Positive Space Station Transmitter Control
http://oresat.org/pub/positive_space_station_transmitter_control.pdf
5-Dec-2019

Note:
This is a preliminary document for the most part because the OreSat software development team is currently working on this aspect of the project.
20-Dec-2019

[IARU 5b]

Positive space station transmitter control.
Explain how telecommand stations will turn off the space station transmitter(s) immediately, even in the presence of user traffic and/or space station computer system failure.

Positive transmitter control is achieved through the following mechanisms:

- A dedicated receiver and frequency for telecommand. The L band receiver block diagram illustrates this subsystem: http://oresat.org/pub/L-band-receiver-v4.0.pdf

- A watchdog on the receiver; The watchdog timer is an integral part of the C3 software system such that all critical code threads must be traversed in order to prevent the watchdog from timing out, causing a C3 computer hard reset. This assures critical code blocks are functioning normally.

- A physical time-out timer on the transmitter. The transmitter time-out timer functions without use of any onboard transceiver functions or CPU interaction. The UHF transmitter (70cm transceiver) block diagram illustrates this subsystem: http://oresat.org/pub/70cm-transceiver-v4.0.pdf