



A Low Frequency Transient Followup Plans using a new LPDA Array at Gauribidanur

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Recently, we have implemented a two element radio interferometer operating in a frequency range between 150-350 MHz, overlapping to the SKA1-LOW frequency telescopes band. The antennas are configured to form two elements in an east-west orientation at the Gauribidanur Radio Observatory (77.428 E, 13.603 N). The front-end electronics, such as Low Noise Amplifiers and Tubular Receiver, and the back-end electronics, including the Fiber Optics Receiver, were custom-developed in-house at RRI. The focus of this effort involved student training opportunities, demonstration of inhouse build RF transmission over Fiber and verification of various RF modules' operability in the field conditions. Students helped in the commissioning and development of a web-based user interface and control / data-collection systems. This interface also enables remote data acquisition and processing via Ethernet. This system has been successfully implemented and operational for the last one year in the observatory. Routine observations of solar transits are being made. We are currently investigating extending this array in a configuration to enable forming multiple beams and record high-resolution/band-width data to monitor transient sources. It may be noted that a FRB out trigger station is being planned in the same site that operates in a higher frequency range between 400 to 800 MHz. We consider establishing a trigger functionality to enable a low frequency followup capabilities between the 150-350 MHz band. This paper will outline the details of the existing two-element infrastructure, example results and provide details of the architecture being planned for the FRB follow up.



Figure 1. Two - Element Radio Interferometer setup at Gauribidanur Radio observatory