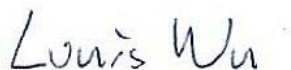


Variant FCC Test Report

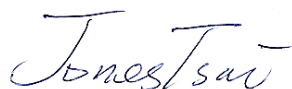
APPLICANT : Yulong Computer Telecommunication
Scientific (Shenzhen) Co., Ltd.
EQUIPMENT : Mobile Phone
BRAND NAME : Vodafone Smart 4G
MODEL NAME : Coolpad 8860U
MARKETING NAME : Vodafone Smart 4G
FCC ID : R38YL8860UO
STANDARD : FCC 47 CFR FCC Part 15 Subpart B
CLASSIFICATION : Certification

This is a variant report which is only valid together with the original test report. The product was received on Aug. 29, 2013 and testing was completed on Aug. 28, 2013. We, SPORTON INTERNATIONAL (SHENZHEN) INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown to be compliant with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL (SHENZHEN) INC., the test report shall not be reproduced except in full.



Reviewed by: Louis Wu / Manager



Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL (SHENZHEN) INC.

No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, Nanshan District, Shenzhen, Guangdong, P.R.C.



TABLE OF CONTENTS

REVISION HISTORY.....	3
SUMMARY OF TEST RESULT	4
1. GENERAL DESCRIPTION	5
1.1. Applicant.....	5
1.2. Manufacturer	5
1.3. Feature of Equipment Under Test.....	5
1.4. Product Specification of Equipment Under Test	6
1.5. Modification of EUT.....	6
1.6. Test Site	7
1.7. Applied Standards.....	7
2. TEST CONFIGURATION OF EQUIPMENT UNDER TEST.....	8
2.1. Test Mode	8
2.2. Connection Diagram of Test System	9
2.3. Support Unit used in test configuration and system.....	9
2.4. EUT Operation Test Setup.....	10
3. TEST RESULT.....	11
3.1. Test of Radiated Emission Measurement	11
4. LIST OF MEASURING EQUIPMENT	15
5. UNCERTAINTY OF EVALUATION.....	16
APPENDIX A. SETUP PHOTOGRAPHS	



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC340403-01	Rev. 01	EUT is variant version of Coolpad 8860U (FCC ID: R38YL8860U which supports NFC function), and now the variant sample with FCC ID: R38YL8860UO is not support NFC function. Due to the similarity, the parent sample EMC performance is representative and part of test data (Sporton Report Number FC340403 for FCC ID: R38YL8860U) is referenced; only the worst case of Radiated Emission were verified for the differences for the variant sample.	Sep. 17, 2013



SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 5.18 dB at 228.850 MHz



1. General Description

1.1. Applicant

Yulong Computer Telecommunication Scientific (Shenzhen) Co., Ltd.

Coolpad Information Harbor, 2nd Mengxi Road, Northern Part of Science&Technology Park, Nanshan district, Shenzhen, P.R.China

1.2. Manufacturer

Yulong Computer Telecommunication Scientific (Shenzhen) Co., Ltd.

Coolpad Information Harbor, 2nd Mengxi Road, Northern Part of Science&Technology Park, Nanshan district, Shenzhen, P.R.China

1.3. Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Phone
Brand Name	Vodafone Smart 4G
Model Name	Coolpad 8860U
Marketing Name	Vodafone Smart 4G
FCC ID	R38YL8860UO
EUT supports Radios application	GSM/GPRS/EGPRS/LTE/WLAN 802.11abgn HT 20/ Bluetooth v3.0 + EDR/Bluetooth v4.0
HW Version	T3
SW Version	082.12.T3.130819.CP8860U
EUT Stage	Production Unit

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4. Product Specification of Equipment Under Test

Product Specification subjective to this standard	
Tx Frequency	GSM1900 : 1850.2 MHz ~ 1909.8MHz LTE Band 7 : 2506.5 MHz ~ 2534.5 MHz and 2562.5 MHz ~ 2567.5 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz 802.11a/n: 5180 MHz ~ 5240 MHz; 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Rx Frequency	GSM1900 : 1930.2 MHz ~ 1989.8 MHz LTE Band 7 : 2626.5MHz ~ 2654.5 MHz and 2666.5 MHz ~ 2697.5 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz 802.11a/n: 5180 MHz ~ 5240 MHz; 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz GPS : 1.57542 GHz
Antenna Type	WWAN : PIFA Antenna WLAN : PIFA Antenna Bluetooth : PIFA Antenna GPS : PIFA Antenna
Type of Modulation	GSM: GMSK GPRS: GMSK EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK LTE: QPSK / 16QAM 802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11a/g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) Bluetooth v4.0 : GFSK Bluetooth v3.0 + EDR: GFSK, $\pi/4$ -DQPSK, 8-DPSK GPS : BPSK

1.5. Modification of EUT

No modifications are made to the EUT during all test items.

1.6. Test Site

Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.	
Test Site Location	No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, Nanshan District, Shenzhen, Guangdong, P.R.C. TEL: +86-755- 3320-2398	
Test Site No.	Sporton Site No.	FCC Registration No.
	03CH01-SZ	831040

1.7. Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC 47 CFR FCC Part 15 Subpart B
- ♦ ANSI C63.4-2003

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

2. Test Configuration of Equipment Under Test

2.1. Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

Frequency range investigated: radiation (30MHz to the 5th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

The following tables are showing the test modes as the worst cases and recorded in this report.

Item	EUT Configuration	Test Condition
		EMI RE
1.	Data application transferred mode (EUT with notebook)	<input checked="" type="checkbox"/>

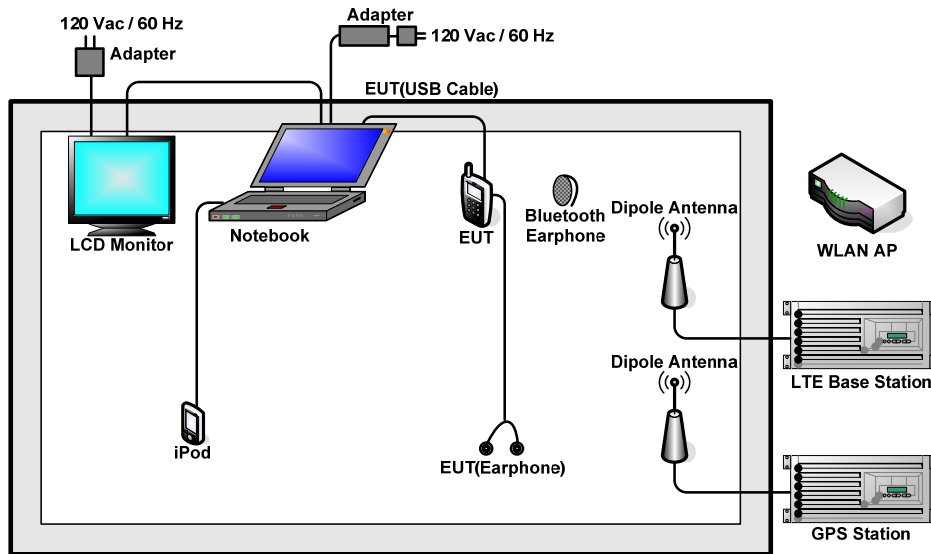
Abbreviations:

- EMI RE: EUT radiated emissions

Test Items	EUT Configure Mode	Function Type
Radiated Emissions	1	Mode 1: LTE Band 7 Idle + Bluetooth Idle + WLAN (2.4GHz) Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx + Battery 2

Remark: Link with Notebook means data application transferred mode between EUT and Notebook.

2.2. Connection Diagram of Test System



2.3. Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	LTE Base Station	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	GPS Station	T&E	GS-50	N/A	N/A	Unshielded, 1.8 m
3.	WLAN AP	D-Link	DIR-615	FCC DoC	N/A	Unshielded, 1.8 m
4.	Bluetooth Earphone	Nokia	HS-12W	PYAHS-12W	N/A	N/A
5.	Notebook	DELL	P08S	FCC DoC	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
6.	LCD Monitor	DELL	IN1940MWB	FCC DoC	Shielded, 1.2 m	Unshielded, 1.8 m
7.	iPod	Apple	MC525 ZP/A	FCC DoC	Shielded, 1.0 m	N/A



2.4. EUT Operation Test Setup

The EUT was in GSM idle mode during the testing. The EUT was synchronized to the BCCH, and was in continuous receiving mode by setting system simulator's paging reorganization.

At the same time, the EUT was attached to the Bluetooth earphone or WLAN AP, and the following programs installed in the EUT were programmed during the test.

1. Execute the program, "Winthrax" under WIN7 installed in notebook for files transfer with EUT via USB cable.
2. Turn on GPS function to make the EUT receive continuous signals from GPS station.
3. Execute "H Pattern" to show H Pattern via VGA Cable on the Monitor.

3. Test Result

3.1. Test of Radiated Emission Measurement

3.1.1. Limit of Radiated Emission

The emissions from an unintentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

3.1.2. Measuring Instruments

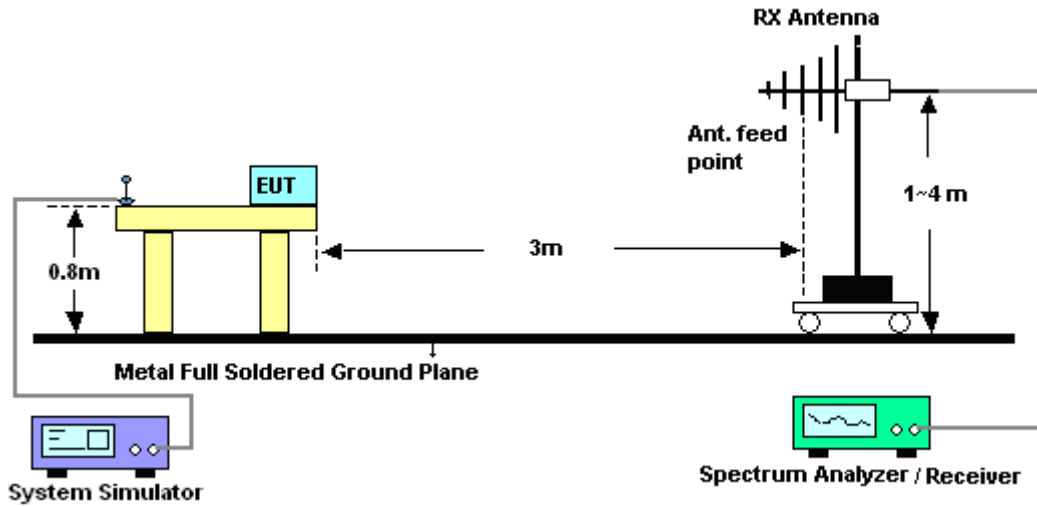
See list of measuring instruments of this test report.

3.1.3. Test Procedures

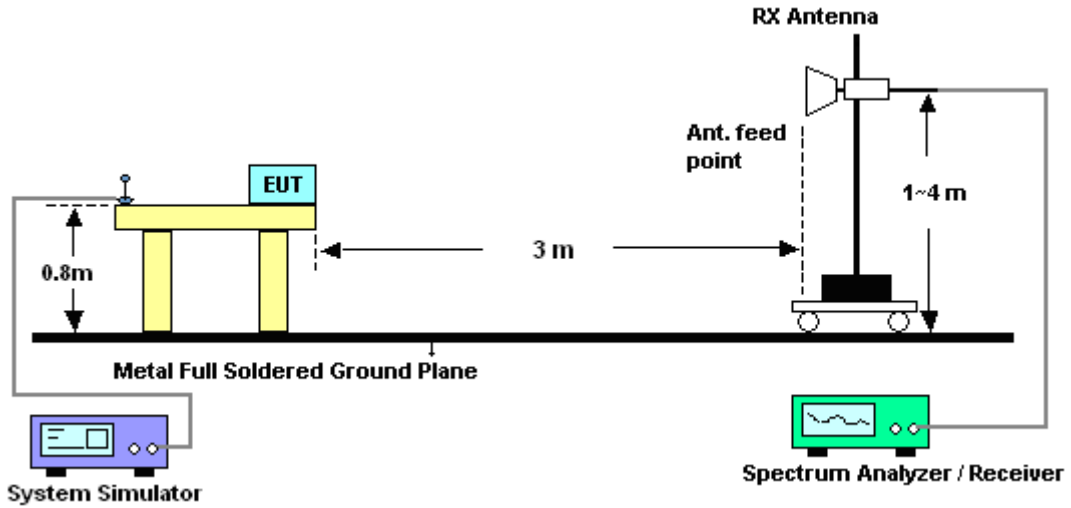
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna is a Bi-Log antenna and its height is adjusted between one to four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, peak values of EUT will be reported. Otherwise, the emission will be repeated by using the quasi-peak method and reported.
8. Emission level (dB μ V/m) = 20 log Emission level (μ V/m)
9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

3.1.4. Test Setup of Radiated Emission

For radiated emissions from 30MHz to 1GHz



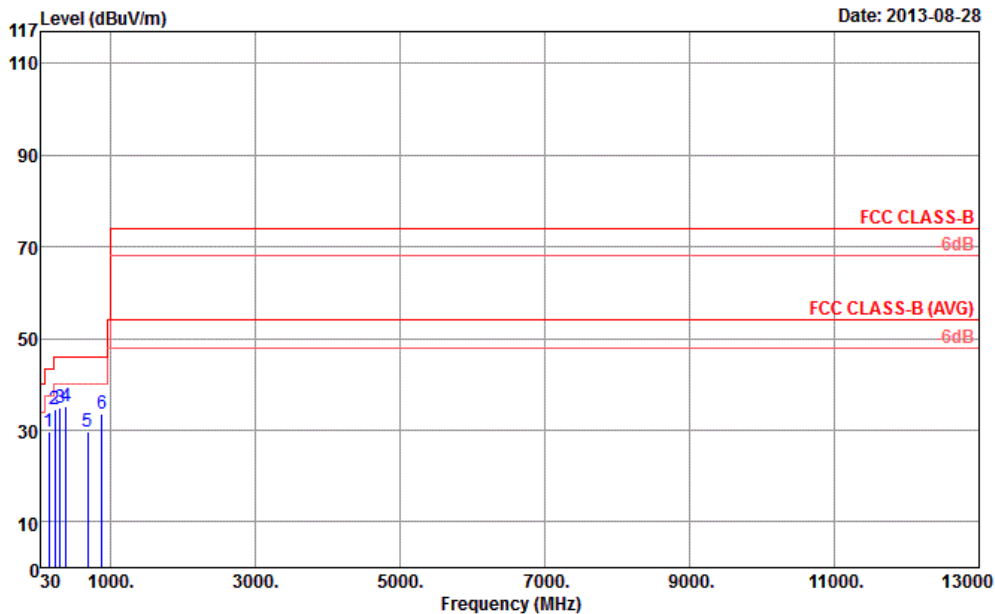
For radiated emissions above 1GHz





3.1.5. Test Result of Radiated Emission

Test Mode :	Mode 1	Temperature :	23~24°C
Test Engineer :	Robin Luo	Relative Humidity :	49~50%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	LTE Band 7 Idle + Bluetooth Idle + WLAN (2.4GHz) Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx + Battery 2		

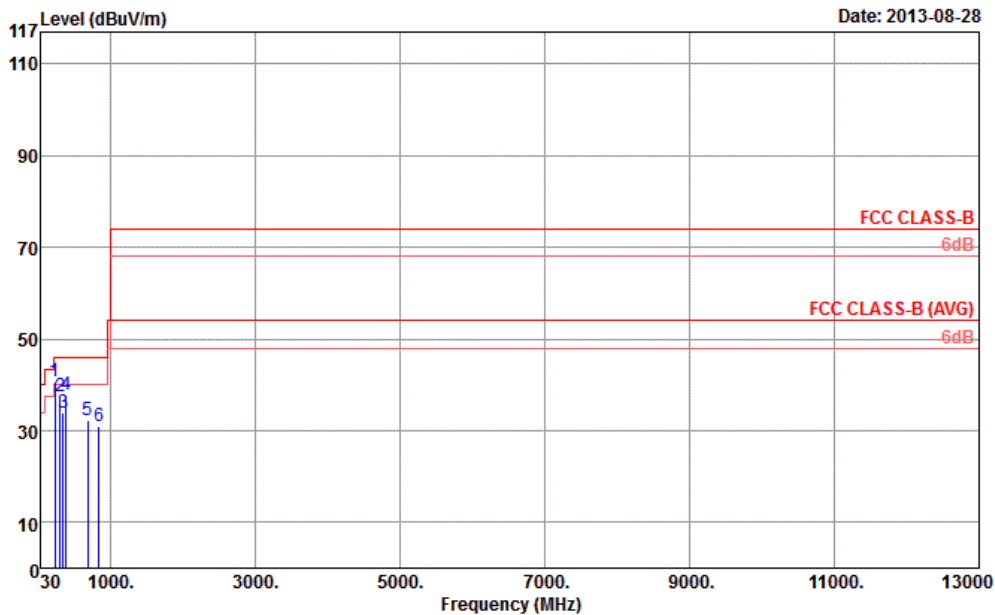


Site : 03CH01-SZ
 Condition : FCC CLASS-B 3m LF_ANT_121103 HORIZONTAL

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	152.22	29.52	-13.98	43.50	48.17	10.35	1.49	30.49	---	---	Peak
2	228.85	34.67	-11.33	46.00	52.52	10.60	1.79	30.24	---	---	Peak
3	305.48	34.93	-11.07	46.00	49.81	13.06	2.04	29.98	---	---	Peak
4 P	381.14	35.22	-10.78	46.00	46.71	16.00	2.24	29.73	152	250	Peak
5	687.66	29.81	-16.19	46.00	36.70	19.24	2.95	29.08	---	---	Peak
6	881.66	33.44	-12.56	46.00	38.08	20.90	3.29	28.83	---	---	Peak



Test Mode :	Mode 1	Temperature :	23~24°C
Test Engineer :	Robin Luo	Relative Humidity :	49~50%
Test Distance :	3m	Polarization :	Vertical
Function Type :	LTE Band 7 Idle + Bluetooth Idle + WLAN (2.4GHz) Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx + Battery 2		



Site : 03CH01-SZ
 Condition : FCC CLASS-B 3m LF_ANT_121103 VERTICAL

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Preamp	A/Pos	T/Pos	Remark		
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 P	228.85	40.82	-5.18	46.00	58.67	10.60	1.79	30.24	185	245	Peak
2	304.51	37.46	-8.54	46.00	52.37	13.04	2.03	29.98	---	---	Peak
3	344.28	33.88	-12.12	46.00	46.99	14.60	2.14	29.85	---	---	Peak
4	382.11	37.77	-8.23	46.00	49.22	16.04	2.24	29.73	---	---	Peak
5	684.75	32.32	-13.68	46.00	39.36	19.12	2.93	29.09	---	---	Peak
6	840.92	30.88	-15.12	46.00	35.54	21.00	3.22	28.88	---	---	Peak



4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	Agilent Technologies	N9038A	MY52260 185	20Hz~26.5GHz	Apr. 04, 2013	Aug. 28, 2013	Apr. 03, 2014	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS Lindgren	3117	00119436	1GHz~18GHz	Oct. 12, 2012	Aug. 28, 2013	Oct. 11, 2013	Radiation (03CH01-SZ)
Bilog Antenna	SCHAFFNER	CBL6112B	2614	30Mhz~2Ghz	Nov. 03, 2012	Aug. 28, 2013	Nov. 02, 2013	Radiation (03CH01-SZ)
Amplifier	ADVANTEST	BB525C	E9007003	9K-3000MHz GAIN 30db	Mar. 28, 2013	Aug. 28, 2013	Mar. 27, 2014	Radiation (03CH01-SZ)
Amplifier	Yiai	AV3860B	04030	2GHz~26.5GHz	Mar. 28, 2013	Aug. 28, 2013	Mar. 27, 2014	Radiation (03CH01-SZ)
Turn Table	EM Electronic	EM 1000	N/A	0 ~ 360 degree	N/A	Aug. 28, 2013	N/A	Radiation (03CH01-SZ)
Antenna Mast	EM electronic	EM 1000	N/A	1 m - 4 m	N/A	Aug. 28, 2013	N/A	Radiation (03CH01-SZ)



5. Uncertainty of Evaluation

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.54
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.72
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