



Flom Test Lab

EMI, EMC, RF Testing Experts Since 1963

toll-free: (866) 311-3268

fax: (480) 926-3598

www.flomlabs.com

info@flomlabs.com

Date: April 16, 2009

Applicant: Blackboard, Inc.
22601 North 19th Ave, Suite 200
Phoenix, AZ 85027

Attention of: Tom Kuestersteffen
623-476-1263
email: tkuestersteffen@blackboard.com
and/or Tim Mattson
623-476-1400

Equipment: VR4100
FCC ID: TMEVR4100X003
FCC Rules: Radio Frequency Radiation Exposure Limits
47 CFR 1.1310
MPE - Mobiles X Fixed Based Station

Gentlemen:

Enclosed please find your copy of the Supplemental Test Data Report, the whole for Environmental Assessment (MPE) of the referenced equipment as shown.

Please allow from 8-12 weeks to hear from the Commission, who may request additional data or information, and even a sample for pre-grant audit testing.

Should you need any clarification, just fax or phone. Thank you again for this order - it has been a pleasure to be of service.

Sincerely yours,

Hoosamuddin S. Bandukwala, Lab Director



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Date: April 16, 2009

Federal Communications Commission
Via: Electronic Filing

Attention: Authorization & Evaluation Division

Applicant: Blackboard, Inc.
Equipment: VR4100
FCC ID: TMEVR4100X003
FCC Rules: Radio Frequency Radiation Exposure Limits
47 CFR 1.1310
MPE - Mobiles X Fixed Based Station

Gentlemen:

On behalf of the Applicant, enclosed please find the Supplemental Test Data Report, the whole for Environmental Assessment (MPE) of the referenced equipment as shown.

We trust the same is in order. Should you need any further information, kindly contact the writer who is authorized to act as agent.

Sincerely yours,

Hoosamuddin S. Bandukwala, Lab Director



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Environmental Assessment

for

Mobiles

for

FCC ID: TMEVR4100X003

Model: VR4100

to

Federal Communications Commission

47 CFR 1.1310

Radio Frequency Radiation Exposure Limits

Date Of Report: April 16, 2009

On the Behalf of the Applicant: Blackboard, Inc.

At the Request of: Blackboard, Inc.
22601 North 19th Ave, Suite 200
Phoenix, AZ 85027

Attention of: Tom Kuestersteffen
623-476-1263
email: tkuestersteffen@blackboard.com
and/or Tim Mattson
623-476-1400

Supervised By:

Hoosamuddin S. Bandukwala, Lab Director

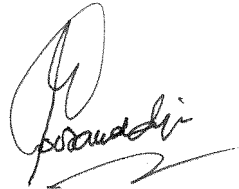
Test Report Revision History

Revision	Date	Revised By	Reason for revision
1.0	April 16, 2009	J Erhard	Original Document

<p style="text-align: center;">Testimonial and Statement of Certification</p>
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This is to certify that:

1. **That** the application was prepared either by, or under the direct supervision of, the undersigned.
2. **That** the technical data supplied with the application was taken under my direction and supervision.
3. **That** the data was obtained on representative units, randomly selected.
4. **That**, to the best of my knowledge and belief, the facts set forth in the application and accompanying technical data are true and correct.



Certifying Engineer:

Hoosamuddin S. Bandukwala, Lab Director

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Required information per ISO 17025-2005, paragraph 5.10:

a) **Test Report (Supplemental)**

b) Laboratory: Flom Test Labs
(FCC: 31040/SIT) 3356 N. San Marcos Place, Suite 107
(Canada: IC 2044) Chandler, AZ 85225

c) Report Number: d0940013

d) Client: Blackboard, Inc.
22601 North 19th Ave, Suite 200
Phoenix, AZ 85027

e) Identification: VR4100

Description: 13.56 MHz Transmitter

f) EUT Condition: Not required unless specified in individual tests.

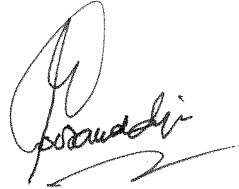
g) Report Date: April 16, 2009

h, j, k): As indicated in individual tests.

i) Sampling method: No sampling procedure used.

l) Uncertainty: In accordance with FTL internal quality manual.

m) Supervised by:



Hoosamuddin S. Bandukwala, Lab Director

n) Results: The results presented in this report relate only to the item tested.

o) Reproduction: This report must not be reproduced, except in full, without written permission from this laboratory.

Identification of the Equipment Under Test (EUT)

Name and Address of Applicant: Blackboard, Inc.
 22601 North 19th Ave, Suite 200
 Phoenix, AZ 85027

Manufacturer: Blackboard, Inc.
 22601 North 19th Ave, Suite 200
 Phoenix, AZ 85027

FCC ID: TMEVR4100X003

Model Number: VR4100

Description: 13.56 MHz Transmitter

Type of Emission: ASK

Frequency Range, MHz: 2412 – 2462 and 13.56

Power Rating, Watts: 0.011
 Switchable Variable N/A

Modulation:
 AMPS
 TDMA
 CDMA
 OTHER

Antenna:
 Helical
 Monopole
 Whip
 Other

Note: For RF Safety test antenna gain taken at the upper range of expected gain (i.e. 0 dBd) and RF Power set to highest nominal power across all channels.

A2LA

“A2LA has accredited Flom Test Labs, Inc. Chandler, AZ for technical competence in the field of Electrical testing. The accreditation covers the specific tests and types of tests listed on the agreed scope of accreditation. This laboratory meets the requirements of ISO 17025:2005 ‘General Requirements for the Competence of Testing and Calibration Laboratories’ and any additional program requirements in the identified field of testing.”

Please refer to www.a2la.org for current scope of accreditation.

Certificate number: 2152.01



Standard Test Conditions and Engineering Practices

Except as noted herein, the following conditions and procedures were observed during the testing:

In accordance with ANSI C63.4-2004 and unless otherwise indicated in the specific measurement results, the ambient temperature of the actual EUT was maintained within the range of 10° to 40°C (50° to 104 °F) unless the particular equipment requirements specify testing over a different temperature range. Also, unless otherwise indicated, the humidity levels were in the range of 10% to 90% relative humidity.

Prior to testing, the EUT was tuned up in accordance with the manufacturer's alignment procedures. All external gain controls were maintained at the position of maximum and/or optimum gain throughout the testing.

Measurement results, unless otherwise noted, are worst-case measurements.

Name of Test: Environmental Assessment

Specification: FCC: 47 CFR 1.1310

Measurement Guide: ANSI/IEEE C95.1 1992

Name of Test: R.F. Radiation Exposure

FCC Rules: 1.1307, 1.1310, 1.1311, 2.1091

Limits: Uncontrolled Exposure	0.3-1.234 MHz:	Limit [mW/cm ²] = 100
47 CFR 1.1310	1.34-30 MHz:	Limit [mW/cm ²] = (180/f ²)
Table 1, (B)	30-300 MHz:	Limit [mW/cm ²] = 0.2
	300-1500 MHz	Limit [mW/cm ²] = f/1500
	1500-100,000 MHz:	Limit [mW/cm ²] = 1.0

Test Frequencies, MHz	13.56
Power, Conducted, W (P)	0.000000632
Antenna Gain Isotropic	-0.3 dBi
Antenna Gain Numeric (G)	0.93
Antenna Type	Integrated PCB
Distance (R)	20 cm

Test Frequencies, MHz	2462
Power, Conducted, W (P)	0.011
Antenna Gain Isotropic	0.5 dBi
Antenna Gain Numeric (G)	1.12
Antenna Type	Ceramic Chip
Distance (R)	20 cm

13.56 MHz	Formula =	$S = PG / 4\pi R^2$
Power Density Calculations	Power Density (S) =	0.0000001169
	Limit =	0.9789

2462 MHz	Formula =	$S = PG / 4\pi R^2$
Power Density Calculations	Power Density (S) =	0.00245
	Limit =	1.0

2412 – 2462 802.11 Collocated with 13.56 MHz

802.11 Power Density (mW/cm ²)	13.56 MHz Power Density (mW/cm ²)	Total Power Density (mW/cm ²)	Limit (mW/cm ²)	Result
0.00245	0.0000001169	0.000245011690	1.0	Pass