

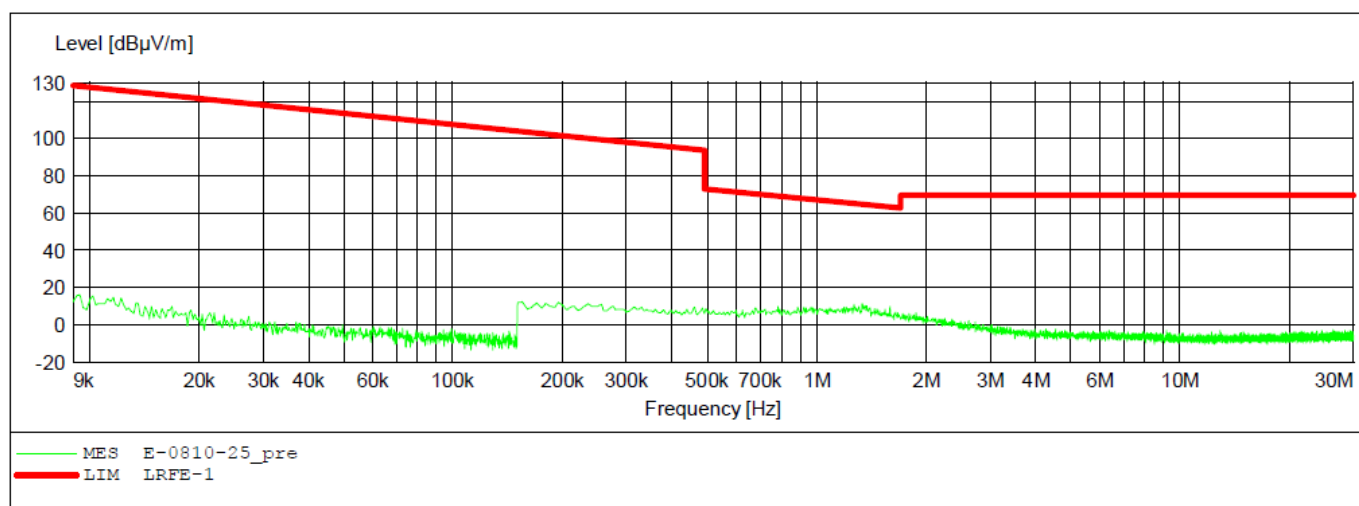
ACCURATE TECHNOLOGY CO., LTD

FCC Class B 3M Radiated

EUT: Multimedia Speaker M/N:S3000 Pro
 Applicant: EDIFIER
 Operating Condition: TX 2480MHz + TX 5814MHz
 Test Site: 2# Chamber
 Operator: WADE
 Test Specification: AC 120V/60Hz
 Comment: X
 Start of Test: 2018-8-10 /

SCAN TABLE: "LFRE Fin"

Short Description:			SUB STD VTERM2 1.70			
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	1516M
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M



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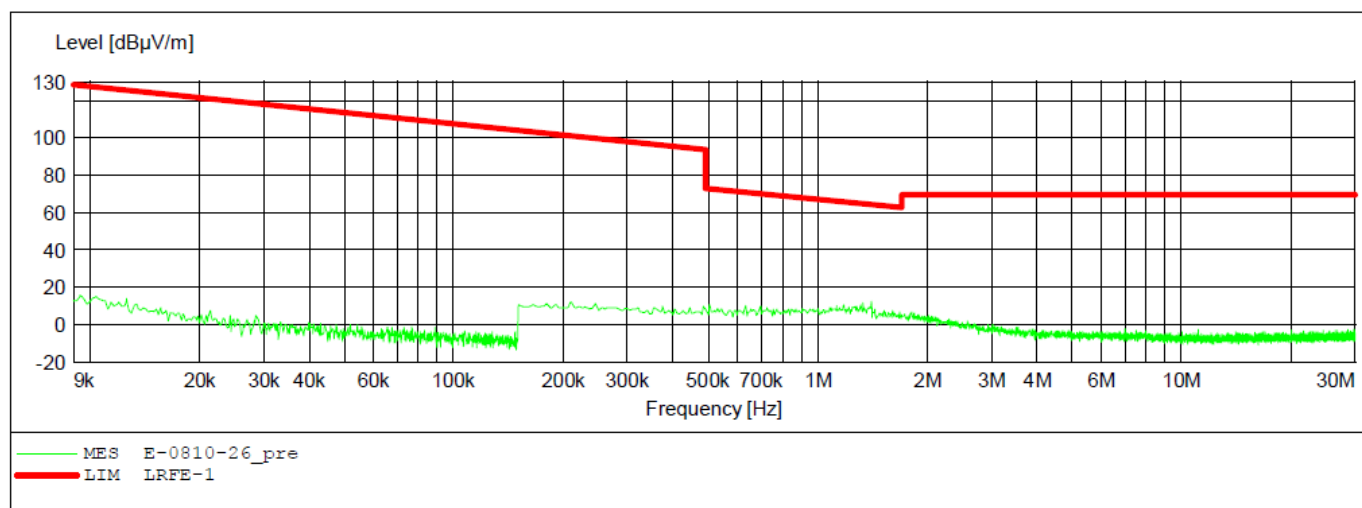
FCC Class B 3M Radiated

EUT: Multimedia Speaker M/N:S3000 Pro
 Applicant: EDIFIER
 Operating Condition: TX 2480MHz + TX 5814MHz
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 Operator: WADE
 Test Specification: AC 120V/60Hz
 Comment: Y
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SCAN TABLE: "LFRE Fin"

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Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	1516M
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M



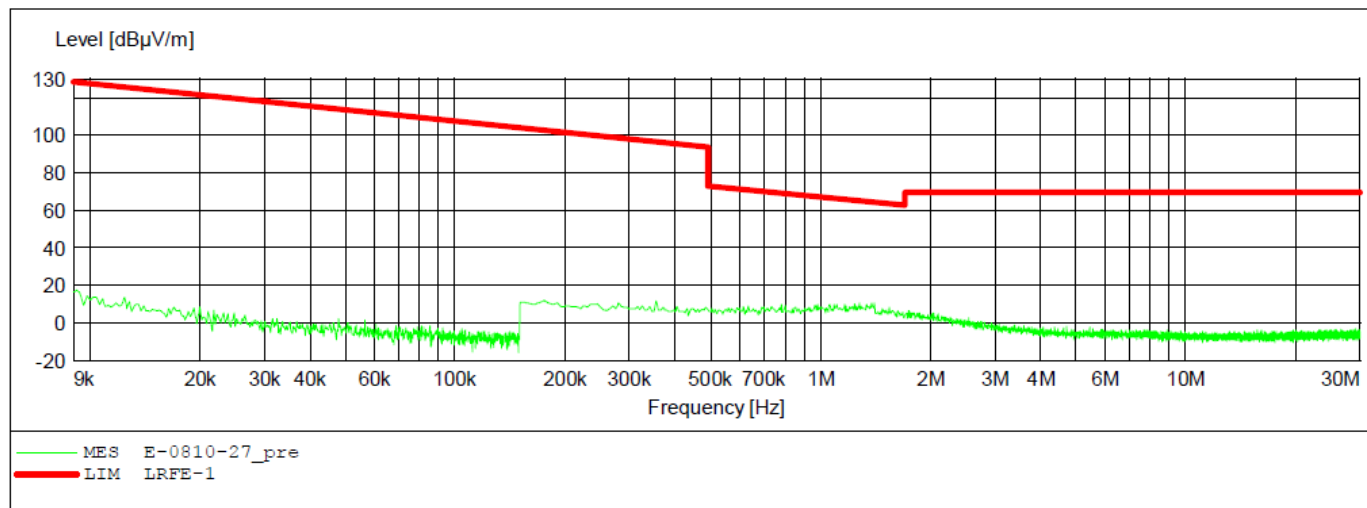
ACCURATE TECHNOLOGY CO., LTD

FCC Class B 3M Radiated

EUT: Multimedia Speaker M/N:S3000 Pro
 Applicant: EDIFIER
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 Test Site: 2# Chamber
 Operator: WADE
 Test Specification: AC 120V/60Hz
 Comment: Z
 Start of Test: 2018-8-10 /

SCAN TABLE: "LFRE Fin"

Short Description:			SUB STD VTERM2 1.70			
Start	Stop	Step	Detector	Meas.	IF	Transducer
Frequency	Frequency	Width		Time	Bandw.	
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	1516M
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516M



30MHz-1000MHz test data (Bluetooth+5.8G)



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Job No.: LGW2018 #2314

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Multimedia Speaker

Mode: TX 2402MHz+TX 5736MHz

Model: S3000 Pro

Applicant: EDIFIER

Polarization: Horizontal

Power Source: AC 120V/60Hz

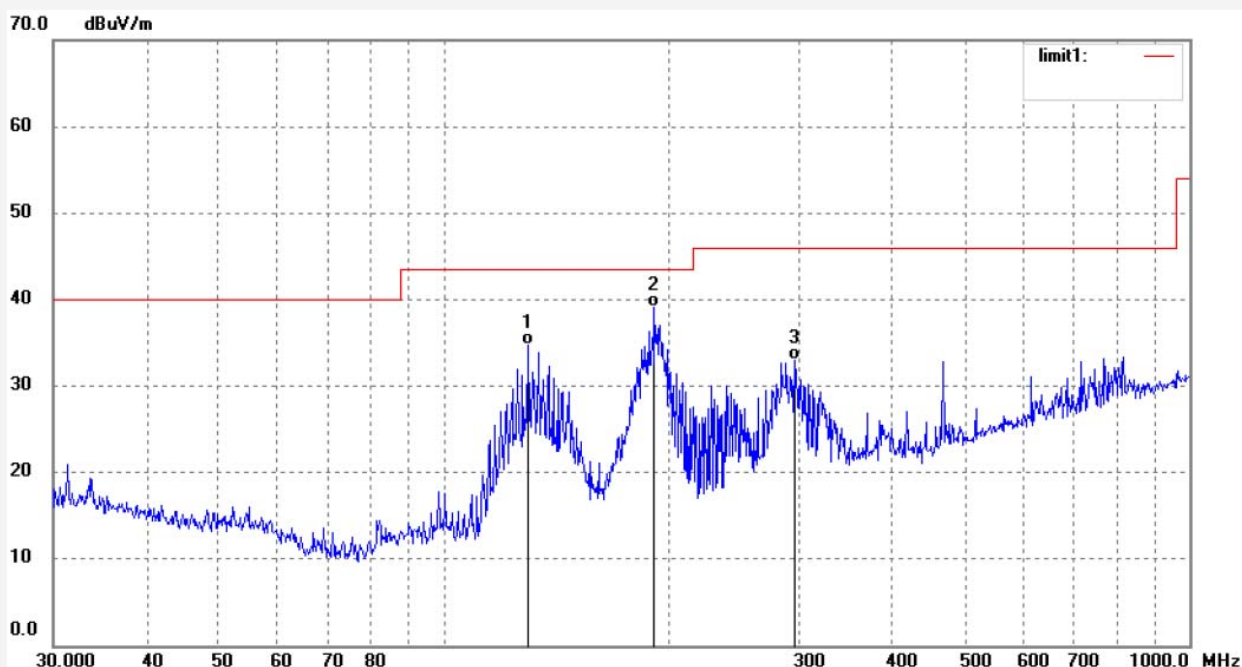
Date: 18/08/05/

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	129.9225	48.53	-13.76	34.77	43.50	-8.73	QP			
2	191.7450	51.47	-12.42	39.05	43.50	-4.45	QP			
3	295.1469	42.01	-9.10	32.91	46.00	-13.09	QP			

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Job No.: LGW2018 #2315

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Multimedia Speaker

Mode: TX 2402MHz+TX 5736MHz

Model: S3000 Pro

Applicant: EDIFIER

Polarization: Vertical

Power Source: AC 120V/60Hz

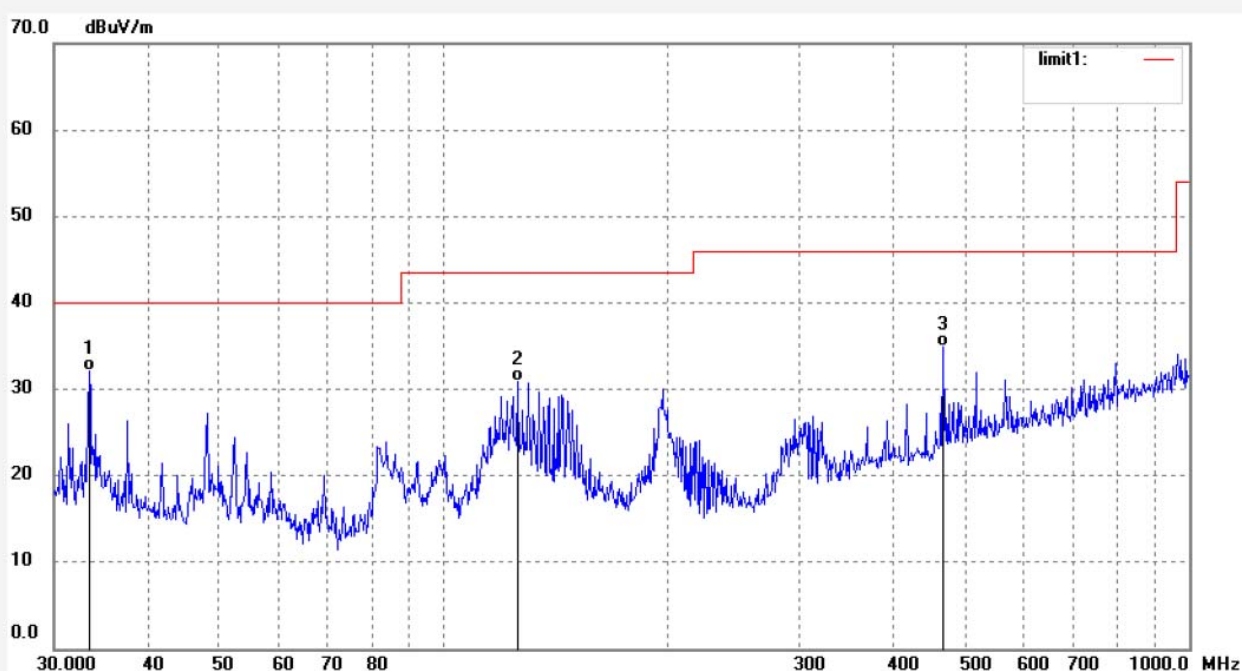
Date: 18/08/05/

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	33.4448	42.12	-9.95	32.17	40.00	-7.83	QP			
2	125.4457	44.52	-13.65	30.87	43.50	-12.63	QP			
3	467.2348	39.95	-5.10	34.85	46.00	-11.15	QP			

Job No.: LGW2018 #2317

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Multimedia Speaker

Mode: TX 2441MHz+TX 5762MHz

Model: S3000 Pro

Applicant: EDIFIER

Polarization: Horizontal

Power Source: AC 120V/60Hz

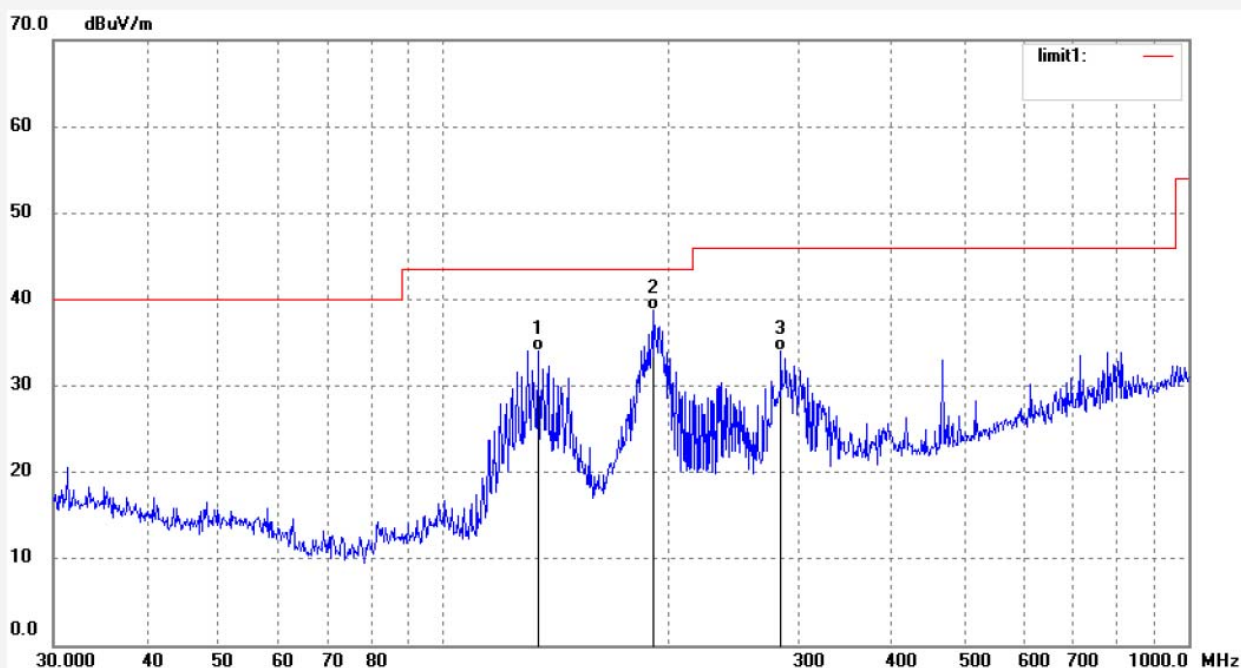
Date: 18/08/05/

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	134.0882	48.04	-13.92	34.12	43.50	-9.38	QP			
2	191.7450	51.20	-12.42	38.78	43.50	-4.72	QP			
3	283.9791	43.40	-9.45	33.95	46.00	-12.05	QP			

Job No.: LGW2018 #2316

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Multimedia Speaker

Mode: TX 2441MHz+TX 5762MHz

Model: S3000 Pro

Applicant: EDIFIER

Polarization: Vertical

Power Source: AC 120V/60Hz

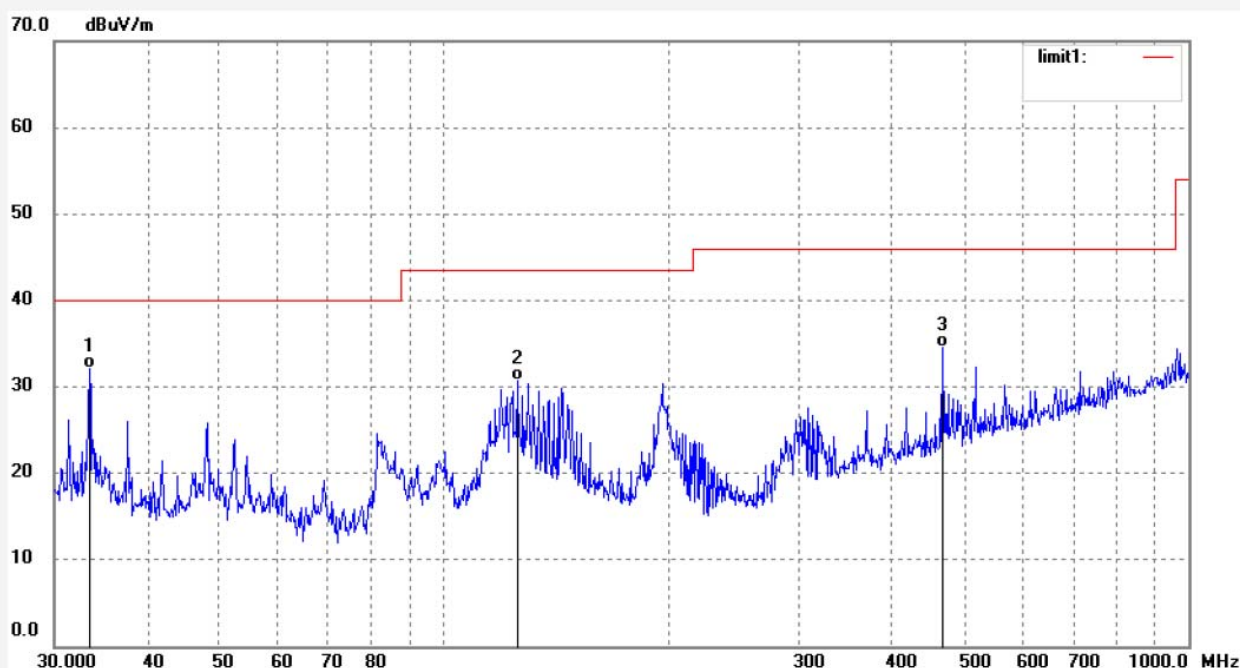
Date: 18/08/05/

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	33.4448	42.09	-9.95	32.14	40.00	-7.86	QP			
2	125.4457	44.30	-13.65	30.65	43.50	-12.85	QP			
3	467.2348	39.65	-5.10	34.55	46.00	-11.45	QP			

Job No.: LGW2018 #2318

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Multimedia Speaker

Mode: TX 2480MHz+TX 5814MHz

Model: S3000 Pro

Applicant: EDIFIER

Polarization: Horizontal

Power Source: AC 120V/60Hz

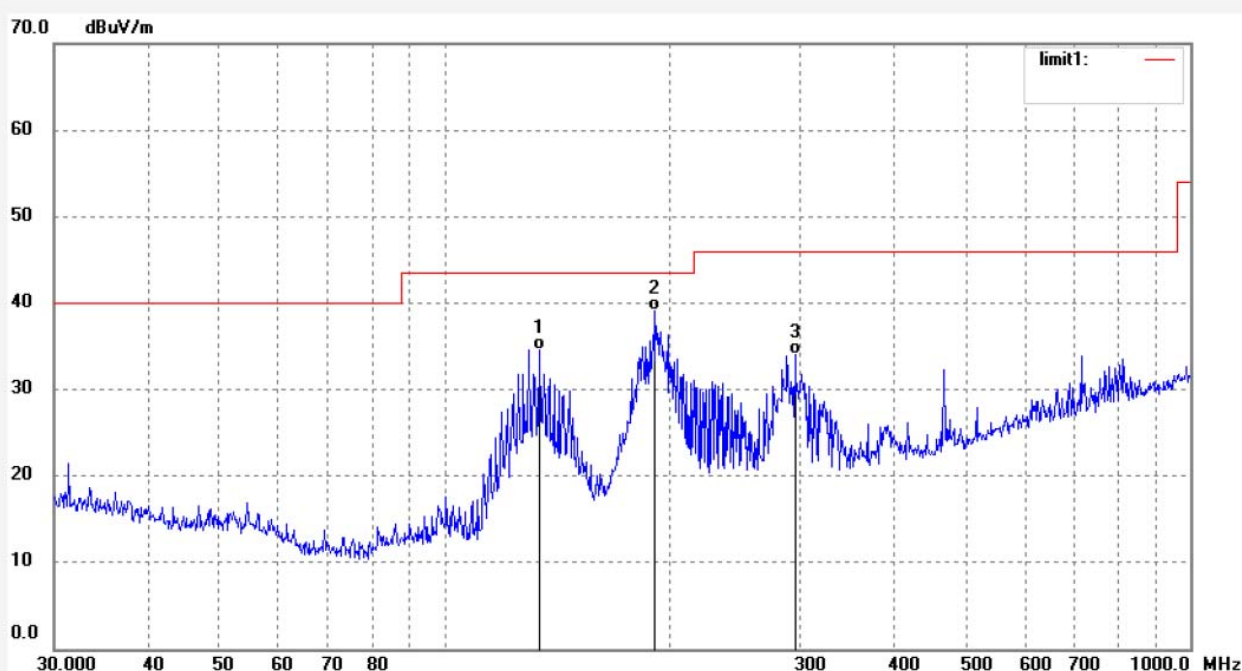
Date: 18/08/05/

Time:

Engineer Signature: WADE

Distance: 3m

Note:

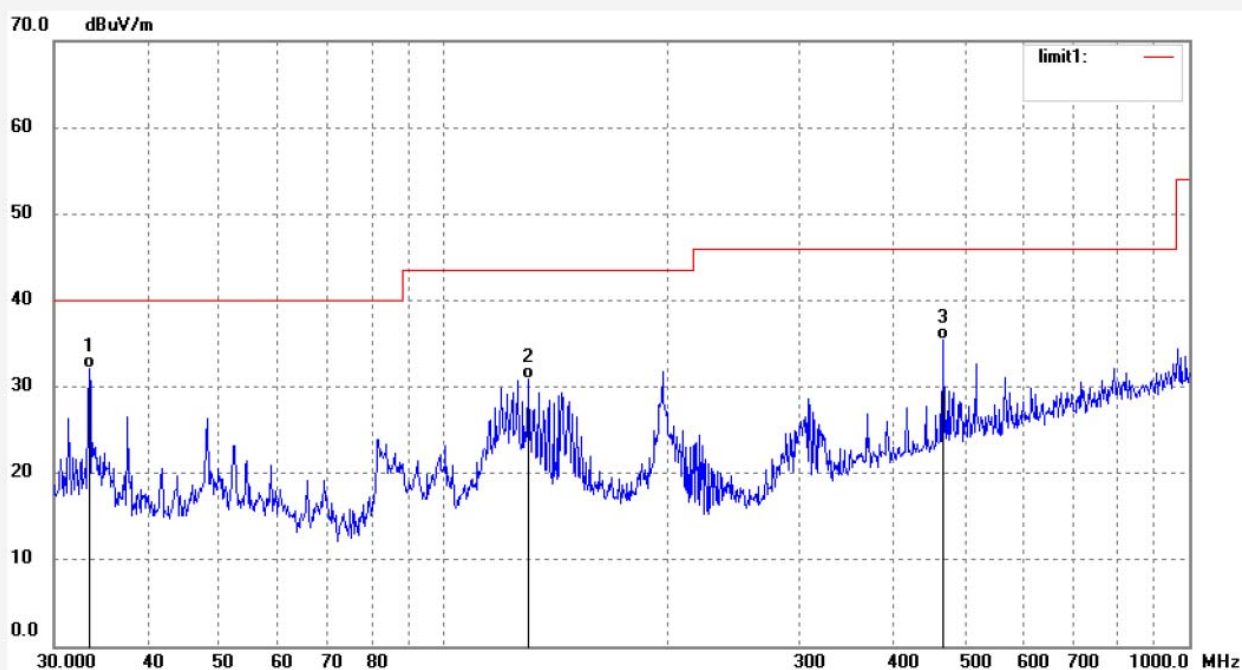


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	134.0882	48.43	-13.92	34.51	43.50	-8.99	QP			
2	191.7450	51.59	-12.42	39.17	43.50	-4.33	QP			
3	295.1469	43.07	-9.10	33.97	46.00	-12.03	QP			

Job No.: LGW2018 #2319
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Multimedia Speaker
Mode: TX 2480MHz+TX 5814MHz
Model: S3000 Pro
Applicant: EDIFIER

Polarization: Vertical
Power Source: AC 120V/60Hz
Date: 18/08/05/
Time:
Engineer Signature: WADE
Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	33.4448	42.03	-9.95	32.08	40.00	-7.92	QP			
2	129.9225	44.65	-13.76	30.89	43.50	-12.61	QP			
3	467.2348	40.51	-5.10	35.41	46.00	-10.59	QP			

1GHz-18GHz test data (Bluetooth+5.8G)



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Job No.: LGW2018 #2270

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Multimedia Speaker

Mode: TX 2402MHz+TX 5736MHz

Model: S3000 Pro

Applicant: EDIFIER

Polarization: Horizontal

Power Source: AC 120V/60Hz

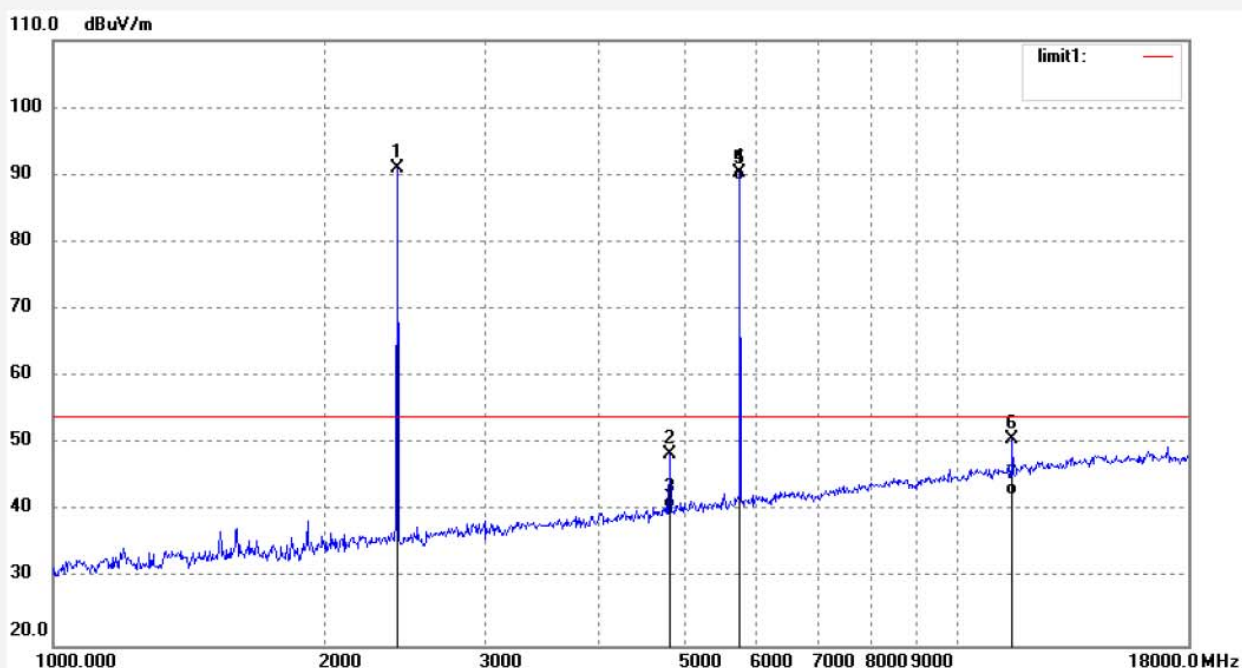
Date: 18/08/05/

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2402.000	90.12	0.89	91.01	/	/	peak			
2	4804.026	41.09	7.40	48.49	74.00	-25.51	peak			
3	4804.026	32.87	7.40	40.27	54.00	-13.73	AVG			
4	5736.000	80.09	10.21	90.30	114.00	-23.70	peak			
5	5736.000	78.99	10.21	89.20	94.00	-4.80	AVG			
6	11472.258	30.78	19.91	50.69	74.00	-23.31	peak			
7	11472.258	22.44	19.91	42.35	54.00	-11.65	AVG			

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Job No.: LGW2018 #2271

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Multimedia Speaker

Mode: TX 2402MHz+TX 5736MHz

Model: S3000 Pro

Applicant: EDIFIER

Polarization: Vertical

Power Source: AC 120V/60Hz

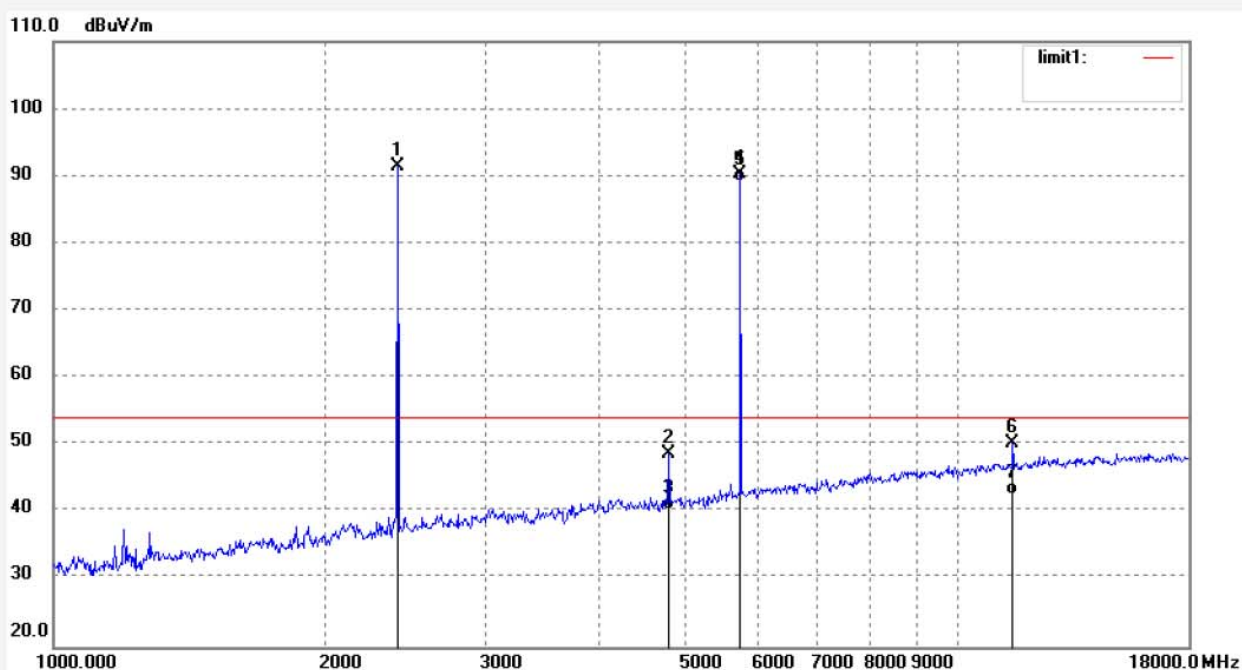
Date: 18/08/05/

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2402.000	90.59	0.89	91.48	/	/	peak			
2	4804.024	41.18	7.40	48.58	74.00	-25.42	peak			
3	4804.024	32.97	7.40	40.37	54.00	-13.63	AVG			
4	5736.000	80.16	10.21	90.37	114.00	-23.63	peak			
5	5736.000	79.06	10.21	89.27	94.00	-4.73	AVG			
6	11472.268	30.36	19.91	50.27	74.00	-23.73	peak			
7	11472.268	22.67	19.91	42.58	54.00	-11.42	AVG			

Job No.: LGW2018 #2273

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Multimedia Speaker

Mode: TX 2441MHz+TX 5762MHz

Model: S3000 Pro

Applicant: EDIFIER

Polarization: Horizontal

Power Source: AC 120V/60Hz

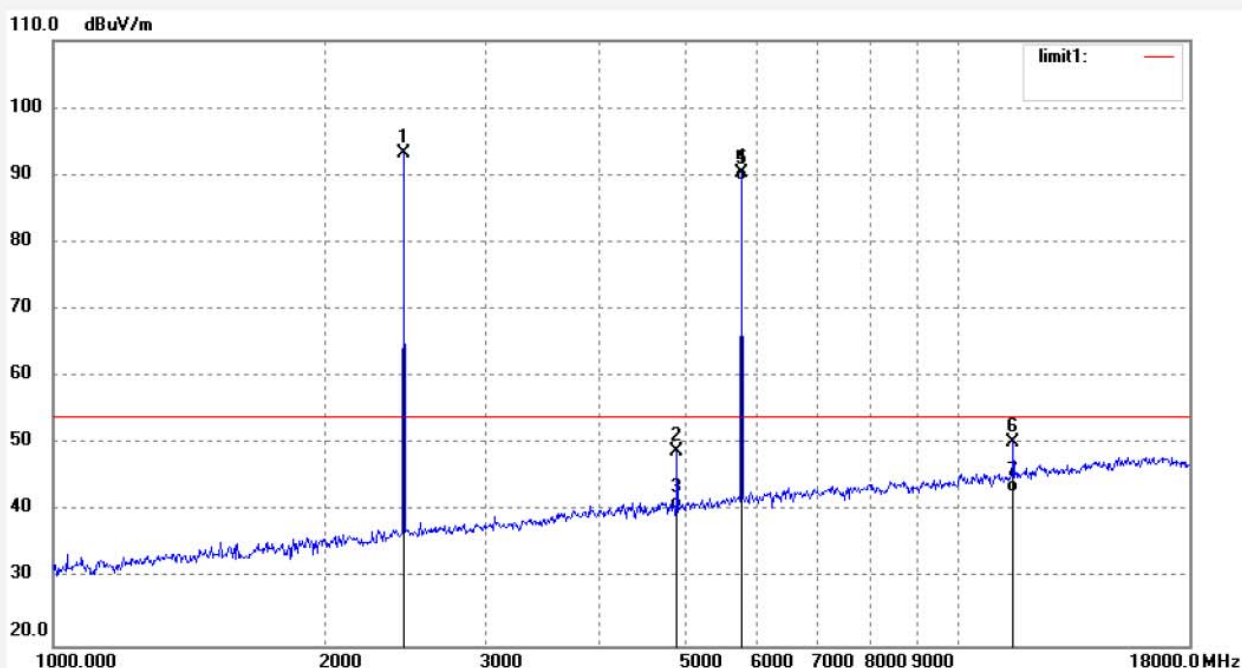
Date: 18/08/05/

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2441.000	92.25	1.06	93.31	/	/	peak			
2	4882.027	40.74	8.11	48.85	74.00	-25.15	peak			
3	4882.027	32.25	8.11	40.36	54.00	-13.64	AVG			
4	5762.000	80.01	10.37	90.38	114.00	-23.62	peak			
5	5762.000	78.71	10.37	89.08	94.00	-4.92	AVG			
6	11524.269	30.20	20.10	50.30	74.00	-23.70	peak			
7	11524.269	22.69	20.10	42.79	54.00	-11.21	AVG			

Job No.: LGW2018 #2272

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Multimedia Speaker

Mode: TX 2441MHz+TX 5762MHz

Model: S3000 Pro

Applicant: EDIFIER

Polarization: Vertical

Power Source: AC 120V/60Hz

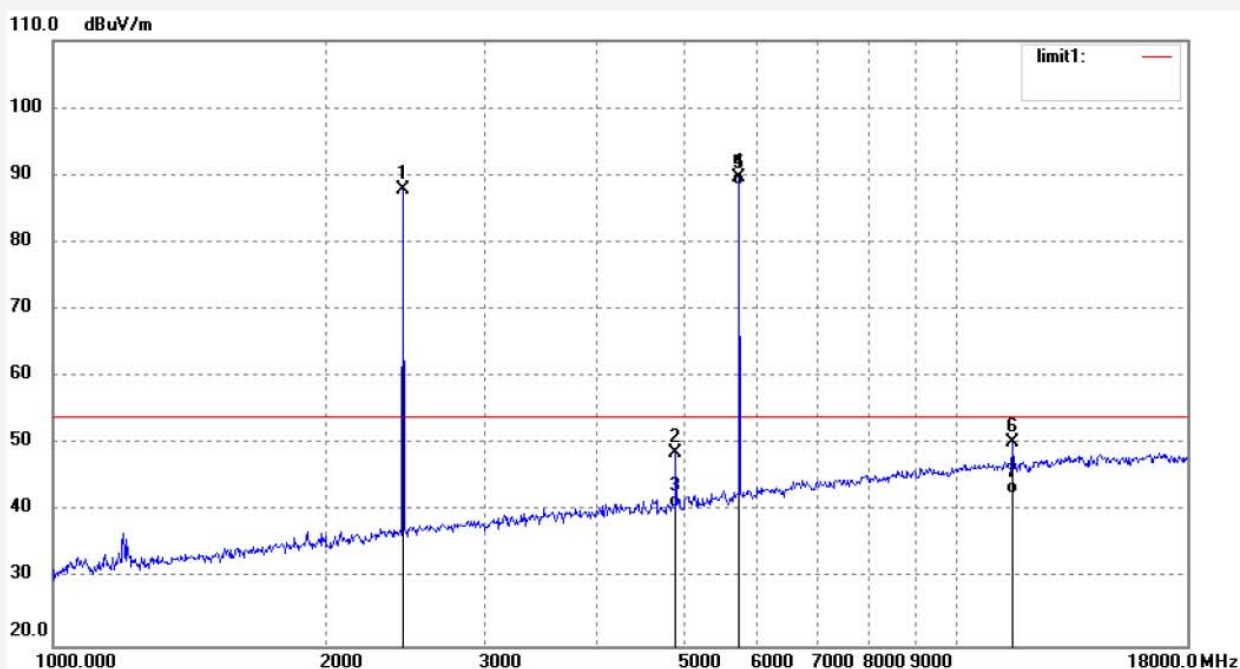
Date: 18/08/05/

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2441.000	86.76	1.06	87.82	/	/	peak			
2	4882.028	40.57	8.11	48.68	74.00	-25.32	peak			
3	4882.028	32.46	8.11	40.57	54.00	-13.43	AVG			
4	5762.000	79.37	10.37	89.74	114.00	-24.26	peak			
5	5762.000	78.07	10.37	88.44	94.00	-5.56	AVG			
6	11524.270	30.16	20.10	50.26	74.00	-23.74	peak			
7	11524.270	22.54	20.10	42.64	54.00	-11.36	AVG			

Job No.: LGW2018 #2274

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Multimedia Speaker

Mode: TX 2480MHz+TX 5814MHz

Model: S3000 Pro

Applicant: EDIFIER

Polarization: Horizontal

Power Source: AC 120V/60Hz

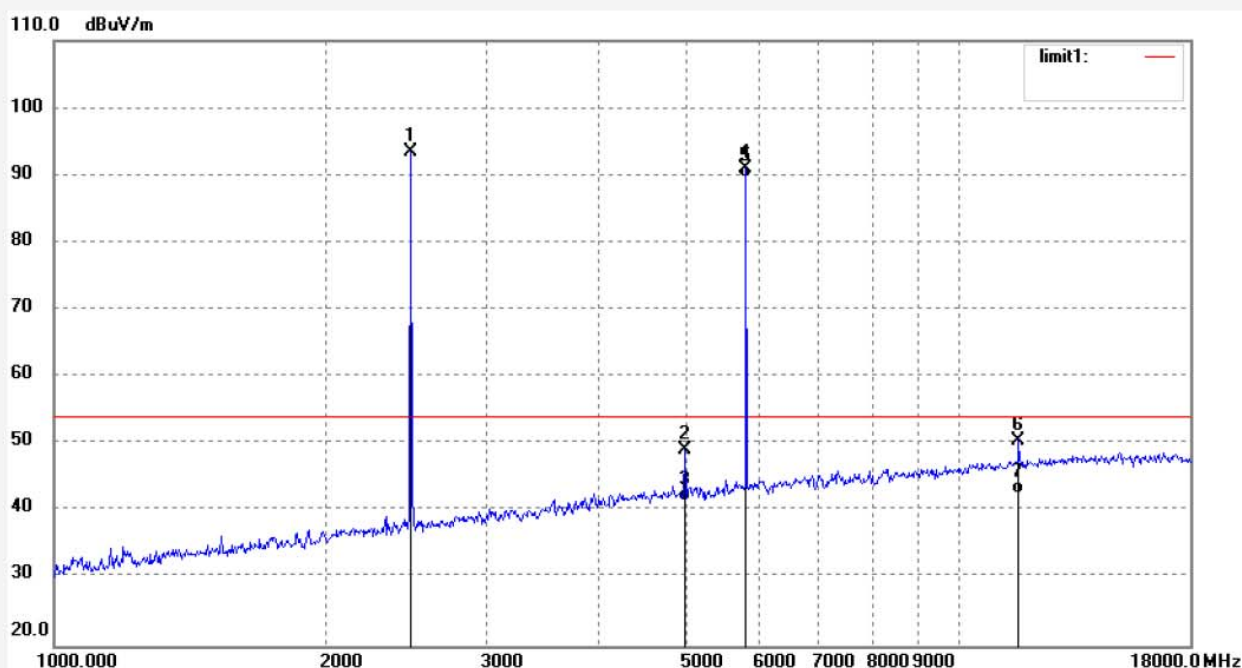
Date: 18/08/05/

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2480.000	92.42	1.10	93.52	/	/	peak			
2	4960.027	40.59	8.60	49.19	74.00	-24.81	peak			
3	4960.027	32.94	8.60	41.54	54.00	-12.46	AVG			
4	5814.000	80.44	10.64	91.08	114.00	-22.92	peak			
5	5814.000	79.04	10.64	89.68	94.00	-4.32	AVG			
6	11628.288	30.00	20.60	50.60	74.00	-23.40	peak			
7	11628.288	22.08	20.60	42.68	54.00	-11.32	AVG			

Job No.: LGW2018 #2275

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Multimedia Speaker

Mode: TX 2480MHz+TX 5814MHz

Model: S3000 Pro

Applicant: EDIFIER

Polarization: Vertical

Power Source: AC 120V/60Hz

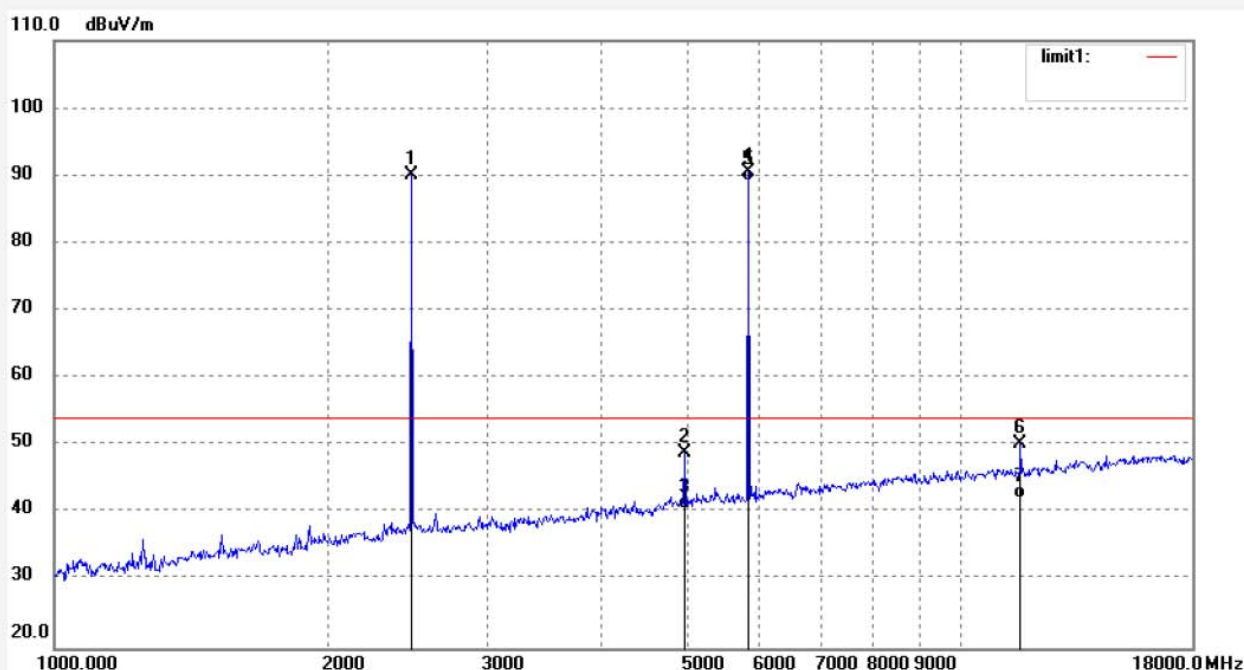
Date: 18/08/05/

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2480.000	89.00	1.10	90.10	/	/	peak			
2	4960.031	40.34	8.60	48.94	74.00	-25.06	peak			
3	4960.031	31.92	8.60	40.52	54.00	-13.48	AVG			
4	5814.000	79.97	10.64	90.61	114.00	-23.39	peak			
5	5814.000	78.57	10.64	89.21	94.00	-4.79	AVG			
6	11628.275	29.77	20.60	50.37	74.00	-23.63	peak			
7	11628.275	21.53	20.60	42.13	54.00	-11.87	AVG			

18GHz-26.5GHz test data (Bluetooth+5.8G)



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Job No.: LGW2018 #2277

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Multimedia Speaker

Mode: TX 2402MHz+TX 5736MHz

Model: S3000 Pro

Applicant: EDIFIER

Polarization: Horizontal

Power Source: AC 120V/60Hz

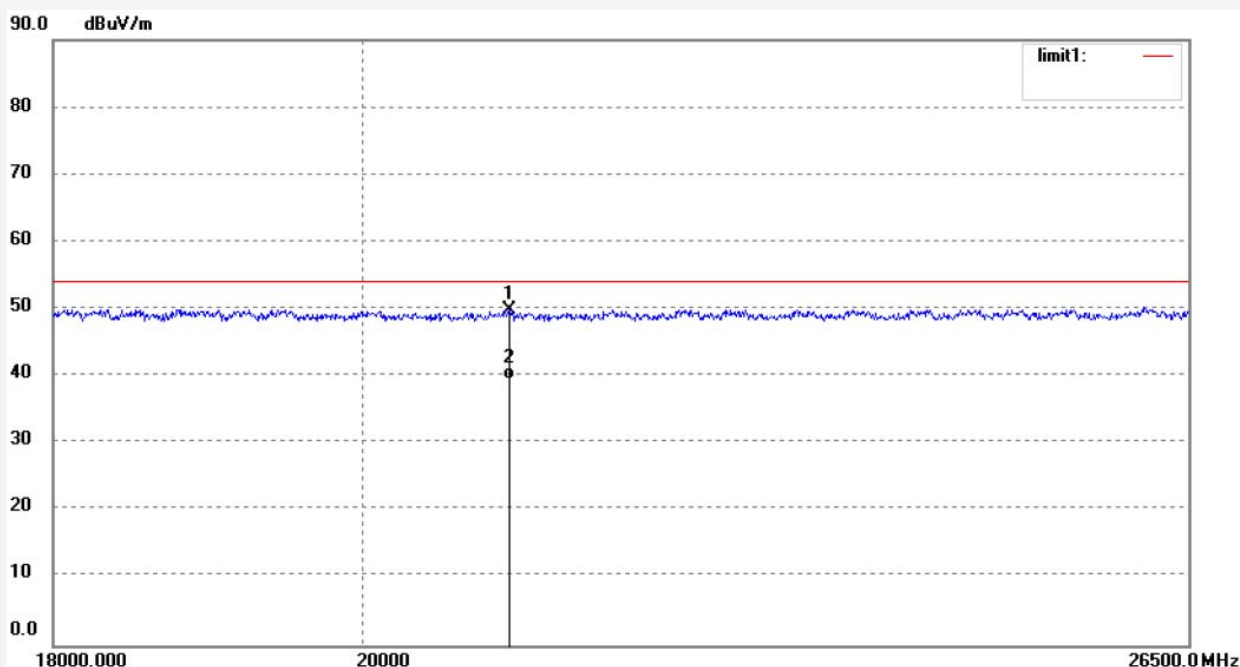
Date: 18/08/05/

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	21027.992	11.40	38.42	49.82	74.00	-24.18	peak			
2	21027.992	1.12	38.42	39.54	54.00	-14.46	AVG			

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Job No.: LGW2018 #2276

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Multimedia Speaker

Mode: TX 2402MHz+TX 5736MHz

Model: S3000 Pro

Applicant: EDIFIER

Polarization: Vertical

Power Source: AC 120V/60Hz

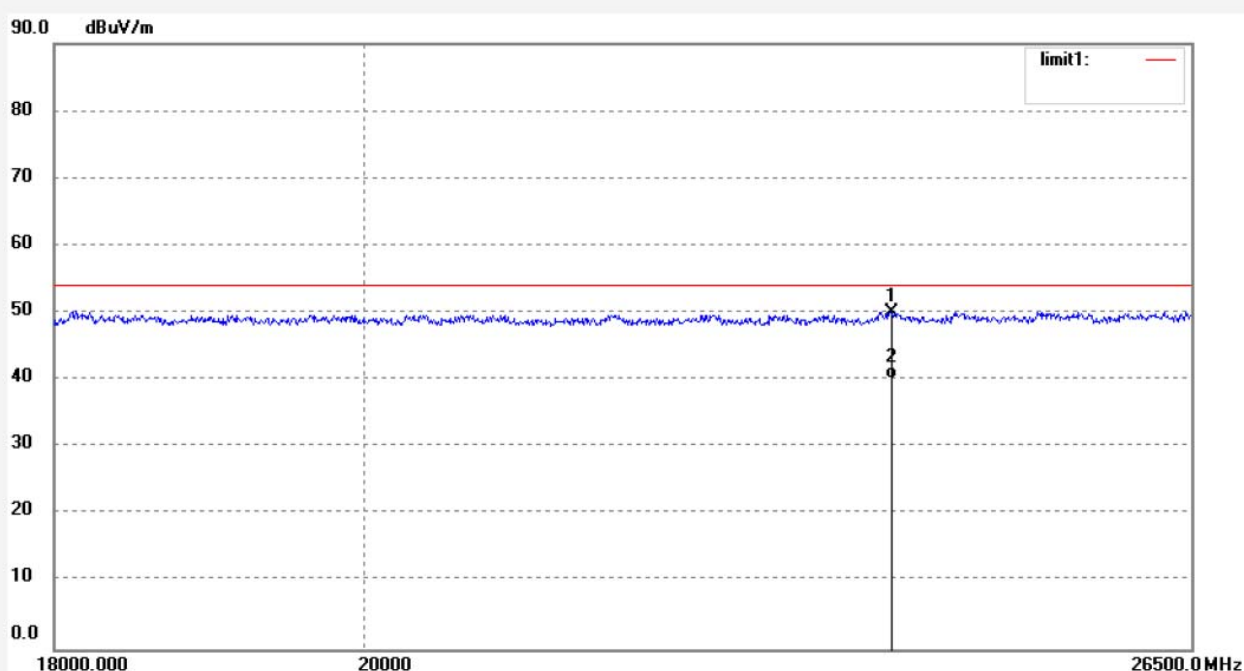
Date: 18/08/05/

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	23936.954	10.30	39.73	50.03	74.00	-23.97	peak			
2	23936.954	0.52	39.73	40.25	54.00	-13.75	AVG			

Job No.: LGW2018 #2278

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Multimedia Speaker

Mode: TX 2441MHz+TX 5762MHz

Model: S3000 Pro

Applicant: EDIFIER

Polarization: Horizontal

Power Source: AC 120V/60Hz

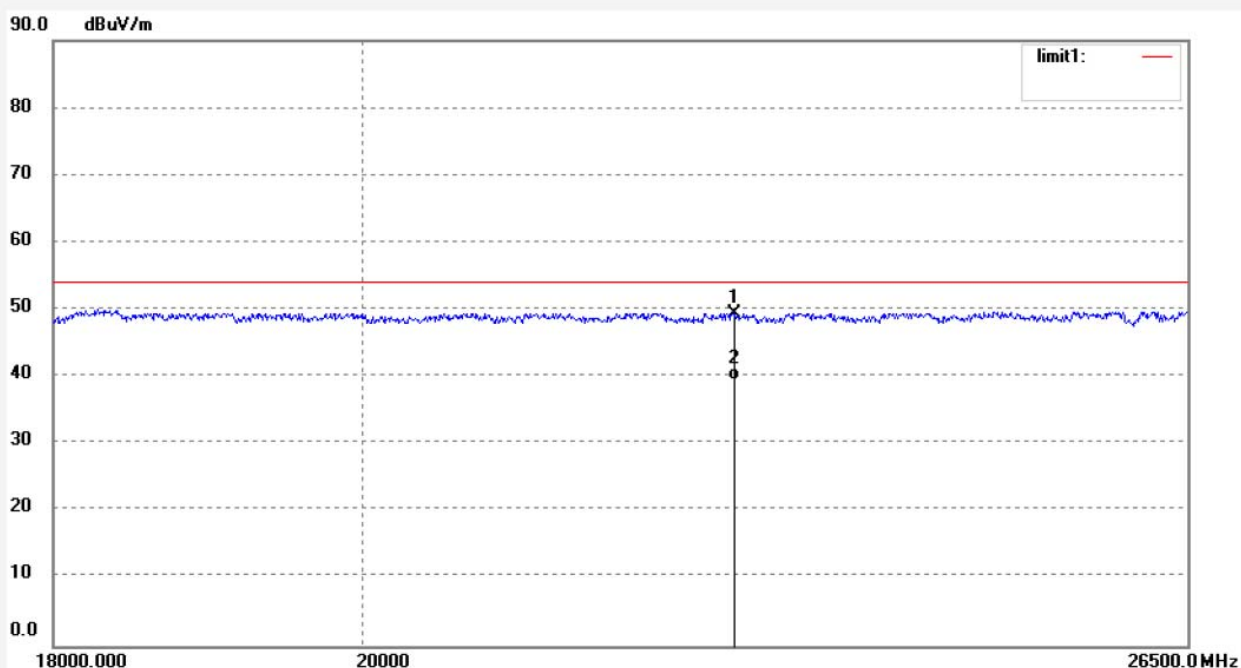
Date: 18/08/05/

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	22701.603	9.77	39.73	49.50	74.00	-24.50	peak			
2	22701.603	-0.28	39.73	39.45	54.00	-14.55	AVG			

Job No.: LGW2018 #2279

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Multimedia Speaker

Mode: TX 2441MHz+TX 5762MHz

Model: S3000 Pro

Applicant: EDIFIER

Polarization: Vertical

Power Source: AC 120V/60Hz

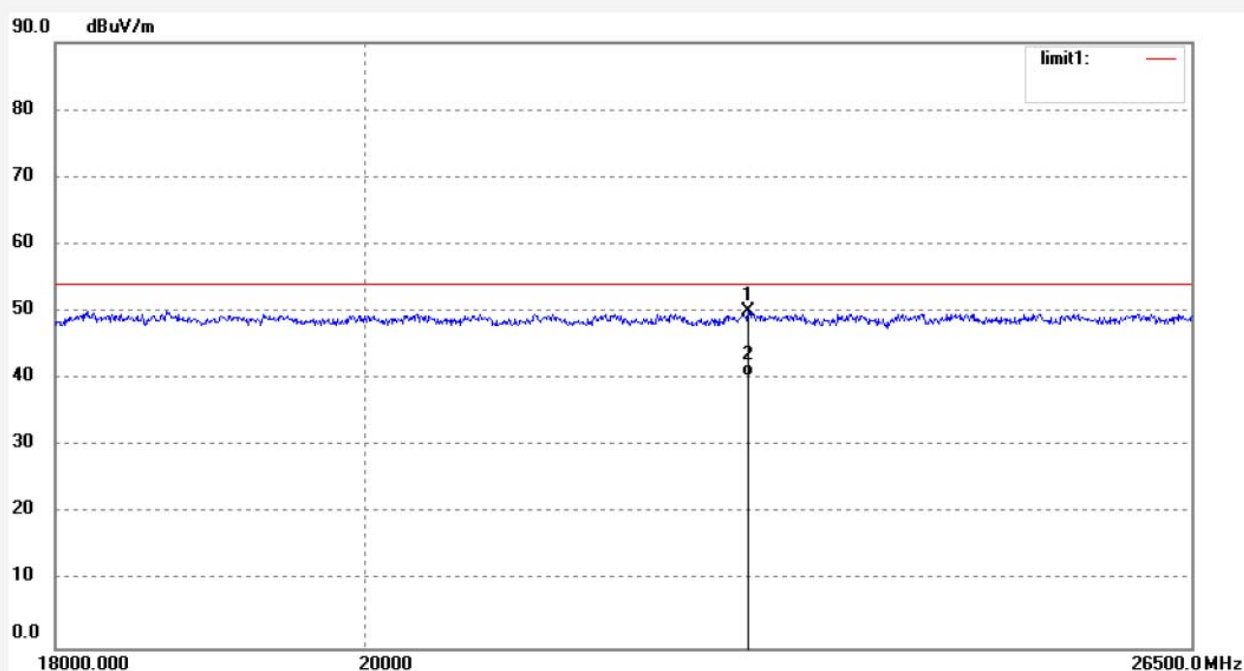
Date: 18/08/05/

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	22789.577	10.38	39.64	50.02	74.00	-23.98	peak			
2	22789.577	0.70	39.64	40.34	54.00	-13.66	AVG			

Job No.: LGW2018 #2281

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Multimedia Speaker

Mode: TX 2480MHz+TX 5814MHz

Model: S3000 Pro

Applicant: EDIFIER

Polarization: Horizontal

Power Source: AC 120V/60Hz

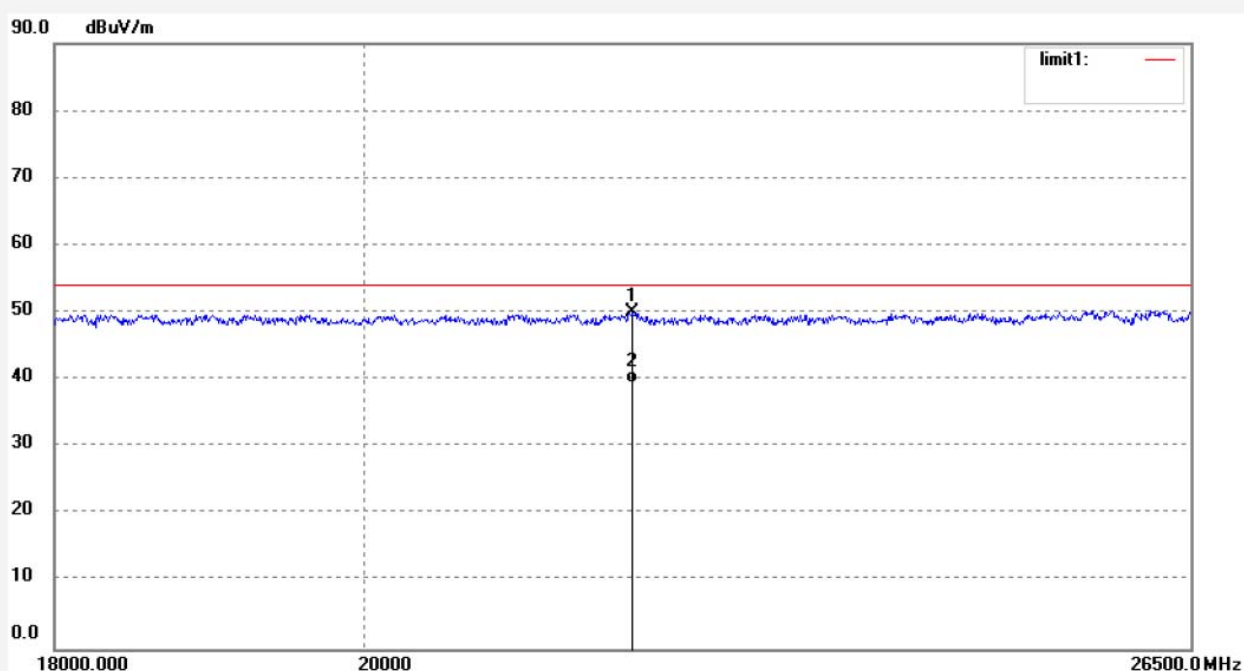
Date: 18/08/05/

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	21916.487	10.72	39.25	49.97	74.00	-24.03	peak			
2	21916.487	0.16	39.25	39.41	54.00	-14.59	AVG			

Job No.: LGW2018 #2280

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Multimedia Speaker

Mode: TX 2480MHz+TX 5814MHz

Model: S3000 Pro

Applicant: EDIFIER

Polarization: Vertical

Power Source: AC 120V/60Hz

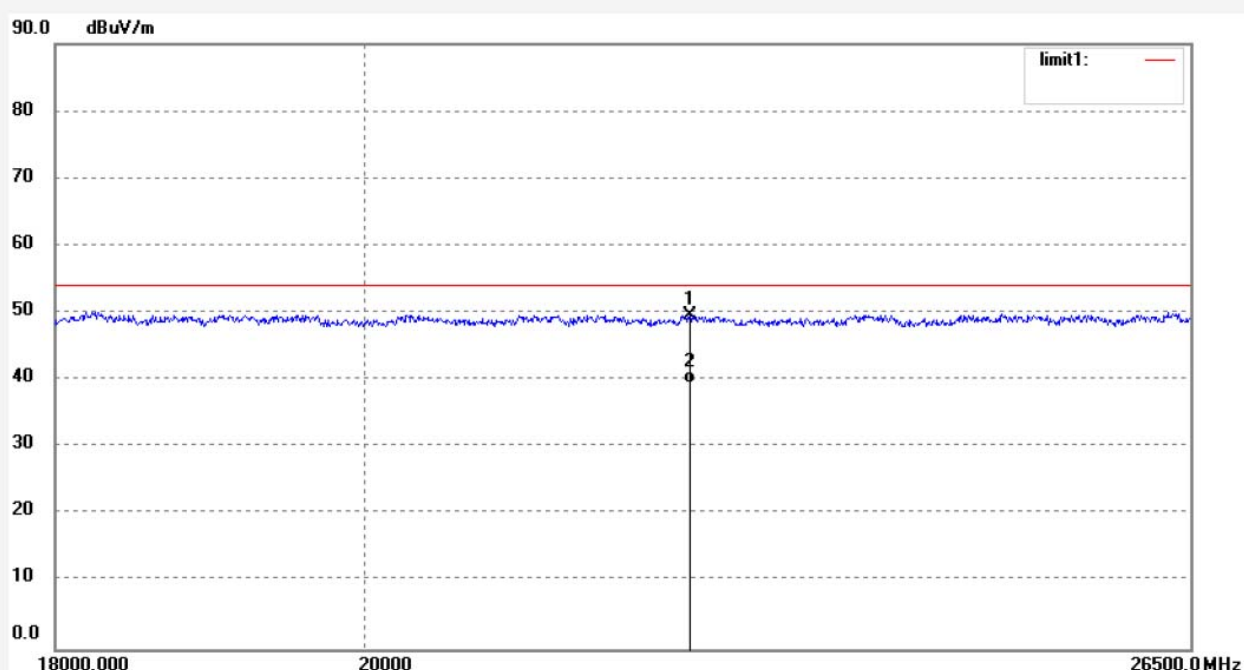
Date: 18/08/05/

Time:

Engineer Signature: WADE

Distance: 3m

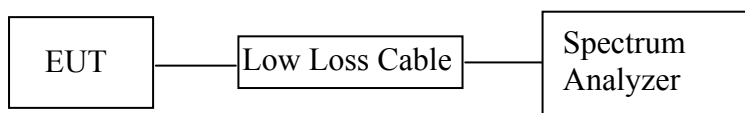
Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	22344.447	10.23	39.32	49.55	74.00	-24.45	peak			
2	22344.447	0.09	39.32	39.41	54.00	-14.59	AVG			

12.BAND EDGE COMPLIANCE TEST FOR 2.4G BT

12.1.Block Diagram of Test Setup



12.2.The Requirement For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

12.3.The Requirement For RSS-247 Section 5.5

Section 5.5: In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

12.4.EUT Configuration on Measurement

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

12.5.Operating Condition of EUT

12.5.1.Setup the EUT and simulator as shown as Section 12.1.

12.5.2.Turn on the power of all equipment.

12.5.3.Let the EUT work in TX (Hopping off, Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2480MHz TX frequency to transmit.

12.6.Test Procedure

12.6.1.The transmitter output was connected to the spectrum analyzer via a low loss cable.

12.6.2.Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz with convenient frequency span including 100 kHz bandwidth from band edge.

12.6.3.The band edges was measured and recorded.

12.7.Test Result

Non-hopping mode

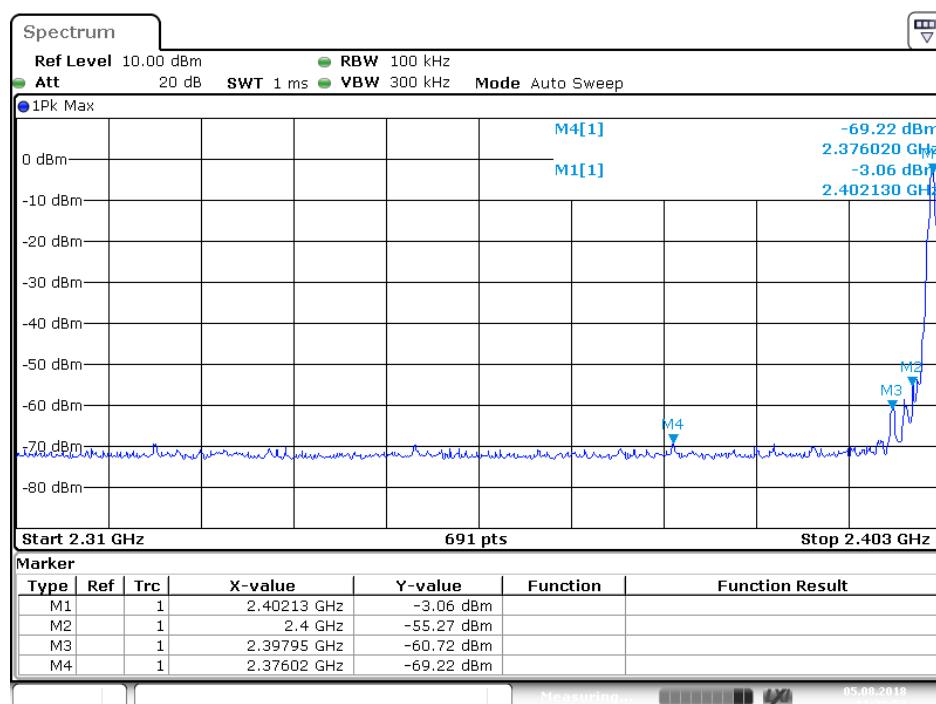
Frequency (MHz)	Result of Band Edge (dBc)	Limit of Band Edge (dBc)
BDR mode		
2400.0	52.21	> 20dBc
2484.0	57.59	> 20dBc
EDR mode		
2400.0	40.64	> 20dBc
2484.0	56.09	> 20dBc

Hopping mode

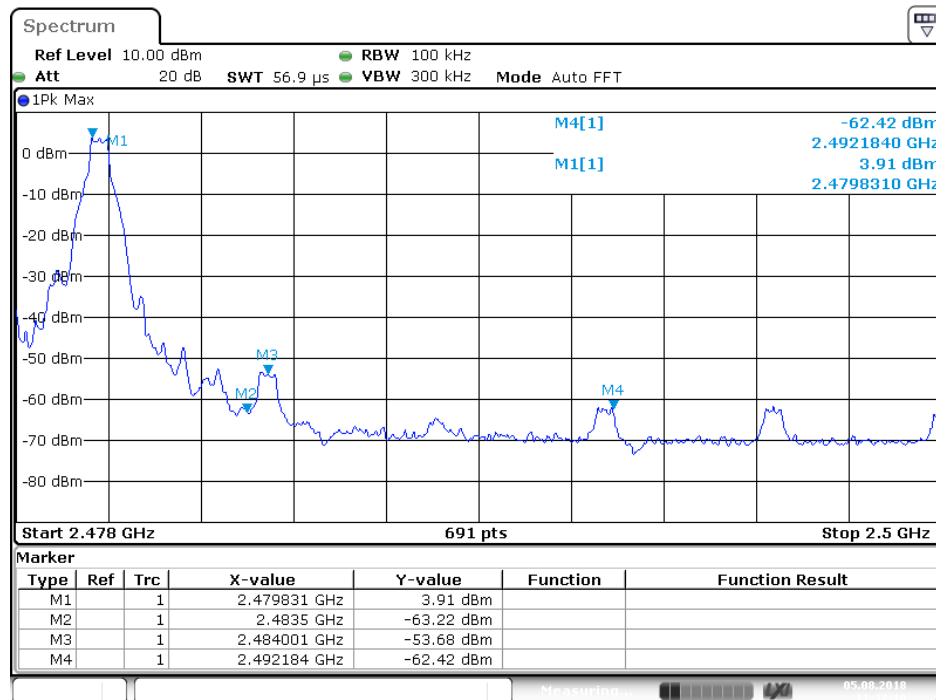
Frequency (MHz)	Result of Band Edge (dBc)	Limit of Band Edge (dBc)
BDR mode		
2400.0	51.94	> 20dBc
2484.0	58.69	> 20dBc
EDR mode		
2400.0	42.63	> 20dBc
2483.8	56.81	> 20dBc

Non-hopping mode

BDR mode

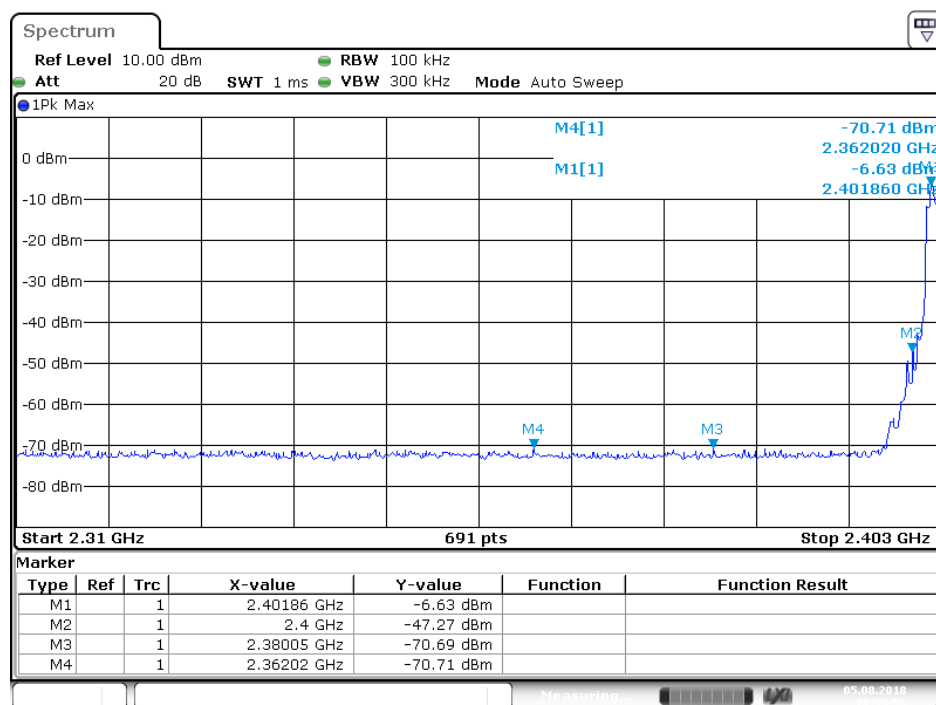


Date: 5.AUG.2018 11:38:52

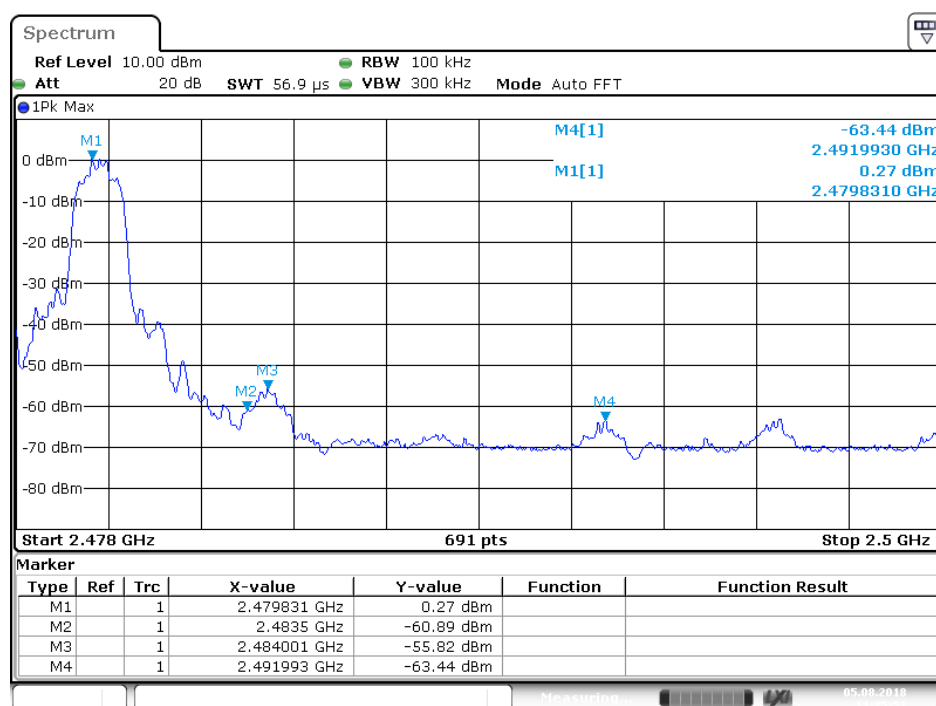


Date: 5.AUG.2018 11:37:10

EDR mode



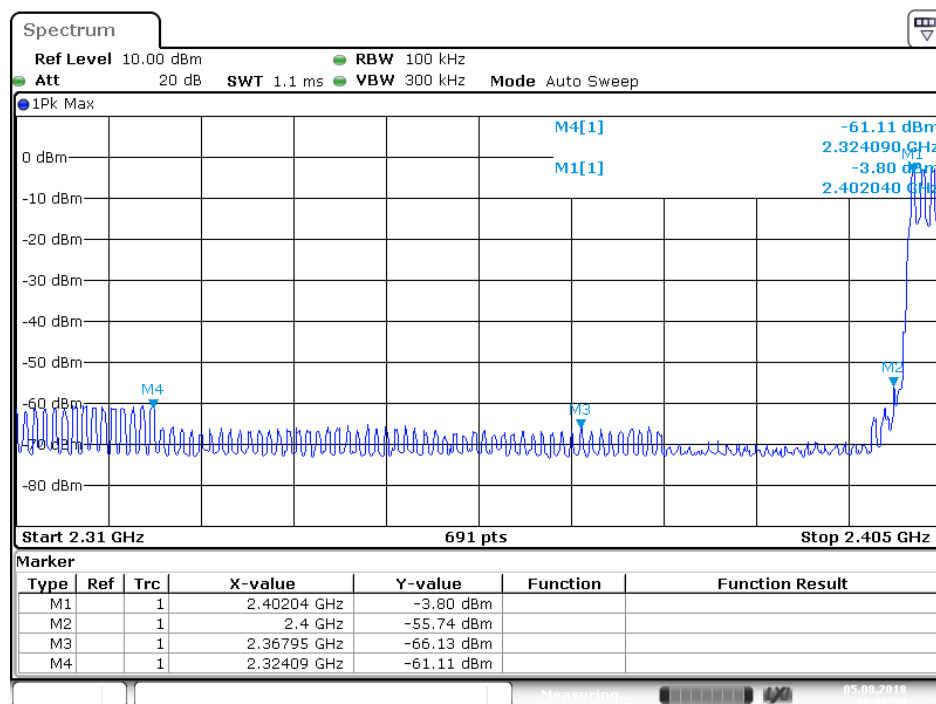
Date: 5.AUG.2018 11:33:56



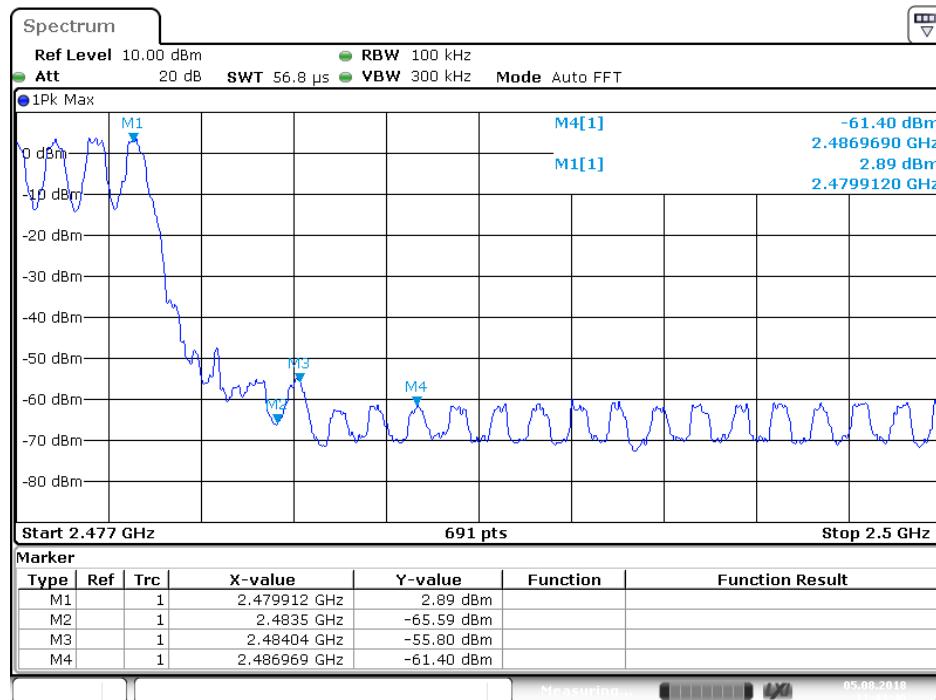
Date: 5.AUG.2018 11:35:51

hopping mode

BDR mode



Date: 5.AUG.2018 11:41:39



Date: 5.AUG.2018 11:43:46

Shenzhen Accurate Technology Co., Ltd.

Address: 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China

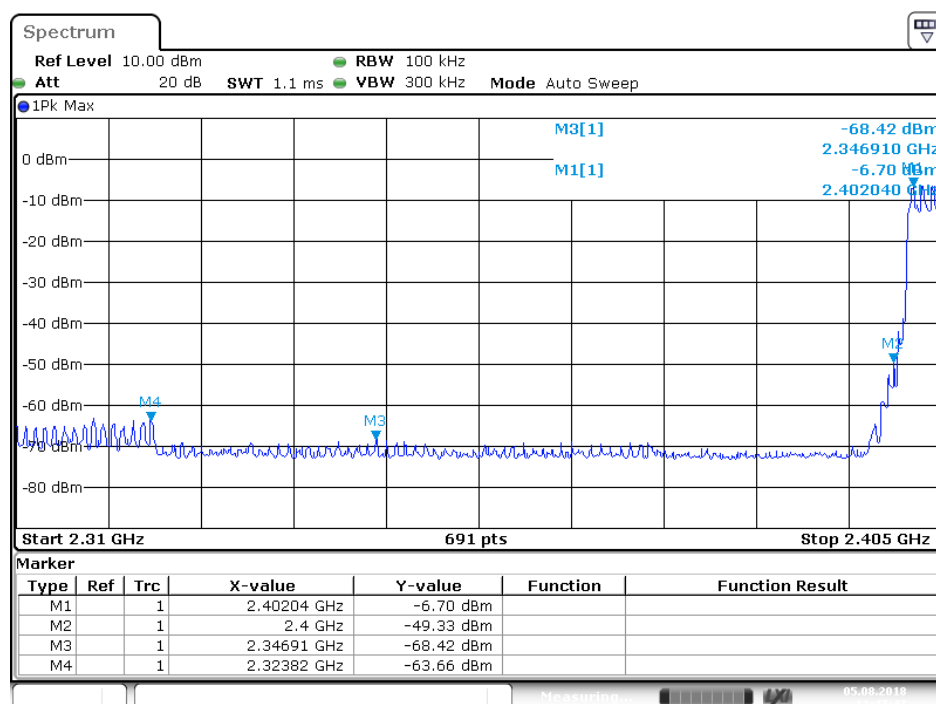
Tel: +86-755-26503290

Fax: +86-755-26503396

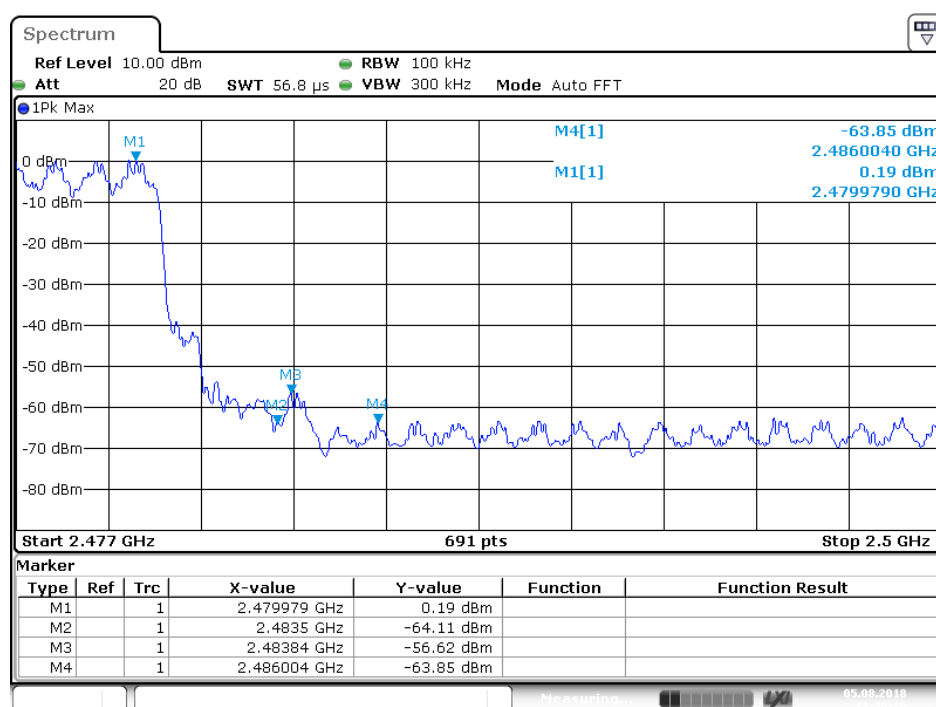
E-mail: webmaster@atc-lab.com

Http://www.atc-lab.com

EDR mode



Date: 5.AUG.2018 11:47:47



Date: 5.AUG.2018 11:46:19

Radiated Band Edge Result

Note:

1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

3. Display the measurement of peak values.

Test Procedure:

The EUT and its simulators are placed on a turntable, which is 1.5 meter high above ground(Above 1GHz). 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 an 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 bi-log antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the EUT location must be manipulated according to ANSI C63.10:2013 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

Let the EUT work in TX (Hopping off, Hopping on) modes measure it.

We select 2402MHz, 2480MHz TX frequency to transmit(Hopping off mode).

We select 2402-2480MHz TX frequency to transmit(Hopping on mode).

During the radiated emission test, the spectrum analyzer was set with the following configurations:

- 1.The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for peak measurement with peak detector at frequency above 1GHz.
- 2.The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average measurement with peak detection at frequency above 1GHz.
- 3.All modes of operation were investigated and the worst-case emissions are reported.

Non-hopping mode



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Fax:+86-0755-26503396

Job No.: LGW2018 #2217

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Multimedia Speaker

Mode: TX 2402MHz

Model: S3000 Pro

Manufacturer: EDIFIER

Polarization: Horizontal

Power Source: AC 120V/60Hz

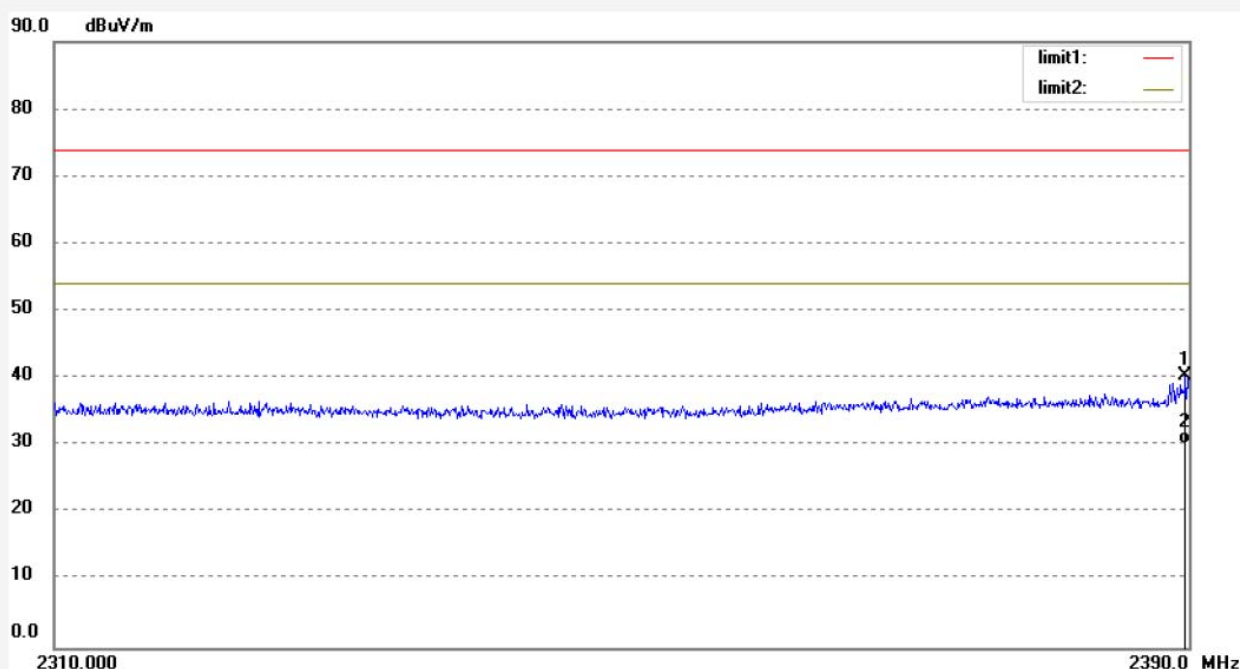
Date: 18/08/05/

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2389.760	39.67	0.79	40.46	74.00	-33.54	peak			
2	2389.760	29.46	0.79	30.25	54.00	-23.75	AVG			

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Http://www.atc-lab.com

Job No.: LGW2018 #2216

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Multimedia Speaker

Mode: TX 2402MHz

Model: S3000 Pro

Manufacturer: EDIFIER

Polarization: Vertical

Power Source: AC 120V/60Hz

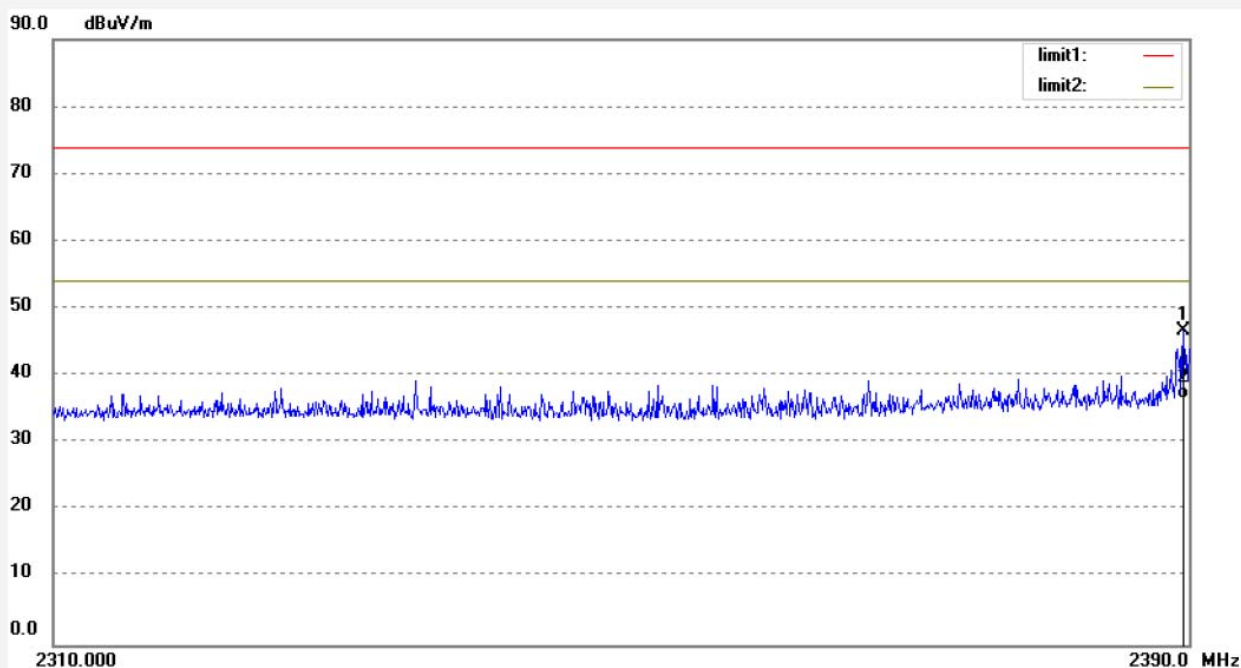
Date: 18/08/05/

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2389.600	45.91	0.79	46.70	74.00	-27.30	peak			
2	2389.600	35.66	0.79	36.45	54.00	-17.55	AVG			

Job No.: LGW2018 #2222

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Multimedia Speaker

Mode: TX 2480MHz

Model: S3000 Pro

Manufacturer: EDIFIER

Polarization: Horizontal

Power Source: AC 120V/60Hz

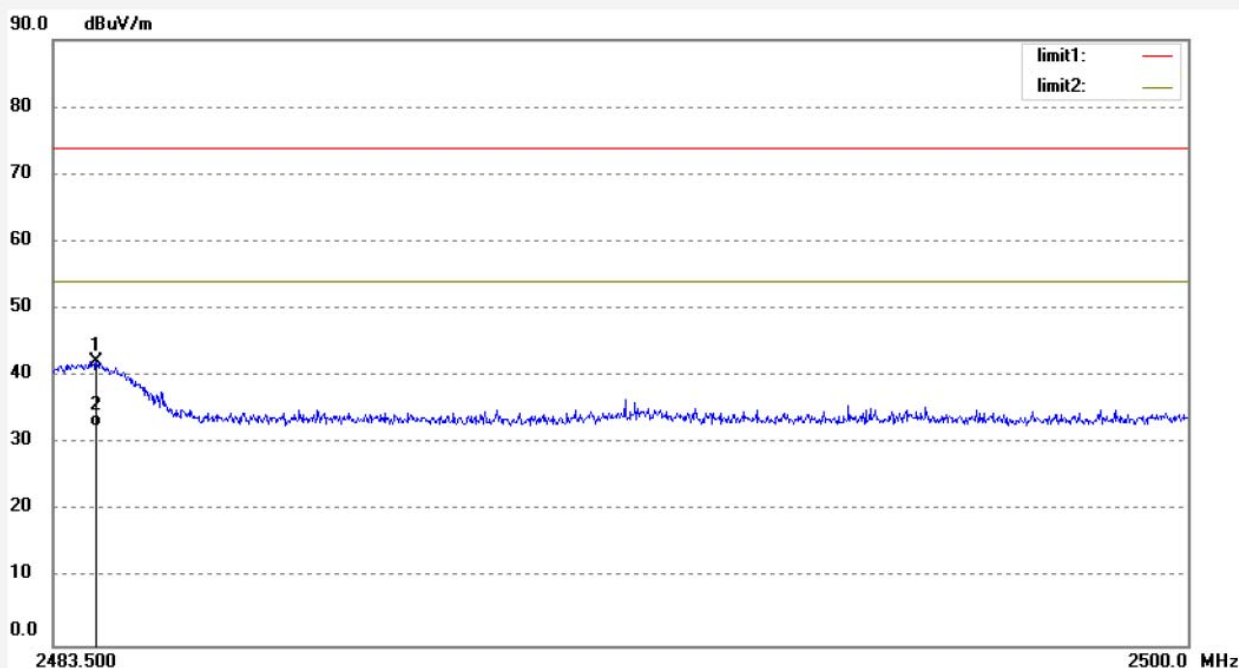
Date: 18/08/05/

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2484.127	41.11	1.09	42.20	74.00	-31.80	peak			
2	2484.127	31.45	1.09	32.54	54.00	-21.46	AVG			

Job No.: LGW2018 #2223

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: Multimedia Speaker

Mode: TX 2480MHz

Model: S3000 Pro

Manufacturer: EDIFIER

Polarization: Vertical

Power Source: AC 120V/60Hz

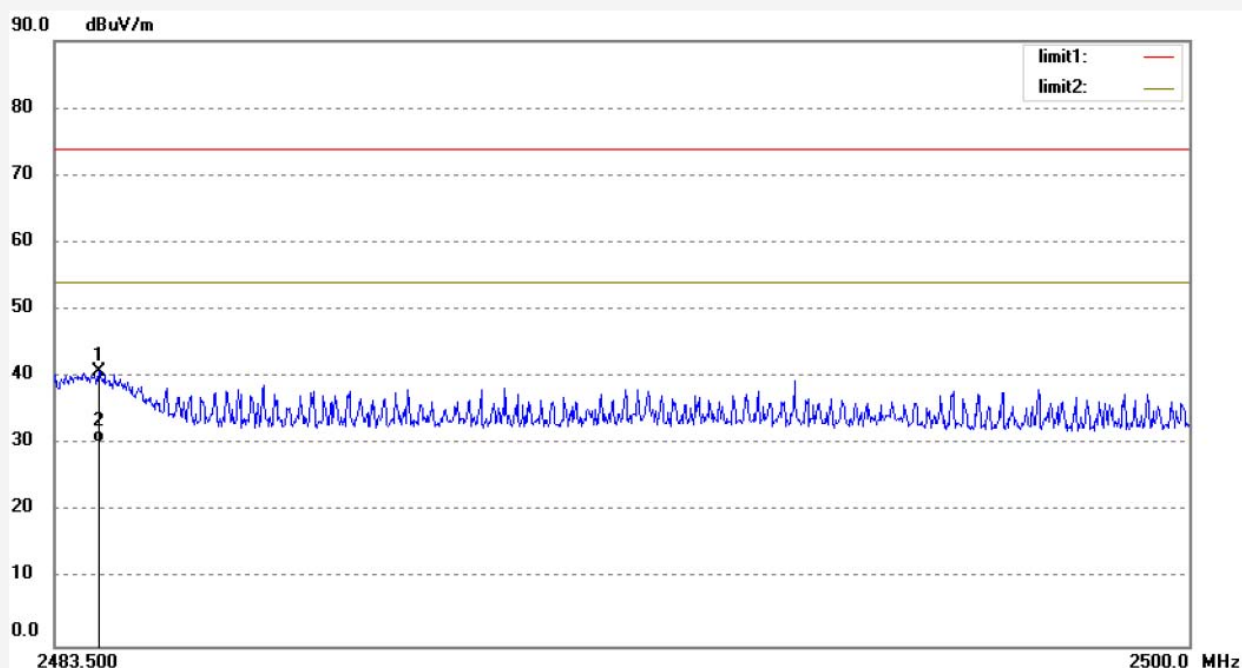
Date: 18/08/05/

Time:

Engineer Signature: WADE

Distance: 3m

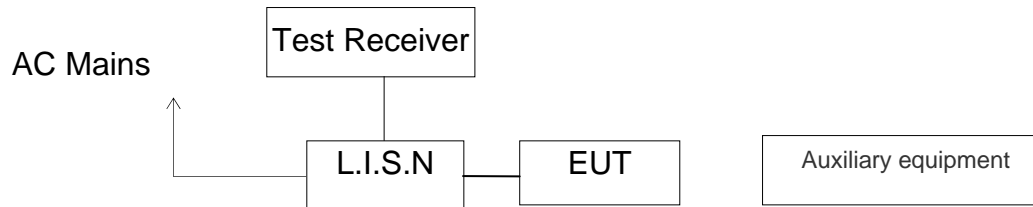
Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2484.144	39.84	1.09	40.93	74.00	-33.07	peak			
2	2484.144	29.16	1.09	30.25	54.00	-23.75	AVG			

13.AC POWER LINE CONDUCTED EMISSION

13.1.Block Diagram of Test Setup



(EUT: Multimedia Speaker)

13.2.Power Line Conducted Emission Measurement Limits

Frequency (MHz)	Limit dB(μV)	
	Quasi-peak Level	Average Level
0.15 - 0.50	66.0 – 56.0 *	56.0 – 46.0 *
0.50 - 5.00	56.0	46.0
5.00 - 30.00	60.0	50.0

NOTE1: The lower limit shall apply at the transition frequencies.
NOTE2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.

13.3.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.

13.4.Operating Condition of EUT

13.4.1.Setup the EUT and simulator as shown as Section 13.1.

13.4.2.Turn on the power of all equipment.

13.4.3.Let the EUT work in test mode and measure it.

13.5.Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines 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 Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

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

13.6.Data Sample

Frequency (MHz)	Transducer value (dB)	QuasiPeak Level (dBμV)	Average Level (dBμV)	QuasiPeak Limit (dBμV)	Average Limit (dBμV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
X.XX	10.6	25.3	17.0	59.0	49.0	33.4	31.7	Pass

Frequency(MHz) = Emission frequency in MHz

Transducer value(dB) = Insertion loss of LISN + Cable Loss

Level(dBμV) = Quasi-peak Reading/Average Reading + Transducer value

Limit (dBμV) = Limit stated in standard

Margin = Limit (dBμV) - Level (dBμV)

Calculation Formula:

Margin = Limit (dBμV) - Level (dBμV)

13.7.Power Line Conducted Emission Measurement Results

PASS.

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

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

Emissions attenuated more than 20 dB below the permissible value are not reported.

We tested the conducted emission of high and low voltage mode and recorded the worst mode data. All data was recorded in the Quasi-peak and average detection mode.

Test mode : 2.4G BT & 5.8G Module Operation(AC 120V/60Hz)

MEASUREMENT RESULT: "TUV-0807-8_fin"

8/7/2018 8:50AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.185000	36.10	10.5	64	28.2	QP	L1	GND
0.600000	28.70	10.7	56	27.3	QP	L1	GND
2.080000	33.20	11.0	56	22.8	QP	L1	GND
22.900000	36.20	11.4	60	23.8	QP	L1	GND

MEASUREMENT RESULT: "TUV-0807-8_fin2"

8/7/2018 8:50AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.185000	21.20	10.5	54	33.1	AV	L1	GND
0.600000	29.10	10.7	46	16.9	AV	L1	GND
2.080000	33.80	11.0	46	12.2	AV	L1	GND
22.900000	35.20	11.4	50	14.8	AV	L1	GND

MEASUREMENT RESULT: "TUV-0807-7_fin"

8/7/2018 8:46AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.185000	36.50	10.5	64	27.8	QP	N	GND
0.600000	30.80	10.7	56	25.2	QP	N	GND
2.080000	33.50	11.0	56	22.5	QP	N	GND
22.900000	36.00	11.4	60	24.0	QP	N	GND

MEASUREMENT RESULT: "TUV-0807-7_fin2"

8/7/2018 8:46AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.185000	21.10	10.5	54	33.2	AV	N	GND
0.600000	31.10	10.7	46	14.9	AV	N	GND
2.080000	33.90	11.0	46	12.1	AV	N	GND
22.900000	29.40	11.4	50	20.6	AV	N	GND

The spectral diagrams are attached as below.

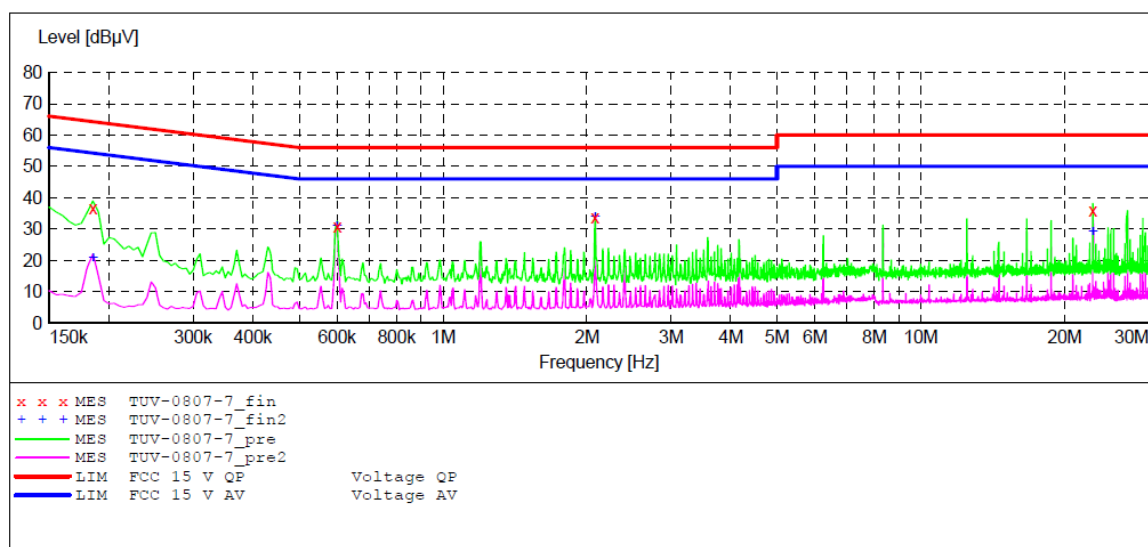
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART 15

EUT: Multimedia Speaker M/N:S3000 Pro
 Applicant: EDIFIER
 Operating Condition: BT&5.8G module OPERATION
 Test Site: 1#Shielding Room
 Operator: WADE
 Test Specification: N 120V/60Hz
 Comment: Mains port
 Start of Test: 8/7/2018 / 8:43:52AM

SCAN TABLE: "V 9K-30MHz fin"

Short Description: SUB STD VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 9.0 kHz 150.0 kHz 100.0 Hz QuasiPeak 1.0 s 200 Hz NSLK8126 2008
 Average
 150.0 kHz 30.0 MHz 5.0 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008
 Average



MEASUREMENT RESULT: "TUV-0807-7_fin"

8/7/2018 8:46AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.185000	36.50	10.5	64	27.8	QP	N	GND
0.600000	30.80	10.7	56	25.2	QP	N	GND
2.080000	33.50	11.0	56	22.5	QP	N	GND
22.900000	36.00	11.4	60	24.0	QP	N	GND

MEASUREMENT RESULT: "TUV-0807-7_fin2"

8/7/2018 8:46AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.185000	21.10	10.5	54	33.2	AV	N	GND
0.600000	31.10	10.7	46	14.9	AV	N	GND
2.080000	33.90	11.0	46	12.1	AV	N	GND
22.900000	29.40	11.4	50	20.6	AV	N	GND

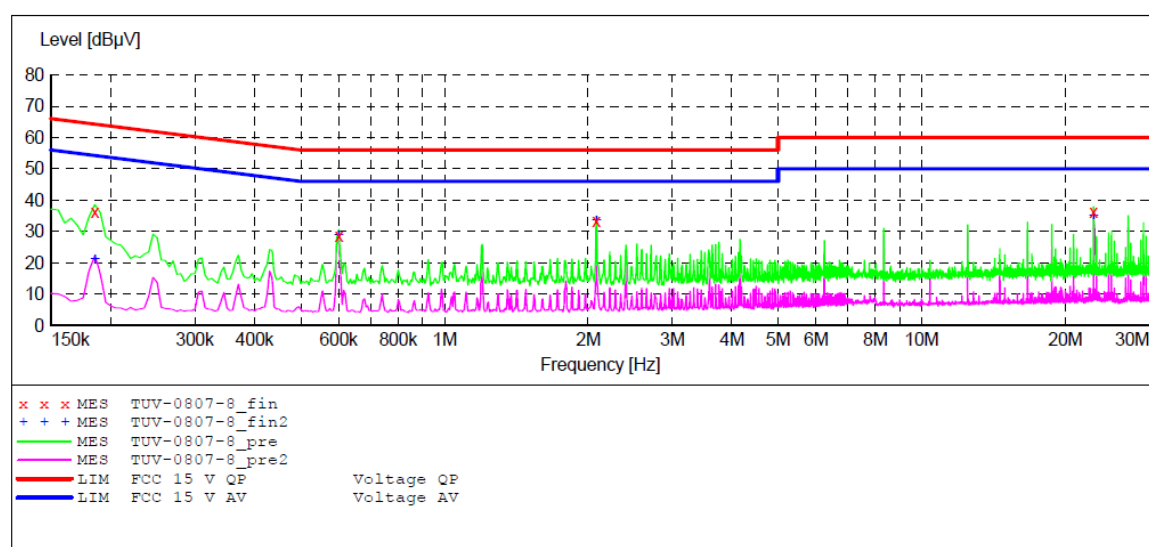
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART 15

EUT: Multimedia Speaker M/N:S3000 Pro
 Applicant: EDIFIER
 Operating Condition: BT&5.8G module OPERATION
 Test Site: 1#Shielding Room
 Operator: WADE
 Test Specification: L 120V/60Hz
 Comment: Mains port
 Start of Test: 8/7/2018 / 8:47:23AM

SCAN TABLE: "V 9K-30MHz fin"

Short Description: SUB STD VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 9.0 kHz 150.0 kHz 100.0 Hz QuasiPeak 1.0 s 200 Hz NSLK8126 2008
 Average
 150.0 kHz 30.0 MHz 5.0 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008
 Average



MEASUREMENT RESULT: "TUV-0807-8_fin"

8/7/2018 8:50AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.185000	36.10	10.5	64	28.2	QP	L1	GND
0.600000	28.70	10.7	56	27.3	QP	L1	GND
2.080000	33.20	11.0	56	22.8	QP	L1	GND
22.900000	36.20	11.4	60	23.8	QP	L1	GND

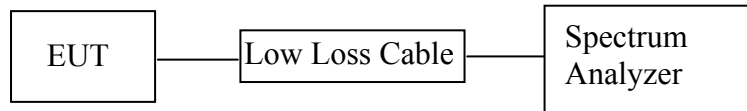
MEASUREMENT RESULT: "TUV-0807-8_fin2"

8/7/2018 8:50AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.185000	21.20	10.5	54	33.1	AV	L1	GND
0.600000	29.10	10.7	46	16.9	AV	L1	GND
2.080000	33.80	11.0	46	12.2	AV	L1	GND
22.900000	35.20	11.4	50	14.8	AV	L1	GND

14.99% OCCUPIED BANDWIDTH FOR 2.4G BT

14.1. Block Diagram of Test Setup



14.2. The Requirement for RSS-Gen Clause 6.7

The occupied bandwidth or the “99% emission bandwidth” is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

In some cases, the “x dB bandwidth” is required, which is defined as the frequency range between two points, one at the lowest frequency below and one at the highest frequency above the carrier frequency, at which the maximum power level of the transmitted emission is attenuated x dB below the maximum in-band power level of the modulated signal, where the two points are on the outskirts of the in-band emission.

14.3. EUT Configuration on Measurement

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

14.4. Operating Condition of EUT

14.4.1. Setup the EUT and simulator as shown as Section 14.1.

14.4.2. Turn on the power of all equipment.

14.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, 2480MHz TX frequency to transmit.

14.5. Test Procedure

14.5.1. The transmitter shall be operated at its maximum carrier power measured under normal test conditions. The transmitter output was connected to the spectrum analyzer through a low loss cable.

14.5.2. The span of the spectrum analyzer shall be set large enough to capture all products of the modulation process, including the emission skirts, around the carrier frequency, but small enough to avoid having other emissions (e.g. on adjacent channels) within the span.

14.5.3. The detector of the spectrum analyzer shall be set to “Sample”. However, a peak, or peak hold, may be used in place of the sampling detector since this usually produces a wider bandwidth than the actual bandwidth (worst-case measurement). Use of a peak hold (or “Max Hold”) may be necessary to determine the occupied / x dB bandwidth if the device is not transmitting continuously.

14.5.4. The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the actual occupied / x dB bandwidth and the video bandwidth (VBW) shall not be smaller than three times the RBW value. Video averaging is not permitted.

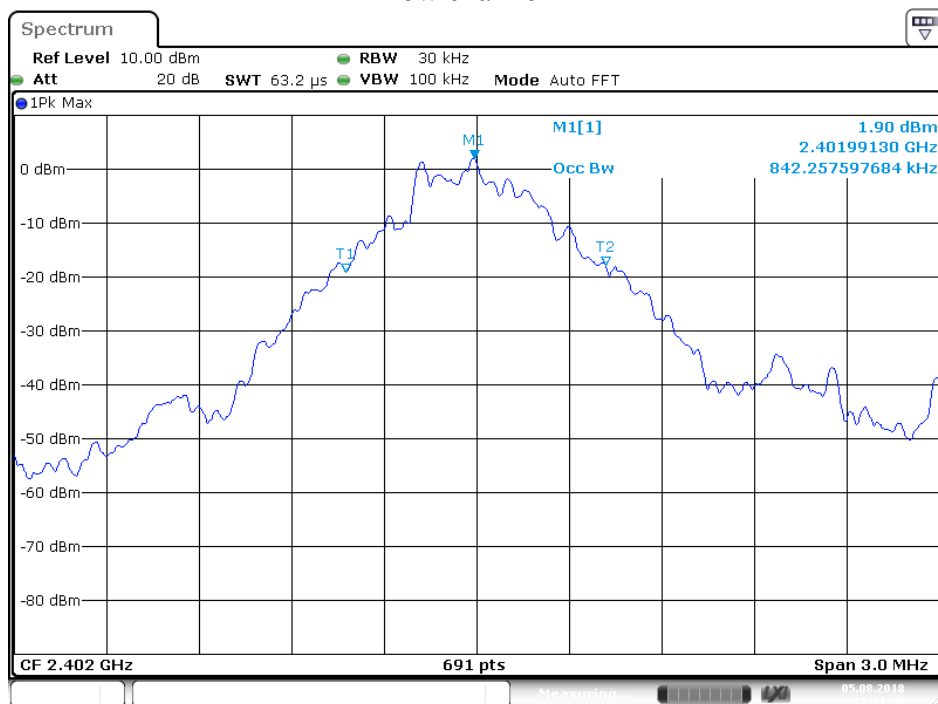
14.6. Measurement Result

Channel	Frequency (MHz)	BDR mode 99% Bandwidth (MHz)	EDR mode 99% Bandwidth (MHz)	Result
Low	2402	0.842	1.137	Pass
Middle	2441	0.838	1.142	Pass
High	2480	0.838	1.142	Pass

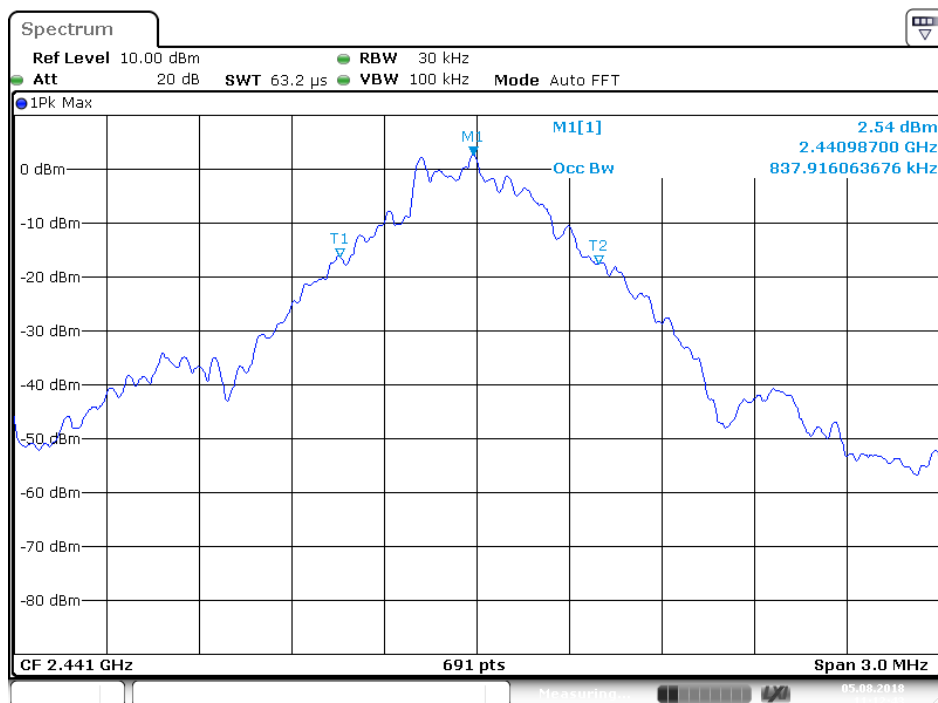
The spectrum analyzer plots are attached as below.

BDR mode

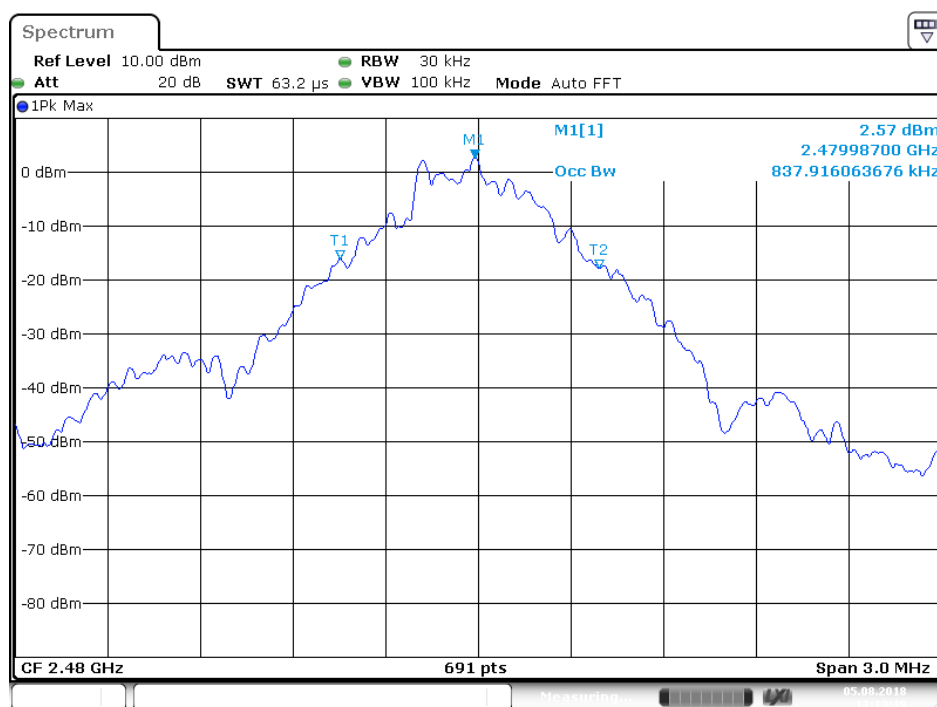
Low channel



Middle channel



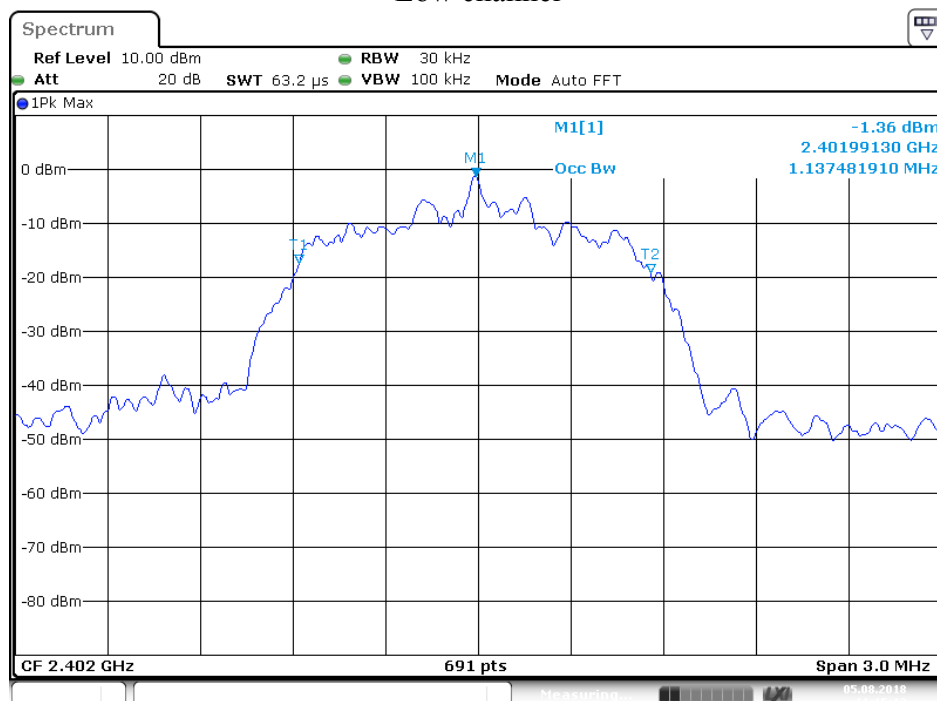
High channel



Date: 5.AUG.2018 11:13:19

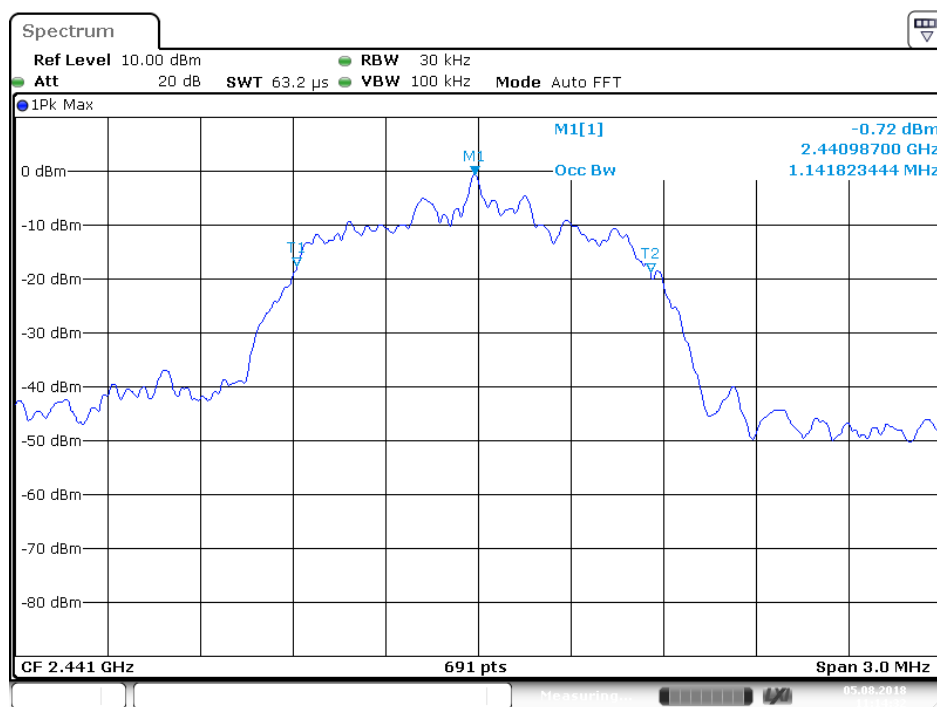
EDR mode

Low channel



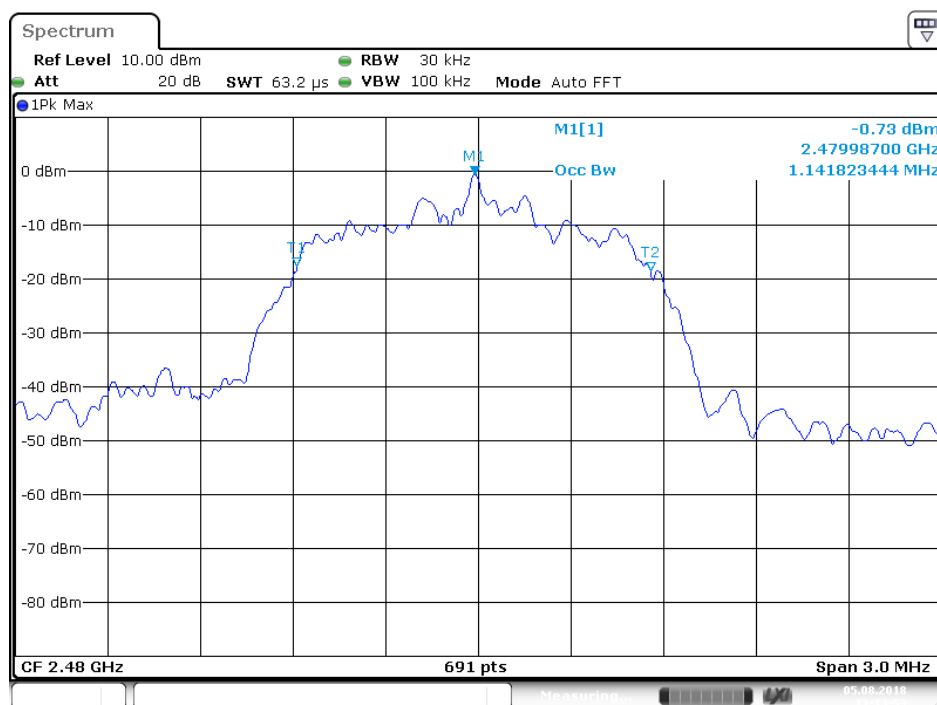
Date: 5.AUG.2018 11:15:12

Middle channel



Date: 5.AUG.2018 11:14:32

High channel



Date: 5.AUG.2018 11:13:53

Shenzhen Accurate Technology Co., Ltd.

Address: 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China

Tel: +86-755-26503290

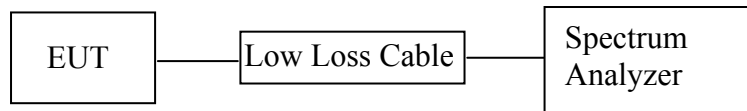
Fax: +86-755-26503396

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15.CONDUCTED SPURIOUS EMISSION COMPLIANCE TEST FOR 2.4G BT

15.1.Block Diagram of Test Setup



15.2.The Requirement For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

15.3.The Requirement For RSS-247 Section 5.5

Section 5.5: In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

15.4.EUT Configuration on Measurement

The equipment is installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

15.5.Operating Condition of EUT

15.5.1.Setup the EUT and simulator as shown as Section 15.1.

15.5.2.Turn on the power of all equipment.

15.5.3.Let the EUT work in TX modes measure it. The transmit frequency are 2402-2480 MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.

15.6.Test Procedure

15.6.1.The transmitter output was connected to the spectrum analyzer via a low loss cable.

15.6.2.Set RBW of spectrum analyzer to 100kHz and VBW to 300kHz

15.6.3.The Conducted Spurious Emission was measured and recorded.

15.7.Test Result

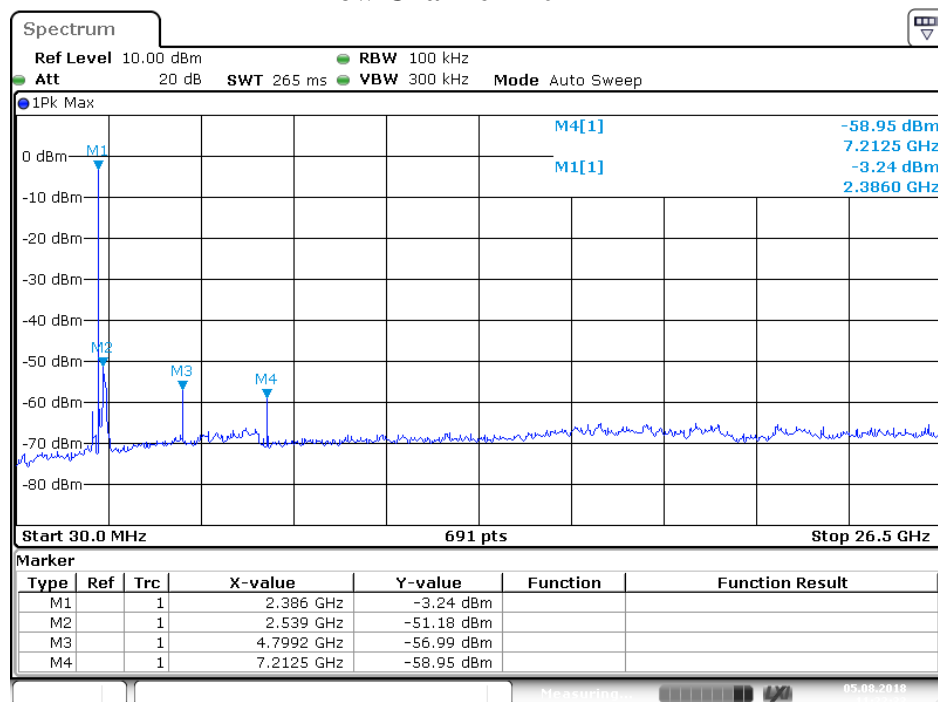
PASS.

Note: This testing was carried out on all operation modes, but only the worst case was presented in this report.

The spectrum analyzer plots are attached as below.

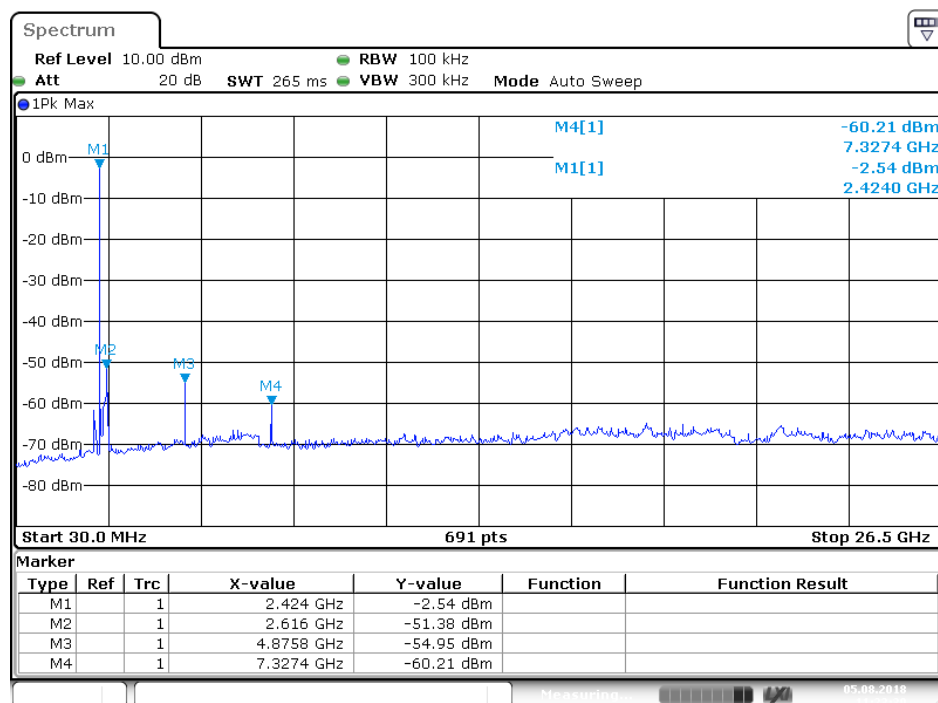
BDR mode

Low Channel 2402MHz



Date: 5.AUG.2018 11:22:33

Middle Channel 2441MHz



Date: 5.AUG.2018 11:23:38

Shenzhen Accurate Technology Co., Ltd.

Address: 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China

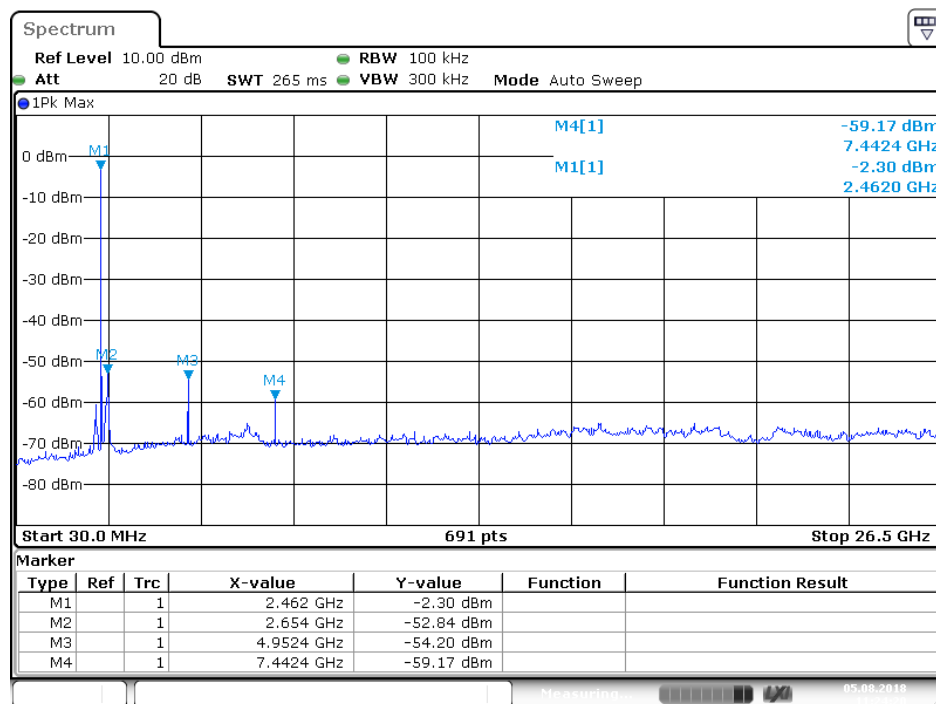
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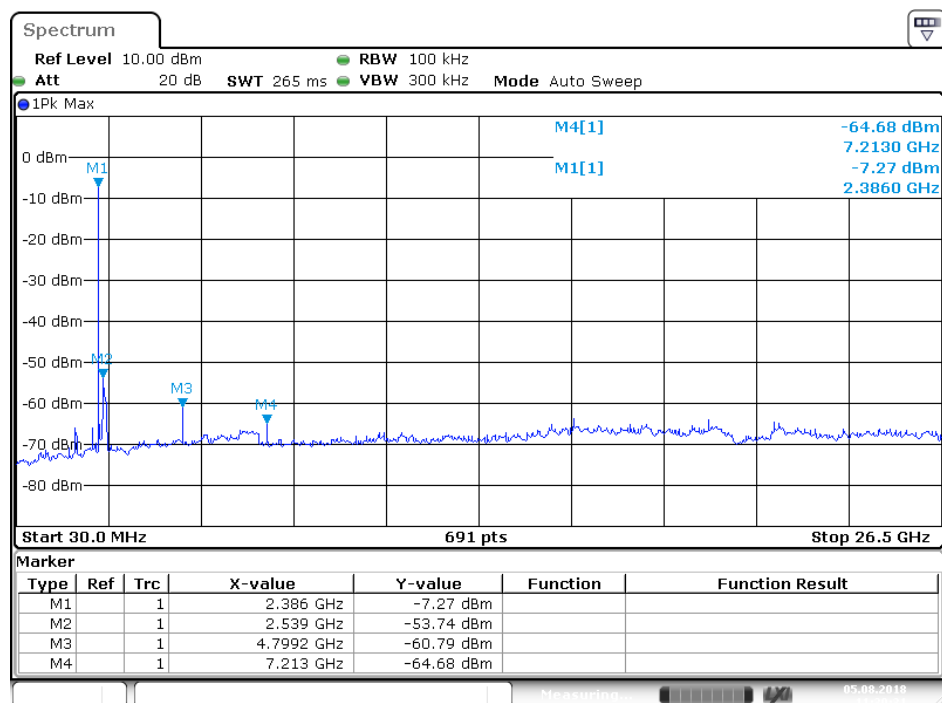
High Channel 2480MHz



Date: 5.AUG.2018 11:24:20

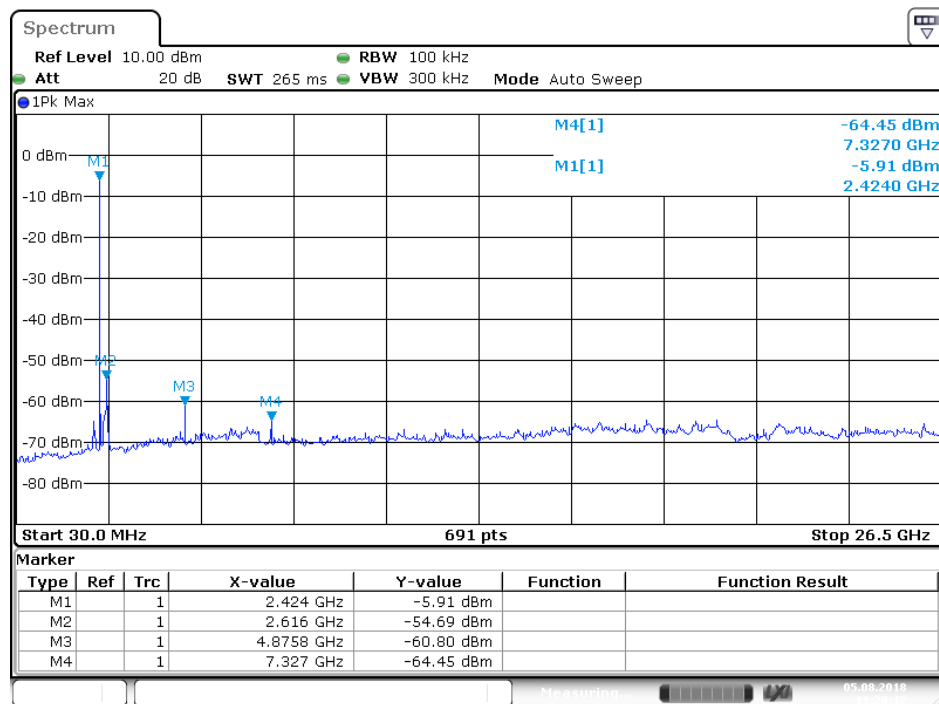
EDR mode

Low Channel 2402MHz



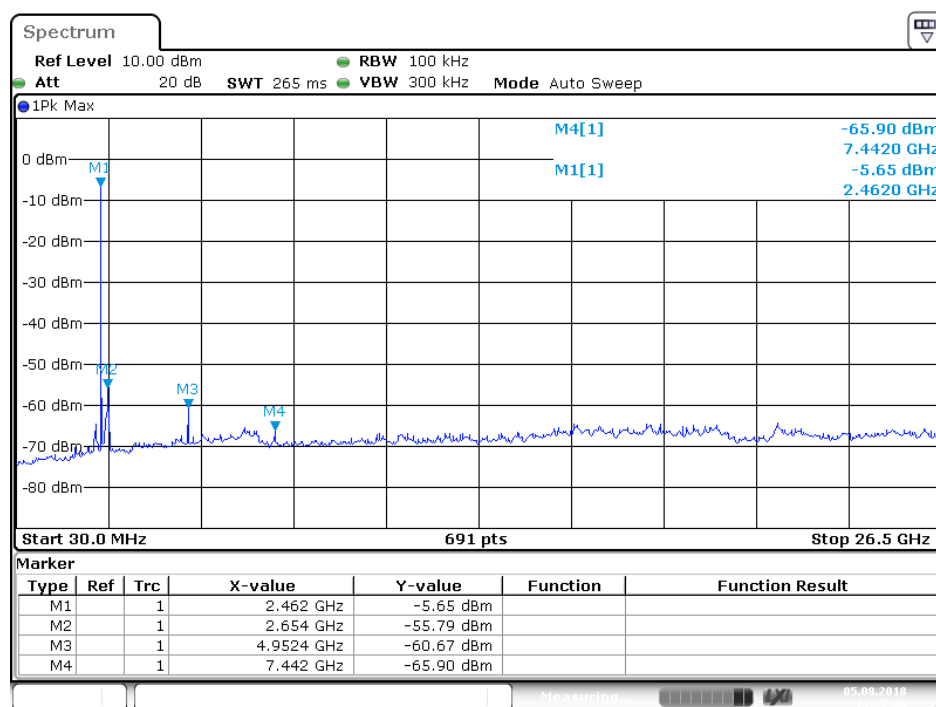
Date: 5.AUG.2018 11:30:31

Middle Channel 2441MHz



Date: 5.AUG.2018 11:28:12

High Channel 2480MHz



Date: 5.AUG.2018 11:27:00

16.ANTENNA REQUIREMENT

16.1.The Requirement

According to Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

16.2.Antenna Construction

Device is equipped with permanent attached antenna, which isn't displaced by other antenna. Therefore, the equipment complies with the antenna requirement of Section 15.203.