

# Sample Screenshots (Part 1)

## 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

I was responsible for all aspects of GUI design, program design, development, test, commission, demonstration and handover to client. This document has been split into x2 parts so that each part is not too large and can be opened and viewed directly on github.com.

## 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	Satisfaction	Ergonomic	Convention
Organised	Intuition	Efficient	Balanced

GUI's should be simple, intuitive and provide a quick mental map to the systems organisation, functionality and flow, for full list of my principles applied to all software please review 'Software Principles.pdf' in this repository.

# 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: <ul style="list-style-type: none"><li>- Research: Research and obtain API information of system components.</li><li>- Develop: Develop and write program using a modular event driven language based on C++.</li><li>- Dependencies: Liaise directly with client on any external dependencies e.g. network/IP allocation.</li></ul> |
| 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. |

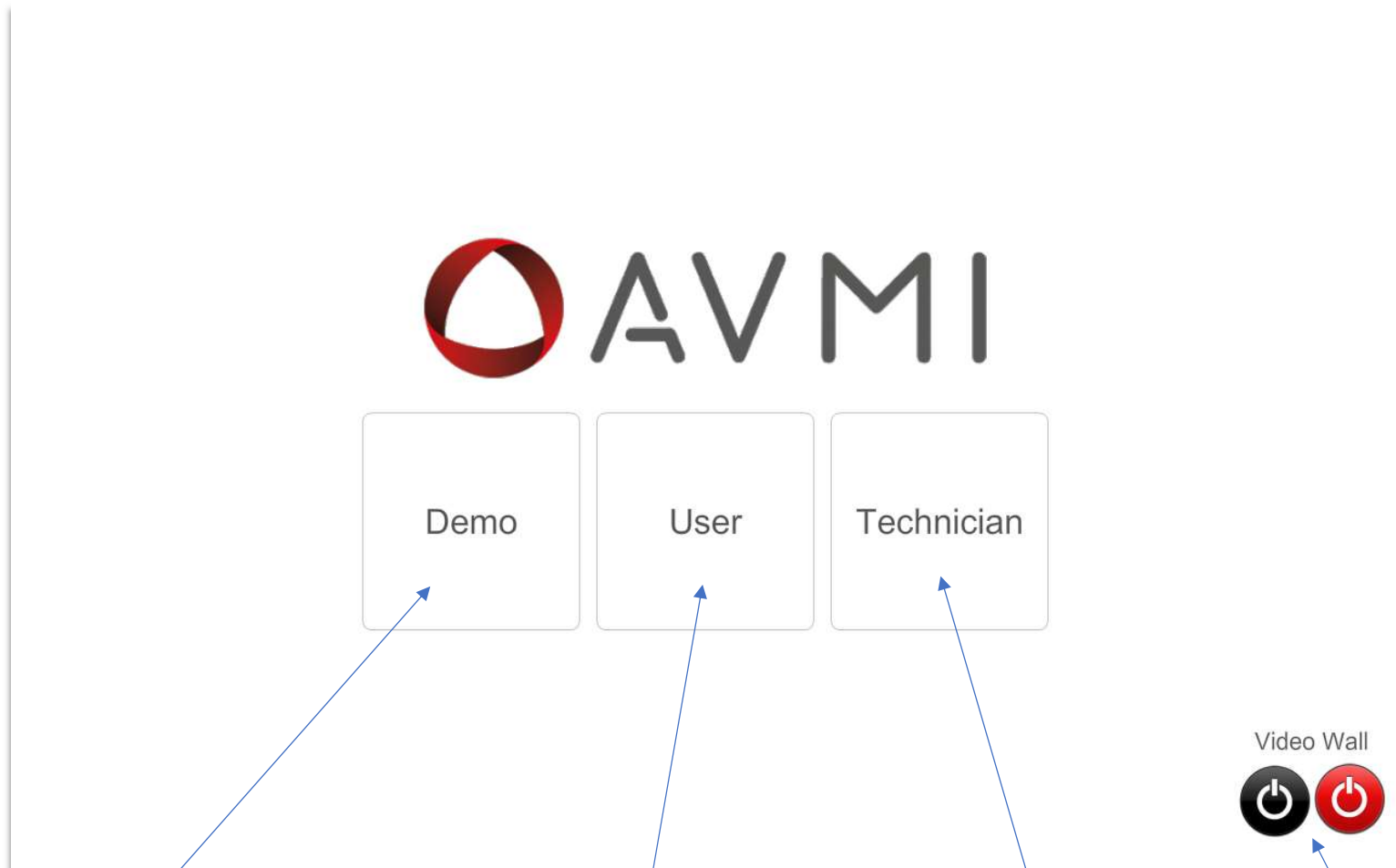
## 1. AVMI London

Video Wall and Digital Signage - Management and Control



NOC Video Wall and Digital Signage

Monitor and Diagnostics

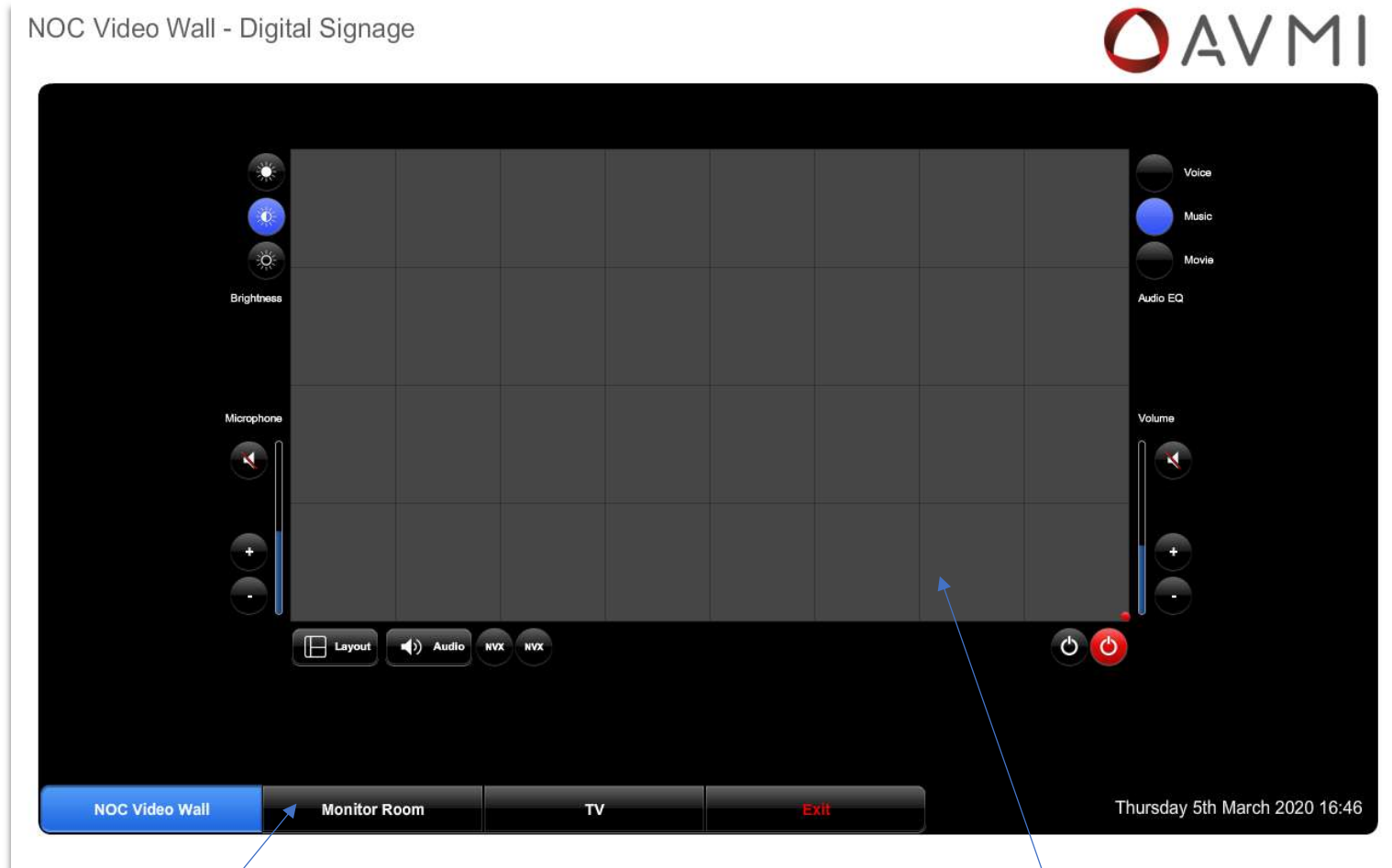


Run demo sequence on video wall  
for client demonstrations

Restricted user-side of UI containing  
simplified controls for non-technical user

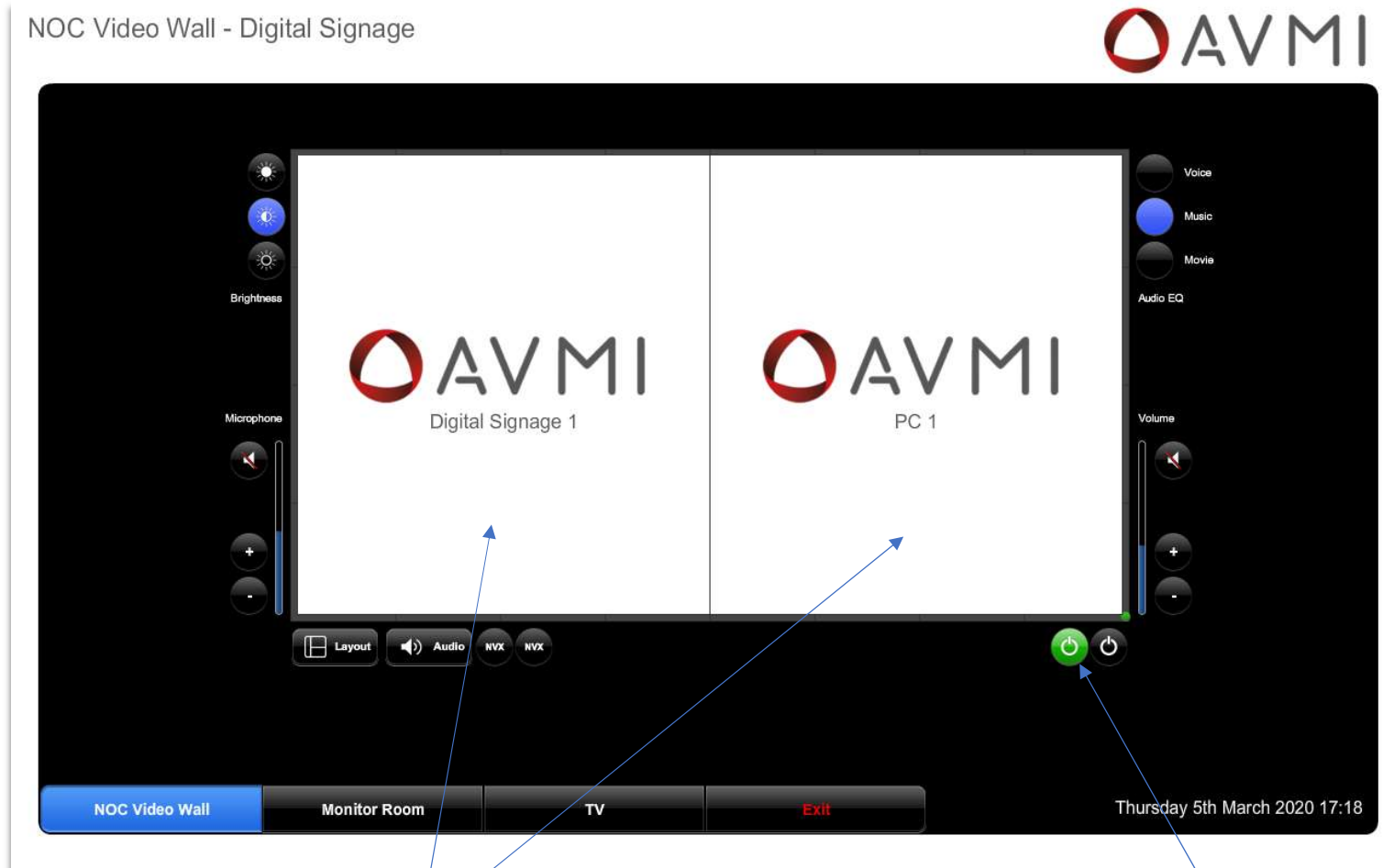
Full technician-side of UI containing all  
control, setup and diagnostics

Video wall  
power



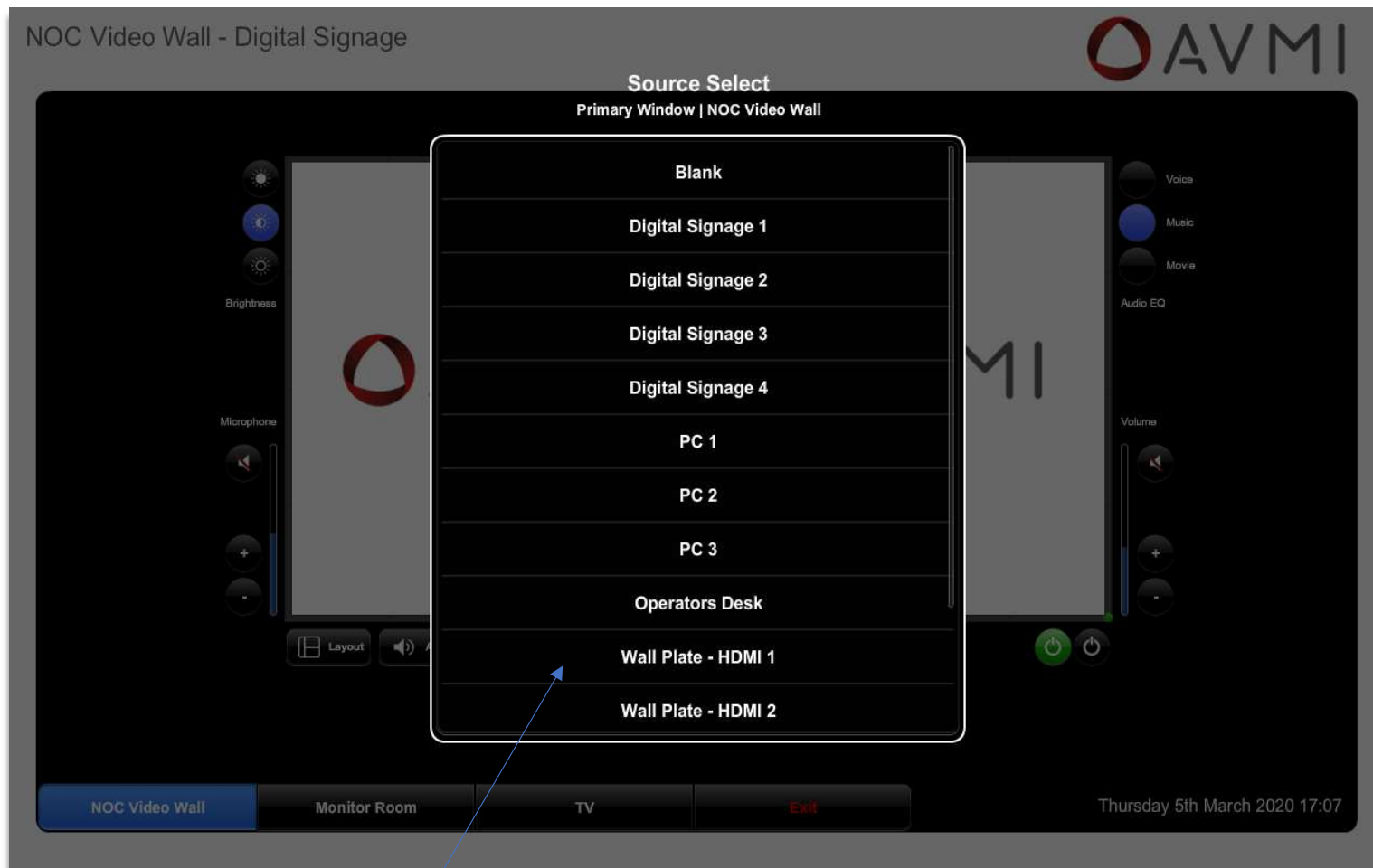
User-side of panel contains x3 pages of limited functionality

Video wall power, layout and source select with audio breakaway

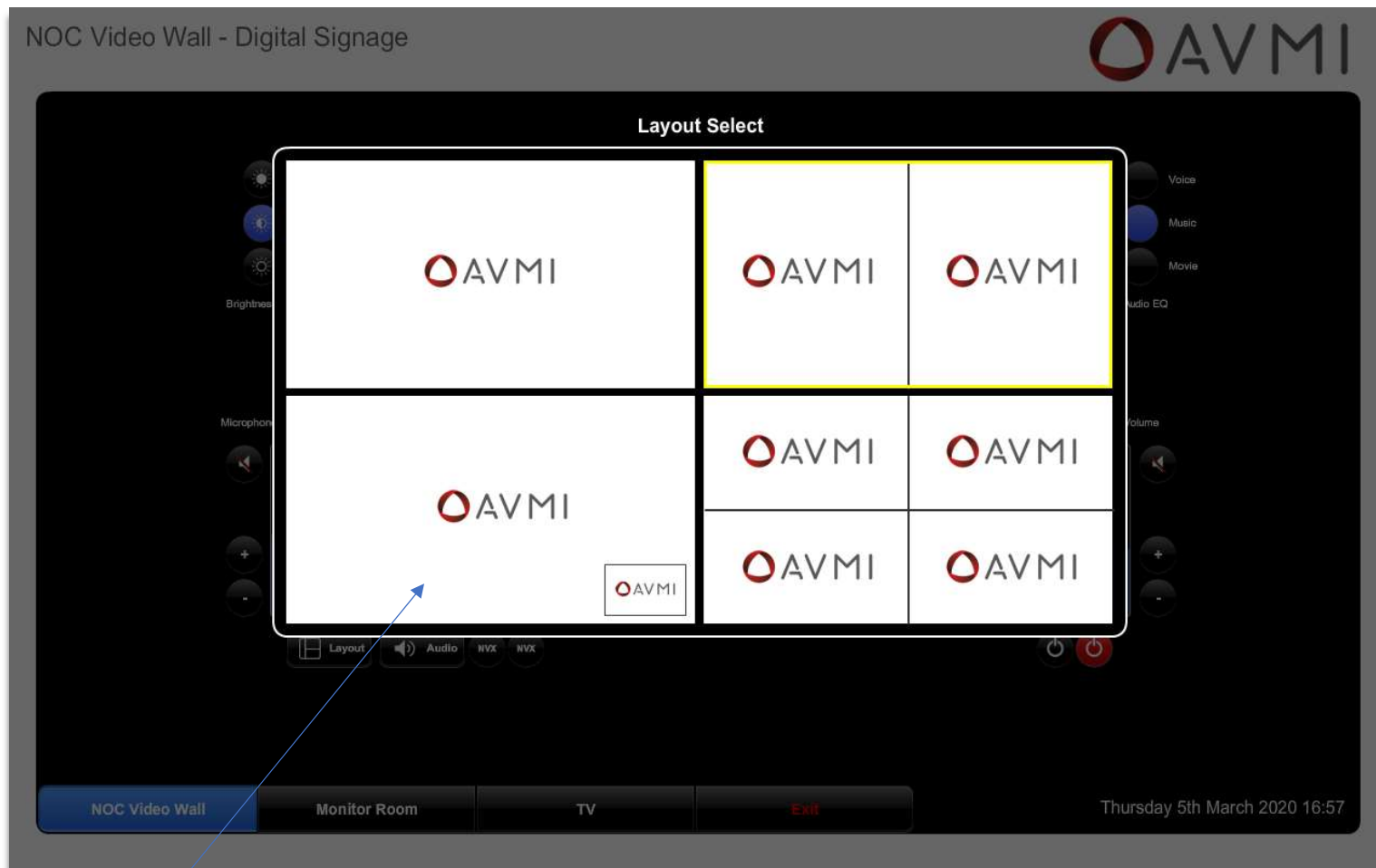


Press on video wall windows to select and send source

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
Chasis 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	<span style="color: green;">■</span>
Processing	<span style="color: gray;">■</span>
Reboot Required	<span style="color: gray;">■</span>
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	Main Display
Location	Operations
IP-ID	71
Card Slot	
Chasis 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	<span style="color: green;">■</span>
Processing	<span style="color: gray;">■</span>
Reboot Required	<span style="color: gray;">■</span>
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

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	<input checked="" type="checkbox"/>
Video Input	None <input type="checkbox"/> Input 1 <input checked="" type="checkbox"/> Input 2 <input type="checkbox"/>
Audio Input	Audio Follow Video <input type="checkbox"/> Input 1 <input type="checkbox"/> Input 2 <input type="checkbox"/> Analog Audio <input checked="" type="checkbox"/> Primary Stream Audio <input type="checkbox"/> Secondary Stream Audio <input type="checkbox"/> Dante/AES-67 Audio Input <input type="checkbox"/>
Secondary Audio Stream	Off <input type="checkbox"/> Auto (Send audio on IP address x1 higher than Primary Stream) <input checked="" type="checkbox"/>
Number of Packets Transmitted	1330531
Number of Packets Dropped	0

Audio Visual Input / Output Network Reset Packet Count Reboot

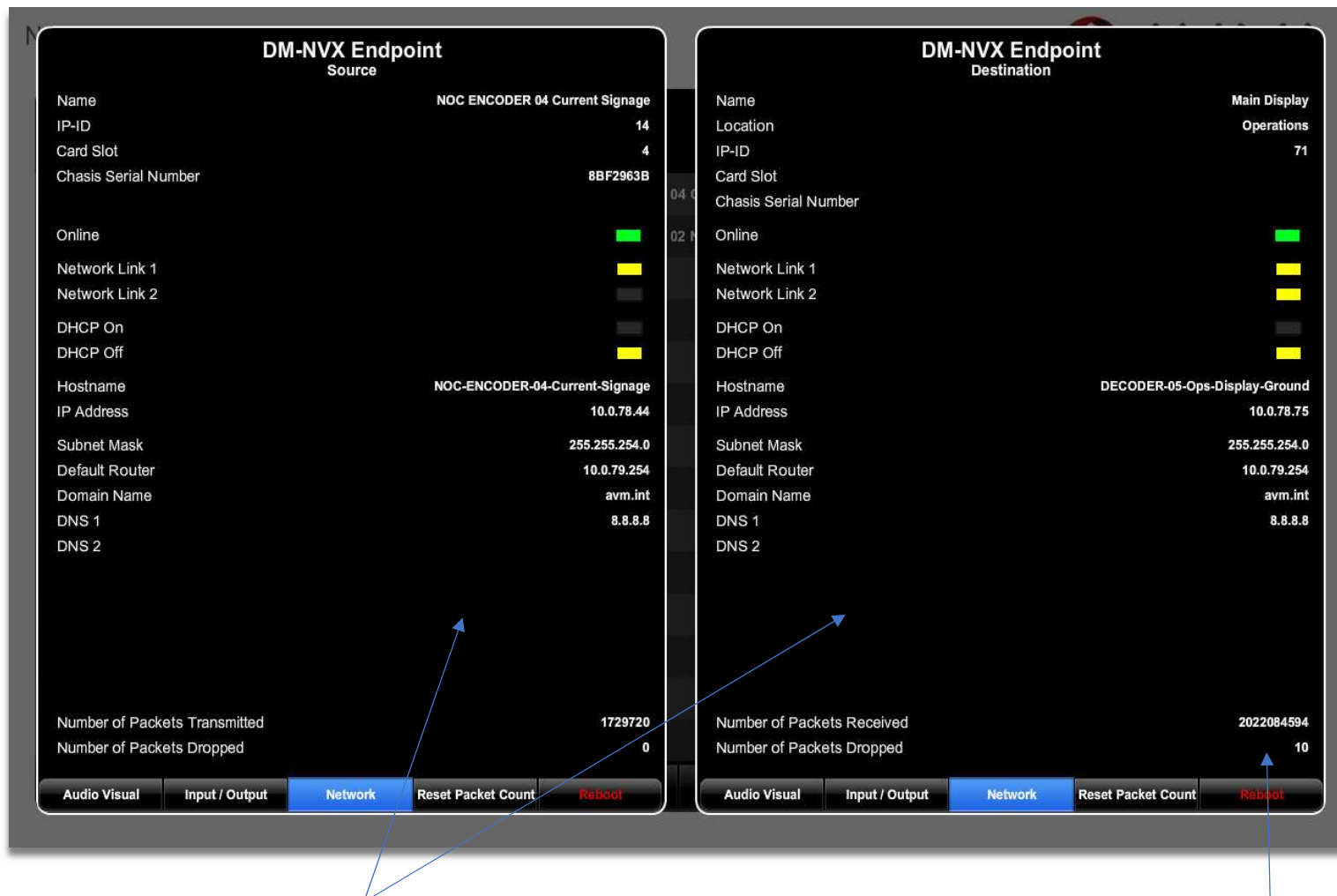
**DM-NVX Endpoint Destination**

Name	Main Display
Location	Operations
IP-ID	71
Card Slot	
Chassis Serial Number	
Auto Switch	<input checked="" type="checkbox"/>
Video Input	None <input type="checkbox"/> Input 1 <input type="checkbox"/> Input 2 <input type="checkbox"/> Stream <input checked="" type="checkbox"/>
Audio Input	Audio Follow Video <input type="checkbox"/> Input 1 <input type="checkbox"/> Input 2 <input type="checkbox"/> Analog Audio <input type="checkbox"/> Primary Stream Audio <input checked="" type="checkbox"/> Secondary Stream Audio <input type="checkbox"/> Dante/AES-67 Audio Input <input type="checkbox"/>
Secondary Audio Stream	Off <input checked="" type="checkbox"/> Auto (Receive audio on IP address x1 higher than Primary Stream) <input type="checkbox"/>
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



Network status between the source and destination endpoints

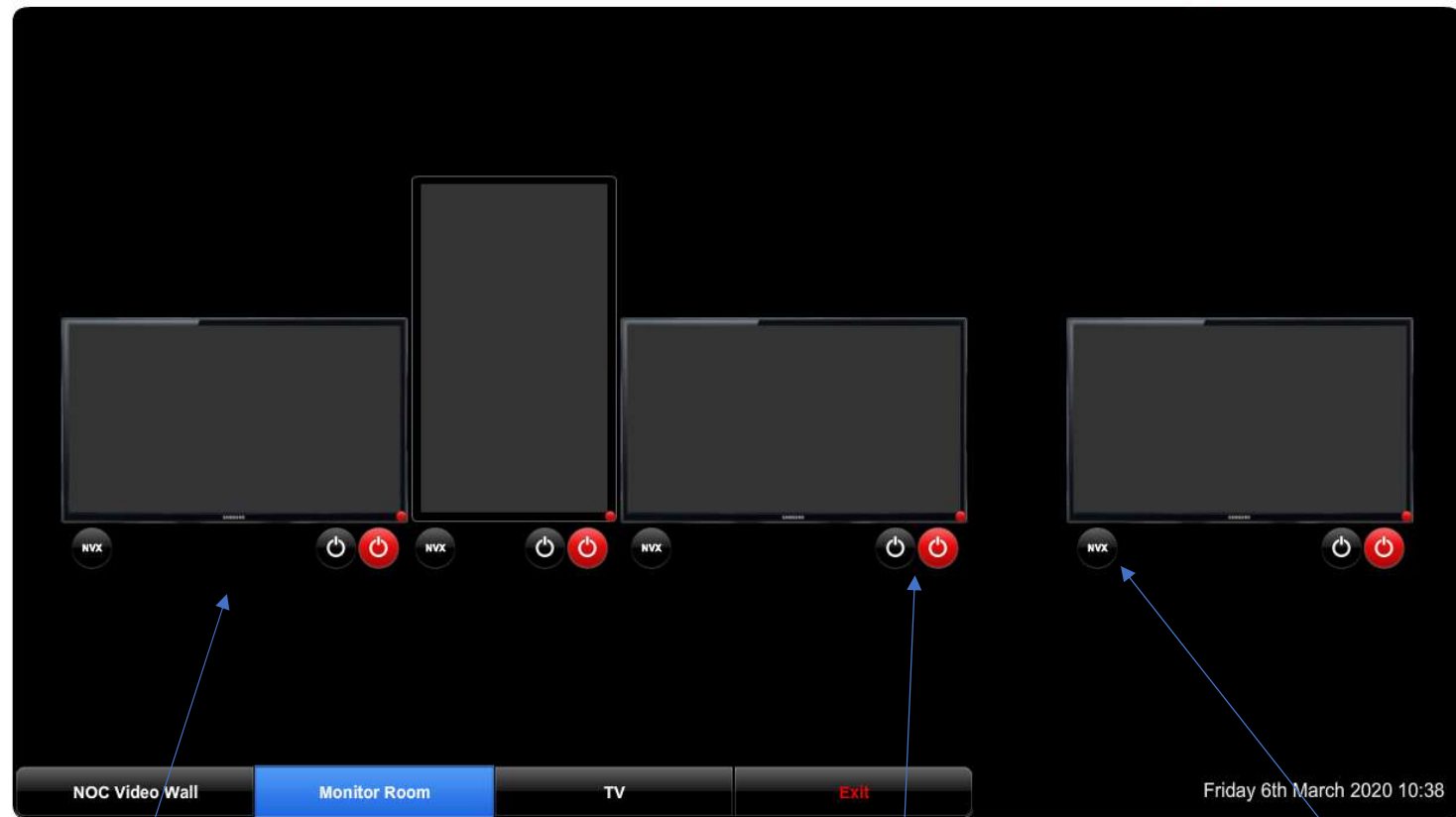
Real-time packet loss data

The screenshot displays a dual-panel interface for managing DM-NVX endpoints. The left panel, titled 'DM-NVX Endpoint Source', shows details for 'NOC ENCODER 04 Current Signage' with fields for Name, IP-ID (14), Card Slot (4), Chasis Serial Number (8BF2963B), Online status (green), Network Link 1 (yellow), Network Link 2 (grey), DHCP On/Off, Hostname, IP Address, Subnet Mask, Default Router, Domain Name, DNS 1, and DNS 2. It also shows packet statistics: 2328468 transmitted and 0 dropped. The right panel, titled 'DM-NVX Endpoint Destination', shows details for 'Main Display Operations' with fields for Name, Location, IP-ID (71), Card Slot, Chasis Serial Number, Online status (green), Network Link 1 (yellow), Network Link 2 (yellow), DHCP On/Off, Hostname, IP Address, Subnet Mask, Default Router, Domain Name, DNS 1, and DNS 2. It also shows packet statistics: 2022684029 received and 10 dropped. A central 'DM-NVX Endpoint Reboot Confirmation' dialog is open, displaying the Name 'NOC ENCODER 04 Current Signage', IP-ID '14', and IP Address '10.0.78.44', with a red 'Reboot' button. A blue arrow points from the 'Reboot' button in the dialog to the 'Reboot' button in the bottom right panel. Both panels have a bottom navigation bar with 'Audio Visual', 'Input / Output', 'Network' (selected), 'Reset Packet Count', and 'Reboot' buttons.

DM-NVX Endpoint Source		DM-NVX Endpoint Destination	
Name	NOC ENCODER 04 Current Signage	Name	Main Display Operations
IP-ID	14	IP-ID	71
Card Slot	4	Card Slot	
Chasis Serial Number	8BF2963B	Chasis Serial Number	
Online	Green	Online	Green
Network Link 1	Yellow	Network Link 1	Yellow
Network Link 2	Grey	Network Link 2	Yellow
DHCP On		DHCP On	
DHCP Off		DHCP Off	
Hostname		Hostname	
IP Address		IP Address	
Subnet Mask		Subnet Mask	
Default Router		Default Router	
Domain Name		Domain Name	
DNS 1		DNS 1	
DNS 2		DNS 2	
Number of Packets Transmitted	2328468	Number of Packets Received	2022684029
Number of Packets Dropped	0	Number of Packets Dropped	10

Conveniently and easily reboot any endpoint situated anywhere around the building

## NOC Video Wall - Digital Signage

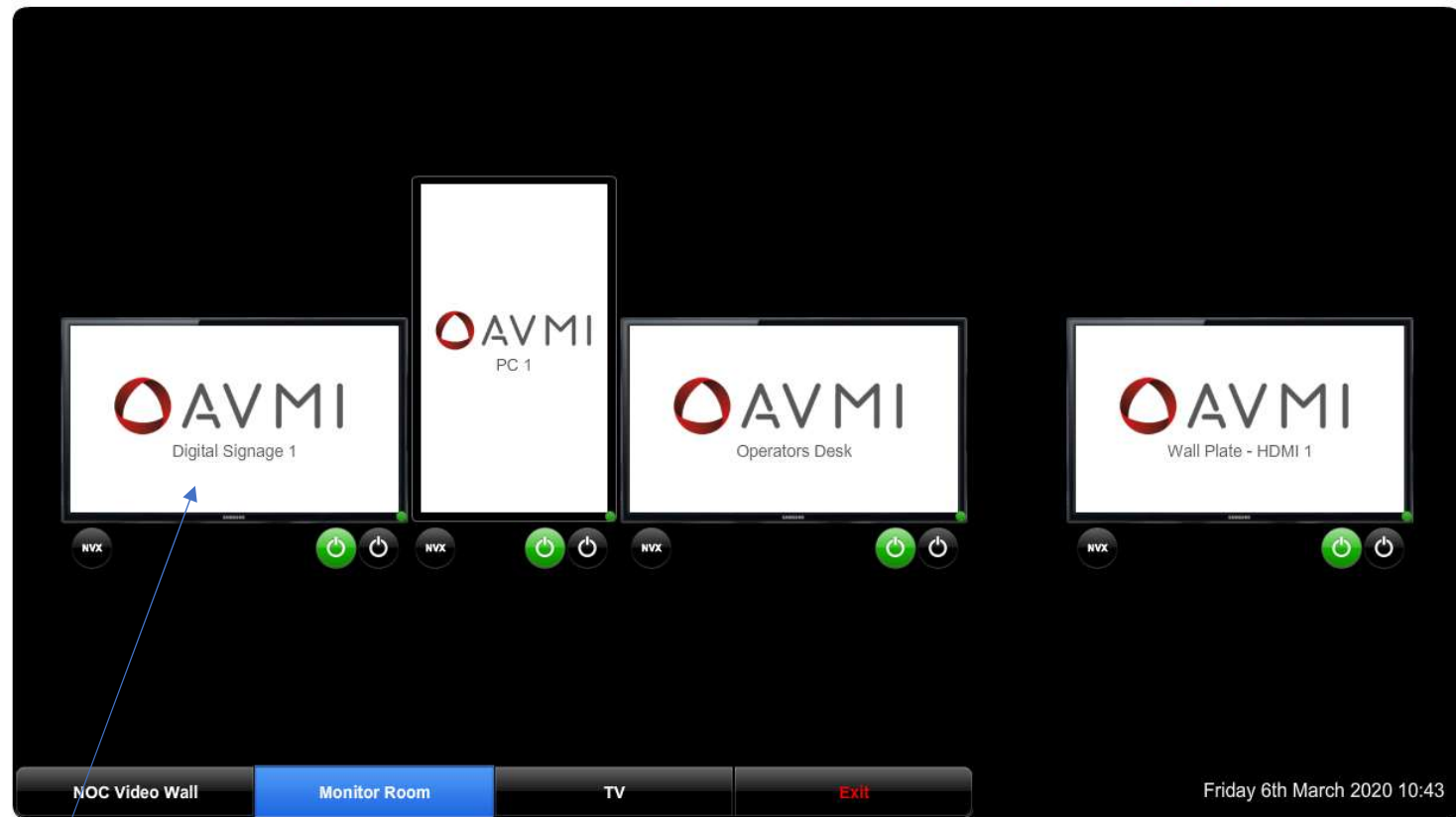


AVMI's digital signage monitoring room contains x4 monitors

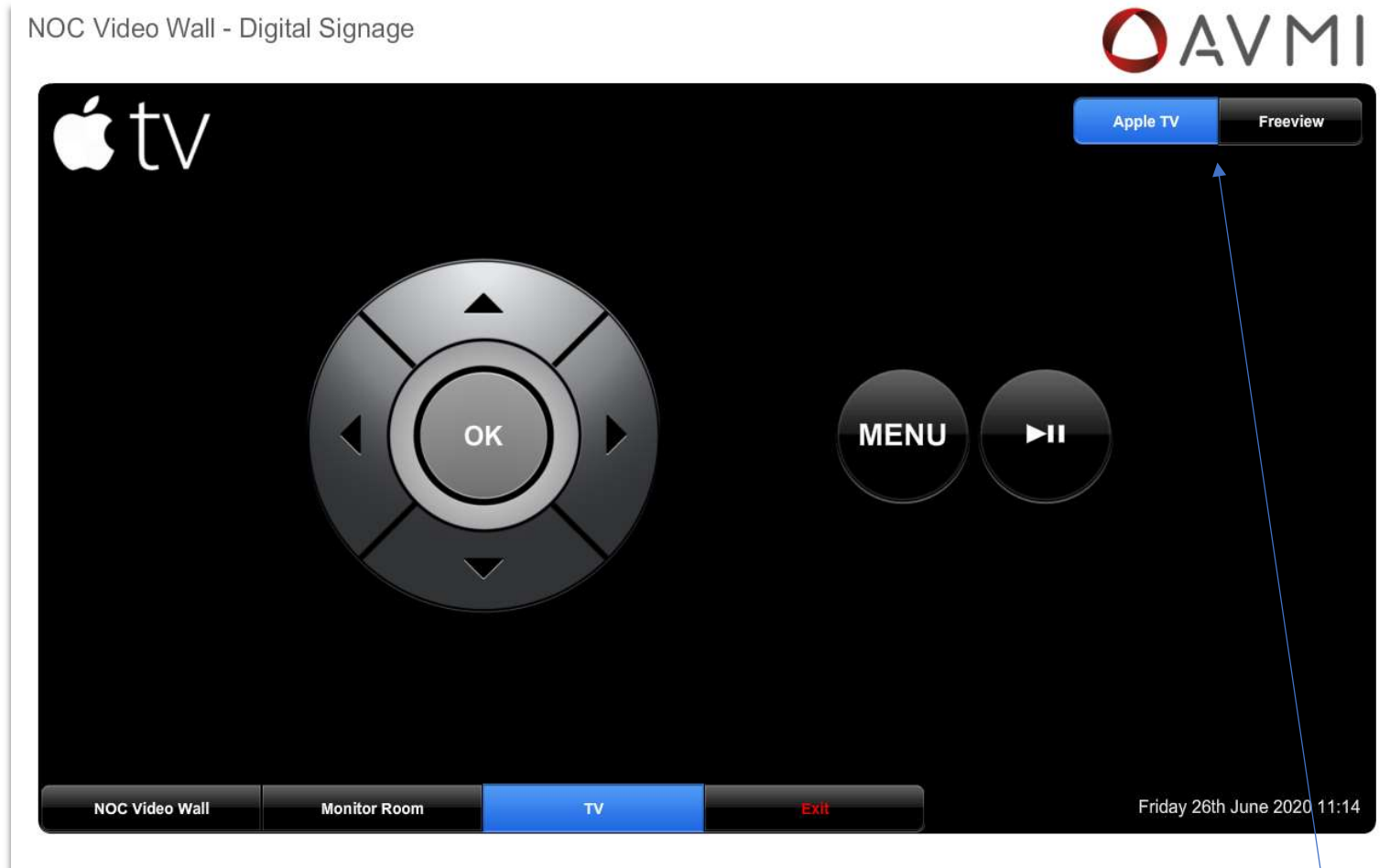
Power and source select of monitor

Endpoint status

## NOC Video Wall - Digital Signage



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



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



Display Control							Page 1 2	
Name	Location	Source	Status	Group	Display	Group	All	Ctrl
Display 1	Operations	PC 1	Stream Started	<input type="checkbox"/>				
Display 2	Operations	Wall Plate - HDMI 1	Stream Started	<input type="checkbox"/>				
Display 3	Operations	Wall Plate - HDMI 1	Stream Started	<input type="checkbox"/>				
Display 4	Operations	Wall Plate - HDMI 1	Stream Stopped	<input type="checkbox"/>				
Display 5	Operations	Blank	Stream Stopped	<input type="checkbox"/>				
LCD 1	Reception	PC 1	Stream Paused	<input type="checkbox"/>				
LCD 2	Reception	PC 2	Stream Started	<input type="checkbox"/>				
LCD 3	Reception	Floor Box 1 - HDMI	Stream Started	<input type="checkbox"/>				
LCD 4	Reception	Floor Box 1 - HDMI	Stream Started	<input type="checkbox"/>				
				<input type="checkbox"/>				
				<input type="checkbox"/>				
				<input type="checkbox"/>				
				<input type="checkbox"/>				
				<input type="checkbox"/>				
				<input type="checkbox"/>				

Digital Signage

Schedule

NVX Setup Sources

NVX Setup Destinations

Email Alerts

Video Wall DSP

IP Test

Configuration Load

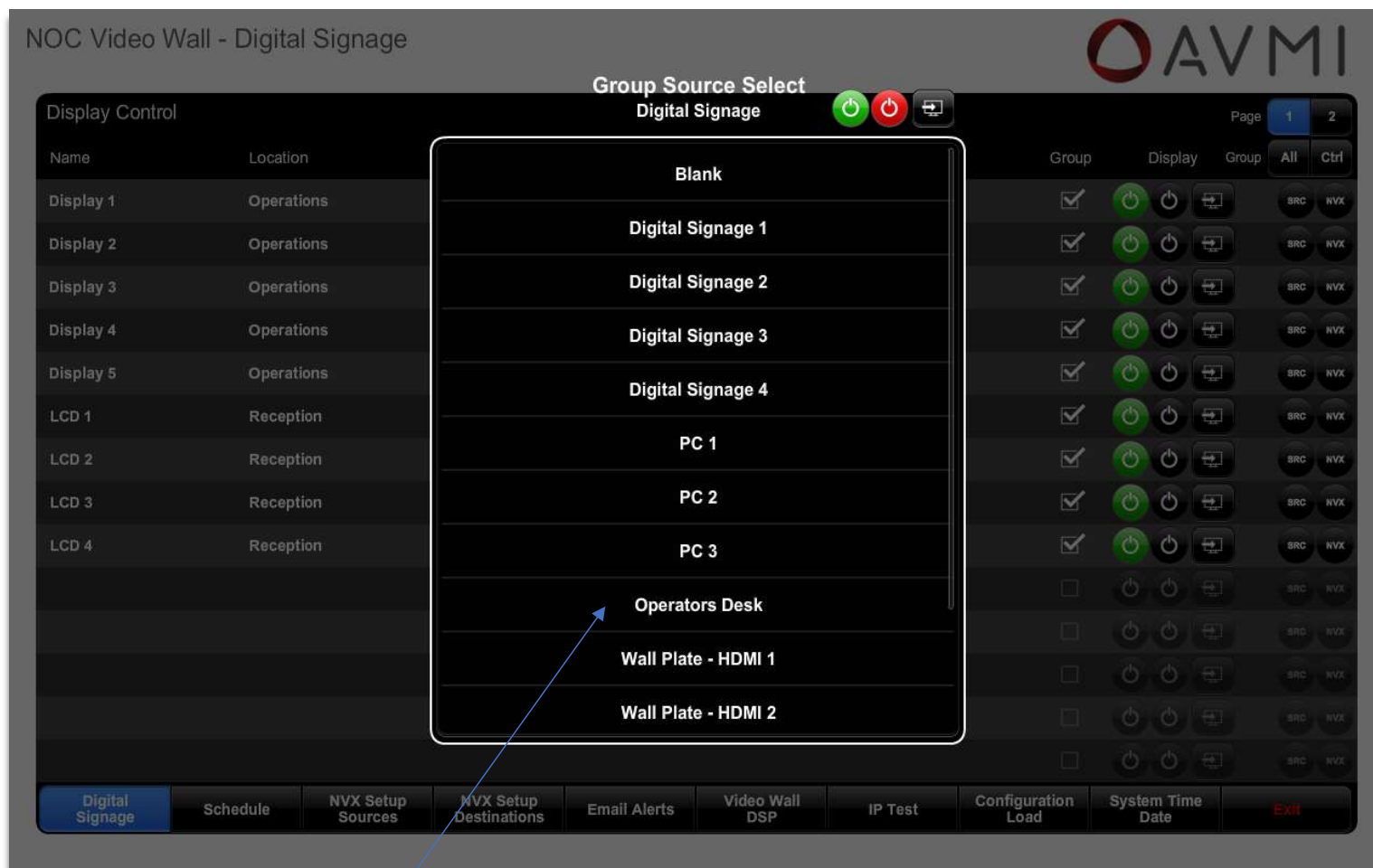
System Time Date

Exit

Technician-side of panel contains full system functionality

Group select multiple LCDs around building

LCD power control, source select and stream status



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	
Digital Signage 1	11	1	10.0.78.41	rtsp://10.0.78.41:554/live.sdp	Stream Started	<div></div>	<div></div>	<div></div>	NVX
Digital Signage 2	12	2	10.0.78.42	rtsp://10.0.78.42:554/live.sdp	Stream Started	<div></div>	<div></div>	<div></div>	NVX
Digital Signage 3	13	3	10.0.78.43	rtsp://10.0.78.43:554/live.sdp	Stream Started	<div></div>	<div></div>	<div></div>	NVX
Digital Signage 4	14	4	10.0.78.44	rtsp://10.0.78.44:554/live.sdp	Stream Started	<div></div>	<div></div>	<div></div>	NVX
PC 1	15	5	10.0.78.45	rtsp://10.0.78.45:554/live.sdp	Stream Started	<div></div>	<div></div>	<div></div>	NVX
PC 2	16	6	10.0.78.46	rtsp://10.0.78.46:554/live.sdp	Stream Started	<div></div>	<div></div>	<div></div>	NVX
PC 3	17		10.0.78.47	rtsp://10.0.78.47:554/live.sdp	Stream Stopped	<div></div>	<div></div>	<div></div>	NVX
Operators Desk	18		10.0.78.48	rtsp://10.0.78.48:554/live.sdp	Stream Started	<div></div>	<div></div>	<div></div>	NVX
Wall Plate - HDMI 1	19		10.0.78.49	rtsp://10.0.78.49:554/live.sdp	Stream Started	<div></div>	<div></div>	<div></div>	NVX
Wall Plate - HDMI 2	1A		10.0.78.50	rtsp://10.0.78.50:554/live.sdp	Stream Started	<div></div>	<div></div>	<div></div>	NVX
Wall Plate - VGA	1B		10.0.78.51	rtsp://10.0.78.51:554/live.sdp	Stream Started	<div></div>	<div></div>	<div></div>	NVX
Floor Box 1 - HDMI	1C		10.0.78.52	rtsp://10.0.78.52:554/live.sdp	Stream Started	<div></div>	<div></div>	<div></div>	NVX
Source Name	1D					<div></div>	<div></div>	<div></div>	NVX
Source Name	1E					<div></div>	<div></div>	<div></div>	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



						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	<div></div>	<div></div>	<div></div>
Display 2	Operations	72	10.0.78.72	rtsp://10.0.78.49:554/live.sdp	Stream Started	<div></div>	<div></div>	<div></div>
Display 3	Operations	73	10.0.78.73	rtsp://10.0.78.49:554/live.sdp	Stream Started	<div></div>	<div></div>	<div></div>
Display 4	Operations	74	10.0.78.74	rtsp://10.0.78.49:554/live.sdp	Stream Stopped	<div></div>	<div></div>	<div></div>
Display 5	Operations	75	10.0.78.75		Stream Stopped	<div></div>	<div></div>	<div></div>
LCD 1	Reception	76	10.0.78.76	rtsp://10.0.78.45:554/live.sdp	Stream Paused	<div></div>	<div></div>	<div></div>
LCD 2	Reception	77	10.0.78.77	rtsp://10.0.78.46:554/live.sdp	Stream Started	<div></div>	<div></div>	<div></div>
LCD 3	Reception	78	10.0.78.78	rtsp://10.0.78.52:554/live.sdp	Stream Started	<div></div>	<div></div>	<div></div>
LCD 4	Reception	79	10.0.78.79	rtsp://10.0.78.52:554/live.sdp	Stream Started	<div></div>	<div></div>	<div></div>
Display Name	Display Location	7A				<div></div>	<div></div>	<div></div>
Display Name	Display Location	7B				<div></div>	<div></div>	<div></div>
Display Name	Display Location	7C				<div></div>	<div></div>	<div></div>
Display Name	Display Location	7D				<div></div>	<div></div>	<div></div>
Display Name	Display Location	7E				<div></div>	<div></div>	<div></div>

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

Realtime status reporting of all destination endpoints around building

URL of the source endpoint currently being received by destination endpoint

# 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

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	Tx	Rx	Refresh	Disconnect
Polycom Soundstructure:	10.0.78.33	Waiting for Connection	Waiting for Connection			Refresh	Disconnect

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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



IP/Hostname:

Ethernet Adapter [CPSW3G1]:  
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)

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...

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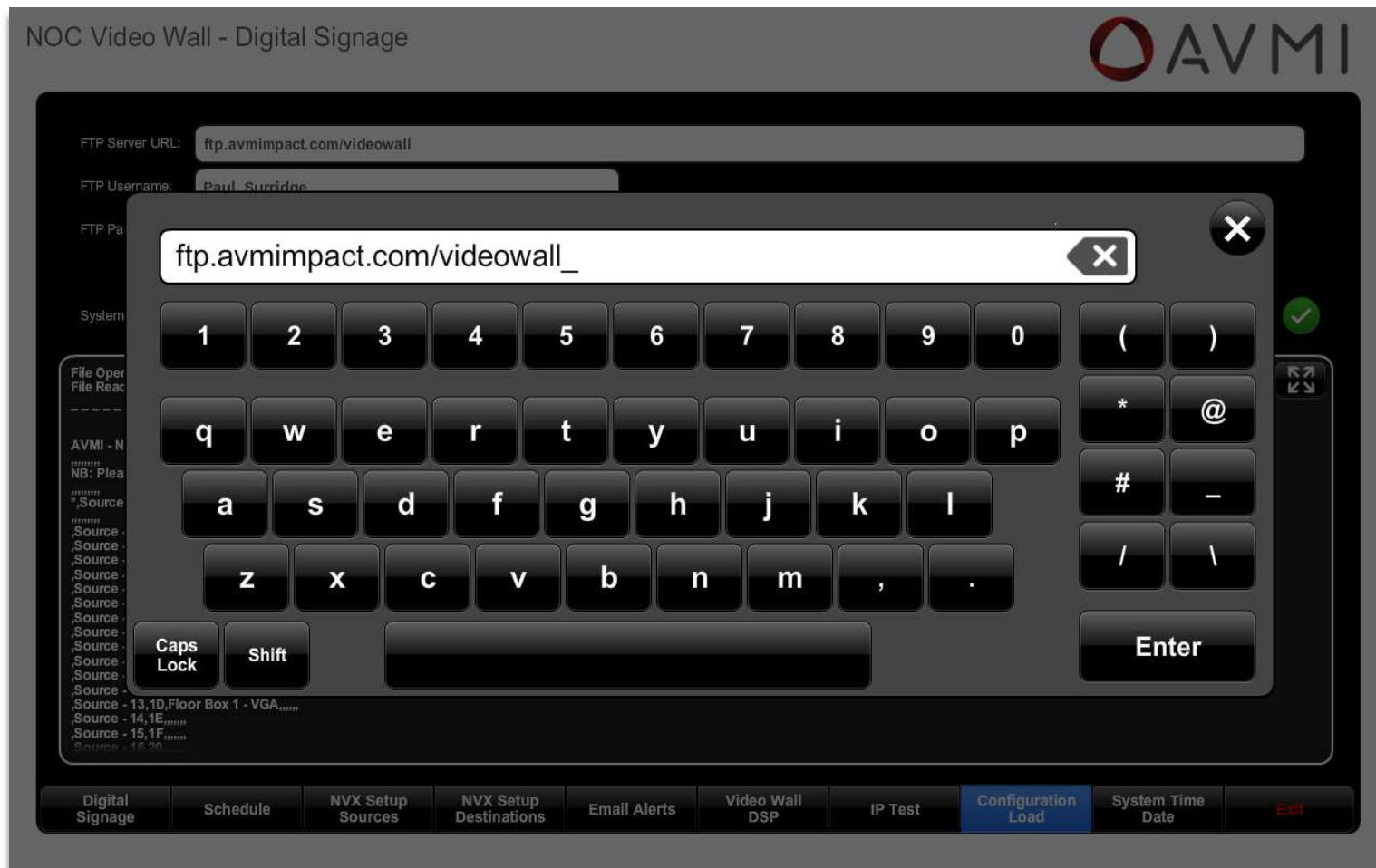
AVMI - NOC Video Wall and Digital Signage - System Config,,,,,,,,,
,,,,,,,,,
NB: Please do not use commas in user definable fields,,,,,,,,,
,,,,,,,,,
*,Source,IP-ID,Name,,,,,,,,,
,,,,,,,,,
,Source - 1,11,Digital Signage 1,,,,,,,,,
,Source - 2,12,Digital Signage 2,,,,,,,,,
,Source - 3,13,Digital Signage 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



The screenshot shows a black interface with white text and controls. At the top left, it says 'Touchpanel Inactive Timeout' followed by a white box containing '10' and the word 'Min'. Below this is a horizontal line. In the center, there is a 'Fire Alarm Test' label and a 'Run Test' button. Below the button, it says 'Press Fire Alarm page to end test'. On the right side, under the heading 'Set Time Date', there are input fields for 'Hour' (11), 'Minute' (05), 'Day' (26), 'Month' (06), and 'Year' (2020). Below these fields, it says 'Set processor internal SNTP time server via Toolbox | System Info | System Clock'. At the bottom, there is a navigation bar with buttons: 'Digital Signage', 'Schedule', 'NVX Setup Sources', 'NVX Setup Destinations', 'Email Alerts', 'Video Wall DSP', 'IP Test', 'Configuration Load', 'System Time Date' (which is highlighted in blue), and 'Exit'.

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

Log Monitor Setup

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.

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	VOIP_PROMPT_NONE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. LG.02	VOIP_CALL_STATE_FAULT	VOIP_PROMPT_AUTH_FAILURE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. LG.03	VOIP_CALL_STATE_IDLE	VOIP_PROMPT_NONE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. LG.04	VOIP_CALL_STATE_FAULT	VOIP_PROMPT_AUTH_USER_NOT_CONFIGURED	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5. LG.05	VOIP_CALL_STATE_IDLE	VOIP_PROMPT_NONE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. LG.06	VOIP_CALL_STATE_FAULT	VOIP_PROMPT_AUTH_FAILURE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7. LG.07	VOIP_CALL_STATE_IDLE	VOIP_PROMPT_NONE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Spare	VOIP_CALL_STATE_FAULT	VOIP_PROMPT_AUTH_USER_NOT_CONFIGURED	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9. Tannoy Solution	VOIP_CALL_STATE_IDLE	VOIP_PROMPT_NONE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. 5.01	VOIP_CALL_STATE_IDLE	VOIP_PROMPT_NONE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11. 6.02	VOIP_CALL_STATE_IDLE	VOIP_PROMPT_NONE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12. 6.03	VOIP_CALL_STATE_IDLE	VOIP_PROMPT_NONE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. 8.03	VOIP_CALL_STATE_IDLE	VOIP_PROMPT_NONE	<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

View History:

Day  Month  Year

☐ Day ☐ Month ☐ Year

☐ From ☒ All ☒ All Lines

☒ Earliest ☐ Latest

Total: 216/216

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

Log

View History:

Day ☐ Month ☐ Year ☐ From ☒ All ☒ All Lines ☐ 3

View Export Clear

Total: 216/216

☒ Earliest ☐ Latest

1.	LG.07	Saturday	7	July	2018	16:21:19	VOIP_CALL_STATE_FAULT	VOIP_PROMPT_CODEC_NEGOTIATION_FAILURE
2.	LG.02							FAILURE
3.	8.03							FAILURE
4.	5.01							NEGOTIATION_FAILURE
5.	LG.06							ARK_LINK_DOWN
6.	LG.02							NEGOTIATION_FAILURE
7.	LG.04							FAILURE
8.	LG.04							ARK_LINK_DOWN
9.	8.03							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

System Log - Export

Target Destination: \NVRAM Disk \ VoIP Monitor \ SystemLog.txt

Exporting... 174, LG.03, Tuesday, 3, December, 2018, 22:25:17, VOIP\_CALL\_STATE\_FAULT, VOIP\_PROMPT\_NETWORK

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



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

VoIP Monitor Setup

Room: Device: IP: SVC-2: Call State: Prompt:

1. LG.01  
2. LG.02  
3. LG.03  
4. LG.04  
5. LG.05  
6. LG.06  
7. LG.07  
8. Spare  
9. Tannoy S  
10. 5.01  
11. 6.02  
12. 6.03  
13. 8.03  
14. -  
15. -  
16. -  
17. -

BiAmp Tesira Connections

		Online	Log		Tx	Rx	
1-8	172.24.66.83			Connected			Refresh
9	172.24.67.96			Connected			Refresh
10	172.24.67.6			Connected			Refresh
11	172.24.67.76			Connected			Refresh
12	172.24.67.86			Connected			Refresh
13	172.24.66.194			Connected			Refresh
14	-						Refresh
15	-						Refresh
16	-						Refresh
17	-						Refresh

Email Alert (Target Address) Debounce

1 Send Test

Error Code: 0  
Error Name: SMTP\_OK  
Error Description: Message Successfully Sent.

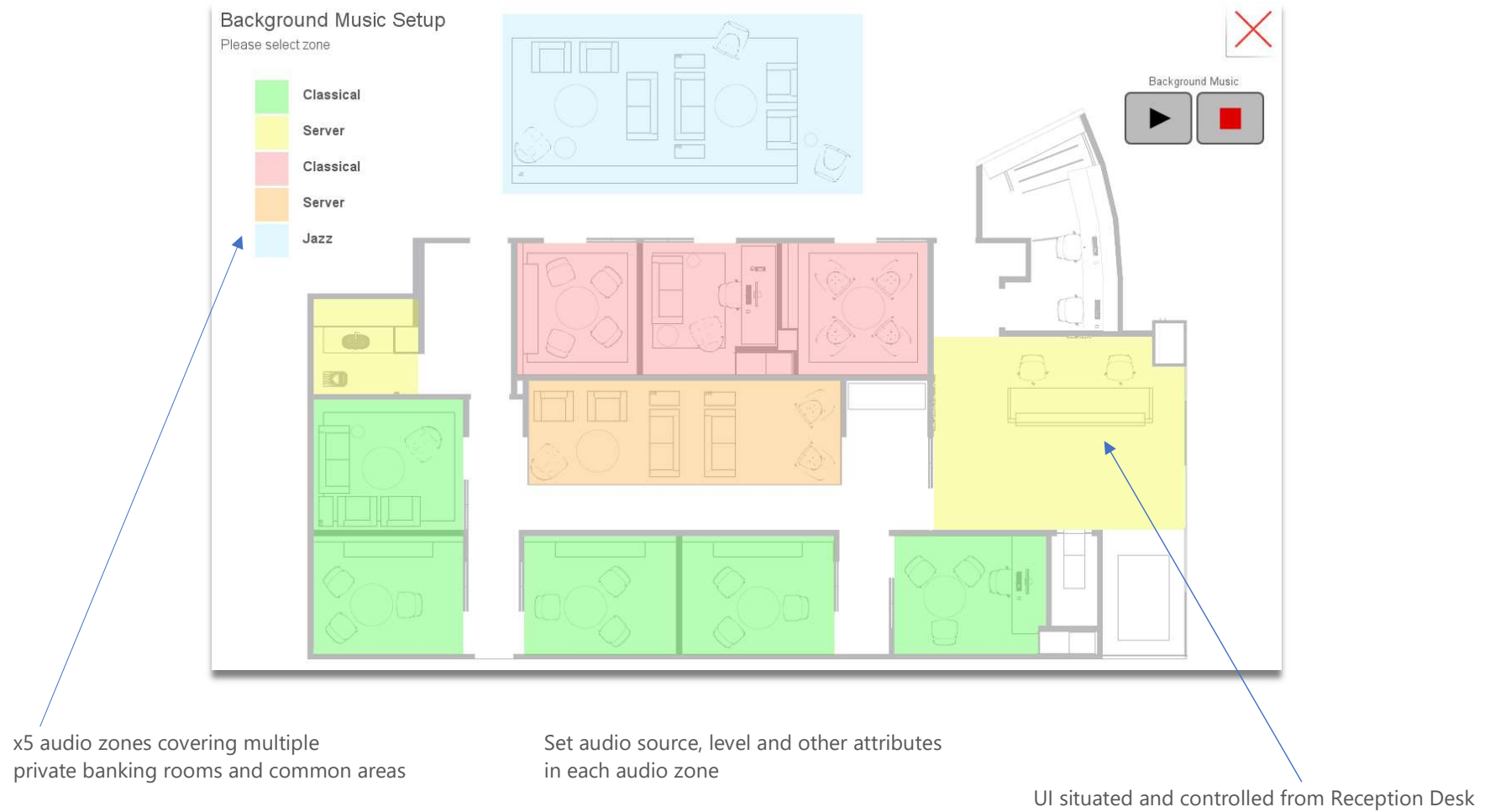
Setup IP/hostname for each VoIP card

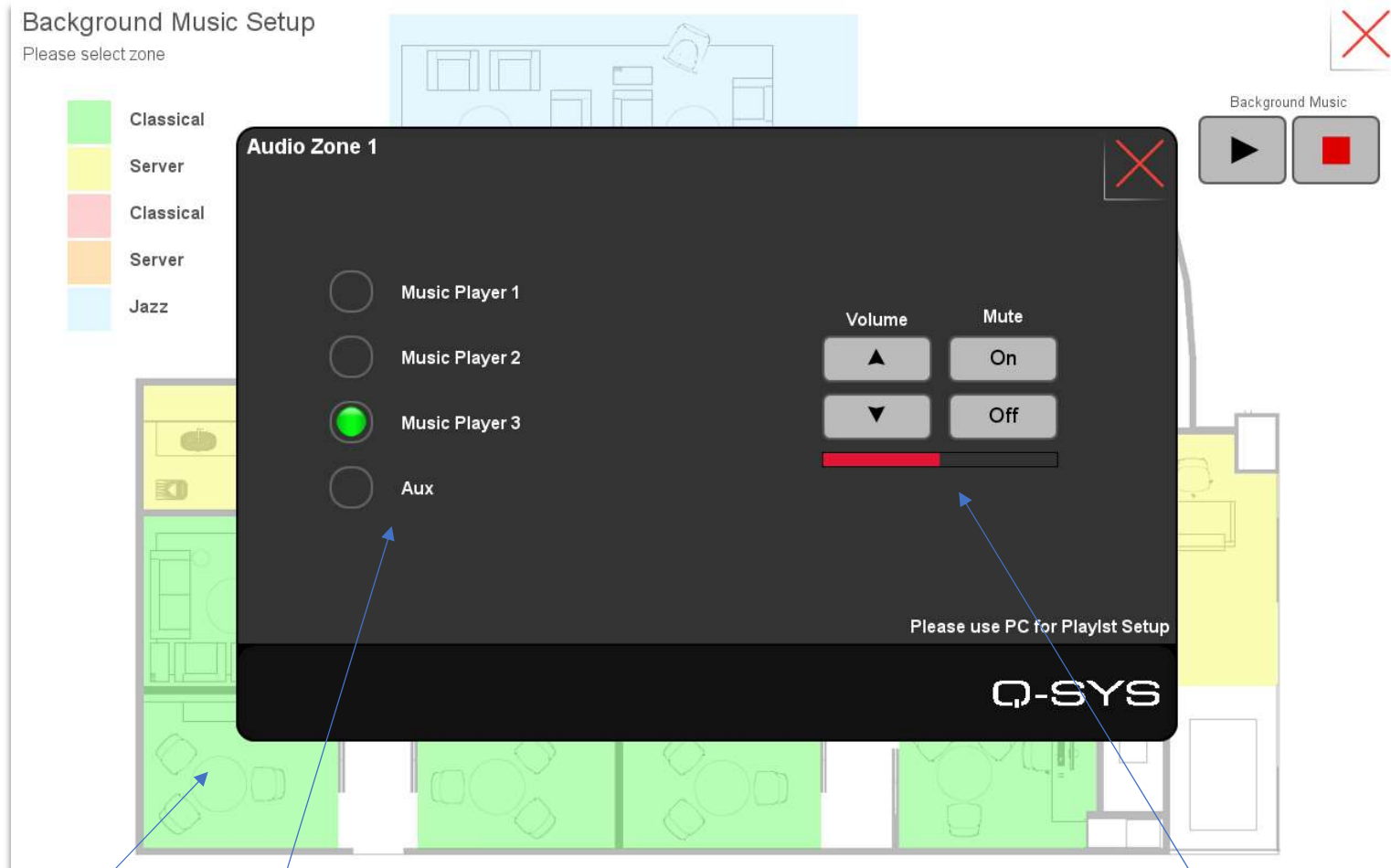
Setup email address to receive an email alert after specified period



### 3. Private Bank London

#### Private Banking Rooms - Audio Distribution Control





Press on audio zone to select audio source to be heard

Manual control of volume/mute

Background Music Setup

Please select zone

- Classical
- Server
- Classical
- Server
- Jazz

System Status

		Online	
QSys:	192.168.1.50	<span style="color: green;">■</span>	Connected
Private Lounge	192.168.1.101	<span style="color: green;">■</span>	Connected
Private 1 - Wordsworth	192.168.1.102	<span style="color: green;">■</span>	Connected
Private 2 - Keynes	192.168.1.103	<span style="color: green;">■</span>	Connected
Private 3 - Pankhurst	192.168.1.104	<span style="color: green;">■</span>	Connected
Gold Lounge	192.168.1.105	<span style="color: red;">■</span>	Disconnected
Gold 1 - Shakespeare	192.168.1.106	<span style="color: green;">■</span>	Connected
Gold 2 - Austen	192.168.1.107	<span style="color: red;">■</span>	Disconnected
Gold 3 - Newton	192.168.1.108	<span style="color: green;">■</span>	Connected
Gold 4 - Hitchcock	192.168.1.109	<span style="color: red;">■</span>	Disconnected

Refresh

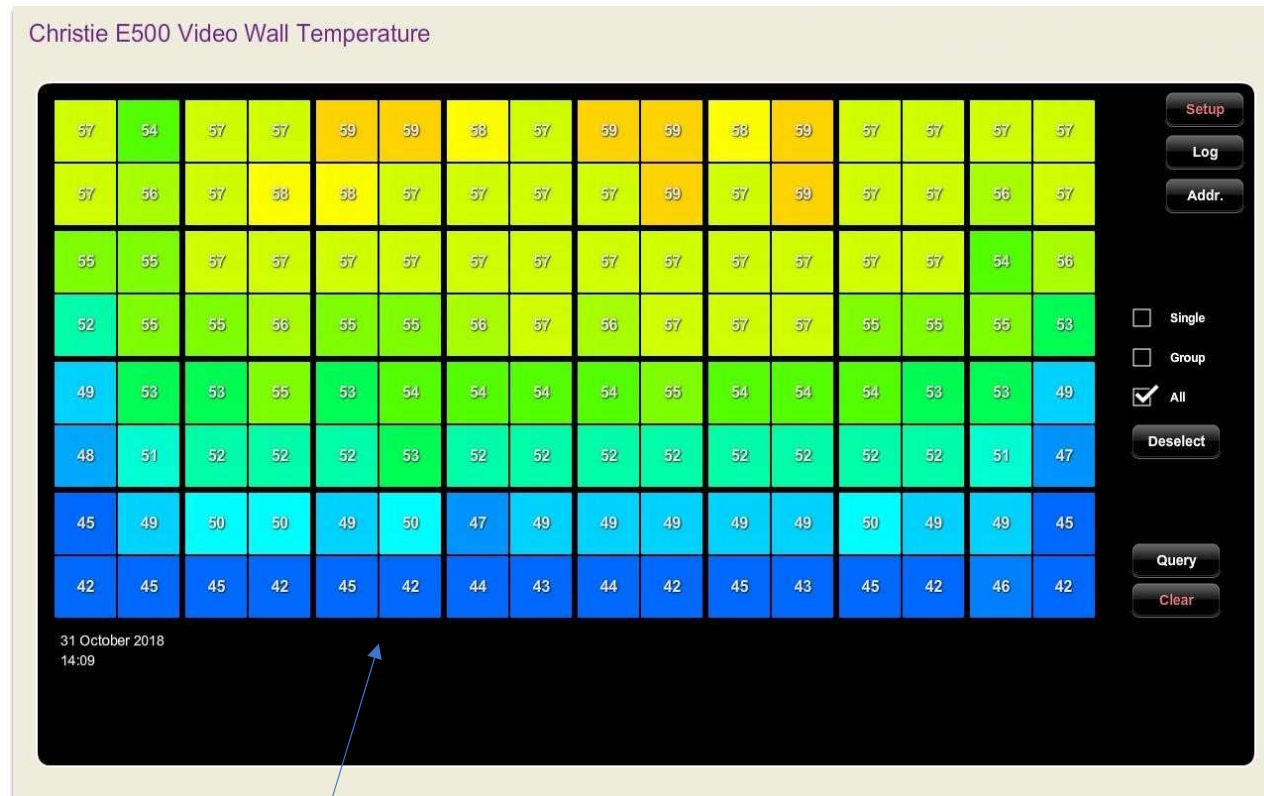
Background Music

▶ ■

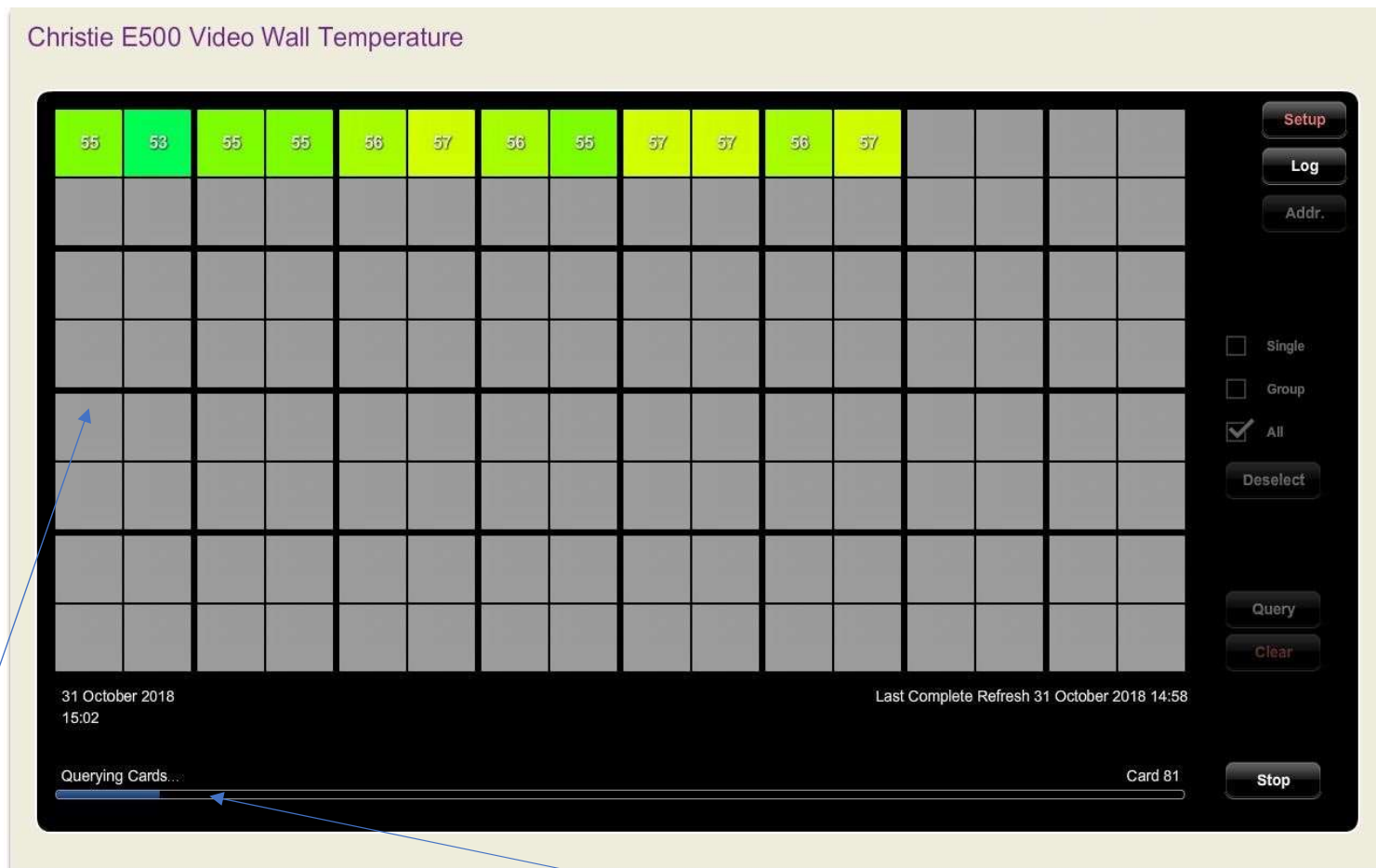
Simple real time status of IP connectivity to all audio endpoints in each private banking room

## 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: ☐ Day ☐ Month ☐ Year ☐ From ☒ All ☒ All ☐ 3 ☒ Earliest ☐ Latest

Day  Month  Year

Total: 20/20

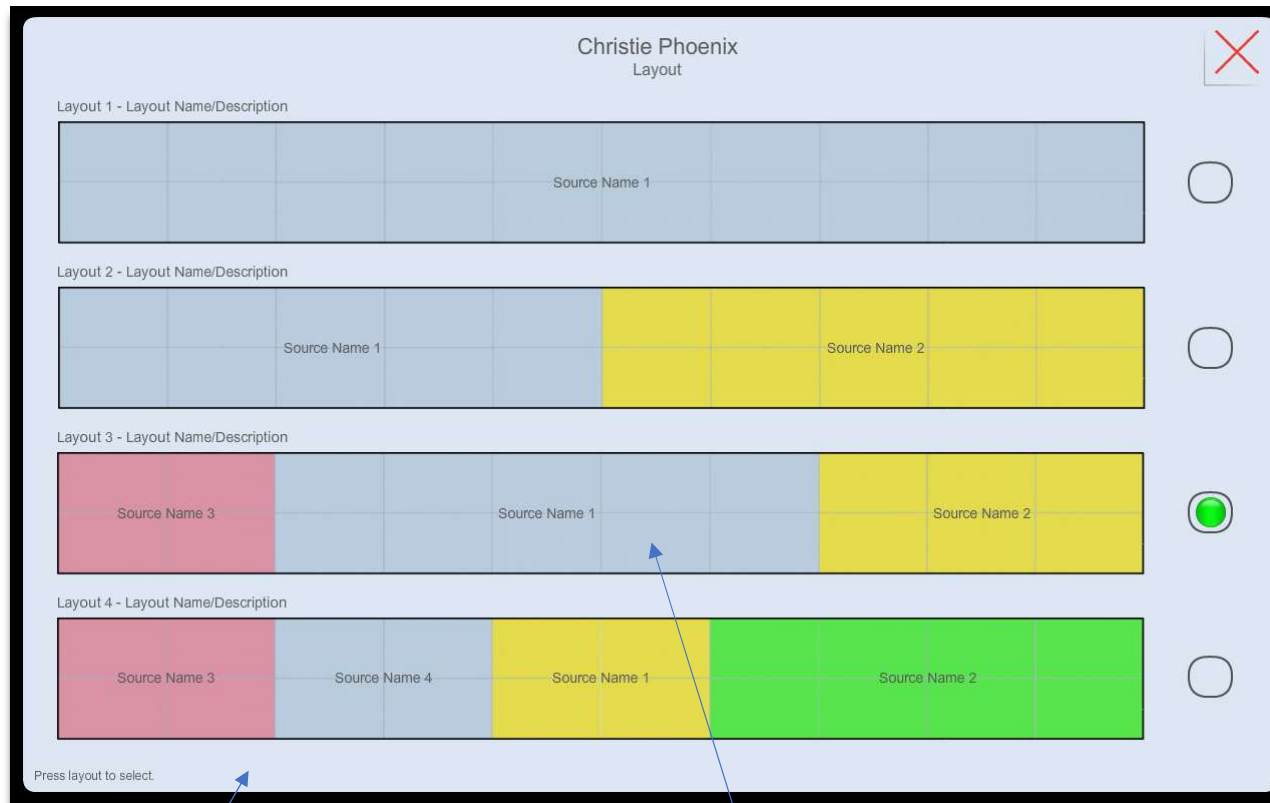
1.	Card Addr: 18	Wednesday	31	October	2018	15:29:30	55
2.	Card Addr: 17	Wednesday	31	October	2018	15:29:32	55
3.	Card Addr: 48	Wednesday	31	October	2018	15:29:34	55
4.	Card Addr: 47	Wednesday	31	October	2018	15:29:36	55
5.	Card Addr: 50	Wednesday	31	October	2018	15:29:38	55
6.	Card Addr: 49	Wednesday	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

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

Offline  
 Online

**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	<div style="width: 15px; height: 15px; background-color: #00ff00; border: 1px solid black; display: inline-block;"></div> Online Connected	<div style="width: 20px; height: 20px; background-color: yellow; border: 1px solid black; display: inline-block; margin-right: 5px;"></div> Tx <div style="width: 20px; height: 20px; background-color: black; border: 1px solid black; display: inline-block; margin-right: 5px;"></div> Rx	<div style="background-color: #555; color: white; padding: 5px 10px; border: 1px solid #333;">Refresh</div>
2	SYGDC-CONTROL-ROOM-VWALL-CUBE-2	<div style="width: 15px; height: 15px; background-color: #00ff00; border: 1px solid black; display: inline-block;"></div> Online Connected	<div style="width: 20px; height: 20px; background-color: black; border: 1px solid black; display: inline-block; margin-right: 5px;"></div> Tx <div style="width: 20px; height: 20px; background-color: black; border: 1px solid black; display: inline-block; margin-right: 5px;"></div> Rx	<div style="background-color: #555; color: white; padding: 5px 10px; border: 1px solid #333;">Refresh</div>
3	SYGDC-CONTROL-ROOM-VWALL-CUBE-3	<div style="width: 15px; height: 15px; background-color: #00ff00; border: 1px solid black; display: inline-block;"></div> Online Connected	<div style="width: 20px; height: 20px; background-color: black; border: 1px solid black; display: inline-block; margin-right: 5px;"></div> Tx <div style="width: 20px; height: 20px; background-color: black; border: 1px solid black; display: inline-block; margin-right: 5px;"></div> Rx	<div style="background-color: #555; color: white; padding: 5px 10px; border: 1px solid #333;">Refresh</div>
4	SYGDC-CONTROL-ROOM-VWALL-CUBE-4	<div style="width: 15px; height: 15px; background-color: #f00; border: 1px solid black; display: inline-block;"></div> Online Performing DNS Lookup	<div style="width: 20px; height: 20px; background-color: black; border: 1px solid black; display: inline-block; margin-right: 5px;"></div> Tx <div style="width: 20px; height: 20px; background-color: black; border: 1px solid black; display: inline-block; margin-right: 5px;"></div> Rx	<div style="background-color: #555; color: white; padding: 5px 10px; border: 1px solid #333;">Refresh</div>
5	SYGDC-CONTROL-ROOM-VWALL-CUBE-5	<div style="width: 15px; height: 15px; background-color: #00ff00; border: 1px solid black; display: inline-block;"></div> Online Connected	<div style="width: 20px; height: 20px; background-color: black; border: 1px solid black; display: inline-block; margin-right: 5px;"></div> Tx <div style="width: 20px; height: 20px; background-color: black; border: 1px solid black; display: inline-block; margin-right: 5px;"></div> Rx	<div style="background-color: #555; color: white; padding: 5px 10px; border: 1px solid #333;">Refresh</div>
6	SYGDC-CONTROL-ROOM-VWALL-CUBE-6	<div style="width: 15px; height: 15px; background-color: #f00; border: 1px solid black; display: inline-block;"></div> Online Performing DNS Lookup	<div style="width: 20px; height: 20px; background-color: black; border: 1px solid black; display: inline-block; margin-right: 5px;"></div> Tx <div style="width: 20px; height: 20px; background-color: black; border: 1px solid black; display: inline-block; margin-right: 5px;"></div> Rx	<div style="background-color: #555; color: white; padding: 5px 10px; border: 1px solid #333;">Refresh</div>
7	SYGDC-CONTROL-ROOM-VWALL-CUBE-7	<div style="width: 15px; height: 15px; background-color: #00ff00; border: 1px solid black; display: inline-block;"></div> Online Connected	<div style="width: 20px; height: 20px; background-color: black; border: 1px solid black; display: inline-block; margin-right: 5px;"></div> Tx <div style="width: 20px; height: 20px; background-color: black; border: 1px solid black; display: inline-block; margin-right: 5px;"></div> Rx	<div style="background-color: #555; color: white; padding: 5px 10px; border: 1px solid #333;">Refresh</div>
8	SYGDC-CONTROL-ROOM-VWALL-CUBE-8	<div style="width: 15px; height: 15px; background-color: #00ff00; border: 1px solid black; display: inline-block;"></div> Online Connected	<div style="width: 20px; height: 20px; background-color: black; border: 1px solid black; display: inline-block; margin-right: 5px;"></div> Tx <div style="width: 20px; height: 20px; background-color: black; border: 1px solid black; display: inline-block; margin-right: 5px;"></div> Rx	<div style="background-color: #555; color: white; padding: 5px 10px; border: 1px solid #333;">Refresh</div>

Press field to set.Page 1



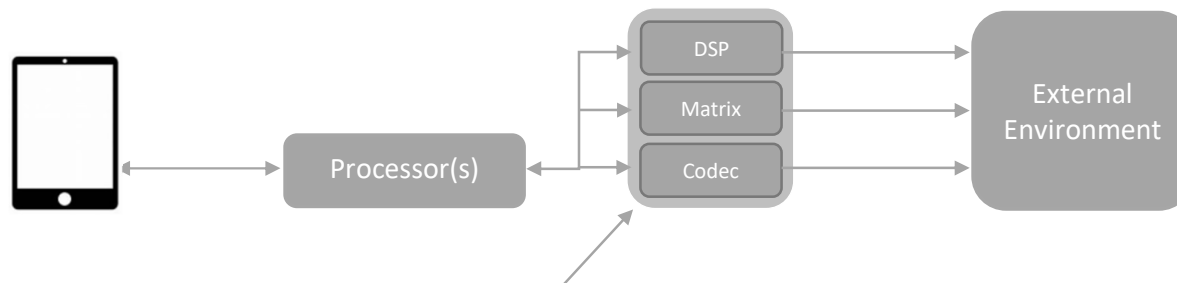
Realtime status of video wall cubes/panels, IP/hostname setup, connectivity and activity

Press on field to set via popup keyboard



# 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 3<sup>rd</sup> 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 3<sup>rd</sup> 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.