**Feed Status**

|  |  |
| --- | --- |
| Document last update | 2021-06-28 |
| Feed Ser. Num. (Rev) | 5C4-019-A |
| Last worked on | 2019-02-1 |
| Antenna (previous/current) | 4J, 1C |
| Original Build Date | 2017-03-07 |
| Number of cooldown cycles | 2 (2018-12-18) |
|  |  |

**Critical Component Summary**

|  |  |
| --- | --- |
| ATA Feed  Control Board | S.N. 6a / 12a |
| Sunpower CryoTel GT  Cryocooler | S.N. GT15-73 |
| Sunpower GT Gen II  Cryo Controller | S.N. 50031135012 |
| Pfeiffer Hi Pace 80  Turbo Pump | S.N. 15802378 |
| Pfeiffer TC 110  Electronic Drive Unit | S.N. 73037408 |
| Pfeiffer MVP 006-4  Diaphragm Pump | S.N. ~~28382546~~ / 28413318 |
| H.S. Martin  Borosilicate Glass Radome | S.N. 015 |
| Pyramid | S.N. 015 |

**Retrofits**

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

**Vibration Measurements**

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

|  |  |
| --- | --- |
| **Chassis Up-Dates** | **Vac & Cryo Up-Dates** |
| 15 pin Hermetic Feedthur Filter | Turbo Centering Ring w/Screen |
| Vibration System (BellowsTech) |  |
| Control Board 12v Jumper |  |
| 48v Through Control Board |  |
| **Control Board Firmware ~~3.12~~ 4.0** |  |
| **Thermostat to Relay wiring** |  |
| Foreline/Valve Layout Change |  |
| RTD Wire Routing |  |
| Buna-N O-Rings |  |

**HISTORY**

2017-03-07 Started Chassis & sub-assembly build-up

2017-05-26 SS Base plate/bellows assy, Turbo & roughing pumps, Cryo cooler & 90% of wiring installed.

2017-06-26 Installed dumpy Pyramid assy(heat load) on SS Base plate/bellows assy (BellowsTech 316/347 SS) finished wiring, new RTD sensor wire length & routing, started pumpdown & cooldown for bellows run-in test, 90k/11w, 65K/137w (data saved).

2017-07-07 Bellows run-in test going fine, 90k/9w, 65K/159w.

2017-08-21 Bellows run-in test going fine, 90k/8w, 65K/216w.

2017-09-(14-15) Shutdown Cryo & Turbo, will let Feed warm-up to allow contaminants

to outgas, start roughing pump in high speed mode, after a few hours started Turbo & normal roughing, once Turbo at 90k & watts less than 20, started Cryo cooldown.

90k/10w, 65K/169w.

2017-09-25 Bellows run-in test going fine, 90k/9w, 65K/182w.

2018-03-19 Bellows run-in test going fine, 90k/9w, 65K/198w.

2018-04-02 Bellows run-in test, 90k/9w, 65.8K/240w, shutting down cryo & restarted.

2018-05-04 Bellows run-in test going fine, 90k/9w, 65K/181w.

2018-07-20 Started LNA Module build-up.

2018-08-06 Bellows run-in test going fine, 90k/8w, 65K/211w.

2018-09-04 Cryo at 66.7K/240w, changed ttarget 68.0K, 90k/8w, 68.0K/170w.

2018-09-10 Bellows run, 90k/8w, 68K/217w.

2018-09-18 Bellows run, 90k/8w, 68K/219w.

2018-10-(11-12) LNA module assy completed, LNA Module & Arms installed in Pyramid, LNA Temp Sensor working, Matt completes Tip final assembly.

2018-10-(15-16) Pyramid/LNA assy completed, stopped Bellows run-in test, prepped Base plate & flex plate, installed Pyramid/LNA assy on Base plate, LNA temp sensor working, installed Glass Dome & finished the rest of the Enclosures wiring. Started pumpdown, 2 try’s 90k/13w, both poles LNA’s working fine (data saved), started cooldown, cooldown completed 65K/238w?, both poles LNA’s working fine (data saved).

2018-11-26 Checked on Cryo & Turbo, Cryo watts are rising to 240?, TTARGET set to 69K/204w, Vac is good 90k/9w.

2018-12-06 Rapid gross vacuum leak, most likely Bellows failure.

2018-12-(14-18) Disassembled Feed, removed Pyramid, Cooler, Turbo & SS Base plate. Turbo had operating fluid on NW-40 Centering Ring Screen & NW-16 flanges, product of rapid venting from Bellows failure, cleaned up Turbo for reuse in Feed, will see what happens, SS Base plate’s Bellows had massive leak when leak tested. Replaced SS Base plate assembly (BellowsTech 316/347 SS) & reassembled Feed. Had problems with Control Board communicating with Turbo Controller during start-up & Pumpdown, problems with Control Board communicating with Cryo Board, pumpdown completed, did “reset” of Control Board, Cooldown started.

2018-12-19 Cooldown completed, 90k/7w, Cryo could only get to 66K/240w, so set TTARGET to 67.5K, 67.5K/208w.

2019-01-02 Checked Feeds Vac & Cryo, 90k rpms/7w, 67.5K/71K/215w, everything looks OK, but had to back down cryo target (data saved).

2019-01-07 Changed TTARGET to 68.5K, watts where climbing, 68.5K/71.8K/218w.

2019-01-10 Jon Richards & Matt installed new software on the Control board to control the 48v for the Cryo board. Still trying to understand Rob Ackermann’s Control board, board may need component up-grades.

2019-01-15 Jon Richards & Matt installed newer software on the Control board to control the 48v for the Cryo board. Board’s relay & thermostat connector are being used to control the Cryo board in the event that the Feed loses 24v power.

2019-01-31 Diaphragm pump problem, replaced with a new on.