



Shenzhen Certification Technology Service Co., Ltd  
2F, Building B, East Area of Nanchang Second Industrial  
Zone, Gushu 2nd Road, Bao'an District, Shenzhen  
518126, P.R. China.

# TEST REPORT

**FCC ID: 2ADGB-STEMI305**

**Applicant** : Carl Zeiss Microscopy GmbH  
**Address** : Carl Zeiss Microscopy GmbH Werk Gottingen Konigsallee 9-21,D-37081  
Gottingen, Germany

**Equipment under Test (EUT):**

Name : Stereo Microscope with integrated WIFI Camera  
Model : Stemi 305 Cam

**Standards** : FCC PART 15, SUBPART C : 2013 (Section 15.247)

**Report No.** : CST-TCB140904053

**Date of Test** : September 11- September 15, 2014

**Date of Issue** : September 15, 2014

<b>Test Result :</b>	<b>PASS *</b>
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\* In the configuration tested, the EUT complied with the standards specified above

Authorized Signature

(Mark Zhu)  
General Manager

The manufacture should ensure that all the products in series production are in conformity with the product sample detailed in this report.

If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of Shenzhen Certification Technology Service Co., Ltd. Or test done by Shenzhen Certification Technology Service Co., Ltd. Approvals in connection with, distribution or use of the product described in this report must be approved by Shenzhen Certification Technology Service Co., Ltd. Approvals in writing.

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# 1 General Information

## 1.1 Description of Device (EUT)

Trade Name	: N/A
EUT	: Stereo Microscope with integrated WIFI Camera
Model No.	Stemi 305 Cam
DIFF.	: N/A
Antenna Type	: Printed Antenna, max gain 2.5 dBi
Operation Frequency	: IEEE 802.11b: 2412MHz-2462MHz IEEE 802.11g: 2412MHz-2462MHz IEEE 802.11n HT20: 2412-2462MHz IEEE 802.11n HT40: 2422-2452MHz IEEE 802.11b/g: 11 Channels
Channel number	: IEEE 802.11n HT20 2.4GHz band: 11 Channels IEEE 802.11n HT40 2.4GHz band: 7Channels IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK)
Modulation type	: IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n :OFDM(64QAM, 16QAM, QPSK, BPSK)
Power Supply	: DC 12V Supply by adaptor with 120V/60Hz input
Adapter	Model No.: GFP241DA-1220B-1
Applicant	: Carl Zeiss Microscopy GmbH
Address	: Carl Zeiss Microscopy GmbH Werk Gottingen Konigsallee 9-21,D-37081 Gottingen, Germany
Manufacturer	: Motic China Group Co., Ltd
Address	: MOTIC BLDG, TORCH HI-TECH INDUSTRIAL DEV ZONE XIAMEN FUJIAN,361006,CN

## 1.2 Description of Test Facility

Shenzhen Certification Technology Service Co., Ltd.  
2F, Building B, East Area of Nanchang Second Industrial Zone,  
Gushu 2nd Road, Bao'an District, Shenzhen 518126, P.R. China  
FCC Registered No.:197647  
IC Registered No.:8528B

## 2 EMC Equipment List

Equipment	Manufacture	Model No.	Serial No.	Last cal.	Cal Interval
3m Semi-Anechoic	ETS-LINDGREN	N/A	SEL0017	Nov. 16, 13	1 Year
Spectrum analyzer	Agilent	E4407B	MY49510055	Oct. 30, 13	1 Year
Receiver	R&S	ESCI	101165	Oct. 30, 13	1 Year
Receiver	R&S	ESCI	101202	Oct. 30, 13	1 Year
Bilog Antenna	SCHWARZBECK	VULB 9168	9168-438	Mar.11, 14	1 Year
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D(1201)	Mar.11, 14	1 Year
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170 D(1432)	Mar.11, 14	1 Year
Active Loop Antenna	Beijing Daze	ZN30900A	SEL0097	Mar.12, 13	1 Year
L.I.S.N.	SCHWARZBECK	NSLK8126	8126466	Oct. 30, 13	1 Year
Cable	Resenberger	SUCOFLEX 104	MY6562/4	Oct. 30, 13	1 Year
Cable	Resenberger	SUCOFLEX 104	309972/4	Oct. 30, 13	1 Year
Cable	Resenberger	SUCOFLEX 104	329112/4	Oct. 30, 13	1 Year
Power Meter	Anritsu	ML2487A	6K00001491	Oct. 30, 13	1 Year
Power sensor	Anritsu	ML2491A	32516	Oct. 30, 13	1 Year
Pre-amplifier	SCHWARZBECK	BBV9743	9743-019	Oct. 30, 13	1 Year
Pre-amplifier	Quietek	AP-180C	CHM-0602012	Oct. 30, 13	1 Year

### 3 Test Procedure

**POWER LINE CONDUCTED INTERFERENCE:** The test procedure used was ANSI Standard C63.4-2003 using a 50 u H LISN. Both Lines were observed. The bandwidth of the receiver was 10kHz with an appropriate sweep speed. The ambient temperature of the EUT was 25°C with a humidity of 58%.

**RADIATION INTERFERENCE:** The test procedure used was ANSI Standard C63.4-2003 using a ANRITSU spectrum analyzer with a pre-selector. The analyzer was calibrated in dB above a micro volt at the output of the antenna. The resolution bandwidth was 100kHz and the video bandwidth was 300 kHz up to 1 GHz and 1 MHz with a video BW of 3MHz above 1 GHz. The ambient temperature of the EUT was 25°C with a humidity of 58%.

**FORMULA OF CONVERSION FACTORS:** The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer and cable loss. The antenna correction factors and cable loss are stated in terms of dB. The gain of the Pre-selector was accounted for in the Spectrum Analyzer Meter Reading.

Example:

Freq (MHz) METER READING + ACF + CABLE = FS

33.20 dBuV + 10.36 dB + 0.9 dB= 44.46 dBuV/m @ 3m

ANSI STANDARD C63.4-2003 10.1.7 MEASUREMENT PROCEDURES: The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The EUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation. When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes. The situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSI Standard C63.4-2003 10.1.7 with the EUT 40 cm from the vertical ground wall.

## 4 Summary of Measurement

### 4.1 Summary of test result

Test Item	Test Requirement	Standards Paragraph	Result
Spurious Emission	FCC PART 15 : 2013	Section 15.247&15.209	Compliance
Conduction Emission	FCC PART 15: 2013	Section 15.207	Compliance
Bandwidth Test	FCC PART 15:2013	Section 15.247	Compliance
Peak Power	FCC PART 15:2013	Section 15.247	Compliance
Power Density	FCC PART 15:2013	Section 15.247	Compliance
Band Edge	FCC PART 15:2013	Section 15.247	Compliance
Antenna Requirement	FCC PART 15 : 2013	Section 15.203	Compliance

Note: The EUT has been tested as an independent unit. And Continual Transmitting in maximum power (The adapter be used during Test)

### 4.2 Test connection



### 4.3 Assistant equipment used for test

Description	:	SWITCHING POWER ADAPTER
Manufacturer	:	N/A
Model No.	:	GFP241DA-1220B-1

#### 4.4 Test mode

Tested mode, channel, and data rate information 2.4G			
Mode	data rate (Mbps)(see Note)	Channel	Frequency (MHz)
IEEE 802.11b	1	Low :CH1	2412
	1	Middle: CH6	2437
	1	High: CH11	2462
IEEE 802.11g	6	Low :CH1	2412
	6	Middle: CH6	2437
	6	High: CH11	2462
IEEE 802.11 n/HT20 with 2.4G	6.5	Low :CH1	2412
	6.5	Middle: CH6	2437
	6.5	High: CH11	2462
IEEE 802.11 n/HT40 with 2.4G	13.5	Low :CH 3	2422
	13.5	Middle:CH 6	2437
	13.5	High:CH 9	2452
Note: According exploratory test, EUT will have maximum output power in those data rate. so those data rate were used for all test.			

Remark: The EUT was set to a 100% duty cycle for testing.

#### 4.5 Channel list

For IEEE 802.11b/g and IEEE 802.11n/HT20 with 2.4G					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
CH1	2412	CH5	2432	CH9	2452
CH2	2417	CH6	2437	CH10	2457
CH3	2422	CH7	2442	CH11	2462
CH4	2427	CH8	2447		

For IEEE 802.11n/HT40 with 2.4G					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
CH3	2422	CH7	2442		
CH4	2427	CH8	2447		
CH5	2432	CH9	2452		
CH6	2437				



#### 4.6 Test Conditions

Temperature range	21-25°C
Humidity range	40-75%
Pressure range	86-106kPa

#### 4.7 Measurement Uncertainty (95% confidence levels, k=2)

Item	MU	Remark
Uncertainty for Power point Conducted Emissions Test	2.42dB	
Uncertainty for Radiation Emission test in 3m chamber (below 30MHz)	2.13 dB	Polarize: V
	2.57dB	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.54dB	Polarize: V
	4.1dB	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	2.08dB	Polarize: H
	2.56dB	Polarize: V
Uncertainty for radio frequency	$1 \times 10^{-9}$	
Uncertainty for conducted RF Power	0.65dB	
Uncertainty for temperature	0.2°C	
Uncertainty for humidity	1%	
Uncertainty for DC and low frequency voltages	0.06%	

## 5 Spurious Emission

### 5.1 Radiation Emission

#### 5.1.1 Radiation Emission Limits(15.209)

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

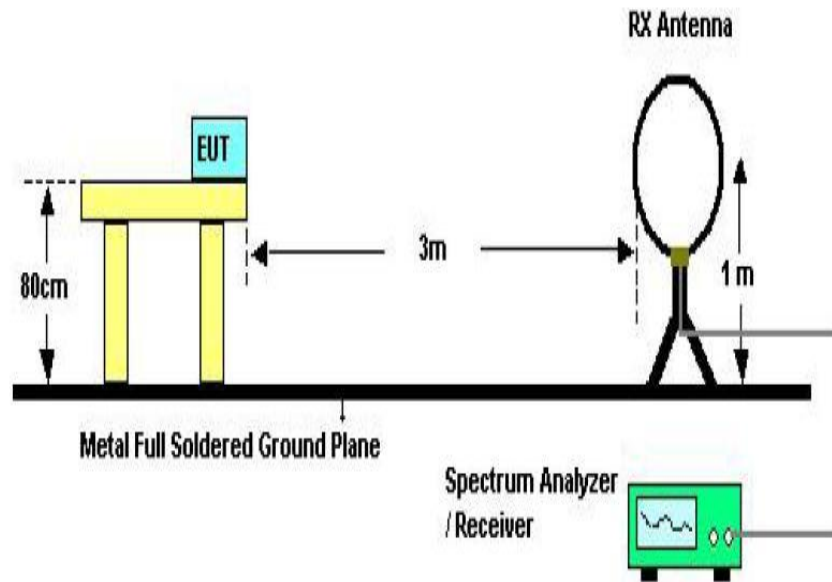
Harmonic emissions limits comply with below 54 dBuV/m at 3m. Other emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or comply with the radiated emissions limits specified in section 15.209(a) limit in the table below has to be followed.

**NOTE:**

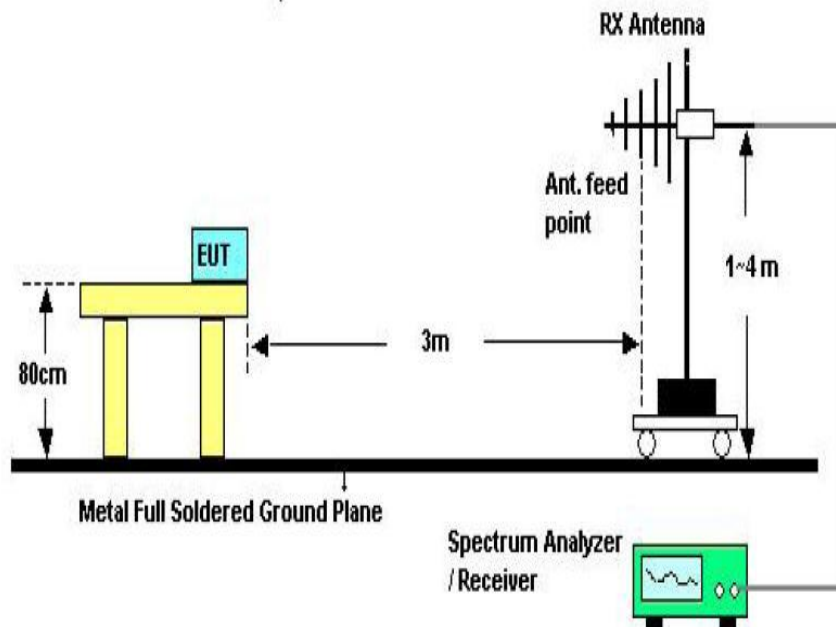
- a) The tighter limit applies at the band edges.
- b) Emission Level(dB uV/m)=20log Emission Level(Uv/m)

#### 5.1.2 Test Setup

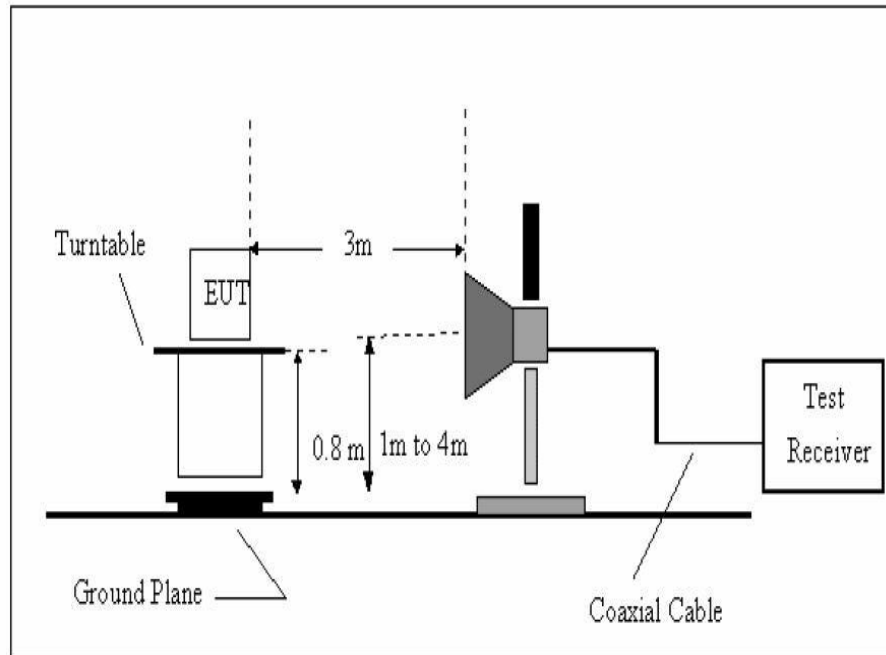
See the next page



Below 30MHz Test Setup



Above 30MHz Test Setup



Above 1GHz Test Setup

### 5.1.3 Test Procedure

- The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1GHz, The EUT was placed on a rotating 0.8 m high above ground, The table was rotated 360 degrees to determine the position of the highest radiation
- The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set of make measurement.
- 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 Qusia Peak Detector mode premeasured
- If Peak value comply with QP limit Below 1GHz. The EUT deemed to comply with QP limit. But the Peak value and average value both need to comply with applicable limit above 1GHz.
- For the actual test configuration, please see the test setup photo.

#### 5.1.4 Test Equipment Setting For emission test Result

9KHz~150KHz	RBW 200Hz	VBW 1KHz
150KHz~30MHz	RBW 9KHz	VBW 30KHz
30MHz~1GHz	RBW 120KHz	VBW 300KHz
Above 1GHz	RBW 1MHz	VBW 3MHz

#### 5.1.5 Test Condition

Transmitting mode.

#### 5.1.6 Test Result

We have scanned the 9KHz from 25GHz to the EUT.  
Detailed information please see the following page.

From 9KHz to 30MHz:      Conclusion: PASS

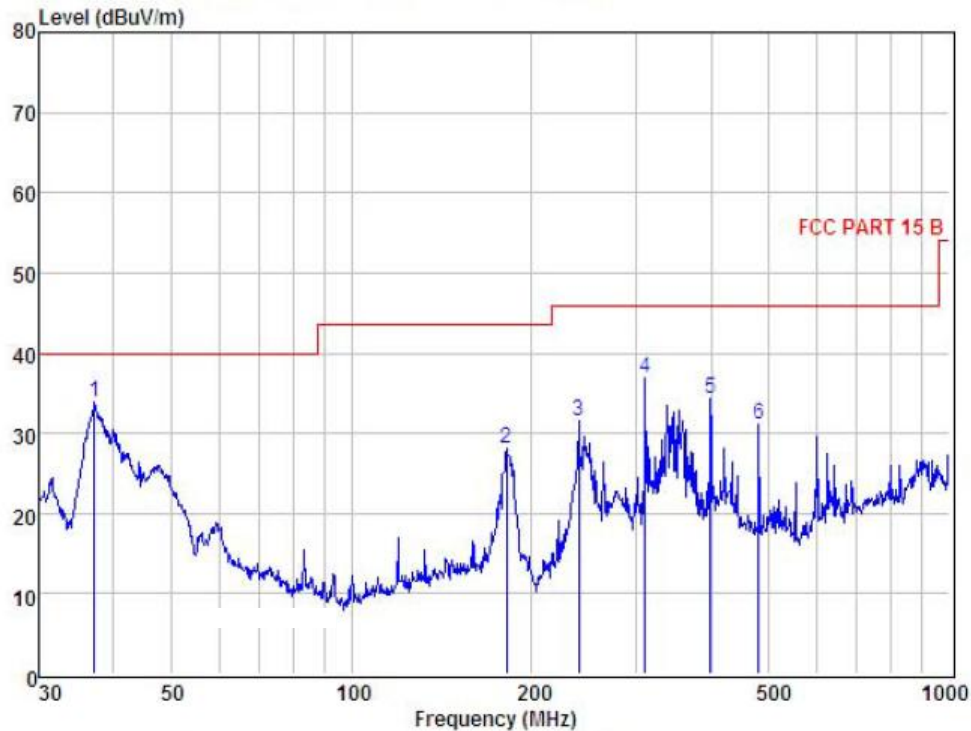
Note: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



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 Website: <http://www.cessz.com> Email: [Service@cessz.com](mailto:Service@cessz.com)

Data: 20

File: D:\REPORT DATA\M\MOTIC\0912RE.EM6 (20)



Condition : FCC PART 15 B 3m POL: HORIZONTAL  
 EUT :  
 Model No : Stemi 305 Cam  
 Test Mode : Tx Mode  
 Power : AC120V 60Hz  
 Test Engineer :  
 Remark :  
 Temp : 25.2°C  
 Hum : 56%

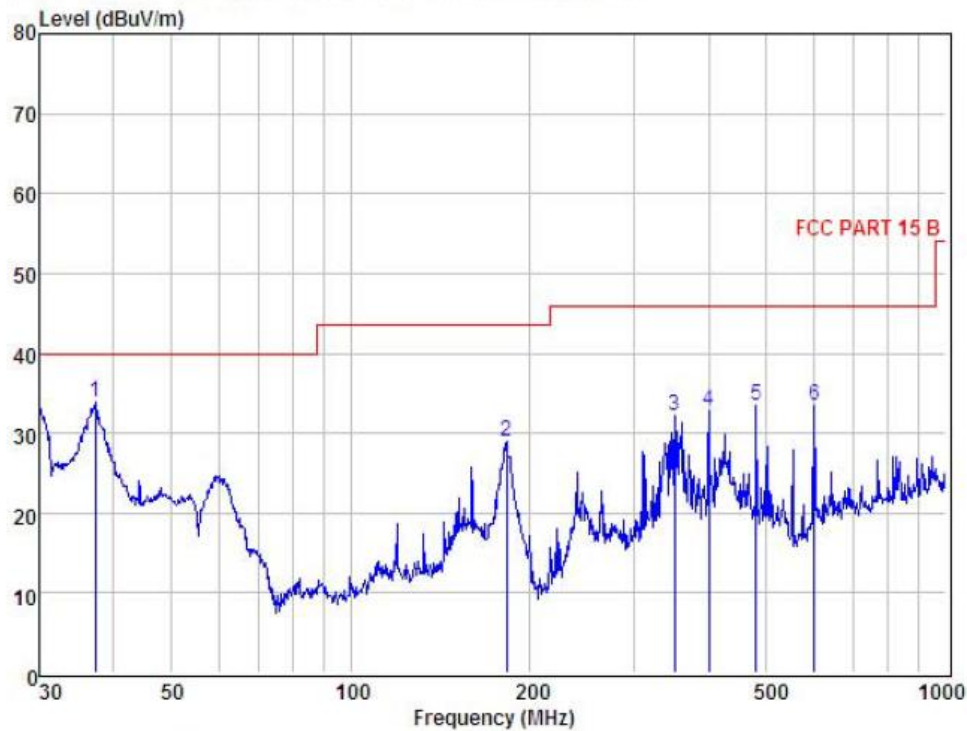
Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Preamplifier Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	37.15	48.70	13.73	26.74	0.10	38.79	40.00	-6.21	Peak
2	181.92	43.13	11.44	26.93	0.56	28.20	43.50	-15.30	Peak
3	239.99	45.55	11.45	26.07	0.53	31.46	46.00	-14.54	Peak
4	310.00	47.40	13.04	24.21	0.60	36.83	46.00	-9.17	Peak
5	399.03	43.26	14.71	24.42	0.66	34.21	46.00	-11.79	Peak
6	480.53	38.59	16.28	24.57	0.81	31.11	46.00	-14.89	Peak

Remark: Level = Read Level + Antenna Factor - Preamplifier Factor + Cable Loss



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 Website: <http://www.cessz.com> Email: [Service@cessz.com](mailto:Service@cessz.com)

Data: 19 File: D:\REPORT DATA\MMOTIC\0912RE.EM6 (20)



Condition : FCC PART 15 B 3m POL: VERTICAL  
 EUT :  
 Model No : Stemi 305 Cam  
 Test Mode : Tx Mode  
 Power : AC120V 60Hz  
 Test Engineer :  
 Remark :  
 Temp : 25.2°C  
 Hum : 56%

Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Preamplifier Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	37.29	45.90	13.73	25.74	0.08	33.97	40.00	-6.03	Peak
2	183.20	43.87	11.44	26.93	0.60	28.98	43.50	-14.52	Peak
3	350.48	41.95	13.83	24.27	0.58	32.09	46.00	-13.91	Peak
4	400.43	41.72	14.74	24.43	0.71	32.74	46.00	-13.26	Peak
5	480.53	40.92	16.28	24.57	0.81	33.44	46.00	-12.56	Peak
6	601.43	39.89	18.36	25.82	1.07	33.50	46.00	-12.50	Peak

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss

From 1G-25GHz

IEEE 802.11b

<b>EUT</b>	Stereo Microscope with integrated WIFI Camera	<b>Model Name</b>	Stemi 305 Cam
<b>Temperature</b>	26°C	<b>Relative Humidity</b>	56%
<b>Pressure</b>	960hPa	<b>Test voltage</b>	DC 12V From adapter
<b>Test Mode</b>	Low Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1103	V	42.15	---	-11.24	30.91	---	74	54	43.09	Peak
4824	V	37.15	---	0.64	37.79	---	74	54	36.21	Peak
N/A										

<b>EUT</b>	Stereo Microscope with integrated WIFI Camera	<b>Model Name</b>	Stemi 305 Cam
<b>Temperature</b>	26°C	<b>Relative Humidity</b>	56%
<b>Pressure</b>	960hPa	<b>Test voltage</b>	DC 12V From adapter
<b>Test Mode</b>	Low Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1103	H	44.15	---	-11.24	32.91	---	74	54	41.09	Peak
4824	H	37.21	---	0.64	37.85	---	74	54	36.15	Peak
N/A										

**Notes:** AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.



<b>EUT</b>	Stereo Microscope with integrated WIFI Camera	<b>Model Name</b>	Stemi 305 Cam
<b>Temperature</b>	26°C	<b>Relative Humidity</b>	56%
<b>Pressure</b>	960hPa	<b>Test voltage</b>	DC 12V From adapter
<b>Test Mode</b>	Middle Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1103	V	42.37	---	-11.24	31.13	---	74	54	42.87	Peak
4874	V	38.15	---	0.76	38.91	---	74	54	35.09	Peak

<b>EUT</b>	Stereo Microscope with integrated WIFI Camera	<b>Model Name</b>	Stemi 305 Cam
<b>Temperature</b>	26°C	<b>Relative Humidity</b>	56%
<b>Pressure</b>	960hPa	<b>Test voltage</b>	DC 12V From adapter
<b>Test Mode</b>	Middle Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1103	H	42.18	---	-11.24	30.94	---	74	54	43.06	Peak
4874	H	38.15	---	0.76	38.91	---	74	54	35.09	Peak

**Notes:** AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

<b>EUT</b>	Stereo Microscope with integrated WIFI Camera	<b>Model Name</b>	Stemi 305 Cam
<b>Temperature</b>	26°C	<b>Relative Humidity</b>	56%
<b>Pressure</b>	960hPa	<b>Test voltage</b>	DC 12V From adapter
<b>Test Mode</b>	High Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1103	V	42.09	---	-11.24	30.85	---	74	54	43.15	Peak
4924	V	38.12	---	0.87	38.99	---	74	54	35.01	Peak

<b>EUT</b>	Stereo Microscope with integrated WIFI Camera	<b>Model Name</b>	Stemi 305 Cam
<b>Temperature</b>	26°C	<b>Relative Humidity</b>	56%
<b>Pressure</b>	960hPa	<b>Test voltage</b>	DC 12V From adapter
<b>Test Mode</b>	High Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1103	H	41.92	---	-11.24	30.68	---	74	54	43.32	Peak
4924	H	34.00	---	0.87	34.87	---	74	54	39.13	Peak

**Notes:** AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

IEEE 802.11 g:

<b>EUT</b>	Stereo Microscope with integrated WIFI Camera	<b>Model Name</b>	Stemi 305 Cam
<b>Temperature</b>	26°C	<b>Relative Humidity</b>	56%
<b>Pressure</b>	960hPa	<b>Test voltage</b>	DC 12V From adapter
<b>Test Mode</b>	Low Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1145	V	43.25	---	-11.24	32.01	---	74	54	41.99	Peak
2586	V	47.15	---	-7.13	40.02	---	74	54	33.98	Peak
3062	V	45.37	---	-5.74	39.63	---	74	54	34.37	Peak
4824	V	41.32	---	0.64	41.96	---	74	54	32.04	Peak
N/A										

<b>EUT</b>	Stereo Microscope with integrated WIFI Camera	<b>Model Name</b>	Stemi 305 Cam
<b>Temperature</b>	26°C	<b>Relative Humidity</b>	56%
<b>Pressure</b>	960hPa	<b>Test voltage</b>	DC 12V From adapter
<b>Test Mode</b>	Low Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1294	H	42.18	---	-10.96	31.22	---	74	54	42.78	Peak
2038	H	42.09	---	-8.58	33.51	---	74	54	40.49	Peak
3483	H	41.38	---	-4.95	36.43	---	74	54	37.57	Peak
4824	H	38.25	---	0.64	38.89	---	74	54	35.11	Peak
N/A										

**Notes:** AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

<b>EUT</b>	Stereo Microscope with integrated WIFI Camera	<b>Model Name</b>	Stemi 305 Cam
<b>Temperature</b>	26°C	<b>Relative Humidity</b>	56%
<b>Pressure</b>	960hPa	<b>Test voltage</b>	DC 12V From adapter
<b>Test Mode</b>	Middle Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1374	V	42.25	---	-10.43	31.82	---	74	54	42.18	Peak
2589	V	43.01	---	-7.13	35.88	---	74	54	38.12	Peak
3365	V	42.18	---	-5.18	37	---	74	54	37	Peak
4874	V	41.32	---	0.76	42.08	---	74	54	31.92	Peak

<b>EUT</b>	Stereo Microscope with integrated WIFI Camera	<b>Model Name</b>	Stemi 305 Cam
<b>Temperature</b>	26°C	<b>Relative Humidity</b>	56%
<b>Pressure</b>	960hPa	<b>Test voltage</b>	DC 12V From adapter
<b>Test Mode</b>	Middle Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1321	H	42.34	---	-10.84	31.5	---	74	54	42.5	Peak
2314	H	42.09	---	-7.46	34.63	---	74	54	39.37	Peak
3577	H	43.06	---	-4.76	38.3	---	74	54	35.7	Peak
4874	H	39.16	---	0.76	39.92	---	74	54	34.08	Peak

**Notes:** AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

<b>EUT</b>	Stereo Microscope with integrated WIFI Camera	<b>Model Name</b>	Stemi 305 Cam
<b>Temperature</b>	26°C	<b>Relative Humidity</b>	56%
<b>Pressure</b>	960hPa	<b>Test voltage</b>	DC 12V From adapter
<b>Test Mode</b>	High Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1302	V	42.72	---	-10.84	31.88	---	74	54	42.12	Peak
2982	V	43.08	---	-5.86	37.22	---	74	54	36.78	Peak
3831	V	41.92	---	-3.96	37.96	---	74	54	36.04	Peak
4924	V	39.26	---	0.87	40.13	---	74	54	33.87	Peak

<b>EUT</b>	Stereo Microscope with integrated WIFI Camera	<b>Model Name</b>	Stemi 305 Cam
<b>Temperature</b>	26°C	<b>Relative Humidity</b>	56%
<b>Pressure</b>	960hPa	<b>Test voltage</b>	DC 12V From adapter
<b>Test Mode</b>	High Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1446	H	43.05	---	-10.29	32.76	---	74	54	41.24	Peak
2198	H	42.85	---	-8.24	34.61	---	74	54	39.39	Peak
3905	H	43.09	---	-3.68	39.41	---	74	54	34.59	Peak
4924	H	38.76	---	0.87	39.63	---	74	54	34.37	Peak

**Notes:** AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

IEEE 802.11n/HT20 with 2.4G

<b>EUT</b>	Stereo Microscope with integrated WIFI Camera	<b>Model Name</b>	Stemi 305 Cam
<b>Temperature</b>	26°C	<b>Relative Humidity</b>	56%
<b>Pressure</b>	960hPa	<b>Test voltage</b>	DC 12V From adapter
<b>Test Mode</b>	Low Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1492	V	43.04	---	-10.27	32.77	---	74	54	41.23	Peak
2671	V	42.74	---	-6.94	35.8	---	74	54	38.2	Peak
3948	V	41.85	---	-3.68	38.17	---	74	54	35.83	Peak
4824	V	38.26	---	0.64	38.9	---	74	54	35.1	Peak
N/A										

<b>EUT</b>	Stereo Microscope with integrated WIFI Camera	<b>Model Name</b>	Stemi 305 Cam
<b>Temperature</b>	26°C	<b>Relative Humidity</b>	56%
<b>Pressure</b>	960hPa	<b>Test voltage</b>	DC 12V From adapter
<b>Test Mode</b>	Low Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1451	H	42.84	---	-10.27	32.57	---	74	54	41.43	Peak
2839	H	42.09	---	-6.17	35.92	---	74	54	38.08	Peak
3607	H	43.12	---	-4.52	38.6	---	74	54	35.4	Peak
4824	H	38.79	---	0.64	39.43	---	74	54	34.57	Peak
N/A										

**Notes:** AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

<b>EUT</b>	Stereo Microscope with integrated WIFI Camera	<b>Model Name</b>	Stemi 305 Cam
<b>Temperature</b>	26°C	<b>Relative Humidity</b>	56%
<b>Pressure</b>	960hPa	<b>Test voltage</b>	DC 12V From adapter
<b>Test Mode</b>	Middle Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1262	V	43.08	---	-10.96	32.12	---	74	54	41.88	Peak
2013	V	42.78	---	-8.58	34.2	---	74	54	39.8	Peak
3798	V	42.82	---	-4.07	38.75	---	74	54	35.25	Peak
4874	V	39.74	---	0.76	40.5	---	74	54	33.5	Peak

<b>EUT</b>	Stereo Microscope with integrated WIFI Camera	<b>Model Name</b>	Stemi 305 Cam
<b>Temperature</b>	26°C	<b>Relative Humidity</b>	56%
<b>Pressure</b>	960hPa	<b>Test voltage</b>	DC 12V From adapter
<b>Test Mode</b>	Middle Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1511	H	43.91	---	-10.14	33.77	---	74	54	40.23	Peak
2353	H	42.68	---	-7.59	35.09	---	74	54	38.91	Peak
3266	H	42.19	---	-5.39	36.8	---	74	54	37.2	Peak
4874	H	38.96	---	0.76	39.72	---	74	54	34.28	Peak

**Notes:** AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

<b>EUT</b>	Stereo Microscope with integrated WIFI Camera	<b>Model Name</b>	Stemi 305 Cam
<b>Temperature</b>	26°C	<b>Relative Humidity</b>	56%
<b>Pressure</b>	960hPa	<b>Test voltage</b>	DC 12V From adapter
<b>Test Mode</b>	High Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1477	V	42.79	---	-10.27	32.52	---	74	54	41.48	Peak
2703	V	43.06	---	-6.43	36.63	---	74	54	37.37	Peak
3561	V	42.64	---	-4.76	37.88	---	74	54	36.12	Peak
4924	V	38.76	---	0.87	39.63	---	74	54	34.37	Peak

<b>EUT</b>	Stereo Microscope with integrated WIFI Camera	<b>Model Name</b>	Stemi 305 Cam
<b>Temperature</b>	26°C	<b>Relative Humidity</b>	56%
<b>Pressure</b>	960hPa	<b>Test voltage</b>	DC 12V From adapter
<b>Test Mode</b>	High Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1503	H	42.82	---	-10.14	32.68	---	74	54	41.32	Peak
3588	H	43.06	---	-4.96	38.1	---	74	54	35.9	Peak
4153	H	41.87	---	-2.48	39.39	---	74	54	34.61	Peak
4924	H	38.69	---	0.87	39.56	---	74	54	34.44	Peak

**Notes:** AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.



IEEE 802.11n/HT40 with 2.4G

<b>EUT</b>	Stereo Microscope with integrated WIFI Camera	<b>Model Name</b>	Stemi 305 Cam
<b>Temperature</b>	26°C	<b>Relative Humidity</b>	56%
<b>Pressure</b>	960hPa	<b>Test voltage</b>	DC 12V From adapter
<b>Test Mode</b>	Low Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1551	V	42.92	---	-10.07	32.85	---	74	54	41.15	Peak
2695	V	42.65	---	-6.94	35.71	---	74	54	38.29	Peak
3463	V	43.05	---	-4.95	38.1	---	74	54	35.9	Peak
4844	V	38.91	---	0.64	39.55	---	74	54	34.45	Peak
N/A										

<b>EUT</b>	Stereo Microscope with integrated WIFI Camera	<b>Model Name</b>	Stemi 305 Cam
<b>Temperature</b>	26°C	<b>Relative Humidity</b>	56%
<b>Pressure</b>	960hPa	<b>Test voltage</b>	DC 12V From adapter
<b>Test Mode</b>	Low Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1542	H	42.76	---	-10.14	32.62	---	74	54	41.38	Peak
2358	H	43.05	---	-7.59	35.46	---	74	54	38.54	Peak
3096	H	42.81	---	-5.74	37.07	---	74	54	36.93	Peak
4844	H	39.39	---	0.64	40.03	---	74	54	33.97	Peak
N/A										

**Notes:** AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

<b>EUT</b>	Stereo Microscope with integrated WIFI Camera	<b>Model Name</b>	Stemi 305 Cam
<b>Temperature</b>	26°C	<b>Relative Humidity</b>	56%
<b>Pressure</b>	960hPa	<b>Test voltage</b>	DC 12V From adapter
<b>Test Mode</b>	Middle Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1628	V	43.11	---	-9.84	33.27	---	74	54	40.73	Peak
2593	V	42.64	---	-7.13	35.51	---	74	54	38.49	Peak
3301	V	41.93	---	-5.31	36.62	---	74	54	37.38	Peak
4874	V	38.79	---	0.76	39.55	---	74	54	34.45	Peak

<b>EUT</b>	Stereo Microscope with integrated WIFI Camera	<b>Model Name</b>	Stemi 305 Cam
<b>Temperature</b>	26°C	<b>Relative Humidity</b>	56%
<b>Pressure</b>	960hPa	<b>Test voltage</b>	DC 12V From adapter
<b>Test Mode</b>	Middle Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1564	H	43.58	---	-10.07	33.51	---	74	54	40.49	Peak
2248	H	42.89	---	-8.13	34.76	---	74	54	39.24	Peak
3159	H	42.32	---	-5.52	36.8	---	74	54	37.2	Peak
4874	H	38.76	---	0.76	39.52	---	74	54	34.48	Peak

**Notes:** AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

<b>EUT</b>	Stereo Microscope with integrated WIFI Camera	<b>Model Name</b>	Stemi 305 Cam
<b>Temperature</b>	26°C	<b>Relative Humidity</b>	56%
<b>Pressure</b>	960hPa	<b>Test voltage</b>	DC 12V From adapter
<b>Test Mode</b>	High Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1645	V	42.75	---	-9.84	32.91	---	74	54	41.09	Peak
2590	V	41.93	---	-7.13	34.8	---	74	54	39.2	Peak
3851	V	42.08	---	-3.84	38.24	---	74	54	35.76	Peak
4904	V	38.79	---	0.87	39.66	---	74	54	34.34	Peak

<b>EUT</b>	Stereo Microscope with integrated WIFI Camera	<b>Model Name</b>	Stemi 305 Cam
<b>Temperature</b>	26°C	<b>Relative Humidity</b>	56%
<b>Pressure</b>	960hPa	<b>Test voltage</b>	DC 12V From adapter
<b>Test Mode</b>	High Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1792	H	42.38	---	-9.27	33.11	---	74	54	40.89	Peak
2804	H	41.77	---	-6.17	35.6	---	74	54	38.4	Peak
3743	H	43.05	---	-4.24	38.81	---	74	54	35.19	Peak
4904	H	39.12	---	0.87	39.99	---	74	54	34.01	Peak

**Notes:** AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

## 6 POWER LINE CONDUCTED EMISSION

### 6.1 Conducted Emission Limits(15.207)

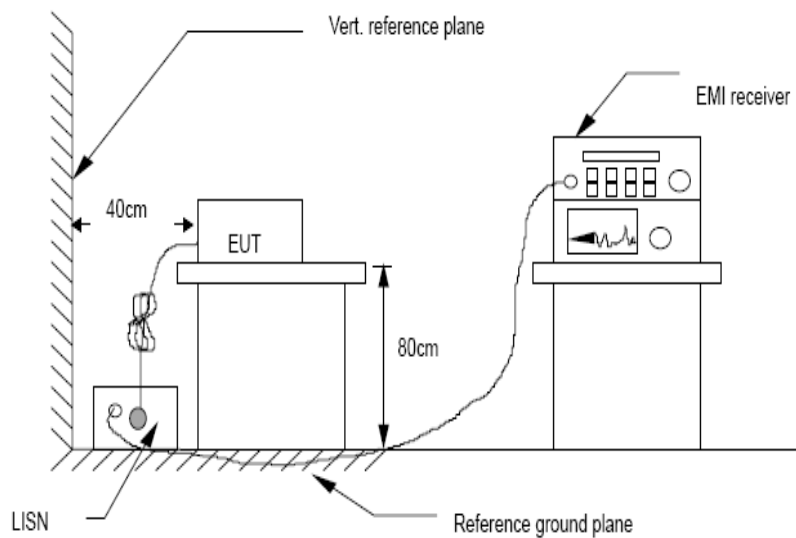
Frequency MHz	Limits dB( $\mu$ V)	
	Quasi-peak Level	Average Level
0.15 -0.50	66 -56*	56 - 46*
0.50 -5.00	56	46
5.00 -30.00	60	50

Notes: 1. \*Decreasing linearly with logarithm of 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 0.50 MHz.

### 6.2 Test Setup



### 6.3 Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4-2003 on Conducted Emission Measurement. The bandwidth of test receiver (R & S ESCStemi 305 Cam0) is set at 9 kHz.

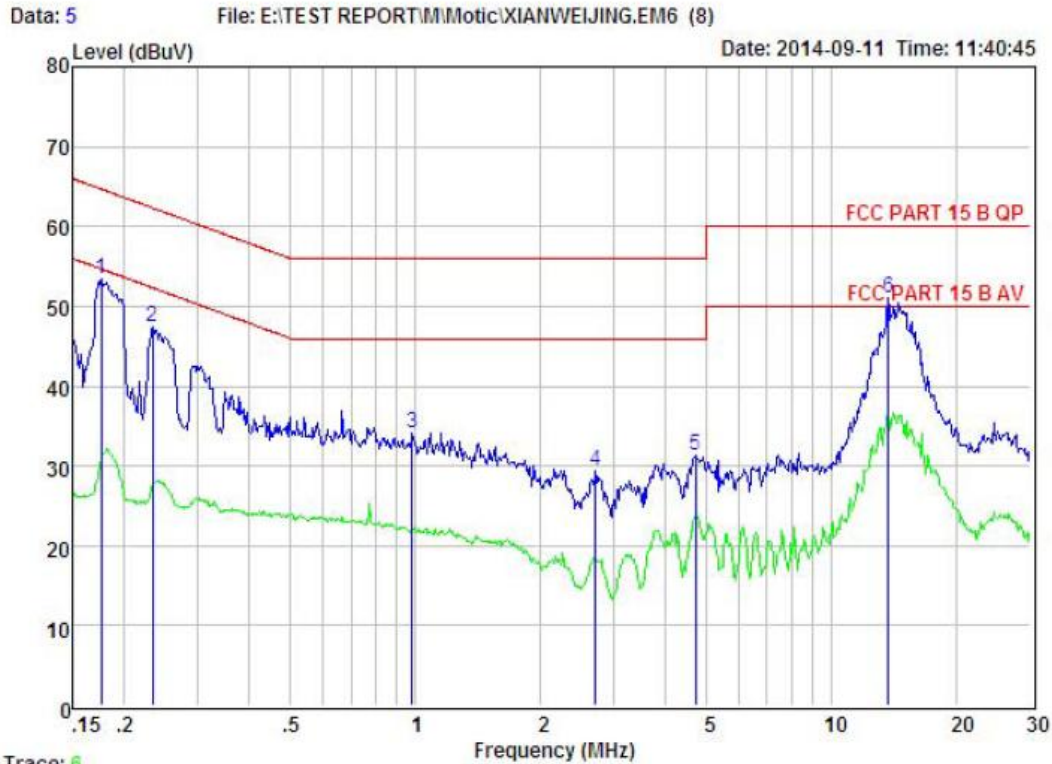
### 6.4 Test Results

**PASS**

Detailed information please see the following page.



Shenzhen Certification Technology Service Co., Ltd.  
2F, Building B, East Area of Nanchang Second Industrial Zone,  
Gushu 2nd Road, Bao'an District, Shenzhen 518126, P.R. China  
Tel: 4006786199 Fax: +86-755-26736857  
Website: <http://www.cessz.com> Email: [Service@cessz.com](mailto:Service@cessz.com)



Trace: 6  
Condition : FCC PART 15 B QP POL: LINE Temp: 24 °C Hum: 56 %  
EUT :  
Model No : Stemi 305 Cam  
Test Mode :  
Power : AC 120V/60Hz  
Test Engineer :  
Remark :

Item	Freq MHz	Read dBuV	LISN Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.176	43.48	0.03	-9.72	0.10	53.33	64.68	-11.35	Peak
2	0.234	37.55	0.03	-9.72	0.10	47.40	62.30	-14.90	Peak
3	0.984	24.35	0.04	-9.71	0.10	34.20	56.00	-21.80	Peak
4	2.707	19.51	0.07	-9.70	0.11	29.39	56.00	-26.61	Peak
5	4.721	21.46	0.10	-9.68	0.12	31.36	56.00	-24.64	Peak
6	13.695	41.09	0.23	-9.42	0.23	50.97	60.00	-9.03	Peak

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss