

Calibrator for BRAMS

Purpose

For the BRAMS network

- Check the gain and frequency offset/drift at every station
- Identify sudden jumps or anomalous behaviour of a station

For the interferometer

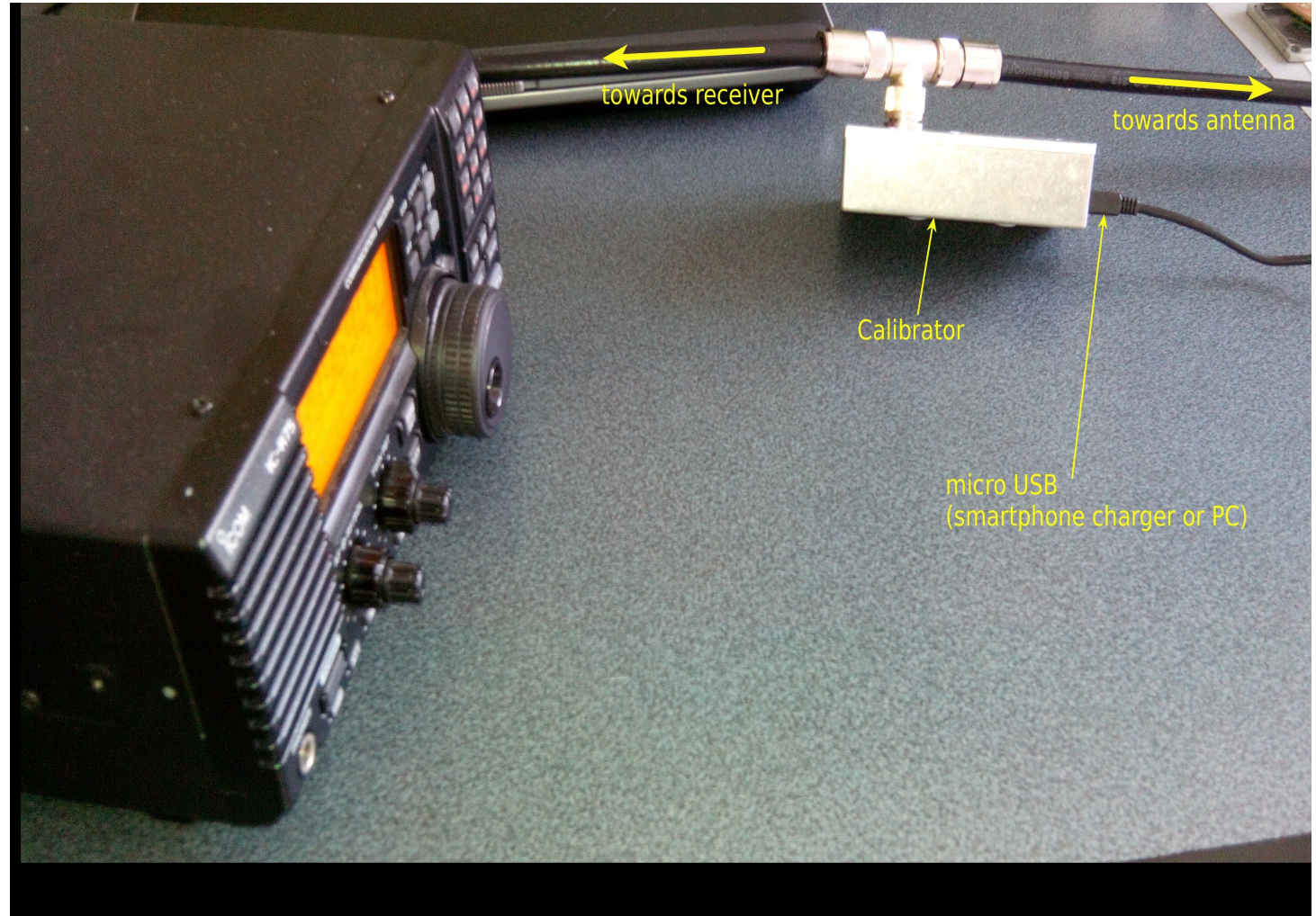
- Calibrate the gain and phase differences at the interferometer. In particular, the phase offset of each receiver jumps after a power recycle (receivers not phase locked to a common reference).

Calibrator for BRAMS

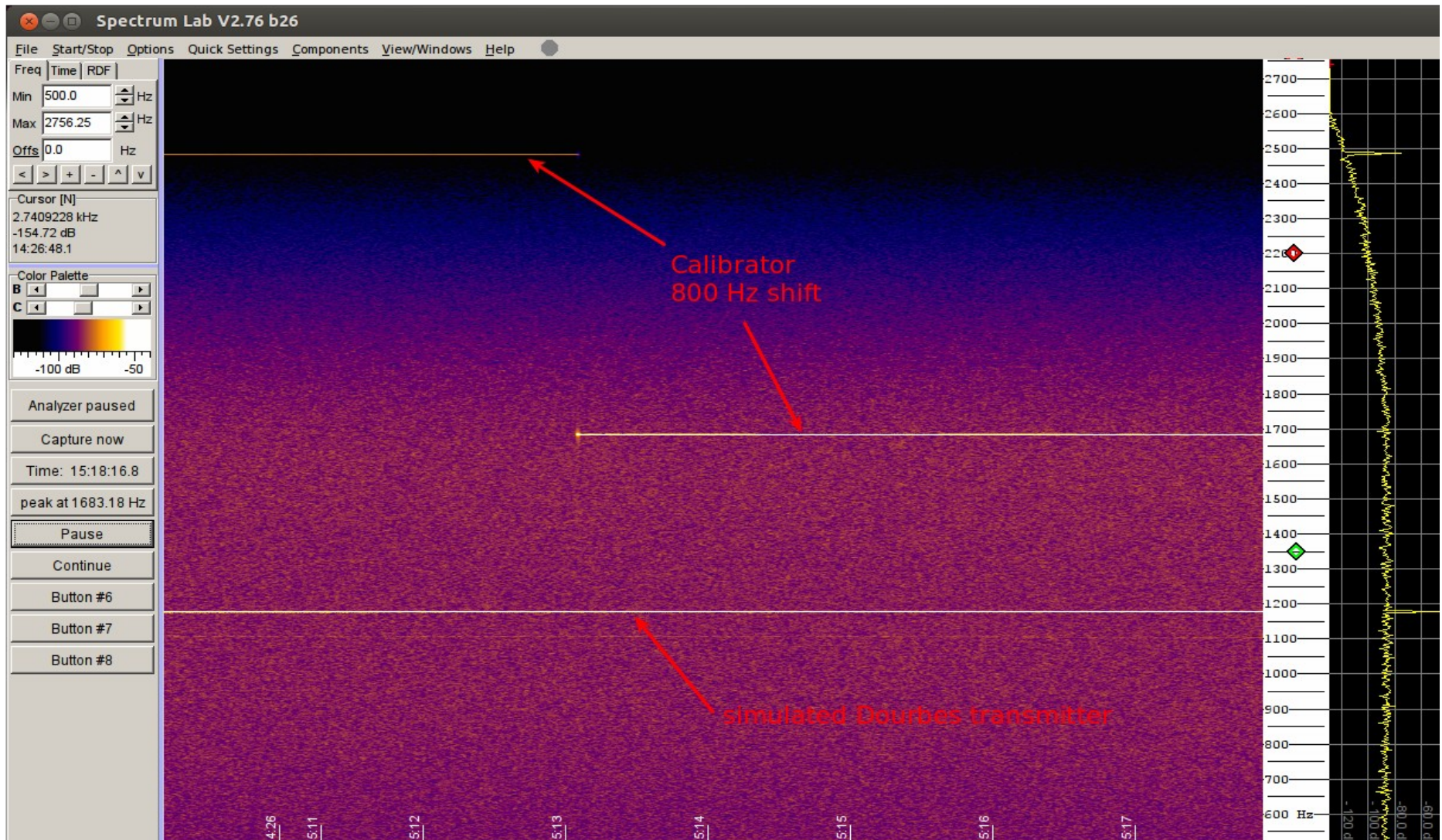
How is it done? BRAMS network

- Signal of a known frequency and amplitude fed into the front end
- Internal reference: 1 ppm
- Target power level: -120 dBm
- Frequency is in the useable receiver band so that the signal can be monitored continuously while gathering echo data. Setting the calibrator frequency well away from most echos will not affect them.
- Small USB powered unit, frequency and amplitude are programmable and can be field adjusted as needed (1 Hz steps anywhere between 48 and 52 MHz)

Calibrator for BRAMS



Calibrator for BRAMS



Calibrator for BRAMS

How is it done? Interferometer

- Similar calibrator unit but with 6 outputs and a 10 MHz reference input (from the same reference used for the receivers)
- Since the same signal is fed to all 6 receivers at the same time, the phase differences can be monitored continuously.
- Amplitude monitoring will also provide to means to know the relative gain of the individual receivers.