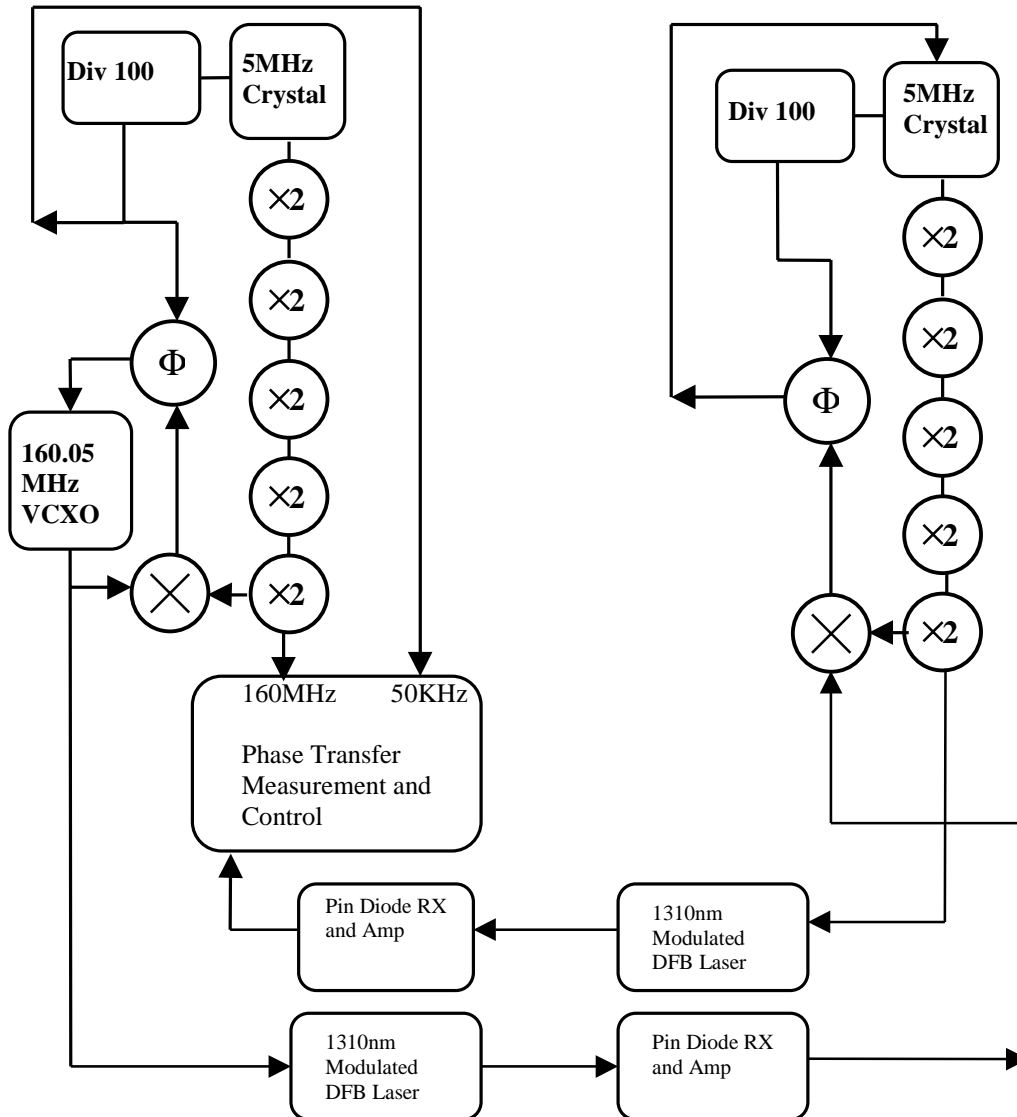


## Local Oscillator Reference Upgrade Stage 1: Fibre Optic Distribution of 160.05MHz Reference to Interferometer Pair

### Central Site

### Modified Compact Array Antenna



In stage 1 of the Local Oscillator upgrade a pair of Compact Array antennae will be fitted out with fibre optics to distribute the 160,05MHz signal produced at the central site. Antenna CA06 is currently similarly equipped. This stage will also field trial fibre optic connectors and components by selectively cabling some of the existing stations and the new array stations.

A major advantage of the proposed scheme is that the antenna phase remains 'locked' to the central site reference. Distributing the reference frequency on fibre also allows for the possibility of increasing the reference frequency.

High frequency Local Oscillators for the 12 to 25GHz receiver will use Dielectric Resonant Oscillators locked to 160MHz obtained from multiplier chain. Output of the DRO will need to be doubled.

The Local Oscillator for the 85 to 100GHz receiver will be a Dielectric Resonant Oscillator using 160MHz as a reference. The DRO will drive a Harmonic mixer and phase lock a Gun Diode. Full frequency coverage of these bands may not be provided.