

J.3 A Wideband Upgrade for the Australia Telescope Compact Array

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The available signal bandwidth on the Australia Telescope Compact Array (ATCA) is to expand from 128MHz to 2GHz. Central to this development is an FPGA-based digital filterbank correlator featuring high dynamic range and flexible configuration. Associated analog to digital conversion requirements will push the limits of high-speed sampling and quantisation techniques. These new technologies are direct candidates for signal processing on the proposed Square Kilometer Array (SKA). The correlator includes extra ports to incorporate two SKA demonstrator antenna stations into the ATCA, providing both a more powerful instrument and a mature test bed for the demonstrators.