TESTING LABORATORY
CERTIFICATE #4820.01

FCC PART 15B

TEST REPORT

For

CLC HONG KONG LIMITED

802, 8/F., Harbour Centre Tower 1, No.1 Hok Cheung St., Hung Hom, Kowloon, Hong Kong

FCC ID: 2AG4WGATOR7

Report Type: Original Report	**Product Type:** Gator 7
Test Engineer:	Walker Chen, Alex Hu, Asa Chen
Report Number:	DG1210429-14662E-00A
Report Date:	2021-07-08
Reviewed By:	Allen Qiao RF Supervisor
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Dongguan) No.12, Pulong East 1st Road, Tangxia Town, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

EUT Name:		Gator 7
EUT Model:		Z570
Highest Operation Frequency:		5240 MHz
Rated Input Voltage:		5Vdc from Adapter or 3.85Vdc from Battery
Adapter Information	**Model:**	PMC45
	Input:	100-240Vac 50/60Hz 0.3A
	Output:	5.0Vdc, 2.0A, 10.0W
Serial Number:		DG1210429-14662E-RF-S1
EUT Received Date:		2021.04.29
EUT Received Status:		Good

Objective

This report is prepared on behalf of ***CLC HONG KONG LIMITED*** in accordance with FCC Part 15B Part 2, Part J, and Part 15, Subpart A and B of the Federal Communications Commission's rules.

The objective is to determine the compliance of EUT with: FCC Part 15B.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2014 American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.

Measurement Uncertainty

Parameter	Measurement Uncertainty
Unwanted Emissions, radiated	30M~200MHz: 4.58 dB for Horizontal, 4.59 dB for Vertical 200M~1GHz: 4.83 dB for Horizontal, 5.85 dB for Vertical 1G~6GHz: 4.45 dB, 6G~13GHz: 5.23 dB
Temperature	±1℃
Humidity	±5%
AC Power Lines Conducted Emission	3.12 dB (150 kHz to 30 MHz)

Note: Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.12, Pulong East 1st Road, Tangxia Town, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 897218, the FCC Designation No. : CN1220.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0022.

Declarations

BACL is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol "▲". Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in typical use mode.

Equipment Modifications

No modification was made to the EUT.

EUT Exercise Software

The software "Winthrax.exe" was used during test.

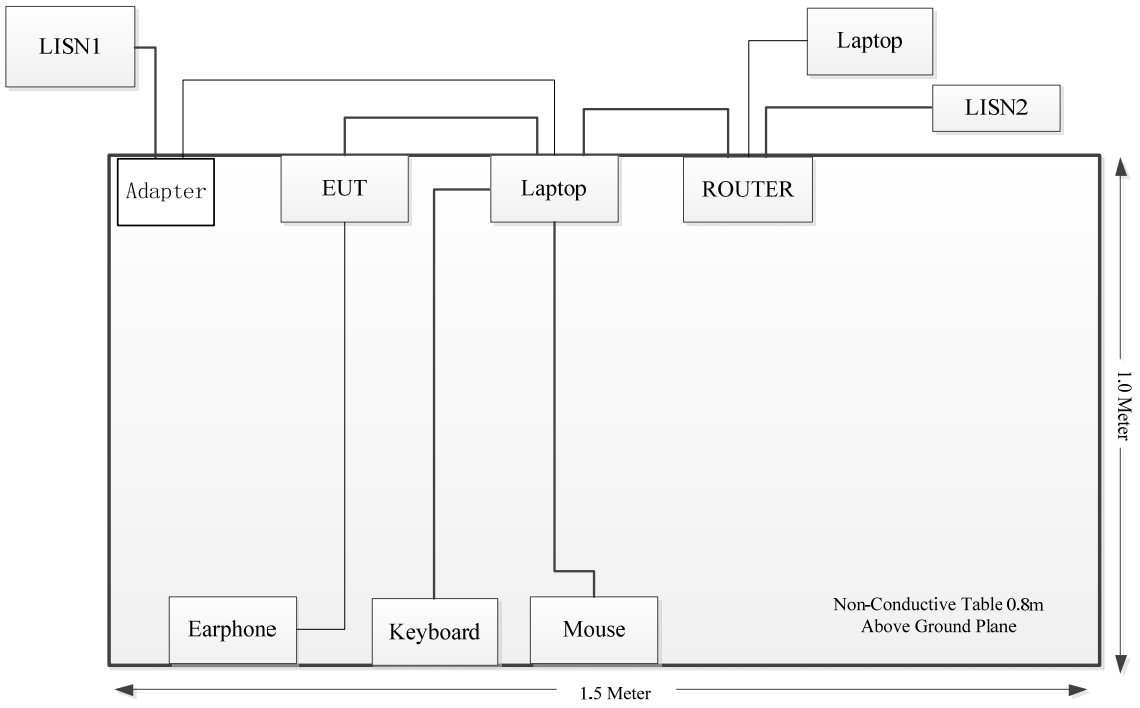
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
ThinkPad	Laptop	E450	PF-0MR8KV 16/08
DELL	Laptop	PP11L	QDS-BRCM1017
DELL	Mouse	MO56UOA	F0Y02P7Y
DELL	Keyboard	L100	CNORH656658907BL05DC
zioncom	Wireless Router	A3700R	200622002S1
D-Link	Router	DGS-1100-08PD	S01Z1H000012

Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
USB Cable	No	No	1.5	Laptop	Keyboard
USB Cable	No	No	1.5	Laptop	Mouse
Network Cable	No	No	10	Router	Laptop
USB Cable	No	No	1.5	Laptop	EUT

Block Diagram of Test Setup



Test Equipment List

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted emissions					
R&S	LISN	ENV 216	101614	2020-09-12	2021-09-12
R&S	EMI Test Receiver	ESCI	101121	2020-07-07	2021-07-07
MICRO-COAX	Coaxial Cable	C-NJNJ-50	C-0200-01	2020-09-05	2021-09-05
R&S	Test Software	EMC32	Version 9.10.00	N/A	N/A
Radiated emissions Below 1GHz					
Sunol Sciences	Antenna	JB3	A060611-2	2020-08-25	2023-08-25
R&S	EMI Test Receiver	ESCI	100224	2020-09-12	2021-09-12
Unknown	Coaxial Cable	C-NJNJ-50	C-1000-01	2020-09-05	2021-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-0400-02	2020-09-05	2021-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-0530-01	2020-09-24	2021-09-24
Sonoma	Amplifier	310N	185914	2020-10-13	2021-10-13
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A
Radiated emissions Above 1GHz					
ETS-Lindgren	Horn Antenna	3115	9912-5985	2020-10-13	2023-10-12
Ducommun Technolagies	Horn Antenna	ARH-4223-02	1007726-01 1304	2020-12-05	2023-12-04
Ducommun Technolagies	Horn Antenna	ARH-2823-02	1007726-01 1302	2020-12-05	2023-12-04
R&S	Spectrum Analyzer	FSP 38	100478	2020-07-07	2021-07-07
HUBER+SUHNER	Coaxial Cable	SUCOFLEX 126EA	MY369/26/26EA	2020-09-25	2021-09-25
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2020-09-05	2021-09-05
Quinstar	Amplifier	QLW-18405536-JO	15964001001	2020-06-27	2021-06-27
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A

* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Environmental Conditions

Test Item:	Conducted emissions	Radiated emissions (Below 1GHz)	Radiated emissions (Above 1GHz)
Temperature:	25.8℃	24.6℃	29.7℃
Relative Humidity:	67%	53.5%	61%
ATM Pressure:	100.5kPa	100.4kPa	100.4kPa
Tester:	Walker Chen	Asa Chen	Alex Hu
Test Date:	2021-05-25	2021-05-27	2021-05-17

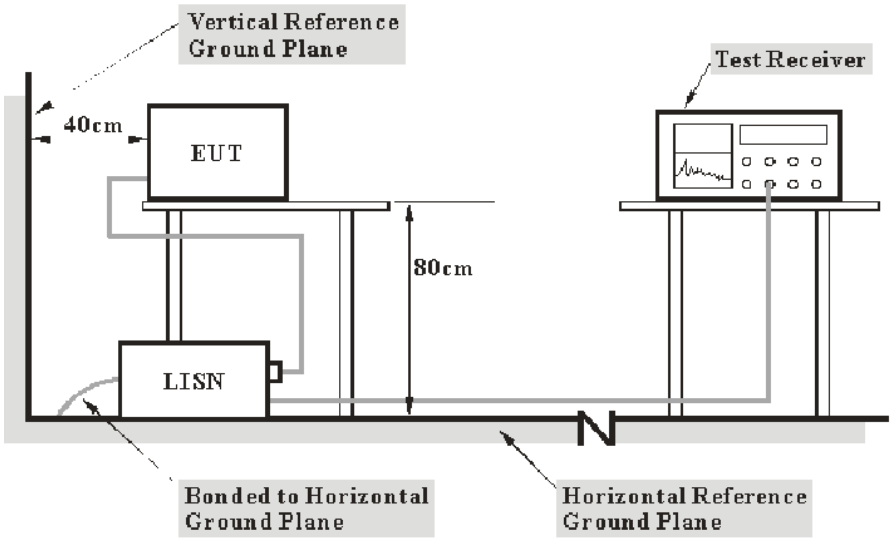
SUMARY OF TEST RESULTS

FCC Part 15B

Clause	Description of Test	Test Result
§15.107	Conducted emissions	Compliance
§15.109	Radiated emissions	Compliance

FCC PART 15B §15.107 – CONDUCTED EMISSIONS

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 15 B Class B limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The adapter was connected to the main LISN with a 120 V/60 Hz AC power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter or EUT was connected to the first LISN.

The frequency and amplitude of the six highest ac power-line conducted emissions relative to the limit, measured over all the current-carrying conductors of the EUT power cords, and the operating frequency or frequency to which the EUT is tuned (if appropriate), should be reported, unless such emissions are more than 20 dB below the limit. AC power-line conducted emissions measurements are to be separately carried out only on each of the phase ("hot") line(s) and (if used) on the neutral line(s), but not on the ground [protective earth] line(s). If less than six emission frequencies are within 20 dB of the limit, then the noise level of the measuring instrument at representative frequencies should be reported. The specific conductor of the power-line cord for each of the reported emissions should be identified. Measure the six highest emissions with respect to the limit on each current-carrying conductor of each power cord associated with the EUT (but not the power cords of associated or peripheral equipment that are part of the test configuration). Then, report the six highest emissions with respect to the limit from among all the measurements identifying the frequency and specific current-carrying conductor identified with the emission. The six highest emissions should be reported for each of the current-carrying conductors, or the six highest emissions may be reported over all the current-carrying conductors.

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result (QuasiPeak or Average) = Meter Reading + Corr.

Note:
Corr. = Cable loss + Factor of coupling device

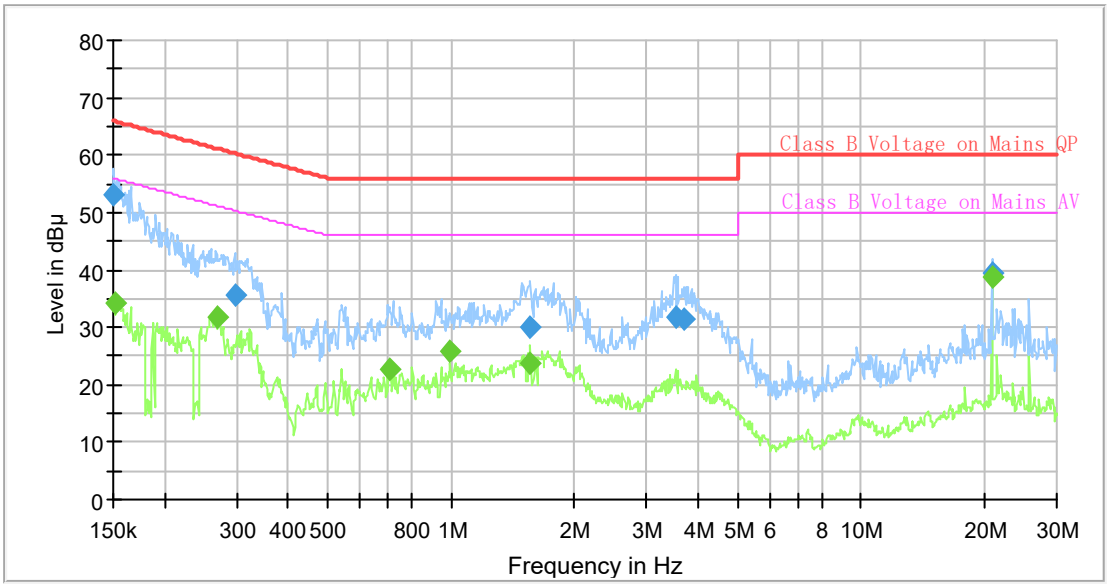
The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Result

Test Data

Please refer to following table and plots:

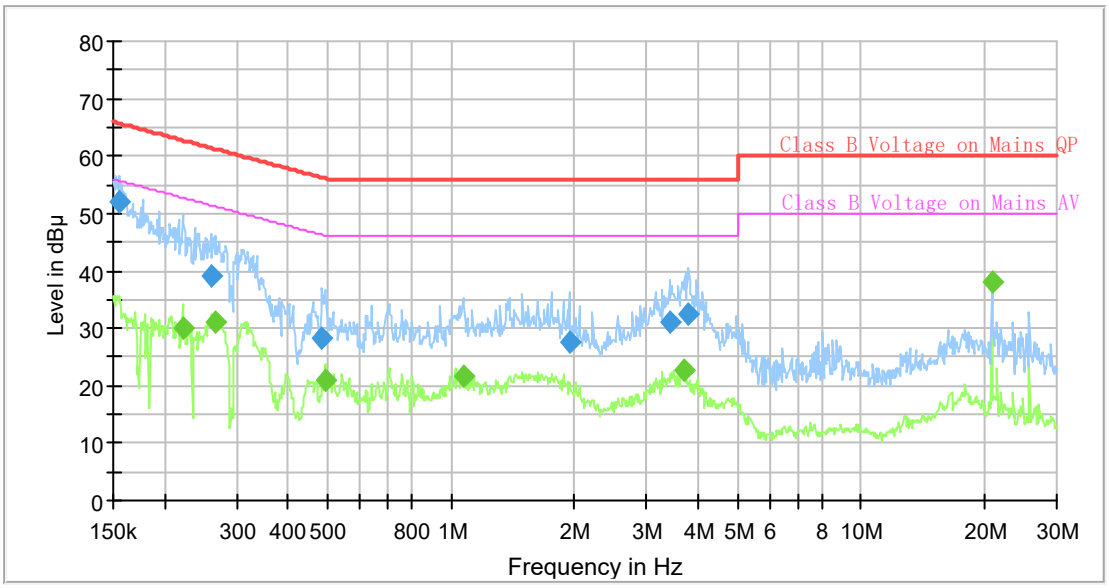
Port:	L
Test Mode:	Downloading
Power Source:	AC 120V/60Hz
Note:	



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.150750	53.02	---	65.96	12.94	9.000	L1	9.6
0.152261	---	34.41	55.88	21.47	9.000	L1	9.6
0.270201	---	31.68	51.11	19.43	9.000	L1	9.6
0.297058	35.71	---	60.32	24.61	9.000	L1	9.6
0.707516	---	22.76	46.00	23.24	9.000	L1	9.7
0.998148	---	25.74	46.00	20.26	9.000	L1	9.7
1.563653	29.99	---	56.00	26.01	9.000	L1	9.7
1.563653	---	23.80	46.00	22.20	9.000	L1	9.7
3.525400	31.87	---	56.00	24.13	9.000	L1	9.7
3.705689	31.47	---	56.00	24.53	9.000	L1	9.7
20.916663	---	38.94	50.00	11.06	9.000	L1	10.0
20.916663	39.49	---	60.00	20.51	9.000	L1	10.0

Port:	N
Test Mode:	Downloading
Power Source:	AC 120V/60Hz
Note:	



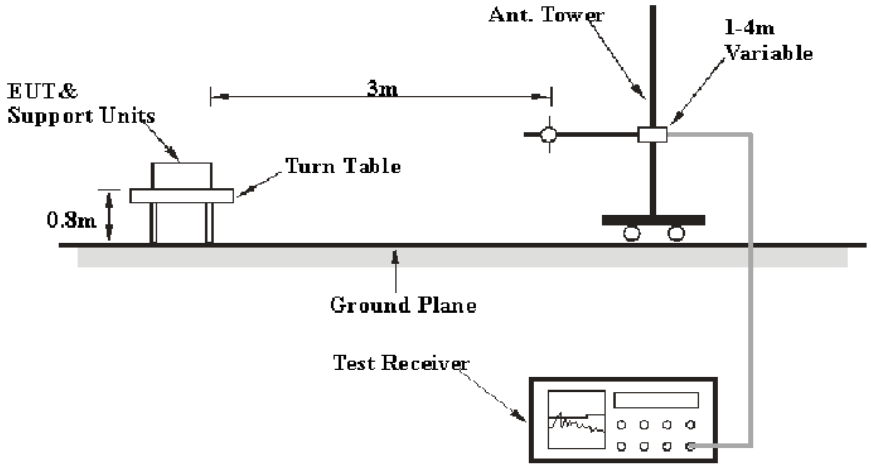
Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.155329	51.97	---	65.71	13.74	9.000	N	9.6
0.221332	---	29.89	52.77	22.88	9.000	N	9.6
0.259632	39.11	---	61.44	22.33	9.000	N	9.6
0.266188	---	31.19	51.24	20.05	9.000	N	9.6
0.484301	28.37	---	56.26	27.89	9.000	N	9.6
0.491602	---	21.13	46.14	25.01	9.000	N	9.6
1.070335	---	21.57	46.00	24.43	9.000	N	9.6
1.947363	27.60	---	56.00	28.40	9.000	N	9.6
3.421464	30.99	---	56.00	25.01	9.000	N	9.6
3.705689	---	22.60	46.00	23.40	9.000	N	9.6
3.799262	32.44	---	56.00	23.56	9.000	N	9.6
20.916663	---	37.96	50.00	12.04	9.000	N	9.9

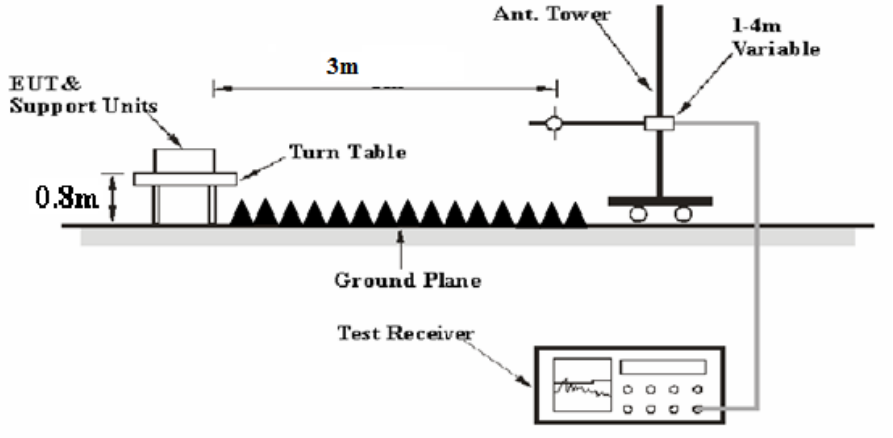
FCC PART 15B §15.109 – RADIATED EMISSIONS

EUT Setup

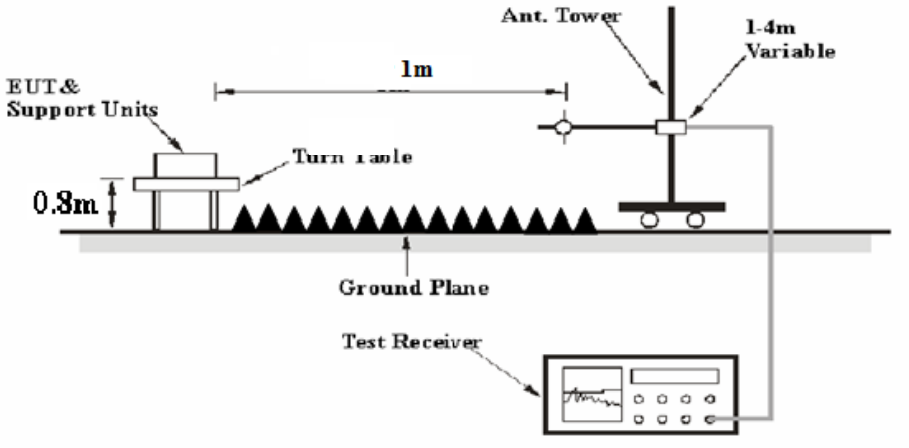
Below 1GHz:



Above 1-26.5 GHz:



26.5-30 GHz:



The radiated emission below 1GHz tests were performed in the 10 meters chamber test site, above 1GHz tests were performed in the 3 meters chamber test site A, using the setup accordance with the ANSI C63.4-2014. The specification used was with the FCC Part 15 B Class B limits.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 30 GHz.

During the radiated emission test, the EMI test receiver was set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1 MHz	3 MHz	/	Peak
	1 MHz	Reduced video bandwidth	/	AVG

Test Procedure

During the radiated emissions, the adapter was connected to the first AC floor outlet and the other support equipments were connected to the second AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

The data was recorded in the Quasi-peak detection mode for below 1 GHz, peak and average detection mode above 1 GHz.

According to C63.4, the above 1G test result shall be extrapolated to the specified distance using an extrapolation Factor of 20dB/decade from 3m to 1m

Distance extrapolation Factor =20 log (specific distance [3m]/test distance [1m]) dB= 9.54 dB

All emissions under the average limit and under the noise floor have not recorded in the report.

Corrected Amplitude & Margin Calculation

For the range 30MHz-1GHz, the Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude = Meter Reading + Antenna Factor + Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit - Corrected Amplitude

For the range 1GHz-40GHz, Test performed at 1.5m or 1m, the Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading and the Distance extrapolation Factor. The basic equation is as follows:

Corrected Amplitude
= Meter Reading + Antenna Factor + Cable Loss - Amplifier Gain-Distance extrapolation factor

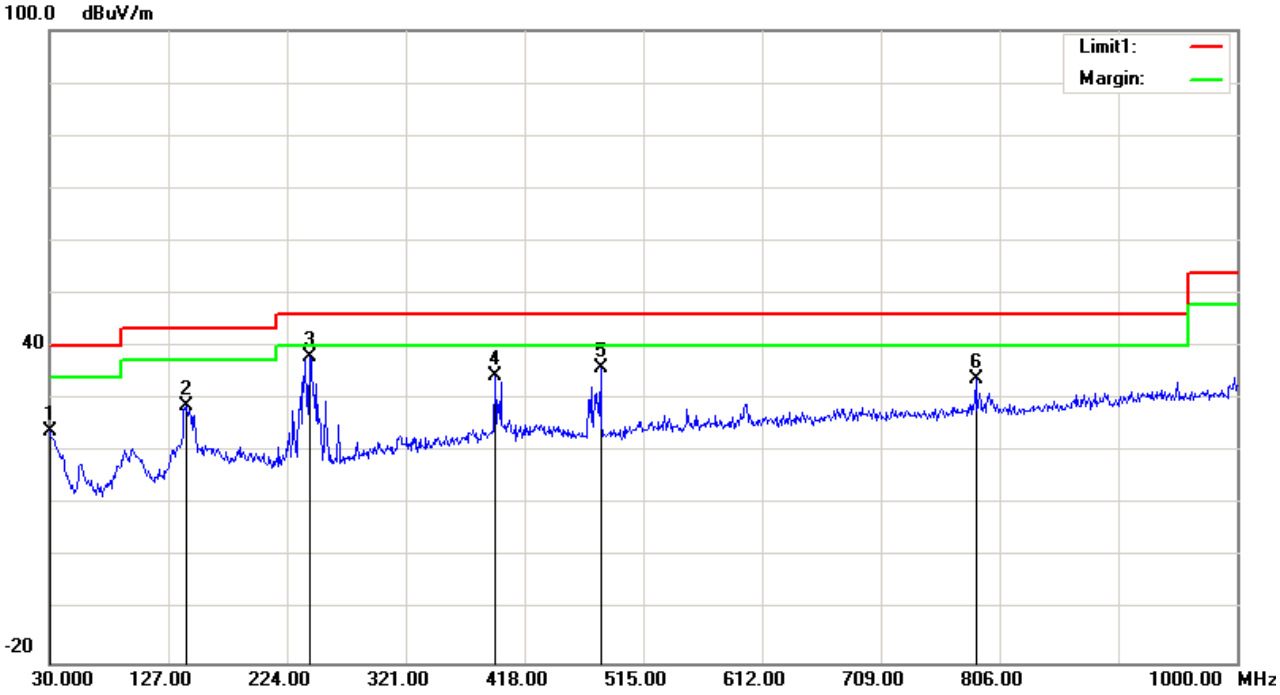
The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit- Corrected Amplitude

Test Data

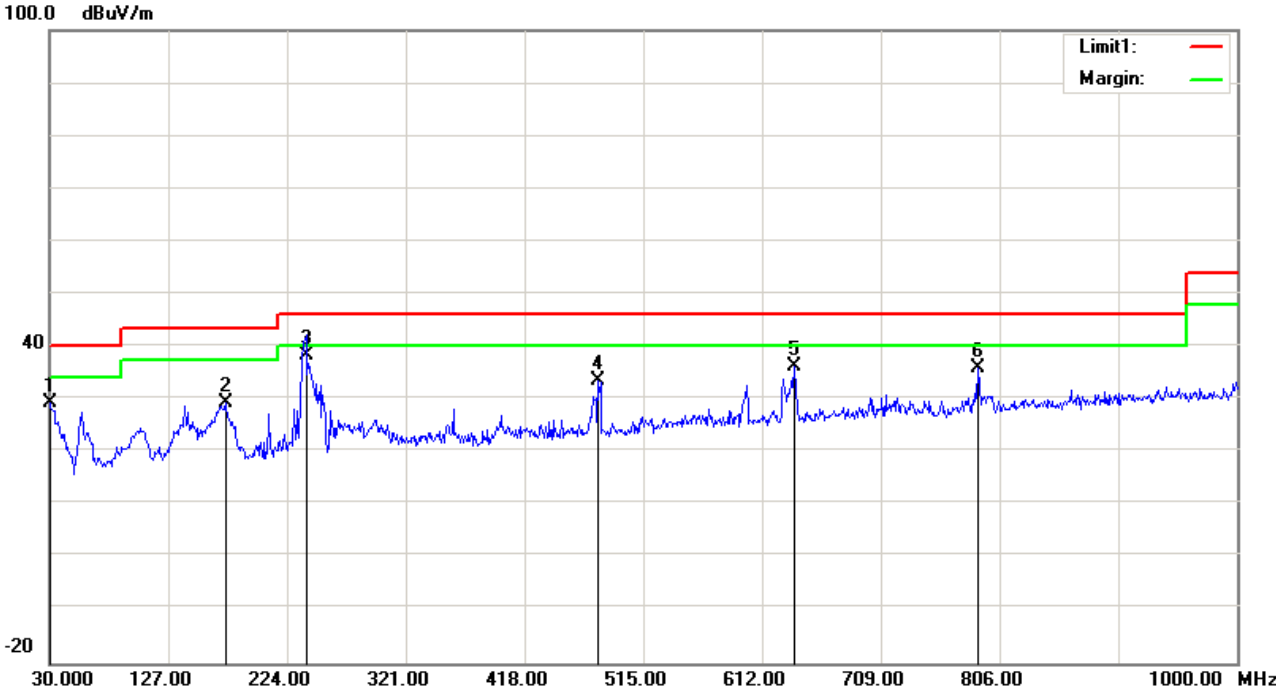
Please refer to following table and plots:

Condition:	FCC Part 15B Class B	**Polarization:**	Horizontal
EUT:	Gator 7	**Power:**	DC 5V
Model:	Z570	**Distance:**	3m
Test Mode:	Downloading		
Note:			



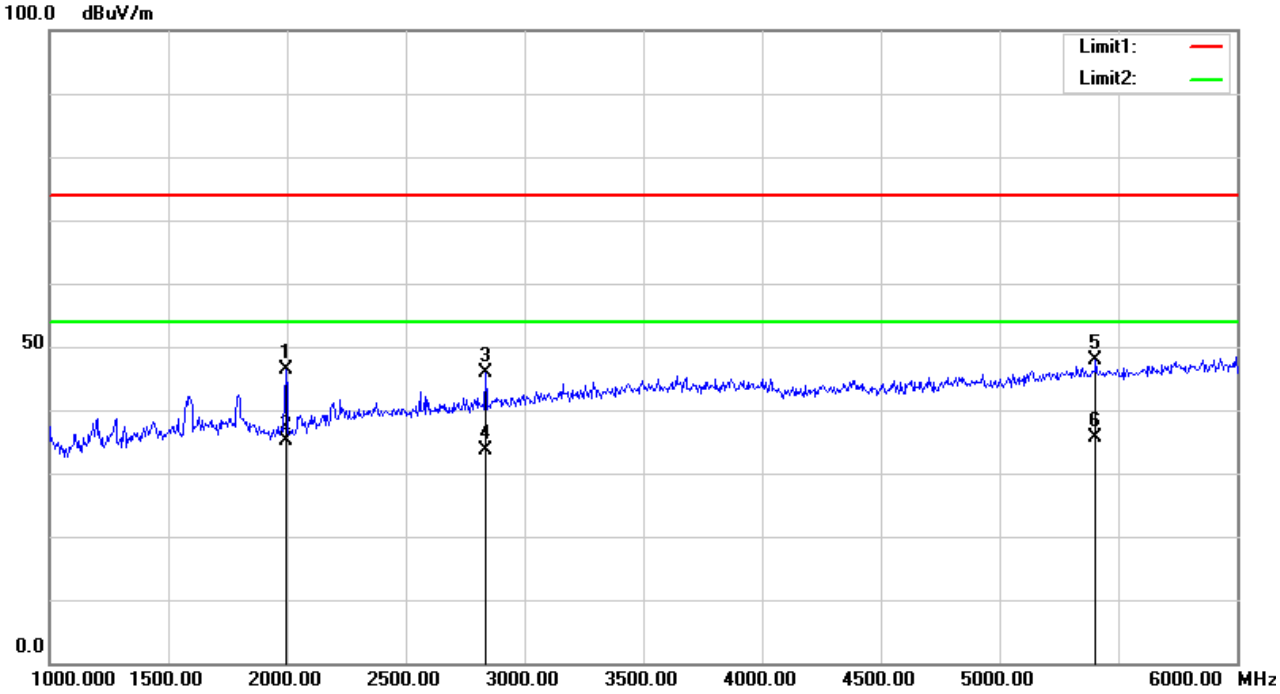
No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
1	30.0000	28.17	peak	-4.10	24.07	40.00	15.93
2	141.5500	37.91	peak	-9.17	28.74	43.50	14.76
3	242.4300	47.81	peak	-9.87	37.94	46.00	8.06
4	393.7500	39.99	peak	-5.42	34.57	46.00	11.43
5	480.0800	39.84	peak	-3.82	36.02	46.00	9.98
6	786.6000	32.77	peak	1.04	33.81	46.00	12.19

Condition:	FCC Part 15B Class B	**Polarization:**	Vertical
EUT:	Gator 7	**Power:**	DC 5V
Model:	Z570	**Distance:**	3m
Test Mode:	Downloading		
Note:			



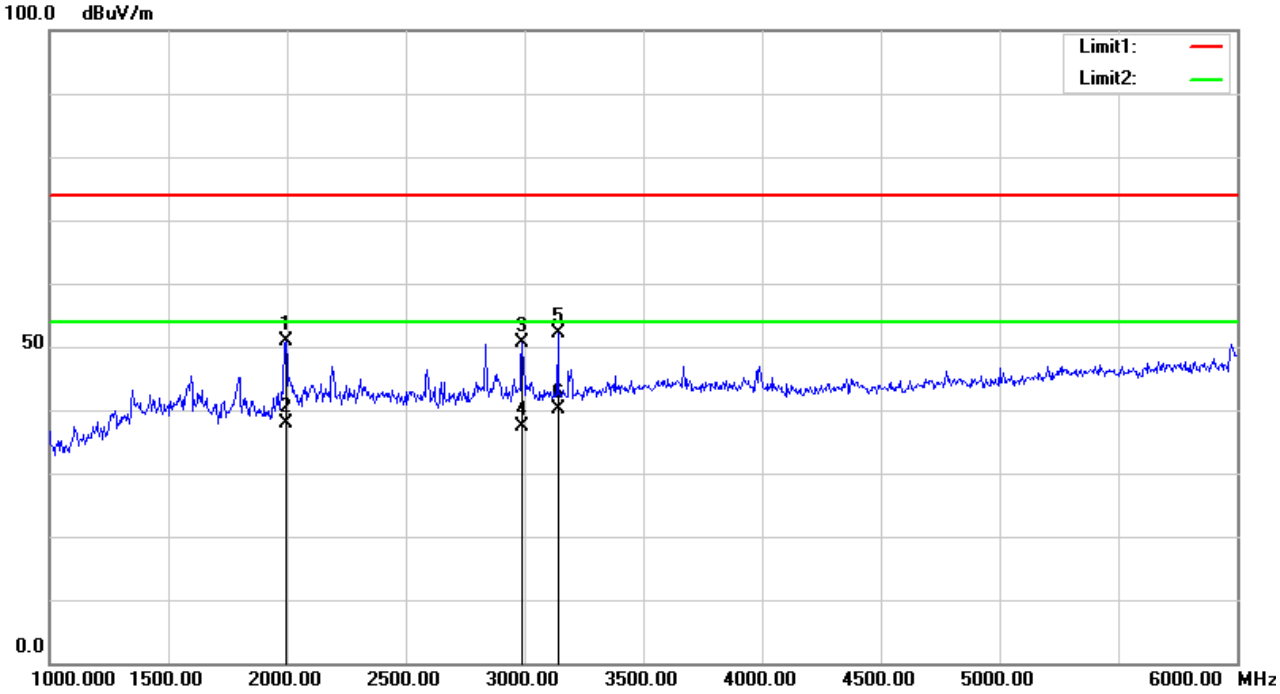
No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
1	30.0000	33.55	peak	-4.10	29.45	40.00	10.55
2	173.5600	38.87	peak	-9.66	29.21	43.50	14.29
3	239.5200	48.55	QP	-10.05	38.50	46.00	7.50
4	478.1400	37.42	peak	-3.80	33.62	46.00	12.38
5	638.1900	37.05	peak	-0.78	36.27	46.00	9.73
6	788.5400	34.89	peak	1.15	36.04	46.00	9.96

Condition:	FCC Part 15B Class B Peak	**Polarization:**	Horizontal
EUT:	Gator 7	**Power:**	DC 5V
Model:	Z570	**Distance:**	3m
Test Mode:	Downloading		
Note:			



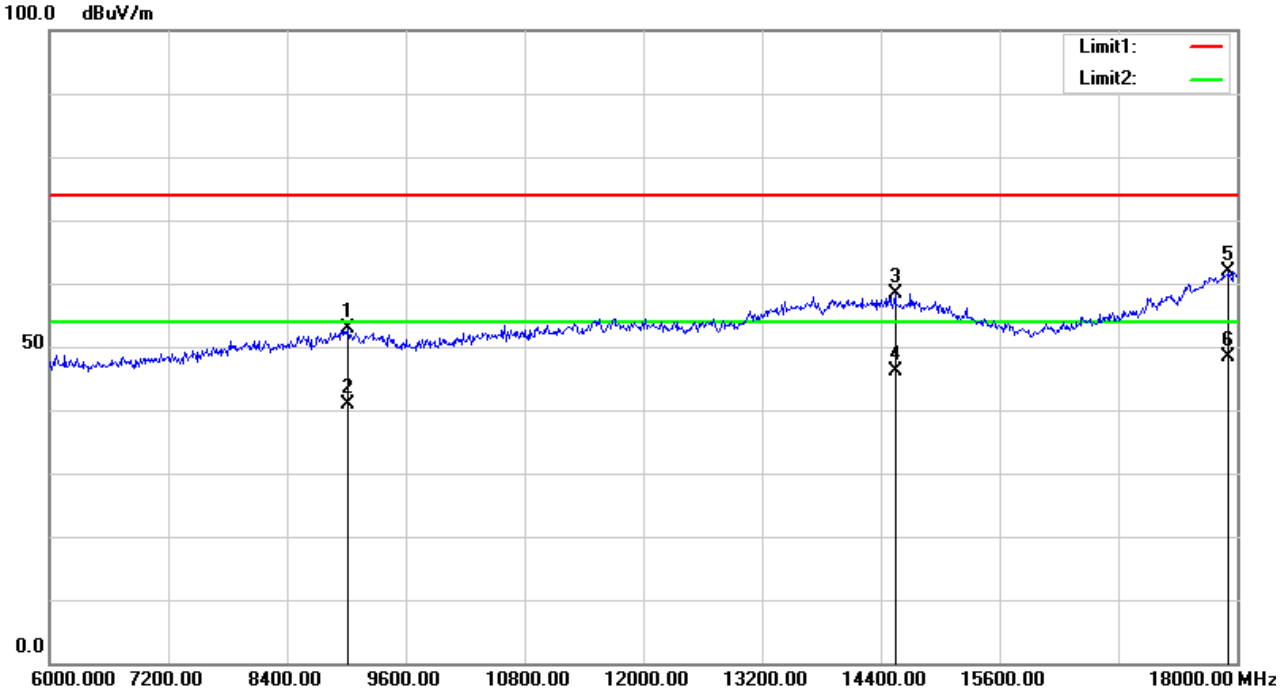
No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
1	1997.500	44.62	peak	1.67	46.29	74.00	27.71
2	1997.500	33.47	AVG	1.67	35.14	54.00	18.86
3	2837.500	41.36	peak	4.45	45.81	74.00	28.19
4	2837.500	29.25	AVG	4.45	33.70	54.00	20.30
5	5405.000	36.74	peak	11.11	47.85	74.00	26.15
6	5405.000	24.57	AVG	11.11	35.68	54.00	18.32

Condition:	FCC Part 15B Class B Peak	**Polarization:**	Vertical
EUT:	Gator 7	**Power:**	DC 5V
Model:	Z570	**Distance:**	3m
Test Mode:	Downloading		
Note:			



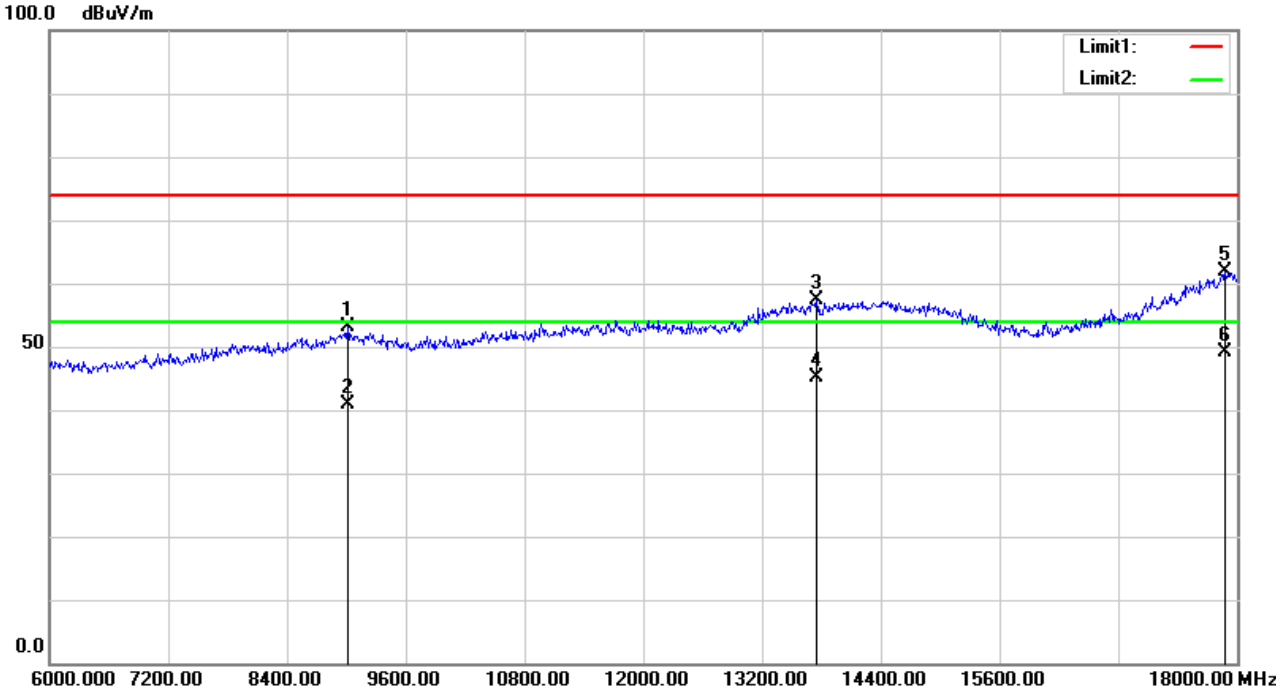
No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
1	1997.500	49.22	peak	1.67	50.89	74.00	23.11
2	1997.500	36.16	AVG	1.67	37.83	54.00	16.17
3	2992.500	45.34	peak	5.26	50.60	74.00	23.40
4	2992.500	32.18	AVG	5.26	37.44	54.00	16.56
5	3142.500	46.10	peak	6.03	52.13	74.00	21.87
6	3142.500	34.08	AVG	6.03	40.11	54.00	13.89

Condition:	FCC Part 15B Class B Peak	**Polarization:**	Horizontal
EUT:	Gator 7	**Power:**	DC 5V
Model:	Z570	**Distance:**	3m
Test Mode:	Downloading		
Note:			



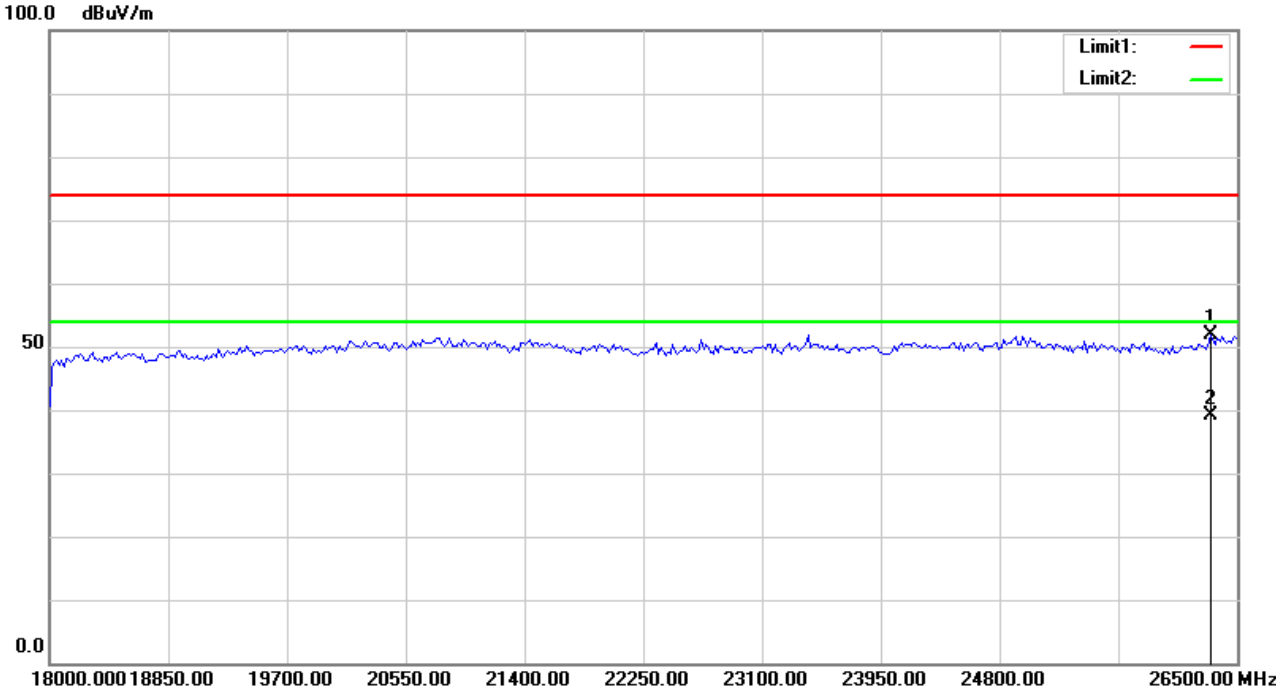
No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
1	9018.000	36.69	peak	16.18	52.87	74.00	21.13
2	9018.000	24.72	AVG	16.18	40.90	54.00	13.10
3	14544.000	36.31	peak	22.00	58.31	74.00	15.69
4	14544.000	24.21	AVG	22.00	46.21	54.00	7.79
5	17916.000	33.51	peak	28.28	61.79	74.00	12.21
6	17916.000	20.10	AVG	28.28	48.38	54.00	5.62

Condition:	FCC Part 15B Class B Peak	**Polarization:**	Vertical
EUT:	Gator 7	**Power:**	DC 5V
Model:	Z570	**Distance:**	3m
Test Mode:	Downloading		
Note:			



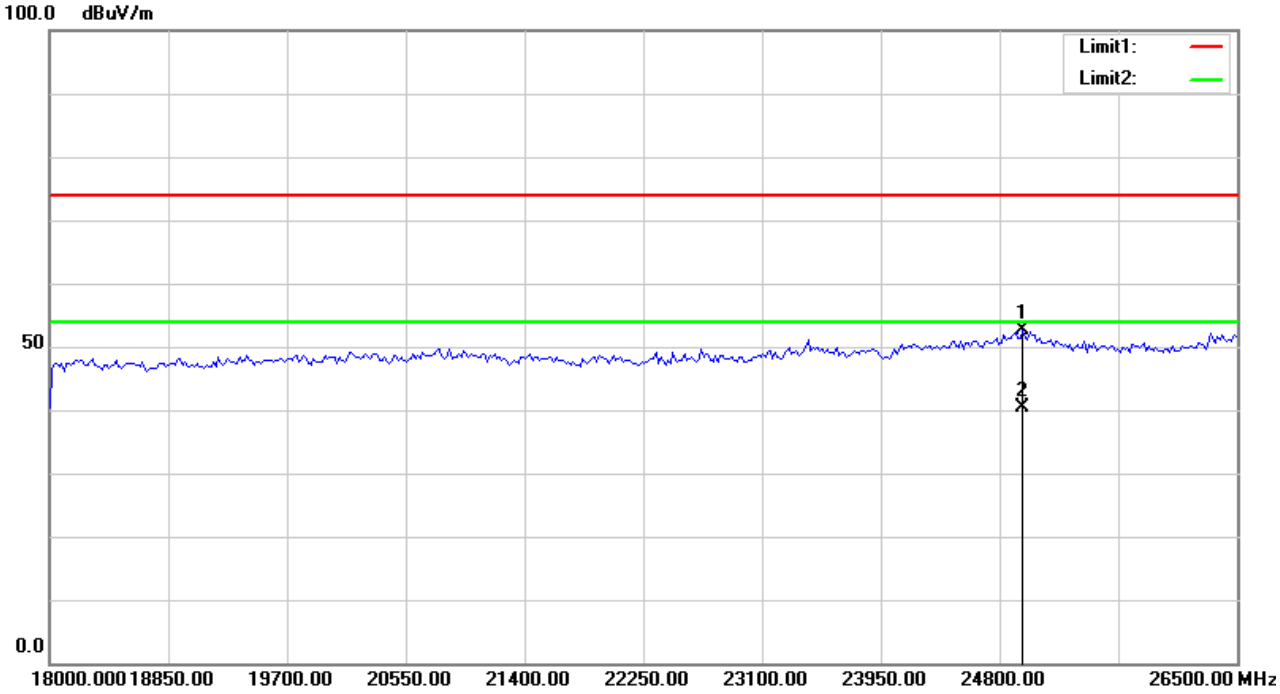
No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
1	9012.000	36.86	peak	16.20	53.06	74.00	20.94
2	9012.000	24.71	AVG	16.20	40.91	54.00	13.09
3	13752.000	36.34	peak	20.97	57.31	74.00	16.69
4	13752.000	24.25	AVG	20.97	45.22	54.00	8.78
5	17886.000	33.74	peak	28.12	61.86	74.00	12.14
6	17886.000	20.97	AVG	28.12	49.09	54.00	4.91

Condition:	FCC Part 15B Class B Peak	**Polarization:**	Horizontal
EUT:	Gator 7	**Power:**	DC 5V
Model:	Z570	**Distance:**	3m
Test Mode:	Downloading		
Note:			



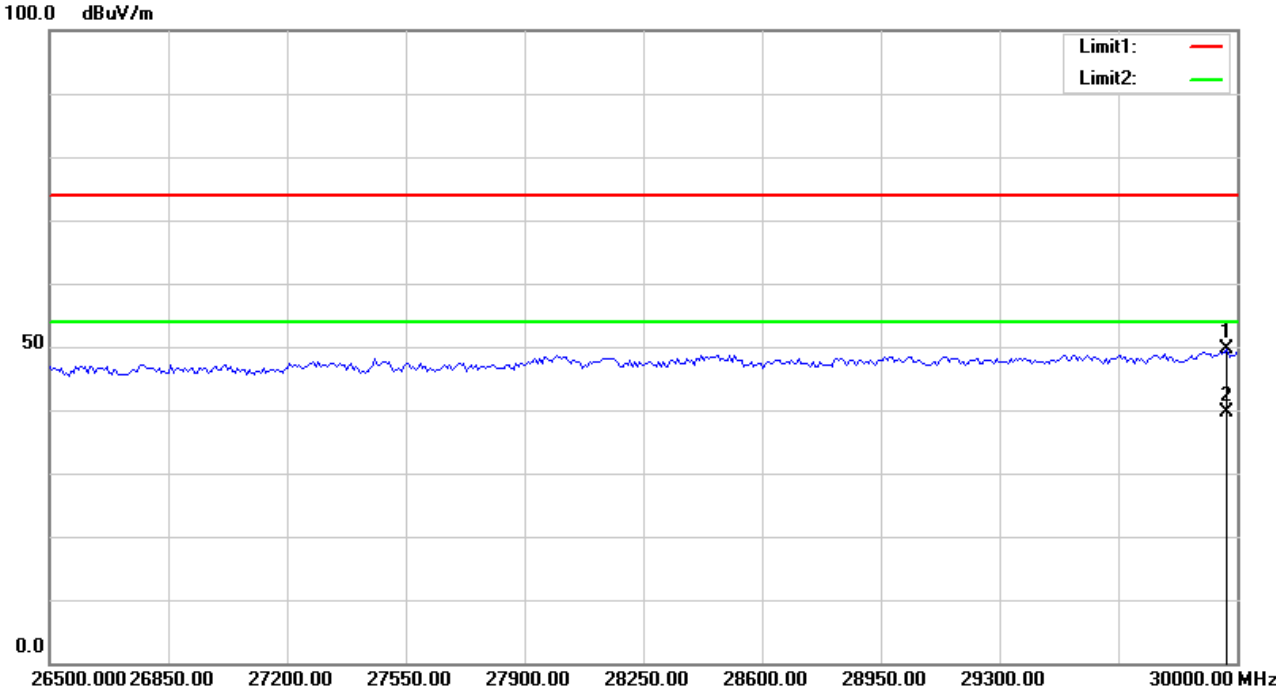
No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
1	26312.625	41.18	peak	10.73	51.91	74.00	22.09
2	26312.625	28.39	AVG	10.73	39.12	54.00	14.88

Condition:	FCC Part 15B Class B Peak	**Polarization:**	Vertical
EUT:	Gator 7	**Power:**	DC 5V
Model:	Z570	**Distance:**	3m
Test Mode:	Downloading		
Note:			



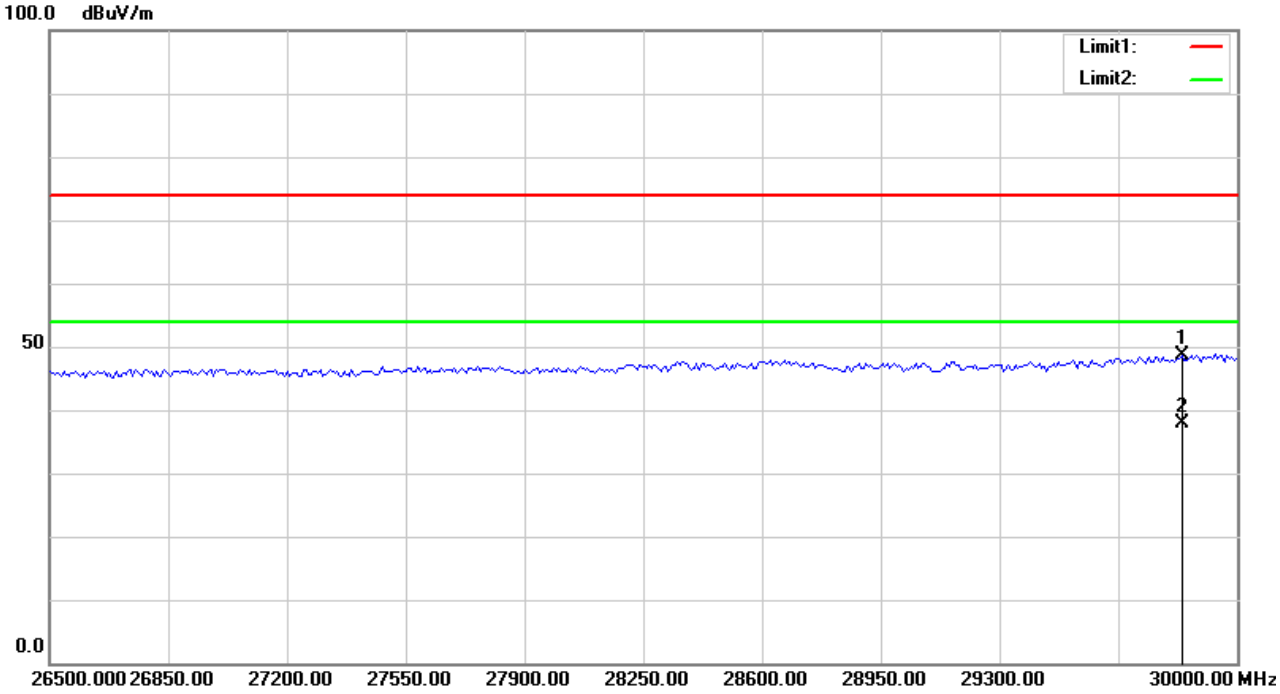
No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
1	24966.934	40.79	peak	11.75	52.54	74.00	21.46
2	24966.934	28.56	AVG	11.75	40.31	54.00	13.69

Condition:	FCC Part 15B Class B Peak	**Polarization:**	Horizontal
EUT:	Gator 7	**Power:**	DC 5V
Model:	Z570	**Distance:**	3m
Test Mode:	Downloading		
Note:			



No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
1	29971.944	44.09	peak	5.51	49.60	74.00	24.40
2	29971.944	34.10	AVG	5.51	39.61	54.00	14.39

Condition:	FCC Part 15B Class B Peak	**Polarization:**	Vertical
EUT:	Gator 7	**Power:**	DC 5V
Model:	Z570	**Distance:**	3m
Test Mode:	Downloading		
Note:			



No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
1	29838.677	43.83	peak	4.84	48.67	74.00	25.33
2	29838.677	33.10	AVG	4.84	37.94	54.00	16.06

*******END OF REPORT*******