	TEST REPOR	Т	
FCC ID :	OKUBS2909		
Test Report No:	TCT231016E010		
Date of issue:	Mar. 18, 2024		
Testing laboratory:	SHENZHEN TONGCE TESTING	G LAB	
Testing location/ address:	2101 & 2201, Zhenchang Factor Fuhai Subdistrict, Bao'an Distric 518103, People's Republic of Cl	t, Shenzhen, Guangd	
Applicant's name: :	Shenzhen Junlan Electronic Ltd		
Address:	No.277 PingKui Road, Shijing C Pingshan New District, Shenzhe		Street,
Manufacturer's name :	Shenzhen Junlan Electronic Ltd		
Address:	No.277 PingKui Road, Shijing Community, Pingshan Street, Pingshan New District, Shenzhen, China		
Standard(s):	FCC CFR Title 47 Part 15 Subp	art C Section 15.231	
Product Name::	Key Finder	KO)	$\langle \mathcal{O} \rangle$
Trade Mark:	amazon basics		
Model/Type reference :	TTIF06A, BS-2909, B0CDLQ7Z can be replaced by letter from "/ blank.)		· ·
Rating(s):	DC 3V		
Date of receipt of test item	Oct. 16, 2023	(C)	
Date (s) of performance of test:	Oct. 16, 2023 - Mar. 18, 2024		
Tested by (+signature) :	Ronaldo LUO	Ronaldz Guaser	
Check by (+signature) :	Beryl ZHAO	Boyle PCT	STING
Approved by (+signature):	Tomsin	Jomsin's 84	
TONGCE TESTING LAB. Th	oduced except in full, without the his document may be altered or i ly, and shall be noted in the revis apply to the tested sample.	revised by SHENZHE	N TONGCE

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1. General Product Information

1.1. EUT description

Product Name:	Key Finder		
Model/Type reference:	TTIF06A		
Sample Number	TCT231016E010-0101		
Operation Frequency:	433.92MHz		
Modulation Technology:	FSK		
Antenna Type:	FPC Antenna	(\mathbf{c}^{*})	
Antenna Gain:	-4.06dBi		
Rating(s):	DC 3V		

Report No.: TCT231016E010

Note: The antenna gain listed in this report is provided by applicant, and the test laboratory is not responsible for this parameter.

1.2. Model(s) list

No.		N	lodel No.		Test	ed with
1		-	TTIF06A			\boxtimes
Other mo		DLQ7ZL4, T tter from "A				
		models are de el names. So				
						S
					Page	e 3 of 31



2. Test Result Summary

Requirement	CFR 47 Section	Result
Antenna Requirement	§15.203/§15.247 (c)	PASS
Conduction Emission, 0.15MHz to 30MHz	§15.207	N/A
Manually Activated Transmitter	§15.231(a)	PASS
Radiation Emission	§15.231(b), §15.205, §15.209, §15.35	PASS
Occupied Bandwidth	§15.231(c)	PASS

Note:

- 1. PASS: Test item meets the requirement.
- 2. Fail: Test item does not meet the requirement.
- 3. N/A: Test case does not apply to the test object.
- 4. The test result judgment is decided by the limit of test standard.

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3. General Information

3.1. Test Environment and Mode

Condition	Radiated Emiss	sion	
Temperature:	24.4 °C		
Humidity:	51 % RH	KO I	le la
Test Mode:			
Operation mode:	Keep the EUT i	n continuous transr	mitting with modulation
The sample was placed (0 plane of 3m chamber. Mea performed. During the test continuously working, inves Z) and considered typical of interconnecting cables, rot	asurements in both t, each emission wa estigated all operati configuration to ob tating the turntable	n horizontal and vert as maximized by: h ing modes, rotated a otain worst position,	tical polarities were aving the EUT about all 3 axis (X, Y & manipulating eight from 1m to 4m in

We have verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:

Ax	S	Х	Y	Z
Field Strengt	h(dBuV/m)	52.47	55.31	52.59
(\mathcal{O})	(¿G`)	(xG))	(KC) ((0))

Final Test Mode:

According to ANSI C63.10 standards, the test results are both the "worst case" and "worst setup": Y axis (see the test setup photo)

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3.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
1	1	1	1	

Note:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4. Facilities and Accreditations

4.1. Facilities

The test facility is recognized, certified, or accredited by the following organizations:

• FCC - Registration No.: 645098

SHENZHEN TONGCE TESTING LAB.

Designation Number: CN1205

The testing lab has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

- IC Registration No.: 10668A-1
 - SHENZHEN TONGCE TESTING LAB
 - CAB identifier: CN0031

The testing lab has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

4.2. Location

SHENZHEN TONGCE TESTING LAB

Address: 2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China TEL: +86-755-27673339

4.3. Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

No.	Item	MU
1	Conducted Emission	± 3.10 dB
2	RF power, conducted	± 0.12 dB
3	Spurious emissions, conducted	± 0.11 dB
4	All emissions, radiated(<1 GHz)	± 4.56 dB
5	All emissions, radiated(1 GHz - 18 GHz)	± 4.22 dB
6	All emissions, radiated(18 GHz- 40 GHz)	± 4.36 dB
7	Temperature	± 0.1°C
8	Humidity	± 1.0%



5. Test Results and Measurement Data

5.1. Antenna Requirement

Standard requirement: FCC Part15 C Se

FCC Part15 C Section 15.203 /247(c)

15.203 requirement:

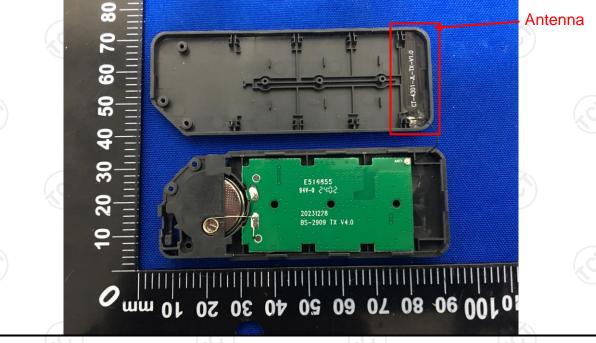
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(c) (1)(i) requirement:

(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

E.U.T Antenna:

The antenna is FPC antenna which permanently attached, and the best case gain of the antenna is -4.06dBi.





5.2. Conducted Emission

5.2.1. Test Specification

Test Requirement:	FCC Part15 C Section	15.207				
Test Method:	ANSI C63.4:2014	ANSI C63.4:2014				
Frequency Range:	150 kHz to 30 MHz	150 kHz to 30 MHz				
Receiver setup:	RBW=9 kHz, VBW=30	RBW=9 kHz, VBW=30 kHz, Sweep time=auto				
Limits:	Frequency range (MHz) 0.15-0.5 0.5-5 5-30	Limit (Quasi-peak 66 to 56* 56 60	dBuV) Average 56 to 46* 46 50			
	Reference	<u>.</u> (1)	661			
Test Setup:	E.U.T AC powe Test table/Insulation plane Remark E.U.T: Equipment Under Test LISN: Line Impedence Stabilization Na Test table height=0.8m	EMI Receiver	- AC power			
Test Mode:	Transmitting Mode					
	 The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to 					
Test Procedure:	 2. The peripheral device power through a LI coupling impedance refer to the block photographs). 3. Both sides of A.C. conducted interference mission, the relative 	ces are also conne ISN that provides with 50ohm tern diagram of the line are checkence. In order to fin e positions of equ s must be chang	ected to the main a 50ohm/50uh nination. (Please test setup and ed for maximun nd the maximun ipment and all c red according to			

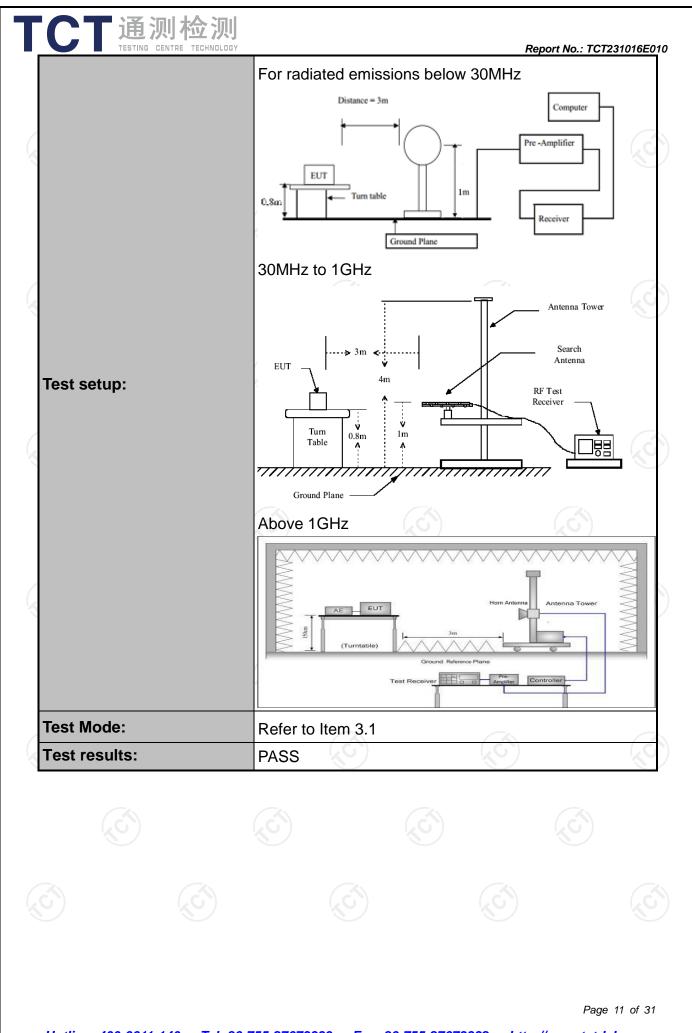
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5.3. Radiated Emission Measurement

5.3.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.231(a) and 15.209				
Test Method:	ANSI C63.4: 2014 and ANSI C63.10:2013				
Frequency Range:	9 kHz to 5 G	Hz	Ž)		
Measurement Distance:	3 m	N.)		S.
Antenna Polarization:	Horizontal &	Vertical			
	Frequency	Detector	RBW	VBW	Remark
	9kHz- 150kHz	Quasi-peak	200Hz	1kHz	Quasi-peak Value
Receiver Setup:	150kHz- 30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak Valu
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Valu
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		Peak	1MHz	10Hz	Average Value
Test Procedure:	1GHz. T determine 2. The EU interferen on the top 3. The anten meters at value of vertical p the meas 4. For each s to its wor heights fr table was find the m 5. The test- Function Hold Moc 6. If the emi 10dB lowe be stopped reported. 0	he table the position T was succe-receiving the of a varian of a varian the field olarizations urement. Suspected of the field olarizations urement. Suspected of the start of the table of table of table table of table of table table of table of table of table of table table of table of table of table of table of table of table table of table of t	was rot on of the et 3 m ig anteni ble-heigh is varied ound to o strength s of the a emission d then th er to 4 m om 0 deg eading. ystem w ified Bai of the E limit spec beak valu the emis be re-te average r	tated 36 highest eters a na, which from on determin antenna a , the EU e antenna , the EU e antenna reters ar grees to as set t ndwidth EUT in p cified, the sions the sted one method a	way from th h was mounte



5.3.2. Limit

Fundamental Frequency (MHz)	Filed Strength of Fundamental (microvolts/meter)	Filed Strength of Spurious Emission (microvolts/meter)
40.66-40.70	2250	225
70-130	1250	125
130-174	1250 to 3750*	125 to 375*
174-260	3750	375
260-470	3750 to 12500*	375 to 1250*
Above 470	12500	1250
Horn Antenna	Schwarzbeck	BBHA 9120D
*Linear interpolations		

[Where F is the frequency in MHz, the formulas for calculating the maximum permitted fundamental field strengths are as follows:

For the band 130-174 MHz, $\mu V/m$ at 3 meters = 56.81818(F) - 6136.3636;

for the band 260-470 MHz, μ V/m at 3 meters = 41.6667(F) - 7083.3333. The maximum permitted unwanted emission level is 20 dB below the maximum permitted fundamental level.

For EUT

	Fundamental Frequency							
Fundamental Frequency (MHz)					Filed Strength of Spurious Emission(dBµV/n			
	433.92		80.83			60.83		
limits or measur 2.Accordir on mea bandwid maximu 3. Accordir on the f average	onal radiators operating in the field strength of e red emissions. Ing to 15.35, on any free suring equipment emp dths, unless otherwise im permitted average e ing to 15.231(b), The li fundamental frequency e (or, alternatively, CISI of 15.209, whichever lim	emissions, as quency or frec oloying a CISF specified the emission limit imits on the fic of the intention PR quasi-pea	shown in the above quencies below or PR quasi-peak det limit on peak radi applicable to the eld strength of the onal radiator. Spu k) limits shown in	ve table, based of equal to 1000 M ector function an o frequency emi equipment unde spurious emissions this table or to t	on the aver IHz, the lim nd related r issions is 20 r test. ions in the shall be att	rage value of nits Shown ar measuremen 0dB above th above table i tenuated to ti	the re based t ne is based he	

Frequencies in restricted band are complied to limit on Paragraph 15.209

Frequency Range (MHz)	Distance (m)	Field strength (dB μ V/m)
0.009-0.490	3	20log 2400/F (kHz) + 80
0.490-1.705	3	20log 24000/F (kHz) + 40
1.705-30	3	20log 30 + 40
30-88	3 (0	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

Note:

1. RF Voltage (dBuV) = 20 log RF Voltage (uV)

2. In the Above Table, the tighter limit applies at the band edges.

3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT

4. The radiated emissions should be tested under 3-axes position (Lying, Side, and Stand), After pre-test. It was found that the worse radiated emission was get at the lying position.

5. If measurement is made at 3m distance, then F.S Limitation at 3m distance is adjusted by using the formula Ld1 = Ld2 * (d2/d1)

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5.3.3. Test Instruments

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Radiated Emission Test Site (966)								
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due				
EMI Test Receiver	R&S	ESIB7	100197	Jun. 29, 2024				
Spectrum Analyzer	R&S	FSV40-N	102188	Jan. 31, 2025				
Pre-amplifier	SKET	LNPA_0118G- 45	SK2021012 102	Jan. 31, 2025				
Pre-amplifier	SKET	LNPA_1840G- 50	SK2021092 03500	Jan. 31, 2025				
Pre-amplifier	HP	8447D	2727A05017	Jun. 27, 2024				
Loop antenna	Schwarzbeck	FMZB1519B	00191	Jul. 02, 2024				
Broadband Antenna	Schwarzbeck	VULB9163	340	Jul. 01, 2024				
Horn Antenna	Antenna Schwarzbeck		631	Jul. 01, 2024				
Horn Antenna	Schwarzbeck	BBHA 9170	00956	Feb. 02, 2025				
Coaxial cable	SKET	RC-18G-N-M) /	Jan. 31, 2025				
Coaxial cable	SKET	RC_40G-K-M	1	Jan. 31, 2025				
EMI Test Software	Shurple Technology	EZ-EMC		1				

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Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

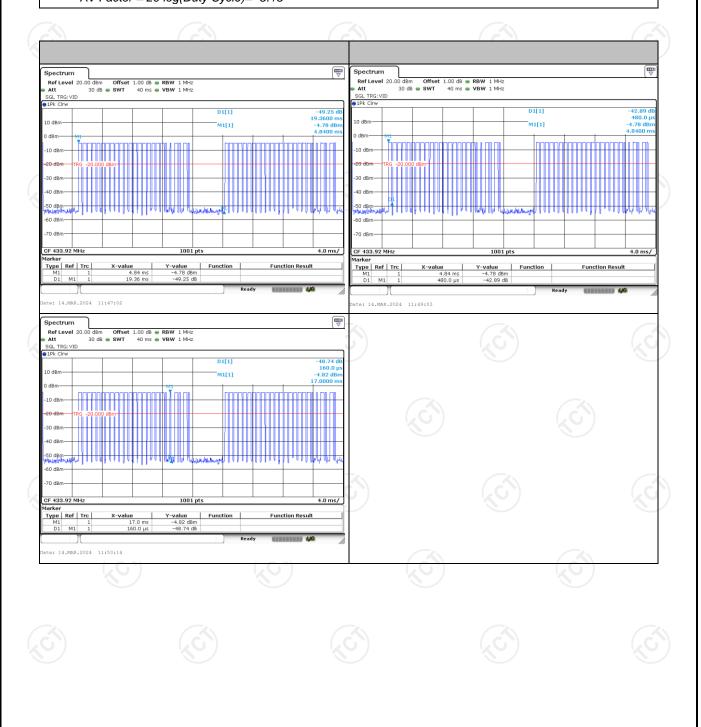
5.3.4. Test Data

Duty Cycle Test Data:

433.92MHz:

Total time(ms)	Effective time(ms)	Duty Cycle	AV Factor(dB)					
19.36	10.72	0.5537	-5.13					
Note: Effective time= 0.48*21+0.16*4=10.72ms								

Duty Cycle= Effective time/ Total time= 0.5537AV Factor = $20 \log(Duty Cycle) = -5.13$



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Frequency (MHz)	Emission PK (dBuV/m)	Horizontal /Vertical	Limits PK (dBuV/m)	Margin (dB)
433.92	79.20	М	100.83	-21.63
433.92	68.07	V	100.83	-32.76

Frequency (MHz)	Emission PK (dBuV/m)	AV Factor(dB)	Horizontal /Vertical	Emission AVG (dBuV/m)	Limits AV (dBuV/m)	Margin (dB)
433.92	79.20	-5.13	ЮН	74.07	80.83	-6.76
433.92	68.07	-5.13	V	62.94	80.83	-17.89

Harmonics and Spurious Emissions

Frequency Range (9 kHz-30MHz)

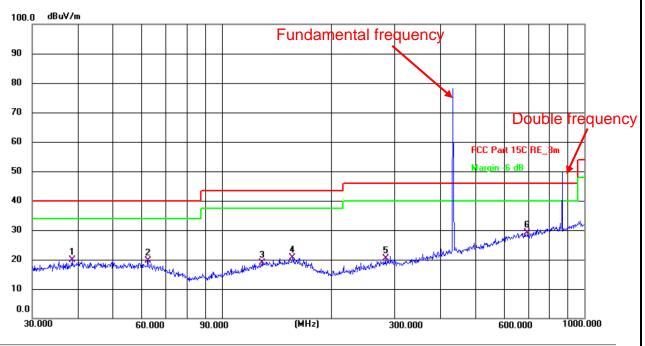
Frequency (MHz)	Level@3m (dBµV/m)	Limit@3m (dBµV/m)								
	(ku)	(c) (c)								
	(A)									
Note: 1 Emission Level-Reading+ C	Note: 1 Emission Level-Reading+ Cable loss-Antenna factor-Amn factor									

Note: 1. Emission Level=Reading+ Cable loss-Antenna factor-Amp factor

2. The emission levels are 20 dB below the limit value, which are not reported. It is deemed to comply with the requirement

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Below 1GHz



Site #2 3m Anechoic Chamber Polarization: Horizontal Temperature: 24.8(C) Humidity: 52 %

Limit: FCC Part 15C RE_3m

Power: DC 3 V

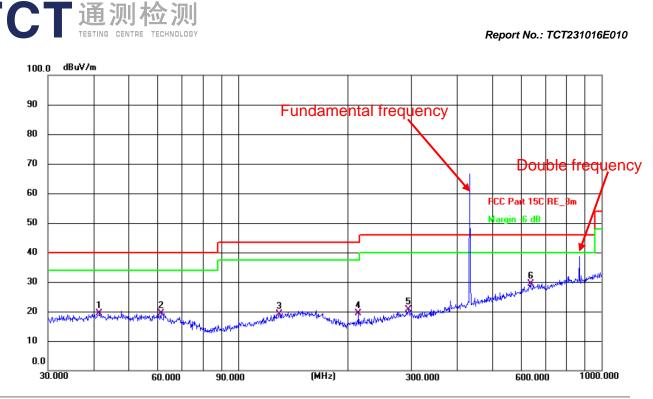
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	38.6160	6.07	13.93	20.00	40.00	-20.00	QP	Р	
2	62.6505	6.28	13.26	19.54	40.00	-20.46	QP	Р	
3	129.0144	5.22	13.69	18.91	43.50	-24.59	QP	Р	
4	156.4576	5.40	15.19	20.59	43.50	-22.91	QP	Р	
5	282.9849	5.87	14.40	20.27	46.00	-25.73	QP	Р	
6 *	696.8567	6.33	22.84	29.17	46.00	-16.83	QP	Р	

Note:

The limit value of the fundamental frequency is 100.83dBuV/m. The limit value for second harmonic generation is 60.83dBuV/m, please refer to the Harmonics Spurious Emissions as follow.



Report No.: TCT231016E010



 Site #2 3m Anechoic Chamber
 Polarization:
 Vertical
 Temperature: 24.8(C)
 Humidity: 52 %

Limit: FCC Part 15C RE_3m

Power: DC 3 V

Linu. I	CC Fait IJC N			l ower.				1.45.3		
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark	
1	41.5670	5.28	14.01	19.29	40.00	-20.71	QP	Р		
2	61.3462	6.00	13.32	19.32	40.00	-20.68	QP	Ρ		
3	129.9225	5.39	13.78	19.17	43.50	-24.33	QP	Р		
4	214.5141	8.05	11.34	19.39	43.50	-24.11	QP	Ρ		
5	294.1136	6.10	14.53	20.63	46.00	-25.37	QP	Р		
6 *	638.3686	6.84	22.60	29.44	46.00	-16.56	QP	Ρ		
			/			7				

Note:

The limit value of the fundamental frequency is 100.83dBuV/m. The limit value for second harmonic generation is 60.83dBuV/m.

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Above 1GHz (PK value)

Frequency PK Value (MHz)	Read Level PK (dBuV)	Correction Factor (dB/m)	Level PK (dBuV/m)	Limit Line PK (dBuV/m)	Over Limit (dB)	Polarization
867.84	18.66	23.98	42.64	60.83	-18.19	Vertical
1301.76	64.42	-18.59	45.83	80.83	-35.00	Vertical
1735.68	55.12	-18.14	36.98	80.83	-43.85	Vertical
2169.60	53.92	-17.61	36.31	80.83	-44.52	Vertical
2603.52	50.45	-16.45	34.00	80.83	-46.83	Vertical
3037.44 🚫	49.40	-14.84	34.56	80.83	-46.27	Vertical
3471.36	47.29	-14.17	33.12	80.83	-47.71	Vertical
867.84	24.61	23.98	48.59	60.83	-12.24	Horizontal
1301.76	61.39	-18.59	42.80	80.83	-38.03	Horizontal
1735.68	57.72	-18.14	39.58	80.83	-41.25	Horizontal
2169.60	56.03	-17.61	38.42	80.83	-42.41	Horizontal
2603.52	55.72	-16.45	39.27	80.83	-41.56	Horizontal
3037.44	54.90	-14.84	40.06	80.83	-40.77	Horizontal
3471.36	52.98	-14.17	38.81	80.83	-42.02	K Horizontal

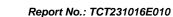
Note:

1. Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss - Pre-amplifier

- 2. Margin (dB) = Emission Level (dB μ V/m)- limit (dB μ V/m)
- 3. The emission levels of other frequencies are very lower than the limit and not show in test report.
- 4. Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency.

5. Data of measurement shown " * " in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.

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5.4. Manually Activated Transmitter

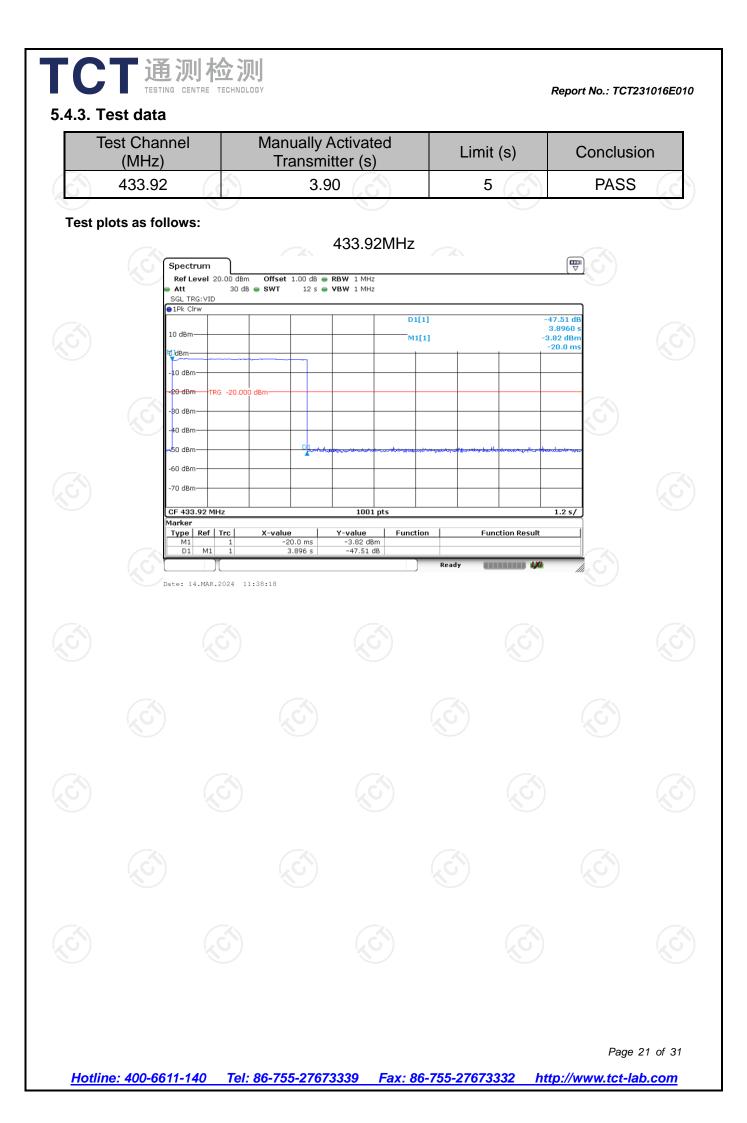
5.4.1. Test Specification

Test Requirement:	FCC Part15 C Section	15.231(a)(1)				
Test Method:	ANSI C63.10: 2013					
Limit:	shall employ a switch	, A manually operated transmitter that will automatically deactivate ot more than 5 seconds of being				
Test Procedure:	 According to the follow Test-setup, keep the reposition between the artificial antenna and the Set to the maximum power setting and enable EUT transmit continuously. Use the following spectrum analyzer settings. VBW = 1MHz, VBW≥RBW; Span = 0; Sweep Time > T(on)+5S; Detector function = peak; 					
Test setup:	Spectrum Analyzer					
Test Mode:	Refer to Item 3.1					
Test results:	PASS					

5.4.2. Test Instruments

5.	4.2. Test instrument	.5					
		RI	F Test Room	I			
	Equipment	Manufacturer	Model	Serial Number	Calibration Due		
	Spectrum Analyzer	R&S	FSV40-N	102188	Jan. 31, 2025		





5.5. Occupied Bandwidth

5.5.1. Test Specification

Test Requirement:	FCC Part15 C Section	15.231C	ć		
Test Method:	ANSI C63.10: 2013	ANSI C63.10: 2013			
Limit:	According to 15.231(c), The bandwidth of the emission shall be no wider than 0.25% of the centre frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the centre frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.				
Test Procedure:	position between the 2. Set to the maximum EUT transmit contin 3. Use the following 20dB Bandwidth me Span = 100 KHz, or RBW =1 KHz; VBW function = peak; Tra	 According to the follow Test-setup, keep the relat position between the artificial antenna and the EU Set to the maximum power setting and enable to EUT transmit continuously. Use the following spectrum analyzer settings 20dB Bandwidth measurement. Span = 100 KHz, centered on a hopping chann RBW =1 KHz; VBW=3 KHz; Sweep = auto; Detect function = peak; Trace = max hold. Measure and record the results in the test report. 			
Test setup:		EUT	Ē		
Test Mode:	Refer to Item 3.1				
Test results:	PASS				

5.5.2. Test Instruments

S	RF Test Room						
	Equipment	Manufacturer	Model	Serial Number	Calibration Due		
	Spectrum Analyzer	R&S	FSV40-N	102188	Jan. 31, 2025		



