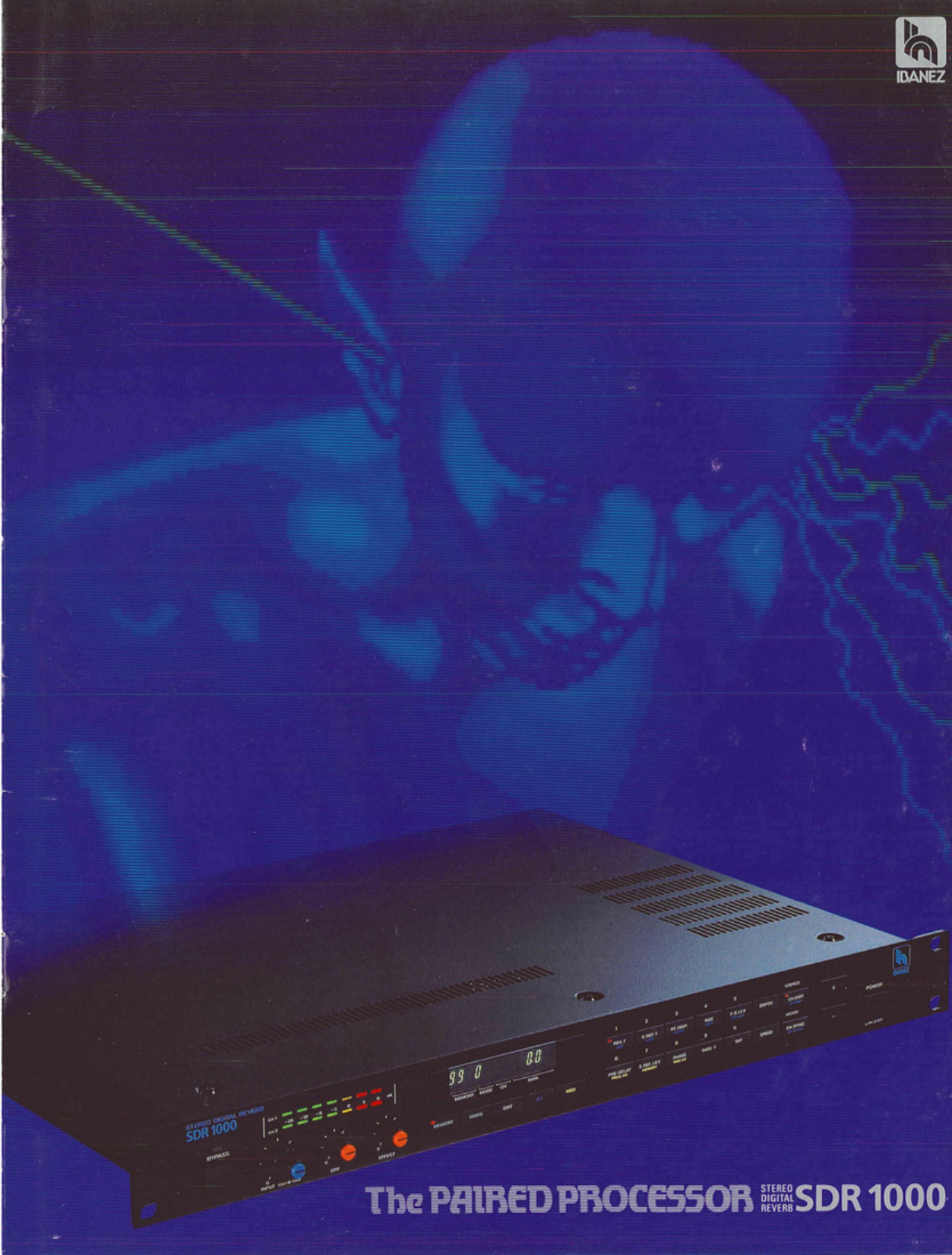

IBANEZ
STEREO DIGITAL REVERB
SDR 1000
BYPASS
INPUT
DRY
EFFECT
MEMORY
WRITE
EDIT
MIDI
MODE
CH
DATA
STEREO
POWER
The PAIRED PROCESSOR
STEREO DIGITAL REVERB
SDR 1000

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

THE IBANEZ SDR1000 STEREO DIGITAL REVERB

The Ibanez SDR1000 ushers in a new dawn in digital signal processing. The SDR1000 digital reverb redefines the concept of digitally simulated reverberation with its multi-mode functions and true stereo paired operation. The SDR1000 uses 16-bit digital processing for truly transparent and crystal-clear reverberation. The SDR1000's studio and live preset programs have been set by top charted professional recording studio engineers exclusively for the SDR1000. This gives you room, hall and plate simulations and unusual naturalness and clarity. In addition the SDR1000 provides "gated" and "reverse" reverb effects, dual or multi-tap delay (echo repeat) processing and auto-panning in order to provide you with all of the latest effects and techniques used today. Whether it's used as an essential recording effect, a live P.A. processor or as a stand-alone instrument reverb, the SDR1000 is truly a powerful processor for everyone and every application.

THE PAIRED PROCESSOR FOR EVERYONE AND EVERY APPLICATION

PAIRED

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. Followings 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 processing. The two channels of the SDR1000 may be programmed independently using different modes or can be easily set for identical reverb characteristics. This provides you with the unlimited opportunities of two independent reverb units in one package.

* With it's multi-mode system the SDR1000 provides flexible user-oriented programming. It's eight modes create eight distinct "sound fields". HALL, ROOM, PLATE, GATE, REVERSE, DUAL DELAY, AUTO PANNING and DUAL REVERB. These modes are used as a basis for 30 studio and live preset programs as well as the additional 70 user-preset programs.
* Each mode's user-programmable parameters include a 4-band EQ for an incredibly wide range of reverb and delay textures.
* Advanced user-oriented software makes editing and creating programs a snap. You can even compare your new sound "side by side" with a sound already in memory with the touch of a single key!

* 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 programs and sounds in live situations from any remote location.

* The SDR1000 provides an easy to read 8-digit flourescent 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. Versatile input level ranging and output signal mixing make it easy to optimize the SDR1000's performance in any application.

STEREO DIGITAL REVERB **SDR 1000**

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 ?

Reverberation occurs naturally as an acoustic phenomenon. Any place that has surfaces capable of reflecting a sound from a source to a listener is a place that creates reverberation. Reverberation 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 smaller rooms (such as a bathroom). The sound residue that one hears after the original sound stops is reverberation: 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, as you listen to other sound sources in the same acoustic space, you notice that there is a "sameness" to the reverberation sound. This is the component of the reverberation sound that the space itself contributes.

E. REF. TIME/LEVEL — Early Reflection

When a listener first hears sound, this primary sound is called "direct sound". Everything else you hear will be sound reflected off of 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 listeners position within the space. Early reflections take the shortest reflection paths and therefore they reach the listener first. These paths are typically smooth floors, walls or ceilings.

REV. T — Reverberation

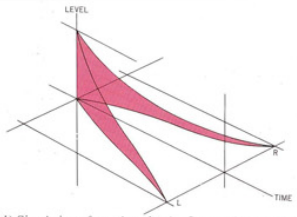
The actual reverberation sound begins with the reception of reflections that cannot be distinctly heard. These remaining sounds come together to the listener one on top of another. These sounds, then, decay away as the sound reflects off of the various surfaces and boundaries. The decay time depends 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

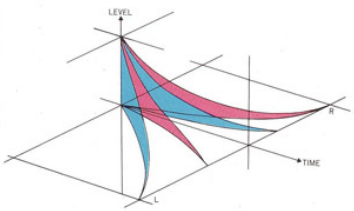
This "room characteristic" is further accentuated by the fact that most reflective surfaces do not reflect all frequencies equally. In most listening spaces high frequencies are absorbed more rapidly than low frequencies. Curtains, rugs, chairs and people all contribute to making the reverberation sound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

■RT. HIGH 0.01-0.99

The technology behind the Ibanez SDR1000 allows you to recreate all of these natural phenomena as well as create new reverberation effects and sounds.



1) Simulation of reverberation by General Reverberator (Monoral signal input)



2) Simulation of reverberation by SDR1000 (Monoral signal input)

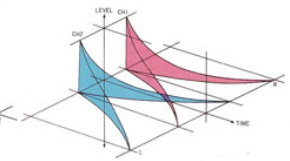
THE EIGHT "MODES" OF THE SDR1000

The SDR1000 provides eight different "listening spaces", including natural reverb simulations, "unnatural" reverb effects, and delay line and stereo panning effects. From these basic spaces the SDR1000 provides 30 "factory preset" programs (program locations 00 through 29), and 70 "user-programmable" programs (program locations 30 through 99). Each program, either factory-set or user-set, starts with one of the eight basic modes and can be altered by the adjustable parameters such as time, equalization, pre-delay, and size. The SDR1000's specific parameters include reverb time, early reflection time, effect level, 4-band equalization, pre-delay time, early reflection level, high frequency and size. By altering the basic modes with the parameters discussed, an almost unlimited number of interesting, exciting and unique variations can be created.

MODE 0 — HALL

This simulation creates the large, expansive reverberation found in concert halls and large out-door amphitheater. 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 enhancement, for live and recording applications. The adjustable parameters for this mode are:

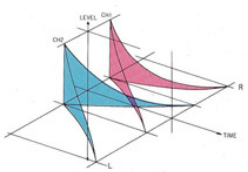
- *Reverb Time
- *Early Reflection Time
- *Early Reflection Level
- *Equalizer Parameters
- *Pre-Delay Time
- *Reverb Time High Frequency
- *Size

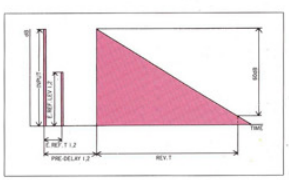


MODE 1 — ROOM

This mode simulates the reverberation of small to medium-sized rooms. Room "liveliness" and reverb coloration may be varied over a wide range. This mode is also very useful for vocals and instruments in live and recording applications. The adjustable parameters for this mode are:

- *Reverb Time
- *Early Reflection Time
- *Early Reflection Level
- *Equalizer Parameters
- *Pre-Delay Time
- *Reverb Time High Frequency
- *Size





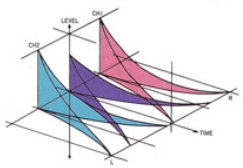
BASIC FACTS ABOUT REVEBERATION

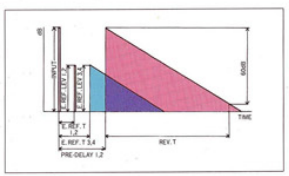
The eight "modes" of the SDR1000 create a "universe" of sonic environments.

MODE 2 — PLATE

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

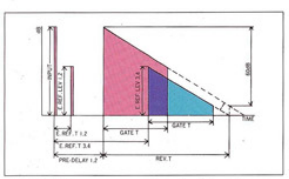
- *Reverb Time
- *Early Reflection Time
- *Early Reflection Level
- *Equalizer Parameters
- *Pre-Delay Time
- *Reverb Time High Frequency
- *Size





MODE 3 — GATE

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

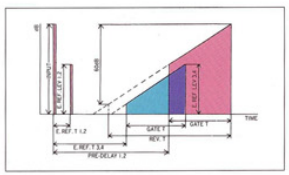


- *Reverb Time
- *Early Reflection Time
- *Early Reflection Level
- *Equalizer Parameters
- *Pre-Delay Time
- *Gate Time

MODE 4 — REVERSE

This is a dramatic special effect for a wide range of applications, including percussive sounds and instrument lead-lines. The reverb sound is played out in "reverse", so that the reverb sound starts at a low level and rapidly rises in level. This mode also uses the "Gate Time" parameter so that the rising reverb sound may be cut off at any time. The adjustable parameters for this mode are:

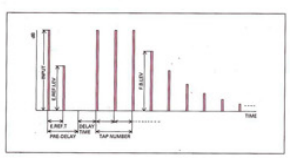
- *Reverb Time
- *Early Reflection Time
- *Early Reflection Level
- *Equalizer Parameters
- *Pre-Delay Time
- *Gate Time



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) tap assignments may be made. Countless delay effects are possible in this mode, for instruments and vocals. The adjustable parameters for this mode are:

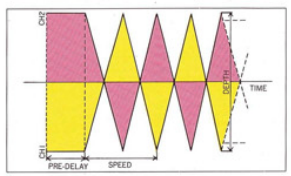
- *Early Reflection Time
- *Early Reflection Level
- *Pre-Delay Time
- *Tap Assignments
- *Delay Time (set by Reverb Time)
- *Reverb Time High Frequency
- *Feedback Level
- *Equalizer Parameters



MODE 6 — AUTO PANNING

This is a special effect that automatically "pans" 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:

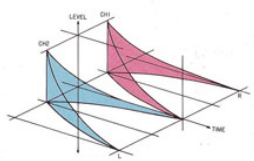
- *Pre-Delay Time
- *Panning Depth
- *Panning Speed
- *Equalizer Parameters

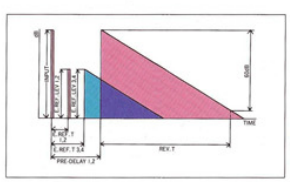


MODE 7 — DUAL REVERB

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

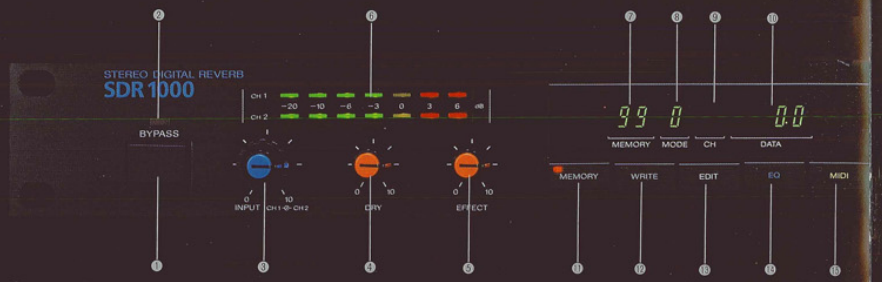
- *Reverb Time
- *Early Reflection Time
- *Early Reflection Level
- *Equalizer Parameters
- *Pre-Delay Time
- *Reverb Time High Frequency
- *Size

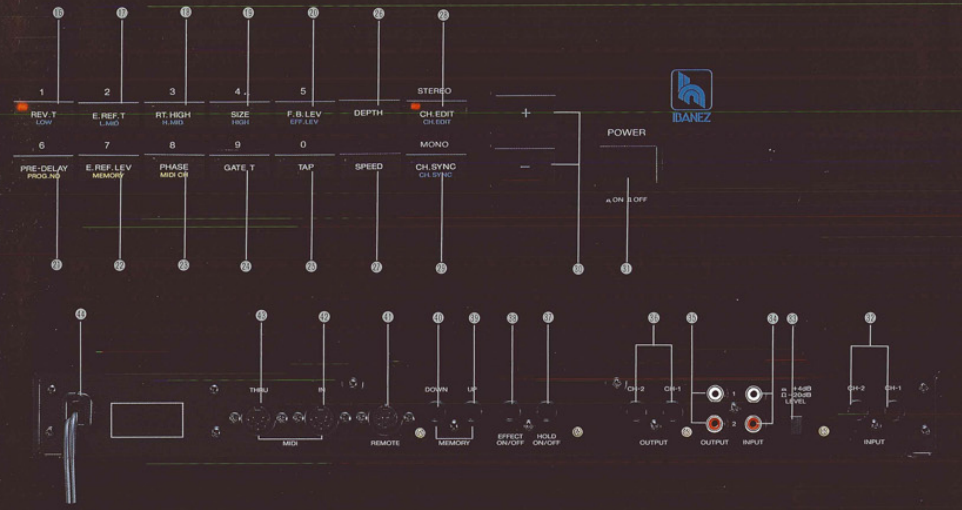




NEW REVEBERATION EFFECTS AND SOUNDS

Comprehensive sound "parameters" — including a programmable graphic EQ — give you a unprecedented range of sound possibilities.





FRONT PANEL

① **BYPASS SWITCH**
This switch is used to turn the reverb effect on and off.

② **BYPASS LED**
This LED lights when the unit is in bypass (reverb effect off).

③ **INPUT LEVEL**
This controls the level of input signal going into the unit. It is a "concentric" control. That is, the knob is "split" into separate "outer" and "inner" sections.

④ **DRY LEVEL**
This controls the amount of "dry", or unprocessed signal that appears in the output signal, when the reverb effect is on.

⑤ **EFFECT LEVEL**
This controls the amount of "effect", or processed signal that appears in the output signal, when the reverb effect is on.

⑥ **INPUT LEVEL LEDS**
These LED's are used along with ③ INPUT LEVEL to adjust the optimum input level. The LED's are labelled in "dB" levels, with "0 dB" representing the optimum input level.

⑦ **MEMORY DISPLAY**
These two digits indicate the SDR1000 memory location that has been recalled for playback, copying or editing.

⑧ **MODE DISPLAY**
This single digit indicates which of the SDR1000's modes (reverb and delay effects) is being used in a particular memory location. The eight modes are numbered from "0" to "7".

⑨ **CHANNEL DISPLAY**
This single digit indicates the SDR1000 channel that is being edited in the "Parameter Edit" and "EQ Edit" functions.

⑩ **DATA DISPLAY**
These four digits indicate various data depending on what operation the user is performing.

⑪ **MEMORY KEY**
This key is used to call up a particular memory location for playback, copying or editing.

⑫ **WRITE KEY**
This key is used to enter an edited program into memory, or to copy a program into another location.

⑬ **EDIT KEY**
This key is used when it is desired to edit a parameter(s) in a program (in any memory location).

⑭ **EQ KEY**
This key is used when it is desired to edit the EQ (equalizer) settings of a particular program (in any memory location).

⑮ **MIDI KEY**
This key is used when it is desired to enter or change the unit's MIDI channel or MIDI receiving mode. It is also used when a memory location is to be assigned to a MIDI patch number.

⑯ **REVERB TIME KEY**
This key serves three purposes, it serves as the number "1" key, "Reverse Time" parameter and "Low" band EQ filter for editing.

⑰ **EARLY REFLECTION TIME KEY**
This key serves three purposes, it serves as the number "2" key, "Early Reflection Time" parameter and "Low-Mid" band EQ filter for editing.

⑱ **REVERB TIME HIGH FREQUENCY KEY**
This key serves three purposes, it serves as the number "3" key, "Reverb Time High Frequency" parameter and "High-Mid" band EQ filter for editing.

⑲ **SIZE KEY**
This key serves three purposes, it serves as the number "4" key, "Size" parameter and "High" band EQ filter for editing.

⑳ **FEEDBACK LEVEL KEY**
This key serves three purposes, it serves as the number "5" key, "Feedback Level" parameter and "EQ Output Level" parameter for editing.

㉑ **PRE-DELAY KEY**
This key serves three purposes, it serves as the number "6" key, "Pre-Delay Time" parameter and MIDI patch number selection.

㉒ **EARLY REFLECTION LEVEL KEY**
This key serves three purposes, it serves as the number "7" key, "Early Reflection Level" parameter and assign a particular MIDI patch number.

㉓ **PHASE KEY**
This key serves three purposes, it serves as the number "8" key, inverts the phase of the "Early Reflection" and "Feedback" and MIDI channel selection.

㉔ **GATE TIME KEY**
This key serves two purposes, it serves as the number "9" key and "Gate Time" parameter for editing.

㉕ **TAP KEY**
This key serves two purposes, it serves as the number "0" key and selects the number of taps (repeats) in the "Dual Delay" Mode only.

㉖ **DEPTH KEY**
This key calls up the "Auto-Pan Depth" parameter for editing in the "Auto-Pan" Mode only.

㉗ **SPEED KEY**
This key calls up the "Auto-Pan Speed" parameter for editing in the "Auto-Pan" Mode only.

㉘ **CHANNEL EDIT KEY**
This key serves two purposes, it selects "Stereo" operation and alternates editing between Channel 1 and Channel 2.

㉙ **CHANNEL SYNC KEY**
This key serves two purposes, it selects "Mono" operation and determines whether each channel will have different parameter settings or identical parameter settings.

㉚ **INCREMENT/DECREMENT KEYS**
These keys serve two basic purposes, they select the memory location number and increase and decrease data settings.

㉛ **POWER SWITCH**
This switch powers the unit on and off.

REAR PANEL

㉜ **PHONE INPUT JACKS**
These jacks accept input via standard 1/4" mono phone plugs, such as those found on standard "phone cords".

㉝ **INPUT/OUTPUT LEVEL SWITCH**
This switch selects between line-level input (averaging +4 dBv) operation and instrument-level input (averaging —20 dBv) operation.

㉞ **PIN INPUT JACKS**
These jacks accept input via standard RCA-type pin plugs, such as those found on "stereo system" cables.

㉟ **PIN OUTPUT JACKS**
These jacks accept standard RCA-type pin plugs, such as those found on "stereo system" cables. These outputs provide a mix of the "dry" and "effect" signals.

㊱ **PHONE OUTPUT JACKS**
These jacks accept standard 1/4" phone plugs, such as those found on standard "phone cords". These outputs basically duplicate the function of ㊺ PIN OUTPUT JACKS.

㊲ **HOLD JACK**
This jack accepts input for remote control of the "repeat hold" feature, via standard 1/4" mono phone plugs.

㊳ **EFFECT JACK**
This jack accepts input for remote control of EFFECT ON/OFF, via standard 1/4" mono phone plugs.

㊴ **PROGRAM UP JACK**
This jack accepts input for remote incrementing (increasing by steps) of the memory location, via standard 1/4" mono phone plugs.

㊵ **PROGRAM DOWN JACK**
This jack accepts input for remote decrementing (decreasing by steps) of the memory location, via standard 1/4" mono phone plugs.

㊶ **REMOTE CONTROLLER JACK**
This jack accepts input from the Ibanez IFC60 Intelligent Foot Controller, for remote selection of memory locations.

㊷ **MIDI IN JACK**
This jack accepts input from any MIDI controller, for MIDI-controlled selection of memory locations.

㊸ **MIDI THRU JACK**
This jack transmits the MIDI information received at ㊷ MIDI IN JACK FOR MIDI control of other devices.

㊹ **AC POWER CORD**
This cord connects the unit to a 120V (220—240V) AC outlet.

SPECIFICATIONS

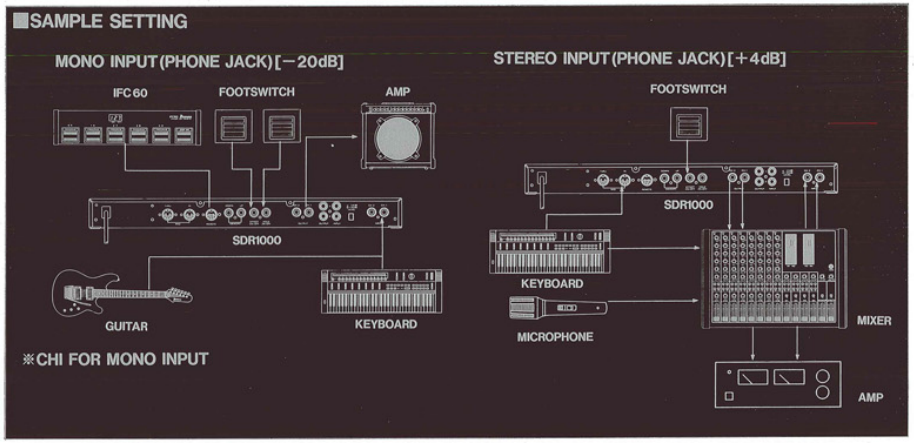
FACTORY PROGRAM	(ROM) 30
USER PROGRAM	(RAM) 70
PARAMETERS	EDIT: REV.T/PRE-DELAY/E.REF.T/E.REF.LEV/RT.HIGH/SIZE/GATE T/F.B.LEV/TAP/DEPTH/SPEED/EFF.LEV
	EQ: LOW/L.MID/H.MID/HIGH/EFF.LEV
	MIDI: PROG.NO/MEMORY/MIDI CH
FREQUENCY RESPONSE	DIRECT: 20 ~ 20 KHz
	EFFECT: 20 ~ 10 KHz
DYNAMIC RANGE	MORE THAN 90 dB
ITAL HARMONIC DISTORTION	LESS THAN 0.03%
DIGITAL ENCODING	16 bit linear PCM
SAMPLING RATE	26 KHz
EQUALIZER	LOW: 100 Hz –12~+12 dB
	L.MID: 40 Hz –12~+12 dB
	H.MID: 1.6 KHz –12~+12 dB
	HIGH: 6.4 KHz –12~+12 dB
INPUT LEVEL	—20, +4 dBv
INPUT IMPEDANCE	10 Kohms
INPUT JACK	PHONE JACK×2, RCA PIN JACK×2
OUTPUT LEVEL	—20, +4 dBv
OUTPUT IMPEDANCE	600 ohms
OUTPUT JACK	PHONE JACK×2, RCA PIN JACK×2
POWER	60 Hz 120 VAC, 30 W
	50, 60 Hz 220 VAC, 30 W
DIMENSION	482(W)×44(H)×320(D)
WEIGHT	4.4 Kg

FRONT/REAR PANEL FEATURES

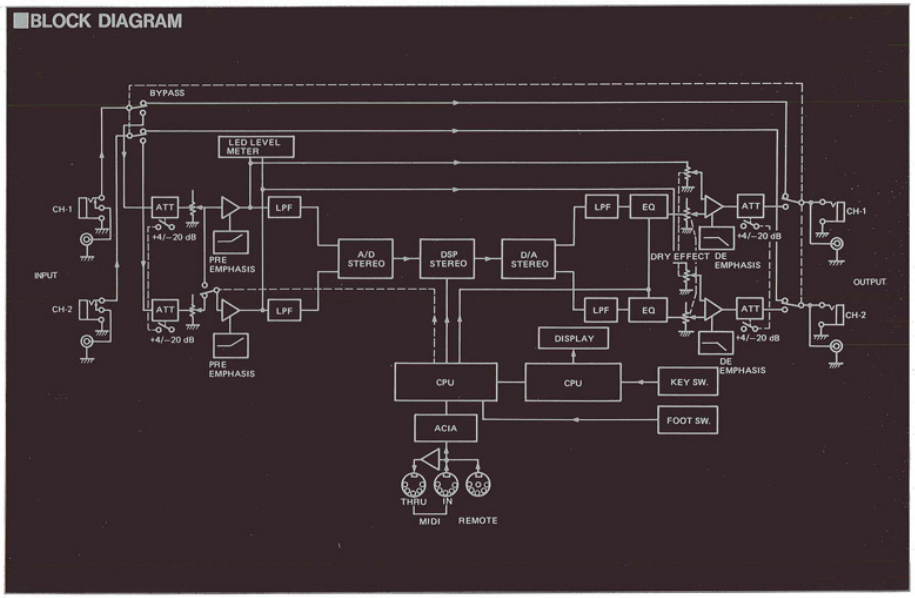
SPECIFICATIONS

Advanced digital design and a professional feature-mix.

■SAMPLE SETTING



■BLOCK DIAGRAM



APPLICATIONS

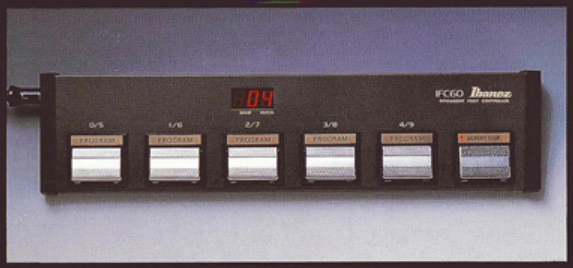
BLOCK DIAGRAM

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

IDANEZ

MEMORY No.	MODE No.	NAME	PARAMETERS REV. T (s)	PRE-DELAY (ms)	E. REF. T (ms)	E. REF. LEV	RT. HIGH	SIZE	EQ (dB)	EFF. LEV
00	0	LARGE HALL	4.4	100	51	0.101	0.46	12	4	0.445
				100	51	0.101			4	
01	0	STRINGS HALL	2.6	125	43	0.156	0.6	9	0	0.500
				150	43	0.156			2	
02	0	PIANO HALL	1.9	50	35	0.273	0.62	9	4	0.500
				50	1	0.273			0	
03	1	SMALL CLUB 1	0.80	19	8	0.5	0.5	3	12	0.445
				19	8	0.5			0	
04	1	SMALL CLUB 2	0.67	65	8	0.5	0.5	3	4	0.750
				71	8	0.5			2	
05	1	DRUM ROOM	0.70	19	8	0.5	0.5	4	0	0.500
				19	8	0.5			0	
06	1	LOCKER ROOM	0.75	15	110	0.843	0.5	2	-2	0.500
				15	110	0.843			-2	
07	2	PERCUSSION PLATE	3.5	34	23	0.5	0.5	11	0	0.500
				34	23	0.25			8	
08	2	LEAD VOCAL PLATE	3.0	34	23	0.5	0.5	15	0	0.500
				34	29	0.5			4	
09	2	BACK UP VOCAL	2.2	116	245	0.296	0.8	16	-2	0.500
				116	256	0.296			2	
10	2	CHURCH CHOIR	3.5	69	1	0.992	0.61	13	6	0.500
				69	174	0.25			0	
11	2	ACOUSTIC GUITAR	2.2	20	1	0	0.54	8	0	0.804
				20	40	0.21			-2	
12	2	ELECTRIC PIANO	1.1	116	1	0.992	0.8	16	-2	0.554
				116	68	0.5			2	
13	2	COMPACT PLATE	0.8	1	90	0.468	0.73	10	0	1.000
				1	23	0.25			4	
14	2	ROCK VOCAL	3.3	256	70	0.953	0.15	16	-4	0.500
				256	256	0.414			12	
15	2	AIRPLANE HANGER	2.2	34	421	0.789	0.82	12	2	0.500
				34	260	0.5			0	
MEMORY No.	MODE No.	NAME	REV. T (s)	PRE-DELAY (ms)	E. REF. T(ms)	E. REF. LEV	GATE T (ms)		EQ (dB)	EFF. LEV
16	3	TOM/KICK GATE	10	30	1	0	163		6	0.445
				30	1	0			4	
17	3	SNARE GATE	99	1	75	0.992	75		0	0.500
				1	38	0.46			4	
18	3	DOUBLE GATE	2.2	24	45	0.992	123		0	0.500
				24	171	0.406			-2	
19	3	LONG GATE	99	43	202	0.46	159		0	0.500
				43	201	0.171			0	
20	4	REVERSE SLAP	0.3	165	22	0.515	28		0	0.898
				165	22	0.515			0	
21	4	REVERSE GATE	1.5	119	1	0	77		4	0.500
				119	80	0.101			4	
22	4	HEAVY REVERSE	1.8	40	245	0.968	172		0	0.445
				40	1	0			6	
MEMORY No.	MODE No.	NAME	REV. T (ms)	PRE-DELAY (ms)	E. REF. T(ms)	E. REF. LEV	RT. HIGH	F. B. LEV	TAP	EQ (dB)	EFF. LEV
23	5	BONANZA ECHO	200	100	1	0	0.99	0	2	0	0.656
			200	0	1	0	0.99	0	1	0	
24	5	STEREO TAP DELAY	510	0	255	0	0.99	0.406	1	0	0.500
			510	255	255	0.75	0.99	0.406	1	0	
25	5	APACHE ECHO	162	0	1	0	0.99	-0.25	6	0	0.500
			162	0	1	0	0.99	-0.25	6	0	
MEMORY No.	MODE No.	NAME	SPEED (Hz)	PRE-DELAY (ms)	DEPTH					EQ (dB)	EFF. LEV
26	6	PANNING DOUBLER	4.35	67	1.0					0	0.500
				67						0
27	6	STEREO PANNER	1.34	91	0.5					0	0.500
				91						0
MEMORY No	MODE No.	NAME	REV. T (s)	E. REF. T (ms)	PRE-DELAY (ms)	E.REF. LEV	RT.HIGH	SIZE	EQ (dB)	EFF. LEV
28	7	MATCHED DUAL PLATE	3.54	83	10	0.5	0.5	16	0	0.750
					10	0.5			0	
			3.54	83	43	0.5	0.5		0	
					43	0.5			0	
29	7	DUAL PERCUSSION PLATE	3.54	120	10	0.5	0.84	16	0	0.609
					10	0.5			0	
			3.54	180	43	0.5	0.84		0	0.750
					43	0.5			0	

※We would like to thank to the following recording engineers who lent their special talents in the creation of the "factory-pre set" sounds stored in the SDR1000.
Mr. Jeff Hendrickson, Mr. Ian Eales, Mr. Ed Thacker, Mr. K. Murata, Mr. K. Ito



●IFC60 INTELLIGENT FOOT CONTROLLER

●IR360C RACK CASE FOR SDR1000

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