Introducing the Paired Processor — professional signal processing and true stereo separation!

THE IBANEZ SDR1000 STEREO DIGITAL REVERB

The Ibanez SDR1000, which is a new device in digital signal processing, represents the concept of digitally simulated reverberation with its multi-mode functions and true stereo paired operation. The SDR 1000 uses 128x digital processing for truly transparent and crystal-clear reverberation. The SDR 1000's studio and live present programs have been set by top-challenged professional recording studio engineers exclusively for the SDR 1000. This gives you room, hall and other sophisticated and unusual reverberant and delay. In addition, the SDR 1000 provides "delay" and "reverb" mode effects, ideal for multiple delay and reverb processing. As a powerful processor that can be used in any studio application, the SDR 1000 truly is a powerful processor for everyone and every application.
Advanced-design DSP (Digital Signal Processor) IC-creates, for the first time, professional-quality reverberation and independent two-channel operation.

The Ibanez SDR1000 incorporates many design breakthroughs in both hardware and software that combined make it the unique and powerful processor it is. Following are just some of the outstanding highlights and features of the SDR1000:

**Features**

- **True stereo reverberation** is now at your finger tips with the use of advanced, high-speed parallel digital reverberation. The two channels of the SDR1000 may be programmed independently using different modes or can be easily set for identical reverber characteristics. This provides you with the unlimited opportunities of two independent reverb units in one package.

- **With its multi-mode system**, the SDR1000 provides flexible user-oriented programming. 18 eight-mode create eight distinct "sound fields" - HALL, ROOM, PLATE, GATE, REVERSE, DUAL DELAY, AUTO PANNING and DUAL EFFECT. These modes are used as a base for 99 factory and four preset programs as well as the additional 70 user-programmed programs.

- **Each mode's user-programmable parameters** include a 4-band EQ for an incredibly wide range of reverb and delay textures.

- **Extensive MIDI** flexibility lets you program the SDR1000 to fit into any system. Select any program within the SDR1000 with your MIDI controller.

- **The SDR1000 lets you select programs** with the Ibanez IFC60 Intelligent Foot Controller. This enables you to select your programmed sounds in live situations from any remote location.

* The SDR1000 provides an easy-to-read 8-digit fluorescent display and LED keys to prompt you for easy preset programming and recall.

* Guitar jack and RCA-type pin jack inputs and outputs make the SDR1000 easy to use in any live, studio or home recording application. Verifiable digital level monitoring and output signal mixing make it easy to optimize the SDR1000’s performance in any application.

* Advanced user-oriented software makes editing and creating programs a snap. You can easily compare your new sound side by side with a sound memory in memory with the touch of a single key!
Acoustic research in the choice locations of the world's great concert halls has provided a wealth of new information about the dispersion of acoustic energy.

What is the Reverb? Reverboccurs naturally as an acoustic phenomenon. Any place that has surfaces capable of reflecting a sound from a source to a listener, such as a place that has reverberation. Reverbation itself consists of a large number of sound reflections that come together at the point of the listener. We are most familiar with the reverberation created in large halls, gymnasiums, and in similar rooms (such as a bathroom). The sound residue that one hears after the original sound has dropped, is the result of a wash of sound that decays quickly in small spaces and decays more slowly in large spaces. While the reverberation sound definitely has some of the characteristics of the original sound, we may listen to other sound sources in the same acoustic space, you notice there is a "harmless" to the reverberation sound. This is the component of the reverberation sound that the space itself contains.

E. REF. TIME/LEVEL Early Reflection

When a listener hears a sound, this primary sound is called "direct sound." Everything else you hear will be sound reflected off all the odd surfaces and boundaries of the listening space, thus this is called "reflected sound." In certain types of spaces distinct early (or primary) reflections can be heard depending on the placement of the sound source and the listener position within the space. Early reflections take the shortest reflection paths and therefore the listener first. These paths are typically smooth, floors, walls, ceilings.

REV. T Reverbation

The reverberation sound begins with the reception of reflections that cannot be distinctly heard. These specific sounds come together to the listener on top of another. These sounds, then, decay away as the sound reflects off the various surfaces and boundaries. The delay time depends on the size of the listening space, and the reflectivity of the surfaces and boundaries. In this way the reverberation sound takes on the characteristics of the space.

RT. HIGH Rotate High

This "room characteristic" is further accentuated by the fact that most reflective surfaces do not reflect all frequencies equally. In most listening spaces high frequencies are absorbed more rapidly than low frequencies. Movable walls, chairs and people all contribute to making the reverberation sound darker as it decays away.

RT. HIGH 0.01-0.99 The technology behind the Buerre SDR1000 allows you to recreate all of these natural phenomena as well as create new reverberation effects and sounds.

The eight "modes" of the SDR1000 create a "universe" of sonic environments.

MODE 0 HALL

This simulation creates the large, expansive reverberation found in concert halls and large auditoriums. A wide variety of hall "sizes" may be created using the "Reverb Time" and "Size" parameters. This very popular form of reverberation may be used for vocal and instrument accompaniment, live recording and applications. The adjustable parameters for this mode are:

- Reverb Time
- Early Reflection Time
- Early Reflection Level
- Equalization Parameters
- Size

1) Simulation of reverberation by General Reverberator

(Monaural signal input)

2) Simulation of reverberation by SDR1000

(Monaural signal input)

MODE 2 PLATE

Plane reverberation is actually a simulation technique that pre-class digital simulation. Formerly found only in the studio due to its physical size, plate reverberation became known for its "cool, tiling-sounding" reverberation. Again, this type of reverberation is a good "general" reverberation sound for many applications. The adjustable parameters for this mode are:

- Reverb Time
- Early Reflection Time
- Early Reflection Level
- Equalization Parameters
- Size

MODE 3 GATE

Reverb sound may be "cut off" at any point you select. This effect is extremely popular for use with percussive sounds, giving them an interesting accent while maintaining the "authentic" nature of the sound. The adjustable parameters for this mode are:

- Early Reflection Time
- Early Reflection Level
- Equalization Parameters
- Delay Time

MODE 4 REVERSE

This is a special effect that automatically "parses" the stereo outputs between Channel 1 and Channel 2. Stereo outputs cross each other for mild or extreme movement effects. This mode may be used with monophonic or stereo inputs. The adjustable parameters for this mode are:

- Early Reflection Time
- Early Reflection Level
- Equalization Parameters
- Delay Time

MODE 5 DUAL DELAY

This mode provides two independent channels of delay whether the input is monophonic or stereo. Also, multiple tap assignments may be made, so that each channel may be programmed for a unique "array" of individual repeats, up to 20 Max taps. The adjustable parameters for this mode are:

- Early Reflection Time
- Early Reflection Level
- Equalization Parameters
- Delay Time

MODE 6 AUTO PANNING

This mode lets both channels of the SDR1000 operate in a totally independent reverber. The SDR1000 acts as two reverber units, whether monophonic, stereo or dual channel inputs are used. The adjustable parameters for this mode are:

- Early Reflection Time
- Early Reflection Level
- Equalization Parameters
- Delay Time

MODE 7 DUAL REVERB

This mode lets both channels of the SDR1000 operate in a totally independent reverber. The SDR1000 acts as two reverber units, whether monophonic, stereo or dual channel inputs are used. The adjustable parameters for this mode are:

- Early Reflection Time
- Early Reflection Level
- Equalization Parameters
- Delay Time

BASIC FACTS ABOUT REVERBERATION

NEW REVERBERATION EFFECTS AND SOUNDS
Comprehensive sound "parameters" — including a programmable graphic EQ — give you a unprecedented range of sound possibilities.

**Front Panel Features**

1. **Bypass Switch**
   - This switch is used to turn the return effects on or off.

2. **Bypass LED**
   - This LED lights when the unit is in bypass mode (return effects off).

3. **Input Level**
   - This controls the amount of dry or unprocessed signal that appears in the output signal. The levels are displayed on a meter.

4. **Effect Level**
   - This controls the amount of processed, or processed signal that appears in the output signal, when the return effects are on.

5. **Input Level LEDs**
   - These LEDs are used along with the **Input Level** to adjust the optimum input level. The LEDs are labeled "in" levels, with "oh" representing the optimum input level.

6. **Memory Display**
   - These two digits indicate the SDR1000 memory location that has been recalled for playback or editing.

7. **Mode Display**
   - This single digit indicates which of the SDR1000's modes (return and delay effects) is being used in the particular memory location. The digits are numbered from "0" to "7".

8. **Channel Display**
   - This triplet digit indicates the SDR1000's channel that is being edited in the "Parameter Edit" and "EQ Scan" functions.

9. **Data Display**
   - These four digits indicate various data depending on what operation the unit is performing.

**Pre-Delay Time**
- This key serves three purposes. It serves as the number "3" key, "Pre-Delay Time" parameter and MIDI patch number selection.

**Early Reflection Level Key**
- This key serves three purposes. It serves as the number "4" key, "Early Reflections Level" parameter and MIDI patch number selection.

**Phase Key**
- This key serves three purposes. It serves as the number "5" key, "Phase" parameter and MIDI patch number selection.

**Gate Time Key**
- This key serves two purposes. It serves as the number "6" key and "Gate Time" parameter for selection.

**Tap Key**
- This key serves two purposes. It serves as the number "7" key for editing.

**Depth Key**
- This key, labeled "Auto-Pan Depth", is for editing in the "Auto-Pan" mode only.

**Speed Key**
- This key, labeled "Auto-Pan Speed", is for editing in the "Auto-Pan" mode only.

**Channel Edit Key**
- This key serves two purposes. It selects "Channel" operation and alternates editing between Channel 1 and Channel 2.

**Channel Scan Key**
- This key serves two purposes. It selects "Scan mode" operation and alternates between Channel 1 and Channel 2.

**Size Key**
- This key serves three purposes. It serves as the number "8" key, "Size" parameter and "High Band" EQ parameter for editing.

**Feedback Level Key**
- This key serves three purposes. It serves as the number "9" key, "Feedback Level" parameter and "EQ Output Level" parameter for editing.

**Power Switch**
- This switch powers the unit on and off.

**Specifications**

- **Input Impedance**: 1 MΩ
- **Output Impedance**: 10 kΩ
- **Frequency Response**: 10 Hz to 20 kHz
- **Dynamic Range**: 97 dB
- **Signal-to-Noise Ratio**: >90 dB
- **Distortion**: <0.01%
- **Input Jacks**: 1/4" TRS stereo
- **Output Jacks**: 1/4" TRS stereo
- **Power Supply**: 12V DC

**Program Down Jack**
- This jack accepts input for remote documentation (decreasing by steps of the memory location, via standard 1/4" mono phone plug)

**Hold Jack**
- This jack accepts input for remote control of the "Hold" feature, via standard 1/4" mono phone plug.

**Effect Jack**
- This jack accepts input for remote control of EFFECT ON/OFF, via standard 1/4" mono phone plug.

**Program Up Jack**
- This jack accepts input for remote increasing (increasing by step) of the memory location, via standard 1/4" mono phone plug.

**MIDI IN Jack**
- This jack accepts input from any MIDI controller, for MIDI-controlled selection of memory locations.

**MIDI Thru Jack**
- This jack accepts MIDI information received @ MIDI IN Jack for MIDI control of other devices.

**AC Power Cord**
- This cord supplies power to the unit using a 120V (220-240V) AC outlet.
Advanced digital design and a professional feature-mix.

30 factorypreset sounds! Use sounds created by top-chart recording engineers, and edit any of them to create your own sonic realizations.

APPLICATIONS

BLOCK DIAGRAM