

Baldock Radio Station
Royston Road
Baldock
Herts SG7 6SH
01462 428500



**Mobile Phone
Base-Station Audit**

Audit Site: Frimley Green Pre-School
Frimley Community Centre
Balmoral Drive
Frimley
Camberley GU16 9AR

Work Performed by		Distribution List	
James Loughlin Field Manager	3G measurements & Report	Lloyd Tailby	1
Mike Reynolds Field Officer	3G measurements	Anne Theobald	1
W. White T.I. Officer	2G measurements & 2G Report	W. White	1
		Technical Manager	1
		Case/Year file	2

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Report Summary

As the radio spectrum is continually changing, these measurements can only provide information on the radio frequency (RF) conditions for the specific locations at the time of the survey.

The Office of Communications (Ofcom) performed this survey of the RF emission environment in the vicinity of Frimley Green Pre-School on the 6th September 2005. Both second generation (2G) and third generation (3G) base station emissions were measured separately and the signal levels combined to give the Total Band Exposure as detailed below.

The table, sorted in descending order of signal level, summarises the total results obtained at each measurement location.

Summary of results:

Location	3G total	2G total	TOTAL Exp. Quot.	Related to ICNIRP limit
The Lawn in front of Store Area	2.61E-05	9.12E-06	3.52E-05	1/28409
The Patio	8.00E-06	9.55E-06	1.75E-05	1/57143
Side Lawn	3.53E-06	5.07E-06	8.60E-06	1/116279
The Hall	3.60E-06	9.32E-07	4.53E-06	1/220750
Car Park	3.43E-06	3.83E-07	3.81E-06	1/262467

The 2G data is annexed to this report

The Cheshunt office carried out the 2G audit, while mobile team 2 from Baldock completed a concurrent 3G survey. The results from both have been combined to provide the summary of results on page 3.

Initially the base stations were scanned to ascertain the extent of 3G activity.

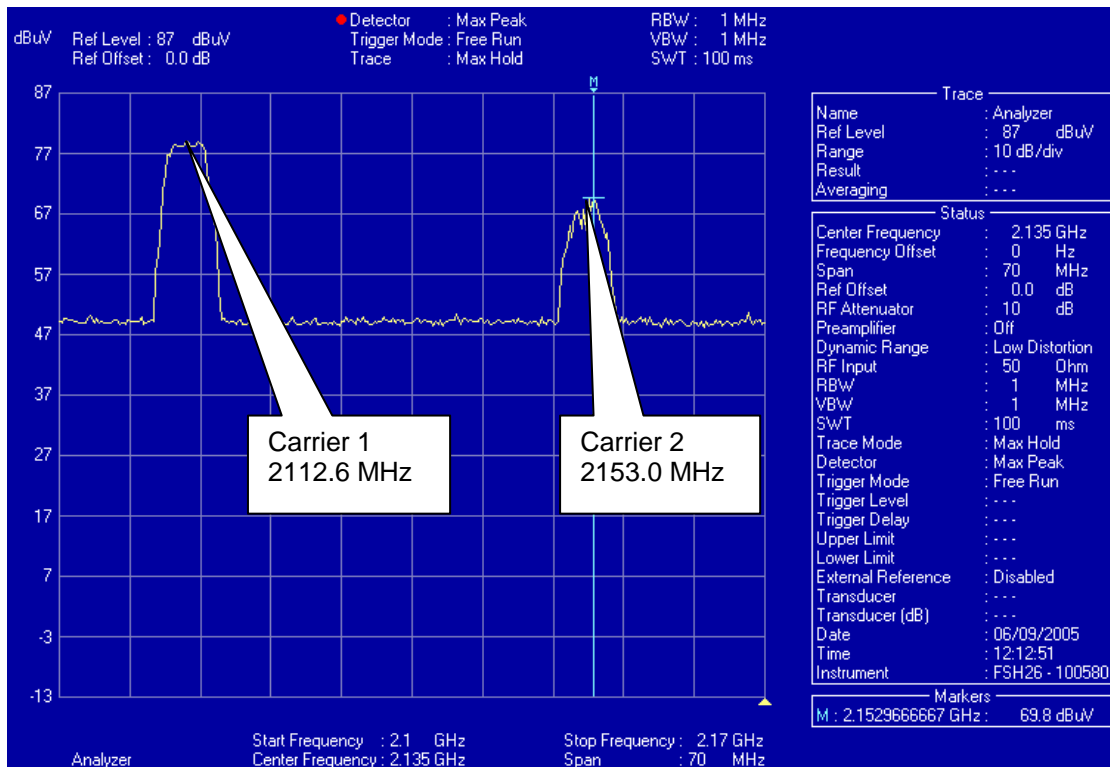


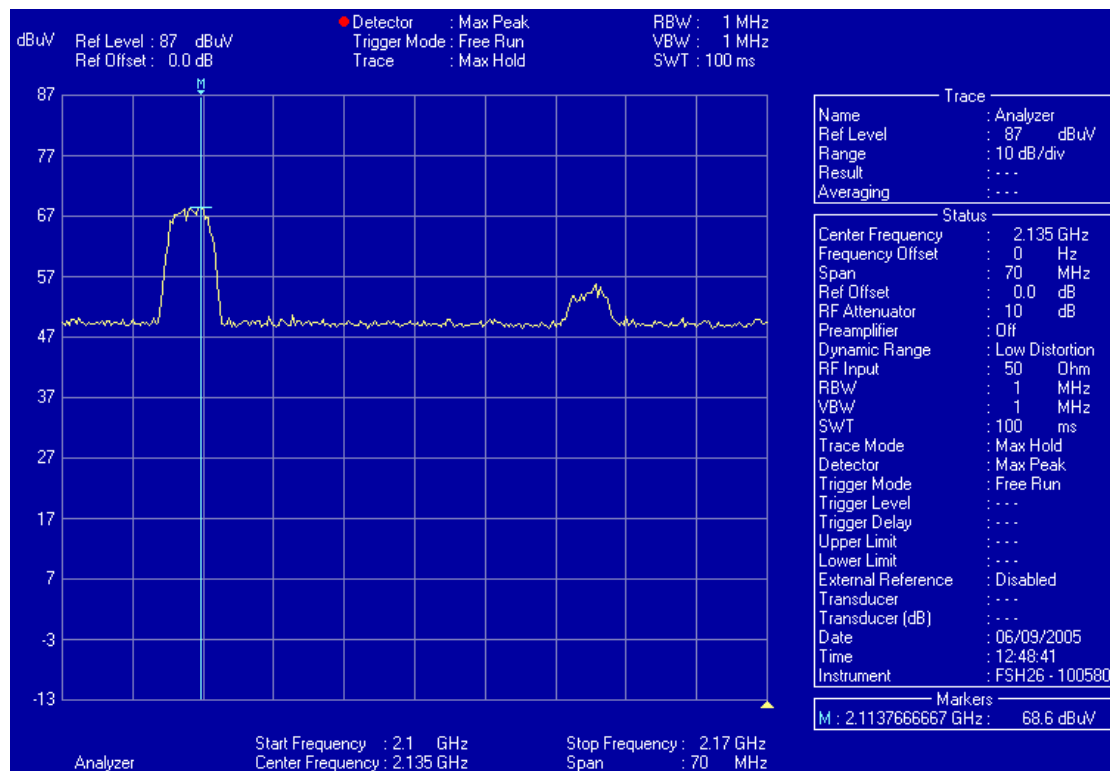
Figure 1

Figure 1 shows that two transmissions were active at this site. At each measurement location the antenna was then set up 1.5 metres above ground or floor level. In this position and the individual carrier's field strengths were recorded. For each measurement the exposure quotient was then calculated and summed to give the total 3G exposure quotient. This in turn was added to the 2G exposure quotient before calculating the Total Exposure Quotient for each survey site.

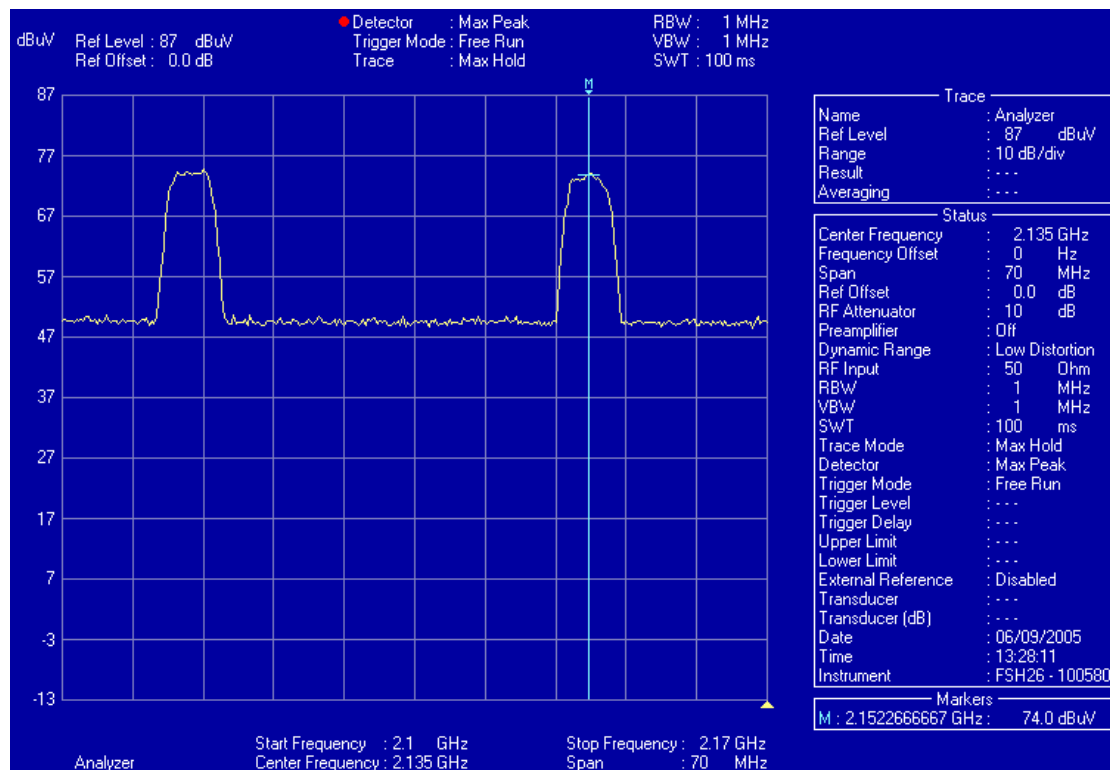
All the 3G measurement data is given overleaf, while the 2G data is contained in the annex to this report.

Equipment: Rohde & Schwarz FSH6 Spectrum Analyser serial number: 100580 CEMS number: 200103
 EMCO DRG 3115 horn Antenna 2153 200005
 Garmin GPS75 receiver 37524369 200011
 Reynolds 12 metre cable type 219-0088 0201 067

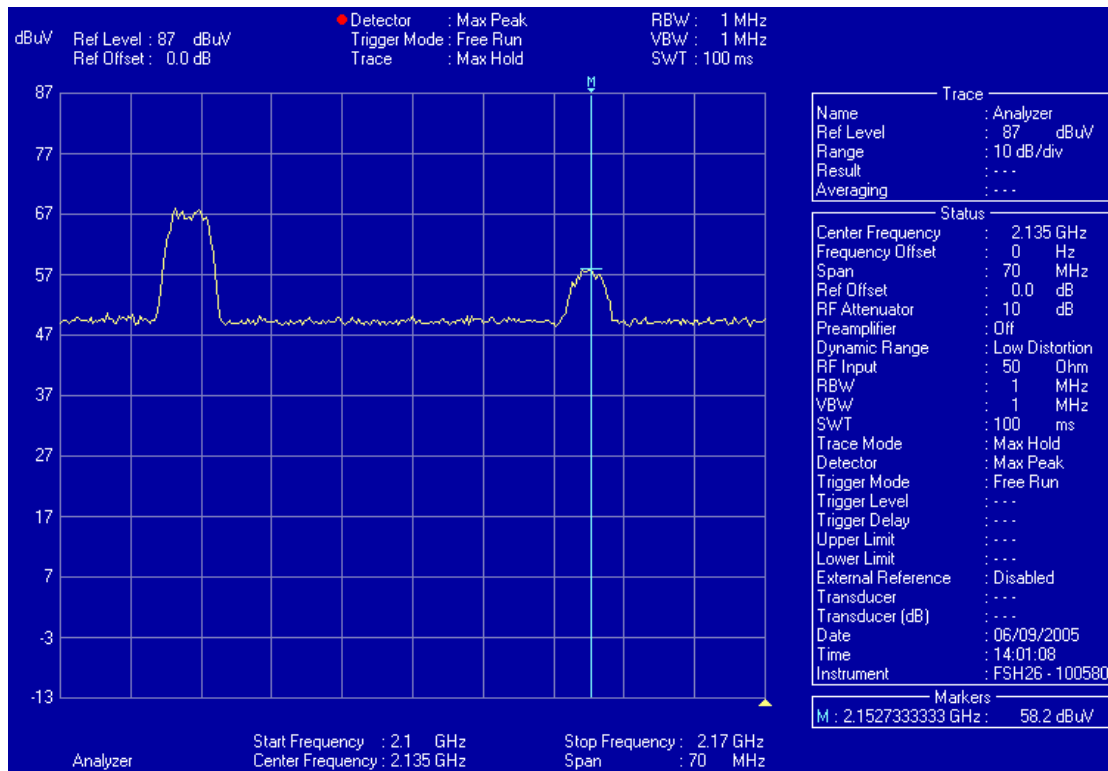
	Location	Carrier	Frequency MHz	Fieldstrength dBuV/m	Fieldstrength uV/m	Fieldstrength V/m	Power W/m ²	Power W/m ²	ICNIRP W/m ²	Exposure Quotient	Exposure Quotient	3G total
1	The Hall	1	2112.6	101.1	113,501.1	0.113501	0.0000341710	3.417E-05	10	0.000003417100	3.42E-06	3.60E-06
	SU 8835 5761	2	2153	88.3	26,001.6	0.026002	0.0000017934	1.793E-06	10	0.000000179340	1.79E-07	
2	The Patio	1	2112.6	103.6	151,356.1	0.151356	0.0000607656	6.077E-05	10	0.000006076560	6.08E-06	8.00E-06
	SU 8834 5762	2	2153	98.6	85,113.8	0.085114	0.0000192159	1.922E-05	10	0.000001921590	1.92E-06	
3	The Lawn in front of Store Area	1	2112.6	107.3	231,739.5	0.231740	0.0001424494	0.0001424	10	0.000014244940	1.42E-05	2.61E-05
	SU 8834 5762	2	2153	106.5	211,348.9	0.211349	0.0001184838	0.0001185	10	0.000011848380	1.18E-05	
4	Side Lawn	1	2112.6	95.2	57,544.0	0.057544	0.0000087833	8.783E-06	10	0.000000878330	8.78E-07	3.53E-06
	SU 8835 5764	2	2153	100	100,000.0	0.100000	0.0000265252	2.653E-05	10	0.000002652520	2.65E-06	
5	Car Park	1	2112.6	100.7	108,392.7	0.108393	0.0000311646	3.116E-05	10	0.000003116460	3.12E-06	3.43E-06
	SU 8840 5765	2	2153	90.7	34,276.8	0.034277	0.0000031165	3.117E-06	10	0.000000311650	3.12E-07	



Location 1: The Hall

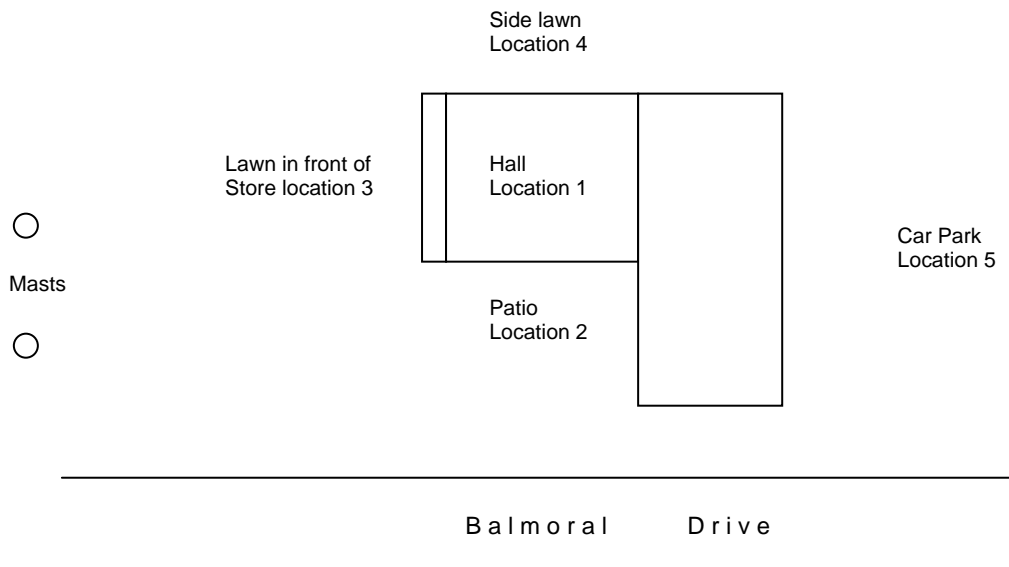


Location 3: The Lawn in front of Store Area



Location 5: Car Park

Measurement locations:



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Annex

2G Mobile Phone Base-Station Audit

Mobile Phone Base-Station Audit

**Audit site: FRIMLEY GREEN PRE-SCHOOL
BALMORAL DRIVE
CAMBERLEY
GU16 9AR**

In 2000 the Government asked the Radiocommunications Agency to implement a national measurement programme to ensure that emissions from cellular base stations do not exceed the guidelines for public maximum exposure set by the International Commission on Non-Ionizing Radiation Protection (ICNIRP). Ofcom took over the functions of the Radiocommunications Agency, along with those of the Independent Television Commission, Radio Authority, Ofcom and Broadcasting Standards Commission, on 29 December 2003.

Electric field strength measurements made in various bands are referenced to and presented alongside the relevant ICNIRP public maximum exposure levels. On the left hand side of the results page(s) is a graphical representation of the radio spectrum surveyed at each location on the site. The green line on each graph indicates the ICNIRP guideline exposure level for that frequency band. To the right hand side of each graph is a table showing the ten highest level emissions recorded within a band.

Further explanation of the results and their context within the ICNIRP guidelines can be provided by the Ofcom officers at the time of the audit or by contacting Ofcom on 0845 456 3000, or by email at contact@Ofcom.org.uk. Results taken from all audit sites and further information on the audit programme can be found on the Ofcom website at www.ofcom.org.uk.

Report Summary

As the radio spectrum is continually changing, these measurements can only provide information on the radio frequency (RF) conditions for the specific locations at the time of the survey.

Ofcom performed this survey of the RF emission environment prevailing in the vicinity of FRIMLEY GREEN PRE-SCHOOL on 6 September 2005.

The following table, sorted in descending order of signal level, summarises the results obtained at each measurement location.

Summary of results:		
Location	Total Band Exposure	Relationship to ICNIRP Limit
THE PATIO	9.55E-06	1/104676
LAWN IN FRONT OF STORE AREA	9.12E-06	1/109699
SIDE LAWN	5.07E-06	1/197347
THE HALL	9.32E-07	1/1073458
CAR PARK	3.83E-07	1/2611987

Issued on behalf of Ofcom.

Issued by:

Received by:

BW
Technical Investigation Officer

ANNE THEOBALD
CHAIR PERSON

Site: FRIMLEY GREEN PRE-SCHOOL

Location: THE HALL

NGR: SU 8835 5761 **Taken from GPS**

Start Time: 06 September 2005 12:52:17

Officer: BW

Receiver:

Manufacturer: ROHDE&SCHWARZ

Model: EB200

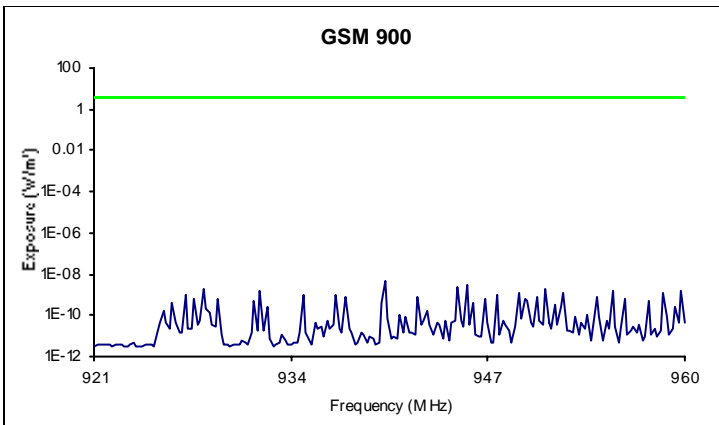
Serial Number: 837.752/028

Antenna:

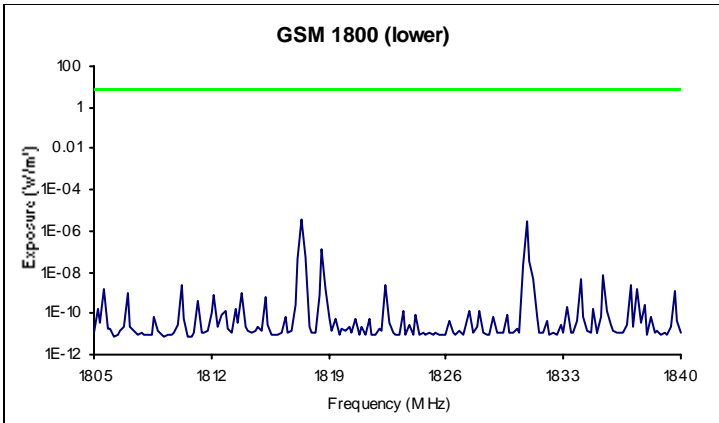
Manufacturer: Rohde & Schwarz

Model: HE200

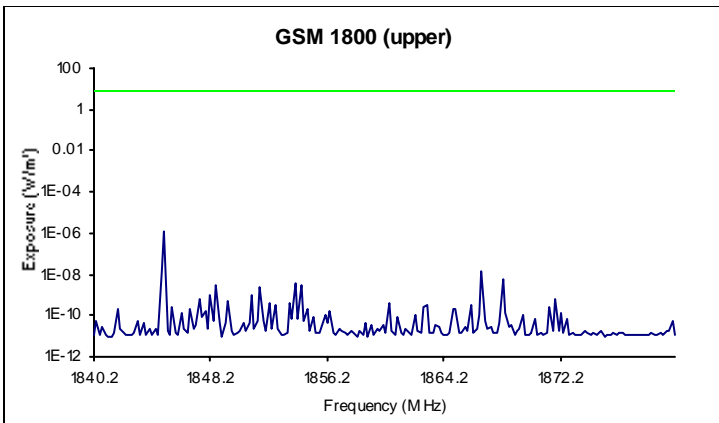
Serial Number: 758745/019



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
940.200	5.18E-09	4.70	1.10E-09
945.600	3.02E-09	4.73	6.38E-10
945.000	2.56E-09	4.72	5.43E-10
928.200	2.05E-09	4.64	4.42E-10
950.800	1.84E-09	4.75	3.87E-10
959.800	1.71E-09	4.80	3.57E-10
955.200	1.51E-09	4.78	3.16E-10
932.000	1.47E-09	4.66	3.14E-10
958.600	1.30E-09	4.79	2.70E-10
952.000	1.22E-09	4.76	2.56E-10
Band Exposure Quotient:			8.69E-09



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,817.400	4.05E-06	9.09	4.45E-07
1,830.800	2.67E-06	9.15	2.92E-07
1,818.600	1.22E-07	9.09	1.35E-08
1,817.600	4.98E-08	9.09	5.48E-09
1,817.200	4.14E-08	9.09	4.56E-09
1,831.000	3.22E-08	9.15	3.51E-09
1,830.600	2.22E-08	9.15	2.43E-09
1,835.400	7.25E-09	9.18	7.90E-10
1,831.200	4.54E-09	9.16	4.96E-10
1,834.000	4.46E-09	9.17	4.87E-10
Band Exposure Quotient:			7.71E-07



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,845.000	1.34E-06	9.22	1.45E-07
1,844.800	1.51E-08	9.22	1.63E-09
1,866.800	1.36E-08	9.33	1.46E-09
1,868.200	5.82E-09	9.34	6.23E-10
1,854.000	3.84E-09	9.27	4.14E-10
1,848.600	3.31E-09	9.24	3.59E-10
1,854.400	2.98E-09	9.27	3.22E-10
1,851.600	2.20E-09	9.26	2.38E-10
1,851.000	1.03E-09	9.26	1.11E-10
1,848.200	9.34E-10	9.24	1.01E-10
Band Exposure Quotient:			1.52E-07

Total number of measurements 572

Total Band Exposure Quotient:

9.32E-07

Site: FRIMLEY GREEN PRE-SCHOOL

Location: THE PATIO

NGR: SU 8834 5762 **Taken from GPS**

Start Time: 06 September 2005 13:08:14

Officer: BW

Receiver:

Manufacturer: ROHDE&SCHWARZ

Model: EB200

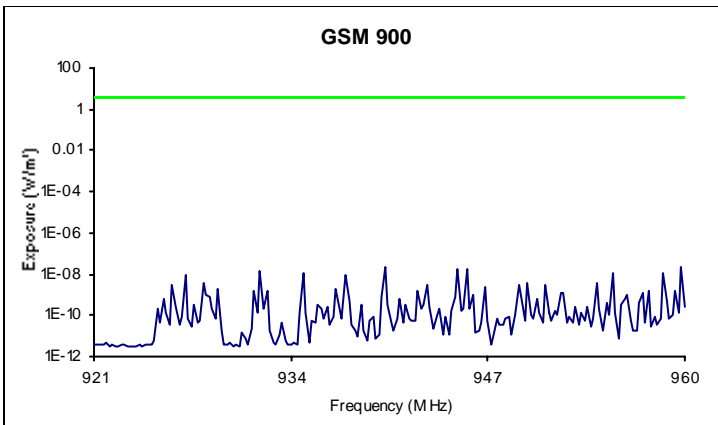
Serial Number: 837.752/028

Antenna:

Manufacturer: Rohde & Schwarz

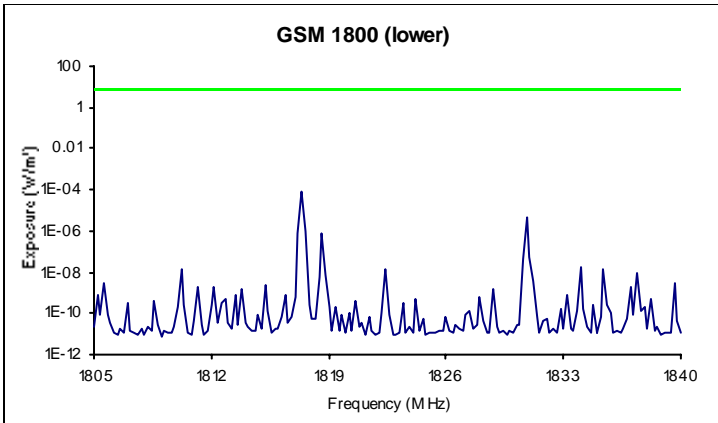
Model: HE200

Serial Number: 758745/019



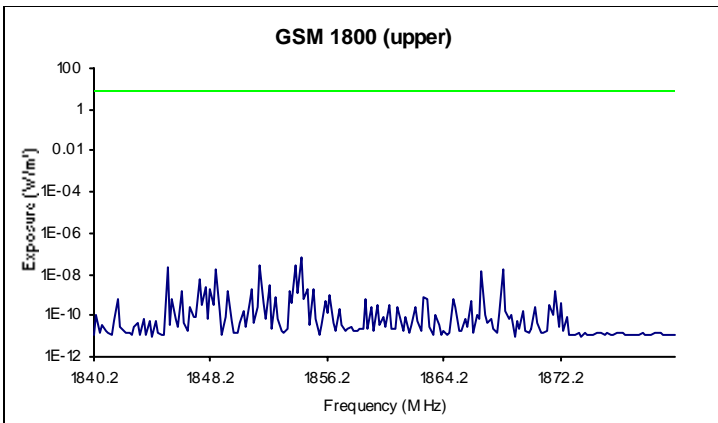
Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
940.200	2.06E-08	4.70	4.39E-09
959.800	2.06E-08	4.80	4.29E-09
945.000	1.69E-08	4.72	3.59E-09
945.600	1.62E-08	4.73	3.43E-09
932.000	1.31E-08	4.66	2.80E-09
934.800	1.09E-08	4.67	2.34E-09
958.600	1.03E-08	4.79	2.15E-09
955.200	1.02E-08	4.78	2.14E-09
927.000	9.35E-09	4.63	2.02E-09
937.600	9.37E-09	4.69	2.00E-09

Band Exposure Quotient: 4.25E-08



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,817.400	7.89E-05	9.09	8.68E-06
1,830.800	4.75E-06	9.15	5.19E-07
1,817.600	8.86E-07	9.09	9.74E-08
1,818.600	7.55E-07	9.09	8.30E-08
1,817.200	7.19E-07	9.09	7.92E-08
1,831.000	5.59E-08	9.15	6.10E-09
1,830.600	4.64E-08	9.15	5.07E-09
1,834.000	1.62E-08	9.17	1.77E-09
1,835.400	1.52E-08	9.18	1.65E-09
1,810.200	1.48E-08	9.05	1.64E-09

Band Exposure Quotient: 9.49E-06



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,854.400	6.09E-08	9.27	6.57E-09
1,854.000	3.05E-08	9.27	3.29E-09
1,851.600	2.71E-08	9.26	2.93E-09
1,845.200	2.39E-08	9.23	2.59E-09
1,848.600	1.91E-08	9.24	2.06E-09
1,868.200	1.60E-08	9.34	1.72E-09
1,866.800	1.30E-08	9.33	1.39E-09
1,847.400	6.30E-09	9.24	6.82E-10
1,852.200	3.19E-09	9.26	3.44E-10
1,847.800	2.24E-09	9.24	2.42E-10

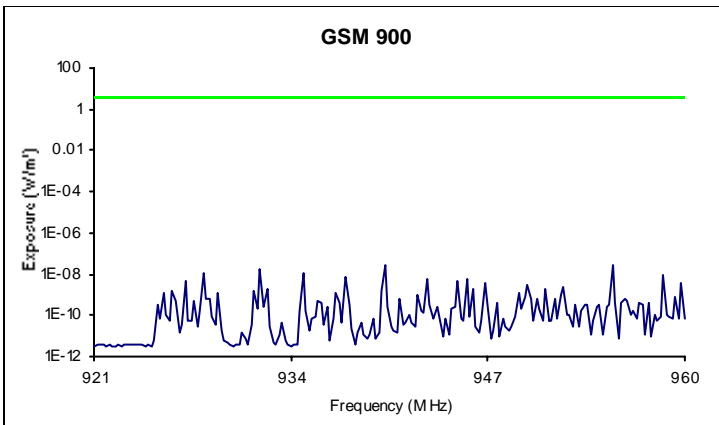
Band Exposure Quotient: 2.54E-08

Total number of measurements 572

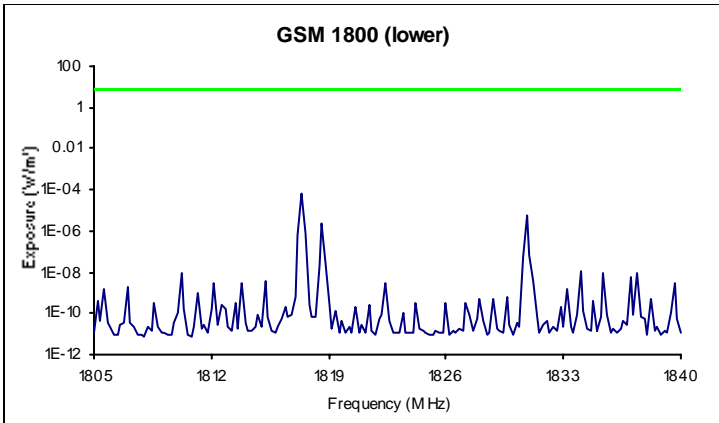
Total Band Exposure Quotient: 9.55E-06

Site: FRIMLEY GREEN PRE-SCHOOL
Location: LAWN IN FRONT OF STORE AREA
NGR: SU 8834 5762 **Taken from GPS**
Start Time: 06 September 2005 13:26:12
Officer: BW

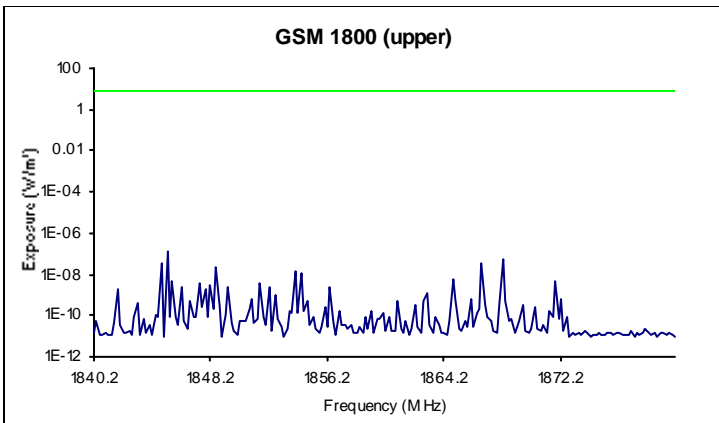
Receiver:
 Manufacturer: ROHDE&SCHWARZ
 Model: EB200
 Serial Number: 837.752/028
Antenna:
 Manufacturer: Rohde & Schwarz
 Model: HE200
 Serial Number: 758745/019



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
955.200	2.95E-08	4.78	6.17E-09
940.200	2.85E-08	4.70	6.05E-09
932.000	1.98E-08	4.66	4.24E-09
934.800	1.23E-08	4.67	2.62E-09
928.200	1.10E-08	4.64	2.37E-09
958.600	8.18E-09	4.79	1.71E-09
937.600	7.11E-09	4.69	1.52E-09
945.600	6.30E-09	4.73	1.33E-09
943.000	5.85E-09	4.71	1.24E-09
945.000	4.78E-09	4.72	1.01E-09
Band Exposure Quotient:			4.02E-08



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,817.400	7.20E-05	9.09	7.92E-06
1,830.800	5.99E-06	9.15	6.54E-07
1,818.600	2.44E-06	9.09	2.69E-07
1,817.600	8.46E-07	9.09	9.31E-08
1,817.200	6.87E-07	9.09	7.56E-08
1,831.000	6.27E-08	9.15	6.85E-09
1,830.600	5.98E-08	9.15	6.54E-09
1,818.800	2.74E-08	9.09	3.02E-09
1,818.400	2.03E-08	9.09	2.23E-09
1,834.000	1.17E-08	9.17	1.28E-09
Band Exposure Quotient:			9.04E-06



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,845.200	1.31E-07	9.23	1.42E-08
1,868.200	5.43E-08	9.34	5.82E-09
1,866.800	3.34E-08	9.33	3.58E-09
1,844.800	3.29E-08	9.22	3.57E-09
1,848.600	2.35E-08	9.24	2.54E-09
1,854.000	1.30E-08	9.27	1.40E-09
1,854.400	1.22E-08	9.27	1.31E-09
1,864.800	5.79E-09	9.32	6.21E-10
1,845.600	4.77E-09	9.23	5.17E-10
1,871.800	4.76E-09	9.36	5.09E-10
Band Exposure Quotient:			3.86E-08

Site: FRIMLEY GREEN PRE-SCHOOL

Location: SIDE LAWN

NGR: SU 8835 5764 **Taken from GPS**

Start Time: 06 September 2005 13:44:35

Officer: BW

Receiver:

Manufacturer: ROHDE&SCHWARZ

Model: EB200

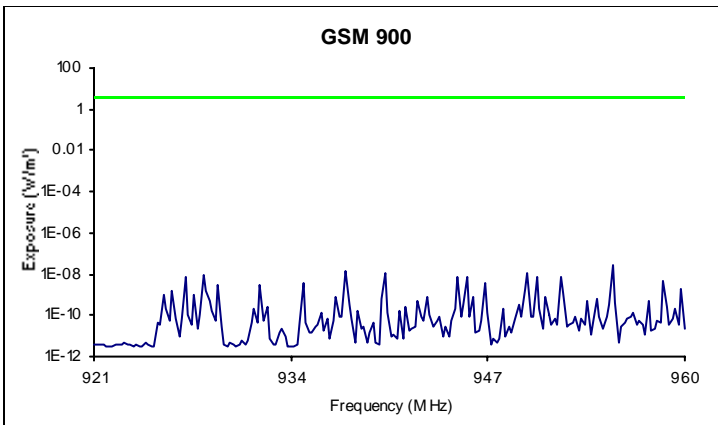
Serial Number: 837.752/028

Antenna:

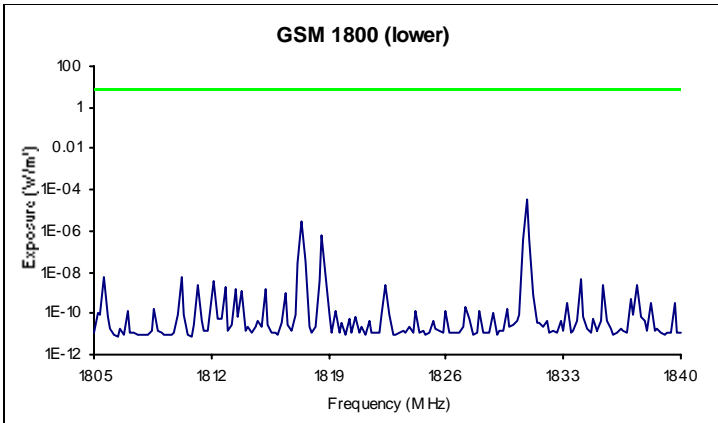
Manufacturer: Rohde & Schwarz

Model: HE200

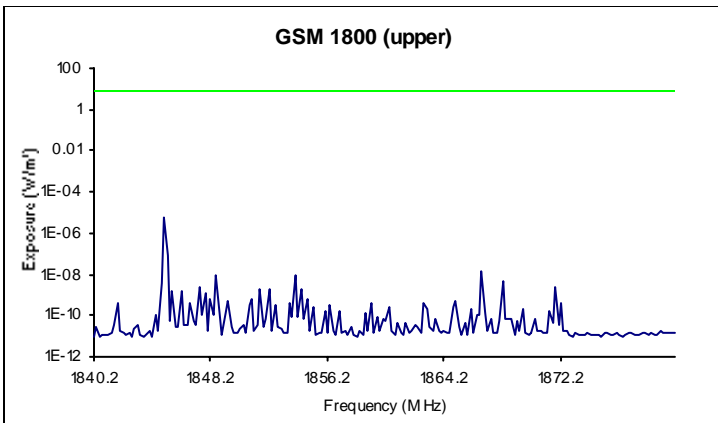
Serial Number: 758745/019



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
955.200	3.08E-08	4.78	6.46E-09
937.600	1.39E-08	4.69	2.96E-09
949.600	1.13E-08	4.75	2.38E-09
940.200	1.03E-08	4.70	2.20E-09
928.200	9.17E-09	4.64	1.98E-09
927.000	7.78E-09	4.63	1.68E-09
945.000	6.90E-09	4.72	1.46E-09
950.200	6.83E-09	4.75	1.44E-09
951.800	6.70E-09	4.76	1.41E-09
945.600	6.60E-09	4.73	1.40E-09
Band Exposure Quotient:			3.26E-08



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,830.800	3.52E-05	9.15	3.85E-06
1,817.400	3.21E-06	9.09	3.54E-07
1,818.600	5.73E-07	9.09	6.30E-08
1,831.000	4.44E-07	9.15	4.85E-08
1,830.600	3.69E-07	9.15	4.03E-08
1,817.600	3.37E-08	9.09	3.70E-09
1,817.200	3.00E-08	9.09	3.30E-09
1,818.800	7.05E-09	9.09	7.75E-10
1,810.200	6.19E-09	9.05	6.84E-10
1,805.600	5.35E-09	9.03	5.92E-10
Band Exposure Quotient:			4.37E-06



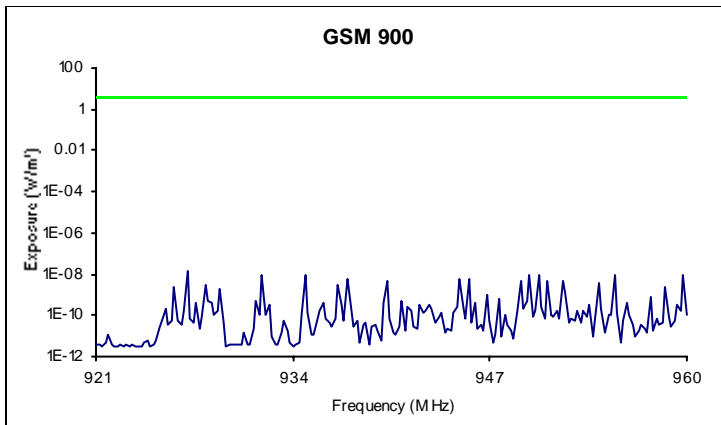
Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,845.000	5.99E-06	9.22	6.50E-07
1,845.200	8.09E-08	9.23	8.77E-09
1,866.800	1.39E-08	9.33	1.49E-09
1,848.600	8.92E-09	9.24	9.65E-10
1,854.000	8.40E-09	9.27	9.07E-10
1,868.200	4.84E-09	9.34	5.19E-10
1,844.800	3.69E-09	9.22	4.01E-10
1,871.800	2.56E-09	9.36	2.73E-10
1,847.400	2.29E-09	9.24	2.48E-10
1,852.200	1.96E-09	9.26	2.12E-10
Band Exposure Quotient:			6.66E-07

Total number of measurements 572

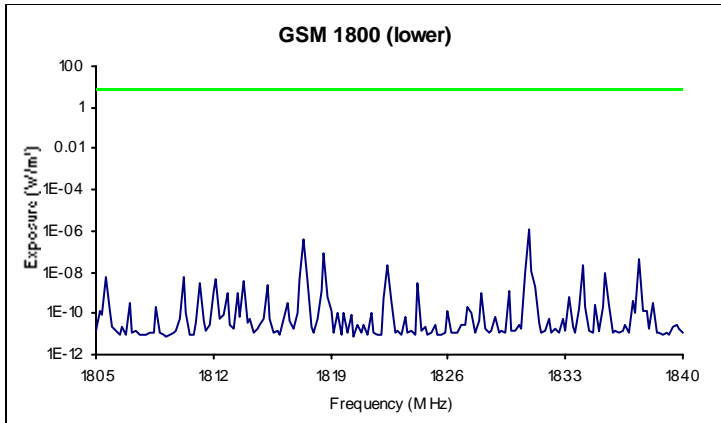
Total Band Exposure Quotient:

5.07E-06

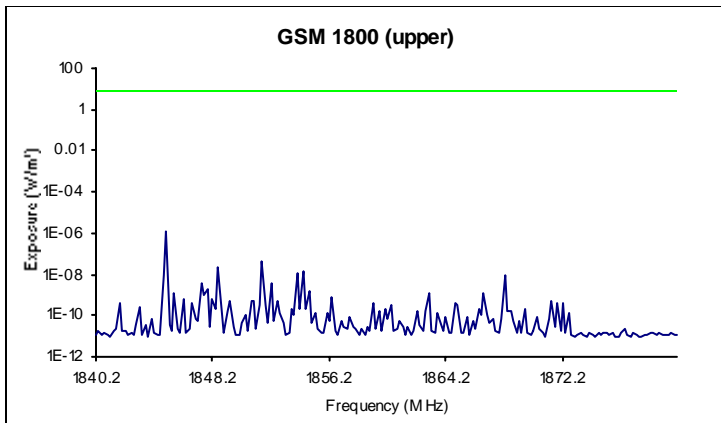
Site: FRIMLEY GREEN PRE-SCHOOL	Receiver:
Location: CAR PARK	Manufacturer: ROHDE&SCHWARZ
NGR: SU 8840 5765 Taken from GPS	Model: EB200
Start Time: 06 September 2005 14:03:35	Serial Number: 837.752/028
Officer: BW	Antenna:
	Manufacturer: Rohde & Schwarz
	Model: HE200
	Serial Number: 758745/019



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
927.000	1.29E-08	4.63	2.79E-09
959.800	1.01E-08	4.80	2.10E-09
934.800	9.52E-09	4.67	2.04E-09
955.200	9.10E-09	4.78	1.91E-09
932.000	8.63E-09	4.66	1.85E-09
949.600	8.78E-09	4.75	1.85E-09
950.200	8.59E-09	4.75	1.81E-09
945.000	6.44E-09	4.72	1.36E-09
945.600	6.02E-09	4.73	1.27E-09
937.600	5.91E-09	4.69	1.26E-09
Band Exposure Quotient:			2.97E-08



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,830.800	1.09E-06	9.15	1.19E-07
1,817.400	4.05E-07	9.09	4.45E-08
1,818.600	9.08E-08	9.09	9.98E-09
1,837.400	4.59E-08	9.19	5.00E-09
1,822.400	2.24E-08	9.11	2.46E-09
1,834.000	2.24E-08	9.17	2.44E-09
1,831.000	1.25E-08	9.15	1.37E-09
1,830.600	9.48E-09	9.15	1.04E-09
1,835.400	8.33E-09	9.18	9.08E-10
1,810.200	6.33E-09	9.05	7.00E-10
Band Exposure Quotient:			1.93E-07



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,845.000	1.34E-06	9.22	1.45E-07
1,851.600	4.29E-08	9.26	4.64E-09
1,848.600	2.09E-08	9.24	2.26E-09
1,854.400	1.36E-08	9.27	1.47E-09
1,854.000	1.03E-08	9.27	1.12E-09
1,844.800	9.07E-09	9.22	9.83E-10
1,868.200	8.42E-09	9.34	9.01E-10
1,847.400	3.89E-09	9.24	4.21E-10
1,852.200	3.41E-09	9.26	3.69E-10
1,847.800	1.86E-09	9.24	2.01E-10
Band Exposure Quotient:			1.60E-07

Glossary

- Site:** The building or area around which sets of measurements are taken
- Location:** The position within a site at which a single set of measurements is taken. A set of measurements consists of multiple scans of many frequencies within a number of bands
- Band:** A portion of the electromagnetic spectrum reserved for specific radio services
- NGR:** The Ordnance Survey national grid reference coordinates of the location. In this survey NGRs are specified to 8-digit (10-metre) resolution. E.g. SJ 9755 9888
- GPS:** The Global Positioning System
- Start Time:** The date and time at which the receiver started taking its measurements at a location
- Officer:** The name of the RA representative who carried out the audit
- Receiver:** The receiver used to perform the measurements
- Antenna:** The antenna used to perform the measurements
- Exposure:** The maximum measured electric field strength (dB(μ V/m)) converted to an equivalent power density (W/m²)
- Power Density:** The electromagnetic energy flowing through a unit area normal to the direction of propagation in a unit time. Measured in Watts per square metre (W/m²)
- ICNIRP Limit:** The reference level given by the International Commission for Non-Ionizing Radiation Protection (ICNIRP) for general public exposure to electromagnetic fields

<i>Frequency</i>	<i>ICNIRP limit</i>
10MHz to 400 MHz	2 W/m ²
400MHz to 2GHz	f / 200 W/m ²
2GHz to 300GHz	10 W/m ²

(where f is frequency in MHz)

Frequency Exposure Quotient:

The ratio of the measured maximum power density to the ICNIRP limit at a given frequency. A value close to 1 signifies that exposure levels could be near to the ICNIRP limit for that frequency

Band Exposure Quotient:

The sum of the frequency exposure quotients for a single band at a location

Total Band Exposure Quotient:

The sum of the frequency exposure quotients for all of the measured bands at a location

- GSM:** Global System for Mobile communication
- ETACS:** Extended Total Access Communications
- TETRA:** Terrestrial Trunked Radio
- 3G:** Third Generation mobile-phone services

- 1.00E-03:** Exponential (or 'scientific') number format. Equal to one thousandth
- 1.00E-06:** Equal to one millionth
- 1.00E-09:** Equal to one thousand-millionth
- 1.00E-12:** Equal to one million-millionth