

**FCC - TEST REPORT**Report Number : **68.760.17.397.01** Date of Issue: June 23, 2017Model : SP8001, SP8000, SWK 360 A1Product Type : 360 wifi panoramic cameraApplicant : Lidl US Trading, LLCAddress : 3500 S. Clark Street, Arlington Virginia United States 22202Production Facility : DONGGUAN AOMEIJIA ELECTRONIC CO., LTDAddress : Lefushan industrial zone, Yonganpu Village, Fenggang town,  
: Dongguan, Guangdong, China.Test Result : ☒ **Positive** ☐ **Negative**Total pages including  
Appendices : 22

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## 2 Details about the Test Laboratory

### Details about the Test Laboratory

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch  
Building 12&13, Zhiheng Wisdomland Business Park,  
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FCC Registration Number: 502708

Telephone: 86 755 8828 6998  
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### 3 Description of the Equipment Under Test

Product: 360 wifi panoramic camera

Model no.: SP8001, SP8000, SWK 360 A1

FCC ID: 2AJ9O-SWK360A1

Options and accessories: NIL

Rating: DC 3.7V, 1050mAH(Supplied by rechargeable battery)  
DC 5V, 1000mA(Charged by the mini-USB port)

## 4 Summary of Test Standards

Test Standards	
FCC Part 15 Subpart B 10-1-16 Edition	Unintentional Radiators

## 5 Summary of Test Results

Emission Tests				
FCC Part 15 Subpart B 10-1-16 Edition				
Test Condition	Pages	Test Result		
		Pass	Fail	N/A
Radiated Emission 30MHz to 1000MHz	8	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conducted Emission on AC 150kHz to 30MHz	15	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## 6 General Remarks

### Remarks

Three models are same except for the Model name difference. So the tests were applied on SWK 360 A1, other models are deemed to fulfil the EMC test without further testing.

### SUMMARY:

All tests according to the regulations cited on page 5 were

■ - Performed

□ - **Not** Performed

The Equipment under Test

■ - **Fulfills** the general approval requirements.

□ - **Does not** fulfill the general approval requirements.

Sample Received Date: May 03, 2017

Testing Start Date: May 03, 2017

Testing End Date: May 23, 2017

- TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch –

Reviewed by:



Phoebe Hu  
EMC Section Manager

Prepared by:



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EMC Project Engineer

Tested by:

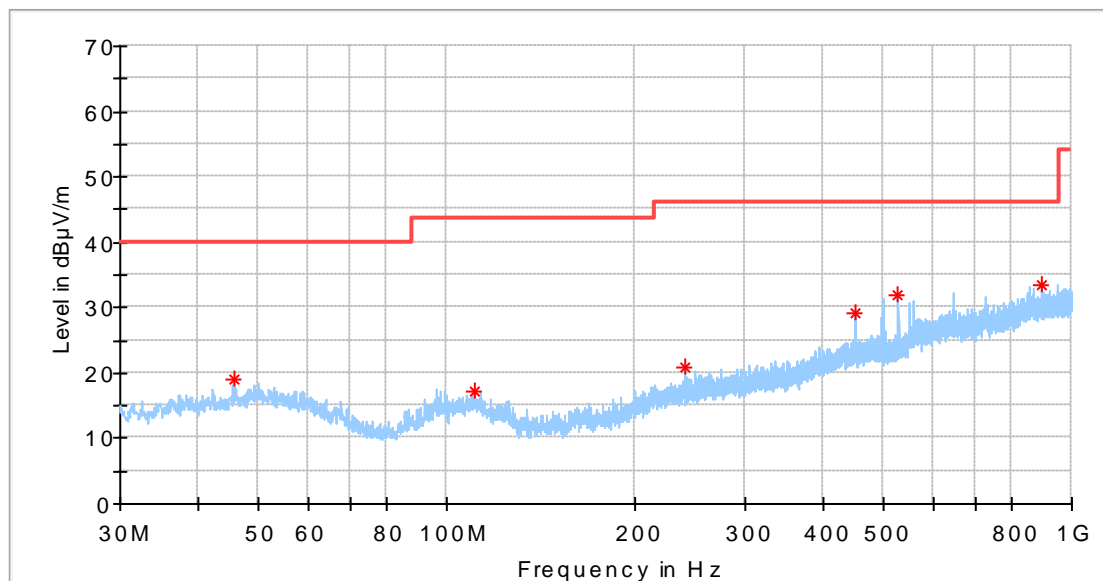


Endy Xie  
EMC Test Engineer

## 7 Technical Requirement

### 7.1 Radiated Emission Test 30MHz – 1000MHz

Product Type : 360 wifi panoramic camera  
 M/N : SWK 360 A1  
 Operating Condition : Charging+ Camera  
 Ant. Polarity : Horizontal  
 Comment : 30-1000MHz



#### Critical Freqs

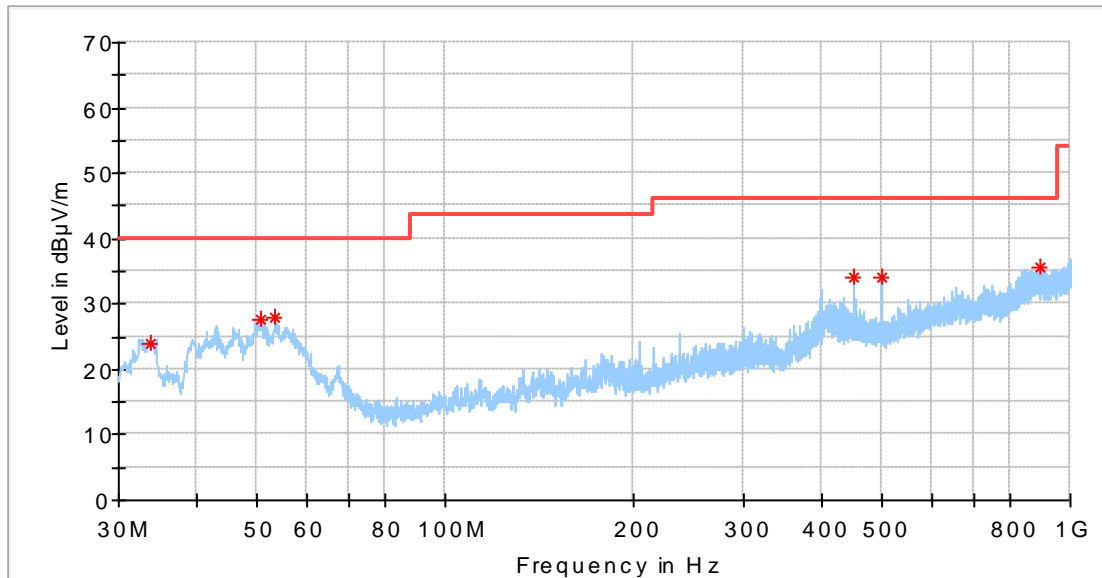
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
45.580625	19.17	40.00	20.83	100.0	H	0.0	17.2
110.934375	17.32	43.50	26.18	100.0	H	0.0	16.1
240.005000	20.78	46.00	25.22	100.0	H	0.0	17.0
450.010000	29.30	46.00	16.70	100.0	H	228.0	22.4
527.973750	31.80	46.00	14.20	100.0	H	0.0	23.2
894.876250	33.57	46.00	12.43	100.0	H	0.0	28.9

#### Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
---	---	---	---	---		---	---



Product Type : 360 wifi panoramic camera  
 M/N : SWK 360 A1  
 Operating Condition : Charging+ Camera  
 Ant. Polarity : Vertical  
 Comment : 30-1000MHz



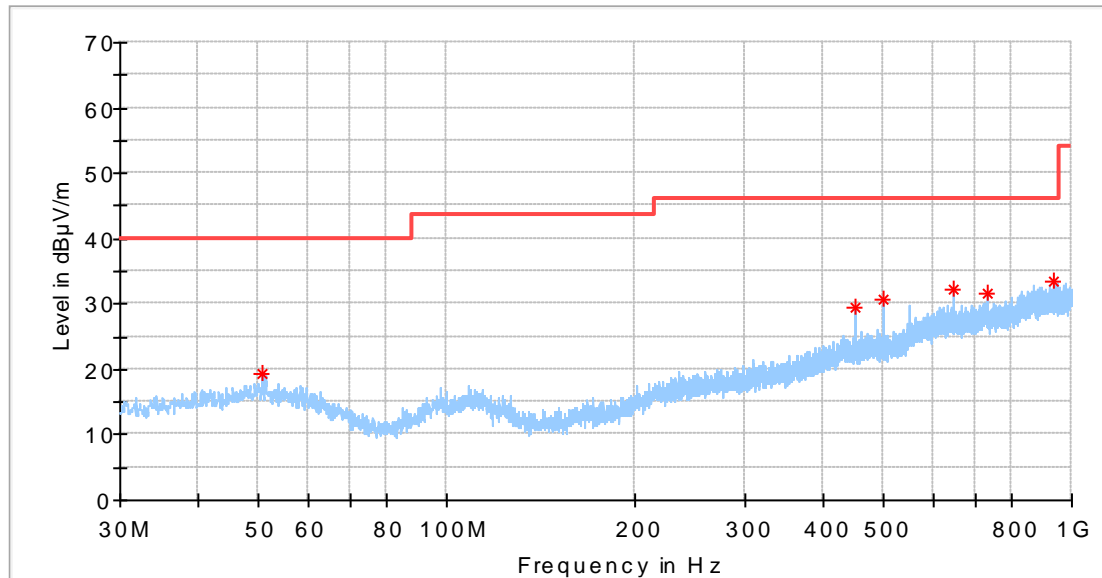
### Critical\_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
33.698125	24.02	40.00	15.98	100.0	V	0.0	17.6
50.673125	27.63	40.00	12.37	100.0	V	0.0	18.5
53.280000	27.84	40.00	12.16	100.0	V	0.0	17.9
450.010000	34.11	46.00	11.89	100.0	V	77.0	24.9
500.025625	34.09	46.00	11.91	100.0	V	31.0	24.8
896.149375	35.75	46.00	10.25	100.0	V	0.0	31.9

### Final\_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
---	---	---	---	---		---	---

Product Type : 360 wifi panoramic camera  
 M/N : SWK 360 A1  
 Operating Condition : Charging+ TX  
 Ant. Polarity : Horizontal  
 Comment : 30-1000MHz



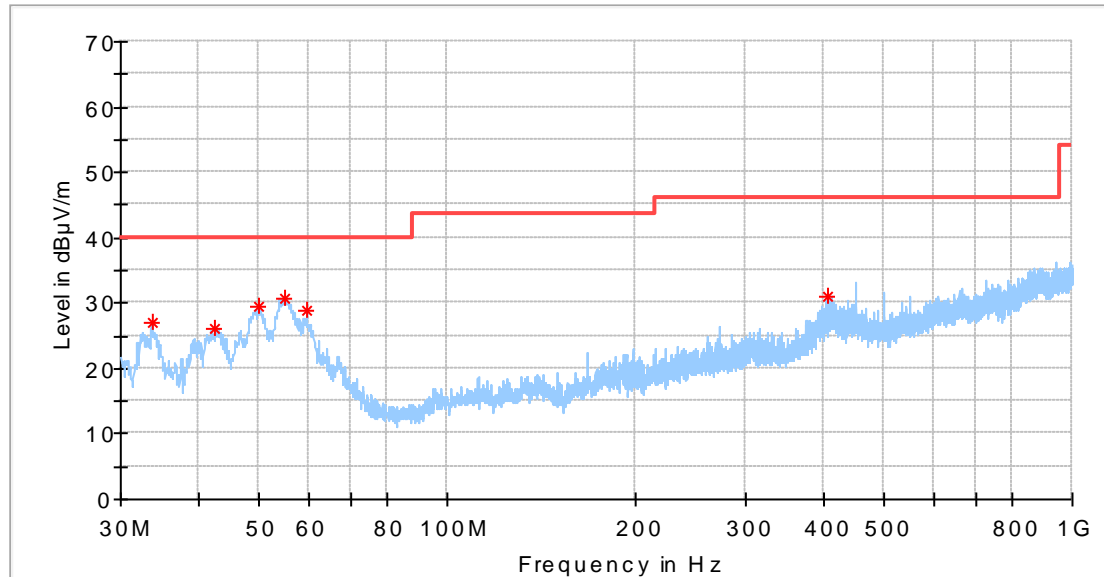
### Critical\_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
50.612500	19.30	40.00	20.70	100.0	H	280.0	17.7
450.010000	29.56	46.00	16.44	100.0	H	214.0	22.4
499.965000	30.60	46.00	15.40	100.0	H	195.0	22.4
648.011250	32.18	46.00	13.82	100.0	H	49.0	26.2
731.491875	31.76	46.00	14.24	100.0	H	0.0	27.3
933.555000	33.31	46.00	12.69	100.0	H	168.0	29.3

### Final\_Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
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Product Type : 360 wifi panoramic camera  
 M/N : SWK 360 A1  
 Operating Condition : Charging+ TX  
 Ant. Polarity : Vertical  
 Comment : 30-1000MHz



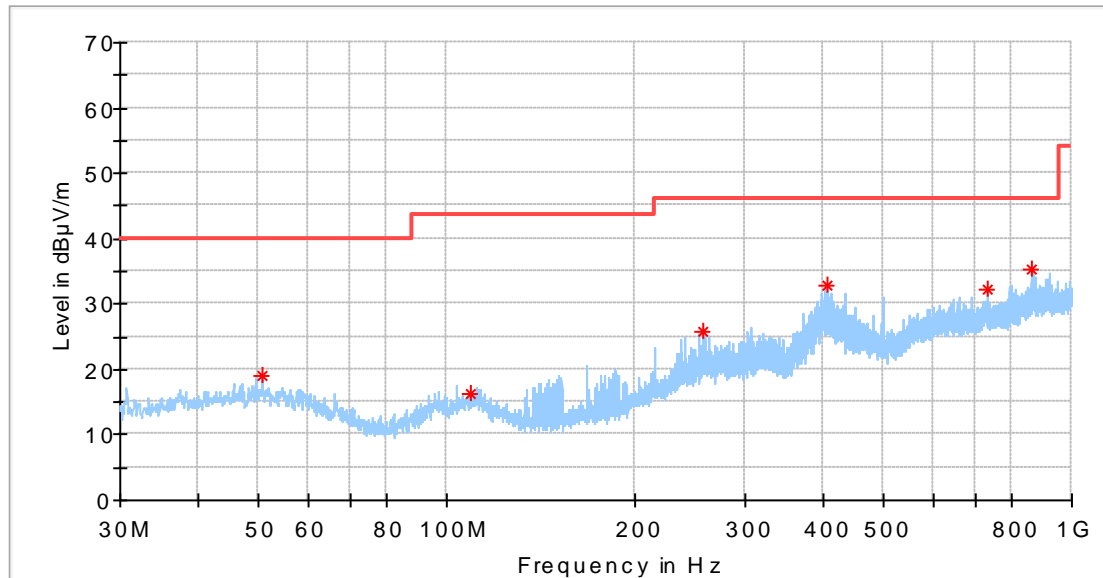
## Critical\_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
33.637500	26.96	40.00	13.04	100.0	V	0.0	17.6
42.488750	26.11	40.00	13.89	100.0	V	0.0	17.9
49.763750	29.33	40.00	10.67	100.0	V	0.0	18.7
54.977500	30.81	40.00	9.19	100.0	V	292.0	17.6
59.524375	28.74	40.00	11.26	100.0	V	328.0	17.2
405.996250	31.13	46.00	14.87	100.0	V	264.0	23.8

## Final\_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
---	---	---	---	---	---	---	---

Product Type : 360 wifi panoramic camera  
 M/N : SWK 360 A1  
 Operating Condition : data transmission  
 Ant. Polarity : Horizontal  
 Comment : 30-1000MHz



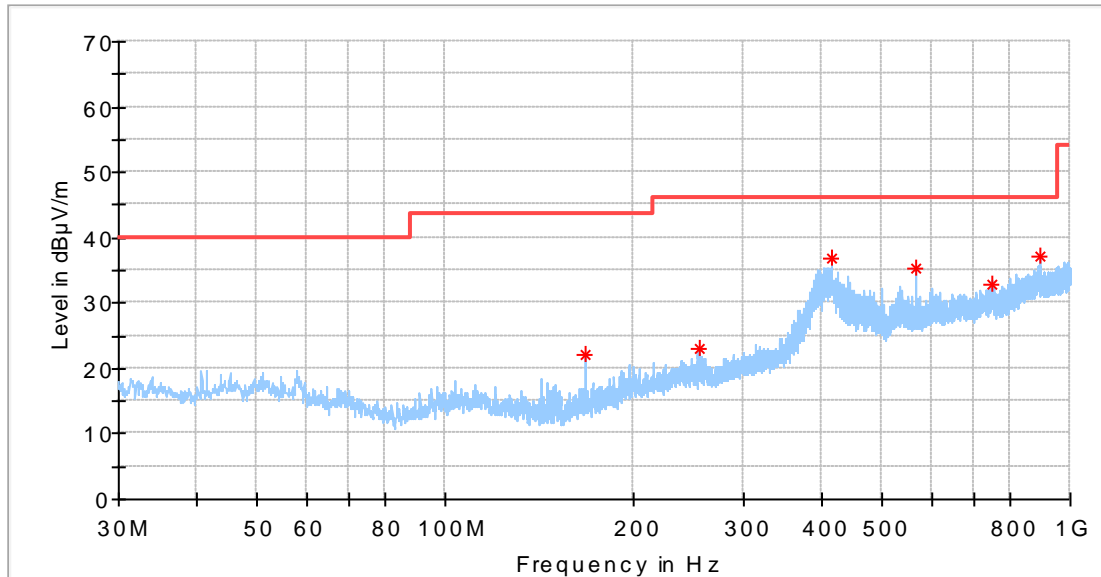
### Critical\_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
50.673125	18.94	40.00	21.06	100.0	H	0.0	17.7
108.812500	16.37	43.50	27.13	100.0	H	0.0	16.2
256.919375	25.76	46.00	20.24	100.0	H	345.0	17.5
405.753750	32.84	46.00	13.16	100.0	H	301.0	21.5
732.825625	32.23	46.00	13.77	100.0	H	0.0	27.2
865.897500	35.33	46.00	10.67	100.0	H	301.0	29.0

### Final\_Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
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Product Type : 360 wifi panoramic camera  
 M/N : SWK 360 A1  
 Operating Condition : data transmission  
 Ant. Polarity : Vertical  
 Comment : 30-1000MHz



### Critical\_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
167.982500	22.15	43.50	21.35	100.0	V	0.0	14.3
254.312500	23.16	46.00	22.84	100.0	V	0.0	18.6
414.241250	36.88	46.00	9.12	100.0	V	348.0	23.9
566.652500	35.20	46.00	10.80	100.0	V	297.0	26.1
748.103125	32.97	46.00	13.03	100.0	V	0.0	29.5
897.119375	37.22	46.00	8.78	100.0	V	0.0	31.9

### Final\_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
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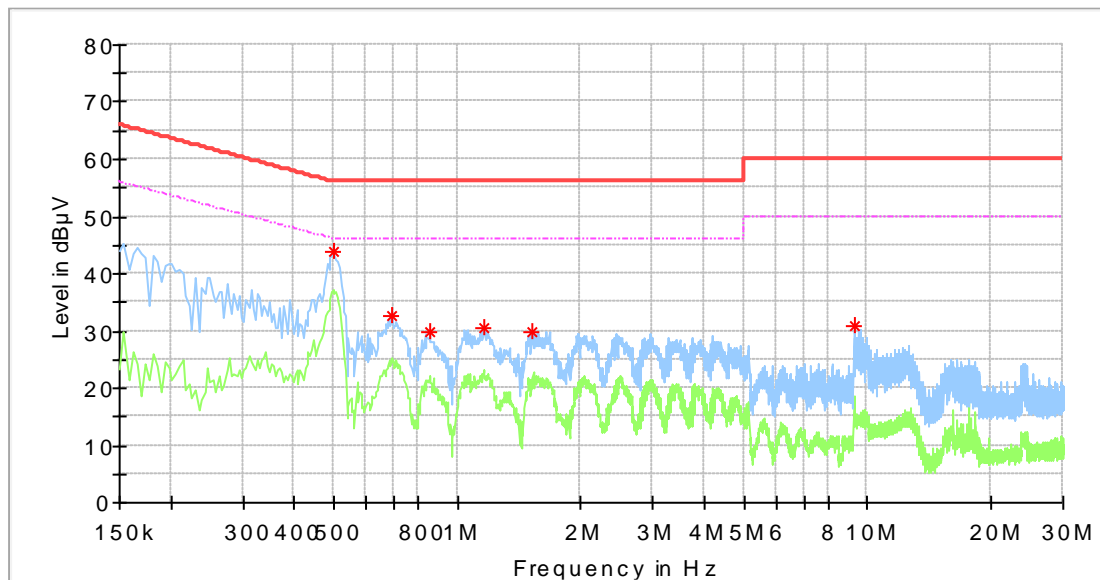
## Test Equipment List

### Radiated Emission Test

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 26	101269	2017-7-15
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9163	707	2017-8-3
Horn Antenna	Rohde & Schwarz	HF907	102294	2017-7-15
Pre-amplifier	Rohde & Schwarz	SCU 18	102230	2017-7-15
3m Semi-anechoic chamber	TDK	9X6X6	----	2019-5-29

## 7. 2 Conducted Disturbance Test 30MHz – 1000MHz

Product Type : 360 wifi panoramic camera  
 M/N : SWK 360 A1  
 Operating Condition : Charging & Camera  
 Test Specification : Line  
 Comment : AC 120V/60Hz



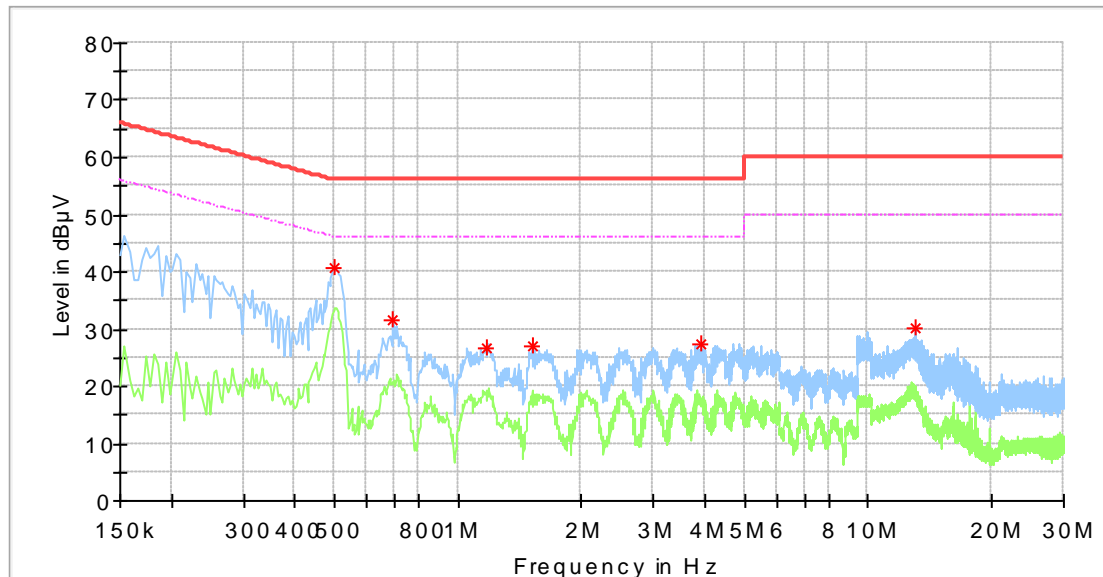
### Critical\_Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.498000	43.98	---	56.03	12.06	L1	10.4
0.694000	32.67	---	56.00	23.33	L1	10.4
0.858000	29.91	---	56.00	26.09	L1	10.4
1.158000	30.53	---	56.00	25.47	L1	10.4
1.530000	29.99	---	56.00	26.01	L1	10.4
9.262000	30.77	---	60.00	29.23	L1	10.7

### Final\_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
---	---	---	---	---		---

Product Type : 360 wifi panoramic camera  
 M/N : SWK 360 A1  
 Operating Condition : Charging & Camera  
 Test Specification : Neutral  
 Comment : AC 120V/60Hz



## Critical Freqs

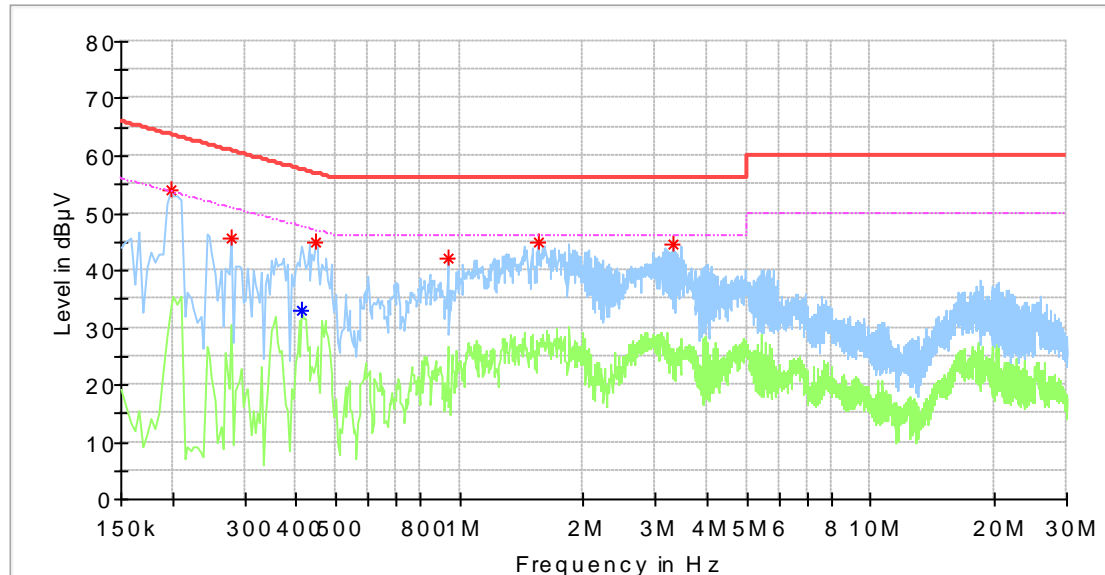
Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.502000	40.65	---	56.00	15.35	N	10.3
0.694000	31.42	---	56.00	24.58	N	10.3
1.170000	26.73	---	56.00	29.27	N	10.4
1.514000	26.90	---	56.00	29.10	N	10.4
3.934000	27.54	---	56.00	28.46	N	10.5
12.990000	30.25	---	60.00	29.75	N	10.8

## Final Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
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Product Type : 360 wifi panoramic camera  
 M/N : SWK 360 A1  
 Operating Condition : Charging & TX  
 Test Specification : Live  
 Comment : AC 120V/60Hz



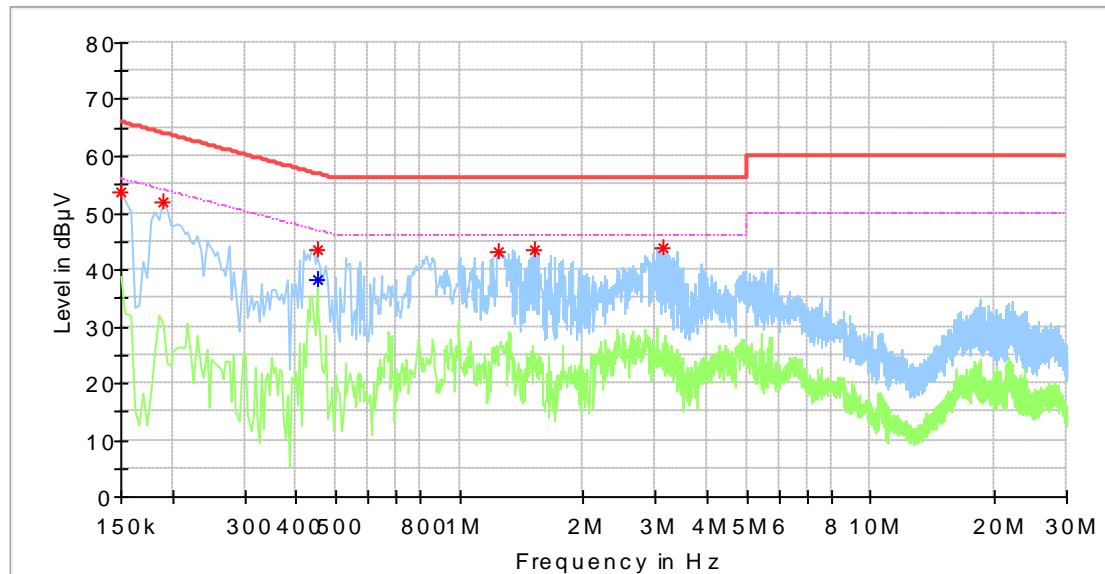
### Critical\_Freqs

Frequency (MHz)	MaxPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.198000	54.21	---	63.69	9.49	L1	10.3
0.278000	45.60	---	60.88	15.28	L1	10.3
0.414000	---	32.98	47.57	14.59	L1	11.5
0.446000	45.04	---	56.95	11.91	L1	11.0
0.938000	41.95	---	56.00	14.05	L1	10.4
1.550000	44.74	---	56.00	11.26	L1	10.4
3.314000	44.56	---	56.00	11.44	L1	10.4

### Final\_Result

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
---	---	---	---	---	---	---

Product Type : 360 wifi panoramic camera  
 M/N : SWK 360 A1  
 Operating Condition : Charging & TX  
 Test Specification : Neutral  
 Comment : AC 120V/60Hz



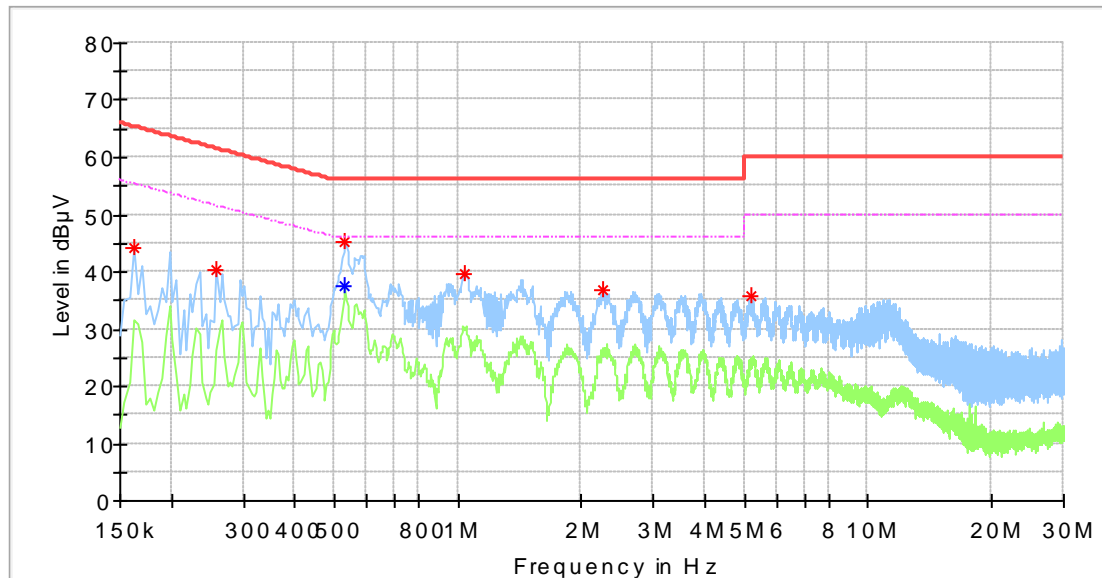
### Critical\_Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.150000	53.74	---	66.00	12.26	N	10.3
0.190000	51.99	---	64.04	12.04	N	10.3
0.450000	---	38.41	46.88	8.46	N	10.3
0.450000	43.52	---	56.88	13.35	N	10.3
1.246000	43.12	---	56.00	12.88	N	10.4
1.526000	43.67	---	56.00	12.33	N	10.4
3.114000	43.94	---	56.00	12.06	N	10.4

### Final\_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
---	---	---	---	---		---

Product Type : 360 wifi panoramic camera  
 M/N : SWK 360 A1  
 Operating Condition : data transmission  
 Test Specification : Line  
 Comment : AC 120V/60Hz



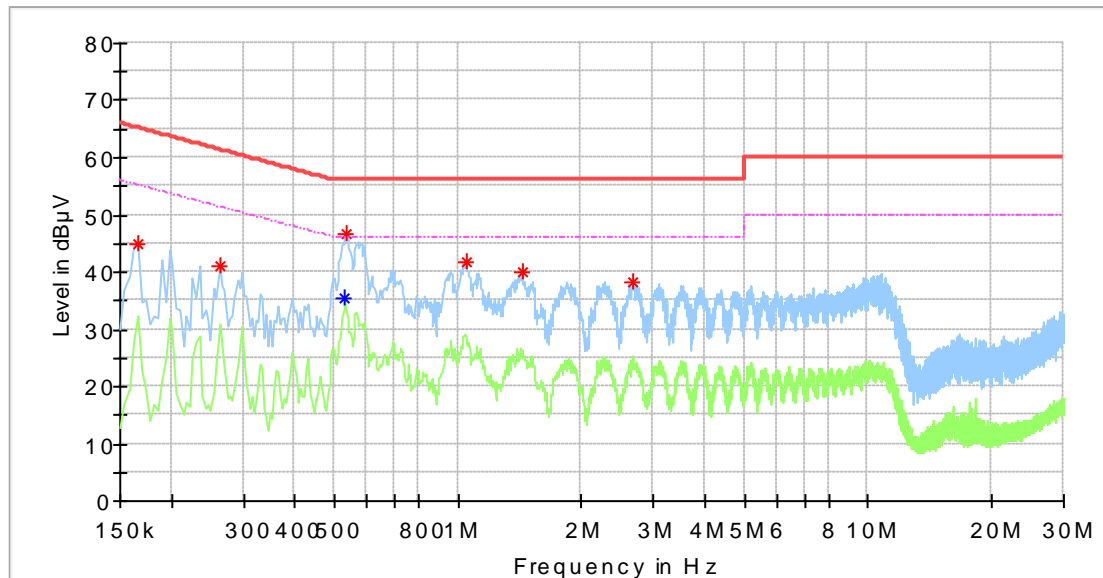
### Critical Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.162000	44.22	---	65.36	21.14	L1	10.3
0.258000	40.32	---	61.50	21.18	L1	10.3
0.530000	---	37.53	46.00	8.47	L1	10.3
0.530000	45.09	---	56.00	10.91	L1	10.3
1.038000	39.77	---	56.00	16.23	L1	10.4
2.262000	36.79	---	56.00	19.21	L1	10.4
5.174000	35.68	---	60.00	24.32	L1	10.5

### Final Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
---	---	---	---	---	---	---

Product Type : 360 wifi panoramic camera  
 M/N : SWK 360 A1  
 Operating Condition : data transmission  
 Test Specification : Neutral  
 Comment : AC 120V/60Hz



### Critical\_Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.166000	44.90	---	65.16	20.26	N	10.3
0.262000	41.17	---	61.37	20.20	N	10.3
0.530000	---	35.31	46.00	10.69	N	10.3
0.534000	46.72	---	56.00	9.28	N	10.3
1.046000	41.82	---	56.00	14.18	N	10.4
1.434000	39.92	---	56.00	16.08	N	10.4
2.678000	38.36	---	56.00	17.64	N	10.4

### Final\_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
---	---	---	---	---	---	---

## Test Equipment List

### Conducted Emission Test

Description	Manufacturer	Model no.	Serial no.	cal. due date
EMI Test Receiver	Rohde & Schwarz	ESR 3	101782	2017-7-15
LISN	Rohde & Schwarz	ENV4200	100249	2017-7-15
LISN	Rohde & Schwarz	ENV432	101318	2017-12-18
LISN	Rohde & Schwarz	ENV216	100326	2017-7-15
ISN	Rohde & Schwarz	ENY81	100177	2017-7-15
ISN	Rohde & Schwarz	ENY81-CA6	101664	2017-7-15
High Voltage Probe	Rohde & Schwarz	TK9420(VT9420)	9420-584	2017-7-15
RF Current Probe	Rohde & Schwarz	EZ-17	100816	2017-7-15
Attenuator	Shanghai Huaxiang	TS2-26-3	080928189	2017-7-17
Test software	Rohde & Schwarz	EMC32	Version9.15.00	N/A

## 8 System 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 %.

System Measurement Uncertainty	
Test Items	Extended Uncertainty
Radiated Emission in 3m chamber 30MHz-1000MHz	Horizontal: 4.99dB; Vertical: 4.97dB;
Conducted Emission 150kHz-30MHz	3.46dB