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**Applicant** : SIEPER GMBH

Schlittenbacher Strasse 60, D-58511 Lüdenscheid, Germany

**Supplier / Manufacturer :** SIEPER GMBH

Schlittenbacher Strasse 60, D-58511 Lüdenscheid, Germany

**Description of Sample(s) :** Submitted sample(s) said to be

Product: Claas Axion 850 Set with remote control

Brand Name: N/A

Model No.: 10688200004 FCC ID: 2BCOX-6882

**Date Samples Received** : 2023-08-31

**Date Tested** : 2023-08-31 to 2023-09-06

**Investigation Requested**: Perform ElectroMagnetic Interference measurement in accordance

with FCC 47CFR [Codes of Federal Regulations] Part 15 and ANSI

C63.10: 2013 for FCC Certification.

**Conclusions**: The submitted product <u>COMPLIED</u> with the requirements of Federal

Communications Commission [FCC] Rules and Regulations Part 15. The tests were performed in accordance with the standards described

above and on Section 2.2 in this Test Report.

**Remarks** : 2.4GHz wireless (2FSK)

Test by Susu





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#### 1.0 General Details

## 1.1 Test Laboratory

The Hong Kong Standards and Testing Centre Ltd.

**EMC Laboratory** 

10 Dai Wang Street, Taipo Industrial Estate, New Territories, Hong Kong

Telephone: 852 2666 1888 Fax: 852 2664 4353

## 1.2 Equipment Under Test [EUT]

## **Description of Sample(s)**

Product: Claas Axion 850 Set with remote control

Manufacturer: SIEPER GMBH

Schlittenbacher Strasse 60, D-58511 Lüdenscheid, Germany

Brand Name: N/A

Model Number: 10688200004

Rating: Vehicle: 4.5Vd.c.("AAA" battery \*3)

## 1.3 Description of EUT Operation

The Equipment Under Test (EUT) is a Claas Axion 850 Set with remote control. It is a transceiver operating at 2408 MHz~2470 MHz and the RF signal was modulated by IC.

RF modulation: 2FSK Antenna gain:1.8dBi

#### 1.4 Date of Order

2023-08-03

#### 1.5 Submitted Sample(s):

1 Sample

## 1.6 Test Duration

2023-08-31 to 2023-09-06

## 1.7 Country of Origin

China



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#### 2.0 Technical Details

#### 2.1 Investigations Requested

Perform Electromagnetic Interference measurements in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15 Regulations and ANSI C63.10: 2013 for FCC Certification.

## 2.2 Test Standards and Results Summary Tables

	EMISSION Results Summary										
Test Condition	Test Requirement	Test Method	Class /	T	est Result						
			Severity	Pass	Failed	N/A					
Field Strength of Fundamental & Harmonics Emissions	FCC 47CFR 15.249	ANSI C63.10: 2013	N/A								
Radiated Emissions	FCC 47CFR 15.209	ANSI C63.10: 2013	N/A	$\boxtimes$							
AC Mains Conducted Emissions	FCC 47CFR 15.207	ANSI C63.10: 2013	N/A			$\boxtimes$					
Antenna requirement	FCC 47CFR 15.203	N/A	N/A	$\boxtimes$							
20dB Emission bandwith	FCC 47CFR 15.215(c)	ANSI C63.10: 2013	N/A	$\boxtimes$							

Note: N/A - Not Applicable



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3.0 Test Results

3.1 Emission

3.1.1 Radiated Emissions

Ambient temperature 25°C Relative humidity 57%

Test Requirement: FCC 47CFR 15.249 & FCC 47CFR 15.209

Test Method: ANSI C63.10:2013

Test Date: 2023-08-31 Mode of Operation: Tx mode

#### **Test Method:**

For emission measurements at or below 1 GHz, the sample was placed 0.8m above the ground plane of semi-anechoic Chamber\*. For emission measurements above 1 GHz, the sample was placed 1.5m above the ground plane of semi-anechoic Chamber\*. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

\* Semi-Anechoic chamber located on the G/F of The Hong Kong Standards and Testing Centre Ltd. with

Registration Number: HK0001

Test Firm Registration Number: 367672



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## **Spectrum Analyzer Setting:**

9KHz – 30MHz (Pk & Av) RBW: 10kHz

VBW: 30kHz Sweep: Auto

Span: Fully capture the emissions being measured

Trace: Max. hold

30MHz - 1GHz (QP) RBW: 120kHz

VBW: 120kHz Sweep: Auto

Span: Fully capture the emissions being measured

Trace: Max. hold

Above 1GHz (Pk) RBW: 1MHz

VBW: 1MHz Sweep: Auto

Span: Fully capture the emissions being measured

Trace: Max. hold

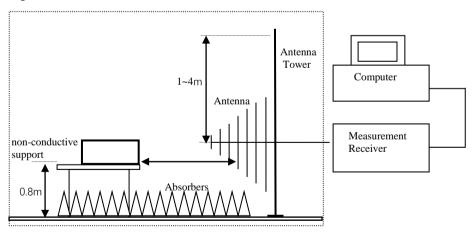
Above 1GHz (Av) RBW: 1MHz

VBW: 10Hz Sweep: Auto

Span: Fully capture the emissions being measured

Trace: Max. hold

#### **Test Setup:**



Ground Plane

- Absorbers placed on top of the ground plane are for measurements above 1000MHz only.
- Measurements between 30MHz to 1000MHz made with Bi-log antennas, above 1000MHz horn antennas are used.

The Hong Kong Standards and Testing Centre Limited

Head Office: 10 Dai Wang Street, Taipo Industrial Estate, Tai Po, N.T., Hong Kong

Unit B, 10/F, Block 1, Tai Ping Industrial Centre, No. 57 Ting Kok Road, Tai Po, N.T., Hong Kong

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## Limits for Field Strength of Fundamental & Harmonics Emissions [FCC 47CFR 15.249]:

Frequency Range of	Field Strength of	Field Strength of
Fundamental	Fundamental Emission	Harmonics Emission
[MHz]	[microvolts/meter]	[microvolts/meter]
902-928	50,000 [Quasi-Peak]	500 [Average]
2400-2483.5	50,000 [Average]	500 [Average]

#### Remarks:

No additional spurious emissions found between lowest internal used/generated frequency and 30 MHz

Calculated measurement uncertainty (9kHz-30MHz): 2.0dB

(30MHz -1GHz): 4.9dB (1GHz -6GHz): 4.02dB (6GHz -26.5GHz): 4.03dB

Emissions in the vertical and horizontal polarizations have been investigated and the worst-case test results are recorded in this report.



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Results of Tx mode (Lowest Frequency Channel-2408 MHz): Pass

results of 1x ii	Results of 1x mode (Lowest Frequency Chamier-2400 MIIIZ). I ass									
Field Strength of Fundamental Emissions										
Peak Value										
Frequency Measured Correction Field Field Limit @3m E-Field										
	Level @3m	Factor	Strength	Strength		Polarity				
MHz	dBμV/m	dBμV/m	dBμV/m	μV/m	μV/m					
2408.00	89.4	-4.8	84.6	17,060.8	500,000	Vertical				
2408.00	88.1	-4.7	83.4	14,842.3	500,000	Horizontal				

Γ	Field Strength of Fundamental Emissions									
L	Average Value									
ſ	Frequency	Measured	Correction	Field	Field	Limit @3m	E-Field			
ı		Level @3m	Factor	Strength	Strength		Polarity			
	MHz	dBμV/m	dBμV/m	dBμV/m	μV/m	μV/m				
	2408.00	69.5	-4.8	64.7	1,717.9	50,000	Vertical			
Γ	2408.00	68.2	-4.7	63.5	1,496.2	50,000	Horizontal			

	Field Strength of Harmonics Emission										
	Peak Value										
Frequency	Measured	Correction	Field	Field	Limit @3m	E-Field					
	Level @3m	Factor	Strength	Strength		Polarity					
MHz	dBμV/m	dBμV/m	dBμV/m	μV/m	μV/m						
4816.0	55.0	0.8	55.8	618.0	5,000	Vertical					
4816.0	55.4	0.5	55.9	623.7	5,000	Horizontal					
7224.0	47.5	7.0	54.5	530.9	5,000	Vertical					
7224.0	48.3	6.5	54.8	549.5	5,000	Horizontal					
9632.0	46.4	8.5	54.9	555.9	5,000	Vertical					
9632.0	45.8	8.3	54.1	507.0	5,000	Horizontal					
12040.0	44.0	10.9	54.9	555.9	5,000	Vertical					
12040.0	44.2	10.8	55.0	562.3	5,000	Horizontal					



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	Field Strength of Harmonics Emission										
	Average Value										
Frequency	Measured	Correction	Field	Field	Limit @3m	E-Field					
	Level @3m	Factor	Strength	Strength		Polarity					
MHz	dBμV/m	dBμV/m	dBμV/m	μV/m	μV/m						
4816.0	40.2	0.8	41.0	112.5	500	Vertical					
4816.0	41.1	0.5	41.6	120.2	500	Horizontal					
7224.0	34.3	7.0	41.3	116.1	500	Vertical					
7224.0	33.5	6.5	40.0	100.0	500	Horizontal					
9632.0	33.0	8.5	41.5	118.9	500	Vertical					
9632.0	32.5	8.3	40.8	109.6	500	Horizontal					
12040.0	30.8	10.9	41.7	121.6	500	Vertical					
12040.0	30.4	10.8	41.2	114.8	500	Horizontal					

Results of Tx mode (Middle Frequency Channel- 2440MHz): Pass

Results of 1x mode (winding Frequency Chaimer- 2440wiffz). 1 ass											
Field Strength of Fundamental Emissions											
	Peak Value										
Frequency	Frequency Measured Correction Field Field Limit @3m E-Field										
	Level @3m	Factor	Strength	Strength		Polarity					
MHz	dBμV/m	dBμV/m	dBμV/m	μV/m	μV/m						
2440.00	2440.00 90.3 -4.8 85.5 18,836.5 500,000 Vertical										
2440.00	93.4	-4.7	88.7	27,227.0	500,000	Horizontal					

	Field Strength of Fundamental Emissions									
		A	Average Valu	e						
Frequency	Measured	Correction	Field	Field	Limit @3m	E-Field				
	Level @3m	Factor	Strength	Strength		Polarity				
MHz	dBμV/m	dBμV/m	dBμV/m	μV/m	μV/m					
2440.00	70.6	-4.8	65.8	1,949.8	50,000	Vertical				
2440.00	73.4	-4.7	68.7	2,722.7	50,000	Horizontal				



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	Field Strength of Harmonics Emission									
Peak Value										
Frequency	Measured	Correction	Field	Field	Limit @3m	E-Field				
	Level @3m	Factor	Strength	Strength		Polarity				
MHz	dBμV/m	dBμV/m	dBμV/m	μV/m	μV/m					
4880.0	54.4	0.8	55.2	576.8	5,000	Vertical				
4880.0	55.3	0.5	55.8	616.6	5,000	Horizontal				
7320.0	47.6	7.0	54.6	537.0	5,000	Vertical				
7320.0	49.1	6.5	55.6	602.6	5,000	Horizontal				
9760.0	46.7	8.5	55.2	575.4	5,000	Vertical				
9760.0	47.0	8.3	55.3	582.1	5,000	Horizontal				
12200.0	45.1	10.9	56.0	631.0	5,000	Vertical				
12200.0	45.0	10.8	55.8	616.6	5,000	Horizontal				

	Field Strength of Harmonics Emission Avarage Value									
Frequency										
	Level @3m	Factor	Strength	Strength		Polarity				
MHz	dBμV/m	dBμV/m	dBμV/m	μV/m	μV/m					
4880.0	40.5	0.8	41.3	116.4	500	Vertical				
4880.0	40.3	0.5	40.8	109.6	500	Horizontal				
7320.0	34.2	7.0	41.2	114.8	500	Vertical				
7320.0	34.1	6.5	40.6	107.2	500	Horizontal				
9760.0	32.5	8.5	41.0	112.2	500	Vertical				
9760.0	32.2	8.3	40.5	105.9	500	Horizontal				
12200.0	31.4	10.9	42.3	130.3	500	Vertical				
12200.0	31.1	10.8	41.9	124.5	500	Horizontal				

Results of Tx mode (Highest Frequency Channel – 2470MHz): Pass

xesures of 14 mode (Highest Frequency Chaimer 247 037112); 1 ass										
Field Strength of Fundamental Emissions										
			Peak Value							
Frequency	Frequency Measured Correction Field Field Limit @3m E-Field									
	Level @3m	Factor	Strength	Strength		Polarity				
MHz	dBμV/m	dBμV/m	dBμV/m	$\mu V/m$	μV/m					
2470.00	2470.00 89.2 -4.8 84.4 16,595.9 500,000 Vertical									
2470.00	95.5	-4.7	90.8	34,673.7	500,000	Horizontal				



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	Field Strength of Fundamental Emissions					
		A	Average Valu	e		
Frequency	Measured	Correction	Field	Field	Limit @3m	E-Field
	Level @3m	Factor	Strength	Strength		Polarity
MHz	dBμV/m	dBμV/m	dBμV/m	μV/m	μV/m	
2470.00	69.1	-4.8	64.3	1,640.6	50,000	Vertical
2470.00	75.6	-4.7	70.9	3,507.5	50,000	Horizontal

	Field Strength of Harmonics Emission						
			Peak Value				
Frequency	Measured	Correction	Field	Field	Limit @3m	E-Field	
	Level @3m	Factor	Strength	Strength		Polarity	
MHz	dBμV/m	dBμV/m	dBμV/m	μV/m	μV/m		
4940.0	54.6	0.8	55.4	590.2	5,000	Vertical	
4940.0	55.2	0.5	55.7	609.5	5,000	Horizontal	
7410.0	48.5	7.0	55.5	595.7	5,000	Vertical	
7410.0	47.9	6.5	54.4	524.8	5,000	Horizontal	
9880.0	46.8	8.5	55.3	582.1	5,000	Vertical	
9880.0	45.6	8.3	53.9	495.5	5,000	Horizontal	
12350.0	44.4	10.9	55.3	582.1	5,000	Vertical	
12350.0	44.7	10.8	55.5	595.7	5,000	Horizontal	

	Field Strength of Harmonics Emission Avarage Value						
Frequency	Measured	Correction	Field	Field	Limit @3m	E-Field	
1 7	Level @3m	Factor	Strength	Strength		Polarity	
MHz	dBμV/m	dBμV/m	dBμV/m	μV/m	μV/m	•	
4940.0	40.2	0.8	41.0	112.5	500	Vertical	
4940.0	40.7	0.5	41.2	114.8	500	Horizontal	
7410.0	34.2	7.0	41.2	114.8	500	Vertical	
7410.0	34.1	6.5	40.6	107.2	500	Horizontal	
9880.0	32.8	8.5	41.3	116.1	500	Vertical	
9880.0	32.7	8.3	41.0	112.2	500	Horizontal	
12350.0	30.2	10.9	41.1	113.5	500	Vertical	
12350.0	30.7	10.8	41.5	118.9	500	Horizontal	



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#### **Radiated Emissions Measurement:**

#### Limit:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 5.205(c)).

#### Result: RF Radiated Emissions (1GHz-26GHz) (Lowest)

	Field Strength of Band-edge Compliance					
Peak Value						
Frequency	Measured	Correction	Field	Limit	Margin	E-Field
	Level @3m	Factor	Strength	@3m		Polarity
MHz	dΒμV	dB/m	$dB\mu V/m$	dBμV/m	dBμV/m	
2400.0	57.9	-4.7	53.2	74.0	20.8	Horizontal

Field Strength of Band-edge Compliance						
	Average Value					
Frequency	Measured	Correction	Field	Limit	Margin	E-Field
	Level @3m	Factor	Strength	@3m		Polarity
MHz	dΒμV	dB/m	dBμV/m	dBμV/m	dBμV/m	
2400.0	47.5	-4.7	42.8	54.0	11.2	Horizontal

#### Result: RF Radiated Emissions (1GHz-26GHz) (Highest)

Field Strength of Band-edge Compliance						
Peak Value						
Frequency	Measured	Correction	Field	Limit	Margin	E-Field
	Level @3m	Factor	Strength	@3m		Polarity
MHz	dΒμV	dB/m	$dB\mu V/m$	dBμV/m	dBμV/m	
2483.5	59.4	-4.7	54.7	74.0	19.3	Horizontal

	Field Strength of Band-edge Compliance					
	Average Value					
Frequency	Measured	Correction	Field	Limit	Margin	E-Field
	Level @3m	Factor	Strength	@3m		Polarity
MHz	dΒμV	dB/m	$dB\mu V/m$	$dB\mu V/m$	$dB\mu V/m$	
2483.5	48.5	-4.7	43.8	54.0	10.2	Horizontal



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Field Strength of Band-edge Compliance						
			Peak Value			
Frequency	Measured	Correction	Field	Limit	Margin	E-Field
	Level @3m	Factor	Strength	@3m		Polarity
MHz	dΒμV	dB/m	$dB\mu V/m$	dBμV/m	dBμV/m	
2400.0	59.8	-4.8	55.0	74.0	19.0	Vertical

Field Strength of Band-edge Compliance						
		A	verage Valu	e		
Frequency	Measured	Correction	Field	Limit	Margin	E-Field
	Level @3m	Factor	Strength	@3m		Polarity
MHz	dΒμV	dB/m	$dB\mu V/m$	$dB\mu V/m$	$dB\mu V/m$	
2400.0	50.0	-4.8	45.2	54.0	8.8	Vertical

Result: RF Radiated Emissions (1GHz-26GHz) (Highest)

	111 11tt 11tt 11tt 11tt 11tt 11tt 11tt						
	Field Strength of Band-edge Compliance						
Peak Value							
Frequency	Measured	Correction	Field	Limit	Margin	E-Field	
	Level @3m	Factor	Strength	@3m		Polarity	
MHz	dΒμV	dB/m	$dB\mu V/m$	dBμV/m	dBμV/m		
2483.5	53.7	-4.8	48.9	74.0	25.1	Vertical	

Field Strength of Band-edge Compliance						
		A	verage Valu	e		
Frequency	Measured	Correction	Field	Limit	Margin	E-Field
	Level @3m	Factor	Strength	@3m		Polarity
MHz	dΒμV	dB/m	$dB\mu V/m$	dBμV/m	dBμV/m	
2483.5	46.1	-4.8	41.3	54.0	12.7	Vertical

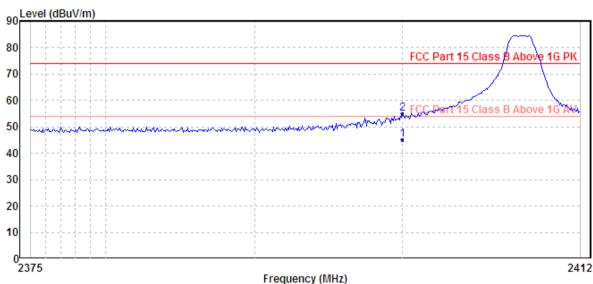


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## Emissions radiated outside of the specified frequency bands (Lowest)

# Horizontal 90 | FCC Part 15 Class B Above 1G PK 70 | FCC Part 15 Class B Above 1G PK 50 | FCC Part 15 Class B Above 1G PK 30 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC Part 15 Class B Above 1G PK 10 | FCC PART 15 Class B Above 1G PK

## Vertical

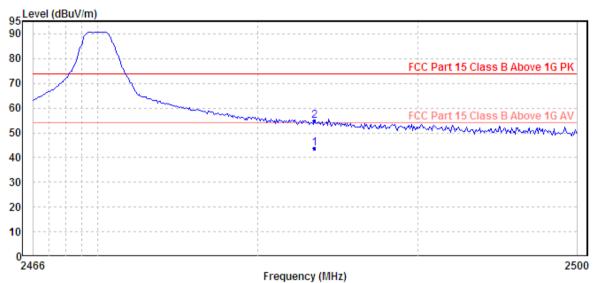




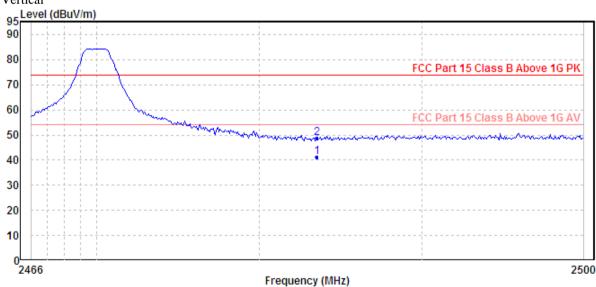
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## Emissions radiated outside of the specified frequency bands (Highest)

#### Horizontal



#### Vertical





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## Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range [MHz]	Quasi-Peak Limits [μV/m]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

#### Remarks:

Calculated measurement uncertainty (9kHz-30MHz): 2.0dB /(30MHz - 1GHz): 4.9dB

Emissions in the vertical and horizontal polarizations have been investigated and the worst-case test results are recorded in this report.

#### Results of TX mode (9kHz - 30MHz): PASS

Emissions detected are more than 20 dB below the FCC Limits, not reported.

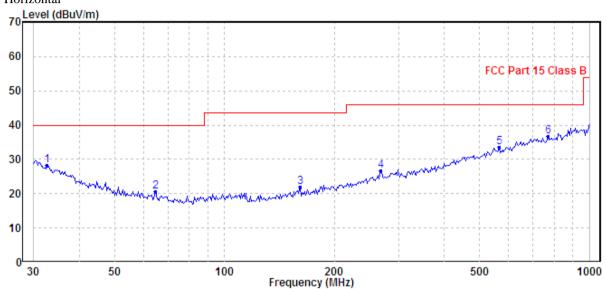


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## Results of TX mode (30MHz - 1GHz)(2410MHz worst case): PASS

Horizontal



Ambient Temperature: 26.3C Relative Humidity : 54.7% Air Pressure : 100.9kPa

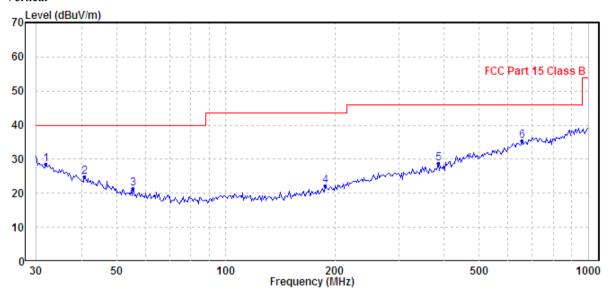
	Freq	Level		Over Limit	Remark	Pol/Phase
	MHz	$\overline{\text{dBuV/m}}$	$\overline{\text{dBuV/m}}$	dB		
1	32.634	28.25	40.00	-11.75	QP	Horizontal
2	64.887	20.51	40.00	-19.49	QP	Horizontal
3	161.474	22.00	43.50	-21.50	QP	Horizontal
4	267.546	26.57	46.00	-19.43	QP	Horizontal
5	566.622	33.54	46.00	-12.46	QP	Horizontal
6	771.449	36.81	46.00	-9.19	QP	Horizontal



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## Results of TX mode (30MHz – 1GHz) (2410MHz worst case): PASS

Vertical



Ambient Temperature: 26.3C Relative Humidity : 54.7% Air Pressure : 100.9kPa

	Freq	Level		Over Limit	Remark	Pol/Phase
-	MHz	$\overline{\text{dBuV/m}}$	$\overline{\text{dBuV/m}}$	dB		
1	31.955	28.48	40.00	-11.52	QP	Vertical
2	40.845	24.93	40.00	-15.07	QP	Vertical
3	55.609	21.38	40.00	-18.62	QP	Vertical
4	188.413	22.23	43.50	-21.27	QP	Vertical
5	385.281	28.82	46.00	-17.18	QP	Vertical
6	656.530	35.49	46.00	-10.51	OP	Vertical



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3.1.2 Antenna Requirement

Ambient temperature 25°C Relative humidity 57%

**Test Requirements: § 15.203** 

#### **Test Specification:**

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.

#### **Test Results:**

This is wire antenna. There is no external antenna, the antenna gain =1.8dBi. User is unable to remove or changed the Antenna.



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#### 3.1.3 20dB Bandwidth of Fundamental Emission

Ambient temperature 25°C Relative humidity 57%

Test Requirement: FCC 47 CFR 15.249
Test Method: ANSI C63.10:2013

Test Date: 2023-09-04 Mode of Operation: Tx mode

#### **Test Method:**

The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

#### **Test Setup:**

As Test Setup of clause 3.1.1 in this test report.

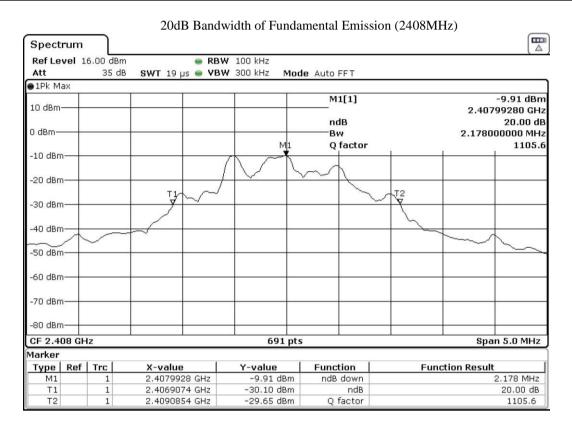


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## Limits for 20dB Bandwidth of Fundamental Emission (Low Frequency Channel):

Frequency Range	20dB Bandwidth
[MHz]	[MHz]
2408.0	2.1780

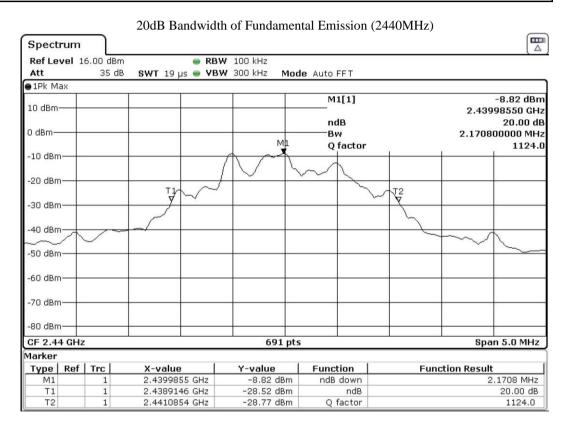




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## Limits for 20dB Bandwidth of Fundamental Emission (Middle Frequency Channel):

Frequency Range	20dB Bandwidth
[MHz]	[MHz]
2440.0	2.1708

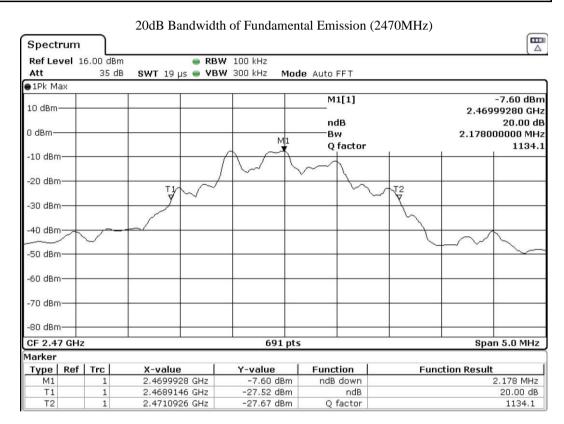




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## Limits for 20dB Bandwidth of Fundamental Emission (High Frequency Channel):

Frequency Range	20dB Bandwidth
[MHz]	[MHz]
2470.0	2.1780





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## Appendix A

#### **List of Measurement Equipment**

## **Radiated Emission**

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL	DUE CAL
EM215	MULTIDEVICE CONTROLLER	EMCO	2090	00024676	N/A	N/A
EM217	ELECTRIC POWERED TURNTABLE	EMCO	2088	00029144	N/A	N/A
EM218	ANECHOIC CHAMBER	ETS-LINDGREN	FACT-3		2019-04-16	2024-04-16
EM356	ANTENNA POSITIONING TOWER	ETS-LINDGREN	2171B	00150346	N/A	N/A
EM293	SPECTRUM ANALYZER	AGILENT TECHNOLOGIES	N9020A	MY50510152	2023-03-21	2024-03-21
EM299	BROADBAND HORN ANTENNA	ETS-LINDGREN	3115	00114120	2023-01-25	2025-01-25
EM300	PYRAMIDAL STANDARD GAIN HORN ANTENNA	ETS-LINDGREN	3160-09	00130130	2023-01-16	2025-01-16
EM301	PYRAMIDAL STANDARD GAIN HORN ANTENNA	ETS-LINDGREN	3160-10	00130988	2023-02-15	2025-02-15
EM353	LOOP ANTENNA	ETS_LINDGREN	6502	00206533	2022-09-26	2024-09-26
EM355	BICONILOG ANTENNA	ETS-LINDGREN	3143B	00094856	2022-08-26	2024-08-26
EM200	DUAL CHANNEL POWER METER	R & S	NRVD	100592	2023-08-02	2025-08-02
EM012	PRE-AMPLIFIER	HP	HP8448B	3008A00262	2022-11-08	2025-11-08
EM215	MULTIDEVICE CONTROLLER	EMCO	2090	00024676	N/A	N/A

#### Remarks:-

N/A Not Applicable or Not Available



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Appendix B **Photographs of EUT** 

Front View of the product



Rear View of the product



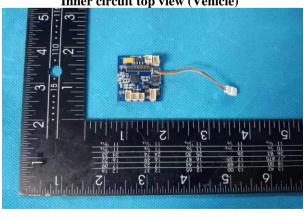
Inner circuit view (Vehicle)



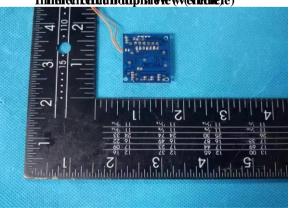
Inviewcofduitteigw(Vehhilde)



Inner circuit top view (Vehicle)



Inhereci circitalt attipmi o ve (Wehible)



Inne

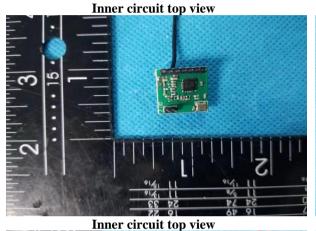
The Hong Kong Standards and Testing Centre Limited

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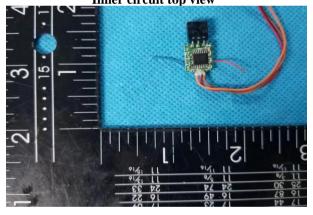
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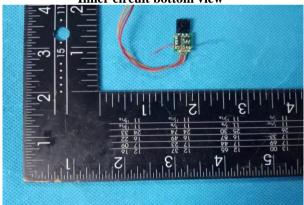
## Photographs of EUT



Inner circuit bottom view

**Inner circuit bottom view** 

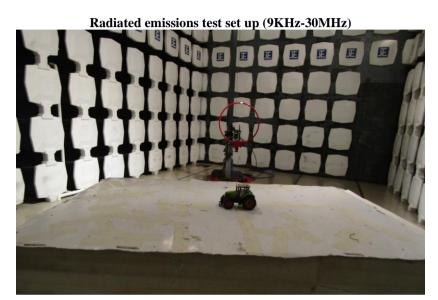






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Photographs of EUT





For Conditions of Issuance of this test report, please refer to "Conditions of Issuance of Test Reports" section or Website.



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Photographs of EUT

Radiated emissions test set up (Above 1GHz)



\*\*\*\*\* End of Test Report \*\*\*\*\*

For Conditions of Issuance of this test report, please refer to "Conditions of Issuance of Test Reports" section or Website.

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