

DBBC Firmware for Radar VLBI

Two main functionalities added:

- **EFD** - Echo expected frequency
'followed' and detected in the
observed sub-band
- **FSS** - VLBI fringes station stopped

EFC – Echo Followed and Detected

- Tuning frequency is finely upgraded with an user external software model
- Frequency variation parameters pre-calculated and downloaded each second to the firmware
- Final tuning frequency calculated by the firmware (linear and quadratic increment in time) and applied to the tuner
- Following timing clock (frequency recalculation and upgrade) 128 MHz
- Arbitrary frequency tone amplitude and phase detection

FSS - Fringes Station Stopped

- Added to the DBBC software control:
 - Observing station geometric parameters
 - Time epoch
 - Observed source coordinates
 - Sky frequency
- Final tuning frequency calculated by the firmware and applied to the tuner in order to get fringes stopped or quasi-stopped
- Zero baseline correlation software support