

HEALTH PLUS

MONITORING, MEASUREMENTS, EVENTS & ALARMS

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**This application note refers to the version of ArmoniaPlus 1.3.1



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HEALTHPLUS OVERVIEW

HealthPlus, replaces the software's previous 'Events' tab, giving sound engineers and integrators a streamlined monitoring environment of all elements in a given sound system with improved communication, control and reporting ensuring even better performance than ever before. HealthPlus updated display gives engineers a complete suite of system diagnostic controls to monitor the health and effectiveness of any sound system in real-time, it can be used with a touring PA or in fixed installations like cinemas, airports, theme parks, etc. In addition to input monitoring for power amplifiers, speakers, and other connected devices, the system is also capable of measuring system health indicators such as headroom, temperature, voltage, and impedance to ensure optimal performance of all elements and will automatically alert users in case of malfunctions or element failures. Engineers can also now utilize the Event History function to track uploaded programs, user logins, and diagnose any long-term system issues. Finally, HealthPlus has improved reporting, giving users the ability to track multiple indicators at once over an hour time log period for more detailed system monitoring.

MONITORING

INPUTS

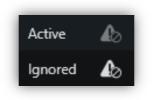
In this section it is possible to monitor the inputs channels, their quantity in total and are divided into Active, Passive and Missing categories. (Figure 1)

ACTIVE

These are the inputs that are playing, independent of the format. We can monitor the total number of input channels for:

- Dante / AES67
- AES3 (Digital)
- Analog

Furthermore, in status there is the possibility to ignore one or more channels, so that HealthPlus does not always signal an alarm. e.g. when you mute the mixer master or between tracks using a media player.





PASSIVE

These are the signals present in the backup strategy, ready to become active as needed. e.g. For input redundancy, when we lose a digital input, and have an analog signal in the backup strategy.

MISSING

Signals lost since you saved the reference.



Figure 1- Inputs

SAVE & CLEAR REFERENCE

With HealthPlus it is possible to monitor the amount of input signals and you can also save a reference so that ArmoníaPlus sends you an alarm when this reference changes. By clicking on save reference, (4/4), which would be the quantity of channels present / the quantity of reference channels.

E.g. when you lose one or more input channels. A recommended time to activate this reference is at the end of a sound check or at the end of a installation. (Figure 2)



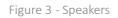
AmoriaPlus	1.3.1 nov. 242		_		Workspace	0.0000000000000000000000000000000000000	Operator View Reporting	Health+	X8	•	_	HealthPlus.paw3	2	- 8
				INPUT									Save Clear Reference Reference	
EVENT HIS		ACTIVE EVE			AC	TIVE		i	ASSIVE			MISSING		
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Alarms	16	Alarms												
Medium Low	49 202	Medium	0						2/2			((0		
						/4			2/2					
						_								
						7 4/4			567 0/0			Dante/AES67		
INPUT	.)	SPEAKEF			E23A golanA	- 0/0		AES3 Analog	- 0/0			AES3 -		
đ	6/6	00												
	4/4			INPUT	DETAILS									
Passive Missing	2/2 0/0	Headroom Impedance	0											
MISSING	0/0	Impedance												
				Active	Amplifier 1602				Dante Ch 2	10.19 dBu 1				
				Active	Amplifier 1602				Dante Ch 1 Analog 2	10.43 dBu 👘				
				Passive	Amplifier X8				Analog 2	9.56 dBu				
AMPLIFIE		MEASUREM	ENTS	Active	Amplifier X8				Dante Ch 2	10.41 dBu th				
-	8	atter A		Active	Amplifier X8				Dante Ch 1	10.62 dBu 1				
Ready		Inputs												
Temperature	10%	Speakers												
FW Updated		Amp Device												
	MAIN													
	MAID	•5												
9	المروما	2000	220											
Three-Phase -														
Single-Phase	27781/													
oungre ratabe	1936	16.01	16,26											
													6	F /3 0

Figure 2 - Save and clear reference

SPEAKERS

In this section it is possible to monitor the status of the speakers, which amplifier they are connected too, which output they are connected too, ways description, overall output gain, headroom and impedance of the speaker. (Figure 3)

EVENT HISTORY 267 Alarms 16 Medium 49	ACTIVE EVENTS 0 Alarms 0	SPEAKERS	ACTIVE	HEADROOM		IMPEDANCE		
267 Alarms 16	▲ 0		ACTIVE	HEADROOM		IMPEDANCE		
Alarms 16			-					
	Alarms 0							
mealum 49	Medium 0							
Low 202	Low 0		2			1		
							/	
			With Signal — 2	Positive Headroom — 6		Within limits -		
	SPEAKERS		No Signal — 0 Muted — 4	Limiting — 0 Heavy Limit — 0		Inactive — Feult —		
6	OO 6							
Active 4	Active 2	SPEAKERS DE	TAILS					
Passive 2	Headroom 0							
Missing 0	Impedance 0							
		Muted - Inactive		Amplifier 1502		0 dB 48 dB		
		Muted - Inactive		Amplifier 1502		0 dB 48 dB		
			Top	Amplifier X8		0 dB 23.4 dB	비해 930	
AMPLIFIERS	MEASUREMENTS	Inactive OK	Top	Amplifier X8	4 HF 1 S8	0 dB 21.1 dB	ाल सिंह सील 11 क	
8	+ + 9	OK Muted - Inactive	5ab (3)	Amplifier X8		0 dB 27.1 dB 0 dB 48 dB	सील Hiz	
Ready 3	Inputs 2	Muted - Inactive	40	Amplifier <u>Quattrocanali 4804</u> Amplifier <u>Quattrocanali 4804</u>		0 ds 48 d8		
Temperature 10%	Speakers 2	Muteo - inactive	191	Ampliner Quatrix anal 460.4		U GE 46 BB		



ACTIVE

In active, we can monitor the speaker with signal, no signal (without signal), and Muted.

HEADROOM

In headroom, we could monitor:

- **Positive Headroom**: This means that you still have headroom to increase the volume in case you need it.
- Limiting: You have reached the limit of the loudspeaker! We recommend do not increase the volume more, if you need more SPL increase the number of speakers or select a more powerful loudspeaker.
- **Heavy Limit**: It means that the channels are limiting more than 12 dB of gain reduction. (*This could be because you have an under-sized system, increase the number of loudspeakers or select a more powerful loudspeaker.*)

IMPEDANCE

In this section it is possible to monitor the speakers working within the nominal threshold range, which are inactive and the loudspeakers in fault.

- Within the range: It is based on the impedance entered in the speaker preset information (.spk3). If no value is entered, the result is always within the nominal range.
- **Inactive**: When the amplifier is not reading the impedance, it will show the last measurement made.
- Fault: When the measurement is out of the established nominal threshold range.

E.g. with an 8 Ω speaker, the upper limit is 4x (32 Ω) and the lower limit is 1/2 (4 Ω), so above 32 Ω and below 4 Ω , HealthPlus will send an alarm Fault.

The **Hi-Z** description appears in the X and Ottocanali Series above 400 Ω , and the T Series, Duecanali and Quattrocanali above 100 Ω .

AMPLIFIERS

In this section it is possible to monitor the status of the amplifiers by name, model, serial number, temperature and firmware. (Figure 4)

READY

In the ready category, we can monitor amplifiers **online**, **stand-by** and **offline**.

TEMPERATURE

Each amplifier model has different temperature ranges where they can work, also different points inside the amplifier where the temperature is taken to be monitored, and to simplify readings to the end customer we have opted for a new way of viewing this in percentage.



- 0% 100%: Is an optimal range for working.
- **100% 150%**: Limits the outputs to reduce heat and help cooling.
- > **150%**: The amplifier could turn off to protect itself.

FIRMWARE

In Firmware we can monitor the total number of amplifiers:

- **Updated**: That have the latest firmware available.
- **Outdated**: amplifiers that have a more recent firmware available for upgrade.
- Not supported

		AMPLIFIERS			
EVENT HISTORY	ACTIVE EVENTS	READY	TEMPERATURE	FIRMWARE	
Alarms 16 Medium 49 Low 202	Alarms 0 Medium 0 Low 0		10%		
		Online — 3 Standay — 0 Office — 0	0-100% — 3 100-150% — 0 2150% — 0	Updated — 8 Outdated — 0 Not supported — 0	
INPUTS 6/5	SPEAKERS 6	Unitine V		noi suggorato V	
Active 4/4		AMPLIFIERS DETAILS			
Passive 2/2	Headroom 0				
Missing 0/0	Impedance 0				
		Discovered n/a	T302 (00476349) n/a		
		Discovered n/a	2CH-1604D (00300103) n/a		
		Discovered n/a	T604 (00477633) n/a	1.8.7.16	
AMPLIFIERS	MEASUREMENTS	Discovered n/a	T304 (00477731) n/a		
8	111	Ok <u>1602</u> Ok X8		1.8.7.16	
Ready 3	Inputs 2	Ok <u>28</u> Discovered n/a	8CH-12K4D (00090295) n/a	18.7.16	
Temperature 10%	Speakers 2	Ok Quattrocanali 4904		187.16	
FW Updated 8	Amp Device 1				
MAI	NS 244				
لىرى 🗒					
مري ک					

Figure 4 - Amplifiers

Status

The status of the amplifier in the 'Amplifiers' tab can be:

- Ok
- Virtual
- **Discovered**: An amplifier seen in discovery, but which has not been added to the workspace.
- Stand-by
- **Outdated**: Amplifiers that have a more recent firmware available for upgrade.
- Not Supported
- **OverTemp**: >150%



MAINS

In this section it is possible to monitor the mains of the amplifiers. (Figure 5)

- Status
- **Rack Name**: The rack where they are positioned on the workspace.
- Amp device: Their name.
- **Amp model (Serial)**: The amplifier model and serial number.
- Phase
- Voltage
- Current
- Power



Figure 5 - Mains

Status

The status of the amplifier in 'Mains' tab can be:

- Ok
- Virtual
- **Offline**: when we lose the connection with an amplifier or when we turn it off.
- Warning (Phase): when there is a phase loss.
- **Warning** (Voltage): when an amplifier deviates from the average.



MEASUREMENTS

In HealthPlus we can measure various data points of a system. These measurements can be input channels, data related to the speakers and measurements that concern the mains.

To select a measurement, click on the measurement icon.

The columns present in measurements are:

- Remove and Show
- **Color**: Allows you to change the color of the measurement.
- Category, Name and Parameter
- Max and Min: it indicates the maximum and minimum value of that particular measurement.
- **Cursor**: It shows you the value of where the mouse is positioned.

INPUTS

We can measure the input level in all formats, Dante / AES67, AES3 (Digital) and Analog. (Figure 6)



Figure 6 - Measurements Inputs: Dante and Analog in Backup Strategy.

OUTPUTS

We can measure the Headroom and Impedance of the speakers. (Figure 7)





Figure 7 - Measurements Speakers: Headroom and Impedance.

AMPLIFIERS

We can measure the Temperature.

MAINS

We can measure: Phases, Voltage, Current and Power. (Figure 8)



Figure 8 - Measurements: Current and Power.



HIDE AND REMOVE ALL

HealthPlus can have a maximum of 10 measurements enabled, and display a maximum of 2 different ranges at a time, it's possible to hide the measurements and delete all.

The saved measurements refer to the last hour of use.

EVENTS AND ALARMS

EVENT HISTORY

In Event History, we can see the date of the event, type of event: Device or Software, priority: low, medium or alarm, and the description of the event. We can also export them to a file (.xlsx), and remove them all. (Figure 9)

ArmoniaPius 1.3.1 rev. 242		Work	space System		Health+ X8 ►	HealthPlus.paw3
				Dashboard Reporting		
		EVENT HISTORY				\boxtimes
EVENT HISTORY	ACTIVE EVENTS					
319	Δ ο					
Alarms 42	Alarms 0 Medium 0	29/01/2020 16:35:30	Device		MULTIEVENT: Inputs Input Dante Ch 2 recovered IN: 2	
Medium 50 Low 227	Low 0				3 Input Dante Ch 1 recovered IN: 1	
1017 221		29/01/2020 16:35:07			▼ MULTEVENT: Inputs	
					Input Dante Ch 1 missing IN: 1 Input Dante Ch 2 missing IN: 2	
		29/01/2020 16:34:51	Device		▼ MULTIEVENT: Inputs	
					Input Analog 2 recovered IN: 2 Input Dante Ch 1 recovered IN: 1	
INPUTS	SPEAKERS				Input Dante Ch 2 recovered IN: 2	
1 4	OO 6				Input Dante Ch 2 recovered IN: 2	
Active 2	Active 0				Input Dante Ch 1 recovered IN: 1	
Passive 2	Headroom 0	29/01/2020 16:34:11	Device	Alarm	MULTIEVENT: Inputs Input: Dante Ch 1 missing IN: 1	
Missing 0	Impedance 0				Input Analog 1 missing IN: 1	
					Input Dante Ch 2 missing IN: 2	
					Issue Input Dante Ch 1 missing IN: 1	
		29/01/2020 16:33:56	Device		MULTIEVENT: Inputs	
AMPLIFIERS	MEASUREMENTS	29/01/2020 16:33:46			MULTIEVENT: Inputs	
Strates and second second		29/01/2020 16:33:26	Device	Alarm	MULTIEVENT: Inputs	
8	1 1 9				MULTIEVENT: Inputs	
Ready 3	Inputs 2	29/01/2020 16:32:15		Alarm	MULTIEVENT: Inputs	
Temperature 10%	Speakers 2	29/01/2020 16:31:21			Qualifying and State Communication link online	
FW Updated 8	Amp Device 1	29/01/2020 16:30:20	Device	Medium	Quattrocardi 4004 Communication link offline	
		29/01/2020 16:28:56	Device		MULTIEVENT: Inputs	
		29/01/2020 16:28:51	Device	Alarm	MULTIEVENT: Inputs	
MAI	INS 244	29/01/2020 16:28:46		Alarm	MULTIEVENT: Inputs	
"	many and provide 222	29/01/2020 16:28:31	Device		MULTIEVENT: Inputs	
میں		29/01/2020 16:27:11		Alarm	MULTIEVENT: Inputs	
Three-Phase — 🗤 🗤		29/01/2020 16:00:55	Device		Quattracanal 4804 Reset called on device Quattrocanali 4804	
Single-Phase 227V	209 16:16 10:41	29/01/2020 15:50:00	Device		Second Communication link online	
						ត្រៃ /3

Figure 9 - Event History

ACTIVE EVENTS

In active events we can see the events and alarms that are happening in the system. Also, we can see the example of a loss in audio channels, we see exactly how many channels were lost, which input format, amplifier and channel, so that we can be precise in solving the problem. (Figure 10)

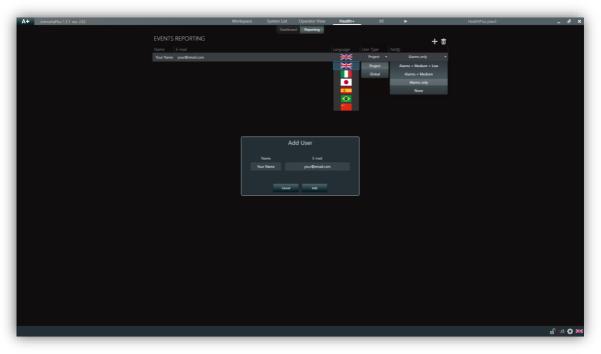


ArmoniaPlus 1.3.1						orkspace System List Deshboe	Operator View	Health+	X8	•	12	ealthPlus.paw3	F 7 5 7	- 6
			100.00	INPUT									LJ LA Save Clear Reference Reference	
EVENT HISTOR	95	ACTIVE EVE	2			ACTIVE		P	ASSIVE			MISSING		
	30	Alarms												
	50	Medium											N	
	15					4/4			0/2))			2		
												\sim		
						Dante/AES67 4/4			87 0/0			Dante/AES67 0		
INPUTS		SPEAKER	5			010 - 023A Analog - 020		AES3 Analog	- 0/0			AES3 0 Analog 2		
-	Ja 🖸		6											
	//4	Active	0	INPUT I										
		Headroom		Stotus										
	1/0	Impedance												
						mplifier <u>1602</u>			Dante Ch 2	-59.1 dBu t[h]				
				Active	AD A	mplifier <u>1602</u>			Dante Ch 1	-60 dBu 1111				
				Missing										
AMPLIFIERS		MEASUREME		Missing		mplifier <u>X3</u>		1	Analog 1		(last seen 432/14 pm)			
		<u>h</u> i	9	Active		mplifier <u>X8</u>			Dante Ch 2	-58.62 dBu 1/11				
				Active		mplifier <u>X8</u>			Dante Ch 1	-60 dBu 111				
	3 0%	Inputs Speakers												
		speakers ump Device												
	MAINS		244											
9	~~~~													
3	- And Comm		~~~ ²⁰											
Three-Phase — 🗤 🗤														
Single-Phase — 228	1542	16.07	193											
														13 🕻

Figure 10 - Active Events

EVENTS REPORTING

In events reporting you can enable various Users to receive an email report sent by HealthPlus every hour. You can choose the language in which to receive the report, whether to receive the events of a specific project, or global of any project loaded, and also choose whether to receive only the alarms, the alarms + medium events, alarms + medium and low events. (Figure 11)







For HealthPlus to work it requires a computer with ArmoníaPlus running and a active internet connection.

Below you can see an example of HealthPlus email reporting. (Figure 12)

elete Reply Reply Fo	orward 📴 Attac		Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: second contraction Image: sec
Armonia+ Report	:		
PT	oft Team 17 September 20 ails)19 at 11:49	
USER:			
PROJECT:			
PROJECT: REPORT:	Type	Priority	Fuent
PROJECT: REPORT: Date	Type	Priority	Event
PROJECT: REPORT: Date 2019/09/17 09:47	Type Software Software	Priority Alarm Alarm	ArmoniaPlus: Input Dante Ch 2 missing IN: 2
PROJECT: REPORT: 2019/09/17 09:47 2019/09/17 09:47	Software	Alarm	
PROJECT: REPORT: Date 2019/09/17 09:47 2019/09/17 09:47 2019/09/17 09:47	Software Software	Alarm Alarm	ArmoniaPlus: Input Dante Ch 2 missing IN: 2 ArmoniaPlus: Input Dante Ch 1 missing IN: 1
PROJECT: REPORT: Date 2019/09/17 09:47 2019/09/17 09:47 2019/09/17 09:47 2019/09/17 09:47	Software Software Software	Alarm Alarm Alarm	ArmoniaPlus: Input Dante Ch 2 missing IN: 2 ArmoniaPlus: Input Dante Ch 1 missing IN: 1 ArmoniaPlus: Input Dante Ch 1 recovered IN: 1
PROJECT: REPORT: Date 2019/09/17 09:47 2019/09/17 09:47 2019/09/17 09:47 2019/09/17 09:48 2019/09/17 09:48	Software Software Software Software	Alarm Alarm Alarm Alarm	ArmoniaPlus: Input Dante Ch 2 missing IN: 2 ArmoniaPlus: Input Dante Ch 1 missing IN: 1 ArmoniaPlus: Input Dante Ch 1 recovered IN: 1 ArmoniaPlus: Input Dante Ch 2 recovered IN: 2
PROJECT: REPORT: 2019/09/17 09:47 2019/09/17 09:47 2019/09/17 09:47 2019/09/17 09:47 2019/09/17 09:48	Software Software Software Software Software	Alarm Alarm Alarm Alarm Alarm	ArmoniaPlus: Input Dante Ch 2 missing IN: 2 ArmoniaPlus: Input Dante Ch 1 missing IN: 1 ArmoniaPlus: Input Dante Ch 1 recovered IN: 1 ArmoniaPlus: Input Dante Ch 2 recovered IN: 2 ArmoniaPlus: Input Dante Ch 2 missing IN: 2
PROJECT: REPORT: Date 2019/09/17 09:47 2019/09/17 09:47 2019/09/17 09:47 2019/09/17 09:48 2019/09/17 09:48	Software Software Software Software Software Software	Alarm Alarm Alarm Alarm Alarm Alarm	ArmoniaPlus: Input Dante Ch 2 missing IN: 2 ArmoniaPlus: Input Dante Ch 1 missing IN: 1 ArmoniaPlus: Input Dante Ch 1 recovered IN: 1 ArmoniaPlus: Input Dante Ch 2 recovered IN: 2 ArmoniaPlus: Input Dante Ch 2 missing IN: 2 ArmoniaPlus: Input Dante Ch 1 missing IN: 1

Figure 12 - Email Reporting



Document Title: HEALTH PLUS – APPLICATION NOTES **Reference:** DO000279.00 REV.00

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