



The Aphex Model 622 Expander/Gate is a dual channel dynamics processor. It incorporates new, proprietary detection circuitry that provides the most reliable, accurate and stable operation of any gate. The Model 622 also offers the highest quality audio path, flexible high "Q" key filters, key headphone outputs on the front panel and remote controlled bypass relays. All these features make the Model 622 the choice of professionals in recording, broadcast and sound reinforcement.

FEATURES:

- **Logic Assisted Gate Circuitry:** Combines sophisticated level detection with logic generated control voltage assuring positive, stable and accurate triggering regardless of attack time. Patents pending.
- **Ultra-pure Audio Path:** Proprietary Aphex VCA 1001 voltage controlled attenuator assures the highest audio quality, speed and freedom from DC control feed through (no clicks regardless of attack time).
- **Parametric key input filters - 24 dB/octave:** Switchable parametric filters with frequency and bandwidth controls allow user greater ease of frequency selection.
- **Key Monitor headphone jack:** provides ability to monitor key input without disrupting audio output.
- **Dedicated downward expander mode:** allows high resolution of ratio adjustment: from 1.2:1 to 10:1.
- **119 dB dynamic range.**
- **Switchable ducking mode:** Fully adjustable control of trigger threshold, attack time, hold time, release time, expander ratio, and attenuation range.
- Simple and accurate metering system
- Improved servo-balanced input and output circuits
- 5 year limited warranty
- +4/-10 operation, rear panel selectable
- Hardwire relay bypass: remote controllable
- Designed and manufactured in the U.S.A.

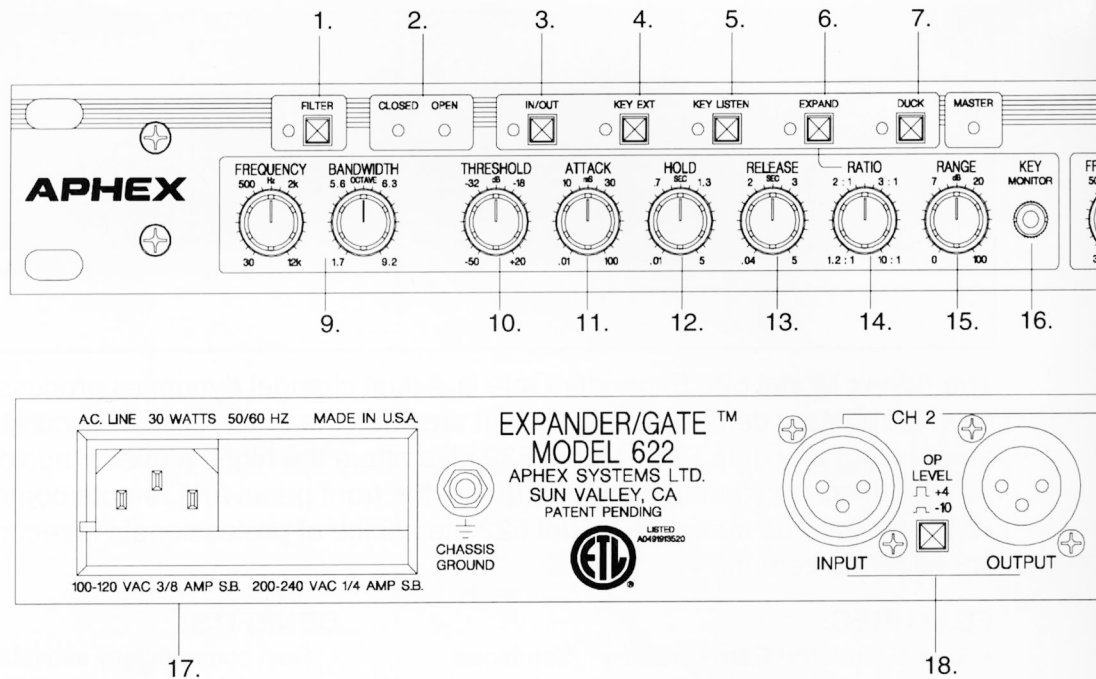
BENEFITS:

- Best commercially available noise gate provides unmatched performance in all parameters
 - Lowest distortion (0.005% typical)
 - Widest frequency response (5 Hz-100kHz)
 - No clicks, regardless of attack speed
 - Ultra-quiet and reliable
- Fast setup, stable, reliable, accurate
- Simple and intuitive to operate
- Rugged and durable construction
- High dynamic range is most suitable for quality digital and analog recording applications
- Versatile - can be used in all recording and live performance applications
- Best user-value in terms of features, performance quality, and durability relative to purchase price

APPLICATIONS:

- Control audio leakage in stage and studio applications
- Increase dynamics of any program material-recorded or live
- Manipulate external audio program for voice-overs and automatic level changes
- Key external sounds to any audio track
- Reshape any sound envelope
- Control feedback in live sound applications
- Create special dynamic effects

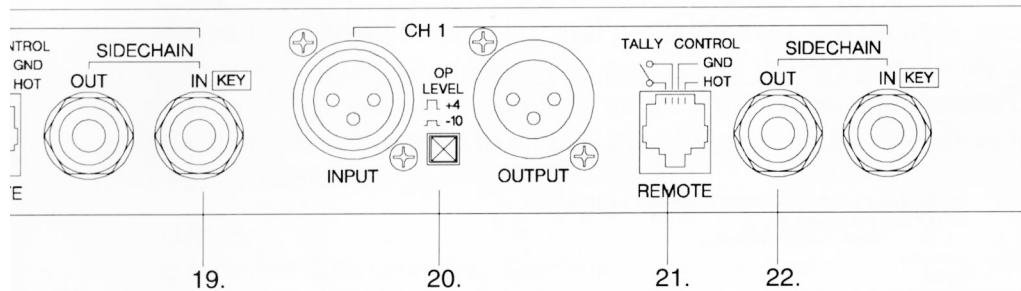
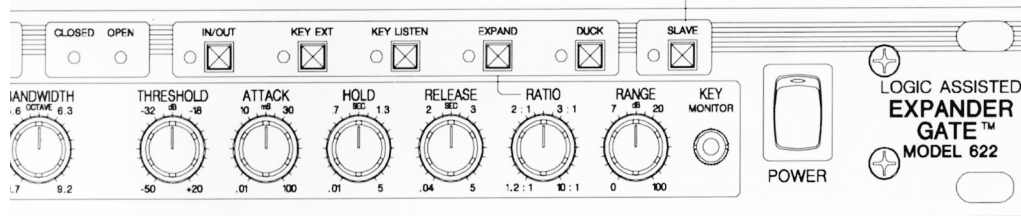
Aphex Logic Assisted Expander/Gate Model 622



Controls and Connections

1. **Filter Switch** - Switches the key filters completely out of the circuit for flat frequency response as well as eliminating the circuit in the control path which would slow down response.
2. **LED Function Display** - Two LED Display instantly shows status of each channel of the 622, "open" or "closed" state.
3. **In/Out** - Each channel of the 622 may be individually switched in or hardwire bypassed.
4. **External Key Switch** - Allows use of a rear panel jack input to the key circuits so the 622 can be controlled from an external source.
5. **Key Listen** - Switches the key signal to the main audio output, making adjustments of the filters and/or the external key very easy.
6. **Expand** - Switch enables expander function.
7. **Ducking** - Inverts operation for voice overs and special effects.
8. **Master/Slave Switch** - Slaves Channel 2 to Channel 1 control signal.
9. **Parametric Key Filters** - *Frequency*: Adjusts center frequency of the key filter from 30Hz to 12kHz. *Bandwidth*: Adjusts bandwidth of filter in Octaves from 1.7 (narrow) to 9.2 (wide).
10. **Threshold** - Adjustable from -50 to +20dB.
11. **Attack Time** - Variable from 10 microsec (with no clicks!) to 100mSec.
12. **Hold** - Allows a programmed delay of 10mSec to 5Sec before the release function is activated.
13. **Release Time** - Adjustable from 40mSec to a full 5Sec.
14. **Ratio** - The ratio of downward expansion may be varied from 1.2:1 through low ratios for accentuating musical dynamics to 10: 1 for more dramatic effects.
15. **Range** - Sets the amount of downward expansion (attenuation) from 0 to 100dB.
16. **Key Monitor Headphone Jack** - Allows monitoring of key input without disrupting main audio output.
17. **RF Filtered AC Mains** - Assures quiet operation.
18. **Servo-Balanced Inputs and Outputs** - For highest quality signal path, maximum common-mode hum and noise rejection and short-circuit proof outputs that can instantly be used balanced or single ended, either Pin #2 or #3 may be used as "High".
19. **Key In Jack** - For connecting an external source for keying (See #4).
20. **Operating level switch** - Switches the nominal operating level from -10dBV to +4dBu for optimizing headroom performance.

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21. Remote Control bypass - RJ11 Jack provides remote control of bypass relay -with a simple closure to ground, tally provides status of relay.

22. Sidechain Out - A single ended buffered copy of the audio input to feed to other devices without using up patchbay or mixer space.

622 APPLICATION HINTS

Controlling Leakage In the Studio - The 622 is very useful to prevent one instrument from bleeding over into the track of another during tracking or mixing. The Key Filters can be used to tune the key signal so it responds to the desired instrument. Cymbals and bass drum can easily and effectively be kept out of a snare track, for example.

Reducing Feedback On Stage Microphones - By using the 622 as a gate on stage mics, they will be turned off when the performer steps back to take a solo. Pickup from the monitors and other instruments will be eliminated.

Keying External Sounds To A Percussion Track - The bass guitar or reverb or low frequency oscillators can be synced exactly to the bass drum. This can tighten or fatten up the rhythm track.

Reducing Tape Noise - The 622 can effectively reduce tape hiss by gating channels so no noise is being added to the mix when no signal is present. This can result in a tremendous reduction of noise on a multi-track mix.

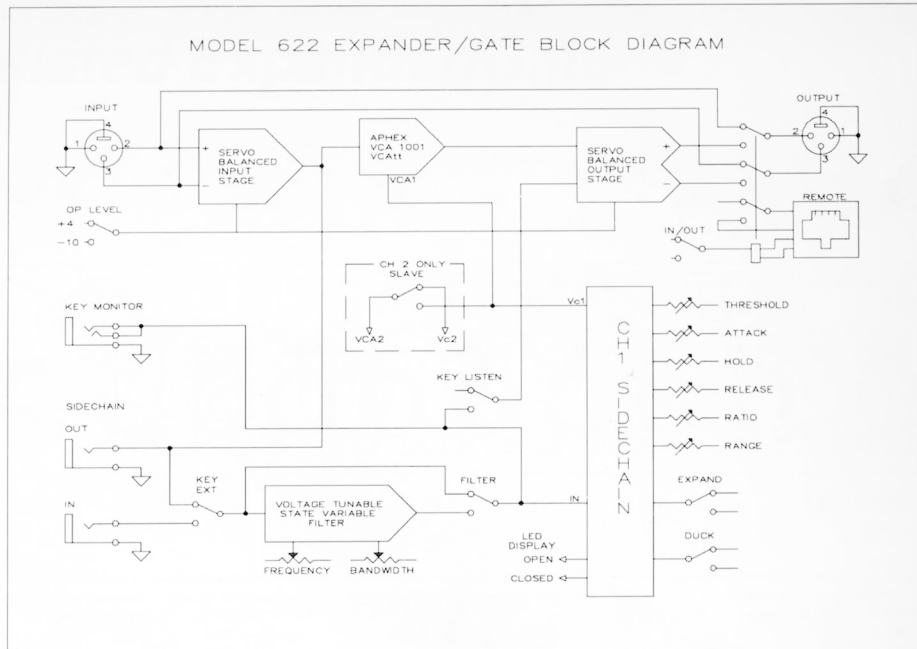
Ducking Programs For Voice-overs and Paging - The ducking action of the 622 can automatically reduce the level of a music track whenever a voice (or other signal) is present, becoming an automatic mixer. The amount of ducking or attenuation is set with the RANGE control.

Adding New Dynamics To Existing Program Material - Because of the variable ratio control, the 622 can be used to spice up the dynamics of a sound track. Low ratios (1.2:1-4:1) will multiply the existing dynamics, adding some punch and life to a boring track.

Reshaping Sampled Sound Envelopes - Once a sound has been captured in a sampler, the 622 can be used to change the envelope, creating new sounds. Attacks can be slowed, dynamics expanded or even reversed with the comprehensive controls on the 622.

ALL FEATURES AND APPLICATIONS ARE EXPLAINED IN GREATER DETAIL IN THE OWNER'S GUIDE FOR THE 622.

Logic Assisted Expander/Gate Model 622



Specifications

INPUTS

Type	RF Filtered true instrumentation differential balanced
Input Impedance	22 kOhms, balanced
Nominal operating level	+4 dBu / -10dBV switch selectable
Maximum input level	+27 dBu
CMRR	60 dB

SIDECHAIN

Gain reduction element	APHEX 1001 VCA
Key input impedance	50 kOhms, unbalanced
Key output impedance	150 Ohms, unbalanced
Maximum Key level	+21 dBu

OUTPUTS

Type	Electronically servo-balanced transformerless. May be operated single-ended or balanced
Output impedance	65 Ohms, balanced
Maximum output level	+27 dBu balanced, +21 dBu unbalanced
Bandwidth	5 Hz to 100 kHz, +0, -0.2 dB
THD @ +20 dBu	0.006%
THD @ +4 dBu	0.003%
IMD (SMPTE) @ +10 dBu	0.006%
Noise and hum — unity gain	-87 dBu
Noise and hum — fully off	-92 dBu
Crosstalk @ 20 kHz	-96 dBu
KEY LISTEN output	Front panel mini-headphone jack

CONTROLS

Threshold	-50 dBu to +20 dBu
Attack time	FAST (10 μ Sec) to SLOW (100 mSec)
Hold	10 mSec to 5 Sec
Release	40 mSec to 5 Sec
Ratio	1.2:1 to 10:1
Range	0 to 100 dB
Frequency	30 Hz to 12 kHz
Bandwidth	1.7 Octave - 9.2 Octave, 24dB/Octave

FUNCTION SWITCHES

Filter in/out	Channel in/out	Key external	Expand
Key listen	Duck	Master/slave link	

INDICATORS

Status — 2 LED display showing: Closed (closing or closed) and Open (holding or open)
Plus: one LED indicator for each function switch

POWER REQUIREMENTS

90-250 VAC 50-60 Hz, 25 Watts
AC input is standard IEC receptacle, with fuse, voltage select and RF filter

PHYSICAL

Size	1.75" (44.5mm) H x 19" (482.6mm) W x 9" (228.6mm) D
Weight	7 lbs.
Shipping weight	8.5 lbs.

APHEX

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Patents pending.

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