC.

COMPLIANCE CERTIFICATION
SERVICES (SHENZHEN) INC.



2 GENERAL INFORMATION

Applicant: HANPIN PRO AUDIO CO.,LTD.
2ND FLOOR,FELIX HOUSE,24 DR.JOSEPH RIVIERE STREET,
PORT LOUIS,REPUBLIC OF MAURITIUS.

Manufacturer: HANCHIH ELECTRONICS(SHENZHEN)CO.,LTD.
FENG HUANG INDUSTRIAL DISTRICT F.H.ROAD 111#FUYONG
TOWN,BAOAN COUNTY,SHENZHEN CITY

Report Number: SZ060919B04-ET

Date of Test: September 20~November 17, 2006

Equipment Under Test: Professional Stereo Compact Mixer

Model Number: M1022

Serial Number: N/A

Technical Standards: EN 55013: 2001+A1:2003
EN 61000-3-2: 2000
EN 61000-3-3: 1995+A1:2001
EN 55020: 2002+A1:2003

**Frequency Range
(EN 55013):** 150KHz to 30MHz for Terminal Voltage Test
30MHz to 300MHz for Power Disturbance Test
30MHz to 1000MHz for Antenna Terminals Disturbance Voltage Test
30MHz to 1000MHz for Radiation Emission Test

Test Site COMPLIANCE CERTIFICATION SERVICES (SHENZHEN) INC.
No. 5, Jinao industrial park,No.35 Jukeng Road, Dashuikeng Village,
Guanlan Town, Baoan District, Shenzhen, China



3 SYSTEM DESCRIPTION

EUT Test Program:

1. Set up EUT and other external peripheral devices.
2. Turn on the EUT and audio generator,then send audio signal to EUT.
3. Make sure the EUT works normally during the test.



4 PRODUCT INFORMATION

Housing Type: Metal
EUT Power Rating: DC18V supplied by the adapter
Power during Test: DC18V supplied by the adapter
Adapter Manufacturer/Model No.: HON-KWANG / 411-M822FX-583
AC input Cable: Unshielded,2.2m
AC output Cable: Unshielded,1.75m

I/O Port of EUT:

I/O Port Type	Q'TY	Tested with
AC INPUT	1	1
MIC 1	1	1
MIC 2	1	1
MIC 3/4	1	1
LINE 1	1	1
LINE 2	1	1
LINE 3 L	1	1
LINE 4 R	1	1
INSERT L	1	1
INSERT R	1	1
LINE 5 L	1	1
LINE 6 R	1	1
LINE 7/8 L	1	1
LINE 7/8 R	1	1
LINE 7 L	1	1
LINE 7 R	1	1
AUX RETURN L	1	1
AUX RETURN R	1	1
LINE 9 L	1	1
LINE 10R	1	1
TAPE IN L	1	1
TAPE IN R	1	1
REC OUT L	1	1



I/O Port Type	Q'TY	Tested with
REC OUT R	1	1
AUX	1	1
EFX	1	1
MAIN OUTPUT L	1	1
MAIN OUTPUT R	1	1
CONTROL ROOM L	1	1
CONTROL ROOM R	1	1
HEADPHONE	1	1

Difference between model numbers as below:

	Model Number	Trade Name
1.	N/A	N/A



5 SECTION 1 EMISSION TESTS (EN 55013: 2001+A1:2003)

5.1 TEST FACILITY

- Location:** No. 5, Jinao industrial park, No.35 Jukeng Road, Dashuikeng Village, Guanlan Town, Baoan District, Shenzhen, China
- Description:** There are one 3/10m open area test sites and one line conducted labs for final test.
The Open Area Test Sites and the Line Conducted labs are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4 and CISPR 22/EN 55022 requirements.
- Site Filing:** A site description is on file with the Federal Communications Commission, 7435 Oakland Mills Road, Columbia, MD 21046.
- Site Accreditation:** Accredited by Nemko (Aut. No.: ELA106), VCCI(Registration No.: R-1996, C-2150), FCC (Registration No.: 101879 and NVLAP(Lab code:200577-0) for EMC.
- Instrument Tolerance:** All measuring equipment is in accord with ANSI C63.4 and CISPR 22 requirements that meet industry regulatory agency and accreditation agency requirement.
- Ground Plane:** Two conductive reference ground planes were used during the Line Conducted Emission, one in vertical and the other in horizontal. The dimensions of these ground planes are as below. The vertical ground plane was placed distancing 40 cm to the rear of the wooden test table on where the EUT and the support equipment were placed during test. The horizontal ground plane projected 50 cm beyond the footprint of the EUT system and distanced 80 cm to the wooden test table. For Radiated Emission Test, one horizontal conductive ground plane extended at least 1m beyond the periphery of the EUT and the largest measuring antenna, and covered the entire area between the EUT and the antenna. It has no holes or gaps having longitudinal dimensions larger than one-tenth of a wavelength at the highest frequency of measurement up to 1GHz.



5.2 TEST STANDARDS AND RESULTS SUMMARY TABLES

TEST STANDARDS	
EN55013:2001+A1:2003	Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment
EN61000-3-2:2000	Electromagnetic Compatibility, Parts3 limit, Section2: limits for harmonic current emissions (equipment input current $\leq 16A$ per phase)
EN61000-3-3:1995+A1:2001	Electromagnetic Compatibility, Parts3 limit, Section3: limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current $\leq 16A$ per phase
EN55020:2002+A1:2003	Electromagnetic immunity of broadcast receivers and associated equipment

EMISSION RESULTS SUMMARY					
Test Condition	Test Requirement	Test Method	Test Result		
			Pass	Failed	N/A
Conducted Emission on AC, 150KHz to 30MHz	EN55013:2001+A1:2003	EN55013:2001+A1:2003	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Antenna Terminal Disturbance Voltage 30MHz to 1GHz	EN55013:2001+A1:2003	EN55013:2001+A1:2003	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Radiated Emissions, 30MHz to 1GHz	EN55013:2001+A1:2003	EN55013:2001+A1:2003	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Disturbance Power on AC& Signal Port, 30MHz to 300MHz	EN55013:2001+A1:2003	EN55013:2001+A1:2003	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Harmonic Emission on AC Supply	EN61000-3-2:2000	EN61000-3-2:2000	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Voltage Fluctuations on AC Supply	EN61000-3-3:1995+A1:2001	EN61000-3-3:1995+A1:2001	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



IMMUNITY RESULTS SUMMARY					
Test Condition	Test Requirement	Test Method	Test Result		
			Pass	Failed	N/A
Immunity Against Input Interference (S1)	EN55020: 2002+A1:2003	EN55020: 2002+A1:2003	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Immunity Against RFI Voltage(S2a)	EN55020: 2002+A1:2003	EN55020: 2002+A1:2003	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Immunity Against RFI Current(S2b)	EN55020: 2002+A1:2003	EN55020: 2002+A1:2003	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Immunity Against Radiated RFI(S3)	EN55020: 2002+A1:2003	EN55020: 2002+A1:2003	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Screening Effectiveness(S4)	EN55020: 2002+A1:2003	EN55020: 2002+A1:2003	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Keyed Carrier(S5)	EN55020: 2002+A1:2003	IEC61000-4-3:2002	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Immunity Against Radiated RFI For Large EUT(S6)	EN55020: 2002+A1:2003	EN55020: 2002+A1:2003	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Electrostatic Discharge	EN55020: 2002+A1:2003	IEC61000-4-2:2001	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fast Transients/Burst on AC Supply	EN55020: 2002+A1:2003	IEC61000-4-4:2001	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



5.3 TEST EQUIPMENT LIST

Instrumentation: The following list contains equipment used at Compliance Certification Services (Shenzhen) Inc. for testing. The equipment conforms to the CISPR 16-1 / ANSI C63.2-1988 Specifications for Electromagnetic Interference and Field Strength Instrumentation from 10kHz to 1.0 GHz or above.

Equipment used during the tests:

Terminal Voltage Test Site: G					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL. DUE
ESCI EMI TEST RECEIV.ESCI	ROHDE&SCHWARZ	1166.5950 03	100088	02/09/2006	02/08/2007
LISN	EMCO	3825/2	1371	02/09/2006	02/08/2007
LISN	EMCO	3825/2	8901-1459	02/09/2006	02/08/2007
<i>Note: The measure uncertainty is less than +/-2.2318dB, which is evaluated as per the UKAS LAB34 and CISPR/A/291/CDV.</i>					
Power Disturbance Test Site: 966 Chamber					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL. DUE
ESCI EMI TEST RECEIV.ESCI	ROHDE&SCHWARZ	1166.5950 03	100145	02/09/2006	02/08/2007
Amplifier	H.P.	8447D	2944A07999	02/09/2006	02/08/2007
Bi-log Antenna	SCHAFFNER	CBL6143	5082	06/10/2006	06/09/2007
Cable	TIME MICROWAVE	LMR-400	N-TYPE04	06/10/2006	06/09/2007

The calibrations of the measuring instruments, including any accessories that may effect such calibration, are checked frequently to assure their accuracy. Adjustments are made and correction factors applied in accordance with instructions contained in the manual for the measuring instrument.



5.4 SUPPORT EQUIPMENT

No.	Equipment	Model #	Serial #	Trade Name	Data Cable	Power Cord
1.	AUDIO GENERATOR	GAG-809	A630525	GW	Shielded 1.8m	N/A

Note: All the above equipment/cables were placed in worse case positions to maximize emission signals during emission test.

Grounding: Grounding was in accordance with the manufacturer's requirements and conditions for the intended use.



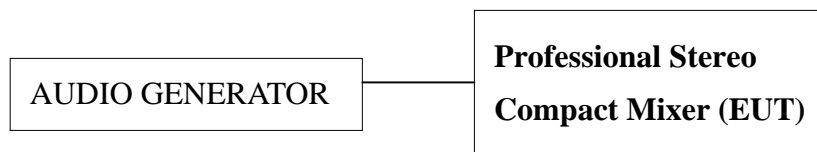
5.5 BLOCK DIAGRAM OF EUT CONFIGURATION

System Diagram of Connections Between EUT and Simulators

EUT: Professional Stereo Compact Mixer

Trade Name: HPA

Model Number: M1022



5.6 PRELIMINARY TERMINAL VOLTAGE TEST

- 1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT place at a 0.8 meters height wooden table above the ground plane, and at a distance of 0.8 m from the Line Impedance Stabilization Network (LISN), and kept at least 0.4 m from the wall of shielding room as per CISPR 13/EN 55013 (see Test Facility for the dimensions of the ground plane used).
- 2) Support equipment, if needed, was placed as per CISPR 13/EN 55013.
- 3) All I/O cables were positioned to simulate typical actual usage as per CISPR 13/EN 55013.
- 4) The EUT received DC18V supplied by the adapter, and the adapter received AC power through a LISN which supplied power source of AC230V/50Hz.
- 5) The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum analyzer connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to analyzer and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the analyzer.
- 6) The Voltage probe shall be used when measuring on terminals other than mains terminals (e.g. load and control terminals), and shell also be used on mains terminals when the LISN can not be used without unduly influencing the EUT or the test equipment.
- 7) The Voltage probe measurement procedure usage as per CISPR 13/EN 55013.
- 8) Analyzer scanned from 150kHz to 30MHz for emissions in each of the test modes. Analyzer settings were stated on the Measuring Instrument Settings page.
- 9) During the above scans, the emissions were maximized by cable manipulation.
- 10) The following test mode(s) were scanned during the preliminary test:

Preliminary VOLTAGE Test			
Frequency Range Investigated		150KHz TO 30 MHz	
Mode of operation	Date	Data Report No.	Worst Mode
MIC 1	2006-11-14	M1022_0(L,N)	<input type="checkbox"/>
MIC 2	2006-11-14	M1022_1(L,N)	<input type="checkbox"/>
MIC 3/4	2006-11-14	M1022_2(L,N)	<input type="checkbox"/>
MIC 5/6	2006-11-14	M1022_3(L,N)	<input type="checkbox"/>
LINE 1	2006-11-14	M1022_4(L,N)	<input checked="" type="checkbox"/>
LINE 2	2006-11-14	M1022_5(L,N)	<input type="checkbox"/>
LINE 3 L	2006-11-14	M1022_6(L,N)	<input type="checkbox"/>
LINE 3 R	2006-11-14	M1022_7(L,N)	<input type="checkbox"/>
INSERT L	2006-11-14	M1022_8(L,N)	<input type="checkbox"/>
INSERT R	2006-11-14	M1022_9(L,N)	<input type="checkbox"/>
LINE 5 L	2006-11-14	M1022_10(L,N)	<input type="checkbox"/>
LINE 6 R	2006-11-14	M1022_11(L,N)	<input type="checkbox"/>
LINE 7/8 L	2006-11-14	M1022_12(L,N)	<input type="checkbox"/>
LINE 7/8 R	2006-11-14	M1022_13(L,N)	<input type="checkbox"/>



LINE 7 L	2006-11-14	M1022_14(L,N)	<input type="checkbox"/>
LINE 7 R	2006-11-14	M1022_15(L,N)	<input type="checkbox"/>
AUX RETURN L	2006-11-14	M1022_16(L,N)	<input type="checkbox"/>
AUX RETURN R	2006-11-14	M1022_17(L,N)	<input type="checkbox"/>
LINE 9 L	2006-11-14	M1022_18(L,N)	<input type="checkbox"/>
LINE 10 R	2006-11-14	M1022_19(L,N)	<input type="checkbox"/>
TAPE IN L	2006-11-14	M1022_20(L,N)	<input type="checkbox"/>
TAPE IN R	2006-11-14	M1022_21(L,N)	<input type="checkbox"/>
REC OUT L	2006-11-14	M1022_22(L,N)	<input type="checkbox"/>
REC OUT R	2006-11-14	M1022_23(L,N)	<input type="checkbox"/>
AUX	2006-11-14	M1022_24(L,N)	<input type="checkbox"/>
EFX	2006-11-14	M1022_25(L,N)	<input type="checkbox"/>
MAIN OUTPUT L	2006-11-14	M1022_26(L,N)	<input type="checkbox"/>
MAIN OUTPUT R	2006-11-14	M1022_27(L,N)	<input type="checkbox"/>
CONTROL ROOM L	2006-11-14	M1022_28(L,N)	<input type="checkbox"/>
CONTROL ROOM R	2006-11-14	M1022_29(L,N)	<input type="checkbox"/>
HEADPHONE	2006-11-14	M1022_30(L,N)	<input type="checkbox"/>

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.



5.7 FINAL TERMINAL VOLTAGE TEST

- 1) EUT and support equipment was set up on the test bench as per step 10 of the preliminary test.
- 2) A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less -2dB to the A.V. limit in peak mode, then the emission signal was re-checked using a Average detector.
- 3) The test data of the worst case condition(s) was reported on the Summary Data page.

Data Sample:

Freq. MHz	Peak Raw dBuV	Q.P. Raw dBuV	Average Raw dBuV	Q.P. Limit dBuV	Average Limit dBuV	Q.P. Margin dB	Average Margin dB	Note
XX.XXX	43.00	---	---	56.00	46.00	---	-3.00	L1

Freq.	= Emission frequency in MHz
Raw dBuV	= Analyzer/Receiver reading + Insertion Loss
Limit dBuV	= Limit stated in standard
Margin dB	= Reading in reference to limit
Note	= Current carrying line of reading
“---“	= The emission level complied with the Average limits, at least 2dB margin limits, so no recheck anymore.

TERMINAL VOLTAGE LIMIT

Frequency	Q.P. (dBuV)	AVERAGE (dBuV)
150kHz-500kHz	66-56	56-46
500kHz-5MHz	56	46
5MHz-30MHz	60	50

****Note:** The lower limit shall apply at the transition frequency.

5.8 PRELIMINARY DISTURBANCE POWER TEST

- 1) The EUT is place on a 0.8 meters height wooden table above the ground plane, and kept at least 0.8 m from other metallic object. The straight portion of main lead would put on 6 m long testing bench of (if main lead is shorter than 6 m it should be extended) as per CISPR 13/EN 55013.
- 2) Any lead connecting the main appliance to an auxiliary apparatus is disconnected if this does not affect the operation of the appliance, or is isolated by means of ferrite rings (or an absorbing clamp) close to the appliance.
- 3) The EUT received DC18V supplied by the adapter, and the adapter received AC230V/50Hz power source from the outlet socket.
- 4) The EUT test program was started. Emissions were scanned and measured using a receiver connected to the absorbing clamp.
- 5) The absorbing clamp is positioned for maximum indication at each test frequency (30MHz to 300MHz), that means is clamp moved along the main lead until the maximum emission value is found.
- 6) The following test mode(s) were scanned during the preliminary test:
- 7)

Preliminary Disturbance Power Test			
Frequency Range Investigated	30 MHz TO 300MHz		
Mode of operation	Date	Data Report No.	Worst Mode
POWER	2006-11-14	M1022_0	<input type="checkbox"/>
MIC 1	2006-11-14	M1022_1	<input type="checkbox"/>
MIC 2	2006-11-14	M1022_2	<input type="checkbox"/>
MIC 3/4	2006-11-14	M1022_3	<input type="checkbox"/>
MIC 5/6	2006-11-14	M1022_4	<input type="checkbox"/>
LINE 1	2006-11-14	M1022_5	<input type="checkbox"/>
LINE 2	2006-11-14	M1022_6	<input type="checkbox"/>
LINE 3 L	2006-11-14	M1022_7	<input type="checkbox"/>
LINE 3 R	2006-11-14	M1022_8	<input type="checkbox"/>
INSERT L	2006-11-14	M1022_9	<input type="checkbox"/>
INSERT R	2006-11-14	M1022_10	<input type="checkbox"/>
LINE 5 L	2006-11-14	M1022_11	<input type="checkbox"/>
LINE 6 R	2006-11-14	M1022_12	<input type="checkbox"/>
LINE 7/8 L	2006-11-14	M1022_13	<input type="checkbox"/>
LINE 7/8 R	2006-11-14	M1022_14	<input type="checkbox"/>
LINE 7 L	2006-11-14	M1022_15	<input type="checkbox"/>
LINE 7 R	2006-11-14	M1022_16	<input type="checkbox"/>
AUX RETURN L	2006-11-14	M1022_17	<input type="checkbox"/>
AUX RETURN R	2006-11-14	M1022_18	<input type="checkbox"/>
LINE 9 L	2006-11-14	M1022_19	<input type="checkbox"/>
LINE 10 R	2006-11-14	M1022_20	<input type="checkbox"/>



TAPE IN L	2006-11-14	M1022_21	<input type="checkbox"/>
TAPE IN R	2006-11-14	M1022_22	<input type="checkbox"/>
REC OUT L	2006-11-14	M1022_23	<input type="checkbox"/>
REC OUT R	2006-11-14	M1022_24	<input type="checkbox"/>
AUX	2006-11-14	M1022_25	<input type="checkbox"/>
EFX	2006-11-14	M1022_26	<input type="checkbox"/>
MAIN OUTPUT L	2006-11-14	M1022_27	<input checked="" type="checkbox"/>
MAIN OUTPUT R	2006-11-14	M1022_28	<input type="checkbox"/>
CONTROL ROOM L	2006-11-14	M1022_29	<input type="checkbox"/>
CONTROL ROOM R	2006-11-14	M1022_30	<input type="checkbox"/>
HEADPHONE	2006-11-14	M1022_31	<input type="checkbox"/>

Then, the EUT and cable configuration, antenna position, polarization and turntable position of the above highest emission level were recorded for final testing.



5.9 FINAL DISTURBANCE POWER TEST

- 1) EUT and support equipment were set up on the wooden table as per step 6 of the preliminary test.
- 2) The receiver scanned from 30MHz to 300MHz. Emissions were scanned and measured to moving the absorbing clamp along the main lead until the maximum emission value is found.
- 3) Recorded at least the six highest emissions. Emission frequency, amplitude, were recorded in which correction factors were used to calculate the emission level and compare reading to the applicable limit, and Q.P./Average reading will record in this report.
- 4) The test data of the worst case condition(s) was reported on the Summary Data page.

Data Sample:

Freq. MHz	Peak Raw dB(pW)	QP Raw dB(pW)	AVG Raw dB(pW)	QP Limit dB (pW)	AVG Limit dB(pW)	QP Margin dB	AVG Margin dB
xx.xxx	30.90	---	---	45.20	35.20	---	-4.30

- Freq. = Emission frequency in MHz
 Raw dB(pW) = Uncorrected Analyzer /Receiver reading
 Limit dB(pW) = Limit stated in standard
 Margin dB(pW) = Reading in reference to limit
 “---” = The emission level complied with the Average limits, at least 2dB margin, so no recheck anymore.

DISTURBANCE POWER LIMIT

Frequency (MHz)	Maximum Disturbance Power Limit dB(pW)	
	Quasi-Peak	Average
30-300	45 – 55	35 – 45

****Note:** The lower limit shall apply at the transition frequency.



5.10 TERMINAL VOLTAGE TEST RESULTS

Model Number: M1022

Location: Site G

Tested by: Veason

Test Mode: LINE 1

Test Results: Pass

Temperature: 25°C

Humidity: 55%

(The chart below shows the highest readings taken from the final data)

FREQ MHz	PEAK RAW dBuV	Q.P. RAW dBuV	AVG RAW dBuV	Q.P. Limit dBuV	AVG Limit dBuV	Q.P. Margin dB	AVG Margin dB	NOTE
0.205	39.61	---	---	64.41	54.41	---	-14.80	L1
0.346	36.05	---	---	60.39	50.39	---	-14.34	L1
0.887	32.93	---	---	56.00	46.00	---	-13.07	L1
1.792	28.58	---	---	56.00	46.00	---	-17.42	L1
11.659	38.09	---	---	60.00	50.00	---	-11.91	L1
21.599	36.64	---	---	60.00	50.00	---	-13.36	L1
0.198	39.77	---	---	64.62	54.62	---	-14.85	L2
0.331	35.44	---	---	60.81	50.81	---	-15.37	L2
1.747	33.35	---	---	56.00	46.00	---	-12.65	L2
11.659	43.84	---	---	60.00	50.00	---	-6.16	L2
12.699	34.53	---	---	60.00	50.00	---	-15.47	L2
21.599	33.25	---	---	60.00	50.00	---	-16.75	L2

L1 = Line One (Hot side) / L2 = Line Two (Neutral side)

****NOTE:** “---” denotes the emission level complied with the Average limit, so no re-check anymore.



5.11 DISTURBANCE POWER TEST RESULTS

Model Number: M1022

Location: 966 Chamber

Tested by: Veason

Detector Function: Peak/Q.P

Test Results: Passed

Temperature: 25°C

Humidity: 55 %RH

Test Mode: MAIN OUTPUT L

FREQ MHz	PEAK Raw dBpW	QP Raw dBpW	AVG Raw dBpW	QP Limit dB(pW)	AVG Limit dB(pW)	QP Margin dB(pW)	AVG Margin dB(pW)
36.075	25.18	---	---	45.23	35.23	---	-10.05
48.225	9.18	---	---	45.67	35.67	---	-26.49
71.850	21.43	---	---	46.55	36.55	---	-15.12
96.150	13.08	---	---	47.45	37.45	---	-24.37
105.600	9.24	---	---	47.80	37.80	---	-28.56
123.825	4.64	---	---	48.48	38.48	---	-33.84

The chart below shows the highest readings taken from the final data.

****NOTE:** “---” denotes the emission level complied with the Average limit, so no re-check anymore.

6 SECTION 2 EN 61000-3-2 & EN 61000-3-3 (POWER HARMONICS & VOLTAGE FLUCTUATION /FLICKER)

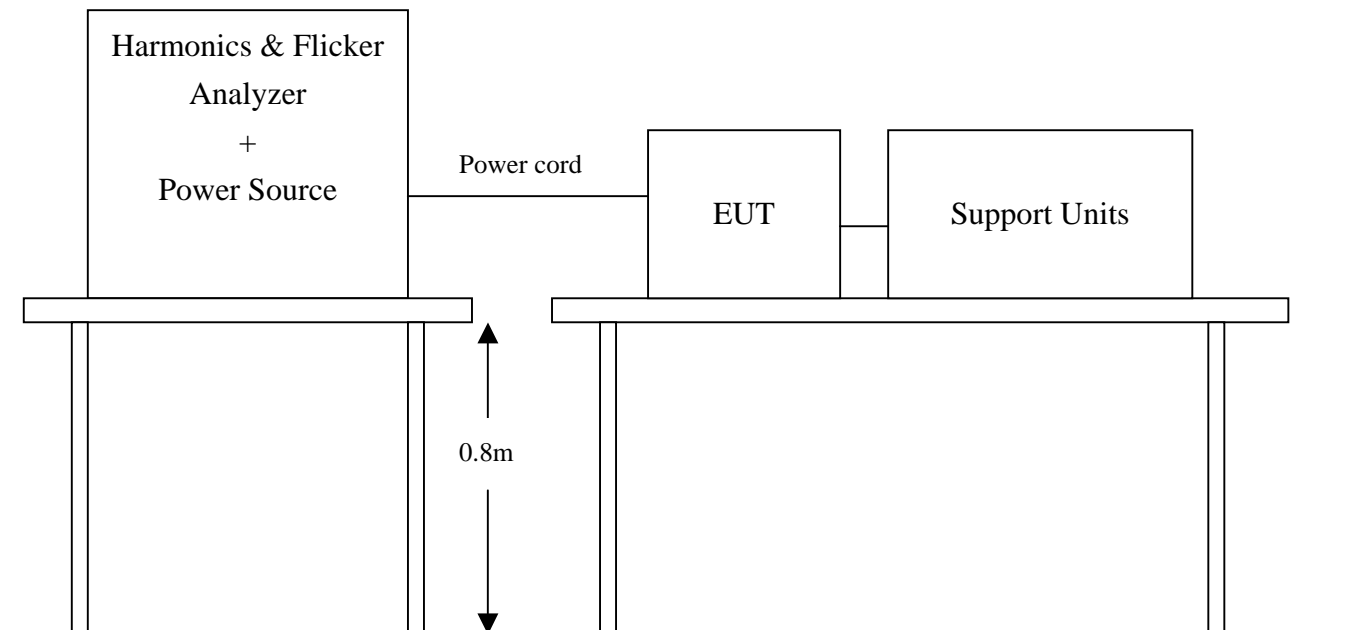
POWER HARMONICS MEASUREMENT

Port : AC mains
Basic Standard : EN 61000-3-2: 2000
Limits : Class A Class D
Tester : Army
Temperature : 25°C
Humidity : 55%

VOLTAGE FLUCTUATION/FLICKER MEASUREMENT

Port : AC mains
Basic Standard : EN 61000-3-3: 1995+A1:2001
Limits : Section 5 of EN 61000-3-3
Tester : Army
Temperature : 25°C
Humidity : 55%

Block Diagram of Test Setup:



Test results:

Please see the attached test data.



Harmonics – Class-A

EUT: Professional Stereo Compact Mixer

Tested by: Veason

Test category: Class-A

Test Margin: 100

Test date: 2006-11-14

Start time: 16:36:41

End time: 16:39:21

Test duration (min): 2.5

Data file name: H-000087.cts_data

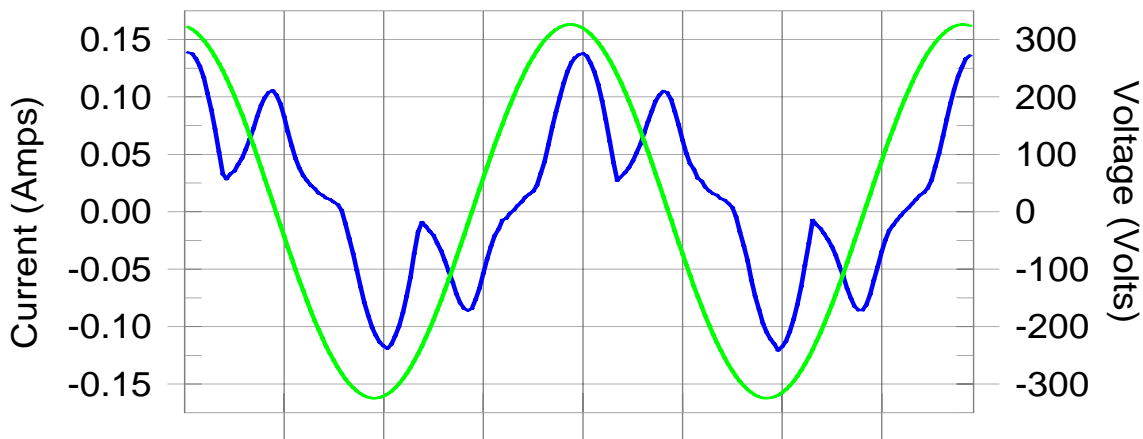
Comment: M1022

Customer: HANPIN PRO AUDIO CO.,LTD.

Test Result: Pass

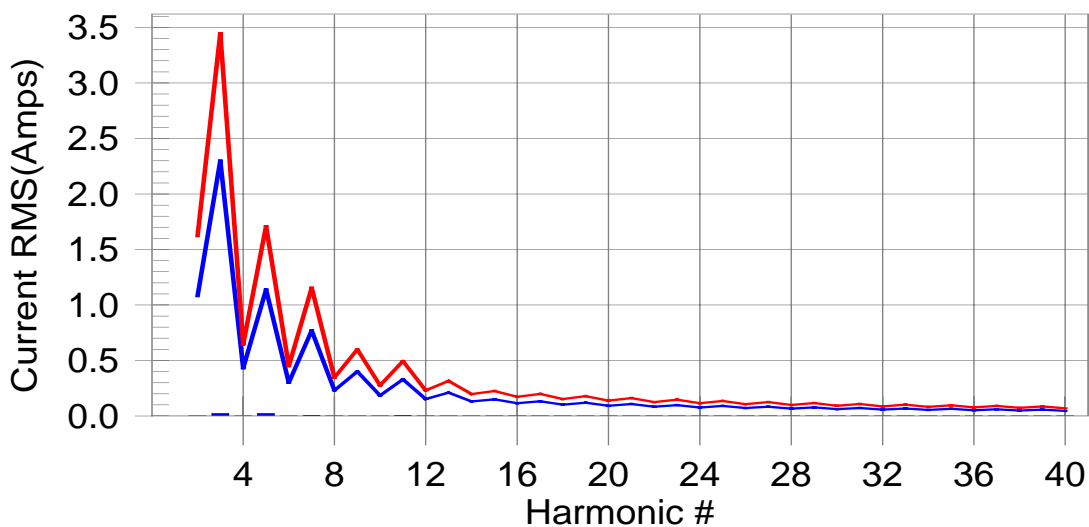
Source qualification: Normal

Current & voltage waveforms



Harmonics and Class A limit line

European Limits



Test result: Pass **Worst harmonic was #5 with 1.30% of the limit.**



Current Test Result Summary

EUT: Professional Stereo Compact Mixer

Tested by: Veason

Test category: Class-A

Test Margin: 100

Test date: 2006-11-14

Start time: 16:36:41

End time: 16:39:21

Test duration (min): 2.5

Data file name: H-000087.cts_data

Comment: M1022

Customer: HANPIN PRO AUDIO CO.,LTD.

Test Result: Pass

Source qualification: Normal

THC(A): 0.03 I-THD(%): 50.77

POHC(A): 0.001

POHC Limit(A): 0.251

Highest parameter values during test:

V_RMS (Volts): 230.17

Frequency(Hz): 50.00

I_Peak (Amps): 0.146

I_RMS (Amps): 0.072

I_Fund (Amps): 0.064

Crest Factor: 2.051

Power (Watts): 11.6

Power Factor: 0.702

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.001	1.080	0.1	0.001	1.620	0.07	Pass
3	0.023	2.300	1.0	0.024	3.450	0.69	Pass
4	0.001	0.430	0.2	0.001	0.645	0.11	Pass
5	0.022	1.140	1.9	0.022	1.710	1.30	Pass
6	0.000	0.300	0.1	0.000	0.450	0.07	Pass
7	0.002	0.770	0.3	0.002	1.155	0.20	Pass
8	0.000	0.230	0.0	0.000	0.345	0.03	Pass
9	0.001	0.400	0.2	0.001	0.600	0.17	Pass
10	0.000	0.184	0.1	0.000	0.276	0.07	Pass
11	0.003	0.330	0.8	0.003	0.495	0.52	Pass
12	0.000	0.153	0.1	0.000	0.230	0.07	Pass
13	0.001	0.210	0.4	0.001	0.315	0.29	Pass
14	0.000	0.131	0.0	0.000	0.197	0.04	Pass
15	0.001	0.150	0.6	0.001	0.225	0.42	Pass
16	0.000	0.115	0.0	0.000	0.173	0.04	Pass
17	0.001	0.132	0.5	0.001	0.199	0.32	Pass
18	0.000	0.102	0.1	0.000	0.153	0.05	Pass
19	0.001	0.118	0.5	0.001	0.178	0.32	Pass
20	0.000	0.092	0.1	0.000	0.138	0.05	Pass
21	0.000	0.107	0.3	0.000	0.161	0.24	Pass
22	0.000	0.084	0.0	0.000	0.125	0.03	Pass
23	0.000	0.098	0.3	0.000	0.147	0.24	Pass
24	0.000	0.077	0.0	0.000	0.115	0.05	Pass
25	0.000	0.090	0.3	0.000	0.135	0.22	Pass
26	0.000	0.071	0.0	0.000	0.106	0.05	Pass
27	0.000	0.083	0.3	0.000	0.125	0.19	Pass
28	0.000	0.066	0.0	0.000	0.099	0.04	Pass
29	0.000	0.078	0.3	0.000	0.116	0.22	Pass
30	0.000	0.061	0.1	0.000	0.092	0.05	Pass
31	0.000	0.073	0.2	0.000	0.109	0.14	Pass
32	0.000	0.058	0.0	0.000	0.086	0.03	Pass
33	0.000	0.068	0.3	0.000	0.102	0.21	Pass
34	0.000	0.054	0.0	0.000	0.081	0.04	Pass
35	0.000	0.064	0.2	0.000	0.096	0.14	Pass
36	0.000	0.051	0.1	0.000	0.077	0.06	Pass
37	0.000	0.061	0.2	0.000	0.091	0.14	Pass
38	0.000	0.048	0.1	0.000	0.073	0.06	Pass
39	0.000	0.058	0.2	0.000	0.087	0.16	Pass
40	0.000	0.046	0.1	0.000	0.069	0.06	Pass



Voltage Source Verification Data

EUT: Professional Stereo Compact Mixer

Tested by: Veason

Test category: Class-A

Test Margin: 100

Test date: 2006-11-14

Start time: 16:36:41

End time: 16:39:21

Test duration (min): 2.5

Data file name: H-000087.cts_data

Comment: M1022

Customer: HANPIN PRO AUDIO CO.,LTD.

Test Result: Pass

Source qualification: Normal

Highest parameter values during test:

Voltage (Vrms):	230.17	Frequency(Hz):	50.00
I_Peak (Amps):	0.146	I_RMS (Amps):	0.072
I_Fund (Amps):	0.064	Crest Factor:	2.051
Power (Watts):	11.6	Power Factor:	0.702

Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.124	0.460	27.01	OK
3	0.514	2.071	24.83	OK
4	0.141	0.460	30.53	OK
5	0.062	0.920	6.74	OK
6	0.067	0.460	14.47	OK
7	0.050	0.690	7.22	OK
8	0.053	0.460	11.58	OK
9	0.042	0.460	9.08	OK
10	0.044	0.460	9.54	OK
11	0.039	0.230	17.02	OK
12	0.038	0.230	16.55	OK
13	0.031	0.230	13.43	OK
14	0.027	0.230	11.62	OK
15	0.025	0.230	10.98	OK
16	0.026	0.230	11.24	OK
17	0.028	0.230	12.23	OK
18	0.028	0.230	11.96	OK
19	0.024	0.230	10.48	OK
20	0.023	0.230	9.91	OK
21	0.021	0.230	9.23	OK
22	0.017	0.230	7.51	OK
23	0.020	0.230	8.72	OK
24	0.014	0.230	6.27	OK
25	0.019	0.230	8.24	OK
26	0.018	0.230	7.92	OK
27	0.018	0.230	7.75	OK
28	0.017	0.230	7.45	OK
29	0.017	0.230	7.43	OK
30	0.015	0.230	6.54	OK
31	0.013	0.230	5.44	OK
32	0.014	0.230	6.01	OK
33	0.013	0.230	5.81	OK
34	0.011	0.230	4.57	OK
35	0.010	0.230	4.24	OK
36	0.010	0.230	4.51	OK
37	0.010	0.230	4.38	OK
38	0.009	0.230	3.79	OK
39	0.009	0.230	4.01	OK
40	0.010	0.230	4.37	OK



Flicker Test Summary

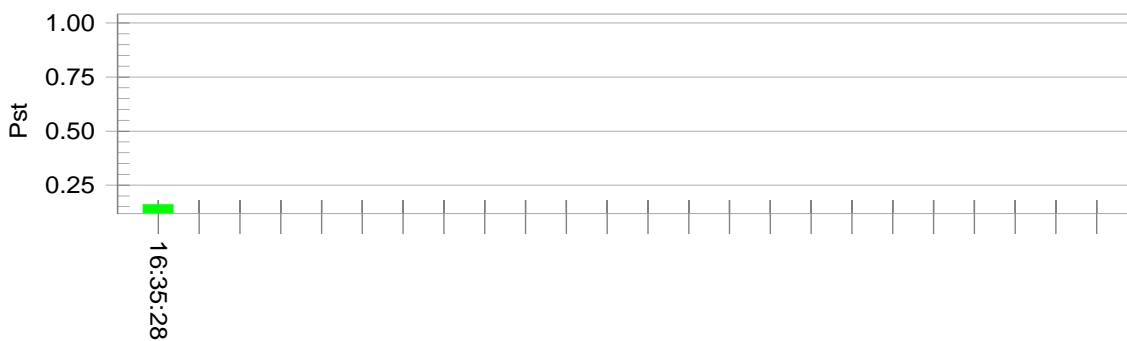
EUT: Professional Stereo Compact Mixer
 Test category: All parameters (European limits)
 Test date: 2006-11-14 Start time: 16:25:08
 Test duration (min): 10 Data file name: F-000086.cts_data
 Comment: M1022
 Customer: HANPIN PRO AUDIO CO.,LTD.

Tested by: Veason
 Test Margin: 100
 End time: 16:35:28

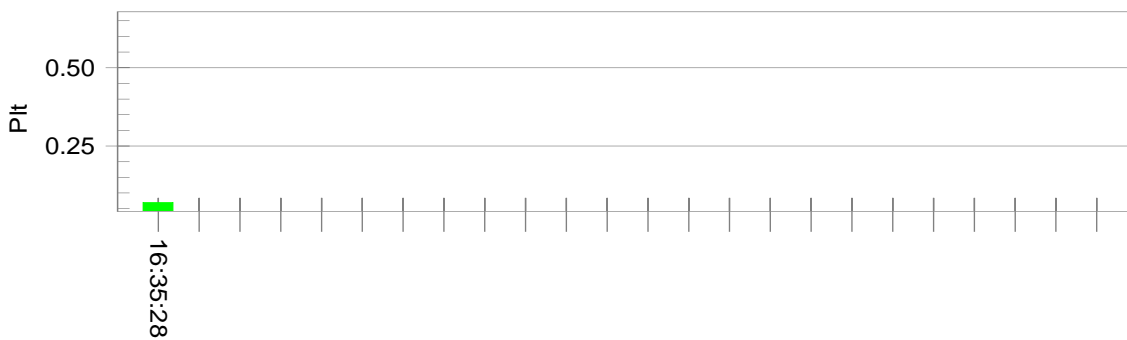
Test Result: Pass Status: Test Completed

Pst and limit line

European Limits



Plt and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt):	230.02			
Highest dt (%):	0.13	Test limit (%):	3.30	Pass
Time(mS) > dt:	0.0	Test limit (mS):	500.0	Pass
Highest dc (%):	0.00	Test limit (%):	3.30	Pass
Highest dmax (%):	0.08	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.160	Test limit:	1.000	Pass
Highest Plt (2 hr. period):	0.070	Test limit:	0.650	Pass



7 SECTION 3 IMMUNITY TESTS

Electrostatic Discharge Test

(IEC 61000-4-2: 2001)

Fast Transient / Burst (EFT) Immunity Test

(IEC 61000-4-4: 2001)

**7.1 TEST EQUIPMENT LIST (IMMUNITY TESTS)**

Power Harmonic & Voltage Fluctuation/Flicker Measurement (61000-3-2&-3-3)					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Harmonic & Flicker Tester	SCHAFFNER	NSG 1007-5-400	54789	02/09/2006	02/08/2007
Power Source	SCHAFFNER	NSG1007	54789	02/09/2006	02/08/2007
ESD test (61000-4-2)					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
ESD 30 System	EM Test	ESD 30C	1202-17	10/17/2006	10/16/2007
Fast Transients/Burst test (61000-4-4)					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Fast Transients/Burst Generator	SCHAFFNER	BEST EMC V2.7	200126-012SC	02/09/2005	02/08/2006
EN 55020 Test System List (TS 9980)					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Control co 1000	INN-CO GmbH	CER.NR:CO 1000/131/8250704	CO 1000	10/17/2006	10/16/2007
MPEG2 MEASUREMENT GENERATOR. DVG	R & S	DVG	100268	10/17/2006	10/16/2007
TV-MESSENDER.TV SET Transmitter SFQ	R & S	SFQ	100456	10/17/2006	10/16/2007
TV-MESSENDER Transmitter SFM	R & S	SFM	NA	10/17/2006	10/16/2007
TV GENERATOR SCAM.SGSF	R & S	SGSF	100046	10/17/2006	10/16/2007
TV GENERATOR PAL.SGPF	R & S	SGPF	100124	10/17/2006	10/16/2007
TV GENERATOR NISC.SGMF	R & S	SGMF	100033	10/17/2006	10/16/2007
ESPL TEST RECEIVER	R & S	ESPL	100567	10/17/2006	10/16/2007
BONN Elektronik PowerAmplifier	BONN Elektronik	BLWA 0310-1	045699	10/17/2006	10/16/2007
SML01.SIGNAL GENERATOR	R & S	SML01	102788	10/17/2006	10/16/2007
SIGNAL GENERATOR	R & S	SML02	101208	10/17/2006	10/16/2007
POWER METER.NRVS	R & S	NRVS	100984	10/17/2006	10/16/2007
AUDIO ANALYZER	R & S	UPL	100984	10/17/2006	10/16/2007
RF. SYSTEM PANEL.TS-RSP	R & S	TS-RSP	100134	10/17/2006	10/16/2007
BONN Elektronik PowerAmplifier	BONN Elektronik	BSA 1515-25	045622-06	10/17/2006	10/16/2007
Control co 1000	INN-CO GmbH	CER.NR:CO 1000/131/8250704	CO 1000	10/17/2006	10/16/2007

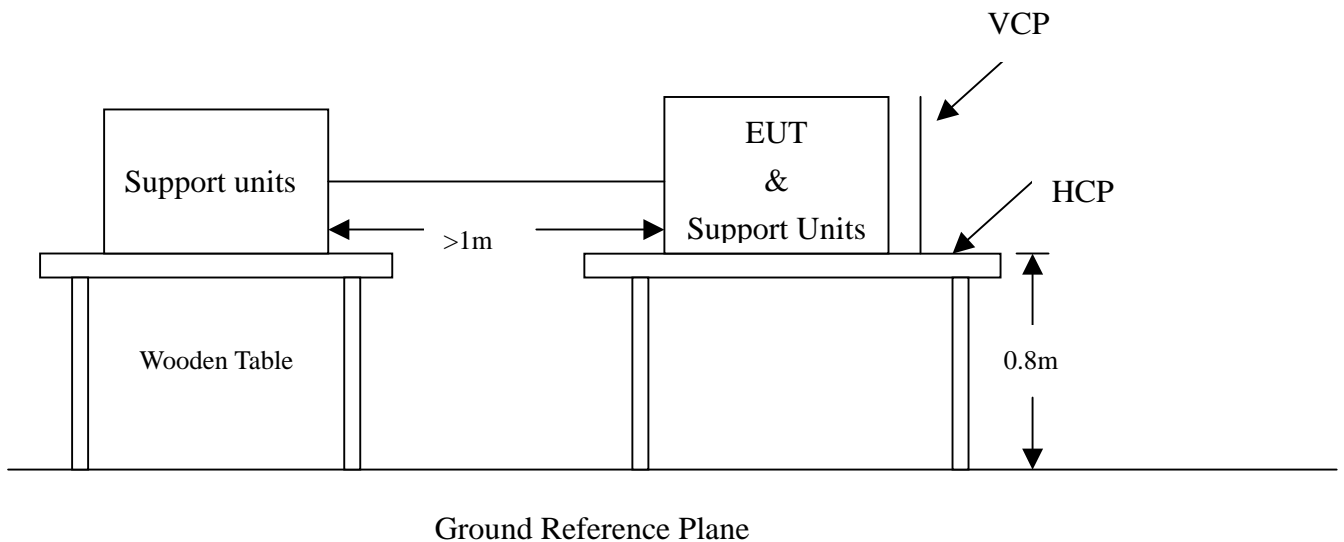
7.2 IEC 61000-4-2 (ELECTROSTATIC DISCHARGE)

ELECTROSTATIC DISCHARGE (ESD) IMMUNITY TEST

Port : Enclosure
Basic Standard : IEC 61000-4-2: 2001
Test Level : ± 8 kV (Air Discharge)
 ± 4 kV (Contact Discharge)
Performance Criterion : B (Standard require)
Temperature/Humidity : 25°C/55%

Block Diagram of Test Setup:

(The 470 k ohm resistors are installed per standard requirement)





Test Procedure:

1. The EUT was located 0.1 m minimum from all side of the HCP.
2. The support units were located 1 m minimum away from the EUT.
3. Set up EUT and other external peripheral devices.Turn on the EUT and audio generator,then send audio signal to EUT.Make sure the EUT works normally during the test.
4. Active the communication function if the EUT with such port(s).
5. As per the requirement of EN 55020; applying direct contact discharge at the sides other than front of EUT at minimum 50 discharges (25 positive and 25 negative) if applicable, can't be applied direct contact discharge side of EUT then the indirect discharge shall be applied. One of the test points shall be subjected to at least 50 indirect discharge (contact) to the front edge of horizontal coupling plane.
6. Other parts of EUT where it is not possible to perform contact discharge then selecting appropriate points of EUT for air discharge, a minimum of 10 single air discharges shall be applied.
7. The application of ESD to the contact of open connectors is not required.
8. Putting a mark on EUT to show tested points. The following test condition was followed during the tests.

Note: As per the A2 to IEC 61000-4-2, a bleed resistor cable is connected between the EUT and HCP during the test.

The electrostatic discharges were applied as follows:

Amount of Discharges	Voltage	Coupling	Result (Pass/Fail)
Mini 25 /Point	±2kV; ±4kV	Contact Discharge	Pass
Mini 25 /Point	±2kV; ±4kV	Indirect Discharge HCP (Front)	Pass
Mini 25 /Point	±2kV; ±4kV	Indirect Discharge VCP (Left)	Pass
Mini 25 /Point	±2kV; ±4kV	Indirect Discharge VCP (Back)	Pass
Mini 25 /Point	±2kV; ±4kV	Indirect Discharge VCP (Right)	Pass
Mini 10 /Point	±2kV; ±4kV; ±8kV	Air Discharge	No discharge point

The discharge points to EUT, please refer to attached pages.

(Blue arrow mark for contact discharge, red arrow mark for air discharge.)



Performance & Result:

- Criterion A:** The apparatus continues to operate as intended. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance.
- Criterion B:** The apparatus continues to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed.
- Criterion C:** Temporary loss of function is allowed, provided the functions self recoverable or can be restored by the operation of controls.

<input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL
--

Discharge Points of EUT



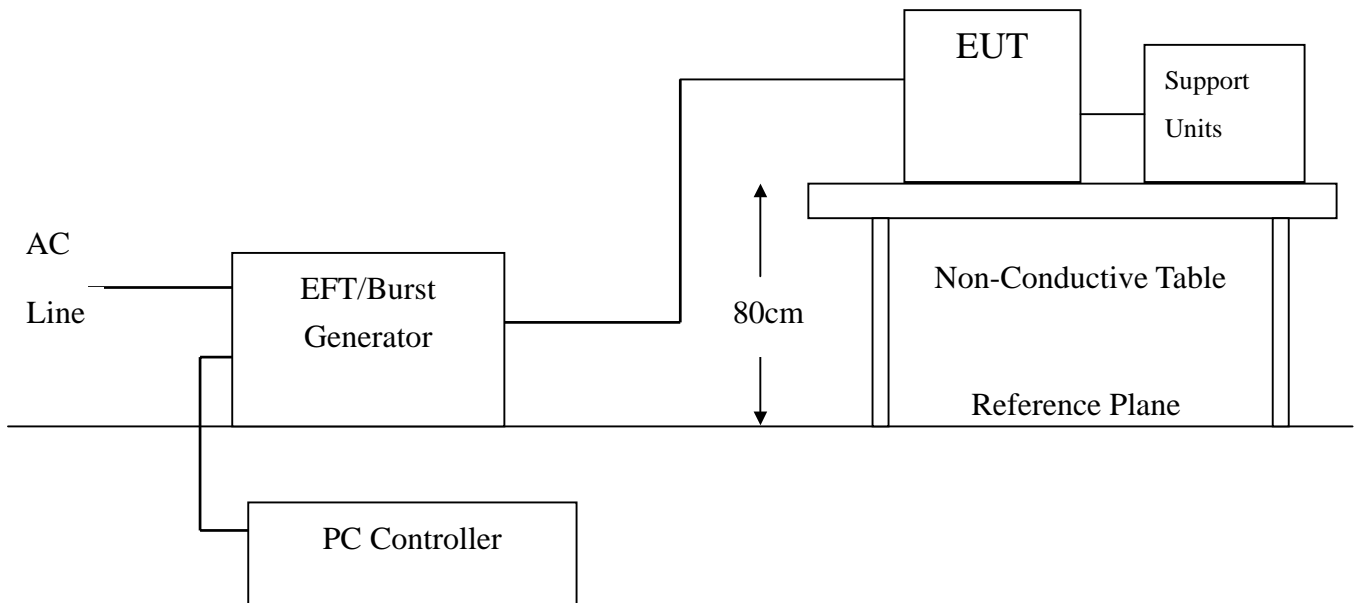


7.3 IEC 61000-4-4 (FAST TRANSIENTS/BURST)

FAST TRANSIENTS/BURST IMMUNITY TEST

Port : AC Power
Basic Standard : IEC 61000-4-4: 2001
Requirements : +/- 1kV for Power Lines
Performance Criterion : B (Standard require)
Temperature : 25°C
Humidity : 55%

Block Diagram of Test Setup:





Test Procedure:

1. The EUT and support units were located on a wooden table 0.8 m away from ground reference plane.
2. Set up EUT and other external peripheral devices. Turn on the EUT and audio generator, then send audio signal to EUT. Make sure the EUT works normally during the test.
3. Recording the test result as shown in following table.

Test conditions:

Impulse Frequency: 5kHz

Tr/Th: 5/50ns

Burst Duration: 15ms

Burst Period: 300ms

Inject Line	Voltage kV	Inject Method	Result (Pass/Fail)
L	+/- 1	Direct	Pass
N	+/- 1	Direct	Pass
L+N	+/- 1	Direct	Pass

Performance & Result:

- Criterion A:** The apparatus continues to operate as intended. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance.
- Criterion B:** The apparatus continues to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed.
- Criterion C:** Temporary loss of function is allowed, provided the functions self-recoverable or can be restored by the operation of controls.

<input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL
--



8 TEST CONTENT AND RESULTS SUMMARY TABLES FOR EN55020 IMMUNITY TEST

Test Item	Test Content	Test Result		
		Pass	Failed	MEGA
S2a	Immunity Against RFI Voltage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
S3	Immunity Against Radiated RFI	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
S5	Keyed Carrier	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



TEST RESULTS:

Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: AUDIO OUT AUX

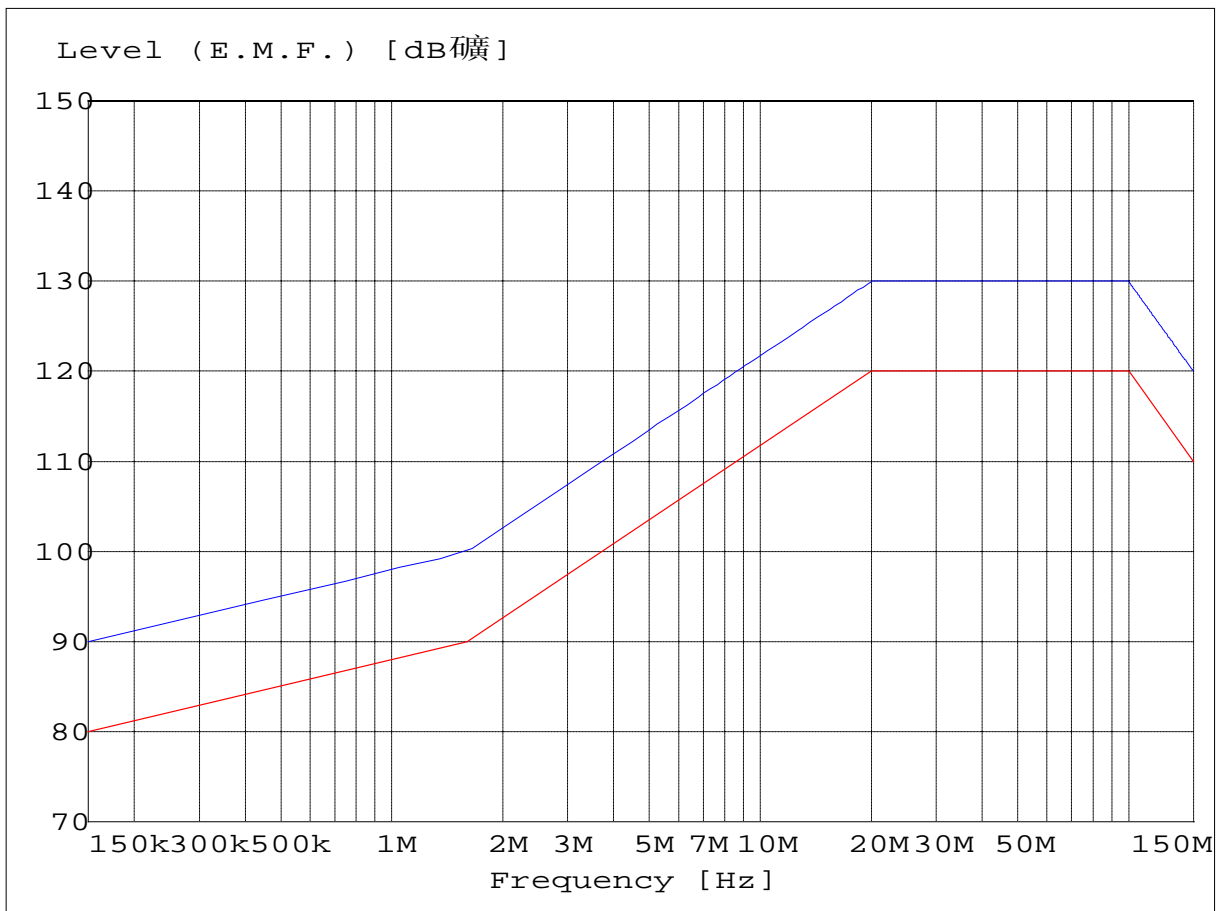
Operating Mode: AUX

S/N: 69.6 dB

Frequency: -

AF Level: 466.9 mV

Interf. Signal: INSERT, 131106-00048-001, 11/13/2006, 4:44:00PM





Test Mode: Amplifier -

Monitor: AUDIO OUT EFX

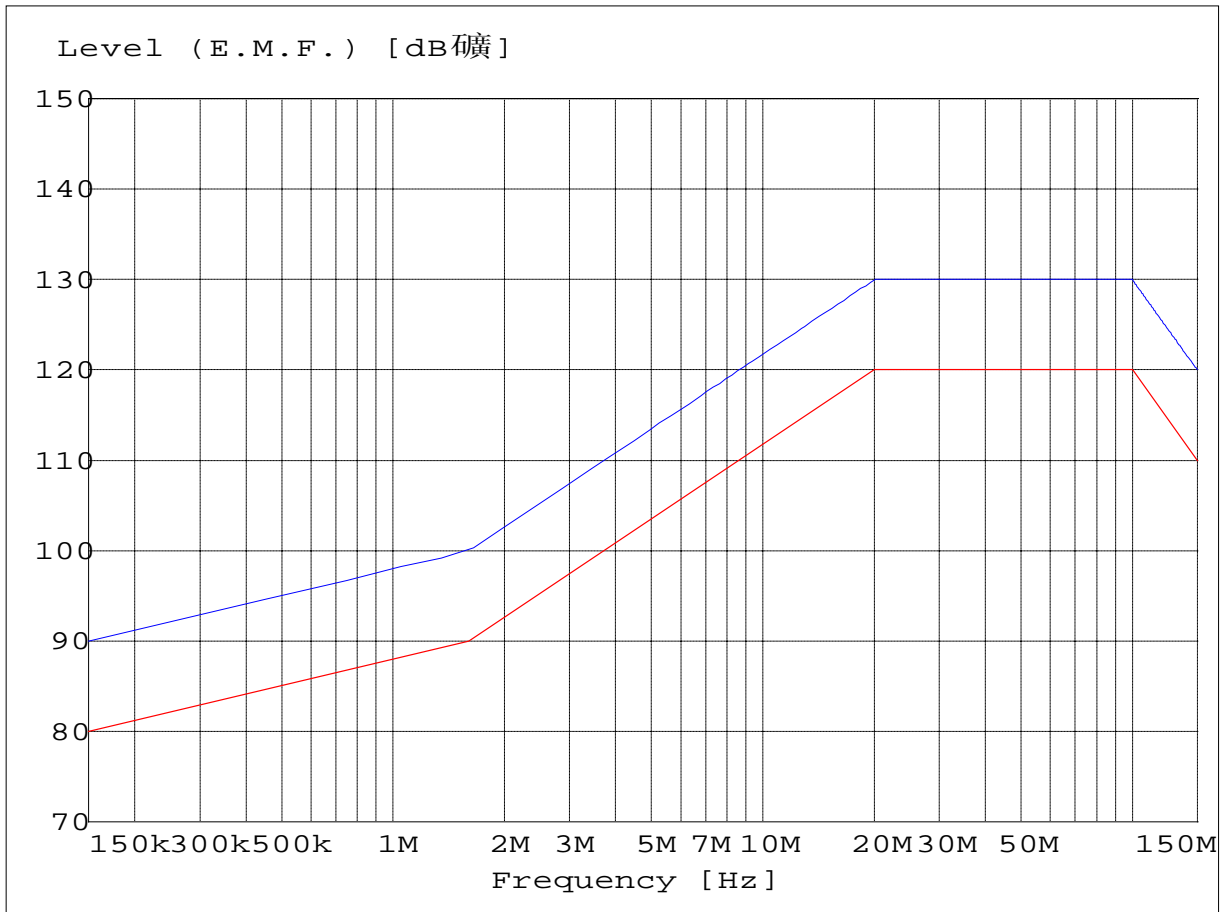
Operating Mode: AUX

S/N: 69.9 dB

Frequency: -

AF Level: 498.6 mV

Interf. Signal: INSERT, 131106-00048-002, 11/13/2006, 4:48:58PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Audio Out CONTRCL R

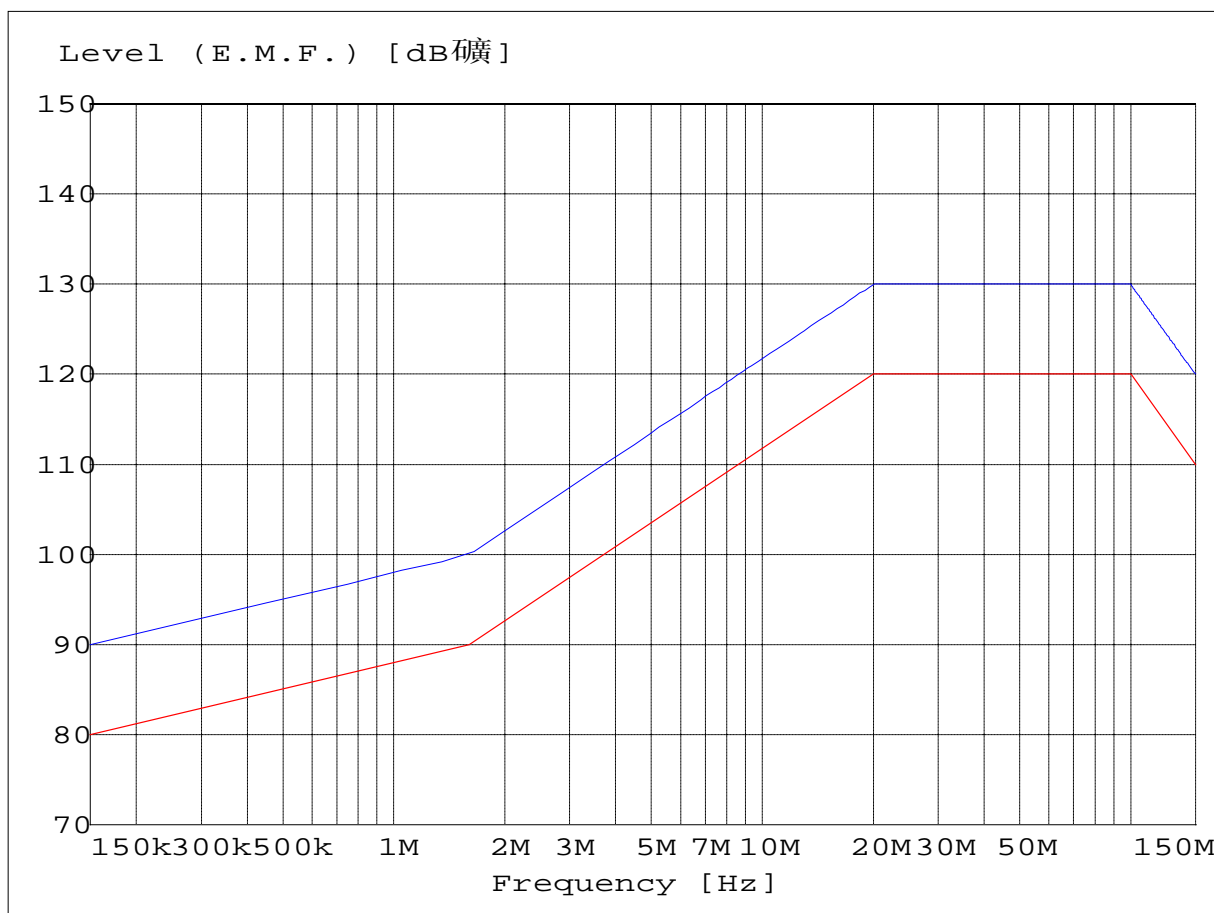
Operating Mode: AUX

S/N: 88.5 dB

Frequency: -

AF Level: 464.9 mV

Interf. Signal: INSERT, 131106-00048-003, 11/13/2006, 4:54:00PM





Test Mode: Amplifier -

Monitor: Audio Out CONTRCL L

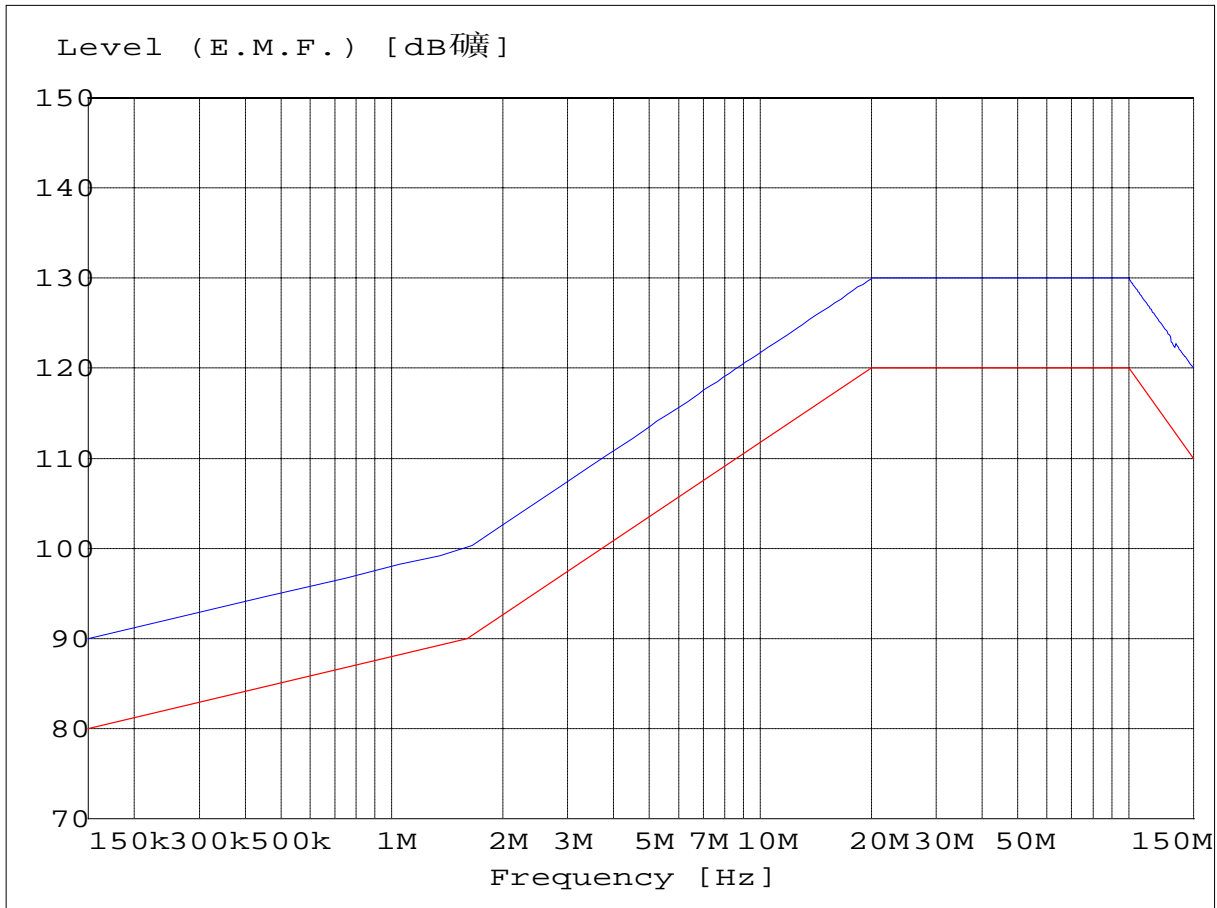
Operating Mode: AUX

S/N: 70.0 dB

Frequency: -

AF Level: 486.4 mV

Interf. Signal: INSERT, 131106-00048-004, 11/13/2006, 4:58:41PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Audio Out MAIN OUT L

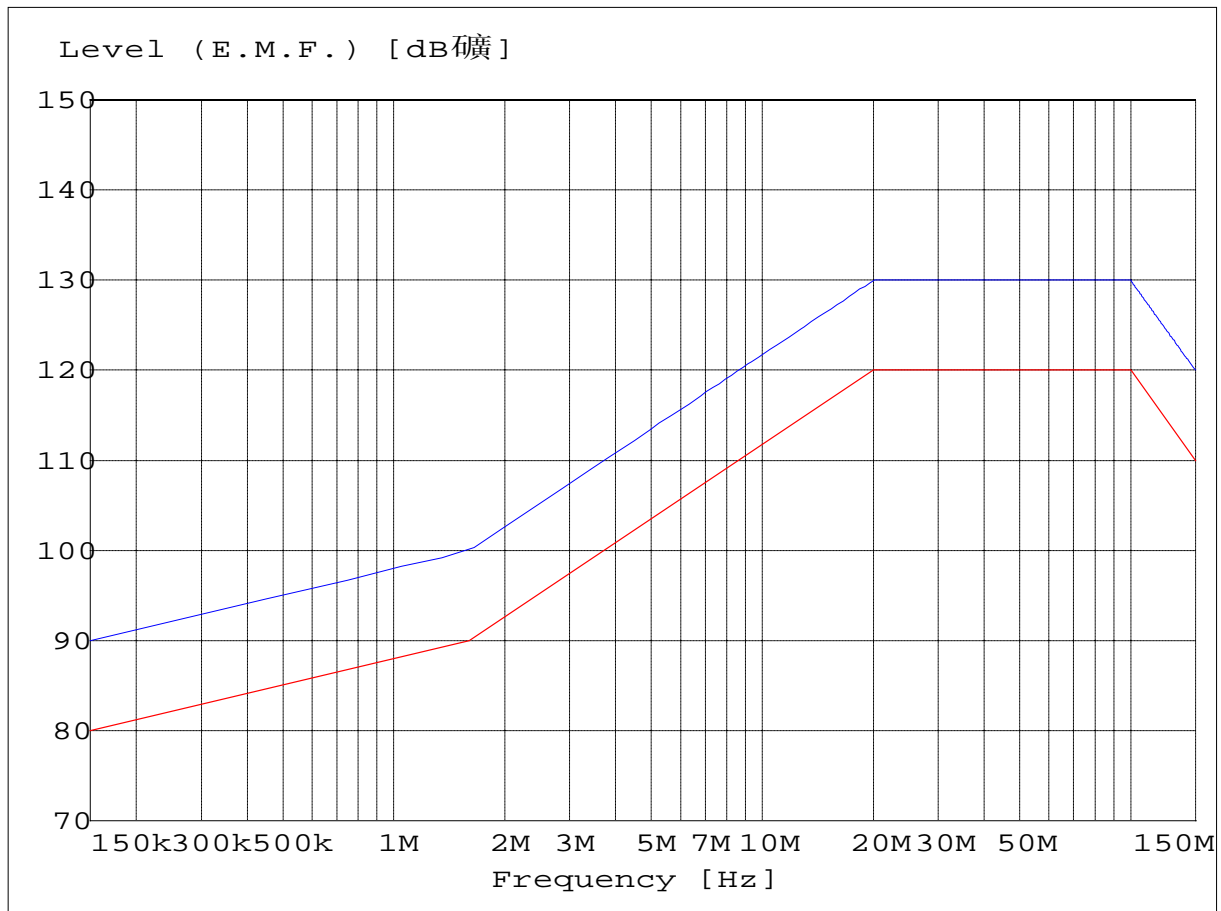
Operating Mode: AUX

S/N: 69.7 dB

Frequency: -

AF Level: 463.5 mV

Interf. Signal: INSERT, 131106-00048-005, 11/13/2006, 5:03:16PM





Test Mode: Amplifier -

Monitor: Audio Out MAIN OUT R

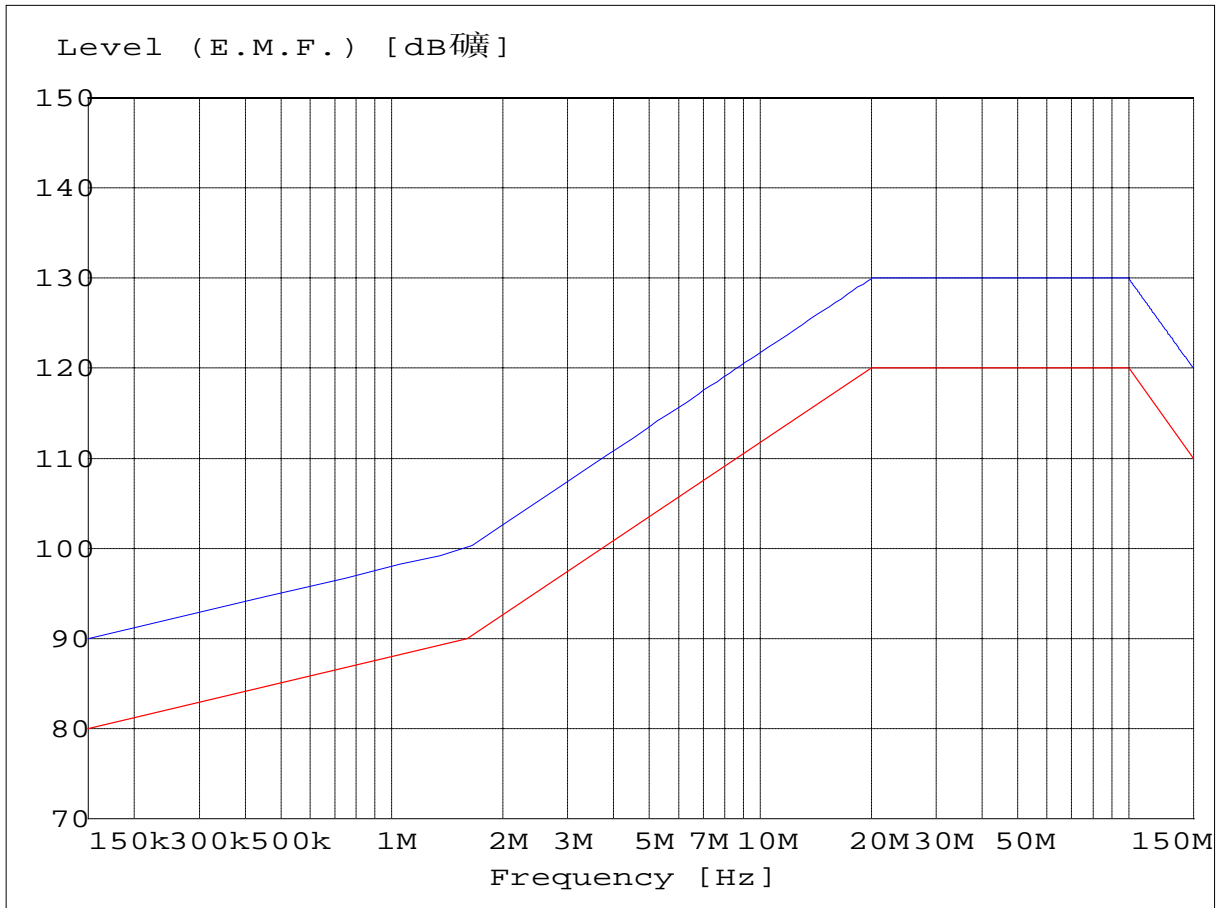
Operating Mode: AUX

S/N: 68.9 dB

Frequency: -

AF Level: 449.3 mV

Interf. Signal: INSERT, 131106-00048-006, 11/13/2006, 5:07:40PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Headphones

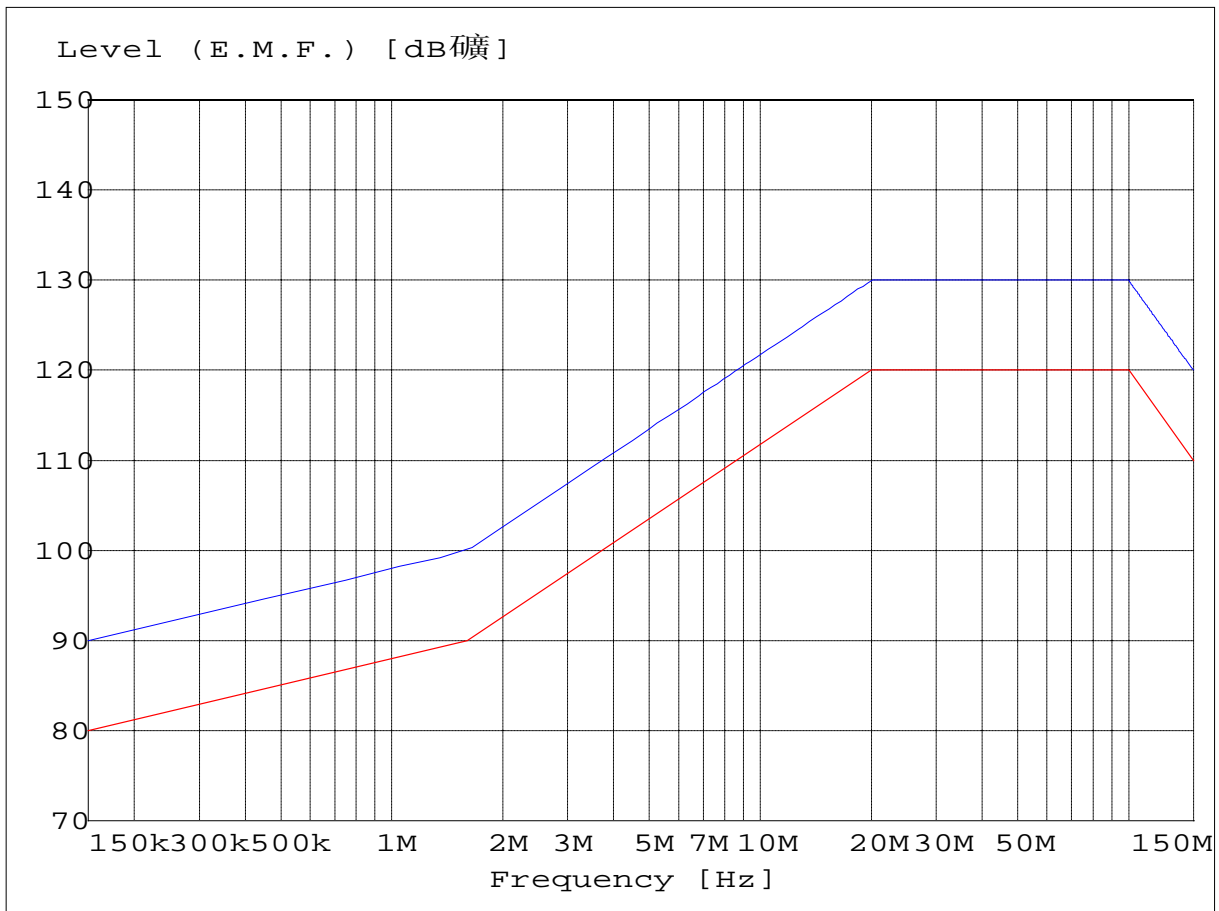
Operating Mode: AUX

S/N: 75.6 dB

Frequency: -

AF Level: 485.2 mV

Interf. Signal: INSERT, 101106-00047-001, 11/10/2006, 11:54:15AM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: REC OUT R

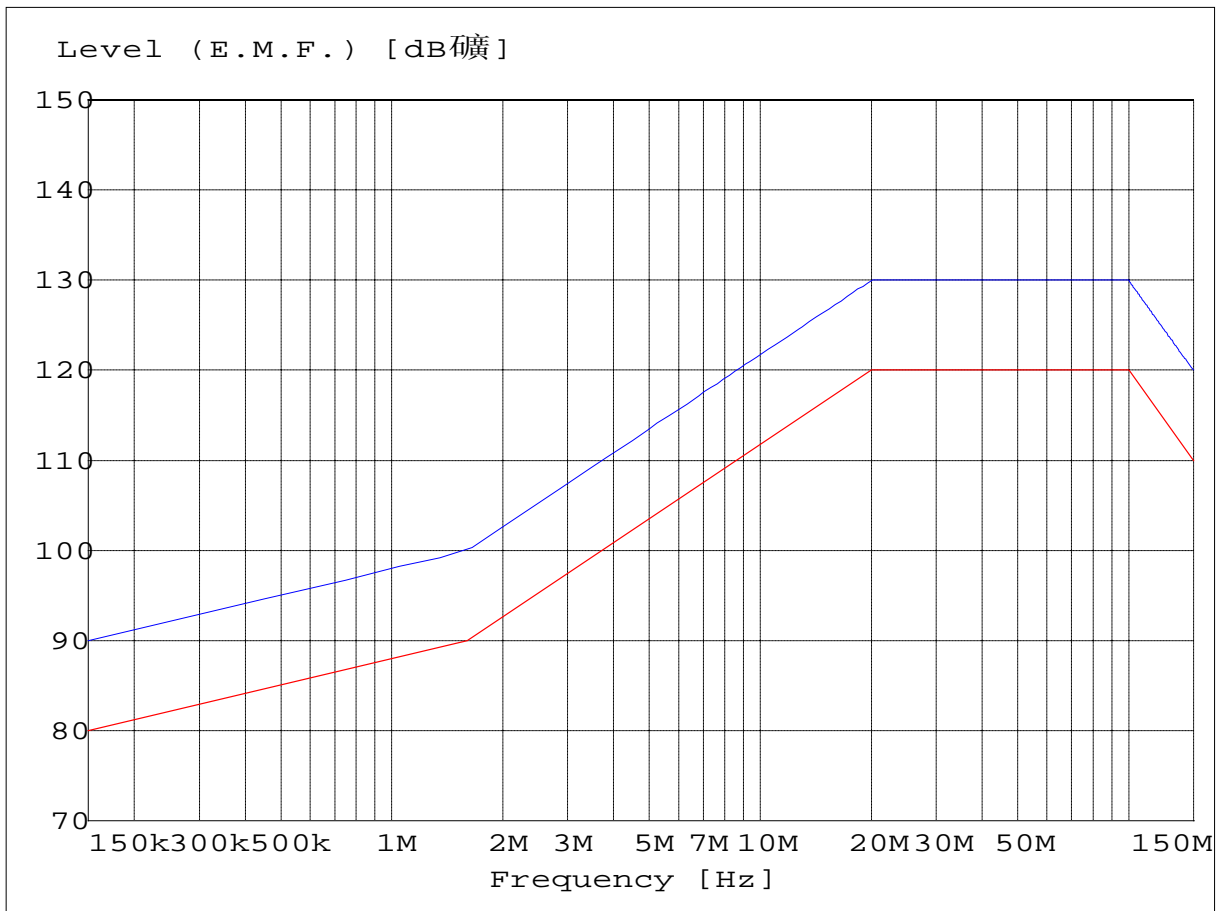
Operating Mode: AUX

S/N: 49.9 dB

Frequency: -

AF Level: 412.2 mV

Interf. Signal: TAPE IN R, 061106-00040-001, 11/6/2006, 5:16:17PM





Test Mode: Amplifier -

Monitor: Audio Out CONTRCL R

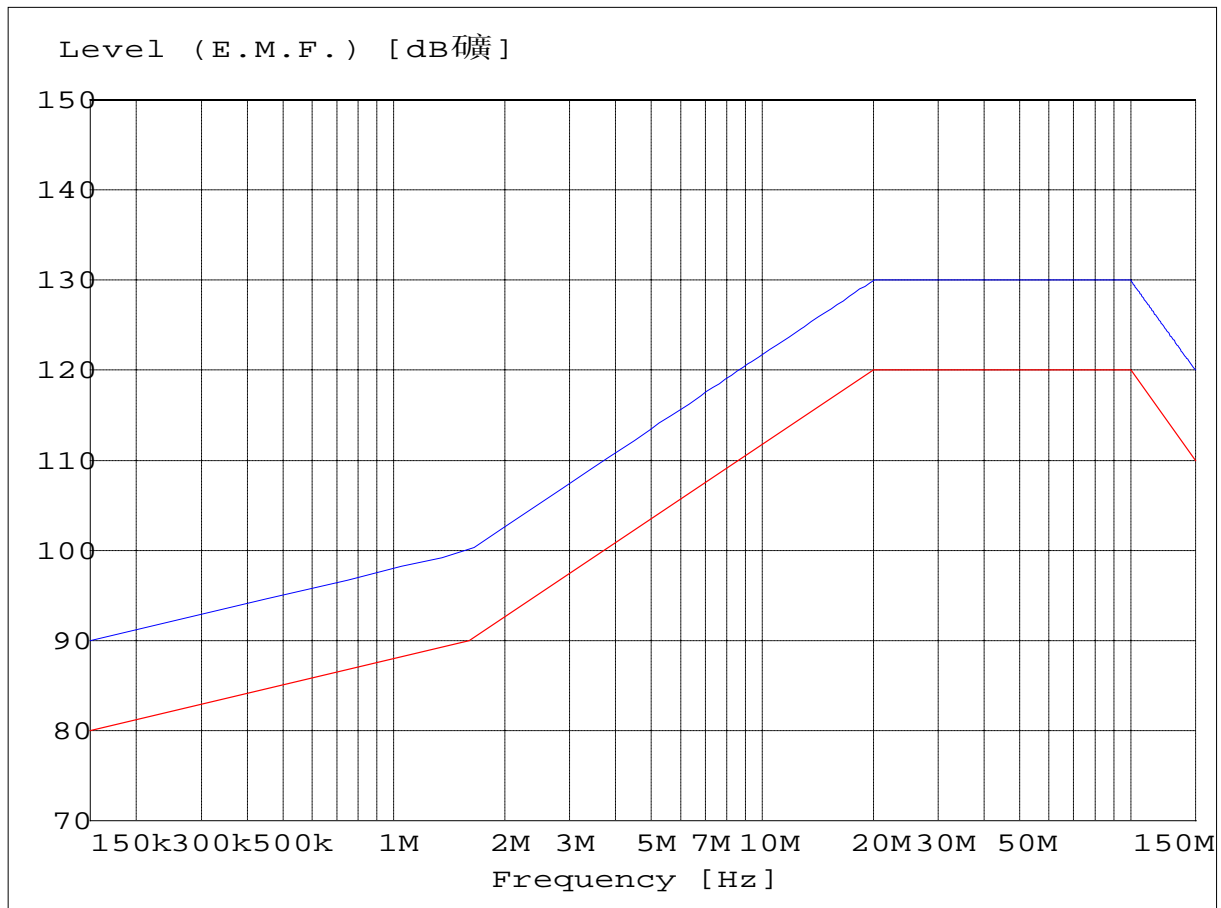
Operating Mode: AUX

S/N: 67.9 dB

Frequency: -

AF Level: 444.0 mV

Interf. Signal: TAPE IN R, 061106-00040-002, 11/6/2006, 5:21:08PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Audio Out MAIN OUT R

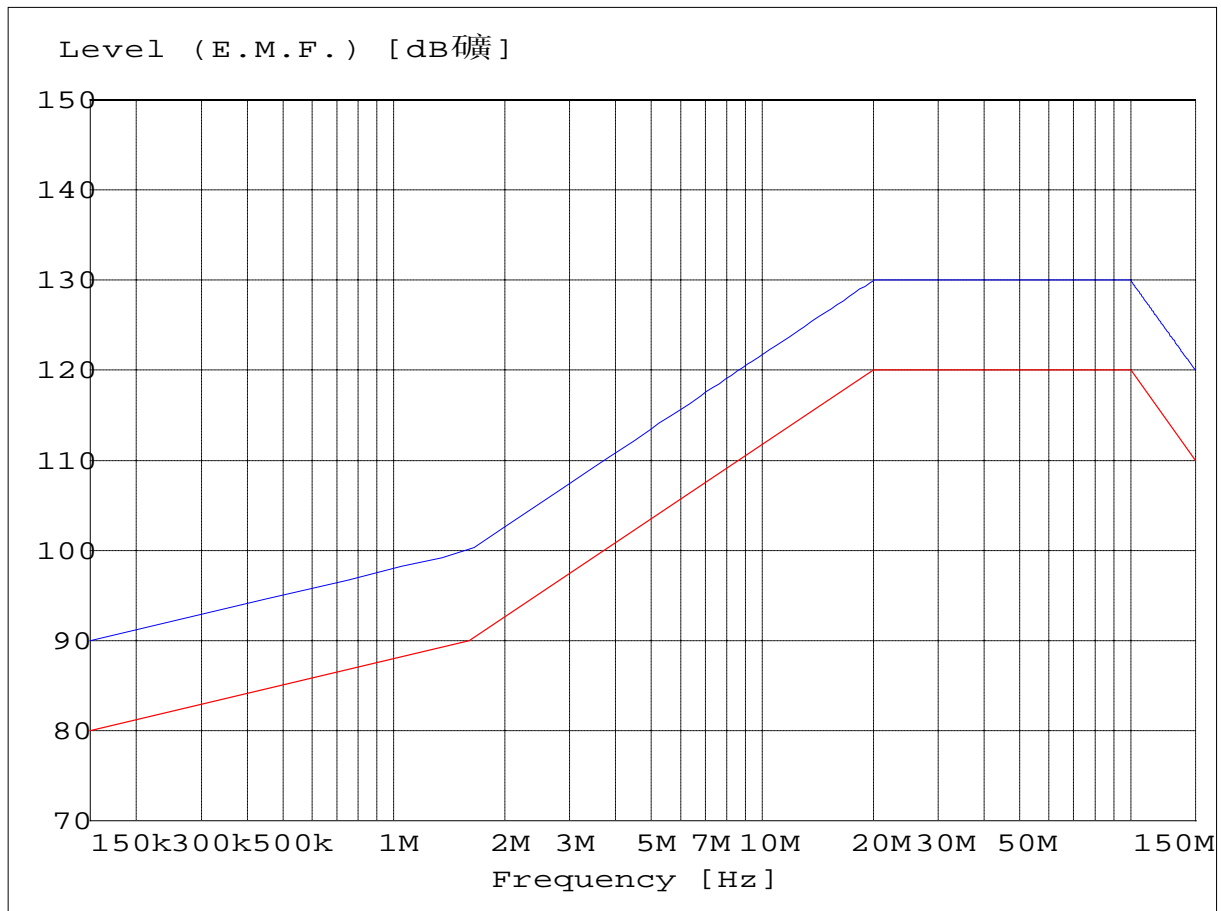
Operating Mode: AUX

S/N: 67.3 dB

Frequency: -

AF Level: 426.4 mV

Interf. Signal: TAPE IN R, 061106-00040-003, 11/6/2006, 5:25:40PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: REC OUT L

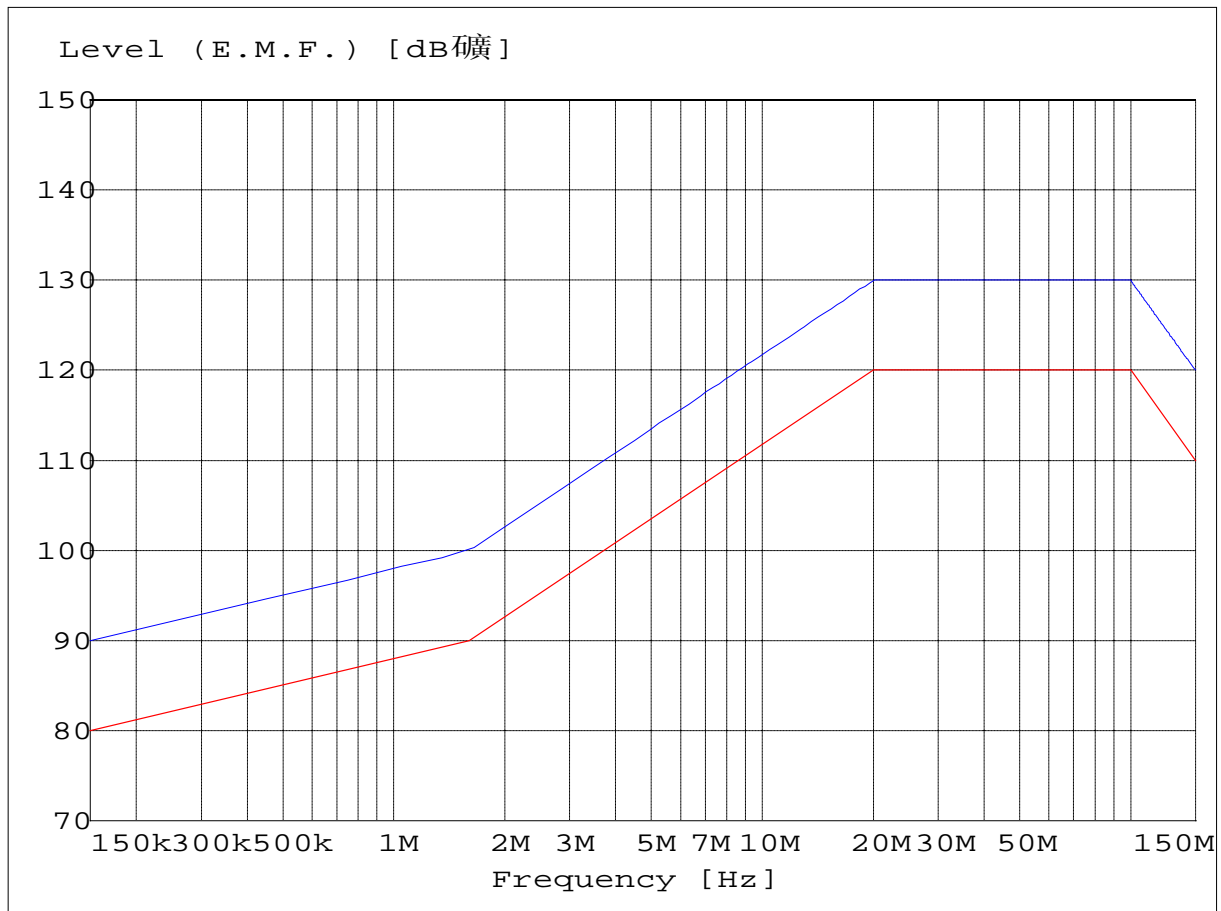
Operating Mode: AUX

S/N: 50.2 dB

Frequency: -

AF Level: 431.1 mV

Interf. Signal: TAPE IN L, 061106-00039-001, 11/6/2006, 5:10:12PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Audio Out MAIN OUT L

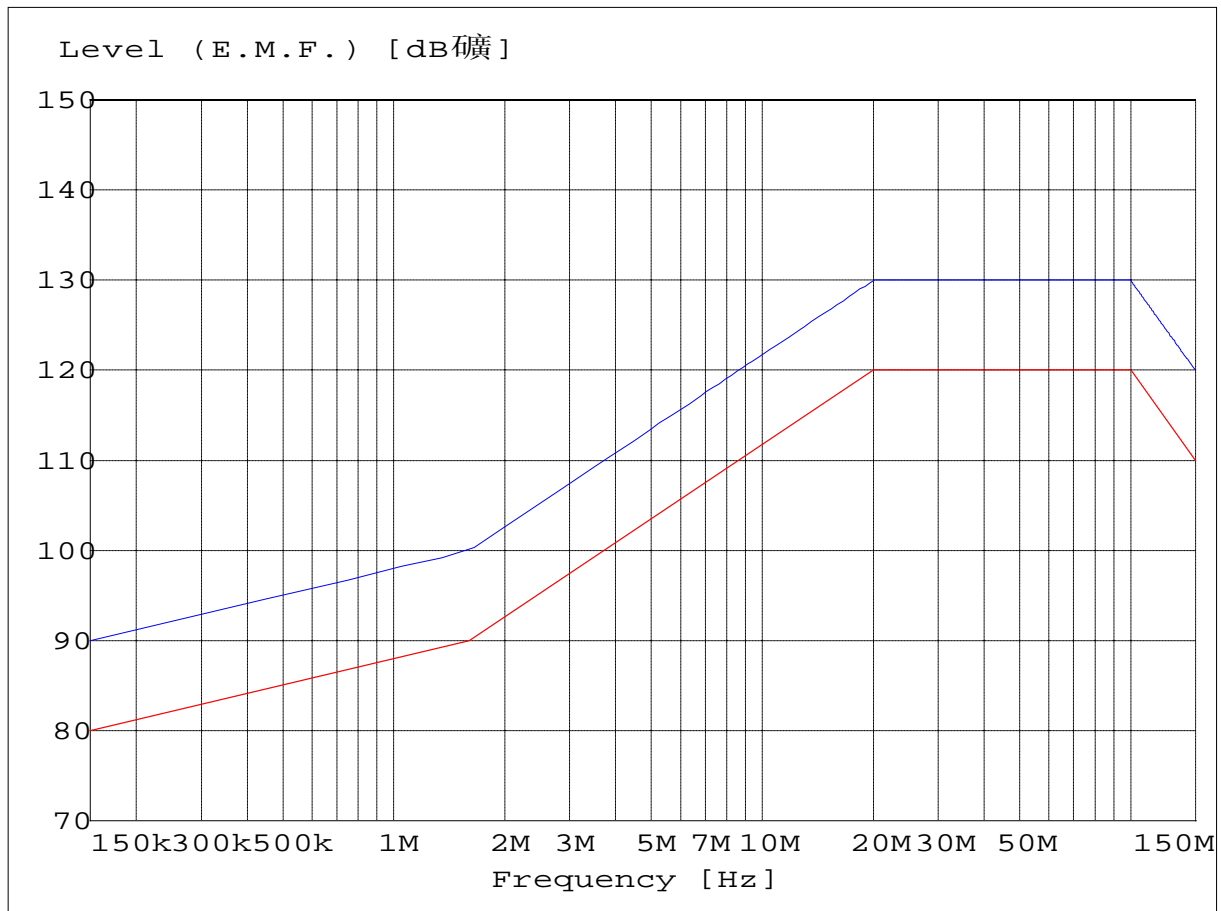
Operating Mode: AUX

S/N: 68.4 dB

Frequency: -

AF Level: 437.7 mV

Interf. Signal: TAPE IN L, 061106-00038-001, 11/6/2006, 4:59:09PM





Test Mode: Amplifier -

Monitor: Audio Out CONTRCL L

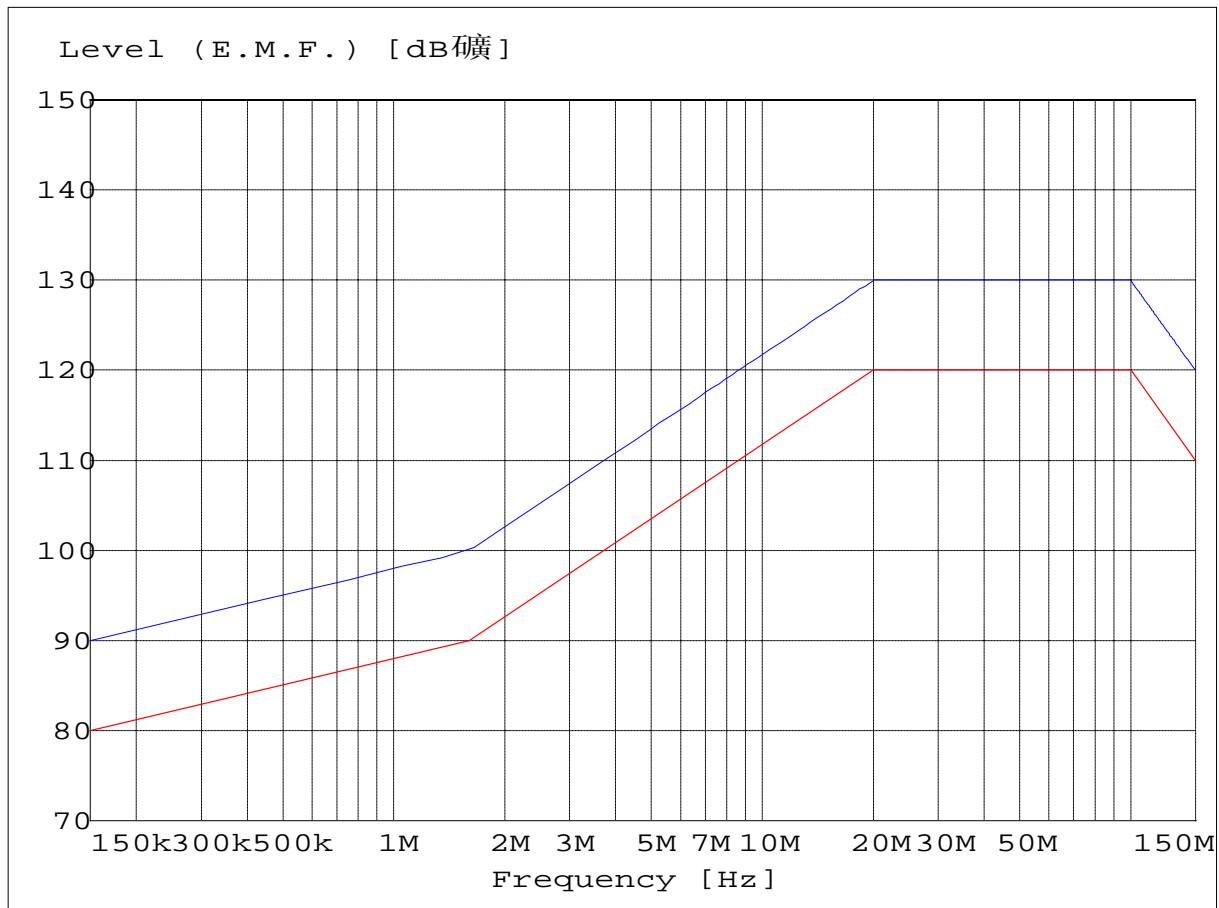
Operating Mode: AUX

S/N: 68.3 dB

Frequency: -

AF Level: 431.5 mV

Interf. Signal: TAPE IN L, 061106-00038-002, 11/6/2006, 5:03:40PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Audio Out PHONE

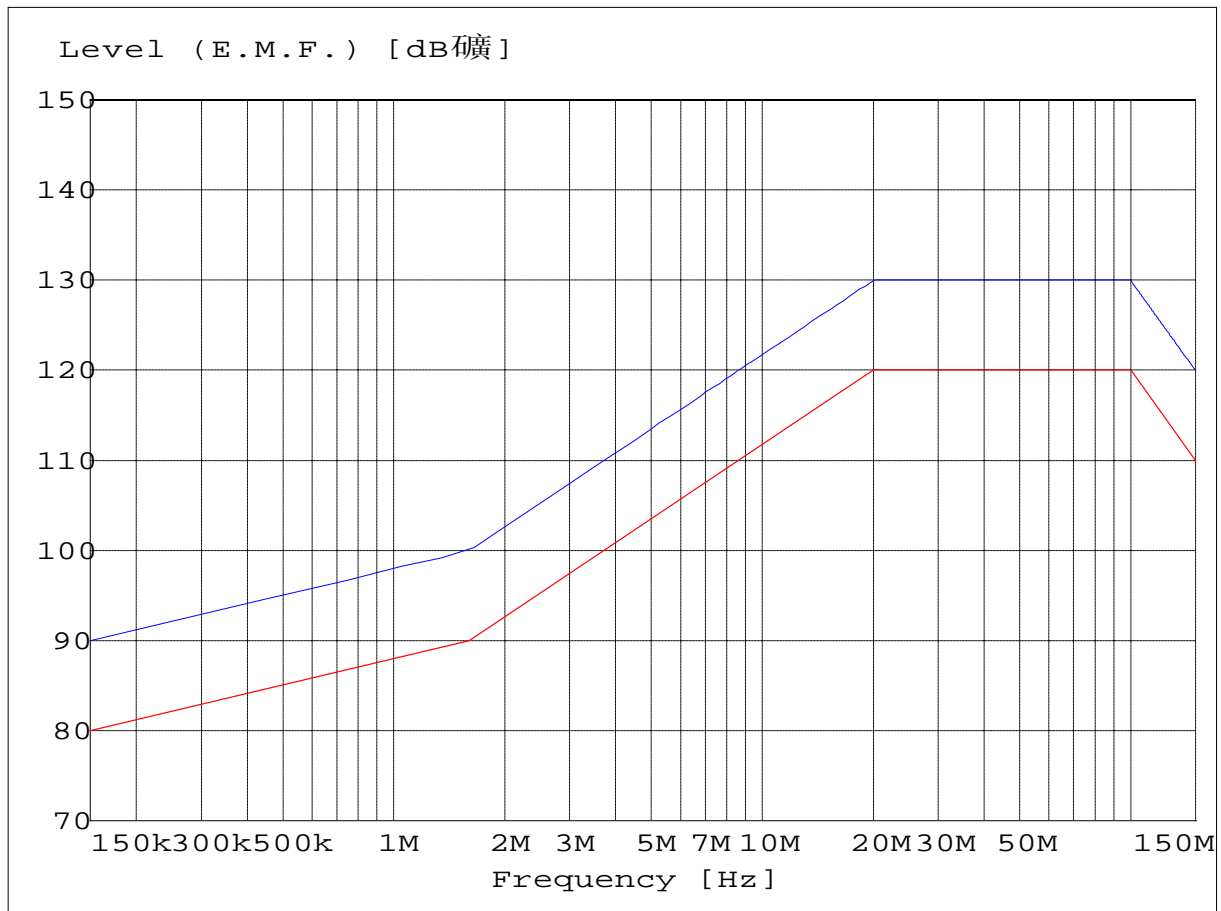
Operating Mode: AUX

S/N: 68.5 dB

Frequency: -

AF Level: 434.6 mV

Interf. Signal: TAPE IN L, 061106-00037-001, 11/6/2006, 4:53:15PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Audio Out CONTRCL R

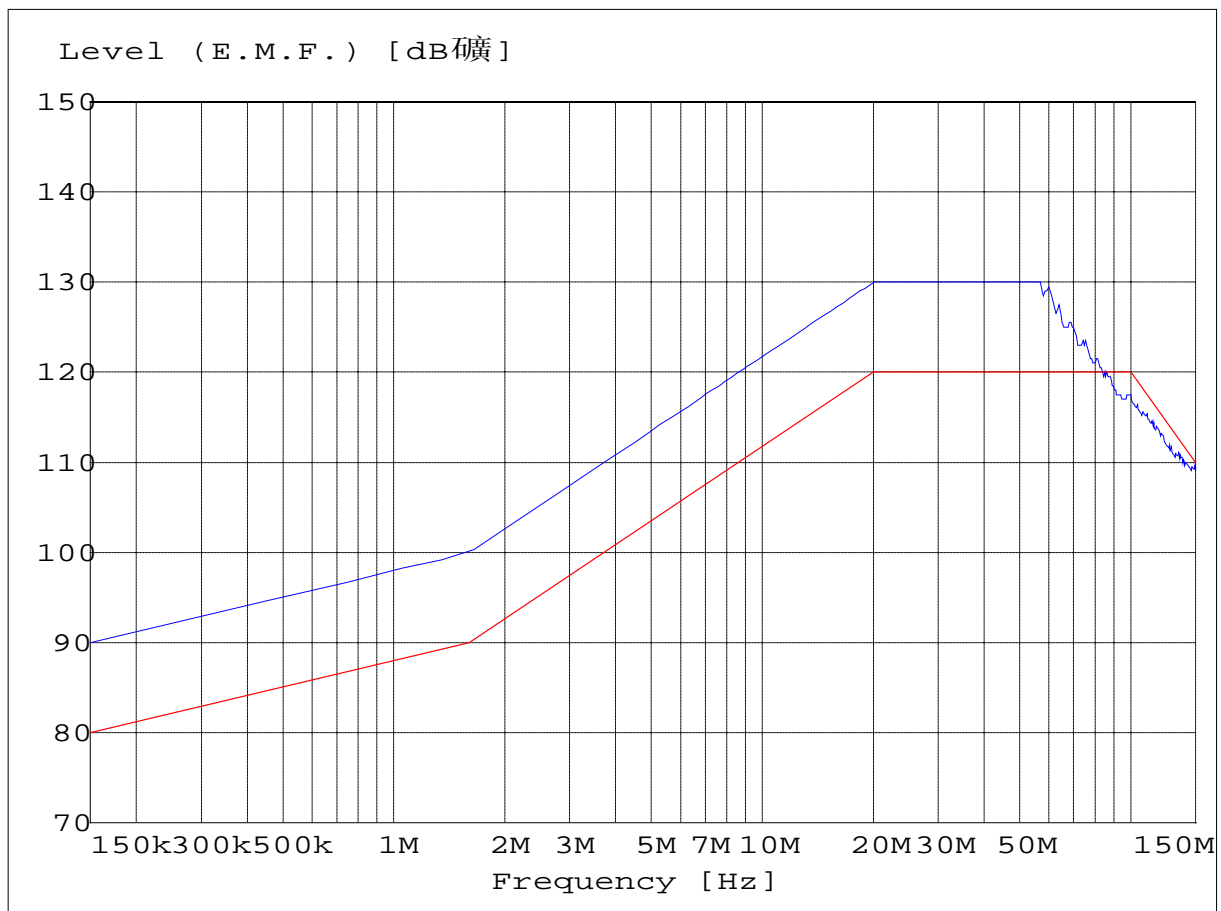
Operating Mode: AUX

S/N: 65.2 dB

Frequency: -

AF Level: 455.4 mV

Interf. Signal: LINE 8 R 7/8, 061106-00036-001, 11/6/2006, 3:59:42PM





Test Mode: Amplifier -

Monitor: Audio Out MAIN OUT R

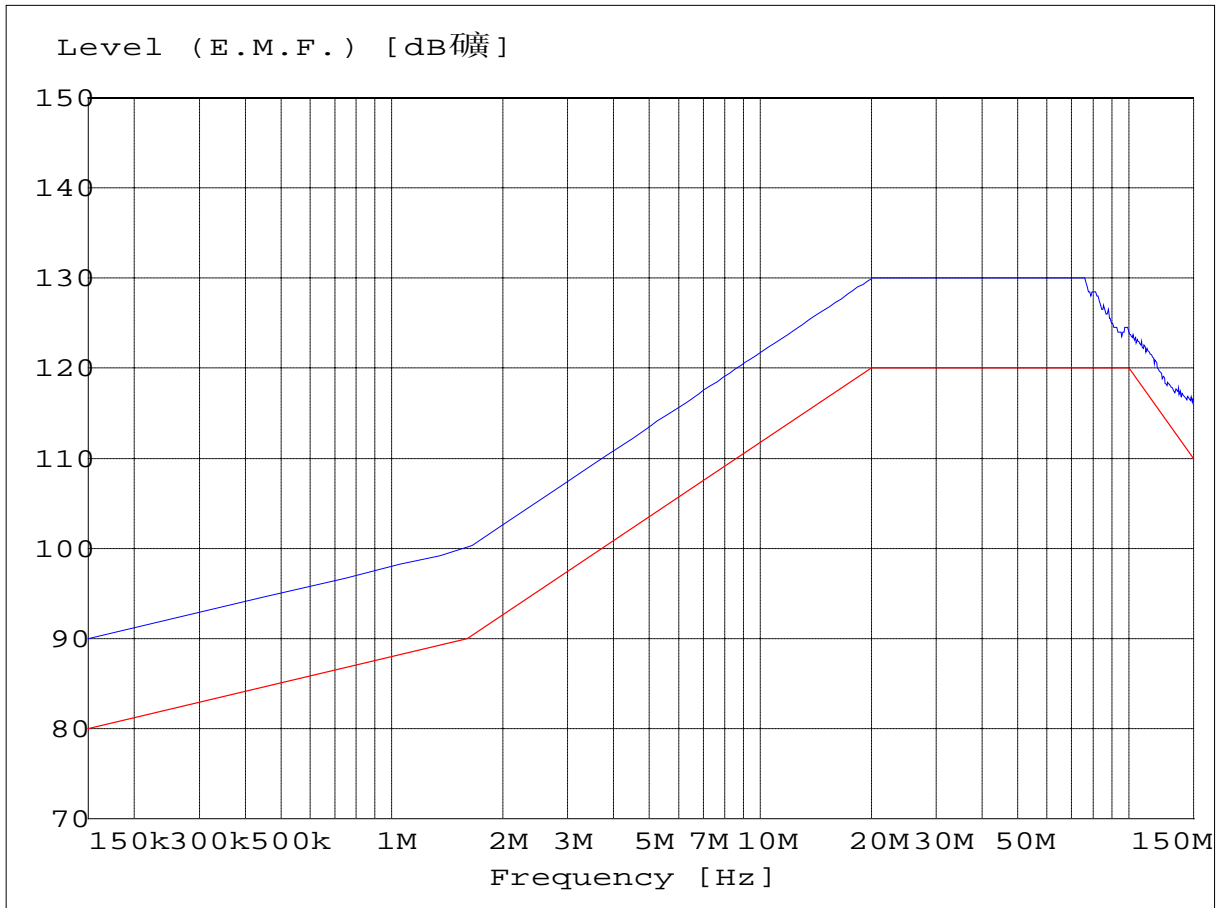
Operating Mode: AUX

S/N: 70.1 dB

Frequency: -

AF Level: 437.3 mV

Interf. Signal: LINE 8 R 7/8, 061106-00036-002, 11/6/2006, 4:05:48PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: AUDIO OUT EFX

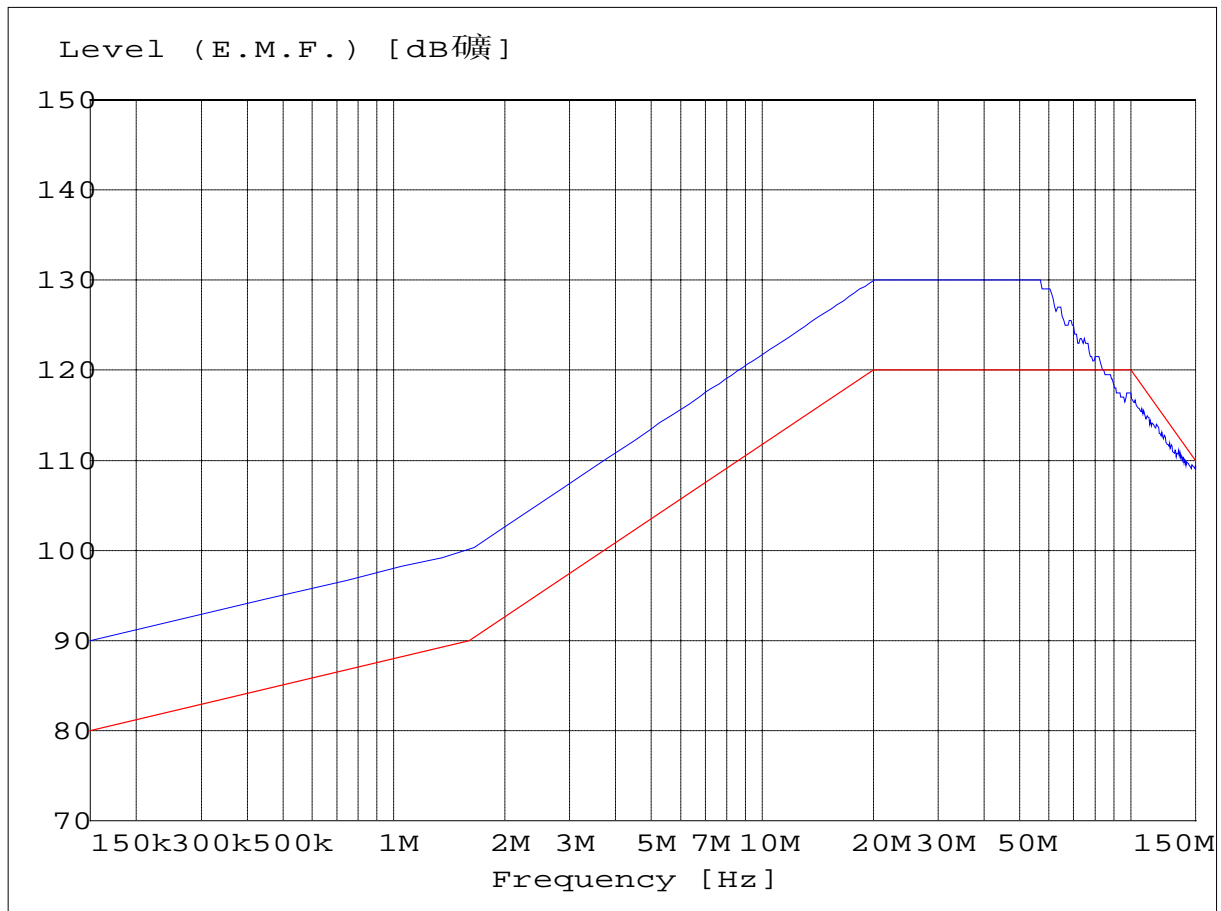
Operating Mode: AUX

S/N: 65.7 dB

Frequency: -

AF Level: 454.9 mV

Interf. Signal: LINE 8 R 7/8, 061106-00036-003, 11/6/2006, 4:36:55PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: AUDIO OUT EFX

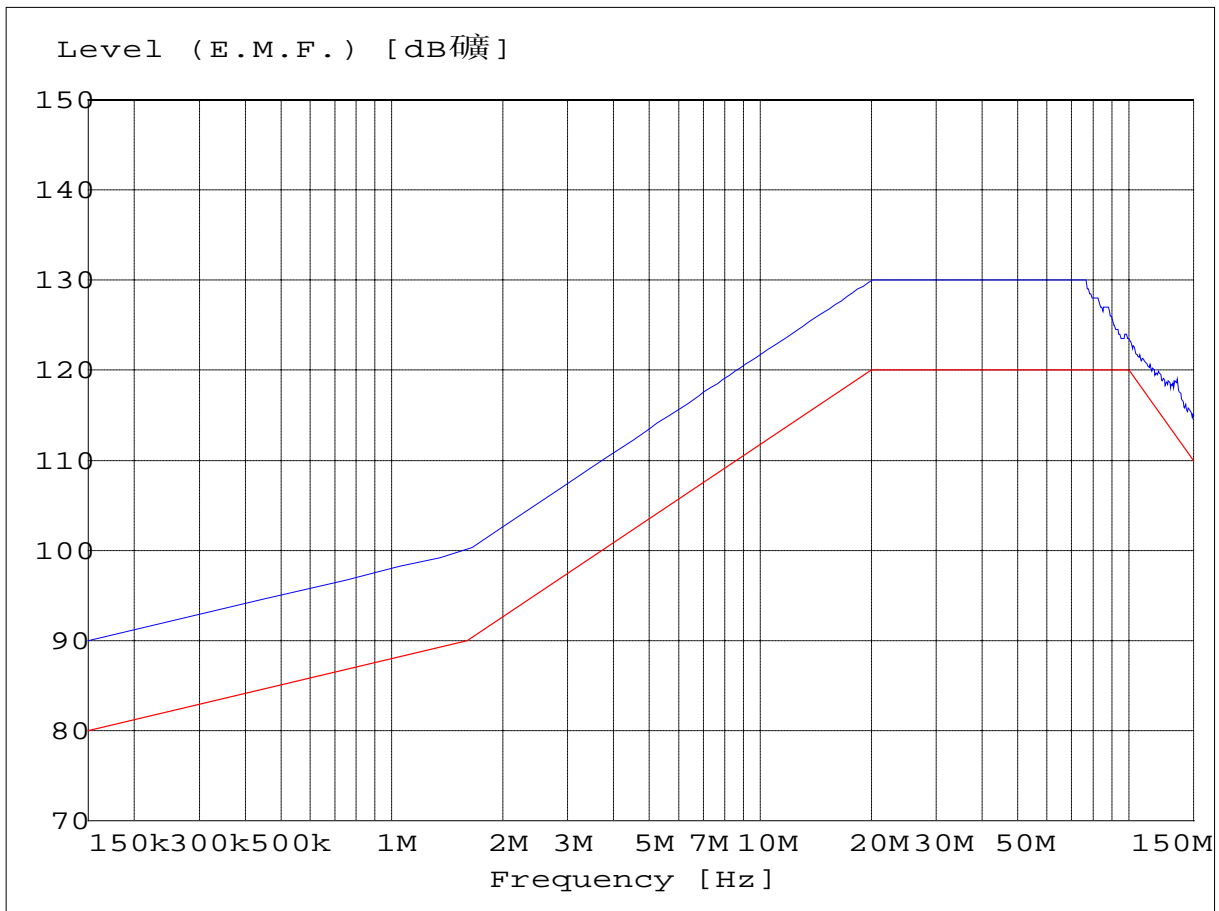
Operating Mode: AUX

S/N: 62.9 dB

Frequency: -

AF Level: 430.8 mV

Interf. Signal: LINE 7 L 7/8, 061106-00035-001, 11/6/2006, 3:37:06PM





Test Mode: Amplifier -

Monitor: Audio Out CONTRCL L

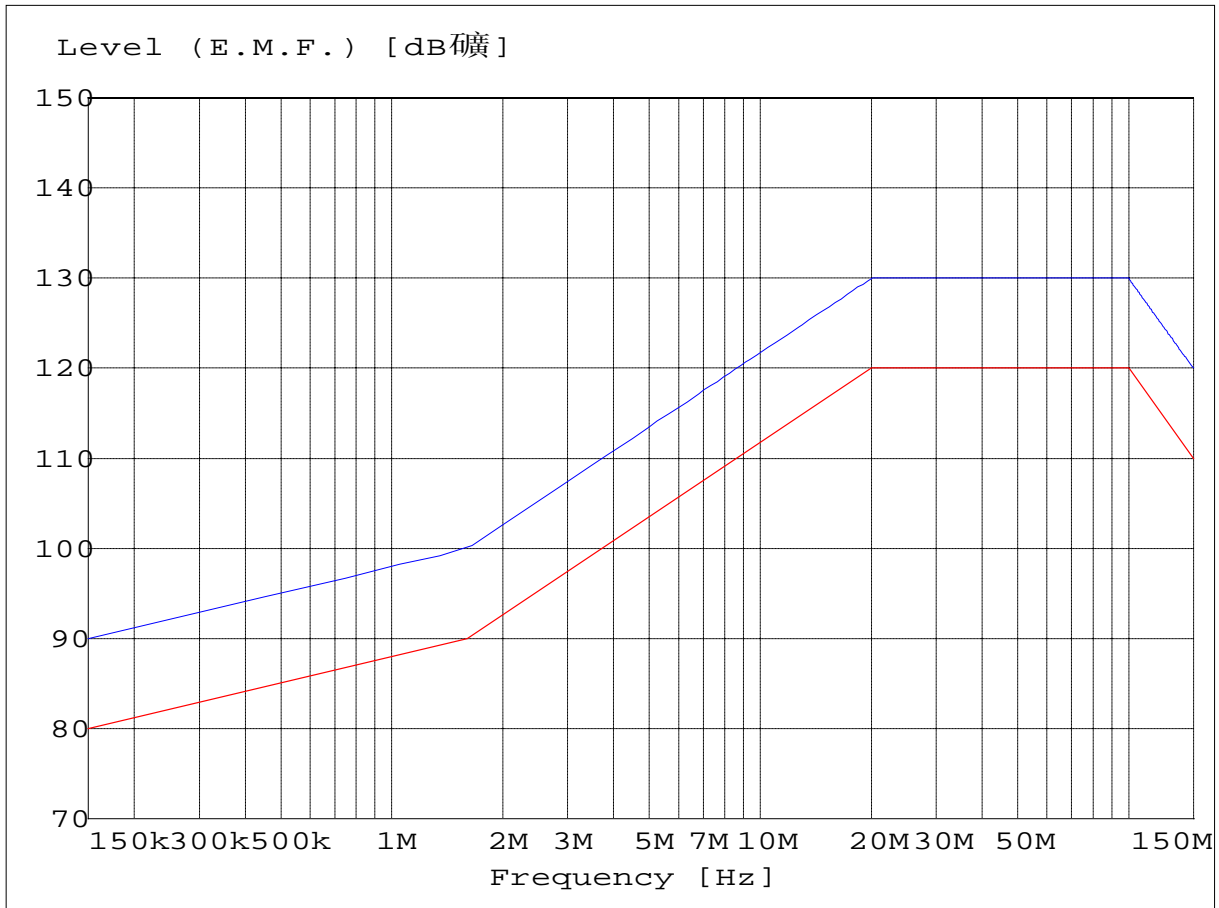
Operating Mode: AUX

S/N: 68.7 dB

Frequency: -

AF Level: 453.8 mV

Interf. Signal: LINE 7 L 7/8, 061106-00035-002, 11/6/2006, 3:41:59PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Audio Out MAIN OUT L

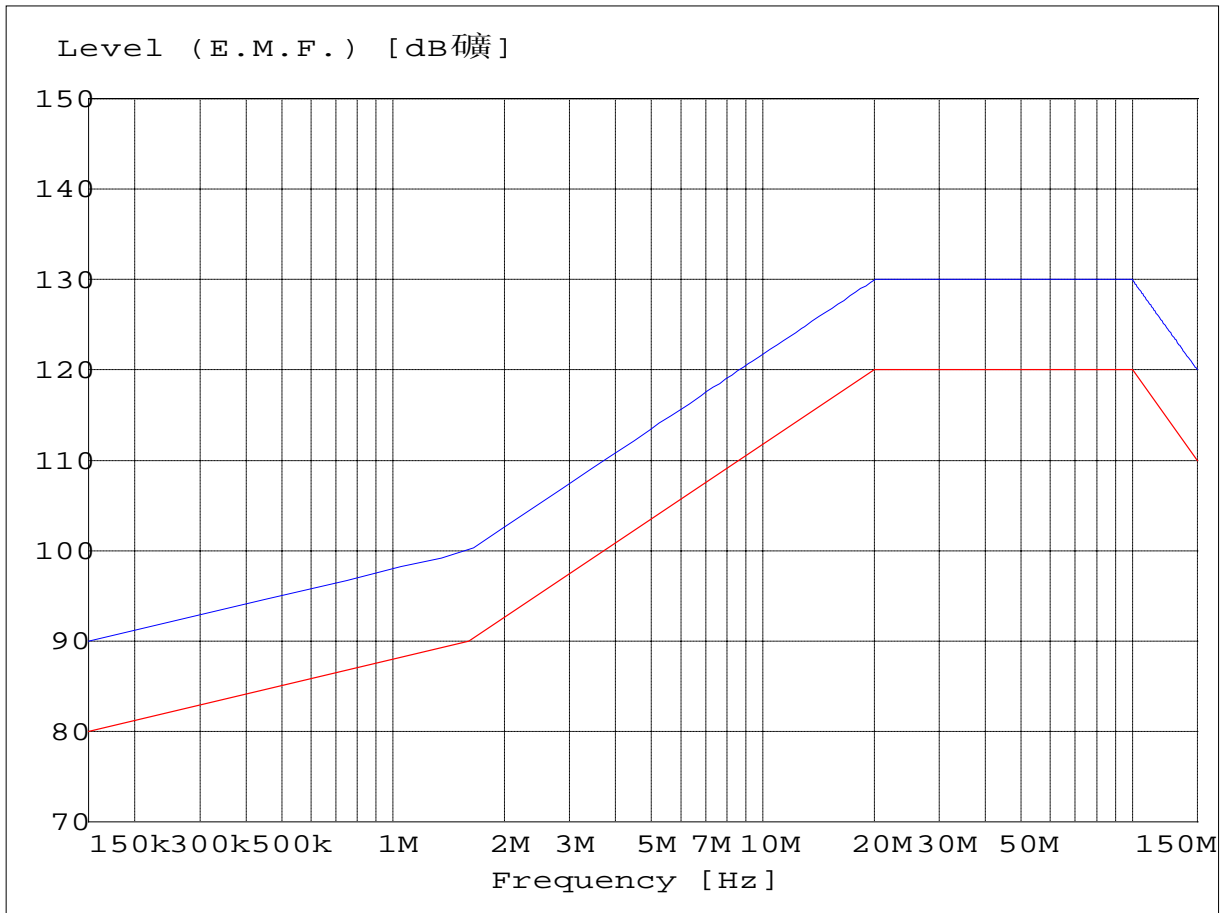
Operating Mode: AUX

S/N: 68.5 dB

Frequency: -

AF Level: 434.8 mV

Interf. Signal: LINE 7 L 7/8, 061106-00035-003, 11/6/2006, 3:46:32PM





Test Mode: Amplifier -

Monitor: Headphones

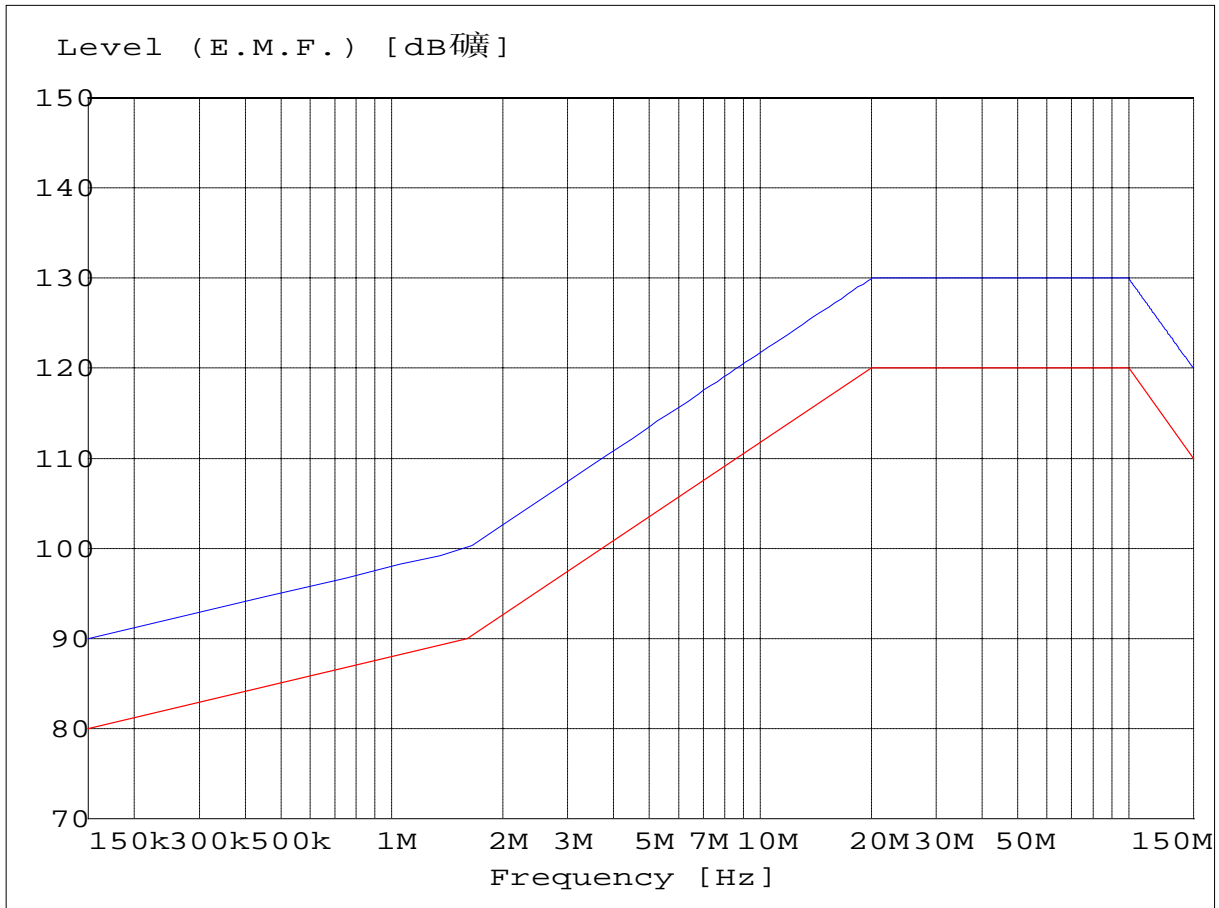
Operating Mode: AUX

S/N: 69.0 dB

Frequency: -

AF Level: 452.1 mV

Interf. Signal: LINE 7 L 7/8, 061106-00035-004, 11/6/2006, 3:51:21PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: LINE 7 L

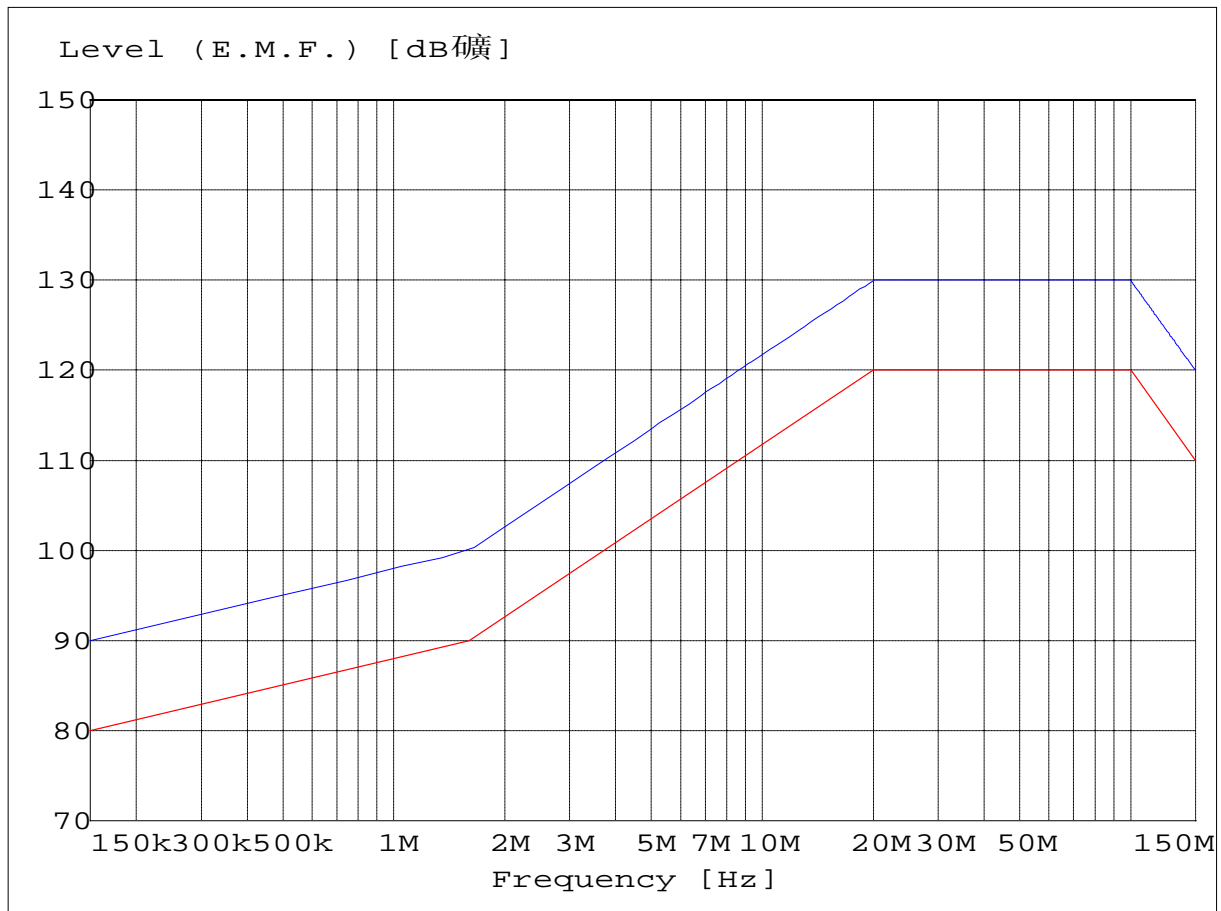
Operating Mode: AUX

S/N: 92.7 dB

Frequency: -

AF Level: 485.9 mV

Interf. Signal: LINE 7 L 7/8, 061106-00034-001, 11/6/2006, 3:25:17PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Audio Out MAIN OUT R

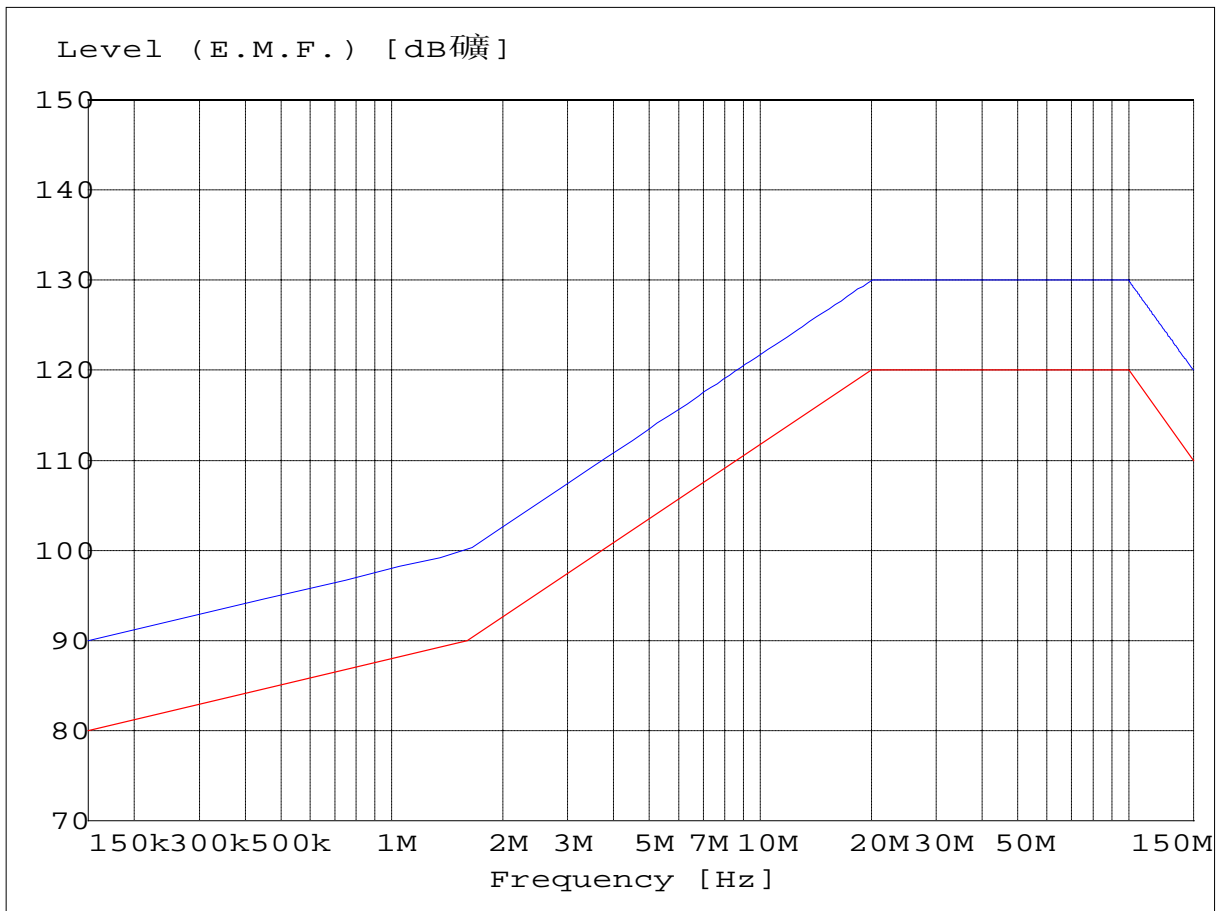
Operating Mode: AUX

S/N: 66.4 dB

Frequency: -

AF Level: 457.5 mV

Interf. Signal: LINE 8 R, 061106-00033-001, 11/6/2006, 3:11:54PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: AUDIO OUT AUX

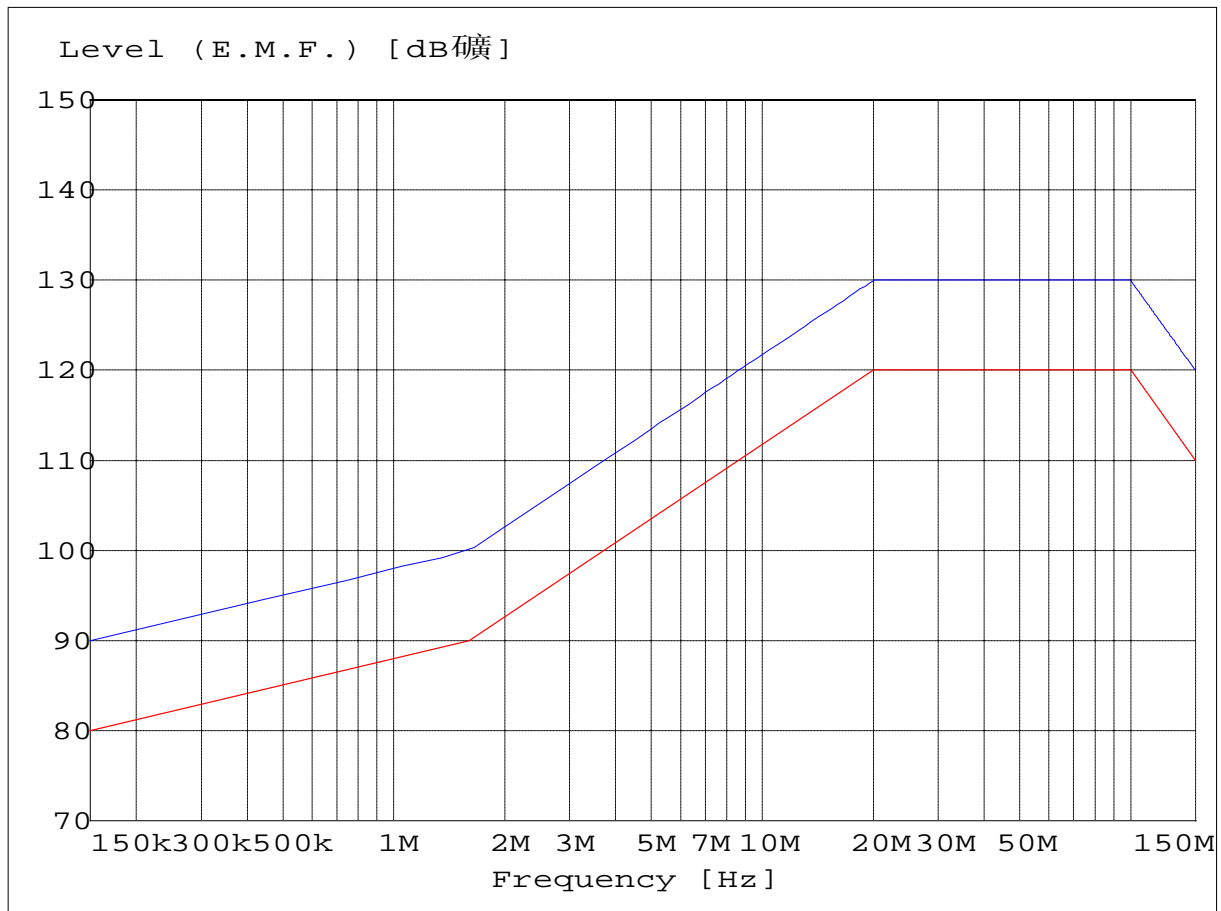
Operating Mode: AUX

S/N: 68.5 dB

Frequency: -

AF Level: 461.9 mV

Interf. Signal: LINE 8 R, 061106-00032-001, 11/6/2006, 2:56:26PM





Test Mode: Amplifier -

Monitor: AUDIO OUT EFX

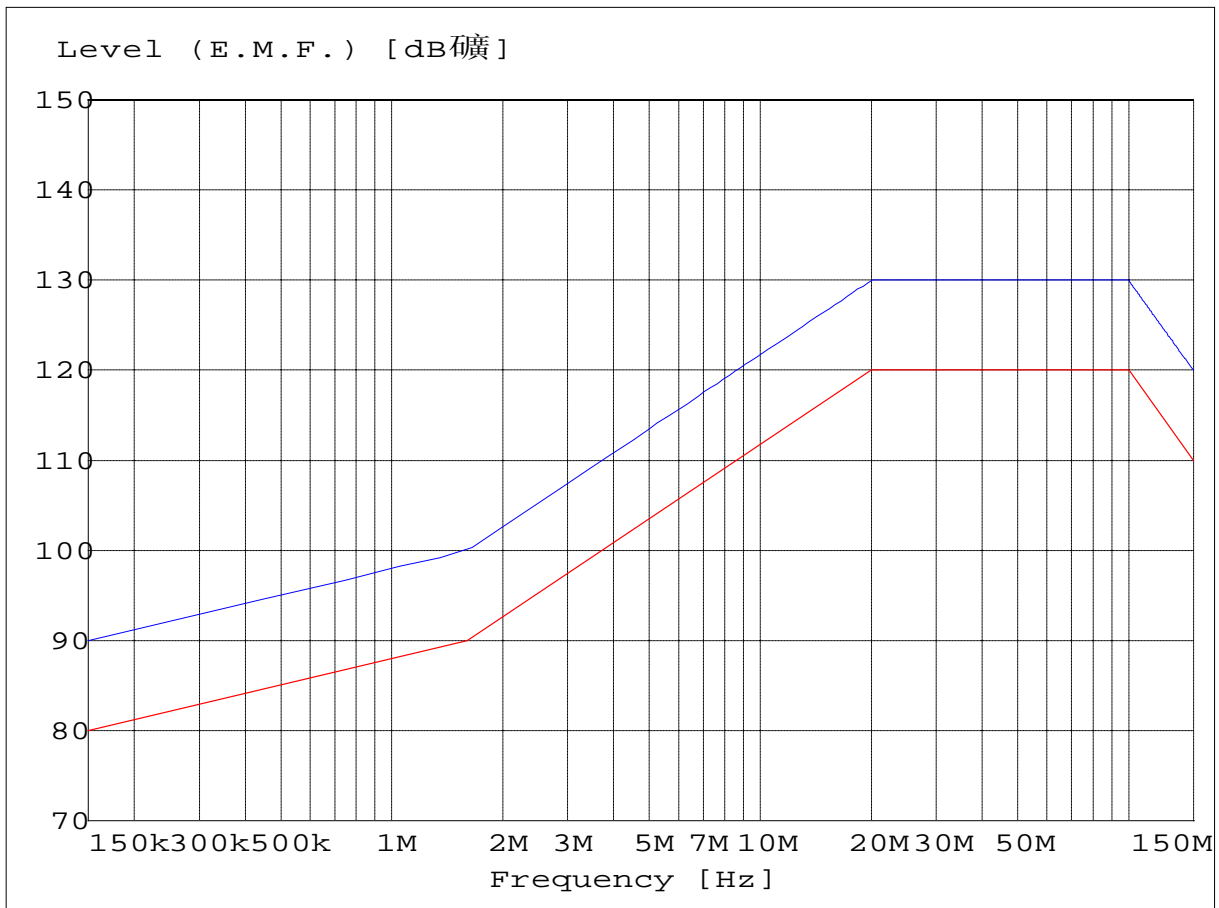
Operating Mode: AUX

S/N: 64.0 dB

Frequency: -

AF Level: 445.7 mV

Interf. Signal: LINE 8 R, 061106-00032-002, 11/6/2006, 3:01:00PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Audio Out CONTRCL R

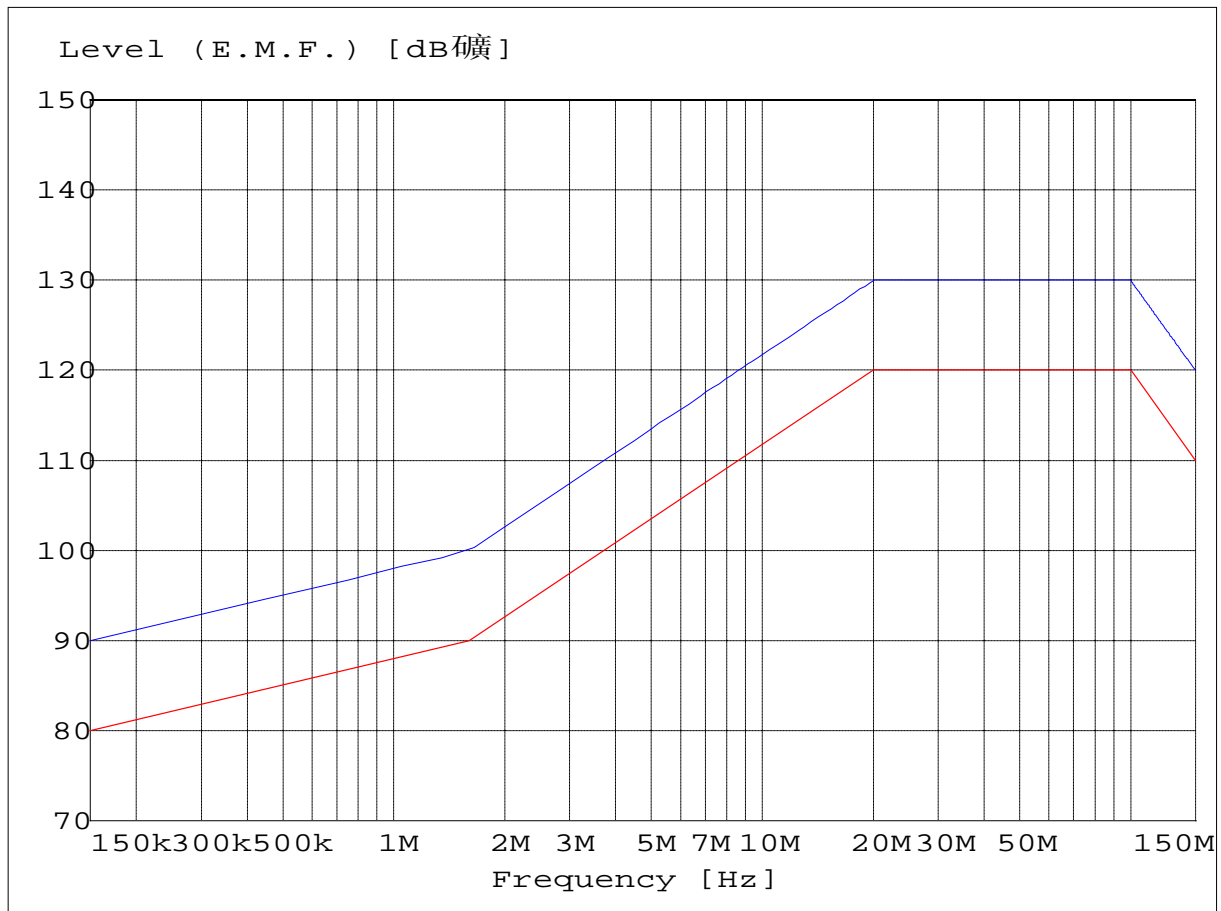
Operating Mode: AUX

S/N: 68.4 dB

Frequency: -

AF Level: 453.0 mV

Interf. Signal: LINE 8 R, 061106-00032-003, 11/6/2006, 3:05:39PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Audio Out MAIN OUT R

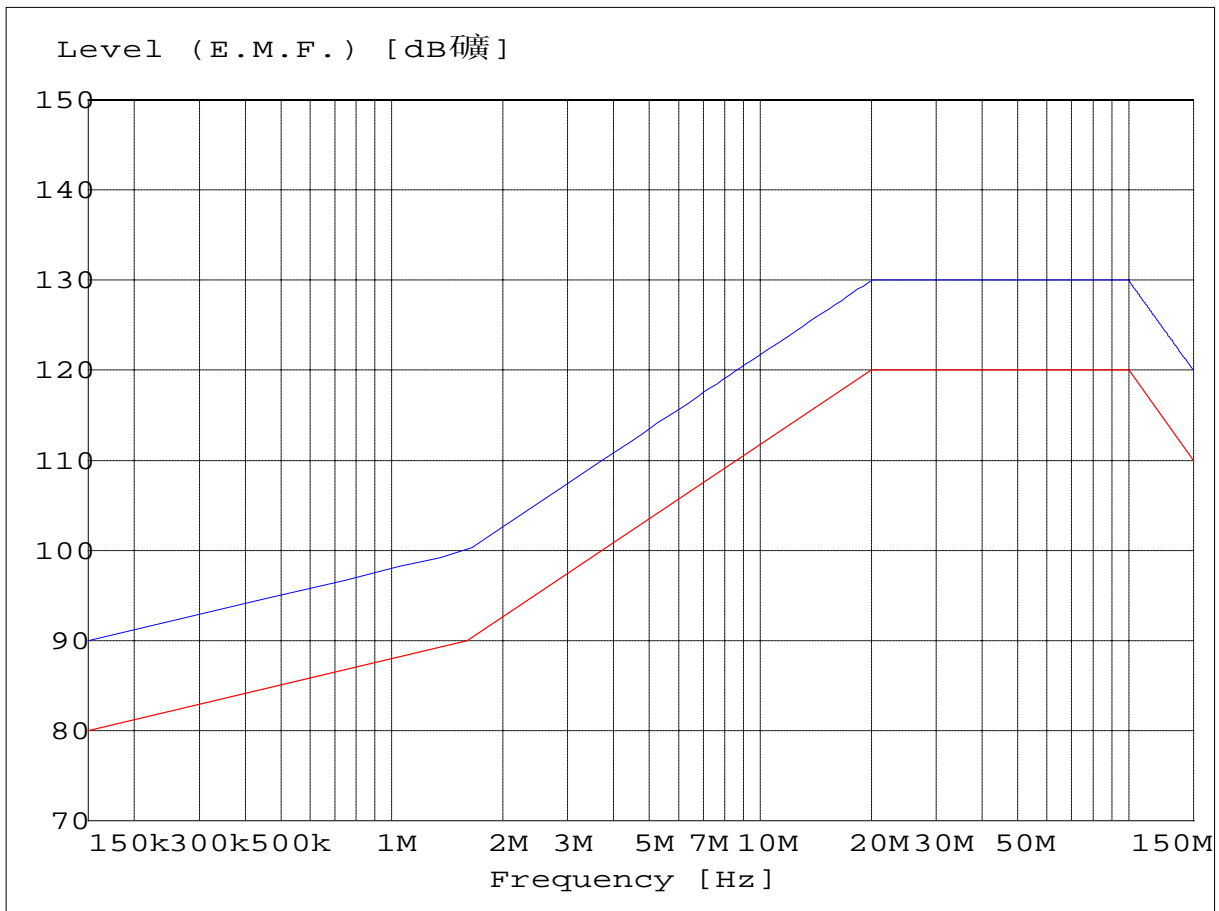
Operating Mode: AUX

S/N: 68.8 dB

Frequency: -

AF Level: 455.9 mV

Interf. Signal: LINE 7 L, 061106-00031-001, 11/6/2006, 2:50:46PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: AUDIO OUT AUX

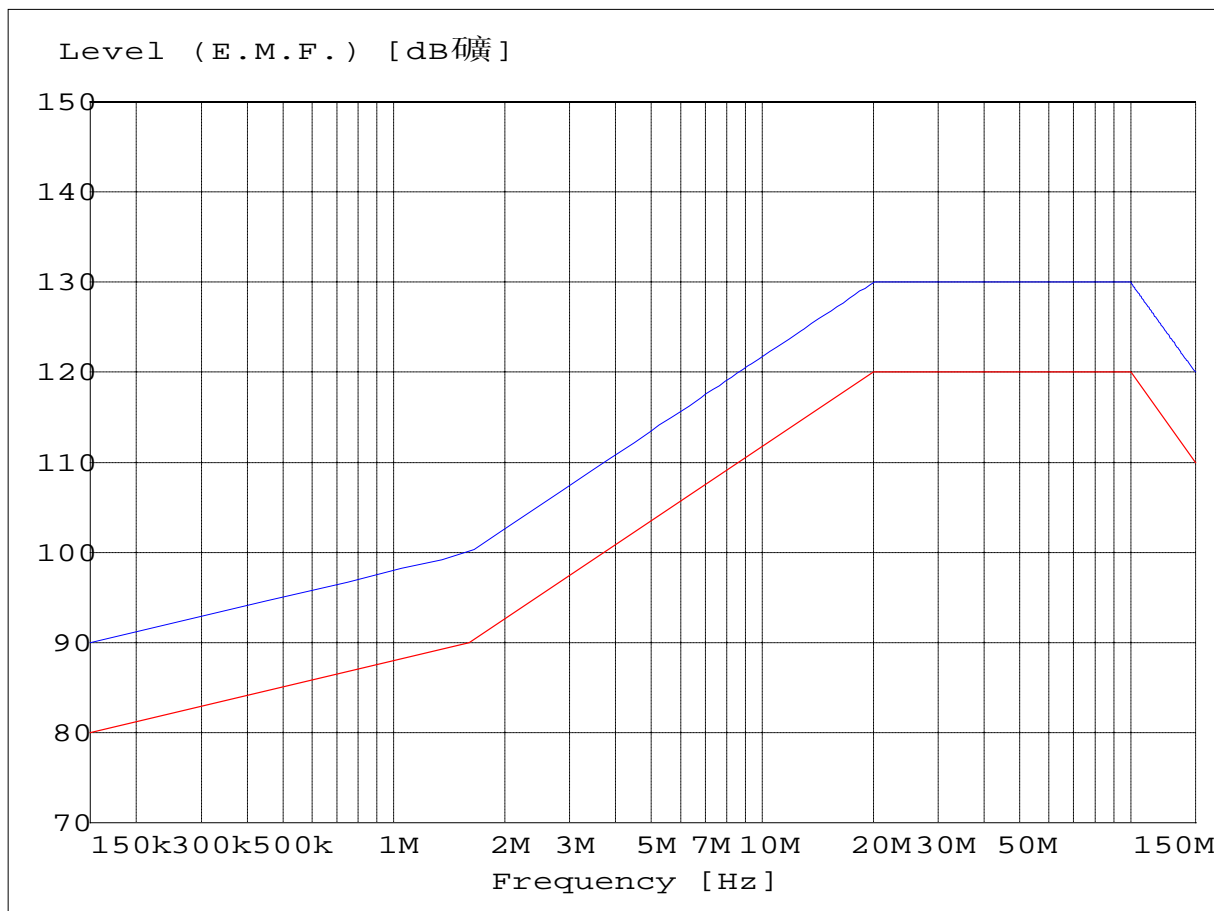
Operating Mode: AUX

S/N: 67.9 dB

Frequency: -

AF Level: 423.5 mV

Interf. Signal: LINE 7 L, 061106-00030-001, 11/6/2006, 2:40:17PM





Test Mode: Amplifier -

Monitor: AUDIO OUT EFX

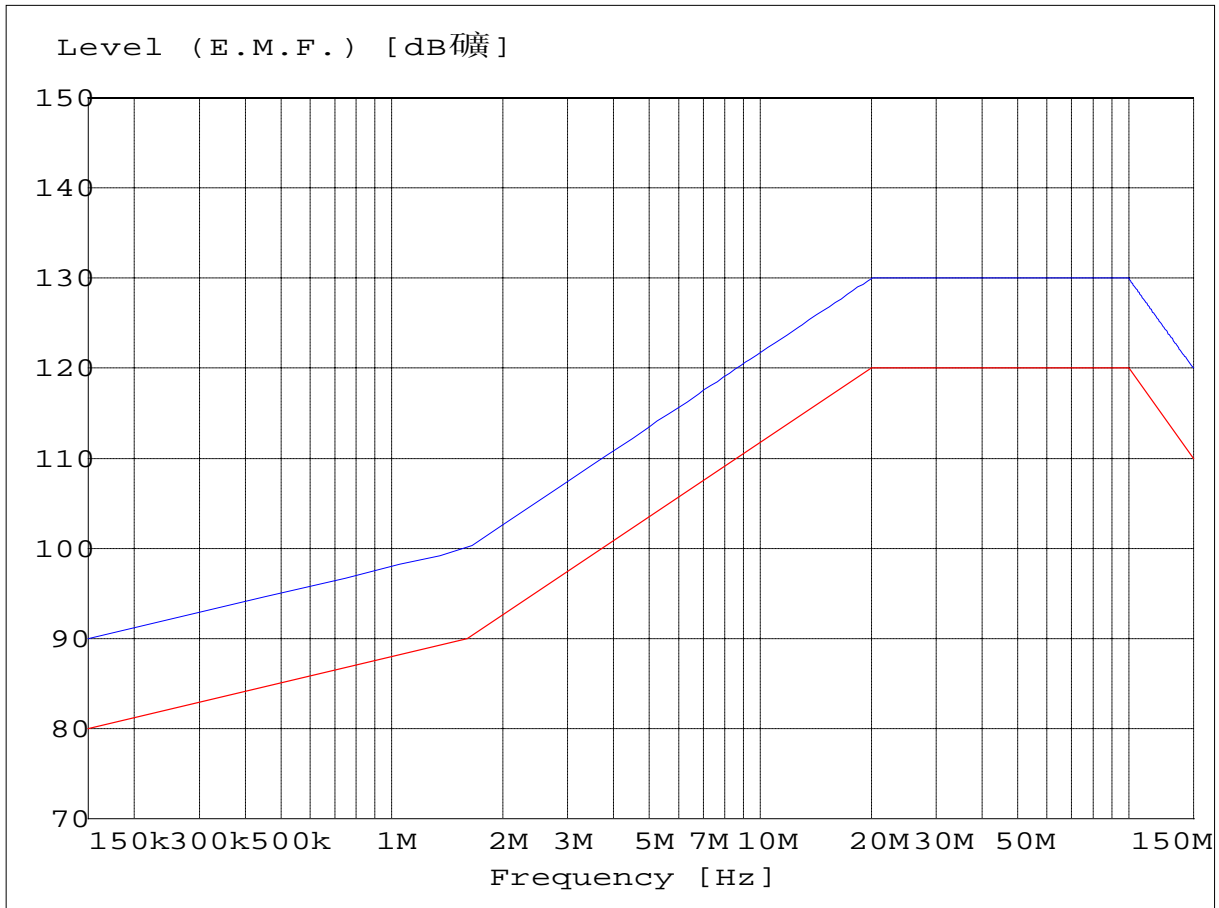
Operating Mode: AUX

S/N: 63.8 dB

Frequency: -

AF Level: 445.2 mV

Interf. Signal: LINE 7 L, 061106-00030-002, 11/6/2006, 2:44:56PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Audio Out PHONE

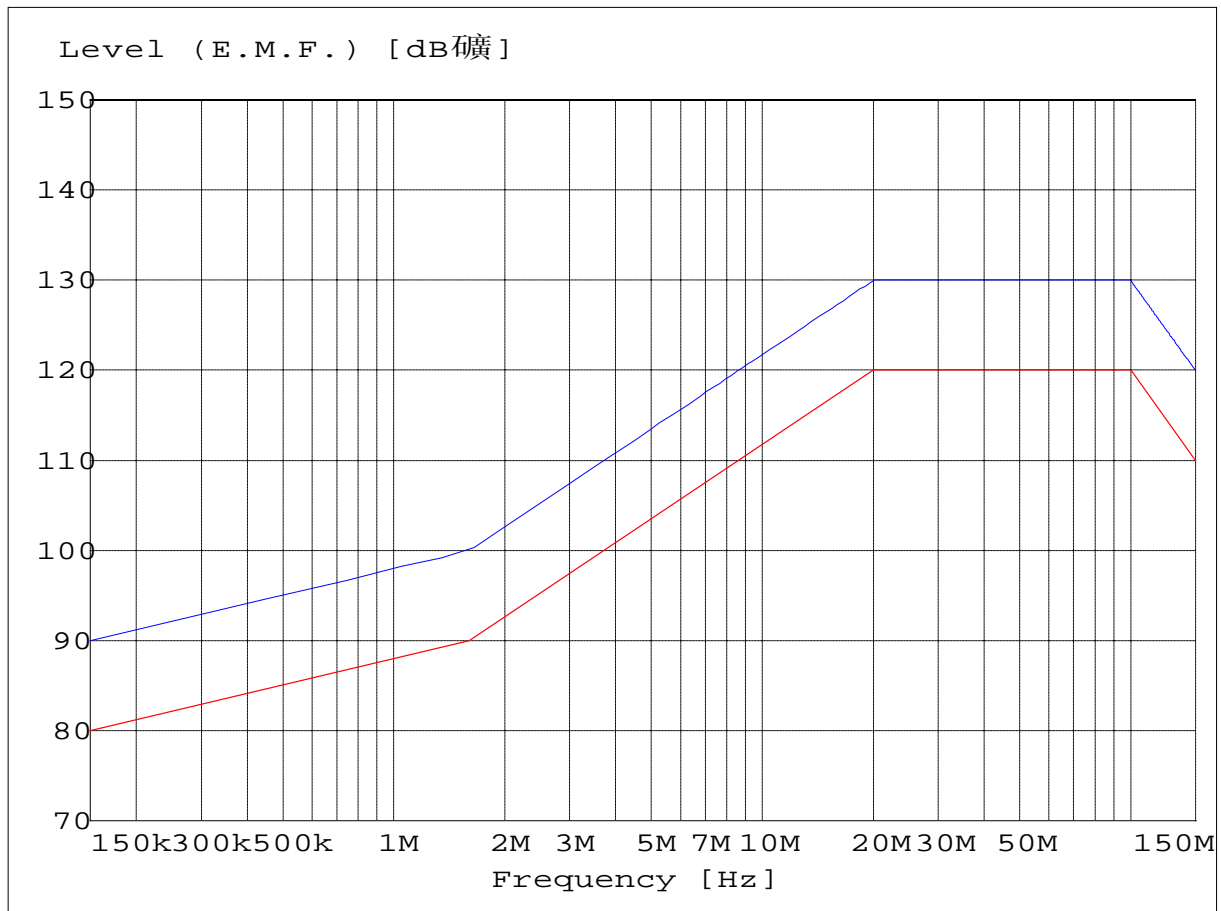
Operating Mode: AUX

S/N: 68.6 dB

Frequency: -

AF Level: 431.3 mV

Interf. Signal: LINE 7 L, 061106-00029-001, 11/6/2006, 2:35:02PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: AUDIO OUT EFX

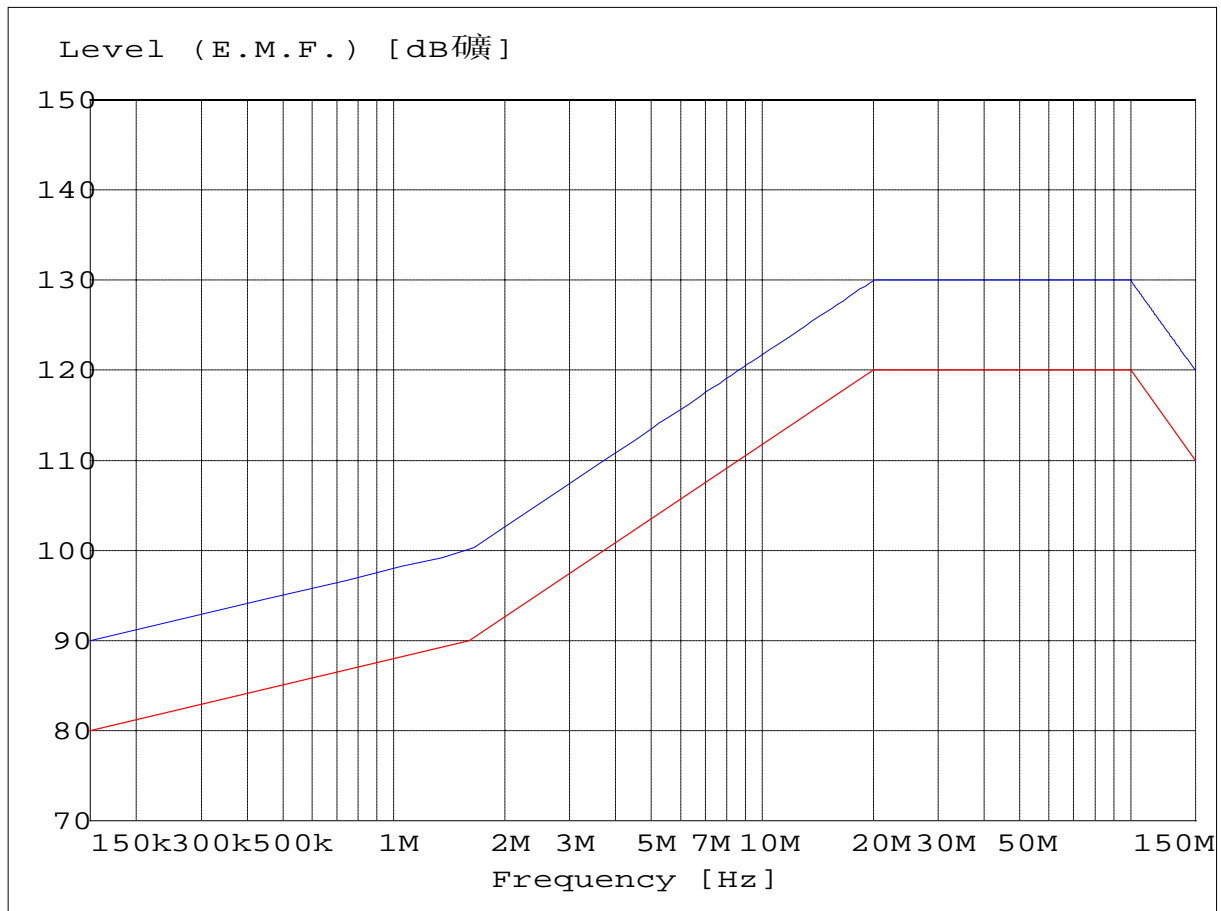
Operating Mode: AUX

S/N: 68.2 dB

Frequency: -

AF Level: 439.8 mV

Interf. Signal: LINE 3 R, 061106-00028-001, 11/6/2006, 2:16:30PM





Test Mode: Amplifier -

Monitor: Audio Out CONTRCL R

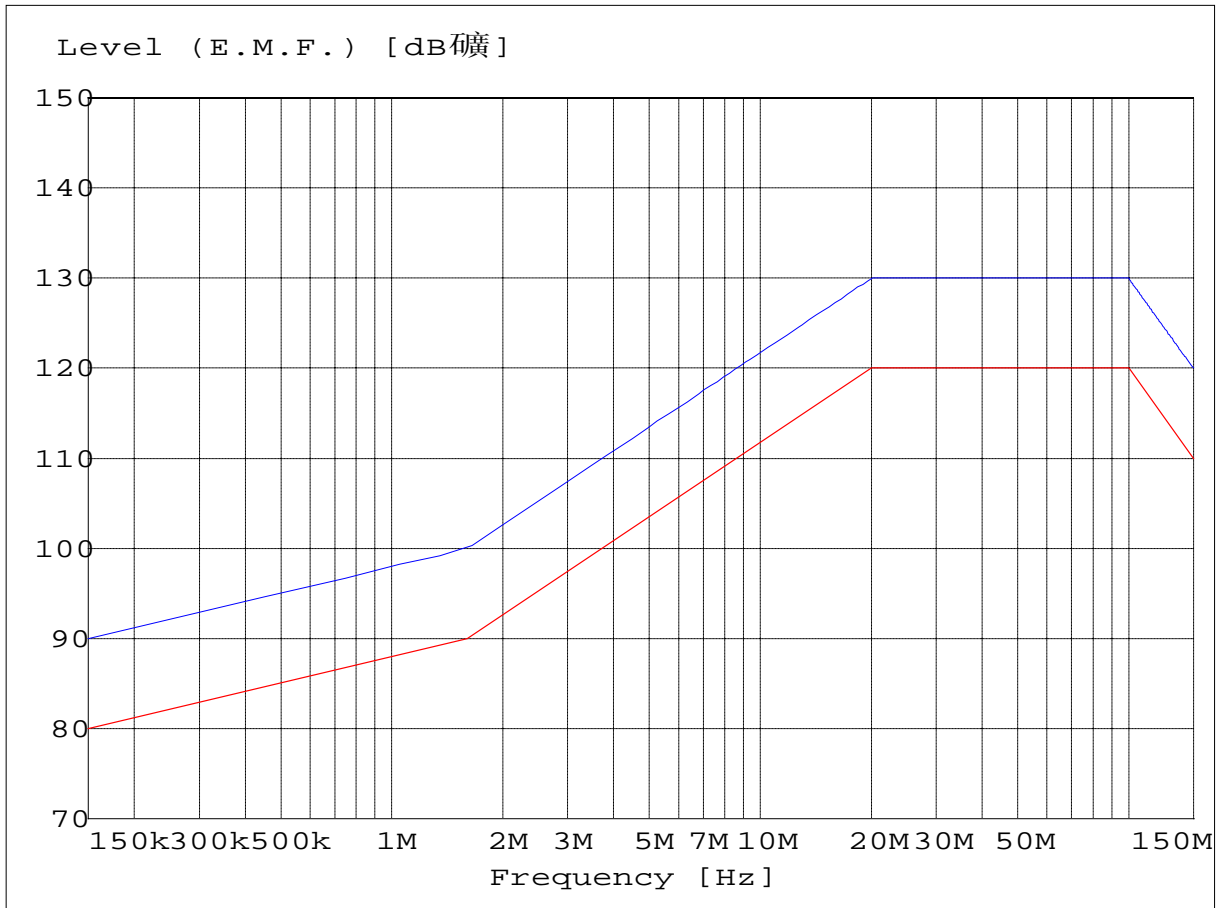
Operating Mode: AUX

S/N: 67.9 dB

Frequency: -

AF Level: 437.4 mV

Interf. Signal: LINE 3 R, 061106-00028-002, 11/6/2006, 2:21:09PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: AUDIO OUT AUX

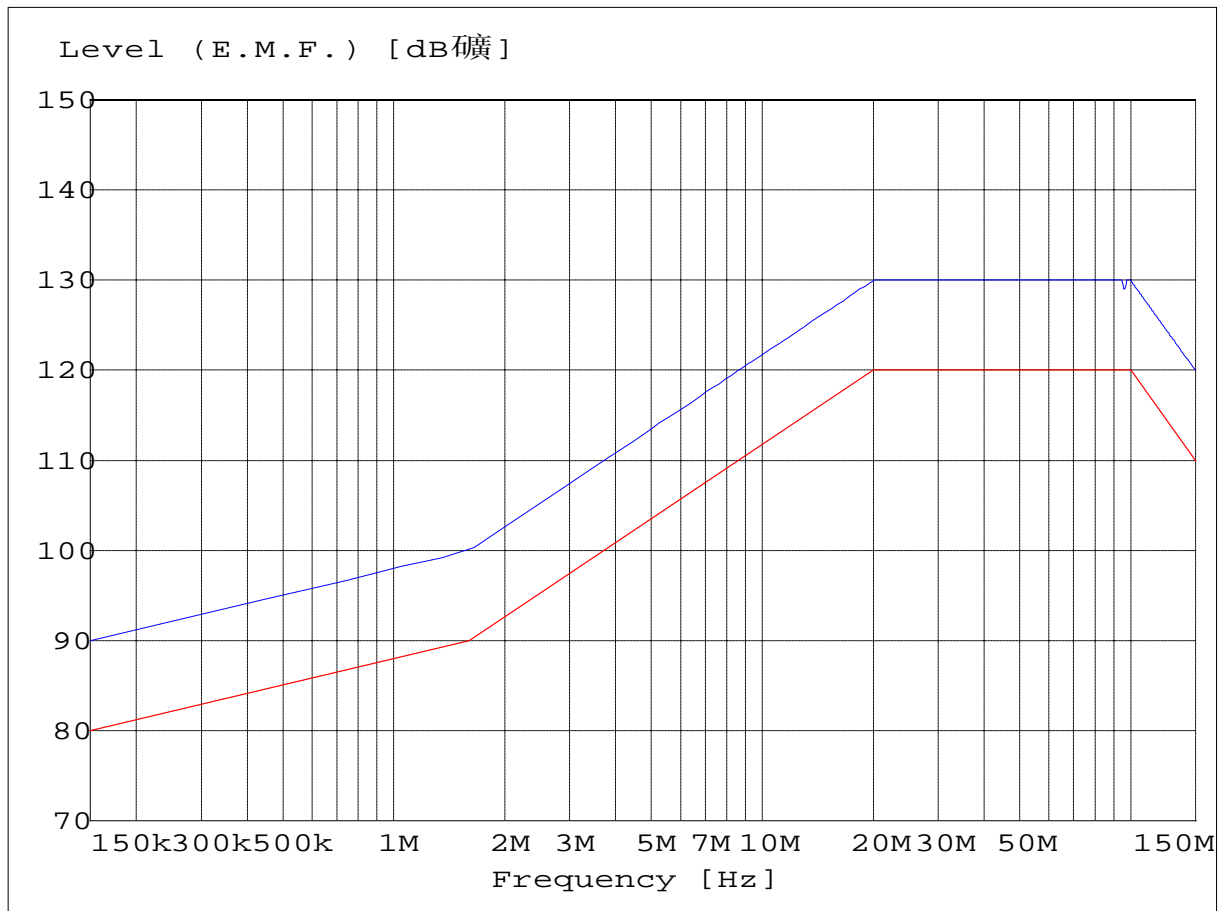
Operating Mode: AUX

S/N: 69.4 dB

Frequency: -

AF Level: 445.5 mV

Interf. Signal: LINE 3 R, 061106-00027-001, 11/6/2006, 1:46:10PM





Test Mode: Amplifier -

Monitor: Audio Out CONTRCL L

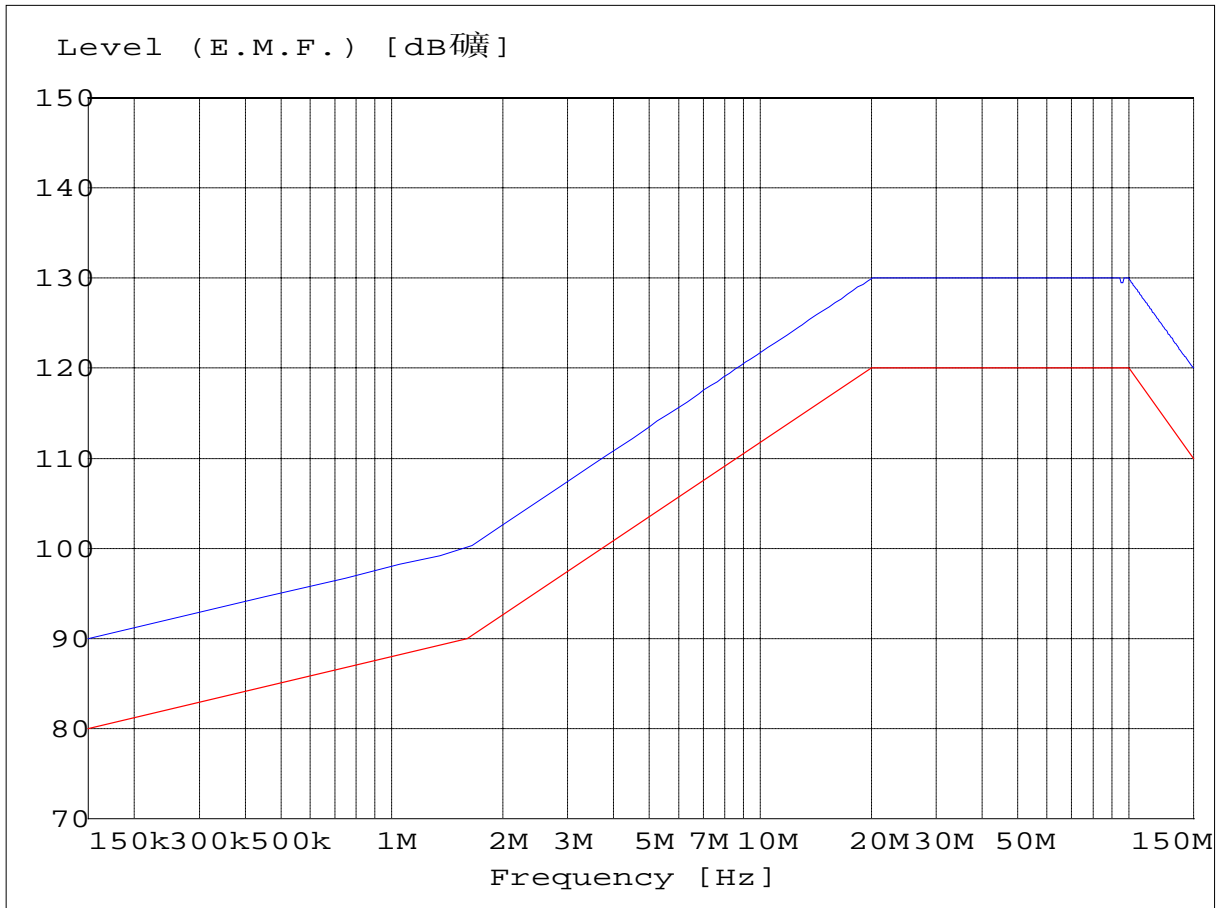
Operating Mode: AUX

S/N: 68.2 dB

Frequency: -

AF Level: 425.9 mV

Interf. Signal: LINE 3 R, 061106-00027-004, 11/6/2006, 2:00:48PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Audio Out MAIN OUT L

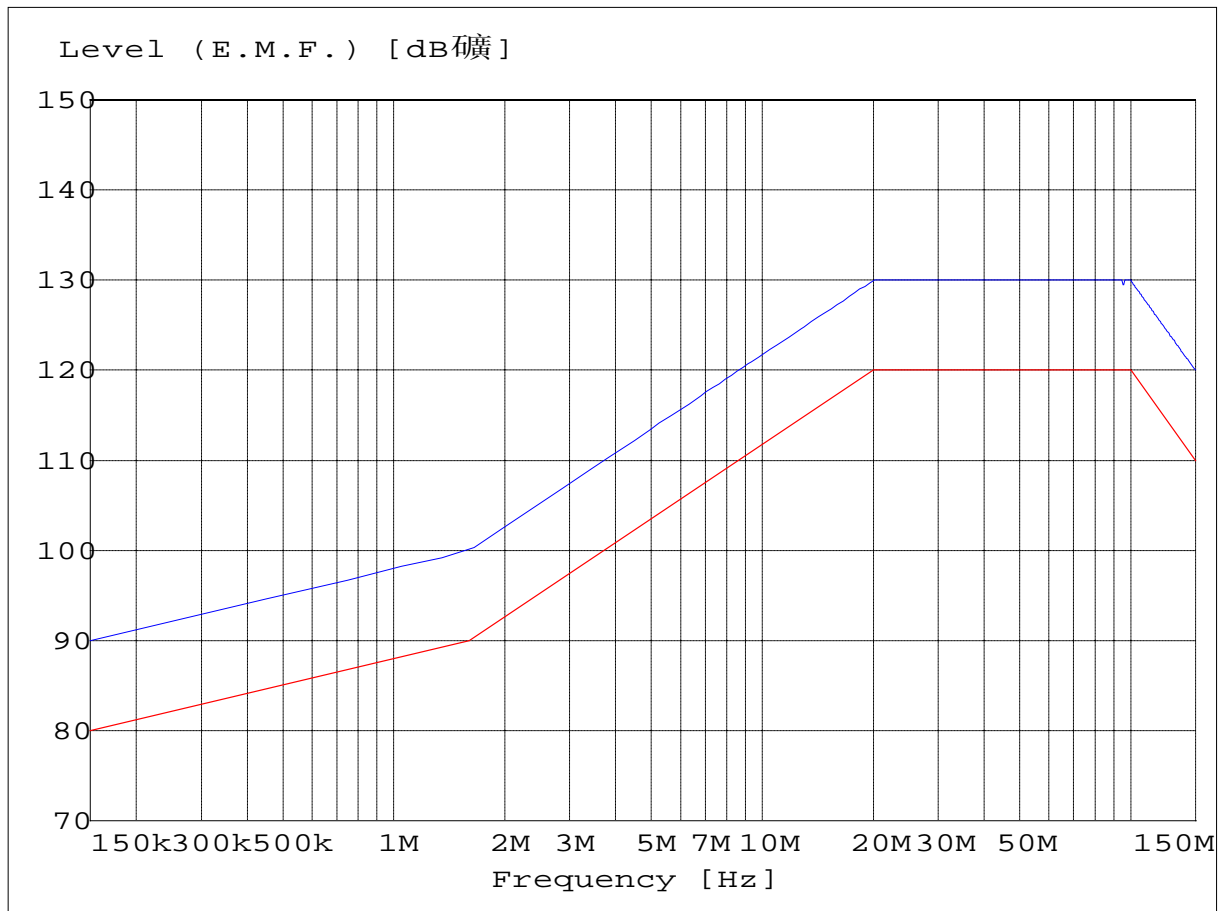
Operating Mode: AUX

S/N: 68.9 dB

Frequency: -

AF Level: 440.6 mV

Interf. Signal: LINE 3 R, 061106-00027-005, 11/6/2006, 2:05:16PM





Test Mode: Amplifier -

Monitor: Audio Out MAIN OUT R

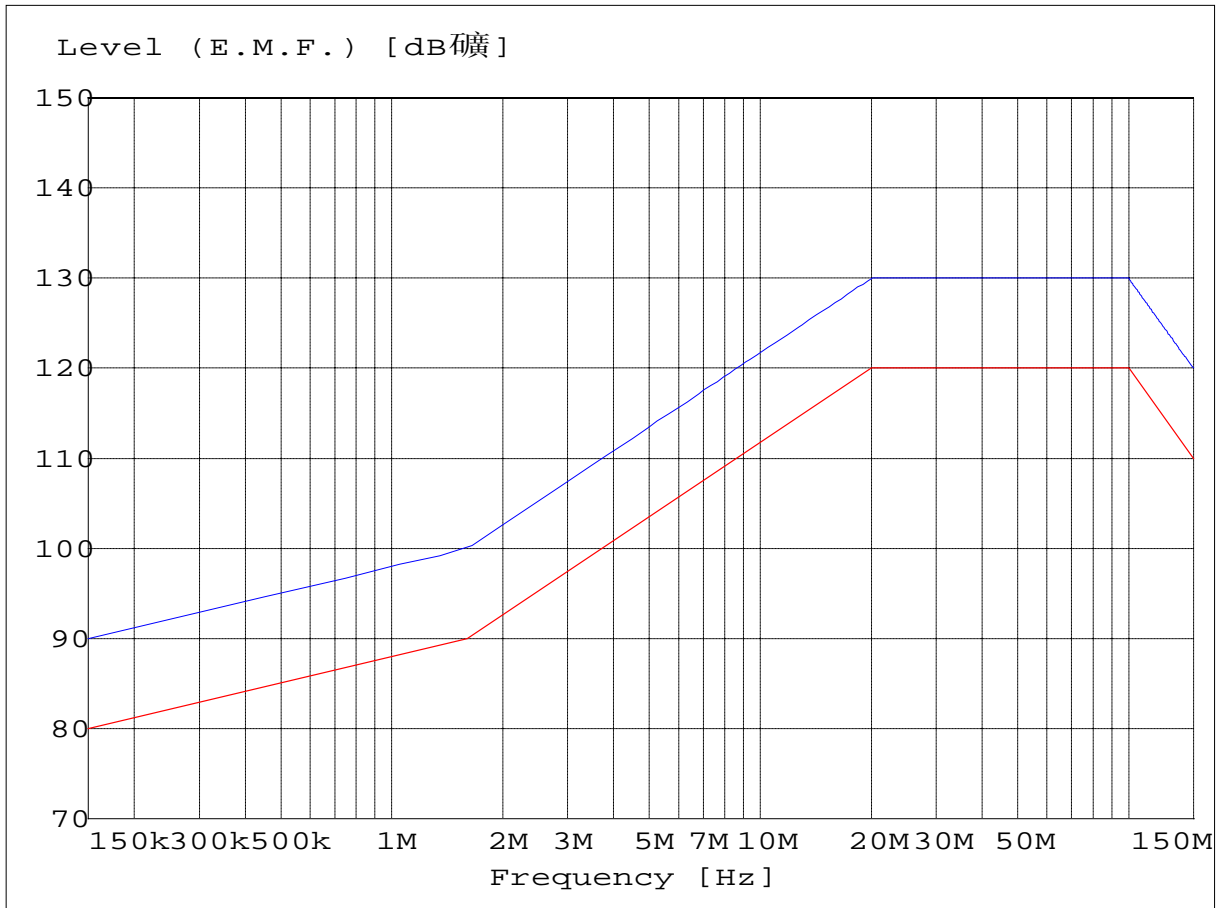
Operating Mode: AUX

S/N: 67.3 dB

Frequency: -

AF Level: 397.1 mV

Interf. Signal: LINE 3 R, 061106-00027-006, 11/6/2006, 2:09:37PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Audio Out MAIN OUT L

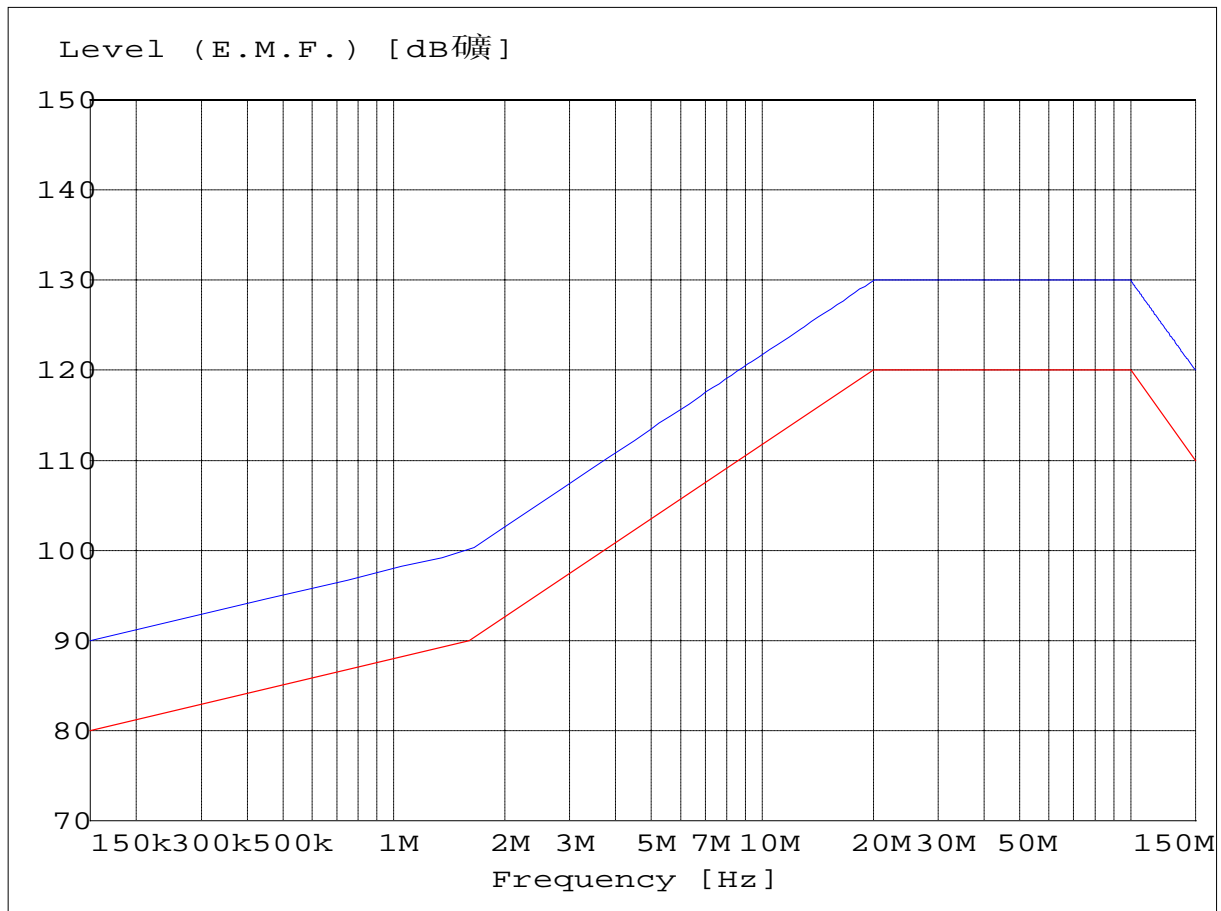
Operating Mode: AUX

S/N: 69.2 dB

Frequency: -

AF Level: 437.0 mV

Interf. Signal: LINE 3 L, 061106-00026-001, 11/6/2006, 1:34:52PM





Test Mode: Amplifier -

Monitor: Audio Out MAIN OUT R

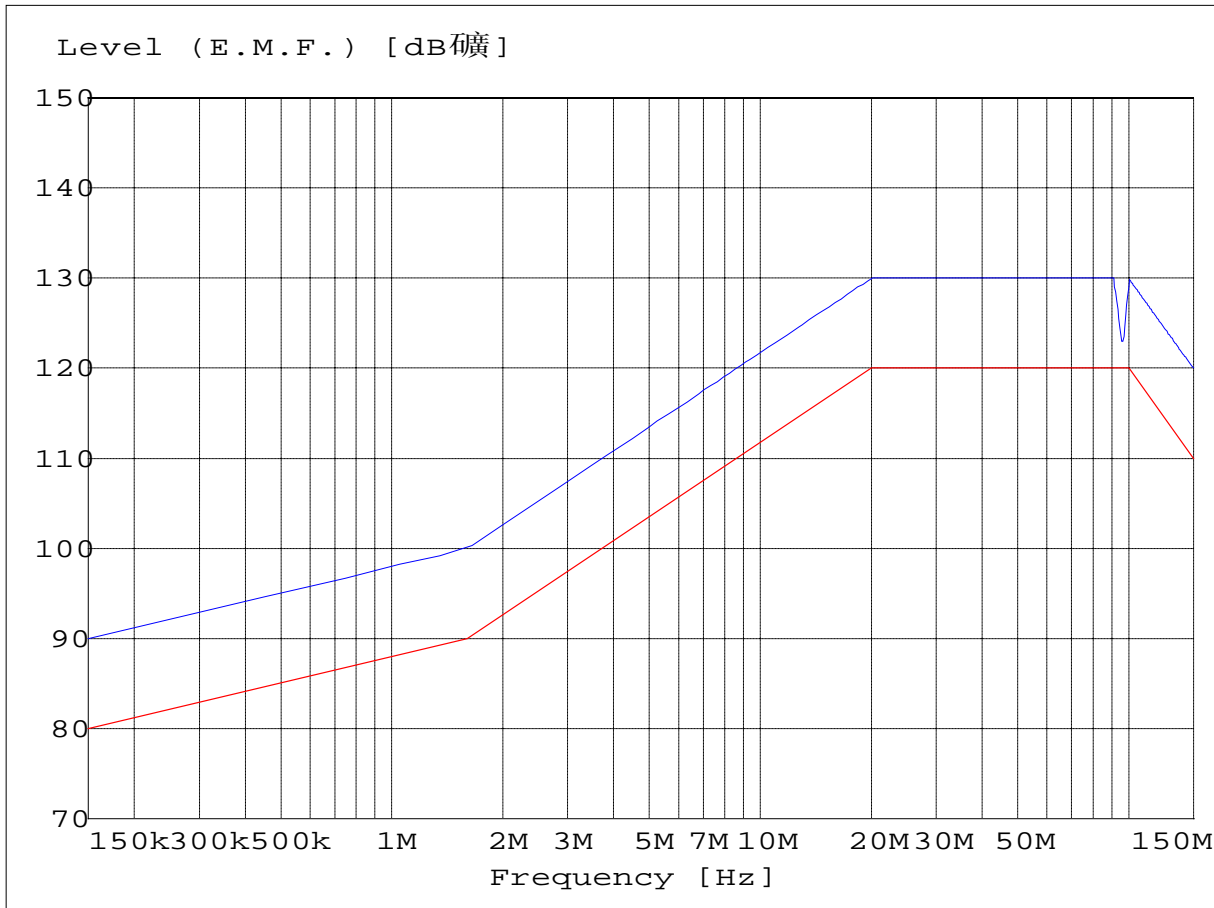
Operating Mode: AUX

S/N: 68.9 dB

Frequency: -

AF Level: 420.6 mV

Interf. Signal: LINE 3 L, 061106-00026-002, 11/6/2006, 1:39:47PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Audio Out CONTRCL R

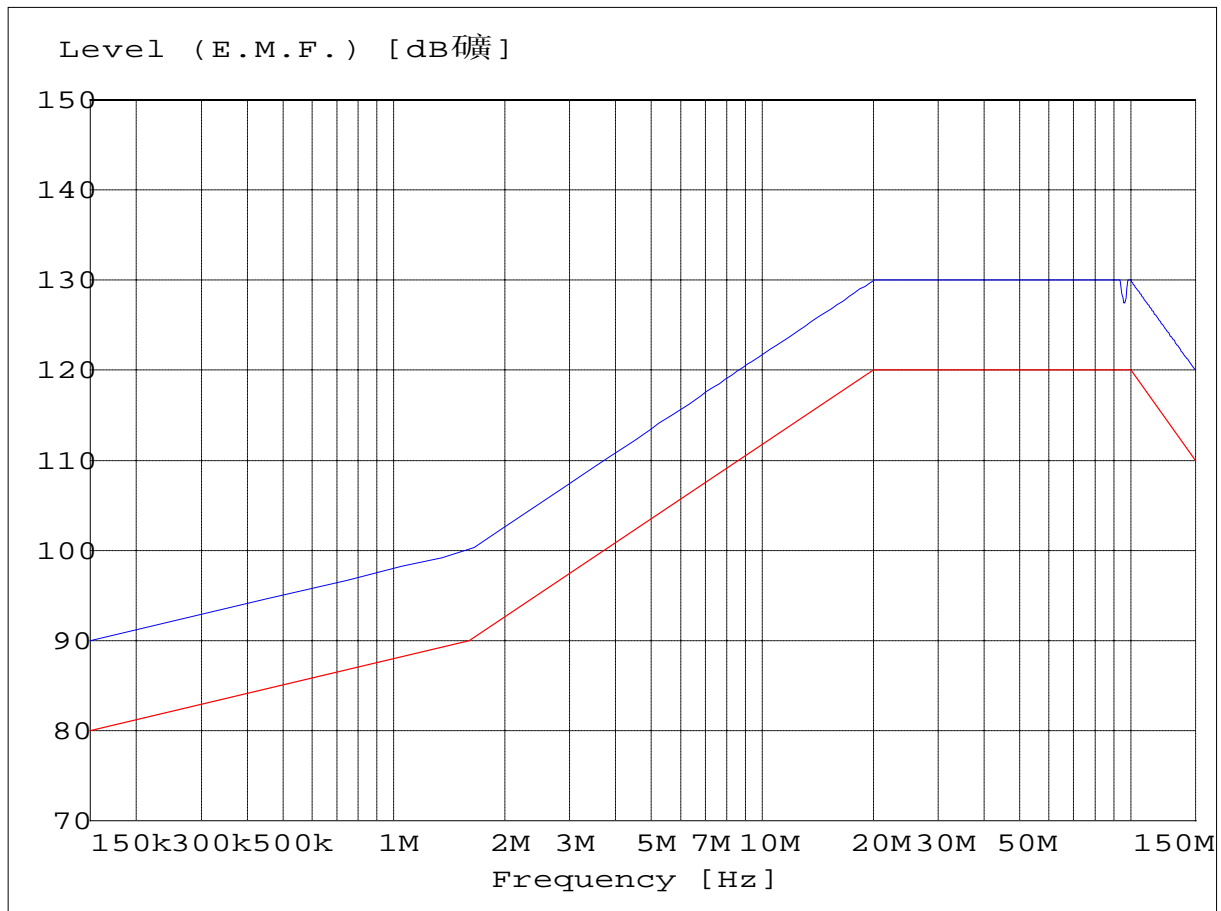
Operating Mode: AUX

S/N: 69.8 dB

Frequency: -

AF Level: 479.6 mV

Interf. Signal: LINE 3 L, 061106-00025-001, 11/6/2006, 12:15:25PM





Test Mode: Amplifier -

Monitor: Audio Out CONTRCL L

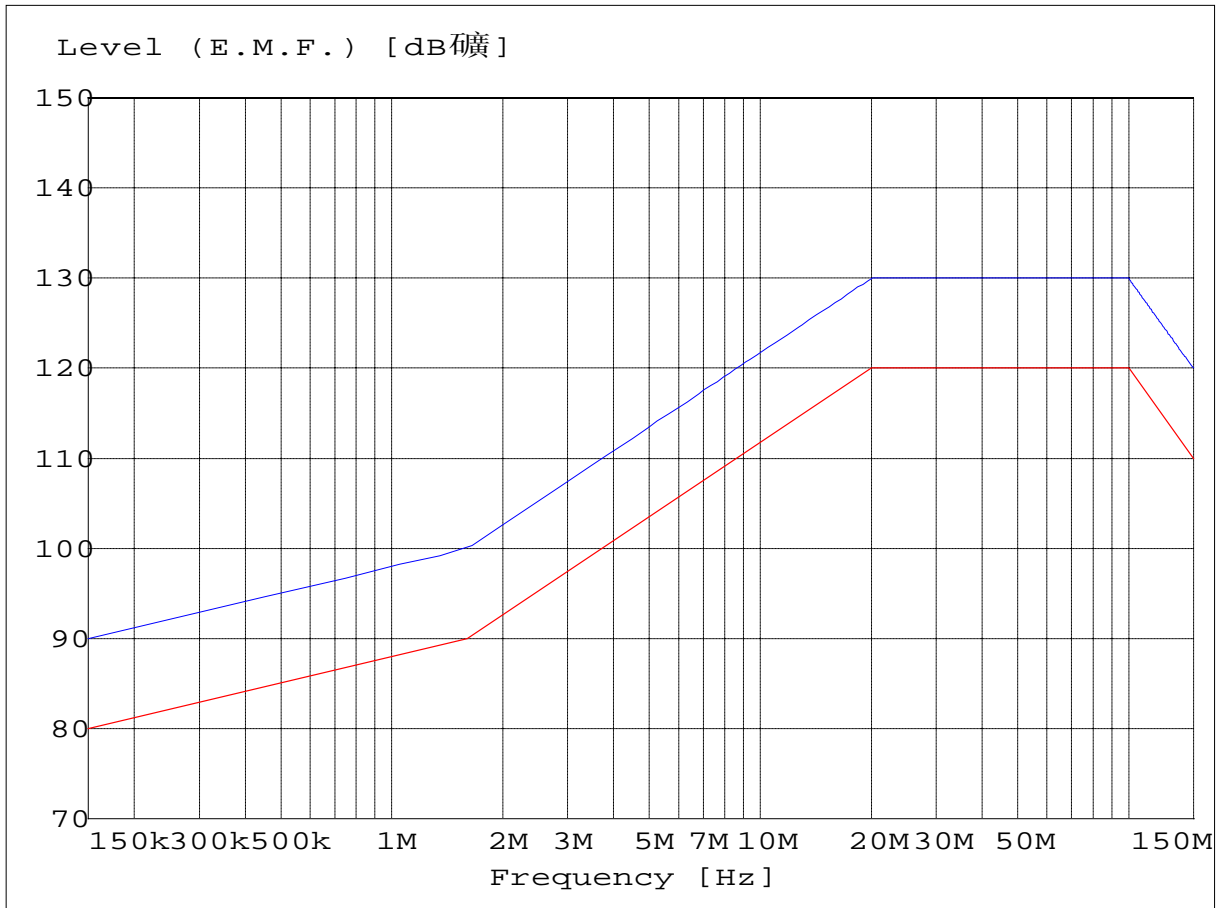
Operating Mode: AUX

S/N: 69.9 dB

Frequency: -

AF Level: 489.2 mV

Interf. Signal: LINE 3 L, 061106-00025-002, 11/6/2006, 12:19:45PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: AUDIO OUT AUX

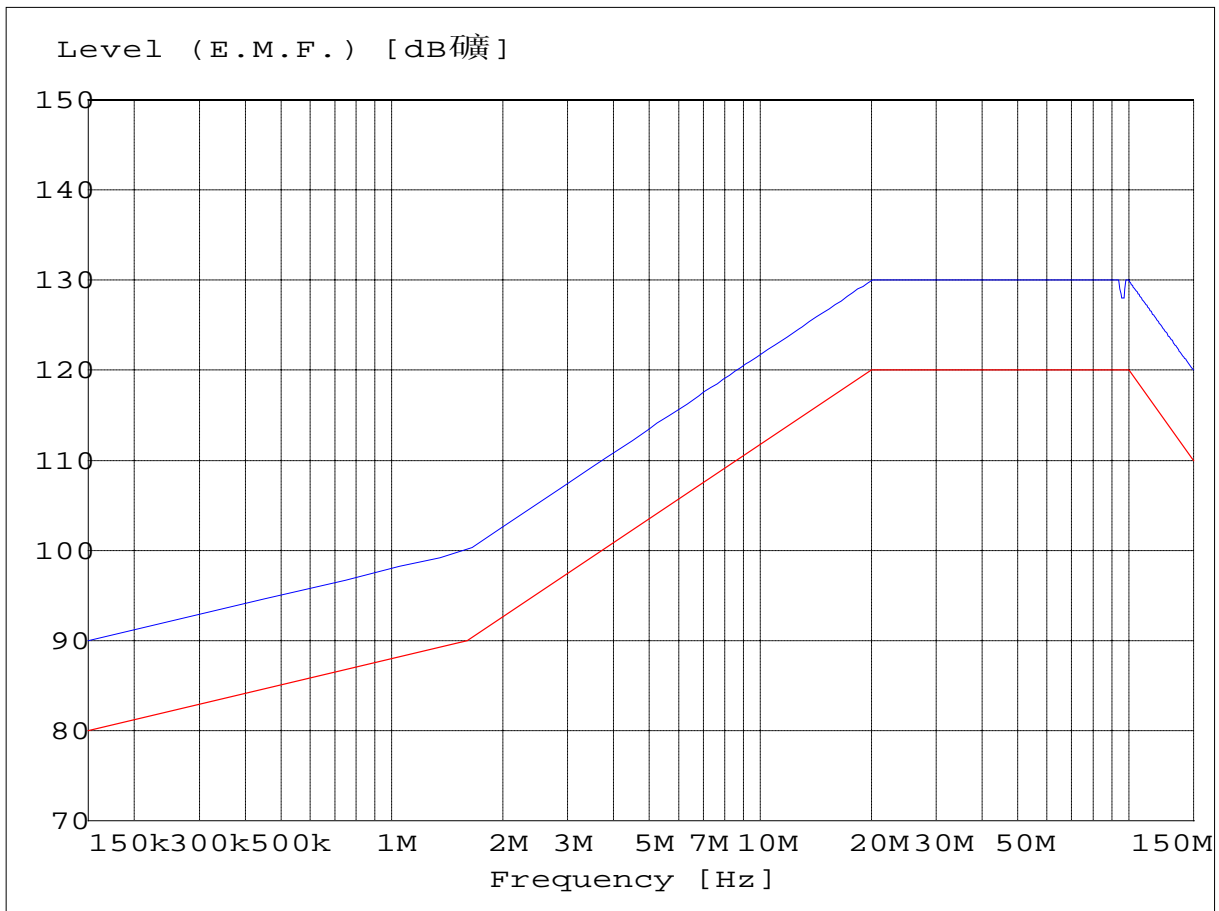
Operating Mode: AUX

S/N: 67.0 dB

Frequency: -

AF Level: 440.5 mV

Interf. Signal: LINE 3 L, 061106-00024-001, 11/6/2006, 12:04:31PM





Test Mode: Amplifier -

Monitor: AUDIO OUT EFX

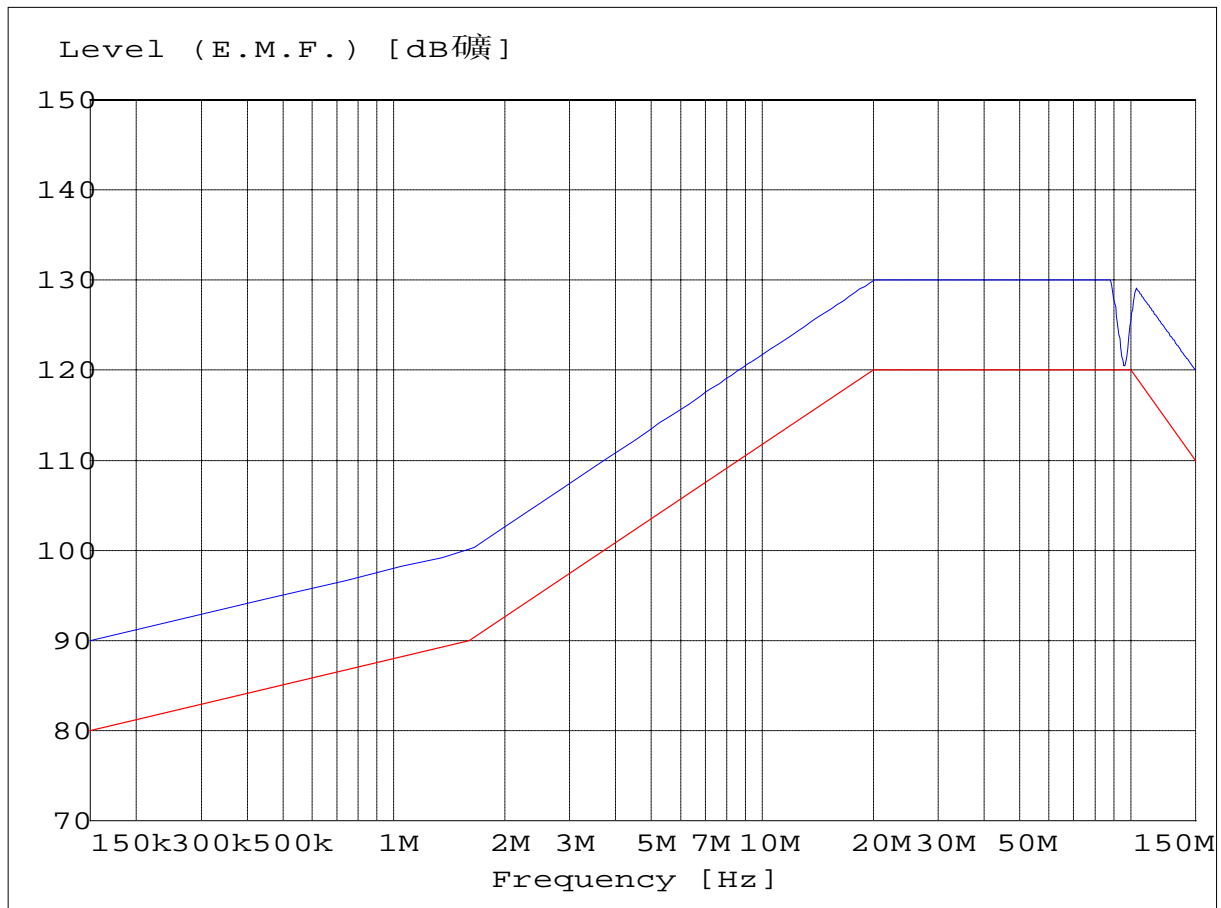
Operating Mode: AUX

S/N: 68.6 dB

Frequency: -

AF Level: 434.6 mV

Interf. Signal: LINE 3 L, 061106-00024-002, 11/6/2006, 12:09:42PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Audio Out PHONE

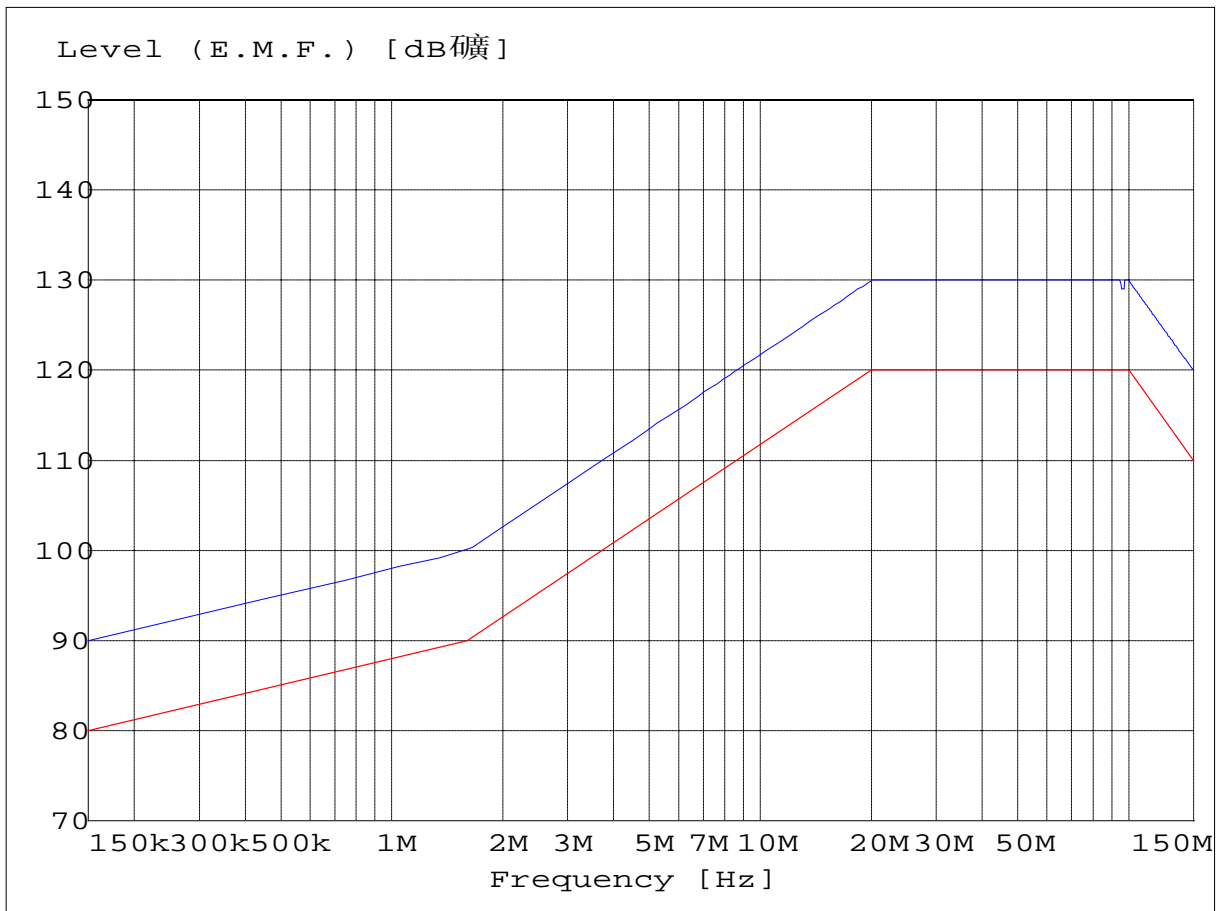
Operating Mode: AUX

S/N: 69.4 dB

Frequency: -

AF Level: 462.6 mV

Interf. Signal: LINE 3 L, 061106-00023-001, 11/6/2006, 11:59:15AM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Audio Out MAIN OUT R

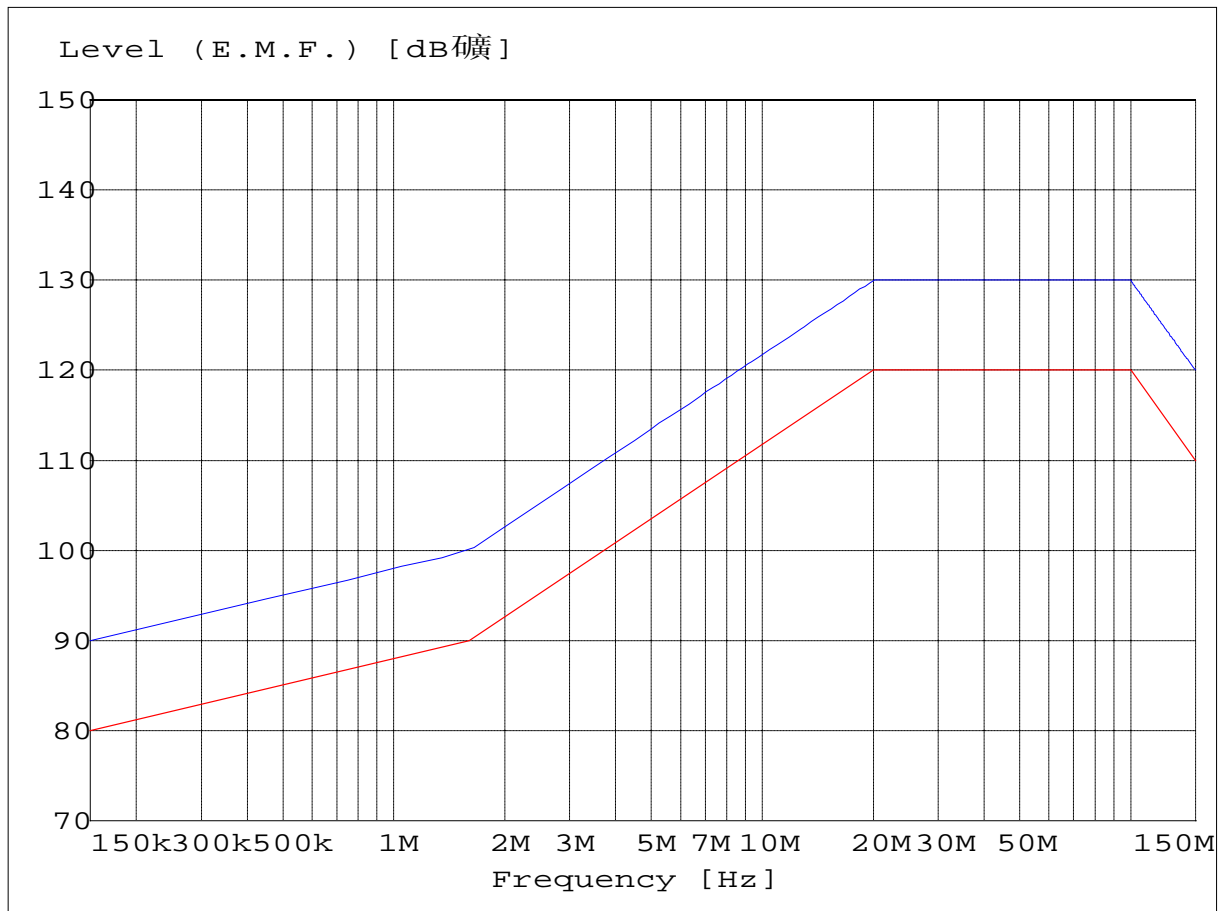
Operating Mode: AUX

S/N: 68.8 dB

Frequency: -

AF Level: 457.5 mV

Interf. Signal: MIC 1, 061106-00022-001, 11/6/2006, 11:52:29AM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Audio Out MAIN OUT L

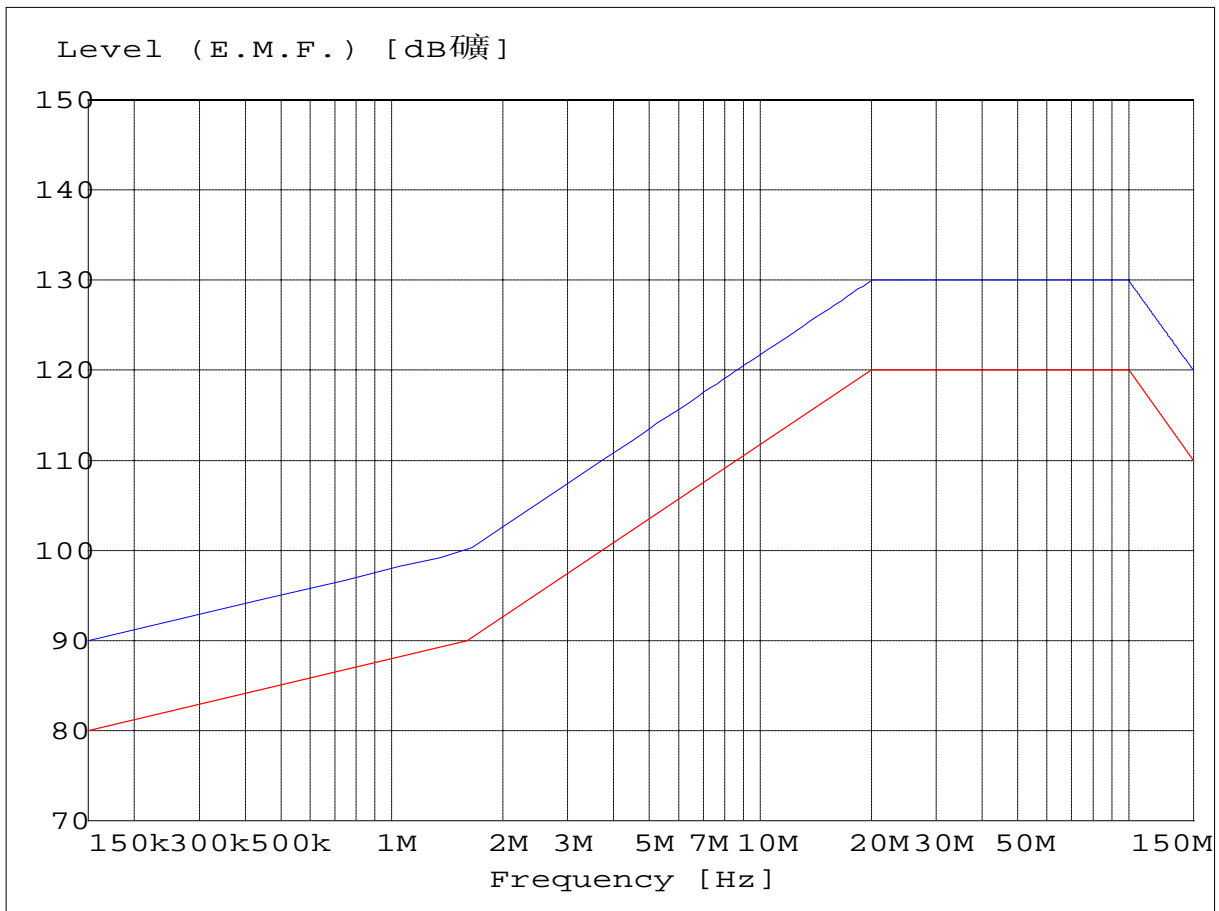
Operating Mode: AUX

S/N: 69.3 dB

Frequency: -

AF Level: 457.5 mV

Interf. Signal: MIC 1, 061106-00021-001, 11/6/2006, 11:47:12AM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Audio Out CONTRCL L

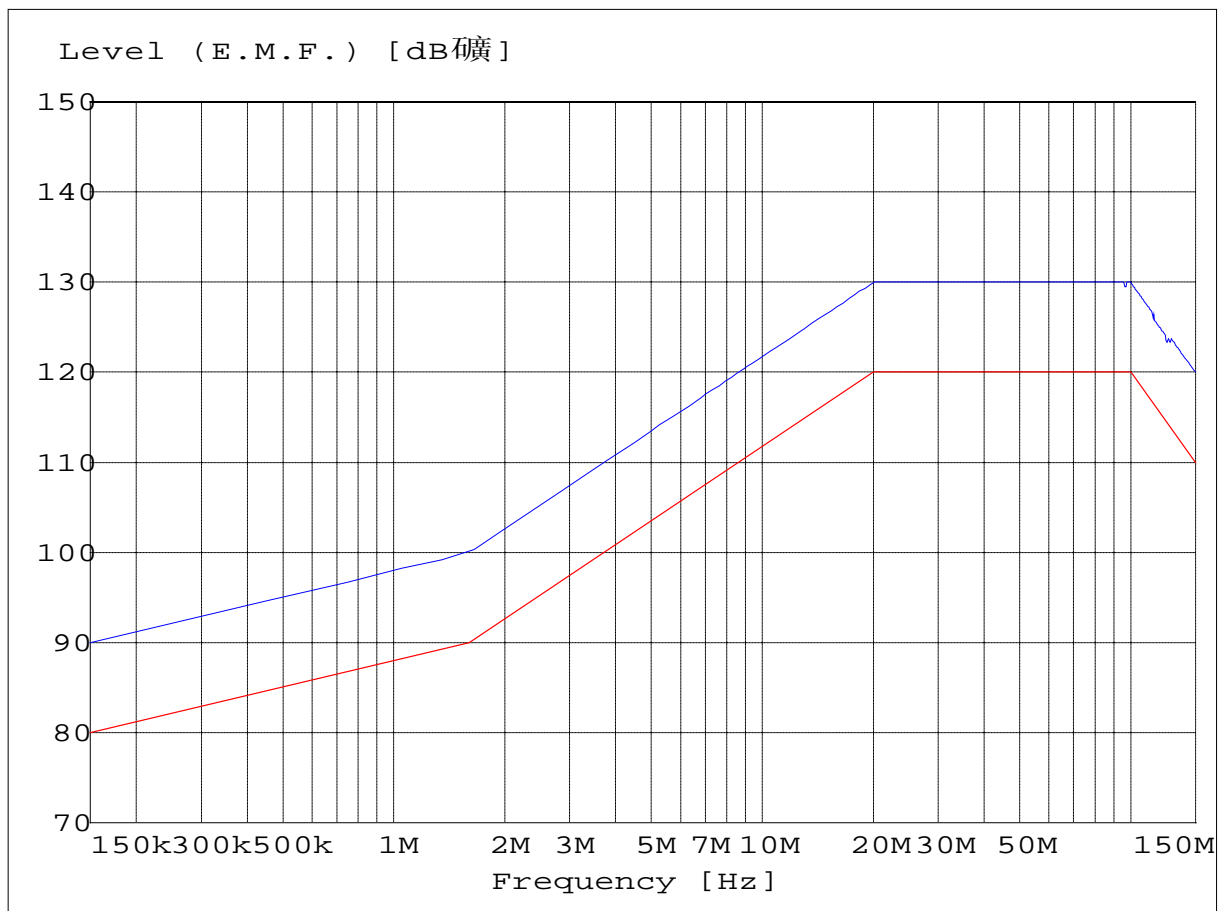
Operating Mode: AUX

S/N: 68.4 dB

Frequency: -

AF Level: 456.9 mV

Interf. Signal: MIC 1, 061106-00020-001, 11/6/2006, 11:41:30AM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: AUDIO OUT EFX

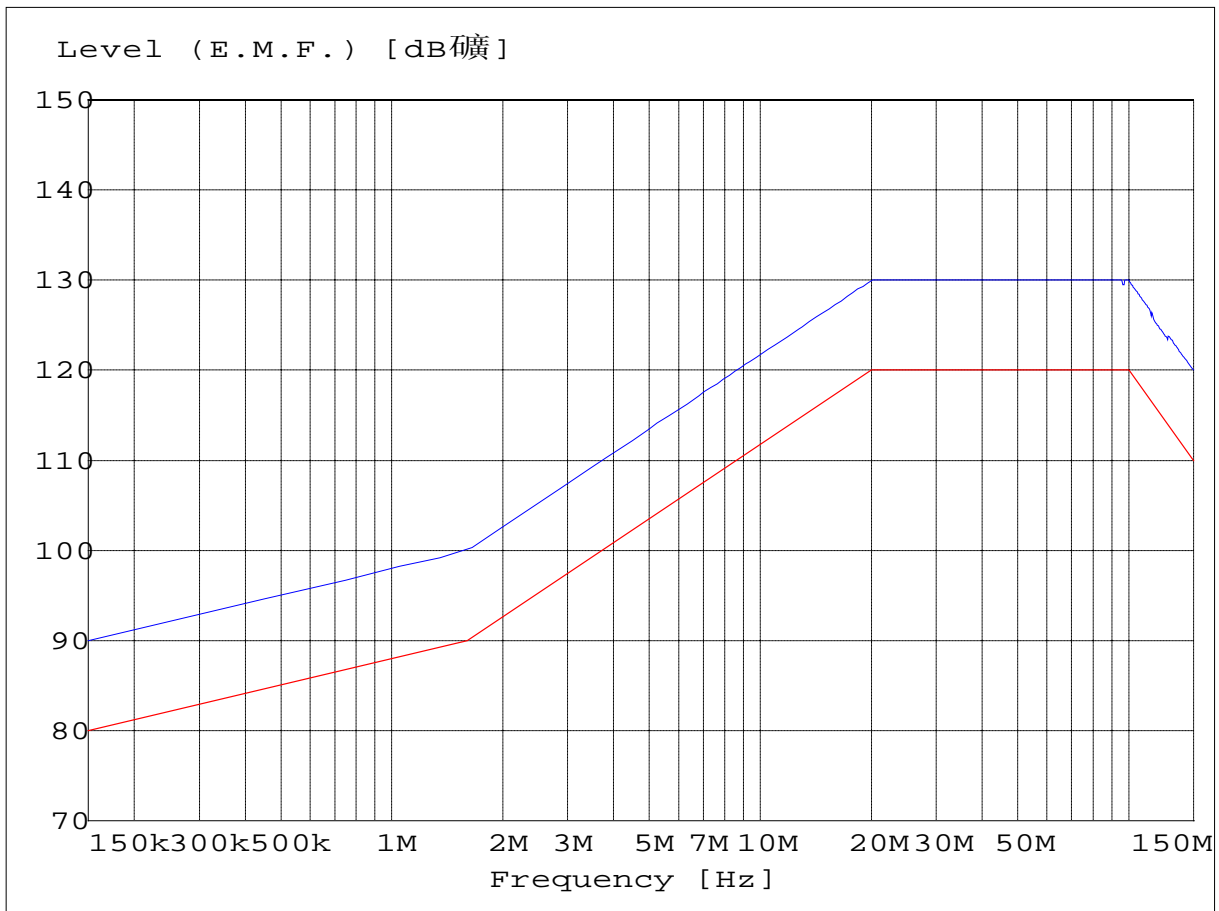
Operating Mode: AUX

S/N: 66.3 dB

Frequency: -

AF Level: 462.3 mV

Interf. Signal: MIC 1, 061106-00019-001, 11/6/2006, 11:27:55AM





Test Mode: Amplifier -

Monitor: Audio Out CONTRCL R

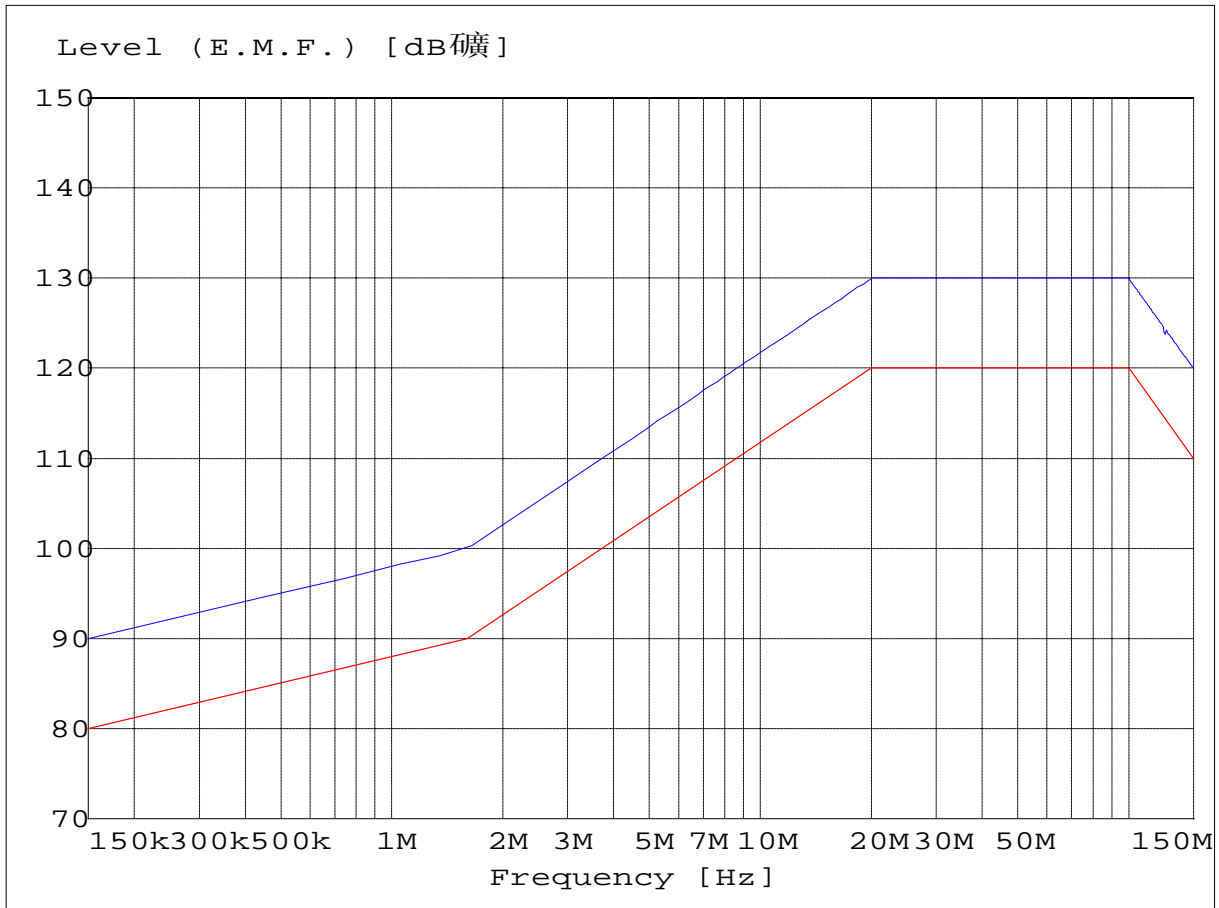
Operating Mode: AUX

S/N: 67.9 dB

Frequency: -

AF Level: 447.0 mV

Interf. Signal: MIC 1, 061106-00019-002, 11/6/2006, 11:33:14AM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: AUDIO OUT AUX

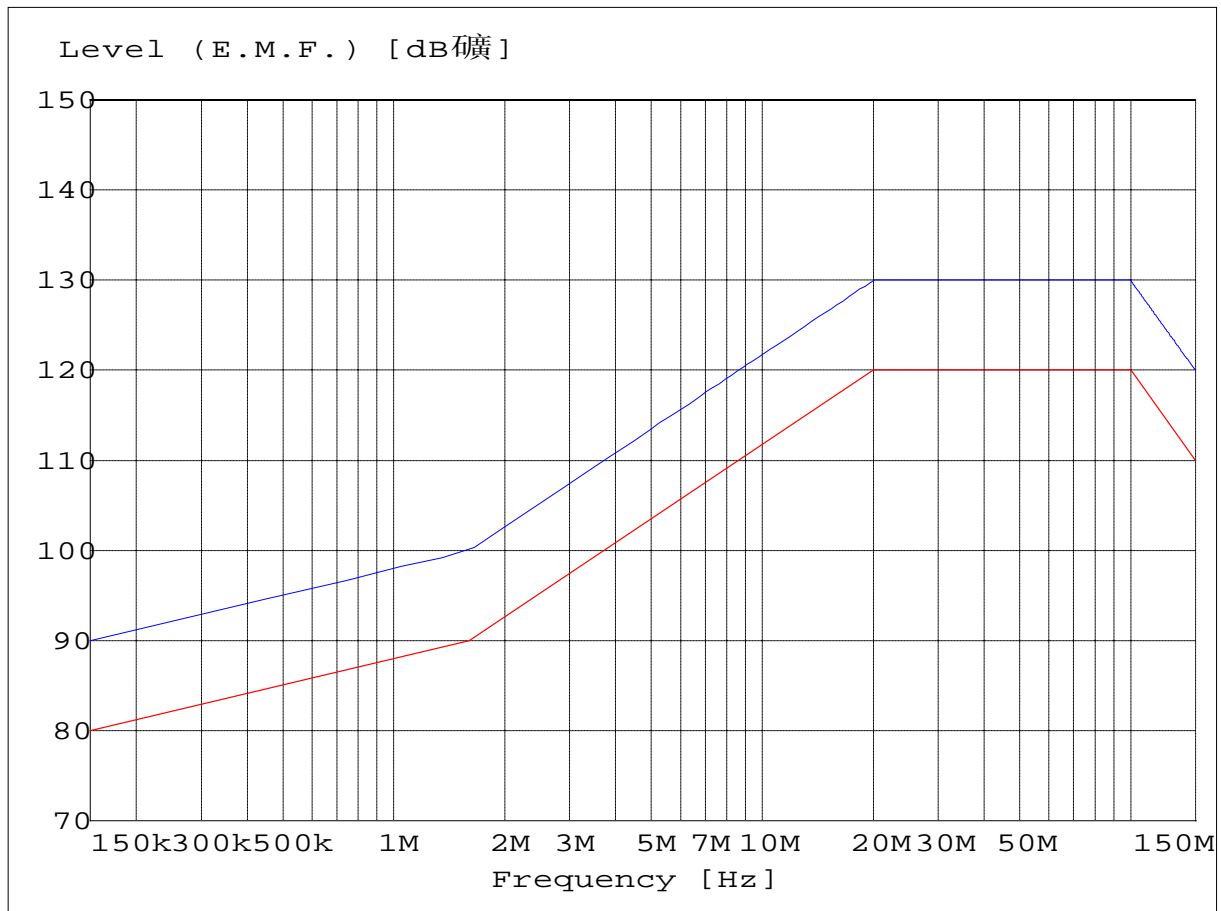
Operating Mode: AUX

S/N: 68.4 dB

Frequency: -

AF Level: 451.3 mV

Interf. Signal: MIC 1, 061106-00018-001, 11/6/2006, 11:19:34AM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Audio Out PHONE

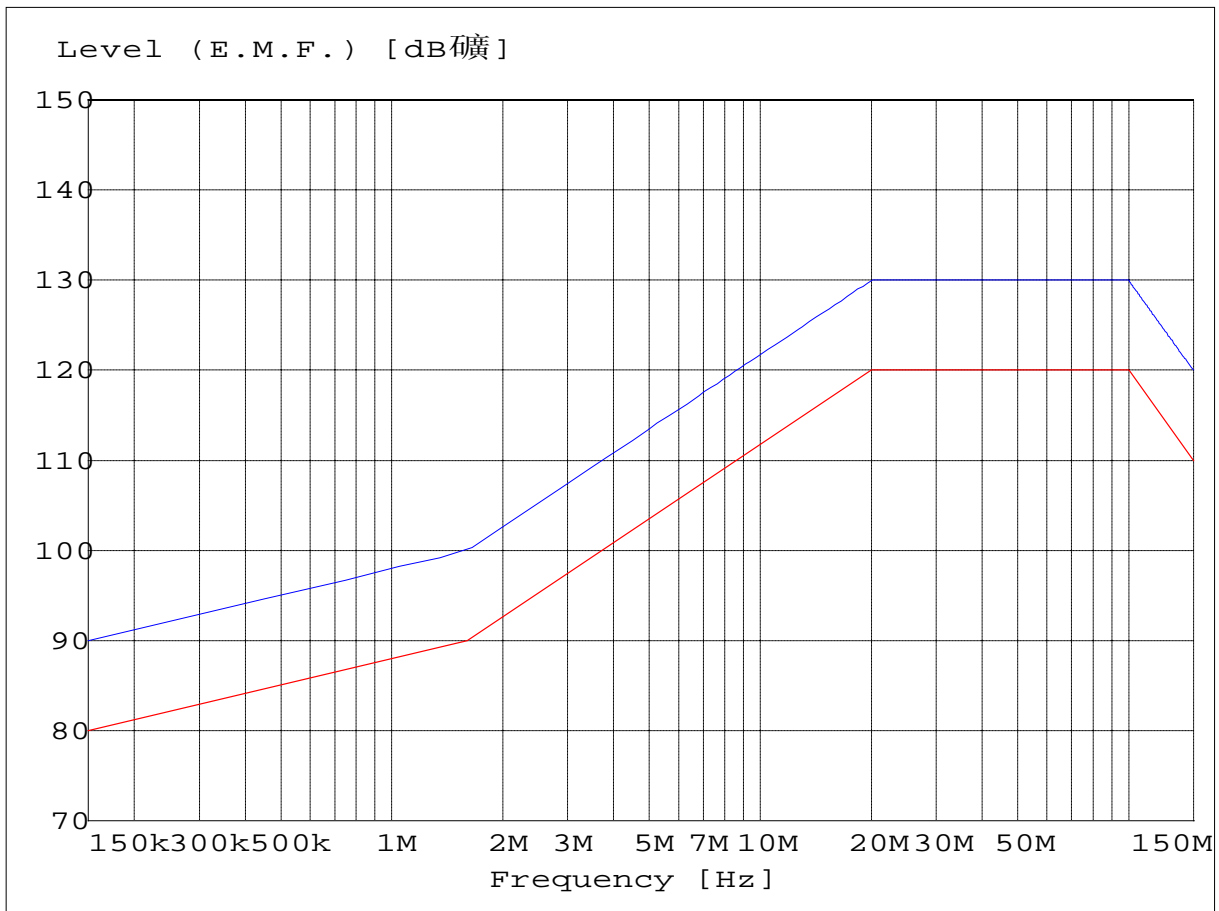
Operating Mode: AUX

S/N: 68.4 dB

Frequency: -

AF Level: 446.1 mV

Interf. Signal: MIC 1, 061106-00017-001, 11/6/2006, 11:14:47AM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Audio Out MAIN OUT L

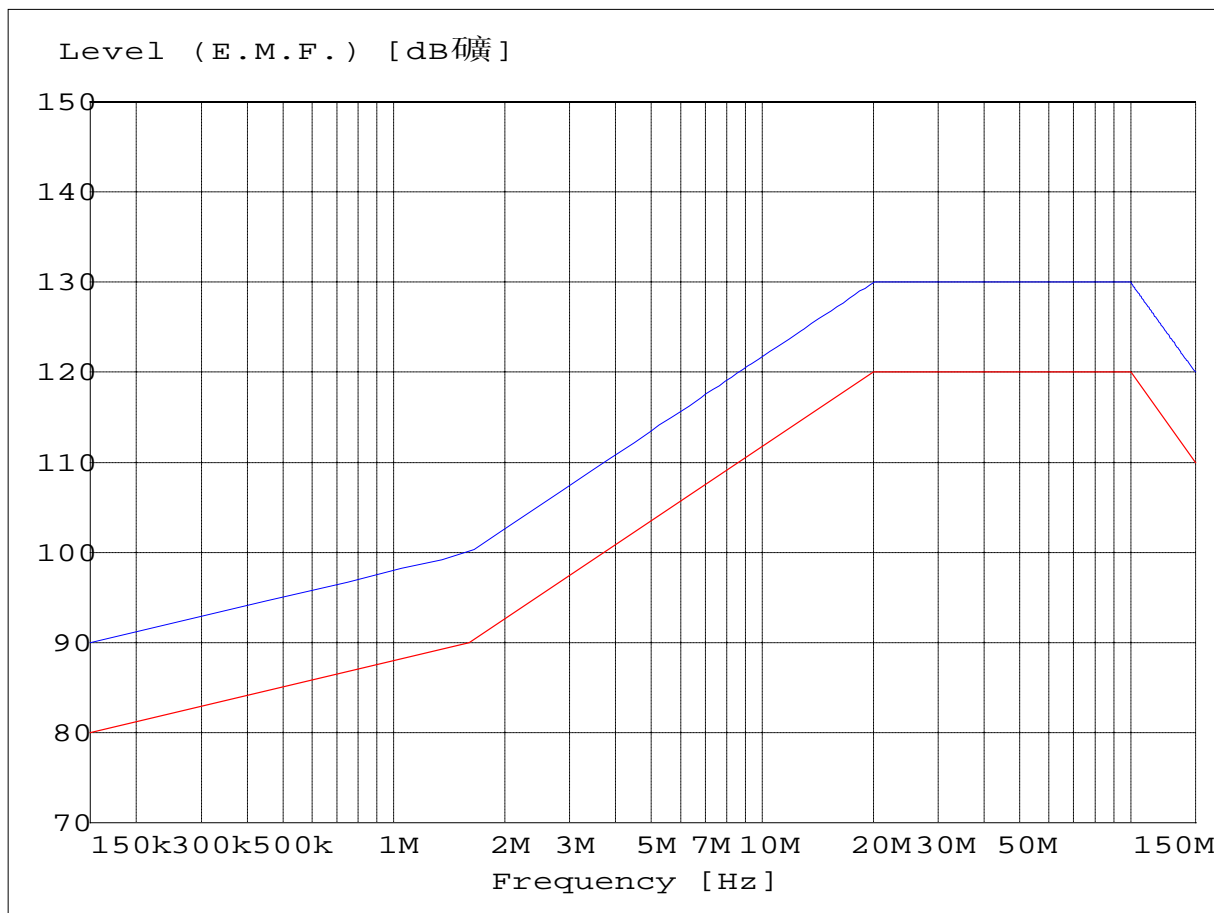
Operating Mode: AUX

S/N: 83.8 dB

Frequency: -

AF Level: 445.2 mV

Interf. Signal: MAIN OUTPU L, 061106-00016-001, 11/6/2006, 11:07:21AM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Audio Out MAIN OUT R

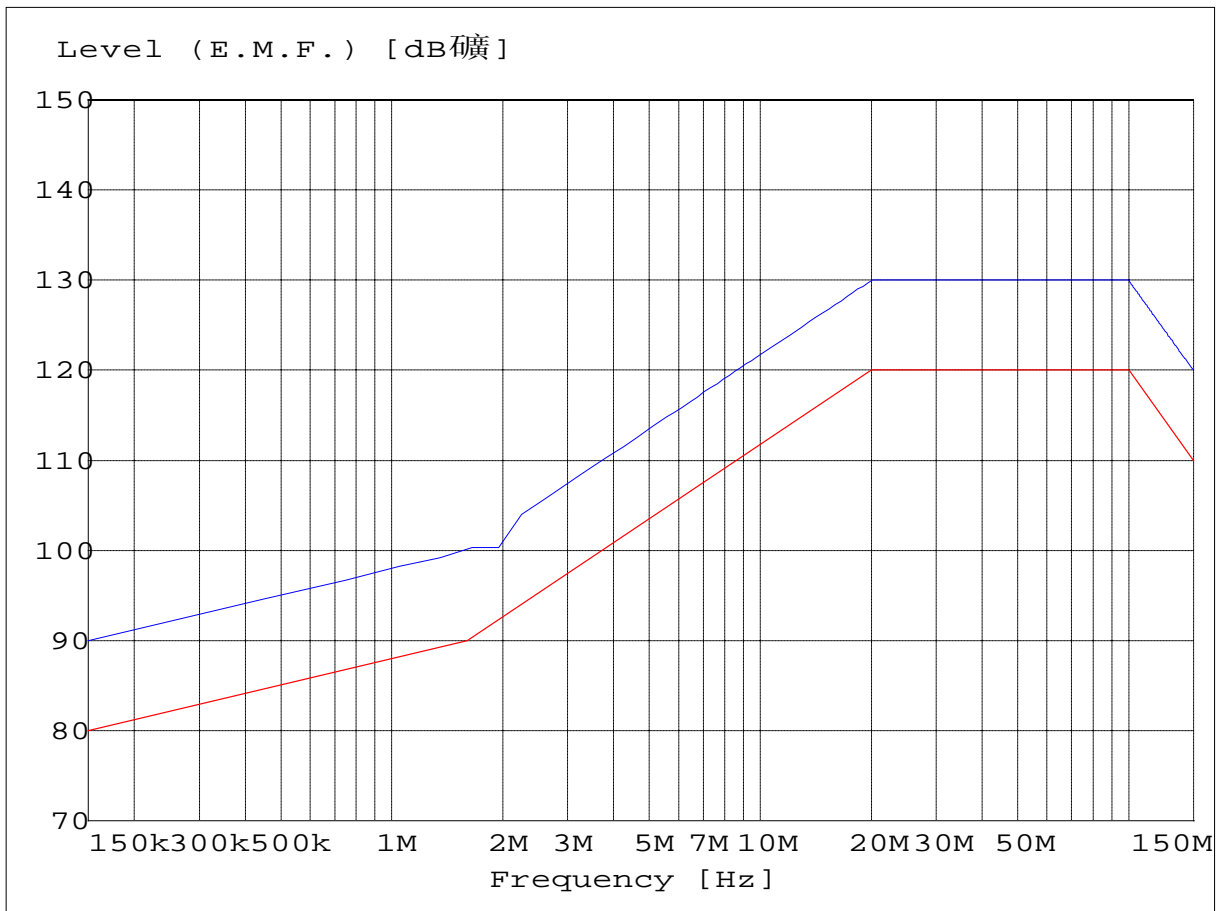
Operating Mode: AUX

S/N: 83.8 dB

Frequency: -

AF Level: 445.2 mV

Interf. Signal: MAIN OUTPU R, 061106-00015-001, 11/6/2006, 11:02:46AM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Audio Out CONTRCL L

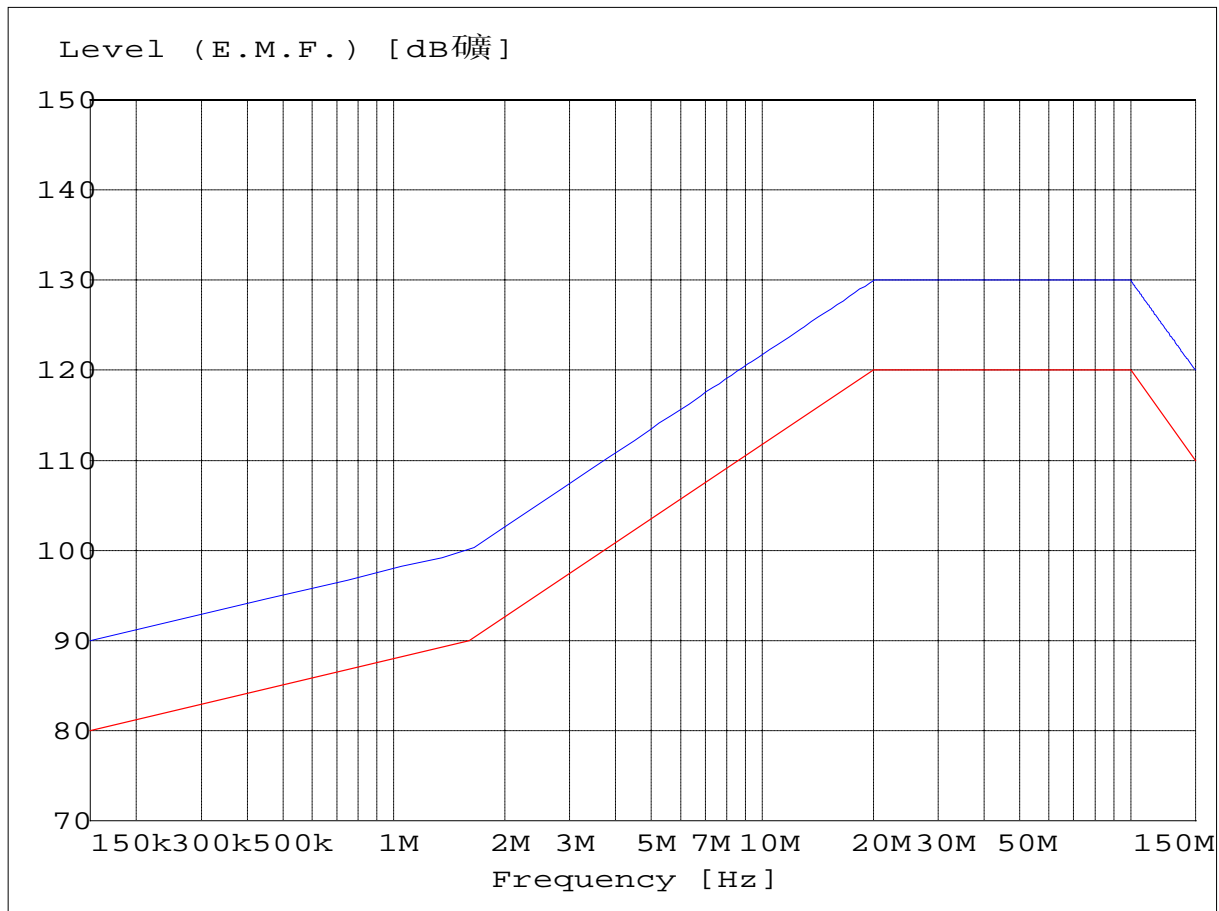
Operating Mode: AUX

S/N: 74.2 dB

Frequency: -

AF Level: 489.0 mV

Interf. Signal: CONTROL ROOM L, 061106-00014-001, 11/6/2006, 10:58:05AM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Audio Out CONTRCL R

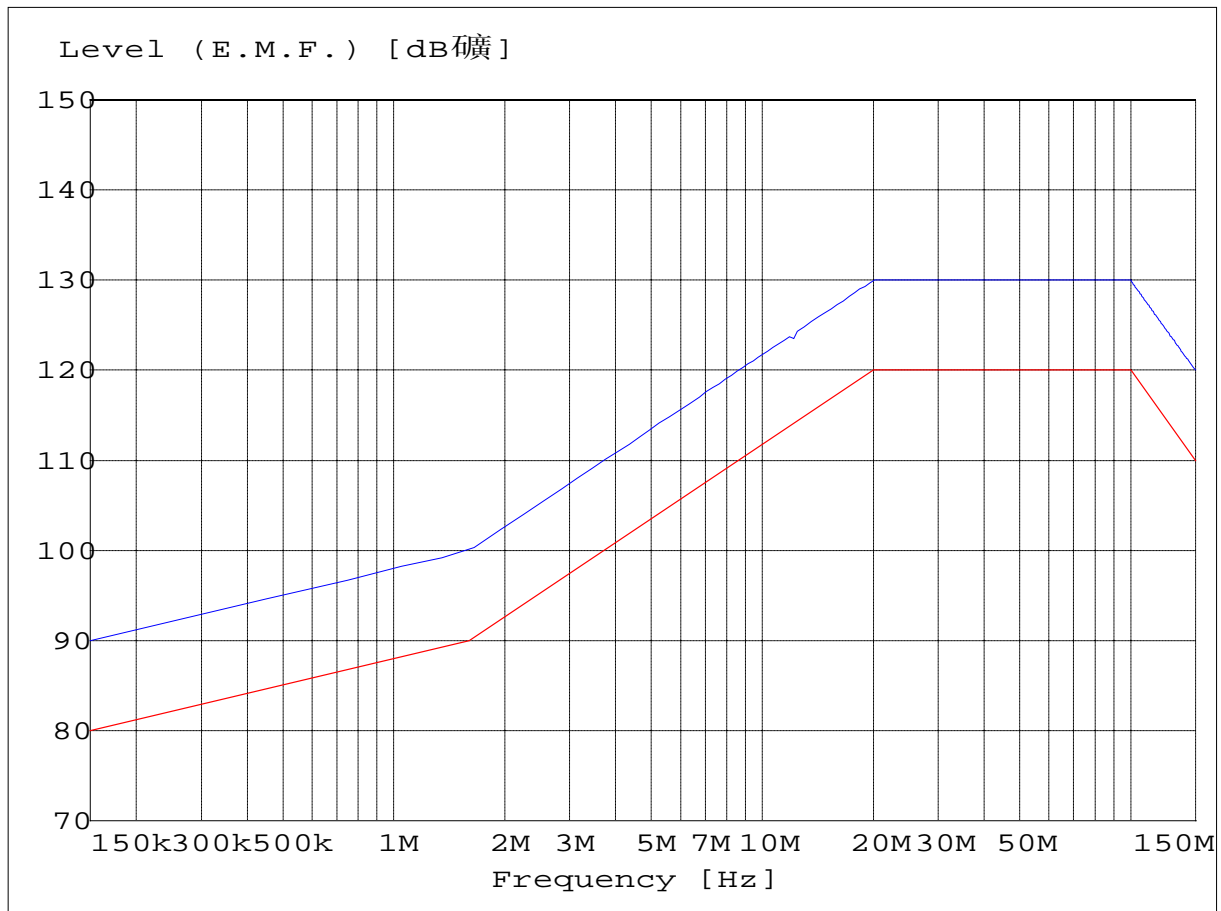
Operating Mode: AUX

S/N: 74.7 dB

Frequency: -

AF Level: 472.3 mV

Interf. Signal: CONTROL ROOM R, 061106-00013-001, 11/6/2006, 10:53:35AM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Headphones

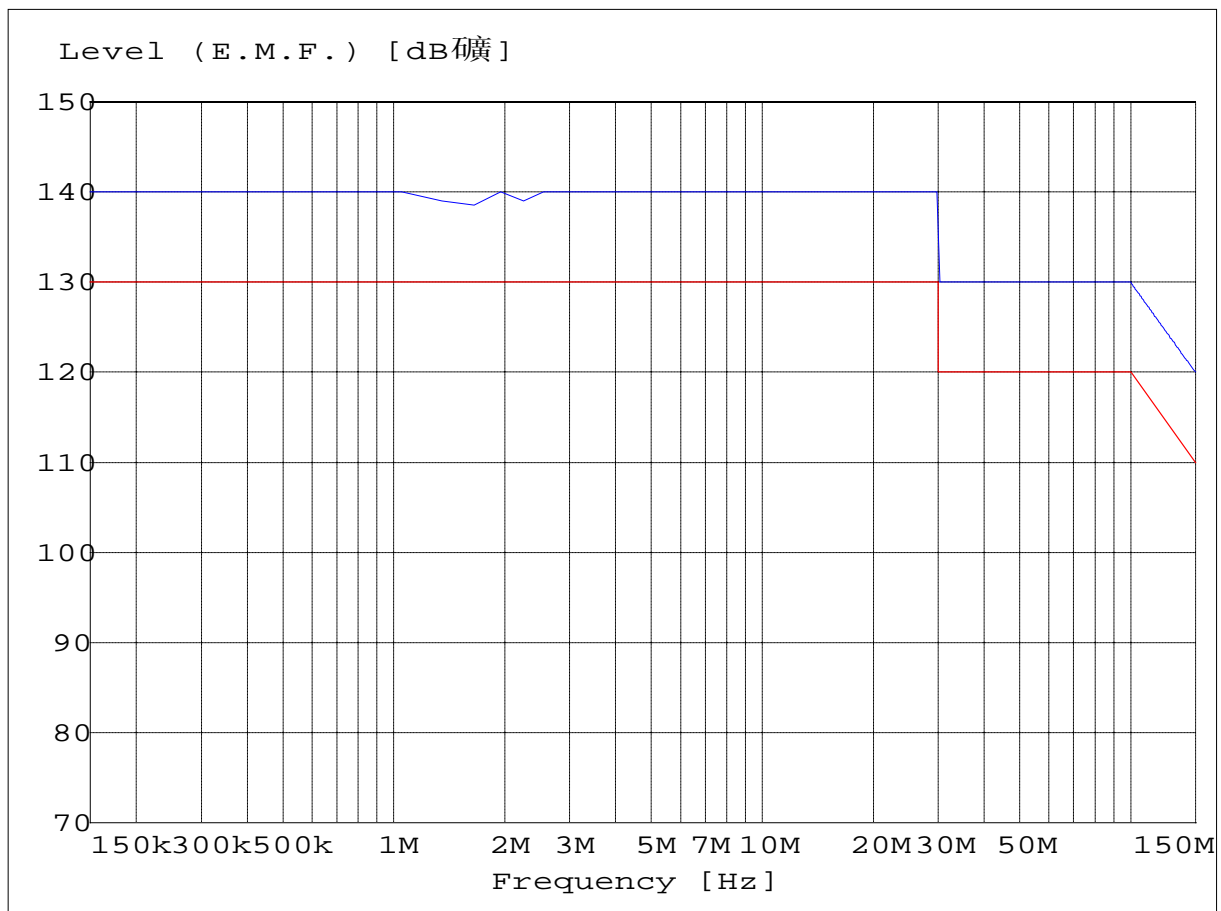
Operating Mode: AUX

S/N: 76.3 dB

Frequency: -

AF Level: 484.6 mV

Interf. Signal: Headphones, 061106-00012-001, 11/6/2006, 10:47:31AM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Headphones

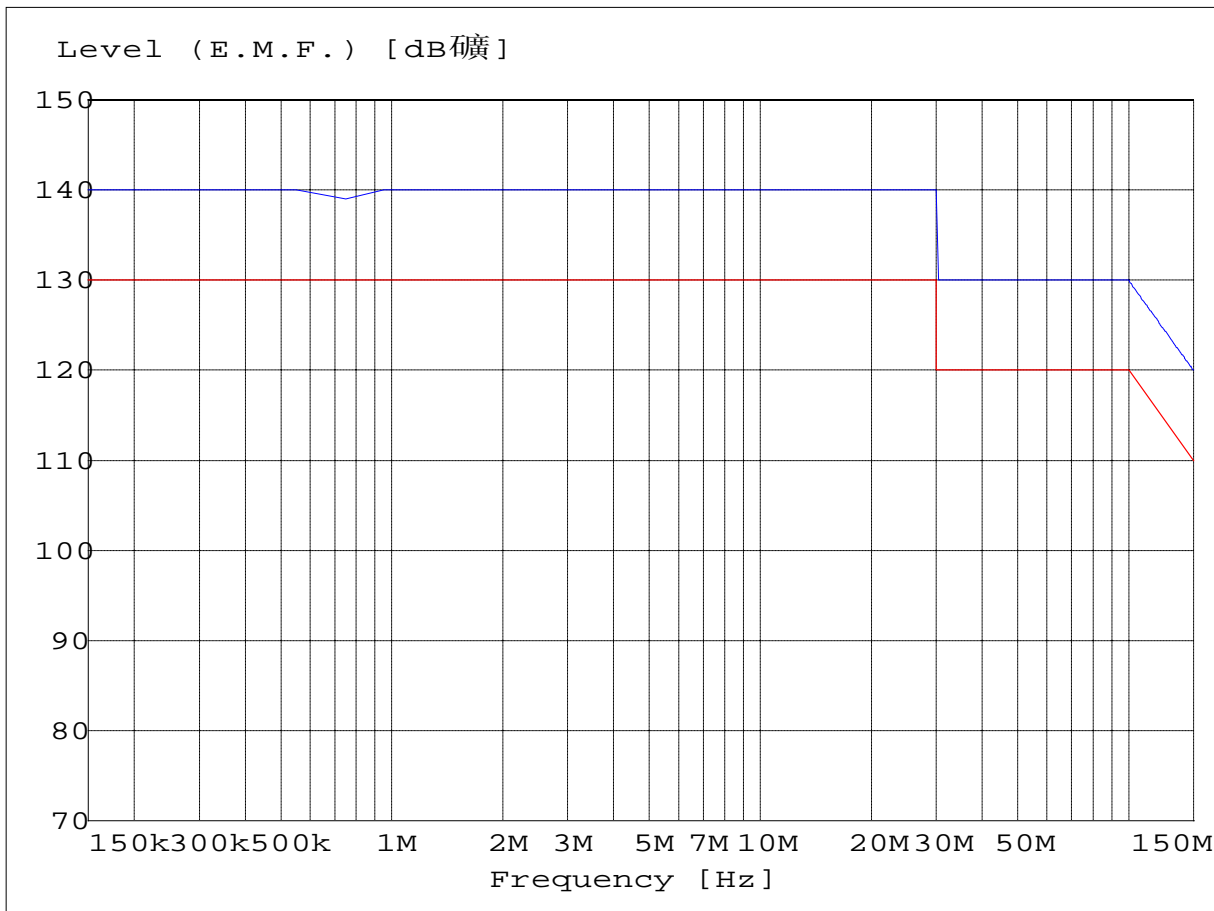
Operating Mode: AUX

S/N: 86.6 dB

Frequency: -

AF Level: 451.5 mV

Interf. Signal: Mains, 210906-00001-001, 9/21/2006, 7:02:13PM





Test Mode: Amplifier -

Monitor: AUDIO OUT AUX

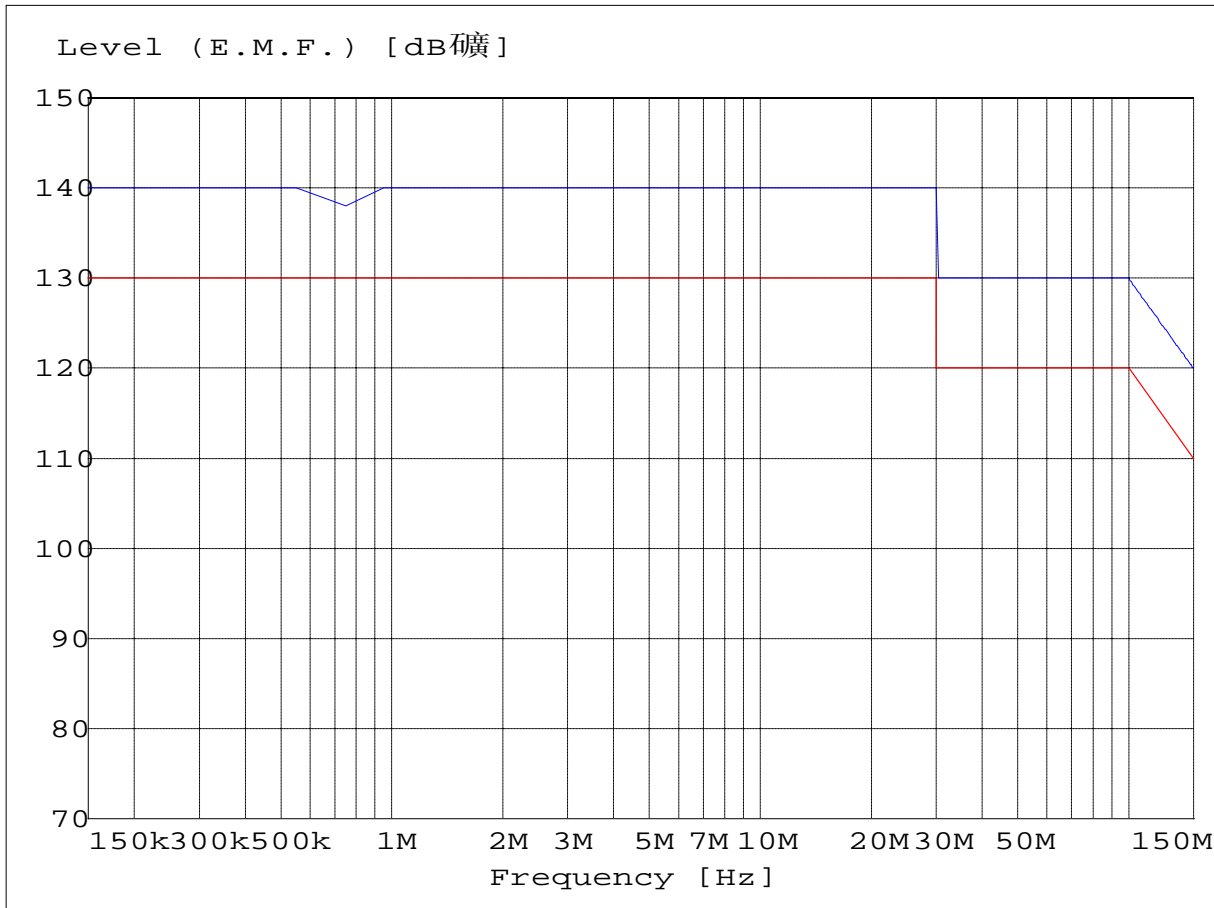
Operating Mode: AUX

S/N: 93.4 dB

Frequency: -

AF Level: 440.5 mV

Interf. Signal: Mains, 210906-00001-002, 9/21/2006, 7:13:07PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: AUDIO OUT EFX

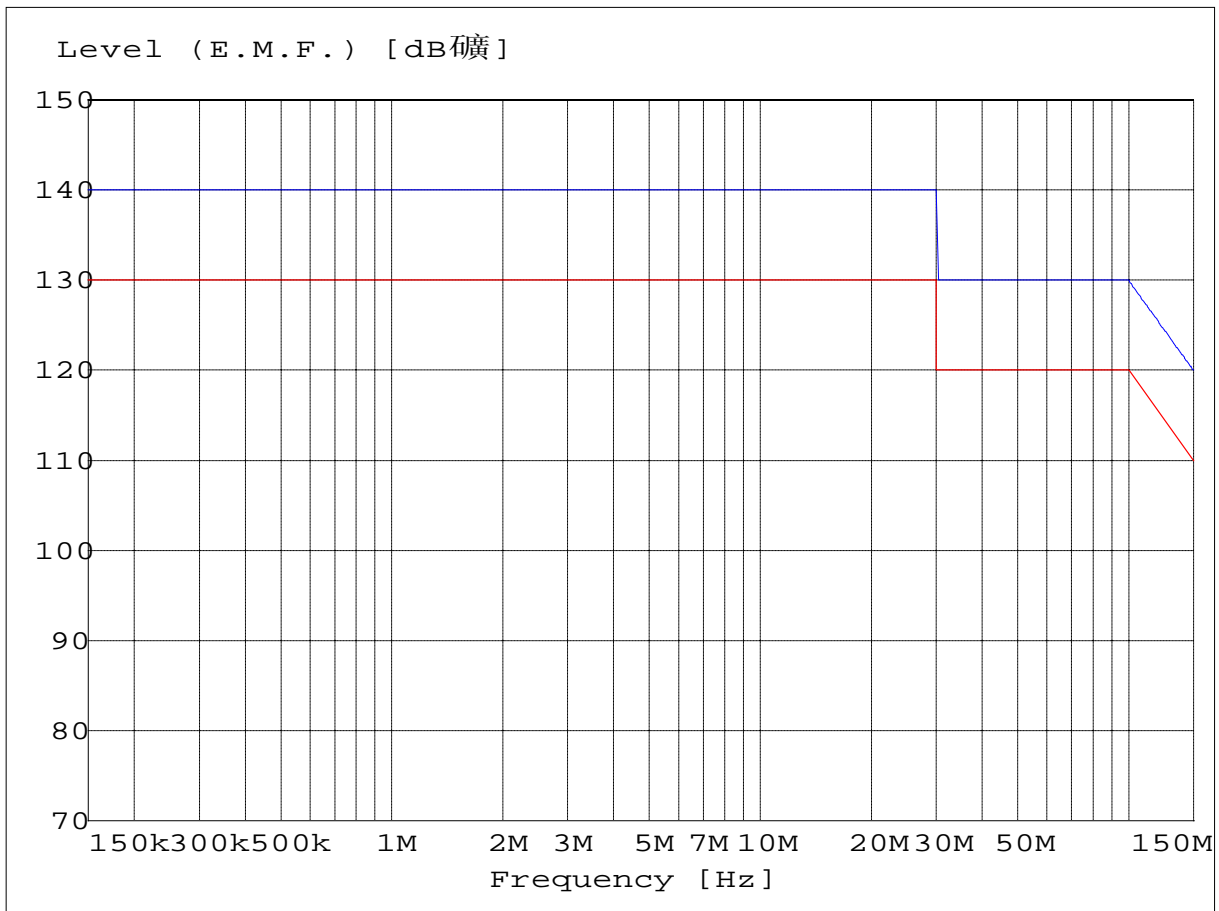
Operating Mode: AUX

S/N: 91.2 dB

Frequency: -

AF Level: 439.1 mV

Interf. Signal: Mains, 210906-00001-003, 9/21/2006, 7:19:31PM





Test Mode: Amplifier -

Monitor: Audio Out MAIN OUT L

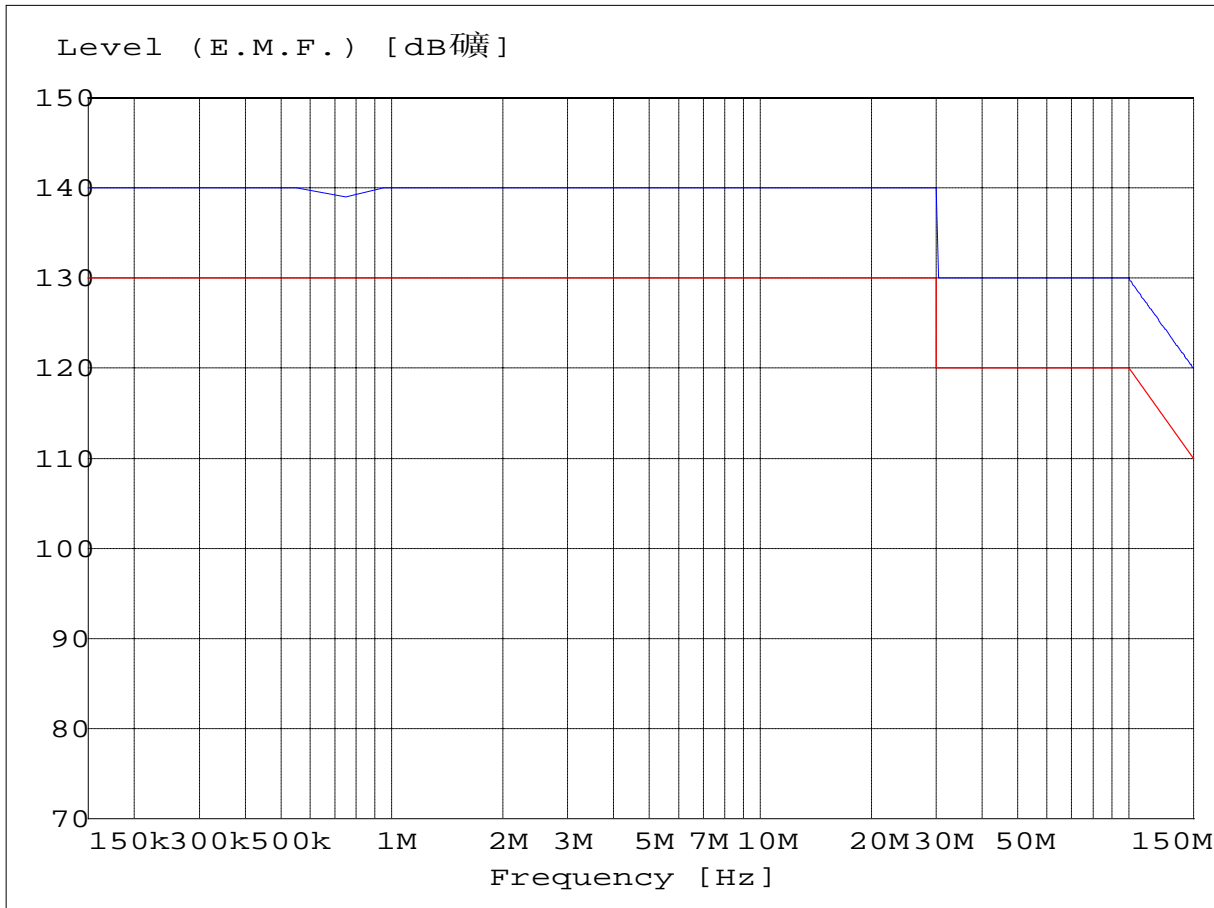
Operating Mode: AUX

S/N: 95.6 dB

Frequency: -

AF Level: 468.1 mV

Interf. Signal: Mains, 210906-00001-004, 9/21/2006, 7:24:54PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Audio Out MAIN OUT R

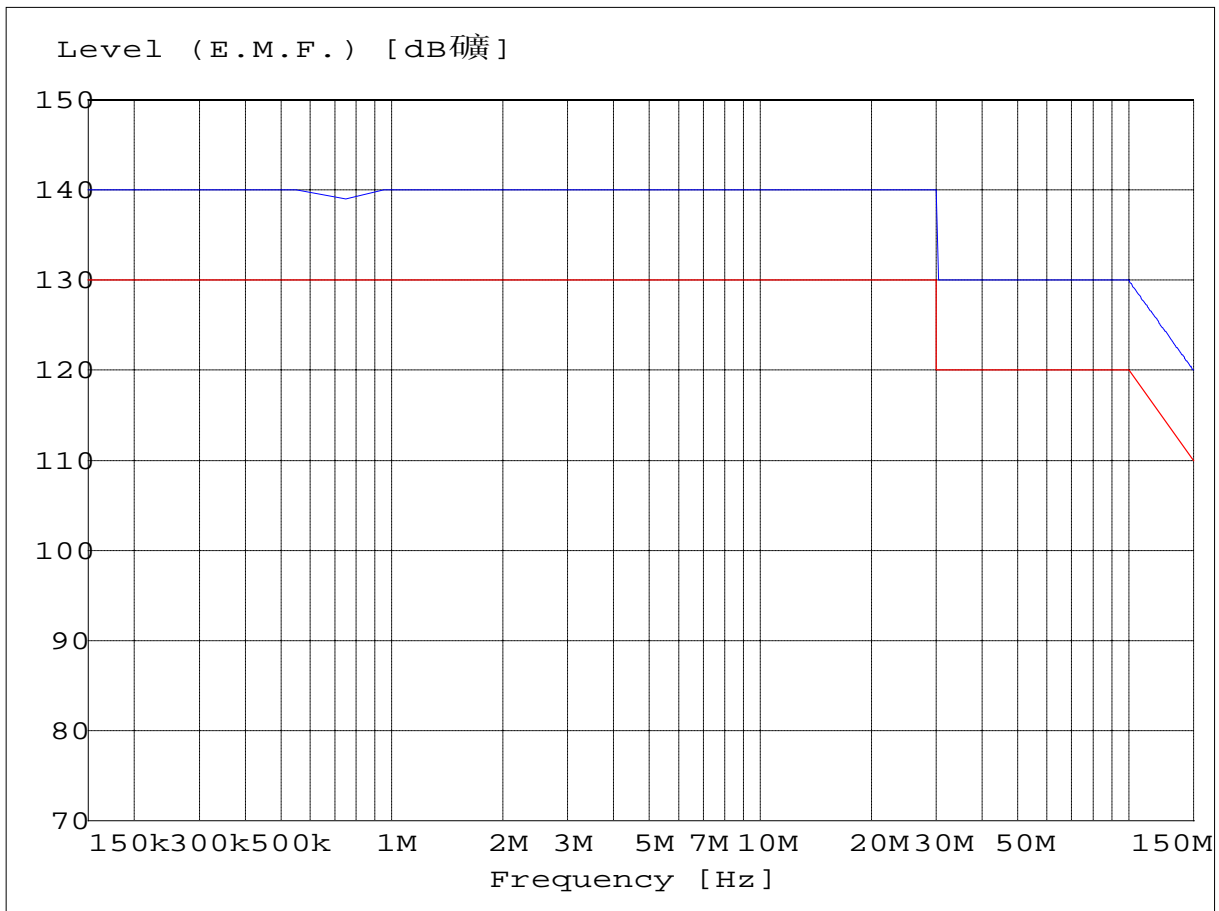
Operating Mode: AUX

S/N: 97.4 dB

Frequency: -

AF Level: 481.9 mV

Interf. Signal: Mains, 210906-00001-005, 9/21/2006, 7:30:10PM





Test Mode: Amplifier -

Monitor: Audio Out CONTRCL L

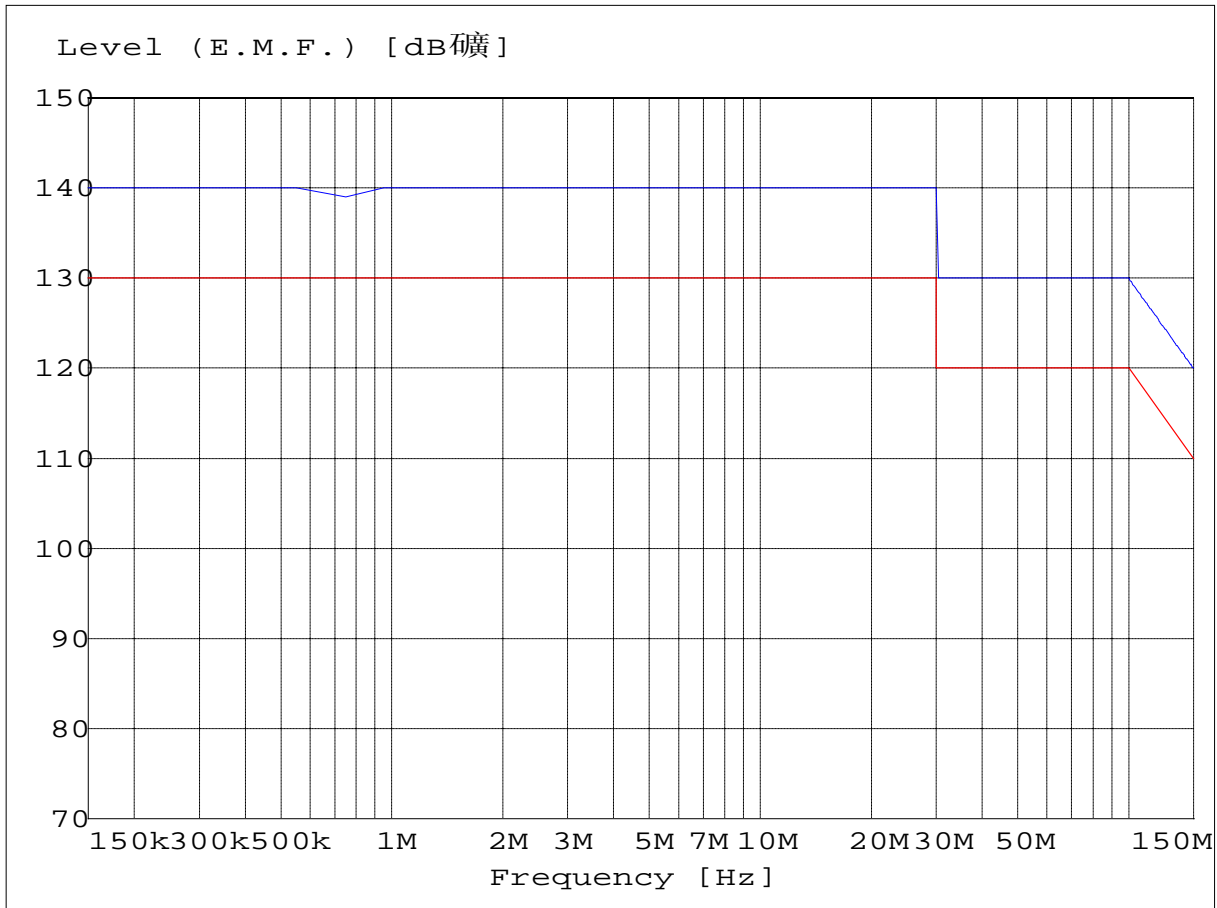
Operating Mode: AUX

S/N: 96.2 dB

Frequency: -

AF Level: 454.5 mV

Interf. Signal: Mains, 210906-00001-006, 9/21/2006, 7:35:44PM





Test: Immunity Conducted Voltages S2a <M1022>

Test Mode: Amplifier -

Monitor: Audio Out CONTRCL R

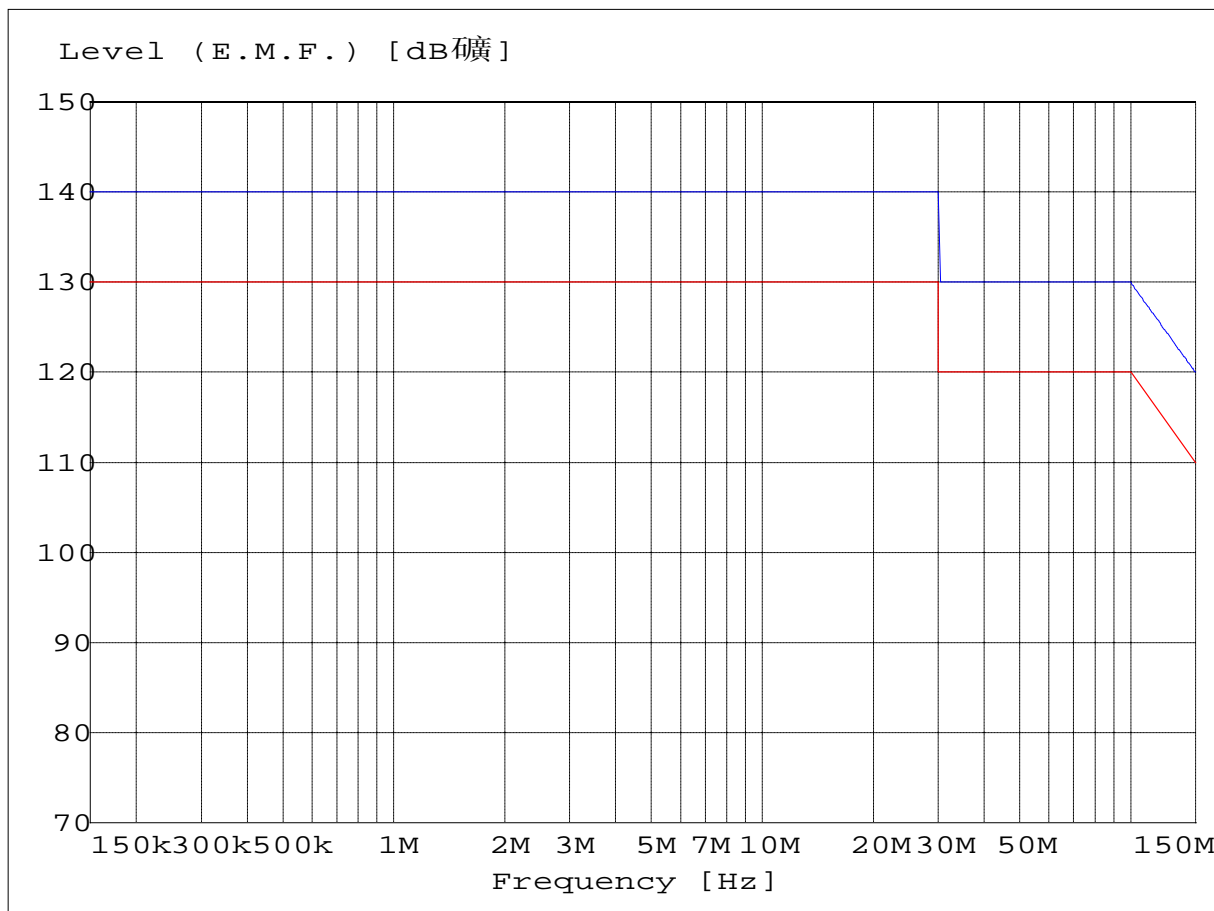
Operating Mode: AUX

S/N: 96.8 dB

Frequency: -

AF Level: 446.7 mV

Interf. Signal: Mains, 210906-00001-007, 9/21/2006, 7:45:38PM





Test: Immunity Radiated Fields S3 <M1022>

Test Mode: Amplifier -

Monitor: Audio Out PHONE

Operating Mode: AUX

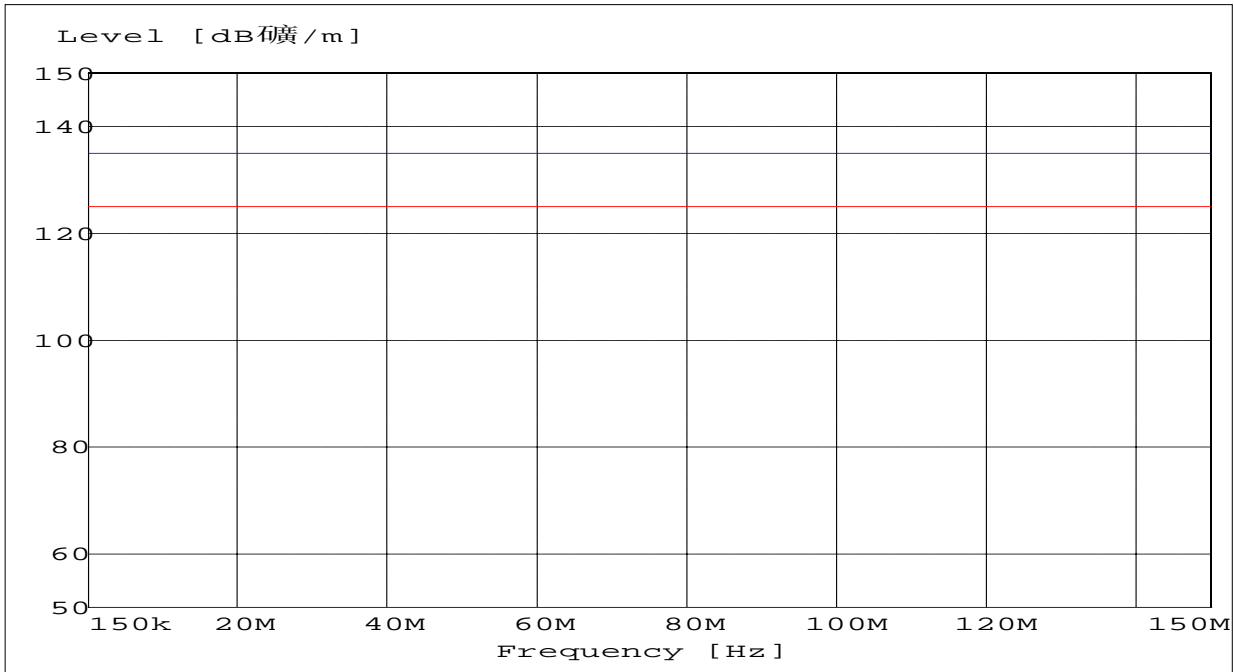
S/N: 80.2 dB

Frequency: -

AF Level: 461.5 mV

Interf. Signal: Scan, 061106-00043-001, 11/6/2006, 6:45:54PM

K2 = 1.6 dB



Test Mode: Amplifier -

Monitor: AUDIO OUT AUX

Operating Mode: AUX

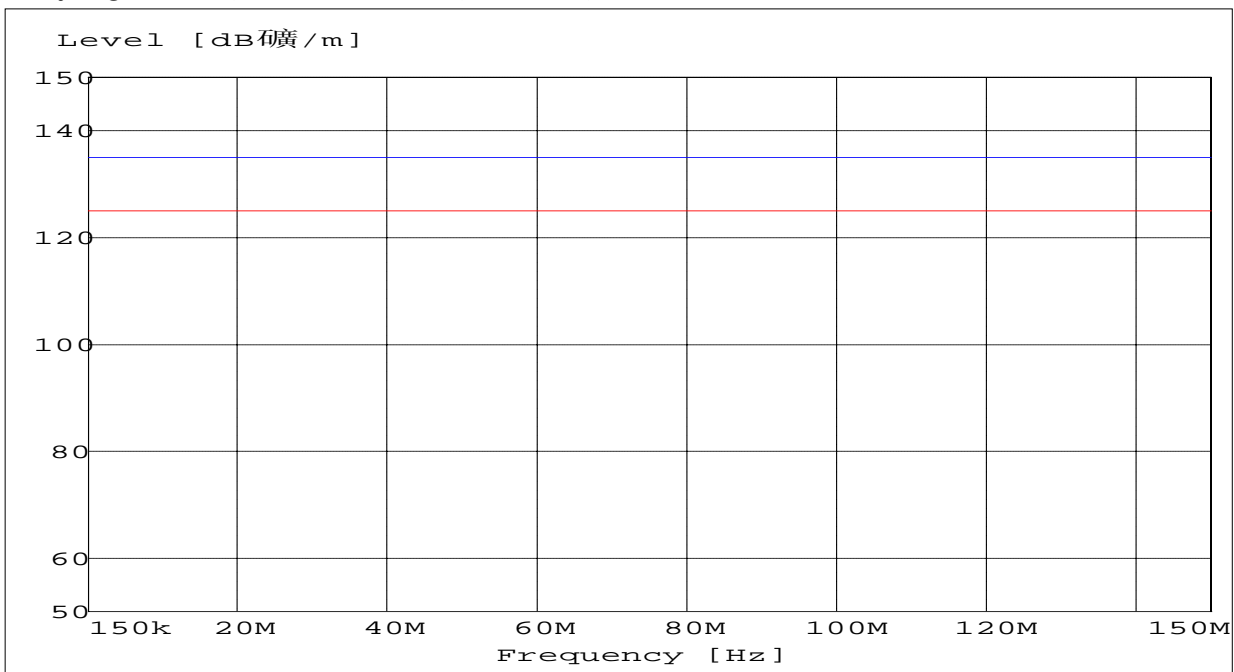
S/N: 75.2 dB

Frequency: -

AF Level: 444.1 mV

Interf. Signal: Scan, 061106-00043-002, 11/6/2006, 7:10:19PM

K2 = 1.6 dB





Test: Immunity Radiated Fields S3 <M1022>

Test Mode: Amplifier -

Monitor: Audio Out MAIN OUT L

Operating Mode: AUX

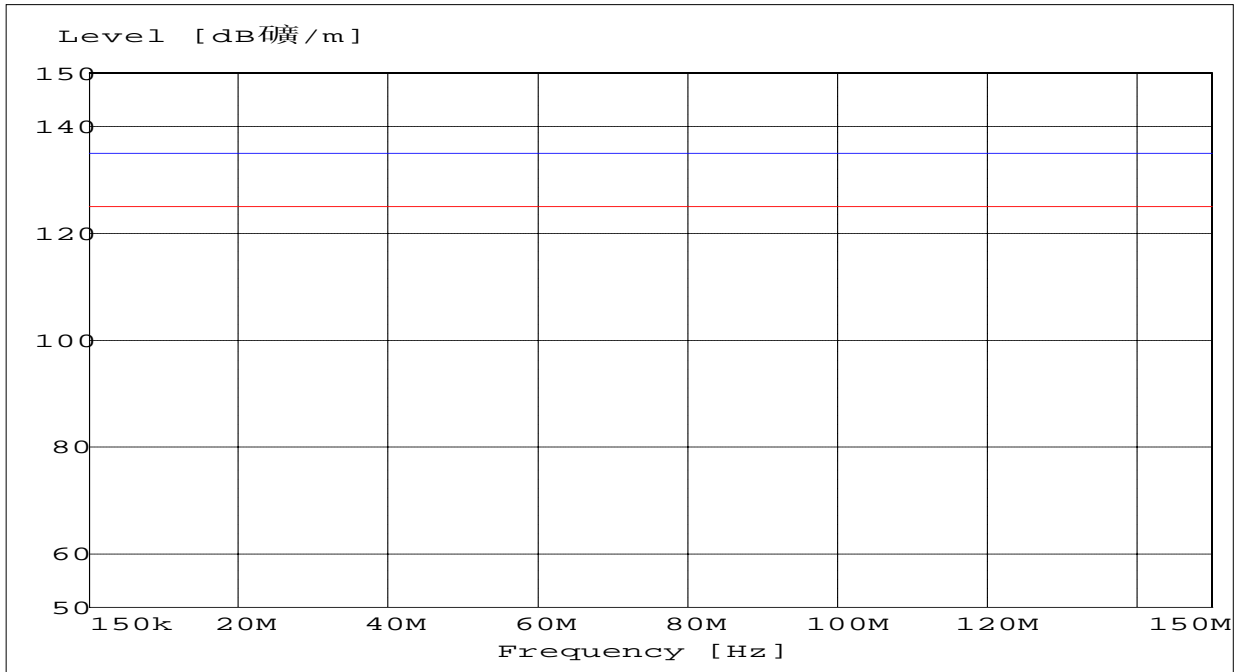
S/N: 79.7 dB

Frequency: -

AF Level: 427.5 mV

Interf. Signal: Scan, 061106-00043-003, 11/6/2006, 7:18:45PM

K2 = 1.6 dB



Test Mode: Amplifier -

Monitor: Audio Out MAIN OUT R

Operating Mode: AUX

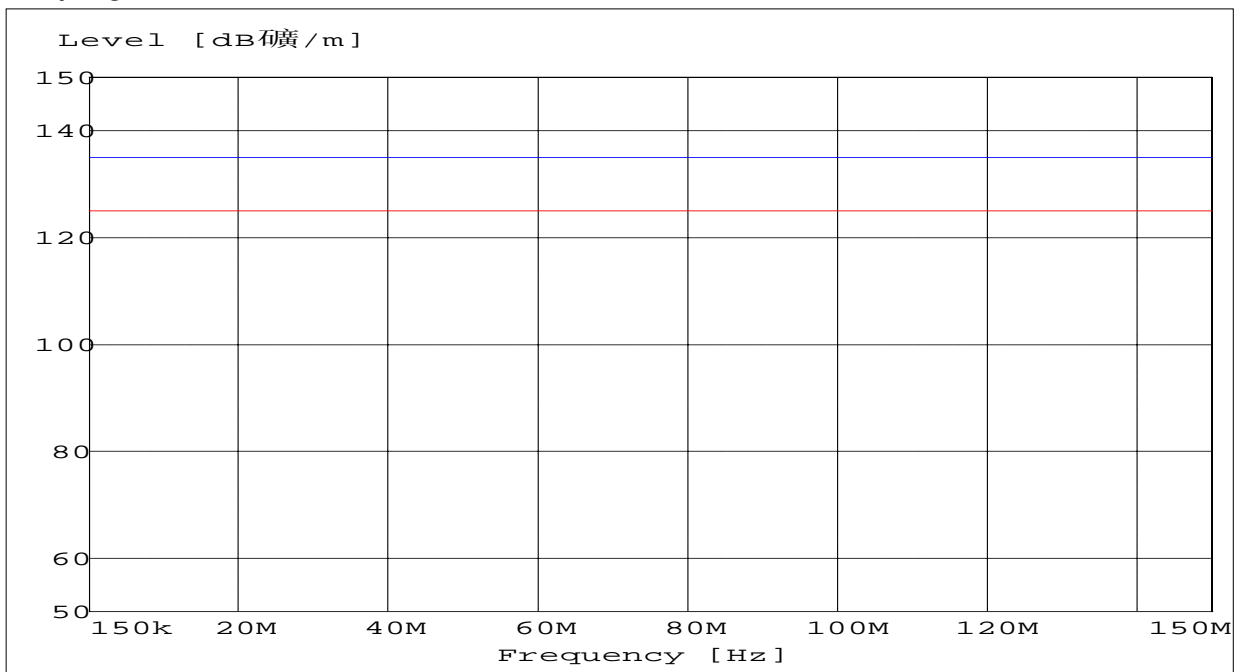
S/N: 78.5 dB

Frequency: -

AF Level: 448.2 mV

Interf. Signal: Scan, 061106-00043-004, 11/6/2006, 7:25:51PM

K2 = 1.6 dB





Test: Immunity Radiated Fields S3 <M1022>

Test Mode: Amplifier -

Monitor: Audio Out CONTRCL R

Operating Mode: AUX

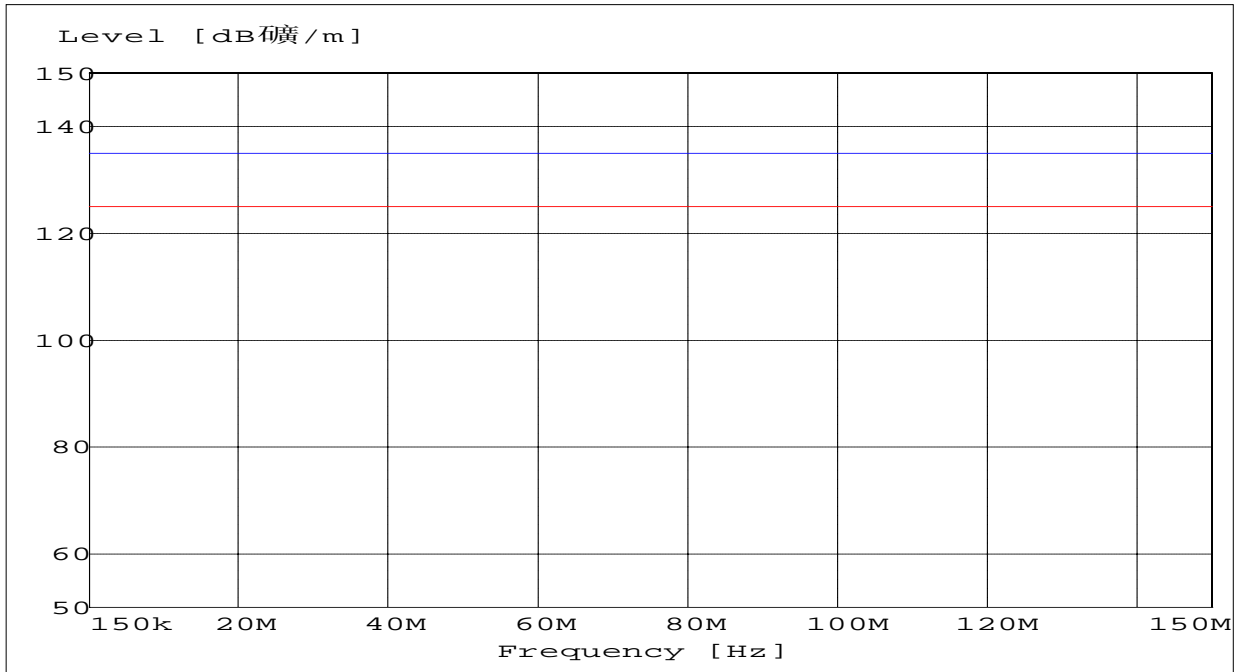
S/N: 79.0 dB

Frequency: -

AF Level: 451.7 mV

Interf. Signal: Scan, 061106-00043-005, 11/6/2006, 7:33:15PM

K2 = 1.6 dB



Test Mode: Amplifier -

Monitor: Audio Out CONTRCL L

Operating Mode: AUX

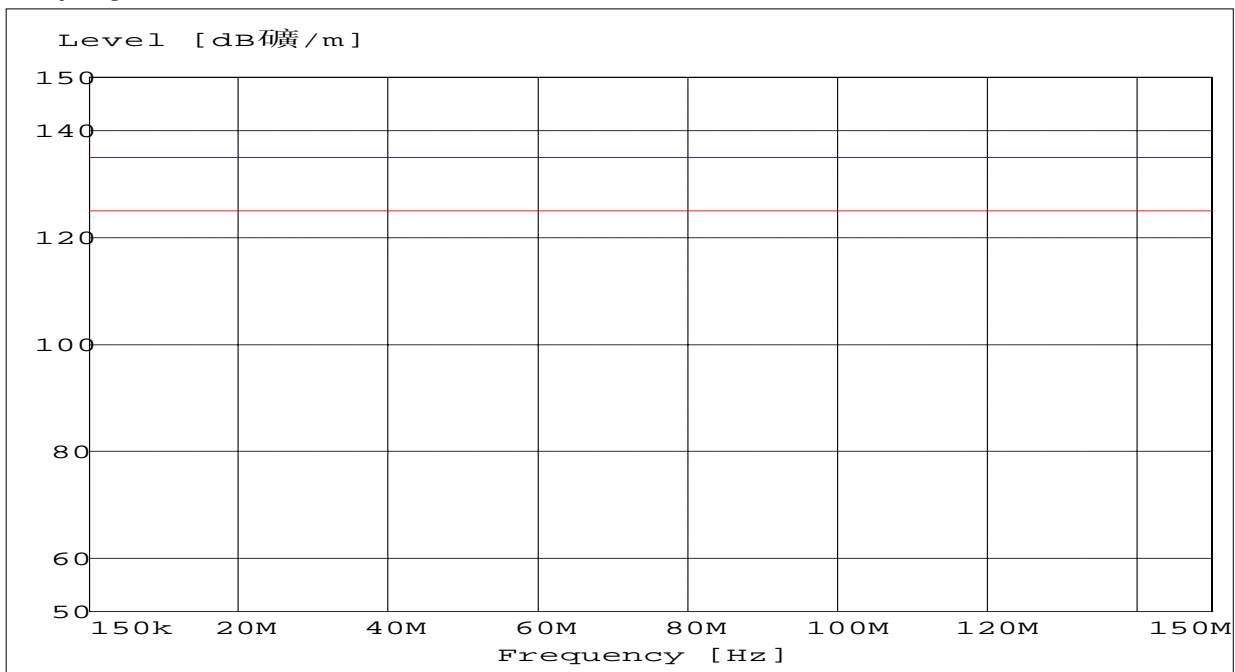
S/N: 80.0 dB

Frequency: -

AF Level: 470.2 mV

Interf. Signal: Scan, 061106-00043-006, 11/6/2006, 7:40:28PM

K2 = 1.6 dB





Test: Immunity Radiated Fields S3 <M1022>

Test Mode: Amplifier -

Monitor: AUDIO OUT EFX

Operating Mode: AUX

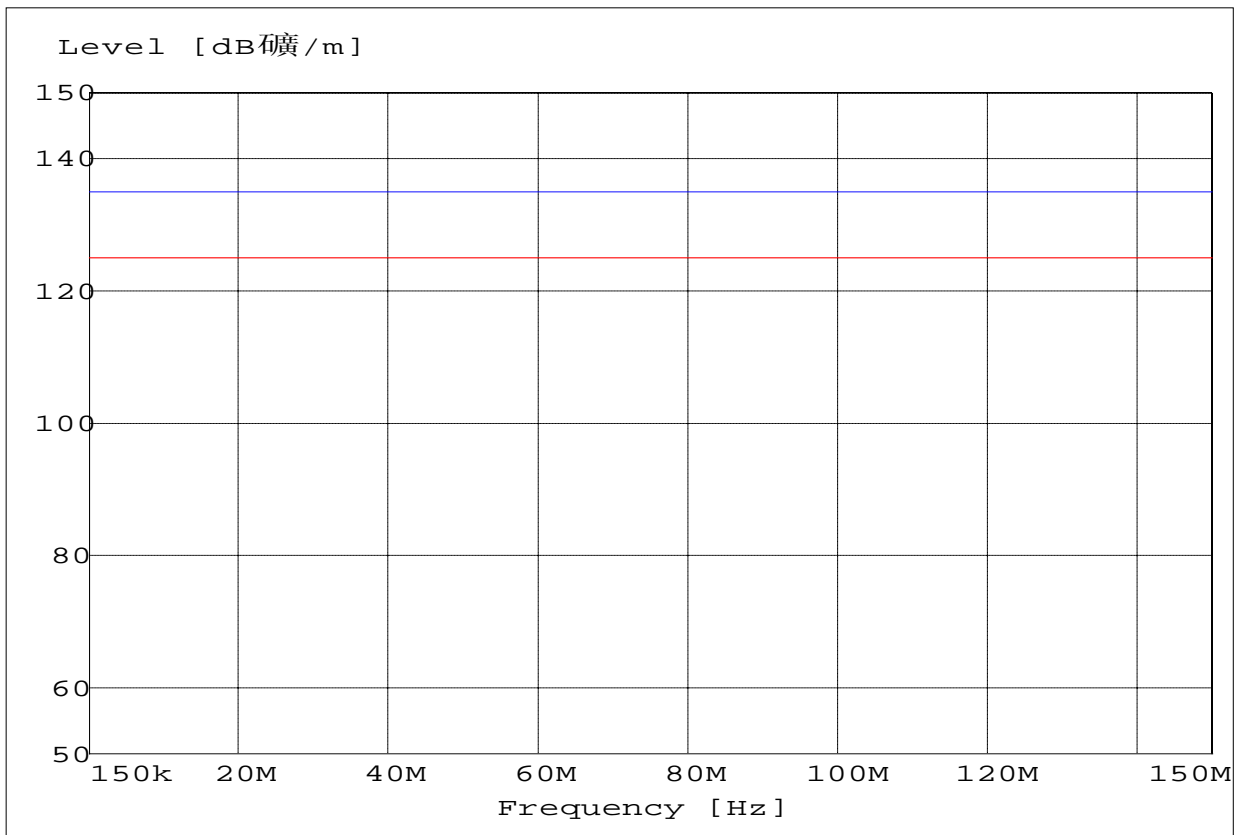
S/N: 64.5 dB

Frequency: -

AF Level: 442.6 mV

Interf. Signal: Scan, 061106-00043-007, 11/6/2006, 7:48:01PM

K2 = 1.6 dB





Test: Keyed Carrier S5 <M1022>

Test Mode: Amplifier -

Monitor: AUDIO OUT AUX

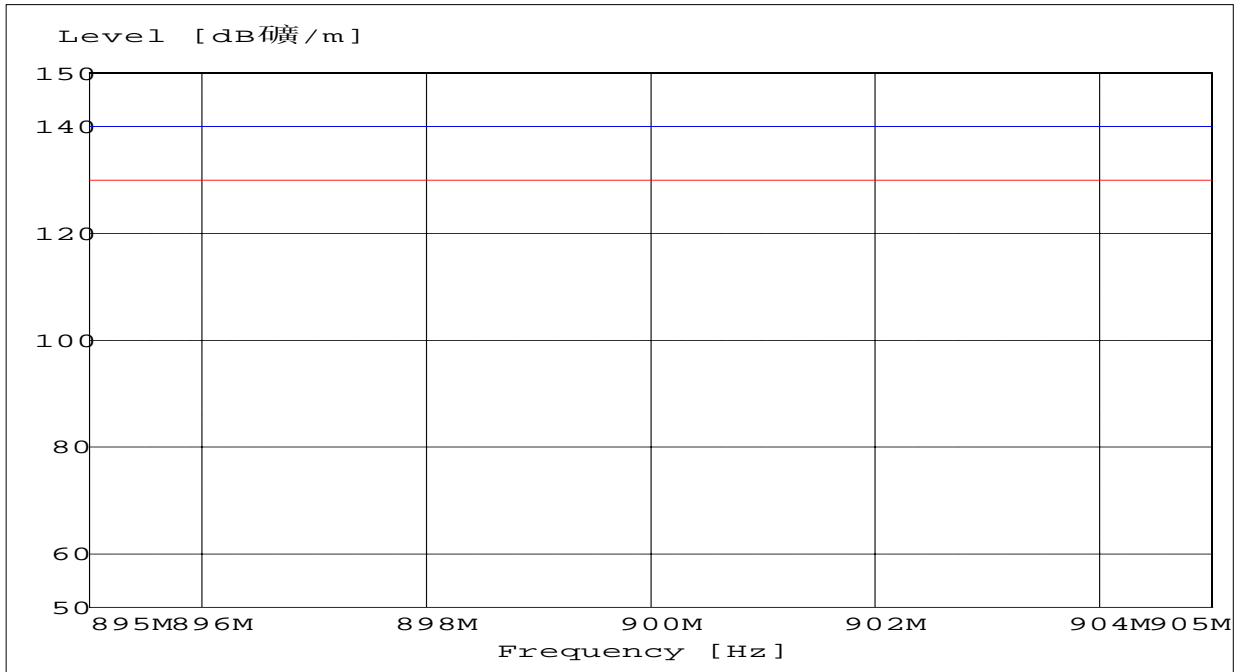
Operating Mode: AUX

S/N: 68.2 dB

Frequency: -

AF Level: 453.0 mV

Interf. Signal: Scan, 131106-00049-001, 11/13/2006, 5:11:25PM



Test Mode: Amplifier -

Monitor: AUDIO OUT EFX

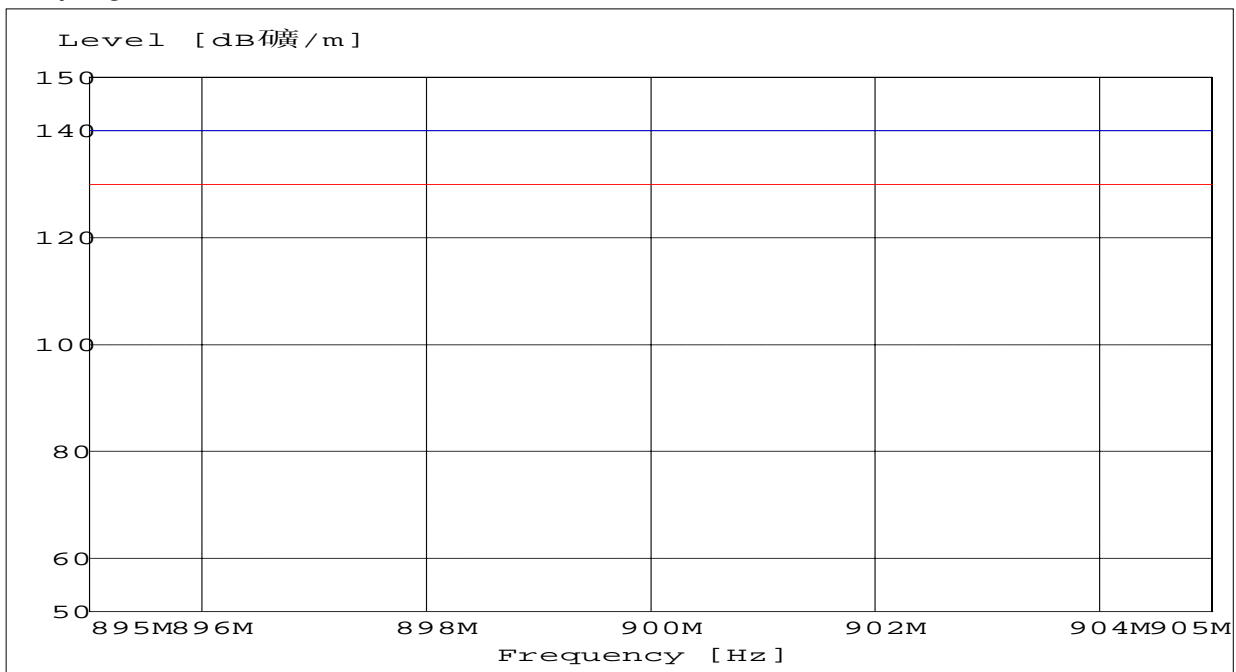
Operating Mode: AUX

S/N: 68.4 dB

Frequency: -

AF Level: 453.0 mV

Interf. Signal: Scan, 131106-00049-002, 11/13/2006, 5:12:36PM





Test: Keyed Carrier S5 <M1022>

Test Mode: Amplifier -

Monitor: Audio Out CONTRCL R

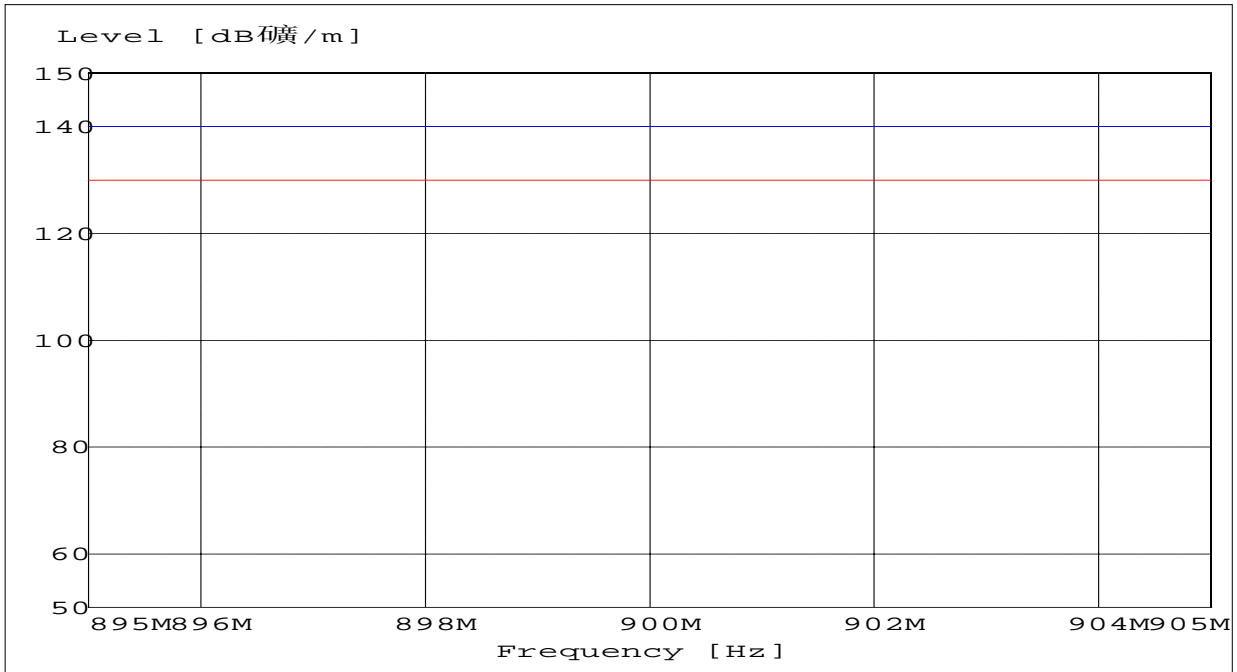
Operating Mode: AUX

S/N: 68.5 dB

Frequency: -

AF Level: 453.1 mV

Interf. Signal: Scan, 131106-00049-003, 11/13/2006, 5:13:47PM



Test Mode: Amplifier -

Monitor: Audio Out CONTRCL L

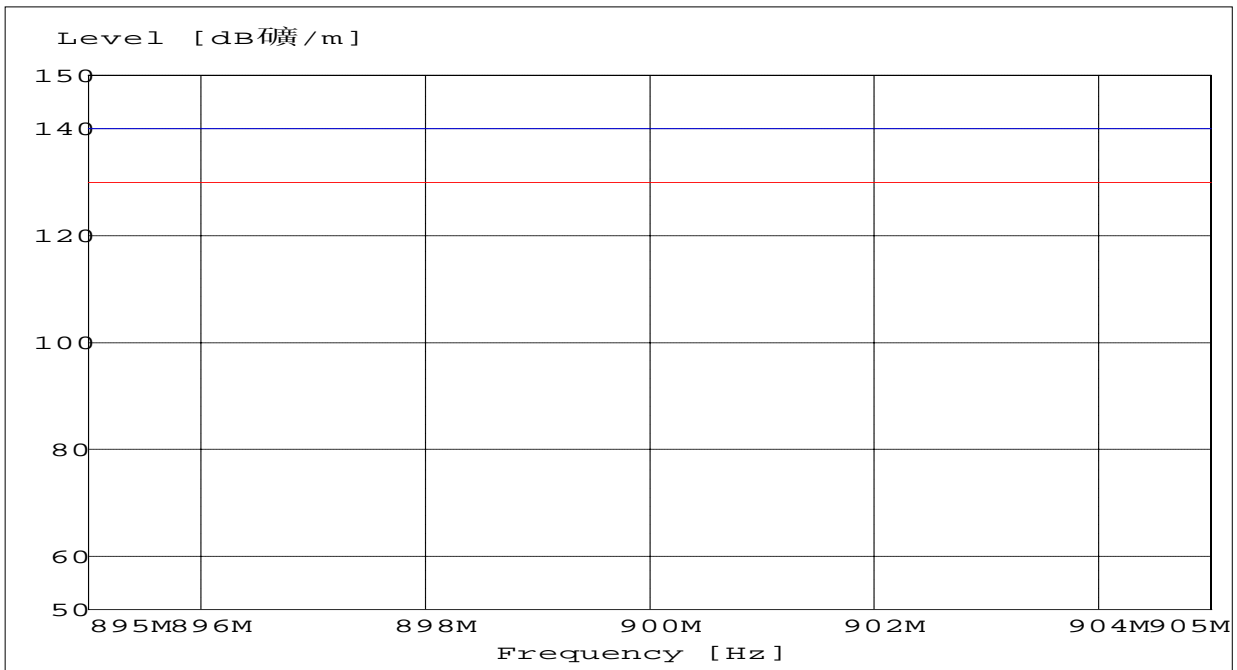
Operating Mode: AUX

S/N: 68.5 dB

Frequency: -

AF Level: 453.1 mV

Interf. Signal: Scan, 131106-00049-004, 11/13/2006, 5:14:56PM





Test: Keyed Carrier S5 <M1022>

Test Mode: Amplifier -

Monitor: Audio Out MAIN OUT L

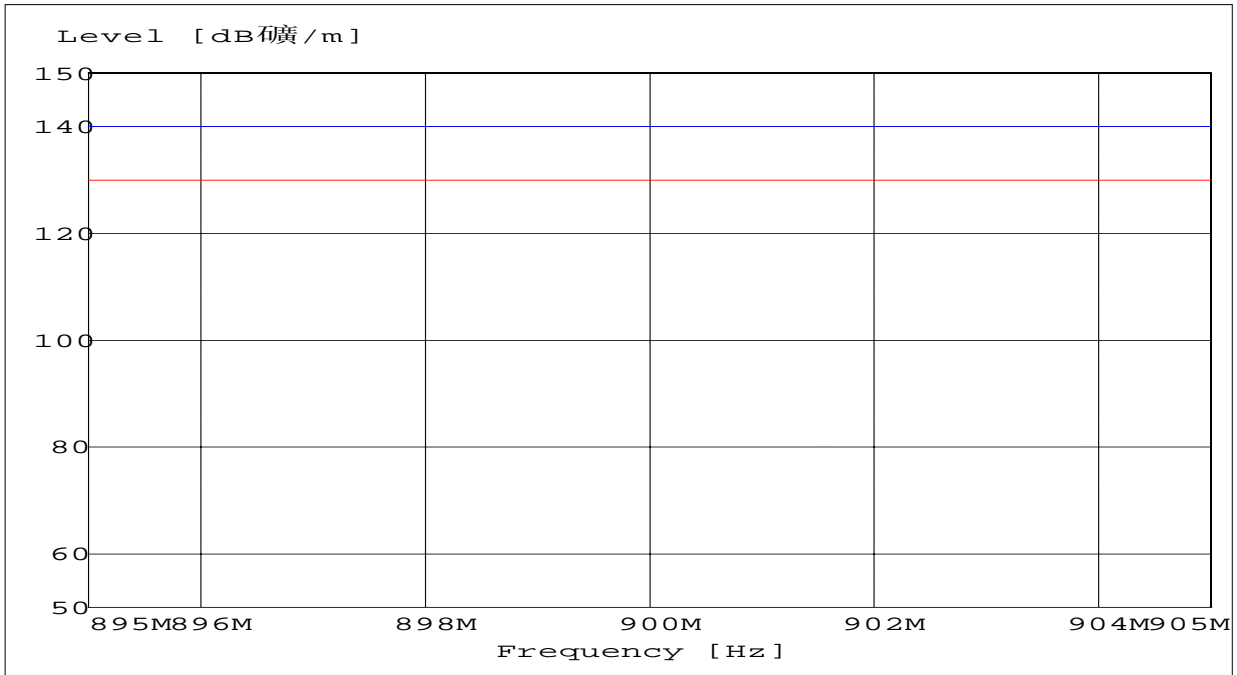
Operating Mode: AUX

S/N: 68.6 dB

Frequency: -

AF Level: 453.0 mV

Interf. Signal: Scan, 131106-00049-005, 11/13/2006, 5:16:05PM



Test Mode: Amplifier -

Monitor: Audio Out MAIN OUT R

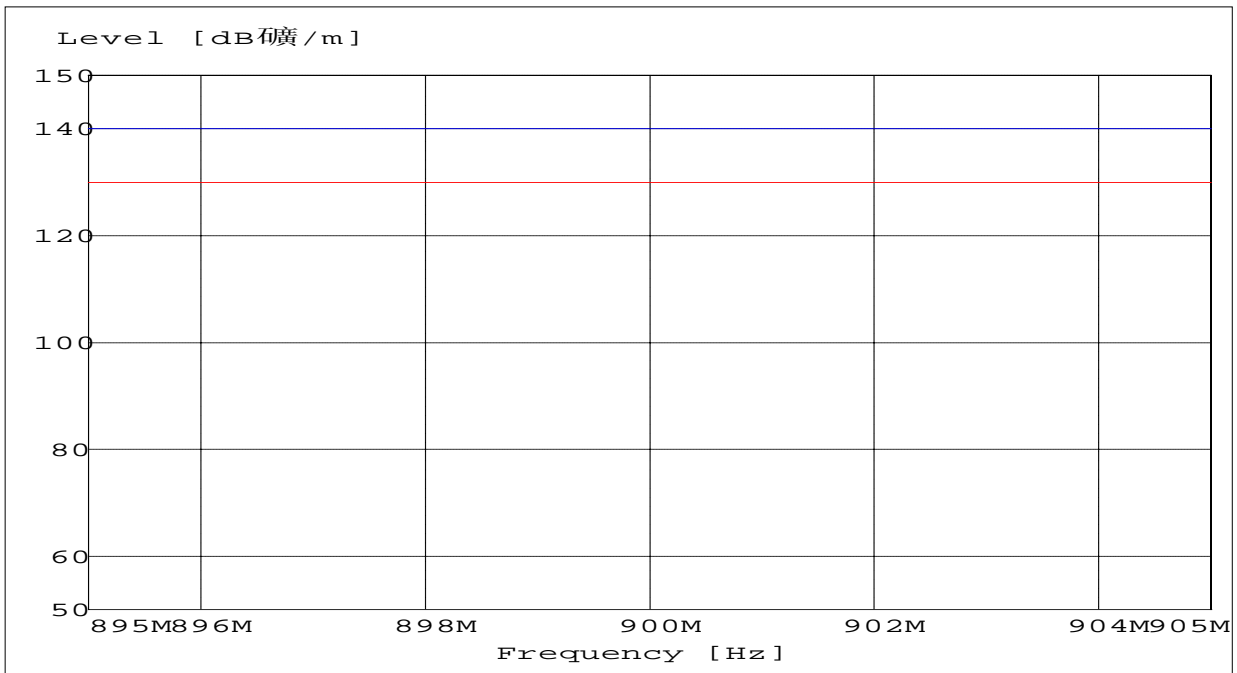
Operating Mode: AUX

S/N: 68.7 dB

Frequency: -

AF Level: 453.0 mV

Interf. Signal: Scan, 131106-00049-006, 11/13/2006, 5:17:18PM





Test: Keyed Carrier S5 <M1022>

Test Mode: Amplifier -

Monitor: Headphones

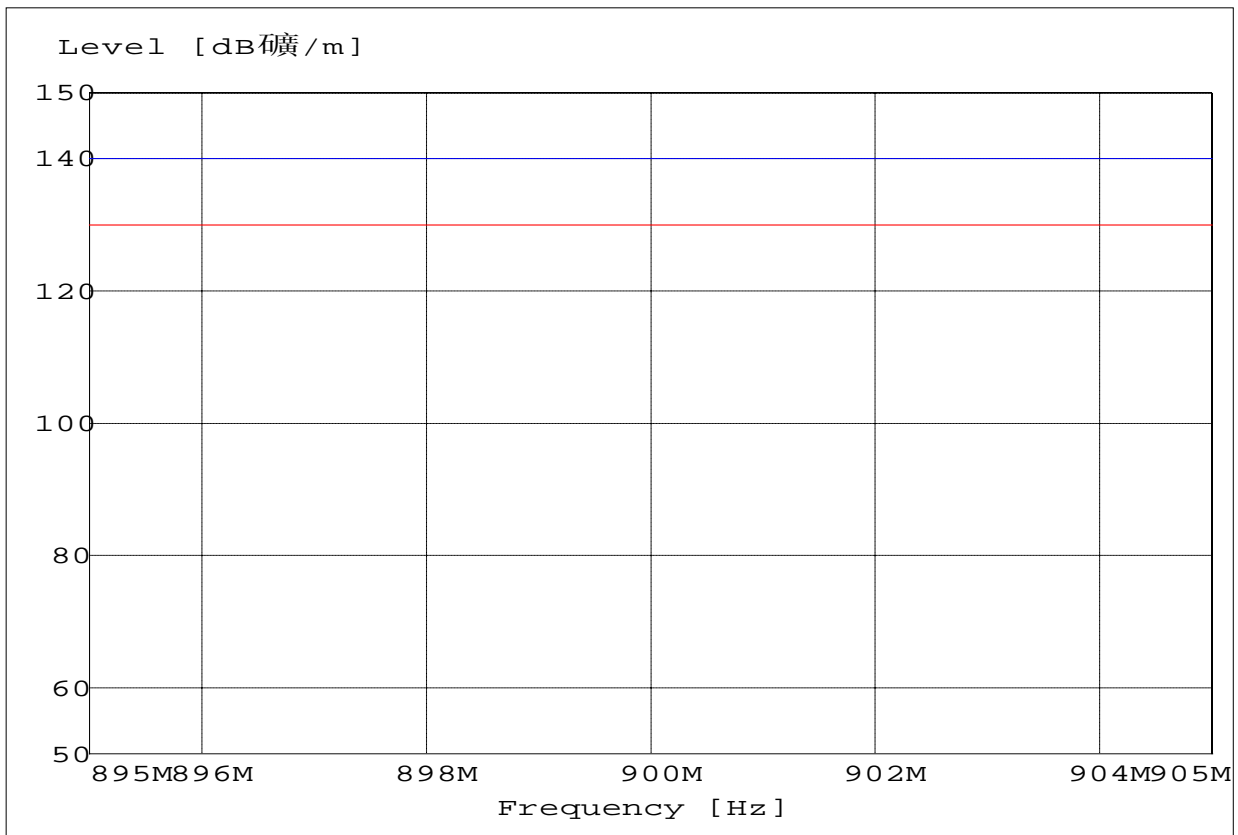
Operating Mode: AUX

S/N: 68.6 dB

Frequency: -

AF Level: 453.1 mV

Interf. Signal: Scan, 131106-00049-007, 11/13/2006, 5:18:28PM





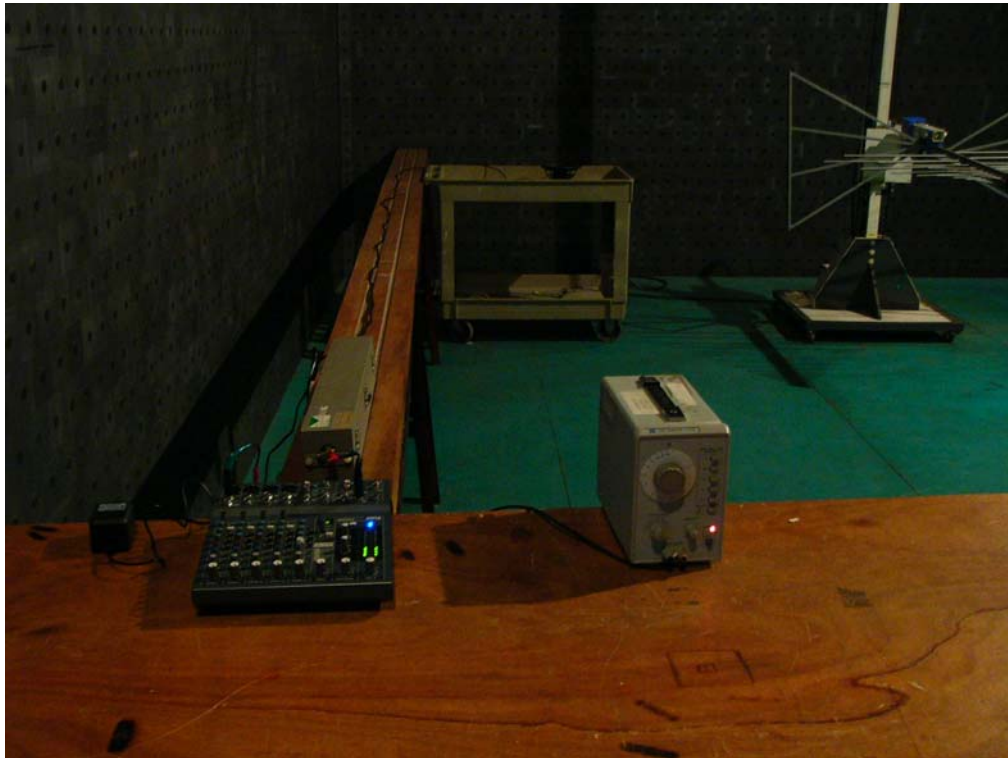
APPENDIX 1

PHOTOGRAPHS OF TEST SETUP

TERMINAL VOLTAGE TEST



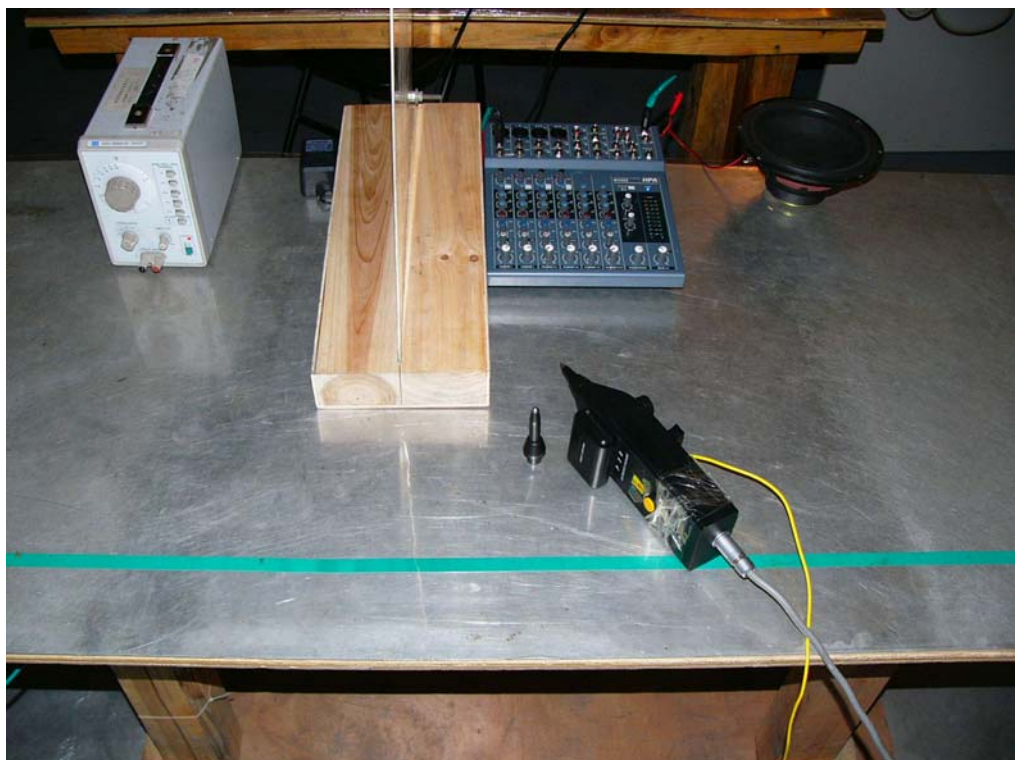
DISTURBANCE POWER TEST



POWER HARMONICS & VOLTAGE FLUCTUATION /FLICKER



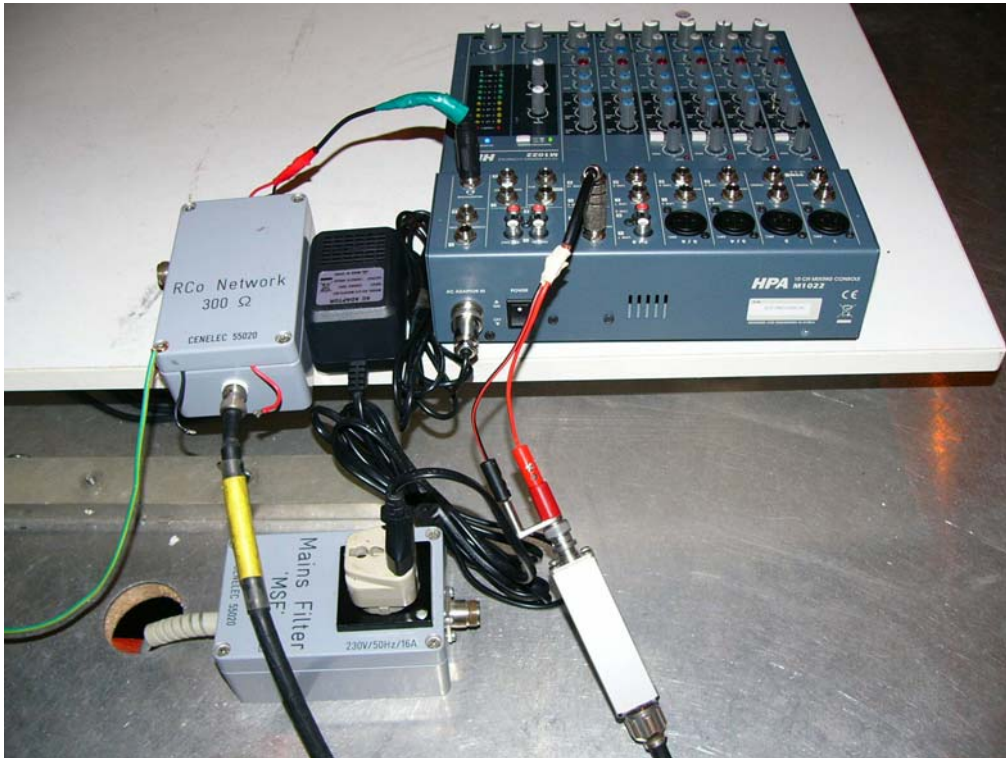
ELECTROSTATIC DISCHARGE TEST (IEC 61000-4-2)



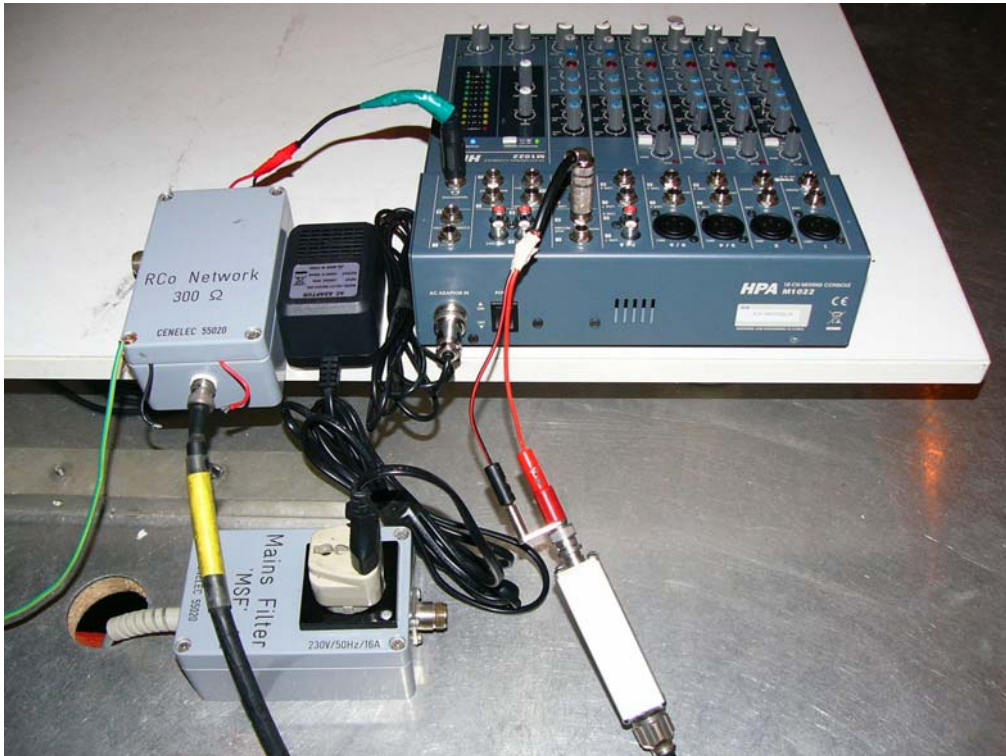
FAST TRANSIENTS/BURST (IEC 61000-4-4)



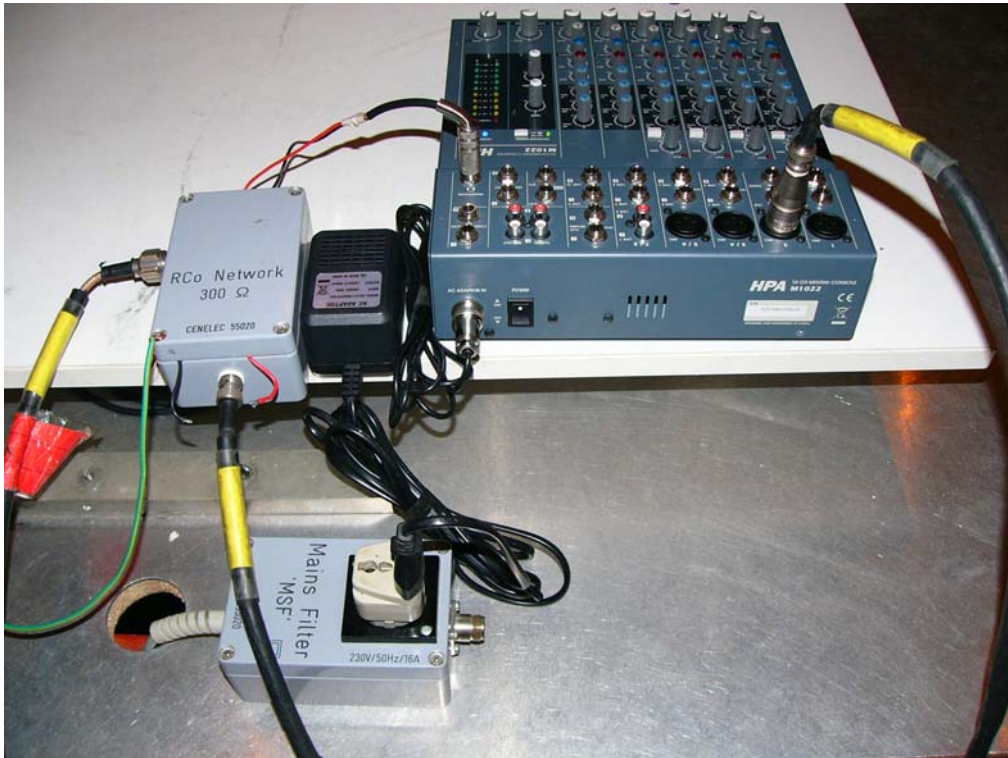
Immunity Against RFI Voltages S2a
(Test mode: AUX RETURN L DISTURBANCE HEADPHONE MONITOR)



Immunity Against RFI Voltages S2a
(Test mode: AUX RETURN R DISTURBANCE HEADPHONE MONITOR)



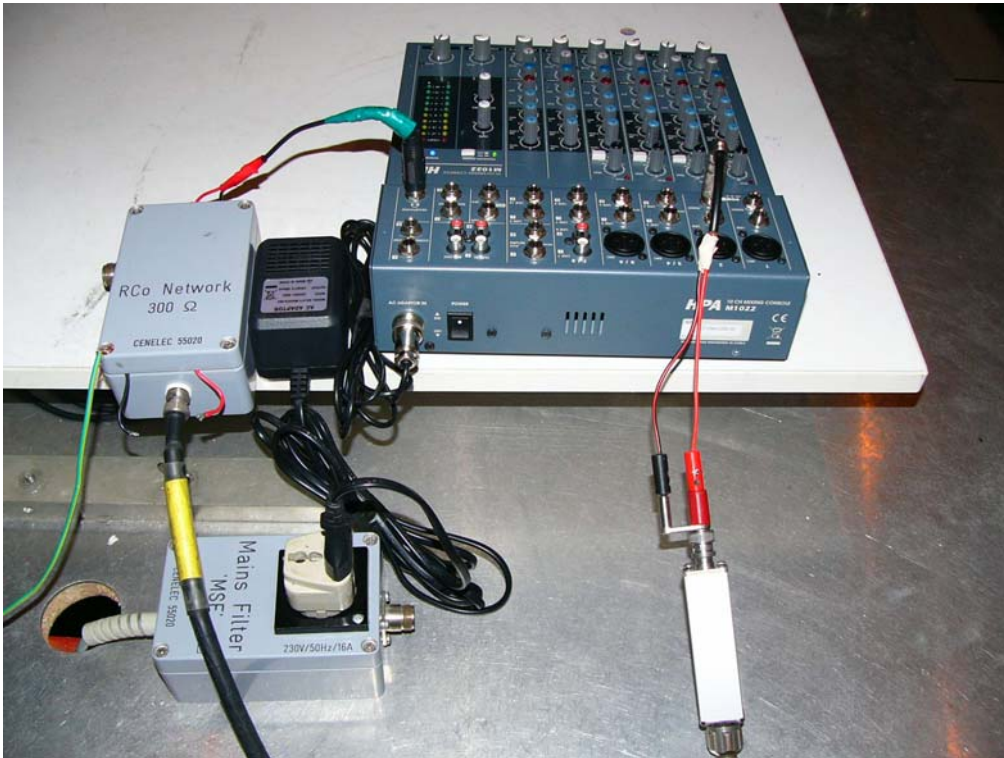
Immunity Against RFI Voltages S2a
(Test mode: HEADPHONE DISTURBANCE HEADPHONE MONITOR)



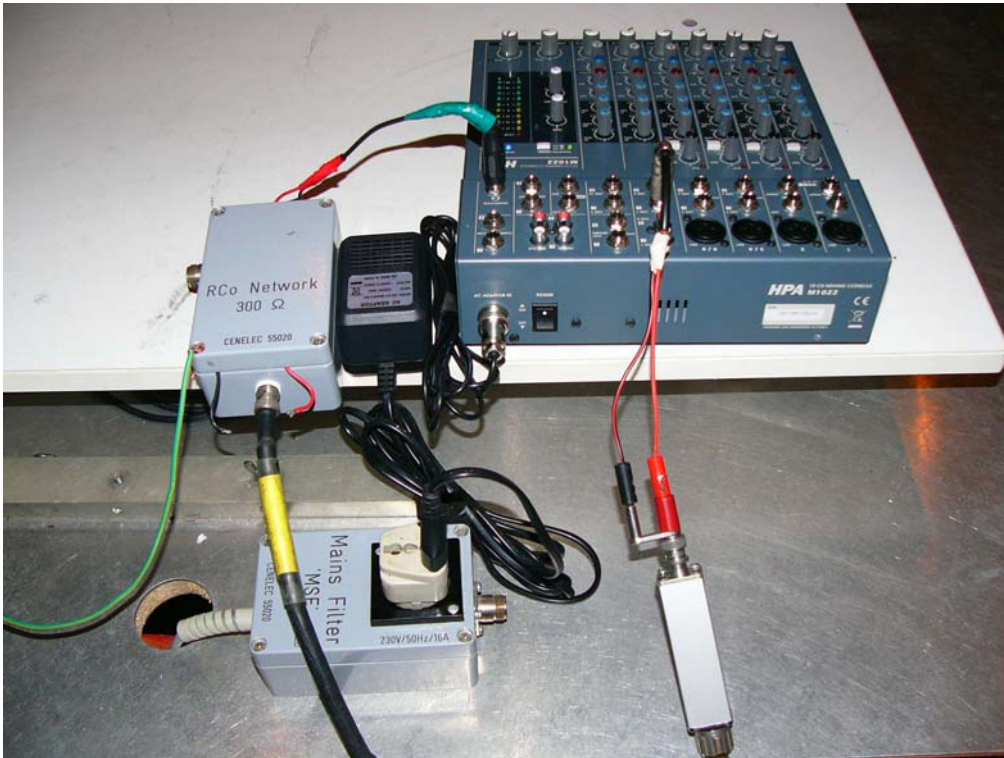
Immunity Against RFI Voltages S2a
(Test mode: INSERT L DISTURBANCE HEADPHONE MONITOR)



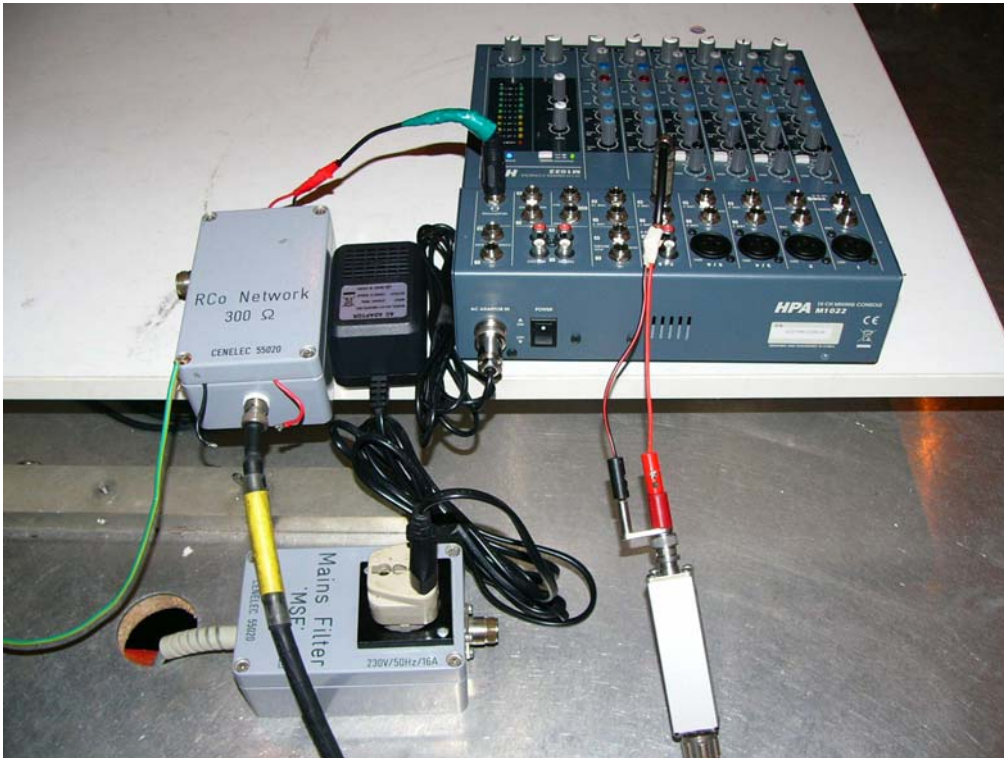
Immunity Against RFI Voltages S2a
(Test mode: INSERT R DISTURBANCE HEADPHONE MONITOR)



Immunity Against RFI Voltages S2a
(Test mode: LINE 7 L DISTURBANCE HEADPHONE MONITOR)



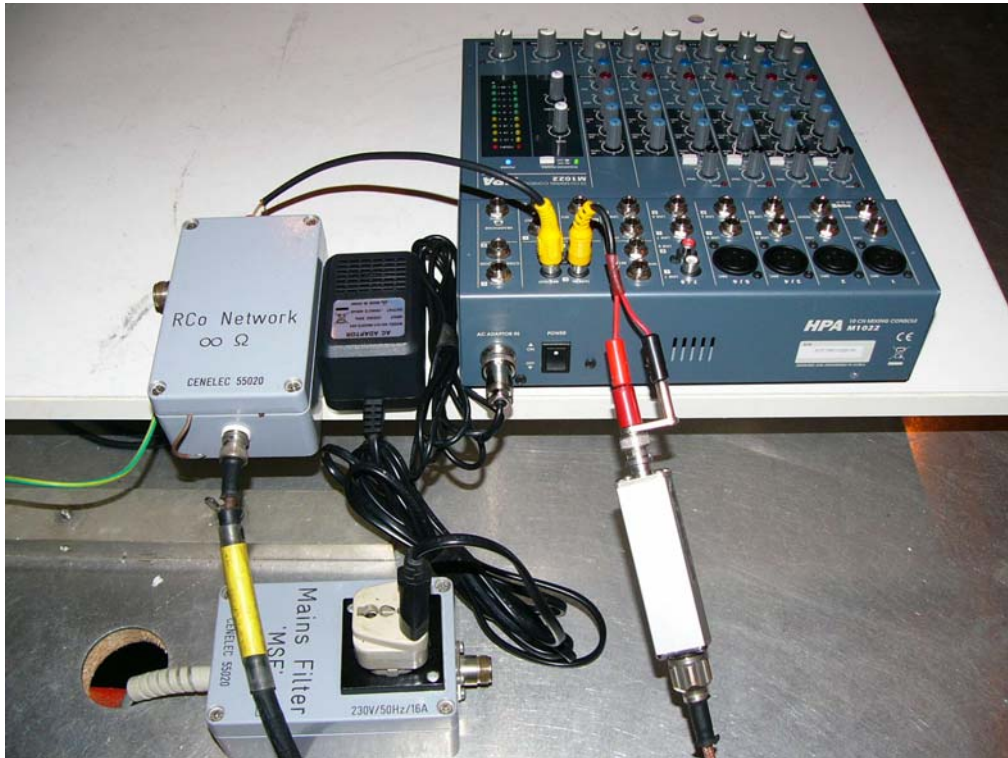
Immunity Against RFI Voltages S2a
(Test mode: LINE 8 R DISTURBANCE HEADPHONE MONITOR)



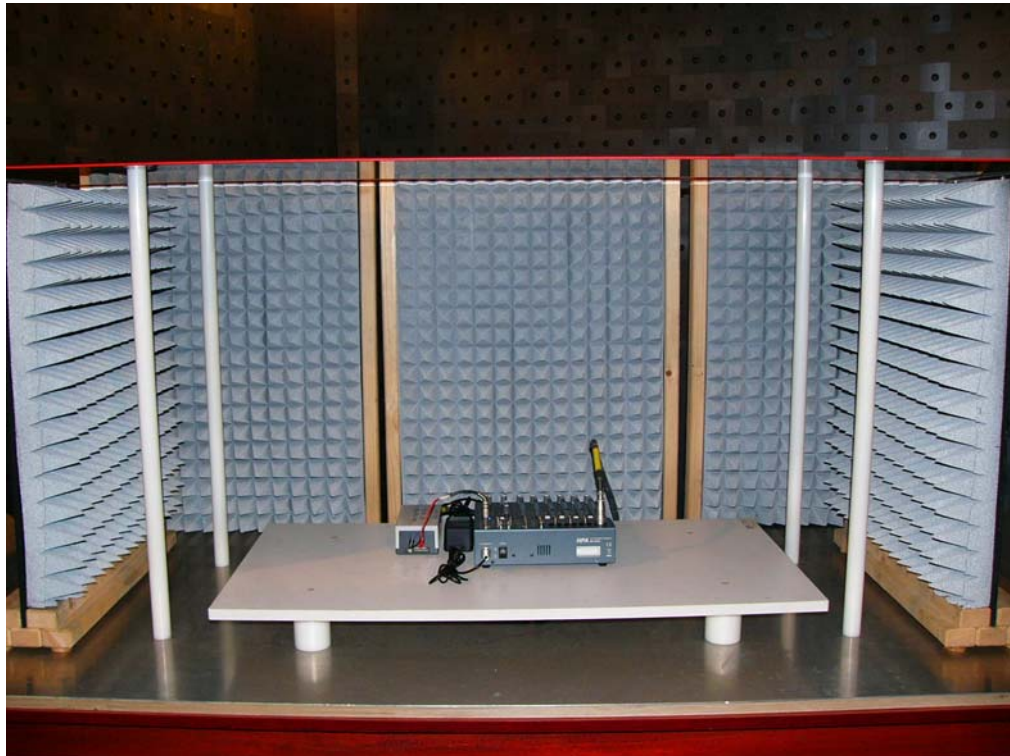
Immunity Against RFI Voltages S2a
(Test mode: MAINS DISTURBANCE HEADPHONE MONITOR)



Immunity Against RFI Voltages S2a
(Test mode: TAPE IN L DISTURBANCE REC OUT MONITOR)



Immunity Against Radiated RFI S3
(Test mode: MIC 1 IN HEADPHONE MONITOR)



Keyed Carrier S5(Test mode: MIC 3 IN HEADPHONE MONITOR)

