TESTING LABORATORY
CERTIFICATE #4820.01

FCC PART 15.247

TEST REPORT

For

KYOCERA Corporation

Yokohama Office 2-1-1 Kagahara,Tsuzuki-ku Yokohama-shi,Kanagawa,Japan

Model Number: JA32

Report Type:	**Product Name:**
Original Report	Smart Phone

Report Number: RDG181026006-00C

Report Date: 2018-11-16

Reviewed By: Jerry Zhang
EMC Manager

Test Laboratory: Bay Area Compliance Laboratories Corp. (Dongguan)
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

EUT Name:	Smart Phone
EUT Model:	JA32
Grant:	JOY
FCC ID:	JOYJA32
Hardware Version:	JA32
SW version:	Sdm660_64-userdebug 9
Serial Number:	JA32125479850089K0860
EUT Received Date:	2018.10.26

Objective

This report is prepared on behalf of *KYOCERA Corporation in* accordance with Part 2, Subpart J, Part 15, Subparts A and C of the Federal Communications Commission's rules.

The tests were performed in order to determine the compliance of the EUT with FCC Rules Part 15-Subpart C, section 15.205, 15.209 and 15.247 rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Dongguan).

Measurement Uncertainty

Parameter	Measurement Uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±0.61dB
Power Spectral Density, conducted	±0.61 dB
Unwanted Emissions, radiated	30M~200MHz: 4.55 dB,200M~1GHz: 5.92 dB,1G~6GHz: 4.98 dB, 6G~18GHz: 5.89 dB,18G~26.5G:5.47 dB,26.5G~40G:5.63 dB
Unwanted Emissions, conducted	±1.5 dB
Temperature	±1℃
Humidity	±5%
DC and low frequency voltages	±0.4%
Duty Cycle	1%
AC Power Lines Conducted Emission	3.12 dB (150 kHz to 30 MHz)

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China.

The test site has been approved by the FCC 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 test site has been registered with ISED Canada under ISED Canada Registration Number 3062D.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in Engineering Mode, which was provided by the manufacturer.

EUT Exercise Software

The software "Engineering Mode" was used for testing, which was provided by manufacturer. The maximum power was configured as below table, that provided by the manufacturer:

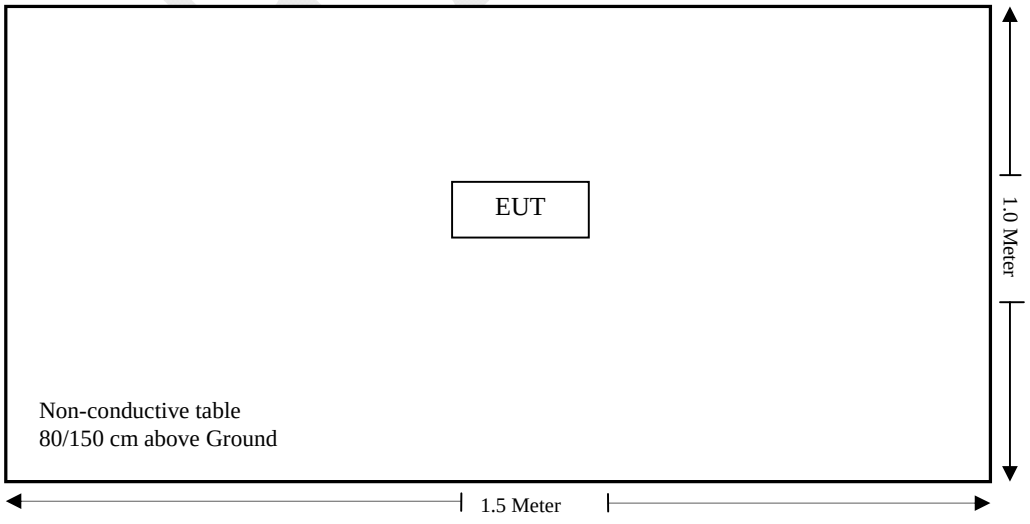
Mode	Channel	Frequency (MHz)	Data Rate	Power level setting
802.11b	Low	2412	1Mbps	17
	Middle	2437	1Mbps	17
	High	2462	1Mbps	17
802.11g	Low	2412	6Mbps	14
	Middle	2437	6Mbps	14
	High	2462	6Mbps	14
802.11n ht20	Low	2412	MCS 0	14
	Middle	2437	MCS 0	14
	High	2462	MCS 0	14

Bluetooth LE mode was configured by the system default setting

Equipment Modifications

No modification was made to the EUT.

Block Diagram of Test Setup



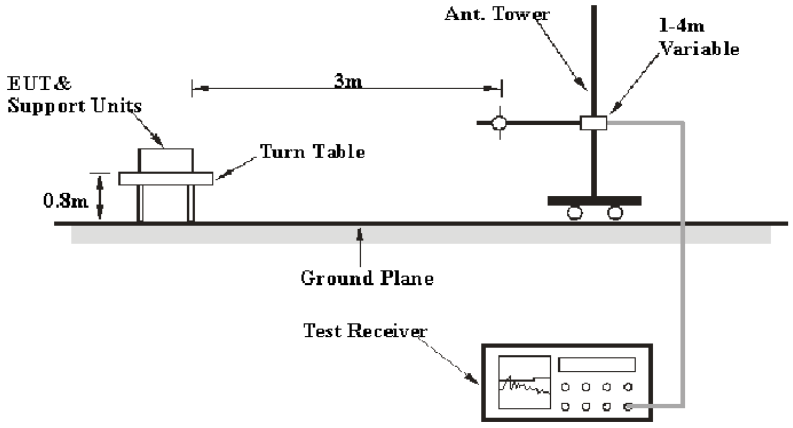
FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

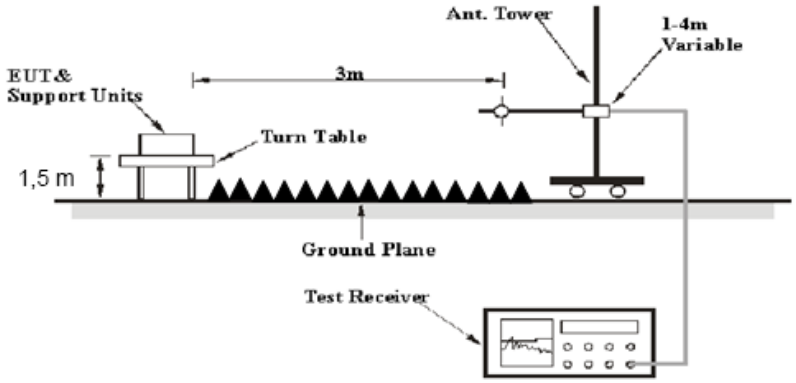
FCC §15.247 (d); §15.209; §15.205;

EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emission Below 1GHz tests were performed in the 3 meters chamber test site A, above 1GHz tests were performed in the 3 meters chamber test site A, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, and FCC 15.247 limits.

The spacing between the peripherals was 10 cm.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 25 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

30MHz-1000MHz:

Measurement	RBW	Video B/W	IF B/W
QP	120 kHz	300 kHz	120kHz

1GHz- 25GHz:

Measurement	Duty cycle	RBW	Video B/W
PK	Any	1MHz	3 MHz
AV	>98%	1MHz	10 Hz
	<98%	1MHz	1/T

Note: T is minimum transmission duration

Test Procedure

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

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1 GHz, peak and Average detection modes for frequencies above 1 GHz.

Corrected Amplitude & Margin Calculation

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

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2017-12-11	2018-12-11
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A
Sunol Sciences	Antenna	JB3	A060611-1	2017-11-10	2020-11-10
Unknown	Coaxial Cable	C-NJNJ-50	C-0400-01	2018-09-05	2019-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-0075-01	2018-09-05	2019-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-1000-01	2018-09-05	2019-09-05
HP	Amplifier	8447D	2727A05902	2018-09-05	2019-09-05
Agilent	Spectrum Analyzer	E4440A	SG43360054	2018-01-04	2019-01-04
TDK RF	Horn Antenna	HRN-0118	130 084	2016-01-05	2019-01-04
Ducommun Technolagies	Horn Antenna	ARH-4223-02	1007726-01 1304	2016-11-18	2019-11-18
Unknown	Coaxial Cable	C-SJSJ-50	C-0800-01	2018-09-05	2019-09-05
Unknown	Coaxial Cable	C-2.4J2.4J-50	C-0700-02	2018-06-27	2019-06-27
MITEQ	Amplifier	AFS42-00101800-25-S-42	2001271	2018-09-05	2019-09-05
Quinstar	Amplifier	QLW-18405536-JO	15964001001	2018-06-27	2019-06-27
E-Microwave	Band-stop Filters	OBSF-2400-2483.5-S	OE01601525	2018-06-16	2019-06-16
Micro-tronics	High Pass Filter	HPM50111	S/N-G217	2018-06-16	2019-06-16

*** 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).

Test Data

Environmental Conditions

Temperature:	27.1~27.2 °C
Relative Humidity:	45~49%
ATM Pressure:	100~101.2 kPa

**The testing was performed by Kami Zhou and Vern Shen on 2018-11-08 and 2018-11-09.*

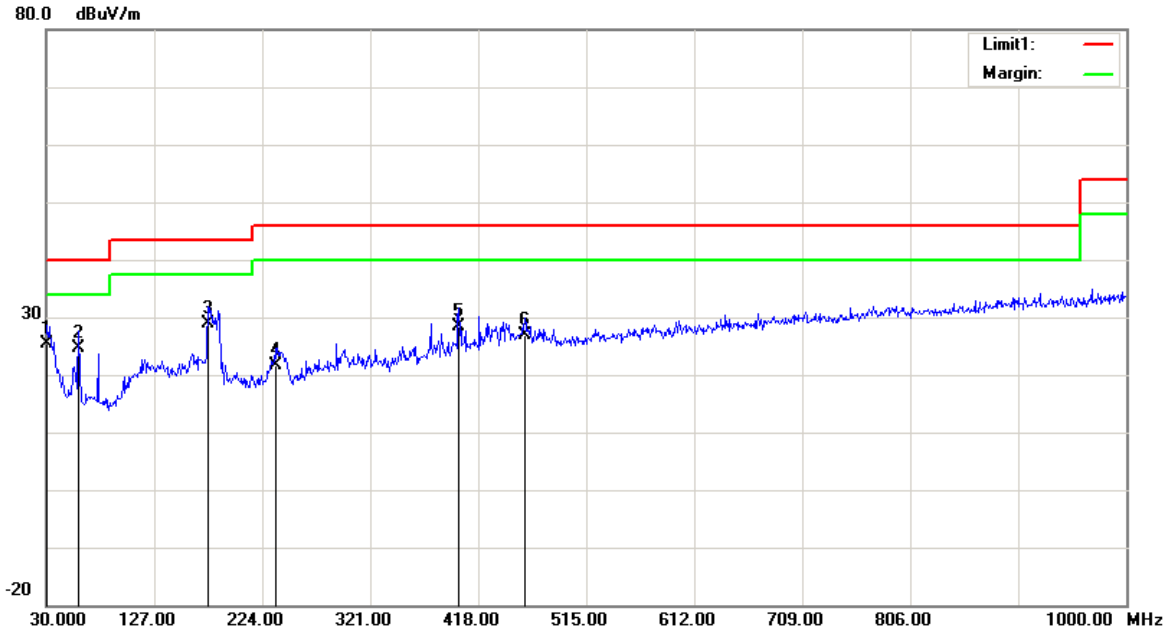
Test Result: Compliance, please Refer to the following data

Test Result: Pass

Test Mode: Transmitting

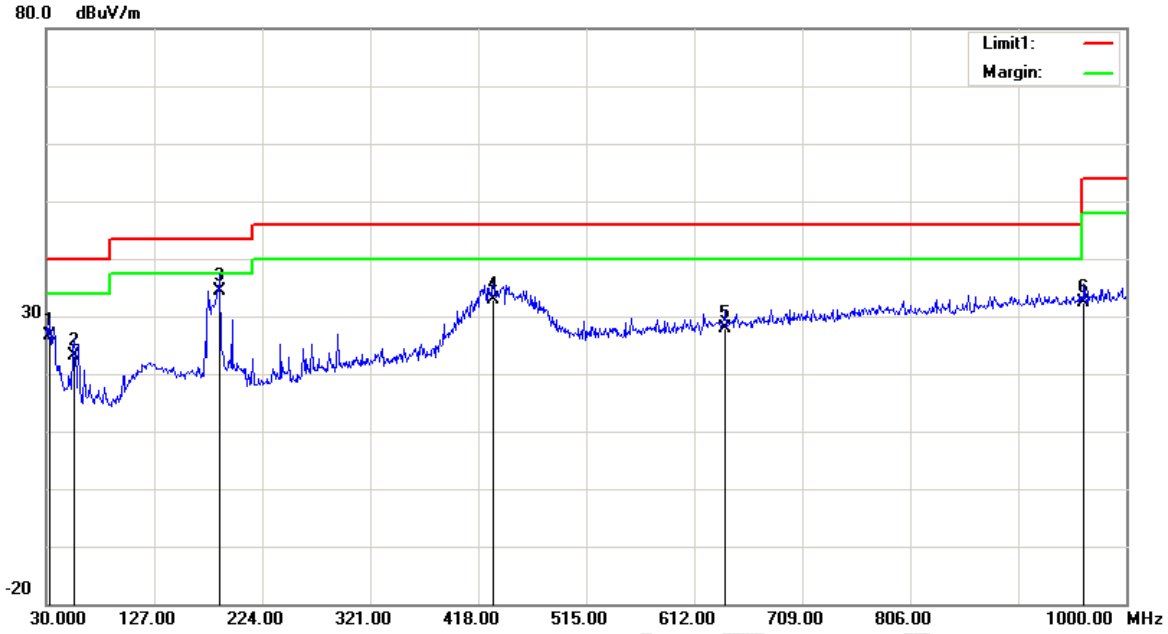
1) 30MHz-1GHz (802.11b high channel was the worst)

Horizontal:



Frequency (MHz)	Receiver Reading (dBuV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
30.0000	23.74	QP	1.76	25.50	40.00	14.50
59.1000	36.85	QP	-12.15	24.70	40.00	15.30
175.5000	35.78	QP	-6.88	28.90	43.50	14.60
235.6400	27.78	QP	-6.18	21.60	46.00	24.40
400.5400	30.51	QP	-2.01	28.50	46.00	17.50
459.7100	27.77	QP	-0.87	26.90	46.00	19.10

Vertical:



Frequency (MHz)	Receiver Reading (dBuV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
32.9100	27.10	QP	-0.50	26.60	40.00	13.40
55.2200	35.18	QP	-12.08	23.10	40.00	16.90
186.1700	41.67	QP	-7.37	34.30	43.50	9.20
431.5800	34.07	QP	-1.27	32.80	46.00	13.20
640.1300	25.74	QP	2.26	28.00	46.00	18.00
962.1700	9.60	QP	22.90	32.50	54.00	21.50

2) 1-25GHz:
802.11b Mode:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector	Polar (H/V)	Factor (dB/m)					
Low Channel: 2412 MHz									
2412.00	74.11	PK	H	28.12	1.81	0.00	104.04	N/A	N/A
2412.00	70.17	AV	H	28.12	1.81	0.00	100.10	N/A	N/A
2412.00	79.06	PK	V	28.12	1.81	0.00	108.99	N/A	N/A
2412.00	75.08	AV	V	28.12	1.81	0.00	105.01	N/A	N/A
2390.00	28.90	PK	V	28.08	1.80	0.00	58.78	74.00	15.22
2390.00	13.89	AV	V	28.08	1.80	0.00	43.77	54.00	10.23
4824.00	46.55	PK	V	32.95	3.19	37.20	45.49	74.00	28.51
4824.00	33.21	AV	V	32.95	3.19	37.20	32.15	54.00	21.85
7236.00	44.34	PK	V	35.81	4.77	37.27	47.65	74.00	26.35
7236.00	31.54	AV	V	35.81	4.77	37.27	34.85	54.00	19.15
Middle Channel: 2437 MHz									
2437.00	74.82	PK	H	28.17	1.82	0.00	104.81	N/A	N/A
2437.00	70.67	AV	H	28.17	1.82	0.00	100.66	N/A	N/A
2437.00	79.14	PK	V	28.17	1.82	0.00	109.13	N/A	N/A
2437.00	75.24	AV	V	28.17	1.82	0.00	105.23	N/A	N/A
4874.00	46.37	PK	V	33.05	3.26	37.21	45.47	74.00	28.53
4874.00	33.56	AV	V	33.05	3.26	37.21	32.66	54.00	21.34
7311.00	43.57	PK	V	36.01	4.64	37.36	46.86	74.00	27.14
7311.00	31.14	AV	V	36.01	4.64	37.36	34.43	54.00	19.57
High Channel: 2462 MHz									
2462.00	74.93	PK	H	28.22	1.83	0.00	104.98	N/A	N/A
2462.00	71.02	AV	H	28.22	1.83	0.00	101.07	N/A	N/A
2462.00	79.40	PK	V	28.22	1.83	0.00	109.45	N/A	N/A
2462.00	75.51	AV	V	28.22	1.83	0.00	105.56	N/A	N/A
2483.50	27.40	PK	V	28.27	1.84	0.00	57.51	74.00	16.49
2483.50	13.84	AV	V	28.27	1.84	0.00	43.95	54.00	10.05
4924.00	45.58	PK	V	33.15	3.27	37.22	44.78	74.00	29.22
4924.00	33.24	AV	V	33.15	3.27	37.22	32.44	54.00	21.56
7386.00	45.27	PK	V	36.20	4.51	37.46	48.52	74.00	25.48
7386.00	32.35	AV	V	36.20	4.51	37.46	35.60	54.00	18.40

802.11g Mode:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Detector	Polar (H/V)	Factor (dB/m)					
Low Channel: 2412 MHz									
2412.00	72.18	PK	H	28.12	1.81	0.00	102.11	N/A	N/A
2412.00	59.88	AV	H	28.12	1.81	0.00	89.81	N/A	N/A
2412.00	76.27	PK	V	28.12	1.81	0.00	106.20	N/A	N/A
2412.00	63.68	AV	V	28.12	1.81	0.00	93.61	N/A	N/A
2390.00	29.17	PK	V	28.08	1.80	0.00	59.05	74.00	14.95
2390.00	13.85	AV	V	28.08	1.80	0.00	43.73	54.00	10.27
4824.00	46.34	PK	V	32.95	3.19	37.20	45.28	74.00	28.72
4824.00	33.47	AV	V	32.95	3.19	37.20	32.41	54.00	21.59
7236.00	44.71	PK	V	35.81	4.77	37.27	48.02	74.00	25.98
7236.00	31.57	AV	V	35.81	4.77	37.27	34.88	54.00	19.12
Middle Channel: 2437 MHz									
2437.00	71.68	PK	H	28.17	1.82	0.00	101.67	N/A	N/A
2437.00	58.76	AV	H	28.17	1.82	0.00	88.75	N/A	N/A
2437.00	76.22	PK	V	28.17	1.82	0.00	106.21	N/A	N/A
2437.00	63.17	AV	V	28.17	1.82	0.00	93.16	N/A	N/A
4874.00	46.21	PK	V	33.05	3.26	37.21	45.31	74.00	28.69
4874.00	33.17	AV	V	33.05	3.26	37.21	32.27	54.00	21.73
7311.00	45.12	PK	V	36.01	4.64	37.36	48.41	74.00	25.59
7311.00	32.23	AV	V	36.01	4.64	37.36	35.52	54.00	18.48
High Channel: 2462 MHz									
2462.00	71.83	PK	H	28.22	1.83	0.00	101.88	N/A	N/A
2462.00	58.67	AV	H	28.22	1.83	0.00	88.72	N/A	N/A
2462.00	76.58	PK	V	28.22	1.83	0.00	106.63	N/A	N/A
2462.00	63.91	AV	V	28.22	1.83	0.00	93.96	N/A	N/A
2483.50	28.85	PK	V	28.27	1.84	0.00	58.96	74.00	15.04
2483.50	13.93	AV	V	28.27	1.84	0.00	44.04	54.00	9.96
4924.00	46.86	PK	V	33.15	3.27	37.22	46.06	74.00	27.94
4924.00	33.75	AV	V	33.15	3.27	37.22	32.95	54.00	21.05
7386.00	45.15	PK	V	36.20	4.51	37.46	48.40	74.00	25.60
7386.00	32.07	AV	V	36.20	4.51	37.46	35.32	54.00	18.68

802.11n ht20 Mode:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Detector	Polar (H/V)	Factor (dB/m)					
Low Channel: 2412 MHz									
2412.00	71.29	PK	H	28.12	1.81	0.00	101.22	N/A	N/A
2412.00	60.15	AV	H	28.12	1.81	0.00	90.08	N/A	N/A
2412.00	75.90	PK	V	28.12	1.81	0.00	105.83	N/A	N/A
2412.00	65.12	AV	V	28.12	1.81	0.00	95.05	N/A	N/A
2390.00	28.23	PK	V	28.08	1.80	0.00	58.11	74.00	15.89
2390.00	14.52	AV	V	28.08	1.80	0.00	44.40	54.00	9.60
4824.00	46.43	PK	V	32.95	3.19	37.20	45.37	74.00	28.63
4824.00	33.25	AV	V	32.95	3.19	37.20	32.19	54.00	21.81
7236.00	44.83	PK	V	35.81	4.77	37.27	48.14	74.00	25.86
7236.00	31.27	AV	V	35.81	4.77	37.27	34.58	54.00	19.42
Middle Channel: 2437 MHz									
2437.00	72.25	PK	H	28.17	1.82	0.00	102.24	N/A	N/A
2437.00	61.39	AV	H	28.17	1.82	0.00	91.38	N/A	N/A
2437.00	76.66	PK	V	28.17	1.82	0.00	106.65	N/A	N/A
2437.00	65.77	AV	V	28.17	1.82	0.00	95.76	N/A	N/A
4874.00	46.57	PK	V	33.05	3.26	37.21	45.67	74.00	28.33
4874.00	33.43	AV	V	33.05	3.26	37.21	32.53	54.00	21.47
7311.00	45.23	PK	V	36.01	4.64	37.36	48.52	74.00	25.48
7311.00	32.24	AV	V	36.01	4.64	37.36	35.53	54.00	18.47
High Channel: 2462 MHz									
2462.00	72.34	PK	H	28.22	1.83	0.00	102.39	N/A	N/A
2462.00	61.42	AV	H	28.22	1.83	0.00	91.47	N/A	N/A
2462.00	76.51	PK	V	28.22	1.83	0.00	106.56	N/A	N/A
2462.00	65.68	AV	V	28.22	1.83	0.00	95.73	N/A	N/A
2483.50	28.34	PK	V	28.27	1.84	0.00	58.45	74.00	15.55
2483.50	14.07	AV	V	28.27	1.84	0.00	44.18	54.00	9.82
4924.00	46.32	PK	V	33.15	3.27	37.22	45.52	74.00	28.48
4924.00	33.27	AV	V	33.15	3.27	37.22	32.47	54.00	21.53
7386.00	45.37	PK	V	36.20	4.51	37.46	48.62	74.00	25.38
7386.00	32.23	AV	V	36.20	4.51	37.46	35.48	54.00	18.52

BLE Mode:
1M

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector	Polar (H/V)	Factor (dB/m)					
Low Channel: 2402 MHz									
2402.00	59.07	PK	H	28.10	1.80	0.00	88.97	N/A	N/A
2402.00	55.52	AV	H	28.10	1.80	0.00	85.42	N/A	N/A
2402.00	63.64	PK	V	28.10	1.80	0.00	93.54	N/A	N/A
2402.00	59.75	AV	V	28.10	1.80	0.00	89.65	N/A	N/A
2390.00	25.61	PK	V	28.08	1.80	0.00	55.49	74.00	18.51
2390.00	13.58	AV	V	28.08	1.80	0.00	43.46	54.00	10.54
4804.00	45.10	PK	V	32.91	3.17	37.20	43.98	74.00	30.02
4804.00	33.24	AV	V	32.91	3.17	37.20	32.12	54.00	21.88
7206.00	42.36	PK	V	35.74	4.82	37.23	45.69	74.00	28.31
7206.00	30.75	AV	V	35.74	4.82	37.23	34.08	54.00	19.92
Middle Channel: 2440 MHz									
2440.00	59.93	PK	H	28.18	1.82	0.00	89.93	N/A	N/A
2440.00	55.83	AV	H	28.18	1.82	0.00	85.83	N/A	N/A
2440.00	64.37	PK	V	28.18	1.82	0.00	94.37	N/A	N/A
2440.00	60.51	AV	V	28.18	1.82	0.00	90.51	N/A	N/A
4880.00	44.93	PK	V	33.06	3.27	37.21	44.05	74.00	29.95
4880.00	32.72	AV	V	33.06	3.27	37.21	31.84	54.00	22.16
7320.00	43.54	PK	V	36.03	4.62	37.37	46.82	74.00	27.18
7320.00	31.86	AV	V	36.03	4.62	37.37	35.14	54.00	18.86
High Channel: 2480 MHz									
2480.00	58.64	PK	H	28.26	1.84	0.00	88.74	N/A	N/A
2480.00	54.78	AV	H	28.26	1.84	0.00	84.88	N/A	N/A
2480.00	62.27	PK	V	28.26	1.84	0.00	92.37	N/A	N/A
2480.00	58.31	AV	V	28.26	1.84	0.00	88.41	N/A	N/A
2483.50	26.10	PK	V	28.27	1.84	0.00	56.21	74.00	17.79
2483.50	14.35	AV	V	28.27	1.84	0.00	44.46	54.00	9.54
4960.00	46.32	PK	V	33.22	3.23	37.25	45.52	74.00	28.48
4960.00	34.58	AV	V	33.22	3.23	37.25	33.78	54.00	20.22
7440.00	44.27	PK	V	36.34	4.41	37.52	47.50	74.00	26.50
7440.00	32.35	AV	V	36.34	4.41	37.52	35.58	54.00	18.42

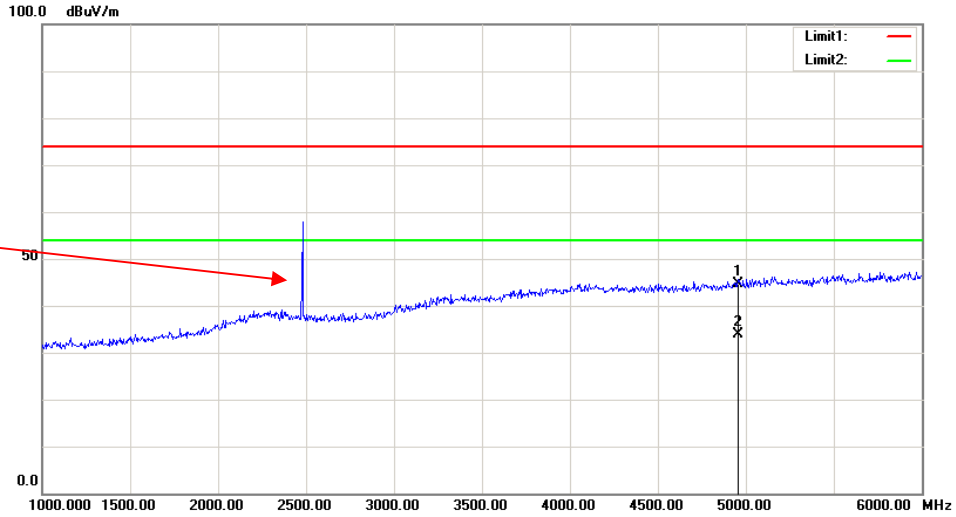
BLE Mode:
2M

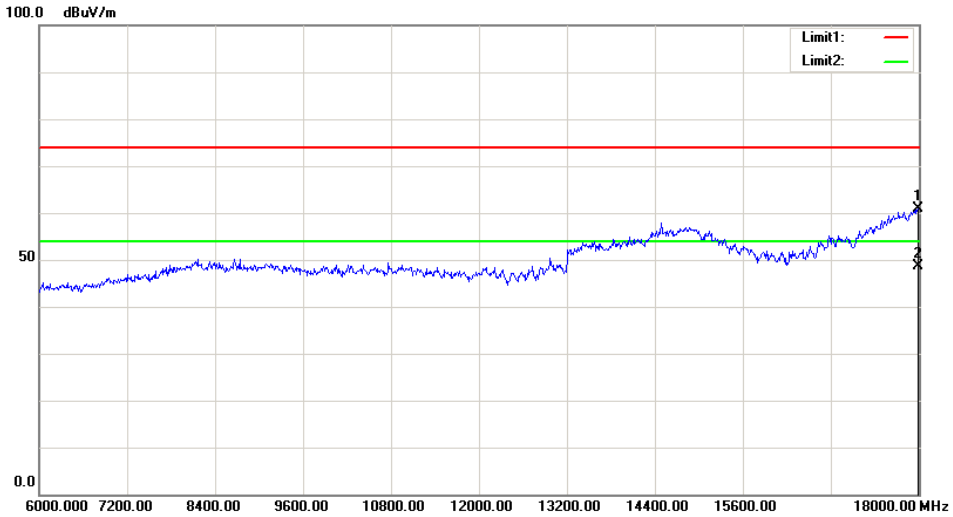
Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector	Polar (H/V)	Factor (dB/m)					
Low Channel: 2402 MHz									
2402.00	57.74	PK	H	28.10	1.80	0.00	87.64	N/A	N/A
2402.00	47.83	AV	H	28.10	1.80	0.00	77.73	N/A	N/A
2402.00	64.41	PK	V	28.10	1.80	0.00	94.31	N/A	N/A
2402.00	55.15	AV	V	28.10	1.80	0.00	85.05	N/A	N/A
2390.00	26.27	PK	V	28.08	1.80	0.00	56.15	74.00	17.85
2390.00	13.41	AV	V	28.08	1.80	0.00	43.29	54.00	10.71
4804.00	45.96	PK	V	32.91	3.17	37.20	44.84	74.00	29.16
4804.00	34.64	AV	V	32.91	3.17	37.20	33.52	54.00	20.48
7206.00	43.45	PK	V	35.74	4.82	37.23	46.78	74.00	27.22
7206.00	31.73	AV	V	35.74	4.82	37.23	35.06	54.00	18.94
Middle Channel: 2440 MHz									
2440.00	56.11	PK	H	28.18	1.82	0.00	86.11	N/A	N/A
2440.00	47.24	AV	H	28.18	1.82	0.00	77.24	N/A	N/A
2440.00	62.76	PK	V	28.18	1.82	0.00	92.76	N/A	N/A
2440.00	53.24	AV	V	28.18	1.82	0.00	83.24	N/A	N/A
4880.00	45.38	PK	V	33.06	3.27	37.21	44.50	74.00	29.50
4880.00	33.42	AV	V	33.06	3.27	37.21	32.54	54.00	21.46
7320.00	44.75	PK	V	36.03	4.62	37.37	48.03	74.00	25.97
7320.00	32.24	AV	V	36.03	4.62	37.37	35.52	54.00	18.48
High Channel: 2480 MHz									
2480.00	57.05	PK	H	28.26	1.84	0.00	87.15	N/A	N/A
2480.00	47.31	AV	H	28.26	1.84	0.00	77.41	N/A	N/A
2480.00	63.43	PK	V	28.26	1.84	0.00	93.53	N/A	N/A
2480.00	54.56	AV	V	28.26	1.84	0.00	84.66	N/A	N/A
2483.50	26.15	PK	V	28.27	1.84	0.00	56.26	74.00	17.74
2483.50	14.13	AV	V	28.27	1.84	0.00	44.24	54.00	9.76
4960.00	46.34	PK	V	33.22	3.23	37.25	45.54	74.00	28.46
4960.00	34.28	AV	V	33.22	3.23	37.25	33.48	54.00	20.52
7440.00	43.09	PK	V	36.34	4.41	37.52	46.32	74.00	27.68
7440.00	32.47	AV	V	36.34	4.41	37.52	35.70	54.00	18.30

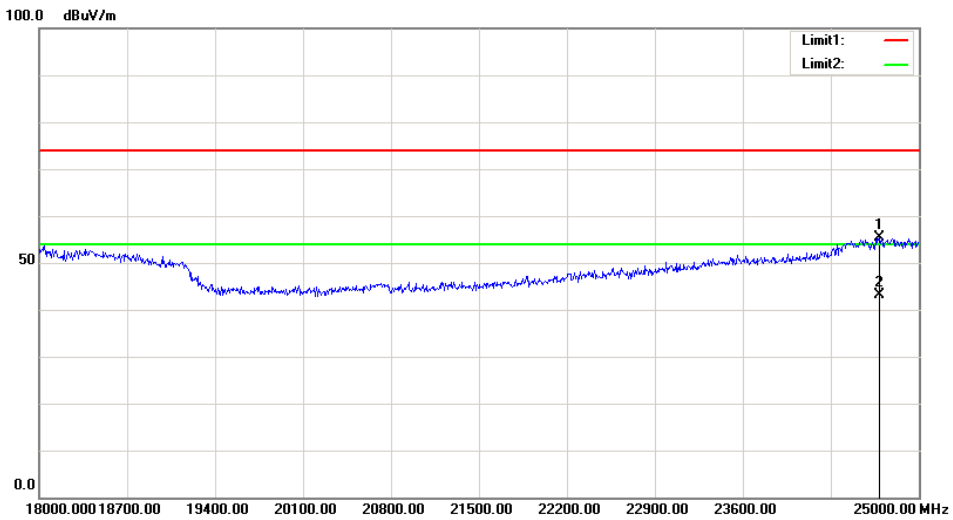
Test plots (802.11b mode High channel was the worst)

Horizontal:

Fundamental Test with Band Rejection Filter

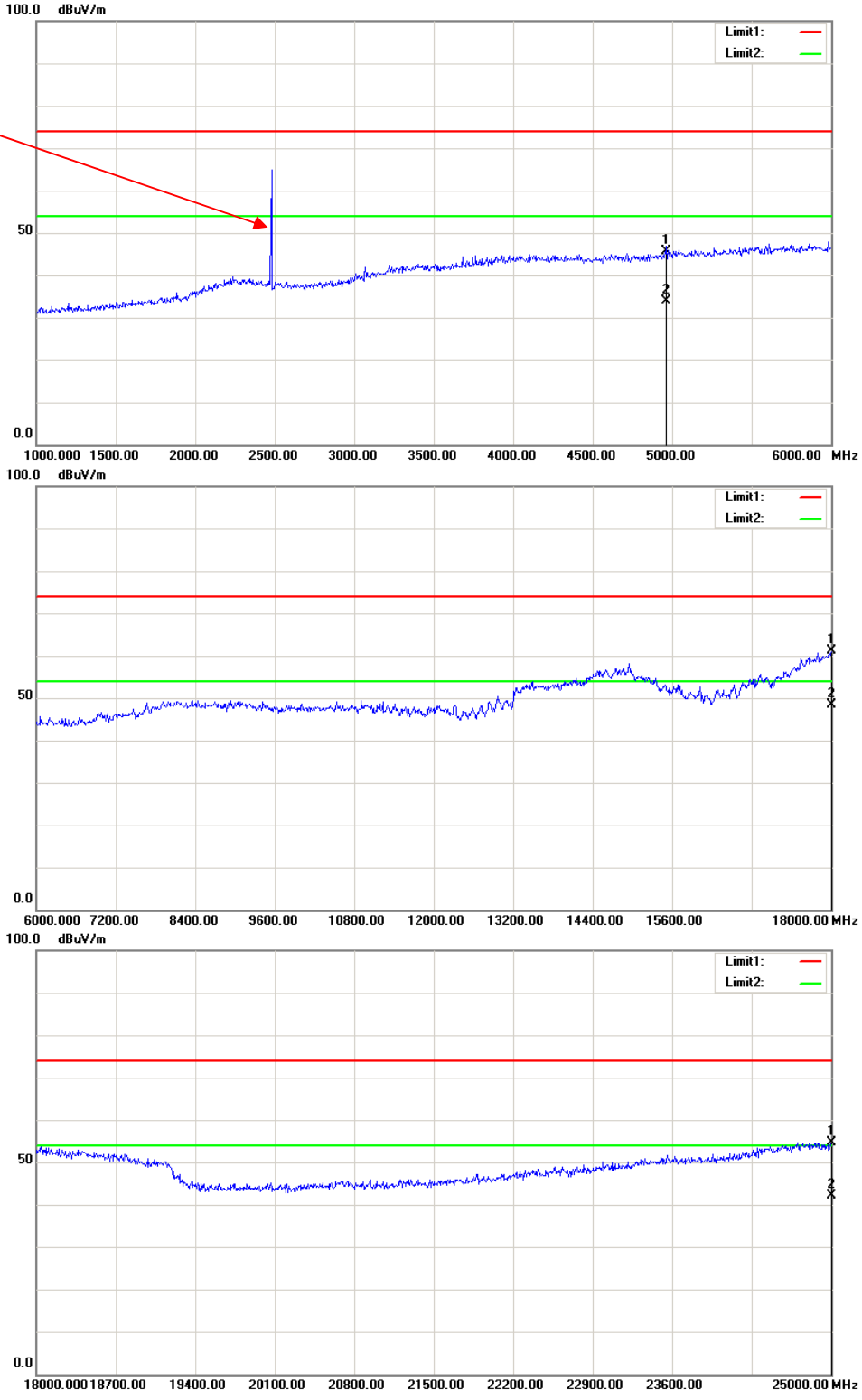






Vertical:

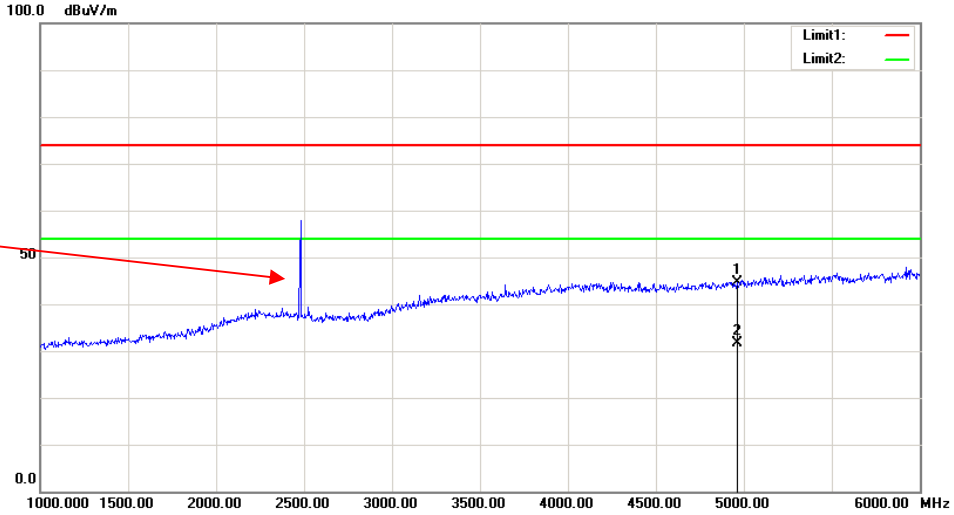
Fundamental Test with Band Rejection Filter

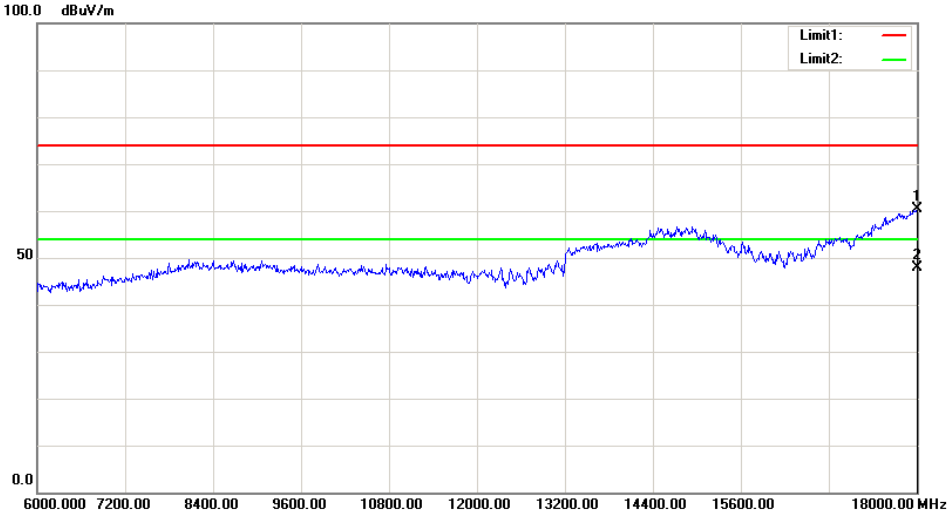


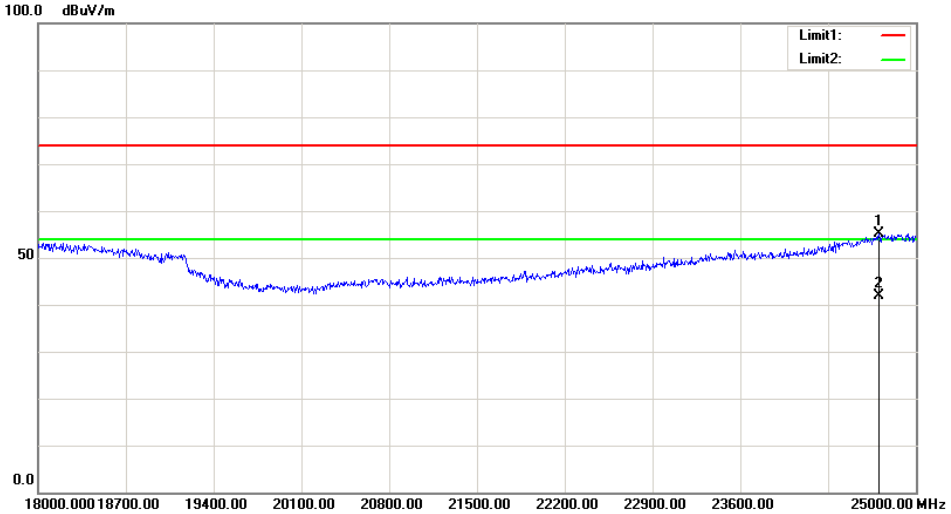
2M

Horizontal:

Fundamental Test with Band Rejection Filter

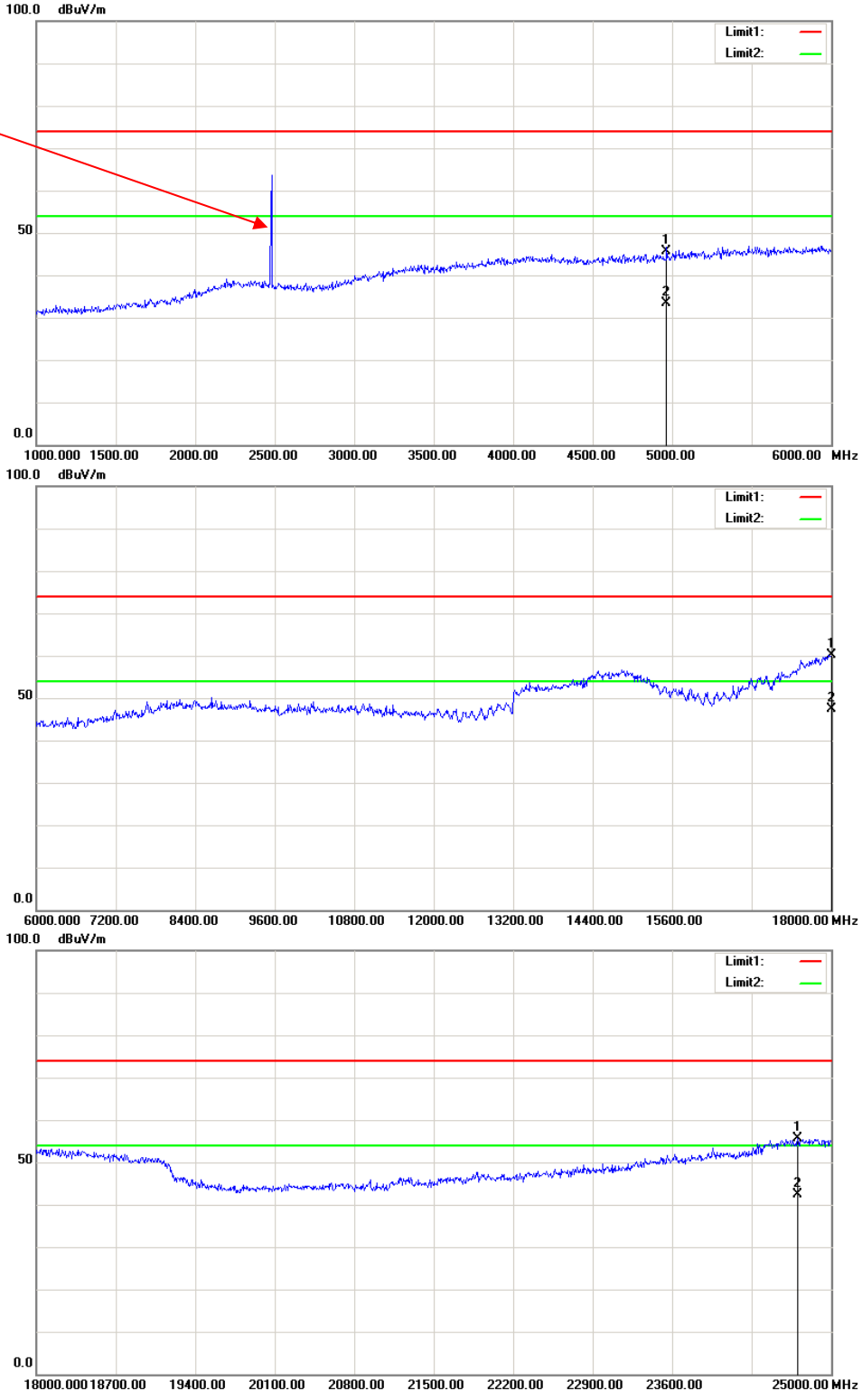






Vertical:

Fundamental Test with Band Rejection Filter



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