

Shenzhen Toby Technology Co., Ltd.

Report No.: TB-FCC152350

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FCC Radio Test Report

Report No. : TB-FCC152350

Applicant: Dong Yang Smart Technology Co.,Ltd

Equipment Under Test (EUT)

EUT Name : Mrico FPV Drone

Model No. : ELF

Serial Model No.: outdoor X130

Brand Name : DYS

Receipt Date : 2017-04-05

Test Date : 2017-04-06 to 2017-04-27

Issue Date : 2017-04-28

Standards : FCC Part 15, Subpart C (15.249: 2016)

Test Method : ANSI C63.10: 2013

Conclusions : PASS

In the configuration tested, the EUT complied with the standards specified above,

The EUT technically complies with the FCC requirements

Test/Witness Engineer : WAN SU

Approved& Authorized :

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

TB-RF-074-1.0



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1. General Information about EUT

1.1 Client Information

Applicant	:(Dong Yang Smart Technology Co.,Ltd
Address	:	No.45, FuDong Industrial Zone, HeChang Rd 2, ZhongKai High Tech
A THUE		Zone, Huizhou City, Guangdong Province, China
Manufacturer		Dong Yang Smart Technology Co.,Ltd
Address	:	No.45, FuDong Industrial Zone, HeChang Rd 2, ZhongKai High Tech
9 1111		Zone, Huizhou City, Guangdong Province, China

1.2 General Description of EUT (Equipment Under Test)

EUT Name	:	Mrico FPV Drone	
Models No.	1	ELF, outdoor X130	
Model Difference	:		ntical in the same PCB, layout and electrical e is model name for commercial.
THU		Operation Frequency:573	33~5866 MHz
		Number of Channels:	22 Channels
Product Description		Out Power:	96.73 dBuV/m@3m Peak 91.75 dBuV/m@3m Avg
		Antenna Gain:	3 dBi Integral Antenna
		Modulation Type:	FSK
Power Supply	1	DC Charger by AC/DC A DC Voltage supplied by L	
Power Rating	•	Input: AC 100-240V, 50/6 Output: DC 13.5V, 1A DC 7.4V 600mAh Lithium	
Connecting I/O Port(S)		Please refer to the User's	

Note:

(1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

(2) Channel List:

					Cha	nnel			
		CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8
) I	FR1	5865M	5845M	5825M	5805M	5785M	5765M	5745M	
ED	FR2	5733M	5752M	5771M	5790M	5809M	5828M	5847M	5866M
FR	FR3	< \		200		(4) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1		// <u>///</u> /	
	FR4	5740M	5760M	5780M	5800M	5820M	5840M	5860M	(444

Note: The Channel 5733MHz, 5800MHz, 5866MHz were selected for test.

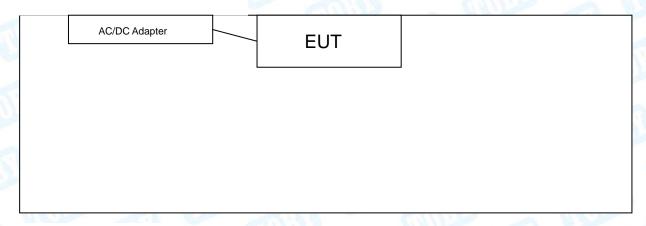




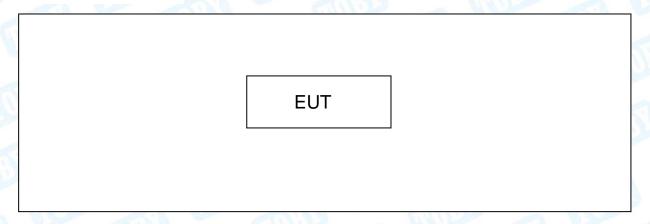
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1.3 Block Diagram Showing the Configuration of System Tested

Mode 1: Charging+TX Mode



Mode 2: TX Mode



1.4 Description of Support Units

The EUT has been tested as an independent unit.

1.5 Description of Test Mode

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 follow was evaluated respectively.

For (Conducted Test
Final Test Mode	Description
Mode 1	Charging+TX Mode



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For Radiated Test						
Final Test Mode Description						
Mode 1	TX Mode(5733MHz/5800MHz/5866MHz)					

Note:

For all test, we have verified the construction and function in typical operation. And all the test modes were carried out with the EUT in transmitting operation in maximum power with all kinds of data rate.

- (1)According to ANSI C63.10 standards, the measurements are performed at the highest, middle, lowest available channels.
- (2)During the testing procedure, the continuously transmitting with the maximum power mode was programmed by the customer.
- (3) The EUT is considered a portable unit; it was pre-tested on the positioned of each 3 axis, X-plane, Y-plane and Z-plane. The worst case was found positioned on X-plane. Therefore only the test data of this X-plane was used for radiated emission measurement test.

1.6 Description of Test Software Setting

During testing channel & Power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of RF mode.

Product SW/HW Version :		N/A	1000
Radio SW/HW Version:		N/A	
Test Software Version	3	N/A	
Frequency	5733 MHz	5800MHz	5866 MHz
FSK	DEF	DEF	DEF



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1.7 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 %.

Test Item	Parameters	Expanded Uncertainty (U _{Lab})
	Level Accuracy:	
Conducted Emission	9kHz~150kHz	±3.42 dB
	150kHz to 30MHz	±3.42 dB
Dedicted Engineer	Level Accuracy:	.4.00 dD
Radiated Emission	9kHz to 30 MHz	±4.60 dB
Dadiated Emission	Level Accuracy:	.4.40 dD
Radiated Emission	30MHz to 1000 MHz	±4.40 dB
Dadiated Emission	Level Accuracy:	. 4 20 dD
Radiated Emission	Above 1000MHz	±4.20 dB

1.8 Test Facility

The testing report were performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at 1A/F., Bldg.6, Yusheng Industrial Zone, The National Road No.107 Xixiang Section 467, Xixiang, Bao'an, Shenzhen, Guangdong, China. At the time of testing, the following bodies accredited the Laboratory:

CNAS (L5813)

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

FCC List No.: (811562)

The Laboratory is listed in the United States of American Federal Communications Commission (FCC), and the registration number is 811562.

IC Registration No.: (11950A-1)

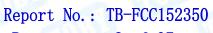
The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A-1.



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2. Test Summary

FCC Part 15 Subpart C(15.249)					
Standard Section	Test Item	Judgment	Remark		
15.203	Antenna Requirement	PASS	N/A		
15.205	Restricted Bands	PASS	N/A		
15.207	AC Power Conducted Emission	PASS	N/A		
15.249 &15.209	Radiated Spurious Emission	PASS	N/A		
15.215(C)	20dB Bandwidth	PASS	N/A		





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3. Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due
EMI Test Receiver	Rohde & Schwarz	ESCI	100321	Jul. 22, 2016	Jul. 21, 2017
RF Switching Unit	Compliance Direction Systems Inc	RSU-A4	34403	Jul. 22, 2016	Jul. 21, 2017
AMN	SCHWARZBECK	NNBL 8226-2	8226-2/164	Jul. 22, 2016	Jul. 21, 2017
LISN	Rohde & Schwarz	ENV216	101131	Jul. 22, 2016	Jul. 21, 2017
Radiation	Emission Tes	t			
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul. 22, 2016	Jul. 21, 2017
EMI Test Receiver	Rohde & Schwarz	ESPI	100010/007	Jul. 22, 2016	Jul. 21, 2017
Bilog Antenna	ETS-LINDGREN	3142E	00117537	Mar. 25, 2017	Mar. 24, 201
Bilog Antenna	ETS-LINDGREN	3142E	00117542	Mar. 25, 2017	Mar. 24, 201
Horn Antenna	ETS-LINDGREN	3117	00143207	Mar. 25, 2017	Mar. 24, 201
Horn Antenna	ETS-LINDGREN	3117	00143209	Mar. 25, 2017	Mar. 24, 201
Loop Antenna	Laplace instrument	RF300	0701	Mar. 25, 2017	Mar. 24, 201
Pre-amplifier	Sonoma	310N	185903	Mar. 24, 2017	Mar. 23, 201
Pre-amplifier	HP	8449B	3008A00849	Mar. 29, 2017	Mar. 28, 201
Cable	HUBER+SUHNER	100	SUCOFLEX	Mar. 29, 2017	Mar. 28, 201
Positioning Controller	ETS-LINDGREN	2090	N/A	N/A	N/A
Antenna C	Conducted Em	ission			
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul. 22, 2016	Jul. 21, 2017
Spectrum Analyzer	Rohde & Schwarz	ESCI	100010/007	Jul. 22, 2016	Jul. 21, 2017
Power Meter	Anritsu	ML2495A	25406005	Jul. 22, 2016	Jul. 21, 2017
Power Sensor	Anritsu	ML2411B	25406005	Jul. 22, 2016	Jul. 21, 201



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4. Conducted Emission Test

4.1 Test Standard and Limit

4.1.1Test Standard FCC Part 15.207

4.1.2 Test Limit

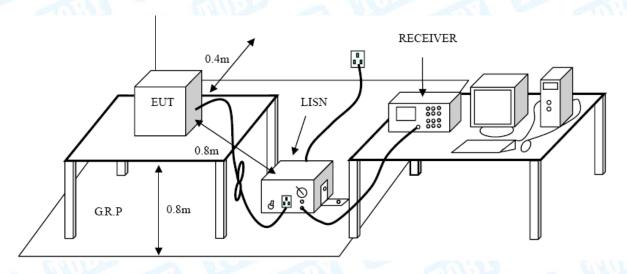
Conducted Emission Test Limit

Eroguenov	Maximum RF Lin	e Voltage (dBμV)
Frequency	Quasi-peak Level	Average Level
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
500kHz~5MHz	56	46
5MHz~30MHz	60	50

Notes:

- (1) *Decreasing linearly with logarithm of the frequency.
- (2) The lower limit shall apply at the transition frequencies.
- (3) The limit decrease in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2 Test Setup



4.3 Test Procedure

The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected 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.

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 40 cm long.



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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.

LISN is at least 80 cm from nearest part of EUT chassis.

The bandwidth of EMI test receiver is set at 9kHz, and the test frequency band is from 0.15MHz to 30MHz.

4.4 EUT Operating Mode

Please refer to the description of test mode.

4.5 Test Data

Test data please refer the following pages.





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EUT:	Mrico	FPV Drone	a WW	Model	Name :	El	F
Temperature:	: 25℃	Can'l	33	Relativ	e Humidity:	55	5%
Test Voltage:	AC 12	0V/60 Hz			(III)	33	
Terminal:	Line		Alton				
Test Mode:	Charg	ing with TX N	Mode 5733 N	ИHz	2		Miller
Remark:	Only w	vorse case is	reported		Cillian.		
90.0 dBuV							
						QP: AVG:	
X							
40	X No		×				
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WWW	\ }\\\\	Male Laws All .	Me delication 111	A Line Could Switchle		ן וייי	AV
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10							
0.150	0.5		(MHz)	5			30.000
	0.5	Reading		_			30.000
	Freq.	Reading Level	(MHz) Correct Factor	5 Measure- ment	Limit (Over	
0.150		_	Correct	Measure-	Limit (Over dB	
0.150	Freq.	Level	Correct Factor	Measure- ment	dBuV		
0.150 No. Mk.	Freq.	Level dBu∀	Correct Factor	Measure- ment	dBuV 64.21 -1	dB	Detecto
0.150 No. Mk.	Freq. MHz 0.1860	dBuV 38.97	Correct Factor dB 9.99	Measure- ment dBuV 48.96	dBuV 64.21 -1	dB 5.25 2.89	Detecto
0.150 No. Mk. 1 * 2	Freq. MHz 0.1860 0.1860	dBuV 38.97 21.33	Correct Factor dB 9.99 9.99	Measure- ment dBuV 48.96 31.32	dBuV 64.21 -1 54.21 -2	dB 5.25 2.89 8.66	QP AV0
0.150 No. Mk. 1 * 2 3	Freq. MHz 0.1860 0.1860 0.2500 0.2500	Level dBuV 38.97 21.33 33.07 14.05	Correct Factor dB 9.99 9.99 10.02	Measure- ment dBuV 48.96 31.32 43.09 24.07	dBuV 64.21 -1 54.21 -2 61.75 -1 51.75 -2	dB 5.25 2.89 8.66 7.68	QP AV0 QP
0.150 No. Mk. 1 * 2 3 4 5	Freq. MHz 0.1860 0.1860 0.2500 0.2500 0.3140	Level dBuV 38.97 21.33 33.07 14.05 28.75	Correct Factor dB 9.99 9.99 10.02 10.02	Measure- ment dBuV 48.96 31.32 43.09 24.07 38.77	dBuV 64.21 -1 54.21 -2 61.75 -1 51.75 -2 59.86 -2	dB 5.25 2.89 8.66 7.68 1.09	QP AV0 QP AV0
0.150 No. Mk. 1 * 2 3 4 5 6	Freq. MHz 0.1860 0.1860 0.2500 0.2500 0.3140 0.3140	Level dBuV 38.97 21.33 33.07 14.05 28.75 13.95	Correct Factor dB 9.99 9.99 10.02 10.02 10.02	Measure- ment dBuV 48.96 31.32 43.09 24.07 38.77 23.97	dBuV 64.21 -1 54.21 -2 61.75 -1 51.75 -2 59.86 -2 49.86 -2	dB 5.25 2.89 8.66 7.68 1.09 5.89	QP AV0 QP AV0 QP
0.150 No. Mk. 1 * 2 3 4 5 6 7	Freq. MHz 0.1860 0.1860 0.2500 0.2500 0.3140 0.3140 2.2260	Level dBuV 38.97 21.33 33.07 14.05 28.75 13.95 21.59	Correct Factor dB 9.99 9.99 10.02 10.02 10.02 10.02	Measure- ment dBuV 48.96 31.32 43.09 24.07 38.77 23.97 31.64	dBuV 64.21 -1 54.21 -2 61.75 -1 51.75 -2 59.86 -2 49.86 -2 56.00 -2	dB 5.25 2.89 8.66 7.68 1.09 5.89 4.36	QP AV0 QP AV0 QP AV0
0.150 No. Mk. 1 * 2 3 4 5 6 7 8	Freq. MHz 0.1860 0.1860 0.2500 0.2500 0.3140 0.3140 2.2260 2.2260	Level dBuV 38.97 21.33 33.07 14.05 28.75 13.95 21.59 6.63	Correct Factor dB 9.99 9.99 10.02 10.02 10.02 10.05	Measure- ment dBuV 48.96 31.32 43.09 24.07 38.77 23.97 31.64 16.68	dBuV 64.21 -1 54.21 -2 61.75 -1 51.75 -2 59.86 -2 49.86 -2 56.00 -2 46.00 -2	dB 5.25 2.89 8.66 7.68 1.09 5.89 4.36 9.32	QP AV0 QP AV0 QP AV0
0.150 No. Mk. 1 * 2 3 4 5 6 7	Freq. MHz 0.1860 0.1860 0.2500 0.2500 0.3140 0.3140 2.2260 2.2260 2.9940	Level dBuV 38.97 21.33 33.07 14.05 28.75 13.95 21.59 6.63 18.66	Correct Factor dB 9.99 9.99 10.02 10.02 10.02 10.05 10.05 10.03	Measure- ment dBuV 48.96 31.32 43.09 24.07 38.77 23.97 31.64 16.68 28.69	dBuV 64.21 -1 54.21 -2 61.75 -1 51.75 -2 59.86 -2 49.86 -2 46.00 -2 56.00 -2	dB 5.25 2.89 8.66 7.68 1.09 5.89 4.36 9.32 7.31	QP AVC QP AVC QP AVC
0.150 No. Mk. 1 * 2 3 4 5 6 7 8	Freq. MHz 0.1860 0.1860 0.2500 0.2500 0.3140 0.3140 2.2260 2.2260	Level dBuV 38.97 21.33 33.07 14.05 28.75 13.95 21.59 6.63	Correct Factor dB 9.99 9.99 10.02 10.02 10.02 10.05	Measure- ment dBuV 48.96 31.32 43.09 24.07 38.77 23.97 31.64 16.68	dBuV 64.21 -1 54.21 -2 61.75 -1 51.75 -2 59.86 -2 49.86 -2 56.00 -2 46.00 -2	dB 5.25 2.89 8.66 7.68 1.09 5.89 4.36 9.32 7.31	QP AV0 QP AV0 QP AV0
0.150 No. Mk. 1 * 2 3 4 5 6 7 8 9	Freq. MHz 0.1860 0.1860 0.2500 0.2500 0.3140 0.3140 2.2260 2.2260 2.9940	Level dBuV 38.97 21.33 33.07 14.05 28.75 13.95 21.59 6.63 18.66	Correct Factor dB 9.99 9.99 10.02 10.02 10.02 10.05 10.05 10.03	Measure- ment dBuV 48.96 31.32 43.09 24.07 38.77 23.97 31.64 16.68 28.69	dBuV 64.21 -1 54.21 -2 61.75 -1 51.75 -2 59.86 -2 49.86 -2 46.00 -2 56.00 -2	dB 5.25 2.89 8.66 7.68 1.09 5.89 4.36 9.32 7.31 0.91	QP AVC QP AVC QP AVC





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EUT:	Mrico FP	V Drone	-	Model	Name :	ELF			
Temperature:	25℃		- Aller	Relativ	ve Humidity:	55%			
Test Voltage:	AC 120V	//60 Hz)	UHI		A STATE OF THE PARTY OF THE PAR			
Terminal:	Neutral	Neutral							
Test Mode:	Charging	with TX M	1ode 5733 M	Hz	6				
Remark:	Only wor	se case is	reported	MILLER		ABOVE THE REAL PROPERTY.			
90.0 dBuV									
					QP:				
X-									
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-10									
0.150	0.5		(MHz)	5		30.000			
		_		leasure-					
		.evel	Factor	ment	Limit Ove	er 			
		dBuV	dB	dBuV	dBuV dB				
1 * 0.1	860 4	1.24	10.12	51.36	64.21 -12.8	5 QP			
2 0.1	860 2	1.75	10.12	31.87	54.21 -22.3	4 AVG			
3 0.2	580 3	5.21	10.10	45.31	61.49 -16.1	8 QP			
4 0.2	580 1	6.29	10.10	26.39	51.49 -25.1	0 AVG			
5 0.3	300 2	6.47	10.08	36.55	59.45 -22.9	0 QP			
6 0.3	300	6.81	10.08	16.89	49.45 -32.5	6 AVG			
7 0.3	740 2	8.02	10.06	38.08	58.41 -20.3	3 QP			
8 0.3	740 1	1.48	10.06	21.54	48.41 -26.8	7 AVG			
		4.68		34.83	56.00 -21.1				
		7.57		17.72	46.00 -28.2				
		4.88		34.94	56.00 -21.0				
12 2.3	580	7.72	10.06	17.78	46.00 -28.2	2 AVG			
Emission Level=	Read Lev	el+ Correc	ct Factor						





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EUT:	Mrico I	FPV Drone		Model	Name :	ELF	
Temperature:	25℃	TIME	13	Relativ	Relative Humidity: 5		
Test Voltage:	AC 24	0V/60 Hz		1	CATALON .	9	
Terminal:	Line		diffe		1 63		
Test Mode:	Chargi	ng with TX N	Mode 5733 M	lHz	2	Alle	
Remark:	Only w	orse case is	reported				
90.0 dBuV						QP: —	
40		Vanada da		*\^\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	VIVale Volombaria de la proposición del proposición de la proposic	AVE	
0.150	0.5		(MHz)	5		30.000	
No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment		ver	
	MHz	dBu∨	dB	dBuV	dBuV c	IB Detector	
1	0.1660	33.62	9.95	43.57	65.15 -21	.58 QP	
2	0.1660	22.31	9.95	32.26	55.15 -22	.89 AVG	
3	0.3020	6.02	10.02	16.04	60.19 -44	.15 QP	
4	0.3020	-3.97	10.02	6.05	50.19 -44	.14 AVG	
5	0.5980	26.33	10.07	36.40	56.00 -19	.60 QP	
6	0.5980	15.26	10.07	25.33	46.00 -20	.67 AVG	
0		26.64	10.06	36.70	56.00 -19	.30 QP	
7	1.0300	20.04					
	1.0300	11.72	10.06	21.78	46.00 -24	.22 AVG	
7			10.06 10.06	21.78 36.95	46.00 -24 56.00 -19		
7	1.0300	11.72				.05 QP	
7 8 9 *	1.0300 1.1060	11.72 26.89	10.06	36.95	56.00 -19	.05 QP .44 AVG	





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UT:	Mrico	FPV Drone		Model	Name :	E	ELF
emperature	: 25 ℃		10	Relativ	e Humidity	y : 5	55%
est Voltage:	AC 2	40V/60 Hz		1	110	133	
erminal:	Neuti	ral	Miller		10		
est Mode:	Char	ging with TX	Mode 5733 I	MHz	2	2 /	N. L.
Remark:	Only	worse case	is reported		CITI'S	91	
90.0 dBuV							
						QP: AVG:	
V							
40	× dd		Min allowalls on	X A Market			
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	Z CMM M MCC	Andrew WANTER TO MAKE	hidhr ^{a a} la , r ^a vawa	A. A. L. A.	PTRY THAT	AND THE PROPERTY OF THE PROPER	
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	<i>}\</i> \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	The second of th	hadr ^{da} a . r ^a vuu	VV' \	the particular of the control of the	10 711 11 11 11	AVG
0.150	0.5	T Anna DAMAN, I WANTA	(MHz)	5	+ 1 A CONTRACTOR OF THE CONTRA	10/11/11/11	30.000
	0.5	Y Y Y Y Y Y Y Y			the party of the state of the s	11/11/11/11	
		Reading	Correct	Measure-	Limit	Over	
0.150	0.5 Freq.	Reading Level				Over	
0.150	Freq.	Level	Correct Factor	Measure- ment	Limit dBuV		30.000
0.150 No. Mk.	Freq. MHz 0.1620	dBuV 31.76	Correct Factor dB	Measure- ment	dBuV 65.36 -	dB -23.48	30.000 Detector
0.150 No. Mk.	Freq.	dBuV 31.76 16.08	Correct Factor dB 10.12 10.12	Measure- ment dBuV 41.88 26.20	dBuV 65.36 -	dB -23.48 -29.16	Detector QP AVG
0.150 No. Mk. 1 2 3	Freq. MHz 0.1620 0.1620 0.3300	dBuV 31.76 16.08 27.56	Correct Factor dB 10.12 10.12 10.08	Measure- ment dBuV 41.88 26.20 37.64	dBuV 65.36 - 55.36 - 59.45 -	dB -23.48 -29.16 -21.81	Detector QP AVG
0.150 No. Mk. 1 2 3 4	Freq. MHz 0.1620 0.1620 0.3300 0.3300	Level dBuV 31.76 16.08 27.56 7.25	Correct Factor dB 10.12 10.12 10.08	Measure- ment dBuV 41.88 26.20 37.64 17.33	dBuV 65.36 - 55.36 - 59.45 - 49.45 -	dB -23.48 -29.16 -21.81 -32.12	Detector QP AVG
0.150 No. Mk. 1 2 3 4 5	Freq. MHz 0.1620 0.1620 0.3300 0.3300 0.6620	Level dBuV 31.76 16.08 27.56 7.25 27.40	Correct Factor dB 10.12 10.12 10.08 10.08 10.02	Measure- ment dBuV 41.88 26.20 37.64 17.33 37.42	Limit dBuV 65.36 - 55.36 - 59.45 - 49.45 - 56.00 -	dB -23.48 -29.16 -21.81 -32.12 -18.58	Detector QP AVG QP AVG
0.150 No. Mk. 1 2 3 4 5	Freq. MHz 0.1620 0.1620 0.3300 0.3300 0.6620 0.6620	Level dBuV 31.76 16.08 27.56 7.25 27.40 2.62	Correct Factor dB 10.12 10.12 10.08 10.08 10.02 10.02	Measure- ment dBuV 41.88 26.20 37.64 17.33 37.42 12.64	Limit dBuV 65.36 - 55.36 - 59.45 - 49.45 - 56.00 - 46.00 -	dB -23.48 -29.16 -21.81 -32.12 -18.58 -33.36	Detector QP AVG QP AVG
0.150 No. Mk. 1 2 3 4 5 6 7 *	Freq. MHz 0.1620 0.1620 0.3300 0.3300 0.6620 0.6620 1.0460	Level dBuV 31.76 16.08 27.56 7.25 27.40 2.62 28.13	Correct Factor dB 10.12 10.12 10.08 10.08 10.02 10.02 10.16	Measure- ment dBuV 41.88 26.20 37.64 17.33 37.42 12.64 38.29	Limit dBuV 65.36 - 55.36 - 59.45 - 49.45 - 56.00 - 56.00 -	dB -23.48 -29.16 -21.81 -32.12 -18.58 -33.36 -17.71	Detector QP AVG QP AVG QP AVG
0.150 No. Mk. 1 2 3 4 5 6 7 * 8	Freq. MHz 0.1620 0.1620 0.3300 0.3300 0.6620 0.6620 1.0460 1.0460	Level dBuV 31.76 16.08 27.56 7.25 27.40 2.62 28.13 6.54	Correct Factor dB 10.12 10.12 10.08 10.08 10.02 10.02 10.16 10.16	Measure- ment dBuV 41.88 26.20 37.64 17.33 37.42 12.64 38.29 16.70	Limit dBuV 65.36 - 55.36 - 59.45 - 49.45 - 56.00 - 46.00 - 46.00 -	dB -23.48 -29.16 -21.81 -32.12 -18.58 -33.36 -17.71 -29.30	Detector QP AVG QP AVG QP AVG
0.150 No. Mk. 1 2 3 4 5 6 7 * 8 9	Freq. MHz 0.1620 0.1620 0.3300 0.3300 0.6620 1.0460 1.0460 2.2820	Level dBuV 31.76 16.08 27.56 7.25 27.40 2.62 28.13 6.54 25.56	Correct Factor dB 10.12 10.12 10.08 10.08 10.02 10.02 10.16 10.16 10.06	Measure-ment dBuV 41.88 26.20 37.64 17.33 37.42 12.64 38.29 16.70 35.62	Limit dBuV 65.36 - 55.36 - 59.45 - 49.45 - 56.00 - 46.00 - 56.00 -	dB -23.48 -29.16 -21.81 -32.12 -18.58 -33.36 -17.71 -29.30 -20.38	Detector QP AVG QP AVG QP AVG
0.150 No. Mk. 1 2 3 4 5 6 7 * 8	Freq. MHz 0.1620 0.1620 0.3300 0.3300 0.6620 0.6620 1.0460 1.0460	Level dBuV 31.76 16.08 27.56 7.25 27.40 2.62 28.13 6.54	Correct Factor dB 10.12 10.12 10.08 10.08 10.02 10.02 10.16 10.16 10.06 10.06	Measure- ment dBuV 41.88 26.20 37.64 17.33 37.42 12.64 38.29 16.70	Limit dBuV 65.36 - 55.36 - 59.45 - 49.45 - 56.00 - 46.00 - 46.00 -	dB -23.48 -29.16 -21.81 -32.12 -18.58 -33.36 -17.71 -29.30 -20.38	Detector QP AVG QP AVG QP AVG
0.150 No. Mk. 1 2 3 4 5 6 7 * 8 9	Freq. MHz 0.1620 0.1620 0.3300 0.3300 0.6620 1.0460 1.0460 2.2820	Level dBuV 31.76 16.08 27.56 7.25 27.40 2.62 28.13 6.54 25.56	Correct Factor dB 10.12 10.12 10.08 10.08 10.02 10.02 10.16 10.16 10.06	Measure-ment dBuV 41.88 26.20 37.64 17.33 37.42 12.64 38.29 16.70 35.62	Limit dBuV 65.36 - 55.36 - 59.45 - 49.45 - 56.00 - 46.00 - 56.00 -	dB -23.48 -29.16 -21.81 -32.12 -18.58 -33.36 -17.71 -29.30 -20.38 -29.35	Detector QP AVG QP AVG QP AVG QP AVG



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5. Radiated Emission Test

5.1 Test Standard and Limit

5.1.1 Test Standard FCC Part 15.209

5.1.2 Test Limit

Radiated Emission Limit (9kHz~1000MHz)

Frequency (MHz	Field Strength (microvolt/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

Radiated Emission Limit (Above 1000MHz)

Frequency	(dBuV/m)(at 3 M)				
(MHz)	Peak	Average			
Above 1000	74	54			

Note:

(1) The tighter limit applies at the band edges.

(2) Emission Level(dBuV/m)=20log Emission Level(Uv/m)

Limits of radiated emission measurement (15.249)

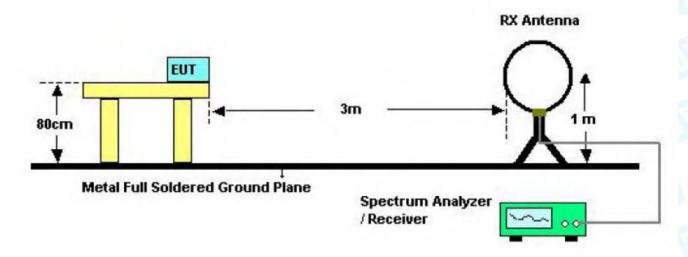
FCC Part 15 (15.249), Subpart C							
Limit Frequency Range (MHz)							
Field strength of fundamental 50000 μV/m (94 dBμV/m) @ 3 m	5725~5875						
Field strength of harmonics 500 μV/m (54 dBμV/m) @ 3 m	Below 5725 and Above 5875						

Restricted bands requirement for equipment operating in 5725MHz to 5875 MHz (15.249)

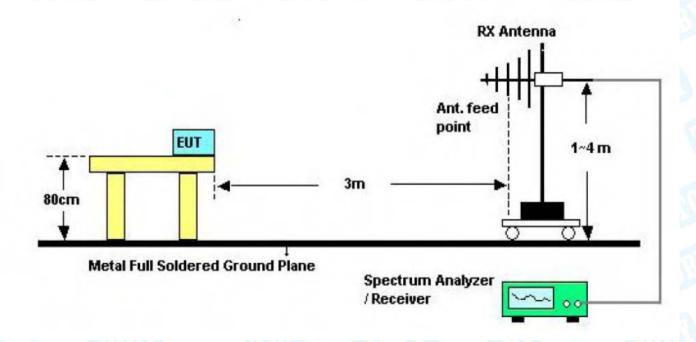
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Restricted Frequency Band (MHz)	(dBuV/m)(at 3 M)
5725~5875	Attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in 15.209, whichever is the

5.2 Test Setup



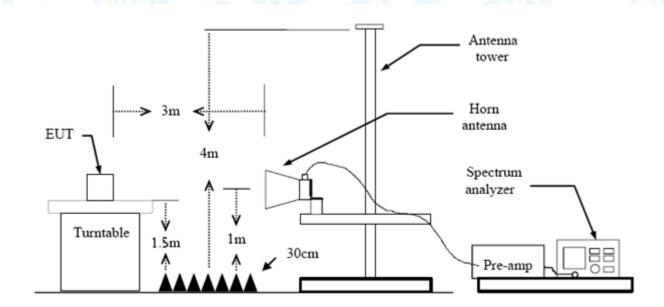
Bellow 30MHz Test Setup



Bellow 1000MHz Test Setup



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Above 1GHz Test Setup

5.3 Test Procedure

- (1) The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1 GHz. The EUT was placed on a rotating 0.8m high above ground, the table was rotated 360 degrees to determine the position of the highest radiation.
- (2) Measurements at frequency above 1GHz. The EUT was placed on a rotating 1.5m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.
- (3) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- (4) 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.
- (5) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
- (6) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (7) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.
- (8) For the actual test configuration, please see the test setup photo.



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5.4 EUT Operating Condition

The EUT was set to Continual Transmitting in maximum power, and new batteries are used during testing.

5.5 Test Data

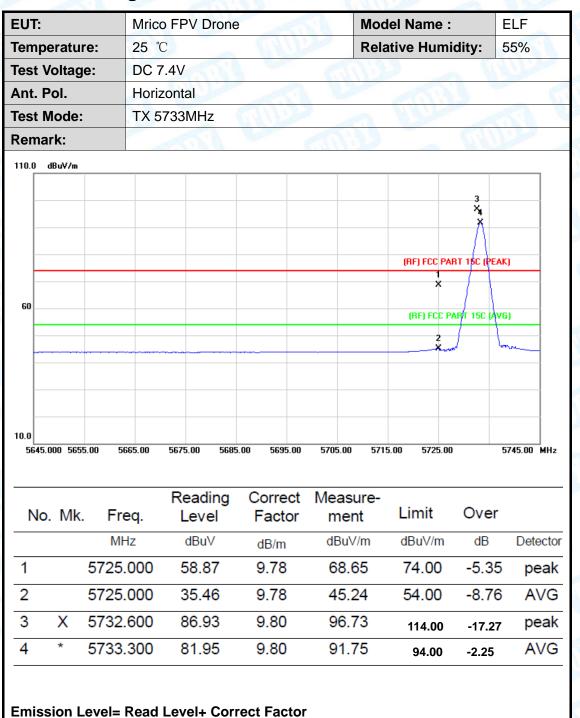
Please see the next page.





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5.6.1 Field Strength of the Fundamental







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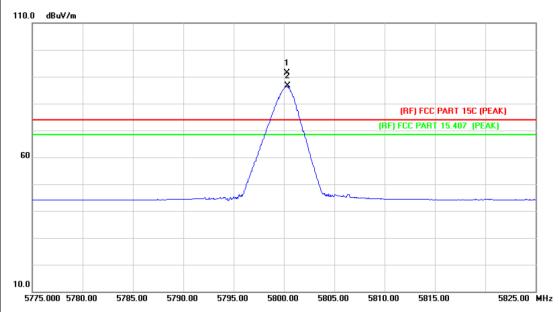
UT:			Mrico	FP\	/ Dron	е			Mod	del Nam	е:	ELF	
[emp	peratu	re:	25 ℃				Relative Humidity: 55%						
Test	Voltag	e:	DC 7	'.4V			50	100		G	MARK		
۹nt.	Pol.		Vertical										
Test	Mode:		TX 5	733N	1Hz			m	No		- N	MAP	
Rem	ark:			M			51	16		CINI)	130		
120.0	dBuV/m												
70										1 X	PART 15C (PE		
20.0 564	17.000 565	7.00 5	667.00	5677.0	00 568	7.00 5697	7.00	5707.00	5717	7.00 572 7	.00	5747.00	4 Hz
No	o. Mk	. Fre	eq.		ading evel	Corre Fact		Meas		Limit	Ove	r	
No	o. Mk	. Fre		Le			or	me		Limit dBuV/r		r Dete	ecto
No.	o. Mk		łz	Le dl	evel	Fact	or	me dBu	ent		n dB	Dete	ecto
1 2	o. Mk	MH	dz 000	Le dl	evel BuV	Factor dB/m	or	dBu	ent V/m	dBuV/r	m dB) -5.3	Dete	ak
1	o. Mk	MH 5725.	000 000	58 35	BuV BuV	dB/m 9.78	or B	68.	ent V/m .65	dBuV/r	m dB) -5.3	Dete	



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EUT:	Mrico FPV Drone	Model Name :	ELF
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 7.4V		
Ant. Pol.	Horizontal		
Test Mode:	TX 5800MHz		THE PARTY OF
Remark:			



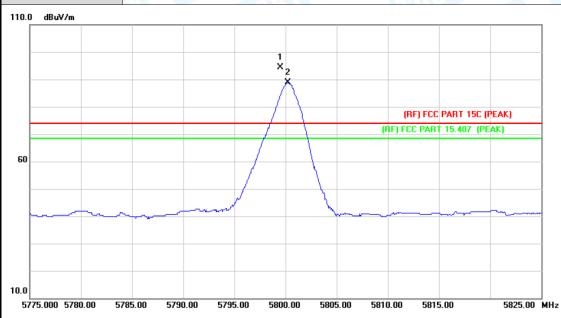
N	o. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	X	5800.300	81.35	9.99	91.34	114.00	-22.66	peak
2	*	5800.400	76.73	9.99	86.72	94.00	-7.28	AVG





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EUT:	Mrico FPV Drone	Model Name :	ELF
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 7.4V		
Ant. Pol.	Vertical		
Test Mode:	TX 5800MHz		MUL
Remark:			



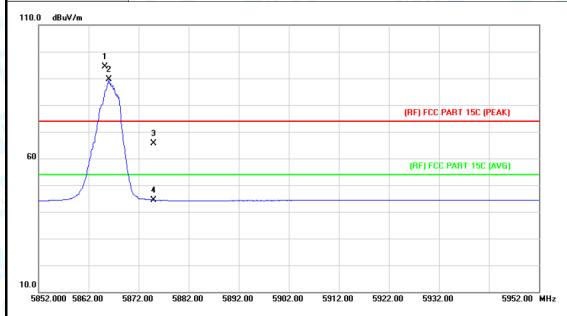
N	No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		X	5799.500	84.39	9.98	94.37	114.00	-19.63	peak
2		*	5800.250	78.85	9.99	88.84	94.00	-5.16	AVG



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EUT:	Mrico FPV Drone	Model Name :	ELF
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 7.4V		
Ant. Pol.	Horizontal		
Test Mode:	TX 5866MHz		HILL STREET
Remark:			



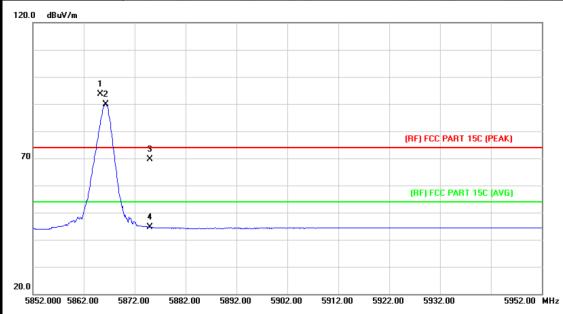
No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1	Χ	5865.300	84.15	10.17	94.32	114.00	-19.68	peak
2	*	5866.000	79.54	10.17	89.71	94.00	-4.29	AVG
3		5875.000	55.45	10.20	65.65	74.00	-8.35	peak
4		5875.000	34.27	10.20	44.47	54.00	-9.53	AVG



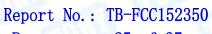
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EUT:	Mrico FPV Drone	Model Name :	ELF
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 7.4V		
Ant. Pol.	Vertical		
Test Mode:	TX 5866MHz		MUL
Remark:			



No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	Χ	5865.300	83.50	10.17	93.67	114.00	-20.33	peak
2	*	5866.300	79.75	10.17	89.92	94.00	-4.08	AVG
3		5875.000	59.40	10.20	69.60	74.00	-4.40	peak
4		5875.000	34.46	10.20	44.66	54.00	-9.34	AVG





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5.6.2 Radiated Spurious Emission (Below 1 GHz)

EUT:	Mrico FPV Drone		Model Name :	ELF
Temperature:	25 ℃	1	Relative Humidity:	55%
Test Voltage:	DC 7.4V			
Ant. Pol.	Horizontal	CALLED S		
Test Mode:	TX 5733MHz			
Remark:	Only worse case	is reported		611
80.0 dBuV/m				
-20 30.000 40 50	60 70 80	MHz)	(RF)FCC 15C 3N	Margin -6 dB
	Reading	Correct	Measure-	
No. Mk. Fr	eq. Level	Factor		Over
M	Hz dBuV	dB/m	dBuV/m dBuV/m	dB Detector
1 224.5	5193 39.09	-18.92	20.17 46.00 -	25.83 peak
2 337.2	2155 36.08	-14.94	21.14 46.00 -	24.86 peak
3 449.5	5558 33.56	-11.99	21.57 46.00 -	24.43 peak
4 612.0	0642 30.12	-8.24		24.12 peak
5 716.6	6820 33.03	-5.85	27.18 46.00 -	18.82 peak
6 * 833.3	3171 36.35	-5.12	31.23 46.00 -	14.77 peak
Emission Level=	Read Level+ Cor	rect Factor		· · ·





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EU	T:			Mr	ico	FP\	/ Dr	one	3 113	No.	Mod	lel Nam	e :		E	LF	
Ten	npera	ature	:	25	$^{\circ}$ C				7	_	Rela	tive Hu	mid	ity:	5	5%	de
Tes	t Vol	tage		DC	7.	4V			1	18		61	M				A.
Ant	. Pol	.		Ve	rtic	al			BHO.			16					ß
Tes	t Mo	de:		TX	57	'33N	1Hz	M				2	A	. 1		اعلا	
Rei	mark	:		Or	ıly v	wors	e ca	ase	is reported	1 8		CITI					
80.0	D dBu	V/m															_
												(RF)FC0	150	3M Ra	diatior	•	
														Ma	rgin -6	dB	H
					_	<u> </u>											Ц
30						#									5	6	
													4	handa dalah	Alexandra (.X.M	nda,
								1 X		2 X	L. L. Market	3 Xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	en <mark>Waler</mark>	ANTON TO			
	YHALALA	Maria			1.	.1.4			gglyriggird Matholydd Ymaria	otherwood backers.	Monday						1
		. "Mundhi	NAHILAHIY	ec _{ynid}	Maha	'r-spikely	(Marun)	4444	Mith Andreas as see, se de sa								-
						+											-
-20											200	100	F00	200	700	100	
31	0.000	40	50	60	70	80			(MHz)		300	400	500	600	700	100	0.000
	.1- 1	N 41.	Г.,				adir		Correct		sure-	Limit		Ove	or		
	Vo. I	VIK.		eq.			evel		Factor	me							
			M	Hz		d	BuV		dB/m	dBu	IV/m	dBuV/r	n	dE	3	Dete	ecto
1		1	12.1	30	5	35	5.01		-21.98	13	.03	43.50)	-30	.47	pe	eak
2		2	24.5	193	3	33	3.11		-18.92	14	.19	46.00)	-31	.81	ре	ak
3		3	352.9	433	3	29	9.52	2	-14.14	15	.38	46.00)	-30	.62	ре	eak
4		Ę	20.8	882	2	29	9.64	1	-9.85		.79	46.00		-26	21		ak
5			77.5				1.44		-6.55		.89	46.00		-21			ak
6	*		33.3	31/	l	3(0.61		-5.12	25	.49	46.00)	-20	.51	pe	eak





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5.6.3 Radiated Spurious Emission (Above 1 GHz)

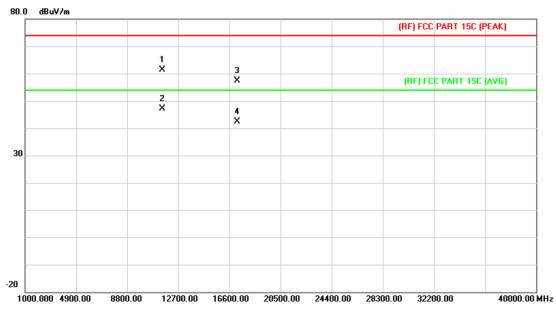
UT:			Mrico F	PV Dror	ne	M	odel Name	:	ELF			
empe	eratur	e:	25 ℃	1	1	Re	elative Hun	nidity:	55%			
est V	oltage) :	DC 7.4	V		3 0		William.				
nt. P	ol.		Horizon	ntal	CIII!	99	a Will					
est N	lode:		TX 573	3MHz	V.		13					
Remai	rk:			No report for the emission which more than 10 dB below the prescribed limit.								
30.0 dE	BuV/m						(0.5) 50	COADT 1EC (DEAK)			
							(RF) FI	CC PART 15C (F	'EAKJ			
			1 X		2							
					X		(RF)	CC PART 15C	(AVG)			
			2 X		4 X							
					^							
10												
0 <u> </u>	0 4900.0	00 880	0.00 12	700.00 166	00.00 20500	.00 24400.00	28300.00 32	2200.00	40000.00 MHz			
				Reading				it Ov	or			
	. Mk.			Level	Facto							
No						dBu∖	//m dBuˈ	V/m dl	3 Detector			
No		MF	łz	dBu∨	dB/m							
No 1		M⊦ 11466		dBu√ 47.65	dB/m 16.62			00 -9.	73 peak			
1			.000			2 64.2	27 74.					
	*	11466	.000	47.65	16.62	2 64.2	27 74. 00 54.	00 -5.	<u> </u>			





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EUT:	Mrico FPV Drone	Model Name :	ELF						
Temperature:	25 ℃	25 ℃ Relative Humidity: 55%							
Test Voltage:	DC 7.4V								
Ant. Pol.	Vertical								
Test Mode:	TX 5733MHz	TX 5733MHz							
Remark:	No report for the emission which prescribed limit.	No report for the emission which more than 10 dB below the prescribed limit.							
	·								

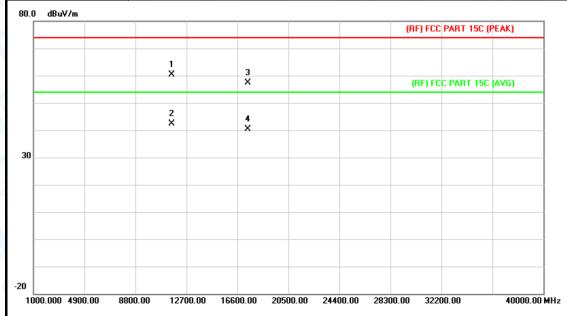


No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		11466.000	83.23	-21.86	61.37	74.00	-12.63	peak
2	*	11466.000	69.09	-21.86	47.23	54.00	-6.77	AVG
3		17199.000	74.66	-17.33	57.33	74.00	-16.67	peak
4		17199.000	59.70	-17.33	42.37	54.00	-11.63	AVG



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EUT:	Mrico FPV Drone	Model Name :	ELF				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	DC 7.4V						
Ant. Pol.	Horizontal						
Test Mode:	TX 5800MHz		MARKET				
Remark:	No report for the emission which	more than 10 dB below th	ne				
	prescribed limit.		COLUMN R				



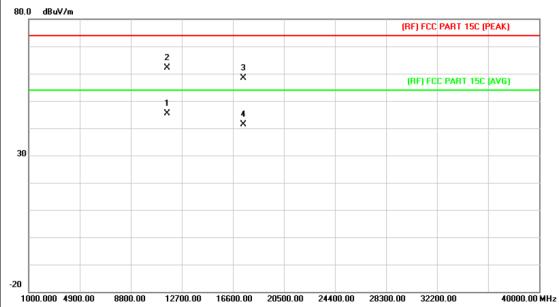
No.	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		11600.000	82.10	-21.76	60.34	74.00	-13.66	peak
2	*	11600.000	64.06	-21.76	42.30	54.00	-11.70	AVG
3		17400.000	74.65	-17.23	57.42	74.00	-16.58	peak
4		17400.000	57.60	-17.23	40.37	54.00	-13.63	AVG





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EUT:	Mrico FPV Drone	Model Name :	ELF					
Temperature:	25 ℃	25 ℃ Relative Humidity: 55%						
Test Voltage:	DC 7.4V							
Ant. Pol.	Vertical	Vertical						
Test Mode:	TX 5800MHz		Alle					
Remark:	No report for the emission	which more than 10 dB below	v the					
	prescribed limit.							

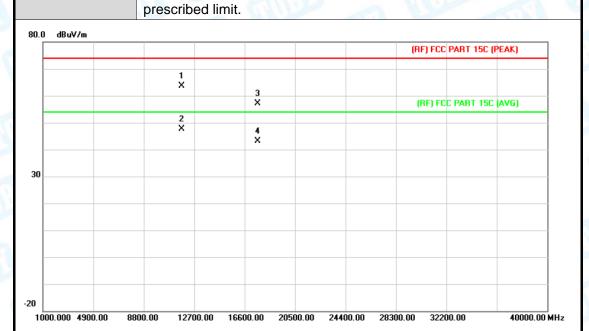


No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		11600.000	67.22	-21.76	45.46	54.00	-8.54	AVG
2	*	11600.000	83.93	-21.76	62.17	74.00	-11.83	peak
3		17400.000	75.50	-17.23	58.27	74.00	-15.73	peak
4		17400.000	58.68	-17.23	41.45	54.00	-12.55	AVG



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EUT:	Mrico FPV Drone	Model Name :	ELF		
Temperature:	25 ℃	Relative Humidity:	55%		
Test Voltage:	DC 7.4V				
Ant. Pol.	Horizontal				
Test Mode:	TX 5866MHz				
Remark:	No report for the emission which more than 10 dB below the				



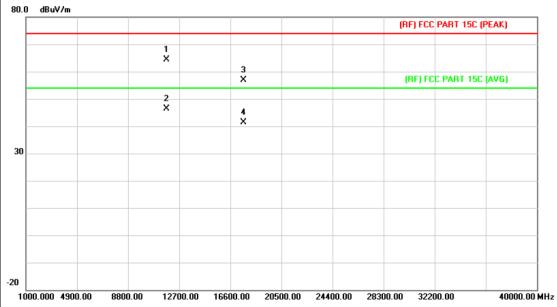
No.	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		11732.000	85.18	-21.65	63.53	74.00	-10.47	peak
2	*	11732.000	69.30	-21.65	47.65	54.00	-6.35	AVG
3		17598.000	74.39	-17.14	57.25	74.00	-16.75	peak
4		17598.000	60.39	-17.14	43.25	54.00	-10.75	AVG





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EUT:	Mrico FPV Drone	Model Name :	ELF				
Temperature:	25 ℃	25 °C Relative Humidity: 55%					
Test Voltage:	DC 7.4V						
Ant. Pol.	Vertical						
Test Mode:	TX 5866MHz						
Remark:	No report for the emission which more than 10 dB below the						
	prescribed limit.						



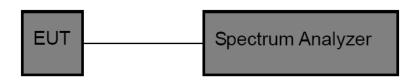
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		11732.000	85.97	-21.65	64.32	74.00	-9.68	peak
2	*	11732.000	67.98	-21.65	46.33	54.00	-7.67	AVG
3		17598.000	73.99	-17.14	56.85	74.00	-17.15	peak
4		17598.000	58.51	-17.14	41.37	54.00	-12.63	AVG



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6. Bandwidth Test

6.1 Test Setup



6.2 Test Procedure

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Spectrum Setting:

Bandwidth: RBW=100 kHz, VBW=300kHz.

(3) The bandwidth is measured at an amplitude level reduced 20dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst –case (i.e the widest) bandwidth.

6.3 EUT Operating Condition

The EUT was set to continuously transmitting for the Bandwidth Test.

6.4 Test Data



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Low Channel Frequency (MHz)	20dB Bandwidth (MHz)		
5733	6.305		

5733 MHz





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MID Channel Frequency (MHz)	20dB Bandwidth (MHz)
5800	5.967

5800 MHz

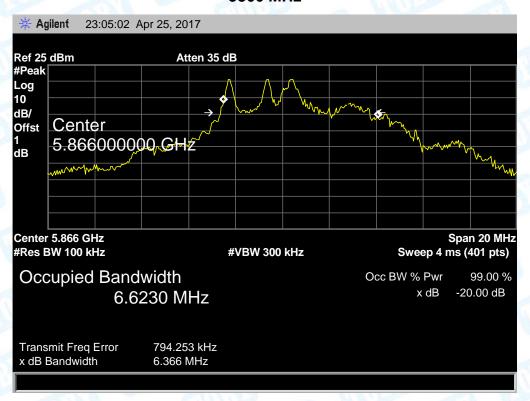




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HIGH Channel Frequency (MHz)	20dB Bandwidth (MHz)		
5866	6.366		

5866 MHz





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7. Antenna Requirement

7.1 Standard Requirement

7.1.1 Standard FCC Part 15.203

7.1.2 Requirement

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.

7.2 Antenna Connected Construction

The directional gains of the antenna used for transmitting is 3 dBi, and the antenna de-signed with permanent attachment and no consideration of replacement. Please see the EUT photo for details.

7.3 Result

The EUT antenna is a Integral Antenna. It complies with the standard requirement.

	Antenna Type
20	▼ Permanent attached antenna
Miller	□ Unique connector antenna
on BY	□ Professional installation antenna

----End of Report----