Canon

Mobile Guide to EOS Speedlite Custom and Personal Functions

Every Canon EX-series Speedlite, with the exception of the super-compact 90EX, offers **Custom Functions (C.Fn)** that allow you to customize your Speedlite's default functions to suit your needs and preferences. Canon's top-of-the-line Speedlite 600EX-RT and ST-E3-RT Wireless Transmitter also offer exclusive **Personal Functions (P.Fn)**, which allow you to personalize display appearance and other behaviors.

This mobile guide will describe every available C.Fn and P.Fn and which Speedlites they are available for. Tap the **By Number** tab for a complete list sorted in numerical order. Tap the **By Function** tab for a list grouped based on similar functions. Tap the **Home** tab to return to this page. Scroll down for instructions on How to Set C.Fns via Camera Menu and How to Set C.Fns and P.Fns via Speedlite Menu.
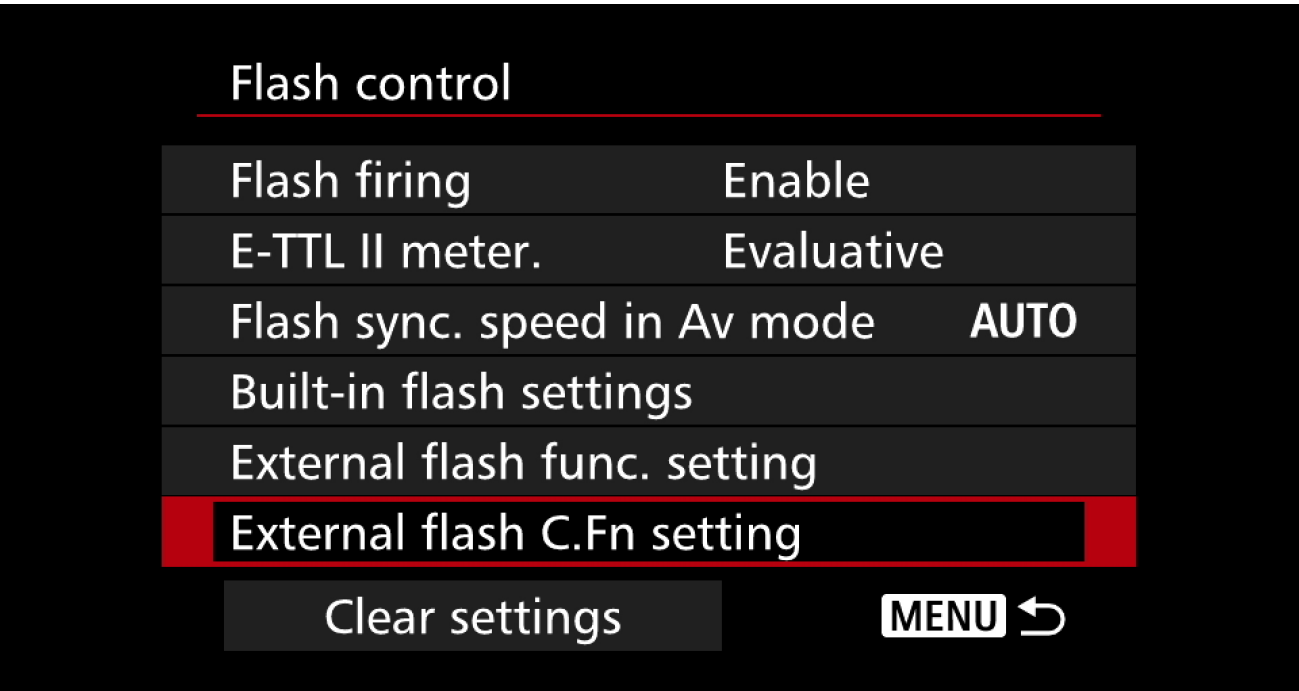
Canon's macro flash units are not included in this guide because their Custom Functions differ significantly from those of shoe-mount Speedlites.

The number of C.Fns a Speedlite has will vary from one model to the next. Top-of-the-line units have the most, smaller and lower-priced units have the least.

Regardless of how many C.Fns a Speedlite may have, the identifying number for a given C.Fn is consistent from one model to the next. For example, C.Fn 10 controls the auto power-off timer when a unit is used as a slave, regardless of whether you're using the 600EX-RT, 430EX II or 320EX. A gap in sequential numbering indicates that the corresponding C.Fn is not available on that particular Speedlite.

Do not confuse **Speedlite** C.Fn numbers with **camera** C.Fn numbers. They are separate and different.

How to Set C.Fns via Camera Menu

Flash control	
Flash firing	Enable
E-TTL II meter.	Evaluative
Flash sync. speed in Av mode	AUTO
Built-in flash settings	
External flash func. setting	
External flash C.Fn setting	
Clear settings	MENU ↩

In general, the fastest and simplest way to set C.Fns is to use your EOS camera's External Flash Control menu screen. Camera menu commands are described in plain English. A Speedlite's LCD panel uses only numbers. Also keep in mind that Canon's least-expensive Speedlites do not have an LCD panel, therefore flash Custom Functions must be applied via your camera's Flash Control menu. A compatible Speedlite must be attached to the camera. The flash and camera must both be on. The camera's Flash Control menu is usually in the first Shooting Menu screen. You will find the Flash Control menu listed in the Shooting Menu of any EOS system camera introduced since 2007. Compatible Speedlites include:

Speedlite 600EX-RT

Speedlite Transmitter ST-E3-RT

Speedlite 580EX II

Speedlite 430EX II

Speedlite 320EX

Speedlite 270EX II

Speedlite 90EX

How to Set C.Fns or P.Fns via Speedlite menu

Canon's radio-compatible Speedlite 600EX-RT and Speedlite Transmitter ST-E3-RT have several C.Fns and P.Fns that are exclusive to these units and must be set via the unit's LCD Display Panel rather than camera menus. As compared to Custom Functions, P.Fns are primarily set-up functions that allow you to configure the LCD panel illumination color and specialized functions to your preferences.

To access C.Fns (and P.Fns if available) via any Speedlite menu:

1 Press and hold down the speedlite **Zm C.Fn** button (C.Fn button on the ST-E3-RT transmitter) until you see the C.Fn or P.Fn menu.

2 Turn the **Select** dial to the number of the C.Fn or P.Fn you want to access.

3 Press the **SET** button to select the C.Fn or P.Fn.

4 Turn the **Select** dial to the specific setting you want.

5 Press the **SET** button to select the new setting. Press the **RETURN** button (curved arrow icon) to return to the list of Speedlite or Transmitter Custom/Personal Functions.

C.Fns and P.Fns By Number

Personal Functions are listed after Custom Functions. They are also grouped together on the **By Function** page.

The factory default setting for every Speedlite C.Fn or P.Fn is [**0**]. Any setting other than [**0**] is therefore a custom setting. To restore your Speedlite to its original factory settings, simply change the setting back to [**0**].

C.Fn 00: Distance Indicator Display

C.Fn 01: Auto Power Off

C.Fn 02: Modeling Flash Activation Method

C.Fn 03: Flash Exposure Bracketing Auto Cancellation

C.Fn 04: Flash Exposure Bracketing Sequence

C.Fn 05: Automatic Flash Exposure Mode

C.Fn 06: Quick Flash During Continuous Shooting

C.Fn 07: Test Flash Power Level (during E-TTL operation)

**Speedlite Personal Functions:
Speedlite 600EX-RT and ST-E3-RT**

Personal Functions (P.Fns) are exclusive to the Speedlite 600EX-RT and ST-E3-RT Wireless Transmitter and can be accessed only via the LCD menu on the unit itself. Flash Control Menu settings on the camera are not available.

P.Fn 01: LCD Panel Contrast

P.Fn 02: LCD Panel Illumination Color — Normal Mode

P.Fn 03: LCD Panel Illumination Color — Master

P.Fn 04: LCD Panel Illumination Color – Slave

P.Fn 05: Auto-Detection of Canon Color Filters

P.Fn 06: Wireless Button Selection Sequence

P.Fn 07: Flash Firing During Linked Shooting

▌Autofocus

C.Fn 08: AF-Assist Beam On or Off

▌Power

C.Fn 01: Auto Power Off

C.Fn 06: Quick Flash During Continuous Shooting

C.Fn 07: Test Flash Power Level (during E-TTL operation)

C.Fn 10: Slave Auto Power Off

C.Fn 11: Slave Auto Power Off Period

C.Fn 12: Primary Power Source When Using External Battery Pack

▌Coverage

C.Fn 09: Auto-zoom to Match Sensor Size

C.Fn 21: Coverage During Auto Flash Head Zooming

▎Exposure

C.Fn 02: Modeling Flash Activation Method

C.Fn 03: Flash Exposure Bracketing Auto Cancellation

C.Fn 04: Flash Exposure Bracketing Sequence

C.Fn 05: Automatic Flash Exposure Mode

C.Fn 13: Flash Exposure Compensation via Speedlite Dial Only

P.Fn 05: Auto-Detection of Canon Color Filters

P.Fn 07: Flash Firing During Linked Shooting

▎Wireless master

P.Fn 03: LCD Panel Illumination Color — Master

P.Fn 06: Wireless Button Selection Sequence

▎Wireless slave

C.Fn 23: AF-Assist as Slave Ready Indicator

▍Display

C.Fn 00: Distance Indicator Display Setup (meters/feet)

C.Fn 14: Speedlite 430EX II Maximum Distance / Aperture Info

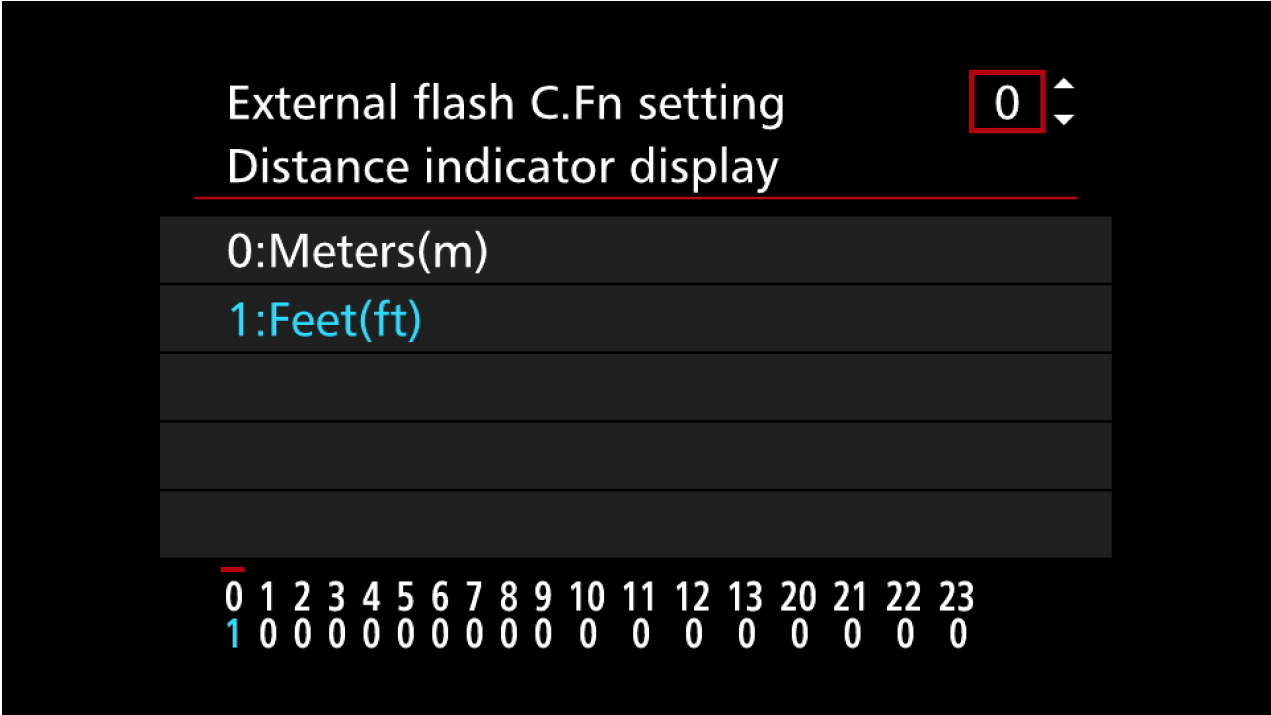*C.Fn 22: Button and LCD Panel Illumination*

▍Personal Settings

C.Fn 20: Audible Recycle Tone

P.Fn 01: LCD Panel Contrast
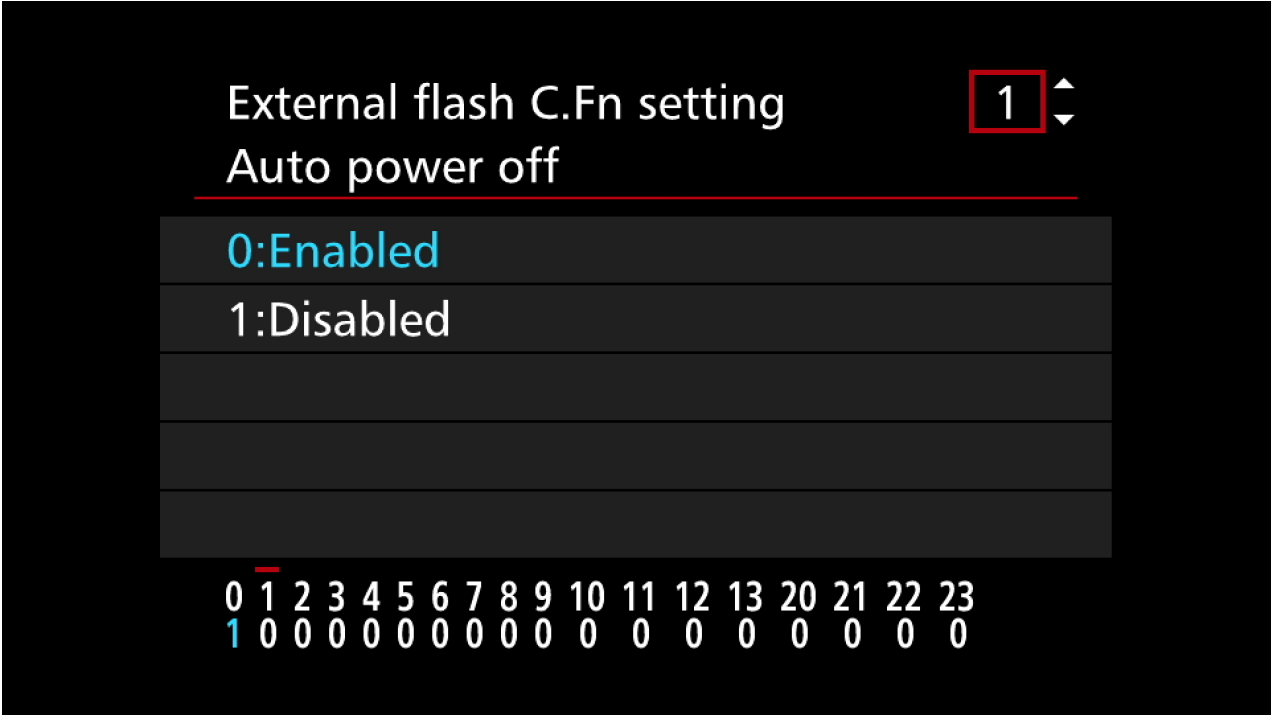
P.Fn 02: LCD Panel Illumination Color — Normal Mode

C.Fn 00: Distance Indicator Display
430EX II, 580EX II, 600EX-RT

External flash C.Fn setting
Distance indicator display   0

0:Meters(m)
1:Feet(ft)

0 1 2 3 4 5 6 7 8 9 10 11 12 13 20 21 22 23
1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Default [0]   Distances will display in meters.

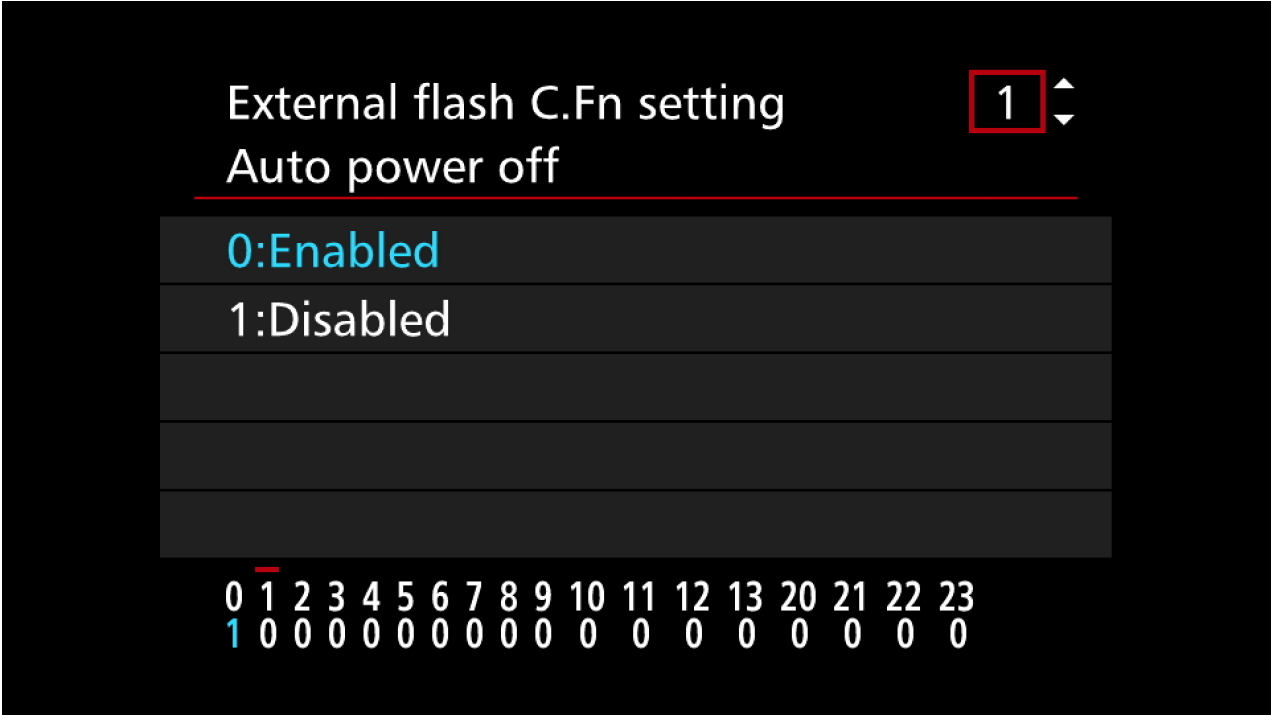**Option [1]**   Distances will display in feet.

C.Fn 01: Auto Power Off
270EX II, 320EX, 430EX II, 580EX II, 600EX-RT, ST-E3-RT

Default [0]   The flash will conserve battery power by automatically "going to sleep" if no buttons are operated or the flash isn't fired after 1½ to 2 minutes. You can re-activate the flash by pressing the shutter button halfway down or by pressing the flash's test button.

Option [1]   The flash will remain on until you switch it off manually or it runs out of battery power. You may prefer this setting if battery conservation is not a concern and you want your flash always ready to fire, without delay.

C.Fn 02: Modeling Flash Activation Method
430EX II, 580EX II, 600EX-RT, ST-E3-RT

External flash C.Fn setting
Auto power off

1

0:Enabled
1:Disabled

0 1 2 3 4 5 6 7 8 9 10 11 12 13 20 21 22 23
1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Default [0]   Pressing the DOF Preview Button on your camera will trigger a one-second burst of rapidly repeating flash (strobe effect) which allows you to preview how flash and shadows will appear in a scene.

Option [1]   Modeling flash will be triggered by the Flash Test Button.

Option [2]   Modeling flash can be triggered by **either** the DOF Preview button **or** the Flash Test button.

Option [3]   Modeling flash is disabled.

Note: Using the modeling flash can cause heat to build-up in the flash tube. To prevent damage, avoid continuous use and give the flash time to cool down.

C.Fn 03: Flash Exposure Bracketing Auto Cancellation
580EX II, 600EX-RT, ST-E3-RT

Default [0]   Flash Exposure Bracketing will automatically cancel itself after one set of three bracketed flash exposures.

Option [1]   Flash Exposure Bracketing will remain active continuously, until manually disabled.

C.Fn 04: Flash Exposure Bracketing Sequence
580EX II, 600EX-RT, ST-E3-RT

Default [0]   Flash Exposure Bracketing takes the "normal" exposure first, followed by an under- and over-exposed shot, in that order.

Option [1]   Flash Exposure Bracketing with expose shots "in order" (Under, Normal, Over) so that thumbnail images appear in a visually pleasing sequence.

C.Fn 05: Automatic Flash Exposure Mode
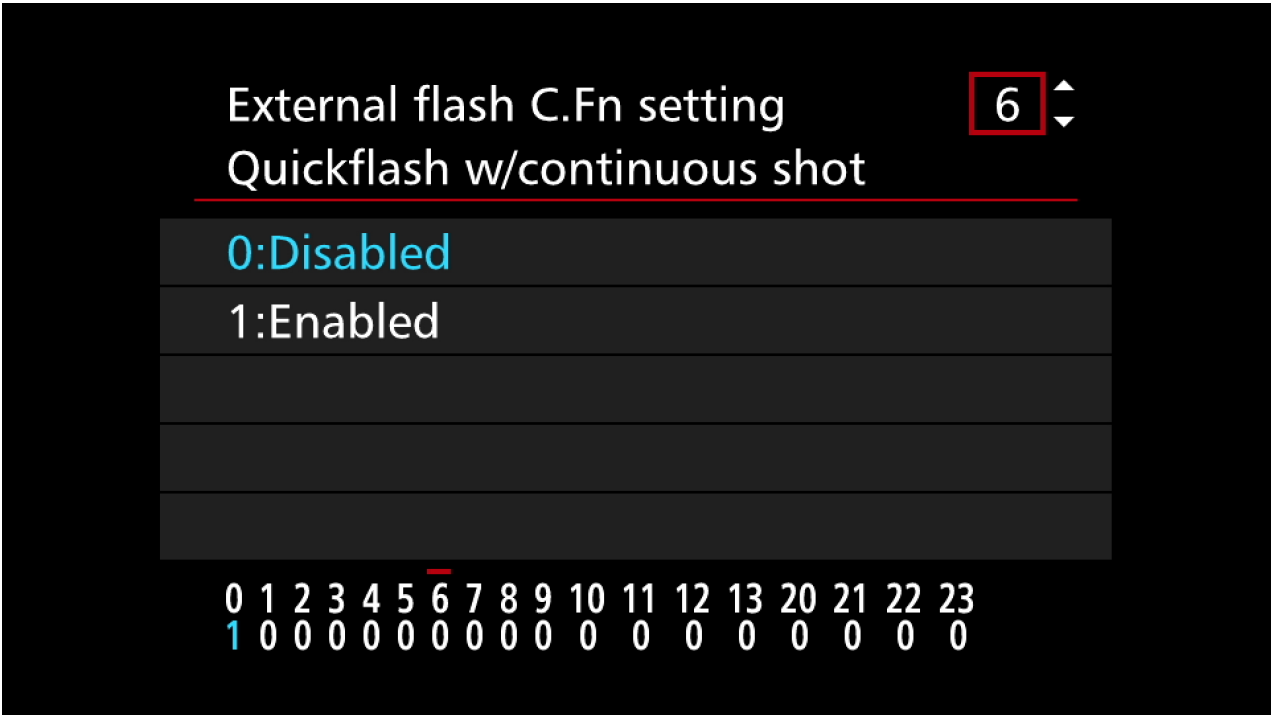## 580EX II, 600EX-RT

Default [0]   **E-TTL:** Automatic flash exposures will be controlled using standard EOS E-TTL or E-TTL II through-the-lens flash control.

Option [1]   **TTL:** Automatic flash exposures will be controlled using the older "off-the-film" TTL flash mode (for use **only** with older EOS film cameras such as the EOS-1, EOS-1n, or EOS A2/A2E).

Option [2]   **Ext. A:** Non-TTL automatic flash, with flash exposure controlled by external flash sensor located on the front of the Speedlite. The Speedlite will automatically set the aperture and ISO on compatible EOS cameras.

Option [3]   **Ext. M:** Non-TTL automatic flash via external flash sensor located on the front of the Speedlite. The aperture and ISO must be set on the Speedlite manually (hence, the "M" designation), to match the camera settings.
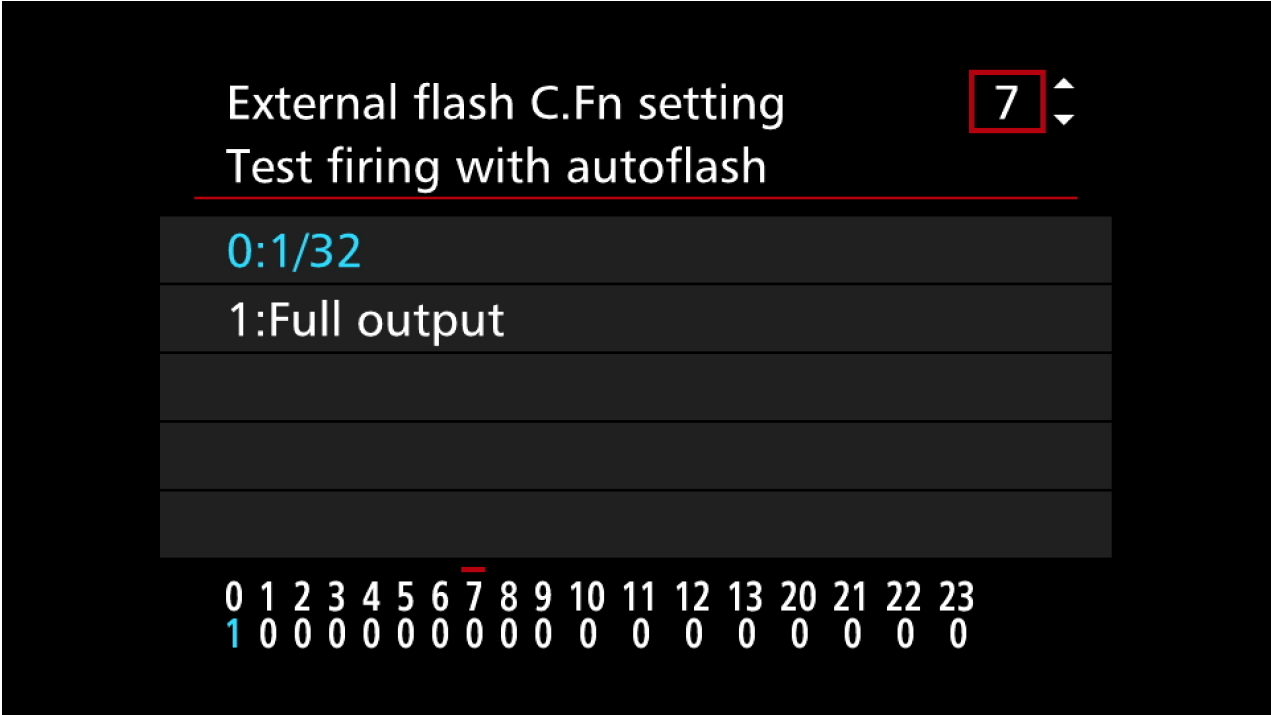
C.Fn 06: Quick Flash During Continuous Shooting
270EX II, 320EX, 580EX II, 600EX-RT

External flash C.Fn setting
Quickflash w/continuous shot   6

0:Disabled
1:Enabled

0 1 2 3 4 5 6 7 8 9 10 11 12 13 20 21 22 23
1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Default [0]   Quick Flash allows you to fire the Speedlite before it has fully recycled from the previous shot. By default, this feature is disabled during continuous shooting.
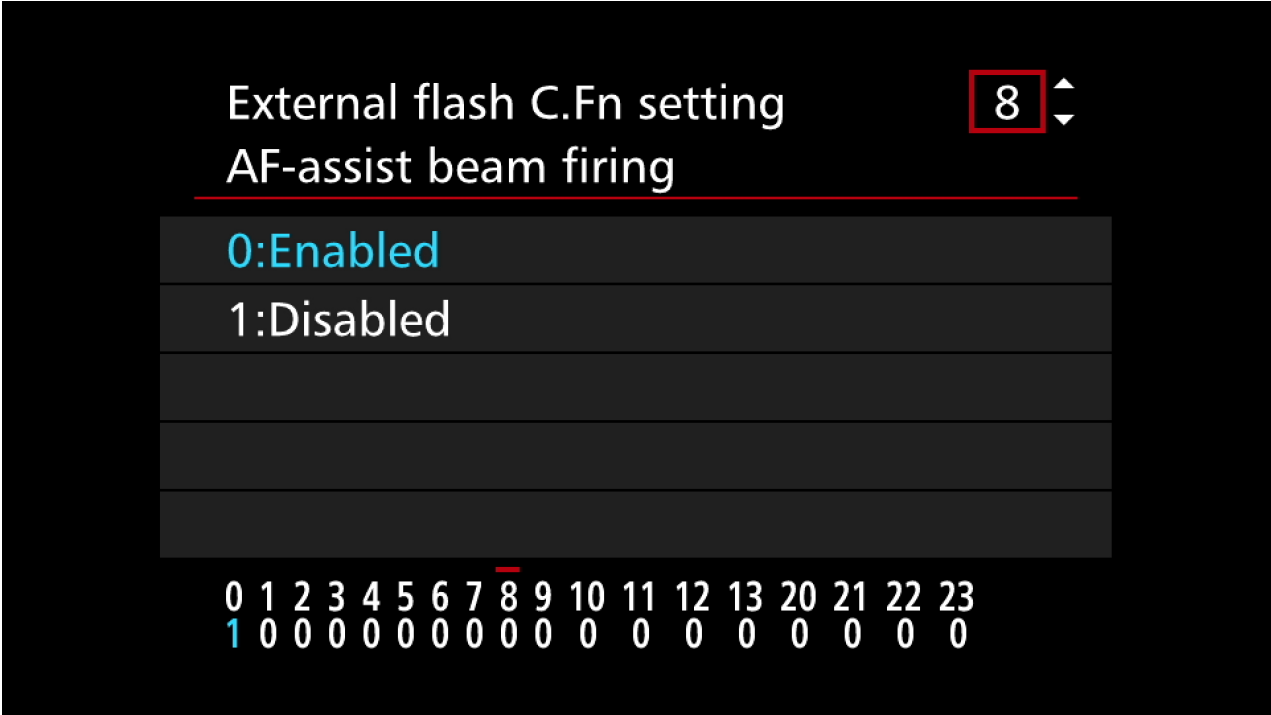
Option [1]   Quick Flash will be available during continuous shooting. This allows you to shoot before the flash has fully recycled; however, because the flash output will be reduced, this mode is best suited for nearby subjects.

C.Fn 07: Test Flash Power Level (during E-TTL operation) 430EX II, 580EX II, 600EX-RT, ST-E3-RT

External flash C.Fn setting
Test firing with autoflash   7

0:1/32
1:Full output

```
0 1 2 3 4 5 6 7 8 9 10 11 12 13 20 21 22 23
1 0 0 0 0 0 0 0 0 0 0  0  0  0  0  0  0  0
```

Default [0]   When you press the Test Flash Button the Speedlite will flash at 1/32 power. This conserves battery power and results in a faster recycle time.

Option [1]   When you press the Test Flash Button the Speedlite will flash at full power. This is preferable if, for example, you want to be aware of the full-power flash recycle time.
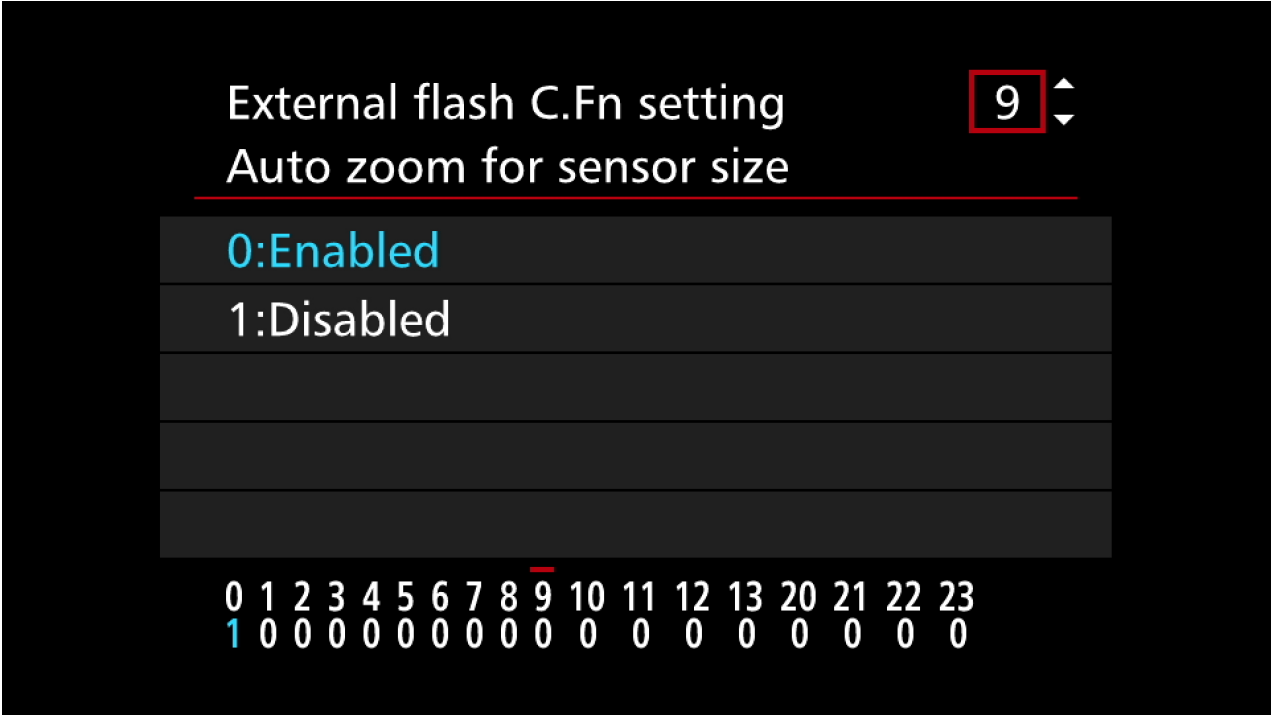
C.Fn 08: AF-Assist Beam On or Off
430EX II, 580EX II, 600EX-RT

External flash C.Fn setting
AF-assist beam firing

0:Enabled
1:Disabled

8

0	1	2	3	4	5	6	7	8	9	10	11	12	13	20	21	22	23
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Default [0] When your EOS camera is set to One-Shot AF mode, the AF Assist Beam on the Speedlite will automatically project a patterned beam onto your subject in low light and/or low contrast conditions to help boost autofocus performance, even when you are not using flash illumination.

Option [1] The AF Assist Beam will be disabled. This is preferable in situations such as weddings or live performances, where the AF Assist Beam could be annoying, distracting, or forbidden. (You can also disable the AF Assist Beam by activating AI Servo AF on your camera.)
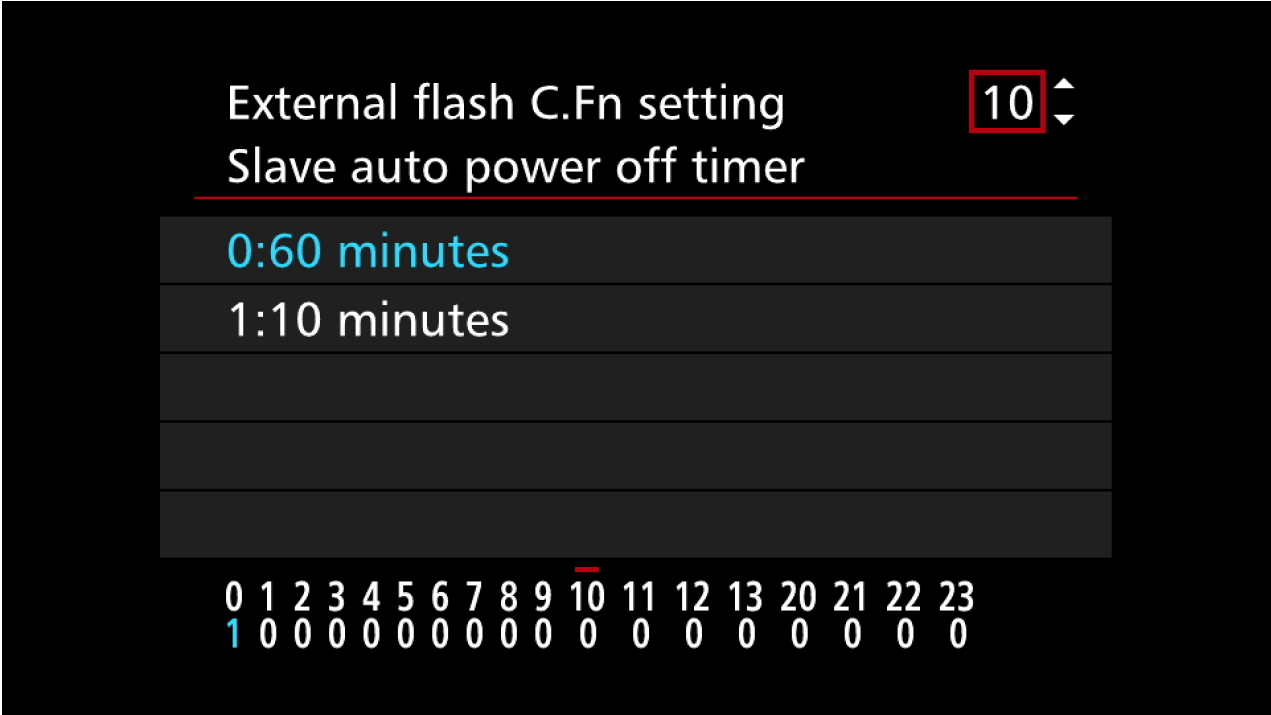
C.Fn 09: Auto-zoom to Match Sensor Size
430EX II, 580EX II, 600EX-RT

Default [0] The Speedlite will automatically recognize the size of your camera's sensor (full-frame or APS-C), the corresponding angle of view of the lens you're using, and adjust the flash's angle of coverage to match.

Option [1] Auto-zoom will be disabled. This is preferable if, for example, you want manual flash exposure levels to stay the same at specific flash head zoom settings, regardless of which camera or lens you're using.
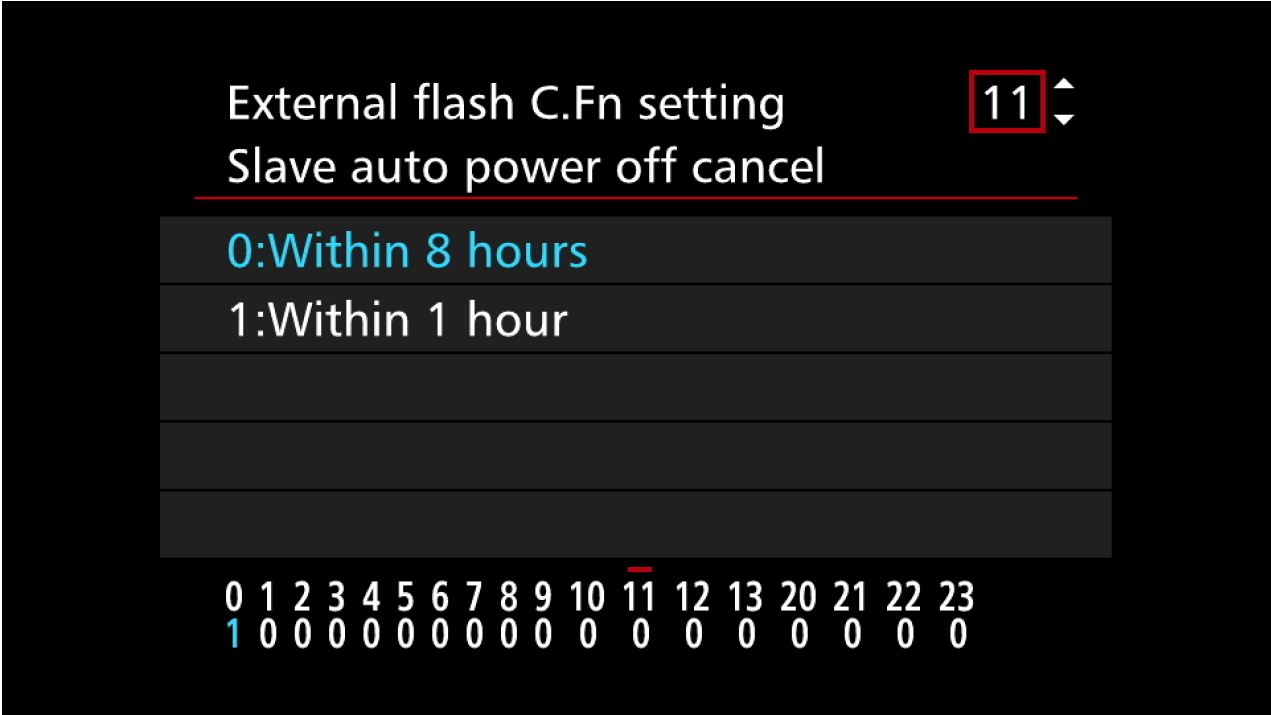
C.Fn 10: Slave Auto Power Off
320EX, 430EX II, 580EX II, 600EX-RT

Default [0] A Speedlite set-up as a slave unit will remain on, without sleeping, for up to 60 minutes after the last shot or button press. Although the slave will always be on and ready for the next shot, this will naturally result in more battery drain.

Option [1] A Speedlite set-up as a slave unit will enter sleep mode after 10 minutes of inactivity. This will help conserve battery power during long shoots. You will have to press the master unit's flash test button to wake up the slaves, which will take a few seconds to power up.

C.Fn 11: Slave Auto Power Off Period
320EX, 430EX II, 580EX II, 600EX-RT

Default [0]   A Speedlite set-up as a slave will power-down completely after a maximum 8 hours of being in continuous sleep mode.

Option [1]   A Speedlite set-up as a slave will power-down completely after 1 hour. Because sleep mode draws a slight amount of battery power, this setting can result in slightly less battery drain.

C.Fn 12: Primary Power Source When Using External Battery Pack - 580EX II, 600EX-RT

Default [0]   A compatible Speedlite's battery compartment must contain four working AA batteries to power basic functions, even when you are using an external battery pack. By default, the Speedlite's capacitors will draw power from the internal as well as external batteries for actual flash power. Because they have less capacity, the internal batteries will drain more quickly than the external battery pack.

Option [1]   Four internal AA batteries are still required to power other flash functions, however, the Speedlite will draw flash recycling power from the external battery pack only, thereby reducing drain on the internal batteries. If and when the external battery pack becomes depleted, you will still have the internal batteries available as back-up.
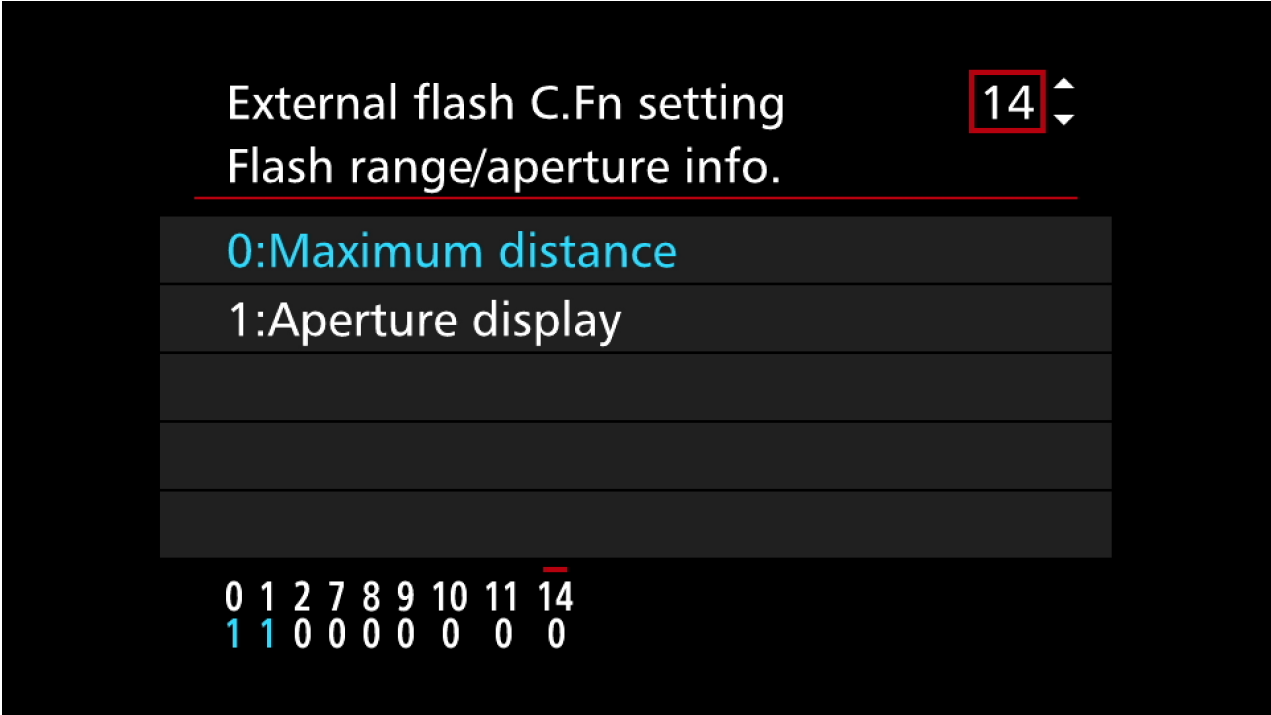
C.Fn 13: FEC via Speedlite Dial Only
580EX II, 600EX-RT, ST-E3-RT

Default [0]   Setting Flash Exposure Compensation is a two-step process: You must first press the **SEL/SET Button** (580EX or 580EX II) or **± Button** (600EX-RT), then turn the Speedlite's Control Dial.

Option [1]   Setting Flash Exposure Compensation is a one-step process: You simply turn the Speedlite's Control Dial.

C.Fn 14: Speedlite 430EX II Maximum Distance / Aperture Info

External flash C.Fn setting
Flash range/aperture info.   14

0:Maximum distance
1:Aperture display

0 1 2 7 8 9 10 11 14
1 1 0 0 0 0 0 0 0

Default [0]   When used in E-TTL mode, the 430EX II will indicate the maximum shooting distance in feet or meters, depending on how you have set C.Fn 00.

Option [1]   Instead of the maximum shooting distance, the 430EX II will display the current lens aperture when used in E-TTL mode.

C.Fn 20: Audible Recycle Tone
600EX-RT, ST-E3-RT

Default [0]   There will be no "beep" tone when the flash recycles. The only indication that the 600EX-RT or ST-E3-RT have recycled and are ready to fire will be the Flash Ready Light.

Option [1]   In addition to the Flash Ready Light, 600EX-RT or ST-E3-RT will emit an audible tone. When used as a master unit during radio wireless flash, the 600EX-RT will emit the tone only after all off-camera 600EX-RTs in all groups have recycled. This helps to avoid misfires from units that haven't yet recycled when you release the shutter.

C.Fn 21: Coverage During Auto Flash Head Zooming 600EX-RT

Default [0]   The 600EX-RT will adjust the angle of coverage during auto-zoom to allow a slight amount of light fall-off at the corners of the frame.

Option [1]   The 600EX-RT will concentrate more of the light towards the center of the frame (at more sacrifice of corner illumination than the default) to provide more maximum range for distant flash-on-camera shots, such as sports and wildlife.

Option [2]   Even Coverage Priority: this is essentially the reverse of Option 1 (Distance Priority): The 600EX-RT will instead provide more even coverage from the center to the edges. This option is generally preferable for group or interior photos.

Note: This C.Fn is disabled during wireless operation of off-camera slave units.

C.Fn 22: Button and LCD Panel Illumination
600EX-RT, ST-E3-RT

Default [0] The LCD panel and all buttons on the 600EX-RT or ST-E3-RT will illuminate for 12 seconds to make settings easier in low light.

Option [1] The LCD panel and buttons on the 600EX-RT or ST-E3-RT will not illuminate at all. This option helps conserve battery power when you are working outdoors or in bright indoor conditions.

Option [2] The LCD panel and buttons on the 600EX-RT or ST-E3-RT will remain on as long as the flash is on. This can be a good option when you need to make frequent changes to flash settings in dimly-lit areas and are using an external battery pack.

C.Fn 23: AF-Assist as Slave Ready Indicator 600EX-RT

Default [0]   When used as an off-camera slave, the 600EX-RT will provide a visual indication that it has recycled by flashing the red AF-assist beam on the front of the unit once-per-second.

Option [1]   This option will disable the default. This might be preferable if you want to prevent the AF-assist beam from appearing in long-exposure images, or if it's distracting to subjects being photographed.

▌ P.Fn 01: LCD Panel Contrast

Default [0]   The contrast of the LCD Panel is set to the middle of a five-step range.

Option [1]   Use the Select Dial to increase or decrease the LCD panel contrast to suit your preference.

▌ P.Fn 02: LCD Panel Illumination Color — Normal Mode

Default [0]   During standard, non-wireless, and master unit shooting, the LCD Panel will have **green** illumination. (By default, when a 600EX-RT is used as a slave, the LCD Panel will have amber illumination. Having the LCD Panel of the master be green makes it easy to distinguish masters from slave units, even in total darkness.).

Option [1]   During standard, non-wireless, and master unit shooting, the LCD panel will have **orange** illumination.

P.Fn 03: LCD Panel Illumination Color — Master

Default [0]   When the 600EX-RT or ST-E3-RT are used as a master unit, the LCD Panel will have **green** illumination.

Option [1]   When the 600EX-RT or ST-E3-RT are used as a master unit, the LCD Panel will have **orange** illumination.

P.Fn 04: LCD Panel Illumination Color – Slave

Default [0] When the 600EX-RT is used as a slave unit (or the ST-E3-RT is used for Linked Shot/ Slave Mode) the LCD Panel will have **orange** illumination.

Option [1] When the 600EX-RT is used as a slave unit (or the ST-E3-RT is used for Linked Shot/ Slave Mode), the LCD Panel will have **green** illumination.

P.Fn 05: Auto-Detection of Canon Color Filters

Default [0]   Whenever the color filter holder is attached, the 600EX-RT will automatically detect the filter color. If the camera is set to either Auto White Balance (AWB) or Flash White Balance (FWB), the camera will adjust the white balance to accommodate this filter. Note: The flash must be mounted onto the camera for AWB or FWB to work.

Option [1]   Auto-detection of Canon color filter will be disabled. You may prefer to disable auto-detection if you prefer to adjust white balance manually or if you are using non-Canon color filters.

P.Fn 06: Wireless Button Selection Sequence

Default [0]   Pressing the Wireless button on the 600EX-RT will change the available settings in the following order: Normal shooting → Radio transmission: Master → Radio transmission: Slave → Optical transmission: Master → Optical transmission: Slave. The default allows for use of the 600EX-RT in optical- as well as radio-transmission applications.

Option [1]   Pressing the Wireless button on the 600EX-RT will change the available settings in the following order: Normal shooting → Radio transmission: Master → Radio transmission: Slave. This option eliminates the optical transmission options, thereby increasing setting speeds and reducing mis-settings when using the flash in radio transmission mode only.

Option [2]   Pressing the Wireless button on the 600EX-RT will change the available settings in the following order: Normal shooting ➔ Optical transmission: Master ➔ Optical transmission: Slave. This option eliminates the wireless transmission options, thereby increasing setting speeds and reducing mis-settings when using the flash in optical transmission mode only.

▍ P.Fn 07: Flash Firing During Linked Shooting

Canon's unique Linked Shooting mode allows up to 15 EOS cameras attached to either a 600EX-RT or Speedlite Transmitter ST-E3-RT to fire in concert when a "master" camera attached to a Speedlite or Transmitter is fired. This can also work by just pressing the Release Button on a Linked Shot / Master Speedlite or Transmitter.

Default [0]   The Speedlite on the "master" camera **will not fire** during Linked Shooting.

Option [1]   The Speedlite **will fire** during Linked Shooting.