EMC TEST REPORT

Report Number	:	**68.760.10.208.01**	Date of Issue:	15 October 2010

Model	:	**NB-01-HDMI**
Product Type	:	Home Theater Personal Computer
Applicant	:	Smarty(HZ) Information Electronics Co., Ltd.
Address	:	Yonghua Industrial District, Huishen Road, Zhenlong Town, Huizhou City, Guangdong, P. R. China 516227
Production Facility	:	Smarty(HZ) Information Electronics Co., Ltd.
Address	:	Yonghua Industrial District, Huishen Road, Zhenlong Town, Huizhou City, Guangdong, P. R. China 516227
Test Result	:	■ **Positive** ☐ **Negative**
Total pages including Appendices	:	18

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Jiangsu TÜV Product Service Ltd. – Shenzhen Branch reports apply only to the specific samples tested under stated test conditions. Construction of the actual test samples has been documented. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. The manufacturer/importer is responsible to the Competent Authorities in Europe for any modifications made to the production units which result in non-compliance to the relevant regulations. Jiangsu TÜV Product Service Ltd. – Shenzhen Branch shall have no liability for any deductions, inferences or generalizations drawn by the client or others from Jiangsu TÜV Product Service Ltd. – Shenzhen Branch issued reports.

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2 Details about the Test Laboratory

Details about the Test Laboratory

Company name:	Jiangsu TÜV Product Service Ltd. – Shenzhen Branch 6th Floor, H Hall, Century Craftwork Culture Square, No. 4001, Fuqiang Road, Futian District 518048, Shenzhen,P.R.C.
Telephone:	86 755 8828 6998
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Company name:	Audix Technology (shenzhen) Co.,Ltd Block Shenzhen, Science & Industry Park, Nantou, Shenzhen, Guangdong, China
Telephone:	86 755 2663 9496
Fax:	86 755 2663 2877

Company name:	SOLID Industrial (SHENZHEN) Co., Ltd. 333 Bulong Highway BUJI, Long Gang, Shenzhen, China
Telephone:	86 755 8471 1789
Fax:	86 755 8471 1909

3 Description of the Equipment Under Test

Description of the Equipment Under Test

Product: Home Theater Personal Computer

Model no.: NB-01-HDMI

Options and accessories: NIL

Rating: DC 12V, 25W
Test with adaptor:
Input: AC 100-240V, 50/60Hz, 0.8A
Output: DC 12V, 2.5A

Description of the EUT: NIL

Auxiliary Equipment and Cable Used during Test:

DESCRIPTION	MANUFACTURER	MODEL NO.(SHIELD)	S/N(LENGTH)
LCD monitor	Hisense	HS-10023	36766-083-01
Keyboard	Dell	SK-115	CN-OJ4633
Mouse	Dell	OC8649	535000440
LCD monitor	DELL	1907FPt	7735430660P0G WD-04
Keyboard	DELL	SK-8115	E145614
Mouse	Lenovo	MO32B0	4469064
Headphone	AIWA	HP-MO34	----
SD card	Kingston	SD4/4GBFE	----
USB Flash drive	Kingston	USB/4G	----
USB Flash drive	Kingston	USB/2G	----
VGA cable	Lenovo	Unshield	100cm
AC Power cable	Lenovo	Unshield	180cm

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4 Summary of Test Standards

Test Standards	
FCC Part 15 Subpart B	PART 15 - RADIO FREQUENCY DEVICES Subpart B - Unintentional Radiators

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5 Summary of Test Results

Technical Requirements				
FCC Part 15 Subpart B				
Test Condition	Pages	Test Result		
		Pass	Fail	N/A
15.107 Conducted Emission AC Power Port	8	☒	☐	☐
15.109 Spurious radiated emissions	11	☒	☐	☐

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6 General Remarks

Remarks
This submittal(s) (test report) is intended for FCC ID: YU8HTPCNB-01-HDMI filing to comply with Section 15.107, 15.109 of the FCC Part 15, Subpart B Rules. Also the product contain a WIFI module which its FCC ID is NCI-VNT6656GEV0X.

SUMMARY:

All tests according to the regulations cited on page 5 were

■ - Performed

☐ - **Not** Performed

The Equipment Under Test

■ - **Fulfills** the general approval requirements.

☐ - **Does not** fulfill the general approval requirements.

Sample Received Date: 28 September 2010

Testing Start Date: 9 October 2010

Testing End Date: 11 October 2010

- Jiangsu TÜV Product Service Ltd. – Shenzhen Branch -

Reviewed by:

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Assistant EMC Manager

Prepared by:

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Senior EMC Project Engineer

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7 Technical Requirement

7.1 Conducted Emission

Test Method

1 The EUT was placed on a table, which is 0.8m above ground plane
2 The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.).
3 Maximum procedure was performed to ensure EUT compliance
4 A EMI test receiver is used to test the emissions from both sides of AC line

Test Mode
Run Test Program
-The test program BIT.exe exercises all the drive and ports of the EUT.

Limit

Frequency MHz	QP Limit dBµV	AV Limit dBµV
0.150-0.500	66-56*	56-46*
0.500-5	56	46
5-30	60	50

Decreasing linearly with logarithm of the frequency

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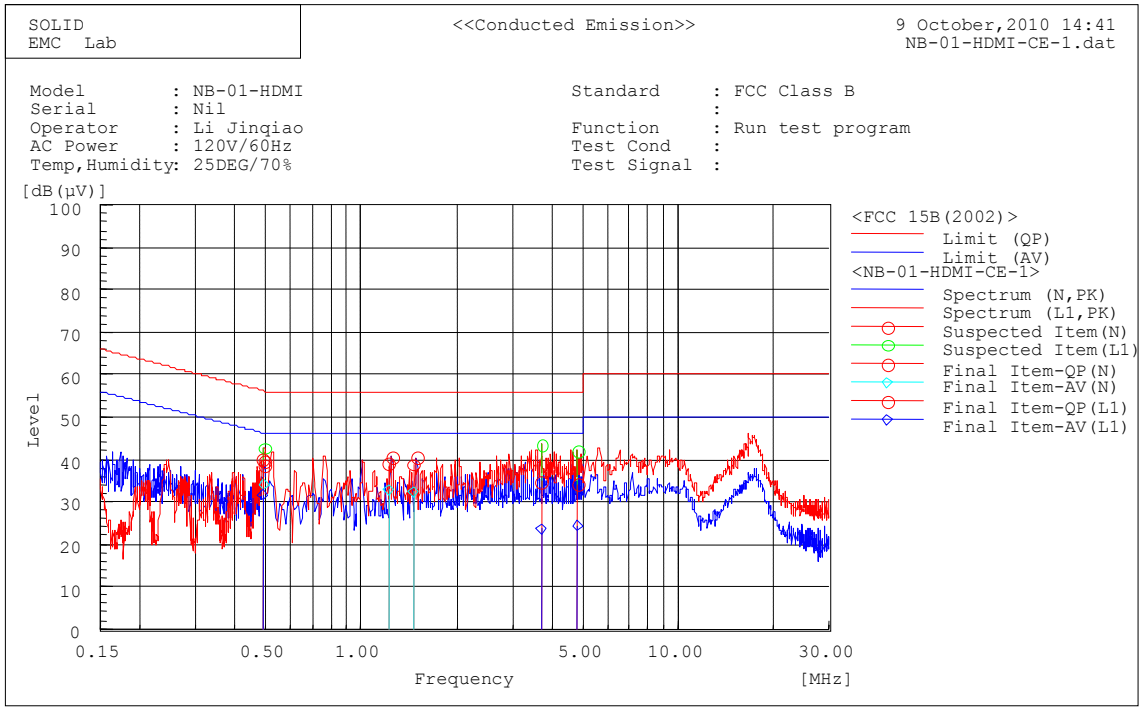
Conducted Emission



Final Result

--- N Phase ---

No.	Frequency [MHz]	Reading QP [dB(µV)]	Reading AV [dB(µV)]	c.f [dB]	Result QP [dB(µV)]	Result AV [dB(µV)]	Limit QP [dB(µV)]	Limit AV [dB(µV)]	Margin QP [dB]	Margin AV [dB]
1	0.492	29.6	24.0	10.0	39.6	34.0	56.1	46.1	16.5	12.1
2	1.220	28.9	22.7	10.0	38.9	32.7	56.0	46.0	17.1	13.3
3	1.463	28.8	22.3	10.0	38.8	32.3	56.0	46.0	17.2	13.7

--- L1 Phase ---

No.	Frequency [MHz]	Reading QP [dB(µV)]	Reading AV [dB(µV)]	c.f [dB]	Result QP [dB(µV)]	Result AV [dB(µV)]	Limit QP [dB(µV)]	Limit AV [dB(µV)]	Margin QP [dB]	Margin AV [dB]
1	0.487	30.0	21.6	10.0	40.0	31.6	56.2	46.2	16.2	14.6
2	3.720	24.6	13.5	10.1	34.7	23.6	56.0	46.0	21.3	22.4
3	4.820	23.8	14.2	10.2	34.0	24.4	56.0	46.0	22.0	21.6

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Test Equipment List

Conducted Emission Test

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
Pre Amplifier	ANRITSU	MH648A	M88544	2011.08
AM/FM Stereo Signal Generator	Panasonic	VP-8122B	990074C122	2011.08
Multi Test Signal Generator	Shibasoku	TG19BC	M63501009	2011.08
RF Selector	TOYO	NS4000	9507001	N/A
Spectrum Analyzer	ADVANTEST	R3261C	51720158	2011.08
EMI Test Receiver	R&S	ESS	837010/012	2011.08
LISN	Kyoritsu	KNW-407	8-1198-1	2011.08
LISN	Kyoritsu	KNW-407	8-1152-11	2011.08
LISN	Kyoritsu	KNW-242C	8-1594-5	2011.08
Computer	DELL	GX260	B9WR91X	2011.08
AC Power Supply	KIKUSUI	PCR-4000W	EA002471	2011.08
Humidity Temperature meter	CENTER	315	030802262	2011.08

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7.2 Radiated emissions

Test Method

1 The EUT is placed on a turntable, which is 0.8m above ground plane.
2 The turntable shall be rotated for 360 degrees to determine the position of maximum emission level
3 EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4 Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5 Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

Test Mode
Run Test Program
-The test program BIT.exe exercises all the drive and ports of the EUT.

Limit

Frequency MHz	Field Strength uV/m	Field Strength dBµV/m	Detector
30-88	100	40	QP
88-216	150	43.5	QP
216-960	200	46	QP
960-1000	500	54	QP
Above 1000	500	54	AV
Above 1000	5000	74	PK

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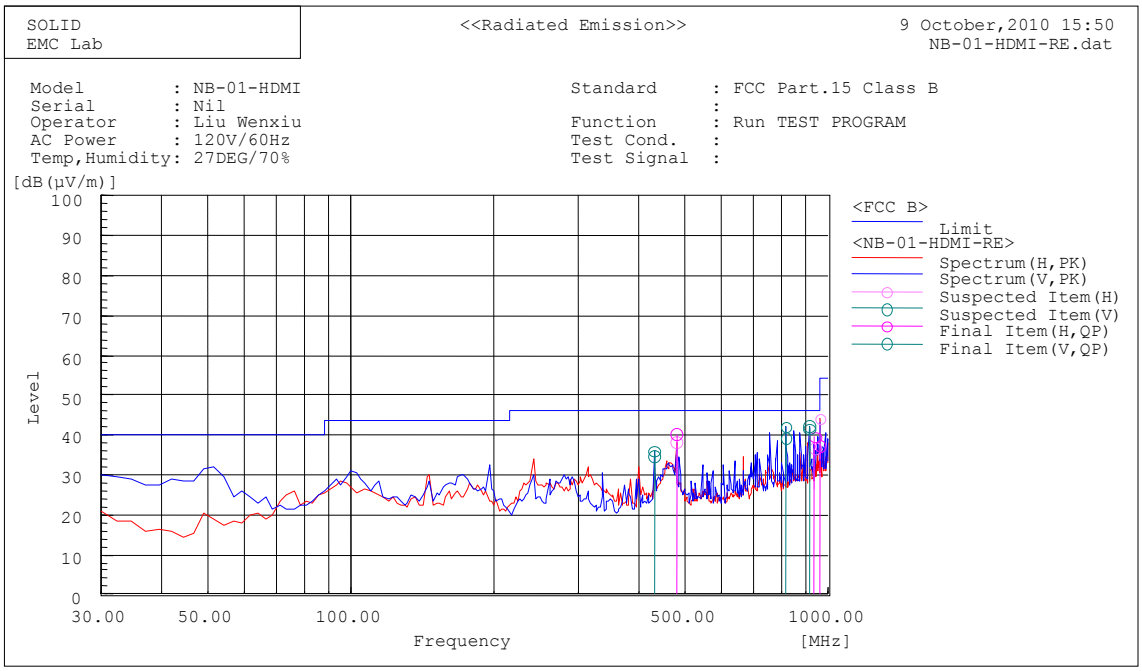
Radiated Emission

Test result below 1GHz:



Final Result

--- Horizontal Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(µV)]	c.f [dB(µV/m)]	Result [dB(µV/m)]	Limit [dB(µV/m)]	Margin [dB]	Remark
1	481.050	18.5	21.8	40.3	46.0	5.7	
2	936.950	9.8	29.8	39.6	46.0	6.4	
3	961.200	6.4	31.0	37.4	54.0	16.6	

--- Vertical Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(µV)]	c.f [dB(µV/m)]	Result [dB(µV/m)]	Limit [dB(µV/m)]	Margin [dB]	Remark
1	432.550	13.0	21.9	34.9	46.0	11.1	
2	815.480	11.0	28.3	39.3	46.0	6.7	
3	911.490	12.3	29.3	41.6	46.0	4.4	

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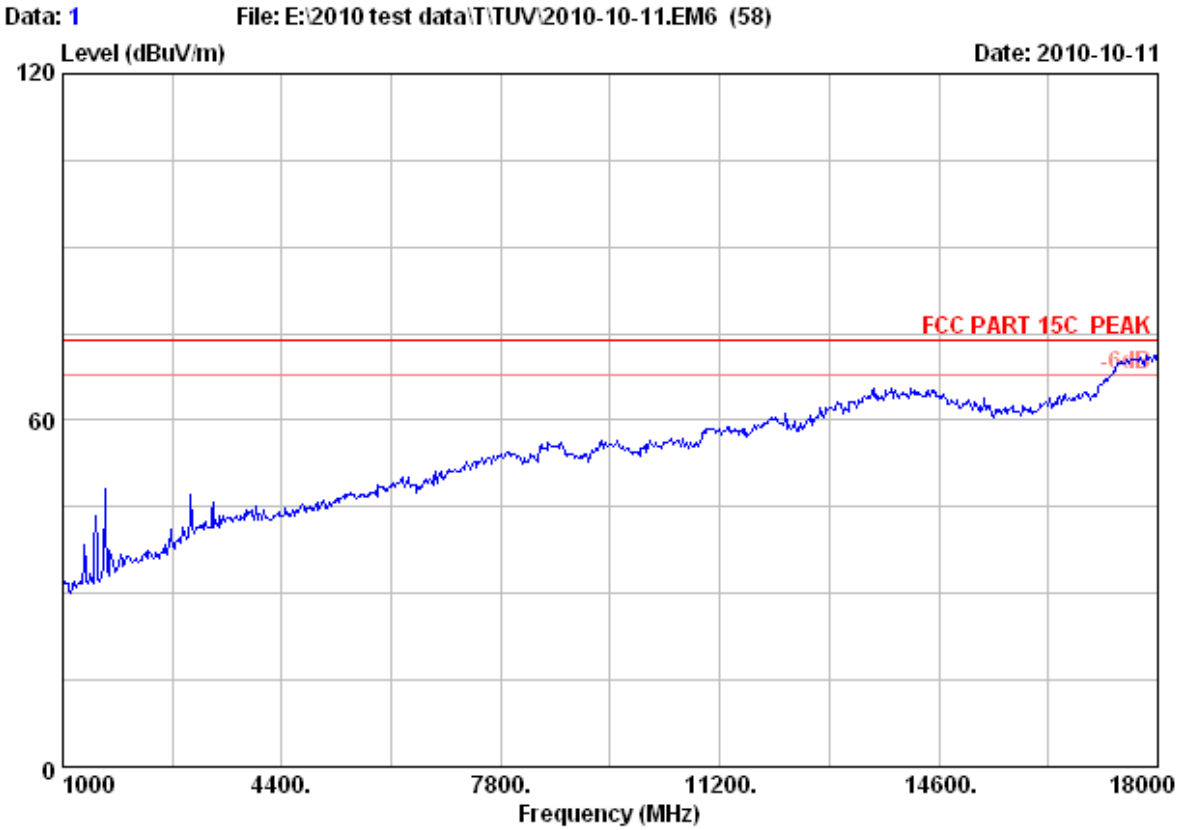
Radiated Emission

Test result above 1GHz:



Site no.	: RF Chamber	Data no.	: 1
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23*C/54%	Engineer	: Sunny-lu
EUT	: NB-01-HDMI		
Power	: AC 120V/60Hz		
Test mode	: Running Test Program		
M/N	:		

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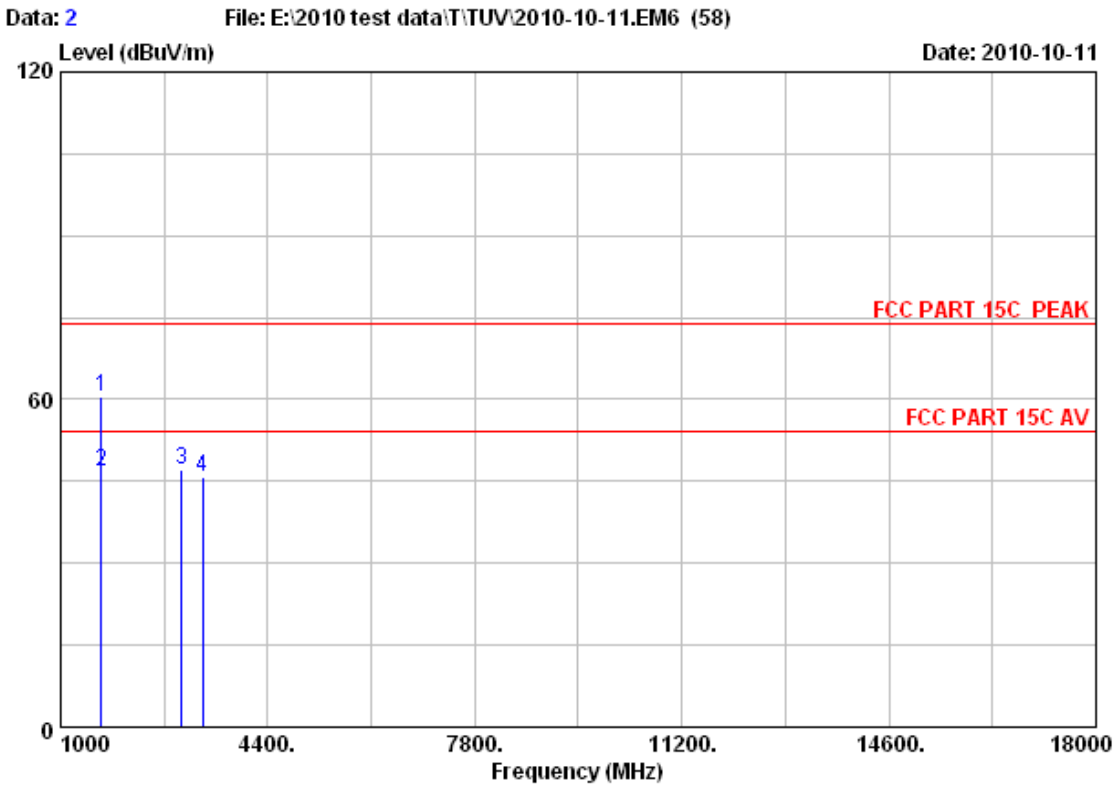
Radiated Emission



Site no. : RF Chamber
Data no. : 2
Dis. / Ant. : 3m 3115(0911)
Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54%
Engineer : Sunny-lu
EUT : NB-01-HDMI
Power : AC 120V/60Hz
Test mode : Running Test Program
M/N :

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1662.000	27.33	6.03	36.91	64.06	60.51	74.00	13.49	Peak
2	1662.000	27.33	6.03	36.91	50.48	46.93	54.00	7.07	Average
3	2989.000	31.92	8.52	36.50	43.06	47.00	74.00	27.00	Peak
4	3329.000	32.85	8.93	36.17	40.29	45.90	74.00	28.10	Peak

Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

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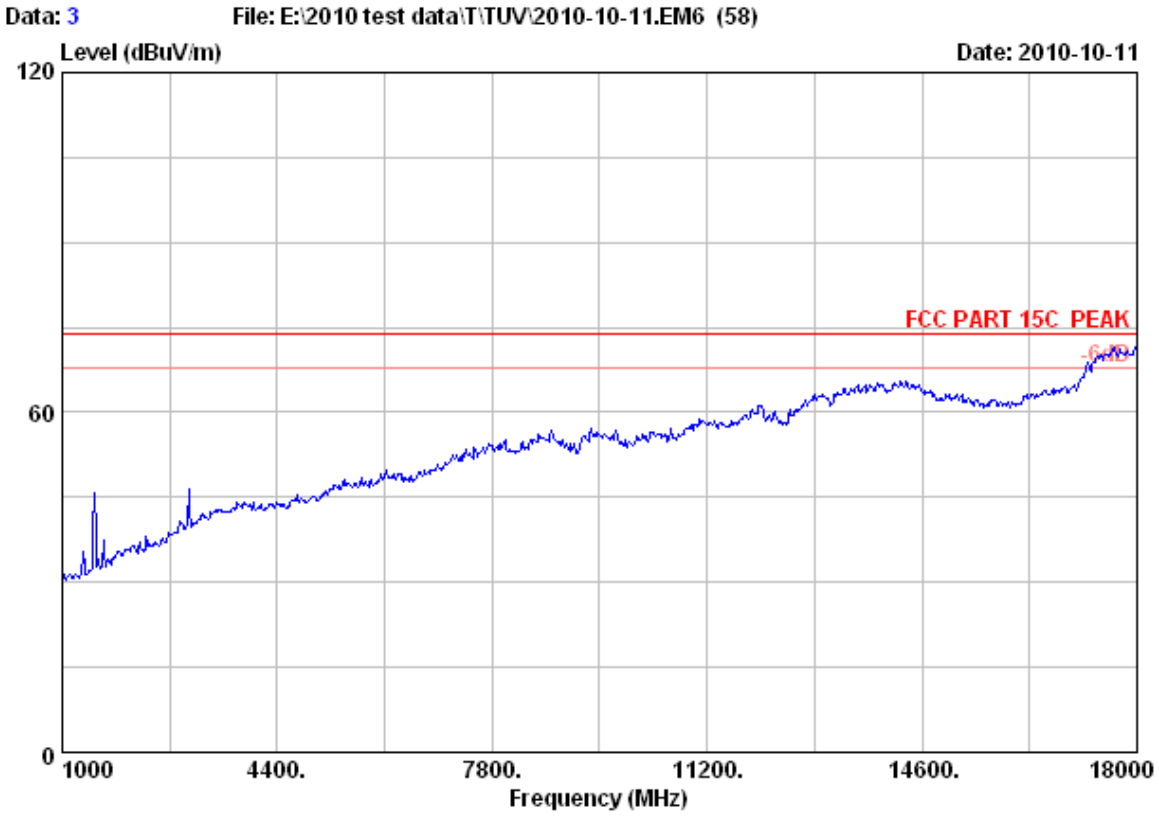
Radiated Emission



Site no.	: RF Chamber	Data no.	: 3
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23*C/54%	Engineer	: Sunny-lu
EUT	: NB-01-HDMI		
Power	: AC 120V/60Hz		
Test mode	: Running Test Program		
M/N	:		

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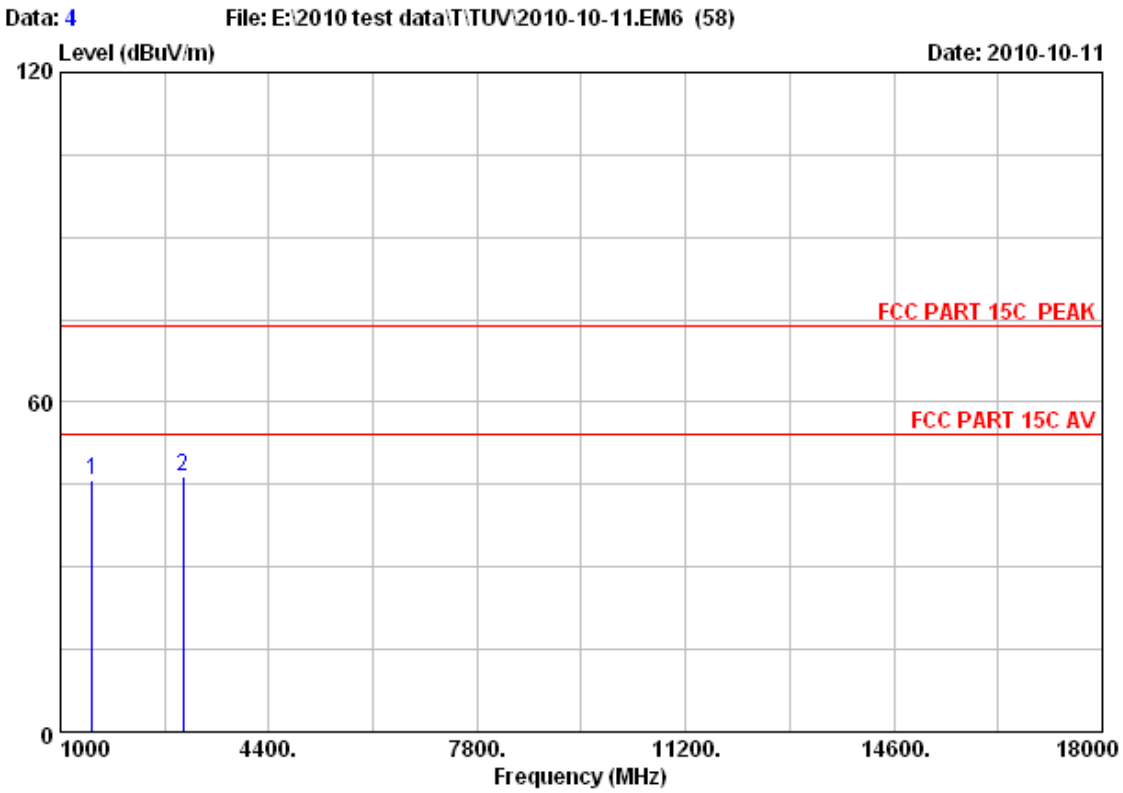
Radiated Emission



Site no. : RF Chamber
Data no. : 4
Dis. / Ant. : 3m 3115(0911)
Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54%
Engineer : Sunny-lu
EUT : NB-01-HDMI
Power : AC 120V/60Hz
Test mode : Running Test Program
M/N :

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1510.000	26.49	5.73	37.00	50.57	45.79	74.00	28.21	Peak
2	3006.000	32.00	8.56	36.47	42.38	46.47	74.00	27.53	Peak

Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

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Test Equipment List

Radiated Emission Test

Below 1GHz:

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
Pre Amplifier	ANRITSU	MH648A	MP2249	2011.08
EMI Test Receiver	R&S	ESS	837010/013	2011.08
Bilog Antenna	SCHAFFNER	CBL6111C	2777	2011.09
EMC Analyzer	Agilent	E7402A	US41110270	2011.08
System Interface	TDK	SI－300	12300010	2011.08
Controller	HD	2000	HD2000120241	2011.08
RF Selector	TOYO	NS4901A	9507004	2011.08
AM/FM Stereo Signal Generator	Panasonic	VP-8122A	730969C125	2011.08
Multi Test Signal Generator	Shibasoku	TG19BB	M-63468009	2011.08
AC Power Supply	KIKUSUI	PCR-4000W	DJ000578	2011.08
Computer	DELL	GX260	89WR91X	2011.08
Humidity Temperature meter	CENTER	315	030802265	2011.08

Above 1GHz:

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
Spectrum Analyzer	Agilent	E7405A	MY45116588	2011.05.08
Test Receiver	Rohde & Schwarz	ESVS10	834468/011	2011.05.08
Horn Antenna	EMCO	3115	9607-4877	2010.11.05
Amplifier	Agilent	8449B	3008A00863	2011.05.08
RF Cable	Hubersuhner	SUCOFLEX 102	28620/2	2011.05.08
RF Cable	Hubersuhner	SUCOFLEX 102	29091/2	2011.05.08
Coaxial Switch	Anritsu	MP59B	M73989	2011.05.08

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8 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

System Measurement Uncertainty

Items		Extended Uncertainty
RE	Field strength (dBμV/m)	U=4.7dB (30MHz-1GHz)
RE	Field strength (dBμV/m)	U=3.8dB (1GHz-18GHz)
CE	Disturbance Voltage (dBμV)	U=3.6dB

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