⊗YAMAHA

AUTO DOPPLER

Owner's Manual

ADD-ON EFFECTS

What Are ADD-ON EFFECTS?

ADD-ON EFFECTS are software packages that let you add on and use high level effect programs in your digital console or similar device.

What is Auto Doppler?

Auto Doppler is one of the effects programs that can be used with ADD-ON EFFECTS.
It simulates a Doppler effect as a sound source is moved.
The volume, orientation, and pitch will change according to settings you make for the path and speed of the sound source.

iSSP — INTERACTIVE SPATIAL SOUND PROCESSING

What is the Interactive Spatial Sound Processor (iSSP)?

iSSP is a technology that combines a geometric sound simulator that attenuates sound according to an estimate of the sound reflection that accompanies the shape of a room, taking into consideration the direction of the sound source and the room's surface materials with multi-channel signal processor technology that uses information about the position of the sound source to perform distance attenuation based on the balance and delay/filter for each output channel.
This iSSP technology is used in Auto Doppler.

Special Notices

- Copying of the commercially available music sequence data and/or digital audio files is strictly prohibited except for your personal use.
- The software and this Owner's Manual are exclusive copyrights of Yamaha Corporation.
- Copying of the software or reproduction of this manual in whole or in part by any means is expressly forbidden without the written consent of the manufacturer.
- Yamaha makes no representations or warranties with regard to the use of the software and documentation and cannot be held responsible for the results of the use of this manual and the software.
- The screen displays as illustrated in this Owner's Manual are for instructional purposes, and may appear somewhat different from the screens which appear on your computer.
- The company names and product names in this Owner's Manual are the trademarks or registered trademarks of their respective companies.

Installing Auto Doppler

See the ADD-ON EFFECTS Installation Guide for more information on installing Auto Doppler.

Using Auto Doppler

As with other effects, you can recall and edit the Auto Doppler program on the console or in Studio Manager.
The basic operation is as follows:

1 Select one of the internal effects processors.

2 Patch the signal to and from the currently selected effects processor.

3 Locate the Effects Library page.

4 Select and recall Auto Doppler.
   NOTE When you recall the program, all effects processor outputs will be muted temporarily.

5 Locate the Effects Edit page.

6 Set the parameters. (See the "Part Names and Functions" on page 3 for more information on Auto Doppler parameters.)

The procedure for recalling and editing Auto Doppler varies depending on the console you are using.
Refer to the Owner's Manual that came with your console for more information.

Editing Parameters in Studio Manager

In Studio Manager, editable parameters appear in both the Auto Doppler window and the Generic Editor window.
The Auto Doppler window enables you to edit Auto Doppler specific parameters, and the Generic Editor window enables you to edit parameters common to Auto Doppler and other Effects.
Refer to the Studio Manager Owner's Manual for your console for more information on the Generic Editor window.
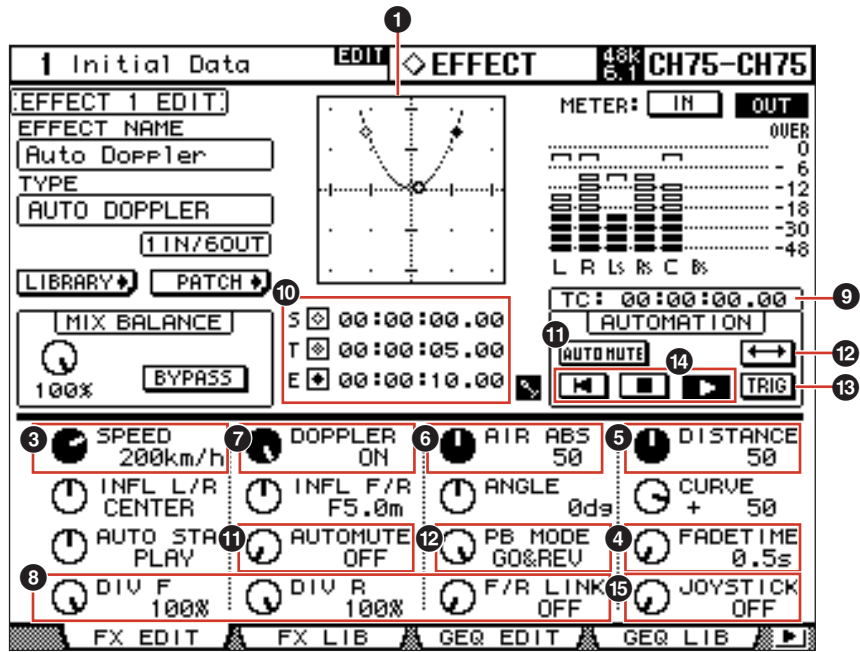

Studio Manager Generic Editor window
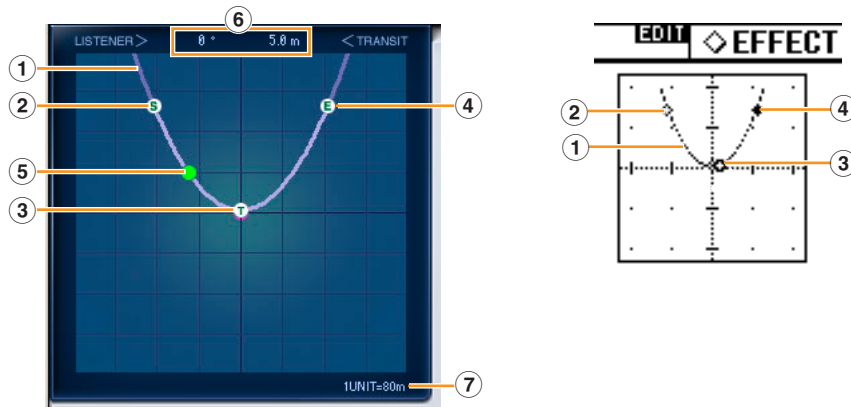
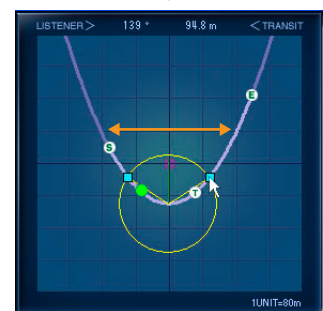# Part Names and Functions
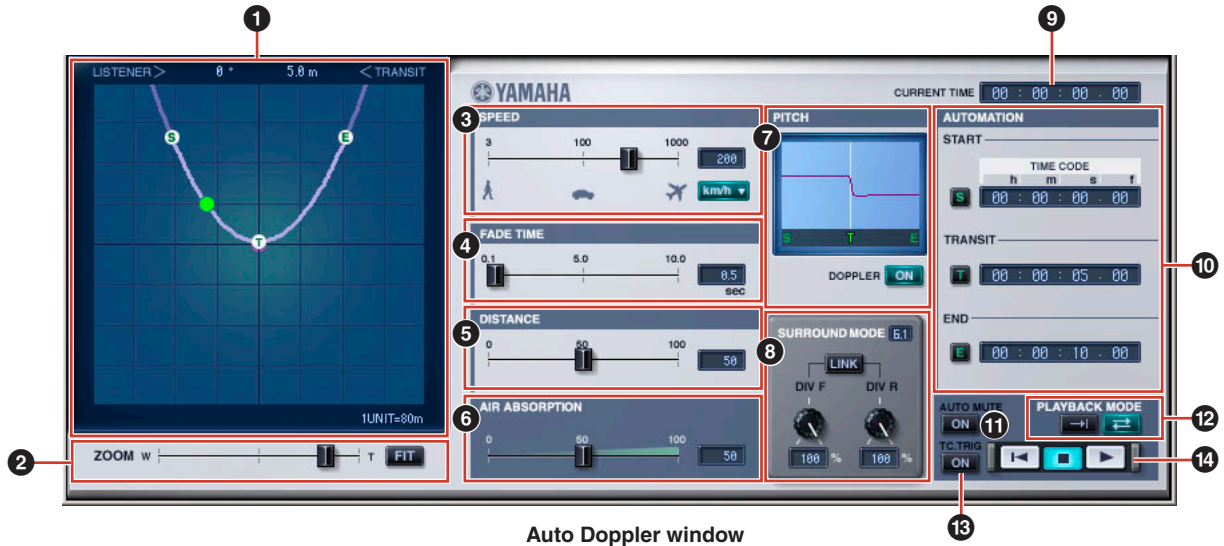
Auto Doppler window

Console display

❶ Position View

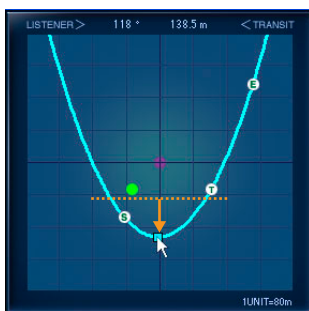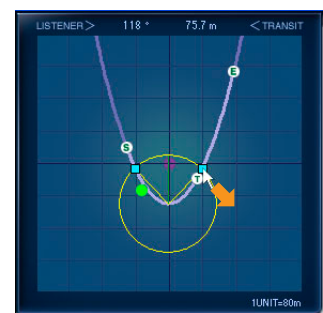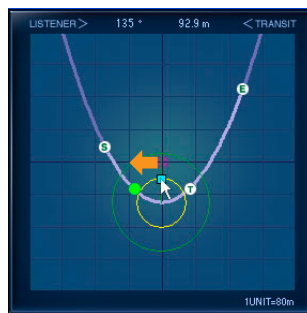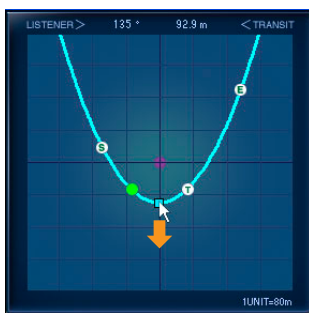In Auto Doppler, the listening point is the center point in this view, and is displayed in purple. The path of the sound source is displayed as a curve.

① Path
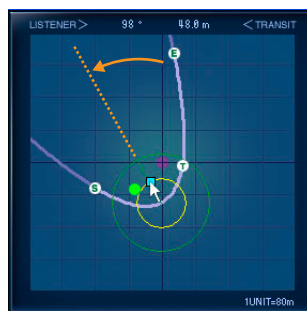
Path Movement

In the Auto Doppler window, you can move the path by using the mouse to drag the control handle the center of the path line, or by holding down the button on the mouse and pressing the arrow keys on the keyboard.
You can also move the path using the [INFL L/R] and [INFL F/R] knobs in the Generic Editor window and console.

Curve Orientation

In the Auto Doppler window, you can change the orientation of the curve by dragging the points or using the arrow keys as shown in the diagram.
The curve orientation can also be adjusted using the [ANGLE] knob in the Generic Editor window and console.

Curve Steepness

In the Auto Doppler window, you can change the steepness of the curve by dragging the points or using the arrow keys as shown in the diagram.
The steepness of the curve can also be adjusted using the [CURVE] knob in the Generic Editor window and console.

② Start Point (S)

This is the beginning position for sound source movement.
The start point is not edited directly. Instead it is determined by the time difference between the Start and the Transit Timecode, along with the Speed.

③ Transit Point (T)

This is the location on the path that is closest to the listening point.
The Transit Point cannot be edited directly. Instead it is determined by the path.

④ **End Point (E)**

This is the stop position for sound source movement.
The end point is not edited directly. Instead it is determined by the time difference between the Transit and End, along with the Speed.

⑤ **Sound Source Position**

The current position of the sound source is displayed in green.
It is not displayed while offline because automation is impossible then.

⑥ **Transit Point Value Display**

The direction and distance from the listening point to the transit point are displayed as numbers.

⑦ **Grid Interval Display**
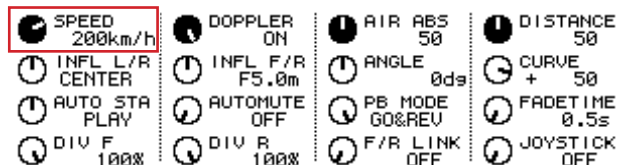
Displays the size of one square on the grid.
This interval is automatically switched when the zoom amount is changed.

❷ **[ZOOM] Slider/[FIT] Button**

The [ZOOM] slider is used to enlarge or reduce the Position View. The [FIT] button automatically zooms the curve from the start point to the end point to a size that stretches across the available area.

❸ **SPEED**

[SPEED] Slider/[SPEED] Knob

This is the speed of the sound source's movement.
It can simulate everything from the speed of a person walking to the speed of a jet.
The sound source moves constantly along the path at the set speed. The value is displayed on the right side of the speed display. The units displayed can be switched through a pull-down menu. Km/h, m/sec, and mph can be selected as the units.
The value can be changed by double-clicking the slider or speed display and entering a number from the keyboard. It can also be changed by dragging the mouse up and down on the speed display.
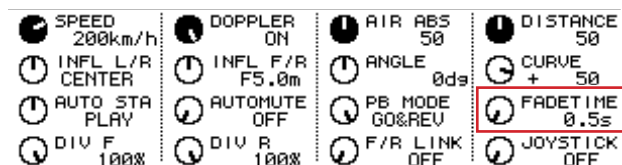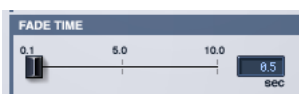
❹ **FADE TIME**

[FADE TIME] Slider/[FADE TIME] Knob

This sets the length of time for the fade-in from the set start point, and the fade-out time to the end point.

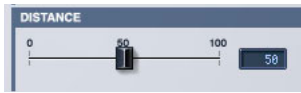**FADE TIME Display**

Displays the set Fade Time in seconds. You can double click here and type in a time from the keyboard.
The value can also be changed by dragging the mouse up and down.
It can be set from 0.1 to 10 seconds.

❺ DISTANCE

[DISTANCE] Slider/[DISTANCE] Knob

Adjusts the strength of attenuation in volume caused by distance.
The actual distance during movement is determined by the SPEED and time. The PITCH is also linked to this.
By changing the value for DISTANCE, you can adjust the difference in volume between when the sound source is near or far away, without varying the PITCH.
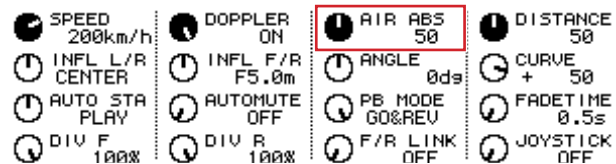
DISTANCE Display

Displays the amount of distance, which indicates the strength of volume attenuation.
You can double click here and type in a value from the keyboard. The value can also be changed by dragging the mouse up and down.
A number between 0 and 100 can be set. The amount of attenuation strengthens (the volume of a distant sound is reduced) as this value is increased.

❻ AIR ABSORPTION

[AIR ABSORPTION] Slider/[AIR ABS] Knob

This simulates the attenuation that occurs in the sound's high frequency component as the sound source and listener are separated.
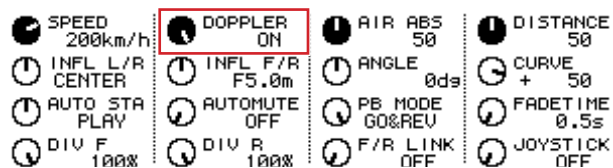
AIR ABSORPTION Display

This displays the Air Absorption, which indicates attenuation of the high frequency component as a percentage.
You can double click here and type in a value from the keyboard. The value can also be changed by dragging the mouse up and down.
Attenuation grows stronger as you increase the number entered here.

❼ PITCH

PITCH Display

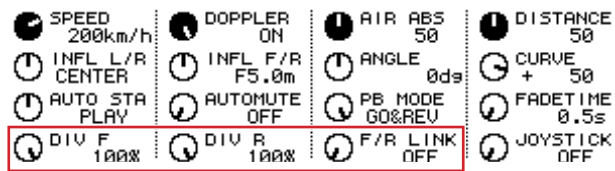Displays the change in pitch caused by the Doppler effect.
This is not edited directly. Instead it is determined by editing the path, the time between each point based on the Timecode, and the Speed.

DOPPLER [ON] Button/[DOPPLER] Knob

Switches the pitch changing Doppler effect ON or OFF.
When this is turned OFF, the PITCH display goes flat.

❽ SURROUND MODE

SURROUND MODE Display

When the surround mode is 6.1, "6.1" is displayed. "3-1" is displayed for 3-1 surround, and "5.1" is displayed for all others.

[DIV] Knob/[DIV F] Knob

Sets right and left for the front center signal, along with the percentage sent to the center channel.
When the surround mode in the Auto Doppler window is 6.1, [DIV.F] is displayed. For all others, [DIV] is displayed.
[DIV.F] is always displayed in the Generic Editor window and console.

DIV/DIV F Display

Sets the DIV/DIV F values.
You can double click here and type in a value from the keyboard. The value can also be changed by dragging the mouse up and down.
If the setting is zero, only L/R is used. If 50 is set, the ratio between L/R and the center will be 50:50. When 100 is set, the signal will go to the center channel only.

[DIV R] Knob

Sets right and left for the rear center signal, along with the percentage sent to the center channel.
This is displayed in the Auto Doppler window only when Surround Mode is 6.1. Otherwise it will be grayed out.

[DIV R] Display

Sets the DIV R value.
You can double click here and type in a value from the keyboard. The value can also be changed by dragging the mouse up and down.
If the setting is zero, only L/R is used. If 50 is set, the ratio between L/R and the center will be 50:50. When 100 is set, the signal will go to the center channel only.

[LINK] Button/[F/R LINK] Knob

Links DIV R to the DIV F value.
When the two are linked, the DIV R value will be the same as the DIV F.
This is displayed in the Auto Doppler window only when Surround Mode is 6.1. Otherwise it will be grayed out.
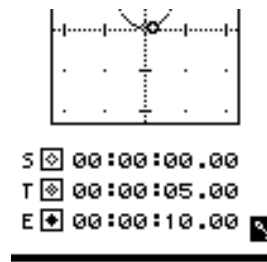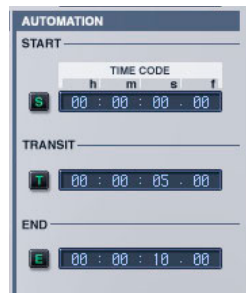
❾ CURRENT TIME Display

Displays the current Timecode. This cannot be edited.
If it is in offline mode or the Clock Reference setting is MIDI CLOCK, 00:00:00.00 will always be displayed.

⑩ AUTOMATION

START TIMECODE, [S] Button

Sets the Timecode for the Start Point.

Automation starts at the time of the Timecode value set here.

The setting can be changed by double clicking the time display and typing in a value from the keyboard. The value can also be changed by dragging the mouse up and down.

Pressing the [S] button on the left side sets it to the Timecode value displayed for the CURRENT TIME. This [S] button is disabled if it is in offline mode or the Clock Reference setting is MIDI Clock.

TRANSIT TIMECODE, [T] Button

Sets the Timecode for the Transit Point.

At the time of the Timecode vaule set here, the sound source reaches its closest to the listening point.

The setting can be changed by double clicking the time display and typing in a value from the keyboard. The value can also be changed by dragging the mouse up and down.

Pressing the [T] button on the left side sets it to the Timecode value displayed for the CURRENT TIME. This [T] button is disabled if it is in offline mode or the Clock Reference setting is MIDI Clock.

End TIMECODE, [E] Button

Sets the Timecode for the End Point.

The automation ends at the time of the Timecode value set here.

You can double click here and type in a value from the keyboard. The value can also be changed by dragging the mouse up and down.

Pressing the [E] button on the left side sets it to the Timecode value displayed for the CURRENT TIME. This [E] button is disabled if it is in offline mode or the Clock Reference setting is MIDI Clock.
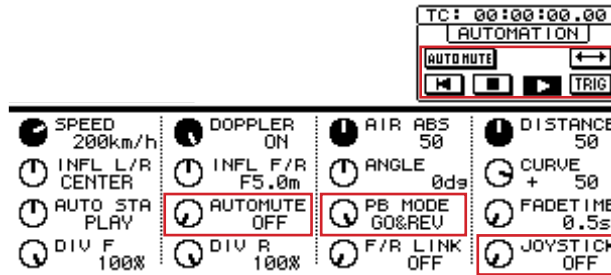
⑪ AUTO MUTE [ON] Button/[AUTOMUTE] Knob

Muting before the fade in and muting after the fade out are switched ON or OFF by this.

⑫ PLAYBACK MODE Button/[PB MODE] Knob

→| **Button/ONCE:** Goes to the end point and finishes.

⇄ **Button/GO&REV:** Makes a round trip between the start point and the end point.

⑬ TC. TRIG [ON] Button

This ON/OFF switch determines whether automation playback automatically starts when the Timecode reaches the value specified for the Start Point.

⑭ Transport Bar

|◀ **Button:** Move the sound source position to the start position.

▶ **Button:** Turns OFF Automation.

■ **Button:** Starts automation.

⑮ [JOYSTICK] Knob

This is an ON/OFF switch that determines whether path movement on the console is performed with the joystick.