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JULY 26, 2000

MP8 / MP9 ACON TROUBLESHOOTING

Page 1 of 3

Overview

This document provides information about troubleshooting ACON problems. Contents of this document will aid in troubleshooting problems that arise when converging an MP8 / MP9 using ACON.

The following is provided in this document.

- Troubleshooting Steps for mechanical and electronic projector setup issues.
- A list of error messages with explanations is also provided.

It is worthwhile to note that the ACON sensor "sees" light differently than the human eye. It is most sensitive to blue. This means that it is sensitive to florescent light and sunlight.

Troubleshooting Steps

- Check that ESD (electrostatic discharge) precautions were and are used when handling the ACON module. Electrostatic discharge can cause subtle faults.
- Check that the ACON sensor has no bent pins or loose wires and is securely connected.
- Check that you have a Marquee ACON board. (& not an ECP module) The board number, which is silk-screened on the board, is 50-1960-01P. The label on the connector is either 03-270307-01P or 02-270307-01P. It has a programmed chip in location U8.
- Check that the ACON board is properly seated in the correct slot, the left slot above the control board.
- Check that the software recognizes the existence of the ACON board. The first status page will show ACON as one of the options. Press <*>.
- Check that there are no obstructions in the line of sight from the sensor to all parts of the screen.
- Check that the toe-in brings the red and blue center very close to the green, within one target.
- Check that the sensor is not closer to the screen than the width of the screen. 1.5 times are more typical.
- The sensor is designed to have the target displayed on the middle part of the sensor and not the edges
- Check that the sensor is not farther than 15 feet away from screen.
- Check that the sensor is mounted at an angle of 15 degrees or less to the center of the screen.
- Check that manual convergence works and that no zone has convergence at or near the limit of adjustment range.
- Check the version of software in the ACON board. Press <UTIL><9><0901><6><2>. It should be version 1.2 or higher (around Aug 95).
- Check that the source is stable. An unstable or noisy source will cause ACON to be unstable.
- Check that the ACON sensor shows smooth motion in both the horizontal and vertical direction.
- Reduce overall ambient light, especially florescent lights and sunlight.. Ambient light should not fall



- Directly into the ACON sensor.
- Check that infrared light is not interfering
- Check for uneven screen response (hot spots). Screen border should not reflect light; it should be matte black.
- If sensor is mounted on the projector and a rear screen is used, try mounting sensor remotely either on the rear side or, preferably, on the audience side.
- Check that the version of main software is V3.2 or higher (around Dec 95). Press <*> to display first status page. There have been no ACON changes since this version.
- Check that targets are sharply focused and uniform and that there are no “hot” spots on the ACON sensor side of the screen.
- Did you perform a LEARN SCREEN after moving the projector? Learn screen should be performed on the biggest physical image. Lighting conditions for learn screen and ACON should be the same.
- Have you tried manual learn screen? Move the bars as close to the edge as possible while still seeing most or the entire bar. Make sure that the bars are uniform in intensity.
- Check that the stigmatism and the focus are set correctly.
- Use CMM to boost the corners that seem too dim.
- Adjust color temperature before ACON is performed. Saturation may be an issue.
- Use yellow post-it notes or plain non-reflective paper on the screen where MIS-CONVERGED targets exist and try ACON again. This is another saturation test.
- Adjust G2 or drive levels slightly up or down for colors that are suspected to be a problem..

Possible Error Messages

An ACON message is based on the results of the last ACON action since POWERUP. If there has been no ACON performed since power up, no status is displayed in the ACON menu. Status messages are also displayed in the EXIT dialog box.

Error Message	Error Description
Full Auto-Convergence Complete Auto-Centering Complete	Successful completion of an ACON operation:
Touchup Complete ACON Offset Complete	Successful completion of an ACON operation:
Learn Screen Complete ACON Stacking Complete	Successful completion of an ACON operation:
ACON Complete	Successful completion of an ACON operation:
	Successful completion of an ACON operation:
ACON Stopped By User	ACON has been exited prematurely. This message is displayed in Exit dialog box but not on ACON menu.
ACON Status Unknown	Request to read the ACON sensor did not get a response from the ACON controller. ACON has not been performed since POWERUP
Learn Screen Failed:	Errors during Learn Screen operation.
X Out Of Range	Errors during Learn Screen operation.
Y Out Of Range	Errors during Learn Screen operation.
Insufficient Magnitude	Errors during Learn Screen operation.
Learn Screen: X Out Of Range	Occurs when searching for the bar, maximum X is reached & no bar is found.

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Learn Screen: Y Out of Range	The code suggests that it occurs when learn screen is working on the center, all was okay then the user aborted with EXIT key! It could not be reproduced.
Learn Screen: Insufficient Magnitude	occurs when, in a binary search to locate a target, contrast and gain are at maximum and it can't "see" the big (>10x10 character) rectangle. The sensor reading is too low.
Sensor Lock Failed:	Errors while trying to lock sensor onto the green target.
Too Many Readings	Errors while trying to lock sensor onto the green target.
Low Signal	Errors while trying to lock sensor onto the green target.
High Signal	Errors while trying to lock sensor onto the green target.
Converge Lock Failed:	Errors while trying to converge red and blue onto the green target. Sensor is already optimally pointing to the green target and will not move. Only converge values will be changed.
Too Many Readings	Errors while trying to converge red and blue onto the green target. Sensor is already optimally pointing to the green target and will not move. Only converge values will be changed.
Low Signal	Errors while trying to converge red and blue onto the green target. Sensor is already optimally pointing to the green target and will not move. Only converge values will be changed.
High Signal	Errors while trying to converge red and blue onto the green target. Sensor is already optimally pointing to the green target and will not move. Only converge values will be changed.
Off Tube Point	Errors while trying to converge red and blue onto the green target. Sensor is already optimally pointing to the green target and will not move. Only converge values will be changed.
Too Many Readings	Adjustment was being made but there were too many motor or convergence steps to get to the optimal value. The assumption is that ACON is off track and will not succeed no matter how many more attempts are made and it is time to give up. There are more steps allowed for the center where it is likely to be needed. Low signal may be reported as Too Many Readings.
Low Signal.	Contrast is at the recommended maximum (76%), gain is at maximum and level is below the marginal value. Too Many Readings error message will occur much more often than Low Signal
High Signal	The sensor is saturated at minimum contrast (1%) and minimum gain.
Converge Lock: Off Tube Point.	Red or blue were out of convergence range and the target is thought to be off the tube. Note: If red or blue are out of convergence range but not off the tube, the value will be accepted as okay even though there may be an error. Most often it is close and should not be a cause for complete rejection!