

FCC TEST REPORT

On Behalf of

Guangzhou Da Zhi Electronic Science Technology Co., Ltd.

LED Lighting

Model No.: Mazarra P-Series

Prepared for : Guangzhou Da Zhi Electronic Science Technology Co., Ltd.

Address : Room 601B, Building 11.#38 Ruibao RD. Haizhu District, Guangzhou, P.R.China

Prepared by : Shenzhen LCS Compliance Testing Laboratory Ltd.

Address : Xingyuan Industrial Park, Tongda Road, Bao'an Blvd., Bao'an District, Shenzhen, Guangdong, China

Date of receipt of test sample : September 06, 2011

Number of tested samples : 1

Serial number : Prototype

Date of Test : September 07, 2011 - September 15, 2011

Date of Report : September 15, 2011

TEST REPORT
FCC CFR 47 PART 18

Report Reference No. : LCS1109072246F

Date of issue : September 15, 2011

Testing Laboratory Name : Shenzhen LCS Compliance Testing Laboratory Ltd.

Address : Xingyuan Industrial Park, Tongda Road, Bao'an Blvd., Bao'an District, Shenzhen, Guangdong, China

Testing location/ procedure : Full application of Harmonised standards
Partial application of Harmonised standards
Other standard testing method

Applicant's name..... : Guangzhou Da Zhi Electronic Science Technology Co., Ltd.

Address : Room 601B, Building 11.#38 Ruibao RD. Haizhu District, Guangzhou, P.R.China

Test specification

Standard : FCC CFR 47 PART 18 Subpart B: 2011, ANSI C63.4-2009

Test Report Form No. : LCSEMC-1.0

TRF Originator : Shenzhen LCS Compliance Testing Laboratory Ltd.

Master TRF : Dated 2011-03

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Test item description..... : LED Lighting

Trade Mark : maxspect

Manufacturer : Guangzhou Da Zhi Electronic Science Technology Co., Ltd.

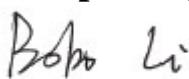
Model/Type reference : Mazarra P-Series

Ratings : Output: DC 18V

Input: AC 100-250V, 50/60Hz

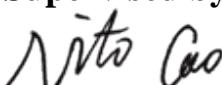
Result : **Positive**

Compiled by:



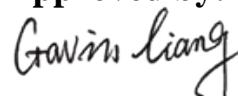
Bobo Li/ File administrators

Supervised by:



Vito Cao/ Technique principal

Approved by:



Gavin Liang/ Manager

EMC -- TEST REPORT

Test Report No. : LCS1109072246F

September 15, 2011

Date of issue

Type / Model..... : Mazarra P-Series

EUT..... : LED Lighting

Applicant..... : **Guangzhou Da Zhi Electronic Science Technology Co., Ltd.**
Address..... : Room 601B, Building 11.#38 Ruibao RD. Haizhu District, Guangzhou, P.R.China
Telephone..... : /
Fax..... : /
Contact..... : /

Manufacturer..... : **Guangzhou Da Zhi Electronic Science Technology Co., Ltd.**
Address..... : Room 601B, Building 11.#38 Ruibao RD. Haizhu District, Guangzhou, P.R.China
Telephone..... : /
Fax..... : /
Contact..... : /

Factory..... : /
Address..... : /
Telephone..... : /
Fax..... : /
Contact..... : /

Test Result according to the standards on page 5: **Positive**

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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1. SUMMARY OF STANDARDS AND RESULTS

1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION			
Description of Test Item	Standard	Limits	Results
Conducted disturbance at mains terminals	FCC CFR 47 PART 18 Subpart B: 2011	-----	PASS
Radiated disturbance	FCC CFR 47 PART 18 Subpart B: 2011	-----	PASS
N/A is an abbreviation for Not Applicable.			

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT : LED Lighting
 Model Number : Mazarra P-Series
 Power Supply : Output: DC 18V
 Input: AC 100-250V, 50/60Hz

EUT Clock Frequency : $\leq 108\text{MHz}$

2.2. Description of Test Facility

Site Description
 EMC Lab. : Accredited by CNAS, June 04, 2010
 The Certificate Registration Number. is L4595.
 Accredited by FCC, July 14, 2011
 The Certificate Registration Number. is 899208.
 Accredited by Industry Canada, May. 02, 2011
 The Certificate Registration Number. is 9642A-1

2.3. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the LCS quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

2.4. Measurement Uncertainty

Test Item		Frequency Range	Uncertainty	Note
Radiation Uncertainty	: 30MHz~200MHz	$\pm 2.96\text{dB}$	(1)	
	: 200MHz~1000MHz	$\pm 3.10\text{dB}$	(1)	
Conduction Uncertainty	: 150kHz~30MHz	$\pm 1.63\text{dB}$	(1)	
Power disturbance	: 30MHz~300MHz	$\pm 1.60\text{dB}$	(1)	

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

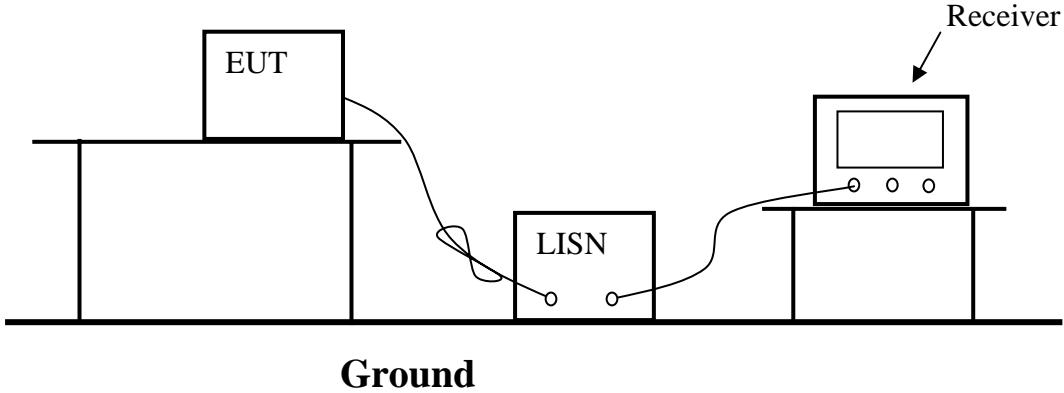
3. POWER LINE CONDUCTED MEASUREMENT

3.1. Test Equipment

The following test equipments are used during the power line conducted measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	1166.5950.03	2011/06
2	EMI Test Receiver	ROHDE & SCHWARZ	ESPI	1164.6407.03	2011/06
3	Artificial Mains	ROHDE & SCHWARZ	ENV216	3560.6550.12	2011/06
4	EMI Test Software	AUDIX	E3	N/A	2011/06

3.2. Block Diagram of Test Setup



3.3. Power Line Conducted Emission Measurement Limits

Frequency of Emission (MHz)	Conducted Limit (dBuV)
	Quasi-peak
0.45 ~ 2.51	48
2.51 ~ 3.00	69.5
3.00 ~ 30.00	48

Notes: 1. *Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

3.4. Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

3.5. Operating Condition of EUT

3.5.1. Setup the EUT and simulator as shown as Section 3.2.

3.5.2. Turn on the power of all equipment.

3.5.3. Let the EUT work in test mode (ON) and measure it.

3.6. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC/ANSI C63.4-2009 on Conducted Emission Measurement.

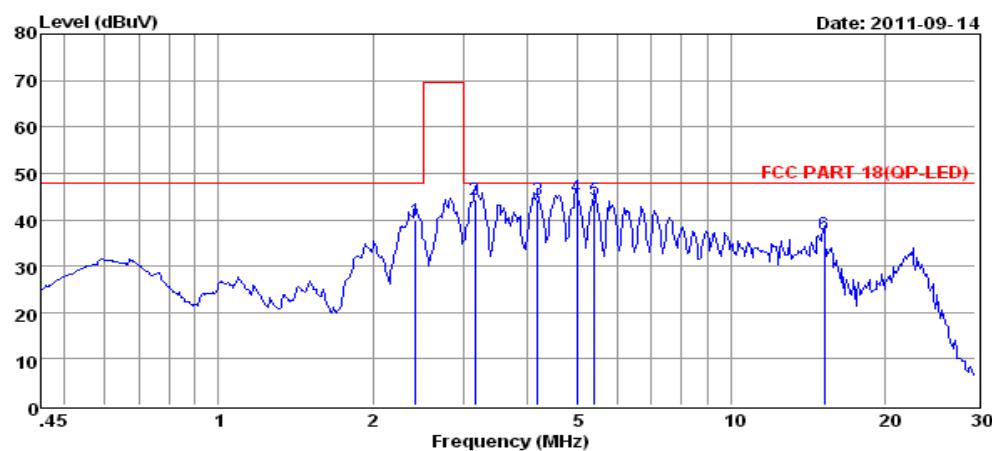
The bandwidth of test receiver is set at 9kHz.

The frequency range from 450kHz to 30MHz is checked.

3.7. Power Line Conducted Emission Measurement Results

PASS.

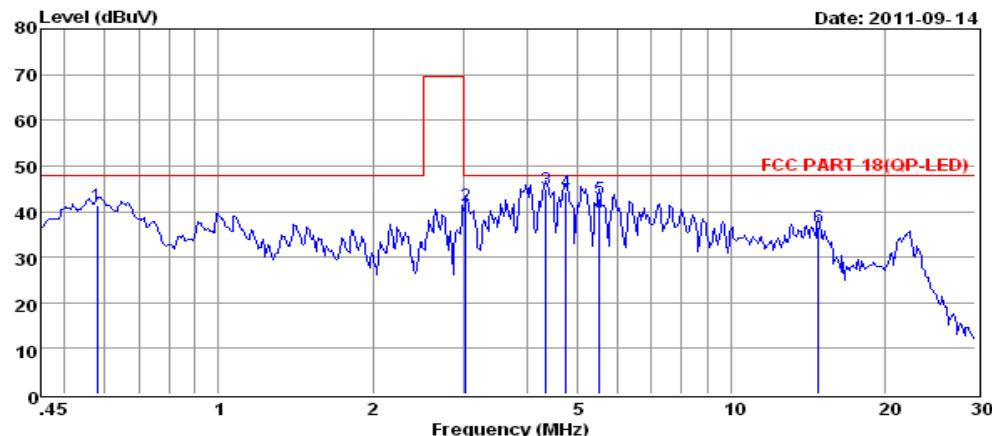
All the scanning waveforms for Conducted Emission Measurement are refer to the next page.



Env. Ins: 24*/56%
 EUT: LED Lighting
 M/N: Mazarra P-Series
 Power Rating: AC 120V/60Hz
 Test Mode: On
 Operator: Bruce
 Memo:
 Applicant:
 Pol: NEUTRAL

Freq	Reading	LisnFac	CabLos	Measured	Limit	Over	Remark
MHz	dBuV	dB	dB	dBuV/m	dBuV/m	dBuV/m	
1	2.42	30.09	9.64	0.05	39.78	48.00	-8.22 QP
2	3.17	34.59	9.65	0.06	44.30	48.00	-3.70 QP
3	4.20	34.71	9.65	0.06	44.42	48.00	-3.58 QP
4	5.00	35.08	9.66	0.06	44.80	48.00	-3.20 QP
5	5.42	34.54	9.67	0.06	44.27	48.00	-3.73 QP
6	15.23	26.94	9.74	0.10	36.78	48.00	-11.22 QP

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss



Env. Ins: 24*/56%
 EUT: LED Lighting
 M/N: Mazarra P-Series
 Power Rating: AC 120V/60Hz
 Test Mode: On
 Operator: Bruce
 Memo:
 Applicant:
 Pol: LINE

Freq	Reading	LisnFac	CabLos	Measured	Limit	Over	Remark
MHz	dBuV	dB	dB	dBuV/m	dBuV/m	dBuV/m	
1	0.58	31.54	9.63	0.04	41.21	48.00	-6.79 QP
2	3.04	31.60	9.64	0.06	41.30	48.00	-6.70 QP
3	4.36	35.10	9.65	0.06	44.81	48.00	-3.19 QP
4	4.77	34.46	9.65	0.06	44.17	48.00	-3.83 QP
5	5.53	33.07	9.66	0.06	42.79	48.00	-5.21 QP
6	14.83	26.80	9.71	0.10	36.61	48.00	-11.39 QP

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss

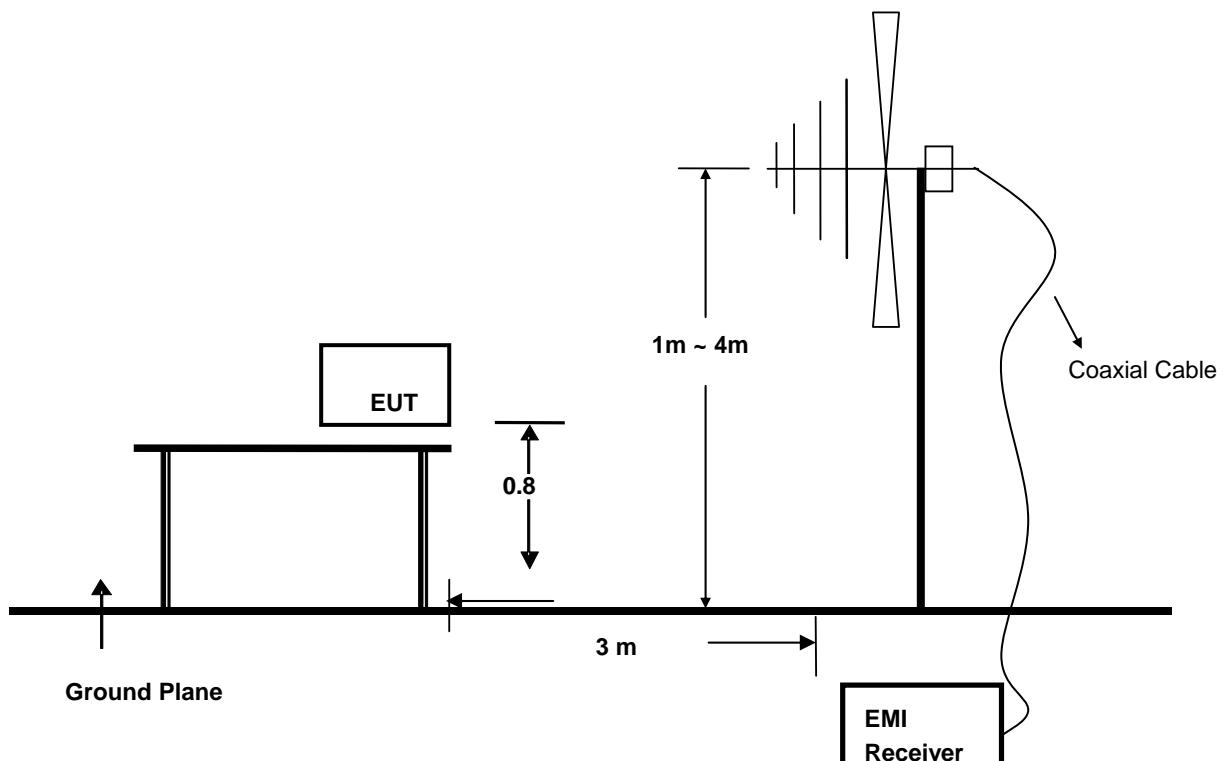
4. RADIATED EMISSION MEASUREMENT

4.1. Test Equipment

The following test equipments are used during the radiated emission measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	1166.5950.03	2011/06
2	EMI Test Receiver	ROHDE & SCHWARZ	ESPI	1164.6407.03	2011/06
3	Log per Antenna	ROHDE & SCHWARZ	VULB9163	9163-470	2011/06
4	Amplifier	SCHWARZBECK	PAP-0001	21002	2011/06
5	EMI Test Software	AUDIX	E3	N/A	2011/06

4.2. Block Diagram of Test Setup



4.3. Radiated Emission Limit

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μ V/m	dB(μ V)/m
30 ~ 88	3	300	40
88 ~ 216	3	500	43.5
216 ~ 1000	3	700	49.5

Remark : (1) Emission level (dB) μ V = 20 log Emission level μ V/m

(2) The smaller limit shall apply at the cross point between two frequency bands.

(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

4.4. EUT Configuration on Measurement

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

4.5. Operating Condition of EUT

- 4.5.1. Setup the EUT as shown in Section 4.2.
- 4.5.2. Let the EUT work in test mode (on) and measure it.

4.6. Test Procedure

EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated by-log antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2009 on radiated emission measurement.

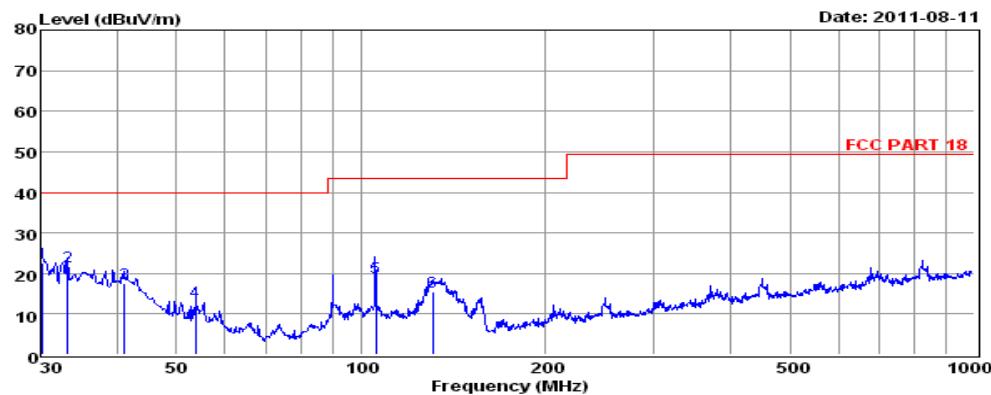
The bandwidth of the EMI test receiver is set at 120kHz.

The frequency range from 30MHz to 1000MHz is checked.

4.7. Radiated Emission Noise Measurement Result

PASS.

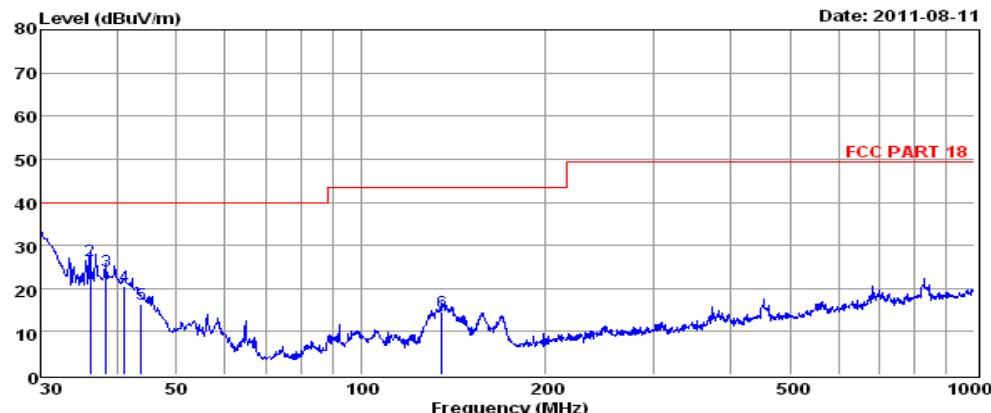
The scanning waveforms please refer to the next page.



Env. / Ins: 24°C/56%
 EUT: LED Lighting
 M/N: Mazarra P-Series
 Power Rating: AC 120V/60Hz
 Test Mode: On
 Operator: Bruce
 Memo:
 Applicant: HORIZONTAL
 pol:

Freq.	Reading	CabLos	AntFac	PreFac	Measured	Limit	Over	Remark
MHz	dBuV				dBuV/m	dBuV/m	dBuV/m	
1 30.27	48.99	0.39	12.33	39.12	22.59	40.00	-17.41	QP
2 33.24	48.12	0.37	12.31	39.13	21.67	40.00	-18.33	QP
3 41.07	42.62	0.50	13.57	39.13	17.56	40.00	-22.44	QP
4 53.76	38.63	0.46	13.08	39.15	13.02	40.00	-26.98	QP
5 105.60	44.93	0.61	12.65	39.20	18.99	43.50	-24.51	QP
6 130.98	44.99	0.76	8.86	39.20	15.41	43.50	-28.09	QP

Note: 1. All readings are Quasi-peak values.
 2. Measured = Reading + Antenna Factor + Cable Loss - Amp Factor.
 3. The emission levels that are 20dB below the official limit are not reported.



Env. / Ins: 24°C/56%
 EUT: LED Lighting
 M/N: Mazarra P-Series
 Power Rating: AC 120V/60Hz
 Test Mode: On
 Operator: Bruce
 Memo:
 Applicant:
 pol: VERTICAL

Freq.	Reading	CabLos	AntFac	PreFac	Measured	Limit	Over	Remark
MHz	dBuV				dBuV/m	dBuV/m	dBuV/m	
1 30.00	57.97	0.39	12.33	39.12	31.57	40.00	-8.43	QP
2 36.21	52.62	0.41	12.61	39.13	26.51	40.00	-13.49	QP
3 38.37	49.60	0.38	13.16	39.13	24.01	40.00	-15.99	QP
4 41.07	45.47	0.50	13.57	39.13	20.41	40.00	-19.59	QP
5 43.77	41.58	0.41	13.56	39.14	16.41	40.00	-23.59	QP
6 135.57	44.51	0.70	8.52	39.20	14.53	43.50	-28.97	QP

Note: 1. All readings are Quasi-peak values.
 2. Measured = Reading + Antenna Factor + Cable Loss - Amp Factor.
 3. The emission levels that are 20dB below the official limit are not reported.

5. MANUFACTURER/ APPROVAL HOLDER DECLARATION

The following identical model(s):

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Belong to the tested device:

Product description : LED Lighting
Model name : Mazarra P-Series

No additional models were tested.

-----THE END OF REPORT-----