TEST REPORT

Applicant:	SHANTOU CITY BOYANG INTELLIGENT TECHNOLOGY CO.,LTD
Address of Applicant:	8/F, NO.10, 2nd Road, Xinjia Dongyuan, Shangjiao Village, Chenghua street, Chenghai District, Shantou City, Guangdong Province, China
Manufacturer:	SHANTOU CITY BOYANG INTELLIGENT TECHNOLOGY CO.,LTD
Address of Manufacturer:	8/F, NO.10, 2nd Road, Xinjia Dongyuan, Shangjiao Village, Chenghua street, Chenghai District, Shantou City, Guangdong Province, China

Equipment Under Test (EUT)

Product Name:	Aircraft Family
Model No.:	See section 5.1
FCC ID:	2BLYO-B9
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.249
Date of sample receipt:	October 14, 2024
Date of Test:	October 15-25, 2024
Date of report issued:	October 25, 2024
Test Result :	PASS *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Robinson Luo
Laboratory Manager

This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

2 Version

Version No.	Date	Description
00	*October 25, 2024*	*Original*

Prepared By: ***Date:*** *October 25, 2024*

Project Engineer

Check By: ***Date:*** *October 25, 2024*

Reviewer

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4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Pass
Field strength of the fundamental signal	15.249 (a)	Pass
Spurious emissions	15.249 (a) (d)/15.209	Pass
Band edge	15.249 (d)/15.205	Pass
20dB Occupied Bandwidth	15.215 (c)	Pass

Remarks:

1. *Test according to ANSI C63.10:2013.*
2. *Pass: The EUT complies with the essential requirements in the standard.*

4.1 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	$\pm 7.25\times10^{-8}$
2	Duty cycle	±0.37%
3	Occupied Bandwidth	±3%
4	RF conducted power	±0.75dB
5	RF power density	±3dB
6	Conducted Spurious emissions	±2.58dB
7	AC Power Line Conducted Emission	±3.44dB (0.15MHz ~ 30MHz)
8	Radiated Spurious emission test	±3.1dB (9kHz-30MHz)
		±3.8039dB (30MHz-200MHz)
		±3.9679dB (200MHz-1GHz)
		±4.29dB (1GHz-18GHz)
		±3.30dB (18GHz-40GHz)
9	Temperature test	±1°C
10	Humidity test	±3%
11	Time	±3%

5 General Information

5.1 General Description of EUT

Product Name:	Aircraft Family
Model No.:	B1, B2, B3, B4, B5, B6, B7, B8, B9, B10, B11, B12, B13, B14, B15, B16, B17, B18, B19, B20, B21, B22, B23, B24, B25, B26, B27, B28, B29, B30, B1S, B2S, B3S, B4S, B5S, B6S, B7S, B8S, B9S, B10S, B11S, B12S, B13S, B14S, B15S, B16S, B17S, B18S, B19S, B20S, B21S, B22S, B23S, B24S, B25S, B26S, B27S, B28S, B29S, B30S, X1, X1 PRO, X2, X2 PRO, X2 PRO2, X2 PRO3, X3, X4, X5, X6, X7, X8, X9, F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, B3 PRO, Raptor B9, Falcon X2, Raven K2, SG109 MAX, SG901 PRO, SG901 MAX
Test Model No.:	B9
Remark: All above models are identical in the same PCB layout, interior structure and electrical circuits. The differences are appearance, color and model name for commercial purpose.	
Serial No.:	N/A
Test sample(s) ID:	GTS2024100143-1
Sample(s) Status	Engineered sample
Operation Frequency:	2403MHz~2460MHz
Channel Numbers:	58
Modulation Type:	GFSK
Antenna Type:	Integral Antenna
Antenna gain:	1.97dBi(declare by applicant)
Power supply:	DC 3.7V, 500mAh, 1.85Wh for Li-ion battery The battery is charged via USB DC 5V

Remark:
1. Antenna gain information provided by the customer
2. The relevant information of the sample is provided by the entrusting company, and the laboratory is not responsible for its authenticity.

Operation Frequency each of channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2403	16	2418	31	2433	46	2448
2	2404	17	2419	32	2434	47	2449
3	2405	18	2420	33	2435	48	2450
4	2406	19	2421	34	2436	49	2451
5	2407	20	2422	35	2437	50	2452
6	2408	21	2423	36	2438	51	2453
7	2409	22	2424	37	2439	52	2454
8	2410	23	2425	38	2440	53	2455
9	2411	24	2426	39	2441	54	2456
10	2412	25	2427	40	2442	55	2457
11	2413	26	2428	41	2443	56	2458
12	2414	27	2429	42	2444	57	2459
13	2415	28	2430	43	2445	58	2460
14	2416	29	2431	44	2446		
15	2417	30	2432	45	2447		

The test frequencies are below:

Channel	Frequency
The lowest channel	2403MHz
The middle channel	2440MHz
The Highest channel	2460MHz

5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode.
Remark: New battery is used during all test.	

Per-test mode.

We have verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report (Only show the worst case:Y axis) and defined as follows:

Axis	X	Y	Z
Field Strength(dBuV/m)	96.31	97.00	95.27

5.3 Description of Support Units

Manufacturer	Description	Model	Serial Number
XIAOMI	USB Charger	MDY-10-EH	N/A

5.4 Deviation from Standards

None.

5.5 Abnormalities from Standard Conditions

None.

5.6 Test Facility

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

● **FCC—Registration No.: 381383**

Designation Number: CN5029

Global United Technology Services Co., Ltd., Shenzhen 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 files.

● **ISED—Registration No.: 9079A**

CAB identifier: CN0091

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of ISED for radio equipment testing

● **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

5.7 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: No. 123- 128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102

Tel: 0755-27798480

Fax: 0755-27798960

5.8 Additional Instructions

Test Software	Special test command provided by manufacturer
Power level setup	Default

6 Test Instruments list

Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	Jun. 22, 2024	Jun. 21, 2027
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Apr. 11, 2024	Apr. 10, 2025
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9168	GTS640	Mar. 19, 2023	Mar. 18, 2025
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	Apr. 17, 2023	Apr. 16, 2025
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	Apr. 11, 2024	Apr. 10, 2025
8	Loop Antenna	ZHINAN	ZN30900A	GTS534	Nov. 13, 2023	Nov.12, 2024
9	Broadband Preamplifier	SCHWARZBECK	BBV9718	GTS535	Apr. 11, 2024	Apr. 10, 2025
10	Amplifier(1GHz-26.5GHz)	HP	8449B	GTS601	Apr. 11, 2024	Apr. 10, 2025
11	Horn Antenna (18-26.5GHz)	/	UG-598A/U	GTS664	Oct. 29, 2023	Oct. 28, 2024
12	Horn Antenna (26.5-40GHz)	A.H Systems	SAS-573	GTS665	Oct. 29, 2023	Oct. 28, 2024
13	FSV·Signal Analyzer (10Hz-40GHz)	Keysight	FSV-40-N	GTS666	Mar. 12, 2024	Mar. 11, 2025
14	Amplifier	/	LNA-1000-30S	GTS650	Apr. 11, 2024	Apr. 10, 2025
15	CDNE M2+M3-16A	HCT	30MHz-300MHz	GTS692	Nov. 08, 2023	Nov. 07, 2024
16	Wideband Amplifier	/	WDA-01004000-15P35	GTS602	Apr. 11, 2024	Apr. 10, 2025
17	Thermo meter	JINCHUANG	GSP-8A	GTS643	Apr. 18, 2024	Apr. 17, 2025
18	RE cable 1	GTS	N/A	GTS675	Jul. 02, 2024	Jul. 01, 2025
19	RE cable 2	GTS	N/A	GTS676	Jul. 02, 2024	Jul. 01, 2025
20	RE cable 3	GTS	N/A	GTS677	Jul. 02, 2024	Jul. 01, 2025
21	RE cable 4	GTS	N/A	GTS678	Jul. 02, 2024	Jul. 01, 2025
22	RE cable 5	GTS	N/A	GTS679	Jul. 02, 2024	Jul. 01, 2025
23	RE cable 6	GTS	N/A	GTS680	Jul. 02, 2024	Jul. 01, 2025
24	RE cable 7	GTS	N/A	GTS681	Jul. 05, 2024	Jul. 04, 2025
25	RE cable 8	GTS	N/A	GTS682	Jul. 05, 2024	Jul. 04, 2025

Conducted Emission						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	Jul. 12, 2022	Jul. 11, 2027
2	EMI Test Receiver	R&S	ESCI 7	GTS552	Apr. 11, 2024	Apr. 10, 2025
3	LISN	ROHDE & SCHWARZ	ENV216	GTS226	Apr. 11, 2024	Apr. 10, 2025
4	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
5	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
6	Thermo meter	JINCHUANG	GSP-8A	GTS642	Apr. 18, 2024	Apr. 17, 2025
7	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	Apr. 11, 2024	Apr. 10, 2025
8	ISN	SCHWARZBECK	NTFM 8158	GTS565	Apr. 11, 2024	Apr. 10, 2025
9	High voltage probe	SCHWARZBECK	TK9420	GTS537	Apr. 11, 2024	Apr. 10, 2025
10	Antenna end assembly	Weinschel	1870A	GTS560	Apr. 11, 2024	Apr. 10, 2025

RF Conducted Test:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	Apr. 13, 2024	Apr. 12, 2025
2	EMI Test Receiver	R&S	ESCI 7	GTS552	Apr. 13, 2024	Apr. 12, 2025
3	PSA Series Spectrum Analyzer	Agilent	E4440A	GTS536	Apr. 13, 2024	Apr. 12, 2025
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	Apr. 13, 2024	Apr. 12, 2025
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	Apr. 13, 2024	Apr. 12, 2025
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	Apr. 13, 2024	Apr. 12, 2025
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	Apr. 13, 2024	Apr. 12, 2025
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	Apr. 13, 2024	Apr. 12, 2025
9	Thermo meter	JINCHUANG	GSP-8A	GTS641	Apr. 18, 2024	Apr. 17, 2025

General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Barometer	KUMAO	SF132	GTS647	Apr. 18, 2024	Apr. 17, 2025

7 Test results and Measurement Data

7.1 Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. **15.247(c) (1)(i) requirement:** (i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.	
EUT Antenna:	
The antenna is integral antenna, reference to the appendix II for details.	

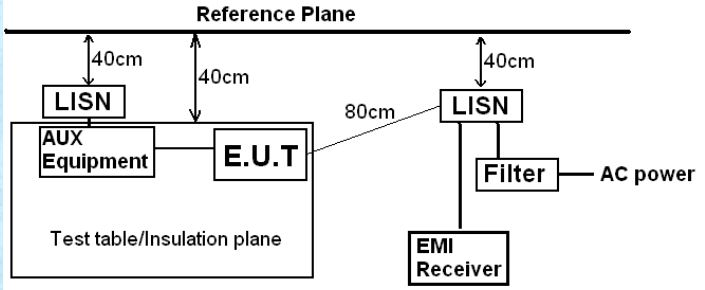
7.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10:2013
Test Frequency Range:	150KHz to 30MHz
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto
Limit:	

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

Test setup:



Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m

Test procedure:

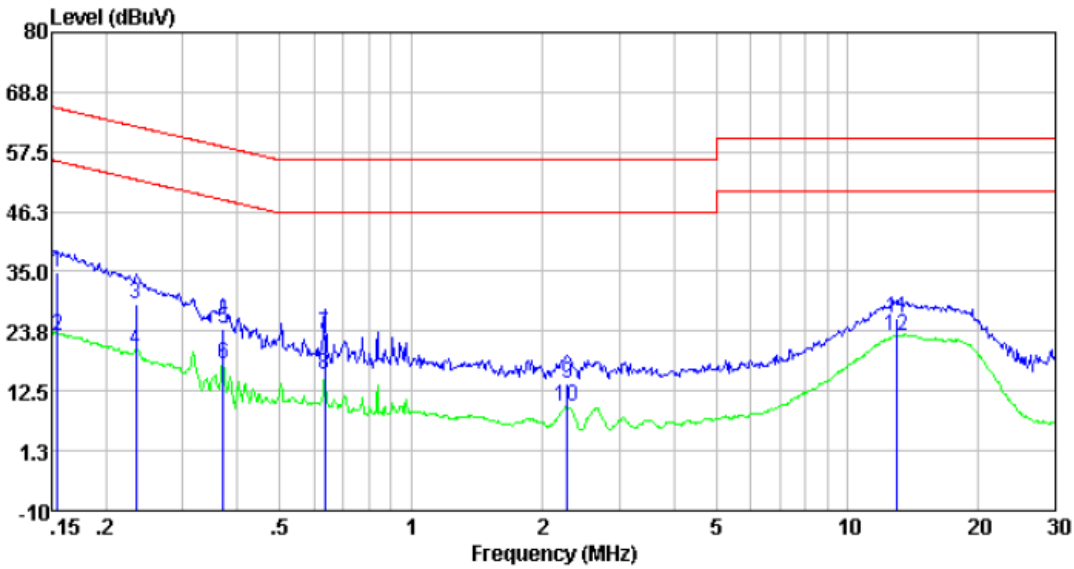
1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.
2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).
3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2013 on conducted measurement.

Test Instruments:	Refer to section 6.0 for details					
Test mode:	Refer to section 5.2 for details					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar
Test voltage:	AC 120V, 60Hz					
Test results:	Pass					

Measurement data

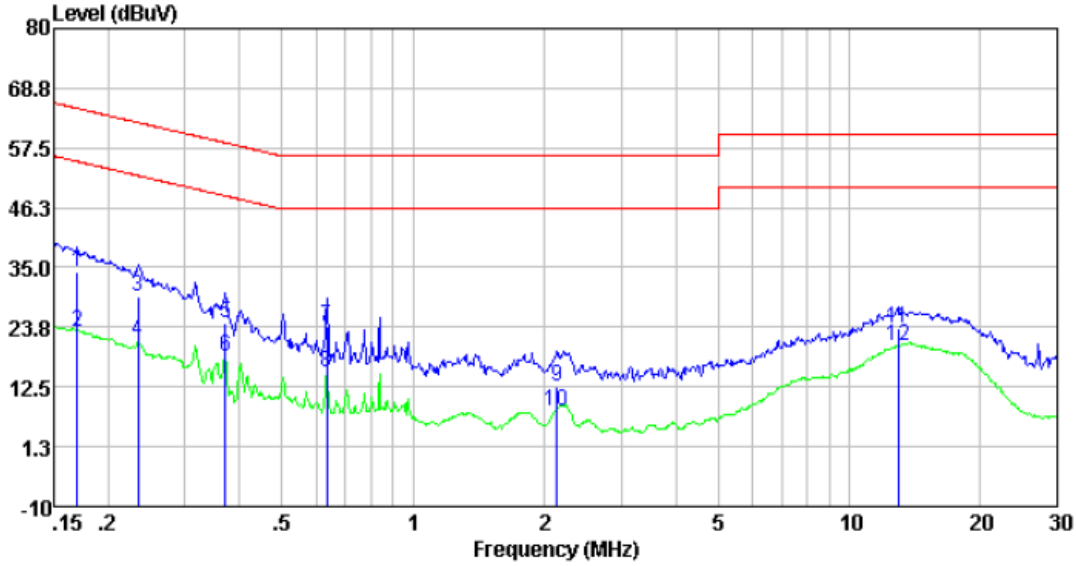
Pre-scan all test modes, found worst case at 2405MHz, and so only show the test result of it

Line:



Freq	Reading level	LISN/ISN factor	Cable loss	Level	Limit level	Over limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.15	24.66	10.01	0.01	34.68	65.74	-31.06	QP
0.15	12.90	10.01	0.01	22.92	55.74	-32.82	Average
0.23	19.15	9.58	0.01	28.74	62.30	-33.56	QP
0.23	10.73	9.58	0.01	20.32	52.30	-31.98	Average
0.37	14.46	9.61	0.01	24.08	58.47	-34.39	QP
0.37	8.07	9.61	0.01	17.69	48.47	-30.78	Average
0.63	13.45	9.65	0.02	23.12	56.00	-32.88	QP
0.63	5.78	9.65	0.02	15.45	46.00	-30.55	Average
2.28	3.99	9.73	0.05	13.77	56.00	-42.23	QP
2.28	-0.32	9.73	0.05	9.46	46.00	-36.54	Average
12.99	16.29	9.68	0.14	26.11	60.00	-33.89	QP
12.99	12.97	9.68	0.14	22.79	50.00	-27.21	Average

Neutral:



Freq	Reading level	LISN/ISN factor	Cable loss	Level	Limit level	Over limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.17	24.14	9.97	0.01	34.12	64.99	-30.87	QP
0.17	12.75	9.97	0.01	22.73	54.99	-32.26	Average
0.23	19.56	9.85	0.01	29.42	62.30	-32.88	QP
0.23	11.25	9.85	0.01	21.11	52.30	-31.19	Average
0.37	14.82	9.77	0.01	24.60	58.47	-33.87	QP
0.37	8.52	9.77	0.01	18.30	48.47	-30.17	Average
0.63	14.12	9.86	0.02	24.00	56.00	-32.00	QP
0.63	5.45	9.86	0.02	15.33	46.00	-30.67	Average
2.13	2.72	9.76	0.05	12.53	56.00	-43.47	QP
2.13	-1.83	9.76	0.05	7.98	46.00	-38.02	Average
12.92	13.49	9.89	0.14	23.52	60.00	-36.48	QP
12.92	10.20	9.89	0.14	20.23	50.00	-29.77	Average

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level =Receiver Read level + LISN Factor + Cable Loss
4. *If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.*

7.3 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209
Test Method:	ANSI C63.10:2013
Test Frequency Range:	9kHz to 25GHz
Test site:	Measurement Distance: 3m

Receiver setup:

Frequency	Detector	RBW	VBW	Remark
9kHz-150kHz	Quasi-peak	200Hz	300Hz	Quasi-peak Value
150kHz-30MHz	Quasi-peak	9kHz	10kHz	Quasi-peak Value
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value
Above 1GHz	Peak	1MHz	3MHz	Peak Value
	Peak	1MHz	10Hz	Average Value

Limit: (Field strength of the fundamental signal)

Frequency	Limit (dBuV/m @3m)	Remark
2400MHz-2483.5MHz	94.00	Average Value
	114.00	Peak Value

Limit: (Spurious Emissions)

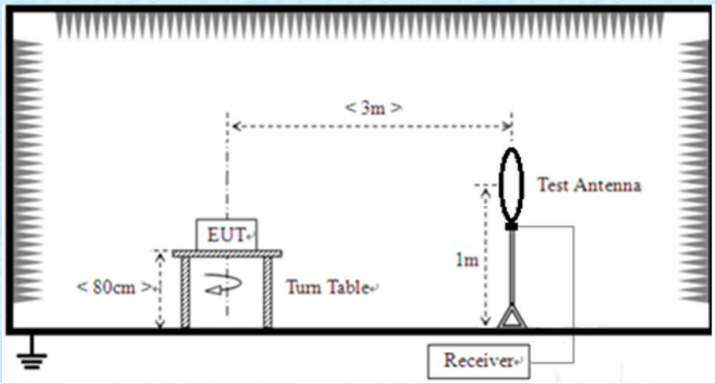
Frequency	Limit (uV/m)	Remark
0.009MHz-0.490MHz	2400/F(kHz) @300m	Quasi-peak Value
0.490MHz-1.705MHz	24000/F(kHz) @30m	Quasi-peak Value
1.705MHz-30.0MHz	30 @30m	Quasi-peak Value
30MHz-88MHz	100 @3m	Quasi-peak Value
88MHz-216MHz	150 @3m	Quasi-peak Value
216MHz-960MHz	200 @3m	Quasi-peak Value
960MHz-1GHz	500 @3m	Quasi-peak Value
Above 1GHz	500 @3m	Average Value
	5000 @3m	Peak Value

Limit: (band edge)

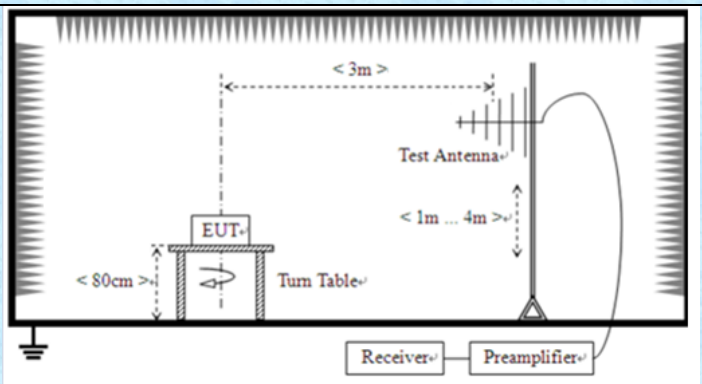
Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

Test setup:

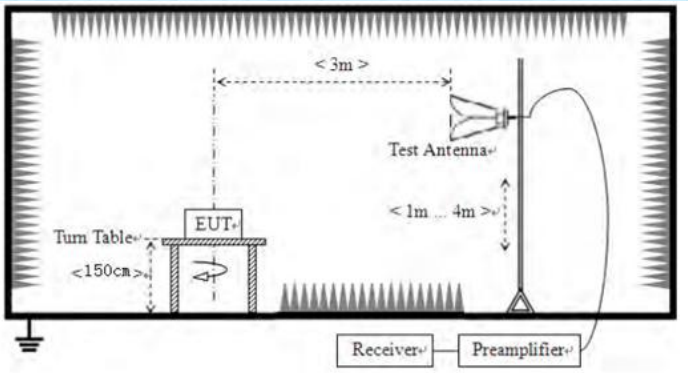
For radiated emissions from 9kHz to 30MHz



For radiated emissions from 30MHz to1GHz



For radiated emissions above 1GHz



Test Procedure:	1. The EUT was placed on the top of a rotating table (0.8m for below 1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.					
Test Instruments:	Refer to section 6.0 for details					
Test mode:	Refer to section 5.2 for details					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar
Test voltage:	DC 3.7V					
Test results:	Pass					

Measurement data:

7.3.1 Field Strength of The Fundamental Signal

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2403.00	99.42	27.43	4.57	38.56	92.86	114.00	-21.14	Vertical
2403.00	102.38	27.43	4.57	38.56	95.82	114.00	-18.18	Horizontal
2440.00	100.57	27.55	4.56	38.57	94.11	114.00	-19.89	Vertical
2440.00	103.46	27.55	4.56	38.57	97.00	114.00	-17.00	Horizontal
2460.00	100.33	27.64	4.55	38.58	93.94	114.00	-20.06	Vertical
2460.00	103.38	27.64	4.55	38.58	96.99	114.00	-17.01	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2403.00	87.82	27.43	4.57	38.56	81.26	94.00	-12.74	Vertical
2403.00	91.15	27.43	4.57	38.56	84.59	94.00	-9.41	Horizontal
2440.00	89.36	27.55	4.56	38.57	82.90	94.00	-11.10	Vertical
2440.00	92.18	27.55	4.56	38.57	85.72	94.00	-8.28	Horizontal
2460.00	89.50	27.64	4.55	38.58	83.11	94.00	-10.89	Vertical
2460.00	92.48	27.64	4.55	38.58	86.09	94.00	-7.91	Horizontal

Note: For fundamental frequency , RBW>20dB BW, VBW>=RBW, PK detector for PK value, RMS detector for AV value

7.3.2 Spurious emissions

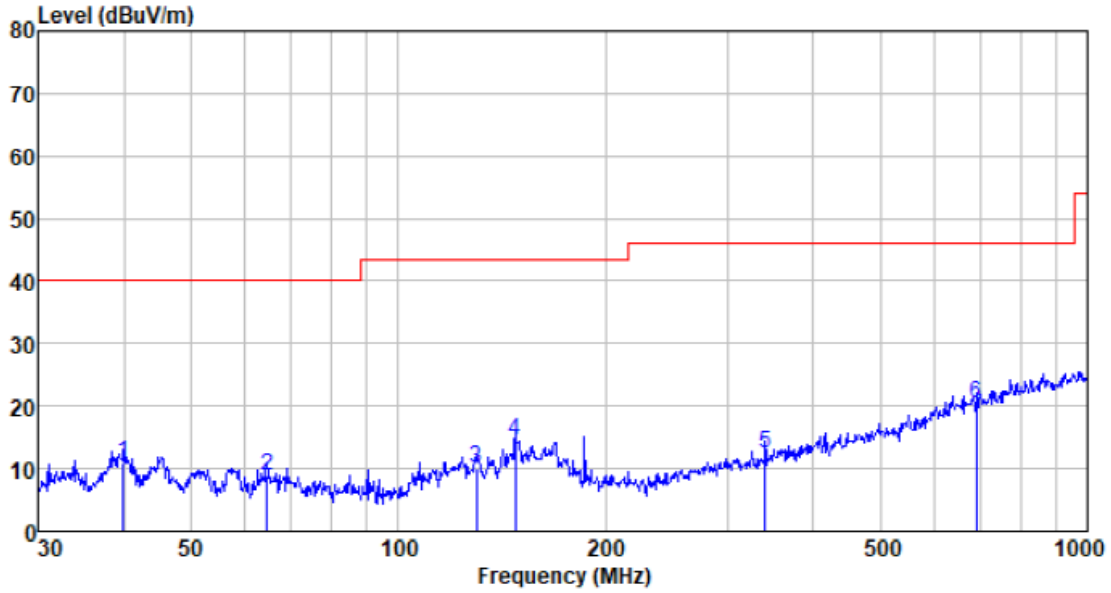
■ **Below 30MHz**

The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o), the test result no need to reported.

■ **Below 1GHz**

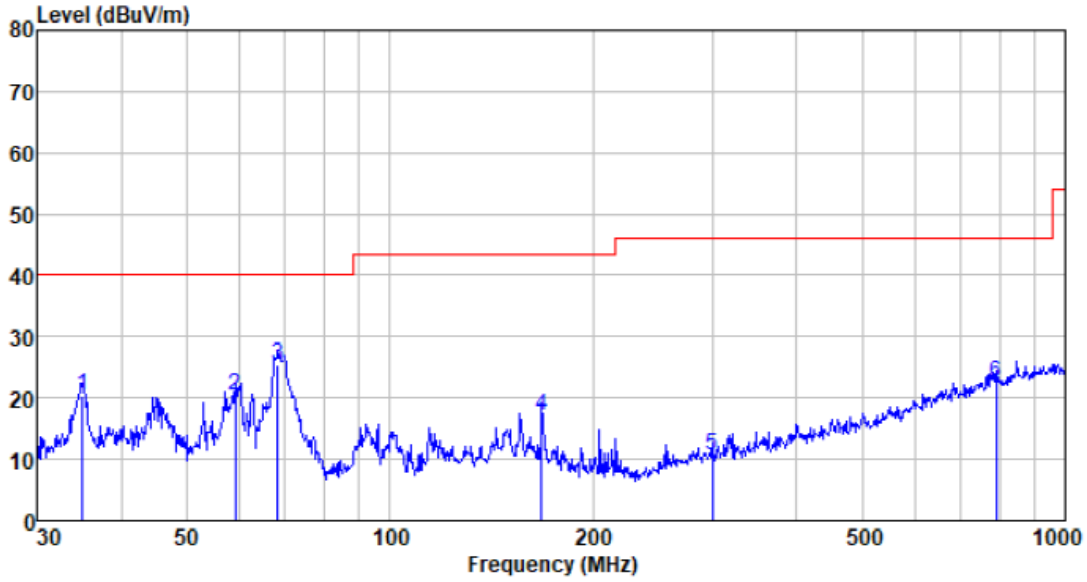
Pre-scan all test modes, found worst case at 2405MHz, and so only show the test result of it

Horizontal



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
39.854	27.56	14.37	1.26	32.30	10.89	40.00	-29.11	QP
64.433	28.36	11.36	1.56	32.36	8.92	40.00	-31.08	QP
129.923	26.97	13.19	2.28	32.47	9.97	43.50	-33.53	QP
147.921	29.75	14.60	2.45	32.45	14.35	43.50	-29.15	QP
340.782	27.99	13.16	3.62	32.28	12.49	46.00	-33.51	QP
689.565	26.33	20.39	5.04	31.50	20.26	46.00	-25.74	QP

Vertical



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
35.005	38.49	13.10	1.19	32.30	20.48	40.00	-19.52	QP
59.025	39.26	12.01	1.47	32.34	20.40	40.00	-19.60	QP
68.151	45.09	10.98	1.62	32.37	25.32	40.00	-14.68	QP
167.824	33.38	13.62	2.62	32.43	17.19	43.50	-26.31	QP
300.367	27.09	12.41	3.42	32.30	10.62	46.00	-35.38	QP
790.619	26.44	21.81	5.44	31.13	22.56	46.00	-23.44	QP

■ **Above 1GHz**

Test channel:	Lowest channel

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4806.00	34.99	32.01	6.01	38.54	34.47	74.00	-39.53	Vertical
7209.00	30.29	36.22	7.92	39.15	35.28	74.00	-38.72	Vertical
9612.00	30.10	38.20	14.78	40.22	42.86	74.00	-31.14	Vertical
4806.00	38.80	32.01	6.01	38.54	38.28	74.00	-35.72	Horizontal
7209.00	31.84	36.22	7.92	39.15	36.83	74.00	-37.17	Horizontal
9612.00	29.30	38.20	14.78	40.22	42.06	74.00	-31.94	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4806.00	24.24	32.01	6.01	38.54	23.72	54.00	-30.28	Vertical
7209.00	19.24	36.22	7.92	39.15	24.23	54.00	-29.77	Vertical
9612.00	18.46	38.20	14.78	40.22	31.22	54.00	-22.78	Vertical
4806.00	28.21	32.01	6.01	38.54	27.69	54.00	-26.31	Horizontal
7209.00	21.26	36.22	7.92	39.15	26.25	54.00	-27.75	Horizontal
9612.00	18.00	38.20	14.78	40.22	30.76	54.00	-23.24	Horizontal

Test channel:	Middle channel

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4880.00	35.25	32.10	6.03	38.52	34.86	74.00	-39.14	Vertical
7320.00	30.47	36.30	8.04	39.22	35.59	74.00	-38.41	Vertical
9760.00	30.25	38.20	11.35	40.25	39.55	74.00	-34.45	Vertical
4880.00	39.11	32.10	6.03	38.52	38.72	74.00	-35.28	Horizontal
7320.00	32.04	36.30	8.04	39.22	37.16	74.00	-36.84	Horizontal
9760.00	29.48	38.20	11.35	40.25	38.78	74.00	-35.22	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4880.00	24.45	32.10	6.03	38.52	24.06	54.00	-29.94	Vertical
7320.00	19.39	36.30	8.04	39.22	24.51	54.00	-29.49	Vertical
9760.00	18.59	38.20	11.35	40.25	27.89	54.00	-26.11	Vertical
4880.00	28.45	32.10	6.03	38.52	28.06	54.00	-25.94	Horizontal
7320.00	21.42	36.30	8.04	39.22	26.54	54.00	-27.46	Horizontal
9760.00	18.15	38.20	11.35	40.25	27.45	54.00	-26.55	Horizontal

Test channel:	Highest channel

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4920.00	35.15	32.14	6.04	38.52	34.81	74.00	-39.19	Vertical
7380.00	30.40	36.30	8.10	39.27	35.53	74.00	-38.47	Vertical
9840.00	30.20	38.20	10.53	40.27	38.66	74.00	-35.34	Vertical
4920.00	39.00	32.14	6.04	38.52	38.66	74.00	-35.34	Horizontal
7380.00	31.97	36.30	8.10	39.27	37.10	74.00	-36.90	Horizontal
9840.00	29.42	38.20	10.53	40.27	37.88	74.00	-36.12	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4920.00	24.39	32.14	6.04	38.52	24.05	54.00	-29.95	Vertical
7380.00	19.34	36.30	8.10	39.27	24.47	54.00	-29.53	Vertical
9840.00	18.55	38.20	10.53	40.27	27.01	54.00	-26.99	Vertical
4920.00	28.38	32.14	6.04	38.52	28.04	54.00	-25.96	Horizontal
7380.00	21.38	36.30	8.10	39.27	26.51	54.00	-27.49	Horizontal
9840.00	18.11	38.20	10.53	40.27	26.57	54.00	-27.43	Horizontal

Remarks:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
3. *For above 18GHz, no emission found.*
4. *If the average limit is met when using a Peak detector, the EUT shall be deemed to meet both peak and average limits. And measurement with the average detector is unnecessary.*

7.3.3 Bandedge emissions

All of the restriction bands were tested, and only the data of worst case was exhibited.

Test channel:	Lowest channel

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	54.54	27.00	4.13	39.14	46.53	74.00	-27.47	Horizontal
2390.00	57.54	27.08	4.17	39.34	49.45	74.00	-24.55	Horizontal
2400.00	55.52	27.10	4.18	39.36	47.44	74.00	-26.56	Horizontal
2310.00	58.46	27.00	4.13	39.14	50.45	74.00	-23.55	Vertical
2390.00	54.98	27.08	4.17	39.34	46.89	74.00	-27.11	Vertical
2400.00	58.23	27.10	4.18	39.36	50.15	74.00	-23.85	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	43.99	27.00	4.13	39.14	35.98	54.00	-18.02	Horizontal
2390.00	46.90	27.08	4.17	39.34	38.81	54.00	-15.19	Horizontal
2400.00	45.05	27.10	4.18	39.36	36.97	54.00	-17.03	Horizontal
2310.00	47.88	27.00	4.13	39.14	39.87	54.00	-14.13	Vertical
2390.00	44.33	27.08	4.17	39.34	36.24	54.00	-17.76	Vertical
2400.00	47.45	27.10	4.18	39.36	39.37	54.00	-14.63	Vertical

Test channel:	Highest channel

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	56.82	27.27	4.08	39.56	48.61	74.00	-25.39	Horizontal
2500.00	55.60	27.30	4.06	39.60	47.36	74.00	-26.64	Horizontal
2483.50	57.86	27.27	4.08	39.56	49.65	74.00	-24.35	Vertical
2500.00	56.71	27.30	4.06	39.60	48.47	74.00	-25.53	Vertical

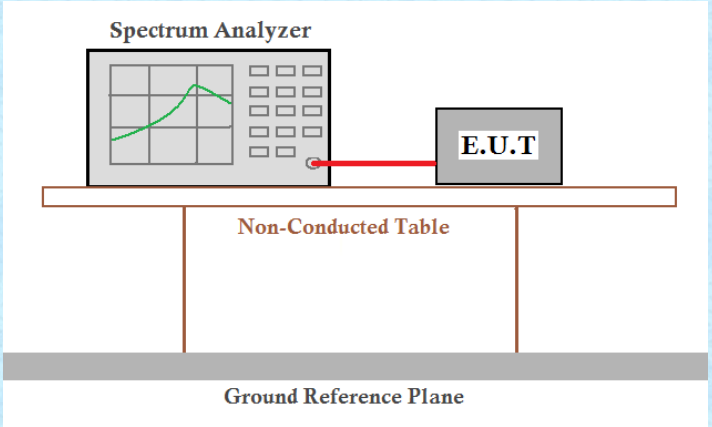
Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	46.15	27.27	4.08	39.56	37.94	54.00	-16.06	Horizontal
2500.00	44.98	27.30	4.06	39.60	36.74	54.00	-17.26	Horizontal
2483.50	46.73	27.27	4.08	39.56	38.52	54.00	-15.48	Vertical
2500.00	46.08	27.30	4.06	39.60	37.84	54.00	-16.16	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *For above 18GHz, no emission found*

7.4 20dB Occupy Bandwidth

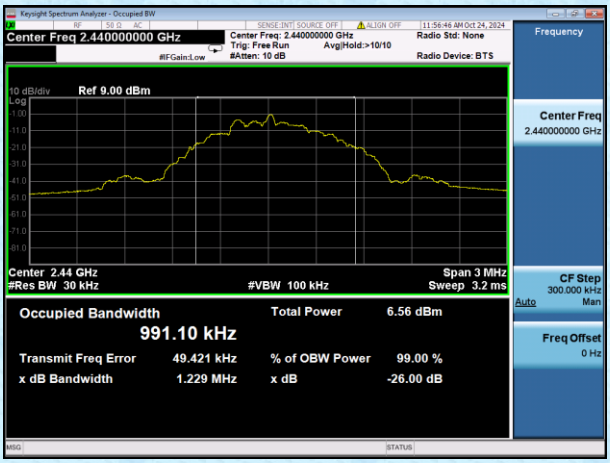
Test Requirement:	FCC Part15 C Section 15.249/15.215
Test Method:	ANSI C63.10:2013
Limit:	Operation Frequency range 2400MHz~2483.5MHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

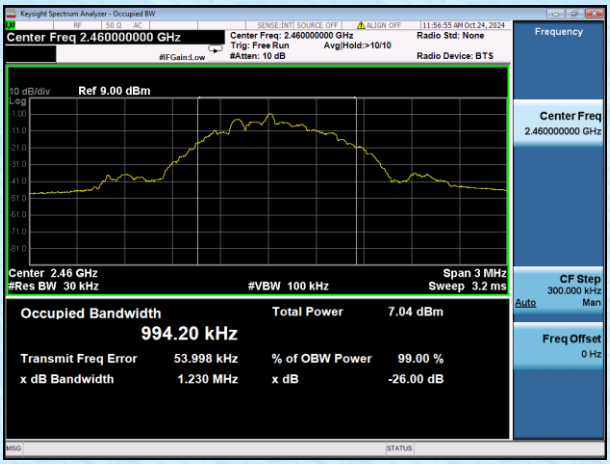
Test channel	20dB bandwidth(MHz)	Result
Lowest	1.232	Pass
Middle	1.229	Pass
Highest	1.230	Pass

Test plot as follows:

Lowest channel



Middle channel



Highest channel

8 Test Setup Photo

Reference to the **appendix I** for details.

9 EUT Constructional Details

Reference to the **appendix II** for details.

------End------