Electromagnetic Field Measurement Survey

ID: 1564
Site Name: Example Site

Survey performed at:
Summerfield Centre
c/o Brie and Clarke Roads
Example Site

Site Address:
63 Barn Lodge
Beetroot Street
Example Site

Site visit date: 11/09/2008
Site report date: 24/01/2011

Introduction

As part of a comprehensive survey of base station installations commissioned by Linked, measurements were performed at a private residence near the Example Site. The aim of the survey was to measure the electromagnetic exposure levels at various positions in the private residence as indicated by concerned member of the public.

Measured results are compared to the guidelines of limiting exposure proposed by the International Commission on Non-Ionizing Radiation Protection (ICNIRP).

The measurement protocol used is the CENELEC 50492 (August 2007) standard for the in-situ measurement of electromagnetic field strength related to human exposure in the vicinity of base stations.

Radio Frequency (RF) Environment

Through visual inspection the cellular service providers, Linked as well as a Television broadcaster and other RF transmitters were observed on site.

In addition to the above, other RF signals were noticed in the measured results and are included in the broadband results. Significant RF signals were observed in close proximity to the site.

Environmental Conditions

During the survey the weather conditions were reported as follows:

Temperature: Hot
Cloud Cover/Rain: Partly Cloudy
Wind: Light Breeze

The weather conditions are not measured accurately and serve only as a basic indication of the weather at the time of the survey.

Measured Results

Table 1 and Figure 1 presents the measured positions and exposure levels in terms of a percentage of the ICNIRP guidelines, where a 100% value would indicate that the safe exposure limit for the General Public has been reached. The Linked contribution to the total exposure is given in the last column of the table. Since the aim of the survey was to measure the typical exposure values, the reported results are un-extrapolated peak field instantaneous exposure results, at the specific date and time of the measurement survey.

Measured On	No.	Position	Total Exposure	Linked Exposure
03/06/2009 10:32	1	**Indoors,** in the lounge, next to the couch.	0.01170%	0.00006%
03/06/2009 11:04	2	**Indoors**, next to the kitchen window.	0.01214%	0.00007%
03/06/2009 11:24	3	**Indoors,** at the kitchen sink.	0.01212%	0.00008%
03/06/2009 11:44	4	**Indoors,** close to the desk in the second bedroom.	0.01257%	0.00011%
03/06/2009 11:57	5	**Indoors**, at the bed in the master bedroom.	0.01255%	0.00007%
03/06/2009 12:36	7	**Indoors**, at the bathroom window.	0.01269%	0.00010%
03/06/2009 12:44	6	**Indoors**, at the computer area in the master bedroom.	0.01246%	0.00008%

Table 1: RF Exposure Levels at Measured Positions

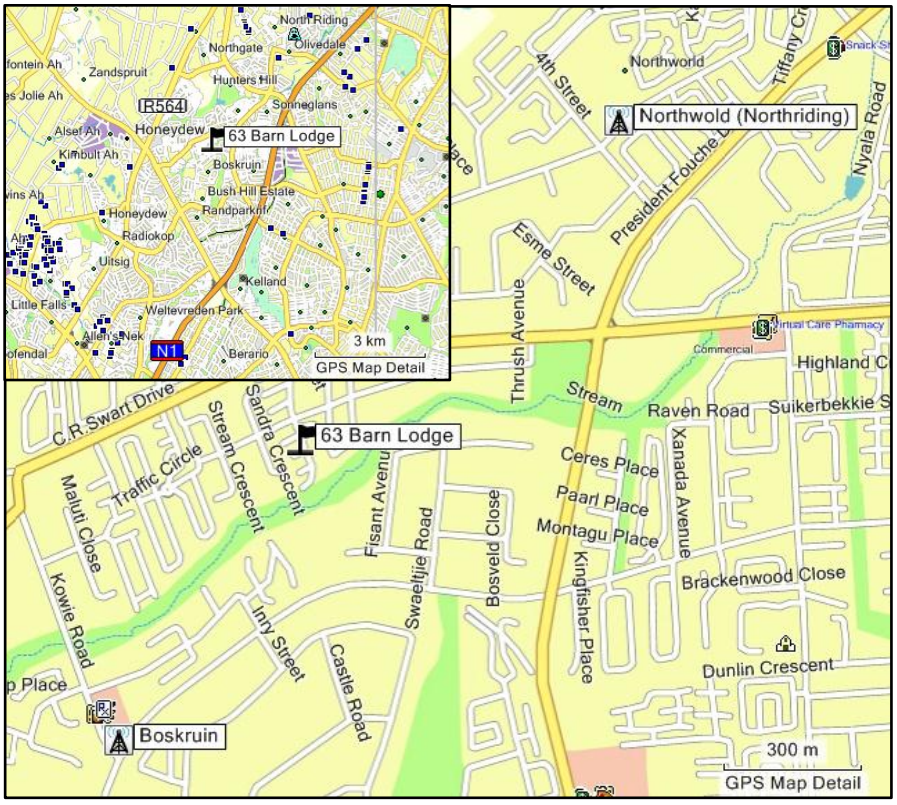

Figure 1: Map of Area around Base Station Site and Measurement Positions

Summary of Results & Conclusion

Measurements were recorded in areas in a private residence, as indicated by concerned member of the public currently residing in the residence.

For the measured results presented in this report a 100% value would indicate that the ICNIRP exposure limit for the General Public has been reached. The highest value measured is 0.01269% of the ICNIRP General Public guidelines and was obtained at position 7. This is more than 7800 times below the General Public limit.

Independent Assessor

EMSS Consulting (EMSS) has expertise in the field of human exposure assessment to radio-frequency fields. Work performed includes site surveys, numerical predictions (computer simulations) and the interpretation and establishment of guidelines for limiting exposure. For the past decade EMSS has focused its efforts in this area on the assessment of human exposure to cellphone technologies. These include measurements and numerical predictions of exposure to cellphones and base station antennas. EMSS publishes its research results in international peer- reviewed literature and has written numerous technical reports on base station site surveys performed on request from cellular operators and/or members of the public.

Measurement Equipment and Methodology

Both survey meter and probe must be calibrated on a regular basis. The calibration status is presented in the following table.

Survey Meter:	Narda SRM 3000 Selective Radiation Meter, S/N: M-0170	**Calibration Status:**	Valid calibration: 9 September, 2008
Probe:	Narda BN 3501/01 Three-Axis E-Field Probe, S/N: H-0339	**Calibration Status:**	Valid calibration: 1 August, 2008

The CENELEC 50492 standard requires an uncertainty assessment to be performed when extrapolation is not used to address maximum traffic. A full uncertainty analysis for the measurement methodology used by EMSS has been performed and resulted in an expanded uncertainty of 3.8 decibel (dB). Additional survey information, typically shown in a CENELEC 50492 report, is available from EMSS on request.

Detailed information on the equipment specifications and the uncertainty assessment can be obtained on request.

For more information, contact EMSS at:
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