

## 23cm Linear Amplifier with water-cooled GS-15b

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This water cooled 1296 MHz amplifier was build around a [cavity](#) designed and made by Mats Bengtsson, KD5FZX. It uses the russian [GS-15b](#) Tetrode with [modified anode cooler](#) and delivers up to about 350 W output without thermal problems or de-tuning.

My amplifier is build into a 19" rack cabinet 48cm/19" wide, 30cm/12" deep (39cm/15" with external heat exchanger) and 18cm/7" high, including power supply and water cooling components. The compact design and size provides an easily transportable 350 W amplifier to be used with my portable SHF-contest setup.

The power supply provides HV switchable 1600/1800/2000 V DC, 32-39 V Ug1 and 350 V Ug2. It has regulated and adjustable screen grid and control grid voltages and over-current protection circuits for anode and grid currents.

The [water cooling system](#) uses standard components (pump, heat exchanger) available for PC water cooling systems. The tank contains 2 liters of distilled water wich is sufficient to keep the water temperature below 40° C (104° F) even during long periods of short-interval CQing in CW.

Below are some pictures of different construction stages and the final product. Well - almost final. Still missing labeling of the front and rear panels...

Thanks to Mats, KD5FZX for providing the cavity and modified tubes.



### Related links

[Complete Information on cavity and amplifier design by KD5FZX](#)

[GS15b amplifier by W6PQL](#)

[Universal Control Unit for Tetrode Power Amplifiers by GM3SEK](#)