

Joe Sousa, August 7th 2008.

Mapping of Paulmann Rustika 60W antique light bulb with 20 segments measuring 6cm each.

Applied Voltage 220VDC. RF output at 95MHz.

Bulb tested in Horizontal position, with filament connection terminals at the top.

Large metal copper shield attenuated operator 60Hz fields. Fluorescent bulb on bench is off.

Bulb driven with stock LC power filter in series with 100 Ohm transformer to drive scope with isolation.

E-field probe is end of BNC cable driven with 100Vp-p at 2kHz from HP200AB. E-Field probe held against bulb by metallic articulated lab assistant Jack Knife. E-Field probe moved in 1cm increments.

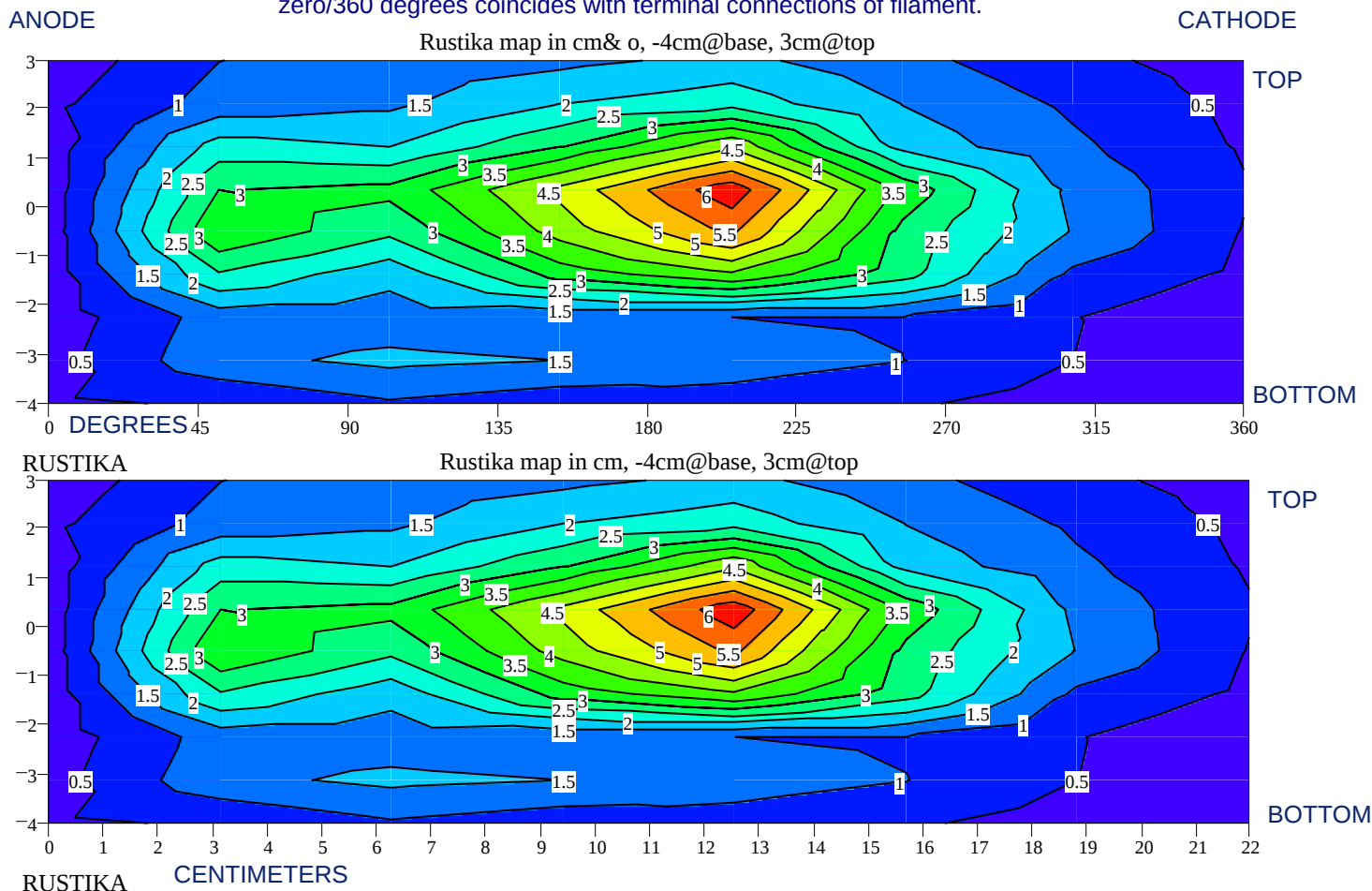
FM output monitored with drugstore scanning FM radio to avoid frequency drift problems.

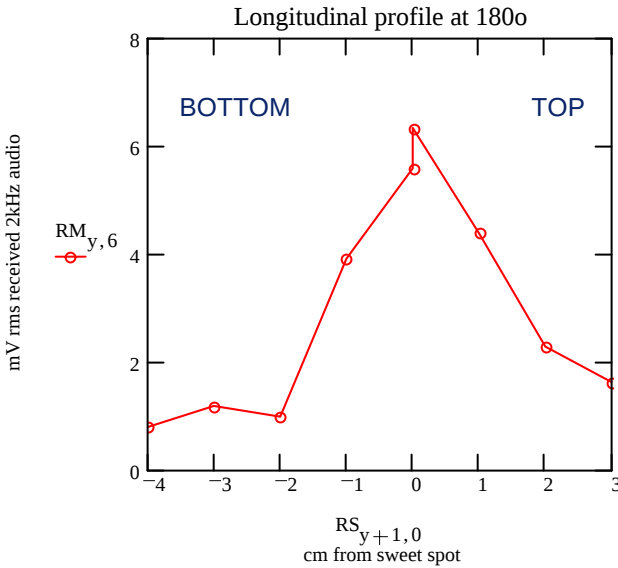
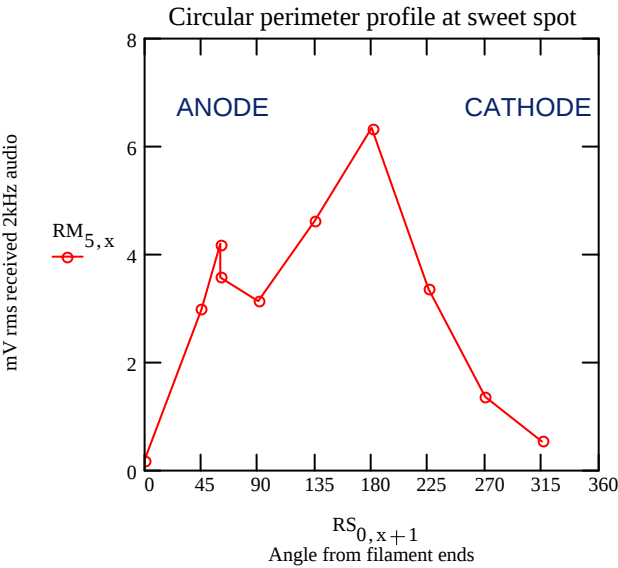
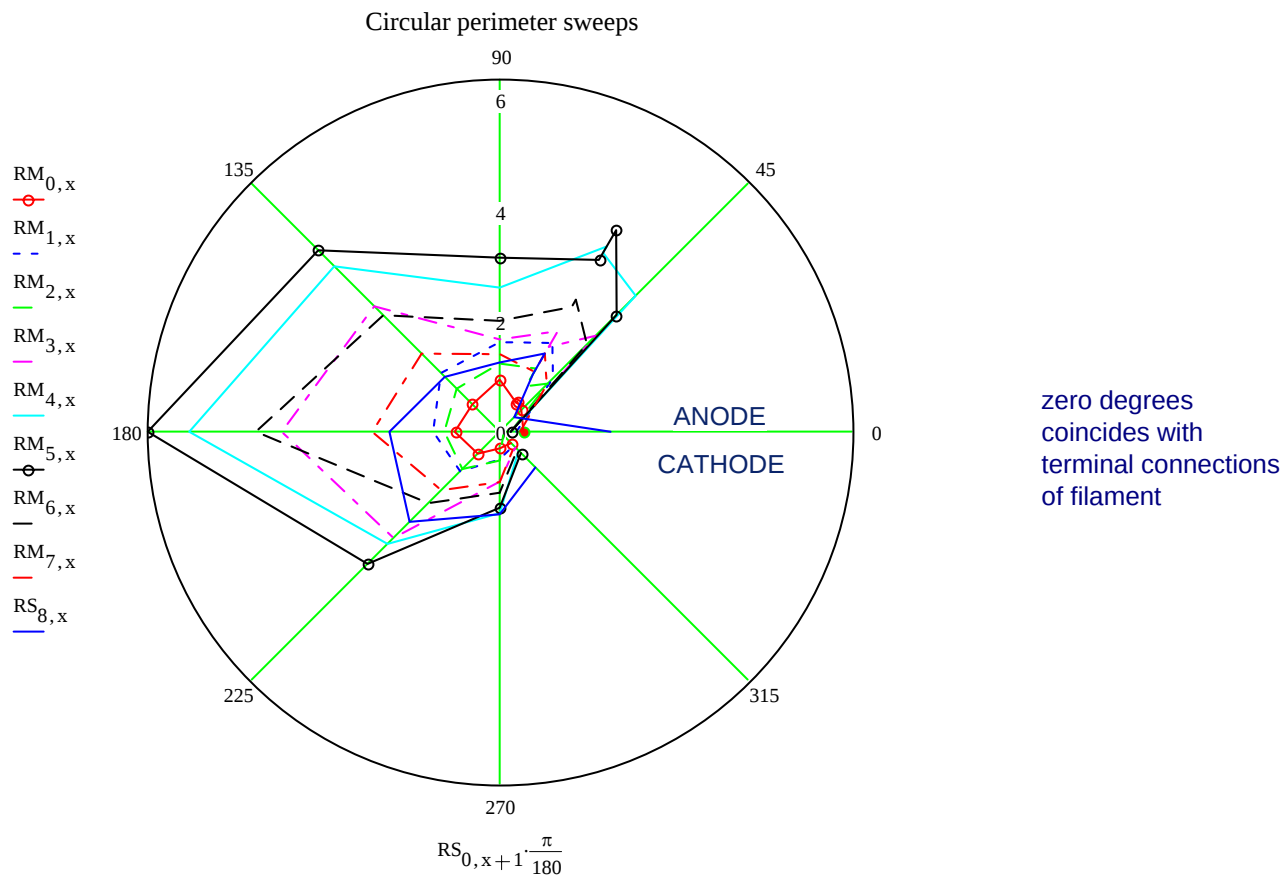
FM audio from scan radio amplified and filtered by 7A22 Tektronix plug-in in 7823 digital/analog scope.

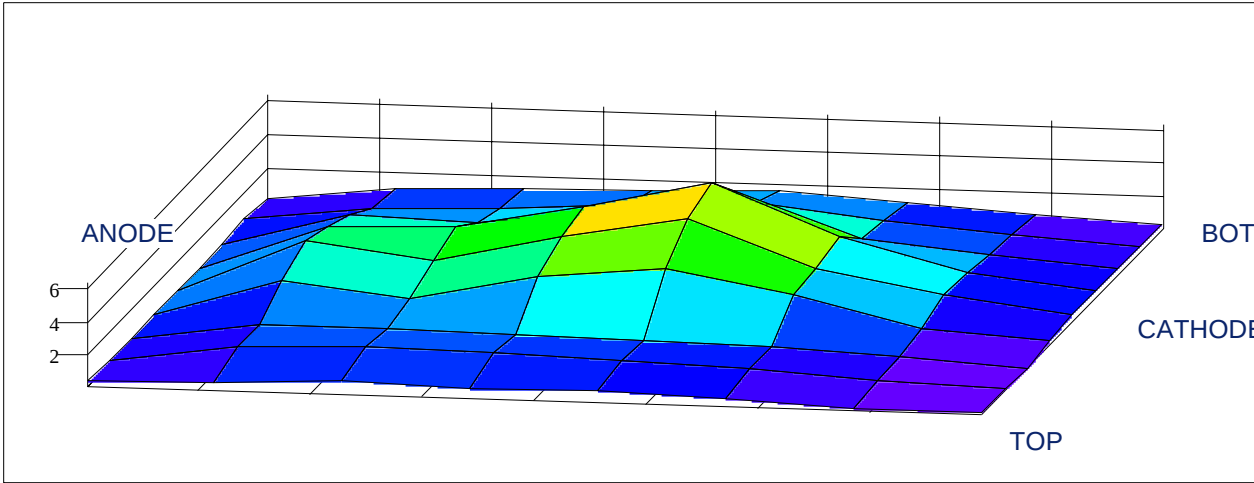
7A22 bandwidth set with low cut at 1kHz and high cut at 3kHz. Most spurious noise was low frequency rumble, despite horizontal position of bulb.

10 or 100 averages used with sweep synchronized to 2kHz from HP200AB to clean up 2kHz from FM scan radio. RMS value of filtered and averaged 2kHz signal computed by 7823 scope.

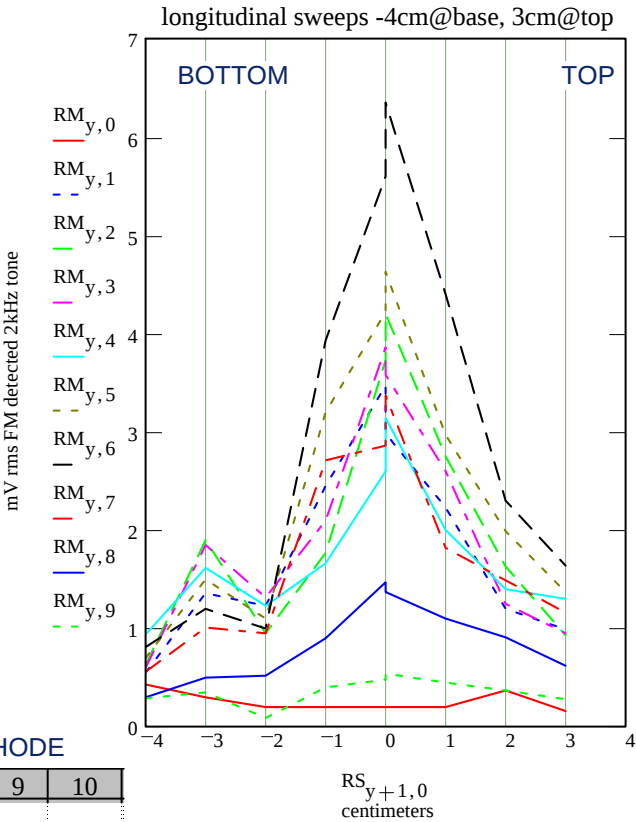
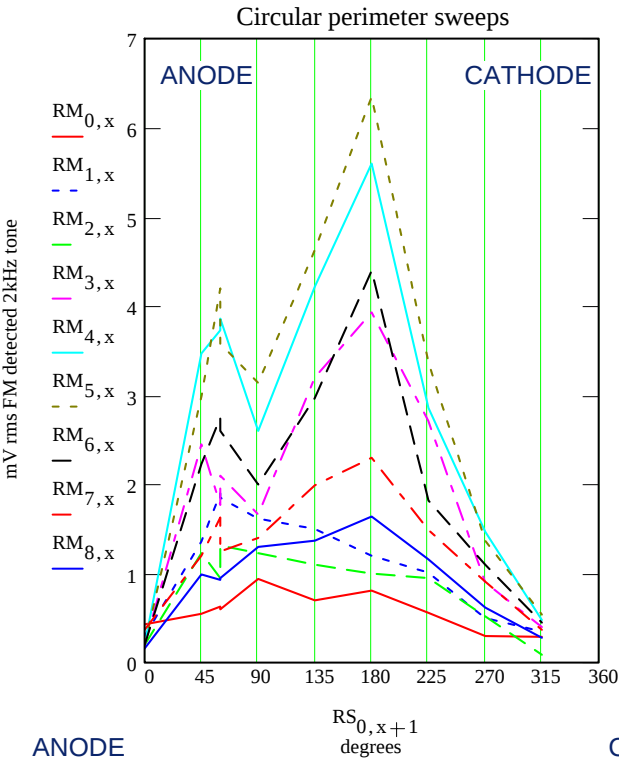
Mapping of DETECTED 2KHz FM Modulation from 2kHz E-field probe injection
zero/360 degrees coincides with terminal connections of filament.







RUSTIKA



ANODE			degrees				CATHODE					
	0	1	2	3	4	5	6	7	8	9	10	
RS =	0	-1.10 ³	0	45	60	60	90	135	180	225	270	315
	1	-4	0.43	0.55	0.63	0.6	0.94	0.7	0.81	0.56	0.3	0.29
	2	-3	0.3	1.36	1.9	1.85	1.617	1.5	1.2	1.01	0.5	0.35
	3	-2	0.2	1.23	0.95	1.316	1.23	1.1	1	0.95	0.52	0.09
	4	-1	0.2	2.45	1.77	2.098	1.664	3.2	3.93	2.71	0.9	0.4
	5	0	0.2	3.47	3.73	3.86	2.6	4.22	5.6	2.86	1.47	0.48
	6	0	0.2	2.984	4.2	3.58	3.14	4.63	6.35	3.37	1.37	0.541
	7	1	0.2	2.23	2.75	2.6	2	2.97	4.4	1.82	1.1	0.45
	8	2	0.37	1.2	1.63	1.25	1.4	1.99	2.3	1.49	0.91	0.37
	9	3	0.16	0.99	0.93	0.95	1.3	1.37	1.64	1.16	0.62	0.29