

Sample Screenshots

Crestron and AMX

Please find of a collection of sample screenshots from x7 programs designed, developed and commissioned during my employment at AVMI:

| Company/Client | Location | System Description | Role |
|-------------------------|-------------------|--------------------------------------|----------------------------|
| 1. AVMI | London | Video wall and digital signage | Management and control |
| 2. Investment Bank | London | Multiroom VoIP | Monitoring and diagnostics |
| 3. Private Bank | London | Private banking rooms | Audio distribution control |
| 4. Global Advisory Firm | London | Auditorium video wall | Temperature monitor |
| 5. Global Bank | Data Centre | Central control room video wall | Management and control |
| 6. Global Bank | UK Branch Rollout | Digital signage and LCD groups | Management and control |
| 7. High St Phone Store | London | Digital signage and asset management | Monitoring and diagnostics |

I was responsible for all aspects of GUI design, program design, development, test, commission, demonstration and handover to client.

Logos

Upon leaving AVMI I was asked to remove all identifying names and logos from the screenshots hence the names above have been anonymized and all logos have been removed from the screenshots in this document.

Personal UI Principles

| | | | |
|-------------------------|---------------------------|------------------------|------------------------|
| Simplicity Organised | Satisfaction Intuition | Ergonomic Efficient | Convention Balanced |
|-------------------------|---------------------------|------------------------|------------------------|

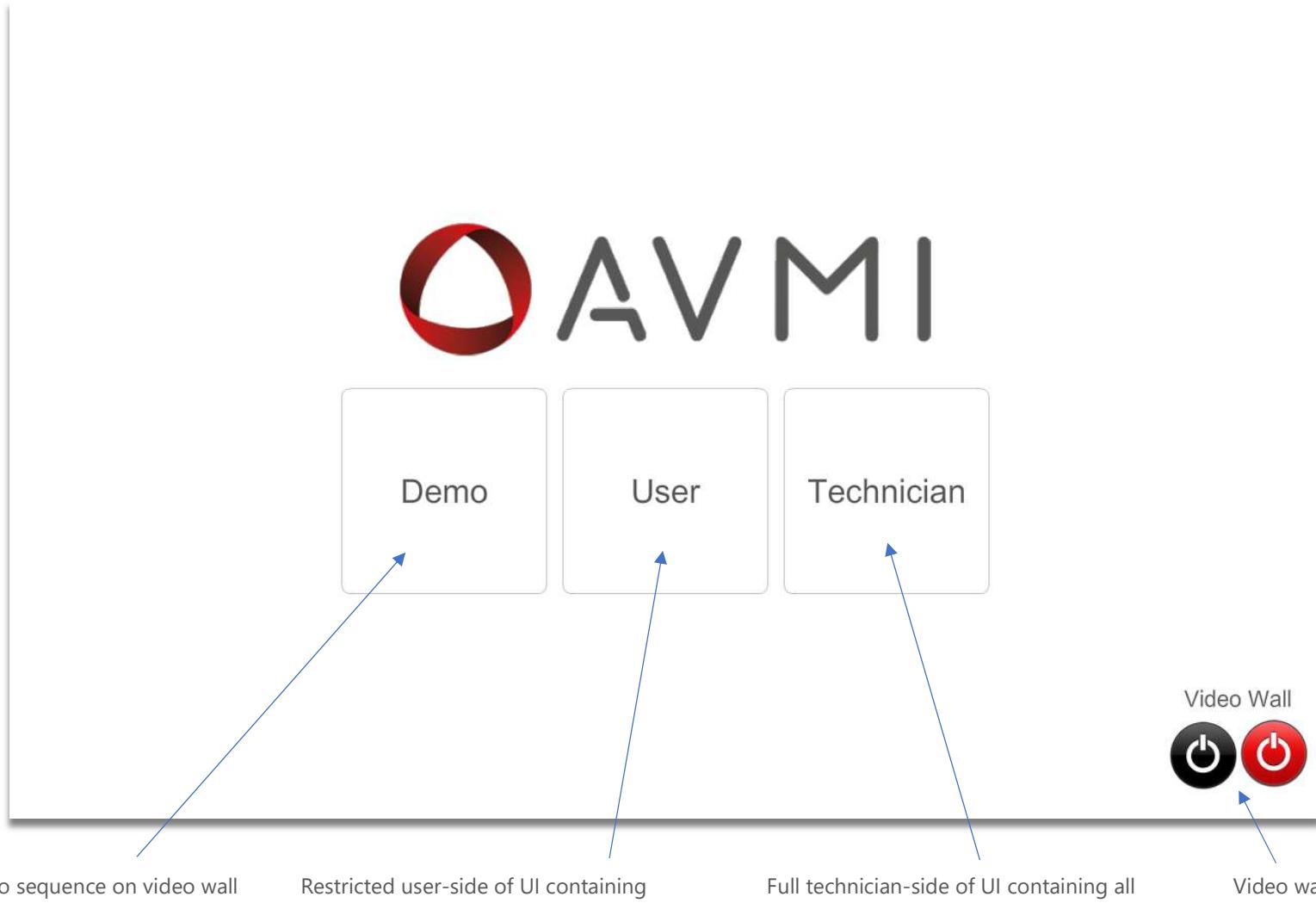
GUI's should be simple, intuitive and enable the user to quickly mentally map the systems organisation, functionality and flow, for a further collection of my principles applied to all software please find 'Software Principles.pdf' in my GitHub repository.

1. AVMI London

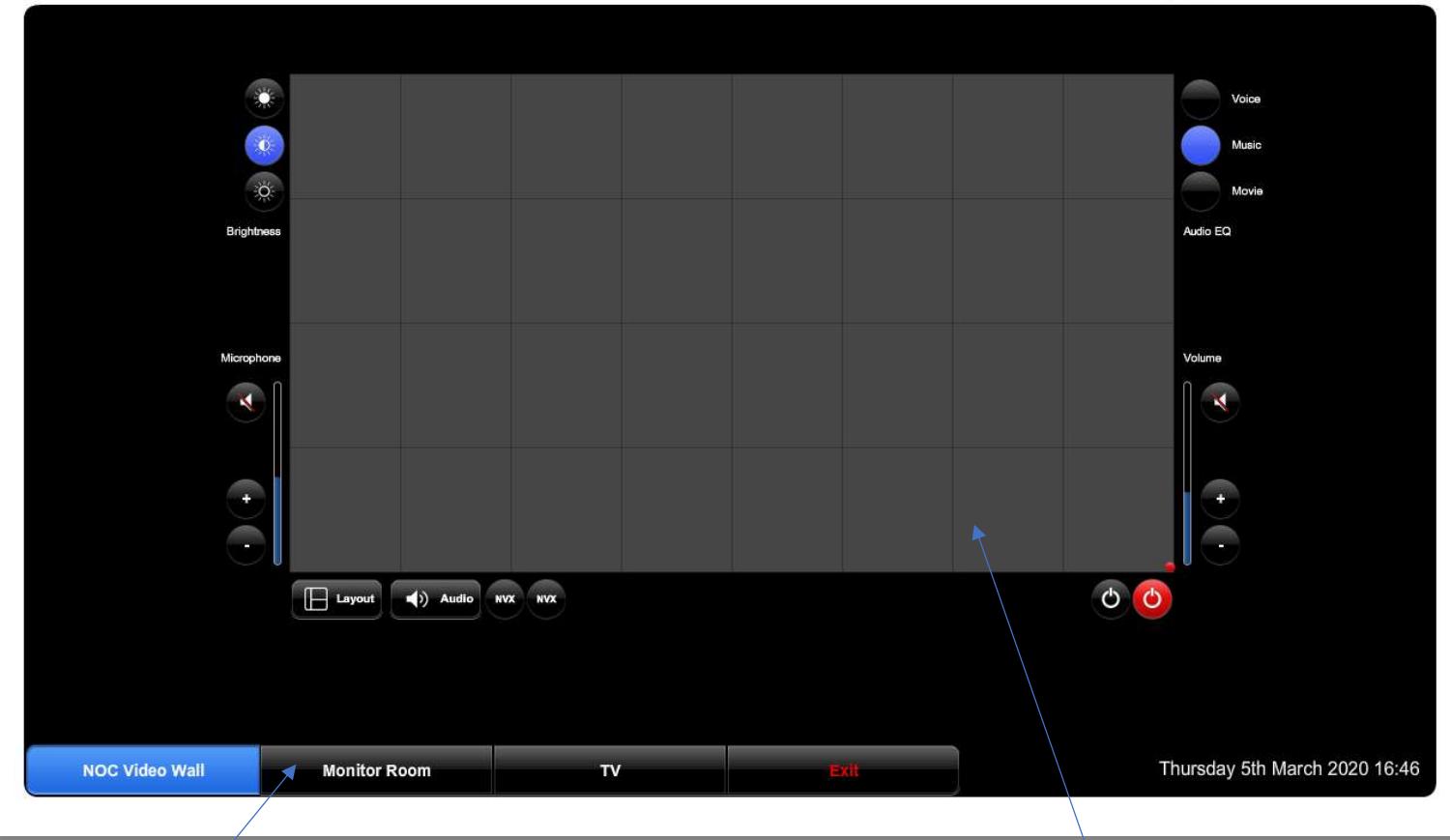
Video Wall and Digital Signage - Management and Control



NOC Video Wall and Digital Signage
Monitor and Diagnostics



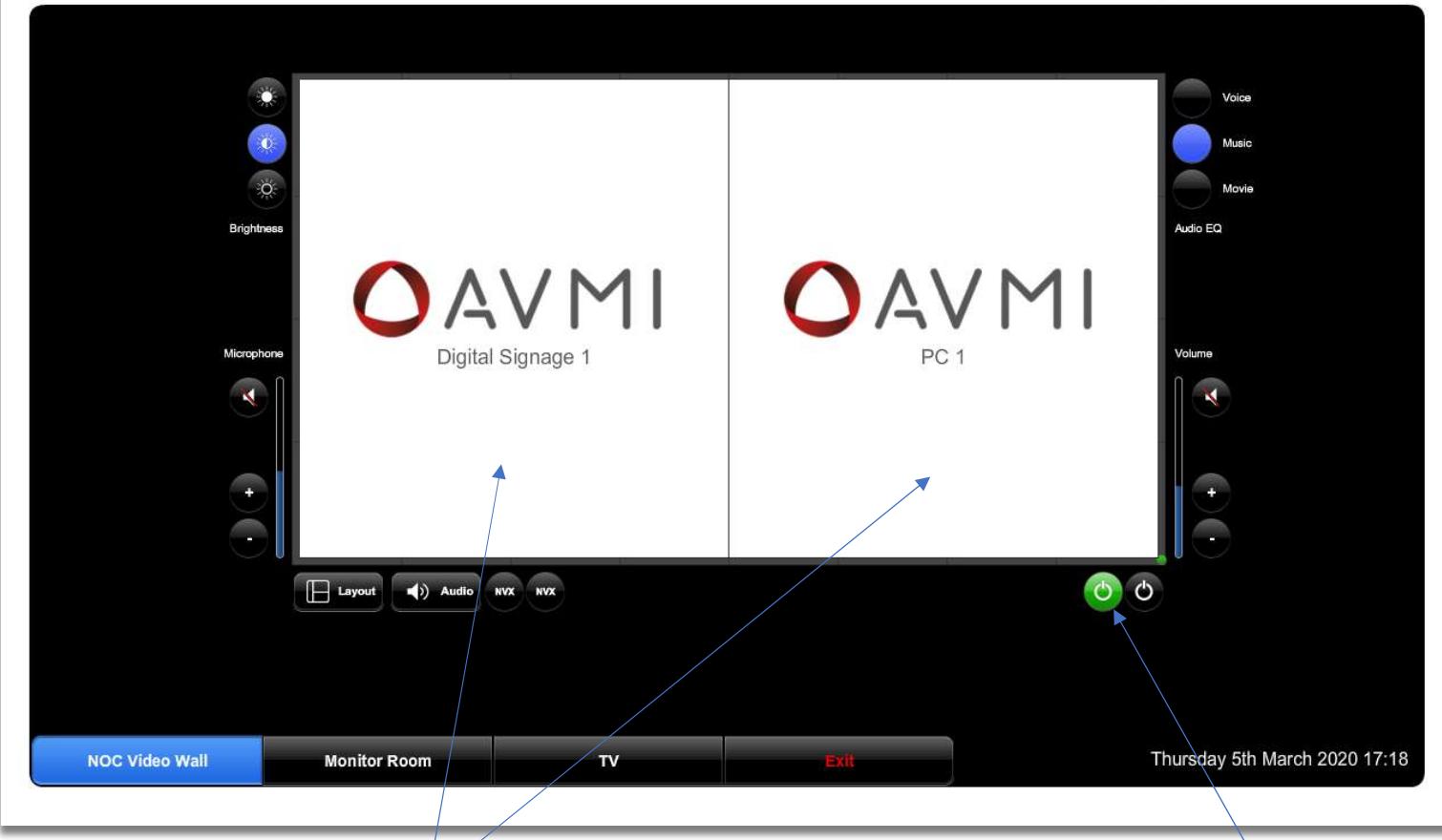
NOC Video Wall - Digital Signage



User-side of panel contains x3 pages of limited functionality

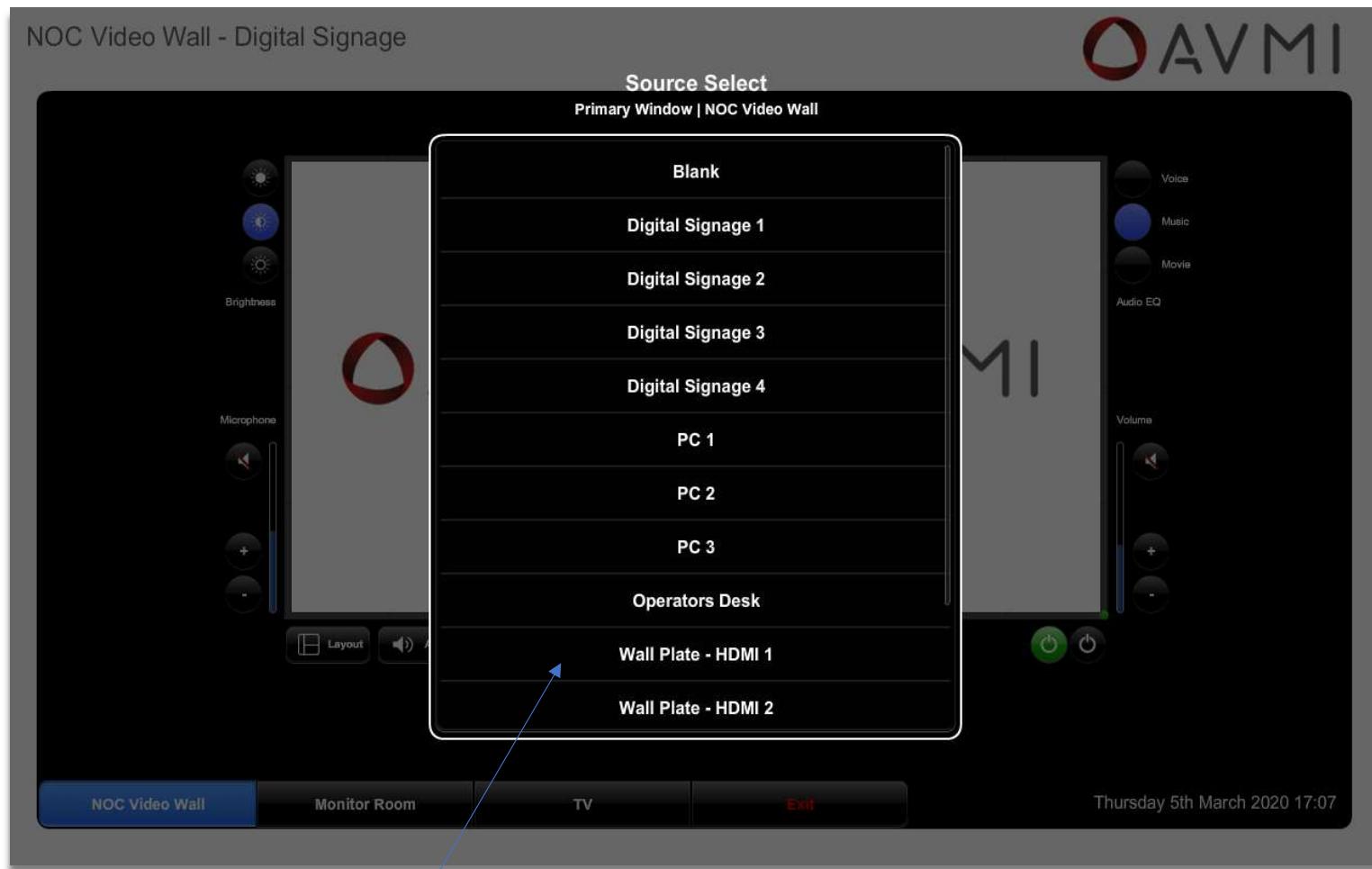
Video wall power, layout and source select with audio breakaway

NOC Video Wall - Digital Signage

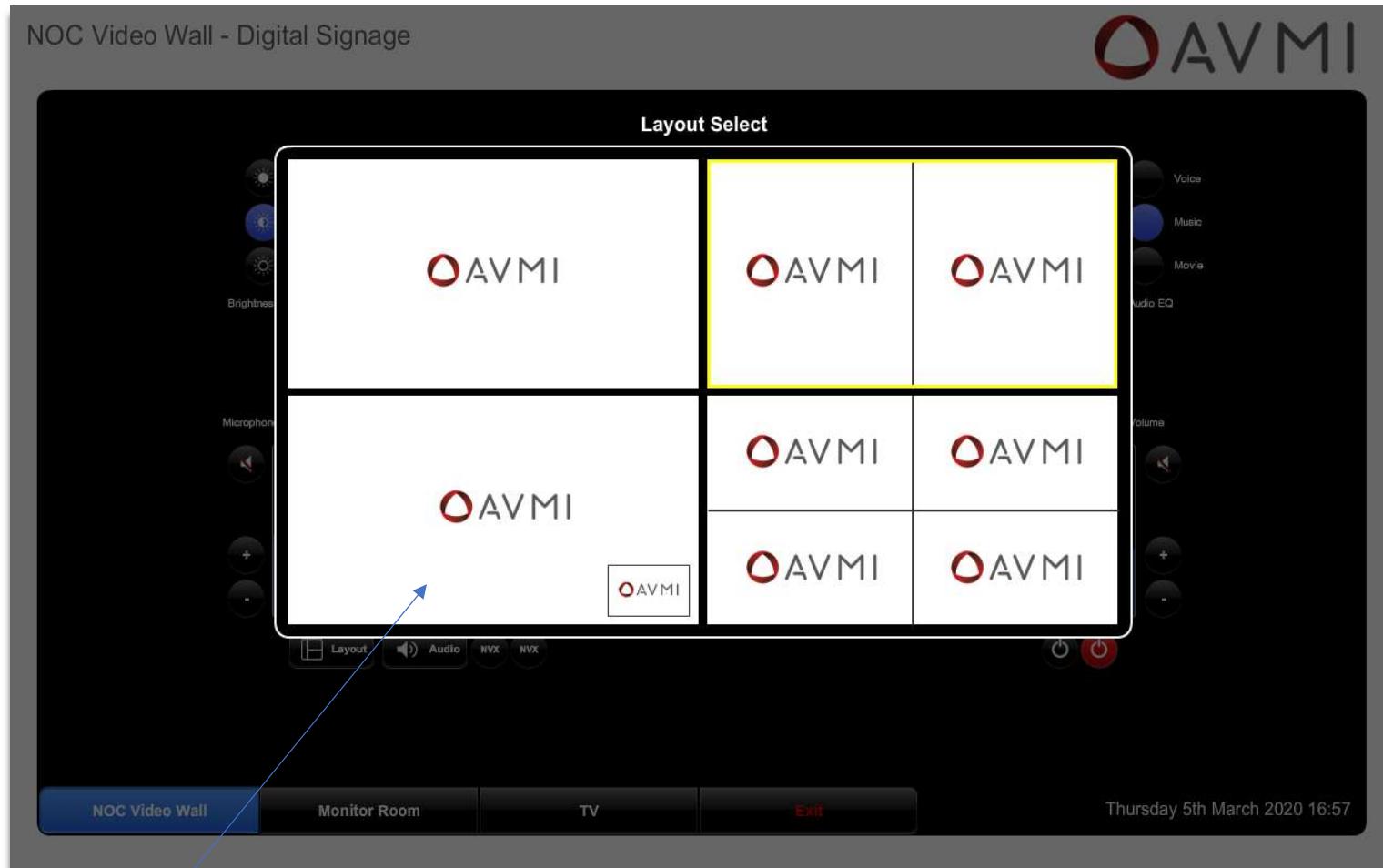


Press on video wall windows to select and send source

Turn on video wall



Scrollable list of available sources to send to individual video wall window(s)



Select video wall layout from x4 preset configurations

DM-NVX Endpoint
Source

| | |
|-------------------------------|--------------------------------|
| Name | NOC ENCODER 04 Current Signage |
| IP-ID | 14 |
| Card Slot | 4 |
| Chassis Serial Number | 8BF2963B |
| Multicast IP Address | 239.1.0.8 |
| Multicast IP Address [Sec.] | 239.1.0.9 |
| Primary Stream | rtsp://10.0.78.44:554/live.sdp |
| Ready | Green |
| Processing | Grey |
| Reboot Required | Grey |
| Status | Stream started |
| RTSP Port | 554 |
| TS Port | 4570 |
| Horizontal Resolution | 1920 |
| Vertical Resolution | 1080 |
| Frame Rate | 60 Hz |
| Aspect Ratio | 16:9 |
| Audio Format | PCM |
| Audio Channels | 2 Chan |
| Bit Rate | 400 Mbps |
| Multicast TTL | 5 |
| Number of Packets Transmitted | 332625 |
| Number of Packets Dropped | 0 |

DM-NVX Endpoint
Destination

| | |
|---------------------------------------|--------------------------------|
| Name | |
| Location | |
| IP-ID | 71 |
| Card Slot | 04.0 |
| Chassis Serial Number | |
| Receiving Multicast IP Address | 239.1.0.8 |
| Receiving Multicast IP Address [Sec.] | 239.1.0.9 |
| Receiving Primary Stream | rtsp://10.0.78.44:554/live.sdp |
| Ready | Green |
| Processing | Grey |
| Reboot Required | Grey |
| Status | Stream started |
| RTSP Port | 554 |
| TS Port | 4570 |
| Horizontal Resolution | 1920 |
| Vertical Resolution | 1080 |
| Frame Rate | 60 Hz |
| Aspect Ratio | 16:9 |
| Audio Format | PCM |
| Audio Channels | 2 Chan |
| Bit Rate | 386 Mbps |
| Number of Packets Received | 2020752333 |
| Number of Packets Dropped | 10 |

Buttons (Bottom Row):

- Audio Visual
- Input / Output
- Network
- Reset Packet Count
- Reboot

Each endpoint contains x5 pages of properties and functionality associated with network, video signal and source

Real-time video streaming diagnostics

DM-NVX Endpoint
Source

Name: NOC ENCODER 04 Current Signage
IP-ID: 14
Card Slot: 4
Chassis Serial Number: 8BF2963B

Auto Switch:

Video Input: None Input 1 Input 2

Audio Input: Audio Follow Video
Input 1 Input 2
Analog Audio
Primary Stream Audio
Secondary Stream Audio
Dante/AES-67 Audio Input

Secondary Audio Stream: Off
Auto (Send audio on IP address x1 higher than Primary Stream)

Number of Packets Transmitted: 1330531
Number of Packets Dropped: 0

Audio Visual **Input / Output** Network Reset Packet Count Reboot

DM-NVX Endpoint
Destination

Name: Main Display
Location: Operations
IP-ID: 71
Card Slot: 04.0
Chassis Serial Number: 02.0

Auto Switch:

Video Input: None Input 1 Input 2 Stream

Audio Input: Audio Follow Video
Input 1 Input 2
Analog Audio
Primary Stream Audio
Secondary Stream Audio
Dante/AES-67 Audio Input

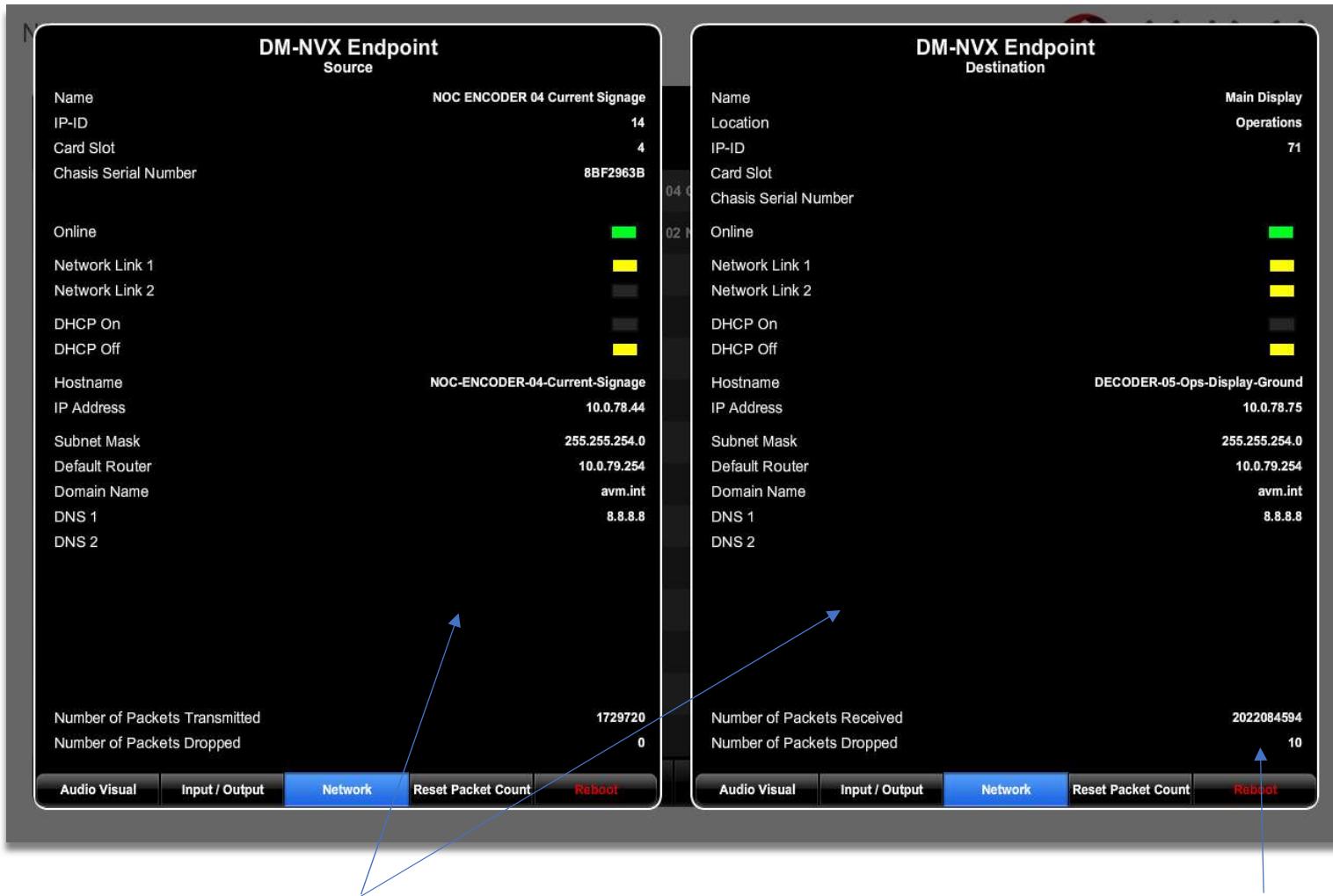
Secondary Audio Stream: Off
Auto (Receive audio on IP address x1 higher than Primary Stream)

Number of Packets Received: 2021751571
Number of Packets Dropped: 10

Audio Visual **Input / Output** Network Reset Packet Count Reboot

Low level IO settings of each endpoint provide maximum flexibility

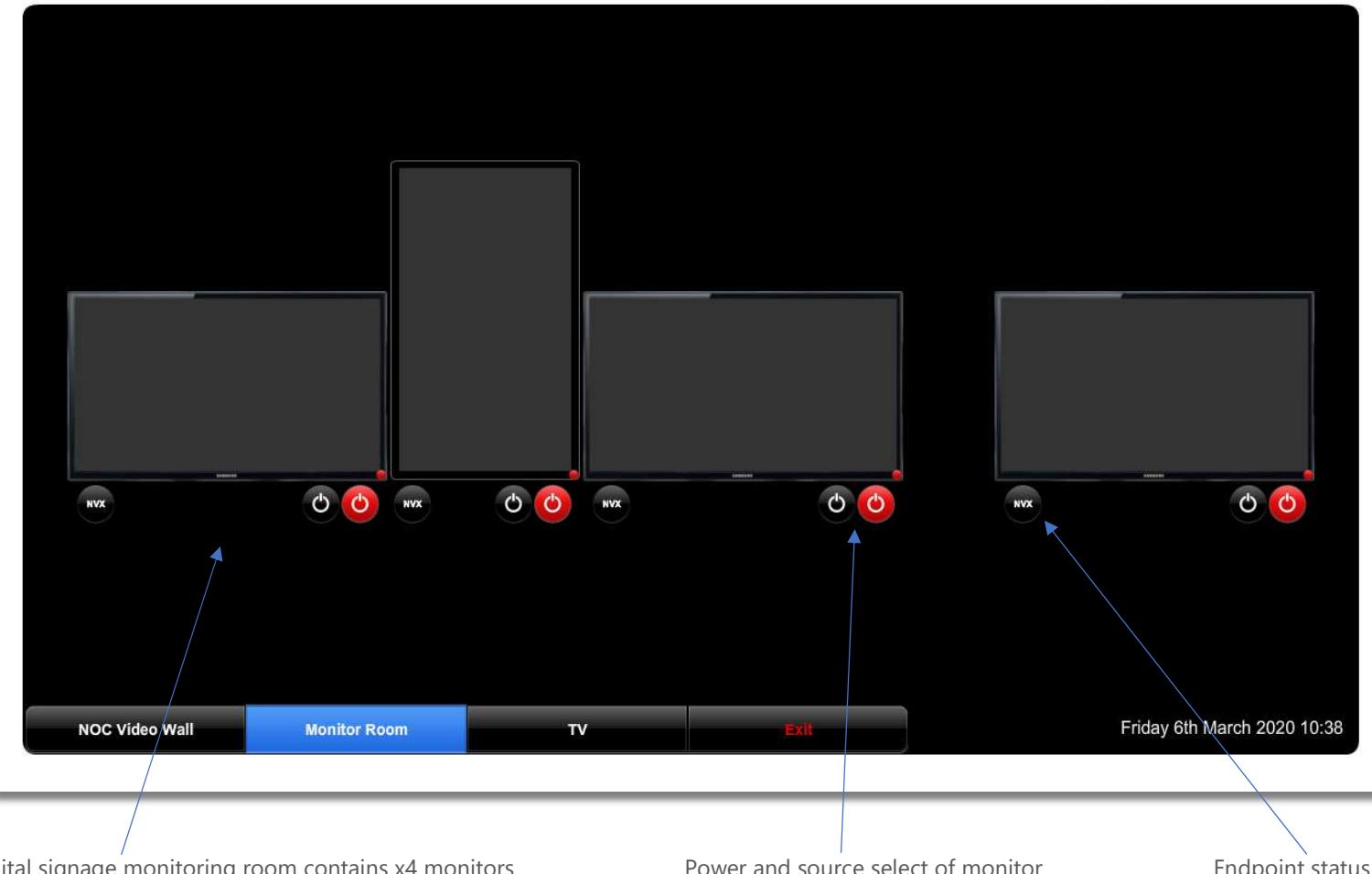
Press on checkboxes to set





Conveniently and easily reboot any endpoint situated anywhere around the building

NOC Video Wall - Digital Signage

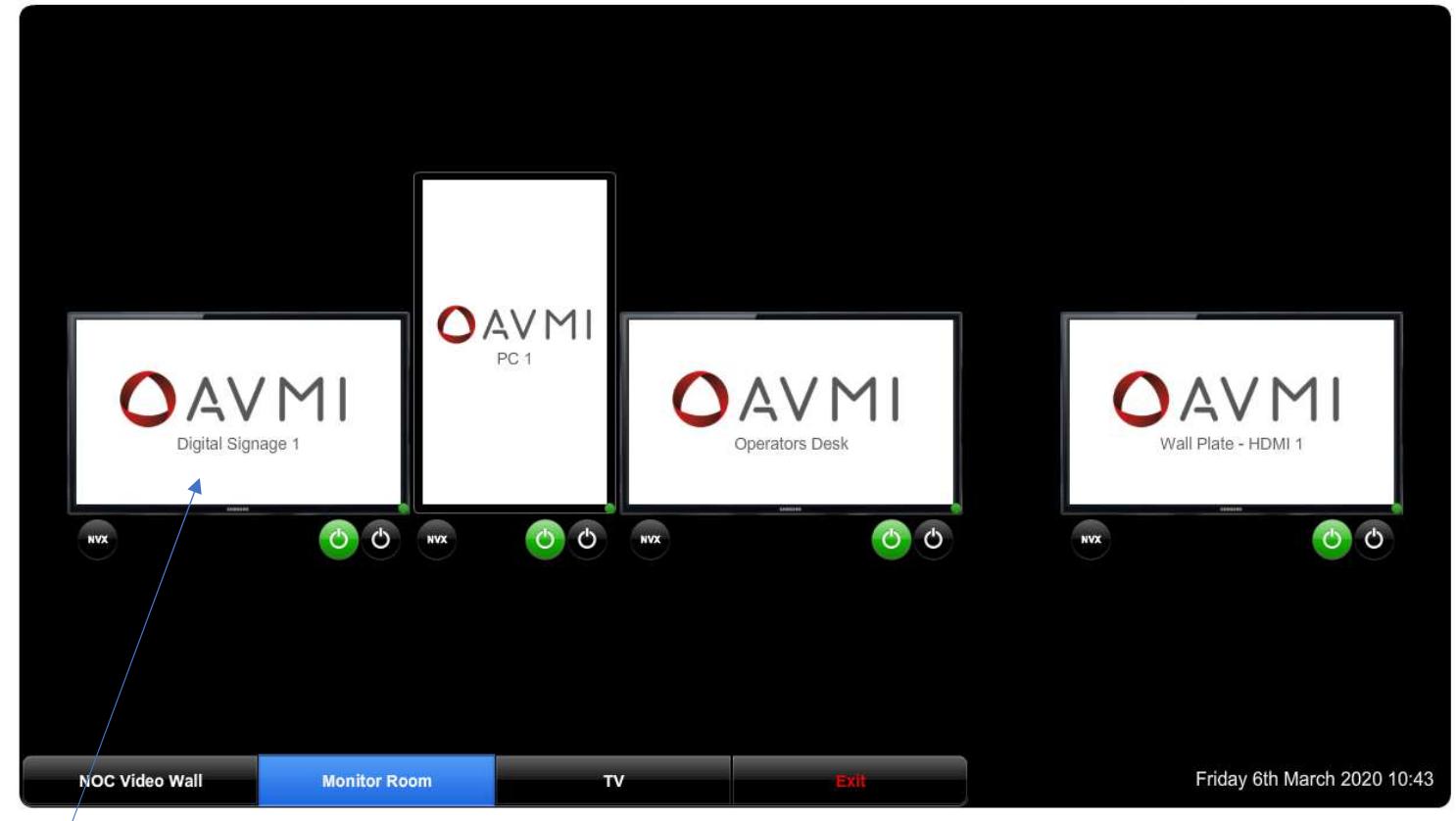


AVMI's digital signage monitoring room contains x4 monitors

Power and source select of monitor

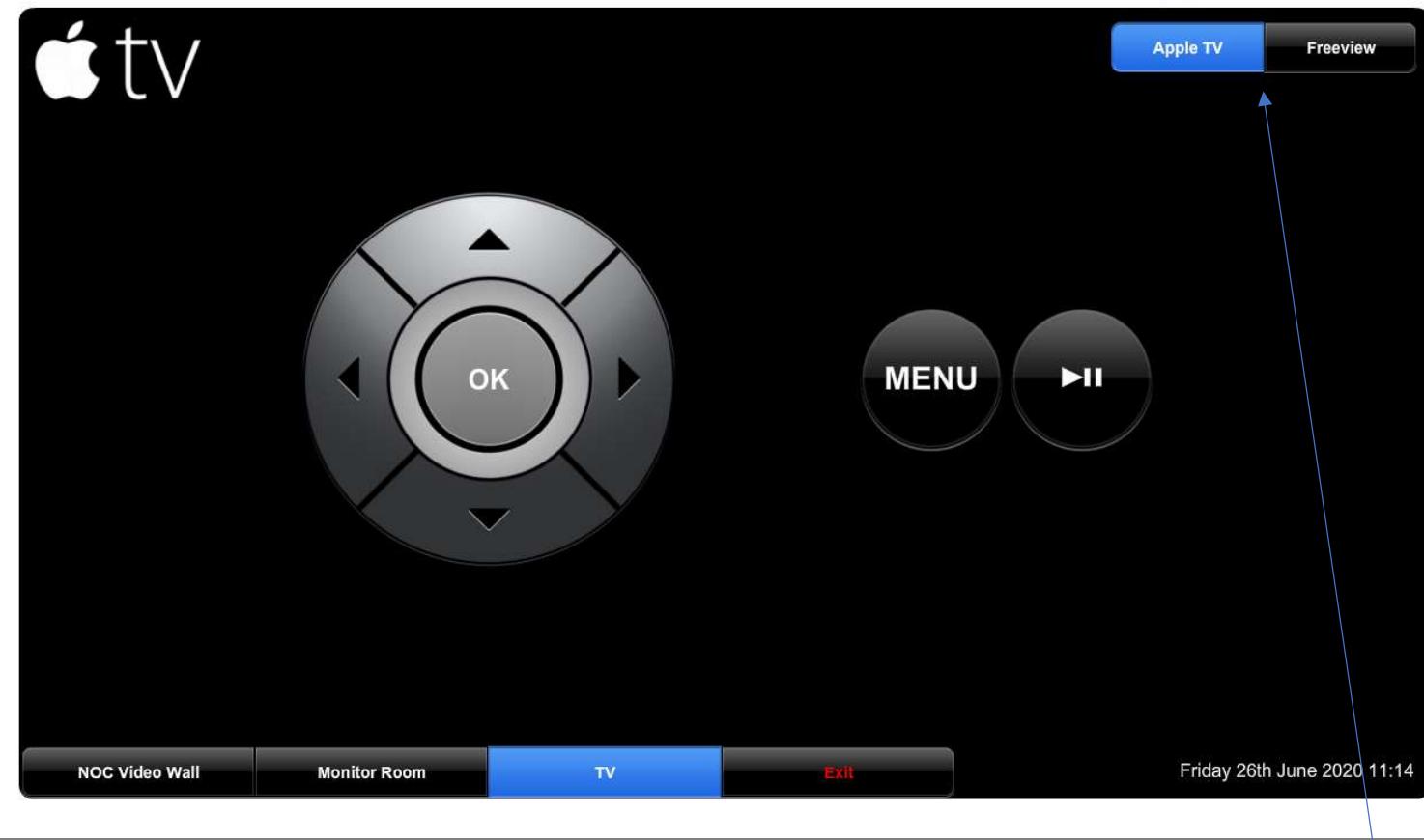
Endpoint status

NOC Video Wall - Digital Signage



Press on monitor to select and send any available source to monitor

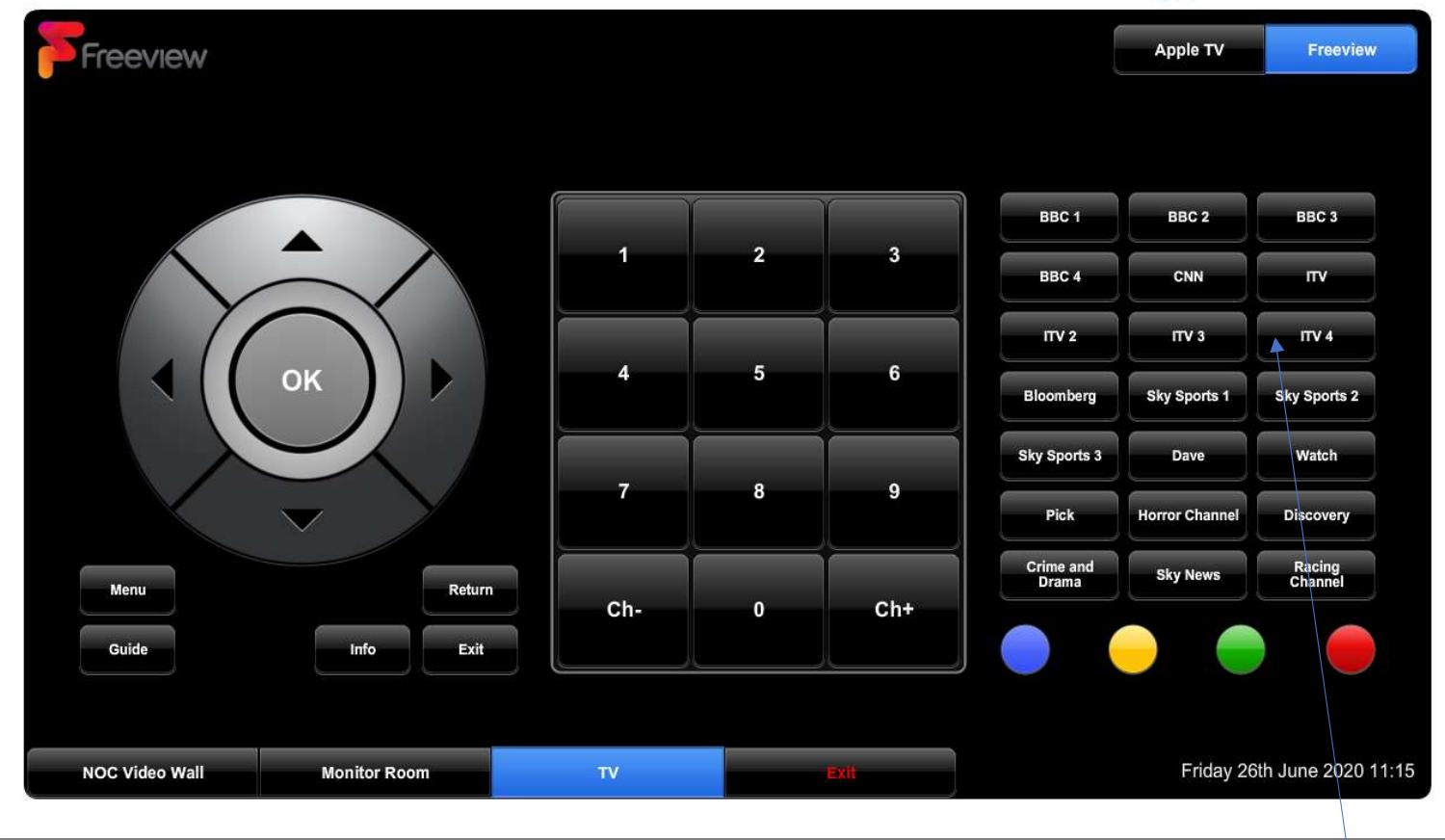
NOC Video Wall - Digital Signage



Select and control the Apple TV source

Switch between Apple TV and Freeview

NOC Video Wall - Digital Signage



Select and control Freeview TV source

On-screen navigation and channel presets
emulating an IR remote

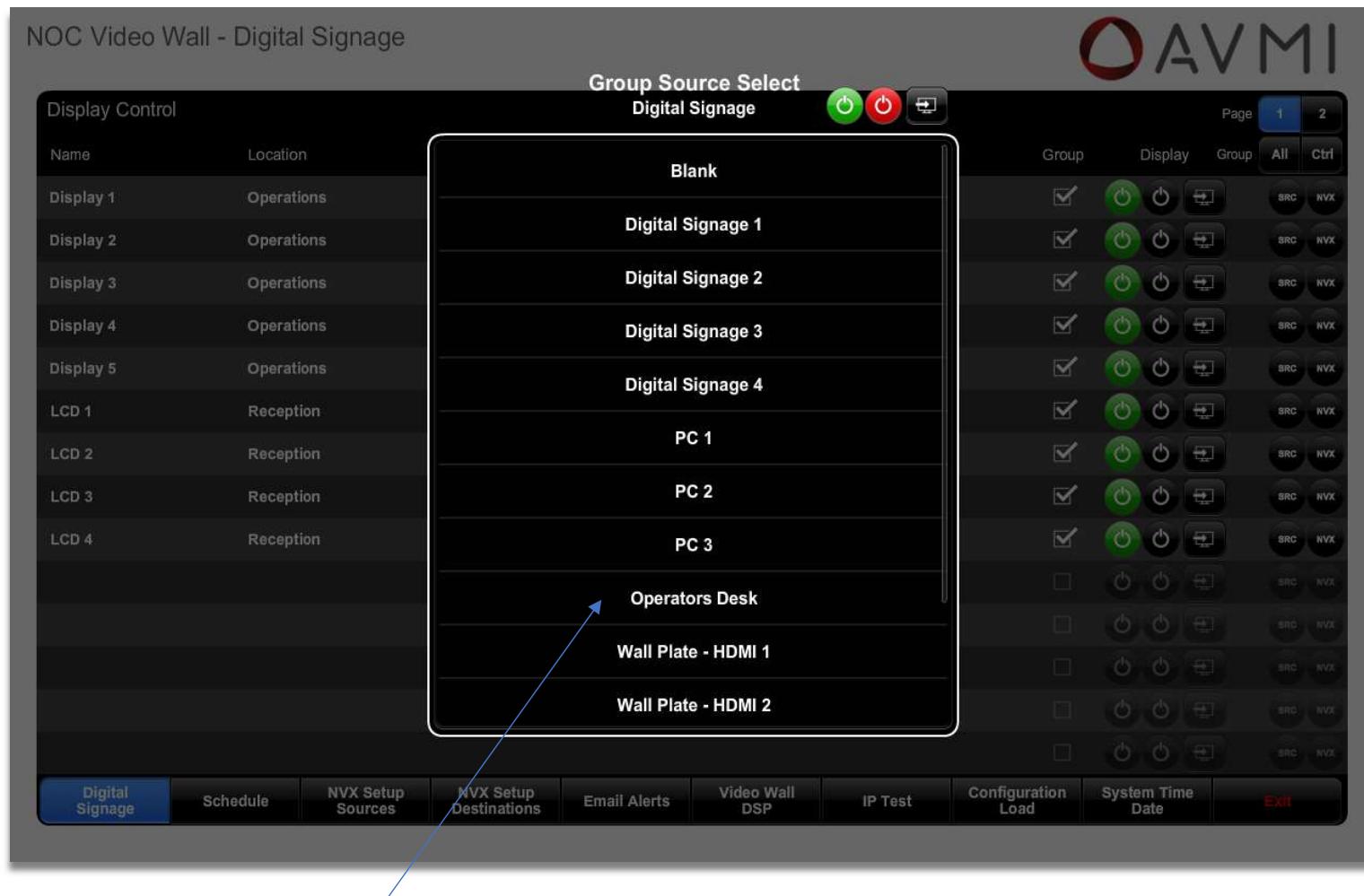
NOC Video Wall - Digital Signage



Technician-side of panel contains full system functionality

LCD power control, source select and stream status

Group select multiple LCDs around building



Set LCD power, input or send a source to multiple LCDs around building

NOC Video Wall - Digital Signage



Schedule

NOC Video Wall Digital Signage

| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|----------------|--|--|---------------------------------|--|--|---------------------------------|---------------------------------|
| Video Wall On | 07:00 | 07:00 | 07:00 | 07:00 | 07:00 | Closed | Closed |
| Video Wall Off | 19:30 | 19:30 | 19:30 | 19:30 | 19:30 | Closed | Closed |
| | <input checked="" type="checkbox"/> Enable | <input checked="" type="checkbox"/> Enable | <input type="checkbox"/> Enable | <input checked="" type="checkbox"/> Enable | <input checked="" type="checkbox"/> Enable | <input type="checkbox"/> Enable | <input type="checkbox"/> Enable |

Digital Signage **Schedule** NVX Setup Sources NVX Setup Destinations Email Alerts Video Wall DSP IP Test Configuration Load System Time Date Exit

Schedule the automatic turning on/off of the video wall or LCDs around building

Press on time field to open keypad to set

NOC Video Wall - Digital Signage



DM-NVX Endpoints - Sources

Page 1 2

| Source Name | IP-ID | Card Slot | IP Address | Sending Stream URL | Status | Ready | Proc. | Reboot | NVX |
|---------------------|-------|-----------|------------|--------------------------------|----------------|-------|--------|--------|-----|
| Digital Signage 1 | 11 | 1 | 10.0.78.41 | rtsp://10.0.78.41:554/live.sdp | Stream Started | Green | Grey | Grey | NVX |
| Digital Signage 2 | 12 | 2 | 10.0.78.42 | rtsp://10.0.78.42:554/live.sdp | Stream Started | Green | Grey | Grey | NVX |
| Digital Signage 3 | 13 | 3 | 10.0.78.43 | rtsp://10.0.78.43:554/live.sdp | Stream Started | Green | Grey | Grey | NVX |
| Digital Signage 4 | 14 | 4 | 10.0.78.44 | rtsp://10.0.78.44:554/live.sdp | Stream Started | Green | Yellow | Grey | NVX |
| PC 1 | 15 | 5 | 10.0.78.45 | rtsp://10.0.78.45:554/live.sdp | Stream Started | Green | Grey | Grey | NVX |
| PC 2 | 16 | 6 | 10.0.78.46 | rtsp://10.0.78.46:554/live.sdp | Stream Started | Green | Grey | Grey | NVX |
| PC 3 | 17 | | 10.0.78.47 | rtsp://10.0.78.47:554/live.sdp | Stream Stopped | Red | Grey | Red | NVX |
| Operators Desk | 18 | | 10.0.78.48 | rtsp://10.0.78.48:554/live.sdp | Stream Started | Green | Grey | Grey | NVX |
| Wall Plate - HDMI 1 | 19 | | 10.0.78.49 | rtsp://10.0.78.49:554/live.sdp | Stream Started | Green | Grey | Grey | NVX |
| Wall Plate - HDMI 2 | 1A | | 10.0.78.50 | rtsp://10.0.78.50:554/live.sdp | Stream Started | Green | Grey | Grey | NVX |
| Wall Plate - VGA | 1B | | 10.0.78.51 | rtsp://10.0.78.51:554/live.sdp | Stream Started | Green | Grey | Grey | NVX |
| Floor Box 1 - HDMI | 1C | | 10.0.78.52 | rtsp://10.0.78.52:554/live.sdp | Stream Started | Green | Grey | Grey | NVX |
| Source Name | 1D | | | | | Red | Grey | Grey | NVX |
| Source Name | 1E | | | | | Red | Grey | Grey | NVX |

Digital Signage Schedule NVX Setup Sources NVX Setup Destinations Email Alerts Video Wall DSP IP Test Configuration Load System Time Date Exit

Manually add/remove source endpoints

Press on text field to open keyboard

Realtime status reporting of all source endpoints around building

NOC Video Wall - Digital Signage



| DM-NVX Endpoints - Destinations - Digital Signage | | | | | Fixed | Digital Signage | Digital Signage | | | |
|---|------------------|-------|------------|--------------------------------|----------------|-----------------|-----------------|--|--|--|
| Name | Location | IP-ID | IP Address | Receiving Stream URL | Status | Ready | Proc. Reboot | | | |
| Display 1 | Operations | 71 | 10.0.78.71 | rtsp://10.0.78.45:554/live.sdp | Stream Started | | | | | |
| Display 2 | Operations | 72 | 10.0.78.72 | rtsp://10.0.78.49:554/live.sdp | Stream Started | | | | | |
| Display 3 | Operations | 73 | 10.0.78.73 | rtsp://10.0.78.49:554/live.sdp | Stream Started | | | | | |
| Display 4 | Operations | 74 | 10.0.78.74 | rtsp://10.0.78.49:554/live.sdp | Stream Stopped | | | | | |
| Display 5 | Operations | 75 | 10.0.78.75 | | Stream Stopped | | | | | |
| LCD 1 | Reception | 76 | 10.0.78.76 | rtsp://10.0.78.45:554/live.sdp | Stream Paused | | | | | |
| LCD 2 | Reception | 77 | 10.0.78.77 | rtsp://10.0.78.46:554/live.sdp | Stream Started | | | | | |
| LCD 3 | Reception | 78 | 10.0.78.78 | rtsp://10.0.78.52:554/live.sdp | Stream Started | | | | | |
| LCD 4 | Reception | 79 | 10.0.78.79 | rtsp://10.0.78.52:554/live.sdp | Stream Started | | | | | |
| Display Name | Display Location | 7A | | | | | | | | |
| Display Name | Display Location | 7B | | | | | | | | |
| Display Name | Display Location | 7C | | | | | | | | |
| Display Name | Display Location | 7D | | | | | | | | |
| Display Name | Display Location | 7E | | | | | | | | |

Digital Signage

Schedule

NVX Setup Sources

NVX Setup Destinations

Email Alerts

Video Wall DSP

IP Test

Configuration Load

System Time Date

Exit

Manually add/remove destination endpoints

URL of the source endpoint currently being received by destination endpoint

Realtime status reporting of all destination endpoints around building

NOC Video Wall - Digital Signage



Server: mail.avmimpact.com

Username: paul.surridge

Password: *****

From: videowall@avmi.com

Subject: Notification Alert

Email Recipients

paul.surridge@avmi.com

Test

Alerts

NVX Unit Offline

DSP Offline

Video Wall Offline

Press icon for email status

Debounce 30 sec

Digital Signage Schedule NVX Setup Sources NVX Setup Destinations Email Alerts Video Wall DSP IP Test Configuration Load System Time Date Exit

Press on any text field to open keyboard

Up to x5 email recipients can receive an email alert if any of the selected devices go offline for defined period of time

NOC Video Wall - Digital Signage



Video Wall / DSP

| | | | |
|-------------------------|------------|--------|--|
| Samsung SBB-SNOWJAU: | 10.0.78.35 | Online | Waiting for Connection |
| Polycom Soundstructure: | 10.0.78.33 | Online | Waiting for Connection |

Tx Rx Refresh Disconnect

Refresh Disconnect

Samsung SBB-SNOWJAU:
Brightness (0-100):

High 100
Mid 75
Low 50

Digital Signage Schedule NVX Setup Sources NVX Setup Destinations Email Alerts **Video Wall DSP** IP Test Configuration Load System Time Date Exit

IP setup and connection status to the video wall processor and audio DSP

Indicators flash upon Tx/Rx data from device(s)

Realtime status information of connection to device

NOC Video Wall - Digital Signage



The screenshot shows a web-based configuration interface for a digital signage processor. At the top, there is a header bar with a search field containing "IP/Hostname: 192.168.1.100" and two buttons: "Ping" and "IP Config". Below the header is a large text area displaying network configuration details for an Ethernet Adapter [CPSW3G1]. The details include:

- Link Status : OK
- DHCP : ON
- MAC Address(es).... : 00:10:7f:44:b5:02
- IP Address : 192.168.1.102
- Subnet Mask : 255.255.255.0
- IPv6 Address..... : fe80::86c:5e68:b477:6309%2
- Default Gateway ... : 192.168.1.1

DNS Servers..... : 194.168.4.100 (DHCP)
194.168.8.100 (DHCP)

At the bottom of the interface is a navigation menu with ten items: Digital Signage, Schedule, NVX Setup Sources, NVX Setup Destinations, Email Alerts, Video Wall DSP, IP Test, Configuration Load, System Time Date, and Exit. The "IP Test" item is highlighted with a blue background.

Test the IP connectivity between local processor and any IP device or endpoint on network

IP Config of local processor

NOC Video Wall - Digital Signage



FTP Server URL:

FTP Username:

FTP Password:

System Config: FTP Load Success ✓

File Open. File Reading...

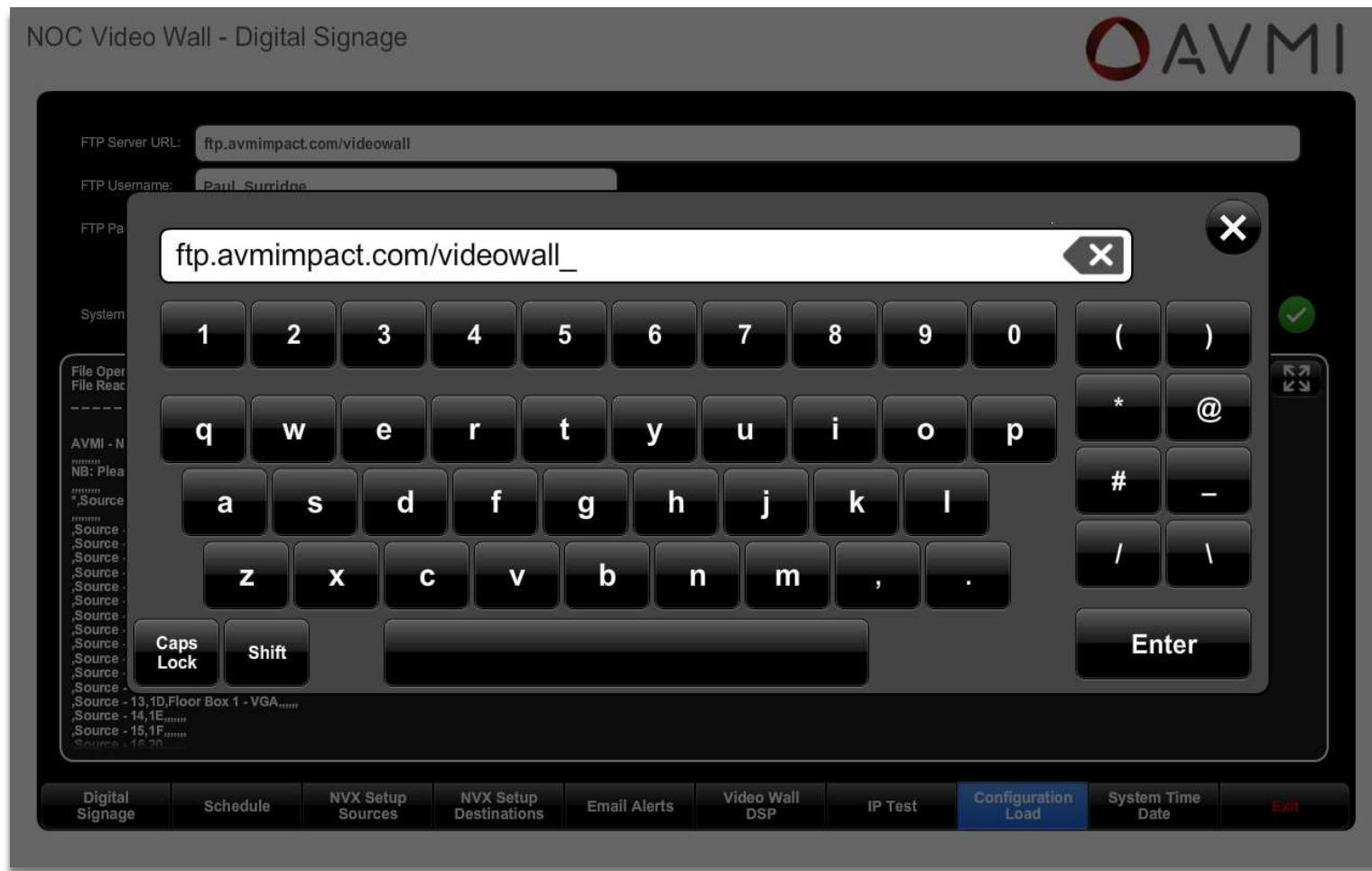
AVMI - NOC Video Wall and Digital Signage - System Config.....
NB: Please do not use commas in user definable fields

*.Source,IP-ID,Name.....
.....
.Source - 1,11,Digital Signage 1.....
.Source - 2,12,Digital Signage 2.....
.Source - 3,13,Digital Signage 3.....
.Source - 4,14,Digital Signage 4.....
.Source - 5,15,PC 1.....
.Source - 6,16,PC 2.....
.Source - 7,17,PC 3.....
.Source - 8,18,Operators Desk.....
.Source - 9,19,Wall Plate - HDMI 1.....
.Source - 10,1A,Wall Plate - HDMI 2.....
.Source - 11,1B,Wall Plate - VGA.....
.Source - 12,1C,Floor Box 1 - HDMI.....
.Source - 13,1D,Floor Box 1 - VGA.....
.Source - 14,1E.....
.Source - 15,1F.....
.Source - 16,20.....

Digital Signage Schedule NVX Setup Sources NVX Setup Destinations Email Alerts Video Wall DSP IP Test Configuration Load System Time Date Exit

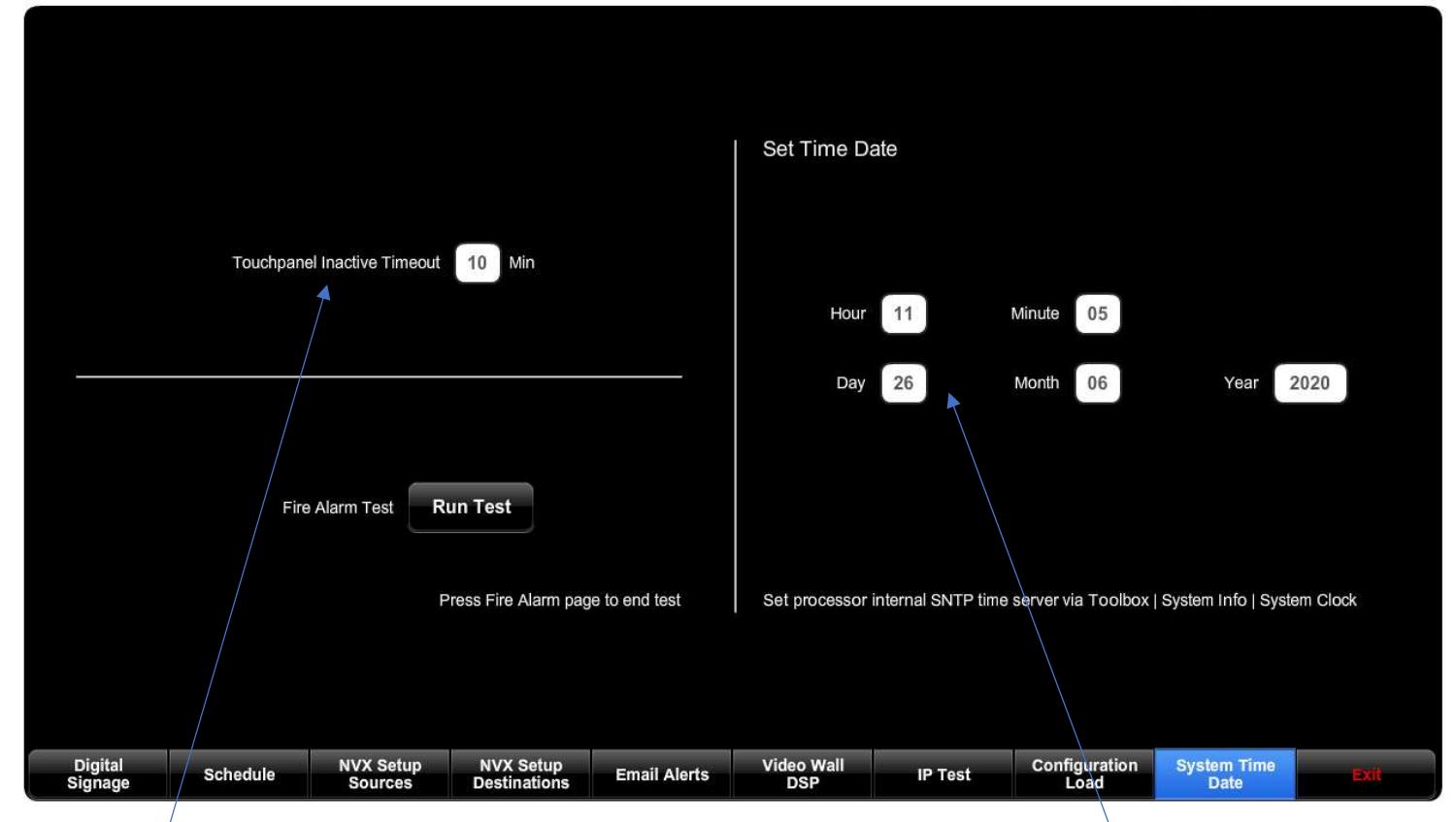
SystemConfig.csv defines all aspects of the entire system, including all endpoints name, location, IP and LCD API commands

Load SystemConfig.csv via USB or download from FTP server



Press on any text field to open keyboard to manually enter text

NOC Video Wall - Digital Signage



Touch panel go to sleep after period of inactivity

Local processor time/date to ensure accurate operation of scheduling

2. Investment Bank London

Multiroom VoIP - Monitoring and Diagnostics

VoIP Monitor

| Room: | LG.02 | Device: | Biamp Tesira Server | IP: | 172.24.66.83 | SVC-2: | Card 1 - Line 2 | | | |
|--|-----------------|-----------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------|-----------------|------------------------------------|--|--------------------------------------|
| Call State: General Fault condition; Network link is down, IP address conflict in place. The SVC-2 card will not be able to dial when this state is displayed. | | | | | | | | <input type="button" value="Log"/> | <input type="button" value="Monitor"/> | <input type="button" value="Setup"/> |
| Prompt: Authentication Username has not been configured in the SVC line properties page. | | | | | | | | | | |
| | Call State | Prompt | Log | Email Alert | Error | | | | | |
| 1. | LG.01 | VOIP_CALL_STATE_IDLE | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | | | |
| 2. | LG.02 | VOIP_CALL_STATE_FAULT | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | | | |
| 3. | LG.03 | VOIP_CALL_STATE_IDLE | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | | | |
| 4. | LG.04 | VOIP_CALL_STATE_FAULT | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | | | |
| 5. | LG.05 | VOIP_CALL_STATE_IDLE | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | | | |
| 6. | LG.06 | VOIP_CALL_STATE_FAULT | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | | | |
| 7. | LG.07 | VOIP_CALL_STATE_IDLE | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | | | |
| 8. | Spare | VOIP_CALL_STATE_FAULT | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | | | |
| 9. | Tannoy Solution | VOIP_CALL_STATE_IDLE | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | | | |
| 10. | 5.01 | VOIP_CALL_STATE_IDLE | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | | | | | |
| 11. | 6.02 | VOIP_CALL_STATE_IDLE | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | | | | | |
| 12. | 6.03 | VOIP_CALL_STATE_IDLE | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | |
| 13. | 8.03 | VOIP_CALL_STATE_IDLE | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | |
| 14. | - | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | |
| 15. | - | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | |
| 16. | - | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | |
| 17. | - | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | |

Monitor and log real time status of VoIP lines in multiple rooms

Log

Day Month Year All Lines 3 Earliest Latest

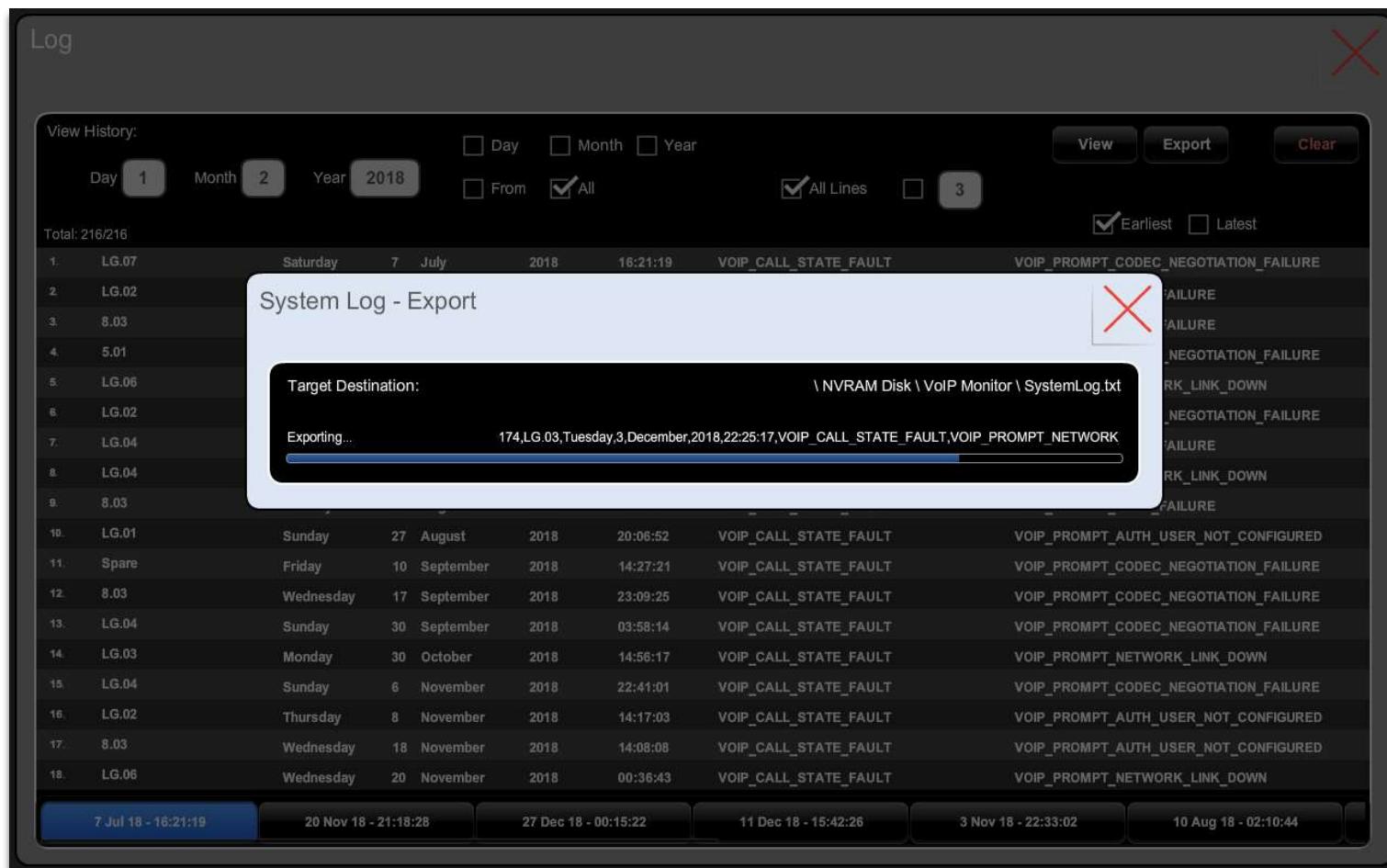
Total: 216/216

| Line | User | Date | Day | Month | Year | Time | Error Type | Details |
|------|-------|-----------|-----|-----------|------|----------|-----------------------|---------------------------------------|
| 1. | LG.07 | Saturday | 7 | July | 2018 | 16:21:19 | VOIP_CALL_STATE_FAULT | VOIP_PROMPT_CODEC_NEGOTIATION_FAILURE |
| 2. | LG.02 | Thursday | 8 | July | 2018 | 14:12:07 | VOIP_CALL_STATE_FAULT | VOIP_PROMPT_AUTH_FAILURE |
| 3. | 8.03 | Thursday | 14 | July | 2018 | 22:59:12 | VOIP_CALL_STATE_FAULT | VOIP_PROMPT_AUTH_FAILURE |
| 4. | 5.01 | Thursday | 16 | July | 2018 | 06:17:32 | VOIP_CALL_STATE_FAULT | VOIP_PROMPT_CODEC_NEGOTIATION_FAILURE |
| 5. | LG.06 | Thursday | 21 | July | 2018 | 07:55:52 | VOIP_CALL_STATE_FAULT | VOIP_PROMPT_NETWORK_LINK_DOWN |
| 6. | LG.02 | Wednesday | 27 | July | 2018 | 03:27:27 | VOIP_CALL_STATE_FAULT | VOIP_PROMPT_CODEC_NEGOTIATION_FAILURE |
| 7. | LG.04 | Tuesday | 18 | August | 2018 | 12:23:43 | VOIP_CALL_STATE_FAULT | VOIP_PROMPT_AUTH_FAILURE |
| 8. | LG.04 | Wednesday | 25 | August | 2018 | 23:28:36 | VOIP_CALL_STATE_FAULT | VOIP_PROMPT_NETWORK_LINK_DOWN |
| 9. | 8.03 | Monday | 27 | August | 2018 | 16:54:27 | VOIP_CALL_STATE_FAULT | VOIP_PROMPT_AUTH_FAILURE |
| 10. | LG.01 | Sunday | 27 | August | 2018 | 20:06:52 | VOIP_CALL_STATE_FAULT | VOIP_PROMPT_AUTH_USER_NOT_CONFIGURED |
| 11. | Spare | Friday | 10 | September | 2018 | 14:27:21 | VOIP_CALL_STATE_FAULT | VOIP_PROMPT_CODEC_NEGOTIATION_FAILURE |
| 12. | 8.03 | Wednesday | 17 | September | 2018 | 23:09:25 | VOIP_CALL_STATE_FAULT | VOIP_PROMPT_CODEC_NEGOTIATION_FAILURE |
| 13. | LG.04 | Sunday | 30 | September | 2018 | 03:58:14 | VOIP_CALL_STATE_FAULT | VOIP_PROMPT_CODEC_NEGOTIATION_FAILURE |
| 14. | LG.03 | Monday | 30 | October | 2018 | 14:56:17 | VOIP_CALL_STATE_FAULT | VOIP_PROMPT_NETWORK_LINK_DOWN |
| 15. | LG.04 | Sunday | 6 | November | 2018 | 22:41:01 | VOIP_CALL_STATE_FAULT | VOIP_PROMPT_CODEC_NEGOTIATION_FAILURE |
| 16. | LG.02 | Thursday | 8 | November | 2018 | 14:17:03 | VOIP_CALL_STATE_FAULT | VOIP_PROMPT_AUTH_USER_NOT_CONFIGURED |
| 17. | 8.03 | Wednesday | 18 | November | 2018 | 14:08:08 | VOIP_CALL_STATE_FAULT | VOIP_PROMPT_AUTH_USER_NOT_CONFIGURED |
| 18. | LG.06 | Wednesday | 20 | November | 2018 | 00:36:43 | VOIP_CALL_STATE_FAULT | VOIP_PROMPT_NETWORK_LINK_DOWN |

7 Jul 18 - 16:21:19 20 Nov 18 - 21:18:28 27 Dec 18 - 00:15:22 11 Dec 18 - 15:42:26 3 Nov 18 - 22:33:02 10 Aug 18 - 02:10:44

All errors are logged and available for review

Log can be exported to *.csv file for review in Excel



Export all/filtered errors to *.csv file for further review and archiving in Excel



View raw feedback from each VoIP card in real time

Make VoIP call in room and view card feedback in real-time for rapid fault finding



Setup IP/hostname for each VoIP card

Setup email address to receive an email alert after specified period

3. Private Bank London

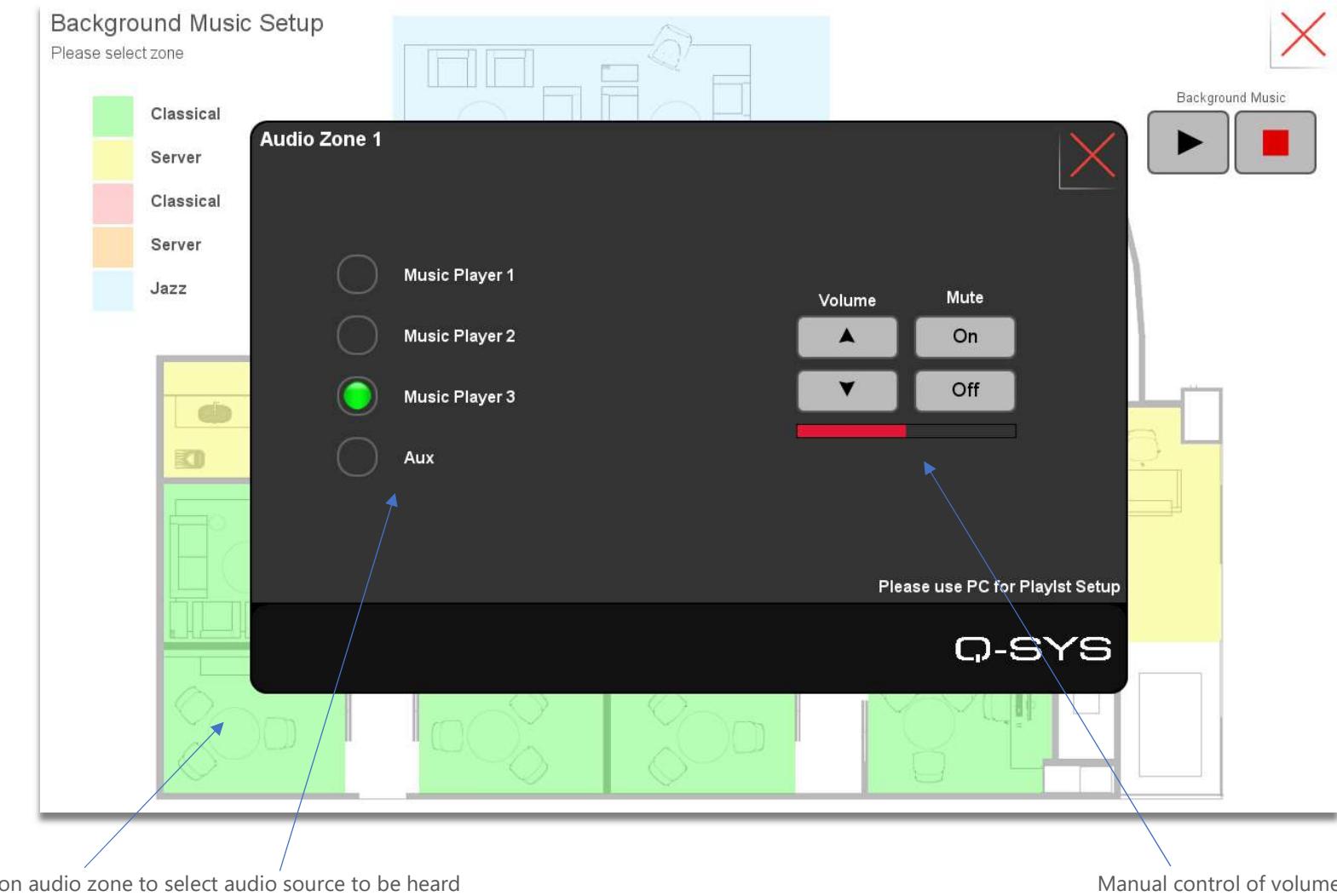
Private Banking Rooms - Audio Distribution Control



x5 audio zones covering multiple private banking rooms and common areas

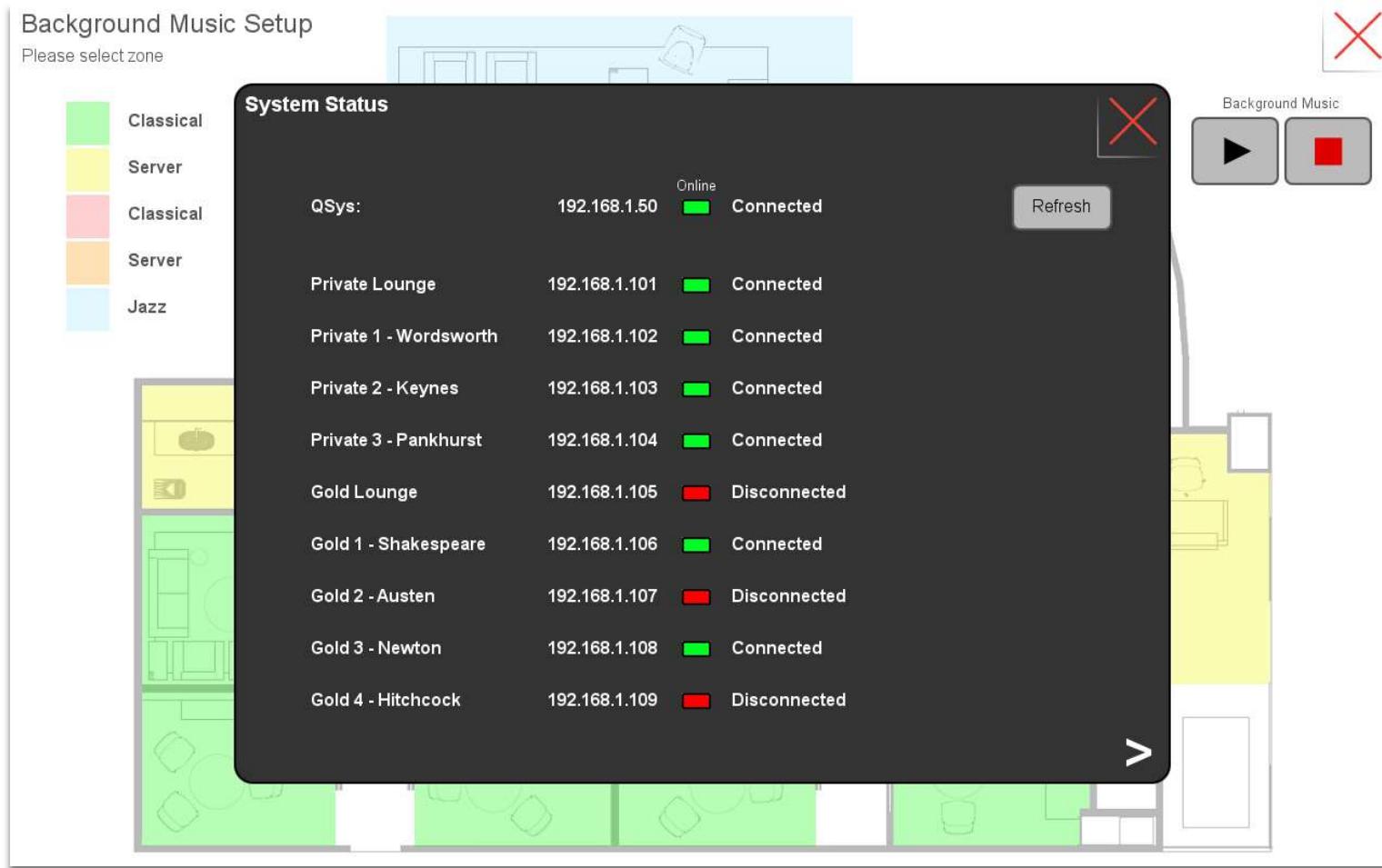
Set audio source, level and other attributes in each audio zone

UI situated and controlled from Reception Desk



Press on audio zone to select audio source to be heard

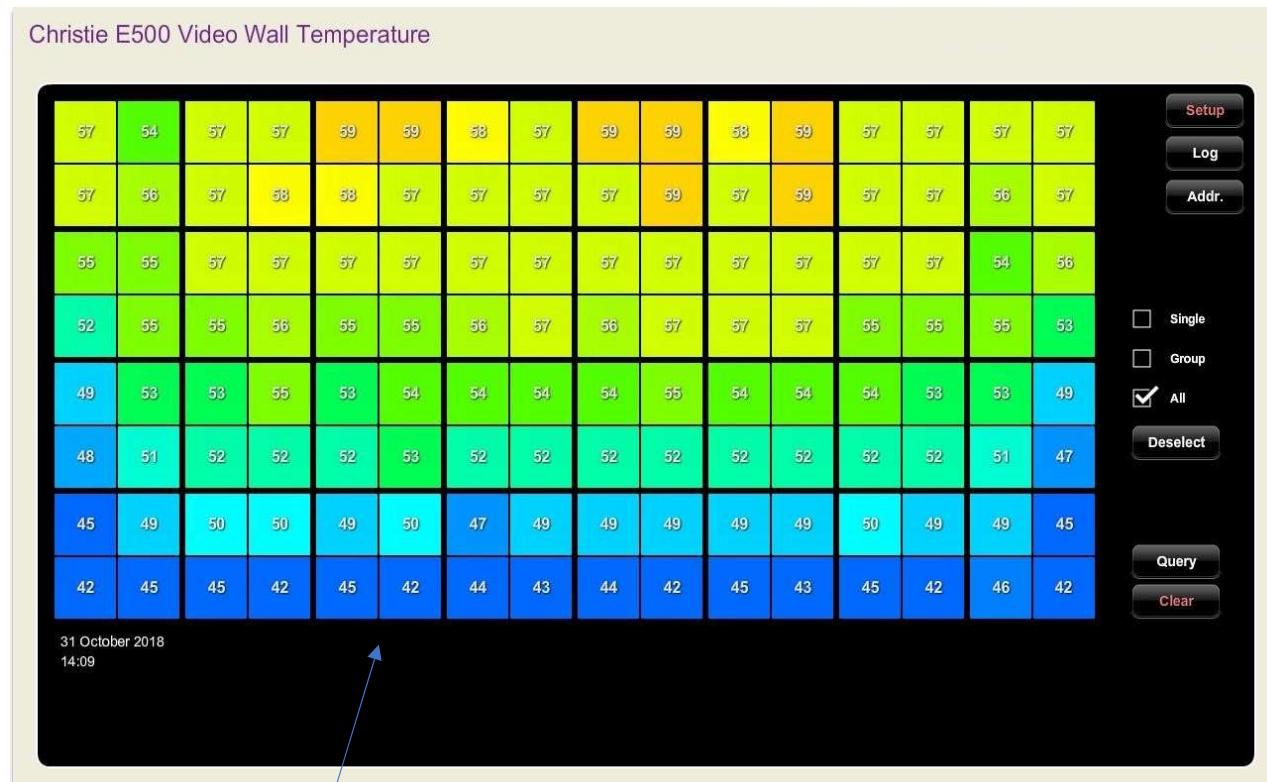
Manual control of volume/mute



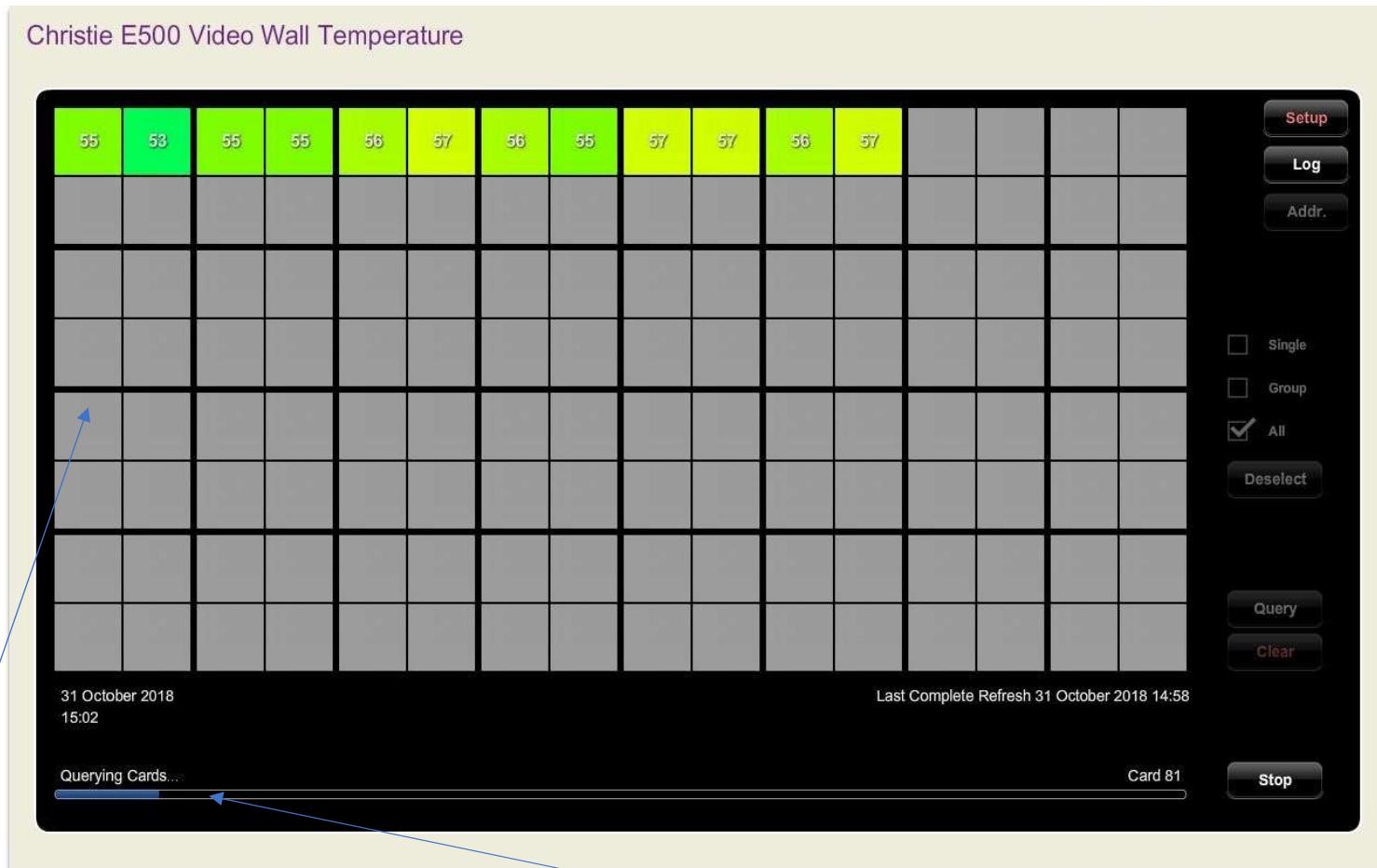
Simple real time status of IP connectivity to all audio endpoints in each private banking room

4. Global Advisory Firm London

Auditorium Video Wall - Temperature Monitor



Clean and simple UI to illustrate heat distribution about the video wall



Auditorium with large multi-panel video wall

Query the temperature of each panel

Christie E500 Video Wall Temperature

| Temperature Alerts: | | | | | | <input type="checkbox"/> Day | <input type="checkbox"/> Month | <input type="checkbox"/> Year | <input type="button" value="View"/> | <input type="button" value="Export"/> | <input type="button" value="Clear"/> | <input type="button" value="Close"/> | |
|---------------------|----------------|-----------|----|---------|------|-------------------------------|---|-------------------------------|---|---------------------------------------|--------------------------------------|--|---------------------------------|
| Day | 1 | Month | 2 | Year | 2018 | <input type="checkbox"/> From | <input checked="" type="checkbox"/> All | | <input checked="" type="checkbox"/> All | <input type="checkbox"/> | 3 | <input checked="" type="checkbox"/> Earliest | <input type="checkbox"/> Latest |
| Total: 20/20 | | | | | | | | | | | | | |
| 1. | Card Addr: 18 | Wednesday | 31 | October | 2018 | 15:29:30 | | | | | | 55 | |
| 2. | Card Addr: 17 | Wednesday | 31 | October | 2018 | 15:29:32 | | | | | | 55 | |
| 3. | Card Addr: 48 | Wednesday | 31 | October | 2018 | 15:29:34 | | | | | | 55 | |
| 4. | Card Addr: 47 | Wednesday | 31 | October | 2018 | 15:29:36 | | | | | | 55 | |
| 5. | Card Addr: 50 | Wednesday | 31 | October | 2018 | 15:29:38 | | | | | | 55 | |
| 6. | Card Addr: 49 | Wednesday | 31 | October | 2018 | 15:29:40 | | | | | | 55 | |
| 7. | Card Addr: 80 | Wednesday | 31 | October | 2018 | 15:29:42 | | | | | | 57 | |
| 8. | Card Addr: 79 | Wednesday | 31 | October | 2018 | 15:29:44 | | | | | | 57 | |
| 9. | Card Addr: 82 | Wednesday | 31 | October | 2018 | 15:29:46 | | | | | | 55 | |
| 10. | Card Addr: 81 | Wednesday | 31 | October | 2018 | 15:29:48 | | | | | | 56 | |
| 11. | Card Addr: 112 | Wednesday | 31 | October | 2018 | 15:29:50 | | | | | | 55 | |
| 12. | Card Addr: 111 | Wednesday | 31 | October | 2018 | 15:29:52 | | | | | | 55 | |
| 13. | Card Addr: 114 | Wednesday | 31 | October | 2018 | 15:29:54 | | | | | | 55 | |
| 14. | Card Addr: 113 | Wednesday | 31 | October | 2018 | 15:29:56 | | | | | | 55 | |
| 15. | Card Addr: 19 | Wednesday | 31 | October | 2018 | 15:30:04 | | | | | | 55 | |
| 16. | Card Addr: 51 | Wednesday | 31 | October | 2018 | 15:30:12 | | | | | | 55 | |
| 17. | Card Addr: 78 | Wednesday | 31 | October | 2018 | 15:30:14 | | | | | | 55 | |
| 18. | Card Addr: 77 | Wednesday | 31 | October | 2018 | 15:30:16 | | | | | | 55 | |

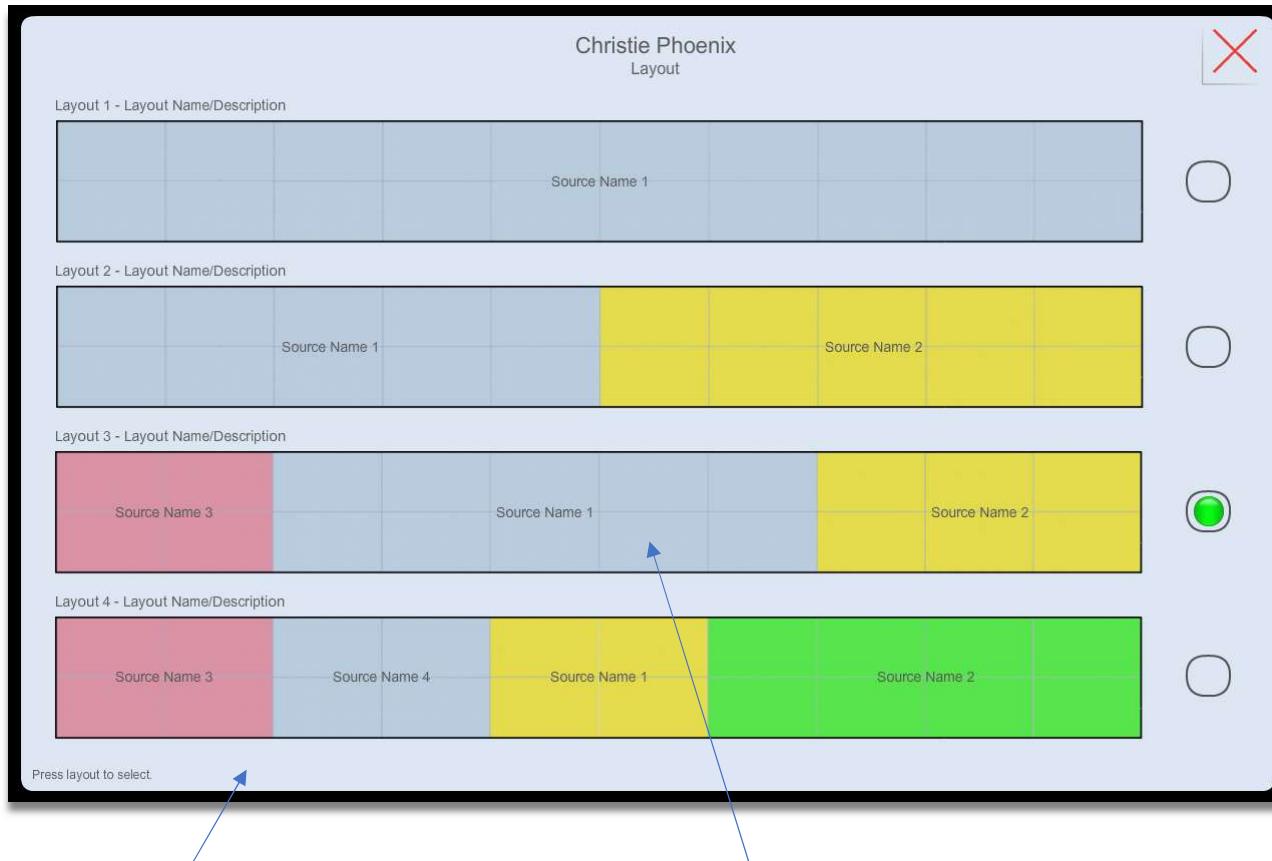
31 Oct 18 - 15:29:30 31 Oct 18 - 15:30:20

Log all panels which exceed temperature threshold using circular memory (FIFO x500) with optional email alert

Filter and export log to *.csv file for review in Excel

5. Global Bank Wakefield Data Centre

Central Control Room Video Wall - Management and Control



Control large videowall within control room of data centre

Select layout or press/hold to set layout/source names via popup keyboard

Video Wall
IP Communication Setup

| | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|--|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |

Phoenix Controller Node - IP/Hostname (Port: 11135)

SYGDC-CONTROL-ROOM-VWALL-PHOENIX

Online Performing DNS Lookup

Tx Rx Refresh

Phoenix Entero Cube - IP/Hostname (Port: 3002)

| | | | |
|---|---------------------------------|------------------------------|---------------|
| 1 | SYGDC-CONTROL-ROOM-VWALL-CUBE-1 | Online Connected | Tx Rx Refresh |
| 2 | SYGDC-CONTROL-ROOM-VWALL-CUBE-2 | Online Connected | Tx Rx Refresh |
| 3 | SYGDC-CONTROL-ROOM-VWALL-CUBE-3 | Online Connected | Tx Rx Refresh |
| 4 | SYGDC-CONTROL-ROOM-VWALL-CUBE-4 | Online Performing DNS Lookup | Tx Rx Refresh |
| 5 | SYGDC-CONTROL-ROOM-VWALL-CUBE-5 | Online Connected | Tx Rx Refresh |
| 6 | SYGDC-CONTROL-ROOM-VWALL-CUBE-6 | Online Performing DNS Lookup | Tx Rx Refresh |
| 7 | SYGDC-CONTROL-ROOM-VWALL-CUBE-7 | Online Connected | Tx Rx Refresh |
| 8 | SYGDC-CONTROL-ROOM-VWALL-CUBE-8 | Online Connected | Tx Rx Refresh |

Press field to set.

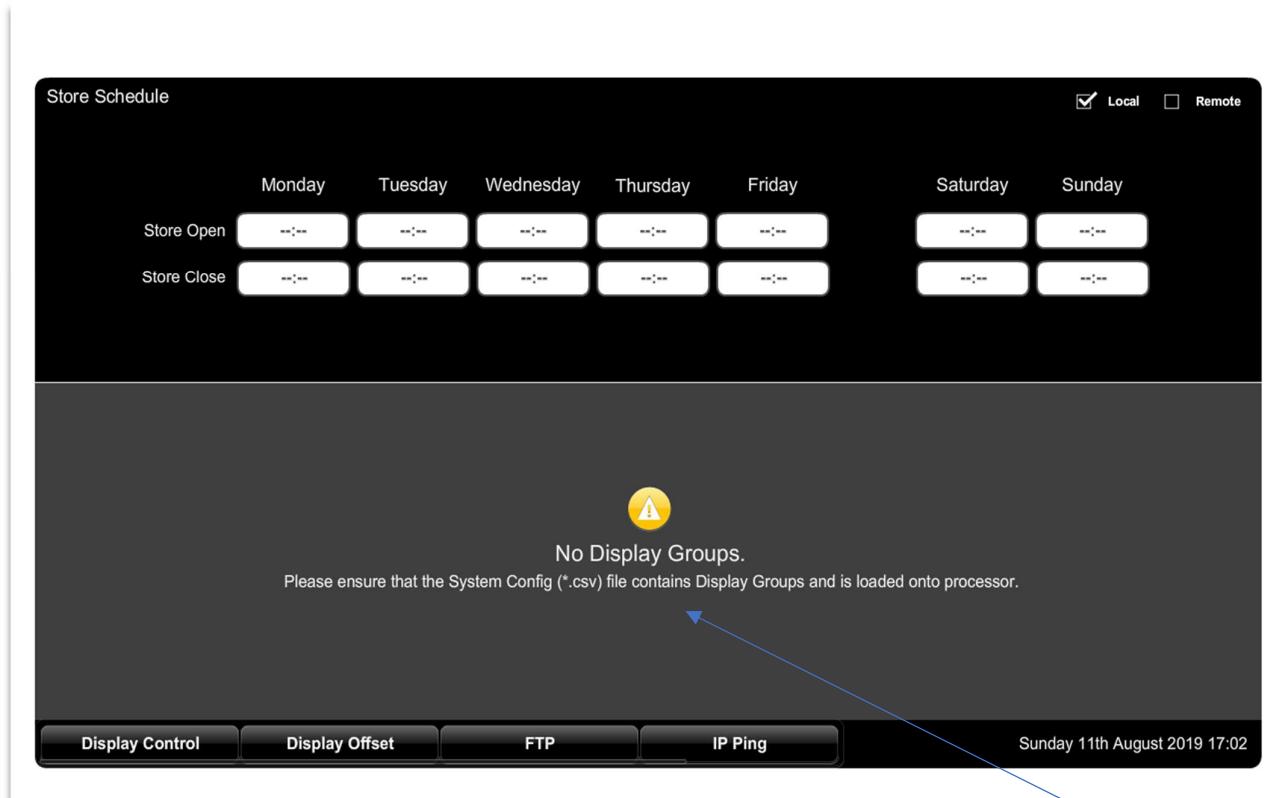
Page 1

Realtime status of video wall cubes/panels, IP/hostname setup, connectivity and activity

Press on field to set via popup keyboard

6. Global Bank UK Branch Rollout

Digital Signage LCD Groups – Management and Control



Control up to x4 LCD groups each containing up to x15 LCDs via LAN within a bank branch

Branch specific SystemConfig.csv is loaded into system, containing all LCD names, grouping, IP, scheduling and API information



Manual power control of the x2 LCD groups called 'Internal' and 'External'

Use either a locally defined schedule or a remote schedule stored on banks FTP server to set the on/off times of the LCD groups

| Internal | | | | | X |
|----------|--------------|-----------------|---------|----------------------|---|
| | IP/Hostname | Location | Refresh | Model | |
| LCD 1: | 192.168.1.11 | Front Door | Refresh | Panasonic TH Series |    |
| LCD 2: | 192.168.1.12 | Entrance | Refresh | Dynascan |    |
| LCD 3: | 192.168.1.13 | Back Door | Refresh | Panasonic TH Series |    |
| LCD 4: | 192.168.1.14 | Landscape | Refresh | Panasonic TH Series |    |
| LCD 5: | 192.168.1.15 | Foyer | Refresh | Panasonic TH Series |    |
| LCD 6: | 192.168.1.16 | Office | Refresh | Panasonic TH Series |    |
| LCD 7: | 192.168.1.17 | Main Room | Refresh | Panasonic TH Series |    |
| LCD 8: | 192.168.1.18 | Meeting Room 11 | Refresh | Panasonic TH Series |    |
| LCD 9: | 192.168.1.19 | Meeting Room 12 | Refresh | Panasonic TH Series |    |
| LCD 10: | 192.168.1.20 | Meeting Room 13 | Refresh | NEC V553 |    |
| LCD 11: | 192.168.1.21 | Meeting Room 14 | Refresh | Samsung QM Series |    |
| LCD 12: | 192.168.1.22 | Meeting Room 15 | Refresh | NEC V553 - (Input 2) |    |
| LCD 13: | 192.168.1.23 | Meeting Room 16 | Refresh | Dynascan |    |
| LCD 14: | 192.168.1.24 | Meeting Room 17 | Refresh | Panasonic TH Series |    |
| LCD 15: | 192.168.1.25 | Meeting Room 18 | Refresh | Panasonic TH Series |    |

Display Control **Display IP Status**

LCD group contains up to x15 LCDs controlled via LAN

Remotely change make/model or API of LCD without needing to update program or disrupt branch

| Internal | | | |
|----------|--------------|-----------------|---|
| | IP/Hostname | Location | |
| LCD 1: | 192.168.1.11 | Front Door | ● Refresh Connection Broken Locally |
| LCD 2: | 192.168.1.12 | Entrance | ● Refresh Connection Broken Locally |
| LCD 3: | 192.168.1.13 | Back Door | ● Refresh Connection Broken Locally |
| LCD 4: | 192.168.1.14 | Landscape | ● Refresh Connection Broken Locally |
| LCD 5: | 192.168.1.15 | Foyer | ● Refresh Connection Failed |
| LCD 6: | 192.168.1.16 | Office | ● Refresh Connection Broken Locally |
| LCD 7: | 192.168.1.17 | Main Room | ● Refresh Connection Broken Locally |
| LCD 8: | 192.168.1.18 | Meeting Room 11 | ● Refresh Waiting for Connection |
| LCD 9: | 192.168.1.19 | Meeting Room 12 | ● Refresh Waiting for Connection |
| LCD 10: | 192.168.1.20 | Meeting Room 13 | ● Refresh Waiting for Connection |
| LCD 11: | 192.168.1.21 | Meeting Room 14 | ● Refresh Waiting for Connection |
| LCD 12: | 192.168.1.22 | Meeting Room 15 | ● Refresh Connection Failed |
| LCD 13: | 192.168.1.23 | Meeting Room 16 | ● Refresh Connection Failed |
| LCD 14: | 192.168.1.24 | Meeting Room 17 | ● Refresh Connection Failed |
| LCD 15: | 192.168.1.25 | Meeting Room 18 | ● Refresh Connection Failed |

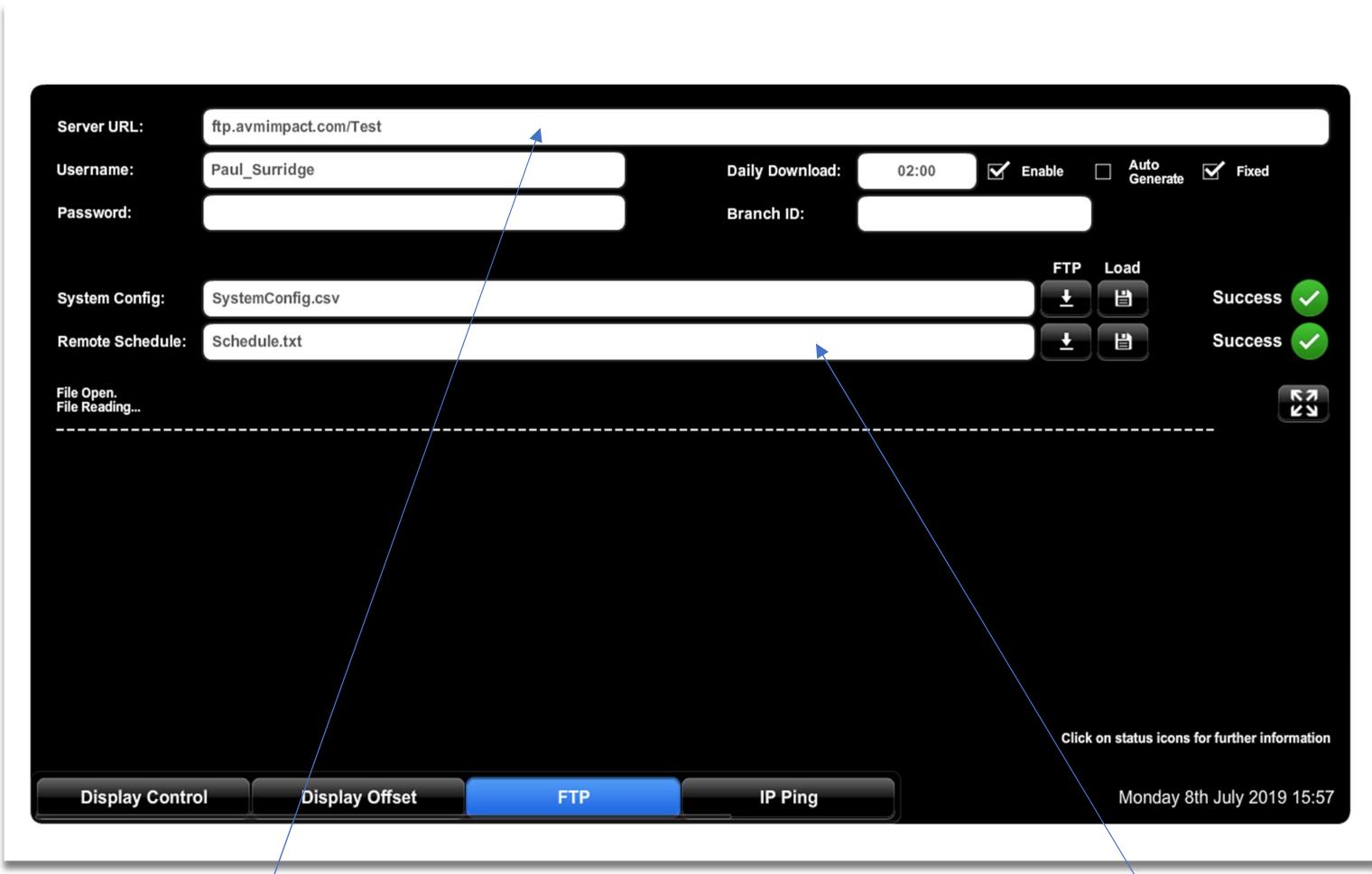
Real time status of IP connections to LCDs within branch

All LCD IP connections auto refresh with additional ability to manually clear, flush and refresh the connection



LCD group offset provides the ability to apply an offset to when the LCD group turns on/off relative to the branch open/close times

Press any text field to open keypad to set time/value



Automate daily download of remote schedule from the banks own FTP server to enable centralised remote management, rapid deployment and commission

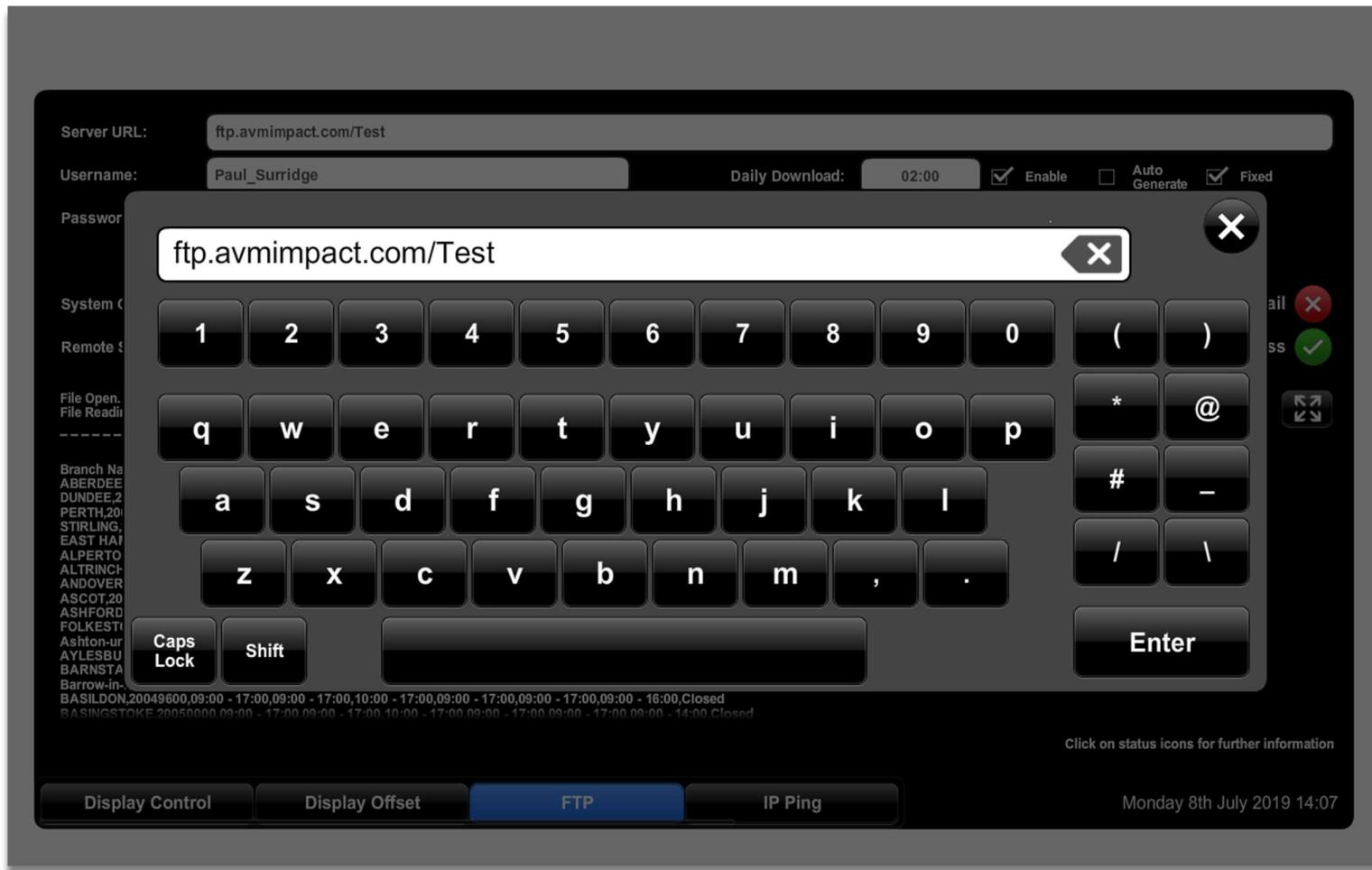
Press on text fields to open keyboard

The screenshot shows the AVM Impact software interface. At the top, there are fields for Server URL (ftp.avmimpact.com/Test), Username (Paul_Surridge), Password, Daily Download (02:00, checked for Enable, unchecked for Auto Generate, checked for Fixed), and Branch ID. Below this, a large central window displays a success message: "System Config Success". It includes a green checkmark icon and a summary of updated configurations:

- Success: System Config loaded.
- Updated: Local Schedule.
- Updated: Display Types.
- Updated: Display Group 1 Name, IP/Hostnames, Locations and Types: Internal
- Updated: Display Group 2 Name, IP/Hostnames, Locations and Types: External
- Updated: Display Group 3 Name, IP/Hostnames, Locations and Types: [Not In Use]
- Updated: Display Group 4 Name, IP/Hostnames, Locations and Types: [Not In Use]
- Updated: Display Groups Store Open Offset.
- Updated: Display Groups Store Close Offset.
- Updated: Display Groups Days Enable.

Below this, it shows "Total Active Display Groups: 2" and "Last Attempt: Monday 8th July 2019 14:30" and "Last Success: Monday 8th July 2019 14:30". On the right side of the main window, there are two green circular icons labeled "Success" with checkmarks, and a small circular arrow icon. At the bottom of the main window, there is a note: "Click on status icons for further information". At the very bottom, there is a navigation bar with tabs: "Display Control", "Display Offset", "FTP" (which is highlighted in blue), and "IP Ping". To the right of the navigation bar, the date and time are displayed as "Monday 8th July 2019 15:57".

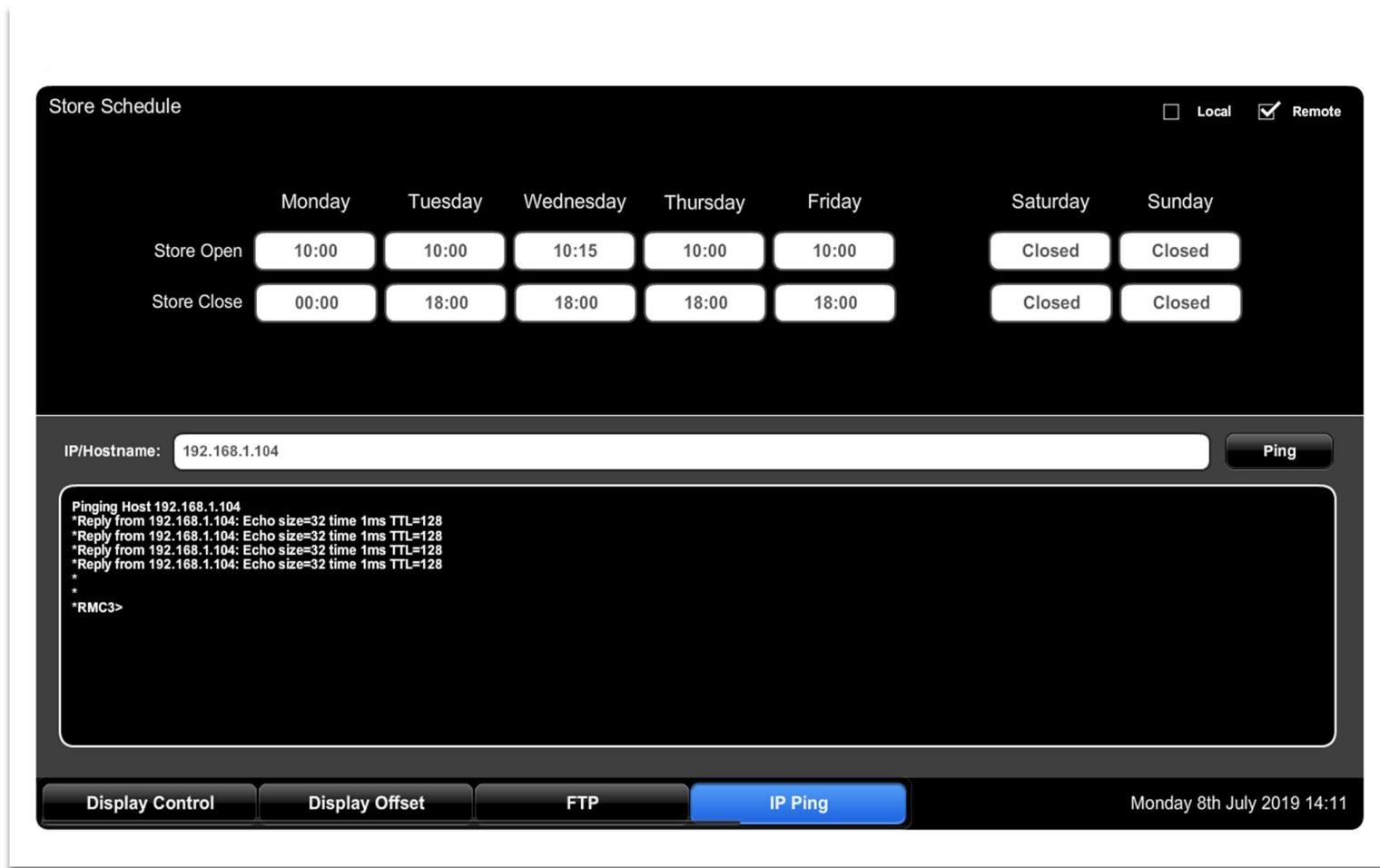
SystemConfig.csv download and install status report



Multipurpose keyboard for entering text into any relevant field



Multipurpose keypad for entering numerical value into any relevant field



Diagnosis tool for testing IP connectivity to any LCD or IP device on banks LAN

Store Schedule

Local Remote

| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|-------------|--------|---------|-----------|----------|--------|----------|--------|
| Store Open | 10:00 | 10:00 | 10:15 | 10:00 | 10:00 | Closed | Closed |
| Store Close | 00:00 | 18:00 | 18:00 | 18:00 | 18:00 | Closed | Closed |

Hour Minute

Day Month Year

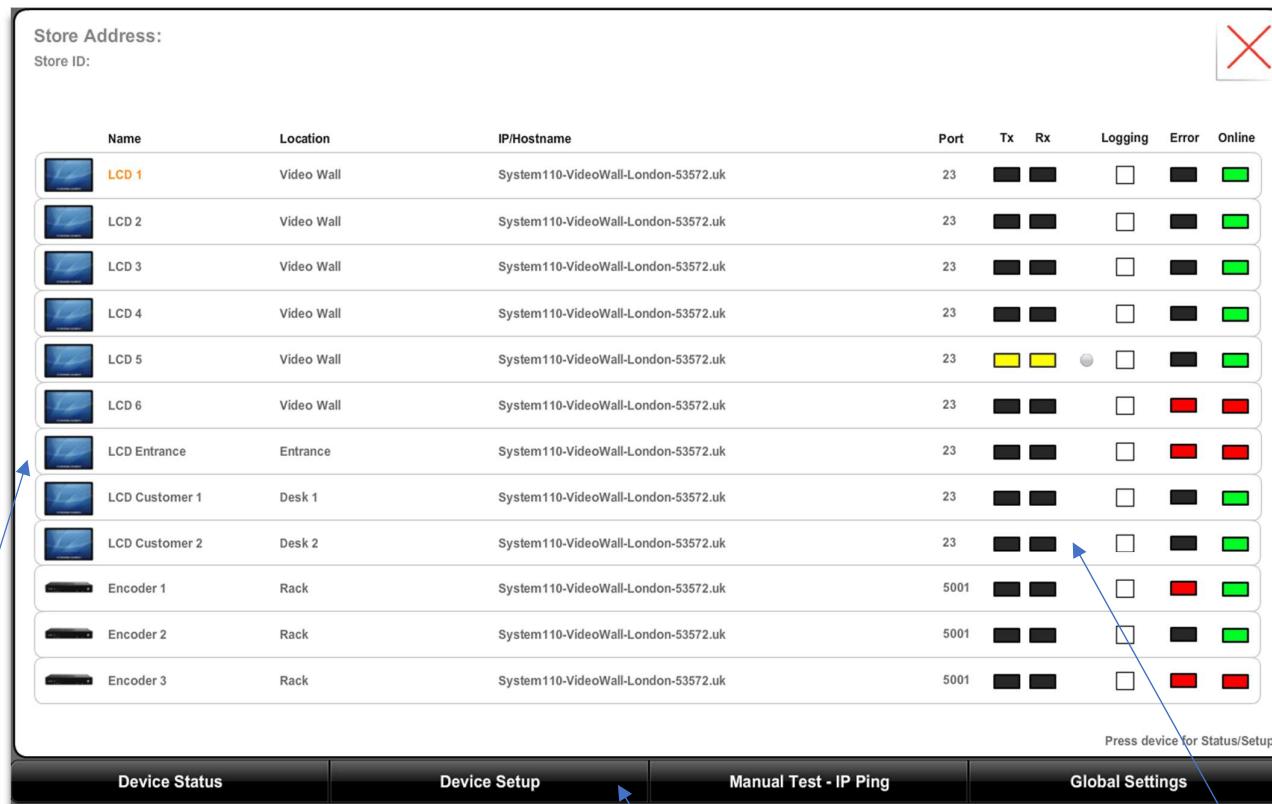
NB: Set internal SNTP time server of processor via [Toolbox](#) | [System Info](#) | [System Clock](#)

[Display Offset](#) [FTP](#) [IP Ping](#) [System Time Date](#) Monday 8th July 2019 14:13

Set internal time date of processor

7. High St Phone Store London (Pilot Only)

Digital Signage - Monitoring and Diagnostics



The screenshot shows a monitoring interface for a digital signage system. At the top, there are fields for 'Store Address:' and 'Store ID:', followed by a red 'X' button. Below is a table of devices with columns for Name, Location, IP/Hostname, Port, Tx/Rx activity, Logging, Error, and Online status. A note at the bottom says 'Press device for Status/Setup'. The footer has tabs for Device Status, Device Setup, Manual Test - IP Ping, and Global Settings.

| Name | Location | IP/Hostname | Port | Tx | Rx | Logging | Error | Online |
|----------------|------------|-------------------------------------|------|----------|----------|----------------------------------|--------------------------|---------|
| LCD 1 | Video Wall | System110-VideoWall-London-53572.uk | 23 | [solid] | [solid] | <input type="checkbox"/> | [solid] | [green] |
| LCD 2 | Video Wall | System110-VideoWall-London-53572.uk | 23 | [solid] | [solid] | <input type="checkbox"/> | [solid] | [green] |
| LCD 3 | Video Wall | System110-VideoWall-London-53572.uk | 23 | [solid] | [solid] | <input type="checkbox"/> | [solid] | [green] |
| LCD 4 | Video Wall | System110-VideoWall-London-53572.uk | 23 | [solid] | [solid] | <input type="checkbox"/> | [solid] | [green] |
| LCD 5 | Video Wall | System110-VideoWall-London-53572.uk | 23 | [yellow] | [yellow] | <input checked="" type="radio"/> | <input type="checkbox"/> | [green] |
| LCD 6 | Video Wall | System110-VideoWall-London-53572.uk | 23 | [solid] | [solid] | <input type="checkbox"/> | [red] | [red] |
| LCD Entrance | Entrance | System110-VideoWall-London-53572.uk | 23 | [solid] | [solid] | <input type="checkbox"/> | [red] | [red] |
| LCD Customer 1 | Desk 1 | System110-VideoWall-London-53572.uk | 23 | [solid] | [solid] | <input type="checkbox"/> | [solid] | [green] |
| LCD Customer 2 | Desk 2 | System110-VideoWall-London-53572.uk | 23 | [solid] | [solid] | <input type="checkbox"/> | [solid] | [green] |
| Encoder 1 | Rack | System110-VideoWall-London-53572.uk | 5001 | [solid] | [solid] | <input type="checkbox"/> | [red] | [green] |
| Encoder 2 | Rack | System110-VideoWall-London-53572.uk | 5001 | [solid] | [solid] | <input type="checkbox"/> | [solid] | [green] |
| Encoder 3 | Rack | System110-VideoWall-London-53572.uk | 5001 | [solid] | [solid] | <input type="checkbox"/> | [red] | [red] |

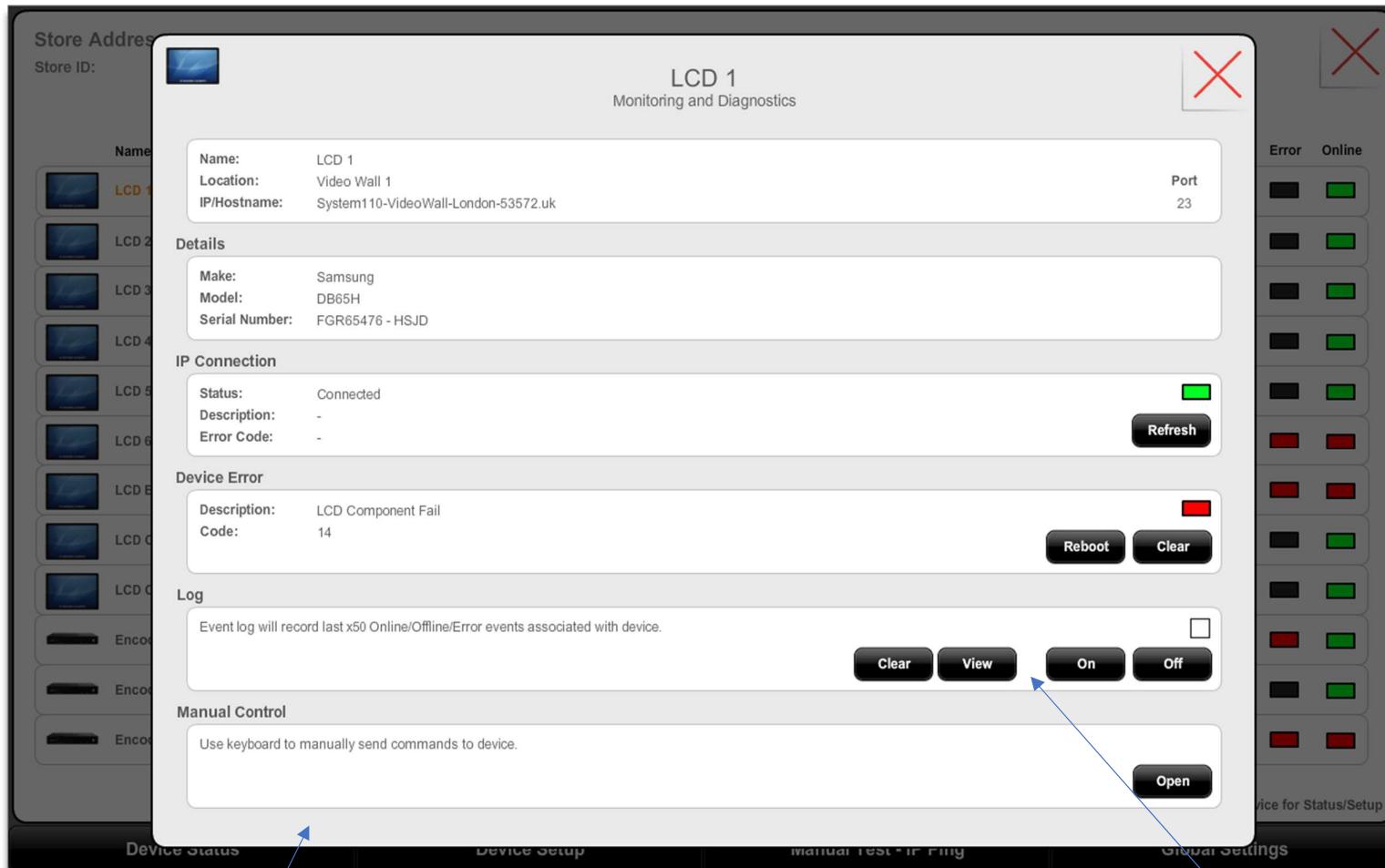
Press device for Status/Setup

Device Status Device Setup Manual Test - IP Ping Global Settings

Dashboard provides an overview and status of the branches digital signage components on LAN

Real time Tx/Rx activity, online/error

Footer to browse pages of dashboard



Select device to view all associated fields, controls and attributes

Each device has its own log recording the last x50 online/offline/error events

Device Log to view all online/offline/error events associated with device

Store Address:

Store ID:

Setup
Configure Device Entry

| Name | Make | Model | Serial Number | Name | Location | IP/Hostname | Port | IP Connection Test | Device Type | Error | Online |
|---------|---------|-------|-----------------|-------|------------|-------------------------------------|------|--|-------------|-------|--------|
| LCD 1 | Samsung | DB65H | FGR65476 - HSJD | LCD 1 | Video Wall | System110-VideoWall-London-53572.uk | 23 | Status: Connected Description: - Error Code: - | LCD | | |
| LCD 2 | | | | | | | | | | | |
| LCD 3 | | | | | | | | | | | |
| LCD 4 | | | | | | | | | | | |
| LCD 5 | | | | | | | | | | | |
| LCD 6 | | | | | | | | | | | |
| LCD E | | | | | | | | | | | |
| LCD C | | | | | | | | | | | |
| LCD C | | | | | | | | | | | |
| Encoder | | | | | | | | | | | |
| Encoder | | | | | | | | | | | |
| Encoder | | | | | | | | | | | |

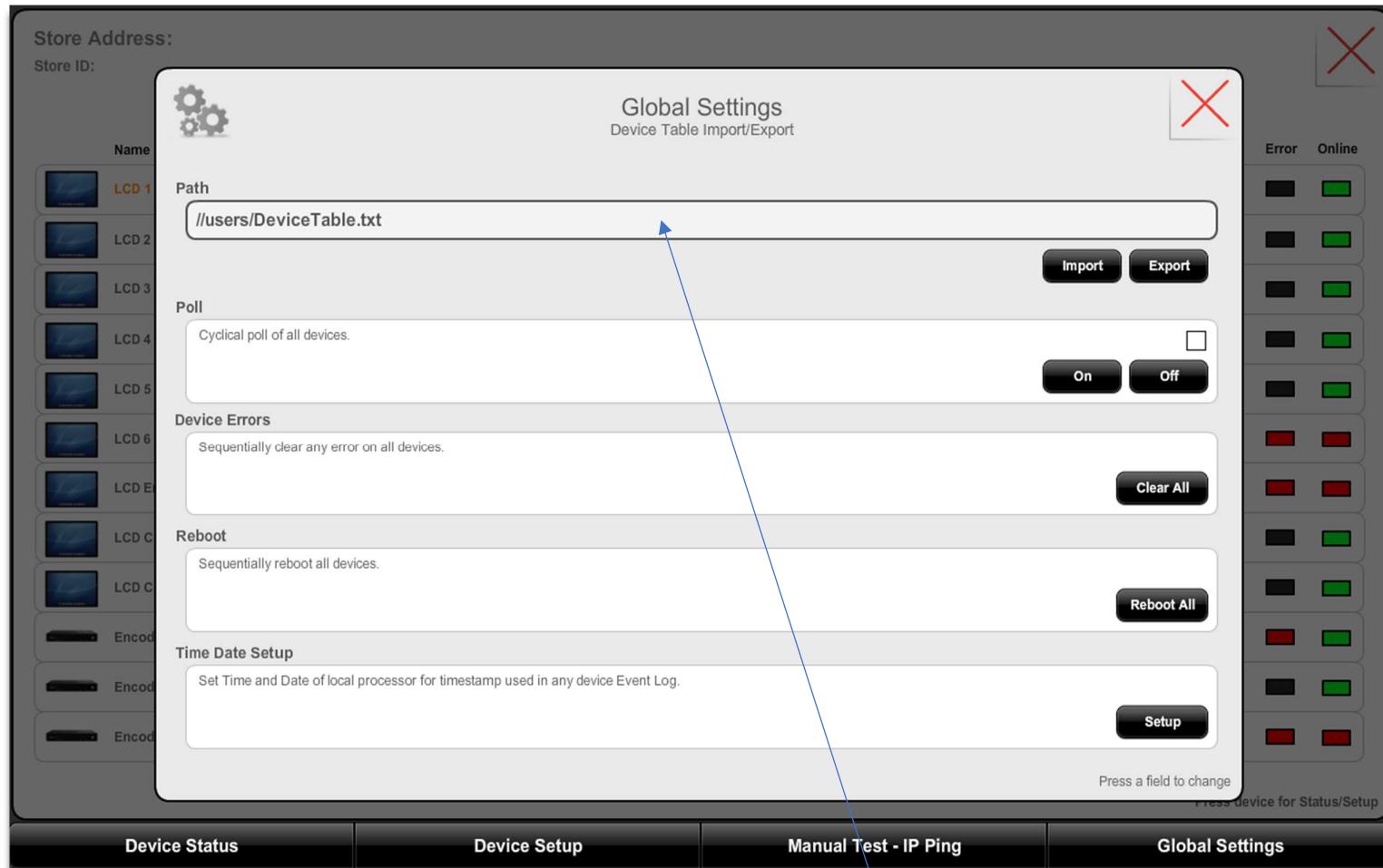
Add a new device or edit an existing one. Click on a field to open the keyboard and enter attribute details.

Press a field to change device for Status/Setup

Device Status **Device Setup** **Manual Test - IP Ping** **Global Settings**

Add/remove device, press on field to enter attribute details

Test IP connectivity to device



Global setup of parameters and behaviors of the dashboard

Save/load all device definitions for rapid deployment and backup

My Role

My role at AVMI generally consisted of the following aspects:

1. New Projects: Design, develop and commission new software as described in the typical project life cycle described below.
2. Software Updates: Evaluate, update, refactor or perform full rewrite of existing software.
3. Consultation: Provide technical advice and support to all areas within AVMI including sales, design and end users.

Typical Project Life Cycle

Design Meetings:

1. Internal: Discuss the new project with AVMI Account Manager and System Designer.
2. Client: Discuss the new project with client to produce an initial brief for the systems overall functionality.

Off-Site:

3. GUI: Design/develop GUI and submit screenshots for client feedback and sign off.
4. Program: Design/develop program to co-ordinate the overall hardware within the system which involved the following:
 - Research: Research and obtain API information of system components.
 - Develop: Develop and write program using a modular event driven language based on C++.
 - Dependencies: Liaise directly with client on any external dependencies e.g. network/IP allocation.

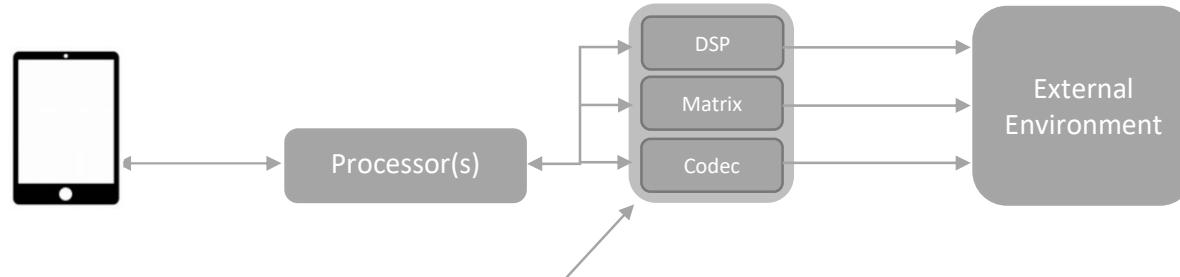
5. Test: Fully test GUI and program using local processors to replicate and emulate onsite environment.

On-Site:

6. Commission: Upload, test and commission.
7. Handover: Demonstrate and handover to the client.

Crestron/AMX

- Crestron and AMX are versatile control systems which are deployed in a variety of environments to implement a particular functional need, including:
 - System diagnostics and monitoring.
 - Scheduling management.
 - Video conferencing, audio conferencing and audio-visual presentation.
- Crestron and AMX systems generally consist of:
 - Central processor communicating with proprietary and 3rd party external hardware.
 - Central processor runs multithreaded program(s) written in a modular event driven architecture using a language based on C++.
 - User interaction via touchpanel(s), iPad(s) or web interface(s).
 - On-premise or cloud-based.



- Crestron and AMX central processor(s) control proprietary or 3rd party hardware via their API in order to implement the required functionality within the physical external environment.
- I was responsible and completed the following:
 1. GUI: Designed, developed and commissioned the GUI that ran on the touchpanel(s), iPad(s) or web interface(s).
 2. Program: Designed, developed and commissioned the program(s) which ran on the central processor(s).
 3. Handover: Demonstration and handover of the overall system to the end user.