ATA Cooled, Antonio Feed
Development History
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Version	Date	Comment	Initials
Version 0	2014-11-08	Preliminary.	MCF
Version 01	2019-03-17	Incomplete, but distributed.	MCF

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Summary:

This document will give information on the installation operation and maintenance of the ATA Cooled Feed. This feed design was originally started with funds from the SKA TDP program in 2010. Information on the various designs leading to the current design can be found in Table X. The current design identified as 5C4 has gone through several iterations. Some highlights of the design are listed below.

- Frequency range 0.9 to 16 GHz.
- Noise temperatures of 21 K at 2 GHz sloping to 60 K at 14 GHz measured on the telescope Sept, 2014.
- LNA & feed arms cooled to between 65 and 70 Kelvin.
- Vacuum chamber under Borosilicate glass radome at about 1.0 E-6 mbar.
- Vacuum maintained by Pfeiffer Hi Pace 80 turbo pump.
- Cooling provided by Sunpower GT sterling cycle cooler.

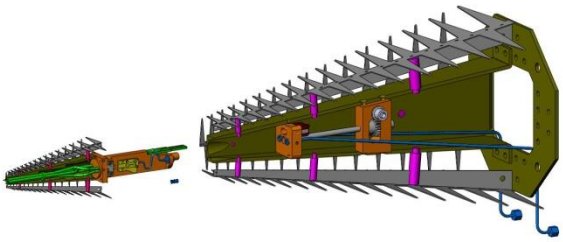
The feed is dimensionally the same length from the arm vanishing point to the focus mechanism mounting plate.

ATA Feed Design History and Designations		
Design Names Serial Numbers	**Dates**	**Description**
1A 2A 3A		Early concept designs.
4A 4B 4C 4D2 SB-018		ATA Ambient Feed 0.5 to 10.5 GHz, installed on ATA 42. (SB nums)
5A		SKA TDP Cooled Feed 0.9 to 18 GHz, early concepts, fully cooled feed arms.
5B		SKA TDP built for testing at Caltech, removable forward section.
5C1		SKA TDP outfitted with quartz radome, no support chassis (balun ??)no vac??
5C2		SKA TDP with quartz radome, preliminary long support chassis & housing. LNA on cone end ? (SETI prototype 1? in contracts)
5C3-000	2014-	SETI Antonio with quartz & composite radome & square housing. (on ant 2e)
5C4B-018	2015-03-17	SETI Antonio production model, borosilicate radome, step housing. Drawing numbers 30-29-200 through 30-29-500 5C4 is now at rev B for most parts, E for tip.

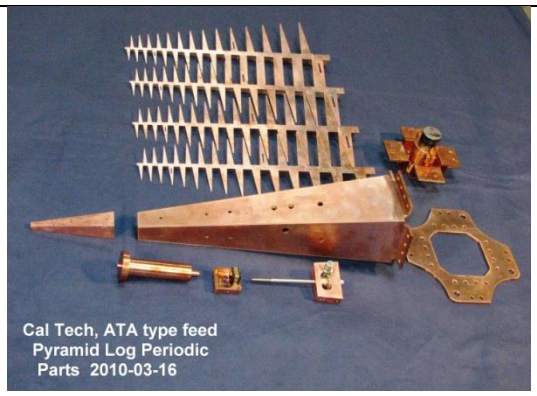
2003-09 design 2

2003-09 design 2

design 3

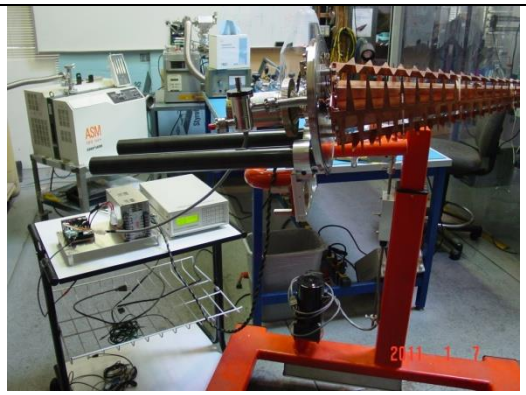


design 5B

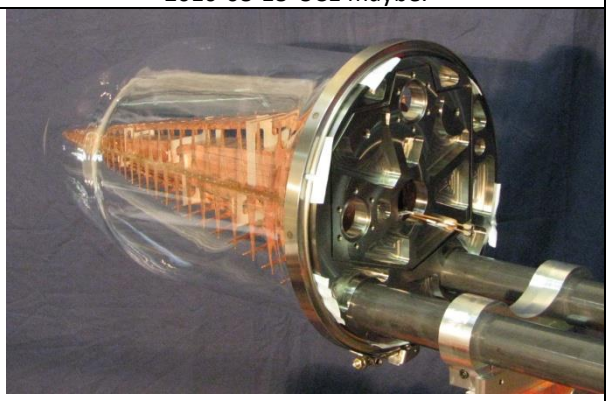


design 5B1 Cal Tech

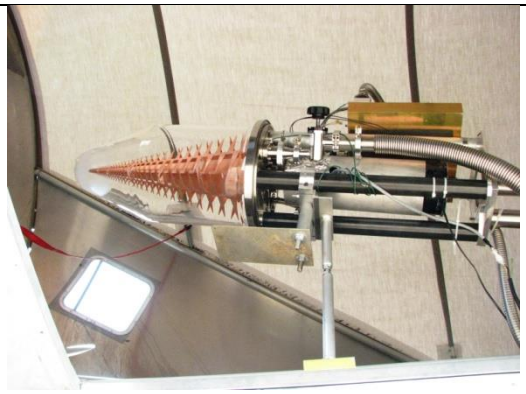
2010-08-18 5C1 maybe.



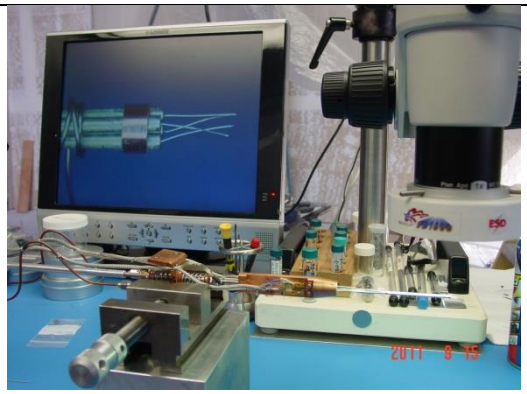
2011-01-05 design 5C1



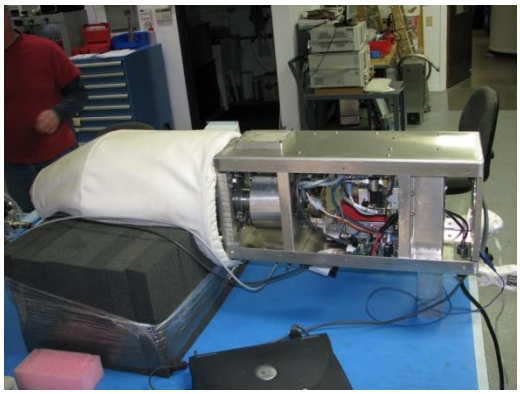
2010-10-24 design 5C1



2012-08-22 HCO 5C2



2011-09-15 Minex 5C2



external controls & quartz dome 5C3

with control & composite dome 5C3

5C4