



Nemko


Test Report: 3W07157

Applicant: Kaba Ilco Inc.
7301 Decarie Blvd Montreal
Qc. Canada
H4P 2G7

**Equipment Under Test:
(EUT)** Legic LPR-10M reader

In Accordance With: **FCC Part 15, Subpart C, 15.225**

Tested By: Nemko Canada Inc.
303 River Road, R.R. 5
Ottawa, Ontario K1V 1H2

Authorized By: 
Russell Grant, Wireless Technologist

Date: 18 July 2003

Total Number of Pages: 12

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EQUIPMENT: Legic LPR-10M reader

Section 1. Summary Of Test Results

General

All measurements are traceable to national standards.

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part 15, Subpart C for low power devices. All tests were conducted using measurement procedure ANSI C63.4-1992. Radiated Emissions were made on an open area test site. A description of the test facility in on file with the FCC.

THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED.

THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE TEST SPECIFICATIONS HAVE BEEN MADE. NONE
See " Summary of Test Data".



TESTED BY: _____
Kevin Carr, EMC Specialist

DATE: 18 July 2003

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This report applies only to the items tested.

EQUIPMENT: Legic LPR-10M reader

Summary Of Test Data

Name Of Test	Para. No.	Result
Powerline Conducted Emissions	15.207	N/A
Frequency Stability	15.225	Complied
Radiated Emissions	15.209	Complied

Footnotes For N/A's: **The EUT is DC powered by a device the manufacturer of the Legic reader does not supply**

Test Conditions:

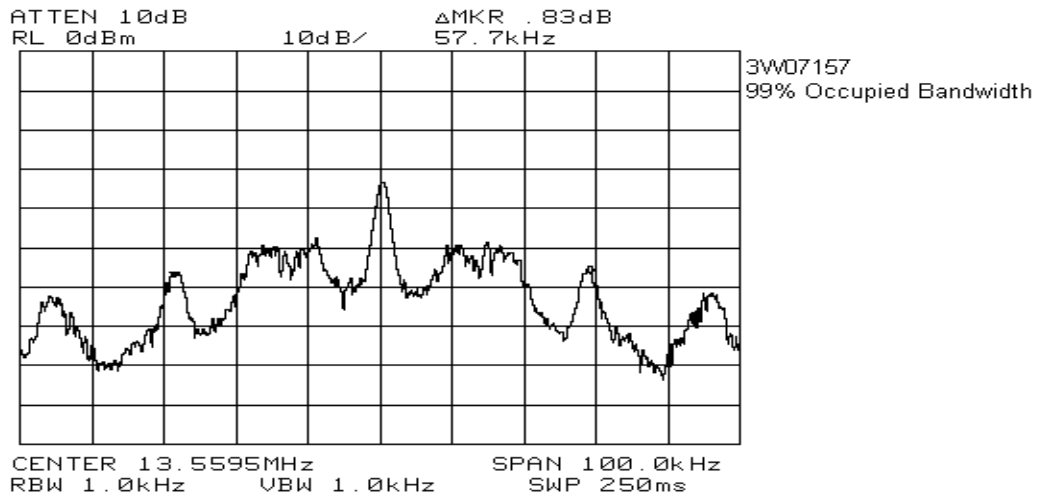
Indoor Temperature: 20°C
 Humidity: 47%

EQUIPMENT: Legic LPR-10M reader

Section 2. General Equipment Specification

General Equipment Information

Manufacturer: Kaba Ilco Inc.
Brand Name: Legic LPR-10M reader
Model/Serial No.: None
Date Received In Laboratory: 3 July 2003
Nemko Identification No.: 1
Frequency Range: Fixed, 13.560MHz
Operating Frequency(ies) of Sample: Fixed, 13.560MHz
Type of Emission: ASK (Amplitude shift keying)
99% Occupied Bandwidth 57.7kHz
Emission Designator: 57K7L1D



EQUIPMENT: Legic LPR-10M reader

Section 4. Radiated Emissions

Para. No.: 15.225

Test Performed By: Kevin Carr	Date of Test: 11 July 2003
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Minimum Standard: 15.225

Test Results: Complies

Measurement Data: See attached table.

EQUIPMENT: Legic LPR-10M reader

Test Date: 11 July 2003											
Engineer's Name: Kevin Carr											
Temperature (C°): 17						Humidity %: 95					
Tested as per (Table Top/Floor Standing): Table Standing											
Test Distance (meters): 2, 3						Range: 1					
Emissions within 25 dB of the limit have been recorded.											
Frequency of Emission (MHz)		Received Signal (dBuV/m@3m)		Extrapolated Signal (dBuV/m@30.0m)		Limit (dBuV/m@30m)		Margin (dB)			
13.56		71.2		31.2		80.0		48.8			
Frequency of Emission (MHz)		Received Signal (dBuV/m@2m)		Extrapolated Signal (dBuV/m@30.0m)		Limit (dBuV/m@30m)		Margin (dB)			
27.12		7.0		-36.5		29.5		66			
Freq. (MHz)	Ant.	Pol. V/H	RCVD Signal (dBµV)	Ant. Factor (dB)	Amp. Gain (dB)	Cable Loss (dB)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Amp.
40.6790	BC2	V	11.2	11.2	N/A	0.8	23.2	40.0	16.8	Peak	None
40.6790	BC2	H	6.8	12.3	N/A	0.8	19.9	40.0	20.1	Peak	None
54.2300	BC2	V	7.1	9.1	N/A	0.8	17.0	40.0	23.0	Peak	None
54.2300	BC2	H	7.0	10.1	N/A	0.8	18.0	40.0	22.0	Peak	None
81.3590	BC2	V	21.2	7.3	N/A	1.0	29.5	40.0	10.5	Peak	None
81.3590	BC2	H	12.9	7.3	N/A	1.0	21.2	40.0	18.8	Peak	None
122.0300	BC2	V	14.5	12.1	N/A	1.4	28.0	43.5	15.5	Peak	None
122.0300	BC2	H	16.9	11.6	N/A	1.4	29.9	43.5	13.6	Peak	None
135.5990	BC2	V	7.8	13.7	N/A	1.5	23.0	43.5	20.6	Peak	None
135.5990	BC2	H	8.6	12.5	N/A	1.5	22.6	43.5	20.9	Peak	None
108.4700	BC2	V	12.0	10.7	N/A	1.3	24.0	43.5	19.5	Peak	None
108.4790	BC2	H	9.2	10.0	N/A	1.3	20.5	43.5	23.0	Peak	None
<p>Note 1: Antenna Legend: BC = Biconical, BL = Bilog, LP = Log-Periodic, Horn = Horn, ED = EMCO Dipole</p> <p>Note 2: Detector Legend: Q-Peak = 120 kHz RBW, Average = 1.0 MHz RBW</p>											

EQUIPMENT: Legic LPR-10M reader

Radiated Photographs (Worst Case Configuration)

Front View



Rear View



EQUIPMENT: Legic LPR-10M reader

Section 5. Carrier Frequency Stability

Para. No.: 15.225,(C)

Test Performed By: Kevin Carr	Date of Test: 2 July 2003
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Minimum Standard: +/- 0.01%, 100ppm

Test Results: Complies

Measurement Data: See attached tabulated data

EQUIPMENT: Legic LPR-10M reader

Voltage Stability

120VAC to Millennium Unit	Ref. Freq. (MHz)	Measured (MHz)	Variance (Hz)	ppm
-85%	13.559366	13.559358	8	1
100%	13.559366	13.559366	0	0
-115%	13.559366	13.559308	58	4

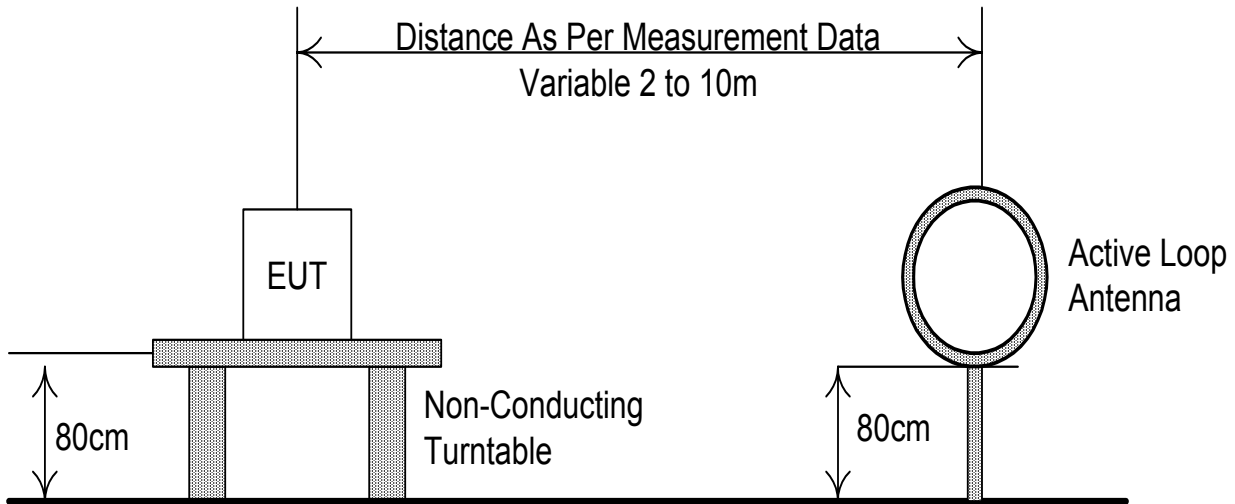
Temperature Stability

Deg. C	Ref. Freq. (MHz)	Measured (MHz)	Variance (Hz)	ppm
-20	13.559366	13.559366	0	0
20	13.559366	13.559366	0	0
50	13.559366	13.559358	8	1

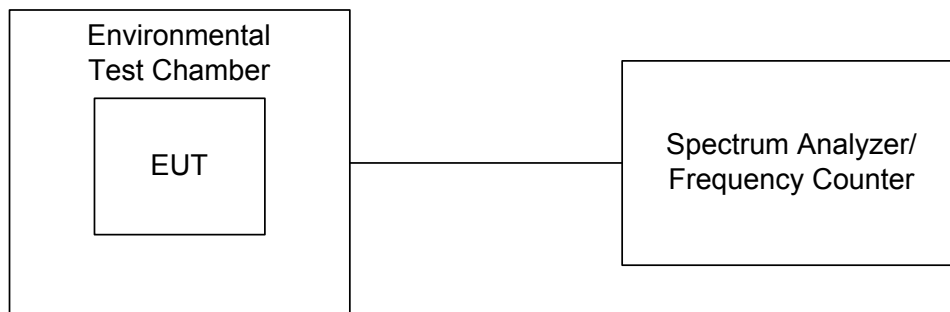
EQUIPMENT: Legic LPR-10M reader

Section 6. Block Diagrams

Radiated Emissions Set-up



Carrier Frequency Stability



EQUIPMENT: Legic LPR-10M reader

Section 7. Test Equipment List

Equipment List - Radiated Emissions

CAL Cycle	Equipment	Manufacturer	Model No.	Asset/Serial No.	Last Cal.	Next Cal.
1 Year	Receiver	Rohde & Schwarz	ESVS-30	FA001437	July. 14/02	July. 14/03
1 Year	Receiver	Rohde & Schwarz	ESVP	FA000871	Nov. 15/02	Nov. 15/03
1 Year	Spectrum Analyzer	Hewlett-Packard	8565E	FA000981	July. 15/02	July. 15/03
1 Year	Biconical (2) Antenna	EMCO	3109	FA000904	July. 04/02	July. 04/03
1 Year	Active Loop Antenna	Rohde & Schwarz	HFH2-Z2	FA000631	12 May 03	120May 04
Note: N/A = Not Applicable, NCR = No Cal Required, COU = CAL On Use, OUT = Out For CAL/Repair						