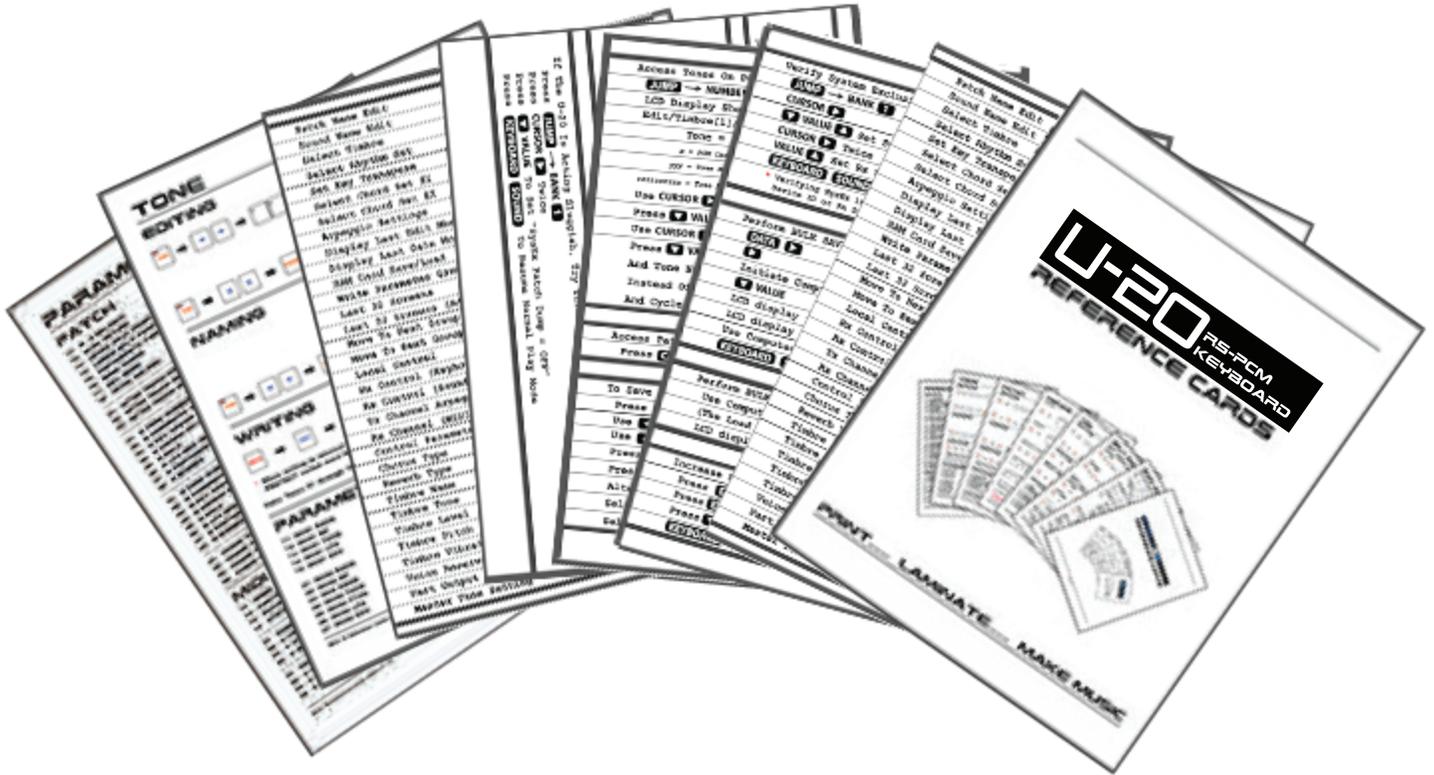


U-20 RS-PCM KEYBOARD

REFERENCE CARDS



PRINT..... LAMINATE..... MAKE MUSIC

Patch Name Edit	JUMP → KEYBOARD
Sound Name Edit	JUMP → SOUND
Select Timbre	JUMP → PART
Select Rhythm Set	JUMP → RHYTHM
Set Key Transpose	JUMP → TRANSPOSE
Select Chord Set #1	JUMP → CHORD1
Select Chord Set #2	JUMP → CHORD2
Arpeggio Settings	JUMP → ARPEGGIO
Display Last Edit Mode	JUMP → EDIT
Display Last Data Mode	JUMP → DATA
RAM Card Save/Load	JUMP → EXIT
Write Parameter Group	JUMP → ENTER
Last 32 Screens	JUMP → ◀ PART
Last 32 Screens (Advance)	JUMP → PART ▶
Move To Next Group	JUMP → ◀ CURSOR
Move To Next Group	JUMP → CURSOR ▶
Local Control	JUMP → BANK 1
Rx Control (Keyboard)	JUMP → BANK 2
Rx Control (Sound)	JUMP → BANK 3
Tx Channel Arpeggiator	JUMP → BANK 4
Rx Channel (MIDI)	JUMP → BANK 5
Control Parameter	JUMP → BANK 6
Chorus Type	JUMP → BANK 7
Reverb Type	JUMP → BANK 8
Timbre Name	JUMP → NUMBER 1
Timbre Tone	JUMP → NUMBER 2
Timbre Level	JUMP → NUMBER 3
Timbre Pitch	JUMP → NUMBER 4
Timbre Vibrato	JUMP → NUMBER 5
Voice Reserve	JUMP → NUMBER 6
Part Output	JUMP → NUMBER 7
Master Tune Setting	JUMP → NUMBER 8

Using the Mark / Jump Function

This Is An Effective Method Of Navigating The U-20 Quickly. It Also Organizes Your Keyboard To The Point Where Accessing Parameters No Longer Involves Lengthy Menu Scrolling. This Function Makes The U-20 Keyboard More User Definable

Select The Parameter Screen Or Display You Wish To Mark

Press **MARK**

Select A Bank Or Number Button

Note: The Selected Button Will Recall The Parameter Screen Or Display That Was Just Marked

Press **EXIT** Repeatedly To Return To The Play Page

Press **JUMP**

Press The Previously Selected Bank Or Number Button

Note: The Marked Parameter Will Now Be Displayed

Initializing / Restoring the Factory Settings

To Clear The Internal Memory And Reload Some Of The Factory Settings All User Information Will Be Lost.

IMPORTANT! Back Up Any Information You Wish To Keep!

Original Factory Data For The U-20 Must Be Loaded In Via MIDI Or A Memory Card. There Is, However, A Memory Clearing Function That Returns Most Of The Other Parameters To Their Original Factory Settings. Use The Following Procedure To Initialize The U-20

Press **PART** + **RHYTHM** Simultaneously To Enter ROM Play

While Holding **JUMP** + **MARK**, Press **ENTER** (*Test Mode*)

While Holding **JUMP**, Press **NUMBER 7**

Press **ENTER**

Press **VALUE**  To Confirm

While Holding **JUMP** + **MARK**, Press **EXIT**

See "Loading System Exclusive Data" For The Procedure To Load The Factory Data Via MIDI

Verify System Exclusive Is ON For BULK LOAD / BULK SAVE

JUMP → **BANK 1**

CURSOR ▶

▼ **VALUE** ▲ Set SysEx Device ID = 17

CURSOR ▶ Twice

VALUE ▲ Set Rx SysEx = ON

KEYBOARD **SOUND** Resume Normal Play Mode

* Verifying SysEx Is only Needed Once Until The Next Time SysEx Device ID Or Rx SysEx Are Changed

Perform BULK SAVE Of All 64 Internal Patches

DATA ▶ Select "Bulk", Press **ENTER**

▶ Select "Internal", Press **ENTER**

Initiate Computer SysEx Program To Capture Data

▼ **VALUE** Select "All", Press **ENTER**

LCD display → "Transmitting Sysex."

LCD display → "Function Complete." When Done

Use Computer SysEx Program To Save *.SYX File

KEYBOARD **SOUND** Resume Normal Play Mode

Perform BULK LOAD Of All 64 Internal Patches

Use Computer SysEx Program To SEND *.SYX File

(The Load Process Is Automatic)

LCD display → "Receiving Exclusive."

Increase LCD Display Contrast

Press **EDIT** Then Use ◀ **CURSOR** To Select "Setup"

Press **ENTER** Then Use ◀ **CURSOR** ▶ To Select "LCD"

Press ▼ **VALUE** ▲ To Adjust The LCD Contrast 0 - 15

KEYBOARD **SOUND** Resume Normal Play Mode

Access Tones On PCM Sound Library Cards

JUMP → **NUMBER 2**

LCD Display Shows

Edit/Timbre[1]/Tone

Tone = (x) - (yyy) (zzzzzzzzzz)

x = PCM Card Number. Example - "SN-U110-11 Sound Effects" Is PCM Card #11

yyy = Tone Number On The PCM Card. Example - 004

zzzzzzzzzz = Tone Name On The PCM Card. Example - "WATERPHONE"

Use **CURSOR**  To Select (x) And It Will Start Blinking

Press **VALUE**  **VALUE**  Until PCM Card Numbers (x) Appear

Use **CURSOR**  To Select Tone Number (yyy)

Press **VALUE**  **VALUE**  To Cycle Through Tone Numbers (yyy)

And Tone Names (zzzzzzzzzz). To Speed Up This Process,

Instead Of Using **VALUE**  **VALUE** , Use The C2/VALUE Slider

And Cycle Through The Tone Numbers And Tone Names

Access Patches on the RAM Data Card

Press **CARD/B** **BANK 1** To **8** Then **NUMBER 1** To **8**

To Save All Internal Patches To The RAM Data Card

Press **JUMP** → **EXIT**

Use **CURSOR**  **CURSOR**  + **VALUE**  **VALUE**  - Select "All"

Use **CURSOR**  **CURSOR**  + **VALUE**  **VALUE**  - Select "Int →Card"

Press **ENTER**

Press **VALUE**  To Confirm

Alternatively You Can

Select "Int← Card" To Load All RAM Card Patches

Select "Int↔Card" To Exchange RAM Card With Internal

Setting MIDI Channels for Individual Parts

To Select MIDI Channels For Parts 1 Through 6

Press **EDIT**

CURSOR **▶** To Sound Then Press **ENTER**

CURSOR **▶** To Part Then Press **ENTER**

Use The **◀** **PART** **▶** Buttons To Select The Desired Part

Use **◀** **CURSOR** **▶** Buttons To Select Rx Ch.

Press **▼** **VALUE** **▲** To Select The Desired Receive Channel

To Select MIDI Channels For The Rhythm Parts

Press **KEYBOARD** + **SOUND** Simultaneously

Press **EDIT**

CURSOR **▶** To Sound & Press **ENTER**

CURSOR **▶** To R. Part & Press **ENTER**

Use **◀** **CURSOR** **▶** Buttons To Select Rx CH.

Press **▼** **VALUE** **▲** To Select The Desired Receive Channel

Adjusting The Panning And Level For Each Part

Press **EDIT**

CURSOR **▶** To Patch And Press **ENTER**

CURSOR **▶** To Part And Press **ENTER**

CURSOR **▶** To Output And Press **ENTER**

Use **PART** Buttons To Select Between The 6 Parts

Use **◀** **CURSOR** **▶** Buttons To Select Asgn / Pan / Level

Use **▼** **VALUE** **▲** Buttons To Change The Value Of Parameter

To Play The Demo Songs

Press **PART** + **RHYTHM** Simultaneously

Use **NUMBER** **1** & **2** Buttons To Select Between Demo Songs

Press **ENTER** To Start Playing The Song

Press **EXIT** To Start Playing The Song

Assigning Individual Outputs

To Assign Timbres To Outputs For Direct/Dry/Reverb/Chorus

Note: If Nothing Is Plugged In To The DIRECT OUT Jacks, The Signal From The DIRECT OUT Jacks Will Be Output From The MIX OUT Jacks

Press **EDIT** Then **CURSOR**  To Sound Then Press **ENTER**

CURSOR  To PRT Then Press **ENTER**

CURSOR  To Output Then Press **ENTER**

CURSOR  To Asgn.

Press **▼** **VALUE** **▲** Buttons & The Chart Below To Choose The Desired Output Assign Value

CURSOR  To Pan.

Press **▼** **VALUE** **▲** Buttons & The Chart Below To Choose The Desired Pan Value

<u>Output Jack</u>	<u>Output Assign</u>	<u>Pan</u>
Out 1 (Mix L)	Dry* - - - - -	7<
Out 2 (Mix R)	Dry* - - - - -	>7
Out 3 (Dir 1L)	Dir - - - - -	7<
Out 4 (Dir 1R)	Dir - - - - -	>7

** If Dry Is Not Chosen For Output Assign, The Reverb Or Chorus Effect Will Mix The Sound Between The Left & Right Mix Outputs*

If The U-20 Is Acting Sluggish, Turn "SysEx Patch Dump" OFF

Press **JUMP** + **BANK** **1**

Press **CURSOR**  Twice

Press **▼** **VALUE** To Set "SysEx Patch Dump = OFF"

Press **KEYBOARD** **SOUND** To Resume Normal Play Mode

MIDI Buffer Error - Set Rx SysEx = OFF

Press **JUMP** + **BANK** **1**

Press **CURSOR**  Three times

Press **▼** **VALUE** to select Rx SysEx = OFF

Press **KEYBOARD** + **SOUND** To Resume Normal Play Mode

Creating A Split Keyboard

To Create A Split Keyboard You Will Need To Assign Two Or More Parts To Receive On The Same MIDI Channel With Different Key Ranges. For Example, In A Bass/Piano Split Sound You Might Assign A Bass Sound To Part 1 & Set Its Key Range From C-1 To B-3 (Left Side Of The Keyboard) Then, You Can Assign A Piano Sound To Part 2 & Set Its Key Range From C-3 To G-9 (Right Side Of The Keyboard)

To Set The Key Range

Press **EDIT**

CURSOR  To Sound And Press **ENTER**

CURSOR  To Part And Press **ENTER**

CURSOR  To MIDI And Press **ENTER**

CURSOR  To Key Range. And Press **ENTER**

Use  **PART**  Buttons To Select The Desired Part

Repeat To Set The Key Range For Any Additional Parts

Once The Key Ranges Are Set, Each Of The Parts Used In The Above Procedure Should Be Set To Receive On The Same MIDI Channel. Use The Following Procedure To Set The Appropriate MIDI Channels

Use  **CURSOR**  Buttons To Select Rx CH. (*Receive Channel*)

Use  **PART**  Buttons To Select The Desired Part

Use  **VALUE**  Buttons To Select Desired MIDI Channel

Repeat To Set The Receive Channel For Additional Parts

Adjusting The Level Of The Rhythm Part In A Patch

Press **EDIT**

CURSOR  To Sound And Press **ENTER**

CURSOR  To R.PRT And Press **ENTER**

CURSOR  To Level Then Use The  **VALUE**  Buttons To Adjust The Level Of The Rhythm Part

Note: For More Even More Volume, Use **CURSOR**  To Boost Then Use **VALUE** 

Setting The Transmit Channel

There Are Two Main Transmit MIDI Channels On The U-20

- The Tx Channel Sends Out Note Information.
- The Tx Setup Channel Sends Out Controller Information

To Set The Transmit Channel

Press **KEYBOARD** + **SOUND** Simultaneously

Press **EDIT**

CURSOR **▶** To Sound And Press **ENTER**

CURSOR **▶** To Kybd And Press **ENTER**

CURSOR **▶** To MIDI And Press **ENTER**

CURSOR **▶** To Tx Ch Use **▼** **VALUE** **▲** To Select Value

To Set The Transmit Setup Channel

Press **KEYBOARD** + **SOUND** Simultaneously

Press **EDIT**

CURSOR **▶** To Setup And Press **ENTER**

CURSOR **▶** To MIDI And Press **ENTER**

CURSOR **▶** To Tx Setup Ch Use **▼** **VALUE** **▲** To Select Value

Saving System Exclusive Data

Sending Or Receiving System Exclusive Data Is Commonly Called A Bulk Dump Or Bulk Load

Press **DATA**

CURSOR **▶** To Bulk And Press **ENTER**

CURSOR **▶** To Select Temp, Internal Or RAM Card

Press **ENTER**

Press **▼** **VALUE** **▲** To Select The Desired Data

Press **ENTER**

Checking The Firmware ROM Version

Press **KEYBOARD** + **SOUND** Simultaneously

Press **PART** + **RHYTHM** Simultaneously To Enter ROM Play

While Holding **JUMP** + **MARK** , Press **ENTER**

While Holding **JUMP** + **MARK** , Press **EXIT** To Leave Screen

Changing Patches By Sending MIDI Program Changes

You Can Change The Entire Setup (Patch) Of The U-20 By Sending A Program change On The Control Channel. This Will Change All Timbres And The Rhythm Set As Well As The Effects Settings. (Program Changes On The MIDI Channels Used For The Individuals Parts Will Change Only The Timbres For The Selected Part)

Press **EDIT**

CURSOR **▶** To Setup And Press **ENTER**

CURSOR **▶** To MIDI And Press **ENTER**

CURSOR **▶** To Sound And Press **ENTER**

CURSOR **▶** To Control

Press **▼** **VALUE** **▲** To Choose Desired MIDI Control Channel
It Is A Good Idea To Set The Control Channel To A MIDI Channel That Is Not Being Used By The Individual Parts In The Performance. Send A Program Change On The Selected Control Channel From Your Sequencer

Setting Local ON/OFF

Press **KEYBOARD** + **SOUND** Simultaneously

Press **EDIT**

CURSOR **▶** To Setup And Press **ENTER**

CURSOR **▶** To MIDI And Press **ENTER**

CURSOR **▶** To COMMON And Press **ENTER**

Use **◀** **CURSOR** **▶** Buttons To Select Local Control

Press **▼** **VALUE** **▲** To Select The Desired Value (ON Or OFF)

The Arpeggiator - Operation, Modes And Adjusting

Parameters which can be adjusted are

TYPE: UP, DOWN, UP & DOWN or RANDOM

RATE: 0 to 100

To set the Arpeggiator Type

Press **EDIT** Then **JUMP** Then **ARPEGGIO**

Use **◀ CURSOR ▶** To Select TYPE (*Blinks*)

Use **▼ VALUE ▲** Select UP, DOWN, UP & DOWN Or RANDOM

Press **KEYBOARD** + **SOUND** At Yhe Same Time To Resume Normal Play Mode

To Set The Arpeggiator Rate

Press **EDIT** Then **JUMP** Then **ARPEGGIO**

Use **◀ CURSOR ▶** To Select RATE (*Blinks*)

Use **▼ VALUE ▲** To Select 0 Through 100

Press **KEYBOARD** + **SOUND** At The Same Time To Resume Normal Play Mode

To Activate The Arpeggiator

Press **ARPEGGIO** Then Play A Chord On The Keyboard

Active Sensing

By Default, The U-20 Has Active Sensing Turned On. This Sends A MIDI Pulse Over The MIDI Wire Every 300ms. I Prefer To Turn Active Sensing Off Because MIDI Message LED's On The Rest Of My Devices Start Going Bat-Shit Crazy Like A Strobe Light. Very Distracting. I Like To See MIDI Message LED's Trigger Only When I Play The Keyboard Or When The Sequencer Is In Playback-Mode. It Also Unnecessarily Fills Up The MIDI Buffer Making Troubleshooting Difficult. Also, Several Devices In A MIDI Chain With Active Sensing Turned On Can Cause MIDI Buffer Overflows

To Turn Active Sensing OFF*

Press **JUMP** + **BANK 2**

Press **RIGHT CURSOR ▶** 5 Times & Select Tx Active Sensing

Press **VALUE DOWN ▼** And Set Tx Active Sensing OFF

* This Parameter Can Also Be Found Within The EDIT Menu

EDIT → Setup → MIDI → Kybd → TX Active Sensing

Service Test Modes

Warning: Test Mode Does A 'RESET' So Backup Your Internal Patches And RAM Card Patches Before Testing!!

Press **PART** + **RHYTHM** Simultaneously To Enter ROM Play While Holding **JUMP** + **MARK**, Press **ENTER** (Test Mode)

JUMP + BANK **1** = LCD Contrast Test (Use Pitch Bender)

JUMP + BANK **2** = LED Test (Use Pitch Bender)

JUMP + BANK **3** = Internal RAM + Shows Battery Voltage

JUMP + BANK **4** = RAM Card + Shows Card Battery Voltage

JUMP + BANK **5** = PCM Card Test (See Notes)

JUMP + BANK **6** = Internal PCM ROM Test

JUMP + BANK **7** = Keys/Buttons/PCM Card/Pedal (DP-2)

JUMP + BANK **8** = A/D Converter/Aftertouch (See Notes)

JUMP + NUMBER **1** = Sliders/External Input (C1/C2/EV-5)

JUMP + NUMBER **2** = MIDI I/O (Connect A Standard MIDI Cable From MIDI IN To MIDI OUT And Then Press **ENTER**)

To Exit Test Mode:

While Holding **JUMP** + **MARK**, Press **EXIT**

Notes:

A) **JUMP** + BANK **#** = Pressing Both Buttons Simultaneously

B) **JUMP** + NUMBER **#** = Pressing Both Buttons Simultaneously

C) "Pcm Card Test" Will Only Work With Pcm Card Sn-U110-11 (In Slot #1) And Sn-U110-01 (In Slot #2)

D) "A/D Converter Test" Displays Pitch Bender And Modulation Levels When Using The Pitch Bender

E) "Aftertouch Test" Shows How Lame Your U-20'S Aftertouch Can Really Be. I Was Only Able To Get Mine To Top Out Around The 20 To 25 Range... Nowhere Near 127... And I Was Really Pressing Hard

F) See The U-20 Service Notes For More Detailed Descriptions

U-20 Factory Preset Patches

BANK 1		BANK 2		BANK 3		BANK 4		BANK 5		BANK 6		BANK 7		BANK 8	
I-11 Acoust Piano	I-21 A.Guitar	I-31 Strings	I-41 Slap Bass	I-51 Soft Trumpet	I-61 Fantasia	I-71 Endymion	I-81 Native Dance	I-12 Chorus Piano	I-22 E.Guitar	I-32 Syn.Strings	I-42 FlangingSlap	I-52 Tromborn	I-62 Calliope	I-72 Prelusion	I-82 Percs Hit
I-13 E.Piano	I-23 Heavy Guitar	I-33 JP8.Strings	I-43 FingeredBass	I-53 BrassSection	I-63 Soundtrack	I-73 Jupiters	I-83 Velo Combi	I-14 Bright EP	I-24 E.Organ 1	I-34 Choir	I-44 FretlessBass	I-54 Saxophone	I-64 Atmosphere	I-74 Selene	I-84 Split Combi
I-15 Vibraphone	I-25 E.Organ 3	I-35 Syn.Vox 1	I-45 Acoust Bass	I-55 JP8.Brass	I-65 Future Pad	I-75 Sacred Tree	I-85 Rotor Craft	I-16 Marimba	I-26 E.Organ 7	I-36 Syn.Vox 2	I-46 Synth Bass 5	I-56 Power Brass	I-66 Pomona	I-76 Macho Lead	I-86 Emergency
I-17 Bell	I-27 E.Organ 9	I-37 Syn.Choir 1	I-47 Synth Bass 6	I-57 Flute	I-67 Melodigan	I-77 Lunar Lead	I-87 Deepsea	I-18 Fanta Bell	I-28 Mad Organ	I-38 Syn.Choir 2	I-48 Synth Bass 7	I-58 Shakuhachi	I-68 Photogene	I-78 HarmonicLead	I-88 Catastrophe

U-20 Factory Preset Timbres

A-11 A.Piano 2	A-21 Bell	A-31 E.Organ 7	A-41 Choir 3	A-51 Picked 1	A-61 TP / TRB 1	A-71 Flute 1	A-81 Pulse Wave 1	A-12 A.Piano 4	A-22 Fanta Bell	A-32 E.Organ 9	A-42 Syn.Vox 1	A-52 Fretless 2	A-62 Brass 1	A-72 Shaku 1	A-82 Pulse Wave 2
A-13 A.Piano 10	A-23 A.Guitar 1	A-33 R.Organ 2	A-43 Syn.Vox 2	A-53 Ac.Bass	A-63 Sax 1	A-73 Bell Pad	A-83 Pulse Wave 3	A-14 E.Piano 1	A-24 E.Guitar 1	A-34 Strings 1	A-44 Syn.Choir	A-54 Syn.Bass 4	A-64 Synth Brs 1	A-74 Breath Vox	A-84 Saw Wave 1
A-15 E.Piano 5	A-25 Heavy Guitar	A-35 Strings 3	A-45 Syn.Choir 2	A-55 Syn.Bass 5	A-65 Synth Brs 2	A-75 Pizzagogo	A-85 Saw Wave 2	A-16 Bright EP	A-26 E.Organ 1	A-36 String Pad 2	A-46 Slap 1	A-56 Syn.Bass 6	A-66 PowerBrass 1	A-76 Spect Bell	A-86 Metal
A-17 Vib 1	A-27 E.Organ 3	A-37 JP.Strings	A-47 Slap 7	A-57 Syn.Bass 7	A-67 PowerBrass 2	A-77 Bell Drum	A-87 SingingPiano	A-18 Marimba	A-28 E.Organ 5	A-38 Choir 1	A-48 Fingered 1	A-58 Soft TP 1	A-68 JP.Brass 2	A-78 Synth Harp	A-88 Syn.Marimba
B-11 Fantasia	B-21 Future 1	B-31 Endymion 1	B-41 Sacred 1	B-51 Harmonic 3	B-61 Percs Hit 3	B-71 Emergency 5	B-81 Catastrophe5	B-12 Calliope 1	B-22 Future 2	B-32 Endymion 2	B-42 Sacred 2	B-52 Native 1	B-62 Rotor 1	B-72 Deep 1	B-82 Pizz
B-13 Calliope 2	B-23 Pomona 1	B-33 Prelusion 1	B-43 Macho 1	B-53 Native 2	B-63 Rotor 2	B-73 Deep 2	B-83 Breath	B-14 Soundtrack 1	B-24 Pomona 2	B-34 Prelusion 2	B-44 Macho 2	B-54 Native 3	B-64 Rotor 3	B-74 Deep 3	B-84 Nails
B-15 Soundtrack 2	B-25 Melodigan 1	B-35 JP8.Brass	B-45 Lunar 1	B-55 Native 4	B-65 Emergency 1	B-75 Catastrophe1	B-85 Spectrum 1	B-16 Soundtrack 3	B-26 Melodigan 2	B-36 JP8.Strings	B-46 Lunar 2	B-56 Native 5	B-66 Emergency 2	B-76 Catastrophe2	B-86 Spectrum 2
B-17 Atmosphere 1	B-27 Photogene 1	B-37 Selene 1	B-47 Harmonic 1	B-57 Percs Hit 1	B-67 Emergency 3	B-77 Catastrophe3	B-87 N.Dance	B-18 Atmosphere 2	B-28 Photogene 3	B-38 Selene 2	B-48 Harmonic 2	B-58 Percs Hit 2	B-68 Emergency 4	B-78 Catastrophe4	B-88 Drums