

Compellor® Compressor/Leveler/Limiter Module Model 9301A

The Aphex Compellor is recognized as one of the more vital tools of the professional audio engineer. As with all Aphex Compellor products, the 9301A delivers intelligent compressor action, leveling and peak limiting simultaneously. Patented control circuits include analog computers that continuously analyze the input signal and vary the control characteristics. This provides for virtually undetectable operation, regardless of the dynamics of the program. Extremely easy to use, you only need to set the Drive level to generate the desired amount of processing, set the Process Balance control between Leveling and Compression and adjust the Output level for unity gain. The Model 9301A is then ready to provide complete dynamic control - smooth, inaudible compression, increased system gain, desired program density and the freedom from constant "gain riding" - fully automatically! Its unique circuit design actually enhances transient qualities, thus making even heavy processing undetectable. This intelligent, versatile and highly affordable processor can be used to solve numerous problems and improve audio signals in a wide range of applications.

A significant improvement in the Model 9301A over its predecessor (Model 9301), is the addition of a newly developed (patent pending) Frequency Discriminate Leveler (FDL) circuit. FDL eliminates this problem of "bass pullback" by allowing low frequency transients to trigger a slower attack time on the initial transient. High frequency leveling is still controlled within the attack time determined by the onboard computer.

FEATURES

- Intelligent Automated Gain Control (AGC) for consistent program levels
- "Invisible" compression characteristics assure tighter dynamics and virtually transparent performance
- Instantaneous Peak Limiting for effective system protection (user defeatable)
- Adaptive control circuits make for fast, simple set-up and no readjustment for varying program dynamics
- "Straight Wire" Sound Quality - Employs the proven Aphex VCA 1001 for absolute audiophile quality sonic performance
- Logical Metering System - One button allows you to choose between Input, Output or Gain Reduction levels; bi-color LEDs
- Transformerless Servo-Balanced Input/Output Circuitry - Permits compatible interface with other balanced and/or single-ended components with no compromise in performance.
- Slow/Fast Leveling Speed - Front panel selectable
- Relay Bypass
- For use in Aphex 9000 Rack, but compatible with the dbx® 900 Series Rack
- Selectable nominal operating levels: -10dBV, +4dBu and +8dBu



APPLICATIONS

- Paging and Public Address (P.A.) Systems
- Cable TV Systems
- Sound Reinforcement
- Tape Duplication
- Meeting and Conference Rooms
- Churches
- Stage Monitor Mixes
- Broadcast Phone Line and Satellite Driver
- Background and Foreground Music Systems
- Recording, Film & Video Post Production

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SPECIFICATIONS

NOMINAL OPERATING LEVEL

(user selectable on PCB)

+8dBu

+4dBu

-10 dBV

INPUT

Type:	Transformerless, differential servo-balanced with passive 4th order RF filter		
Impedance:	22kΩ balanced, 11kΩ unbalanced	same	same
Nominal Level:	+8dBu	+4dBu	-10dBV (-7.8dBu)
Maximum Input Level:	+27dBu	+25dBu	+10.8dBV (+13dBu)
CMRR:	>90dB/100Hz, >70dB/1kHz, >50dB/20KHz	same	same

OUTPUT

Type:	Transformerless, differential servo-balanced (may be used unbalanced without 6dB loss)		
Impedance:	65Ω balanced/unbalanced (Nominal Load Impedance: 600Ω or greater)		
Maximum Output Level: balanced	+26dBu	+25dBu	+10.8dBV (+13dBu)
unbalanced	+21dBu	+20dBu	+10.8dBV (+13dBu)

AUDIO

Frequency Response:	±1dB from 10Hz to 65kHz	same	same
Hum and Noise @ Unity Gain:			
No Gain Reduction	-64dBu	-67dBu	-78dBu
10dB Gain Reduction	-68dBu	-74dBu	-81dBu
Crosstalk @ 20 kHz:	-60dBu	-65dBu	-70dBu
Dynamic THD (1kHz, 20dB G.R.):	.05%	same	same
THD @ (Max.Output):	.025%	same	same
IMD (SMPTE) @(Max.Output):	.12%	.13%	.4%

SYSTEM FUNCTIONS

Compression, Frequency Discriminate Leveler, Peak Limiter, Dynamic Verification Gate (DVG), Dynamic Recovery Computer (DRC), Silence Gate, Stereo Enhance

THRESHOLD

(0 VU with DRIVE full clockwise)

Compressor:	30dB below nominal level
Leveler:	30dB below nominal level
Limiter:	12dB above nominal level

RATIO

Compressor:	1.1:1 to 3:1 Program Dependent
Leveler:	20:1
Limiter:	>30:1

ATTACK TIMES

(For 20dB Gain Reduction):

Compressor:	5 to 50mSec Program Dependent
Leveler, Fast:	20Hz = 3Sec >1KHz = 1.5Sec. Frequency Dependent Leveler (FDL)
Leveler, Slow:	20Hz = 10Sec >1KHz = 5Sec. Frequency Dependent Leveler (FDL)
Limiter:	1μSec

RELEASE TIMES

(For Recovery From 20dB Gain Reduction):

Compressor:	200μSec to 1Sec Program Dependent
Leveler, Fast:	3 Sec
Leveler, Slow:	10 Sec
Limiter:	200μSec

CONTROLS

Drive (Min-Max), Process Balance (Level-Comp), Output (-10dB to +10dB)
Silence Gate (-40dB to 0dB)

FUNCTION SWITCHES (with LED indicators)

Process in, Meter Select (Input, Output, Gain Reduction), Leveling Speed, Limiter On/Off

METERING

Meter Type:	10 LED dual color display (green & red)
Input or Output Mode:	Simultaneous indication of average (VU) and peak level (-15dB to 12dB)
Gain Reduction Mode:	Simultaneous indication of compression & leveling (2dB to 20dB of gain reduction)

OTHER SPECIFICATIONS

Audio, Control & Power Terminations:	PCB edge connectors with 15 gold contacts (mates with female connector in the 9000R)
Power Requirements:	±15 Volts DC
Power Consumption (maximum)	300mA
Dimensions: Front Panel:	5.25" H x 1/5" W
Circuit Board:	4.5" H x 9.5" D (10.65" D including front panel & knobs)
Net Weight:	<1 lbs.
Shipping Weight:	2 lbs.

REQUIRED HARDWARE (purchased separately)

Module Termination/Frame:	9000R Modular System Rack required per 11 modules (3 RU)
Power Supply:	9000PS for module combinations not to exceed 3 amps load (3 RU) 9001PS same as 9000PS with dbx 900 Series module capacity 9005PS for module combinations not to exceed 5 amps load (3 RU)

APHEX

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