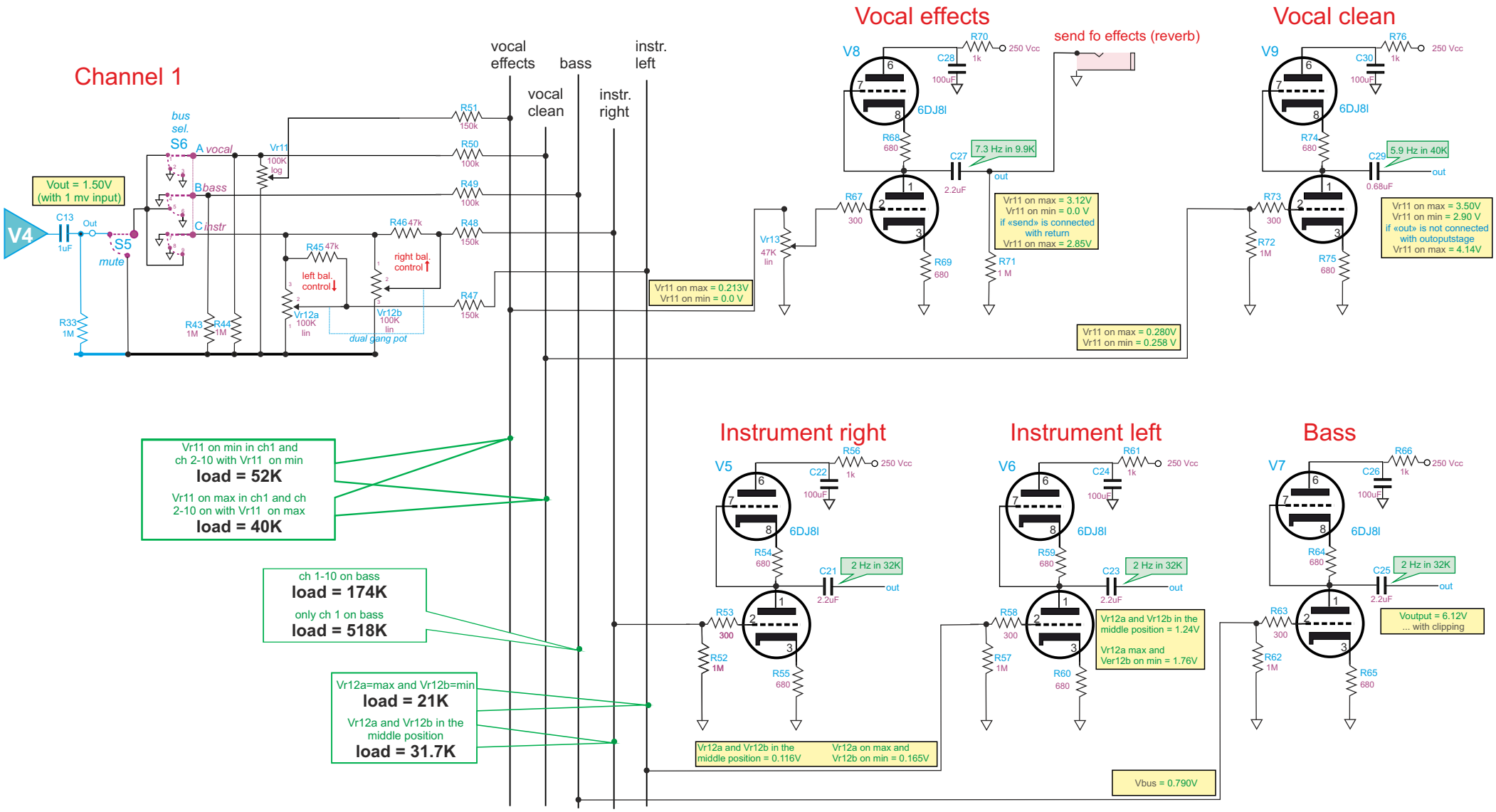# bus amplifier stages