

# Operation of a 70 cm amateur beacon transmitter, operation of a 23 cm voice repeater station, study of high-frequency propagation conditions

Roland Moser<sup>1</sup>, Christian Schmocker<sup>2</sup>, and Armin Rösch<sup>3</sup>

<sup>1</sup>HB9MHS, Bern, Switzerland

<sup>2</sup>HB9DUU, Ringgenberg, Switzerland

<sup>3</sup>HB9MFL, Deitingen, Switzerland

hb9mhs@bluewin.ch

**Keywords:** amateur radio beacon; repeater

## 1 Project description

The “Relaisgemeinschaft HB9F Bern” has been operating two amateur radio stations on the Sphinx observatory for almost 45 years.

In 1980, a 70 cm beacon was put into operation on the frequency 432.984 MHz. This frequency was later adapted to the newly created international frequency plan. Since then, the beacon has been transmitting on the frequency 432.432 MHz. The beacon is used exclusively for monitoring propagation conditions.

A 23 cm FM relay station was added in 1993. It operates with a transmission frequency of 1298.900 MHz. It is also used for monitoring propagation conditions.

For full details of the two stations see Relaisgemeinschaft HB9F Bern.

## 2 Activities in 2024

Both systems had to be maintained. Some of the electronic components were causing us concern. Many of these components are not specified for such altitudes. In particular, the power supplies of both systems were replaced. After more than 30 years in operation, the 23 cm FM relay was completely replaced. The associated crossover also showed signs of ageing and had to be completely overhauled and retuned.

Since then, both systems have been running smoothly again.

## 3 Propagation conditions

The UK Microwave Group (<https://beaconspot.uk>) is monitoring the propagation conditions of many microwave and VHF/UHF beacons in Europe. Data may be retrieved for a particular beacon for analysis. Maps show beacon distribution by band, and spots coverage of every beacon. DXCluster incoming real time spots are collected, and outgoing spots can be sent to the DXCluster. ODX is recorded for every

beacon, and distance to every beacon is shown for every spot for registered users.

In addition, reports on the reception of our systems are still welcome by e-mail to [hb9mhs@bluewin.ch](mailto:hb9mhs@bluewin.ch).

## Acknowledgements

The “Relaisgemeinschaft HB9F Bern” would like to thank the International Foundation HFSJG for its hospitality over the past decades.

## References

*Relaisgemeinschaft HB9F Bern.* <https://www.relais-hb9f.ch>.

## Collaborating partners / networks

UK Microwave Group. URL: <https://beaconspot.uk>.

## Address

Relaisgemeinschaft HB9F Bern  
c/o Roland Moser  
Zeerlederstrasse 2  
3006 Bern  
Switzerland

## Contact

Roland Moser, HB9MHS  
Tel: +41 79 300 03 11  
E-mail: [hb9mhs@bluewin.ch](mailto:hb9mhs@bluewin.ch)