

Dual Channel Tube Microphone Preamplifier Model 107



For the past two decades, we at Aphex Systems have worked diligently to bring you the best in audio signal processing. Even if the signal processing is of the highest quality, audio can be only as good as the weakest link in the chain from the microphone to master. Typically, one of the weakest links in an audio chain is the very first gain stage in the signal path: the microphone preamplifier.

We are proud to introduce the **Aphex Model 107 Dual Channel Thermionic (Tube) Microphone Preamplifier.** It combines the best attributes of both tube and solid state circuitry to provide performance unmatched by conventional designs. The solid state front end is transformerless and only expensive, great sounding capacitors are used in the signal path. The tube circuit is a revolutionary new invention (patents pending) which imparts the sonic characteristics of tubes without the extremely high voltages, heat, fragility and short life span of conventional tube circuitry. We call it TUBESSENCE.

The Model 107 provides you with two discrete preamp channels, each with its own dedicated controls. The switchable 48 volt Phantom Power supply makes it compatible with all microphones; dynamic, ribbon, electret condenser or large diaphragm studio condensers. Despite its extremely attractive price, the Model 107 delivers outstanding sonic performance, such that you can confidently match it with even the most esoteric microphones and the most advanced recording media. The sonic benefit you can expect from the Model 107 is a greater degree of presence, detail, openness and image. You can also expect extended high frequency response without any harshness. Lastly you should realize improved bass response that is tighter, deeper and richer than before.

Any facility, from the simplest home studio to major state-of-the-art recording studios, can benefit from using a Model 107 instead of a console's microphone preamplifiers. The improvement will astound you! Bypassing the console altogether and recording direct is yet another opportunity to achieve even hotter sounding tracks. Live performers can also profit from using a Model 107: vocals and instruments are clearer, cleaner and more up-front. The Model 107 delivers that great sounding mix in the house P.A., stage monitors and studio.

FEATURES

- TUBESSENCE™ Revolutionary new tube circuit (patent pending) uses a 12AT7 tube in a whole new way
- Equivalent Input Noise (EIN) of -128 dBu, worst case at maximum gain
- Two independent channels with front panel XLR inputs
- Up to 64dB of gain available
- 20dB pad with red LED indicator
- Two LED input meter (green LED = -20dBu, red LED = 6dB below clip)
- Full 48 volt Phantom power with red LED indicator
- Low cut filter with red LED indicator: 80Hz, 12dB/octave
- Polarity inversion switch with red LED indicator
- Individual channel remote mute capability with red LED indicator
- Switchable +4dBu or -10dBV output with 1/4" TRS phone jacks
- Studio quality tube circuitry rugged enough for touring and field use

APPLICATIONS

- Primary microphone preamplifier for recording, video and film production
- Live performances with artist actuated remote muting
- Live direct-to-DAT recordings using stereo microphone techniques
- High quality broadcast talent preamplifier

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1. MUTE (RMT) INDICATOR

Illuminates when each channel is muted. Muting is achieved via an external (remote) closure switch

2. INPUT CONNECTOR

The Microphone Input is located on the front panel and is a locking 3-pin XLR connector. This location keeps all of the low level input circuitry closely clustered inside helping us to achieve the purest audio path possible.

3. 20dB PAD & INDICATOR

Permits reduction of input sensitivity by 20dB to allow use of microphones with high output levels.

4. GAIN CONTROL

Provides 46dB of continuously variable adjustment of gain. The total range of control with Pad is 66dB

5. "OK" & "OVERLOAD" LED INDICATORS

Provide a visual reference for setting maximum gain before clipping

6. 80Hz LOW CUT FILTER SWITCH AND INDICATOR

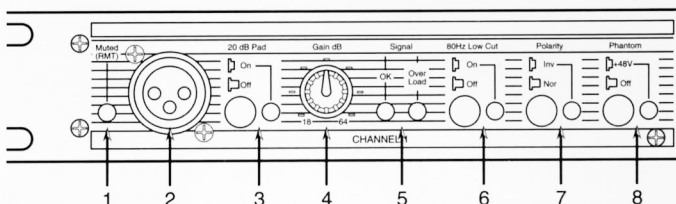
Allows you to roll-off low frequencies below 80Hz at 12dB per octave to eliminate low frequency wind noise, rumble or poor vocal articulation.

7. POLARITY INVERSION SWITCH & INDICATOR

Electrically inverts polarity 180° to provide a quick and easy way to correct polarity differences in cabling or microphone positioning.

8. PHANTOM POWER SWITCH AND INDICATOR

The Model 107 provides a high quality 48 volt supply to condenser microphones when necessary.



SPECIFICATIONS

INPUT

Connector:	3 pin XLR female, Pin 1-ground (chassis), Pin 2-hot, Pin 3-low
Type:	Transformerless, differential active balanced with passive 2nd order RF filter
Input Impedance	2.0K Ω nominal balanced
Pad out:	2.2K Ω nominal balanced
Pad In:	Greater than 70dB @ 60Hz
CMRR ¹ :	48VDC on pins 2 and 3 with internal transient-suppression circuitry
Phantom Power:	

OUTPUT

Nominal Output Level (User Selectable On Back)	+4dBu	-10dBV
Connector:	TRS 1/4" phone jack	same
Type:	Single-ended, impedance-balanced* (may be used unbalanced)	unbalanced
Output Impedance:	Balanced (SEIB*): 114 Ω \pm 10%	n/a
	Unbalanced: 200 Ω \pm 5%	200 Ω \pm 5%
Maximum Output Level:	+20dBu	+6dBV (+8.2dBu)

AUDIO

Frequency Response:	+0.1dB/-1.5dB from 20Hz to 1.0kHz; +0.1dB/-0.2dB from 1.0kHz to 20kHz
Voltage Gain ² :	Gain is continuously variable from +18dB to +64dB (-2dB to +44dB with Pad in)
Hum and Noise (22Hz to 22kHz):	At maximum gain, equivalent short-circuit input noise does not exceed -128dBu
Crosstalk ³ (20Hz to 20kHz):	Does not exceed -64 dB
THD:	Less than 0.2% @ +10 dBu output (output set at +4dBu)
Tube Type:	12AT7/ECC81 dual triode (qty-1)

REMOTE MUTE

	Each channel is provided with an individual muting circuit. Each muting circuit is controlled by an external (user-supplied) contact closure (foot switch). Operation of each muting circuit is indicated by a red LED
Muting Attenuation:	Greater than 50 dB
Mute Control Connection:	TS 1/4" phone jack, located on rear panel (one for each channel).
Control Operation:	Muting occurs when external circuit closure is provided tip-to-sleeve

OTHER SPECIFICATIONS

Power Requirements:	Unit is powered by an external 24-volt, 600mA transformer (supplied with unit). Primary voltage, connectorization and appropriate agency listings of transformers supplied with units are appropriate for local power at points of destination.
Power Consumption (maximum):	13 watts
Dimensions:	19" W x 1/75"H x 5.75" overall depth, depth behind front panel: 4.5"
Net Weight:	Rack-mount preamplifier, 3 lbs; wall transformer, 13.3 oz (USA model)
Shipping Weight:	5 lbs.

¹ Measured at maximum gain with 1VRMS common-mode signal and pad out

² Measured at 1kHz with output selector set to "+4" and output load of 100K Ω

³ Measured with both channels at maximum gain; active-channel input is -50dBu; undriven-channel input is terminated with 150 Ω

⁴ 1kHz measurement with output selector set to "+4" and load of 100K Ω ; signal input is 10mv.; output level is set using gain control on product

*The Model 107 has a single-ended, impedance-balanced output. This type of output is sometimes referred to as "quasi-balanced". When terminated by a balanced input at the receiving end, this type of line exhibits the most important benefits of differential and transformer balanced outputs. Common mode rejection (greater induced-noise immunity) remains the same as well as the ability to leave the shield ground disconnected at the sending end only, thus eliminating ground loop hum. However, quasi-balanced outputs do not have signal on the "signal reference" or negative conductor as do "balanced" outputs. This means that the negative conductor cannot be used as a "hot" (positive) as there is no signal level on it, just a ground reference.

APHEX

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