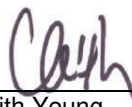
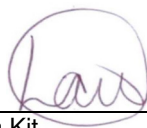


TEST REPORT No: (5216)071-1033

TEST REPORT

To:	VIVID IMAGINATIONS (FAR EAST) LIMITED	To:	-
Attn:	Stephen Tsang / Matthew Li / Debby Wu	Attn:	-
Address:	Unit 816, 8/F, North Tower, Concordia Plaza, 1 Science Museum Road, TST East, Kowloon, Hong Kong	Address:	-
Fax:	852 2736 3783	Fax:	-
E-mail:	stephentsang@vife.com.hk / matthew@vife.com.hk / debbywu@vife.com.hk	E-mail:	-
Folder No.:	--		
Factory name:	--		
Location:	--		
Product:	Dave The Funky Monkey Model No.:22400		
		Sample No:	(5216)071-1033
		Date of Receipt:	March 14, 2016
		Test date:	April 30, 2016
		Test Requested:	FCC Part 15 - 2012
		Test Method:	ANSI C63.4 - 2009
		FCC ID:	2AIEY22400040
The results given in this report are related to the tested specimen of the described electrical apparatus. CONCLUSION: The submitted sample was found to <u>COMPLY</u> with requirement of FCC Part 15 Subpart C.			
Authorized Signature:			
			
Reviewed by: Keith Yeung		Approved by: Law Man Kit	
Date: May 24, 2016		Date: May 24, 2016	



TEST REPORT No: (5216)071-1033
Test Result Summary

EMISSION TEST			
Test requirement: FCC Part 15 - 2012			
Test Condition	Test Method	Test Result	
		Pass	Failed
Radiated Emission Test, 9kHz to 40GHz	ANSI C63.4	☒	☐
Frequency range of Fundamental Emission	ANSI C63.4	☒	☐
26dB Bandwidth of Fundamental Emission	ANSI C63.4	☒	☐
Duty Cycle Correction During 100msec	ANSI C63.4	☒	☐

Report Revision & Sample Re-submit History:

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TEST REPORT No: (5216)071-1033

Location of the test laboratory

Radiated and Conducted emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2009. An Open Area Test Site and Full Anechoic Chamber (FCC Listed Site, Registration No. 642151) are set up for investigation and located at :

BUREAU VERITAS HONG KONG LIMITED, EMC CENTRE

No. 2106-2107, 21/F., Westin Centre,
26 Hung To Road,
Kwun Tong, Kowloon,
Hong Kong

List of measuring equipment

Radiated Emission

EQUIPMENT	MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATION DUE
EMI TEST RECEIVER	R&S	ESCI	100379	22-FEB-2017
LOOP ANTENNA	ETS LINDGREN	6502	00102266	05-NOV-2016
BICONICAL ANTENNA	ROHDE & SCHWARZ	HK116	100179	13-APR-2018
LOG-PERIODIC DIPOLE ARRAY ANTENNA	ROHDE & SCHWARZ	HL223	832369/001	06-APR-2018
BILOG ANTENNA	SCHAFFNER	CBL6112D	25229	26-FEB-2018
HORN ANTENNA	SCHWARZBECK	BBHA9120D	9120D-692	04-APR-2018
PREAMPLIFIER	SCHWARZBECK	BBV9718	9718-152	12-OCT-2016
OPEN AREA TEST SITE	BVCPS	N/A	N/A	18-JUN-2016
ANECHOIC CHAMBER	ALBATROSS	M-CDC	80374004499B	10-MAY-2017
COAXIAL CABLE	SUHNER	N/A	N/A	04-OCT-2016
Signal Analyzer 40GHz	Rohde & Schwarz	FSV 40	100977	29-JUN-2016
Wideband Horn Antenna 18 to 40GHz	STEATITE	QWH-SL-18-40-K-SG	12688	02-SEP-2016
High frequency RF cable	Rohde & Schwarz	N/A	N/A	03-NOV-2016

Measurement Uncertainty

MEASUREMENT	FREQUENCY	UNCERTAINTY
Radiated emissions	9kHz to 30MHz	4.2dB
	30MHz to 1GHz	5.0dB
	1GHz to 18GHz	4.9dB
	18GHz to 40GHz	4.8dB

Remarks:-

N/A : Not Applicable or Not Available

The measurement instrumentation uncertainty would be taking into consideration on each of the test result

TEST REPORT No: (5216)071-1033

Equipment Under Test [EUT]

Description of Sample:

Model Name: Dave The Funky Monkey
Model Number: 22400
Additional Model Name: --
Additional Model Number: --
Additional Model information: --
Rating: 3Vd.c. ("AAA" size battery x 2)

Description of EUT Operation:

The Equipment Under Test (EUT) is a **VIVID IMAGINATIONS (FAR EAST) LIMITED** of Remote Control Transmitter. It is a 1 switch and 8 buttons transmitter and operating at 2475MHz. The EUT transmit while buttons are being pressed, Modulation by IC, and type is GFSK.

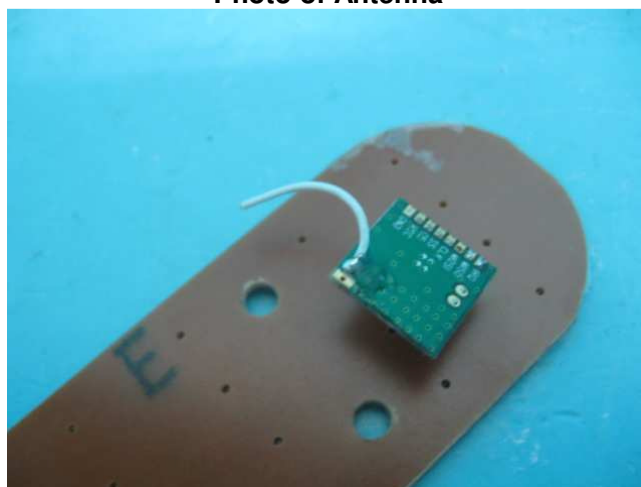
The transmitter has different control:

1. I / 0 / II switch – On / Off / Demo control
2. Keypad "1" button – behaviour control
3. Keypad "2" button – behaviour control
4. Keypad "3" button – behaviour control
5. Keypad "4" button – behaviour control
6. Conversation button – mode selection
7. Greeting button – mode selection
8. Puppet button – mode selection
9. Action button – mode selection

Antenna Requirement (Section 15.203)

The EUT is use of a permanently antenna. It is soldered on the PCB. The antenna consists of 2cm long wire The antenna is not replaceable or user serviceable. The requirements of S15.203 are met. There are no deviations or exceptions to the specifications.

Photo of Antenna



TEST REPORT No: (5216)071-1033

Test Results

Radiated Emissions (Fundamental)

Test Requirement: FCC Part 15 Section 15.249
Test Method: ANSI C63.4
Test Date(s): 2016-04-30
Temperature: 27.0 °C
Humidity: 71.0 %
Atmospheric Pressure: 100.1 kPa
Mode of Operation: Transmission mode
Tested Voltage: 3Vd.c. ("AAA" size battery x 2)

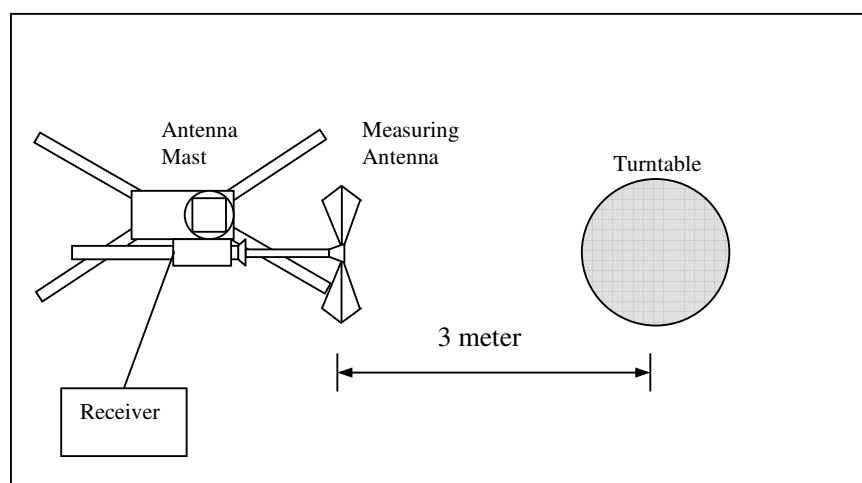
Test Procedure:

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2009.

The equipment under test (EUT) was placed on a non-conductive turntable with dimensions of 1.5m x 1m and 0.8m high above the ground. 3m from the EUT, a broadband antenna mounting on the mast received the signal strength. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables. For battery operated equipment, the equipment tests shall be performed using new battery. The turntable was rotated to maximize the emission level. The antenna was then moving along the mast from 1m up to 4m until no more higher value was found. Both horizontal and vertical polarization of the antenna were placed and investigated.

Location: The Roof, Westin Centre, 26 Hung To Road, Kwun Tong, Kowloon, Hong Kong

Test Setup: Open Area Test Site





TEST REPORT No: (5216)071-1033

Limits for Field Strength of Fundamental Emissions [FCC 47CFR 15.249]:

Frequency Range of Fundamental [MHz]	Field Strength of Fundamental Emission (Average) [mV/m]	Field Strength of Harmonics Emission (Average) [μV/m]
2400-2483.5	50	500

Measurement Data

Test Result of (Transmission mode): PASS

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBμV/m)	Limit at 3m – Peak (dBμV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBμV/m)	Limit at 3m – Average (dBμV/m)	Margin - Average (dB)
2475.00	H	-3.7	-30.4	80.2	114.0	-33.8	**49.8	94.0	-44.2
2475.00	V	-3.7	-30.4	80.2	114.0	-33.8	**49.8	94.0	-44.2

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.

**Duty Cycle Correction = $20\log(0.03) = -30.4\text{dB}$.

Note: Field Strength includes Antenna Factor, Cable Loss and Gain of pre-amplifier.

Receiver setting: RBW = 1MHz
VBW = 1MHz



TEST REPORT No: (5216)071-1033

Radiated Emissions (Spurious Emission)

Test Requirement: FCC Part 15 Section 15.249
 Test Method: ANSI C63.4
 Test Date(s): 2016-04-30
 Temperature: 27.0 °C
 Humidity: 71.0 %
 Atmospheric Pressure: 100.1 kPa
 Mode of Operation: Transmission mode
 Tested Voltage: 3Vd.c. ("AAA" size battery x 2)

Measurement Data

Test Result of (Transmission mode): PASS

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBμV/m)	Limit at 3m – Peak (dBμV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBμV/m)	Limit at 3m – Average (dBμV/m)	Margin - Average (dB)
4950.00	H	4.3	-30.4	49.4	74.0	-24.6	**19.0	54.0	-35.0
7425.00	H	11.6	-30.4	50.4	74.0	-23.6	**20.0	54.0	-34.0
9900.00	H	15.8	-30.4	54.0	74.0	-20.0	**23.6	54.0	-30.4
12375.00	H	19.1	-30.4	57.6	74.0	-16.4	**27.2	54.0	-26.8
14850.00	H	23.2	-30.4	61.5	74.0	-12.5	**31.1	54.0	-22.9
17325.00	H	28.7	-30.4	64.5	74.0	-9.5	**34.1	54.0	-19.9
19800.00	H	46.6	-30.4	62.4	74.0	-11.6	**32.0	54.0	-22.0
22275.00	H	47.5	-30.4	60.9	74.0	-13.1	**30.5	54.0	-23.5
24750.00	H	47.9	-30.4	61.4	74.0	-12.6	**31.0	54.0	-23.0
27225.00	H	48.7	-30.4	63.0	74.0	-11.0	**32.6	54.0	-21.4

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.

**Duty Cycle Correction = $20\log(0.03) = -30.4\text{dB}$.

Note: Field Strength includes Antenna Factor, Cable Loss and Gain of pre-amplifier.

Receiver setting: RBW = 1MHz
VBW = 1MHz



TEST REPORT No: (5216)071-1033

Measurement Data

Test Result of (Transmission mode): PASS

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBμV/m)	Limit at 3m – Peak (dBμV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBμV/m)	Limit at 3m – Average (dBμV/m)	Margin - Average (dB)
4950.00	V	4.3	-30.4	46.6	74.0	-27.4	**16.2	54.0	-37.8
7425.00	V	11.6	-30.4	48.6	74.0	-25.4	**18.2	54.0	-35.8
9900.00	V	15.8	-30.4	53.1	74.0	-20.9	**22.7	54.0	-31.3
12375.00	V	19.1	-30.4	58.3	74.0	-15.7	**27.9	54.0	-26.1
14850.00	V	23.2	-30.4	62.3	74.0	-11.7	**31.9	54.0	-22.1
17325.00	V	28.7	-30.4	64.9	74.0	-9.1	**34.5	54.0	-19.5
19800.00	V	46.6	-30.4	62.8	74.0	-11.2	**32.4	54.0	-21.6
22275.00	V	47.5	-30.4	63.0	74.0	-11.0	**32.6	54.0	-21.4
24750.00	V	47.9	-30.4	63.2	74.0	-10.8	**32.8	54.0	-21.2
27225.00	V	48.7	-30.4	62.7	74.0	-11.3	**32.3	54.0	-21.7

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.

**Duty Cycle Correction = $20\log(0.03) = -30.4\text{dB}$.

Note: Field Strength includes Antenna Factor, Cable Loss and Gain of pre-amplifier.

Receiver setting: RBW = 1MHz

VBW = 1MHz



TEST REPORT No: (5216)071-1033

Radiated Emissions (9kHz – 40GHz)

Test Requirement: FCC Part 15 Section 15.209
Test Method: ANSI C63.4
Test Date(s): 2016-04-20
Temperature: 27.0 °C
Humidity: 71.0 %
Atmospheric Pressure: 100.1 kPa
Mode of Operation: On mode
Tested Voltage: 3Vd.c. ("AAA" size battery x 2)

Limits for Radiated Emissions [FCC 47 CFR 15.209]:

Frequency Range [MHz]	Quasi-Peak Limits [μV/m]	Measurement Distance m
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Measurement Data

Test Result of (On mode): PASS

Detection mode: Quasi-Peak

Frequency	Polarity (H/V)	Field Strength	Limit	Margin (dB)
Emissions detected are more than 20 dB below the limit line(s) in 9kHz to 30MHz				

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 200Hz
VBW = 200Hz

TEST REPORT No: (5216)071-1033

Measurement Data

Test Result of (On mode): PASS

Detection mode: Quasi-Peak

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
43.56	H	24.3	40.0	-15.7
127.32	H	25.8	43.5	-17.7
203.56	H	20.5	43.5	-23.0
306.60	H	26.1	46.0	-19.9
377.60	H	28.5	46.0	-17.5
532.36	H	31.7	46.0	-14.3

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
43.56	V	24.7	40.0	-15.3
127.32	V	25.2	43.5	-18.3
203.56	V	20.6	43.5	-22.9
306.60	V	26.4	46.0	-19.6
377.60	V	28.0	46.0	-18.0
532.36	V	31.3	46.0	-14.7

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 120KHz
VBW = 120KHz



TEST REPORT No: (5216)071-1033

Frequency range of Fundamental Emission

Test Requirement: FCC 47 CFR 15.249
Test Method: ANSI C63.4:2009 (Section 13.1.7)
Test Date(s): 2016-04-20
Temperature: 27.0 °C
Humidity: 71.0 %
Atmospheric Pressure: 100.1 kPa
Mode of Operation: Transmission mode
Tested Voltage: 3Vd.c. ("AAA" size battery x 2)

Test Method:

The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. 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.

Limits for Frequency range of Fundamental Emission:

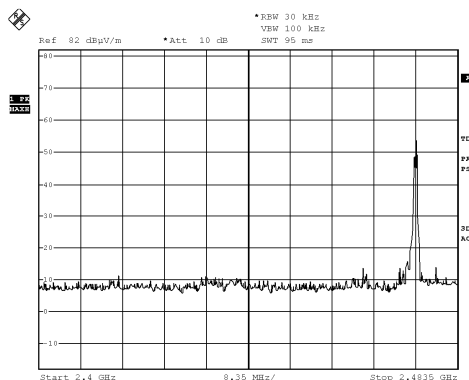
Frequency [MHz]	FCC Limits [MHz]
2474.420 – 2475.680	2400.00 – 2483.50

TEST REPORT No: (5216)071-1033

Measurement Data :

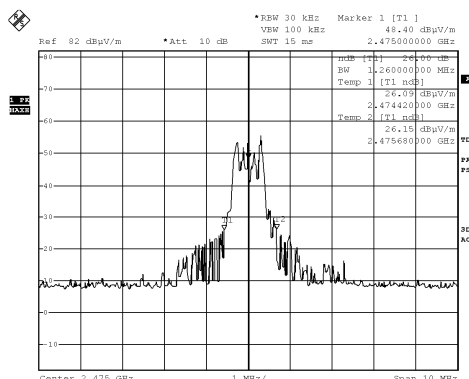
Test Result of Frequency Range of Fundamental Emission: PASS

2475.00MHz



Test Result of 26dB Bandwidth of Fundamental Emission: PASS

2475.00MHz





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Duty Cycle Correction During 100msec:

Each function key sends a different series of characters, but each packet period (100msec) never exceeds a series of 5 pulses (0.6 msec). Assuming any combination of short and long pulses maybe obtained due to encoding the worst case transmit duty cycle would be considered 5×0.6 per 100msec = 3% duty cycle.

Remarks:

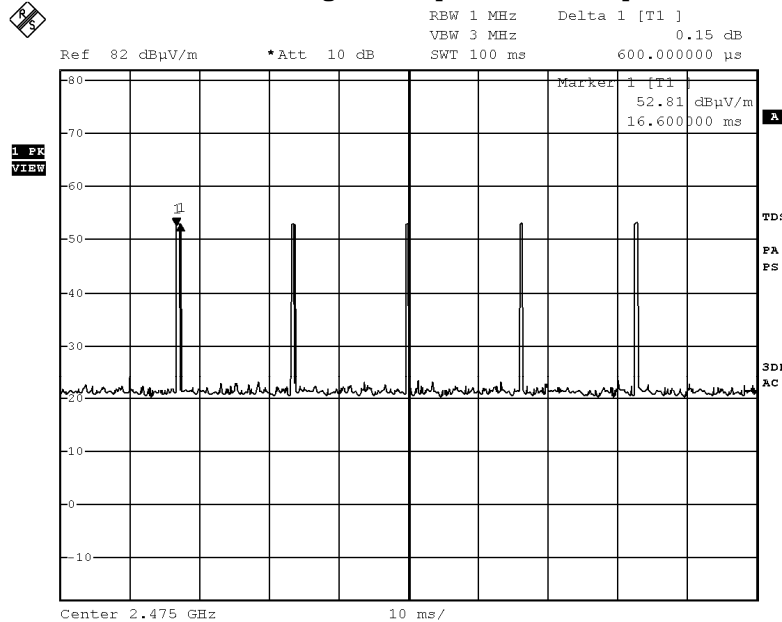
Duty Cycle Correction = $20\text{Log}(0.03) = -30.4\text{dB}$

The following figures [Figure A] show the characteristics of the pulse train for one of these functions.

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Measurement Data :

Figure A [Pulse Train]



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Photographs of EUT

Front View of the product



Rear View of the product



Top View of the product



Bottom View of the product



Side View of the product



Side View of the product



Battery compartment



Battery cover



TEST REPORT No: (5216)071-1033

Photographs of EUT

Internal View of the product



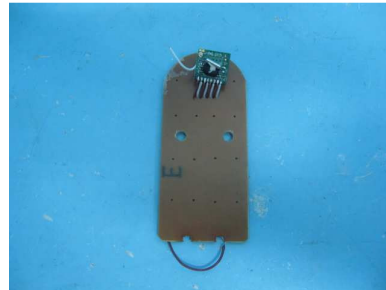
Internal View of the product



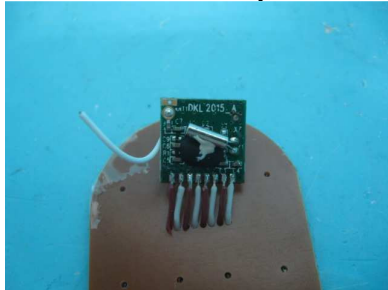
Inner Circuit Top View



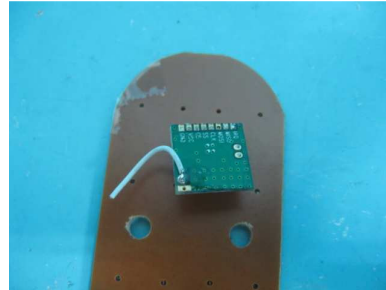
Inner Circuit Bottom View



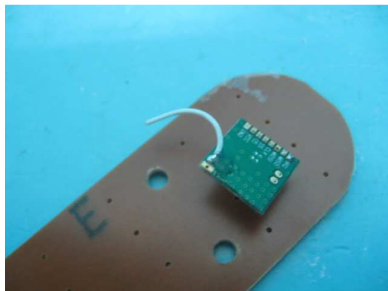
Inner Circuit Top View



Inner Circuit Bottom View



Antenna



TEST REPORT No: (5216)071-1033

Measurement of Radiated Emission Test Set Up



******* End of Report *******