BOC
RF Measurement

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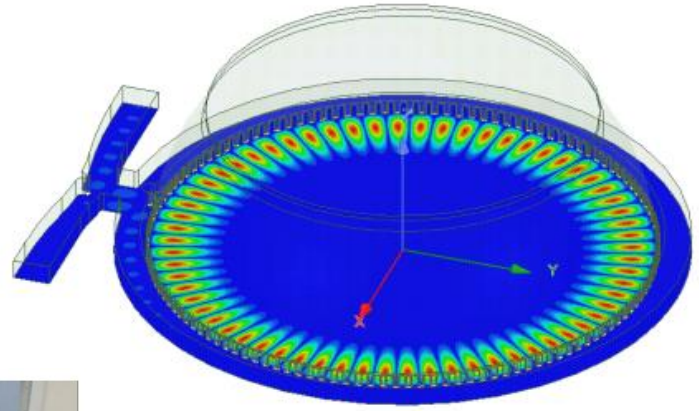
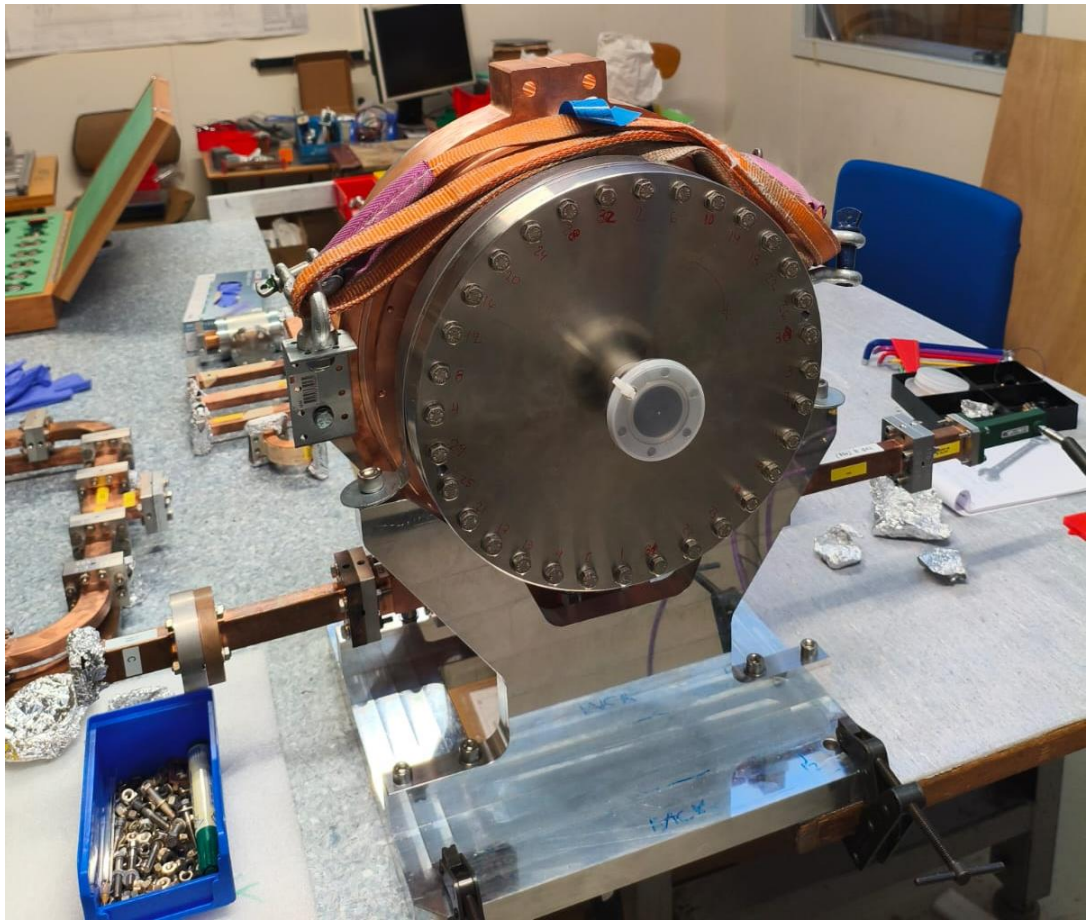
MARTINEZ REVIRIEGO, Pablo; ALONSO ARIAS, Paz; WANG, Ping

pablo.martinez.reviriego@cern.ch, paz.alonso.arias@cern.ch, ping.wang@cern.ch

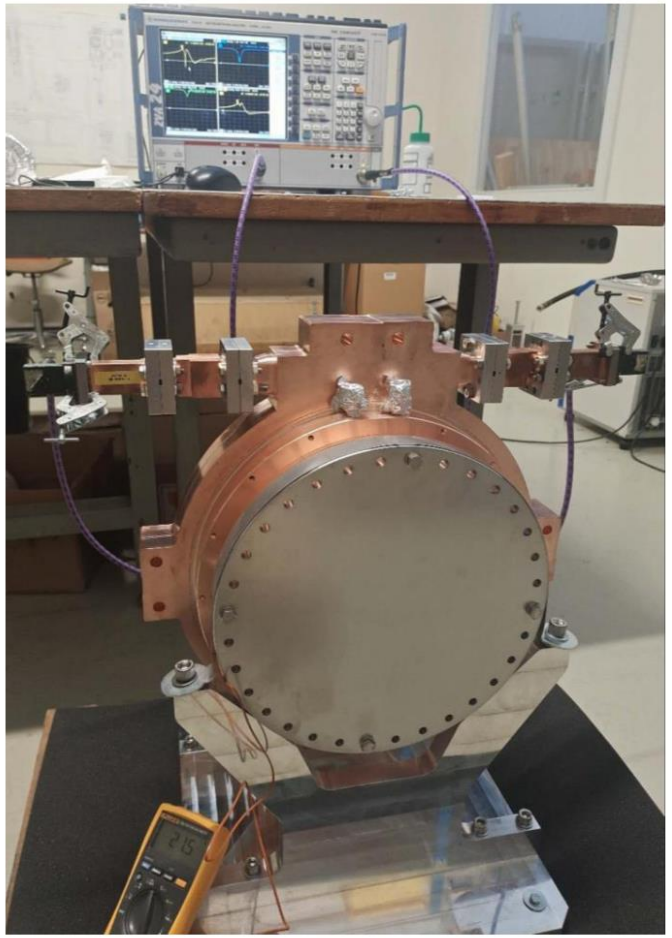
BOC



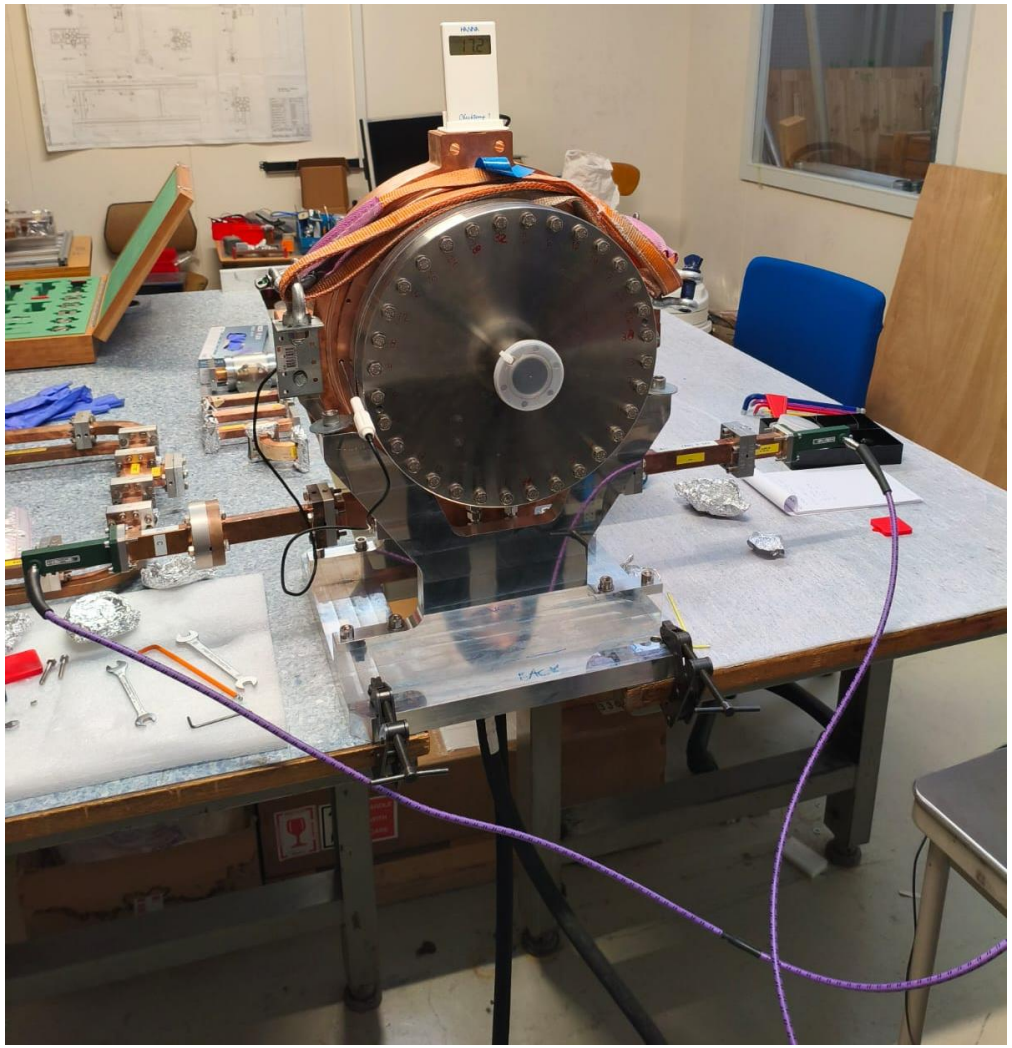
Our measurement



Ping’s measurement



Measurement Setup – VNA settings

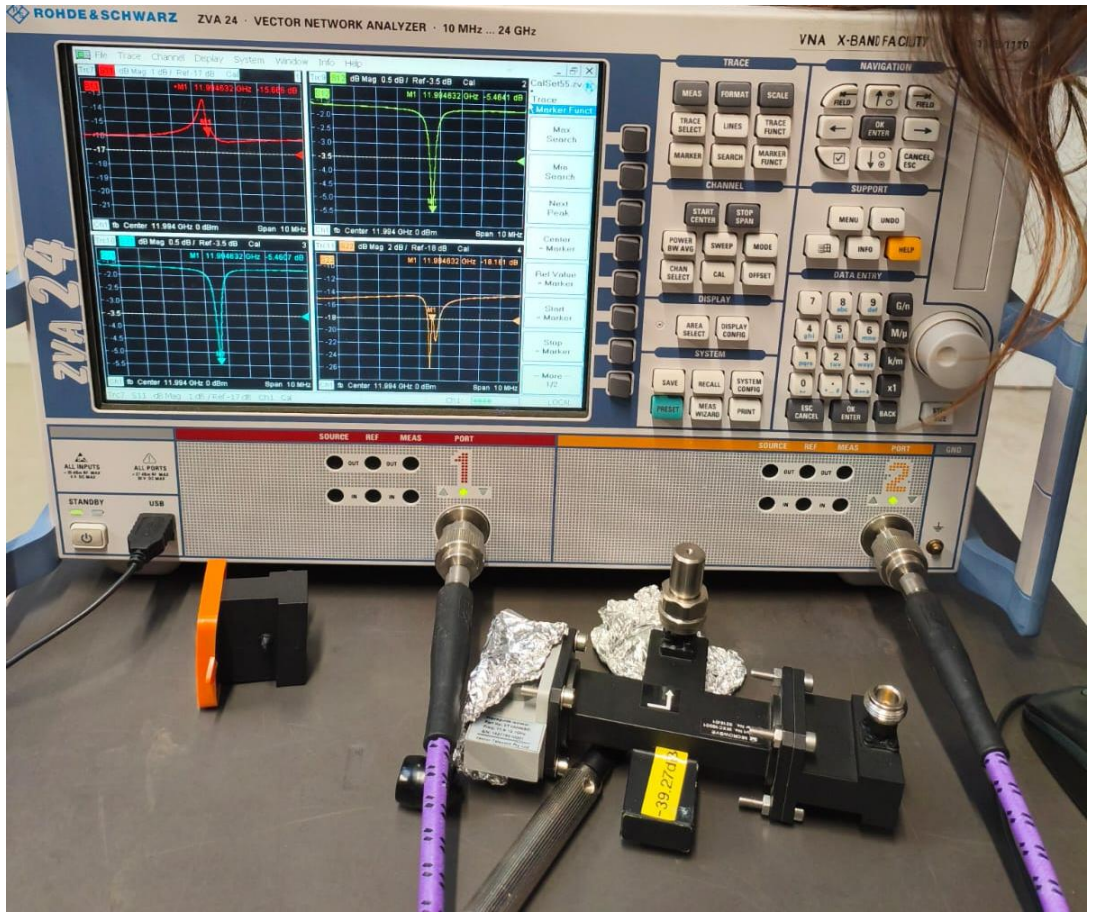


S-parameters measurement made with Rohde&Schwarz ZVA24 10MHz..24GHz

VNA settings:

- *Central freq: 11.994 GHz*
- *Span 10 MHz*
- *Spectral resolution: 500 Hz*
- *No. of points: 20001*
- *IF Bandwidth: 1 kHz*

Measurement Setup – VNA calibration

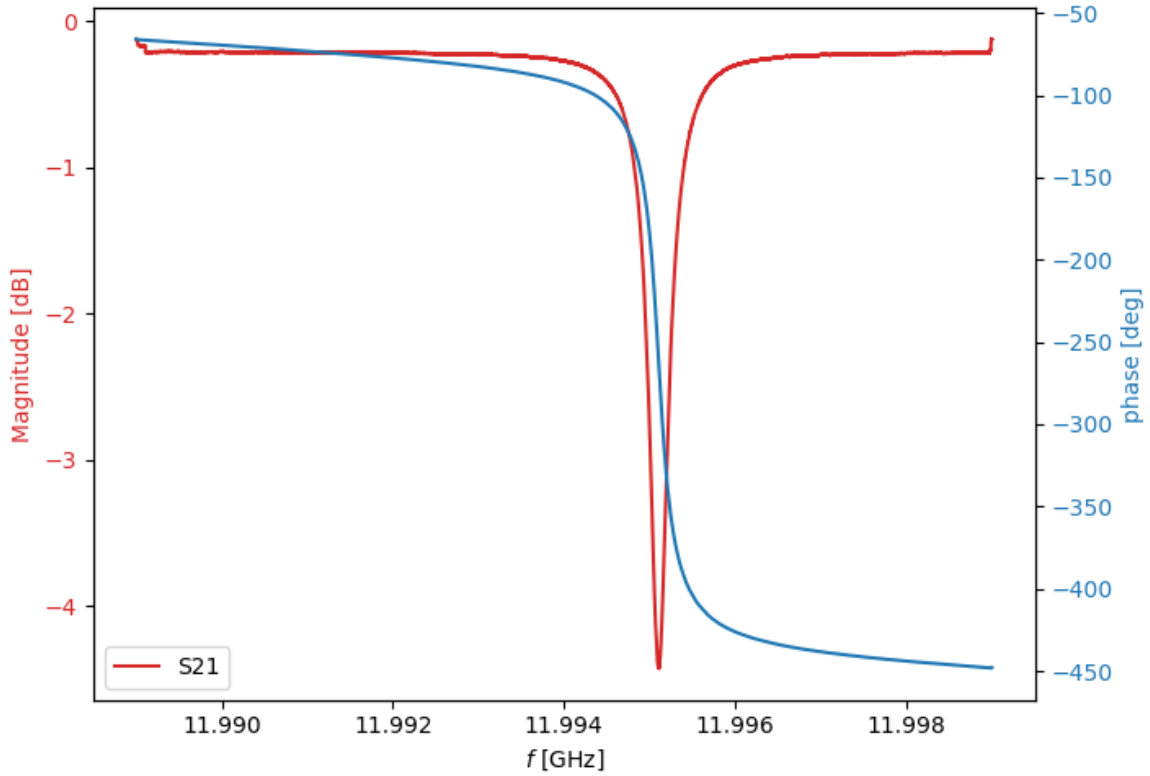


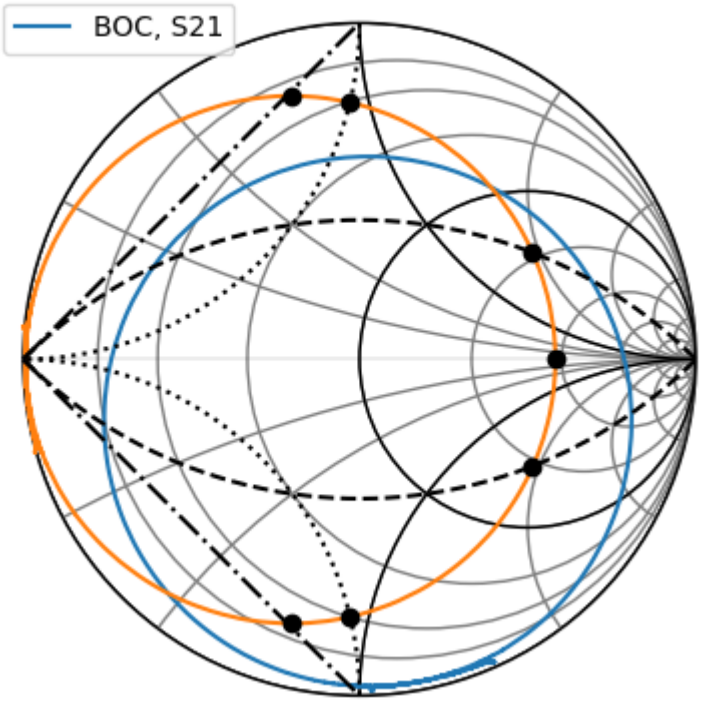
Full 2 ports calibration (TRL)

S-matrix

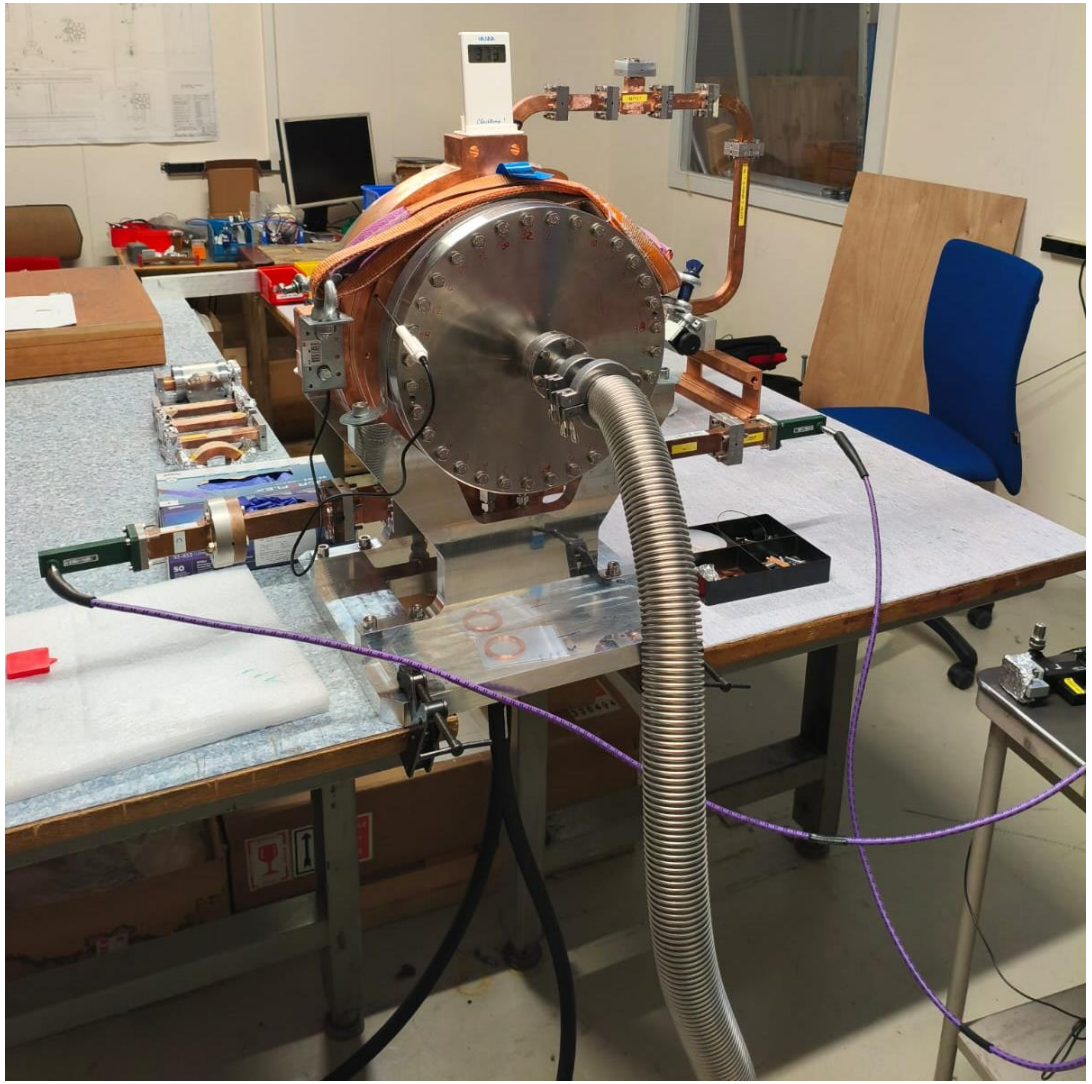
Parameters	Frequency [GHz]
Air & 16.0 °C	11.9951
Vacuum & 16.0 °C	11.9986
Vacuum & 38.8 °C	11.994

	Measurement	Ping	Designed
Q_0	167764	2.15e5	2.36e5
Q_{ext}	44675	4.28e4	3.58e4
β	3.8	5.03	6.6





Vacuum and temperature regulation



S-matrix

$\epsilon_r = 1.00058986$ (internet)

$\epsilon_r = 1.00053884$ (calculated)

Parameters	Frequency [GHz]
Air & 16.0 °C	11.9951
Vacuum & 16.0 °C (theory)	11.9986
Vacuum & 38.8 °C (theory)	11.994
Vacuum & 37.3 °C	11.994016

	Measurement	Ping	Designed
Q_0	175095	2.15e5	2.36e5
Q_{ext}	45174	4.28e4	3.58e4
β	3.9	5.03	6.6