



A hardware upgrade to the original Sync-it called Sync-it Plus allows on-screen measurement of the offset between audio and video. The unit now has an internal mic and light sensor (on the top of the unit) that detects the Sync-it bleep and flash, and displays the offset between the two in milliseconds and frames. For measurements of sync within the OB truck, studio or home cinema, we supply Apple ProRes .mov and Avid .mxf video files at various frame rates which show a simulation of the Sync-it pattern, this can be played on an EVS, smartphone or other video player. You can download the test videos here: <https://www.sync-it.co.uk/support>

To get used to the way your Sync-it Plus works, we recommend you go to the Sync-it Plus page on our website <https://www.sync-it.co.uk/sync-it-plus> and play the test video at the bottom of the page in full screen using the instructions below.

To enter audio/video offset measurement mode, cycle through the modes with the select button until “measure audio/video” is displayed. With the test file playing, point the light sensor (on the top of the unit) at the screen, and play the audio on speakers. As the sound is first detected, 2 red or orange LEDs will sequentially light up showing successful audio detection, then 2 blue LEDs will light to show flash detection. These LEDs enable you to adjust levels or contrast if detection isn’t successful.

With any on-screen measurements, bear in mind that you need to take into account the delay of the monitor you are using, and the part of the screen that you are pointing at. Most LCD displays draw the pixels from top to bottom, so expect the video at the top of the screen to be earlier than at the bottom by a few milliseconds. Most professional broadcast monitors have a video latency of between 20 and 30ms.

Once the blue LEDs have lit, the audio/video offset in ms and frames is displayed on the screen. The detection will restart after a few seconds if no flash is detected. Once 2 consistent readings have been obtained, the readings will also be displayed on the graphic display below. This display shows a maximum of +/- 3 frames, up +/- 11 frames are displayed as text.

For live camera measurements, put another Sync-it in front of the camera, ‘All LEDs flash mode’ on the target unit is best for this, it’s enabled by holding down the select button on the on camera Sync-it for 10 seconds. Frame the shot so that the Sync-it fills the frame, zoom in on the top few white flashing LEDs and de-focus the camera slightly. Expose the camera to maximise the contrast between the background and the top white LED. Hold the Sync-it close to the screen (almost touching it) with the light sensor on the top pointing directly at the top flashing LED, the red and blue LEDs should sequentially light up as described above. If you don’t have another Sync-it to hand, you can play the test file on a smartphone on full brightness in shot, though you’d need to measure the display offset of the phone using the Sync-it first. Make sure the monitor contrast is set to maximum, and that the loudspeaker level is sufficient to mask any background noise.

The audio detection is heavily filtered to respond only to the Sync-it bleep, and the timing and frequency of the 2 consecutive beeps is critical for detection to happen, this means it can detect the audio even if the background is not ideally quiet. The unit features a slow release AGC circuit that adjusts to the ambient audio level.

The unit adjusts to the background light level, then relies on the contrast between the background and the Sync-it flash to detect correctly. A bright monitor and a well exposed camera improves detection time. Zooming in on a single white LED and de-focussing helps with detection, but beware of false detection of the adjacent coloured LEDs on the Sync-it.

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