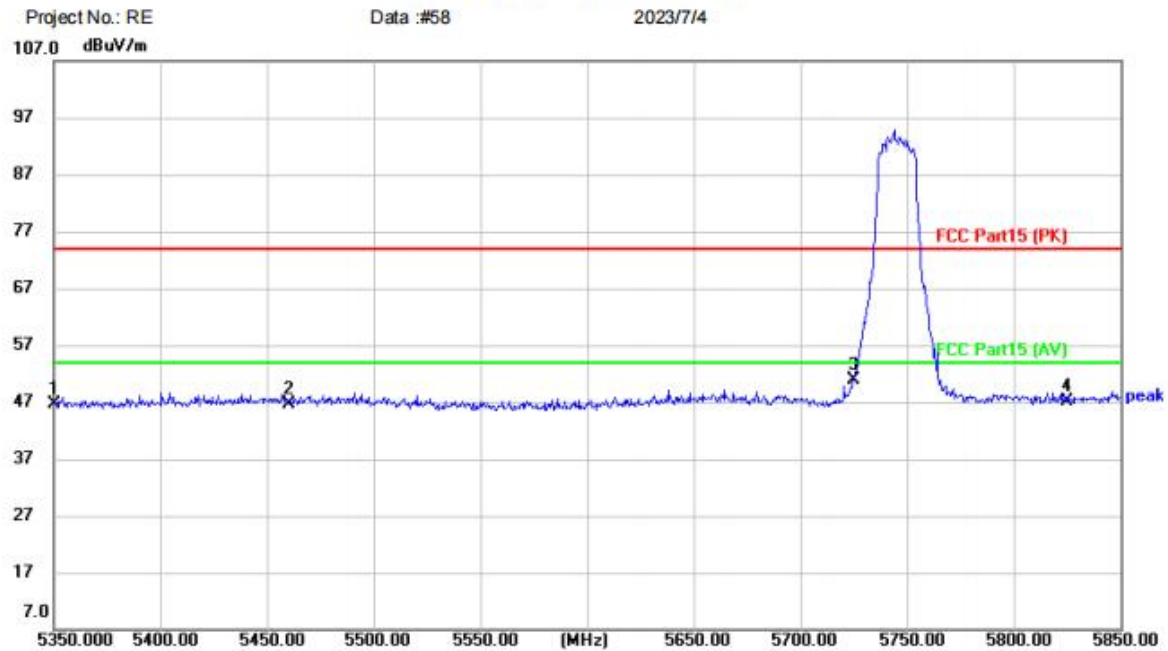


[TestMode: TX band4 a 5745 channel]; [Polarity: Vertical]

Radiated Emission Measurement

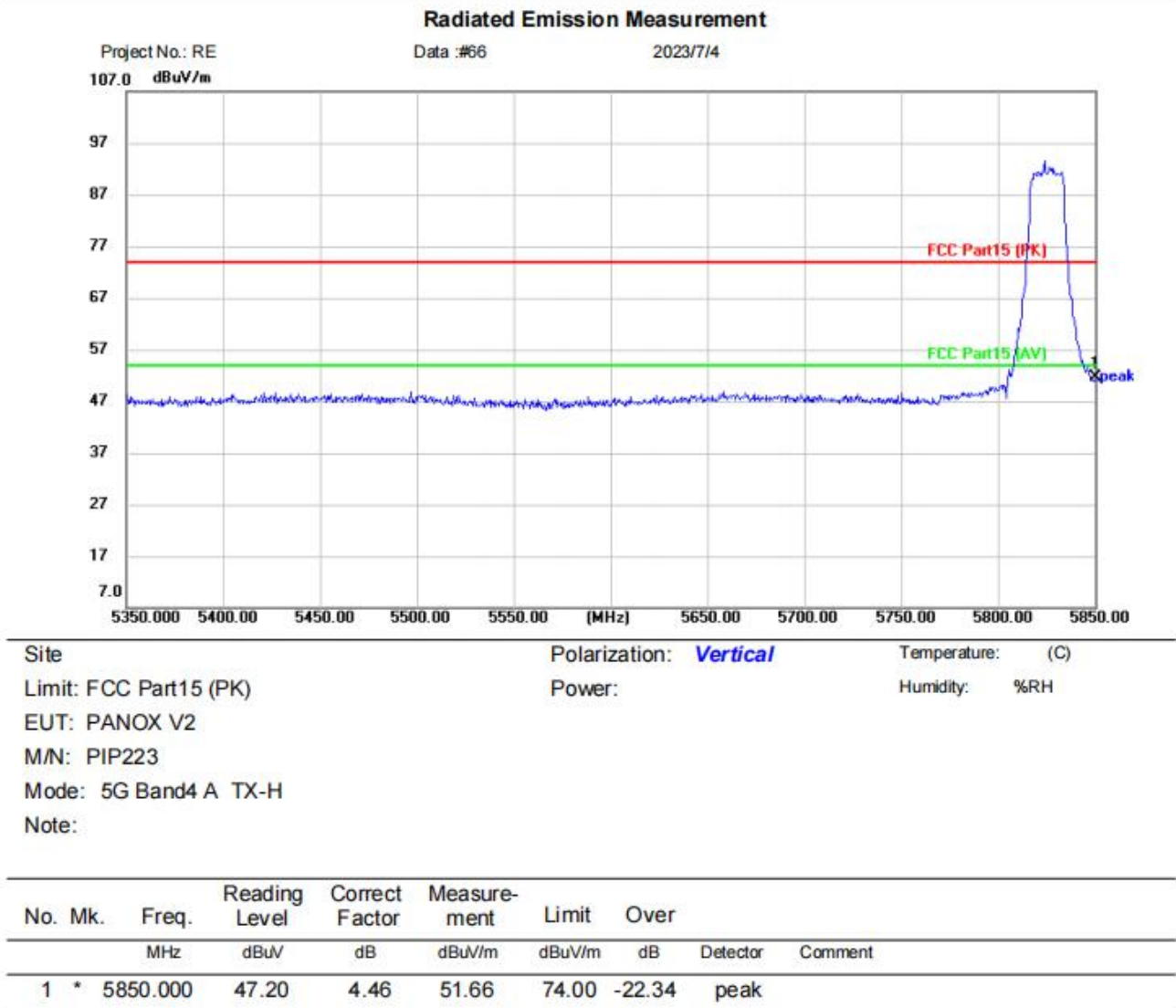


Site Polarization: **Vertical** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: PANOX V2
M/N: PIP223
Mode: 5G Band4 A TX-L
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		5350.000	42.99	3.58	46.57	74.00	-27.43	peak	
2		5460.000	42.89	3.84	46.73	74.00	-27.27	peak	
3	*	5725.000	46.65	4.29	50.94	74.00	-23.06	peak	
4		5825.000	42.87	4.27	47.14	74.00	-26.86	peak	

Test Result: Pass

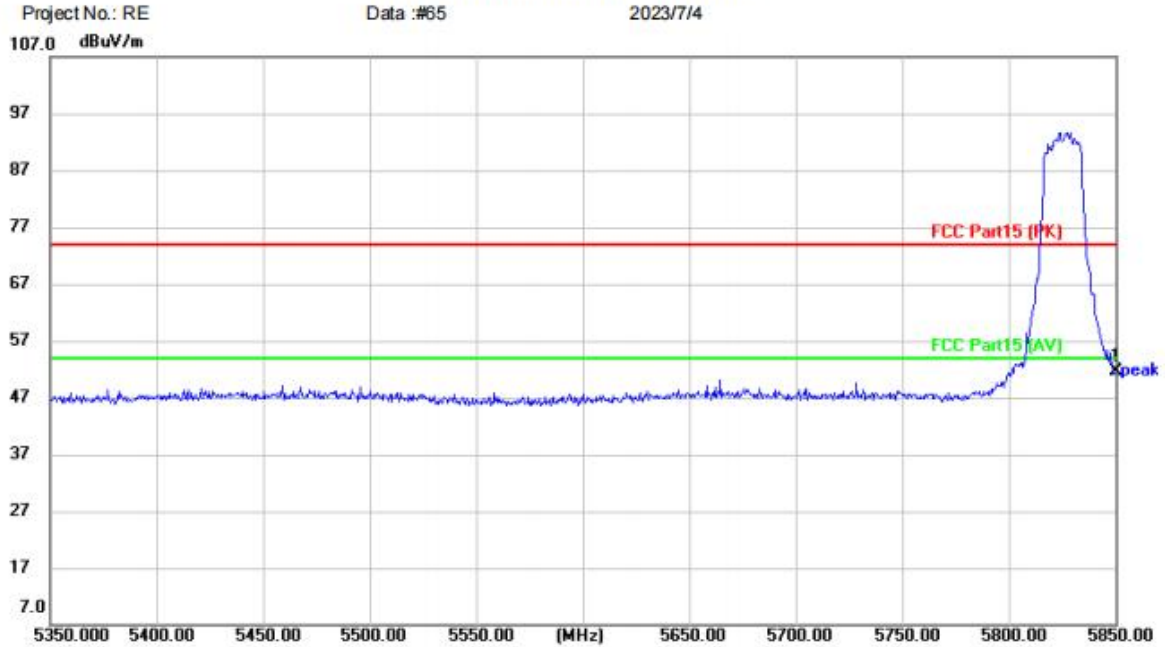
[TestMode: TX band4 a 5825 channel]; [Polarity: Vertical]



Test Result: Pass

[TestMode: TX band4 a 5825 channel]; [Polarity: Horizontal]

Radiated Emission Measurement



Site Polarization: **Horizontal** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: PANOX V2
M/N: PIP223
Mode: 5G Band4 A TX-H
Note:

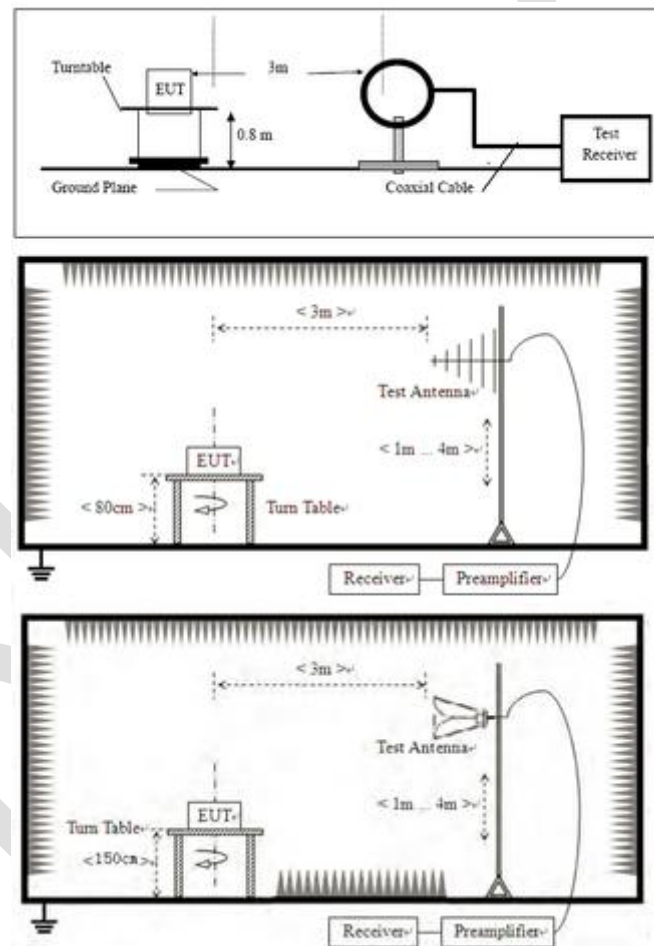
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	5850.000	47.18	4.46	51.64	74.00	-22.36	peak	

Test Result: Pass

12 RADIATED EMISSIONS

Test Standard	47 CFR Part 15, Subpart E 15.407
Test Method	KDB 789033 D02 II G
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Charlie
Temperature	25°C
Humidity	60%

12.1 BLOCK DIAGRAM OF TEST SETUP



12.2 PROCEDURE

- For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest

radiation.

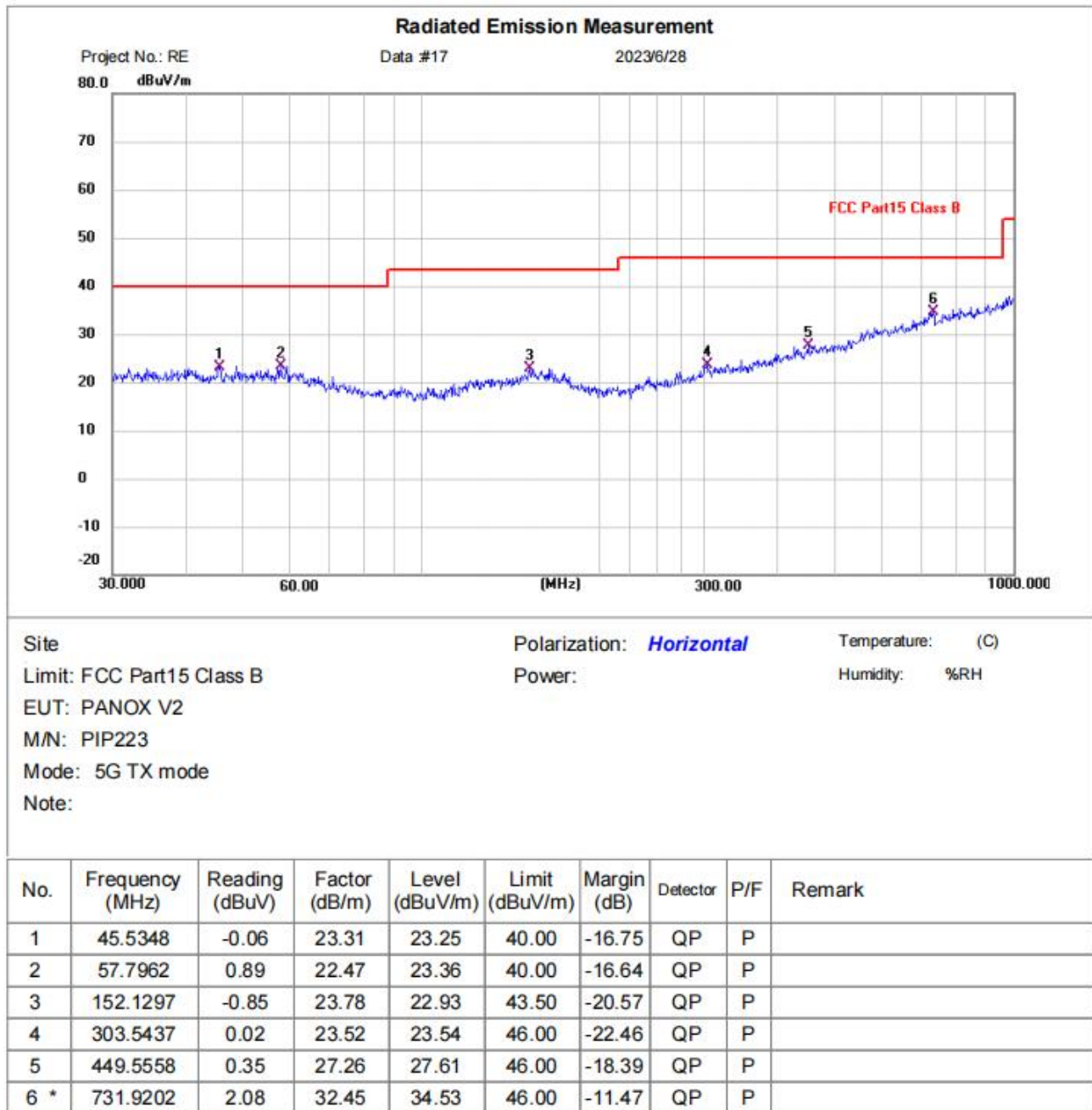
- c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- e. 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g. 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.
- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was complete.

Remark:

- 1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor
- 2. For emission below 1GHz, through the pre-scan found the worst case is the lowest channel of 802.11a. Only the worst case is recorded in the report.
- 3. Scan from 9kHz to 40GHz, the disturbance above 12.75GHz and below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. fundamental frequency is blocked by filter, and only spurious emission is shown.
- 4. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

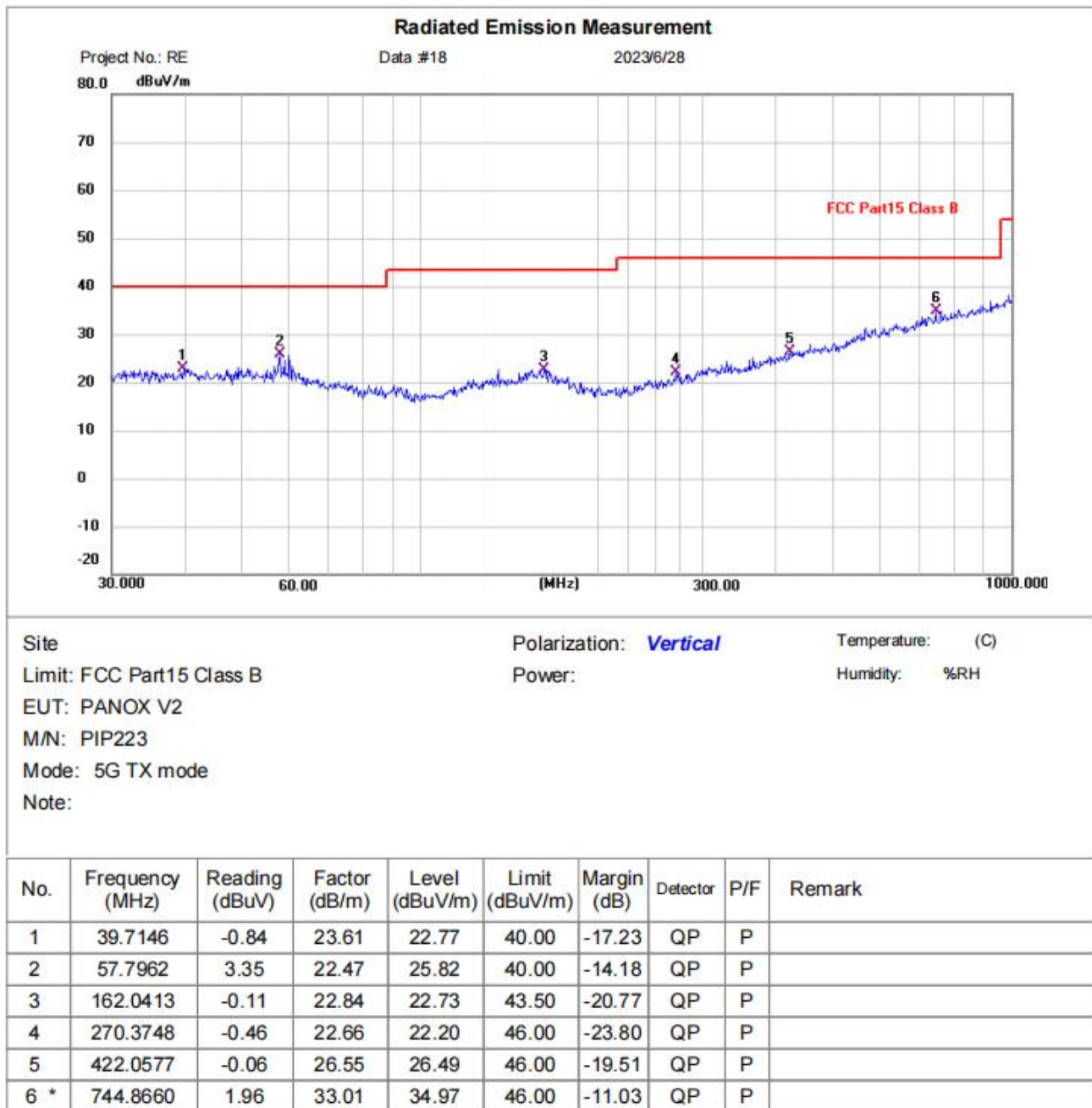
12.3 TEST DATA

[TestMode: TX below 1G]; [Polarity: Horizontal]



Test Result: Pass

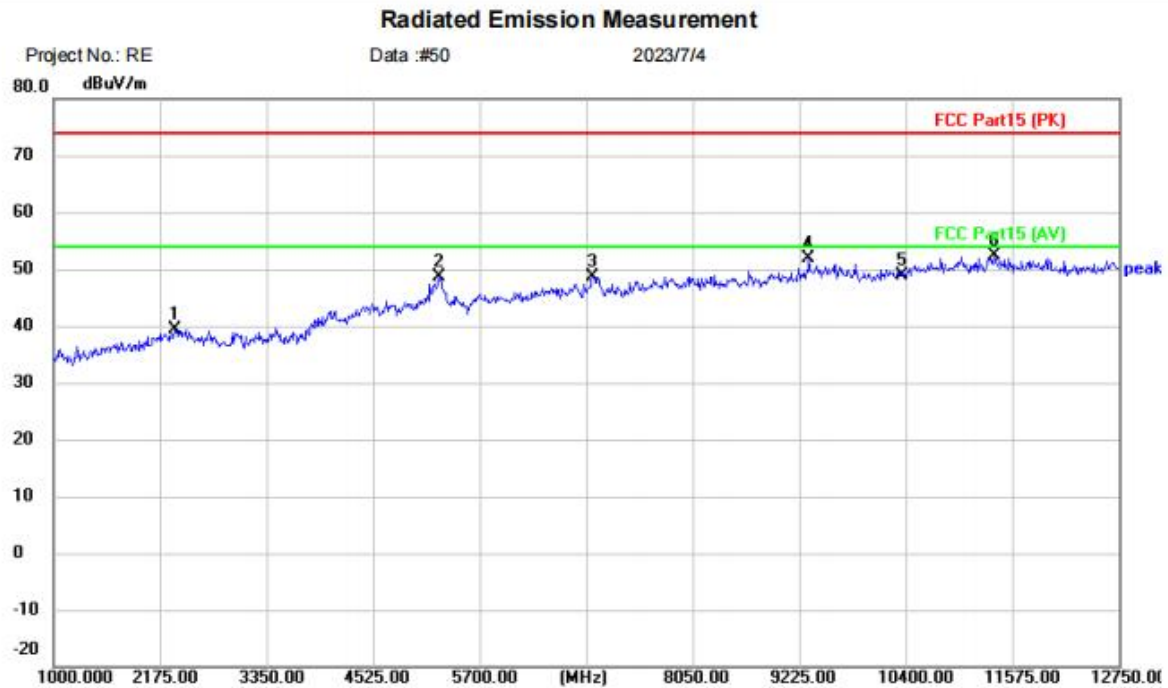
[TestMode: TX below 1G]; [Polarity: Vertical]



Test Result: Pass

Remark: During the test, pre-scan the 802.11a/n/ac mode, and found the 802.11a mode which it is worse case.

[TestMode: TX band1 a 5180 channel]; [Polarity: Vertical]

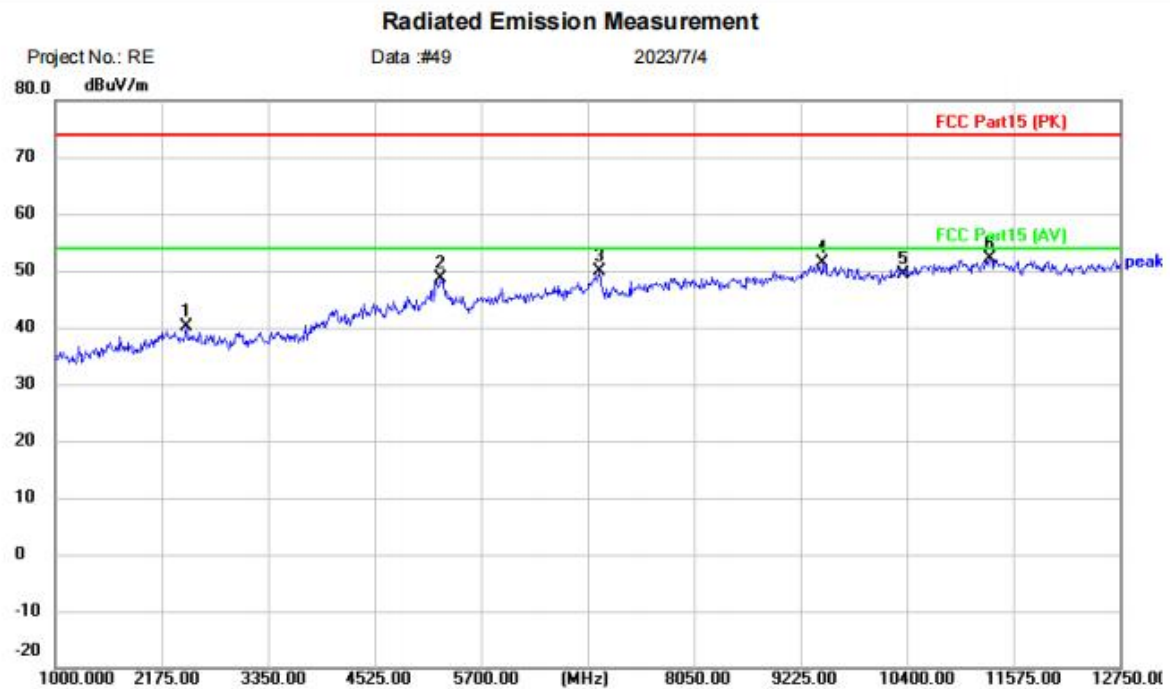


Site: Polarization: **Vertical** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: PANOX V2
M/N: PIP223
Mode: 5G Band1 A TX-L
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2339.500	42.74	-3.42	39.32	74.00	-34.68	peak	
2		5253.500	39.77	8.92	48.69	74.00	-25.31	peak	
3		6945.500	39.65	9.02	48.67	74.00	-25.33	peak	
4		9330.750	40.52	11.39	51.91	74.00	-22.09	peak	
5		10360.00	36.04	12.96	49.00	74.00	-25.00	peak	
6	*	11375.25	39.05	13.40	52.45	74.00	-21.55	peak	

Test Result: Pass

[TestMode: TX band1 a 5180 channel]; [Polarity: Horizontal]



Site: Polarization: **Horizontal** Temperature: (C)

Limit: FCC Part15 (PK) Power: Humidity: %RH

EUT: PANOX V2

M/N: PIP223

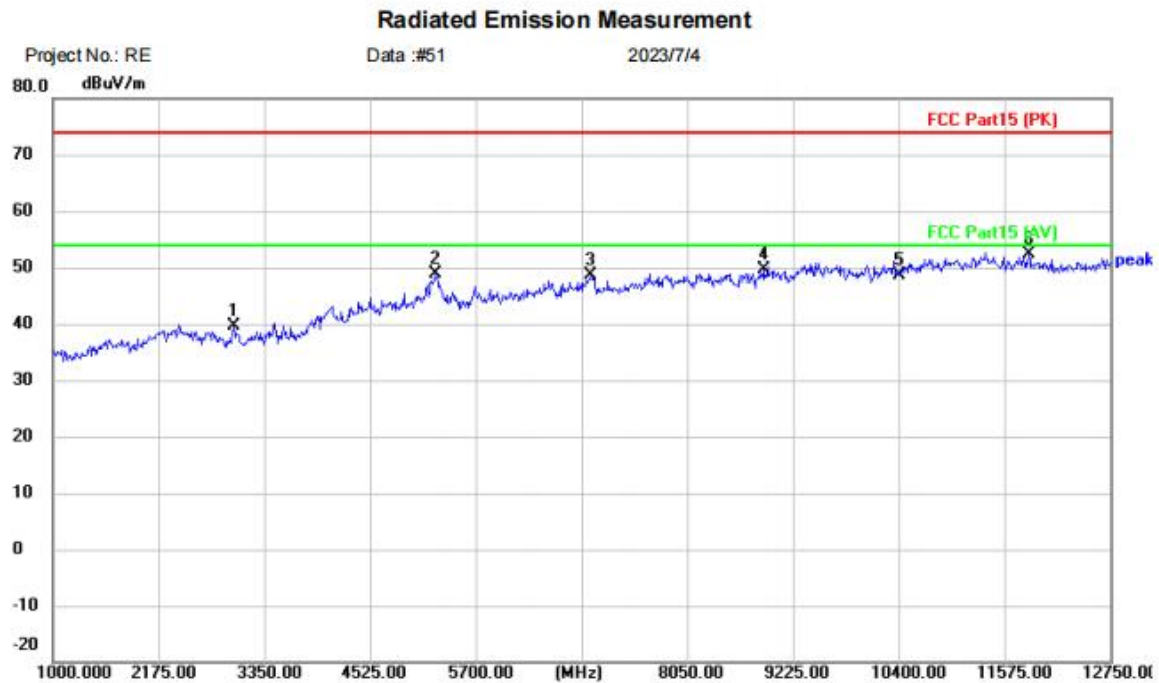
Mode: 5G Band1 A TX-L

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2445.250	43.54	-3.45	40.09	74.00	-33.91	peak	
2		5253.500	39.79	8.92	48.71	74.00	-25.29	peak	
3		7004.250	43.75	6.24	49.99	74.00	-24.01	peak	
4		9471.750	40.06	11.34	51.40	74.00	-22.60	peak	
5		10360.00	36.52	12.96	49.48	74.00	-24.52	peak	
6	*	11316.50	38.86	13.39	52.25	74.00	-21.75	peak	

Test Result: Pass

[TestMode: TX band1 a 5200 channel]; [Polarity: Horizontal]

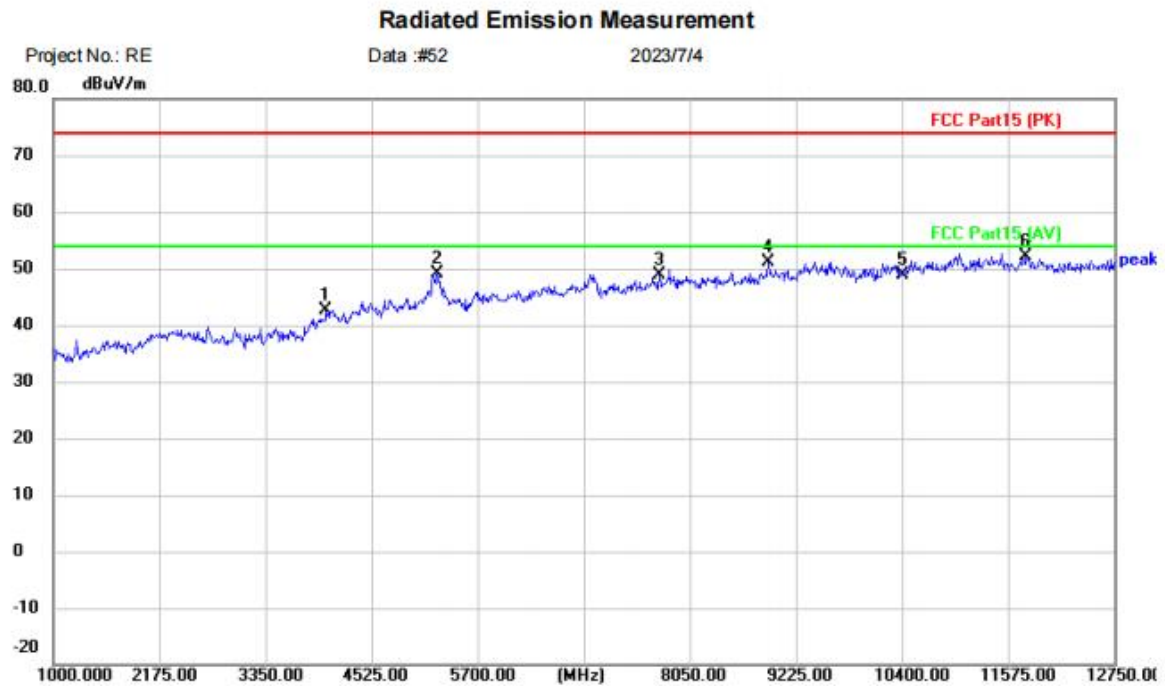


Site: Polarization: **Horizontal** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: PANOX V2
M/N: PIP223
Mode: 5G Band1 A TX-M
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		3009.250	43.87	-4.13	39.74	74.00	-34.26	peak	
2		5253.500	39.94	8.92	48.86	74.00	-25.14	peak	
3		6980.750	39.50	9.05	48.55	74.00	-25.45	peak	
4		8896.000	39.23	10.31	49.54	74.00	-24.46	peak	
5		10400.00	35.73	13.01	48.74	74.00	-25.26	peak	
6	*	11845.25	39.27	13.01	52.28	74.00	-21.72	peak	

Test Result: Pass

[TestMode: TX band1 a 5200 channel]; [Polarity: Vertical]

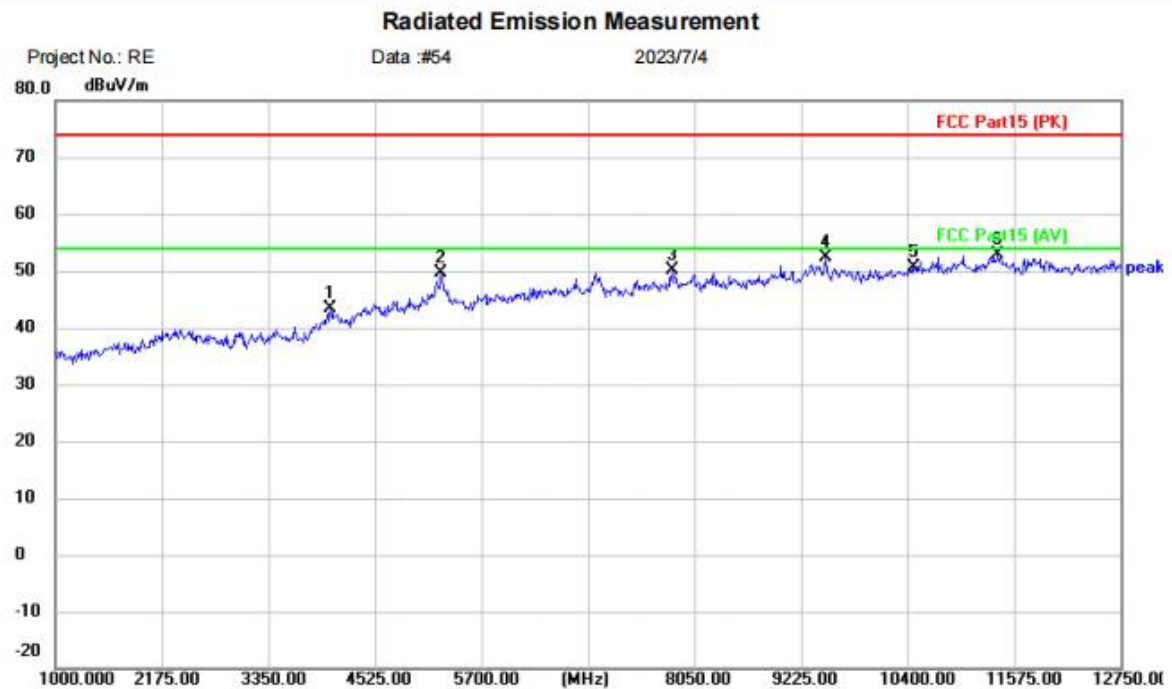


Site Polarization: **Vertical** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: PANOX V2
M/N: PIP223
Mode: 5G Band1 A TX-M
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4019.750	42.23	0.34	42.57	74.00	-31.43	peak	
2		5253.500	40.26	8.92	49.18	74.00	-24.82	peak	
3		7709.250	40.42	8.34	48.76	74.00	-25.24	peak	
4		8919.500	40.67	10.40	51.07	74.00	-22.93	peak	
5		10400.00	35.77	13.01	48.78	74.00	-25.22	peak	
6	*	11774.75	39.13	12.99	52.12	74.00	-21.88	peak	

Test Result: Pass

[TestMode: TX band1 a 5240 channel]; [Polarity: Vertical]

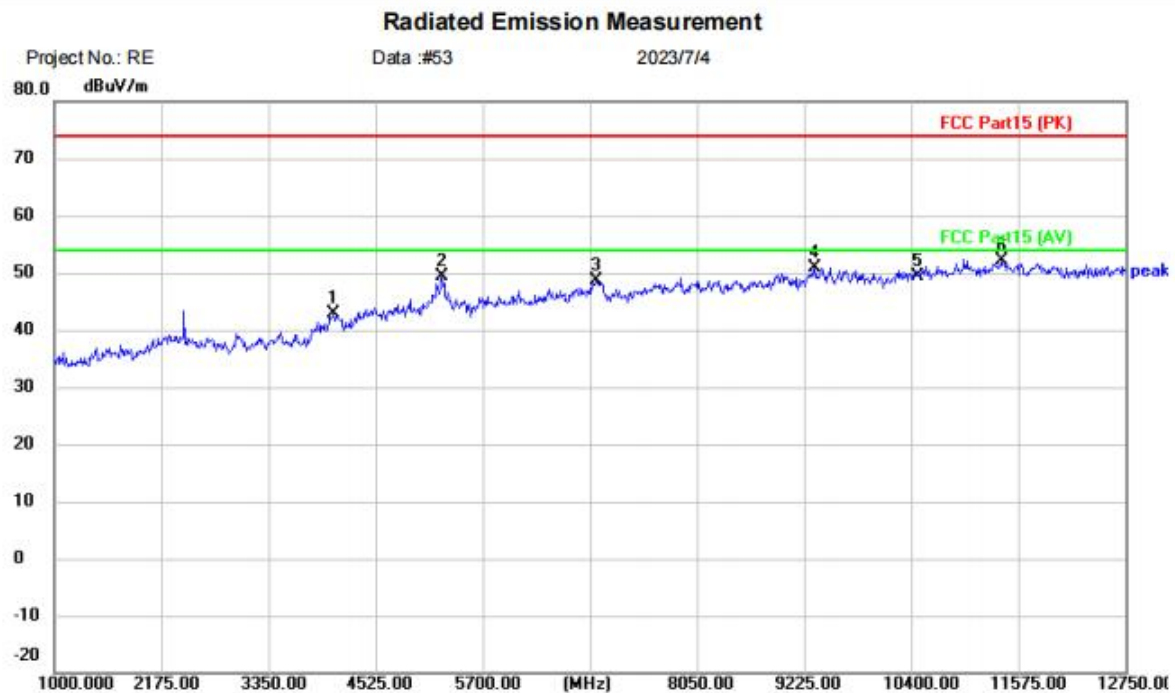


Site Polarization: **Vertical** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: PANOX V2
M/N: PIP223
Mode: 5G Band1 A TX-H
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4031.500	42.93	0.50	43.43	74.00	-30.57	peak	
2		5253.500	40.73	8.92	49.65	74.00	-24.35	peak	
3		7803.250	41.89	8.23	50.12	74.00	-23.88	peak	
4		9495.250	41.04	11.30	52.34	74.00	-21.66	peak	
5		10480.00	37.59	12.94	50.53	74.00	-23.47	peak	
6	*	11398.75	39.40	13.41	52.81	74.00	-21.19	peak	

Test Result: Pass

[TestMode: TX band1 a 5240 channel]; [Polarity: Horizontal]

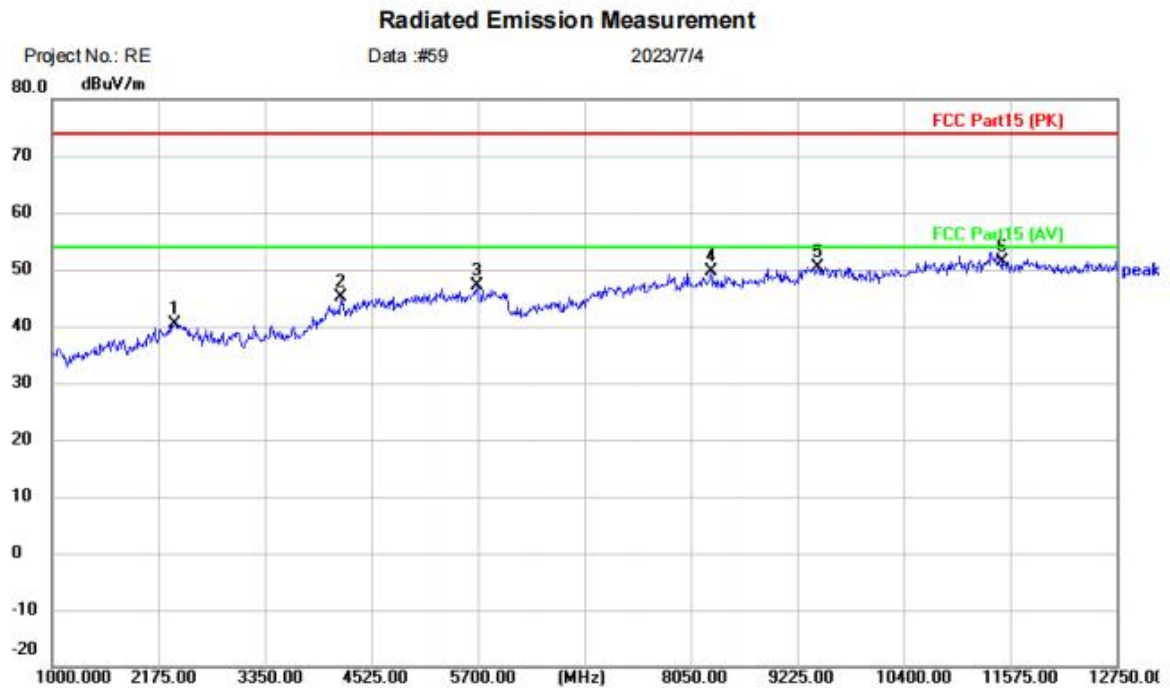


Site: Polarization: **Horizontal** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: PANOX V2
M/N: PIP223
Mode: 5G Band1 A TX-H
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4066.750	42.04	0.93	42.97	74.00	-31.03	peak	
2		5253.500	40.37	8.92	49.29	74.00	-24.71	peak	
3		6945.500	39.69	9.02	48.71	74.00	-25.29	peak	
4		9342.500	39.63	11.37	51.00	74.00	-23.00	peak	
5		10480.00	36.33	12.94	49.27	74.00	-24.73	peak	
6	*	11387.00	38.75	13.41	52.16	74.00	-21.84	peak	

Test Result: Pass

[TestMode: TX band4 a 5745 channel]; [Polarity: Horizontal]

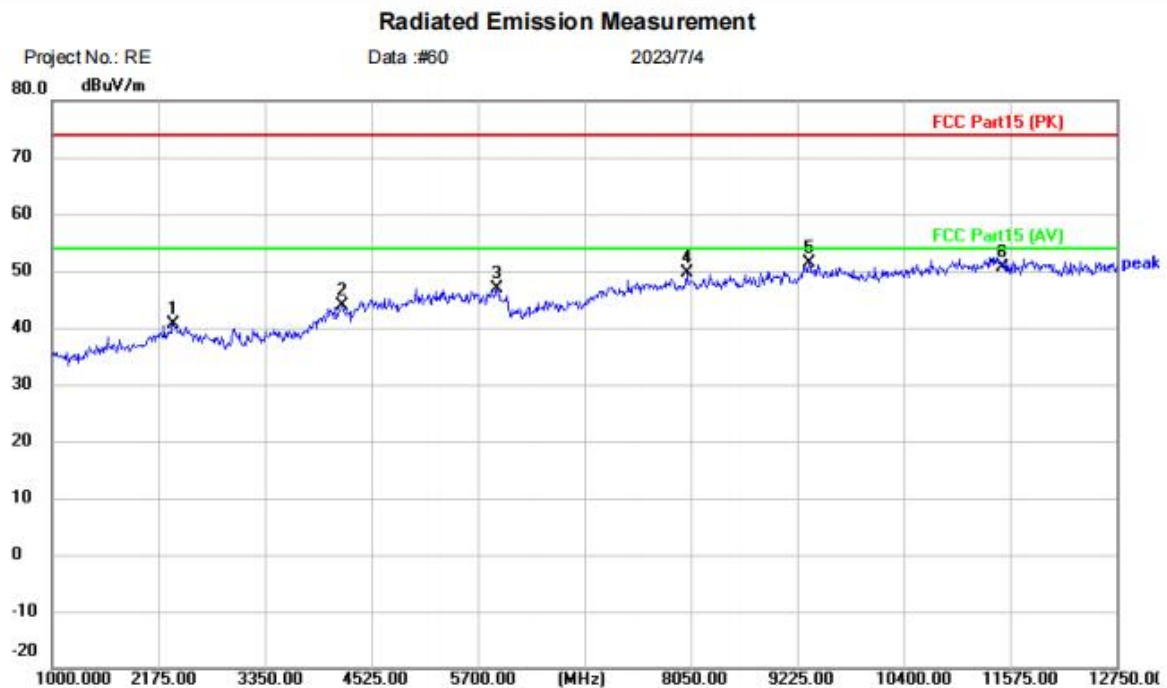


Site Polarization: **Horizontal** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: PANOX V2
M/N: PIP223
Mode: 5G Band4 A TX-L
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2351.250	42.24	-1.83	40.41	74.00	-33.59	peak	
2		4184.250	40.82	4.40	45.22	74.00	-28.78	peak	
3		5688.250	40.69	6.36	47.05	74.00	-26.95	peak	
4		8273.250	40.98	8.71	49.69	74.00	-24.31	peak	
5		9448.250	39.01	11.36	50.37	74.00	-23.63	peak	
6	*	11490.00	37.91	13.52	51.43	74.00	-22.57	peak	

Test Result: Pass

[TestMode: TX band4 a 5745 channel]; [Polarity: Vertical]

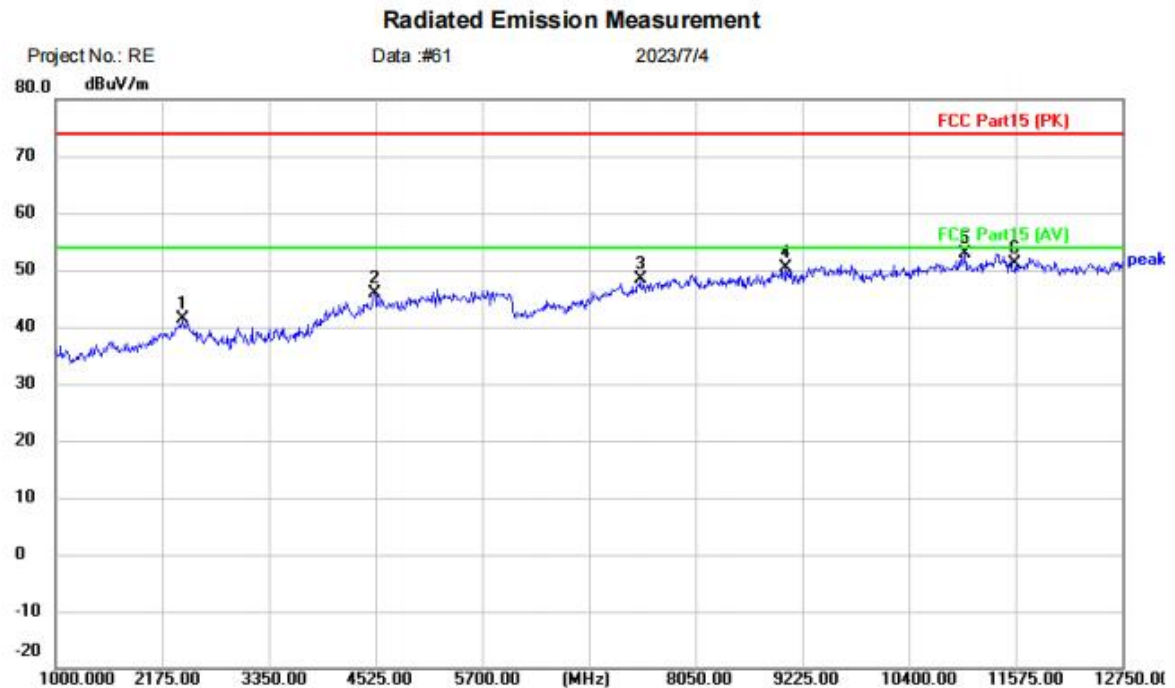


Site Polarization: **Vertical** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: PANOX V2
M/N: PIP223
Mode: 5G Band4 A TX-L
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2339.500	42.52	-1.87	40.65	74.00	-33.35	peak	
2		4207.750	39.19	4.74	43.93	74.00	-30.07	peak	
3		5911.500	40.13	6.75	46.88	74.00	-27.12	peak	
4		8003.000	40.87	8.72	49.59	74.00	-24.41	peak	
5	*	9354.250	40.09	11.37	51.46	74.00	-22.54	peak	
6		11490.00	37.06	13.52	50.58	74.00	-23.42	peak	

Test Result: Pass

[TestMode: TX band4 a 5785 channel]; [Polarity: Horizontal]

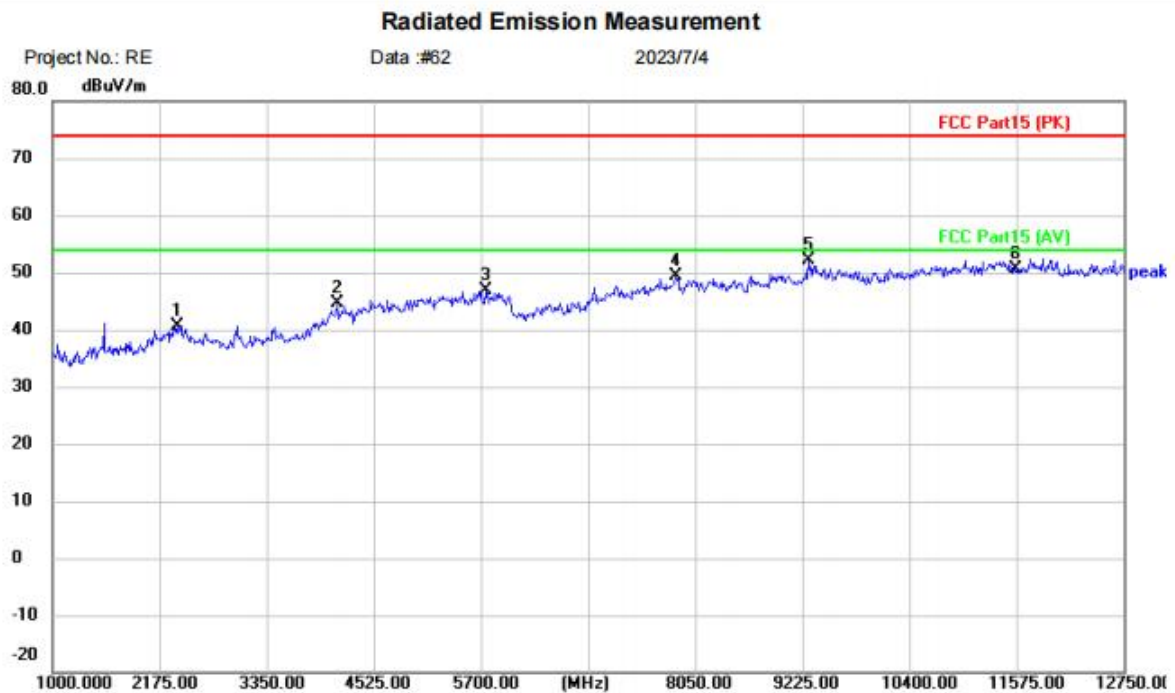


Site Polarization: **Horizontal** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: PANOX V2
M/N: PIP223
Mode: 5G Band4 A TX-M
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2398.250	43.07	-1.66	41.41	74.00	-32.59	peak	
2		4513.250	42.12	3.71	45.83	74.00	-28.17	peak	
3		7439.000	40.24	8.23	48.47	74.00	-25.53	peak	
4		9048.750	39.93	10.42	50.35	74.00	-23.65	peak	
5	*	11022.75	39.15	13.69	52.84	74.00	-21.16	peak	
6		11570.00	37.83	13.27	51.10	74.00	-22.90	peak	

Test Result: Pass

[TestMode: TX band4 a 5785 channel]; [Polarity: Vertical]

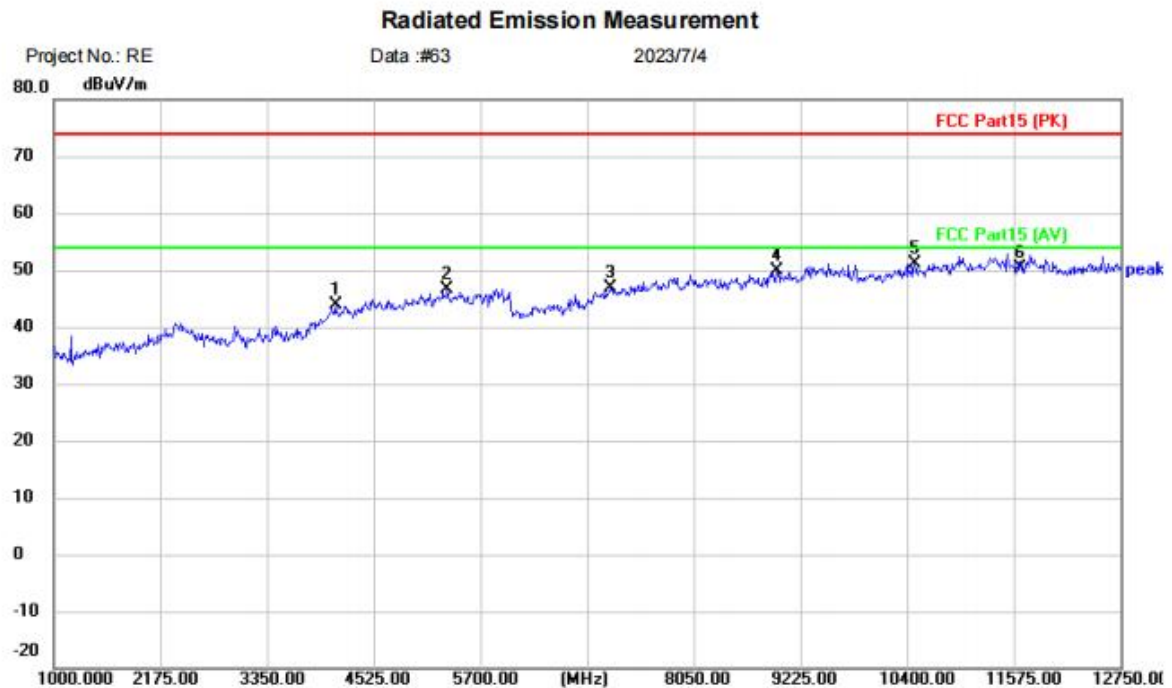


Site: Polarization: **Vertical** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: PANOX V2
M/N: PIP223
Mode: 5G Band4 A TX-M
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2363.000	42.48	-1.76	40.72	74.00	-33.28	peak	
2		4125.500	42.00	2.59	44.59	74.00	-29.41	peak	
3		5747.000	40.56	6.44	47.00	74.00	-27.00	peak	
4		7838.500	40.83	8.66	49.49	74.00	-24.51	peak	
5	*	9295.500	40.67	11.41	52.08	74.00	-21.92	peak	
6		11570.00	37.28	13.27	50.55	74.00	-23.45	peak	

Test Result: Pass

[TestMode: TX band4 a 5825 channel]; [Polarity: Horizontal]

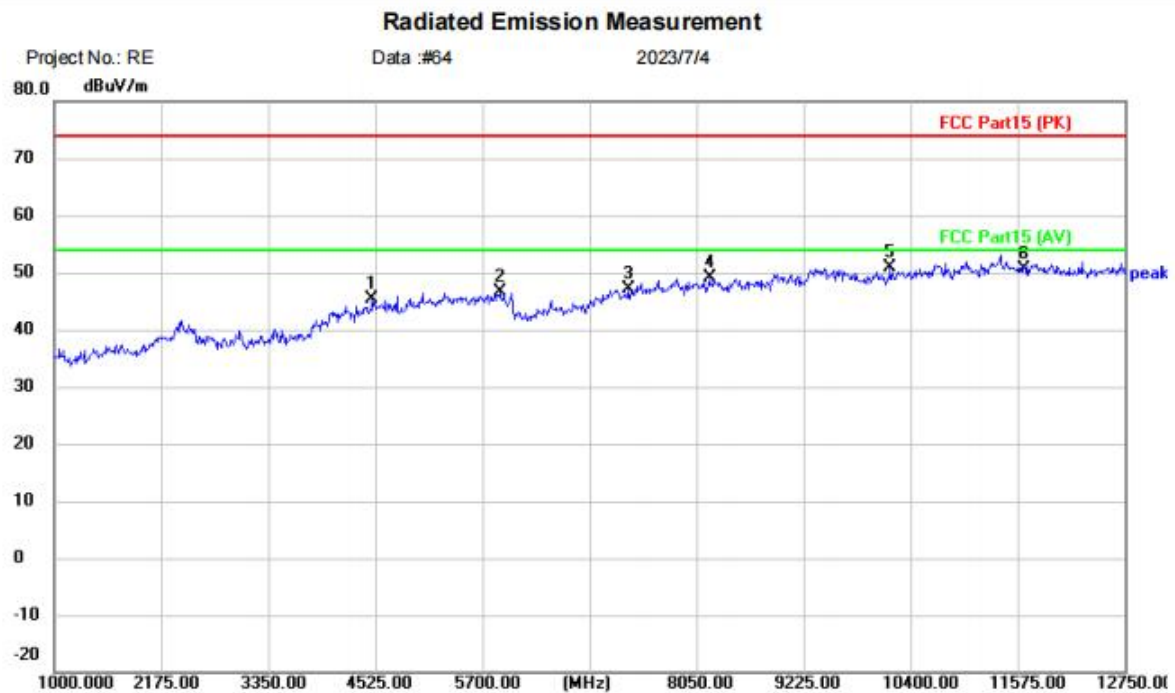


Site: Polarization: **Horizontal** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: PANOX V2
M/N: PIP223
Mode: 5G Band4 A TX-H
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4102.000	41.87	1.99	43.86	74.00	-30.14	peak	
2		5335.750	40.63	5.88	46.51	74.00	-27.49	peak	
3		7133.500	39.50	7.32	46.82	74.00	-27.18	peak	
4		8966.500	39.33	10.55	49.88	74.00	-24.12	peak	
5	*	10482.25	38.10	12.94	51.04	74.00	-22.96	peak	
6		11650.00	37.29	13.07	50.36	74.00	-23.64	peak	

Test Result: Pass

[TestMode: TX band4 a 5825 channel]; [Polarity: Vertical]



Site: Polarization: **Vertical** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: PANOX V2
M/N: PIP223
Mode: 5G Band4 A TX-H
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4489.750	41.82	3.61	45.43	74.00	-28.57	peak	
2		5888.000	39.95	6.71	46.66	74.00	-27.34	peak	
3		7298.000	39.42	7.76	47.18	74.00	-26.82	peak	
4		8191.000	40.54	8.59	49.13	74.00	-24.87	peak	
5	*	10176.75	38.62	12.34	50.96	74.00	-23.04	peak	
6		11650.00	37.45	13.07	50.52	74.00	-23.48	peak	

Test Result: Pass

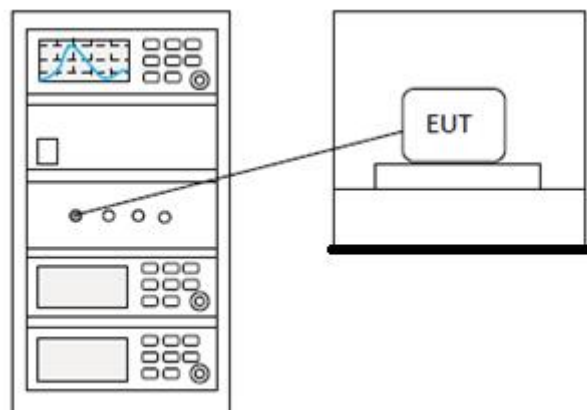
13 DFS: CHANNEL CLOSING TRANSMISSION TIME

Test Standard	47 CFR Part 15, Subpart E 15.407
Test Method	KDB 905462 D02 Section 7.8.3
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Charlie
Temperature	25°C
Humidity	60%

13.1 LIMITS

Limit:	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period(should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst. It is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required facilitating a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions)
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13.2 BLOCK DIAGRAM OF TEST SETUP



13.3 PROCEDURE

- 1) The radar pulse generator is setup to provide a pulse at frequency that the master and client are operating. A type 0 radar pulse with a 1us pulse width and a 1428us PRI is used for the testing.
- 2) The vector signal generator is adjusted to provide the radar burst (18 pulses) at the level of approximately -61dBm at the antenna port of the master device.
- 3) A trigger is provided from the pulse generator to the DFS monitoring system in order to capture the traffic and the occurrence of the radar pulse.
- 4) EUT will associate with the master at channel. The file `iperf.exe` specified by the FCC is streamed