

APPLICATION CERTIFICATION FCC Part 15C
On Behalf of
SHEN ZHEN FANR TECHNOLOGY CO., LIMITED

Eye Massager Smart Eye
Model No.: OE-0909

FCC ID: 2ATAW-OE0909

Prepared for : SHEN ZHEN FANR TECHNOLOGY CO., LIMITED
Address : 6th Floor, Yusheng Building, Huafeng Second Industrial Park,
Hangcheng Avenue, Xixiang Street, Baoan District, Shenzhen,
Guangdong, China

Prepared by : Shenzhen Accurate Technology Co., Ltd.
Address : 1/F., Building A, Changyuan New Material Port, Science & Industry
Park, Nanshan District, Shenzhen, Guangdong, P.R. China

Tel: (0755) 26503290
Fax: (0755) 26503396

Report No. : ATE20190617
Date of Test : May 7-May 15, 2019
Date of Report : May 16, 2019

TABLE OF CONTENTS

Description	Page
Test Report Certification	
TABLE OF CONTENTS	2
1. GENERAL INFORMATION	5
1.1. Description of Device (EUT)	5
1.2. Accessory and Auxiliary Equipment	5
1.3. Description of Test Facility	6
1.4. Measurement Uncertainty	6
2. MEASURING DEVICE AND TEST EQUIPMENT	7
3. OPERATION OF EUT DURING TESTING	8
3.1. Operating Mode	8
3.2. Configuration and peripherals	8
4. FREQUENCY HOPPING SYSTEM REQUIREMENTS	9
4.1. Standard and Limit	9
4.2. EUT Pseudorandom Frequency Hopping Sequence	9
4.3. Frequency Hopping System	10
5. TEST PROCEDURES AND RESULTS	11
6. 20DB BANDWIDTH TEST	12
6.1. Block Diagram of Test Setup	12
6.2. The Requirement For Section 15.247(a)(1)	12
6.3. EUT Configuration on Measurement	12
6.4. Operating Condition of EUT	12
6.5. Test Procedure	12
6.6. Test Result	13
7. CARRIER FREQUENCY SEPARATION TEST	17
7.1. Block Diagram of Test Setup	17
7.2. The Requirement For Section 15.247(a)(1)	17
7.3. EUT Configuration on Measurement	17
7.4. Operating Condition of EUT	17
7.5. Test Procedure	18
7.6. Test Result	18
8. NUMBER OF HOPPING FREQUENCY TEST	22
8.1. Block Diagram of Test Setup	22
8.2. The Requirement For Section 15.247(a)(1)(iii)	22
8.3. EUT Configuration on Measurement	22
8.4. Operating Condition of EUT	22
8.5. Test Procedure	22
8.6. Test Result	23
9. DWELL TIME TEST	25
9.1. Block Diagram of Test Setup	25
9.2. The Requirement For Section 15.247(a)(1)(iii)	25
9.3. EUT Configuration on Measurement	25
9.4. Operating Condition of EUT	25

9.5.	Test Procedure	25
9.6.	Test Result	26
10.	MAXIMUM PEAK OUTPUT POWER TEST	30
10.1.	Block Diagram of Test Setup.....	30
10.2.	The Requirement For Section 15.247(b)(1).....	30
10.3.	EUT Configuration on Measurement	30
10.4.	Operating Condition of EUT	30
10.5.	Test Procedure	30
10.6.	Test Result	31
11.	RADIATED EMISSION TEST	35
11.1.	Block Diagram of Test Setup.....	35
11.2.	The Limit For Section 15.247(d)	36
11.3.	Restricted bands of operation	37
11.4.	Configuration of EUT on Measurement	37
11.5.	Operating Condition of EUT	38
11.6.	Test Procedure	38
11.7.	Data Sample.....	39
11.8.	Test Result	39
12.	BAND EDGE COMPLIANCE TEST	52
12.1.	Block Diagram of Test Setup.....	52
12.2.	The Requirement For Section 15.247(d)	52
12.3.	EUT Configuration on Measurement	52
12.4.	Operating Condition of EUT	52
12.5.	Test Procedure	53
12.6.	Test Result	53
13.	AC POWER LINE CONDUCTED EMISSION TEST	63
13.1.	Block Diagram of Test Setup.....	63
13.2.	Test Limits.....	64
13.3.	Configuration of EUT on Measurement	64
13.4.	Operating Condition of EUT	64
13.5.	Test Procedure	64
13.6.	Data Sample.....	65
13.7.	Test Result	65
14.	ANTENNA REQUIREMENT.....	68
14.1.	The Requirement	68
14.2.	Antenna Construction	68

Test Report Certification

Applicant : SHEN ZHEN FANR TECHNOLOGY CO., LIMITED
Address : 6th Floor, Yusheng Building, Huafeng Second Industrial Park,
Hangcheng Avenue, Xixiang Street, Baoan District, Shenzhen,
Guangdong, China
EUT Description : Eye Massager Smart Eye
Model No. : OE-0909

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.247 ANSI C63.10: 2013

The device described above is tested by Shenzhen Accurate Technology Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.247 limits. The measurement results are contained in this test report and Shenzhen Accurate Technology Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Shenzhen Accurate Technology Co., Ltd.

Date of Test : May 7-May 15, 2019
Date of Report : May 16, 2019

Test Engineer : 
(Frank Lü, Engineer)

Prepared by : 
(Steven Yang, Engineer)

Approved & Authorized Signer : 
(Sean Liu, Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Model Number	:	OE-0909
Bluetooth version	:	V4.2 (BR+EDR)
Frequency Range	:	2402MHz-2480MHz
Number of Channels	:	79
Antenna Gain(Max)	:	-0.68dBi
Antenna type	:	PCB antenna
Modulation mode	:	GFSK, $\pi/4$ DQPSK
Hardware version	:	V1.3
Software version	:	V1.0
Trade Mark	:	OGAWA
Power Supply	:	DC 3.7V (Powered by Lithium battery) or DC 5V (Powered by charging port)
Applicant	:	SHEN ZHEN FANR TECHNOLOGY CO., LIMITED
Address	:	6th Floor, Yusheng Building, Huafeng Second Industrial Park, Hangcheng Avenue, Xixiang Street, Baoan District, Shenzhen, Guangdong, China
Manufacturer	:	SHEN ZHEN FANR TECHNOLOGY CO., LIMITED
Address	:	6th Floor, Yusheng Building, Huafeng Second Industrial Park, Hangcheng Avenue, Xixiang Street, Baoan District, Shenzhen, Guangdong, China

1.2. Accessory and Auxiliary Equipment

AC/DC Power Adapter: (provided by laboratory)	:	Model: TEKA006-0501000UKU
		Input: 100-240V~50/60Hz 0.3A
		Output: DC 5V/1A

1.3. Description of Test Facility

EMC Lab	:	Recognition of accreditation by Federal Communications Commission (FCC) The Designation Number is CN1189 The Registration Number is 708358 Listed by Innovation, Science and Economic Development Canada (ISED) The Registration Number is 5077A-2 Accredited by China National Accreditation Service for Conformity Assessment (CNAS) The Registration Number is CNAS L3193 Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 4297.01
Name of Firm	:	Shenzhen Accurate Technology Co., Ltd.
Site Location	:	1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China

1.4. Measurement Uncertainty

Conducted Emission Expanded Uncertainty	=	2.23dB, k=2
Radiated emission expanded uncertainty (9kHz-30MHz)	=	3.08dB, k=2
Radiated emission expanded uncertainty (30MHz-1000MHz)	=	4.42dB, k=2
Radiated emission expanded uncertainty (Above 1GHz)	=	4.06dB, k=2

2. MEASURING DEVICE AND TEST EQUIPMENT

Table 1: List of Test and Measurement Equipment

Kind of equipment	Manufacturer	Type	S/N	Calibrated dates	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 05, 2019	1 Year
EMI Test Receiver	Rohde& Schwarz	ESR	101817	Jan. 05, 2019	1 Year
Spectrum Analyzer	Rohde&Schwarz	FSV40	101495	Jan. 05, 2019	1 Year
Pre-Amplifier	Compliance Direction	RSU-M2	38322	Jan. 05, 2019	1 Year
Pre-Amplifier	Agilent	8447D	294A10619	Jan. 05, 2019	1 Year
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 05, 2019	1 Year
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 05, 2019	1 Year
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 05, 2019	1 Year
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan. 05, 2019	1 Year
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 05, 2019	1 Year
Highpass Filter	Wainwright Instruments	WHKX3.6/18G-10S S	N/A	Jan. 05, 2019	1 Year
Band Reject Filter	Wainwright Instruments	WRCG2400/2485-2375/2510-60/11SS	N/A	Jan. 05, 2019	1 Year
RF Coaxial Cable	SUHNER	N-5m(Frequency range:9KHz-26.5GHz)	NO.3	Jan. 05, 2019	1 Year
RF Coaxial Cable	SUHNER	N-5m(Frequency range:9KHz-26.5GHz)	NO.4	Jan. 05, 2019	1 Year
RF Coaxial Cable	SUHNER	N-1m(Frequency range:9KHz-26.5GHz)	NO.5	Jan. 05, 2019	1 Year
RF Coaxial Cable	SUHNER	N-1m(Frequency range:9KHz-26.5GHz)	NO.6	Jan. 05, 2019	1 Year
Temporary antenna connector	NTGS	14AE	N/A	May 13, 2019	N/A

Note: The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

3. OPERATION OF EUT DURING TESTING

3.1. Operating Mode

The mode is used: Transmitting mode

Low Channel: 2402MHz

Middle Channel: 2441MHz

High Channel: 2480MHz

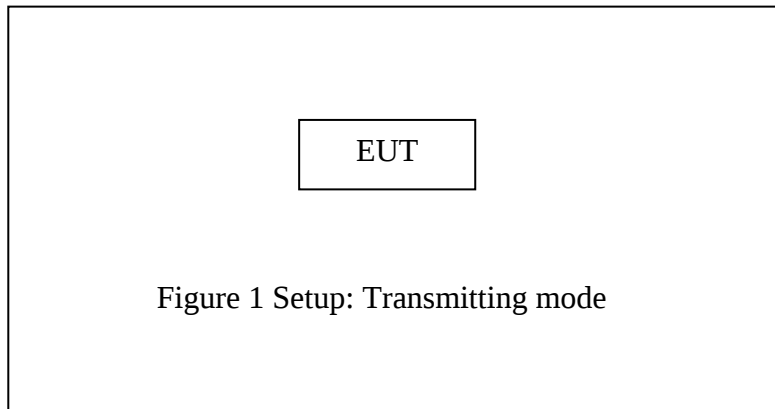
Hopping

Note: The equipment under test (EUT) was tested under fully-charged battery.
The Bluetooth has been tested under continuous transmission mode.

EUT is connected to a computer through the usb-serial controller tool and Use test software to set the test mode.

Test software is (FCCAssist_2.4)

3.2. Configuration and peripherals



4. FREQUENCY HOPPING SYSTEM REQUIREMENTS

4.1. Standard and Limit

According to FCC Part 15.247(a)(1), The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

(g) Frequency hopping spread spectrum systems are not required to employ all available hopping channels during each transmission. However, the system, consisting of both the transmitter and the receiver, must be designed to comply with all of the regulations in this section should the transmitter be presented with a continuous data (or information) stream. In addition, a system employing short transmission bursts must comply with the definition of a frequency hopping system and must distribute its transmissions over the minimum number of hopping channels specified in this section.

(h) The incorporation of intelligence within a frequency hopping spread spectrum system that permits the system to recognize other users within the spectrum band so that it individually and independently chooses and adapts its hop sets to avoid hopping on occupied channels is permitted. The coordination of frequency hopping systems in any other manner for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters is not permitted.

4.2. EUT Pseudorandom Frequency Hopping Sequence

Pseudorandom Frequency Hopping Sequence Table as below:

Channel: 08, 24, 40, 56, 34, 51, 72, 09, 01, 64, 22, 33, 41, 32, 47, 65, 73, 53, 69, 06, 17, 04, 20, 36, 52, 38, 66, 70, 78, 68, 76, 21, 29, 10, 26, 49, 00, 58, 44, 59, 75, 13, 03, 14, 11, 35, 43, 37, 50, 61, 77, 55, 71, 02, 23, 07, 27, 39, 54, 46, 48, 15, 63, 62, 67, 25, 31, 12, 28, 19, 60, 42, 57, 74, 16, 05, 18, 30, 45, etc.

The system receiving have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchronization with the transmitted signals.

4.3.Frequency Hopping System

This transmitter device is frequency hopping device, and complies with FCC part 15.247 rule.

This device uses Bluetooth radio which operates in 2400-2483.5 MHz band. Bluetooth uses a radio technology called frequency-hopping spread spectrum, which chops up the data being sent and transmits chunks of it on up to 79 bands (1 MHz each; centred from 2402 to 2480 MHz) in the range 2,400-2,483.5MHz. The transmitter switches hop frequencies 1,600 times per second to assure a high degree of data security. All Bluetooth devices participating in a given piconet are synchronized to the frequency-hopping channel for the piconet. The frequency hopping sequence is determined by the master's device address and the phase of the hopping sequence (the frequency to hop at a specific time) is determined by the master's internal clock. Therefore, all slaves in a piconet must know the master's device address and must synchronize their clocks with the master's clock.

Adaptive Frequency Hopping (AFH) was introduced in the Bluetooth specification to provide an effective way for a Bluetooth radio to counteract normal interference. AFH identifies "bad" channels, where either other wireless devices are interfering with the Bluetooth signal or the Bluetooth signal is interfering with another device. The AFH-enabled Bluetooth device will then communicate with other devices within its piconet to share details of any identified bad channels. The devices will then switch to alternative available "good" channels, away from the areas of interference, thus having no impact on the bandwidth used.

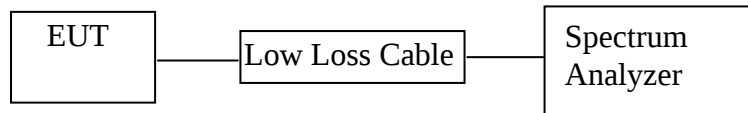
This device was tested with a bluetooth system receiver to check that the device maintained hopping synchronization, and the device complied with these requirements FCC Part 15.247 rule.

5. TEST PROCEDURES AND RESULTS

FCC Rules	Description of Test	Result
Section 15.247(a)(1)	20dB Bandwidth Test	Compliant
Section 15.247(a)(1)	Carrier Frequency Separation Test	Compliant
Section 15.247(a)(1)(iii)	Number Of Hopping Frequency Test	Compliant
Section 15.247(a)(1)(iii)	Dwell Time Test	Compliant
Section 15.247(b)(1)	Maximum Peak Output Power Test	Compliant
Section 15.247(d) Section 15.209	Radiated Emission Test	Compliant
Section 15.247(d)	Band Edge Compliance Test	Compliant
Section 15.207	AC Power Line Conducted Emissions Limits Test	Compliant
Section 15.203	Antenna Requirement	Compliant

6. 20DB BANDWIDTH TEST

6.1. Block Diagram of Test Setup



6.2. The Requirement For Section 15.247(a)(1)

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

6.3. EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

6.4. Operating Condition of EUT

6.4.1. Setup the EUT and simulator as shown as Section 6.1.

6.4.2. Turn on the power of all equipment.

6.4.3. Let the EUT work in TX (Hopping off) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.

6.5. Test Procedure

6.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

6.5.2. The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW.

6.5.3. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

6.6. Test Result

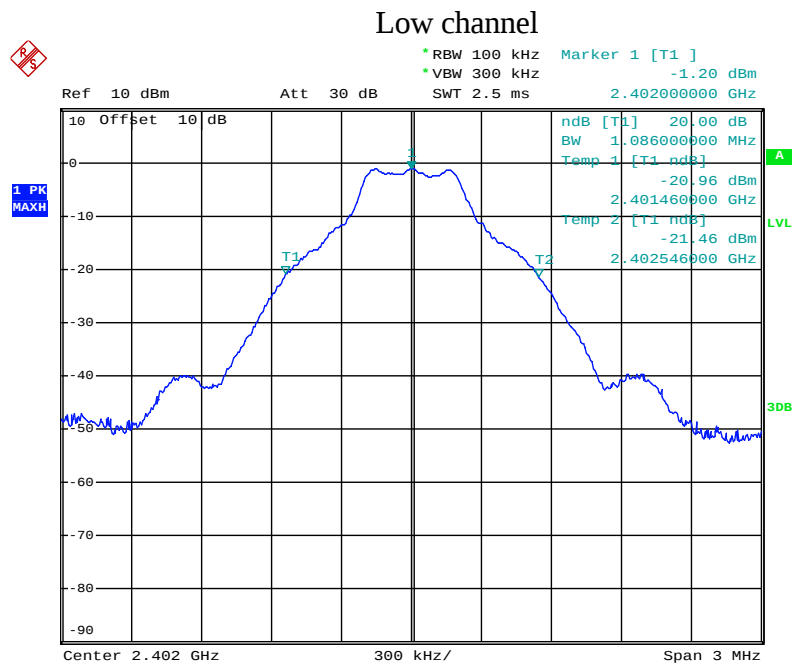
Test Lab: Shielding room

Test Engineer: Frank

Channel	Frequency (MHz)	GFSK 20dB Bandwidth (MHz)	$\Pi/4$ -DQPSK 20dB Bandwidth (MHz)	Result
Low	2402	1.086	1.362	Pass
Middle	2441	1.092	1.374	Pass
High	2480	1.086	1.368	Pass

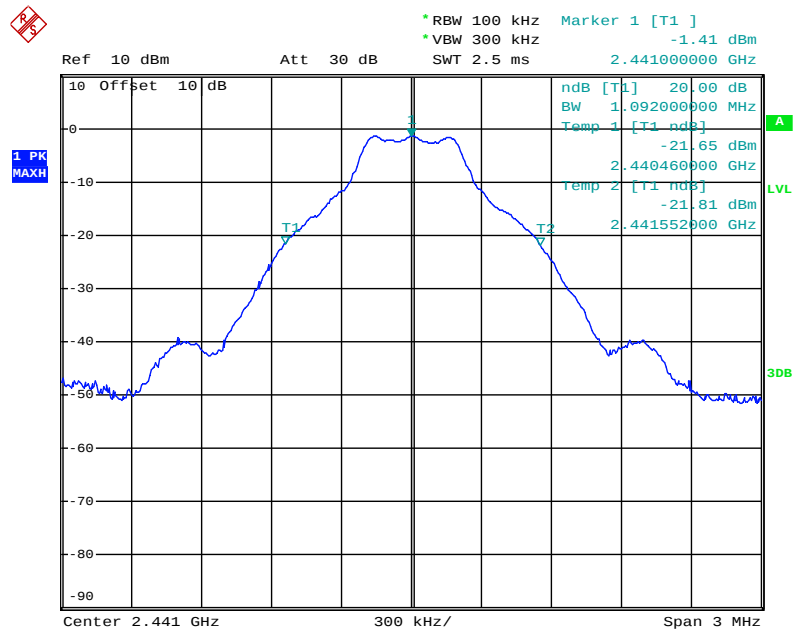
The spectrum analyzer plots are attached as below.

GFSK Mode



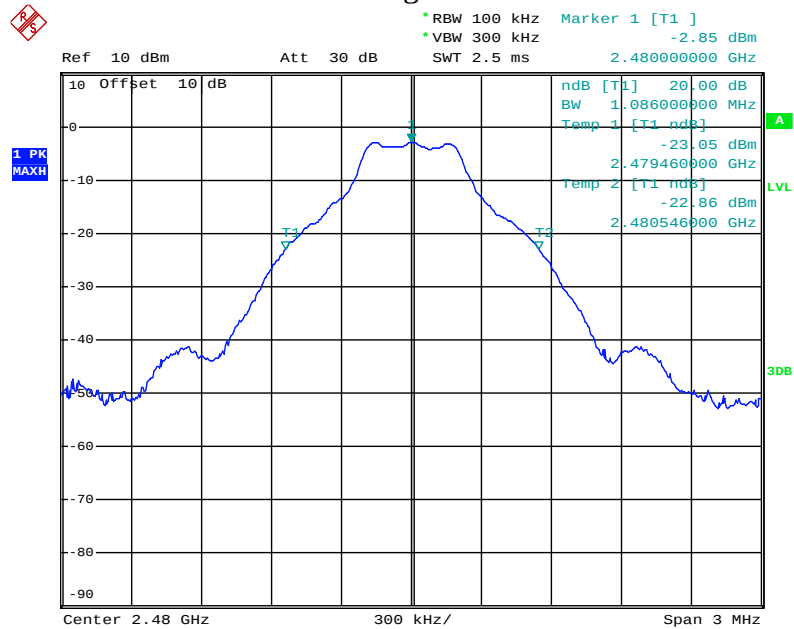
Date: 13.MAY.2019 10:46:28

Middle channel



Date: 13.MAY.2019 10:48:35

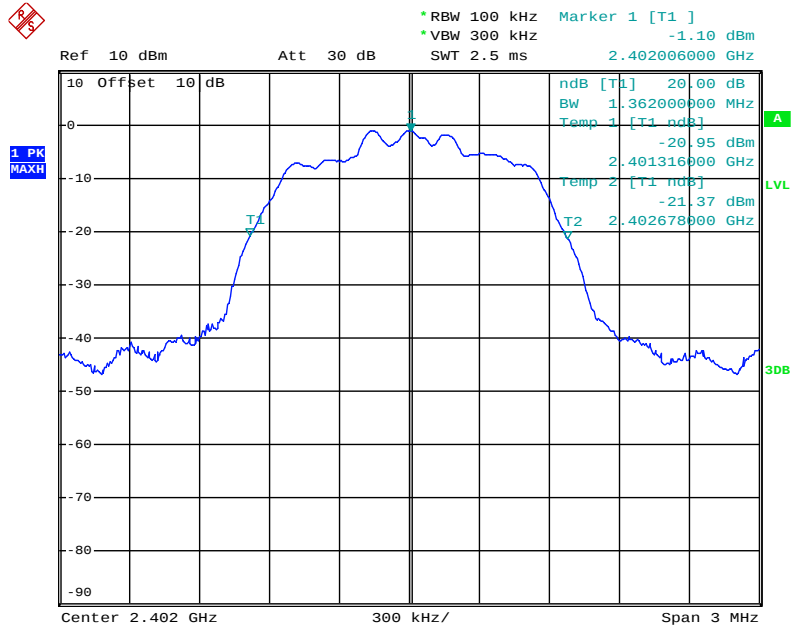
High channel



Date: 13.MAY.2019 10:50:13

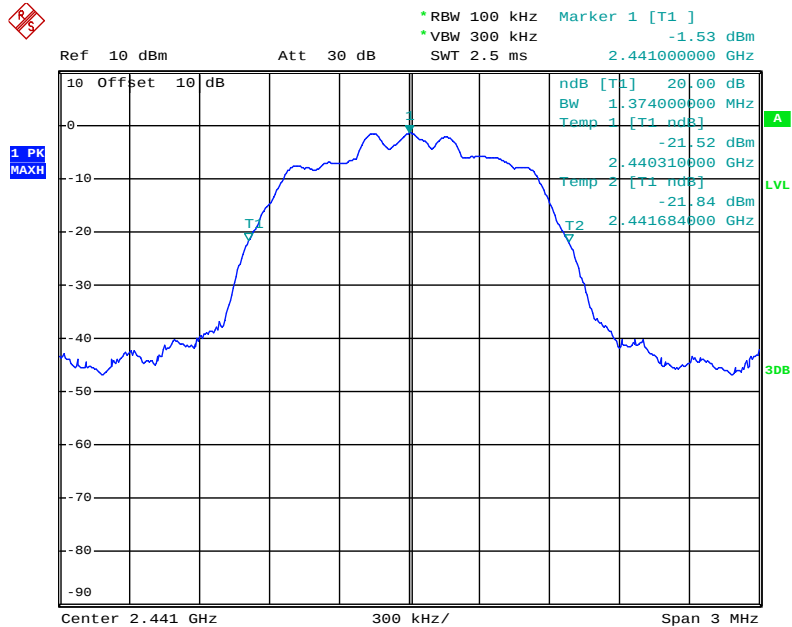
Π/4-DQPSK Mode

Low channel

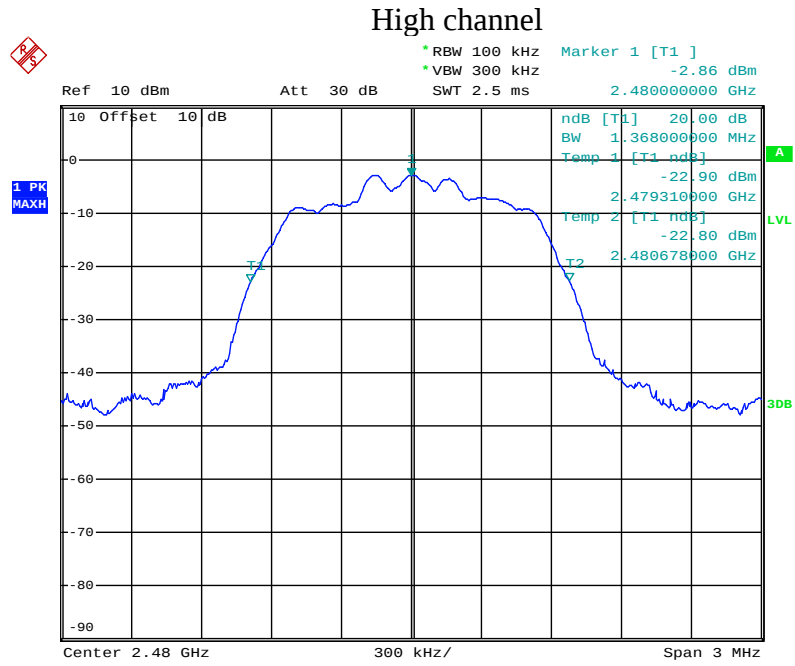


Date: 13.MAY.2019 10:54:10

Middle channel



Date: 13.MAY.2019 10:52:30



Date: 13.MAY.2019 10:51:16

7. CARRIER FREQUENCY SEPARATION TEST

7.1. Block Diagram of Test Setup



7.2. The Requirement For Section 15.247(a)(1)

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

7.3. EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

7.4. Operating Condition of EUT

7.4.1. Setup the EUT and simulator as shown as Section 7.1.

7.4.2. Turn on the power of all equipment.

7.4.3. Let the EUT work in TX (Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.

7.5. Test Procedure

7.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

7.5.2. Set RBW of spectrum analyzer to 30 kHz and VBW to 100 kHz. Adjust Span to 3 MHz.

7.5.3. Set the adjacent channel of the EUT Maxhold another trace.

7.5.4. Measurement the channel separation

7.6. Test Result

Test Lab: Shielding room

Test Engineer: Star

GFSK

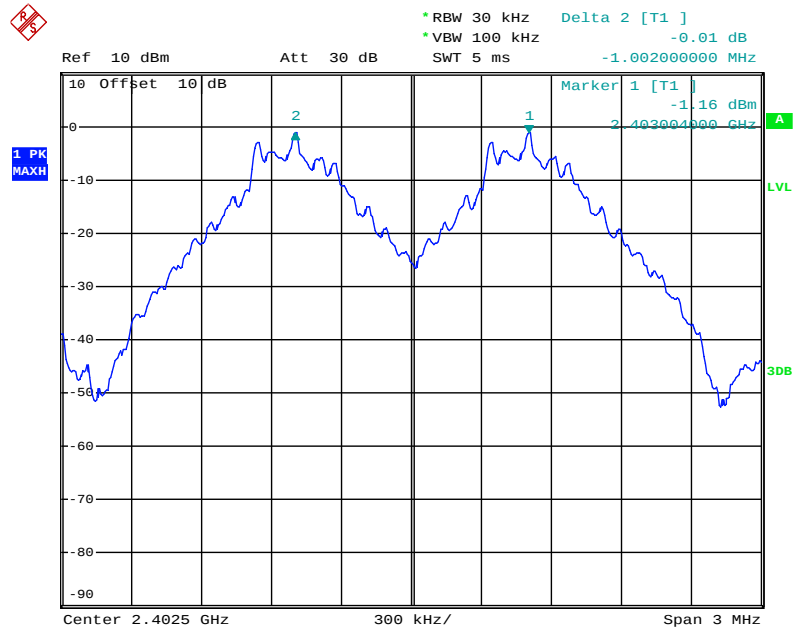
Channel	Frequency (MHz)	Channel Separation(MHz)	Limit (MHz)	Result
Low	2402	1.002	25KHz or 2/3*20dB bandwidth	Pass
	2403			
Middle	2440	1.002	25KHz or 2/3*20dB bandwidth	Pass
	2441			
High	2479	0.996	25KHz or 2/3*20dB bandwidth	Pass
	2480			

Π/4-DQPSK

Channel	Frequency (MHz)	Channel Separation(MHz)	Limit (MHz)	Result
Low	2402	0.996	25KHz or 2/3*20dB bandwidth	Pass
	2403			
Middle	2440	1.002	25KHz or 2/3*20dB bandwidth	Pass
	2441			
High	2479	0.996	25KHz or 2/3*20dB bandwidth	Pass
	2480			

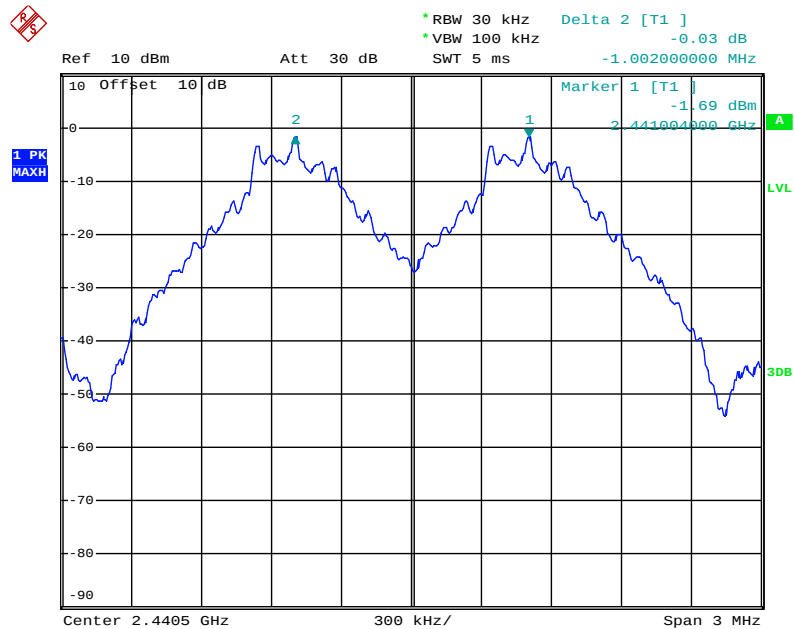
GFSK Mode

Low channel

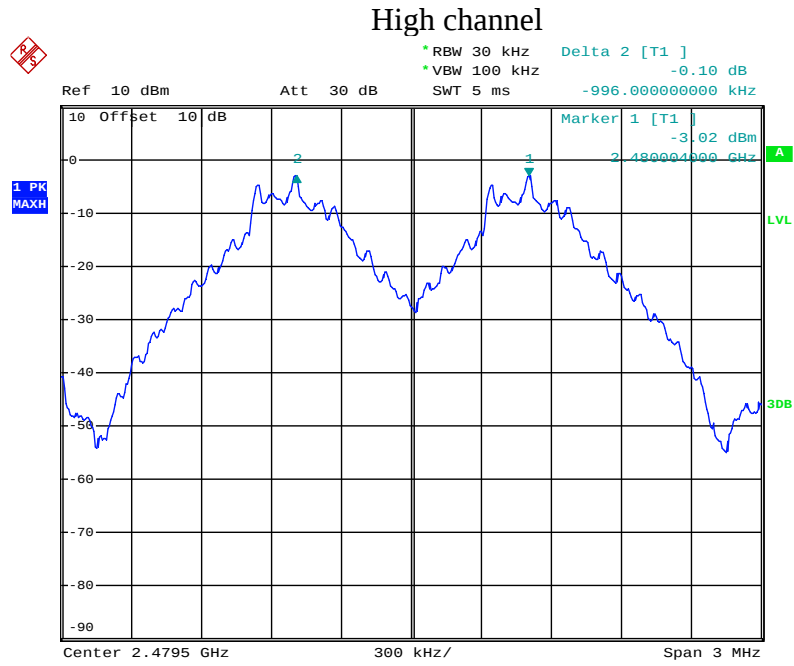


Date: 13.MAY.2019 11:47:02

Middle channel

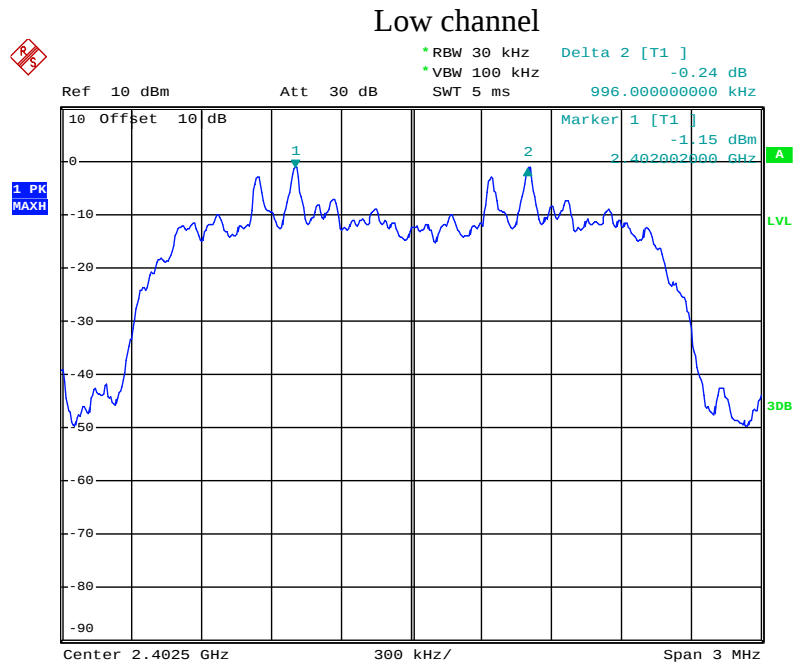


Date: 13.MAY.2019 11:46:17



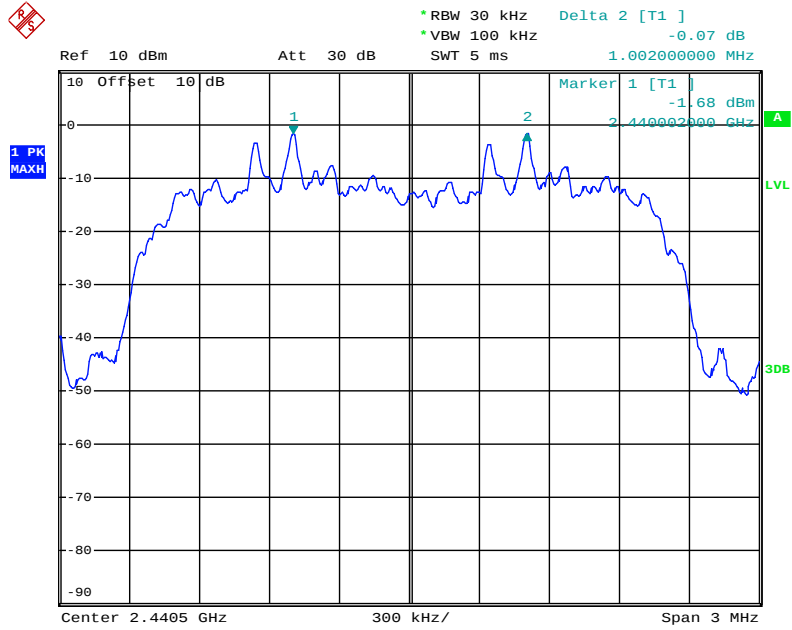
Date: 13.MAY.2019 11:45:38

$\Pi/4$ -DQPSK Mode



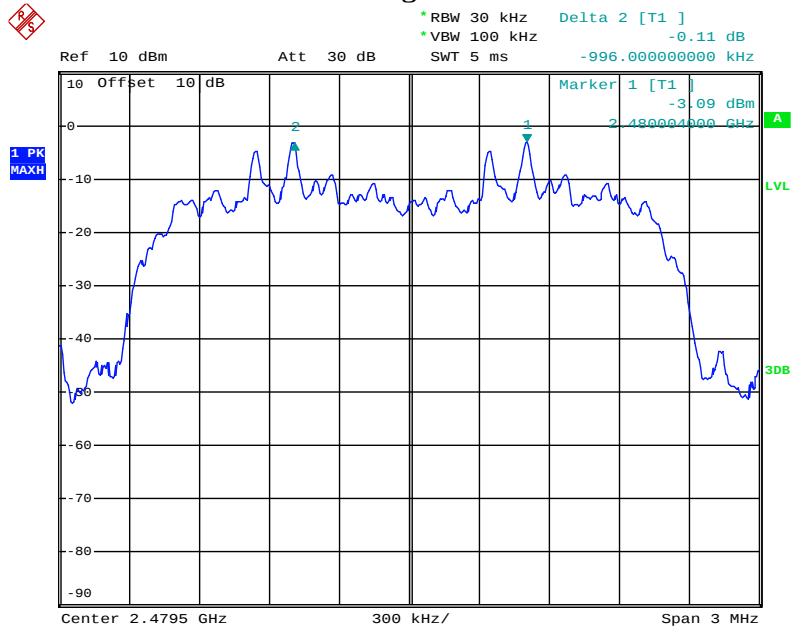
Date: 13.MAY.2019 11:42:48

Middle channel



Date: 13.MAY.2019 11:44:15

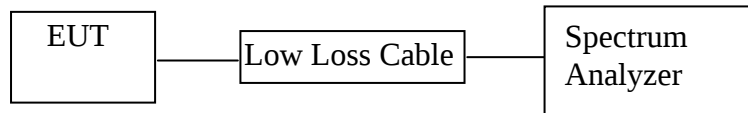
High channel



Date: 13.MAY.2019 11:44:56

8. NUMBER OF HOPPING FREQUENCY TEST

8.1. Block Diagram of Test Setup



8.2. The Requirement For Section 15.247(a)(1)(iii)

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

8.3. EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

8.4. Operating Condition of EUT

8.4.1. Setup the EUT and simulator as shown as Section 8.1.

8.4.2. Turn on the power of all equipment.

8.4.3. Let the EUT work in TX (Hopping on) modes measure it.

8.5. Test Procedure

8.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

8.5.2. Set the spectrum analyzer as RBW=100 kHz, VBW=300 kHz.

8.5.3. Max hold, view and count how many channel in the band.

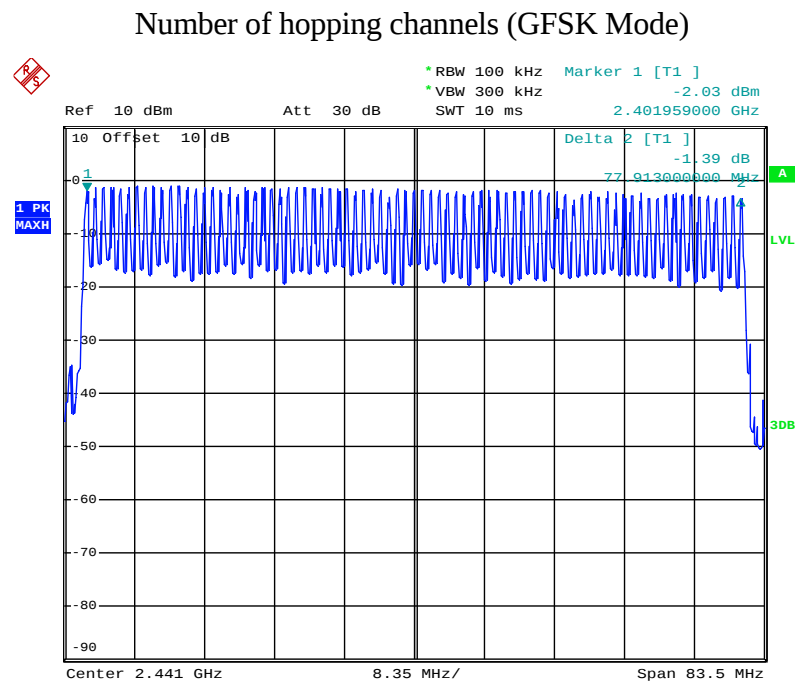
8.6.Test Result

Test Lab: Shielding room

Test Engineer: Frank

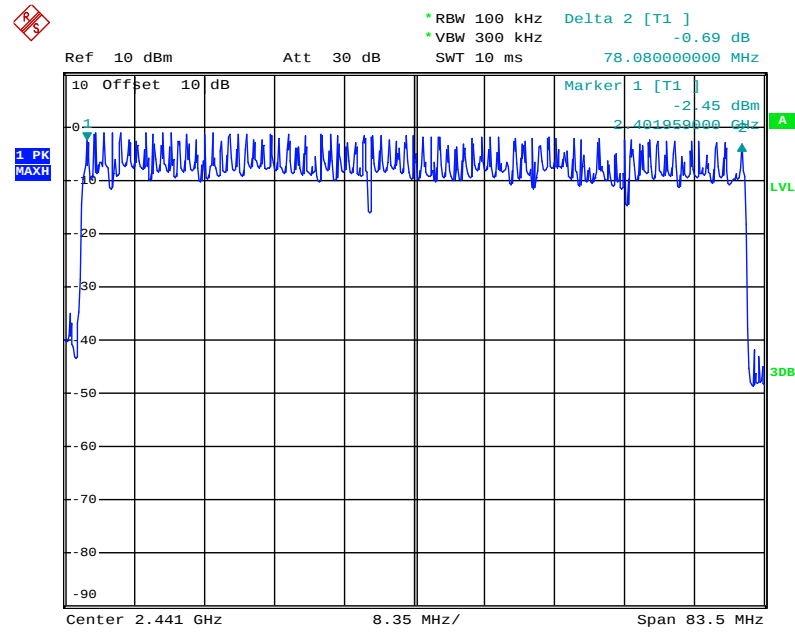
Total number of hopping channel	Measurement result(CH)	Limit(CH)	Result
	79	≥ 15	Pass

The spectrum analyzer plots are attached as below.



Date: 13.MAY.2019 11:22:14

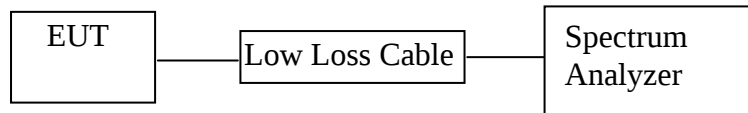
Number of hopping channels ($\Pi/4$ -DQPSK Mode)



Date: 13.MAY.2019 11:23:35

9. DWELL TIME TEST

9.1. Block Diagram of Test Setup



9.2. The Requirement For Section 15.247(a)(1)(iii)

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

9.3. EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

9.4. Operating Condition of EUT

9.4.1. Setup the EUT and simulator as shown as Section 9.1.

9.4.2. Turn on the power of all equipment.

9.4.3. Let the EUT work in TX (Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.

9.5. Test Procedure

9.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

9.5.2. Set center frequency of spectrum analyzer = operating frequency.

9.5.3. Set the spectrum analyzer as RBW=1MHz, VBW=3MHz, Span=0Hz, Adjust Sweep=5ms, 10ms, 15ms. Get the pulse time.

9.5.4. Repeat above procedures until all frequency measured were complete.

9.6. Test Result

Test Lab: Shielding room

Test Engineer: Frank

GFSK Mode (Worse case)

Mode	Channel Frequency (MHz)	Pulse Time (ms)	Dwell Time (ms)	Limit (ms)
DH1	2441	0.430	137.6	400
A period transmit time = $0.4 \times 79 = 31.6$ Dwell time = pulse time $\times (1600/(2 \times 79)) \times 31.6$				
DH3	2441	1.690	270.4	400
A period transmit time = $0.4 \times 79 = 31.6$ Dwell time = pulse time $\times (1600/(4 \times 79)) \times 31.6$				
DH5	2441	2.990	218.9	400
A period transmit time = $0.4 \times 79 = 31.6$ Dwell time = pulse time $\times (1600/(6 \times 79)) \times 31.6$				

Π/4-DQPSK Mode (Worse case)

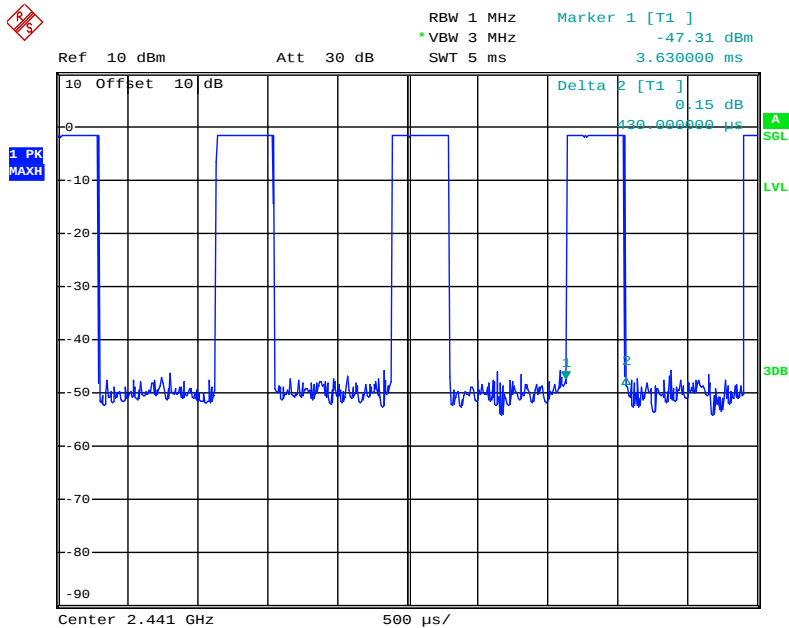
Mode	Channel Frequency (MHz)	Pulse Time (ms)	Dwell Time (ms)	Limit (ms)
2-DH1	2441	0.440	140.8	400
A period transmit time = $0.4 \times 79 = 31.6$ Dwell time = pulse time $\times (1600/(2 \times 79)) \times 31.6$				
2-DH3	2441	1.720	275.2	400
A period transmit time = $0.4 \times 79 = 31.6$ Dwell time = pulse time $\times (1600/(4 \times 79)) \times 31.6$				
2-DH5	2441	2.980	217.9	400
A period transmit time = $0.4 \times 79 = 31.6$ Dwell time = pulse time $\times (1600/(6 \times 79)) \times 31.6$				

Note: We tested GFSK mode and Π/4-DQPSK mode the low, middle and high channel and recorded the worse case data for all test mode.

The spectrum analyzer plots are attached as below.

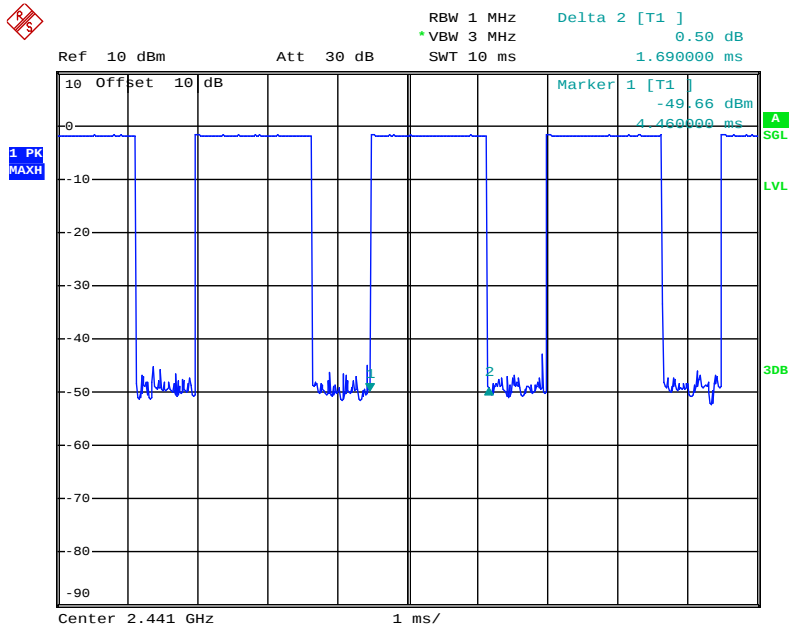
GFSK Mode

DH1 Middle channel



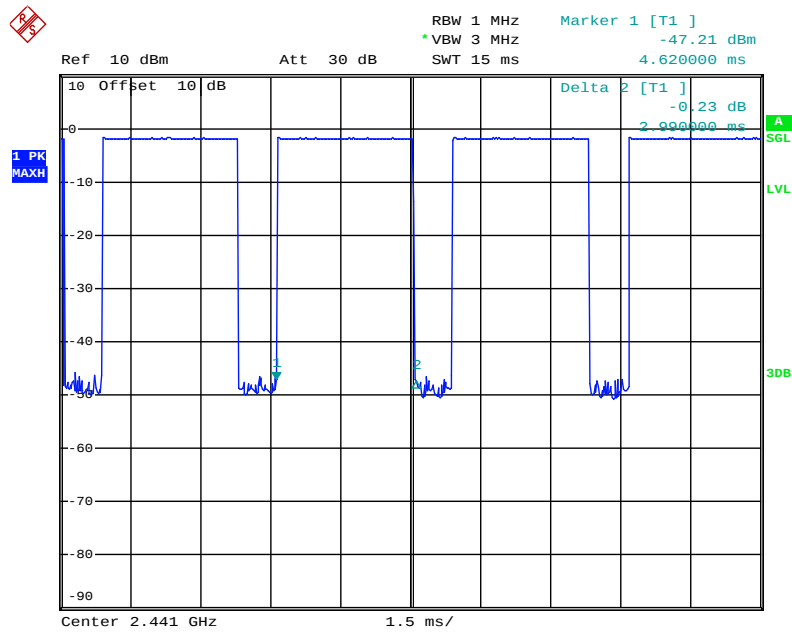
Date: 13.MAY.2019 13:44:30

DH3 Middle channel



Date: 13.MAY.2019 13:44:03

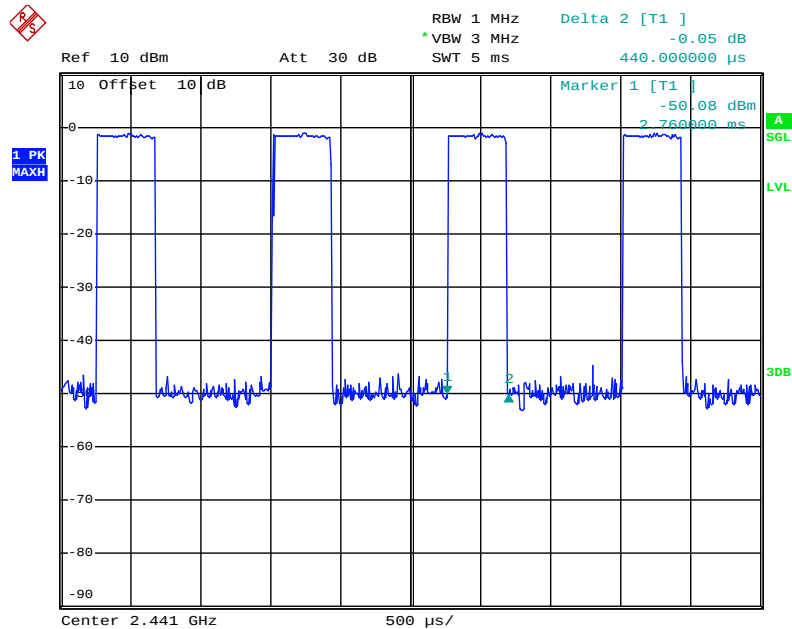
DH5 Middle channel



Date: 13.MAY.2019 13:43:40

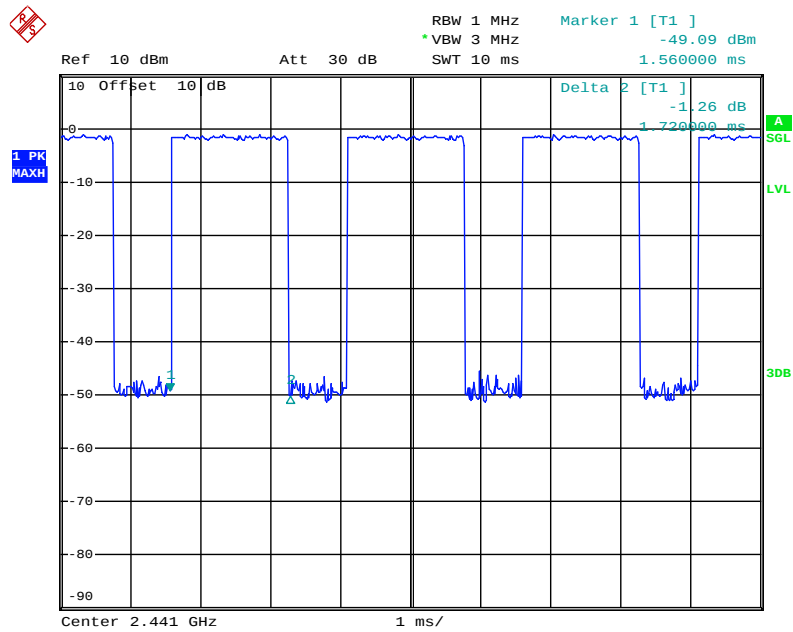
Π/4-DQPSK Mode

2-DH1 Middle channel



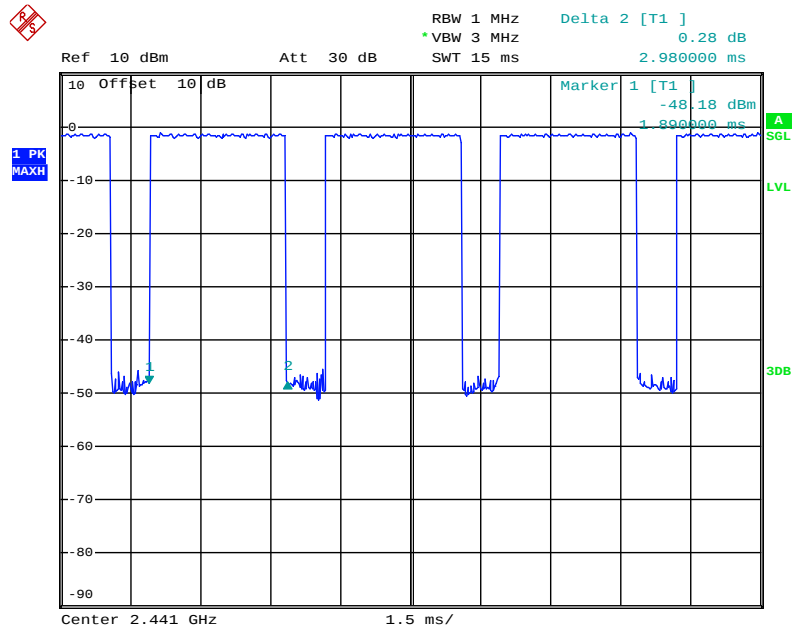
Date: 13.MAY.2019 13:48:07

2-DH3 Middle channel



Date: 13.MAY.2019 13:48:33

2-DH5 Middle channel



Date: 13.MAY.2019 13:49:08

10. MAXIMUM PEAK OUTPUT POWER TEST

10.1. Block Diagram of Test Setup



10.2. The Requirement For Section 15.247(b)(1)

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

10.3. EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

10.4. Operating Condition of EUT

10.4.1. Setup the EUT and simulator as shown as Section 10.1.

10.4.2. Turn on the power of all equipment.

10.4.3. Let the EUT work in TX (Hopping off) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.

10.5. Test Procedure

10.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

10.5.2. Set RBW of spectrum analyzer to 3MHz and VBW to 3MHz.

10.5.3. Measurement the maximum peak output power.

10.6.Test Result

Test Lab: Shielding room

Test Engineer: Frank

GFSK Mode

Channel	Frequency (MHz)	Peak Output Power (dBm/W)	Limits (dBm/W)	Result
Low	2402	-0.35/0.0009	21 / 0.125	Pass
Middle	2441	-0.90/0.0008	21 / 0.125	Pass
High	2480	-2.36/0.0006	21 / 0.125	Pass

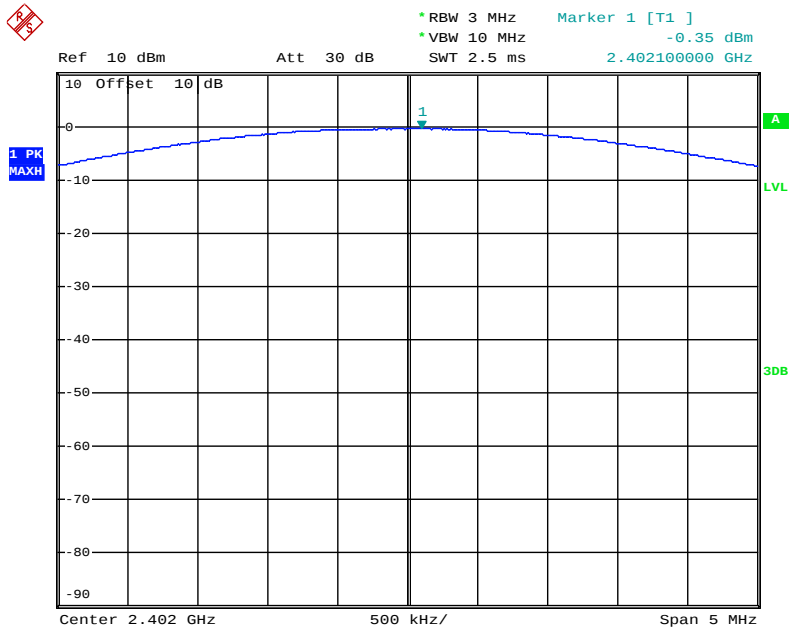
II/4-DQPSK Mode

Channel	Frequency (MHz)	Peak Output Power (dBm/W)	Limits (dBm/W)	Result
Low	2402	0.44/0.0011	21 / 0.125	Pass
Middle	2441	0.14/0.0010	21 / 0.125	Pass
High	2480	-1.24/0.0008	21 / 0.125	Pass

The spectrum analyzer plots are attached as below.

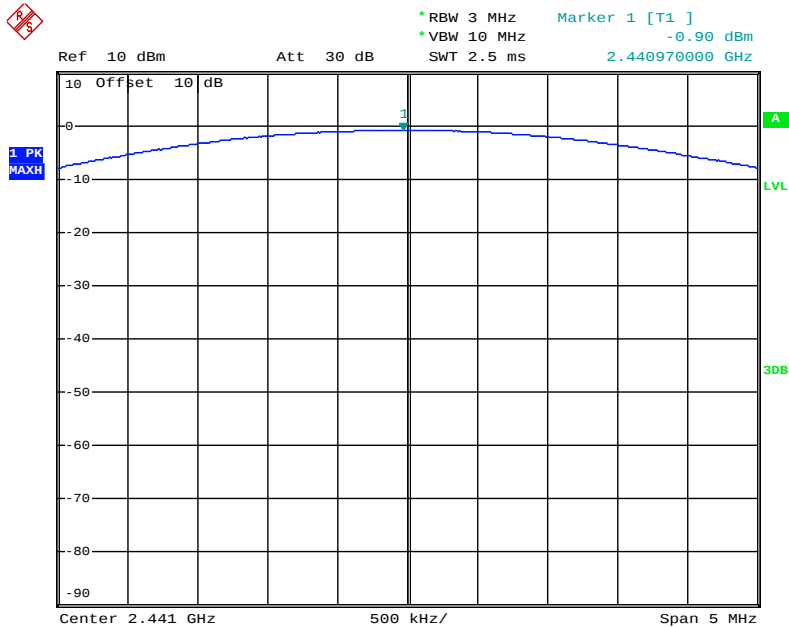
GFSK Mode

Low channel

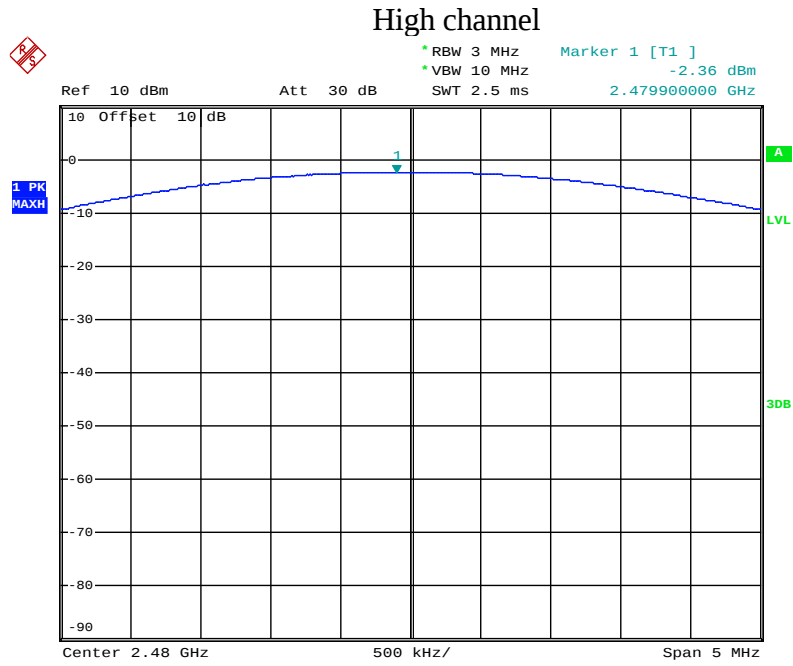


Date: 15.MAY.2019 16:16:12

Middle channel

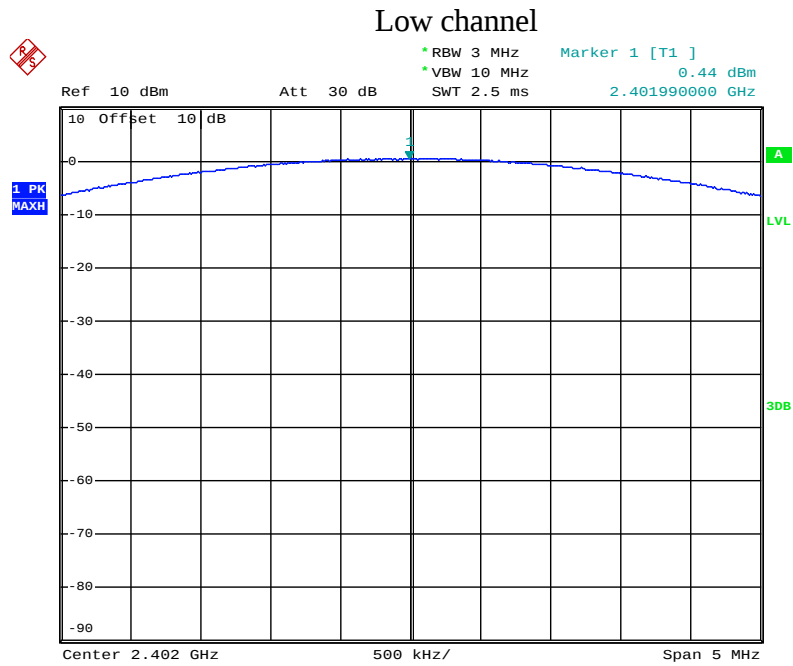


Date: 15.MAY.2019 16:17:12



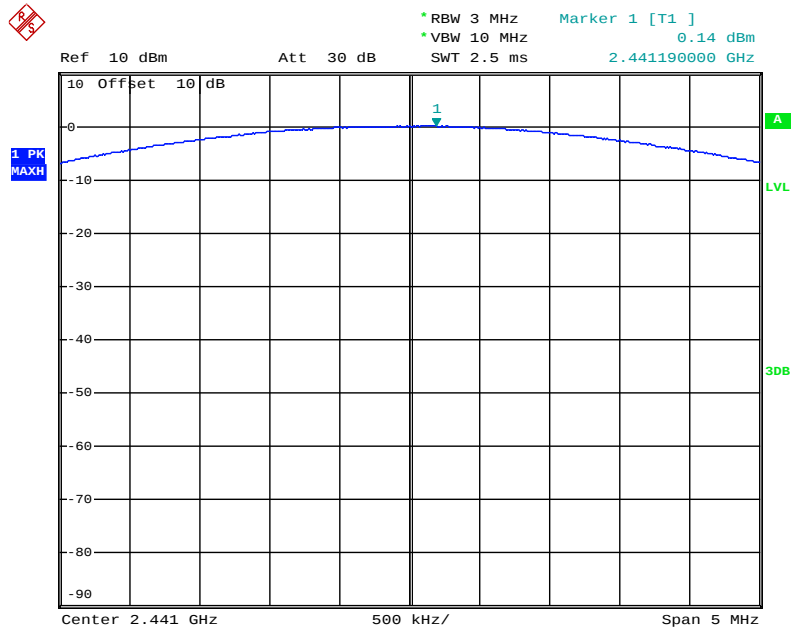
Date: 15.MAY.2019 16:17:45

Π/4-DQPSK Mode



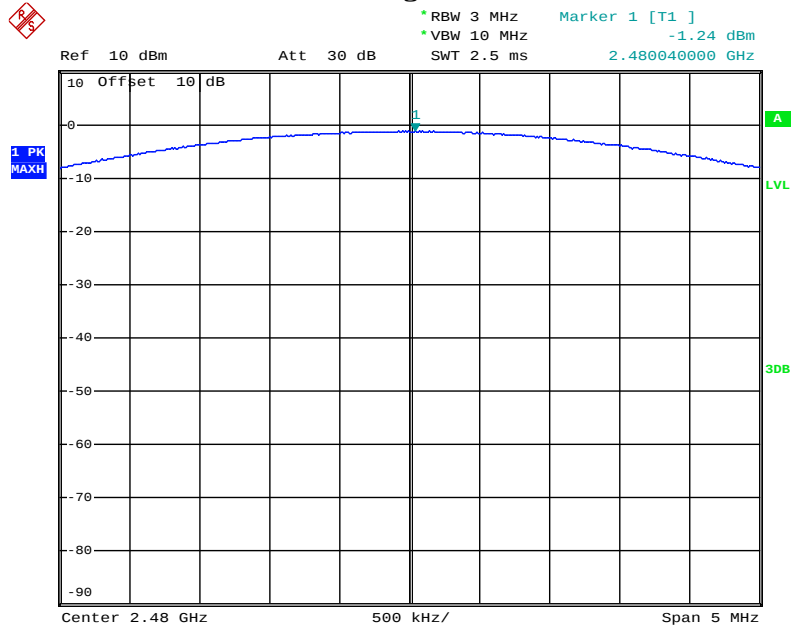
Date: 15.MAY.2019 16:24:52

Middle channel



Date: 15.MAY.2019 16:24:26

High channel

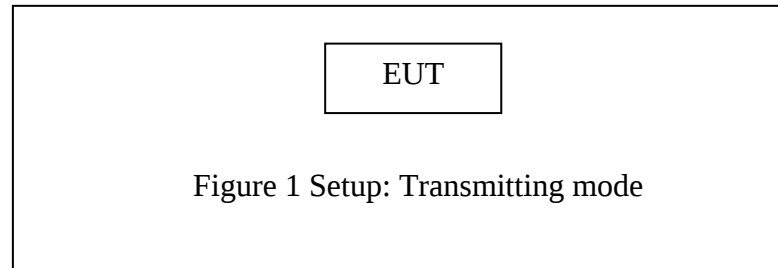


Date: 15.MAY.2019 16:23:50

11.RADIATED EMISSION TEST

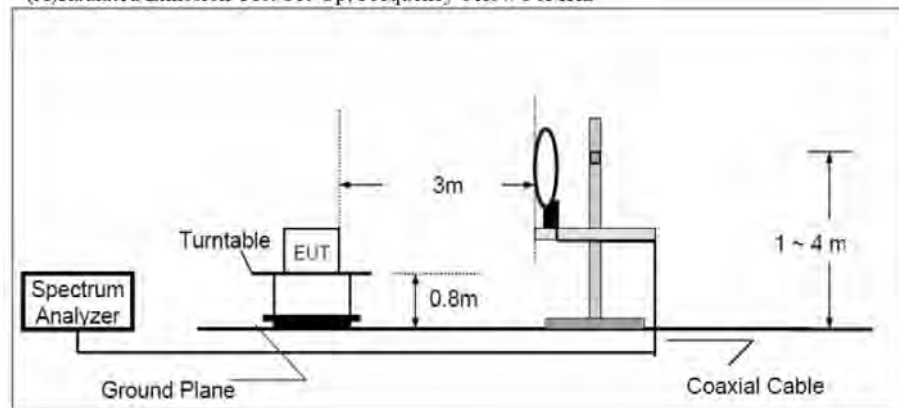
11.1.Block Diagram of Test Setup

11.1.1.Block diagram of connection between the EUT and peripherals

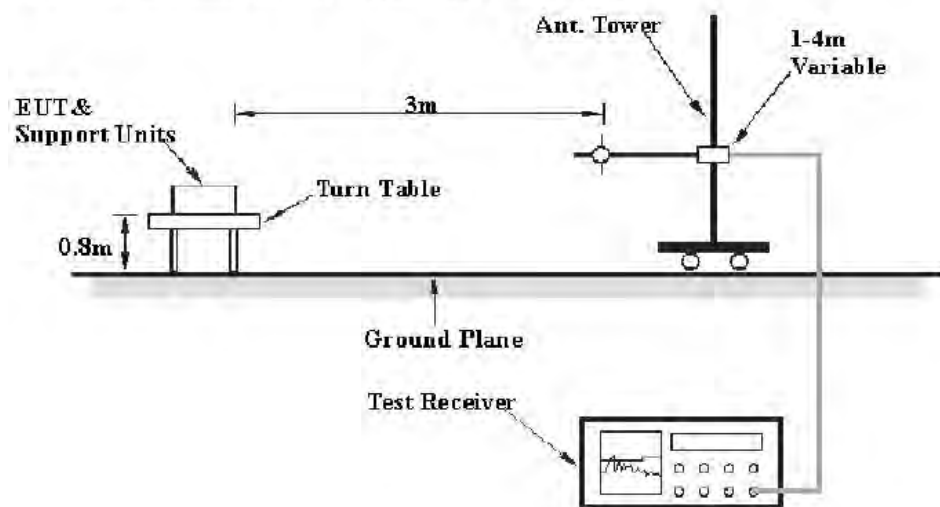


11.1.2.Semi-Anechoic Chamber Test Setup Diagram

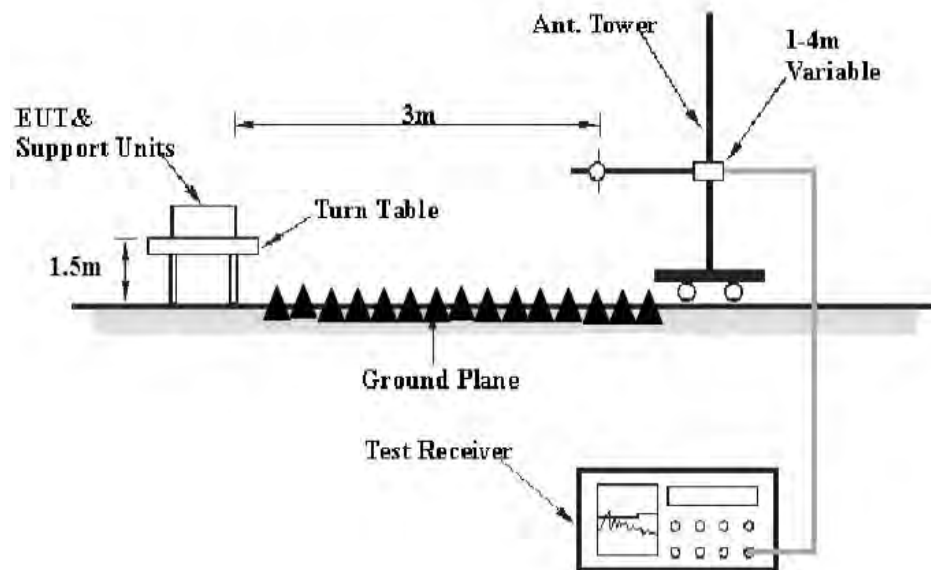
(A)Radiated Emission Test Set-Up, Frequency below 30MHz



(B)Radiated Emission Test Set-Up, Frequency 30MHz-1GHz



(C) Radiated Emission Test Set-Up. Frequency above 1GHz



11.2.The Limit For Section 15.247(d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

11.3.Restricted bands of operation

11.3.1.FCC Part 15.205 Restricted bands of operation

(a) Except as shown in paragraph (d) of this section, Only spurious emissions are permitted in any of the frequency bands listed below:

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
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	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	23.6-24.0
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			

¹Until February 1, 1999, this restricted band shall be 0.490-0.510

²Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

11.4.Configuration of EUT on Measurement

The equipment is installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

11.5. Operating Condition of EUT

11.5.1. Setup the EUT and simulator as shown as Section 11.1.

11.5.2. Turn on the power of all equipment.

11.5.3. Let the EUT work in TX modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.

11.6. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground(Below 1GHz). The EUT and its simulators are placed on a turntable, which is 1.5 meter high above ground(Above 1GHz). The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bi-log antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the EUT location must be manipulated according to ANSI C63.10:2013 on radiated emission measurement. This EUT was tested in 3 orthogonal positions and the Worse case position data was reported.

During the radiated emission test, the spectrum analyzer was set with the following configurations:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for peak measurement with peak detector at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average measurement with peak detection at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

11.7.Data Sample

Frequency (MHz)	Reading (dB μ v)	Factor (dB/m)	Result (dB μ v/m)	Limit (dB μ v/m)	Margin (dB)	Remark
X.XX	28.66	-15.19	13.47	40.0	-26.53	QP

Frequency(MHz) = Emission frequency in MHz

Reading(dB μ v) = Uncorrected Analyzer/Receiver reading

Factor (dB/m) = Antenna factor + Cable Loss – Amplifier gain

Result(dB μ v/m) = Reading(dB μ v) + Factor(dB/m)

Limit (dB μ v/m) = Limit stated in standard

Margin (dB) = Result(dB μ v/m) - Limit (dB μ v/m)

QP = Quasi-peak Reading

Calculation Formula:

Margin(dB) = Result (dB μ V/m)–Limit(dB μ V/m)

Result(dB μ V/m)= Reading(dB μ V)+ Factor(dB/m)

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the limit.

11.8.Test Result

Pass.

Test Lab: 3m Anechoic chamber

Test Engineer: Frank

Note: 1.We tested GFSK mode, $\Pi/4$ -DQPSK Mode and recorded the Worse case data ($\Pi/4$ -DQPSK mode) for all test mode.

2. Testing is carried out with frequency rang 9kHz to the tenth harmonics, which above 3th Harmonics are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

The measurements greater than 20dB below the limit from 9kHz to 30MHz and 18 to 26.5GHz.

The spectrum analyzer plots are attached as below.

Below 1GHz



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: FRANK2019 #984

Polarization: Horizontal

Standard: FCC Part 15C 3M Radiated

Power Source: DC 3.7V

Test item: Radiation Test

Date: 2019/05/08

Temp.(C)/Hum.(%) 25 C / 55 %

Time: 16:38:27

EUT: Eye Massager Smart Eye

Engineer Signature:

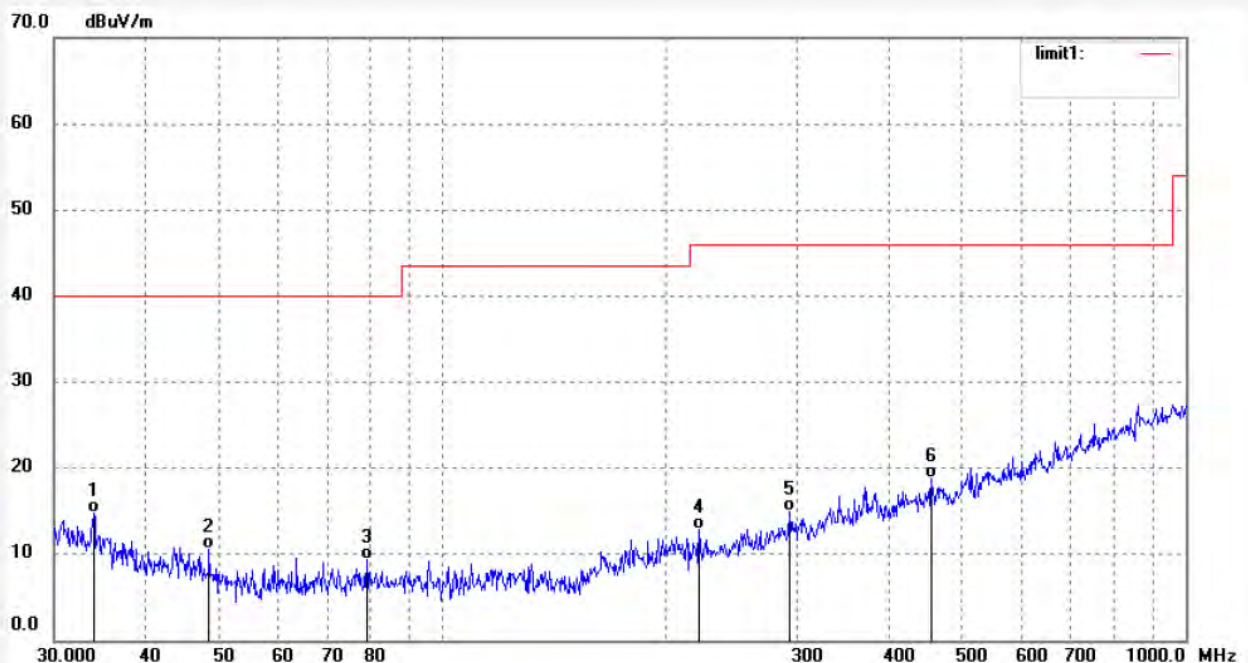
Mode: TX2402MHz

Distance: 3m

Model: OE-0909

Manufacturer: Shenzhen Fanr Technology Co.,Limited

Note: Report NO.:ATE20190617



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	33.9256	35.92	-21.18	14.74	40.00	-25.26	QP	200	231	
2	48.5482	36.29	-25.68	10.61	40.00	-29.39	QP	200	41	
3	79.1184	36.90	-27.46	9.44	40.00	-30.56	QP	200	115	
4	221.5010	36.78	-23.99	12.79	46.00	-33.21	QP	200	92	
5	293.3933	36.52	-21.51	15.01	46.00	-30.99	QP	200	229	
6	455.1888	36.00	-17.11	18.89	46.00	-27.11	QP	200	103	



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: FRANK2019 #985

Standard: FCC Part 15C 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Eye Massager Smart Eye

Mode: TX2402MHz

Model: OE-0909

Manufacturer: Shenzhen Fanr Technology Co.,Limited

Polarization: Vertical

Power Source: DC 3.7V

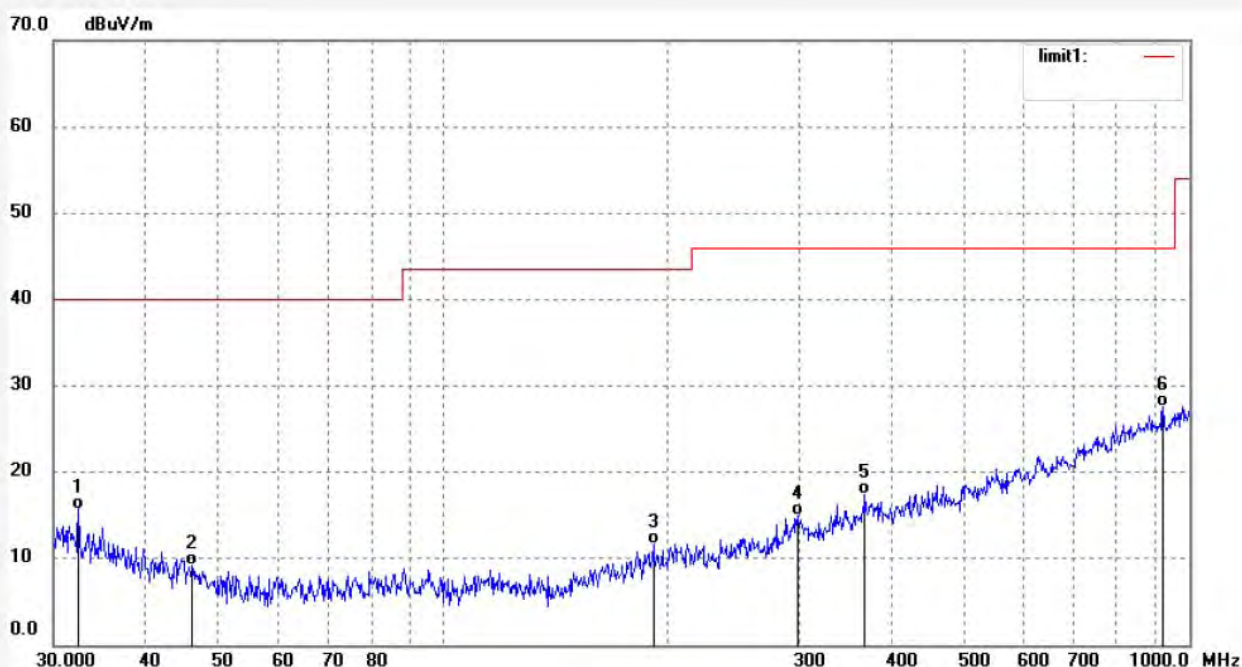
Date: 2019/05/08

Time: 16:39:03

Engineer Signature:

Distance: 3m

Note: Report NO.:ATE20190617



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	32.4107	36.56	-20.81	15.75	40.00	-24.25	QP	100	103	
2	46.0557	33.97	-24.80	9.17	40.00	-30.83	QP	100	219	
3	191.1114	36.62	-25.01	11.61	43.50	-31.89	QP	100	93	
4	298.5932	36.16	-21.28	14.88	46.00	-31.12	QP	100	244	
5	367.3752	36.19	-18.81	17.38	46.00	-28.62	QP	100	66	
6	922.3667	34.41	-6.81	27.60	46.00	-18.40	QP	100	216	



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: FRANK2019 #987

Standard: FCC Part 15C 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Eye Massager Smart Eye

Mode: TX2441MHz

Model: OE-0909

Manufacturer: Shenzhen Fanr Technology Co.,Limited

Polarization: Horizontal

Power Source: DC 3.7V

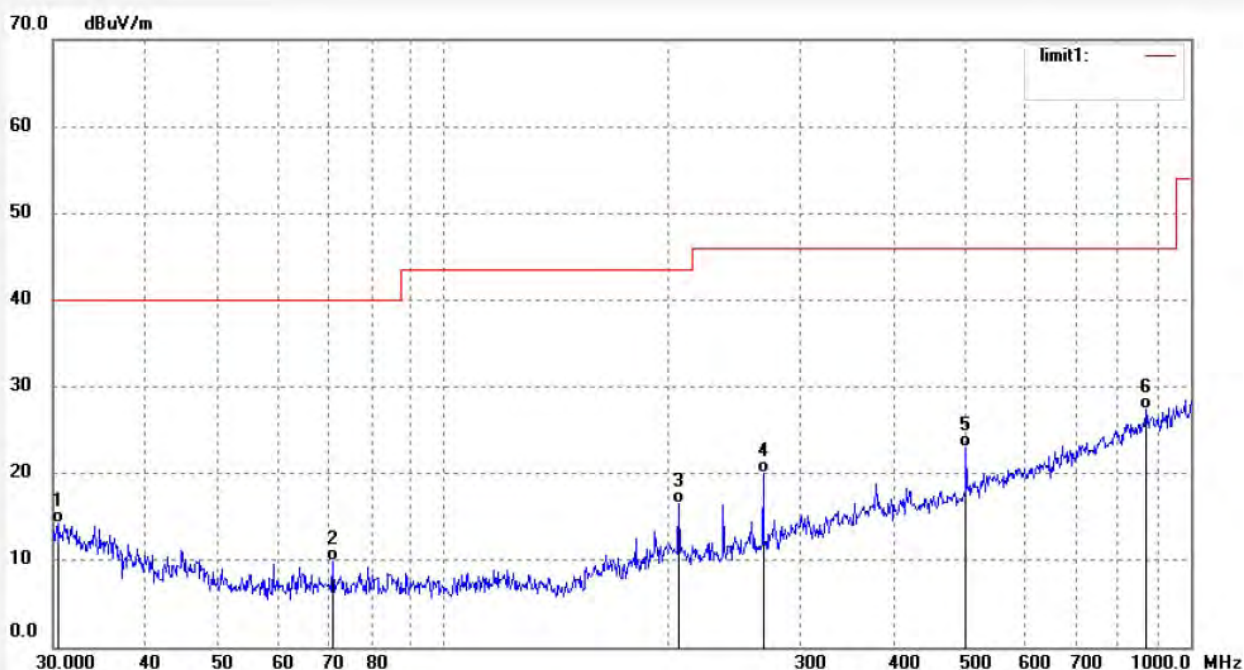
Date: 2019/05/08

Time: 16:40:07

Engineer Signature:

Distance: 3m

Note: Report NO.:ATE20190617



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	30.4246	34.54	-20.31	14.23	40.00	-25.77	QP	200	103	
2	70.9535	37.32	-27.52	9.80	40.00	-30.20	QP	200	221	
3	206.4701	40.68	-24.14	16.54	43.50	-26.96	QP	200	93	
4	267.7787	42.64	-22.64	20.00	46.00	-26.00	QP	200	218	
5	500.4857	39.38	-16.31	23.07	46.00	-22.93	QP	200	321	
6	871.9442	34.98	-7.67	27.31	46.00	-18.69	QP	200	201	



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: FRANK2019 #986

Standard: FCC Part 15C 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Eye Massager Smart Eye

Mode: TX2441MHz

Model: OE-0909

Manufacturer: Shenzhen Fanr Technology Co.,Limited

Polarization: Vertical

Power Source: DC 3.7V

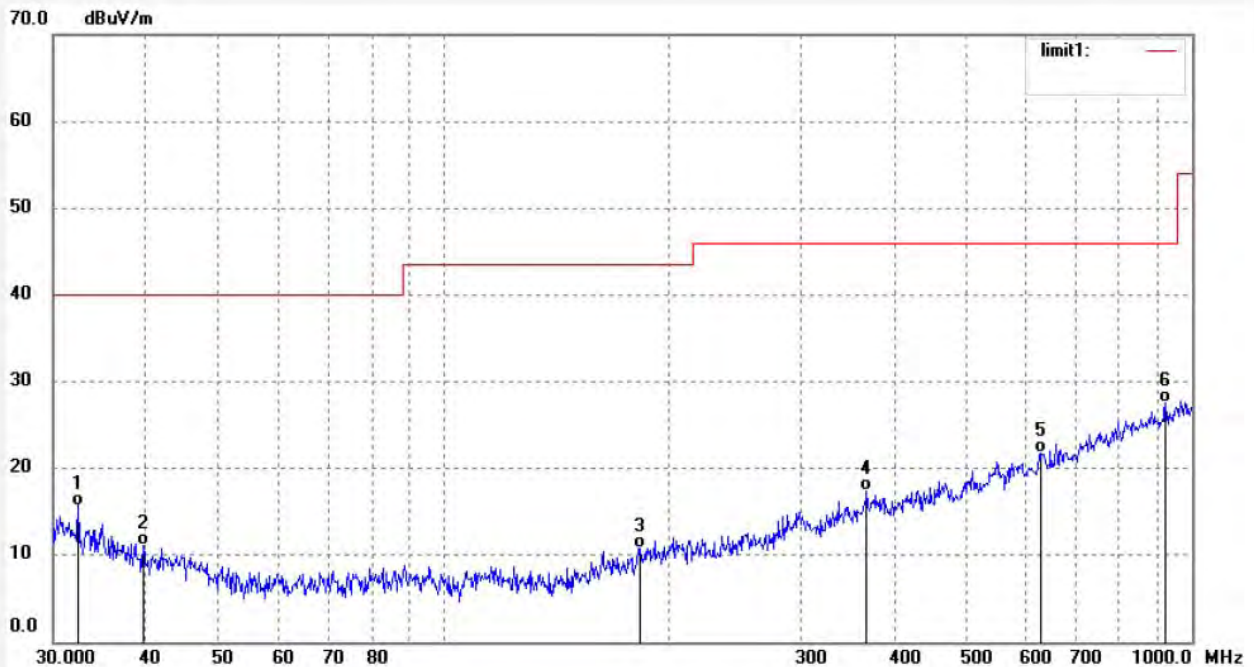
Date: 2019/05/08

Time: 16:39:13

Engineer Signature:

Distance: 3m

Note: Report NO.:ATE20190617



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	32.4107	36.56	-20.81	15.75	40.00	-24.25	QP	100	271	
2	39.5977	34.52	-23.42	11.10	40.00	-28.90	QP	100	66	
3	181.9380	36.54	-25.84	10.70	43.50	-32.80	QP	100	215	
4	367.3752	36.19	-18.81	17.38	46.00	-28.62	QP	100	93	
5	626.6878	34.91	-13.12	21.79	46.00	-24.21	QP	100	221	
6	922.3667	34.41	-6.81	27.60	46.00	-18.40	QP	100	103	



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: FRANK2019 #988

Polarization: Horizontal

Standard: FCC Part 15C 3M Radiated

Power Source: DC 3.7V

Test item: Radiation Test

Date: 2019/05/08

Temp.(C)/Hum.(%) 25 C / 55 %

Time: 16:40:45

EUT: Eye Massager Smart Eye

Engineer Signature:

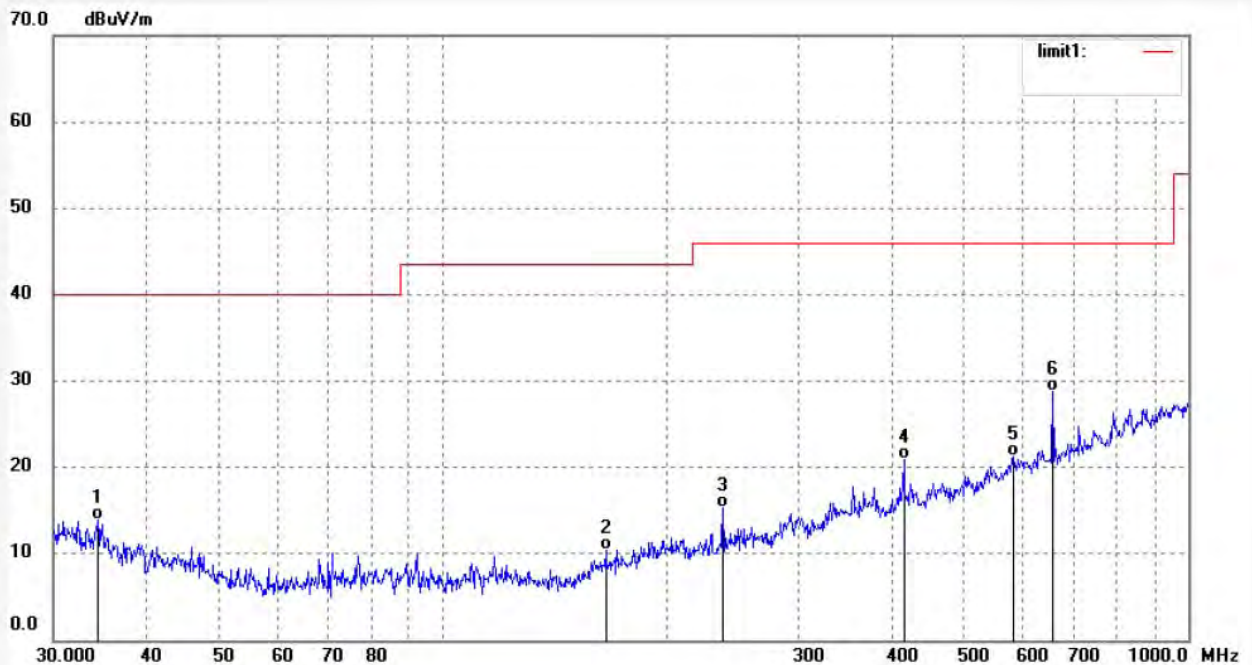
Mode: TX2480MHz

Distance: 3m

Model: OE-0909

Manufacturer: Shenzhen Fanr Technology Co.,Limited

Note: Report NO.:ATE20190617



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	34.4059	35.20	-21.30	13.90	40.00	-26.10	QP	200	103	
2	165.4715	36.83	-26.48	10.35	43.50	-33.15	QP	200	62	
3	237.6262	38.99	-23.76	15.23	46.00	-30.77	QP	200	112	
4	415.4485	39.04	-18.05	20.99	46.00	-25.01	QP	200	95	
5	582.1122	35.33	-14.08	21.25	46.00	-24.75	QP	200	226	
6	658.2854	41.26	-12.44	28.82	46.00	-17.18	QP	200	103	



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: FRANK2019 #989

Polarization: Vertical

Standard: FCC Part 15C 3M Radiated

Power Source: DC 3.7V

Test item: Radiation Test

Date: 2019/05/08

Temp.(C)/Hum.(%) 25 C / 55 %

Time: 16:41:45

EUT: Eye Massager Smart Eye

Engineer Signature:

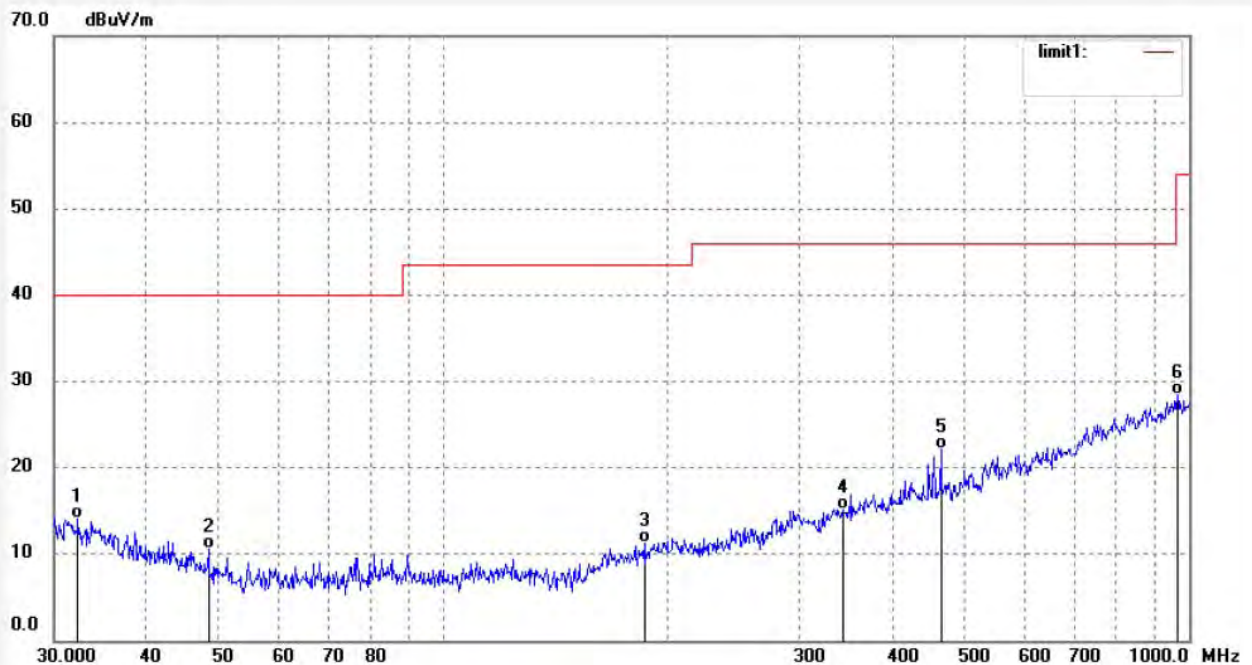
Mode: TX2480MHz

Distance: 3m

Model: OE-0909

Manufacturer: Shenzhen Fanr Technology Co.,Limited

Note: Report NO.:ATE20190617



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	32.2972	34.89	-20.78	14.11	40.00	-25.89	QP	100	103	
2	48.3780	36.26	-25.63	10.63	40.00	-29.37	QP	100	219	
3	185.8143	36.84	-25.48	11.36	43.50	-32.14	QP	100	92	
4	343.6505	34.78	-19.58	15.20	46.00	-30.80	QP	100	110	
5	464.8867	39.00	-16.83	22.17	46.00	-23.83	QP	100	302	
6	965.4741	34.30	-5.91	28.39	54.00	-25.61	QP	100	169	

Above 1GHz



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: FRANK2019 #990

Standard: FCC Part 15C 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Eye Massager Smart Eye

Mode: TX2402MHz

Model: OE-0909

Manufacturer: Shenzhen Fanr Technology Co.,Limited

Polarization: Horizontal

Power Source: DC 3.7V

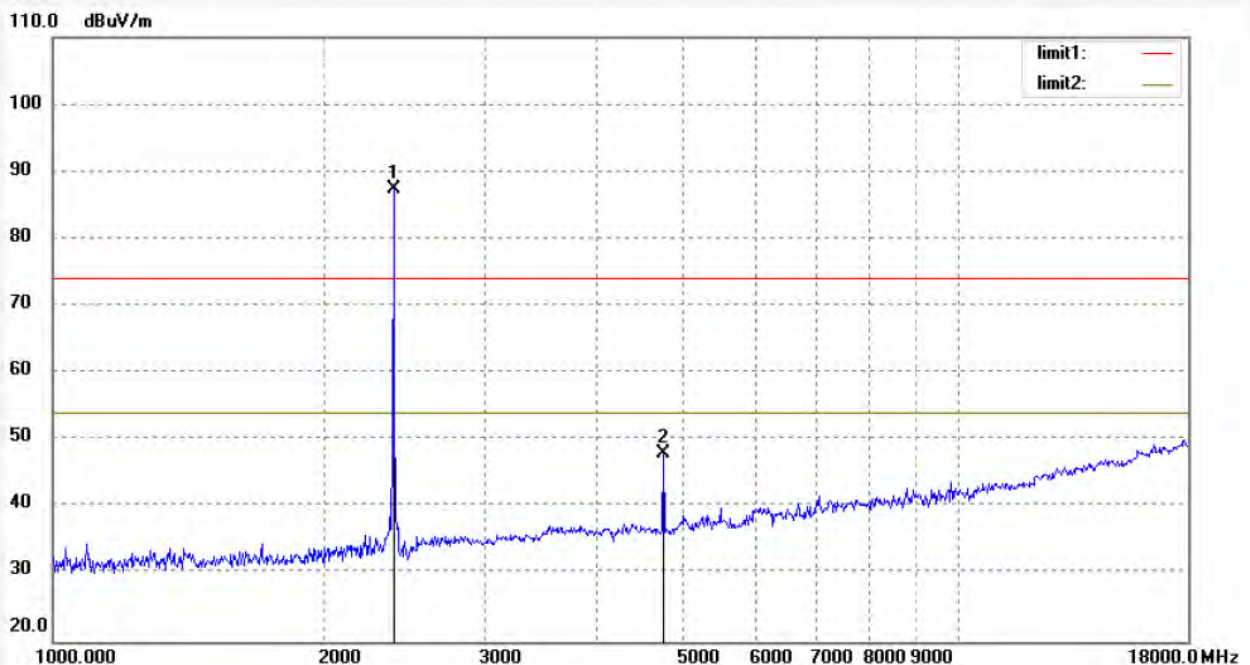
Date: 2019/05/08

Time: 16:48:38

Engineer Signature:

Distance: 3m

Note: Report NO.:ATE20190617



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2402.019	93.80	-6.37	87.43	/	/	peak	200	198	
2	4804.057	47.35	0.70	48.05	74.00	-25.95	peak	200	103	



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: FRANK2019 #991

Standard: FCC Part 15C 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Eye Massager Smart Eye

Mode: TX2402MHz

Model: OE-0909

Manufacturer: Shenzhen Fanr Technology Co.,Limited

Polarization: Vertical

Power Source: DC 3.7V

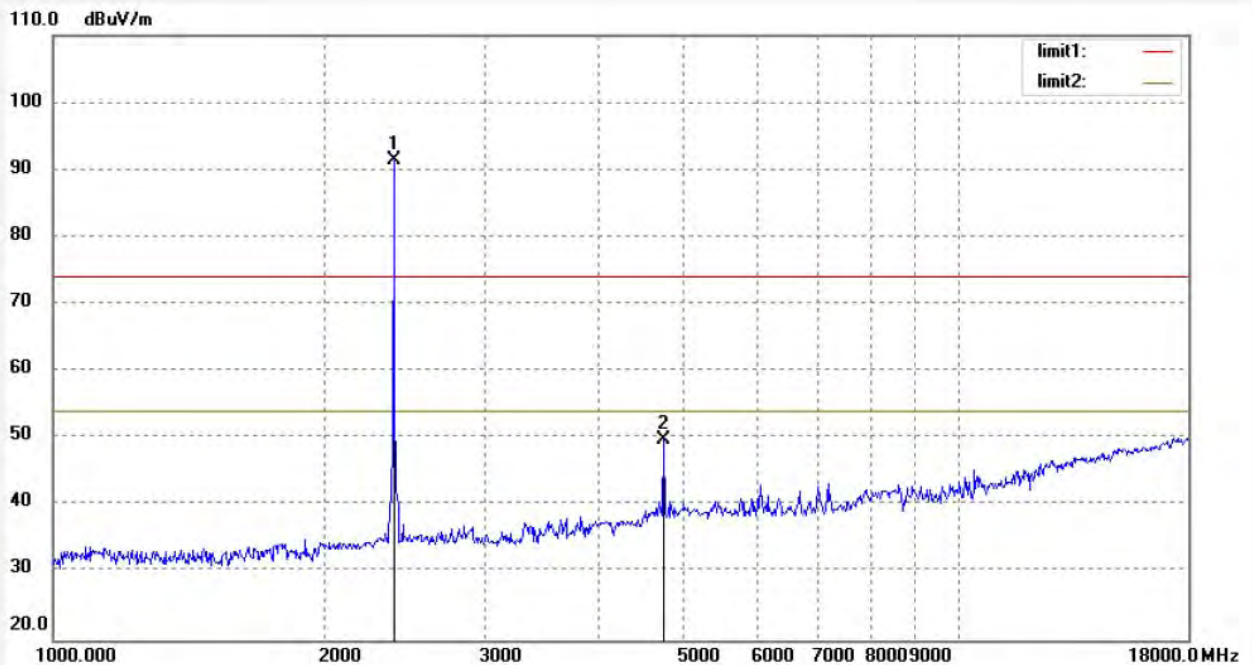
Date: 2019/05/08

Time: 16:50:17

Engineer Signature:

Distance: 3m

Note: Report NO.:ATE20190617



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2402.019	97.84	-6.37	91.47	/	/	peak	150	246	
2	4804.057	49.11	0.70	49.81	74.00	-24.19	peak	150	198	



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: FRANK2019 #993

Standard: FCC Part 15C 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Eye Massager Smart Eye

Mode: TX2441MHz

Model: OE-0909

Manufacturer: Shenzhen Fanr Technology Co.,Limited

Polarization: Horizontal

Power Source: DC 3.7V

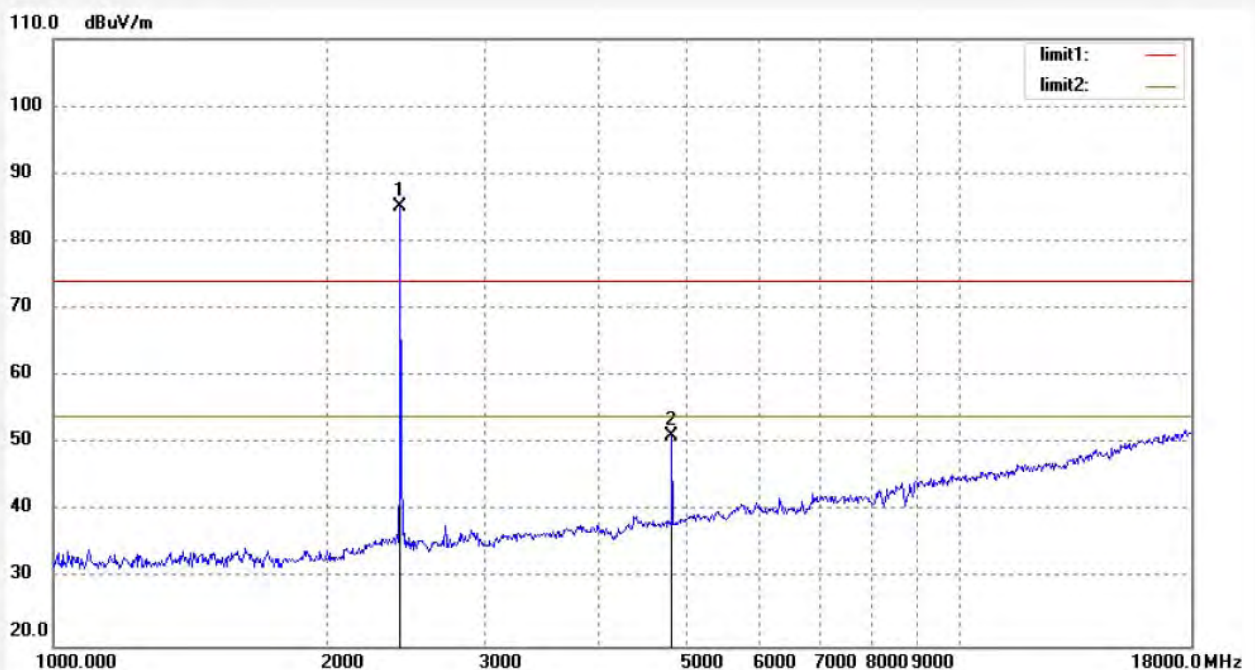
Date: 2019/05/08

Time: 16:56:49

Engineer Signature:

Distance: 3m

Note: Report NO.:ATE20190617



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2441.021	91.28	-6.20	85.08	/	/	peak	200	249	
2	4882.124	50.11	1.07	51.18	74.00	-22.82	peak	200	301	



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: FRANK2019 #992

Standard: FCC Part 15C 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Eye Massager Smart Eye

Mode: TX2441MHz

Model: OE-0909

Manufacturer: Shenzhen Fanr Technology Co.,Limited

Polarization: Vertical

Power Source: DC 3.7V

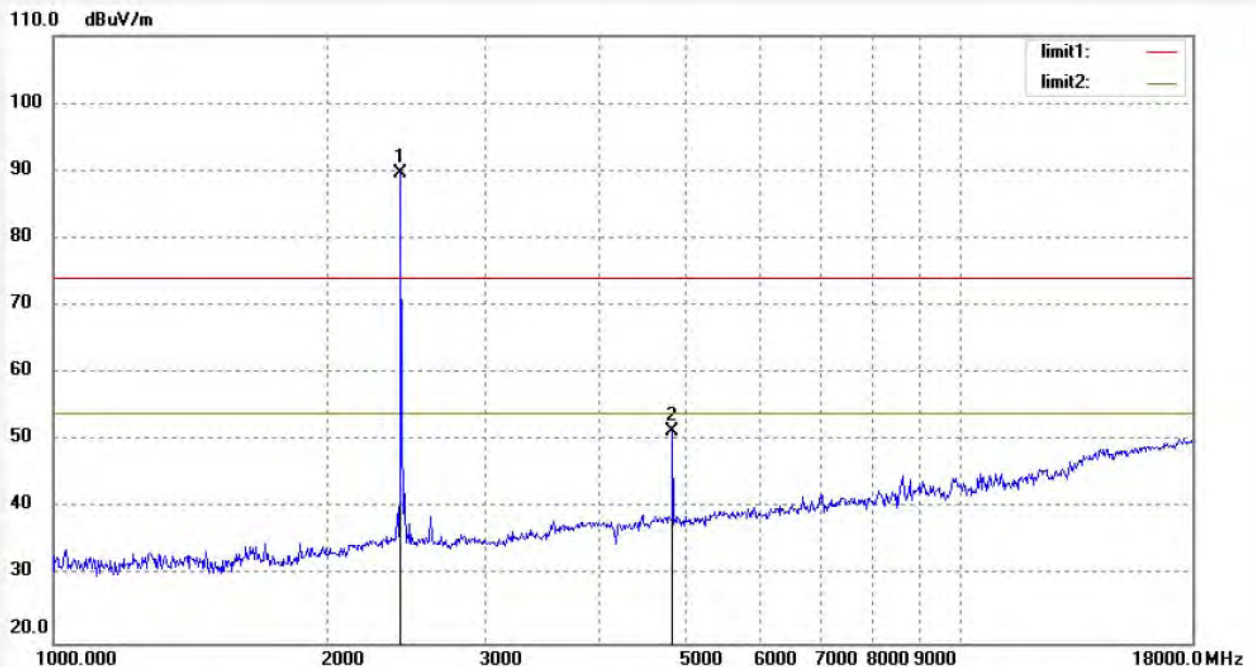
Date: 2019/05/08

Time: 16:51:52

Engineer Signature:

Distance: 3m

Note: Report NO.:ATE20190617



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2441.021	95.82	-6.20	89.62	/	/	peak	150	328	
2	4882.324	50.41	1.07	51.48	74.00	-22.52	peak	150	109	



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: FRANK2019 #994

Standard: FCC Part 15C 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Eye Massager Smart Eye

Mode: TX2480MHz

Model: OE-0909

Manufacturer: Shenzhen Fanr Technology Co.,Limited

Polarization: Horizontal

Power Source: DC 3.7V

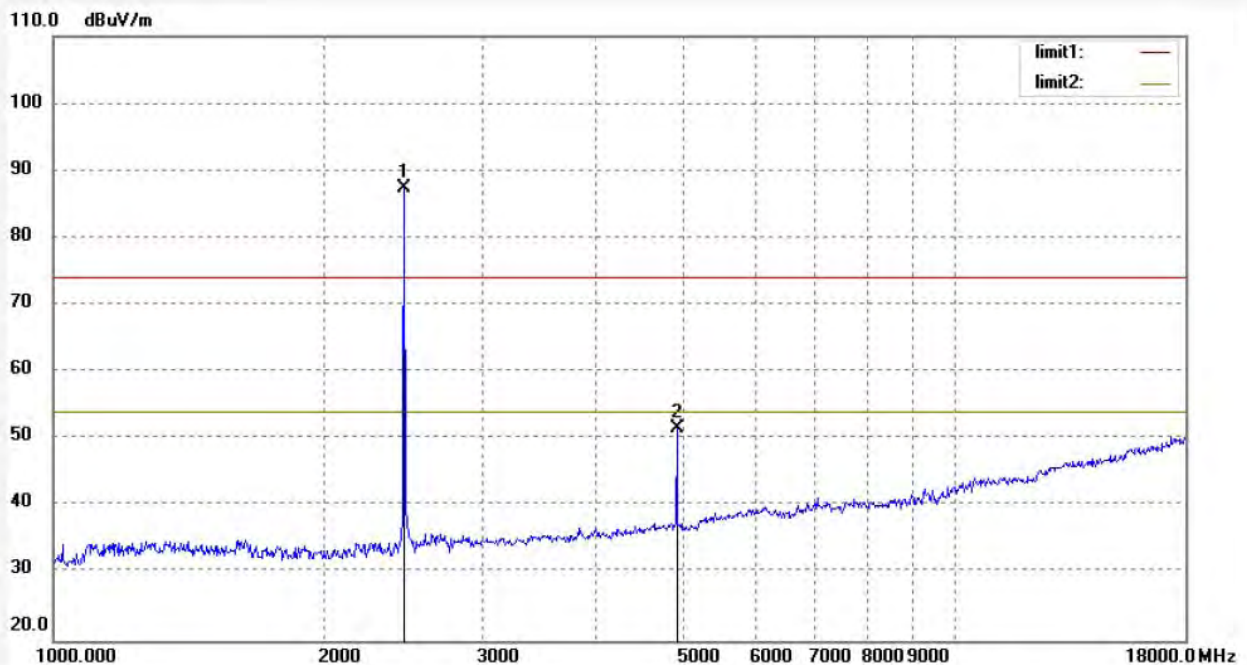
Date: 2019/05/08

Time: 16:58:09

Engineer Signature:

Distance: 3m

Note: Report NO.:ATE20190617



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2480.034	93.51	-6.04	87.47	/	/	peak	200	328	
2	4960.044	50.17	1.50	51.67	74.00	-22.33	peak	200	196	



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: FRANK2019 #995

Standard: FCC Part 15C 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Eye Massager Smart Eye

Mode: TX2480MHz

Model: OE-0909

Manufacturer: Shenzhen Fanr Technology Co.,Limited

Polarization: Vertical

Power Source: DC 3.7V

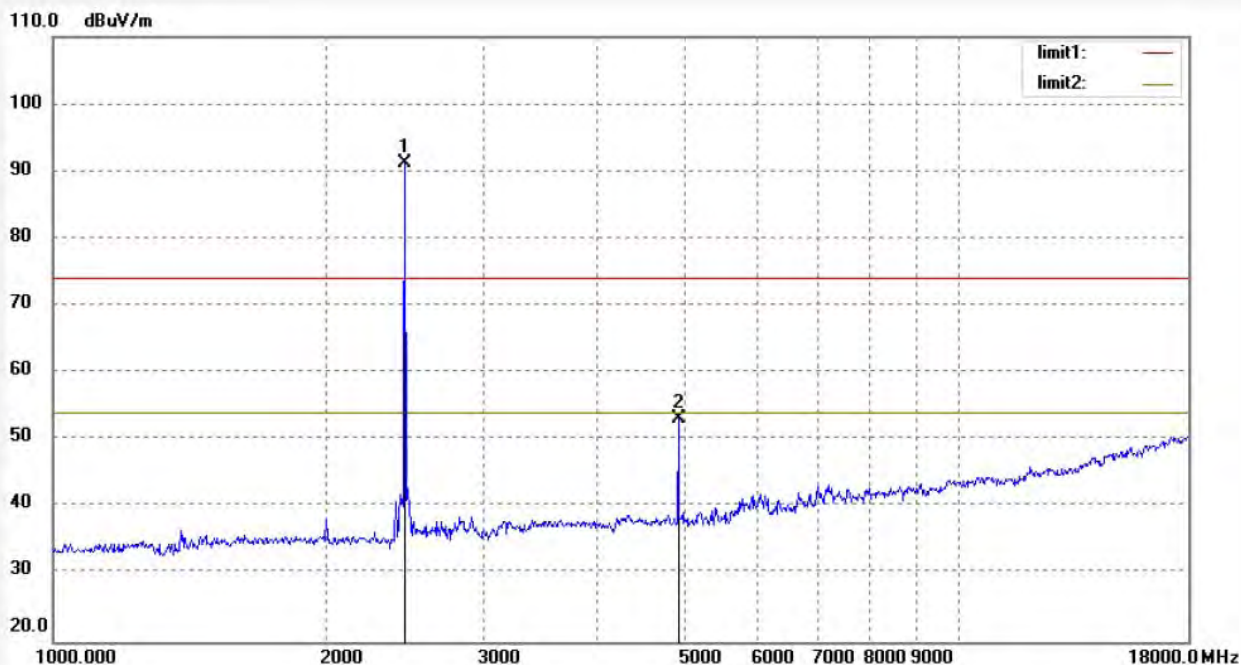
Date: 2019/05/08

Time: 16:59:56

Engineer Signature:

Distance: 3m

Note: Report NO.:ATE20190617



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2480.034	97.29	-6.04	91.25	/	/	peak	150	221	
2	4960.044	51.70	1.50	53.20	74.00	-20.80	peak	150	103	

12.BAND EDGE COMPLIANCE TEST

12.1.Block Diagram of Test Setup



12.2.The Requirement For Section 15.247(d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

12.3.EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

12.4.Operating Condition of EUT

12.4.1.Setup the EUT and simulator as shown as Section 12.1.

12.4.2.Turn on the power of all equipment.

12.4.3.Let the EUT work in TX (Hopping off, Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2480MHz TX frequency to transmit.

12.5. Test Procedure

12.5.1. The transmitter output was connected to the spectrum analyzer via a low loss cable.

12.5.2. Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz with convenient frequency span including 100 kHz bandwidth from band edge.

12.5.3. The band edges was measured and recorded.

12.6. Test Result

Test Lab: Shielding room

Test Engineer: Frank

Note: Both hopping-on mode and hopping-off mode had been pre-tested, and only the Worse case was recorded in the test report.

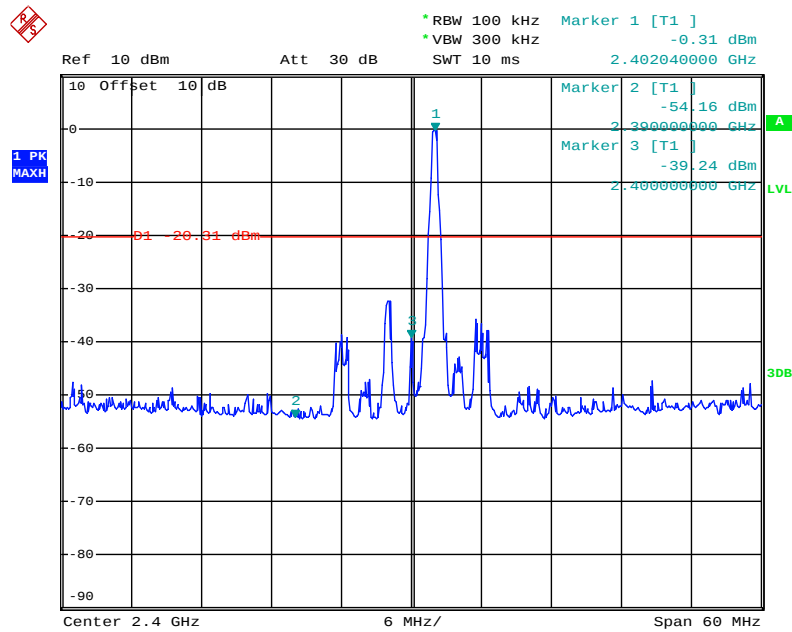
Conducted Band Edge Result

Non-hopping mode

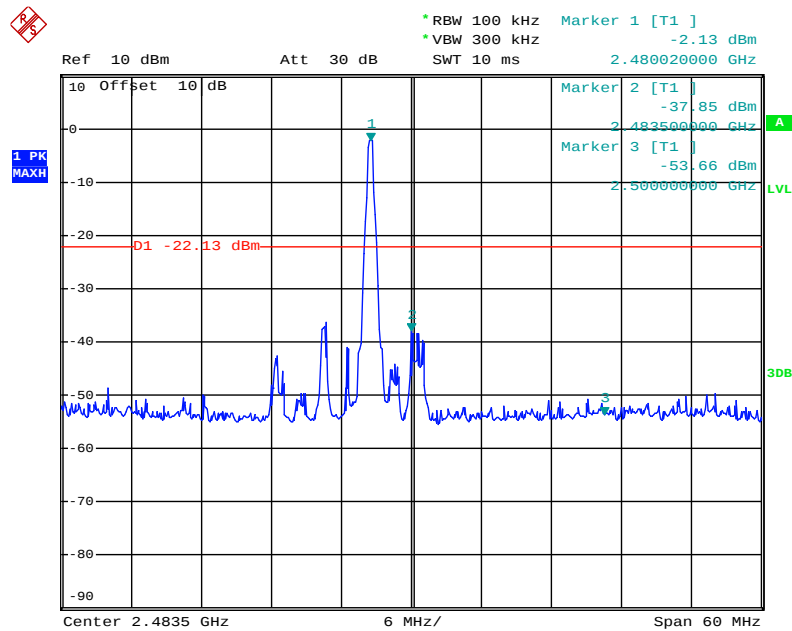
Frequency (MHz)	Result of Band Edge (dBc)	Limit of Band Edge (dBc)	Result
GFSK Mode			
2400.00	38.93	> 20dBc	Pass
2483.50	35.72	> 20dBc	Pass
Π/4-DQPSK Mode			
2400.00	39.22	> 20dBc	Pass
2483.50	35.79	> 20dBc	Pass

The spectrum analyzer plots are attached as below.

GFSK Mode

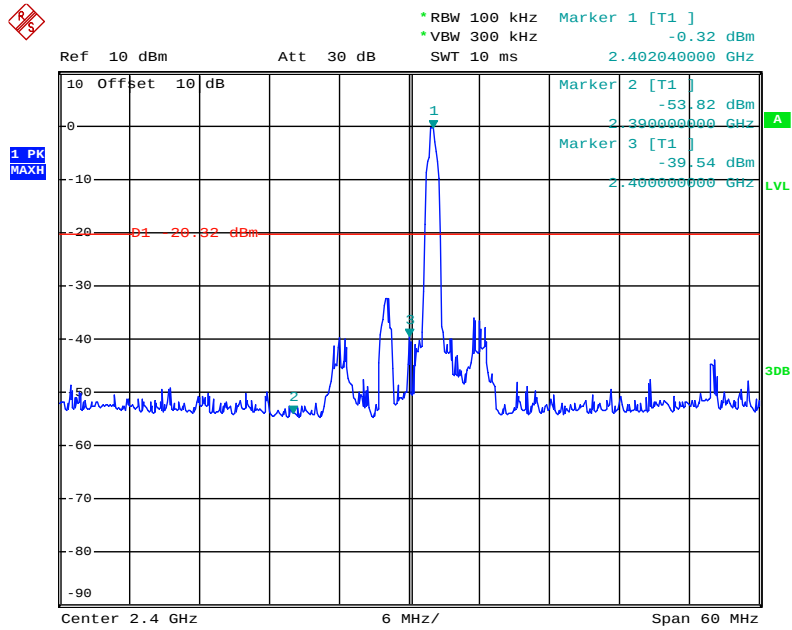


Date: 15.MAY.2019 16:21:32

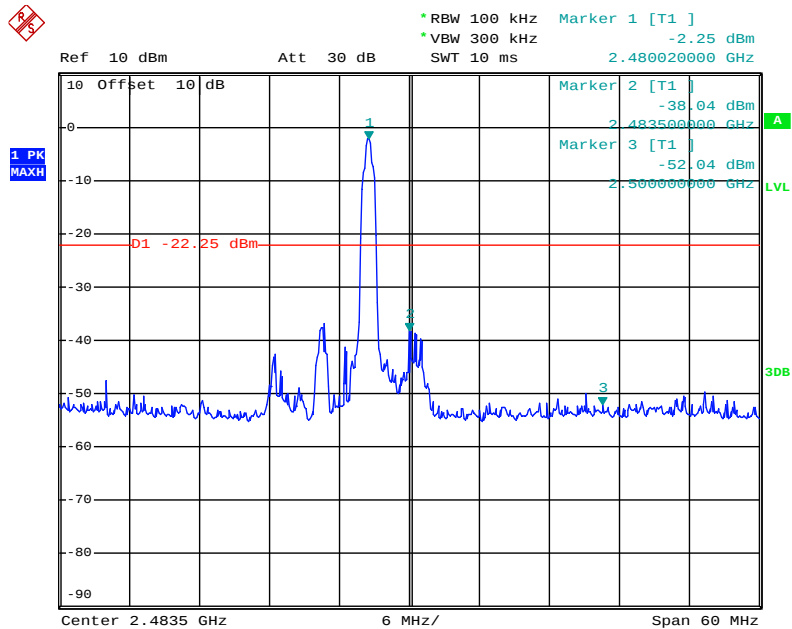


Date: 15.MAY.2019 16:20:17

Π/4-DQPSK Mode



Date: 15.MAY.2019 16:22:27



Date: 15.MAY.2019 16:23:05

Radiated Band Edge Result

Note:

1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

3. Display the measurement of peak values.

Test Procedure:

The EUT and its simulators are placed on a turntable, which is 1.5 meter high above ground(Above 1GHz). The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bi-log antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the EUT location must be manipulated according to ANSI C63.10:2013 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

Let the EUT work in TX (Hopping off, Hopping on) modes measure it.
We select 2402MHz, 2480MHz TX frequency to transmit(Hopping off mode).
We select 2402-2480MHz TX frequency to transmit(Hopping on mode).

During the radiated emission test, the spectrum analyzer was set with the following configurations:

- 1.The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for peak measurement with peak detector at frequency above 1GHz.
- 2.The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average measurement with peak detection at frequency above 1GHz.
- 3.All modes of operation were investigated and the Worse case (Π/4-DQPSK Mode) emissions are reported.

Test Lab: 3m Anechoic chamber

Test Engineer: Frank

The spectrum analyzer plots are attached as below.



Non-hopping mode
ACCURATE TECHNOLOGY CO., LTD.
 F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
 Science & Industry Park,Nanshan Shenzhen,P.R.China

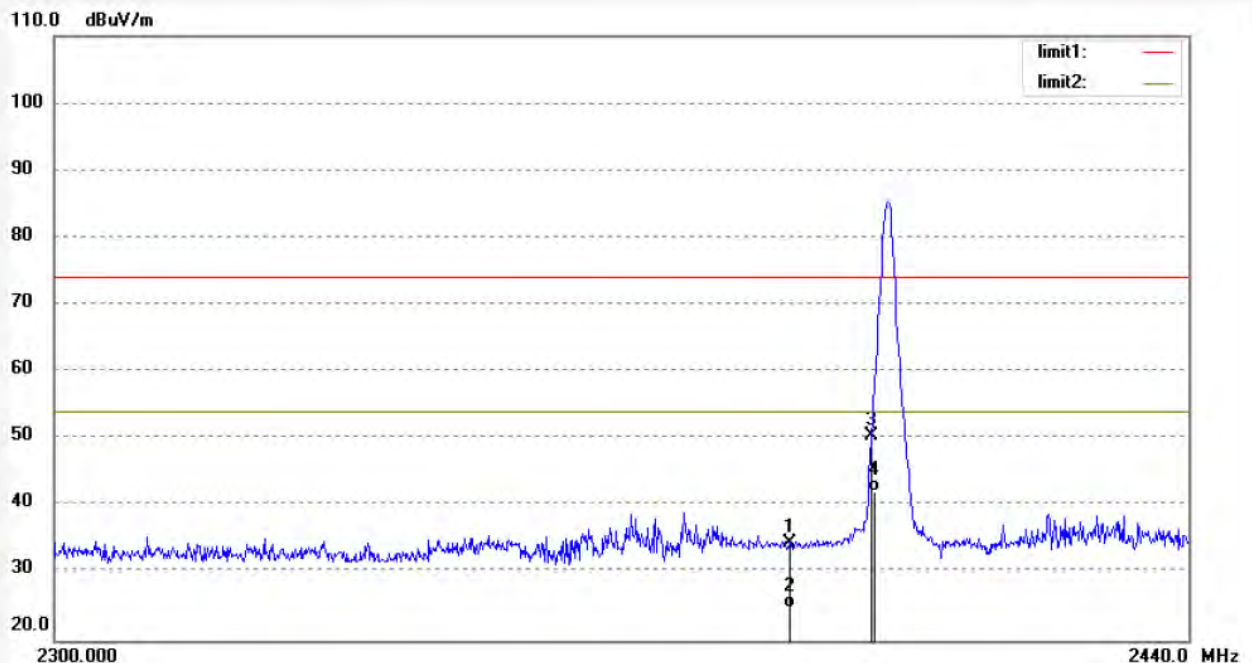
Site: 1# Chamber
 Tel:+86-0755-26503290
 Fax:+86-0755-26503396

Job No.: FRANK2019 #1002
 Standard: FCC Part 15C 3M Radiated
 Test item: Radiation Test
 Temp.(C)/Hum.(%) 25 C / 55 %
 EUT: Eye Massager Smart Eye
 Mode: TX2402MHz
 Model: OE-0909

Polarization: Horizontal
 Power Source: DC 3.7V
 Date: 2019/05/08
 Time: 17:18:45
 Engineer Signature:
 Distance: 3m

Manufacturer: Shenzhen Fanr Technology Co.,Limited

Note: Report NO.:ATE20190617



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	40.84	-6.32	34.52	74.00	-39.48	peak	200	95	
2	2390.000	31.15	-6.32	24.83	54.00	-29.17	AVG	200	118	
3	2400.000	56.80	-6.27	50.53	74.00	-23.47	peak	200	295	
4	2400.000	48.45	-6.27	42.18	54.00	-11.82	AVG	200	103	

Note: Average measurement with peak detection at No.2&4



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: FRANK2019 #1003

Polarization: Vertical

Standard: FCC Part 15C 3M Radiated

Power Source: DC 3.7V

Test item: Radiation Test

Date: 2019/05/08

Temp.(C)/Hum.(%) 25 C / 55 %

Time: 17:19:48

EUT: Eye Massager Smart Eye

Engineer Signature:

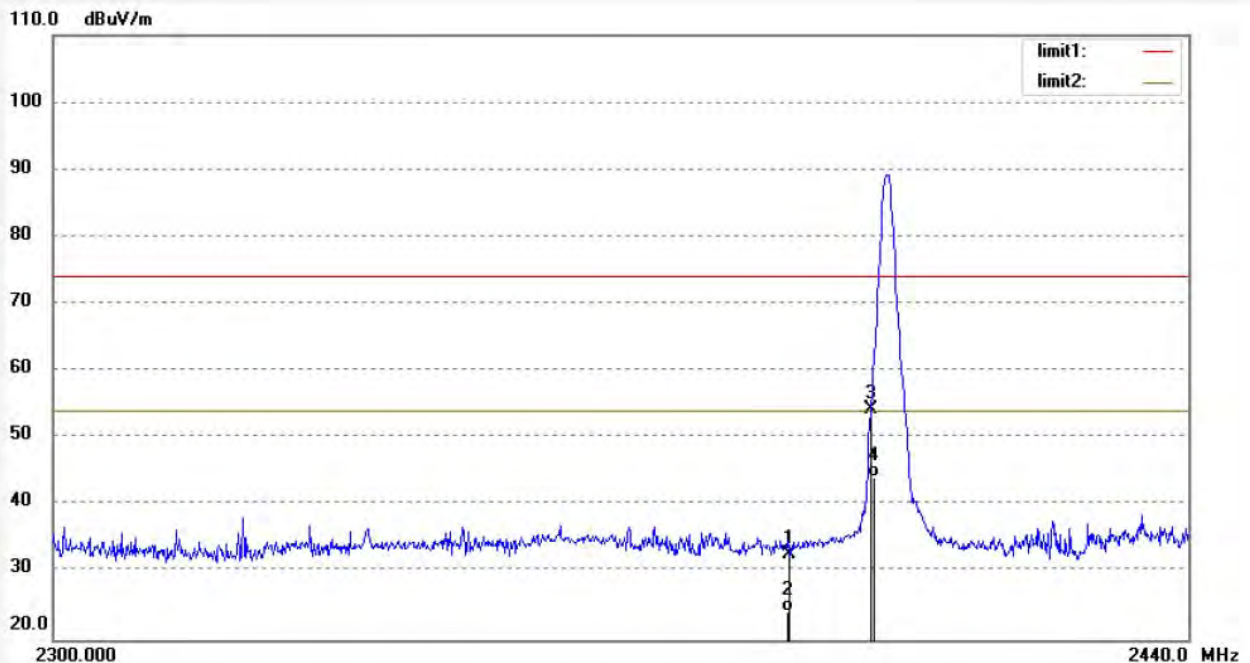
Mode: TX2402MHz

Distance: 3m

Model: OE-0909

Manufacturer: Shenzhen Fanr Technology Co.,Limited

Note: Report NO.:ATE20190617



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	39.09	-6.32	32.77	74.00	-41.23	peak	150	311	
2	2390.000	30.45	-6.32	24.13	54.00	-29.87	AVG	150	214	
3	2400.000	60.57	-6.27	54.30	74.00	-19.70	peak	150	221	
4	2400.000	50.45	-6.27	44.18	54.00	-9.82	AVG	150	103	

Note: Average measurement with peak detection at No.2&4



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: FRANK2019 #997

Polarization: Horizontal

Standard: FCC Part 15C 3M Radiated

Power Source: DC 3.7V

Test item: Radiation Test

Date: 2019/05/08

Temp.(C)/Hum.(%) 25 C / 55 %

Time: 17:06:40

EUT: Eye Massager Smart Eye

Engineer Signature:

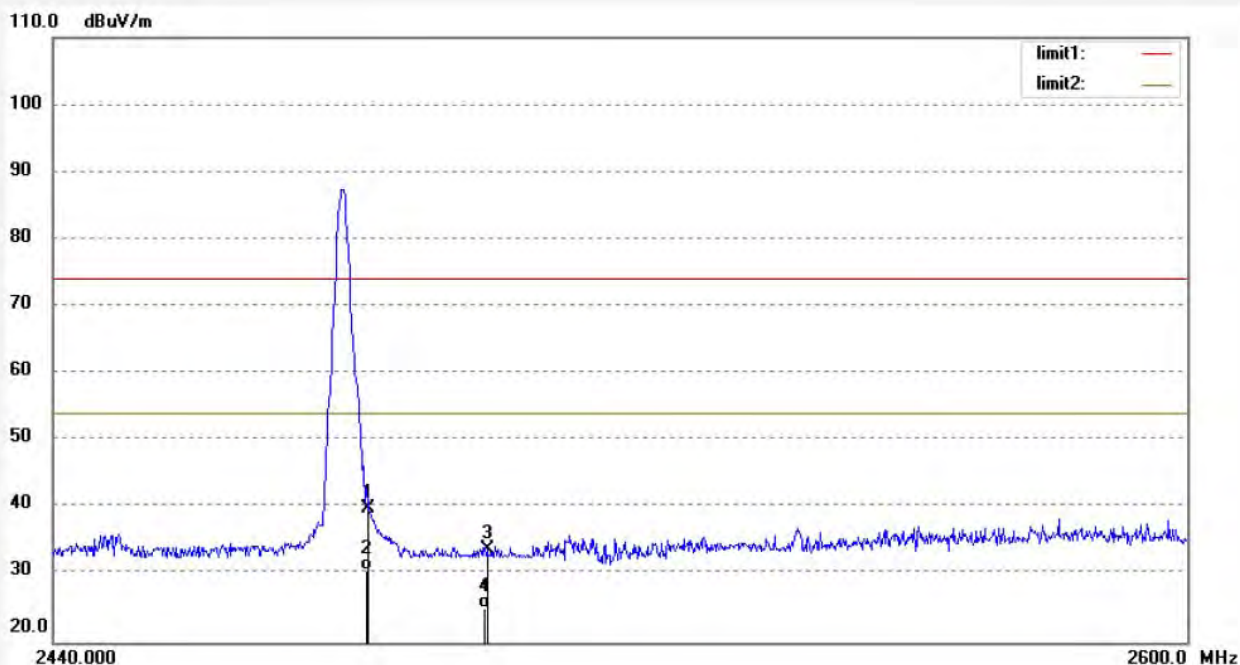
Mode: TX2480MHz

Distance: 3m

Model: OE-0909

Manufacturer: Shenzhen Fanr Technology Co.,Limited

Note: Report NO.:ATE20190617



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	45.83	-5.89	39.94	74.00	-34.06	peak	200	194	
2	2483.500	36.48	-5.89	30.59	54.00	-23.41	AVG	200	201	
3	2500.000	39.59	-5.81	33.78	74.00	-40.22	peak	200	211	
4	2500.000	30.78	-5.81	24.97	54.00	-29.03	AVG	200	93	

Note: Average measurement with peak detection at No.2&4



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: FRANK2019 #996

Standard: FCC Part 15C 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Eye Massager Smart Eye

Mode: TX2480MHz

Model: OE-0909

Manufacturer: Shenzhen Fanr Technology Co.,Limited

Polarization: Vertical

Power Source: DC 3.7V

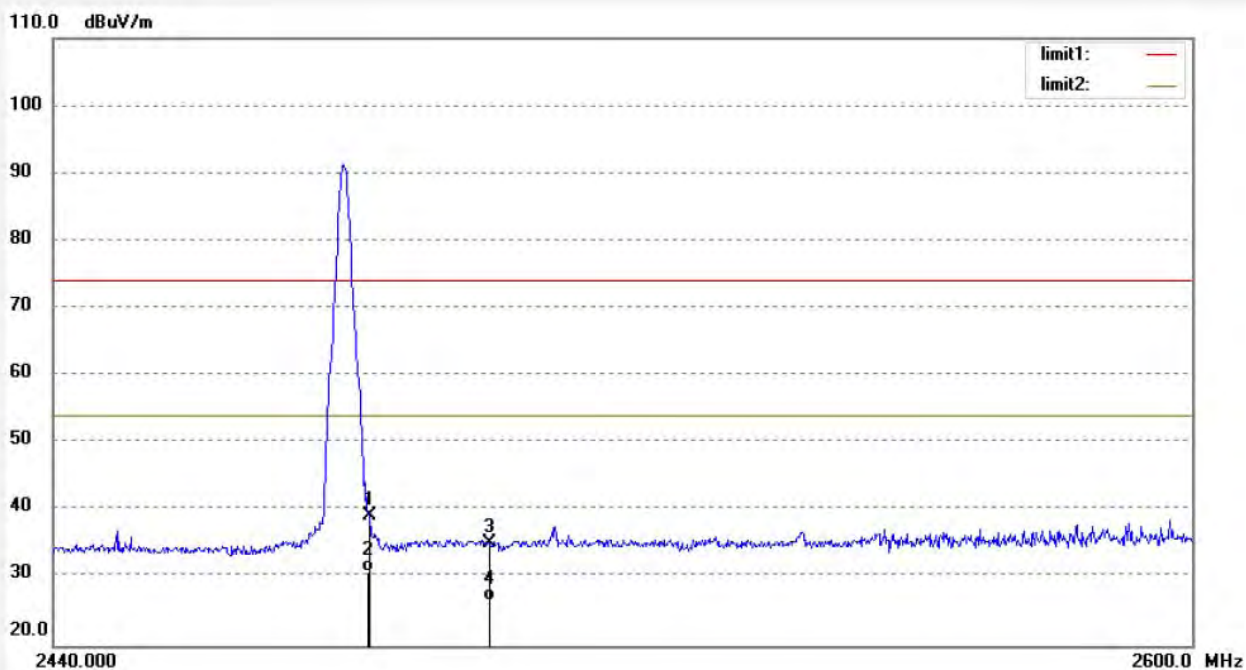
Date: 2019/05/08

Time: 17:05:42

Engineer Signature:

Distance: 3m

Note: Report NO.:ATE20190617



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	45.13	-5.89	39.24	74.00	-34.76	peak	150	141	
2	2483.500	36.78	-5.89	30.89	54.00	-23.11	AVG	150	92	
3	2500.000	41.04	-5.81	35.23	74.00	-38.77	peak	150	252	
4	2500.000	32.48	-5.81	26.67	54.00	-27.33	AVG	150	103	

Note: Average measurement with peak detection at No.2&4



Hopping mode
ACCURATE TECHNOLOGY CO., LTD.
 F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
 Science & Industry Park,Nanshan Shenzhen,P.R.China

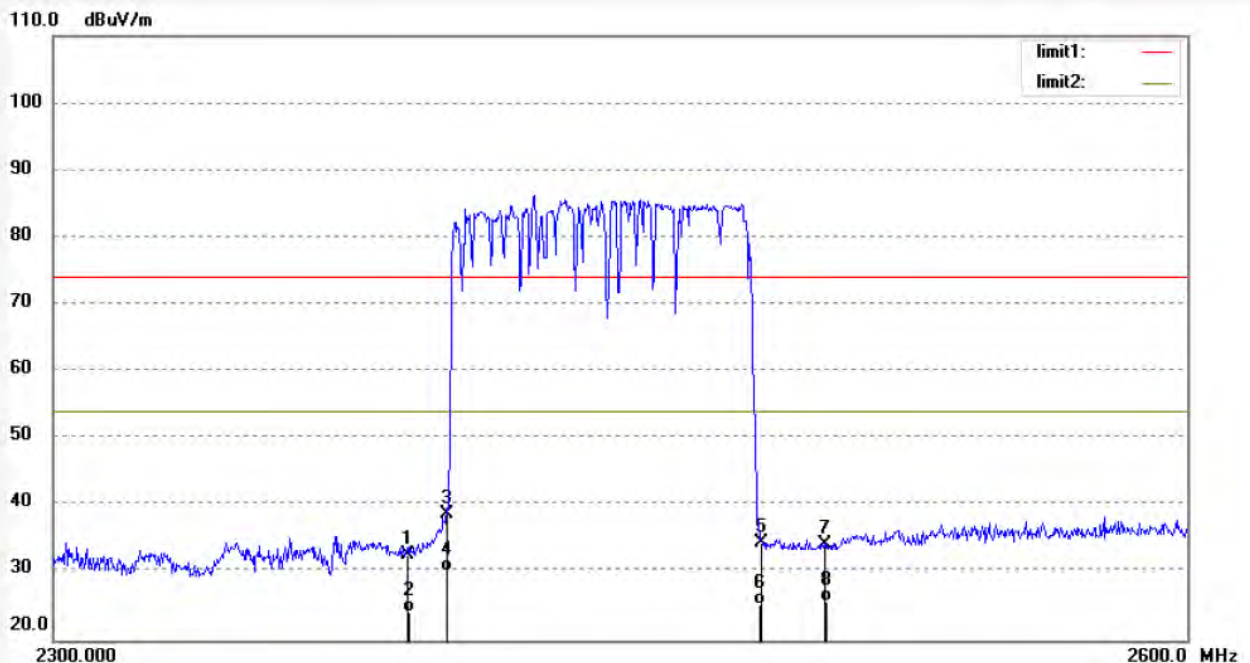
Site: 1# Chamber
 Tel:+86-0755-26503290
 Fax:+86-0755-26503396

Job No.: FRANK2019 #1005
 Standard: FCC Part 15C 3M Radiated
 Test item: Radiation Test
 Temp.(C)/Hum.(%) 25 C / 55 %
 EUT: Eye Massager Smart Eye
 Mode: HOPPING
 Model: OE-0909

Polarization: Horizontal
 Power Source: DC 3.7V
 Date: 2019/05/08
 Time: 17:23:29
 Engineer Signature:
 Distance: 3m

Manufacturer: Shenzhen Fanr Technology Co.,Limited

Note: Report NO.:ATE20190617



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	39.05	-6.32	32.73	74.00	-41.27	peak	200	174	
2	2390.000	30.45	-6.32	24.13	54.00	-29.87	AVG	200	96	
3	2400.000	45.16	-6.27	38.89	74.00	-35.11	peak	200	111	
4	2400.000	36.45	-6.27	30.18	54.00	-23.82	AVG	200	224	
5	2483.500	40.35	-5.89	34.46	74.00	-39.54	peak	200	95	
6	2483.500	31.12	-5.89	25.23	54.00	-28.77	AVG	200	320	
7	2500.000	40.18	-5.81	34.37	74.00	-39.63	peak	200	115	
8	2500.000	31.45	-5.81	25.64	54.00	-28.36	AVG	200	162	

Note: Average measurement with peak detection at No.2&4&6&8



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: FRANK2019 #1004

Standard: FCC Part 15C 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Eye Massager Smart Eye

Mode: HOPPING

Model: OE-0909

Manufacturer: Shenzhen Fanr Technology Co.,Limited

Polarization: Vertical

Power Source: DC 3.7V

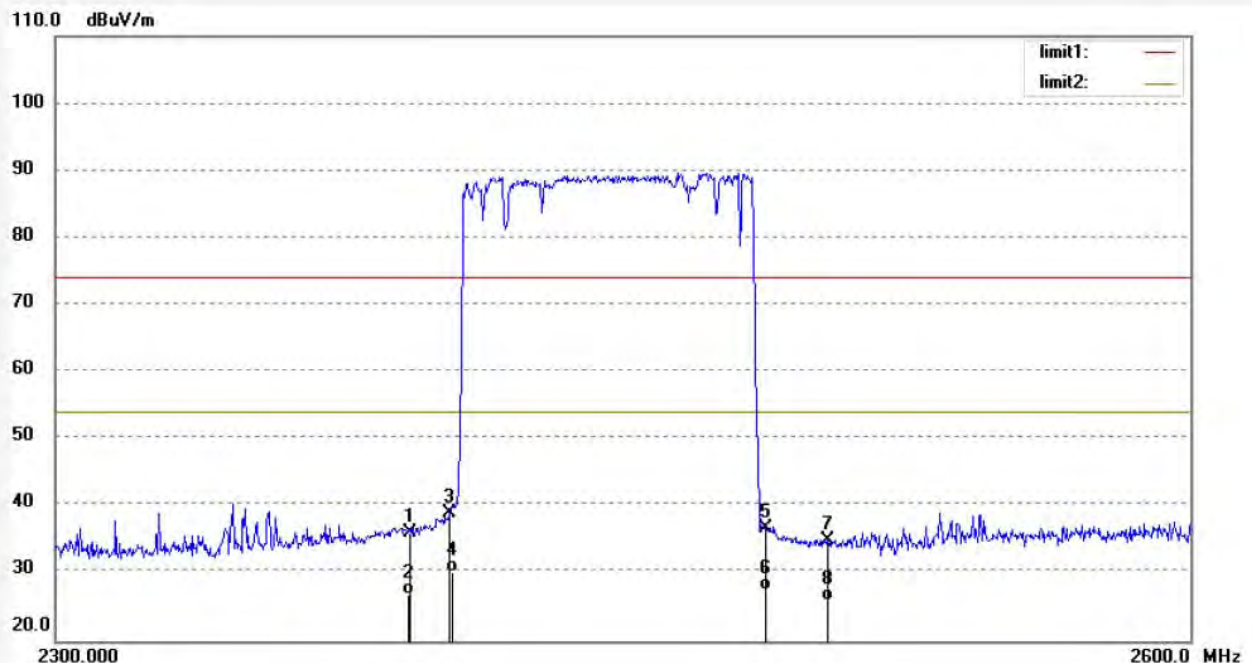
Date: 2019/05/08

Time: 17:21:38

Engineer Signature:

Distance: 3m

Note: Report NO.:ATE20190617



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	42.49	-6.32	36.17	74.00	-37.83	peak	150	97	
2	2390.000	33.15	-6.32	26.83	54.00	-27.17	AVG	150	159	
3	2400.000	45.39	-6.27	39.12	74.00	-34.88	peak	150	325	
4	2400.000	36.48	-6.27	30.21	54.00	-23.79	AVG	150	66	
5	2483.500	42.67	-5.89	36.78	74.00	-37.22	peak	150	115	
6	2483.500	33.46	-5.89	27.57	54.00	-26.43	AVG	150	93	
7	2500.000	40.73	-5.81	34.92	74.00	-39.08	peak	150	22	
8	2500.000	31.78	-5.81	25.97	54.00	-28.03	AVG	150	103	

Note: Average measurement with peak detection at No.2&4&6&8

13.1. Block Diagram of Test Setup

```

graph LR
    AC_Mains[AC Mains] --> LISN[L.I.S.N]
    LISN --> Test_Receiver[Test Receiver]
    LISN --> Adapter[Adapter]
    Adapter --> EUT[EUT]
  
```

The diagram illustrates a test setup for an EUT (Equipment Under Test) and a LISN (Line Impedance Stabilization Network) connected to a Test Receiver. The EUT is positioned on a stand, and the LISN is connected to the EUT and the Test Receiver. The Test Receiver is also on a stand. The setup is connected to a power source (N) via a cable. The diagram includes labels for the EUT, LISN, Test Receiver, and the power source (N). Dimensions are indicated: 40cm for the EUT stand height and 80cm for the LISN stand height. The setup is connected to a power source (N) via a cable. The diagram includes labels for the EUT, LISN, Test Receiver, and the power source (N). Dimensions are indicated: 40cm for the EUT stand height and 80cm for the LISN stand height.

2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

13.2.Test Limits

Frequency (MHz)	Limit dB(μ V)	
	Quasi-peak Level	Average Level
0.15 - 0.50	66.0 – 56.0 *	56.0 – 46.0 *
0.50 - 5.00	56.0	46.0
5.00 - 30.00	60.0	50.0
NOTE1: The lower limit shall apply at the transition frequencies.		
NOTE2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.		

13.3.Configuration of EUT on Measurement

The equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

13.4.Operating Condition of EUT

13.4.1.Setup the EUT and simulator as shown as Section 13.1.

13.4.2.Turn on the power of all equipment.

13.4.3.Let the EUT work in test mode and measure it.

13.5.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 C63.10: 2013 on Conducted Emission Measurement. The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

13.6.Data Sample

Frequency (MHz)	Transducer value (dB)	QuasiPeak Level (dBμV)	Average Level (dBμV)	QuasiPeak Limit (dBμV)	Average Limit (dBμV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
X.XX	10.6	25.3	17.0	59.0	49.0	33.4	31.7	Pass

Frequency(MHz) = Emission frequency in MHz

Transducer value(dB) = Insertion loss of LISN + Cable Loss

Level(dBμV) = Quasi-peak Reading/Average Reading + Transducer value

Limit (dBμV) = Limit stated in standard

Margin = Limit (dBμV) - Level (dBμV)

Calculation Formula:

Margin = Limit (dBμV) - Level (dBμV)

13.7.Test Result

Pass.

Test Lab: Shielding room

Test Engineer: Frank

The frequency range from 150kHz to 30MHz is checked.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.
Emissions attenuated more than 20 dB below the permissible value are not reported.

All data was recorded in the Quasi-peak and average detection mode.

The spectral diagrams are attached as below.

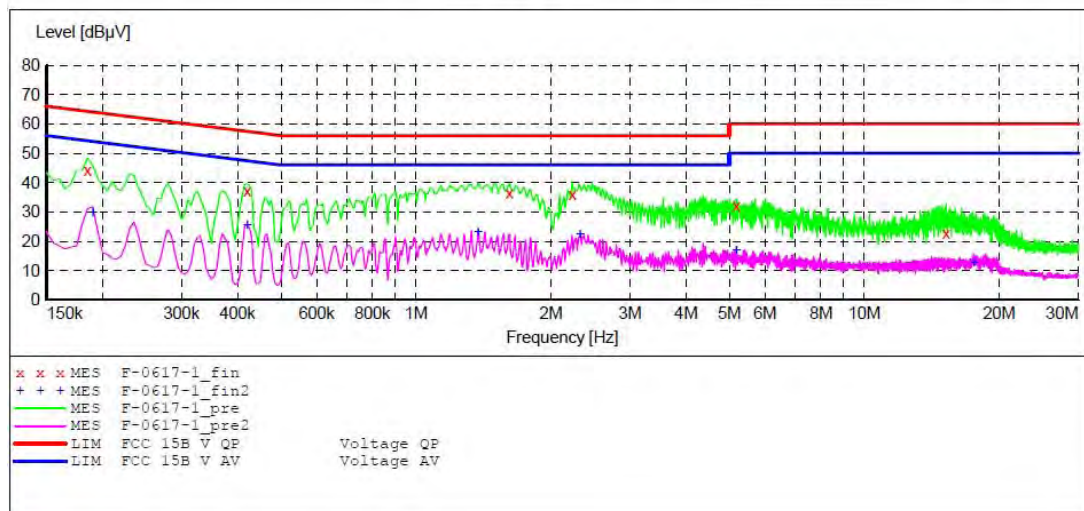
ACCURATE TECHNOLOGY CO.,LTD

CONDUCTED EMISSION STANDARD FCC PART 15 C

EUT: Eye Massager Smart Eye M/N:OE-0909
 Manufacturer: Shenzhen Fanr Technology Co.,Limited
 Operating Condition: BT Communication
 Test Site: 1#Shielding Room
 Operator: Frank
 Test Specification: N 120V/60Hz
 Comment: Report NO.:ATE20190617
 Start of Test: 5/7/2019 / 10:20:27AM

SCAN TABLE: "V 9K-30MHz fin"

Short Description: _SUB_STD_VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 9.0 kHz 150.0 kHz 100.0 Hz QuasiPeak 1.0 s 200 Hz NSLK8126 2008
 Average
 150.0 kHz 30.0 MHz 5.0 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008
 Average



MEASUREMENT RESULT: "F-0617-1_fin"

5/7/2019 10:25AM

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.185000	44.30	10.5	64	20.0	QP	N	GND
0.420000	36.90	10.7	57	20.5	QP	N	GND
1.615000	36.50	10.9	56	19.5	QP	N	GND
2.230000	36.00	11.0	56	20.0	QP	N	GND
5.180000	32.10	11.2	60	27.9	QP	N	GND
15.220000	22.50	11.4	60	37.5	QP	N	GND

MEASUREMENT RESULT: "F-0617-1_fin2"

5/7/2019 10:25AM

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.190000	29.70	10.5	54	24.3	AV	N	GND
0.420000	25.30	10.7	47	22.1	AV	N	GND
1.375000	23.10	10.9	46	22.9	AV	N	GND
2.320000	22.30	11.0	46	23.7	AV	N	GND
5.180000	17.00	11.2	50	33.0	AV	N	GND
17.575000	12.50	11.4	50	37.5	AV	N	GND

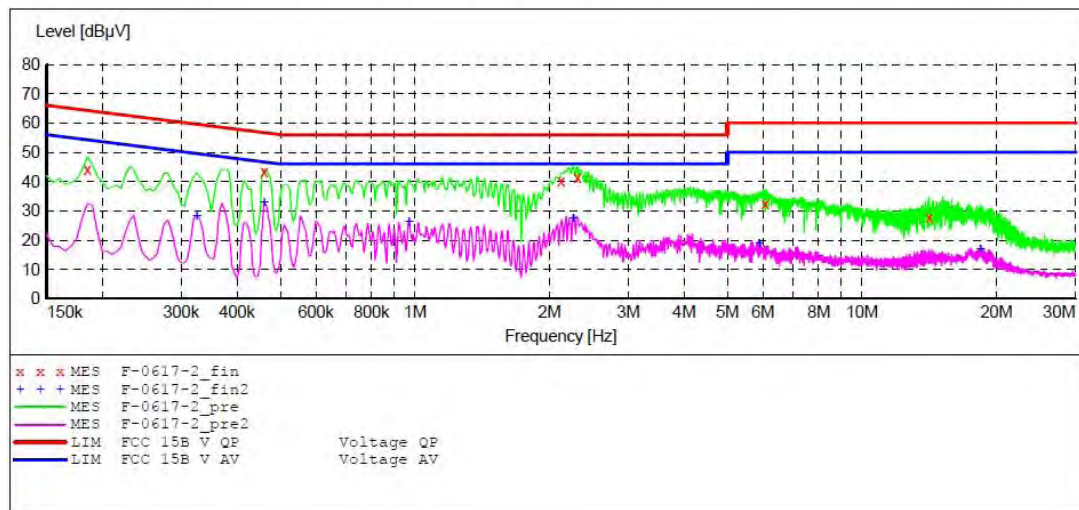
ACCURATE TECHNOLOGY CO.,LTD

CONDUCTED EMISSION STANDARD FCC PART 15 C

EUT: Eye Massager Smart Eye M/N:OE-0909
 Manufacturer: Shenzhen Fanr Technology Co.,Limited
 Operating Condition: BT Communication
 Test Site: 1#Shielding Room
 Operator: Frank
 Test Specification: L 120V/60Hz
 Comment: Report NO.:ATE20190617
 Start of Test: 5/7/2019 / 10:26:03AM

SCAN TABLE: "V 9K-30MHz fin"

Short Description: _SUB_STD_VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 9.0 kHz 150.0 kHz 100.0 Hz QuasiPeak 1.0 s 200 Hz NSLK8126 2008
 Average
 150.0 kHz 30.0 MHz 5.0 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008
 Average



MEASUREMENT RESULT: "F-0617-2_fin"

5/7/2019 10:29AM

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.185000	44.20	10.5	64	20.1	QP	L1	GND
0.460000	43.30	10.7	57	13.4	QP	L1	GND
2.120000	40.40	11.0	56	15.6	QP	L1	GND
2.310000	41.60	11.0	56	14.4	QP	L1	GND
6.070000	32.30	11.2	60	27.7	QP	L1	GND
14.155000	27.90	11.4	60	32.1	QP	L1	GND

MEASUREMENT RESULT: "F-0617-2_fin2"

5/7/2019 10:29AM

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.325000	28.20	10.6	50	21.4	AV	L1	GND
0.460000	32.70	10.7	47	14.0	AV	L1	GND
0.970000	26.20	10.8	46	19.8	AV	L1	GND
2.260000	27.30	11.0	46	18.7	AV	L1	GND
5.880000	19.00	11.2	50	31.0	AV	L1	GND
18.415000	16.70	11.4	50	33.3	AV	L1	GND

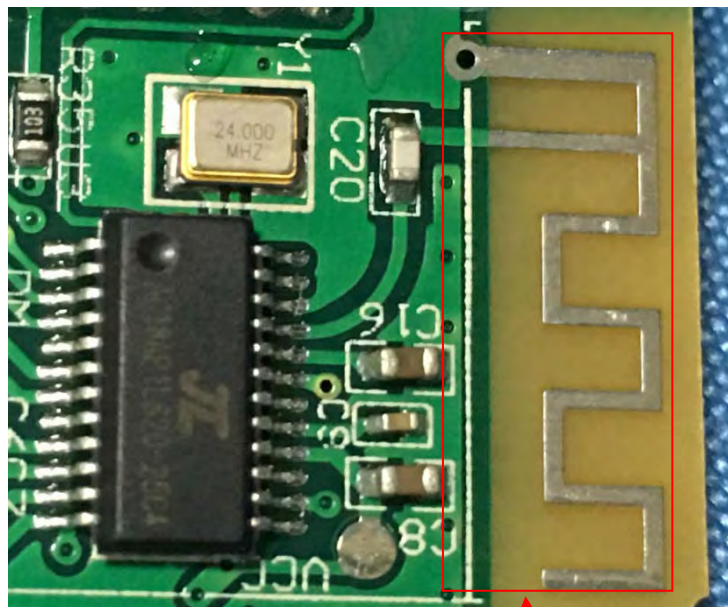
14.ANTENNA REQUIREMENT

14.1.The Requirement

According to 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.

14.2.Antenna Construction

Device is equipped with permanent attached antenna, which isn't displaced by other antenna. The Max Antenna gain of EUT is -0.68dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.



Antenna

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