DCP

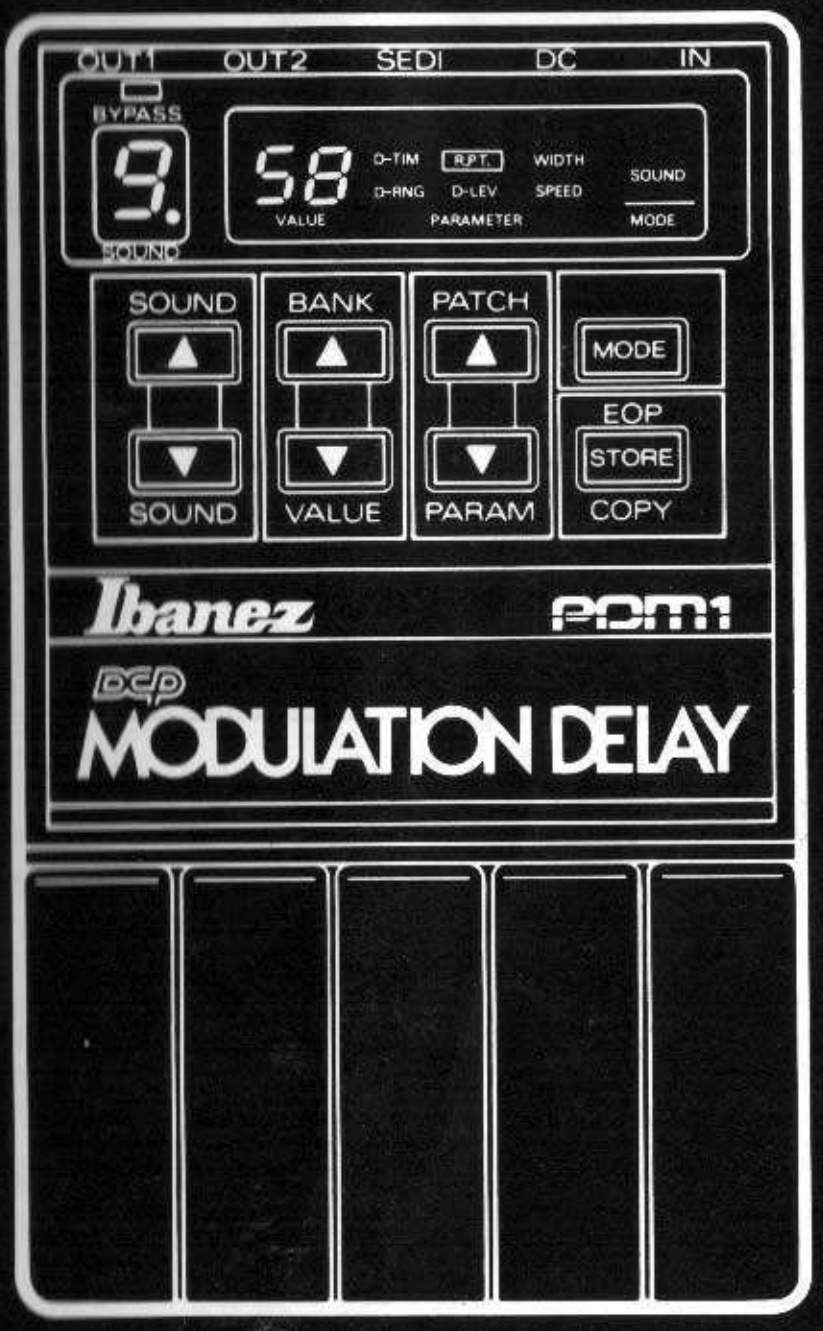
Digitally Controlled Processor

PDM1 MODULATION DELAY

PDD1 DELAY

PDS1 DISTORTION

Owner's Manual / Bedienungsanleitung / Mode d'emploi



Ibanez

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INHALT

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1 INTRODUCTION

Welcome to the exciting world of Ibanez Digitally Controlled Processors, with the first fully programmable compact effect from Ibanez.
Traditionally the compact effects have been left behind some of the new technologies especially in programmable functions. The new Ibanez custom LSI change this.
In order to enjoy the DCP effects' capabilities, please read this manual carefully.

2 PRECAUTIONS

It is helpful to keep a few points in mind in order to keep your DCP units running smoothly.

* Avoid using the DCP units in a place that will cause the unit to get extremely hot(or cold), such as; Direct sunlight.
* Avoid exposing the unit to sand, excessive amounts of water, dust and dirt. If you wish to clean the unit, use a clean, soft rag. If necessary, use a slightly dampened cloth and a mild detergent. Never use strong detergents or solvents. Use a second cloth to dry the unit completely.
* Avoid using the unit in the vicinity of radios, televisions, or wireless transmitters and receivers. The DCP units may pick up interference from these units, or cause the units to pick up interference.
* All DCP units have a battery back up system for maintaining the Factory and User sounds. The battery life is approximately a little more than 5 years. So, after 5 years, please contact your music dealer, service technician or local Ibanez service station to replace the battery.
* AC adapter
  Use the Ibanez AC adapter sold with the DCP units only. Other AC adapters may cause operational problems.

3 FEATURES

*Fully Programable functions

All DCP units are fully programable effects. For example, the PDM1 Modulation Delay has 6 programable parameters such as DELAY TIME, DELAY RANGE, DELAY LEVEL, REPEAT, SPEED and WIDTH.

PDD1 digital delay parameters	PDS1 distortion parameters
DELAY TIME	DISTORTION
DELAY TANGE	ATTACK
DELAY LEVEL	PUNCH
REPEAT	EDGE
	LEVEL

All sound programs can be stored in 19 program locations.

*10 Factory sounds and 19 program locations

DCP units have 10 different preprogramed sounds developed by professional musicians. All of these factory sounds can be recalled instantaneously. Also, these sounds can be modified by users and stored in any of 19 locations.

*TWO CUSTOM LSI

MC4105F Digitally Controlled Potentiometer LSI

VCA technology has been widely used in synthesizers and generally expensive and don't perform well at lower operating voltages such as 9 volts.

Ibanez has developed a custom LSI which goes beyond VCA technology. This LSI has 6 parameters (6 different controls),and each parameter has 100 increments to control value.

*MC4102 Digital Delay Processor LSI

Ibanez introduced IDPC(Ibanez Digital Processor)LSI two years ago. Now we have improved a new LSI to perform much better than before(40 dB wider dynamic range and better S/N ratio). It performs equivalent to a 15 bit PCM digital delay system, thus eliminating the need for any analog noise reduction circuitry.

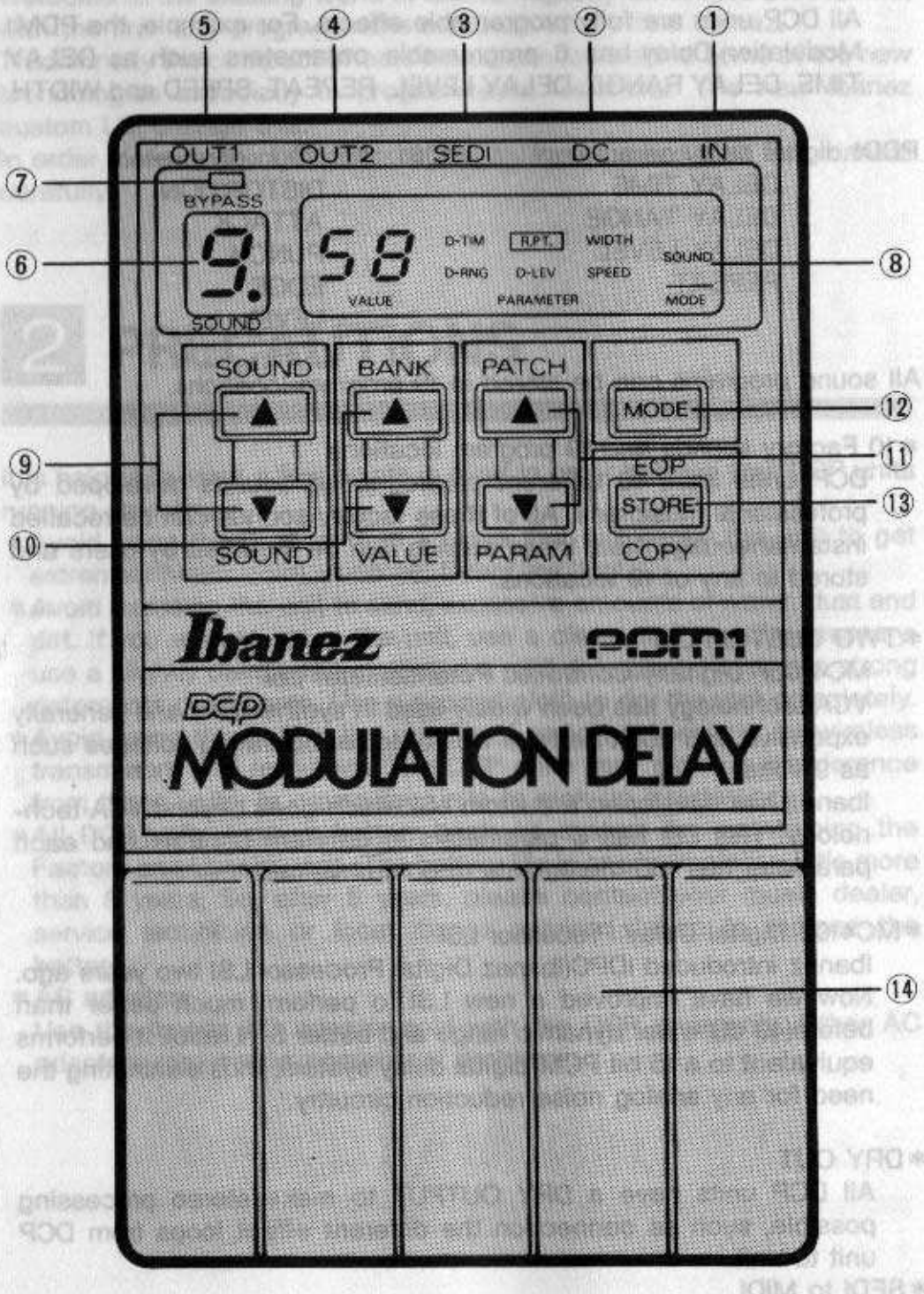
*DRY OUT

All DCP units have a DRY OUTPUT to make stereo processing possible, such as connection the different effect loops from DCP unit to unit.

*SEDI to MIDI

All DCP unit have SEDI(Small Effect Digital Interface) outputs to interface them with the Ibanez DMI4 MIDI converter.

4 NAME OF CONTROLS



①IN
1/4" phone input for instruments.

②DC IN
This is the power supply input for an AC adapter.
Use the Ibanez AC adapter sold with the unit ONLY.

③SEDI

Small Effect Digital Interface. Connects to DMI4 interface unit by SEDI cable. This interface transmits the PLAY MODE sequence data, DC power and special switching functions.

NOTE: Switching function will be explained in the DMI4 introduction.

④DRY OUT

1/4"phone output for Dry Signal.

NOTE: PDM1:Delay Range 00,01 and 02 changes this output to an Inverted Output.

⑤OUTPUT

1/4"phone output for mix of dry and effect signals.

⑥LED display

Displays SOUND numbers.
0.–9. Factory Sounds
1 –9 Users' locations
0 Bypass

⑦BYPASS LED

When the DCP is in BYPASS by the FOOTSWITCH, green LED indicates BYPASS.

⑧LCD display

Display, Bank, Patch in PLAY MODE.Displays parameter data in SOUND MODE.

⑨SOUND keys

Changes the SOUND number
[▲] increases the SOUND number
[▼] decreases the SOUND number

⑩VALUE/BANK keys

These keys work for 2 different functions in each mode.
SOUND mode: [▲] increases the VALUE of each PARAMETER.
[▼] decreases the VALUE of each PARAMETER
PLAY mode : [▲] increases the BANK number.
[▼] decreases the BANK number.

⑪PARAMETER/PATCH keys

These keys work for 2 different functions in each mode.
SOUND mode: [▲] [▼] changes the PARAMETER.
PLAY mode : [▲] increases the PATCH number.
[▼] decreases the PATCH number.

⑫MODE key

Changes the mode.

⑬STORE/COPY/EOP key

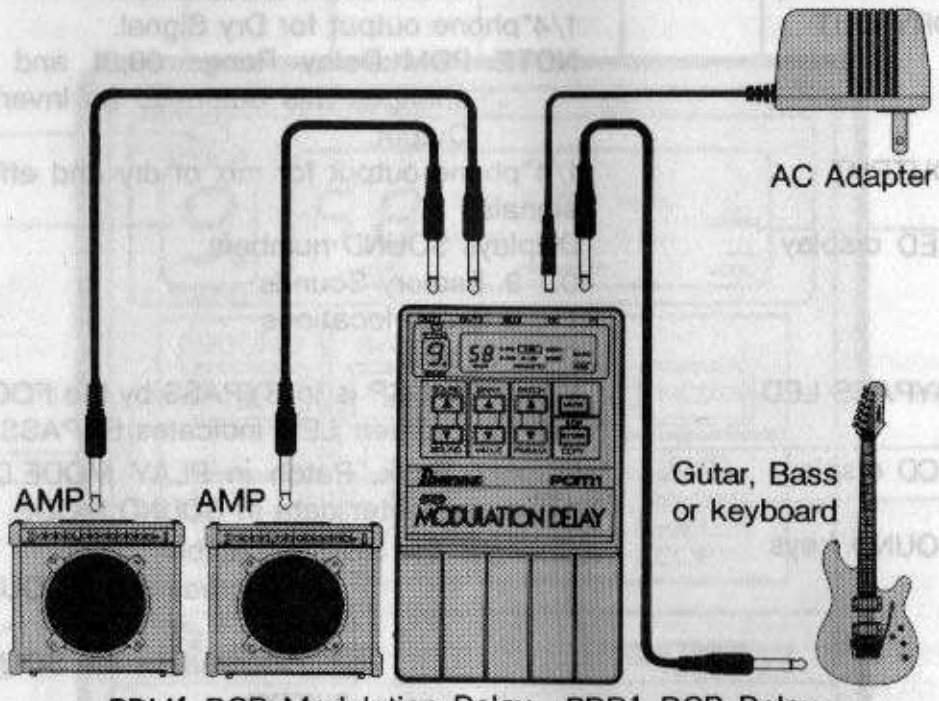
The key works for 3 different functions.
SOUND mode: Works as a STORE & COPY key.
PLAY mode : Works as a STORE & EOP key.

⑭FOOTSWITCH

Works for 2 different functions in each mode.
SOUND MODE-Effect ON/OFF function.
PLAY MODE-Increments sequence patches.

5 CONNECTION DIAGRAM

Before connecting the INPUT and the OUTPUT cables and AC adapter, be sure to either turn the amp off, or reduce the amp's volume to zero.

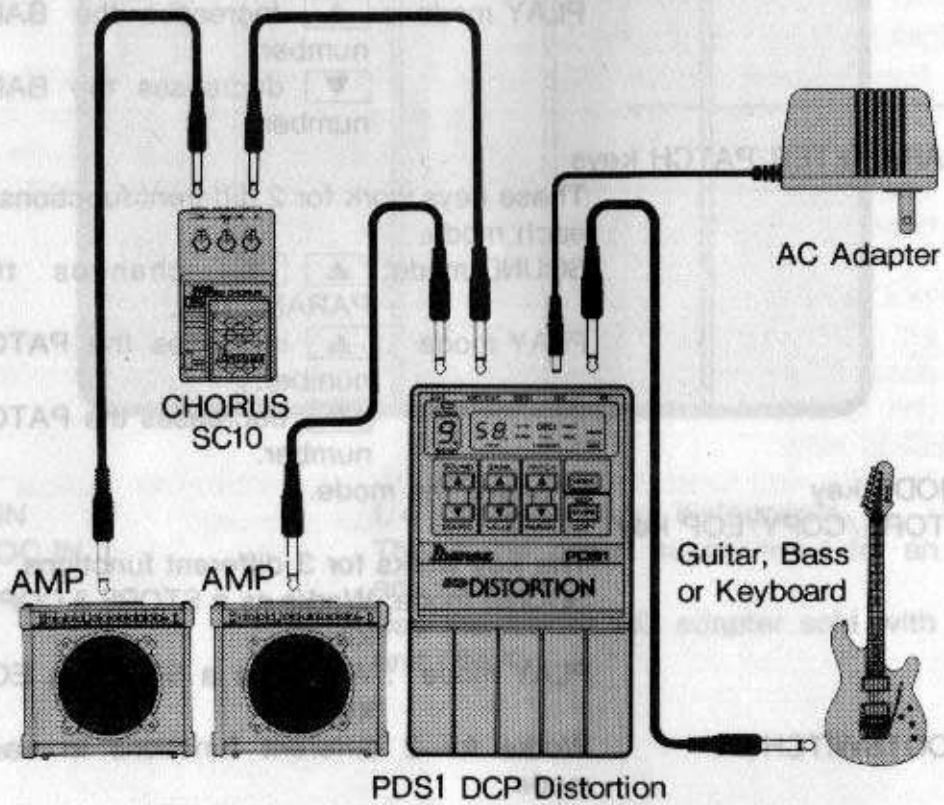


PDM1 DCP Modulation Delay PDD1 DCP Delay

diagram 1 PDM1 & PDD1 Connection Diagram

PDM1 & PDD1

The DRY OUT ④ of the PDM1 will be an inverted output, if you select presets 00,01 and 02 of the DELAY RANGE. This is for stereo chorus sound.



PDS1 DCP Distortion

diagram 2 PDS1 Connection Diagram

PDS1

The DRY OUT ④ of the PDS1 is a new exclusive feature. When you take the same phrase of 2 different sounds(for example chorus & distortion), you can use this DRY OUT ④ like the diagram.

6 OPERATIONS

*Before operating the DCP

There are both SOUND and PLAY modes in the DCP. These modes have certain purposes and they are important, so here are short explanations of both modes.

SOUND mode: For creating your own sound; use it like a regular pedal.

PLAY mode : For sequencing sounds and playing the sequenced sounds back.

〈Ready to operate the DCP〉

Be sure to connect the AC adapter to DC IN ② of the DCP unit first. Now the LCD display ⑥ looks like the diagram 3.

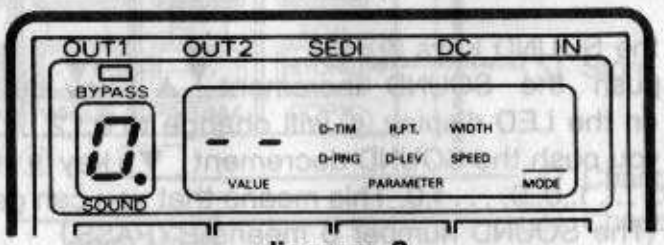


diagram 3

Push the FOOTSWITCH ⑭ once!! All functions will be back to the same place as they were the last time the DCP was used.(If you were in the BYPASS EDIT or COPY function of the SOUND mode when powered down, it will be cancelled, and the DCP will be in the "ACTIVE" SOUND mode. If you were in the PLAY mode, the PATCH number will be "0".)

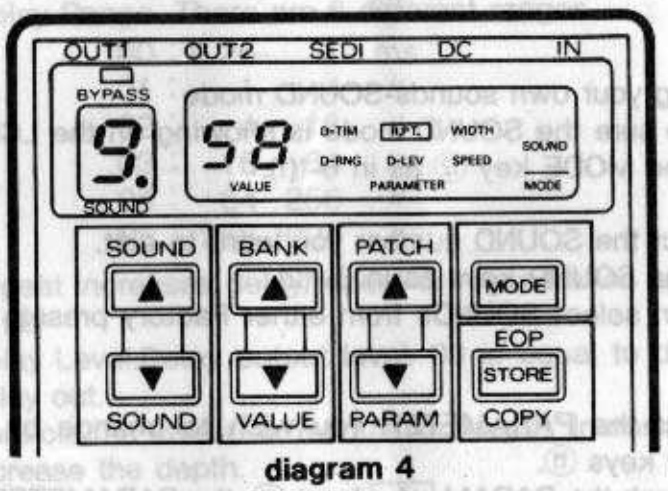


diagram 4

NOTE: Upon connecting the AC adapter, if you push any key but the FOOTSWITCH ⑭, the DCP will not work.

NOW, THE DCP IS READY TO OPERATE!

6-1 Playing a Factory sound.-SOUND mode

(1)Make sure the SOUND mode is showing on the LCD display ⑧. If the PLAY mode is showig on the LCD display ⑧, change to the SOUND mode by pushing the MODE key⑫

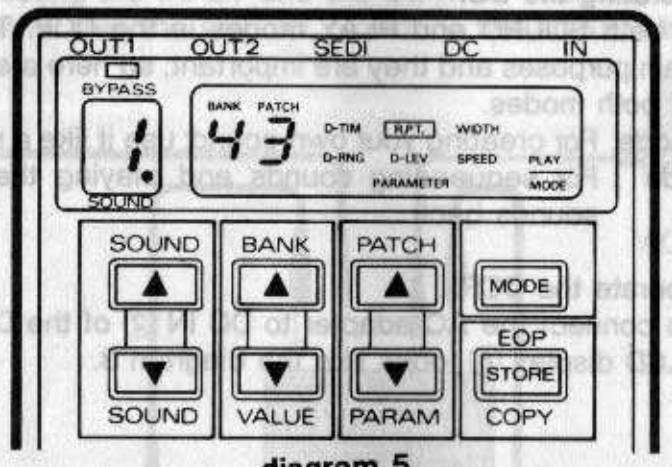


diagram 5

(2)Push the SOUND keys ⑨.

If you push the SOUND increment [▲] key ⑨, the SOUND number on the LED display ⑥ will change to 0,1,2, . . . 9,0.,1., . . 9., 0.and if you push the SOUND decrement [▼] key ⑨, it will change to 0,9.,8., . . . 1.,0.,9, . . . 1,0. This means that you can get 19 different sounds. (The SOUND number 0 means BYPASS.)

Select your favorite Factory sound in 0.-9..

See page 46~48 for the LIST of Factory Preset.

NOTE: If you cannot change the SOUND number by the SOUND keys ⑨, check the BYPASS LED ⑦, If it is lighting, push the FOOTSWITCH ⑭ once. Now, the SOUND keys ⑨ will work.

(3)Push the FOOTSWITCH ⑭

It allows you to turn the effect ON/OFF.

6-2 Creating your own sounds-SOUND mode

(1)Make sure the SOUND mode is showing on the LCD display ⑧. Push the MODE key ⑫ as in 6-1(1).

(2)Select the SOUND number you want to edit.

Push the SOUND keys as in 6-1(2).

You can select SOUNDs from either Factory presets or User programs.

(3)Select the PARAMETER you wish to change by pushing the PARAM keys ⑪.

If you push the PARAM [▲] keys ⑪, the PARAMETER will change as below.

[ ] means you select the PARAMETER in the [ ] now.

PDM1

[D-TIM]	R.PT.	WIDTH
D-RNG	D-LEV	SPEED

PDD1

[D-TIM]	D-LEV
D-RNG	R.PT.

PDS1

[ATTK]	PUNCH	LEVEL
DIST	EDGE	

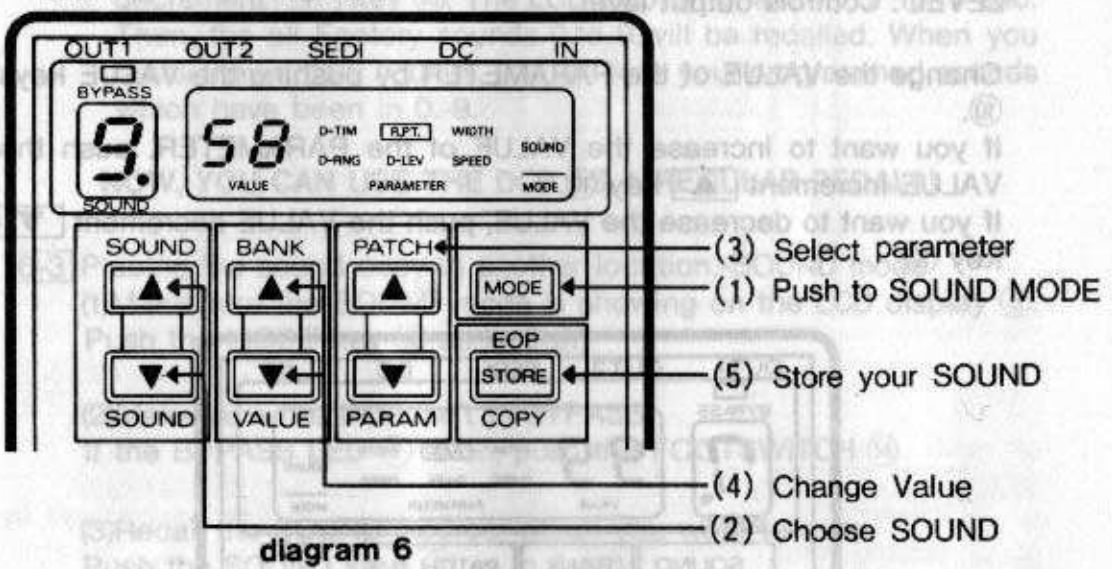


diagram 6

Pushing the PARAM [▼] key〈11〉will reverse sequence of the PARAMETERs above.

＊PARAMETERs

PDM1 MODULATION DELAY

D-TIM : Delay time. Increases Delay time by one step from 0 to 99 for each delay range.

D-RNG: Delay Range. There are 6 different ranges.

00 :	0.25- 1	ms
01 :	1- 4	〃
02 :	4- 16	〃
03 :	16- 64	〃
04 :	64- 256	〃
05 :	256-1024	〃

R.PT : Repeat Increases delay repeat or regeneration up to a value of 99.

D-LEV: Delay Level.Delay output level. 99 is equal to dry; 00 is no delay out.

WIDTH: Controls the sweep or modulation depth. Increment digits to increase the depth.

SPEED: Controls the sweep or modulation speed. Increment digits to increase the speed.

PDDI DIGITAL DELAY

D-TIME: Delay Time. Same as PDM1 MODULATION DELAY.

D-RNG : Delay Range. Same as PDM1 MODULATION DELAY

00 :	1- 4	ms
01 :	4- 16	〃
02 :	16- 64	〃
03 :	64- 256	〃
04 :	256-1024	〃

D-LEV : Delay Level:Same as PDM1 MODULATION DELAY.
R.PT. : Rpeat. Same as PDM1 MODULATION DELAY

PDS1 DISTORTION

ATTK : ATTACK Control the pick attack. Increasing digits emphasizes the attack.
DIST : DISTORTION Controls the distortion depth. Increasing digits increases both distortion and sustain.
PUNCH: Controls bass. Increases digits boosts lows.
EDGE : Controls treble. Increases digits boosts highs.
LEVEL : Controls output level.

Change the VALUE of the PARAMETER by pushing the VALUE keys ⑩.
If you want to increase the VALUE of the PARAMETER, push the VALUE increment [▲] key ⑩.
If you want to decrease the VALUE, push the VALUE decrement [▼] key ⑩.

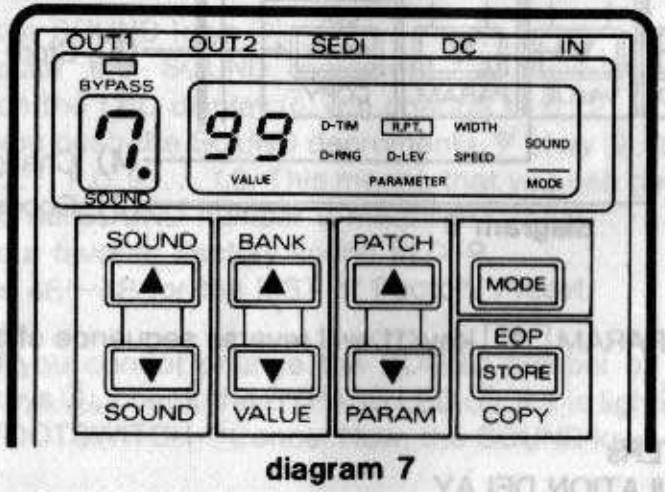


diagram 7

(4)If you want to change another PARAMETER, do (2),(3) again.

(5)Store the VALUEs of all PARAMETERs by pushing the STORE key ⑬. If you push the SOUND ⑨ or MODE keys ⑫ before pushing the STORE key ⑬, the SOUND which you have edited will be gone.
19 locations for SOUNDs number 1-9,0.-9. on the LED display ⑥ are available to store users' sound.

NOTE: If you want to recall the original Factory sound after modifing them, plug AC adapter into unit while holding down the VALUE decrement [▼] key ⑩. The LCD display ⑧ shows *FP* for 4 sec. Then, the all Factory sounds 0.to 9.will be recalled. When you recall the Factory sounds, you will lose your programmed sounds which have been in 0.-9.

NOW, YOU CAN USE THE DCP AS A REGULAR PEDAL!!

[6-3] Placing the sound copy in another location.-SOUND mode
(1)Make sure the SOUND mode is showing on the LCD display ⑧. Push the MODE key ⑫ as in 6-1(1)

(2)Make sure the DCP isn't in BYPASS.
If the BYPASS LED ⑦ is on, push the FOOTSWITCH ⑭

(3)Recall the SOUND (source) which you want to copy.
Push the SOUND keys ⑨ as in 6-1(2).

EXAMPLE:Make the SOUND number 2, copy to SOUND number 5.

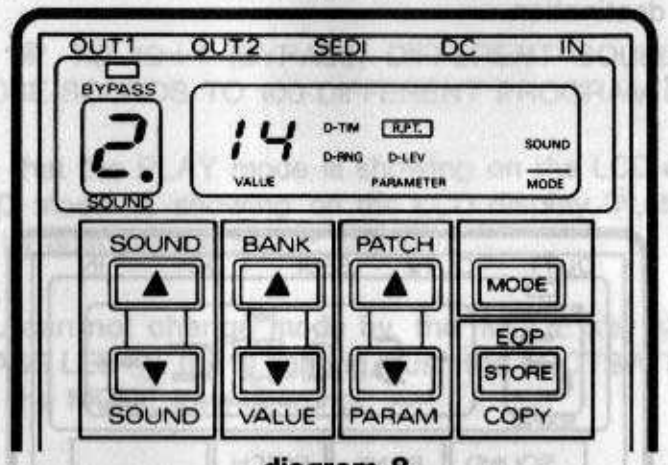


diagram 8

(4)Push the COPY (STORE) key ⑬
The LCD display will appear as diagram 9

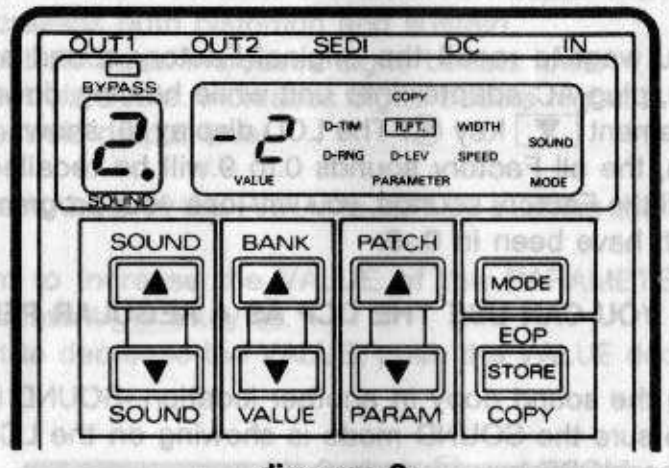


diagram 9

(5)Select the SOUND (Destination) which will be the new sound by pushing the SOUND key ⑨
If you push keys other than the SOUND key ⑨ after pushing the COPY key ⑬, the COPY function will be cancelled.

NOTE: The SOUND number 0 should be neither the source or destination.

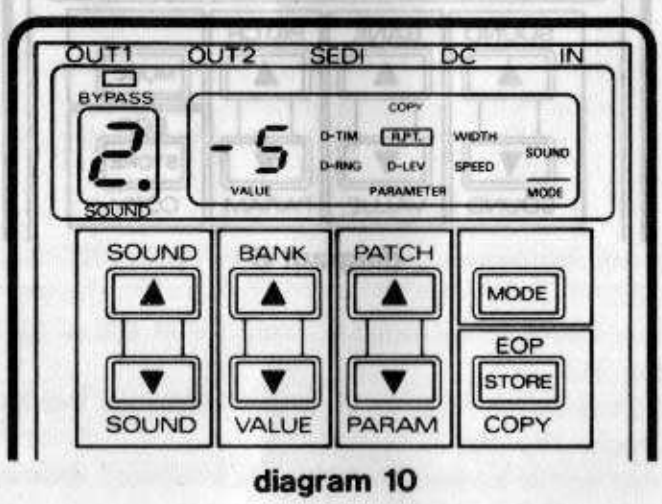


diagram 10

(6)Store the SOUND by pushing the STORE key ⑬.
The SOUND number on the LED display ⑨ shows the destination number, when the COPY is done.
If you push the MODE key ⑫ or the FOOTSWITCH ⑭ before pushing the STORE key ⑬, the COPY function will be cancelled.

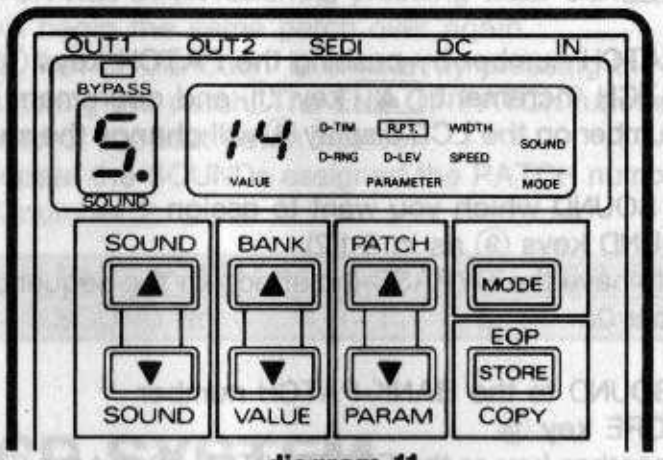


diagram 11

6-4 Sequencing SOUNDs. -PLAY mode

* Before making the SOUND sequences;
There are the BANK-PATCH number in the DCP. It is easy to understand how to sequence SOUNDs, if you have a knowledge of the BANK-PATCH number.
You may think of the BANK-PATCH number as the program number. In the PLAY mode, from left to right, the first digit of the number on the LCD display ⑧ is the BANK, the second digit is the PATCH. Both the BANK and PATCH have numbers from 0 to 9, which means that there are total of 100 program locations in the DCP.

YOU HAVE UP TO 19+1 (BYPASS) DIFFERENT SOUND AND CAN ASSIGN THOSE SOUNDS TO 100 DIFFERENT PROGRAM LOCATIONS.

(1)Make sure that the PLAY mode is showing on the LCD display ⑧. If the SOUND mode is showing on the LCD display ⑧,change to the PLAY mode by pushing the MODE key ⑫.

NOTE: If you can not change mode by the MODE key ⑫, check the BYPASS LED ⑦. If it is lighting, push the FOOTSWITCH ⑭ once. Now, the MODE key ⑫ works.

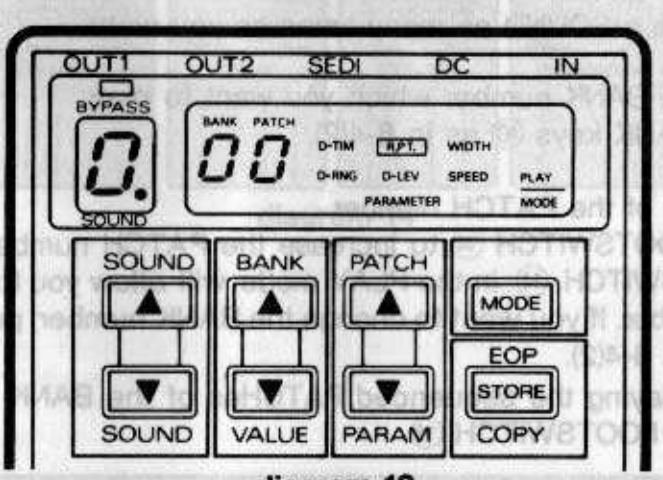


diagram 12

(2)Select a BANK number by pushing the BANK keys ⑩.
If you push the BANK increment [▲] key ⑩, the BANK number on the LCD display ⑧ will change to 0,1,2, . . . 9,0, and if you push the BANK decrement [▼] key ⑩, it will change to 0,9,8, . . . 1,0.

(3)Select a PATCH number by pushing the PATCH keys ⑪.
Push the PATCH increment [▲] key ⑪ and decrement [▼] key ⑪, the PATCH number on the LCD display ⑧ will change the same as 6-4(2).

(4)Recall the SOUND which you want to assign
Push the SOUND keys ⑨ as in 6-1(2).
If you want to have the BYPASS (no effect) in the sequence, recall the SOUND number 0.

(5)Store the SOUND to the BANK-PATCH number
Push the STORE key ⑬.
If you push another key or the FOOTSWITCH ⑭ but the STORE key ⑬ after pushing the SOUND key ⑨, the sequence function will be cancelled.

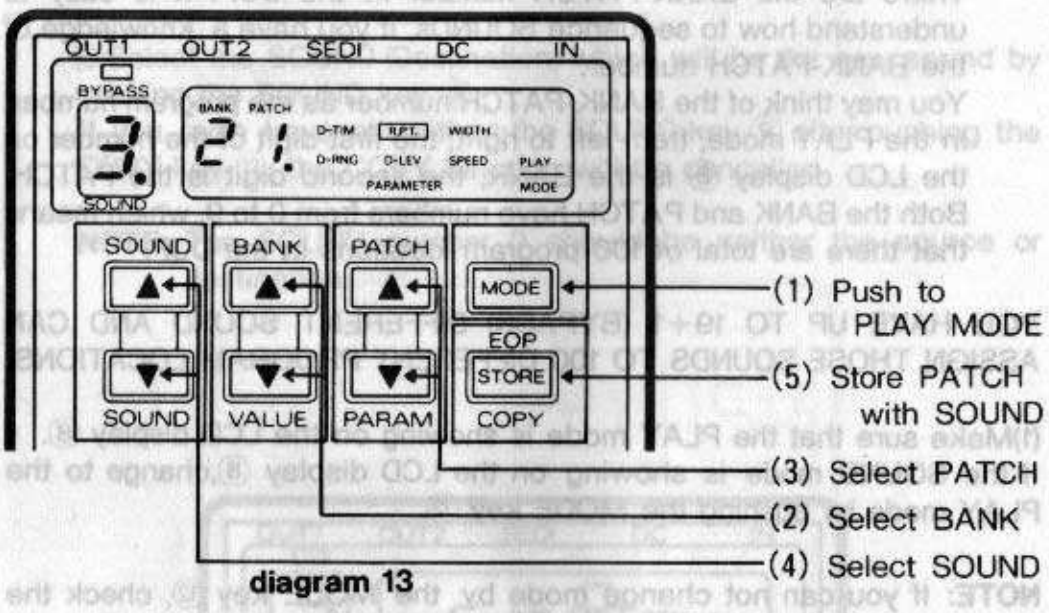


diagram 13

(6)If you want to another SOUND to a BANK-PATCH number, do 6-4(2)-(5) again.
You can use a SOUND as many times as you want.

(7)Select the BANK number which you want to play.
Push the BANK keys ⑩ as in 6-4(2).

(8)Increment of the PATCH number
Push the FOOTSWITCH ⑭ to increase the PATCH number.
The FOOTSWITCH ⑭ in the PLAY mode will allow you to increase the PATCH number. If you want to change the BANK number, push the BANK key ⑩ as in 6-4(2).
EXAMPLE:Playing the sequenced PATCHes of the BANK number 2 by pushing the FOOTSWITCH ⑭.

LCD display ⑧ BANK-PATCH No.	20	21	22	----	29	20
LED display ⑥ SOUND No.	1	3.	5	----	9.	1

(9)If you don't need 10 PATCHes in one BANK.
The DCP has an END OF PATCH (EOP) function. You can set the END OF PATCH to the last PATCH that you want to use in a BANK. When the END OF PATCH has been reached, pressing the FOOTSWITCH ⑭ one more time will begin the same patch over again.
The END OF PATCH function is enable by pressing the EOP(STORE) key ⑬ after storing the patch. The END OF PATCH function is noted by a "." at the end of the last patch number.
EXAMPLE:Repeat the SOUNDs assigned the PATCH number from 0 to 2 of the BANK number 2.

LCD display ⑧ BANK-PATCH No.	2 0 – 2 1 – 2 2. END OF PATCH
LED display ⑥ SOUND No.	1 3. 5

7 DCP SYSTEM

DCP units are primarily designed to work with two or more of together, so DCP units each have SEDI for interfacing with MIDI through the DMI4. The DMI4 Master Controller is the interface unit for SEDI to MIDI. The controller has 4 SEDI inputs to accept DCP units, and will send program change information to DCP pedals (from external MIDI controller).

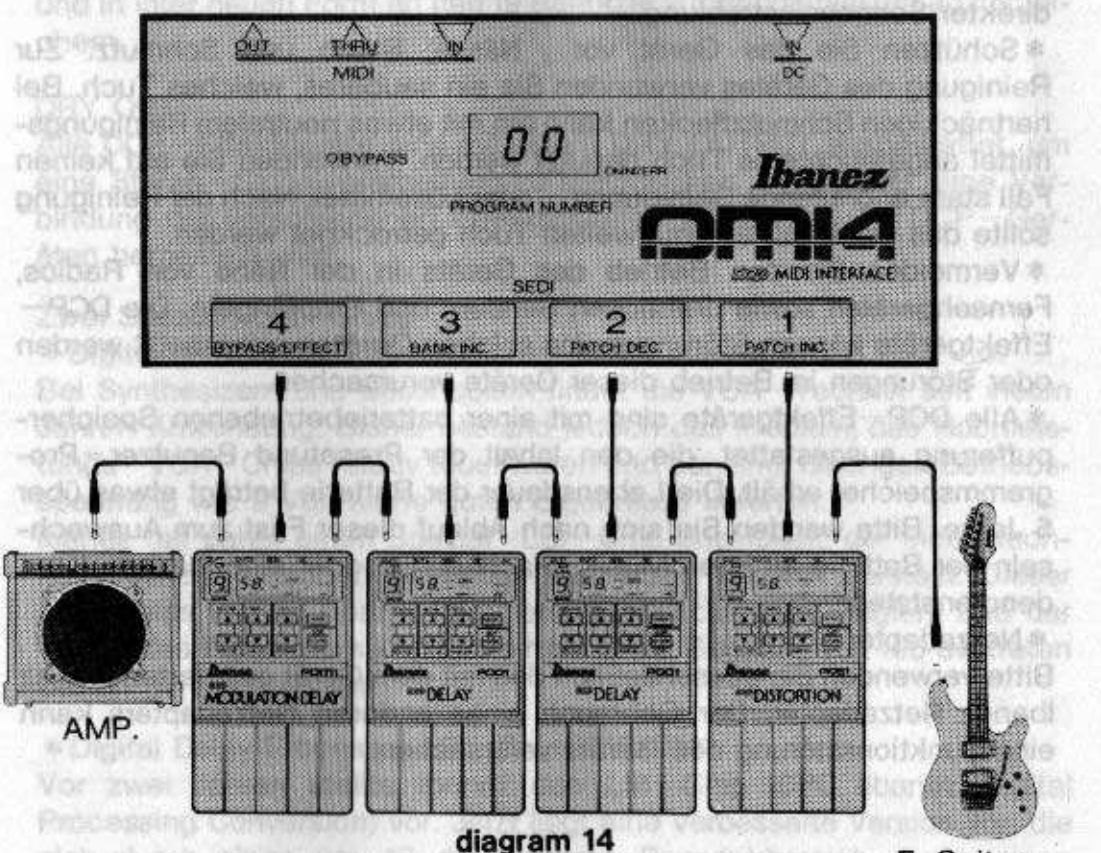


diagram 14

8 SPECIFICATIONS/ TECHNISCHE DATEN

PDM1 Delay Time and Value

mSec

DELAY TIME VALUE	RANGE 0	RANGE 1	RANGE 2	RANGE 3	RANGE 4	RANGE 5
99	1.00	4.0	16.0	64	256	1024
90	0.90	3.5	14.0	55	223	891
80	0.75	3.0	12.0	48	191	764
70	0.66	2.5	10.0	41	164	655
60	0.55	2.2	8.9	35	142	568
50	0.48	1.9	7.7	31	123	494
40	0.42	1.6	6.7	27	107	430
30	0.37	1.5	5.8	23	94	376
20	0.32	1.3	5.1	20	82	328
10	0.28	1.1	4.5	18	72	287
00	0.25	1.0	4.0	16	64	256
OUT 2	Inverted				dry	

PDM1 PLAY MODE Pre-Set

PATCH \ BANK	0	1	2	3	4	5	6	7	8	9
0	0.	0.	5.	3.	7.					
1	1.	0	0	2.	5.					
2	2.	1.	6.	8.	6.					
3	3.	0	0		8.					
4	4.	2.	7.		4.					
5	5.	0	0							
6	6.	3.	8.							
7	7.	0	0							
8	8.	4.	9.							
9	9.	0	0							

PDM1 SOUND MODE Factory Pre-Set

SOUND NUMBER	DELAY TIME	DELAY RANGE	REPEAT	DELAY LEVEL	WIDTH	SPEED	NAME
0.	47	05	29	32	01	87	REPEAT ECHO(SOLO MID TEMPO)
1.	73	05	29	20	00	00	LONG ECHO(SLOW SOLO)
2.	14	05	53	22	01	27	SHORT ECHO(SOLO)
3.	34	02	00	70	34	20	CHORUS(BACKING)
4.	44	03	00	99	13	11	DEEP CHORUS
5.	50	03	00	99	00	00	DOUBLING
6.	00	04	68	35	02	27	REFLECTION(SOLO/BACKING)
7.	15	00	86	77	99	02	FLANGING
8.	10	01	80	99	45	14	PHASER
9.	99	05	60	99	80	00	PITCH BEND

PDD1 Delay Time and Value

mSec

DELAY TIME VALUE	RANGE 0	RANGE 1	RANGE 2	RANGE 3	RANGE 4
99	4.0	16.0	64	256	1024
90	3.5	14.0	55	223	891
80	3.0	12.0	48	191	764
70	2.5	10.0	41	164	655
60	2.2	8.9	35	142	568
50	1.9	7.7	31	123	494
40	1.6	6.7	27	107	430
30	1.5	5.8	23	94	376
20	1.3	5.1	20	82	328
10	1.1	4.5	18	72	287
00	1.0	4.0	16	64	256

PDD1 PLAY MODE Pre-Set

PATCH \ BANK	0	1	2	3	4	5	6	7	8	9
0	0.	0.	5.	0.	3.					
1	1.	0	0	2.	7.					
2	2.	1.	6.	5.	0.					
3	3.	0	0		2.					
4	4.	2.	7.		5.					
5	5.	0	0							
6	6.	3.	8.							
7	7.	0	0							
8	8.	4.	9.							
9	9.	0.	0							

PDD1 SOUND MODE Factory Pre-Set

SOUND NUMBER	DELAY TIME	DELAY RANGE	REPEAT	DELAY LEVEL	NAME
0.	69	04	34	20	LONG ECHO 1
1.	37	04	18	15	LONG ECHO 2
2.	23	04	29	55	MID ECHO
3.	65	03	65	33	SHORT ECHO
4.	50	02	00	99	DOUBLING 1
5.	65	02	00	99	DOUBLING 2
6.	99	04	00	50	SINGLE REPEAT
7.	99	02	58	45	HARD REVERB
8.	99	04	54	75	SOUND ON SOUND
9.	27	02	90	99	STEEL DRAM

PDS1 PLAY MODE Pre-Set

PATCH \ BANK	0	1	2	3	4	5	6	7	8	9
0	0.	0.	5.	5.	3.					
1	1.	0	0	9.	0					
2	2.	1.	6.	8.	9.					
3	3.	0	0		8.					
4	4.	2.	7.		2.					
5	5.	0	0							
6	6.	3.	8.							
7	7.	0	0.							
8	8.	4.	9.							
9	9.	0	0							

PDS1 SOUND MODE Pre-Set

SOUND NUMBER	ATTACK	DISTOR TIN	PUNCH	EDGE	LEVEL	NAME
0.	85	99	70	80	30	DOUBLE STACK
1.	51	99	88	99	20	LA MELLOW (SOLO)
2.	99	99	95	22	53	HEAVY METAL (SOLO)
3.	22	90	99	70	20	OVERDRIVE1 (SOLO)
4.	80	20	81	90	40	OVERDRIVE 2 (BACKING)
5.	65	80	45	70	41	AMERICAN SOUND
6.	80	38	45	80	41	BLUES
7.	20	70	50	94	41	OLD FUZZ
8.	99	99	99	20	30	METAL RHYTHM
9.	90	99	10	99	16	SMALL AMP DISTORTION

PDM 1

Input Impedance ..... 500 KΩ
Output Impedance ..... <1 KΩ
Maximum Input Level ..... +5 dBv
Maximum Output Level ..... +5 dBv
Delay Time Range 00 ..... 0.25 – 1 msec
Range 01 ..... 1 – 4 msec
Range 02 ..... 4 – 16 msec
Range 03 ..... 16 – 64 msec
Range 04 ..... 64 – 256 msec
Range 05 ..... 256 – 1024 msec
Bandwidth ..... 16 kHz (+0.5, –3 dB)
Sweep Ratio ..... 1 : 4
Speed Range ..... 0.06 Hz – 13 Hz
Total Harmonic Distortion ..... 0.5% (400 Hz, –20 dB)
Equivalent Input Noise ..... –90 dB (IHF-A)
Memory Size
Factory Preset 10
User Preset 9
Power Supply ..... AC ADAPTER
Power Requirement ..... 150 mA
Size ..... 132(D) × 80(W) × 42(H) mm
Weight ..... 260 g

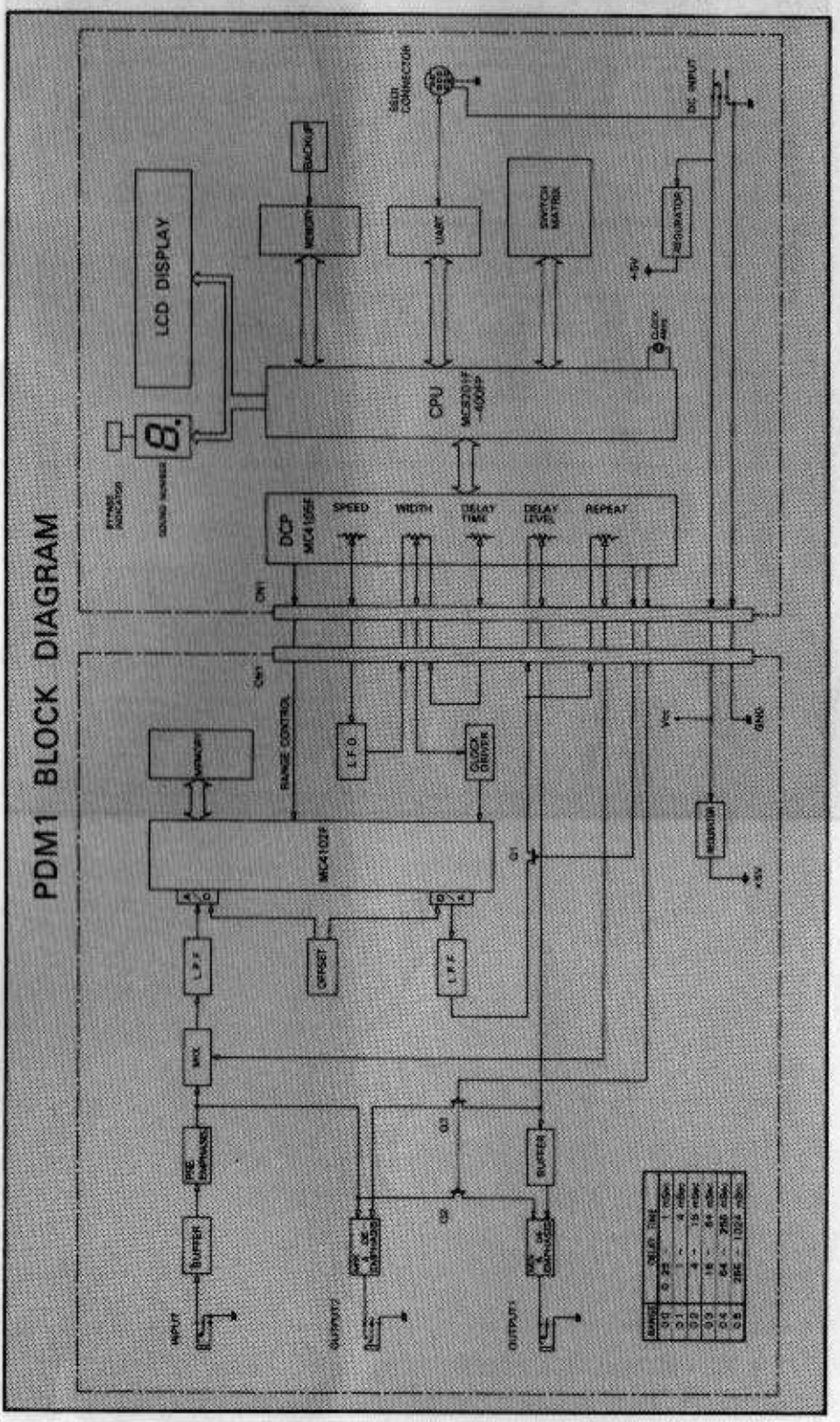
PDD 1

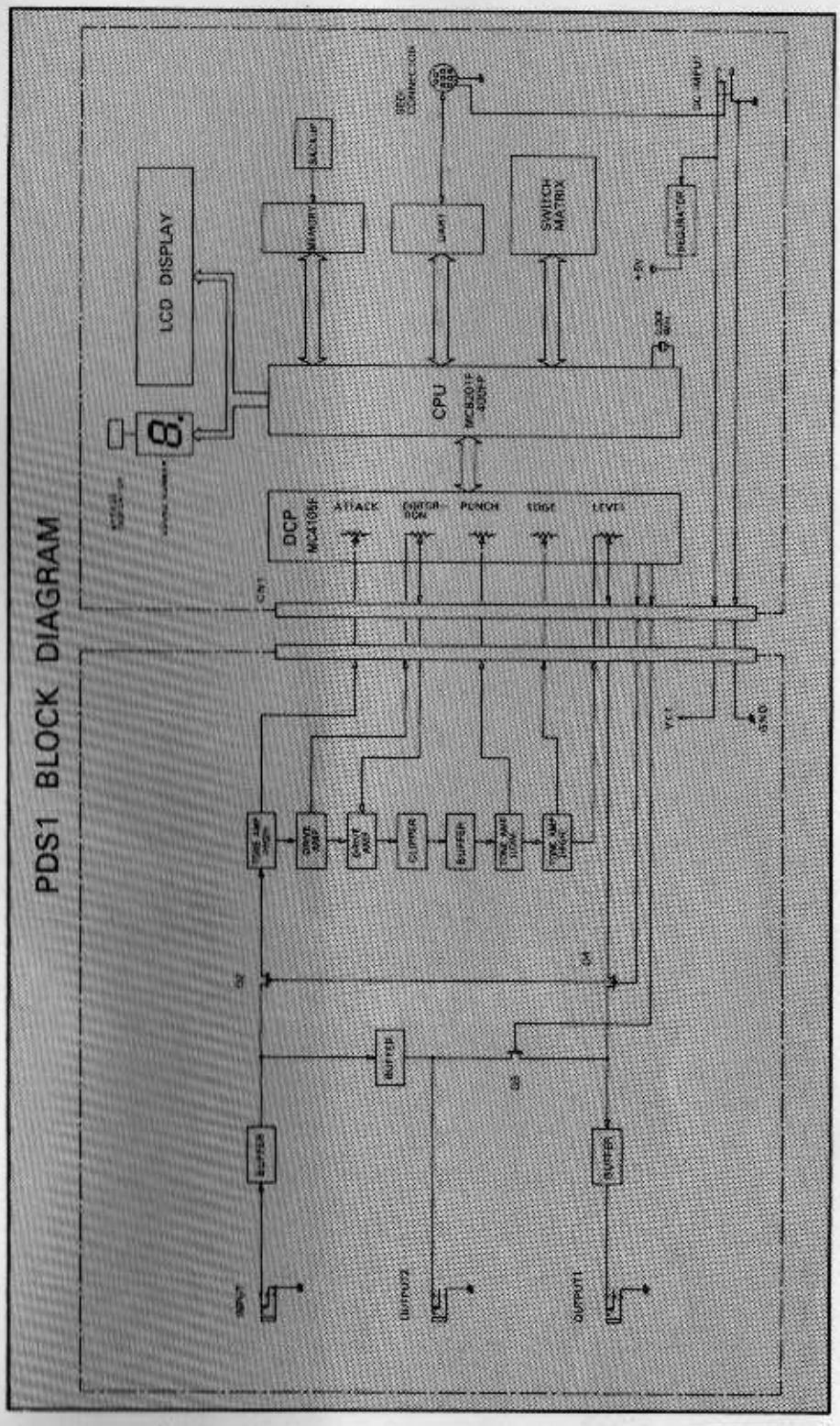
Input Impedance ..... 500 KΩ
Output Impedance ..... <1 KΩ
Maximum Input Level ..... +5 dBv
Maximum Output Level ..... +5 dBv
Delay Time Range 00 ..... 1 – 4 msec
Range 01 ..... 4 – 16 msec
Range 02 ..... 16 – 64 msec
Range 03 ..... 64 – 256 msec
Range 04 ..... 256 – 1024 msec
Bandwidth ..... 16 kHz (+0.5, –3 dB)
Total Harmonic Distortion ..... 0.5% (400 Hz, –20 dB)
Equivalent Input Noise ..... –90 dB (IHF-A)
Memory Size
Factory Preset 10
User Preset 9
Power Supply ..... AC ADAPTER
Power Requirement ..... 150 mA
Size ..... 132(D) × 80(W) × 42(H) mm
Weight ..... 260 g

PDS 1

Input Impedance	1 KΩ
Output Impedance	<1 KΩ
Maximum Gain	+55 dB
Equivalent Input Noise	−110 dB (IHF-A)
Memory Size	
Factory Preset	10
User Preset	9
Power Supply	AC ADAPTER
Power Requirement	100 mA
Size	132(D)×80(W)×42(H) mm
Weight	260 g

9 BLOCK DIAGRAM/BLOCK DIAGRAMM/ SCHEMA DE PRINCIPE





Ibanez

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