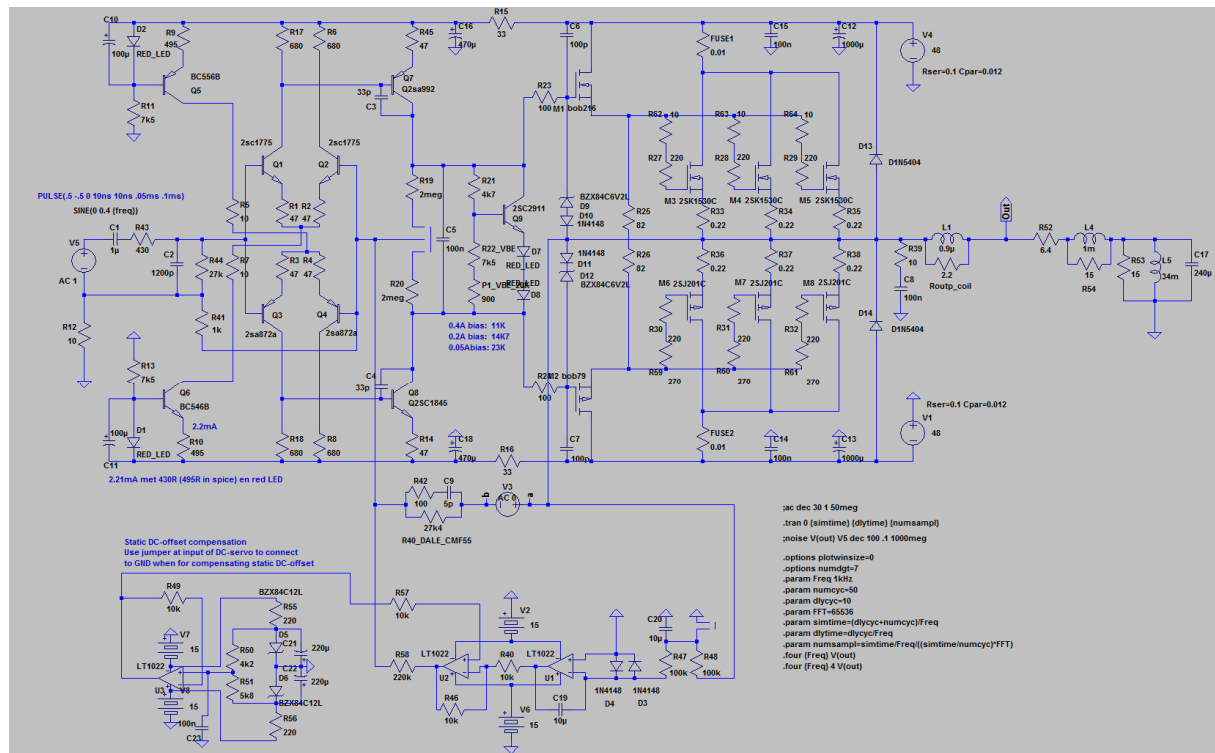


Amplifier for subwoofer and wideband duty

This is a low feedback amp (OLG 57 or 30 dB selectable, CLG of 29dB)



Bias currents and dissipation

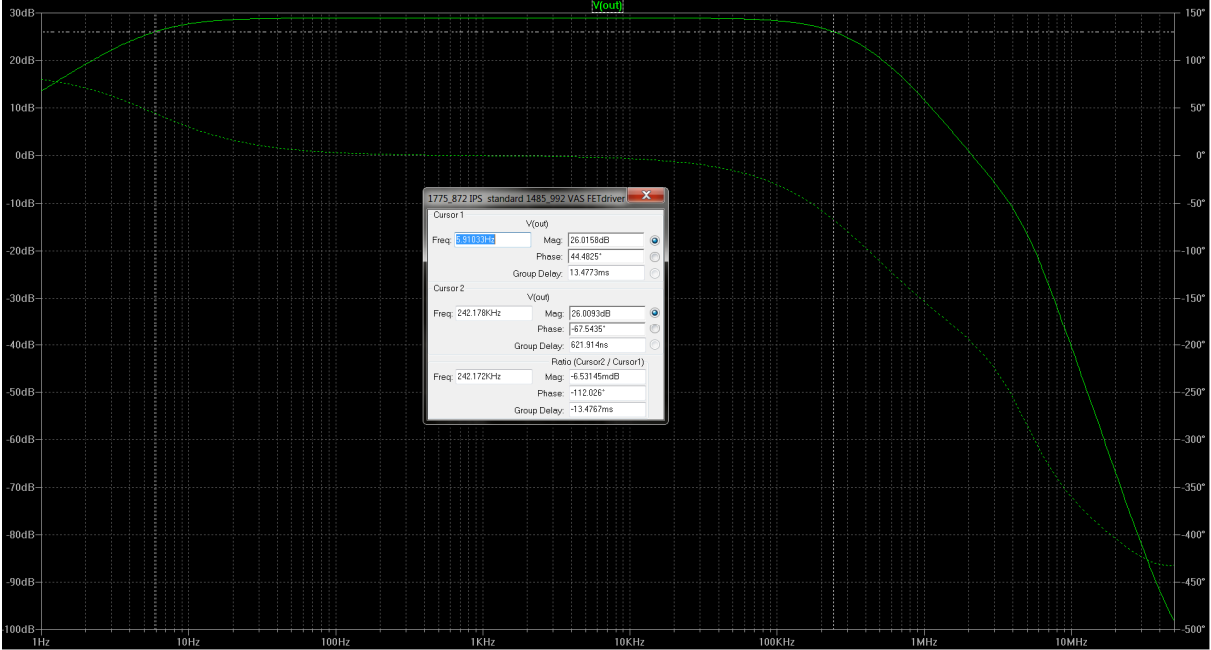
	Diff amp (2SC1775/2SA872)	VAS (2SC1845/2SA992)	Drivers (2SK216/2SJ79)	Output stage (2SK1530/2SJ201)
Ibias	1.1mA	3.3mA	22mA	200-250mA
Pd	55mW	148mW	1W	12W

Thermal stability

Bias through OPS from 15°C to 50°C changes 14mA (3mV over 0.22R emitter resistor). The 2SK1530/2SJ201 seems to have a very low tempco (almost as Lateral fet's), the two red Led's in series with the emitter of the VBE transistor drop the tempco of the VBE multiplier to the same level as the OPS Fet's.

		2SK792 + 100R in Emitter	2sk792 + 1N4148	IRF610	BS170	MJE340	MJE340 + LED Green	MJE340 + LED RED (Vf1,52V)	MJE340 + 2x LED RED (Vf1,52V)	2SC2911 + 2x LED RED (Vf1,52V)
Cold (15°C)	60mV	+~60mV	75mV	60mV	68mV	60mV	73mV	65mV	60mV	60mV
Warm (40°C)	46mV	+~46mV	60mV				65mV	60mV	57mV	57mV
Hot (50°C)				43mV	52mV	40mV	60,2mV	52mV	54mV	57mV

Closed Loop Gain: 29dB
Bandwith: 6Hz - 240kHz

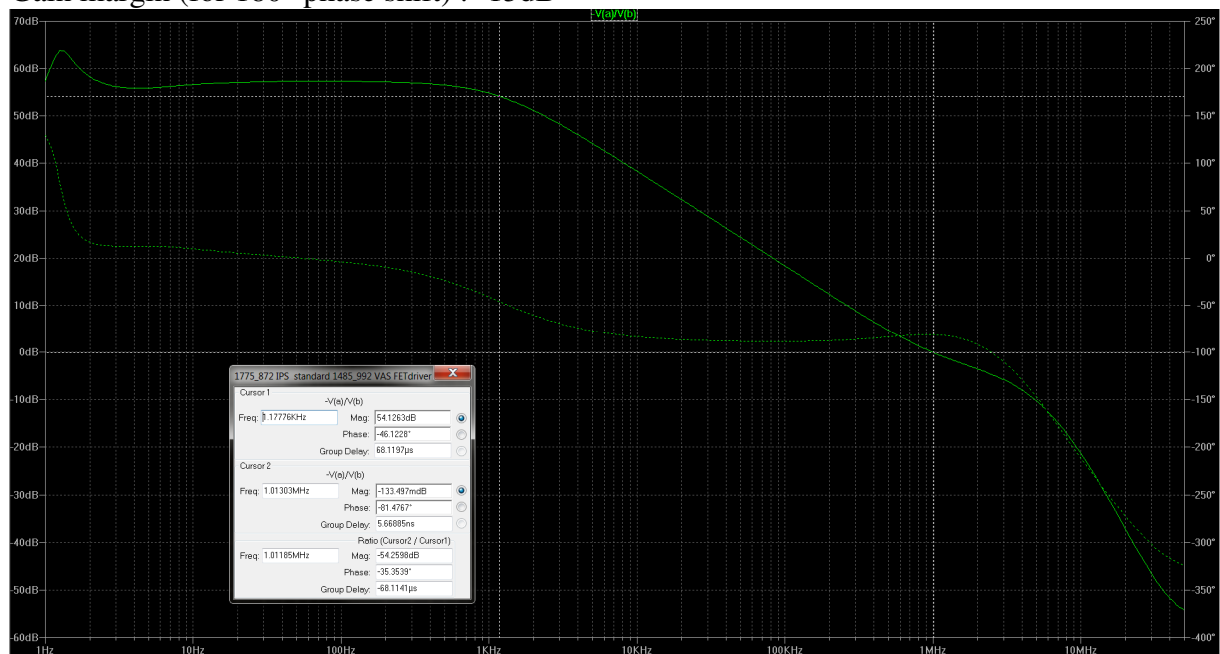


Open Loop Gain with jumpers (output VAS) open : 57dB

Open Loop Bandwidth: 1.1kHz

Phase margin: $\pm 100^\circ$

Gain margin (for 180° phase shift) : -15dB

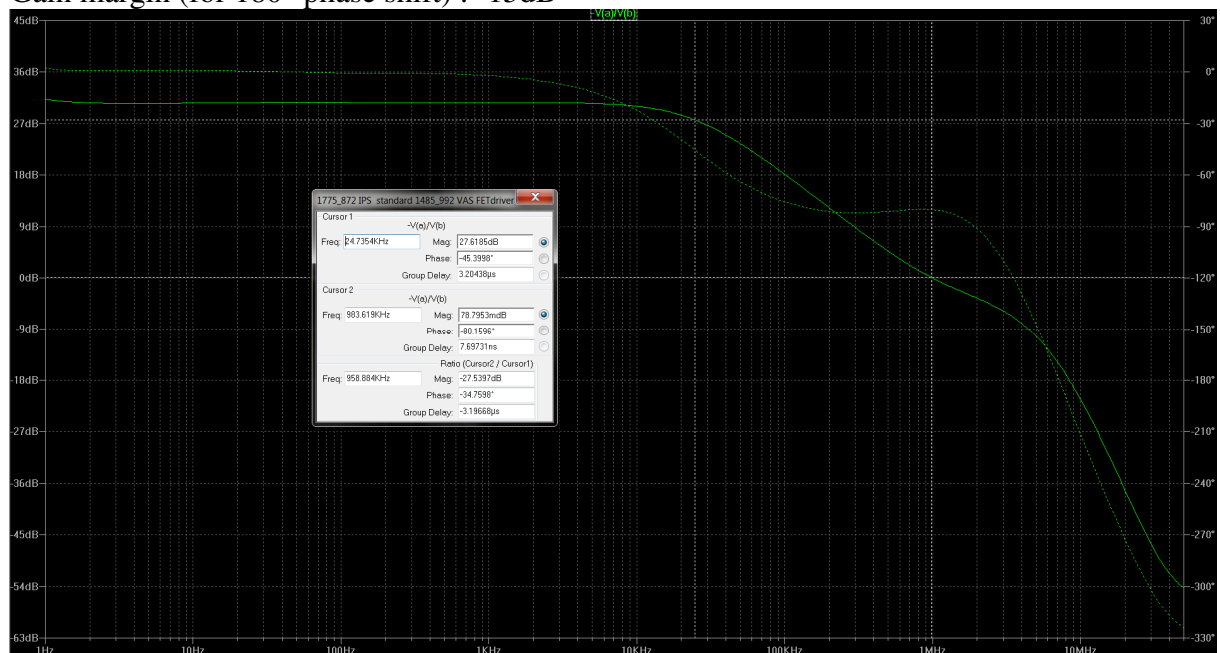


Open Loop Gain with jumpers (output VAS) closed : 30.5dB

Open Loop Bandwidth: 24kHz

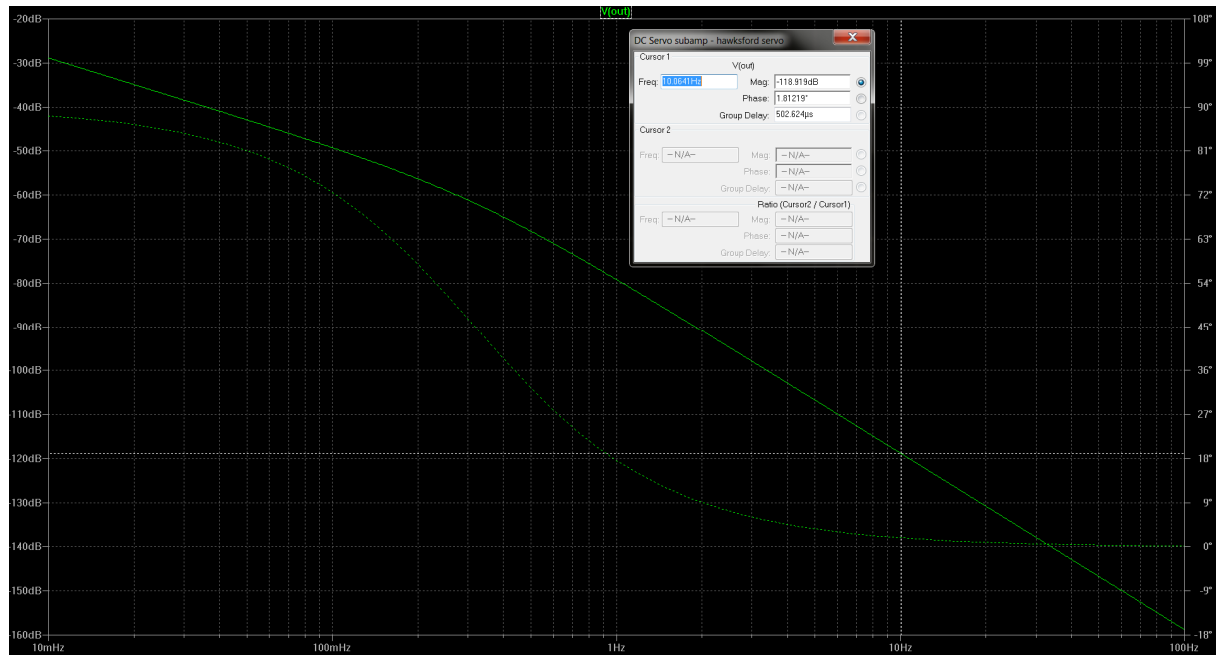
Phase margin: $\pm 100^\circ$

Gain margin (for 180° phase shift) : -15dB



DC-servo - ac analysis

At 10Hz: 120dB

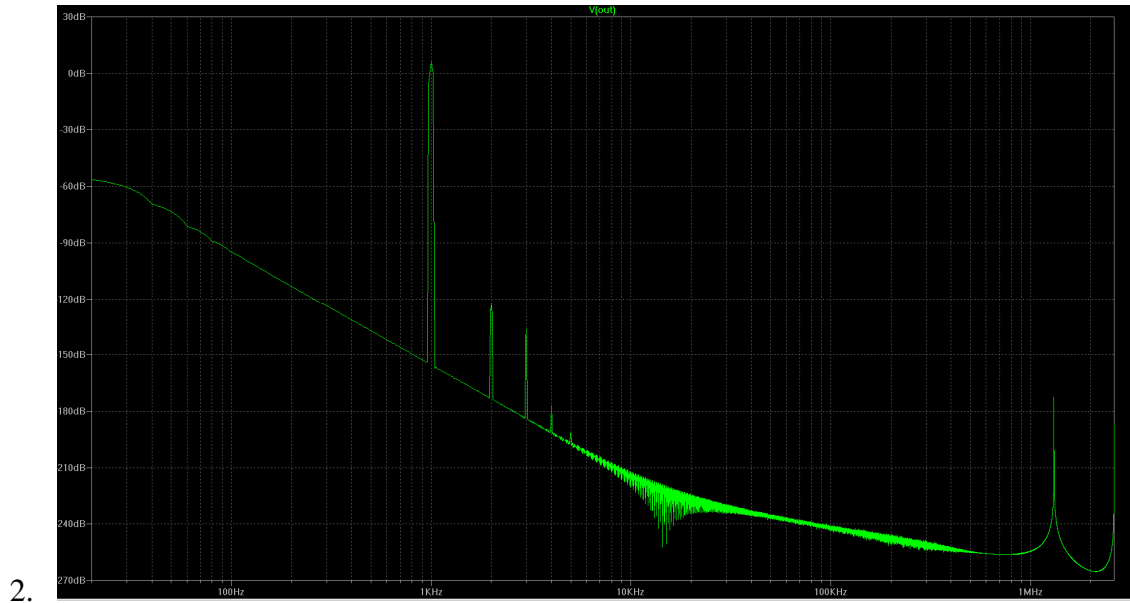


THD simulations (High OLG = Jumpers open)

All simulations are done with the load specified on the schematic on the page 1

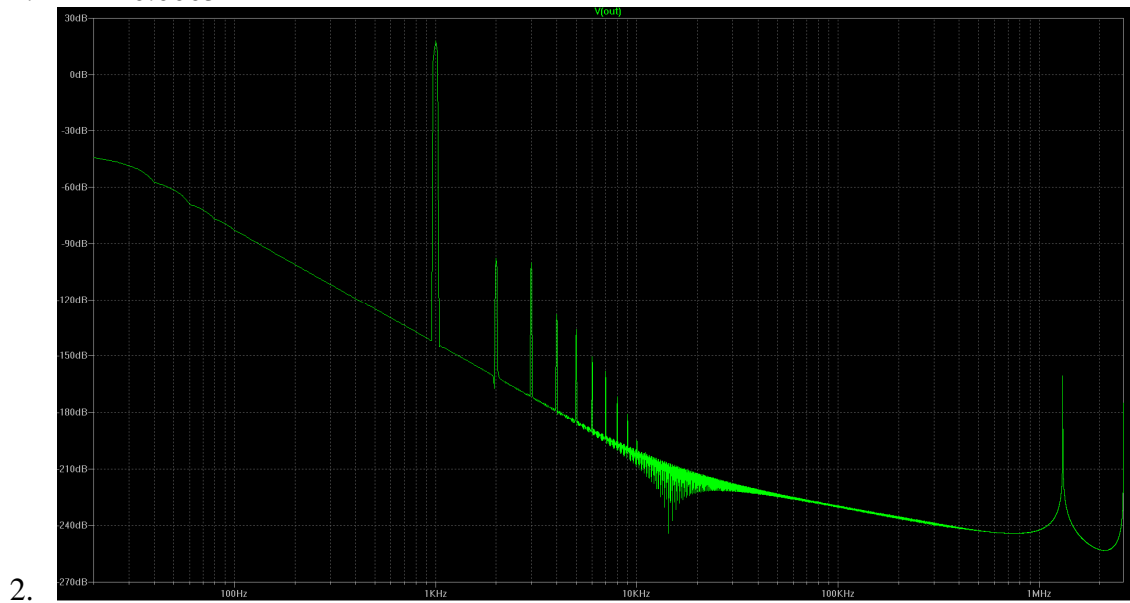
Input: 1KHz/0.1V => Voutp=2.8V

1. THD 0.0005



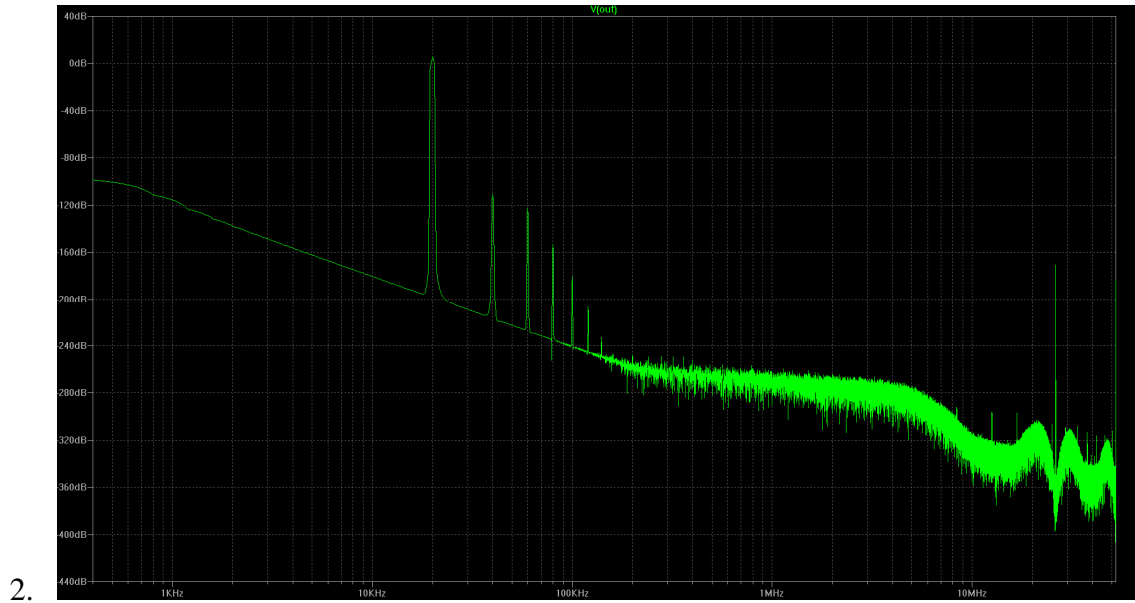
Input: 1KHz/0.4V => Voutp=11.2V

1. THD 0.0005



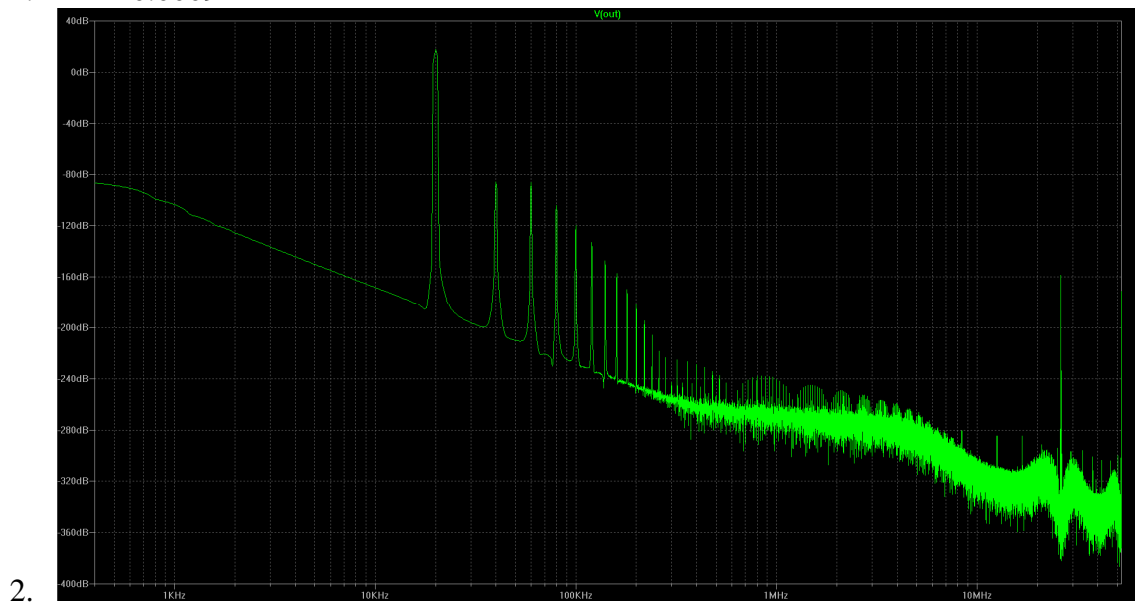
Input: 20KHz/0.1V => Voutp=2.8V

1. THD 0.00016

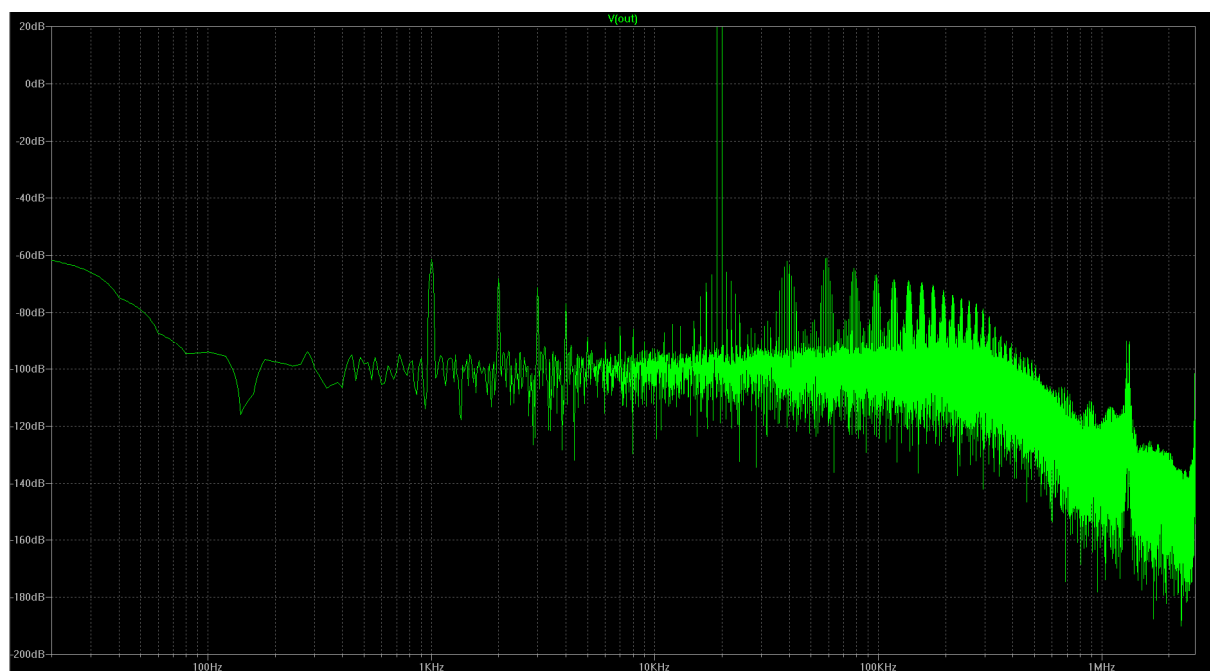


Input: 20KHz/0.4V => Voutp=11.2V

1. THD 0.0009



CCIF test (20KHz/0.5V + 19KHz/0.5V)



CCIF test (20KHz/0.25V + 19KHz/0.25V)

