YAMAHA

PortaSound

PSS-595

Owner's Manual

Bedienungsanleitung

Mode d'emploi

Manual del usuario

FCC INFORMATION

1. ***IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!***
   This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.

2. ***IMPORTANT:*** *When connecting this product to accessories and/or another product use only high quality shielded cables. Cable/s supplied with this product MUST be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.*

3. ***NOTE:*** *This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in a residential environment will not result in harmful interference with other electronic devices. This equipment generates/uses radio frequencies and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices. Compliance with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures:*

Relocate either this product or the device that is being affected by the interference.

Utilize power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter/s.

In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to co-axial type cable.

If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Corporation of America, Electronic Service Division, 6600 Orangethorpe Ave, Buena Park, CA 90620.

The above statements apply ONLY to those products distributed by Yamaha Corporation of America or its subsidiaries.

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WARNING: CHEMICAL CONTENT NOTICE!

The solder used in the manufacture of this product contains LEAD. In addition, the electrical/electronic and/or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

DO NOT REMOVE ANY ENCLOSURE COMPONENTS! There are no user serviceable parts inside. All service should be performed by a service representative authorized by Yamaha to perform such service.

IMPORTANT MESSAGE: Yamaha strives to produce products that are both user safe and environmentally "friendly". We sincerely believe that our products meet these goals. However, in keeping with both the spirit and the letter of various statutes we have included the messages shown above and others in various locations in this manual.

Wichtiger Hinweis für die Benutzung in der Bundesrepublik Deutschland.

Bescheinigung des Importeurs

Hiermit wird bescheinigt, daß der/die/das

Porta Sound *Typ:* ***PSS-595***
(Gerät, Typ, Bezeichnung)

in Übereinstimmung mit den Bestimmungen der VERFÜGUNG 1046/84

(Amtsblattverfügung)

funk-entstört ist.

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

Yamaha Europa GmbH

Name des Importeurs

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CANADA
This digital apparatus does not exceed the "CLASS B" limits for radio noise emissions from digital apparatus set out in the radio interference regulation of the Canadian Department of Communications.

Le present appareil numérique n'émet pas de bruits radioélectriques depassant les limites applicables aux appareils numériques de la "CLASS B" prescrites dans le règlement sur le brouillage radioélectrique édicte par le ministère des communications du Canada.

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Dette apparat overholder det gaeldende EF-direktiv vedrørende radiostøj.

Cet appareil est conforme aux prescriptions de la directive communautaire 87/308/CEE.

Diese Geräte entsprechen der EG-Richtlinie 82/499/EWG und/oder 87/308/EWG.

This product complies with the radio frequency interference requirements of the Council Directive 82/499/EEC and/or 87/308/EEC.

Questo apparecchio è conforme al D.M.13 aprile 1989 (Direttiva CEE/87/308) sulla soppressione dei radiodisturbi.

Este producto está de acuerdo con los requisitos sobre interferencias de radio frequencia fijados por el Consejo Directivo 87/308/CEE.

YAMAHA CORPORATION

Congratulations !

Thank you for purchasing YAMAHA PortaSound PSS-595. The PSS-595 is adopted with a unique synthesis "Advanced Wave Memory (AWM)" so that you can perform with a wide range of natural to hyper-natural sound qualities.
Furthermore, the Auto Accompaniment function supports your performance on the keyboard with various music styles such as rock 'n' roll, jazz, latin, funk, and much more. Moreover, you can record and play back your performance with the Song Memory Function. And other useful functions are also provided. In order to fully enjoy your lifelong musical time spent with the PSS-595, please read the instructions in this Owner's Manual which should provide help and suggestions.

Features

* **100 pre-set AWM Voices and 50 rhythm patterns (50 styles)** included. (sound reproduction: 28 notes at the same time)

* **Harmony effect** gives harmonized notes to a phrase or passage you play. 6 Harmony Types are provided.

* **Auto Accompaniment function** allows you to make an ensemble in any of 50 styles. A "Style" includes total arrangement for a certain musical style, which consists of rhythm patterns, chords, obbligati, formation of instruments and so on. You can easily and automatically incorporate these techniques into your playing which gives you the characteristics of the style you choose.

* **Song Memory function** enables digital recording of Melody and Auto Accompaniment parts on each individual track as a song. It is capable of memorizing up to 3 songs.

* **Manual Percussion** can be easily carried out whenever you select the Voice number 76 Percussion which includes 23 percussion sounds.

* **The PSS-595 has MIDI connectors** so that you can play it together with other MIDI-equipped devices. "MIDI" is an abbreviation for "Musical Instrument Digital Interface" and an international standard for electronic musical instruments. Furthermore the PSS-595 has the Multi-Timbre mode, which allows you to make an ensemble of Multiple Parts just only with one unit of the PSS-595.

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CAUTION!!

Pay special attention when handling the Song Memory.

The Song Memory data (= Songs you have Recorded) are so delicate that they will be easily destroyed by the electrical shock. Actually, the data will be lost partially. Remember this will definitely take place in the following situations:

The Song Memory data will be lost partially when the PSS-595 is turned Off intentionally or accidentally, that is, by using the POWER switch, or with batteries' voltage lowered or the authorized AC adaptor disconnected;

- **During Recording or Playback**

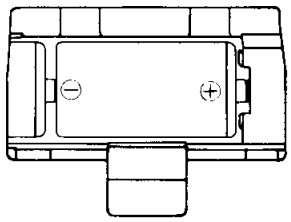
Getting Started

a. Setting up the power supply

The PSS-595 can be operated using either batteries or a standard outlet.

a) When you are using batteries

Flip the PSS-595 over and open the battery case. Insert six batteries (dry cells: 1.5V SUM-2 or R-14) all facing the same direction as shown. Replace cover.

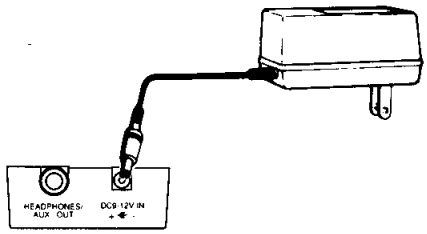


* In case batteries' voltage are low, you hear the sounds distorted. If you go on using the PortaSound, <bt chn> indication will be shown. In this case, it's the time to replace all of 6 batteries with new ones.

* Do not use the batteries of different types other than listed above.

b) When using an electrical outlet

An authorized optional AC adaptor (YAMAHA PA-3, PA-4 or PA-40) must be used. The adaptor is plugged into the DC 9-12V IN terminal located on the back of the instrument.

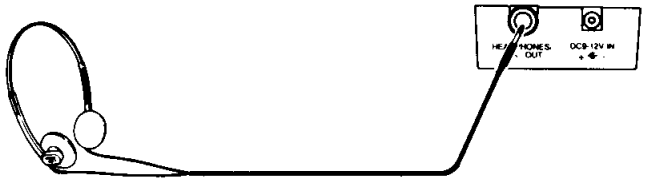


* There are different types of AC adaptors, be careful to use only the models mentioned above.

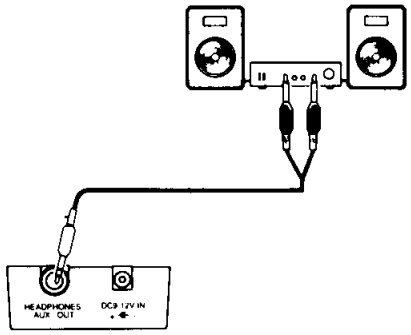
* If you leave the instrument without any power supply (batteries or adaptor) for a long period, your record in the Song Memory (explained later) will be lost, and the PSS-595 will be in the original status when shipped. But you don't mind the amount of time for changing batteries – 1 minute at most. This short period will not cause this to occur.

b. Hook-up terminals for attatchments

To use headphones: Plug the jack of the headphones into the terminal marked HEADPHONES/AUX. OUT. When the jack is plugged in, the speakers will no longer play out , thereby enabling you to enjoy making music without disturbing those around you.



To connect to keyboard amplifier or stereo: (in using a keyboard or stereo amplifier you will enhance greatly the overall sound) Plug in an Audio connection cord from the PSS-595's HEADPHONES/AUX. OUT terminal to the keyboard or stereo amplifier's LINE IN, AUX IN, etc.



* Before inserting plugs in, MAKE SURE the volume controls on the amplifiers are turned all the way down to prevent damage to the speakers.

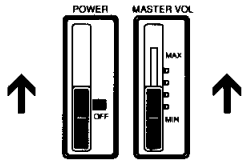
Note: *In both cases of attatchments (headphones and amplifiers), the Master Volume control located on the PSS-595 can be used in controlling levels of volume.*

Quick Reference

Here the basic PSS-595 operations are outlined for easy reference. To get you started right away follow the instructions marked with a star (*) and you can make music instantly.

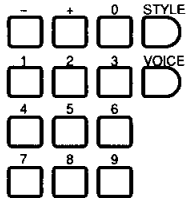
*Sound Set-Up

Step 1: Turn the power switch to the ON position.
Step 2: Slide the MASTER VOLUME control half way up.
As you press the keys the tones will be Piano Sound Voice number 00.



*Selection of Voices

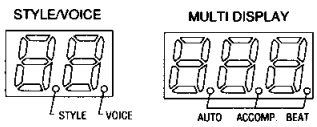
Step 1: Press the VOICE button.
Step 2: You may select one of 100 different Voices by pressing the buttons marked <0> thru <9> located to the left of the VOICE button. For example, if you wanted to select Voice number 35 - Trombone, you enter the number <3>, then the number <5>.
Step 3: You may move up or down a single digit from the number entered by pressing the <+> or <–> buttons once. For example by pressing the <–> button once after entering Voice number 35, you will change to Voice number 34 - Mute Trumpet Echo.
The Voice List located on the Control Panel indicates which Voice corresponds to number's 00 thru 99.



* In selecting a Voice number, you must enter a two digit figure, for example Voice number 02 would be selected by first pressing the number <0>, then the number <2>.

Displays

2 displays located on the front panel of the PSS-595 will allow you to read the current status or parameter at a glance.

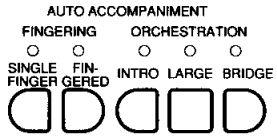


Voice Effects

By controlling these effects well, you can achieve a variety of colors and moods in your music making. Also you can establish each of the Voice Effects levels individually.
***Note:** For further details see page 10.*

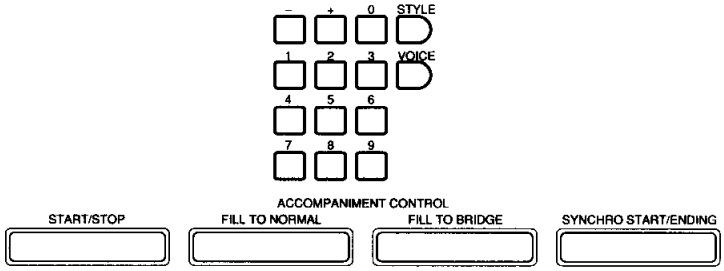
Auto Accompaniment

This function is provided for you to easily carry out various Orchestrations all by yourself. There are two kinds of modes for fingering the chords. First is the "Single Finger" mode which provides Auto Accompaniment by easy fingerings. Secondly, you can select the "Fingered" mode which is suited for songs containing more complicated chords. By combining and balancing these Fingering modes with the Orchestration, you will be able to produce more sophisticated and pleasurable music.
***Note:** For further details see page 16.*



*Rhythm Accompaniment

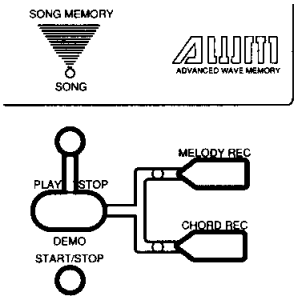
Step 1: Push the STYLE button of the STYLE/VOICE section.
Step 2: Select one of the 50 Rhythm Styles listed on the control panel, and enter it's 2 digit number using the same buttons <0> thru <9> used in selecting a Voice, also by pressing the <+> or <–> buttons to select a Style of a higher or lower number.
Step 3: To start the rhythm, push the START/STOP button of the Accompaniment Control. When you push the FILL TO NORMAL, or FILL TO BRIDGE buttons, you can have Fill-Ins that correspond to the Style you are using. To stop the rhythm, push the START/STOP button again.
***Note:** for instructions on the SYNCHRO START/ENDING button, and controlling tempos refer to page 12.*



Song Memory

By using the Song Memory function you can easily record and play back melodies, chords, and rhythm. But best of all, there are 2 separate recording tracks (: MELODY and CHORD) for each song. And, you can memorize up to 3 original songs as you wish.

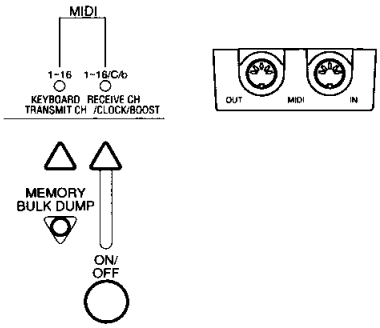
Note: *For further details see page 23.*



MIDI

By using a MIDI hook-up to another synthesizer (or MIDI equipment), you can operate the PSS-595 as a master keyboard to play the other synthesizer. Also you can hook-up to a sequencer or drum machine that will act as a master, and control the PSS-595.

Note: *For further details see page 28.*

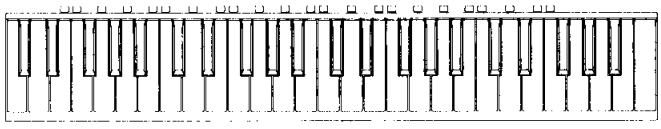


* By pressing these buttons you can select a variety of MIDI modes.

*Manual Percussion

When select the Voice number 76 PERCUSSION in the same methods as described in "Selection of Voices", you can play a percussion instrument illustrated above each key. 23 percussion sounds are provided.

Note*: For further details see page 15.*

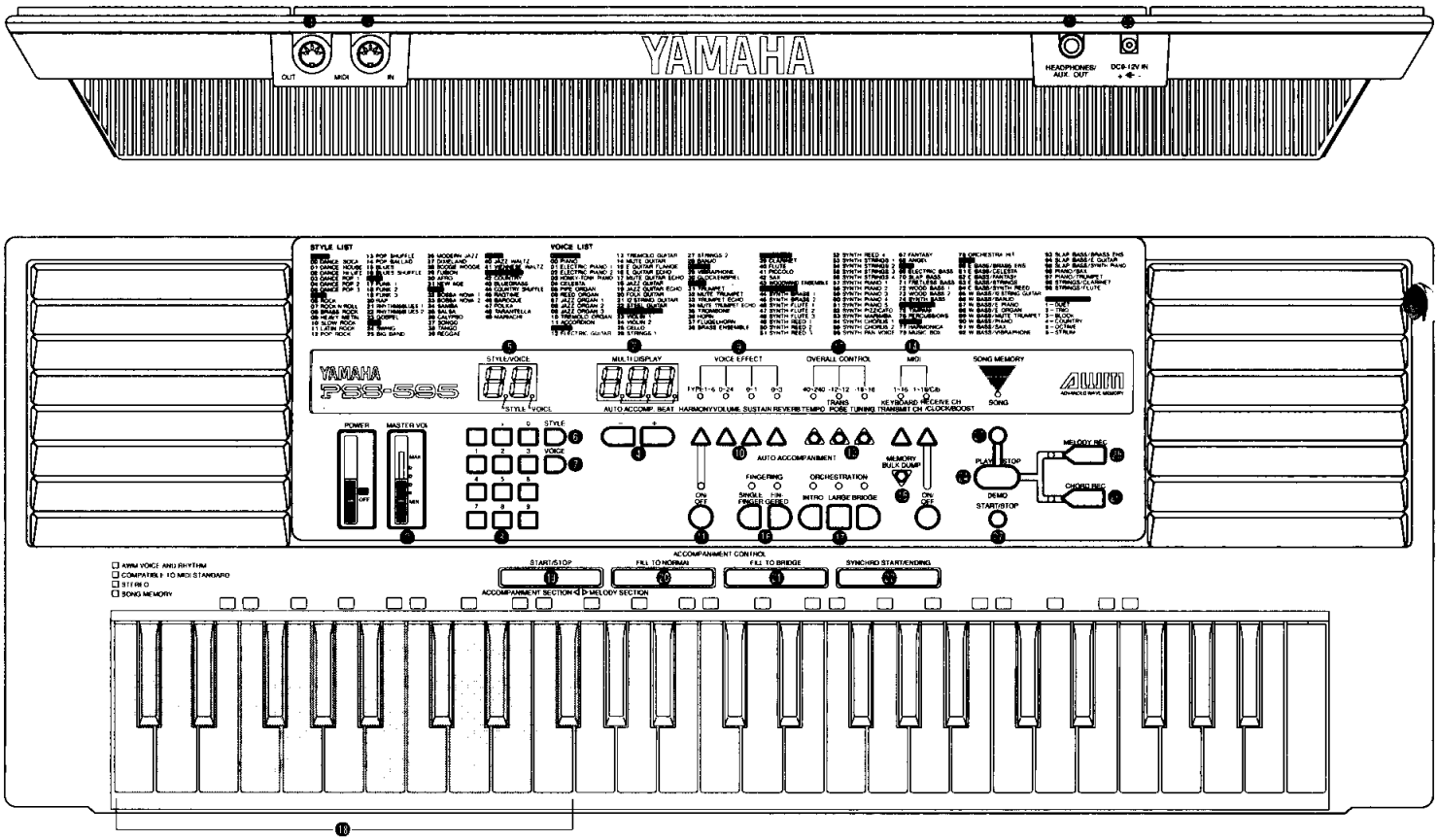


*Demonstration

The PSS-595 comes with a Fusion song to demonstrate it's capabilities. To hear this example, press the DEMO START/STOP button anytime. The demonstration will keep repeating over and over until you stop it. To stop the demonstration, press the DEMO START/STOP button once again. The demonstration has been pre-assigned a tempo and style accordingly. You can play along with the demonstration on the keyboard, adjusting the Voice and Tempo as you like. During playing the demonstration, Voice selection and Voice Effects are also available. However, these will be reflected on only the notes you play on the keyboard.

* The "Demo Tune" of this keyboard is strictly for demonstration purposes and cannot be reproduced.

Panel Description



❶ Power switch
Turns PSS-595 on and off.

❷ MASTER VOLUME control
Adjusts output of built-in speakers or HEADPHONES/AUX. OUT Terminal.

❸ MULTI DISPLAY
Shows the value of Voice Effects, Overall Controls and MIDI parameters, or a song number selected.

❹ Increment/Decrement buttons (+/–)
Set the Value of Voice Effects, Overall Controls and MIDI parameters.

<< For Style/Voice selection >>

❺ STYLE/VOICE display and LEDs
Shows the Style or Voice number currently selected with the corresponding LED lit up.

❻ STYLE button
Before you select a STYLE, press this button.

❼ VOICE button
Before you select a VOICE, press this button.

❽ Numericr buttons (0 thru 9, +/–)
Specify a Style or Voice number in 2 digits as shown in each list printed on the front panel.

<< For Voice Effects control >>

❾ VOICE EFFECT LEDs
Indicates which Voice Effect - Harmony/Volume/Sustain/Reverb is available. Current Value of the effect is shown in Multi Display.

❿ VOICE EFFECT Select buttons
When setting a Voice Effect, first press the corresponding button and ensure the Voice Effect LED is lit up. Then set it with Increment/ Decrement buttons.

⓫ HARMONY Effect ON/OFF button
Allows for switching this effect ON/OFF in realtime.

<< For Overall control >>

⓬ OVERALL CONTROL LEDs
Displays the current status of Overall control settings.

⓭ OVERALL CONTROL Select buttons
Sets the Value for Tempo/Transpose/Tuning when each corresponding button is pressed.

<< For MIDI control >>

⓮ MIDI LEDs
Indicates whether you are in KEYBOARD TRANSMIT CHannel or RECEIVE CHannel/CLOCK/velocity BOOST, while the Multi Display indicates what Value is set.

⓯ MIDI Select buttons
To set KEYBOARD TRANSMIT CHannel or RECEIVE CHannel/CLOCK/ velocity BOOST or into Bulk Dump mode, press the corresponding button.

<< For Auto Accompianment >>

⓰ FINGERING buttons
To select Single Finger/Fingered mode of Auto Accompaniment.

⓱ ORCHESTRATION buttons
To select the instrumentation or variations of Auto Accompaniment.

⓲ Keys for Auto Accompianment
These are the keys you push when using the Auto Accompaniment function.

<< For Accompaniment Control >>

⓳ START/STOP button
Activates or disactivates the Auto Accompaniment or Rhythm.

⓴ FILL TO NORMAL button
This provides a fill-in which then continues to play the normal accompaniment pattern.

㉑ FILL TO BRIDGE button
This provides a fill-in which then continues to play the accompaniment pattern used in the Bridge section of a song.

㉒ SYNCHRO START/ENDING button
Allows you to start the Auto Accompaniment and Rhythm simultaneously by pressing one of the Auto Acconpaniment keys. Also provides an ending pattern for when you want to finish a song.

<< For Song Memory >>

㉓ SONG Number button
Press this button when you select a Song number.

㉔ PLAY/STOP button
Press this button when you start or stop recording or reproduction of a song already recorded.

㉕ MELODY REC button
Press this button when recording a melody or passage played by the right hand.

㉖ CHORD REC button
Press this button when recording an Auto Accompaniment led by the left hand.

㉗ DEMO (Demonstration) START/ STOP button
To start or stop the demonstration song.

<< Accessory Terminals >>

㉘ DC 9-12V IN Terminal (for AC adaptor)
Terminal for connecting an optional adaptor (: YAMAHA PA-3, PA-4, PA-40) for electrical power supply from AC outlet.

㉙ HEADPHONES/AUX. OUT Terminal
Terminal for connecting headphones, keyboard amplifier, stereo amplifier, etc.

㉚ MIDI IN Terminal
Terminal for PSS-595 to receive MIDI information.

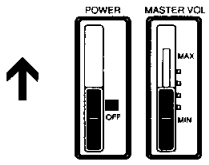
㉛ MIDI OUT Terminal
Terminal for PSS-595 to generate MIDI information.

Voice Section

a. Selecting a Voice

There are 100 different pre-set voices to choose from, providing a wide variety of sounds to accomodate many types of song styles.

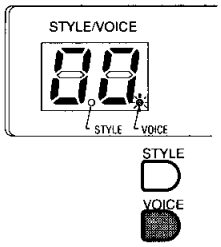
Step 1: Turn the POWER ON.



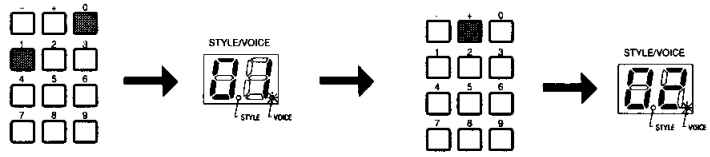
Turn the POWER switch to ON, and slide the MASTER VOLUME control up.

Step 2: Press the VOICE button.
Press the VOICE button of STYLE/VOICE select.

The Voice LED in the STYLE/VOICE display will light up. The number displayed indicates the Voice number. For now do the Voice selection.

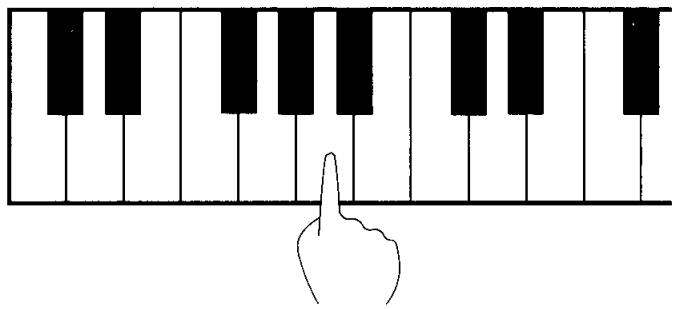


Step 3: Select a Voice.
Consult the Voice List on the Control Panel and enter the 2 digit number using the Numeric buttons <0> thru <9> of the STYLE/VOICE select. For example, if you want ELECTRIC PIANO 1, which is Voice number 01, you first press <0>, then <1>. You can increase or decrease the number selected by the <+>/<–> buttons, so if you wanted to change the Voice to ELECTRIC PIANO 2, which is Voice number 02, you can just press the <+> button once.



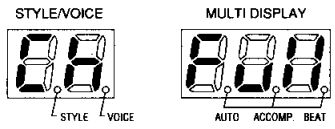
Note: *To press and hold the <+> / <–> buttons you will increase or decrease the number at an accelerated rate.*

Step 4: Now when you press the keys of the keyboard, you will hear the Voice selected in Step 3. If you wish to change your Voice selection, just repeat Steps 2 & 3. (Unless you have been pressed the STYLE button, skip Step 2.)



* The PSS-595 allows you to play up to 28 notes simultaneously. (But this number does vary depending on the mode of Auto Accompaniment, Orchestration, Voice, or playback status of Song Memory.)

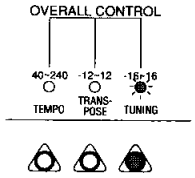
* If there is a shortage of notes that can be sounded at a time, the following indication will be shown until the total amount of notes is reduced under 28:



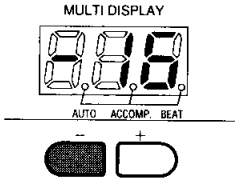
b. Tuning

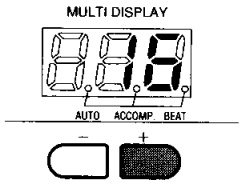
When you play along with another instrument, CD, tape or record, etc., it often happens that the tunings are slightly different. With the PSS-595 you don't have to worry about this. There is a Tuning function built in to this model that can adjust the pitch, allowing you to play in tune with other musical instuments, or musical sources.

Step 1: Press the TUNING button.
Press the TUNING button located in the OVERALL CONTROL select. The LED will light up, and the MULTI DISPLAY shows the current Tuning Value. The initial value displayed has been assigned as <0> which is A3=440Hz.



Step 2: Adjustment of Tuning:
Press the Increment/Decrement buttons located under the MULTI DISPLAY to raise or lower the pitch. You can raise or lower the pitch by about 3.13 cents. And with the value <+/–16>, It will be higher or lower than the standard pitch <0> by 50 cents (a quarter tone).

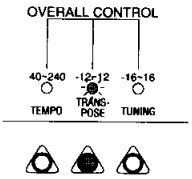




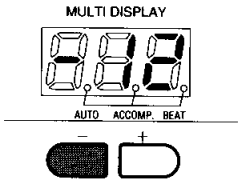
c. Transposing

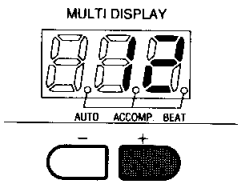
This is a very useful function that allows you to change the key of the music you're playing, without changing the fingering at all. The notes you play can be heard as any pitch you select. This is especially useful for playing with other instruments, and Vocal accompaniment. You can easily change keys to match other musical sources, but still play the notes of your accustomed key. Also, you can extend the range of the lowest or highest notes on your keyboard.

Step 1: Press the TRANSPOSE button.
When you press the TRANSPOSE button located in the OVERALL CONTROL select, the LED lights up, and the MULTI DISPLAY shows the current parameter value transposed. The initial value is pre-assigned as <0>.



Step 2: Adjusting the Transposition:.
Press the Increment/Decrement buttons located under the MULTI DISPLAY, to raise or lower the key. You can raise or lower the key by 100 cents. And with the value <+/–12>, It will be higher or lower than the standard key <0> by 1200 cents (one octave). For example if you change the parameter value to <3>, and play a song on the keyboard in the key of "C", the notes you actually hear, will be transposed to the key of "E♭ (E flat)".





* Both the Tuning and Transpose functions work simultaneously in all possible Voices. (except Rhythm sounds, for which the Tuning is available.)
* Both the Tuning and Transpose functions will return instantly to <0> by pressing the <+> and <–> buttons BOTH at the same time.
* By pressing and holding down the <+> or <–> buttons, you will increase or decrease the Value at an accelerated rate.
* After setting up the Tuning or Transposition functions, the levels will be memorized until you shut off the POWER.
* Both the Tuning and Transposing will also affect the notes sounded by the MIDI Note On message from the external Master device. However, they will not affect the MIDI Note On message itself.
* If you change the Transpose value while any key is pressed down, the note currently reproduced will be held in the same key (pitch), but not transposed. Once releasing the key and repress it, at this time, the note will be reproduced in the transposed key (pitch).
* Transposition affects only the sound reproduction, so that MIDI Note On message transmitted will be still the same as without Transposition.

d. Voice Effects

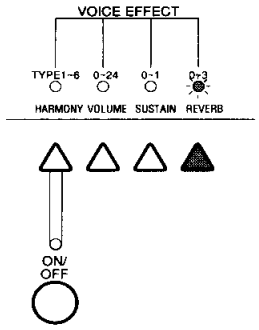
The PSS-595 has a variety of Voice Effects to choose from, such as REVERB/SUSTAIN etc., that with a little practice and wise selection, can be effective to make your performance more sophisticated.

a) Reverb

This effect adds Reverberation to your sounds. It gives width and depth to your music that almost gives the impression of being in a concert hall. The PSS-595 Reverb Effect has a range of values that can be assigned within the range between <0> to <3>.

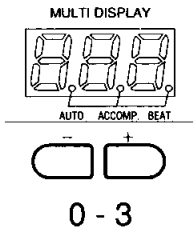
Step 1: Press the REVERB button.
When you press the REVERB button located in the VOICE EFFECT select, the LED lights up, and the MULTI DISPLAY shows the current Reverb Effect value.

* The initial value for Reverb Effect is <0>. If the MULTI DISPLAY shows <– – –>, this means the Reverb effect has been pre-fixed.



Step 2: Adjusting the value of Reverb Effect:
You can adjust the value of the Reverb Effect by using the Increment/Decrement buttons located under the MULTI DISPLAY. <0> means the Reverb Effect is Off, <1> is weak, and thru <3> is strong.

* Reverberation given by the Reverb Effect is heard to vary, even when you set the same value to several Voices. It depends on the Voice you select.

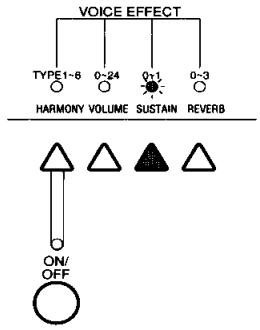


b) Sustain

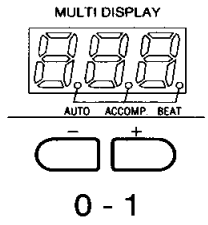
This Effect adjusts the Release time of the Voice after releasing the pressed key(s) and enrich the sound for you to play with in a warm mood. The value is assigned either <0>: Off, or <1>: On. It will be applied in common to all possible Voices.

Step 1: Press the SUSTAIN button.
When you press the SUSTAIN button located in the VOICE EFFECT select, the LED lights up, and the MULTI DISPLAY shows the current Sustain Effect value.

* The initial value for Sustain Effect is <0>. If the MULTI DISPLAY shows <– – –>, this means the Sustain effect has been pre-fixed.



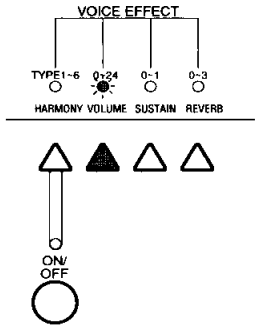
Step 2: Adjusting the value of Sustain Effect:
You can adjust the value of the Sustain Effect by using the Increment/Decrement buttons located under the MULTI DISPLAY. <0> means the Sustain Effect is Off, <1> is On.



c) Volume

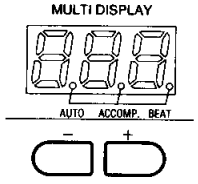
This function allows you to adjust only the Volume of Voices you play with, to contrast them with Rhythm or Accompaniment sounds. The Volume levels <0> to <24> apply to all Voice selections.

Step 1: Press the VOLUME button.
When you press the VOLUME button located in the VOICE EFFECT select, the LED lights up, and the MULTI DISPLAY shows the current VOLUME value. The initial value is pre-assigned as <21>.



Step 2: Adjusting the value of VOLUME:
You can adjust the Value of the VOLUME by using the Increment/Decrement buttons located under the MULTI DISPLAY.
<0> VOLUME is Minimum and <24> is Maximum.

* After setting any Volume value, If you activate and use the Vector Synthesizer, and turn it off by VECTOR SYNTH ON/OFF button, the assigned Volume value will return to the initial value <21>.

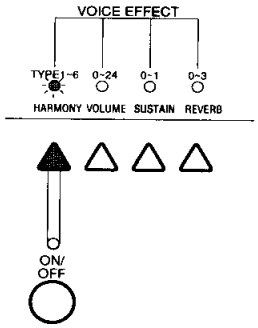


0 - 24

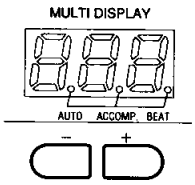
d) Harmony

This function allows you to produce chordal type sounds. When you use the Harmony Effect, you can achieve an image of more than one person playing while just utilizing one finger. The PSS-595 provides 6 different types of Harmony Effects. These Harmony sounds will automatically be selected according to the chord. That's why this Harmony Effect is so useful when you play along with in the Auto Accompaniment.

Step 1: Press the HARMONY button.
When you press the HARMONY button located in the VOICE EFFECT select, the LED lights up, and the MULTI DISPLAY shows the current HARMONY Type value. The initial value is pre-assigned as <1> Duet.



Step 2: Selecting the Type of Harmony:
Consult the HARMONY TYPE List on the Control Panel and enter the number of your selection using the Increment/ Decrement buttons located under the MULTI DISPLAY.



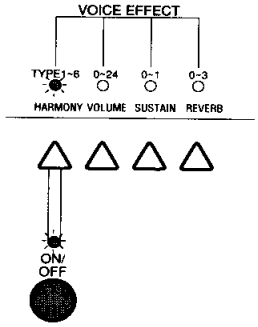
1 - 6

The 6 different types of Harmony Effects are shown below:

Harmony Types	
1. Duet	Adds Harmony that sounds like two people are playing.
2. Trio	Adds Harmony that sounds like three people are playing.
3. Block	Adds Harmony that sounds like Jazz type chording.
4. Country	Adds Harmony that sounds like Country Music style.
5. Octave	Plays additional notes in Octaves.
6. Strum	Adds Harmony as given by playing the each chord tone in order.

* The Harmony Type you assign will be memorized until you shut off the POWER. Next time when you turn the PSS-595, <1> Duet will be selected automatically.

Step 3: Press the HARMONY ON/OFF button.
When you press the HARMONY ON/OFF button, the LED lights up, and you will be set up to play in the currently selected Harmony Type.



* When the Harmony ON/OFF button is turned ON, you can play only one note at a time (If you press more than one note at a time, the highest note, only is given priority and played).

* The Harmony function works very effectively when you are using Auto Accompaniment. For you can have the Harmonized tones in accord with the Chord Progression.

* The Harmony Effect is also applied to a note sounded by an external MIDI Note On message.

<< Reference #1 >>

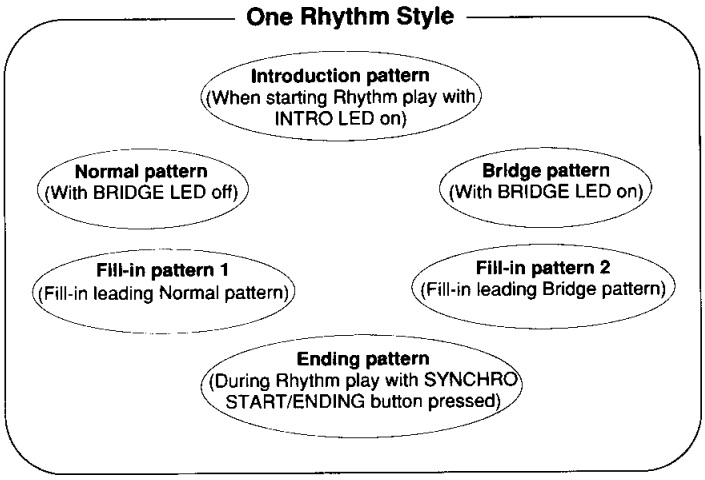
>> When you use certain Voice Effects in combination, it will help you give much more excellent expression. For example, PIPE ORGAN sound with Sustain and Reverb Effects will remind you of a cathedral in solemnity. Or, as a typical setting, STRINGS with Sustain and Reverb Effects can give you reality and ambience in a concert hall.

>> To utilize Harmony Effect with Sustain and/or Reverb Effect(s), a solo instrument will be a duo, trio, and even more so easily. If this is applied to a simple ELECTRIC PIANO, you will find its transfiguration and possibilities.

Rhythm Style Section

The PSS-595 has 50 kinds of realistic pre-set Rhythm Styles. Each Rhythm Style has a variety of patterns such as Normal, Bridge, Intro., Ending, and two kinds of Fill-in patterns. So you have a storehouse of Styles and patterns to work with in varying your playing. Plus, the PSS-595 provides 23 kinds of percussion sounds, which you can play along with a selected Rhythm Style on the keyboard, in a flexible way that fits to the mood you wish to create. If you utilize the Song Memory function (explained in the Song Memory Section) it's possible to memorize the original Rhythm. We hope you enjoy the many options available for a variety of Rhythm Styles.

The following diagram shows the various patterns which one Rhythm Style contains, you can use it for reference as you learn more about each Style selection.



Every pattern is provided for you to construct a song as you wish. That is, each pattern is taken as a section of a song, so that you have various combination possibilities. Following are typical examples for song construction:

Ex.1

Introduction → Normal → Fill-in 2 → Bridge → Ending
BRIDGE off — INTRO — FILL TO BRIDGE — SYNCHRO START/ENDING

Ex.2

Introduction → Bridge → Fill-in 1 → Normal → Ending
BRIDGE on — INTRO — FILL TO NORMAL — SYNCHRO START/ENDING

Ex.3

Normal → Bridge → Fill-in 1 → Normal → Bridge
BRIDGE off — FILL TO NORMAL — FILL TO BRIDGE

Ex.4

Bridge → Fill-in 1→ Normal → Fill-in 2 → Bridge → Ending
BRIDGE on — FILL TO NORMAL — FILL TO BRIDGE — SYNCHRO START/ENDING

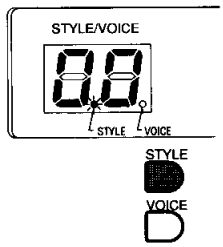
You can easily order the patterns to press each corresponding button. Now, you learn about the operations of the Rhythm Style.

a. Basic Operations

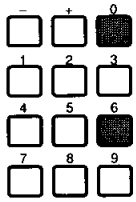
a) Selecting a Rhythm Style

Step 1: Press the STYLE button.
Press the STYLE button of STYLE/VOICE select.

The Style LED in the STYLE/VOICE display will light up. The Number displayed indicates the Style number. For now do the Style selection.



Step 2: Select a Rhythm Style.
Consult the Style List on the Control Panel and enter the 2 digit number using the Numeric buttons of the STYLE/ VOICE select. For example, if you want ROCK, which is Style number 06, you first press <0>, then <6>. You can increase or decrease the Number selected by using the <+>/<–> buttons.



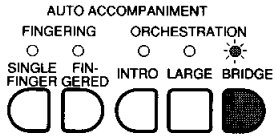
* To press and hold the <+>/<–> buttons you will increase or decrease the number at an accelerated rate.

Step 3: Assigning NORMAL/BRIDGE:
Decide which you want, NORMAL pattern or BRIDGE pattern, of the selected Rhythm Style.

* Normal pattern offers a basic pattern of the Style (including its Auto Accompaniment). And Bridge pattern offers additional sounds or little complicated pattern. Actually, you can take Normal pattern is pre-made intended to fit the introduction of a Song. Oppositely, a Bridge pattern is pre-made to fit the most interesting part of a song, in other words a climax.

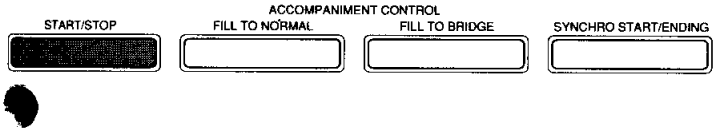
How you assign NORMAL/BRIDGE: Press the BRIDGE button located in the Orchestration. The BRIDGE LED lights up and indicates the BRIDGE pattern has been assigned. Oppositely, when this LED is not lit, assigned is the NORMAL pattern.

* When powering up, the NORMAL pattern is assigned.



b) Start & Stop

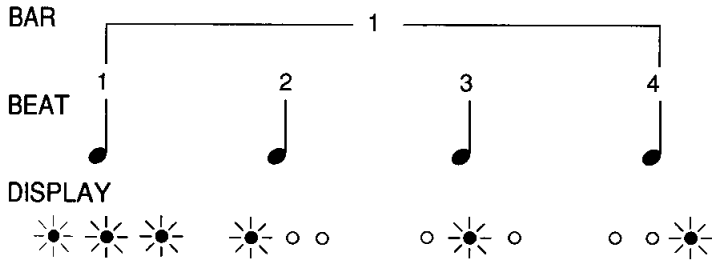
Step 1: Starting the Rhythm:
Start the Rhythm by pressing the START/STOP button located in the ACCOMPANIMENT CONTROL. If you press the button the Rhythm pattern which you selected (in "Selecting a Rhythm Style" procedure) will sound.



While playing the Rhythm pattern, if you select another Rhythm Style, the Rhythm will change automatically at the beginning of the next bar. You can also change NORMAL pattern to BRIDGE pattern, or vice versa. It will be changed over at the beginning of the next bar. You can change NORMAL/BRIDGE pattern any time.

Step 2: Stopping the Rhythm:
Stop the Rhythm by pressing the START/STOP button, a second time.

While the Rhythm Pattern is playing, 3 dots will flash on and off in time, in the MULTI DISPLAY.



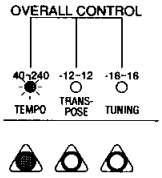
* This diagram represents 4/4 Meter, if you are in another meter it displays differently.

* How to construct the Rhythm pattern, depends on the Rhythm Style, sometimes the patterns are in 2 bar units, or in 4 bar units, or 8 bar units, etc..

c) Tempo Control

Tempos of the Rhythm have been pre-assigned different values according to the Rhythm Style, but you can adjust the Tempo easily even after starting the Rhythm or stopping by the following procedure. Here's how to change the Tempos to your liking:

Step 1: Press the TEMPO button.
When you press the TEMPO button located in the OVERALL CONTROL select, the LED lights up, and the MULTI DISPLAY indicates the current Tempo value.



Step 2: Adjusting the Tempo:
You adjust the Tempo by pressing the Increment/ Decrement buttons located under the MULTI DISPLAY. The range of Tempo rates which you can adjust is from one quarter note = 40 to 240. Also, when the Increment/ Decrement buttons are both pressed simultaneously, the value of the Tempo automatically returns to the pre-assigned value of the current Rhythm Style selected.

* The Tempo you changed has been memorized until you Stop, and then change the Rhythm.

* When you Stop and change the Rhythm, Tempo will automatically become the pre-assigned value for the Rhythm Style selected.

* While Rhythm is playing and you change to another Rhythm, only the Rhythm Style will change not the Tempo.

b. Advanced Operations

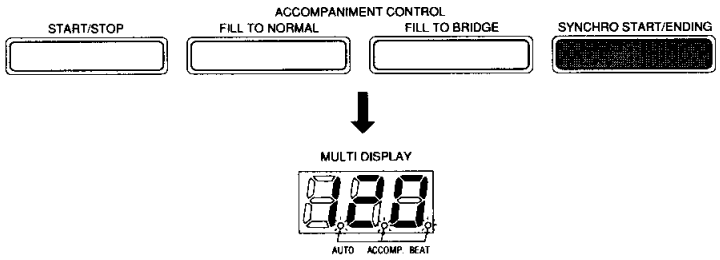
a) Synchro Start

If you press the SYNCRO START/ENDING button beforehand, you can start the Rhythm exactly simultaneously when you start playing on the keyboard.

Step 1: Select the Rhythm Style.

Step 2: Press the SYNCHRO START/ENDING button.
When you press the SYNCHRO START/ENDING button,

located in the ACCOMPANIMENT CONTROL, 3 dots in the MULTI DISPLAY flash all together in time. This is SYNCHRO START Stand By position.



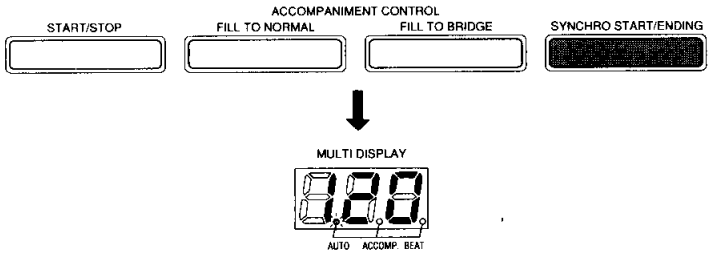
* If you want to cancel the SYNCHRO START Stand By position, press the SYNCHRO START/ENDING button again.

Step 3: Start the Rhythm.
The Rhythm will Start the minute when you press any key on the keyboard as long as the Auto Accompaniment is OFF (with the SINGLE FINGER or FINGERED LED off). Also, when the Auto Acompaniment is ON (with the SINGLE FINGER or FINGERED LED on), you can start the Rhythm the minute when you press the keys of the Accompaniment section of the keyboard (from F#2 and below).

* To select the Fingering (by pressing SINGLE FINGER or FINGERED button), it means to activate the Auto Accompaniment. (See "Auto Accompaniment Section".)

b) Ending

When you press the SYNCHRO START/ENDING button, while the Rhythm is running, the pre-set ENDING phrase which suits the current Rhythm Style, will start from the beginning of the next bar. And then the Rhythm will stop automatically.
While the ENDING phrase is being played, the Left dot in the MULTI DISPLAY will flash.

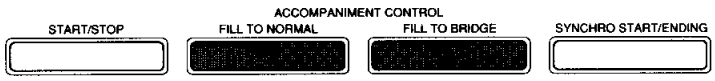


* The length of the ENDING phrase, varies depending on the Rhythm Style.

* If you change the Style number while the ENDING is being played, the ENDING pattern does NOT change.

c) Fill-Ins

You can insert Fill-Ins while playing the Rhythm pattern. When you press the FILL TO NORMAL button, Fill-In pattern which fits to the current rhythm style will be played until the end of the bar, and then continues to play the NORMAL pattern from the beginning of the next bar. When you press FILL TO BRIDGE button, a different Fill-In pattern will be played until the end of the bar, and then switched to the BRIDGE pattern at the beginning of the next bar. Each Rhythm Style has 2 Fill-in patterns, and depending on which button you press, the following rhythm will be defined as either NORMAL pattern or BRIDGE pattern.



FILL TO NORMAL button leads a Fill-In followed by a Normal pattern.

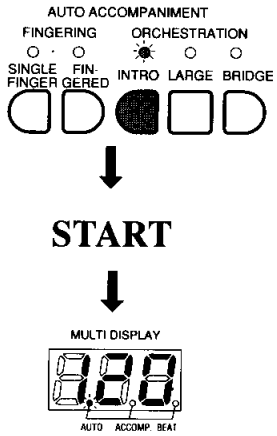
FILL TO BRIDGE button leads a Fill-In followed by a Bridge pattern.

* When you press the either of the Fill-in buttons and hold it down, the Fill-In pattern will be repeated for the duration it is held down.

* Both buttons will function while playing Intro. or Ending.

d) Intro

When you set up the Intro. function, you can automatically start off the Rhythm with an Intro. which matches the currently selected Rhythm Style. You can easily set up the Intro. anytime by pressing the INTRO ON/OFF button located in the ORCHESTRATION select. When the INTRO ON/OFF button has been pressed, the LED lights up and the Intro. function is ready. But if the LED is not lit up, the Intro. function doesn't work. After the Intro. is set up, the Rhythm will start off with an Intro. when you press the START/STOP button. While the Intro. is being played, the Left dot in the MULTI DISPLAY will flash. Also, you can use this function with SYNCHRO START.



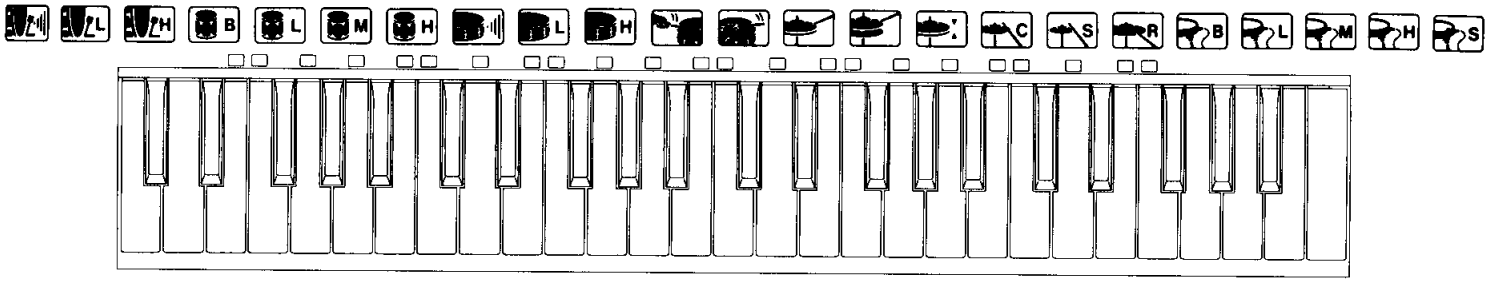
* The length of the Intro. varies depending on each Rhythm Style.

* When you press the INTRO button while the Rhythm is being played, the Intro. will not be played, (unlike when changing Rhythm Style or NORMAL/BRIDGE patterns), but the Intro. function will be set up and ready.

e) Manual Percussion

Different from the other Voices provided, the Voice number 76 PERCUSSIONS allows you to play various sounds of percussion at a time. To carry this out, you only select the Voice number 76 in normal way of Voice selection. Now you have 23 percussion sounds assigned to the keys. Each percussion sound assigned is illustrated above the corresponding key. Try a percussion play to a Rhythm running.
Each instrument is illustrated as follows:

* Even pressing the keys assigned no sounds, you cannot make any sound reproduction.



<< Reference #2>>

It seems difficult to control the Rhythm functions of the PSS-595, where even one style has many kind of Patterns, so we have provided a few hints.

>> You can start the Rhythm with an Intro. right away by: (a) selecting a Rhythm Style, (b) pressing the INTRO ON/OFF button, and (c) pressing the SYNCHRO START/STOP button. Now you are in SYNCHRO START Stand By position. As soon as you play with the touch of your first key, the Rhythm with an Intro. will start.

>> If you press the BRIDGE or FILL TO NORMAL button while the Normal pattern is running, you can play in another mood switching to the Bridge pattern. If you need more variation, simply select another Rhythm Style without stopping the rhythm running. And you may go into entirely different mood at the same Tempo.

>> During playing a Rhythm, you can simulate a Drum Solo by selecting the Voice number 76 PERCUSSIONS and pressing any keys assigned percussion sounds.

>> You can top off your performance with flair, by making use of the provided Endings when you press the SYNCHRO START/ENDING button.

Auto Accompaniment Section

When you make use of this very effective function, you will be sounding like a Professional in no time at all. This Auto Accompaniment function is closely related to the Rhythm Style, because it functions in combination with (a) the arranging which fits to each Rhythm Style, or corresponding Intro. & Ending, and (b) accompaniment sound which fits to the chord work by FINGERING (SINGLE FINGER or FINGERED). So, as was explained in the Rhythm Style Section, regarding the Rhythm functions, you can control Auto Accompaniment in almost the same way. Let's take a look at the Basic steps involved, so you can have an overview of the whole function of Auto Accompaniment:

Steps for Auto Accompaniment

- **Selection of the Fingering** (*)
  - SINGLE FINGER or FINGERED

↓

- **Selection of the Rhythm Style**
  (For Rhythm and Auto Accompaniment by Left Hand)
- **Selection of the Voice**
  (For Melody played by Right Hand)

↓

- **Assigning the Orchestration**
  - BRIDGE on: Bridge pattern
  - BRIDGE off: Normal pattern
  - INTRO on: To Start with Introduction
  - LARGE on: Large ensemble(*)
  - LARGE off: Small ensemble (*)

↓

Starting the Rhythm
- **Immediate Start by START/STOP**
- **Start by key pressing**
  (any key in Auto Accompaniment section: C1-F#2)

↓

During Rhythm Play
- **Auto Accompaniment led by Chord work of Left Hand**
  (Chords formed by SINGLE FINGER or FINGERED)
- **Possible Assignment Change**
  - Tempo change
  - Selection of Normal/Bridge (manually or by 2 Fill-In patterns)
  - Selection of the Voice
  - Selection of the Rhythm Style
  - Assignment of LARGE (on/off)

↓

Stopping the Rhythm
- **Immediate Stop by START/STOP**
- **Stop after Ending pattern**

Note: Operations marked with (*) have not been discussed in the Rhythm Style Section.

Note: Normal, Bridge, Introduction and Ending will be affected with Assignment of LARGE (on/off).

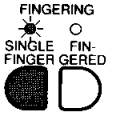
a. Fingering of Auto Accompaniment

There are 2 kinds of Fingering methods provided for Auto Accompaniment. One is SINGLE FINGER method, which allows you to have Auto Accompaniment by easy fingering, the other is FINGERED method which you play chords as usual. Auto Accompaniment will be carried out by your chord work in either Fingering, within the Auto Accompaniment Key Section: C1 thru F#2.

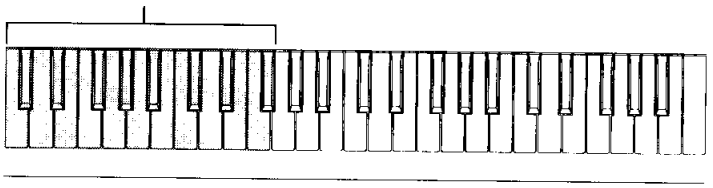
< Fingering Selection >

When FINGERED method is selected

When SINGLE FINGERED method is selected

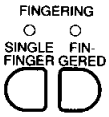


Auto Accompaniment Key Section (C1 thru F#2)



* F#2 and below is the Auto Accompaniment key section, so when you select a Voice you will not be able to hear that Voice sounded on keys C1 thru F#2.

When the Fingering is NOT selected, (Normal keyboard: C1 thru C6)



* When the Fingering is not selectd, you will be able to play on the whole keyboard in any Voice you select.

b. 3 Orchestrations

Another important function to consider when you're using Auto Accompaniment is Orchestration. There are 3 buttons which are: INTRO, LARGE, and BRIDGE located in the Orchestration select. Depending on how you assign these Orchestrations in combining one another, you can produce many styles of arrangements.

>> INTRO button:

When you press the INTRO button, the LED will light up, and you are set up for Intro. (Same as in Rhythm Style Section). Now, after selecting either SINGLE FINGER or FINGERED mode to start the Auto Accompaniment, it will play an Intro. controlled by the chords you play with your left hand, and in the Style which is currently selected.

>> LARGE button:

This button controls whether the Auto Acommpaniment will be played with a Small ensemble or a Large ensemble (of Instrumentation). When you press the Large button and the LED lights up, you will have the Large ensemble Effect, and when the LED is not lit up, you have the Small ensemble Effect.

>> BRIDGE button:

When you press the BRIDGE button, the LED will light up and you will be in the BRIDGE pattern set-up (same as in the Rhythm Style Section) when the LED is not lit up it will be in NORMAL pattern set-up. The Auto Accompaniment will play in either case assigned, the arranging which fits to each Pattern. Also, depending on the status of the Large/ Small ensemble selected using the LARGE button, the arranging will vary accordingly.

You can play with various patterns combining these 3 Orchestrations' activation and inactivation.

* INTRO inactivation simply means Starting the Rhythm without Intro.. This inactivation simply means Starting the Rhythm without Intro.. This has no concern with LARGE active or inactive.

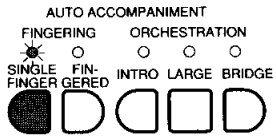
* You can assign the Orchestration buttons at any time. The initial pre-set settings are: INTRO/Off, LARGE/On, BRIDGE/Off (NORMAL).

c. Single Finger Mode

This Fingering method allows you to have Auto Accompaniment easily, without playing the whole exact chord. For example, if you want to play a Major chord, just one Finger is required. Even for other chords, you only need to press a few keys to establish the whole chord.

Step 1: Select a Rhythm Style.

Step 2: Press the SINGLE FINGER button.
When you press the SINGLE FINGER button, the corresponding LED will light up, and SINGLE FINGER mode has been assigned.
At this time, the PSS-595 will automatically be in the SYNCHRO START Stand By position.

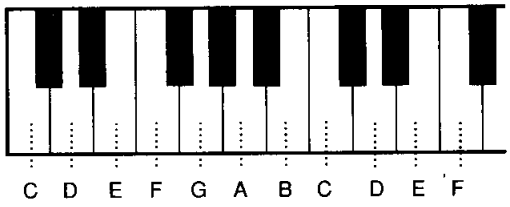


Step 3: Press any Auto Accompaniment keys.
When you press the Auto Accompaniment Key(s), the Auto Accompaniment will start automatically.

Step 4: Stop Auto Accompaniment.
When you want to Stop the Auto Accompaniment, press the SYNCHRO START/ENDING button, or the START/STOP button.
When you press the SYNCHRO START/ENDING button the Auto Accompaniment will finish in the Ending pattern.

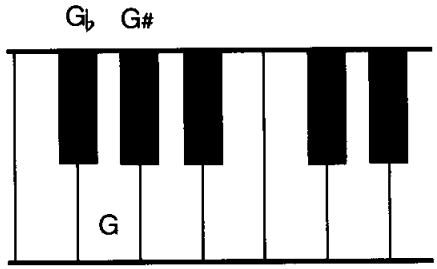
< Single Finger Chording >

The following diagram shows the relationship between the Chord Names, and Keys to press in the Auto Accompaniment section on the keyboard.



< How to play Chords named with a Sharp or Flat >

When the Chord Name has a Sharp, press the black Key to the right of the Chord Name Key. When the Chord Name has a Flat, press the black Key to the left of the Chord Name Key.



< How to play 7th or Minor Chords >

When the Chord Name consists of a Single Capital letter (C, D, etc.), this is a Major Chord. But the Chord progression of most songs also often use other Chords such as 7th chords (G7, E7, etc.) or Minor Chords (Cm, Am, etc.). For these types of Chords, press 2 or 3 Keys simultaneously as shown below:

Major Chord: Press the Root key.

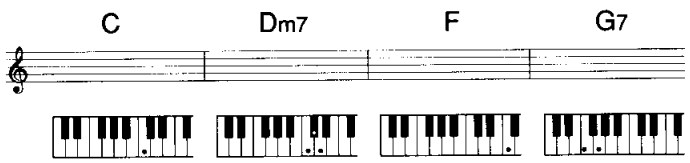
Minor Chord: Press both Root key and any black key on the left of the Root key simultaneously. (with 2 fingers)

7th Chord: Press both Root key and any white key on the left of the Root key simultaneously. (with 2 fingers)

Minor 7th Chord: Press both Root key and any black and white keys on the left of the Root key simultaneously. (with 3 fingers)

* For further reference consult the Table on page 20.

< Example > The following diagram shows an example of playing using the SINGLE FINGER mode:

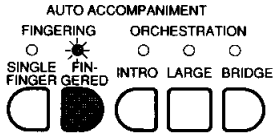


d. Fingered Mode

This Fingering method allows you to have Auto Accompaniment by playing Chords in the usual manner. It is well suited for the individual who is accustomed to playing Chords, and also for those songs containing Chords which are not possible to play using the SINGLE FINGER mode.

Step 1: Select a Rhythm Style.

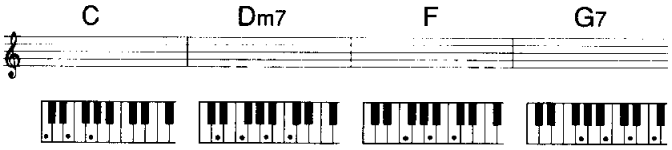
Step 2: Press the FINGERED button.
When you press the FINGERED button, the corresponding LED will light up, and FINGERED mode has been assigned. At this time, the PSS-595 will automatically be in the SYNCHRO START Stand By position.



Step 3: Press the Auto Accompaniment keys.
When you press the Auto Accompaniment keys which are detectable as a Chord, the Chords will change accordingly.

Step 4: Stop Auto Accompaniment.
When you want to Stop the Auto Accompaniment, press the SYNCHRO START/ENDING button, or the START/STOP button.
When you press the SYNCHRO START/ENDING button, the Auto Accompaniment will finish in the Ending pattern.

< Example > The following diagram shows an example of playing using the FINGERED mode:

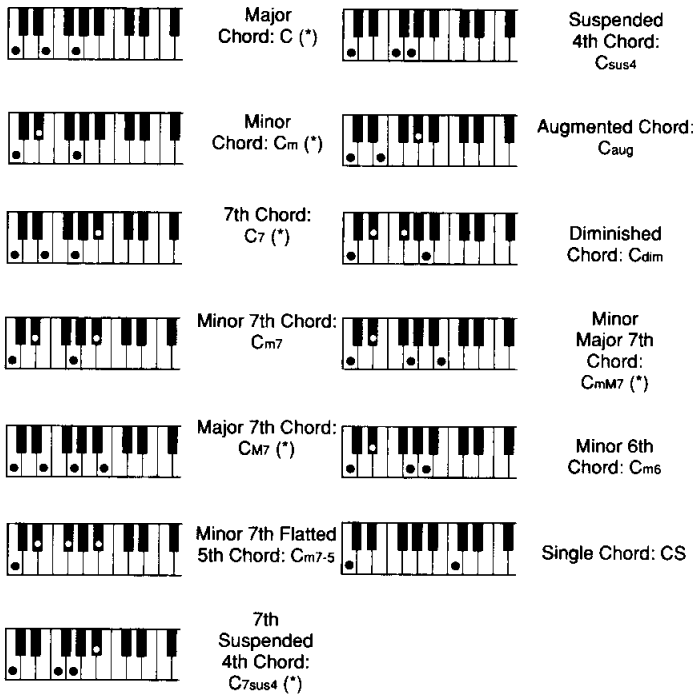


e. Detectable Chords

Types of Chords for Auto Acccompaniment detectable in the SINGLE FINGER/FINGERED modes are listed below:

Detected as a Chord if the Braketted note is not played:

ex. Detectable Chords on the Root "C"



* Specified Chords (marked with a star) are detected when you play its inversions. A Diminished or Augmented Chord will be detected with the lowest note you play taken as its Root.

* Minor 7th Flatted 5th Chords and Minor 6th Chords are similar in the intervals of Chord tones (ex. Bm7-5 and Dm6 includes the same notes.). So only when the lowest note played can be taken as the Root of a Minor 6th Chord, it will be detected as a Minor 6th Chord. Otherwise, it will be detected as a Minor 7th Flatted 5th Chord.

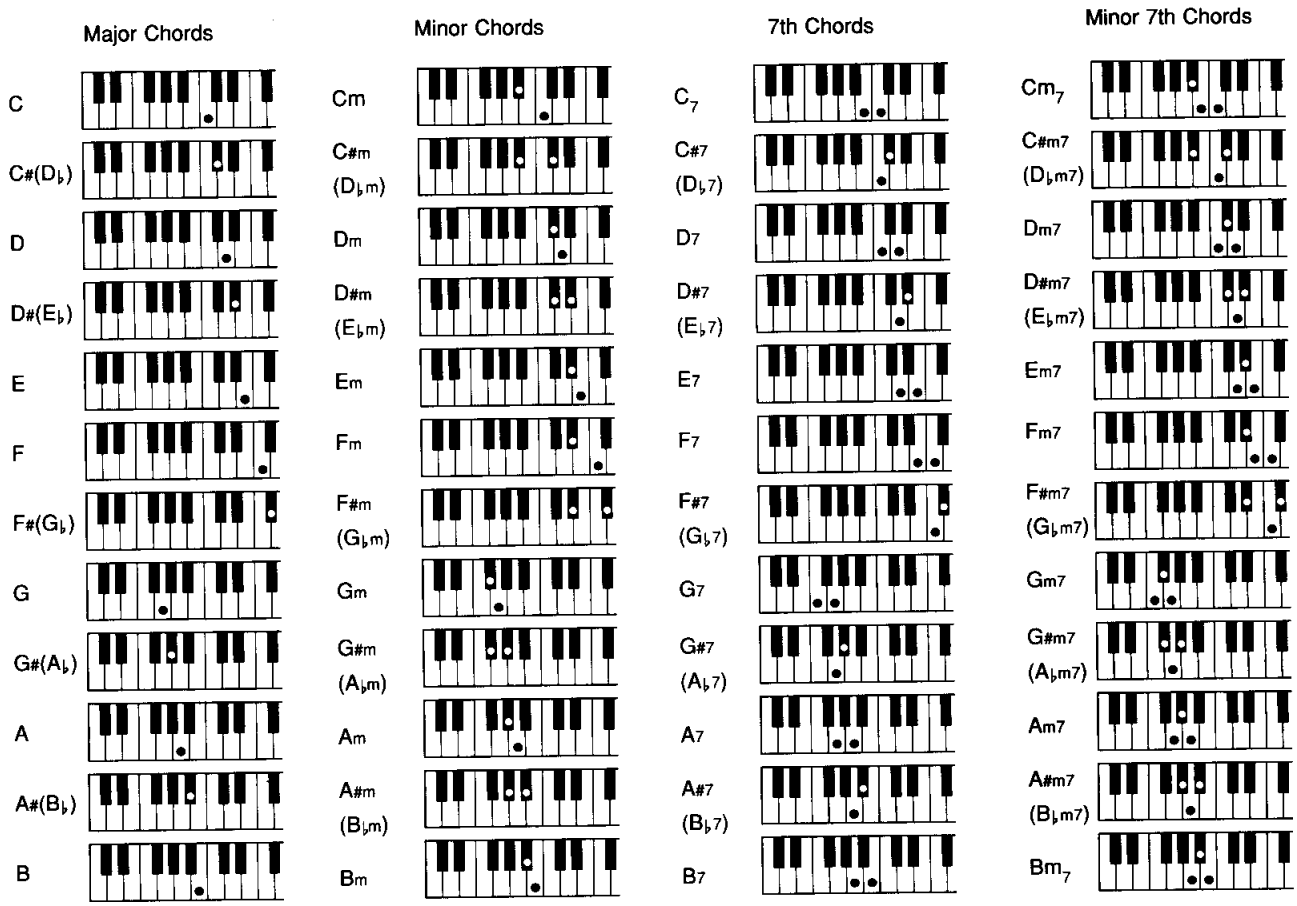
<< Reference #3 >>

>> Why don't you try using many different techniques such as switching LARGE on/off or NORMAL/BRIDGE, to vary the arrangments of your songs.

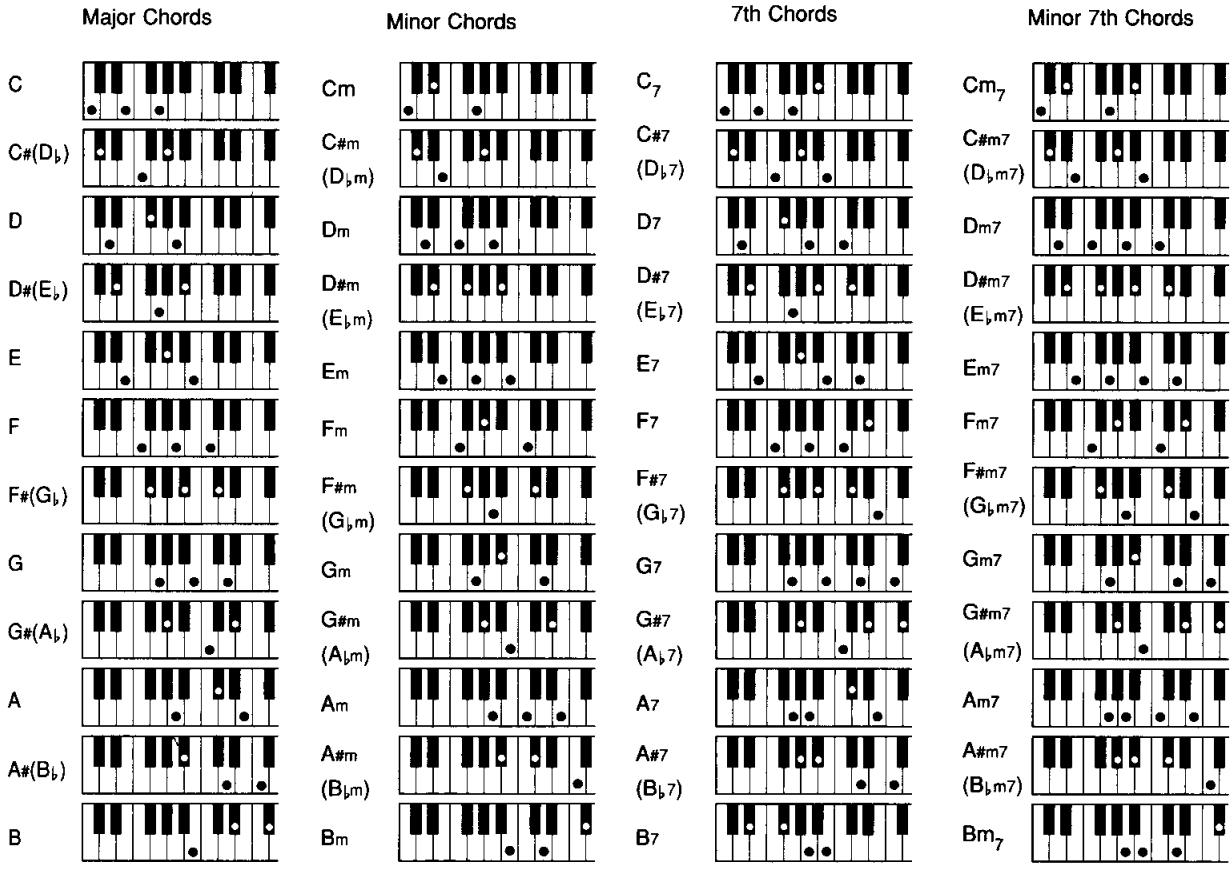
>> When you insert a Fill-in using the FILL TO NORMAL or FILL TO BRIDGE buttons, the arranging of the accompaniment will automatically change to fit the Fill-in itself. So keep in mind how those changes occur, and use them to add flavor to your performances.

>> To use the Harmony Effect without Auto Accompaniment, simply press the SYNCRO START/ENDING button to cancel it. You still have the Harmonized tones in accord with the Chord Progression.

CHORD TABLE #1 - Single Fingered Chords

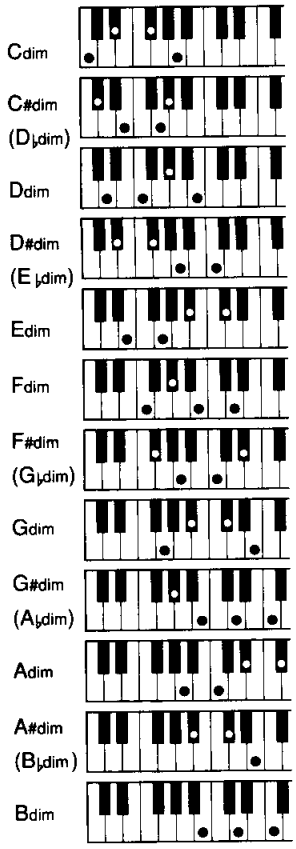


CHORD TABLE#2 - Fingered Chords

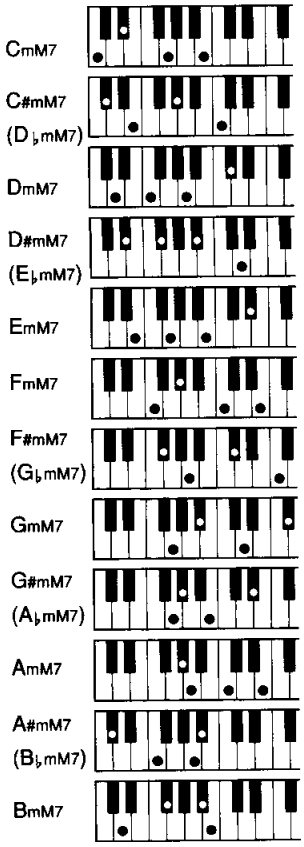


CHORD TABLE#3 - Fingered Chords

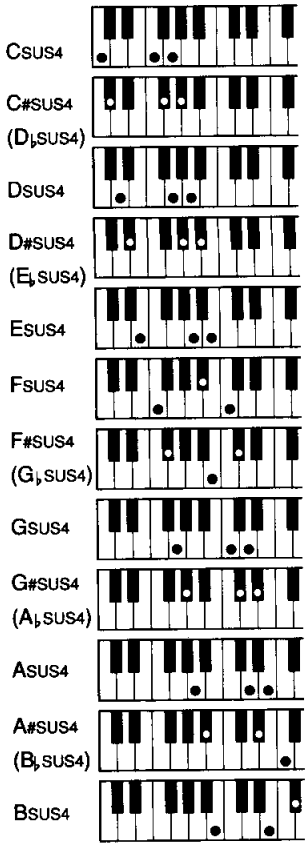
Diminished Chords



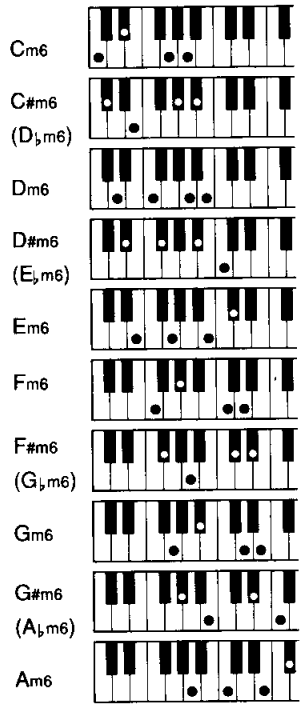
Minor Major 7th Chords



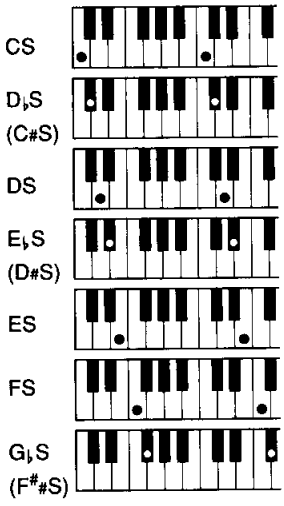
Suspended 4th Chords



Minor 6th Chords



Single Chords

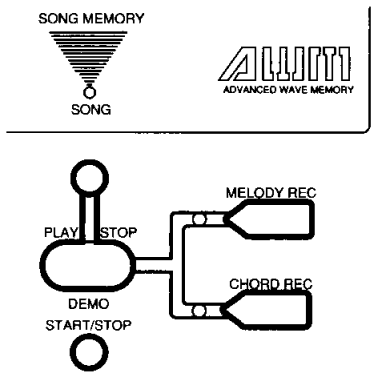


Song Memory Section

Song Memory function enables you to easily record and playback your performance on the keyboard. It has 2 individual tracks for Melody and Auto Accompaniment for 1 song. It would be so helpful when you make a practice or write an original song of yours.

a. 2 Recording Tracks

The PSS-595 has 2 recording tracks. The following chart shows what is recorded on each track:



TRACK	WHAT CAN BE RECORDED
MELODY	Melodies played by using the 100 Pre-set sounds. * Voice numbers and the timing of changes of them. * Assigned value of Voice Effects and Harmony On/Off.
CHORD	Auto Accompaniment sounds, and Rhythm Style sounds. * Chords and the timing of Chord change. * Assigning of ORCHESTRATION, and the timing of changes of the ORCHESTRATION. * Timing of FILL-INs or ENDING. * RHYTHM STYLE number and the timing of changes of Rhythm Styles. * Tempos (*)

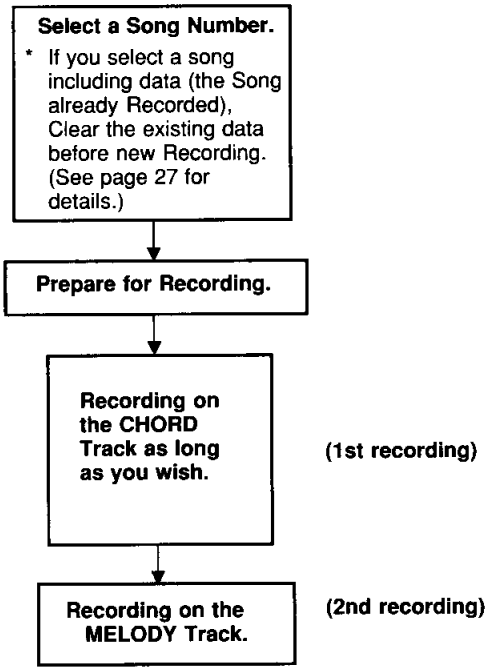
* MELODY means:
  (1) your performance using the keys higher than F#2 when recording on both the MELODY and CHORD Tracks.
  (2) your performance using whole keyboard when recording only on the MELODY Track.

* On CHORD Track, your performance using Auto Accompaniment keys (lower than G2).

***Note:** (*)Tempo Recording is available on the CHORD Track. This procedure is not explained especially in the Instructions on the following pages. When you Re-recorded the Tempo, you have to Retake all the performance for CHORD Track, from the 1st Bar of the Song. Remember, in this case, the performance you have Recorded will be overwritten and lost.*

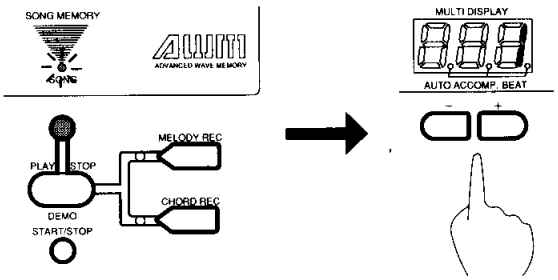
b. Basic Recording Procedure

When you use the PSS-595's many different functions, they will give you a variety of recordings. First, we will explain the basic procedure simply.



c. How to Record a Song

Step 1: Select a Song number (#).
The PSS-595 has a Memory Bank for up to 3 songs (Song numbers <1> thru <3>). First, choose the Song number which you want to Record on by pressing the buttons located under the MULTI DISPLAY. The Display will show the number selected.



Select a Song number by pressing the Song Number Select buttons.

Step 2: Prepare for Recording.
You will need some preparation depending on which Track you record on.
So, please consider the following information regarding preparation of Recording:

1) Preparation when you select the MELODY Track:

Choose a Voice by consulting the Voice List located on the Control Panel, and assign the Voice Effects desired.

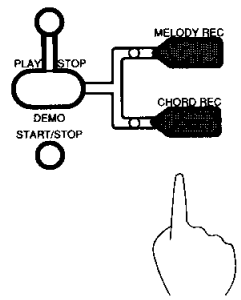
* You can change the assignments of Voice number or Voice Effects just before or during recording.

2) Preparation when you select the CHORD Track:

Select a Rhythm Style, and assign the Orchestation. At the time you select to Record on the CHORD Track, the Fingering will automatically be assigned to the FINGERED mode if the Fingering has not been selected yet. If you want SINGLE FINGER mode you must assign it at that time. If you want to record just the Rhythm, press the Fingering button assigned to turn it off.

* You can change the assignments of Rythm Style, Orchestration, or Fingering just before or during recording.
* In the CHORD Track, be careful to remember only Auto Accompaniment Sounds, and Rhythm Style sounds will be recorded.

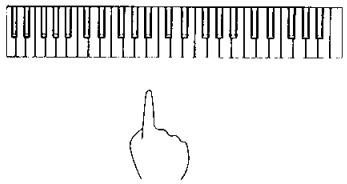
Step 3: Stand By for Recording.
As you press the REC button(s), the LED(s) of the selected Track(s) will flash indicating you are ready to Record (Stand By for Recording). Also at this time, 3 dots in the MULTI DISPLAY will flash together in time with the currently assigned Tempo. Along with the dots flashing, a metronome sound will play out from the speakers.



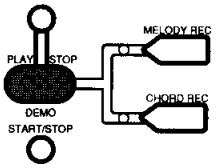
Press a REC button.

If you want to cancel, press the REC button of the Track in the Stand By position again.

Step 4: Start Recording.
You can start Recording in the currently selected Tempo by pressing any key of the keyboard or pressing the PLAY/STOP button.

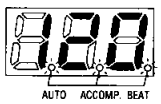


or



During Recording, the 3 dots in the MULTI DISPLAY will show the beats of the measure in tempo, same as when in the Rhythm playing. When you record on the MELODY Track, metronome sound will play out from the speakers with an accent on the first beat of each bar, and the LED of the Selected Track will continue to flash. When you record on the CHORD Track, however, the metronome sound will not play out because the Rhythm patterns will be a guide for you. (Also when in Playback the metronome is not played out.)

MULTI DISPLAY

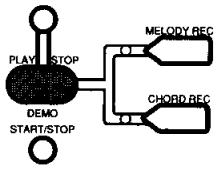


Displays the Beat.

Step 5: Stop Recording.
You can stop Recording by pressing the PLAY/STOP button once again. When you're Recording on the CHORD Track, you can finish the Recording with an Ending pattern by pressing the SYNCHRO START/ENDING button of ACCOMPANIMENT CONTROL. After Stopping the Recording, the PSS-595 will be in Stand By position to Playback.

>> Verification of Recording:

When you press the PLAY/STOP button, you can Playback what you have Recorded. You can stop Playback at any time by pressing the PLAY/STOP button once again. For further details see page 26 "d. How to Playback a Song")



>> Continued Recording on Remaining Track:

If you want to Record on the other Track listening to the Playback first Recorded, repeat Steps 2 thru 5 to Record on the Track. Playback of the recorded Track will automatically start together when you start the New Recording.

* DURING the New Recording, if you don't want to hear a Track first Recorded, turn OFF that Track's LED by pressing the corresponding REC button. Remember this operation should be done AFTER the New Recording has begun. If you press the REC button of a Track first Recorded BEFORE you start the New Recording, this will be a Re-Recording operation on the FIRST Track. During the New Recording, you can Playback the first Track by pressing its REC button with the LED lit up, or vice versa.

Note: *The length of the Song is determened by the length of the CHORD Track. So, when you make a New Recording on the MELODY Track, the song will automatically stop after the last measure of the CHORD Track previously Recorded (even if the CHORD Track is not played back during the New Recording).*

>> Simultaneous Recording on Both MELODY and CHORD Tracks:

When you record the melody and accompaniment at a time, as explained in Step 3, set both MELODY and CHORD Tracks in the STAND BY position by pressing both REC buttons. Then follow Steps 4 and 5 as normally. At this time, play Auto Accompaniment keys (lower than G2) by the left hand, and melodies should be played with higher keys than F#2.

>> Re-recording Methods:

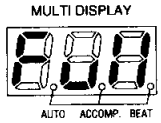
In case you have mistaken and Re-record it, just repeat Steps 2 thru 5 as many times you wish. Every time you Re-record, an old performance will be overwritten by a newly recorded one. Why don't you take the best one?

>> When you want to record another Song,

choose another Song number as explained in Step 1, and then continue Recording following Steps 2 thru 5.

* Once you start the song to Record or Playback, you cannot set the other Track in RECORD position during the song running.

* During Recording, if the capacity of Song Memory has been reached, the following indication will be shown for a second and the Recording will automatically stop.



In case this indication is shown while Recording on the MELODY Track, even if you try a Re-recording on the MELODY Track by pressing the keys, you cannot start it right away. Also, when Playback, you will hear the beginning part of the Song incorrectly. When you Record on the MELODY Track after <Ch Full> indication, first make a dummy Recording or Clear the Song (for Clearing see page 27). Then start Re-recording.

* The contents of SONG MEMORY will be Stored even after you turn OFF the POWER, if you have batteries installed.

CAUTION!!

Pay special attention when handling the Song Memory.

The Song Memory data (= Songs you have Recorded) are so delicate that will be easily destroyed by the electrical shock. Actually, the data will be lost partially. Remember this will definitely take place in the following situations:

The Song Memory data will be lost partially when the PSS-595 is turned Off intentionally or accidentally, that is, by using the POWER switch, or with batteries' voltage lowered or the authorized AC adaptor disconnected;

- **During Recording or Playback**

d. How to Playback a Song

Step 1: Select a Song number.

First, choose the Song number which you want to Playback by pressing the <+/–> buttons as explained in the Recording procedure.

* When you listen to the Playback of a Song you have just recorded, this operation can be skipped.

Step 2: Start Playback.

When you press the PLAY/STOP button, the Recorded performance will be Played Back. You can determine which Track to Playback or not by pressing the corresponding REC button (LED indication: available; ON, inavailable; OFF) during Playback. If you turn OFF the LED of either Track, the Playback will stop immediately.

Step 3: Stop Playback.

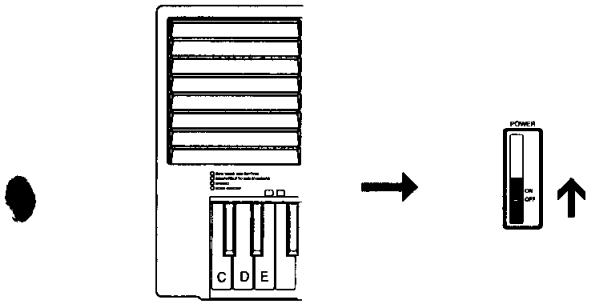
When you reach the end of the Song, Playback will Stop automatically. Also, you can Stop the Playback at any time, by pressing the PLAY/STOP button.

e. Clear Function

The Clear function enables you to Clear a whole Song at a time.

Step 1: Turn the PSS-595 OFF.

Step 2: Press one of the 3 keys; C1, D1 and E1 in the lowest Octave, and hold it down. These keys each correspond to the Song number 1 to 3:



C1: Song number 1
D1: Song number 2
E1: Song number 3

When you wish to Clear the Song number 2, just press D1 key and hold it down.

Step 3: Next turn the PSS-595 ON while holding the key.

Step 4: Release the key when you hear a Voice.
Try a Song selection with the SONG Number button and <+/–> buttons under the MULTI DISPLAY and make a Playback. If it has done well (with No sounds Played back), o the Song making as you wish.

For the rest Songs, if you like, repeat Steps 1 to 4.

<< Reference #4 >>

>> Using Song Memory for Minus One Settings:

You can use Song Memory as Backing for Vocals, or Instrumental Solos, for Practice or Live Performances.

< Example >

Step 1: First, you Record the Rhythm Style and Chord Progression using Auto Accompaniment, onto the CHORD Track. Of course, remember to make the most of the Intro and Ending available.

Step 2: Next, in order to contrast and enrich the preset Rhythm, you Record your original Fill-Ins or "live" Rhythm variations manually played with the Voice number 76 PERCUSSION, onto the MELODY Track. Or, add obbligatos or phrases you wish with other Voices.

Step 3: Stop Recording. Then give a realtime solo in another Voice while Playing back the accompaniment just Recorded.

>> Using Song Memory for Compostion or Arranging:

You can log your Melodic and Harmonic ideas into the Song Memory.

Note: *You can also do the Recording from an external MIDI keyboard. See page 35 for detailed information about this.*

MIDI Section

The PSS-595 is a digital Keyboard operating with MIDI Standard. If you know about MIDI, you will come to know more about the workings and applications of the PSS-595. Now, we will gradually venture into the world of MIDI.

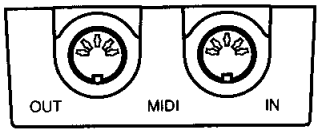
a. What is MIDI?

MIDI is an abbreviation for: Musical Instrument Digital Interface, which transmits and receives information about the music being played between MIDI-equipped electronic instruments/devices (such as personal computers). Since the concept of this World Standard has been adopted, it has allowed the interaction of many kinds of electronic equipment throughout the world. It may sound overwhelming but it really will be worth learning about MIDI. For example, you can connect different brands of MIDI-equipped instruments, the melodies played on an instrument could be played out on another instrument, or if you connect even more instruments, it's easy to broaden your capabilties and coordinate many sounds which together could sound as big as an Orchestra with you as the conductor! Let's take a look into how the electronic instruments can be connected by using MIDI.

b. MIDI Terminals and MIDI Cables

MIDI instruments/devices always have MIDI Terminal hook-ups. If you view the rear panel of the PSS-595, you will see the MIDI Terminals fitted there as shown below. Starting from the right, they are: MIDI IN and MIDI OUT.

* Depending on the type of machine or instrument, the order of the Terminals may vary.

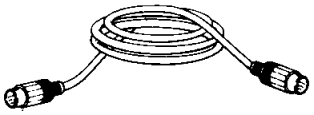


Each Terminal's role is as follows:

MIDI IN Terminal: This is the gateway which Receives MIDI information from other MIDI instruments/devices.

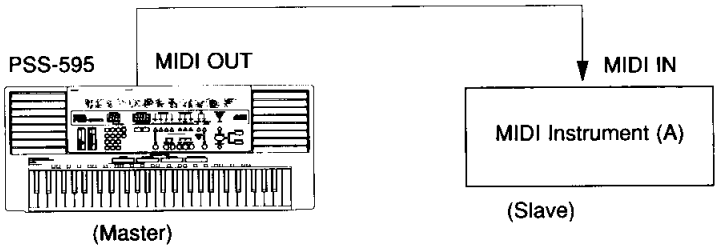
MIDI OUT Terminal: This is the gateway which Transmits MIDI information generated by the PSS-595.

When you connect those MIDI Terminals, use MIDI Cables which are shown below:

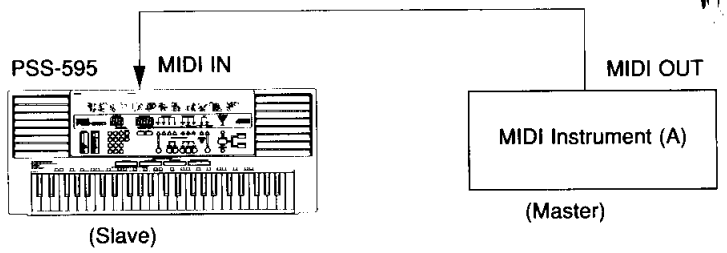


c. MIDI Connections

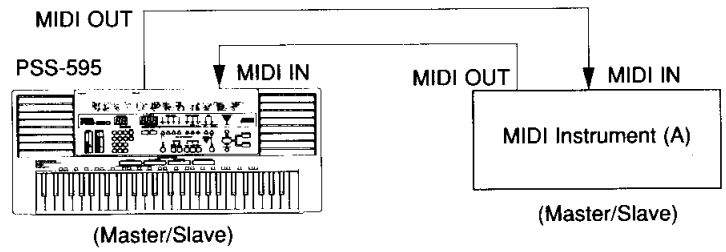
Now, let's connect the MIDI OUT Terminal which is an Exit of MIDI information, and the MIDI IN Terminal which is an Entrance of the information, using one MIDI cable. In this case of the connection illustrated, performance information from the PSS-595 will be sent out to MIDI instrument (A). In other words, you can say this is a situation where the PSS-595 controls (commands) the MIDI musical Instrument (A). Therefore, in this case the instrument that gives the command (PSS-595) is called the **"Master"**, and the instrument that obeys the commands is called the **"Slave"** (Musical Instrument (A)). This is an important idea to remember when dealing with connecting MIDI Instruments.



Oppositely, in the following case, MIDI instrument (A) will be the Master and the PortaSound will be the Slave.



Additionally, If you make a couple of MIDI OUT-to-MIDI IN connection as shown below, you can use either of the instruments for Master and Slave at the same time.



d. Types of MIDI Information

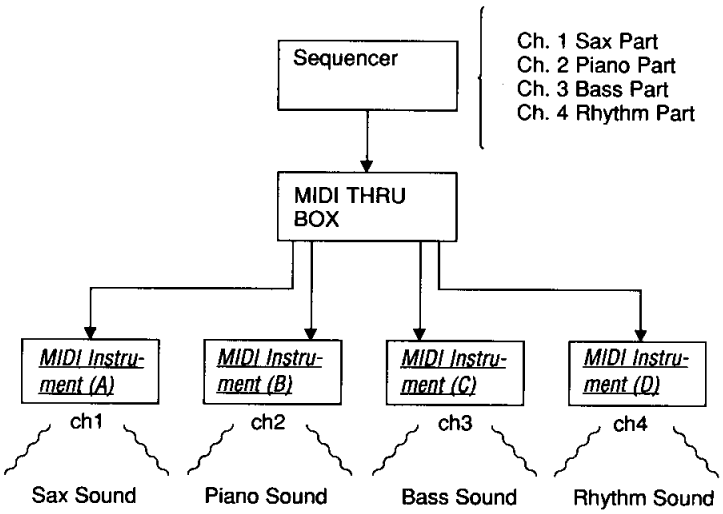
MIDI Information includes various kinds of messages (commands). You should learn some basic ones among them, which all are transmitted or received on the PortaSound.

Even when you press a key with one finger, information like **Note number** (which key), **Note on/off** (when pressed/released), and **Velocity** (how fastly and strongly played) will be transmitted. Not only these, but **Program Change** (for Voice selection) and **Control Change** (for Voice Effects) can also be transmitted. These kinds of information are called "**Channel Messages**". In order for these types of information to be communicated, you must select the same **MIDI Channel number** (from 1 to 16) on both the Transmitter (Master) and Receivers (Slaves) among the MIDI-connected instruments. There is another kind of information called "**System Messages**", which you need when you have a rhythm machine or sequencer synchronized to play together.

Any MIDI information is rapidly transmitted/received in digital signals comprised of just two numerals 0 and 1.

e. Matching MIDI Channels

MIDI instruments/devices can transmit or receive information only when you select the same MIDI Channel on both Transmitter and Receiver, this is a basic rule to remember. For example consider how T.V. channels work; when you want to see a movie, you must select a certain Channel which is broadcasting the movie. In basically the same way, one MIDI cable can carry different kinds of MIDI performance information on 16 MIDI Channels. When the Receiver is set to the same MIDI Channel of the information as on the Transmitter, you can have it play as the received information. The following example shows a sequencer transmitting MIDI performance information for several parts on corresponding MIDI Channels. Each Receiver's MIDI Channel has been prepared so as to receive the specified performance information and independently plays out with a different sound and melody.

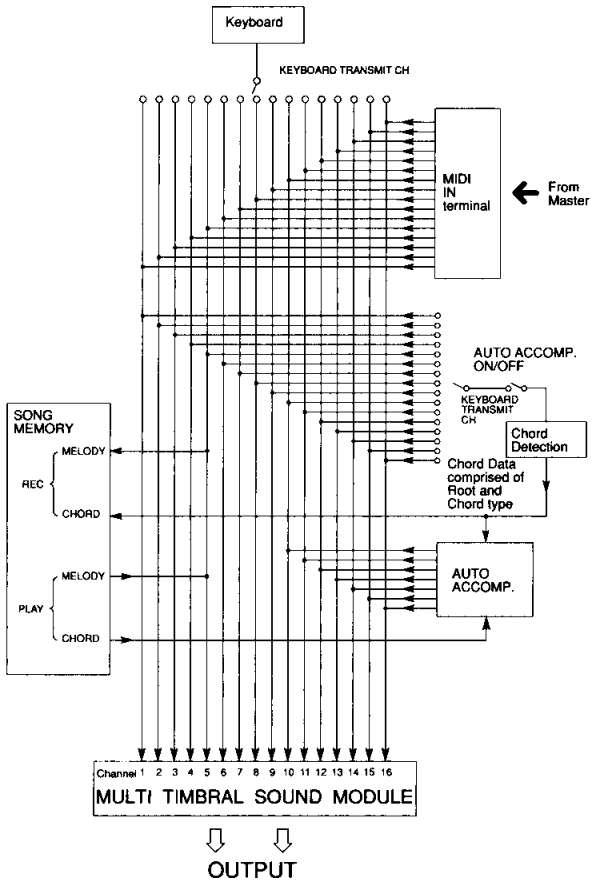


* "MIDI THRU BOX" is a device used to distribute the same MIDI data as input to its MIDI IN Terminal so that the Master can send the data to multiple Slaves simultaneously.

Note: *If a certain MIDI instrument can receive MIDI performance information on Multiple Channels and play out several parts' sounds at a time, this MIDI instrument has Multi-Timbre mode. And so the PSS-595 does.*

f. What is Multi-Timbre?

Here we will give the little explanation about the Multi-Timbre. As the illustration on the previous page "e. Matching MIDI Channels", if you have a Master device which can control multiple Slave instruments on respective Channels (ex. Sequencer) and several Slave instruments, you will have them make an automatic ensemble and will be a MIDI beneficiary. However, imagine if you wish to reproduce a philharmonic orchestration, besides a solo, combo, or quartet.... Simply talking, it will be required as many Slave instruments as the parts or members in the orchestra. This is no easy way of musical enjoyment. Generally, Multi-Timbre is an easy and economical way to carry out multiple MIDI performances simultaneously. In this case, a single Multi-Timbral Sound module will accept the MIDI messages on multiple Channels and reproduce the multiple performances. The Sound Module of your PortaSound is provided with this function. The following diagram will help you understand the Multi-Timbre:



As shown in the above diagram, the PortaSound has 16 Channel Buses toward its Sound Module, and they correspond to MIDI Channels 1 to 16 respectively (16 vertical arrows in the center of the diagram).
Built-in controllers such as Keyboard, Song Memory, and Auto Accompaniment are designed to drive the Sound Module with their respective MIDI Informations and functions. MIDI IN Terminal is a gateway of MIDI Information from an external Master controller. These are illustrated by 4 arrow groups toward Channel Buses. That is, you can play with a single Voice on the whole Keyboard (drive the Sound Module to sound a single Voice) on a KEYBOARD TRANSMIT CHannel(*1) selected (See page 31 for details.). If you activate the Auto Accompaniment, the whole Keyboard will be split into two sections (C1-F#2: for accompaniment, G2-C5: for melody) and Auto Accompanimet will drive the Sound Module to sound several Voices on Channel 10 to 16. Song Memory(*2) is a little complex as it functions in combination with other controllers, but finally it will drive the Sound Module fully on Channel 1 to 16. And, you can drive the Sound Module also from an external Master controller via MIDI IN Terminal. In this case, you can drive the Sound Module by the MIDI Information on the Channel(s) specified in RECEIVE CHannel selection (See right for details.).

(*1) KEYBOARD TRANSMIT CHannel will be selected by a couple of link switches as shown in the diagram.

(*2) Song Memory is a little complex as it functions in combination with other controllers. That is, for example, in case of recording on the MELODY Track, KEYBOARD TRANSMIT CHannel will be automatically switched to the corresponding Channel to the Track (Channel 5). Or, in case of recording on CHORD Track, the Fingering will be automatically selected (initially FINGERED) and switched to Transmit Channel 10 to 16 (dedicated to Auto Accompaniment).

* Multi-Timbre on the PortaSound will be performed with Dynamic Voice Allocaiton. (See page 32 for details.)

* When recording on the MELODY Track by the keyboard, KEYBOARD TRANSMIT Channel will be automatically switched to channel 5.

g. How to Operate MIDI Functions on PSS-595

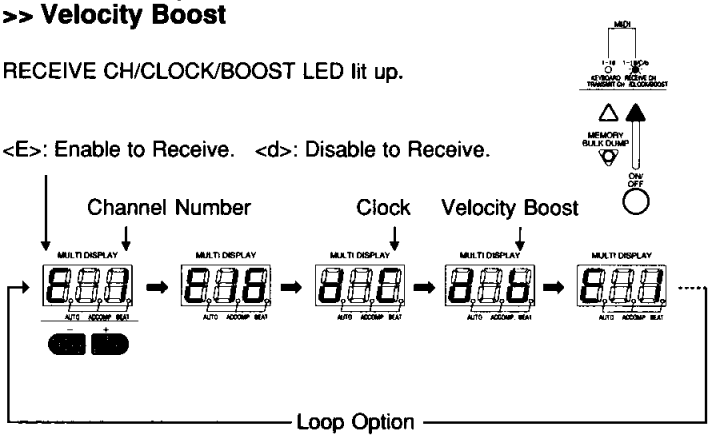
a) Receive Channel Selection

When you press the RECEIVE CH/CLOCK/BOOST button in MIDI select, the corresponding LED will light up, the MULTI DISPLAY will initially indicate <E 1>, and you can select the following option for reception of MIDI Information by Increment/Decrement buttons under the MULTI DISPLAY:

>> Channel message reception by each individual Channel
>> Clock reception
>> Velocity Boost

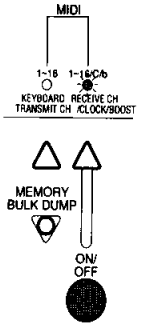
RECEIVE CH/CLOCK/BOOST LED lit up.

<E>: Enable to Receive. <d>: Disable to Receive.



>> Channel message reception by each individual Channel
Initial Setting: Enable/Channel 1-16 <E 1> to <E16>

This option is useful when you use the PortaSound as a Slave Sound Module. Each of <E 1> to <E16> indication means <Enable/Channel Number>. In this "Enable" position, the PortaSound can receive Channel messages (: Note On, Program Change, Control Change, etc.) including that Channel number via its MIDI IN Terminal, so that you can control the PortaSound's Sound Module from an external Master.
However if you don't wish the PortaSound to receive the messages on a certain Channel, you can put the Channel in "Disable" position. First select the <Enable/Channel Number> indication and then press the ON/OFF button under the RECEIVE CH/CLOCK/BOOST button. At this time, the indication will be changed to <disable/Channel Number> such as <d 1>, <d 2>, etc. Oppositely, "Disable" can be changed to "Enable" also pressing the ON/OFF button.



>> Clock reception
Initial Setting: disable/Clock <d c>

The Clock is generally called "MIDI Clock" and you can specify by this option, whether the PortaSound can receive external MIDI Clock or not.
As with Channel message reception, select Clock reception initially shown as <d c> (disable/Clock) and switch to "enable" position by the ON/OFF button to receive external MIDI Clock. The <d c> indication will be changed to <E c> (Enable/Clock).
Normally, the PortaSound runs by its internal clock. However if it is in <Enable/Clock> position and connected to a Master which generates MIDI Clock, the PortaSound will synchronize and run with the Master. Additionally, the PortaSound can transmit and receive Start/Stop messages, so if a Master generates Start/Stop messages, you can control even start/stop of the accompaniment from the Master.

* With <E c> selected, while the PortaSound will synchronize and run with the Master, the MULTI DISPLAY will show an external Tempo. At this time, it would seem to be disordered because the microcomputer of the PortaSound calculate external MIDI Clock in realtime. This is no problem.

>> Velocity Boost
Initial Setting: disable/Boost <d b>

Normally the Keyboard on the PortaSound controls the internal Sound Module by Note On message including Velocity data maximally fixed (for your manual play). However, when you control the Sound Module from an external Master Keyboard which generates variable Velocity data, you may be compelled to do the key hitting or beating not pressing in order to well balance your melody with the accompaniment.
In this case, this option will be useful. First select Velocity Boost initially shown as <d b> (disable/Boost). Then activate the Booster by the ON/OFF button, and the <d b> indication will be changed to <E b> (Enable/Boost). After this operation you can play more comfortably from the Master Keyboard. If you don't need it, turn off the Booster by the ON/OFF button to change to the <d b> indication.

* When you activate the Booster, volume of Auto Accompaniment will be turned down (lower than its normal volume by 3dB).

* The initial pre-set settings for the Receive Channel mode are: Each Receive Channel;Enable, MIDI Clock;Disable, velocity Boost;Disable.

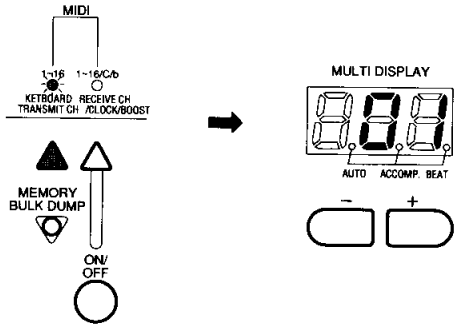
b) Transmit Channel Selection

When you press the KEYBOARD TRANSMIT CH button of the MIDI select, the corresponding LED will light up, and you can assign the Transmit Channel for manual play on the keyboard and Voice selection for each individual Channel.
Additionally, to press the MEMORY BULK DUMP button consecutively, you can make a Data Transfer of the System Exclusive Message of the PortaSound.

>> Transmit Channel

When you press the KEYBOARD TRANSMIT CH button, the value shown in the MULTI DISPLAY is the current MIDI Transmit Channel for manual play on the Keyboard. If you want to change the value, press the <+/–> buttons to select the Channel you wish to Transmit on, however, only one Transmit Channel can be assigned at a time.

KEYBOARD TRANSMIT CH LED lit up.

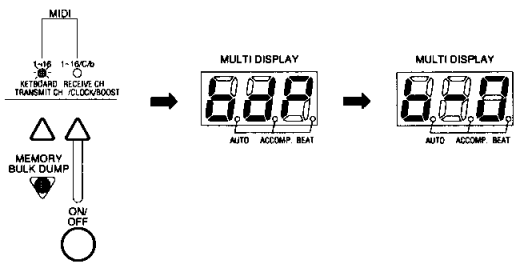


>> Voice selection for each individual Channel

After setting the Transmit Channel, make a normal Voice selection. That is all for setting a Voice selection for a single Channel. Repeat the same procedure for all Channels. See page 35 for the situation to actually do this. Additionally, initial settings when the PortaSound is turned on: Ch.1-15; Voice number 00, Ch.16; Voice number 76.

>> Memory Bulk Dump

Memory Bulk Dump function allows you to Transfer out and save the Song Memory data as a MIDI System Exclusive Message. (See page 34 for details.)
As you press the MEMORY BULK DUMP button once, with the KEYBOARD TRANSMIT CH LED lit, the PortaSound will now be in the Bulk Dump mode. At this point the MULTI DISPLAY will show <b d P>, and All other functions will automatically Stop. This means that the PortaSound is ready Data Transfer (Stand By to Bulk Dump). When you press the MEMORY BULK DUMP button once again, the Display will show <0>, while the Bulk Dump is being executed. After finishing the Bulk Dump process, the Display will automatically returns to the current Tempo indication.



* In case you wish to try a Data Transfer to another PSS-595, just make a typical MIDI connection between the Transmitter PSS-595 and the Receiver PSS-595. Then you press the MEMORY BULK DUMP button on the Transmitter, the MULTI DISPLAY on the Receiver will also indicate <b-0>. When the Bulk Dump process is successfully completed, the Receiver's MULTI DISPLAY will also return to the Receiver's current Tempo indication.
In case you try a Data Transfer to a MIDI-equipped personal computer or Sequencer, normally it should only be set in Recording mode, and operation on the PSS-595 (Transmitter) is the same as explained. However, keep in mind to refer to the Operation Manual of the Receiver in use.

* When the PortaSound stands by to Data Transfer, if you can press any button for Voice Effects or Overall Controls, Data Transfer will be cancelled.

h. Transmitted and Received Data on PSS-595

a) Transmitted Data

<< Note On/Off >>

☞ *Each Transmit Channel is as follows:*

<Manual Play>

Whole Keys: C1-C6
When Auto Accompaniment used: G2 and above.
Channel Assignment: one of 1-16, Initial Value: 1.
☞ *Transmitted by Manual play on the Keyboard.*

Note: *Even if you press a specific key, the PortaSound won't always generate the same Note On message. When you press C3 key in a Voice "BASS", the sound will be reproduced in C1, which is lower than what it should be reproduced (C3) by two octaves. At this time, Note On message will be transmitted as C1. The standard Note number (included in Note On message) is A3=440Hz.*

<Song Memory>

☞ *Transmitted are all the recorded data on the respective Tracks when they are played back. The data consist of: Note On/Off, Program Change (for Voice selection), Control Change (for assignment of Voice Effects' value), and preset assignment change of Auto Accompaniment.*

* <MELODY Track>

☞ *Transmitted on Channels 1-9.*

* <CHORD Track>

☞ *Recorcded data on the CHORD Track consist of:*

<Rhythm Part>

☞ *Transmitted on Channel 16.*

<Bass Part>

☞ *Transmitted on Channel 15.*

<Other Accompaniment Parts>

☞ *Transmitted on Channels 10-14.*

Note: *Asterisk (*) means that the performance information on the Tracks are Transmitted on the specified Channels when they are played back on the PSS-595.*

<< Control Change >>

☞ *The value of Voice Effects (Volume, Sustain, and Reverb) for the Voice will be Transmitted on each Channel.*

<< Program Change >>

☞ *Program Change of each Channel's Voice will be executed according to PortaSound Standard Voice Numbers. See page 37 for correspondence between Program Change numbers and Voices.*

<< System Exclusive >>

☞ *Transmitted by the MEMORY BULK DUMP button.*
See page 41 for details of the Bulk Data Format.

<< Active Sense, Start/Stop, Clock >>

☞ *These Realtime messages are all Transmitted.*
Active Sense will be Transmitted for the Receiver(s) to recognize to be connected to the Transmitter.
Start/Stop will be Transmitted if any Start/Stop operation is executed on the PortaSound.
Clock will be Transmitted for the Receiver to synchronize with the PortaSound.

b) Received Data

<< Note On/Off >>

☞ *Received on each Channel.*
Sound reproduction on the PortaSound is executed by Dynamic Voice Allocation.

On Dynamic Voice Allocation

The PortaSound fuctions as a Multi-Timbral Sound Module. That is, the PortaSound's internal microcomputer accepts Note On/Off and Program Change messages on the respective Channels, with which it drives the Sound Module to reproduce the corresponding Voices independently at the maximum of 28 notes. This is called Dynamic Voice Allocation to save you a bothering manual allocation. The Dynamic Voice Allocation will be performed by Channel Messages (: Note On/Off, Program Change, Control Change and Pitch Bend Change). So, when you use the PortaSound as a Multi-Timbre Sound Module, you need to send the Messages from the Master device. Additionally, the Auto Accompaniment is an application based on the Dynamic Voice Allocation.

<< Pitch Bend Change >>

☞ *Pitch Bend Change can be received on Every Channel. However, the Pitch Bend Range is in common to All Channels as shown below:*

Status	1st Data	2nd Data	Range
EnH	00H	00H	–1 Octave
EnH	00H	40H	Center
EnH	7FH	7FH	+1 Octave

* EnH=Pitch Bend Change status, n=0-F (: Ch.1-16)

<< Control Change >>

☞ *Each Channel Receives the Values of Volume, Sustain, and Reverb for each sound, however the Value of each Effect is as shown below:*

Status	Effects	MIDI Data
BnH	01H	00H-7FH
BnH	07H	00H-7FH
BnH	40H	00H-7FH
BnH	5BH	00H-7FH

* BnH=Control Change status, n=0-F (: Ch.1-16)

* Effects: 01H=Vibrato (Modulation), 07H=Volume, 40H=Sustain, 5BH=Reverb

☞ *The following charts show the correspondence between Voice Effects' value and Received MIDI data.*

Vibrato Step (Modulation)	MIDI Data
0	00H-0FH
1	10H-1FH
2	20H-2FH
3	30H-3FH
4	40H-4FH
5	50H-5FH
6	60H-6FH
7	70H-7FH

* Vibrato (Modulation) won't be applied to all Voices.

Volume Value	MIDI Data	Volume Value	MIDI Data
0	00H-04H	13	45H-49H
1	05H-09H	14	4AH-4EH
2	0AH-0EH	15	4FH-54H
3	0FH-14H	16	55H-59H
4	15H-19H	17	5AH-5EH
5	1AH-1EH	18	5FH-64H
6	1FH-24H	19	65H-69H
7	25H-29H	20	6AH-6EH
8	2AH-2EH	21	6FH-74H
9	2FH-34H	22	75H-79H
10	35H-39H	23	7AH-7FH
11	3AH-3EH	24	7FH
12	3FH-44H		

Sustain Value	MIDI Data
0	00H-3FH
1	40H-7FH

Reverb Value	MIDI Data
0	00H-0FH
1	20H-3FH
2	40H-5FH
3	60H-7FH

* BnH=Control Change status, n=0-F (: Ch.1-16)

* Effects: 07H=Volume, 40H=Sustain, 5BH=Reverb

<< Program Change >>

☞ *Received on all Channels except for Channel 16. Program Change for Channels 1-15 will be executed according to PortaSound Standard Voice Numbers. See page 37 for correspondence between Program Change numbers and Voices.*

<< Active Sense, Start/Stop, Clock >>

☞ *Active Sense will be Received. In case the PortaSound has recognized this message to come in every specified period, if the PortaSound cannot recognize it, all the sound reproduction on the PortaSound will be stopped. This is to prevent ceaseless sound reproduction by disconnection of a MIDI cable.*
Start/Stop can be Received by Auto Accompaniment (with Fingering selected) or Song Memory (with Track(s) selected for Recording). You can select either of them alternatively. If neither Fingering nor Track(s) has been selected, only the Rhythm will be controlled by Start/Stop.
Clock can be Received if it is set in <Enable/Clock> position in Clock reception. When you intend to use the PortaSound as a Slave also utilizing Auto Accompaniment or Song Memory, remember to set Clock in "Enable" position. And, you can synchronize the performance on the PortaSound with the external accompaniment.

* Even if you set the PortaSound in <Enable/Clock> position, it will run by its internal clock unless it recognizes the external Clock to come in. Additionally, the PortaSound in <Enable/Clock> position, won't start running by external Start message unless it recognizes the external Clock to come in. Oppositely, the PortaSound in <Disable/Clock> position, can Receive external Start and Stop messages. At this time, however, the PortaSound runs by its internal clock (does not synchronize with the Master). Furthermore, in case you have been controlled the tempo of the PortaSound in <Enable/Clock> position from the Master, if you switch <Enable/Clock> to <Disable/Clock>, the tempo of the PortaSound is that you have last set from the Master.

<< System Exclusive >>

☞ *Received when the data is Recognized as the Bulk Data (System Exclusive data) for the PSS-595.*
See page 41 for details of the Bulk Data Format.

	Description	Value
1st Byte	System Exclusive status	F0H
2nd Byte	Manufacturer ID	43H (YAMAHA)
3rd Byte	Classification ID	76H
4th Byte	Data Format NO.	08H
Data	(Show below)	
Last Byte	End of Exclusive (EOX)	F7H

* "Classification ID" indicates the following "Data" is for "Portable Keyboard".

* "Data Format NO." indicates the following "Data" is exclusive for the PSS-595.

* System Exclusive "Data" of the PSS-595 are:

  • All the recorded data in Song Memory.

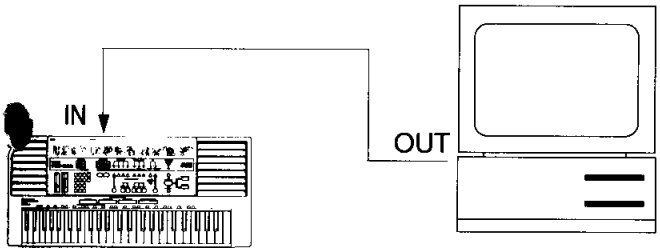
  Data in Song Memory are Song data which consist of: Note On/Off, Program Change (for Voice selection), Control Change (for Voice Effects except Harmony), Pitch Bend Change, Tempo Change.

* End of Exclusive is a MIDI standard message to indicate the System Exclusive Message's end.

i. Advanced Uses of PSS-595 in MIDI Connection

< Example 1> When using with a Personal Computer or Sequencer

The PSS-595 can be used as a Multi-Timbral, 28 note Polyphonic Sound Module when used together with a Personal Computer or Sequencer, and can be a valuable aid in working with music. Also, you can easily Transmit the Recorded data in Song Memory to a Personal Computer or Sequencer in order to store it on a floppy disk or cartridge tape, or modify it into the excellent ones on those machines.



* When you connect with a Personal Computer, You need a MIDI Interface authorized for the computer.

>> Setting of the PSS-595 used as a Sound Module:

After you assign a Voice on each Channel, you can play out MIDI performance data for every part from a Personal Computer or Sequencer.

<< Voice Selection on Each Receive Channel >>

Step 1: First, turn the PSS-595's Receive Channels (1-16) ~~need~~ to <Enable> position. Of course for those ~~annels~~ you do not wish to Receive MIDI information, leave <Disable>.

Step 2: Next, press the KEYBOARD TRANSMIT CH button, and as you select each Channel (Channel Number is being displayed in the MULTI DISPLAY) with <+/–> buttons beneath the Display, and assign a Voice with the VOICE and Number buttons in the STYLE/VOICE Select. Or, if you wish to do each Voice selection from the Master device, simply program it in the sequence data and send the data directly to the PortaSound. Due to the PortaSound's Dynamic Voice Allocation, you can concentrate on the operation of the Master device.

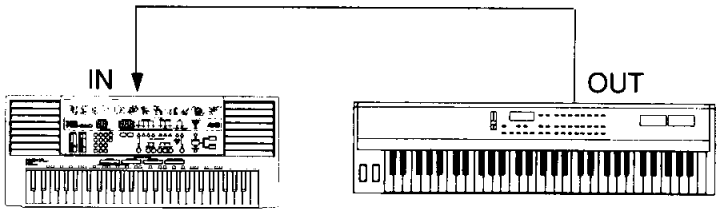
* When the PortaSound is turned on, the Voice number 00 PIANO is automatically selected for the Channels 1-15 and the Voice number 96 PERCUSSIONS for the Channel 16.

>> Data transmitting from the PSS-595:

Transmit the performance data of pre-made Song by using Song Memory to a Personal Computer or Sequencer in Real time. After setting the Personal Computer or Sequencer in Recording mode with its MIDI Clock synchronized to the PSS-595, on the PSS-595 you only Playback the Song to Transmit.

< Example 2> When controlling from an external keyboard

If you connect the PortaSound to an external keyboard with over 49 keys, you can expand the key range for performance. You can also balance your manual performance with the accompaniment by Velocity Booster activation setting the PortaSound in the <Enable/Boost> position.



<< Controlling Auto Accompaniment by External Keyboard >>

Step 1: First select the Fingering (Single Finger or Fingered), and then match the Transmit Channel on the external keyboard with the KEYBOARD TRANSMIT CHannel on the PortaSound. At this point, you can use the keyboard splitting into two key sections for Auto Accompaniment and Melody as on the PortaSound.

Step 2: If the Master can transmit Start/Stop and Clock messages, set the PortaSound in <Enable/Clock> position. And, you can also control the PortaSound from the Master. That is, it enables you to start Auto Accompaniment running at an identical tempo that is set on the Master, and stop it.

Note: *Orchestration assignment, Fingering selection, and Fill-in insertion should be operated manually on the PortaSound. In matching the Transmit Channel on both units, if you set Channel 10 to 16 (dedicated to Auto Accompaniment), your performance and Auto Accompaniment will run against each other. For example, when you select a Voice or Style, the accompaniment reselect another. So don't select Channel 10-16 as Transmit Channel.*

<< Controlling Song Memory by External Keyboard >>

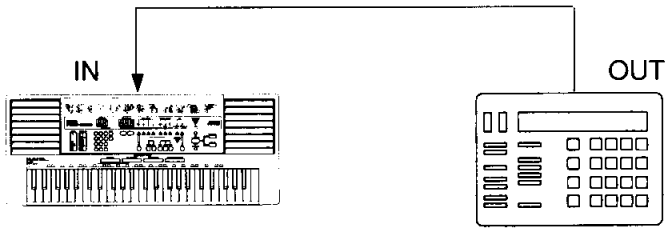
Step 1: First match the Transmit Channel on the external keyboard with the KEYBOARD TRANSMIT CHannel on the PortaSound.
That is all for you to control the Song Memory from an external keyboard. And you can do the recording on the Tracks: MELODY 1 to 5, PAD, and AUTO ACCOMP. For recording onto VECTOR SYNTH Track, you should play the Vector Synthesizer on the PortaSound.

Step 2: For actual recording, you can follow the same steps as explained in "Song Memory Section".

Note: *You can control Voice selection, Voice Effects from the external keyboard. That is, Voice selection will be executed by Program Change message, and Voice Effects' value will be assigned by Control Change message. They could be done by simply transmitting those message to the PortaSound referring to the Correspondence Charts (: on page 37 for Program Change and on page 32 for Control Change). However, as previously explained, in case you set the Transmit Channel on both units to one of 10 to 16 (dedicated to Auto Accompaniment), Voice selection of yours and that of Auto Accompaniment will run against each other.*
Additionally, for controlling Tempo, or Start/Stop of Recording from the external keyboard, follow the same step in "Controlling Auto Accompaniment by External Keyboard".

< Example 3 > When using a Drum Machine or Pad Controller

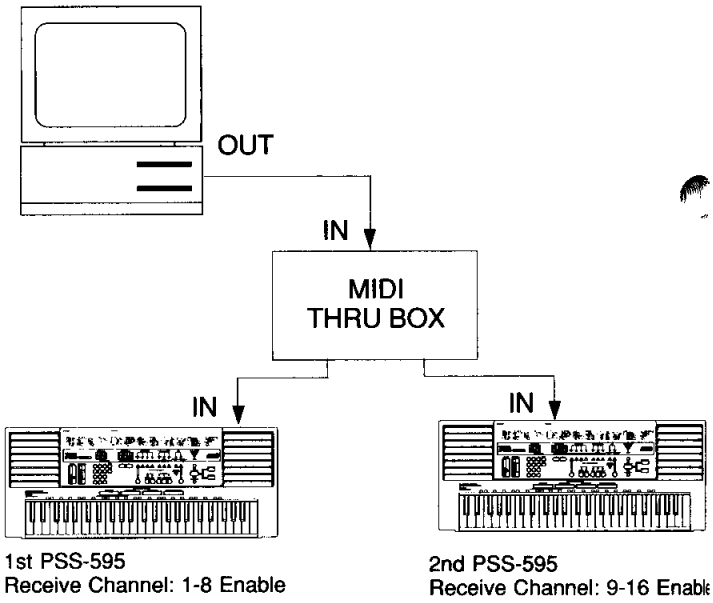
First, you set the Transmit Channel of the Drum Machine to <16>, and set each Transmit Note number same as the one corresponding to the PSS-595's Percussion sound you wish, refering to the correspondence list on page 37. When you play the Drum Machine, the Percussion sounds of PSS-595 will be reproduced by the performance data including Strength and Weakness (according to Velocity data).



Note: *If the Transmit Channel of the Drum Machine is fixed on a specific Channel number and disable to be changed, first **(A)** send MIDI Program Change number 100 (which is corresponding to Voice number 76 PERCUSSIONS) from the Drum Machine (or other Master device), or **(B)** assign the Voice number 76 PERCUSSIONS for the same Channel on the PSS-595 following the methods in "Voice Selection on Each Receive Channel" on page 35. Then set the Transmit Note number on the Drum Machine as already mentioned.*

< Example 4 > When making a Larger Polyphonic ensemble

When you Receive a larger composition data (in case it is required to sound more than 28 notes at a time), you can use a MIDI connection as shown below. For example, you can use two units of PSS-595, and assign the 1st PSS-595 (Receive Channels 1-8/Enable, the rest/Disable) and assign the 2nd PSS-595 (Receive Channnels 9-16/Enable, the rest/Disable). If you use two PSS-595s dividing their Receive Channels like this, you can have them play in 56 Polyphonic Sounds capability.



< Example 5 > When controlling an external Sound Module from PSS-595

If you set the Sound program number of the external Sou Module which matches to a MIDI Program Change Number of PSS-595 beforehand, you can do the external Sound program selections PSS-595. In this case, if you select a similar Sound Program to a PSS-595's Voice and the Sound Module has Multi-Timbre mode, you can also apply Song Memory or Auto Accompaniment function to the Module.

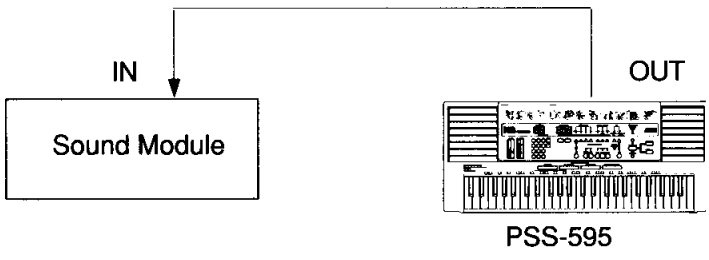


Chart 1: Correspondence between MIDI Note Numbers and Percussion Sounds

Note Name	Instrument Name	MIDI Note Number	Note Name	Instrument Name	MIDI Note Number
C1			C#3		
C#1			D3	HIHAT OPEN	59
D1			D#3		
D#1			E3	HIHAT FOOT	80
E1	BASS DRUM REVERB	36	F3	CRASH CYMBAL	60
F1	BASS DRUM LO	44	F#3		
F#1			G3	SPLASH CYMBAL	61
G1	BASS DRUM HI	45	G#3		
G#1			A3	RIDE CYMBAL EDGE	63
A1	TOM BASS	47	A#3		
A#1			B3	SYNTH TOM BASS	40
B1	TOM LO	48	C4	SYNTH TOM LO	41
C2	TOM MID	50	C#4		
C#2			D4	SYNTH TOM MID	42
D2	TOM HI	53	D#4		
D#2			E4	SYNTH TOM HI	43
E2	SNARE GATED REVERB	81	F4	SYNTH SNARE	38
F2	SNARE LO	52	F#4		
F#2			G4		
G2	SNARE HI	49	G#4		
G#2			A4		
A2	RIM SHOT 2	51	A#4		
A#2			B4		
B2	RIM SHOT 1	48	C5		
C3	HIHAT CLOSED	57	C#5		

Chart 2: Correspondence between MIDI Program Change Numbers and PortaSound Standard Voices

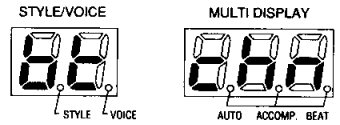
Voice Number	Voice Name	MIDI Program Number	Voice Number	Voice Name	MIDI Program Number	Voice Number	Voice Name	MIDI Program Number
00	PIANO	3	34	MUTE TRUMPET ECHO	106	68	ANGEL	55
01	ELECTRIC PIANO 1	5	35	TROMBONE	16	69	ELECTRIC BASS	38
02	ELECTRIC PIANO 2	54	36	HORN	17	70	SLAP BASS	39
03	HONKY-TONK PIANO	25	37	FLUGELHORN	87	71	FRETLESS BASS	80
04	CELESTA	6	38	BRASS ENSEMBLE	92	72	WOOD BASS 1	14
05	PIPE ORGAN	29	39	CLARINET	19	73	WOOD BASS 2	81
06	REED ORGAN	49	40	FLUTE	20	74	SYNTH BASS	58
07	JAZZ ORGAN 1	1	41	PICCOLO	89	75	TIMPANI	66
08	JAZZ ORGAN 2	2	42	SAX	18	76	PERCUSSIONS	100
09	JAZZ ORGAN 3	27	43	WOODWIND ENSEMBLE	93	77	HARMONICA	22
10	TREMOLO ORGAN	28	44	SYNTH BRASS 1	0	78	MUSIC BOX	24
11	ACCORDION	31	45	SYNTH BRASS 2	82	79	ORCHESTRA HIT	90
12	ELECTRIC GUITAR	68	46	SYNTH FLUTE 1	95	80	E. BASS/BRASS ENS.	111
13	TREMOLO GUITAR	69	47	SYNTH FLUTE 2	47	81	E. BASS/CELESTA	126
14	MUTE GUITAR	70	48	SYNTH FLUTE 3	88	82	E. BASS/FANTASY	127
15	E. GUITAR FLANGE	104	49	SYNTH REED 1	45	83	E. BASS/STRINGS	124
16	E. GUITAR ECHO	107	50	SYNTH REED 2	85	84	E. BASS/SYNTH REED	116
17	MUTE GUITAR ECHO	105	51	SYNTH REED 3	13	85	W. BASS/12STRING GUITAR	123
18	JAZZ GUITAR	12	52	SYNTH REED 4	23	86	W. BASS/BANJO	112
19	JAZZ GUITAR ECHO	71	53	SYNTH STRINGS 1	51	87	W. BASS/E. PIANO	109
20	FOLK GUITAR	36	54	SYNTH STRINGS 2	101	88	W. BASS/E. ORGAN	114
21	12 STRING GUITAR	72	55	SYNTH STRINGS 3	103	89	W. BASS/MUTE TRUMPET	125
22	STEEL GUITAR	33	56	SYNTH STRINGS 4	56	90	W. BASS/PIANO	108
23	VIOLIN 1	10	57	SYNTH PIANO 1	60	91	W. BASS/SAX	115
24	VIOLIN 2	67	58	SYNTH PIANO 2	102	92	W. BASS/VIBRAPHONE	122
25	CELLO	11	59	SYNTH PIANO 3	9	93	SLAP BASS/BRASS ENS.	110
26	STRINGS 1	41	60	SYNTH PIANO 4	4	94	SLAP BASS/E. GUITAR	113
27	STRINGS 2	50	61	SYNTH PIANO 5	53	95	SLAP BASS/SYNTH PIANO	121
28	BANJO	34	62	SYNTH PIZZICATO	78	96	PIANO/SAX	118
29	VIBRAHONE	7	63	SYNTH MARIMBA	59	97	PIANO/TRUMPET	119
30	GLOCKENSPIEL	32	64	SYNTH CHORUS 1	94	98	STRINGS/CLARINET	120
31	TRUMPET	15	65	SYNTH CHORUS 2	96	99	STRINGS/FLUTE	117
32	MUTE TRUMPET	44	66	SYNTH PAN VOICE	98			
33	TRUMPET ECHO	83	67	FANTASY	64			

Troubleshooting

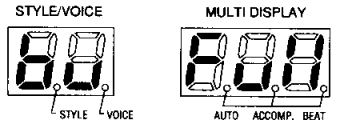
Symptom	Possible Causes	Solutions
When POWER switched ON speakers make a "pop" noise.	Initial Electric Current flows.	Don't worry (not a problem).
No sound coming from speakers.	MASTER VOLUME or the value of Voice Effect's VOLUME is turned down.	Turn up the MASTER VOLUME, or the value of Voice Effect's VOLUME.
	The value for VOLUME (of Voice Effects) is assigned to <0>.	Set the value other than <0>.
	HEADPHONES/AUX. OUT Terminal has a jack plugged into it.	Remove the jack.
When you press multiple keys, there are notes which are not sounded.	Depending on the mode (Auto Accompaniment, etc.), the amount of notes voiced are different.	Don't worry, you can play up to 28 notes simultaneously in Normal mode.
	You are playing with a Voice which consist of some notes. For example, with a Voice made of 4 notes, you can play up to 7 notes at a time (4 by 7 equals 28: maximum notes).	This is not a problem. Lessen the notes you play at a time.
Cannot change the Voice or Rhythm Style.	The VOICE or STYLE button has not been pressed first.	See page 8 or 12 and read instructions.
Cannot get Rhythm Sounds.	START button of ACCOMPANIMENT CONTROL is not pressed.	Make sure of the instructions on pages 13 thru 19.
	After pressing the SYNCHRO START button or Keys have not been pushed (when you are in Normal mode).	
	After pressing the SYNCHRO START button, the keys for Auto Accompaniment have not been pushed (when using Auto Accompaniment function).	
Cannot get Auto Accompaniment sounds.	Because you are in Normal mode.	Assign FINGERING mode to obtain desired Auto Accompaniment.
Cannot play the Chord you want while pressing the keys when using Auto Accompaniment.	You might be trying to play a Fingered Chord when you're in Single Finger mode, or in the opposite case.	Change either your fingering or the Fingering mode.
Abnormally works or malfunctions. Any unfamiliar status found. Cannot control the PSS-595 any longer.	The PortaSound's internal micro-computer may have been "locked up" by Static Electricity or other factors.	**Step 1:** Turn the PortaSound OFF. **Step 2:** Then press the SINGLE FINGER and FINGERED buttons simultaneously and hold them down, and turn the POWER ON. This operation is called "All Reset", and brings the PSS-595 to the status when shipped. But remember this operation will clear the whole data in the Song Memory.

Warning Messages

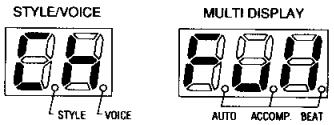
Battery Change:
If you plays the PortaSound without cease, you may hear the sounds distorted. This is why batteries' voltage is lowered. If you go on using the PortaSound, <bt chn> indication will be shown in the STYLE/VOICE display and MULTI DISPLAY. In this case, change all of 6 batteries at a time. Be sure not to use the different type(s) of batteries together.



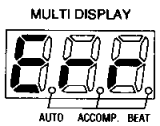
Buffer Full:
While the PSS-595 is Receiving the MIDI performance information from an external Master device, in case the quantity of MIDI information is over that the PSS-595 can process at a time, it will show <bu full> in the STYLE/VOICE display and MULTI DISPLAY for a second. Simultaneously, the notes currently sounding will automatically stop. Should this occur, lessen the MIDI information from the Master.



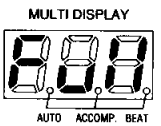
Channel Full:
While Transmitting or Receiving the MIDI performance information, or even playing on the Keyboard, if the total amount of notes on Channels 1 – 16 exceeds 28 (: Maximum of sound reproduction), the STYLE/VOICE display and MULTI DISPLAY will go on reading <Ch Full> until the total amount of notes is reduced under 28.



Check Sum Error:
While the PSS-595 is Receiving the "System Exclusive Message" (: the same data as the PSS-595 transmits in Memory Bulk Dump; General name for this kind of data in MIDI Standard), if the indication <Err> is shown in the MULTI DISPLAY, this means the Receiver PSS-595 failed to Receive the Exclusive data. In this case, specified Factory Preset data corresponding to the Exclusive data missed will be applied automatically.



Memory Full:
While using the Song Memory function, if <Full> indication is shown, this means the memory capacity of the Song Memory has been reached. At this time, Recording will be automatically stop and Bar indication in the SONG#/MEASURE display turns to <001>. If you wish to go on Recording, you have to Clear the Recorded data by Track. (See page 27 for Clear function.)



Maintenance

- **Location**
  Avoid exposure to direct sunlight or other sources of heat. Never leave it inside a car where it can get very hot. It may cause discoloration or deformation. Vibration, excessive dust, cold, low or high humidity can also cause malfunction.
- **Handling**
  Avoid rough handling. Don't drop or jolt the PortaSound as this can damage the internal circuitry. Pressing too hard on keys or controls may lead to malfunctions. When cords are plugged into the rear panel jacks, pay particular attention not to apply excessive force to them since this may damage the terminals.
- **Adaptors**
  Use only the power adaptor described in the POWER section. Disconnect the AC adaptor when not using your PortaSound.
- **Batteries**
- When not using your PortaSound for long periods, be sure to remove the batteries to avoid damage through battery leakage.
- Replace weak batteries before they run down completely.
- Always replace all batteries with new ones.
- Do not use different kinds of batteries at the same time.
- In case electrolyte has leaked into the battery compartment, wipe it off completely before installing new batteries.
- **Cleaning**
  Clean the exterior with a soft, dry cloth. Using chemical solvents will damage the finish.
- **Interference Through Electromagnetic Fields**
  Do not use your PortaSound close to television sets or other equipment receiving electromagnetic signals as this could cause interference noise in the other appliance.
- **Service and Modifications**
  Your PortaSound contains no user serviceable parts. Opening it or tampering with it in any way can lead to electrical shock as well as damage. Of course, any resulting damage will not longer be repaired free of charge. Refer all servicing to qualified YAMAHA personnel.

YAMAHA is NOT responsible for damage caused by improper use.

Specifications

Keyboard	49 half-sized keys (C_1-C_5)
Master Controls	Power switch, Master Volume, Demo Start/Stop button
Voices	100 AWM Voices
Styles	50 Basic Rhythm Styles and Arrangements
Style/Voice Select	Number buttons, (0-9, +/–) Style/Voice buttons, Style/Voice Display
Multi Display	Increment/Decrement buttons
Voice Effects	Harmony (On/Off), Volume, Sustain, Reverb buttons.
Overall Controls	Tempo, Transpose, Tuning buttons
MIDI Controls	Keyboard Transmit Channel, Memory Bulk Dump buttons, Receive Channel/Clock/BOOST, Receive On/Off buttons
Song Memory	Song Memory LED, Song# button, Play/Stop button, Play/Stop button, Melody Rec button, Chord Rec button
Auto Accompaniment	Single Finger/Fingered buttons for Fingering Assign, Intro/Large/Bridge buttons for Orchestration Start/Stop, Fill to Normal, Fill to Bridge, Synchro Start/Ending buttons for Accompaniment Control
Terminals	MIDI OUT, MIDI IN,HEADPHONES/ AUX. OUT (stereo), DC 9-12V IN
Amplifiers	2W × 2
Speakers	10cm × 2 (4 ohms)
Power Source	DC 9V (6 batteries: 1.5V SUM-2, R-14) AC power adaptor: PA-3, PA-4, PA-40
Dimensions	668mm (W) × 265mm (D) × 83mm (H)
Weight	2.5 kg (without batteries)
Optional Items	PA-3, PA-4, PA-40 AC power adaptor

YAMAHA reserves the right to make design and specification changes in the interests of product improvement without prior notice.

Appendix: Bulk Data Format

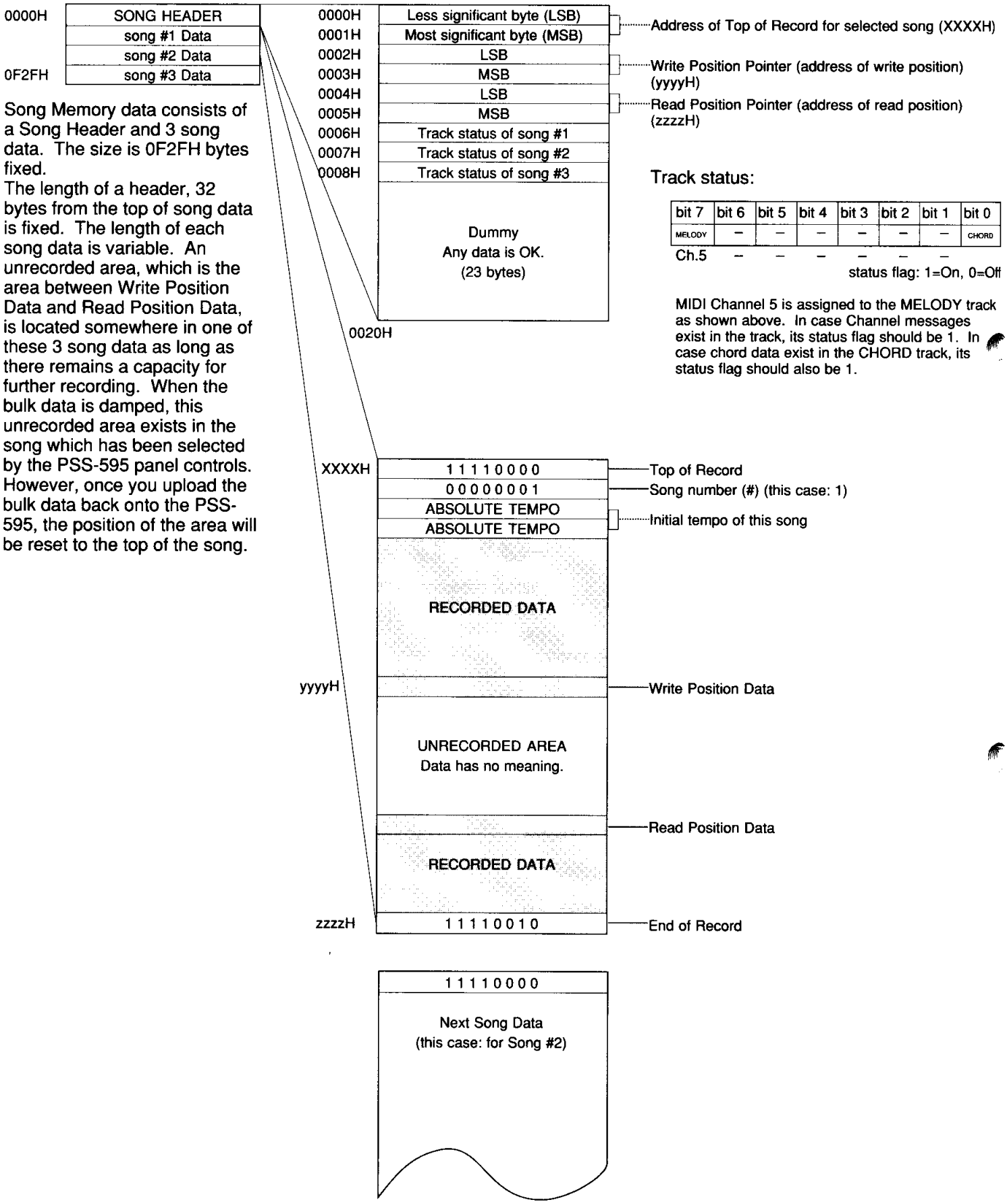
In addition to an explanation on page 34, in this section you have detailed information about the Bulk Data Format for the PortaSound.

HEADER and EOX

0000H	1 1 1 1 0 0 0 0	Status=F0H
	0 1 0 0 0 0 1 1	Manufactuerer ID=43H (Yamaha)
	0 1 1 1 0 1 1 0	Classification ID=76H (Portable Keyboard)
	0 0 0 0 1 0 0 0	Data Format Number=08H (PSS-595)
	Song Memory Data	(See next page.)
	0 c c c c c c c	Check Sum Data=Two's compliment of 7 bits sum of all Songs
	1 1 1 1 0 1 1 1	EOX=F7H

SONG MEMORY DATA

Note: following data bytes are to be divided into 4 bit bit data and sent as less significant 4 bits of data part. Significant 4 bits are sent first.



CONTENTS OF EACH SONG DATA

Note: Header and Footer must exist in a song data even when the song data has no contents.

HEADER

TOR

1 1 1 1 0 0 0 0	Top of Record
0 0 0 0 0 r r r	r r r = Song number (: 0-2)
0 *l l l l l l l*	*l l l l l l l* = Tempo1
0 h h h h h h h	hhhhhhh = Tempo2

Tempo = Tempo1 (40≦Tempo≦127)
Tempo = Tempo1+Tempo2 (128≦Tempo≦240)

FOOTER

EOR

1 1 1 1 0 0 1 0	End of Record

INTERVAL DATA

0 D D D D D D D	DDDDDDD = Time Length (0000001=1/24 Beat) (0011000=1 Beat)

PERFORMANCE DATA

NOTE ON

1 0 0 1 n n n n	nnnn = MIDI Channel (: 0-15)
0 k k k k k k k	kkkkkkk = Note number (: 0-127)

* Velocity data is not acceptable.

NOTE OFF

1 0 0 0 n n n n	nnnn = MIDI Channel (: 0-15)
0 k k k k k k k	kkkkkkk = Note number (: 0-127)

PROGRAM CHANGE

1 1 0 0 n n n n	nnnn = MIDI Channel (: 0-15)
0 p p p p p p p	ppppppp = Program number (: 0-127)

CONTROL CHANGE

1 0 1 1 n n n n	nnnn = MIDI Channel (: 0-15)
0 c c c c c c c	* ccccccc = Harmony (: 00)
0 v v v v v v v	vvvvvvv = Harmony type (: 0-5)

0=Duet 1=Trio
2=Block 3=Country
4=Octave 5=Strum

* ccccccc = Modulation (: 01)
vvvvvvv = depth (: 0-127)
* ccccccc = Volume (: 07)
vvvvvvv = value (: 0-127)
* ccccccc = Sustain (: 64)
vvvvvvv = depth (: 0-127)
* ccccccc = Reverb (: 91)
vvvvvvv = depth (: 0-127)

PITCH BEND CHANGE

1 1 1 0 n n n n	nnnn = MIDI Channel (: 0-15)
0 *l l l l l l l*	*lllllll* = LSB
0 h h h h h h h	hhhhhhh = MSB
	lllllll, hhhhhhh: 00, 00 (-1 octave)
	00, 64 (center)
	127, 127 (+1 octave)

CHORD CHANGE

1 1 1 1 0 1 0 1	Chord Change
0 0 0 0 n n n n	nnnn = Root name (: 0-11, 0; C, 1; C#....11; B)
0 0 0 0 t t t t	tttt = Chord type (: 0-11)

0: major
1: minor
2: 7th
3: minor 7th
4: major 7th
5: minor 7th flatted 5th
6: (7th) suspended 4th
7: augmented
8: diminished (7th)
9: minor major 7th
10: minor 6th
11: Single (octave unison)

MEASURE MARK

1 1 1 1 1 0 0 1	Measure Mark
0 b b b b b b b	bbbbbbb=number of beat in a measure (1 beat=1/4 note)
0 m m m m m m m	mmmmmmm=measure number within a pattern

STYLE NUMBER

1 1 1 1 1 0 1 0	Style number
0 0 0 0 0 0 0 0	
0 0 s s s s s s	ssssss = Style (: 0-49)
0 0 0 0 0 v v v	vvv = variation

0: Normal
1: Bridge
2: Fill-in 1
3: Fill-in 2
4: Intro
5: Ending

RELATIVE TEMPO

1 1 1 1 1 0 1 1	Relative Tempo
0 s 0 0 0 0 0 n	s: sign bit (1: minus)
0 h h h h h h h	hhhhhhh = tempo difference (0-127)
	Relative Tempo = 128*n+hhhhhhh

ABSOLUTE TEMPO

1 1 1 1 1 1 0 0	Absolute Tempo
0 *l l l l l l l*	Tempo = *lllllll* (40≤tempo≤127)
0 h h h h h h h	= *lllllll*+hhhhhhh (128≤tempo≤240)

FILL-IN STATUS

1 1 1 1 1 1 0 1	Fill-In Status
0 s 0 0 0 0 0 n	s: 1=On, 0=Off
	n: Fill-In number (0: Fill to Normal, 1: Fill to Bridge)

ORCHESTRATION

1 1 1 1 1 1 1 0	Orchestration
0 0 0 0 0 0 n n	nn=Orchestration type (01: Large, 10: Large Off)

YAMAHA [PortaSound]
Model PSS-595

MIDI Implementation Chart

Date : 12/1 1990
Version : 1.0

Function ...		Transmitted Manual / Accomp / Rhythm	Recognized	Remarks
Basic	Default	1 / 10-15 / 16	1-16	
Channel	Changed	1-16	1-16(*1)	
Mode	Default	3(*2)	3(*3)	
	Messages	x	x	
	Altered	**********	x	
Note Number		0-127(*4)	0-127	
	True voice	**********	0-127	
Velocity	Note on	x 9nH, v=1-127(*5)	o 9nH, v=1-127	
	Note off	x 9nH	x 9nH / 8nH	
After Touch	Key's	x	x	
	Ch's	x	x	
Pitch Bender		x	o	7 bit resolution
Control Change	1	o	o(*6)	MODULATION
	7	o	o	VOLUME
	64	o	o(*6)	DAMPER (SUSTAIN)
	91	o	o(*6)	REVERB DEPTH
				(VOICE EFFECTS)
Program Change	True #	o(*7) **********	o 0-127(*8) 0-99	
System Exclusive		o	o	
System Common	Song pos	x	x	
	Song Sel	x	x	
	Tune	x	x	
System Real Time	Clock	o	o(*9)	
	Commands	o	o	START, STOP
Aux Mes-sages	Local ON/OFF	x	x	
	All Notes OFF	x	o	
	Active Sense	o	o	
	Reset	x	x	

Note:
*1: Possible to set ON/OFF individually on each channel (: 1-16ch).
*2: Multi-timbre.
*3: Multi-timbre by Dynamic Voice Allocation.
*4: Keys; 12-96, While the Song Memory data are being played back; 0-127.
*5: Manual; Fixed value 7FH when performed by pressing Keys or Pads.
With Velocity Boost function active, Value is fixed to 70H.
Accomp.; Various values.
Recorded value when Song Memory is played back.
*6: Not received by every VOICE selected.
*7: A VOICE nunmber transmitted after converted to the corresponding Program Change number according to PortaSound Standard Voice Number.
*8: Received according to PortaSound Standard Voice Number. Ignores the Message based on Ch.16.
*9: Possible to set ON/OFF manually.

Mode 1: OMNI ON, POLY Mode 2: OMNI ON, MONO
Mode 3: OMNI OFF, POLY Mode 4: OMNI OFF, MONO

o: YES
x: No

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