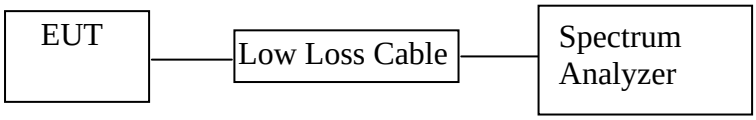
11.BAND EDGE COMPLIANCE TEST

11.1.Block Diagram of Test Setup



(EUT: Turntable)

11.2.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).

11.3.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.

11.4.Operating Condition of EUT

11.4.1.Setup the EUT and simulator as shown as Section 11.1.

11.4.2.Turn on the power of all equipment.

11.4.3.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.

11.5.Test Procedure

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

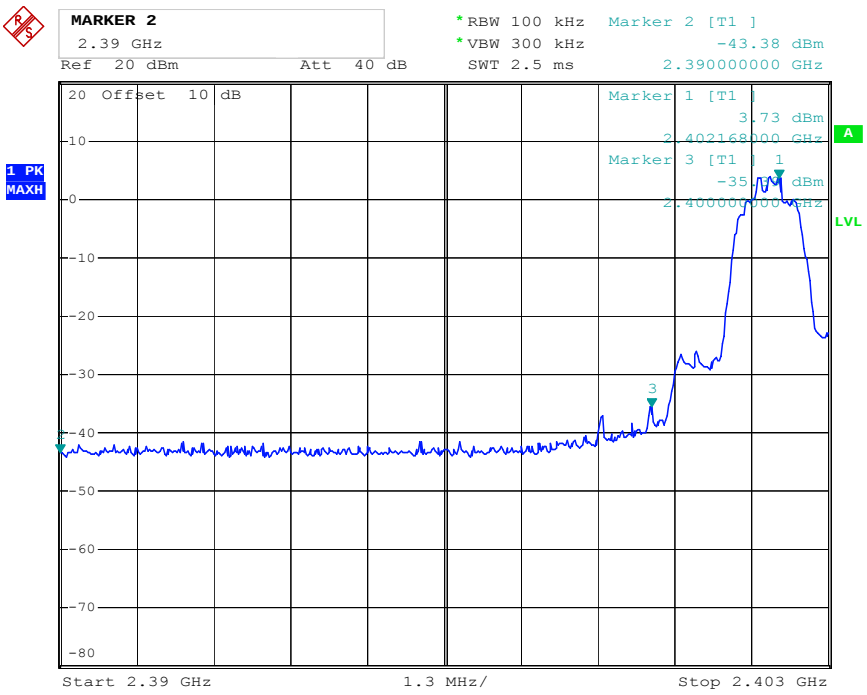
11.5.2.Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz with convenient frequency span including 100 kHz bandwidth from band edge.

11.5.3.The band edges was measured and recorded.

11.6.Test Result

Frequency (MHz)	Result of Band Edge (dBc)	Limit of Band Edge (dBc)
GFSK		
2400.00	31.66	> 20dBc
2483.50	36.14	> 20dBc
Π/4-DQPSK Mode		
2400.00	33.14	> 20dBc
2483.50	36.96	> 20dBc
8DPSK		
2400.00	33.33	> 20dBc
2483.50	35.04	> 20dBc

GFSK



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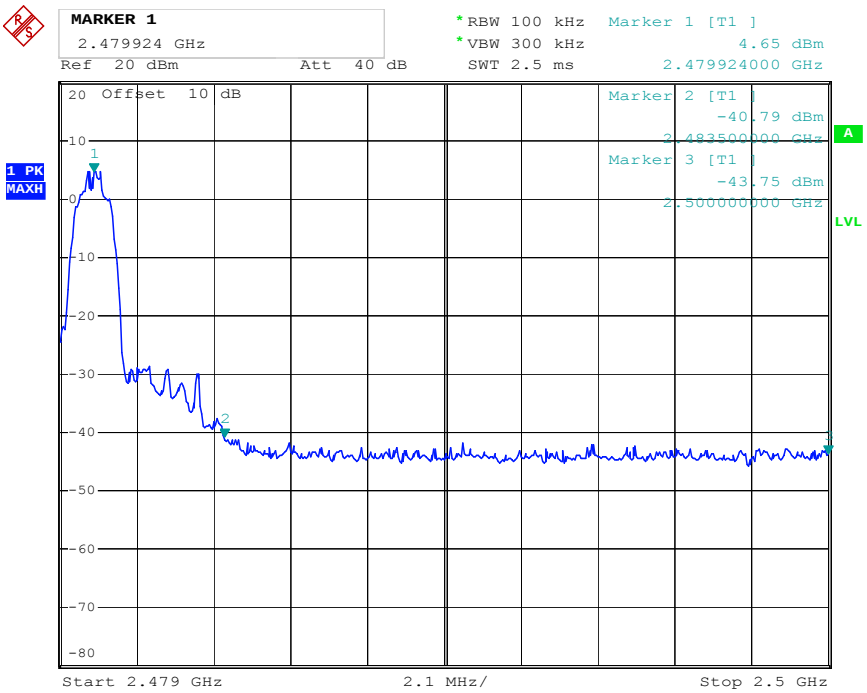
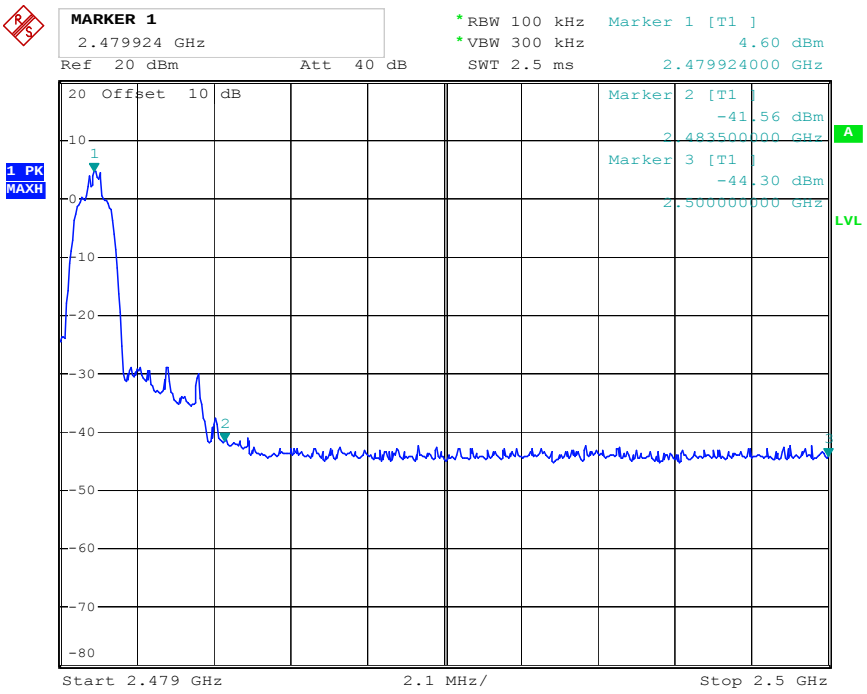


Date: 27.FEB.2017 15:49:42

Π/4-DQPSK Mode



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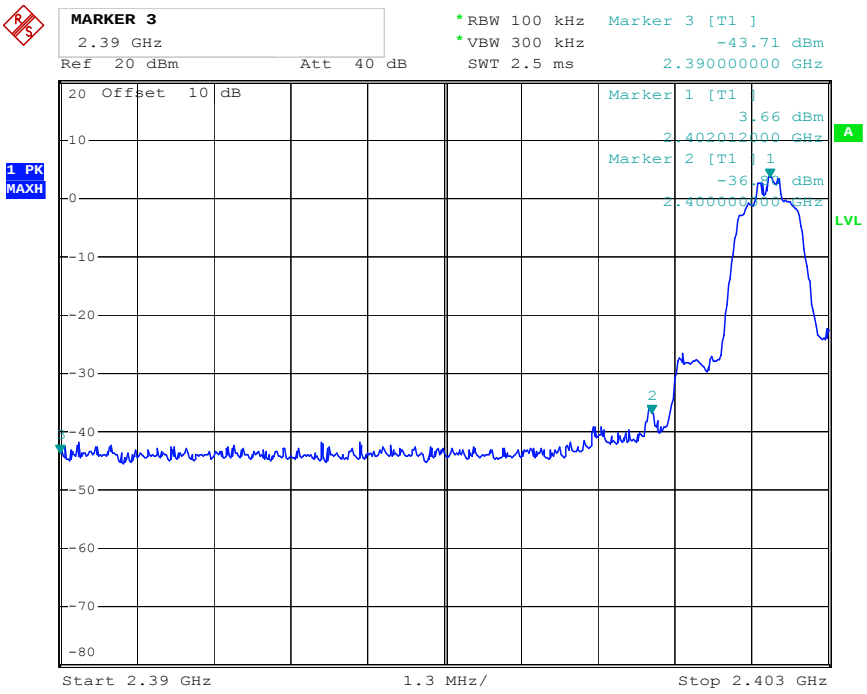
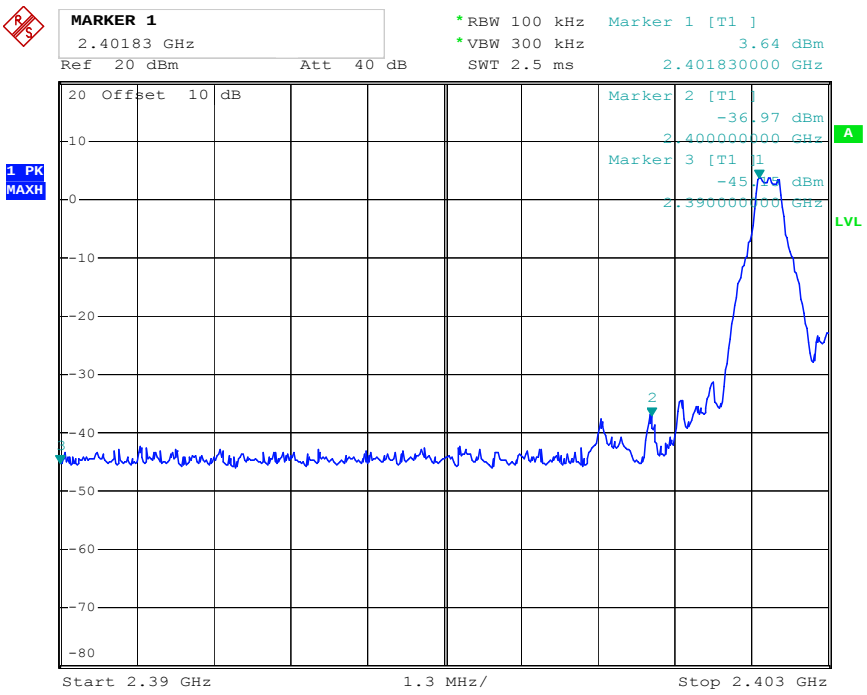


Date: 27.FEB.2017 15:53:15

8DPSK



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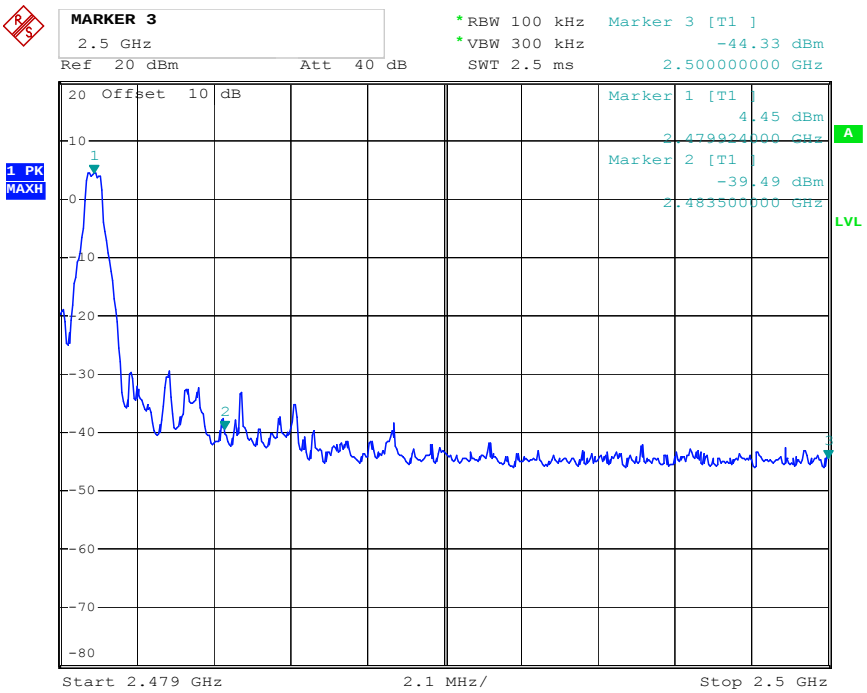

Date: 27.FEB.2017 15:55:28

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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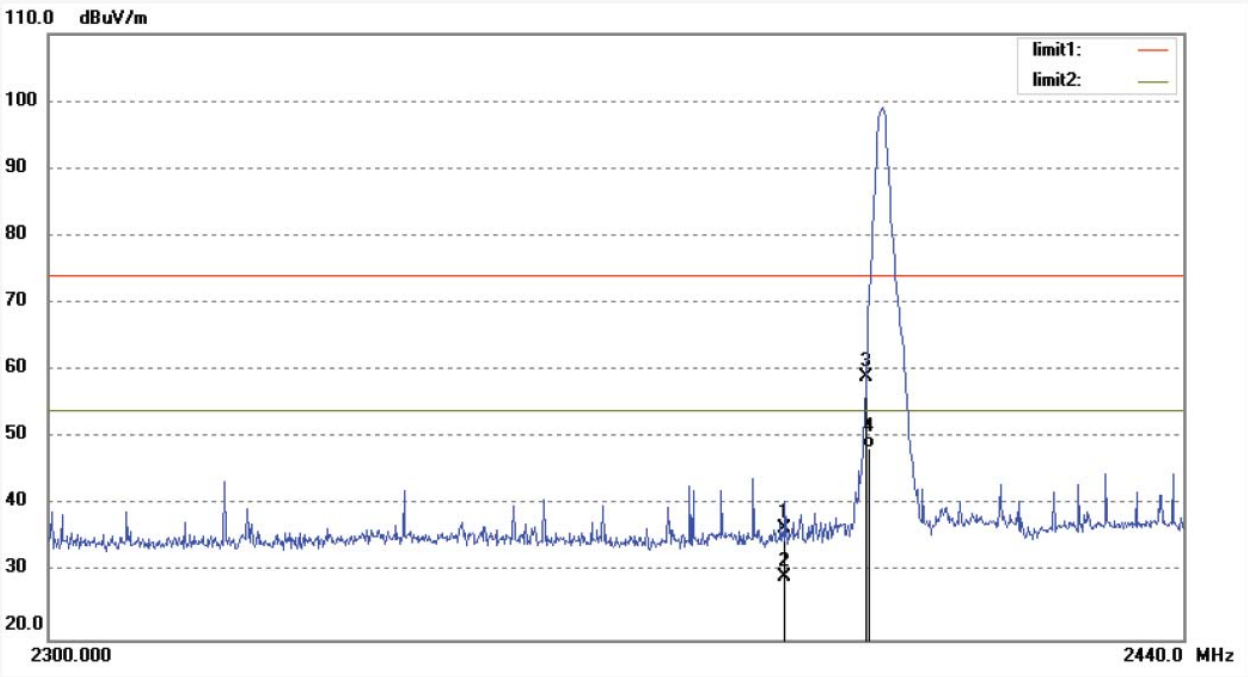
Job No.: ding1 #362
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Turntable
Mode: TX 2402MHz(GFSK)
Model: CR6023A-NA
Manufacturer: TIMSEN

Polarization: Horizontal
Power Source: AC 120V/60Hz
Date: 17/02/25/
Time: 9/20/00
Engineer Signature: DING
Distance: 3m

Note: Report NO.:ATE20170147



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	42.34	-5.89	36.45	74.00	-37.55	peak			
2	2390.000	35.12	-5.89	29.23	74.00	-44.77	peak			
3	2400.000	64.79	-5.80	58.99	74.00	-15.01	peak			
4	2400.000	54.23	-5.80	48.43	54.00	-5.57	AVG			

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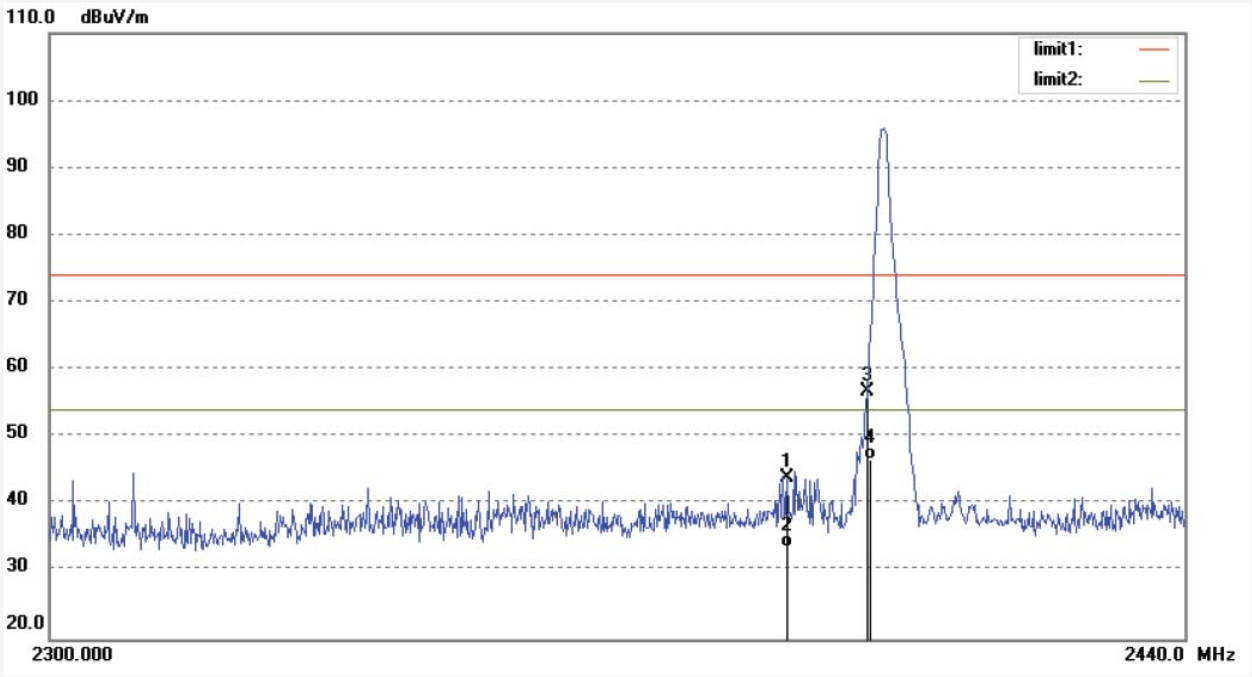
Job No.: ding1 #361	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 17/02/25/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 9/16/31
EUT: Turntable	Engineer Signature: DING
Mode: TX 2402MHz(GFSK)	Distance: 3m
Model: CR6023A-NA	
Manufacturer: TIMSEN	

Note: Report NO.:ATE20170147



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	49.90	-5.89	44.01	74.00	-29.99	peak			
2	2390.000	39.52	-5.89	33.63	54.00	-20.37	AVG			
3	2400.000	62.58	-5.80	56.78	74.00	-17.22	peak			
4	2400.000	52.41	-5.80	46.61	54.00	-7.39	AVG			

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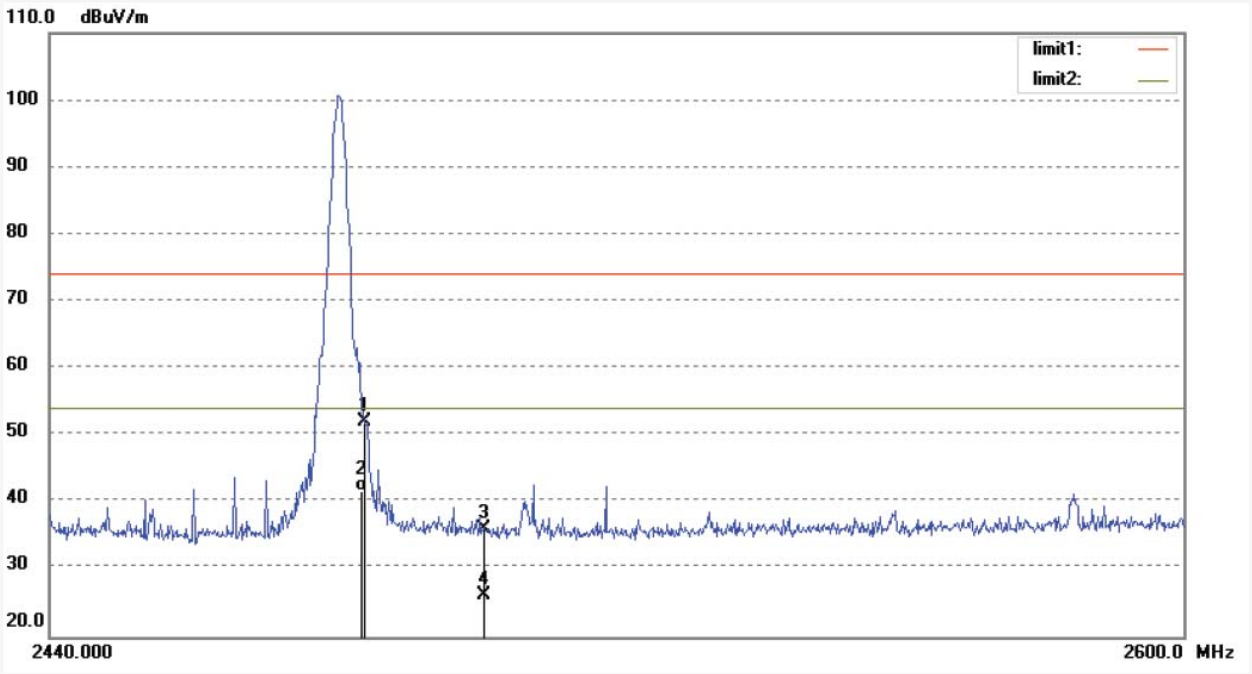
Job No.: ding1 #363	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 17/02/25/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 9/25/19
EUT: Turntable	Engineer Signature: DING
Mode: TX 2480MHz(GFSK)	Distance: 3m
Model: CR6023A-NA	
Manufacturer: TIMSEN	

Note: Report NO.:ATE20170147



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	57.50	-5.51	51.99	74.00	-22.01	peak			
2	2483.500	47.26	-5.51	41.75	54.00	-12.25	AVG			
3	2500.000	41.53	-5.50	36.03	74.00	-37.97	peak			
4	2500.000	31.72	-5.50	26.22	74.00	-47.78	peak			

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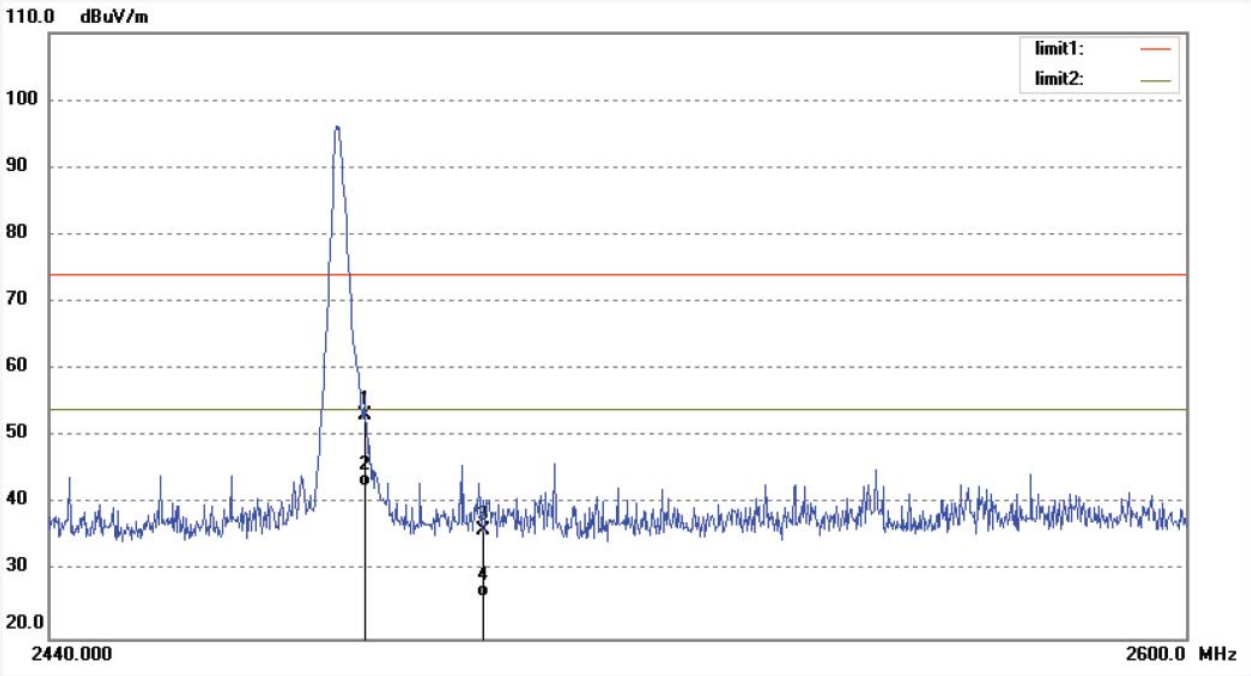
Job No.: ding1 #364	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 17/02/25/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 9/38/50
EUT: Turntable	Engineer Signature: DING
Mode: TX 2480MHz(GFSK)	Distance: 3m
Model: CR6023A-NA	
Manufacturer: TIMSEN	

Note: Report NO.:ATE20170147



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	58.75	-5.51	53.24	74.00	-20.76	peak			
2	2483.500	48.02	-5.51	42.51	54.00	-11.49	AVG			
3	2500.000	41.57	-5.50	36.07	74.00	-37.93	peak			
4	2500.000	31.63	-5.50	26.13	54.00	-27.87	AVG			

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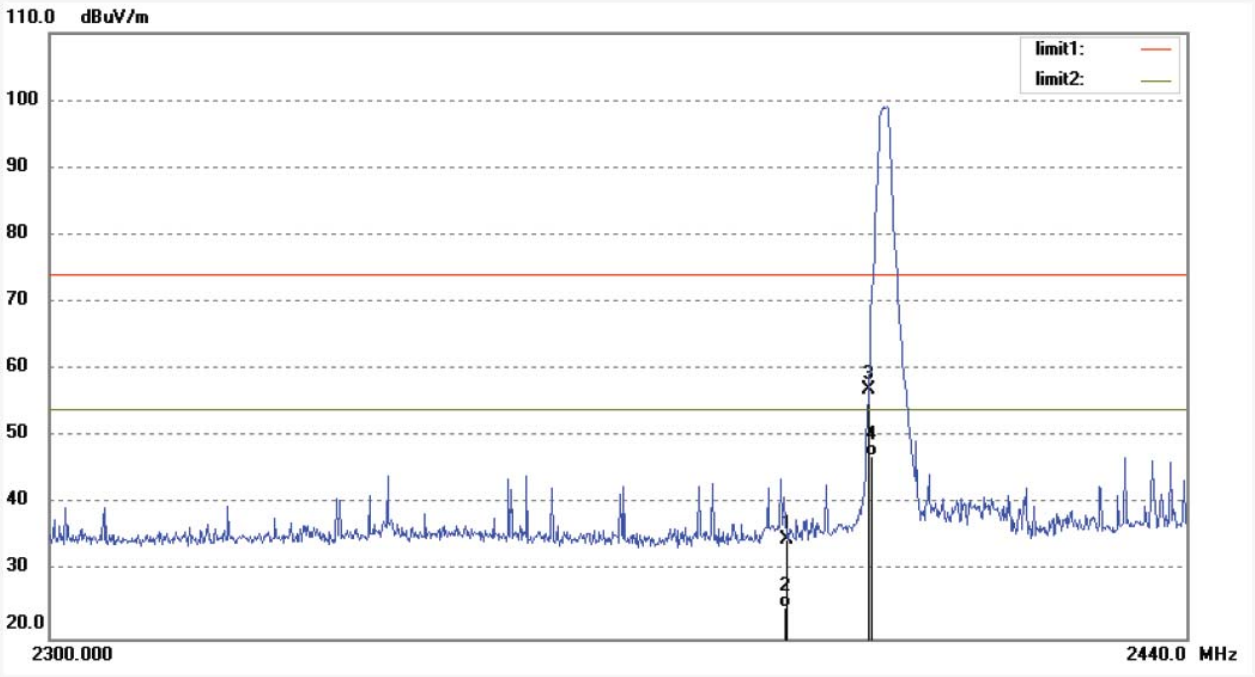
Job No.: ding1 #366	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 17/02/25/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 9/45/58
EUT: Turntable	Engineer Signature: DING
Mode: TX 2402MHz(π/4 DQPSK)	Distance: 3m
Model: CR6023A-NA	
Manufacturer: TIMSEN	

Note: Report NO.:ATE20170147



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	40.65	-5.89	34.76	74.00	-39.24	peak			
2	2390.000	30.47	-5.89	24.58	54.00	-29.42	AVG			
3	2400.000	62.92	-5.80	57.12	74.00	-16.88	peak			
4	2400.000	52.94	-5.80	47.14	54.00	-6.86	AVG			

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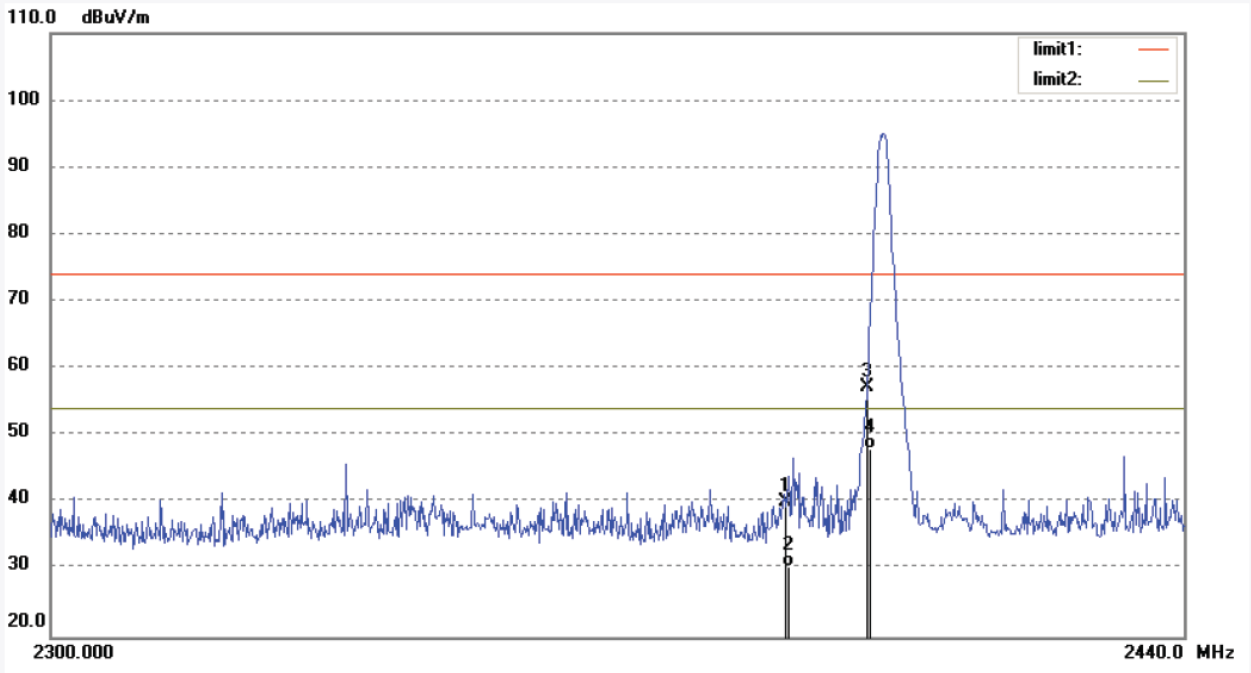
Job No.: ding1 #365	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 17/02/25/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 9/42/57
EUT: Turntable	Engineer Signature: DING
Mode: TX 2402MHz(π/4 DQPSK)	Distance: 3m
Model: CR6023A-NA	
Manufacturer: TIMSEN	

Note: Report NO.:ATE20170147



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	46.04	-5.89	40.15	74.00	-33.85	peak			
2	2390.000	36.25	-5.89	30.36	54.00	-23.64	AVG			
3	2400.000	63.15	-5.80	57.35	74.00	-16.65	peak			
4	2400.000	53.74	-5.80	47.94	54.00	-6.06	AVG			

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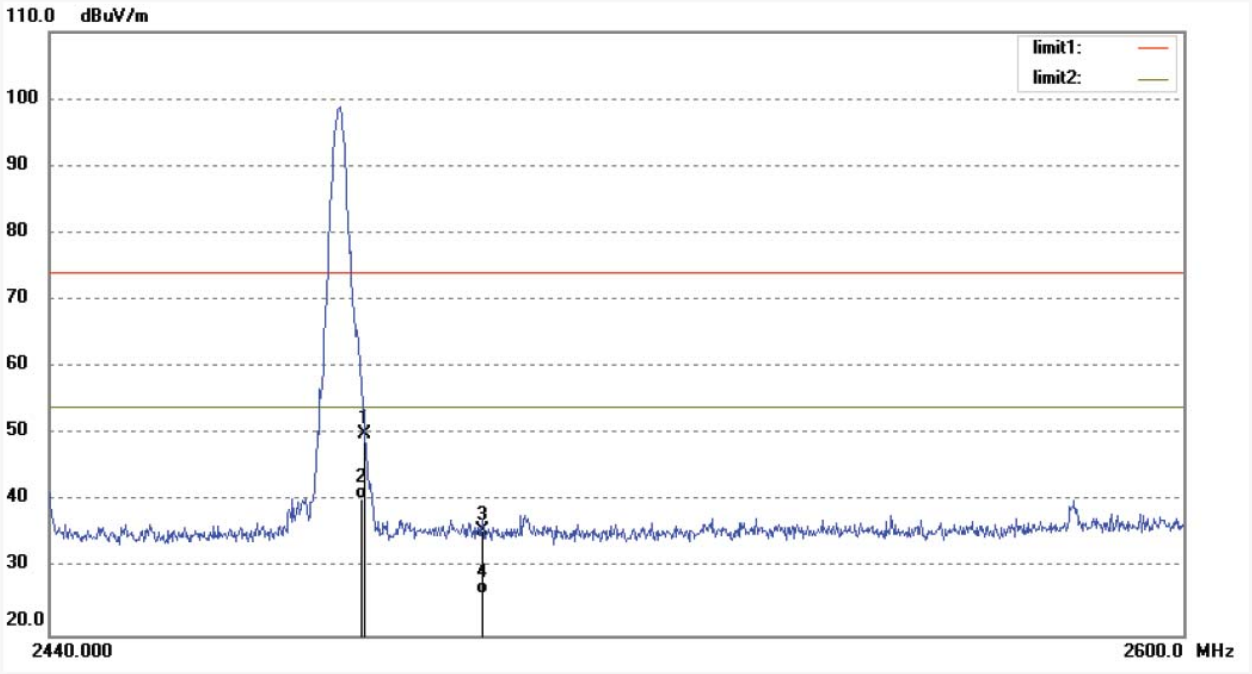
Job No.: ding1 #367	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 17/02/25/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 9/49/54
EUT: Turntable	Engineer Signature: DING
Mode: TX 2480MHz(π/4 DQPSK)	Distance: 3m
Model: CR6023A-NA	
Manufacturer: TIMSEN	

Note: Report NO.:ATE20170147



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	55.46	-5.51	49.95	74.00	-24.05	peak			
2	2483.500	45.78	-5.51	40.27	54.00	-13.73	AVG			
3	2500.000	41.18	-5.50	35.68	74.00	-38.32	peak			
4	2500.000	31.64	-5.50	26.14	54.00	-27.86	AVG			

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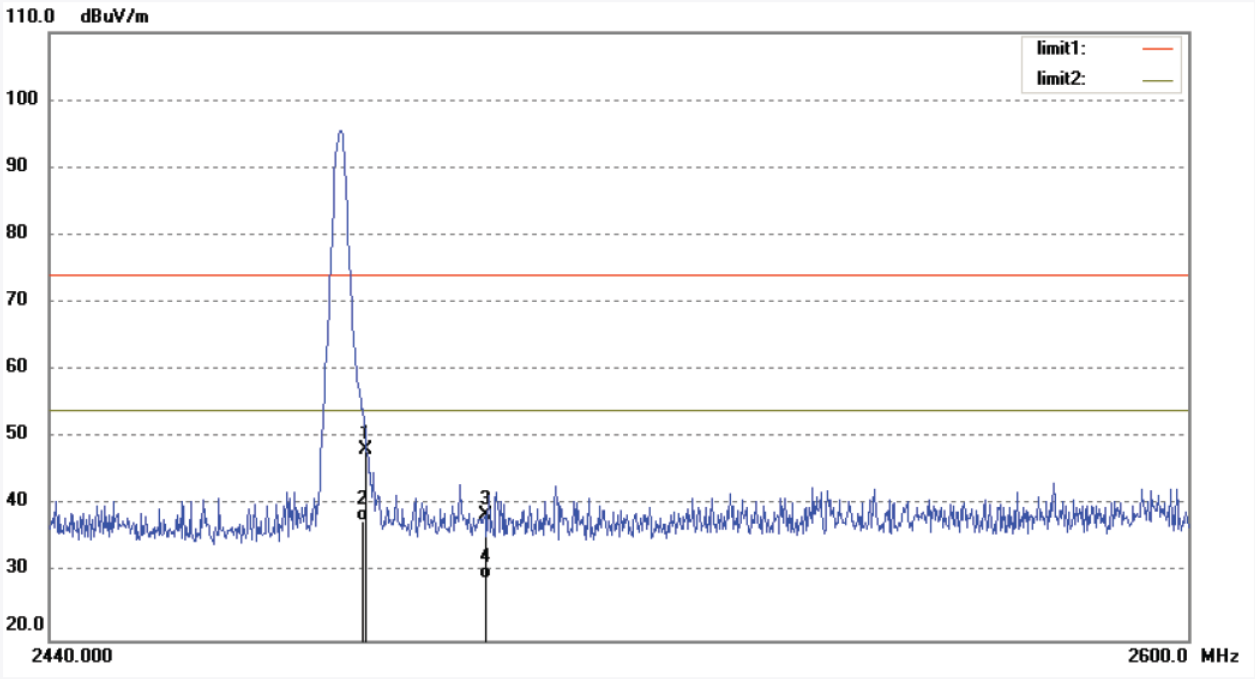
Job No.: ding1 #368	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 17/02/25/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 9/51/49
EUT: Turntable	Engineer Signature: DING
Mode: TX 2480MHz(π/4 DQPSK)	Distance: 3m
Model: CR6023A-NA	
Manufacturer: TIMSEN	

Note: Report NO.:ATE20170147



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	53.77	-5.51	48.26	74.00	-25.74	peak			
2	2483.500	43.26	-5.51	37.75	54.00	-16.25	AVG			
3	2500.000	44.15	-5.50	38.65	74.00	-35.35	peak			
4	2500.000	34.67	-5.50	29.17	54.00	-24.83	AVG			

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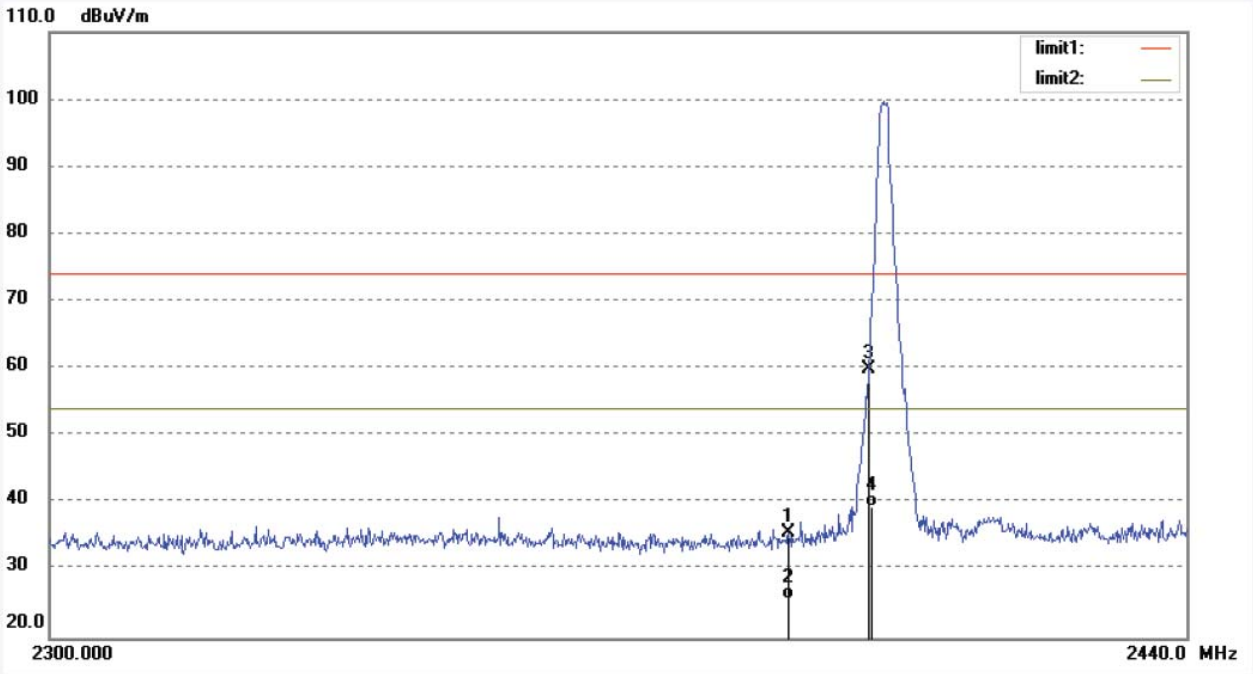
Job No.: ding1 #370	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 17/02/25/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 9/57/00
EUT: Turntable	Engineer Signature: DING
Mode: TX 2402MHz(8DPSK)	Distance: 3m
Model: CR6023A-NA	
Manufacturer: TIMSEN	

Note: Report NO.:ATE20170147



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	41.44	-5.89	35.55	74.00	-38.45	peak			
2	2390.000	31.58	-5.89	25.69	54.00	-28.31	AVG			
3	2400.000	65.72	-5.80	59.92	74.00	-14.08	peak			
4	2400.000	45.21	-5.80	39.41	54.00	-14.59	AVG			

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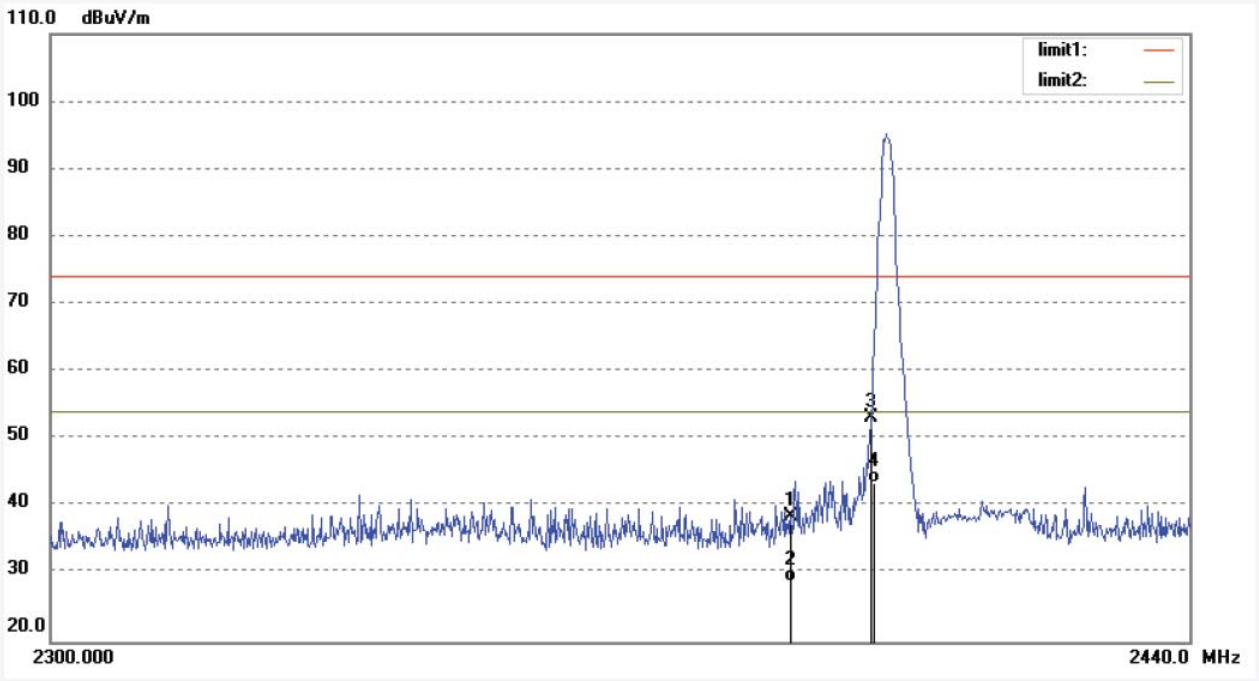
Job No.: ding1 #369	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 17/02/25/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 9/55/07
EUT: Turntable	Engineer Signature: DING
Mode: TX 2402MHz(8DPSK)	Distance: 3m
Model: CR6023A-NA	
Manufacturer: TIMSEN	

Note: Report NO.:ATE20170147



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	44.53	-5.89	38.64	74.00	-35.36	peak			
2	2390.000	34.78	-5.89	28.89	54.00	-25.11	AVG			
3	2400.000	59.06	-5.80	53.26	74.00	-20.74	peak			
4	2400.000	49.33	-5.80	43.53	54.00	-10.47	AVG			

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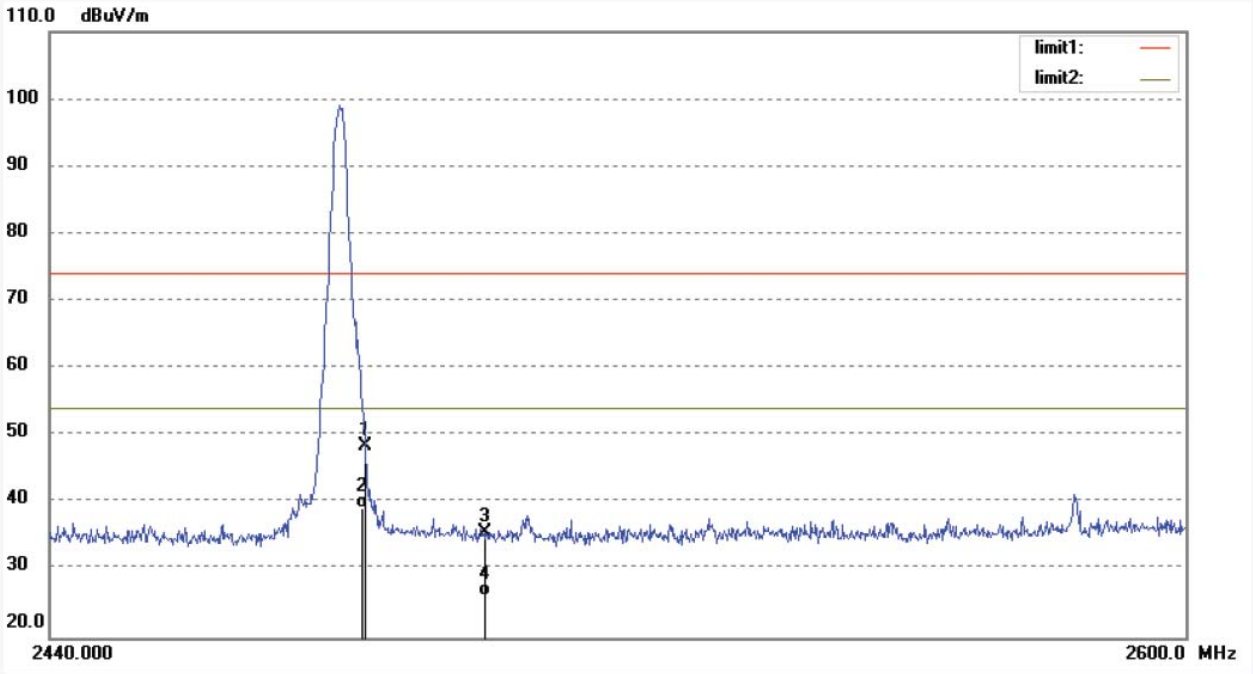
Job No.: ding1 #371	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 17/02/25/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 9/59/51
EUT: Turntable	Engineer Signature: DING
Mode: TX 2480MHz(8DPSK)	Distance: 3m
Model: CR6023A-NA	
Manufacturer: TIMSEN	

Note: Report NO.:ATE20170147



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	54.06	-5.51	48.55	74.00	-25.45	peak			
2	2483.500	44.71	-5.51	39.20	54.00	-14.80	AVG			
3	2500.000	41.06	-5.50	35.56	74.00	-38.44	peak			
4	2500.000	31.69	-5.50	26.19	54.00	-27.81	AVG			

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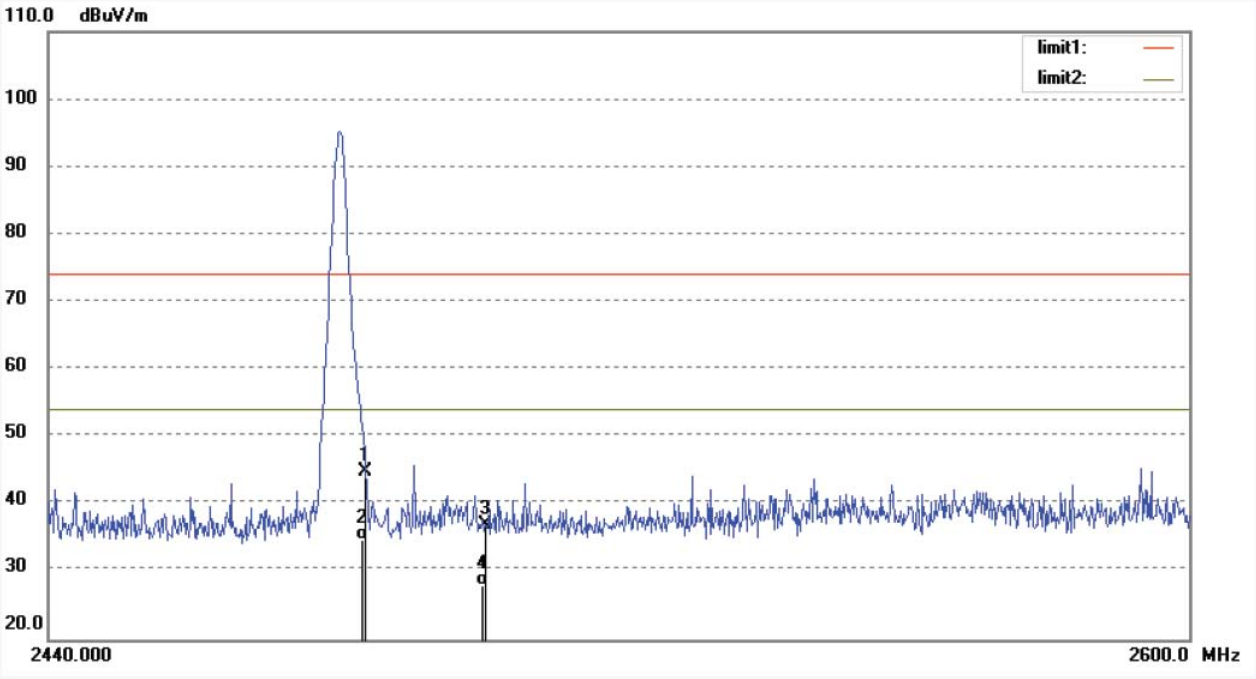
Fax:+86-0755-26503396

Job No.: ding1 #372	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 17/02/25/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 10/02/08
EUT: Turntable	Engineer Signature: DING
Mode: TX 2480MHz(8DPSK)	Distance: 3m
Model: CR6023A-NA	
Manufacturer: TIMSEN	

Note: Report NO.:ATE20170147



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	50.31	-5.51	44.80	74.00	-29.20	peak			
2	2483.500	40.25	-5.51	34.74	54.00	-19.26	AVG			
3	2500.000	42.58	-5.50	37.08	74.00	-36.92	peak			
4	2500.000	33.48	-5.50	27.98	54.00	-26.02	AVG			

Hopping mode

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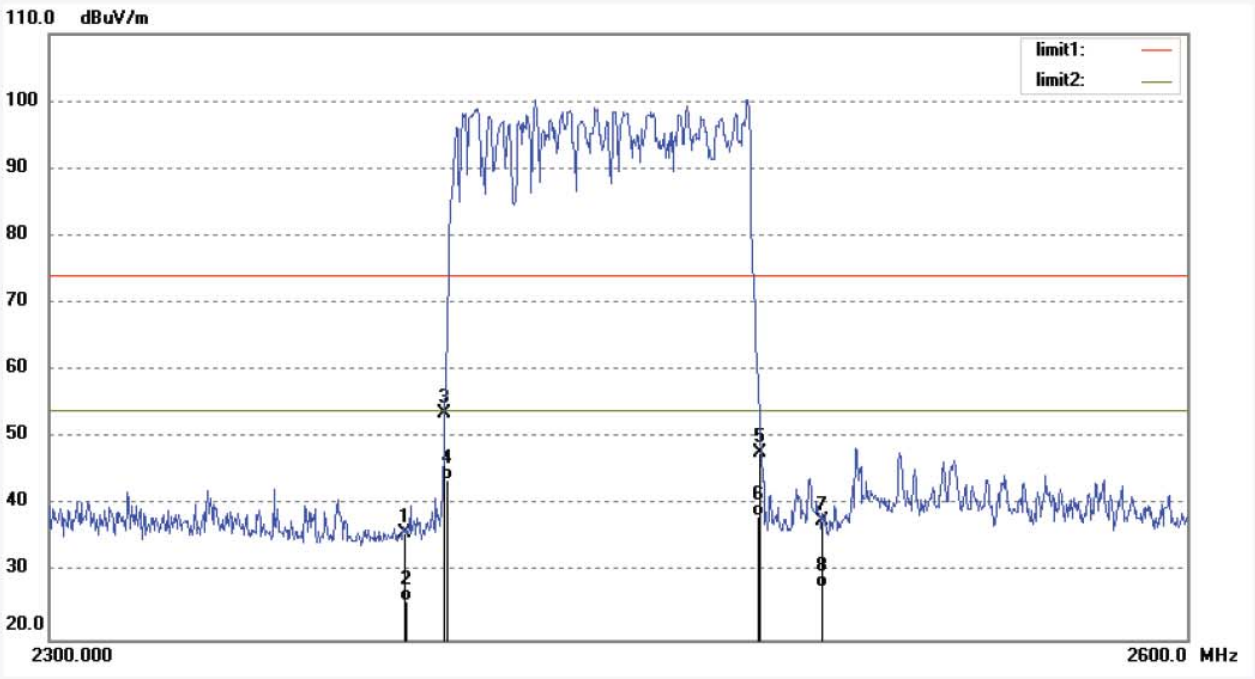
Job No.: ding1 #374	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 17/02/25/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 10/15/13
EUT: Turntable	Engineer Signature: DING
Mode: HOPPONG(GFSK)	Distance: 3m
Model: CR6023A-NA	
Manufacturer: TIMSEN	

Note: Report NO.:ATE20170147



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	41.75	-5.89	35.86	74.00	-38.14	peak			
2	2390.000	31.59	-5.89	25.70	54.00	-28.30	AVG			
3	2400.000	59.44	-5.80	53.64	74.00	-20.36	peak			
4	2400.000	49.61	-5.80	43.81	54.00	-10.19	AVG			
5	2483.500	53.29	-5.51	47.78	74.00	-26.22	peak			
6	2483.500	43.87	-5.51	38.36	54.00	-15.64	AVG			
7	2500.000	43.23	-5.50	37.73	74.00	-36.27	peak			
8	2500.000	33.26	-5.50	27.76	54.00	-26.24	AVG			

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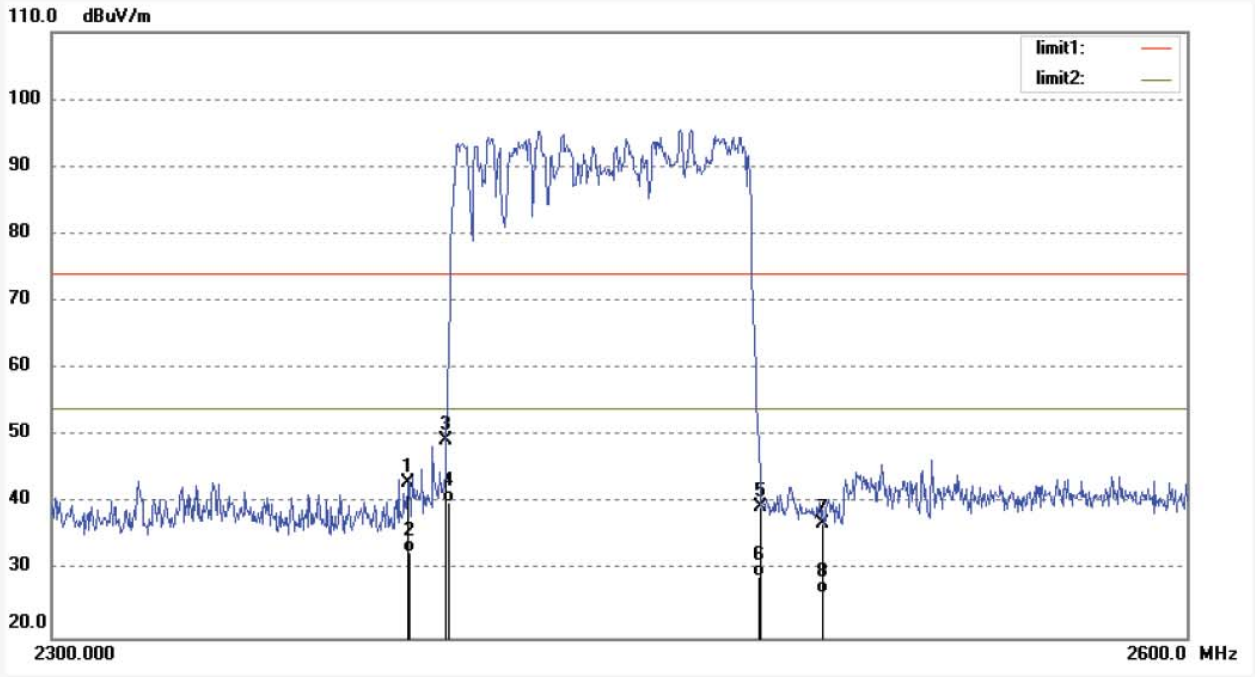
Job No.: ding1 #373	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 17/02/25/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 10/09/04
EUT: Turntable	Engineer Signature: DING
Mode: HOPPONG(GFSK)	Distance: 3m
Model: CR6023A-NA	
Manufacturer: TIMSEN	

Note: Report NO.:ATE20170147



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	48.95	-5.89	43.06	74.00	-30.94	peak			
2	2390.000	38.64	-5.89	32.75	54.00	-21.25	AVG			
3	2400.000	55.07	-5.80	49.27	74.00	-24.73	peak			
4	2400.000	45.85	-5.80	40.05	54.00	-13.95	AVG			
5	2483.500	44.96	-5.51	39.45	74.00	-34.55	peak			
6	2483.500	34.57	-5.51	29.06	54.00	-24.94	AVG			
7	2500.000	42.46	-5.50	36.96	74.00	-37.04	peak			
8	2500.000	32.18	-5.50	26.68	54.00	-27.32	AVG			

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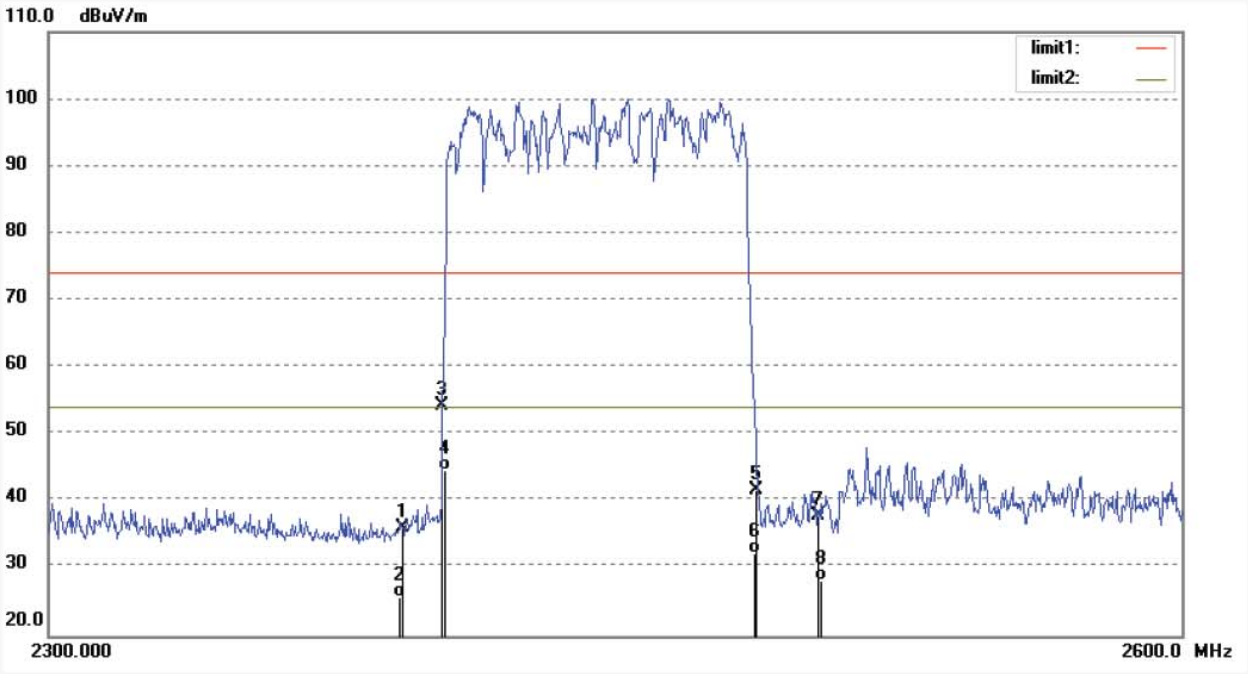
Job No.: ding1 #375	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 17/02/25/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 10/20/23
EUT: Turntable	Engineer Signature: DING
Mode: HOPPONG(π/4 DQPSK)	Distance: 3m
Model: CR6023A-NA	
Manufacturer: TIMSEN	

Note: Report NO.:ATE20170147



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	41.94	-5.89	36.05	74.00	-37.95	peak			
2	2390.000	31.59	-5.89	25.70	54.00	-28.30	AVG			
3	2400.000	60.15	-5.80	54.35	74.00	-19.65	peak			
4	2400.000	50.43	-5.80	44.63	54.00	-9.37	AVG			
5	2483.500	47.27	-5.51	41.76	74.00	-32.24	peak			
6	2483.500	37.84	-5.51	32.33	54.00	-21.67	AVG			
7	2500.000	43.47	-5.50	37.97	74.00	-36.03	peak			
8	2500.000	33.68	-5.50	28.18	54.00	-25.82	AVG			

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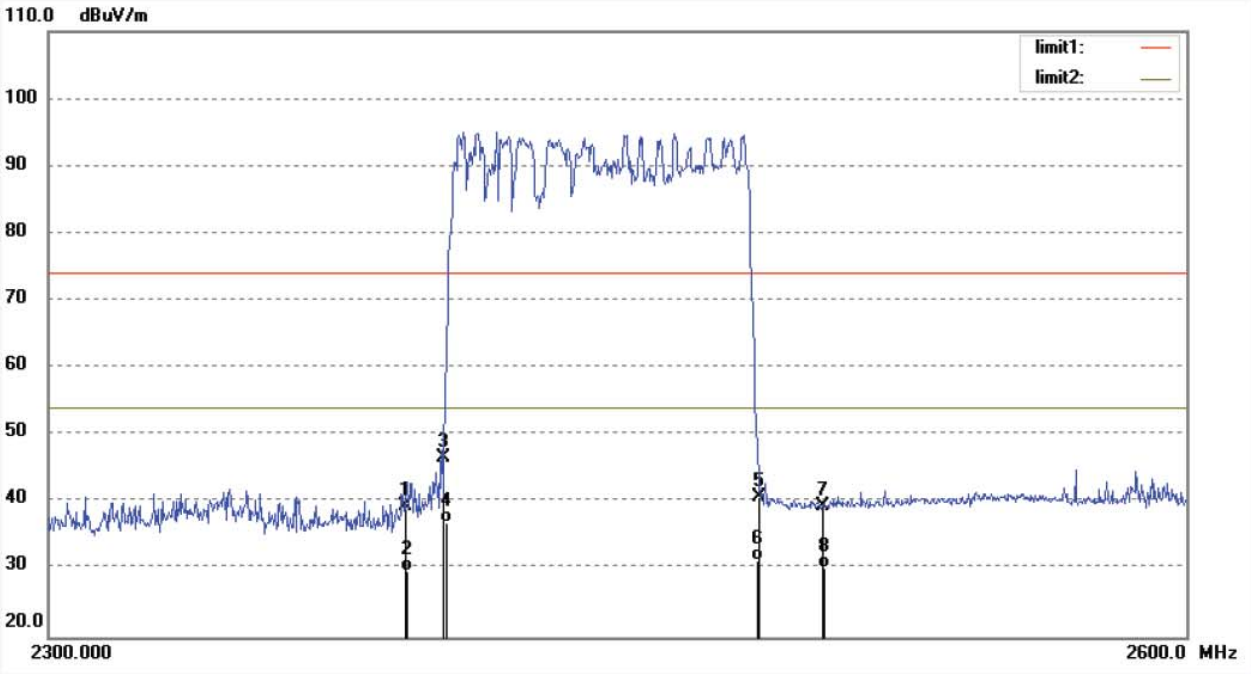
Job No.: ding1 #376
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Turntable
Mode: HOPPONG(π/4 DQPSK)
Model: CR6023A-NA
Manufacturer: TIMSEN

Polarization: Vertical
Power Source: AC 120V/60Hz
Date: 17/02/25/
Time: 10/26/51
Engineer Signature: DING
Distance: 3m

Note: Report NO.:ATE20170147



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	45.26	-5.89	39.37	74.00	-34.63	peak			
2	2390.000	35.62	-5.89	29.73	54.00	-24.27	AVG			
3	2400.000	52.57	-5.80	46.77	74.00	-27.23	peak			
4	2400.000	42.68	-5.80	36.88	54.00	-17.12	AVG			
5	2483.500	46.31	-5.51	40.80	74.00	-33.20	peak			
6	2483.500	36.94	-5.51	31.43	54.00	-22.57	AVG			
7	2500.000	45.03	-5.50	39.53	74.00	-34.47	peak			
8	2500.000	35.66	-5.50	30.16	54.00	-23.84	AVG			

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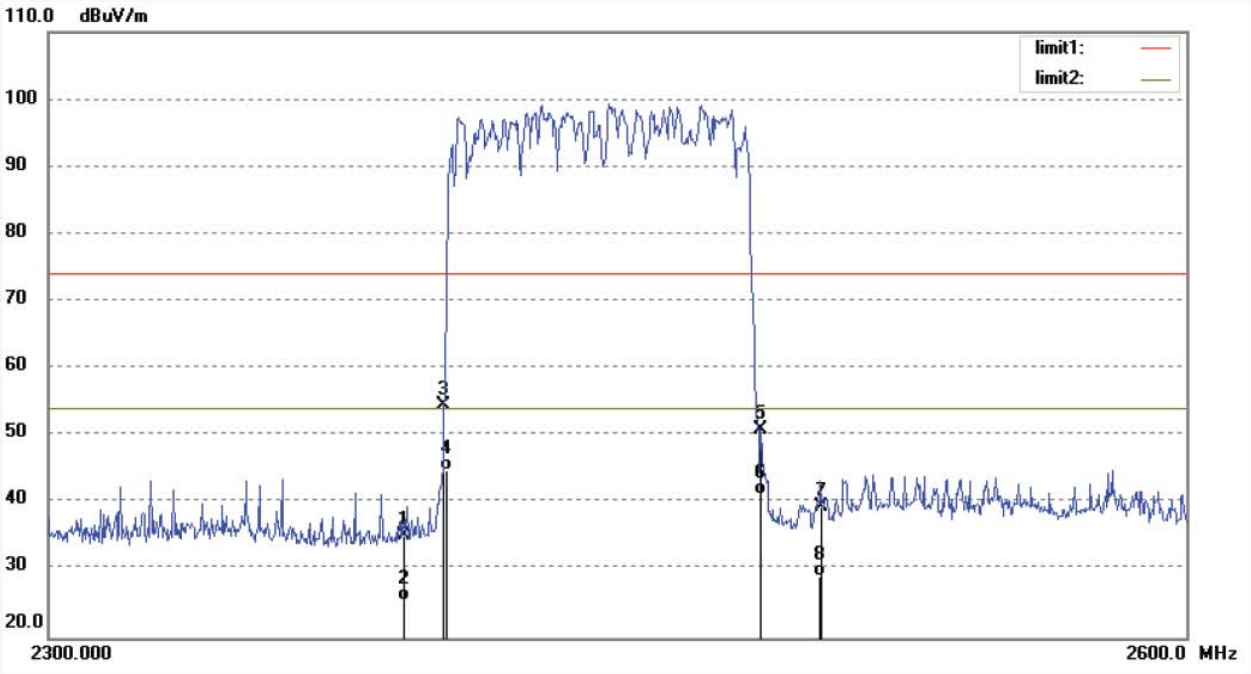
Job No.: ding1 #378	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 17/02/25/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 10/41/15
EUT: Turntable	Engineer Signature: DING
Mode: HOPPONG(8DPSK)	Distance: 3m
Model: CR6023A-NA	
Manufacturer: TIMSEN	

Note: Report NO.:ATE20170147



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	41.10	-5.89	35.21	74.00	-38.79	peak			
2	2390.000	31.42	-5.89	25.53	54.00	-28.47	AVG			
3	2400.000	60.32	-5.80	54.52	74.00	-19.48	peak			
4	2400.000	50.68	-5.80	44.88	54.00	-9.12	AVG			
5	2483.500	56.50	-5.51	50.99	74.00	-23.01	peak			
6	2483.500	46.77	-5.51	41.26	54.00	-12.74	AVG			
7	2500.000	44.94	-5.50	39.44	74.00	-34.56	peak			
8	2500.000	34.51	-5.50	29.01	54.00	-24.99	AVG			

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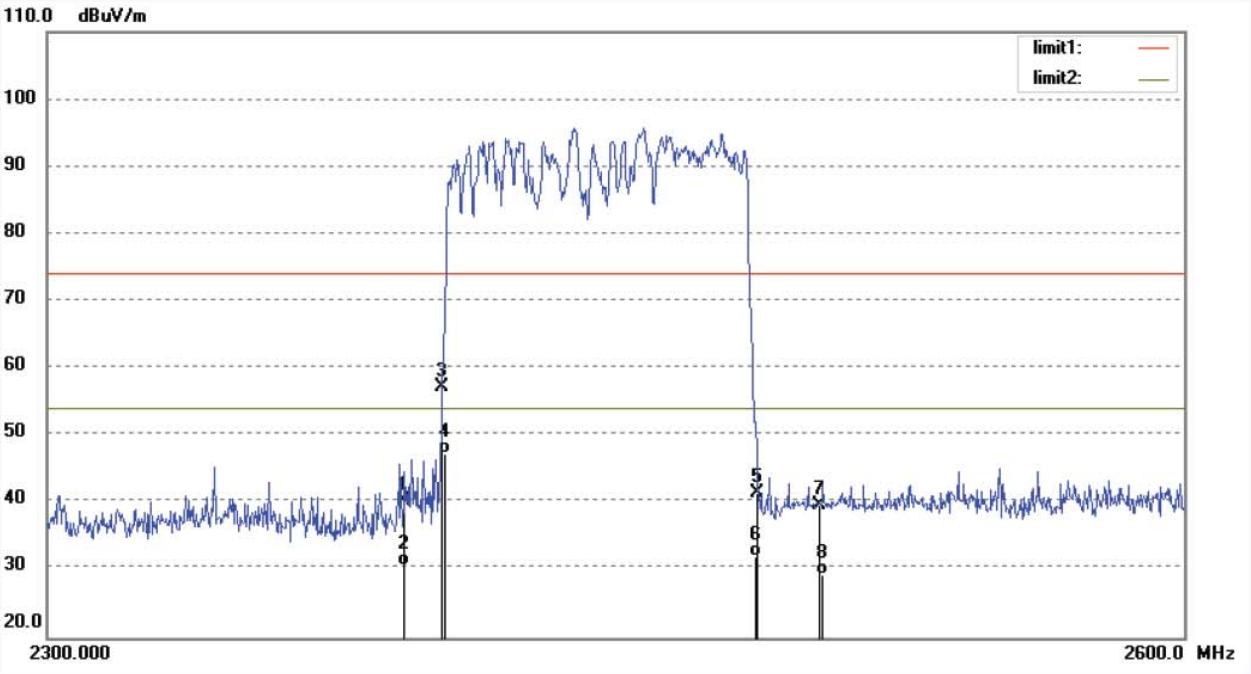
Job No.: ding1 #377	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 17/02/25/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 10/37/02
EUT: Turntable	Engineer Signature: DING
Mode: HOPPONG(8DPSK)	Distance: 3m
Model: CR6023A-NA	
Manufacturer: TIMSEN	

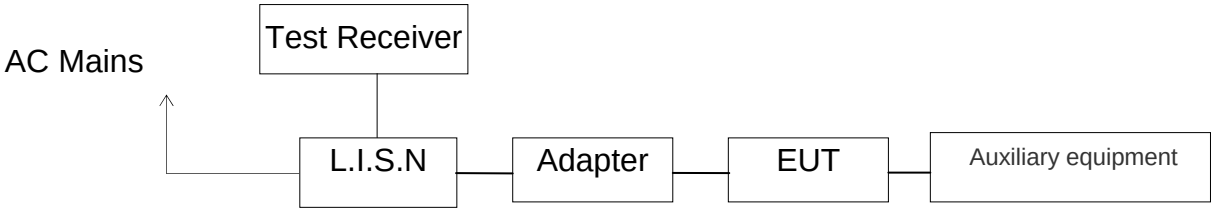
Note: Report NO.:ATE20170147



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	46.33	-5.89	40.44	74.00	-33.56	peak			
2	2390.000	36.57	-5.89	30.68	54.00	-23.32	AVG			
3	2400.000	63.11	-5.80	57.31	74.00	-16.69	peak			
4	2400.000	53.11	-5.80	47.31	54.00	-6.69	AVG			
5	2483.500	47.01	-5.51	41.50	74.00	-32.50	peak			
6	2483.500	37.59	-5.51	32.08	54.00	-21.92	AVG			
7	2500.000	45.26	-5.50	39.76	74.00	-34.24	peak			
8	2500.000	34.87	-5.50	29.37	54.00	-24.63	AVG			

12. AC POWER LINE CONDUCTED EMISSION FOR FCC PART 15 SECTION 15.207(A)

12.1. Block Diagram of Test Setup



(EUT: TURNTABLE)

12.2. 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.		

12.3. 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.

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 0.8m 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.

12.6.Power Line Conducted Emission Measurement Results

PASS.

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

Test mode : BT communicating(AC 120V/60Hz)

MEASUREMENT RESULT: "TM-0223-01_fin"

2/23/2017 7:09PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	38.20	10.5	66	27.8	QP	L1	GND
0.195000	36.40	10.5	64	27.4	QP	L1	GND
0.255000	35.00	10.6	62	26.6	QP	L1	GND
0.300000	32.50	10.6	60	27.7	QP	L1	GND
0.390000	30.10	10.7	58	28.0	QP	L1	GND
0.500000	26.00	10.7	56	30.0	QP	L1	GND

MEASUREMENT RESULT: "TM-0223-01_fin2"

2/23/2017 7:09PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.155000	7.90	10.5	56	47.8	AV	L1	GND
0.170000	7.20	10.5	55	47.8	AV	L1	GND
0.200000	6.90	10.5	54	46.7	AV	L1	GND
0.275000	5.60	10.6	51	45.4	AV	L1	GND
0.360000	3.40	10.6	49	45.3	AV	L1	GND
0.500000	0.40	10.7	46	45.6	AV	L1	GND

MEASUREMENT RESULT: "TM-0223-02_fin"

2/23/2017 7:14PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	38.10	10.5	66	27.9	QP	N	GND
0.165000	38.30	10.5	65	26.9	QP	N	GND
0.195000	37.60	10.5	64	26.2	QP	N	GND
0.235000	36.50	10.6	62	25.8	QP	N	GND
0.290000	35.60	10.6	61	24.9	QP	N	GND
0.460000	34.10	10.7	57	22.6	QP	N	GND

MEASUREMENT RESULT: "TM-0223-02_fin2"

2/23/2017 7:14PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.160000	8.80	10.5	56	46.7	AV	N	GND
0.205000	7.80	10.5	53	45.6	AV	N	GND
0.235000	7.10	10.6	52	45.2	AV	N	GND
0.255000	7.00	10.6	52	44.6	AV	N	GND
0.290000	6.40	10.6	51	44.1	AV	N	GND
0.410000	5.70	10.7	48	41.9	AV	N	GND

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

The spectral diagrams are attached as below.

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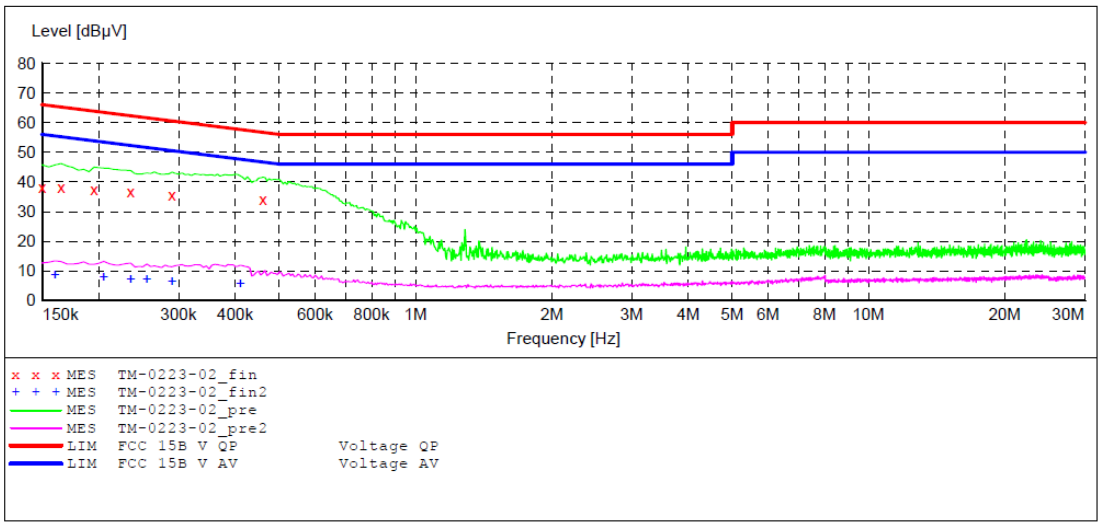
CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: Turntable M/N:CR6023A-NA
Manufacturer: TIMSEN
Operating Condition: BT communicating
Test Site: 1#Shielding Room
Operator: DING
Test Specification: N 120V/60Hz
Comment: Report NO.:ATE20170147
Start of Test: 2/23/2017 / 7:10:16PM

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

Short Description: SUB STD VTERM2 1.70

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



MEASUREMENT RESULT: "TM-0223-02_fin"

2/23/2017 7:14PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	38.10	10.5	66	27.9	QP	N	GND
0.165000	38.30	10.5	65	26.9	QP	N	GND
0.195000	37.60	10.5	64	26.2	QP	N	GND
0.235000	36.50	10.6	62	25.8	QP	N	GND
0.290000	35.60	10.6	61	24.9	QP	N	GND
0.460000	34.10	10.7	57	22.6	QP	N	GND

MEASUREMENT RESULT: "TM-0223-02_fin2"

2/23/2017 7:14PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.160000	8.80	10.5	56	46.7	AV	N	GND
0.205000	7.80	10.5	53	45.6	AV	N	GND
0.235000	7.10	10.6	52	45.2	AV	N	GND
0.255000	7.00	10.6	52	44.6	AV	N	GND
0.290000	6.40	10.6	51	44.1	AV	N	GND
0.410000	5.70	10.7	48	41.9	AV	N	GND

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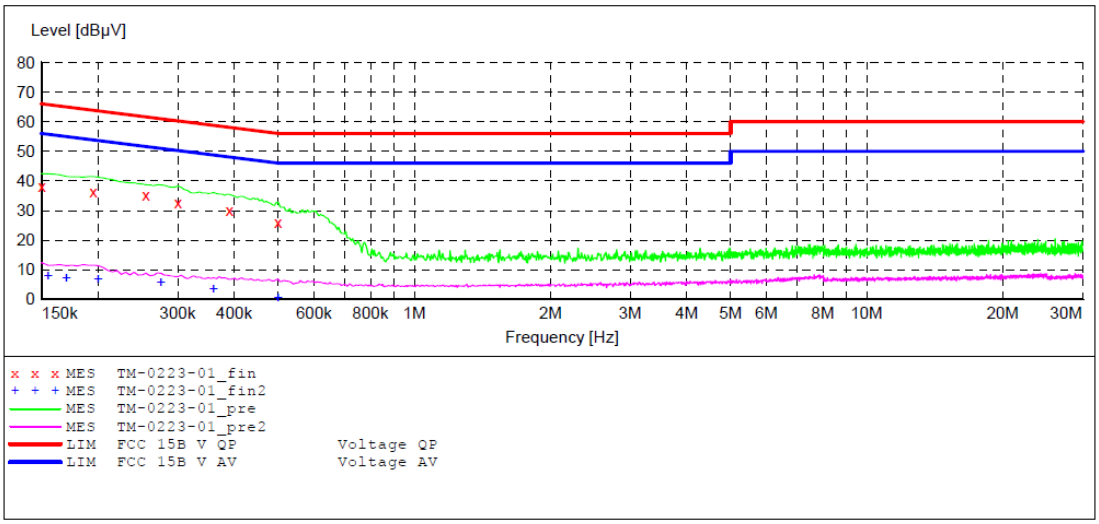
CONDUCTED EMISSION STANDARD FCC PART 15B

```
EUT:                  Turntable  M/N:CR6023A-NA
Manufacturer:         TIMSEN
Operating Condition:  BT communicating
Test Site:            1#Shielding Room
Operator:             DING
Test Specification:   L 120V/60Hz
Comment:              Report NO.:ATE20170147
Start of Test:        2/23/2017 / 7:04:30PM
```

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

Short Description: SUB STD VTERM2 1.70

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



MEASUREMENT RESULT: "TM-0223-01_fin"

2/23/2017 7:09PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	38.20	10.5	66	27.8	QP	L1	GND
0.195000	36.40	10.5	64	27.4	QP	L1	GND
0.255000	35.00	10.6	62	26.6	QP	L1	GND
0.300000	32.50	10.6	60	27.7	QP	L1	GND
0.390000	30.10	10.7	58	28.0	QP	L1	GND
0.500000	26.00	10.7	56	30.0	QP	L1	GND

MEASUREMENT RESULT: "TM-0223-01_fin2"

2/23/2017 7:09PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.155000	7.90	10.5	56	47.8	AV	L1	GND
0.170000	7.20	10.5	55	47.8	AV	L1	GND
0.200000	6.90	10.5	54	46.7	AV	L1	GND
0.275000	5.60	10.6	51	45.4	AV	L1	GND
0.360000	3.40	10.6	49	45.3	AV	L1	GND
0.500000	0.40	10.7	46	45.6	AV	L1	GND

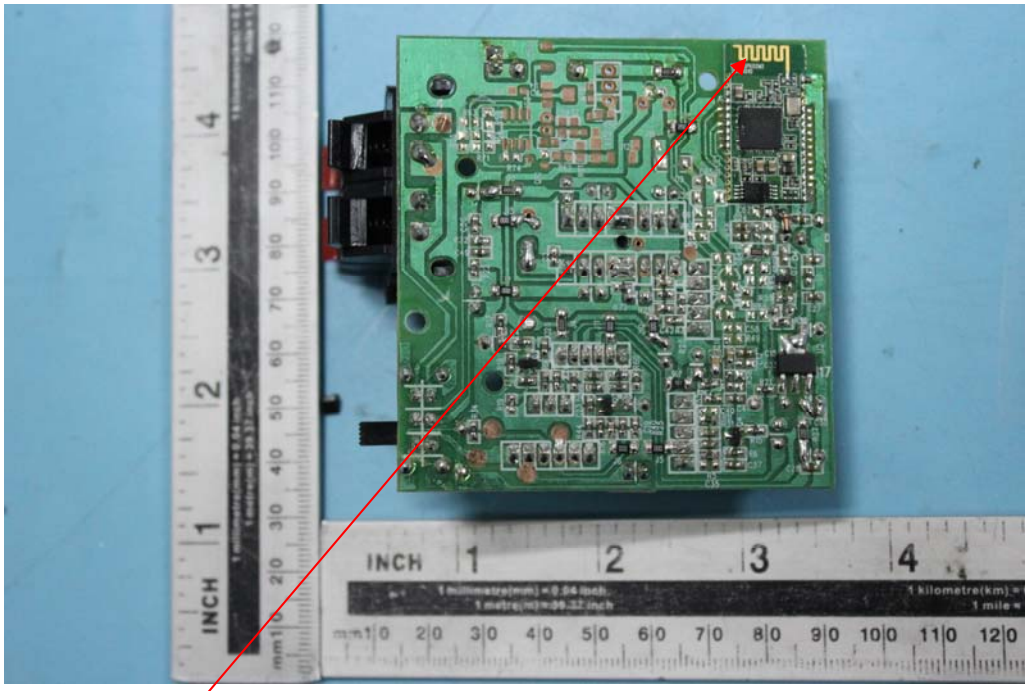
13. ANTENNA REQUIREMENT

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 2dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.



Antenna