



# What's New at Davicom

*ALT-NAB 2020 webinar*

320  
**CORTEX**



360  
**CORTEX**



John Ahern  
*President*





- Introduction
- New Hardware
- New Firmware Functionalities
- New Main & Backup Controller
- New Davicom EXchange (DEX) support portal



# New Hardware

## Digital Temperature Probe Interface with SNMP (DTPI)



- 4 input channels
- 5 to 9VDC supply
- Display in °Fahrenheit or °Celsius
- -55° to 125°C range for probes
- Interfaces directly to Davicom RTU's through SNMP
- Can be used independently from Davicom RTU's
- 4 x 3-digit LED displays
- Open MIB for use with other SNMP managers

# Digital Temperature Probe Interface



- 4-channels for One-Wire Digital Temperature probes
- Advantages over “analog” temperature sensors:
  - Require no calibration
  - Operate over cable lengths up to 30m
  - RF immunity

# Digital Temperature Probe Interface

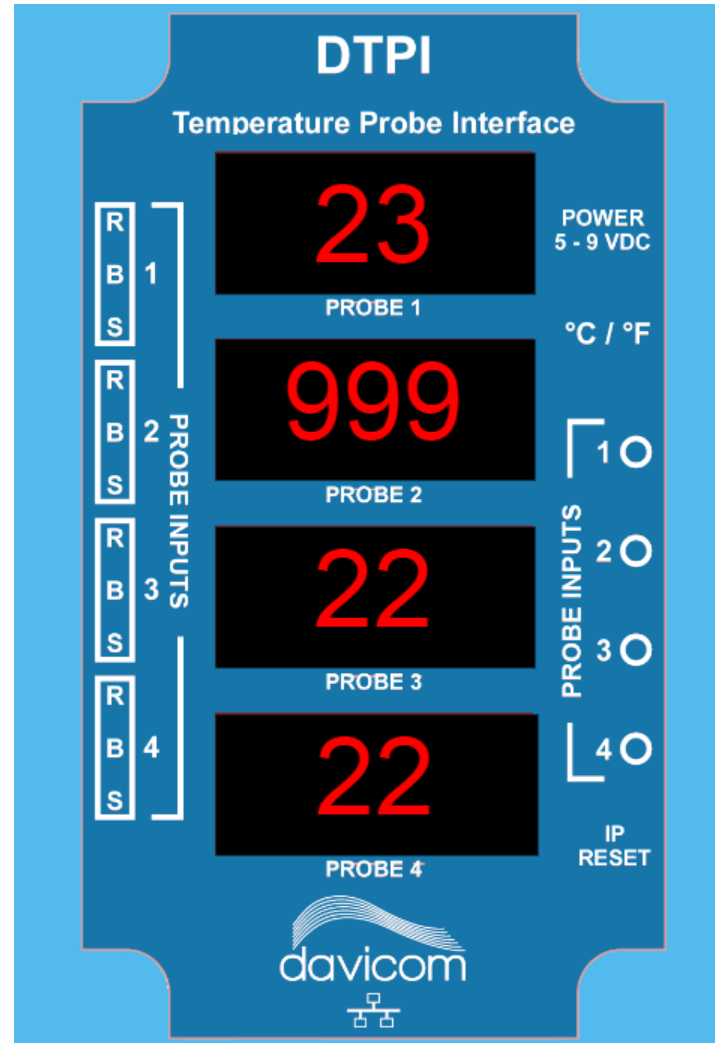
- Invented by Dallas Semiconductor, now property of Maxim, the DS18B20 digital thermometer provides 9-bit to 12-bit Celsius temperature measurements.
- The DS18B20 communicates over a 1-Wire bus that by definition requires only one data line (and ground) for communication with a central microprocessor.
- In addition, the DS18B20 can derive power directly from the data line ("parasite power"), eliminating the need for an external power supply.
- Each DS18B20 has a unique 64-bit serial code, which allows multiple DS18B20s to function on the same 1-Wire bus.



# Digital Temperature Probe Interface



# Digital Temperature Probe Interface



[Cortex360 Live unit](#)

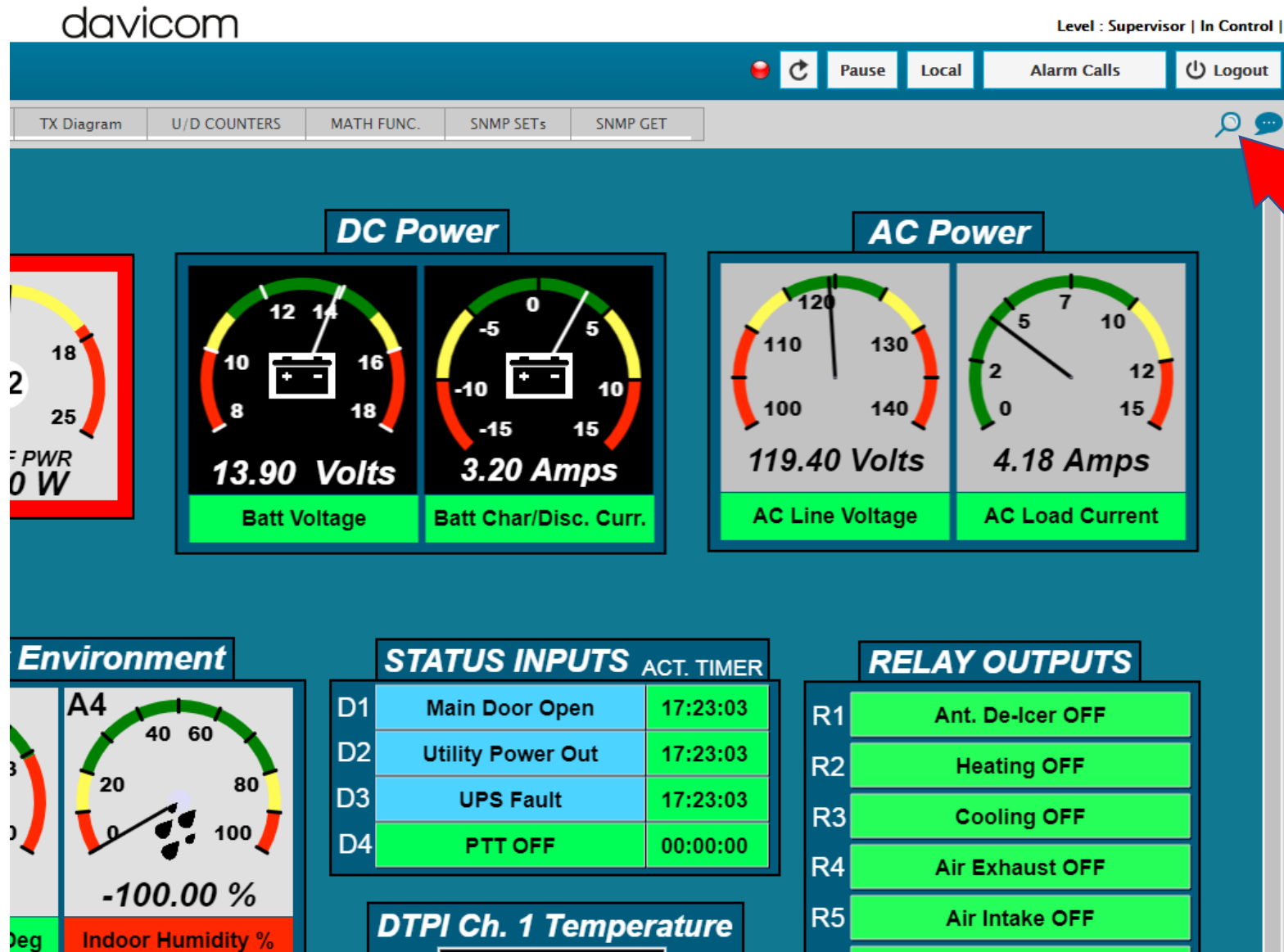




# New Firmware Functionalities

- I/O Finder
- Up/Down counters
- Recordable audio files
- Inter-user online chat
- Signal averaging
- HDMI & Webview displays
- Direct SNMP MIB file download
- SNMP Devices
- MIB Browser (coming soon)

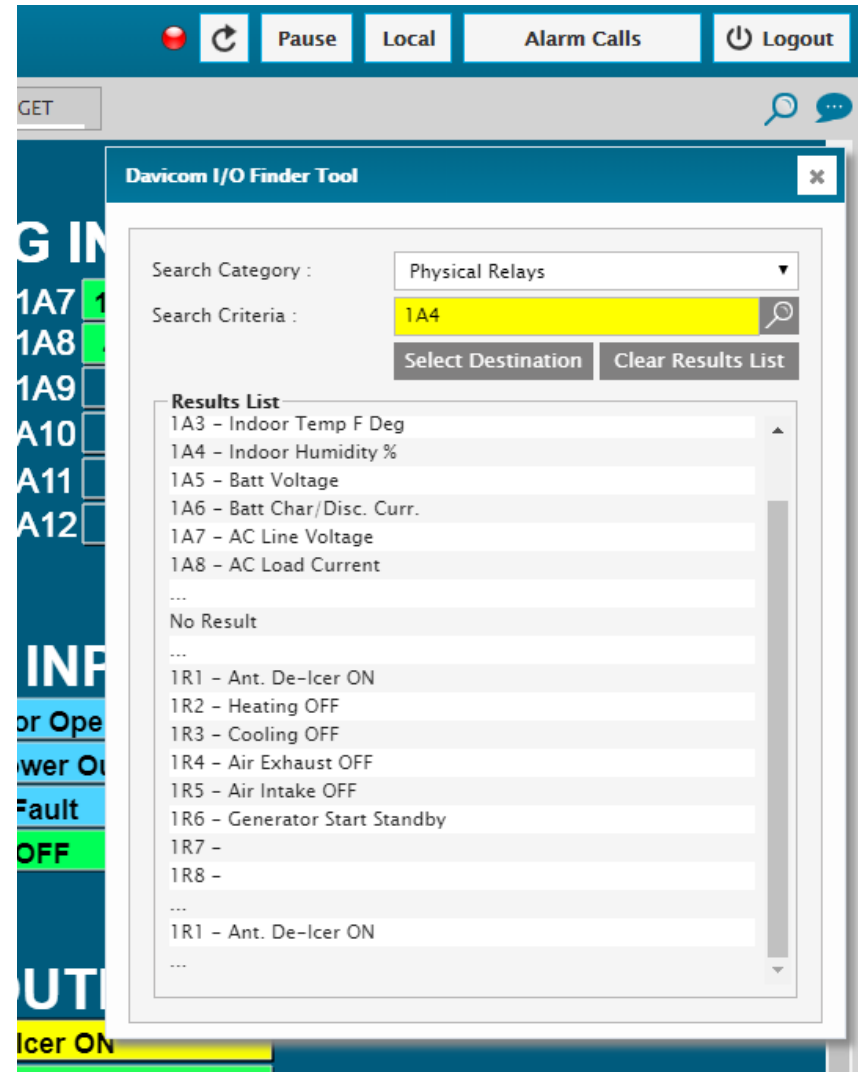
# I/O Finder





# I/O Finder

Makes finding specific or available I/O points easier



# I/O Finder

Metering input configuration – 1A2

ID :

1A2

Enable

Descriptions

Actions

Qualifier :

State

Voltage Range :

5

Normal Value :

0

Default Value :

0

Measurement Unit :

W

☐ Display positive values only

Automatic Limit Change

Qualifier :

Multiplier :

1

Delay

Before Action (sec) :

0

Before Return to Normal (sec) :

0

Level 1

Action Type :

MINOR1

System log

Low Limit: (\* = don't care) :

\*

Hysteresis :

0

High Limit: (\* = don't care) :

7

Hysteresis :

0

Controlled Output :

1

1R1

2

3

4

5

6

Level 2

Sensor Coefficients

$y = Ax^2 + Bx + C$  for  $D = 0$ , or  $y = D \text{ Log}(Ax^2 + Bx + C)$

A :

0

B :

5

C :

0

D :

0

Graph

Signalling On

☒ Alarm

☒ Return to Normal

Davicom I/O Finder Tool

Search Category :

Physical Relays

Search Criteria :

All configured I/O

Select Destination

Clear Results List

Results List

1A1 – FWD RF Power

1A2 – REF RF Power

1A3 – Indoor Temp F Deg

1A4 – Indoor Humidity %

1A5 – Batt Voltage

1A6 – Batt Char/Disc. Curr.

1A7 – AC Line Voltage

1A8 – AC Load Current

...

1R1 – Ant. De-Icer ON

1R2 – Heating OFF

1R3 – Cooling OFF

1R4 – Air Exhaust OFF

1R5 – Air Intake OFF

1R6 – Generator Start Standby

1R7 –

1R8 –

...

R4

Air Exhaust OFF

R5

Air Intake OFF

R6

Generator Start Standby

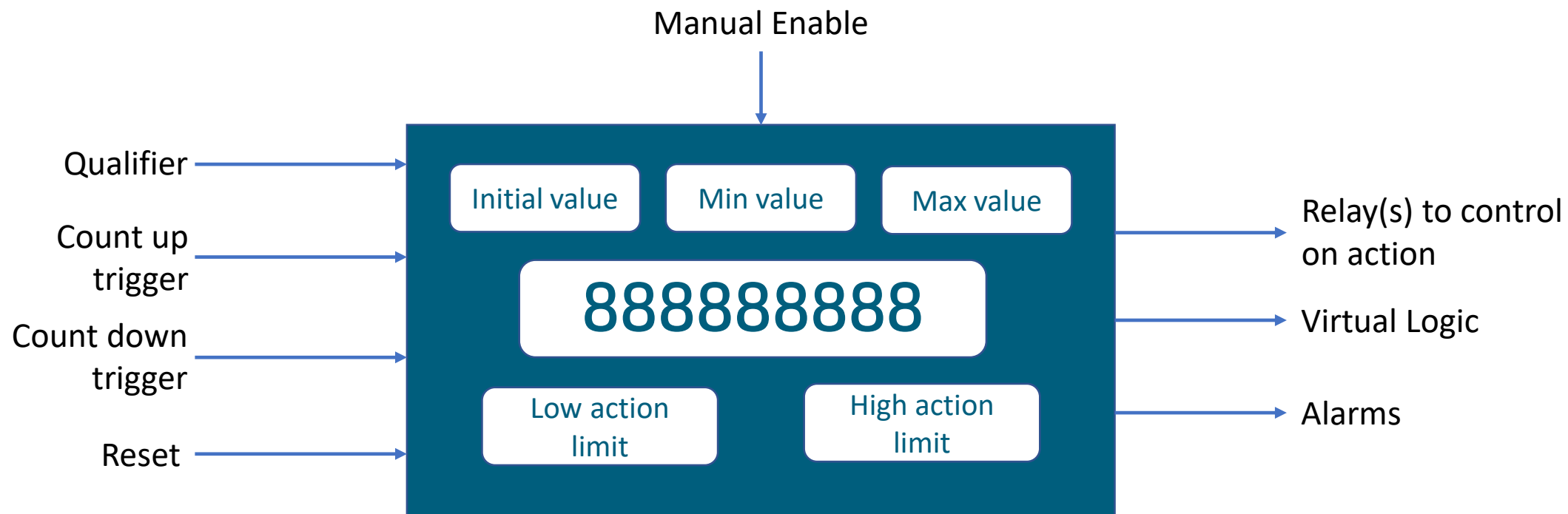
(Double-click)





# Up/Down Counter

Makes event count-tracking easier



Cortex320: 16 counters

Cortex360: 32 counters

# Up/Down Counter

UP / DOWN COUNTERS

Counter Configuration – 1CT1 ✕

ID : 1CT1 ▼

☒ Enable

Descriptions

Actions

Action Type : CMD ▼

Qualifier :  State ▼

Maximum Value : 10

Minimum Value : 2

Initial Value : 5

☒ System log

Count Up Trigger : 1D01

Count Down Trigger : 1D02

Reset Trigger : 1D03

Reset

**Controlled Output**

1

2

3

4

5

6

**Action Limits**

High Limit: (\* = don't care) : 9

Low Limit: (\* = don't care) : 3

**Signalling On**

☒ Alarm

☒ Return to Normal

↺
↻
↗
↘



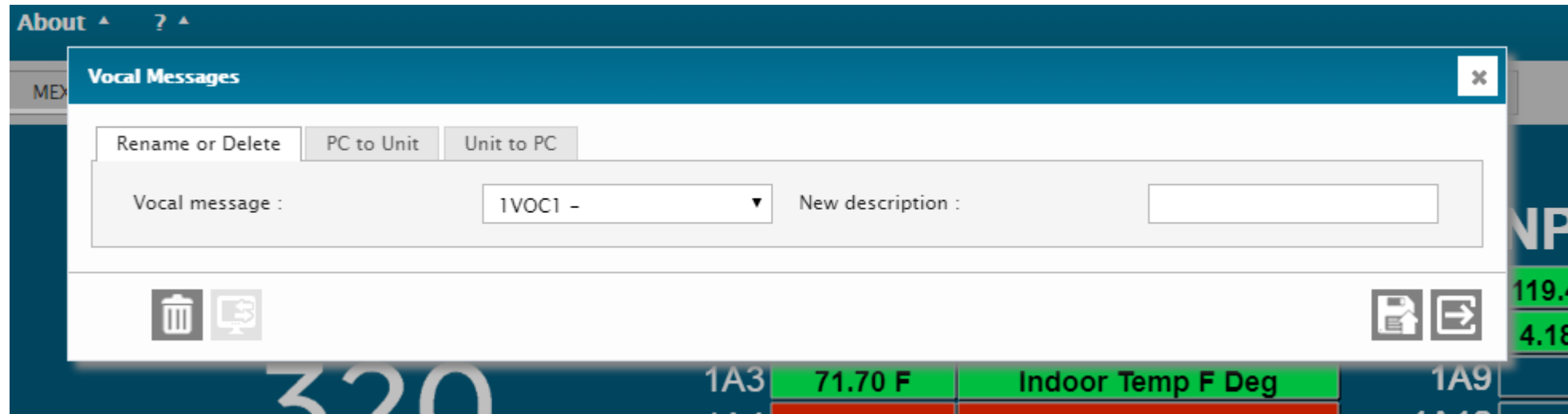
# Recordable Voice Messages

Customizable messages for your specific needs





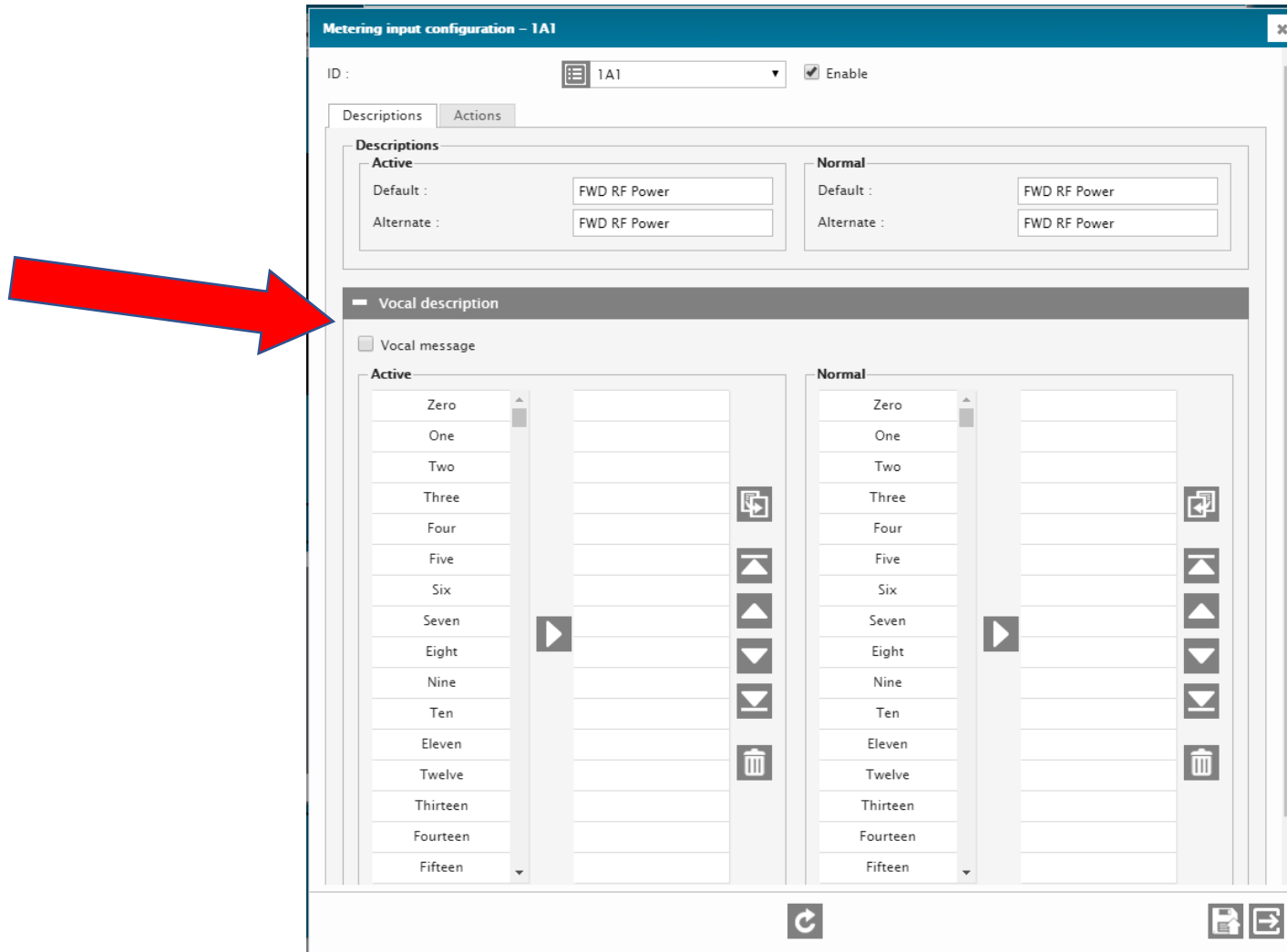
# Recordable Voice Messages



The required file format is WAV or MP3



# Recordable Voice Messages

The screenshot shows a software window titled "Metering input configuration - 1A1". At the top, there's a tabbed interface with "Descriptions" and "Actions". The "Descriptions" tab is active, showing "Active" and "Normal" sections with "Default" and "Alternate" fields, all containing "FWD RF Power". Below this is a collapsed "Vocal description" section, which is highlighted by a large red arrow. This section contains a "Vocal message" checkbox and two columns of numeric labels (Zero to Fifteen) for "Active" and "Normal" configurations. Each column has a list of labels, a play button, and a trash icon. At the bottom of the window are icons for refresh, save, and export.

# Recordable Voice Messages

**Metering input configuration – 1A1**

ID : 1A1 ☒ Enable

Descriptions Actions

**Descriptions**

**Active**

Default : FWD RF Power

Alternate : FWD RF Power

**Normal**

Default : FWD RF Power

Alternate : FWD RF Power

**Vocal description**




☒ Vocal message

**Active**

Message file : 1VOC1 -

**Normal**

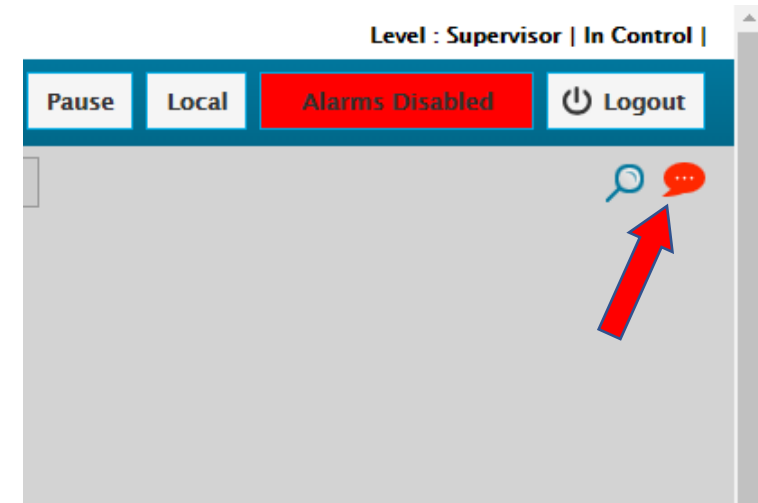
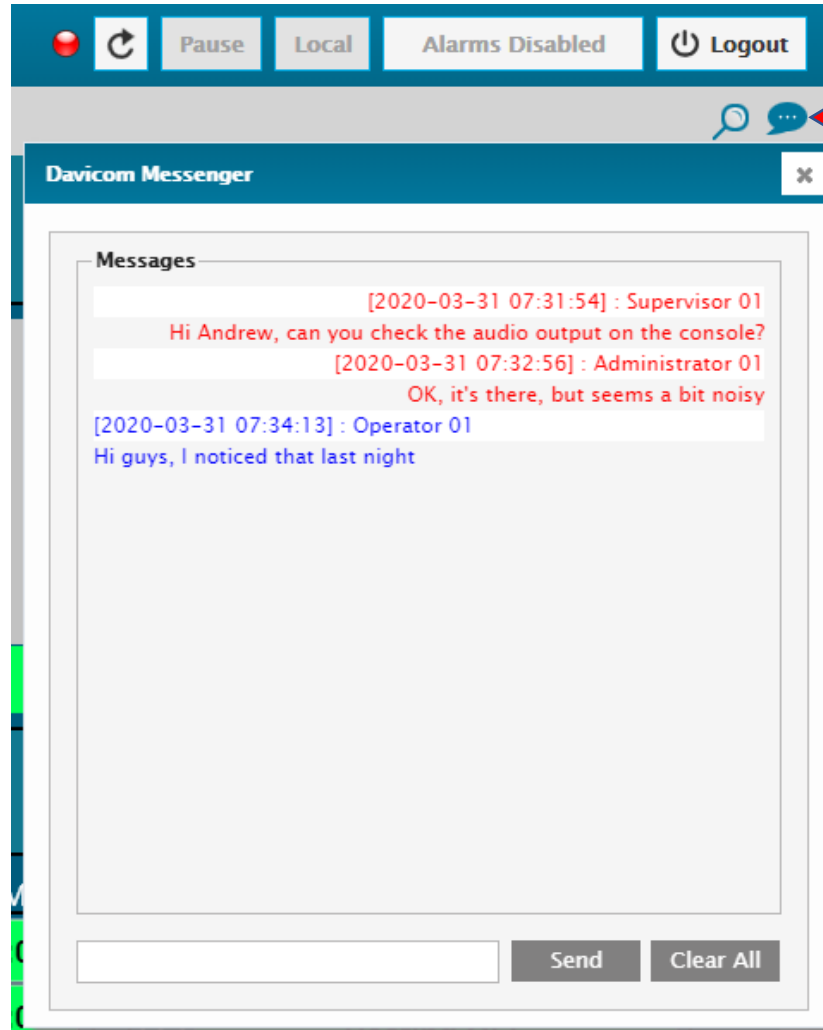
Message file : 1VOC2 -



# On-Line Chat Function

Gives you another option for site communications



# Input Signal Averaging

Reduces noise and false alarms

**Math function configuration - 1F11**

ID : 1F11 ☒ Enable

Descriptions Actions

Qualifier :  State

Normal Value : 0

Operator : **Average**

Measurement Unit :

☐ Display positive values only

**Automatic Limit Change**

Qualifier :

Multiplier : 1

**Delay**

Before Action (sec) : 0

Before Return to Normal (sec) : 0

**Operands**

A = Source ID  
B = Averaging Factor (2-20)  
(Smaller B → less smoothing but faster)

A : 1A01

B : 20

C :

D :

E :

**Signalling On**

☒ Alarm

☒ Return to Normal

**Level 1**

Action Type : CMD ☒ System log

Low Limit: (\* = don't care) : \* Hysteresis : 0

High Limit: (\* = don't care) : \* Hysteresis : 0

Controlled Output :

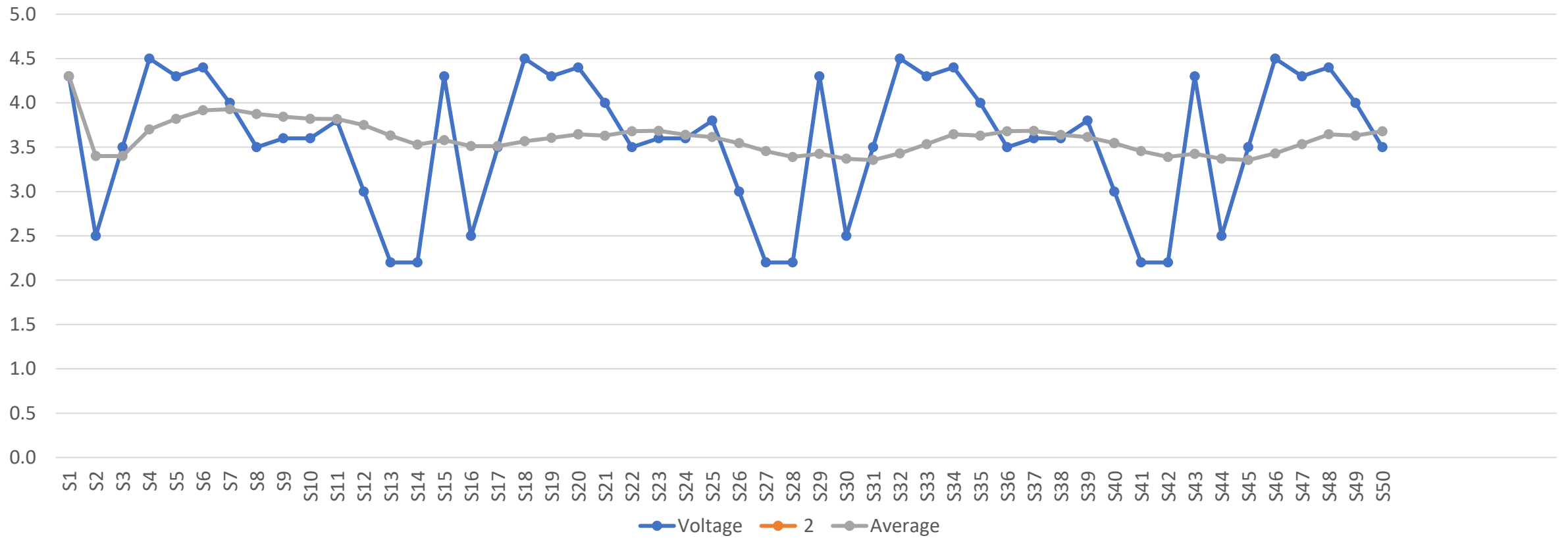
1  2  3  4  5  6

**Level 2**



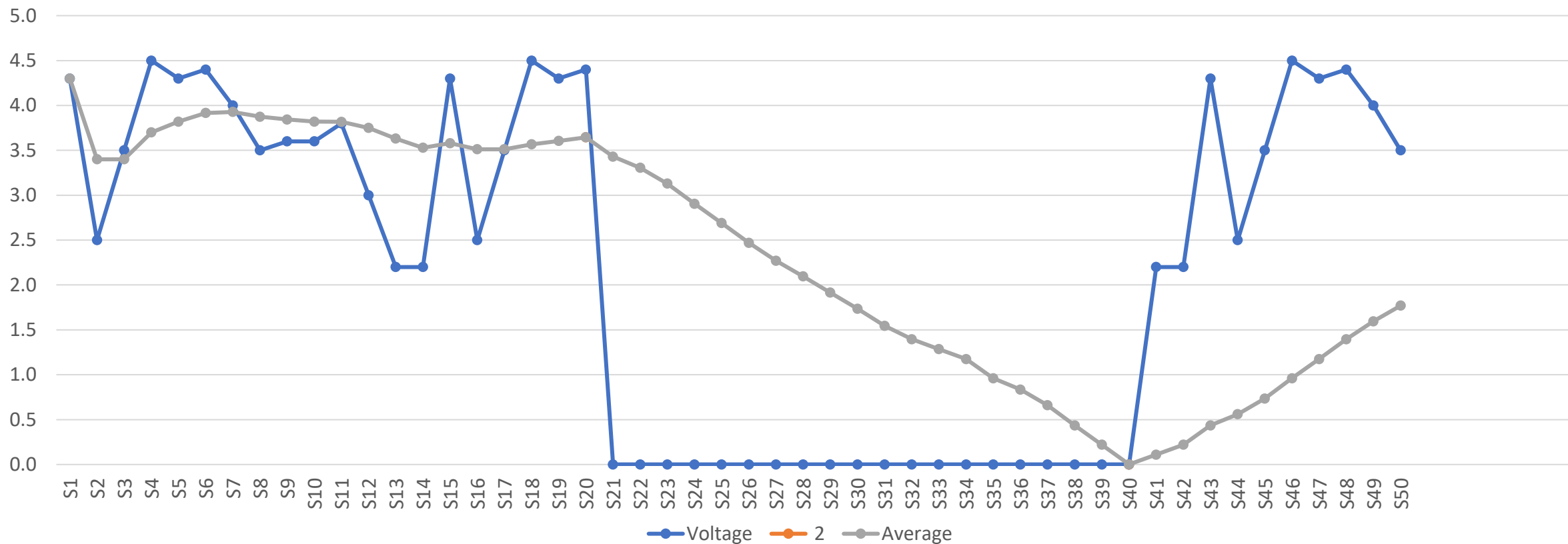
# Input Signal Averaging

B=20



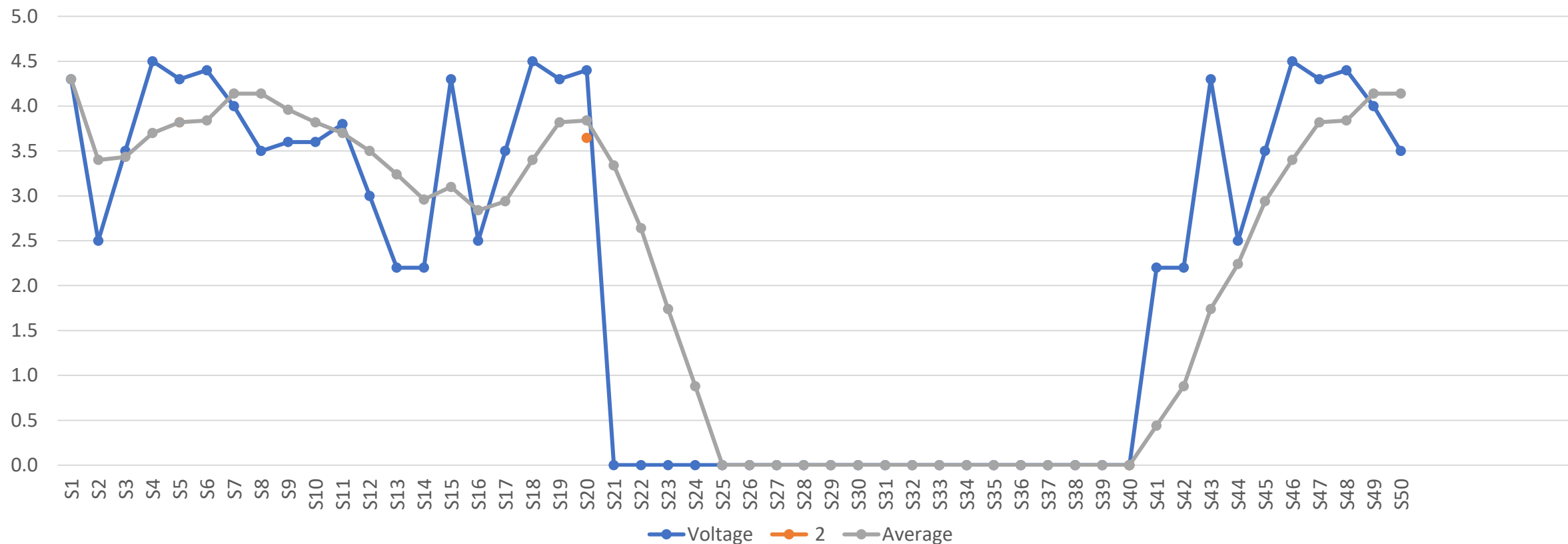
# Input Signal Averaging

B=20



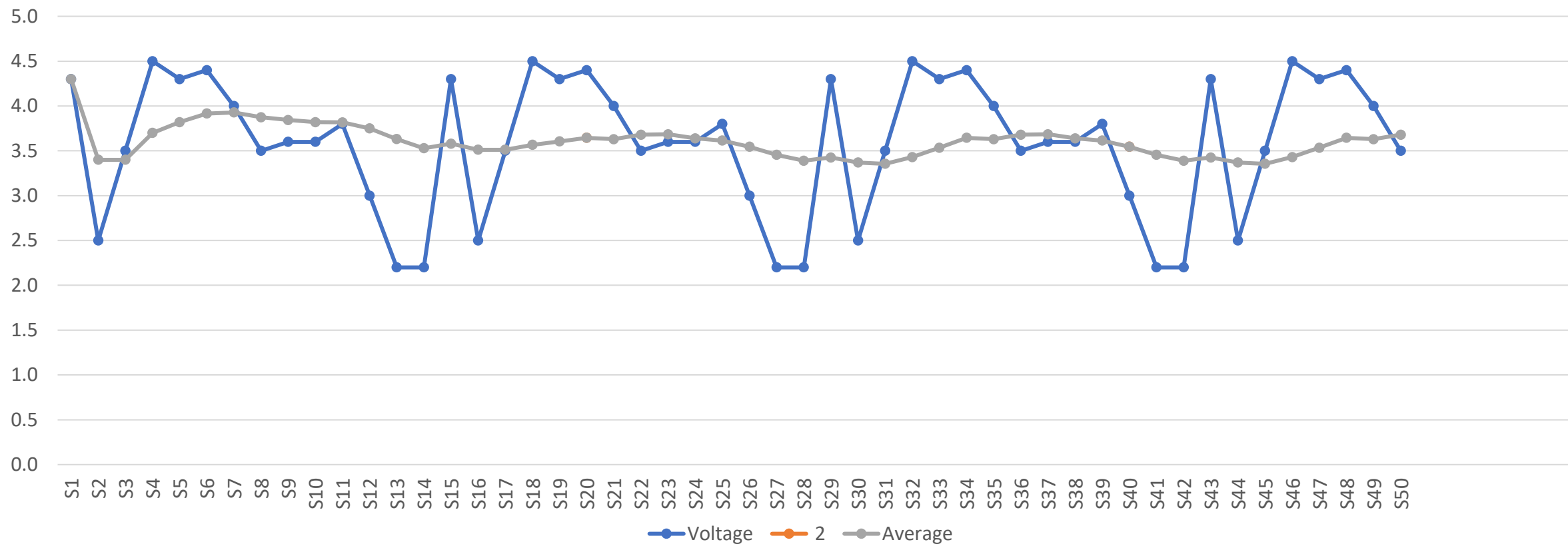
# Input Signal Averaging

B=5



# Input Signal Averaging

B=20

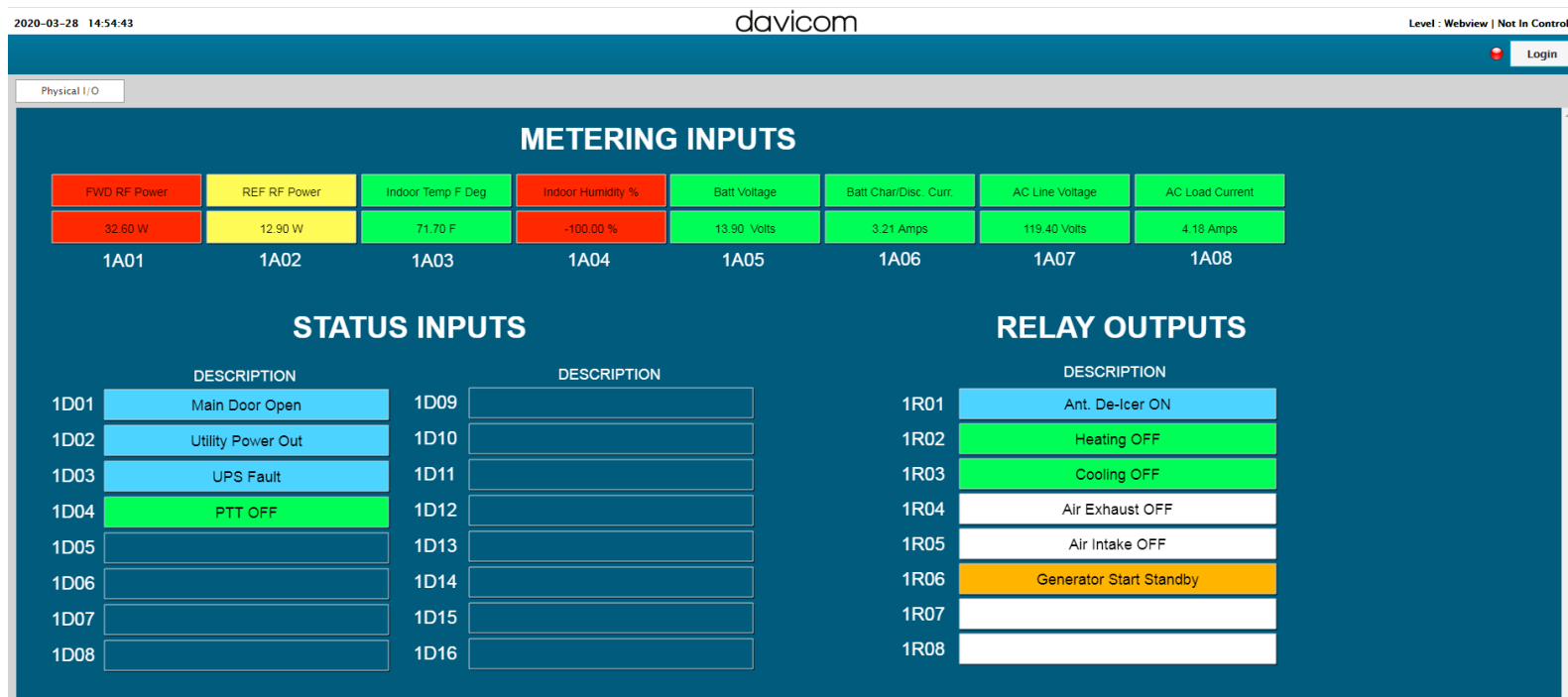




# HDMI User & Webview

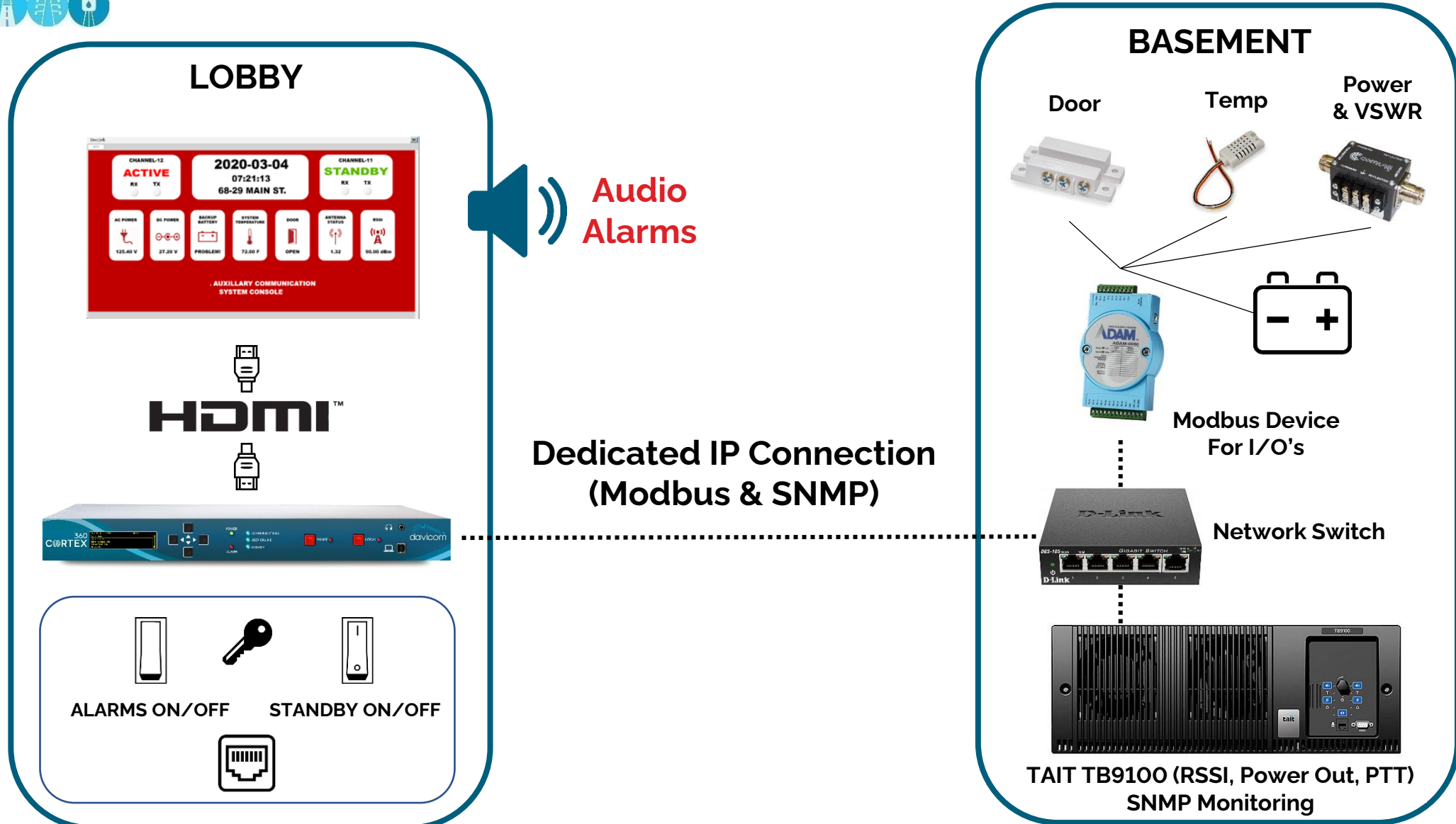
Special views for special requirements

- HDMI User is a special user and workspace that outputs only on the rear-panel HDMI connector. Applications are for local alarm display panels, on-site in-rack monitoring (small digital video screen) etc.
- WebView is essentially the same, but can be accessed via an address similar to <https://172.16.203.39/webview.html> without needing to log-in.



# Application Example

## HDMI Display for NFPA 1221 BDA Monitoring





# Direct SNMP MIB File Download

Easier access to this important information

**IP Configuration**

GeneralE-mailDynamic DNSSSL CertificatesWebFTPSNMP Agent

SNMP Mode :Send Traps & Read/Write

SNMP Port (Default 161) :161

Community (Read Only) :public

Community (Read/Write) :private

Cortex MIB file

Alarm Trap Parameters

Type :Trap V1

Port (Default 162) :162

Community :

+ SNMP V3 Agent

+ SNMP V3 Alarm Trap

Send Test Trap To :

Test Trap











# SNMP Devices




## Easier configuration of SNMP devices

### SNMP Devices




	ID	Description
<input type="checkbox"/>	1SD1	Inovonics 531
<input type="checkbox"/>	1SD2	APC Power Bar
<input type="checkbox"/>	1SD3	DV-MINI
<input type="checkbox"/>	1SD4	Web Relay
<input type="checkbox"/>	1SD5	Cortex 360
<input checked="" type="checkbox"/>	1SD6	Digital Temp Probe I/F
<input type="checkbox"/>	1SD7	
<input type="checkbox"/>	1SD8	
<input type="checkbox"/>	1SD9	
<input type="checkbox"/>	1SD10	
<input type="checkbox"/>	1SD11	

### SNMP Device Configuration – 1SD6



ID : 

 1SD6 ▼

#### Descriptions

Default :

Alternate :

#### Parameters

IP Address :

Port :

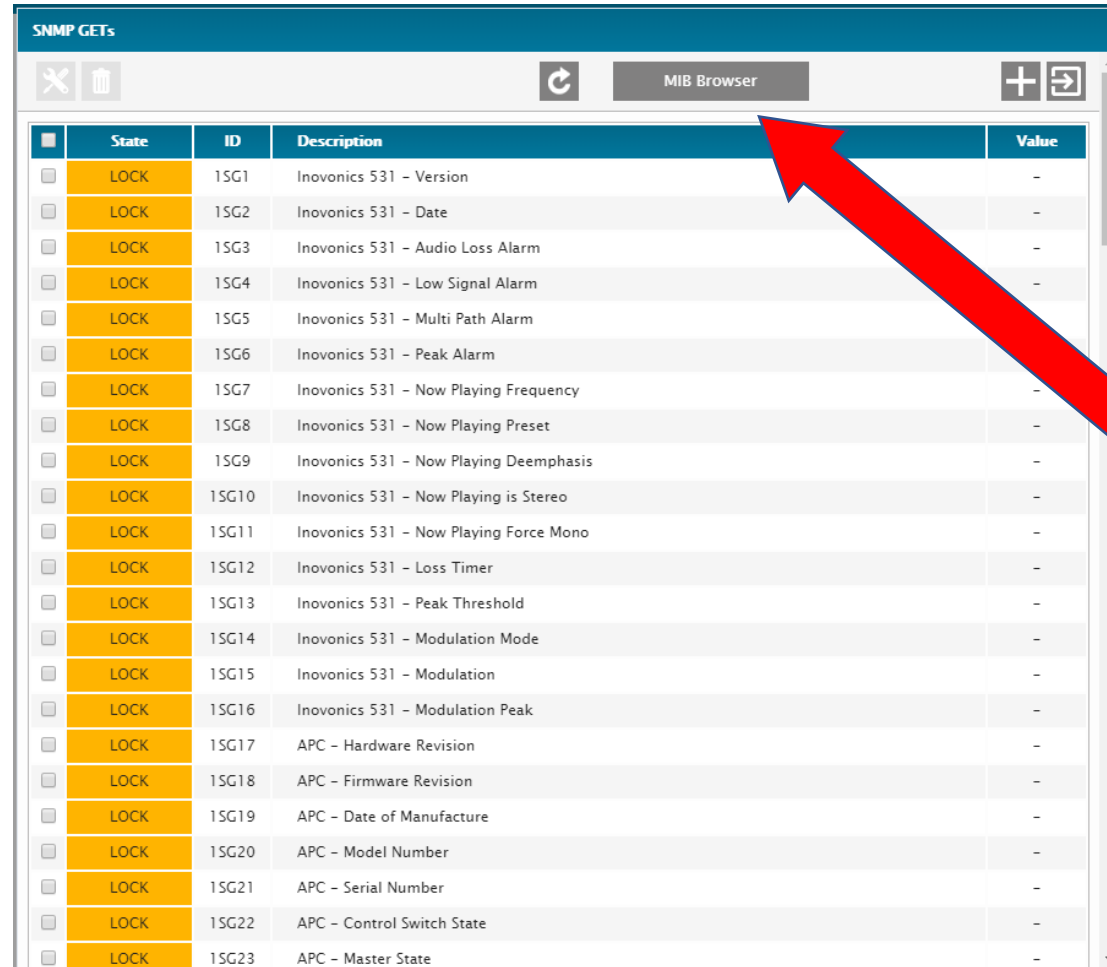
Version :  ▼

Community :



# SNMP MIB Browser *(\*alpha version firmware only\*)*

Quicker access to SNMP OID's for easier configuration



SNMP GET's				
	State	ID	Description	Value
<input type="checkbox"/>	LOCK	1SG1	Inovonics 531 - Version	-
<input type="checkbox"/>	LOCK	1SG2	Inovonics 531 - Date	-
<input type="checkbox"/>	LOCK	1SG3	Inovonics 531 - Audio Loss Alarm	-
<input type="checkbox"/>	LOCK	1SG4	Inovonics 531 - Low Signal Alarm	-
<input type="checkbox"/>	LOCK	1SG5	Inovonics 531 - Multi Path Alarm	-
<input type="checkbox"/>	LOCK	1SG6	Inovonics 531 - Peak Alarm	-
<input type="checkbox"/>	LOCK	1SG7	Inovonics 531 - Now Playing Frequency	-
<input type="checkbox"/>	LOCK	1SG8	Inovonics 531 - Now Playing Preset	-
<input type="checkbox"/>	LOCK	1SG9	Inovonics 531 - Now Playing Deemphasis	-
<input type="checkbox"/>	LOCK	1SG10	Inovonics 531 - Now Playing is Stereo	-
<input type="checkbox"/>	LOCK	1SG11	Inovonics 531 - Now Playing Force Mono	-
<input type="checkbox"/>	LOCK	1SG12	Inovonics 531 - Loss Timer	-
<input type="checkbox"/>	LOCK	1SG13	Inovonics 531 - Peak Threshold	-
<input type="checkbox"/>	LOCK	1SG14	Inovonics 531 - Modulation Mode	-
<input type="checkbox"/>	LOCK	1SG15	Inovonics 531 - Modulation	-
<input type="checkbox"/>	LOCK	1SG16	Inovonics 531 - Modulation Peak	-
<input type="checkbox"/>	LOCK	1SG17	APC - Hardware Revision	-
<input type="checkbox"/>	LOCK	1SG18	APC - Firmware Revision	-
<input type="checkbox"/>	LOCK	1SG19	APC - Date of Manufacture	-
<input type="checkbox"/>	LOCK	1SG20	APC - Model Number	-
<input type="checkbox"/>	LOCK	1SG21	APC - Serial Number	-
<input type="checkbox"/>	LOCK	1SG22	APC - Control Switch State	-
<input type="checkbox"/>	LOCK	1SG23	APC - Master State	-

# SNMP MIB Browser

SNMP GET – MIB Browser

MIB file : 1MIB1 – Open

Current MIB File : 1MIB1 –

- [+] modbus-slave1-mibs
- [+] modbus-slave32-mibs
- [+] statecounters-mibs
- [+] quickstate-mibs
- [+] alarms-mibs
- [+] communications-mibs
- [-] dtpi-mibs
  - [+] dtpilp
  - [-] dtpiTemperatureTable
  - [-] dtpiTemperature
    - dtpiTemperatureIndex
    - dtpiTemperatureValue
  - [-] dtpilInfo
    - dtpilInfoProduceType
    - dtpilInfoHWVersion**
    - dtpilInfoFWVersion
    - dtpilInfoSerialNumber
    - dtpilInfoInit

OID : 1.3.6.1.4.1.14665.1.200.3.2

Name : dtpilInfoHWVersion

Value Type : OctetString

Descriptions : Unit's hardware version.

SNMP Device : 1SD1 – Inovonics 531

Index (OID): 0 +

SNMP Device	OID	Name	Descriptions
None	1.3.6.1.4.1.1466...	dtpiTemperatureV...	
1SD1 – Inovonics ...	1.3.6.1.4.1.1466...	dtpiTemperatureV...	
1SD1 – Inovonics ...	1.3.6.1.4.1.1466...	dtpiTemperatureV...	
1SD1 – Inovonics ...	1.3.6.1.4.1.1466...	dtpilInfoHWVersion	

SNMP GET – MIB Browser

MIB file : 1 MIB1 –

Open

Current MIB File : 1 MIB1 –

[+] quickstate-mibs

[+] alarms-mibs

[+] communications-mibs

[-] dtpi-mibs

[+] dtpiilp

[-] dtpiTemperatureTable

[-] dtpiTemperature

dtpiTemperatureIndex

dtpiTemperatureValue

[-] dtpiInfo

dtpiInfoProduceType

dtpiInfoHWVersion

dtpiInfoFWVersion

dtpiInfoSerialNumber

dtpiInfoUnits

dtpiInfoReadOnly

[+] dtpiCommand

OID : 1.3.6.1.4.1.14665.1.200.3.3

Name : dtpiInfoFWVersion

Value Type : OctetString

Descriptions : Unit's firmware version.

SNMP Device : 1SD6 – Digital Temp Prob

Index (OID): 0

+

SNMP Device	OID	Name	Descriptions
1SD6 – Digital Te	1.3.6.1.4.1.1466	dtpiTemperatureV	Probe 1 Temperature
1SD6 – Digital Te	1.3.6.1.4.1.1466	dtpiInfoFWVersion	Firmware version

SNMP GETs

↺

↻

MIB Browser

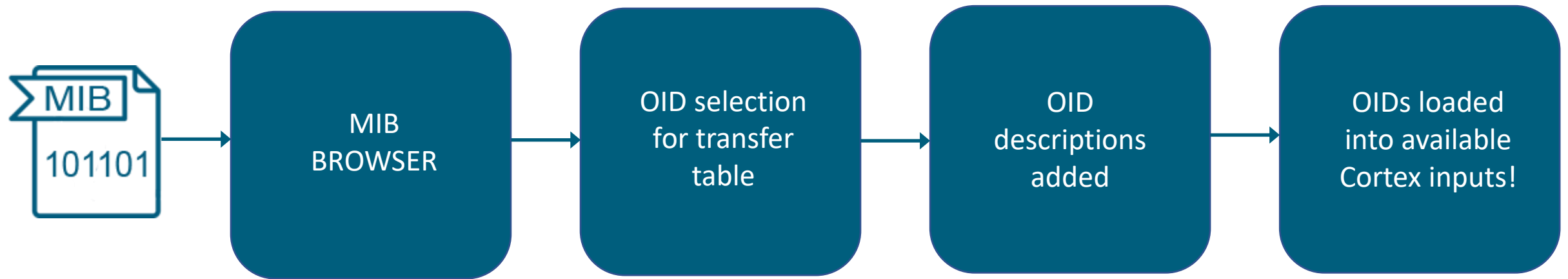
+

↗

	State	ID	Description	Value
<input type="checkbox"/>	NORMAL	1SG1	DTPI	24
<input type="checkbox"/>	LOCK	1SG2		-
<input type="checkbox"/>	NORMAL	1SG3		24
<input type="checkbox"/>	NORMAL	1SG4		0
<input type="checkbox"/>	NORMAL	1SG5		0
<input type="checkbox"/>	NORMAL	1SG6	Probe 1 Temperature	0
<input type="checkbox"/>	NORMAL	1SG7	Firmware version	0
<input type="checkbox"/>	LOCK	1SG8	Inovonics 531 – Now Playing Preset	-
<input type="checkbox"/>	LOCK	1SG9	Inovonics 531 – Now Playing Deemphasis	-
<input type="checkbox"/>	LOCK	1SG10	Inovonics 531 – Now Playing is Stereo	-
<input type="checkbox"/>	LOCK	1SG11	Inovonics 531 – Now Playing Force Mono	-
<input type="checkbox"/>	LOCK	1SG12	Inovonics 531 – Loss Timer	-
<input type="checkbox"/>	LOCK	1SG13	Inovonics 531 – Peak Threshold	-
<input type="checkbox"/>	LOCK	1SG14	Inovonics 531 – Modulation Mode	-
<input type="checkbox"/>	LOCK	1SG15	Inovonics 531 – Modulation	-
<input type="checkbox"/>	LOCK	1SG16	Inovonics 531 – Modulation Peak	-
<input type="checkbox"/>	LOCK	1SG17	APC – Hardware Revision	-
<input type="checkbox"/>	LOCK	1SG18	APC – Firmware Revision	-
<input type="checkbox"/>	LOCK	1SG19	APC – Date of Manufacture	-
<input type="checkbox"/>	LOCK	1SG20	APC – Model Number	-
<input type="checkbox"/>	LOCK	1SG21	APC – Serial Number	-
<input type="checkbox"/>	LOCK	1SG22	APC – Control Switch State	-
<input type="checkbox"/>	LOCK	1SG23	APC – Master State	-

# SNMP MIB Browser

## Usage





# Main + Backup Controller

## For Nautel Transmitters

- Dedicated configuration and GUI for Nautel Main & Backup (Aux) control.
- **Based on Davicom's Cortex 320** product, the M&A controller is a plug and play solution for main and backup control. In addition, the system provides **monitoring and alarming capabilities for both transmitters.**
- The Graphical User Interface provides **instant visibility of system status and switchover progress** while allowing safe manual control, if required.
- **Switchover can occur in as little as 2 seconds**, if the interlocks and RF switch respond adequately.
- Interfacing to the transmitters and switches is achieved via metering and status inputs as well as relay outputs.
- **SNMP control and monitoring is also optionally available** for transmitters having such capabilities.



# Main + Backup Controller For Nautel Transmitters







# Main + Backup Controller

## For Nautel Transmitters





# Main + Backup Controller

## For Nautel Transmitters

Sequence steps
<input type="checkbox"/> Problem detected in Main TX (low RF power, no response to ping, no audio)
<input type="checkbox"/> Shut-down main TX
<input type="checkbox"/> Check to ensure both TX's are off
<input type="checkbox"/> Switch Main TX to RF load and Backup TX to antenna
<input type="checkbox"/> Validate position of Baseball switch
<input type="checkbox"/> Turn Backup TX RF power ON
<input type="checkbox"/> Keep checking rest of conditions in real-time and wait for manual Return To Normal command.
Features
<ul style="list-style-type: none"><li>• Automatic, Manual, Maintenance &amp; Test modes</li><li>• Continuous health monitoring of both main and backup transmitters</li><li>• Backup TX can be up and on-the-air within 2 seconds</li><li>• Complete activity logging and transmission.</li><li>• SNMP compatible for newer transmitters</li><li>• Switching diagnostics to quickly help identify any problems</li><li>• Remote access over dial-up, IP network or low-speed serial links</li><li>• Simple Graphical User Interface</li></ul>
Equipment Required
✓ Davicom Cortex 320 unit with Main & Aux system configuration pre-loaded
✓ Interconnection cables and accessories
✓ Optional on-site dedicated HDMI video screen for GUI display
✓ Optional Network switch if SNMP capability is required



*And now,  
a word from our sponsor*

*See Louis-Charles' in-depth coverage of SNMP & Modbus during his  
webinar, tomorrow (Wednesday April 22<sup>nd</sup>) at 11:00 AM EDT*





# New DEX Support Portal

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## Welcome to DEX!

Davicom Exchange Support Portal



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Downloads

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# New DEX Support Portal

Let's connect and explore!

<https://dex.davicom.com>



Thank you for attending!

*Questions?*

*Please complete the survey to be eligible for the prize drawing*

Stay safe and healthy

*the Davicom team*