

# INNOVATIVE PRODUCTS FROM APHEX, FOR SUPERIOR SOUND REPRODUCTION

The remarkable Aphex Aural Exciter is a unique proprietary audio processing device that makes use of highly advanced psychoacoustic principals to effectively restore and enhance audio presence, brightness and intelligibility. The patented psychoacoustic process creates the perception of an increase in mid and high frequency energy, with no actual increase in power or level.

The Aural Exciter can produce dramatically improved clarity, dimension and character in any sound system or application. It can also reduce distortion in P.A. and sound reinforcement applications by providing increased penetration and audibility at reduced power levels. The device can be added to virtually any new or existing system with no danger of overloading other components or triggering

compressors or limiters.

The Aural Exciter is a single-ended process, requiring no decoder. Once encoded, copies made from a processed tape sound every bit as good as the original.

The Aphex Aural Exciter is available in three models, each is specially designed for a specific application.



**APHEX II-S \$2,950.00**

The Studio Aural Exciter is engineered for the sophisticated recording and production studio, as well as advanced sound reinforcement applications. In the studio, the Aural Exciter effectively restores the presence and clarity which the recording process removes, reviving that bright, unmistakable "live" quality. It can also make certain segments "stand out" without actually being louder. Used typically in stereo mixdown situations, this latest version of the Aural Exciter features increased flexibility so it's ideal for virtually all types of program material, from the hardest rock and roll, to the subtlest movie dialogue and sound effects.

The Aural Exciter is also well suited to stage and concert use. It can make any P.A. system sound much cleaner, brighter and intelligible without adding any level or feedback to the house or monitor system. It is particularly effective in filling acoustic spaces to eliminate dead spots. The device cleans up sound in overly reverberant halls and makes speaker location much less critical.

**SPECIFICATIONS APHEX II**

**FREQ. RESPONSE:** 15HZ - 50KHZ +0-.2 dB  
**THD, IMD:** .05% at max I/O  
**NOISE:** 110dB below max output  
**CROSSTALK:** Better than -80dB  
**MAX I/O (with standard Jensen output xfrmr):** Selectable +21dB, +24Bm, + a user definable position  
**INPUT IMPEDANCE:** Selectable 600ohm or bridging, 40K Bal, 60K unbal



**APHEX II-B \$2,950.00**

The Broadcast Aural Exciter has all the remarkable features and capabilities of the Studio unit, plus complete R.F. shielding and safety bypass relays in the event of power failure. Designed specifically for on-air use, this unit provides AM stations with the clarity and brightness of FM, while restoring to FM the naturalness and openness normally lost due to processing.

The most impressive aspect of the Aphex Broadcast Aural Exciter is the fact that the lower the quality of the playback system, the better the comparative benefit derived. The sound of your broadcast will satisfy the most demanding audiophile, and at the same time grab the attention of the rush-hour commuter.

**OUTPUT IMPEDANCE:** 50ohm  
**METER:** 2 color, 2 channel VTF with LED legends for drive, limit, peak and meter status indication  
**SIZE:** 3-1/2" x 19" x 9"  
**WEIGHT:** 19 lbs.  
**POWER REQUIRED:** 100 - 240 VAC 50 - 60 Hz

\*Single-ended transformerless and balanced transformerless outputs optional.



**APHEX AURAL EXCITER TYPE B \$495.00**

The Aural Exciter Type B is engineered for less demanding situations. It utilizes the same psychoacoustic principles to make Aural Excitement available to small clubs, studios, halls, restaurants, musicians, tape duplicators and sound contractors operating on a more modest budget. Retaining the most important features of its bigger brothers, the Aural Exciter Type B is a small, lightweight package with extensive capabilities limited only by the user's imagination.

**SPECIFICATIONS - TYPE B**

**FREQ. RESPONSE:** 10 HZ - 100K HZ ± .05 dB  
**THD:** Less than .01%  
**NOISE:** -90 dBV  
**OPERATING LEVEL:** Selectable -10 or 0 dBm  
**MAX I/O:** +20 dBm  
**INPUT IMPEDANCE:** 47K ohm unbalanced  
**OUTPUT IMPEDANCE:** 150 ohm unbalanced  
**METER:** Tri-colored LED for drive level  
**SIZE:** 1-3/4" x 19" x 6"  
**WEIGHT:** 4.5 lbs.  
**POWER REQUIREMENT:** 100 - 130 VAC 50 - 60Hz (export version available)



**COMPPELLOR™ COMPRESSOR/LEVELER/PEAK LIMITER \$995.00**

The Compellor™ is a unique, revolutionary audio processing tool that combines the functions of a fast compressor with slow gain riding and an overall peak limiter. It provides complete flexibility in dynamics control when used as a broadcast pre-processor, as well as in the recording

studio or live p.a. situation. The resulting sound is smooth and dense with an increase in perceived loudness and brightness.

The variable slope compressor operates over a 30 dB range with attack and release times controlled by program dynamics, eliminating "pumping" and the choked sound associated with deep compression.

Audio leveling over a 20 dB range maintains the audio in the "knee" of the compressor providing a uniquely dynamic compression which is rich in transient quality and openness, with an absolute ceiling maintained by the peak limiter.

The balance between compression and leveling actions is continuously variable; adapting the Compellor™ and its effects to an enormous variety of material.



**EQF-2** \$449.00

The EQF-2 combines a 3-band sweep equalizer with a sweep Hi and Lo pass filter section. The EQ has switchable peak/shelf on the Hi and Lo sections, and reciprocal 12 dB of cut and boost on all sections. The filters are second order Butterworth and can be switched separately from the EQ section.

**SPECIFICATIONS**

**FREQ. RESPONSE:** ± 1dB 20 Hz – 20 kHz all sections in  
**THD & IMD:** Below 0.1% at max. I/O  
**NOISE:** –123 dB below max. I/O  
**FILTERS:** Hi pass 20-500 Hz  
 Lo pass 1-20 kHz  
**EQ LOW:** 25 – 500 Hz  
**MID:** 250 – 5kHz  
**HI:** 1 – 20kHz  
**MAX. I/O:** +20dBm with optional Jensen xfrmr  
**SIZE:** 1-1/2" x 5-1/4" x 6"  
 (industry standard)  
**WEIGHT:** 2 lbs.

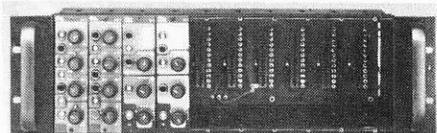


**CX-1** \$449.00

The CX-1 is a very versatile module combining a "soft knee" compressor/limiter with a switchable expander/gate. The CX-1 uses the proprietary Aphex VCA chip to provide an extremely clean overall sound. The expander is adjustable from 0 to 100 dB of expansion (gating) and is the only noise gate on the market that can be guaranteed not to click or pop. The unit features a multi-functional LED display that indicates input, output, compression or expansion levels.

**SPECIFICATIONS**

**BANDWIDTH:** ± 1dB 20 – 20 KHz all sections  
**THD, IMD:** Less than 0.2% at max I/O  
**NOISE:** –85 dBm  
**MAX I/O:** +20 dBm (+30 dBm with optional Jensen xfrmr)  
**SIZE:** 1-1/2" x 5-1/4" x 6"  
 (industry standard)  
**WEIGHT:** 2 lbs.



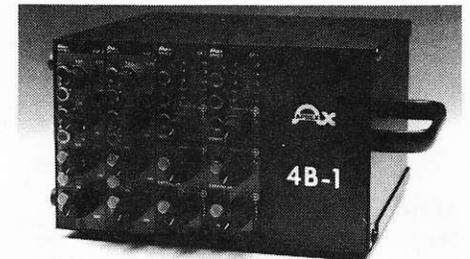
**R-1** \$195.00

The R-1 holds 10 Aphex modules and provides barrier strip access to all inputs and outputs. Power and ground are bussed.



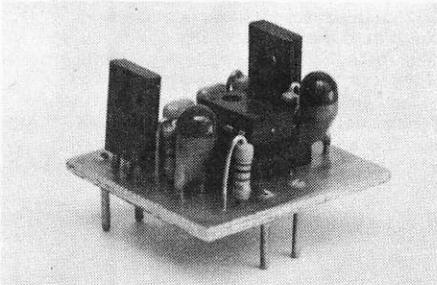
**PS-1** \$275.00

The PS-1 is a ± 16V @ 3.4A regulated supply with OVP that will power two R-1 racks.



**4B-1** \$349.00

Self-powered, the 4B-1 is for the mobile engineer. It holds 4 Aphex modules and has a built-in patch board on the rear with 1/4" and T-T size jacks.



**2521 – OPERATIONAL MODULE**  
 \$35.00 (singles)

The 2521 Operational Module is a high speed, high output, short circuit proof buffer that takes on the characteristics of the IC that is plugged into it. It is current limited and can put out a full watt of power into a 62 ohm load.

The 2521 output transistors have a 3 amp rating for superior reliability. The unit is also 100% field repairable, so there's never a need to discard a complete module because of a defective 10<sup>4</sup> resistor. The 2521 can be continually and easily updated to meet changing needs.

**FEATURES**

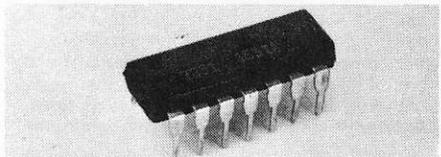
- 100% Field-repairable
- 100% short circuit proof
- Greatly improved overload characteristics
- Built-in power decoupling
- Socketed IC eliminates obsolescence
- Extremely low noise current

**SPECIFICATIONS**

**BANDWIDTH:** 4MHz  
**THD (at clipping –1 dB):** 0.02%  
**IMD:** 0.02%  
**GAIN:** 50,000 Min.  
**SLEW RATE:** >10 v/μ Sec.  
**OUTPUT NOISE:** –113 dBm  
**MAXIMUM INPUT:** 30 Volts P-P  
**MAXIMUM POWER OUTPUT:** 1 Watt (+30 dBm)  
**MAXIMUM VOLTS OUTPUT:** Supply –4 volts P-P  
**MAX. SUPPLY VOLTAGE:** ±18 volts  
 (with LF 351)

\*High voltage, high output versions are available. Consult the factory for details.

**VCA PRODUCTS**

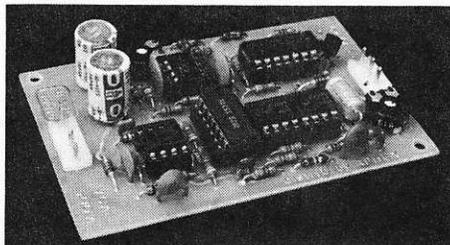


**1537A VCA IC** \$10.50 (100's)

The 1537A is the only monolithic Class A voltage-controlled attenuator on the market today. Its patented design features extremely low distortion, low noise, high stability and wide dynamic range. It can provide more than 100dB of attenuation at +20 dBm. Its high slew rate gives low T.I.M. and makes it useable from DC to 50 MHz.

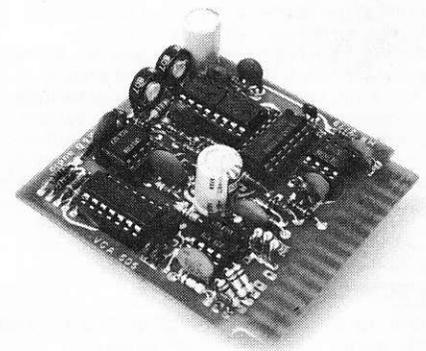
**SPECIFICATIONS**

**BANDWIDTH:** DC to 50 MHz  
**THD:** 0.004% TYP  
**IMD:** 0.03% TYP  
**NOISE:** –90 dBv worst case  
**MAX. ATTENUATION:** >100 dB, DC – 200 kHz



**VCA 500A** \$89.00 (singles)

The new VCA 500 A utilizes a 1537A VCA IC to significantly improve the performance and overall sound quality of the MCI JH-500 series console. Conversion takes only a few minutes per channel with plug-in convenience.



**VCA 505** \$89.00 (singles)

The VCA 505 is an expanded version of the highly-acclaimed 1537A Voltage Controlled Attenuator. It utilizes a 15-pin card edge mount package for easy installation, has multiple buffered control inputs for maximum versatility, and requires no additional circuitry.

**SIZE:** 2.75" high x 2.85" deep x .72" wide

## Aural Exciter® Type C



**T**he best way to improve your sound system just got better and more affordable. Less than \$300! Like the famous Type B, the new Type C restores natural brightness, presence and detail to live and recorded sound...and does it more quietly and musically! Lyrics will have more intelligibility...guitars more bite...drums more kick. The overall mix will be cleaner, more natural and exciting.

The Type C is the best way to improve any sound system. It adds that *extra edge* that is impossible to add with any other processor. Live sounds fill the room without all the problems of high frequency EQ. Multitrack tapes made on narrow format machines will sound like they were made on expensive studio recorders. Even cassette dupes will have an unmuffled, professional sound.

The Type C is a cost effective enhancement for *any* audio application, such as recording, P.A., paging, tape duplication (audio and video), club sound and communications. It will also enhance *any home stereo system* by improving the program material as well as the playback system. Movie dialog is enhanced as well as music.

Aural Excitement is a patented, proprietary process that cannot be duplicated in any way, except by another *genuine* Aural Exciter from Aphex Systems, LTD. The Type C is designed, engineered and proudly manufactured in the United States.



Aphex Systems Limited

## WHAT IS AURAL EXCITEMENT, AND WHY DO YOU NEED IT?

All signal processing is far from perfect, whether it is the recording and reproduction process...or simply sound reinforcement. Every step of the process from the original microphone to the final loudspeaker causes a loss of *realism*. And you know it's happening because things just don't sound *live* anymore. What's missing are the tiny fragile parts of any sound which give it its character and allow it to be differentiated from other sounds.

Conventional equalizers and compressor/expanders fail to restore this realism because they only work on what's left of the original sound, often increasing noise and distortion in the attempt. The Aural Exciter uses a *patented* process incorporating *psycho-acoustic principles* to actually recreate these missing details, restoring natural brightness, presence and clarity to your sound.

This process electrically divides the signal into two paths. The first path goes unmodified to the output. The second path goes through the enhancement circuit to generate musically related harmonics over a tunable range and are then added back into the main signal at a much lower level. Since the enhancement signal is low level, high frequency information, there is virtually no increase in power or level as there would be using EQ. The perceived effect, however, is tremendous. And this effect seems even greater in low quality systems, right down to 3" TV speakers.

Thousands of recording artists all over the world have paid \$30 per recorded minute to have this effect encoded into their music. Now, with the Type C, Aphex brings *genuine* Aural Excitement within reach.

The benefits to *any* sound system are numerous:

- **Recording**—The tracks will "open up" with greater dimension. Each instrument will be clearer and more distinct. Vocals will be more present and intelligible. Background tracks can stay in the back without being lost. Tape copies will be as good as or better than originals.
- **Live Performances**—The house fills with sound eliminating "dead" spots in the most difficult acoustic environments (e.g. churches). Since it makes the sound "Bigger" without adding level, it is especially effective in monitoring systems. Just imagine being able to hear yourself without having to worry about feedback!
- **Theaters, Clubs, Restaurants and Discos**—The sound will be clear and penetrating, even with a room full of people. It works for low level background music, too!
- **Industrial/Commercial**—Any paging/P.A. system will become more intelligible even in high ambient noise environments.
- **Home Systems**—Your stereo will sound richer and fuller. The sound will seem to jump out of the speakers. The stereo image spreads making listener and speaker location less critical.

The applications of the Aural Exciter are endless. Once you realize what it can do, you will surely be able to add many of your own uses for it.

### Aphex Aural Exciter Type C Features

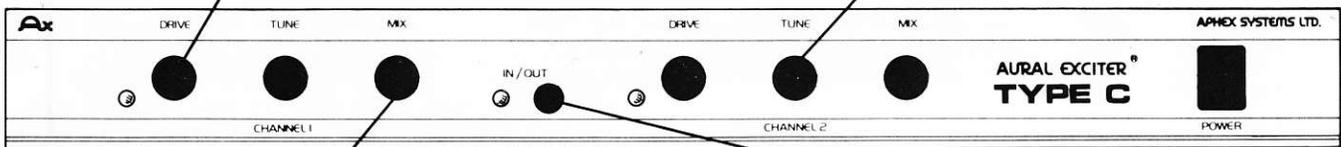
The Type C has two independent channels that can be used for stereo with matching settings, or separately with different settings. Each channel is line level in/out with the nominal operating level -10 dBm. Connections are made via both standard 1/4" phone jacks and RCA jacks on the back.

#### DRIVE

The Drive control sets the proper input level to the enhancement generating circuitry. Its tricolor L.E.D. should show mostly Green/Yellow with program, occasionally flashing Red on peaks. Too much Green (or no color) will under-drive the circuit, causing minimal effect generation. Too much Red will over-drive it, perhaps causing distortion.

#### TUNING

The Tune control allows you to adjust the range of the enhancement from the tops of cymbals down into the voice and lower instrument range. This control interacts with the Drive level, so be sure to verify correct Drive after setting the Tune control.



#### MIX

The Mix control varies the amount of enhancement mixed back in with your program from none to maximum. Your setting will depend on the effect you wish, from just a touch of naturalness for a fine sound to grinding out maximum intelligibility in a low quality paging/P.A. system.

#### IN/OUT

Switches the effect instantly in and out of your system for A/B comparison of your settings to the dry program material. The L.E.D. indicates A.C. power on as well as effect out (Green) and effect in (Red).

An Aural Exciter is usually hooked up as the last item in the sound chain, before the power amp or recording deck and after any other processing that may be done.

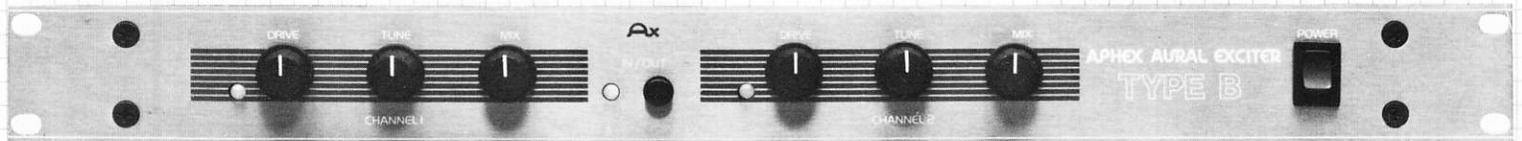
### Specifications

Dimensions:	1 3/4" x 17" x 6"*
Weight:	4.5 lbs.
Bandwidth:	10Hz to 100kHz ± 0.5 dB
Noise:	-90 dBv
THD:	Less than .01%
Operating Level:	-10 dBm
Maximum in/out level:	+14 dBm
*With rack ears (included)	19" wide

Aural Exciter is a registered trademark of Aphex Systems, Ltd. U.S. Pat. No. 4,150,253.  
Foreign patents issued and pending.



# THE AFFORDABLE APHEX AURAL EXCITER™ TYPE B



- Newest version of the Aural Exciter™ from Aphex – the **originators** of psychoacoustic enhancement.
- Uses the same principles as the more expensive Aural Exciters™ used on thousands of hit albums, concerts and movies, and on the air on hundreds of radio stations worldwide.
- Restores **natural** brightness and presence, makes your sound **real** again.
- Improves intelligibility; makes individual sounds distinct from one another.
- Increases perceived loudness without changing actual gain or EQ.
- Improves the acoustic performance of any environment.
- Synthesizes program related harmonics to generate a musical, **natural** sounding enhancement instead of unnatural effects such as EQ, echo, delay, flanging, phasing, notching, filtering, etc.
- Cost effective enhancement for **any** audio application, such as recording, P.A., paging, tape duplicating (audio and video), club sound and communications. Possibly the single most dramatic improvement you can make to your audio system for less than \$500.
- Aural Excitement is a patented, proprietary process that cannot be duplicated in any way, except by another **genuine** Aural Exciter™ from Aphex Systems, LTD.



**WHAT IS AURAL EXCITEMENT, AND WHY DO YOU NEED IT?** The sound recording and reproduction process is far from perfect. Every step of the process from the original microphone to the final loudspeaker causes a loss of *realism*. And you know its happening because things just don't sound *live* anymore. What's missing are the tiny fragile parts of any sound which give it its character and allow it to be differentiated from other sounds.

Conventional equalizers and compressor/expanders fail to restore this realism because they only work on what's left of the original sound, often increasing noise and distortion in the attempt. The Aural Exciter uses a patented process incorporating *psychoacoustic principles* to actually re-create these missing details, restoring the natural brightness, presence and clarity to your sound.

This process electronically divides the signal into two paths. The first path goes unmodified to the output. The second (the enhancement circuit) generates musically related harmonics over a tunable range, and then adds them back into the main signal at a much lower level. Since the enhancement signal is low level, high frequency information, there is virtually no increase in power or level as there would be using EQ. The perceived effect, however, is tremendous. And this effect seems even greater in low quality systems, right down to 3" TV speakers.

Thousands of recording artists all over the world have paid \$30 per recorded minute to have this effect encoded into their music. Now, with the introduction of the Type B, Aphex brings real Aural Excitement within reach.

The benefits to *any* sound system are numerous: • **Recording** – The tracks will 'open up' with greater dimension. Each instrument will be clearer and more distinct. Vocals will be more present and intelligible. Background tracks can stay in the back without being lost. Tape copies will be as good as or better than originals. • **Live Performances** – The house fills with sound, eliminating 'dead' spots in the most difficult acoustic environments (e.g.-churches). Since it makes the sound 'Bigger' without adding level, it is especially effective in monitoring systems. Just imagine being able to hear yourself without having to worry about feedback! • **Discos, Theaters, Restaurants, and Clubs** – The sound will be clear and penetrating, even with a room full of people. It works for low level background music too! • **Industrial** – Any paging/P.A. system will become more intelligible even in high ambient noise environments. • **Home Systems** – Your stereo will sound richer and fuller. The sound will seem to jump out of the speakers. The stereo image spreads making listener and speaker location less critical.

The applications of the Aural Exciter are endless. Once you realize what it can do, you will surely be able to add many of your own uses to the list.

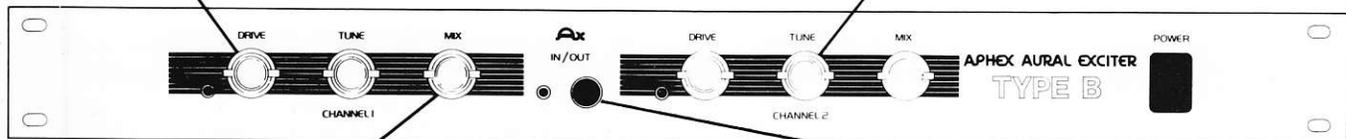
The Aphex Aural Exciter Type B has two independent channels, that can be used for stereo with matching settings, or separately, with different settings. Each channel is line level in/out with the nominal operating level switchable between -10 and 0 dBm for optimum noise and headroom performance. Connections are made via standard 1/4" phone jacks on the rear.

**DRIVE**

The drive control sets the proper input level to the enhancement generating circuitry. It's tricolor L.E.D. should show mostly Green/Yellow with program, occasionally flashing Red on peaks. Too much Green (or no color) will under-drive the circuit, causing minimal effect generation. Too much Red will over-drive it, perhaps causing distortion.

**TUNING**

The tune control allows you to adjust the range of the enhancement from the tops of cymbals down into the voice and lower instrument range. Experimentation with your program will show you what setting is right for you. This control interacts with the Drive level, so be sure to verify correct Drive level after setting the Tuning control. (Try starting in the 12 o'clock position).



**MIX**

The Mix control varies the amount of enhancement mixed back in with your program from none to maximum. Your setting will depend on the effect you wish, from just a touch of naturalness for a fine sound system to grinding out maximum intelligibility in a terrible paging/P.A. system. *It's very common to over use this control at first. Remember, the goal is to sound clean and natural, not blistering!*

**IN/OUT**

Switches the effect instantly in and out of your system for A/B comparison of your settings to the dry program material. The L.E.D. indicates A.C. power on as well as effect out (Green), and effect in (Red).

An Aural Exciter is usually hooked up as the last item in the sound chain before the power amp or recording deck and after any other processing that may be done.

**SPECIFICATIONS**

- Dimensions ..... 1 3/4" x 19" x 6"
- Weight ..... 4.5 lbs.
- Bandwidth..... 10Hz to 100 kHz ±0.5 dB
- Noise..... -90 dBv
- THD..... Less than .01%
- Maximum in/out level ..... +20 dBm

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U.S. Pat. No. 4,150,253 foreign patents issued and pending.

