

Test Report

Verified code: 286503

Report No.: E202403143863-5

Customer: Hangzhou Moyu Technology Co., Ltd

Address: Room 4069, Building 2, Xixi Lotte City, Wuchang Street, Yuhang District hangzhou
Zhejiang 311122 China (Peoples Republic Of)

Sample Name: Pet Tracker

Sample Model: M200d

Receive Sample Date: Mar.21,2024

Test Date: Mar.27,2024 ~ Apr.08,2024

Reference Document: CFR 47, FCC Part 2,
CFR 47, FCC Part 24 Subpart E

Test Result: Pass

Prepared by: Wen Wenwen
Wen Wenwen

Reviewed by: Peng Huarui
Peng Huarui

Approved by: Zhao Zetian
Zhao Zetian



GRG METROLOGY & TEST GROUP CO., LTD.

Issued Date: 2024-05-29

GRG METROLOGY & TEST GROUP CO., LTD.

Address: No.163, Pingyun Road, West of Huangpu Avenue, Guangzhou, Guangdong, China
Tel: (+86) 400-602-0999 FAX: (+86) 020-38698685 Web: <http://www.grgtest.com>



Statement

1. The report is invalid without "special seal for inspection and testing"; some copies are invalid; The report is invalid if it is altered or missing; The report is invalid without the signature of the person who prepared, reviewed and approved it.
2. The sample information is provided by the client and responsible for its authenticity; The content of the report is only valid for the samples sent this time.
3. When there are reports in both Chinese and English, the Chinese version will prevail when the language problems are inconsistent.
4. If there is any objection concerning the report, please inform us within 15 days from the date of receiving the report.
5. Without the agreement of the laboratory, the client is not authorized to use the test results for unapproved propaganda.
6. The test report without CMA approval mark is only used for scientific research, teaching, internal quality control and other purposes.

----- The following blanks -----

TABLE OF CONTENTS

1.	TEST RESULT SUMMARY	6
1.1	TEST STANDARDS.....	6
1.2	TEST RESULT	7
2.	GENERAL DESCRIPTION OF EUT	8
2.1	APPLICANT.....	8
2.2	MANUFACTURER.....	8
2.3	FACTORY	8
2.4	BASIC DESCRIPTION OF EQUIPMENT UNDER TEST	8
2.5	CONFIGURATION OF SYSTEM UNDER TEST	9
2.6	DESIGNATION OF EMISSION	9
3.	LABORATORY AND MEASUREMENT UNCERTAINTY	10
3.1	LABORATORY.....	10
3.2	ACCREDITATIONS	10
3.3	MEASUREMENT UNCERTAINTY	11
4.	LIST OF USED TEST EQUIPMENT AT GRGT.....	12
5.	EFFECTIVE (ISOTROPIC) RADIATED POWER OUTPUT DATA	13
5.1	LIMIT.....	13
5.2	TEST PROCEDURES.....	13
5.3	TEST SETUP	13
5.4	TEST RESULTS	14
6.	PEAK-TO-AVERAGE RATIO.....	19
6.1	LIMIT.....	19
6.2	TEST PROCEDURES.....	19
6.3	TEST SETUP	19
6.4	TEST RESULTS	20
7.	MODULATION CHARACTERISTICS	38
7.1	TEST PROCEDURES.....	38
7.2	TEST SETUP	38
7.3	TEST RESULTS	39
8.	BANDWIDTH.....	49
8.1	LIMIT.....	49
8.2	TEST PROCEDURES.....	49
8.3	TEST SETUP	49
8.4	TEST RESULTS	50
9.	BAND EDGES COMPLIANCE	58
9.1	LIMIT.....	58
9.2	TEST PROCEDURES.....	58
9.3	TEST SETUP	58
9.4	TEST RESULTS	59
10.	SPURIOUS EMISSION AT ANTENNA TERMINAL	77
10.1	LIMIT.....	77
10.2	TEST PROCEDURES.....	77
10.3	TEST SETUP	77
10.4	TEST RESULTS	78
11.	FREQUENCY STABILITY	263
11.1	LIMIT.....	263
11.2	TEST PROCEDURES.....	263
11.3	TEST SETUP	263
11.4	TEST RESULTS	264

12.	FIELD STRENGTH OF SPURIOUS RADIATION.....	266
12.1	LIMIT	266
12.2	TEST PROCEDURES.....	266
12.3	TEST SETUP	267
12.4	DATA SAMPLE	269
12.5	TEST RESULTS	270
13.	TEST PHOTO	288
14.	PHOTOGRAPH OF THE EUT.....	289

----- The following blanks -----

REPORT ISSUED HISTORY

Report Version	Report No.	Description	Compile Date
1.0	E202403143863-5	Original Issue	2024-05-29

----- The following blanks -----

1. TEST RESULT SUMMARY**1.1 TEST STANDARDS**

No.	Identity	Document Title
1	CFR 47, FCC Part 2 Section 2.1047,2.1049	Frequency Allocations And Radio Treaty Mattres; General Rules And Regulations
2	CFR 47, FCC Part 24 Subpart E	Broadband PCS

----- The following blanks -----

1.2 TEST RESULT

LTE Band 2			
Item	FCC Rule No.	Requirements	Result
Effective (Isotropic) Radiated Power Output Data	§2.1046, §24.232(c)	$EIRP \leq 2 \text{ W}$	PASS
Peak-Average Ratio	§24.232(d)	Limit $\leq 13 \text{ dB}$	PASS
Modulation Characteristics	§2.1047	Digital modulation	PASS
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	PASS
Band Edges Compliance	§2.1051, §24.238(a)(b)	Refer to section 10.1	PASS
Spurious Emission at Antenna Terminals	§2.1051, §24.238(a)(b)	$\leq -13 \text{ dBm/1MHz}$	PASS
Field Strength of Spurious Radiation	§2.1053, §24.238(a)	$\leq -13 \text{ dBm/1MHz.}$	PASS
Frequency Stability	§2.1055, §24.235	$\leq \pm 2.5 \text{ ppm.}$	PASS

----- The following blanks -----

2. GENERAL DESCRIPTION OF EUT

2.1 APPLICANT

Name:	Hangzhou Moyu Technology Co., Ltd
Address:	Room 4069, Building 2, Xixi Lotte City, Wuchang Street, Yuhang District hangzhou Zhejiang 311122 China (Peoples Republic Of)

2.2 MANUFACTURER

Name:	Hangzhou Moyu Technology Co., Ltd
Address:	Room 4069, Building 2, Xixi Lotte City, Wuchang Street, Yuhang District hangzhou Zhejiang 311122 China (Peoples Republic Of)

2.3 FACTORY

Name:	Hangzhou Moyu Technology Co., Ltd
Address:	Room 4069, Building 2, Xixi Lotte City, Wuchang Street, Yuhang District hangzhou Zhejiang 311122 China (Peoples Republic Of)

2.4 BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

Equipment:	Pet Tracker
Model No.:	M200d
Trade Name:	/
Adding Model	/
FCC ID:	2BGPO-M200D
Power Supply:	DC 3.85V by battery, DC 5V by USB cable for charging
Battery:	DC 3.85V/790mAh
Hardware Version:	V1.0.0.2
Software Version:	V1.0.0.1
Antenna type:	Internal antenna
Maximum Antenna Gain:	LTE Band 2: 1.64dBi
Category:	Category 1
Power Class:	3
Frequency range:	LTE Band 2: Tx 1850MHz~1910MHz, Rx 1930MHz ~ 1990MHz
Bandwidth:	LTE Band 2: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
Modulation:	QPSK, 16QAM
Sample No.:	E202403143863-0001, E202403143863-0002
IMEI:	861261029936727

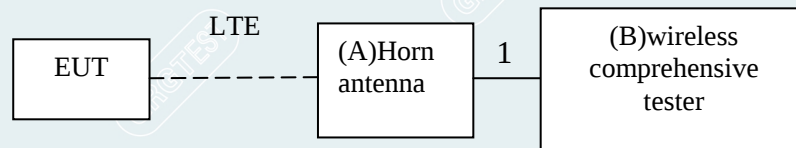
Temperature Range:	-20℃~+70℃
Voltage Range:	DC 3.5V~4.2V
Sample Submitting Way :	■ Provided by customer □ Sampling
Note:	The basic description of the EUT is provided by the applicant. The antenna gain is provided by applicant. This report is made solely on the basis of such data and/or information. We accept no responsibility for the authenticity and completeness of the above data and information and the validity of the results and/or conclusions.

2.5 CONFIGURATION OF SYSTEM UNDER TEST

For conducted test:



For radiated spurious emissions:



2.6 DESIGNATION OF EMISSION

Designation Of Emission			
Band	Bandwidth(MHz)	QPSK	16QAM
Band 2	1.4	1M10G7D	1M10W7D
	3	2M70G7D	2M70W7D
	5	4M52G7D	4M52W7D
	10	8M97G7D	/
	15	13M5G7D	/
	20	17M9G7D	/

Note: For 10MHz, 15MHz, 20MHz bandwidth support QPSK only.

3. LABORATORY AND MEASUREMENT UNCERTAINTY

3.1 LABORATORY

The tests & measurements refer to this report were performed by Shenzhen EMC Laboratory of GRG METROLOGY & TEST GROUP CO., LTD.

Add.: No.1301 Guanguang Road Xinlan Community, Guanlan Street, Longhua District
Shenzhen, 518110, People's Republic of China.

P.C.: 518110

Tel : 0755-61180008

Fax: 0755-61180008

3.2 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

USA	A2LA(Certificate #2861.01)
------------	----------------------------

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada	ISED (Company Number: 24897, CAB identifier:CN0069)
USA	FCC (Registration Number: 759402, Designation Number:CN1198)

Copies of granted accreditation certificates are available for downloading from our web site,
<http://www.grgtest.com>

----- The following blanks -----

3.3 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement		Frequency	Uncertainty
Radiated Emission	Horizontal	30MHz~1000MHz	4.6dB
		1GHz~18GHz	5.0dB
		18GHz~40GHz	5.2dB
	Vertical	30MHz~1000MHz	4.7dB
		1GHz~18GHz	5.1dB
		18GHz~40GHz	5.4dB
	Coaxial	9kHz~30MHz	4.4dB
	Coplanar	9kHz~30MHz	4.4dB

Measurement	Uncertainty
RF frequency	6.0×10^{-6}
RF power conducted	0.8 dB
Occupied channel bandwidth	0.4 dB
Unwanted emission, conducted	0.7 dB
Humidity	6 %
Temperature	2 °C

This uncertainty represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

----- The following blanks -----

4. LIST OF USED TEST EQUIPMENT AT GRGT

Conducted System :

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Keysight	N9010B	MY60680122	2025-03-01
Wideband radio Communication Tester	R&S	CMW500	144611-nc	2024-04-16
Temperature chamber	HT	SMC-22PF	H12204211060-1	2024-12-14
RF switch box	Tonscend	JS0806-1	20D8060250	/
Test SW	Tonscend	JS1120	/	/
Dc Source	LW	PS-305DM	180704473	2024-07-05

RSE system:

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Test Receiver	R&S	ESR26	101758	2024-09-22
Loop Antenna	Schwarzbeck	FMZB 1513-60	1513-60-56	2024-07-15
Bi-log Antenna	Schwarzbeck	VULB 9160	VULB 9160-3402	2024-10-06
Horn Antenna	Schwarzbeck	BBHA9120D	02143	2024-09-23
Horn Antenna	Schwarzbeck	BBHA9170	BBHA 9170-497	2024-09-18
Amplifier	tonscend	TAP01018048	AP20E8060075	2025-03-01
Preamplifiers	SHIRONG ELECTRONIC	DLNA-1G18G-G 40	20200928005	2024-08-17
Preamplifiers	SHIRONG ELECTRONIC	DLNA-30M1G-G 41	20200928002	2024-10-24
Wideband radio Communication Tester	R&S	CMW500	144611-nc	2024-04-16
Test S/W	tonscend	JS32-RE/2.5.1.5		

Note: The calibration interval of the above test instruments is 12 months.

5. EFFECTIVE (ISOTROPIC) RADIATED POWER OUTPUT DATA

5.1 LIMIT

According to FCC section 24.232(c), Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

5.2 TEST PROCEDURES

Measurement Procedure: FCC KDB 971168 D01 V03r01

1. Connect the test system to the UE antenna connector.
2. A call is set up according to the Generic call setup procedure.
3. Set and send continuously up power control commands to the UE, until the UE output power shall be maximum level.
4. Read the conducted power in the base station.

Remark:

- a: For getting the EIRP (Efficient Isotropic Radiated Power) in substitution method, the following formula should be taken to calculate it,

$$\text{EIRP [dBm]} = \text{Conducted output power [dBm]} + \text{Gain [dBi]}$$

$$\text{ERP [dBm]} = \text{Conducted output power [dBm]} + \text{Gain [dBi]} - 2.15\text{dB}$$

$$P [\text{dBm}] = 10 \lg(P/1\text{mw})$$

5.3 TEST SETUP



----- The following blanks -----

5.4 TEST RESULTS

Effective Radiated Power

EUT Name	Pet Tracker	Model	M200d
Sample No.	E202403143863-0002	Test Mode	LTE
Power supply	DC 3.85V	Environmental Conditions	Temp:25.8℃;Humi:45%RH
Test Date	2024-03-27 to 2024-03-30	Test Site	/
Tested By	Zhu rongting	Reviewed by	Zhao Zetian

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	EIRP (dBm)	Limit (dBm)	Verdict
Band2	1.4MHz	QPSK	18607	1RB#0	21.45	23.09	≤33.01	PASS
Band2	1.4MHz	QPSK	18607	1RB#2	22.51	24.15	≤33.01	PASS
Band2	1.4MHz	QPSK	18607	1RB#5	22.46	24.10	≤33.01	PASS
Band2	1.4MHz	QPSK	18607	3RB#0	22.50	24.14	≤33.01	PASS
Band2	1.4MHz	QPSK	18607	3RB#1	22.48	24.12	≤33.01	PASS
Band2	1.4MHz	QPSK	18607	3RB#3	22.40	24.04	≤33.01	PASS
Band2	1.4MHz	QPSK	18607	6RB#0	21.32	22.96	≤33.01	PASS
Band2	1.4MHz	QPSK	18900	1RB#0	23.90	25.54	≤33.01	PASS
Band2	1.4MHz	QPSK	18900	1RB#2	23.77	25.41	≤33.01	PASS
Band2	1.4MHz	QPSK	18900	1RB#5	23.78	25.42	≤33.01	PASS
Band2	1.4MHz	QPSK	18900	3RB#0	23.82	25.46	≤33.01	PASS
Band2	1.4MHz	QPSK	18900	3RB#1	23.80	25.44	≤33.01	PASS
Band2	1.4MHz	QPSK	18900	3RB#3	23.78	25.42	≤33.01	PASS
Band2	1.4MHz	QPSK	18900	6RB#0	22.77	24.41	≤33.01	PASS
Band2	1.4MHz	QPSK	19193	1RB#0	23.59	25.23	≤33.01	PASS
Band2	1.4MHz	QPSK	19193	1RB#2	23.37	25.01	≤33.01	PASS
Band2	1.4MHz	QPSK	19193	1RB#5	23.35	24.99	≤33.01	PASS
Band2	1.4MHz	QPSK	19193	3RB#0	23.46	25.10	≤33.01	PASS
Band2	1.4MHz	QPSK	19193	3RB#1	23.43	25.07	≤33.01	PASS
Band2	1.4MHz	QPSK	19193	3RB#3	23.36	25.00	≤33.01	PASS
Band2	1.4MHz	QPSK	19193	6RB#0	22.36	24.00	≤33.01	PASS
Band2	1.4MHz	16QAM	18607	1RB#0	21.39	23.03	≤33.01	PASS
Band2	1.4MHz	16QAM	18607	1RB#2	21.39	23.03	≤33.01	PASS
Band2	1.4MHz	16QAM	18607	1RB#5	21.25	22.89	≤33.01	PASS
Band2	1.4MHz	16QAM	18607	3RB#0	21.14	22.78	≤33.01	PASS
Band2	1.4MHz	16QAM	18607	3RB#1	21.12	22.76	≤33.01	PASS
Band2	1.4MHz	16QAM	18607	3RB#3	21.11	22.75	≤33.01	PASS
Band2	1.4MHz	16QAM	18607	6RB#0	20.26	21.90	≤33.01	PASS
Band2	1.4MHz	16QAM	18900	1RB#0	22.65	24.29	≤33.01	PASS
Band2	1.4MHz	16QAM	18900	1RB#2	22.65	24.29	≤33.01	PASS
Band2	1.4MHz	16QAM	18900	1RB#5	22.57	24.21	≤33.01	PASS
Band2	1.4MHz	16QAM	18900	3RB#0	22.54	24.18	≤33.01	PASS
Band2	1.4MHz	16QAM	18900	3RB#1	22.50	24.14	≤33.01	PASS
Band2	1.4MHz	16QAM	18900	3RB#3	22.50	24.14	≤33.01	PASS
Band2	1.4MHz	16QAM	18900	6RB#0	21.73	23.37	≤33.01	PASS
Band2	1.4MHz	16QAM	19193	1RB#0	22.20	23.84	≤33.01	PASS
Band2	1.4MHz	16QAM	19193	1RB#2	22.16	23.80	≤33.01	PASS
Band2	1.4MHz	16QAM	19193	1RB#5	22.02	23.66	≤33.01	PASS
Band2	1.4MHz	16QAM	19193	3RB#0	22.15	23.79	≤33.01	PASS
Band2	1.4MHz	16QAM	19193	3RB#1	22.15	23.79	≤33.01	PASS
Band2	1.4MHz	16QAM	19193	3RB#3	22.06	23.70	≤33.01	PASS
Band2	1.4MHz	16QAM	19193	6RB#0	21.12	22.76	≤33.01	PASS
Band2	3MHz	QPSK	18615	1RB#0	22.71	24.35	≤33.01	PASS
Band2	3MHz	QPSK	18615	1RB#8	22.74	24.38	≤33.01	PASS

Band2	3MHz	QPSK	18615	1RB#14	22.51	24.15	≤33.01	PASS
Band2	3MHz	QPSK	18615	8RB#0	21.45	23.09	≤33.01	PASS
Band2	3MHz	QPSK	18615	8RB#4	21.47	23.11	≤33.01	PASS
Band2	3MHz	QPSK	18615	8RB#7	21.36	23.00	≤33.01	PASS
Band2	3MHz	QPSK	18615	15RB#0	21.40	23.04	≤33.01	PASS
Band2	3MHz	QPSK	18900	1RB#0	23.94	25.58	≤33.01	PASS
Band2	3MHz	QPSK	18900	1RB#8	23.87	25.51	≤33.01	PASS
Band2	3MHz	QPSK	18900	1RB#14	23.68	25.32	≤33.01	PASS
Band2	3MHz	QPSK	18900	8RB#0	22.87	24.51	≤33.01	PASS
Band2	3MHz	QPSK	18900	8RB#4	22.84	24.48	≤33.01	PASS
Band2	3MHz	QPSK	18900	8RB#7	22.80	24.44	≤33.01	PASS
Band2	3MHz	QPSK	18900	15RB#0	22.77	24.41	≤33.01	PASS
Band2	3MHz	QPSK	19185	1RB#0	23.68	25.32	≤33.01	PASS
Band2	3MHz	QPSK	19185	1RB#8	23.51	25.15	≤33.01	PASS
Band2	3MHz	QPSK	19185	1RB#14	23.14	24.78	≤33.01	PASS
Band2	3MHz	QPSK	19185	8RB#0	22.55	24.19	≤33.01	PASS
Band2	3MHz	QPSK	19185	8RB#4	22.60	24.24	≤33.01	PASS
Band2	3MHz	QPSK	19185	8RB#7	22.41	24.05	≤33.01	PASS
Band2	3MHz	QPSK	19185	15RB#0	22.50	24.14	≤33.01	PASS
Band2	3MHz	16QAM	18615	1RB#0	21.42	23.06	≤33.01	PASS
Band2	3MHz	16QAM	18615	1RB#8	21.41	23.05	≤33.01	PASS
Band2	3MHz	16QAM	18615	1RB#14	21.19	22.83	≤33.01	PASS
Band2	3MHz	16QAM	18615	8RB#0	20.41	22.05	≤33.01	PASS
Band2	3MHz	16QAM	18615	8RB#4	20.38	22.02	≤33.01	PASS
Band2	3MHz	16QAM	18615	8RB#7	20.37	22.01	≤33.01	PASS
Band2	3MHz	16QAM	18615	15RB#0	20.27	21.91	≤33.01	PASS
Band2	3MHz	16QAM	18900	1RB#0	22.56	24.20	≤33.01	PASS
Band2	3MHz	16QAM	18900	1RB#8	22.60	24.24	≤33.01	PASS
Band2	3MHz	16QAM	18900	1RB#14	22.40	24.04	≤33.01	PASS
Band2	3MHz	16QAM	18900	8RB#0	21.80	23.44	≤33.01	PASS
Band2	3MHz	16QAM	18900	8RB#4	21.77	23.41	≤33.01	PASS
Band2	3MHz	16QAM	18900	8RB#7	21.77	23.41	≤33.01	PASS
Band2	3MHz	16QAM	18900	15RB#0	21.68	23.32	≤33.01	PASS
Band2	3MHz	16QAM	19185	1RB#0	22.52	24.16	≤33.01	PASS
Band2	3MHz	16QAM	19185	1RB#8	22.43	24.07	≤33.01	PASS
Band2	3MHz	16QAM	19185	1RB#14	22.09	23.73	≤33.01	PASS
Band2	3MHz	16QAM	19185	8RB#0	21.45	23.09	≤33.01	PASS
Band2	3MHz	16QAM	19185	8RB#4	21.46	23.10	≤33.01	PASS
Band2	3MHz	16QAM	19185	8RB#7	21.39	23.03	≤33.01	PASS
Band2	3MHz	16QAM	19185	15RB#0	21.43	23.07	≤33.01	PASS
Band2	5MHz	QPSK	18625	1RB#0	22.69	24.33	≤33.01	PASS
Band2	5MHz	QPSK	18625	1RB#12	22.57	24.21	≤33.01	PASS
Band2	5MHz	QPSK	18625	1RB#24	22.58	24.22	≤33.01	PASS
Band2	5MHz	QPSK	18625	12RB#0	21.21	22.85	≤33.01	PASS
Band2	5MHz	QPSK	18625	12RB#6	21.27	22.91	≤33.01	PASS
Band2	5MHz	QPSK	18625	12RB#13	21.20	22.84	≤33.01	PASS
Band2	5MHz	QPSK	18625	25RB#0	21.30	22.94	≤33.01	PASS
Band2	5MHz	QPSK	18900	1RB#0	24.09	25.73	≤33.01	PASS
Band2	5MHz	QPSK	18900	1RB#12	23.93	25.57	≤33.01	PASS
Band2	5MHz	QPSK	18900	1RB#24	23.77	25.41	≤33.01	PASS
Band2	5MHz	QPSK	18900	12RB#0	22.82	24.46	≤33.01	PASS
Band2	5MHz	QPSK	18900	12RB#6	22.86	24.50	≤33.01	PASS
Band2	5MHz	QPSK	18900	12RB#13	22.71	24.35	≤33.01	PASS
Band2	5MHz	QPSK	18900	25RB#0	22.77	24.41	≤33.01	PASS
Band2	5MHz	QPSK	19175	1RB#0	24.15	25.79	≤33.01	PASS
Band2	5MHz	QPSK	19175	1RB#12	23.84	25.48	≤33.01	PASS
Band2	5MHz	QPSK	19175	1RB#24	23.49	25.13	≤33.01	PASS

Band2	5MHz	QPSK	19175	12RB#0	22.68	24.32	≤33.01	PASS
Band2	5MHz	QPSK	19175	12RB#6	22.65	24.29	≤33.01	PASS
Band2	5MHz	QPSK	19175	12RB#13	22.47	24.11	≤33.01	PASS
Band2	5MHz	QPSK	19175	25RB#0	22.63	24.27	≤33.01	PASS
Band2	5MHz	16QAM	18625	1RB#0	21.40	23.04	≤33.01	PASS
Band2	5MHz	16QAM	18625	1RB#12	21.29	22.93	≤33.01	PASS
Band2	5MHz	16QAM	18625	1RB#24	21.29	22.93	≤33.01	PASS
Band2	5MHz	16QAM	18625	12RB#0	20.20	21.84	≤33.01	PASS
Band2	5MHz	16QAM	18625	12RB#6	20.18	21.82	≤33.01	PASS
Band2	5MHz	16QAM	18625	12RB#13	20.47	22.11	≤33.01	PASS
Band2	5MHz	16QAM	18625	25RB#0	20.21	21.85	≤33.01	PASS
Band2	5MHz	16QAM	18900	1RB#0	22.94	24.58	≤33.01	PASS
Band2	5MHz	16QAM	18900	1RB#12	22.76	24.40	≤33.01	PASS
Band2	5MHz	16QAM	18900	1RB#24	22.68	24.32	≤33.01	PASS
Band2	5MHz	16QAM	18900	12RB#0	21.79	23.43	≤33.01	PASS
Band2	5MHz	16QAM	18900	12RB#6	21.78	23.42	≤33.01	PASS
Band2	5MHz	16QAM	18900	12RB#13	21.63	23.27	≤33.01	PASS
Band2	5MHz	16QAM	18900	25RB#0	21.72	23.36	≤33.01	PASS
Band2	5MHz	16QAM	19175	1RB#0	22.79	24.43	≤33.01	PASS
Band2	5MHz	16QAM	19175	1RB#12	22.68	24.32	≤33.01	PASS
Band2	5MHz	16QAM	19175	1RB#24	22.34	23.98	≤33.01	PASS
Band2	5MHz	16QAM	19175	12RB#0	21.60	23.24	≤33.01	PASS
Band2	5MHz	16QAM	19175	12RB#6	21.58	23.22	≤33.01	PASS
Band2	5MHz	16QAM	19175	12RB#13	21.41	23.05	≤33.01	PASS
Band2	5MHz	16QAM	19175	25RB#0	21.43	23.07	≤33.01	PASS
Band2	10MHz	QPSK	18650	1RB#0	22.92	24.56	≤33.01	PASS
Band2	10MHz	QPSK	18650	1RB#24	22.55	24.19	≤33.01	PASS
Band2	10MHz	QPSK	18650	1RB#49	22.72	24.36	≤33.01	PASS
Band2	10MHz	QPSK	18650	25RB#0	21.08	22.72	≤33.01	PASS
Band2	10MHz	QPSK	18650	25RB#12	21.14	22.78	≤33.01	PASS
Band2	10MHz	QPSK	18650	25RB#25	21.23	22.87	≤33.01	PASS
Band2	10MHz	QPSK	18650	50RB#0	21.36	23.00	≤33.01	PASS
Band2	10MHz	QPSK	18900	1RB#0	24.22	25.86	≤33.01	PASS
Band2	10MHz	QPSK	18900	1RB#24	23.83	25.47	≤33.01	PASS
Band2	10MHz	QPSK	18900	1RB#49	23.70	25.34	≤33.01	PASS
Band2	10MHz	QPSK	18900	25RB#0	22.76	24.4	≤33.01	PASS
Band2	10MHz	QPSK	18900	25RB#12	22.73	24.37	≤33.01	PASS
Band2	10MHz	QPSK	18900	25RB#25	22.48	24.12	≤33.01	PASS
Band2	10MHz	QPSK	18900	50RB#0	22.69	24.33	≤33.01	PASS
Band2	10MHz	QPSK	19150	1RB#0	24.07	25.71	≤33.01	PASS
Band2	10MHz	QPSK	19150	1RB#24	23.74	25.38	≤33.01	PASS
Band2	10MHz	QPSK	19150	1RB#49	23.69	25.33	≤33.01	PASS
Band2	10MHz	QPSK	19150	25RB#0	22.26	23.90	≤33.01	PASS
Band2	10MHz	QPSK	19150	25RB#12	22.24	23.88	≤33.01	PASS
Band2	10MHz	QPSK	19150	25RB#25	22.45	24.09	≤33.01	PASS
Band2	10MHz	QPSK	19150	50RB#0	22.37	24.01	≤33.01	PASS
Band2	10MHz	16QAM	18650	1RB#0	21.59	23.23	≤33.01	PASS
Band2	10MHz	16QAM	18650	1RB#24	21.40	23.04	≤33.01	PASS
Band2	10MHz	16QAM	18650	1RB#49	21.58	23.22	≤33.01	PASS
Band2	10MHz	16QAM	18650	25RB#0	20.03	21.67	≤33.01	PASS
Band2	10MHz	16QAM	18650	25RB#12	20.04	21.68	≤33.01	PASS
Band2	10MHz	16QAM	18650	25RB#25	20.21	21.85	≤33.01	PASS
Band2	10MHz	16QAM	18900	1RB#0	23.12	24.76	≤33.01	PASS
Band2	10MHz	16QAM	18900	1RB#24	22.76	24.40	≤33.01	PASS
Band2	10MHz	16QAM	18900	1RB#49	22.65	24.29	≤33.01	PASS
Band2	10MHz	16QAM	18900	25RB#0	21.63	23.27	≤33.01	PASS
Band2	10MHz	16QAM	18900	25RB#12	21.64	23.28	≤33.01	PASS

Band2	10MHz	16QAM	18900	25RB#25	21.40	23.04	≤33.01	PASS
Band2	10MHz	16QAM	19150	1RB#0	22.38	24.02	≤33.01	PASS
Band2	10MHz	16QAM	19150	1RB#24	22.36	24.00	≤33.01	PASS
Band2	10MHz	16QAM	19150	1RB#49	22.26	23.9	≤33.01	PASS
Band2	10MHz	16QAM	19150	25RB#0	21.08	22.72	≤33.01	PASS
Band2	10MHz	16QAM	19150	25RB#12	21.14	22.78	≤33.01	PASS
Band2	10MHz	16QAM	19150	25RB#25	21.31	22.95	≤33.01	PASS
Band2	15MHz	QPSK	18675	1RB#0	22.54	24.18	≤33.01	PASS
Band2	15MHz	QPSK	18675	1RB#38	22.69	24.33	≤33.01	PASS
Band2	15MHz	QPSK	18675	1RB#74	23.36	25.00	≤33.01	PASS
Band2	15MHz	QPSK	18675	38RB#0	21.45	23.09	≤33.01	PASS
Band2	15MHz	QPSK	18675	38RB#18	21.42	23.06	≤33.01	PASS
Band2	15MHz	QPSK	18675	38RB#37	21.45	23.09	≤33.01	PASS
Band2	15MHz	QPSK	18675	75RB#0	21.45	23.09	≤33.01	PASS
Band2	15MHz	QPSK	18900	1RB#0	24.31	25.95	≤33.01	PASS
Band2	15MHz	QPSK	18900	1RB#38	23.81	25.45	≤33.01	PASS
Band2	15MHz	QPSK	18900	1RB#74	23.46	25.10	≤33.01	PASS
Band2	15MHz	QPSK	18900	38RB#0	22.66	24.30	≤33.01	PASS
Band2	15MHz	QPSK	18900	38RB#18	22.67	24.31	≤33.01	PASS
Band2	15MHz	QPSK	18900	38RB#37	22.68	24.32	≤33.01	PASS
Band2	15MHz	QPSK	18900	75RB#0	22.70	24.34	≤33.01	PASS
Band2	15MHz	QPSK	19125	1RB#0	23.46	25.10	≤33.01	PASS
Band2	15MHz	QPSK	19125	1RB#38	24.02	25.66	≤33.01	PASS
Band2	15MHz	QPSK	19125	1RB#74	23.54	25.18	≤33.01	PASS
Band2	15MHz	QPSK	19125	38RB#0	22.41	24.05	≤33.01	PASS
Band2	15MHz	QPSK	19125	38RB#18	22.33	23.97	≤33.01	PASS
Band2	15MHz	QPSK	19125	38RB#37	22.36	24.00	≤33.01	PASS
Band2	15MHz	QPSK	19125	75RB#0	22.52	24.16	≤33.01	PASS
Band2	15MHz	16QAM	18675	1RB#0	21.38	23.02	≤33.01	PASS
Band2	15MHz	16QAM	18675	1RB#38	21.56	23.20	≤33.01	PASS
Band2	15MHz	16QAM	18675	1RB#74	22.17	23.81	≤33.01	PASS
Band2	15MHz	16QAM	18675	38RB#0	21.44	23.08	≤33.01	PASS
Band2	15MHz	16QAM	18675	38RB#18	21.42	23.06	≤33.01	PASS
Band2	15MHz	16QAM	18675	38RB#37	21.43	23.07	≤33.01	PASS
Band2	15MHz	16QAM	18900	1RB#0	23.08	24.72	≤33.01	PASS
Band2	15MHz	16QAM	18900	1RB#38	22.77	24.41	≤33.01	PASS
Band2	15MHz	16QAM	18900	1RB#74	22.36	24.00	≤33.01	PASS
Band2	15MHz	16QAM	18900	38RB#0	22.68	24.32	≤33.01	PASS
Band2	15MHz	16QAM	18900	38RB#18	22.66	24.30	≤33.01	PASS
Band2	15MHz	16QAM	18900	38RB#37	22.67	24.31	≤33.01	PASS
Band2	15MHz	16QAM	19125	1RB#0	22.12	23.76	≤33.01	PASS
Band2	15MHz	16QAM	19125	1RB#38	22.70	24.34	≤33.01	PASS
Band2	15MHz	16QAM	19125	1RB#74	22.40	24.04	≤33.01	PASS
Band2	15MHz	16QAM	19125	38RB#0	22.39	24.03	≤33.01	PASS
Band2	15MHz	16QAM	19125	38RB#18	22.32	23.96	≤33.01	PASS
Band2	15MHz	16QAM	19125	38RB#37	22.36	24.00	≤33.01	PASS
Band2	20MHz	QPSK	18700	1RB#0	22.55	24.19	≤33.01	PASS
Band2	20MHz	QPSK	18700	1RB#49	22.84	24.48	≤33.01	PASS
Band2	20MHz	QPSK	18700	1RB#99	23.92	25.56	≤33.01	PASS
Band2	20MHz	QPSK	18700	50RB#0	21.30	22.94	≤33.01	PASS
Band2	20MHz	QPSK	18700	50RB#25	21.25	22.89	≤33.01	PASS
Band2	20MHz	QPSK	18700	50RB#50	22.06	23.70	≤33.01	PASS
Band2	20MHz	QPSK	18700	100RB#0	21.59	23.23	≤33.01	PASS
Band2	20MHz	QPSK	18900	1RB#0	24.19	25.83	≤33.01	PASS
Band2	20MHz	QPSK	18900	1RB#49	23.98	25.62	≤33.01	PASS
Band2	20MHz	QPSK	18900	1RB#99	23.24	24.88	≤33.01	PASS
Band2	20MHz	QPSK	18900	50RB#0	22.95	24.59	≤33.01	PASS

Band2	20MHz	QPSK	18900	50RB#25	22.92	24.56	≤33.01	PASS
Band2	20MHz	QPSK	18900	50RB#50	22.40	24.04	≤33.01	PASS
Band2	20MHz	QPSK	18900	100RB#0	22.56	24.20	≤33.01	PASS
Band2	20MHz	QPSK	19100	1RB#0	23.17	24.81	≤33.01	PASS
Band2	20MHz	QPSK	19100	1RB#49	23.89	25.53	≤33.01	PASS
Band2	20MHz	QPSK	19100	1RB#99	23.68	25.32	≤33.01	PASS
Band2	20MHz	QPSK	19100	50RB#0	21.88	23.52	≤33.01	PASS
Band2	20MHz	QPSK	19100	50RB#25	21.90	23.54	≤33.01	PASS
Band2	20MHz	QPSK	19100	50RB#50	22.44	24.08	≤33.01	PASS
Band2	20MHz	QPSK	19100	100RB#0	22.49	24.13	≤33.01	PASS
Band2	20MHz	16QAM	18700	1RB#0	21.20	22.84	≤33.01	PASS
Band2	20MHz	16QAM	18700	1RB#49	21.57	23.21	≤33.01	PASS
Band2	20MHz	16QAM	18700	1RB#99	22.59	24.23	≤33.01	PASS
Band2	20MHz	16QAM	18900	1RB#0	23.07	24.71	≤33.01	PASS
Band2	20MHz	16QAM	18900	1RB#49	22.67	24.31	≤33.01	PASS
Band2	20MHz	16QAM	18900	1RB#99	22.00	23.64	≤33.01	PASS
Band2	20MHz	16QAM	19100	1RB#0	22.01	23.65	≤33.01	PASS
Band2	20MHz	16QAM	19100	1RB#49	22.59	24.23	≤33.01	PASS
Band2	20MHz	16QAM	19100	1RB#99	22.49	24.13	≤33.01	PASS

----- The following blanks -----

6. PEAK-TO-AVERAGE RATIO

6.1 LIMIT

According to FCC section 24.232 (d), the peak to average ratio (PAR) of the transmission may not exceed 13dB.

6.2 TEST PROCEDURES

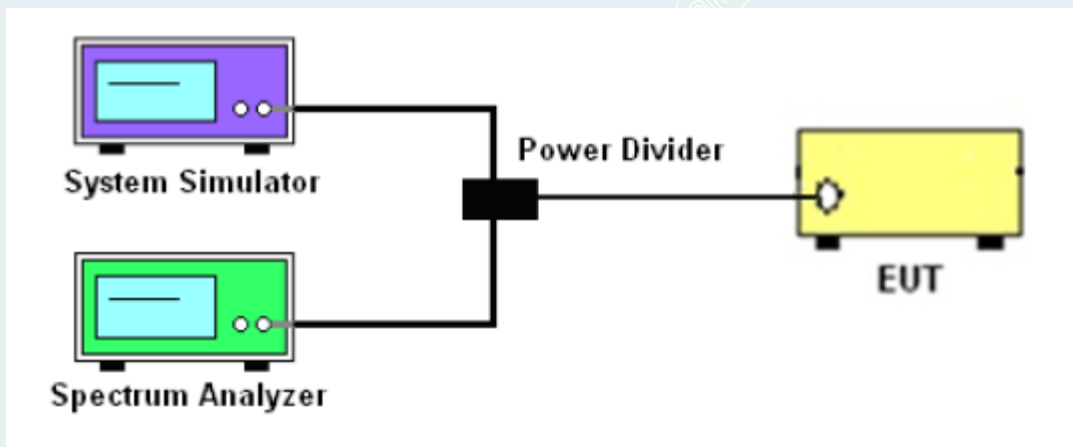
Measurement Procedure: FCC KDB 971168 D01 V03r01 Section 5.7.1

A peak to average ratio measurement is performed at the conducted port of the EUT. For WWAN signals, the spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level.

Test Settings

1. The signal analyzer's CCDF measurement profile is enabled
2. Frequency = carrier center frequency
3. Measurement BW > Emission bandwidth of signal
4. The signal analyzer was set to collect one million samples to generate the CCDF curve
5. The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms. For burst transmissions, the spectrum analyzer is set to use an internal "RF Burst" trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the "on time" of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power

6.3 TEST SETUP



6.4 TEST RESULTS

EUT Name	Pet Tracker	Model	M200d
Sample No.	E202403143863-0002	Test Mode	LTE
Power supply	DC 3.85V	Environmental Conditions	Temp:25.8℃;Humi:45%RH
Test Date	2024-03-27 to 2024-03-30	Test Site	/
Tested By	Zhu rongting	Reviewed by	Zhao Zetian

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band2	1.4MHz	QPSK	18607	1RB#0	8.68	≤13	PASS
Band2	1.4MHz	QPSK	18607	6RB#0	5.27	≤13	PASS
Band2	1.4MHz	QPSK	18900	1RB#0	3.29	≤13	PASS
Band2	1.4MHz	QPSK	18900	6RB#0	4.04	≤13	PASS
Band2	1.4MHz	QPSK	19193	1RB#0	5.39	≤13	PASS
Band2	1.4MHz	QPSK	19193	6RB#0	3.99	≤13	PASS
Band2	1.4MHz	16QAM	18607	1RB#0	5.43	≤13	PASS
Band2	1.4MHz	16QAM	18607	6RB#0	6.09	≤13	PASS
Band2	1.4MHz	16QAM	18900	1RB#0	4.34	≤13	PASS
Band2	1.4MHz	16QAM	18900	6RB#0	4.94	≤13	PASS
Band2	1.4MHz	16QAM	19193	1RB#0	4.15	≤13	PASS
Band2	1.4MHz	16QAM	19193	6RB#0	5.00	≤13	PASS
Band2	3MHz	QPSK	18615	1RB#0	4.63	≤13	PASS
Band2	3MHz	QPSK	18615	15RB#0	5.32	≤13	PASS
Band2	3MHz	QPSK	18900	1RB#0	3.10	≤13	PASS
Band2	3MHz	QPSK	18900	15RB#0	3.83	≤13	PASS
Band2	3MHz	QPSK	19185	1RB#0	3.90	≤13	PASS
Band2	3MHz	QPSK	19185	15RB#0	3.86	≤13	PASS
Band2	3MHz	16QAM	18615	1RB#0	5.80	≤13	PASS
Band2	3MHz	16QAM	18615	15RB#0	6.20	≤13	PASS
Band2	3MHz	16QAM	18900	1RB#0	4.05	≤13	PASS
Band2	3MHz	16QAM	18900	15RB#0	4.81	≤13	PASS
Band2	3MHz	16QAM	19185	1RB#0	3.91	≤13	PASS
Band2	3MHz	16QAM	19185	15RB#0	3.81	≤13	PASS
Band2	5MHz	QPSK	18625	1RB#0	4.59	≤13	PASS
Band2	5MHz	QPSK	18625	25RB#0	5.42	≤13	PASS
Band2	5MHz	QPSK	18900	1RB#0	3.26	≤13	PASS
Band2	5MHz	QPSK	18900	25RB#0	3.98	≤13	PASS
Band2	5MHz	QPSK	19175	1RB#0	3.01	≤13	PASS
Band2	5MHz	QPSK	19175	25RB#0	3.89	≤13	PASS
Band2	5MHz	16QAM	18625	1RB#0	5.48	≤13	PASS
Band2	5MHz	16QAM	18625	25RB#0	6.13	≤13	PASS
Band2	5MHz	16QAM	18900	1RB#0	4.09	≤13	PASS
Band2	5MHz	16QAM	18900	25RB#0	4.85	≤13	PASS
Band2	5MHz	16QAM	19175	1RB#0	4.24	≤13	PASS
Band2	5MHz	16QAM	19175	25RB#0	4.88	≤13	PASS
Band2	10MHz	QPSK	18650	1RB#0	4.53	≤13	PASS
Band2	10MHz	QPSK	18650	50RB#0	5.45	≤13	PASS
Band2	10MHz	QPSK	18900	1RB#0	3.70	≤13	PASS
Band2	10MHz	QPSK	18900	50RB#0	4.01	≤13	PASS
Band2	10MHz	QPSK	19150	1RB#0	3.90	≤13	PASS
Band2	10MHz	QPSK	19150	50RB#0	4.27	≤13	PASS
Band2	10MHz	16QAM	18650	1RB#0	5.45	≤13	PASS
Band2	10MHz	16QAM	18900	1RB#0	4.81	≤13	PASS
Band2	10MHz	16QAM	19150	1RB#0	5.15	≤13	PASS
Band2	15MHz	QPSK	18675	1RB#0	4.59	≤13	PASS

Band2	15MHz	QPSK	18675	75RB#0	5.80	≤13	PASS
Band2	15MHz	QPSK	18900	1RB#0	3.78	≤13	PASS
Band2	15MHz	QPSK	18900	75RB#0	4.54	≤13	PASS
Band2	15MHz	QPSK	19125	1RB#0	3.99	≤13	PASS
Band2	15MHz	QPSK	19125	75RB#0	4.83	≤13	PASS
Band2	15MHz	16QAM	18675	1RB#0	5.61	≤13	PASS
Band2	15MHz	16QAM	18900	1RB#0	4.83	≤13	PASS
Band2	15MHz	16QAM	19125	1RB#0	5.35	≤13	PASS
Band2	20MHz	QPSK	18700	1RB#0	4.48	≤13	PASS
Band2	20MHz	QPSK	18700	100RB#0	5.50	≤13	PASS
Band2	20MHz	QPSK	18900	1RB#0	3.97	≤13	PASS
Band2	20MHz	QPSK	18900	100RB#0	4.74	≤13	PASS
Band2	20MHz	QPSK	19100	1RB#0	3.74	≤13	PASS
Band2	20MHz	QPSK	19100	100RB#0	4.83	≤13	PASS
Band2	20MHz	16QAM	18700	1RB#0	5.71	≤13	PASS
Band2	20MHz	16QAM	18900	1RB#0	5.02	≤13	PASS
Band2	20MHz	16QAM	19100	1RB#0	5.00	≤13	PASS

----- The following blanks -----

