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and assembly of a low-cost experimental infrasound array for seismo-volcanic monitoring

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A seismo-volcanic crisis on Terceira Island led us to design and build a mobile low-cost experimental array, based on our previous experience of a successful collaborative deployment of an infrasound array from the University of Florence (UNIFI) on São Jorge Island, in April 2022.
We present the details of the design, the hardware and the assembly of a 6-element low-cost experimental array, deployed in April 2024 and designated as TER. This includes the data acquisition, which comprises the digitizer, the 4G (GSM) router, the signal conditioning circuit and their respective interconnectivity, the 6 boxes with differential pressure sensors, and an innovative mechanical Wind Noise Reduction System (WNRS). The communication between the sensors and the data acquisition box is assured by six 100-meter-long protected electrical cables. The energy for the array is supplied by a system of batteries coupled with solar panels.
The deployment took two working days, including site clearance, testing and adjustments in a densely forested area.

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