DATE: December 29 2009

I.T.L. (PRODUCT TESTING) LTD.

Supplemental FCC Radio Test Report

for

Mobile Access Networks

Equipment under test:

EnCOVER VE CELL-PCS System Comprising:
1. EnCOVER VE Access Pod
2. EnCOVER VE Control Unit CELL-PCS

1. VAP-CELL-PCSE-EXTAN
2. VCU-CELL-PCS-12E

Written by: _____
D. Shidlowsky, Documentation

Approved by: _____
A. Sharabi, Test Engineer

Approved by: _____
I. Raz, EMC Laboratory Manager

Measurement/Technical Report for

Mobile Access Networks

EnCOVER VE CELL-PCS System Comprising:

1. EnCOVER VE Access Pod

2. EnCOVER VE Control Unit CELL-PCS

FCC ID: OJFVE-CELL-PCS12E

This report concerns:	Original Grant: X Class II change: Class I change:
Equipment type:	PCS Licensed Transmitter
Limits used: 47CFR Part 24 Section 24.135	

Measurement procedure used is ANSI C63.4-2003.
Substitution Method used as in ANSI/TIA-603-B: 2002

Application for Certification prepared by:

Ishaishou Raz
ITL (Product Testing) Ltd.
Kfar Bin Nun
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Applicant for this device: (different from "prepared by")

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1. General Information

1.1 Administrative Information

Manufacturer:	Mobile Access Networks
Manufacturer's Address:	8391 Old Courthouse Rd. Suite #300 Vienna, VA 22182 U.S.A. Tel: +1-541-758-2880 Fax: +1-703-848-0260
Manufacturer's Representative:	Steve Blum
Equipment Under Test (E.U.T):	EnCOVER VE CELL-PCS System Comprising: 1. EnCOVER VE Access Pod 2. EnCOVER VE Control Unit CELL-PCS
Equipment Model No.:	EnCOVER VE CELL-PCS System Comprising: 1. EnCOVER VE Access Pod 2. EnCOVER VE Control Unit CELL-PCS
Equipment Serial No.:	1. VAP-CELL-PCSE-EXTAN 2. VCU-CELL-PCS-12E
Date of Receipt of E.U.T:	1. 00094500A5 2. 00094500081
Start of Test:	06.12.09
End of Test:	06.12.09
Test Laboratory Location:	I.T.L (Product Testing) Ltd. Kfar Bin Nun, ISRAEL 99780
Test Specifications:	FCC Parts 2, 22, 24

1.2 List of Accreditations

The EMC laboratory of I.T.L. is accredited by the following bodies:

1. The American Association for Laboratory Accreditation (A2LA) (U.S.A.), Certificate No. 1152.01.
2. The Federal Communications Commission (FCC) (U.S.A.), Registration No. 90715.
3. The Israel Ministry of the Environment (Israel), Registration No. 1104/01.
4. The Voluntary Control Council for Interference by Information Technology Equipment (VCCI) (Japan), Registration Numbers: C-1350, R-1285.
5. Industry Canada (Canada), IC File No.: 46405-4025; Site No. IC 4025B-1.
6. TUV Product Services, England, ASLLAS No. 97201.
7. Nemko (Norway), Authorization No. ELA 207.

I.T.L. Product Testing Ltd. is accredited by the American Association for Laboratory Accreditation (A2LA) and the results shown in this test report have been determined in accordance with I.T.L.'s terms of accreditation unless stated otherwise in the report.

1.3 Product Description

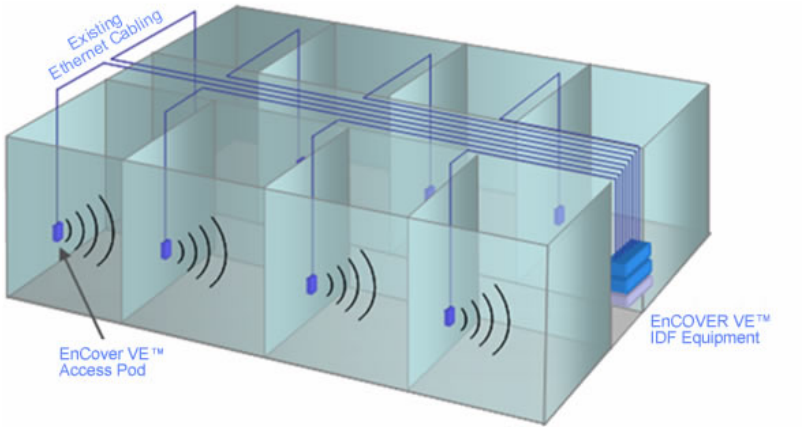
MobileAccess EnCOVER VE™ Dual-Band solution provides enhanced, cost effective in-building dual-band coverage for small to large-sized enterprises. This solution is quickly and simply deployed using the existing Ethernet cabling infrastructure to provide instant coverage without requiring the installation of new cables.

The EnCOVER VE™ solution distributes two types of services to EnCOVER VE™ Access Pods (VAPs) installed throughout the enterprise: wireless services from the service provider's equipment and Ethernet services from the corporate LAN. The Access Pods distribute the wireless services via integrated internal antennas, and provide Ethernet connectivity to the LAN terminals. (Optionally, external antennas can be connected to the Access Pods for additional coverage optimization).

The VAPs are distributed on each floor and plug into standard Ethernet jacks already installed at the enterprise site. They are powered via PoE technology and managed via an EnCOVER VE™ Control Unit (VCU) located in the floor's communication shaft. For site coverage that requires more than one VCU (each VCU supports up to 12 VAPs), several VCUs (up to 12) can be aggregated under a single VCU serving as Master. The Master VCU provides the interface to the capacity source, the service provider's equipment and for management of all units.

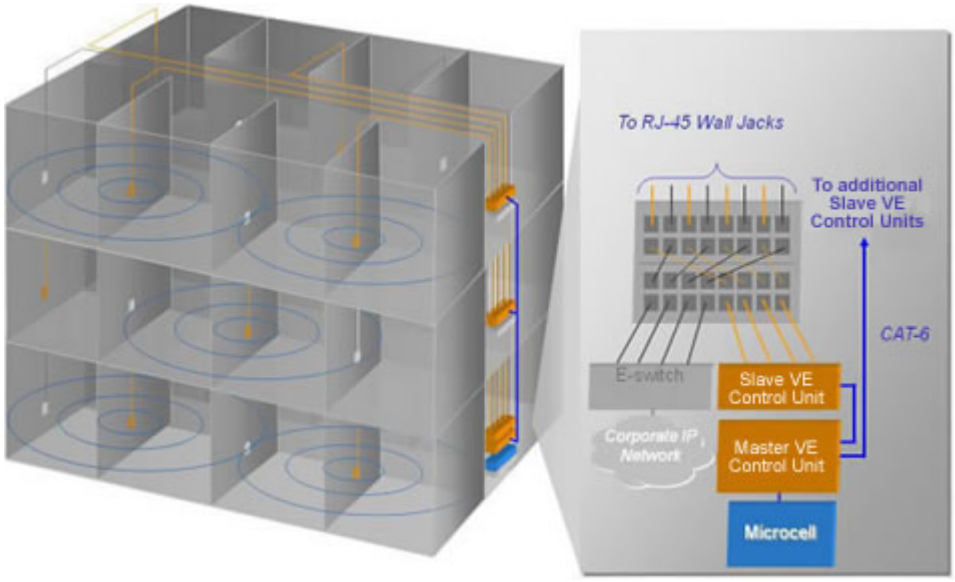
The following figures illustrate single-tier and multi-tier EnCOVER VE™ installations.

In a single-tier installation, the VCU is connected to the service provider's equipment and to the Ethernet switch and distributes Ethernet and mobile services to up to 12 VAPs distributed over one more adjacent floors.



Single Tier VE™ Installation

Multi-tier installation includes the Master VCU that supports up to twelve Slave VCUs. In this type of installation the provider's services are fed to the Master VCU through which the Slave VCUs are controlled and managed.



Multi Tier VE™ Installation

There are two versions of the EnCOVER VE Access Pod, one using extenal antennas and the possibility of using an internal antenna (M/N VAP-CELL-PCSE-EXTAN, antenna gain of up to 10 dBi) and the other using an internal antenna only (M/N VAP-CELLPCSE, antenna gain of 0 dBi). Model VAP-CELL-PCSE-EXTAN was tested.
See customer's declaration on following page.

mobileaccess

UnWiring the Workplace

2009–12–16

MobileAccess Networks Inc. hereby Declares that the only difference between the following VAP's:

P/N: VAP-CELL-PCSE

and

P/N: VAP-CELL-PCSE-EXTAN

is the option to use an external antenna connected to SMA connectors (available in *P/N VAP-CELL-PCSE-EXTAN)* instead of an internal antenna (available in both models).

Thank you,

Steven C Blum

Steve Blum
Product Manager
MobileAccess Networks Inc.
Office 541 758-2880
Mobile 541 990-3470

8391 Old Courthouse Road, Suite 300
Vienna, VA 22182

1.4 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4: 2003. Radiated testing was performed at an antenna to EUT distance of 3 meters.

1.5 Test Facility

The radiated emissions tests were performed at I.T.L.'s testing facility at Kfar Bin-Nun, Israel. This site is a FCC listed test laboratory (FCC Registration No. 90715, date of listing September 3, 2009).
I.T.L.'s EMC Laboratory is also accredited by A2LA, certificate No. 1152.01.

1.6 Measurement Uncertainty

Radiated Emission

The Open Site complies with the ±4 dB Normalized Site Attenuation requirements of ANSI C63.4-2003. In accordance with Paragraph 5.4.6.1 of this standard, this tolerance includes instrumentation calibration errors, measurement technique errors, and errors due to site anomalies.

2. System Test Configuration

2.1 Justification

The EUT consists of the VCU and VAP. The cellular signal is represented in the setup by the EGSM/UMTS portion of the setup.
An "Exercise" SW on the computer was used to enable/disable transmission of the VAP, while the EUT output was connected to the spectrum analyzer

System connected to 2 signal generators, one is feeding the VCU with Cell band at CDMA modulation (with 10dBm input power) and the other is feeding the VCU with PCS band at W-CDMA and GSM modulation (with 10dBm input power).

Both channels transmit while testing.

There are two versions of the EnCOVER VE Access Pod, one using external antennas and the possibility of using an internal antenna (M/N VAP-CELL-PCSE-EXTAN, antenna gain of up to 10 dBi) and the other using an internal antenna only (M/N VAP-CELLPCSE, antenna gain of 0 dBi). Model VAP-CELL-PCSE-EXTAN was tested.

2.2 EUT Exercise Software

The EnCOVER VE Control Unit and Access Pod units were delivered commands via Eng GUI Suite Ver. 0.3 B08.
These commands are used to enable/disable transmission of the VAP.
VCU Version 0.3 B11, VAP Version 0.3 B09.

2.3 Special Accessories

No special accessories were needed in order to achieve compliance.

2.4 Equipment Modifications

No modifications were needed in order to achieve compliance.

2.5 Configuration of Tested System

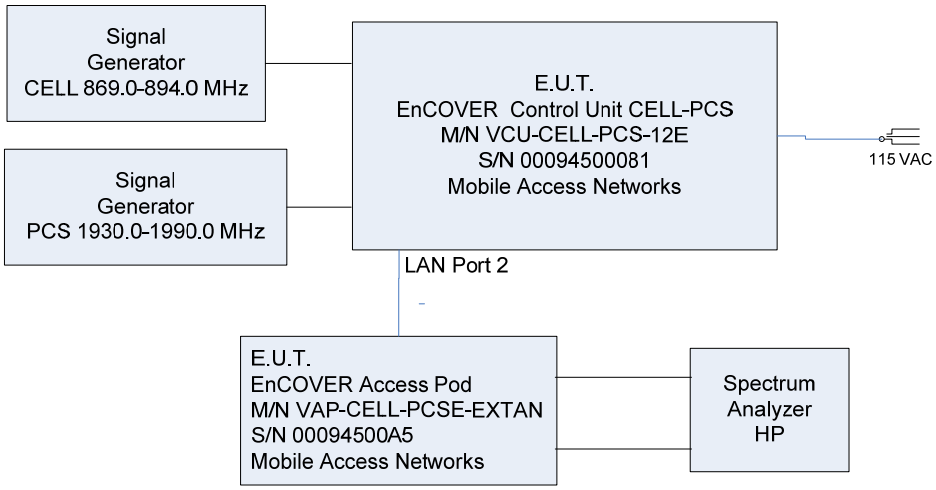


Figure 1. Tests Set-up

3. Test Set-up Photo

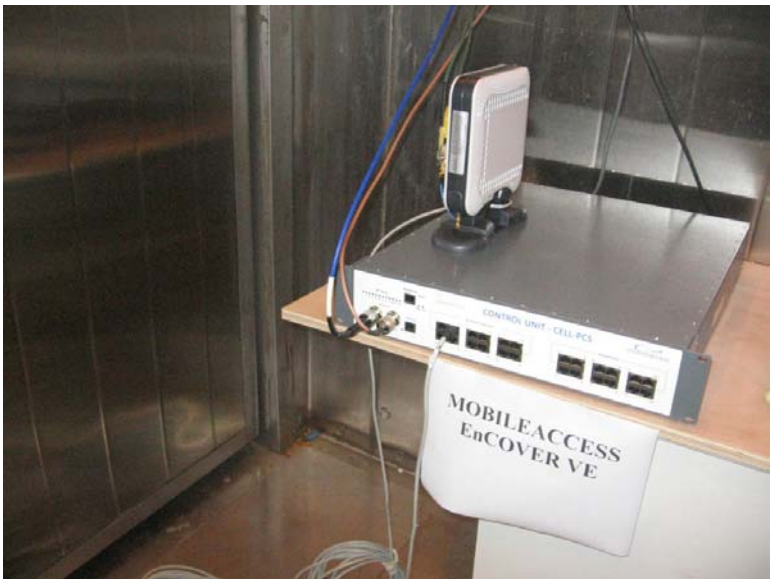


Figure 2.

4. Frequency Stability

4.1 Test Specification

Part 24 Sub-part D Section 24.135

4.2 Test Procedure

The E.U.T operation mode and test setup are as described in Section 2. The E.U.T. was operated with a CW signal in the downlink path.

The E.U.T. was placed inside a temperature chamber. The E.U.T. was operated from 115 VAC at normal temperature and the chamber temperature was set to +20°C.

The spectrum analyzer was set to 50.0 kHz span and 1.0 kHz resolution B.W.

The carrier frequency was measured and recorded (reference frequency reading).

The carrier frequency measurement was repeated for:

(a). +20°C and 97.5 VAC

(b). +20°C and 132.5 VAC

(c). -30°C and 115 VAC

(d). -30°C and 97.5 VAC

(e). -30°C and 132.5 VAC

(f). +50°C and 115 VAC

(g). +50°C and 97.5 VAC

(h). +50°C and 132.5 VAC

The carrier frequency was measured and recorded after at least 20 minutes of exposing the E.U.T. to the temperature.

The E.U.T. was operated at 1932.50, 1960.00, and 1987.5 MHz.

and 870.2, 881.5, and 892.8 MHz

4.3 Test Results

The E.U.T met the requirements of Part 24 Sub-part D, Section 24.135 specification.

The details of the results are given in *Figure 4* to *Figure 3*.

For the operation frequency of 1932.50 MHz:

The frequency offset between the frequency measured under extreme conditions and the reference carrier frequency measured under normal test conditions, is in the worst case, 0.13 kHz at -30 °C.

For the operation frequency of 1960.00 MHz:

The frequency offset between the frequency measured under extreme conditions and the reference carrier frequency measured under normal test conditions, is in the worst case, 0.13 kHz at -30 °C.

For the operation frequency of 1987.50:

The frequency offset between the frequency measured under extreme conditions and the reference carrier frequency measured under normal test conditions, is in the worst case, 0.13 kHz at -30 °C.

For the operation frequency of 870.20 MHz:

The frequency offset between the frequency measured under extreme conditions and the reference carrier frequency measured under normal test conditions, is in the worst case, 0.07 kHz at +50 °C at 97.5 and 115 VAC.

For the operation frequency of 881.50 MHz:

The frequency offset between the frequency measured under extreme conditions and the reference carrier frequency measured under normal test conditions, is in the worst case, 0.12 kHz at +50 °C.

For the operation frequency of 892.80:

The frequency offset between the frequency measured under extreme conditions and the reference carrier frequency measured under normal test conditions, is in the worst case, 0.12 kHz at -30 °C.

JUDGEMENT: Passed by 0.13 kHz

TEST PERSONNEL:

Tester Signature: _____ Date: 29.12.09

Typed/Printed Name: A. Sharabi

Frequency Stability

E.U.T Description	EnCOVER VE CELL-PCS System Comprising: 1. EnCOVER VE Access Pod 2. EnCOVER VE Control Unit CELL-PCS
Type	1. VAP-CELL-PCSE-EXTAN 2. VCU-CELL-PCS-12E
Serial Number:	1. 00094500A5 2. 00094500081

Specification: FCC Part 24 Sub-part D Section 24.135

Operation Frequency (MHz)	Frequency Readings (MHz)			Δ f(max) (kHz)	Spec. (kHz)
	97.5 (VAC)	115 (VAC)	132.5 (VAC)		
1932.50	1932.49975	1932.49975	1932.49975	-	± 1.9
1960.00	1959.99975	1959.99975	1959.99975	-	± 1.9
1987.50	1987.49975	1987.49975	1987.49975	-	± 1.9

Figure 3. Frequency Stability 20°C

Operation Frequency (MHz)	Frequency Readings (MHz)			Δ f(max) (kHz)	Spec. (kHz)
	97.5 (VAC)	115 (VAC)	132.5 (VAC)		
1932.50	1932.49988	1932.49988	1932.49988	+0.13	± 1.9
1960.00	1959.99988	1959.99988	1959.99988	+0.13	± 1.9
1987.50	1987.49988	1987.49988	1987.49988	+0.13	± 1.9

Figure 4. Frequency Stability -30°C

Notes:

1. Δ f = Reference frequency – frequency reading.
2. Reference reading measured at 115 VAC, + 20°C.
3. Specification: spec: ± 1 ppm = ± 1.9 kHz

Frequency Stability

E.U.T Description	EnCOVER VE CELL-PCS System Comprising: 1. EnCOVER VE Access Pod 2. EnCOVER VE Control Unit CELL-PCS
Type	1. VAP-CELL-PCSE-EXTAN 2. VCU-CELL-PCS-12E
Serial Number:	1. 00094500A5 2. 00094500081

Specification: FCC Part 24 Sub-part D Section 24.135

Operation Frequency (MHz)	Frequency Readings (MHz)			Δ f(max) (kHz)	Spec. (kHz)
	97.5 (VAC)	115 (VAC)	132.5 (VAC)		
1932.50	1932.49975	1932.49975	1932.49975	0.00	± 1.9
1960.00	1959.99975	1959.99975	1959.99975	0.00	± 1.9
1987.50	1987.49975	1987.49975	1987.49975	0.00	± 1.9

Figure 5. Frequency Stability +50°C

Notes:

1. Δ f = Reference frequency – frequency reading.
2. Reference reading measured at 115 VAC, + 20°C.
3. Specification: spec: ± 1 ppm = ± 1.9 kHz

Frequency Stability

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Type	1. VAP-CELL-PCSE-EXTAN 2. VCU-CELL-PCS-12E
Serial Number:	1. 00094500A5 2. 00094500081

Specification: FCC Part 24 Sub-part D Section 24.135

Operation Frequency (MHz)	Frequency Readings (MHz)			Δ f(max) (kHz)	Spec. (kHz)
	97.5 (VAC)	115 (VAC)	132.5 (VAC)		
870.2	870.20032	870.20032	870.20032	-	± 0.87
881.5	881.50037	881.50037	881.50037	-	± 0.88
892.8	892.80025	892.80025	892.80025	-	± 0.89

Figure 6. Frequency Stability 20°C

Operation Frequency (MHz)	Frequency Readings (MHz)			Δ f(max) (kHz)	Spec. (kHz)
	97.5 (VAC)	115 (VAC)	132.5 (VAC)		
870.2	870.20037	870.20037	870.20037	+0.05	± 0.87
881.5	881.50037	881.50037	881.50037	0.00	± 0.88
892.8	892.80037	892.80037	892.80037	+0.12	± 0.89

Figure 7. Frequency Stability -30°C

Notes:

1. Δ f = Reference frequency – frequency reading.
2. Reference reading measured at 115 VAC, + 20°C.
3. Specification: spec: ± 1 ppm = ± 1.9 kHz

Frequency Stability

E.U.T Description	EnCOVER VE CELL-PCS System Comprising: 1. EnCOVER VE Access Pod 2. EnCOVER VE Control Unit CELL-PCS
Type	1. VAP-CELL-PCSE-EXTAN 2. VCU-CELL-PCS-12E
Serial Number:	1. 00094500A5 2. 00094500081

Specification: FCC Part 24 Sub-part D Section 24.135

Operation Frequency (MHz)	Frequency Readings (MHz)			Δ f(max) (kHz)	Spec. (kHz)
	97.5 (VAC)	115 (VAC)	132.5 (VAC)		
870.2	870.20025	870.20025	870.20037	-0.07*	± 0.87
881.5	881.50025	881.50025	881.50025	-0.12	± 0.88
892.8	892.80025	892.80025	892.80025	0.00	± 0.89

Figure 8. Frequency Stability +50°C

Notes:

1. Δ f = Reference frequency – frequency reading.
2. Reference reading measured at 115 VAC, + 20°C.
3. Specification: spec: ± 1 ppm = ± 1.9 kHz

* Worst case result.

4.4 Test Instrumentation Used, Radiated Measurements

Instrument	Manufacturer	Model	Serial Number	Calibration	Period
Environmental Chamber	THERMOTRON CORP	SM 32C Mini Max	25-1030	March 04, 2009	1 Year
Digital Voltage Meter	Escort	EDM1111A	10313121	November 3, 2008	2 Years
Variable Voltage Transformer	Variac Voltage Co.	-	-	N/A	N/A
Spectrum Analyzer	HP	8594E	3809U03785	February 26, 2009	1 Year
Signal Generator	HP	83731B	US37100653	December 12, 2009	2 Years
Signal Generator	HP	86478	3625U00686	December 12, 2009	2 Years