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# **FCC Test Report**

**Shenzhen SOYES Premium Technology Applicant** 

limited

Building 521, 305, Bagualing Industrial Zone, **Address** 

255 Baguagsan Road, Hualin Community,

Yuanling, Futian, Shenzhen, China

**Product Name** Mini smartphone

Mar. 26, 2024 **Report Date** 

Shenzhen Anbotek Contribute



Laboratory Limited



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### **TEST REPORT**

Applicant : Shenzhen SOYES Premium Technology limited

Manufacturer : Shenzhen SOYES Premium Technology limited

Product Name : Mini smartphone

Test Model No. : XS16Max

K99+, XS17Max, XS18Max, XS18Pro, XS19Pro, XS20Pro, XS21Pro,

Reference Model No. : XS22Pro, XS23Pro, XS24Pro, XS26Pro, XS25Pro, XS26Pro, S28, XS28Pro,

XS18, XS19, XS22, Maxo, XS13Pro, S24ultra, S27ultra

Trade Mark : SOYES

Input: 5V= 1.5A

Rating(s) : Capacity: Lithium-ion: DC 3.8V, 2400mAh

Test Standard(s) : FCC PART 2, FCC Part 22(H), FCC Part 24(E)

ANSI C63.26-2015

Test Method(s) : KDB 971168 D01 Power Meas License Digital Systems v03r01

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 22, FCC Part 24 requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Receipt Jan. 30, 2024

Date of Test: Jan. 30, 2024 to Mar. 06, 2024

Ella Liane

(Ella Liang)

Idward pan

Approved & Authorized Signer:

Prepared by :

(Edward Pan)

Code: AB-RF-05-b





### **Revision History**

Re	eport Versi	on	n Description		Issued Date				
bu,	R00	Anbot	sk Aupo.	otek bi	Original Issue.	ipoter Ar	abotek	Mar. 26, 2024	-046
ek-	Anbotek	An	otek bu	nbotek	Anbotek	Anbors	Aupotek	Anboren Ar	, no
potek	Anbotel	. ak	Auporok	Anborek	Aupole	Aupotek	Anbor	er Auto	450





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### 1. General Information

#### 1.1. Client Information

Applicant	:	Shenzhen SOYES Premium Technology limited
Address	:	Building 521, 305, Bagualing Industrial Zone, 255 Baguagsan Road, Hualin Community, Yuanling, Futian, Shenzhen, China
Manufacturer	:	Shenzhen SOYES Premium Technology limited
Address	:	Building 521, 305, Bagualing Industrial Zone, 255 Baguagsan Road, Hualin Community, Yuanling, Futian, Shenzhen, China
Factory	:	Shenzhen SOYES Premium Technology limited
Address	:	Building 521, 305, Bagualing Industrial Zone, 255 Baguagsan Road, Hualin Community, Yuanling, Futian, Shenzhen, China

### 1.2. Description of Device (EUT)

Product Name	:	Mini smartphone
Test Model No.	:	XS16Max
Reference Model No.	÷	K99+, XS17Max, XS18Max, XS18Pro, XS19Pro, XS20Pro, XS21Pro, XS22Pro, XS23Pro, XS24Pro, XS26Pro, XS25Pro, XS26Pro, S28, XS28Pro, XS18, XS19, XS22, Maxo, XS13Pro, S24ultra, S27ultra (Note: All samples are the same except the model number and appearance color, so we prepare "XS16Max" for test only.)
Trade Mark	:	SOYES AND THE MAN
Test Power Supply	:	DC 3.8V battery inside
Test Sample No.	:	1-2-1(Normal Sample), 1-2-2(Engineering Sample)
Adapter	:	N/A Amborett Amborett Amborett Amborett Amborett Amborett
RF Specification		
Support Band	:	⊠ FDD Band II ⊠ FDD Band V □ FDD Band IV
Transmit Frequency	:	FDD Band II: 1852.40MHz~1907.60MHz FDD Band V: 826.40MHz~846.60MHz
Receive Frequency	:	FDD Band II: 1932.40MHz~1987.60MHz FDD Band V: 871.40MHz~891.60MHz
Modulation Type	:	RMC: QPSK; HSDPA/HSUPA: QPSK
Power Class	:	Class 3
Antenna Type	:	FPC Antenna
Antenna Gain(Peak):		FDD Band II: -4.6dBi FDD Band V: -4.6dBi

Remark: 1) All of the RF specification are provided by customer. 2) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

**Shenzhen Anbotek Compliance Laboratory Limited** 

Code: AB-RF-05-b www.anbotek.com.cn





#### 1.3. Auxiliary Equipment Used During Test

Title	Manufacturer	Model No.	Serial No.
Anbotes. / And	Anbotek / Anbo	abotek Anbote	And Anbotek

#### 1.4. Operation State

#### **Test frequency list:**

FDD B	and II	FDD B	and V	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	
9262	1852.40	4132	826.40	
9400	1880.00	4183	836.60	
9538	1907.60	4233	846.60	

#### Test mode:

Antenna port conducted and radiated test items were performed according to KDB 971168 D01 Power Meas. License Digital Systems v03 and ANSI C63.26-2015 with maximum output power.

Radiated measurements were performed with rotating EUT in different three orthogonal test planes to find the maximum emission.

Radiated emissions were investigated as following frequency range:

30 MHz to 10th harmonic for FDD Band II, Band V

All modes and data rates and positions were investigated.

Test modes are chosen to be reported as the worst case configuration below:

	Test modes							
Band Item		Radiated	Conducted					
tek Anbotek	RMC	■ RMC 12.2Kbps Link	■ RMC 12.2Kbps Link					
botek Anbote	ok hotek A	■ HSDPA Subtest-1	■ HSDPA Subtest-1					
botek Anbo	MODDA	■ HSDPA Subtest-2	■ HSDPA Subtest-2					
Ann otek	HSDPA	■ HSDPA Subtest-3	■ HSDPA Subtest-3					
FDD Band II		■ HSDPA Subtest-4	■ HSDPA Subtest-4					
FDD Band V	Anbotek Anbotek	■ HSUPA Subtest-1	■ HSUPA Subtest-1					
ek Anboten		■ HSUPA Subtest-2	■ HSUPA Subtest-2					
stek shotek	HSUPA	■ HSUPA Subtest-3	■ HSUPA Subtest-3					
loo. W.		■ HSUPA Subtest-4	■ HSUPA Subtest-4					
Anbore Ana		■ HSUPA Subtest-5	■ HSUPA Subtest-5					







#### 1.5. Environmental Conditions

The state of the s	VIII	100				V1.
Temperature range:	21-25℃	Aupor	VII.	Anboren	Anbo	nbotek
Humidity range:	40-75%	Anboro	Aug	Anbotek	Anbo	nbotek
Pressure range:	86-106kP	a Anbore	And	k Anborek	Aupo	ok above





### 1.6. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.
1. <sub>p</sub>	EMI Preamplifier	SKET Electronic	LNPA-0118G-4 5	SKET-PA-002	Oct. 12, 2023	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESR26	101481	Oct. 12, 2023	1 Year
3.	Double Ridged Horn Antenna	SCHWARZBECK	BBHA 9120D	02555	Oct. 16, 2022	3 Year
4.oo	Bilog Broadband Antenna	Schwarzbeck	VULB9163	345	Oct. 23, 2022	3 Year
5. <sub>M</sub>	Pre-amplifier	SONOMA	310N	186860	Oct. 12, 2023	1 Year
6.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
nbolek Nak	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	Oct. 12, 2023	1 Year
8.	DC Power Supply	Lotek LW Anbore	TPR-6420D	374470	Oct. 20, 2023	1 Year
9. <sup>A.nl</sup>	Constant Temperature Humidity Chamber	ZHONGJIAN	ZJ-KHWS80B	N/A	Oct. 16, 2023	1 Year
10.	Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	167336	Feb. 23, 2023	1 Year
Anbor 11. Anb	High-Pass Filter	CDKMV	ZHPF-BM1100 -4000-0730	B2015094550	Oct. 20, 2023	1 Year
12.	High-Pass Filter	CDKMV	ZHPF-M3.5 -18G-3834	1307006523	Oct. 20, 2023	1 Year
13.	Bilog Broadband Antenna	SCHWARZBECK	VULB 9163	01109	Oct. 16, 2022	3 Year
14.	Double Ridged Horn Antenna	Chengyi Electronics Co., Ltd.	GTH-0118	351600	Nov. 02, 2022	2 Year
15.	Signal Generator	Anritsu	MG3690A	MY48180749	Oct. 12, 2023	1 Year







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#### 1.7. Measurement Uncertainty

Parameter	Uncertainty		
Occupied Bandwidth	925Hz		
Conducted Output Power	0.76dB		
Conducted Spurious Emission	1.24dB		
Radiated spurious emissions (30MHz~1GHz)	Horizontal: 3.92dB; Vertical: 4.52dB		
Radiated spurious emissions (above 1GHz)	1G-6GHz: 4.78dB; 6G-18GHz: 4.88dB		

The measurement uncertainty and decision risk evaluated according to AB/WI-RF-F-032.

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

#### 1.8. Description of Test Facility

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

#### FCC-Registration No.: 434132

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No. 434132.

#### ISED-Registration No.: 8058A

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (ISED) Innovation, Science and Economic Development Canada. The acceptance letter from the ISED is maintained in our files. Registration 8058A.

#### **Test Location**

Shenzhen Anbotek Compliance Laboratory Limited.

1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.







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#### 1.9. Disclaimer

- 1. The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
- 2. The test report is invalid if there is any evidence and/or falsification.
- 3. The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.
- 4. This document may not be altered or revised in any way unless done so by Anbotek and all revisions are duly noted in the revisions section.
- 5. Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
- 6. The authenticity of the information provided by the customer is the responsibility of the customer and the laboratory is not responsible for its authenticity.

The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.





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### 2. Summary of Test

### 2.1. Summary of test result

FCC Rules	Description of Test	Result
Part 2.1046 Part 22.913(a) Part 24.232(c)	Conducted Output Power	Compliance
Part 24.232	Peak-Average Ratio	Compliance
§ 2.1047	Modulation Characteristics	nbotek N/A nbotek
Part 2.1049	99% Occupied Bandwidth & 26 dB Bandwidth	Compliance
Part 2.1051	both Amborek Amborek Ambo	abotek
Part 22.917	Conducted Spurious Emission	Compliance
Part 24.238	Anbotek Anbo. Ak hotek Anbo	re. And stek
Part 2.1051	hotek Anbote And	bolek Aupo
Part 22.917	Band Edge	Compliance
Part 24.238	ek Anbote Anbote	Ann otek Anb
Part 2.1055(a)(1)(b)	potek Anbore An Otek Anborek	And
Part 22.355	Frequency stability VS. temperature	Compliance
Part 24.235	Aubo K Spotek Aupol K W.	ek Anboten
Part 2.1055(d)(1)(2)	Anbor An Motek Anborter And	tek abotek
Part 22.355	Frequency stability VS. voltage	Compliance
Part 24.235	k nbotek Anbo ak hotek	Anbore. And
Part 2.1046	ak hotek Anbore And	anbotek Anbe
Part 22.913(a)	ERP and EIRP	Compliance
Part 24.232(c)	upotek Anbotek Anbotek	Ans
Part 2.1053	potek Aupota Augusta	Sk Vupp.
Part 2.1053 Part 22.917	Radiated Spurious Emission	Compliance
Part 24.238	Anbores Anbores An	otek Anbotek

Note: Testing was performed by configuring EUT to maximum output power status, the declared output power class for different







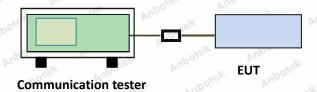
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### 3. Conducted Output Power Test

### 3.1. Test Standard and Limit

4	Applicable	Part 2.1046	Anbore A	"sek	anbotek	Aupo.	hote
	Standard:	Part 22.913(a)					Vur
o'i		Part 24.232(c)	botek	Anbore	Anna	Anbotek	Vup
57	Limit:	N/A	r Au	anbotek	Anbo	ak abore	SK b

#### 3.2. Test Setup



#### 3.3. Test Procedure

- 1. The EUT output port was connected to communication tester.
- 2. Set EUT at maximum power through communication tester.
- 3. Select lowest, middle, and highest channels for each band and different modulation.
- 4. Measure the maximum burst average power.

#### 3.4. Test Data

Pass

Please refer to Appendix A of the Appendix Test Data.







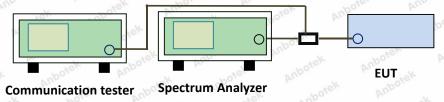
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### 4. Peak-Average Ratio

#### 4.1. Test Standard and Limit

-	Applicable Standard:	Part 24.232	Anbore	Ame	Anborek	Anbo	-100/g
	Limit:	13dB	Anbotek	Anbe	abotek	Anboro	Dir.

#### 4.2. Test Setup



#### 4.3. Test Procedure

#### According with KDB 971168 D01 Section 5.7:

- 1. The EUT was connected to the spectrum analyzer and communication tester via a power splitter.
- 2. Set EUT in maximum power output.
- 3. Center Frequency = Carrier frequency, RBW > 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.
  - i. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms.
- ii. 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. Record the maximum PAPR level associated with a probability of 0.1%.

#### 4.4. Test Data

**Pass** 

Please refer to Appendix B of the Appendix Test Data.







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### 5. Modulation Characteristic

According to FCC § 2.1047(d), Part 22H, Part 24E there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.





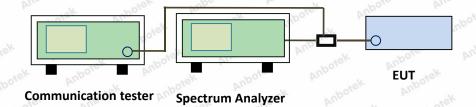
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### 6. 99% Occupied Bandwidth & 26 dB Bandwidth

#### 6.1. Test Standard and Limit

4	Applicable Standard:	Part 2.1049	Anbore	Ann	Anbotek	Aupo	, hotel
	Limit:	N/A	tek Anbote	Aup	ek abotek	Anbore	bu.

#### 6.2. Test Setup



#### 6.3. Test Procedure

- 1. The EUT was connected to the spectrum analyzer and communication tester via a power splitter.
- 2. Set EUT in maximum power output.
- Spectrum analyzer setting as follow: Center Frequency= Carrier frequency, RBW=1% to 5% of anticipated OBW, VBW= 3 \* RBW, Detector=Peak, Trace maximum hold.
- 4. Record the value of 99% Occupied bandwidth and -26dB bandwidth.

#### 6.4. Test Data

Pass

Please refer to Appendix C of the Appendix Test Data.







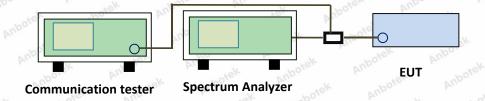
Report No.: 18220WC40024205 FCC ID: 2A5MW-XS16M Page 17 of 28

### 7. Band Edge

#### 7.1. Test Standard and Limit

Applicable Standard:	Part 2.1051
	Part 22.917
	Part 24.238
Limit:	Part 24.238 and Part 22.917 specify that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.
	The specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

#### 7.2. Test Setup



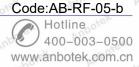
#### 7.3. Test Procedure

- 1. The EUT was connected to the spectrum analyzer and communication tester via a power splitter.
- 2. Set EUT in maximum power output.
- 3. The band edges of low and high channels were measured.
- Spectrum analyzer setting as follow:
   RBW=51KHz, VBW = 150KHz, Sweep time= Auto
- 5. Record the test plot.

#### 7.4. Test Data

**Pass** 

Please refer to Appendix D of the Appendix Test Data.







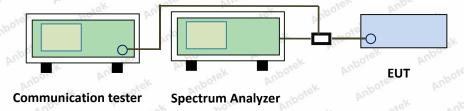
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### 8. Conducted Spurious Emission

#### 8.1. Test Standard and Limit

Part and the second sec	
Applicable Standard:	Part 2.1051
	Part 22.917
	Part 24.238
Limit:	Part 24.238 and Part 22.917 specify that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.
	The specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute
	terms is carried out.

#### 8.2. Test Setup



#### 8.3. Test Procedure

- 1. The EUT was connected to the spectrum analyzer and communication tester via a power splitter.
- 2. Set EUT in maximum power output.
- Spectrum analyzer setting as follow:
   Below 1GHz, RBW=100KHz, VBW = 300KHz, Detector=Peak, Sweep time= Auto
   Above 1GHz, RBW=1MHz, VBW=3MHz, Detector=Peak, Sweep time= Auto
   Scan frequency range up to 10<sup>th</sup> harmonic.
- 4. Record the test plot.

#### 8.4. Test Data

**Pass** 

Please refer to Appendix E of the Appendix Test Data







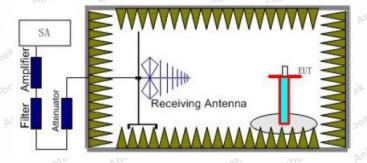
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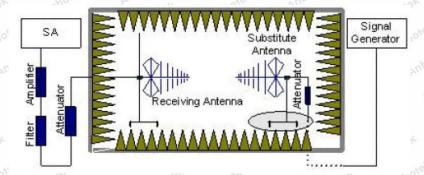
### 9. Radiated Spurious Emission

#### 9.1. Test Standard and Limit

4	Applicable Standard:	Part 2.1053	Anbores Ar	" sek	nbotek	Aupo	hotel
		Part 22.917					Arra
o'i		Part 24.238	botek	Anbore	Annatek	Anbotek	Vup
57	Limit:	-13dBm	h bu	Anbotek	AUP	y sport	SK b

#### 9.2. Test Setup





#### 9.3. Test Procedure

- 1. Place the EUT in the center of the turntable.
  - a) For radiated emissions measurements performed at frequencies less than or equal to 1 GHz, the EUT shall be placed on a RF-transparent table at a nominal height of 80 cm above the reference ground plane
  - b) For radiated measurements performed at frequencies above 1 GHz, the EUT shall be placed on an RF transparent table at a nominal height of 1.5 m above the ground plane.
- 2. Unless the EUT uses an integral antenna, the EUT shall be terminated with a non-radiating transmitter load. In cases where the EUT uses an adjustable antenna, the antenna shall be adjusted through typical positions and lengths to maximize emissions levels.
- The EUT shall be tested while operating on the frequency per manufacturer specification. Set the transmitter to operate in continuous transmit mode.
- 4. Receiver or Spectrum set as follow:

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Below 1GHz, RBW=100kHz, VBW=300kHz, Detector=Peak, Sweep time=Auto Above 1GHz, RBW=1MHz, VBW=3MHz, Detector=Peck, Sweep time=Auto

- 5. Each emission under consideration shall be evaluated:
  - a) Raise and lower the measurement antenna from 1 m to 4 m, as necessary to enable detection of the maximum emission amplitude relative to measurement antenna height.
  - b) Rotate the EUT through 360° to determine the maximum emission level relative to the axial position.
  - c) Return the turntable to the azimuth where the highest emission amplitude level was observed.
  - d) Vary the measurement antenna height again through 1 m to 4 m again to find the height associated with the maximum emission amplitude.
  - e) Record the measured emission amplitude level and frequency
- 6. Repeat step 5 for each emission frequency with the measurement antenna oriented in both the horizontal and vertical polarizations to determine the orientation that gives the maximum emissions amplitude.
- Set-up the substitution measurement with the reference point of the substitution antenna located as near as possible to where the center of the EUT radiating element was located during the initial EUT measurement.
- 8. Maintain the previous measurement instrument settings and test set-up, with the exception that the EUT is removed and replaced by the substitution antenna.
- 9. Connect a signal generator to the substitution antenna; locate the signal generator so as to minimize any potential influences on the measurement results. Set the signal generator to the frequency where emissions are detected, and set an output power level such that the radiated signal can be detected by the measurement instrument, with sufficient dynamic range relative to the noise floor.
- 10. For each emission that was detected and measured in the initial test
  - a) Vary the measurement antenna height between 1 m to 4 m to maximize the received (measured) signal amplitude.
  - b) Adjust the signal generator output power level until the amplitude detected by the measurement instrument equals the amplitude level of the emission previously measured directly in step 5 and step 6.
  - c) Record the output power level of the signal generator when equivalence is achieved in step b)
- 11. Repeat step 8 through step 10 with the measurement antenna oriented in the opposite polarization.
- 12. Calculate the emission power in dBm referenced to a half-wave dipole using the following equation:

Pe = Ps(dBm) - cable loss (dB) + antenna gain (dBd)

where

Pe = equivalent emission power in dBm

Ps = source (signal generator) power in dBm

NOTE—dBd refers to the measured antenna gain in decibels relative to a half-wave dipole.

13. Correct the antenna gain of the substitution antenna if necessary to reference the emission power to a half-wave dipole. When using measurement antennas with the gain specified in dBi, the equivalent dipole-referenced gain can be determined from:

gain (dBd) = gain (dBi) - 2.15 dB.

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If necessary, the antenna gain can be calculated from calibrated antenna factor information

14. Provide the complete measurement results as a part of the test report.

#### 9.4. Test Data

Pass

Note: Worst case at WCDMA Band II/ WCDMA Band V.

			WCDMA	Band II			
	Frequency		Spurious	Emission		Limit	
Channel	(MHz)	Polarization	Reading (dBm)	Factor (dB)	Level (dBm)	(dBm)	Result
Anborel	3704.80	Vertical	-48.99	13.26	-35.73	sk Aupo,	V. Dir.
	5557.20	V	-56.05	16.62	-39.43	<-13.00	PASS
	7409.60	poter Au	-58.31	17.84	-40.47	botek	
9262	3704.80	Horizontal	-50.33	13.26	-37.07	hotek	Anboren
	5557.20	AnbAtek	-57.31	16.62	-40.69	<-13.00	PASS
	7409.60	Hootek	-59.38	17.84	-41.54	Anti-	
Anborek	3760.00	Vertical	-47.99	13.27	-34.72	Aug	otek Ant
	5640.00	de V nb	-54.97	16.49	-38.48	<-13.00	PASS
notek	7520.00	V	-57.54	17.96	-39.58	nbotek	
9400	3760.00	Horizontal	-49.11	13.27	-35.84	Anborek	Anbore
	5640.00	Anbox H Lak	-56.18	16.49	-39.69	<-13.00	PASS
	7520.00	H4	-58.55	17.96	-40.59	Anbore	
Anbo	3815.20	Vertical	-46.59	13.59	-33.00	tek anb	otek Anb
	5722.80	otek V Anbe	-53.60	16.69	-36.91	<-13.00	PASS
otek An	7630.40	abotekV A	-56.04	17.95	-38.09	upo, tek	
9538	3815.20	Horizontal	-48.83	13.59	-35.24	Anboro	abotek
	5722.80	Hotek	-55.81	16.69	-39.12	<-13.00	PASS
	7630.40	H hotek	-58.06	17.95	-40.11	Anbore	

#### Remark:

- 1. The emission behaviour belongs to narrowband spurious emission.
- 2. The emission levels of not record in the report are very lower than the limit and not show in test report.







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			WCDMA	Band V			
			Spurious	Emission		l imais	
Channel	Frequency (MHz)	Polarization	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Result
Anbore	1652.80	Vertical	-38.87	5.62	-33.25	K Mu	rek Anbo
K Anbote	2479.20	ek V noot	-47.15	9.32	-37.83	<-13.00	PASS
otek 4400 Amb	3305.60	Not V	-53.10	12.69	-40.41	abover Ar	
4132	1652.80	Horizontal	-40.24	5.62	-34.62	Anborek	Aupo stek
Anbotek	2479.20	Anber Hek	-48.44	9.32	-39.12	<-13.00	PASS
Auprovek	3305.60	Aupor	-54.31	12.69	-41.62	Anbotek	
Anbanatel	1673.20	Vertical	-39.80	7.69	-32.11	Jek Anbor	sk Vupo.
Anbore	2509.80	Sk Aupon	-46.22	9.46	-36.76	<-13.00	PASS
tek Anbi	3346.40	potek V Anh	-51.66	12.26	-39.40	upo. kek	
4183	1673.20	Horizontal	-41.36	7.69	-33.67	Aupo.	hotek
Anbotek	2509.80	Hek.	-47.69	9.46	-38.23	<-13.00	PASS
nbotek	3346.40	Hotek	-53.04	12.26	-40.78	Anbore	
Anbotek	1693.20	Vertical	-39.03	8.26	-30.77	ASK MUPO,	Dr.
ek wo	2539.80	V	-45.15	9.65	-35.50	<-13.00	PASS
4000	3386.40	V AITH	-50.62	12.41	-38.21	abotek	
4233	1693.20	Horizontal	-40.82	8.26	-32.56	abotek .	Anbores
Anbotek	2539.80	Anb Helt	-46.83	9.65	-37.18	<-13.00	PASS
Anbore	3386.40	A Hotek	-52.21	12.41	-39.80	K Ann	

#### Remark:

- 1. The emission behaviour belongs to narrowband spurious emission.
- 2. The emission levels of not record in the report are very lower than the limit and not show in test report





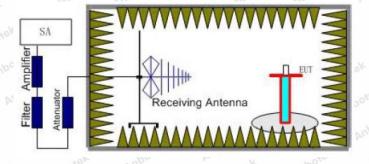
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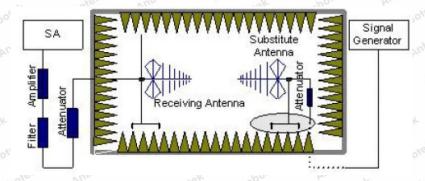
#### 10. ERP and EIRP

#### 10.1. Test Standard and Limit

F	Applicable Standard:	Part 2.1046	Anbore	Yun Olek	Anborek	Anbo	bote
		Part 22.913(a)					Diring
o'i		Part 24.232(c)	k botek	Anbore	Arrangek	Anbotek	AUP
T)	Limit:	WCDMA Band II: 2	2W (33dBm) E	IRP Anbore	Anbo	ek abote	P/K Pi
		WCDMA Band V:	7W (38.45dBr	n) ERP	yek Aupor	K VIII.	otek

#### 10.2. Test Setup





#### 10.3. Test Procedure

- 1. Place the EUT in the center of the turntable.
  - a) For radiated emissions measurements performed at frequencies less than or equal to 1 GHz, the EUT shall be placed on a RF-transparent table at a nominal height of 80 cm above the reference ground plane
  - b) For radiated measurements performed at frequencies above 1 GHz, the EUT shall be placed on an RF transparent table at a nominal height of 1.5 m above the ground plane.
- Unless the EUT uses an integral antenna, the EUT shall be terminated with a non-radiating transmitter load. In cases where the EUT uses an adjustable antenna, the antenna shall be adjusted through typical positions and lengths to maximize emissions levels.
- 3. The EUT shall be tested while operating on the frequency per manufacturer specification. Set the transmitter to operate in continuous transmit mode.

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4. Receiver or Spectrum set as follow:

Below 1GHz, RBW=100kHz, VBW=300kHz, Detector=Peak, Sweep time=Auto Above 1GHz, RBW=1MHz, VBW=3MHz, Detector=Peck, Sweep time=Auto

- 5. Each emission under consideration shall be evaluated:
  - a) Raise and lower the measurement antenna from 1 m to 4 m, as necessary to enable detection of the maximum emission amplitude relative to measurement antenna height.
  - b) Rotate the EUT through 360° to determine the maximum emission level relative to the axia position.
  - c) Return the turntable to the azimuth where the highest emission amplitude level was observed.
  - d) Vary the measurement antenna height again through 1 m to 4 m again to find the height associated with the maximum emission amplitude.
  - e) Record the measured emission amplitude level and frequency
- 6. Repeat step 5 for each emission frequency with the measurement antenna oriented in both the horizontal and vertical polarizations to determine the orientation that gives the maximum emissions amplitude.
- Set-up the substitution measurement with the reference point of the substitution antenna located as near as possible to where the center of the EUT radiating element was located during the initial EUT measurement.
- 8. Maintain the previous measurement instrument settings and test set-up, with the exception that the EUT is removed and replaced by the substitution antenna.
- 9. Connect a signal generator to the substitution antenna; locate the signal generator so as to minimize any potential influences on the measurement results. Set the signal generator to the frequency where emissions are detected, and set an output power level such that the radiated signal can be detected by the measurement instrument, with sufficient dynamic range relative to the noise floor.
- 10. For each emission that was detected and measured in the initial test
  - a) Vary the measurement antenna height between 1 m to 4 m to maximize the received (measured) signal amplitude.
  - b) Adjust the signal generator output power level until the amplitude detected by the measurement instrument equals the amplitude level of the emission previously measured directly in step 5 and step 6.
  - c) Record the output power level of the signal generator when equivalence is achieved in step b).
- 11. Repeat step 8 through step 10 with the measurement antenna oriented in the opposite polarization.
- 12. Calculate the emission power in dBm referenced to a half-wave dipole using the following equation:

Pe = Ps(dBm) - cable loss (dB) + antenna gain (dBd)

where

Pe = equivalent emission power in dBm

Ps = source (signal generator) power in dBm

NOTE—dBd refers to the measured antenna gain in decibels relative to a half-wave dipole.

13. Correct the antenna gain of the substitution antenna if necessary to reference the emission power to a half-wave dipole. When using measurement antennas with the gain specified in dBi, the equivalent dipole-referenced gain can be determined from:

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gain (dBd) = gain (dBi) -2.15 dB.

If necessary, the antenna gain can be calculated from calibrated antenna factor information

14. Provide the complete measurement results as a part of the test report.

#### 10.4. Test Data

			ERP&EIRI	>		
Dand	Mada	Chamal	(dl	Bm)	Limait (alDina)	Danult
Band	Mode	Channel	Vertical	Horizontal	Limit (dBm)	Result
Anborek	Anbore	9262	23.29	21.58	otek Anbote	And otek
Arr. Hotek	RMC	9400	23.69	19.98	<33.00	PASS
Andhorel	Anbotek	9538	22.85	21.11	notek Ar	potek Anbo
WCDMA	rek Anbo	9262	23.03	21.22	Aur	Anbotek An
Band II	HSDPA	9400	23.41	20.03	<33.00	PASS
(EIRP)	ipo otek	9538	22.42	21.22	Anboorek	Anborek
Anbotek	Anbe	9262	23.08	21.08	ter Aupo	ak Anbotek
Anbotek k	HSUPA	9400	23.02	20.03	<33.00	PASS
Anbotek	Anboro	9538	2242	21.36	Anborek An	20. Pr.
lek Aupo	sk Wupo,	4132	20.72	19.74	Anbotek	
potek Ar	RMC	4183	20.93	18.32	<38.45	PASS
lon tek	abotek	4233	19.77 And	19.19	ek abotek	Anbore
WCDMA	n. abotek	4132	20.63	19.74	*ek "pote	
Band V	HSDPA	4183	20.36	18.77	<38.45	PASS
(ERP)	ok hoje	4233	20.11	19.35	Anbore Air	-botek Ant
ek Aupor	ble ble	4132	20.25	19.25	Aupor	hotek I
potek Ani	HSUPA	4183	20.14	19.36	<38.45	PASS
botek	Aupoter.	4233	19.96	19.36	ak Anboten	





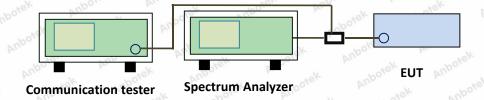
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### 11. Frequency stability VS Voltage measurement

#### 11.1. Test Standard and Limit

6-	Applicable Standard:	Part 2.1055(	(d)(1)(2)	DOJOGO N	up otek	Anbotek	Aupo.	-pote
		Part 22.355						Viv
o <sup>n</sup>		Part 24.235	100 ak	-botek	Anbore	An	Anborek	Vup
77	Limit:	2.5ppm	Aupor	Arr. Lotek	Anborer	Anbo	ak abor	ek b

#### 11.2. Test Setup



#### 11.3. Test Procedure

- 1. The equipment under test was connected to an external DC power supply and input rated voltage.
- 2. The EUT output port was connected to communication tester.
- 3. The EUT was placed inside the temperature chamber at 25°C.
- 4. The power supply voltage to the EUT was varied ±15% of the nominal value measured at the input to the EUT.
- 5. Record the maximum frequency change.

#### 11.4. Test Data

**Pass** 

Please refer to Appendix F of the Appendix Test Data.







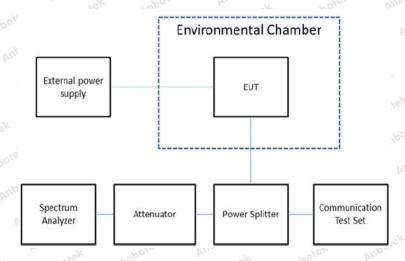
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### 12. Frequency stability VS Temperature measurement

#### 12.1. Test Standard and Limit

4	Applicable Standard:	Part 2.1055	(a)(1)(b)	pore. A	up rotek	Anbotek	Vupo.	abote
		Part 22.355						by.
0,		Part 24.235	,oc	botek	Anbore	Air.	Anborer	AMP
57	Limit:	2.5ppm	Aupor	Mr. Olek	Anborer	Anbo	ak abor	ek b

#### 12.2. Test Setup



#### 12.3. Test Procedure

- 1. The equipment under test was connected to an external DC power supply and input rated voltage.
- 2. The EUT output port was connected to communication tester.
- 3. The EUT was placed inside the temperature chamber.
- 4. Turn EUT off and set the chamber temperature to –30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency.
- Repeat step 4 measure with 10°C increased per stage until the highest temperature of +50°C reached.

#### 12.4. Test Data

Pass

Please refer to Appendix F of the Appendix Test Data.







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#### **APPENDIX I -- TEST SETUP PHOTOGRAPH**

Please refer to separated files Appendix I -- Test Setup Photograph\_Licensed

#### APPENDIX II -- EXTERNAL PHOTOGRAPH

Please refer to separated files Appendix II -- External Photograph

### **APPENDIX III -- INTERNAL PHOTOGRAPH**

Please refer to separated files Appendix III -- Internal Photograph

101	- End of Report	

