

# RADIO TEST REPORT FCC ID: 2ARZ2PIONA1925A

Product:	Panoramic Camera		
Trade Mark:	Labpano		
Model No.:	PIONA1925/A		
Family Model:	PIONA1925/B, PIONA1925/C, PIONA1925/D, PIONA1925/E		
Report No.:	S20082504102002		
Issue Date:	11 Sep. 2020		

# Prepared for

Shenzhen Pisoftware Technology Co., Ltd. Room 1221, 12F,Shenzhen Newspaper Group and Periodicals Building, Qinghu Community, Longhua Street,Longhua District, Shenzhen, China

# Prepared by

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### **1 TEST RESULT CERTIFICATION**

Applicant's name:	Shenzhen Pisoftware Technology Co., Ltd.
Address:	Room 1221, 12F,Shenzhen Newspaper Group and Periodicals Building, Qinghu Community, Longhua Street,Longhua District, Shenzhen, China
Manufacturer's Name	Shenzhen Pisoftware Technology Co., Ltd.
Address:	Room 1221, 12F, Shenzhen Newspaper Group and Periodicals Building, Qinghu Community, Longhua Street, Longhua District, Shenzhen, China
Product description	
Product name:	Panoramic Camera
Model and/or type reference:	PIONA1925/A
Family Model:	PIONA1925/B, PIONA1925/C, PIONA1925/D, PIONA1925/E

Measurement Procedure Used:

#### APPLICABLE STANDARDS

APPLICABLE STANDARD/ TEST PROCEDURE	TEST RESULT
FCC 47 CFR Part 2, Subpart J	
FCC 47 CFR Part 15, Subpart C	
KDB 174176 D01 Line Conducted FAQ v01r01	Complied
ANSI C63.10-2013	
KDB 558074 D01 15.247 Meas Guidance v05r02	

This device described above has been tested by Shenzhen NTEK Testing Technology Co., Ltd., and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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The test results of this report relate only to the tested sample identified in this report.

Note: In addition to AC conduction and radiation data below 1G, other test data of this report are based on the original test report S19112901716002, dated by 2020-03-13.

Date of Test	:	Aug. 25, 2020 ~ Sep. 11, 2020	
Testing Engineer	:	Jorry Xie	
		(Jerry Xie)	
Technical Manager	:	Jason chen	
		(Jason Chen)	
		Sam. Chen	
Authorized Signatory	:		
		(Sam Chen)	

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	FCC Part15 (15.247), Subpart C				
Standard Section	Test Item	Verdict	Remark		
15.207	AC Conducted Emission	PASS			
15.247 (a)(2)	6dB Bandwidth	N/A			
15.247 (b)	Peak Output Power	N/A			
15.209 (a) 15.205 (a)	Radiated Spurious Emission	PASS			
15.247 (e)	Power Spectral Density	N/A			
15.247 (d)	Band Edge Emission	N/A			
15.247 (d)	Spurious RF Conducted Emission	N/A			
15.203	Antenna Requirement	N/A			
All test items were ver the test.	ot applicable in this Test Report. ified and recorded according to the standard een tested and complied with the requiren test report.		-		
"N/A" denotes test is no All test items were ver the test. This EUT has also be	ified and recorded according to the standard		-		
"N/A" denotes test is no All test items were ver the test. This EUT has also be	ified and recorded according to the standard		-		



# **3 FACILITIES AND ACCREDITATIONS**

#### 3.1 FACILITIES

All measurement facilities used to collect the measurement data are located at

1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126 P.R. China.

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10 and CISPR Publication 22.

#### 3.2 LABORATORY ACCREDITATIONS AND LISTINGS

Site Description	
CNAS-Lab.	: The Laboratory has been assessed and proved to be in compliance with
	CNAS-CL01:2006 (identical to ISO/IEC 17025:2005)
	The Certificate Registration Number is L5516.
IC-Registration	The Certificate Registration Number is 9270A.
	CAB identifier:CN0074
FCC- Accredited	Test Firm Registration Number: 463705.
	Designation Number: CN1184
A2LA-Lab.	The Certificate Registration Number is 4298.01
	This laboratory is accredited in accordance with the recognized
	International Standard ISO/IEC 17025:2005 General requirements for
	the competence of testing and calibration laboratories.
	This accreditation demonstrates technical competence for a defined
	scope and the operation of a laboratory quality management system
	(refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009).
Name of Firm	: Shenzhen NTEK Testing Technology Co., Ltd.
Site Location	: 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang
	Street, Bao'an District, Shenzhen 518126 P.R. China.

#### 3.3 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $y\pm U$ , where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

Item	Uncertainty
Conducted Emission Test	±2.80dB
RF power, conducted	±0.16dB
Spurious emissions, conducted	±0.21dB
All emissions, radiated(30MHz~1GHz)	±2.64dB
All emissions, radiated(1GHz~6GHz)	±2.40dB
All emissions, radiated(>6GHz)	±2.52dB
Temperature	±0.5°C
Humidity	±2%
	Conducted Emission Test     RF power, conducted     Spurious emissions, conducted     All emissions, radiated(30MHz~1GHz)     All emissions, radiated(1GHz~6GHz)     All emissions, radiated(>6GHz)     Temperature



# 4 GENERAL DESCRIPTION OF EUT

Product Feature and Specification			
Equipment	Panoramic Camera		
Trade Mark	Labpano		
FCC ID	2ARZ2PIONA1925A		
Model No.	PIONA1925/A		
Family Model	PIONA1925/B, PIONA1925/C, PIONA1925/D, PIONA1925/E		
Model Difference	All models are the same circuit and RF module, except the model name.		
Operating Frequency	2402MHz~2480MHz		
Modulation	GFSK		
Number of Channels	40 Channels		
Bluetooth Version	BT V4.0		
Antenna Type	FPCB Antenna		
Antenna Gain	1.81dBi		
	DC supply: DC 3.8V/3400mAh from Battery or DC 5V from Adapter		
Power supply	Adapter supply: Model: A138A-120150U-US2 Input: 100-240V~50/60Hz 0.5A Output: 5V2.5A/9V2A/12V1.5A		
HW Version	Pilot?MINI-MB_V03		
SW Version	rftesttool-cn-v57		
SW Version	rftesttool-cn-v57		

Note: Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.



# **Revision History**

		-	
Report No.	Version	Description	Issued Date
S19112901716002	Rev.01	Initial issue of report	Mar 13, 2020
S20082504102002	Rev.02	Added the GPS module and Update appearance photos. Update the AC Conducted Emission and Radiated Test data	Sep. 11, 2020

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# 5 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

Test of channel included the lowest and middle and highest frequency to perform the test, then record on this report.

Those data rates (1Mbps for GFSK modulation) were used for all test.

The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement -X, Y, and Z-plane. The X-plane results were found as the worst case and were shown in this report.

#### Carrier Frequency and Channel list:

Channel	Frequency(MHz)
0	2402
1	2404
19	2440
20	2442
38	2478
39	2480

Note: fc=2402MHz+k×2MHz k=0 to 39

The following summary table is showing all test modes to demonstrate in compliance with the standard.

	Test Cases
Test Item	Data Rate/ Modulation
Test Item	Bluetooth 4.0_LE / GFSK
AC Conducted Emission	Mode 1: normal link mode
	Mode 1: normal link mode
Radiated Test	Mode 2: Bluetooth Tx Ch00_2402MHz_1Mbps
Cases	Mode 3: Bluetooth Tx Ch19_2440MHz_1Mbps
	Mode 4: Bluetooth Tx Ch39_2480MHz_1Mbps
Conducted Test	Mode 2: Bluetooth Tx Ch00_2402MHz_1Mbps
Conducted Test Cases	Mode 3: Bluetooth Tx Ch19_2440MHz_1Mbps
Cases	Mode 4: Bluetooth Tx Ch39_2480MHz_1Mbps

Note:

- 1. The engineering test program was provided and the EUT was programmed to be in continuously transmitting mode.
- 2. AC power line Conducted Emission was tested under maximum output power.
- 3. For radiated test cases, the worst mode data rate 1Mbps was reported only, because this data rate has the highest RF output power at preliminary tests, and no other significantly frequencies found in conducted spurious emission.
- 4. EUT built-in battery-powered, the battery is fully-charged.



6 SETUP OF EQUIPMENT UNDER TEST	
6.1 BLOCK DIAGRAM CONFIGURATION OF TEST SYSTEM	
For AC Conducted Emission Mode	
C-1 AC PLUG EUT AE-1 Adapter Adapter	
For Radiated Test Cases	
EUT	
For Conducted Test Cases	
Measurement C-2 EUT	
Note:The temporary antenna connector is soldered on the PCB board in order tests and this temporary antenna connector is listed in the equipment list.	to perform conducted

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#### 6.2 SUPPORT EQUIPMENT

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
AE-1	Adapter	N/A	A824A-120150U-EU1	N/A	Peripherals

Item	Cable Type	Shielded Type	Ferrite Core	Length
C-1	USB Cable	NO	NO	1.0m
C-2	RF Cable	YES	NO	0.1m

#### Notes:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in [Length] column.
- (3) "YES" is means "shielded" "with core"; "NO" is means "unshielded" "without core".



#### 6.3 EQUIPMENTS LIST FOR ALL TEST ITEMS

#### Radiation& Conducted Test equipment

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		estequipment					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibrati on period
1	Spectrum Analyzer	Aglient	E4407B	MY45108040	2020.05.11	2021.05.10	1 year
2	Spectrum Analyzer	Agilent	N9020A	MY49100060	2020.7.13	2021.7.12	1 year
3	Spectrum Analyzer	R&S	FSV40	101417	2020.08.07	2021.08.06	1 year
4	Test Receiver	R&S	ESPI7	101318	2020.05.11	2021.05.10	1 year
5	Bilog Antenna	TESEQ	CBL6111D	31216	2020.04.11	2021.04.10	1 year
6	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2020.05.11	2023.05.10	3 year
7	Horn Antenna	EM	EM-AH-1018 0	2011071402	2018.04.08	2021.04.07	3 year
8	Broadband Horn Antenna	SCHWARZBE CK	BBHA 9170	803	2019.11.18	2020.11.17	1 year
9	Amplifier	EMC	EMC051835 SE	980246	2020.7.13	2021.7.12	1 year
10	Active Loop Antenna	SCHWARZBE CK	FMZB 1519 B	055	2019.11.18	2020.11.17	1 year
11	Power Meter	DARE	RPR3006W	15I00041SN 084	2020.7.13	2021.7.12	1 year
12	Test Cable (9KHz-30MHz)	N/A	R-01	N/A	2019.08.06	2022.08.05	3 year
13	Test Cable (30MHz-1GHz)	N/A	R-02	N/A	2019.08.06	2022.08.05	3 year
14	High Test Cable(1G-40G Hz)	N/A	R-03	N/A	2019.6.28	2022.6.27	3 year
15	High Test Cable(1G-40G Hz)	N/A	R-04	N/A	2019.6.28	2022.6.27	3 year
16	Filter	TRILTHIC	2400MHz	29	2020.04.07	2023.04.06	3 year
17	temporary antenna connector (Note)	NTS	R001	N/A	N/A	N/A	N/A

Note:

We will use the temporary antenna connector (soldered on the PCB board) When conducted test And this temporary antenna connector is listed within the instrument list



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AC Cc	AC Conduction Test equipment						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Test Receiver	R&S	ESCI	101160	2020.05.11	2021.05.10	1 year
2	LISN	R&S	ENV216	101313	2020.05.11	2021.05.10	1 year
3	LISN	SCHWARZBE CK	NNLK 8129	8129245	2020.05.11	2021.05.10	1 year
4	50Ω Coaxial Switch	ANRITSU CORP	MP59B	6200983704	2020.05.11	2023.05.10	3 year
5	Test Cable (9KHz-30MH z)	N/A	C01	N/A	2020.05.11	2023.05.10	3 year
6	Test Cable (9KHz-30MH z)	N/A	C02	N/A	2020.05.11	2023.05.10	3 year
7	Test Cable (9KHz-30MH z)	N/A	C03	N/A	2020.05.11	2023.05.10	3 year

Note: Each piece of equipment is scheduled for calibration once a year except the Aux Equipment & Test Cable which is scheduled for calibration every 2 or 3 years.



# 7 TEST REQUIREMENTS

#### 7.1 CONDUCTED EMISSIONS TEST

'FK 11.:/

#### 7.1.1 Applicable Standard

#### According to FCC Part 15.207(a)

#### **Conformance Limit**

Fraguanay(MHz)	Conducted Emission Limit			
Frequency(MHz)	Quasi-peak	Average		
0.15-0.5	66-56*	56-46*		
0.5-5.0	56	46		
5.0-30.0	60	50		

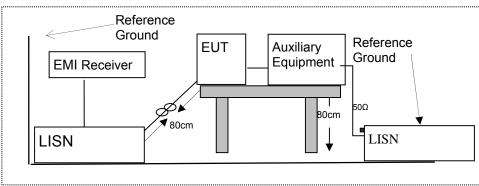
Note: 1. \*Decreases with the logarithm of the frequency

- 2. The lower limit shall apply at the transition frequencies
  - 3. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

#### 7.1.2 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

#### 7.1.3 Test Configuration



#### 7.1.4 Test Procedure

According to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 Conducted emissions the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode.

- 1. The EUT was placed 0.4 meter from the conducting wall of the shielding room.
- 2. The EUT was placed on a table which is 0.8m above ground plane.
- 3. Connect EUT to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- 4. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40cm long.
- 5. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- 6. LISN at least 80 cm from nearest part of EUT chassis.
- 7. The frequency range from 150KHz to 30MHz was searched.
- 8. Set the test-receiver system to Peak Detect Function and specified bandwidth(IF bandwidth=9KHz) with Maximum Hold Mode
- 9. For the actual test configuration, please refer to the related Item -EUT Test Photos.



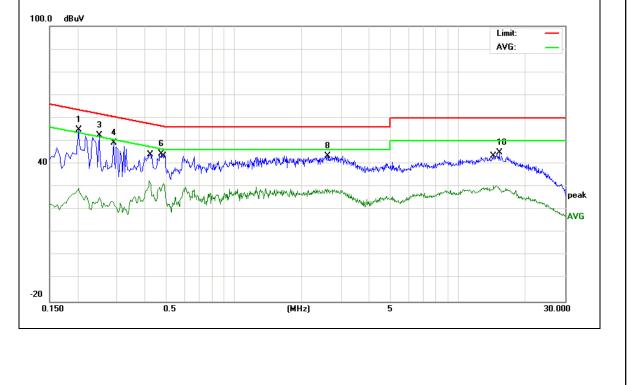
#### 7.1.5 **Test Results**

EUT:	Panoramic Camera	Model Name :	PIONA1925/A
Temperature:	<b>26</b> ℃	Relative Humidity:	54%
Pressure:	1010hPa	Phase:	L
Test Voltage:	DC 5V from Adapter AC 120V/60Hz	Test Mode:	Mode 1

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBµV)	(dB)	(dBµV)	(dBµV)	(dB)	Remark
0.2020	45.14	9.76	54.90	63.52	-8.62	QP
0.2020	19.48	9.76	29.24	53.52	-24.28	AVG
0.2500	42.66	9.76	52.42	61.75	-9.33	QP
0.2900	39.39	9.74	49.13	60.52	-11.39	QP
0.4180	22.87	9.74	32.61	47.49	-14.88	AVG
0.4740	34.62	9.74	44.36	56.44	-12.08	QP
0.4820	21.76	9.74	31.50	46.30	-14.80	AVG
2.6140	33.76	9.80	43.56	56.00	-12.44	QP
14.3739	20.39	10.09	30.48	50.00	-19.52	AVG
15.3019	34.75	10.11	44.86	60.00	-15.14	QP

Remark:

All readings are Quasi-Peak and Average values.
Factor = Insertion Loss + Cable Loss.



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Temperature		Panoramic Camera 26 ℃		Model Name: Relative Humidity:		PIONA1925/A 54%	
-				Phase :		54% N	
Pressure: Test Voltage	. DC 5V fro	1010hPa DC 5V from Adapter AC 120V/60Hz		Phase : Test Mode:		Mode 1	
Frequency	Reading Leve	Correct Factor	Measure-r	ment	Limits	Margin	Remark
(MHz)	(dBµV)	(dB)	(dBµ\	√)	(dBµV)	(dB)	Remain
0.1739	46.71	9.73	56.44	4	64.77	-8.33	QP
0.2020	18.31	9.73	28.04	4	53.52	-25.48	AVG
0.2139	43.78	9.73	53.5	1	63.05	-9.54	QP
0.4779	17.42	9.75	27.1	7	46.38	-19.21	AVG
0.4859	33.60	9.75	43.3	5	56.24	-12.89	QP
1.7740	31.74	9.79	41.53	3	56.00	-14.47	QP
2.7099	15.11	9.84	24.9	5	46.00	-21.05	AVG
14.9939	29.01	10.09	39.10	0	60.00	-20.90	QP
17.9539	17.41	10.16	27.5	7	50.00	-22.43	AVG
00.0 dBu¥						Limit: AVG:	
	Mmmm	M. M. Marine Margareen	S Xypervilley/ky/k			AVG:	Marada
40	5 Mmy WM				ANN MANA MANY	AVG:	
40	Y	WM W MANAGAMANA NA MANAMANANA NA MANAMANANANANA				AVG:	



#### 7.2 RADIATED SPURIOUS EMISSION

#### 7.2.1 Applicable Standard

According to FCC Part 15.247(d) and 15.209 and ANSI C63.10-2013

#### 7.2.2 Conformance Limit

According to FCC Part 15.247(d): radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)). According to FCC Part15.205, Restricted bands

According to FOC Fait 15.205, Restricted bands					
MHz GHz	MHz	MHz			
423 399.9-410 4.5-5.15	16.42-16.423	0.090-0.110			
69525 608-614 5.35-5.46	16.69475-16.69525	0.495-0.505			
80475 960-1240 7.25-7.75	16.80425-16.80475	2.1735-2.1905			
67 1300-1427 8.025-8.5	25.5-25.67	4.125-4.128			
25 1435-1626.5 9.0-9.2	37.5-38.25	4.17725-4.17775			
6 1645.5-1646.5 9.3-9.5	73-74.6	4.20725-4.20775			
2 1660-1710 10.6-12.7	74.8-75.2	6.215-6.218			
3 2200-2300 14.47-14.5	123-138	6.26775-6.26825			
.05 2310-2390 15.35-16.2	149.9-150.05	8.291-8.294			
6.525252483.5-250017.7-21.4	156.52475-156.52525	8.362-8.366			
5.92690-290022.01-23.12	156.7-156.9	8.37625-8.38675			
3260-3267 23.6-24.0	162.0125-167.17	8.41425-8.41475			
3.2 3332-3339 31.2-31.8	167.72-173.2	12.29-12.293			
5 3345.8-3358 36.43-36.5	240-285	12.51975-12.52025			
.4 3600-4400 (2)	322-335.4	12.57675-12.57725			
		13.36-13.41			
61645.5-1646.59.3-9.521660-171010.6-12.732200-230014.47-14.5.052310-239015.35-16.25.525252483.5-250017.7-21.45.92690-290022.01-23.1267.173260-326723.6-24.03.23332-333931.2-31.853345.8-335836.43-36.5	73-74.6 74.8-75.2 123-138 149.9-150.05 156.52475-156.52525 156.7-156.9 162.0125-167.17 167.72-173.2 240-285	4.20725-4.20775 6.215-6.218 6.26775-6.26825 8.291-8.294 8.362-8.366 8.37625-8.38675 8.41425-8.41475 12.29-12.293 12.51975-12.52025 12.57675-12.57725			

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Restricted Frequency(MHz)	Field Strength (µV/m)	Field Strength (dBµV/m)	Measurement Distance
0.009~0.490	2400/F(KHz)	20 log (uV/m)	300
0.490~1.705	24000/F(KHz)	20 log (uV/m)	30
1.705~30.0	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

Limits of Radiated Emission Measurement(Above 1000MHz)

Frequency(MHz)	Class B (dBuV	/m) (at 3M)
Frequency(winz)	PEAK	AVERAGE
Above 1000	74	54

Remark :1. Emission level in dBuV/m=20 log (uV/m)

2. Measurement was performed at an antenna to the closed point of EUT distance of meters.

3. For Frequency 9kHz~30MHz: Distance extrapolation factor =40log(Specific distance/ test distance)(dB); Limit line=Specific limits(dBuV) + distance extrapolation factor.

For Frequency above 30MHz: Distance extrapolation factor =20log(Specific distance/ test distance)(dB); Limit line=Specific limits(dBuV) + distance extrapolation factor.

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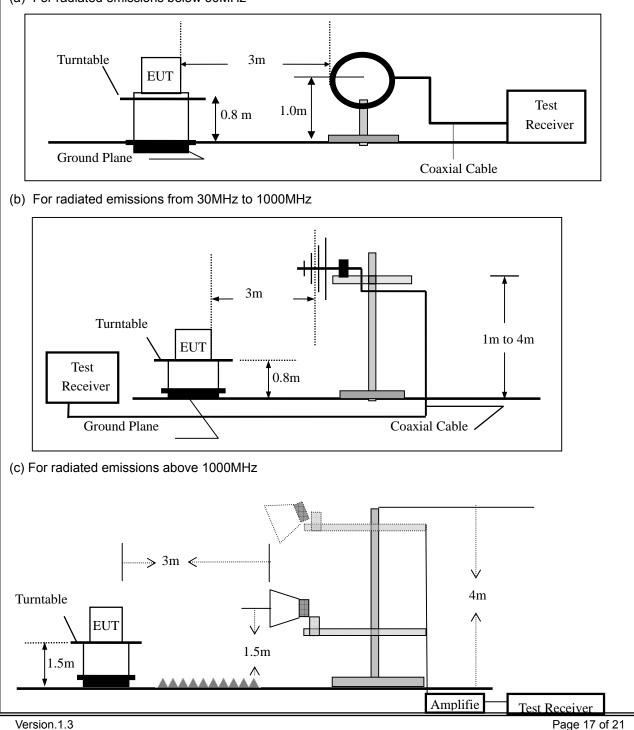


#### 7.2.3 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

#### 7.2.4 Test Configuration

#### (a) For radiated emissions below 30MHz





#### 7.2.5 Test Procedure

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.10-2013. The test distance is 3m. The setup is according to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 and CAN/CSA-CEI/IEC CISPR 22.

This test is required for any spurious emission that falls in a Restricted Band, as defined in Section 15.205. It must be performed with the highest gain of each type of antenna proposed for use with the EUT. Use the following spectrum analyzer settings:

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 m for below 1GHz and 1.5m for above 1GHz the ground at a 3 meter. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m for below 1GHz and 1.5m for above 1GHz; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For the radiated emission test above 1GHz: Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- e. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- f. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- g. For the actual test configuration, please refer to the related Item –EUT Test Photos. Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported



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During the radiated emission test, the Spectrum Analyzer was set with the following configurations:						
Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth			
30 to 1000	QP	120 kHz	300 kHz			
Above 1000	Peak		1 MHz			
	Average	1 MHz	10 Hz			

Note: for the frequency ranges below 30 MHz, a narrower RBW is used for these ranges but the measured value should add a RBW correction factor (RBWCF) where RBWCF [dB] =10\*lg(100 [kHz]/narrower RBW [kHz]). , the narrower RBW is 1 kHz and RBWCF is 20 dB for the frequency 9 kHz to 150 kHz, and the narrower RBW is 10 kHz and RBWCF is 10 dB for the frequency 150 kHz to 30 MHz.

#### 7.2.6 Test Results

■ Spurious Emission below 30MHz (9KHz to 30MHz)

EUT:	Panoramic Camera	Model No.:	PIONA1925/A
Temperature:	<b>20</b> ℃	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Jerry Xie

Freq.	Ant.Pol.	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
(MHz)	H/V	PK	AV	PK	AV	PK	AV

Note: the amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.





Spurious Emission below 1GHz (30MHz to 1GHz) All the modulation modes have been tested, and the worst result was report as below:

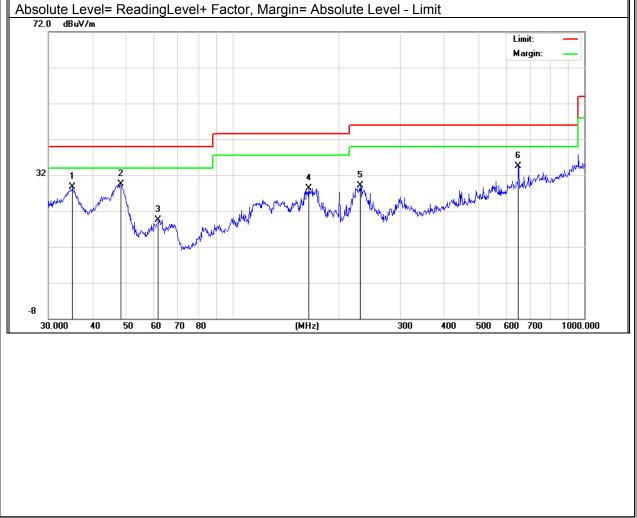
EUT:	Panoramic Camera	Model No.:	PIONA1925/A
Temperature:	<b>20</b> ℃	Relative Humidity:	48%
Pressure:	1010hPa	Test Mode:	Mode 1
Test Voltage:	DC 3.8V		

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Polar	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(H/V)	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	35.1278	12.40	16.39	28.79	40.00	-11.21	QP
V	48.1626	18.76	10.79	29.55	40.00	-10.45	QP
V	61.5618	13.53	5.91	19.44	40.00	-20.56	QP
V	164.9075	17.78	10.60	28.38	43.50	-15.12	QP
V	230.9068	18.01	11.04	29.05	46.00	-16.95	QP
V	649.6597	12.10	22.39	34.49	46.00	-11.51	QP

Remark:



Version.1.3



