

# How to Set Up the EMF adapter for Canon Eos Digital Cameras

The EMF adapters for Canon EOS digital cameras make it possible to use various manual focus lenses on these cameras with manual (stop down) aperture control, with four extra functions:

- activation of the camera's focus confirmation indicator (with lens apertures of at least f/5.6)
- insertion of the maximum aperture of the lens in the EXIF data
- insertion of the focal length of the lens in the EXIF data
- focus micro-adjustment for the lens-camera combination.

In the EXIF data, the name of the lens appears as 1-65535.

Note: The EMF focus micro-adjustment is not to be confused with AF Microadjustment available on some EOS high-end cameras. EF lenses pass a Best Focus Correction Value (BFCV – built in by the manufacturer) to the camera. This enables the camera's focusing system to compensate for variations between individual lenses. The EMF adapter enables you to set a value for this for your lens-adapter combination, but since you measure it yourself, it also renders the camera's AF Microadjustment unnecessary for your lens-adapter-camera combination.).

To make full use of the capabilities of the adapter, you will need to program the chip in the adapter appropriately. Otherwise the default settings of 50mm, f/1.4, and no focus micro-adjustment (setting 17) will be used. To program the chip you should work through the following steps.

1. Mount the adapter on the lens, and the lens on the camera
2. Make appropriate basic settings on the camera
3. Activate the adapter programming mode
4. Enter a setting
  - a. Select a setting mode
  - b. Enter the appropriate value
5. Confirm the setting, and return the adapter to normal mode

Then:

6. Set the camera to record the correct working aperture in the EXIF data, and take pictures.

## 1. Mount the lens on the camera

### 1.1 Attach the adapter

Attach the adapter to the lens.

Check that no part of the lens mount projects from the back of the adapter in any focus or zoom setting. This will not often occur with a lens from a normal 35mm camera, but if the mirror should strike the lens mount when you take a photo this would seriously damage the camera. This effect is more likely with full frame cameras, as the mirror of APS format cameras is smaller.

Check that the aperture control on the lens actually operates the diaphragm over its full range.

(For advice and tips on using an EMF adaptor with your particular lens fitting, see [www.emfphoto.com/forum/](http://www.emfphoto.com/forum/), or search the web.)

## 1.2 Mount the lens on the camera

Switch off the camera!!!

Mount the lens with adapter on your camera in the usual way.

## 2. Make the basic camera settings

Switch on the camera.

Make sure that the camera drive mode is set to single shooting!!!

Set the camera to Manual Exposure mode.

Set the shutter speed to 1/60 second and the exposure level increment to 1/3 EV.

## 3. Activate the adapter programming mode

On the camera:

- adjust the aperture setting to f/64, and press the shutter button once.
- adjust the aperture setting to f/57, and press the shutter button once.
- adjust the aperture setting to f/64, and press the shutter button once.

Check that the adapter programming mode has been activated. If you can set the maximum aperture of f/1.0 on the camera, the adapter is in programming mode, and you can set the focal length and maximum aperture of your lens into the adapter. You can also set up focus micro-adjustment for your lens.

## 4. Enter settings

### 4.1 How to enter values in programming mode

To enter values in programming mode, you set an aperture value on the camera and press the shutter button once for each digit, and the adapter interprets the camera's aperture setting as a numerical digit as follows:

0	1	2	3	4	5	6	7	8	9
f/2.0	f/2.2	f/2.5	f/2.8	f/3.2	f/3.5	f/4.0	f/4.5	f/5.0	f/5.6

### 4.2 Choosing the setting mode

The adapter has three setting modes:

Mode 0: set the maximum aperture of your lens into the adapter.

Mode 1: set the focal length of your lens into the adapter.

Mode 2: set the adapter for the focus micro-adjustment of your lens.

To select the desired setting mode, after activating programming mode, adjust the aperture setting on your camera to the appropriate value:

- f/2.0 for mode 0 – set maximum aperture value
- f/2.2 for mode 1 – set focal length
- f/2.5 for mode 2 –focus micro-adjustment

and press the shutter button once.

### 4.3 Setting the maximum aperture of the lens into the adapter

After activating the adapter's programming mode, set the adapter into setting mode 0. (Adjust the aperture setting on the camera to f/2.0, and press the shutter button.)

Adjust the aperture setting on the camera to the actual maximum aperture of your lens, and press the shutter button. (The adapter will accept apertures between f/1.1 and f/45, but, as was explained earlier, focus confirmation may not work for apertures smaller f/5.6.) This maximum aperture will be registered in the adapter.

Continue with 4.4, or confirm the setting and return the adapter to normal mode (see 5.).

**Note: Do not attempt to set a maximum aperture of f/1.0. This will not be accepted by the adapter, and might cause a malfunction.**

### 4.4 Setting the focal length of the lens into the adapter

**Note: The adapter can store focal lengths of from 1mm to 65535 mm using five digits. You must enter the focal length using leading zeroes as necessary to make up the five digits.**

After activating the adapter's programming mode, set the adapter into setting mode 1. (Adjust the aperture setting on the camera to f/2.2, and press the shutter button.)

For each of the five digits of the focal length, enter the value by adjusting the aperture setting on the camera appropriately, and pressing the shutter button. (For example, to set a focal length of 350mm:

1. adjust the aperture setting on the camera to f/2.0, for 0, and press the shutter button
2. again with aperture setting f/2.0, for 0, press the shutter button
3. adjust the aperture setting to f/2.8, for 3, and press the shutter button
4. adjust the aperture setting to f/3.5, for 5, and press the shutter button
5. adjust the aperture setting to f/2.0, for 0, and press the shutter button.)

Confirm the setting and return the adapter to normal mode (see 5.).

### 4.5 Setting the focus micro-adjustment for your lens

**Note 1: These instructions do not attempt to explain how to determine the amount of focus micro-adjustment required for your lens-camera combination. Instructions for several different methods are to be found on the internet.**

**Note 2: The EMF chip accepts focus micro-adjustment values from 0 to 31 using two digits. You must enter a leading zero if necessary to make up the two digits.**

After activating the adapter's programming mode, set the adapter into setting mode 2. (Adjust the aperture setting on the camera to f/2.5, and press the shutter button.)

For each of the two digits of the focus micro-adjustment value, enter the value by adjusting the aperture setting on the camera appropriately (see 4.1), and pressing the shutter button.

Confirm the setting and return the adapter to normal mode (see 5.).

## 5. Confirm the setting and return the adapter to normal mode.

After you have entered the value of your setting, you must confirm it, and restore the adapter to normal mode. You do this as follows.

On the camera:

- adjust the aperture setting to f/57, and press the shutter button once
- adjust the aperture setting to f/64, and press the shutter button once
- adjust the aperture setting to f/57, and press the shutter button once.

If the value you have entered is correct, the chip will retain it until you change it. You can switch off the camera and remove the lens without losing your settings. However, if you have made any errors in the programming process (e.g. missed a step or entered an incorrect value), the adapter settings will remain unchanged.

## 6. Photographing with the EMF adaptor

To take photographs with a manual lens, you must set the camera mode to Manual Exposure (M) or Aperture Priority (Av). Then you must set the exposure manually, using the stop-down aperture setting on the lens and setting the shutter speed on the camera; and you must focus manually, taking advantage of the camera's focus confirmation activated by the adaptor, or any other focusing aid you have.

### 6.1 How to record the correct working aperture in the EXIF data

When a shot is taken with the camera in Manual Exposure or Aperture Priority mode, the EXIF data shows the working aperture as the value set on the camera, irrespective of the physical lens aperture actually used. So to get the correct working aperture in the EXIF data, all you have to do is to make sure that the same aperture value is set on both the camera and the lens.

### 6.2 How to achieve correct exposure

Some camera-lens combinations expose correctly at full aperture, but overexpose increasingly as you stop down. In that case, select Manual Exposure, determine the correct exposure at full aperture, next set the aperture you want to use, and then change the shutter speed correspondingly without worrying about the meter reading.

For example, the camera indicates an exposure of 1/400 sec at f/2.0, but you want to use f/4.0. Set both the camera and the lens to f/4.0, and the shutter speed to 1/100 sec.

## Caution

Do not touch the contacts on the EMF chip or the camera.

If you should inadvertently activate programming mode as described under 3, select an aperture value between f/6.3 and f/51 and press the shutter button to return the adapter to normal mode.

## Website

For up-to-date information and questions on these adaptors see [www.emfphoto.com/forum/](http://www.emfphoto.com/forum/).

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