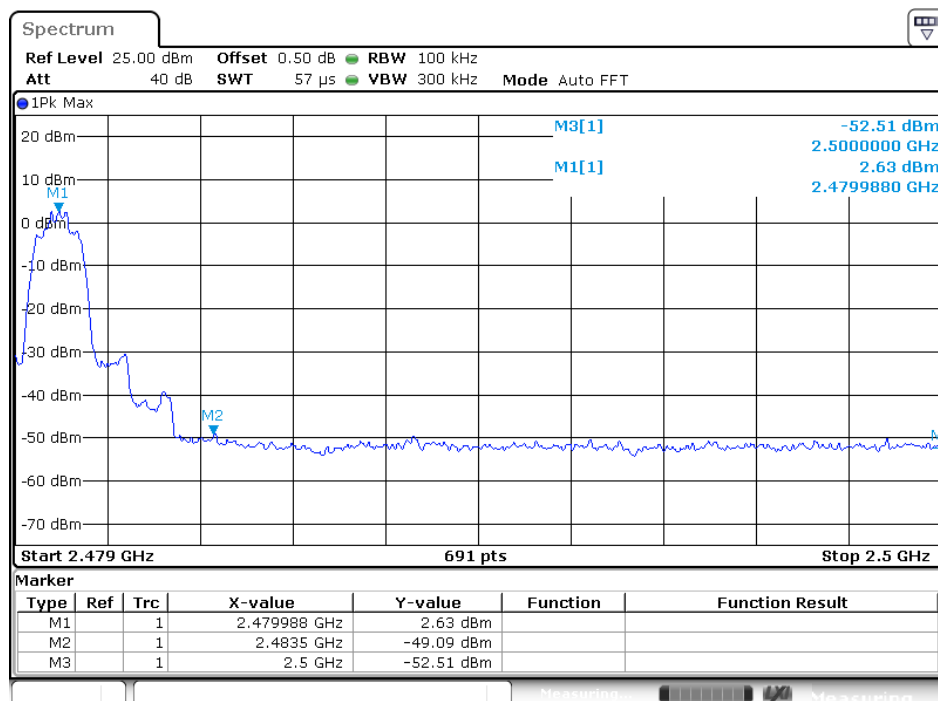
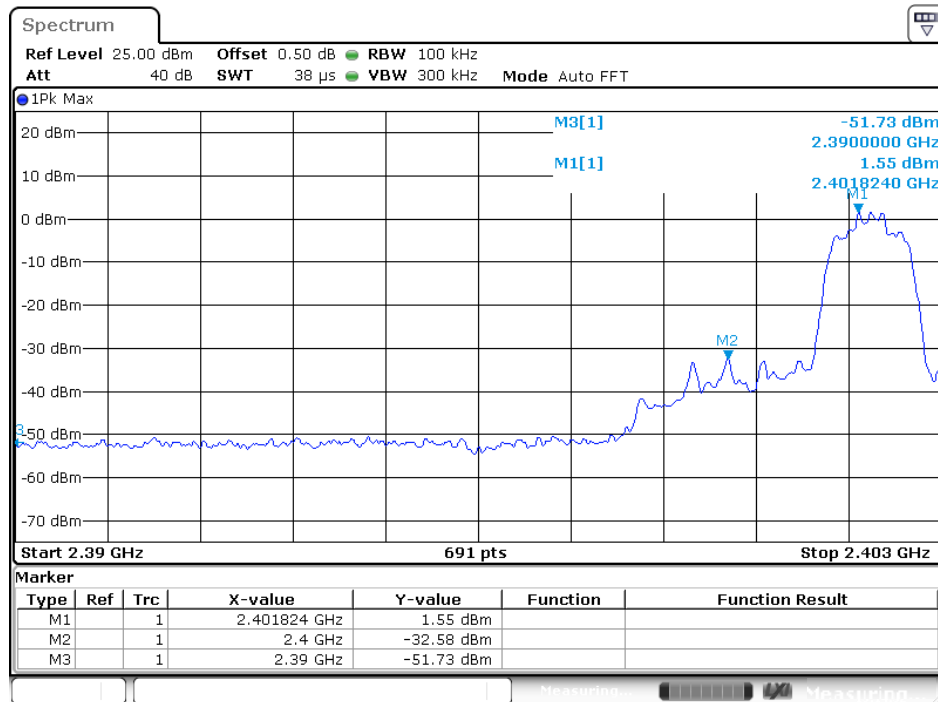


8DPSK



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 0.1 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.: frank2018 #232

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Massage Chair

Mode: TX2402MHz(GFSK)

Model: EC-528H

Manufacturer: MARUTAKATECHNO CO., LTD

Polarization: Vertical

Power Source: AC 120V; 60Hz

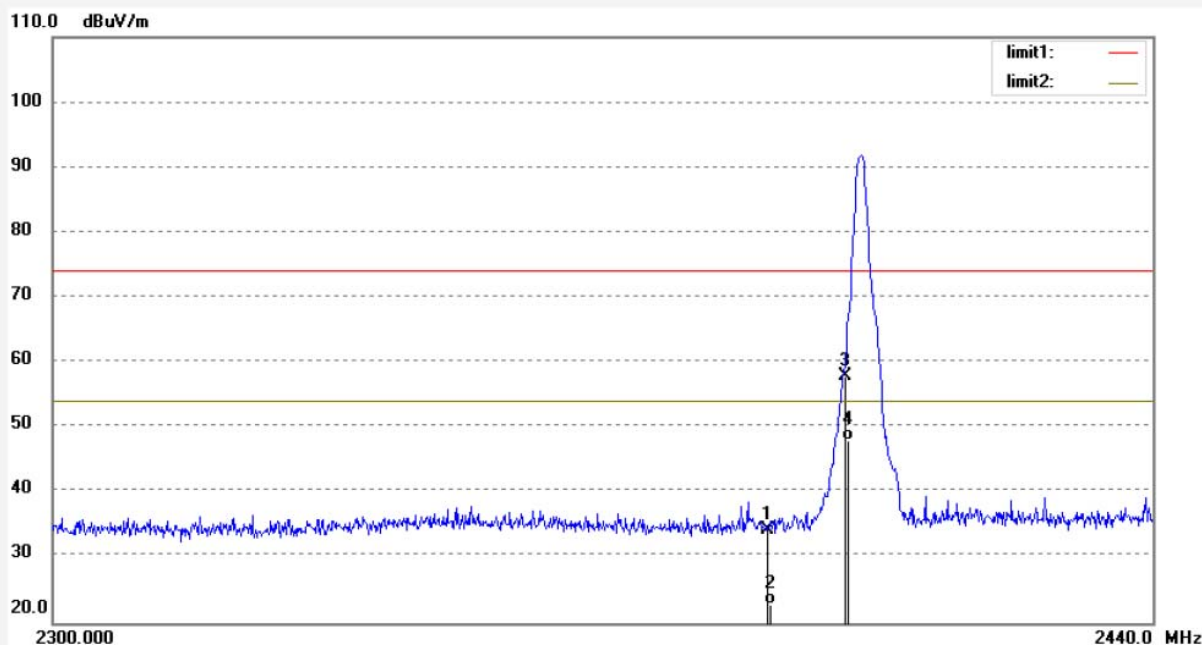
Date: 2018/03/29

Time: 15:41:35

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172091



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	38.70	-4.32	34.38	74.00	-39.62	peak	250	132	
2	2390.000	27.15	-4.32	22.83	54.00	-31.17	AVG	250	97	
3	2400.000	62.15	-4.27	57.88	74.00	-16.12	peak	250	45	
4	2400.000	52.18	-4.27	47.91	54.00	-6.09	AVG	250	102	

Note: Average measurement with peak detection at No.2&4



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Fax:+86-0755-26503396

Job No.: frank2018 #233

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Massage Chair

Mode: TX2402MHz(GFSK)

Model: EC-528H

Manufacturer: MARUTAKATECHNO CO., LTD

Polarization: Horizontal

Power Source: AC 120V; 60Hz

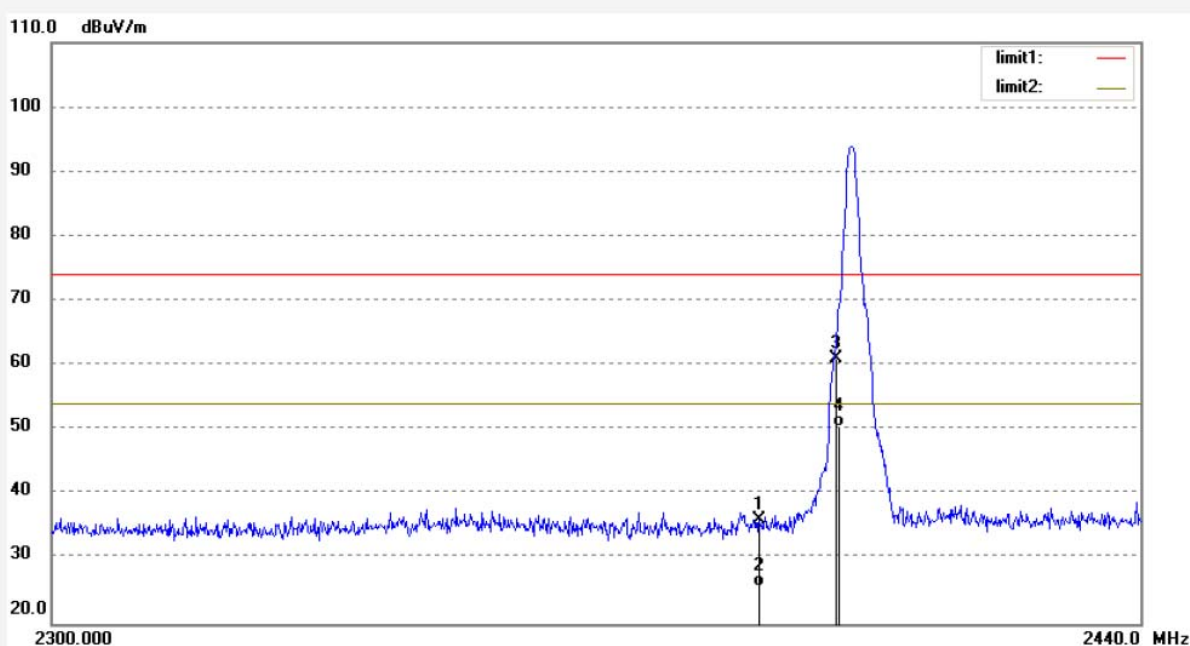
Date: 2018/03/29

Time: 15:42:28

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172091



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	40.31	-4.32	35.99	74.00	-38.01	peak	250	132	
2	2390.000	30.12	-4.32	25.80	54.00	-28.20	AVG	250	185	
3	2400.000	65.35	-4.27	61.08	74.00	-12.92	peak	250	58	
4	2400.000	54.78	-4.27	50.51	54.00	-3.49	AVG	250	241	

Note: Average measurement with peak detection at No.2&4



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Job No.: frank2018 #234

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Massage Chair

Mode: TX2480MHz(GFSK)

Model: EC-528H

Manufacturer: MARUTAKATECHNO CO., LTD

Polarization: Horizontal

Power Source: AC 120V; 60Hz

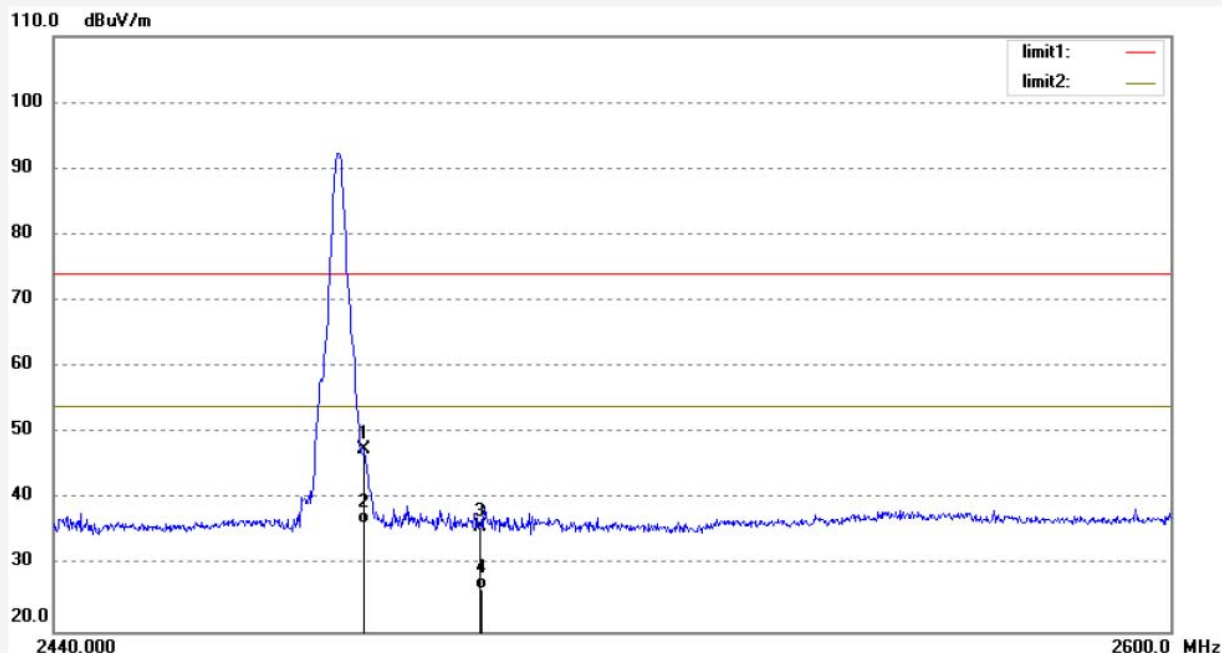
Date: 2018/03/29

Time: 15:43:51

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172091



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	51.44	-3.89	47.55	74.00	-26.45	peak	250	194	
2	2483.500	40.30	-3.89	36.41	54.00	-17.59	AVG	250	259	
3	2500.000	39.66	-3.81	35.85	74.00	-38.15	peak	250	94	
4	2500.000	30.12	-3.81	26.31	54.00	-27.69	AVG	250	267	

Note: Average measurement with peak detection at No.2&4



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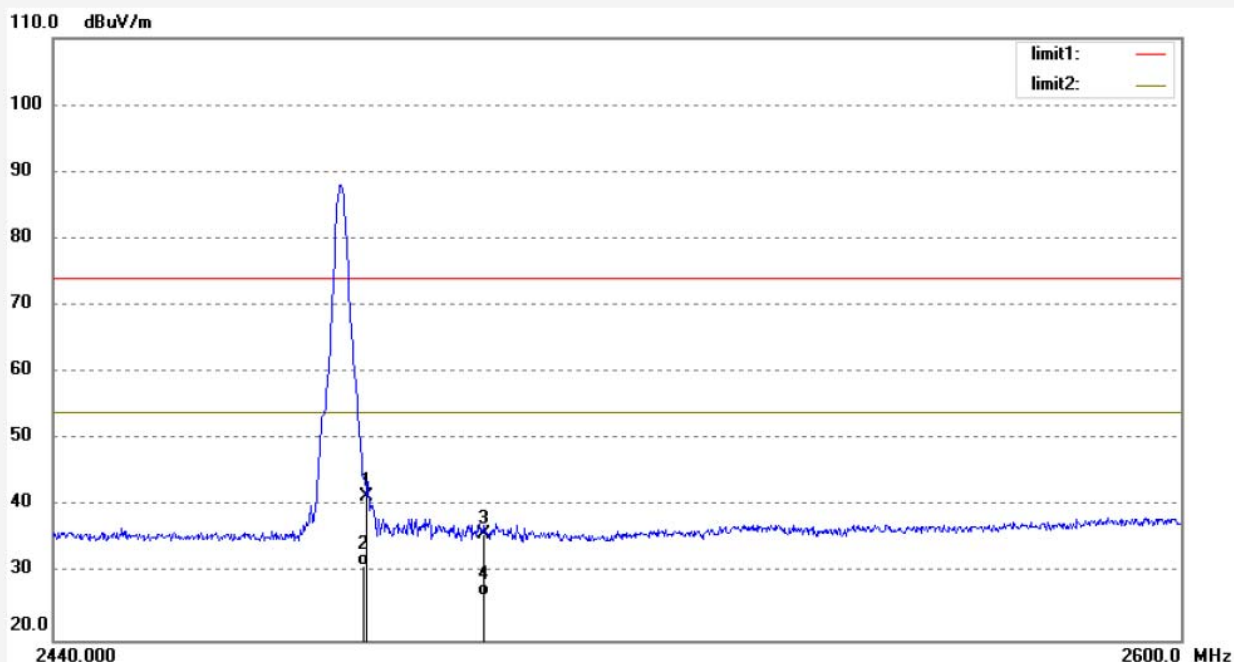
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: frank2018 #235
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Massage Chair
Mode: TX2480MHz(GFSK)
Model: EC-528H
Manufacturer: MARUTAKATECHNO CO., LTD

Polarization: Vertical
Power Source: AC 120V; 60Hz
Date: 2018/03/29
Time: 15:44:56
Engineer Signature: Frank
Distance: 3m

Note: Report NO.:ATE20172091



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	45.27	-3.89	41.38	74.00	-32.62	peak	250	121	
2	2483.500	35.12	-3.89	31.23	54.00	-22.77	AVG	250	321	
3	2500.000	39.66	-3.81	35.85	74.00	-38.15	peak	250	94	
4	2500.000	30.45	-3.81	26.64	54.00	-27.36	AVG	250	204	

Note: Average measurement with peak detection at No.2&4



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Job No.: frank2018 #230

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Massage Chair

Mode: TX2402MHz(□/4-DQPSK)

Model: EC-528H

Manufacturer: MARUTAKATECHNO CO., LTD

Polarization: Horizontal

Power Source: AC 120V; 60Hz

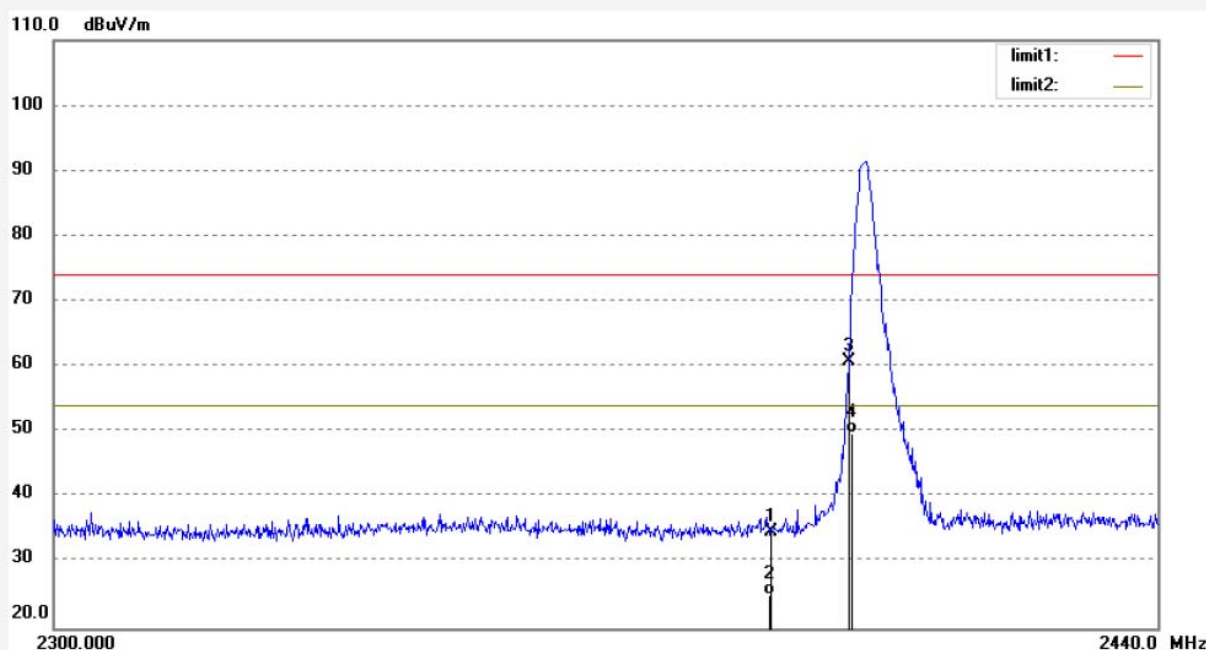
Date: 2018/03/29

Time: 15:38:58

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172091



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	38.95	-4.32	34.63	74.00	-39.37	peak	250	210	
2	2390.000	29.48	-4.32	25.16	54.00	-28.84	AVG	250	254	
3	2400.000	65.15	-4.27	60.88	74.00	-13.12	peak	250	108	
4	2400.000	54.15	-4.27	49.88	54.00	-4.12	AVG	250	121	

Note: Average measurement with peak detection at No.2&4



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Job No.: frank2018 #231

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Massage Chair

Mode: TX2402MHz(□/4-DQPSK)

Model: EC-528H

Manufacturer: MARUTAKATECHNO CO., LTD

Polarization: Vertical

Power Source: AC 120V; 60Hz

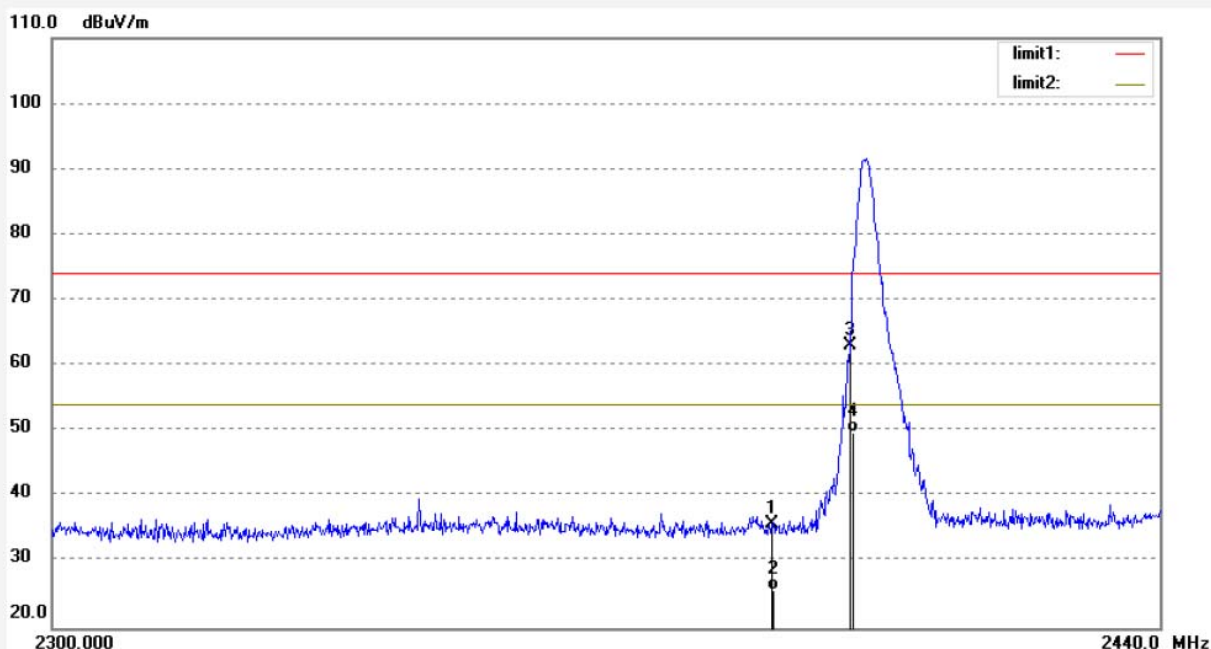
Date: 2018/03/29

Time: 15:39:52

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172091



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	40.11	-4.32	35.79	74.00	-38.21	peak	250	122	
2	2390.000	30.00	-4.32	25.68	54.00	-28.32	AVG	250	61	
3	2400.000	67.39	-4.27	63.12	74.00	-10.88	peak	250	109	
4	2400.000	54.00	-4.27	49.73	54.00	-4.27	AVG	250	232	

Note: Average measurement with peak detection at No.2&4



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Job No.: frank2018 #236

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Massage Chair

Mode: TX2480MHz(□/4-DQPSK)

Model: EC-528H

Manufacturer: MARUTAKATECHNO CO., LTD

Polarization: Vertical

Power Source: AC 120V; 60Hz

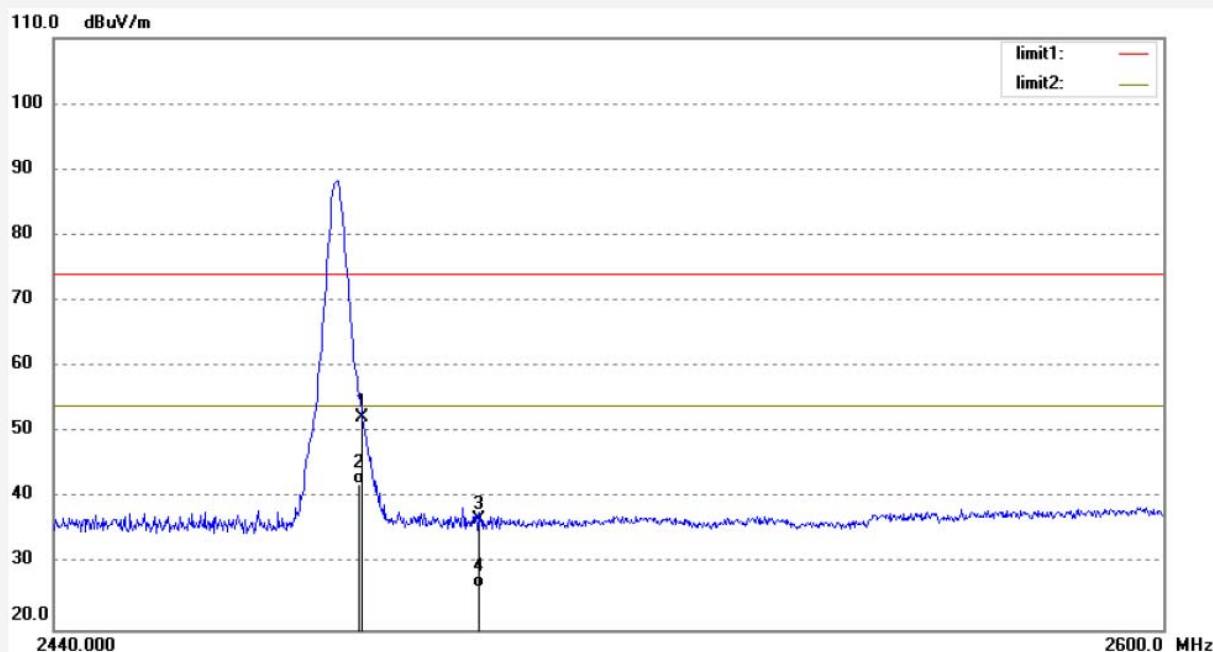
Date: 2018/03/29

Time: 15:46:19

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172091



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	56.27	-3.89	52.38	74.00	-21.62	peak	250	12	
2	2483.500	46.12	-3.89	42.23	54.00	-11.77	AVG	250	103	
3	2500.000	40.48	-3.81	36.67	74.00	-37.33	peak	250	57	
4	2500.000	30.12	-3.81	26.31	54.00	-27.69	AVG	200	124	

Note: Average measurement with peak detection at No.2&4



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Job No.: frank2018 #237

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Massage Chair

Mode: TX2480MHz(Π/4-DQPSK)

Model: EC-528H

Manufacturer: MARUTAKATECHNO CO., LTD

Polarization: Horizontal

Power Source: AC 120V; 60Hz

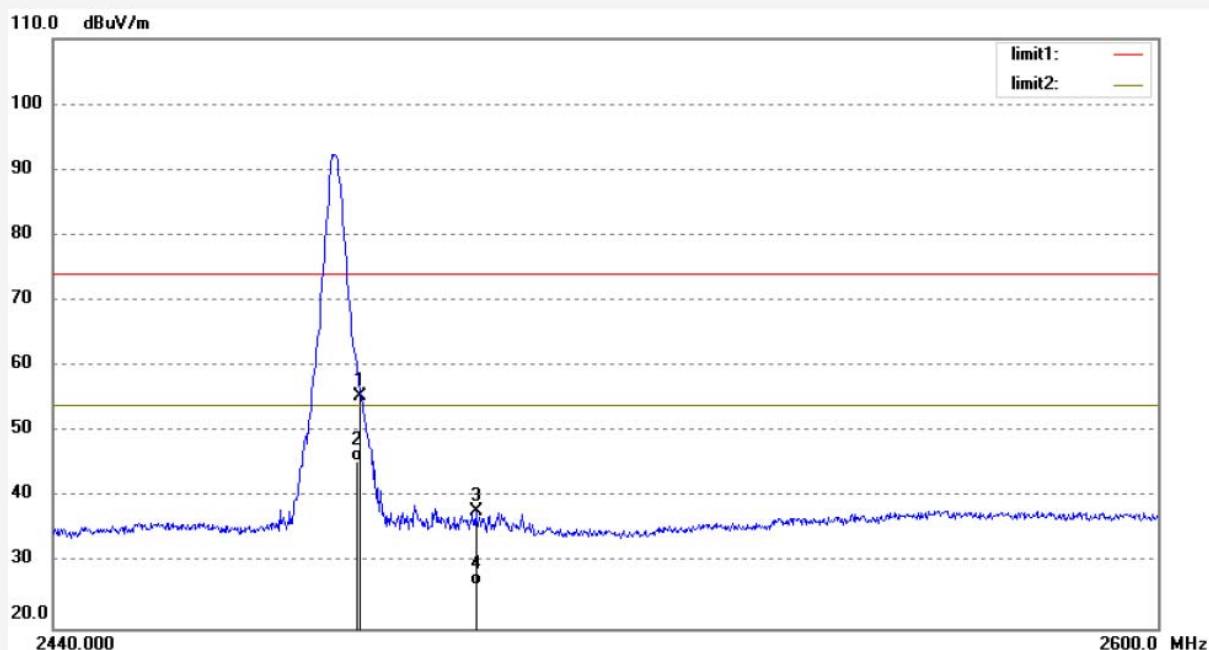
Date: 2018/03/29

Time: 15:47:14

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172091



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	59.29	-3.89	55.40	74.00	-18.60	peak	250	123	
2	2483.500	49.48	-3.89	45.59	54.00	-8.41	AVG	250	22	
3	2500.000	41.59	-3.81	37.78	74.00	-36.22	peak	250	167	
4	2500.000	30.48	-3.81	26.67	54.00	-27.33	AVG	250	154	

Note: Average measurement with peak detection at No.2&4



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Site: 1# Chamber

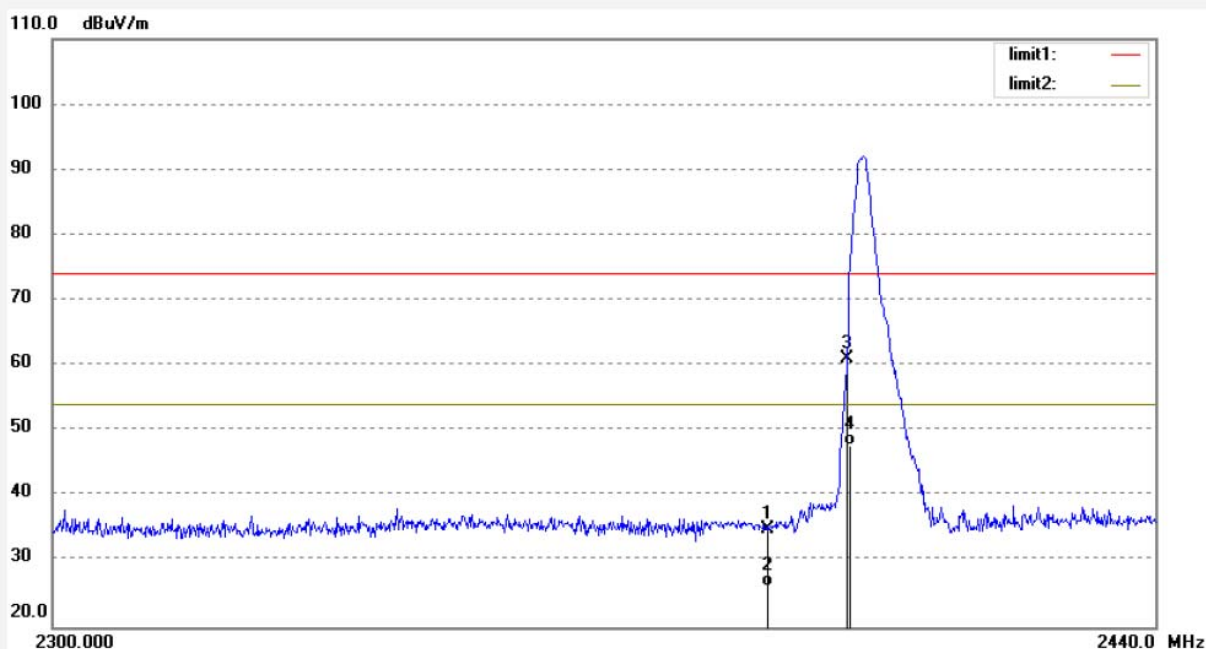
Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: frank2018 #228
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Massage Chair
Mode: TX2402MHz(8DPSK)
Model: EC-528H
Manufacturer: MARUTAKATECHNO CO., LTD

Polarization: Vertical
Power Source: AC 120V; 60Hz
Date: 2018/03/29
Time: 15:36:28
Engineer Signature: Frank
Distance: 3m

Note: Report NO.:ATE20172091



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	39.31	-4.32	34.99	74.00	-39.01	peak	250	138	
2	2390.000	30.46	-4.32	26.14	54.00	-27.86	AVG	250	214	
3	2400.000	65.44	-4.27	61.17	74.00	-12.83	peak	250	59	
4	2400.000	52.12	-4.27	47.85	54.00	-6.15	AVG	250	211	

Note: Average measurement with peak detection at No.2&4



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Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: frank2018 #229

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Massage Chair

Mode: TX2402MHz(8DPSK)

Model: EC-528H

Manufacturer: MARUTAKATECHNO CO., LTD

Polarization: Horizontal

Power Source: AC 120V; 60Hz

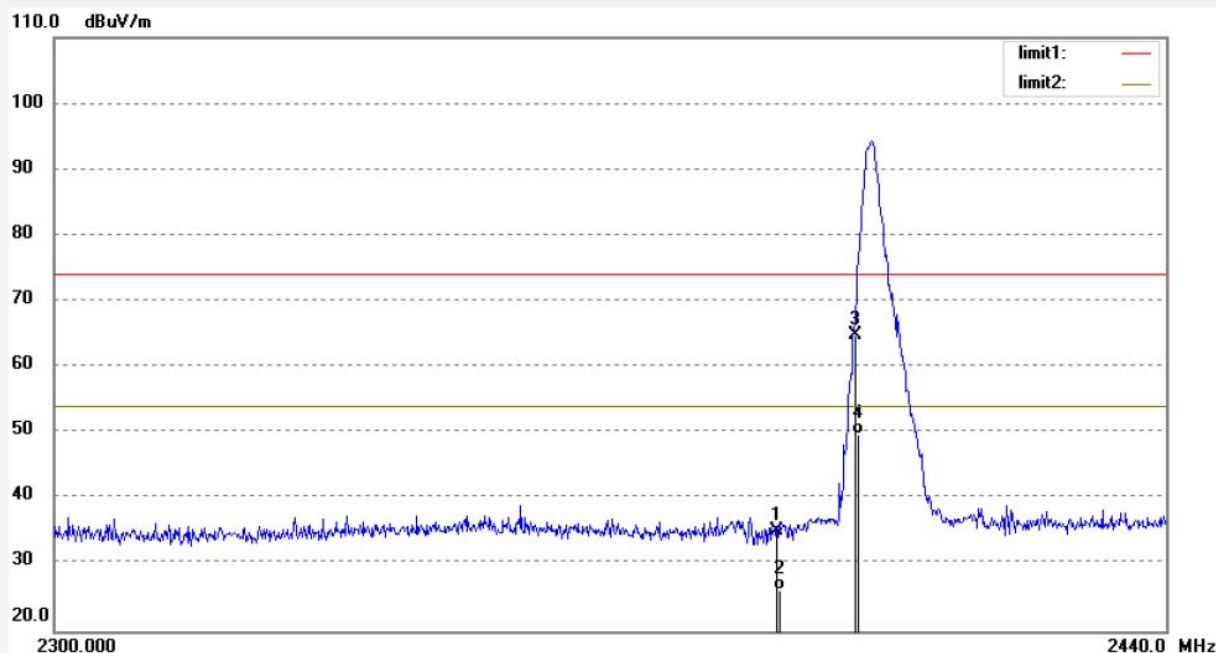
Date: 2018/03/29

Time: 15:37:54

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172091



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	39.40	-4.32	35.08	74.00	-38.92	peak	250	122	
2	2390.000	30.45	-4.32	26.13	54.00	-27.87	AVG	250	84	
3	2400.000	69.24	-4.27	64.97	74.00	-9.03	peak	250	211	
4	2400.000	54.12	-4.27	49.85	54.00	-4.15	AVG	250	100	

Note: Average measurement with peak detection at No.2&4



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Job No.: frank2018 #238

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Massage Chair

Mode: TX2480MHz(8DPSK)

Model: EC-528H

Manufacturer: MARUTAKATECHNO CO., LTD

Polarization: Horizontal

Power Source: AC 120V; 60Hz

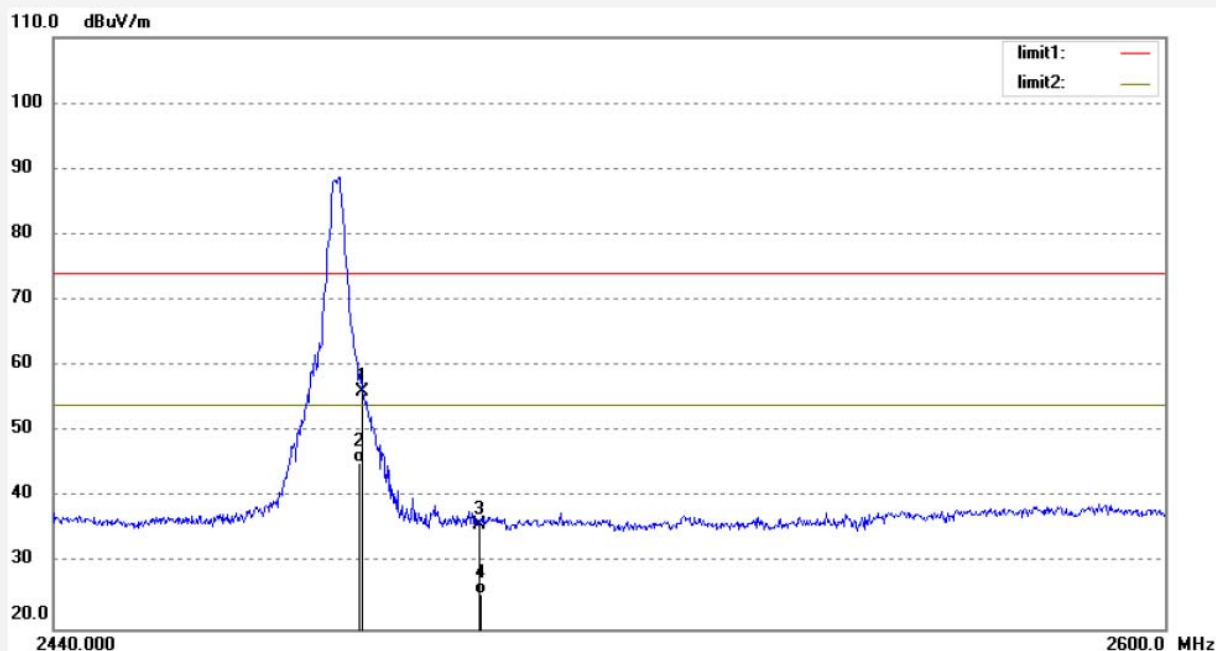
Date: 2018/03/29

Time: 15:48:28

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172091



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	59.97	-3.89	56.08	74.00	-17.92	peak	250	184	
2	2483.500	49.15	-3.89	45.26	54.00	-8.74	AVG	250	19	
3	2500.000	39.62	-3.81	35.81	74.00	-38.19	peak	250	201	
4	2500.000	29.15	-3.81	25.34	54.00	-28.66	AVG	250	215	

Note: Average measurement with peak detection at No.2&4



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Job No.: frank2018 #239

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Massage Chair

Mode: TX2480MHz(8DPSK)

Model: EC-528H

Manufacturer: MARUTAKATECHNO CO., LTD

Polarization: Vertical

Power Source: AC 120V; 60Hz

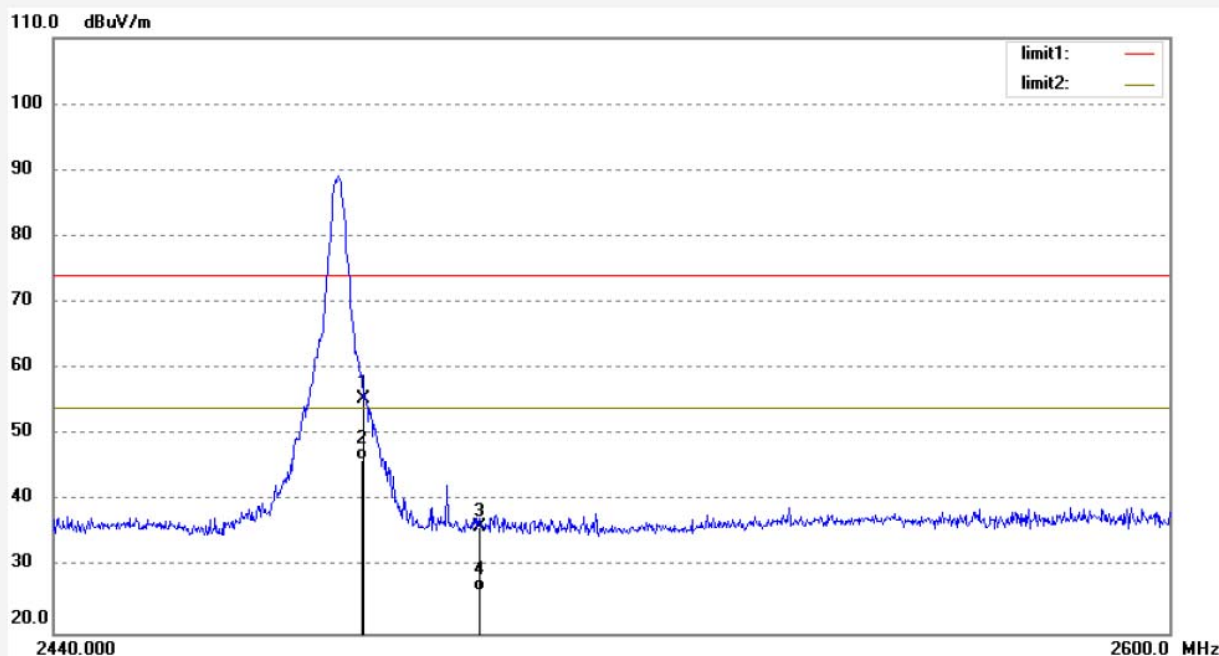
Date: 2018/03/29

Time: 15:49:32

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172091



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	59.28	-3.89	55.39	74.00	-18.61	peak	250	123	
2	2483.500	50.12	-3.89	46.23	54.00	-7.77	AVG	250	225	
3	2500.000	39.96	-3.81	36.15	74.00	-37.85	peak	250	164	
4	2500.000	30.15	-3.81	26.34	54.00	-27.66	AVG	250	92	

Note: Average measurement with peak detection at No.2&4

Hopping mode



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Fax:+86-0755-26503396

Job No.: frank2018 #240

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Massage Chair

Mode: HOPPING(GFSK)

Model: EC-528H

Manufacturer: MARUTAKATECHNO CO., LTD

Polarization: Vertical

Power Source: AC 120V; 60Hz

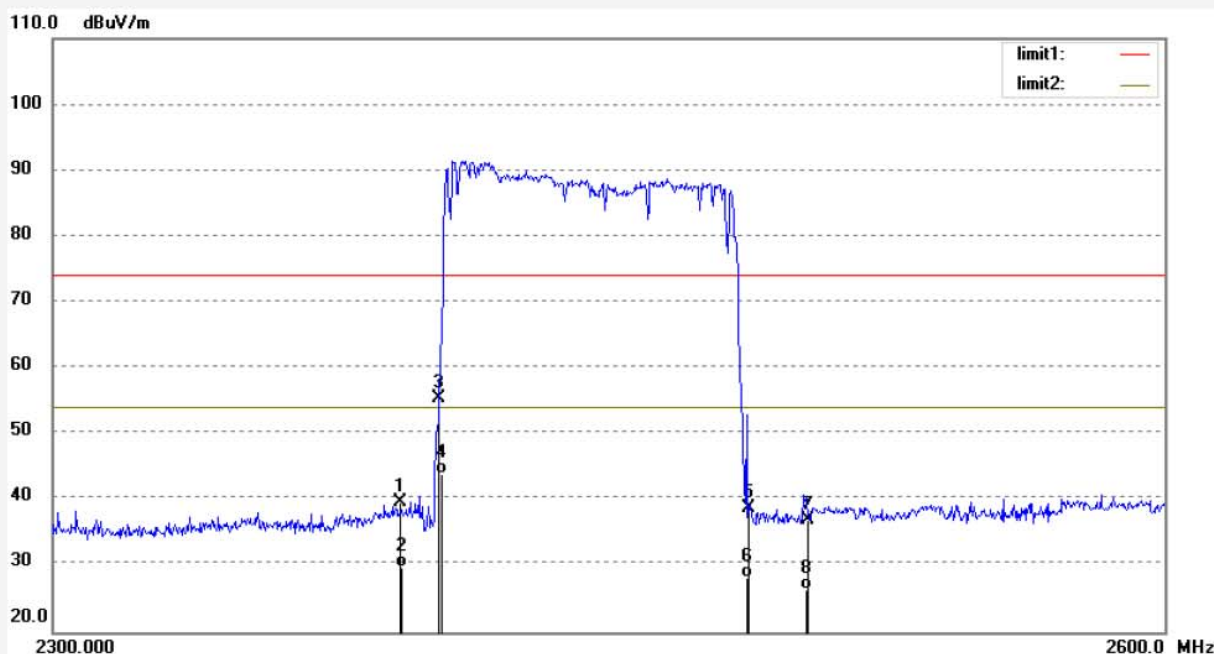
Date: 2018/03/29

Time: 15:52:55

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172091



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	43.95	-4.32	39.63	74.00	-34.37	peak	250	121	
2	2390.000	34.12	-4.32	29.80	54.00	-24.20	AVG	250	13	
3	2400.000	59.68	-4.27	55.41	74.00	-18.59	peak	250	101	
4	2400.000	48.15	-4.27	43.88	54.00	-10.12	AVG	200	127	
5	2483.500	42.62	-3.89	38.73	74.00	-35.27	peak	200	195	
6	2483.500	32.15	-3.89	28.26	54.00	-25.74	AVG	200	125	
7	2500.000	40.83	-3.81	37.02	74.00	-36.98	peak	200	111	
8	2500.000	30.12	-3.81	26.31	54.00	-27.69	AVG	250	320	

Note: Average measurement with peak detection at No.2&4&6&8



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Site: 1# Chamber

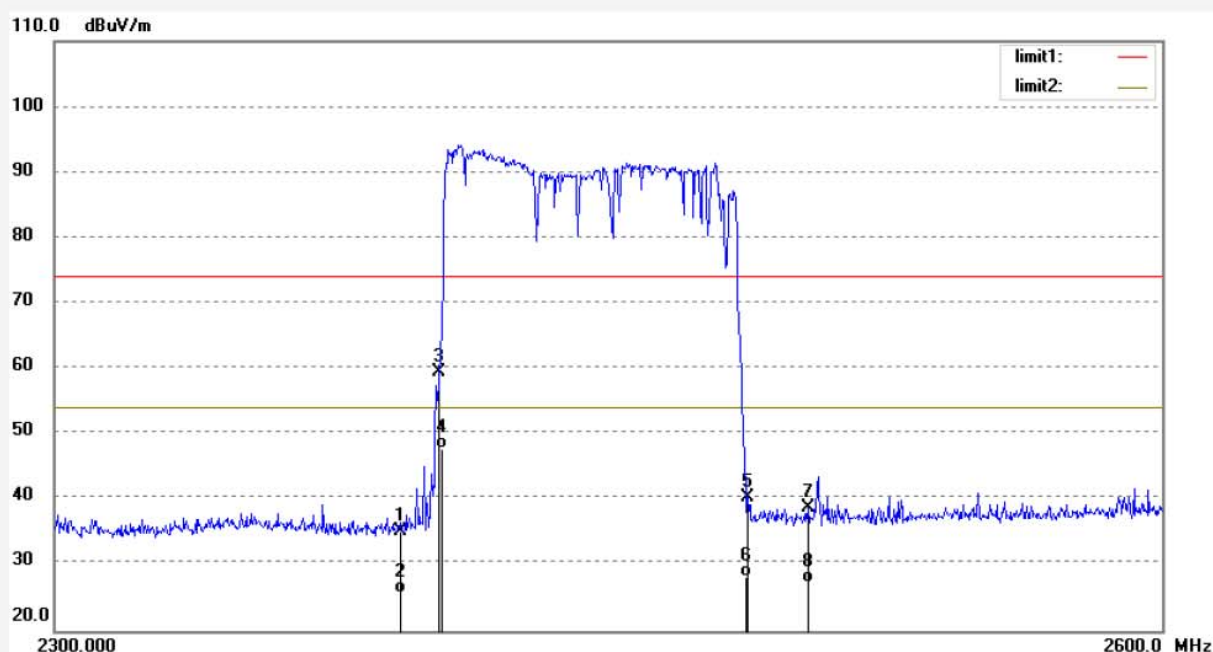
Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: frank2018 #241
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Massage Chair
Mode: HOPPING(GFSK)
Model: EC-528H
Manufacturer: MARUTAKATECHNO CO., LTD

Polarization: Horizontal
Power Source: AC 120V; 60Hz
Date: 2018/03/29
Time: 15:55:13
Engineer Signature: Frank
Distance: 3m

Note: Report NO.:ATE20172091



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	39.40	-4.32	35.08	74.00	-38.92	peak	200	138	
2	2390.000	30.12	-4.32	25.80	54.00	-28.20	AVG	200	94	
3	2400.000	63.70	-4.27	59.43	74.00	-14.57	peak	200	251	
4	2400.000	52.12	-4.27	47.85	54.00	-6.15	AVG	200	103	
5	2483.500	44.19	-3.89	40.30	74.00	-33.70	peak	250	158	
6	2483.500	32.12	-3.89	28.23	54.00	-25.77	AVG	250	149	
7	2500.000	42.57	-3.81	38.76	74.00	-35.24	peak	250	201	
8	2500.000	31.15	-3.81	27.34	54.00	-26.66	AVG	200	321	

Note: Average measurement with peak detection at No.2&4&6&8



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: frank2018 #242

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Massage Chair

Mode: HOPPING(Π/4-DQPSK)

Model: EC-528H

Manufacturer: MARUTAKATECHNO CO., LTD

Polarization: Horizontal

Power Source: AC 120V; 60Hz

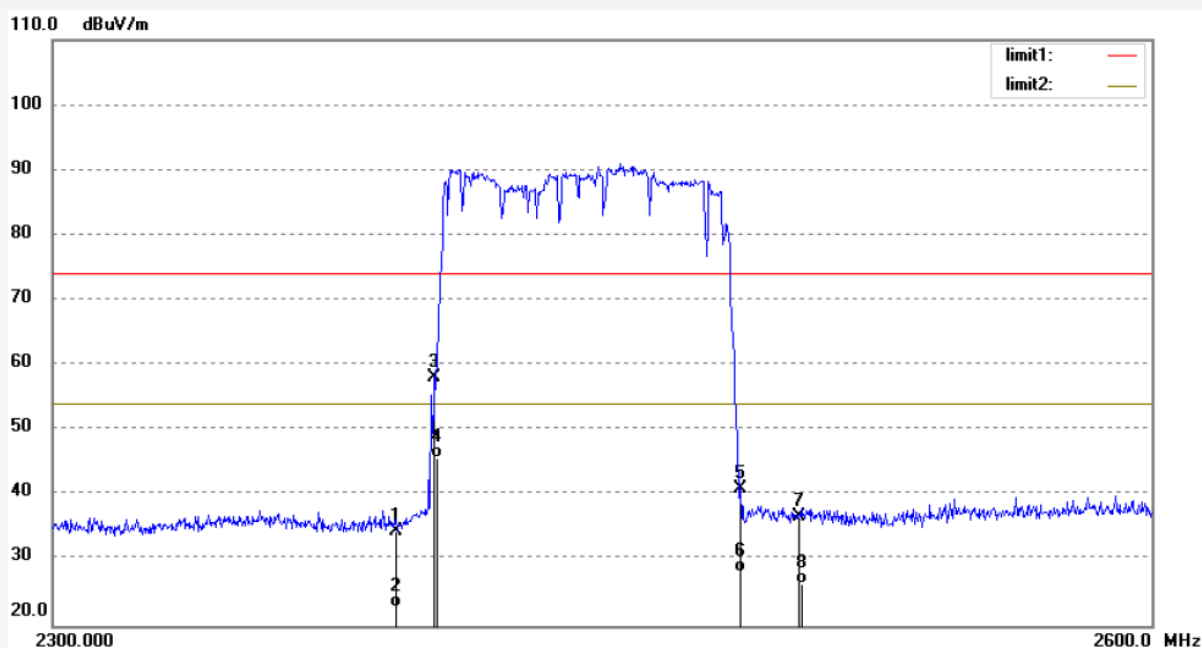
Date: 2018/03/29

Time: 15:57:29

Engineer Signature: Frank

Distance: 3m

Note: Report NO.:ATE20172091



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	38.87	-4.32	34.55	74.00	-39.45	peak	250	132	
2	2390.000	27.13	-4.32	22.81	54.00	-31.19	AVG	300	195	
3	2400.000	62.30	-4.27	58.03	74.00	-15.97	peak	300	28	
4	2400.000	50.12	-4.27	45.85	54.00	-8.15	AVG	250	312	
5	2483.500	44.90	-3.89	41.01	74.00	-32.99	peak	200	182	
6	2483.500	32.15	-3.89	28.26	54.00	-25.74	AVG	250	97	
7	2500.000	40.61	-3.81	36.80	74.00	-37.20	peak	250	83	
8	2500.000	30.18	-3.81	26.37	54.00	-27.63	AVG	250	156	

Note: Average measurement with peak detection at No.2&4&6&8



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Site: 1# Chamber

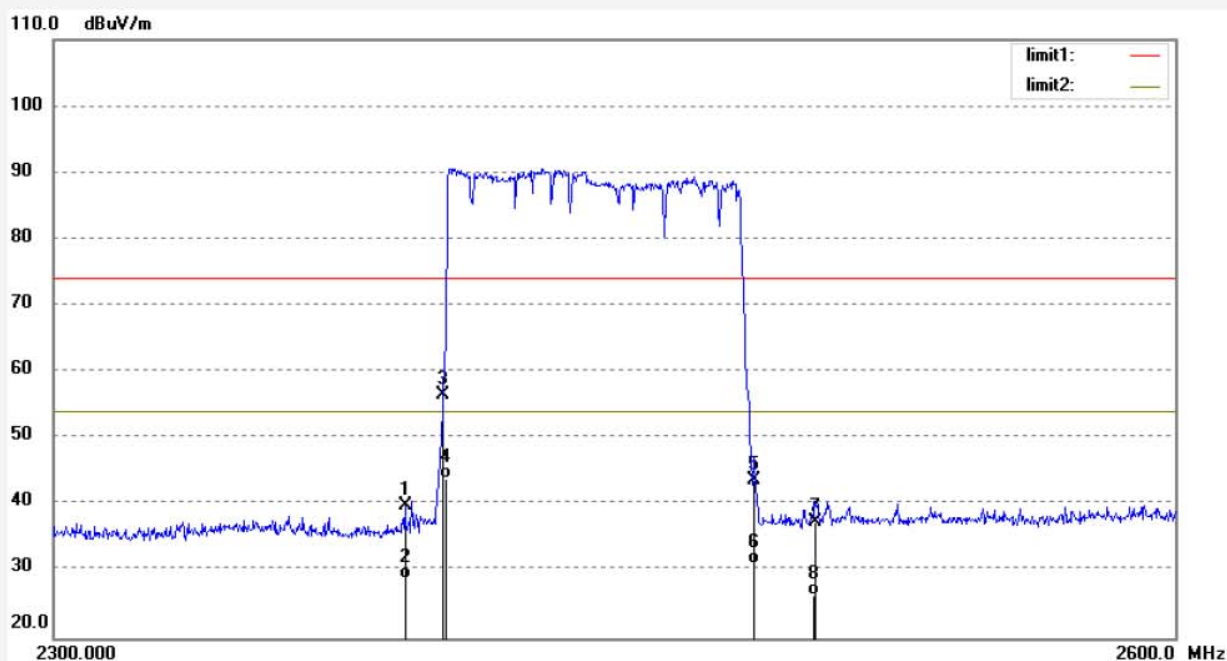
Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: frank2018 #245
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Massage Chair
Mode: HOPPING(□/4-DQPSK)
Model: EC-528H
Manufacturer: Cozzia USA LLC.

Polarization: Vertical
Power Source: AC 120V; 60Hz
Date: 2018/03/29
Time: 16:19:32
Engineer Signature: Frank
Distance: 3m

Note: Report NO.:ATE20172091



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	44.19	-4.32	39.87	74.00	-34.13	peak	150	270	
2	2390.000	33.15	-4.32	28.83	54.00	-25.17	AVG	150	351	
3	2400.000	60.83	-4.27	56.56	74.00	-17.44	peak	250	75	
4	2400.000	48.15	-4.27	43.88	54.00	-10.12	AVG	250	130	
5	2483.500	47.57	-3.89	43.68	74.00	-30.32	peak	250	91	
6	2483.500	35.12	-3.89	31.23	54.00	-22.77	AVG	250	156	
7	2500.000	41.15	-3.81	37.34	74.00	-36.66	peak	250	150	
8	2500.000	30.15	-3.81	26.34	54.00	-27.66	AVG	250	122	

Note: Average measurement with peak detection at No.2&4&6&8



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Site: 1# Chamber

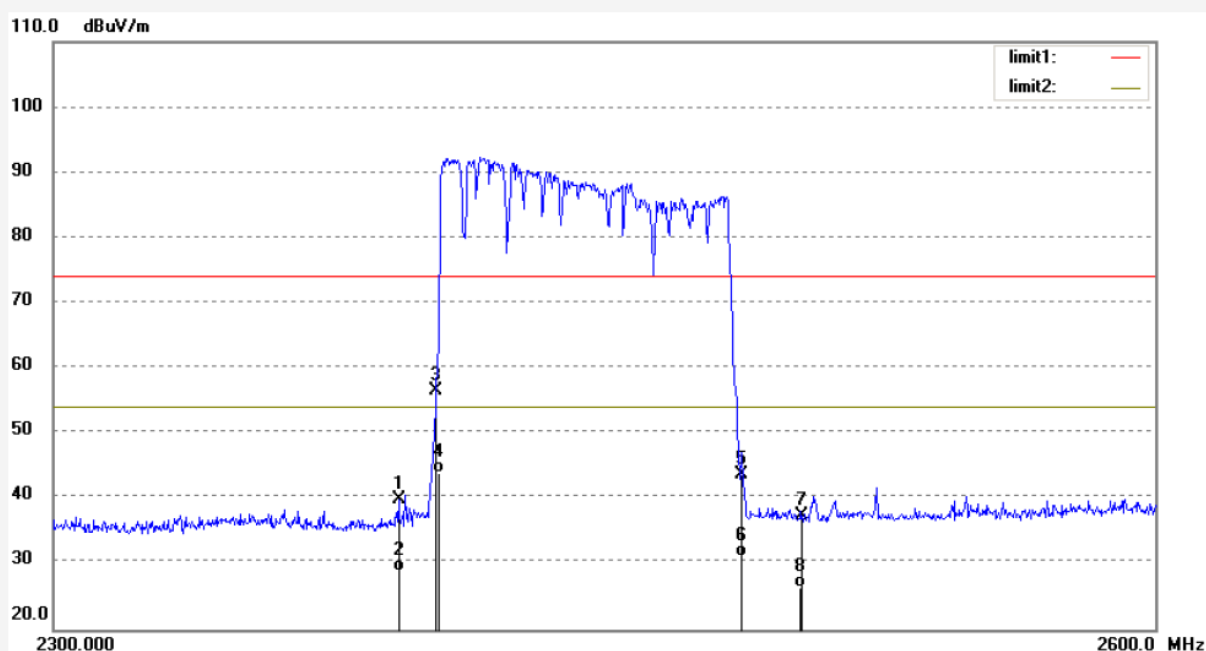
Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: frank2018 #243
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Massage Chair
Mode: HOPPING(8DPSK)
Model: EC-528H
Manufacturer: MARUTAKATECHNO CO., LTD

Polarization: Vertical
Power Source: AC 120V; 60Hz
Date: 2018/03/29
Time: 16:02:12
Engineer Signature: Frank
Distance: 3m

Note: Report NO.:ATE20172091



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	44.19	-4.32	39.87	74.00	-34.13	peak	150	270	
2	2390.000	33.15	-4.32	28.83	54.00	-25.17	AVG	150	351	
3	2400.000	60.83	-4.27	56.56	74.00	-17.44	peak	250	75	
4	2400.000	48.15	-4.27	43.88	54.00	-10.12	AVG	250	130	
5	2483.500	47.57	-3.89	43.68	74.00	-30.32	peak	250	91	
6	2483.500	35.12	-3.89	31.23	54.00	-22.77	AVG	250	156	
7	2500.000	41.15	-3.81	37.34	74.00	-36.66	peak	250	150	
8	2500.000	30.15	-3.81	26.34	54.00	-27.66	AVG	250	122	

Note: Average measurement with peak detection at No.2&4&6&8



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber

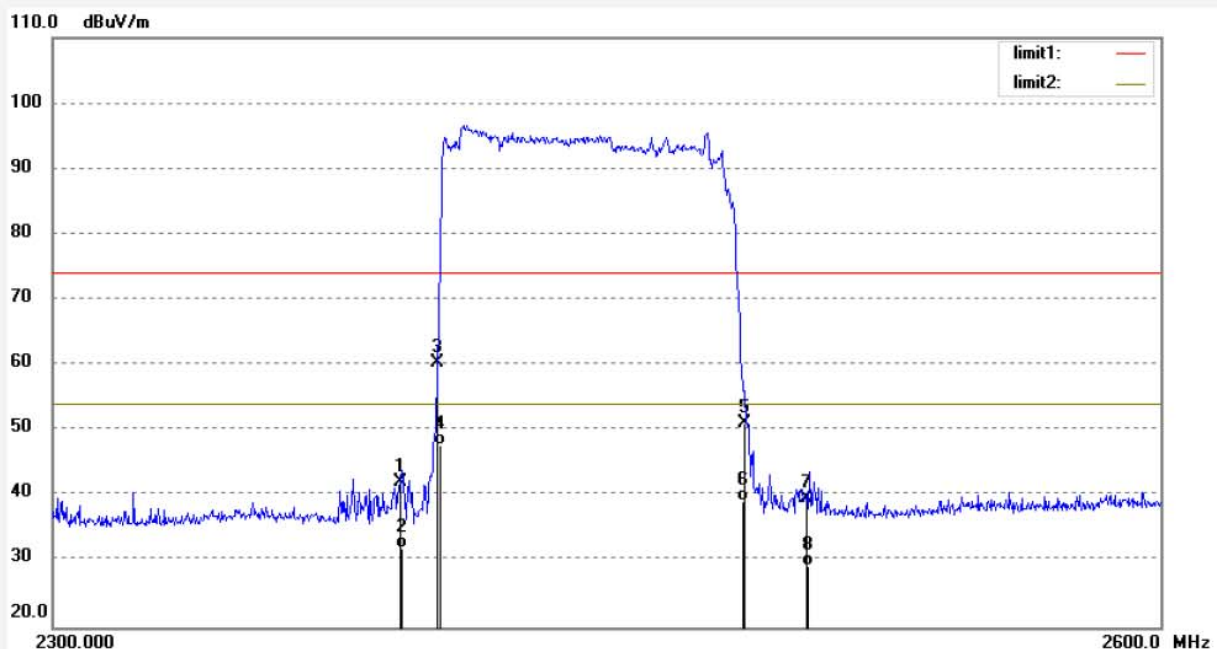
Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: frank2018 #244
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Massage Chair
Mode: HOPPING(8DPSK)
Model: EC-528H
Manufacturer: MARUTAKATECHNO CO., LTD

Polarization: Horizontal
Power Source: AC 120V; 60Hz
Date: 2018/03/29
Time: 16:15:03
Engineer Signature: Frank
Distance: 3m

Note: Report NO.:ATE20172091



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	46.50	-4.32	42.18	74.00	-31.82	peak	250	91	
2	2390.000	36.45	-4.32	32.13	54.00	-21.87	AVG	300	147	
3	2400.000	64.65	-4.27	60.38	74.00	-13.62	peak	300	132	
4	2400.000	52.12	-4.27	47.85	54.00	-6.15	AVG	250	154	
5	2483.500	55.07	-3.89	51.18	74.00	-22.82	peak	250	56	
6	2483.500	43.12	-3.89	39.23	54.00	-14.77	AVG	250	54	
7	2500.000	43.54	-3.81	39.73	74.00	-34.27	peak	250	125	
8	2500.000	33.12	-3.81	29.31	54.00	-24.69	AVG	250	214	

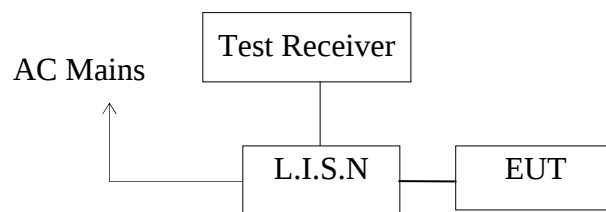
Note: Average measurement with peak detection at No.2&4&6&8

12.AC POWER LINE CONDUCTED EMISSION FOR FCC PART

15 SECTION 15.207(A)

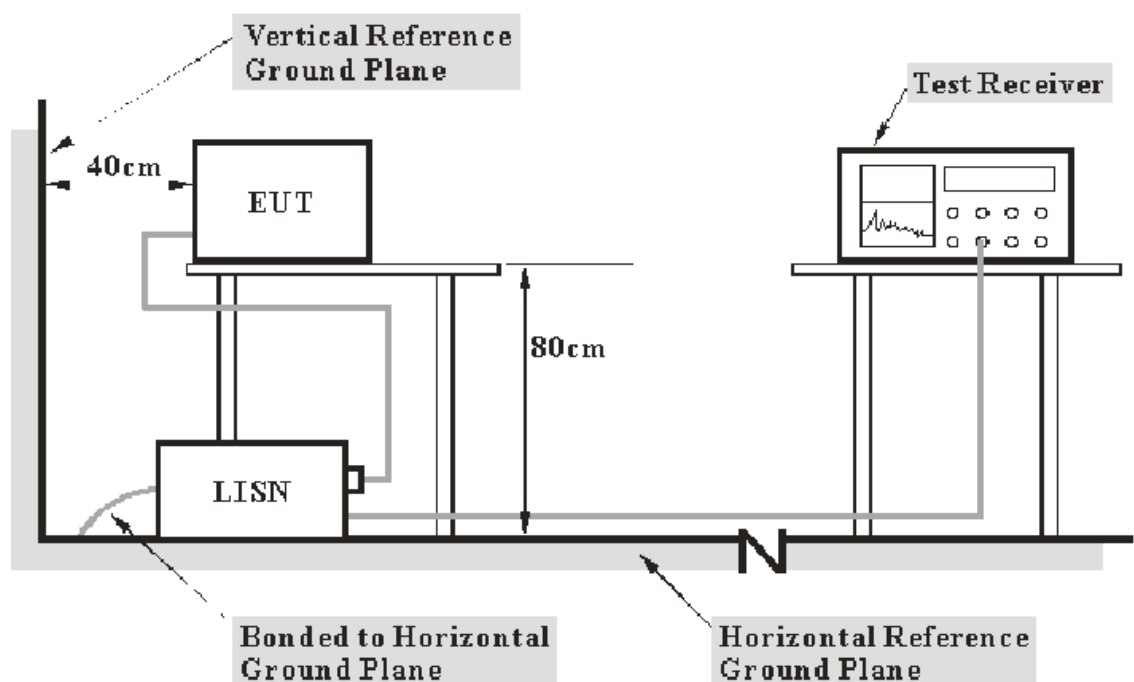
12.1.Block Diagram of Test Setup

12.1.1.Block diagram of connection between the EUT and simulators



(EUT: Massage Chair)

12.1.2.Test System 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.

12.2.Power Line Conducted Emission Measurement Limits

Frequency (MHz)	Limit dB(μ V)	
	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.		

12.3.Configuration of EUT on Measurement

The 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.

12.4.Operating Condition of EUT

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

12.4.2.Turn on the power of all equipment.

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

12.5.Test Procedure

The EUT is put on the plane 0.1m 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.

12.6.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)
xx.xxxx	11.6	42.60	27.90	60.0	50.0	-17.4	-22.1	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)

12.7.Power Line Conducted Emission Measurement Results

PASS.

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

Test mode : BT communicating (AC 120V/60Hz)								
EUT mode : EC-528H								
MEASUREMENT RESULT: "2091-2_fin"								
2018-3-5 14:01								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.150000	31.20	10.8	66	34.8	QP	L1	GND	
0.624000	30.10	11.0	56	25.9	QP	L1	GND	
1.128000	21.30	11.2	56	34.7	QP	L1	GND	
2.495000	18.70	11.3	56	37.3	QP	L1	GND	
11.840000	25.30	11.6	60	34.7	QP	L1	GND	
21.975000	24.40	11.7	60	35.6	QP	L1	GND	
MEASUREMENT RESULT: "2091-2_fin2"								
2018-3-5 14:01								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.150000	25.60	10.8	56	30.4	AV	L1	GND	
0.624000	26.60	11.0	46	19.4	AV	L1	GND	
1.870000	16.50	11.3	46	29.5	AV	L1	GND	
2.495000	11.70	11.3	46	34.3	AV	L1	GND	
11.840000	16.20	11.6	50	33.8	AV	L1	GND	
22.250000	6.90	11.7	50	43.1	AV	L1	GND	
MEASUREMENT RESULT: "2091-1_fin"								
2018-3-5 13:59								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.150000	31.20	10.8	66	34.8	QP	N	GND	
0.620000	30.10	11.0	56	25.9	QP	N	GND	
1.338000	22.00	11.2	56	34.0	QP	N	GND	
3.100000	23.60	11.3	56	32.4	QP	N	GND	
8.220000	17.40	11.5	60	42.6	QP	N	GND	
25.560000	29.20	11.7	60	30.8	QP	N	GND	
MEASUREMENT RESULT: "2091-1_fin2"								
2018-3-5 13:59								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.150000	25.70	10.8	56	30.3	AV	N	GND	
0.620000	29.20	11.0	46	16.8	AV	N	GND	
1.858000	17.70	11.2	46	28.3	AV	N	GND	
3.100000	16.80	11.3	46	29.2	AV	N	GND	
8.115000	3.90	11.5	50	46.1	AV	N	GND	
25.545000	21.40	11.7	50	28.6	AV	N	GND	

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

The spectral diagrams are attached as below.

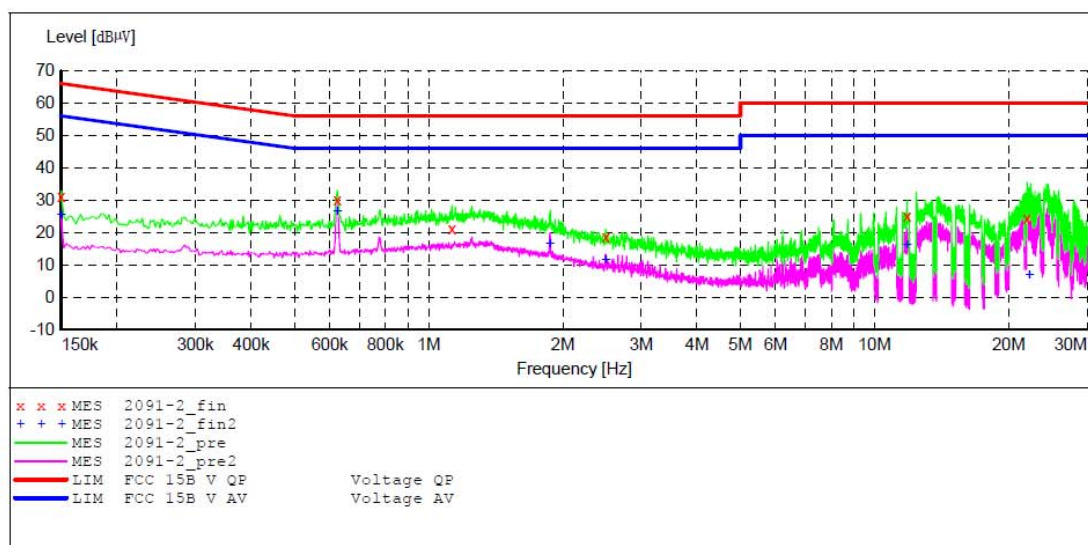
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: Massage Chair M/N:EC-528H
 Manufacturer: MARUTAKATECHNO CO., LTD
 Operating Condition: BT communicating
 Test Site: 1#Shielding Room
 Operator: Frank
 Test Specification: L 120V/60Hz
 Comment: Report NO.:ATE20172091
 Start of Test: 2018-3-5 / 14:00:04

SCAN TABLE: "V 150K-30MHz fin"

Short Description: _SUB_STD_VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008
 Average



MEASUREMENT RESULT: "2091-2_fin"

2018-3-5 14:01

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.150000	31.20	10.8	66	34.8	QP	L1	GND
0.624000	30.10	11.0	56	25.9	QP	L1	GND
1.128000	21.30	11.2	56	34.7	QP	L1	GND
2.495000	18.70	11.3	56	37.3	QP	L1	GND
11.840000	25.30	11.6	60	34.7	QP	L1	GND
21.975000	24.40	11.7	60	35.6	QP	L1	GND

MEASUREMENT RESULT: "2091-2_fin2"

2018-3-5 14:01

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.150000	25.60	10.8	56	30.4	AV	L1	GND
0.624000	26.60	11.0	46	19.4	AV	L1	GND
1.870000	16.50	11.3	46	29.5	AV	L1	GND
2.495000	11.70	11.3	46	34.3	AV	L1	GND
11.840000	16.20	11.6	50	33.8	AV	L1	GND
22.250000	6.90	11.7	50	43.1	AV	L1	GND

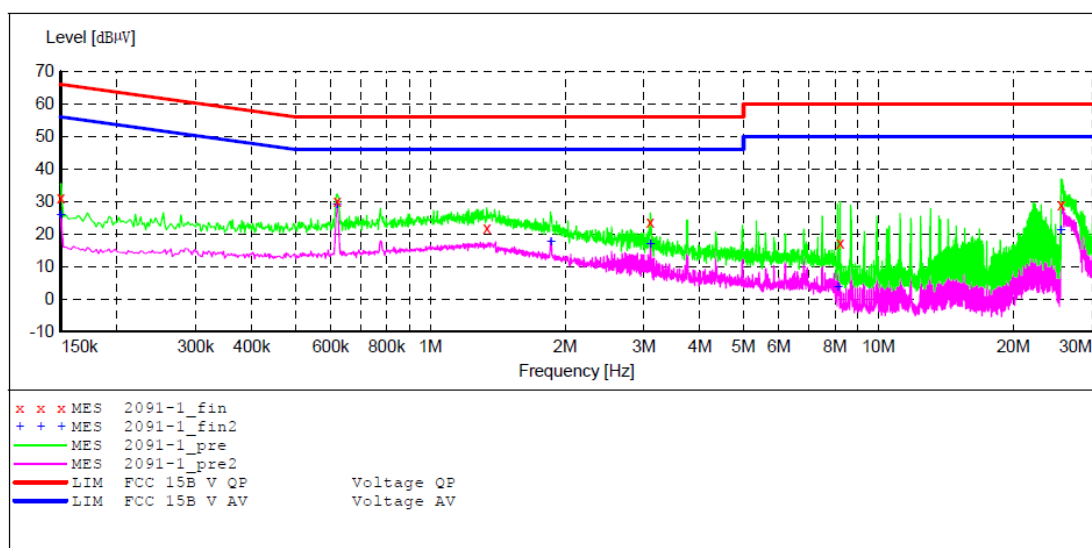
ACCURATE TECHNOLOGY CO.,LTD

CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: Massage Chair M/N:EC-528H
 Manufacturer: MARUTAKATECHNO CO., LTD
 Operating Condition: BT communicating
 Test Site: 1#Shielding Room
 Operator: Frank
 Test Specification: N 120V/60Hz
 Comment: Report NO.:ATE20172091
 Start of Test: 2018-3-5 / 13:57:19

SCAN TABLE: "V 150K-30MHz fin"

Short Description: _SUB_STD_VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008
 Average



MEASUREMENT RESULT: "2091-1_fin"

2018-3-5 13:59

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.150000	31.20	10.8	66	34.8	QP	N	GND
0.620000	30.10	11.0	56	25.9	QP	N	GND
1.338000	22.00	11.2	56	34.0	QP	N	GND
3.100000	23.60	11.3	56	32.4	QP	N	GND
8.220000	17.40	11.5	60	42.6	QP	N	GND
25.560000	29.20	11.7	60	30.8	QP	N	GND

MEASUREMENT RESULT: "2091-1_fin2"

2018-3-5 13:59

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.150000	25.70	10.8	56	30.3	AV	N	GND
0.620000	29.20	11.0	46	16.8	AV	N	GND
1.858000	17.70	11.2	46	28.3	AV	N	GND
3.100000	16.80	11.3	46	29.2	AV	N	GND
8.115000	3.90	11.5	50	46.1	AV	N	GND
25.545000	21.40	11.7	50	28.6	AV	N	GND

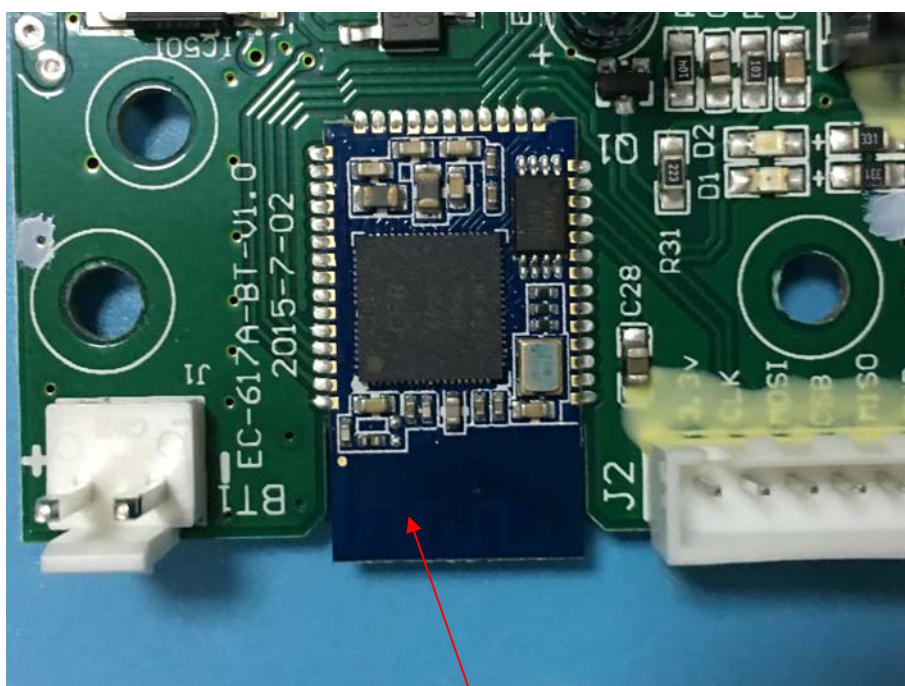
13.ANTENNA REQUIREMENT

13.1.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.

13.2.Antenna Construction

Device is equipped with permanent attached antenna, which isn't displaced by other antenna. The Max Antenna gain of EUT is 2.5dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.



Antenna

***** End of Test Report *****