

TEST REPORT

Applicant : Guangdong Weili Intelligent Development Co., Ltd.
Address : The south side of Laimei Rd. and the west side of Fengxin 2nd Rd.,
Fengxiang St., Chenghai Dist., Shantou, Guangdong, China
Manufacturer : Guangdong Weili Intelligent Development Co., Ltd.
Address : The south side of Laimei Rd. and the west side of Fengxin 2nd Rd.,
Fengxiang St., Chenghai Dist., Shantou, Guangdong, China
Product Name : Desktop Excavator
Model Number : 6402,6408,6402-C,6402-D,6403,6403-C,6403-D,6404,6404-C,6404-D,
.6408-C,6408-D,6409,6409-C,6409-D,6410,6411,6412,6413,6414,64
15,6416,6417,6418,6419,6420,6421,6422,6423,6424,6425
Trademark : N/A
Date of Receipt : Jul. 14, 2026
Test Date : Jul. 15, 2026 to Jul. 24, 2026
Date of Report : Jul. 30, 2026
Test Result : This device described above has been tested by BKC, and the test
results show that the equipment under test (EUT) is in compliance
with the Article 2 Paragraph 1 of Item 19 requirements. And it is
applicable only to the tested sample identified in the report.
Test Procedure Used:
Standards : Article 2 Paragraph 1 of Item 19
MIC Notice No.88 Appendix No.43

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1. General Information

1.1. Description of Device (EUT)

EUT Name : Desktop Excavator

Model No. : 6402,6408,6402-C,6402-D,6403,6403-C,6403-D,6404,6404-C,6404-D,6408-C,6408-D,6409,6409-C,6409-D,6410,6411,6412,6413,6414,6415,6416,6417,6418,6419,6420,6421,6422,6423,6424,6425

Model Difference : Only the model names are different. 6402 is the primary model under test for this evaluation.

Power supply : Rating(s): DC 3V(2*AA battery)

Operation frequency : 2.412-2.469GHz

Declared Power : 1mW

Modulation : GFSK

Antenna Type : Internal Antenna, Maximum Gain is 0.1dBi

Intend use environment : Residential, commercial and light industrial environment

Adapter Information : N/A

Hardware version : V1.0

Software version : V1.0

1.2. Channel List

2.4G mode

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
0	2412	1	2449	2	2469

1.3. Summary of test result

RF PART		
Test Items	Test Requirement	Result
Antenna Power	Article 2 Paragraph 1 of Item 19	PASS
Tolerances for Antenna Power	Article 2 Paragraph 1 of Item 19	PASS
Frequency Tolerance	Article 2 Paragraph 1 of Item 19	PASS
Transmission Rate	Article 2 Paragraph 1 of Item 19	N/A
Occupied Frequency Bandwidth	Article 2 Paragraph 1 of Item 19	PASS
Spread Bandwidth	Article 2 Paragraph 1 of Item 19	N/A
Process Gain	Article 2 Paragraph 1 of Item 19	N/A
Number of Carriers	Article 2 Paragraph 1 of Item 19	N/A
Dwell Time	Article 2 Paragraph 1 of Item 19	N/A
Spurious emission intensity	Article 2 Paragraph 1 of Item 19	PASS
Half-power beam width	Article 2 Paragraph 1 of Item 19	Note1

Carrier Sensing Function	Article 2 Paragraph 1 of Item 19	N/A ^{Note2}
Secondary Radiated Emissions	Article 2 Paragraph 1 of Item 19	PASS
Interference prevention function	Article 2 Paragraph 1 of Item 19	PASS
Remark: N/A is an abbreviation for Not Applicable. Note1: means the Max EIRP Power(-1.44dBm) is less than 12.14dBm, the test is not applicable. Note2: Application to transmitting devices which EIRP is less than (Antenna gain+ antenna power limit) and the shortage of EIRP is compensated by the antenna power. Not applicable to this product.		

1.4. Test mode

The special RF test software was used to control EUT work in Continuous TX mode, and select test channel, wireless mode, Normal Mode

ANT	Test mode	Low channel	Middle channel	High channel
ANT-1	GFSK(TX)	2412MHz	2449MHz	2469MHz
	GFSK(RX)	2412MHz	2449MHz	2469MHz
Note:				

1.5. Test Conditions

Supply Voltage			
	Input Voltage (Vac)	Voltage at the input of the RF Circuit (Vdc)	Tolerance (%)
Normal	3	3.3	
+10%	3.3	3.3	0
-10%	2.7	3.3	0
Others			
Temperature (° C)		22.5	
Relative humidity		51%	
ATM Pressure:		1019 mbar	
Note 1: When the input voltage is reduced or increased by 10%, the regulator voltage changes of less than 1%. So the following test items are conducted in the normal voltage.			

1.6. Measurement Uncertainty (95% confidence levels, k=2)

Item	MU	Remark
Uncertainty for radio frequency	1×10 ⁻⁹	
Uncertainty for conducted RF Power	0.65dB	
Uncertainty for temperature	0.6°C	
Uncertainty for humidity	1%	
Spurious emissions conducted	±0.21dB	
OBW	±0.20KHz	

1.7. Special Accessories and Auxiliary Equipment

Description	Manufacturer	Model No.	Hardware Version	Software Version
PC	HP	RYBD-14i01	/	/

1.8. Test Facility

Site Description	
Name of Firm	: Shenzhen BKC Testing Co., Ltd.
Site Location	: Room103, 1/F, Huaya Building, Huaya Industrial Park, Yousong Community, Longhua Subdistrict, Longhua District, Shenzhen, Guangdong, China

1.9. Test Equipment

Radiated Test Site(Below 1G and Above 1G)

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Antenna	Schwarzbeck	VULB 9168	01321	Mar. 20. 2025	Mar. 19. 2027
2	EMI Test Receiver	R&S	ESRP	101478	Mar. 11. 2026	Mar. 10. 2027
3	Preamplifier	HP	8447D	2727A05345	Mar. 11. 2026	Mar. 10. 2027
4	Double Ridged Broadband	SCHWARZBECK	BBHA 9120D	02621	Mar. 11. 2026	Mar. 19. 2028
5	Preamplifier	Schwarzbeck	BBV 9718D	00041	Mar. 11. 2026	Mar. 10. 2027
6	Rf cables	HUBER+SUHNER	8M-RE	N/A	Mar. 11. 2026	Mar. 10. 2027
7	Rf cables	HUBER+SUHNER	1.5M-RE	N/A	Mar. 11. 2026	Mar. 10. 2027
8	Rf cables	HUBER+SUHNER	1.5M-AP-RE	N/A	Mar. 11. 2026	Mar. 10. 2027
9	Loop antenna	ANRF	ANRF-6603	091802	Mar. 16. 2026	Mar. 15. 2027
10	Spectrum analyzer	R&S	FSP40	200061	Mar. 11. 2026	Mar. 10. 2027
11	Double Ridged Broadband Horn Antenna	COM-POWER	AH-1840	10100009	Mar. 11. 2026	Mar. 10. 2027
12	Spectrum	Agilent	N9020A	MY50510311	Mar. 11. 2026	Mar. 10. 2027
13	Band Stop Filter	Bafang	BSF5G	2024052610	Mar. 11. 2026	Mar. 10. 2027
14	RE Testing software	EZ	EZ-EMC	/	/	/

RF Test Site

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibration Date	Calibrated until
1	Spectrum	Agilent	N9020A	MY50510311	Mar. 11. 2026	Mar. 10. 2027

2	Vector source	Agilent	N5182A	MY47420223	Mar. 11. 2026	Mar. 10. 2027
3	All instrument	Rohde & Schwarz	CMW 500	101131	Mar. 11. 2026	Mar. 10. 2027
4	control unit	MW	MW100-RFCB	MW200411BK-34	Mar. 11. 2026	Mar. 10. 2027
5	RF Testing software	MW	MTS 8310	/	/	/
6	Spectrum analyzer	R&S	FSP40	200061	Mar. 11. 2026	Mar. 10. 2027

Note: The attenuator and power meter are already included in the control unit.

Antenna calibration: Shenzhen Academy of Metrology & Quality Inspection;

Other: Bay Area Metrology Services Co., Ltd;

Remark:

Calibration conducted in countries except Japan, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1).

Test software

Software name	RF Testing software
Software version	2.0.0.0
Software name	RE EMI Testing software
Software version	EMEC-03A2 RE+

Remark:

(a) Calibration conducted by the National Institute of Information and Communications Technology (NICT) in Japan (hereinafter referred to as "NICT") or a designated calibration agency under Article 102-18 paragraph (1) in JRL.

(b) Correction conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Act (Act No. 51 of 1992).

(c) Calibration conducted in countries except Japan, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1).

(d) Calibration, etc. conducted by using measuring instruments and other equipment listed in the right column of appended table No. 3, which shall have been given any type of calibration, etc. listed above from (a) to (c) From JRL Article 24-2, paragraph 4, Item 2

2. Frequency Tolerance

2.1. Limit

According to Radio Law of Japan item 19 of Article 2 Paragraph 1, Clause 3.2 (4), the Tolerance of frequency: $\pm 50 \times 10^{-6}$.

Limit
50ppm

2.2. Test Setup



2.3. Test Procedure

1. In the case of unmodulated signal (continuous or continuous burst), measure the frequency directly by a Spectrum.
2. Set RBW = 10 kHz.
3. Set the video bandwidth (VBW) = RBW.
4. SPAN=1MHz
5. Detector = Peak.
6. Trace mode = max hold.
7. Sweep = auto couple.

2.4. Test Result

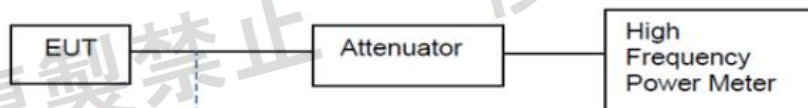
Please see the attachment for data.

3. Antenna Power Error Measurement

3.1. Limit

Item	Limits
Antenna Power Density	10mW
EIRP Power	12.14-22.14dBm
Antenna Power Error	+20% No lower limit

3.2. Test Setup



3.3. Test Procedure

- Connect the high frequency power meter to the attenuator and measure the total power.
- Set the antenna power as follows:
Continuous waves: • Use a fast power sensor suitable for 2.4 GHz and capable of minimum 1 MS/s.
Use the following settings:
 - Sample speed 1 MS/s or faster.
 - The samples shall represent the RMS power of the signal.

3.4. Test Result

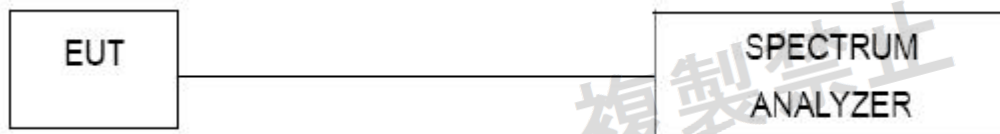
Please see the attachment for data.

4. Occupied Frequency Bandwidth(99%)

4.1. Limit

Item	Limits
Occupied Band Width(99%):	$\leq 26\text{MHz}$

4.2. Test Setup



4.3. Test Procedure

1. Setting of SA is following as: RB: 300KHz / VB:300KHz / SPAN: 3MHz / AT: 10dB Ref: 0dBm / Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold
2. EUT have transmitted the maximum modulation signal and fixed channelize (For DSSS or OFDM Device) or continuous maximum power of hopping mode(For FHSS Device). SA set to 99% of occupied bandwidth to measure occupied bandwidth. The limit is less than 26MHz(For DSSS, OFDM Device or Other Digital methods) or 83.5MHz(For FHSS Device).

4.4. Test Result

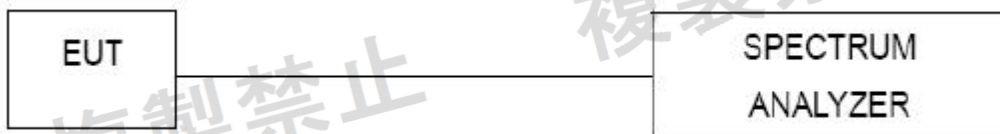
Please see the attachment for data.

5. Unwanted Emission Intensity Measurement

5.1. Limit

Item	Limit
TX Spurious Emission	30MHz - 2387MHz; 2.5 μ W/MHz or less
	2387MHz – 2400MHz; 25 μ W/MHz or less
	2483.5MHz – 2496.5MHz; 25 μ W/MHz or less
	2496.5MHz – 12.5GHz; 2.5 μ W/MHz or less

5.2. Test setup



5.3. Test Procedure

1. EUT have transmitted the maximum modulation signal and fixed channelize.
2. Setting of SA is following as: Below 1GHz RB:1MHz / VB:1MHz
Above 1GHz RB:1MHz / VB:1MHz / AT: 10dB Ref: 0dBm / Sweep time: Auto
Sweep Mode: Continuous sweep / Detect mode: Positive peak
Trace mode: Max hold
3. Setting of SA is following as 30MHz and stop frequency 1000MHz Then to mark peak reading value + cable loss shall be less than 0.25 μ W/MHz.
4. Setting of SA is following as 1000MHz and stop frequency 2387MHz Then to mark peak reading value + cable loss shall be less than 2.5 μ W/MHz.
5. SA adjusted to start frequency 2387MHz and stop frequency 2400MHz. Then to mark peak reading value + cable loss shall be less than 25 μ W/MHz.
6. SA adjusted to start frequency 2483.5MHz and stop frequency 2496.5MHz Then to mark peak reading value + cable loss shall be less than 25 μ W/MHz
7. SA adjusted to start frequency 2496.5MHz and stop frequency 12500MHz Then to mark peak reading value + cable loss shall be less than 2.5 μ W/MHz
8. If the Result_Value is over the requirement, take total sum of 1MHz band centered at the spur frequency like ACLP measurement as Result_Value.

5.4. Test Result

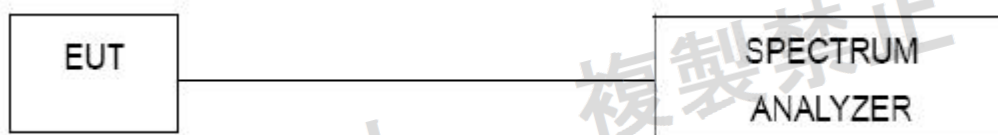
Please see the attachment for data.

6. Secondary Radiated Emissions

6.1. Limit

Item	Limit
RX Spurious Emission	$\leq 4 \text{ nW}$ (Below 1GHz)
	$\leq 20 \text{ nW}$ (Above 1GHz)

6.2. Test Setup



6.3. Test Procedure

1. EUT have the continuous reception mode and fixed only one channelize.
2. Setting of SA is following as RB / VB: 100 kHz (below 1GHz emissions) / 1 MHz (above 1GHz emissions) / AT: 10dB / Ref: 0dBm / Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold
3. SA set RB: 100kHz and VB: 100kHz. Then adjust to start frequency 30MHz and stop frequency 1000MHz. Search to mark peak reading value + cable loss shall be less than 4nW
4. SA set RB: 1MHz and VB: 1MHz. Then adjust to start frequency 1000MHz and stop frequency 12500MHz. Search to mark peak reading value + cable loss shall be less than 20nW
5. If power level of lower emissions are more than 1/10 of limit (.0.4nW for $f < 1\text{GHz}$, 2nW for $f \geq 1\text{GHz}$), all those are to be indicated in the 2nd and 3rd lines. If others are 1/10 or less more of the limit, no necessary to be indicated.

6.4. Test Result

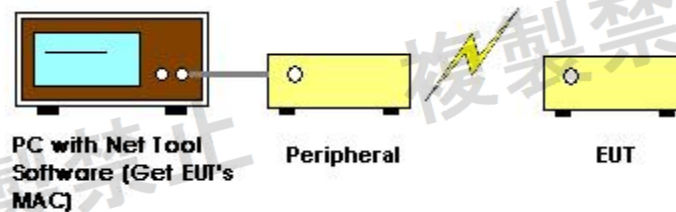
Please see the attachment for data.

7. Interference prevention function

7.1. Limit

Item	Limits
Identification code	≥ 48 bits

7.2. Test Setup



7.3. Test Procedure

- In the case that the EUT has the function of automatically transmitting the identification code: a. Transmit the predetermined identification codes from EUT. b. Check the transmitted identification codes with the demodulator.
- In the case of receiving the identification code: a. Transmit the predetermined identification codes from the counterpart. b. Check if communication is normal. c. Transmit the signals other than predetermined ID codes from the counterpart. d. Check if the EUT stops the transmission, or if it displays that identification codes are different from the predetermined ones.

7.4. Test Result

The detected ID of the device is below:

19:FB:12:F8:15:D9

Test result: The device meet the requirements
PASS

8. Test Photographs

Reference to EUT photo attachment for details.

9. Appendix I: Photos of the EUT

Reference to EUT photo attachment for details.

***** END OF REPORT *****