Merry Christmas and Happy New Year from Steelsring, and we wish you a better life in 2020

Announcement of Steelsring EF-NZ Dual-Mode Smart AF Lens Adapter

Major features of Steelsring EF-NZ Lens Smart Adapter

1) **Dual working mode**: Z-mount native lens emulation mode (works like S lens) and F-mount lens adapter mode (works like FTZ adapter), pursuing the best balance of performance and compatibility.
2) High-speed focusing, supports AF-S/AF-C, Eye/Face recognition and tracking, AF-C and AF-F for video shooting, and pin point AF.
3) Auto matching between EF lens AF driving parameters and Nikon Z/F lens AF algorithm.
4) Support Z series camera body IBIS and Image Stabilization of EF lens body.
5) Complete EXIF recording, including exact EF Lens Name being used.
6) Auto recognition of APS-C EF lenses, and switch to DX mode automatically. (see FAQ after 1.06).
7) Nikon S lens body L-Fn button emulation. (added after firmware version 1.01)
8) Support AF/MF mode switch and Image Stabilization switch of EF lens bodies.
9) Built-in AF driving sensitivity tuning mode.
10) USB storage disk mode for firmware upgrade, drag&drop or copy&paste mode for firmware update, no extra software/driver required, compatible with Windows/MAC
11) Easy switching of dual working mode via multi-function button (MFB) clicks of adapter body

Comparison	Features	Z-mount native mode	F-mount adapter mode
Difference across working modes	AF-S/AF-C, Eye / Face tracking, Video AF-C/AF-F , Pin point AF	Best in most of conditions, faster (Protocol advantage)	Best sometimes for certain lenses, usually slower. (Protocol limitation)
	VR Mode (refer to Note1)	IBIS and Lens IS can work alone, or together	IBIS only or IBIS + Lens IS
	EXIF Recording	Complete, with exact lens name recorded	Partial, focal length range, aperture range, etc. (Protocol limitation)
	APS-C/DX mode auto switching	Support (v1.06 see FAQ)	Not support yet, studying on it.
	L-Fn emulation	Support	Not support (Protocol limitation)
Commons in different working modes	EF Lens AF driving parameters matching	Support	
	AF driving sensitivity tuning	Support, activated via clicks on MFB of adapter body	
	AF/MF mode switch and Lens IS On/Off switch	Support	
	USB storage mode for firmware update	Support	
	Dual working modes switch	Support, activated via multi-function button of adapter body	

Table-1 Features comparison across working modes

FAQ: What is the difference of Z-mount native lens emulation mode and F-mount lens adapter mode?

Compared with F-mount protocol in Nikon DSLR, Z mount protocol is better designed, more informative and need more real-time communications between lens and camera, better for expansion of new product features, such as control ring, and better for v-logging, etc. A F-to-Z adapter speaks both F protocol and Z protocol, any lens driving instructions and lens queries need to be translated between S and F protocol by FtoZ adapter. F mount communication is far slower than the speed of S protocol, so a simple lens instruction for S lens, may take 2-3 times duration for F lens to action/response.

Furthermore, in S protocol mode, lens provides more tuned and pre-measured information for camera's fast decision, Z cameras use some wild default setting in case of FtoZ adapter mode, because F lens is too old to carry those information. Actually, it depends on the lens age, latest E-type AF-S lens carries more information than early AF-S G-type lenses.

Better performance is always what we purse in the development of this adapter, also we were not quite satisfied with some limitations of F mount adapter mode, such as partial EXIF recording, APS-C lens recognition/DX mode switching, lens profiles embedding, etc. We already managed to solve some of them as you can see in Table-1, however it is a continuous effort for us to improve it via future firmware update.

Steelsring has long terms history in studying Nikon lens protocols and camera/lens firmware, we knew Nikon and Canon's little secret more than others, guaranteed.

FAQ: How to tell the current working mode of Steelsring adapter?

Open camera setting menu, choose to display "Firmware version", two lines of information will be displayed. First line is version number of camera body firmware, second line is about lens version. If the second line starts with MA, then it works in F mount adapter mode. If it starts with LF, then it works in Z mount native lens mode.

FAQ: Is EF lens suitable for Z mount adapting?

EF lens equips with USM and electromagnetics aperture technology, it works great for picture taking, both AF-S and AF-C functions, but the noise of USM and slow electromagnetics aperture moving of old EF lenses make it is not suitable for v logging. However, EF/EF-S STM lenses are both fast and quiet, better performance and much cheaper than Z amount DX lenses, (Our feeling comes from real experience of shooting Nikon Z 50-250 f/4.5-6.3 DX and EF-S 55-250 f/4-5.6 STM on Z6 camera body, just for your reference, not for your decision). Secondly, EF lenses AF driving are positioned by discrete numbers, while Nikon lens is counted by motor pulses, it's much easier for Nikon lenses be more accurate position controlled in AF hunting, so sometimes adapted EF lenses isn't very accurate in AF-S mode, but AF-C can compensate it anyway.

FAQ: How to use Pinpoint AF?

Pinpoint AF aims at better AF focus accuracy, however EF lenses can't report very precise AF

motor position in real-time like Nikon lenses, so usually the final position of lens motor was not the best position for focus locking, thus camera will not allow shutter actions. Here are some temp solutions until we have better ideas: 1) In camera settings, set Autofocus->AF-S priority selection to Release, instead of Focus. Or 2) Step down lens aperture for 2-3 stops, to increase the depth of focus. Or 3) Set L-Fn button of adapter to "Zoom On/Off", range 50%. When focusing rectangle is red, single click L-Fn will turn lens view zoom on. Then half press lens shutter again, usually camera will start focus hunting in short range and focus lock quickly, then you can press the shutter button to trigger the shooting. Single click the L-Fn to turn zoom off to restore normal lens view. Success rate of accurate focus locking is 80% per our experiments. 3) is the best practice we recommend.

FAQ: What's L-Fn button emulation?

There is an extra L-Fn button provided in high end S lens, it provides single click camera function activation, such as turning grid on/off in camera LCD, DOF preview, etc., details can be found in https://onlinemanual.nikonimglib.com/z7_z6/en/09_menu_guide_05_f02.html

From firmware v1.01, the MFB in Steelsring EF-NZ adapter body can be used like an L-Fn button when being single clicked, works with either an expensive or a cheap EF lens. Deeply sorry for Nikon 50s, 35s, 50-250s …. It works only in Nikon Z mount native mode.

Function options for L-Fn (from Nikon web site):

Option								
RESET	Select center focus point	–	–	✔	–	✔	–	–	–
AF-ON	AF-ON	✔	✔	✔	–	✔	–	✔	–
	AF lock only	✔	✔	✔	–	✔	–	✔	–
	AE lock (Hold)	✔	✔	✔	–	✔	✔	✔	–
	AE lock (Reset on release)	✔	✔	✔	–	✔	✔	✔	–
	AE lock only	✔	✔	✔	–	✔	–	✔	–
	AE/AF lock	✔	✔	✔	–	✔	–	✔	–
	FV lock	✔	✔	–	–	✔	–	✔	–
	Disable/enable	✔	✔	–	–	✔	–	✔	–
	Preview	✔	✔	–	–	✔	✔	✔	–
	Matrix metering	✔	✔	–	–	✔	–	✔	–
	Center-weighted metering	✔	✔	–	–	✔	–	✔	–
	Spot metering	✔	✔	–	–	✔	–	✔	–
	Highlight-weighted metering	✔	✔	–	–	✔	–	✔	–
BKT	Bracketing burst	✔	✔	–	–	✔	–	✔	–
	Sync. release selection	✔	✔	–	–	✔	–	✔	–
+RAW	+ NEF (RAW)	✔	✔	–	–	✔	✔	✔	–
	Framing grid display	✔	✔	–	–	✔	✔	✔	–
	Zoom on/off	✔	✔	✔	–	–	✔	✔	–
	MY MENU	✔	✔	–	–	–	✔	✔	–
	Access top item in MY MENU	✔	✔	–	–	–	✔	✔	–
	Playback	✔	✔	–	–	–	–	✔	–

FAQ: How to disable/enable auto DX mode for EF-S lenses? (v1.06)

1) Auto DX mode works only for EF-S lenses, and in Z mount native lens working mode.
2) To switch between on/off, hold the multi-function button in adapter while powering up camera, then release the button after 1 second.
3) This setting will be saved, and works until next change.
4) This setting may be lost during new firmware update, make sure check it after firmware update if it is important to you.
5) Default setting is On for auto DX mode.

Using guide.

Attention: To avoid potential damage to adapter, camera or lens circuit PCBs, we strongly suggest turning off camera body power first, before changing lenses or detaching adapter from camera body.

How to install the adapter and lens?

1) Put adapter, lens and camera body in stable and hard surface.
2) Make sure camera body is powered off.
3) Align the red mark of rear of lens with the red dot mark of adapter's front lens mount, insert the rear of lens into the lens mount until it can't move forward, then turn the lens

body in clockwise direction, until hear a click, which means lens is locked.

4) Align the white mark of rear of adapter with the white mark of camera body near the lens mount, insert the rear of adapter into camera's lens mount until it can't move forward, then turn the adapter body in counter clockwise direction, until hear a click, which means adapter is locked.
5) Turn on camera power, the default working mode is Z mount native lens mode, unless being changed by user later.

How to use it?

1) When camera power is on, AF/AE is controlled via camera body.
2) When camera power is on, AF/MF mode can be switched via lens body switch
3) When camera power is on, Lens body Image Stabilization can be switched on/off via lens body switch, see note 1 for difference across working modes.
4) When camera power is on, by clicking the MFB of adapter body, adapter's working mode can be switched or entering lens AF driving sensitivity tuning mode.

How to detach the adapter and lens?

1) Make sure camera body is powered off.
2) Press down the lens release button near camera lens mount, turn the adapter body in clockwise direction at the same time, until you can pull the adapter out of lens mount of camera body.
3) Press down the lens release button near adapter lens mount, turn the lens body in counter clockwise direction at the same time, until you can pull the lens out of lens mount of adapter

Note1: About Image Stabilization

Mode of IS	**Z-mount native working mode**	**F-mount adapter working mode**
Lens IS functions only	*Pre-conditions:* 1) Lens body Image stabilization is On 2) Lens body Image stabilization mode does not matter 3) Camera IBIS is turned off *When to activate:* IS works all the times, until Lens body IS switched off	Not available in this working mode

Camera IBIS functions only	*Pre-conditions:* 1) Lens body Image stabilization is Off 2) In F-mount adapter working mode, Lens body Image stabilization must be switched off before camera power on. any changes after camera power on does not affect anything until camera is power off 3) Or it is a non-IS lens 4) Or it is a lens without electronic contacts. *When to activate:* Controlled by camera body	
Lens IS and Camera IBIS co-works	*Pre-conditions*: 1) Lens body IS is on 2) Camera IBIS is on 3) Co-op of Lens IS and IBIS is an ongoing study, sometime situation maybe worse if both functions enabled. Disable one of them in that case. 4) Could be improved in future firmware update, no guarantee yet.	*Pre-conditions:* 1) Lens body IS is on 2) Camera IBIS is on 4) May performs better than native working mode sometimes. *When to activate:* Controlled by camera body

Note2: Lens AF driving sensitivity tuning

1) The default EF lens driving parameter for Z camera is calculated directly from original Lens parameter, most time it shall works perfect, there is still a chance for user to have a better choice.
2) When Lens AF driving slowly or hunt a lot in focusing point, you can try this feature before waiting for our solutions.
3) To **enter** Lens AF driving sensitivity tuning mode: When camera is power on, lens and adapter is mounted, continuous double click (1 double click = 2 clicks in 1 second) for 2 times on adapter body's MFB, stop for a while , then ***single click*** (= 1 click in 1 second) on MFB. If you did it right, the camera will show F1.0 aperture always from now on, which means you are in the tuning mode. If you have an EF 50 F/1.0L lens, make sure you set the aperture to any other F-numbers than F1.0, other you will be confused.
4) To **quite** Lens AF driving sensitivity tuning mode: Turn camera power off or refer to 7) reset to default sensitivity
5) When AF hunt a lot around a focusing point, it means sensitivity maybe too high (default value for all lenses is **100**), need to be lowered down. Each single click on MFB will decrease current sensitivity value by 1. N single clicks on MFB will decrease current sensitivity value by N, the minimum sensitivity value can be set is 1.
6) When AF slows in moving, it means sensitivity is low, need to be speed up. A single double clicks on MFB will increase current sensitivity value by 1, N double clicks will increase current sensitivity value by N , the maximum sensitivity value can be set is 1000. The result of 1 double clicks and 1 single click later, is zero adjustment to your current setting.
7) If you want back to system default value (which is 100), just press down the multi-function

button for 10s or little bit longer, then release the button, F1.0 on camera display will be cancelled, it means your sensitivity setting for current setting was reset to default, and you are not in Lens AF driving sensitivity tuning mode anymore.

8) Effect of each time tuning will work only **after camera reboot**.
9) Adapter can store sensitivity setting for more than 100 lenses. Each time tuning is only related to the current lens attached and current adapter working mode, will not impact different lenses or same lens working in different working mode.
10) User's lens sensitivity tuning information **may lose** after firmware update or not, you may need to re-tune it if necessary.
11) We find no way to display the current setting for you, please start with system default value if you are lost.

Note3: Switch Adapter Working Mode

1) Refer to FAQ to determine your current adapter working mode
2) To switch current adapter working mode: When camera is power on, lens and adapter is mounted, continuous double click (1 double click = 2 clicks in 1 second) for 2 times on adapter body MFB, stop for a while, then ***double click*** once on MFB. If you did it right, the camera will show F2.0 aperture always from now on, which means your adapter working mode is switched already, from native mode -> F lens adapter mode or vice versa. Any more double or single clicks on MFB are meaningless and unnecessary after working mode was changed.
3) To quite this mode, please turn off camera power
4) In order for the new adapter working mode taking effect, adapter must be detached from camera mount for once, then remounted.
5) New working mode will work forever for all lenses, until you switch it again.
6) Firmware update **may reset** the working mode to native lens mode without further notification, make sure to check it after firmware update if it is important to you.

Note 4: USB storage disk mode for firmware update

1) When adapter is connected to USB port of Windows PC or MAC, there will be a USB storage disk emerging with Volume Label: "SR_EFZ"
2) Open that USB disk named as "SR_EFZ" with File explorer in Windows or Finder app in MAC.
3) 3 files exists in the root directory of that USB disk. Double click INFO.TXT to view its contents. First line is product name, second line is PCB version, third line is version number of bootloader. The forth line is version number of Firmware, you need to check it out before or after firmware update. SETTING.DAT is for diagnosis purpose only, do not touch it, and send it to us if help is needed.

4) In File explorer or Finder, drag&drop or copy&paste the official firmware file into the root directory of SR_EFZ USB disk, firmware will be updated on the fly while copying.
5) When file copying is finished, wait until USB disk storage disappears.
6) If SR_EFZ USB disk does not appear again, disconnect USB cable from PC/MAC, wait for a while then reconnect it to PC/MAC.
7) Check INFO.TXT for firmware version, it is not the same version as firmware update file, or “N/A” was shown, it means firmware upgrade failed, you need to do it again as step 4) – 7), until you see the right info.
8) If you fails always, please disable any anti-virus software or system protection before try it again.
9) Remember to enable anti-virus or system protection again when you get it done.
10) Do not copy another things into SR_EFZ USB disk, it may confuse the firmware updater.

Known bugs:

1) For adapter with bootldr 1.00, firmware update will fails for the first time, but the second attempt will works, sorry about his, bug fixed in bootldr 1.01 .