



FCC Product Information Document

E10G-7282-2512

Following are Block diagrams, internal and external pictures, basic product description and comments on frequency stability of the above product.

Product Description

The E10G is a state of the art very high capacity low latency radio. It is the first freely available radio with a capacity of 5 GBps. It is also capable of providing packet latency useful for low latency applications in the financial market.

The 1200mm version includes a gimbaled 4 foot (1200mm) antenna. Due to the very small beamwidth of this antenna, active pointing is required in order to close communications.

The E10G does this using state-of-the-art mono-pulse pointing. This technology uses a very low level beacon transmitted at a highly accurate frequency from the remote link (in the ISM 24Ghz band) to actively measure the angle of reception of the incoming signal from the remote end and track towards that signal. The result is the antenna can remain locked onto the remote transmission with accuracies measured in the 10's of millidegree even with violent motion of both end terminals.

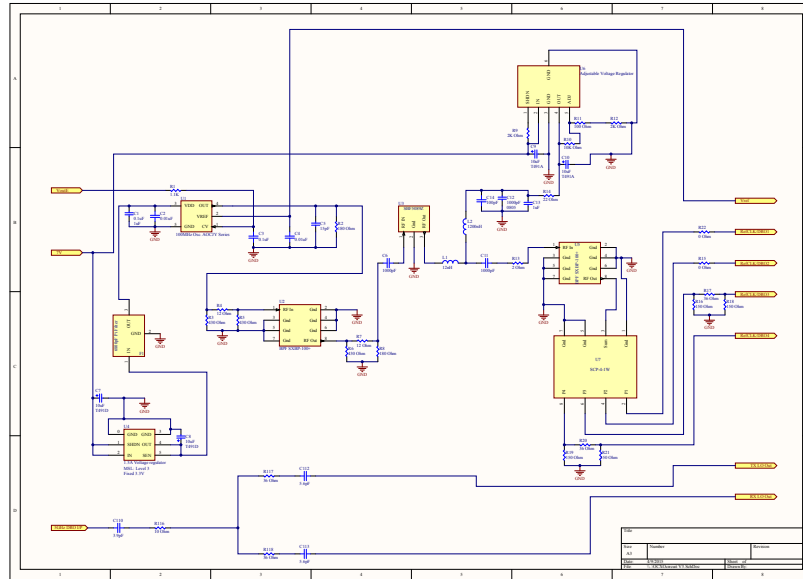
Comments of Frequency Stability

The entire systems frequency stability is locked to a 100MHz clock in the modem module. This clock is also GPS Locked for extremely accurate frequency stability. The product transmit frequency is within 100Hz of target frequency at 80Ghz. This is needed for effective data transfer at the prescribed data rate.

The 100Mhz clock is based on the ABRICON AOCJY series smd oven controlled crystal oscillator with 5ppb (parts per billion) stability over 0 – 50 Degrees C and 10ppb stability over -20 to 70 degrees C.

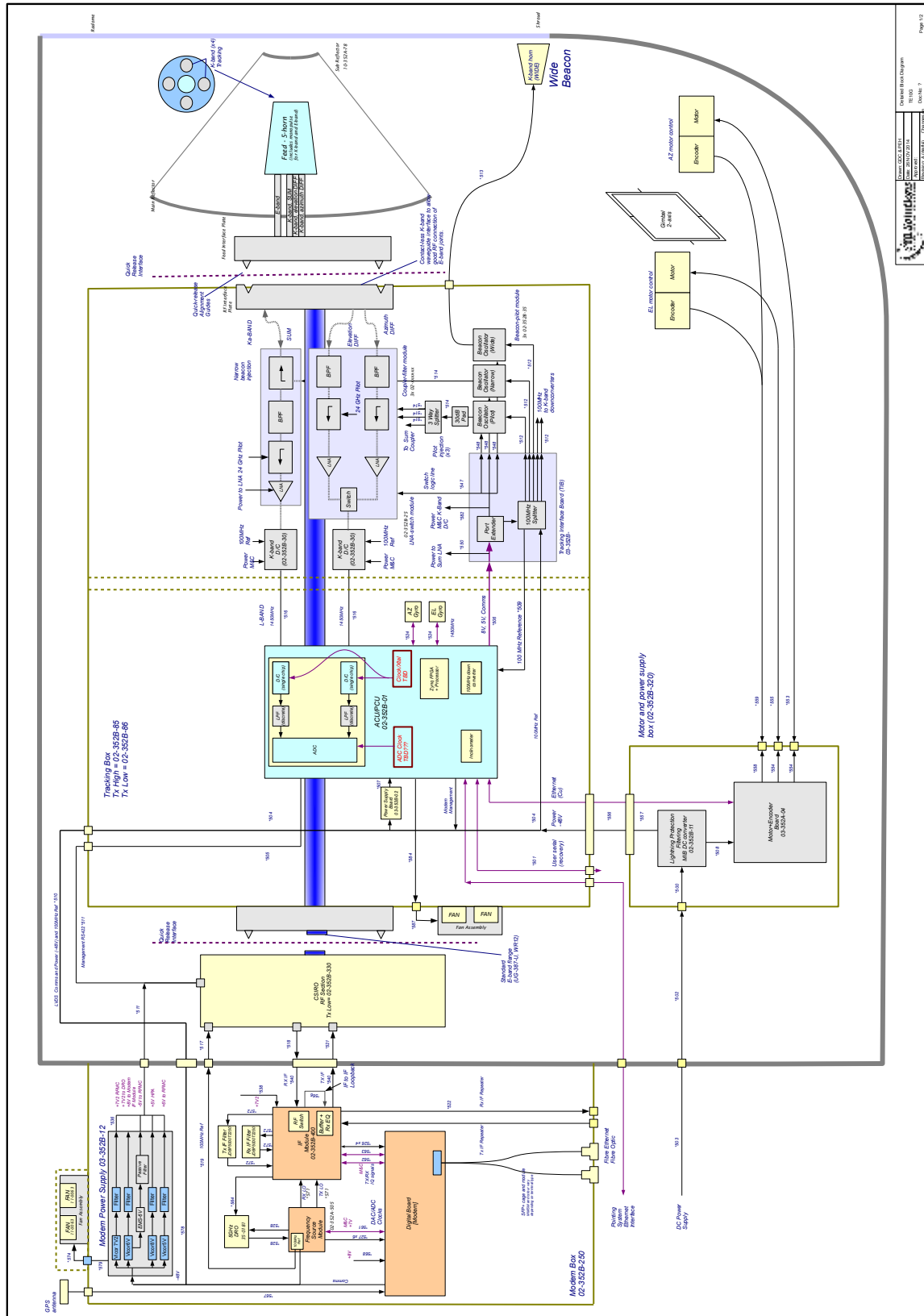
GPS locking of the 100Mhz oscillator achieves the desired frequency stability and accuracy.

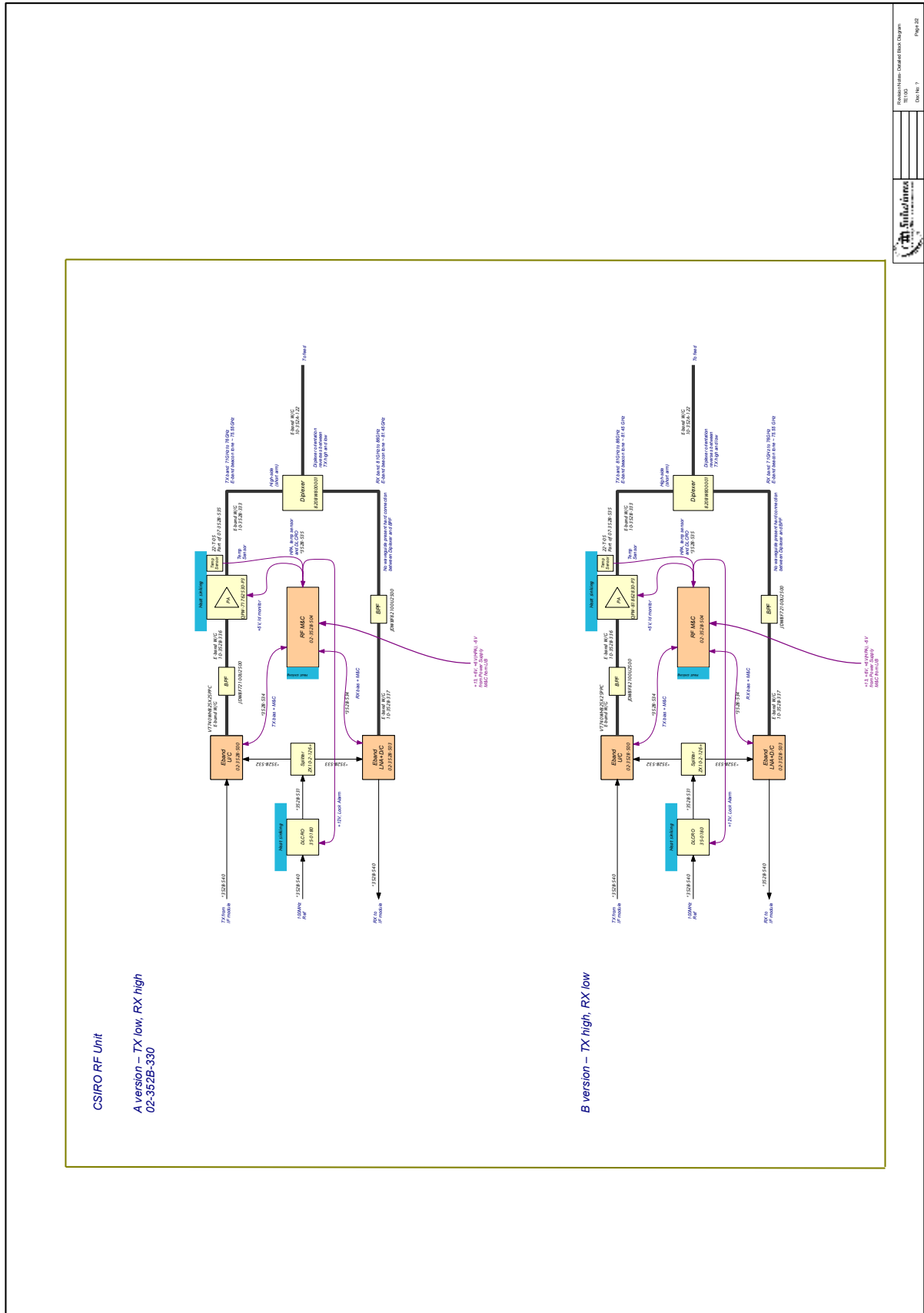
The 100Mhz clock Schematic is:



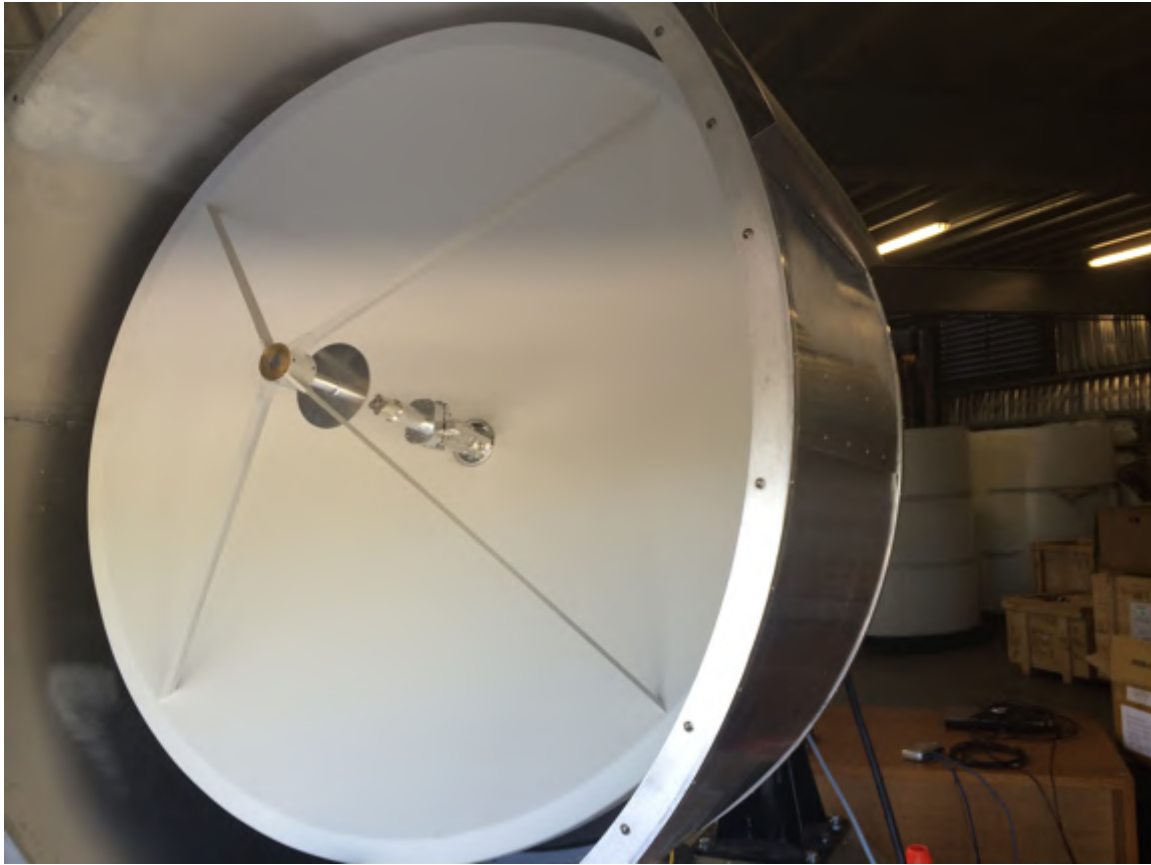


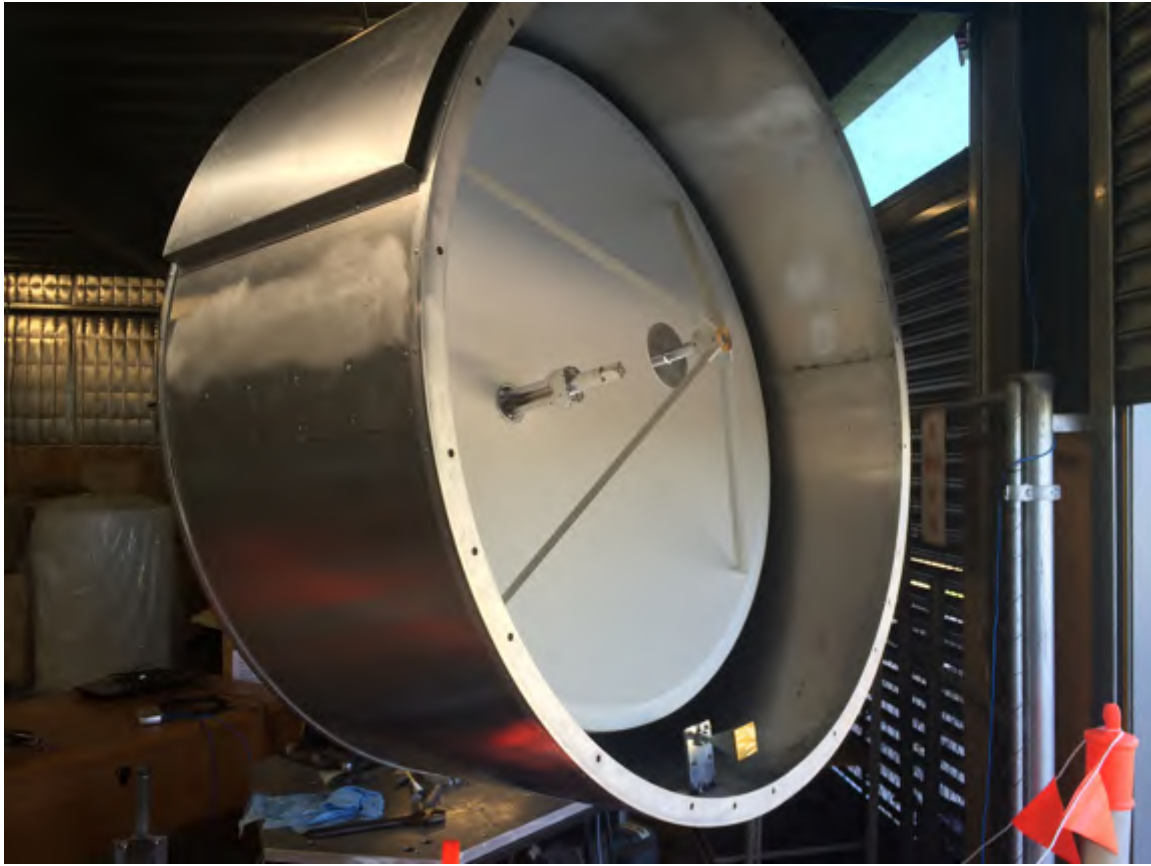
Block Diagrams





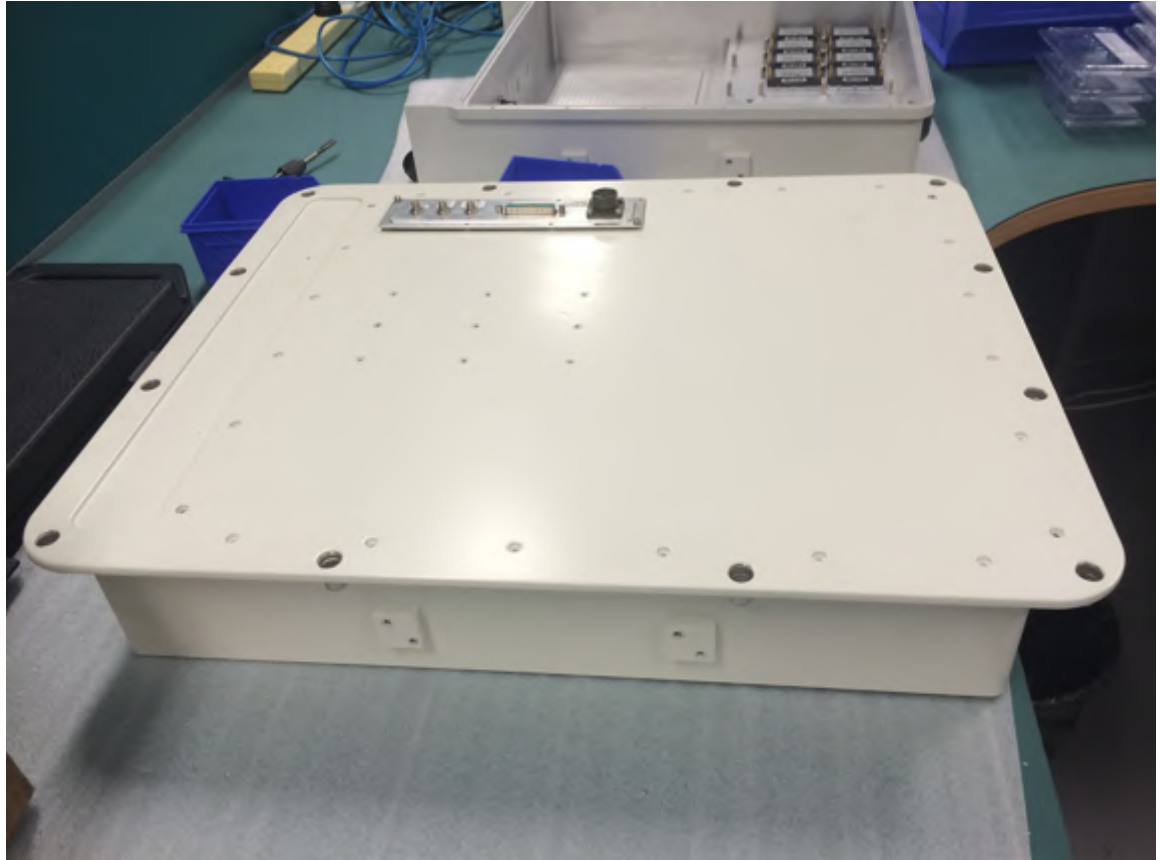
External Pictures



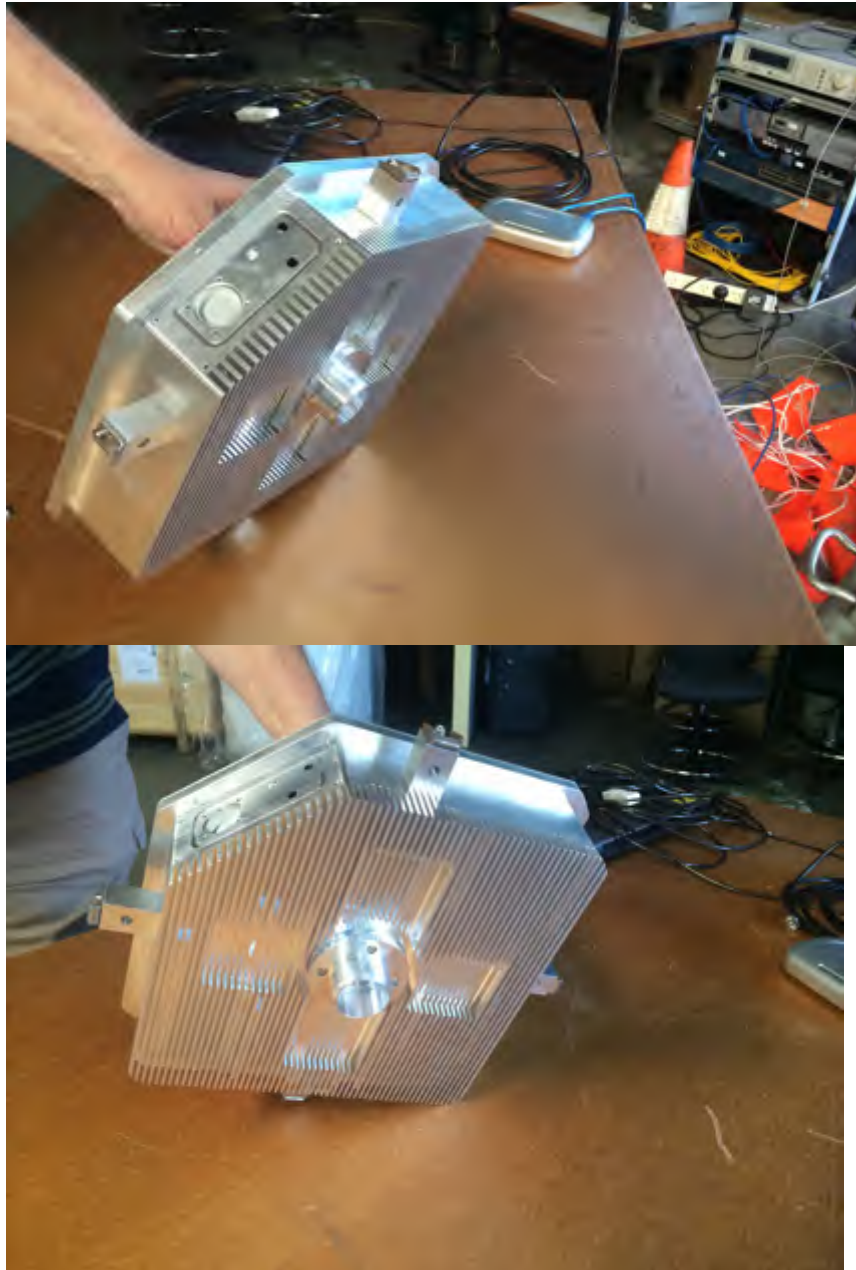


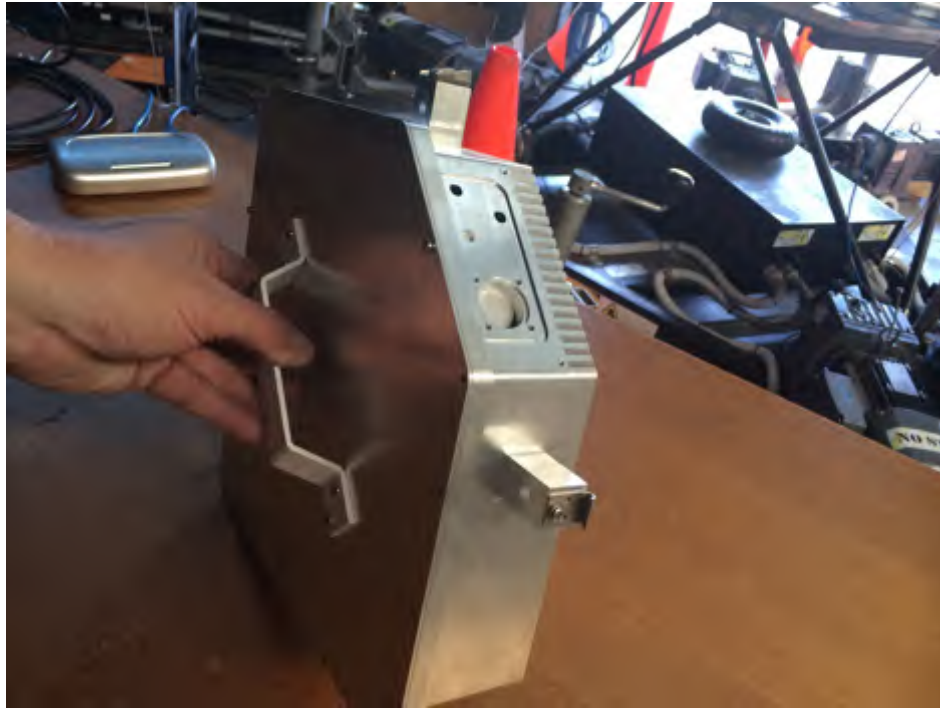
Pictures of Main Modules

Modem Module

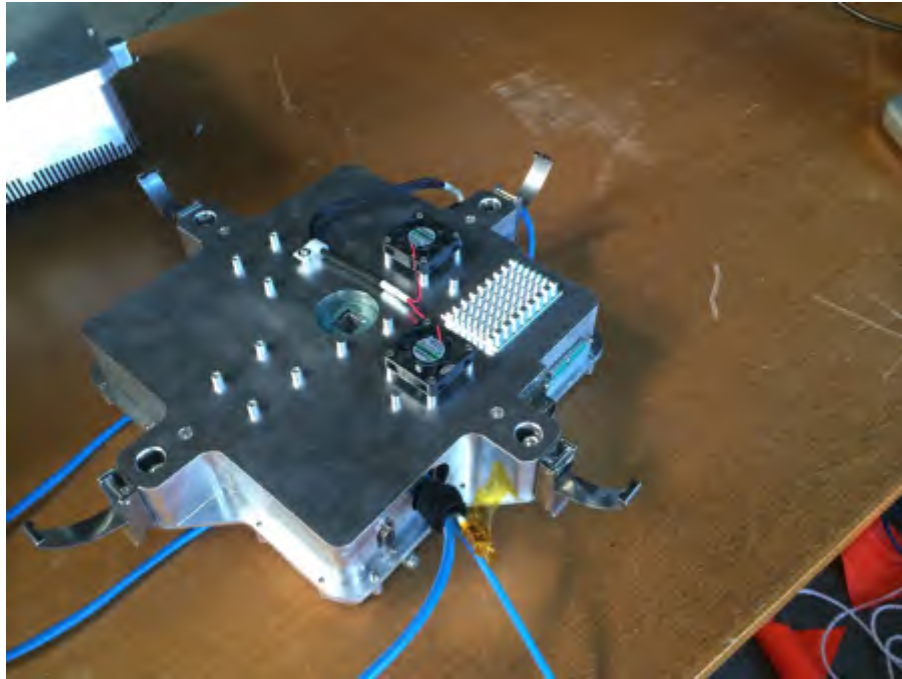


RF Module

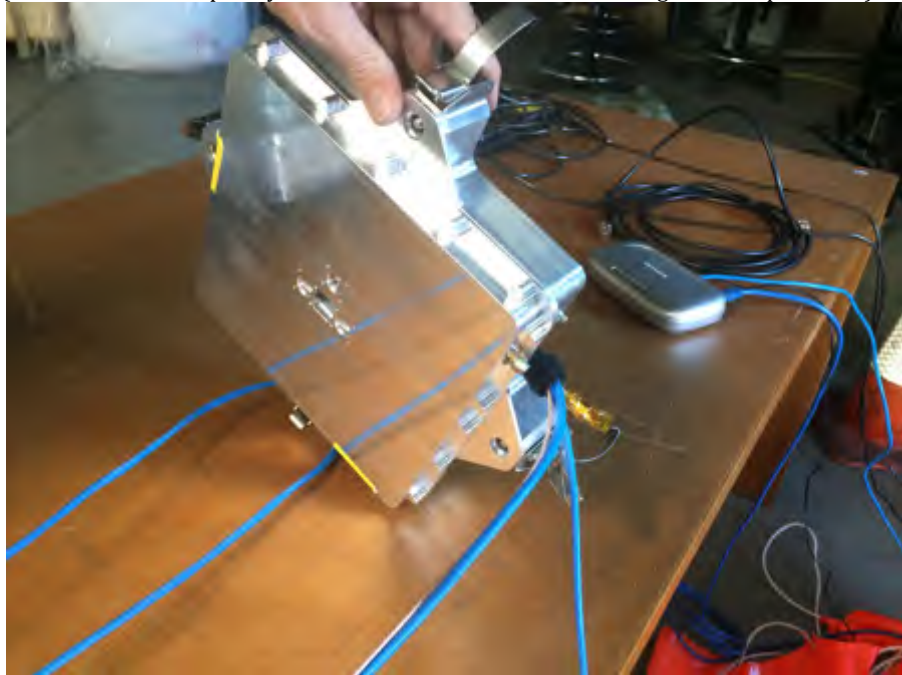




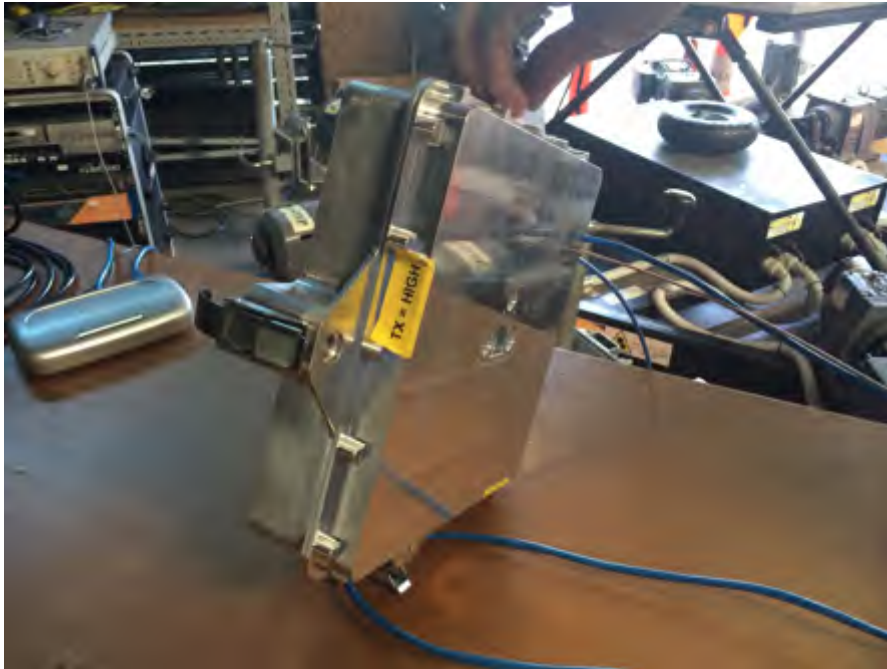
Tracking Module



(Blue cables are temporary test cables which are removed during normal operations)



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Motor Control Module



Internal Pictures IF Radio showing antenna and Gimbal

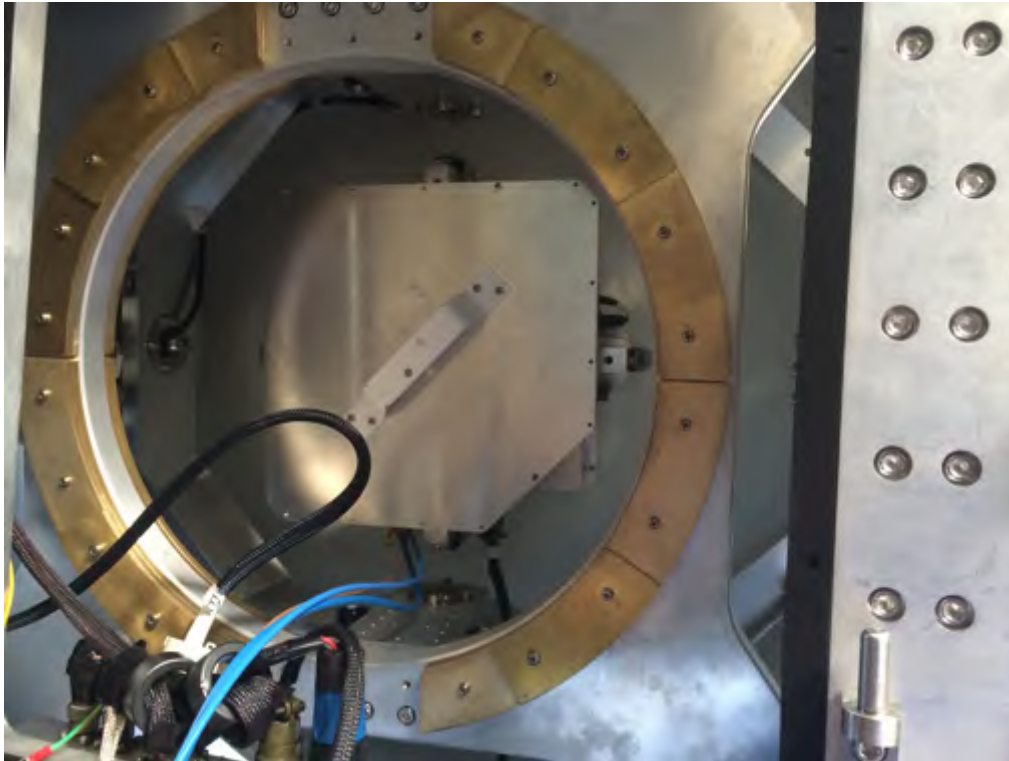


Without RF or Tracking modules



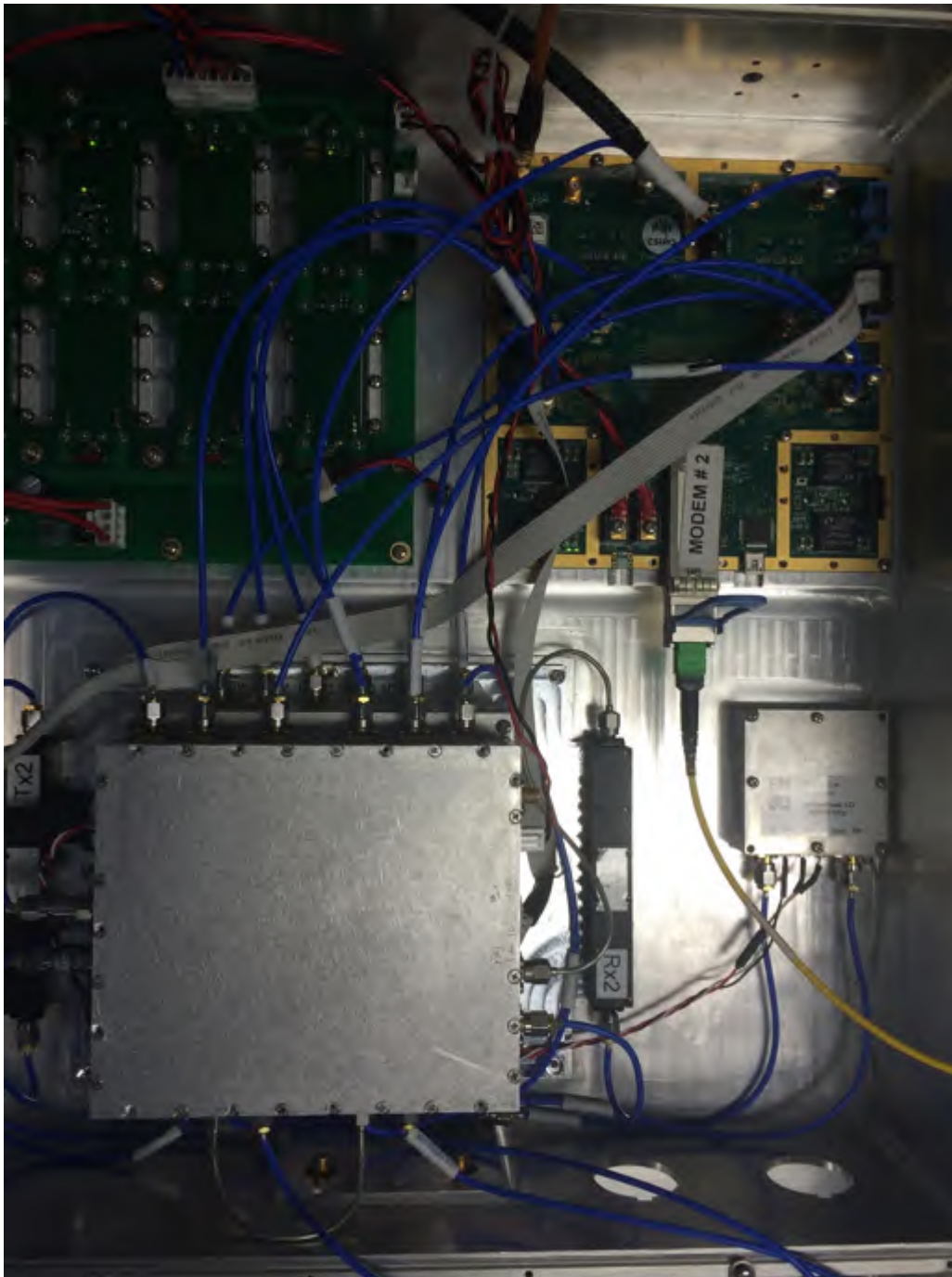
With Tracking Module installed

(Blue cables are temporary test cables which are removed during normal operations)

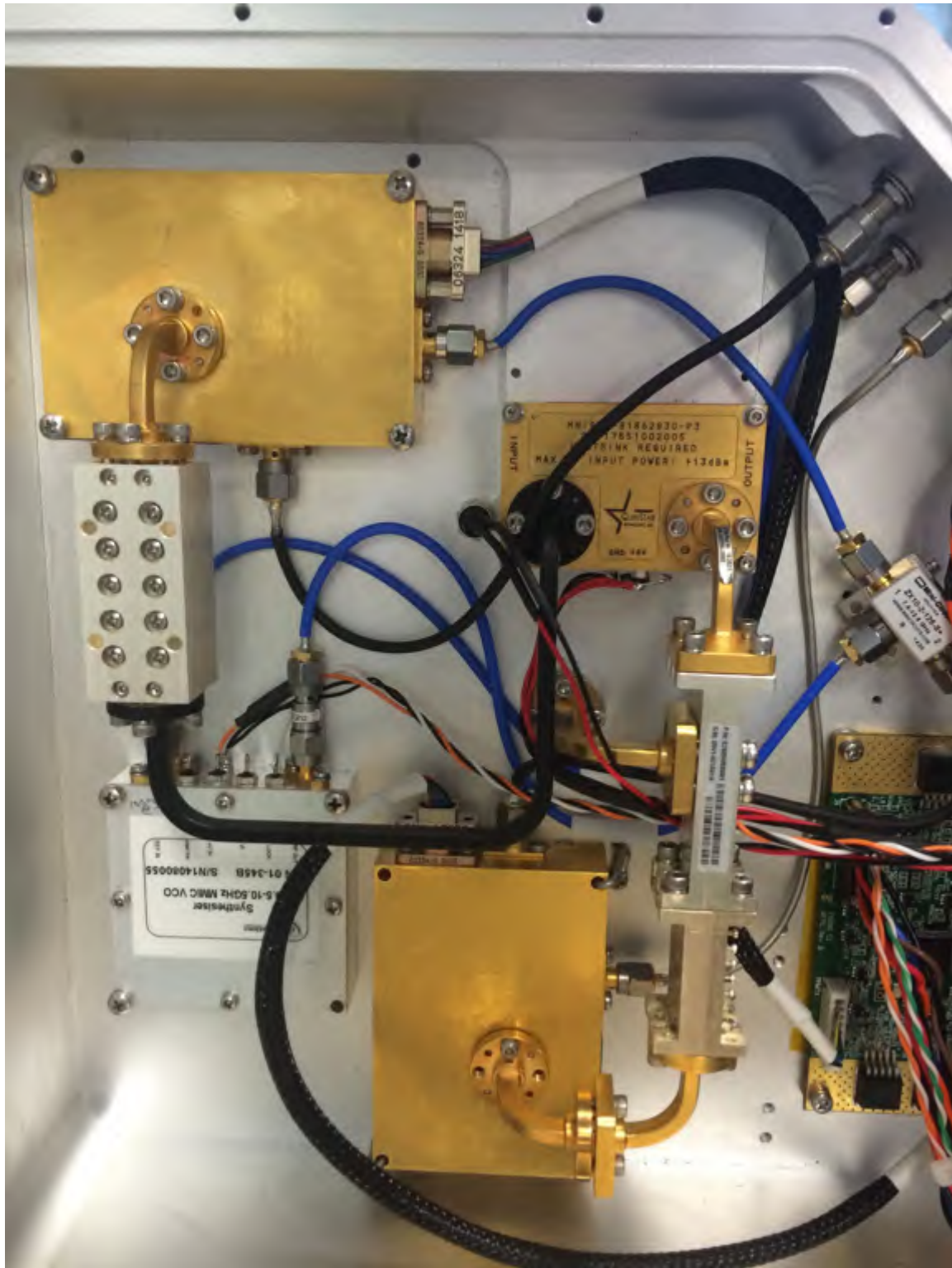


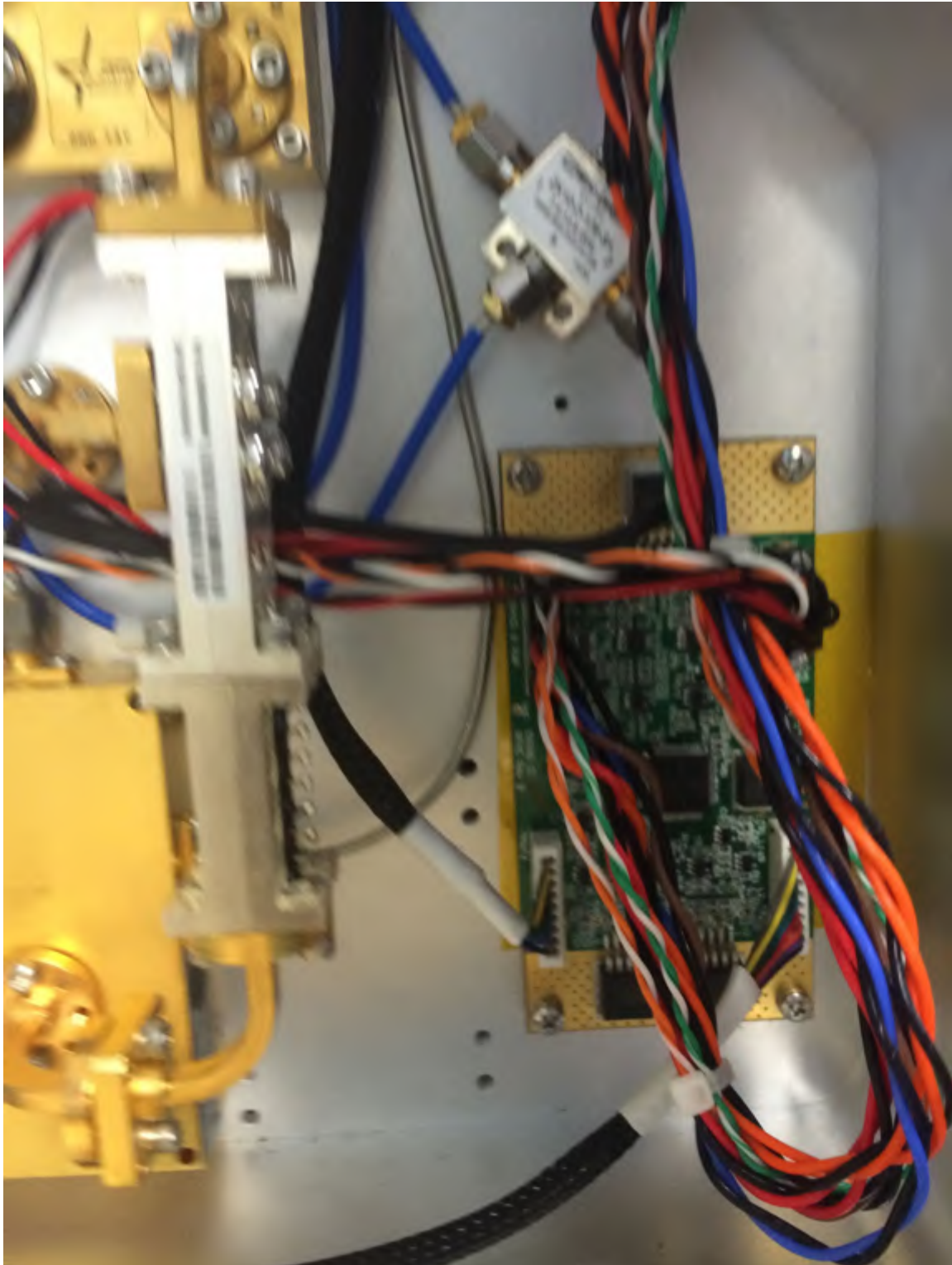
With RF and Tracking Module Installed (Blue cables are temporary test cables which are removed during normal operations)

Internal Pictures of Modem Box

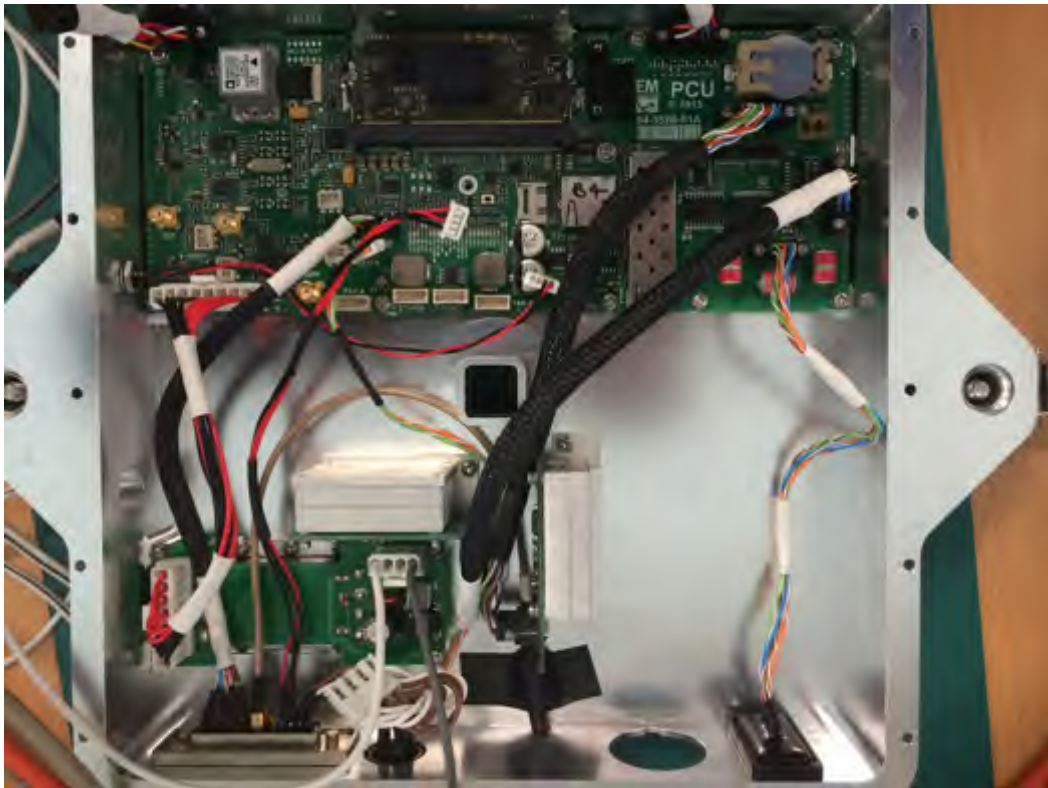


Internal Pictures of CSIRO RF Unit





Internal Pictures of Tracking Module



Internal Pictures of Motor Control Box

