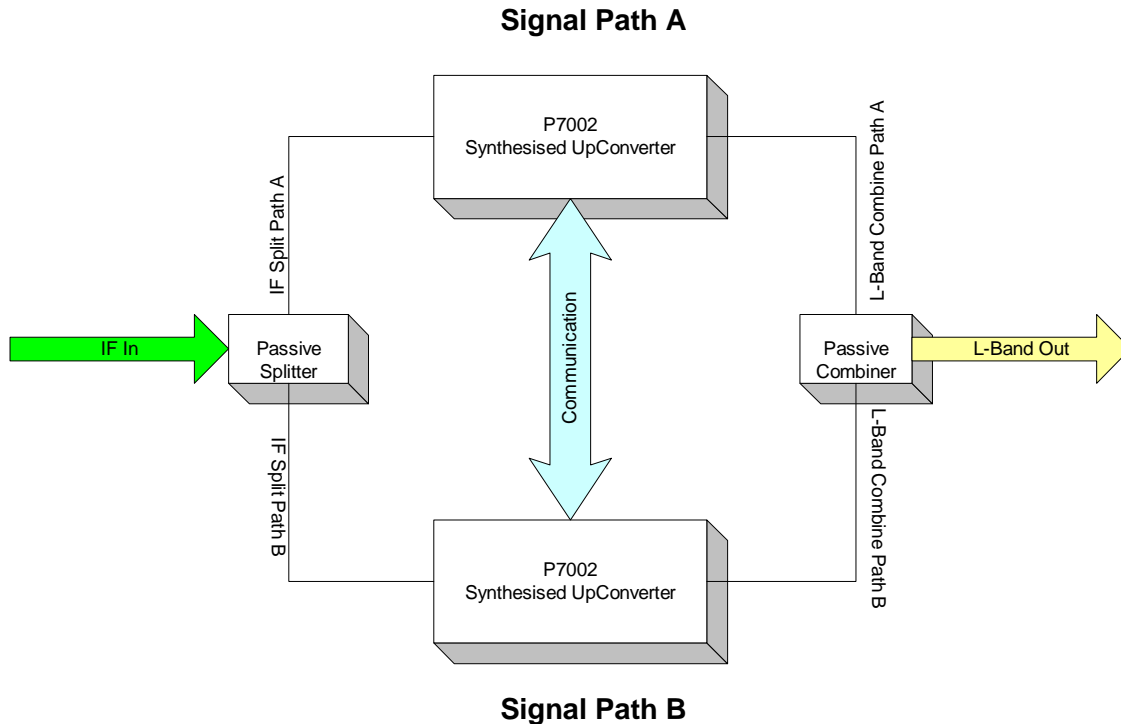


## P7002 Fully Synthesised IF to L-Band UpConverters in a 1 FOR 1 Configuration

Any two P7002's will operate as a 1 FOR 1 redundant pair, with no other equipment except for a single interconnecting lead, two power splitter/combiners and cables to parallel up the units.



Both P7002s operate continuously, performing their function on the incoming IF and L Band signals, but only one P7002 enables its output, and drives the signals from the Modem to the external Block UpConverters.

In the event of a catastrophic failure, such as a power supply etc, the switching circuitry (which is distributed between the two units) will switch over to the operational unit.

### SWITCHING PHILOSOPHY

Both P7002's operate continuously, with each providing a regularly updated status to their half of the 1 FOR 1 control logic. There is no pre-assigned master and slave unit.

Changeovers are minimised, i.e. a unit taken off line due to a reported failure, will remain off line even if it returns to the OK state. If it does return to the OK state then it will act as the standby unit. The software provides the necessary delays of status to the control logic, to prevent unnecessary switching. There is no delay in the case of catastrophic failures, when the hardware performs the switching regardless of the software, and its associated built in delays.

The 1 FOR 1 system has no 'memory', i.e. a unit taken off line because of an indicated failure, will be put on line again if it now indicates OK. This will only occur if the on-line unit subsequently failed, otherwise it would be an unnecessary changeover.

### **Detected failure**

A failure is defined as either a detected failure of the unit, or a catastrophic (power) failure. The P7002s will change over if one fails, and if the other unit indicates that it is still operational. If both units fail simultaneously (which is likely to be caused by external circumstances), then no changeover takes place.

A 'detected failure' is defined as a UNIT FAULT. On this release of software an external fault will now cause a switch over. This previously was a deliberate design feature to inhibit this feature. External faults will also cause the status LED to change from green to flashing green and an alarm report to be displayed.

### **Manual changeovers**

The P7002 is able to 'give away' operation to the other unit of the pair, if instructed to do so from the front panel. The switch over will only occur if the other unit indicates that it is OK, and is performed by momentarily simulating a failure in the on-line equipment.