



# **TEST REPORT**

Applicant	BRANCH OF LONG THUY - LT COMPANY LIMITED
Address	Hamlet 2, Tan Trach Commune, Can Duoc District, Long An, Long An, Vietnam

Manufacturer or Supplier	BRANCH OF LONG THUY - LT COMPANY LIMITED
Address	Hamlet 2, Tan Trach Commune, Can Duoc District, Long An, Long An, Vietnam
Product	Toy RC Monster Spinning Car
Brand Name	Sharper Image
Model	1012639
Additional Models & Model Difference	1014391, 1018808, 1014812, 1015605, 1018492, 1019636, 1018965, 101XXXX (where XXXX can be digits 0000-9999 which represent different customers), see item 3.1
Date of tests	Mar. 03, 2025 ~ Mar. 06, 2025

the tests have been carried out according to the requirements of the following standard:

#### FCC Part 15, Subpart C, Section 15.235

#### CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Loren Luo Project Engineer / EMC Department Approved by Glyn He Assistant Manager / EMC Department

Date: Mar. 25, 2025

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <a href="http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/">http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/</a> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of the is report, the tests conducted and the correctness of the corport contents.

No. 96, Guantai Road (Houjie Section), Houjie Town, Dongguan City, Guangdong Province. 523942. People's Republic of China.



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# **RELEASE CONTROL RECORD**

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF2502WDG0201	Original release	Mar. 25, 2025



## **1 SUMMARY OF TEST RESULTS**

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.235)						
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK			
§15.207 (a)	Conducted Emission	N/A	EUT is powered by battery			
§15.209 §15.235(a)	Radiated Emission	PASS	Compliant			
§15.235(b) §15.215(c)	Measured Bandwidth	PASS	Compliant			
§15.203	Antenna Requirement	PASS	No antenna connector is used			

## 2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY	
Radiated emissions	9KHz ~ 30MHz	2.72dB	
hadiated emissions	30MHz ~ 1GHz	4.24dB	

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.



## **3 GENERAL INFORMATION**

#### 3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Toy RC Monster Spinning Car		
MODEL NO.	1012639		
ADDITIONAL MODEL	1014391, 1018808, 1014812, 1015605, 1018492, 1019636, 1018965, 101XXXX (where XXXX can be digits 0000-9999 which represent different customers)		
FCC ID	2BMHW2025A49A		
NOMINAL VOLTAGE	DC 9V(9V*6F22*1) from battery		
MODULATION TYPE	AM		
OPERATING FREQUENCY	49.86MHz		
NUMBER OF CHANNEL	1		
ANTENNA TYPE	Spring Antenna, with 0dBi gain		
I/O PORTS	Refer to user's manual		
CABLE SUPPLIED	N/A		

#### NOTES:

- 1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- 2. For the test results, the EUT had been tested with all conditions, but only the worst case was shown in test report.
- 3. Please refer to the EUT photo document (Reference No.: 2502WDG0201) for detailed product photo.
- 4. Additional models (see above table) are identical with the test model 1012639 except the color of the appearance and model number for trading purpose.



#### 3.2 DESCRIPTION OF TEST MODES

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and packet type. The worst case was found when the EUT was positioned on Y axis for radiated emission. The EUT was tested under the following mode.

FREQUENCY	TEST MODE	
49.86MHz	Transmitting	

### 3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C, 15.235

ANSI C63.10-2013

#### 3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit without any other necessary accessories or support units.



## 4 TEST TYPES AND RESULTS

#### 4.1 RADIATED EMISSION MEASUREMENT

#### 4.1.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

According to §15.235(a), the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fr	requency Range of Fundamental [MHz]	Field Strength of Fundamental Emission [Peak] [μV/m]	Field Strength of Fundamental Emission [Average] [μV/m]
	49.82 - 49.90	100,000 (100 dBµV/m)	10,000 (80 dBµV/m)

NOTES:

- 1. The lower limit shall apply at the transition frequencies.
- 2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
- 3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.



#### 4.1.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
Spectrum Analyzer	Rohde&Schwarz	FSV3044	101326	July 09, 25
EMI Test Receiver Rohde&Schwarz E		ESU8	100372	Apr. 16, 25
Bilog Antenna	SCHWARZBECK	VULB 9168	9168-555	Nov. 07, 25
Pre-Amplifier	Agilent	8447D	2944A10488	July. 23, 25
3m Semi-anechoic Chamber	ETS-Lindgren	9m*6m*6m	D3040003DG-1	July 30, 25
Coaxial RF Cable	Joinfront	JFAA6-NMNM-8000	2100033742	July 02, 25
Coaxial RF Cable	Joinfront	JFAR-NMBNCM-2000	2100033742	July 02, 25
Coaxial RF Cable	Joinfront	JFAR-BNCMSMM-500	2100033742	July 02, 25
Test software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A
Horn Antenna	ETS-Lindgren	3117	00240036	Apr. 20, 25
Horn Antenna	SCHWARZBECK	BBHA 9170	01024	Oct. 16, 25
Pre-Amplifier (1GHz-18GHz)	Rohde&Schwarz	SCU18	102265	July. 23, 25
Pre-Amplifier (18GHz-40GHz) Rohde&Schwarz		SCU40	100437	Nov. 28, 25
Coaxial RF Cable	Joinfront	JFAA6-NMNM-8000	2100033742	July 02, 25
Coaxial RF Cable	Joinfront	JFAA6-NMSMM-2000	2100033742	July 02, 25
Coaxial RF Cable	Joinfront	JFAA6-NMSMM-800	2100033742	July 02, 25

NOTES:

1. The test was performed in 966 Chamber and RF Test Shielding Room.

2. Equipment are calibrated by calibration laboratory accredited to ISO/IEC 17025 by a mutually recognized Accreditation and all tests are conducted within a valid calibration cycle.

3. The horn antenna is used only for the measurement of emission frequency above1GHz if tested.

4. The FCC Site Registration No. is 749762. Designation Number: CN1174.

5. Test site: No. 122, Houjie Avenue West Houjie Town, Dongguan City Guangdong Province, 523960, People's Republic of China.



#### 4.1.3 TEST PROCEDURES

The basic test procedure was in accordance with ANSI C63.10 (section 6).

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters Semi-anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. For below 30MHz, a loop antenna with its vertical plane is place 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1.3m above the ground.
- g. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, For battery operated equipment, the equipment tests shall be perform using new battery. The turntable was rotated to maximize the emission level.

#### .NOTES:

- 1. The resolution bandwidth of test receiver/spectrum analyzer is 100kHz for peak detection (PK) at fundamental frequency below 1GHz; The resolution bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at radiated spurious emission frequency below 1GHz.
- 2. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
- 3. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
- 4. Margin value = Emission level Limit value.
- 5. Fundamental AV value =PK Emission +AV factor.

#### 4.1.4 DEVIATION FROM TEST STANDARD

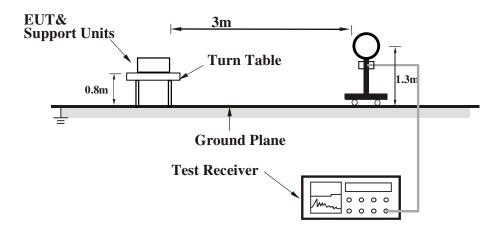
No deviation.

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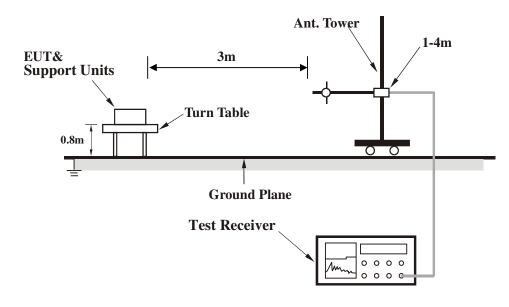


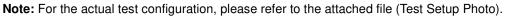
#### 4.1.5 TEST SETUP

#### Below 30MHz test setup



#### Below 1GHz test setup





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### 4.1.6 EUT OPERATING CONDITIONS

- a. Turned on the power of equipment.
- b. Hold down the TX of button, and then the EUT was operating.
- c. EUT was operated according to the type used was description in manufacturer's specifications or the User's Manual.

### 4.1.7 TEST RESULTS

#### FIELD STRENGTH OF FUNDAMENTAL

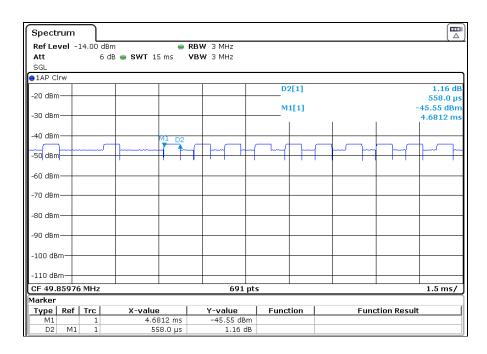
No.	Freq. (MHz)	Antenna Polarization	Correction Factor (dB/m)	Raw Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
*	49.86(PK)	V	-14.12	52.73	38.61	100	-61.39
*	49.86(AV)	V	-7.61	-	31.00	80	-49.00
*	49.86(PK)	Н	-14.12	35.41	21.29	100	-78.71
*	49.86(AV)	Н	-7.61	-	13.68	80	-66.32

**REMARKS:** 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The emission levels of other frequencies were greater than 20dB margin.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.
- 6. The average value of fundamental frequency is: Average value = Peak value +AV factor, where the AV factor is calculated from following formula: AV factor=20 log (Duty cycle) = 20\*log(41.62%)= -7.61dB.



Tp = 18.7681msTon = Ton1 \* Number =0.558\*14 = 7.812ms Duty Cycle = Ton / Tp \* 100% =7.812/18.7681= 41.62% AV Factor=20\*log(duty cycle)=20\*log(41.62%)= -7.61dB.



Spectrum					
Ref Level -14.00 dBr	_	RBW 3 MHz			· · · · ·
	8 画 SWT 50 ms	VBW 3 MHz			
SGL					
●1AP Clrw	1				
-20 dBm			D2[1]		-0.59 dB
20 0011			M1[1]		18.7681 ms -43.96 dBm
-30 dBm					3.7681 ms
-40 dBr <mark>M1</mark>		D2			
- $ hhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhh$	╊₽₽₽₽₽₽₽	╓┿╓┷╇	ԴԱԴԻԱԴԻ	n-n-n	
-50 dBm			<del>                                     </del>	<del>           </del>	<u> </u>
-60 dBm					
-60.08m					
-70 dBm					
-80 dBm					
-90 dBm					
-100 dBm					
-110 dBm					
CF 49.85976 MHz		691 pt	S		5.0 ms/
Marker Type   Ref   Trc	X-value	Y-value	Function	<b></b>	tion Result
Type Ref Trc M1 1	3.7681 ms	-43.96 dBm	Function	Func	cion Result
D2 M1 1	18.7681 ms	-0.59 dB			

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FREQUENCY RANGE	$19KHz \sim 1(-Hz)$	DETECTOR FUNCTION	Quasi-Peak (QP)
-----------------	---------------------	----------------------	-----------------

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)	
1	61.04	12.62 QP	40.00	-27.38	1.00 H	24	27.17	-14.55	
2	145.43	14.05 QP	43.50	-29.45	1.00 H	63	27.80	-13.75	
3	473.29	19.07 QP	46.00	-26.93	1.00 H	124	27.95	-8.88	
4	530.52	21.06 QP	46.00	-24.94	1.00 H	234	29.15	-8.09	
5	662.44	23.25 QP	46.00	-22.75	1.00 H	145	28.61	-5.36	
6	763.32	25.08 QP	46.00	-20.92	1.00 H	88	28.28	-3.20	

#### **REMARKS:**

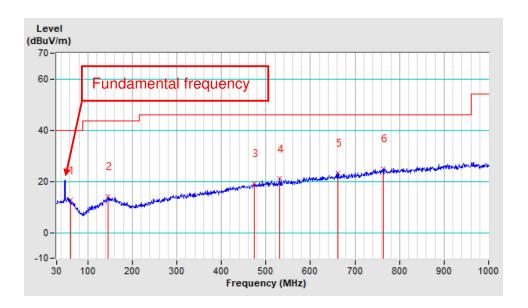
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

3. The emission levels of other frequencies were greater than 20dB margin.

4. 9KHz~30MHz have been test and test data more than 20dB margin.

5. Margin value = Emission level – Limit value.



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FREQUENCY RANGE	$19KH_7 \sim 1(-H_7)$	DETECTOR FUNCTION	Quasi-Peak (QP)
-----------------	-----------------------	----------------------	-----------------

	ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M									
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	HEIGHT ANGLE		RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)		
1	30.00	18.96 QP	40.00	-21.04	1.00 V	45	34.56	-15.60		
2	98.87	14.25 QP	43.50	-29.25	1.00 V	69	32.85	-18.60		
3	159.98	13.69 QP	43.50	-29.81	1.00 V	145	27.40	-13.71		
4	450.98	18.93 QP	46.00	-27.07	1.00 V	96	28.04	-9.11		
5	578.05	21.49 QP	46.00	-24.51	1.00 V	231	28.61	-7.12		
6	608.12	22.97 QP	46.00	-23.03	1.00 V	215	29.38	-6.41		

**REMARKS:** 

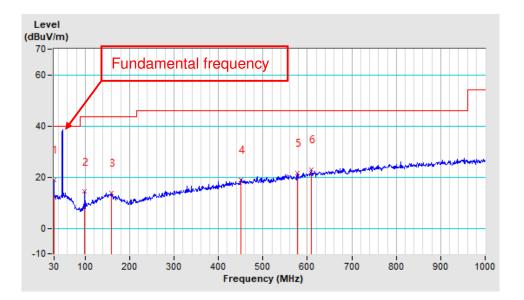
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

3. The emission levels of other frequencies were greater than 20dB margin.

4. 9KHz~30MHz have been test and test data more than 20dB margin.

5. Margin value = Emission level – Limit value.



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#### 4.2 BANDWIDTH MEASUREMENT

#### 4.2.1 LIMITS OF BANDWIDTH MEASUREMENT

The field strength of any emissions appearing between the band edges and up to 10 kHz above and below the band edges shall be attenuated at least 26 dB below the level of the unmodulated carrier or to the general limits in Section 15.209.

FREQUENCY	Limits		
(MHz)	[MHz]		
49.86	within 49.81~49.91		

#### 4.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
Wireless Connectivity Tester	Rohde&Schwarz	CMW270	101601	Oct. 15, 25
Spectrum Analyzer	Rohde&Schwarz	FSV40	101003	Jan. 01, 26
Spectrum Analyzer	Rohde&Schwarz	FSV40	101094	Jan. 01, 26
Frequency Analyzer	Keysight	N9010B	MY60240432	Oct. 10, 25
Power Meter	Rohde&Schwarz	NRX	103107	Apr. 02, 25
Power Sensor	Rohde&Schwarz	NRP6A	103356	Apr. 02, 25
Progammble Temperature&Humidity Chamber	Hongjin	HYC-TH-225DH	DG-180746	Jan. 02, 26
Attenuator	MINI	BW-S10W2+	S130129FGE2	N/A
DC Source	Agilent	E3640A	MY40004013	Jan. 01, 26
Test software	ADT	ADT_RF Test Software V6.6.5.3	N/A	N/A
Test software	ADT	ADT_RF Test Software V6.6.5.4	N/A	N/A

#### NOTES:

- 1. The test was performed in RF Test Shielded Room.
- 2. Equipment are calibrated by calibration laboratory accredited to ISO/IEC 17025 by a mutually recognized Accreditation and all tests are conducted within a valid calibration cycle.
- 3. Test site: No. 122, Houjie Avenue West Houjie Town, Dongguan City Guangdong Province, 523960, People's Republic of China.



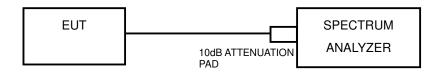
#### 4.2.3 TEST PROCEDURE

- a. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- b. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
- c. Measure the frequency difference of two frequencies that were attenuated 26dB from the reference level. Record the frequency difference as the emission bandwidth.
- d. Repeat above procedures until all frequencies measured were complete.

#### 4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

#### 4.2.5 TEST SETUP



#### 4.2.6 EUT OPERATING CONDITIONS

Same as item 4.1.6



## 4.2.7 TEST RESULTS

Lower & Upper Test Frequency Point (MHz)	Test Frequency (MHz)	P/F
Lower	49.84587	PASS
Upper	49.87221	PASS

Spectrum										
Ref Level -:	25.00 dBn	ı		RBW 3 kHz						
Att	0 d8	3 <b>SWT</b> 630	i.9 μs 👄	VBW 10 kHz	Mode 4	uto FFT				
⊖1Pk View										)
-30 dBm						M1[1]				-43.80 dBm
-30 0.011									49.8	59760 MHz
-40 dBm				64		ndB				20.00 dB
-40 dbin				3	(	Зw			26.3400	000000 kHz
-50 dBm						Q factor				1893.0
00 0011										
-60 dBm					12	_				
				F	y					
-70 dBm						-				
				, 						
-80 dBm							$\rightarrow$	~		
-90 dBm						_				
-100 dBm						-				
-110 dBm						_				
-120 dBm										
CF 49.85976	5 MHz	1 1		691	pts	-			Span	200.0 kHz
Marker										
	Trc	X-value	1	Y-value	Eun	ction	1	Fund	tion Result	t 1
M1	1	49.8597	6 MHz	-43.80 dB		B down				26.34 kHz
T1	1	49.8458	7 MHz	-63.88 dB		ndB				20.00 dB
T2	1	49.8722	1 MHz	-63.93 dB	m C	) factor				1893.0



# **5** PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).

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## 6 APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

---END----

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