TEST REPORT

Applicant:	Shenzhen Hysiry Technology Co., Ltd.
Address of Applicant:	2403D, 24th floor, coast huanqing building, no.24 futian road, xu town community, futian street, futian district, shenzhen
Manufacturer:	Shenzhen Hysiry Technology Co., Ltd.
Address of Manufacturer:	2403D, 24th floor, coast huanqing building, no.24 futian road, xu town community, futian street, futian district, shenzhen

Equipment Under Test (EUT)

Product Name:	CLASS 2 POWER SUPPLY
Model No.:	wwww-PULxxxyyyy-zzzzzz, wwww-PUL0502500-zzzzzz
Trade Mark:	HYSIRY
FCC ID:	2AKBP-PLUGIN
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.249
Date of sample receipt:	2022-08-18
Date of Test:	2022-08-22 to 2022-08-31
Date of report issued:	2022-10-10
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	*2022-10-10*	*Original*

Prepared By: *Project Engineer* ***Date:*** *2022-10-10*

Check By: *Reviewer* ***Date:*** *2022-10-10*

3 Contents

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.*
2. *Pass: The EUT complies with the essential requirements in the standard.*

4.1 Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9kHz-30MHz	3.1dB	(1)
Radiated Emission	30MHz-200MHz	3.8039dB	(1)
Radiated Emission	200MHz-1GHz	3.9679dB	(1)
Radiated Emission	1GHz-18GHz	4.29dB	(1)
Radiated Emission	18GHz-40GHz	3.30dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	3.44dB	(1)
Occupied Bandwidth	/	2.8dB	(1)
Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.			

5 General Information

5.1 General Description of EUT

Product Name:	CLASS 2 POWER SUPPLY
Model No.:	wwww-PULxxxyyyy-zzzzzz
Test Model No.:	wwww-PUL0502500-zzzzzz

Remark:

Model list

Model	Rated input	Output voltage (VDC)	Output current (A)	Max. output power (W)	Transformer (T1) type	PCB
wwww-PULxxxyyyy-zzzzzz	100-240V~, 50/60Hz, 0.8A	5.0-11.9	0.01-1.8	9.0	EE16-0.57mH	PCB A (HYS-03-025)
		12.0-24.0	0.01-0.5	12.0	EE16-0.7mH	
wwww-PUL0502500-zzzzzz		5.0	2.5	12.5	EE16-0.57mH	PCB B (HYS-03-026)

Remarks:
wwww= A-Z or blank, only for marketing purpose, no technical differences.
xxx=050-240 denote output voltage from 5.0VDC to 24.0VDC, in step of 1 denote 0.1V;
yyyy=0010-1800 denote output current from 0.01A to 1.8A, in step of 1 denote 0.01A;
zzzzzz=0-9, A-Z or blank, only for marketing purpose, no technical differences.
Transformer EE16-0.7mH and EE16-0.57mH are same except different winding number of secondary winding and auxiliary winding.
All models are identical with each other except for model number, secondary PCB layout, output rating, parameters of some components, transformer auxiliary winding and secondary winding. The parameters of these components (C20, C21, C23, R23, R24, R30, R31, T1) depend on output voltage and output current. These differences do not affect the rf, and the inconsistent parameters of components do not affect the voltage current parameters input to the rf control chip.

Serial No.:	N/A
Hardware Version:	V1.0
Software Version:	V1.0
Test sample(s) ID:	GTSL202210000012-1
Sample(s) Status	Engineered sample
Operation Frequency:	2402MHz~2480MHz
Channel numbers:	40
Channel separation:	1MHz
Modulation type:	GFSK
Antenna Type:	PCB Antenna
Antenna gain:	1.0dBi
Power supply:	Input :100-240Vac , 50/60HZ

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2402 MHz	11	2422 MHz	21	2442 MHz	31	2462 MHz
2	2404 MHz	12	2424 MHz	22	2444 MHz	32	2464 MHz
3	2406 MHz	13	2426 MHz	23	2446 MHz	33	2466 MHz
4	2408 MHz	14	2428 MHz	24	2448 MHz	34	2468 MHz
5	2410 MHz	15	2430 MHz	25	2450 MHz	35	2470 MHz
6	2412 MHz	16	2432 MHz	26	2452 MHz	36	2472 MHz
7	2414 MHz	17	2434 MHz	27	2454 MHz	37	2474 MHz
8	2416 MHz	18	2436 MHz	28	2456 MHz	38	2476 MHz
9	2418 MHz	19	2438 MHz	29	2458 MHz	39	2478 MHz
10	2420 MHz	20	2440 MHz	30	2460 MHz	40	2480 MHz

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The lowest channel	2402MHz
The middle channel	2440MHz
The Highest channel	2480MHz

5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode.

Remark: During the test, the duty cycle >98%, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.

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 and defined as follows:

Axis	X	Y	Z
Field Strength(dBuV/m)	79.70	83.65	90.19

5.3 Description of Support Units

None.

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.

● **IC —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 Industry Canada 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	July 02, 2020	July 01, 2025
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	April 22, 2022	April 21, 2023
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9168	GTS640	March 21, 2022	March 20, 2023
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June 12, 2022	June 11, 2023
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June 23, 2022	June 22, 2023
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	April 22, 2022	April 21, 2023
9	Coaxial Cable	GTS	N/A	GTS211	April 22, 2022	April 21, 2023
10	Coaxial cable	GTS	N/A	GTS210	April 22, 2022	April 21, 2023
11	Coaxial Cable	GTS	N/A	GTS212	April 22, 2022	April 21, 2023
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	April 22, 2022	April 21, 2023
13	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 23, 2022	June 22, 2023
14	Band filter	Amindeon	82346	GTS219	June 23, 2022	June 22, 2023
15	Power Meter	Anritsu	ML2495A	GTS540	June 23, 2022	June 22, 2023
16	Power Sensor	Anritsu	MA2411B	GTS541	June 23, 2022	June 22, 2023
17	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	April 22, 2022	April 21, 2023
18	Splitter	Agilent	11636B	GTS237	June 23, 2022	June 22, 2023
19	Loop Antenna	ZHINAN	ZN30900A	GTS534	Nov. 30, 2021	Nov. 29, 2022
20	Broadband Preamplifier	SCHWARZBECK	BBV9718	GTS535	April 22, 2022	April 21, 2023
21	Breitband hornantenna	SCHWARZBECK	BBHA 9170	GTS579	Oct. 17, 2021	Oct. 16, 2022
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 17, 2021	Oct. 16, 2022
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 17, 2021	Oct. 16, 2022
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June 23, 2022	June 22, 2023
25	Amplifier(1GHz-26.5GHz)	HP	8449B	GTS601	April 22, 2022	April 21, 2023

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	May 14, 2022	May 13, 2025
2	EMI Test Receiver	R&S	ESCI 7	GTS552	April 24, 2022	April 23, 2023
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June 23, 2022	June 22, 2023
4	ENV216 2-L-V-NETZNACHB.DE	ROHDE&SCHWARZ	ENV216	GTS226	April 22, 2022	April 21, 2023
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	JINCHUANG	GSP-8A	GTS639	April 28, 2022	April 27, 2023
8	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	April 15, 2022	April 14, 2023
9	ISN	SCHWARZBECK	NTFM 8158	GTS565	April 22, 2022	April 21, 2023
10	High voltage probe	SCHWARZBECK	TK9420	GTS537	April 22, 2022	April 21, 2023

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	April 22, 2022	April 21, 2023
2	EMI Test Receiver	R&S	ESCI 7	GTS552	April 22, 2022	April 21, 2023
3	Spectrum Analyzer	Agilent	E4440A	GTS536	April 22, 2022	April 21, 2023
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	April 22, 2022	April 21, 2023
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	April 22, 2022	April 21, 2023
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	April 22, 2022	April 21, 2023
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	April 22, 2022	April 21, 2023
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	April 22, 2022	April 21, 2023

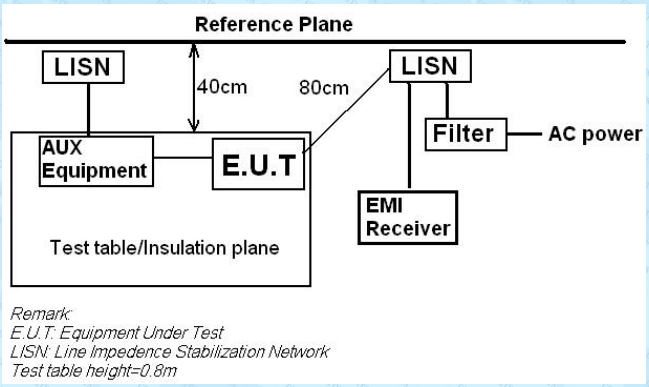
General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	April 25, 2022	April 24, 2023
2	Barometer	KUMAO	SF132	GTS647	July 26, 2022	July 25, 2023

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.	
EUT Antenna:	
The antenna is PCB antenna, the best case gain of the antenna is 1.0dBi, reference to the appendix II for details	

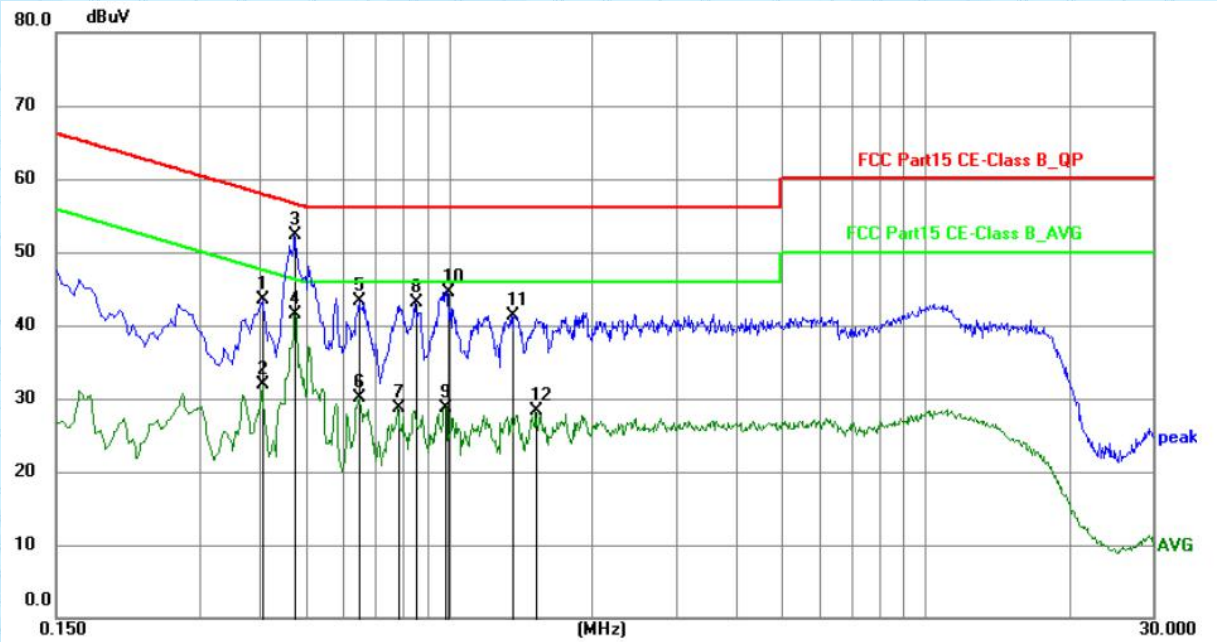
7.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10
Test Frequency Range:	150KHz to 30MHz
Class / Severity:	Class B
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 EUT 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 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

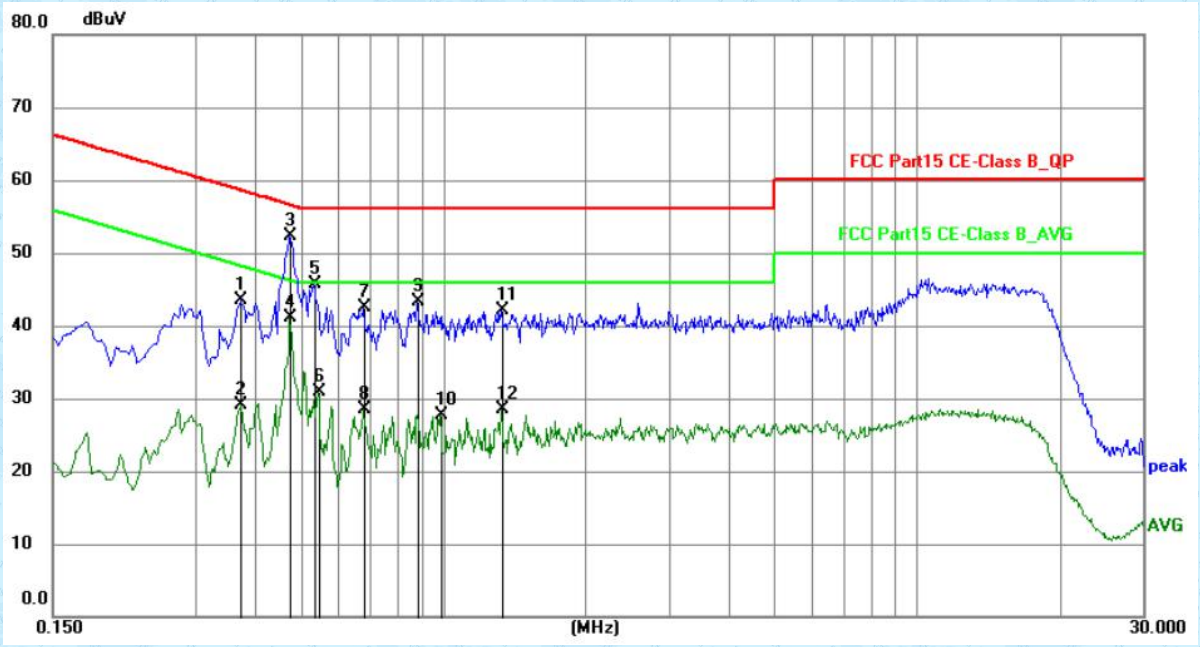
Model: HSY-PUL2400500-1

Line:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.4065	33.79	9.72	43.51	57.72	-14.21	QP	P
2	0.4065	22.27	9.72	31.99	47.72	-15.73	AVG	P
3	0.4740	42.60	9.71	52.31	56.44	-4.13	QP	P
4	0.4740	31.75	9.71	41.46	46.44	-4.98	AVG	P
5	0.6495	33.66	9.71	43.37	56.00	-12.63	QP	P
6	0.6495	20.32	9.71	30.03	46.00	-15.97	AVG	P
7	0.7799	19.04	9.68	28.72	46.00	-17.28	AVG	P
8	0.8520	33.42	9.67	43.09	56.00	-12.91	QP	P
9	0.9825	19.06	9.64	28.70	46.00	-17.30	AVG	P
10	0.9960	34.88	9.64	44.52	56.00	-11.48	QP	P
11	1.3560	31.62	9.66	41.28	56.00	-14.72	QP	P
12	1.5270	18.54	9.68	28.22	46.00	-17.78	AVG	P

Neutral:

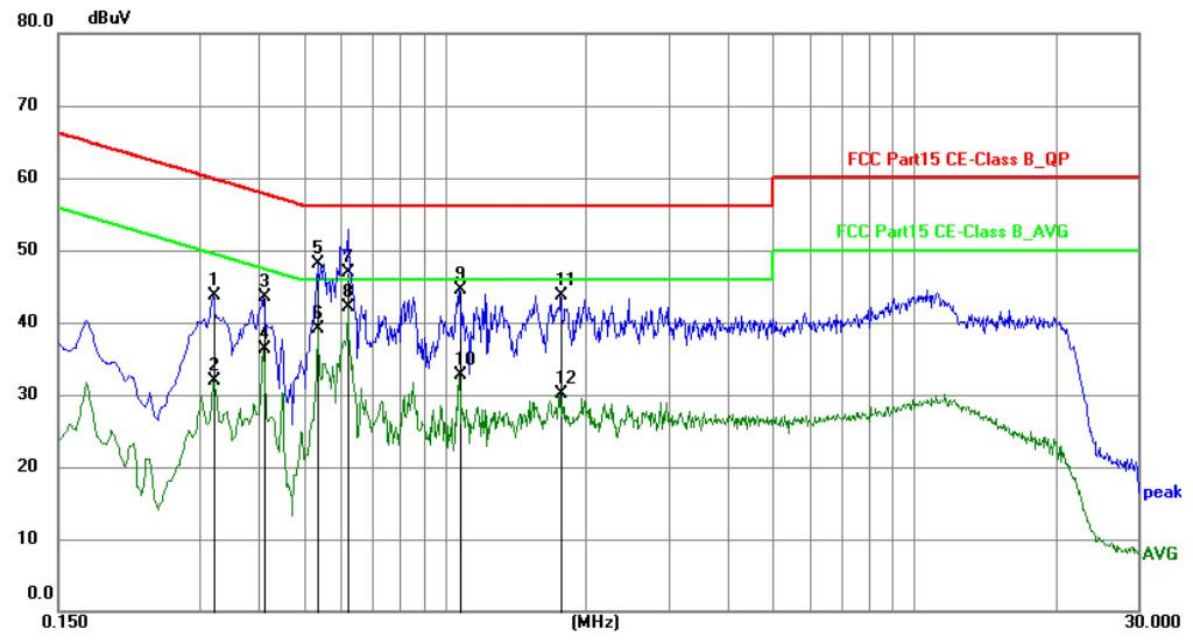


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.3750	33.69	9.73	43.42	58.39	-14.97	QP	P
2	0.3750	19.43	9.73	29.16	48.39	-19.23	AVG	P
3	0.4740	42.55	9.71	52.26	56.44	-4.18	QP	P
4	0.4740	31.30	9.71	41.01	46.44	-5.43	AVG	P
5	0.5325	35.96	9.71	45.67	56.00	-10.33	QP	P
6	0.5460	21.24	9.71	30.95	46.00	-15.05	AVG	P
7	0.6809	32.87	9.70	42.57	56.00	-13.43	QP	P
8	0.6809	18.73	9.70	28.43	46.00	-17.57	AVG	P
9	0.8835	33.70	9.66	43.36	56.00	-12.64	QP	P
10	0.9870	18.00	9.64	27.64	46.00	-18.36	AVG	P
11	1.3245	32.47	9.66	42.13	56.00	-13.87	QP	P
12	1.3245	18.92	9.66	28.58	46.00	-17.42	AVG	P

Measurement data

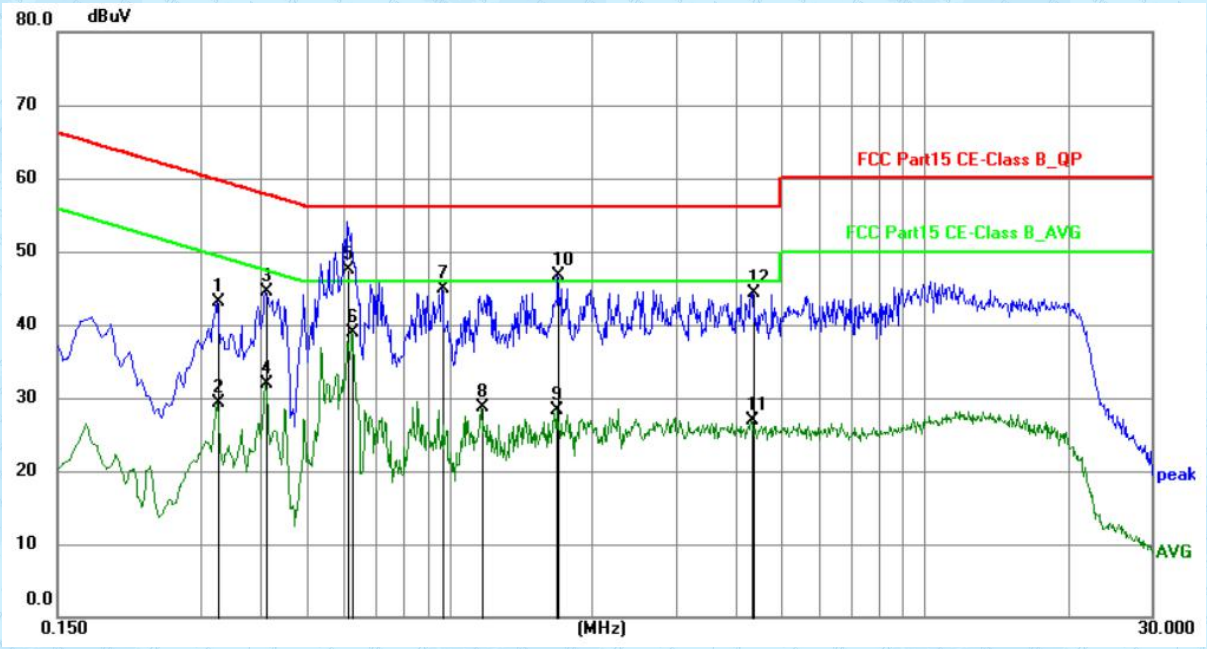
Model: HSY-PUL0502500-1

Line:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.3209	33.91	9.73	43.64	59.68	-16.04	QP	P
2	0.3209	22.27	9.73	32.00	49.68	-17.68	AVG	P
3	0.4110	33.82	9.72	43.54	57.63	-14.09	QP	P
4	0.4110	26.53	9.72	36.25	47.63	-11.38	AVG	P
5	0.5369	38.43	9.71	48.14	56.00	-7.86	QP	P
6	0.5369	29.32	9.71	39.03	46.00	-6.97	AVG	P
7	0.6224	37.14	9.71	46.85	56.00	-9.15	QP	P
8	0.6224	32.49	9.71	42.20	46.00	-3.80	AVG	P
9	1.0723	34.95	9.65	44.60	56.00	-11.40	QP	P
10	1.0723	23.05	9.65	32.70	46.00	-13.30	AVG	P
11	1.7700	34.07	9.70	43.77	56.00	-12.23	QP	P
12	1.7700	20.38	9.70	30.08	46.00	-15.92	AVG	P

Neutral:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.3255	33.33	9.73	43.06	59.57	-16.51	QP	P
2	0.3255	19.49	9.73	29.22	49.57	-20.35	AVG	P
3	0.4110	34.72	9.72	44.44	57.63	-13.19	QP	P
4	0.4110	22.12	9.72	31.84	47.63	-15.79	AVG	P
5	0.6134	37.86	9.71	47.57	56.00	-8.43	QP	P
6	0.6270	29.11	9.71	38.82	46.00	-7.18	AVG	P
7	0.9645	35.24	9.65	44.89	56.00	-11.11	QP	P
8	1.1670	19.05	9.65	28.70	46.00	-17.30	AVG	P
9	1.6890	18.51	9.70	28.21	46.00	-17.79	AVG	P
10	1.6935	37.03	9.70	46.73	56.00	-9.27	QP	P
11	4.3350	17.26	9.72	26.98	46.00	-19.02	AVG	P
12	4.3530	34.68	9.72	44.40	56.00	-11.60	QP	P

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
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)

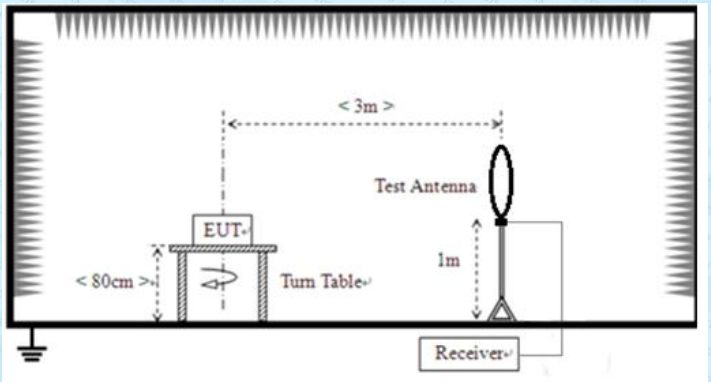
Frequency	Limit (uV/m)	Remark
0.009MHz-0.490MHz	2400/F(kHz) @300m	Quasi-peak Value
0.490MHz-1.705MHz	24000/F(kHz) @30m	Quasi-peak Value
1.705MHz-30.0MHz	30 @30m	Quasi-peak Value
30MHz-88MHz	100 @3m	Quasi-peak Value
88MHz-216MHz	150 @3m	Quasi-peak Value
216MHz-960MHz	200 @3m	Quasi-peak Value
960MHz-1GHz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

Limit:
(band edge)

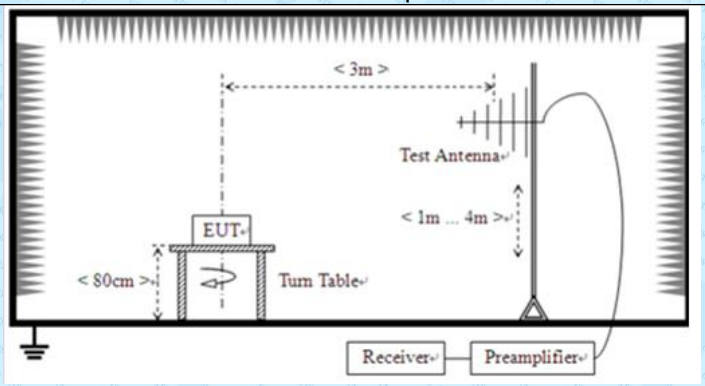
Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

Test setup:

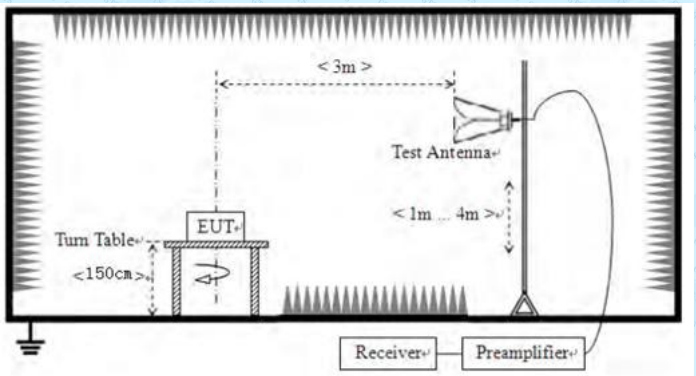
For radiated emissions from 9kHz to 30MHz



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:	AC 120V, 60Hz					
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)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2402.000	66.32	26.34	92.66	114	-21.34	Vertical
2402.000	61.21	26.34	87.55	114	-26.45	Horizontal
2440.000	65.01	26.40	91.41	114	-22.59	Vertical
2440.000	59.49	26.40	85.89	114	-28.11	Horizontal
2480.000	63.45	26.47	89.92	114	-24.08	Vertical
2480.000	58.64	26.47	85.11	114	-28.89	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2402.000	51.61	26.34	77.95	94	-16.05	Vertical
2402.000	50.10	26.34	76.44	94	-17.56	Horizontal
2440.000	49.85	26.40	76.25	94	-17.75	Vertical
2440.000	46.89	26.40	73.29	94	-20.71	Horizontal
2480.000	53.12	26.47	79.59	94	-14.41	Vertical
2480.000	45.34	26.47	71.81	94	-22.19	Horizontal

7.3.2 Spurious emissions

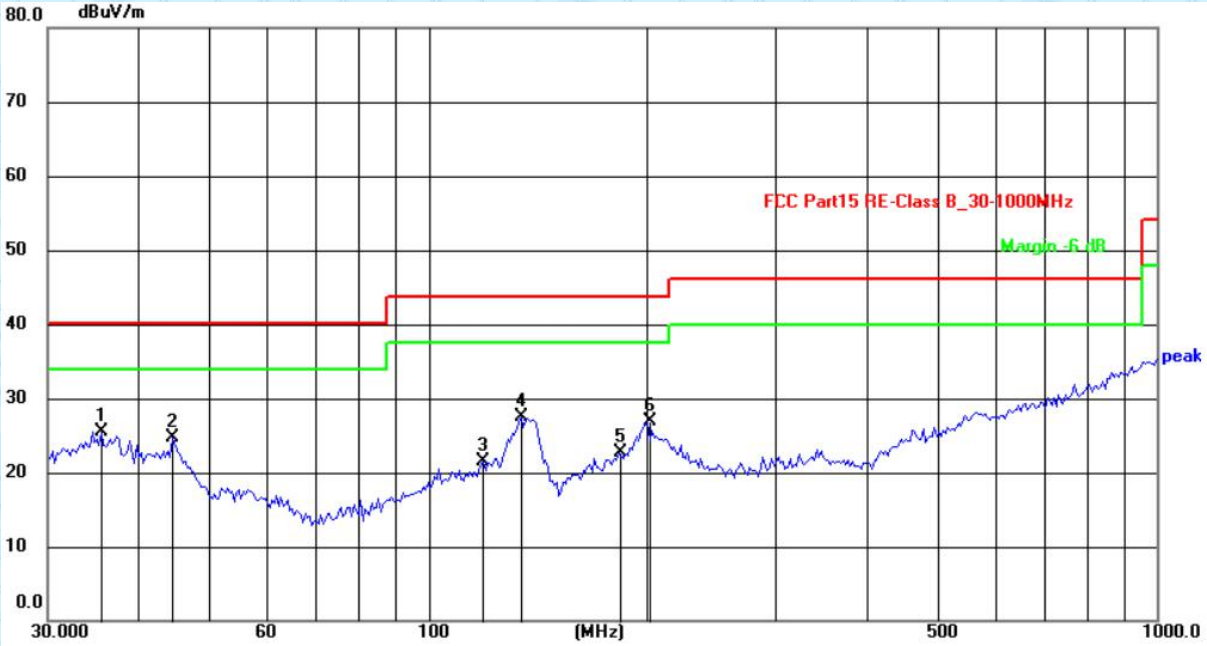
■ **Below 30MHz**

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**

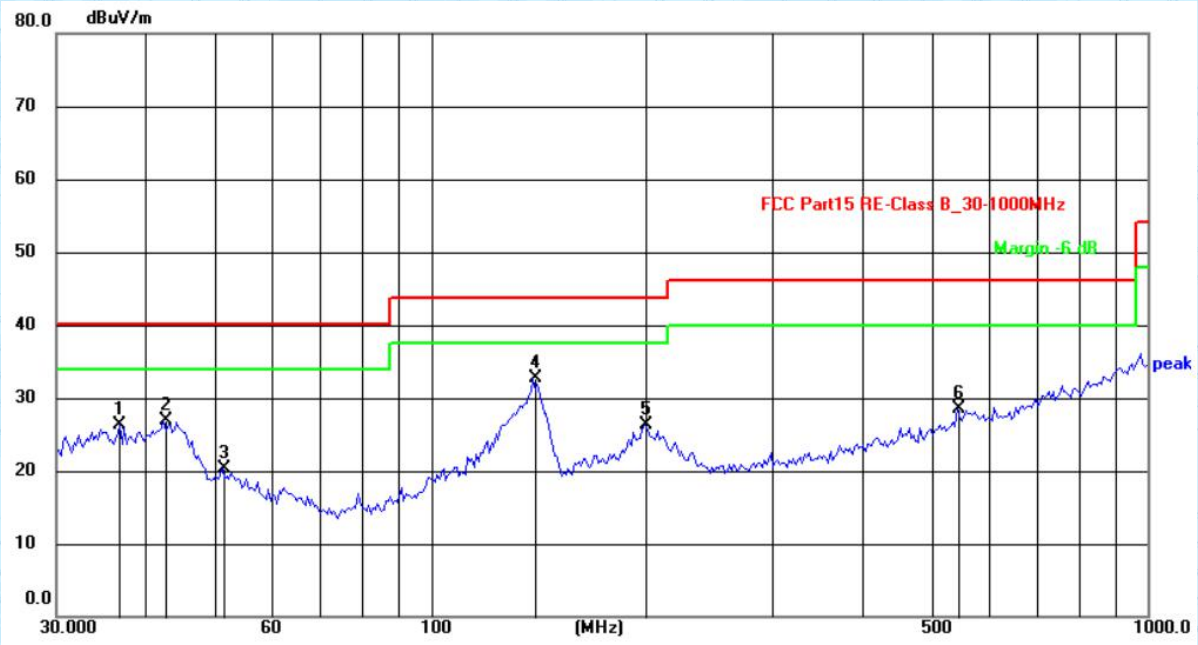
Model: HSY-PUL2400500-1

Horizontal:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	35.5112	27.94	-2.39	25.55	40.00	-14.45	QP
2	44.4657	28.65	-4.01	24.64	40.00	-15.36	QP
3	118.9285	28.06	-6.50	21.56	43.50	-21.94	QP
4	134.0194	33.61	-6.03	27.58	43.50	-15.92	QP
5	182.5785	28.18	-5.55	22.63	43.50	-20.87	QP
6	200.0432	27.59	-0.75	26.84	43.50	-16.66	QP

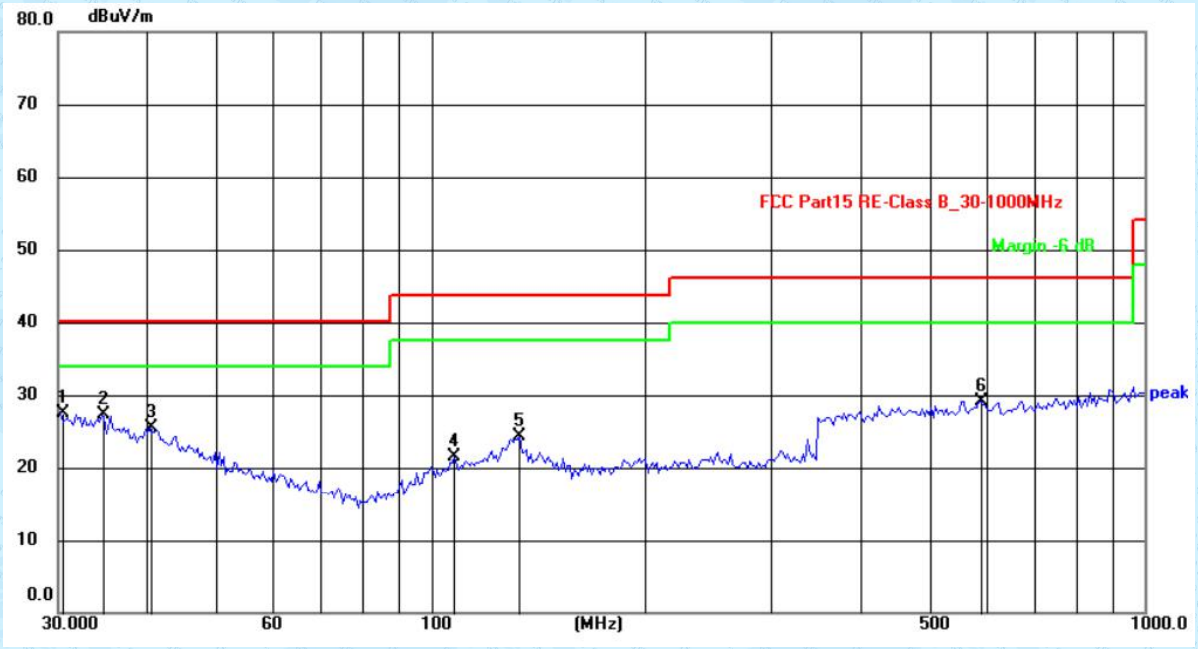
Vertical:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	36.7811	29.17	-2.86	26.31	40.00	-13.69	QP
2	42.3314	31.00	-4.03	26.97	40.00	-13.03	QP
3	51.1756	29.43	-9.05	20.38	40.00	-19.62	QP
4	138.8120	38.77	-6.16	32.61	43.50	-10.89	QP
5	198.6424	28.13	-1.74	26.39	43.50	-17.11	QP
6	542.6104	28.44	0.14	28.58	46.00	-17.42	QP

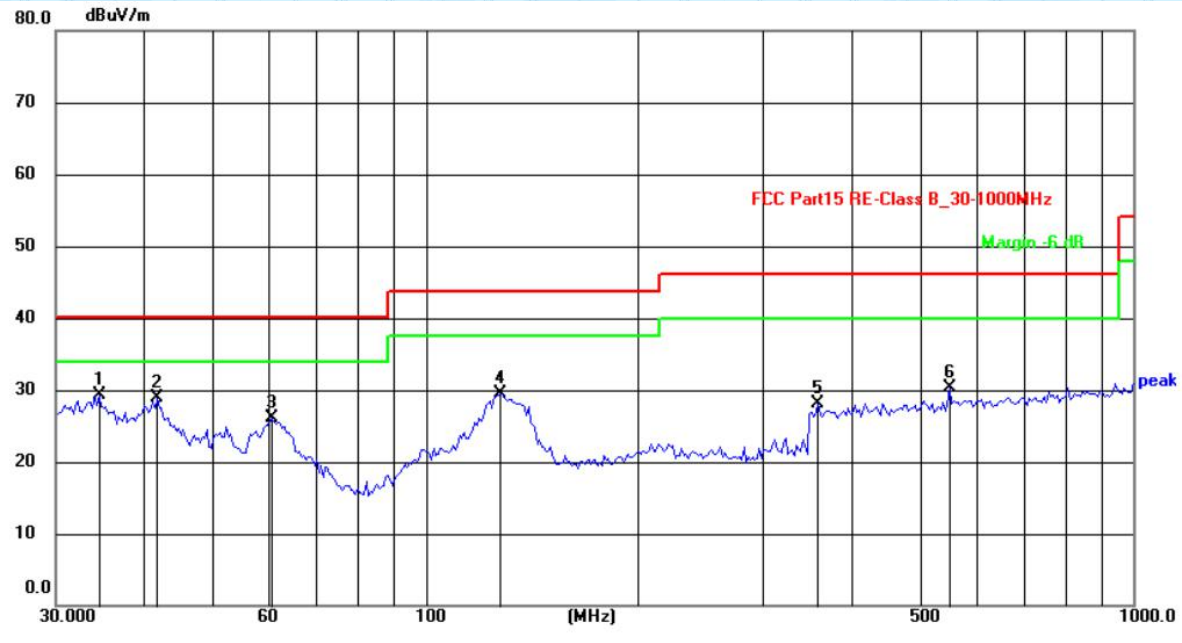
Model: HSY-PUL0502500-1

Horizontal:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.2116	27.87	-0.41	27.46	40.00	-12.54	QP
2	34.5270	28.58	-1.34	27.24	40.00	-12.76	QP
3	40.2995	27.61	-2.17	25.44	40.00	-14.56	QP
4	107.7854	29.35	-7.83	21.52	43.50	-21.98	QP
5	133.0809	31.09	-6.76	24.33	43.50	-19.17	QP
6	586.2172	29.55	-0.38	29.17	46.00	-16.83	QP

Vertical:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	34.5269	30.63	-1.24	29.39	40.00	-10.61	QP
2	41.7406	31.59	-2.76	28.83	40.00	-11.17	QP
3	60.5769	35.66	-9.58	26.08	40.00	-13.92	QP
4	127.5864	35.98	-6.57	29.41	43.50	-14.09	QP
5	358.4497	32.36	-4.32	28.04	46.00	-17.96	QP
6	550.2902	30.43	-0.17	30.26	46.00	-15.74	QP

■ Above 1GHz

Test channel:2402MHz	Lowest channel

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1109.891	25.75	23.83	49.58	74.00	-24.42	Vertical
1457.177	22.52	24.36	46.88	74.00	-27.12	Vertical
2903.127	19.23	27.23	46.46	74.00	-27.54	Vertical
7002.185	13.82	35.80	49.62	74.00	-24.38	Vertical
7771.663	9.88	36.43	46.31	74.00	-27.69	Vertical
1029.385	47.02	1.86	48.88	74.00	-25.12	Horizontal
1290.284	23.58	24.19	47.77	74.00	-26.23	Horizontal
1674.504	22.07	24.72	46.79	74.00	-27.21	Horizontal
4805.307	15.98	30.07	46.05	74.00	-27.95	Horizontal
7002.185	14.64	35.80	50.44	74.00	-23.56	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1109.891	2.20	23.83	26.03	54.00	-27.97	Vertical
1457.177	-0.55	24.36	23.81	54.00	-30.19	Vertical
2903.127	-1.46	27.23	25.77	54.00	-28.23	Vertical
7002.185	-11.98	35.80	23.82	54.00	-30.18	Vertical
7771.663	-11.33	36.43	25.10	54.00	-28.90	Vertical
1029.385	22.10	1.86	23.96	54.00	-30.04	Horizontal
1290.284	0.98	24.19	25.17	54.00	-28.83	Horizontal
1674.504	0.10	24.72	24.82	54.00	-29.18	Horizontal
4805.307	-4.44	30.07	25.63	54.00	-28.37	Horizontal
7002.185	-9.46	35.80	26.34	54.00	-27.66	Horizontal

Remarks:

1. *Final Level =Receiver Read level + Antenna Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
3. *"*", means this data is the too weak instrument of signal is unable to test.*

Test channel:2440MHz	Middle

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1017.529	47.31	1.67	48.98	74.00	-25.02	Vertical
1268.057	23.02	24.17	47.19	74.00	-26.81	Vertical
4062.276	16.64	28.96	45.60	74.00	-28.40	Vertical
7002.185	13.59	35.80	49.39	74.00	-24.61	Vertical
8282.955	9.69	36.73	46.42	74.00	-27.58	Vertical
1023.440	46.41	1.76	48.17	74.00	-25.83	Horizontal
4861.299	16.05	30.19	46.24	74.00	-27.76	Horizontal
7002.185	13.62	35.80	49.42	74.00	-24.58	Horizontal
8331.072	9.79	36.73	46.52	74.00	-27.48	Horizontal
16124.140	7.83	38.15	45.98	74.00	-28.02	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1017.529	24.67	1.67	26.34	54.00	-27.66	Vertical
1268.057	0.64	24.17	24.81	54.00	-29.19	Vertical
4062.276	-5.36	28.96	23.60	54.00	-30.40	Vertical
7002.185	-9.42	35.80	26.38	54.00	-27.62	Vertical
8282.955	-12.56	36.73	24.17	54.00	-29.83	Vertical
1023.440	23.87	1.76	25.63	54.00	-28.37	Horizontal
4861.299	-5.31	30.19	24.88	54.00	-29.12	Horizontal
7002.185	-10.17	35.80	25.63	54.00	-28.37	Horizontal
8331.072	-11.56	36.73	25.17	54.00	-28.83	Horizontal
16124.140	-14.35	38.15	23.80	54.00	-30.20	Horizontal

Remarks:

1. *Final Level =Receiver Read level + Antenna Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
3. *"*", means this data is the too weak instrument of signal is unable to test.*

Test channel:2480MHz	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1017.529	47.62	1.67	49.29	74.00	-24.71	Vertical
1589.447	22.30	24.49	46.79	74.00	-27.21	Vertical
7002.185	13.36	35.80	49.16	74.00	-24.84	Vertical
8282.955	10.76	36.73	47.49	74.00	-26.51	Vertical
16217.807	7.27	38.19	45.46	74.00	-28.54	Vertical
1029.385	46.44	1.86	48.30	74.00	-25.70	Horizontal
1847.783	21.84	25.24	47.08	74.00	-26.92	Horizontal
4946.511	14.67	30.38	45.05	74.00	-28.95	Horizontal
7002.185	13.56	35.80	49.36	74.00	-24.64	Horizontal
9246.582	8.04	37.39	45.43	74.00	-28.57	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1017.529	24.63	1.67	26.30	54.00	-27.70	Vertical
1589.447	0.05	24.49	24.54	54.00	-29.46	Vertical
7002.185	-10.79	35.80	25.01	54.00	-28.99	Vertical
8282.955	-11.32	36.73	25.41	54.00	-28.59	Vertical
16217.807	-14.93	38.19	23.26	54.00	-30.74	Vertical
1029.385	23.81	1.86	25.67	54.00	-28.33	Horizontal
1847.783	-0.59	25.24	24.65	54.00	-29.35	Horizontal
4946.511	-6.78	30.38	23.60	54.00	-30.40	Horizontal
7002.185	-10.95	35.80	24.85	54.00	-29.15	Horizontal
9246.582	-13.43	37.39	23.96	54.00	-30.04	Horizontal

Remarks:

1. *Final Level =Receiver Read level + Antenna Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
3. *"*", means this data is the too weak instrument of signal is unable to test.*

7.3.3 Bandedge emissions

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

Test channel:2402MHz	Lowest channel

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	22.08	26.32	48.40	74.00	-25.60	Horizontal
2400.00	42.52	26.34	68.86	74.00	-5.14	Horizontal
2390.00	25.92	26.32	52.24	74.00	-21.76	Vertical
2400.00	46.75	26.34	73.09	74.00	-0.91	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	-1.49	26.32	24.83	54.00	-29.17	Horizontal
2400.00	2.09	26.34	28.43	54.00	-25.57	Horizontal
2390.00	-0.69	26.32	25.63	54.00	-28.37	Vertical
2400.00	4.37	26.34	30.71	54.00	-23.29	Vertical

Test channel:2480MHz	Highest channel

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	27.88	26.47	54.35	74.00	-19.65	Horizontal
2500.00	19.30	26.50	45.80	74.00	-28.20	Horizontal
2483.50	34.02	26.47	60.49	74.00	-13.51	Vertical
2500.00	21.74	26.50	48.24	74.00	-25.76	Vertical

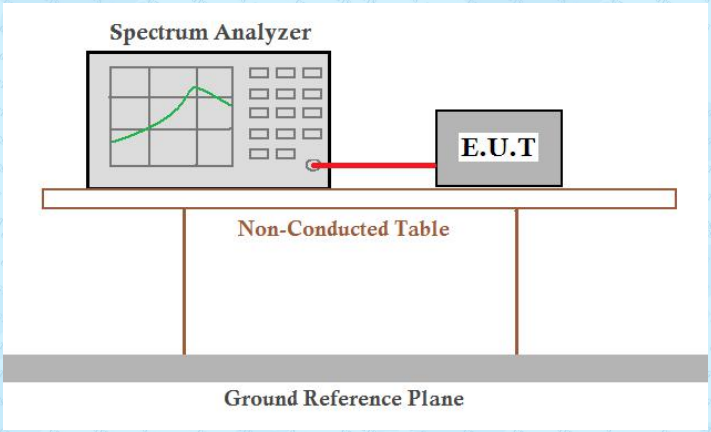
Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	-1.40	26.47	25.07	54.00	-28.93	Horizontal
2500.00	-1.82	26.50	24.68	54.00	-29.32	Horizontal
2483.50	-1.72	26.47	24.75	54.00	-29.25	Vertical
2500.00	-1.79	26.50	24.71	54.00	-29.29	Vertical

Remark:

1. Final Level =Receiver Read level + Antenna Factor

7.4 20dB Occupy Bandwidth

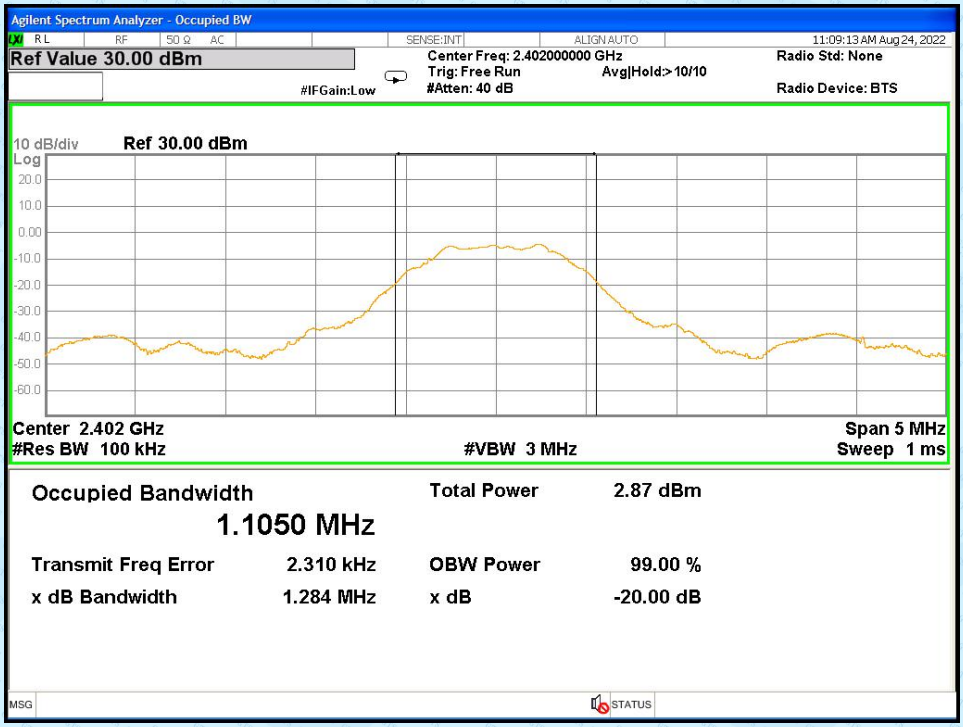
Test Requirement:	FCC Part15 C Section 15.249/15.215
Test Method:	ANSI C63.10
Limit:	Operation Frequency range 2400MHz~2483.5MHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

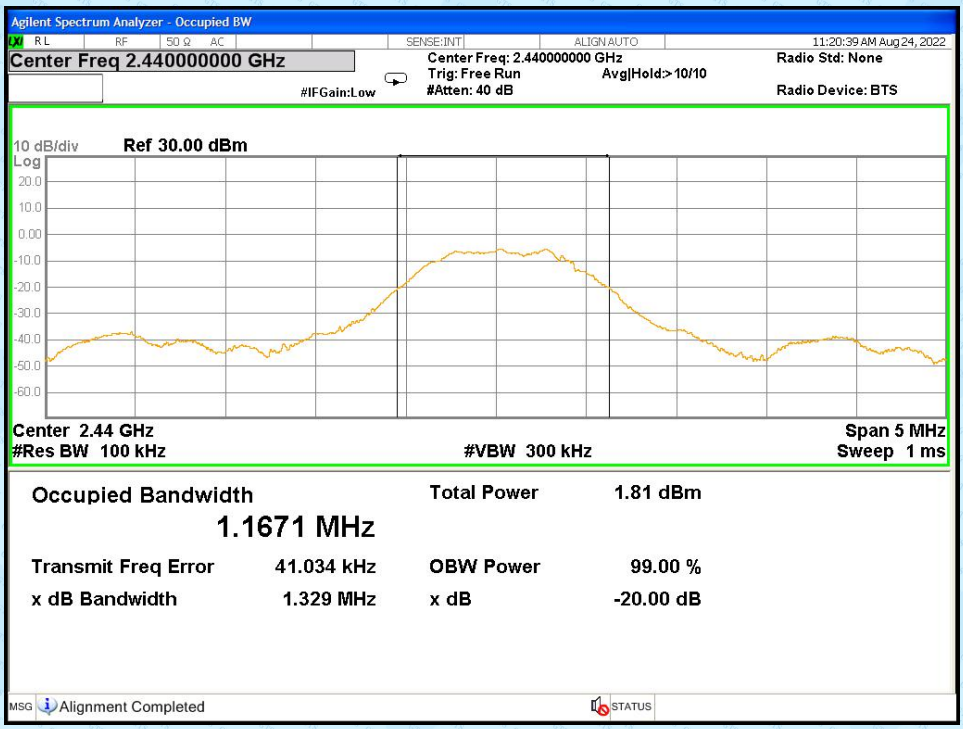
Test channel	20dB bandwidth(MHz)	Result
Lowest	1.284	Pass
Middle	1.329	Pass
Highest	1.355	Pass

Test plot as follows:

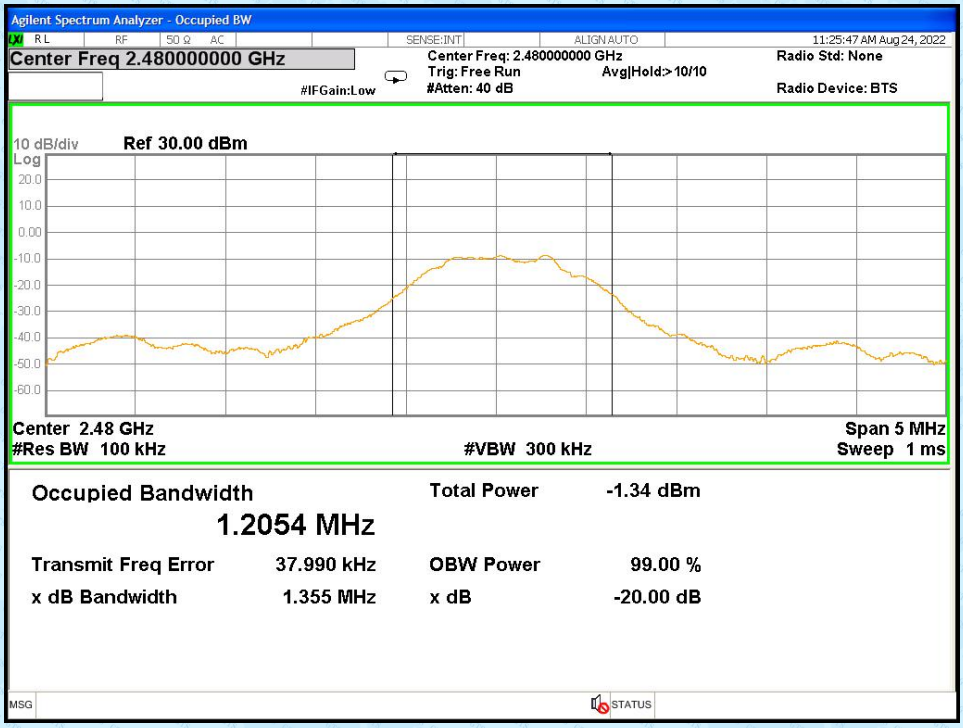
Lowest channel



Middle channel



Highest channel



8 Test Setup Photo

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

9 EUT Constructional Details

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

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