Report No.: DDT-R22102105-2E01

Issued Date: Nov. 09, 2022

FCC CERTIFICATION TEST REPORT

FOR

Applicant	**:**	BEIJING MADV TECHNOLOGY CO., LTD.
Address	**:**	NO.80, FLOOR 4, BUILDING17, YARD 30, SHIXINGDAJIE SHIJINGSHAN DISTRICT, BEIJING, CHINA
Equipment under Test	**:**	MADV Smart Video Doorbell 2M
Model No.	**:**	FJ07MLTZ (Transmitter) FJ05MLNJ (Receiver)
Trade Mark	**:**	N/A
FCC ID	**:**	2AJ2LE3JGL
Manufacturer	**:**	BEIJING MADV TECHNOLOGY CO., LTD.
Address	**:**	NO.80, FLOOR 4, BUILDING17, YARD 30, SHIXINGDAJIE SHIJINGSHAN DISTRICT, BEIJING, CHINA

Issued By: Dongguan Dongdian Testing Service Co., Ltd.

Add.: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City, Guangdong Province, China, 523808

Tel.: +86-0769-38826678, **E-mail:** ddt@dgddt.com, http://www.dgddt.com

REPORT

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TEST REPORT DECLARE

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Address	:	NO.80, FLOOR 4, BUILDING17, YARD 30, SHIXINGDAJIE SHIJINGSHAN DISTRICT, BEIJING, CHINA

Test Standard Used:

FCC Rules and Regulations Part 15 Subpart C.

Test procedure used:

ANSI C63.10:2013

We Declare:

The equipment described above is tested by Dongguan Dongdian Testing Service Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and Dongguan Dongdian Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After test and evaluation, our opinion is that the equipment provided for test compliance with the requirement of the above FCC standards.

Report No.:	DDT-R22102105-2E01		
Date of Receipt:	Oct. 26, 2022	**Date of Test:**	Oct. 26, 2022~ Nov. 09, 2022

Prepared By:

Sanvin Zheng

Sanvin Zheng//Engineer

Approved By:

DONGGUAN DONGDIAN TESTING SERVICE CO., LTD. APPROVED

Damon Hu/EMC Manager

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Dongguan Dongdian Testing Service Co., Ltd.

Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Nov. 09, 2022	

1 Summary of test results

Description of Test Item	Standard	Results
20dB Bandwidth	FCC Part 15: 15.215 ANSI C63.10:2013	Pass
Stop Transmitting Time Test	FCC Part 15C: 15.231(a)(1)	Pass
Radiated Emission	FCC Part 15: 15.209 FCC Part 15: 15.231(b) ANSI C63.10:2013	Pass
Power Line Conducted Emissions	FCC Part 15: 15.207 ANSI C63.10:2013	Pass
Antenna requirement	FCC Part 15: 15.203	Pass

2 General test information

2.1. Description of EUT

EUT* Name	:	MADV Smart Video Doorbell 2M	
Model Number	:	FJ07MLTZ (Transmitter) FJ05MLNJ (Receiver)	
EUT function description	:	Please reference user manual of this device	
Power supply	:	FJ07MLTZ	DC 3.7 V Rechargeable Lithium-ion battery DC 5V from external AC Adapter
		FJ05MLNJ	DC 5V from external AC Adapter
Operation frequency	:	433.92 MHz	
Modulation	:	FSK	
Antenna Gain	:	-2.15 dBi	
Sample Number	:	S22102105-01 for conductive S22102105-02 for radiation	

Note 1: EUT is the ab. of equipment under test.

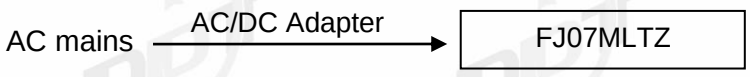
2.2. Accessories of EUT

Assistant equipment	Manufacturer	Model number	Serial No.	Other
USB cable	N/A	N/A	N/A	Length: 30cm
USB cable	N/A	N/A	N/A	Length: 80cm
MADV Smart Video Doorbell Chime	BEIJING MADV TECHNOLOGY CO., LTD.	FJ05MLNJ	N/A	Input: DC 5V/1A

2.3. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	EMC Compliance	SN
AC Adapter	HUAWEI	HW-050450C00	N/A	Input: 100-240V~ 50/60Hz, Output: 5V/2A or 4.5V/5A or 5V/4.5A

2.4. Block diagram of EUT configuration for test



Tested mode, channel, information		
Mode	Channel	Frequency (MHz)
TX mode	1	433.92

2.5. Deviations of test standard

No Deviation.

2.6. Test environment conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature range:	21-25℃
Humidity range:	40-75%
Pressure range:	86-106kPa

2.7. Test laboratory

Dongguan Dongdian Testing Service Co., Ltd.

Add.: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City, Guangdong Province, China, 523808.

Tel.: +86-0769-38826678, http://www.dgddt.com, Email: ddt@dgddt.com.

CNAS Accreditation No. L6451; A2LA Accreditation Number: 3870.01

FCC Designation Number: CN1182, Test Firm Registration Number: 540522

Innovation, Science and Economic Development Canada Site Registration Number: 10288A

Conformity Assessment Body identifier: CN0048

VCCI facility registration number: C-20087, T-20088, R-20123, R-20155, G-20118

2.8. Measurement uncertainty

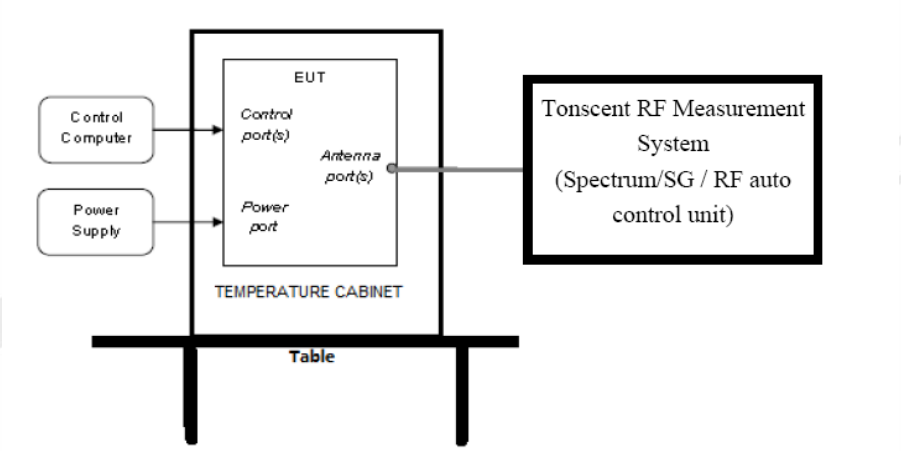
Test Item	Uncertainty
Bandwidth	1.1%
Peak Output Power(Conducted)(Spectrum analyzer)	0.86dB (10 MHz ≤ f < 3.6GHz);
	1.38dB (3.6GHz ≤ f < 8GHz)
Peak Output Power(Conducted)(Power Sensor)	0.74dB
Power Spectral Density	0.74dB (10 MHz ≤ f < 3.6GHz);
	1.38dB (3.6GHz ≤ f < 8GHz)
Frequencies Stability	6.7×10^{-8} (Antenna couple method)
	5.5×10^{-8} (Conducted method)
Conducted spurious emissions	0.86dB (10 MHz ≤ f < 3.6GHz);
	1.40dB (3.6GHz ≤ f < 8GHz)
	1.66dB (8GHz≤ f < 26.5GHz)
Uncertainty for radio frequency (RBW<20kHz)	3×10^{-8}
Temperature	0.4℃
Humidity	2%
Uncertainty for Radiation Emission test (30MHz-1GHz)	4.70 dB (Antenna Polarize: V)
	4.84 dB (Antenna Polarize: H)
Uncertainty for Radiation Emission test (1GHz-40GHz)	4.10dB (1-6GHz)
	4.40dB (6GHz-18GHz)
	3.54dB (18GHz-26GHz)
	4.30dB (26GHz-40GHz)
Uncertainty for Power line conduction emission test	3.32dB (150kHz-30MHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

3 Equipment used during test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☒**RF Connected Test (Tonscend RF Measurement System 3#)**					
Signal &Spectrum analyzer	R&S	FSV40	101407	Jul. 21, 2022	1 Year
Wideband Radio Communication tester	R&S	CMW500	117491	May 18, 2022	1 Year
Vector Signal Generator	Agilent	N5182A	MY19060405	May 18, 2022	1 Year
Vector Signal Generator	Agilent	N5182A	MY48180912	May 18, 2022	1 Year
RF Control Unit	Tonscend	JS0806-2	20C8060230	May 18, 2022	1 Year
Temp&Humi Programmable	ZHIXIANG	ZXGDJS-150 L	ZX170110-A	May 26, 2022	1 Year
Test Software	JS Tonscend	JS1120-3	Ver.3.2.22	N/A	N/A
☒**Radiation 3#chamber**					
EMI Test Receiver	R&S	ESU26	100472	May 19, 2022	1 Year
Spectrum analyzer	Agilent	E4447A	MY50180031	May 17, 2022	1 Year
Active Loop antenna	Schwarzbeck	FMZB-1519	1519-038	Sep. 29, 2022	1 Year
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	01429	Jul. 22, 2022	1 Year
Double Ridged Horn Antenna	Schwarzbeck	BBHA9120 D	02468	Sep. 29, 2022	1 Year
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	790	May 06, 2022	1 Year
Pre-amplifier	COM-POWER	PAM-118A	18040084	Aug.17, 2022	1 Year
Pre-amplifier	COM-POWER	PAM-840A	461369	Apr. 11, 2022	1 Year
RE Cable	N/A	W23.02 CP1-X2 + W23.09 AP1-X8+ JCT26S-NJ-NJ-1.5M+ JCT26S-NJ-NJ-1.5M	4.5M+8M+1.5M+1.5M	Aug.17, 2022	1 Year
RF Cable	Yuhu Technology	JCTB810-NJ-NJ-9M	21123964	May. 19,2022	1 Year
RF Cable	Yuhu Technology	ZT26S-SMAJ-SMAJ-1M	21073466	Aug.17, 2022	1 Year
Test software	Audix	E3	V 6.1.1.1	N/A	N/A
☒**Power Line Conducted Emissions Test 1#**					
Test Receiver	R&S	ESCI	100551	Aug. 26, 2022	1 Year
LISN 1	R&S	ENV216	101109	Aug. 26, 2022	1 Year
LISN 2	R&S	ESH2-Z5	100309	Aug. 26, 2022	1 Year
CE Cable 1	HUBSER	N/A	W10.01	Aug. 26, 2022	1 Year
Test software	Audix	E3	V 6.11111b	N/A	N/A
Test Receiver	R&S	ESCI	100551	Aug. 26, 2022	1 Year

4. On Time and Duty Cycle

4.1. Block diagram of test setup



4.2. Limits

None: for reporting purposes only.

4.3. Test Procedure

Set the Centre frequency of the spectrum analyzer to the transmitting frequency;

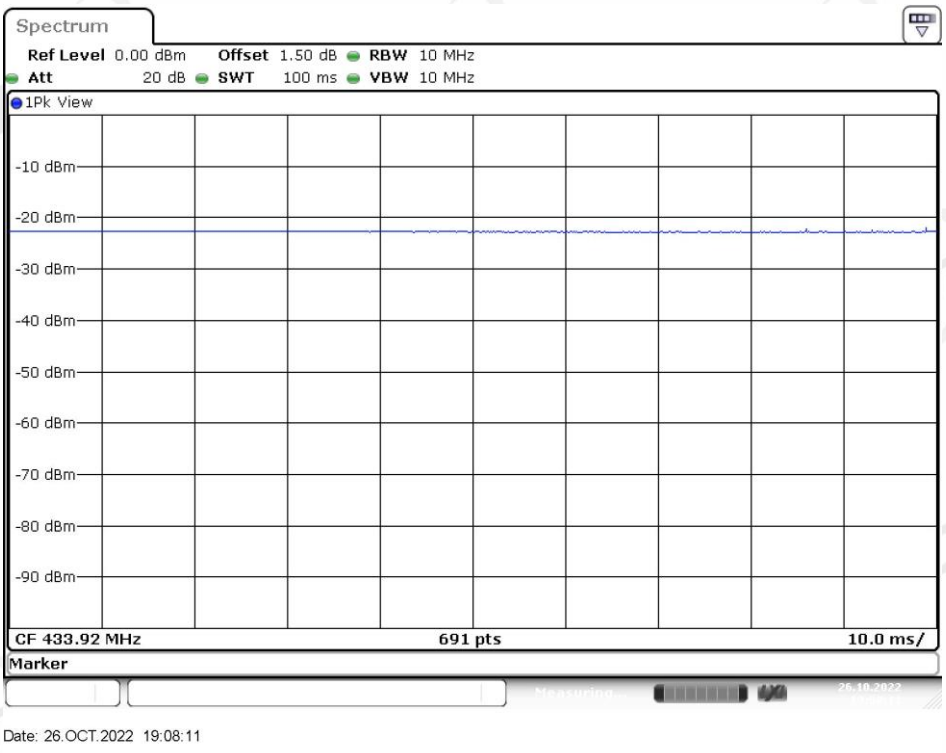
Set the span=0MHz, RBW=10MHz, VBW=10MHz, Sweep time=100ms;

Trace mode = Single hold.

4.4. Test Result

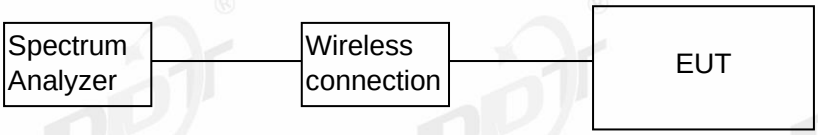
Test Channel	Duty Cycle[%]	20log(1/x) Factor[dB]
433.92 MHz	100.00	0
Note 1: The transmitter duty cycle was measured using a spectrum analyser in the time domain and calculated by below Equation: δ(dB) = 20log(Δ)= 20 log(100/100)=0 dB δ is the duty cycle correction factor (dB) Δ is the duty cycle (dimensionless) Note 2: In cases where the pulse train exceeds 0.1 s, the measured field strength shall be determined during a 0.1 s interval		

4.5. Original test data

Duty Cycle


5. 20dB Bandwidth

5.1. Block diagram of test setup



5.2. Limits

The bandwidth of the emission shall be no wider than 0.25% of the center frequency of devices operation above 70MHz and below 900MHz.

5.3. Test Procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

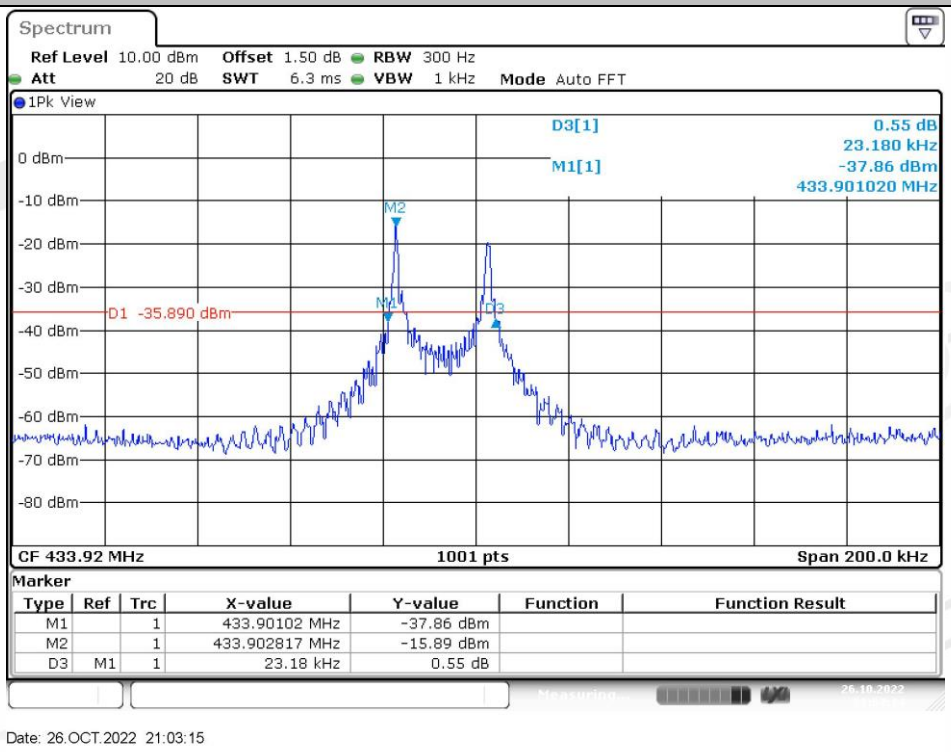
(2) The bandwidth of the fundamental frequency was measured by spectrum analyzer with 300Hz RBW and 1kHz VBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

5.4. Test Result

Frequency (MHz)	20 dB Bandwidth (kHz)	Limit (MHz): No wider than 0.25% of the center frequency (MHz)	Conclusion
433.92	23.18	433.92*0.25%=1.085	Pass

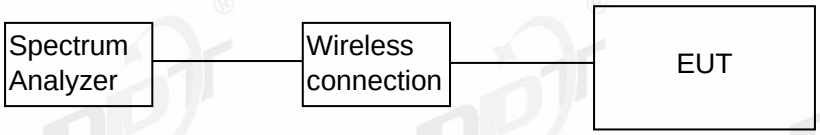
5.5. Original test data

Graph



6 Stop transmitting time test

6.1. Block diagram of test setup



6.2. Limits

1) A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.
2) A transmitter activated automatically shall cease transmission within 5 seconds after activation.
3) Periodic transmissions at regular predetermined intervals are not permitted. However, polling or supervision transmissions, including data, to determine system integrity of transmitters used in security or safety applications are allowed if the total duration of transmissions does not exceed more than two seconds per hour for each transmitter. There is no limit on the number of individual transmissions, provided the total transmission time does not exceed two seconds per hour.

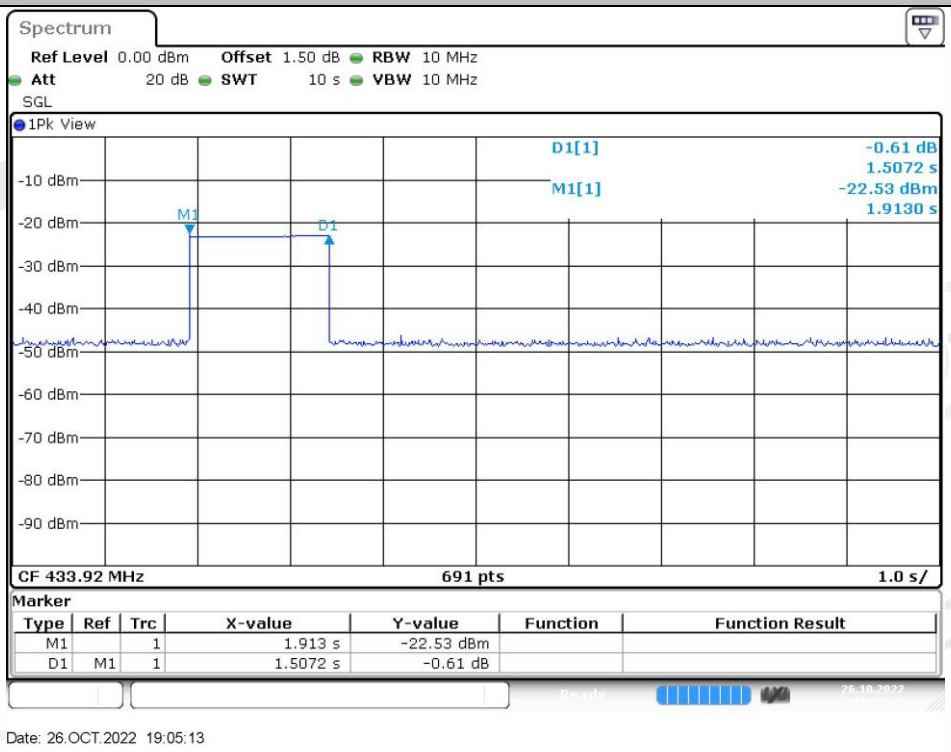
6.3. Test Procedure

(1) The EUT's RF signal was coupled to spectrum analyzer by antenna connected to spectrum analyzer.
(2) Set the spectrum to zero span mode, and centered of EUT frequency.
(3) Measure the stop transmitting time after release EUT button.

6.4. Test Result

Frequency (MHz)	Transmission Time (s)	Limit (s)	Verdict
433.92	1.507	5	Pass

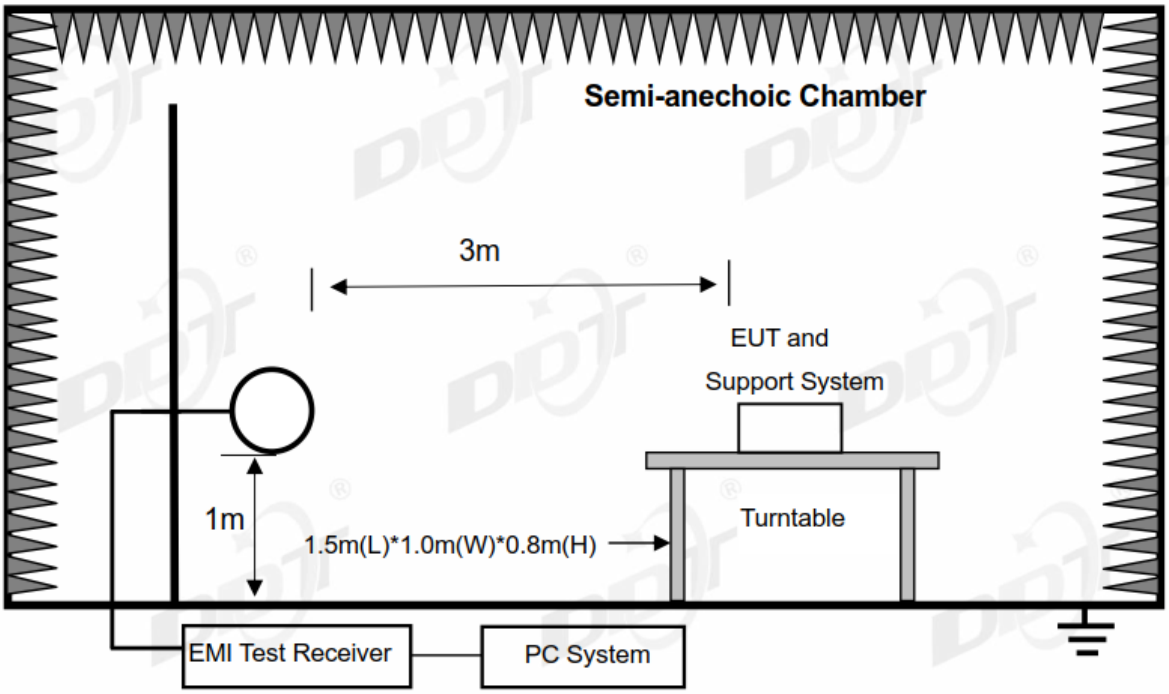
6.5. Original test data

Graph


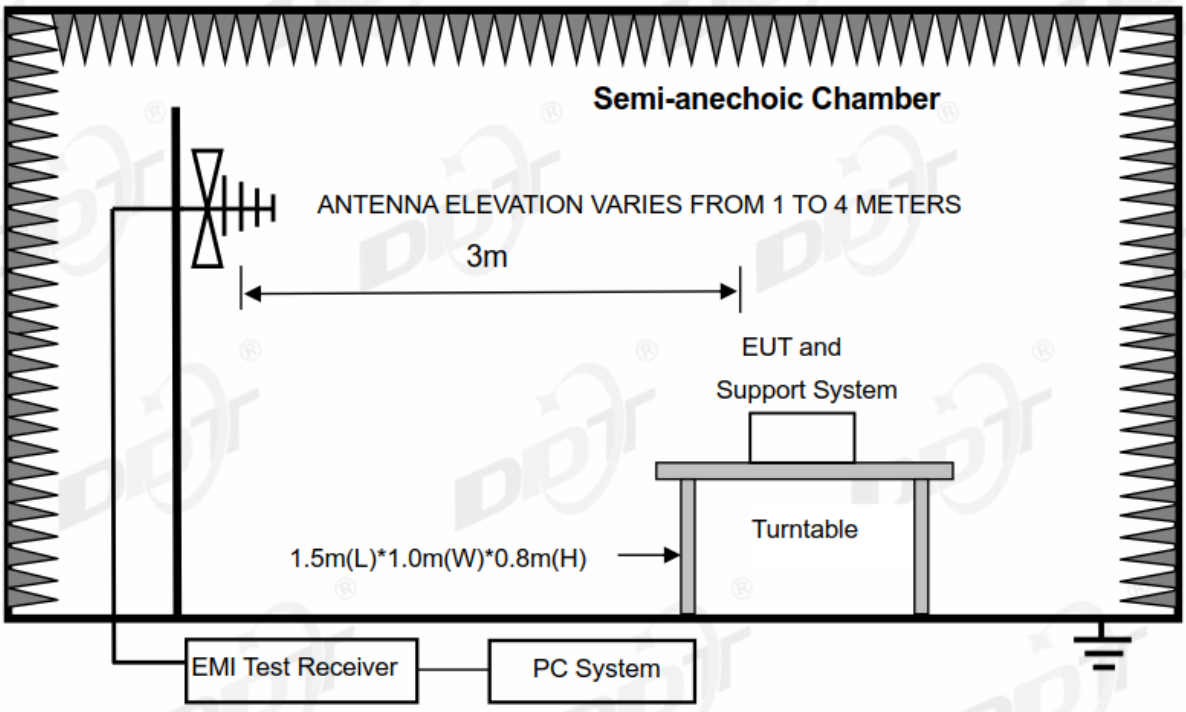
7 Radiated emission

7.1. Block diagram of test setup

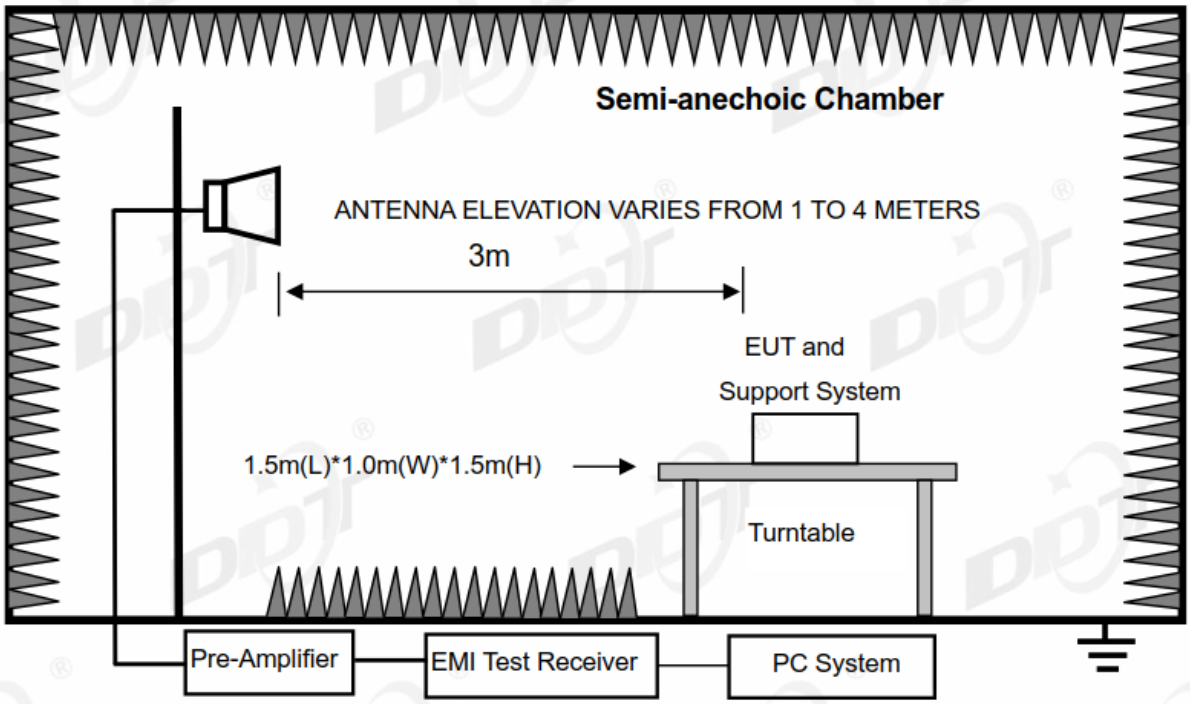
In 3 m Anechoic Chamber, test setup diagram for 9 kHz - 30 MHz:



In 3 m Anechoic Chamber, test setup diagram for 30 MHz - 1 GHz:



In 3 m Anechoic Chamber, test setup diagram for frequency above 1 GHz:



Note: For harmonic emissions test a appropriate high pass filter was inserted in the input port of AMP.

7.2. Limit

(1) FCC 15.205 Restricted frequency band

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.1772&4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.2072&4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.G
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41			

[1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

[2]Above 38.6

(2) FCC 15.209 Limit.

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
0.009 ~ 0.490	300	2400/F(kHz)	67.6-20log(F)
0.490 ~ 1.705	30	24000/F(kHz)	87.6-20log(F)
1.705 ~ 30.0	30	30	29.54
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

(3) FCC 15.231 section (a) limit

Fundamental Frequency (MHz)	Field Strength of Fundamental
433.92	AV:80.82dBuV/m @3m PK:100.82dBuV/m @3m

Note: (1)The emission limits shown in the above table are based on measurements employing a CISPR QP detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000MHz.Radiated emissions limits in these three bands are based on measurements employing an average detector.

(2) At frequencies below 30MHz, measurement may be performed at a distance closer then that specified, and the limit at closer measurement distance can be extrapolated by below formula:

$Limit_{3m}(dBuV/m) = Limit_{300m}(dBuV/m) + 40Log(300m/3m) = Limit_{300m}(dBuV/m) + 80$
$Limit_{3m}(dBuV/m) = Limit_{30m}(dBuV/m) + 40Log(30m/3m) = Limit_{30m}(dBuV/m) + 40$

(3) Limit for this EUT

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions include fundamental emission shall not exceed FCC 15.231 section (a) limit of comply with FCC 15.209 limit which permit higher emission level.

7.3. Test Procedure

(1) EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber for blow 1GHz and 150 cm above the ground plane inside a semi-anechoic chamber for above 1GHz.

(2) Test antenna was located 3m from the EUT on an adjustable mast, and the antenna used as below table.

Test frequency range	Test antenna used	Test antenna distance
9kHz-30MHz	Active Loop antenna	3m
30MHz-1GHz	Trilog Broadband Antenna	3m

1GHz-18GHz	Double Ridged Horn Antenna(1GHz-18GHz)	3m
18GHz-40GHz	Horn Antenna(18GHz-40GHz)	1m

According ANSI C63.10:2013 clause 6.4.4.2 and 6. 5.3, for measurements below 30 MHz, Antenna was located 3 m from EUT, the loop antenna was positioned in three antenna orientations (parallel, perpendicular, and round-parallel), for each measurement antenna alignment, the EUT shall be rotated through 0° to 360° on a turntable, and the lowest height of the magnetic antenna shall be 1 m above the ground. For measurement above 30MHz, the Trilog Broadband Antenna or Horn Antenna was located 3m from EUT, Measurements were made with the antenna positioned in both the horizontal and vertical planes of Polarization, and the measurement antenna was varied from 1 m to 4 m. in height above the reference ground plane to obtain the maximum signal strength.

(3) Below pre-scan procedure was first performed in order to find prominent frequency spectrum radiated emissions from 9kHz to 6GHz (tenth harmonic of fundamental frequency):

(a) Scanning the peak frequency spectrum with the antenna specified in step (2), and the EUT was rotated 360 degree, the antenna height was varied from 1m to 4m(Except loop antenna, it's fixed 1m above ground.)

(b) Change work frequency or channel of device if practicable.

(c) Change modulation type of device if practicable.

(d) Change power supply range from 85% to 115% of the rated supply voltage

(e) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions.

(4) For final emissions measurements at each frequency of interest, the EUT was rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.10 2013 on Radiated Emission test.

(5) The emissions from 9kHz to 1GHz were measured based on CISPR QP detector except for the frequency bands 9-90kHz, 110-490kHz, for emissions from 9kHz-90kHz,110kHz-490kHz and above 1GHz were measured based on average detector, for emissions above 1GHz, peak emissions also be measured and need comply with Peak limit.

(6) The emissions from 9kHz to 1GHz, QP or average values were measured with EMI receiver with below RBW.

Frequency band	RBW
9kHz-150kHz	200Hz
150kHz-30MHz	9kHz
30MHz-1GHz	120kHz

(7) For emissions above 1GHz, both Peak and Average level were measured with Spectrum

Analyzer, and the RBW is set at 1MHz, VBW is set at 3MHz for Peak measure; According ANSI C63.10:2013 clause 4.1.4.2.2 procedure for average measure.

7.4. Test result

Pass. (See below detailed test result)

All the emissions except fundamental emission from 9 kHz to 6 GHz were comply with 15.209 limits.

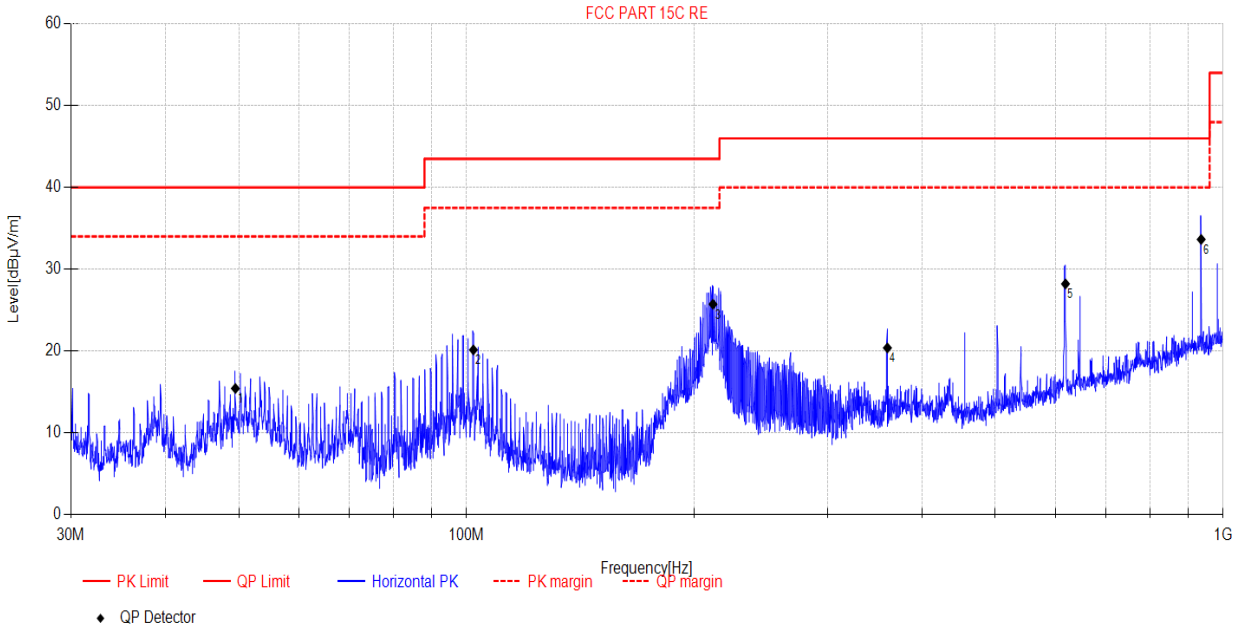
Note1: According exploratory test, the emission levels are 20 dB below the limit detected from 9 kHz to 30 MHz, so the final test was performed with frequency range from 30 MHz to 6 GHz and recorded in below.

Note2: For emissions above 1GHz. If peak results comply with AV limit, AV Result is deemed to comply with AV limit.

Radiated Emission test (below 1GHz)

TR-4-E-009 Radiated Emission Test Result

Test Date:	2022-11-10	**Tested By**:	Bairong
EUT:	MADV Smart Video Doorbell 2M	**Model Number**:	FJ07MLTZ
Test Mode:	TX Mode	**Power Supply**:	AC120V/60Hz
Condition:	Temp:23.4°C;Humi:53.8%;Press:100.2kPa	**Test Site**:	DDT 3# Chamber
File Path:	d:\ts\2022 report data\Q22102105-2E FJ07MLTZ\FCC BELOW 1G 433\20221110-112645_H		
Memo:	Inclusion Filter		



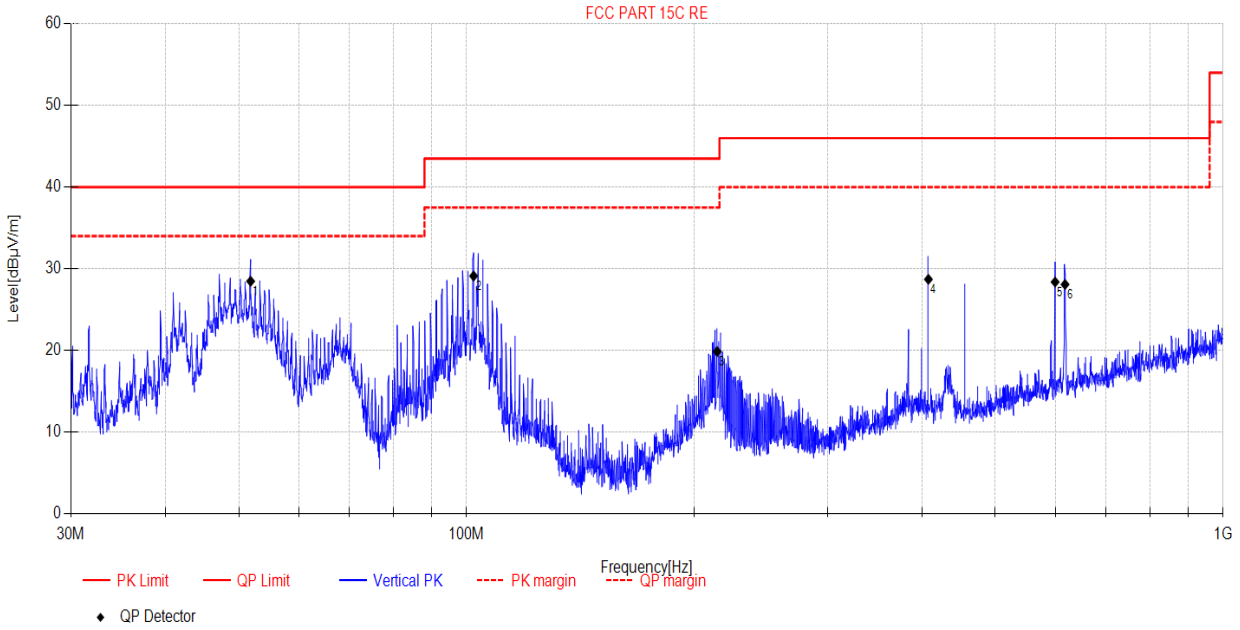
Final Data List

NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Result [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	49.49	33.69	-18.28	15.41	40.00	24.59	QP	Horizontal
2	102.12	40.08	-19.95	20.13	43.50	23.37	QP	Horizontal
3	211.74	45.12	-19.41	25.71	43.50	17.79	QP	Horizontal
4	360.02	35.37	-15.00	20.37	46.00	25.63	QP	Horizontal
5	619.03	38.57	-10.37	28.20	46.00	17.80	QP	Horizontal
6	935.56	38.44	-4.80	33.64	46.00	12.36	QP	Horizontal

Note: 1. Result Level = Read Level + Factor
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:	2022-11-10	**Tested By**:	Bairong
EUT:	MADV Smart Video Doorbell 2M	**Model Number**:	FJ07MLTZ
Test Mode:	TX Mode	**Power Supply**:	AC120V/60Hz
Condition:	Temp:23.4°C;Humi:53.8%;Press:100.2kPa	**Test Site**:	DDT 3# Chamber
File Path:	d:\ts\2022 report data\Q22102105-2E FJ07MLTZ\FCC BELOW 1G 433\20221110-112724_V		
Memo:	Inclusion Filter		



Final Data List								
NO.	**Freq. [MHz]**	**Reading [dBµV/m]**	**Factor [dB]**	**Result [dBµV/m]**	**Limit [dBµV/m]**	**Margin [dB]**	**Detector**	**Polarity**
1	51.84	46.85	-18.38	28.47	40.00	11.53	QP	Vertical
2	102.19	49.06	-19.95	29.11	43.50	14.39	QP	Vertical
3	214.43	39.19	-19.33	19.86	43.50	23.64	QP	Vertical
4	407.87	42.78	-14.07	28.71	46.00	17.29	QP	Vertical
5	599.80	38.98	-10.60	28.38	46.00	17.62	QP	Vertical
6	618.16	38.46	-10.38	28.08	46.00	17.92	QP	Vertical

Note: 1. Result Level = Read Level + Factor
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

Field Strength Of The Fundamental Signal

Frequency (MHz)	PK Level (dBuV/m)	PK Limit Line (dBuV/m)	Over Limit (dB)	Polarization
433.92	77.48	100.82	-23.34	Horizontal
433.92	77.47	100.82	-23.35	Vertical

Frequency (MHz)	AV Level (dBuV/m)	AV Limit Line (dBuV/m)	Over Limit (dB)	Polarization
433.92	77.48	80.82	-3.34	Horizontal
433.92	77.47	80.82	-3.35	Vertical
Note: AV Level= PK Level+ Duty factor Duty factor=0dB				

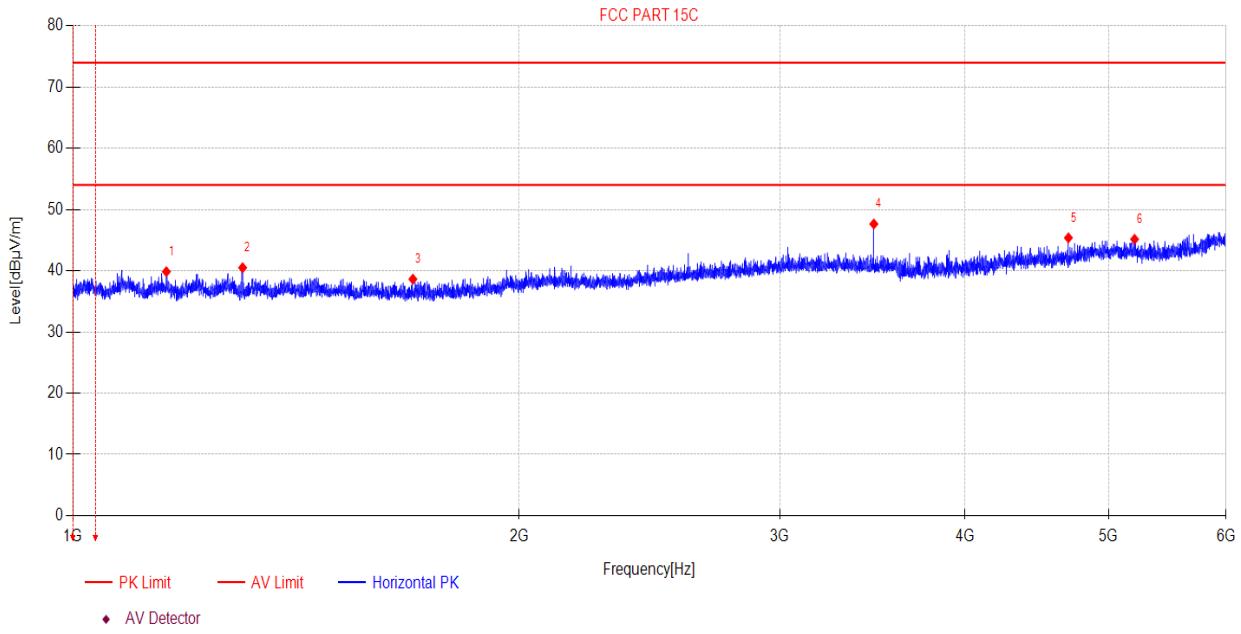
Radiated Emission test (above 1GHz)

TR-4-E-009 Radiated Emission Test Result

Test Date:	2022-11-08	**Tested By**:	Bairong
EUT:	MADV Smart Video Doorbell 2M	**Model Number**:	FJ07MLTZ
Test Mode:	TX Mode	**Power Supply**:	AC120V/60Hz
Condition:	Temp:23.4°C;Humi:53.8%;Press:100.2kPa	**Test Site**:	DDT 3# Chamber
File Path:	d:\ts\2022 report data\Q22102105-2E FJ07MLTZ\FCC ABOVE 1G 433\1		

Memo:

Test Graph



Suspected Data List								
NO.	**Freq. [MHz]**	**Reading [dBµV]**	**Factor [dB]**	**Level [dBµV/m]**	**Limit [dBµV/m]**	**Margin [dB]**	**Detector**	**Polarity**
1	1156.18	50.75	-10.90	39.85	74.00	34.15	PK	Horizontal
2	1301.53	51.53	-11.03	40.50	74.00	33.50	PK	Horizontal
3	1695.81	50.21	-11.58	38.63	74.00	35.37	PK	Horizontal
4	3470.96	55.46	-7.82	47.64	74.00	26.36	PK	Horizontal
5	4696.65	50.57	-5.19	45.38	74.00	28.62	PK	Horizontal
6	5205.35	49.11	-3.96	45.15	74.00	28.85	PK	Horizontal

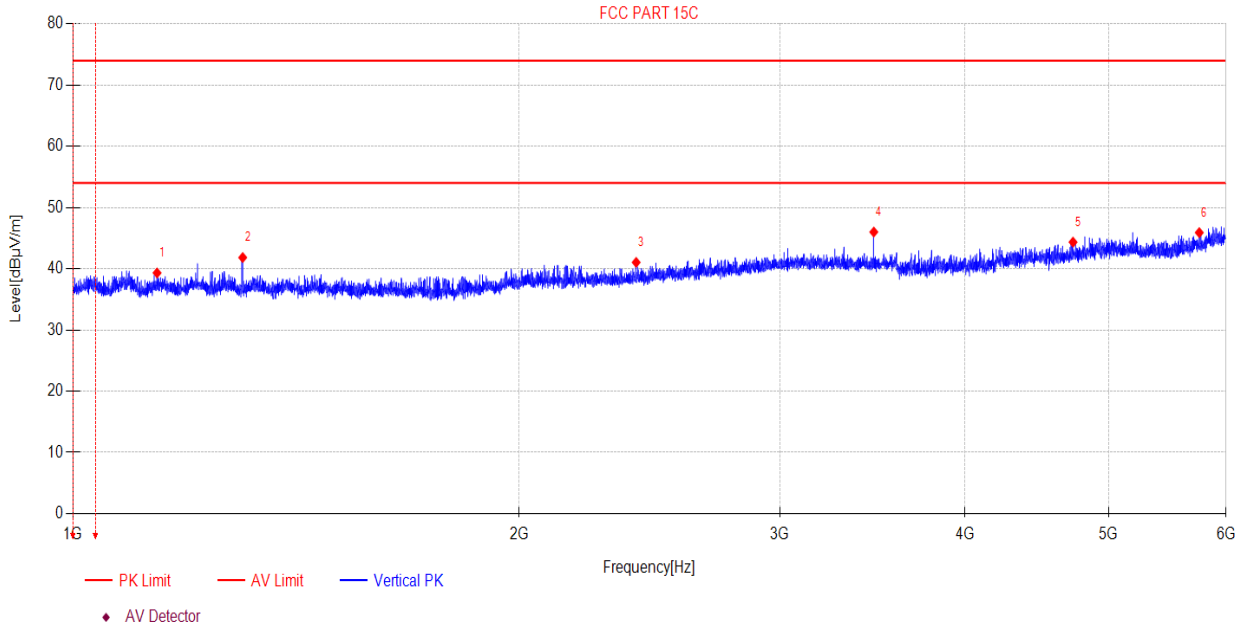
Note:
1. Level = Reading + Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:	2022-11-08	**Tested By**:	Bairong
EUT:	MADV Smart Video Doorbell 2M	**Model Number**:	FJ07MLTZ
Test Mode:	TX Mode	**Power Supply**:	AC120V/60Hz
Condition:	Temp:23.4°C;Humi:53.8%;Press:100.2kPa	**Test Site**:	DDT 3# Chamber
File Path:	d:\ts\2022 report data\Q22102105-2E FJ07MLTZ\FCC ABOVE 1G 433\2		

Memo:

Test Graph

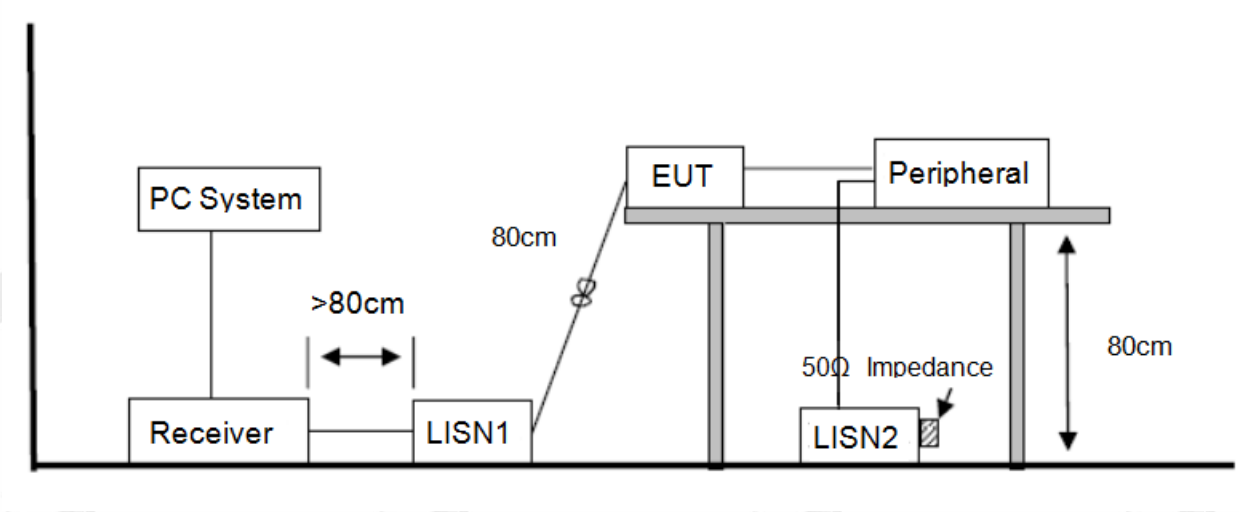


Suspected Data List								
NO.	**Freq. [MHz]**	**Reading [dBµV]**	**Factor [dB]**	**Level [dBµV/m]**	**Limit [dBµV/m]**	**Margin [dB]**	**Detector**	**Polarity**
1	1139.52	50.22	-10.90	39.32	74.00	34.68	PK	Vertical
2	1301.76	52.86	-11.03	41.83	74.00	32.17	PK	Vertical
3	2399.32	50.74	-9.70	41.04	74.00	32.96	PK	Vertical
4	3470.96	53.82	-7.82	46.00	74.00	28.00	PK	Vertical
5	4730.43	49.45	-5.10	44.35	74.00	29.65	PK	Vertical
6	5755.72	48.81	-2.91	45.90	74.00	28.10	PK	Vertical

Note:
1. Level = Reading + Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

8 Power Line Conducted Emission

8.1. Block diagram of test setup



8.2. Power Line Conducted Emission Limits

Frequency	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Note 1: * Decreasing linearly with logarithm of frequency.

Note 2: The lower limit shall apply at the transition frequencies.

8.3. Test Procedure

The EUT and Support equipment, if needed, were put placed on a non-metallic table, 80cm above the ground plane.

Configuration EUT to simulate typical usage as described in clause 2.4 and test equipment as described in clause 8.1 of this report.

All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.

All support equipment power received from a second LISN.

Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.

The Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.

During the above scans, the emissions were maximized by cable manipulation.

The test mode(s) described in clause 2.4 were scanned during the preliminary test.

After the preliminary scan, we found the test mode producing the highest emission level.

The EUT configuration and worse cable configuration of the above highest emission levels were recorded for reference of the final test.

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.

A scan was taken on both power lines, Neutral and Line, recording at least the six highest emissions.

Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.

The test data of the worst-case condition(s) was recorded.

The bandwidth of test receiver is set at 9 kHz.

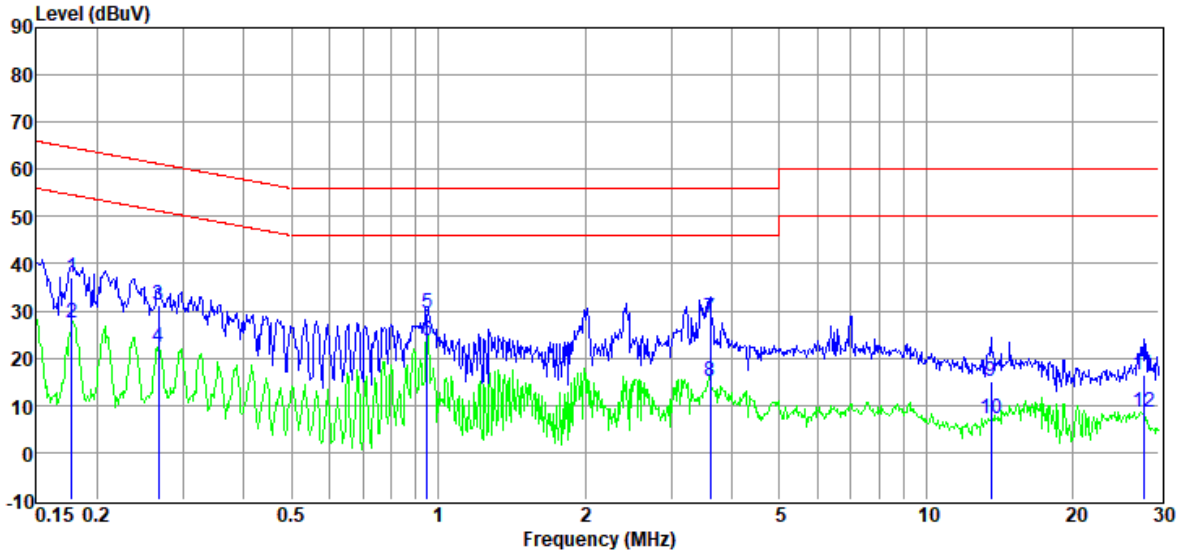
8.4. Test Result

Pass. (See below detailed test result)

Note1: All emissions not reported below are too low against the prescribed limits.
Note2: "-----" means Peak detection; "-----" means Average detection.
Note3: Pre-test AC conducted emission at both voltage AC 120V/60Hz and AC 240V/50Hz, recorded worse case.

TR-4-E-010 Conducted Emission Test Result

Test Site	:	DDT 1# Shield Room	D:\2022 CE report date\Q22102105-2E FJ07MLTZ\FCC.EM6		
Test Date	:	2022-11-08	**Tested By**	:	James Gan
EUT	:	MADV Smart Video Doorbell 2M	**Model Number**	:	FJ07MLTZ
Power Supply	:	AC 120V/60Hz	**Test Mode**	:	TX Mode
Condition	:	TEMP:23.2°C, RH:55.3%, BP:100.3KPa	**LISN**	:	2021 1# ENV216/LINE
Memo	:				

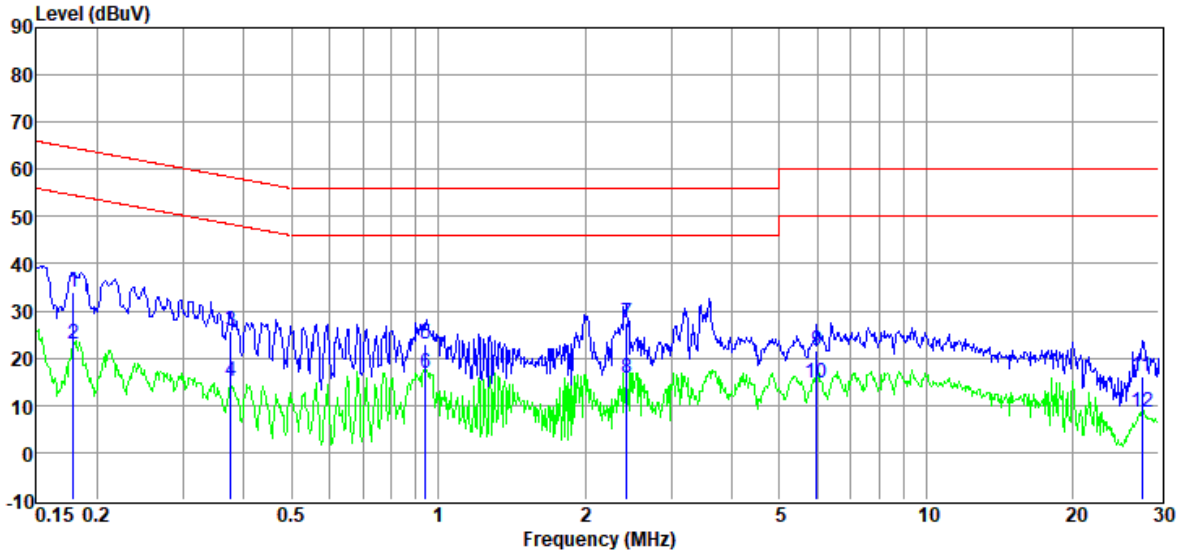


Item (Mark)	Freq. (MHz)	Read Level (dBµV)	LISN Factor (dB)	Cable Loss (dB)	Pulse Limiter Factor (dB)	Result Level (dBµV)	Limit Line (dBµV)	Over Limit (dB)	Detector	Phase
1	0.18	17.40	9.72	0.01	9.92	37.05	64.59	-27.54	QP	LINE
2	0.18	7.79	9.72	0.01	9.92	27.44	54.59	-27.15	Average	LINE
3	0.27	11.54	9.74	0.02	9.92	31.22	61.20	-29.98	QP	LINE
4	0.27	2.56	9.74	0.02	9.92	22.24	51.20	-28.96	Average	LINE
5	0.95	10.18	9.59	0.03	9.89	29.69	56.00	-26.31	QP	LINE
6	0.95	4.14	9.59	0.03	9.89	23.65	46.00	-22.35	Average	LINE
7	3.60	9.08	9.58	0.05	9.92	28.63	56.00	-27.37	QP	LINE
8	3.60	-4.45	9.58	0.05	9.92	15.10	46.00	-30.90	Average	LINE
9	13.55	-4.76	9.72	0.14	9.93	15.03	60.00	-44.97	QP	LINE
10	13.55	-12.72	9.72	0.14	9.93	7.07	50.00	-42.93	Average	LINE
11	27.86	-3.48	9.68	0.20	9.99	16.39	60.00	-43.61	QP	LINE
12	27.86	-11.33	9.68	0.20	9.99	8.54	50.00	-41.46	Average	LINE

Note:
1. Result Level = Read Level +LISN Factor + Pulse Limiter Factor + Cable loss.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

TR-4-E-010 Conducted Emission Test Result

Test Site	:	DDT 1# Shield Room	D:\2022 CE report date\Q22102105-2E FJ07MLTZ\FCC.EM6		
Test Date	:	2022-11-08	**Tested By**	:	James Gan
EUT	:	MADV Smart Video Doorbell 2M	**Model Number**	:	FJ07MLTZ
Power Supply	:	AC 120V/60Hz	**Test Mode**	:	TX Mode
Condition	:	TEMP:23.2°C, RH:55.3%, BP:100.3KPa	**LISN**	:	2021 1# ENV216/NEUTRAL
Memo	:				



Item (Mark)	Freq. (MHz)	Read Level (dBµV)	LISN Factor (dB)	Cable Loss (dB)	Pulse Limiter Factor (dB)	Result Level (dBµV)	Limit Line (dBµV)	Over Limit (dB)	Detector	Phase
1	0.18	14.24	9.80	0.01	9.92	33.97	64.55	-30.58	QP	NEUTRAL
2	0.18	3.22	9.80	0.01	9.92	22.95	54.55	-31.60	Average	NEUTRAL
3	0.38	6.18	9.59	0.02	9.91	25.70	58.39	-32.69	QP	NEUTRAL
4	0.38	-4.42	9.59	0.02	9.91	15.10	48.39	-33.29	Average	NEUTRAL
5	0.94	3.36	9.72	0.03	9.89	23.00	56.00	-33.00	QP	NEUTRAL
6	0.94	-2.70	9.72	0.03	9.89	16.94	46.00	-29.06	Average	NEUTRAL
7	2.44	7.93	9.66	0.05	9.90	27.54	56.00	-28.46	QP	NEUTRAL
8	2.44	-3.83	9.66	0.05	9.90	15.78	46.00	-30.22	Average	NEUTRAL
9	5.96	1.95	9.66	0.07	9.93	21.61	60.00	-38.39	QP	NEUTRAL
10	5.96	-4.90	9.66	0.07	9.93	14.76	50.00	-35.24	Average	NEUTRAL
11	27.71	-3.93	9.88	0.20	9.99	16.14	60.00	-43.86	QP	NEUTRAL
12	27.71	-11.61	9.88	0.20	9.99	8.46	50.00	-41.54	Average	NEUTRAL

Note:
1. Result Level = Read Level +LISN Factor + Pulse Limiter Factor + Cable loss.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

9 Antenna Requirements

9.1. Limit

For intentional device, according to FCC 47 CFR Section 15.203, 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.

9.2. Result

The antenna used for this product is Integral Antenna and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is -2.15 dBi.