# Maser failure

If the maser would fail, which can be seen as large time jumps in the time difference on the HP counter or by looking at the file
`cetus:/usr2/prog/data/gps-maser.600s.dat`
and/or Phase Lock Monitor is red (= phase lock error in the phase lock receiver, due, most probably, to a too weak maser signal), then you could run the system on an external 5 MHz TCXO oscillator.
The oscillator is inside the *10 MHz Frequency Distribution* unit in the left rack in the control room. To make this oscillator master for the system you need to flip a switch, which is at the back of the unit. You need also to re-connect on the rear side of the unit. The 1 PPS going to the TCS system has to be connected to one of the 1 PPS outputs from the Onsala Clock, the other 1 PPS output on the Onsala clock should be connected to the 1 PPS input to the HP Counter (disconnect first the 1 PPS coming from the SEST clock)
Do a reset of SEST Clock and keep track of the GPS-TCXO time, until the day the maser is back in operation again.
Note: This oscillator is not suitable for VLBI but is OK for normal observations. You do need to keep track of the 1 $PPS_{GPS}$-1 $PPS_{TCXO}$ and make a reset of the SEST Clock before the time difference is 10 ms ($\sim$pointing error of 0.15 arcsec.).
Adjustment of the TCXO frequency is not needed, since the TCXO is always turned on, regardless if in use or not, and has already been tuned. But if found necessary, there are two tuning screws, one course, one fine, on the front of the unit. Be aware of that the tuning is sensitive and you need to use a counter for the measurement.