



INTERNATIONAL EMF PROJECT ADVISORY COMMITTEE (IAC) MEETING

ANATEL Report on EMF Activities in Brazil

1. Introduction

The main purpose of this document is to present an update of what has been done in Brazil regarding Electromagnetic Fields – EMF since the IAC meeting in June 2023.

2. Activities related to EMF Exposure

In 2019 we have established the Action Plan for the NIR (non-ionizing radiation) program, to assess compliance with Federal Law No. 11,934, which provide limits on human exposure to electric, magnetic, and electromagnetic fields, mobile probes were used in drive test measurements based on Recommendation ITU-T K.113. In sites where electric field strengths were measured greater than 14 V/m, 6-minute time-averaged measurements were taken than compared with the limits of the general public exposure (28 V/m).

According to the Action Plan, in 2023, EMF exposure measurements were carried out in 399 broadcasting stations and 2616 radiocommunication base stations.

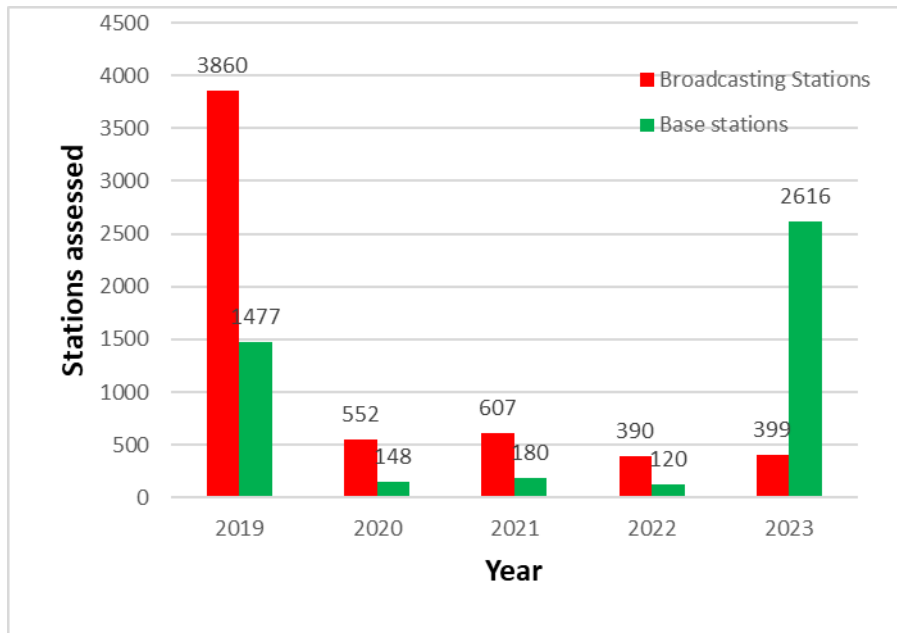
Emissions of 23 broadcasting stations had their electrical field strength measured above 14 V/m. Time-averaged field strength measurements were less than 28 V/m at these locations.

Table 1 shows the number of stations measured since 2019 as displayed in Figure 1.

Table 1: EMF exposure assessments in numbers

Station	2019	2020	2021	2022	2023
Broadcasting Stations	3860	552	607	390	399
Base stations	1477	148	180	120	2616

Figure 1: EMF exposure assessments per year.



In 2023, EMF exposure measurements were planned to be carried out in indoor 5G Base Stations licensed with transmit power greater than 100 W. 7 (seven) indoor 5G Base Stations were assessed with one reported outlier of electrical field strength measurements with 18.28 V/m (greater than 14 V/m), but still within range (up to 28 V/m).

In 2023, 37 requests (government authorities, general public) regarding EMF compliance, results in 14 measurements, all of them were assessed and were below the general public limits.

Measurement raw data by 2023 is available at:

https://sei.anatel.gov.br/sei/modulos/pesquisa/md_pesq_documento_consulta_externa.php?HWH32bONvibUcMC3mewfUpIX7e-9fyZZC4iEjI2QHwXAoLCOrVZwNzRf5vR3YcCMWNZ4eCgQDLmVzIOFPcg7Rkyuvsxkwgf0yTwU4nce0fNLPWQeXplTVpNvpewzAet8

3. New policies and legislations regarding EMF Exposure

To ensure Environmental Health and Safety (EHS) throughout Brazilian territory, Federal Law no. 11,934 states the adoption of limits recommended by the World Health Organization (WHO) for occupational and general exposure to electric, magnetic and electromagnetic fields generated by broadcasting and radiocommunication stations. While no new or updated WHO recommendations are issued, limits recommended by the International Commission for the Protection against Non-Ionizing Radiation (ICNIRP) are the norm.

By the time the Law was enacted, ANATEL, Telecommunications National Regulatory Authority (NRA) in Brazil, responsible for the assessment of EMF exposure, had already issued Resolution no. 700/2018 defining general EMF exposure rules, and Act no. [17,865/2023](#) detailing procedures for assessing compliance with the recommended limits, in line with the ICNIRP 2020 and ICNIRP 2010 guidelines and ITU-T Recommendations (e.g. K.100, K.61, K.52, K.70 and K.91).

4. Public information activities

As a result of the Action Plan, ANATEL published a radiofrequency electromagnetic field level map for consultation of monitored levels by the general public. The map displays EMF magnitudes measured by ANATEL and the private sector. The action is also part of the Government Open Data program.

The map is available at the following link: <https://informacoes.anatel.gov.br/paineis/espectro-e-orbita/mapa-de-exposicao-a-campos-eletromagneticos>.

5. Closing remarks

It is important to mention that ANATEL maintains an open dialogue with society, industry, service providers and other governmental authorities to present clear information about what is being done in Brazil and worldwide regarding EMF exposure issues, including EMF emissions from 5G base stations, while monitoring WHO responses to public concern over health effects of EMF exposure.