

# FCC Test Report

Report No.: AGC00767190402FE04

**FCC ID** : 2ALTA4G001X  
**APPLICATION PURPOSE** : Original Equipment  
**PRODUCT DESIGNATION** : Smart phone  
**BRAND NAME** : Avvio, Mint  
**MODEL NAME** : 4G0, 4G0+, M342  
**CLIENT** : Planet Avvio LLC  
**DATE OF ISSUE** : May 15, 2019  
**STANDARD(S)** : FCC Part 15.247  
**TEST PROCEDURE(S)** : KDB 558074 D01 DTS Meas Guidance v04  
**REPORT VERSION** : V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

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**Report Revise Record**

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	May 15, 2019	Valid	Initial Release

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**1. VERIFICATION OF CONFORMITY**

<b>Applicant</b>	Planet Avvio LLC
<b>Address</b>	9725 NW 117th Ave, Medley, Florida , 33178 United States
<b>Manufacturer</b>	LAAGIN COMPANY LIMITED
<b>Address</b>	RM 1905 NAN FUNG CENTRE,264-298 CASTLE PEAK ROAD,TSUEN WAN, HONG KONG 518000
<b>Factory</b>	Shenzhen Tensen Technology Co., LTD.
<b>Address</b>	4th Floor,Yufeng Building, Jinhai Road No.6-9, Xixiang Street Bao'an District, Shenzhen
<b>Product Designation</b>	Smart phone
<b>Brand Name</b>	Avvio, Mint
<b>Test Model</b>	4GO
<b>Serial Model</b>	4GO+, M342
<b>Difference description</b>	a) All the same except for brand name and model name, the corresponding relationship are as follow: b) <b>Avvio</b> is corresponding <b>4GO, 4GO+</b> ; <b>Mint</b> is corresponding <b>M342</b> ;
<b>Date of test</b>	Apr. 16, 2019~May 12, 2019
<b>Deviation</b>	None
<b>Condition of Test Sample</b>	Normal
<b>Report Template</b>	AGCRT-US-BGN/RF

We hereby certify that:

The above equipment was tested by Attestation of Global Compliance(Shenzhen) Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with requirement of FCC Part 15 Rules requirement.

The test results of this report relate only to the tested sample identified in this report.

Tested By



Donjon Huang(Huang dongyang)

May 12, 2019

Reviewed By



Max Zhang(Zhang Yi)

May 15, 2019

Approved By



Forrest Lei(Lei Yonggang)  
Authorized Officer

May 15, 2019

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## 2. GENERAL INFORMATION

### 2.1. PRODUCT DESCRIPTION

The EUT is designed as "Smart phone". It is designed by way of utilizing the DSSS and OFDM technology to achieve the system operation.

A major technical description of EUT is described as following

<b>Operation Frequency</b>	2.412 GHz~2.462GHz
<b>Output Power</b>	IEEE 802.11b: <b>11.79</b> dBm, IEEE 802.11g: <b>9.66</b> dBm; IEEE 802.11n(20): <b>9.65</b> dBm, IEEE 802.11n(40): <b>9.19</b> dBm
<b>Modulation</b>	DSSS(DBPSK/DQPSK/CCK);OFDM(BPSK/QPSK/16-QAM/64-QAM)
<b>Number of channels</b>	11 Channels (IEEE802.11b/g/n20)& 7 Channels (IEEE802.11n40)
<b>Hardware Version</b>	K200-PW-V2.0
<b>Software Version</b>	Avvio_4GO_Claro_v2.00
<b>Antenna Designation</b>	PIFA Antenna
<b>Antenna Gain</b>	1.0dBi
<b>Power Supply</b>	DC 3.7V by Built-in Li-ion Battery

### 2.2. TABLE OF CARRIER FREQUENCIES

Frequency Band	Channel Number	Frequency
2400~2483.5MHZ	1	2412 MHZ
	2	2417 MHZ
	3	2422 MHZ
	4	2427 MHZ
	5	2432 MHZ
	6	2437 MHZ
	7	2442 MHZ
	8	2447 MHZ
	9	2452 MHZ
	10	2457 MHZ
	11	2462 MHZ

Note: For 20MHz bandwidth system use Channel 1 to Channel 11  
 For 802.11n 40MHz bandwidth system use Channel 3 to Channel 9.

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**2.3. IEEE 802.11N MODULATION SCHEME**

MCS Index	Nss	Modulation	R	NBPS	NCBPS		NDBPS		Data rate(Mbps)			
					800nsGI		20MHz	40MHz	20MHz	40MHz	20MHz	40MHz
					20MHz	40MHz						
0	1	BPSK	1/2	1	52	108	26	54	6.5	13.5		
1	1	QPSK	1/2	2	104	216	52	108	13.0	27.0		
2	1	QPSK	3/4	2	104	216	78	162	19.5	40.5		
3	1	16-QAM	1/2	4	208	432	104	216	26.0	54.0		
4	1	16-QAM	3/4	4	208	432	156	324	39.0	81.0		
5	1	64-QAM	2/3	6	312	648	208	432	52.0	108.0		
6	1	64-QAM	3/4	6	312	648	234	489	58.5	121.5		
7	1	64-QAM	5/6	6	312	648	260	540	65.0	135.0		

Symbol	Explanation
NSS	Number of spatial streams
R	Code rate
NBPS	Number of coded bits per single carrier
NCBPS	Number of coded bits per symbol
NDBPS	Number of data bits per symbol
GI	Guard interval

**2.4. RELATED SUBMITTAL(S) / GRANT (S)**

This submittal(s) (test report) is intended for **FCC ID: 2ALTA4GO01X** filing to comply with the FCC Part 15 requirements.

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## 2.5. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10 (2013).

Radiated testing was performed at an antenna to EUT distance 3 meters.

Others testing (listed at item 5.3) was performed according to the procedures in FCC Part 15.247 rules KDB 558074 D01 DTS Meas Guidance v05.

## 2.6. SPECIAL ACCESSORIES

Refer to section 5.2.

## 2.7. EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

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### 3. MEASUREMENT UNCERTAINTY

Test	Measurement Uncertainty	Notes
Transmitter power conducted	±0.57 dB	(1)
Transmitter power Radiated	±2.20 dB	(1)
Conducted spurious emission 9KHz-40 GHz	±2.20 dB	(1)
Occupied Bandwidth	±0.01ppm	(1)
Radiated Emission 30~1000MHz	±4.10dB	(1)
Radiated Emission Above 1GHz	±4.32dB	(1)
Conducted Disturbance0.15~30MHz	±3.20dB	(1)

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

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#### 4. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION
1	Low channel TX
2	Middle channel TX
3	High channel TX
4	Normal operating

Note:  
 Transmit by 802.11b with Data rate (1/2/5.5/11)  
 Transmit by 802.11g with Data rate (6/9/12/18/24/36/48/54)  
 Transmit by 802.11n (20MHz) with Data rate (6.5/13/19.5/26/39/52/58.5/65)  
 Transmit by 802.11n (40MHz) with Data rate (13.5/27/40.5/54/81/108/121.5/135)

**Note:**

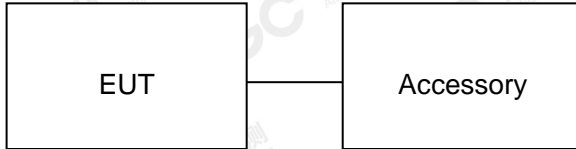
1. The EUT has been set to operate continuously on the lowest, middle and highest operation frequency Individually, and the eut is operating at its maximum duty cycle>or equal 98%
2. All modes under which configure applicable have been tested and the worst mode test data recording in the test report, if no other mode data.
3. For Radiated Emission, 3axis were chosen for testing for each applicable mode.

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## 5 SYSTEM TEST CONFIGURATION

### 5.1. CONFIGURATION OF EUT SYSTEM

Configure:



### 5.2. EQUIPMENT USED IN EUT SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	Smart phone	4GO	2ALTA4GO01X	EUT
2	Antenna	N/A	N/A	AE
3	Adapter	4GO	DC 5.0V 700mA	AE
4	Battery	4GO	DC 3.7V 1450mAh	AE
5	Earphone	N/A	N/A	AE
6	USB Cable	N/A	N/A	AE

Note: All the accessories have been used during the test in conduction emission test.

### 5.3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.247	Output Power	Compliant
§15.247	6 dB Bandwidth	Compliant
§15.247	Conducted Spurious Emission	Compliant
§15.247	Maximum Conducted Output Power SPECTRAL Density	Compliant
§15.209	Radiated Emission	Compliant
§15.247	Band Edges	Compliant
§15.207	Line Conduction Emission	Compliant

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**6. TEST FACILITY**

<b>Test Site</b>	Attestation of Global Compliance (Shenzhen) Co., Ltd
<b>Location</b>	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
<b>Designation Number</b>	CN1259
<b>FCC Test Firm Registration Number</b>	975832
<b>A2LA Cert. No.</b>	5054.02
<b>Description</b>	Attestation of Global Compliance(Shenzhen) Co., Ltd is accredited by A2LA

**ALL TEST EQUIPMENT LIST**

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESPI	101206	Jun.18, 2018	Jun.17, 2019
LISN	R&S	ESH2-Z5	100086	Aug.19, 2018	Aug.18, 2019
TEST RECEIVER	R&S	ESCI	10096	Jun.18, 2018	Jun.17, 2019
EXA Signal Analyzer	Aglient	N9010A	MY53470504	Dec.06, 2018	Dec.05, 2019
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Mar. 01, 2018	Feb. 28, 2020
preamplifier	ChengYi	EMC184045SE	980508	Sep.20, 2018	Sep.19, 2019
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	Mar. 01, 2018	Feb. 28, 2020
Broadband Preamplifier	SCHWARZBECK	BBV 9718	9718-205	Jun.18, 2018	Jun.17, 2019
ANTENNA	SCHWARZBECK	VULB9168	D69250	Mar. 01, 2018	Feb. 28, 2020
SIGNAL ANALYZER	Agilent	N9020A	MY52090123	Sep.20, 2018	Sep.19, 2019
USB Wideband Power Sensor	Agilent	U2021XA	MY54110007	Sep. 20, 2018	Sep. 19, 2019
LOOP ANTENNA	A.H	SAS-562B	/	Mar. 01, 2018	Feb. 28, 2020
Horn Ant (18G-40GHz)	Schwarzbeck	BBHA 9170	/	Mar.01,2018	Feb. 28, 2020
Horn Ant (18G-40GHz)	ETS	QWH_SL_18_40_K_SG	/	Mar.01,2018	Feb. 28, 2020

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## 6. OUTPUT POWER

### 6.1. MEASUREMENT PROCEDURE

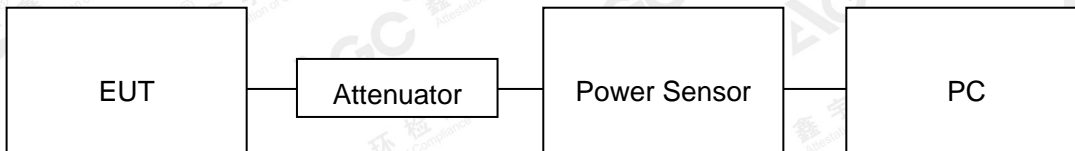
For max average conducted output power test:

1. Connect EUT RF output port to power probe through an RF attenuator.
2. Connect the power probe to the PC.
3. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
4. Record the maximum power from the software.

**Note :** The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

### 6.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

#### AVERAGE POWER SETUP



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**6.3. LIMITS AND MEASUREMENT RESULT**

<b>TEST ITEM</b>	OUTPUT POWER
<b>TEST MODE</b>	802.11b with data rate 1

Frequency (GHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	11.69	30	Pass
2.437	11.60	30	Pass
2.462	<b>11.79</b>	30	Pass

<b>TEST ITEM</b>	OUTPUT POWER
<b>TEST MODE</b>	802.11g with data rate 6

Frequency (GHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	7.70	30	Pass
2.437	9.52	30	Pass
2.462	<b>9.66</b>	30	Pass

<b>TEST ITEM</b>	OUTPUT POWER
<b>TEST MODE</b>	802.11n 20 with data rate 6.5

Frequency (GHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	7.63	30	Pass
2.437	<b>9.65</b>	30	Pass
2.462	9.57	30	Pass

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<b>TEST ITEM</b>	<b>OUTPUT POWER</b>
<b>TEST MODE</b>	802.11n 40 with data rate 13.5

Frequency (GHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.422	7.89	30	Pass
2.437	<b>9.19</b>	30	Pass
2.452	6.77	30	Pass

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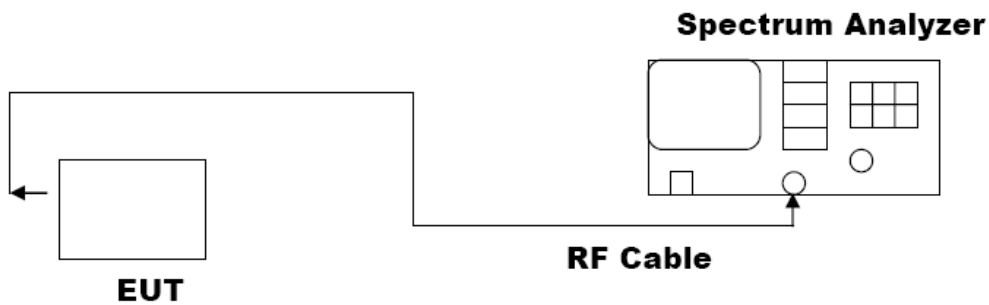
## 7. 6dB BANDWIDTH

### 7.1. MEASUREMENT PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. Set SPA Centre Frequency = Operation Frequency, RBW= 100 KHz, VBW $\geq$ 3 $\times$ RBW.
4. Set SPA Trace 1 Max hold, then View.

**Note:** The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

### 7.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



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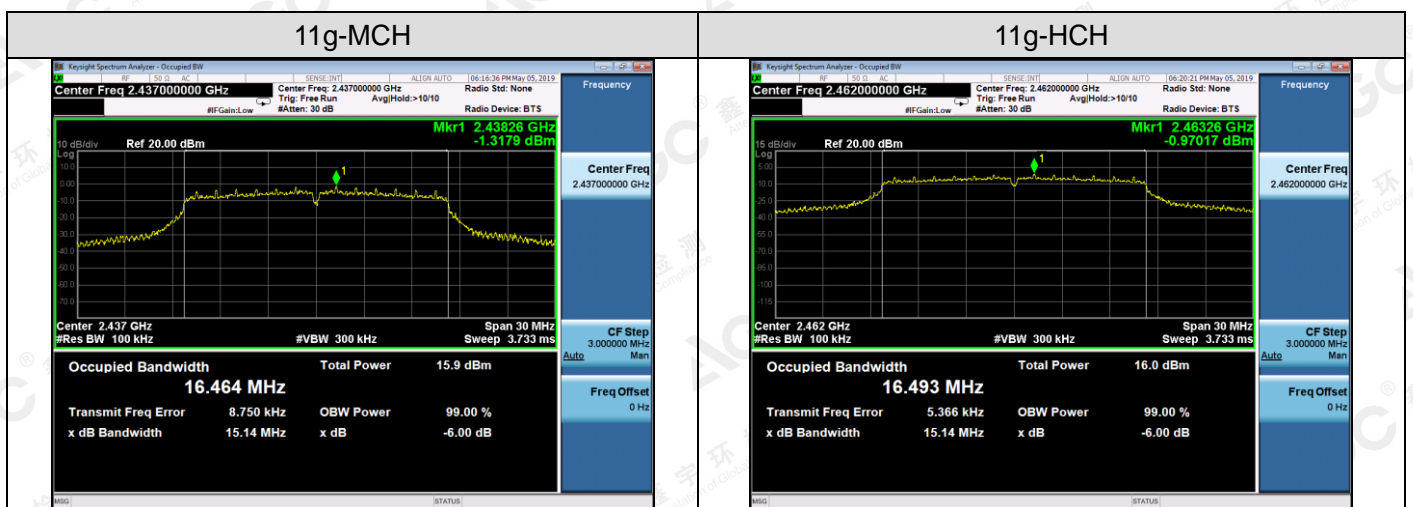
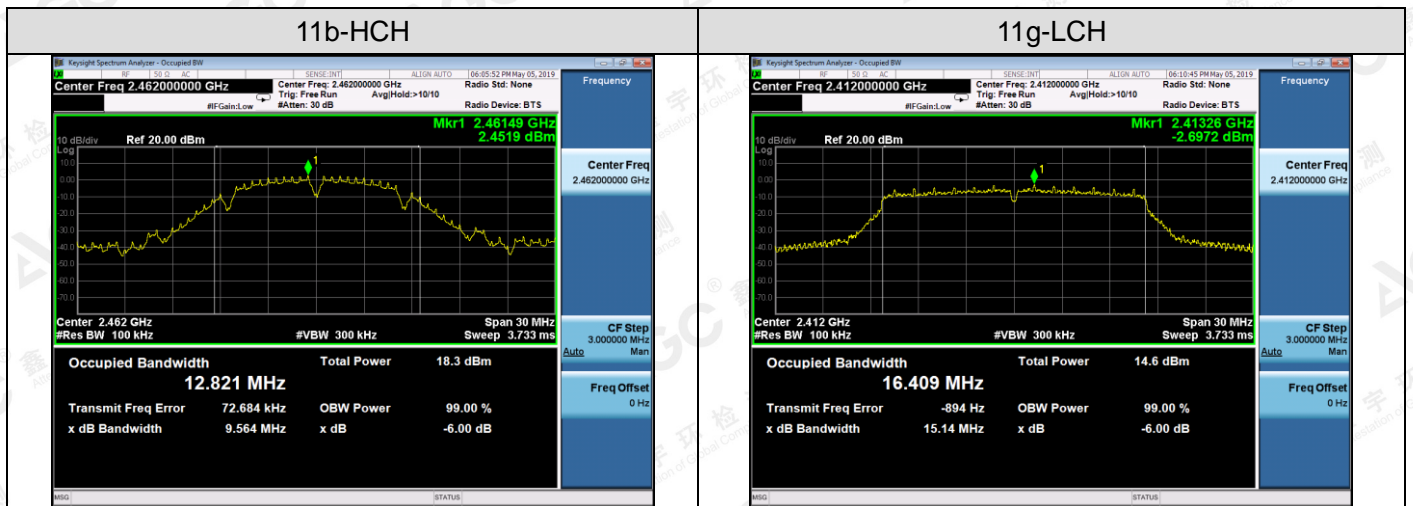
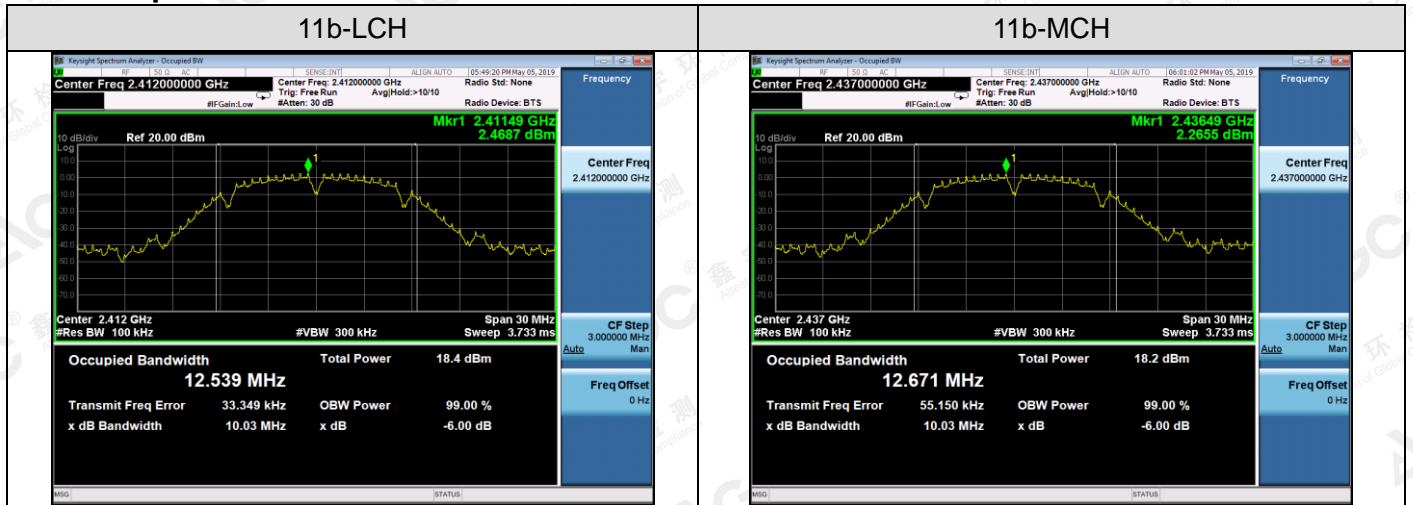


**7.3. LIMITS AND MEASUREMENT RESULTS**

Mode	Channel	6dB Bandwidth [MHz]	Verdict
11b	LCH	10.030	PASS
	MCH	10.030	PASS
	HCH	9.564	PASS
11g	LCH	15.140	PASS
	MCH	15.140	PASS
	HCH	15.140	PASS
11nHT20	LCH	15.770	PASS
	MCH	15.730	PASS
	HCH	15.140	PASS
11nHT40	LCH	35.390	PASS
	MCH	35.160	PASS
	HCH	35.360	PASS

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**Test Graph**



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