Prüfbericht-Nr.: *Test report No.:*	**50332228 001**	**Auftrags-Nr.:** *Order No.:*	168141149	Seite 1 von 17 *Page 1 of 17*
Kunden-Referenz-Nr.: *Client reference No.:*	N/A	**Auftragsdatum:** *Order date.:*	20.11.2019	
Auftraggeber: *Client:*	**Beijing AIQI Technology Co., LTD.** Room.D1204A, The 11th floor, Block D, No.9 Shangdi 3rd St., Haidian District, Beijing, 100085, China			
Prüfgegenstand: *Test item:*	ONEMARS Hexapod Battle Robot Remote Control			
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	OMC01AIQI			
Auftrags-Inhalt: *Order content:*	FCC approval			
Prüfgrundlage: *Test specification:*	CFR47 FCC Part 15: Subpart C Section 15.249 CFR47 FCC Part 15: Subpart C Section 15.209			

Wareneingangsdatum: *Date of receipt:*	29.11.2019
Prüfmuster-Nr.: *Test sample No.:*	A001024861-001 to 002
Prüfzeitraum: *Testing period:*	02.12.2019 - 13.12.2019
Ort der Prüfung: *Place of testing:*	TÜV Rheinland (Shenzhen) Co., Ltd.
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shenzhen) Co., Ltd.
Prüfergebnis*: *Test result*:*	Pass

Please refer to photo documents

geprüft von / *tested by:*

Datum *Date*	Name/Stellung *Name/Position*	Unterschrift *Signature*
23.03.2020	Jonathan Li / Project Manager	

kontrolliert von / *reviewed by:*

Datum *Date*	Name/Stellung *Name/Position*	Unterschrift *Signature*
23.03.2020	Winnie Hou / Technical Certifier	

Sonstiges / *Other:*

FCC ID: 2ALJ6-OMC01AIQI

Zustand des Prüfgegenstandes bei Anlieferung: *Condition of the test item at delivery:* Prüfmuster vollständig und unbeschädigt *Test item complete and undamaged:*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhalt
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
Legend:	1 = very good	2 = good	3 = satisfactory	4 = sufficient	5 = poor
	P(ass) = passed a.m. test specifications(s)		F(ail) = failed a.m. test specifications(s)	N/A = not applicable	N/T = not tested

Test Summary

5.1.1 ANTENNA REQUIREMENT
RESULT: Pass

5.1.2 FUNDAMENTAL & HARMONICS RADIATED EMISSION
RESULT: Pass

5.1.3 20DB BANDWIDTH
RESULT: Pass

5.1.4 RADIATED SPURIOUS EMISSION & BAND EDGE
RESULT: Pass

Contents

1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Photographs of the Test Set-up

Appendix B: Test Results of General 2.4GHz wireless

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.
No. 362 Huanguan Road Middle, Longhua District, Shenzhen 518110, People's Republic of China

FCC Registration No.: 694916

ISED wireless device testing laboratory: 25069

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

TÜV Rheinland (Shenzhen) Co., Ltd.

Radio Spectrum Testing (TS8997)					
Equip. No.	**Equipment**	**Manufacturer**	**Model**	**Serial No.**	**Cal. until**
1825795	Signal Analyzer	R&S	FSV 40	101441	20.08.2020
1825798	OSP	R&S	OSP 150	101017	17.12.2020
1825799	Control PC	DELL	OptiPlex 7050	FTJZ9P2	N/A
1825800	Test Software	R&S	WMS32 (V10.50.10)	N/A	N/A
1825801	Power Meter	R&S	NRP2	107105	17.12.2020
1825802	Wideband Power Sensor	R&S	NRP-Z81	105350	17.12.2020
1826431	Shielding Room 8#	Albatross	SR8	APC17151-SR8	23.07.2020
Unwanted Emission Testing (TS9975)					
Equip. No.	**Equipment**	**Manufacturer**	**Model**	**Serial No.**	**Cal. until**
1826021	EMI Test Receiver	R&S	ESR 7	102021	19.08.2020
1826023	Signal Analyzer	R&S	FSV 40	101439	21.08.2020
1826024	System Controller Interface	R&S	SCI-100	S10010038	N/A
1826025	Filterbank	R&S	Wlan	100759	21.08.2020
1826026	OSP	R&S	OSP 120	102040	N/A
1826028	Pre-amplifier	R&S	SCU08F1	08320031	20.08.2020
1826029	Amplifier	R&S	SCU-18F	180070	20.08.2020
1826030	Amplifier	R&S	SCU40A	100475	20.09.2020
1826031	Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	02.09.2020
1826032	Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218717	02.09.2020
1826033	Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	02.09.2020
1826034	Active Loop	Schwarzbeck	FMZB 1513	302	01.09.2020

	Antenna				
1826035	Wideband Ridged Horn Antenna (12-18 GHz)	Steatite	QMS-00208	18313	02.09.2020
1826036	Test software	R&S	EMC32 (V10.50.40)	N/A	N/A
1826037	Control PC	Dell	OptiPlex 7050	36NV9P2	N/A
1826433	3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151-SAC	06.07.2020

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basics using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

Parameter	Uncertainty
Radiated Emission of Transmitter, valid up to 26.5 GHz	±6 dB
Radiated Emission of Receiver, valid up to 26.5 GHz	±6 dB
Radiated Emission (3m SAC), 30MHz to 1000MHz	± 4.52 dB
Radiated Emission (3m SAC), above 1000MHz	± 4.37 dB
Temperature	±1 °C
Humidity	±5 %

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Guangdong) Ltd. file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at No. 362 Huanguan Road Middle, Longhua District, Shenzhen 518110, People's Republic of China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The EUT is ONEMARS Hexapod Battle Robot Remote Control operating 2.4GHz wireless technology.
The EUT is powered by DC 3V via non-rechargeable batteries.

For details, refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment	ONEMARS Hexapod Battle Robot Remote Control
Type Designation	OMC01AIQI
FCC ID	2ALJ6-OMC01AIQI
Operating Voltage	DC 3V via non-rechargeable batteries (1.5V*2)
Testing Voltage	Fully charged battery
Operating Frequency	2407.156MHz ~ 2475.156MHz
Type of Modulation	O/QPSK, DSS
Channel Number	27 channel
Antenna Type	Whip transparency antenna
Antenna number	1
Antenna Gain	-2 dBi Max

Table 3: RF Channel and Frequency

RF Channel	O/QPSK, DSS	RF Channel	O/QPSK, DSS	RF Channel	O/QPSK, DSS
	Frequency (MHz)		**Frequency (MHz)**		**Frequency (MHz)**
1	**2407.156**	10	2431.156	19	2459.156
2	2409.156	11	2433.156	20	2461.156
3	2411.156	12	2435.156	21	2463.156
4	2413.156	13	2437.156	22	2465.156
5	2415.156	14	2439.156	23	2467.156
6	2417.156	15	2441.156	24	2469.156
7	2419.156	16	2443.156	25	2471.156
8	2421.156	17	**2445.156**	26	2473.156
9	2423.156	18	2447.156	27	**2475.156**

3.3 Independent Operation Modes

The basic operation modes are:

A. On, General 2.4GHz wireless transmitting mode (Low / Middle / High channel)
B. On, Normal operation mode
C. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Application Form
- Operation Description
- ID Label and Location Info
- Schematics
- Block Diagram
- User Manual

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All tests were performed according to the procedures in ANSI C63.10: 2013.

According to clause 3.1, all tests were performed on model OMC01AIQI in this report.

4.3 Special Accessories and Auxiliary Equipment

N/A

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

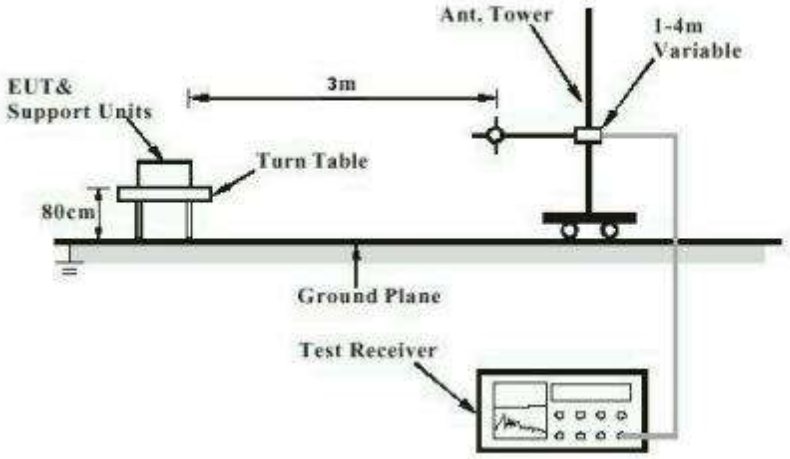


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

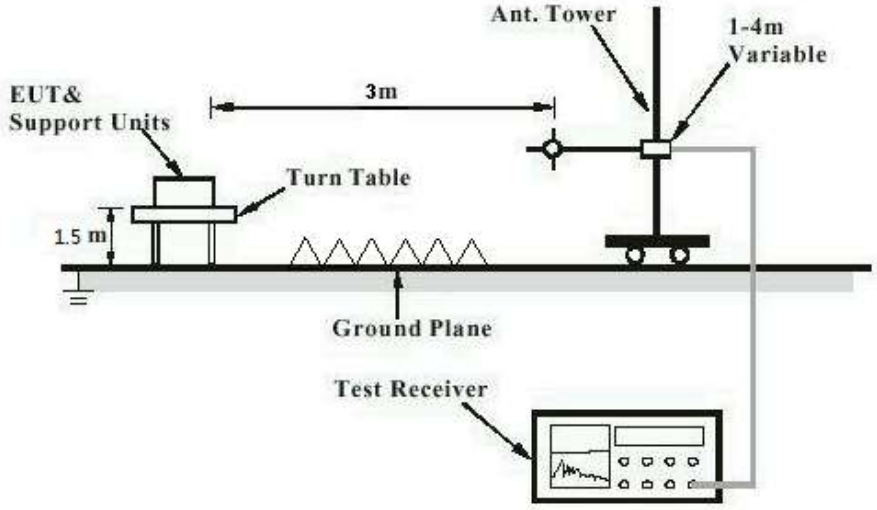
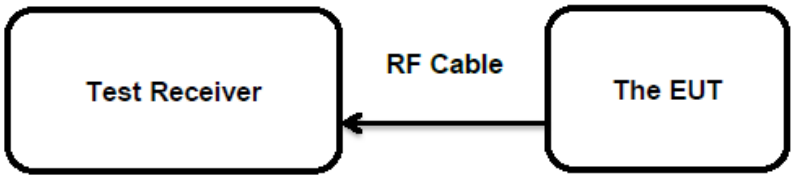


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT: **Pass**

Test Specification
Test standard : FCC Part 15.203

According to the manufacturer declared, the EUT has an internal antenna, the directional gain of antenna is -2 dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore, the EUT is considered sufficient to comply with the provision.

Therefore, the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

5.1.2 Fundamental & Harmonics Radiated Emission

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.249(a)
Basic standard	:	ANSI C63.10: 2013
Limits	:	Refer to FCC Part 15.209(a)
Kind of test site	:	3m Semi-anechoic Chamber

Test Setup

Date of testing	:	Refer to test result
Input voltage	:	Fully charged battery
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	24 ℃
Relative humidity	:	45 %
Atmospheric pressure	:	100 kPa

For the measurement records, refer to the appendix B.

5.1.3 20dB Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.215
Basic standard	:	ANSI C63.10: 2013
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	Refer to test result
Input voltage	:	Fully charged battery
Operation mode	:	A
Ambient temperature	:	24 ℃
Relative humidity	:	45 %
Atmospheric pressure	:	100 kPa

For the measurement records, refer to the appendix B.

5.1.4 Radiated Spurious Emission & Band Edge

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.249 (d) & FCC Part 15.205
Basic standard	:	ANSI C63.10: 2013
Limits	:	Refer to 15.209(a) of FCC part 15.249(d)
Kind of test site	:	3m Semi-anechoic Chamber

Test Setup

Date of testing	:	Refer to test result
Input voltage	:	Fully charged battery
Operation mode	:	A
Ambient temperature	:	24 ℃
Relative humidity	:	45 %
Atmospheric pressure	:	100 kPa

Remark:
Testing was carried out within frequency range 9kHz to the tenth harmonics. Only the worst case spurious emissions configuration of the each mode were reported.

For the measurement records, refer to the appendix B.

6 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix A.

7 List of Tables