



VCA (Voltage Controlled Attenuator) Circuitry in VX Amplifiers

** Revised 10/07/96**

** Revised 13/08/98**

Introduction

VX series previous to 06/96 used a VCA integrated circuit (i.c.) called the SSM2013 this has now been made obsolete . The semiconductor manufacturers recommended replacement is the SSM2018.

Unfortunately this i.c. is in no way compatible with previous circuit boards, PCB 00822 (DWG 1624) and PCB 00630.. The only difference between these early boards is that PCB 00630 includes a 'switch on delay' circuit.

These 2 PCB's have now been replaced by the PCB 9100 which physically fits all VX models and also incorporates the option of the 'switch on delay' ,now making this feature available to all models.

**** Warning ****

This VCA application note allow the use of external voltage sources to the ones generated internally . External voltage sources for old style VCA kits are NOT compatible with the new PCB 9100 based Kit.

The SSM2013 has a unity gain with -1.3V on its control line.with a control line sensitivity of - 10mV/dB
The SSM2018 has a unity gain with 0V on its control linewith a control line sensitivity of -28mV/dB

VCA information

The VCA is an optional unit for use with any of the HH VX series power amplifiers.It may be factory fitted or ordered seperately for dealer fitting.

The VCA provides variation from unity gain to -90dB of attenuation,infininitely variable via a remote d.c. source

The VCA is fitted in circuit in circuit after the front panel input attenuators.

A 6 pin DIN is provided on the rear panel for the external control of the VCA

Fitting Instructions

Caution : CMOS devices .Observe static handling precautions

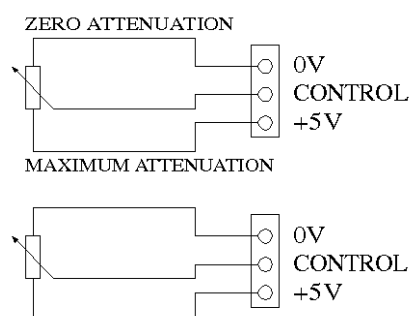
1. Disconnect the amplifier the mains.
2. Remove top cover.
3. Remove the VCA blanking socket from the rear panel.
4. Remove the black shorting links from plugs PL2 and PL6 on the front panel PCB(PC 00550/Lx2)
5. Remove the fixing nut from the 6 way DIN connector.
Pass the two connectors through the VCA socket hole in the rear panel and slide the fixing nut over cable.
6. Fit the 6 way DIN socket to the rear panel , ensuring that the locating pipe engages with the keyway . Tighten the rear nut..



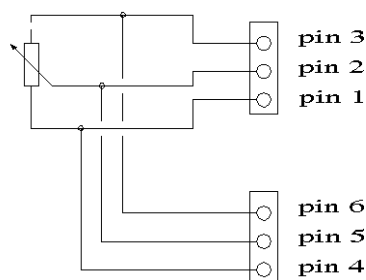
7. Carefully fit the two VCA pcb's to plugs PL1 and PL2 (on channel one) and PL5 and PL6 with the ribbon cables on the VCA boards towards the heatsink assemblies.
n.b. slight resistance will be felt as the boards are pushed home due to the retaining mechanism
8. Carefully slide the 6 way ribbon cable into the channel supporting the 16 way ribbon cable, and ensure the 6 way cable runs as close to the front panel as possible , using the double sided pads as supplied.
9. Check to ensure to ensure all connections are correctly made and nothing has been inadvertently left inside the unit.
10. Refit top cover
11. Connect the remote control circuit via the 6 way DIN connector.
12. Reconnect the amplifier and test the system.

Typical VCA wiring connections

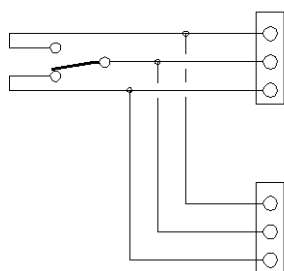
Seperate Channel Controls



Combined Channel Controls



Combined Channel Muting



Above are shown some typical application circuits that can be implemented using the VCA circuitry
Recommended Pot value = 10KC (anti-log)
ONLY Use screened lead for VCA cable

VCA Socket Pin Out

Pin 1	0V channel 1
Pin 2	Control Channel 1
Pin 3	+5V Channel 1
Pin 4	0V Channel 2
Pin 5	Control Channel 2
Pin 6	+5V channel 2

