



RADIO TEST REPORT

EN 303 345-1 V1.1.1 (2019-06)

(Draft) EN 303 345-3 V1.1.0 (2019-11)

Product : Smartphone

Trade Mark : CUBOT

Model Number : KINGKONG 5

Family Model : N/A

Report No. : S21042201103007

Prepared for

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Prepared by

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TEST RESULT CERTIFICATION

Applicant's name Shenzhen Huafurui Technology Co., Ltd.
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Product description

Product name Smartphone
Trademark CUBOT
Model and/or type reference KINGKONG 5
Family Model N/A

Standards EN 303 345-1 V1.1.1 (2019-06)

(Draft) EN 303 345-3 V1.1.0 (2019-11)

This device described above has been tested by Shenzhen NTEK, and the test results show that the equipment under test (EUT) is in compliance with the 2014/53/EU RED Directive Art.3.2 requirements. And it is applicable only to the tested sample identified in the report.

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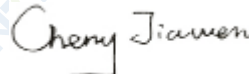
Date of Test

Date (s) of performance of tests Apr 22, 2021 ~May 19, 2021

Date of Issue May 19, 2021

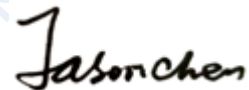
Test Result **Pass**

Testing Engineer :



(Cheng Jiawen)

Technical Manager :



(Jason Chen)

Authorized Signatory :



(Alex Li)

Table of Contents

Page

1 . GENERAL INFORMATION	5
1.1 GENERAL DESCRIPTION OF EUT	5
1.2 TEST CONDITIONS AND CHANNEL	6
1.3 DESCRIPTION OF TEST CONDITIONS	7
1.4 DESCRIPTION OF SUPPORT UNITS	8
1.5 EQUIPMENTS LIST FOR ALL TEST ITEMS	9
2 . SUMMARY OF TEST RESULTS	10
2.1 TEST FACILITY	11
2.2 MEASUREMENT UNCERTAINTY	11
3 . TEST PROCEDURES AND RESULTLS	12
3.1 SENSITIVITY	12
3.1.1 LIMITS	12
3.1.2 TEST PROCEDURE	12
3.1.3 TEST SETUP	13
3.1.4 TEST SIGNALS	13
3.1.5 TEST RESULTS	13
3.2 . ADJACENT CHANNEL SELECTIVITY AND BLOCKING	14
3.2.1 LIMITS	14
3.2.2 TEST PROCEDURE	15
3.2.3 TEST SETUP	15
3.2.4 TEST SIGNALS	15
3.2.5 TEST RESULTS	16
4 . EUT TEST PHOTO	17

Revision History

Report No.	Version	Description	Issued Date
S21042201103007	Rev.01	Initial issue of report	May 19, 2021

1. GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF EUT

Equipment	Smartphone	
Trade Mark	CUBOT	
Model Number.	KINGKONG 5	
Family Model	N/A	
Model Difference	N/A	
Product Description	The EUT is Smartphone	
	Operation Frequency:	FM: 87.5 MHz to 108 MHz
	Modulation Type:	FM: Analog modulation
	Number Of Channel	Please see Note 2.
	Antenna Designation:	Use earphone as Antenna
Channel List	Refer to below	
Adapter	Model: HJ-0502000W2-EU Input: AC 100-240V~50/60Hz 0.3A Output: DC 5V ---2.0A 10.0W	
Battery type&specification	DC 3.85V, 5000mAh, 19.25Wh	
Rating	DC 3.85V from battery or DC 5V from Adapter.	
I/O Ports	Refer to users manual	
Hardware Version	TE826_MAIN_PCB_V1.1	
Software Version	CUBOT_KINGKONG 5_B023C_V02_20210513	

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

1.2 TEST CONDITIONS AND CHANNEL

	Normal Test Conditions
Temperature	15°C - 35°C
Relative Humidity	20% - 75%
Supply Voltage	DC 5V

Number Of Channel

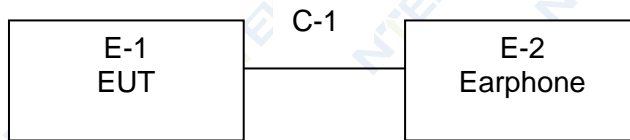
Channel	Frequency (MHz)
01	87.5
02	87.6
k	$87.5+0.1(k-1)$
106	98.0
.....	...
.....
205	107.9
206	108.0

Test Channel	EUT Channel	Test Frequency (MHz)
Middle	CH106	98.0

Note:

(1) The measurements are performed at the highest, middle, lowest available channels.

1.3 DESCRIPTION OF TEST CONDITIONS



1.4 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.

Item	Equipment	Model/Type No.	Series No.	Note
E-1	Smartphone	KINGKONG 5	N/A	EUT
E-2	Earphone	N/A	N/A	Peripherals

Item	Type	Shielded Type	Ferrite Core	Length	Note
C-1	Earphone Cable	NO	NO	1.2m	

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

1.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	ESG VETCTOR SIGNAL GENERATOR	Agilent	E4438C	MY45093347	Jul. 13, 2020	Jul. 12, 2021	1 year
2	PSG Analog Signal Generator	Agilent	E8257D	MY51110112	Jul. 13, 2020	Jul. 12, 2021	1 year
3	Coupler	Mini-Circuits	ZADC-10-63-S+	SF794101410	Apr. 07, 2020	Apr. 06, 2023	3 year
4	Audio Analyzer	audio precision	ATS-1	41128	Jul. 13, 2020	Jul. 12, 2021	1 year
5	Spectrum Analyzer	Agilent	E4407B	MY45108040	May. 11, 2020 Apr. 27, 2021	May. 10, 2021 Apr. 26, 2022	1 year
6	NTEK-EMC -Cable 005	N/A	N/A	N/A	N/A	N/A	N/A

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Bilog Antenna	TESEQ	CBL6111D	31216	Mar. 29, 2021	Mar. 28, 2022	1 year
2	Test Cable	N/A	R-01	N/A	May. 11, 2020	May. 10, 2023	3 year
3	Test Cable	N/A	R-02	N/A	May. 11, 2020	May. 10, 2023	3 year
4	EMI Test Receiver	R&S	ESCI-7	101318	May. 11, 2020 Apr. 27, 2021	May. 10, 2021 Apr. 26, 2022	1 year
5	Antenna Mast	EM	SC100_1	N/A	N/A	N/A	N/A
6	Turn Table	EM	SC100	060531	N/A	N/A	N/A
7	50Ω Switch	Anritsu Corp	MP59B	6200983705	May. 11, 2020	May. 10, 2023	3 year
8	Spectrum Analyzer	Agilent	E4407B	MY45108040	Jul. 13, 2020	Jul. 12, 2021	1 year
9	Horn Antenna	EM	EM-AH-10180	2011071402	Mar. 29, 2021	Mar. 28, 2022	1 year
10	Amplifier	EMC	EMC051835SE	980246	Jul. 13, 2020	Jul. 12, 2021	1 year

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

EN 303 345-1 V1.1.1 (2019-06)

Draft ETSI EN 303 345-3 V1.1.0 (2019-11)

Clause	Test Item	Results
4.2	Sensitivity	Pass
4.3	Adjacent channel selectivity and blocking	Pass

2.1 TEST FACILITY

Shenzhen NTEK Testing Technology Co., Ltd.

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FCC Registered No.: 463705 IC Registered No.:9270A-1

CNAS Registration No.:L5516

2.2 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	Uncertainty
1	Uncertainty in conducted measurements	± 1 dB
2	Uncertainty in radiated measurements	± 6 dB
4	All emissions,radiated	± 0.21 dB

3. TEST PROCEDURES AND RESULTS

3.1 SENSITIVITY

3.1.1 LIMITS

Refer to chapter 4.2 of (Draft) EN 303 345-3 V1.1.0 (2019-11)

Table 2: FM sensitivity requirements

De-modulation	Tuned frequency band	Wanted signal centre frequency (MHz)	Required sensitivity limit	
			Conducted (dBm)	Radiated (dBµV/m)
FM	VHF band II	98	-90	50 (see note)
NOTE: For products with an integral antenna, the requirement is relaxed to 67 dBµV/m.				

The limits for sensitivity specified in table 2 shall apply. Each figure quoted is the required level of wanted signal which provides a given level of audio quality. The audio impairment criteria relevant for these tests is that the audio SNR ≥ 40 dBQ ref $\pm 60,8$ kHz deviation, and that there shall be 10 seconds of audio with no subjective impairments (e.g. clicks resulting from FM threshold effects).

3.1.2 TEST PROCEDURE

Refer to chapter 5.3.4 of EN 303 345-1 V1.1.1 (2019-06)

Measurement	
<input type="checkbox"/> Conducted measurement	<input checked="" type="checkbox"/> Radiated measurement

3.1.3 TEST SETUP

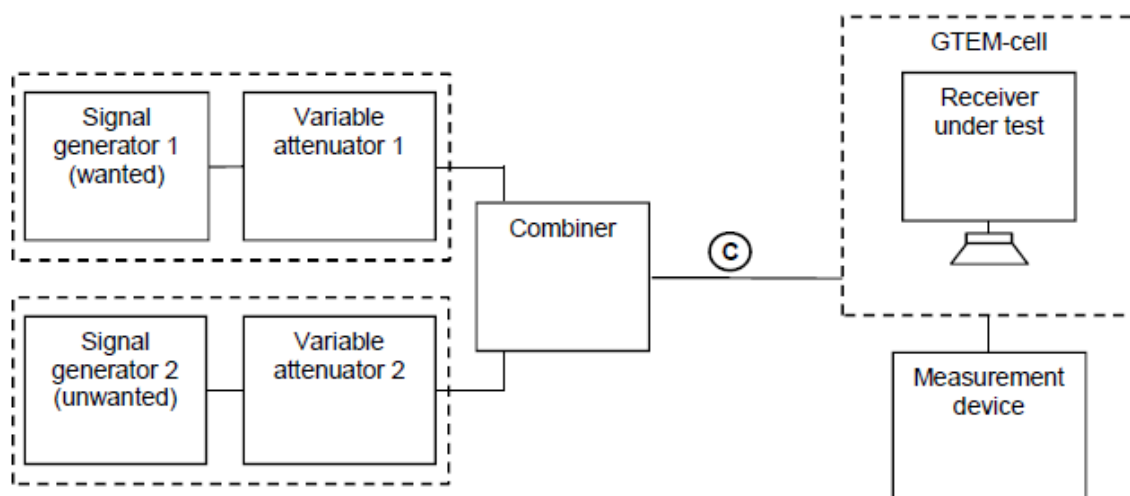


Figure 1: Generic measurement arrangement for receivers with built-in or integral antennas

3.1.4 TEST SIGNALS

The generated FM signals (wanted and unwanted) and the blocking signal shall be in accordance with table 2. The configuration is based on Recommendation ITU-R BS.641 [i.6].

Table 1: FM configuration

Parameter	FM signals		AM signal Blocking
	Wanted	Unwanted	
Audio modulation	1 kHz tone	Weighted noise Recommendation ITU-R BS.559-2 [3], clause 1, band- limited to 15 kHz (see note 1)	1 kHz tone
Other modulation parameters	$\pm 60,8$ kHz peak deviation	15,9 kHz RMS deviation (see note 2)	80 % depth
Pilot tone	None	None	
NOTE 1: The filter shall have a cut-off frequency of 15 kHz and a minimum roll-off of 60 dB/octave. NOTE 2: This is equivalent to a quasi-peak deviation of 34,8 kHz and has pre-emphasis enabled. The quasi-peak level measurement is defined by Recommendation ITU-R BS.641 [i.5], clause 5; with pre-emphasis disabled the quasi-peak deviation is 32 kHz (14,5 kHz RMS).			

The means of generating the noise modulation for the "unwanted" signal is shown in figure 1.

3.1.5 TEST RESULTS

EUT :	Smartphone	Model Number :	KINGKONG 5
Temperature :	26°C	Relative Humidity:	60 %
Pressure :	1012 hPa	Test Voltage :	DC 3.85V
Test Mode :	RX-Middle Channel		

Frequency (MHz)	E (dBuV/m)	Signal(dBm)	Sound (mV)	Noise (mV)	SN (dBQ)
98	67	-24.88	367.528	1.121	50.314

3.2. ADJACENT CHANNEL SELECTIVITY AND BLOCKING

3.2.1 LIMITS

Refer to chapter 4.3 of (Draft) EN 303 345-3 V1.1.0 (2019-11)

The limits for selectivity and blocking specified in table 4 shall apply with the channel spacings given in table 3. Each figure quoted is the minimum acceptable level of unwanted signal, relative to that of the wanted signal, which provides a given level of audio quality. The audio impairment criteria relevant for these tests is that the audio SNR ≥ 40 dBQ ref $\pm 60,8$ kHz deviation, and that there shall be 10 seconds of audio with no subjective impairments (e.g. clicks resulting from FM threshold effects).

Table 4: Adjacent channel selectivity and blocking requirements

De-modulation (see note 1)	Tuned frequency band	C Wanted signal centre frequency (MHz)	C Wanted signal level		Required I/C ratio (see notes 2 and 3)			
			Conducted (dBm)	Radiated (dB μ V/m)	N = 2 (dB)	N = 3 (dB)	N = 4 (dB)	Blocking (dB)
FM (built-in or integral antenna)	VHF band II	98	n/a	56 (see note 4)	-15	-3	8	20
FM (external antenna)	VHF band II	98	-84	n/a	3	17	30	30

NOTE 1: The ACS and blocking requirements are currently separated into different limits for radiated and conducted testing methods. These limits are likely to be unified in a future revision of the present document. Users of the present document should consult frequently the latest list published in the Official Journal of the European Union.

NOTE 2: The frequency of the interferer shall be calculated using the channel spacing data in table 3 for each of the 6 defined adjacent channels $N = \{-4, -3, -2, +2, +3, +4\}$ and the two blocking offsets. Each row of table 4 thus defines 8 individual tests.

NOTE 3: The minimum level of I for the relevant level of impairment is calculated by adding the I/C ratio to the wanted C level.

NOTE 4: The wanted signal level for receivers with integral antenna is 73 dB μ V/m.

3.2.2 TEST PROCEDURE

Refer to chapter 5.3.5 of EN 303 345-1 V1.1.1 (2019-06)

Measurement	
<input type="checkbox"/> Conducted measurement	<input checked="" type="checkbox"/> Radiated measurement

3.2.3 TEST SETUP

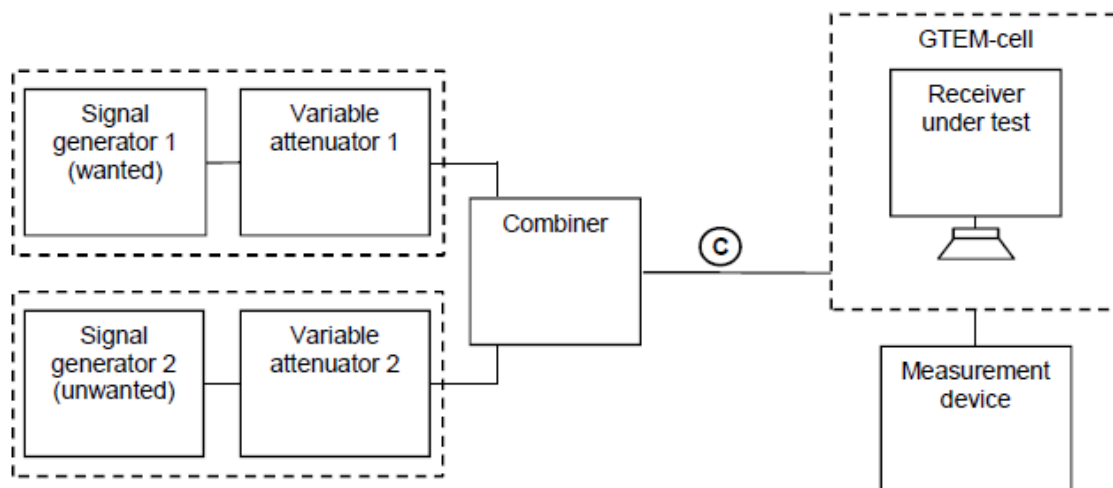


Figure 1: Generic measurement arrangement for receivers with built-in or integral antennas

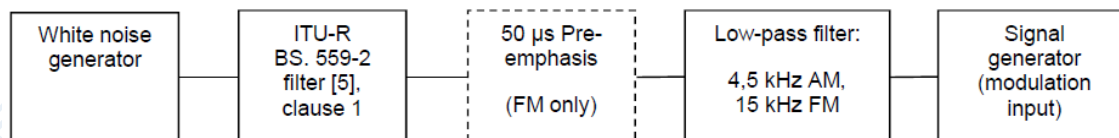


Figure 6: Arrangement for generating AM and FM interferers

3.2.4 TEST SIGNALS

The generated FM signals (wanted and unwanted) and the blocking signal shall be in accordance with table 2. The configuration is based on Recommendation ITU-R BS.641 [i.6].

Table 1: FM configuration

Parameter	FM signals		AM signal Blocking
	Wanted	Unwanted	
Audio modulation	1 kHz tone	Weighted noise Recommendation ITU-R BS.559-2 [3], clause 1, band- limited to 15 kHz (see note 1)	1 kHz tone
Other modulation parameters	±60,8 kHz peak deviation	15,9 kHz RMS deviation (see note 2)	80 % depth
Pilot tone	None	None	
NOTE 1: The filter shall have a cut-off frequency of 15 kHz and a minimum roll-off of 60 dB/octave. NOTE 2: This is equivalent to a quasi-peak deviation of 34,8 kHz and has pre-emphasis enabled. The quasi-peak level measurement is defined by Recommendation ITU-R BS.641 [i.5], clause 5; with pre-emphasis disabled the quasi-peak deviation is 32 kHz (14,5 kHz RMS).			

The means of generating the noise modulation for the "unwanted" signal is shown in figure 1.

The signal generator 1 provides the wanted Signal (dBm), and the signal generator 2 provides unwanted signal (dBm).

3.2.5 TEST RESULTS

EUT :	Smartphone	Model Number :	KINGKONG 5
Temperature :	26°C	Relative Humidity:	60 %
Pressure :	1012 hPa	Test Voltage :	DC 3.85V
Test Mode :	RX-Middle Channel		

Adjacent channel selectivity

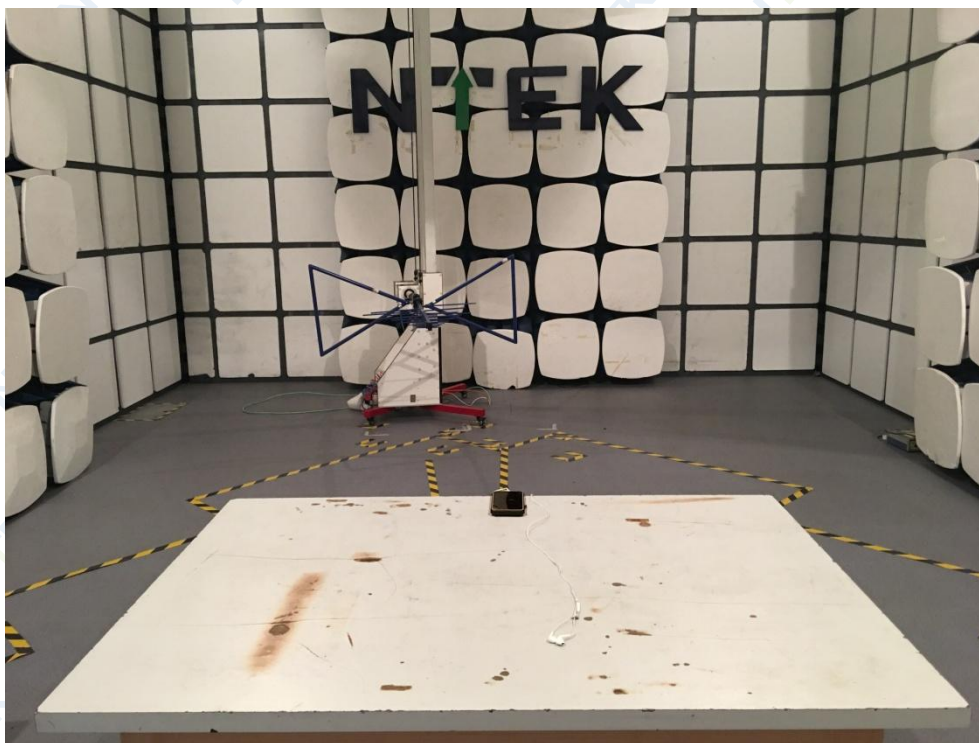
Frequency (MHz)	E (dBuV/m)	Signal(dBm)	Sound (mV)	Noise (mV)	SN (dBQ)
98	73	-18.28			
97.6	81	-9.93	364.941	1.038	50.921
97.7	70	-21.86	372.367	1.075	50.791
97.8	58	-34.28	365.792	1.082	50.580
98.2	58	-34.3	361.497	1.111	50.248
98.3	70	-21.93	358.63	1.019	50.929
98.4	81	-10.36	375.621	0.929	52.135

Receiver blocking

Frequency (MHz)	E (dBuV/m)	Signal(dBm)	Sound (mV)	Noise (mV)	SN (dBQ)
98	73	-18.28			
98.8	93	2.42	365.772	1.091	50.508
97.2	93	2.35	361.527	1.009	51.085

4. EUT TEST PHOTO

Measurement Photos



END OF REPORT