

# HHB Radius 30 & Classic 80

To be or HHB? Konrad Skirlis ponders the question while evaluating the Radius 30 compressor and Classic 80 pentode tube mic preamp.

HHB have released the Radius and Classic series of tube-based outboard gear for microphone preamplification, dynamics processing and equalisation. While there is no shortage of valve processors on the market, HHB have entered the race knowing full well that the sonic character of the vacuum tube is the sought-after sound of the modern recording era. Both the Radius and Classic series combine solid state design and vacuum tube sound quality, with attractive price tags.

## Radius 30

The Radius 30 is a 2U rack mountable compressor, measuring around eight inches deep. The purple face plate is attractively marked with white graphics and

20ms, and release times are either 40ms or two seconds. The backlit VU meter may be selected to display output level or gain reduction. Furthermore, a 6.5mm side-chain insert allows an equaliser to be used for frequency dependent compression, i.e. de-essing.

Being a valve unit, the settings on the Radius 30 improve the sound of most instruments – variations in input level, threshold, and gain make-up will affect the overall sound character. Having valves in the signal path, there may be times when tube colouration is all that's needed. However, with the lowest compression ratio of 1:1.5 (rather than 1:1) some compression will be added even though the existing dynamic range may not need to be changed. On the other hand, the highest compression ratio of 1:30 does not constitute true limiting.

With the ratio settings marked at 1:1.5, 1:5, 1:10, and 1:30, finding other exact values may be difficult. Considering that ratios between 1:1.5 and 1:5 are most popular for tracking and mixing, precision is not the Radius 30's forte. In general, ratios under 1:5 were subtle compared to other compressors and this is an advantage for gentle compression applications. Attack and release times offer only two options – fast and slow.

While the available settings are good for vocals, guitar and piano, the Radius 30 may be unsuitable for fast attack transient instruments.

However, the vacuum tube stage smoothes out transient response, making drums sound warm and fat. By increasing the input drive for bass guitar, bass tone improved – again, the result of the valve stage. Vocals seemed to benefit the most from Radius 30 compression. Working the input levels at a moderate setting took away the harshness normally associated with budget digital recording gear – this alone will justify its use to many. The individual control afforded by the stereo-link feature gives the Radius 30 more flexibility for fine-tuning stereo signals or two mono signals of the same sound, e.g. a close and distant mic set-up of the same amplifier. A fat sound was produced when the compressor was inserted across the main stereo L/R mix outputs and digital synths were warmed up before being recorded. Overall, the Radius 30 offers adequate control to shape a good sound on a variety of instruments.

The Radius 30 also includes an expander/gate. It exists as a one knob control which enables you to adjust the threshold until the Gate Shut LED illuminates. The attack and release times of the gate seemed better tailored to vocals and other instruments that have mild envelope shapes – transients on more percussive sounds may be lost. While it's uncommon for engineers to use

ivory-coloured knobs. Around the back, XLR (pin two hot) balanced and 6.5mm unbalanced jack connectors take care of the I/O. The 6.5mm instrument input on the front panel allows the unit to be used as a DI for electric guitar and keyboard applications. The frequency response is a staggering 10Hz to 40kHz, while line level input has a good noise floor figure of -80dBu (at unity gain); and the quoted dynamic range figure is 106dB, which is 10dB better than CD quality.

The Radius 30 features include: an input gain which drives the tube stage; variable threshold for activating the compressor (+20dB to -20dB); sweepable compression ratio (1:1.5 to 1:30); gain make-up (0dB to +20dB) to bring up the level of the compressed signal; an output level control and an expander/gate feature. When the expander/gate is shut, an LED illuminates and additional LEDs indicate 'Drive' and 'Peak' levels. Additional switches include: stereo link and a compressor in/out button, both of which have LED indicators. When the Radius 30 is stereo-linked, the compressor for both channels is triggered by one channel's signal, yet individual adjustments for threshold, ratio, and I/O levels may be made. Attack times are switchable between 0.5ms and



gates during tracking, I found that adjusting the gate knob during recording produced some useful results. For example, it helped clean up the head and tail of an overdub, thereby improving overall dynamic range.

## Classic 80

The Classic series includes a tube compressor, parametric equaliser and microphone preamp, all designed for serious audio applications. The Classic 80 is the preamp of the range and utilises General Electric's 12AX7 and Siemen's EF86 pentode devices powered by high HT voltages to ensure maximum gain and minimum noise. The tubes are held in place securely by tube sockets which are PCB-mounted ceramic units with gold-plated contacts. The 250V DC voltage and minimal use of transformers in the signal path should ensure maximum gain and minimum noise.

The Classic 80's controls are clearly calibrated and easy to read – with a white printed panel on a purple background, the unit is easily viewed in poorly lit conditions. The HHB Classic units, like its Radius counterparts, include a standard IEC AC lead, and power is switchable between 220/240V 50Hz (European) and 110/120V 60Hz (US). The build quality of the Classic 80 is excellent, using heavy gauge front panels and rounded edges. Toroidal transformers and linear regulators are used on the DC rails. The transformers are securely mounted, and mechanical noise is kept to a minimum.

The Classic 80 has identical mic preamplifier channels via XLR sockets on the rear panel. The microphone input is balanced by means of a transformer, which couples the signal directly to a low noise pentode tube in the first stage of tube preamplification. Gain control is switchable in 10dB increments from 20dB to 50dB, configured around this pentode. There is also an unbalanced high impedance instrument input on each channel, suitable for sources such as guitars and keyboards. The second and third stage of amplification use an ECC83/12AX7 twin triode tube, where the second stage provides negative feedback to the pentode stage. A variable trim control provides additional  $\pm 12$ dB and forms part of the second triode stage. The tubes are of military specification and the inner components are of high quality, i.e. glass fibre double-sided circuit boards, metal film resistors and long-life capacitors. The HPF and LPF provided are -12dB per octave and utilise solid state circuitry. Each has four settings: Off, 50Hz, 100Hz and 150Hz (for the HPF) and Off, 5kHz, 10kHz and 15kHz (for the LPF). A large rotary fader controls the output level and is calibrated from zero to 10. 'Peak' and 'Drive' LEDs monitor the operating level of the preamp valve stage. The Peak LED is activated at around 2dB below clipping. The VU meter looks at the signal after the output stage and a phase invert switch exists only on channel one. Both electronically balanced (XLR) and unbalanced outputs (6.5mm jacks) are provided and the output level can be set to +4dB or -10dB on the back panel.

The Classic 80 has a tube sound which is hard to beat, mainly because the main preamp stages are all tube-based. Because mic inputs are transformer coupled using low noise EF86 pentode tubes, the sound quality is excep-

tional. By the sparing use of transformers in the signal path the Classic 80 is electronically very quiet (-122dBu at maximum gain). Mechanically, it's also quiet. The large cooling slot provides adequate ventilation for the tubes, so forced air cooling is not used, thereby eliminating the need for noisy fans that increase the background noise level. The advanced transistor circuitry allows maximum power to be transferred between the valve stages, so distortion and phase errors are significantly reduced. Additionally, heavy duty and fully stabilised power supply units provide maximum gain and headroom, thereby minimising noise and hum. The overall frequency response measures up favourably (from 22Hz to 22kHz).

I found the Classic 80 brought out the best in a variety of dynamic and solid state condenser mics – it's amazing how well a good preamp can improve the sound of good microphones. Synth and guitar signals also benefited from passing through this unit, and bringing up the gain produced some very warm, glowing sounds. By varying I/O levels, the harmonic content from the different tube stages can be controlled, providing additional classic valve characteristics.

## Modern Classic?

Both the Radius 30 and Classic 80 both use valves in their circuits and, as intended, they provide a warm 'analogue' sound. While both units warm up audio for digital tracking, they also have a place in analogue recording and live sound reinforcement. The Radius 30 is an affordable unit where moderate levels of tube sound enhance the audio. The unit is well constructed with solid knobs and front panel instrument inputs, while good specs and individual channel control in stereo link mode are definite advantages. On the down side, the Radius 30's limited attack and release settings are not ideal for all applications. At times, the expander/gate clipped transients and a lack of comprehensive knob markings made exact settings difficult to find. The Radius 30 is designed for personal studios and commercial studios on a budget, striking a good balance between affordability and sonic performance. On the other hand, the Classic 80 is a truly a professional unit and worth a look by anyone wanting superior mic performance. It provides that sought after 'tube warmth' in a way that maximises gain and minimises noise. With superior construction and electronic parts, its performance is at a high level. By using valves in the important audio amplification stages and solid state circuitry for less critical functions, mic performance is greatly improved.



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## Price

• Radius 30: \$1999 RRP; Classic 80 \$5599 RRP.