

Staging

Date of Review:

Tests Performed by:

Test	Staging Test Description	Results & Supplementary Notes
5.1.0	<b>Physical</b>	
5.1.1	Verify that all the exceptions from previous checklists, if any, have been successfully completed.	
5.1.2	The full complete inventory is all new equipment, in full compliance with the specification, or as modified by approved submission. Record all equipment not present, and why.	
5.1.3	Racks have temporary labels indicating the building and room where they are being installed.	
5.1.4	I/O Panels are easily accessible.	
5.1.5	All equipment being installed is connected, and ALL peripheral equipment is hooked up as per flow diagram: microphones, loudspeakers, video monitors, projectors, PC's, USB switchers, etc.	
5.1.6	All mounts for all rack and field equipment (rack mounts, ceiling mounts, wall mounts, loudspeaker mounts, etc.) have been verified and tested..	
5.1.7	Racks are "clean". All blanks and vents are installed.	
5.1.8	All labeling is permanently fastened.	
5.1.9	All the equipment can be pulled for repairs or replaced without hindrance, and equipment without IEC removable power cords are not tie-wrapped to the cabinet. There are no obstructions to the item being pulled from the front of the rack. If there are obstructions prohibiting the disconnection of terminations on the back of the unit, there must be sufficient cabling to permit the equipment to be pulled from the front, and disconnected there. Further, terminations are such that it is relatively easy to find their proper terminating points when the item is re-installed.	
5.1.10	The cabling and wiring is properly dressed, and allows for signal separation (cables carrying voltages differing by 20 dB or more must be separated by 4 inches), cable stress, serviceability, and cable management. All cable labeling is positioned and oriented in a consistent manner, is legible and unambiguous. Cable supports are used when unsupported lengths exceed 12 inches (depending on size and stiffness of cables), and that all terminations are free from stress due to gravity acting on the form.	
5.1.11	Terminations have sufficient service loop, allowing at least two re-terminations without having to open a form to lay in a new cable.	
5.1.12	All cables are within manufacture's recommended bend radius specification, usually given as a multiple of a cable's diameter.	
5.1.13	CatX or twisted pair cables have hook and loop fasteners, and there is no cable deformities caused by poor dress or fasteners being too tight; cables are properly identified; any color convention used by the building/integrator, or used to identify POE, proprietary video or data cabling is conforming to plan.	
5.1.14	RJ terminations are solid in their connectors.	
5.1.15	Fiber cables have hook and loop fasteners, and have been properly identified in an unambiguous manner; unterminated spares have dust caps; they are loosely dressed, and any color convention used by the building/integrator is labeled by the patch panel.	
5.1.16	Screw terminals have spade or ring lugs on wires.	
5.1.17	All cables are of the type recommended by the manufacturer they connect to, and they are dressed in accordance with the manufactures' recommendations.	

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5.1.18	Rack elevation and flow drawings, cable and other labels and engravings are an accurate paper model of the furnished system, and in compliance with latest revised specifications. All nomenclature is consistent: drawings, touch screen, wall plates, floor boxes, patch panels, equipment, etc. Record test results as pass/fail.	
5.1.19	All inputs and outputs of switchers are labeled (wherever possible), so that users can easily make manual routes quickly, without having to refer to the system drawings.	
5.1.20	All channels on amplifiers, especially on multi-channel amplifiers are properly labeled, so users can make quick adjustments without having to refer to the system drawings.	
5.1.21	All equipment in the rack is labeled in an appropriate and reasonable manner, and the labels match those on the drawings (equipment symbols and/or description), control system, field plates, patch panels, and any labels associated with the system. This will allow for easy serviceability, as well as prevent confusion in systems with multiples of similar equipment.	
5.1.22	A representative sampling of the wiring practices of the System Under Test is captured using digital photographs	
5.1.23	All unbalanced and balanced terminations are in agreement with the equipment manufacturer's recommendations.	
5.1.24	There is perfect agreement between the "paper model" documentation (drawings), the control system user interface (i.e., touch panel screens, push button labels, panel engravings, etc.), the device labels, any patch panels/designation strips, the physical wiring and labeling, and any label associated with the system.	
5.1.25	All connectors on input and output plates are identified in a discernible, consistent manner (i.e., there is only one "MIC 1" in the system), and in agreement with all other labels in the system.	
5.1.26	Small racks to be installed into credenzas have carpet tiles or sliders on bottom to avoid scratching credenzas.	
5.1.27	The thermal gradient of all the equipment in the rack has been measured and all active components to be deployed in the space (including wall plates, floor box plates, credenzas, etc.) and all equipment is operating within manufacturers' specifications. <b>Record the highest measurement and where it was found.</b>	
5.2.0	<b>Audio</b>	
5.2.1	All audio paths on the flow diagram have been verified (all lines marked).	
5.2.2	All audio channels can develop a headroom level with THD < __ (0.5)% <b>Record results for all sources.</b>	
5.2.3	All audio channels have a signal to noise (S/N) > __ (55) dB. <b>Record results for all sources.</b>	
5.3.0	<b>Video</b>	
5.3.1	All video paths on the flow diagram have been verified (all lines marked).	
5.3.2	The system has been configured in accordance with the designer's EDID Plan, where applicable, and the system performs as intended (resolutions, displayed images, audio formats, etc).	
5.3.3	All displays are able to switch between different color spaces and resolutions. Show a BluRay or TV (YUV) signal, then show a laptop (RGB) signal, and then switch back to the BluRay/TV (YUV) signal. The source should always display properly.	
5.3.4	Automatic CEC controls do not negatively affect the displays. With the displays powered on, power off each source in the system. The displays should remain on (no Power Off command sent from a source).	

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5.3.5	All sources can be routed to all expected destinations. Disregard any routes that are not permitted by design, as described in the narrative, such as HDCP sources routed to a codec.	
5.3.6	All HDCP sources can be routed to all expected destinations at the same time. There are some devices with a limited capability to display on multiple displays. The system requires that each source can display on the required number of displays in the system at the same time.	
5.3.7	All HDMI signals have been tested using the entire cabling to be installed in the field, to the extent it is possible. <i>Using an appropriate HDMI generator, display with HDCP enabled, for the following resolutions and timings, as required in the design (check all that apply):</i>  See project specifications for resolutions to be tested. (base default, in case the PC has issues and boots up in default mode). Images exhibit no "sparklies" when leaving the signal on for several seconds. Appropriate HDMI Generator required.	
5.3.8	A report is obtained when the switcher makes available a system status report with information regarding each source and destination signal integrity, EDID and CEC status information, etc. If a printed or 'pdf' report is not included, a screen print showing the status of the system (including source and destination communications with the switcher) is obtained and it is included.	
5.3.9	A BluRay movie plays. Sometimes HDCP is not enabled during the menus and previews, but only during the movie.	
5.3.10	Typical client laptops have been successfully used with the system, inclusive of default resolution (works with switcher EDID), and any adapters, etc. Client laptop(s) required.	
5.3.11	Motion video has satisfactory lip sync. While observing each display using a video of someone clapping their hands, confirm that there are no objectionable latency issues	
5.3.12	Video levels at 'sinks' (displays) are 1 v P-P +/- 10% for composite (if any) or 700 mV for computer video for all sources.	
5.3.13	Camera(s) image quality has a focused, acceptable image.	
5.3.14	There are no lost or stuck "on" pixels when Full White Test signal is displayed (7 pixels maximum per quadrant, or follow manufacturer's spec). Note number and location of lost pixels, if any.	
5.3.15	AV equipment configuration and control system programming has been optimized for the least switching time when selecting different sources. In the event switching time goes beyond a reasonable time ( __ (5) seconds), the User receives a visual message with the estimated time to execute the command. Record the maximum switching time experienced.	
<b>5.4.0</b>	<b>Control and Network Integration</b>	
5.4.1	All control paths on the flow diagram have been tested (all lines marked - emulate closures for screens, motors, etc.)	
5.4.2	All serial controlled equipment is properly configured and communications has been established.	
5.4.3	Control system functions not obvious from the control flow diagrams (i.e., lighting presets that are activated when the control system enters a videoconferencing mode) have been verified.	
5.4.4	All IP information provided by the client is accurately loaded into the system, including IP address, network ID's, subnet masks, default gateway, timeserver, Gatekeeper, alias, hostnames, etc. Confirm that these settings are listed in a report that will remain with the system.	
5.4.5	All web-based system control or monitoring features, and other IP functionality of system (time servers, system-generated e-mail, etc.) has been verified.	

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5.4.6	All system programming is installed (control system, DSP devices), and properly communicating with the equipment intended. If a control specification is present, it has been thoroughly tested.	
5.4.7	When system is powered down, system "up" sequence presents the system in a desirable state with no objectionable anomalies.	
<b>5.5.0</b>	<b>Final Inspection</b>	
5.5.1	Non-conformances, anomalies, etc. have been video recorded and included in this report.	
5.5.2	Sanity Check: There is no reason why this system should NOT be released for installation. Everything plumb and square, clean and blemish-free.	
5.5.3	The system under test satisfies ALL of the system requirements laid out in the client-approved functional narrative/signed proposal.	
5.5.4	A document report has been completed, certifying the product, performance, and practices are in compliance, and any exceptions are noted below. Distribute accordingly.	