**Feed Status**

|  |  |
| --- | --- |
| Document last update | 2021-06-28 |
| Feed ser. num. (rev) | 5C4-006-A |
| Last worked on | 2019-06-04 |
| Antenna (previous/current) | 1E , 4J |
| Original build date | 2015-9-08 |
| Number of cooldown cycles | 5 (2018-06-01)? |
|  |  |

**Critical Component Summary**

|  |  |
| --- | --- |
| ATA Feed  Control Board | S.N. 17a |
| Sunpower CryoTel GT  Cryocooler | S.N. GT15-110 |
| Sunpower GT Gen II  Cryo Controller | S.N. 50031135097 |
| Pfeiffer Hi Pace 80  Turbo Pump | S.N. 15861900 |
| Pfeiffer TC 110  Electronic Drive Unit | S.N. 74482092 |
| Pfeiffer MVP 006-4  Diaphragm Pump | S.N.  ~~28409748~~ / 28377399 |
| H.S. Martin  Borosilicate Glass Radome | S.N. 011 |
| Pyramid | S.N. 006 |

**Retrofits**

|  |  |
| --- | --- |
| Temp S. Isolation | X |
| New Wire Harness | X |
| Bellow Removed | X |
| Cryo Tuned | X |
| Firmware 5.4 | X |

**Vibration Measurements**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Before Tuning | Tuned | Re-tune #1 | Re-tune #2 | Re-tune #3 |
| X | NA | 0.15 |  |  |  |
| Y | NA | 0.13 |  |  |  |
| Z | NA | 0.10 |  |  |  |

|  |  |
| --- | --- |
| **Chassis/Electronics Up-Dates** | **Vac/Cryo Up-Dates** |
| Base Plate 15 pin connector filter | RTD wire routing |
| ~~48v through Control Board N/A~~ | Buna-n O-rings |
| Vibration System (Metal Flex) | Turbo Centering Ring w/screen |
| Control Board Firmware 4.1 | Foreline/Valve assy updated |
| Remote Accelerometer | Diaphragm pump RF up-dated |
| All wiring RF up-dated for testing |  |
|  |  |
|  |  |
| **(red / needs up-dating)** |  |

**HISTORY**

2015-10-01 Chassis, cryo cooler, vacuum system, pax box & basic wire completed. Some sub-assemblies completed for Pyramid/LNA assembly. LNA 0071 Y pole lower left input coax clamp Philips is stripped out completely. Dome is 011 typical 0.040 thick. X & Y poles Vg adjustments did not work. Error in cable FH17 at 8 pin quench connector Yel & Blk swapped 2 places. A correction was made at FH15 Dewar connector, pins 2 & 4 were swapped and pins 6 & 8 were swapped.

2015-10-20 Tested feed in screen room, vac & cryo good, X pole 4-4.5dB out to 12GHz,

Y pole lots of structure, possible broken wire/lead at tip (data recorded).

2015-10-30 Opened up Feed, removed pyramid & installed in cleanroom assembly fixture. Found broken solder joint between Tip Arm Link & 034 Coax center conductor, repaired & re-assembled Feed (photos taken), problems with Auto Feed start-up, 2nd attempt worked, Vac & cryo fine, ready for testing.

2015-12-(01-11) Rob A’s board latest software & 12v jumper (rev a on board sn),

Cooler vibration system up-date, Metal Flex bellows 347/304ss, no vac gage, emi filter at hermetic d-sub, Buna-n O-rings at SS base plate & borosilicate glass installed. Noise test completed, very good results, vac good (9-10watts) & cryo good (65K, 174watts) (data saved), HC PAX set-up & installed.

2015-12-15 Delivered to HC (1of5), installed on antenna 1E, 24+48v power supply

up-dates added to Rim Box. Turbo, Cryo & LNAs working properly, Noise test preformed for X & Y (data saved).

2015-12-21 Feed Test Report sent to HC (Elin).

**---------------------------------------------------------------------------------------------------------**

2018-06-01? Jon Richards had Mark move this Feed from Antenna 1E to 4J for testing reasons.

2019-04-05 At H.C. Jon R. has up-dated Feed with, a new modified Control board & remote Accelerometer, Firmware 4.1 up-dated & new relay/cryo cable on Control board.

2019-06-(04-06) At Hat Creek installed all new RF wiring (1st prototype very rough see photos) & Diaphragm pump Rob & Jon. Slow process, had trouble with Temp sensors & the Accelerometer not seen by the Control board. The control board is original so it should be OK. Biasing not working, Vg & Vd not working, Jon checked new cable, something is not right. At Minex we found the old removed Biasing cable was altered, see 2015-10-01 enter above. Just bad luck that this Feed got the New wiring kit. Sent 2 new Control boards to Jon at HC FedEx next day & start on a quick fix for the Biasing cable problem. Made an adapter to go between the Biasing cable & the PAX box, sent it to HC for Jon to install. (data & photos saved)

2019-06-12 Adapter has not fixed the problem, going to Hat Creek to repair cable,

moved pins to correct locations in DB-9 connector, biasing working correctly now.

Temp sensor all working ?

2020-02-15 Alex removed Pyramid & Arms Assy. Two retracted coax found.