REPORT No. : SZ15050021E01

FCC TEST REPORT

APPLICANT	:	RM Acquisition LLC
PRODUCT NAME	:	GPS navigation
MODEL NAME	:	TND 765
TRADE NAME	:	N/A
BRAND NAME	:	Rand McNally
FCC ID	:	A4C01003A
STANDARD(S)	:	47 CFR Part 15 Subpart B
TEST DATE	:	2015-05-02 to 2015-05-15
ISSUE DATE	:	2015-06-04

SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.

MORLAB GROUP
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DIRECTORY

Test Report Declaration

Applicant	RM Acquisition LLC
Applicant Address	9855 Woods Drive, Skokies IL 60077
Manufacturer	LONGHORN AUTO LIMITED
Manufacturer Address	Gongyeyuan rd., Dalang street, Longhua , Shenzhen
Product Name	GPS navigation
Model Name	TND 765
Brand Name	Rand McNally
HW Version	RM762_V3.0
SW Version	762.01.01.010
Test Standards	47 CFR Part 15 Subpart B
Test Result	PASS

Tested by : Kuang Xinhua
Kuang Xinhua (Test Engineer)

Reviewed by : Xiao Xiong
Xiao Xiong (EMC Manager)

Approved by : Zeng Dexin
Zeng Dexin (Chief Engineer)

1. Technical Information

Note: Provide by applicant.

1.1. Applicant Information

Company: RM Acquisition LLC
Address: 9855 Woods Drive, Skokies IL 60077

1.2. Equipment under Test (EUT) Description

EUT Type:	GPS navigation
Serial No:	(n.a., marked #1 by test site)
Hardware Version:	RM762_V3.0
Software Version:	762.01.01.010
Rated Voltage:	12VDC
Rated Current:	1.5A

Power supply:	**Battery**	
	Brand Name:	SouthRIiver
	Model No.:	+SR404255
	Serial No.:	(n.a. marked #1 by test site)
	Capacity:	950mAh
	Rated Voltage:	3.7V
	Charge Limit:	4.2V

NOTE:

1. The EUT is a GPS navigation. It is equipped with a Micro USB port and a female USB port for transmitting data and software upgrading.
2. For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

2. Test Results

2.1. Applied Reference Documents

The objective of the report is to perform testing according to 47 CFR Part 15 Subpart B:

No.	Identity	Document Title
1	47 CFR Part 15(10-1-13 Edition)	Radio Frequency Devices

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Test Date	Result
1	15.107	Conducted Emission	N/A	N/A[Note]
2	15.109	Radiated Emission	2015.05.10	PASS

Note: The EUT is a GPS navigation which used in vehicular environment, it was charged by 12VDC directly.

The tests were performed according to the method of measurements prescribed in ANSI C63.4-2009.

3. Test Conditions Setting

3.1. Test Mode

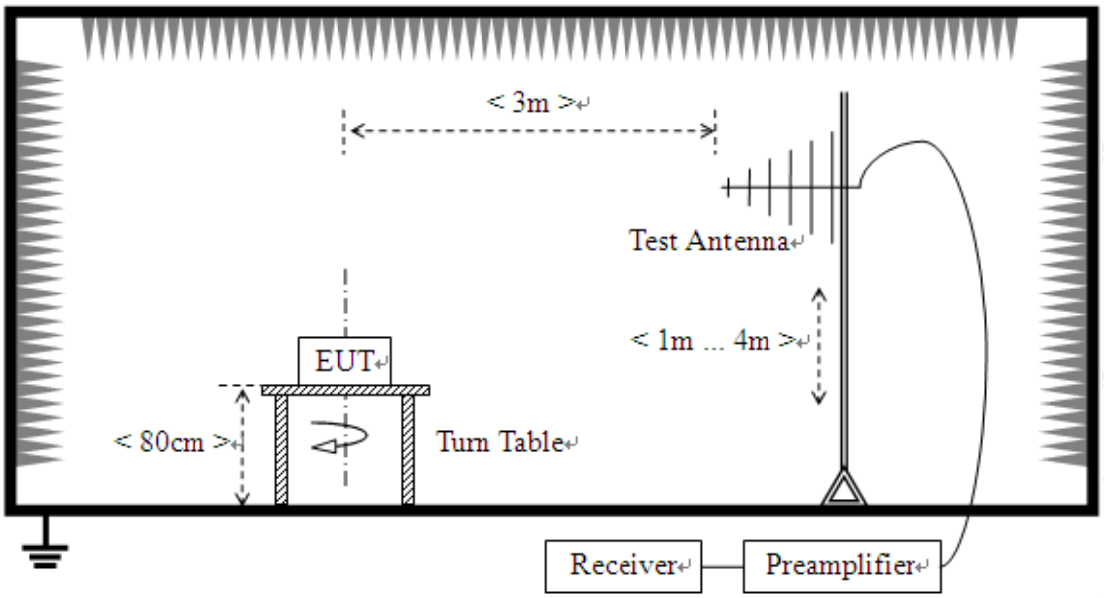
1	**The first test mode (Micro USB port)**
	The EUT configuration of the emission tests is EUT + Battery + DC Power Source + PC. In this test mode, the EUT was powered by DC power source and connected to a PC via the Micro USB port. During the measurement, the data was transmitting between the PC and the EUT.
2	**The second test mode (Female USB port)**
	The EUT configuration of the emission tests is EUT + Battery + DC Power Source + U Disk. In this test mode, the EUT was powered by DC power source, a U disk was inserted into the EUT via the female USB port. During the measurement, the data was transmitting between the U disk and the EUT.
Note: All test modes are performed, only the worse case(Female USB port) is recorded in this report.	

3.2. Test Setup and Equipments List

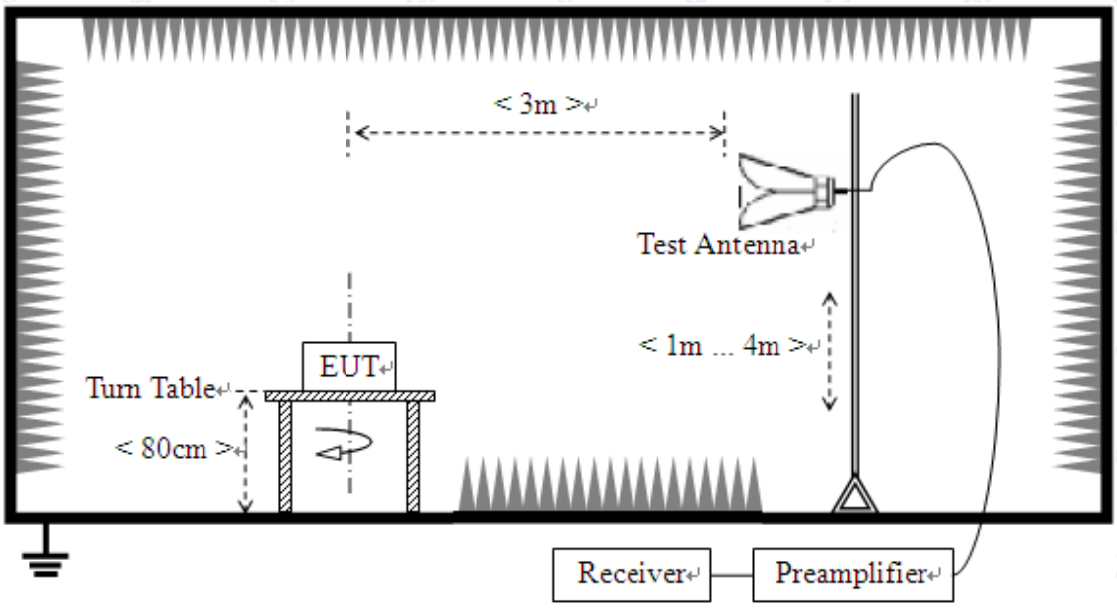
3.2.1. Radiated Emission

A. Test Setup:

1. For radiated emissions from 30MHz to1GHz



2. For radiated emissions above 1GHz



The test is performed in a 3m Semi-Anechoic Chamber; the antenna factor, cable loss and so on of the site (factors) is calculated to correct the reading. The EUT is placed on a 0.8m high insulating Turn Table, and keeps 3m away from the Test Antenna, which is mounted on a variable-height antenna master tower.

For the test Antenna:

In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength. The emission levels at both horizontal and vertical polarizations should be tested.

B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Due. Date
EMC Analyzer	Agilent	E7405A	US44210471	2015.2.21	2016.2.20
Receiver	Narda	PMM 9060	001WX11001	2015.2.21	2016.2.20
Receiver	Narda	PMM 9010	595WX11007	2015.2.21	2016.2.20
Semi-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2015.2.21	2016.2.20
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2015.2.25	2016.2.24
Test Antenna - Horn	Schwarzbeck	BBHA 9120D	9120D-963	2015.2.25	2016.2.24
PC	Apple	A1370	C02FQ2PYDDQW	(n.a.)	(n.a.)

4. 47 CFR Part 15B Requirements

4.1. Radiated Emission

4.1.1. Requirement

According to FCC section 15.109(a), the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency range (MHz)	Field Strength Limitation at 3m Measurement Dist	
	(μV/m)	(dBμV/m)
30.0 - 88.0	100	20log 100
88.0 - 216.0	150	20log 150
216.0 - 960.0	200	20log 200
Above 960.0	500	20log 500

As shown in FCC section 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector. When average radiated emission measurements are specified in this part, including emission measurements below 1000MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit for the frequency being investigated unless a different peak emission limit is otherwise specified in the rules.

Note:

1) The tighter limit shall apply at the boundary between two frequency range.
2) Limitation expressed in dBμV/m is calculated by 20log Emission Level(μV/m).
3) If measurement is made at 3m distance, then F.S Limitation at 3m distance is adjusted by using the formula of $Ld1 = Ld2 * (d2/d1)^{2.}$
   Example:
   F.S Limit at 30m distance is 30μV/m, then F.S Limitation at 3m distance is adjusted as
   $Ld1 = L1 = 30\mu V/m * (10)^2 = 100 * 30\mu V/m$

4.1.2. Test Description

See section 3.2.1 of this report.

4.1.3. Frequency range of measurement

Highest frequency generated or used in the device is the highest speed of the processor, lowest frequency generated or used in the device is the lowest frequency of the oscillator. According to 15.33(b)(1), the frequency range of radiated measurement for the EUT is listed in the following table:

Frequency	Frequency generated or used in the device	Frequency range of radiated measurement in the report
Highest	800MHz	5GHz

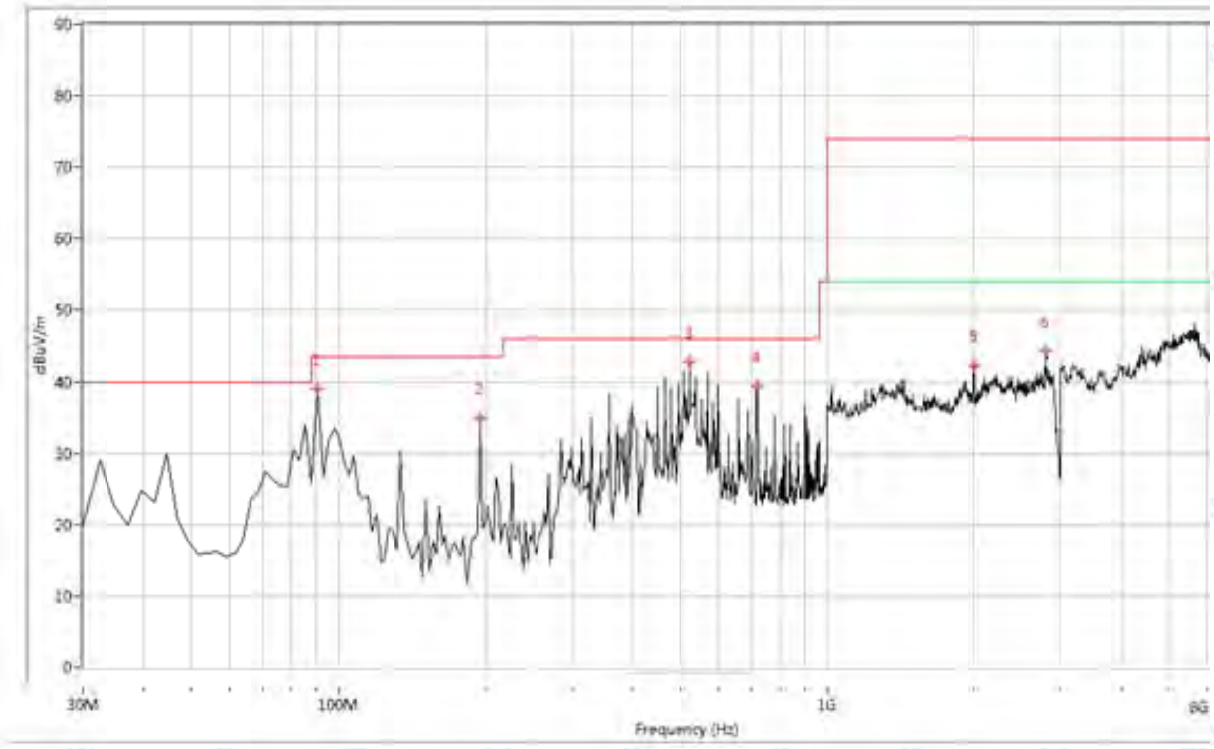
4.1.4. Test Result

The maximum radiated emission is searched using PK, QP and AV detectors; the emission levels more than the limits, and that have narrow margins from the limits will be re-measured with AV and QP detectors. Both the vertical and the horizontal polarizations of the Test Antenna are considered to perform the tests. All test modes are considered, refer to recorded points and plots below.

The amplitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be reported.

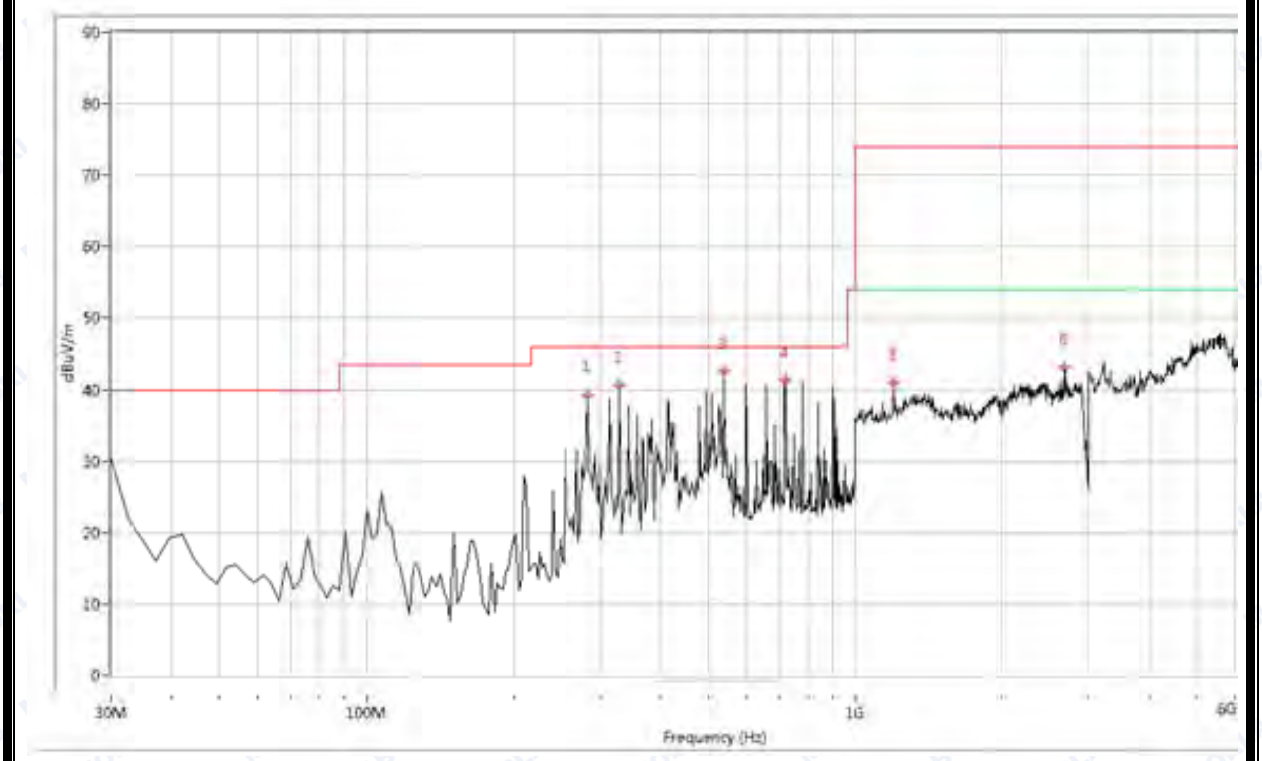
Note: All radiated emission tests were performed in X, Y, Z axis direction, and only the worst axis test condition was recorded in this test report.

A. Test Plots and Suspicious Points:



(Plot A: 30MHz – 6GHz, Test Antenna Vertical)

NO.	Fre. MHz	Pk dBµV/m	QP dBµV/m	AV dBµV/m	Limit-PK dBµV/m	Limit-QP dBµV/m	Limit-AV dBµV/m	ANT	Verdict
1	90.474	N.A	39.07	N.A	N.A	43.5	N.A	V	Pass
2	194.489	N.A	34.93	N.A	N.A	43.5	N.A	V	Pass
3	523.466	N.A	42.77	N.A	N.A	46.0	N.A	V	Pass
4	719.401	N.A	39.34	N.A	N.A	46.0	N.A	V	Pass
5	2002.494	42.32	N.A	33.69	74.0	N.A	54.0	V	Pass
6	2783.441	43.11	N.A	35.56	74.0	N.A	54.0	V	Pass



(Plot B: 30MHz – 6GHz, Test Antenna Horizontal)

NO.	Fre. MHz	Pk dBμV/m	QP dBμV/m	AV dBμV/m	Limit-PK dBμV/m	Limit-QP dBμV/m	Limit-AV dBμV/m	ANT	Verdict
1	283.990	N.A	39.12	N.A	N.A	46.0	N.A	H	Pass
2	329.950	N.A	40.60	N.A	N.A	46.0	N.A	H	Pass
3	540.399	N.A	42.58	N.A	N.A	46.0	N.A	H	Pass
4	719.401	N.A	41.38	N.A	N.A	46.0	N.A	H	Pass
5	1199.501	40.98	N.A	31.74	74.0	N.A	54.0	H	Pass
6	2714.713	41.97	N.A	32.87	74.0	N.A	54.0	H	Pass

Test Result: PASS

Annex A Test Uncertainty

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in Measurement" (GUM) published by ISO.

Uncertainty of Conducted Emission:	±1.8dB
Uncertainty of Radiated Emission:	±3.1dB

Annex B Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

Company Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Department:	Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Responsible Test Lab Manager:	Mr. Su Feng
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

3. Accreditation Certificate

Accredited Testing Laboratory: The FCC registration number is 695796.
(Shenzhen Morlab Communications Technology Co., Ltd.)

4. Test Environment Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15 - 35
Relative Humidity (%):	30 - 60
Atmospheric Pressure (kPa):	86 - 106

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