

FCC File # 0334-EX-PL-2011 Text Supplement

Question 7 Purpose of Experiment

L-3 Communications Datron Advanced Technologies Division is under contract with Iridium Satellite LLC of Tempe, AZ under Product and Service Agreement No. IS-11-013, Dated April, 11, 2011 to provide the necessary labor and material to perform Phase 0 activities only for the Iridium Feeder Link Terminal (FLT). Iridium Satellite LLC (Iridium) is retrofitting their existing Feeder Link Terminals (ground station antennas) and installing new FLT's consistent with Iridium NEXT satellite operation. L-3 Datron is performing the retrofit work.

The FLT is the fixed satellite TT&C and telegraphy data ground station for the current Iridium and future Iridium NEXT satellites. Phase 0 efforts include control software development, FLT design, fabrication, assembly, factory test and installation of the prototype FLT in Chandler, Arizona. In addition a second Golden FLT will be built concurrent with the Prototype. This Golden unit will be installed near the front parking lot of the L-3 Datron facility in Simi Valley, California. L-3 Datron will retrofit the current 27 FLT's to address obsolescence and maintenance issues as well as modernizing hardware and software interfaces. As many as 12 new FLT's will also be built in the future to support the latest generation of Iridium NEXT satellites currently being planned and designed.

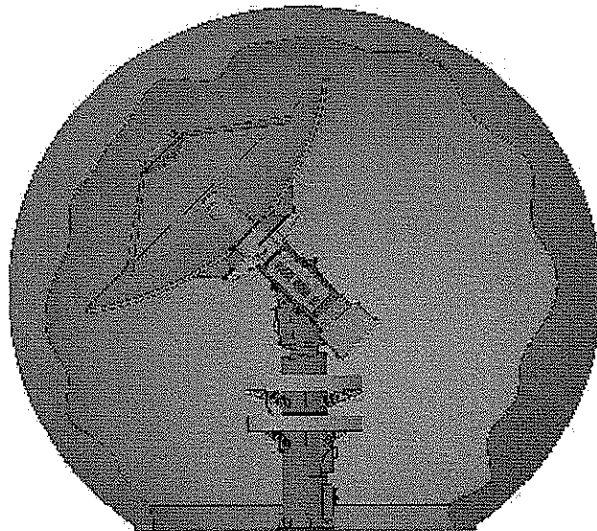


Figure 1 Iridium Feeder Link Terminal

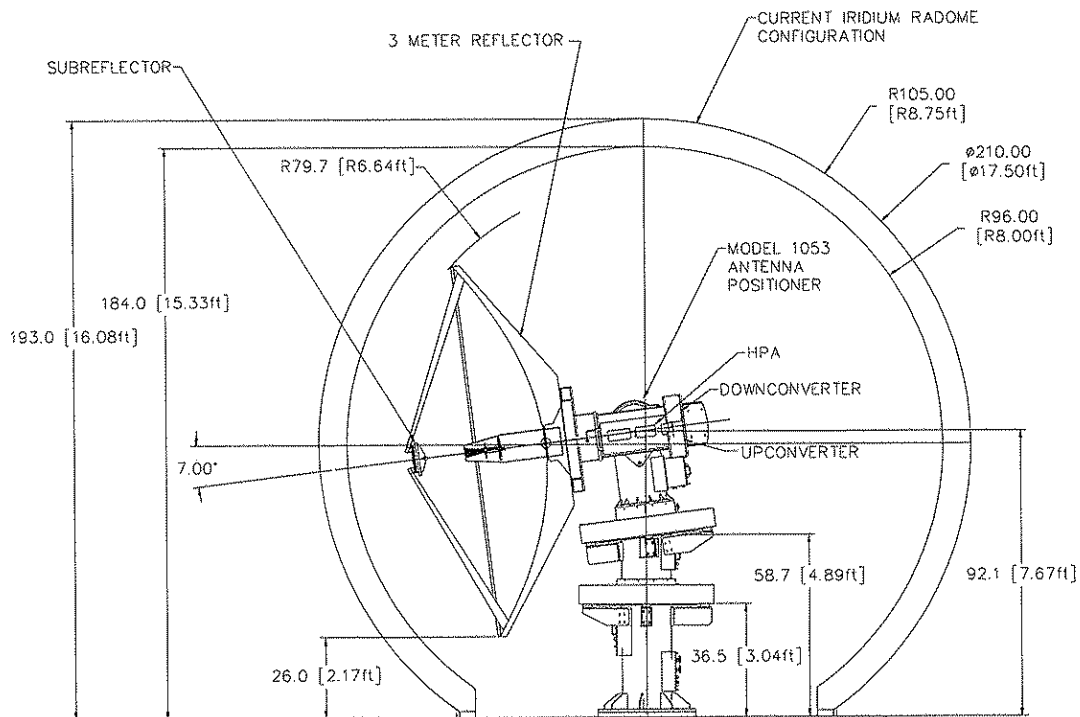


Figure 2 Iridium FLT Outline Drawing

The request for an FCC permanent License 442 is to allow transmit operations to the Iridium satellite constellation from the L-3 Datron facility Golden FLT at Simi Valley, CA for system level testing of both new FLT hardware and spares. The license is requested for the next ten years to 2021.

The FLT antenna is shown in Figures 1 and 2. It is a 3.1-meter antenna operating over 19.4-19.6 GHz for reception and 29.1-29.3 GHz for transmission. It is housed inside a truncated spherical radome for environmental protection as shown in Figure 2.

Emission Details

The Antenna shall be capable of supporting communications in one of two modes interchangeably: primary or secondary.

The primary link has an effective data rate of 3.125 Msps. The link operates at K-band (29.1 to 29.3 GHz uplink and 19.4 to 19.6 GHz downlink) to communicate between the SV and the FLT in a full duplex mode. The primary channel is an effective 6.25 MHz channel (3.125 Mbps w/ Rate $\frac{1}{2}$ FEC – 3.125 Mega-Symbols per second QPSK) which is used to carry the Iridium telecommunications traffic. There are 25 primary channels each with a channel spacing of 7.5 MHz nominal with a guard band of 875 kHz on each side.

The secondary link is intended to be used with an SV in sparing or parking orbits or with an SV with degraded attitude control, in safe mode or other anomalous state that prevents wideband communications using the primary link. The secondary channel is a single 1 kbps BPSK channel both up and down used to communicate command and status (telemetry) data. FLT's are expected to support both channel types; however, FLT's are not expected to be capable of operating both channel types simultaneously.

Iridium Technical Point of Contact

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