



**Test Report:** 3W07058


**Applicant:** Instantel Inc.  
309 Legget Drive  
Kanata Ont.  
K2K 3A3

**Equipment Under Test:  
(EUT)** WatchMate  
217MHz Transmitter

**FCC ID:** ISEESC

**In Accordance With:** **FCC Part 15, Subpart C, 15.231**

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



**Authorized By:** Kevin Carr, EMC Specialist

**Date:** 21 April 2003

**Total Number of Pages:** 16

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*EQUIPMENT: WatchMate, 217MHz Transmitter*

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## **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 Part 15, Subpart C. All tests were conducted using measurement procedure ANSI C63.4-1992. Radiated emissions are made on an open area test site. A description of the test facility is 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.

See "Summary of Test Data".



TESTED BY: \_\_\_\_\_  
Glen Westwell, Wireless Technologist

DATE: 15 April 2003

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This report applies only to the items tested.

*EQUIPMENT: WatchMate, 217MHz Transmitter*

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**Summary Of Test Data**

<b>Name of Test</b>	<b>Para. Number</b>	<b>Results</b>
Transmission Requirements	15.231(a)	Complies
Radiated Emissions	15.231(b)	Complies
Occupied Bandwidth	15.231(c)	Complies
Frequency Tolerance	15.231(d)	NA
Periodic Alternate Field Strength Requirements	15.231(e)	NA
Powerline Conducted Emissions	15.207	NA

Note: This device is powered by a 3.6Vdc lithium cell.

**Test Conditions:**

**Indoor**                      Temperature: 20°C  
                                    Humidity:     20%

**Outdoor**                    Temperature: 15°C  
                                    Humidity:     5%

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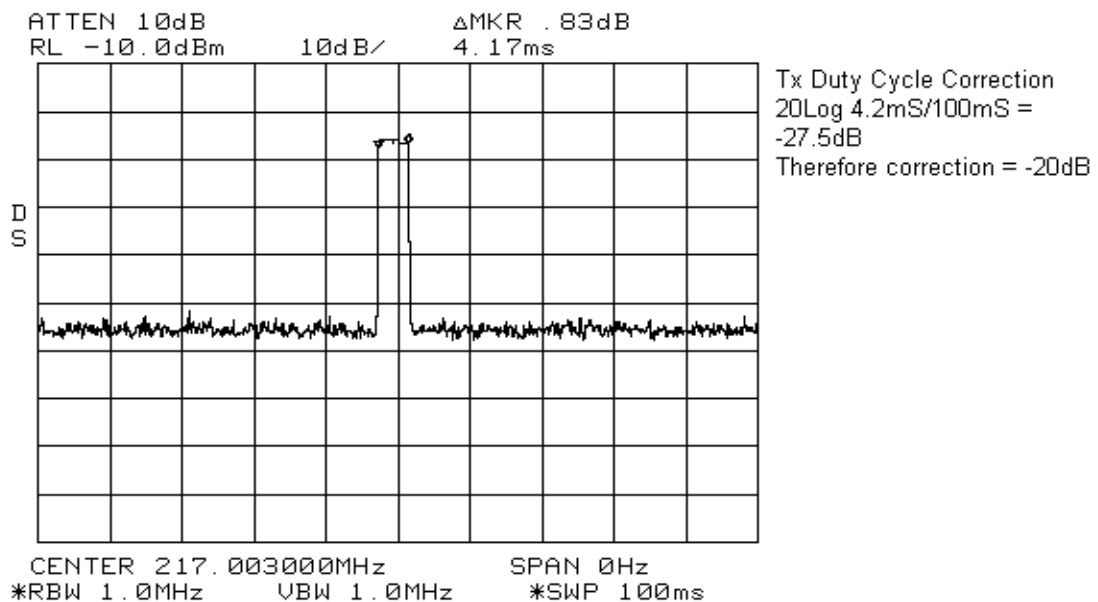
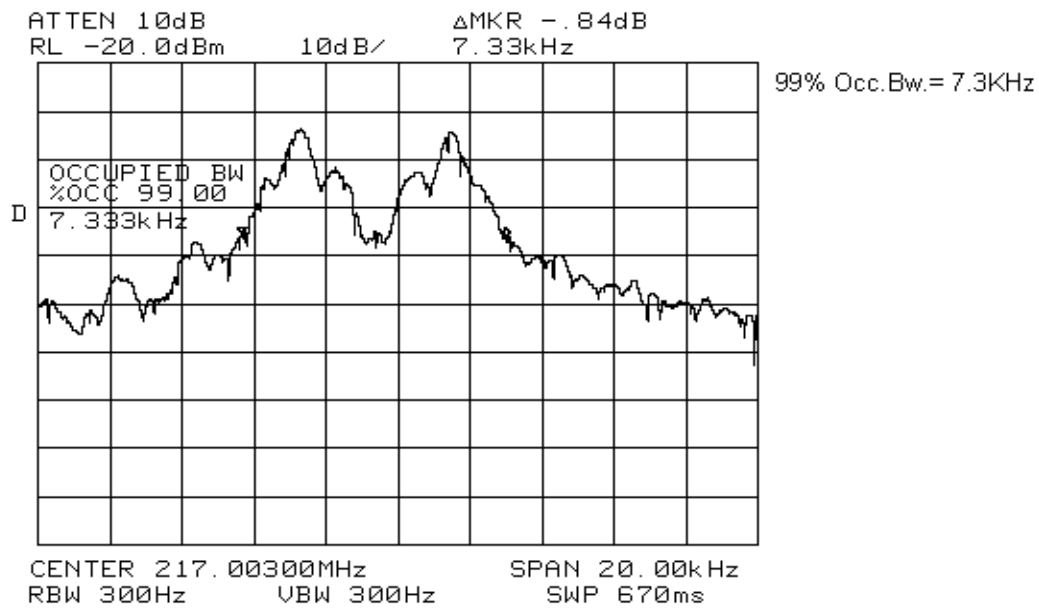
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## **Section 2.        Equipment Under Test**

### **General Equipment Information**

<b>Manufacturer:</b>	Instantel Inc.
<b>Model No.:</b>	803A0901
<b>Serial No.:</b>	A3
<b>Date Received In Laboratory:</b>	15 April 2003
<b>Nemko Identification No.:</b>	1
<b>Modulation:</b>	FSK
<b>Emission Designator:</b>	7K3L1D
<b>Transmit Frequency:</b>	217.003 MHz Fixed

EQUIPMENT: WatchMate, 217MHz Transmitter



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### **Section 3.           Transmission Requirements**

**Para. No.: 15.231(a)**

<b>Test Performed By: Glen Westwell</b>
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<b>Date of Test: 15 April 2003</b>
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**Minimum Standard:**       15.231(a) Continuous transmissions such as voice, video or data transmissions are not permitted.

15.231(a)(1) A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds after being released.

15.231(a)(2) A transmitter activated automatically shall cease transmission within 5 seconds of activation.

15.231(a)(3) Periodic transmissions at regular pre-determined intervals are not permitted. However polling or supervisory transmissions to determine system integrity of transmitters used in security or safety applications are allowed if the periodic rate of transmission does not exceed one transmission of not more than one second duration per hour for each transmitter.

15.231(a)(4) Intentional radiators which are employed for radio control purposes during emergencies involving fire, security, and safety of life, when activated to signal an alarm, may operate during the pendency of the alarm.

**Test Results:**               Complies

**Test Data:**                Compliance was determined by verification of technical specifications and a functional test on the equipment.

*EQUIPMENT: WatchMate, 217MHz Transmitter*

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**Rationale for Compliance with Transmission Requirements**

**15.231(a)(1) :** The transmitter is deactivated immediately after release of push button.

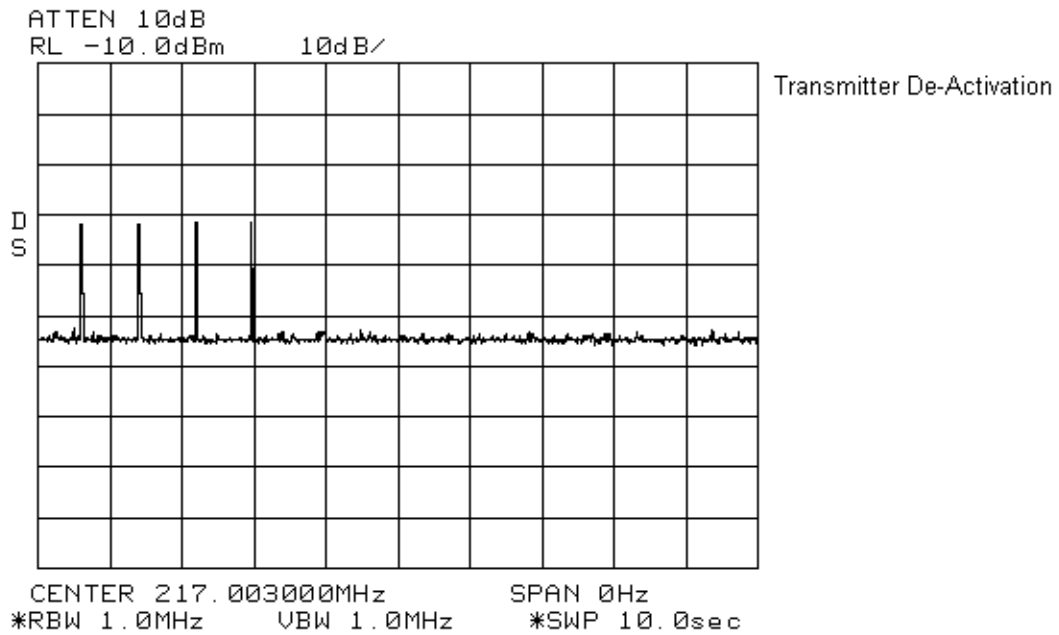
**15.231(a)(2) :** No automatic activation.

**15.231(a)(3) :** There is no provision for regular periodic transmission.

**15.231(a)(4) :** N/A.

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**Section 4. Radiated Emissions****Para. No.: 15.231(b)****Test Performed By: Glen Westwell****Date of Test: 15 April 2003****Minimum Standard:**

Fundamental Frequency (MHz)	Field Strength of Fundamental ( $\mu\text{V/m}$ @ 3m)	Field Strength of Spurious Emissions ( $\mu\text{V/m}$ @ 3m)
40.66 - 40.70	2,250	225
70-130	1, 250	125
130-174	1,250 to 3,750*	125 to 375
174-260 (note 1)	3,750	375
260-470 (note 1)	3,750 to 12,500*	375 to 1,250
Above 470	12,500	1,250

**Test Results:** Complies

**Test Data:** As per attached tabulated data.  
Emissions were search on 3 orthogonal axis with a fresh battery.  
All emissions up to the 10<sup>th</sup> harmonic were searched.

EQUIPMENT: WatchMate, 217MHz Transmitter

Radiated Emissions											
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.
217.0030	BC1	H	40.4	15.3	N/A	1.8	57.5	71.5	14.0	Q-Peak	N/A
217.0030	BC1	V	34.0	15.9	N/A	1.8	51.7	71.5	19.8	Q-Peak	N/A
72.3300	BC1	H	15.1	8.3	N/A	1.0	24.4	51.5	27.1	Q-Peak	N/A
72.3300	BC1	V	16.7	8.6	N/A	1.0	26.3	51.5	25.2	Q-Peak	N/A
144.6600	BC1	V	16.1	13.2	N/A	1.5	30.8	51.5	20.7	Q-Peak	N/A
144.6600	BC1	H	22.1	13.2	N/A	1.5	36.8	51.5	14.7	Q-Peak	N/A
434.0060	LP1	V	30.2	16.4	N/A	2.7	49.3	51.5	2.2	Q-Peak	N/A
434.0060	LP1	H	27.7	17.0	N/A	2.7	47.4	51.5	4.1	Q-Peak	N/A
651.0090	LP1	H	15.6	20.9	N/A	3.3	39.8	51.5	11.7	Q-Peak	N/A
651.0090	LP1	V	25.8	20.8	N/A	3.3	49.9	51.5	1.6	Q-Peak	N/A
Note 1: Antenna Legend: BC = Biconical, BL = Bilog, LP = Log-Periodic, Horn = Horn, ED = EMCO Dipole											
Note 2: Detector Legend: Q-Peak = 120 kHz RBW, Average = 1.0 MHz RBW											
Notes:											

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## **Section 5.        Occupied Bandwidth**

**Para. No.: 15.231(c)**

<b>Test Performed By: Glen Westwell</b>
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<b>Date of Test: 15 April 2003</b>
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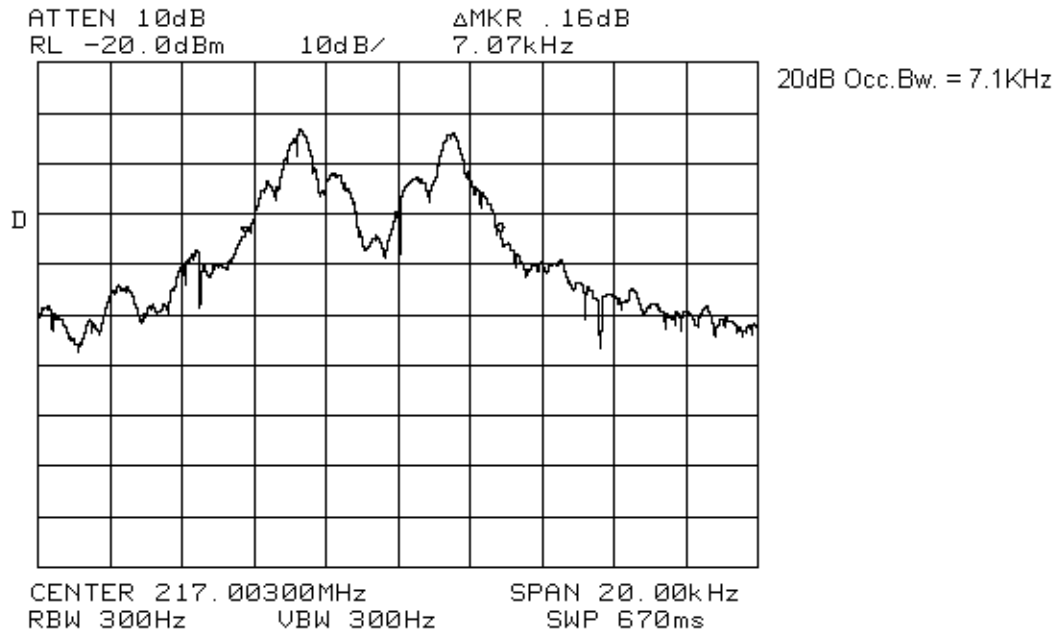
**Minimum Standard:**        15.231(c) The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

**Test Results:**                Complies

**Test Data:**                  See attached graph.

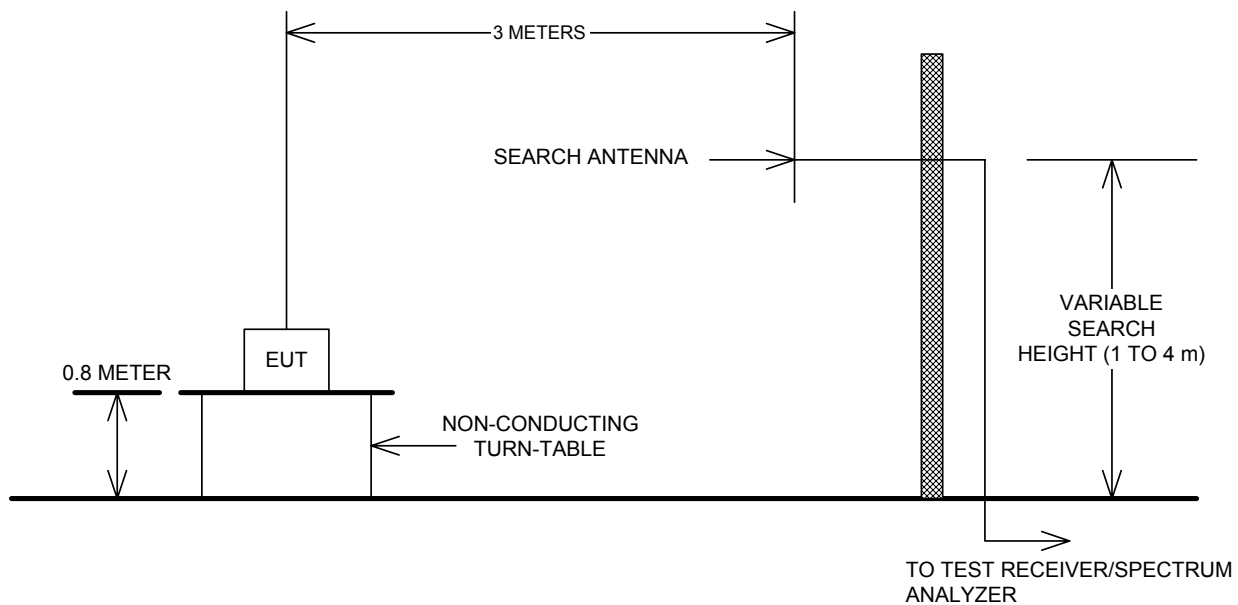
EQUIPMENT: WatchMate, 217MHz Transmitter

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## Section 6. Block Diagrams

### Outdoor Test Site For Radiated Emissions



The spectrum was searched up to the 10th harmonic of the fundamental frequency of operation.

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**Section 7. Test Equipment List****WIRELESS RADIO TEST EQUIPMENT LIST**

<b>CAL CYCLE</b>	<b>EQUIPMENT</b>	<b>MANUFACTURER</b>	<b>MODEL</b>	<b>SERIAL</b>	<b>LAST CAL.</b>	<b>NEXT CAL.</b>
1 Year	Receiver	Rohde & Schwarz	ESVS-30	FA001437	July. 04/02	July. 04/03
1 Year	Spectrum Analyzer	Hewlett Packard	8565E	FA000981	15 Jul 02	15 Jul 03
1 Year	Log Periodic Antenna #1	EMCO	LPA-25	FA000477	Aug. 23/02	Aug. 23/03
1 Year	Biconical (1) Antenna	EMCO	3109	FA000805	Aug. 22/02	Aug. 22/03
1 Year	Dipole Antenna Set	EMCO #1	3121C	FA000814	May. 06/02	May. 06/03