# Summary of RTCH2 Conditioning

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**Status**

As of 4/24/09, RTCH2 was fully conditioned to operate at 10 kW with a 3.5 ms pulse length at 2 Hz. This 10 kW is somewhat larger than 120% of the nominal 6.24 kW (power to be dissipated in the cavity).

*Note:* CH2 had previously been conditioned in late February ’08. It was reconditioned as documented here after being sent back to Technical Division for tuner upgrades.

**Baking**

The cavity was not baked for the conditioning in April 2009. It was baked before the conditioning in February 2008.

**Vacuum**

* During high power testing, the vacuum pressure was about 2.2E-07 torr as measured by the ion gauge. Before high power was applied the pressure was 1.8E-07.
* By 5/6/09, when the cavity was moved to the storage room, the pressure was 2.88E-08, with no cooling water.

**Settings**

* With no cooling water hooked up *f* was 324.043 with tuner at mid range (as shipped from Technical Division).
* With cooling water hooked up *f* was 324.979.
* The Q phase detector was used in the automatic frequency control loop during conditioning.

**Other Anomalies**

* There was some difficulty in getting a good seal for vacuum on the beamtube, on the side of the cavity with the flange with the longer neck. A ring around the flange was observed. A scratch on the beamtube was also observed. This necessitated using an o-ring instead of the metal seals which are usually used.

**Details**

* *04/15/09:* Started at low power, 500 us pulse width, 2 Hz and conditioned to 10 kW, 3.5 ms, 2 Hz. Multipacting was observed during various stages of the conditioning, but less occurred as time went on.
* *04/16/09:* Continued running at 10 kW, 3.5 ms, 2 Hz.
* *04/24/09*: Continued running at 10 kW, 3.5 ms, 2Hz. The main purpose for running on this day was so that Gary Lauten could measure any detectable x-rays.
* Further details may be found at <http://www-hins-crl.fnal.gov/hins/Index.jsp>