



**BLOCK DIAGRAM, OTU  
US BAND B**

General Description  
RBS TX (OTU)

## 1. SCOPE

This document establishes the general description for the functional performance of the frequency stability and control, spurious suppression and power control requirements for the Outdoor Transmitter Unit (OTU).

## 2. DESCRIPTION

- 2.1. Frequency stability and control. The integral Local Oscillator (L.O.) is frequency locked to the reference oscillator source supplied via the companion receiver unit. The frequency stability is guaranteed by the manufacturer to be +/- 8ppm over 17 years.
- 2.2. Spurious suppression. The radiated spurious emissions from the OTU, at the RF output port, are suppressed by the use of a waveguide filter which rejects signals > 100 MHz from either band edge by > 15 dB. The cutoff characteristics of WR-28 waveguide and the length of the filter reject signals DC- 20 GHz by > 90dB. The LO level, LO harmonics and sub-harmonics is cut off by this filter and guaranteed to be less than -30 dBm.
- 2.3. Power control. The OTU output power is controlled by the equipment downstream of the IF input signal. An RS-422 interface can be used to monitor phase-locked-loop status. The output power can be turned off remotely through this interface if a non-compliant condition is detected. There is no limiting circuitry on the output power, however, the power amplifiers will saturate a few dB above the rated P1dB level.