

Effects Connection Ibanez

DIGITAL DELAY DD-5000

- 16 tap delay/feedback
- 16 tap delay/feedback
- 16 tap delay/feedback
- 16 tap delay/feedback

HARMONICS DELAY HD-5000

- 16 tap delay/feedback
- 16 tap delay/feedback
- 16 tap delay/feedback
- 16 tap delay/feedback

ANALOG DELAY AD-5000

- 16 tap delay/feedback
- 16 tap delay/feedback
- 16 tap delay/feedback
- 16 tap delay/feedback

MULTI EFFECTS UC-5000

- 16 tap delay/feedback
- 16 tap delay/feedback
- 16 tap delay/feedback
- 16 tap delay/feedback

EF-5000

- 16 tap delay/feedback
- 16 tap delay/feedback
- 16 tap delay/feedback
- 16 tap delay/feedback

Ibanez



'83

**SOUND
EFFECTS**

IBANEZ SIGNAL PROCESSORS

Ibanez has long been a leader in the field of signal processors — and for good reason. An unprecedented international team of engineers, designers and artists have combined their talents to create signal processors that are artistically stimulating and electronically reliable. No compromises have been made in the quest for the most innovative and desirable signal processors available anywhere.

With the introduction of the Ibanez effects devices a new standard was set for others to follow. Quality and versatility were combined with human engineering to make effects devices easier to use and more effective than ever before. Signal processing had indeed come out of the dark ages.

Ibanez revolutionized the signal processing industry with the first integrated signal processing systems: the UE400 Rack System Series and the innovative UE300 Floor System Series. The benefits of the system optimized design created a new level of performing versatility, reliability and convenience — a level that is still unmatched in the industry today.

Ibanez brings its innovative tradition to pro sound with the introduction of two exciting new digital audio processors. The DM1000 Digital Delay and the HD1000 Harmonics Delay break the price/performance barrier to deliver true studio quality signal processing to the musician, professional soundman and recording engineer.

We at Ibanez invite you to look through our catalog and see just what has made Ibanez a leader in quality and innovation.

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EFFECTS DEVICES FEATURES



LED INDICATOR

An easily visible LED indicates the IN/OUT status of the device and its battery condition. Vital statistics may be visually checked during setup, avoiding embarrassing performance disasters.



BATTERY COMPARTMENT

The battery may be easily accessed without the use of tools or coins. The compartment protects the battery from mechanical shock and circuit board from battery leakage.



SILENT D-1 SWITCHING

The D-1 switching system uses field effect transistors for absolutely silent reliable operation. The smooth action switchplate is enlarged for easy activation.



CASE DESIGN

The case has a sloped front, human engineered for comfortable activation of the switch while standing or sitting. The control knobs are recessed for protection. A rubber pad on the case bottom prevents device movement during use. The case is made of die-cast zinc for years of dependable service. Convenient small size (124mm X 74mm X 53mm) and lightweight (570g, 1.3 lbs).



CIRCUIT DESIGN

Ibanez Effects Device circuits are state-of-the-art designs providing stable, repeatable performance with low noise. Only top grade components and circuit board materials are used. All finished assemblies are fully tested to rigorous quality assurance specifications.



AC/DC POWER CAPABILITY

Ibanez effects devices operate on 9 volts DC, typically from an internal battery. They may also be safely powered by an external AC adapter via the rear mounted power jack.



PT9 PHASER

A phaser uses phase shift networks to create "notches" and "peaks" in the signal response. When the amount of phase shift is changed the notches and peaks move or "sweep". The PT9 Phaser uses eight phase shift networks that provide rich, deep phasing for guitar, keyboard or bass. The PT9's sweep circuit is exceptionally smooth and provides adjustable sweep width and speed. The feedback control adjusts the level of phasing intensity. The PT9 Phaser—versatility and sonic quality for stage or studio.

SPECIFICATIONS

Input Impedance 500K ohms
Output Impedance <1K ohms
Maximum Input Level 0 dBm
Gain 9 dB (unity)
Delay Time Range 0.08 - 13 Hz
Equivalent Input Noise -80 dBm (IHF-A)



FL9 FLANGER

Flanging is a time delay effect using very short time delays mixed together with the input (dry) signal. This creates a series of peaks and notches in the signal's response throughout the audible spectrum. When the time delay is varied the peaks and notches move or "sweep". The FL9 Flanger features an extremely quiet time delay section creating an unusually noise-free flange. The sweep speed and width may be changed as well as overall time delay. This allows the artist to center the flanging action in a particular part of the sound. Flange intensity may be adjusted with the feedback control. The FL9 Flanger provides quality and flexibility that defies comparison.

SPECIFICATIONS

Input Impedance 500K ohms
Output Impedance <1K ohms
Maximum Input Level 0 dBm
Gain 9 dB (unity)
Delay Time Range 1.0 - 12.8 ms
Sweep Speed Range 0.05 - 13 Hz
Equivalent Input Noise -75 dBm (IHF-A)



CS9 STEREO CHORUS

The chorus effect uses a small time delay that is varied to produce a slight pitch bend. When the delay signal is mixed with the input (dry) signal the resultant sound moves with a rich, thick undulation. This is the effect of multiple voices playing in unison. The CS9 Stereo Chorus provides stereo outputs that add an exciting dimension of movement to the sound. The sweep speed and width controls allow the artist to illicit slow, wide-ranging sweeps or a more rapid vibrato. The CS9 Stereo Chorus—the industry's finest realization of an exciting new sound.

SPECIFICATIONS

Input Impedance 500K ohms
Output Impedance <1K ohms
Maximum Input Level 0 dBm
Gain 0 dB (unity)
Delay Time Range 3.2 - 8.5 ms
Sweep Speed Range 0.3 - 3.0 Hz
Equivalent Input Noise -100 dBm (IHF-A)



TS9 TUBE SCREAMER

The warm and powerful sound of an overdriven tube amplifier has long eluded effects device manufacturers. The TS9 Tube Screamer has captured this distinctive sound in a remarkably functional format. The Overdrive control and Output Level control adjust the intensity of overdrive and output volume. The Tone control adjusts the brightness for warm and smooth or sizzling hot distortion. From the most subtle of rumbles to the most outrageous of roars, the TS9 Tube Screamer provides the artist with the widest range of usable, distinctively tube sounds.

SPECIFICATIONS

Input Impedance 500K ohms
Output Impedance <1K ohms
Maximum Output Level 0 dBm
Maximum Gain +30 dB
Equivalent Input Noise -100 dBm (IHF-A)





SD9 SONIC DISTORTION

The Distortion sound has been around for some time now and it's as popular today as ever. The SD9 Sonic Distortion expands on the traditional idea of distortion to create a wide new range of possibilities. The Tone control allows the artist to modify the distortion with bass or treble boost for exciting new colorations. The Distortion control and Output Level control adjust the intensity and level of distortion. Versatility and performance — The SD9 Sonic Distortion is a cut above.

SPECIFICATIONS

Input Impedance 500K ohms
Output Impedance <10K ohms
Maximum Output Level 0 dBm
Maximum Gain +65 dB
Equivalent Input Noise -100 dBm (IHF-A)



CP9 COMPRESSOR/LIMITER

Compressor / Limiters are very useful devices for increasing voice sustain and for containing signal peaks. But until now, the attack time of the Compressor/Limiter was fixed — either you liked the way it sounded or you didn't. The CP9 Compressor/Limiter lets the artist choose his attack time, fast for smooth, tight control of signal attack or slow for a more percussive attack (great for bass). The CP9 also uses a new VCA configuration for low noise operation even at the longest sustain. The CP9 Compressor/Limiter — an unusual value for guitar, keyboard or bass.

SPECIFICATIONS

Input Impedance 500K ohms
Output Impedance <10K ohms
Maximum Input Level +5 dBm
Maximum Output Level -10 dBm
Compression Range 40 dB
Attack Time Range 6 — 20 ms
Equivalent Input Noise -85 dBm (IHF-A)



AD9 ANALOG DELAY

Discrete echo is one of the most dramatic effects in the music industry. Bulky tape and "spring/disk" units have given way to the convenience and reliability of solid state delays. The AD9 Analog Delay uses a compander with pre- and de-emphasis for an exceptionally clean delay. The Delay Time control adjusts the delay time and the Delay Level control allows the artist to adjust the mix between dry and delayed signals. The Repeat control permits the number of repeats to be controlled without runaway. Two outputs enable the dry and delayed signals to be separately routed for dramatic special movement. The quality and features of the AD9 Analog Delay make it the professional's choice.

SPECIFICATIONS

Input Impedance 500K ohms
Output Impedance <1K ohms
Maximum Input Level +5 dBm
Gain 9 dB (unity)
Delay Time Range 10 — 300 ms
Equivalent Input Noise -100 dBm (IHF-A)



GE9 GRAPHIC EQ

Equalizers are extremely useful frequency response modifiers. EQ's can change the sound of voices, instruments and signal processors such as distortion devices, phasers and time delay effects. They are also widely used in feedback control applications. The GE9 Graphic EQ combines the simplicity of a graphic with whisper quiet circuitry. The GE9 uses six octave-wide minimum-phase-shift filters for 15dB of boost or cut. The Level slider allows the signal level to be adjusted without disturbing the filter settings. The GE9 Graphic EQ is a useful addition to any musician's system.

SPECIFICATIONS

Input Impedance 500K ohms
Output Impedance <1K ohms
Maximum Input Level +10 dBm
Maximum Output Level +5 dBm
Filter Center Frequencies 100, 200, 400, 800, 1.6K, 3.2KHz
Filter Bandwidth 1 octave
Filter Control Range ± 15 dB center detented
Level Control Range ± 15 dB center detented
Equivalent Input Noise -100 dBm (IHF-A)



PQ9 PARAMETRIC EQ

Parametric EQ's are a powerful method of equalization. Its filter center may be adjusted over a wide frequency range allowing the artist to affect a specific frequency band of interest. This feature is most useful for getting that very special sound from voice, instruments or signal processors. The PQ9 Parametric EQ contains a wide-ranging sliding filter along with fixed high and low shelving type filters. An infinite number of settings — from mild tonal changes to extreme frequency modifications — and easily obtainable. The PQ9 Parametric EQ provides simplicity with maximum flexibility.

SPECIFICATIONS

Input Impedance 500K ohms
Output Impedance <1K ohms
Low Filter Roll-off Frequency 75 Hz
Middle Filter Center Range 75 — 5.6 KHz
Middle Filter Bandwidth 1/3 octave
High Filter Roll-off Frequency 5.6 KHz
Filter Control Range ± 15 dB center detented
Equivalent Input Noise -85 dBm (IHF-A)



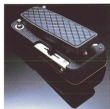
AF9 AUTO FILTER

Auto filters are automatic "wah-wah" type sliding filters that are triggered by the input level. The AF9 Auto Filter has taken that idea several steps further. The AF9 provides three selectable filter types, two slide directions and two slide ranges. The Sensitivity control adjusts the auto threshold and the Peak control determines the slide width. The chosen filter's slide action may be placed whenever the emphasis is desired, making the AF9 ideally suited for any type of instrument. The AF9 Auto Filter truly represents the state-of-the-art.

SPECIFICATIONS

Input Impedance 500K ohms
Output Impedance <1K ohms
Filter Type Low Pass Shelving
Mid Bandpass
High Pass Shelving
Filter Frequency Ranges 100 — 2 KHz (Low range)
200 — 48 KHz (High range)
Equivalent Input Noise -90 dBm (IHF-A)



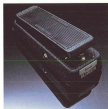


84 DOUBLE SOUND

The combination of distortion and wah effects produces a complex sound of unique character. The rich harmonic overtones produced by the distortion are filtered by the wah-wah for dynamic control of distortion color. The B4 Double Sound places a raging distortion stage in a rocker type wah-wah pedal of unparalleled comfort and control. Sliders control the distortion intensity and level. Footswitches control the bypass functions of both sounds. An LED indicates effect and battery status. The B4 Double Sound — a uniquely versatile and dynamic combination.

SPECIFICATIONS

Input Impedance 1M ohms
Output Impedance <100K ohms
Maximum Input Level -4 dBm
Maximum Output Level +10 dBm (w/wh), 0 dBm (distortion)
Equivalent Input Noise -100 dBm (11HF-A)
Power Supply 9VDC (Battery)
Weight 1.8 Kg, 4.0 lbs



93 BLUBBER

The wah-wah pedal was one of the first effects to let the artist's unique character come through. No two players use the wah-wah pedal in quite the same way. The 93 Blubber provides the perfect blend of electrical and mechanical control to let the artist's style emerge totally uninhibited. The rocker action takes the musician comfortably through the entire wah range without interference from the bypass switch. An LED indicates effect and battery status. The rugged diecast housing helps to make the 93 Blubber the finest rendering of this classic sound.

SPECIFICATIONS

Input Impedance 1M Ohms
Output Impedance <100K ohms
Maximum Input Level -4 dBm
Maximum Output Level +10 dBm
Equivalent Input Noise -95 dBm (10HF-A)
Power Supply 9V DC (Battery)
Weight 1.1 Kg, 2.4 lbs



PROFESSIONAL PATCH CABLES AND PLUGS



215 6 INCHES SHORT

The Ibanez 215 Patch Cable measures six inches short and features two right-angle male phone plugs. The configuration of the 215 permits the musician to place his effects side by side as close as desired. The 215 Patch Cable may be used with any make of effect. Quality components assure a long-lived connection.

217 18 INCHES SHORT

The Ibanez 217 Patch Cable measures 18 inches short and features two reinforced straight male phone plugs. The 217 is ideal for keeping rack connections neat and manageable. Professional grade components make the 217 Patch Cable perfect for road or studio use.



4564 DOUBLE MALE PATCH PLUG

The Ibanez double male Patch Plug is a unique solution to the problems of interconnecting effects devices without the tangle of cables underfoot. The 4564 provides two male phone plugs that are offset to accommodate virtually any effect device available regardless of jack height. Constructed of solid brass, the 4564 Patch Plug will never need repairing.

IBANEZ MULTI-EFFECTS SYSTEMS

As the relationship between the artist and electronics has matured the professional has seen a need for more sophisticated signal processing capabilities. He needs a system that is easily changed in live situations. It must be compact, easy to set up and yet flexible enough to accommodate his particular sound.

Ibanez was first to meet this challenge with the UE400 Rack System Series — professional quality rackmount processor

systems. The response was tremendous. The UE400 Series have found their way into professional and semi-pro recording studios PA systems as well as musical instrument systems.

Ibanez continues to lead the way with the UE300 Floor System Series — a bold new format for multi-effect systems. And again, the response has been overwhelming. Clearly the time for Ibanez Multi-Effect Systems has come.

UE300 FLOOR SYSTEM SERIES

Each system in the UE300 series contains three integrated signal processors and an external loop for use with external processors. Each effect or the whole system may be switched in and out using the Q-1 silent switching system. The UE300 Series are AC powered and include multiple outputs for dimensional enhancement of the sound. LED's indicate the status of each effect and master control. Professional quality and readability make the UE300 Floor System Series a unique solution for the pedal weary musician. Uniquely Ibanez.



UE400 RACK SYSTEM SERIES



The UE400 Rack System Series are the most advanced multi-effects systems in the industry. Four signal processors and an external loop capability are integrated into the most flexible package available. The Ibanez Insta-Patch switching system permits the artist to place each effect in any desired location — no patch cords are necessary. Changes in the Insta-Patch program are quick and easy, giving the artist a versatility never before realized.

Each UE400 System is AC powered and housed in a standard EIA 19 inch rackmount package. A remote footswitch provides foot control of all effects and system bypass. LED's on the rack unit and the remote footswitch indicate the status of each effect, the Insta-Patch system and master control. Multiple outputs are provided for enhanced dimensional effects.

The UE400 Rack System Series represents the leading edge of multi-effects system technology — maximum flexibility, easy utilization, and the professional quality that is Ibanez.



UE300 FLOOR SYSTEM

The UE300 Floor System utilizes a powerful trio of processors for guitars or bass. The exceptionally quiet Compressor/Limiter with variable attack time, the Tube Sreamer for a myriad of tube amp sounds, and the Stereo Chorus, the latest time delay sound whose stereo outputs dimensionally enhance all of the effects of the UE300. The combination of Compressor/Limiter and Tube Sreamer is ideal for creating smooth, ultra-sustained distortion. An external loop permits the

artist to place additional processors between the Tube Sreamer and Stereo Chorus. Q-1 silent switching is provided on all sections and on master control. The UE300 Floor System—today's most desired sounds in today's most advanced design.

SPECIFICATIONS

Comp/Limit Compression Ratio 40 dB
Tube Sreamer Max. Gain +30 dB
Stereo Chorus
Time Delay Range 3.2 – 8.5 ms
Input Impedance 500K ohms
(Input, Effect Receive) 500K ohms
Output Impedance <1K ohms
(Outputs 1, 2 and Eff Send) <1K ohms
Dimensions 310(w) x 190(d) x 70(h)mm
Weight 1.9 kg, 4.2 lbs.
Power Requirements 117 VAC, 60 Hz, 3.7 W
220 – 240 VAC, 50 Hz, 5.2 W



UE303B FLOOR SYSTEM

The UE303B Floor System contains the three most popular processors for bass. The versatile Auto Filter for attack-driven automatic filtering, the Compressor/Limiter with variable attack time, and the Stereo Chorus/Flanger for an undulating bass sound. Stereo outputs enhance all of the effects of the UE303B when used with two amplifier systems.

An external loop permits the artist to insert additional signal processors between the Compressor/Limiter and the

Stereo Chorus/Flanger. The Q-1 switching system provides silent switching of all effects and master control. The UE303B—the most advanced processor system for bass, keyboards or guitar.

SPECIFICATIONS

Auto Filter Frequency Range 90 – 1 KHz (Low Range)
100 – 2 KHz (High Range)
Comp/Lim Compression Ratio 40 dB
Stereo Chorus/Flanger Delay Range 1.2 – 12.8 ms (Flanger)
3.2 – 8.5 ms (Chorus)
Input Impedance 500 K ohms
(Input, Effect Receive) 500 K ohms
Output Impedance <1K ohms
(Outputs 1 & 2, Eff Send) <1K ohms
Dimensions 310(w) x 190(d) x 70(h)mm
Weight 2.1 kg, 4.6 lbs.
Power Requirements 117 VAC, 60 Hz, 6W
220 – 240 VAC, 50 Hz, 8W



UE305 FLOOR SYSTEM

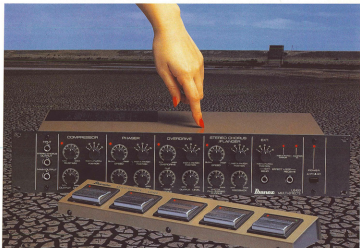
The UE305 Floor System contains three popular signal processors for keyboards, guitars or bass. The Compressor/Limiter with variable attack time, the Analog Delay for quality echo and hand reverb effects, and the Stereo Chorus for a swirling multi-dimensional sound. The stereo output enhances all the effects of the UE305. A third output is provided for echo "ping-pong" effects or for system branching. An external loop

between the Compressor/Limiter and Analog Delay allow the control of additional signal processors. The Q-1 switching system is used for silent switching of each section and master control. The UE305—another reason why Ibanez leads the way in signal processing.

SPECIFICATIONS

Comp/Limit Compression Ratio 40dB
Analog Delay Range 10 – 300 ms
Stereo Chorus Delay Range 3.2 – 8.5 ms
Input Impedance 500K ohms
(Input, Effect Receive) 500K ohms
Output Impedance <1K ohms
(Outputs 1, 2, 3 and effect send) <1K ohms
Dimensions 310(w) x 190(d) x 70(h)mm
Weight 2.1 kg, 4.6 lbs.
Power Requirements 120 VAC, 60 Hz, 5W
220 – 240 VAC, 50 Hz, 7W

UE400 RACK SYSTEM



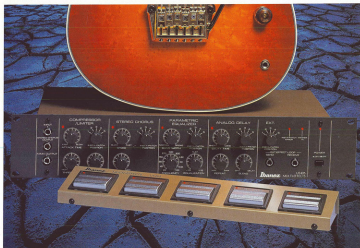
The UE400 Rack System contains four professional signal processors, an external effects loop and the Insta-Patch switching system. The Compressor provides smooth, clear sustain, the Phaser uses eight phase shift stages for professional-quality phase sweeps, the Overdrive provides a wide range of distortion sounds and the Stereo Chorus/Flanger for the most popular of time delay effects. The external loop, allows integration of other signal processors into the systems control. The remote footswitch uses silent FET switching for each section of the system

and master control — allowing the artist to change complex processor combinations at the touch of a switch. The UE400 Rack System with Insta-Patch — the most powerful signal processing system available.

SPECIFICATIONS

Compression Ratio	40 dB
Power Stage	0 stage
Overdrive Max Gain	+20 dB
Stereo Chorus/Flanger Delay Range	3.2 — 8.0 ms (Chorus) 1.40 — 12.8 ms (Flanger)
Input Impedance (Input, Effect Receive)	500K ohms
Output Impedance (Main Out, S. Chorus Out, Eff Send)	<1K ohms
Dimensions	Rack Unit — 482(w) x 96(h) x 232(d) mm Footswitch — 340(w) x 431(h) x 70(d) mm
Weight	Rack Unit — 3.9 kg, 8.6 lbs Footswitch — 1.2 kg, 2.7 lbs
Power Requirements	117 VAC, 60 Hz, 7.0 W 220 — 240 VAC, 60 Hz, 9.2 W

UE405 RACK SYSTEM



The UE405 Rack System provides four popular and versatile signal processors along with an external loop capability and Ibanez's Insta-Patch switching system. The Compressor/Limiter is a low noise limiter with variable attack time. The Stereo Chorus provides a moving texture to the sound and stereo outputs for enhanced multi-dimensional effects. The Parametric Equalizer is the most versatile EQ in the industry. The Analog Delay provides professional delay effects from long echo to hard reverb. The external loop facility permits the artist to insert

additional signal processors at any point in the system. The remote footswitch with silent FET switching provides single-touch control of each section and the entire system. The UE405 Rack System with Insta-Patch — the professionals' choice for signal processing systems.

SPECIFICATIONS

Gain/Limit Compression Ratio	40 dB
Stereo Chorus Delay Range	3.2 — 8.0 ms
EQ Frequency Center Range	25 Hz — 10 KHz
Analog Delay Range	10 — 300 ms
Input Impedance	500K ohms
Output Impedance (Main Out, S. Chorus Out, Eff. Send)	<1K ohms
Dimensions	Rack Unit — 482(w) x 96(h) x 232(d) mm Footswitch — 340(w) x 431(h) x 70(d) mm
Weight	Rack Unit 3.9 kg, 8.6 lbs Footswitch 1.2 kg, 2.7 lbs
Power Requirements	117 VAC, 60 Hz, 7.0 W 220 — 240 VAC, 60 Hz, 9.2 W

IBANEZ PROFESSIONAL PRODUCTS

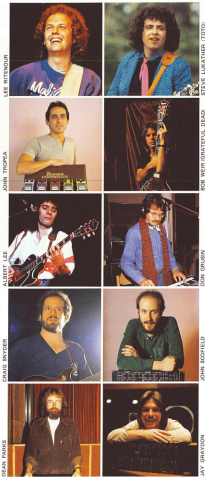
With the invasion of signal processors into music making, sound reinforcement and recording, professionals have demanded products of the highest quality. Reliability, versatility and sonic excellence are absolutely essential. Units that "go down" cost the professional money and perhaps future clients — he counts on his equipment working every time. The professional's signal processing budget is almost always limited, so he will look for processors that will do many things for him, not just one or two. The professional always looks for the best possible sound from his investment, so his demands on his signal processors are no less rigorous. He wants the best, most useful sounds that technology can provide at a price he can afford.

Other features that professionals look for in signal processors include standard 19 inch rack mount packaging and easy system interface and utilization. Many professionals in recording and sound reinforcement and professional musicians have adopted the EIA standard 19 inch rack system for their stationary and portable electronics systems. Amplifiers, mixers, equalizers and other professional sound equipment use the EIA standard, so professional signal processors must fit into that standard as well. Processor inputs and outputs must conform to professional standards — the use of adapters and matching transformers must be kept to an absolute minimum. Finally, the signal processor must be easy to use within the professional's system. If the processor is difficult to set up or adjust, the whole system will suffer.

The design and development team at Ibanez has long recognized the demanding standards of the professional. As a result, Ibanez has developed professional signal processors that not only meet the requirements of the professional, but create new price/performance standards for the industry at large. This is possible because Ibanez Professional Products ride the leading edge of technology. Advanced analog circuit design, benchmark of Ibanez processing technology, is now joined by exciting and innovative digital signal processing designs. Vast new frontiers are possible with this new, quickly emerging technology, and Ibanez will continue to lead the way.

But leading-edge technology will not help the professional if his other requirements are ignored. Ibanez Professional Products incorporate EIA packaging standards and industry-standard system interfacing. While being easy to use, Ibanez Professional Products are extremely versatile. And for audio quality, they defy comparison with anything in their class.

Reliability, versatility and sonic excellence are the absolute essentials of IBANEZ PROFESSIONAL PRODUCTS.



ANALOG DELAY AD202



When delay or "echo" was first used in music making, tape, tape loops or recording discs were used to generate the time delay required. Complex mechanisms and trail recording materials made these early "echo boxes" a nightmare (at best) for the professional.

Recent advances in solid state technology has led to a new generation of delay devices. Gone are the tape and disc mechanisms and in their place is clean, maintenance free solid-state analog circuitry. A new plateau of performance and reliability was made available to the professional.

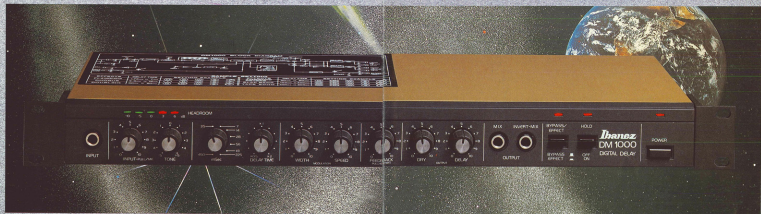
But another equally profound benefit was realized with the switch to solid-state circuitry. The slight manipulation of delay time, now made possible with analog circuitry, opened the door to a vast range of new sounds. Flanging, chorus, double-tracking, reverb and other new effects came under the professional's control. Finally the full potential of time delay became apparent.

The AD202 Analog Delay places the full potential of time delay processing in an elegantly functional format. The Mode Selector allows instant switching of delay time into the chorus, flanging, doubling and discrete echo range. Delay time may be continuously varied within each delay range and may be automatically modulated for sweeping effects. The Regen control adjusts the intensity of short delay effects and the number of repeats of discrete echo. The Blend control sets the ratio of dry to delay signal. Input mixing allows the use of two mics or instrument and mic. The Tone control lets the professional adjust the tonality of the delayed signal while leaving the dry signal unaffected. Two outputs provide the capability for multi-dimensional enhancement of the sound. LED's indicate essential functions and show the optimum input level. The AD202 Analog Delay — the professional's choice for a full-function delay.

SPECIFICATIONS

Input Impedance	MIC 9K ohms (Unbalanced) INST 100K ohms (Unbalanced)
Input Sensitivity	MIC -30 dBm to -20 dBm INST -30 dBm to -10 dBm
Output Impedance	<1K ohms
Delay Time Range/Freq. Response	1-3 dB, <2 dB
Delay 60 - 400 ms/20 Hz - 20 KHz	
Doubling 12 - 75 ms/20 Hz - 7 KHz	
Stereo Chorus 3.2 - 8 ms/20 Hz - 7 KHz	
Flanger 2.8 - 12 ms/20 Hz - 10 KHz	
Equivalent Input Noise	DRY -100 dBm (1HP-A) DELAY -86 dBm (1HP-A)
Power Requirements	117 VAC, 60 Hz, 6.6 W 220 - 240 VAC, 60 Hz, 6.0 W
Dimensions	482mm x 90mm x 202mm
Weight	3.6 kg, 8 lbs

DM1000 DIGITAL DELAY



When digital technology was in its infancy, digital circuits did digital things, leaving the analog world to the domain of conventional analog technology. But with the emergence of good, low-cost data conversion techniques (analog-to-digital and digital-to-analog conversion) and the rapid maturing of complex digital circuits, the digital domain gave us "inside" many functions previously left to analog solutions (e.g., auto). New digital circuits began performing analog functions better than their analog counterparts. But as digital technology further developed, the digital circuits became price-competitive with their analog counterparts. Today's digital technology has come to offer superior electrical performance in audio technology and it's competitive at the market place with analog audio technology.

Such is the case with audio delay lines. Digital delays can offer improved electrical performance, such as better signal

to noise, distortion and bandwidth. They often are more compact, contain more features and are just as reliable as older designs. In short, digital delays offer the best performance value to the professional of any delay system available today.

The DM1000 Digital Delay marks a new high-performance breakthrough in the highly competitive world of digital audio delay lines. The DM1000 boasts the performance and features that are found on digital delays costing two to three times as much. A full-function delay line, the DM1000 fits into a single rack height of 3 1/4 inches and yet is easy to use and it's cost-effective.

The DM1000 features delay times up to 900 milliseconds at full 20 KHz bandwidth. All time delay effects are possible with the DM1000: tape echo, slapback echo, hard reverb, doubling, pitch bending, chorus and the industry's best

sounding 4:1 range. The commandingly variable "time" delay allows precise placement of all time delay effects. The Hold function allows data to be held in memory indefinitely for repeated playback of musical passages. The clean execution of data conversion allows the use of heavy amounts of regeneration without noticeable signal deterioration. Stereo mix output plus a dry-only output provide maximum flexibility for dimensional variations of the sound. The DM1000 can accommodate a wide range of input levels and contains a limiter to prevent system clipping. A high-frequency boost/cut filter allows the response of the delayed signal. A full complement of LEDs display all essential functions and optimum input level.

The DM1000 Digital Delay truly represents the next generation of digital audio delay lines. We at Ibanez invite you to experience the future today.

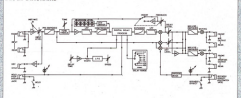
REAR PANEL



SPECIFICATIONS

Delay Time Range	1.75 - 900 ms
Bandwidth	Dry 20 - 20 KHz
	Delay 20 - 8 KHz
Distortion	Delay 1.0 %
	Dry 0.2 %
Equivalent input noise	-90 dBm (BW-A)
Input impedance	500K ohms
Output impedance	10K ohms
LFO Frequency Range	5.1 Hz - 14 Hz
LFO Waveform	Sine wave
Power Requirements	117 VAC, 60 Hz, 110
	270 - 290 VAC, 90 Hz, 14 W
Dimensions	482 (w) x 417 (h) x 233 (d) mm
Weight	3 kg (6.6 lbs)

BLOCK DIAGRAMS



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PT3	Phaser
FL3	Flanger
CS3	Stems Chorus
TS3	Tube Screamer
SD3	Sonic Distortion
CP3	Compressor/Limiter
AD3	Analogue Delay
GE3	Graphic EQ
PE3	Parametric EQ
AF3	Auto Filter
84	Double Sound
93	Shifter
216	Patch Cable
217	Patch Cable
4044	Patch Plug
UE-200	Fiber System
UE-303X	Fiber System
UE-206	Fiber System
UE-400	Rack System
UE-406	Rack System
AD200	Analogue Delay
DM1000	Digital Delay
HD1000	Harmonics/Delay



Tomorrow's Innovations

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