

## **Mobile Phone Base-Station Audit**

**Audit site: FIRE STATION AREA  
PENCOED  
CF35**

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, OfTel 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](mailto: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](http://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 FIRE STATION AREA on 22 September 2004.

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
HENDRE ROAD (EAST END)	7.99E-05	1/12517
PUB CAR PARK. NEAR FOOTBRIDGE	7.13E-05	1/14029
FAIRLAWN TERRACE (WEST END)	4.63E-05	1/21598
FIRE STATION CARPARK	2.28E-05	1/43930
CUL DE SAC OPPOSITE MEMORIAL	1.54E-05	1/64981
COED Y CRAIG	3.10E-06	1/322064

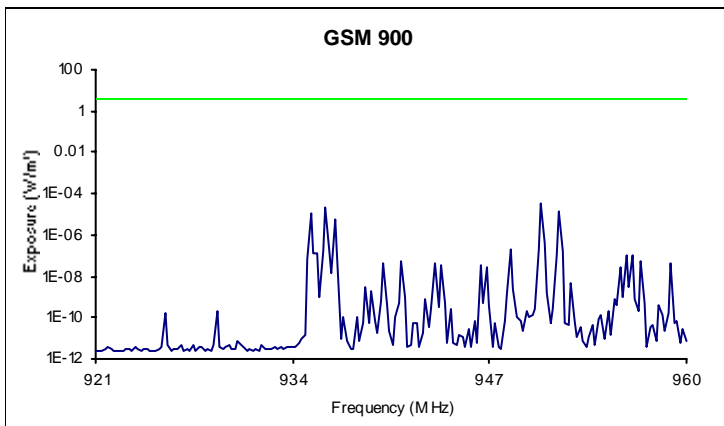
Issued on behalf of Ofcom.

Issued by:

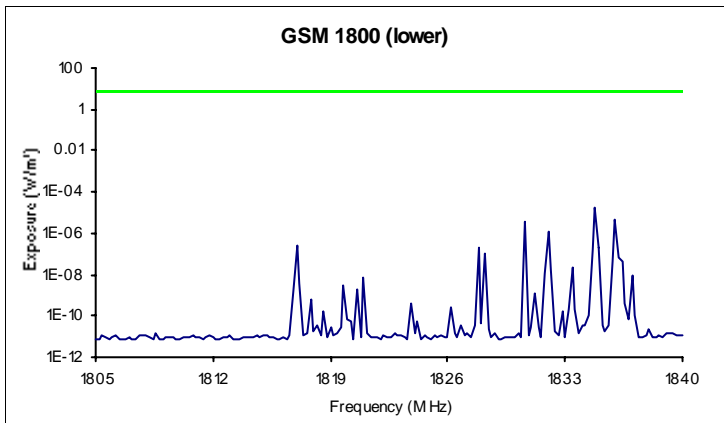
Received by:

Keith Stanton  
Technical Investigation Officer

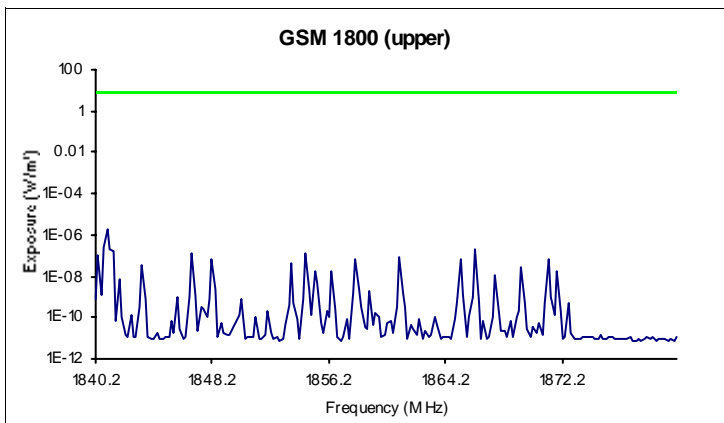
<b>Site:</b> FIRE STATION AREA	<b>Receiver:</b>
<b>Location:</b> FIRE STATION CARPARK	Manufacturer: ROHDE&SCHWARZ
<b>NGR:</b> SS 9592 8156 <b>Taken from GPS</b>	Model: EB200
<b>Start Time:</b> 22 September 2004 9:54:55	Serial Number: 836.378/014
<b>Officer:</b> Keith Stanton	<b>Antenna:</b>
	Manufacturer: Rohde & Schwarz
	Model: HE200.4050.3609.02
	Serial Number: 836287/009



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
950.400	3.58E-05	4.75	7.54E-06
936.200	2.04E-05	4.68	4.36E-06
951.600	1.50E-05	4.76	3.15E-06
935.200	1.15E-05	4.68	2.45E-06
936.800	5.26E-06	4.68	1.12E-06
950.600	3.75E-07	4.75	7.90E-08
948.400	2.25E-07	4.74	4.75E-08
950.200	2.06E-07	4.75	4.34E-08
936.400	2.00E-07	4.68	4.27E-08
936.000	1.78E-07	4.68	3.80E-08
<b>Band Exposure Quotient:</b>			<b>1.92E-05</b>



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,834.800	1.86E-05	9.17	2.03E-06
1,836.000	4.80E-06	9.18	5.23E-07
1,830.600	3.69E-06	9.15	4.03E-07
1,832.000	1.25E-06	9.16	1.37E-07
1,817.000	2.49E-07	9.09	2.74E-08
1,835.000	2.09E-07	9.18	2.28E-08
1,827.800	2.02E-07	9.14	2.21E-08
1,834.600	1.48E-07	9.17	1.61E-08
1,828.200	9.66E-08	9.14	1.06E-08
1,836.200	7.43E-08	9.18	8.10E-09
<b>Band Exposure Quotient:</b>			<b>3.22E-06</b>

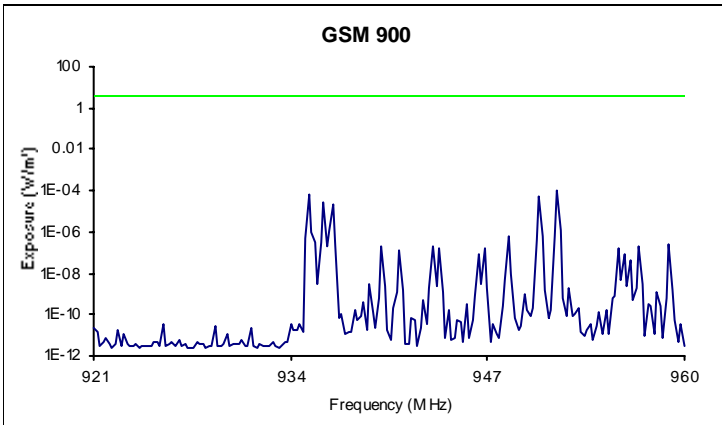


Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,841.000	1.93E-06	9.21	2.09E-07
1,840.800	2.32E-07	9.20	2.52E-08
1,841.200	2.02E-07	9.21	2.19E-08
1,866.200	1.92E-07	9.33	2.06E-08
1,841.400	1.57E-07	9.21	1.70E-08
1,854.600	1.30E-07	9.27	1.41E-08
1,846.800	1.20E-07	9.23	1.30E-08
1,840.400	1.11E-07	9.20	1.20E-08
1,861.000	9.33E-08	9.30	1.00E-08
1,865.200	7.13E-08	9.33	7.64E-09
<b>Band Exposure Quotient:</b>			<b>3.95E-07</b>

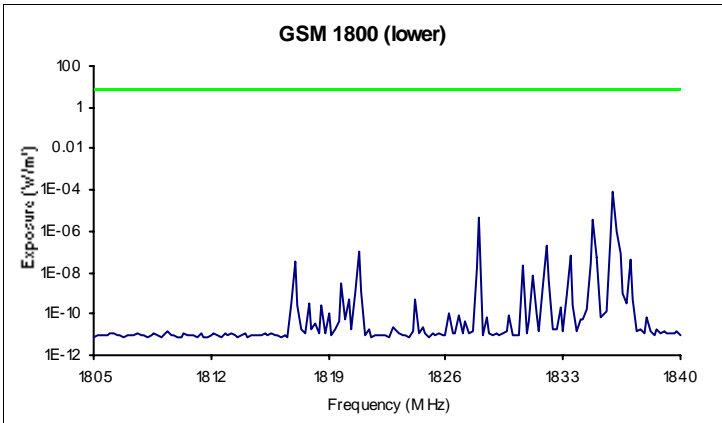
Total number of measurements: 572

**Total Band Exposure Quotient:** **2.28E-05**

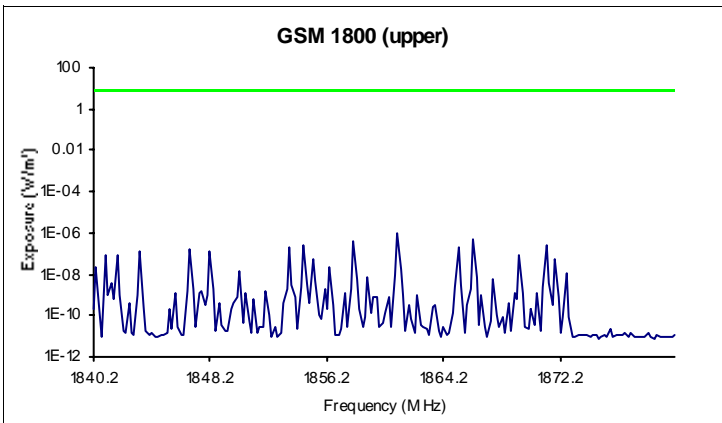
<b>Site:</b> FIRE STATION AREA	<b>Receiver:</b>
<b>Location:</b> PUB CAR PARK. NEAR FOOTBRIDGE	Manufacturer: ROHDE&SCHWARZ
<b>NGR:</b> SS 9593 8161 <b>Taken from GPS</b>	Model: EB200
<b>Start Time:</b> 22 September 2004 10:20:29	Serial Number: 836.378/014
<b>Officer:</b> Keith Stanton	<b>Antenna:</b>
	Manufacturer: Rohde & Schwarz
	Model: HE200.4050.3609.02
	Serial Number: 836287/009



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
951.600	1.01E-04	4.76	2.13E-05
935.200	6.91E-05	4.68	1.48E-05
950.400	5.68E-05	4.75	1.20E-05
936.200	2.82E-05	4.68	6.02E-06
936.800	2.09E-05	4.68	4.47E-06
936.600	1.32E-06	4.68	2.82E-07
951.800	1.11E-06	4.76	2.33E-07
935.400	8.70E-07	4.68	1.86E-07
948.400	6.80E-07	4.74	1.43E-07
951.400	5.96E-07	4.76	1.25E-07
<b>Band Exposure Quotient:</b>			<b>6.04E-05</b>



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,836.000	8.53E-05	9.18	9.29E-06
1,828.000	4.84E-06	9.14	5.30E-07
1,834.800	3.98E-06	9.17	4.34E-07
1,836.200	1.05E-06	9.18	1.14E-07
1,835.800	6.18E-07	9.18	6.73E-08
1,832.000	1.94E-07	9.16	2.12E-08
1,820.800	9.76E-08	9.10	1.07E-08
1,836.400	8.94E-08	9.18	9.74E-09
1,833.400	7.23E-08	9.17	7.89E-09
1,835.000	5.50E-08	9.18	5.99E-09
<b>Band Exposure Quotient:</b>			<b>1.05E-05</b>

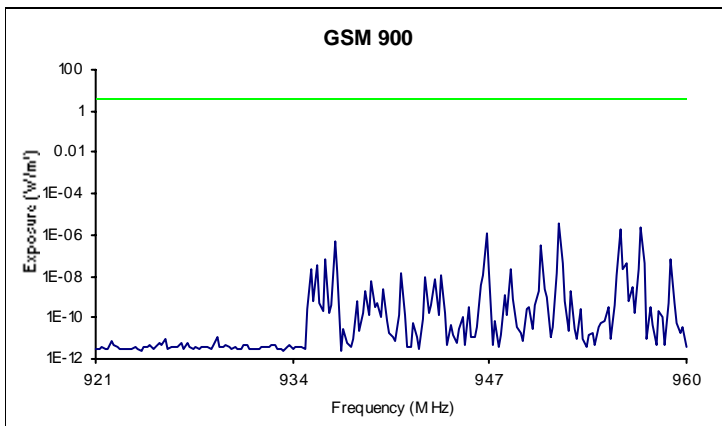


Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,861.000	9.33E-07	9.30	1.00E-07
1,866.200	4.72E-07	9.33	5.06E-08
1,858.000	3.61E-07	9.29	3.89E-08
1,871.200	2.74E-07	9.36	2.93E-08
1,854.600	2.66E-07	9.27	2.87E-08
1,865.200	2.06E-07	9.33	2.20E-08
1,853.600	1.88E-07	9.27	2.03E-08
1,846.800	1.55E-07	9.23	1.67E-08
1,843.400	1.43E-07	9.22	1.56E-08
1,848.200	1.38E-07	9.24	1.49E-08
<b>Band Exposure Quotient:</b>			<b>3.96E-07</b>

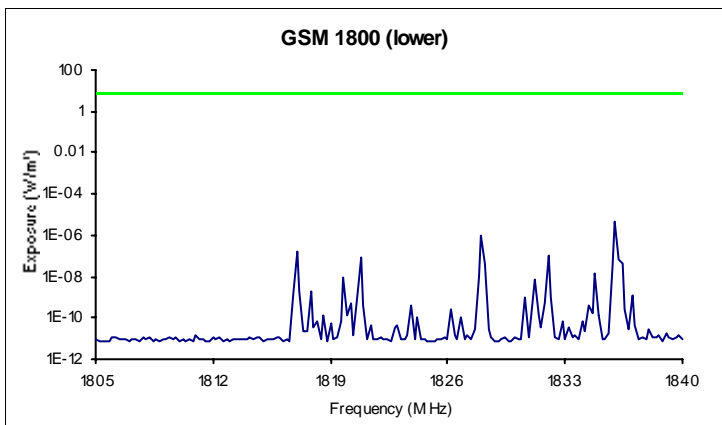
Total number of measurements: 572

**Total Band Exposure Quotient:** **7.13E-05**

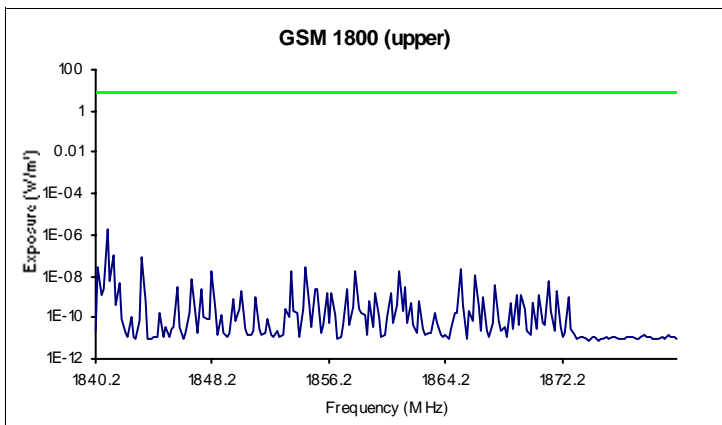
<b>Site:</b> FIRE STATION AREA	<b>Receiver:</b>
<b>Location:</b> COED Y CRAIG	Manufacturer: ROHDE&SCHWARZ
<b>NGR:</b> SS 9592 8169 <b>Taken from GPS</b>	Model: EB200
<b>Start Time:</b> 22 September 2004 10:53:00	Serial Number: 836.378/014
<b>Officer:</b> Keith Stanton	<b>Antenna:</b>
	Manufacturer: Rohde & Schwarz
	Model: HE200.4050.3609.02
	Serial Number: 836287/009



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
951.600	3.35E-06	4.76	7.05E-07
957.000	2.35E-06	4.79	4.91E-07
955.600	1.90E-06	4.78	3.98E-07
946.800	1.26E-06	4.73	2.66E-07
936.800	5.14E-07	4.68	1.10E-07
950.400	2.91E-07	4.75	6.13E-08
959.000	7.13E-08	4.79	1.49E-08
936.200	6.92E-08	4.68	1.48E-08
957.200	4.18E-08	4.79	8.73E-09
956.000	4.17E-08	4.78	8.72E-09
<b>Band Exposure Quotient:</b>			<b>2.15E-06</b>



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,836.000	5.02E-06	9.18	5.47E-07
1,828.000	8.81E-07	9.14	9.64E-08
1,817.000	1.65E-07	9.09	1.81E-08
1,832.000	9.51E-08	9.16	1.04E-08
1,820.800	7.94E-08	9.10	8.72E-09
1,836.200	6.04E-08	9.18	6.58E-09
1,828.200	4.52E-08	9.14	4.94E-09
1,836.400	4.38E-08	9.18	4.77E-09
1,835.800	3.72E-08	9.18	4.06E-09
1,834.800	1.45E-08	9.17	1.58E-09
<b>Band Exposure Quotient:</b>			<b>7.07E-07</b>

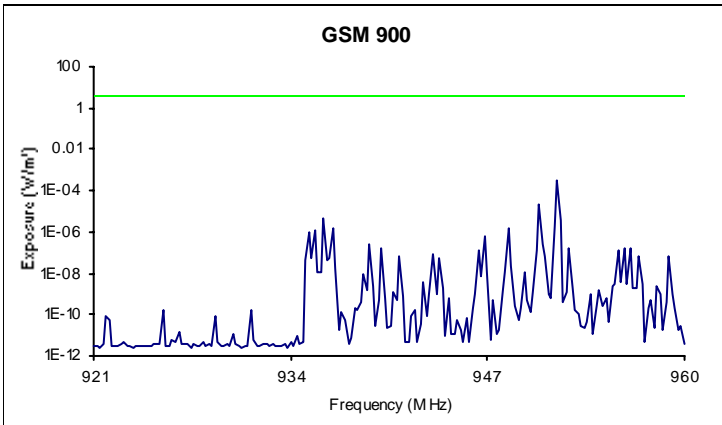


Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,841.000	1.88E-06	9.21	2.05E-07
1,841.400	9.66E-08	9.21	1.05E-08
1,843.400	9.26E-08	9.22	1.00E-08
1,840.400	2.85E-08	9.20	3.09E-09
1,854.600	2.48E-08	9.27	2.68E-09
1,865.200	2.20E-08	9.33	2.36E-09
1,848.200	1.95E-08	9.24	2.11E-09
1,853.600	1.88E-08	9.27	2.03E-09
1,861.000	1.78E-08	9.30	1.91E-09
1,858.000	1.69E-08	9.29	1.82E-09
<b>Band Exposure Quotient:</b>			<b>2.51E-07</b>

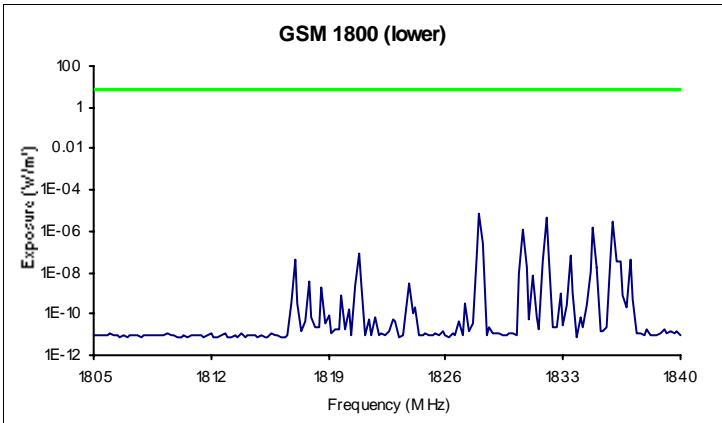
Total number of measurements: 572

**Total Band Exposure Quotient:** **3.10E-06**

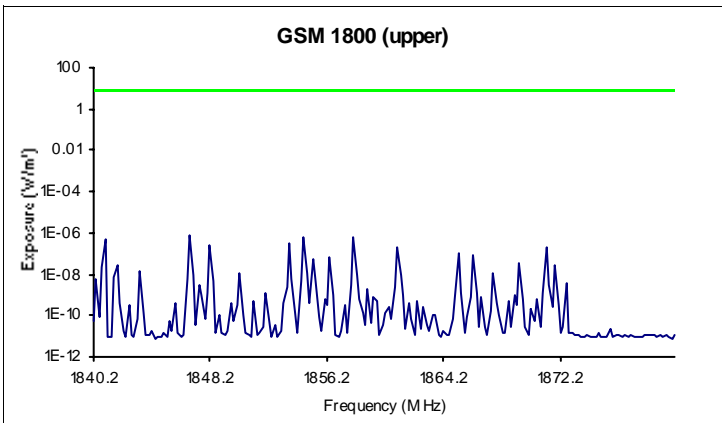
<b>Site:</b> FIRE STATION AREA	<b>Receiver:</b>
<b>Location:</b> HENDRE ROAD (EAST END)	Manufacturer: ROHDE&SCHWARZ
	Model: EB200
	Serial Number: 836.378/014
<b>NGR:</b> SS 9588 8163 <b>Taken from GPS</b>	<b>Antenna:</b>
<b>Start Time:</b> 22 September 2004 14:10:28	Manufacturer: Rohde & Schwarz
<b>Officer:</b> Keith Stanton	Model: HE200.4050.3609.02
	Serial Number: 836287/009



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
951.600	3.28E-04	4.76	6.89E-05
950.400	2.21E-05	4.75	4.65E-06
936.200	4.47E-06	4.68	9.55E-07
951.800	3.68E-06	4.76	7.73E-07
951.400	1.93E-06	4.76	4.06E-07
948.400	1.67E-06	4.74	3.52E-07
936.800	1.48E-06	4.68	3.16E-07
935.600	1.10E-06	4.68	2.34E-07
935.200	1.02E-06	4.68	2.18E-07
946.800	6.93E-07	4.73	1.46E-07
<b>Band Exposure Quotient:</b>			<b>7.74E-05</b>



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,828.000	6.68E-06	9.14	7.31E-07
1,832.000	4.76E-06	9.16	5.20E-07
1,836.000	3.17E-06	9.18	3.45E-07
1,834.800	1.55E-06	9.17	1.69E-07
1,830.600	1.31E-06	9.15	1.43E-07
1,828.200	2.72E-07	9.14	2.98E-08
1,827.800	1.16E-07	9.14	1.27E-08
1,820.800	7.58E-08	9.10	8.32E-09
1,833.400	7.06E-08	9.17	7.71E-09
1,835.800	6.47E-08	9.18	7.05E-09
<b>Band Exposure Quotient:</b>			<b>2.01E-06</b>

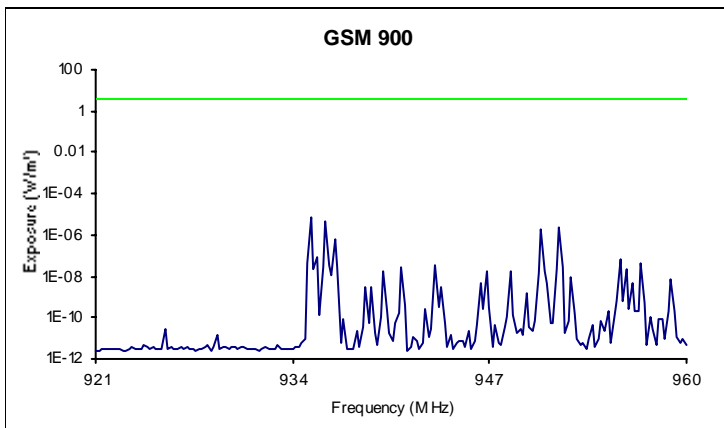


Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,846.800	7.40E-07	9.23	8.01E-08
1,858.000	6.88E-07	9.29	7.40E-08
1,854.600	5.96E-07	9.27	6.42E-08
1,841.000	5.43E-07	9.21	5.90E-08
1,853.600	3.50E-07	9.27	3.78E-08
1,848.200	2.40E-07	9.24	2.60E-08
1,871.200	1.94E-07	9.36	2.07E-08
1,861.000	1.86E-07	9.30	2.00E-08
1,865.200	1.13E-07	9.33	1.21E-08
1,866.200	8.01E-08	9.33	8.58E-09
<b>Band Exposure Quotient:</b>			<b>4.45E-07</b>

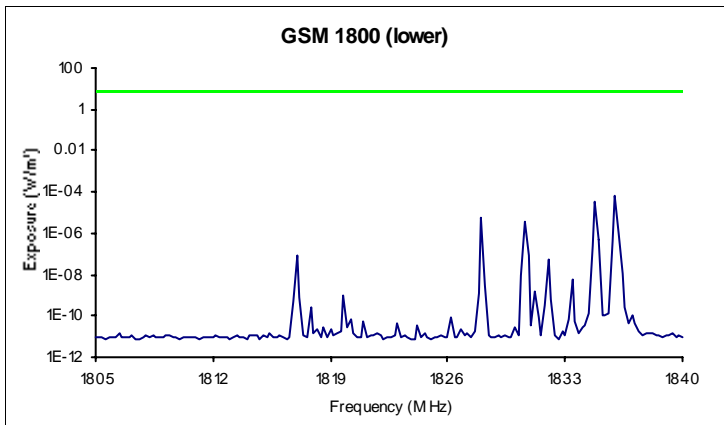
Total number of measurements: 572

**Total Band Exposure Quotient:** **7.99E-05**

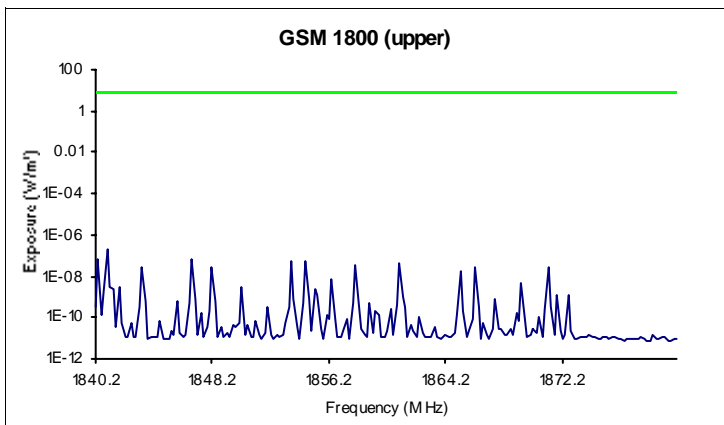
<b>Site:</b> FIRE STATION AREA	<b>Receiver:</b>
<b>Location:</b> CUL DE SAC OPPOSITE MEMORIAL	Manufacturer: ROHDE&SCHWARZ
	Model: EB200
	Serial Number: 836.378/014
<b>NGR:</b> SS 9602 8157 <b>Taken from GPS</b>	<b>Antenna:</b>
<b>Start Time:</b> 22 September 2004 14:31:48	Manufacturer: Rohde & Schwarz
<b>Officer:</b> Keith Stanton	Model: HE200.4050.3609.02
	Serial Number: 836287/009



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
935.200	7.75E-06	4.68	1.66E-06
936.200	4.68E-06	4.68	1.00E-06
951.600	2.37E-06	4.76	4.99E-07
950.400	1.84E-06	4.75	3.87E-07
936.800	5.90E-07	4.68	1.26E-07
935.600	8.70E-08	4.68	1.86E-08
955.600	6.30E-08	4.78	1.32E-08
957.000	4.58E-08	4.79	9.57E-09
935.000	4.16E-08	4.67	8.90E-09
943.400	3.61E-08	4.72	7.65E-09
<b>Band Exposure Quotient:</b>			<b>3.80E-06</b>



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,836.000	6.18E-05	9.18	6.73E-06
1,834.800	3.16E-05	9.17	3.45E-06
1,828.000	6.38E-06	9.14	6.98E-07
1,830.600	3.44E-06	9.15	3.76E-07
1,836.200	9.80E-07	9.18	1.07E-07
1,835.000	4.68E-07	9.18	5.10E-08
1,835.800	4.37E-07	9.18	4.76E-08
1,834.600	2.63E-07	9.17	2.87E-08
1,830.800	7.89E-08	9.15	8.62E-09
1,817.000	7.70E-08	9.09	8.48E-09
<b>Band Exposure Quotient:</b>			<b>1.15E-05</b>

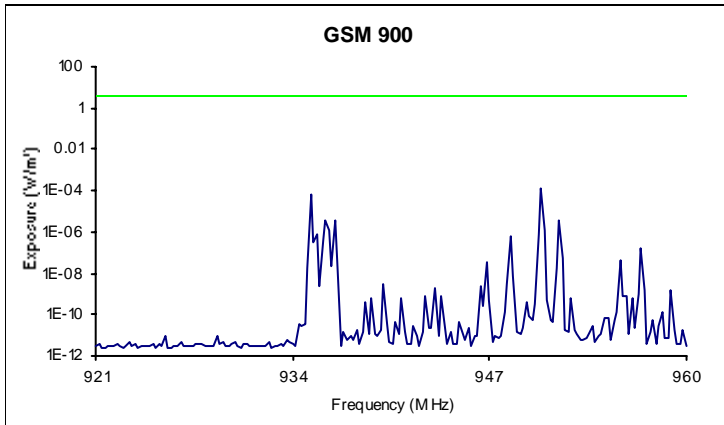


Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,841.000	1.93E-07	9.21	2.09E-08
1,846.800	6.44E-08	9.23	6.98E-09
1,840.400	6.37E-08	9.20	6.92E-09
1,853.600	5.55E-08	9.27	5.99E-09
1,854.600	4.95E-08	9.27	5.34E-09
1,861.000	4.46E-08	9.30	4.80E-09
1,858.000	3.78E-08	9.29	4.07E-09
1,866.200	2.91E-08	9.33	3.12E-09
1,848.200	2.82E-08	9.24	3.05E-09
1,843.400	2.61E-08	9.22	2.83E-09
<b>Band Exposure Quotient:</b>			<b>7.38E-08</b>

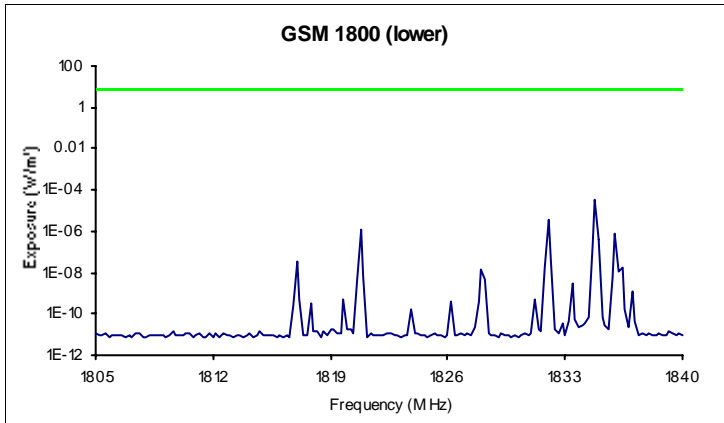
Total number of measurements: 572

**Total Band Exposure Quotient:** **1.54E-05**

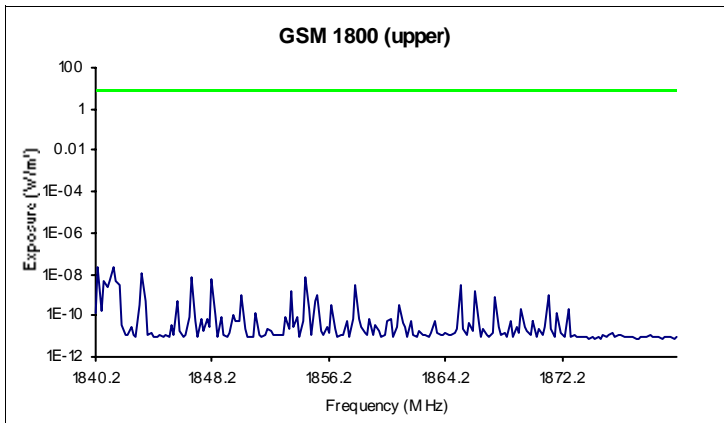
<b>Site:</b> FIRE STATION AREA	<b>Receiver:</b>
<b>Location:</b> FAIRLAWN TERRACE (WEST END)	Manufacturer: ROHDE&SCHWARZ
<b>NGR:</b> SS 9589 8152 <b>Taken from GPS</b>	Model: EB200
<b>Start Time:</b> 22 September 2004 14:54:18	Serial Number: 836.378/014
<b>Officer:</b> Keith Stanton	<b>Antenna:</b>
	Manufacturer: Rohde & Schwarz
	Model: HE200.4050.3609.02
	Serial Number: 836287/009



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
950.400	1.21E-04	4.75	2.56E-05
935.200	6.01E-05	4.68	1.29E-05
936.800	3.90E-06	4.68	8.32E-07
936.200	3.63E-06	4.68	7.76E-07
951.600	3.68E-06	4.76	7.73E-07
950.600	1.30E-06	4.75	2.74E-07
936.400	1.12E-06	4.68	2.40E-07
950.200	7.49E-07	4.75	1.58E-07
935.600	7.07E-07	4.68	1.51E-07
948.400	6.64E-07	4.74	1.40E-07
<b>Band Exposure Quotient:</b>			<b>4.20E-05</b>



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,834.800	3.31E-05	9.17	3.61E-06
1,832.000	3.30E-06	9.16	3.60E-07
1,820.800	1.32E-06	9.10	1.45E-07
1,836.000	7.43E-07	9.18	8.09E-08
1,835.000	3.98E-07	9.18	4.34E-08
1,834.600	2.69E-07	9.17	2.93E-08
1,832.200	3.96E-08	9.16	4.33E-09
1,817.000	3.52E-08	9.09	3.88E-09
1,836.400	1.96E-08	9.18	2.13E-09
1,831.800	1.90E-08	9.16	2.07E-09
<b>Band Exposure Quotient:</b>			<b>4.29E-06</b>



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,841.400	2.21E-08	9.21	2.40E-09
1,840.400	2.06E-08	9.20	2.24E-09
1,843.400	1.17E-08	9.22	1.26E-09
1,854.600	7.67E-09	9.27	8.27E-10
1,846.800	7.57E-09	9.23	8.20E-10
1,848.200	6.03E-09	9.24	6.52E-10
1,841.600	5.07E-09	9.21	5.51E-10
1,840.800	5.07E-09	9.20	5.50E-10
1,841.200	4.73E-09	9.21	5.14E-10
1,858.000	3.22E-09	9.29	3.46E-10
<b>Band Exposure Quotient:</b>			<b>1.26E-08</b>

Total number of measurements: 572

**Total Band Exposure Quotient:** **4.63E-05**



## 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( $\mu$ V/m)) converted to an equivalent power density ( $W/m^2$ )
- 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 ( $W/m^2$ )
- ICNIRP Limit:** The reference level given by the International Commission for Non-Ionizing Radiation Protection (ICNIRP) for general public exposure to electromagnetic fields

<b>Frequency</b>	<b>ICNIRP limit</b>
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