FCC ID: O2SNURIT3010CT

Exhibit 2a

Engineering Report on

ERP (2.1046)

Assessment of Compliance

for

Measurement of Effective Radiated Power (ERP)in accordance with the FCC Rules & Regulations Part 2.1046 & 22

Point of Sale Device

Nurit 3010 with a Novatel Wireless CDPD radio transmitter and TNC Carant Antenna

Lipman USA, Inc.

March 2001

LPMB-NURIT3010-POS-EDC Terminal w. Novatel CDPD-3684

51 Spectrum Way Nepean ON K2R 1E6
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Engineering Report

Subject: **Measurement of Effective Radiated Power (ERP) in accordance with the FCC Rules & Regulations Part 2.1046 & 22**

FCC ID: **O2SNURIT3010CT**

Equipment: **Point of Sale Device**

Model: **Nurit 3010 with a Novatel NRM-6832 transmitter CDPD**

Client: **Lipman USA, Inc.**
50 Gordon Drive
Syosset, NY 11791
U.S.A.

Project #: LPMB-Nurit 3010 POS EDC Terminal w. Novatel CDPD-3684

Prepared By: **APREL Laboratories,**
Regulatory Compliance Diyision

Approved by: _____ Date: April 2, 2001
Jay Sarkar
Technical Director, Standards & Certification

Submitted by: _____ Date: April 2, 2001
Jay Sarkar
Technical Director, Standards & Certification

Released by: _____ Date: April 2/01
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FCC ID: O2SNURIT3010CT
Applicant: Lipman USA, Inc.
Equipment: Point of Sale Device
Model: Nurit 3010 CDPD with a Novatel NRM-6832 transmitter, CDPD
Standard: FCC Rules and Regulations Part 2.1046 & 22

ENGINEERING SUMMARY

This report contains the results of the effective radiated power (ERP) measurement performed on a LIPMAN Point of Sale Device operating with a built-in Novatel NRM-6832 radio transmitter equipped with a detachable Carant 3664 antenna. The measurements were carried out in accordance with the FCC Rules and Regulations Part 2.1046 and 22.

Tests were conducted to determine the peak ERP of the above sample.

Nurit 3010 CDPD was tested for ERP at high, middle, and low frequencies with the maximum ERP obtained at channel No.: 799 with the frequency being 848.97 MHz. The test data is presented in page 10 of this report. The measured ERP is 0.141 W.

(The results presented in this report relate only to the sample tested.)

INTRODUCTION

General

This report describes the results of the effective radiated power (ERP) measurement conducted on a Lipman USA Point of Sale Device model Nurit 3010 CDPD operating with a built-in Novatel NRM-6832 radio transmitter, and equipped with a Carant 3664 antenna having a TNC male type connector that bolts through the casing of the unit. Tests were performed to determine the peak ERP for the above sample.

Test Facility

The tests were performed for Lipman USA, Inc. by APREL Laboratories at APREL's EMI facility located in Nepean, Ontario, Canada. The laboratory operates an (3m and 10m) Open Area Test Site (OATS). The measurement facility is calibrated in accordance with ANSI C63.4-1992.

A description of the measurement facility in accordance with the radiated and AC line conducted test site criteria per ANSI C63.4-1992 is on file with the Federal Communications Commission and is in compliance with the requirements of Section 2.948 of the Commissions rules and regulations.

APREL's registration number is: 90416

APREL is accredited by Standard Council of Canada, under PALCAN program (ISO Guide 25). APREL is also accredited by Industry Canada (formerly DOC) and recognised by the Federal Communications Commissions (FCC).

Standard

The evaluation and analysis were conducted in accordance with FCC Rules and Regulations Parts 2.1046 and 2.

Test Equipment

The test equipment used during the evaluation is listed in Appendix A with calibration due dates.

Environmental Conditions

Final measurements were conducted in open area test site.

- Temperature: 15 °C ± 2, - Relative Humidity: 30 - 50 %, - Air Pressure: 101 kPa ± 3

FCC SUBMISSION INFORMATION

FCC ID:	**O2SNURIT3010CT**
Equipment:	Point of Sale Device
Model:	Nurit 3010 CDPD
For:	Certification
Applicant:	Lipman USA, Inc.. 50 Gordon Drive Syosset, NY 11791 USA
Manufacturer:	Lipman USA, Inc.. 50 Gordon Drive Syosset, NY 11791 USA
Evaluated by:	APREL Laboratories 51 Spectrum Way Nepean, Ontario Canada K2R 1E6

MANUFACTURER'S DATA

FCC ID No:	**O2SNURIT3010CT**
Equipment Type:	Point of Sale Device
Model:	Nurit 3010 CDPD
Reference:	FCC Rules and Regulations Parts 2 and Part 22.901(d)
Manufacturer:	Lipman USA, Inc..
Power Source:	DC Battery
Development Stage of Unit:	Production

GENERAL SPECIFICATIONS

1. Frequency Range: 824 to 849 MHz (Transmitter)
2. Output Power: 0.141 W ERP
3. Frequency Tolerance: 2.5 ppm
4. Type of Modulation: GMSK
5. Emission Designators(See 47 CFR § 2.201 and §2.202) 28K8FXW
6. Antenna Impedance: 50 Ohms

Test: **RF Power Output as Radiated (ERP)**

Ref.: **FCC Part 2 paragraph 2.1046**

Criteria: N/A

Set-up: See Figure No. 1.

Equipment: See Appendix A.

Methodology: RF Power Measurement by Radiated Method (ERP):

Test site: The radiated RF power measurement was taken at APREL Laboratory's open area test site (OATS). This open area test site is calibrated to ANSI C63.4 document and a description of the measurement facility is on file with the Federal Communications Commission and is in compliance with the requirement of Section 2.948 of the Commissions rules and regulations. (FCC File No.: 90416)

The test was set-up as illustrated in Fig.1. The Point of Sale Device was configured to operate at maximum power with carrier **unmodulated**. The equipment under test was placed on a turntable positioned 3 m away from the calibrated receiving antenna, which in turn was connected to the spectrum analyzer.

For each transmitter frequency, the received signal was **maximised** by rotating the turntable and adjusting the height of the receiving antenna. To obtain the actual ERP, the Point of Sale Device was replaced by a vertically polarised half-wave dipole antenna resonant to that frequency and fed by a RF power amplifier and signal generator. The center of the dipole antenna was placed precisely in the same location as the Point of Sale Device. It was ensured that the orientation of the rotating table and the height of the receiving antenna were unmoved. The signal generator level was adjusted until the peak reading on the spectrum analyzer was identical to that obtained when the Point of Sale Device was on the turntable. The two signals were matched by superimposing one signal to the other on the spectrum analyzer screen. The output of power amplifier was disconnected from the substitute dipole antenna and connected to a RF power meter. **The effective radiated power was read directly form the power meter**.

The process was repeated for two more channels.

Results: See Table 1

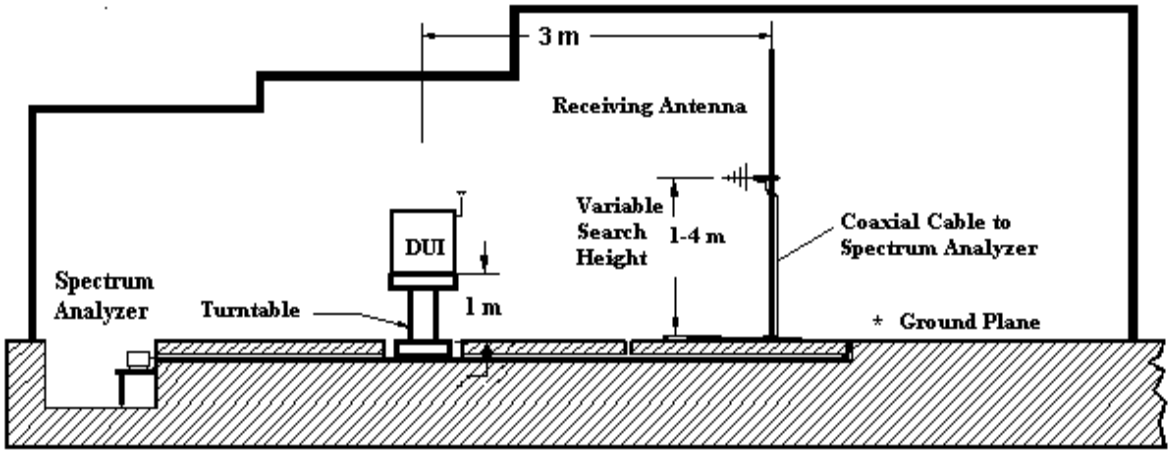


Figure 1.a Test set up for the Radiated Power (ERP) Measurement in OATS (not to scale)

Fig. 1.b APREL's OATS (Open Area Test Site)

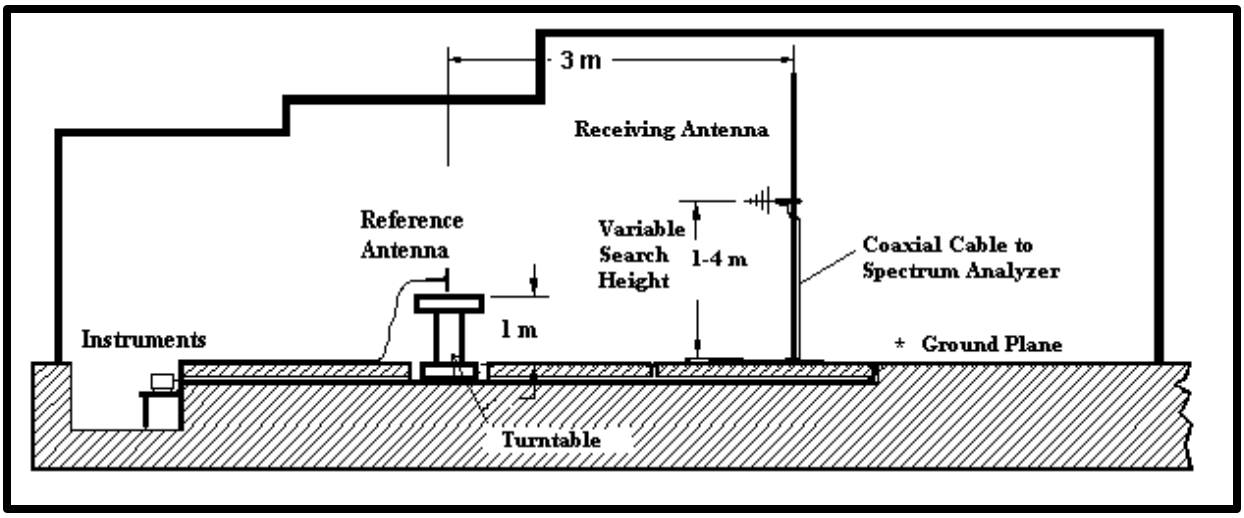


Figure 1.c Test set up for the Radiated Power (ERP) Measurement in OATS (not to scale)
The DUI is replaced by Reference Dipole Antenna.

Table 1.
RF Output Power Measurement
ERP
Power Level: 0

Channel No.	Nominal Transmit Frequency	Measured Output Power ERP (Power Level: 0)	ERP (Power Level: 0)
	(MHz)	(dBm)	(W)
991	824.04	20.90	0.123
383	836.49	21.35	0.136
799	848.97	21.50	0.141

APPENDIX A

List of Test Equipment

List of Equipment used

Description	Manufacturer	Model #	Asset #	Calibration Due Data
Spectrum Analyzer	Anritsu	MS2661C	301330	Dec 10, 2001
Power Meter	Rhode & Schwarz	NRVS	00851	July 21, 2001
20 dB Attenuator	Narda	4779-20	301370	May 18, 2001
Signal Generator	Hewlett-Packard	HP 8662A	100456	Nov 1, 2001
RF Power Amplifier	Amplifier Research	25W100M	100735	Sep 16, 2001
Reference Half wave Dipole	APREL Inc.	D-8355	N/A	June 16, 2001
Log Periodic Antenna	Eaton	ALP-1	100553	July 21, 2001
Turntable with Controller	EMCO	1060-1.241	100506	CNR
Computer Controlled Antenna Position Mast	EMCO	1051-12	100507	CNR
OATS	APREL Inc.	3m & 10m	N/A	N/A

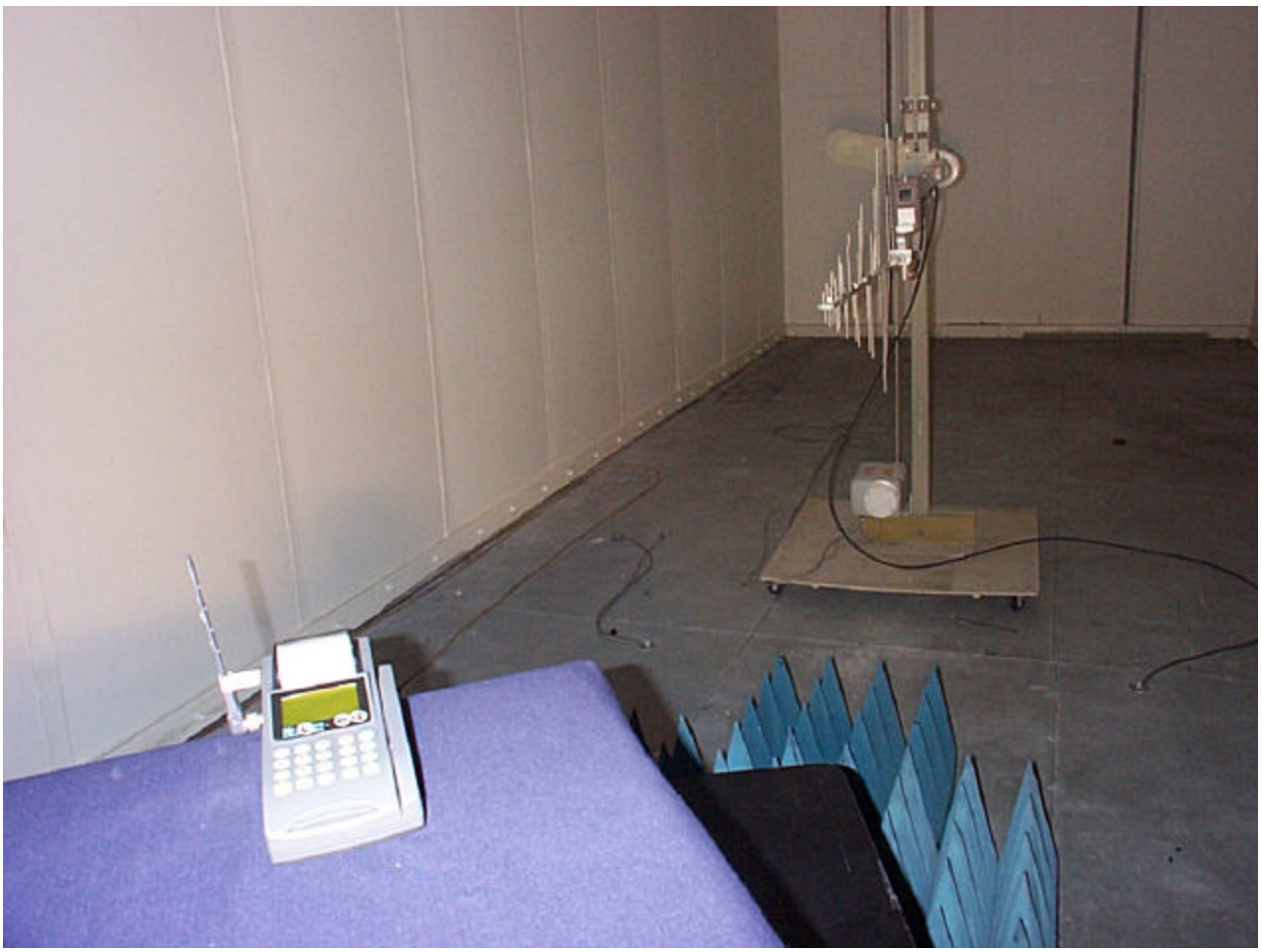
APPENDIX B

PHOTOGRAPHS

APREL's internal identification tag

TNC Connector

Lipman USA
Point of Sale Device
Nurit 3010 CDPD



ERP Measurements in OATS

Reference Dipole Antenna Used for ERP Measurement