FCC TEST REPORT

FCC ID : WSQSP-1850

Applicant : Beijing Lanbe Tianhe Technologies&Develop CO., Ltd.
Address : Room 508,Guoxin Building,SHOUT:Nan Rd. NO.20,
Haidian District,Beijing,China

Equipment Under Test (EUT) :

Product description : VIDEO SPLITTER
Model No. : SP-1215 SP-1225 SP-1235 SP-1250 SP-1415 SP-1425 SP-1435 SP-1450 SP-1815 SP-1825 SP-1835 SP-1850

Standards : FCC Part 15 Subpart B

Date of Test : Sep. 10, 2009
Prepared By : Maikou Zhang
Reviewed By : Phillo zhong

Test Result :	**PASS ***

PERPARED BY:
Waltek Services (Shenzhen) Co., Ltd.
1/F, Fukangtai Building,West Baima Rd.,Songgang Street, Baoan District, Shenzhen 518105,China
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1 Test Summary

Test	Test Requirement	Test Method	Class / Severity	Result
Conducted Emission (150KHz to 30MHz)	FCC PART 15, SUBPART B: 2007	ANSI C63.4: 2003	FCC PART15.107	PASS
Radiated Emission (30MHz to 2GHz)	FCC PART 15, SUBPART B: 2007	ANSI C63.4: 2003	FCC PART15.109	PASS

2 Contents

3 General Information

3.1 Client Information

Applicant:	Beijing Lanbe Tianhe Technologies&Develop CO., Ltd.
Address of Applicant:	Room 508,Guoxin Building, SHOUT:Nan Rd. NO.20,Haidian District,Beijing,China
Manufacturer:	Suzhou Switek Electronics&Technology CO., Ltd.
Address of manufacturer:	No.5 Linggang Industry Zone,Luzhi Town, Wuzhong District,Suzhou City

3.2 General Description of E.U.T.

Product description:	VIDEO SPLITTER
Model No.:	SP-1215 SP-1225 SP-1235 SP-1250 SP-1415 SP-1425 SP-1435 SP-1450 SP-1815 SP-1825 SP-1835 SP-1850
Model Description:	The PCB of all models are identical except the appearance of EUTs, SP-1850 and SP-1250 is the test samples,and the worse sample is SP-1850,so the data were shown as follow.

3.3 Details of E.U.T.

Power Supply:	Adapter input: 100V-240VAC, 50/60Hz,0.8A Adapter Output:9VDC,1.5A

3.4 Description of Support Units

The EUT has been tested as an independent unit.

3.5 Standards Applicable for Testing

The customer requested FCC tests for a VIDEO SPLITTER . The standards used were FCC Part 15 Subpart B.

3.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC – Registration No.: 880581**

  Waltek Services(Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 880581.June 24,2008.

- **IC – Registration No.: 7760A**

  Waltek Services(Shenzhen) Co., Ltd. has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files. Registration No.:7760A, July 24, 2008.

3.7 Test Location

All Emission tests were performed at:-
1/F, Fukangtai Building,West Baima Rd.,Songgang Street, Baoan District, Shenzhen 518105,China

4 Equipment Used during Test

Equipment Name	Manufacturer Model	Equipment No	Internal No	Specification	Cal. Date	Due Date	Cert. No	Uncertainty
EMC Analyzer	Agilent/ E7405A	MY45114943	W2008001	9k-26.5GHz	Aug-09	Aug-10	Wws20081596	±1dB
Trilog Broadband Antenne 30-3000 MHz	SCHWARZBECK MESS-ELEKTROM / VULB9163	336	W2008002	30-3000 MHz	Aug-09	Aug-10		±1dB
Broad-band Horn Antenna 1-18 GHz	SCHWARZBECK MESS-ELEKTROM / VULB9163	667	W2008003	1-18GHz	Aug-09	Aug-10		f＜10 GHz：±1dB 10GHz＜f＜18 GHz：±1.5dB
Broadband Preamplifier 0.5-18 GHz	SCHWARZBECK MESS-ELEKTROM / BBV 9718	9718-148	W2008004	0.5-18GHz	Aug-09	Aug-10		±1.2dB
10m Coaxial Cable with N-male Connectors usable up to 18GHz,	SCHWARZBECK MESS-ELEKTROM / AK 9515 H	-	-	-	Aug-09	Aug-10		-
10m 50 Ohm Coaxial Cable with N-plug,individual length,usable up to 3(5)GHz, Connector	SCHWARZBECK MESS-ELEKTROM / AK 9513				Aug-09	Aug-10		
Positioning Controller	C&C LAB/ CC-C-IF				N/A	N/A		
Color Monitor	SUNSPO/ SP-14C				N/A	N/A		
Test Receiver	ROHDE&SCHWARZ/ ESPI	101155	W2005001	9k-3GHz	Aug-09	Aug-10	Wws20080942	±1dB
EMI Receiver	Beijingkehuan	KH3931		9k-1GHz	Aug-09	Aug-10		
Two-Line V-Network	ROHDE&SCHWARZ/ ENV216	100115	W2005002	50Ω/50μH	Aug-09	Aug-10	Wws20080941	±10%

Equipment Name	Manufacturer Model	Equipment No	Internal No	Specification	Cal. Date	Due Date	Cert. No	Uncertainty
Absorbing Clamp	ROHDE&SCHWARZ/ MDS-21	100205	W2005003	impandance50 Ω loss ：17 dB	Aug-09	Aug-10	Wws20080943	±1dB
10m 50 Ohm Coaxial Cable with N-plug,individual length,usable up to 3(5)GHz, Connectors	SCHWARZBECK MESS-ELEKTROM / AK 9514				Aug-09	Aug-10		
Digital Power Analyzer	Em Test AG/Switzerland/ DPA 500	V0745103095	W2008012	Power：2000VA Vol-range：0-300V Freq_range：10-80Hz	Aug-09	Aug-10	Wwd20081185	Voltage distinguish:0.025% Power_freq distinguish:0.02Hz
Power Source	Em Test AG/Switzerland/ ACS 500	V0745103096	W2008013	Vol-range：0-300V Power_freq：10-80Hz				
Electrostatic Discharge Simulator	Em Test AG/Switzerland/DITO	V0745103094	W2008005	Contact discharge：500V-10KV Air diacharge：500V-16.5KV	Aug-09	Aug-10	Wwc20082400	7.5A current will be changed in V_m=1.5V
RF Generator	TESEQ GmbH/ NSG4070	25781	W2008008	Fraq-range：9K-1GHz RF voltage：-60 dBm-+10dBm	Aug-09	Aug-10	Wws20081890	Power_freq distinguish0.1Hz RFeletricity distinguish 0.1 B
CDN M-Type	TESEQ GmbH/ CDN M016	25112	W2008009	Voltage correct factor 9.5 dB	Aug-09	Aug-10	Wwc20082396	150K-80MHz：±1dB 80-230MHz:-2-+3dB
EM-Clamp	TESEQ GmbH/ KEMZ 801	25453	W2008010	Freq_range：0.15-1000 MHz	Aug-09	Aug-10	Wwc20082397	0.3-400 MHz：±4dB Other freq：±5dB
Attenuator 6dB	TESEQ GmbH/ ATN6050	25365			Aug-09	Aug-10	Wws20081597	

Equipment Name	Manufacturer Model	Equipment No	Internal No	Specification	Cal. Date	Due Date	Cert. No	Uncertainty
All Modules Generator	SCHAFFNER/6150	34579	W2008006	voltage:200V-4.4KV Pulse current：100A-2.2KA	Aug-09	Aug-10	Wwc20082401	voltage: ±10% Pulse current：±10%
Capacitive Coupling Clamp	SCHAFFNER/ CDN 8014	25311			Aug-09	Aug-10	Wwc20082398	-
Signal and Data Line Coupling Network	SCHAFFNER/ CDN 117	25627	W2008011	1.2/50μS	Aug-09	Aug-10	Wwc20082399	-
AC Power Supply	TONGYUN/ DTDGC-4				Aug-09	Aug-10	Wws20080944	-
Exposure Level Tester ELT-400	Narda Safety TEST Solutions/2304/03	M-0155	w2008022	Test freq range：1—400kHz	Aug-09	Aug-10	Wwd20081191	Test uncertainly：1—120kHz:±1.83%, 120 kHz-400 kHz: ±4.06%
Magnetic Field Probe 100cm^2	Narda Safety TEST Solutions/2300/90.10	M-1070	w2008021	Test freq range：1—400kHz				Test uncertainly：1Hz-10Hz: ±16.2%, 10Hz - 120kHz:±2.2%, 120 kHz-400 kHz: ±4.7%
Active Loop Antenna Charger 10kHz-30MHz	Beijing Dazhi / ZN30900A	-	-	10kHz-30MHz	Aug-09	Aug-10		±1dB
Other								
Notebook	IBM	X31	/	/	/	/		
PC	acer	AG1720	/	/	/	/		
Moniter	viewsonic	S27996-1W	/	/	/	/		
K/B	DELL	L100	/	/	/	/		
Mouse	acer	M-UVACR1	/	/	/	/		
Displayer	viewsonic	S27889	/	/	/	/		

5 Emissions Test Results

5.1 Conducted Emission Data

Test Requirement:	FCC Part15.107
Test Method:	ANSI C63.4：2003
Test Result:	PASS
Frequency Range:	150kHz to 30MHz
Limit:	66-56 dBμV between 0.15MHz & 0.5MHz 56 dBμV between 0.5MHz & 5MHz 60 dBμV between 5MHz & 30MHz
Detector:	Peak for pre-scan (9kHz Resolution Bandwidth) Quasi-Peak & Average if maximised peak within 6dB of Average Limit

5.1.1 E.U.T. Operation

Operating Environment:

Temperature:	25.5°C
Humidity:	51 % RH
Atmospheric Pressure:	1012 mbar

EUT Operation :

The EUT was tested according to ANSI C63.4：2003. The frequency spectrum from 150kHz to 30MHz was investigated. The EUT was tested in working mode with the PC and Displayer, It was pre-tested in Connected with one displayer mode and four displayers mode, the worse was Connected four displayers mode,so the data was shown Connected four displayers mode only.

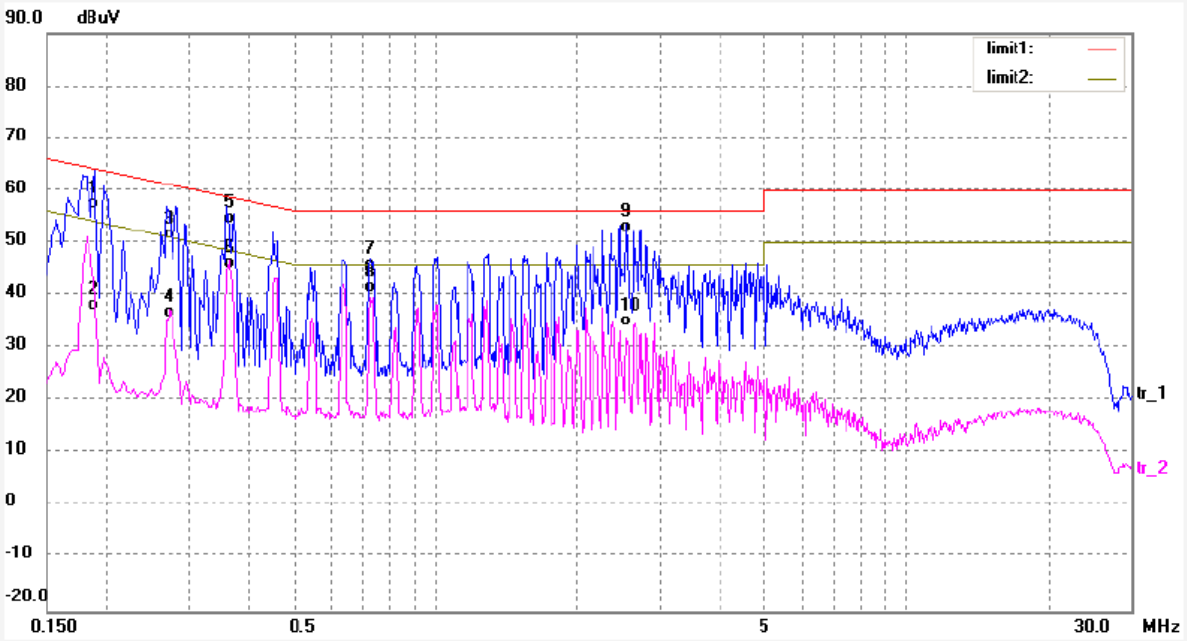
The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

5.1.2 EUT Setup

The conducted emission tests were performed using the setup accordance with the ANSI C63.4：2003, The specification used in this report was the FCC Part15.107 Class B limits.

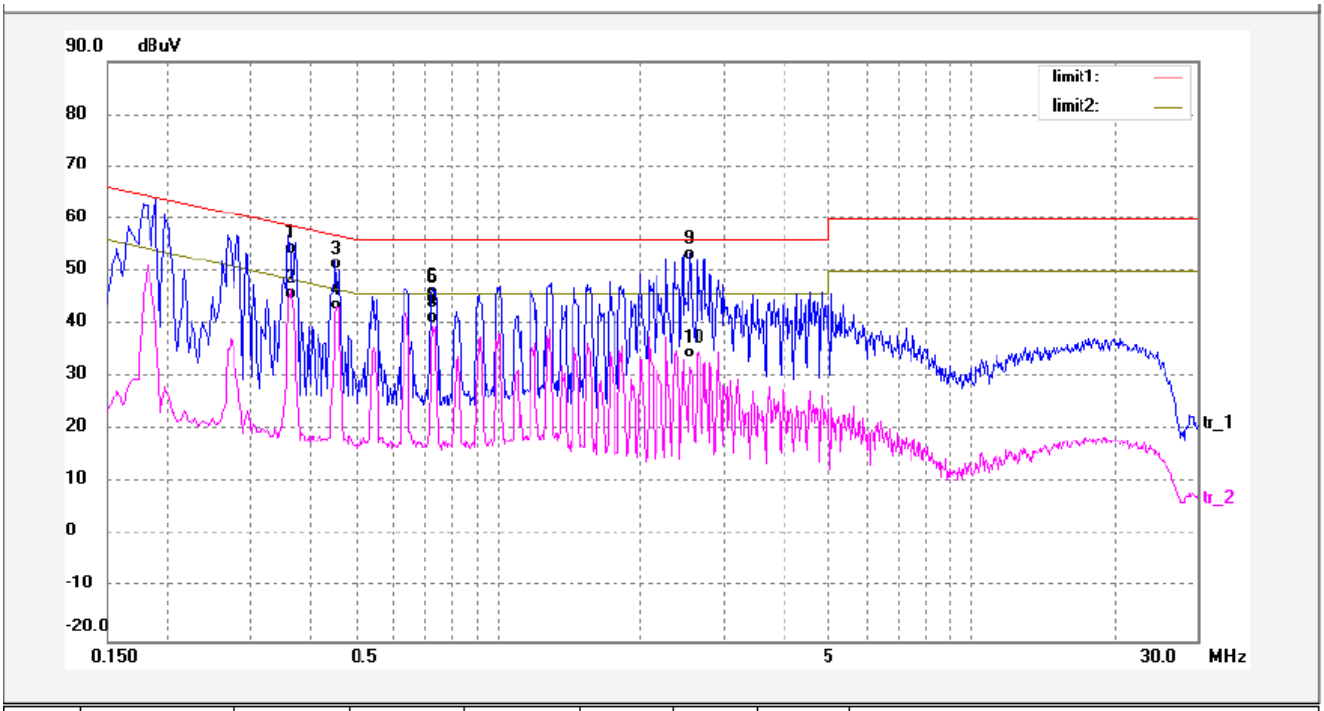
5.1.3 Conducted Emission Test Data

Live Line :



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1900	45.37	10.87	56.24	64.03	-7.79	QP	
2	0.1900	26.24	10.87	37.11	54.03	-16.92	AVG	
3	0.2700	40.11	10.56	50.67	61.12	-10.45	QP	
4	0.2700	25.24	10.56	35.80	51.12	-15.32	AVG	
5	0.3620	43.17	10.28	53.45	58.68	-5.23	QP	
6	0.3620	34.80	10.28	45.08	48.68	-3.60	AVG	
7	0.7300	34.98	9.79	44.77	56.00	-11.23	QP	
8	0.7300	30.53	9.79	40.32	46.00	-5.68	AVG	
9	2.5460	42.28	9.72	52.00	56.00	-4.00	QP	
10	2.5460	24.28	9.72	34.00	46.00	-12.00	AVG	

Neutral Line :



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.3620	43.12	10.28	53.40	58.68	-5.28	QP	
2	0.3620	34.40	10.28	44.68	48.68	-4.00	AVG	
3	0.4540	40.36	10.01	50.37	56.80	-6.43	QP	
4	0.4540	32.42	10.01	42.43	46.80	-4.37	AVG	
5	0.7300	35.11	9.79	44.90	56.00	-11.10	QP	
6	0.7300	35.14	9.79	44.93	56.00	-11.07	QP	
7	0.7300	30.38	9.79	40.17	46.00	-5.83	AVG	
8	0.7300	30.38	9.79	40.17	46.00	-5.83	AVG	
9	2.5460	42.34	9.72	52.06	56.00	-3.94	QP	
10	2.5460	23.83	9.72	33.55	46.00	-12.45	AVG	

5.1.4 Photograph – Conducted Emission Test Setup

5.2 Radiation Emission Data

Test Requirement:	FCC Part15.109
Test Method:	Based on ANSI C63.4:2003
Test Result:	PASS
Frequency Range:	30MHz to 2GHz
Measurement Distance:	3m
Limit:	40.0 dBμV/m between 30MHz & 88MHz
	43.5 dBμV/m between 88MHz & 216MHz
	46.0 dBμV/m between 216MHz & 960MHz
	54.0 dBμV/m zbove 960MHz
Detector:	Peak for pre-scan (120kHz resolution bandwidth)
	Quasi-Peak if maximised peak within 6dB of limit

5.2.1 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in the field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at Waltek EMC lab is $\pm$5.03 dB.

5.2.2 EUT Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.4:2003, The specification used in this report was the FCC Part15 B limits.

5.2.3 Spectrum Analyzer Setup

According to FCC Part15 B Rules, the system was tested 30 to 2GHz.

Below 1GHz

Start Frequency.....30 MHz
Stop Frequency.....1 GHz
Sweep Speed Auto
IF Bandwidth.....120 kHz
Video Bandwidth.....100 kHz
Quasi-Peak Adapter Bandwidth.....120 kHz
Quasi-Peak Adapter Mode.....Normal
Resolution Bandwidth.....100 kHz

Above 1GHz

Start Frequency.....1GHz
Stop Frequency.....2 GHz
Sweep Speed Auto
Video Bandwidth.....1MHz
Resolution Bandwidth.....1MHz

5.2.4 Test Procedure

The radiated emissions test.

Maximizing procedure was performed on the six (6) highest emissions to ensure EUT is compliant with all installation combinations.

All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dBμV of specification limits), and are distinguished with a "**Qp**" in the data table.

The EUT was tested in working mode with the PC and displayer, It was pre-tested in connected with one displayer mode and four displayers mode, the worse was connected four displayers mode,so the data was shown connected four displayers mode only.

5.2.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

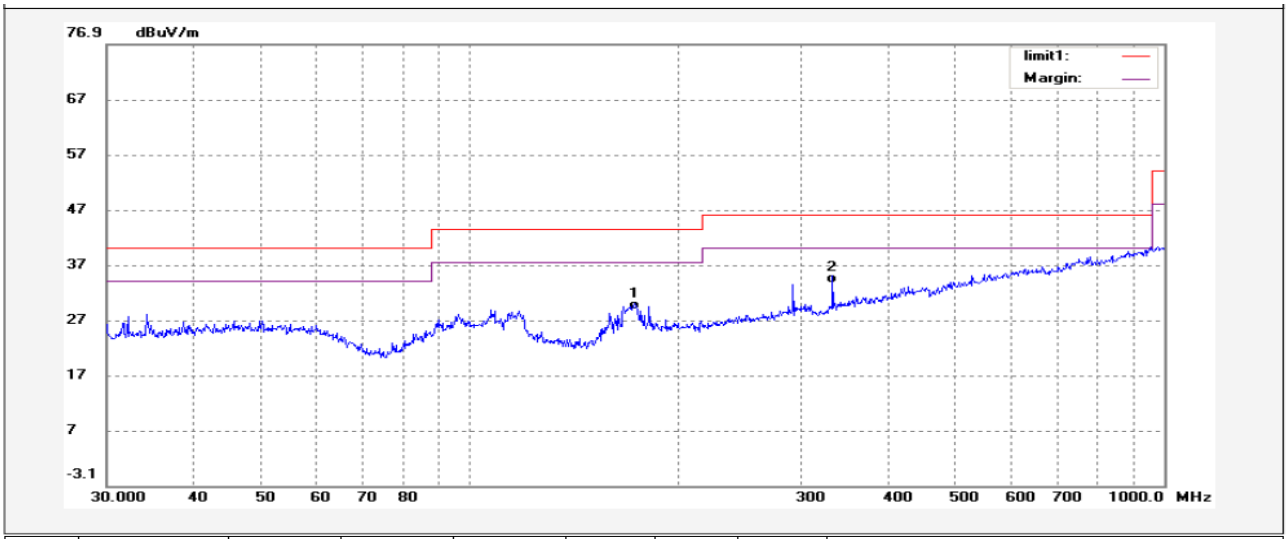
Corr. Ampl. = Indicated Reading + Antenna Factor + Cable Factor - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dBμV means the emission is 7dBμV below the maximum limit for Class B. The equation for margin calculation is as follows:
Margin = Corr. Ampl. – Class B Limit

5.2.6 Summary of Test Results

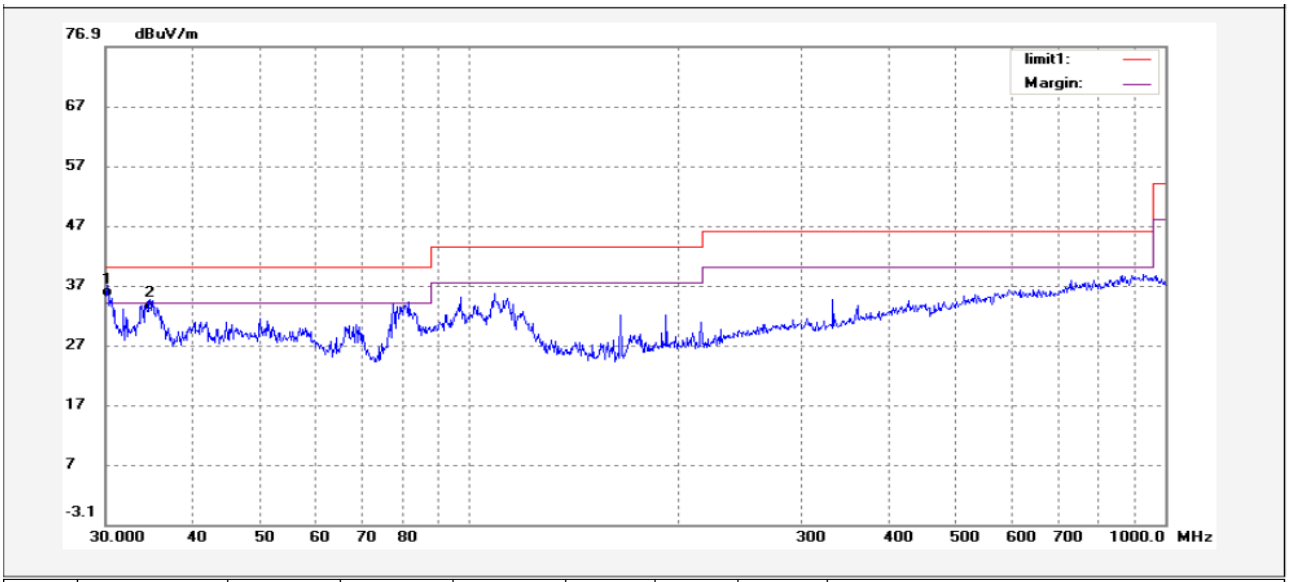
According to the data in this section, the EUT complied with the FCC Part15 B standards.
Below 1GHz

Antenna Polarization: Horizontal



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/	Margin (dB)	Detector	Remark
1	172.5976	17.24	11.65	28.89	43.50	-14.61	QP	
2	332.9536	16.42	17.25	33.67	46.00	-12.33	QP	

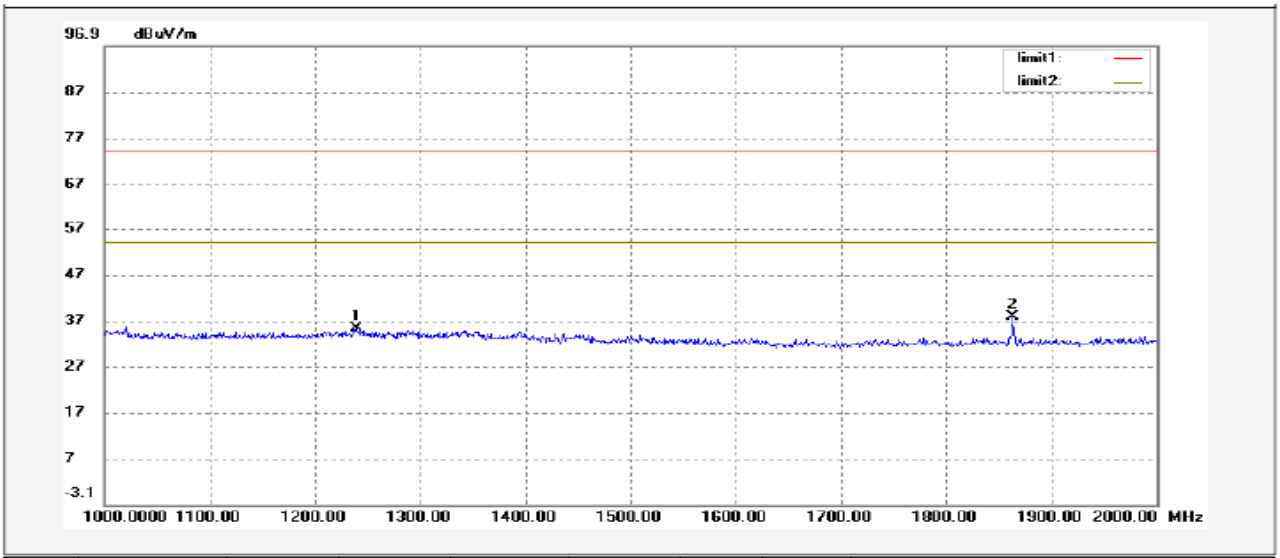
Antenna Polarization: Vertical



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/	Margin (dB)	Detector	Remark
1	30.2116	19.25	15.83	35.08	40.00	-4.92	QP	
2	34.7705	16.96	15.80	32.76	40.00	-7.24	QP	

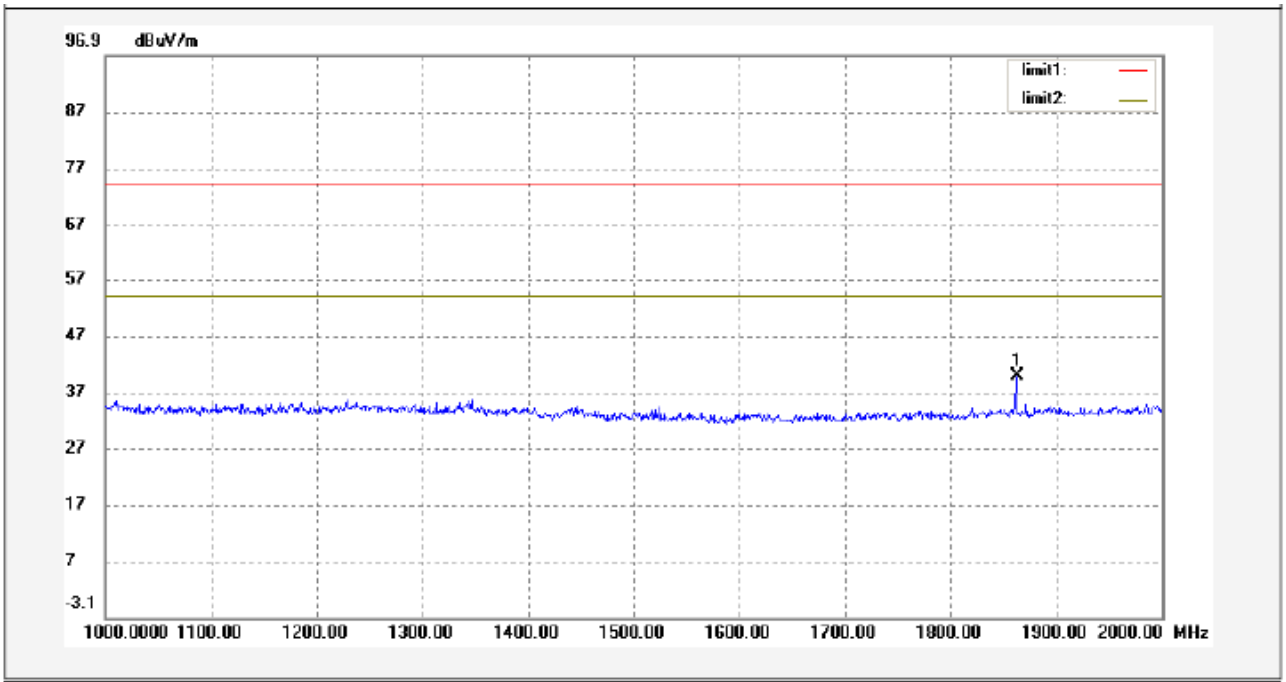
Above 1GHz

Antenna Polarization: Horizontal



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	1239.479	43.02	-7.81	35.21	74.00	-38.79	peak	
2	1862.726	47.56	-9.67	37.89	74.00	-36.11	peak	

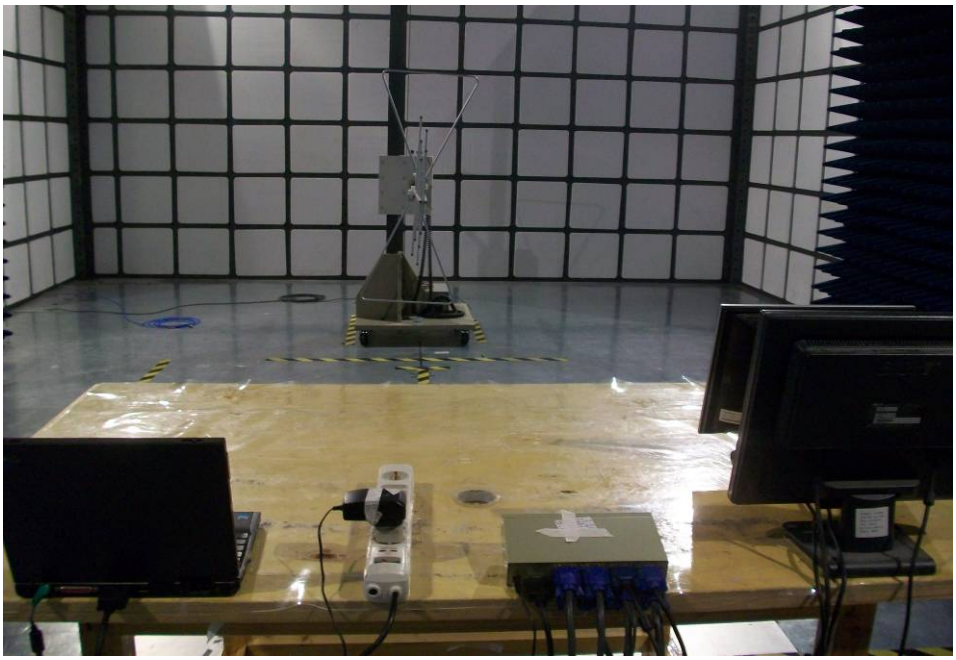
Antenna Polarization: Vertical



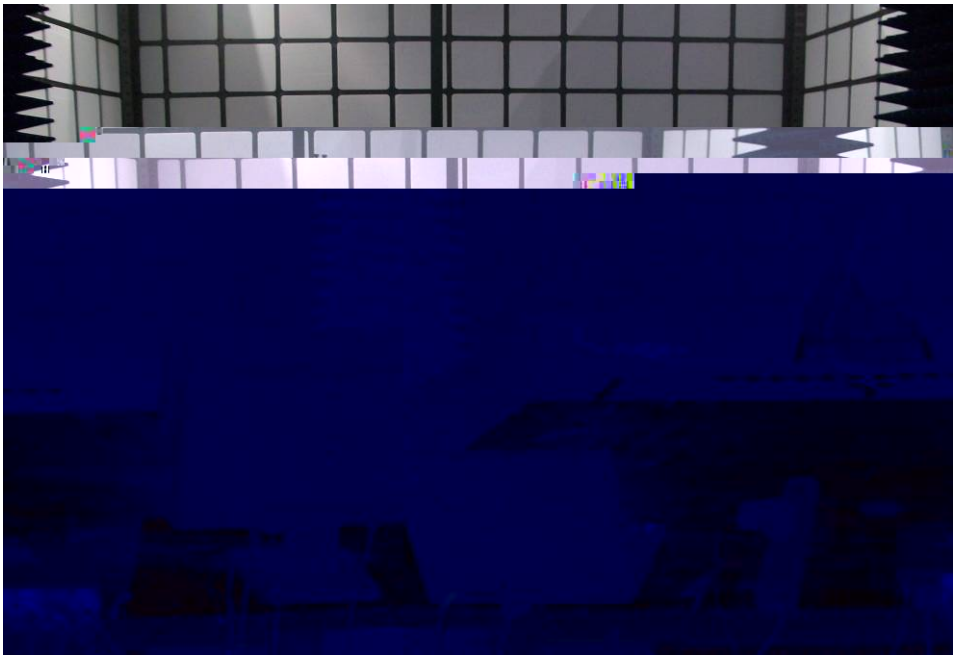
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	1862.726	48.25	-8.52	39.73	74.00	-34.27	peak	

5.2.7 Photographs – Radiation Emission Test Setup

Below 1GHz

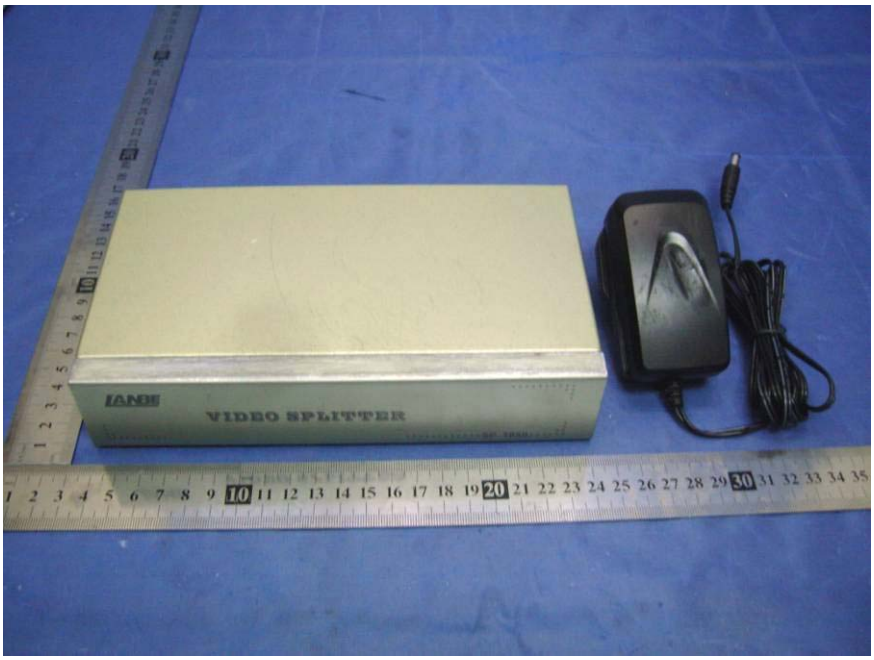


Above 1GHz



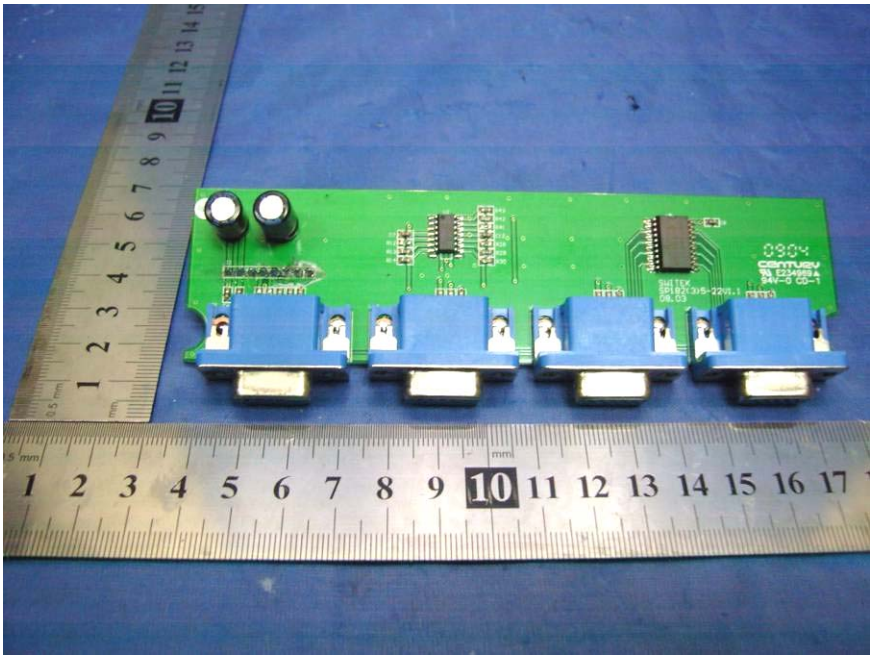
6 Photographs - Constructional Details

6.1 EUT(SP-1850) - Front View

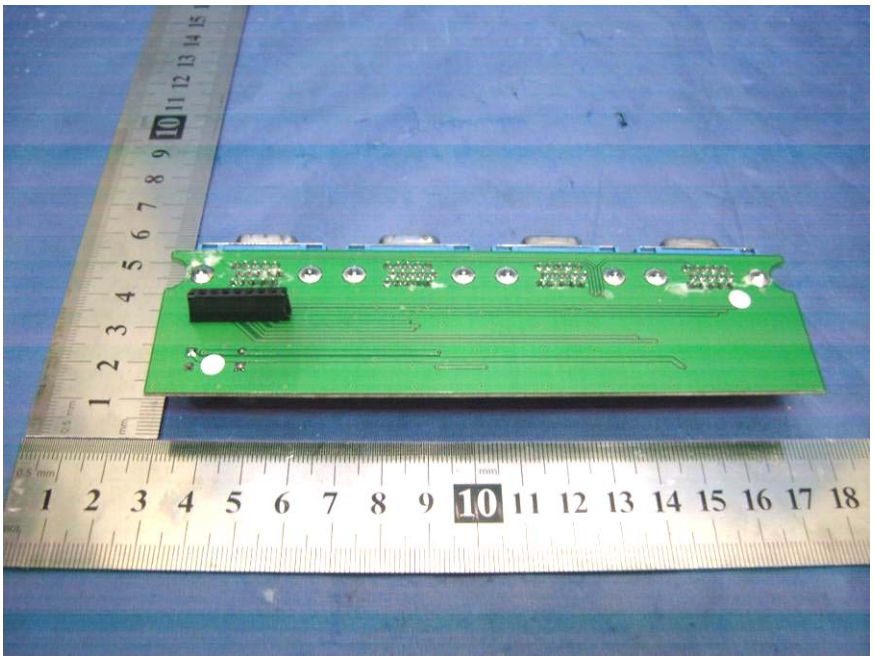


6.2 EUT(SP-1850) - Back View

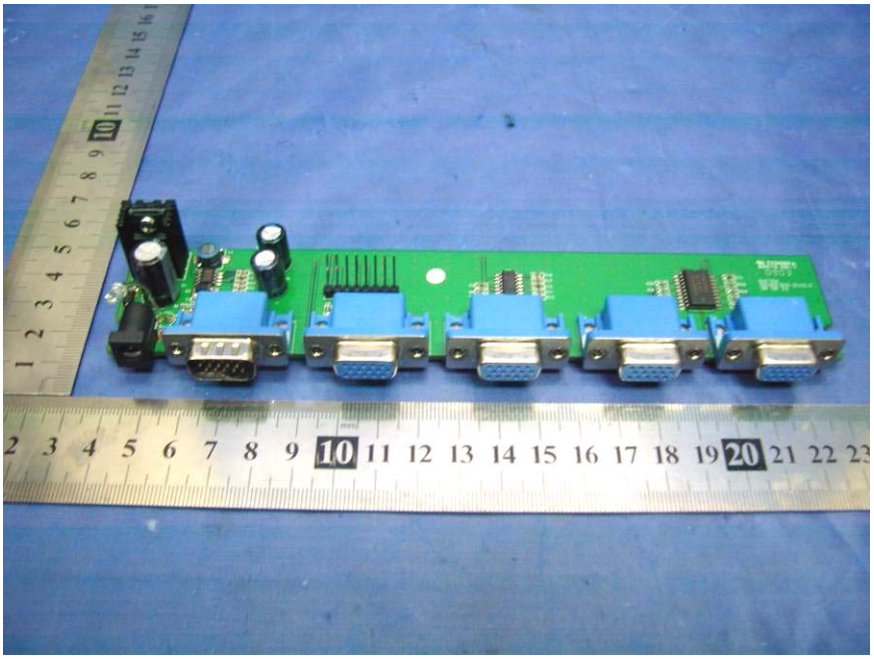
6.3 EUT(SP-1850)-PCB 1 -Front View



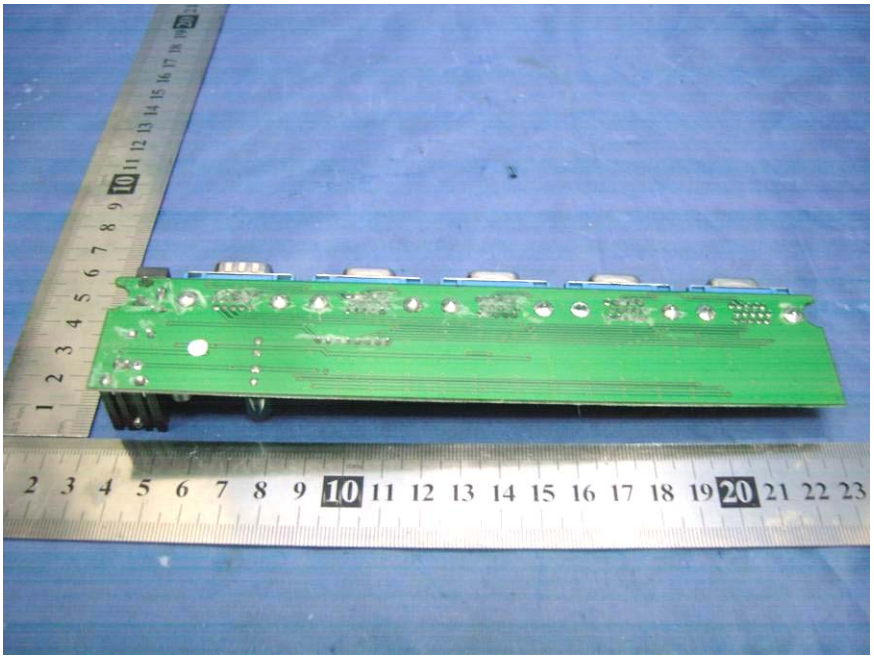
6.4 EUT(SP-1850)-PCB 1 - Back View



6.5 EUT(SP-1850)-PCB 2 -Front View

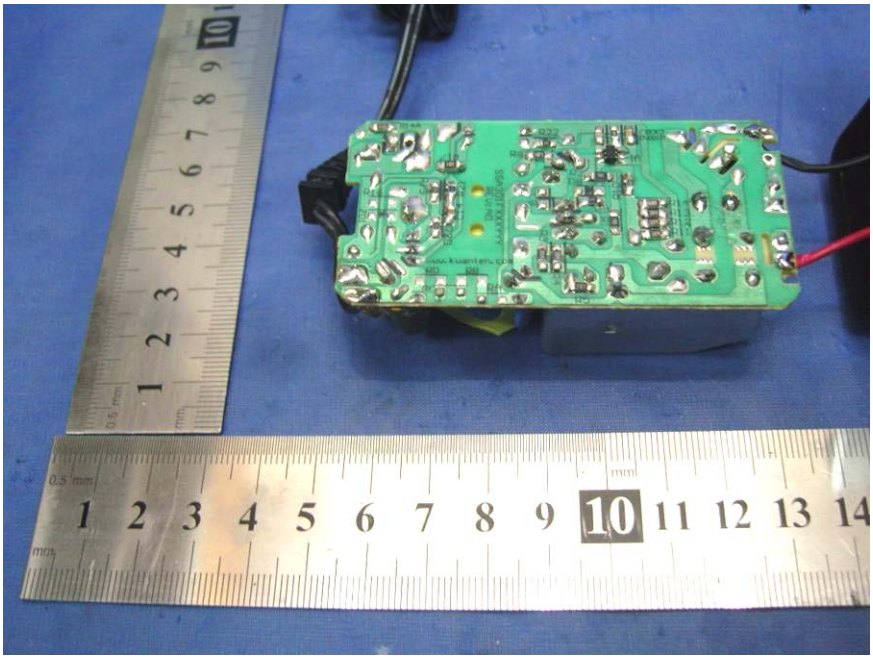


6.6 EUT(SP-1850)-PCB 2-Back View



6.7 Adapter-PCB -Front View

6.8 Adapter-PCB -Back View



7 FCC ID Label

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:(1)this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The Label must not be a stick-on paper. The Label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Proposed Label Location on EUT

EUT Top View/ proposed FCC Label Location