

Compliance test report

**175872-1TRFWL**Date of issue  
May 17, 2011

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**Title 47-Telecommunication**

Part 15 – Radio Frequency Devices

Subpart D - Unlicensed Personal Communications Service Devices

**RSS-213**

2 GHz Licence-exempt Personal Communications Service Devices (PCS)

- AC Line conducted emissions.

Applicant **Mitel Networks Corporation**  
Product **Mitel 5505 Guest IP phone,  
Mitel 5505 Guest IP phone FRU**  
Model **Mitel 5505**

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Nemko Canada Inc., a testing  
laboratory, is accredited by the  
Standards Council of Canada. The  
tests included in this report are within  
the scope of this accreditation



Test location

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**Reviewed by**

A handwritten signature in blue ink, appearing to read 'A. Adelberg'.

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Andrey Adelberg, Senior Wireless/EMC Specialist

May 17, 2011

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Date:

Limits of responsibility

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Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.

This test report has been completed in accordance with the requirements of ISO/IEC 17025. All results contain in this report are within Nemko Canada's ISO/IEC 17025 accreditation.

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## Section 1: Report summary

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### 1.1 Test specifications

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#### **Title 47-Telecommunication**

Part 15 – Radio Frequency Devices

Subpart D - Unlicensed Personal Communications Service Devices

#### **RSS-213**

2 GHz Licence-exempt Personal Communications Service Devices (PCS)

- AC Line conducted emissions.

### 1.2 Statement of compliance

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In the configuration tested, the EUT was found compliant.

Testing was completed against all relevant requirements of the test standard. Results obtained indicate that the product under test complies in full with the requirements tested. The test results relate only to the items tested.

See “Summary of test results” for full details.

### 1.3 Exclusions

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None

### 1.4 Test report revision history

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None

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## Section 2: Summary of test results

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### 2.1 Summary of results

<b>FCC Part 15, Subpart D</b>		
Part/Clause	Test description	Verdict
§15.315	Conducted limits	Pass
<b>Requirements for RSS-213</b>		
Part/Clause	Test description	Verdict
8	AC Line conducted emissions	Pass
Notes: None		

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## Section 3: Equipment under test (EUT) details

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### 3.1 Applicant

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Mitel Networks Corporation  
350 Legget Drive  
Kanata, Ontario  
Canada, K2K 2W7

### 3.2 Sample information

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**Receipt date** March 30,2011  
**Nemko sample ID number** Item # 1

### 3.3 EUT information

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**Product name** Mitel 5505 Guest IP phone, Mitel 5505 Guest IP phone FRU  
**Model** Mitel 5505  
**Serial number** FSAZZ9007  
**Power requirements** Base is 48 V<sub>DC</sub> 130 mA maximum, Mid-span PSE 100–250 V<sub>AC</sub>, 50–60 Hz, 0.5 A  
**Manufacturer** Flextronics Inc.  
21 Richmond Side Road  
Kanada ON K2K 2C1  
Canada

#### **Product description and theory of operation**

The 5505 is a Cordless DECT IP phone which is software programmable for DECT and DECT 6.0.

#### **Operational frequencies**

The integrated 48 V<sub>DC</sub> - 3.3 V<sub>DC</sub> converter switching frequency is 100 kHz. The battery charger buck boost regulator switching frequency is 2200 to 2600 kHz. The TNETV1055 (TI SOIC) uses a 25 MHz crystal with the integrated MIPS32 processor running at 125 MHz (including SDRAM clock), and the integrated DSP running at 100 MHz. The TNETV1055 also uses an 8.192 MHz crystal to run the PCM interface at 2.048 MHz. The SC14CVM480FL (SiTel Cordless Voice Module) uses a 10.368 MHz crystal. The DECT operating frequency range is DECT 1880 to 1900 MHz and DECT 6.0 1920 to 1930 MHz set by software configuration

#### **Software details**

TNETV1055: Boot Load 4.00.02.02, Main 4.00.02.02.  
CVM480 4.10 set for DECT or DECT 6.0.

### 3.4 EUT exercise details

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EUT was tested with call established.

3.5 EUT setup details

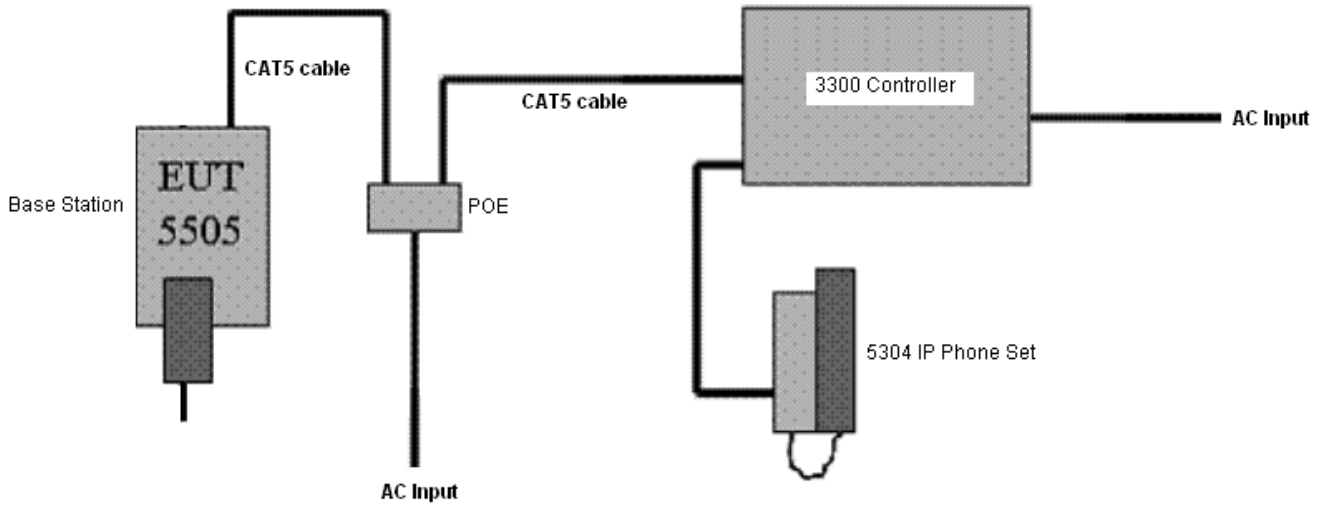


Diagram 3.5-1: Setup diagram

EUT sub assemblies				
Description	Brand name	Model/Part number	Serial number	Rev.
Mitel 5505 Guest IP Phone	Mitel	Mitel 5505	FSAZZ9007	N/A
Mitel 5505 Guest IP Phone FRU	Mitel	Mitel 5505	FSAZZ9007	N/A
ITE power supply	SL power and ault	MN# PW180KB4800N03, PN# 50005301	None	N/A

Support equipment				
Description	Brand name	Model/Part number	Serial number	Rev.
3300	Mitel	3300	AHAAE1204	
IP Phone	Mitel	MN# 5304	SN# FSABH1123	N/A
ITE power supply	SL power and ault	MN# PW180KB4800N03, PN# 50005301	None	N/A

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## Section 4: Engineering considerations

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### 4.1 Modifications incorporated in the EUT

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There were no modifications performed to the EUT during this assessment.

### 4.2 Technical judgment

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There are two kinds of Guest IP phones, Mitel 5505 North American Guest IP phone and Mitel 5505 EURO IP phone.

Guest IP phone is a "bundle" consisting of a base IP phone plus a DECT handset. The base IP phone without the handset is marketed as a "FRU":

For both the base and the DECT handset, the HW is the same and the differences in operation for NA vs Euro DECT is done by SW.

This SW programming is done in factory (not in field) therefore the part numbers for the NA and Euro versions are different.

### 4.3 Deviations from laboratory tests procedures

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No deviations were made from laboratory test procedures.



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## Section 5: Test conditions

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### 5.1 Atmospheric conditions

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Temperature: 15–30 °C  
Relative humidity: 20–75 %  
Air pressure: 86–106 kPa

When it is impracticable to carry out tests under these conditions, a note to this effect stating the ambient temperature and relative humidity during the tests shall be recorded and stated.

### 5.2 Power supply range

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The normal test voltage for equipment to be connected to the mains shall be the nominal mains voltage. For the purpose of the present document, the nominal voltage shall be the declared voltage, or any of the declared voltages  $\pm 5\%$ , for which the equipment was designed.

## Section 6: Measurement uncertainty

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### 6.1 Uncertainty of measurement

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Nemko Canada Inc. has calculated measurement uncertainty and is documented in EMC/MUC/001 "Uncertainty in EMC measurements." Measurement uncertainty was calculated using the methods described in CISPR 16-4 Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC measurements; as well as described in UKAS LAB34: The expression of Uncertainty in EMC Testing. Measurement uncertainty calculations assume a coverage factor of  $K=2$  with 95 % certainty.

## Section 7: Testing data

### 7.1 Conducted disturbance at mains port

#### 7.1.1 References

An unlicensed PCS device that is designed to be connected to the public utility (AC) power line must meet the limits specified in §15.207 and CISPR 22.

#### 7.1.2 Test summary

**Verdict**    Pass

#### 7.1.3 Observations/special notes

- The EUT was set up as tabletop configuration.
- EUT was powered at 120 V<sub>AC</sub> 60 Hz
- The handset was off the base and there was a call established with a second phone.

#### 7.1.4 Test equipment list

Equipment	Manufacturer	Model no.	Asset no.	Cal cycle	Next cal.
Receiver/spectrum analyzer	Rohde & Schwarz	ESU 40	FA002071	1 year	Jan. 04/12
Power supply	California Inst.	3001I	FA001021	1 year	Jan. 26/12
LISN	Rohde & Schwarz	ENV216	FA002023	1 year	Nov. 09/11
50 coax cable	Huber + Suhner	NONE	FA002015	1 year	Sept. 01/11

#### 7.1.5 Test data

**Test date**          May 11, 2011

**Temperature**     21.3 °C

**Test engineer**    David Duchesne

**Air pressure**     994.5 mbar

**Relative humidity** 25.2 %

**Port under test**         AC input of ITE power supply

#### Receiver/spectrum analyzer settings

Preview measurements – Receiver:

Peak and Average detector (Max hold), RBW = 9 kHz, VBW = 30 kHz, Measurement time = 100 ms

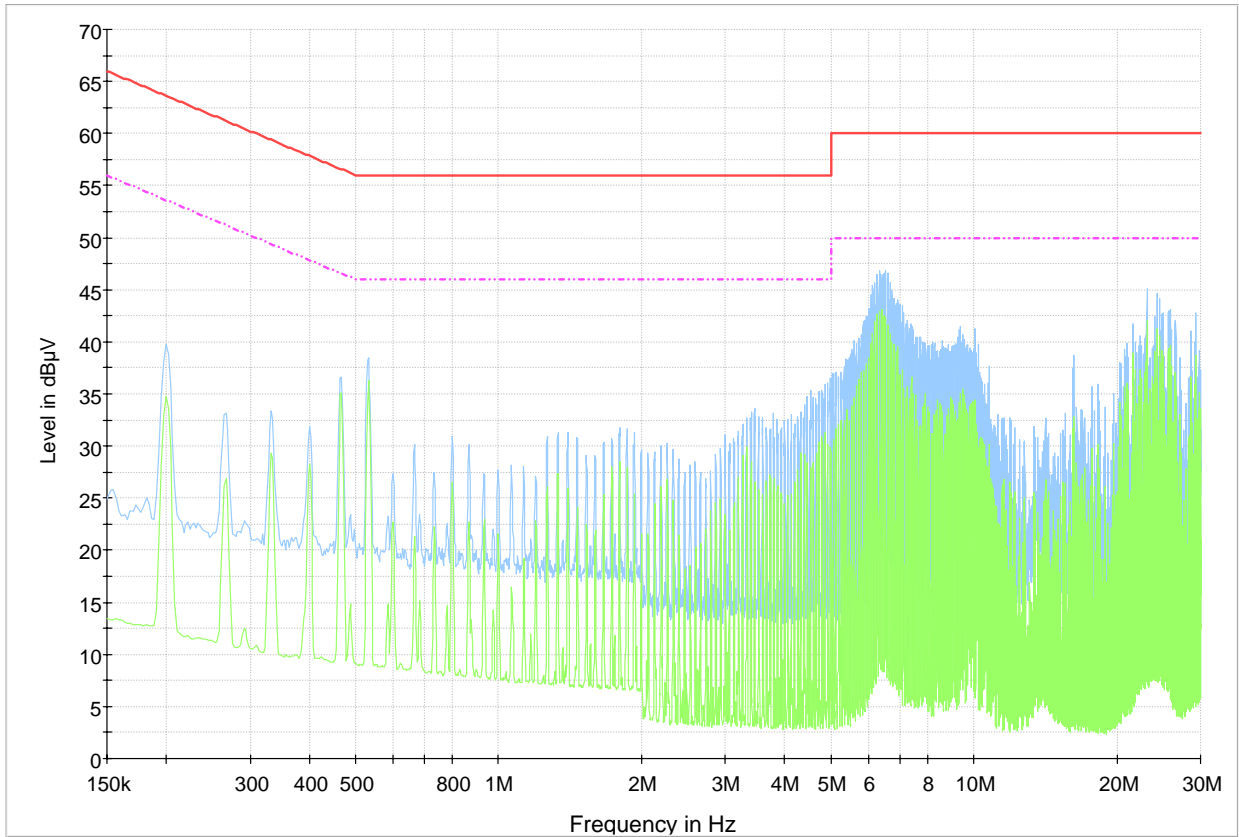
Final measurements – Receiver:

Q-Peak and Average detector, RBW = 9 kHz, VBW = 30 kHz, Measurement time = 100 ms

#### Measurement details

A preview measurement was generated with the receiver in continuous scan mode. Emissions detected within 6 dB or above limit were re-measured with the appropriate detector against the correlating limit and recorded as the final measurement.

**7.1.5 Test data, continued**

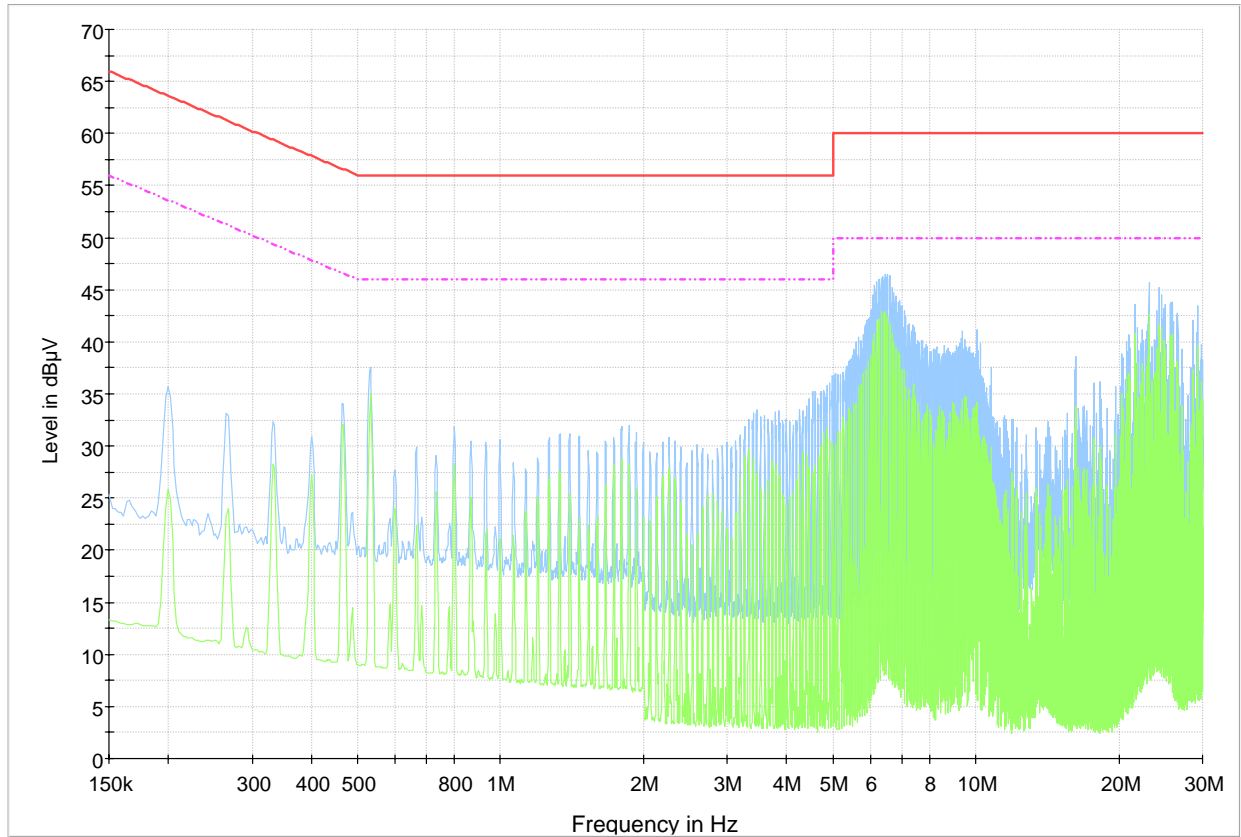


- 120VAC 60Hz, Phase
- CISPR Mains QP Class B Limit
- · - · CISPR Mains AV Class B Limit
- Preview Peak Detector
- Preview Average Detector

**Spectral plot 7.1-1:** Conducted emissions on phase line

The spectral scan has been corrected with transducer factors (i.e. cable loss, LISN factors, and attenuators) for determination of compliance.

7.1.5 Test data, continued



120VAC 60Hz, Neutral

- CISPR Mains QP Class B Limit
- - - CISPR Mains AV Class B Limit
- Preview Peak Detector
- Preview Average Detector

**Spectral plot 7.1-2:** Conducted emissions on neutral line

The spectral scan has been corrected with transducer factors (i.e. cable loss, LISN factors, and attenuators) for determination of compliance.

7.1.6 Setup photos

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Photo 7.1-1: Conducted disturbance, front view

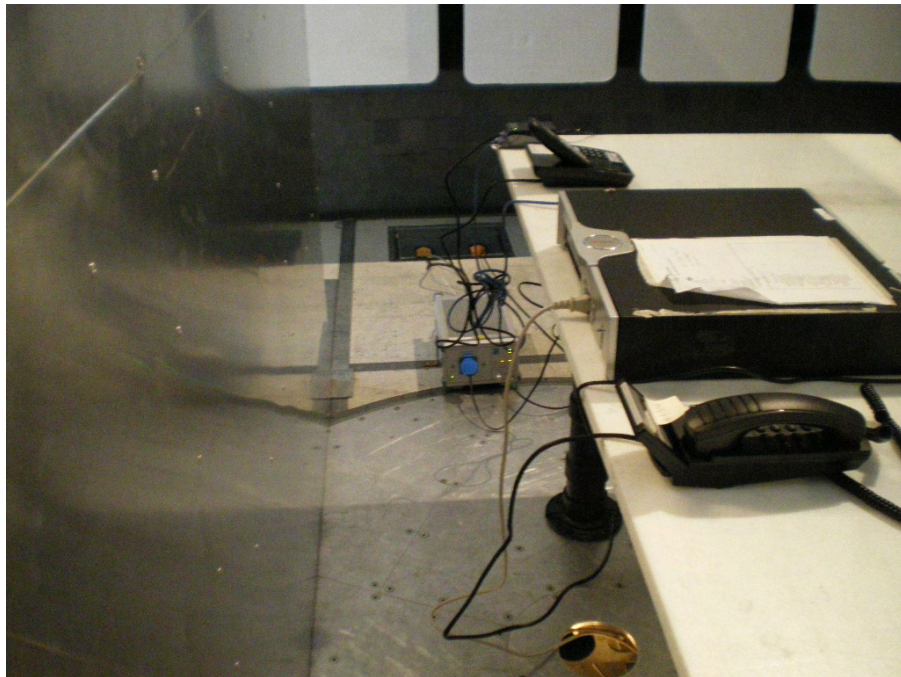


Photo 7.1-2: Conducted disturbance, side view

Section 8: EUT photos

