

Input stage = JFet's

- 2SK389BL/2SJ109BL
 - bias current adjustable (set to 7.7mA in LTspice)
 - $V_{ds} = 8.7V$
- floating cascoded with LOW Cob BJT's (2SC2911/2SA1209)

Vas stage = MOSFet

- 2SK216/2SJ79 biased at $\pm 20mA$
- Cascoded (Hawskford) with low Cob BJT's (KSA1142/KSC2682)
- Local feedback loop is used (820K resistors) \Rightarrow OLBW = $\pm 4.5kHz$

Bias spreader

- Will be designed/tested during prototyping

Driver stage = Mosfet

- 2SK2013/2SJ313 (Toshiba) set to $\pm 70mA$ bias current
- Chosen because of
 - their good complementary parameters (C_i and S/R_d)
 - having a bunch of them
 - low V_{ds} (not that important because of separate PSU for driver section)

Output stage = BJT

- 6pairs of Sanken 2SC2922/2SA1216
- Biased to $\pm 117mA$ using 0R18 emitter resistors \Rightarrow Class A output power of 11Wrms/8R
- 4.7Ohm gate stoppers

NFB

- Done with Dale RND55 resistors
- total gain of +-29dB

frequency compensation and feedback network

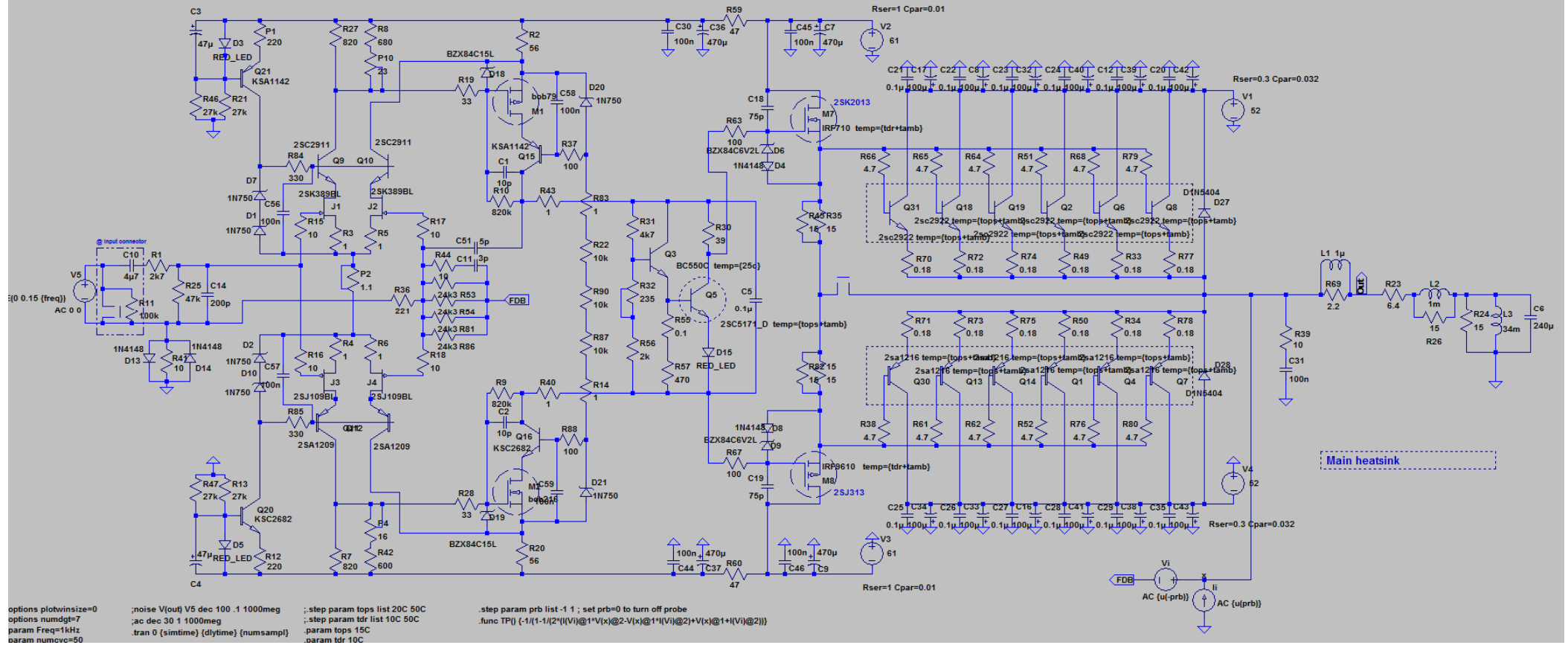
- Standard miller C over VAS of 10pF
- 3pf over feedback network series resistor
- 5pf from VAS output to diff amp inverting input (done by many OEM's and proposed by many people on the forum)
- 2x 75pf at driver FET's from base to drain
- I had to drop the shunt NFB resistor to a value of 221R to keep a UGF of +-1.5MHz.
==> this is rather low compared to many other amps. (But I have no intention to drive it balanced)

Power supply = mainly in seperate enclosure

- For output stage 2X52V
- For front end and drivers 2X61V (Cap multipliers can be used)
- See <http://www.diyaudio.com/forums/power-supplies/247239-high-performance-dual-mono-psu.html>
- In the amplifier enclosure a minimum of 20000µF/rail will be added close to the OPS PCB.

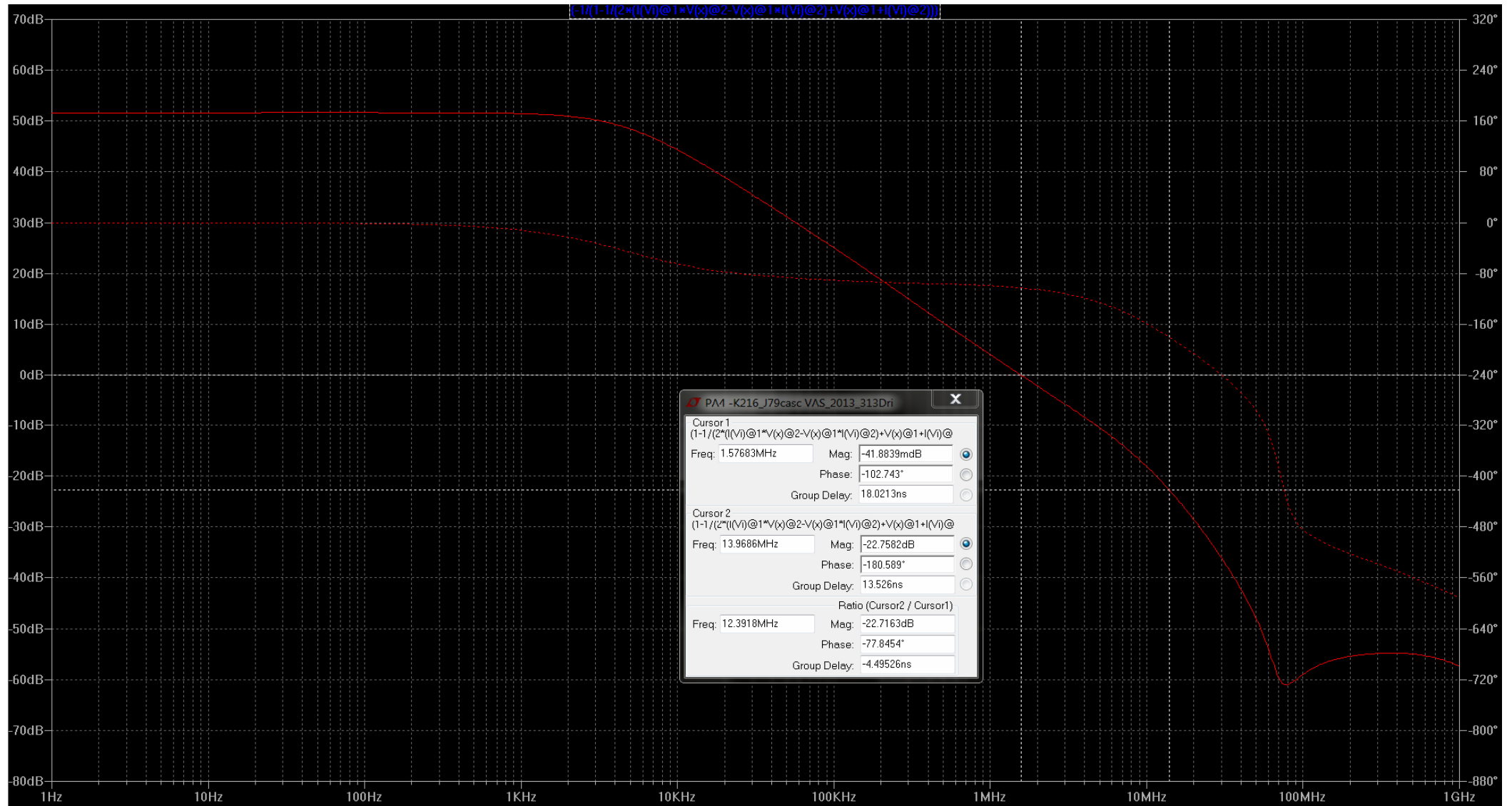
Enclosure

- Will be very hard looking to my previous amp
- see <http://www.diyaudio.com/forums/solid-state/198209-amp-design-subwoofer-wideband-duty-13.html>
- Or post 2837 <http://www.diyaudio.com/forums/solid-state/96192-post-your-solid-state-pics-here-284.html>

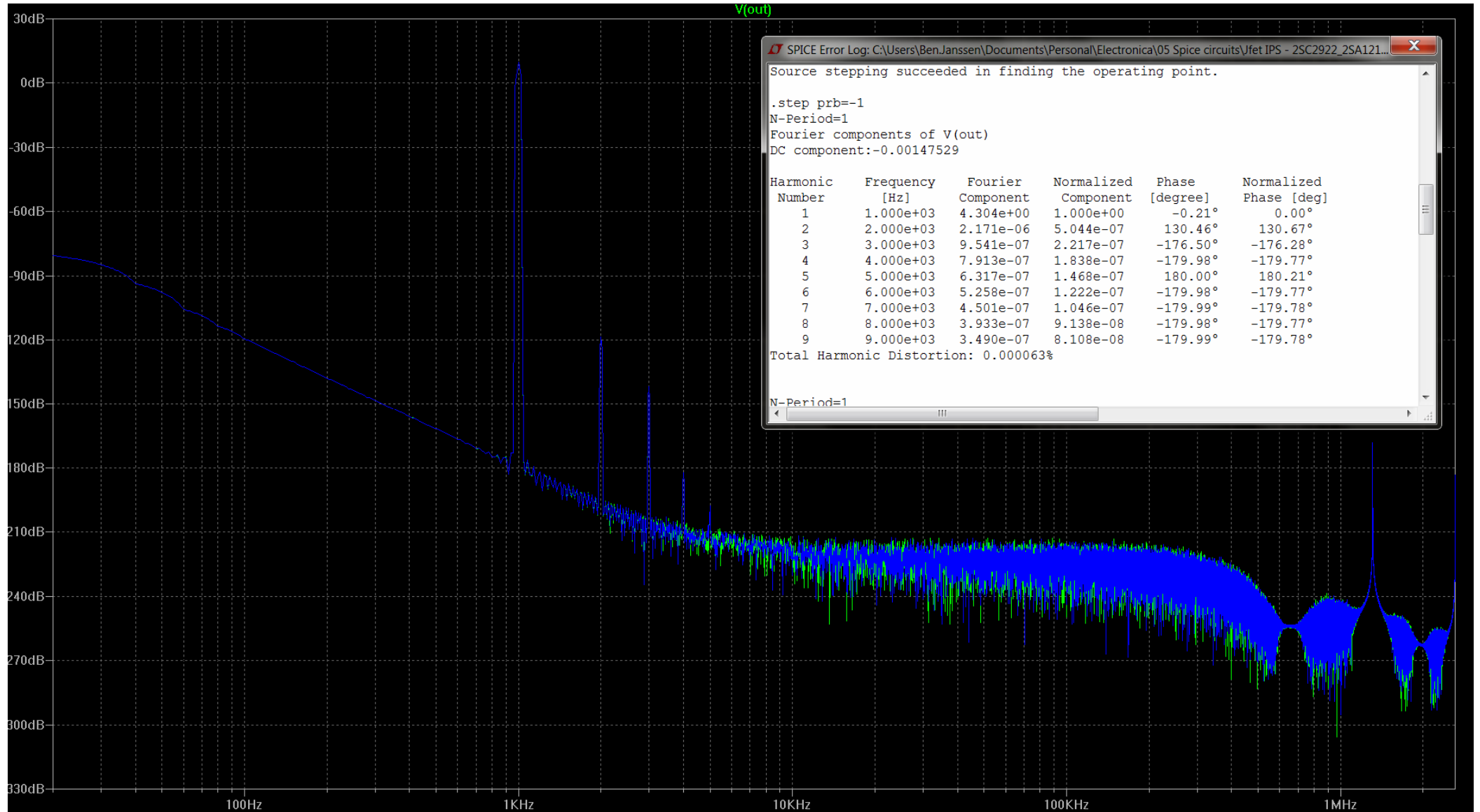


Phase and gain margin

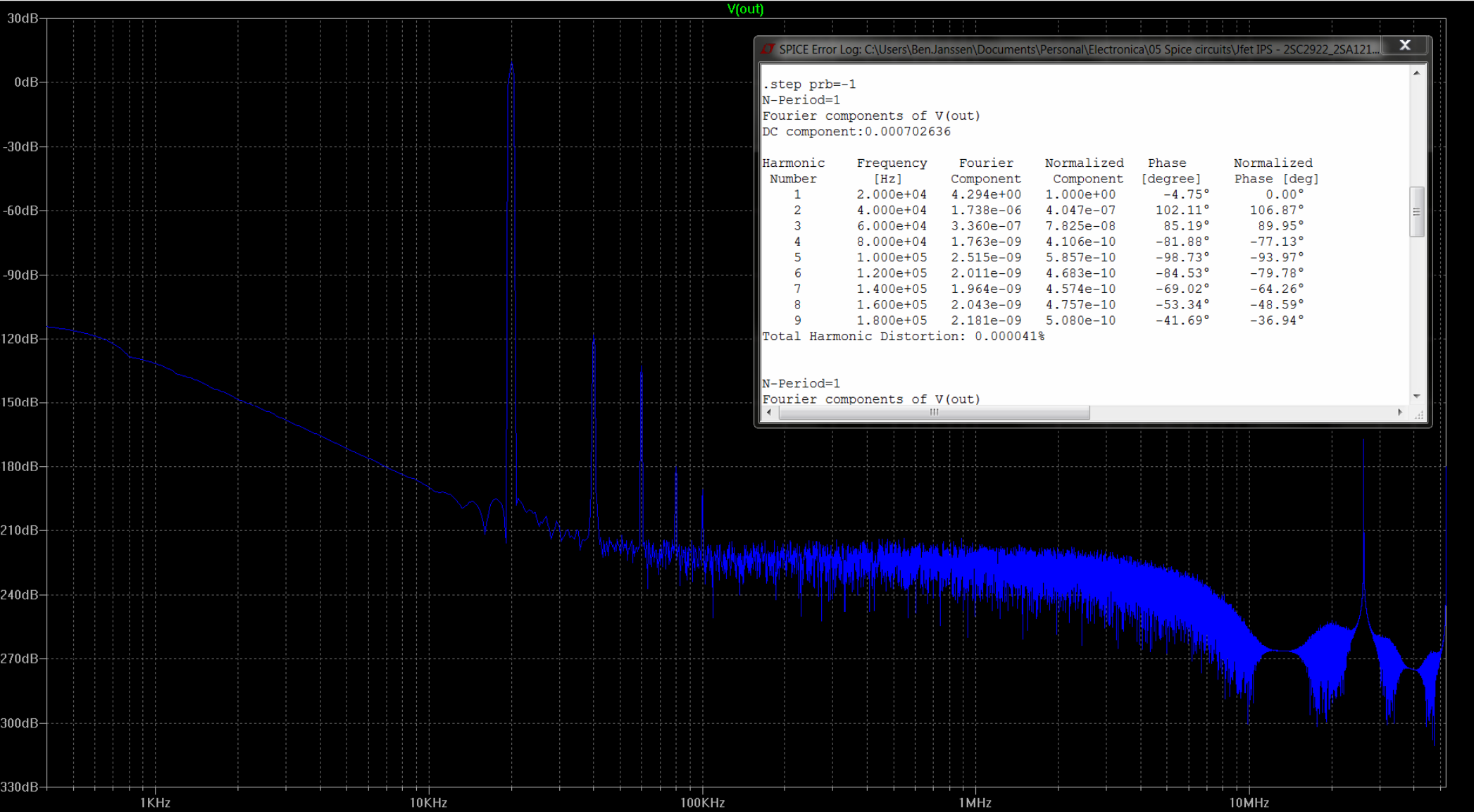
- PM = 77°
- GM= 22dB
- UGF = 1.6MHz



1Khz 1Wrms (load see schematic)



20Khz 1Wrms (load see schematic)



19kHz+20kHz (2x 0.5Vinput)

