



FCC ID:2AO7Q-X600M1

AUDIX Technology (Shenzhen) Co., Ltd.

FCC PART 15C TEST REPORT FOR CERTIFICATION
On Behalf of

Planet Computers Limited

Gemini

Gemini 4G

FCC ID: 2AO7Q-X600M1

Prepared for : Planet Computers Limited
Suite #9, 56 Sloane Square, London, SW1W 8AX, United
Kingdom

Prepared By : Audix Technology (Shenzhen) Co., Ltd.
No. 6, Kefeng Road, Science & Technology Park,
Nanshan District, Shenzhen, Guangdong, China

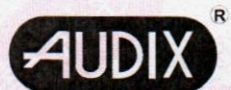
Tel: (0755) 26639496

Report Number : ACS-F18052
Date of Test : Jan.08~31, 2018
Date of Report : Apr.12, 2018

TABLE OF CONTENTS

Description	Page
1. SUMMARY OF STANDARDS AND RESULTS.....	1-1
1.1. Description of Standards and Results	1-1
2. GENERAL INFORMATION	2-1
2.1. Description of Device (EUT).....	2-1
2.2. Tested Supporting System Details.....	2-2
2.3. Block Diagram of connection between EUT and simulators	2-2
2.4. Test information.....	2-2
2.5. Test Facility	2-3
2.6. Measurement Uncertainty (95% confidence levels, k=2).....	2-3
3. POWER LINE CONDUCTED EMISSION TEST.....	3-1
3.1. Test Equipments	3-1
3.2. Block Diagram of Test Setup.....	3-1
3.3. Power Line Conducted Emission Test Limits	3-1
3.4. Configuration of EUT on Test.....	3-2
3.5. Operating Condition of EUT	3-2
3.6. Test Procedure	3-2
3.7. Power Line Conducted Emission Test Results	3-2
4. RADIATED EMISSION MEASUREMENT	4-1
4.1. Test Equipments	4-1
4.2. Block Diagram of Test Setup.....	4-1
4.3. Radiated Emission Limit Standard:	4-2
4.4. EUT Configuration on Test	4-2
4.5. Operating Condition of EUT	4-2
4.6. Test Procedure	4-2
4.7. Radiated Emission Test Results.....	4-3
5. CONDUCTED SPURIOUS EMISSIONS.....	5-1
5.1. Test Equipments	5-1
5.2. Limit.....	5-1
5.3. Test Procedure	5-1
5.4. Test result.....	5-1
6. 20 DB BANDWIDTH TEST	6-1
6.1. Test Equipments	6-1
6.2. Limit.....	6-1
6.3. Test Procedure	6-1
6.4. Test Results.....	6-1
7. CARRIER FREQUENCY SEPARATION TEST	7-1
7.1. Test Equipments	7-1
7.2. Limit.....	7-1
7.3. Test Procedure	7-1
7.4. Test Results.....	7-1
8. NUMBER OF HOPPING FREQUENCY TEST	8-1
8.1. Test Equipments	8-1
8.2. Limit.....	8-1

8.3.	Test Procedure	8-1
8.4.	Test Results.....	8-1
9.	DWELL TIME	9-1
9.1.	Test Equipments	9-1
9.2.	Limit.....	9-1
9.3.	Test Procedure	9-1
9.4.	Test Results.....	9-1
10.	MAXIMUM PEAK OUTPUT POWER TEST	10-1
10.1.	Test Equipments	10-1
10.2.	Limit.....	10-1
10.3.	Test Procedure	10-1
10.4.	Test Results.....	10-1
11.	BAND EDGE COMPLIANCE TEST	11-1
11.1.	Test Equipments	11-1
11.2.	Limit.....	11-1
11.3.	Test Procedure	11-1
11.4.	Test Results.....	11-1
12.	ANTENNA REQUIREMENT	12-1
12.1.	Standard Applicable.....	12-1
12.2.	Antenna Connected Construction	12-1
13.	DEVIATION TO TEST SPECIFICATIONS.....	13-1
14.	PHOTOGRAPH OF TEST	14-1
14.1.	Photos of Power Line Conducted Emission Test	14-1
14.2.	Photos of Radiated Emission Test	14-2
15.	PHOTOS OF EUT	15-1



FCC ID:2A07Q-X600M1

AUDIX Technology (Shenzhen) Co., Ltd.

TEST REPORT CERTIFICATION

Applicant : Planet Computers Limited
Manufacturer : Planet Computers Limited
Product : Gemini
FCC ID : 2A07Q-X600M1
(A) Model No. : Gemini 4G
(B) Serial No. : N/A
(C) Test Voltage : DC 5V From Adapter Input AC 120V/60Hz

Tested for comply with:
FCC CRF 47 Part 15 Subpart C

Test procedure used:
ANSI C63.10: 2013

The device described above is tested by AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. to confirm comply with all the FCC Part 15 Subpart C requirements. The test results are contained in this test report and AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. is assumed full responsibility for the accuracy and completeness of these tests. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC and IC requirements. This report contains data that are not covered by the NVLAP accreditation.

This Report is made under FCC Part 2.1075. No modifications were required during testing to bring this product into compliance.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

Date of Test : Jan.08~31, 2018 Report of date: Apr.12, 2018

Prepared by : Monica Liu Reviewed by : Sunny Lu
Monica Liu / Assistant Sunny Lu / Deputy Manager



Approved & Authorized Signer :

David Jin / Manager

1. SUMMARY OF STANDARDS AND RESULTS

1.1. Description of Standards and Results

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

EMISSION		
Description of Test Item	Standard	Results
Power Line Conducted Emission Test	FCC Part 15: 15.207 ANSI C63.10 2013	PASS
Radiated Emission Test	FCC Part 15 15.209 FCC Part 15 15.205 FCC Part 15 15.247(d) ANSI C63.10 2013	PASS
Conducted Spurious Emissions	FCC Part 15: 15.247(d) ANSI C63.10 2013	PASS
Carrier Frequency Separation Test	FCC Part 15: 15.247(a)(1) ANSI C63.10 2013	PASS
20dB Bandwidth Test	FCC Part 15: 15.215 ANSI C63.10 2013	PASS
Number Of Hopping Frequency Test	FCC Part 15: 15.247(a)(1)(iii) ANSI C63.10 2013	PASS
Dwell Time Test	FCC Part 15: 15.247(a)(1)(iii) ANSI C63.10 2013	PASS
Maximum Peak Output Power Test	FCC Part 15 15.247(b)(1)\ ANSI C63.10 2013	PASS
Band Edge Compliance Test	FCC Part 15 15.247(d) ANSI C63.10 2013	PASS

2. GENERAL INFORMATION

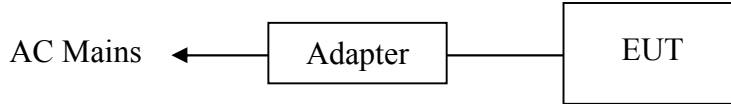
2.1. Description of Device (EUT)

Product	: Gemini
Model No.	: Gemini 4G
FCC ID	: 2AO7Q-X600M1
Radio	: IEEE802.11 a/b/g/n/ac; Bluetooth V3.0+EDR; Bluetooth V4.0
Operation Frequency	: IEEE 802.11a: 5180MHz—5240MHz; 5745MHz—5825MHz IEEE 802.11ac VHT20: 5180MHz—5240MHz; 5745MHz—5825MHz IEEE 802.11ac VHT40: 5190MHz—5230MHz; 5755MHz—5795MHz IEEE 802.11ac VHT80: 5210MHz; 5775MHz IEEE 802.11b: 2412MHz—2462MHz IEEE 802.11g: 2412MHz—2462MHz IEEE802.11n HT20: 2412MHz—2462MHz; 5180MHz—5240MHz; 5745MHz—5825MHz IEEE802.11n HT40: 2422MHz—2452MHz; 5190MHz—5230MHz; 5755MHz—5795MHz Bluetooth : 2402-2480MHz
Modulation Technology	: IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE 802.11a/g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac VHT20, VHT40, VHT80: OFDM(16QAM, 64QAM, 256QAM, QPSK, BPSK) IEEE 802.11n HT20, HT40: OFDM (64QAM, 16QAM,QPSK,BPSK) Bluetooth V3.0+EDR: GFSK, $\pi/4$ DQPSK,8-DPSK Bluetooth V4.0:GFSK
Antenna Assembly Gain	: Antenna Type: PIFA Bluetooth: 2.0dBi WIFI 2.4GHz: 2.0dBi WIFI 5GHz: 0.42dBi
Applicant	: Planet Computers Limited Suite #9, 56 Sloane Square, London, SW1W 8AX, United Kingdom
Manufacturer	: Planet Computers Limited Suite #9, 56 Sloane Square, London, SW1W 8AX, United Kingdom
Factory	: SHENZHEN YIXU ELECTRONICS CO., LTD. Building B, Area E, Yuwei, Qingxiang Rd, Longhua, Shenzhen
Power Adapter	: Manufacturer: Planet, M/N: TPA-10120125UUA-MTK; Cable: Unshielded, Detachable, 1.0m
USB Cable	: Shielded, Detachable, 0.8m
Date of Test	: Jan.08~31, 2018
Date of Receipt	: Dec.26, 2017
Sample Type	: Prototype production

2.2. Tested Supporting System Details

[None]

2.3. Block Diagram of connection between EUT and simulators



(EUT: Gemini)

2.4. Test information

Tested mode, Packet Type, peak output power information			
Mode	Packet Type	Output power(dBm) P max	Output Power(dBm) P low
GFSK	DH1	5.605	1.225
	DH3		
	DH5		
$\pi/4$ DQPSK	2-DH1	4.230	1.350
	2-DH3		
	2-DH5		
8DPSK	3-DH1	4.761	2.76
	3-DH3		
	3-DH5		

$\pi/4$ DQPSK mode has been verified to have the lowest power, so the final test were performed with GFSK and 8DPSK mode, the worse-case packet type were:

GFSK Mode: DH5

8DPSK Mode: 3DH5

Item		Modulation	Data Rate	Test Channel
Radiated Test Case	Radiated Band Edge ^{Note1}	GFSK	1Mbps	00/78
		8-DPSK	3Mbps	00/78
	Radiated Spurious Emission ^{Note1}	GFSK	1Mbps	00/39/78
		8-DPSK	3Mbps	00/39/78
Conducted Test Case ^{Note2}	20dB Bandwidth	GFSK	1Mbps	00/39/78
		8-DPSK	3Mbps	00/39/78
	Carrier Frequency Separation	GFSK	1Mbps	39
		8-DPSK	3Mbps	39
	Time of Occupancy	GFSK	1Mbps	39
		8-DPSK	3Mbps	39
	Number of Hopping Channels	GFSK	1Mbps	39
		8-DPSK	3Mbps	39
	Maximum Peak Output Power	GFSK	1Mbps	00/39/78
		8-DPSK	3Mbps	00/39/78
	Band Edges	GFSK	1Mbps	00/78
		8-DPSK	3Mbps	00/78
	Spurious Emission	GFSK	1Mbps	00/39/78
		8-DPSK	3Mbps	00/39/78

2.5. Test Facility

Site Description

Name of Firm	:	Audix Technology (Shenzhen) Co., Ltd. No. 6, Kefeng Road, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China
EMC Lab.	:	Certificated by Industry Canada Registration Number: IC 5183A-1 Valid Date: May.07, 2020
	:	Certificated by DAkkS, Germany Registration No: D-PL-12151-01-00 Valid Date: Dec.07, 2021
	:	Accredited by NVLAP, USA NVLAP Code: 200372-0 Valid Date: Mar.31, 2018
	:	Certificated by FCC, USA Designation Number: CN5022 Valid Date: Mar.31, 2018

2.6. Measurement Uncertainty (95% confidence levels, k=2)

Test Item	Uncertainty
Uncertainty for Conduction emission test in No. 1 Conduction	3.6dB (150KHz to 30MHz)
Uncertainty for Radiation Emission test in 3m chamber	2.8dB (30~200MHz, Polarization: H)
	2.8dB (30~200MHz, Polarization: V)
	3.0dB (200M~1GHz, Polarization: H)
	3.0dB (200M~1GHz, Polarization: V)
Uncertainty for Radiation Emission test in 3m chamber	5.6dB (1~6GHz, Distance: 3m)
	5.8dB (6~18GHz, Distance: 3m)
	5.8dB (Above 18GHz, Distance: 3m)
Uncertainty for Radiated Spurious Emission test in RF chamber	3.7dB(30MHz~1000MHz)
	3.3dB(1GHz~26.5GHz)
Uncertainty for Conduction Spurious emission test	2.0dB
Uncertainty for Output power test	0.8dB
Uncertainty for Bandwidth test	83 kHz
Uncertainty for DC power test	0.1 %
Uncertainty for test site temperature and humidity	0.6°C
	3%

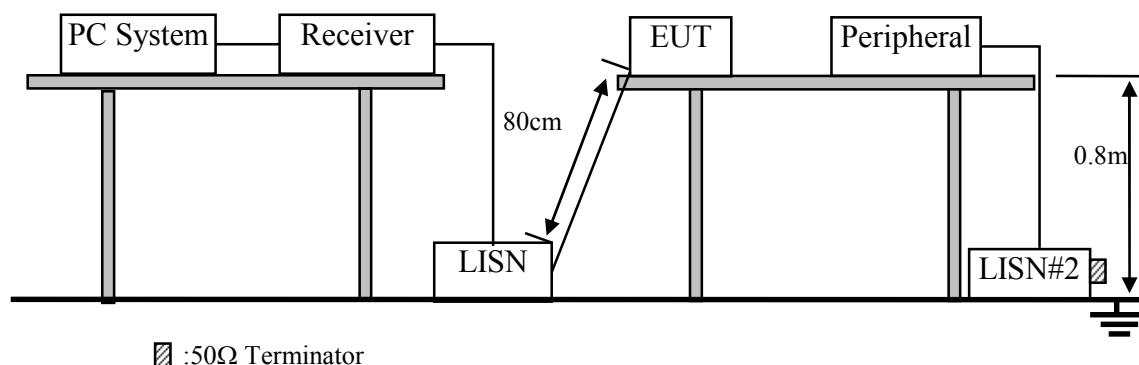
3. POWER LINE CONDUCTED EMISSION TEST

3.1. Test Equipments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	1# Shielding Room	AUDIX	N/A	N/A	Apr.17,17	1 Year
2.	Test Receiver	Rohde & Schwarz	ESCI	100842	Apr.22,17	1 Year
3.	L.I.S.N.	Rohde & Schwarz	ENV216	102160	Mar.06.17	1 Year
4.	L.I.S.N.#2	Kyoritsu	K NW-403D	8-1750-2	Apr.22,17	1 Year
5.	I.S.N.	TESEQ	S751	24559	Mar.06.17	1.year
6.	Terminator	Hubersuhner	50Ω	No.1	Apr.23,17	1 Year
7.	Terminator	Hubersuhner	50Ω	No.2	Apr.23,17	1 Year
8.	RF Cable	Fujikura	RG55/U	NO.2	Apr.22,17	1Year
9.	Coaxial Switch	Anritsu	MP59B	6201397223	Apr.22,17	1 Year
10.	Test Software	AUDIX	e3	6.100913a	N/A	N/A

Note: N/A means Not applicable.

3.2. Block Diagram of Test Setup



3.3. Power Line Conducted Emission Test Limits

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

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

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

3.4.Configuration of EUT on Test

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

3.4.1.Gemini (EUT)

Model No. : Gemini 4G
Serial No. : N/A

3.4.2. Support Equipment: As Tested Supporting System Details, in Section 2.2.

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 equipments.

3.5.3. PC run test software to control EUT work in BT 3.0 Tx mode.

3.6.Test Procedure

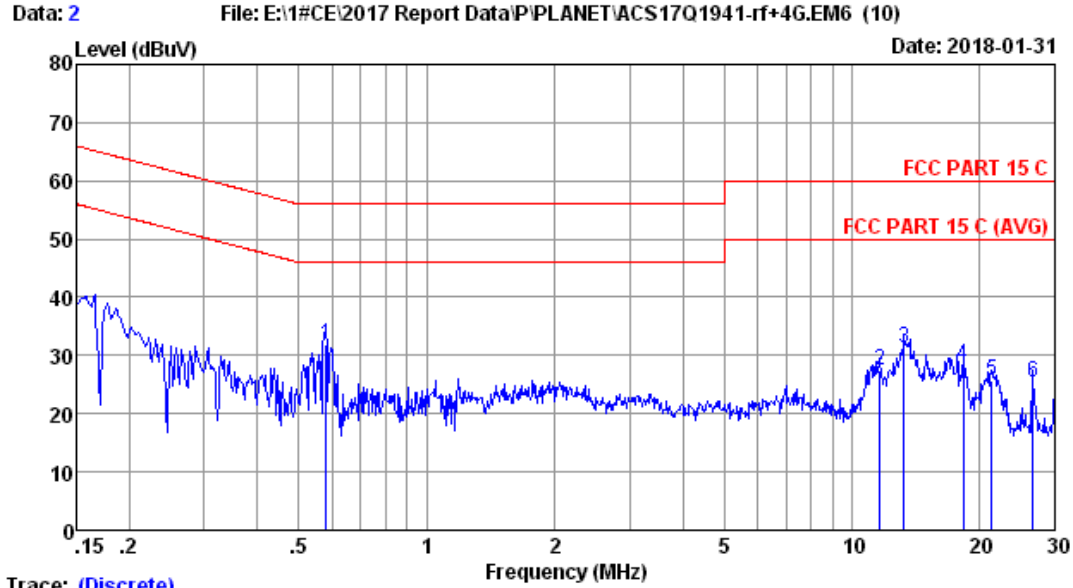
The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power Via PC connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm coupling impedance for the EUT (Please refer the block diagram of the test setup and photographs). The 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 ANSI C63.10: 2013 on Conducted Emission Test.

The bandwidth of test receiver (R & S ESCI) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

3.7.Power Line Conducted Emission Test Results

PASS. (All emissions not reported below are too low against the prescribed limits.)

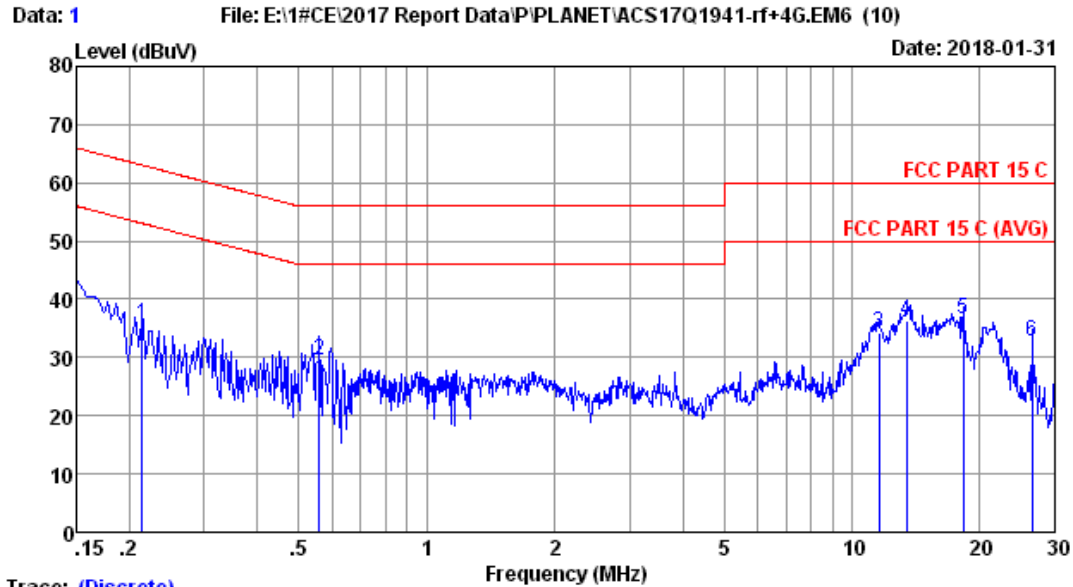


Trace: (Discrete)

Site no :1# CE Data No :2
 Dis./Lisn :2017 LISN ENV216-L LISN phase:
 Limit :FCC PART 15 C
 Env./Ins. :21.5°C/53% Engineer :Garry
 EUT :Gemini M/N:Gemini 4G
 Power Rating :DC 5V From Adapter Input AC 120V/60Hz
 Test Mode :BT 3.0 TX

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.579	9.50	0.03	22.49	32.02	56.00	23.98	QP
2	11.621	9.58	0.11	17.73	27.42	60.00	32.58	QP
3	13.267	9.58	0.12	21.56	31.26	60.00	28.74	QP
4	18.232	9.69	0.12	18.65	28.46	60.00	31.54	QP
5	21.260	9.75	0.13	15.70	25.58	60.00	34.42	QP
6	26.699	9.80	0.13	15.43	25.36	60.00	34.64	QP

Remarks: 1.Emission Level=LISN Factor+Cable Loss+Reading.
 2.If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.



Trace: (Discrete)

Site no :1# CE Data No :1
 Dis./Lisn :2017 LISN ENV216-N LISN phase:
 Limit :FCC PART 15 C
 Env./Ins. :21.5°C/53% Engineer :Garry
 EUT :Gemini M/N:Gemini 4G
 Power Rating :DC 5V From Adapter Input AC 120V/60Hz
 Test Mode :BT 3.0 TX

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.214	9.45	0.02	26.34	35.81	63.05	27.24	QP
2	0.558	9.31	0.03	20.25	29.59	56.00	26.41	QP
3	11.559	9.47	0.11	24.76	34.34	60.00	25.66	QP
4	13.408	9.49	0.12	26.61	36.22	60.00	23.78	QP
5	18.232	9.61	0.12	26.81	36.54	60.00	23.46	QP
6	26.558	9.78	0.13	22.96	32.87	60.00	27.13	QP

Remarks: 1.Emission Level=LISN Factor+Cable Loss+Reading.
 2.If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

4. RADIATED EMISSION MEASUREMENT

4.1. Test Equipments

Frequency range: 30~1000MHz

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	3#Chamber	AUDIX	N/A	N/A	Mar.28,17	1 Year
2.	Signal Analyzer	R&S	FSV30	103669	Oct.15,17	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESR7	101547	Apr.22,17	1 Year
4.	Amplifier	HP	8447D	2648A04738	Apr.22,17	1 Year
5.	Trilog-Broadband Antenna	SCHWARZBECK	VULB 9168	493	Jun.27.17	1 Year
6.	Loop Antenna	Chase	HLA6120	1062	Oct.15,17	1 Year
7.	RF Cable	MIYAZAKI	CFD400NL-LW	No.3	Sep.02.17	1 Year
8.	Coaxial Switch	Anritsu	MP59B	6201397222	Apr.22,17	1 Year
9.	Test Software	AUDIX	e3	6.2009-5-21a(n)	N/A	N/A

Note: N/A means Not applicable.

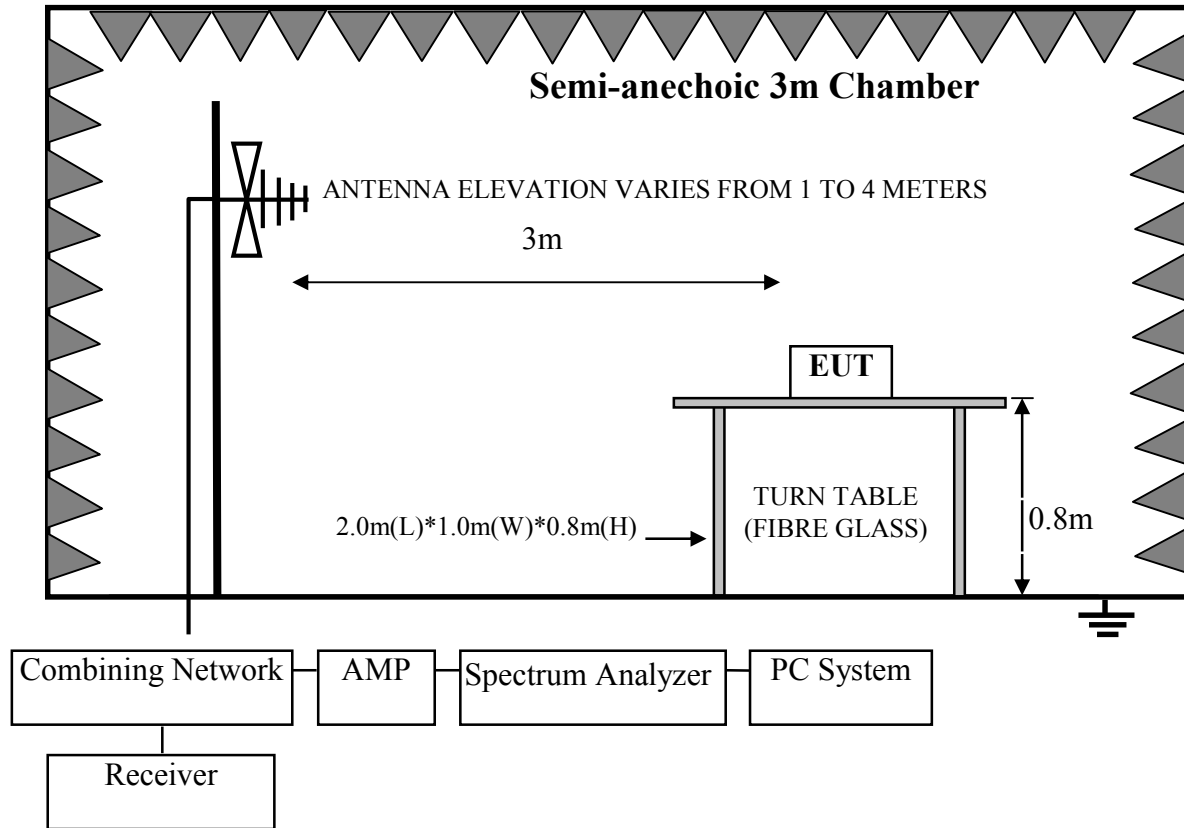
Frequency range: above 1000MHz

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300459	Apr.22,17	1 Year
2.	Horn Antenna	ETC	MCTD 1209	DRH15F03006	May.15,17	1 Year
3.	Amplifier	Agilent	8449B	3008A02495	Apr.22,17	1 Year
4.	RF Cable	Hubersuhner	SUCOFLEX104	274094/4	Apr.22,17	1 Year
5.	Horn Antenna	EMCO	3116	0062643	Oct.10,17	1 Year
6.	Test Software	AUDIX	e3	6.2009-5-21a(n)	N/A	N/A

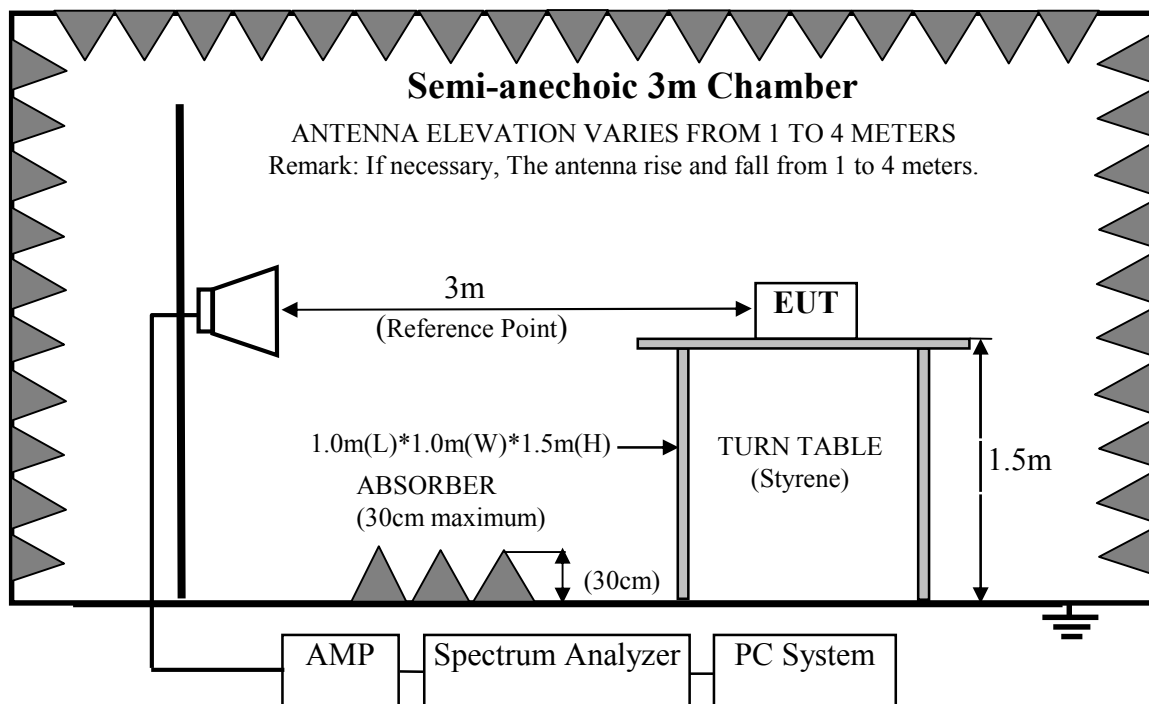
Note: N/A means Not applicable.

4.2. Block Diagram of Test Setup

For frequency range 30MHz-1000MHz



For frequency range 1GHz-25GHz



4.3. Radiated Emission Limit Standard:

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V/m}$	$\text{dB}(\mu\text{V})/\text{m}$
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000MHz	3	74.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 54.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	

Remark : (1) Emission level $\text{dB}\mu\text{V} = 20 \log$ Emission level $\mu\text{V/m}$

(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) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

4.4. EUT Configuration on Test

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

4.4.1. Gemini (EUT)

Model No. : Gemini 4G

Serial No. : N/A

4.5. Operating Condition of EUT

4.5.1. Setup the EUT and simulator as shown as Section 4.2.

4.5.2. Turn on the power of all equipments.

4.5.3. Let EUT work in BT 3.0 Tx mode.

4.6. Test Procedure

Frequency below 30MHz:

The EUT setup on the turn table which has 0.8 m height to the ground. The turn table rotated 360 degrees and antenna fixed to 1 m to find the maximum emission level. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10-2013 regulation.

EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground for frequency 30MHz~1000MHz, 1.5 meter high above ground for frequency above 1GHz and put the absorbing with 2.4m(L)*2.4m(W)*0.3m(H) on the ground . The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna for frequency 30MHz~1000MHz, and the Horn antenna is used as receiving antenna for frequency above 1GHz. Both horizontal and vertical polarization of the antenna is set on Test. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.10-2013 on radiated emission Test.

This test was performed with EUT in X, Y, Z position, and the worse case was found when EUT in X position as the test photo indicated.

The bandwidth of the EMI test receiver (R&S ESR7) is set at 120kHz for frequency range from 30MHz to 1000MHz.

The bandwidth of the Spectrum's RBW is set at 1MHz and VBW is set at 3MHz for peak emissions measurement above 1GHz

This device is pulse Modulated, a duty cycle factor was used to calculated average level based measured peak level.

The frequency range from 30MHz to 10th harmonic (25GHz) are checked. and no any emissions were found from 18GHz to 25 GHz, So the radiated emissions from 18GHz to 25GHz were not record.

4.7.Radiated Emission Test Results

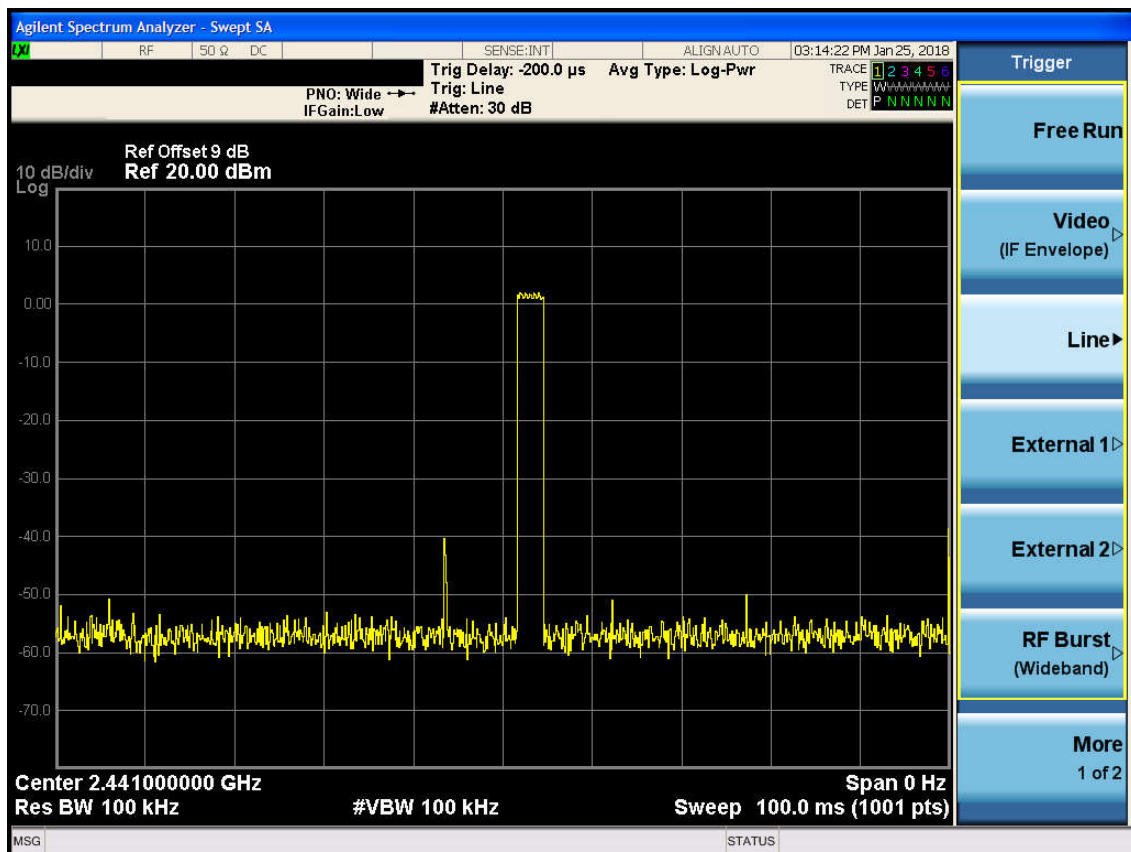
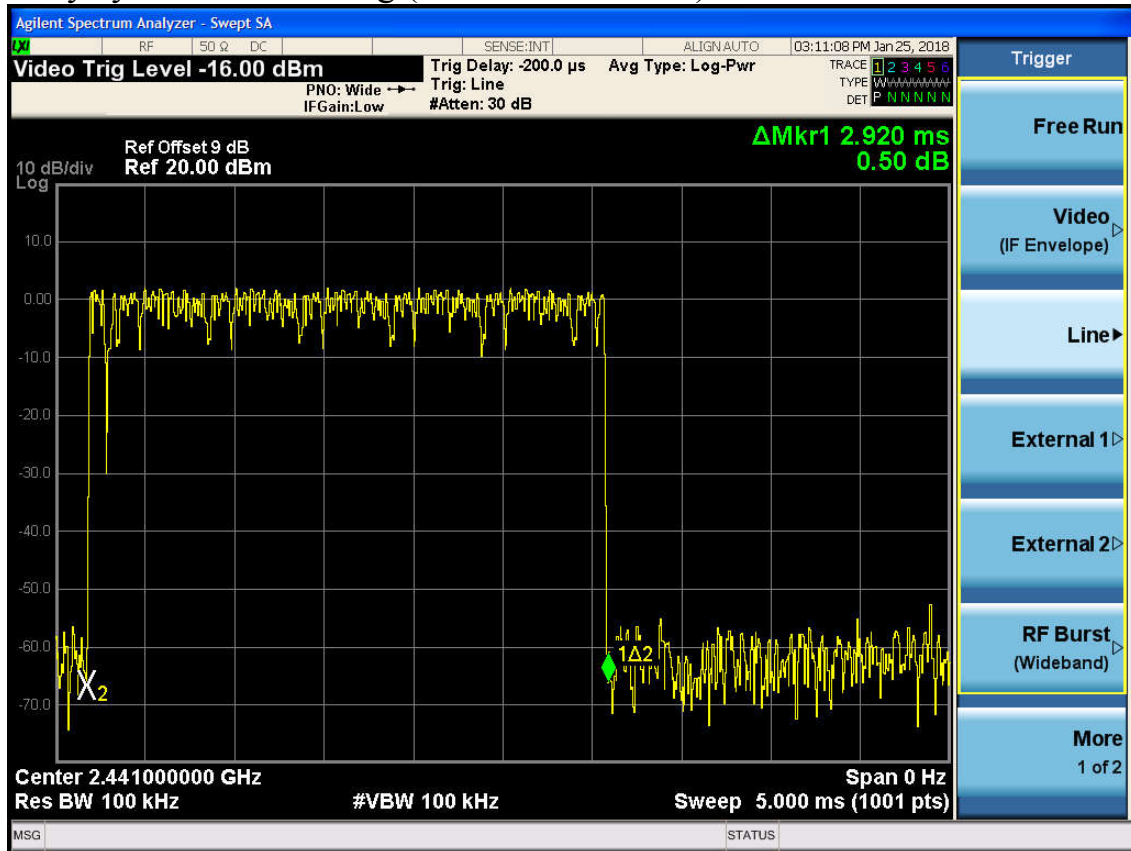
PASS.

All the emissions from 30MHz to 25GHz were comply with the 15.209 Limit.

Note 1: The duty cycle factor for calculate average level is -30.692dB, and average limit is 20dB below peak limit, so if peak measured level comply with average limit, the average level was deemed to comply with average limit.

Note 2: The emissions (9kHz~30MHz) not reported for there is no emission be found.

Duty cycle factor = $20\log(\text{Dwell time}/100\text{ms}) = -30.692\text{dB}$

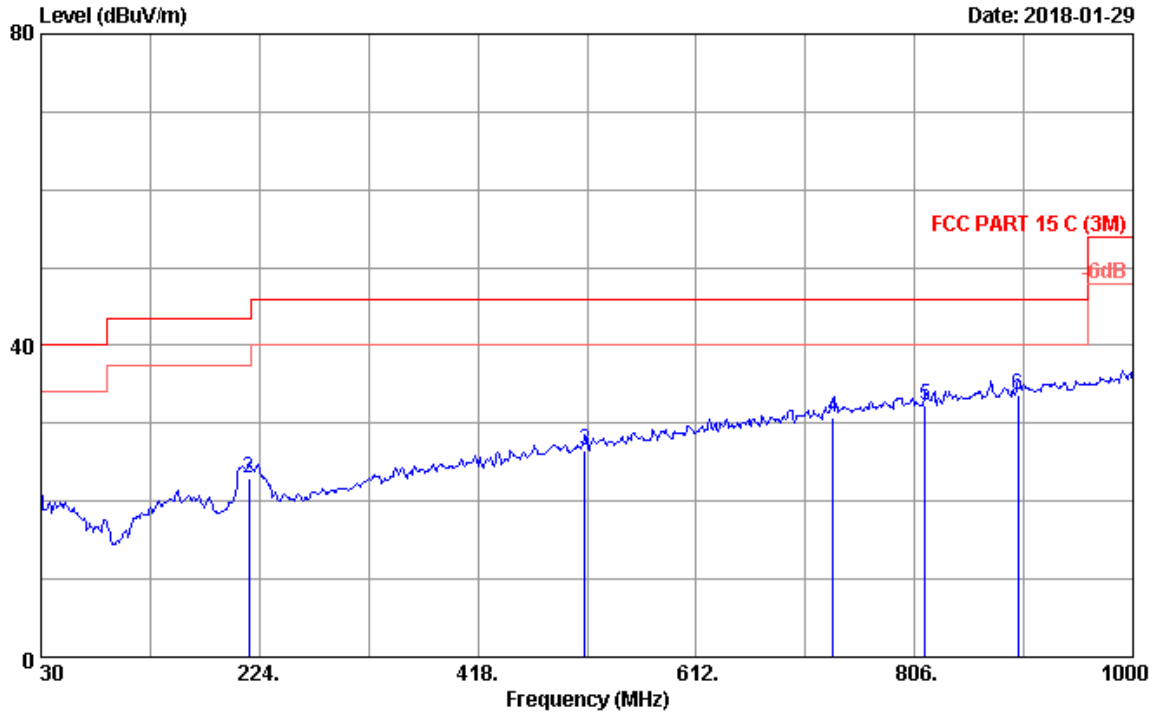


Frequency: 30MHz~1GHz

Data: 2

File: E:\2017 Report Data\PLANET\ACS17Q1941-FCC-RF.EM6 (10)

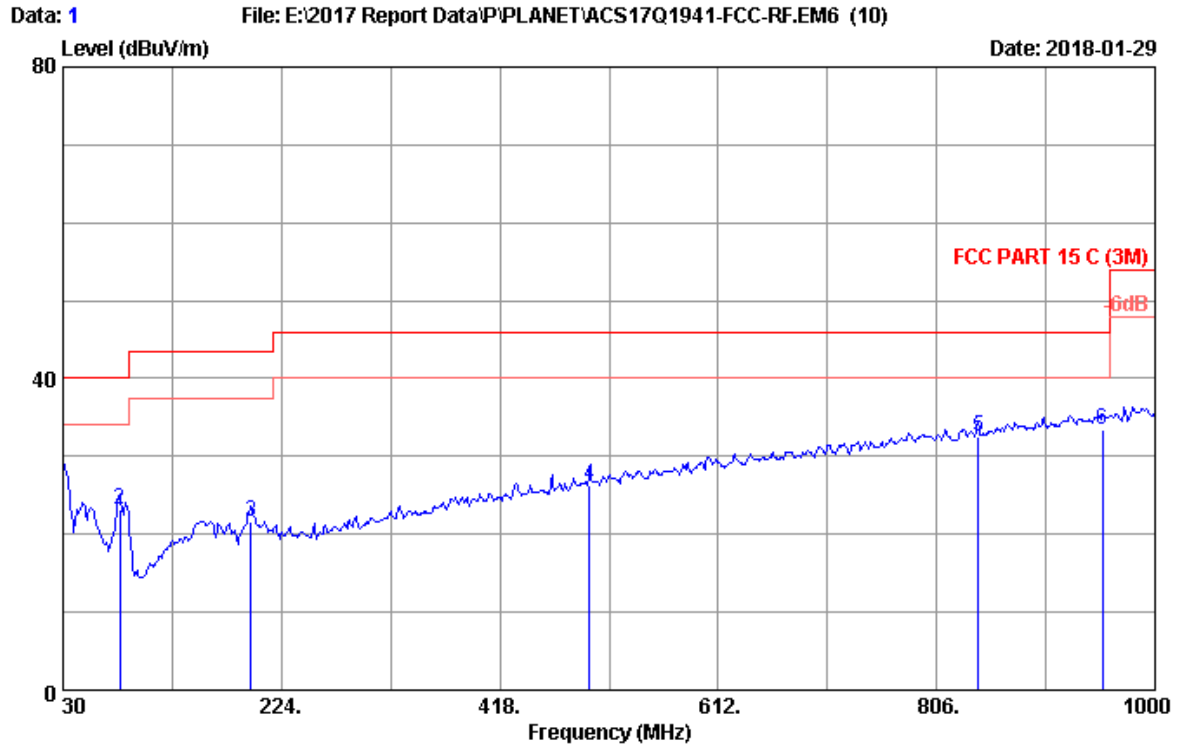
Date: 2018-01-29



Site no. : 3m Chamber Data no. : 2
Dis. / Ant. : 3m 2017 9168-493 Ant. pol. : HORIZONTAL
Limit : FCC PART 15 C (3M)
Env. / Ins. : 23.7°C/52% Engineer : Kayle
EUT : Gemini M/N: Gemini 4G
Power rating : DC5V From Adapter input AC 120V/60Hz
Test Mode : BT3.0 TX

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	30.000	19.40	0.63	-0.42	19.61	40.00	20.39	QP
2	214.300	16.90	1.73	4.43	23.06	43.50	20.44	QP
3	513.060	24.33	3.25	-1.11	26.47	46.00	19.53	QP
4	733.250	27.60	4.26	-1.07	30.79	46.00	15.21	QP
5	815.700	28.57	4.60	-0.91	32.26	46.00	13.74	QP
6	898.150	29.48	5.08	-0.97	33.59	46.00	12.41	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 1
 Dis. / Ant. : 3m 2017 9168-493 Ant. pol. : VERTICAL
 Limit : FCC PART 15 C (3M)
 Env. / Ins. : 23.7°C/52% Engineer : Kayle
 EUT : Gemini M/N: Gemini 4G
 Power rating : DC5V From Adapter input AC 120V/60Hz
 Test Mode : BT3.0 TX

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	30.000	19.40	0.63	7.41	27.44	40.00	12.56	QP
2	80.440	15.20	0.98	7.00	23.18	40.00	16.82	QP
3	196.840	17.08	1.62	2.87	21.57	43.50	21.93	QP
4	497.540	24.05	3.17	-0.82	26.40	46.00	19.60	QP
5	842.860	28.87	4.76	-1.02	32.61	46.00	13.39	QP
6	953.440	29.98	5.31	-1.92	33.37	46.00	12.63	QP

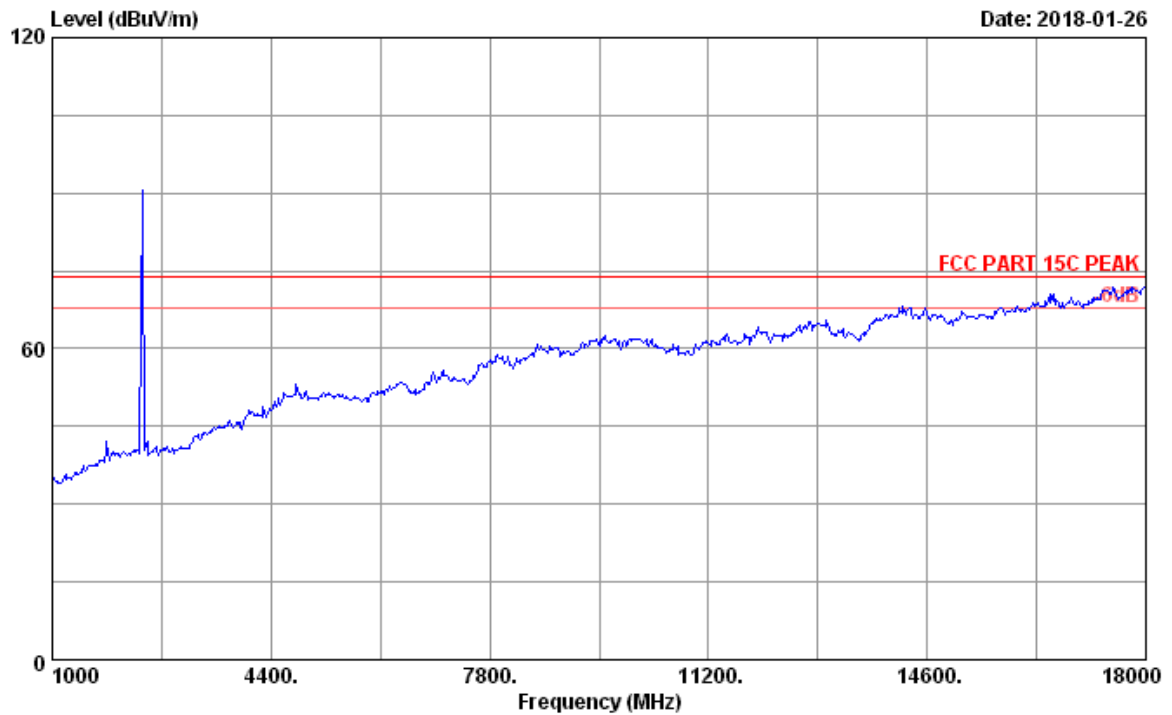
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Frequency: 1GHz~18GHz

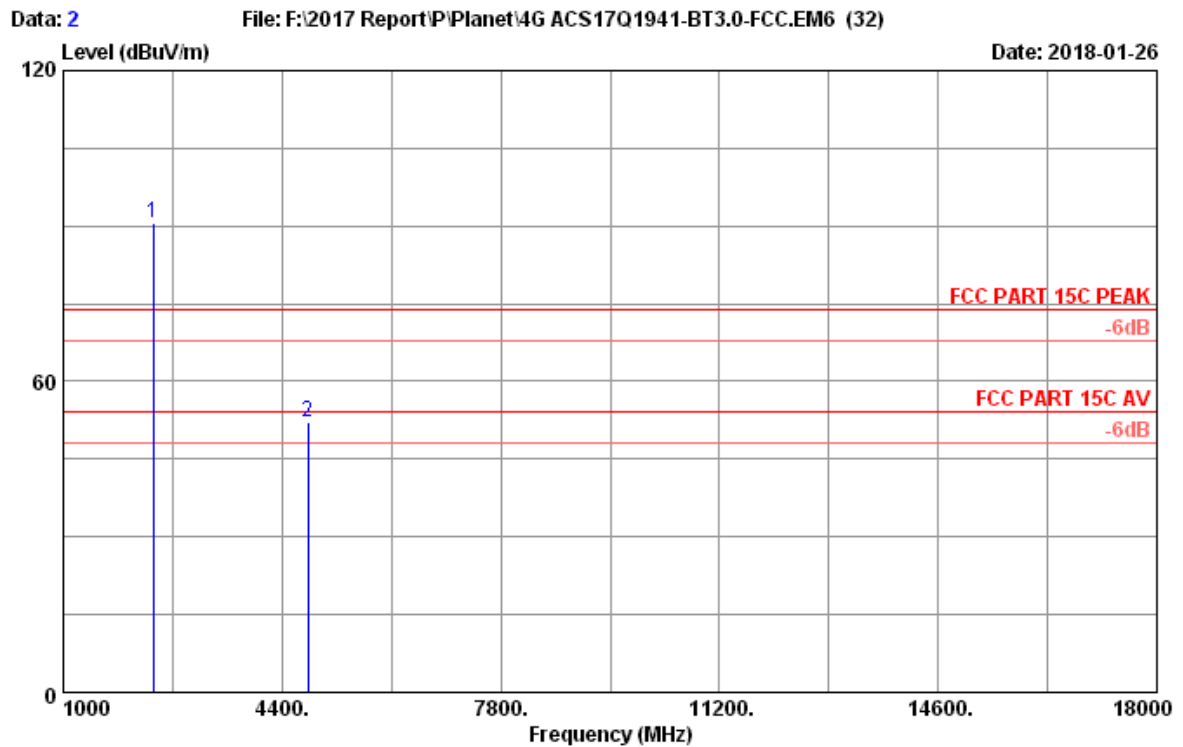
Data: 1

File: F:\2017 Report\Planet\4G ACS17Q1941-BT3.0-FCC.EM6 (32)

Date: 2018-01-26



Site no.	: 3m Chamber	Data no.	: 1
Dis. / Ant.	: 3m 2017 ANT 3006 HF	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23.1°C/52.5%	Engineer	: Kayle
EUT	: Gemini M/N: Gemini 4G		
Power rating	: DC 5V From Adapter Input AC 120V/60Hz		
Test Mode	: BT3.0 GFSK 2402 Tx Mode		

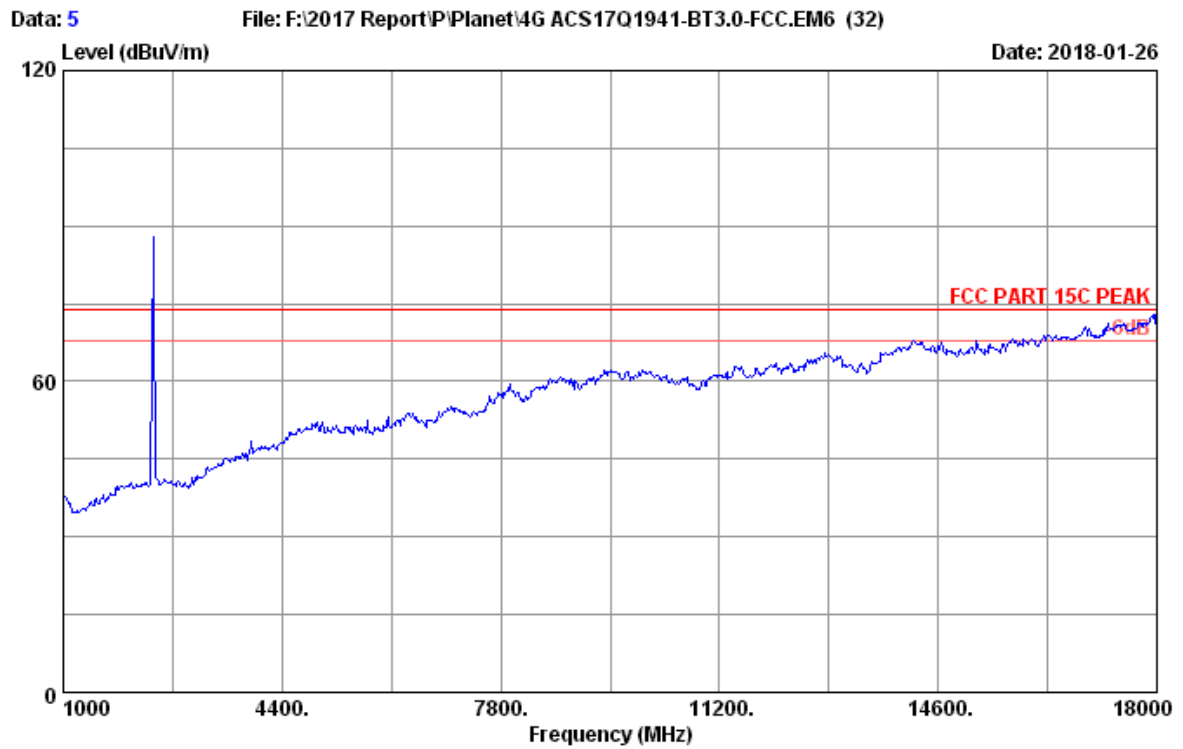


Site no. : 3m Chamber Data no. : 2
 Dis. / Ant. : 3m 2017 ANT 3006 HF Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.1°C/52.5% Engineer : Kayle
 EUT : Gemini M/N:Gemini 4G
 Power rating : DC 5V From Adapter Input AC 120V/60Hz
 Test Mode : BT3.0 GFSK 2402 Tx Mode

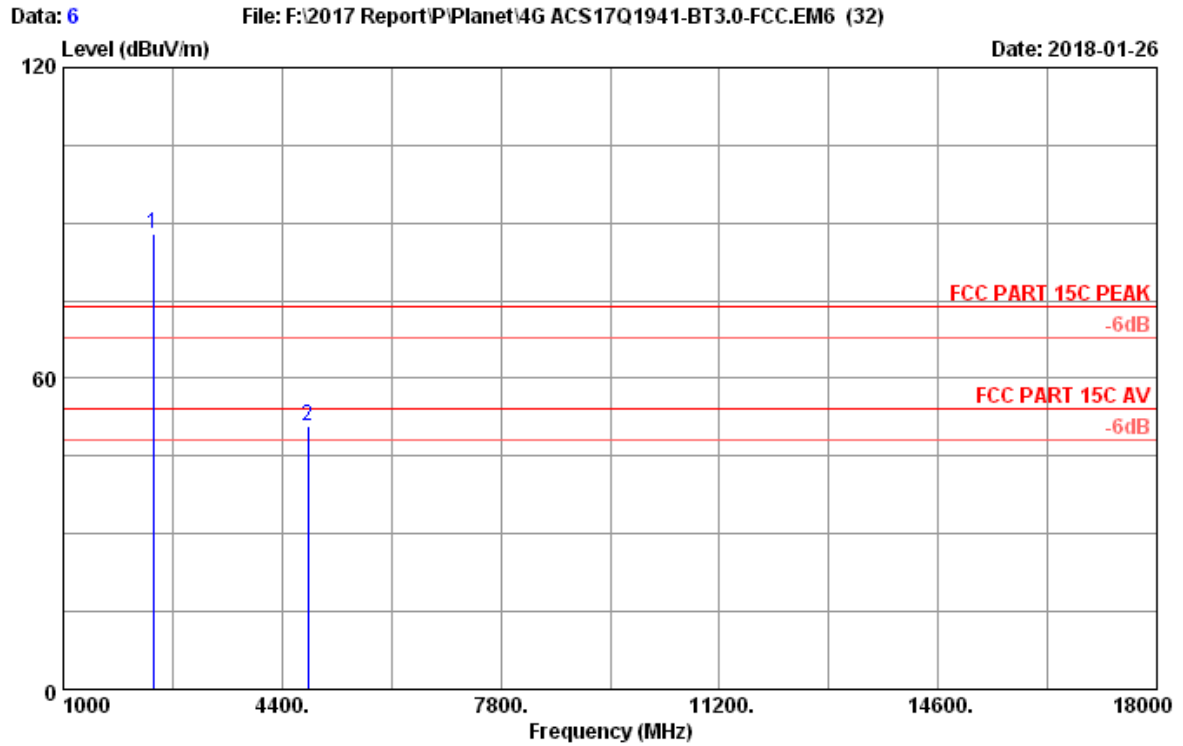
No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2402.00	27.96	10.30	87.96	35.61	90.61	74.00	-16.61	Peak
2	4804.00	33.42	14.52	38.09	33.82	52.21	74.00	21.79	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.

2. The emission levels that are 20dB below the official
 limit are not reported.



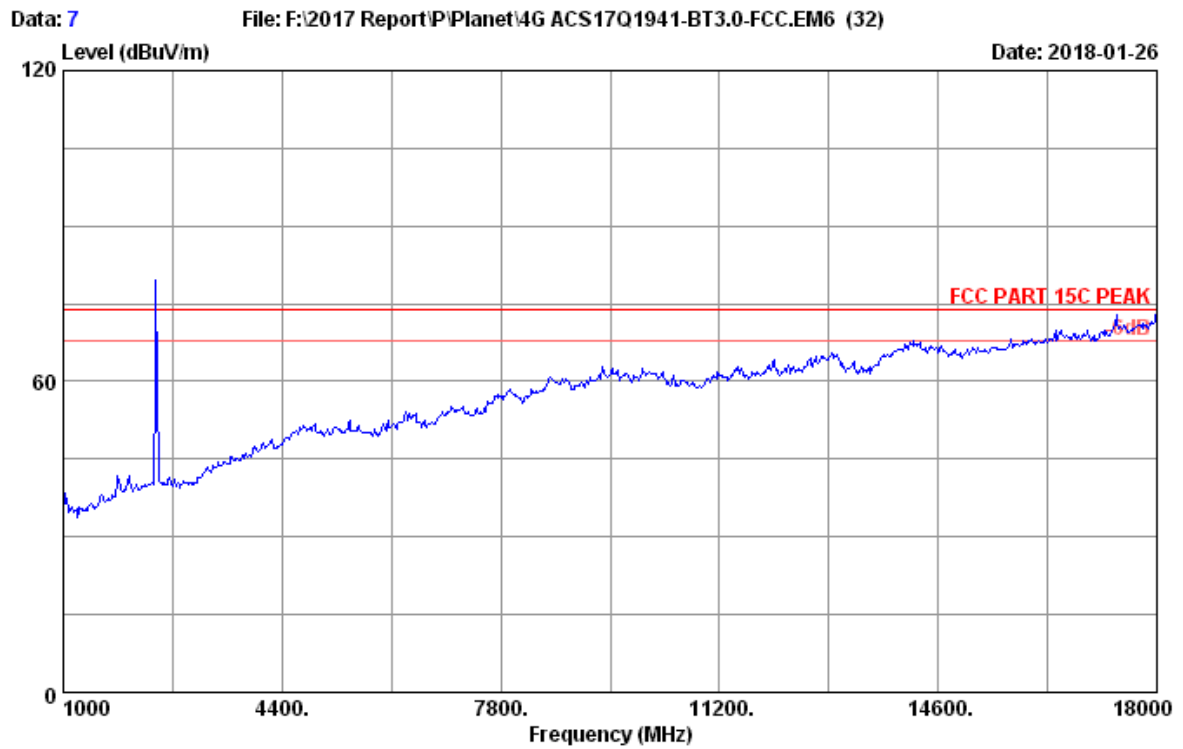
Site no.	: 3m Chamber	Data no.	: 5
Dis. / Ant.	: 3m 2017 ANT 3006 HF	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23.1°C/52.5%	Engineer	: Kayle
EUT	: Gemini M/N:Gemini 4G		
Power rating	: DC 5V From Adapter Input AC 120V/60Hz		
Test Mode	: BT3.0 GFSK 2402 Tx Mode		



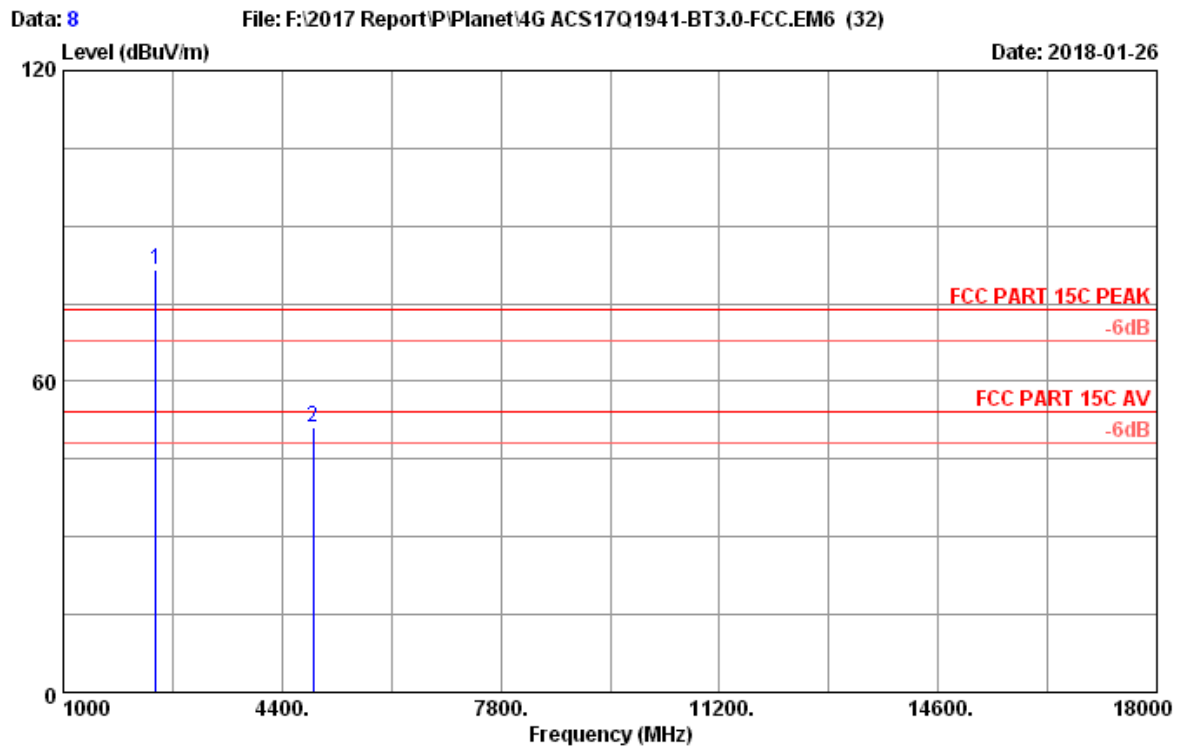
Site no. : 3m Chamber Data no. : 6
 Dis. / Ant. : 3m 2017 ANT 3006 HF Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.1°C/52.5% Engineer : Kayle
 EUT : Gemini M/N:Gemini 4G
 Power rating : DC 5V From Adapter Input AC 120V/60Hz
 Test Mode : BT3.0 GFSK 2402 Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2402.00	27.96	10.30	85.24	35.61	87.89	74.00	-13.89	Peak
2	4804.00	33.42	14.52	36.74	33.82	50.86	74.00	23.14	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



Site no.	: 3m Chamber	Data no.	: 7
Dis. / Ant.	: 3m 2017 ANT 3006 HF	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23.1°C/52.5%	Engineer	: Kayle
EUT	: Gemini M/N: Gemini 4G		
Power rating	: DC 5V From Adapter Input AC 120V/60Hz		
Test Mode	: BT3.0 GFSK 2441 Tx Mode		

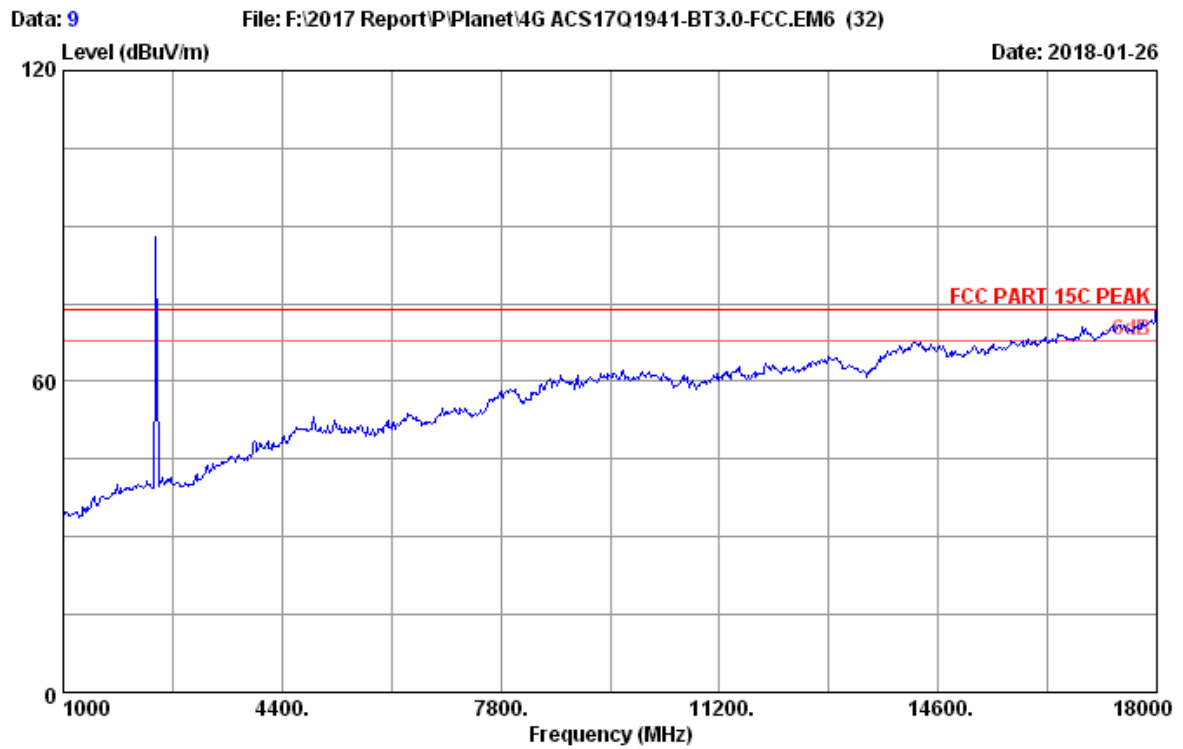


Site no. : 3m Chamber Data no. : 8
 Dis. / Ant. : 3m 2017 ANT 3006 HF Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.1°C/52.5% Engineer : Kayle
 EUT : Gemini M/N:Gemini 4G
 Power rating : DC 5V From Adapter Input AC 120V/60Hz
 Test Mode : BT3.0 GFSK 2441 Tx Mode

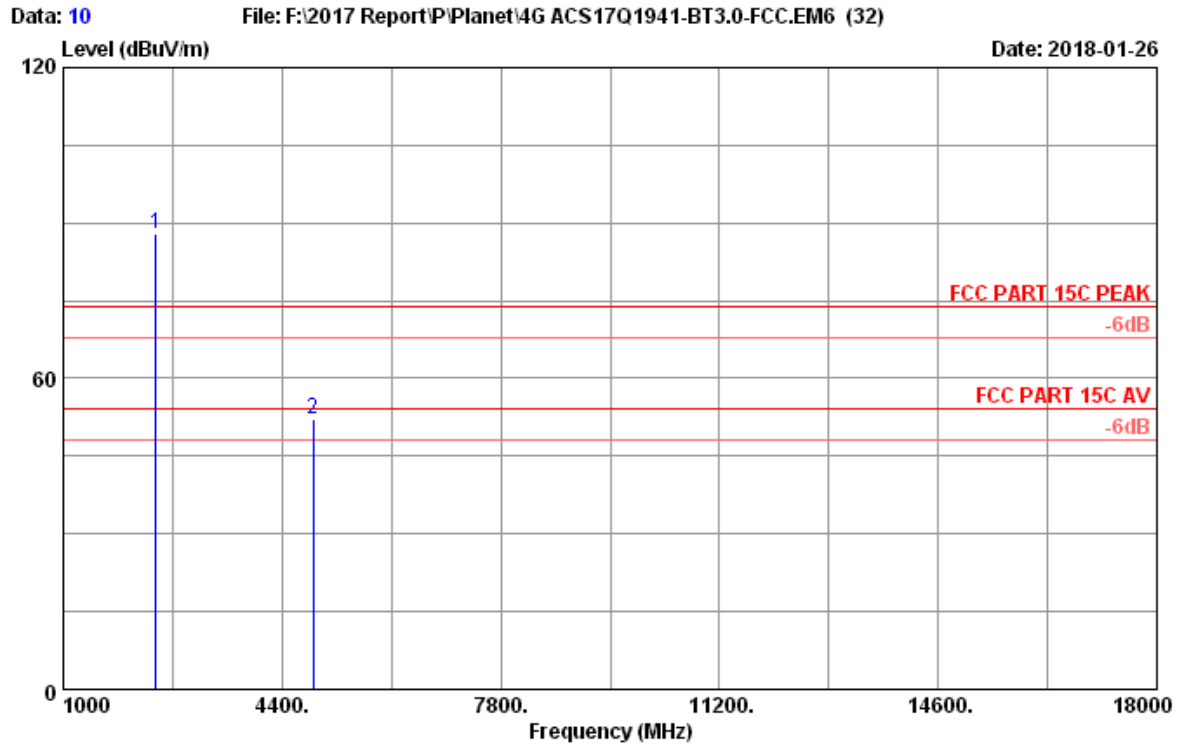
No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2441.00	28.03	10.37	78.73	35.68	81.45	74.00	-7.45	Peak
2	4882.00	33.56	14.62	36.72	33.75	51.15	74.00	22.85	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.

2. The emission levels that are 20dB below the official
 limit are not reported.



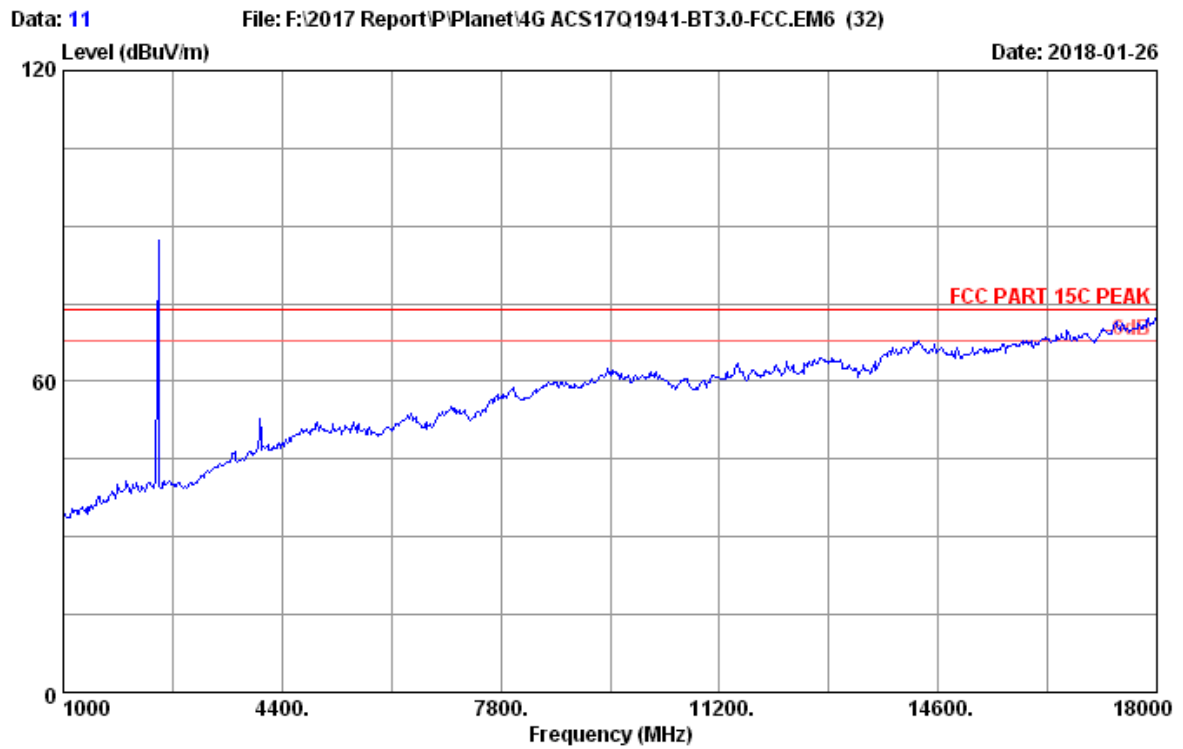
Site no.	: 3m Chamber	Data no.	: 9
Dis. / Ant.	: 3m 2017 ANT 3006 HF	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23.1°C/52.5%	Engineer	: Kayle
EUT	: Gemini M/N: Gemini 4G		
Power rating	: DC 5V From Adapter Input AC 120V/60Hz		
Test Mode	: BT3.0 GFSK 2441 Tx Mode		



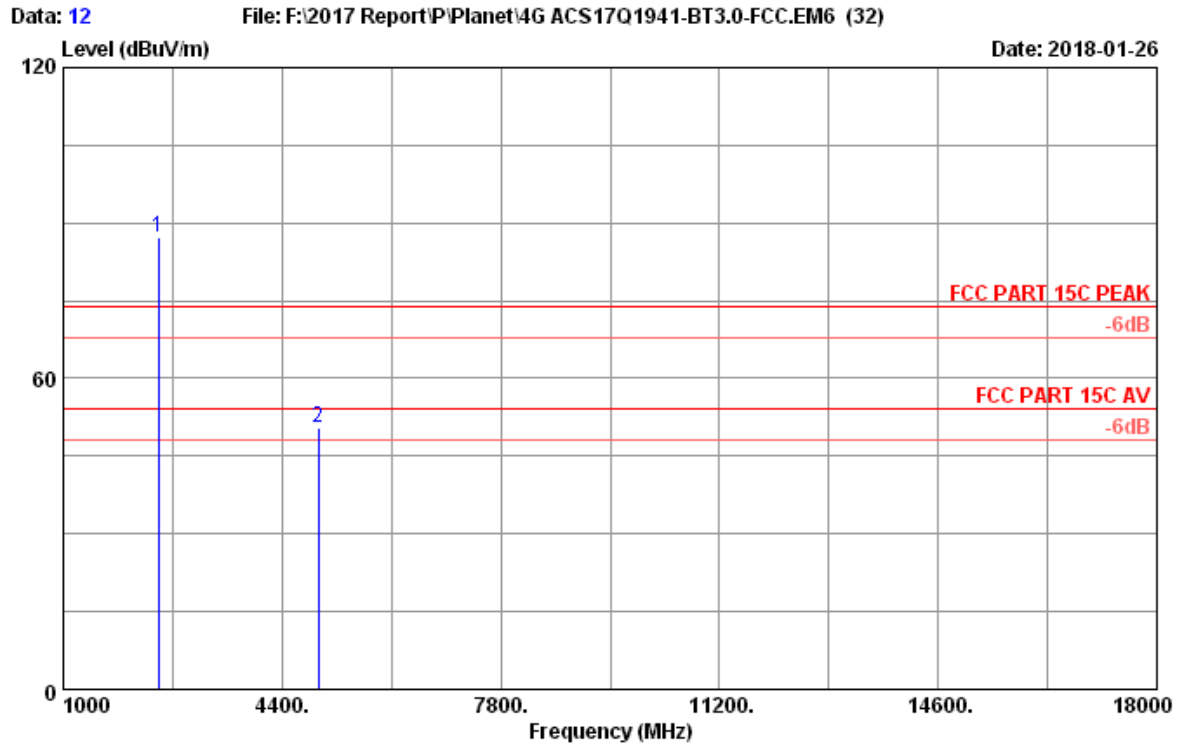
Site no. : 3m Chamber Data no. : 10
 Dis. / Ant. : 3m 2017 ANT 3006 HF Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.1°C/52.5% Engineer : Kayle
 EUT : Gemini M/N:Gemini 4G
 Power rating : DC 5V From Adapter Input AC 120V/60Hz
 Test Mode : BT3.0 GFSK 2441 Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2441.00	28.03	10.37	85.25	35.68	87.97	74.00	-13.97	Peak
2	4882.00	33.56	14.62	37.75	33.75	52.18	74.00	21.82	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



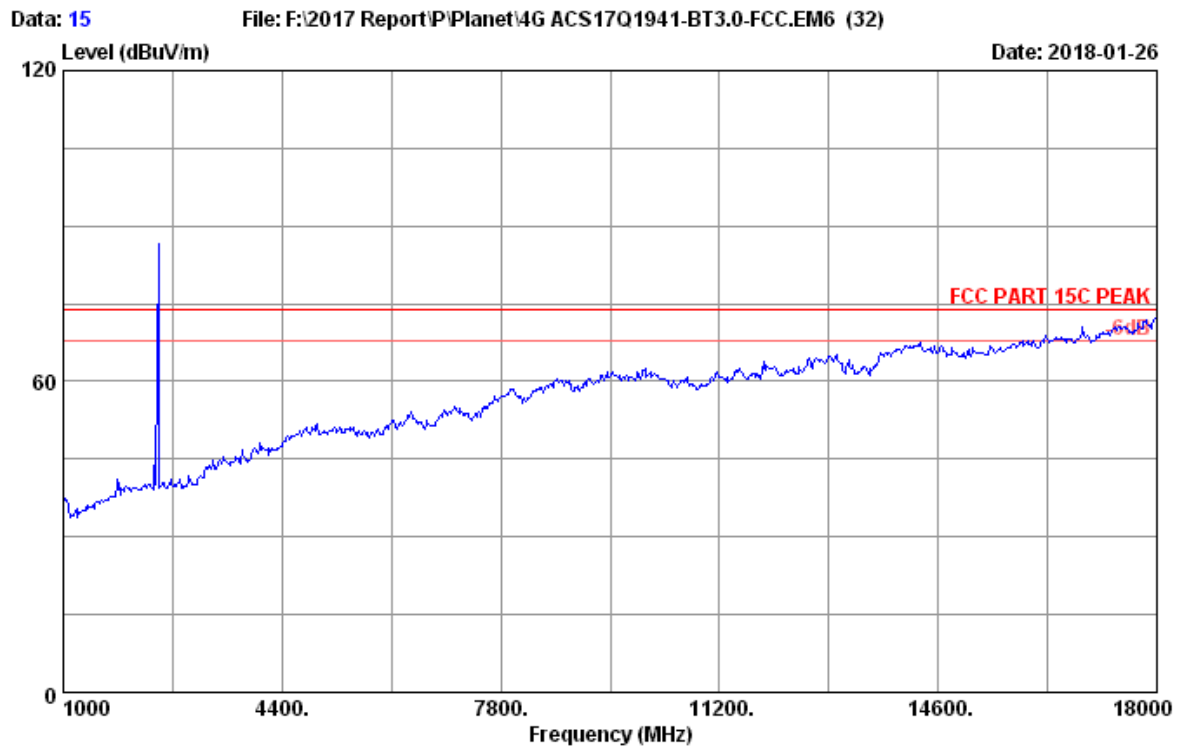
Site no.	: 3m Chamber	Data no.	: 11
Dis. / Ant.	: 3m 2017 ANT 3006 HF	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23.1°C/52.5%	Engineer	: Kayle
EUT	: Gemini M/N:Gemini 4G		
Power rating	: DC 5V From Adapter Input AC 120V/60Hz		
Test Mode	: BT3.0 GFSK 2480 Tx Mode		



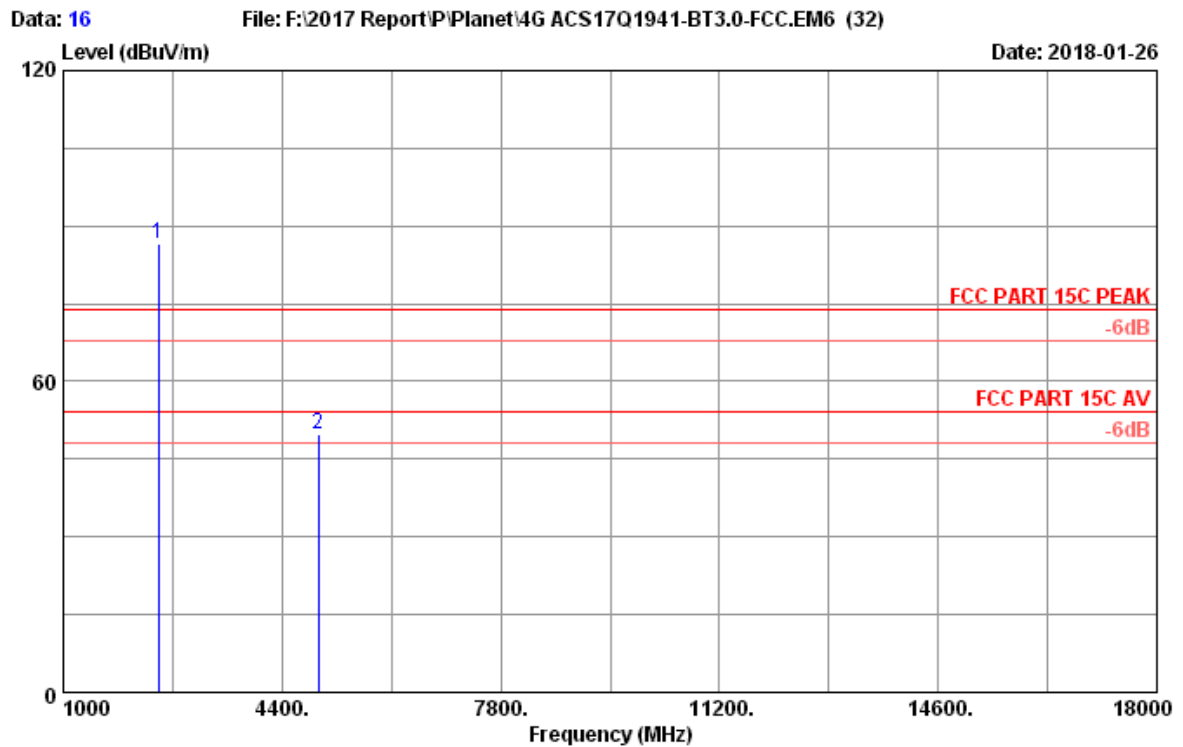
Site no. : 3m Chamber Data no. : 12
 Dis. / Ant. : 3m 2017 ANT 3006 HF Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.1°C/52.5% Engineer : Kayle
 EUT : Gemini M/N:Gemini 4G
 Power rating : DC 5V From Adapter Input AC 120V/60Hz
 Test Mode : BT3.0 GFSK 2480 Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.00	28.08	10.45	84.45	35.71	87.27	74.00	-13.27	Peak
2	4960.00	33.73	14.73	35.84	33.69	50.61	74.00	23.39	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



Site no.	: 3m Chamber	Data no.	: 15
Dis. / Ant.	: 3m 2017 ANT 3006 HF	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23.1°C/52.5%	Engineer	: Kayle
EUT	: Gemini M/N: Gemini 4G		
Power rating	: DC 5V From Adapter Input AC 120V/60Hz		
Test Mode	: BT3.0 GFSK 2480 Tx Mode		

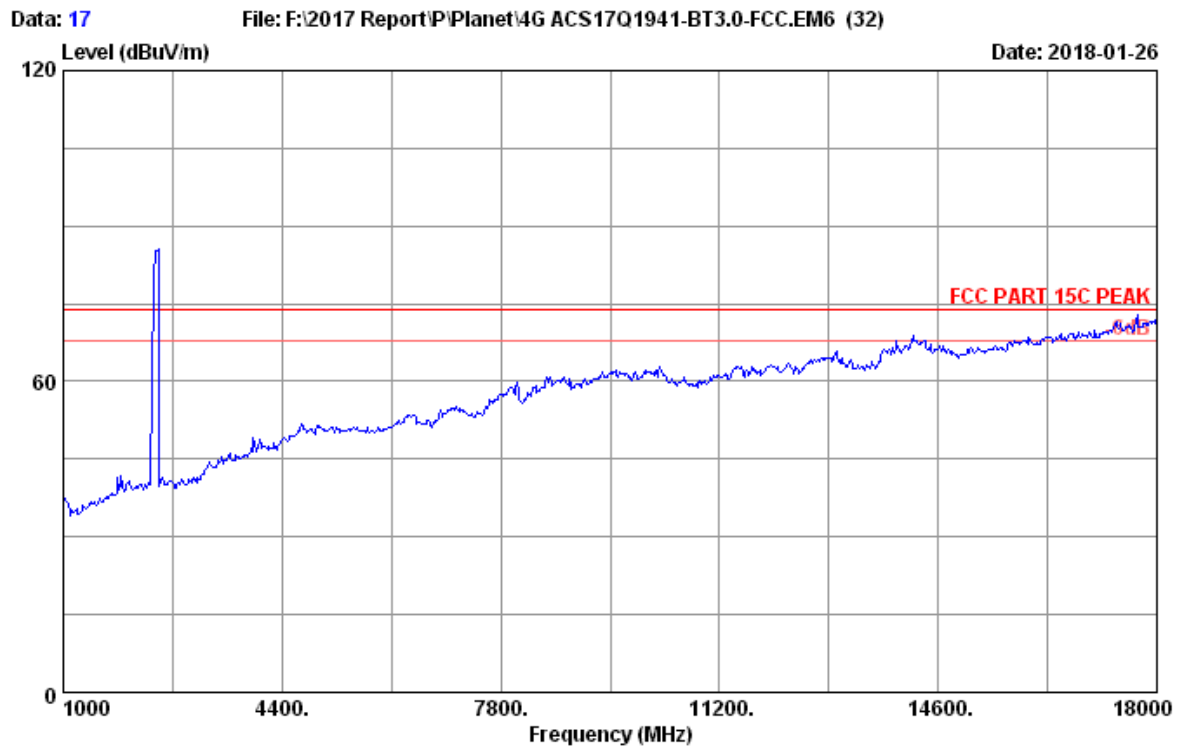


Site no. : 3m Chamber Data no. : 16
 Dis. / Ant. : 3m 2017 ANT 3006 HF Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.1°C/52.5% Engineer : Kayle
 EUT : Gemini M/N:Gemini 4G
 Power rating : DC 5V From Adapter Input AC 120V/60Hz
 Test Mode : BT3.0 GFSK 2480 Tx Mode

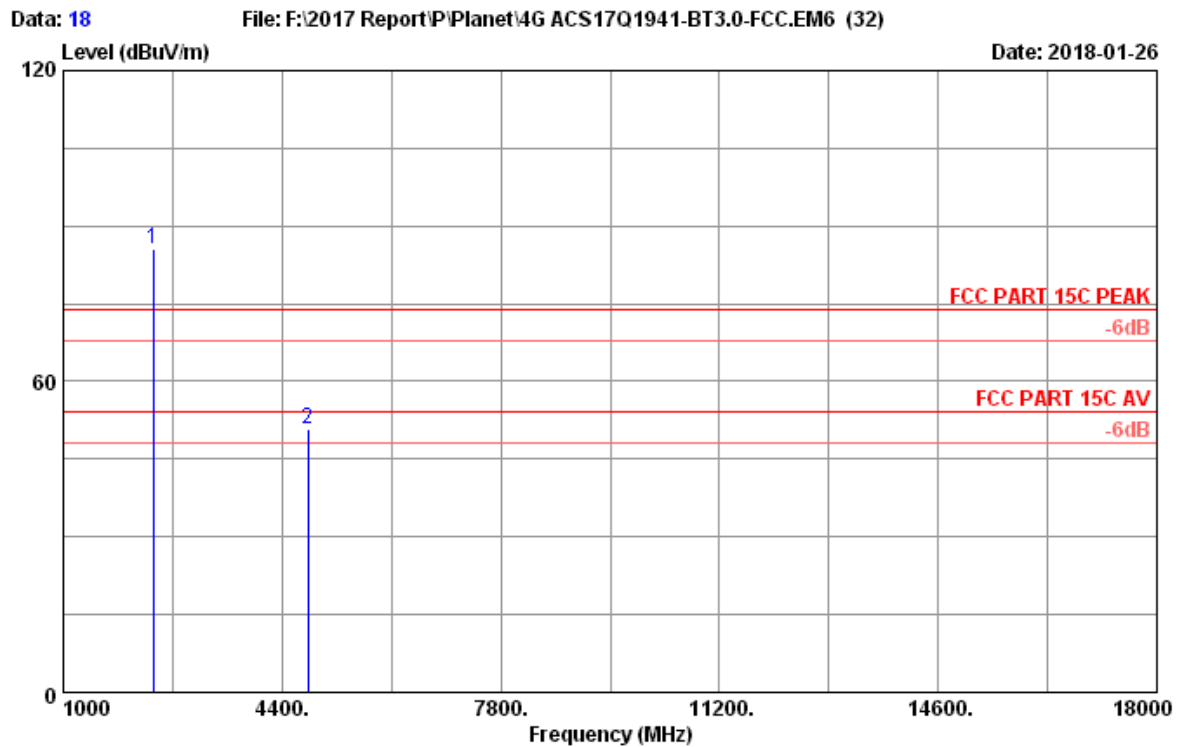
No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.00	28.08	10.45	83.66	35.71	86.48	74.00	-12.48	Peak
2	4960.00	33.73	14.73	35.12	33.69	49.89	74.00	24.11	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.

2. The emission levels that are 20dB below the official
 limit are not reported.



Site no.	: 3m Chamber	Data no.	: 17
Dis. / Ant.	: 3m 2017 ANT 3006 HF	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23.1°C/52.5%	Engineer	: Kayle
EUT	: Gemini M/N:Gemini 4G		
Power rating	: DC 5V From Adapter Input AC 120V/60Hz		
Test Mode	: BT3.0 8-DPSK 2402 Tx Mode		

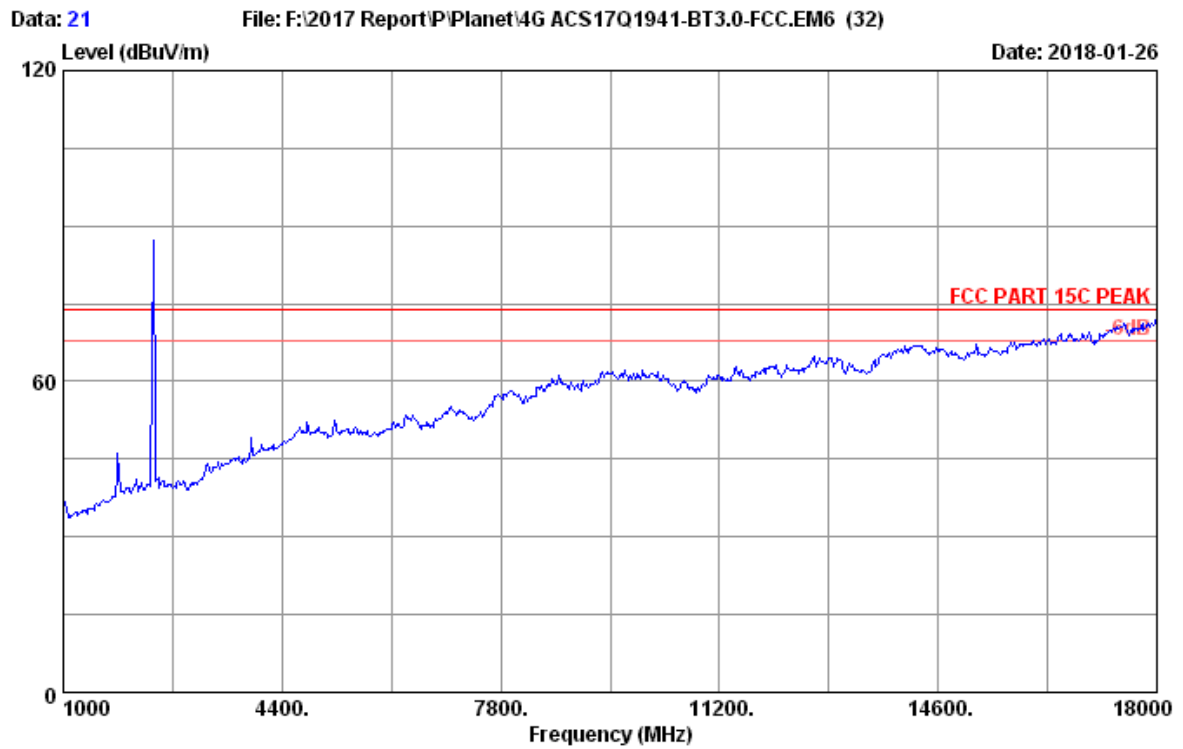


Site no. : 3m Chamber Data no. : 18
 Dis. / Ant. : 3m 2017 ANT 3006 HF Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.1°C/52.5% Engineer : Kayle
 EUT : Gemini M/N:Gemini 4G
 Power rating : DC 5V From Adapter Input AC 120V/60Hz
 Test Mode : BT3.0 8-DPSK 2402 Tx Mode

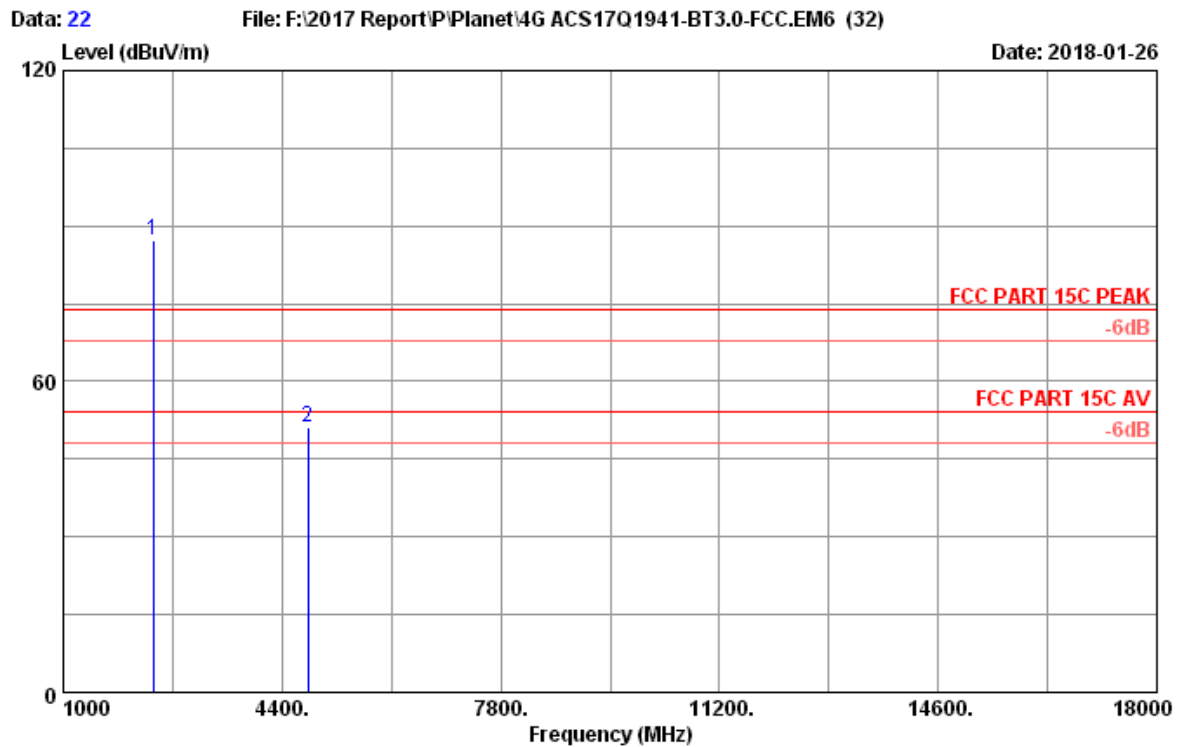
No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2402.00	27.96	10.30	83.00	35.61	85.65	74.00	-11.65	Peak
2	4804.00	33.42	14.52	36.77	33.82	50.89	74.00	23.11	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.

2. The emission levels that are 20dB below the official
 limit are not reported.



Site no.	: 3m Chamber	Data no.	: 21
Dis. / Ant.	: 3m 2017 ANT 3006 HF	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23.1°C/52.5%	Engineer	: Kayle
EUT	: Gemini M/N: Gemini 4G		
Power rating	: DC 5V From Adapter Input AC 120V/60Hz		
Test Mode	: BT3.0 8-DPSK 2402 Tx Mode		

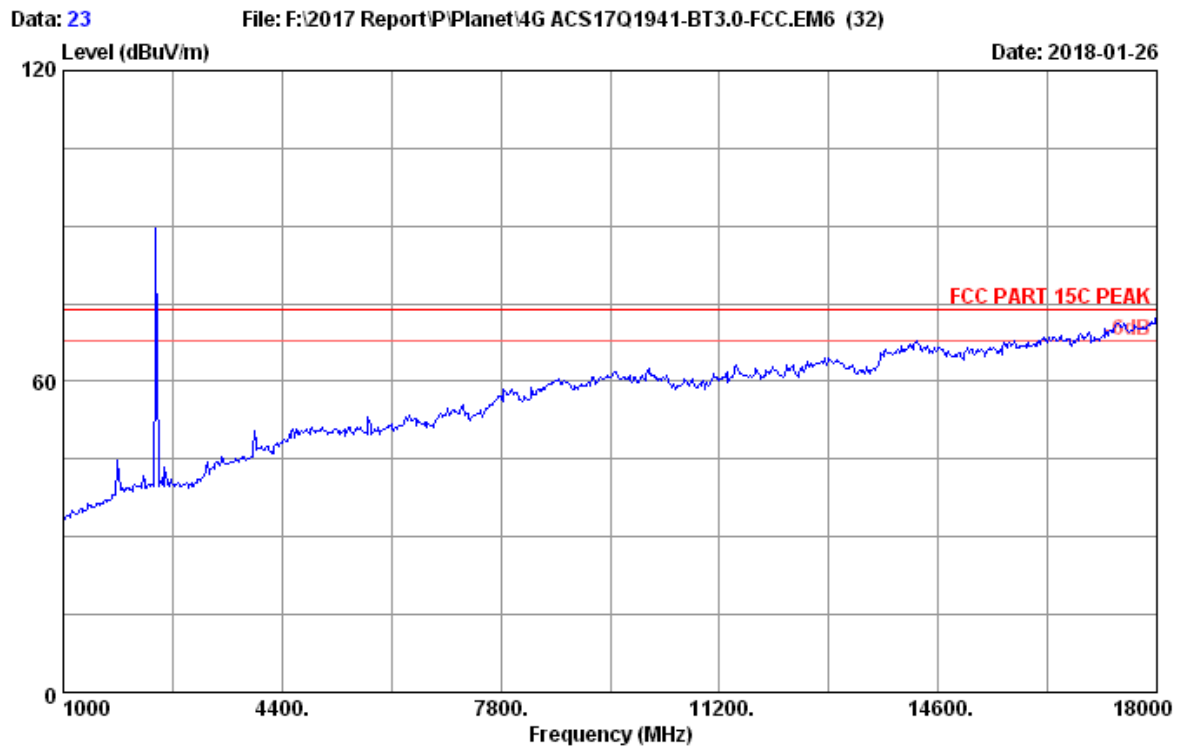


Site no. : 3m Chamber Data no. : 22
 Dis. / Ant. : 3m 2017 ANT 3006 HF Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.1°C/52.5% Engineer : Kayle
 EUT : Gemini M/N:Gemini 4G
 Power rating : DC 5V From Adapter Input AC 120V/60Hz
 Test Mode : BT3.0 8-DPSK 2402 Tx Mode

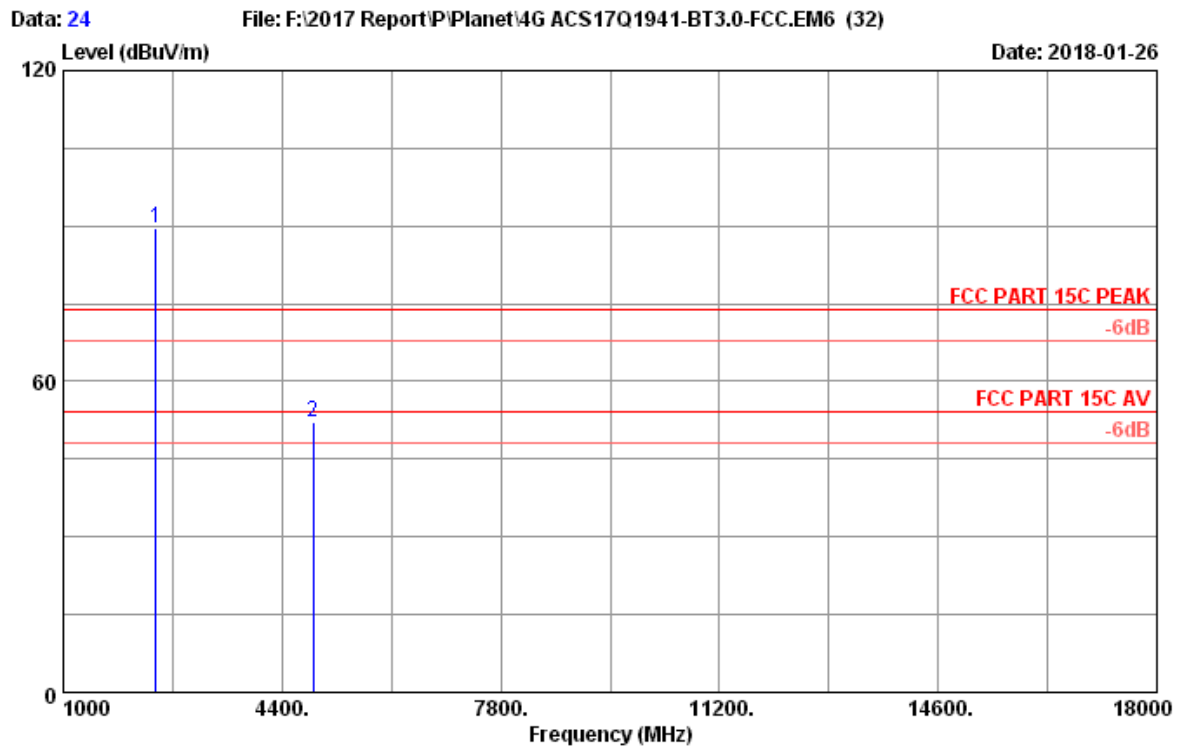
No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2402.00	27.96	10.30	84.63	35.61	87.28	74.00	-13.28	Peak
2	4804.00	33.42	14.52	37.03	33.82	51.15	74.00	22.85	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.

2. The emission levels that are 20dB below the official
 limit are not reported.



Site no.	: 3m Chamber	Data no.	: 23
Dis. / Ant.	: 3m 2017 ANT 3006 HF	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23.1°C/52.5%	Engineer	: Kayle
EUT	: Gemini M/N:Gemini 4G		
Power rating	: DC 5V From Adapter Input AC 120V/60Hz		
Test Mode	: BT3.0 8-DPSK 2441 Tx Mode		

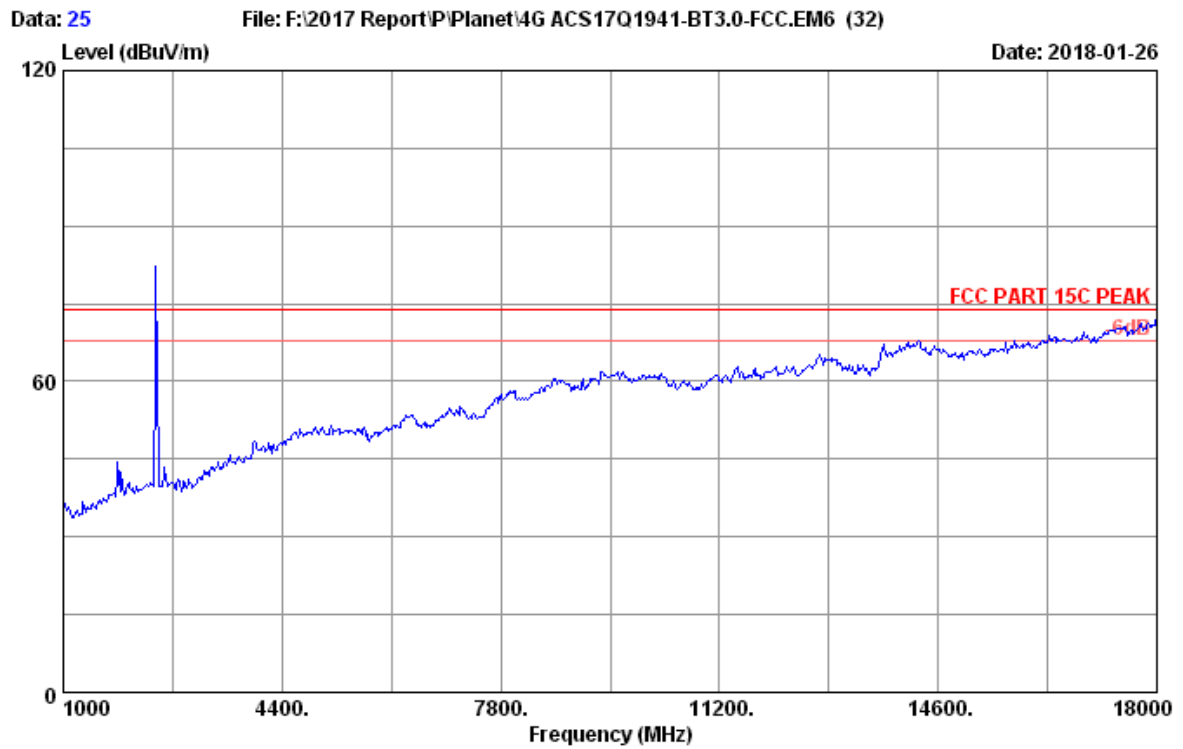


Site no. : 3m Chamber Data no. : 24
 Dis. / Ant. : 3m 2017 ANT 3006 HF Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.1°C/52.5% Engineer : Kayle
 EUT : Gemini M/N:Gemini 4G
 Power rating : DC 5V From Adapter Input AC 120V/60Hz
 Test Mode : BT3.0 8-DPSK 2441 Tx Mode

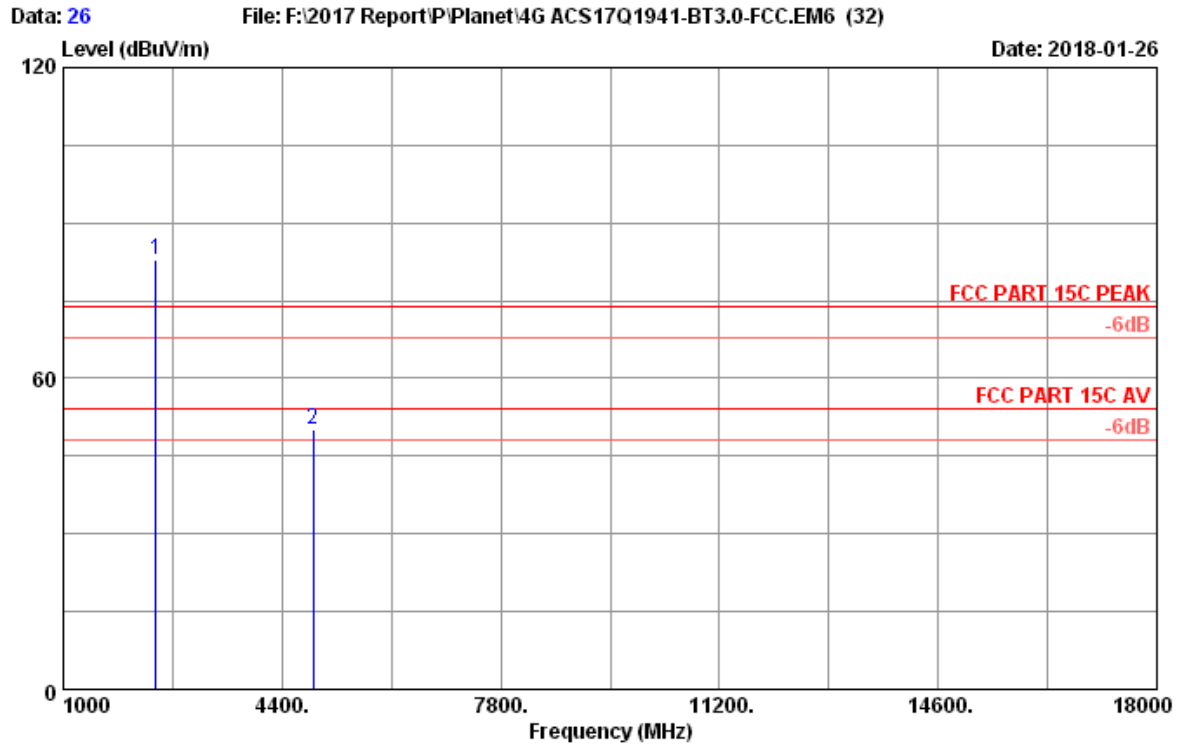
No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2441.00	28.03	10.37	86.80	35.68	89.52	74.00	-15.52	Peak
2	4882.00	33.56	14.62	37.57	33.75	52.00	74.00	22.00	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.

2. The emission levels that are 20dB below the official
 limit are not reported.



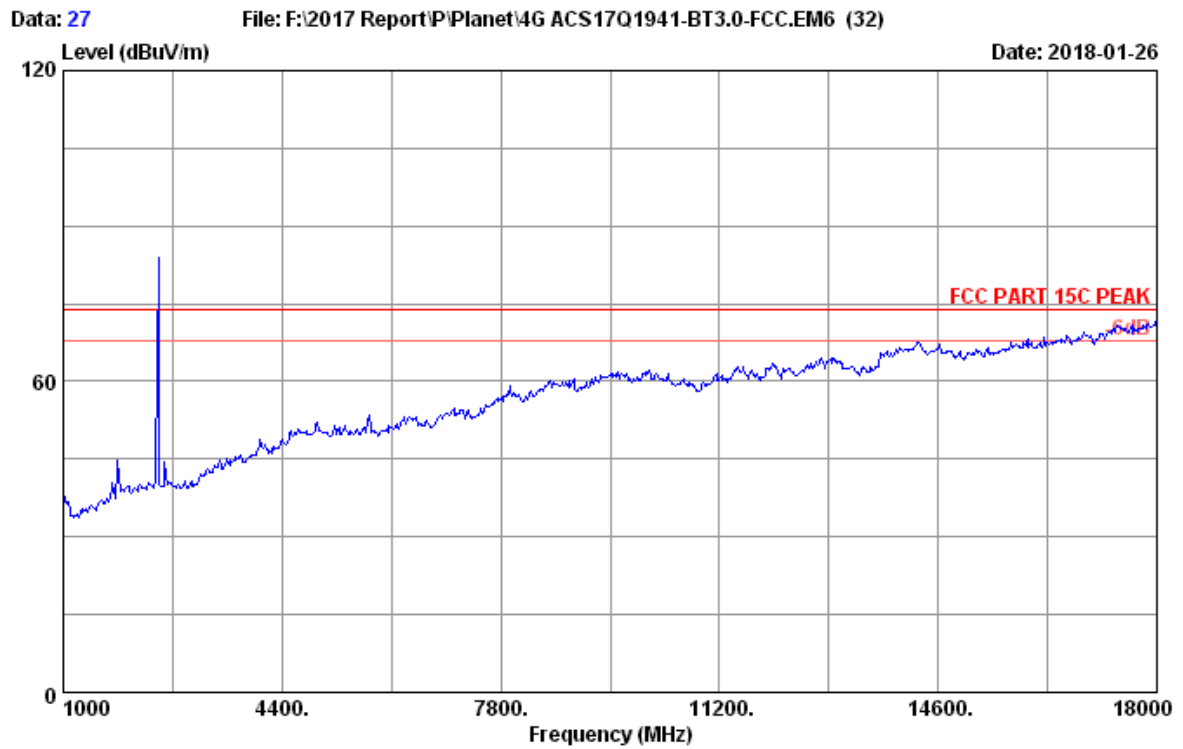
Site no.	: 3m Chamber	Data no.	: 25
Dis. / Ant.	: 3m 2017 ANT 3006 HF	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23.1°C/52.5%	Engineer	: Kayle
EUT	: Gemini M/N:Gemini 4G		
Power rating	: DC 5V From Adapter Input AC 120V/60Hz		
Test Mode	: BT3.0 8-DPSK 2441 Tx Mode		



Site no. : 3m Chamber Data no. : 26
 Dis. / Ant. : 3m 2017 ANT 3006 HF Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23.1°C/52.5% Engineer : Kayle
 EUT : Gemini M/N:Gemini 4G
 Power rating : DC 5V From Adapter Input AC 120V/60Hz
 Test Mode : BT3.0 8-DPSK 2441 Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2441.00	28.03	10.37	80.06	35.68	82.78	74.00	-8.78	Peak
2	4882.00	33.56	14.62	35.63	33.75	50.06	74.00	23.94	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp factor.
 2. The emission levels that are 20dB below the official
 limit are not reported.



Site no.	: 3m Chamber	Data no.	: 27
Dis. / Ant.	: 3m 2017 ANT 3006 HF	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23.1°C/52.5%	Engineer	: Kayle
EUT	: Gemini M/N: Gemini 4G		
Power rating	: DC 5V From Adapter Input AC 120V/60Hz		
Test Mode	: BT3.0 8-DPSK 2480 Tx Mode		