

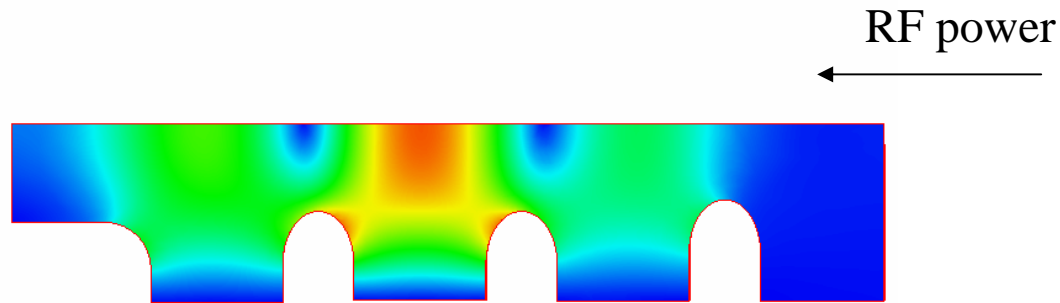
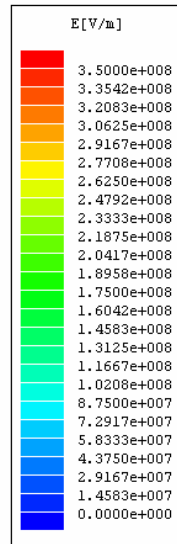
High Power Test of Single Cell SW structure

V. A. Dolgashev

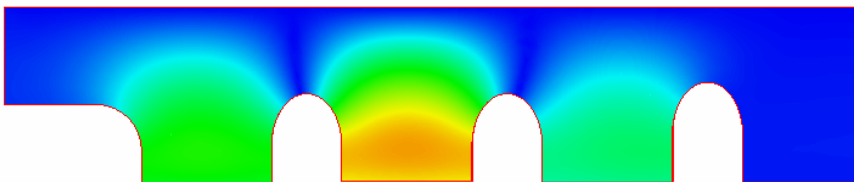
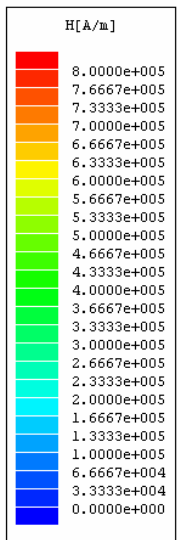
7 February 2007

HFSS verification of whole copper structure, 10 MW input power

Electric fields



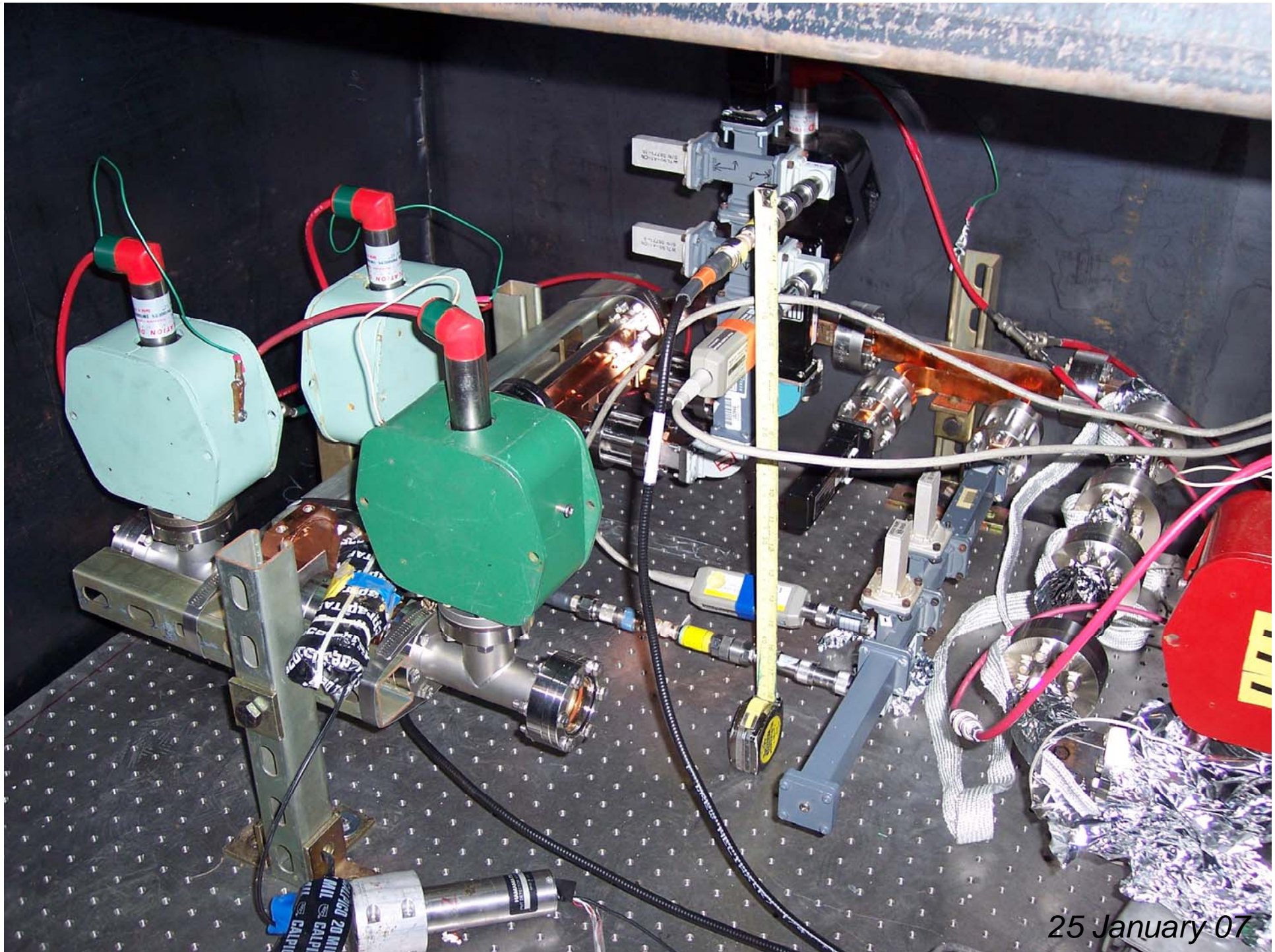
Magnetic fields



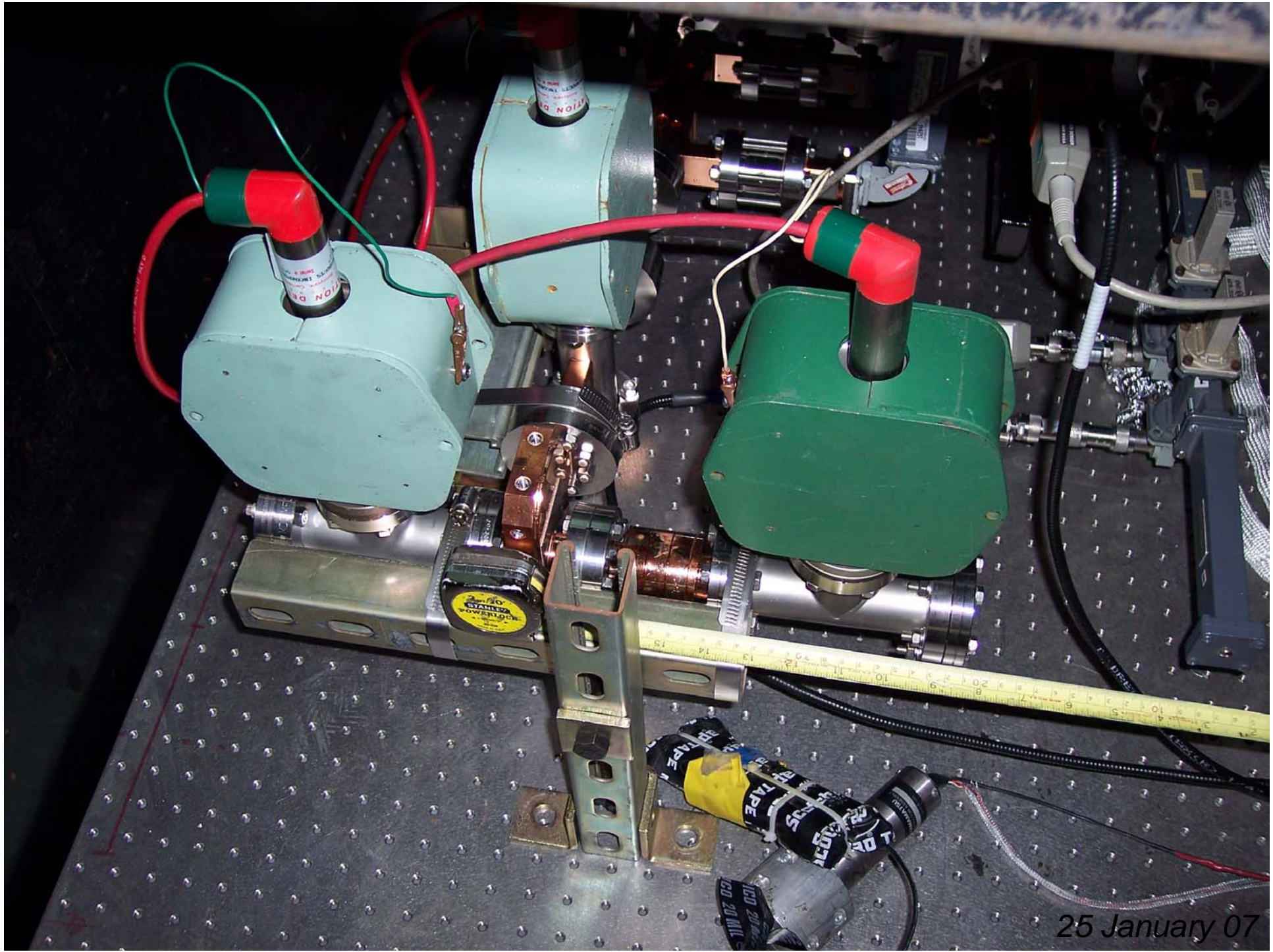
Frequency 11.4225 GHz, S11 ~ 0.06



25 January 07



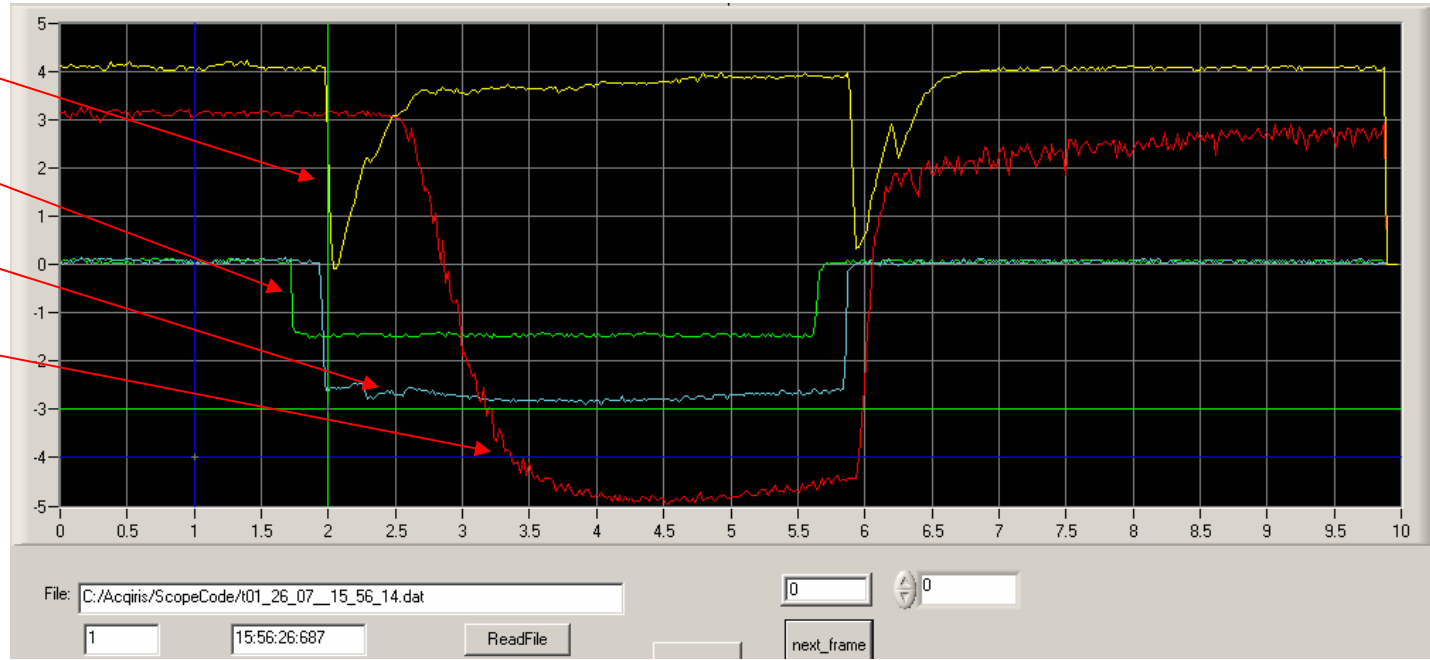
25 January 07



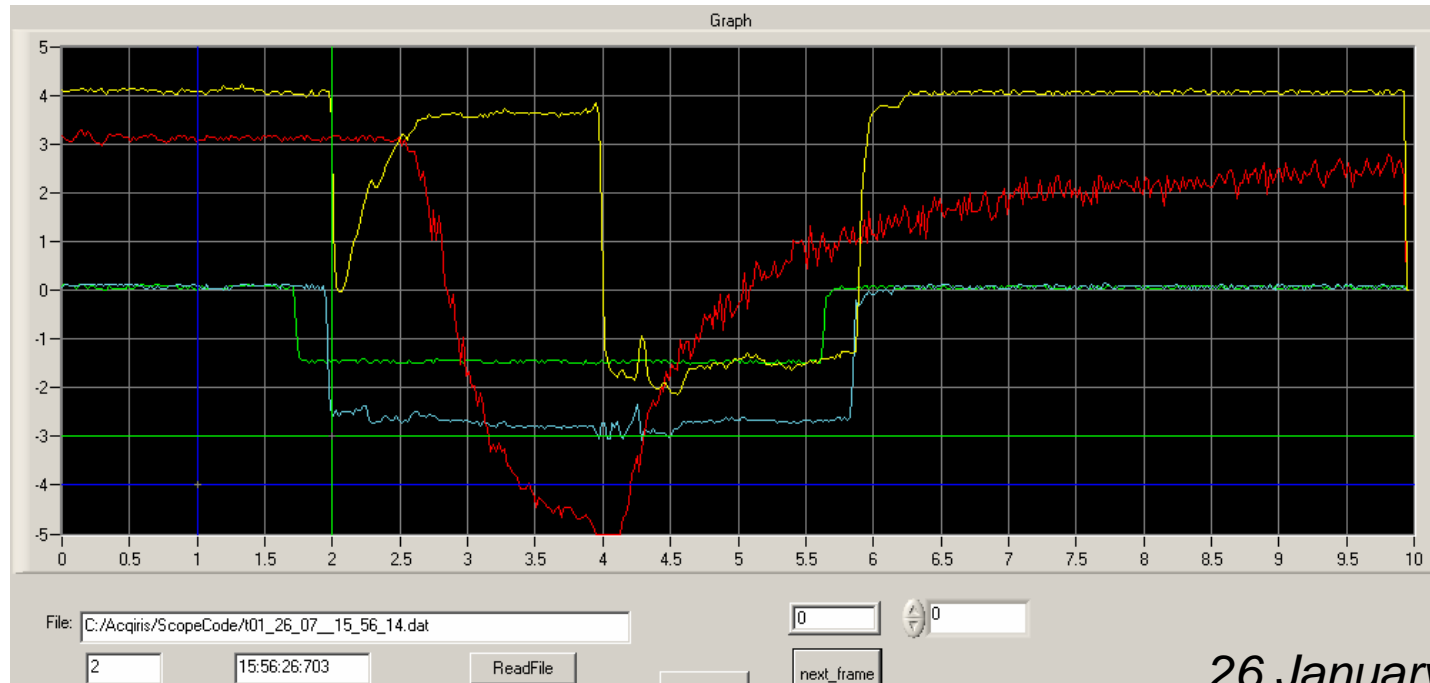
25 January 07

Breakdowns in Single Cell SW structure

Reflected
TWT
Forward
PMT
Pulse
Before
Breakdown

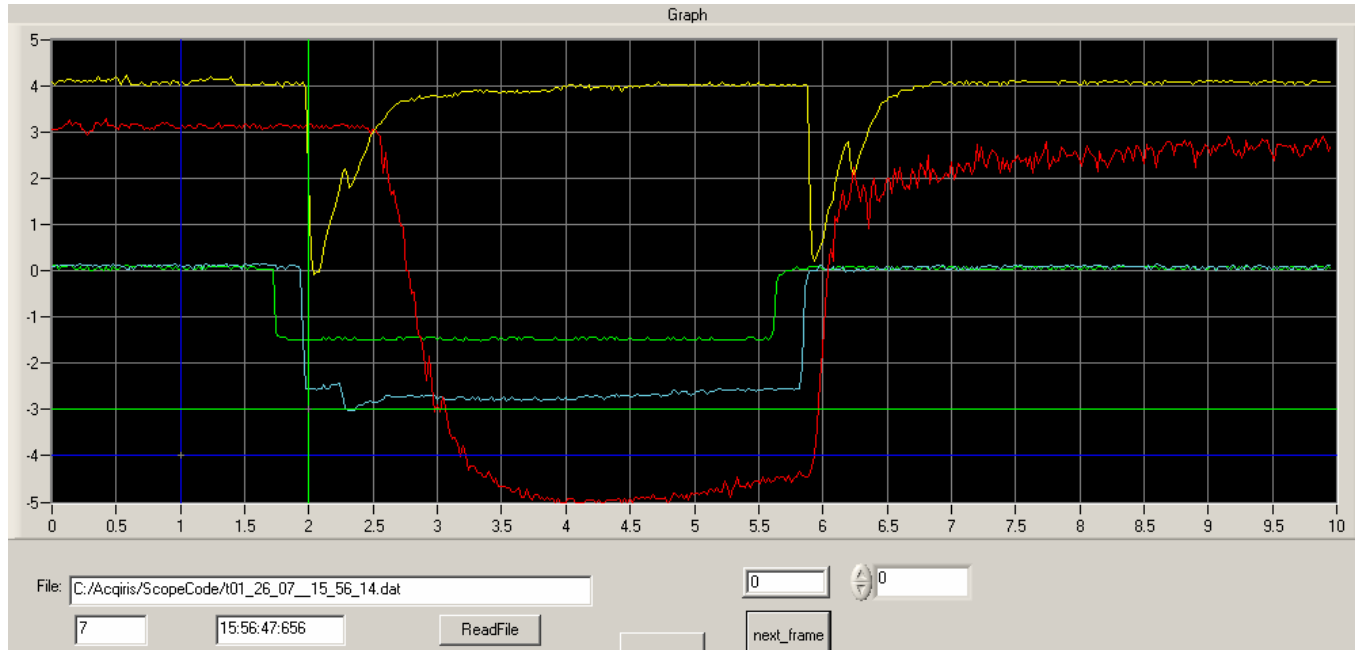


Breakdown

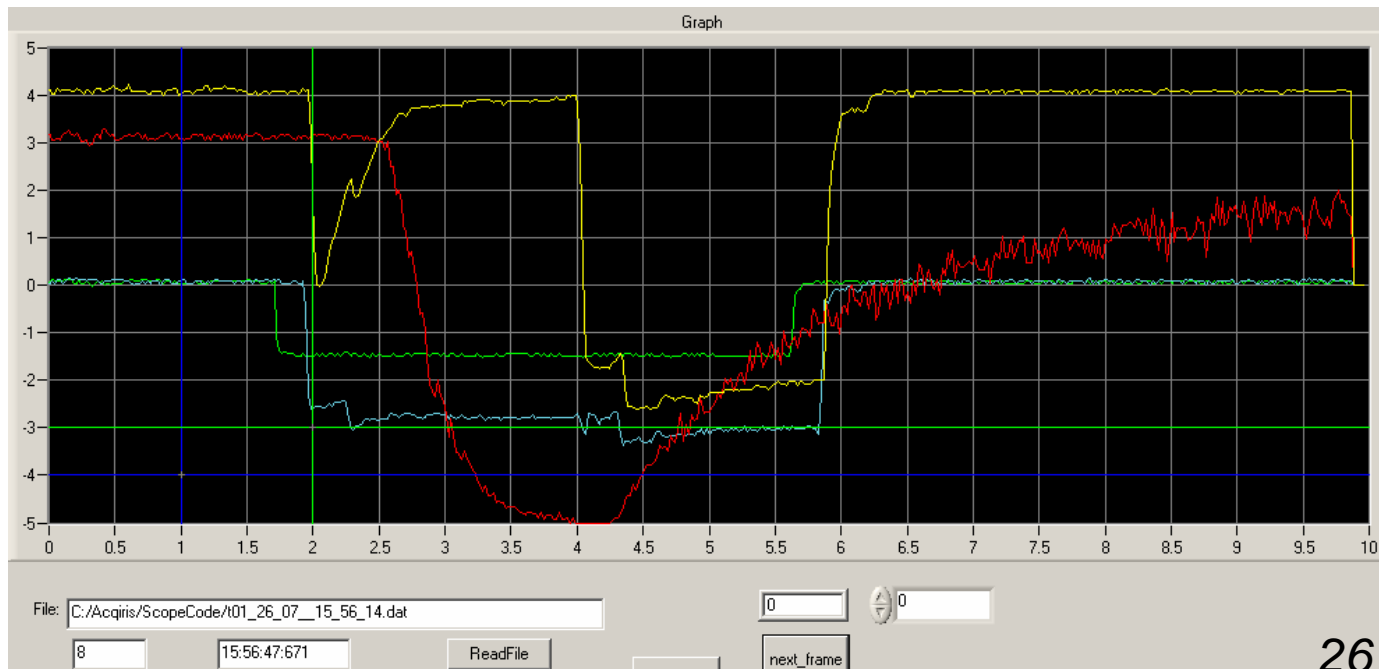


Breakdowns in Single Cell SW structure

Pulse
Before
Breakdown

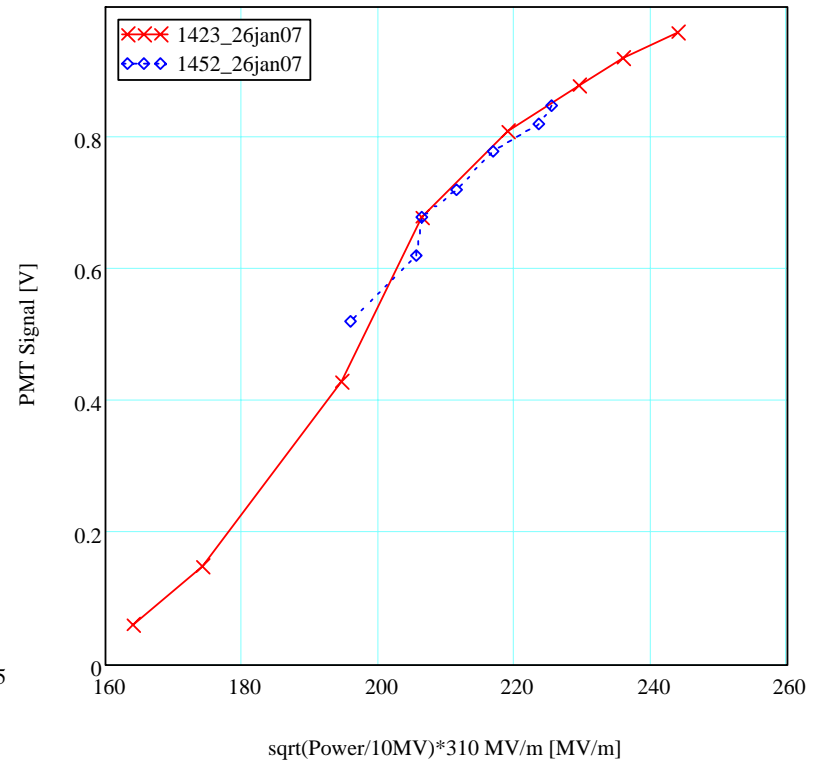
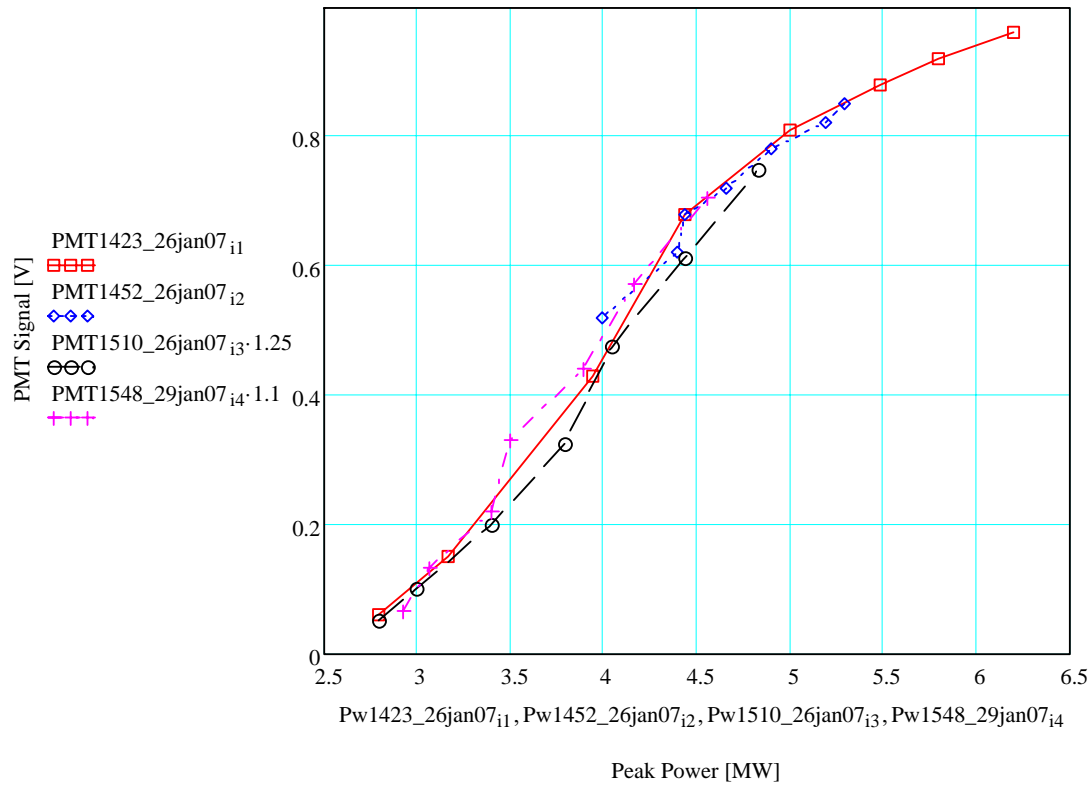


Breakdown



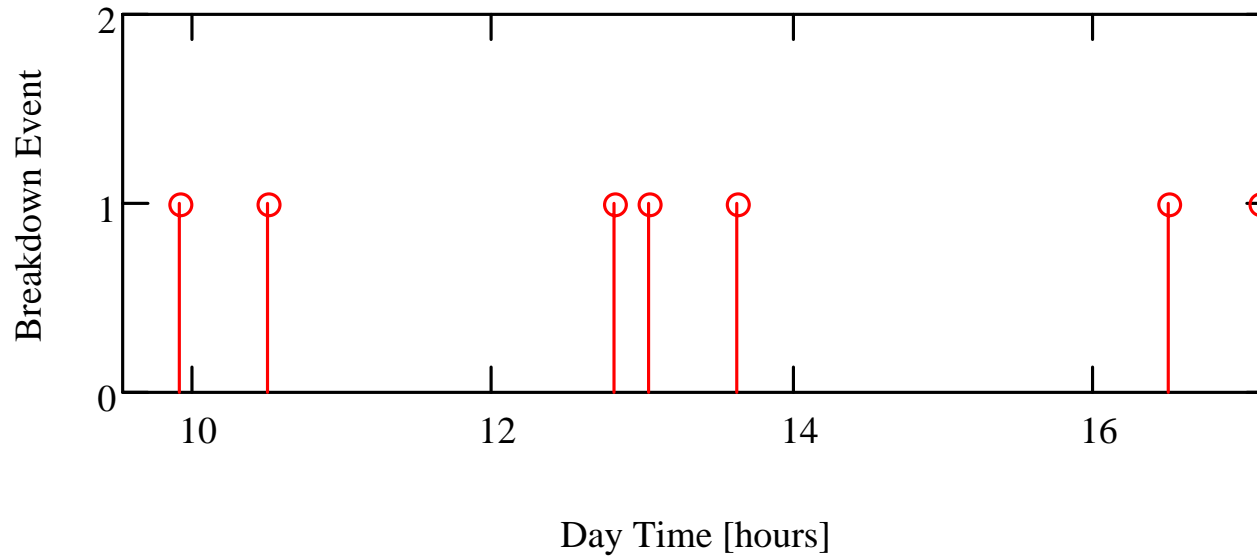
26 January 07

Knee in dark current



7 February 07

Breakdowns vs. running time



$t_{\text{pulse}} = 500 \text{ ns}$, $P_{\text{in}} = 4.5 \text{ MW}$, $f = 11.429190 \text{ GHz}$, 60 Hz

Predicted pulse heating for
4.5 MW of input power

