

Report Summary

The Radiocommunications Agency performed this survey of the RF emission environment prevailing in the vicinity of Jeff Joseph Sale Moor Technology College on 17 December 2001.

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

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 Quotient	Relationship to ICNIRP Public Exposure Level
Classroom 10	0.00020071654200	1/4982
Classroom 55	0.00019514213508	1/5124
Far end of playing field	0.00017466687129	1/5725
Library	6.4853335010E-05	1/15419
Playground	3.6168685732E-05	1/27648
Kiln room underneath mast	1.4123974065E-05	1/70801

Issued on behalf of the Radiocommunications Agency

Issued by:

Received by:

Stephen Parkinson
Radiocommunications Specialist

David Walmsley
Head Teacher

Site: Jeff Joseph Sale Moor Technology College

Location: Far end of playing field

NGR: SJ79909080

Start Time: 17 Dec 2001 11:07:46

Engineer: Stephen Parkinson

Receiver:

Manufacturer: ROHDE&SCHWARZ

Model: EB200

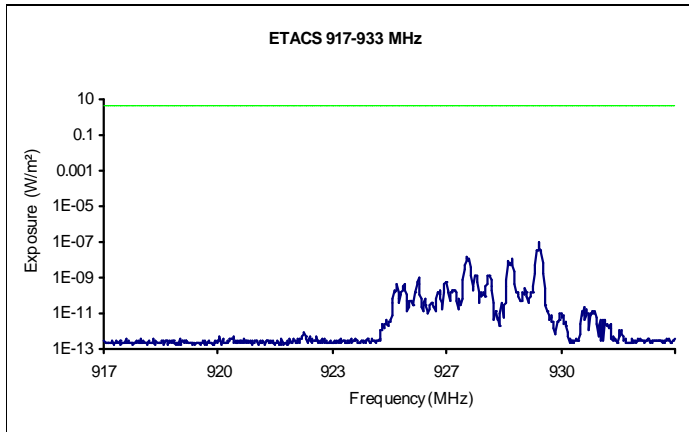
Serial Number: 836.378/024,V02.31-4052.4654.

Antenna:

Manufacturer: Rohde & Schwarz

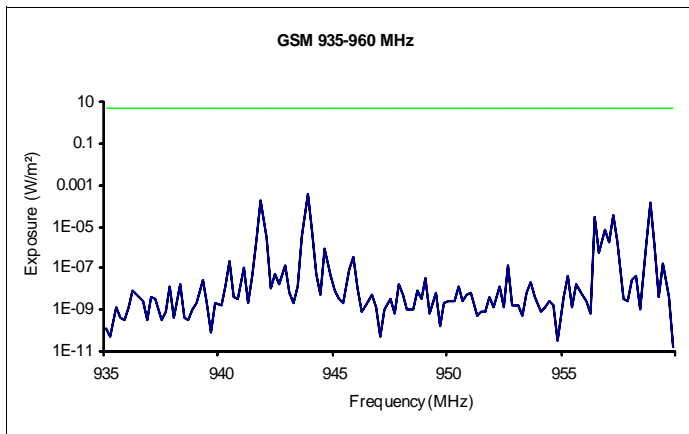
Model: HE200.4050.3509.02

Serial Number: 836287/018



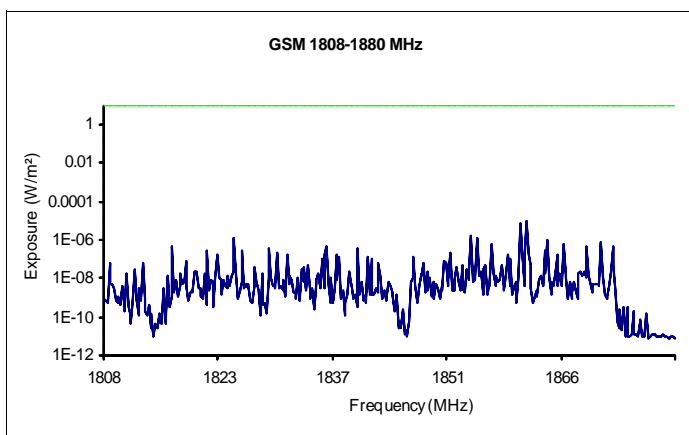
Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
929.200	8.978E-08	4.65	1.933E-08
929.225	4.822E-08	4.65	1.038E-08
929.175	3.336E-08	4.65	7.180E-09
929.150	3.185E-08	4.65	6.856E-09
929.250	3.114E-08	4.65	6.701E-09
929.125	2.973E-08	4.65	6.399E-09
929.275	2.473E-08	4.65	5.323E-09
927.200	1.553E-08	4.64	3.350E-09
927.175	1.206E-08	4.64	2.600E-09
928.450	1.155E-08	4.64	2.487E-09

Band Exposure Quotient : 9.806E-08



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
944.000	3.698E-04	4.72	7.835E-05
942.000	1.932E-04	4.71	4.102E-05
959.000	1.489E-04	4.79	3.106E-05
957.400	3.814E-05	4.79	7.968E-06
956.600	3.024E-05	4.78	6.323E-06
957.000	7.780E-06	4.79	1.626E-06
944.200	5.107E-06	4.72	1.082E-06
943.800	3.220E-06	4.72	6.823E-07
942.200	2.490E-06	4.71	5.286E-07
941.800	2.117E-06	4.71	4.496E-07

Band Exposure Quotient : 1.710E-04



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,861.400	1.000E-05	9.31	1.075E-06
1,860.600	7.070E-06	9.30	7.600E-07
1,854.400	1.640E-06	9.27	1.769E-07
1,824.600	1.326E-06	9.12	1.453E-07
1,855.200	1.190E-06	9.28	1.282E-07
1,864.000	1.127E-06	9.32	1.209E-07
1,870.800	7.535E-07	9.35	8.056E-08
1,857.000	6.408E-07	9.29	6.902E-08
1,866.000	5.669E-07	9.33	6.076E-08
1,836.200	4.911E-07	9.18	5.349E-08

Band Exposure Quotient : 3.543E-06

Number of Frequencies Used in Quotient : 1128

Total Band Exposure Quotient : 1.747E-04

Site: Jeff Joseph Sale Moor Technology College

Location: Playground

NGR: SJ79909080

Start Time: 17 Dec 2001 11:23:01

Engineer: Stephen Parkinson

Receiver:

Manufacturer: ROHDE&SCHWARZ

Model: EB200

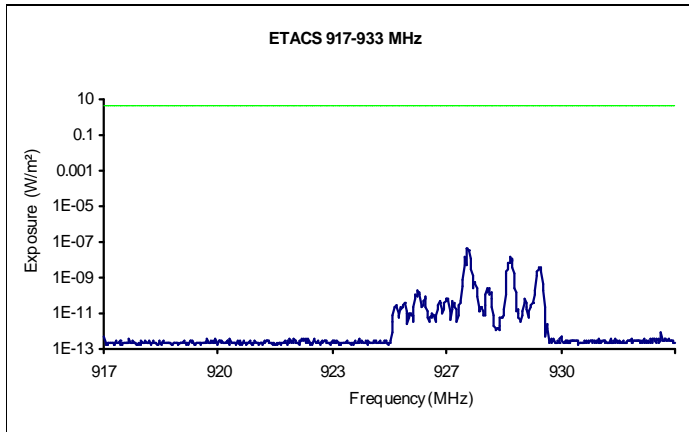
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Antenna:

Manufacturer: Rohde & Schwarz

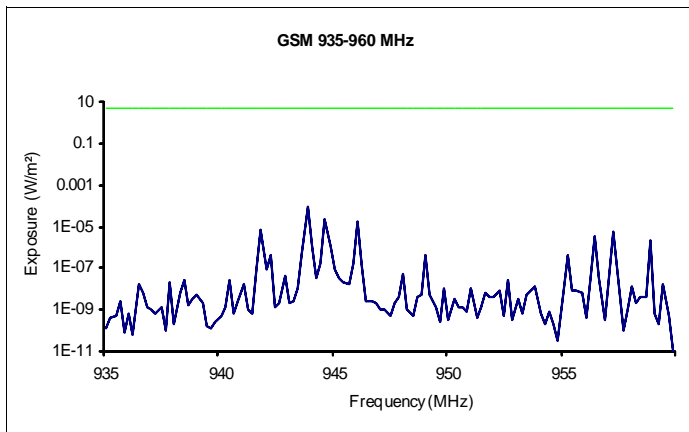
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Serial Number: 836287/018



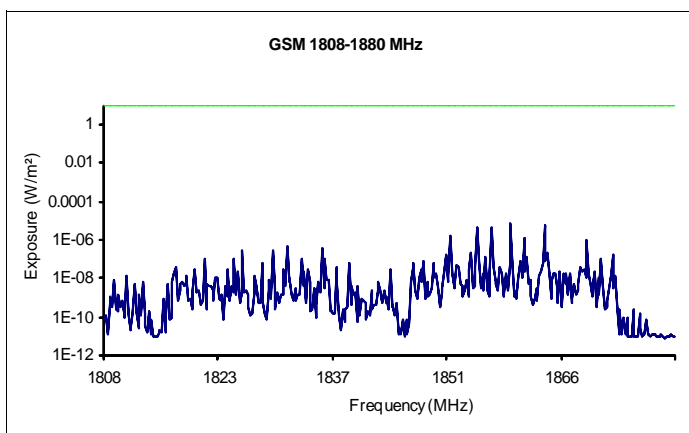
Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
927.175	4.377E-08	4.64	9.442E-09
927.200	3.992E-08	4.64	8.611E-09
927.225	3.477E-08	4.64	7.500E-09
927.250	3.099E-08	4.64	6.685E-09
928.400	1.669E-08	4.64	3.595E-09
927.125	1.664E-08	4.64	3.589E-09
928.450	1.296E-08	4.64	2.791E-09
927.275	1.178E-08	4.64	2.542E-09
928.425	8.174E-09	4.64	1.761E-09
928.350	6.956E-09	4.64	1.499E-09

Band Exposure Quotient : 6.162E-08



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
944.000	8.872E-05	4.72	1.880E-05
944.800	2.285E-05	4.72	4.836E-06
946.200	1.779E-05	4.73	3.761E-06
942.000	7.691E-06	4.71	1.633E-06
957.400	6.045E-06	4.79	1.263E-06
956.600	3.167E-06	4.78	6.621E-07
959.000	2.415E-06	4.79	5.037E-07
945.000	1.172E-06	4.72	2.481E-07
944.200	1.043E-06	4.72	2.209E-07
943.800	5.859E-07	4.72	1.242E-07

Band Exposure Quotient : 3.265E-05



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,859.400	7.388E-06	9.30	7.947E-07
1,863.600	6.190E-06	9.32	6.643E-07
1,857.000	4.537E-06	9.29	4.886E-07
1,855.200	4.420E-06	9.28	4.765E-07
1,851.800	1.832E-06	9.26	1.978E-07
1,861.000	1.445E-06	9.30	1.553E-07
1,869.000	9.031E-07	9.35	9.664E-08
1,831.200	4.440E-07	9.16	4.849E-08
1,835.600	3.554E-07	9.18	3.872E-08
1,825.600	2.839E-07	9.13	3.110E-08

Band Exposure Quotient : 3.460E-06

Number of Frequencies Used in Quotient : 1128

Total Band Exposure Quotient : 3.617E-05

Site: Jeff Joseph Sale Moor Technology College

Location: Library

NGR: SJ79909080

Start Time: 17 Dec 2001 11:38:34

Engineer: Stephen Parkinson

Receiver:

Manufacturer: ROHDE&SCHWARZ

Model: EB200

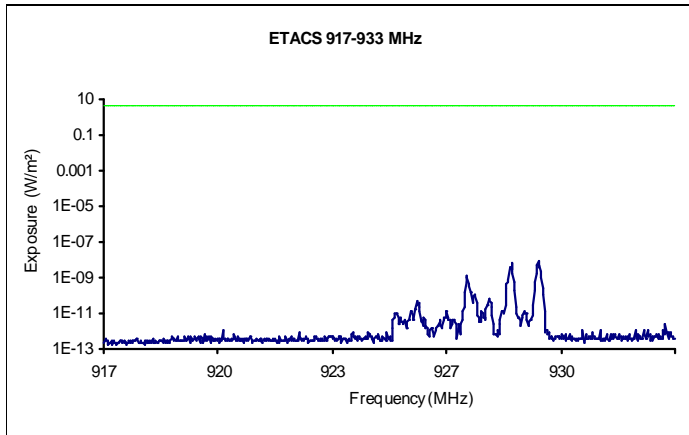
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Antenna:

Manufacturer: Rohde & Schwarz

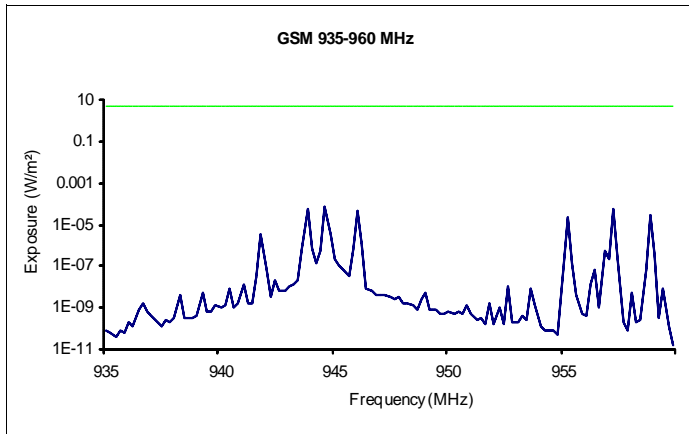
Model: HE200.4050.3509.02

Serial Number: 836287/018



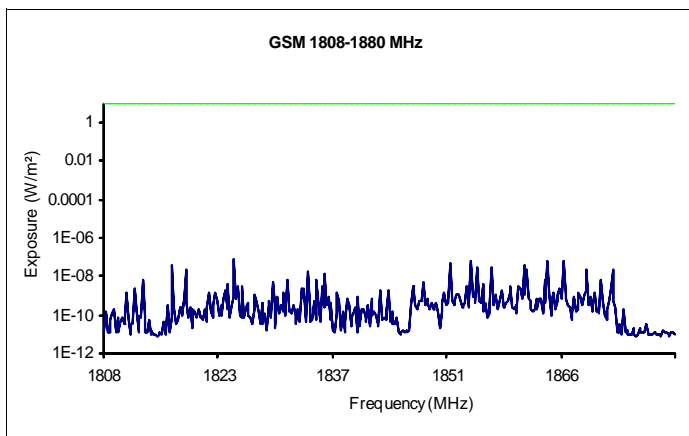
Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
929.175	8.379E-09	4.65	1.803E-09
928.450	7.455E-09	4.64	1.606E-09
929.150	4.933E-09	4.65	1.062E-09
929.225	4.500E-09	4.65	9.686E-10
928.375	4.192E-09	4.64	9.030E-10
928.400	3.823E-09	4.64	8.236E-10
929.200	3.658E-09	4.65	7.873E-10
928.425	2.770E-09	4.64	5.966E-10
929.250	2.105E-09	4.65	4.531E-10
929.125	1.596E-09	4.65	3.436E-10

Band Exposure Quotient : 1.204E-08



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
944.800	7.565E-05	4.72	1.601E-05
957.400	6.045E-05	4.79	1.263E-05
944.000	5.861E-05	4.72	1.242E-05
946.200	4.789E-05	4.73	1.012E-05
959.000	2.838E-05	4.79	5.918E-06
955.400	2.341E-05	4.78	4.901E-06
942.000	3.206E-06	4.71	6.807E-07
945.000	3.155E-06	4.72	6.677E-07
946.400	1.149E-06	4.73	2.429E-07
946.000	7.586E-07	4.73	1.604E-07

Band Exposure Quotient : 6.476E-05



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,824.600	7.988E-08	9.12	8.756E-09
1,864.000	7.112E-08	9.32	7.631E-09
1,866.000	6.660E-08	9.33	7.139E-09
1,854.400	6.528E-08	9.27	7.041E-09
1,851.800	5.162E-08	9.26	5.576E-09
1,816.800	4.042E-08	9.08	4.450E-09
1,861.000	3.629E-08	9.30	3.900E-09
1,857.000	3.363E-08	9.29	3.622E-09
1,855.200	2.854E-08	9.28	3.076E-09
1,818.400	2.442E-08	9.09	2.686E-09

Band Exposure Quotient : 8.546E-08

Number of Frequencies Used in Quotient : 1128

Total Band Exposure Quotient : 6.485E-05

Site: Jeff Joseph Sale Moor Technology College

Location: Kiln room underneath mast

NGR: SJ 7990 9080

Start Time: 17 Dec 2001 12:11:33

Engineer: Stephen Parkinson

Receiver:

Manufacturer: ROHDE&SCHWARZ

Model: EB200

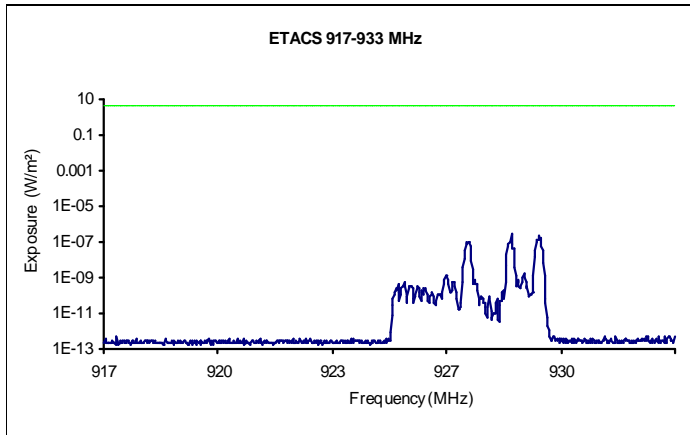
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Antenna:

Manufacturer: Rohde & Schwarz

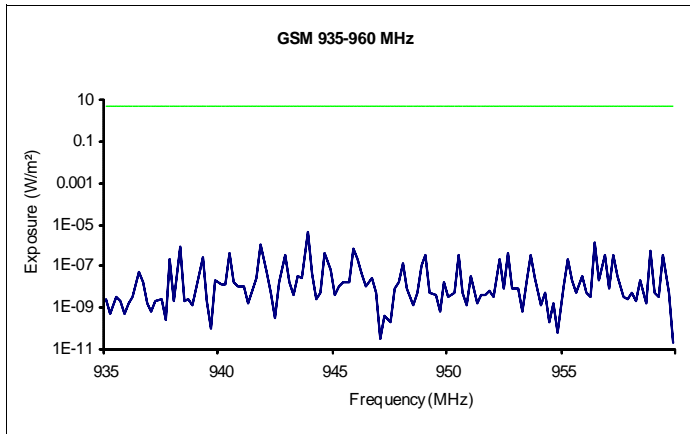
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Serial Number: 836287/018



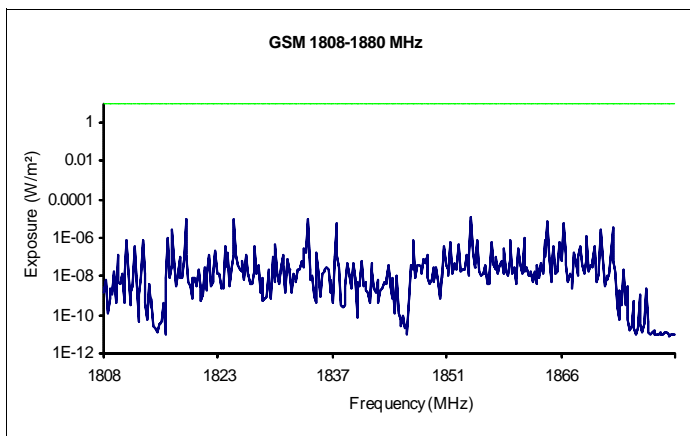
Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
928.425	2.900E-07	4.64	6.248E-08
929.200	2.105E-07	4.65	4.530E-08
929.250	1.964E-07	4.65	4.228E-08
929.225	1.672E-07	4.65	3.599E-08
929.150	1.423E-07	4.65	3.063E-08
929.175	1.328E-07	4.65	2.858E-08
927.225	1.100E-07	4.64	2.372E-08
928.400	1.077E-07	4.64	2.321E-08
927.175	1.050E-07	4.64	2.265E-08
928.375	1.005E-07	4.64	2.166E-08

Band Exposure Quotient : 5.425E-07



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
944.000	4.764E-06	4.72	1.009E-06
956.600	1.414E-06	4.78	2.957E-07
942.000	1.164E-06	4.71	2.472E-07
938.400	9.171E-07	4.69	1.955E-07
946.000	6.918E-07	4.73	1.463E-07
959.000	6.067E-07	4.79	1.265E-07
952.800	4.643E-07	4.76	9.746E-08
944.800	4.353E-07	4.72	9.215E-08
940.600	3.932E-07	4.70	8.360E-08
943.000	3.864E-07	4.71	8.194E-08

Band Exposure Quotient : 3.338E-06



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,854.400	1.216E-05	9.27	1.311E-06
1,824.600	1.103E-05	9.12	1.209E-06
1,833.800	1.070E-05	9.17	1.167E-06
1,818.400	1.066E-05	9.09	1.173E-06
1,864.000	7.278E-06	9.32	7.809E-07
1,866.000	5.291E-06	9.33	5.670E-07
1,837.400	5.273E-06	9.19	5.740E-07
1,872.200	4.056E-06	9.36	4.333E-07
1,816.800	2.928E-06	9.08	3.223E-07
1,870.800	2.495E-06	9.35	2.667E-07

Band Exposure Quotient : 1.024E-05

Number of Frequencies Used in Quotient : 1128

Total Band Exposure Quotient : 1.412E-05

Site: Jeff Joseph Sale Moor Technology College

Location: Classroom 55

NGR: SJ 7990 9080

Start Time: 17 Dec 2001 12:29:50

Engineer: Stephen Parkinson

Receiver:

Manufacturer: ROHDE&SCHWARZ

Model: EB200

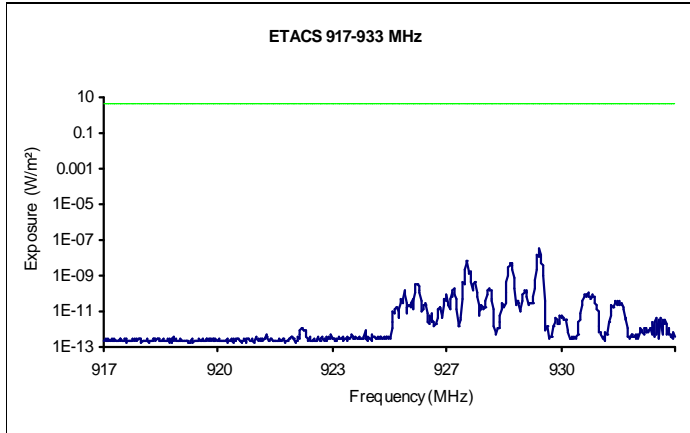
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Antenna:

Manufacturer: Rohde & Schwarz

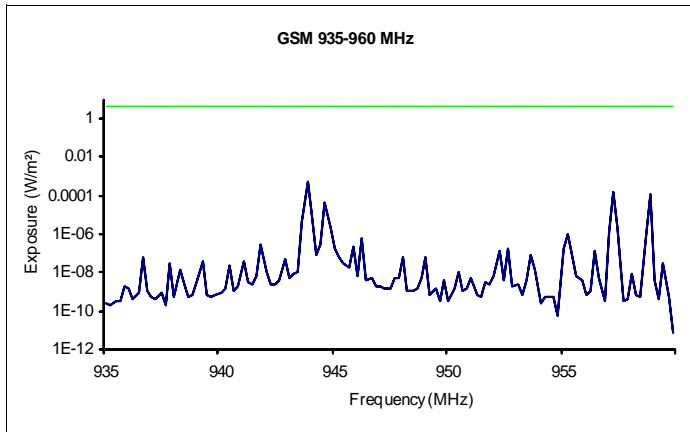
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Serial Number: 836287/018



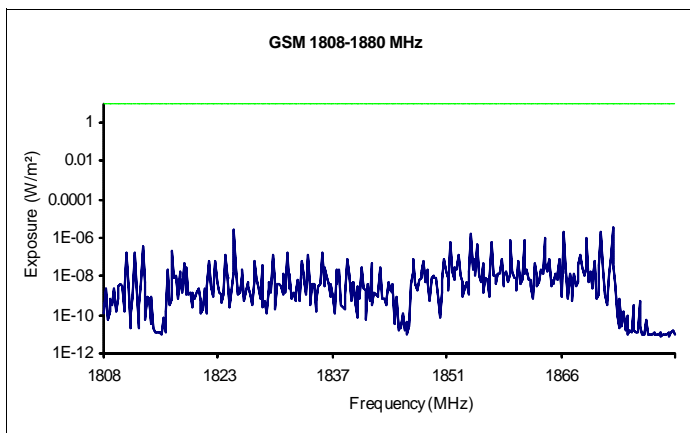
Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
929.225	3.575E-08	4.65	7.694E-09
929.200	1.964E-08	4.65	4.228E-09
929.250	1.525E-08	4.65	3.282E-09
929.150	1.328E-08	4.65	2.858E-09
929.175	1.298E-08	4.65	2.793E-09
927.175	7.433E-09	4.64	1.603E-09
927.200	6.327E-09	4.64	1.365E-09
927.150	5.510E-09	4.64	1.189E-09
928.425	5.400E-09	4.64	1.163E-09
929.275	4.935E-09	4.65	1.062E-09

Band Exposure Quotient : 3.714E-08



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
944.000	5.346E-04	4.72	1.133E-04
957.400	1.743E-04	4.79	3.642E-05
959.000	1.358E-04	4.79	2.833E-05
944.800	4.664E-05	4.72	9.874E-06
944.200	7.050E-06	4.72	1.493E-06
943.800	5.222E-06	4.72	1.106E-06
945.000	1.991E-06	4.72	4.213E-07
957.600	1.912E-06	4.79	3.994E-07
957.200	1.206E-06	4.79	2.519E-07
958.800	1.129E-06	4.79	2.356E-07

Band Exposure Quotient : 1.927E-04



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,872.200	3.615E-06	9.36	3.862E-07
1,824.600	2.585E-06	9.12	2.833E-07
1,866.000	2.011E-06	9.33	2.156E-07
1,870.800	1.937E-06	9.35	2.071E-07
1,854.400	1.530E-06	9.27	1.651E-07
1,869.000	1.111E-06	9.35	1.189E-07
1,863.600	1.101E-06	9.32	1.181E-07
1,861.000	8.907E-07	9.30	9.573E-08
1,859.400	8.101E-07	9.30	8.714E-08
1,857.000	6.867E-07	9.29	7.396E-08

Band Exposure Quotient : 2.437E-06

Number of Frequencies Used in Quotient : 1128

Total Band Exposure Quotient : 1.951E-04

Site: Jeff Joseph Sale Moor Technology College

Location: Classroom 10

NGR: SJ 7990 9080

Start Time: 17 Dec 2001 12:45:20

Engineer: Stephen Parkinson

Receiver:

Manufacturer: ROHDE&SCHWARZ

Model: EB200

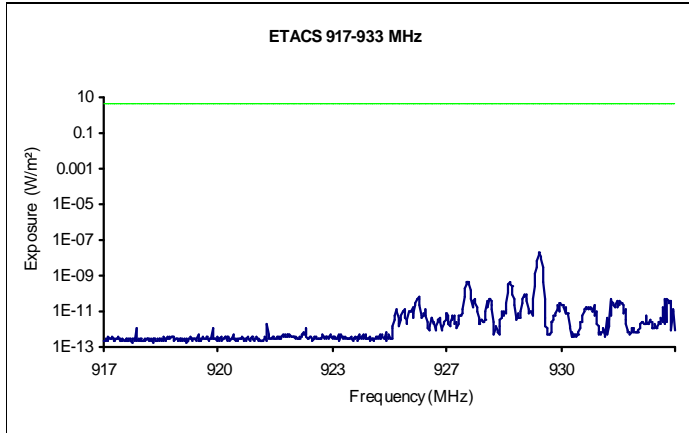
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Manufacturer: Rohde & Schwarz

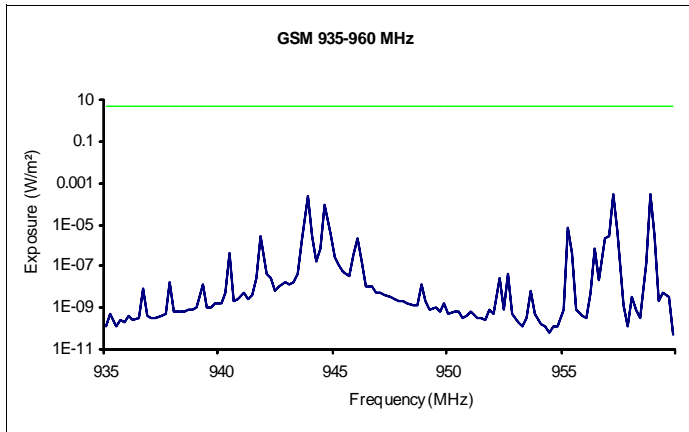
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Serial Number: 836287/018



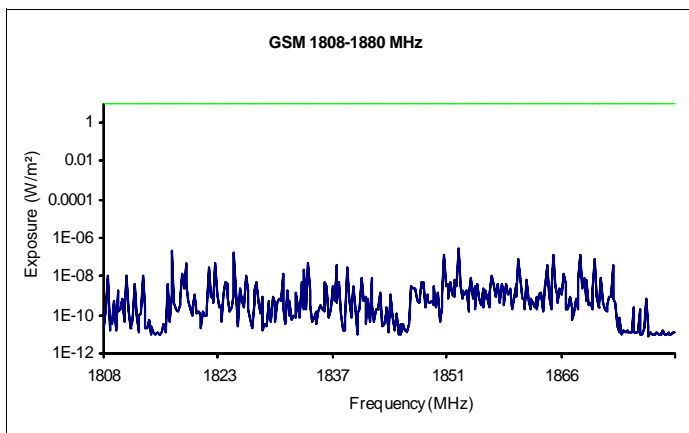
Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
929.200	2.154E-08	4.65	4.636E-09
929.225	1.876E-08	4.65	4.038E-09
929.175	1.672E-08	4.65	3.598E-09
929.250	1.080E-08	4.65	2.324E-09
929.275	8.190E-09	4.65	1.763E-09
929.150	5.931E-09	4.65	1.277E-09
929.125	3.259E-09	4.65	7.016E-10
929.300	2.650E-09	4.65	5.704E-10
929.100	1.156E-09	4.65	2.489E-10
929.325	4.713E-10	4.65	1.014E-10

Band Exposure Quotient : 2.097E-08



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
957.400	3.172E-04	4.79	6.627E-05
959.000	2.588E-04	4.79	5.398E-05
944.000	2.500E-04	4.72	5.297E-05
944.800	9.307E-05	4.72	1.970E-05
955.400	6.301E-06	4.78	1.319E-06
957.600	4.089E-06	4.79	8.540E-07
945.000	3.793E-06	4.72	8.028E-07
944.200	3.078E-06	4.72	6.519E-07
957.200	3.028E-06	4.79	6.327E-07
959.200	2.839E-06	4.80	5.920E-07

Band Exposure Quotient : 2.005E-04



Frequency (MHz)	Maximum Exposure (W/m²)	ICNIRP Limit (W/m²)	Frequency Exposure Quotient
1,852.800	2.714E-07	9.26	2.930E-08
1,816.800	2.380E-07	9.08	2.620E-08
1,824.600	1.748E-07	9.12	1.916E-08
1,868.200	1.334E-07	9.34	1.428E-08
1,864.800	1.296E-07	9.32	1.390E-08
1,851.000	1.295E-07	9.26	1.399E-08
1,870.000	7.880E-08	9.35	8.427E-09
1,860.400	7.401E-08	9.30	7.957E-09
1,822.200	4.793E-08	9.11	5.261E-09
1,833.800	4.779E-08	9.17	5.212E-09

Band Exposure Quotient : 2.190E-07

Number of Frequencies Used in Quotient : 1128

Total Band Exposure Quotient : 2.007E-04

Glossary

Location:

The point at which the readings are taken. Each location is uniquely identified by its NGR coordinates and its timestamp. A description of the location should be sufficient to allow the position to be identified at a later date.

NGR:

The coordinates of the location. In this survey they must be specified using a 100km tile identifier followed by a 4-digit easting and northing as defined in the Ordnance Survey National Grid Reference (NGR) system. N.B. This gives the position of a location to 10 metre precision. E.g. TQ 3056 2184

Start Time:

The date and time at which the receiver started taking its measurements at a location.

Antenna:

The antenna device connected to the receiver. This is known by its serial number, type and manufacturer, and has an associated calibration (see definition).

Calibration:

A set of frequency (Hz) and K-factor (dB) pairs that define the gain characteristics of the antenna. Linear interpolation is used to obtain K-factor values for intermediate frequencies.

Sweep Band:

The measurements are taken at regular frequency intervals within a band of frequencies. A sweep band is defined by the band title (which appears on each graph), start frequency, end frequency, frequency step, bandwidth and dwell time.

Exposure:

This is the name given to the measured results. The maximum electric field strength values in decibel microvolts per metre ($\text{dB}(\mu\text{V}/\text{m})$) are converted to power density in watts per square metre (W/m^2).

Table Data:

The 'Maximum Exposure' column consists of the ten highest exposure values in a band. Accompanying them are the frequency at which they occurred, the ICNIRP limit at that frequency (see definition), and the frequency exposure quotient (see definition).

ICNIRP:

International Commission for Non-Ionizing Radiation Protection

ICNIRP Limit:

This is a guideline for the maximum permitted power density of non-ionizing radiation for public exposure. The guideline is frequency dependent and is currently defined as:

<i>Frequency</i>	<i>ICNIRP Limit</i>
Less than 400MHz	2W/m ²
400MHz to 2GHz	(f / 200)W/m ² , where f is frequency in MHz
2GHz to 300GHz	10 W/m ²

Frequency Exposure Quotient:

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

Band Exposure Quotient:

The sum of all the frequency exposure quotients in a band at a single location.

Total Band Exposure Quotient:

The sum of all the frequency exposure quotients in all bands at a single location.

Power Density:

The energy flowing from an antenna through a unit area normal to the direction of propagation in a unit time. This is measured in watts per square metre (W/m^2).

GSM: Global System for Mobile communication

ETACS: Extended Total Access Communications System

TETRA: Terrestrial Trunked Radio

3G: Third Generation mobile phone services

1.000E-06 Exponential (or scientific) number format. Equal to one millionth

1.000E-09 Equal to one thousand millionth

1.000E-12 Equal to one million millionth.