Technical Reference

Mirage 4KLH
Status System

CHRISTIE®

NOTICES

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GENERAL

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WARRANTY

Products are warranted under Christie's standard limited warranty, the complete details of which are available by contacting your Christie dealer or Christie. In addition to the other limitations that may be specified in Christie's standard limited warranty and, to the extent relevant or applicable to your product, the warranty does not cover:

a. Problems or damage occurring during shipment, in either direction.

b. Projector lamps (See Christie's separate lamp program policy).

c. Problems or damage caused by use of a projector lamp beyond the recommended lamp life, or use of a lamp other than a Christie lamp supplied by Christie or an authorized distributor of Christie lamps.

d. Problems or damage caused by combination of a product with non-Christie equipment, such as distribution systems, cameras, DVD players, etc., or use of a product with any non-Christie interface device.

e. Problems or damage caused by the use of any lamp, replacement part or component purchased or obtained from an unauthorized distributor of Christie lamps, replacement parts or components including, without limitation, any distributor offering Christie lamps, replacement parts or components through the internet (confirmation of authorized distributors may be obtained from Christie).

f. Problems or damage caused by misuse, improper power source, accident, fire, flood, lightening, earthquake or other natural disaster.

g. Problems or damage caused by improper installation/alignment, or by equipment modification, if by other than Christie service personnel or a Christie authorized repair service provider.

h. Problems or damage caused by use of a product on a motion platform or other movable device where such product has not been designed, modified or approved by Christie for such use.

i. Problems or damage caused by use of a projector in the presence of an oil-based fog machine or laser-based lighting that is unrelated to the projector.

j. For LCD projectors, the warranty period specified in the warranty applies only where the LCD projector is in "normal use" which means the LCD projector is not used more than 8 hours a day, 5 days a week.

k. Except where the product is designed for outdoor use, problems or damage caused by use of the product outdoors unless such product is protected from precipitation or other adverse weather or environmental conditions and the ambient temperature is within the recommended ambient temperature set forth in the specifications for such product.

l. Image retention on LCD flat panels.

m. Defects caused by normal wear and tear or otherwise due to normal aging of a product.

The warranty does not apply to any product where the serial number has been removed or obliterated. The warranty also does not apply to any product sold by a reseller to an end user outside of the country where the reseller is located unless (i) Christie has an office in the country where the end user is located or (ii) the required international warranty fee has been paid.

The warranty does not obligate Christie to provide any on site warranty service at the product site location.

PREVENTATIVE MAINTENANCE

Preventative maintenance is an important part of the continued and proper operation of your product. Please see the Maintenance section for specific maintenance items as they relate to your product. Failure to perform maintenance as required, and in accordance with the maintenance schedule specified by Christie, will void the warranty.

REGULATORY

The product has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the product is operated in a commercial environment. The product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of the product in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at the user's own expense.

CAN ICES-3 (A) / NMB-3 (A)

이 기기는 업무용 (A 급) 으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이점을 주의하시기 바라며 , 가정 외의 지역에서 사용하는 것을 목적으로 합니다 .

Environmental

The product is designed and manufactured with high-quality materials and components that can be recycled and reused. This symbol ⌧ means that electrical and electronic equipment, at their end-of-life, should be disposed of separately from regular waste. Please dispose of the product appropriately and according to local regulations. In the European Union, there are separate collection systems for used electrical and electronic products. Please help us to conserve the environment we live in!

Content

Mirage 4KLH Status System

This guide contains information about the values and fault conditions that can be reported by the status system on 'Product Name' projectors.

The status system provides an overview of the projector at the current point in time. It contains a number of groups, which contain a set of status items. Each status item represents a component or sub-component of the system. Obtain specific details regarding a warning or error for a status item using the log system.

The numbers next to the status items in this guide correspond directly to the status item index within each group.

> The projector presents the information contained in this document in the language selected by the operator.

Documentation Conventions

	OK	No known issue
	Warning	A problem with this item should be addressed.
	Error	A problem with this item prevents the projector from properly displaying video or turning on the projector.

Alarm Group (SST+ALRM)

Displays any status items not in the OK state. This group contains a dynamic number of status items. If everything in the projector is OK, this group is empty.

Configuration Group (SST+CONF)

#	Status	State	Value	Description
0	Projector Model	🟢	Mirage 4KLH	Displays the model for the projector.
		🔺	Jig-Mode	Reserved for engineering use.
		✖	Not Specified	The projector subtype-ID has not been specified.
		✖	Invalid Data	Information is missing or corrupted.
		✖	Communication Fault	Information is not available due to a hardware fault.
1	Projector S/N	🟢	<serial number>	Displays the serial number of the projector.
		🔺	N/A	The storage device containing the information is inaccessible or the data on the device is corrupted.
2	Output Resolution	🟢	<horizontal>x<vertical>	Provides the native output resolution of the projector.
3	Projector Build Date	🟢	<YYYY>/<MM>/<DD>	Displays the build date of the projector.
		🔺	N/A	The storage device containing the information is inaccessible or the data on the device is corrupted.

System Group (SST+SYST)

#	Status	State	Value	Description
0	Projector Hours	🟢	<hours>:<minutes>	Displays the total amount of time that the projector has been on (including warm up and cool down times).
		🔺	N/A	The storage device containing the information is inaccessible or the data on the device is corrupted.
1	Pitch/Roll	🟢	<pitch value>/<roll value>	Provides the physical orientation of the projector: • A negative pitch means that the projector is pointing down. • A negative roll means the projector is tilted counter clockwise as seen from the rear.
		🔺	Communication Fault	Information is not available due to a hardware fault.
		✖	<pitch value>/<roll value> - Illegal Orientation	The projector cannot operate in the current orientation.

#	Status	State	Value	Description
5	Lens Motor Horizontal-Axis	🟢	OK	The motor and sensor combination is connected and functioning correctly as far as can be determined.
		✖	Failed	During reset or calibration, an error was detected related to the motor and/or sensor.
6	Lens Motor Vertical-Axis	🟢	OK	The motor and sensor combination is connected and functioning correctly as far as can be determined.
		✖	Failed	During reset or calibration, an error was detected related to the motor and/or sensor.
7	Lens Motor Zoom-Axis	🟢	OK	The motor and sensor combination is connected and functioning correctly as far as can be determined.
		✖	Failed	During reset or calibration, an error was detected related to the motor and/or sensor.
8	Lens Motor Focus-Axis	🟢	OK	The motor and sensor combination is connected and functioning correctly as far as can be determined.
		✖	Failed	During reset or calibration, an error was detected related to the motor and/or sensor.
9	Built-In Self Test	🟢	N/A	The built-in self test has not been executed yet.
		🟢	Passed	The built-in self test completed successfully.
		✖	Failed	The built-in self-test failed one or more tests.

Signal Group (SST+SIGN?)

#	Status	State	Value	Description
0	Card 1 - Input 1	●	Card Not Present	The slot does not contain a card.
1	Card 2 - Input 1			
2	Card 1 - Input 2	●	<input type> (No Signal)	Where <input type> : {DP, HDMI, DVI, 3G-SDI}
3	Card 2 - Input 2			
4	Card 3 - Input 1	●	<input type>, <active window>@ <v-sync rate> (<status>)	Where <input type> : {DP, HDMI, DVI, 3G-SDI} <active window> : <columns>x<rows> <v-sync rate> : the input frame rate, in Hz (##.##Hz) <status> : {"Master", "No signal", "Inactive", "Locked"}
5	Card 4 - Input 1			
6	Card 3 - Input 2			
7	Card 4 - Input 2			
		▲	<input type> <active window> @ <v-sync rate> (<status>)	Where <input type> : {DP, HDMI, DVI, 3G-SDI} <active window> : <columns>x<rows> <v-sync rate> : the input frame rate, in Hz (##.##Hz) <status> : {"Unlocked", "Out of phase"}
9	Output Frequency	●	N/A	No video is being displayed.
		●	<rate>Hz	Where <rate> : the output frame rate, in Hertz
10	Frame Locked	●	N/A	No video is being displayed or an internal test pattern is being displayed.
		●	Locked	The output is locked to the selected input(s).
		●	Unlocked	The output is not locked to the selected input(s).

Lamp Group (SST+LAMP?)

#	Status	State	Value	Description
30	Laser Bank Manager Version	●	<version>	Software version as reported by the Laser Bank Manager.
		●	N/A	Software version is not available because the connection with the Laser Bank Manager could not be established.
		▲	Requires minimum version: <version>	Software version is lower than expected. <version>—Represent the required version of software.

#	Status	State	Value	Description
31	Laser Bank Manager State	●	Off	The Laser Bank Manager is off.
		●	Warming Up	The Laser Bank Manager is transitioning to standby state.
		●	Standby	The Laser Bank Manager is ready to turn the lasers on.
		●	On	The Laser Bank Manager is emitting laser light.
		●	Cooling Down	The Laser Bank Manager is transitioning to the off state.
		●	Unknown	The Laser Bank Manager is disconnected so its state is not known.
		▲	Unexpected Off	The Laser Bank Manager transitioned to the off state unexpectedly.
32	Laser Bank Manager Status	●	OK	The Laser Bank Manager and all laser modules are working as expected.
		▲	Reduced Functionality	The Laser Bank Manager is working but is reporting a warning. Check the Laser Bank Manager for more information.
		▲	General Fault	The Laser Bank Manager failed to provide a correct response to a command/query.
		✖	Detection Fault	The Laser Bank Manager is currently not detected.
		▲	Initializing	The Laser Bank Manager is detected but is still initializing.
		✖	LMs Offline	All laser modules are offline. Light cannot be produced.
33	Laser System Interlock	●	Closed	The system interlock is closed.
		●	Unknown	The system interlock is unknown because the communication path is non-functional.
		✖	Open	The system interlock is open.
34	Color Sensor - Red	●	<value>	Displays the current color sensor value.
		●	Unknown	The value is unknown because the CSENSE board is not detected or non-functional
		✖	<value> - Unexpected	The color sensor detects light when there should not be any light.

#	Status	State	Value	Description
35	Color Sensor - Green	🟢	<value>	Displays the current color sensor value.
		🟢	Unknown	The value is unknown because the CSENSE board is not detected or non-functional
		✖	<value> - Unexpected	The color sensor detects light when there should not be any light.
36	Color Sensor - Blue	🟢	<value>	Displays the current color sensor value.
		🟢	Unknown	The value is unknown because the CSENSE board is not detected or non-functional
		✖	<value> - Unexpected	The color sensor detects light when there should not be any light.

Version Information (SST+VERS?)

#	Status	State	Value	Description
0	Main Control Board SW Version	🟢	<version>	Displays the software version running on the controller board.
1	Main Control Board HW Version	🟢	<name>.<level>.<mod>	<name> = Short name of the board <level> = Version of the board <mod> = Modification level of the board
		✖	Detection Fault	Failed to read the board type information.
2	Backplane HW Version	🟢	<name>.<level>.<mod>	<name> = Short name of the board <level> = Version of the board <mod> = Modification level of the board
		🟢	Off	Board is off.
		✖	Detection Fault	Failed to read the board type information.
3	Image Processor HW Version	🟢	<name>.<level>.<mod>	<name> = Short name of the board <level> = Version of the board <mod> = Modification level of the board
		🟢	Off	Board is off.
		🟢	Unknown	The upstream ABP failed to be detected.
		✖	Detection Fault	Failed to read the board type information.

#	Status	State	Value	Description
4	Formatter-Red HW Version	🟢	<name>.<level>.<mod>	<name> = Short name of the board <level> = Version of the board <mod> = Modification level of the board
		🟢	Off	Board is off.
		🟢	Unknown	The upstream ABP or HIP failed to be detected.
		🔺	Mismatch - <color>	Incorrect board plugged into the red port on image processor board.
		✖	Mismatch - Unknown	Remote temperature harness on formatter is missing or not behaving properly.
		✖	Detection Fault	Failed to read the board type information.
5	Formatter-Green HW Version	🟢	<name>.<level>.<mod>	<name> = Short name of the board <level> = Version of the board <mod> = Modification level of the board
		🟢	Off	Board is off.
		🟢	Unknown	The upstream ABP or HIP failed to be detected.
		🔺	Mismatch - <color>	Incorrect board plugged into the green port on image processor board.
		✖	Mismatch - Unknown	Remote temperature harness on formatter is missing or not behaving properly.
		✖	Detection Fault	Failed to read the board type information.
6	Formatter-Blue HW Version	🟢	<name>.<level>.<mod>	<name> = Short name of the board <level> = Version of the board <mod> = Modification level of the board
		🟢	Off	Board is off.
		🟢	Unknown	The upstream ABP or HIP failed to be detected.
		🔺	Mismatch - <color>	Incorrect board plugged into the blue port on image processor board.
		✖	Mismatch - Unknown	Remote temperature harness on formatter is missing or not behaving properly.
		✖	Detection Fault	Failed to read the board type information.

#	Status	State	Value	Description
7	Optional Card 1 HW Version	●	<name>.<level>.<mod>	<name> = Short name of the board
				<level> = Version of the board
8	Option Card 2 HW Version			<mod> = Modification level of the board
9	Option Card 3 HW Version			This is cached information while the projector is in standby.
10	Option Card 4 HW Version	●	Off	Board is off.
		●	Not Present	No board is installed in the slot.
		●	Unknown	The upstream ABP failed to be detected.
		▲	Detection Fault	Failed to read the board type information.
11	Primary Environmental Board SW Version	●	<boot version> <version>	Displays the software version as reported by the board.
		●	N/A	Software version is not available because the board failed to initialize properly.
		▲	<boot version><main version> - backup firmware not found	Upgrade (RFF) file not found or cannot be validated (corrupt).
		✖	Programming	The board cannot be used because it is being programmed.
		✖	<boot version><main version> Incorrect	Upgrade of the board failed.
		✖	Unexpected Behavior	The board is not behaving as expected. For example, it is in the wrong state or it is not responding to commands correctly.
12	Primary Environmental Board HW Version	●	<name>.<level>.<mod>	<name> = Short name of the board
				<level> = Version of the board
				<mod> = Modification level of the board
		●	Unknown	The upstream communication path is non-functional.
		✖	Detection Fault	Failed to read the board type information.
		✖	Power Connector Fault	The 12V switchable power did not turn on. Check the EVB power connector.

#	Status	State	Value	Description
15	Lens Motor Board SW Version	🟢	<boot version><main version>	Displays the software version as reported by the board.
		🟢	N/A	Software version is not available because the board failed to initialize properly.
		🔺	<boot version><main version> - backup firmware not found	Upgrade (RFF) file not found or cannot be validated (corrupt).
		✖	Programming	Lens Motor board cannot be used because it is being programmed.
		✖	<boot version><main version> - Incorrect	The upgrade of the board failed.
		✖	Unexpected Behavior	The board is not behaving as expected, for example, it is in the wrong state or it is not responding to commands correctly.
16	Lens Motor Board HW Version	🟢	<name>.<level>.<mod>	<name> = Short name of the board <level> = Version of the board <mod> = Modification level of the board
		🟢	Unknown	The upstream EVB failed to be detected.
		✖	Detection Fault	Failed to read board type information.
30	Secondary Environmental Board SW Version	🟢	<boot version><main version>	Displays the software version as reported by the board.
		🟢	N/A	The software version is not available because the board failed to initialize properly.
		🔺	<boot version><main version>-backup firmware not found	Upgrade (RFF) file not found or cannot be validated (corrupt).
		✖	Programming	The board cannot be used because it is being programmed.
		✖	<boot version><main version>-Incorrect	Upgrade of the board failed.
		✖	Unexpected Behavior	Board is not behaving as expected, for example, it is in the wrong state or is not responding to commands correctly.
31	Secondary Environmental Board HW Version	🟢	<name>.<level>.<mod>	<name> = Short name of the board <level> = Version of the board <mod> = Modification level of the board
		🟢	Unknown	The upstream Environmental Board failed to be detected.
		✖	Detection Fault	Failed to read board type information
		✖	Power Connector Fault	The 12V switch power did not turn on. Check the EVB power connector.

#	Status	State	Value	Description
32	IGB HW Version	🟢	<name>.<level>.<mod>	<name> = Short name of the board <level> = Version of the board <mod> = Modification level of the board
		🟢	Unknown	The upstream communication path is non-functional.
		✖	<ID>.<level>.<mod>-Incorrect Board Type	Failed to read board type information. <ID> = Board module ID <level> = Version of the board <mod> = Modification level of the board
		✖	General Fault	The board is not behaving as expected or is failing commands.
33	CSENSE HW Version	🟢	<name>.<level>.<mod>	<name> = Short name of the board <level> = Version of the board <mod> = Modification level of the board
		🟢	Unknown	The upstream communication path is non-functional.
		✖	<ID>.<level>.<mod>-Incorrect Board Type	Failed to read board type information. <ID> = Board module ID <level> = Version of the board <mod> = Modification level of the board
		✖	General Fault	The board is not behaving as expected or is failing commands.

Temperature Group (SST+TEMP?)

Some temperature sensor status items have Temp numbers, which are related to the physical markings on the projector harnessing. Each item can only display one of the values in the following table:

#	Status	State	Value	Description
0 1 2 4	Integrator Rod Temperature (Temp 1) Prism Temperature (Temp 7) Air Intake Temperature (Temp 2) Main Control Board Temperature	●	<value> °C	Displays the current temperature of the sensor.
		●	Unknown	Temperature sensor is unavailable.
		✖	Communication Fault (shutdown)	Cannot retrieve the temperature from sensor.
		▲	<value> °C - High Temperature	Temperature is sitting inside warning band.
		✖	<value> °C - Too Hot (shutdown)	Temperature is exceeding error threshold.
		▲	<value> °C - Low Temperature	Temperature is sitting inside warning band.
		✖	<value> °C - Too Cold (shutdown)	Temperature is below error threshold.
5 6 7 8 9 10	Backplane temperature Image Processor Scaler Temperature Image Processor Warp-Red Temperature Image Processor Warp-Green Temperature Image Processor Warp-Blue Temperature Formatter-Red Temperature	●	<value> °C	Displays the current temperature of the sensor.
		●	Unknown	Temperature sensor is unavailable.
		▲	<value> °C - High Temperature	Temperature is sitting inside warning band.
		✖	<value> °C - Too Hot (shutdown)	Temperature is exceeding error threshold.
		▲	<value> °C - Low Temperature	Temperature is sitting inside warning band.
		✖	<value> °C - Too Cold (shutdown)	Temperature is below error threshold.

#	Status	State	Value	Description
11	DMD-Red Temperature (Temp 4)	🟢	<value> °C	Displays the current temperature of the sensor.
		🟢	Unknown	Temperature sensor is unavailable.
		✖	Communication Fault (shutdown)	Cannot retrieve the temperature from sensor.
		🔺	<value> °C - High Temperature	Temperature is sitting inside warning band.
		✖	<value> °C - Too Hot (shutdown)	Temperature is exceeding error threshold.
		🔺	<value> °C - Low Temperature	Temperature is sitting inside warning band.
		✖	<value> °C - Too Cold (shutdown)	Temperature is below error threshold.
12	Formatter-Green Temperature	🟢	<value> °C	Displays the current temperature of the sensor.
		🟢	Unknown	Temperature sensor is unavailable.
		🔺	<value> °C - High Temperature	Temperature is sitting inside warning band.
		✖	<value> °C - Too Hot (shutdown)	Temperature is exceeding error threshold.
		🔺	<value> °C - Low Temperature	Temperature is sitting inside warning band.
		✖	<value> °C - Too Cold (shutdown)	Temperature is below error threshold.

#	Status	State	Value	Description
13	DMD-Green Temperature (Temp 5)	🟢	<value> °C	Displays the current temperature of the sensor.
		🟢	Unknown	Temperature sensor is unavailable.
		✖	Communication Fault (shutdown)	Cannot retrieve the temperature from sensor.
		🔺	<value> °C - High Temperature	Temperature is sitting inside warning band.
		✖	<value> °C - Too Hot (shutdown)	Temperature is exceeding error threshold.
		🔺	<value> °C - Low Temperature	Temperature is sitting inside warning band.
		✖	<value> °C - Too Cold (shutdown)	Temperature is below error threshold.
14	Formatter-Blue Temperature	🟢	<value> °C	Displays the current temperature of the sensor.
		🟢	Unknown	Temperature sensor is unavailable.
		🔺	<value> °C - High Temperature	Temperature is sitting inside warning band.
		✖	<value> °C - Too Hot (shutdown)	Temperature is exceeding error threshold.
		🔺	<value> °C - Low Temperature	Temperature is sitting inside warning band.
		✖	<value> °C - Too Cold (shutdown)	Temperature is below error threshold.

#	Status	State	Value	Description
15	DMD-Blue Temperature (Temp 6)	🟢	<value> °C	Displays the current temperature of the sensor.
16	Option Card 1 Temperature	🟢	Unknown	Temperature sensor is unavailable.
17	Option Card 2 Temperature	✖	Communication Fault (shutdown)	Cannot retrieve the temperature from sensor.
18	Option Card 3 Temperature	🔺	<value> °C - High Temperature	Temperature is sitting inside warning band.
19	Option Card 4 Temperature	✖	<value> °C - Too Hot (shutdown)	Temperature is exceeding error threshold.
		🔺	<value> °C - Low Temperature	Temperature is sitting inside warning band.
		✖	<value> °C - Too Cold (shutdown)	Temperature is below error threshold.
20	Environmental Board Temperature	🟢	<value> °C	Displays the current temperature of the sensor.
30	Secondary Environmental Board Temperature	🟢	Unknown	Temperature sensor is unavailable.
		🔺	<value> °C - High Temperature	Temperature is sitting inside warning band.
		✖	<value> °C - Too Hot (shutdown)	Temperature is exceeding error threshold.
		🔺	<value> °C - Low Temperature	Temperature is sitting inside warning band.
		✖	<value> °C - Too Cold (shutdown)	Temperature is below error threshold.

#	Status	State	Value	Description
31 32	Fiber Bundle Temperature Diffuser Temperature	🟢	<value> °C	Displays the current temperature of the sensor.
		🟢	Unknown	Temperature sensor is unavailable.
		✖	Communication Fault (shutdown)	Cannot retrieve the temperature from sensor.
		🔶	<value> °C - High Temperature	Temperature is sitting inside warning band.
		✖	<value> °C - Too Hot (shutdown)	Temperature is exceeding error threshold.
		🔶	<value> °C - Low Temperature	Temperature is sitting inside warning band.
		✖	<value> °C - Too Cold (shutdown)	Temperature is below error threshold.

Three asterisks (***) in the value of the temperature sensor indicate it was the last known state of the temperature sensor before shutdown. This helps to indicate why a projector shut down suddenly.

Cooling Group (SST+COOL?)

Some cooling status items have Fan numbers, which relate to the physical markings on the projector harnessing.

#	Status	State	Value	Description
0 1	Light Engine Intake (Fan 1) Light Engine Intake (Fan 2)	🟢	<tach> RPM	Displays the current tachometer reading.
2 3	Light Engine Intake (Fan 3) Formatter-Green Blower	🟢	Off	Fan is off.
4 5	Laminar Airflow Device Electronics Intake (Fan 1)	🟢	Unknown	The upstream EVB failed to be detected.
6 7	Electronics Intake (Fan 2) Electronics Intake (Fan 3)	🔶	<tach> RPM - Low RPM	Fan tachometer reading is lower than the minimum recommended speed.
8 9 10	Image Processor Blower Electronics Exhaust (Fan 1) Electronics Exhaust (Fan 2)	🔶	Off–Overridden	Fan speed has been changed from its default recommended value.
11	Liquid Cooling Radiator	🔶	<tach> RPM–Overridden	Fan speed has been changed from it default recommended value.

#	Status	State	Value	Description
12	Liquid Cooling Flow Meter	●	<value> L/min	Displays the amount of liquid flowing past the sensor.
		●	Off	Liquid cooling is off.
		●	Unknown	The tachometer reading is unavailable.
		▲	<tach> L/min - Flow Impeded	Flow reading is lower than the minimum recommended threshold.
13	Liquid Cooling Pump	●	<tach> RPM	Displays the current tachometer reading of the pump.
		●	Off	Pump is off.
		●	Unknown	The tachometer reading is unavailable.
		▲	<tach> RPM - Low RPM	Pump tachometer reading is lower than the minimum recommended speed.
15	Scaler Fan	●	<tach> RPM	Displays the current tachometer reading.
		●	Off	Fan is off.
		●	Unknown	Failed to detect the upstream EVB.
		▲	<tach> RPM - Low RPM	Fan tachometer reading is lower than the minimum recommended speed.
		▲	Off - Overridden	Fan is off. The fan speed has been changed from its default recommended value.
		▲	<tach> RPM - Overridden	Fan is on. The fan speed has been changed from its default recommended value.

#	Status	State	Value	Description
30	Light Engine Intake Fan 4	🟢	<tach> RPM	Displays the current tachometer reading.
31	Red Formatter FPGA Fan			
32	IOS Fan	🟢	Off	Fan is off.
33	Radiator Fan 1			
34	Radiator Fan 2	🟢	Unknown	The upstream EVB failed to be detected.
35	Radiator Fan 3			
36	Radiator Fan 4	🔺	<tach> RPM - Low RPM	Fan tachometer reading is lower than the minimum recommended speed.
37	Light Engine Read LAD Fan			
39	Ferrule Fan	🔺	Off - Overridden	Fan is off. The fan speed has been changed from its default recommended value.
40	Diffuser/Integrator Fan			
		🔺	<tach> RPM - Overridden	Fan is on. The fan speed has been changed from its default recommended value.

Serial Number Group (SST+SERI?)

#	Status	State	Value	Description
0	Main Control Board S/N	🟢	<serial number>	Displays the electronic serial number of the board.
		🟢	N/A	Failed to retrieve the value because the serial number was not programmed into the board correctly.
1	Backplane S/N	🟢	<serial number>	Displays the electronic serial number of the board.
		🟢	N/A	Failed to retrieve the value due to an error with the backpane.
		✖	Initialization Fault	Could not establish the communication link to the ABP, HIP, or one of the CFB138xs.
2	Image Processor S/N	🟢	<serial number>	Displays the electronic serial number of the board.
		🟢	N/A	Failed to retrieve the value due to an error with the board.
		✖	Initialization Fault	Could not establish the communication link to the image processor.
		✖	Unexpected Behavior	An unexpected fault prevented the entire electronics from initializing. **Note:** This error does not point to a specific problem with the image processor but is more of a general failure.

#	Status	State	Value	Description
3 4 5	Formatter-Red S/N Formatter-Green S/N Fromatter-Blue S/N	🟢	<serial number>	Displays the electronic serial number of the board.
		🟢	N/A	Failed to retrieve the value due to an error with the formatter.
		🔺	Power Bad	One of the power rails on the formatter is currently out of specification.
		🔺	Initialization Fault	Could not load the formatter's calibration data.
6 7 8 9	Option Card 1 S/N Option Card 2 S/N Option Card 3 S/N Option Card 4 S/N	🟢	<serial number>	Displays the electronic serial number of the option card.
		🟢	N/A	Failed to retrieve the value due to an error with the option card.
		🔺	Initialization Fault	Could not establish the communication link to an option card.
10 12 30	Primary Environmental Board S/N Lens Motor Board S/N Secondary Environment Board S/N	🟢	<serial number>	Displays the electronic serial number of the board.
		🟢	N/A	Failed to retrieve the value due to an error with the board.
		✖	Initialization Fault	The board is detected but it failed to initialize successfully.

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