Product Name:	Remote controller (RX)
Model Number:	Tx262FP
Applicant:	Superwinch, Inc. 45 Danco Raod Putnam, CT 06260 U.S.A.
Date of Receipt:	Dec. 27, 2002
Finished date of Test:	Jan. 15, 2003
Applicable Standards:	47 CFR Part 15, Subpart B, Class B ANSI C63.4:2001

We, **Spectrum Research & Testing Laboratory Inc.**, hereby certify that one sample of the above was tested in our laboratory with positive results according to the above-mentioned standards. The records in the report are an accurate account of the results. Details of the results are given in the subsequent pages of this report.

Checked By : _____ , Date: Jan 23, 2003
(Wolfgang Huang)

Approved By : _____ , Date: Jan. 23. 2003
(Johnson Ho, Director)

NVLAP®
Lab Code: 200099-0

FCC ID: QUUW2RX

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1. DOCUMENT POLICY AND TEST STATEMENT

1.1 DOCUMENT POLICY

- The report shall not be reproduced except in full, without the written approval of SRT Lab, Inc.
- The report must not be used by the applicant to claim that the product is endorsed by NVLAP.
- The NVLAP logo applies only to the applicable standards specified in this report.

1.2 TEST STATEMENT

- The test results in the report apply only to the unit tested by SRT Lab.
- There was no deviation from the requirements of test standards during the test.
- The new batterry power source, 12 Vdc, was used during the test.

2. DESCRIPTION OF EUT AND TEST MODE

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Remote controller (RX)
MODEL NO.	Tx262FP
POWER SUPPLY	DC 12V from Battery (working voltage:5Vdc)
CABLE	N/A
I/O PORT/INTERFACE	N/A
FREQUENCY BAND	281-323MHz
RECEIVER FREQUENCY	303.875MHz
NUMBER OF CHANNEL	1
CHANNEL SPACING	0
MODULATION TYPE	ASK
SENSITIVITTY	-35dBm(0dB)
ANTENNA TYPE	Mono pole antenna

NOTE:
The EUT is the receiver part of a remote controller which is designed to use in a vehicle.
Operating frequency : 303.875 MHz

2.2 DESCRIPTION OF EUT INTERNAL DEVICE

DEVICE	BRAND / MAKER	MODEL #	FCC ID/DOC	REMARK
N/A				

2.3 DESCRIPTION OF TEST MODE

N/A (It is only applicable to more than one test mode.)

2.4 DESCRIPTION OF SUPPORT UNIT

The EUT was configured by the requirement of ANSI C63.4 and CISPR 22. All interface ports were connected to the appropriate support units via specific cables. The support units and cables are listed below.

NO	DEVICE	BRAND	MODEL #	FCC ID/DOC	CABLE
	N/A				

NOTE: For the actual test configuration, please refer to the photos of testing.

3. DESCRIPTION OF APPLIED STANDARDS

The EUT is a kind of receiver and according to the specifications provided by the applicant, must comply with the requirements of the following standards:

47 CFR Part 15 Subpart B, Class B

All tests have been performed and recorded as per the above standards.

4. RADIATED EMISSION TEST

4.1 RADIATED EMISSION LIMIT

FCC Part 15, Subpart B limit of radiated emission :

Frequency (MHz)	Class B (at 3m)
	dBμV/m
30 – 88	40.0
88 – 216	43.5
216 – 960	46.0
Above 960	54.0

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBμV/m) = 20 log Emission level (μV/m).

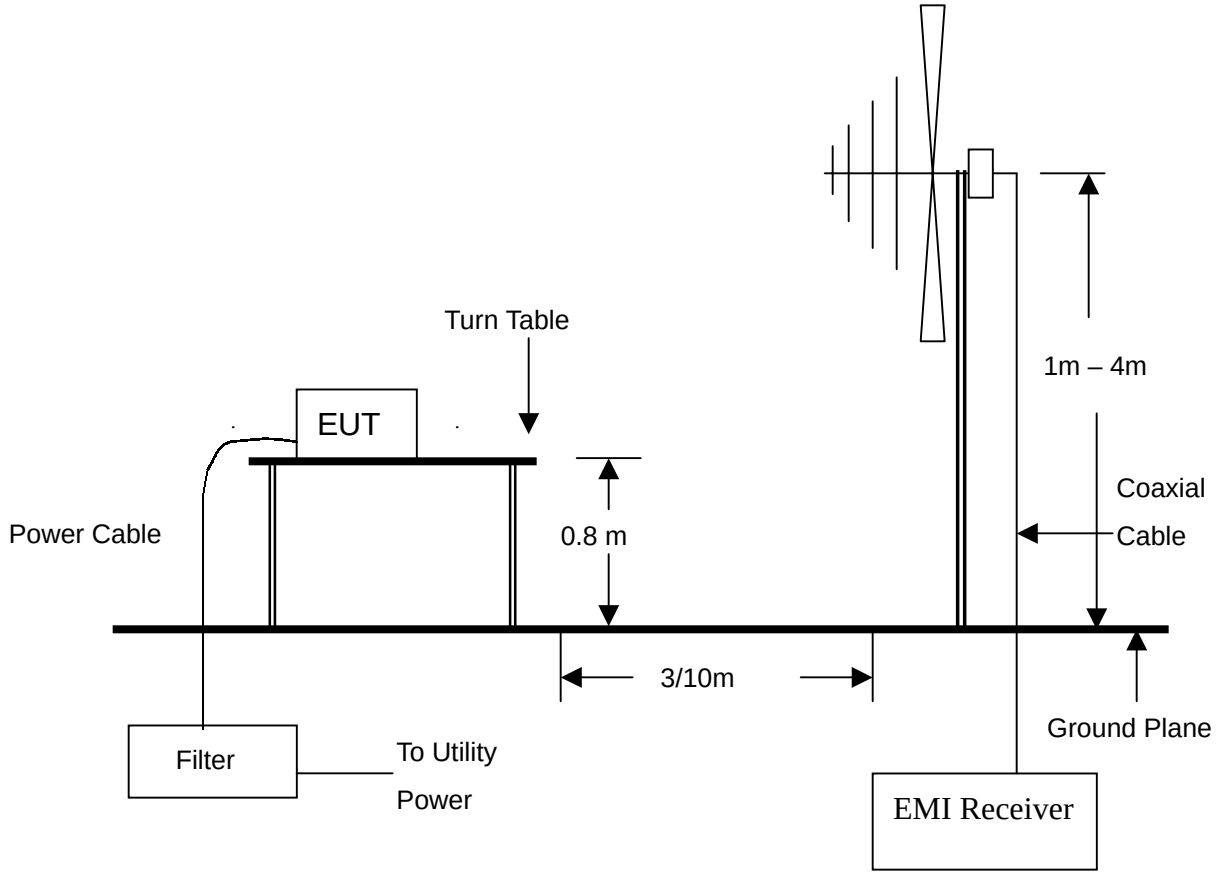
4.2 TEST EQUIPMENT

The following test equipment was used during the radiated emission test :

EQUIPMENT/ FACILITIES	SPECIFICATIONS	MANUFACTURER	MODEL#/ SERIAL#	DUE DATE OF CAL. & CAL. CENTER
EMI TEST RECEIVER	9 kHz TO 2750 MHz	ROHDE & SCHWARZ	ESCS30/ 836858/008	DEC. 2003 R&S
BI-LOG ANTENNA	25 MHz TO 2 GHz	EMCO	3142/ 9701-1124	APR. 2003 ETC
PRE-AMPLIFIER	1GHz-26.5GHz Gain:30dB(typ.)	HP	8449B/ 3008A01019	NOV. 2003 ETC
SPECTRUM	9KHz TO 26.5GHz	HP	8953E/ 3710A03220	MAY 2003 ETC
HORN ANTENNA	1GHz TO 18GHz	EMCO	3115/ 9602-4681	DEC. 2003 ETC
OATS	3 – 10 M MEASUREMENT	SRT	SRT-1	MAY 2003 SRT

1. The calibration interval of the above test equipment is one year and the calibrations are traceable to NML/ROC and NIST/USA.
2. The Open Area Test Site (SRT-1) is registered by FCC with No. 90957 and VCCI with No. R-1081.
3. The Open Area Test Site (SRT-2) is registered by FCC with No. 98458 and VCCI with No. R-1168.

4.3 TEST SET-UP



NOTE :

1. The EUT system was put on a wooden table with 0.8m heights above a ground plane.
2. For the actual test configuration, please refer to the photos of testing.

4.4 TEST PROCEDURE

The EUT was tested according to the requirement of ANSI C63.4 . The measurements were made at an open area test site with 3 meter measurement distance under 1 GHz and with 3m distance above 1GHz. The frequency spectrum measured started from 30 MHz. Under 1 GHz. All readings were quasi-peak values with 120 kHz resolution bandwidth of the test receiver. Above 1 GHz, the measurements were made at an open area test site with 3 meter measurement distance and all readings were peak or average values with 1 MHz resolution bandwidth of the test receiver. The EUT system was operated in all typical methods by users. The cables connected to EUT and support units were moved to find the maximum emission levels for each frequency.

4.5 EUT OPERATING CONDITION

1.The EUT was operated at continue receiver mode.

4.6 RADIATED EMISSION TEST RESULT

Temperature:	31 °C	Humidity:	50 %RH
Ferquency Range:	30 – 18GHz	Measured Distance:	3m
Receiver Detector:	Q.P.	Tested by:	James Lee

Antenna Polarization : Horizontal

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB)	Reading Data (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	AZ(°)	EL(m)
303.7909	2.05	14.92	18.4	35.4	46.0	-10.6	130	1
607.5818	*	*	*	*	*	*	*	*
911.3727	*	*	*	*	*	*	*	*
1215.1636	*	*	*	*	*	*	*	*

Antenna Polarization : Vertical

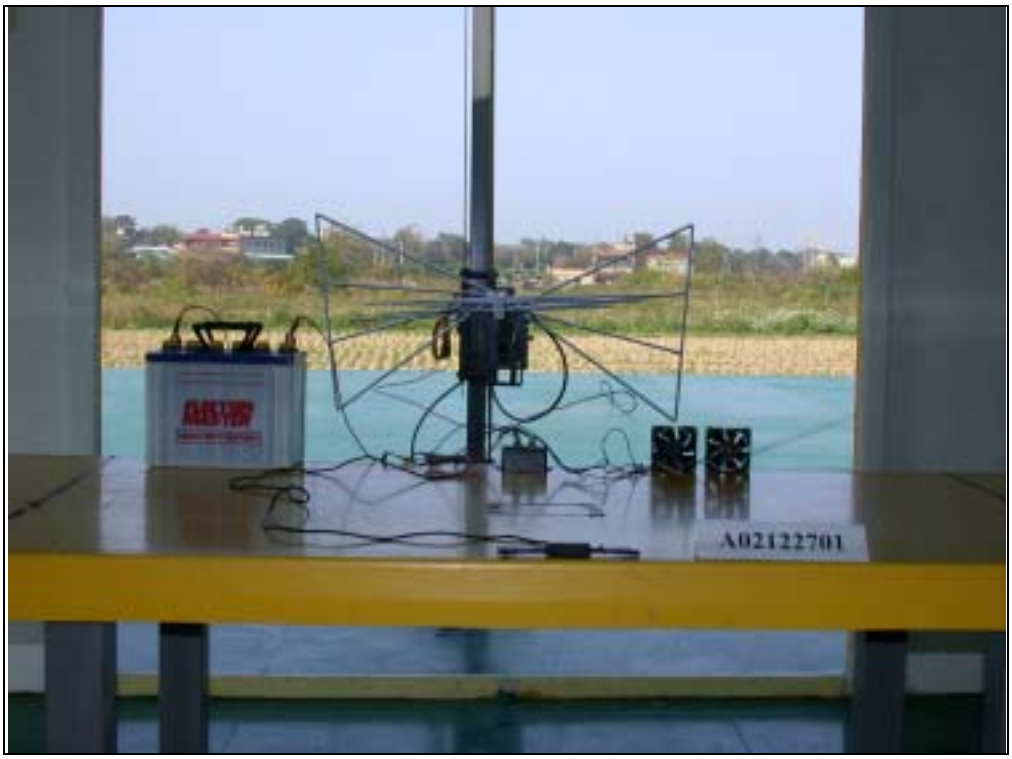
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB)	Reading Data (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	AZ(°)	EL(m)
303.7988	2.05	14.92	9.6	26.6	46.0	-19.4	321	1
607.5818	*	*	*	*	*	*	*	*
911.3727	*	*	*	*	*	*	*	*
1215.1636	*	*	*	*	*	*	*	*

NOTE :

1. Measurement uncertainty is 4dB.
2. "*": Measurement does not apply for this frequency.
3. Emissiom Level = Reading Value + Ant. Factor + Cable Loss.
4. The field strength of other emission frequencies were very low against the limit.
5. (F): Fundmental frequency of receiver.

5. PHOTOS OF TESTING

- Radiated test



6. TERMS OF ABRIVATION

AV.	Average detection
AZ(°)	Turn table azimuth
Correct.	Correction
EL(m)	Antenna height (meter)
EUT	Equipment Under Test
Horiz.	Horizontal direction
LISN	Line Impedance Stabilization Network
NSA	Normalized Site Attenuation
Q.P.	Quasi-peak detection
SRT Lab	Spectrum Research & Testing Laboratory, Inc.
Vert.	Vertical direction