

Lightspeed Volume Control - (A) Thread Summary (2/11/08)

Many Thanks to George for making this amazing little device available to us all and the extra info

The thread is now 1500+ posts long and is quite confusing – it wastes a lot of time looking for any particular thing.

All suggestions most welcome.

George's *Lightspeed Mk II* uses 4 X Silonex NSL-32SR2 LDR in Series & Shunt configuration, controlled by a 100k dual Log Volume Pot and 5v double reg'd supply. Additional 1kR trimmer pots for small imbalance corrections and current limiting resistors completes the parts list!

The thread is divided into **Information, Circuits, Testing, P/Supplies, Buffers and Loads**

Post Numbers are - **Red** = Classic LS, **Blue** = CCS, VCCS, Dac control, etc, **Green** = Other

Information - General Information

#1 George's design & cct, **#25** Operating Conditions **#36,53,184,1328,1382** Silonex RS2,3 information **#48** LS photo **#82** Amp Zin **#90** LDR white dot **#99** 5volt supply **#103** **Tips to build** **#112** Led pot values **#117** **How it works** **#151** Arne's Neat project **#183** 100k Linear Pot **#196,203** VTL5C3 info link **#198** **Use heatsink clips when soldering LDRs legs** **#222** Stereo Pots? **#249** RS2, RS3 discussion **#295** Passive preamp forum request **#322** Allied source for LDRs **#358** LDR limiting resistors **#401** QED input selector box **#445** Melos VTL3A47 info **#571** MikeM 'balance pot' cct **#574** P'head chokes between regs (supply) **#581,90** Caps across L D R s **#585** link to LED noise papers **#595** P'head switched vol pot **#597** Peufeu's CCS idea (**#989** Richidoo, **#1001** Pietjers) **#672** Vactrol on ESP **#685** Tesla LDR **#689** Dartzeil info **#777,799** "Audiofaidante" project **#849,50** distortion diags **#867** LDR FFTs **#882** range of attenuation **#895** Loss of central image – bad matching **#905** AndrewT's Resistor bypass of LDR **#928** Cap decoupling link **#971** Interconnect = <100pF/ft **#984** SKA = Mk I version **#989** LEDS current drive – maxim paper **#994,1013** CCS with 16bit dac **#990,1001,17,32,118** Pietjers CCS drive details **#1117,8** CCS – seperate Leds **#1144,5** Alps Blue sub for Stepper **#1046** Gootee spice model **#1063** Greyscale pcb (basic unit) **#1062,5,72,87,96** Gootee LDR // resistor bypass values **#1086** Cap across Volume Pot **#1184** VCCR system info **#1088** Greyscale pcb of #1001 CCS circuit **#1185** VCCS design **#1192,7** AndyP current pump **#1217,87,1440** Maximus VCCR project **#1256,74** Dantimax remote vol control **#1324** Clairex link **#1325** Vactrol link **#1400** George reverts back to double pot **#1413** P'head suggestions **#1421** Burson buffer link **#1428** 4 ch for bal use **#1438** VCCS revisited **#1475** Mkl & II comparison **#1510,12,17** Tolu DAC controlled LS **#1543** PNS kits

Circuits - posted Ccts only

#1,758 George's original design **#34,86,97,756** layout **#66** test/matching ideas **#90** **Careful - use h/sink clips when soldering LDRs legs** **#91** Pot connections (single pot) **#226** Shunt connection? **#249** Simpler setup **#348** Cct again **#416** single 100kR LOG pot **#424,5** Blues pot schematics **#496** Blues' redrawn original Cct **#581,90** Cap Bypass for LDR **#782,1248** LDR I/P selector **#788** PIC for Pot **#799** "Audiofaidante" Cct **#829** Loop control? **#913** Tolu LM49710 preamp **#1001,17,32,118** Pietjers CCS Cct **#1060** Pietjers variation? **#1153** JLM lineamp (>!) **#167** link to DD 5V supply **#1311** Urei gain cell **#1338** NP - R3 buffer **#1361** [corrected cct] **#1362** NP - 2 channel version **#1363** NP - variation 2 **#1366** NP - variation 3 **#1387** Maximus VCCR design **#1417** Orion Xover **#1444** Caps on basic LS

Testing – Matching, Specs, graphs, etc

#67 LED current chart (+5v with 100R) #74 LED Matching 2 values #87 match @ 0.1,0.5,1.5mA #103 P'head Tips on testing # 184 Siliconex Info #198 LDRs are delicate - be careful about connections #232,4 Arne's digital controlled testing? #243 matching @ 0.1, 0.6, 1.8mA #260 simple test #321 Adjust the 3 currents of LDR & measure the LDR - and match #365,1263 multi with 8 pin DIL socket #442 Warm up LDRs #495 SeaSaw matching idea #513 George's active matching (see note) #515 Blues in cct method (see note) #540,1 measuring Zout, etc #719 Can use 2 unequal matched pairs in series and in shunt #1237 Badge LDRs #1262 a simple individual LDR test with dial-up adjustable p/supply.

Power Supplies

#57 double reg to 5volt #99 5volt #148 Battery supply #195 5volt @50mA = 2 ch #516 MikeM supply #523 Gnd connection problem #532 Signal Gnd via resistor #659 AMB supply (plus various mentions of Wallwarts, computer supplies, etc)

Buffers

#333,490 Al Wright valve buffer #367 AD825 Cct #368 BUF634 Cct #601 AD815 Cct #913 Tolu LME49710 preamp #1213 Jfet "stage" #1280 NP buffer link # 1338 NP buffer (R3) #1350 more #1361 NP corrected Cct #1362 NP 2 ch version #1363 NP final Cct #1421 Burson buffer link #1459 Zum LS, Buffered LS, M.Fidelity & B1 comparison #1471 George's valve buffer (not including Aikido Cct, JC buffer, Borbelly and other excellent articles references)

Loads - Zin, Zout, Equipment combinations, etc

#121 Marchant Xover – low Zin #124 Dac valve o/p stage = high Zout 138 # Change Naim Zin #141 Lightspeed Zin & Zout = 7kR #146 as I/V stage for dac? #277 T-Amp combination #332 LS + AtmoSphere #333,4 Al Wright o/p stage #461 added Lundahl trannies #485,940 Gainclone Zin mods #730 Zapfilter II #744 LS + Aikido #929,1400 LS + AudioNote M7 #950 LS + Krell50 #1417 LS + Orion Xover #1457 LS + Zum's M/Fidity, B1, etc