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Using this Reference Manual

By using Edit mode on the reface DX, you can make detailed settings for individual operators. Please read this manual if you wish make detailed changes to Voices on the reface DX.

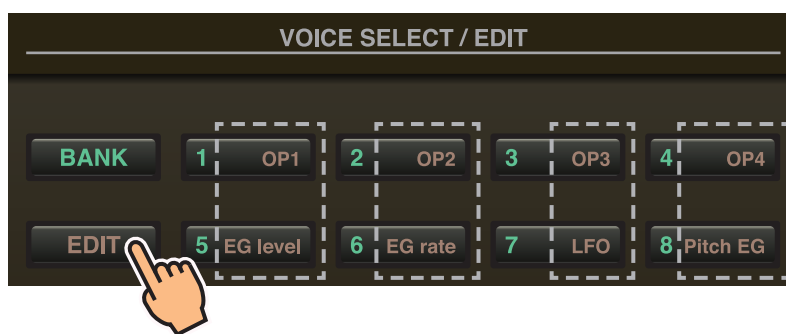
Edit Mode

In Edit mode, you can make detailed adjustments to Voice settings.

NOTE

To change the algorithm, use the [ALGO] button from the FM section.

Edit mode is activated by pressing the [EDIT] button.



In Edit mode, you can use the [1] to [8] buttons from the VOICE SELECT/EDIT section as [OP1] to [OP4], [EG level], [EG rate], [LFO], and [Pitch EG] buttons.

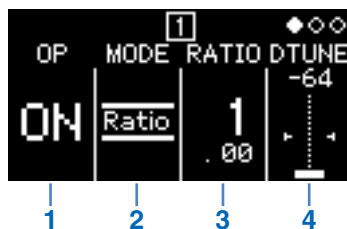
To leave Edit mode, press the [EDIT] button once again.

Changing detailed operator settings

Set Operators 1 to 4 as follows.

1. Press the [EDIT] button to activate Edit mode.
2. Press one of the [OP1] to [OP4] buttons to select the operator you wish to set.
The setting screen for the corresponding operator is displayed.
3. If necessary, press the same button several times to select the required page from the setting screen. When a setting screen contains multiple pages, they are indicated in the form “●○○” (i.e., page 1 of 3 pages).
4. Adjust the operator’s settings by using the sliders and/or switches.
5. If necessary, you can also adjust other settings at this time.
For example, if you press the [OP2] button while page 3 from the Operator 1 Settings screen is displayed, page 3 from the Operator 2 Settings screen is displayed.
Similarly, if you press the [EG level] or [EG rate] button while the Operator 2 Settings screen is displayed, you can make EG adjustments for Operator 2.
6. When you have finished making settings, press the [EDIT] button once again to leave Edit mode.

● Operator Settings screen (page 1)



1	OP (operator)	ON or Off	Turns the operator on and off.	
2	MODE	Selects the frequency setting method.		
		Ratio	The frequency is set as a ratio with respect to the standard pitch. This frequency is also displayed as a ratio when you press the [FREQ] button.	
3	FREQ (Frequency)	Specifies the frequency by using a number.		
		When MODE is set to “Ratio”:	0.500 to 31.99	Specify a value with respect to the standard value of 1.00. When this value is doubled, the octave increases by one; when halved, the octave drops by one. This value is also displayed when you press the [FREQ] button.
4	DTUNE (Detune)	When MODE is set to “Fixed”:	1.000 to 9,772 Hz	Specifies the frequency in Hertz (Hz). This value is also displayed when you press the [FREQ] button.
		-64 to 0 to +63	Detunes the frequency set with “FREQ”. Slightly detuning the frequency produces a chorus-like effect.	

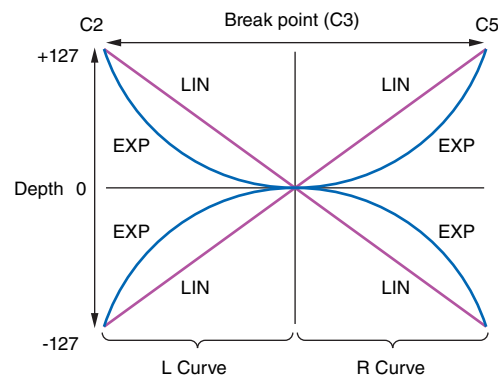
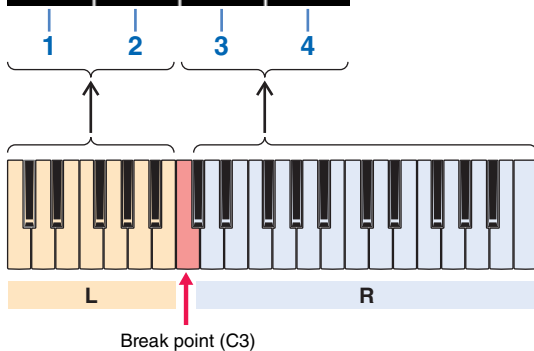
● Operator Settings screen (page 2)



1	LEVEL	0 to 127	Sets the output level. In the case of carriers, this changes the volume. In the case of modulators, this changes the degree to which the carrier(s) are modulated. This value is also displayed when you press the [LEVEL] button.
2	VEL.S (Velocity Sensitivity)	0 to 127	Used to change the volume and/or tone based on how hard you play the keys. There is no change when the setting is "0". The higher the value, the greater the degree of change.
3	FB (Feedback)	-127 (SQUARE) to 0 to +127 (SAW)	Selects the feedback level. From "+1" to "+127", the waveform changes from sine to sawtooth; from "-1" to "-127", it changes from sine to square. At "0", no feedback is applied and the waveform retains its normal sine shape. This value is also displayed when you press the [FB] button.
4	KSC-Rate (Keyboard Scaling Rate)	0 to 127	Sets how the speed of the EG changes based on the area of the keyboard being played. The higher the value, the faster the EG changes for the high-pitch side compared with the low-pitch side.

● KSC (Keyboard Scaling) level setting (page 3)

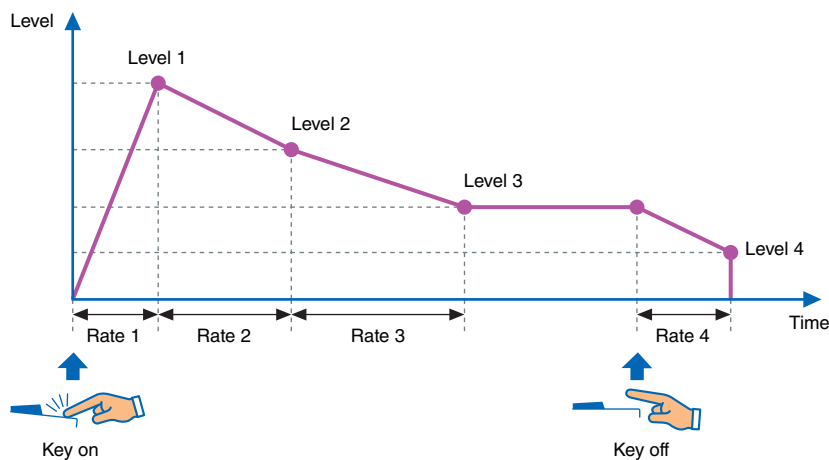
With keyboard scaling, you can adjust the effect of the envelope based on the area of the keyboard being played. In this way, it is possible to achieve a balance between tone and volume that is similar to that of acoustic instruments. The keyboard is divided in two at the break point (fixed at C3 on the reface DX). The high-pitch side at the right is set by using the R Depth and the R Curve; the low-pitch side at the left is set by using the L Depth and the L Curve.



1	L Depth	-127 to 0 to +127	Sets the degree of keyboard scaling at the left side of the keyboard. When set to "0", no keyboard scaling is applied.
2	L Curve	LIN (Linear)	The depth changes in a linear fashion from the break point to the left of the keyboard.
		EXP (Exponential)	The depth changes in an exponential fashion from the break point to the left of the keyboard.
3	R Curve	LIN (Linear)	The depth changes in a linear fashion from the break point to the right of the keyboard.
		EXP (Exponential)	The depth changes in an exponential fashion from the break point to the right of the keyboard.
4	R Depth	-127 to 0 to +127	Sets the degree of keyboard scaling at the right side of the keyboard. When set to "0", no keyboard scaling is applied.

Setting the EG (envelope generator)

You can adjust the shape of the envelopes applied to the operators by using the [EG level] and [EG rate] buttons. Volumes and modulation degrees are set on the EG Level screen; rates of change are set on the EG Rate screen.

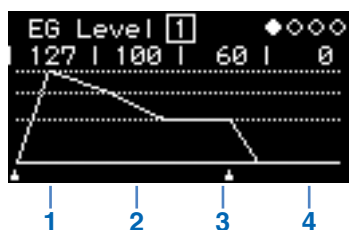


EG Level

EG levels can be set between “0” (minimum) and “127” (maximum) for each operator. For carriers, these levels set the volume; for modulators, they set the degree of modulation.

1. Press the [EDIT] button to activate Edit mode.
2. Press the [EG level] button.
The EG Level Settings screen is displayed.
3. If necessary, press the [EG level] button several times to switch between operators.
4. Change the settings for Level 1 to Level 4 by using the sliders.
5. If necessary, alternately use the [EG level] and [EG rate] buttons to adjust the overall shape of the envelope.
6. When you have finished making settings, press the [EDIT] button once again to leave Edit mode.

● EG Level Settings screen



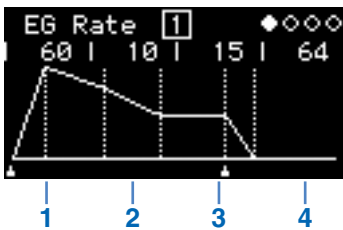
1	Level 1	0 to 127	Attack level
2	Level 2		Decay level
3	Level 3		Sustain level
4	Level 4		Release level For settings other than “0”, the sound will stop when it reaches the Level 4 setting.

EG Rate

EG rates can be set between “0” (slowest) and “127” (fastest) for each operator.

1. Press the [EDIT] button to activate Edit mode.
2. Press the [EG rate] button.
The EG Rate Settings screen is displayed.
3. If necessary, press the [EG rate] button several times to select the operator you wish to set.
4. Change the settings for Rate 1 to Rate 4 by using the sliders.
5. If necessary, alternately use the [EG level] and [EG rate] buttons to adjust the overall shape of the envelope.
6. When you have finished making settings, press the [EDIT] button once again to leave Edit mode.

● EG Rate Settings screen



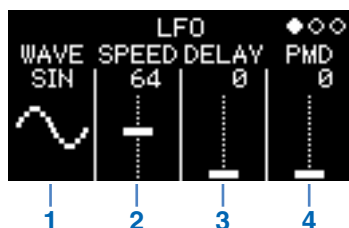
1	Rate 1	0 to 127	Attack rate
2	Rate 2		Decay rate
3	Rate 3		Sustain rate
4	Rate 4		Release rate








Setting the LFO

You can set the LFO (low frequency oscillator) to change the waveform used to vary the sound and apply effects such as vibrato, tremolo, and wah.

1. Press the [EDIT] button to activate Edit mode.
2. Press the [LFO] button.
The LFO Settings screen is displayed.
3. If necessary, press the [LFO] button several times to switch between this screen's pages.
4. Adjust the LFO by using the sliders and/or switches.
5. When you have finished making settings, press the [EDIT] button once again to leave Edit mode.

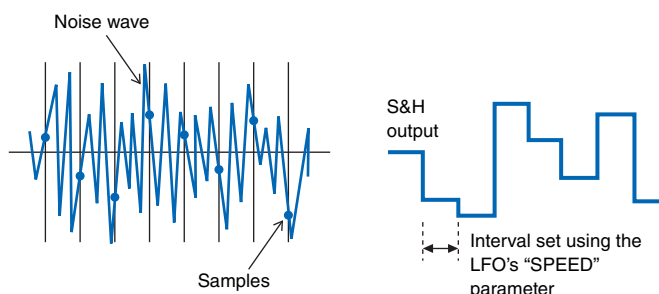
● LFO screen (page 1)



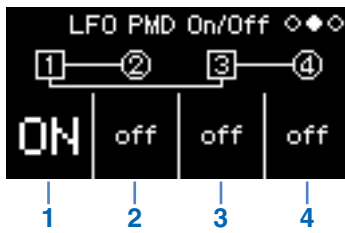
1	WAVE	Selects the LFO waveform.	
		SIN	 Sine wave
		TRI	 Triangular wave
		SAW U	 Ramp-up type sawtooth wave
		SAW D	 Ramp-down type sawtooth wave
		SQ	 Square wave
		S&H8	 Sample & Hold 8 wave Values are sampled each 1/8th of the interval set using "SPEED".
		S&H	 Sample & Hold wave Values are sampled at the interval set using "SPEED".
2	SPEED	0 to 127	Sets the LFO speed. When "WAVE" is set to "S&H" or "S&H8"; this parameter determines the interval at which values are sampled.
3	DELAY	0 to 127	Sets how long it takes after pressing a key for the LFO to start.
4	PMD (pitch modulation depth)	0 to 127	Sets the degree to which the pitch is affected by the LFO (vibrato).

Sample & Hold (S&H)

Sample & Hold waves are formed by taking (sampling) a value from a noise wave at a certain time and keeping (holding) that value until the next one is taken. In this way, it is possible to create a wave that changes in a random fashion.

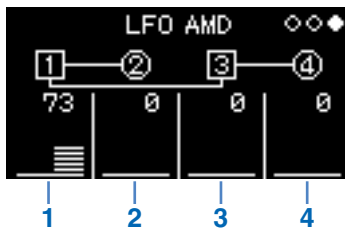


● **LFO PMD On/Off screen (page 2)**



1	Operator 1 LFO PMD On/Off	ON and off	Turns LFO PMD on and off. When turned on, the PMD settings from the LFO screen (page 1) are active.
2	Operator 2 LFO PMD On/Off		
3	Operator 3 LFO PMD On/Off		
4	Operator 4 LFO PMD On/Off		

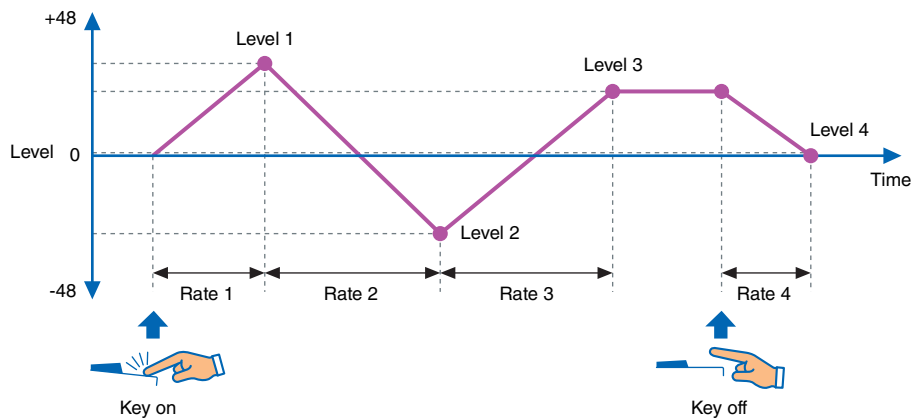
● **LFO AMD screen (page 3)**



1	Operator 1 AMD (amplitude modulation depth)	0 to 127	Sets the degree to which the amplitude is affected by the LFO (tremolo, wah).
2	Operator 2 AMD		
3	Operator 3 AMD		
4	Operator 4 AMD		

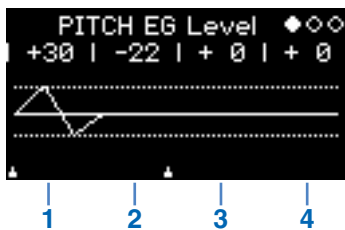
Setting the Pitch EG

The operators' pitches can be changed using an envelope. As with the normal EG, levels set the degree to which the pitches are affected; rates set the rate of change. These values are common to all operators.



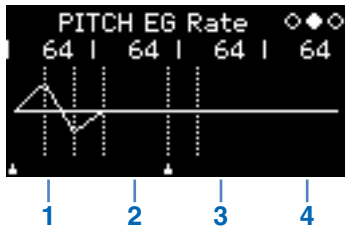
1. Press the [EDIT] button to activate Edit mode.
2. Press the [Pitch EG] button.
The Pitch EG Settings screen is displayed.
3. If necessary, press the [Pitch EG] button several times to switch between this screen's pages.
4. Set the envelope by using the sliders.
5. When you have finished making settings, press the [EDIT] button once again to leave Edit mode.

● PITCH EG Level screen (page 1)



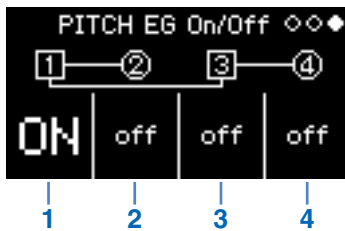
1	Pitch EG Level 1	-48 to 0 to +48	Adjust the Pitch EG levels. The standard pitch is represented by "0", and you can adjust the pitch upward and downward by 48 semitones (4 octaves).
2	Pitch EG Level 2		
3	Pitch EG Level 3		
4	Pitch EG Level 4		

● **PITCH EG Rate screen (page 2)**



1	Pitch EG Rate 1	0 to 127	Adjust the Pitch EG rates. The higher the value, the faster the pitch changes.
2	Pitch EG Rate 2		
3	Pitch EG Rate 3		
4	Pitch EG Rate 4		

● **PITCH EG On/Off screen (page 3)**



1	Operator 1 Pitch EG On/Off	ON and off	Turn the Pitch EG on or off for each operator.
2	Operator 2 Pitch EG On/Off		
3	Operator 3 Pitch EG On/Off		
4	Operator 4 Pitch EG On/Off		

Troubleshooting

If this instrument does not behave as expected—for example, not producing the correct sound or producing no sound at all—please refer first of all to “Troubleshooting” from your Owner’s Manual (page 46). Many issues can also be resolved by doing a Factory Reset (page 40). If any specific issue should persist, however, please contact your Yamaha dealer or a service center (see the back of this booklet).

Issue		Model(s)	Suspected cause	Solution
No sound is produced.	The instrument stopped producing sound when a setting was changed.	reface DX	The carrier level is set to 0.	Press the [LEVEL] button from the FM section, and confirm whether the carrier level is set to “0”. If so, increase the carrier level.
		reface DX	All carriers are turned off.	In Edit mode, confirm whether the carrier is turned on or off. If the carrier is off, turn it on and ensure that its level is sufficiently high.
		reface DX	The carrier’s Fixed frequency value is too low.	In Edit mode, confirm whether the carrier mode is set to “Fixed” and the “FREQ” value is too low. If so, increase the “FREQ” value.
Notes continue to play without end.	Notes started to play without end when a setting was changed.	reface DX	Rate 4 for the carrier’s EG is too low.	Raise Rate 4 for the EG. Alternatively, select a different Voice to stop the sound.