

Application for FCC Certificate
On Behalf of
Hisense Electric Co., Ltd.

LED LCD TV

Model No.	Brand
LTDN50K2207WUS	Hisense
50H4C	
50H4C+	

FCC ID : W9HLCDF0079

Prepared For : Hisense Electric Co., Ltd.
No.218 Qianwangang Road, Economy & Technology
Development Zone, Qingdao, China

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Report No. : ACI-F16052
Date of Test : Feb 15-29, 2016
Date of Report : Mar 09, 2016

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TEST REPORT FOR FCC CERTIFICATE

Applicant : Hisense Electric Co., Ltd.
 Manufacturer : Hisense Electric Co., Ltd.
 Factory #1 : Hisense Electric Co., Ltd.
 Factory #2 : Tatung Mexico S.A. de C.V.
 Factory #3 : HISENSE ELECTRONICA MEXICO, S.A. DE C.V.
 EUT Description : LED LCD TV

Model No.	Brand	Power Supply
LTDN50K2207WUS	Hisense	120V/60Hz
50H4C		
50H4C+		

Test Procedure Used:

*FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 2015
AND ANSI C63.4-2003*

The device described above is tested by Audix Technology (Shanghai) Co., Ltd. To determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart B (Class B) limits both radiated and conducted emissions.

The test results are contained in this test report and Audix Technology (Shanghai) Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. This report shows that the EUT (M/N: Refer to Sec2.1) which was tested in 3m anechoic chamber Feb 15-29, 2016 is technically compliance with the FCC official limits also.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shanghai) Co., Ltd.

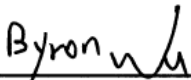
This report contains data that are not covered by the NVLAP accreditation.


This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

The test results for EUT's TV functions are contained in No.F16051, a Verification report.

Date of Test : Feb 15-29, 2016 Date of Report : Mar 09, 2016

Producer : 
 ALAN HE / Assistant

Review : 
 BYRON WU / Deputy Assistant Manager

 For and on behalf of
 Audix Technology (Shanghai) Co., Ltd.

Signatory : 
 Authorized Signature EMC BYRON KWO / Assistant General Manager

1 SUMMARY OF STANDARDS AND RESULTS

1.1 Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below:

Description of Test Item	Standard	Limits	Results
EMISSION			
Conducted Disturbance at the Mains Terminal	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2015 AND ANSI C63.4-2003	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2015 AND ANSI C63.4-2003	15.109(a) Class B	Pass

2 GENERAL INFORMATION

2.1 Description of Equipment Under Test

Description	:	LED LCD TV
Type of EUT	:	<input checked="" type="checkbox"/> Production <input type="checkbox"/> Pre-product <input type="checkbox"/> Pro-type
Model No	:	LTDN50K2207WUS, 50H4C, 50H4C+
Note #1	:	The above models are all the same except for model number.LTDN50K2207WUS model is tested and recorded in the report.
Note #2	:	“+”represents any of the Arabic numeral.
Brand	:	Hisense
Applicant	:	Hisense Electric Co., Ltd. No.218 Qianwangang Road, Economy & Technology Development Zone, Qingdao, China
Manufacturer	:	Same as Applicant
Factory #1	:	Same as Applicant
Factory #2	:	Tatung Mexico S.A. de C.V. Miguel Catalán 420, Parque Industrial Rio Bravo, Cd. Juarez, Chih., CP 32557
Factory #3	:	HISENSE ELECTRONICA MEXICO,S.A. DE C.V. Blvd. Sharp #3510 Parque Industrial Rosarito, C.P. 22710 Playas de Rosarito, B.C.
LCD Panel	:	Manufacturer : Hisense M/N : HD500DF-B54(020)
Tuner	:	Manufacturer : XuGuang Tech. Co., Ltd M/N : HFT-96S3/W11FJ4H\ROH
Max Resolution	:	1920*1080@60Hz
HDMI Cable*3 (Lab provide)	:	Shielded, Detachable, 1.50m
Power Cord	:	Unshielded, Detachable, 1.80m
USB Cable*1 (Lab provide)	:	Shielded, Detachable, 1.00m

Remark:

The EUT is a LED LCD TV which input/output ports as follows:

Side Port:

- (1) One AUDIO OUT Port : Connected with Earphone #1
- (2) One ANT Port : Connected with ATSC SG
- (3) One HDMI1 (ARC) Port : Connected with DVD PLAYER #1
- (4) One HDMI2 Port : Connected with PC
- (5) One USB Port : Connected with H-Disk

Back Port:

- (6) Digital Audio Out : Connected with Audio Converter to Earphone #2
- (7) One AV in Port : Connected with DVD PLAYER #1
- (8) One HDMI3 Port : Connected with DVD PLAYER #2

2.2 Peripherals

2.2.1 PC

Manufacturer : HP
 Model Number : dx7400MT
 Serial Number : CNG8130K89
 Power Cord : Unshielded, Detachable, 1.8m
 Certificate : FCC DoC; CE/EMC; VCCI; C-Tick

2.2.2 Keyboard

Manufacturer : Microsoft
 Model Number : RT2300
 Serial Number : 7668200662248
 Data Cable : Shielded, Detachable, 1.5m
 Certificate : CE/EMC, FCC DoC, VCCI, MIC, C-Tick, BSMI

2.2.3 Printer

Manufacturer : HP
 Model Number : C8060A
 Serial Number : CN3J19564X
 Data Cable : Shielded, Detachable, 1.5m
 Certificate : CE/EMC, FCC DoC, VCCI, MIC, C-Tick, BSMI

2.2.4 Mouse

Manufacturer : Microsoft
Model Number : RT2300
Serial Number : 6965712071551
Data Cable : Shielded, Detachable, 1.5m.
Certificate : CE/EMC, FCC DoC, VCCI, MIC,
C-Tick, BSMI

2.2.5 Modem

Manufacturer : TP-LINK
Model Number : TM-EC5658V
Serial Number : 07123301053
Data Cable : Shielded, Detachable, 1.5m
Certificate : CCC

2.2.6 Earphone *2

Manufacturer : EDIFIER
Model Number : H180P

2.2.7 DVD PLAYER #1

Manufacturer : PHILIPS
Model Number : DVP3986K/93
Serial Number : KX1A0902120108
Certificate : CCC

2.2.8 DVD PLAYER #2

Manufacturer : PHILIPS
Model Number : DVP3986K/93
Serial Number : KX1A0902120082
Certificate : CCC

2.2.9 Hard Disk

Manufacturer : Tetasys
Model Number : F12
Serial Number : A010022-4860010X
Data Cable : Shielded, Detachable, 1.5m.
Certificate : CE, FCC DoC

2.2.10 ATSC Signal Generator

Manufacturer : SENCORE
Model Number : ATSC997
Serial Number : 6790071

2.2.11 TV Signal Generator

Manufacturer : FLUKE
Model Number : 54200M01
Serial Number : 814008

2.3 Description of Test Facility

Site Description (No.3 3m Chamber)	:	Sept. 17, 1998 file on Jan.15, 2015 Renewed Federal Communications Commission FCC Engineering Laboratory 7435 Oakland Mills Road Columbia, MD 21046, USA
Name of Firm	:	Audix Technology (Shanghai) Co., Ltd.
Site Location	:	3F 34Bldg 680 Guiping Rd, Caohejing Hi-Tech Park, Shanghai 200233, China
FCC registration Number	:	91789
NVLAP Lab Code	:	200371-0

2.4 Measurement Uncertainty

Conducted Emission Expanded Uncertainty :	U = 3.4dB
Radiated Emission Expanded Uncertainty (30-200MHz):	U = 4.6dB(Horizontal) U = 4.3dB (Vertical)
Radiated Emission Expanded Uncertainty (200M-1GHz):	U = 4.5dB (Horizontal) U = 5.4dB (Vertical)
Radiated Emission Expanded Uncertainty (1GHz-6GHz):	U = 5.1dB

3 CONDUCTED EMISSION TEST

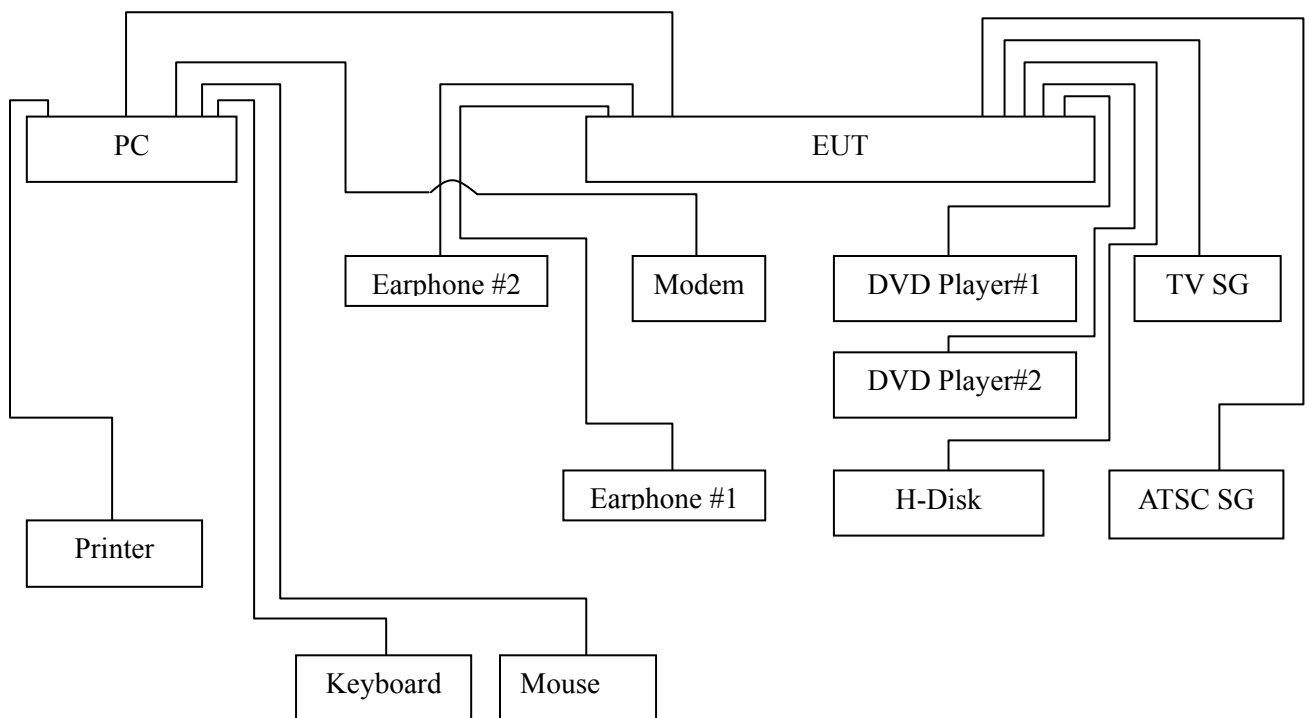
3.1 Test Equipment

The following test equipments are used during the conducted emission test in a shielded room:

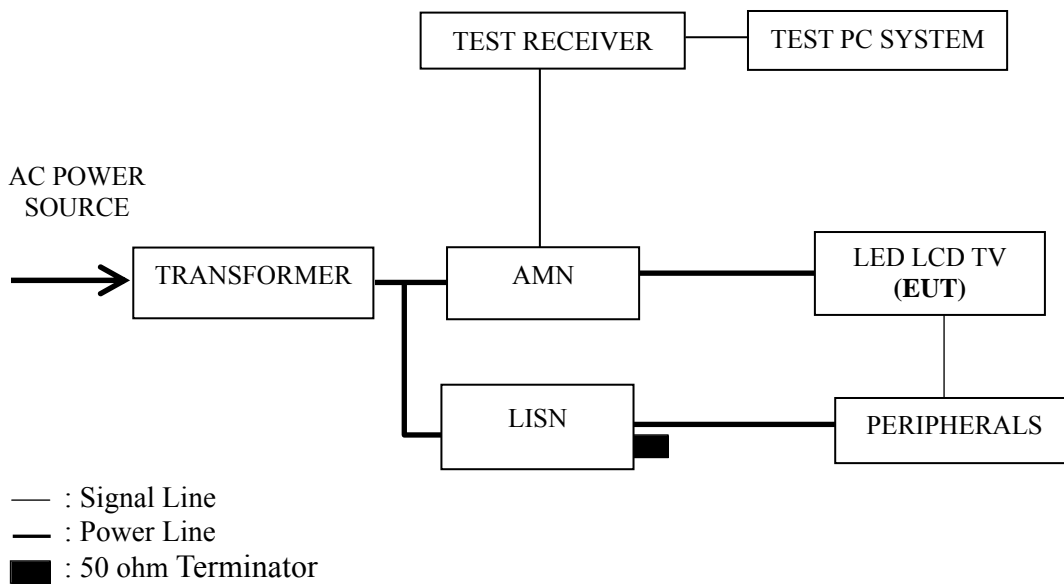
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	101302	Jul 03, 2015	Jul 02, 2016
2.	Artificial Mains Network (AMN)	R&S	ENV4200	100125	Jun 27, 2015	Jun 26, 2016
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-5	Mar 20, 2015	Mar 19, 2016
4.	50Ω Terminator	Anritsu	BNC	001	Mar 20, 2015	Mar 19, 2016
5.	Software	Audix	e3	6.111206	--	--

3.2 Block Diagram of Test Setup

3.2.1 EUT & Peripherals



3.2.2 Conducted Disturbance Test Setup



3.3 Conducted Emission Limit [FCC Part 15 Subpart B 15.107(a)]

Frequency Range (MHz)	Limits Db (μ V)	
	Quasi-peak	Average
0.15 ~ 0.5	66~56	56~46
0.5 ~ 5	56	46
5 ~ 30	60	50

NOTE 1 – The lower limit shall apply at the transition frequencies.
 NOTE 2 – The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz~0.50 MHz

3.4 Test Configuration

The EUT (listed in Sec.2.1) and the peripherals (listed in Sec 2.2) were installed as shown on Sec.3.2 to meet FCC requirement and operating in a manner that tends to maximize its emission level in a normal application.

3.5 Operating Condition of EUT

- 3.5.1 Setup the EUT and peripherals as shown in Sec. 3.2.
- 3.5.2 Turn on the power of all equipments and the EUT.
- 3.5.3 Set the contrast & brightness of EUT to maximum.
- 3.5.4 PC system ran the self-test program “EMC Test” by windows XP and sent “H” characters to EUT through graphic card, the EUT’s screen displayed and filled with “H” pattern by its resolution (Via HDMI Input).
- 3.5.5 PC system sent the 1kHz audio signal to EUT through audio port, the EUT speak out 1kHz audio signal.
- 3.5.6 In USB Play mode, set the EUT play digital media from H-Disk.
- 3.5.7 The other peripherals devices were driven and operated during the test.
- 3.5.8 The test modes are as follows:

Test Mode
HDMI 1920*1080@60Hz & 1kHz playing
HDMI 1280*1024@60Hz & 1kHz playing
HDMI 640*480@60Hz & 1kHz playing
HDMI1080P
USB Play

3.6 Test Procedures

The EUT and peripherals were connected to the power mains through an Artificial Mains Network (AMN). This provided a 50 ohm coupling impedance for the measuring equipment.

Both sides of AC line (Line & Neutral) were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables were changed or manipulated according to ANSI C63.4:2003 during conducted emission test.

The bandwidth of R&S Test Receiver ESCI was set at 9 kHz.

The frequency range from 150 kHz to 30 MHz was checked.

The test modes were done on conducted disturbance test and all the test results are listed in Sec. 3.7.

3.7 Test Results

< **PASS** >

The frequency and amplitude of the highest conducted emission relative to the limit is reported. All emissions not reported below are too low against the prescribed limits.

Test Mode	Data Page
HDMI 1920*1080@60Hz & 1kHz playing	P13
HDMI 1280*1024@60Hz & 1kHz playing	P14
HDMI 640*480@60Hz & 1kHz playing	P15
HDMI1080P	P16
USB Play	P17

NOTE 1 – Factor = Cable Loss + AMN Factor.

NOTE 2 – Emission Level = Meter Reading + Factor.

NOTE 3 – “QP” means “Quasi-Peak” values, “AV” means “Average” values.

NOTE 4 – The worst case is HDMI 1920*1080@60Hz & 1kHz Playing for test mode.
The worst emission is detected at 0.158MHz (Quasi-Peak Value) with corrected signal level of 51.37dB (μ V) (limit is 65.59 dB (μ V)), when the Neutral of the EUT is connected to AMN.

EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN50K2207WUS Humidity : 48%RH

Test Mode : HDMI 1920*1080@60Hz Date of Test : Feb 15, 2016
& 1kHz Playing

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.158	40.49	10.58	51.07	65.59	14.52	QP
	0.370	28.29	10.44	38.73	58.51	19.78	
	0.564	29.50	10.38	39.88	56.00	16.12	
	1.310	26.60	10.39	36.99	56.00	19.01	
	2.517	22.11	10.42	32.53	56.00	23.47	
	5.509	34.50	10.48	44.98	60.00	15.02	
	0.158	24.19	10.58	34.77	55.59	20.82	AV
	0.370	14.69	10.44	25.13	48.51	23.38	
	0.564	19.30	10.38	29.68	46.00	16.32	
	1.310	13.80	10.39	24.19	46.00	21.81	
	2.517	12.91	10.42	23.33	46.00	22.67	
	5.509	20.30	10.48	30.78	50.00	19.22	
Neutral	0.158	40.79	10.58	51.37	65.59	14.22	QP
	0.373	30.60	10.41	41.01	58.43	17.42	
	0.565	30.50	10.36	40.86	56.00	15.14	
	0.750	28.60	10.36	38.96	56.00	17.04	
	1.506	27.50	10.39	37.89	56.00	18.11	
	5.499	32.09	10.49	42.58	60.00	17.42	
	0.158	27.29	10.58	37.87	65.59	27.72	AV
	0.373	19.90	10.41	30.31	58.43	28.12	
	0.565	19.60	10.36	29.96	56.00	26.04	
	0.750	18.00	10.36	28.36	56.00	27.64	
	1.506	15.80	10.39	26.19	56.00	29.81	
	5.499	18.69	10.49	29.18	60.00	30.82	

TEST ENGINEER: WENCY YANG

EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN50K2207WUS Humidity : 48%RH

Test Mode : HDMI 1280*1024@60Hz & 1kHz Playing Date of Test : Feb 15, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.156	40.50	10.58	51.08	65.70	14.62	QP
	0.375	28.10	10.43	38.53	58.38	19.85	
	0.566	30.20	10.38	40.58	56.00	15.42	
	0.891	26.20	10.38	36.58	56.00	19.42	
	1.698	26.79	10.41	37.20	56.00	18.80	
	5.755	34.50	10.47	44.97	60.00	15.03	
	AV	0.156	23.60	10.58	34.18	55.70	21.52
		0.375	17.70	10.43	28.13	48.38	20.25
		0.566	18.80	10.38	29.18	46.00	16.82
		0.891	13.30	10.38	23.68	46.00	22.32
		1.698	14.89	10.41	25.30	46.00	20.70
		5.755	19.80	10.47	30.27	50.00	19.73
Neutral	0.158	39.30	10.57	49.87	65.57	15.70	QP
	0.375	30.50	10.41	40.91	58.39	17.48	
	0.566	30.60	10.36	40.96	56.00	15.04	
	0.892	25.50	10.37	35.87	56.00	20.13	
	1.508	27.80	10.39	38.19	56.00	17.81	
	5.755	33.70	10.49	44.19	60.00	15.81	
	AV	0.158	26.20	10.57	36.77	55.57	18.80
		0.375	20.30	10.41	30.71	48.39	17.68
		0.566	19.80	10.36	30.16	46.00	15.84
		0.892	13.10	10.37	23.47	46.00	22.53
		1.508	15.90	10.39	26.29	46.00	19.71
		5.755	18.60	10.49	29.09	50.00	20.91

TEST ENGINEER: WENCY YANG

EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN50K2207WUS Humidity : 48%RH

Test Mode : HDMI 640*480@60Hz & 1kHz Playing Date of Test : Feb 15, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.155	40.50	10.58	51.08	65.72	14.64	QP
	0.373	28.20	10.43	38.63	58.44	19.81	
	0.564	29.50	10.38	39.88	56.00	16.12	
	0.750	28.10	10.38	38.48	56.00	17.52	
	1.512	26.90	10.40	37.30	56.00	18.70	
	5.769	34.60	10.47	45.07	60.00	14.93	
	AV	0.155	23.60	10.58	34.18	55.72	21.54
		0.373	17.10	10.43	27.53	48.44	20.91
		0.564	19.20	10.38	29.58	46.00	16.42
		0.750	17.60	10.38	27.98	46.00	18.02
		1.512	15.20	10.40	25.60	46.00	20.40
		5.769	20.30	10.47	30.77	50.00	19.23
Neutral	0.156	39.35	10.58	49.93	65.66	15.73	QP
	0.375	30.60	10.41	41.01	58.38	17.37	
	0.567	30.80	10.36	41.16	56.00	14.84	
	0.746	29.50	10.36	39.86	56.00	16.14	
	1.700	27.79	10.41	38.20	56.00	17.80	
	5.726	34.10	10.49	44.59	60.00	15.41	
	AV	0.156	25.79	10.58	36.37	55.66	19.29
		0.375	20.30	10.41	30.71	48.38	17.67
		0.567	19.90	10.36	30.26	46.00	15.74
		0.746	17.30	10.36	27.66	46.00	18.34
		1.700	15.19	10.41	25.60	46.00	20.40
		5.726	19.50	10.49	29.99	50.00	20.01

TEST ENGINEER: WENCY YANG

EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN50K2207WUS Humidity : 48%RH

Test Mode : HDMI 1080P Date of Test : Feb 15, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark
Line	0.159	40.49	10.58	51.07	65.54	14.47	QP
	0.365	27.79	10.44	38.23	58.61	20.38	
	0.564	29.50	10.38	39.88	56.00	16.12	
	0.677	27.31	10.37	37.68	56.00	18.32	
	1.311	26.60	10.39	36.99	56.00	19.01	
	5.723	34.30	10.47	44.77	60.00	15.23	
	0.159	24.59	10.58	35.17	55.54	20.37	AV
	0.365	11.49	10.44	21.93	48.61	26.68	
	0.564	19.80	10.38	30.18	46.00	15.82	
	0.677	15.51	10.37	25.88	46.00	20.12	
	1.311	13.80	10.39	24.19	46.00	21.81	
	5.723	20.60	10.47	31.07	50.00	18.93	
Neutral	0.158	39.40	10.57	49.97	65.56	15.59	QP
	0.373	30.50	10.41	40.91	58.44	17.53	
	0.566	30.60	10.36	40.96	56.00	15.04	
	0.745	28.90	10.36	39.26	56.00	16.74	
	1.513	26.70	10.39	37.09	56.00	18.91	
	5.549	32.89	10.49	43.38	60.00	16.62	
	0.158	26.20	10.57	36.77	55.56	18.79	AV
	0.373	19.90	10.41	30.31	48.44	18.13	
	0.566	19.10	10.36	29.46	46.00	16.54	
	0.745	16.50	10.36	26.86	46.00	19.14	
	1.513	15.50	10.39	25.89	46.00	20.11	
	5.549	19.79	10.49	30.28	50.00	19.72	

EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN50K2207WUS Humidity : 48%RH

Test Mode : USB Play Date of Test : Feb 15, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark	
Line	0.157	40.60	10.58	51.18	65.63	14.45	QP	
	0.374	28.20	10.43	38.63	58.41	19.78		
	0.566	29.80	10.38	40.18	56.00	15.82		
	0.883	25.90	10.38	36.28	56.00	19.72		
	1.506	27.20	10.40	37.60	56.00	18.40		
	5.759	34.50	10.47	44.97	60.00	15.03		
	0.157	24.10	10.58	34.68	55.63	20.95	AV	
	0.374	17.60	10.43	28.03	48.41	20.38		
	0.566	19.40	10.38	29.78	46.00	16.22		
	0.883	9.70	10.38	20.08	46.00	25.92		
	1.506	15.60	10.40	26.00	46.00	20.00		
	5.759	19.80	10.47	30.27	50.00	19.73		
	Neutral	0.158	39.30	10.57	49.87	65.55	15.68	QP
		0.371	30.49	10.42	40.91	58.48	17.57	
0.566		30.60	10.36	40.96	56.00	15.04		
0.745		29.20	10.36	39.56	56.00	16.44		
1.320		26.30	10.39	36.69	56.00	19.31		
5.764		33.90	10.49	44.39	60.00	15.61		
0.158		26.20	10.57	36.77	55.55	18.78	AV	
0.371		18.29	10.42	28.71	48.48	19.77		
0.566		19.20	10.36	29.56	46.00	16.44		
0.745		16.60	10.36	26.96	46.00	19.04		
1.320		13.80	10.39	24.19	46.00	21.81		
5.764		18.80	10.49	29.29	50.00	20.71		

TEST ENGINEER: WENCY YANG

4 RADIATED EMISSION TEST

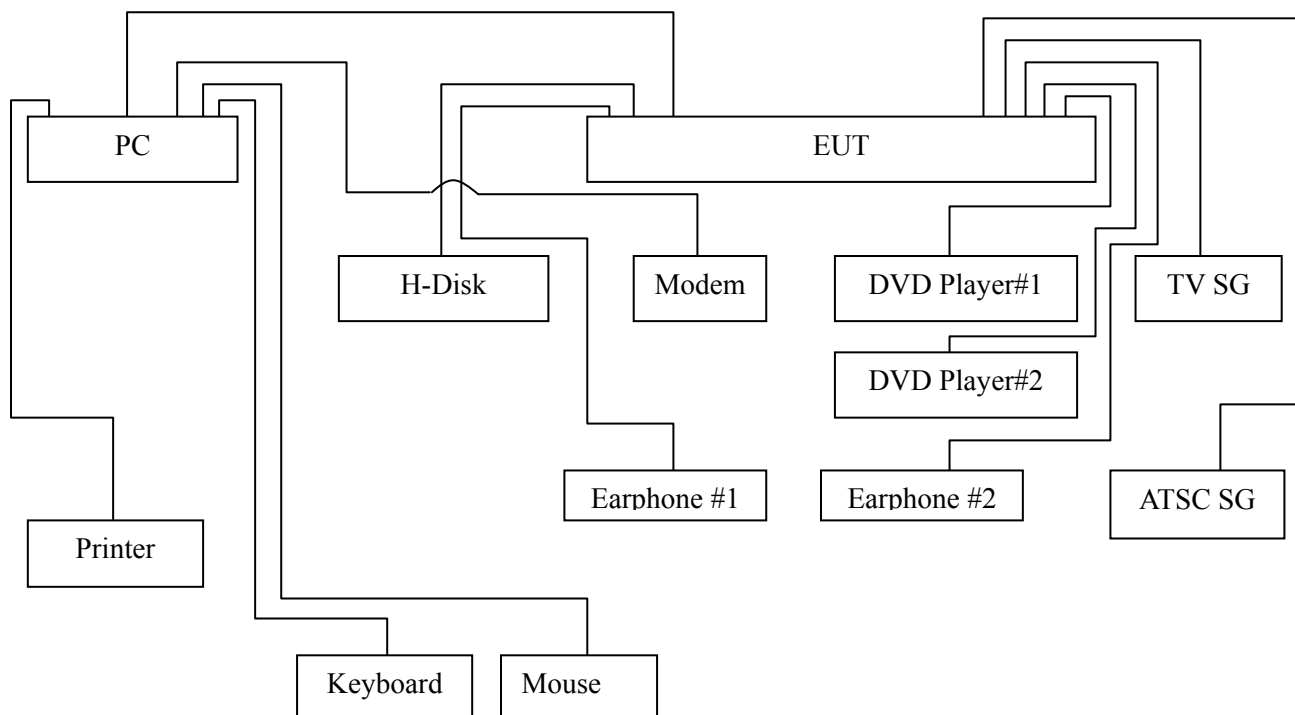
4.1 Test Equipment

The following test equipments are used during the radiated emission test in a semi-anechoic chamber:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	101303	May 07, 2015	May 06, 2016
2.	Preamplifier	Agilent	8447D	2944A06664	Apr 27, 2015	Apr 26, 2016
3.	Preamplifier	HP	8449B	3008A00864	Mar 20, 2015	Sep 19, 2016
4.	Bi-log Antenna	TESEQ	CBL6112D	23193	May 15, 2015	May 14, 2016
5.	Horn Antenna	EMCO	3115	9607-4878	Jun 03, 2015	Jun 02, 2016
6.	Spectrum	Agilent	N9010A	MY52221182	Jun 12, 2015	Jun 11, 2016
7.	Spectrum	HP	8591EM	3628A00908	May 07, 2015	May 06, 2016
8.	Software	Audix	e3	6.2007-9-10	--	--

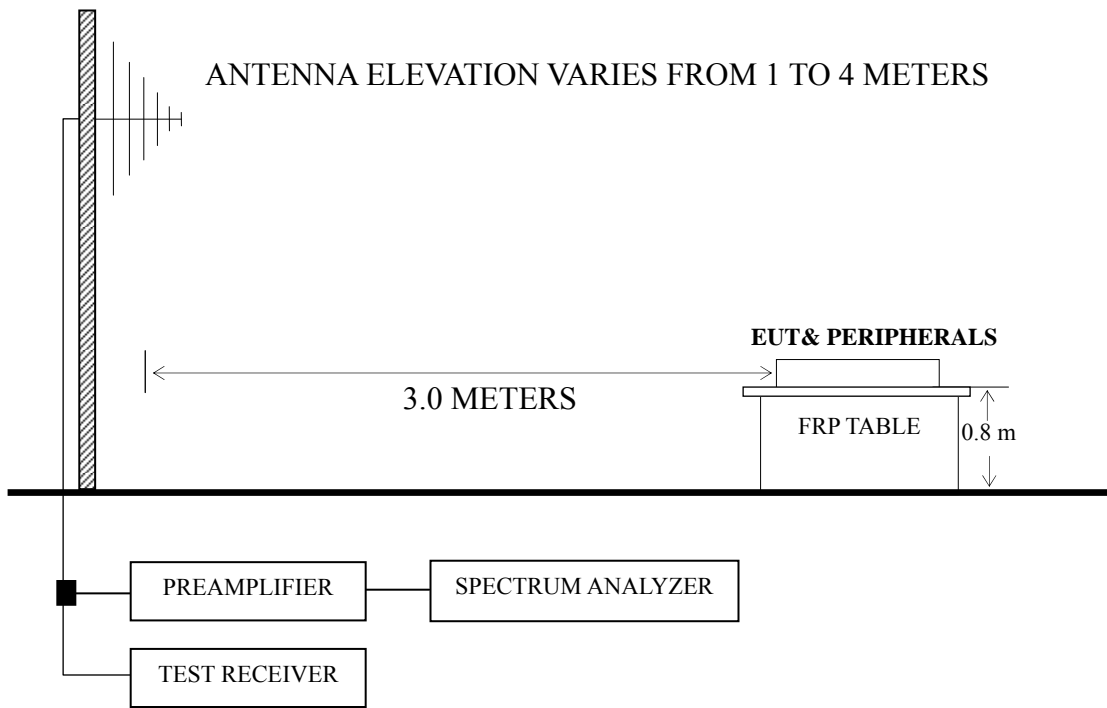
4.2 Block Diagram of Test Setup

4.2.1 EUT & Peripherals

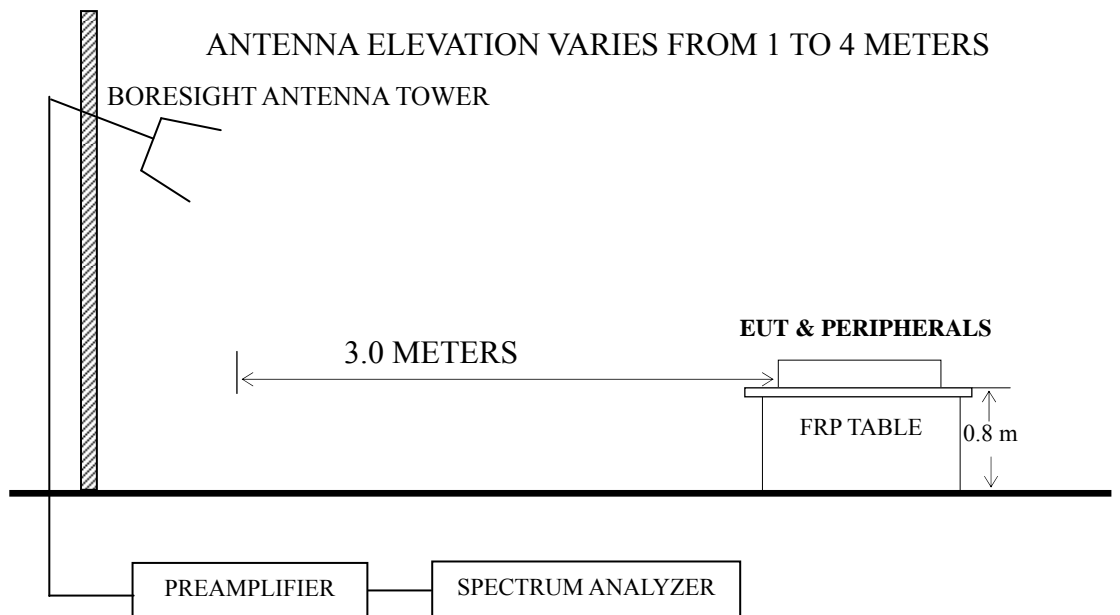


4.2.2 Radiated emission test setup

4.2.2.1 Below 1GHz



4.2.2.2 Above 1GHz



4.3 Radiated Emission Limit [FCC Part 15 Subpart B 15.109(a)]

Frequency (MHz)	Distance (m)	Field strength limits	
		($\mu\text{V}/\text{m}$)	dB ($\mu\text{V}/\text{m}$)
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0

NOTE 1 - Emission Level dB ($\mu\text{V}/\text{m}$) = 20 log Emission Level ($\mu\text{V}/\text{m}$)
 NOTE 2 - The tighter limit applies at the band edges.
 NOTE 3 - Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
 NOTE 4 - The limits shown are based on Quasi-peak value detector.
 NOTE 5 - Above 1 GHz, the limit on peak emission is 20 dB above the maximum permitted average emission limit applicable to the EUT.

4.4 Test Configuration

The configuration of the EUT and peripherals are same as those used in conducted emission test.

Please refer to Sec.3.4.

4.5 Operating Condition of EUT

Same as conducted emission test which is listed in Sec.3.5, except for the test setup replaced by Sec.4.2.

4.6 Test Procedures

The EUT and peripherals were placed on a FRP turntable that is 0.8 meter above ground. The FRP turntable rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna, which was mounted on an antenna tower. Broadband antenna (Calibrated Bilog Antenna) was used as receiving antenna. The antenna moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarizations of the antenna were set on measurement. In order to find the maximum emission, all of the interference cables were manipulated according to ANSI C63.4:2003 requirements during radiated emission test.

The I.F. bandwidth of Test Receiver R&S ESCI was set at 120 kHz.

The frequency range from 30 MHz to 1000MHz was checked for all test modes.

The frequency range from 1 GHz to 6 GHz was checked for the maximum resolution test mode.

The test modes were done on radiated disturbance test and all the test results are listed in Sec.4.7.

4.7 Test Results

<PASS>

The frequency and amplitude of the highest radiated emission relative the limit is reported. All the emissions not reported below are too low against the FCC limit.

Test Mode	Data Page
HDMI 1920*1080@60Hz & 1kHz playing	P22-P23
HDMI 1280*1024@60Hz & 1kHz playing	P24
HDMI 640*480@60Hz & 1kHz playing	P25
HDMI1080P	P26
USB Play	P27

NOTE 1 – Emission Level = Antenna Factor + Cable Loss + Meter Reading. (< 1GHz);

Emission Level = Antenna Factor + Cable Loss – Preamp Factor + Meter Reading. (> 1GHz)

NOTE 2 – All readings are Quasi-Peak values below or equal to 1GHz, Peak and Average values above 1GHz.

NOTE 3 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

NOTE 4 – The worst case is for HDMI 1920*1080@60Hz & 1 kHz playing test mode. The worst emission at horizontal polarization was detected at 742.259MHz with corrected signal level of 41.71 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 2.20 m height and the turntable was at 235°. The worst emission at vertical polarization was detected at 890.728 MHz with corrected signal level of 42.93dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was 1.10 m height and the turntable was at 35°.

EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN50K2207WUS Humidity : 60%RH

Test Mode : HDMI 1920*1080@60Hz & 1kHz Playing Date of Test : Feb 29, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	75.182	24.93	8.56	1.01	--	34.50	40.00	5.50	QP
	125.886	24.58	13.07	1.50	--	39.15	43.50	4.35	
	297.224	23.46	13.70	2.56	--	39.72	46.00	6.28	
	742.259	18.14	19.97	3.60	--	41.71	46.00	4.29	
	824.597	15.31	20.70	3.88	--	39.89	46.00	6.11	
	884.503	14.99	21.20	4.36	--	40.55	46.00	5.45	
	1480.523	56.12	25.54	3.86	35.71	49.81	74.00	24.19	PK
	1690.434	56.77	26.40	4.07	35.44	51.80	74.00	22.20	
	2529.778	57.90	28.53	4.96	35.16	56.23	74.00	17.77	
	2945.949	63.67	30.30	5.69	35.20	64.46	74.00	9.54	
	3369.664	59.17	31.25	6.10	34.83	61.69	74.00	12.31	
	4230.695	50.90	33.18	6.31	34.20	56.19	74.00	17.81	
	1480.523	39.49	25.54	3.86	35.71	33.18	54.00	20.82	AV
	1690.434	40.33	26.40	4.07	35.44	35.36	54.00	18.64	
	2529.778	38.49	28.53	4.96	35.16	36.82	54.00	17.18	
2945.949	43.29	30.30	5.69	35.20	44.08	54.00	9.92		
3369.664	39.12	31.25	6.10	34.83	41.64	54.00	12.36		
4230.695	31.99	33.18	6.31	34.20	37.28	54.00	16.72		

EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN50K2207WUS Humidity : 60%RH

Test Mode : HDMI 1920*1080@60Hz & 1kHz Playing Date of Test : Feb 29, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark	
Vertical	74.135	23.51	8.27	0.99	--	32.77	40.00	7.23	QP	
	122.834	25.01	12.98	1.48	--	39.47	43.50	4.03		
	194.453	26.62	10.13	1.94	--	38.69	43.50	4.81		
	210.786	27.21	10.03	2.01	--	39.25	43.50	4.25		
	593.050	20.77	18.85	2.31	--	41.93	46.00	4.07		
	890.728	17.17	21.30	4.46	--	42.93	46.00	3.07	PK	
	1206.996	67.15	24.48	3.54	36.12	59.05	74.00	14.95		
	2122.382	58.60	27.73	4.58	35.11	55.80	74.00	18.20		
	2525.249	62.55	28.50	4.96	35.16	60.85	74.00	13.15		
	2940.675	61.86	30.27	5.69	35.20	62.62	74.00	11.38		
	3369.664	57.73	31.25	6.10	34.83	60.25	74.00	13.75		
	4223.122	51.37	33.16	6.31	34.20	56.64	74.00	17.36		
	1206.996	47.64	24.48	3.54	36.12	39.54	54.00	14.46		AV
	2122.382	39.72	27.73	4.58	35.11	36.92	54.00	17.08		
	2525.249	42.12	28.50	4.96	35.16	40.42	54.00	13.58		
2940.675	42.98	30.27	5.69	35.20	43.74	54.00	10.26			
3369.664	38.70	31.25	6.10	34.83	41.22	54.00	12.78			
4223.122	31.42	33.16	6.31	34.20	36.69	54.00	17.31			

TEST ENGINEER: MARK LI

EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN50K2207WUS Humidity : 60%RH

Test Mode : HDMI 1280*1024@60Hz & 1kHz Playing Date of Test : Feb 29, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	75.977	24.31	8.67	1.02	34.00	40.00	6.00
	125.446	24.92	13.07	1.50	39.49	43.50	4.01
	239.147	22.50	11.72	2.11	36.33	46.00	9.67
	348.027	19.99	15.53	2.65	38.17	46.00	7.83
	540.000	20.20	18.50	2.68	41.38	46.00	4.62
	890.728	11.59	21.30	4.46	37.35	46.00	8.65
Vertical	30.000	15.50	18.90	0.63	35.03	40.00	4.97
	73.103	24.64	8.05	0.98	33.67	40.00	6.33
	125.007	24.45	13.10	1.49	39.04	43.50	4.46
	209.313	27.40	10.00	2.01	39.41	43.50	4.09
	540.000	20.20	18.50	2.68	41.38	46.00	4.62
	909.667	11.10	21.50	4.56	37.16	46.00	8.84

TEST ENGINEER: MARK LI

EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN50K2207WUS Humidity : 60%RH

Test Mode : HDMI 640*480@60Hz & 1kHz Playing Date of Test : Feb 29, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	76.512	22.97	8.78	1.04	32.79	40.00	7.21
	127.218	22.27	12.97	1.51	36.75	43.50	6.75
	159.784	26.52	11.11	1.70	39.33	43.50	4.17
	239.987	23.97	11.80	2.11	37.88	46.00	8.12
	302.481	20.27	13.88	2.59	36.74	46.00	9.26
	821.710	12.56	20.70	3.88	37.14	46.00	8.86
Vertical	30.962	16.53	18.15	0.64	35.32	40.00	4.68
	70.090	26.22	7.30	0.95	34.47	40.00	5.53
	125.007	24.32	13.10	1.49	38.91	43.50	4.59
	213.015	26.79	10.13	2.02	38.94	43.50	4.56
	593.050	19.74	18.85	2.31	40.90	46.00	5.10
	903.309	12.38	21.40	4.56	38.34	46.00	7.66

TEST ENGINEER: MARK LI

EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN50K2207WUS Humidity : 60%RH

Test Mode : HDMI1080P Date of Test : Feb 29, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	72.338	26.23	7.90	0.98	35.11	40.00	4.89
	135.982	23.12	12.58	1.55	37.25	43.50	6.25
	446.414	19.63	16.83	2.82	39.28	46.00	6.72
	590.974	19.71	18.73	2.31	40.75	46.00	5.25
	742.259	18.15	19.97	3.60	41.72	46.00	4.28
	890.000	15.30	21.30	4.46	41.06	46.00	4.94
Vertical	74.396	24.68	8.35	1.01	34.04	40.00	5.96
	129.923	22.73	12.80	1.52	37.05	43.50	6.45
	217.544	26.79	10.38	2.04	39.21	46.00	6.79
	601.427	19.19	19.10	2.26	40.55	46.00	5.45
	742.259	17.53	19.97	3.60	41.10	46.00	4.90
	891.000	16.10	21.30	4.46	41.86	46.00	4.14

TEST ENGINEER: MARK LI

EUT : LED LCD TV Temperature : 22°C

Model No. : LTDN50K2207WUS Humidity : 60%RH

Test Mode : USB Play Date of Test : Feb 29, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission Level dB (μ V/m)	Limits dB (μ V/m)	Margin (dB)
Horizontal	70.740	25.28	7.45	0.95	33.68	40.00	6.32
	128.940	23.11	12.87	1.52	37.50	43.50	6.00
	297.000	23.20	13.70	2.56	39.46	46.00	6.54
	605.210	18.54	19.10	2.26	39.90	46.00	6.10
	743.920	16.47	20.03	3.60	40.10	46.00	5.90
	917.550	13.47	21.50	4.61	39.58	46.00	6.42
Vertical	31.940	16.34	17.50	0.65	34.49	40.00	5.51
	44.550	22.14	11.20	0.77	34.11	40.00	5.89
	69.770	25.89	7.26	0.93	34.08	40.00	5.92
	135.730	24.28	12.59	1.55	38.42	43.50	5.08
	241.460	25.91	12.00	2.13	40.04	46.00	5.96
	596.480	18.90	18.98	2.31	40.19	46.00	5.81

TEST ENGINEER: MARK LI

5 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	M/N	Manufacturer	Location
FERRITE CORE	BNF1730GR\ROH	Brigitte Liu Si (Shandong) photoelectric co., LTD	See Internal photos Figure 23

Note: We had required the applicant and manufacturer that all electrical and mechanical devices employed for spurious radiation suppression, including any modifications made during certification testing, must be incorporated in each unit marked

TEST ENGINEER: Wency Yang
(WENCY YANG)

6 DEVIATION TO TEST SPECIFICATIONS

None.