

DBBC3 the new wide-band backend for VLBI

G. Tuccari, W. Alef, S. Dornbusch, R. Haas, K-A Johansson, H. Rottmann, M. Wunderlich

The DBBC3 VLBI digital backend is the successor of the most widely adapted VLBI backend DBBC2. The DBBC3 offers much wider bandwidth, integrated Ethernet output, and three different firmwares for observing have been implemented now: Direct Sampling Conversion (DSC), arbitrary selection of bands (OCT), Digital Down Conversion (DDC).

These modes cover all the requirements of astronomical, VGOS and legacy geodetic VLBI of the present, but also of the near future. In addition the DBBC3 offers unsurpassed compatibility to the relatively large number of other existing VLBI backends.

A number of test observation have been conducted in the last months to achieve the best performance for the VGOS modes, and a similar test is planned for the EVN network. A number of DBBC3 systems has been deployed and more are currently under construction, with a number of 4GHz bands ranging from 2 up to 8 with resulting output data-rates from 32 Gbps to 128 Gbps.