

UB287 Voltage Controlled Amplifier/Automatic Gain Control Module

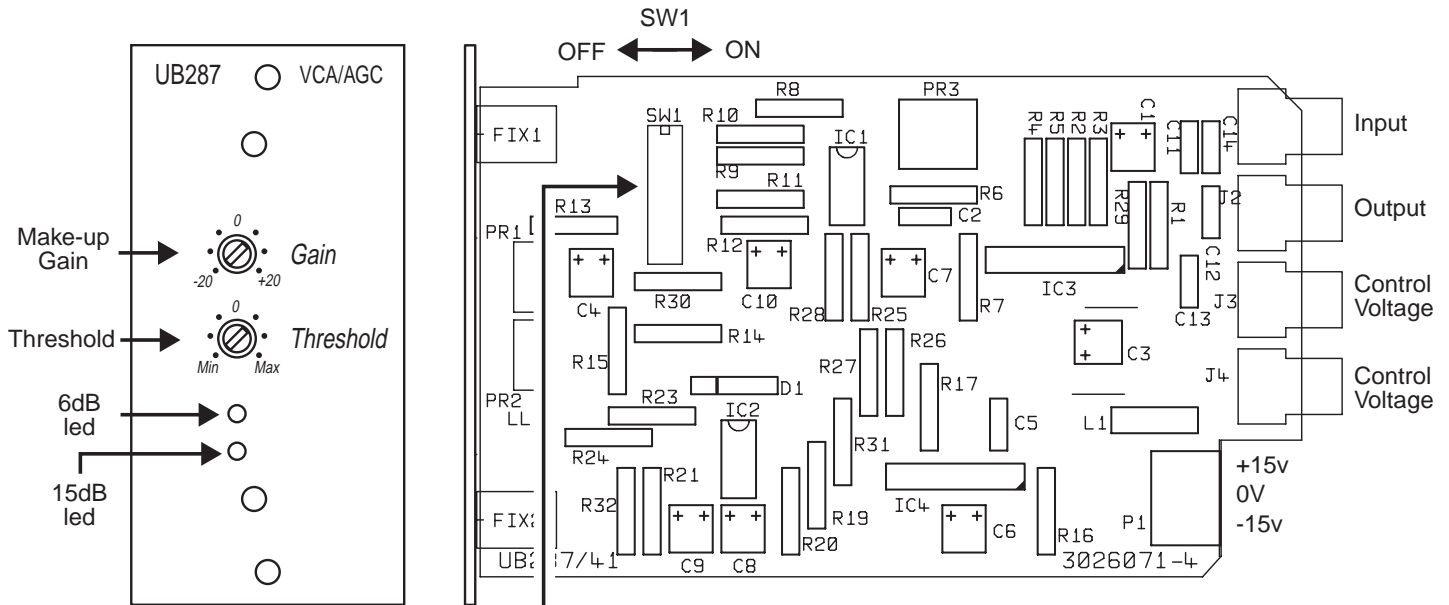
UB287 includes a low distortion VCA and level detector which can be configured as a VCA or AGC amplifier. Applications include remote control of audio signals, loudspeaker protection and automatic volume control.

In VCA mode, the control voltage sensitivity can be scaled to the required control characteristics (5V, 10V with or without offset, AC or DC). In AGC mode, the control curve is soft-knee to minimise side-effects such as breathing and pumping.

Provision is made for coupling the control voltages in multi-channel distribution systems.

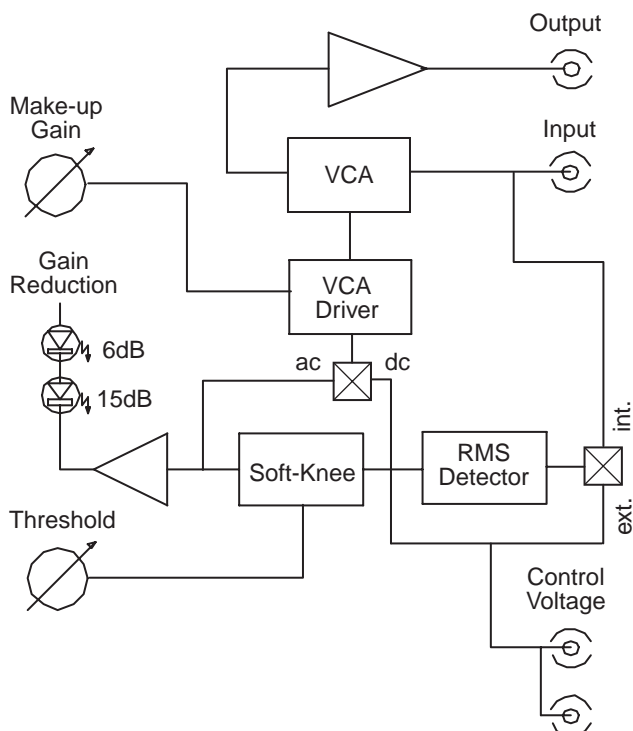
The line level input and output are unbalanced. For balanced applications use one of the standard I/O modules (UB282, UB285 or UB285T).

CONNECTIONS AND CONTROLS



See over the page for details on setting SW1

BLOCK DIAGRAM



SPECIFICATIONS

Frequency response	+0, -0.5dB, 20Hz to 20kHz
Input impedance	7k5 unbalanced
Output impedance	1k unbalanced
Input level	-7dBu nominal +18dBu maximum
Output level	+18dBu maximum
Gain control range	+/-20dB
Threshold range	-40dBu to 0dBu
Attenuation	>80dB
Signal to noise ratio	<-80dBu
THD	0.02% VCA mode 0.2% AGC mode
Control Voltage	-20dB/V or -10dB/V

POWER SUPPLY +/-15V @ 30mA



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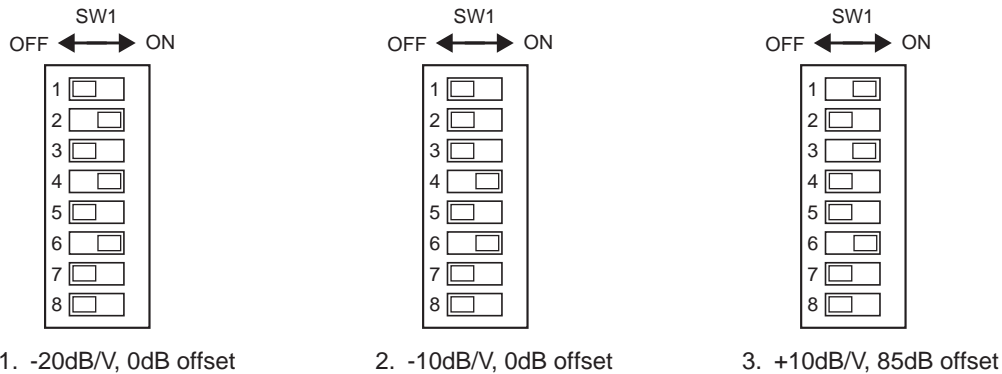
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1. VCA mode

In VCA mode, gain is controlled by the DC voltage present at the Control Voltage input. This control voltage can be scaled using SW1 - see diagrams.

- Control law is -20dB/V with 0dB for 0V control voltage
- Control law -10dB/V, with 0dB for 0V control voltage
- Control law is +10dB/V with 100dB offset (i.e. VCA is at full attenuation and increasing control voltage reduces attenuation).

The Make-up Gain control is operational in this mode and can offset VCA gain by +/-20dB.



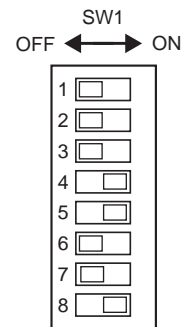
2. AGC: Automatic Gain Control mode

In AGC mode the UB287 functions as a soft knee limiter/compressor. This means the compression ratio depends on the input signal level, starting at a 1:1 transfer to a 10:1 ratio over a 16dB input level range. To configure the UB287 for AGC mode using SW1 refer to the diagram on the right.

The Control Voltage input is not used in this mode.

With a nominal input level (typically 0dBu) adjust the Threshold control until the Green (6dB GR) led lights intermittently. Adjust the Make-up Gain control to restore the compressed signal level to nominal level.

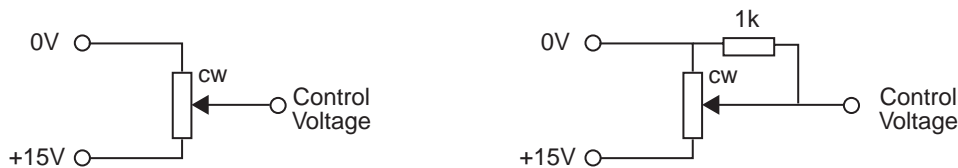
The Red led lights to indicate a gain reduction of greater than 15dB and that the signal is subject to severe limiting. Unless required this should be avoided for normal operation.



AGC mode

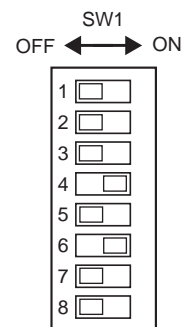
3. Remote Gain Control

The UB287 can be configured as a remote volume control - see diagram for SW1 settings.



1. Using a 10k Reverse Log potentiometer

2. Using a 10k Linear potentiometer



-10dB/V, 0dB offset

Please note that unless you are using the same supply as the UB module you will need to connect 0V of the control potentiometer to 0V of the Control Voltage connector.

Both these suggested circuits allow attenuation to -100dB. This can be changed by adding a resistor in series with the wiper of the control pot e.g. a 33k resistor limits the maximum attenuation to -30dB.



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