Status of 325 MHz couplers

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325 MHz coupler

- Cryomodule flange
- Spring to compensate thermal expansion
- "80K" intercept
- "5K" intercept
- Ceramic window
- Bronze bellows
- e-pickup port
- Matching bump
- Antenna
- Cold flange
- 3”x 0.0158” stainless steel tube
- Heater
- 3-1/8” coaxial input
- Air inlet
- Arc detector
Current status:

• 3 couplers are fabricated.

• Coupler is tuned (s11 < -26 dB).

• HV bias was tested up to 5.5 kV (operating level 2 kV).

• Test cavity is fabricated.

• Test cavity is tuned with two couplers (s11 < 20 dB).

• Test cavity and vacuum parts of coupler were cleaned, assembled and leak checked.

• Two DC blocks are fabricated.

• DC blocks are tuned (S11 < -40 dB).

• HV bias was tested up to 5.5 kV.

• Cavity with couplers are moved in experimental area, preparing works are started.
Coupler #2
Coupler #3
Couplers before tuning.
All couplers are identical:

All couplers, $S_{11}$

Couplers after tuning:

325 MHz couplers after tuning
Test cavity (with dummy couplers)
Test cavity with coupler are assembled for tuning
Test cavity with couplers

Test cavity with couplers after welding

![Graph showing frequency vs. S11, dB with peaks and a cross indicating a significant point.]
Assembly is in “Meson” building
DC block
DC blocks have been tested up to 5.5 kV of DC voltage. Operating voltage ~ 2 kV.
Problems:

Bellows are too soft. Bellows will be more stiffer in next couplers.

Quality of ceramic brazing is poor and must be improved.