

# EVENT CINEMA ROOM TESTS GUIDE.

---

2023 – VERSION 1.02

CTC; the global cinema technology network  
[www.cinema-technology.com](http://www.cinema-technology.com)



---

# Cinema Technology Community (CTC)

Cinema Technology Community (CTC) is an independent, not-for-profit membership organization that aims to advance the use of technology to enhance all aspects of the movie-going experience.

As well as providing guidance and support, CTC engages in a wide range of activities aimed at further educating industry professionals and improving the cinema experience. These include training courses, lectures, technical handbooks, educational visits, seminars, web seminars, videos, podcasts, networking events, projectionist certification and one of the industry's leading technical journals, Cinema Technology Magazine.



---

# Contents

**Cinema Technology Community (CTC)** .....2

**Introduction** .....4

**Room Tests**.....5

    Clapperboard ..... 5

    Lip Sync ..... 5

    Pip and Flash ..... 5

    Loudspeakers ..... 6

    Focus..... 8

    Convergence ..... 8

    Framing ..... 9

    Aspect Ratio ..... 10

    Colour ..... 11

**Other Tests** .....11

**Join Our Community and Share Ideas** .....12



---

# Introduction

Event Cinema has become a very lucrative product for cinema operators. With ticket prices usually higher than those for [general release] films – often with exclusive content available - exhibitors have increasingly seen the advantages of having the ability to screen Event Cinema. With a breadth of content, spanning many genres, cinemas are able to showcase events from around the world. Such genres include opera, ballet, theatre and concert. Whilst these events are traditionally broadcast live, many events are made available as a pre-recorded format (“Encore Screenings”). In addition to this, some major-release film titles can be accompanied with a filmed ‘red-carpet’ experience and/or Director Q&A; bringing the *‘premier-feel’*, to the local cinema.

This paper provides a comprehensive guide to using the CTC Event Cinema Room Tests to check audio and visual quality from live feeds.

The CTC Event Cinema Room Tests were created with assistance from Encompass Digital Media, Twickenham Film Studios and Splice.

---

# Room Tests

The Room Tests programme is available as a file for broadcast and off-line testing of the signal chain. There is a DCP for those who wish to use the Room Tests programme for training and reference. The DCP must not be used as a substitute for taking part in test transmissions.

Certain units such as projectors and sound processors often have their own test routines, and these can be used alongside the Room Tests programme.

In all cases, if you suspect an issue with projection or sound, we encourage you to take a picture of the test programme and pass the information to your cinema manager, integrator or service engineer, as appropriate.

## Clapperboard

The clapperboard is a classic way of spotting sync. The “clap” sound of the board closing should be in sync with the picture. In larger cinemas sync can vary depending on how close you are to the screen, so we suggest sitting in the reference listening position (RLP) when conducting sound tests. The RLP is on the screen centre axis, at 2/3 of the distance from the screen to the rear wall.

## Lip Sync

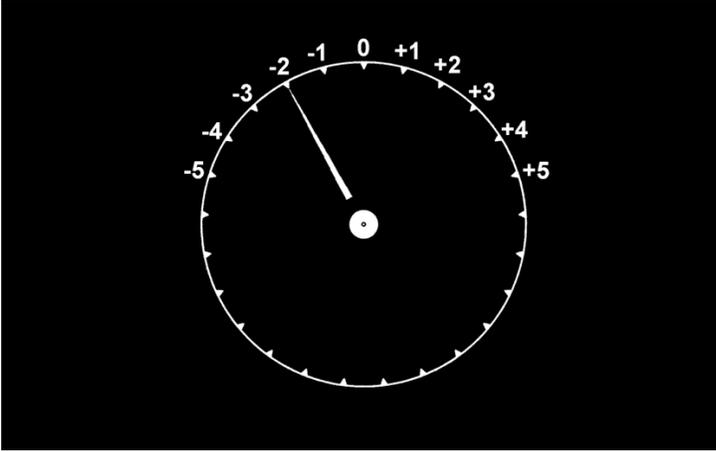
Another way to test for sync is by watching the lips during live action speech. Check to see if the words are in time with the movement of the lips. It can be easier to identify incorrect sync where the sound is early, as it appears unnatural. Sync that is late can occur in daily life, for example when we see something happening (perhaps some distance away) and then hear the sound slightly later. If the distances are large there can be a long gap; when a thunderstorm approaches the lightning is seen before the thunder is heard.

Fun fact: You can practice checking for lip sync at home when watching live action films and TV.

## Pip and Flash

This is a test for sync that can be observed (like the clapperboard and lip sync) and can also be measured using a hand-held sync-check device. The sync-check device measures the difference between the flash at the “0 mark” / “12 o’clock” and the audible “pip” and reports the result, usually in milliseconds or frames. The flash can be early or late in relation to the pip.

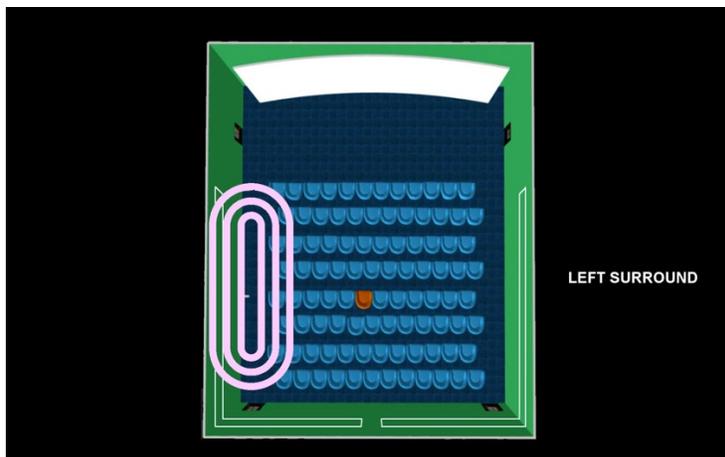
For illustration purposes only, an example of a hand-held sync-check device is the Harkwood Sync One2  
<https://sync-one2.harkwood.co.uk/>



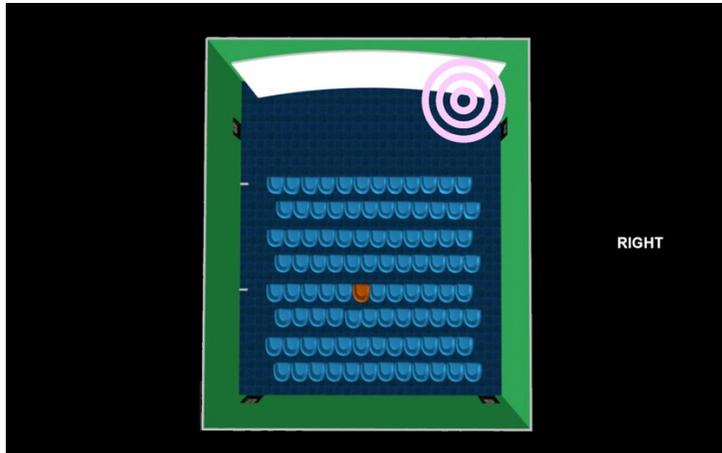
## Loudspeakers

The CTC Event Cinema Room Tests are available in three versions: 5.1, two channel, and Atmos. The only difference is in the loudspeaker tests.

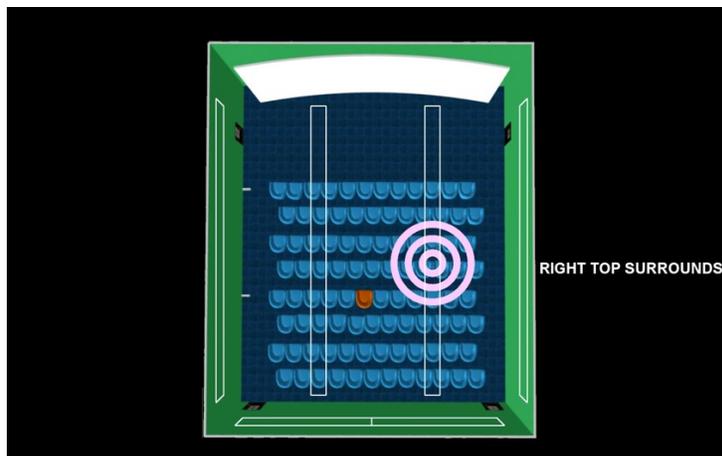
- **5.1** – sound rotates around the room, starting at the left behind the screen and rotating clockwise to the left surrounds. This is followed by the subwoofer.



- **Two Channel** – sound goes from left to right and back again. There should be no sound in the other loudspeakers, including the centre of the screen and subwoofer.



- **Atmos** – sound rotates around the room, starting at the left behind the screen and rotating clockwise to the left surrounds. It then travels clockwise around the overhead loudspeakers. This is followed by the subwoofer.



The sound used is pink noise. You should expect to hear some fading as the sound moves between the loudspeakers, but assuming you are in the reference listening position (RLP) the sound level and timbre should stay largely the same as the sound moves around the room. Note that the subwoofer (also known as LFE: low frequency effects) will sound different.

You may hear a drop in level if a loudspeaker has failed or is out of phase. The pink noise test will not identify all types of loudspeaker damage, and if a problem is suspected further testing with a continuous tone may be required.

---

If you suspect damage to a loudspeaker is causing distortion the CTC test DCP (available at <https://www.cinema-technology.com/resources>) can be used to test high and low frequencies. Any issues should be reported to your cinema manager, integrator or service engineer.

Fun fact: Who knew noise could be pink? You have probably heard of white noise: a random signal with equal energy across all frequencies. Pink noise has a different profile, and is shaped such that there is equal energy in each octave. The logarithmic profile of pink noise makes it more representative of human hearing, and hence a more effective test sound for cinema loudspeakers.

## Focus

Having a sharp picture is important for your presentation, and for the success of the picture tests. The focus chart should appear sharp in all corners and in the centre of the screen. The lines should be a distinct black and white, with no colour fringing (where a colour breaks out of the lines).

If you see an image that is out of focus, check the macro on the projector. Some projectors are equipped with a knob or buttons for focus that can be used to sharpen the image.

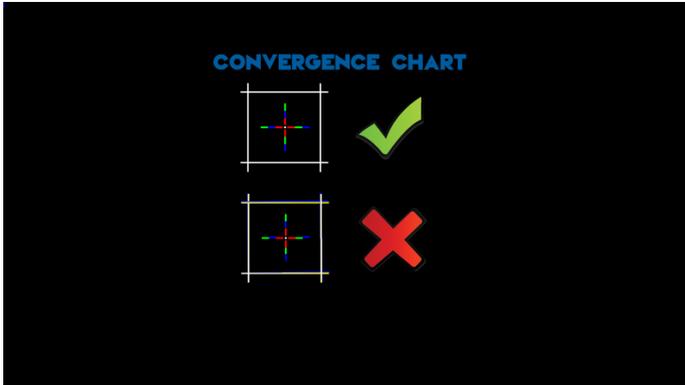
If you see colour fringing in the focus chart this could indicate lens or convergence issues with the projector, and these may require professional attention. Take a photo of the affected area and report to your cinema manager, integrator or service engineer.



## Convergence

Rotation of components within the projector can cause the red, blue or green coloured lines to move in relation to the lines of other colours. This can manifest differently over the projected area, so you may want to take a few photos across the screen to show a diagonal change.

In a similar way to the focus test, look for colour fringing. This can be horizontal or vertical.



## Framing

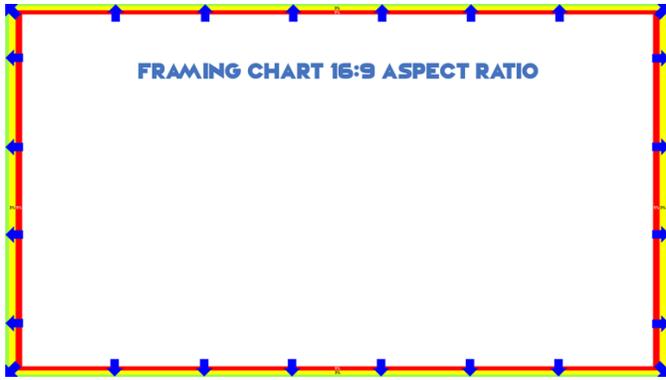
This test helps to identify cropping of the projected picture. It is only intended for testing the framing of a widescreen broadcast (1.78:1 / 16:9) and the picture area will be different to presenting regular feature films from DCP.

The ideal situation is to have the green line visible on all four edges of the screen. The frame for 3% (yellow) is tolerable and 5% (red) indicates additional care should be taken. In some cinemas cropping is unavoidable due to the keystone, so if this is observed please discuss with someone familiar with the installation.

If none of the colours are visible on one or more edge, or there is a black bar on one or more edge, this indicates that the image needs to be repositioned on screen.

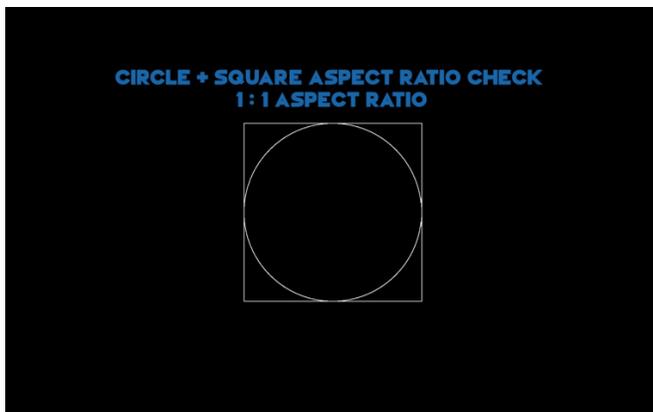
If there are problems with the framing this could indicate an incorrect macro. If the problem persists further investigation may be required.





## Aspect Ratio

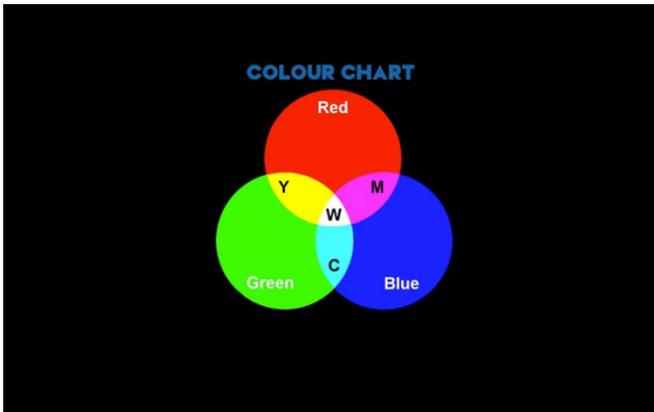
This test is to highlight any stretch, squeeze or keystone in the projected picture. A distorted picture could indicate an incorrect macro, an incorrect output setting on the set top box or an issue with the signal routing.



---

## Colour

This test is confirming that the colours are appearing as described. The labels 'Red', 'Green' and 'Blue' should be in white text. The section in the centre where all three of the coloured discs overlap should also be white with a black 'W' in the centre. If the projector macro is incorrectly set the colours will look different, perhaps with a pink / magenta cast over the white text and the rest of the picture.



## Other Tests

There are other checks you can do during periods of testing. For example, look for areas where the screen should appear completely black. If you see spots of colour, they could indicate a dead pixel on the projector.

Remember that test routines are also built into certain units such as projectors and sound processors, and these can be used to help identify issues.

You can find other test materials at <https://www.cinema-technology.com/resources>

Whenever you find something that requires further investigation, take a photo of the screen and make a note for your cinema manager, integrator or service engineer.

---

## Join Our Community and Share Ideas

With over 750 members in more than 75 countries, Cinema Technology Community (CTC), the global cinema technology network, is the world's largest independent, not-for-profit membership organisation that aims to assist the cinema industry in recognizing the importance that cinema technology and indeed the way in which it's utilized can have a profoundly positive effect on the movie-going experience.

As well as providing guidance and support, CTC engages in a wide range of activities aimed at further educating industry professionals and improving the cinema experience. These include training courses, lectures, technical handbooks, educational visits, seminars, web seminars, videos, podcasts, networking events, projectionist certification and one of the industry's leading technical journals, Cinema Technology Magazine.

For more information, visit the CTC web page at [www.cinema-technology.com](http://www.cinema-technology.com)

