



Ambient Levels of Radio Frequency Emissions in the Kingdom of Bahrain

Results of measurements made between
April and June 2010

A Report issued by the
Telecommunications Regulatory Authority

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Purpose

To present the results of RF field strength measurements taken in Bahrain during the 2nd Quarter of 2010.

Table of contents

1	Executive Summary	3
2	Introduction	4
3	Scope	5
4	Results	6
5	Conclusions	17
6	Next steps	17

1 Executive Summary

- 1.1 This report is the 2nd report issued in 2010 by TRA as part of its ongoing campaign to measure the ambient level of Radio Frequency (RF) field strengths in the Kingdom of Bahrain.
- 1.2 Previous reports provided a detailed background to the issue as well as the results for measurements taken during the period covered by the report. This report provides the results of measurements made between April and June 2010 and can be considered to be an extension of the earlier reports.
- 1.3 The key findings of the measurements presented in this report are:
 - a. All RF field strengths measured are significantly below the ICNIRP guideline.
 - b. The highest total exposure level for new typical public sites measured during the quarter was 0.01% of the ICNIRP level as shown in Figures 4 & 6.

2 Introduction

- 2.1 This report is the 2nd report issued in 2010 by TRA as part of its ongoing campaign to measure the ambient level of Radio Frequency (RF) field strengths in the Kingdom of Bahrain.
- 2.2 Previous reports provided a detailed background to the issue as well as the results for measurements taken during the period covered by the report. This report provides the results of measurements made between April and June 2010 and can be considered to be an extension of the earlier reports.
- 2.3 During the period April to June 2010 measurements of RF field strengths were made at 10 locations throughout the Kingdom of Bahrain.
- 2.4 The results of these measurements are presented in section 4 of this report.

3 Scope

3.1 This report presents the results of measurements made between April and June 2010 at the following locations:

Location	General Area	Specific location
1	Malkeya	Block 1033
2	Rehabilitation Centre	Zinj
3	Aali	Road 3231
4	Duraz	Block 540
5	Al Hekma International School	Sanad
6	Waqf Directorate	Manama
7	Darkulaib	Road 4653
8	Karzakan	Road 2557
9	Hamala	Road 1030
10	Hamad Town	Road 453

Table 1: locations of measurement

4 Results

- 4.1 Measurements were made with the Insite Box systems. The Insite Box system enables measurements to be made continuously over a period of time (i.e. 24 hours a day and 7 days a week), but can only measure up to 3 GHz.
- 4.2 Figures 1 to 10 below present the results of measurements taken at each site showing the total exposure as a fraction of the ICNIRP level, as well as the minimum, maximum and average field strengths measured, per band, as a fraction of the ICNIRP level.
- 4.3 All measurements were taken in typical public or domestic locations (i.e. inside homes, offices or apartments).

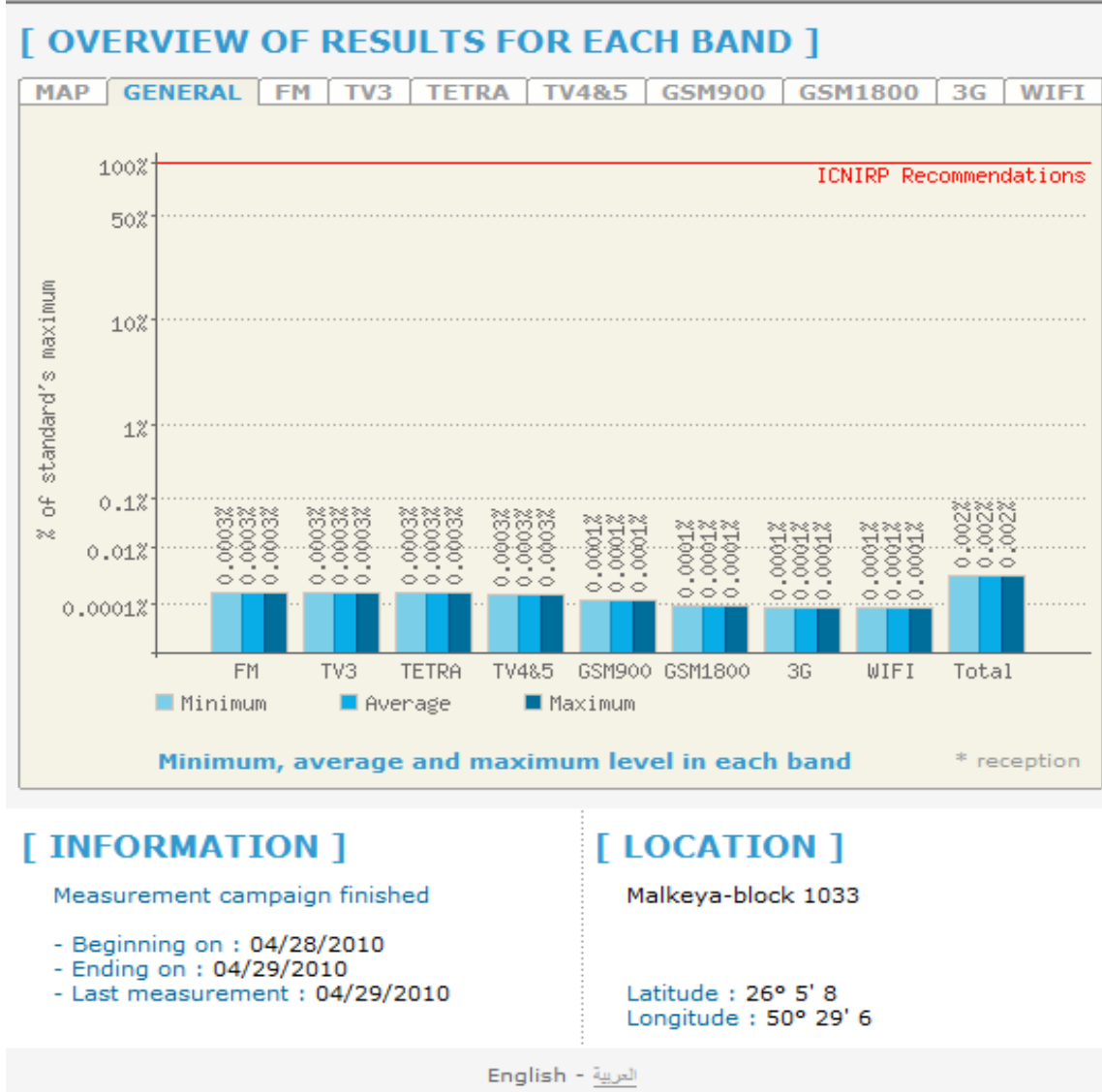


Figure 1: Result for Malkeya-Block 1033

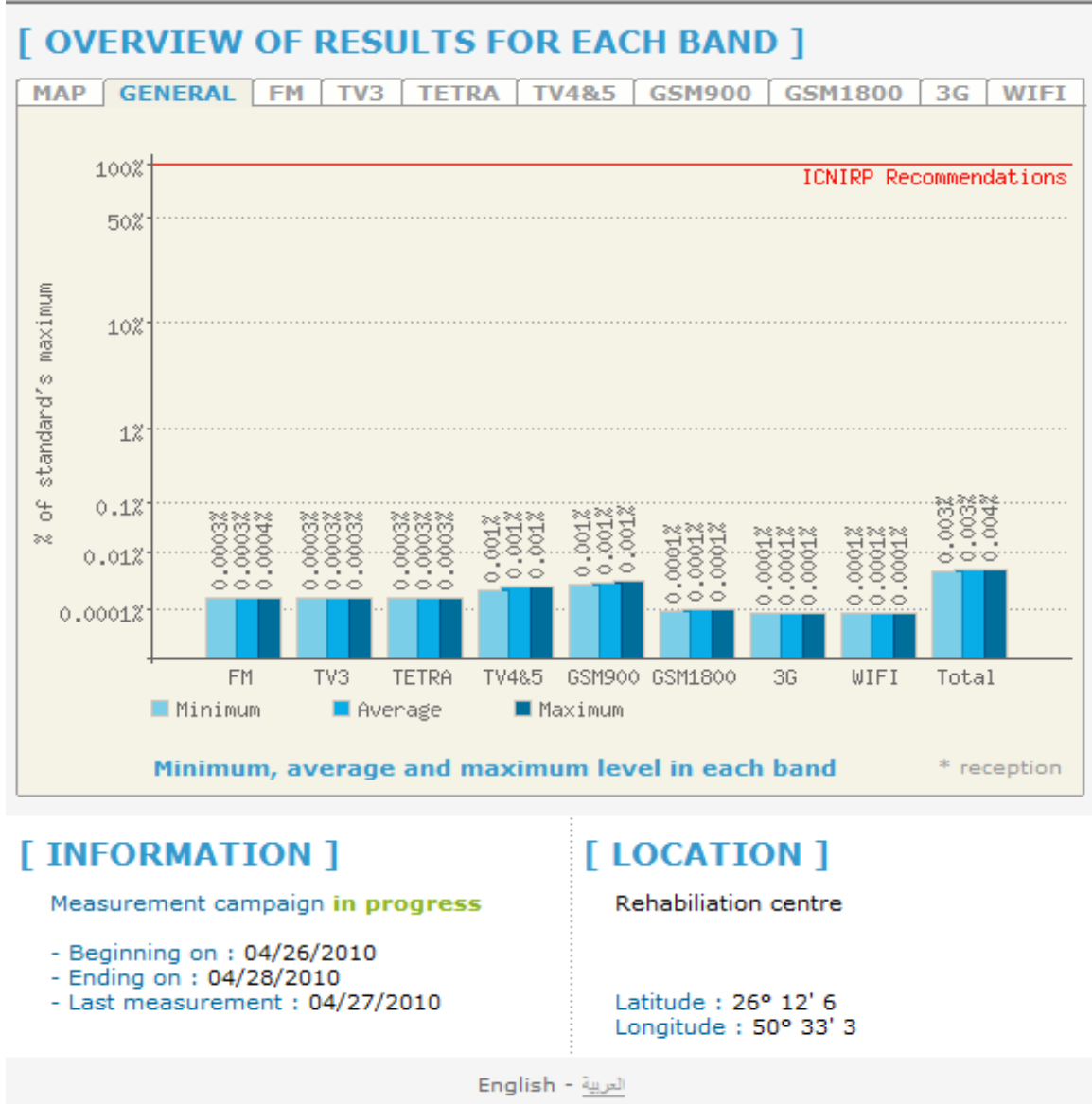


Figure 2: Result for Rehabilitation Centre in Zinj

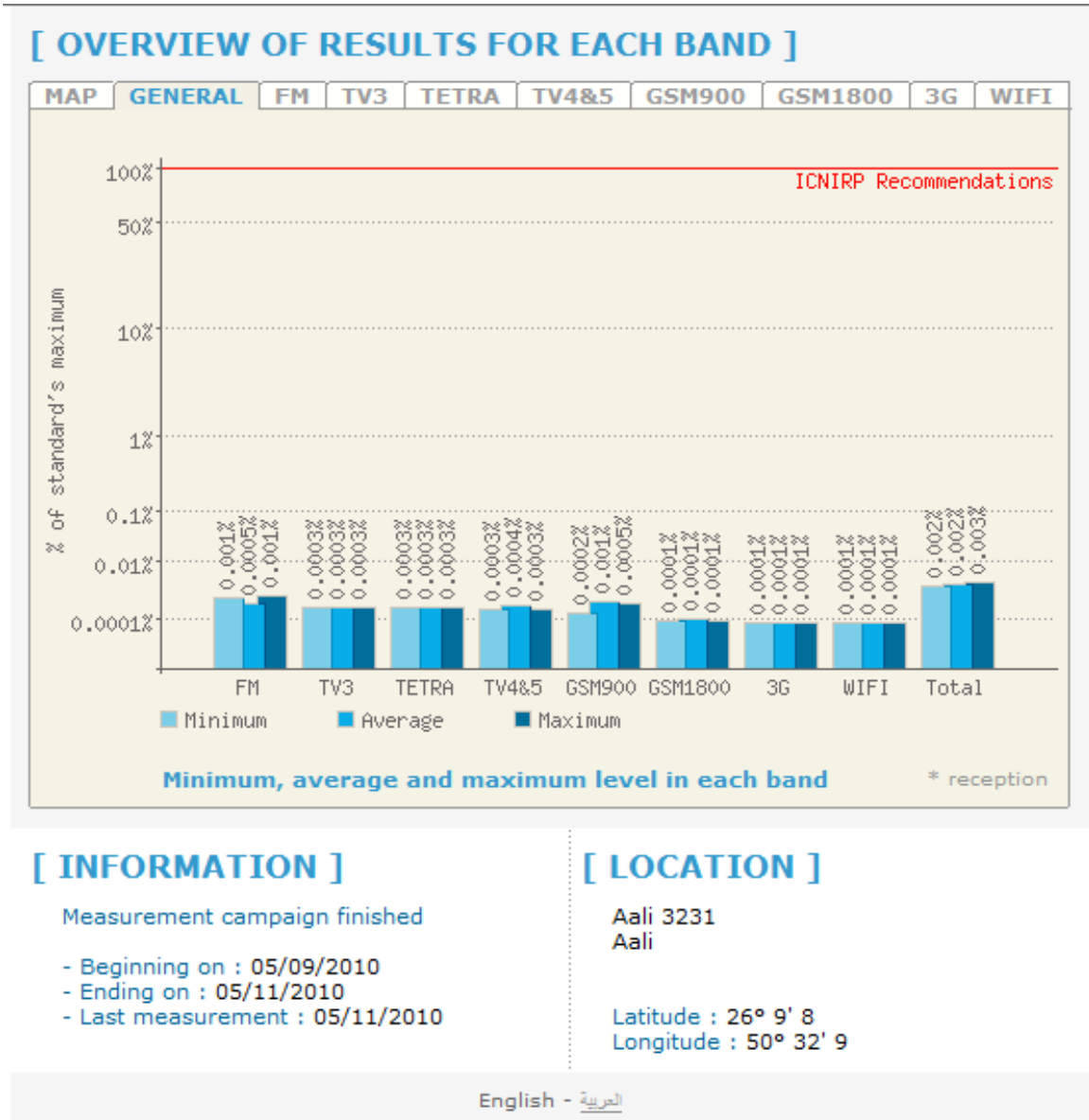


Figure 3: Result for Aali block 3231

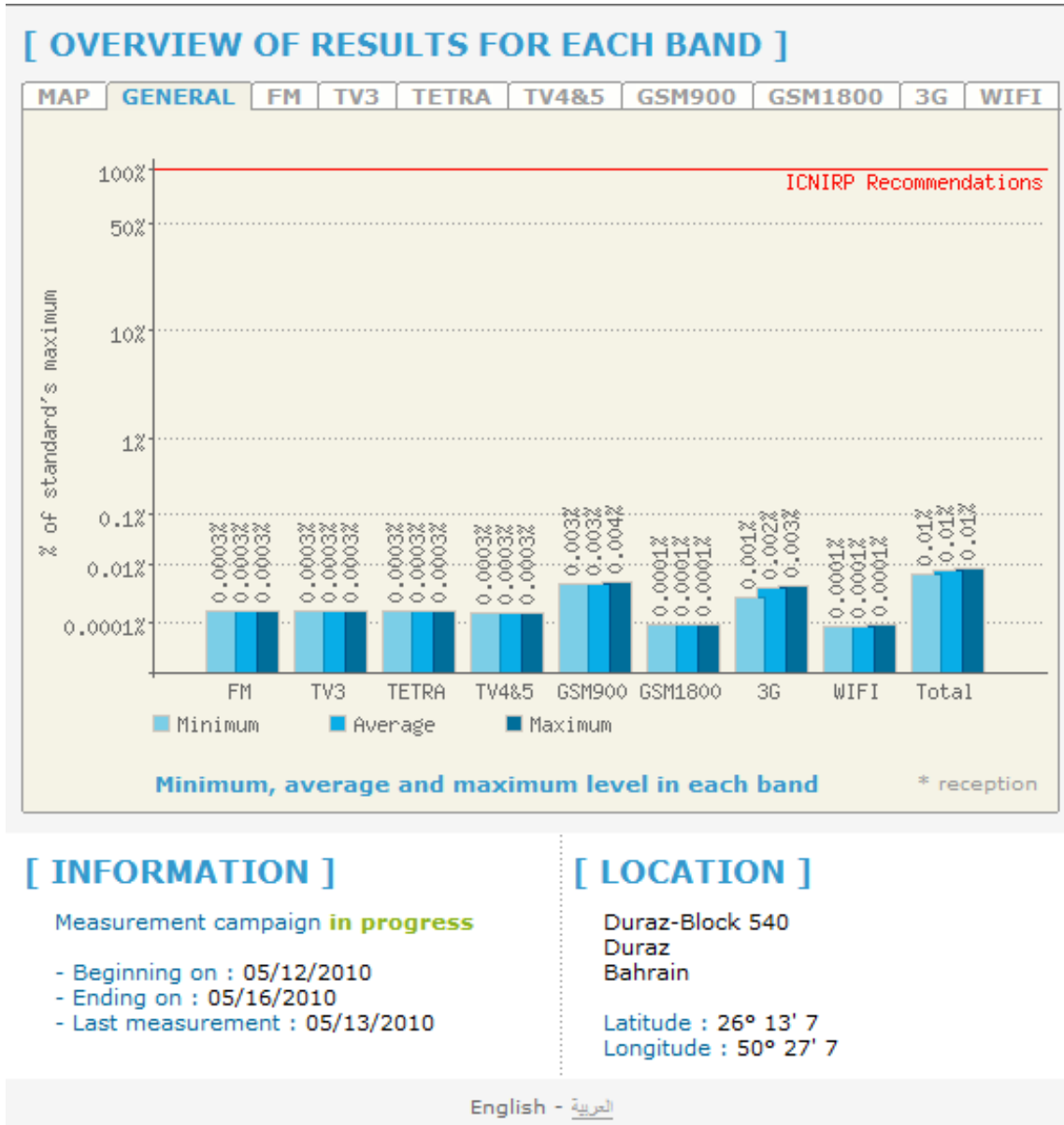


Figure 4: Result for Duraz-Block 540

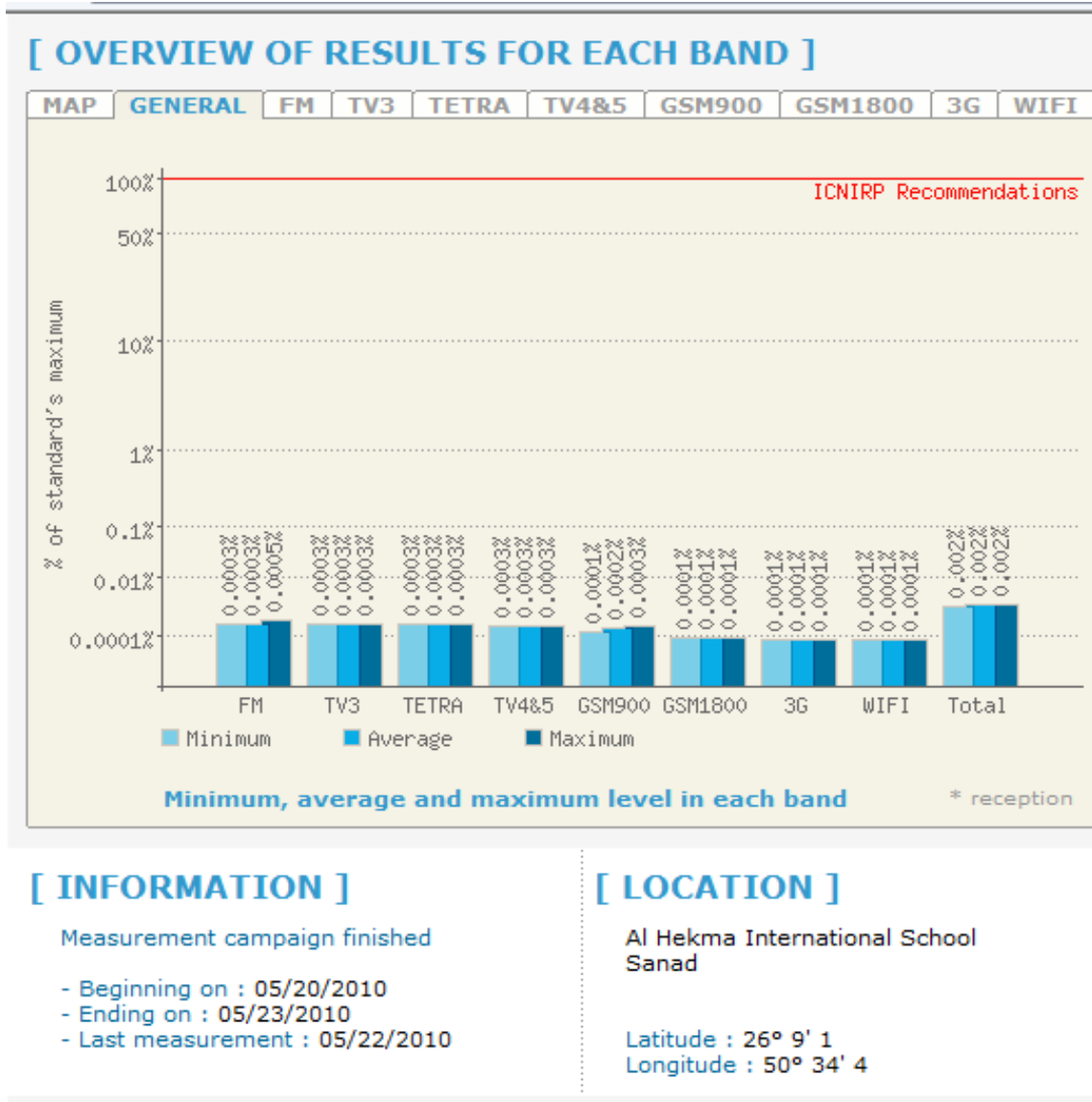


Figure 5: Result for Al Hekma International School

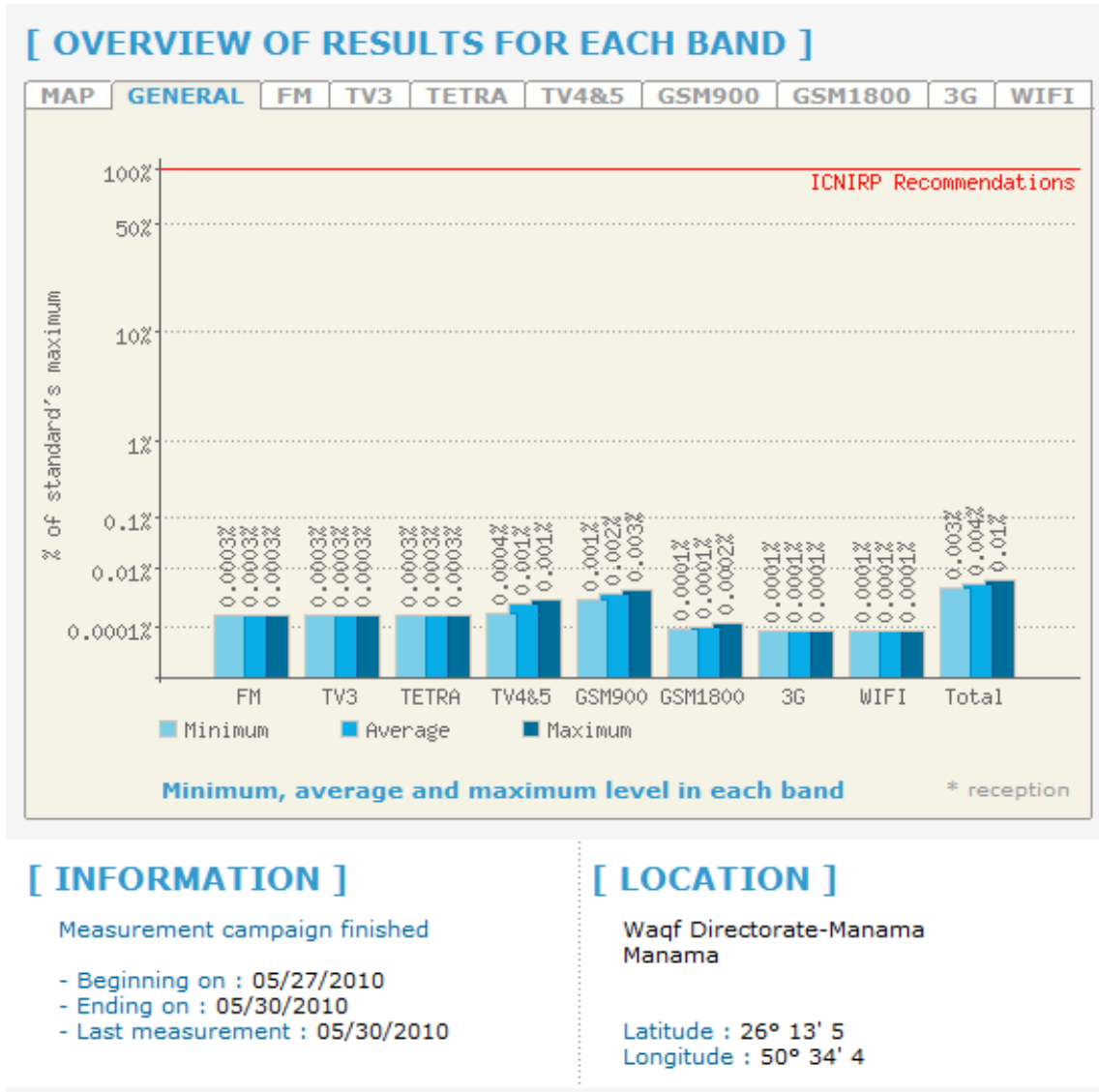


Figure 6: Result for Waqf Directorate-Manama

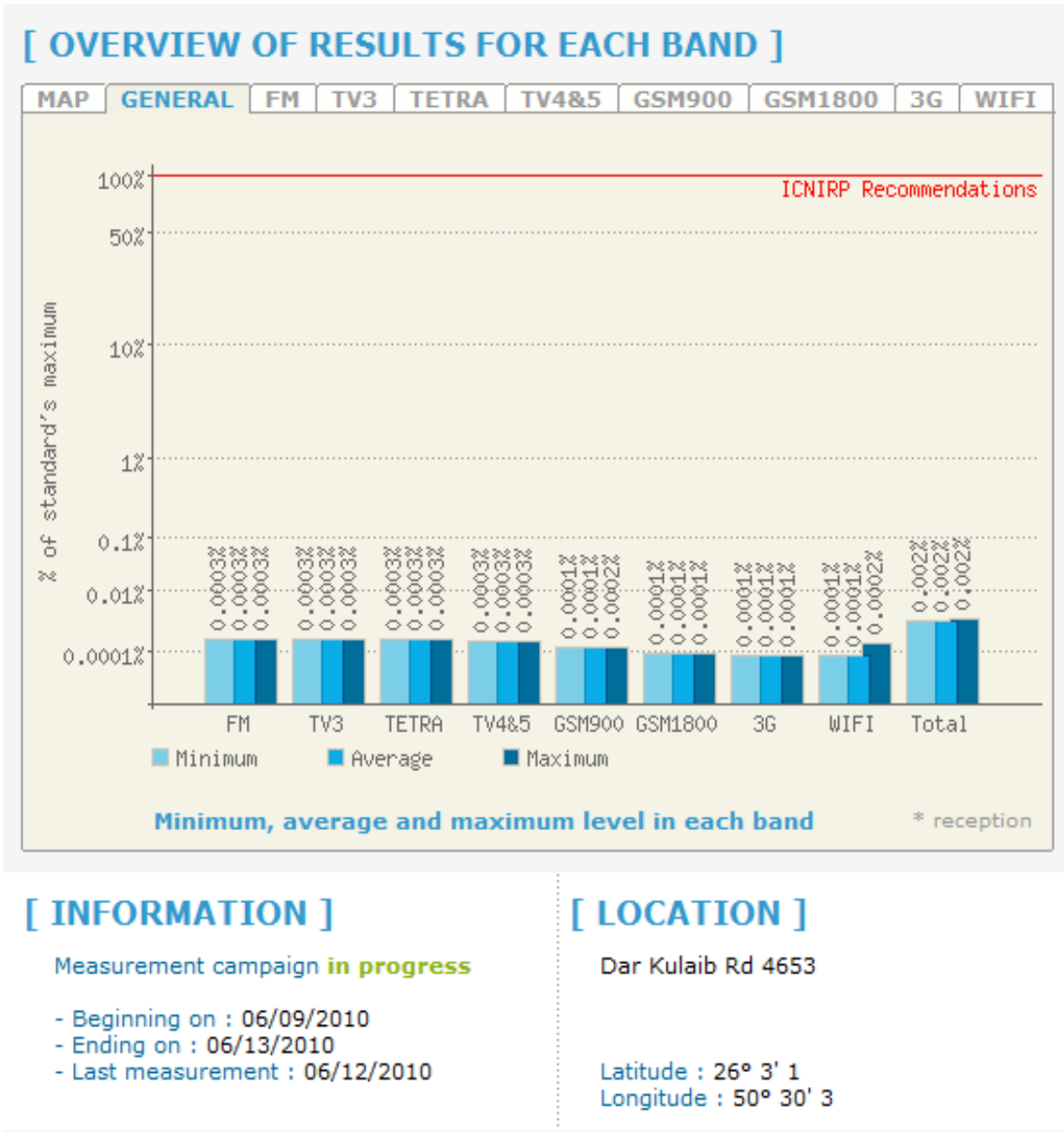


Figure 7: Result for Dar Kulaib Rd 4653

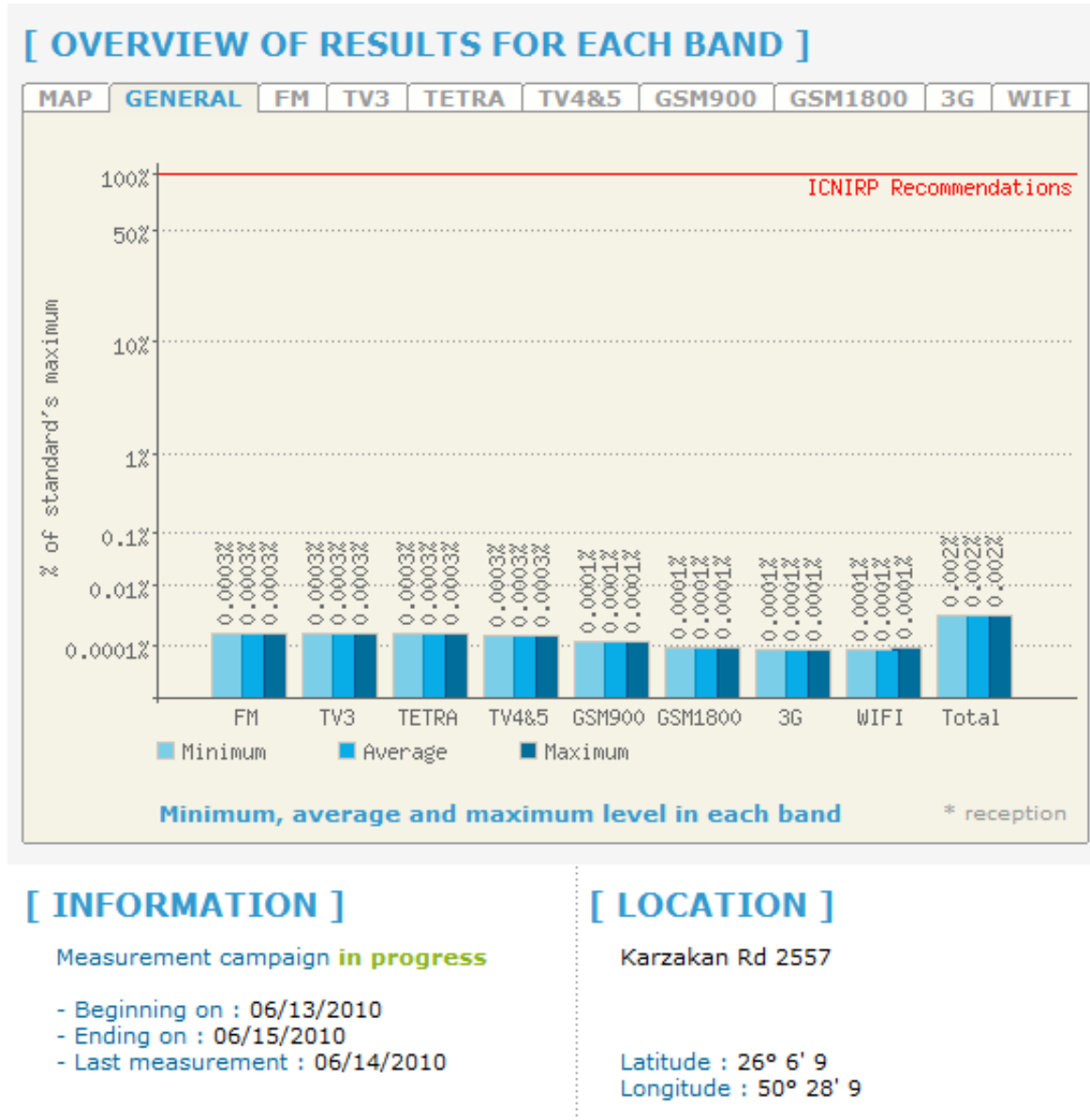


Figure 8: Result for Karzakan Rd 2557

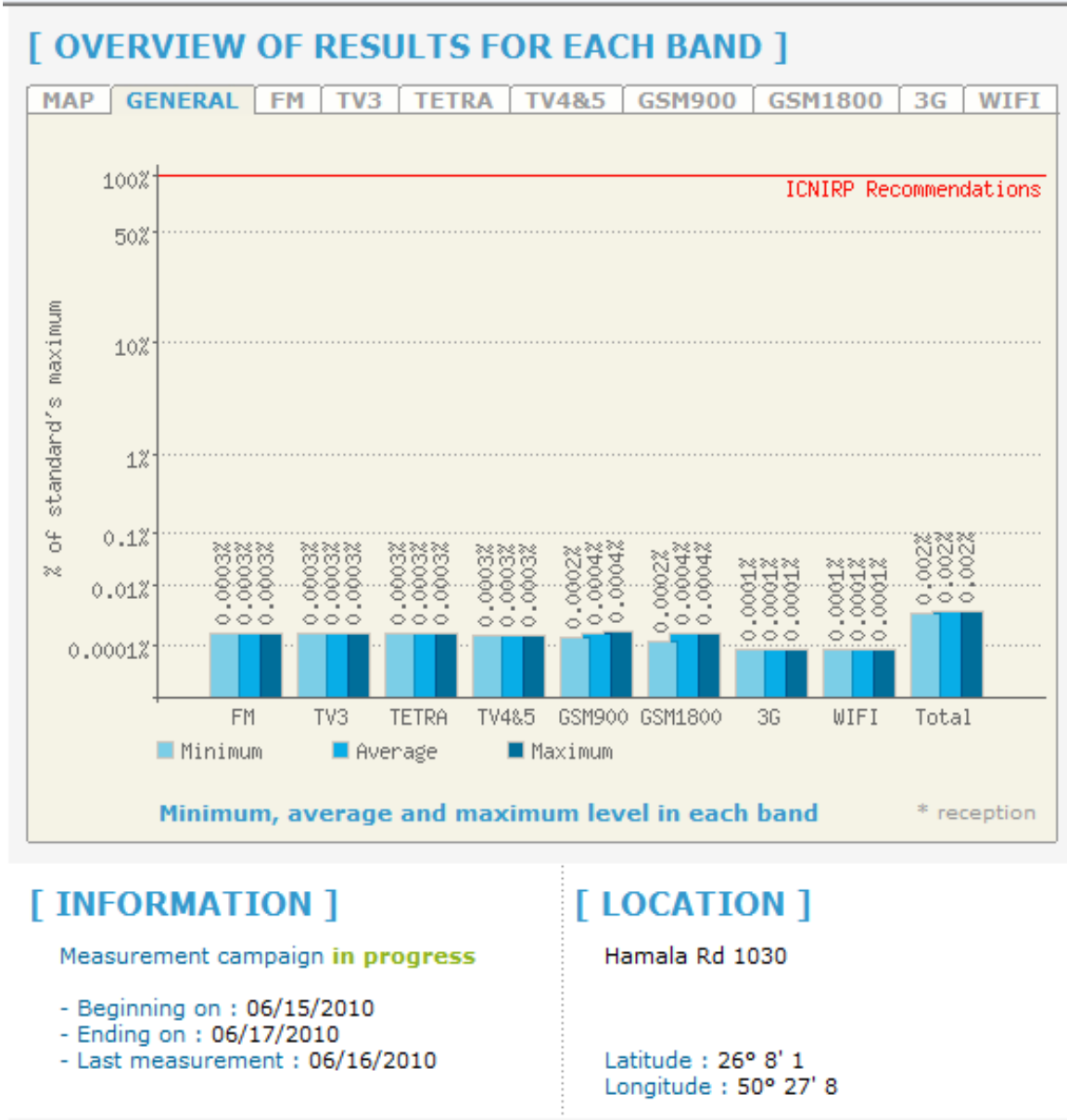


Figure 9: Result for Hamala Rd 1030

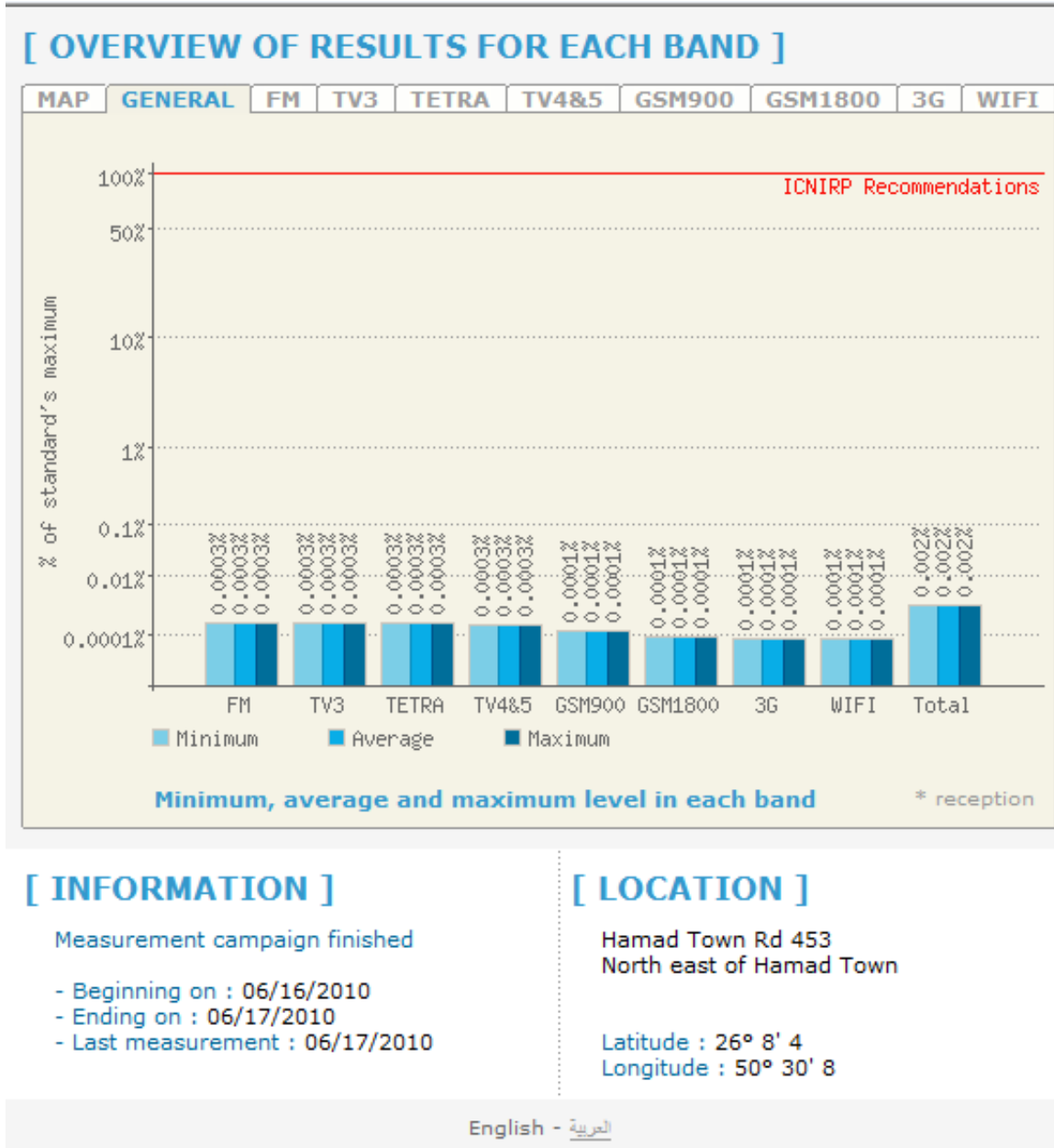


Figure 10: Result for Hamad Town Rd 453

5 Conclusions

- 5.1 All measurements are very small compared to the ICNIRP guidelines and at, or very close the lowest signal level measureable by the test equipment.
- 5.2 The highest total exposure level for typical public sites measured during the quarter was 0.01% of the ICNIRP level as shown in Figures 4 and 6 for Duraz and Waqf Directorate.

6 Next Steps

- 6.1 TRA will continue with the measurement campaign in 2010 to map RF signal levels throughout the Kingdom of Bahrain