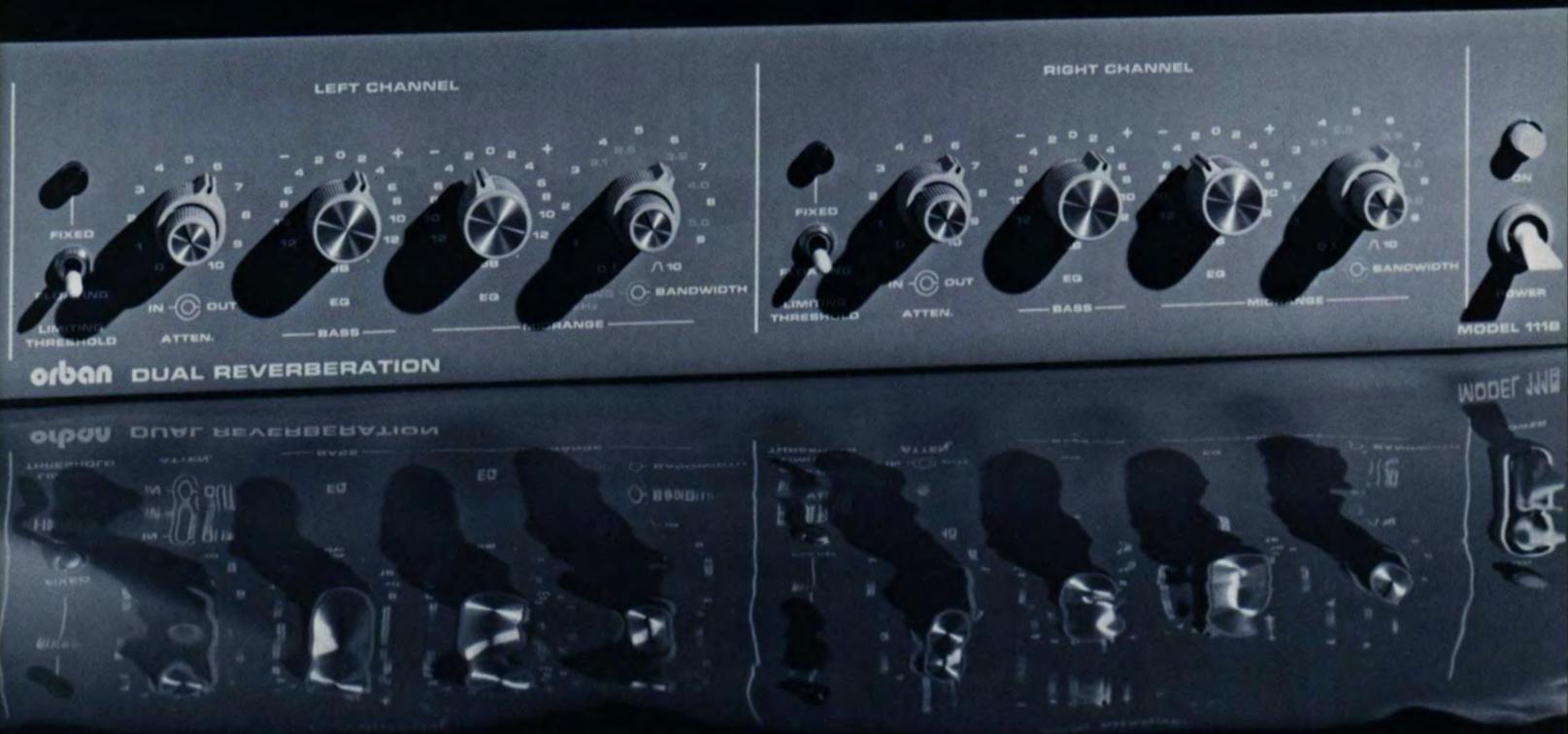


# The Orban 111B Dual Spring Reverb

A Proven Performer  
with the Right Sound at the Right Price.



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### Performance Highlights

- Two independent channels with six springs per channel
- Floating threshold peak limiter protects against "twang" and "boing" noises
- Bass and quasi-parametric midrange EQ allows coloring of echo return
- Front panel mixed output control
- Accepts input levels from -30 to +4 dBm
- Industrial-quality construction and rugged package
- Extremely low signal-to-noise ratio and distortion

### The Reverb with a Track Record

The Orban 111B Dual Spring Reverb represents the refinement of over 12 years of experience with spring reverbs. In that time, thousands of 111B's (and its predecessors) have found their way into recording studios, broadcast facilities, schools and colleges, and sound reinforcement systems. The reason is simple: Orban continues to offer the best price/performance value in spring reverbs, resulting in units with excellent sound quality, easy installation, and an outstanding reliability record.

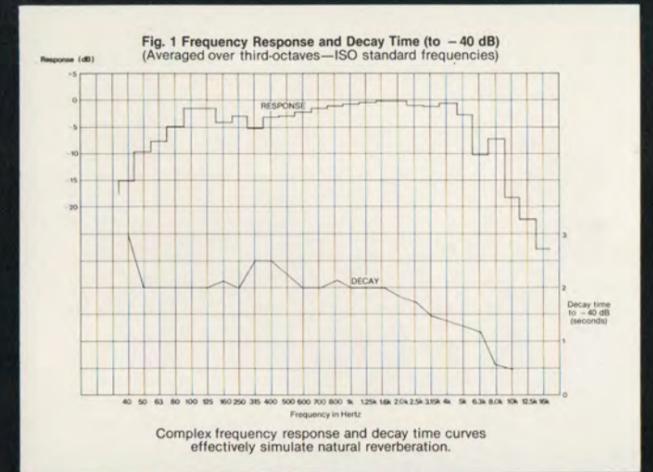
### Features

- **LOW FLUTTER** is assured by the use of six springs per channel. Compared to the low-priced, consumer-grade competition, the sound is much smoother and better integrated.
  - **SIGNAL-TO-NOISE** ratio is optimized by the use of a special low-noise IC preamp, by added mu-metal hum shielding around the spring pickup coils, and by a specially designed limiter circuit which allows the user to utilize the full headroom available in the system without concern for potential overload and distortion. The result: the effective signal-to-noise ratio of the 111B can be more than 6dB better than some of the high-priced competition.
  - **"TWANG" AND "BOING" NOISES** are greatly reduced by this exclusive limiter when operated in the "floating threshold" mode. This circuit serves to eliminate sudden, sharp changes in level regardless of average level. By exploiting the "masking effect" (which lets the direct sound hide the residual "twangs"), even percussion and guitar can be reverberated without unnatural effects.
- Evaluating a reverb by listening to the echo return alone is essentially meaningless—because reverb is almost never used in this mode. In fact, it is **essential** to evaluate the reverb in a real-world situation (with direct sound mixed in) to perceive the subtle psychoacoustical interaction between the direct sound and the reverb. You will find that the reverb generator that sounds best when listened to alone may give a totally different impression when direct sound is mixed in.

The 111B was designed with the psychoacoustical interaction between direct and reverberated sound always in mind. Therefore, **DECAY VERSUS FREQUENCY** does not drop abruptly at high frequencies, unlike some of the high-priced competition. When others tout their naturalness on percussion, watch out—too often, this is achieved at the expense of excessive high frequency damping which gives the highly-audible reverb decay a dull, bassy sound. Because this characteristic is time-varying, it is **not** correctable with fixed equalization.

On the other hand, the 111B's longer high frequency decay results in the bright sound that most pop music demands. In fact, it's the closest you can get to the high-priced "plate" reverb sound in a low-priced reverb. Compare on vocals...strings...guitar...brass. We think that the cost-effective 111B more than stands up to the higher-priced compact spring reverbs on the market.

- **FREQUENCY RESPONSE** is optimized by means of elaborate fixed equalization in the reverb circuitry. In addition, a bass control and a quasi-parametric midrange equalizer permit the user to tailor the sound to his exact requirements. The versatile midrange equalizer permits continuously variable adjustment of the **frequency** of maximum equalization (1.5 to 5.5 kHz), the **amount** of equalization (up to  $\pm 12$ dB), and the **bandwidth** (Q's from 0.5 to 5.0). We call it "quasi-parametric" because operating the **tuning** control causes the bandwidth to change (unlike our full parametric equalizer, in which the controls are totally non-interacting).



### Installation and Applications

The versatility of the quasi-parametric midrange equalizer complements the simple, inflexible equalization found on many low-cost mixers, and permits the owners of such systems to get the exact reverb sound they want. In addition, the 111B has very high basic input sensitivity (-30dBm), and a front-panel input gain control makes it usable with all mixers—even those with unusually low level sends.

This versatility is complemented by a fully-professional 0 dBm balanced, floating output. This arrangement vastly improves immunity to RF interference, and assures easy integration into any system without introducing ground loops and hum.



Because the spring delay lines are located in the same chassis as the electronics it may be inconvenient to install the reverb away from hum fields. Therefore, considerable attention has been given to hum-shielding the 111B. The spring pickup coils are protected with added mu-metal shields and the steel case of the 111B provides increased protection.

If the Model 111B is used with a recording studio-type mixing console, it is connected to the echo send and echo return busses in the customary manner. For users who wish to use the 111B without such a console, an auxiliary output containing a mixture of direct sound and reverberated sound is available. The amount of reverberated sound is adjustable with the front panel Output Atten control.

### Warranty and Service

Orban's use of top quality parts, industrial-quality construction, and special test and burn-in procedures make it highly unlikely that a user will ever experience any trouble with a 111B reverb. However, it's nice to know that the 111B is protected by a one-year parts and labor warranty, and that Orban is well-known for its fast, reasonable-cost service. Installation and "in-house" troubleshooting are made easy by an outstanding instruction manual which includes detailed installation instructions, performance verification tests, circuit description, troubleshooting hints, alignment instructions, and schematic diagram, as well as the user operator's instructions.

When shopping for a reverb, always consider parts quality, workmanship, reliability, warranty, service, and manual in addition to the obvious features. While the Orban 111B's features are outstanding, its true value lies in assuring **all** aspects of owner satisfaction. Compare before you buy.

It's a proven performer with the right sound at the right price.



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### SPECIFICATIONS

- Number of Channels:** two, entirely independent except for power supply.
- Reverberation Element:** six-spring array (per channel).
- Frequency Response:** See Fig. 1.
- Decay Time:** See Fig. 1.
- Delay Time:** Approximately 30 milliseconds between direct sound and first reflection.
- Input Level:** will accept input levels between -30 and +4 dBm. Audio-taper **Input level** attenuator available on the front panel. Limiter will control overloads up to 25 dB above limiting threshold before clipping and distortion occur.
- Input Impedance:** 10,000 ohms, unbalanced. Source impedance non-critical.
- Output Level:** nominally 0 dBm, adjustable by front panel control,  $\pm 20$  dBm clipping level allows adequate headroom for equalization and spring resonances.
- Output Impedance:** 600 ohms; transformer-coupled; balanced and floating.
- Limiter Attack Time:** less than 100 micro-seconds.
- Limiter Release Time:** Dual time-constant circuit adjusts release time as a function of the program.
- Compression Ratio (FIXED Mode):** greater than 10:1.
- Limiter-Induced Harmonic Distortion (@5 kHz):** less than 0.2%.
- Limiter Element:** Junction Field-Effect Transistor.
- Bass Equalizer:**
  - Type: Shelving
  - Turnover Frequency: 500 Hz.
  - Equalization Range:  $\pm 12$  dB, reciprocal.
- Midrange Equalizer:**
  - Type: quasi-parametric peaking.
  - Peaking Frequency: continuously variable, 1.5 to 5.5 kHz.
  - Equalization Range: continuously variable  $\pm 12$  dB, reciprocal.
  - Bandwidth Range: can adjust "Q" from 0.5 to 5.0 with any setting of TUNING control.
  - Control Interaction: TUNING and EQUALIZATION controls also vary "Q." Otherwise, all controls are independent and non-interacting.
- Weighted System Signal/Noise Ratio:** better than 76 dB.
- Indicators:**
  - POWER ON pilot lamp.
  - LED automatically lights whenever limiter is in FIXED mode (one per channel).
- Audio Connector:** Jones 140-Y barrier strip (#5 screw).
- Power Connector:** "U-Ground" power cord to United States standards.
- Power Requirements:** 115/230 volt AC  $\pm 10\%$ . 50-60 Hz, approximately 10 watts.
- Dimensions:** 19" (48.3 cm) wide x 3 1/2" (8.9 cm) high x 12" (30.5 cm) deep.
- Shipping Weight:** 10 pounds (4.54 kg).

**ORDERING GUIDE &  
SUGGESTED LIST PRICES**

Professional Audio  
Products

Revision 15; Effective 1 February 1986

Changes: Add 275A, 275A/RC

No price changes

Change Security Cover from "GY" to "WH"

<u>Model</u>	<u>Description</u>	<u>Suggested List</u>
111B/1	Spring Reverberation (2 channels)	\$899.00
245F	Stereo Synthesizer	\$399.00
275A	Automatic Stereo Synthesizer	\$1,895.00
275A/RC	Remote Control for 275A	\$295.00
412A	Compressor/Limiter (1 channel)	\$425.00
414A	Compressor/Limiter (2 channels)	\$799.00
418A	Stereo Compressor/Limiter	\$899.00
422A	Gated Compressor/Limiter/De-Esser (1 channel)	\$629.00
424A	Gated Compressor/Limiter/De-Esser (2 channels)	\$989.00
536A	Dynamic Sibilance Controller (2 channels)	\$539.00
622A	Parametric Equalizer (1 channel)	\$569.00
622B	Parametric Equalizer (2 channels)	\$879.00
672A	Mono Graphic Parametric Equalizer	\$689.00
674A	Stereo Graphic Parametric Equalizer	\$1,299.00

Prices are domestic U.S. only; F.O.B. San Francisco. Prices based on Buyer's acceptance of Orban Standard Terms & Conditions of Sale are subject to change without notice. All units are supplied for 115V, 50/60 Hz operation unless otherwise specified.

See reverse side for accessories.

PROFESSIONAL AUDIO PRODUCTS ACCESSORIES

ACRYLIC SECURITY COVERS

All security covers are 19" wide. Add suffix in place of xx to specify color. Screws supplied. Fits most EIA-standard panels. 1 1/4" maximum protrusion.

CL Clear  
BL Blue transparent  
WH Opaque White

Suggested List

ACC-11xx	1 3/4" panel (1 rack space)	\$43.00
ACC-12xx	3" panel (2 rack spaces)	\$45.00
ACC-13xx	5 1/4" panel (3 rack spaces)	\$47.00
ACC-14xx	7" panel (4 rack spaces)	\$49.00

ACCESSORIES FOR 622A/622B

RET-05 Balanced output transformer. Order one per output. \$16.00

ACCESSORIES FOR 672A

RET-06 Balanced output transformer. Order one per output. \$16.00  
RET-21 XLR connectors for input and both outputs. \$18.00

ACCESSORIES FOR 674A

ACC-03 Plexiglass security cover for filter section controls. \$9.00  
RET-07 Balanced output transformers (2) for main outputs. \$32.00  
RET-08 Balanced output transformers (4) for both outputs. \$64.00  
RET-10 TRS phone jacks for inputs & all outputs. \$13.00  
RET-12 XLR connectors for inputs & all outputs. \$30.00

ACCESSORIES FOR 422A/424A

RET-14 XLR connectors for input and output. (422A) \$12.00  
RET-15 XLR connectors for both inputs and both outputs. (424A) \$24.00

ACCESSORIES FOR 245F

RET-19 Balanced output transformers (2) for both outputs. \$32.00

ACCESSORIES FOR 536A

RET-22 XLR connectors for both inputs and both outputs. \$24.00  
RET-23 Balanced output transformers (2) for both outputs. \$32.00

ACCESSORIES FOR 412A/414A

RET-28A XLR connectors for input and output. (412A) \$12.00  
RET-28B XLR connectors for both inputs and both outputs. (414A) \$24.00