

SIMULTANEOUSLY TRANSMISSION AND CO-LOCATION TEST REPORT

For

Sensor System

MODEL NUMBER: FRD2488_25

REPORT NUMBER: 4791826590-6-RF-4

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Prepared for

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Prepared by

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1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name: Guangzhou Xaircraft Technology CO.,LTD
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Manufacturer Information

Company Name: Guangzhou Xaircraft Technology CO.,LTD
Address: Block C, No.115, Gaopu Road, Tianhe District, GuangzhouCity,
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EUT Information

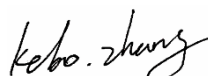
EUT Name: Sensor System
Model: FRD2488_25
Brand: XAG
Sample Received Date: June 9, 2025
Sample Status: Normal
Sample ID: 8564579
Date of Tested: June 10, 2025 to August 11, 2025

Prepared By:



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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with KDB 558074 D01 15.247 Meas Guidance v05r02, KDB 414788 D01 Radiated Test Site v01r01, CFR 47 FCC Part 2, CFR 47 FCC Part 15, ANSI C63.10-2013.

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	A2LA (Certificate No.: 4102.01) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA. FCC (FCC Designation No.: CN1187) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules. ISED (Company No.: 21320) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320 and the test lab Conformity Assessment Body Identifier (CABID) is CN0046. VCCI (Registration No.: C-20202, G-20240, R-20248 and T-20202) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber E, the VCCI registration No. is G-20240 and R-20248 Shielding Room F, the VCCI registration No. is C-20202 and T-20202
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Note 1:

All tests measurement facilities use to collect the measurement data are located at Room 101, Building 2, No.4, Information Road, Songshan Lake, Dongguan, Guangdong, China.

Note 2:

The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.

Note 3:

For below 30 MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30 MHz had been correlated to measurements performed on an OFS.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognize national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Uncertainty
Radiated Emission (Included Fundamental Emission) (1 GHz to 40 GHz)	5.78 dB (1 GHz-18 GHz)
	5.23dB (18 GHz-26 GHz)
	5.64 dB (26 GHz-40 GHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of k=2.	

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name	Sensor System
Model	FRD2488_25
Normal Test Voltage:	DC 24V

5.2. THE TEST CASE CONFIGURATIONS

Simultaneously Transmission Conditions:

Co-Location Conditions:

Condition	Technology			Support (YES/NO)
1	FPV board WLAN 2.4G	Radar board WLAN 2.4G		YES
2	FPV board WLAN 2.4G	Radar 24G		YES
3	Radar board WLAN 2.4G	Radar 24G		YES
4	FPV board WLAN 2.4G	Radar board WLAN 2.4G	Radar 24G	YES

For the detailed test description, please refer to the below report number:

Model	Technology	Report Number
FRD2488_25	FPV board WLAN 2.4G	4791826590-6-RF-1
	Radar board WLAN 2.4G	4791826590-6-RF-1
	Radar 24G	4791826590-6-RF-2

6. MEASURING INSTRUMENT AND SOFTWARE USED

Radiated Emissions					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date
MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Sep.28, 2024	Sep.27, 2025
Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	June 28, 2024	June.27 2027
Preamplifier	HP	8447D	2944A09099	Sep.28, 2024	Sep.27, 2025
EMI Measurement Receiver	R&S	ESR26	101377	Sep.28, 2024	Sep.27, 2025
Horn Antenna	TDK	HRN-0118	130940	Dec.10, 2024	Dec.11, 2027
Preamplifier	TDK	PA-02-0118	TRS-305-00067	Sep.28, 2024	Sep.27, 2025
Horn Antenna	Schwarzbeck	BBHA9170	697	Jun 30, 2024	Jun 29, 2027
Preamplifier	TDK	PA-02-2	TRS-307-00003	Sep.28, 2024	Sep.27, 2025
Preamplifier	TDK	PA-02-3	TRS-308-00002	Sep.28, 2024	Sep.27, 2025
Loop antenna	Schwarzbeck	1519B	00008	Dec.09, 2024	Dec.08, 2027
High Pass Filter	Wi	WHKX10-2700-3000-18000-40SS	23	Sep.28, 2024	Sep.27, 2025
Highpass Filter	Wainwright	WHKX10-5850-6500-1800-40SS	4	Sep.28, 2024	Sep.27, 2025
Band Reject Filter	Wainwright	WRCJV12-5695-5725-5850-5880-40SS	4	Sep.28, 2024	Sep.27, 2025
Band Reject Filter	Wainwright	WRCJV20-5120-5150-5350-5380-60SS	2	Sep.28, 2024	Sep.27, 2025
Band Reject Filter	Wainwright	WRCJV20-5440-5470-5725-5755-60SS	1	Sep.28, 2024	Sep.27, 2025
Band Reject Filter	Wainwright	WRCJV8-2350-2400-2483.5-2533.5-40SS	4	Sep.28, 2024	Sep.27, 2025
Software					
Description			Manufacturer	Name	Version
Test Software for Radiated Emissions			Farad	EZ-EMC	Ver. UL-3A1

7. RADIATED TEST RESULTS

LIMITS

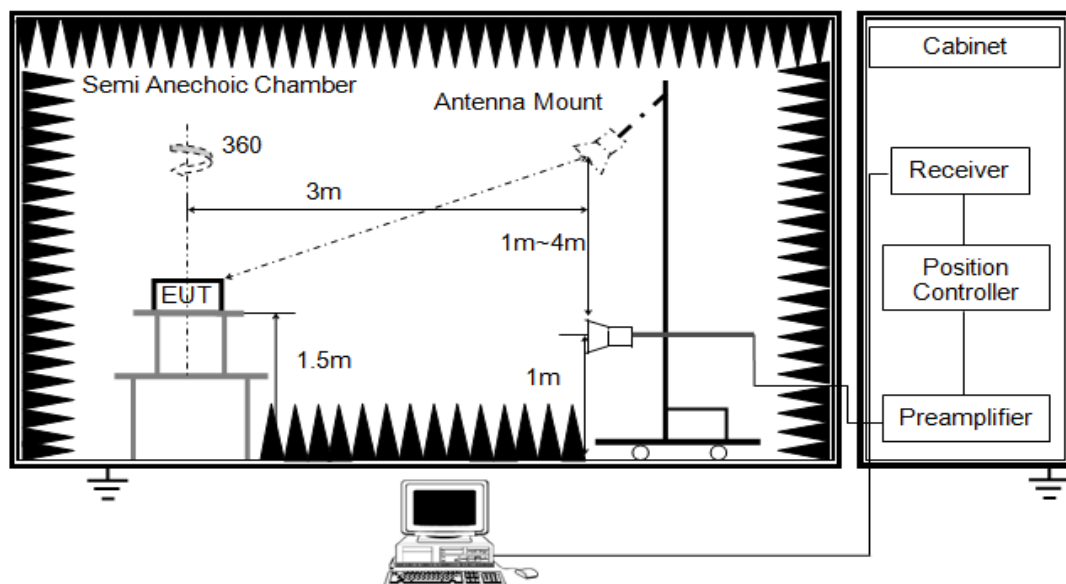
Refer to CFR 47 FCC §15.205, §15.209 and §15.407 (b).

Emissions radiated outside of the specified frequency bands above 30MHz			
Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m	
		Quasi-Peak	
30 - 88	100	40	
88 - 216	150	43.5	
216 - 960	200	46	
Above 960	500	54	
Above 1000	500	Peak	Average
		74	54

Limits of unwanted/undesirable emission out of the restricted bands refer to CFR 47 FCC §15.407 (b).

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1GHz)		
Frequency Range (MHz)	EIRP Limit	Field Strength Limit (dBuV/m) at 3 m
5150~5250 MHz	PK: -27 (dBm/MHz)	PK:68.2(dBμV/m)
5250~5350 MHz		
5470~5725 MHz		
5725~5850 MHz	PK: -27 (dBm/MHz) *1 PK: 10 (dBm/MHz) *2 PK: 15.6 (dBm/MHz) *3 PK: 27 (dBm/MHz) *4	PK: 68.2(dBμV/m) *1 PK: 105.2 (dBμV/m) *2 PK: 110.8(dBμV/m) *3 PK: 122.2 (dBμV/m) *4
Note: *1 beyond 75 MHz or more above of the band edge. *2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above. *3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above. *4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.		

Above 1GHz

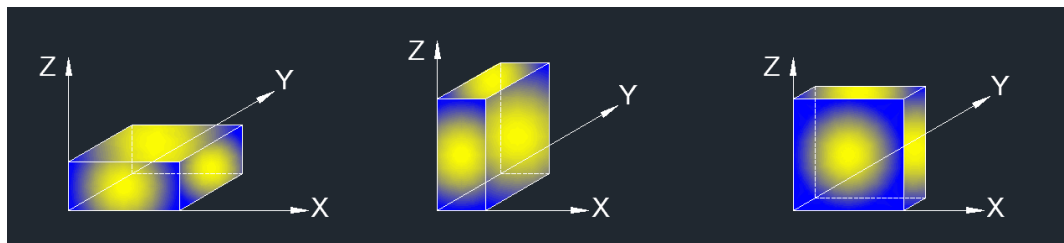


The setting of the spectrum analyser

RBW	1MHz
VBW	PEAK: 3MHz AVG: see note 6
Sweep	Auto
Detector	Peak
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013 clause 11.11 and 11.12.
2. The testing follows the guidelines in KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 section II.G.3 ~ II.G.6.
2. The EUT was arranged to its worst case and then tune the antenna tower (1.5 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 1.5m above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. For measurement above 1GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.
6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements.

X axis, Y axis, Z axis positions:



Note 1: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

TEST ENVIRONMENT

Temperature	23.5°C	Relative Humidity	55%
Atmosphere Pressure	101kPa	Test Voltage	DC 24V

RESULTS

Note 1: For spurious emissions below 1 GHz and above 18 GHz, pre-scan had done for all condition 1 to 4, the test results are almost the same as other no-co-location modes and no worse emission was found during tested, so do no show in this report.

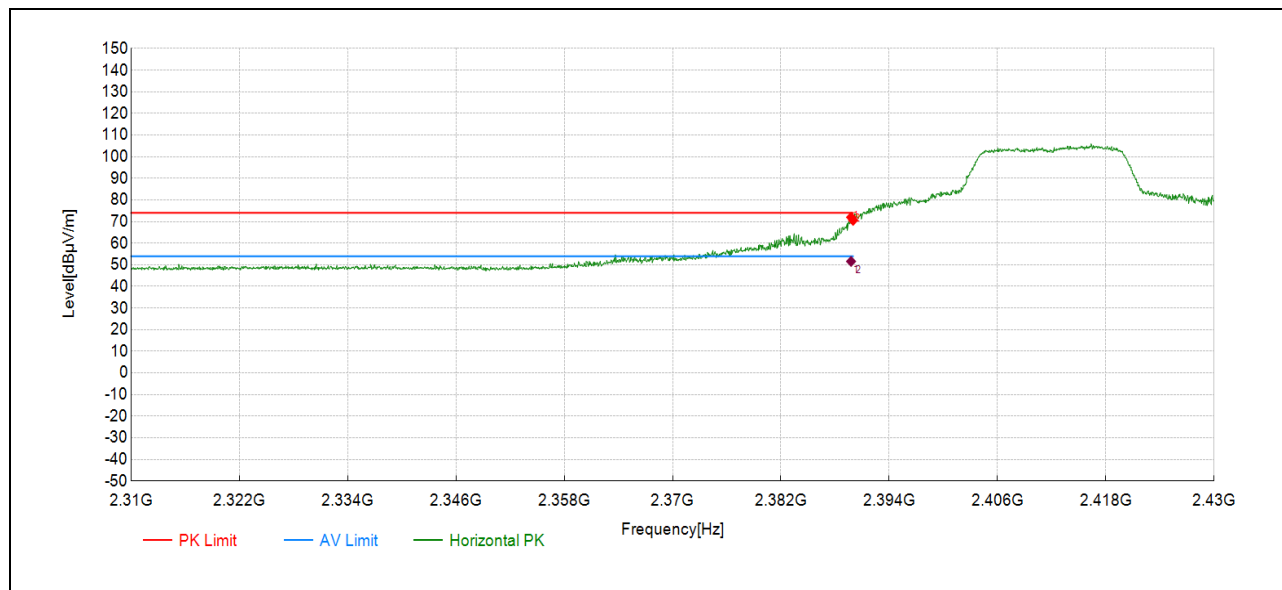
Note 2: Since the harmonics of Radar 24G overtake the 10th harmonic of WLAN 2.4G, the report only show the result of condition 1.

7.1. WORST-CASE TEST RESULTS

7.1.1. CONDITION 1

MODEL FRD2488 25 FPV BOARD 802.11G MODE 2.4G MODE LOW CHANNEL & RADAR BOARD
802.11G MODE 2.4G LOW CHANNEL

RESTRICTED BANDEDGE (WORST-CASE CONFIGURATION, HORIZONTAL)



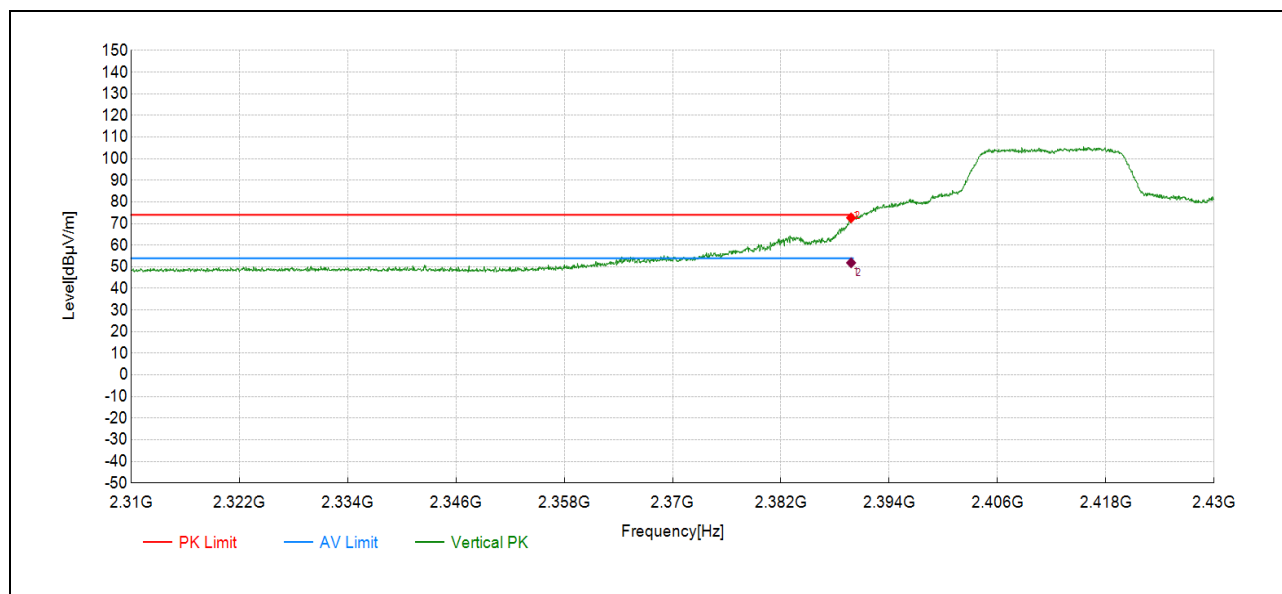
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.78	67.42	4.60	72.02	74.00	-1.98	peak
	2389.78	46.98	4.60	51.58	54.00	-2.42	AVG
2	2390.00	65.95	4.60	70.55	74.00	-3.45	peak
	2390.00	47.06	4.60	51.66	54.00	-2.34	AVG

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

RESTRICTED BANDEDGE (WORST-CASE CONFIGURATION, VERTICAL)

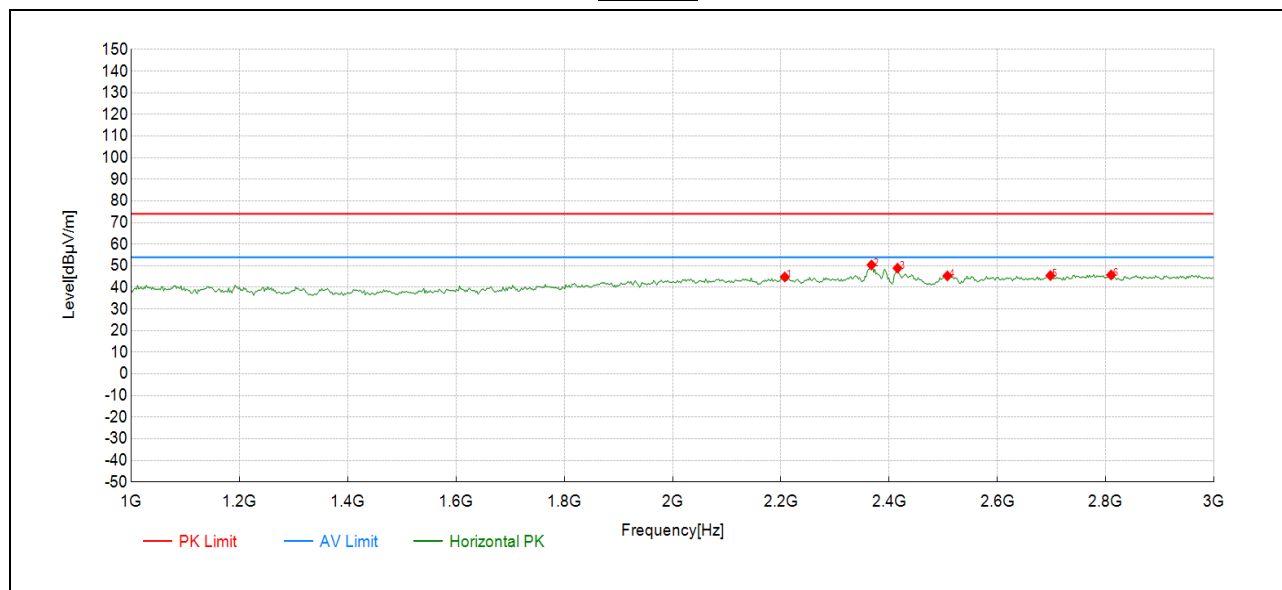


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.78	68.04	4.60	72.64	74.00	-1.36	peak
	2389.78	47.26	4.60	51.86	54.00	-2.14	AVG
2	2390.00	67.85	4.60	72.45	74.00	-1.55	peak
	2390.00	46.66	4.60	51.26	54.00	-2.74	AVG

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

SPURIOUS EMISSIONS (WORST-CASE CONFIGURATION, HORIZONTAL)

1-3 GHz

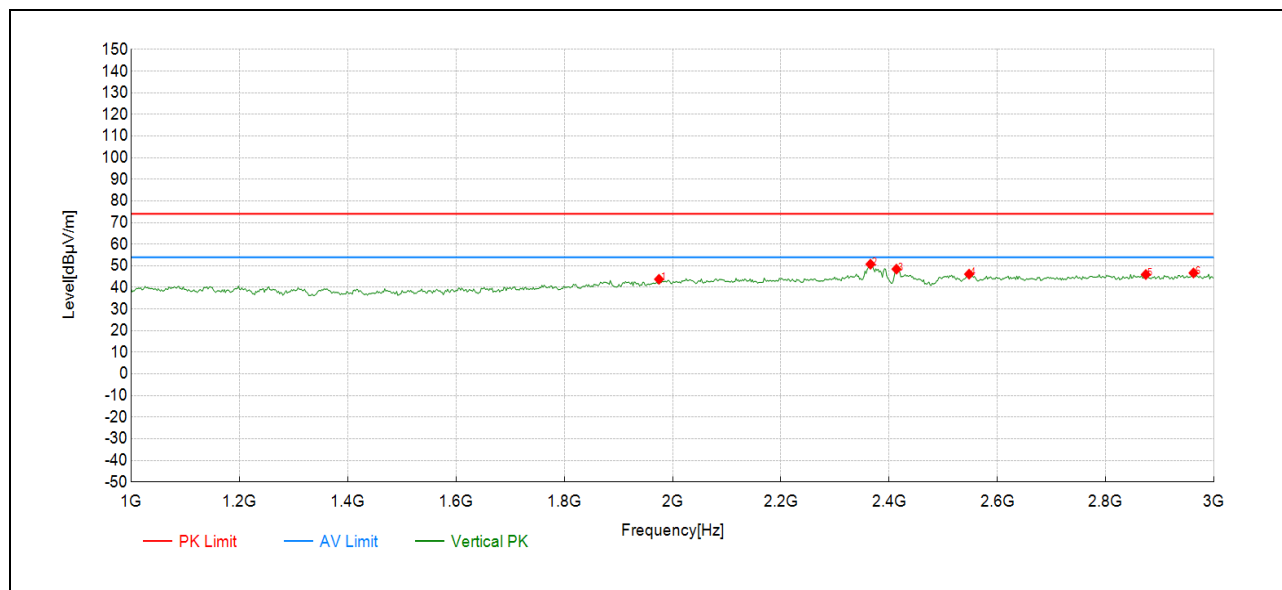


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2207.21	51.61	-6.77	44.84	74.00	-29.16	peak
2	2367.37	56.90	-6.51	50.39	74.00	-23.61	peak
3	2412.00	55.35	-6.44	48.91	/	/	Fundamental
4	2507.51	51.65	-6.30	45.35	74.00	-28.65	peak
5	2697.70	51.23	-5.73	45.50	74.00	-28.50	peak
6	2809.81	51.15	-5.39	45.76	74.00	-28.24	peak

- Note:
1. Measurement = Reading Level + Correct Factor.
 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
 3. Peak: Peak detector.
 4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

SPURIOUS EMISSIONS (WORST-CASE CONFIGURATION, VERTICAL)

1-3 GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1974.97	51.48	-7.71	43.77	74.00	-30.23	peak
2	2365.37	57.25	-6.51	50.74	74.00	-23.26	peak
3	2412.00	54.92	-6.44	48.48	/	/	Fundamental
4	2547.55	52.35	-6.19	46.16	74.00	-27.84	peak
5	2873.87	51.23	-5.26	45.97	74.00	-28.03	peak
6	2961.96	51.75	-5.07	46.68	74.00	-27.32	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

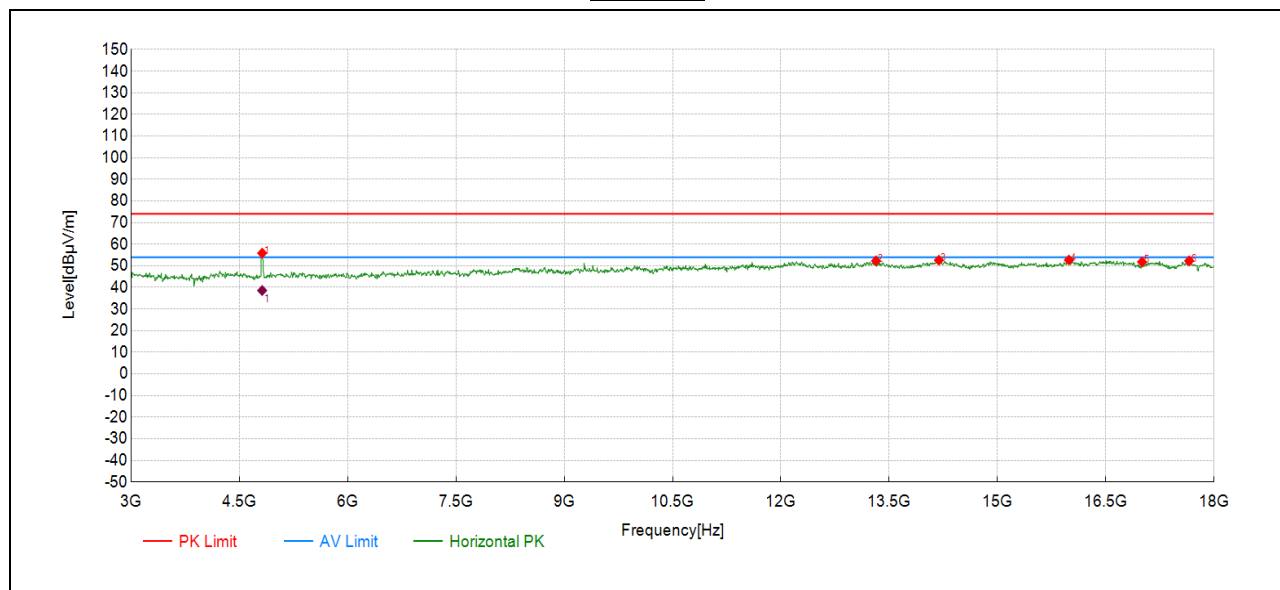
3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

SPURIOUS EMISSIONS (WORST-CASE CONFIGURATION, HORIZONTAL)

3-18 GHz

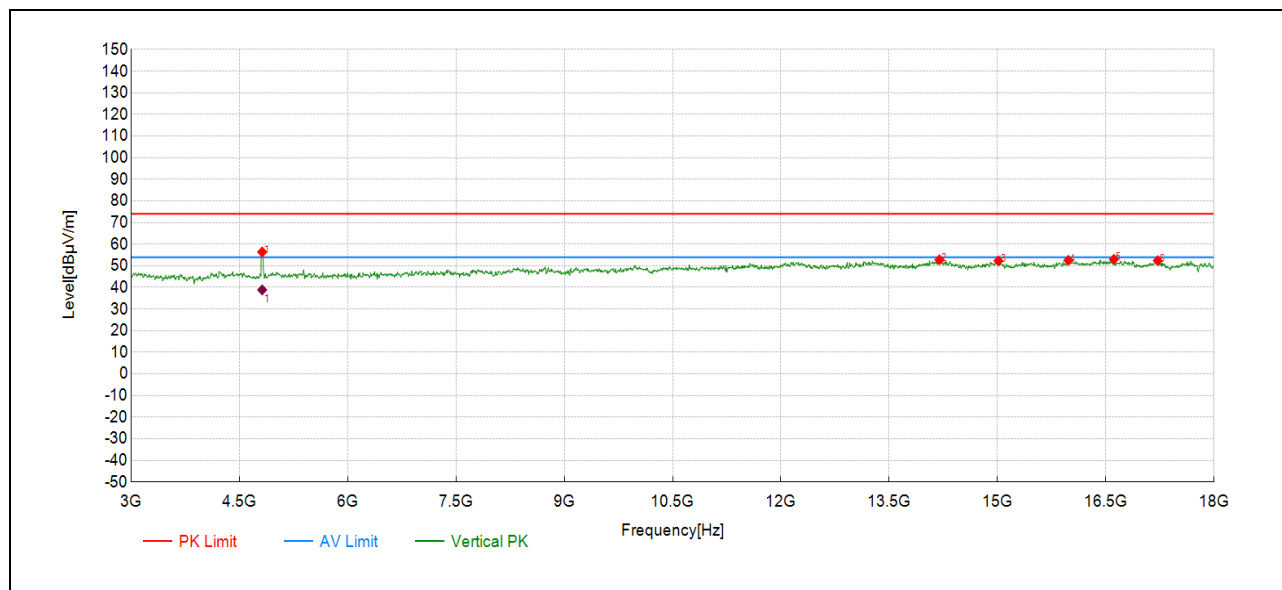


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4815.91	59.16	-3.28	55.88	74.00	-18.12	peak
	4815.91	41.86	-3.28	38.58	54.00	-15.42	AVG
2	13317.66	44.12	8.19	52.31	74.00	-21.69	peak
3	14188.09	43.74	8.85	52.59	74.00	-21.41	peak
4	15988.99	43.07	9.59	52.66	74.00	-21.34	peak
5	17002.00	40.52	11.27	51.79	74.00	-22.21	peak
6	17654.83	39.87	12.41	52.28	74.00	-21.72	peak

- Note:
1. Peak Result = Reading Level + Correct Factor.
 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
 3. Peak: Peak detector.
 4. AVG: $VBW=1/Ton$, where: Ton is the transmitting duration.
 5. For the transmitting duration, please refer to clause 7.1.
 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

SPURIOUS EMISSIONS (WORST-CASE CONFIGURATION, VERTICAL)

3-18 GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4815.91	59.68	-3.28	56.40	74.00	-17.60	peak
	4815.91	42.15	-3.28	38.87	54.00	-15.13	AVG
2	14195.60	43.90	8.88	52.78	74.00	-21.22	peak
3	15013.51	44.21	8.09	52.30	74.00	-21.70	peak
4	15981.49	43.00	9.53	52.53	74.00	-21.47	peak
5	16611.81	42.33	10.68	53.01	74.00	-20.99	peak
6	17219.61	40.78	11.61	52.39	74.00	-21.61	peak

- Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for HPF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

END OF REPORT