

**EXHIBIT VI.**

**Test Report 1**

**Supplemental Test Report**

**For New Certification**

**Of Previously Certified AirCard 750**

**Under**

**FCC ID: KBCIX300AC750WLBT**

**IX300 GoBook Tablet PC**

**With AirCard 750, WLAN and Bluetooth**

Certification Requested Under Part 24

Prepared On Behalf Of

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February 23, 2004

## **Supplemental Test Report**

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Note: Please refer to the original Certification data and exhibits uploaded for FCC ID: N7NAC750, in support of this application.

**Exhibit 6 Test - RF Conducted Power Output**

FCC ID: KBCIX300AC750WLBT

Grantee: ITRONIX, Corp.

Model: IX300 with AirCard 750, (WAN), WM168b-Molex, (WLAN),  
& MUBTC2-TH, (Bluetooth)

Authorization Procedure: Part 2.1046  
 Limit: Part 24.232(b)  
 Test Date: 2/11/04

Radio	Band	Tx Band Frequency Range MHz	Max. Conducted Tx Output (dBm)
AirCard 750	PCS1900	1850.2 - 1909.8	30.02

**Method of Measurement**

The RF output port of the AirCard 750 was directly coupled to the input of the Agilent spectrum analyzer through a special RF adapter short cable and SMA connector. The instrument was set to measure peak power output and the measured results for low, mid and high channels within the PCS band are reported below.

**Conducted Measurement Data**

AC750		
PCS1900		
Frequency (MHz) Channel #	Peak Power (Watts)	Peak Power (dBm)
1850.2 (Ch.512)	1.004	30.02
1880.0 (Ch.661)	0.970	29.87
1909.8 (Ch.810)	0.939	29.73

**Exhibit 6 Test - Effective Isotropic Radiated Power (EIRP) Output**

Grantee: ITRONIX, Corp.

FCC ID: KBCIX300AC750WLBT

Model: IX300 with AirCard 750, (WAN), WM168b-Molex, (WLAN), &amp; MUBTC2-TH, (Bluetooth)

**Part 24.232**

Effective Isotropic Radiated Power Output measurements by Substitution Method according to ANSI/TIA-603-B, approved November 7, 2002.

The measurements were made as prescribed in TIA-603-B 2.2.17.2.2, a – f. The EUT was set up at the OATS facility on the non conductive turntable 3 meters from the receive antenna. The height and turntable rotation were adjusted for the maximum reading on the spectrum analyzer for each antenna polarization. The adjustable swivel antenna on the EUT was also investigated in vertical and horizontal polarization. With the highest levels observed is reported. The EUT was removed and a horn antenna was substituted in it's place with the height of this antenna consistent with the position of the EUT antenna. The RF signal generator with a known output fed a signal to the horn antenna to obtain and record the path loss in dB as LOSS.  $LOSS = \text{Generator Output Power (dBm)} - \text{Analyzer reading (dBm)}$ .

The difference between the gain of the horn antenna and an isotropic antenna is taken into account and the EIRP is recorded.

Freq. MHz	EIRP (W)	EIRP (dBm)	Ref. Level (dBm)	Path LOSS	Ant. Pol. H / V	Limit EIRP (dBm)
1850.20	1.327	31.23	2.59	28.67	V	33
1800.00	1.425	31.54	3.38	28.15	V	33
1909.80	1.559	31.93	3.21	28.72	V	33

Measured at 3 meters EUT to receive antenna distance.

Location: Spectrum Technology Inc., Fluke Park II OATS facility

Date: Feb 13, 2004

EUT tuned to maximum power continuous transmit with 4 time slots in GPRS mode via the Sierra test script running under Procomm.

Test made with a fully charged standard battery with the IX300 in a desk stand & charging cradle.

**Exhibit 6 Test - Field Strength of Spurious Radiated Emissions**

FCC ID:	KBCIX300AC750WLBT
Grantee:	ITRONIX, Corp.
Model:	IX300 with AirCard 750, (WAN), WM168b- Molex, (WLAN), & MUBTC2-TH, (Bluetooth)
Serial No.:	FSN: T0251 700221013
Minimum Standard Specified:	Part 24.238 (a) = $43+10\log(PO)$ dB
Test Results:	Equipment complies with standard
Authorization Procedure:	Part 2.1053
Test Equipment Set Up:	See photos and block diagram in Exhibit 7
Frequency Range Observed:	30 to 20 GHz
Test Frequencies:	1850.2, 1880, & 1909.8 MHz
Power Output:	0. 000 Watts EIRP
Spurious Limit = $43 + 10\log_{10} PO =$	43 dB below the carrier
Test date: 2/13/04	Location: OATS Fluke Park II Everett, WA

**Discussion**

The field strength of the radiated spurious emissions and harmonics was measured at 3 meters EUT to antenna distance using 1 MHz RBW and VBW. The transmitter output of the AirCard 750 was terminated into a 50 ohm coaxial termination. A high pass filter was used prior to the input to the preamp during testing to reduce the fundamental signal of the WLAN and BT and avoid overloading the front end of the analyzer. All of the measured spurious levels appear to be 20 dB or more below the spurious limit. Emissions attenuated by 20 dB or more below the limit need not be reported according to Part 2.1051. The highest level emissions observed were then measured with the signal substitution method and the level reported on page 7.

The change observed in the measurable emissions levels with or without the two Part 15 Intentional Radiators was negligible so the reported results are "worst case" with all three co-located transmitters transmitting simultaneously. The Part 15 Intentional Radiators were both set to operate on the same frequencies as follows: Low, 2412 MHz, Mid, 2436 MHz, High, 2463 MHz corresponding to the Low, 1850.2 MHz, Mid 1880.0 MHz and High 1909.8 MHz channels the AirCard 750 was set for during this test.

**Exhibit 6 Test: Field Strength of Spurious Radiated Emissions**

FCC ID: KBCIX300AC750WLBT  
 Applicant: ITRONIX Corp.  
 Model: IX300 with AirCard 750, WLAN, & Bluetooth  
 Frequency Range Observed: 0 to 25 GHz Date: 02/13/04

**NOTE:** Simultaneous co-location transmit with Part 24 PCS and two Part 15 devices. The Part 15 WLAN and the Bluetooth transmitters were centered on the same RF channels for worst case.

<b>RADIATED HARMONIC AND SPURIOUS EMISSIONS &amp; RESTRICTED BANDS</b>									
Frequency GHz	Max. SA Rdg. dBuV	Ant. Vert. or Horz.	Peak or Average Detector	Antenna Factor dB	Cable & filter loss dB	Amp Gain	Corrected Reading dBuV/m	Corrected Reading dBm	Margin in dB Below -13 dBm LIMIT
<b>Fo-1850.2</b>									
3700.4	43.32	V	Peak	31.58	2.37	23.2	54.07	-52.93	39.93
3700.4	40.78	H	Peak	31.58	2.37	23.2	51.53	-55.47	42.47
5551.6	44.39	V	Peak	34.24	2.85	25.9	55.58	-51.42	38.42
5551.6	42.30	H	Peak	34.24	2.85	25.9	53.49	-53.51	40.51
* 7400.8	45.72	V	Peak	36.77	3.28	24.5	61.27	-45.73	32.73
7400.8	41.98	H	Peak	36.77	3.28	24.5	57.53	-49.47	36.47
<b>Fo-1880.0</b>									
3760.0	41.98	V	Peak	31.58	2.37	23.2	52.73	-54.27	41.27
3760.0	38.57	H	Peak	31.58	2.37	23.2	44.58	-62.42	49.42
5640.0	46.27	V	Peak	34.24	2.85	25.9	57.46	-49.54	36.54
5640.0	42.67	H	Peak	34.24	2.85	25.9	53.86	-53.17	40.17
* 7520.0	44.52	V	Peak	36.77	3.28	24.7	59.87	-47.13	34.13
7520.0	38.70	H	Peak	36.77	3.28	24.7	54.05	-52.95	39.95
<b>Fo-1909.8</b>									
3819.6	42.67	V	Peak	31.84	2.37	23.2	53.68	-53.32	40.32
3819.6	40.71	H	Peak	31.84	2.37	23.2	51.72	-55.28	42.28
5729.4	45.67	V	Peak	34.36	2.85	25.9	56.98	-50.02	37.02
5729.4	46.52	H	Peak	34.36	2.85	25.9	57.83	-49.17	36.17
* 7639.2	46.64	V	Peak	36.87	3.28	24.7	62.09	-44.94	31.94
7639.2	41.43	H	Peak	36.87	3.28	24.7	56.68	-50.32	37.32
<b>Harmonic emissions on all three channels (low, mid &amp; high) 5Fo – 10Fo at or below noise floor</b>									
Channel	Frequency in GHz	Harmonics Observed		Limit 43 + 10 Log(P)					
Low Ch.	2.402								
5Fo – 10Fo	12.085 – 24.170	None -at or < noise floor @3m		All emissions < 54 dBuV/m					
Mid Ch.	2.441								
5Fo – 10Fo	12.205 – 24.410	None -at or < noise floor @3m		All emissions < 54 dBuV/m					
High Ch.	2.480								
5Fo o- 10Fo	12.400 – 24.800	None -at or < noise floor @3m		All emissions < 54 dBuV/m					

\* Worst case spurious emissions were re-tested using signal substitution and are reported on page 7.

## Exhibit 6 Test : Spurious Emissions Attenuation Measured by Signal Substitution Method

Trans. Freq. & Spurious Freq.	Spectrum Analyzer Ref. Rdg. Of EUT Tx level	Horn Gain	Ant. Polarization	Corrected Signal Generator Output inc. cable loss	EIRP	ERP	Limit EIRP
MHz	(dBuV)	(dBi)	(H / V)	(dBm)	(dBm)	(dBm)	(dBm)
1851.25			V		31.23		
7400.80	45.72	7.63	V	-47.46	-39.83	-41.98	-13
1880.00			V		31.54		
7520.00	44.52	7.62	V	-47.54	-39.92	-40.07	-13
1908.75			V		31.93		
7639.20	46.64	7.62	V	-46.11	-38.49	-40.64	-13

The highest level spurious emissions observed from the low, mid, and high channels field strength reading were re-measured to determine the Effective Isotropic Radiated Power Output. The measurements were made by the Signal Substitution Method described in TIA-603-B, approved November 7, 2002.

The measurements were made as prescribed in TIA-603-B 2.2.12, Unwanted Emissions: Radiated Spurious. The EUT was set up at the OATS facility on the non-conductive turntable 3 meters from the receive antenna. The antenna height and the turntable rotation were adjusted for the maximum reading on the spectrum analyzer for each antenna polarization. Only the highest levels observed are reported above. All other emission are more than 20 dB below the limit and are not required to be reported

During the preliminary field strength measurements the highest level spurious emissions were identified. The EUT was removed and a horn antenna was substituted in it's place, with the height of this antenna consistent with the position of the EUT antenna. The output of the RF signal generator tuned to a particular spurious frequency was carefully adjusted along with adjustment of the test antenna to duplicate the reading originally observed on the Spectrum Analyzer during the filed strength measurements. The Signal Generator reading was corrected for the cable loss and the gain of the substitute horn antenna used, relative to an ideal half wave dipole, to obtain the power in dBm.

$$P_d \text{ (dBm)} = P_g \text{ (dBm)} - \text{cable loss (dB)} + \text{antenna gain (dB)}$$

$P_d$  is the dipole equivalent power and  $P_g$  is the generator output power into the substitute antenna.

Measured at 3 meters EUT to receive antenna distance.

Location: Spectrum Technology Inc., Fluke Park II OATS facility

Date: Feb 13, 2004

EUT tuned to maximum power continuous transmit with 4 time slots in GPRS mode via the Sierra test script running under Procomm.

Test made with a fully charged standard battery with the IX300 in a desk stand & charging cradle.