IEEE C95.1 2005
KDB 447498 D01 V06
47 C.F.R. Part 1, Subpart I, Section 1.1310
47 C.F.R. Part 2, Subpart J, Section 2.1091

RF EXPOSURE REPORT

For

Data Collection PC

Model: CV61, 1011CM01

Trade Name: INTERMEC

Issued to

Intermec Technologies Corporation
9680 Old Bailes Road, Fort Mill, South Carolina, United States 29707

Issued by

Compliance Certification Services Inc.
No.11, Wugong 6th Rd., Wugu Dist.,
New Taipei City 24891, Taiwan. (R.O.C.)
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Issued Date: July 5, 2016

Testing Laboratory
1309

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	July 5, 2016	Initial Issue	ALL	Doris Chu

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1. TEST RESULT CERTIFICATION

We hereby certify that:

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10: 2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 15.207, 15.209, 15.247.

The test results of this report relate only to the tested sample EUT identified in this report.

APPLICABLE STANDARDS	
STANDARD	**TEST RESULT**
IEEE C95.1 2005 KDB 447498 D03 47 C.F.R. Part 1, Subpart I, Section 1.1310 47 C.F.R. Part 2, Subpart J, Section 2.1091	No non-compliance noted

Approved by:

Miller Lee
Manager
Compliance Certification Services Inc.

Test by:

Doris Chu
Report coordinator
Compliance Certification Services Inc.

2. LIMIT

According to §15.247(i), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this chapter.

3. EUT SPECIFICATION

EUT	Data Collection PC
Model	CV61, 1011CM01
Model Discrepancy	All the specification and layout are identical except they come with different model numbers for marketing purposes.
Trade Name	INTERMEC
Frequency band (Operating)	☒ 802.11a/n HT20: 5180MHz ~ 5700MHz / 5745MHz ~ 5825MHz 802.11n HT40: 5190MHz ~ 5670MHz / 5755MHz ~ 5795MHz ☐ Others
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation) ☐ Others
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm^2) ☒ General Population/Uncontrolled exposure (S=1mW/cm^2)
Antenna Specification	5GHz 1. External antenna 1 Laird Technologies / Model Number: CAF94606AA Main: Patch Antenna / Gain: 3.0 dBi 2. External antenna 2 Laird Technologies / Model Number: OEM2689-P110 Main: Omni Antenna / Gain: 5.0 dBi 3. Internal MIMO antenna Venture Corp. Ltd / MIMO1 antenna: Part No.: VE027-6007-A0 MIMO2 antenna: Part No.: VE027-6008-A0 Main: Omni Antenna 5.25 dBi (Numeric gain: 3.35) Aux: PIFA Antenna 5.36 dBi (Numeric gain: 3.44) 5GHz: Directional gain = 5.36 dBi +10log (2) = 8.37 dBi (Numeric gain 6.87)
Maximum Average output power	IEEE 802.11a Mode: 13.57 dBm (22.751 mW) IEEE 802.11n HT 20 Mode: 16.22 dBm (41.879 mW) IEEE 802.11n HT 40 Mode: 15.58 dBm (36.141 mW)

Maximum Tune up Power	IEEE 802.11a Mode: 15.50 dBm (35.481 mW) IEEE 802.11n HT 20 Mode: 18.00 dBm (63.096 mW) IEEE 802.11n HT 40 Mode: 17.50 dBm (56.234 mW)
Evaluation applied	☒ MPE Evaluation* ☐ SAR Evaluation ☐ N/A

4. TEST RESULTS

No non-compliance noted.

Calculation

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{377}$

Where E = Field strength in Volts / meter
P = Power in Watts
G = Numeric antenna gain
d = Distance in meters
S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377 d^2}$$

Changing to units of mW and cm, using:

P (mW) = P (W) / 1000 and

d (cm) = d(m) / 100

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2}$$ ***Equation 1***

Where d = Distance in cm
P = Power in mW
G = Numeric antenna gain
S = Power density in mW / cm^2

5. MAXIMUM PERMISSIBLE EXPOSURE

Substituting the MPE safe distance using d = 20 cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm^2

IEEE 802.11a mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
145	5745	35.481	3.44	20	0.0243	1

IEEE 802.11a HT20 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
145	5745	63.096	6.87	20	0.0863	1

IEEE 802.11a HT40 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
151	5755	56.234	6.87	20	0.0769	1