

## **Alignment Procedure For Norsat Newslink Model 3200**

All local oscillators within the system are synchronized to a common 10 MHz ovenized voltage controlled crystal oscillator (OCXO). The OCXO is a MTI-Milliren Technologies Corp P/N 220-0102-B. The OCXO has the following specifications:

a)	short term stability (1sec)	2E-11
b)	ageing per day	2E-9
c)	ageing per year	2E-7
d)	stability over temperature( -30 to +70 degrees C)	2E-7
e)	electrical tuning capability	+/-3E-6 to +/-9E-6

During final system test, the OCXO frequency is tuned such that transmit output frequency (14-14.5 GHz) is within +/- 100 Hz window. The control voltage value is stored in EEPROM.

Each PLL in the transmit path has lock detect circuitry which monitors the PLL operation. If any PLL goes out of lock the logic circuitry automatically detects this and mutes the RF output of that upconversion stage. This initial mute is done within upconverter hardware assemblies. The alarm condition is also provided to Controlling Software which provides an alarm indication to the user and turns off the remaining portions of the transmit chain. The delay between the initial mute of the upconversion stage and the complete shutdown is a small fraction of a second.

When any upconversion stage is muted the transmit signal is muted. The transmitter will transmit thermal noise for the small fraction of a second between the initial mute and the complete shutdown.

The system will not allow the transmitter to start if any PLL is out of lock.