FCC PART 15.407

TEST REPORT

For

AKUVOX (XIAMEN) NETWORKS CO., LTD.

10/F, No.56 Guanri Road, Software Park II, Xiamen 361009, China

FCC ID: 2AHCR-PH81

Report Type:	**Product Name:**
Original Report	HyPanel Ultra

Report Number:	2407T76694E-RF-04
Report Date:	2024-12-30
Reviewed By:	Ash Lin
Approved By:	Miles Chen
Prepared By:	Bay Area Compliance Laboratories Corp. (Xiamen) Unit 102, No. 902 Meifeng South Road, Binhai West Avenue, Science and Technology Innovation Park, Torch High tech Zone XiaMen Tel: +86-592-3200111 www.baclcorp.com.cn

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REPORT REVISION HISTORY

Number of Revisions	Report No.	Version	Issue Date	Description
0	2407T76694E-RF-04	R1V1	2024-12-30	Initial Release

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product Name:	HyPanel Ultra
Tested Model:	PH81
Power Supply:	DC 12-24V
Maximum Conducted Average Output Power:	14.97 dBm in 5150-5250 MHz Band; 15.31 dBm in 5250-5350 MHz Band; 13.38 dBm in 5470-5725 MHz Band; 9.95 dBm in 5725-5850 MHz Band
Frequency Range:	**Band1:** 5180-5240 MHz (802.11a/n ht20/ac vht20) 5190-5230 MHz(802.11n ht40/ac vht40) 5210 MHz(802.11ac vht80) **Band2:** 5260-5320 MHz (802.11a/n ht20/ac vht20) 5270-5310 MHz(802.11n ht40/ac vht40) 5290 MHz(802.11ac vht80) **Band3:** 5500-5720 MHz (802.11a/n ht20/ac vht20) 5510-5710 MHz(802.11n ht40/ac vht40) 5530-5690MHz(802.11ac vht80) **Band4:** 5745-5825 MHz (802.11a/n ht20/ac vht20) 5755-5795 MHz(802.11n ht40/ac vht40) 5775 MHz(802.11ac vht80)
Modulation Technique:	OFDM-BPSK, QPSK, 16QAM, 64QAM,256QAM
Antenna Type:	FPC Antenna
★Maximum Antenna Gain:	Band1: 1.4dBi Band2: 0.3dBi Band3: -2.8dBi Band4: -3.6dBi
EUT Received Status:	Good
Note: *1. The Maximum Antenna Gain was declared by manufacturer.* *2. All measurement and test data in this report was gathered from production sample serial number: 2LM0-1 (Assigned by the BACL(Xiamen). The EUT supplied by the applicant was received on 2024-05-20)*	

Objective

This report is prepared on behalf of *AKUVOX (XIAMEN) NETWORKS CO., LTD.* in accordance with Part 2-Subpart J, Part 15-Subparts A and E of the Federal Communication Commission's rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart E, and section 15.203, 15.205, 15.207, 15.209 and 15.407 rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Xiamen) to collect test data is located on the Unit 102, No. 902 Meifeng South Road, Binhai West Avenue, Science and Technology Innovation Park, Torch High tech Zone XiaMen.

Bay Area Compliance Laboratories Corp. (Xiamen) Lab is accredited to ISO/IEC 17025 by A2LA (Certificate Number: 7134.01) and the lab has been recognized as the FCC accredited lab under the KDB 974614 D01, the FCC Designation No. : CN1384.

Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the product as specified in CISPR 16-4-2. This uncertainty represents expanded uncertainty expressed at 95% confidence level using a coverage factor of k=2.

$$u_c(y) = \sqrt{\sum_i c_i^2 \; u^2(x_i)}$$

Item	Frequency Range	U_{lab} = 2 u_c (y) (Confidence of 95%)
Conducted Emissions	150kHz-30MHz	2.33dB
Radiated Spurious Emission	9kHz-30MHz	2.59dB
	30MHz~200MHz	4.38dB
	200MHz~1GHz	4.50dB
	1GHz~6GHz	4.58dB
	6GHz~18GHz	5.43dB
	18GHz~26.5GHz	5.47 dB
	26.5GHz~40GHz	5.63dB
Transmitter Conducted Power		0.624 dB
Power Spectral Density		0.61dB
Occupy Bandwidth		0.053kHz
Voltage (DC)		0.4%
Temperature		1℃
Humidity		5%

SYSTEM TEST CONFIGURATION

Test Mode and Voltage

The system was configured for testing in a typical mode (as normally used by a typical user).	
Test mode:	Test Mode: Transmitting
Test voltage:	AC 120V/60Hz
Remark:	During all emission tests, the EUT was configured to measure its highest possible emission level and the worst case's test data was presented in this test report.

Description of Test Configuration

For 802.11a/n ht20/ac vht20:

5150-5250MHz Band		5250-5350 MHz Band		5470-5725 MHz Band		5725-5850MHz Band	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	**5180**	52	**5260**	100	**5500**	149	**5745**
40	**5200**	56	**5280**	104	5520	153	5765
44	5220	60	5300	108	5540	157	**5785**
48	**5240**	64	**5320**	112	5560	161	5805
/	/	/	/	116	**5580**	165	**5825**
/	/	/	/	120	5600	/	/
/	/	/	/	124	5620	/	/
/	/	/	/	128	5640	/	/
/	/	/	/	132	5660	/	/
/	/	/	/	136	5680	/	/
/	/	/	/	140	**5700**	/	/
/	/	/	/	144	**5720**[Note]	/	/

For 802.11n ht40/ac vht40:

5150-5250MHz Band		5250-5350 MHz Band		5470-5725 MHz Band		5725-5850MHz Band	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	**5190**	54	**5270**	102	**5510**	151	**5755**
46	**5230**	62	**5310**	110	**5550**	159	**5795**
		/	/	118	5590		
		/	/	126	5630		
/	/	/	/	134	**5670**	/	/
/	/	/	/	142	**5710**[Note]	/	/

For 802.11ac vht80:

5150-5250MHz Band		5250-5350 MHz Band		5470-5725 MHz Band		5725-5850MHz Band	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
42	**5210**	58	**5290**	106	**5530**	155	**5775**
/	/	/	/	122	**5610**	/	/
/	/	/	/	138	**5690**[Note]	/	/

Note: Additional channels cross the band 5470-5725MHz and 5725-5850 MHz, Conducted output power/ Power Spectral Density/bandwidth test with the additional channel to compliance with stricter limit of the two bands(5470-5725MHz more stricter).

Equipment Modifications

No modification was made to the EUT tested.

EUT Operation Condition

The system was configured for testing in Engineering Mode, which was provided by the manufacturer.

★EUT Exercise Software:	SecureCRTPortable.exe			
5150-5250 MHz Band:				
Test Modes	**Test Channels**	**Test Frequency**	**Data rate**	**Power Level Setting**
802.11a	Lowest	5180	6Mbps	18
	Middle	5200	6Mbps	18
	Highest	5240	6Mbps	18
802.11ac vht20	Lowest	5180	MCS0	18
	Middle	5200	MCS0	18
	Highest	5240	MCS0	18
802.11ac vht40	Lowest	5190	MCS0	18
	Highest	5230	MCS0	18
802.11ac vht80	Middle	5210	MCS0	18

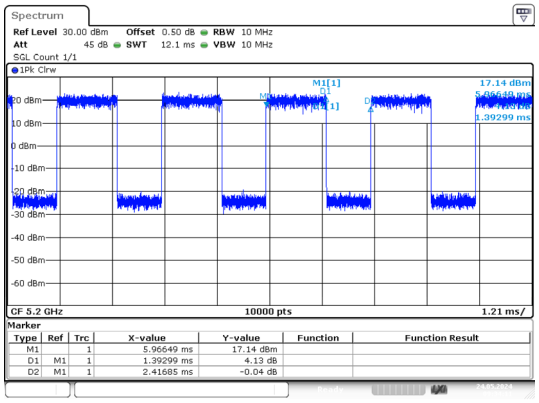
5250-5350 MHz Band:				
Test Modes	**Test Channels**	**Test Frequency**	**Data rate**	**Power Level Setting**
802.11a	Lowest	5260	6Mbps	18
	Middle	5280	6Mbps	18
	Highest	5320	6Mbps	18
802.11ac vht20	Lowest	5260	MCS0	18
	Middle	5280	MCS0	18
	Highest	5320	MCS0	18
802.11ac vht40	Lowest	5270	MCS0	18
	Highest	5310	MCS0	18
802.11ac vht80	Middle	5290	MCS0	18
5470-5725 MHz Band:				
Test Modes	**Test Channels**	**Test Frequency**	**Data rate**	**Power Level Setting**
802.11a	Lowest	5500	6Mbps	16
	Middle	5580	6Mbps	16
	Highest	5700	6Mbps	16
	Cross	5720	6Mbps	16
802.11ac vht20	Lowest	5500	MCS0	16
	Middle	5580	MCS0	16
	Highest	5700	MCS0	16
	Cross	5720	MCS0	16
802.11ac vht40	Lowest	5510	MCS0	16
	Middle	5550	MCS0	16
	Highest	5670	MCS0	16
	Cross	5710	MCS0	16
802.11ac vht80	Lowest	5530	MCS0	15
	Middle	5610	MCS0	15
	Highest	5690	MCS0	15

5725-5850 MHz Band:				
Test Modes	**Test Channels**	**Test Frequency**	**Data rate**	**Power Level Setting**
802.11a	Lowest	5745	6Mbps	16
	Middle	5785	6Mbps	16
	Highest	5825	6Mbps	16
802.11ac vht20	Lowest	5745	MCS0	16
	Middle	5785	MCS0	16
	Highest	5825	MCS0	16
802.11ac vht40	Lowest	5755	MCS0	16
	Highest	5795	MCS0	16
802.11ac vht80	Middle	5775	MCS0	15

Duty Cycle

Modes	Ton (ms)	Ton+off (ms)	Duty cycle (%)	1/T (Hz)	Duty Factor (dB)	VBW Setting(kHz)
802.11a	1.393	2.417	57.63	718	2.39	1.0
802.11ac vht20	5.085	6.111	83.21	197	0.80	0.2
802.11ac vht40	4.897	5.927	82.62	204	0.83	0.3
802.11ac vht80	4.519	5.547	81.47	221	0.89	0.3

a_5200MHz_Chain 0



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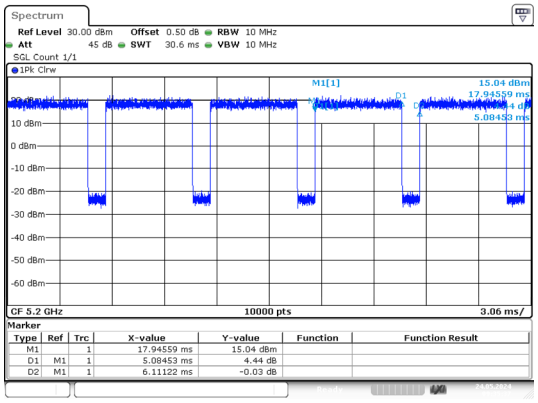
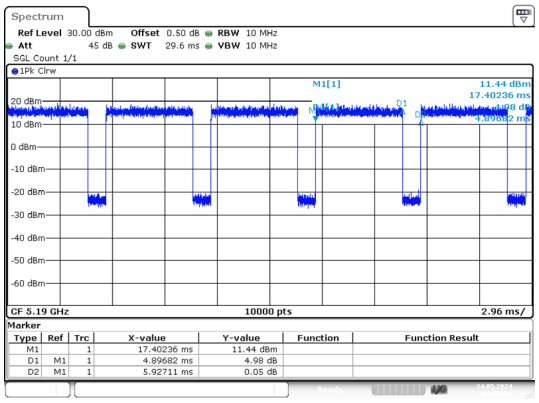
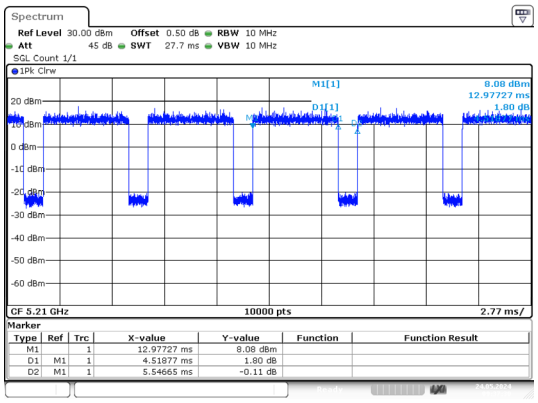


ac40_5190MHz_Chain 0



ac80_5210MHz_Chain 0



Support Equipment List and Details

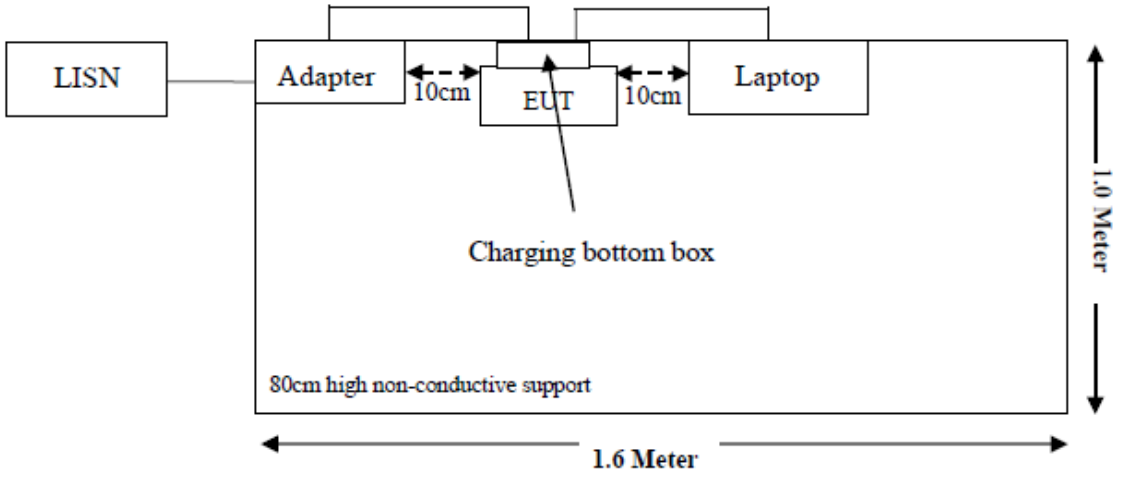
Manufacturer	Description	Model	Serial Number
Lenovo	Laptop	T480	PF1P5K4F
Akuvox	Charging bottom box	FX1-ST	Unknown
KLEC	Switching Adapter	SW-0222	Unknown

External I/O Cable

Cable Description	Length (m)	From Port	To
Adapter cable	1.0	Charging bottom box	Adapter
NETWORK cable	8	Charging bottom box	Laptop

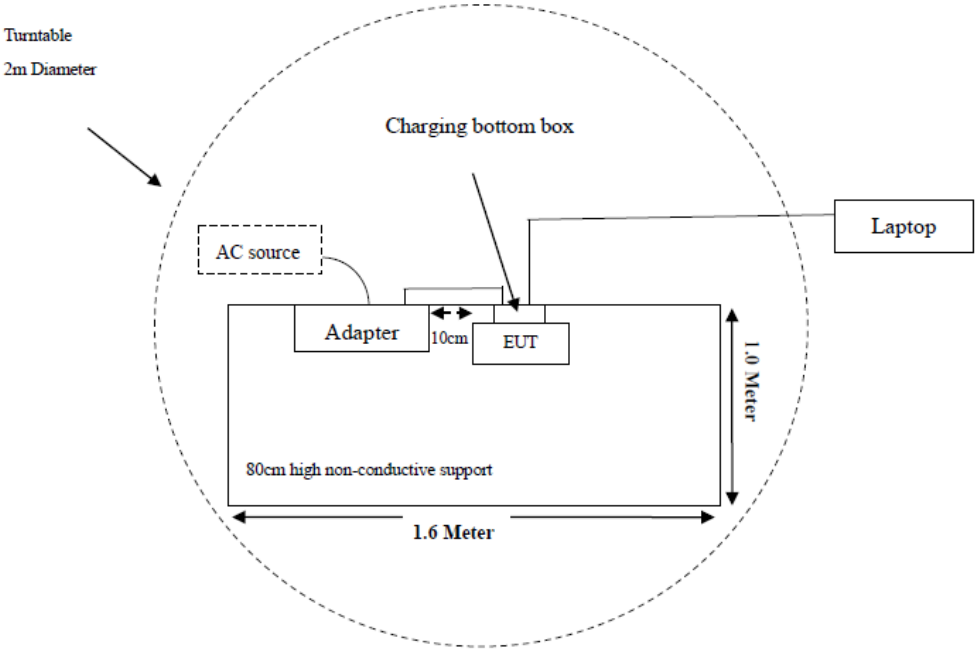
Block Diagram of Test Setup

Conducted Emission:

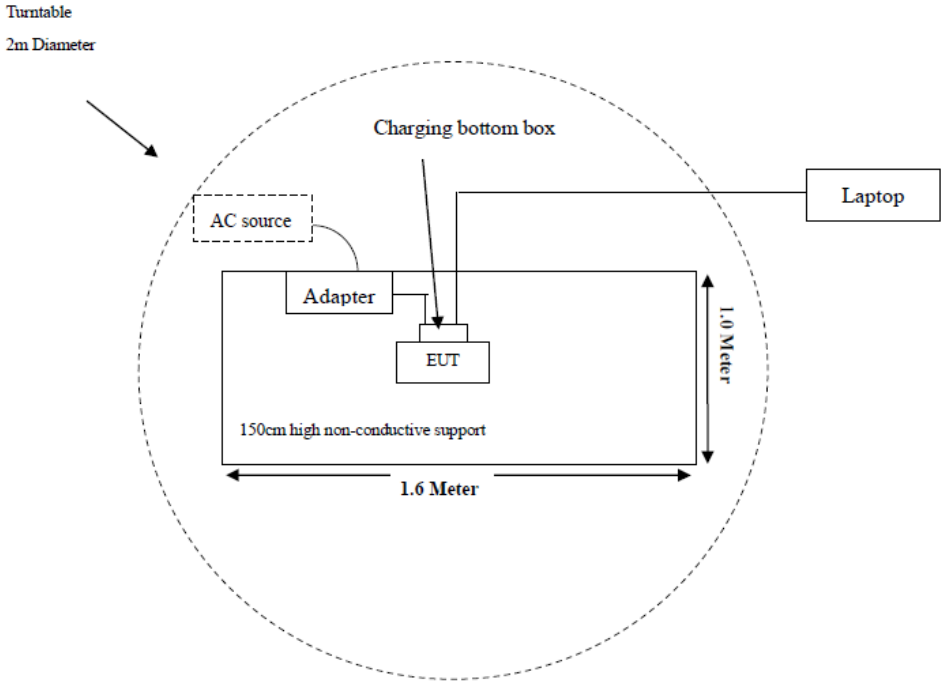


Radiated Emission:

Below 1GHz



Above 1GHz



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.203	Antenna Requirement	Compliance
§15.207 (a)	AC Line Conducted Emissions	Compliance
§15.205, §15.209, §15.407(b)	Radiated Spurious Emissions	Compliance
§15.407 (a)(e)	Emission Bandwidth	Compliance
§15.407(a)	Maximum Conducted Output Power	Compliance
§15.407(a)	Power Spectral Density	Compliance

Note 1: For AC line conducted emissions, the maximum output power mode and channel was tested.
Note 2: For Radiated Spurious Emissions 9kHz~ 1GHz, the maximum output power mode and channel was tested.
Note 3: The system support 802.11a/n ht20/n ht40/ac vht20 /ac vht40 /ac vht80, modes 802.11n ht20 and ht40 reduced since the identical parameters with 802.11ac vht20/vht40.

TEST EQUIPMENT LIST

Test Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emissions					
EMI Test Receiver	Rohde & Schwarz	ESR	103105	2024/03/29	2025/03/28
LISN	Rohde & Schwarz	ENV216	100129	2024/03/29	2025/03/28
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	0357.8810.54	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	XH400T-N-4M	CC001	2024/03/29	2025/03/28
Test Software	Audix	E3	18621a	N/A	N/A
Radiated Emissions Below 1GHz					
EMI Test Receiver	Rohde & Schwarz	ESR	103103	2024/03/29	2025/03/28
Loop Antenna	Rohde & Schwarz	HFH2-Z2	830749/001	2023/07/27	2026/07/26
Antenna	Sunol Sciences	JB6	A122022-5	2023/07/27	2026/07/26
Amplifier	Sonoma	310B	120903	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	XH400T-N-4M	CC002	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	XH460B-N-2M	CC006	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	XH460B-N-12M	CC007	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	HFH2-CC	335.3609	2024/03/29	2025/03/28
Test Software	Audix	E3	18621a	N/A	N/A
Radiated Emissions Above 1 GHz					
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102051	2024/03/29	2025/03/28
Filter Switch Unit	Decentest	DT7220FSU	DS79904	2024/02/23	2025/02/22
Multiplex Switch Test Control Set	Decentest	DT7220SCU	DS79901	2024/02/23	2025/02/22
Double Ridge Guide Horn Antenna	A.H.Systems	SAS-571	1980	2023/07/28	2026/07/27
Preamplifier	A.H.Systems	PAM-0118P	489	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	XH800A-N-6M	CC003	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	XH800A-N-1M	CC005	2024/03/29	2025/03/28
Horn Antenna	EMCO	3116	9407-2232	2023/07/31	2026/07/30
Preamplifier	A.H.Systems	PAM-1840	200	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	XH360A-2.92-3M	CC008	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	XH360A-2.92-1M	CC009	2024/03/29	2025/03/28
Test Software	Audix	E3	18621a	N/A	N/A
RF Conducted Test					
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102051	2024/03/29	2025/03/28
Coaxial Cable	N/A	N/A	N/A	2024/03/29	2025/03/28
USB Wideband Power Sensor	Boonton	55318	8934	2023/09/20	2024/09/19

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Xiamen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

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 shall be considered sufficient to comply with the provisions of this section. 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. This requirement does not apply to carrier current devices or to devices operated under the provisions of §§15.211, 15.213, 15.217, 15.219, 15.221, or §15.236. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

Antenna Connector Construction

The EUT has one FPC antenna arrangement for 5G WIFI, which was permanently attached and the Max. antenna gain is 1.4 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

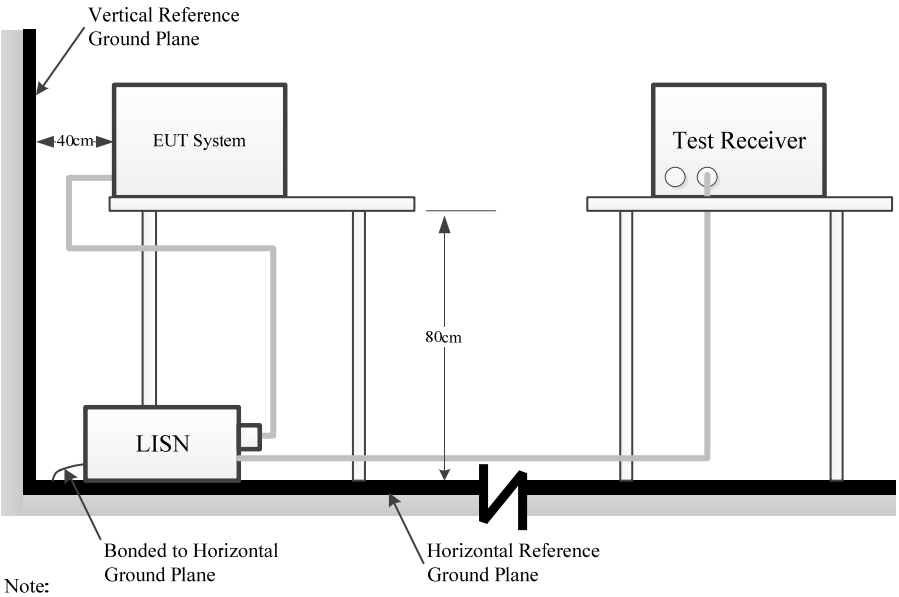
Result: Compliance

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC§15.207(a)

EUT Setup



Note:
1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at least 80 cm from other units and oter metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	RBW	VBW	Detector
150 kHz – 30 MHz	9 kHz	30 kHz	QP/AV

Test Procedure

The frequency and amplitude of the six highest ac power-line conducted emissions relative to the limit, measured over all the current-carrying conductors of the EUT power cords, and the operating frequency or frequency to which the EUT is tuned (if appropriate), should be reported, unless such emissions are more than 20 dB below the limit. AC power-line conducted emissions measurements are to be separately carried out only on each of the phase ("hot") line(s) and (if used) on the neutral line(s), but not on the ground [protective earth] line(s). If less than six emission frequencies are within 20 dB of the limit, then the noise level of the measuring instrument at representative frequencies should be reported. The specific conductor of the power-line cord for each of the reported emissions should be identified. Measure the six highest emissions with respect to the limit on each current-carrying conductor of each power cord associated with the EUT (but not the power cords of associated or peripheral equipment that are part of the test configuration). Then, report the six highest emissions with respect to the limit from among all the measurements identifying the frequency and specific current-carrying conductor identified with the emission. The six highest emissions should be reported for each of the current-carrying conductors, or the six highest emissions may be reported over all the current-carrying conductors.

Result &Margin Calculation

The Result is calculated by adding LISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation from the Meter Reading. The basic equation is as follows:

Factor (dB) = LISN VDF (dB) + Cable Loss (dB) + Transient Limiter Attenuation (dB)
Result (dBμV) = Reading (dBμV) + Factor (dB)

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin (dB) = Limit (dBμV) –Result (dBμV)

Test Data

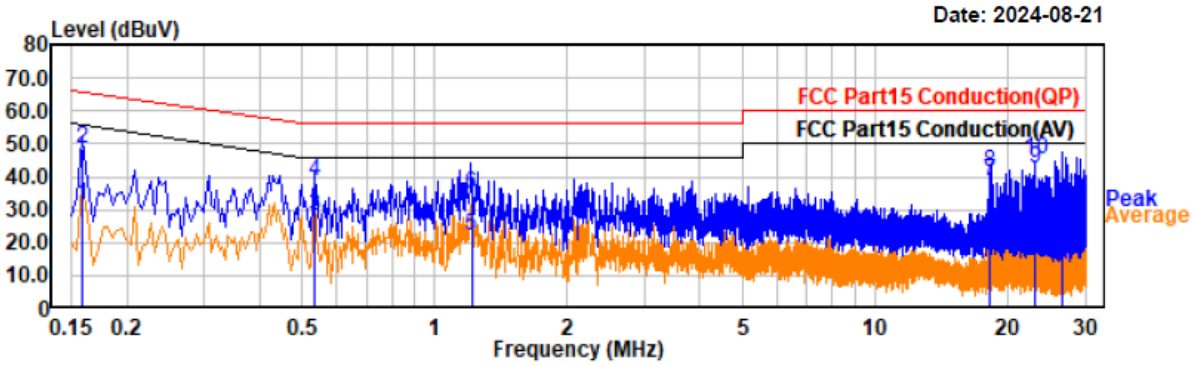
Temperature:	23.5℃
Relative Humidity:	54 %
ATM Pressure:	101.1kPa
Test Date:	2024-08-21
Test Engineer:	Spike Gao

For 5G WIFI:

EUT operation mode: Transmitting in 802.11ac20 5320MHz (worst case)

Project No.: 2407T76694E-RF
Test Mode: 5G Wi-Fi Band2 ac20 5320MHz
EUT Model: PH81

Temp/Humi/ATM: 23.5℃/54%/101.1kPa
Tested by: Spike Gao
Power Source: AC 120V/60Hz

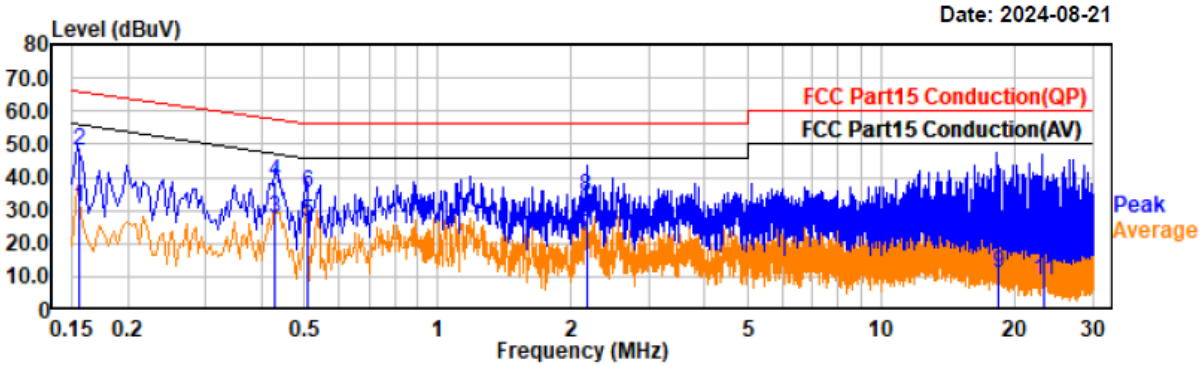


Trace: 1

Freq MHz	Reading dBuV	Factor dB	Result dBuV	Limit dBuV	Margin dB	Phase	Remark
0.16	10.50	20.87	31.37	55.52	24.15	Line	Average
0.16	27.66	20.87	48.53	65.52	16.99	Line	QP
0.54	7.69	20.33	28.02	46.00	17.98	Line	Average
0.54	18.03	20.33	38.36	56.00	17.64	Line	QP
1.21	1.36	20.98	22.34	46.00	23.66	Line	Average
1.21	13.51	20.98	34.49	56.00	21.51	Line	QP
18.24	17.54	21.18	38.72	50.00	11.28	Line	Average
18.24	20.23	21.18	41.41	60.00	18.59	Line	QP
23.13	20.46	21.77	42.23	50.00	7.77	Line	Average
23.13	23.31	21.77	45.08	60.00	14.92	Line	QP
26.59	-9.26	21.49	12.23	50.00	37.77	Line	Average
26.59	-2.65	21.49	18.84	60.00	41.16	Line	QP

Project No.: 2407T76694E-RF
Test Mode: 5G Wi-Fi Band2 ac20 5320MHz
EUT Model: PH81

Temp/Humi/ATM: 23.5℃/54%/101.1kPa
Tested by: Spike Gao
Power Source: AC 120V/60Hz



Trace: 1

Freq MHz	Reading dBuV	Factor dB	Result dBuV	Limit dBuV	Margin dB	Phase	Remark
0.16	10.16	20.73	30.89	55.73	24.84	Neutral	Average
0.16	27.14	20.73	47.87	65.73	17.86	Neutral	QP
0.43	7.32	20.44	27.76	47.24	19.48	Neutral	Average
0.43	18.03	20.44	38.47	57.24	18.77	Neutral	QP
0.51	5.88	20.39	26.27	46.00	19.73	Neutral	Average
0.51	15.03	20.39	35.42	56.00	20.58	Neutral	QP
2.16	0.88	21.00	21.88	46.00	24.12	Neutral	Average
2.16	13.24	21.00	34.24	56.00	21.76	Neutral	QP
18.30	-10.34	21.19	10.85	50.00	39.15	Neutral	Average
18.30	0.55	21.19	21.74	60.00	38.26	Neutral	QP
23.18	-12.67	21.70	9.03	50.00	40.97	Neutral	Average
23.18	-3.99	21.70	17.71	60.00	42.29	Neutral	QP

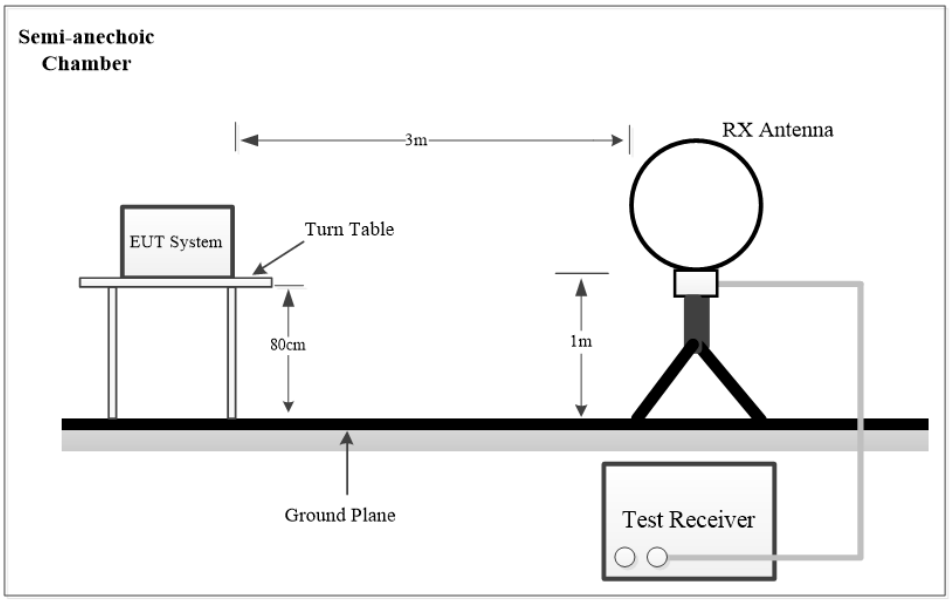
FCC §15.407(b) – RADIATION SPURIOUS EMISSIONS

Applicable Standard

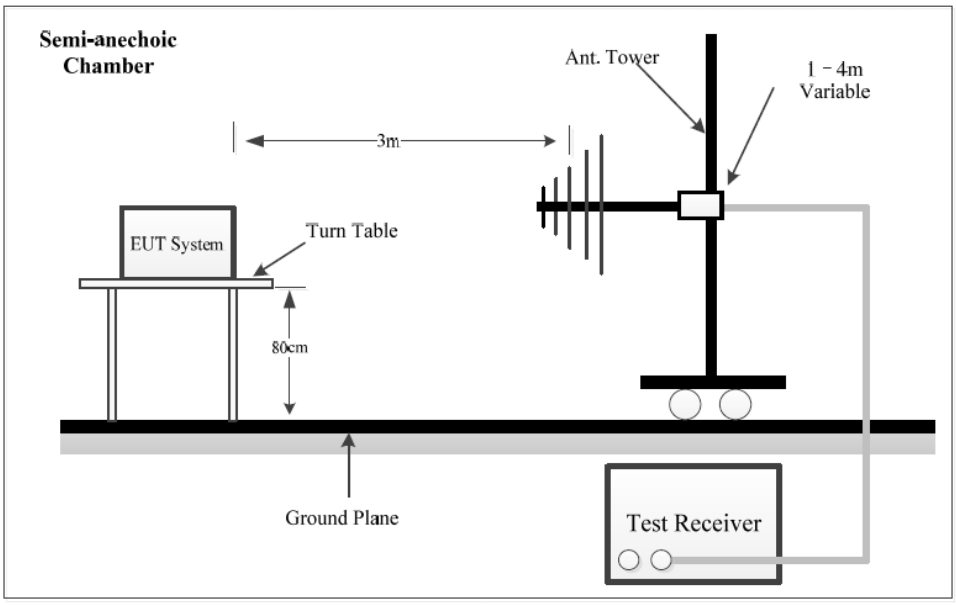
FCC §15.407 (b)

EUT Setup

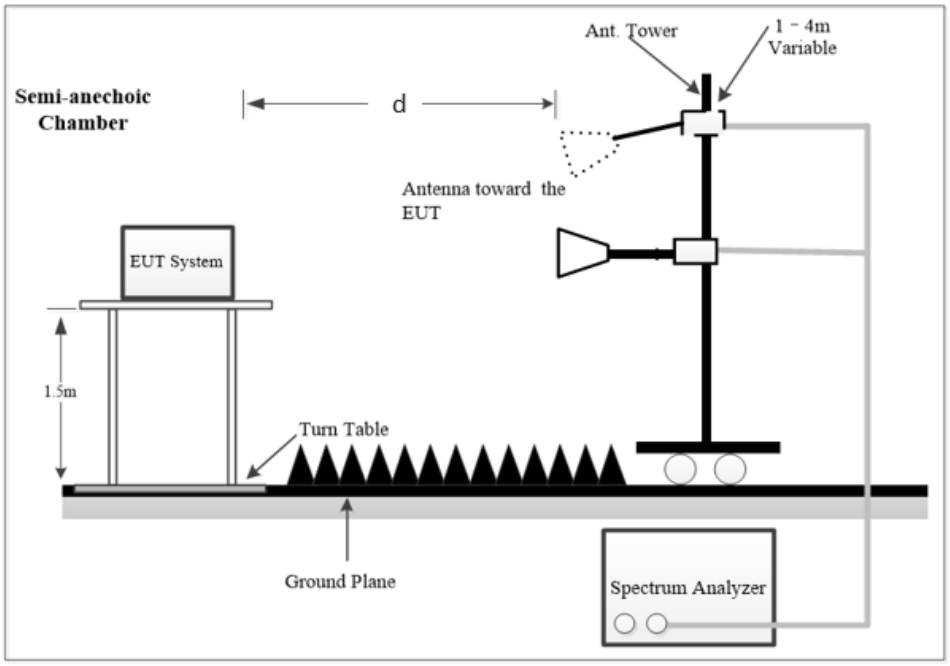
9 kHz-30MHz:



30MHz -1 GHz:



Above 1GHz:



The radiated emission tests using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, and FCC 15.407 limits.

NOTE: d is testing distance;
For Radiated Emission test (1GHz-18GHz) and Bandedge Emission test, which was performed at 3 m distance.

For Radiated Emission test (18GHz-40GHz), which was performed at 1.0 m distance, according to ANSI C63.10-2013, the test result shall be extrapolated to the specified distance using an extrapolation Factor of 20dB/decade from 3m to 1.0m.
Distance extrapolation Factor =20 log (specific distance [3m]/test distance [1.0m]) dB= 9.54 dB

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 9 kHz to 40 GHz.

During the radiated emission test, the EMI test receiver & spectrum analyzer setup were set with the following configurations:

Below 1GHz:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
9 kHz – 150 kHz	200Hz	1 kHz	200Hz	QP/AV
150 kHz – 30 MHz	10 kHz	30 kHz	9 kHz	QP/AV
30 MHz – 1000 MHz	100 kHz	300 kHz	/	PK
	/	/	120kHz	QP

Above 1GHz:
Pre-scan:

Duty Cycle	RBW	VBW	Measurement
Any	1MHz	3MHz	PK
＞98%	1MHz	5kHz	AV
＜98%	1MHz	≥1/T, not less than 5kHz	AV

Final measurement for emission identified during the pre-scan:

Duty Cycle	RBW	VBW	Measurement
Any	1MHz	3MHz	PK
＞98%	1MHz	10Hz	AV
＜98%	1MHz	≥1/T	AV

Note: T is minimum transmission duration

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

For each measurement antenna alignment, the EUT shall be rotated through 0°to 360°on a turntable. The report shall list the six emissions with the smallest margin relative to the limit, for each of the three antenna orientations (parallel, perpendicular, and ground parallel) unless the margin is greater than 20 dB, then the following statement shall be made: “all emissions were greater than 20 dB below the limit.”

Below 1GHz, if the measured peak level of the emissions that the measuring receiver reading level plus corrected factor is at least 6 dB below the QP emission limit, there's no need to record the measured QP level of the emissions in the report.

Above 1GHz, if the measured peak level of the emissions that the measuring receiver reading level plus corrected factor is below the AV emission limit, there's no need to record the measured AV level of the emissions in the report.

Result &Margin Calculation

The Result is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

For 9 kHz to 18GHz Radiated emission test
Factor (dB/m) =Antenna Factor (dB/m) + Cable Loss (dB) - Amplifier Gain (dB)

For 18GHz to 40GHz Radiated emission test and Bandedge emissions test
Factor (dB/m) =Antenna Factor (dB/m) + Cable Loss (dB) - Amplifier Gain (dB) - Extrapolation factor (dB)

Extrapolation factor=9.54dB (distance=1m)

Result (dBμV/m) = Reading (dBμV) + Factor (dB/m)

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin (dB) = Limit (dBμV/m) –Result (dBμV/m)

Test Data

Please refer to the below table and plots.
After pre-scan in the X, Y and Z axes of orientation, the worst case is below:

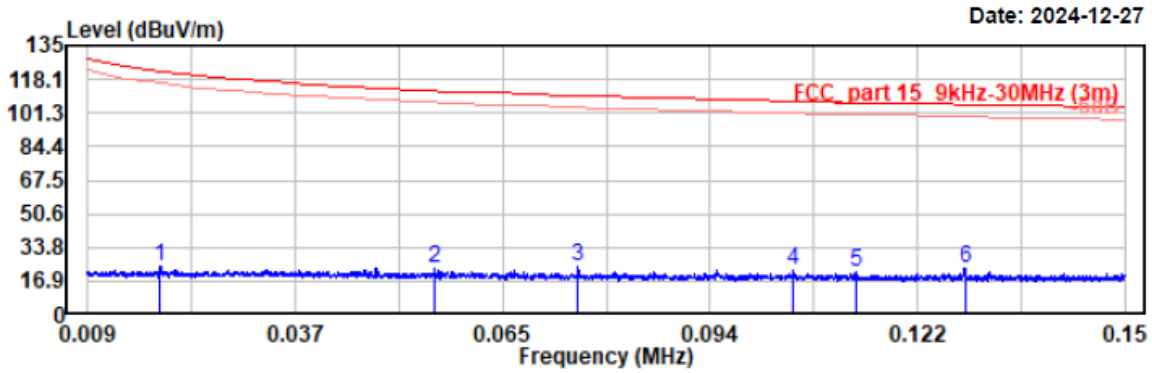
Frequency Range:	Below 1 GHz	Above 1 GHz
Temperature:	22.8℃~23.4℃	21.3℃~24.3℃
Relative Humidity:	50%~52%	48%~55%
ATM Pressure:	100.2kPa ~100.6kPa	99.9kPa~100.4kPa
Test Date:	2024-08-10~2024-12-27	2024-08-11~2024-12-12
Test Engineer:	Wlif Wu	Wlif Wu

1) 9 kHz~30MHz

EUT operation mode: Transmitting in 802.11ac20 5320MHz in parallel (worst case)

Project No.: 2407T76694E-RF
Test Mode: 802.11ac20 5320MHz
EUT Model: PH81
Test distance: 3m

Temp/Humi/ATM: 22.8℃/50%/100.2kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

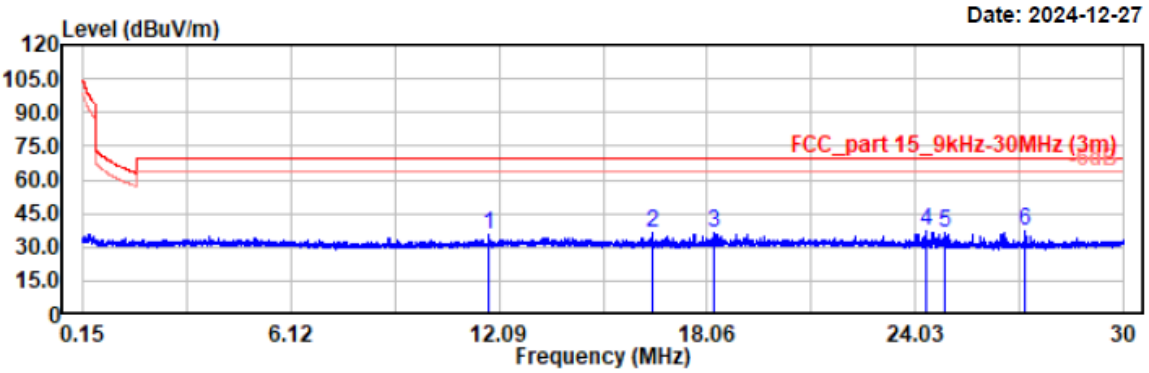


Condition: PK RBW:200Hz VBW:1kHz SWT:auto
QP RBW:200Hz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
0.019	4.20	19.78	23.98	122.09	98.11	Peak
0.056	3.03	19.91	22.94	112.63	89.69	Peak
0.076	4.00	19.75	23.75	110.04	86.29	Peak
0.105	2.57	19.73	22.30	107.19	84.89	Peak
0.113	1.68	19.73	21.41	106.52	85.11	Peak
0.128	3.67	19.73	23.40	105.45	82.05	Peak

Project No.: 2407T76694E-RF
Test Mode: 802.11ac20 5320MHz
EUT Model: PH81
Test distance: 3m

Temp/Humi/ATM: 22.8℃/50%/100.2kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz



Condition: PK RBW:10kHz VBW:30kHz SWT:auto
QP RBW:9kHz SWT:auto

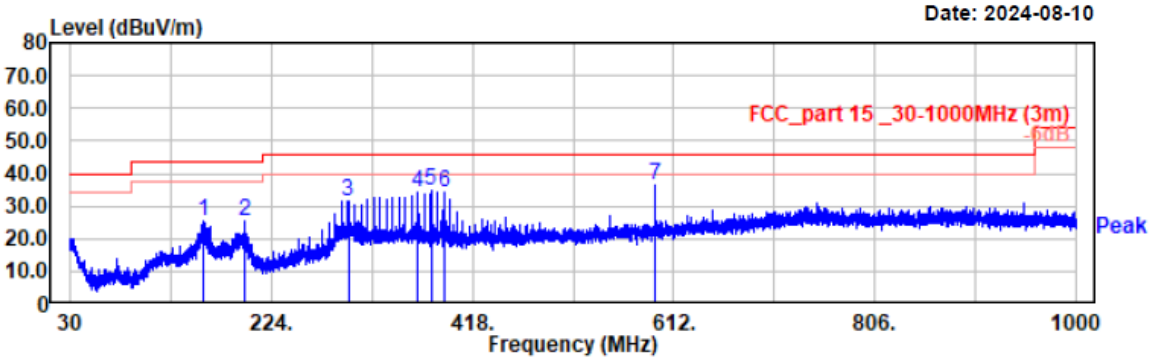
Freq	Reading	Factor	Result	Limit	Margin	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
11.780	15.50	19.72	35.22	69.54	34.32	Peak
16.472	16.59	19.86	36.45	69.54	33.09	Peak
18.242	16.42	19.97	36.39	69.54	33.15	Peak
24.352	16.74	20.21	36.95	69.54	32.59	Peak
24.902	16.19	20.22	36.41	69.54	33.13	Peak
27.161	16.86	20.11	36.97	69.54	32.57	Peak

2) 30 MHz-1GHz

EUT operation mode: Transmitting in 802.11 ac20 5320MHz in Z-axis of orientation (worst case)

Project No.: 2407T76694E-RF
Test Mode: 11ac20-5320
EUT Model: PH81
Test distance: 3m

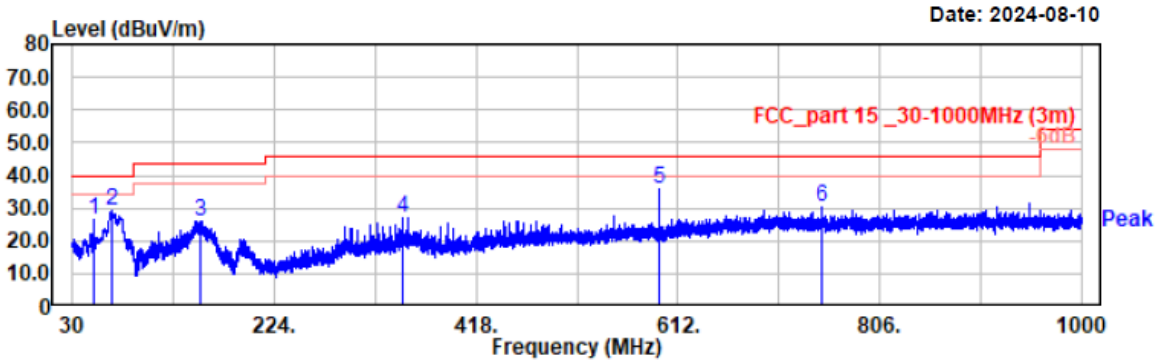
Temp/Humi/ATM: 23.4℃/52%/100.6kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
158.53	36.82	-11.47	25.35	43.50	18.15	Horizontal	QP
198.00	37.13	-11.73	25.40	43.50	18.10	Horizontal	QP
298.01	40.87	-9.22	31.65	46.00	14.35	Horizontal	QP
365.52	41.57	-7.50	34.07	46.00	11.93	Horizontal	QP
377.84	41.69	-7.17	34.52	46.00	11.48	Horizontal	QP
390.16	40.73	-6.65	34.08	46.00	11.92	Horizontal	QP
594.06	38.72	-2.44	36.28	46.00	9.72	Horizontal	QP

Project No.: 2407T76694E-RF
Test Mode: 11ac20-5320
EUT Model: PH81
Test distance: 3m

Temp/Humi/ATM: 23.4℃/52%/100.6kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



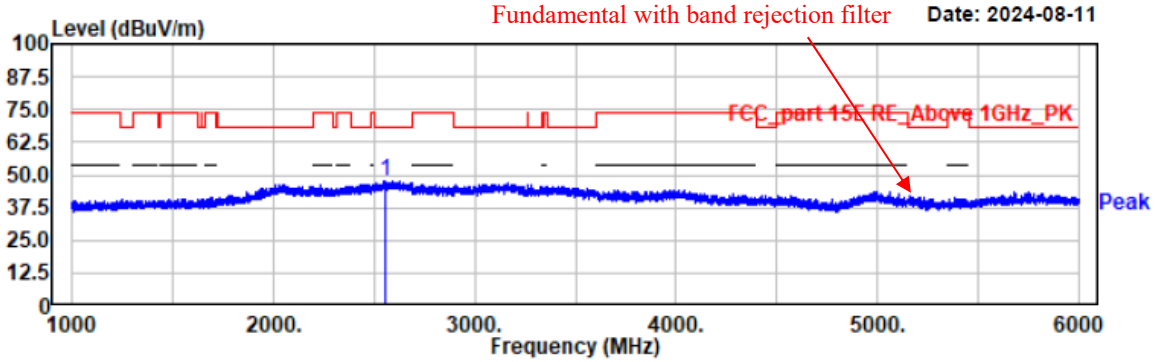
Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
49.98	43.92	-17.33	26.59	40.00	13.41	Vertical	Peak
68.12	46.24	-17.11	29.13	40.00	10.87	Vertical	Peak
153.58	37.29	-11.26	26.03	43.50	17.47	Vertical	Peak
347.09	35.44	-8.15	27.29	46.00	18.71	Vertical	Peak
594.06	38.48	-2.44	36.04	46.00	9.96	Vertical	Peak
750.03	30.06	0.56	30.62	46.00	15.38	Vertical	Peak

3) 1GHz~6GHz

For 5150-5250 MHz:

Project No.: 2407T76694E-RF
Test Mode: 11a-5180
EUT Model: PH81
Test distance: 3m

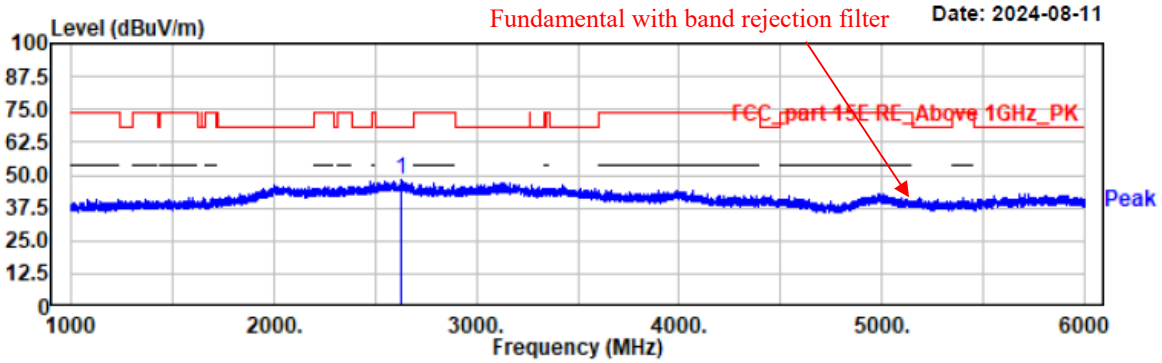
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2557.50	41.32	6.05	47.37	68.20	20.83	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11a-5180
EUT Model: PH81
Test distance: 3m

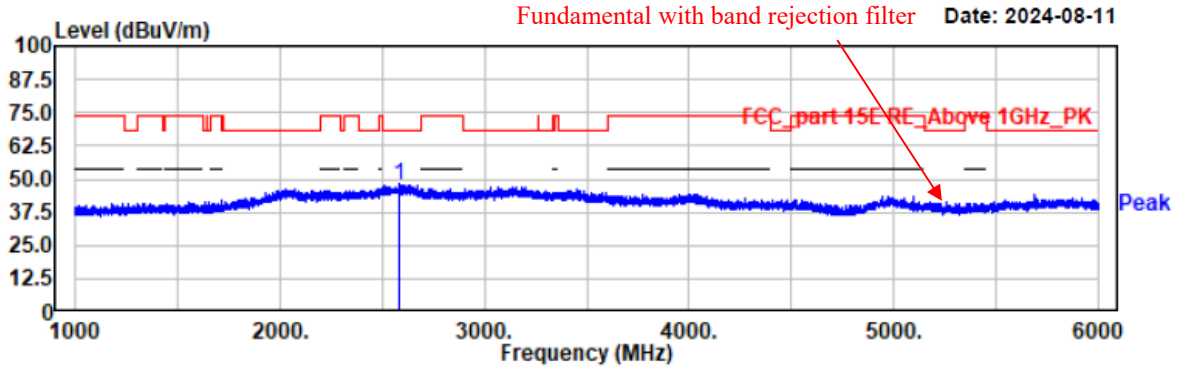
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2628.50	42.10	6.14	48.24	68.20	19.96	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11a-5200
EUT Model: PH81
Test distance: 3m

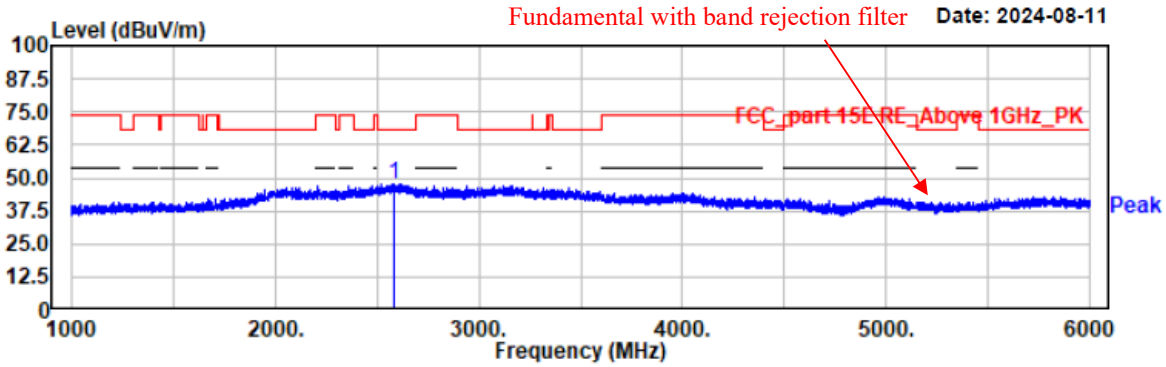
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2582.50	41.80	6.13	47.93	68.20	20.27	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11a-5200
EUT Model: PH81
Test distance: 3m

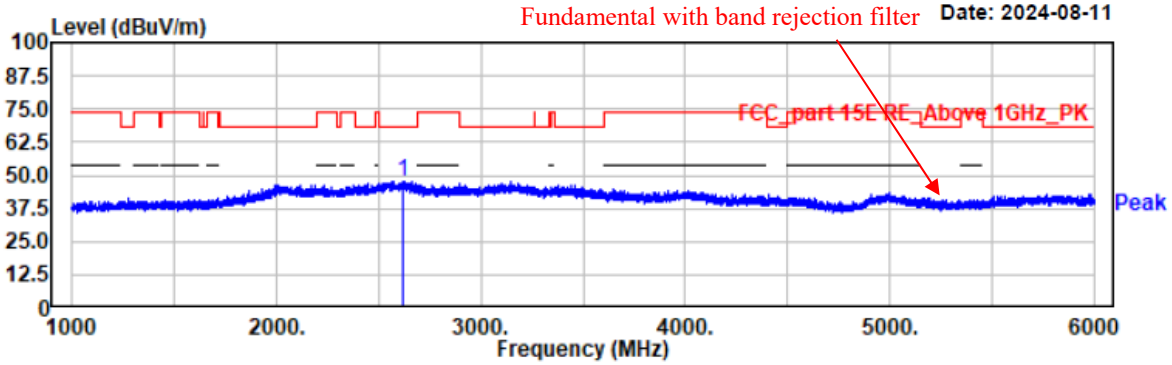
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2587.00	41.55	6.16	47.71	68.20	20.49	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11a-5240
EUT Model: PH81
Test distance: 3m

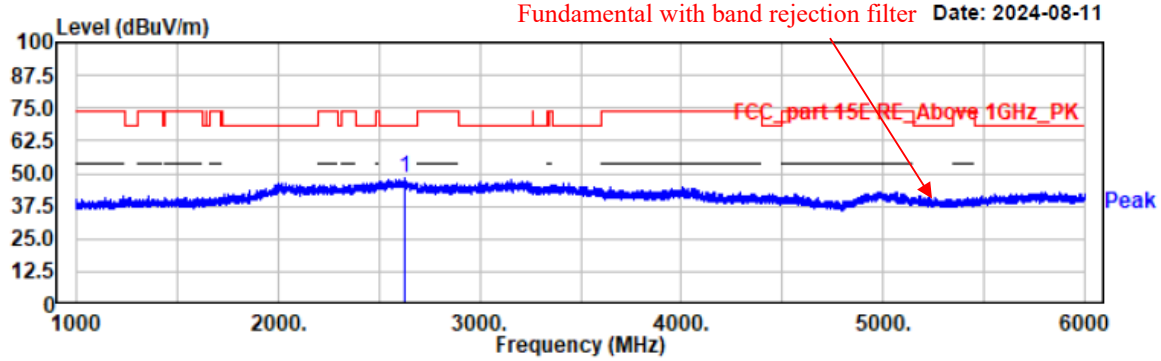
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2615.50	41.58	6.16	47.74	68.20	20.46	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11a-5240
EUT Model: PH81
Test distance: 3m

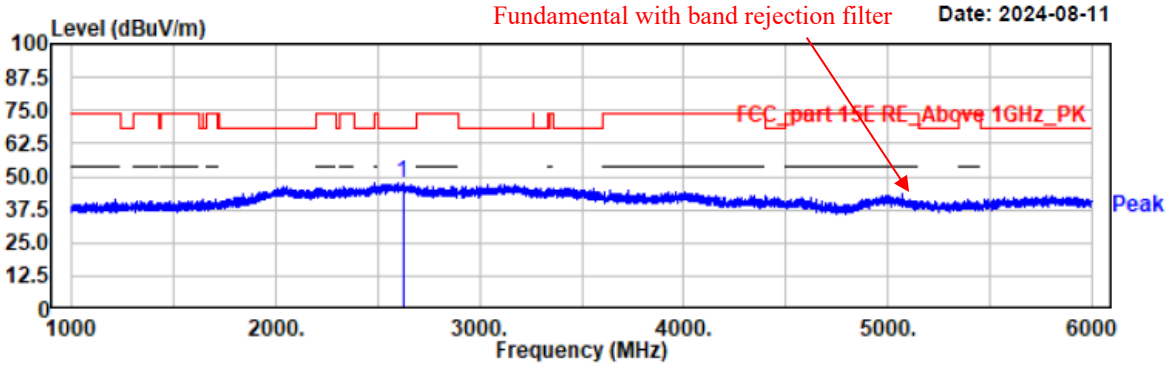
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2629.50	42.08	6.14	48.22	68.20	19.98	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac20-5180
EUT Model: PH81
Test distance: 3m

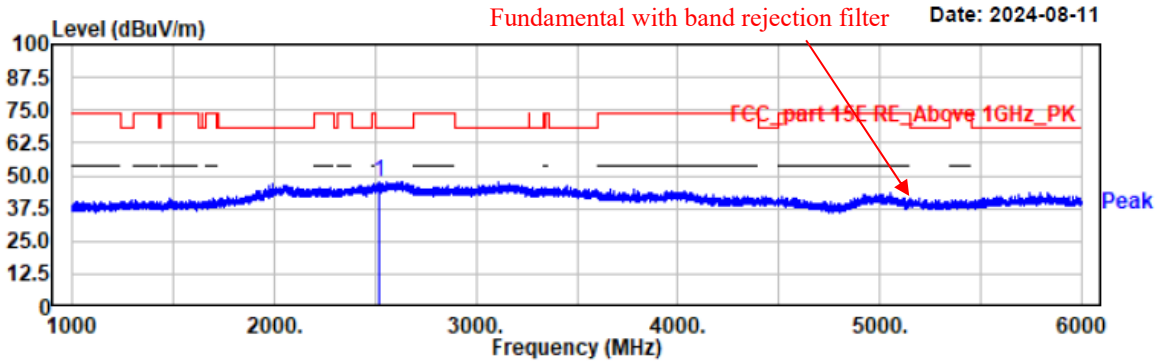
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2623.00	41.77	6.13	47.90	68.20	20.30	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac20-5180
EUT Model: PH81
Test distance: 3m

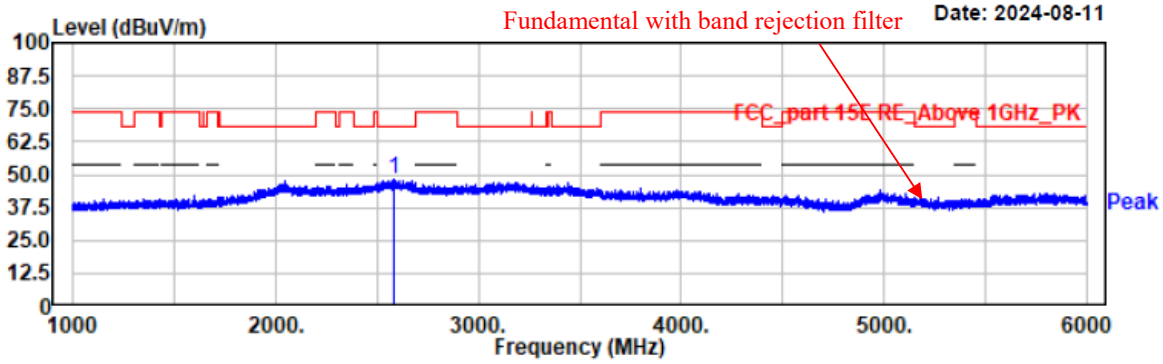
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2519.00	42.30	5.59	47.89	68.20	20.31	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac20-5200
EUT Model: PH81
Test distance: 3m

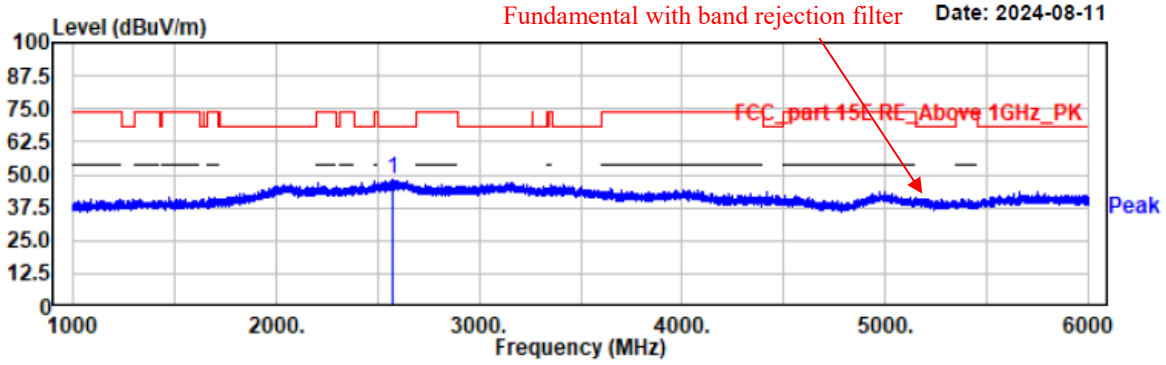
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2585.50	42.10	6.14	48.24	68.20	19.96	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac20-5200
EUT Model: PH81
Test distance: 3m

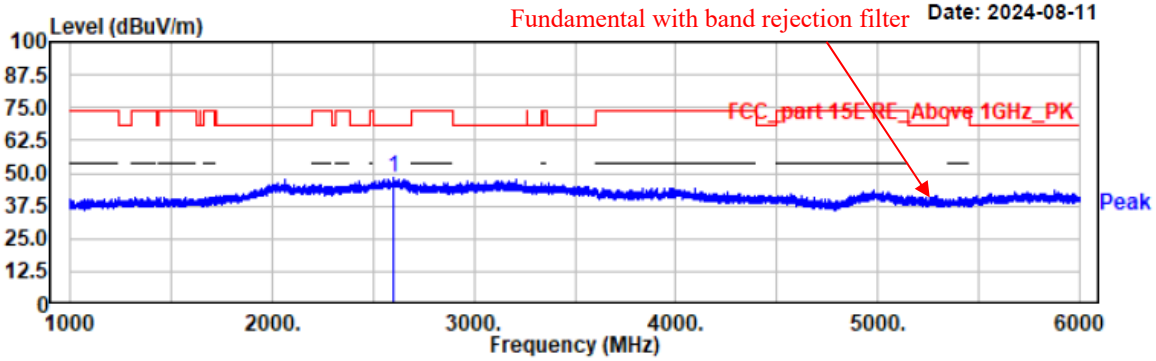
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2575.50	41.83	6.11	47.94	68.20	20.26	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac20-5240
EUT Model: PH81
Test distance: 3m

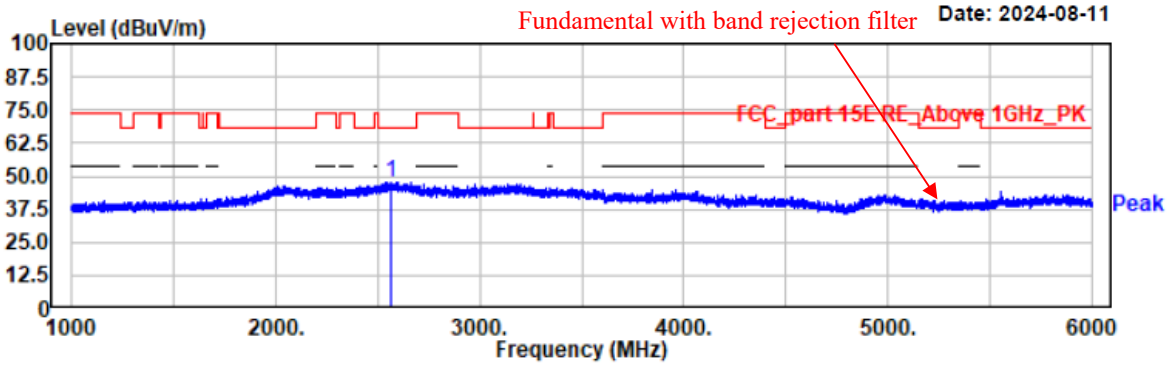
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2599.50	41.95	6.20	48.15	68.20	20.05	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac20-5240
EUT Model: PH81
Test distance: 3m

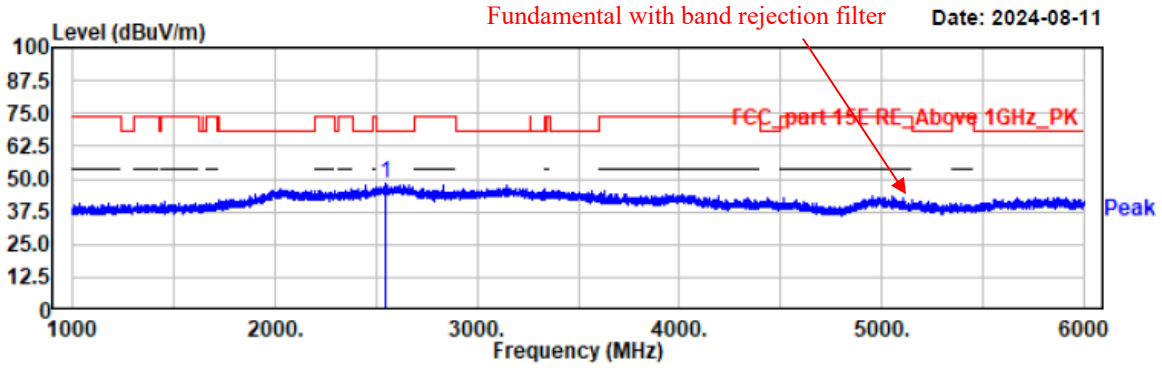
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2569.00	41.75	6.10	47.85	68.20	20.35	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac40-5190
EUT Model: PH81
Test distance: 3m

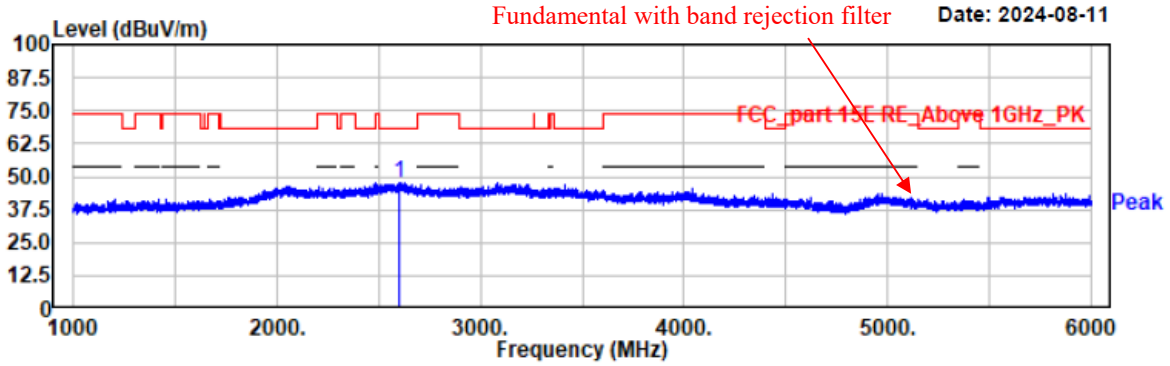
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2546.00	42.64	5.95	48.59	68.20	19.61	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac40-5190
EUT Model: PH81
Test distance: 3m

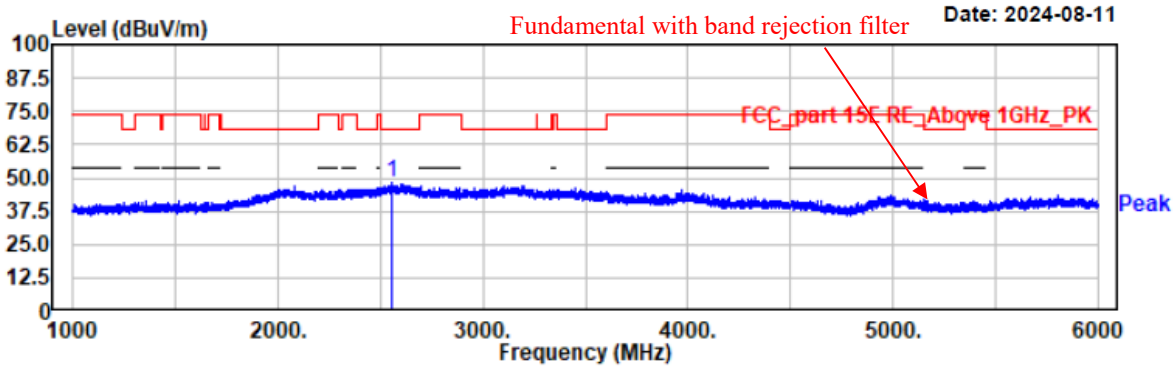
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2602.00	41.57	6.19	47.76	68.20	20.44	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac40-5230
EUT Model: PH81
Test distance: 3m

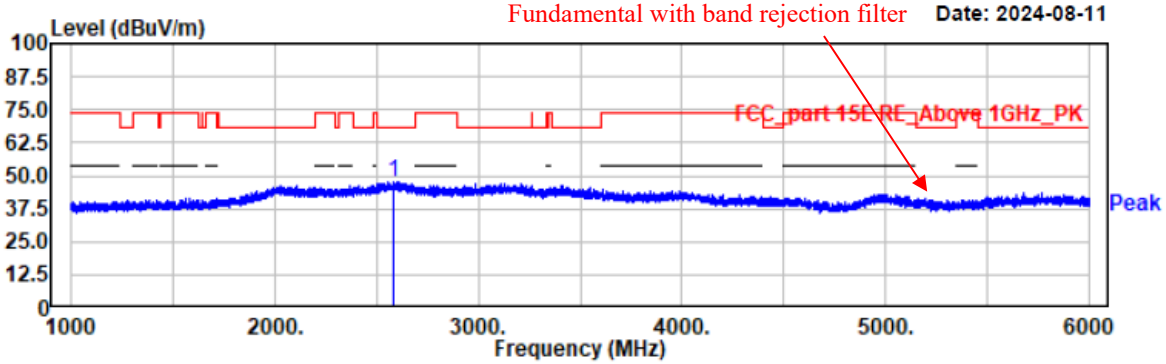
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2553.00	42.08	6.02	48.10	68.20	20.10	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac40-5230
EUT Model: PH81
Test distance: 3m

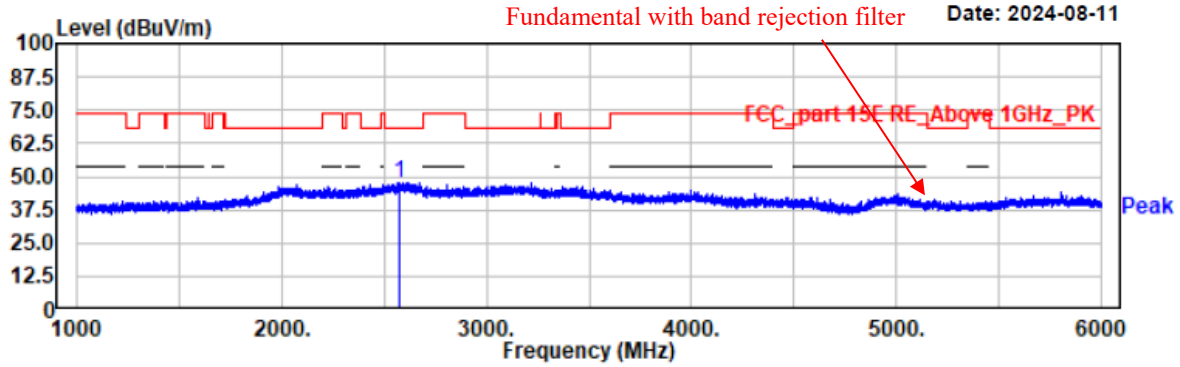
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2580.50	41.59	6.12	47.71	68.20	20.49	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac80-5210
EUT Model: PH81
Test distance: 3m

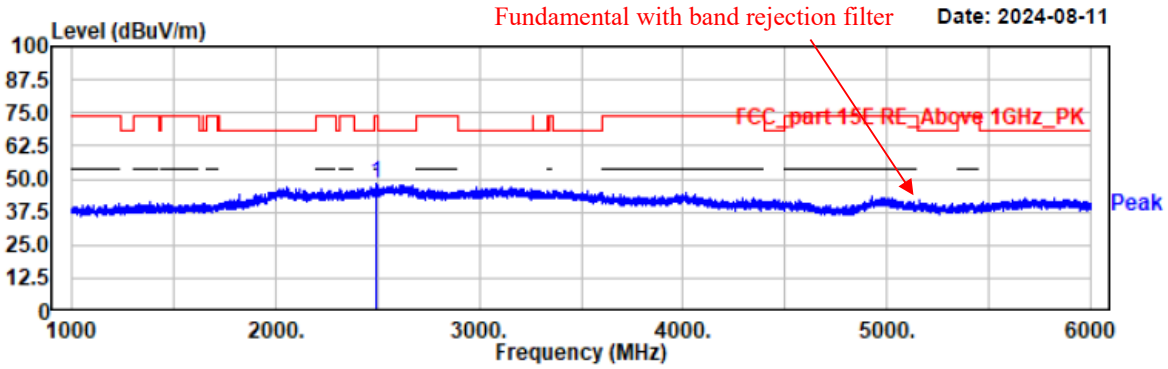
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/50HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2577.50	41.52	6.12	47.64	68.20	20.56	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac80-5210
EUT Model: PH81
Test distance: 3m

Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ

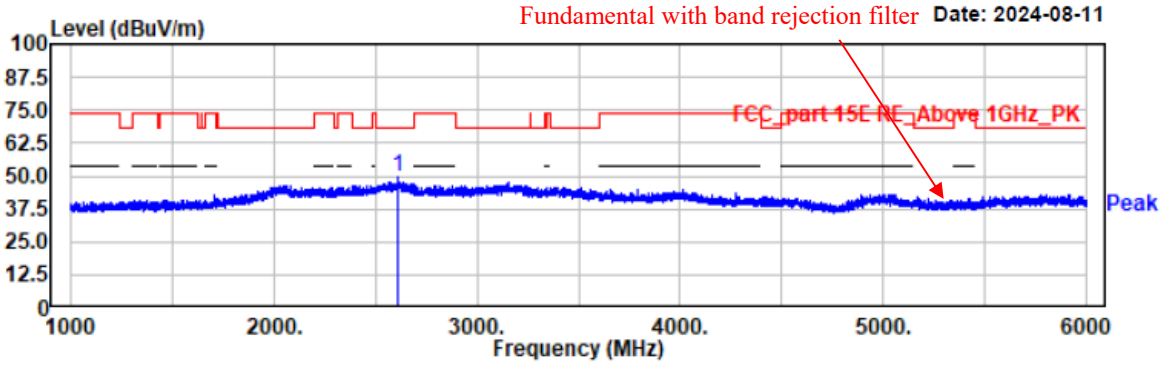


Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2495.00	42.90	5.24	48.14	74.00	25.86	vertical	Peak

For 5250-5350 MHz:

Project No.: 2407T76694E-RF
Test Mode: 11a-5260
EUT Model: PH81
Test distance: 3m

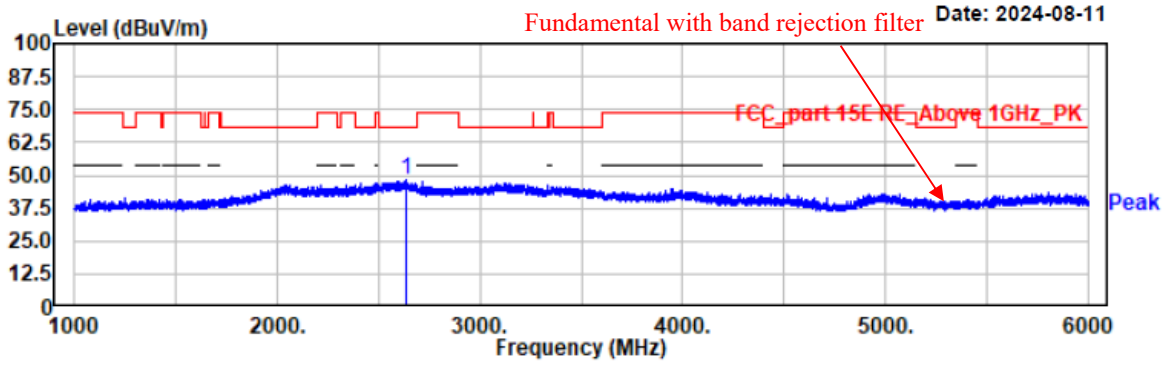
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2608.00	43.24	6.18	49.42	68.20	18.78	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11a-5260
EUT Model: PH81
Test distance: 3m

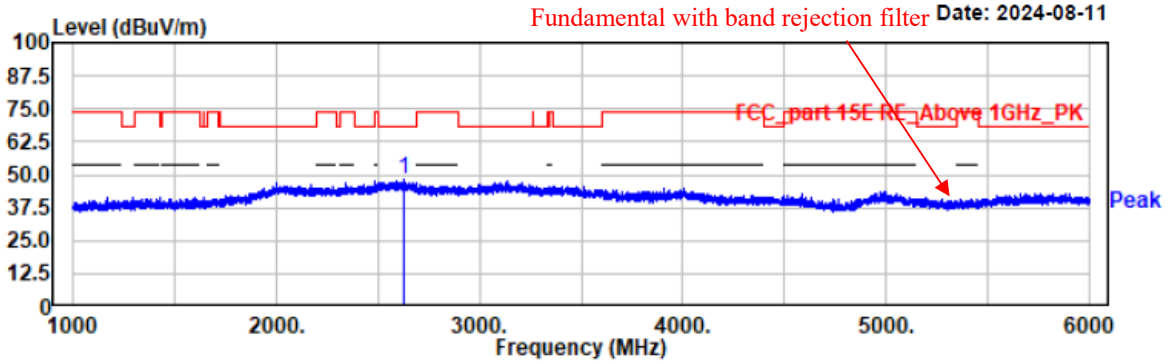
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2638.00	41.87	6.11	47.98	68.20	20.22	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11a-5280
EUT Model: PH81
Test distance: 3m

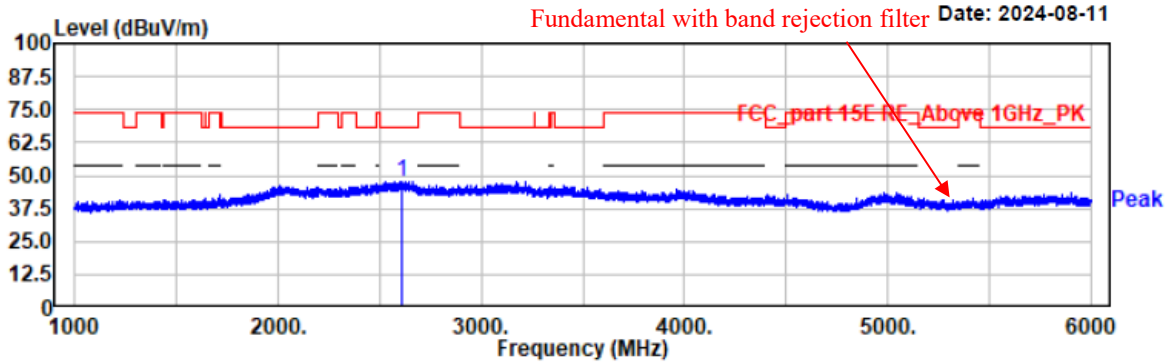
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2628.00	41.92	6.14	48.06	68.20	20.14	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11a-5280
EUT Model: PH81
Test distance: 3m

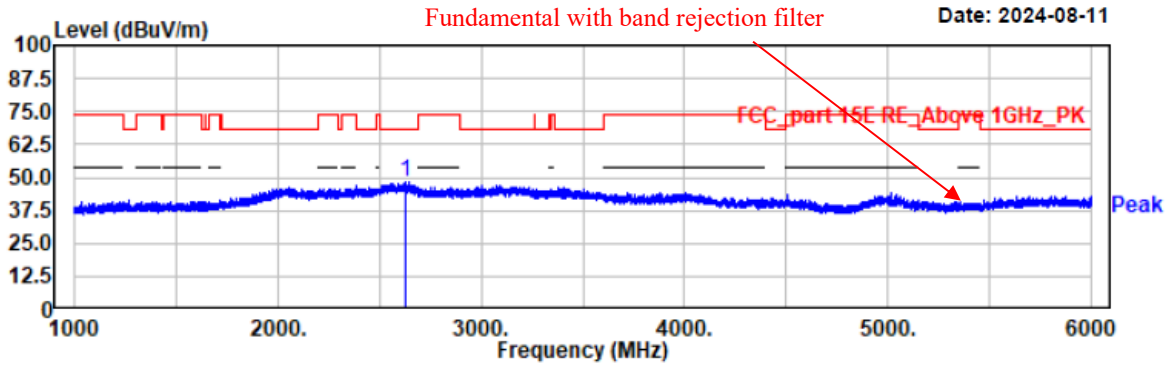
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2608.50	41.62	6.18	47.80	68.20	20.40	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11a-5320
EUT Model: PH81
Test distance: 3m

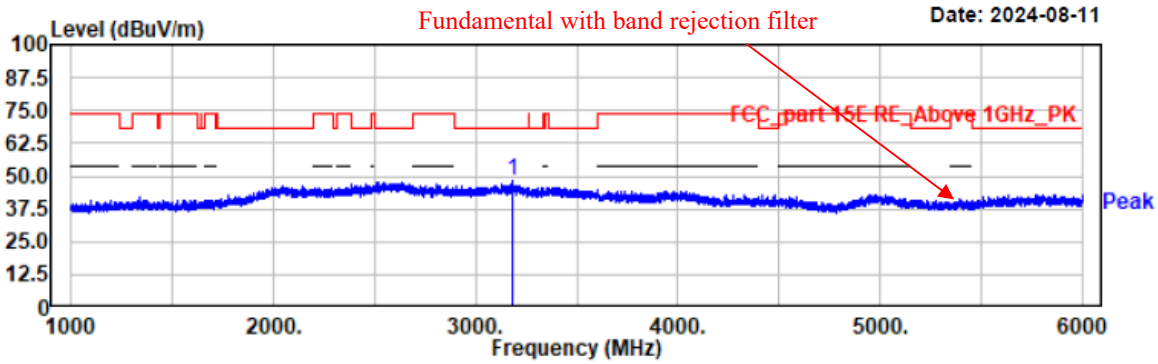
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2628.00	42.01	6.14	48.15	68.20	20.05	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11a-5320
EUT Model: PH81
Test distance: 3m

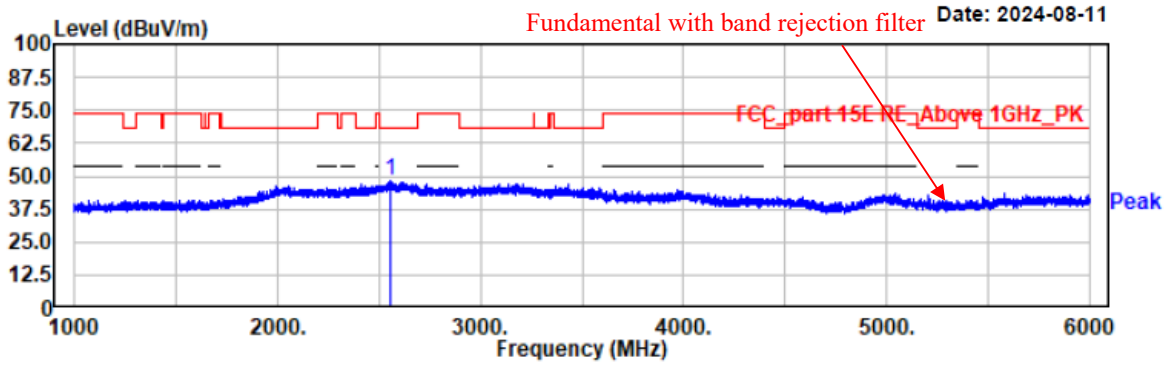
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
3185.50	41.82	6.19	48.01	68.20	20.19	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac20-5260
EUT Model: PH81
Test distance: 3m

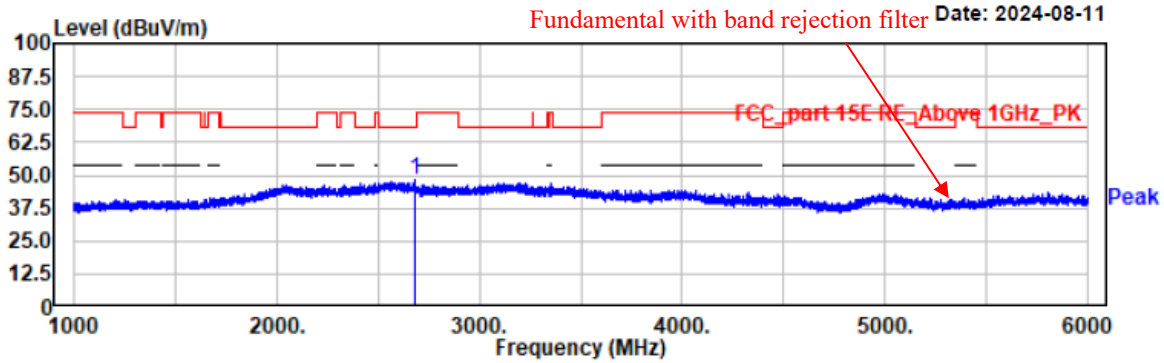
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2553.50	41.96	6.02	47.98	68.20	20.22	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac20-5260
EUT Model: PH81
Test distance: 3m

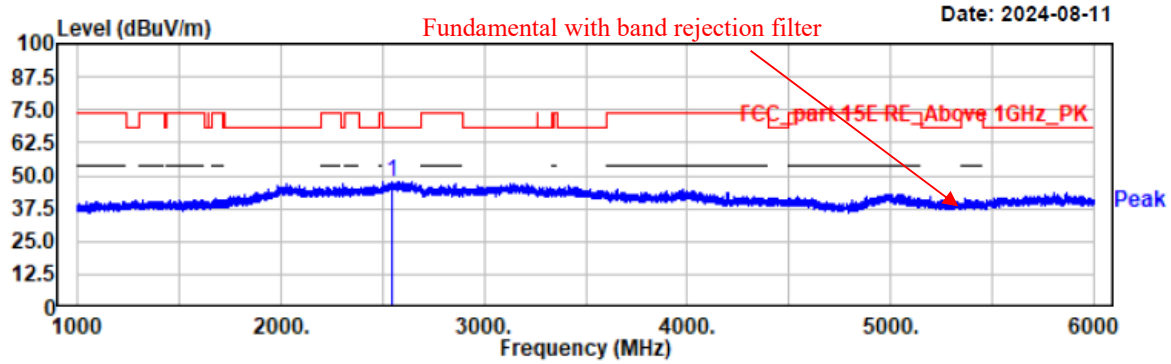
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2679.00	42.64	5.32	47.96	68.20	20.24	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac20-5280
EUT Model: PH81
Test distance: 3m

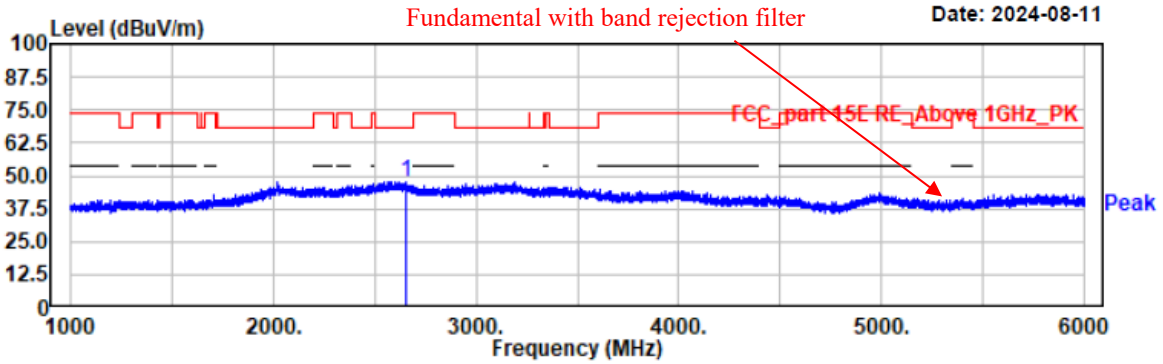
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2545.00	41.88	5.94	47.82	68.20	20.38	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac20-5280
EUT Model: PH81
Test distance: 3m

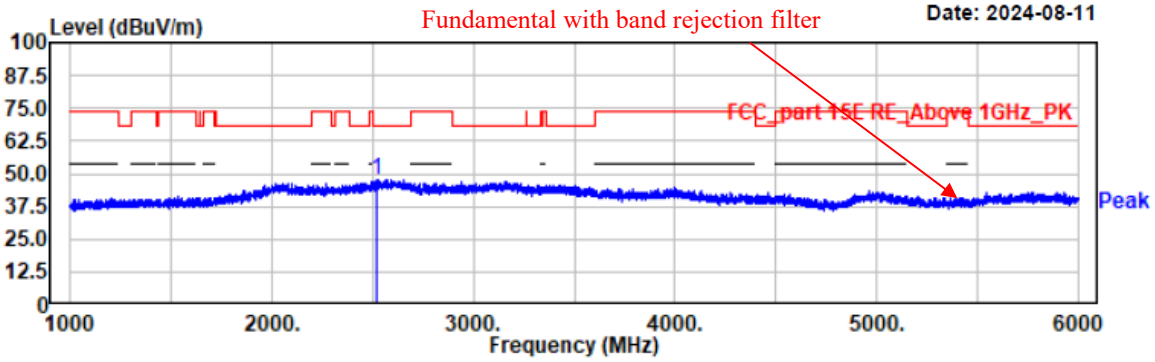
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2655.50	41.94	5.94	47.88	68.20	20.32	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac20-5320
EUT Model: PH81
Test distance: 3m

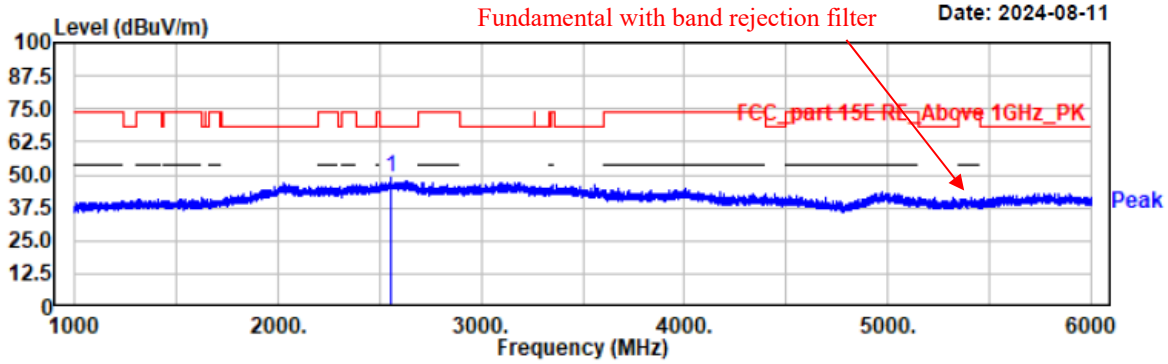
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2523.50	41.99	5.65	47.64	68.20	20.56	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac20-5320
EUT Model: PH81
Test distance: 3m

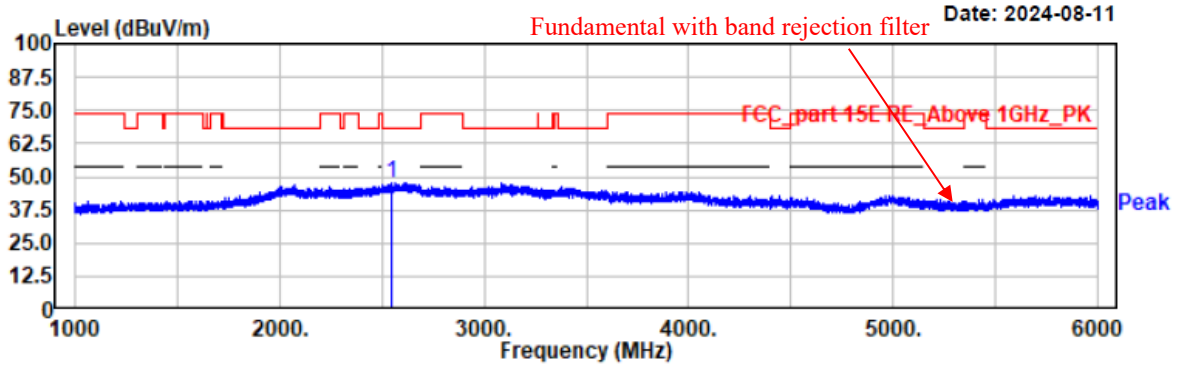
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2558.50	42.59	6.05	48.64	68.20	19.56	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac40-5270
EUT Model: PH81
Test distance: 3m

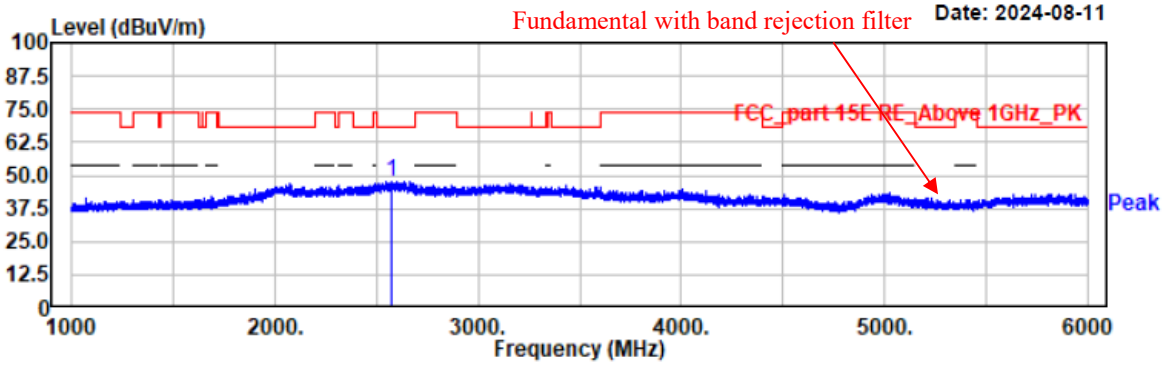
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2546.00	41.96	5.95	47.91	68.20	20.29	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac40-5270
EUT Model: PH81
Test distance: 3m

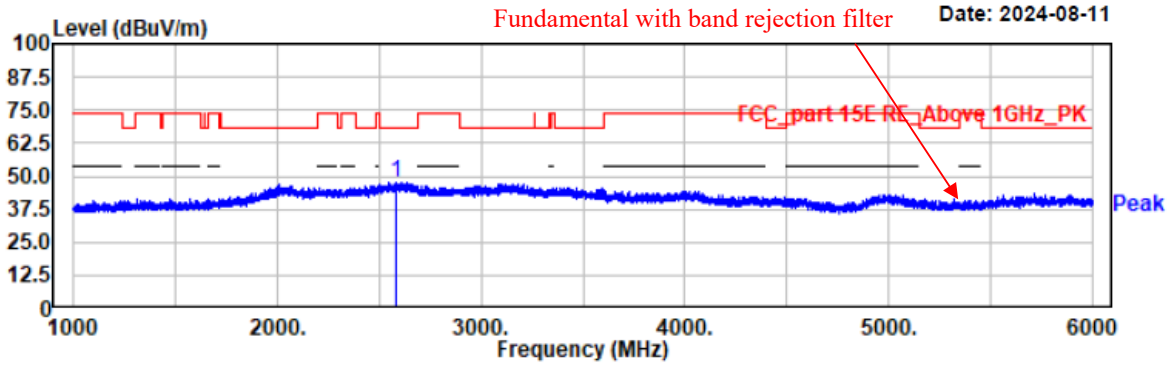
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2573.00	41.74	6.10	47.84	68.20	20.36	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac40-5310
EUT Model: PH81
Test distance: 3m

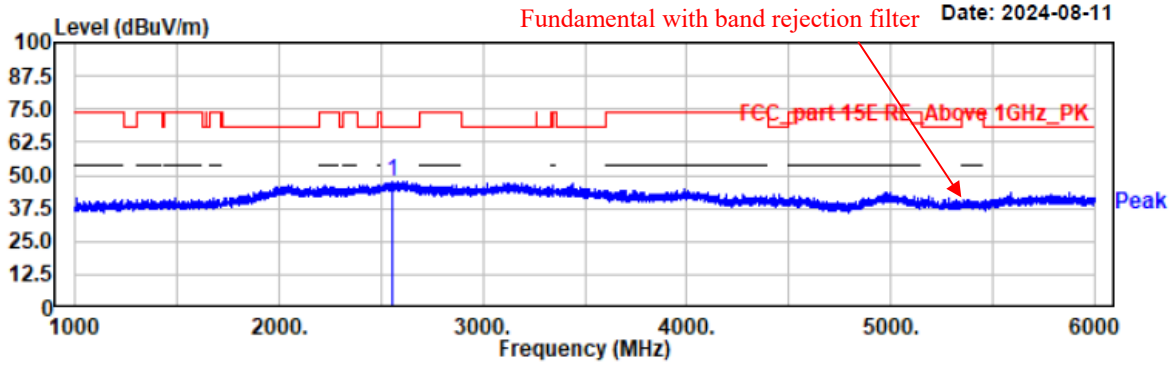
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2582.00	41.51	6.13	47.64	68.20	20.56	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac40-5310
EUT Model: PH81
Test distance: 3m

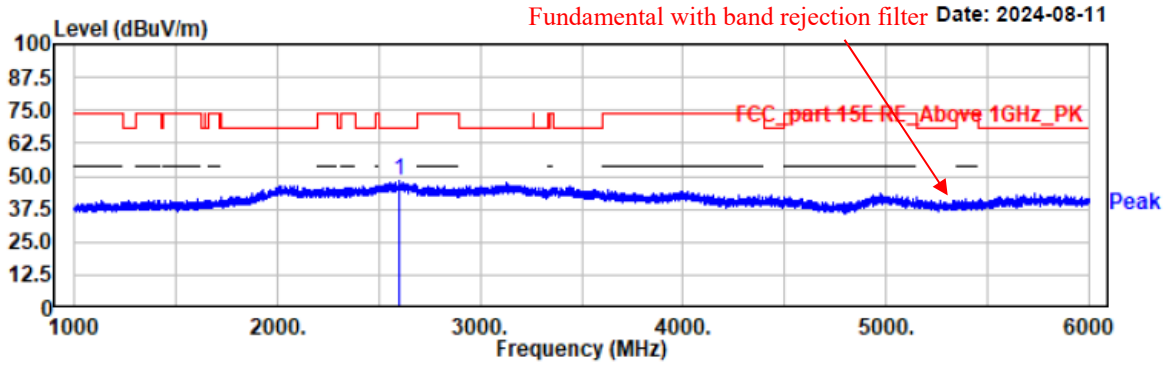
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2552.50	41.90	6.02	47.92	68.20	20.28	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac80-5290
EUT Model: PH81
Test distance: 3m

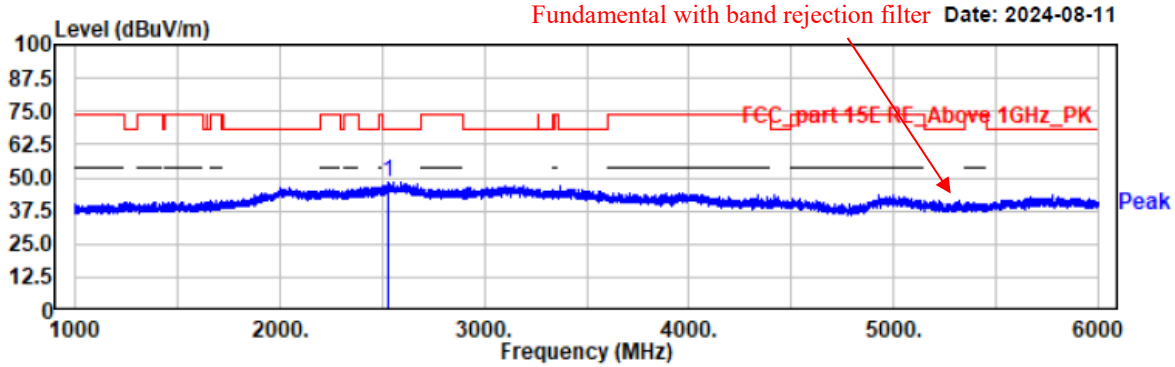
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2597.00	42.06	6.19	48.25	68.20	19.95	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac80-5290
EUT Model: PH81
Test distance: 3m

Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ

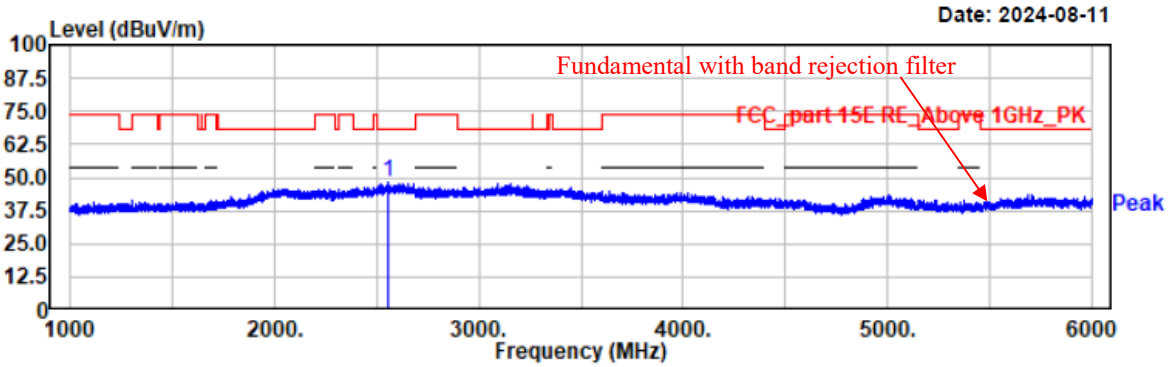


Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2527.00	42.64	5.69	48.33	68.20	19.87	vertical	Peak

For 5470-5725 MHz:

Project No.: 2407T76694E-RF
Test Mode: 11a-5500
EUT Model: PH81
Test distance: 3m

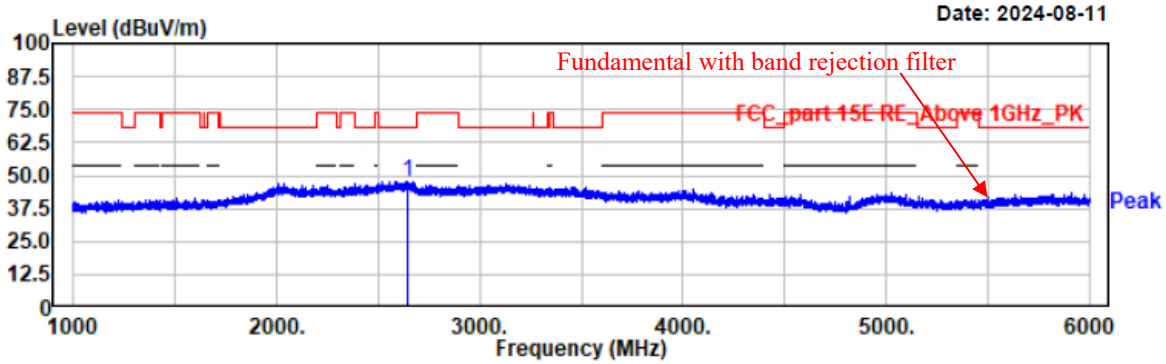
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2556.00	42.48	6.04	48.52	68.20	19.68	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11a-5500
EUT Model: PH81
Test distance: 3m

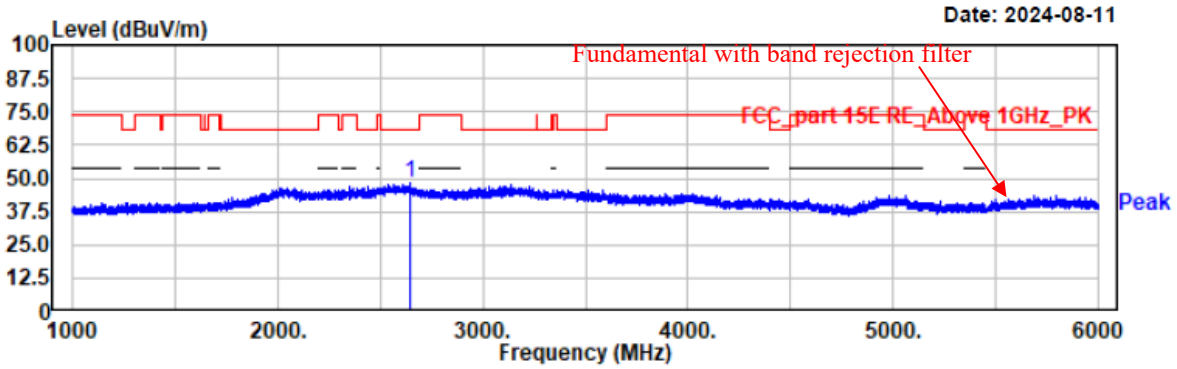
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2647.50	41.64	6.10	47.74	68.20	20.46	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11a-5580
EUT Model: PH81
Test distance: 3m

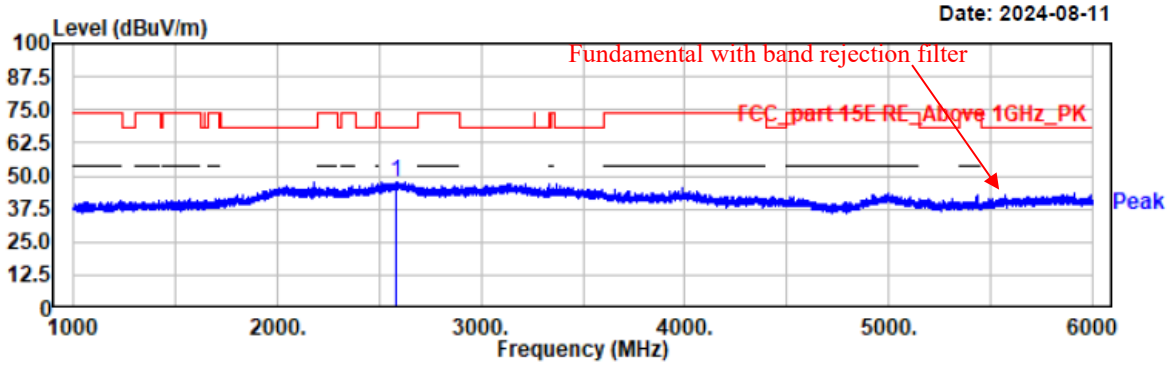
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2644.50	41.93	6.10	48.03	68.20	20.17	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11a-5580
EUT Model: PH81
Test distance: 3m

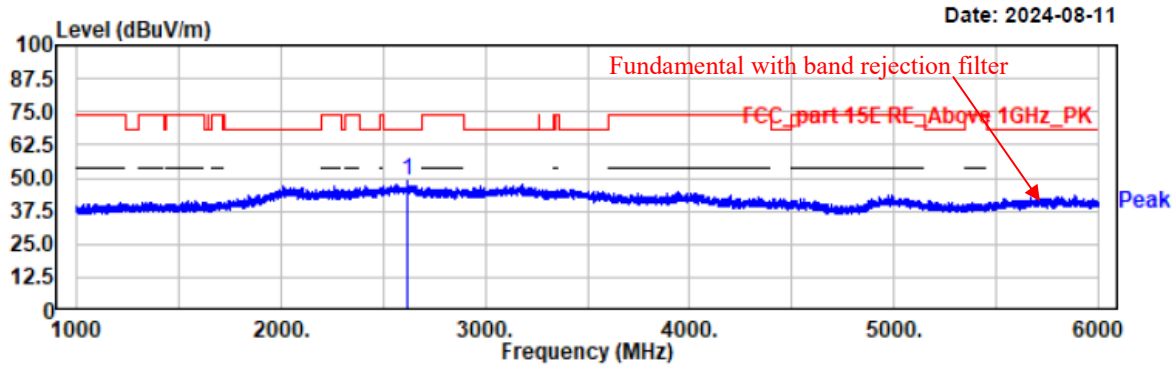
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2582.00	41.57	6.13	47.70	68.20	20.50	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11a-5700
EUT Model: PH81
Test distance: 3m

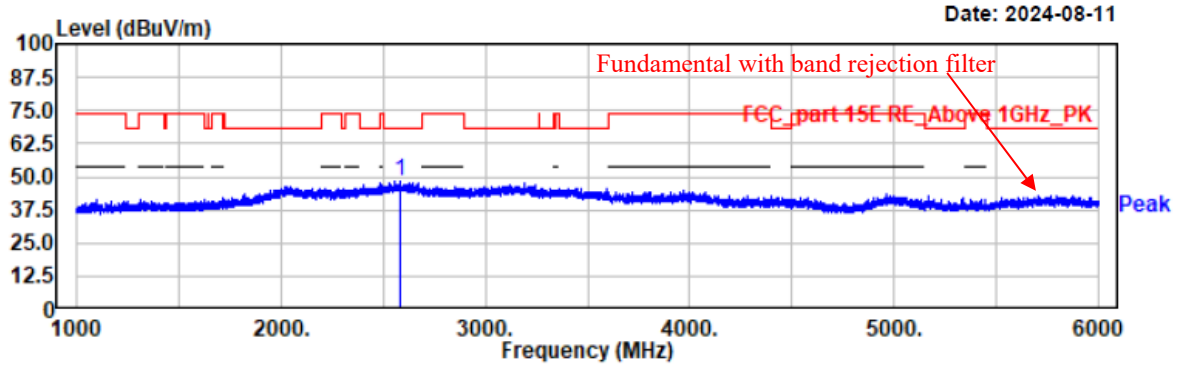
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2622.50	42.85	6.14	48.99	68.20	19.21	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11a-5700
EUT Model: PH81
Test distance: 3m

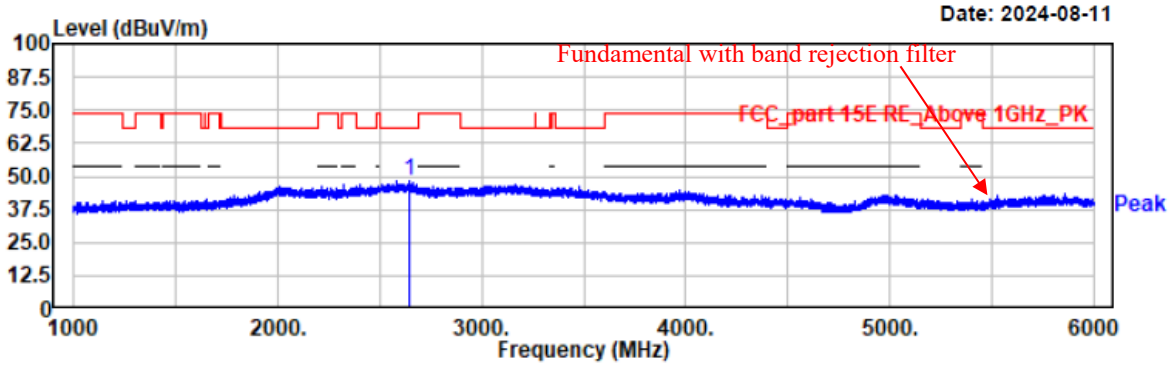
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2587.00	42.35	6.16	48.51	68.20	19.69	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac20-5500
EUT Model: PH81
Test distance: 3m

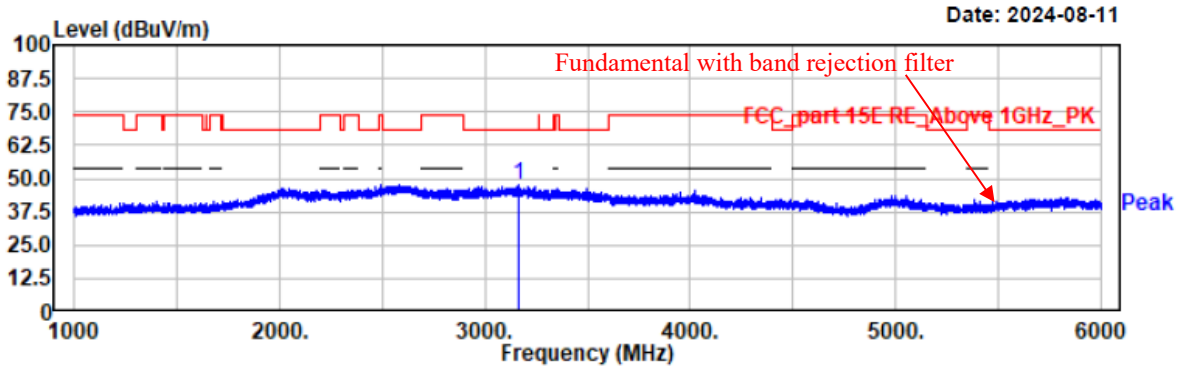
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2643.00	42.04	6.10	48.14	68.20	20.06	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac20-5500
EUT Model: PH81
Test distance: 3m

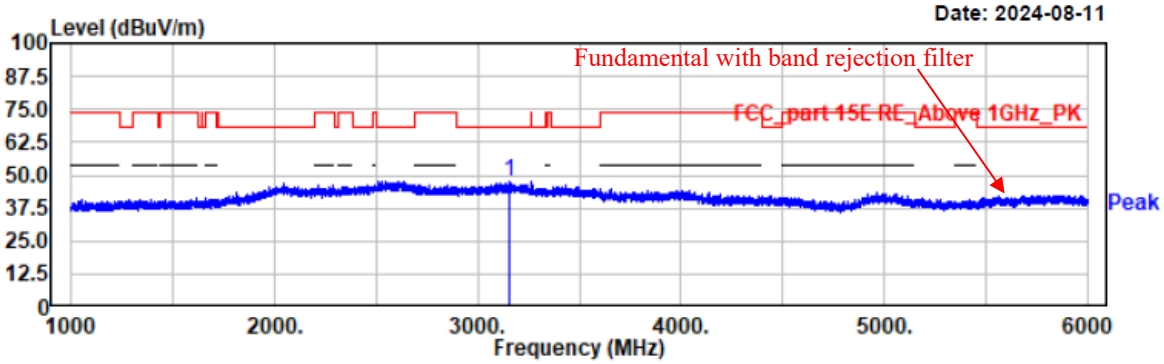
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
3168.50	41.32	6.19	47.51	68.20	20.69	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac20-5580
EUT Model: PH81
Test distance: 3m

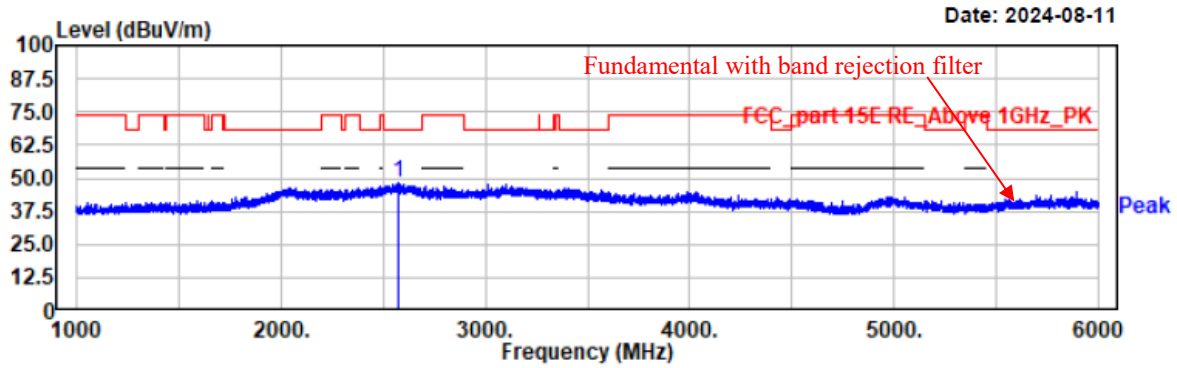
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
3153.50	41.58	6.18	47.76	68.20	20.44	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac20-5580
EUT Model: PH81
Test distance: 3m

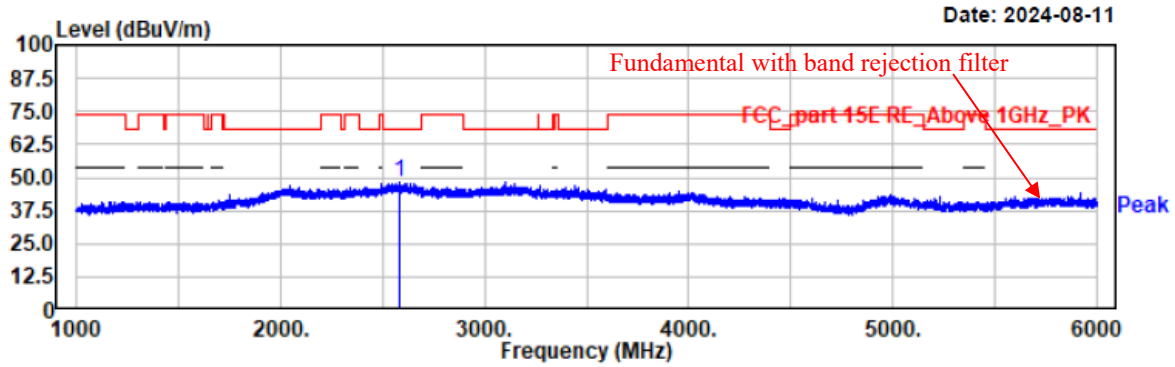
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2577.50	42.02	6.12	48.14	68.20	20.06	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac20-5700
EUT Model: PH81
Test distance: 3m

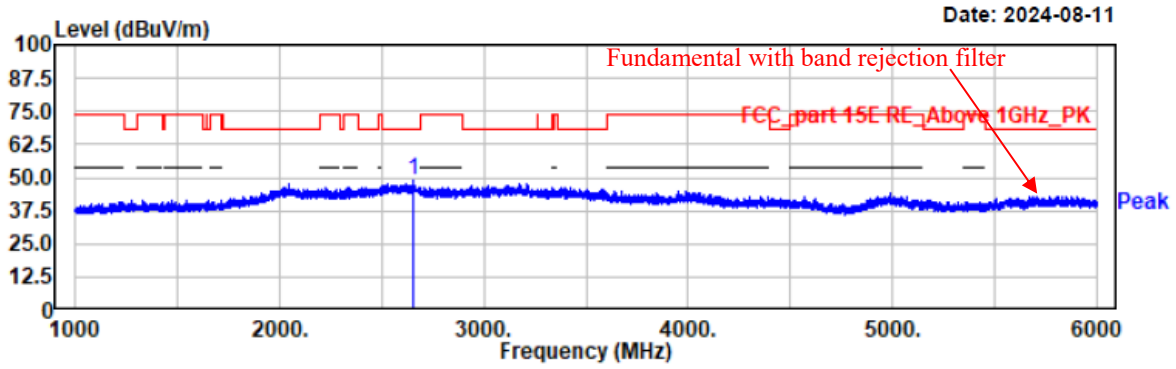
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2582.00	42.16	6.13	48.29	68.20	19.91	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac20-5700
EUT Model: PH81
Test distance: 3m

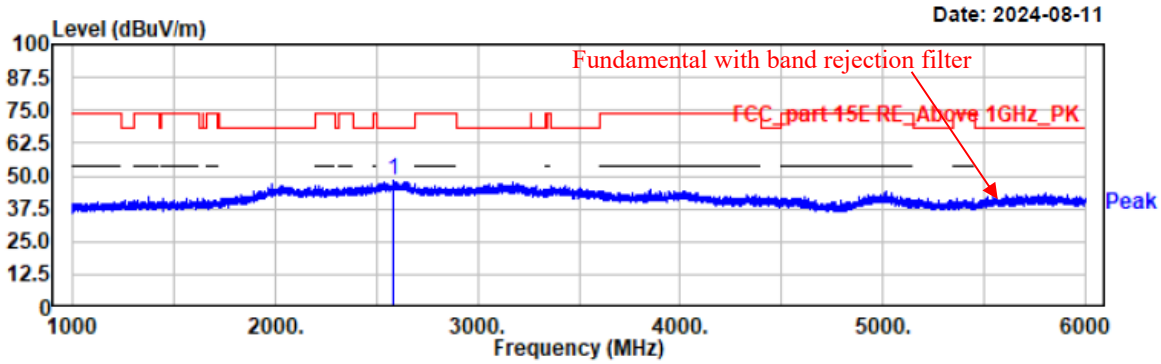
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2652.00	43.11	6.04	49.15	68.20	19.05	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac40-5510
EUT Model: PH81
Test distance: 3m

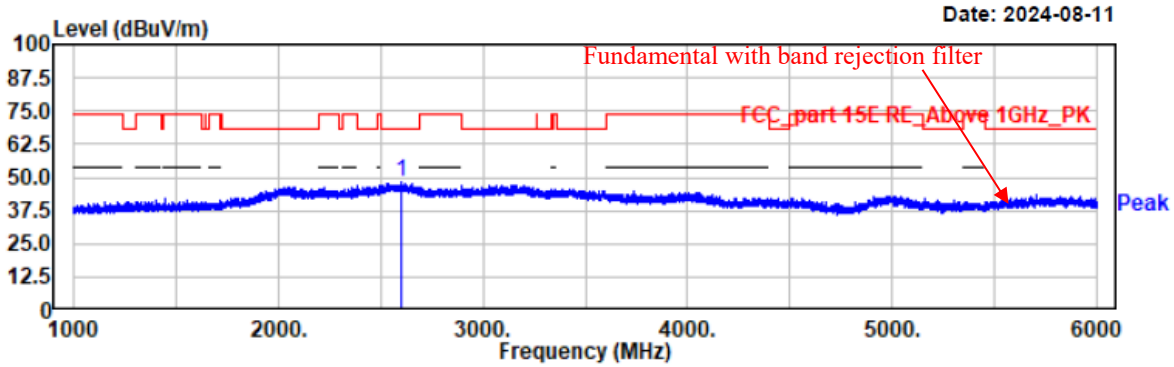
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2581.50	42.47	6.13	48.60	68.20	19.60	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac40-5510
EUT Model: PH81
Test distance: 3m

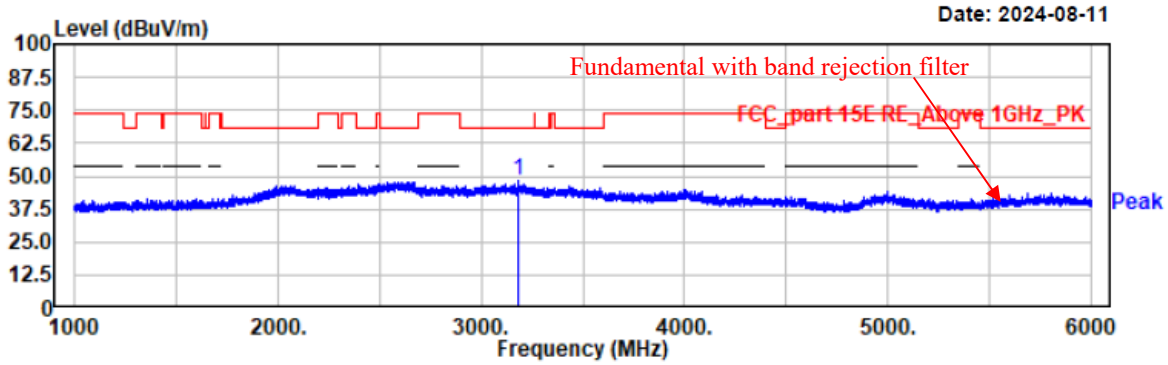
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2603.00	41.91	6.18	48.09	68.20	20.11	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac40-5550
EUT Model: PH81
Test distance: 3m

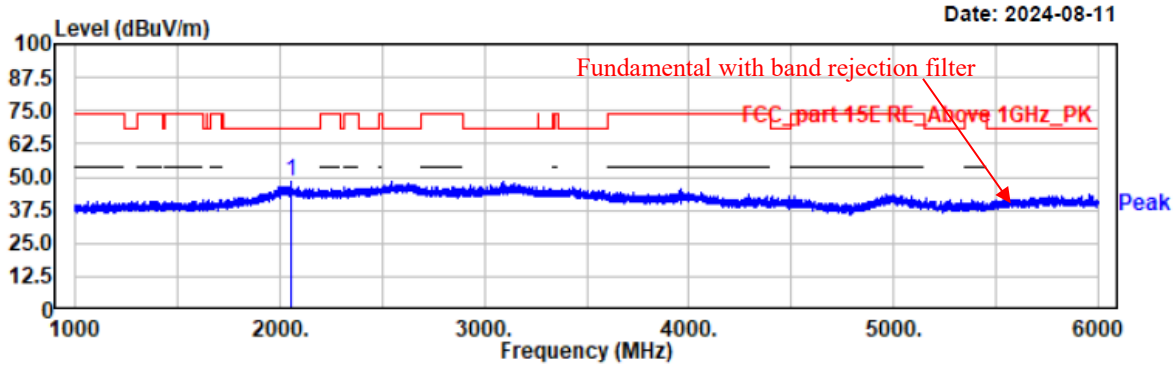
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
3185.00	42.14	6.19	48.33	68.20	19.87	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac40-5550
EUT Model: PH81
Test distance: 3m

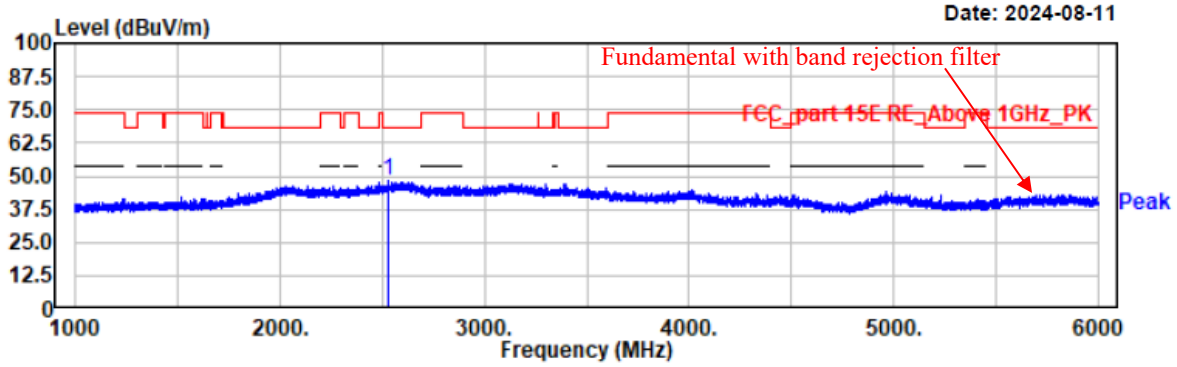
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2056.00	44.42	3.93	48.35	68.20	19.85	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac40-5670
EUT Model: PH81
Test distance: 3m

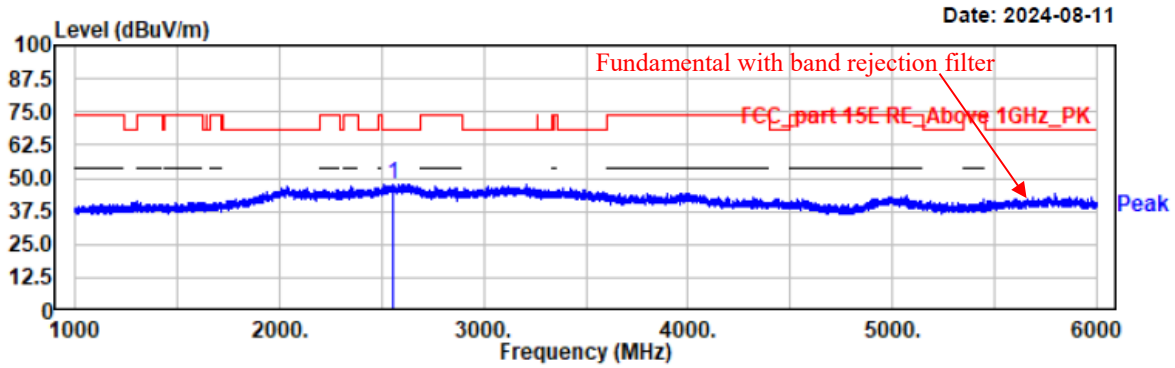
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2530.00	42.28	5.74	48.02	68.20	20.18	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac40-5670
EUT Model: PH81
Test distance: 3m

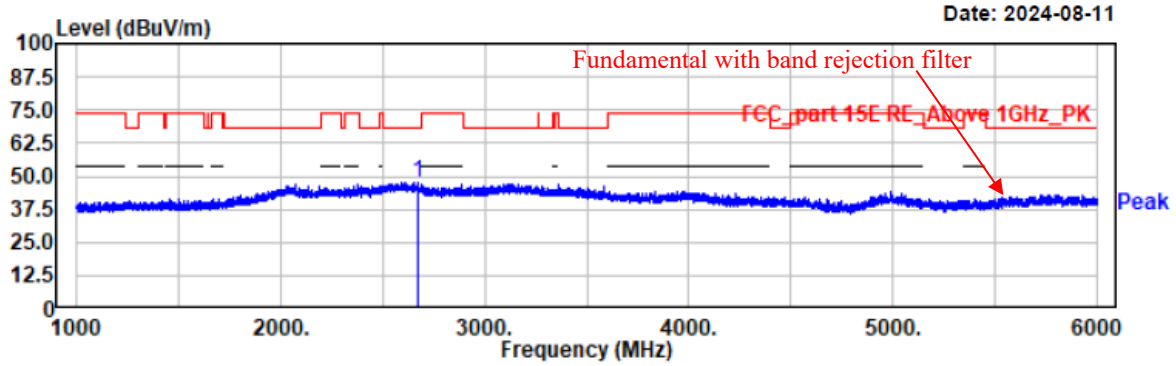
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2553.50	41.74	6.02	47.76	68.20	20.44	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac80-5530
EUT Model: PH81
Test distance: 3m

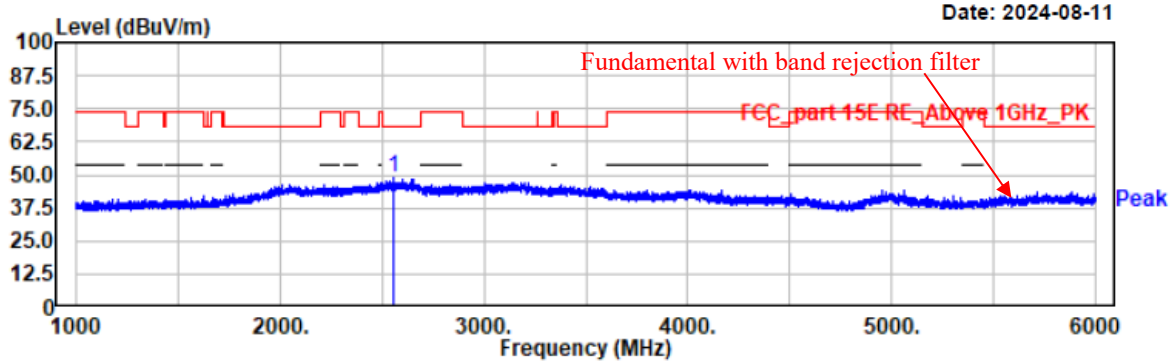
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2673.00	42.16	5.48	47.64	68.20	20.56	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac80-5530
EUT Model: PH81
Test distance: 3m

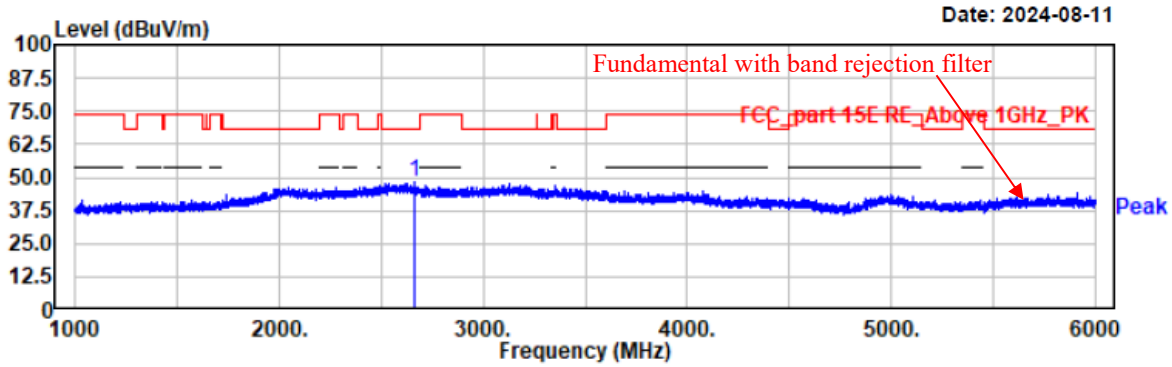
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2558.00	42.83	6.05	48.88	68.20	19.32	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac80-5610
EUT Model: PH81
Test distance: 3m

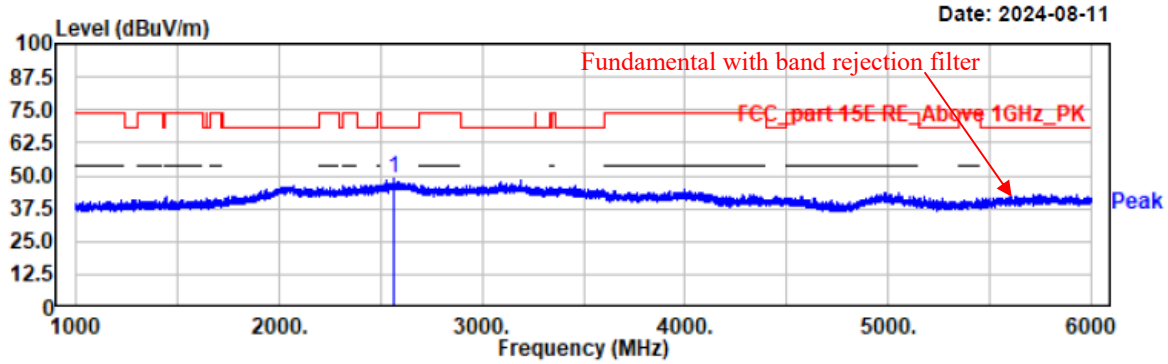
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2664.50	42.49	5.70	48.19	68.20	20.01	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac80-5610
EUT Model: PH81
Test distance: 3m

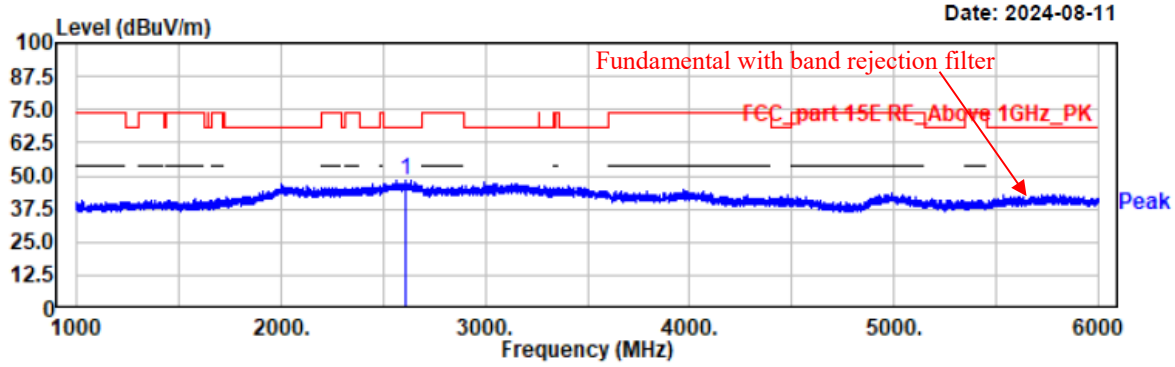
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2568.50	42.78	6.09	48.87	68.20	19.33	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac80-5690
EUT Model: PH81
Test distance: 3m

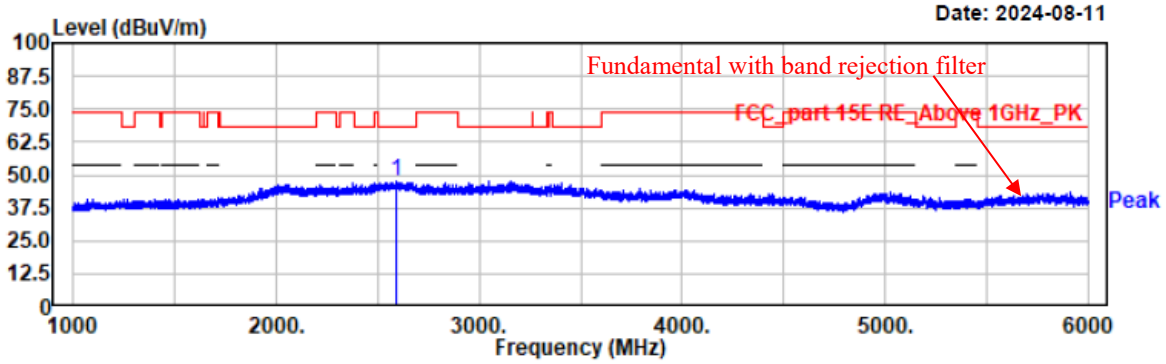
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2613.00	42.21	6.16	48.37	68.20	19.83	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac80-5690
EUT Model: PH81
Test distance: 3m

Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ

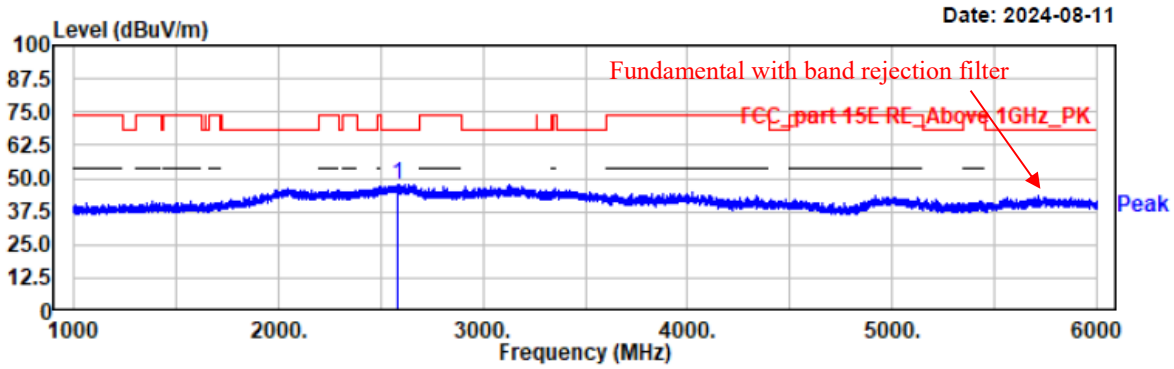


Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2595.00	41.42	6.18	47.60	68.20	20.60	vertical	Peak

For 5725-5850 MHz:

Project No.: 2407T76694E-RF
Test Mode: 11a-5745
EUT Model: PH81
Test distance: 3m

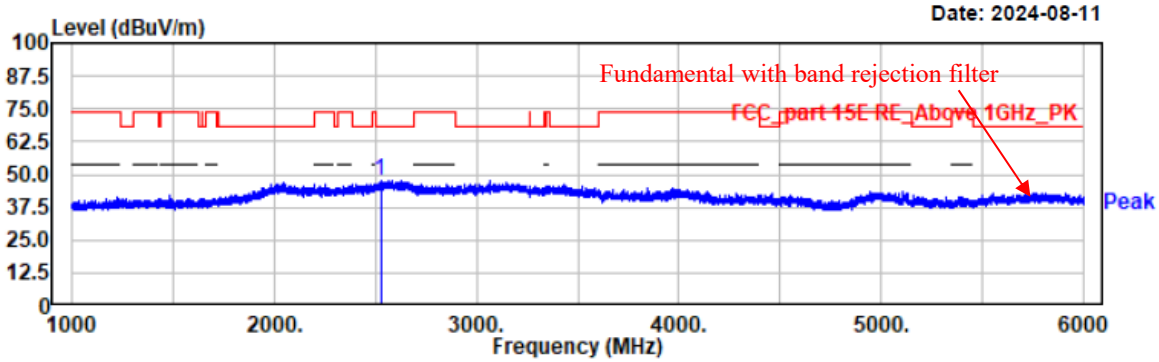
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2584.50	41.75	6.14	47.89	68.20	20.31	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11a-5745
EUT Model: PH81
Test distance: 3m

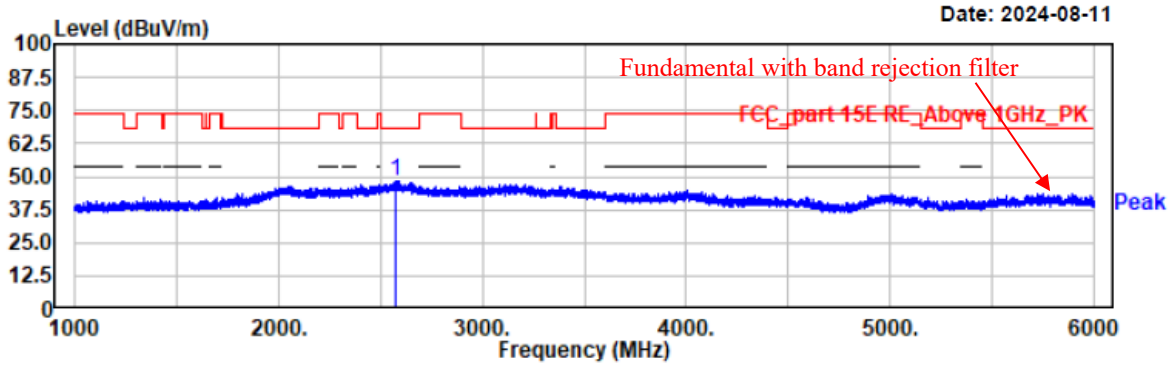
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2524.50	41.87	5.66	47.53	68.20	20.67	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11a-5785
EUT Model: PH81
Test distance: 3m

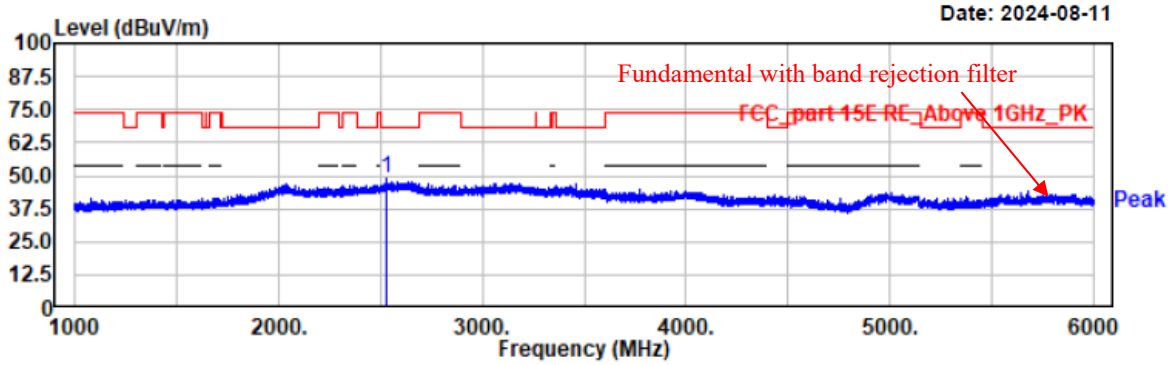
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2576.50	41.95	6.12	48.07	68.20	20.13	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11a-5785
EUT Model: PH81
Test distance: 3m

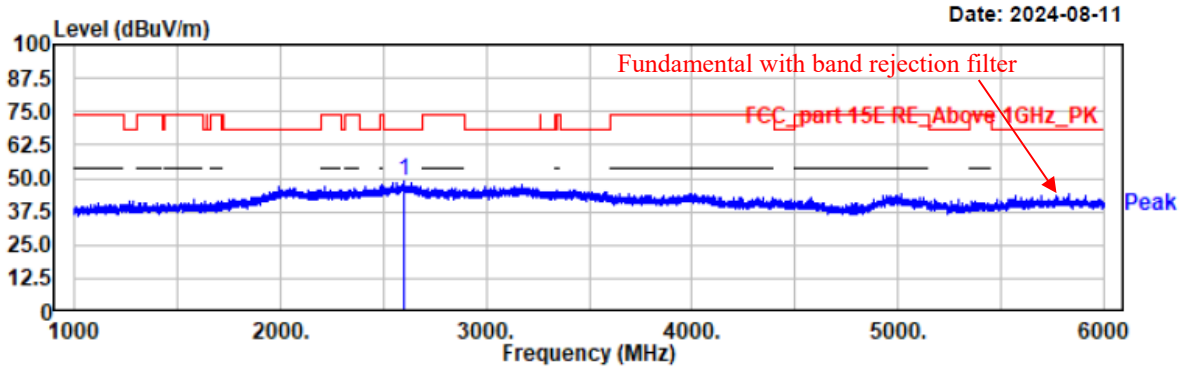
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2531.50	42.89	5.76	48.65	68.20	19.55	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11a-5825
EUT Model: PH81
Test distance: 3m

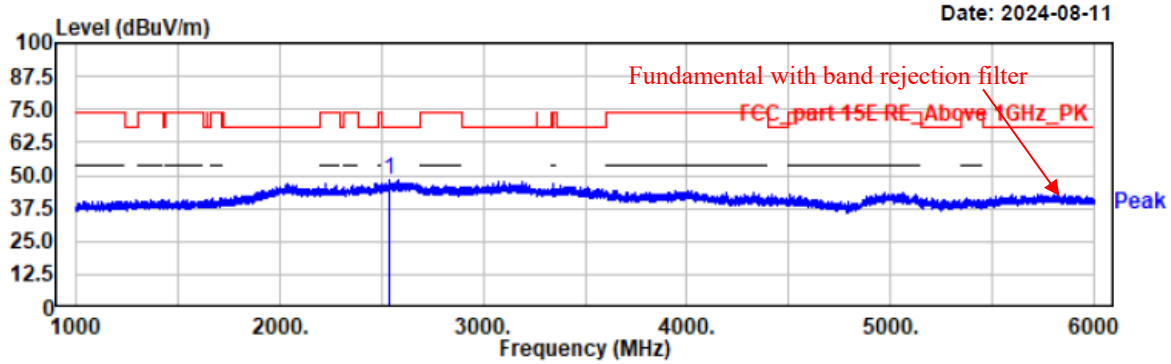
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2601.50	42.74	6.19	48.93	68.20	19.27	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11a-5825
EUT Model: PH81
Test distance: 3m

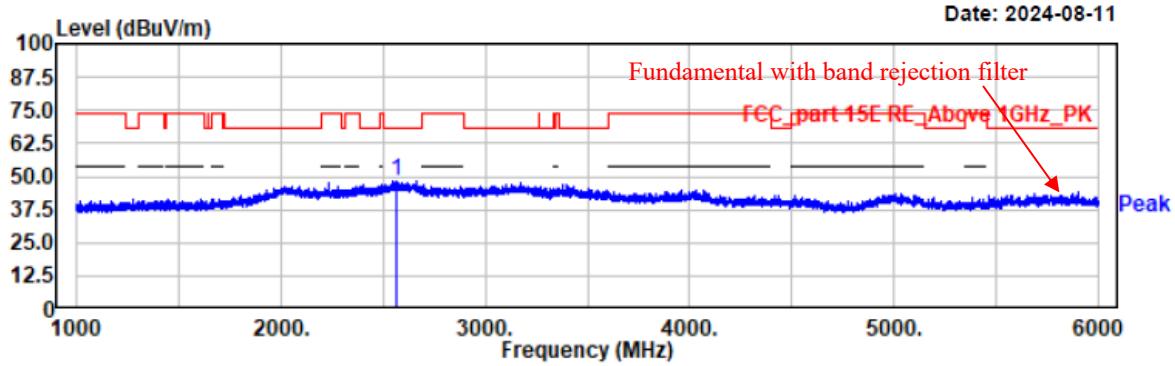
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2538.50	42.72	5.85	48.57	68.20	19.63	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac20-5745
EUT Model: PH81
Test distance: 3m

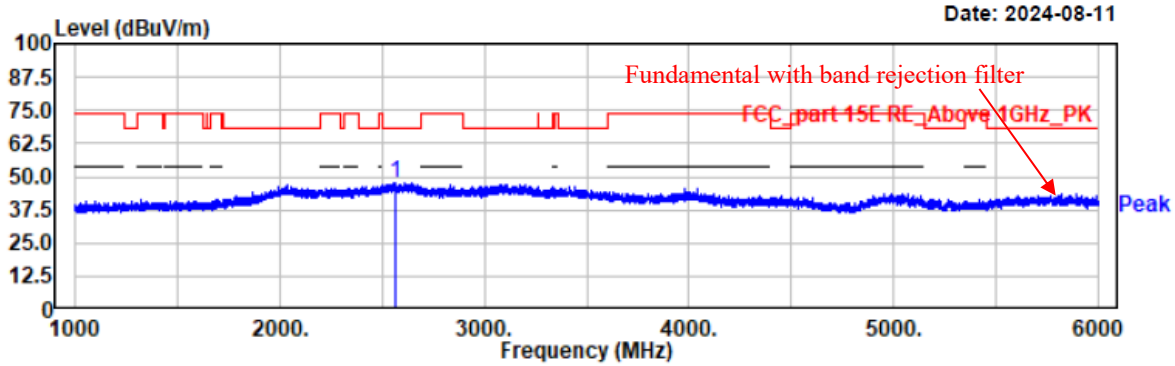
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2561.50	42.16	6.06	48.22	68.20	19.98	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac20-5745
EUT Model: PH81
Test distance: 3m

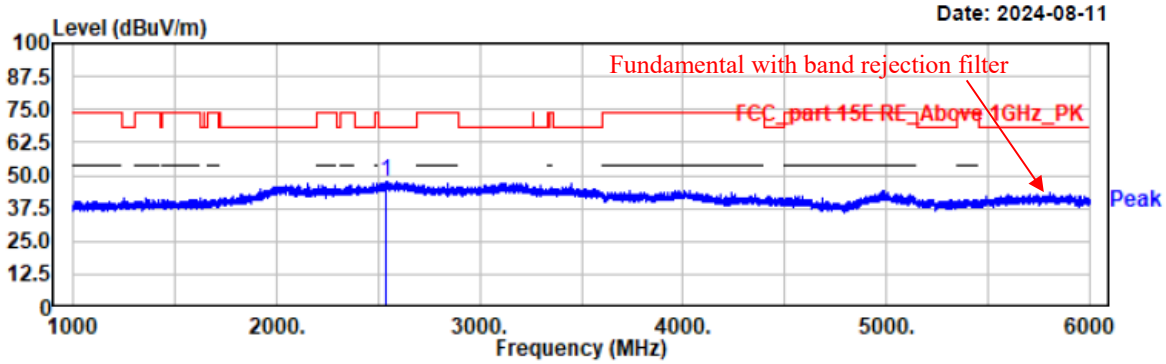
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2563.50	41.82	6.06	47.88	68.20	20.32	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac20-5785
EUT Model: PH81
Test distance: 3m

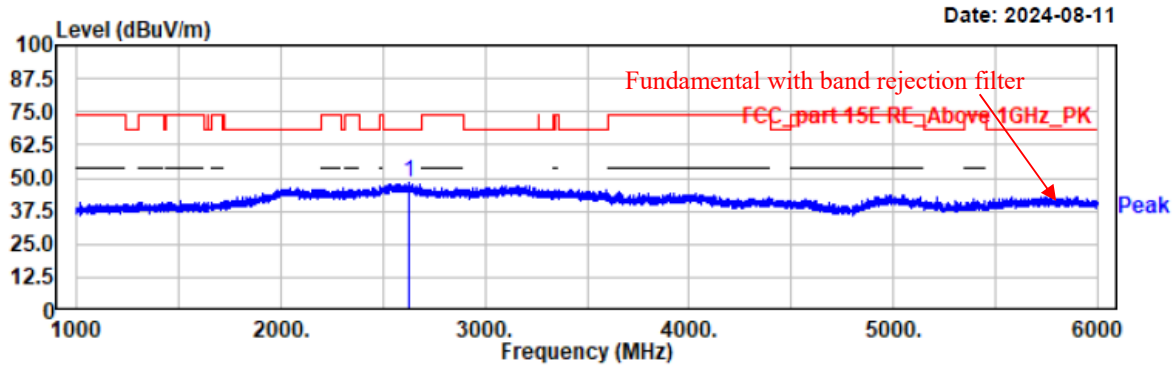
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2537.00	41.70	5.84	47.54	68.20	20.66	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac20-5785
EUT Model: PH81
Test distance: 3m

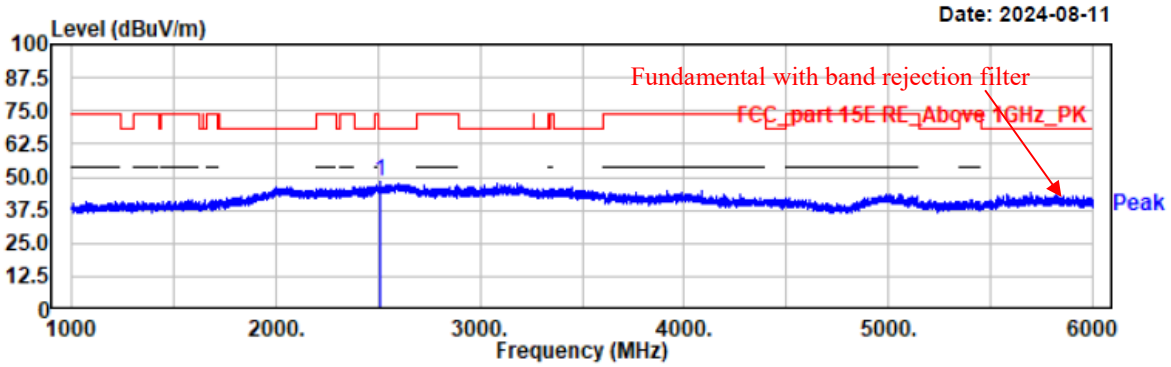
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2625.50	41.83	6.15	47.98	68.20	20.22	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac20-5825
EUT Model: PH81
Test distance: 3m

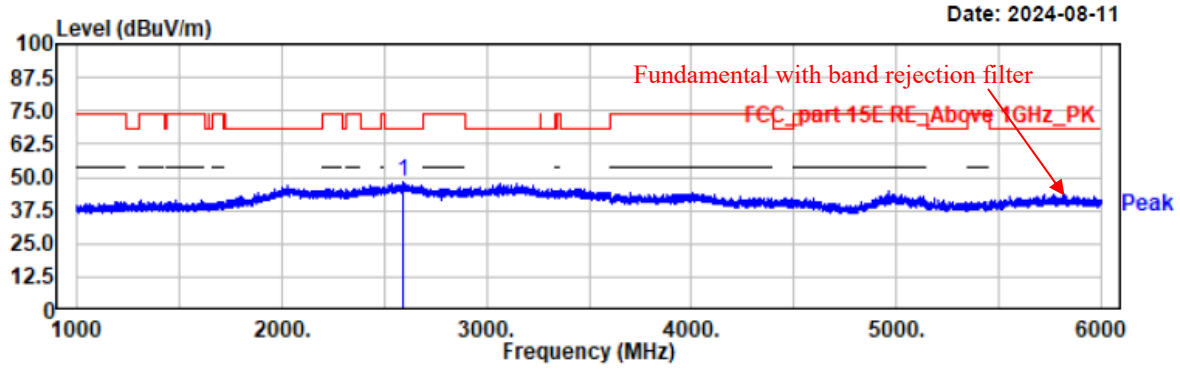
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2515.00	42.87	5.54	48.41	68.20	19.79	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac20-5825
EUT Model: PH81
Test distance: 3m

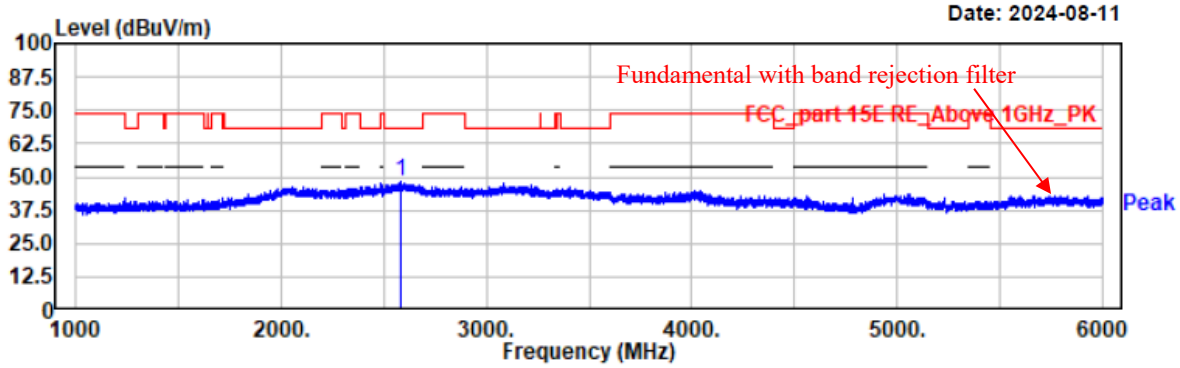
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2589.50	41.94	6.17	48.11	68.20	20.09	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac40-5755
EUT Model: PH81
Test distance: 3m

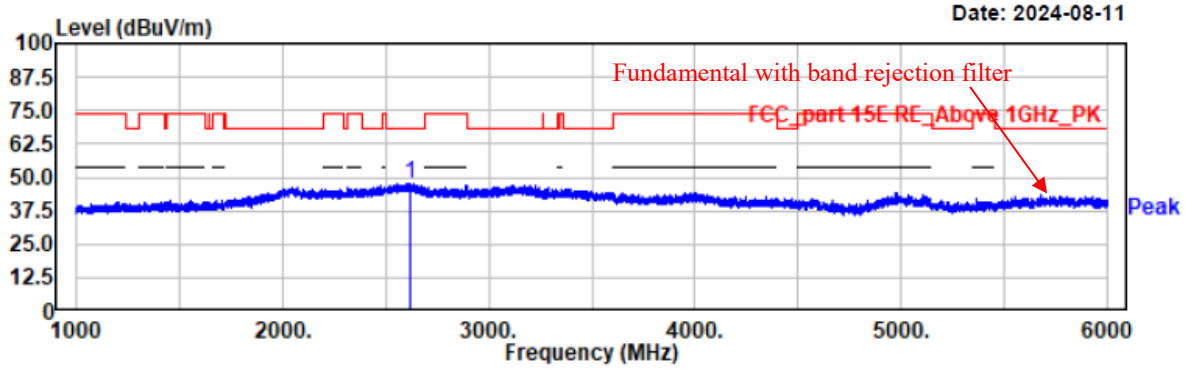
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2579.50	41.83	6.13	47.96	68.20	20.24	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac40-5755
EUT Model: PH81
Test distance: 3m

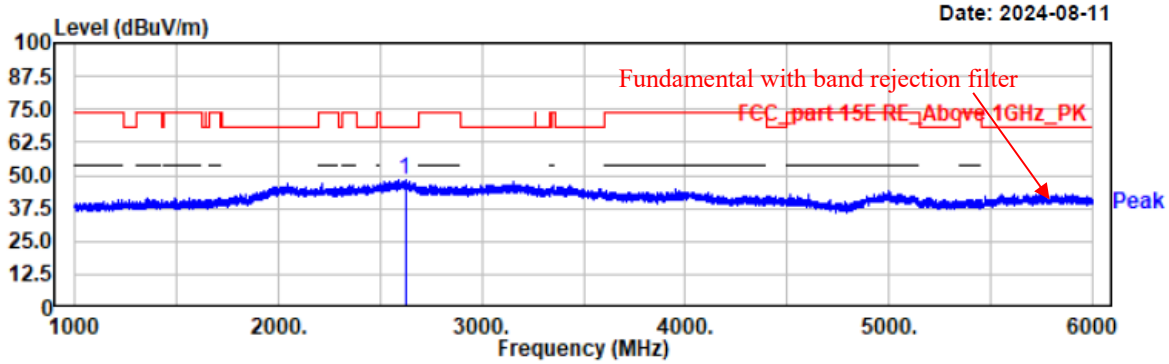
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2617.00	41.48	6.16	47.64	68.20	20.56	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac40-5795
EUT Model: PH81
Test distance: 3m

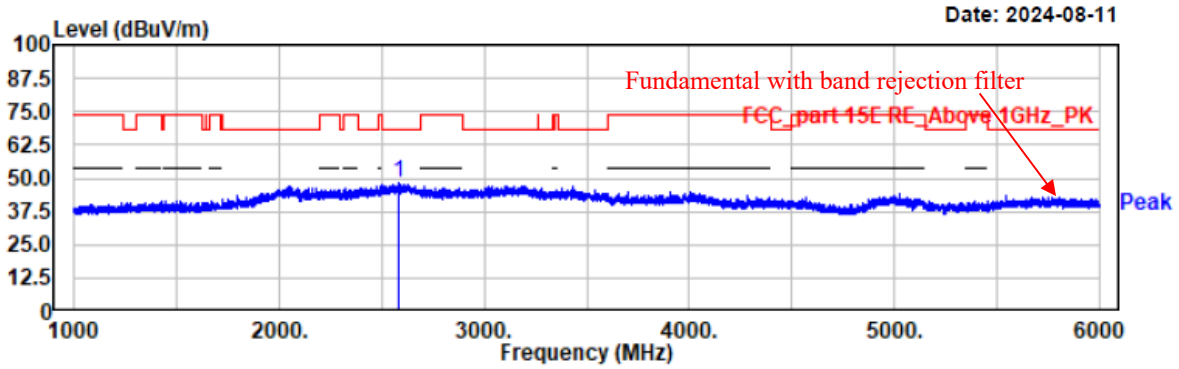
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2623.00	42.14	6.13	48.27	68.20	19.93	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac40-5795
EUT Model: PH81
Test distance: 3m

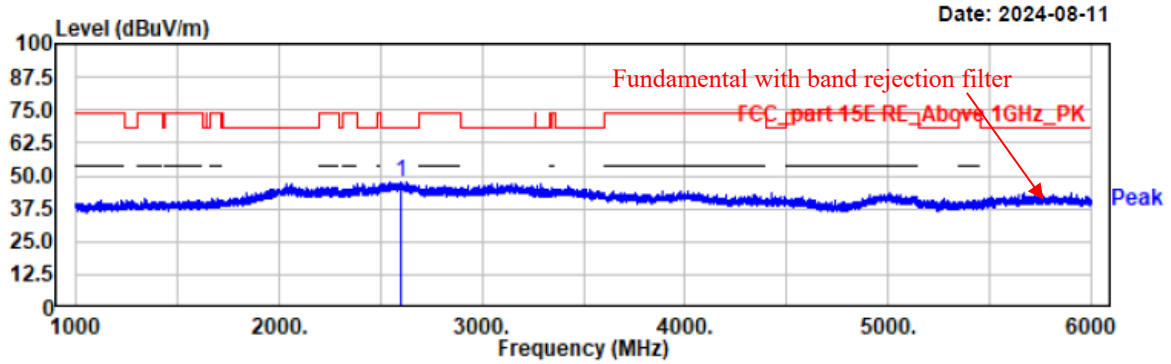
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2586.50	41.82	6.15	47.97	68.20	20.23	vertical	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac80-5775
EUT Model: PH81
Test distance: 3m

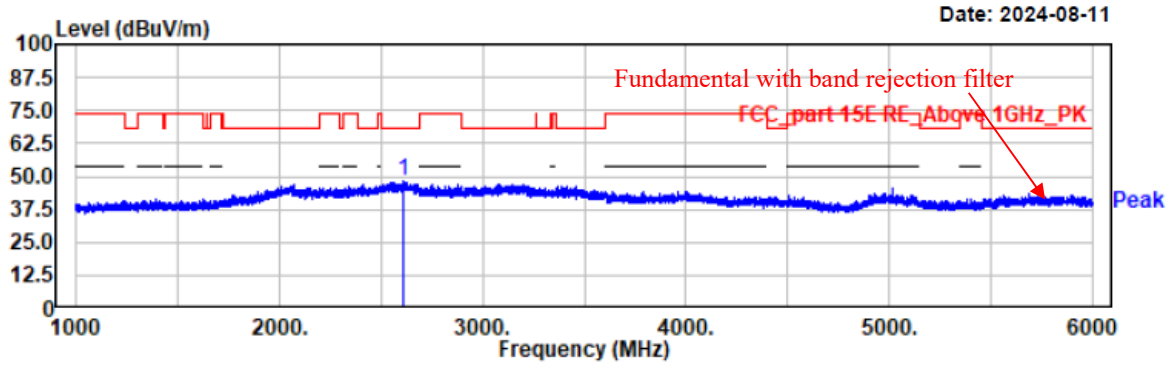
Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2600.50	41.26	6.20	47.46	68.20	20.74	horizontal	Peak

Project No.: 2407T76694E-RF
Test Mode: 11ac80-5775
EUT Model: PH81
Test distance: 3m

Temp/Humi: 22.9℃/55%/100.4kPa
Tested by: Wlif Wu
Power Source: AC 120V/60HZ



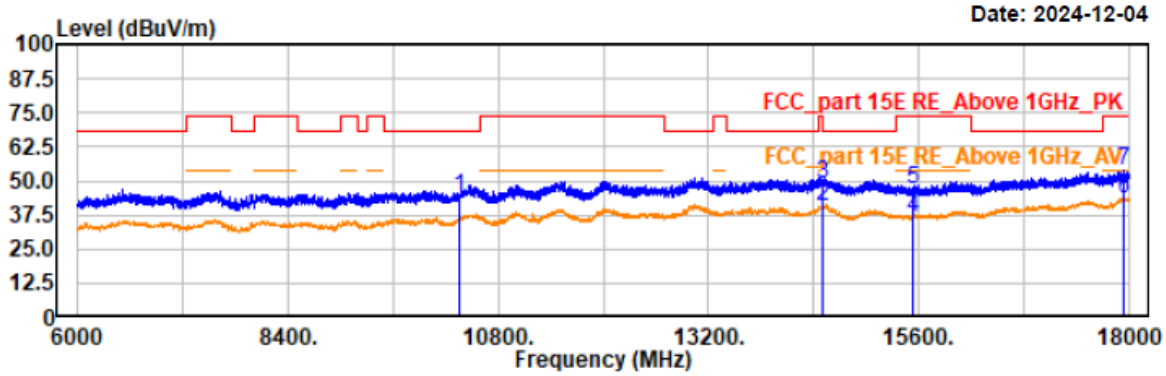
Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2613.50	42.36	6.16	48.52	68.20	19.68	vertical	Peak

4) 6GHz~18GHz

For 5150-5250 MHz:

Project No.: 2407T76694E-RF
Test Mode: 11a-5180
EUT Model: PH81
Test distance: 3m

Temp/Humi/ATM: 22.9℃/54%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz



Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
10359.60	42.24	1.62	43.86	68.20	24.34	horizontal	Peak
14493.60	35.37	4.99	40.36	54.00	13.64	horizontal	Average
14493.60	43.91	4.99	48.90	74.00	25.10	horizontal	Peak
15540.00	34.25	2.61	36.86	54.00	17.14	horizontal	Average
15540.00	44.14	2.61	46.75	74.00	27.25	horizontal	Peak
17946.00	35.95	7.66	43.61	54.00	10.39	horizontal	Average
17946.00	45.97	7.66	53.63	74.00	20.37	horizontal	Peak