

GHIELMETTI



Dante Monitoring System

GMS 3164 Dante

Manual

Edition 09/2019

Contents

- 1 Introduction 5
- 2 General description 6
 - 2.1 Front Side 6
 - 2.2 Back side 6
- 3 GMS 3164 Dante - System 7
- 4 Installation and Start-up 8
- 5 Manual operation on device 9
 - 5.1 Boot screen 9
 - 5.2 Controls 10
 - 5.2.1 Navigation knob 10
 - 5.2.2 Volume knob 10
 - 5.2.3 Balance knob 10
 - 5.2.4 User button 10
 - 5.2.5 Mode button 11
 - 5.2.6 Headphone Out 11
 - 5.3 Navigation – Navigation knobs 11
 - 5.4 Audio Monitoring 12
 - 5.5 Meter Mode 13
 - 5.5.1 Status information 14
 - 5.5.2 Channel selection 15
 - 5.5.2.1 Detail information 15
 - 5.6 Menu Setup 17
 - 5.6.1 Setup Structure 17
 - 5.6.2 Main Menu 18
 - 5.6.2.1 Monitoring 18
 - 5.6.2.1.1 Internal 18
 - 5.6.2.1.2 Analog out 19
 - 5.6.2.1.3 Digital out 19
 - 5.6.2.2 Meters 19
 - 5.6.2.2.1 Layout – Display number of channels 20
 - 5.6.2.2.2 Assignment 20
 - 5.6.2.2.3 Mode 22
 - 5.6.2.2.4 Scale – Display unit of level meter 22
 - 5.6.2.3 Mixing 23
 - 5.6.2.4 Audio Network 23
 - 5.6.2.4.1 Disconnect all 23
 - 5.6.2.4.2 Rediscover devices 23
 - 5.6.2.4.3 Connection management 23
 - 5.6.2.5 Info 25
 - 5.6.3 Configuration 25
 - 5.6.4 Dialogue 26
 - 5.6.4.1 Numeric value 26
 - 5.6.4.2 IP Address 27
 - 5.6.4.3 Radio buttons (1 off n) with value 27

- 6 Remote manual 28
- 6.1 Open web browser 28
- 6.2 Remote dialog 28
 - 6.2.1 Monitoring dialog 29

6.2.2	Settings dialog	29
6.2.2.1	Input Channel List.....	30
6.2.2.2	Mixer List.....	30
6.2.3	About Dialog.....	31
6.3	SW Update.....	32
7	Standards and approvals	34
7.1	CE Declaration	34
7.2	Standards	34
8	Technical data	35

1 Introduction

GMS 3164 Dante is a monitoring and metering device that can display up to 64 AoIP channels from the Dante network.

GMS 3164 Dante can be operated with its front elements on the device («Local-GUI » with display and buttons) and remotely through a WEB browser («Web-GUI») for monitoring meters.

GMS 3164 Dante has a separate LAN/Ethernet port for remote viewing or for updating software.

Following we use the term «GUI» for both above operating modes, and AoIP-channels are termed «**Dante-Channel**» or «Channel», respectively (for more Information visit <https://www.audinate.com>).

2 General description

GMS 3164 Dante is an Audio monitoring device for display, listen and observe Audio over IP signals from a DANTE network. Beside many special futures you can display up to 64 Dante channels. For its function you don't necessarily need a Dante-Controller.

2.1 Front Side

GMS 3164 Dante is a 19", 1RU device with steel and aluminium body. Assembly depth is 150 mm.



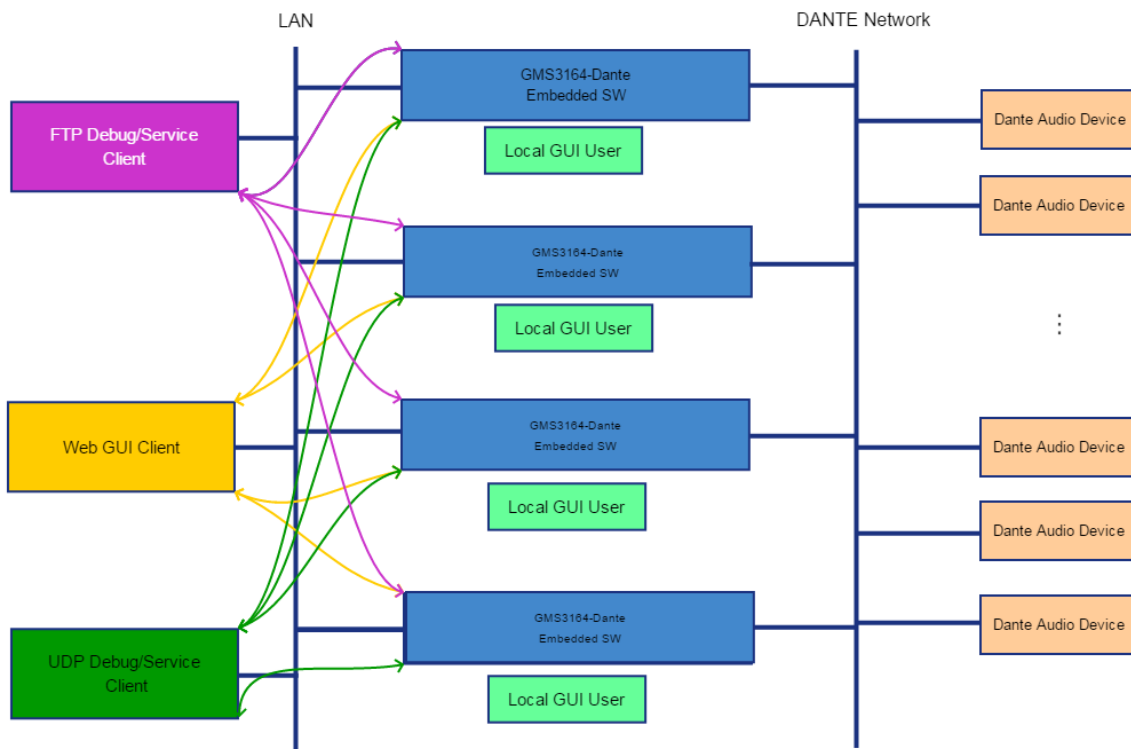
2.2 Back side



3 GMS 3164 Dante - System

« **GMS 3164 Dante -System**» includes the GMS 3164 Dante - **Hardware** (Embedded Hardware), GMS 3164 Dante - **Firmware** (Embedded Software) and GMS 3164 DANTE-**Web-GUI-Software** (Internet-Browser-Web pages).

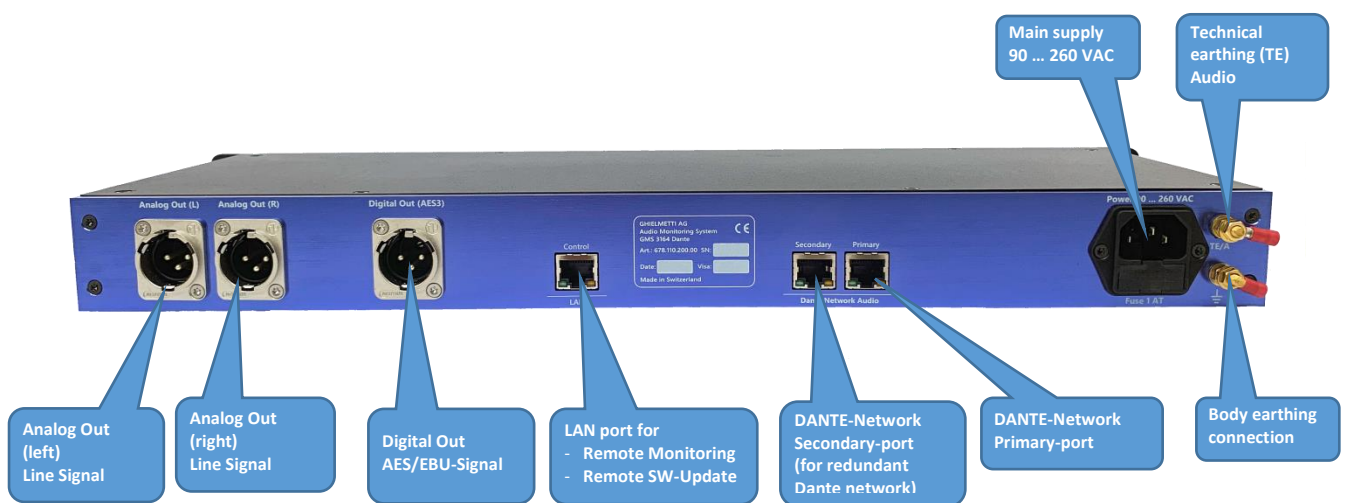
System overview



4 Installation and Start-up

The installation includes plug-in the **main supply** and connect to the Dante-Network.
 After you push the Power button on the front of the device the system will start automatically. At system start-up, the device will connect to the Dante network and all active channels will be displayed.

GMS 3164 Dante can be used locally ([Cap. 6](#)) or remotely over the web browser (for best performance with Google Chrome).



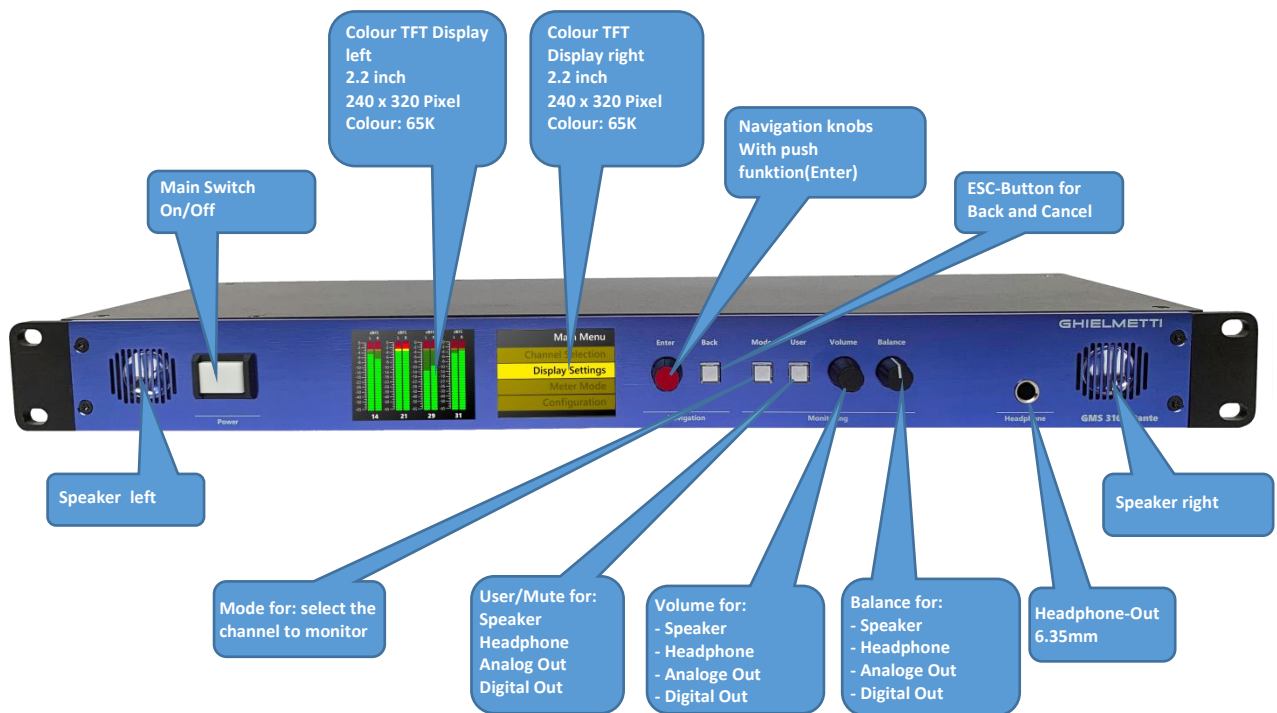
5 Manual operation on device

5.1 Boot screen

Start-up time for the Brooklyn II is about 8 seconds. While booting you will see below display. By pushing the „back” button you can skip the boot screen. On the bottom of the start-up screen, there is a progress bar, which shows the progress of start-up procedures.



5.2 Controls



5.2.1 Navigation knob

As an interface for GUI use the knob with push function (enter) or the button (back) right next to the screens on the right side.

5.2.2 Volume knob

With push function to select the output (intern speaker / headphone, analog out, digital out)

5.2.3 Balance knob

(intern speaker / headphone, analog out, digital out)

5.2.4 User button

Standard function: mute.
Optional programable for other functions.

5.2.5 Mode button

For Switching between mono channel, stereo channel or Dolby 5.1 (if activated)

Dolby 5.1: selects 6 channels simultaneously. The Order of the channels is defined by: left, right, centre, effect (subwoofer), surround left und surround right

Stereo mix will produce the following down mix:

Left channel: left (0dB) + centre (-3dB) + Surround left (-3dB)

Right channel: right (0dB) + centre (-3dB) + Surround right (-3dB)

5.2.6 Headphone Out

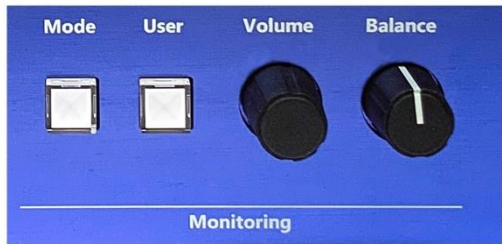
When a headphone is plugged, speakers on the device are automatically turned off.

5.3 Navigation – Navigation knobs



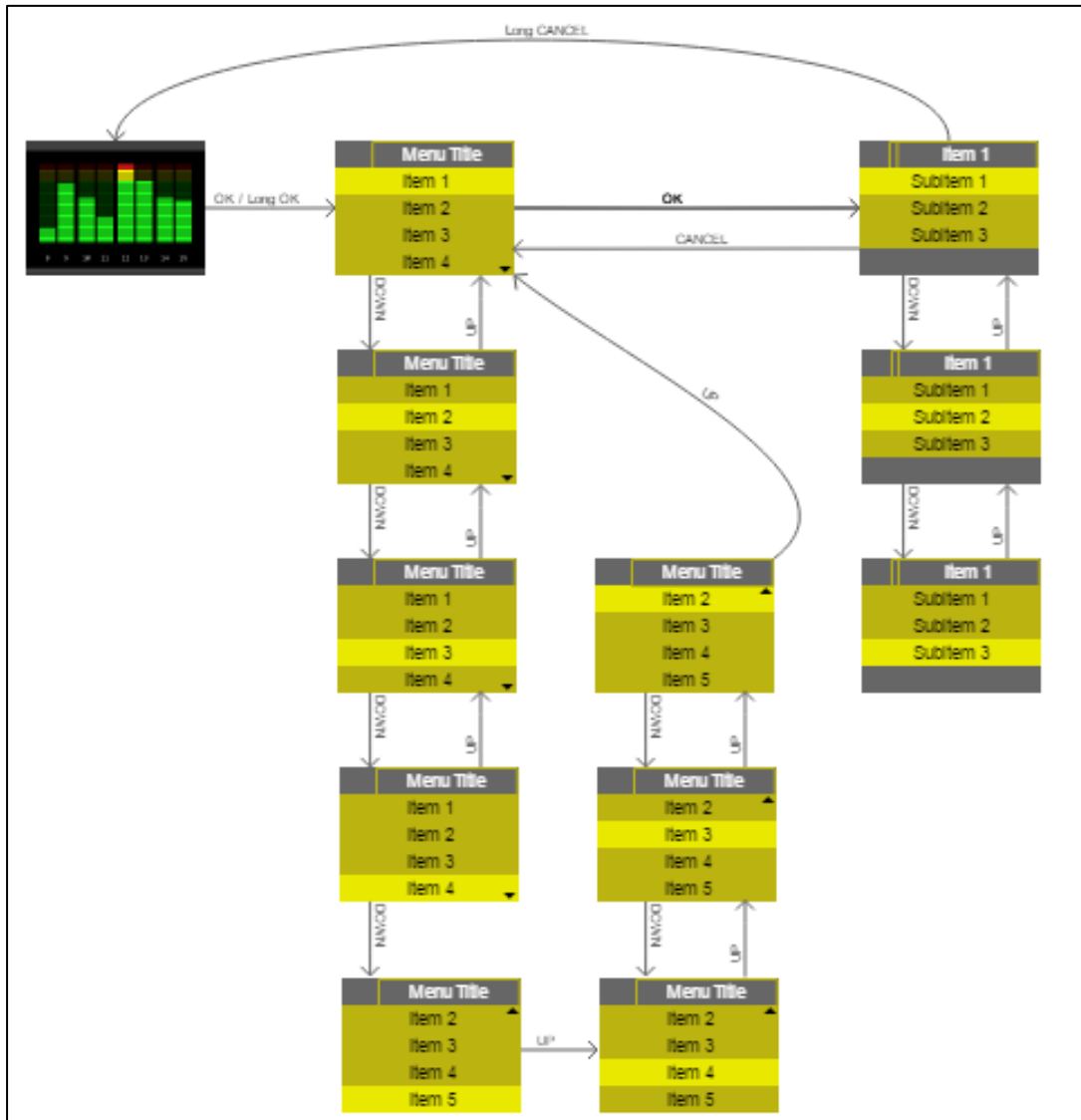
Navigation	Navigation knob	• Turn clockwise	• menu navigation up • raise value
		• Turn counter clockwise	• menu navigation down • reduce value
	Enter button on navigation knob	• Push (normal)	• Call-up audio meter information • select menu item • accept value
		• Push (>2 sec)	• Call-up main menu
	Back button	• Push (normal)	• 1 step back in settings • Leave the actual screen
		• Push (>2 sec)	• From any screen/menu • back to the channel view

5.4 Audio Monitoring



Monitoring	Mode button	<ul style="list-style-type: none"> • Push (normal) 	<ul style="list-style-type: none"> • Switch between different modes of the level meters: <ul style="list-style-type: none"> • mono channel • Stereo channel • Dolby 5.1
	User button	<ul style="list-style-type: none"> • Push (normal) 	<ul style="list-style-type: none"> • Mute • Execution of the function, which is assigned by the user (as of SW v4)
	Volume knob push function	<ul style="list-style-type: none"> • Turn • Push (normal) 	<ul style="list-style-type: none"> • raise or reduce the volume • Select the output, on which the volume control should be activated: <ul style="list-style-type: none"> • Speakers and headphone (Int) • Analog Out (Aout) • Digital Out (Dout)
	Balance - knob	<ul style="list-style-type: none"> • Turn 	<ul style="list-style-type: none"> • Balance for the active output

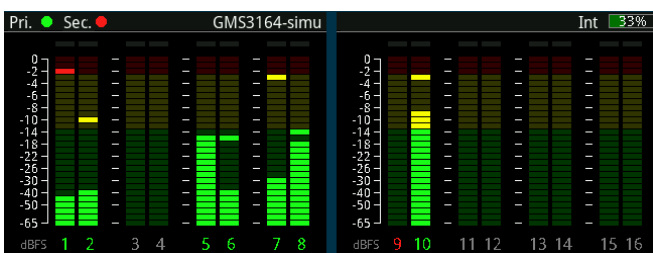
Schematic depiction of the navigation:



5.5 Meter Mode

Generally, the device is in „meter mode“.

For the metering of either 16, 32 or 64 channel both screens are in use. In case you call-up the settings menu of the device, this will be shown on the right screen while the left screen is still in use for monitoring.



5.5.1 Status information

In the **header of the screen** there are status information displayed:

- **Pri. / Sec:**

Dante Network Primary / Secondary (grey: no communication with Brooklyn Module, green: active, red: inactive)

- **GMS3164-xyyzz:**

Device name from GMS 3164 Dante Monitor (xyyzz: last 3 Bytes from MAC-Address)

- **nn %:**

Actual value of the volume (Int, Aout, Dout). Active output can be chosen by pressing the volume knob.

- **Int:**

Speaker / Headphone

- **Aout:**

Analog Out

- **Dout:**

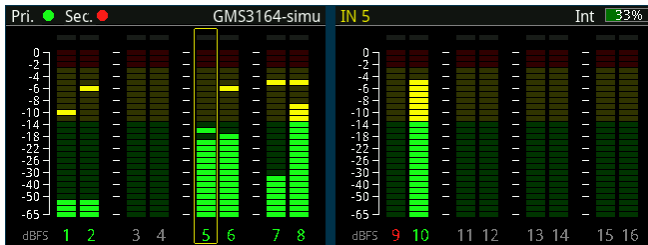
Digital Out

5.5.2 Channel selection

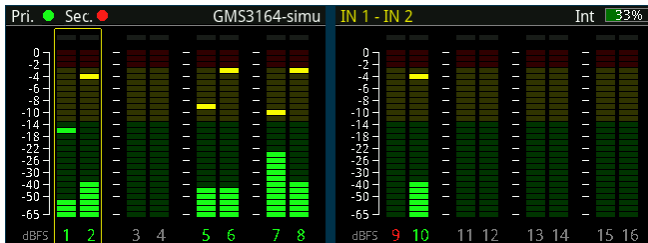
With the Navigation knob, one can select the channels to be monitored.

The selected channel(s) will be marked with a yellow square

Mono channel:



Dual channel:

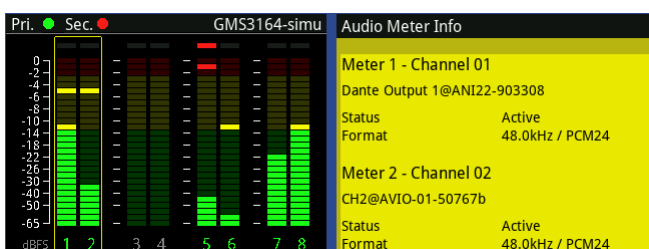


The Channel number shows-up in different colours:

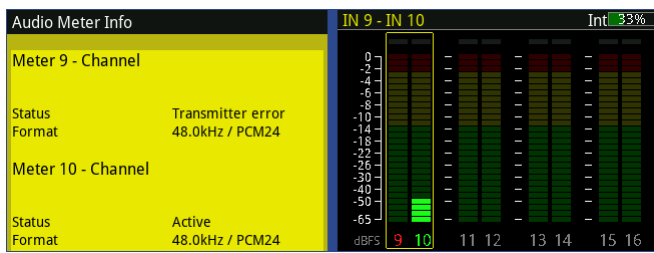
- **Grey:** In active connection on the channel
- **White:** Channel connection is loading
- **Green:** Active channel connection
- **Red:** Failure, no channel connection
- **Blue:** Channel is connected to the mixer

5.5.2.1 Detail information

To display the detail information about the selected channel(s), press the **Enter** button



Depending on which screen the channel is chosen, the information window will show-up on the left or on the right hand side.



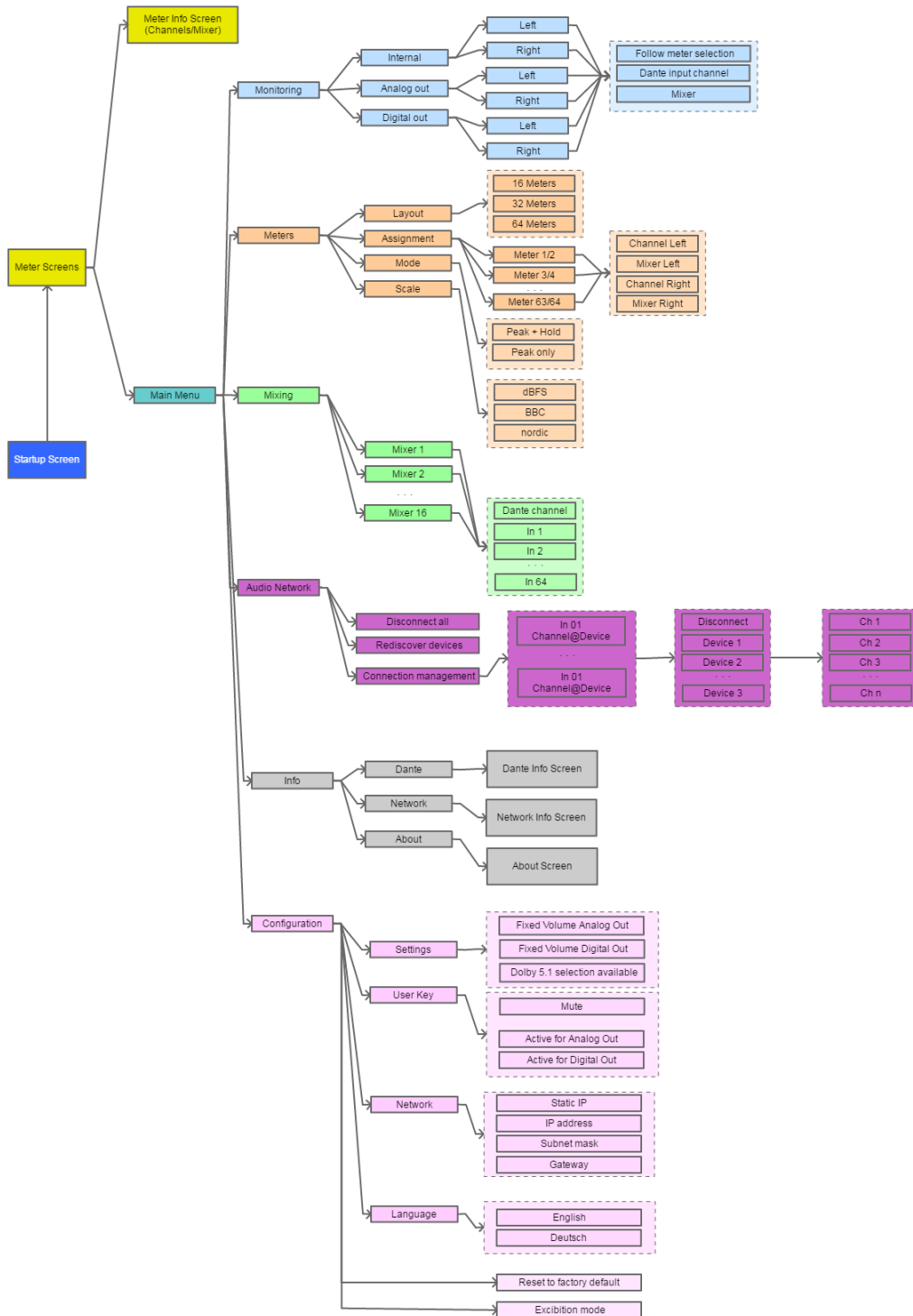
In **Audio Meter Info** window, following information is listed:

<p>Meter 7 - Channel 07 CH1@AVIO-03-998877 Status Active Format 48.0kHz / PCM24</p>	<p>Name of the input channel</p> <p>Name of the connection: in the format channel@device</p> <p>Status: of the connection</p> <p>Format: sample rate / decoding</p>
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5.6 Menu Setup

5.6.1 Setup Structure

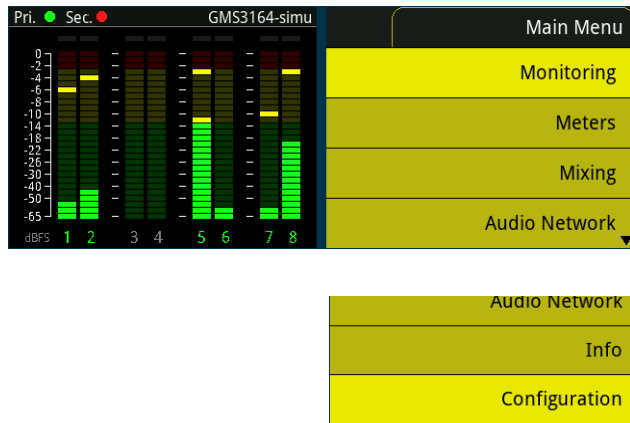
The user interface is made from different windows, which depends on the selected function or the status



5.6.2 Main Menu

If no Audio meter is selected, one can call-up the **Main Menu** by pushing the Navigation knob.

The **Main Menu** can also be called from any window by long pressing (>2 sec) the **Enter** button. The **Main Menu** will always be displayed on the right-hand screen.



5.6.2.1 Monitoring

In „**Monitoring**”, one can configure outputs of the Dante network channels (listening).

	<p>Internal: configuration of internal speaker and headphone</p> <p>Analog out: configuration of analog output</p> <p>Digital out: Configuration of digital output</p>
--	---

5.6.2.1.1 Internal

	<p>Selection of left or right channel from internal speaker or headphone:</p> <p>Left: left channel</p> <p>Right: right channel</p>
	<p>Follow meter selection: listen to the selected audio meter</p> <p>Fix. Dante Channel: selected channel will be played (Channel 1,2, ... or 64)</p> <p>Mixer: selected mixer will be played (mixer 1,2, ... or 16)</p>

5.6.2.1.2 **Analog out**

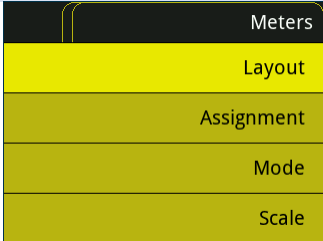
Same menu and same parameter as 'Internal'.

5.6.2.1.3 **Digital out**

Same menu and same parameter as 'Internal'.

5.6.2.2 **Meters**

This menu allows the configuration of displayed audio meters

	<p>Layout: Display the number of channels (16, 32 or 64)</p> <p>Assignment: Configuration of the audio meters (groups in the view).</p> <p>Mode: Configuration of the level meter mode (Peak Hold or Peak only)</p> <p>Scale: display of the level meter unit: dBFS, BBC, nordic</p>
---	---

5.6.2.2.1 Layout – Display number of channels

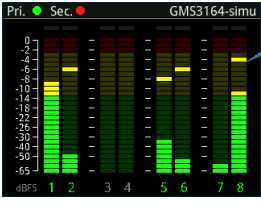
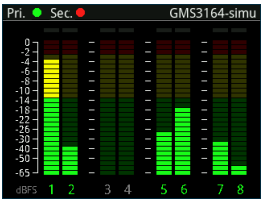
	<p>16 channels:</p> <p>32 channels:</p> <p>64 channels:</p>
--	--

5.6.2.2.2 Assignment

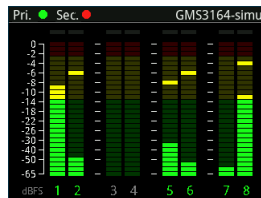
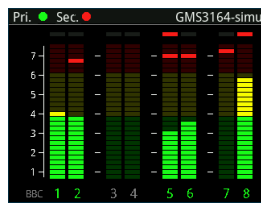
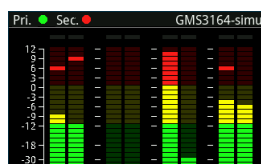
Configuration of the audiometer. Always configured as a pair of channels.

	<p>Selection of the audio meter to be configured</p> <p>Meter 1/2, 3/4 ... 63/64</p>
	<p>Show Dante input channel on left meter.</p> <p>Show mixer channel on left meter.</p> <p>Show Dante input channel on right meter.</p> <p>Show mixer channel on right meter.</p>

5.6.2.2.3 Mode

<p>Mode</p> <p><input checked="" type="radio"/> Peak + Hold</p> <p><input type="radio"/> Peak only</p>	<p>Peak + Hold:</p> 
	<p>Peak only:</p> 

5.6.2.2.4 Scale – Display unit of level meter

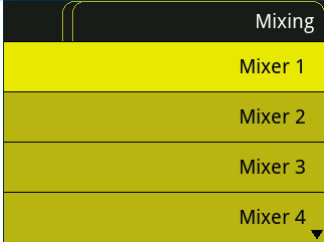
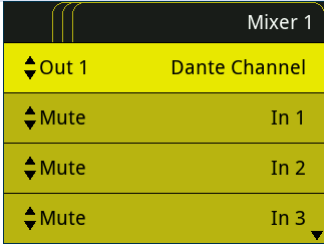
<p>Scale</p> <p><input checked="" type="radio"/> dBFS</p> <p><input type="radio"/> BBC</p> <p><input type="radio"/> nordic</p> <p>Start red [dBFS] \blacktriangleup -2.0 \blacktriangledown</p> <p>Start yellow [dBFS] \blacktriangleup -12.0 \blacktriangledown</p>	<p>dBFS</p> 
	<p>BBC</p> 
	<p>Nordic</p> 

Start red [dBFS]: start value [in dBFS], where the segment turns red

Start yellow [dBFS]: start value [in dBFS], where the segment turns yellow

5.6.2.3 **Mixing**

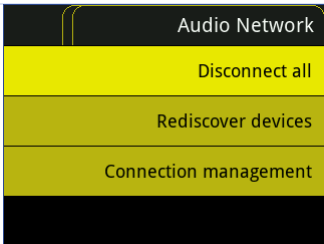
In "Mixing", there are 16 mixers available to blend 1 to 64 channels into one.

	<p>Mixing: Selection of the mixers: 16 mixers are available (Mixer 1, Mixer 2 ... Mixer 16).</p>
	<p>Mixer 1... 16: Out 1 ... Out 64 output channel (Dante Out) for the mixer n</p> <p>For each of the 64 input channel (Dante In) one can choose an individual volume value.</p> <p>Mute means, that the channel is not being mixed-in.</p>

Every mixer will be automatically connected to an output channel on the Dante network (Dante Out).

5.6.2.4 **Audio Network**

This menu option is to create a connection to the Dante network. If extensive configuration is required in Dante Network, a Dante controller is recommended.

	<p>Disconnect all: Disconnect all connection</p> <p>Rediscover devices: Search for new devices in Dante Network</p> <p>Connection management: Connect or disconnect a connection</p>
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5.6.2.4.1 **Disconnect all**

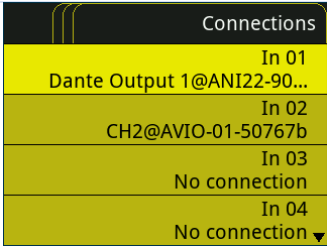
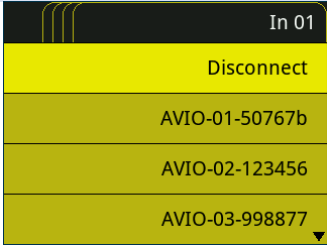
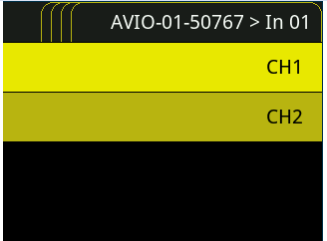
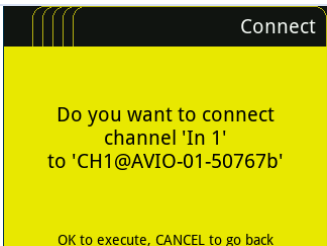
Disconnect all connections from GMS 3164 Dante to all devices on Dante Network.

5.6.2.4.2 **Rediscover devices**

Search for new devices in Dante Network

5.6.2.4.3 **Connection management**

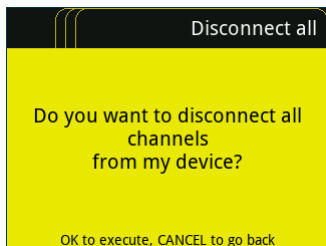
Connect or disconnect an input channel from GMS 3164 Dante to an Output channel on a device from Dante Network.

	<p>To connect or disconnect a connection, first you have to select an input channel from the GSM 3164 Dante. For each input channel it will be displayed if a connection exists (channel@device) or not (No connection).</p>
	<p>For the selected input channel, one can now select the following action:</p> <p>Disconnect if connection exist.</p> <p>Dante Device to which a connection can be established.</p>
	<p>For the selected Dante device, a channel can now be selected (for example CH 1 or CH2)</p>
	<p>In the confirmation dialog „Connect“ a summary of the desired connection is displayed:</p> <p>The Dante-channel In 1, in this case on channel CH1, from Dante device AVIO-01-50767b will be connected.</p> <p>To finish the connection you have to select OK (Enter). By selecting Cancel (Back) you break-up the connection process.</p>

Every action must be confirmed in a dialog window.

In case the action is not as desired, you can break it up by pushing the **Back** button.

Display for „**Disconnect all**“:



5.6.2.5 Info

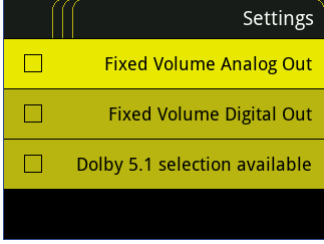
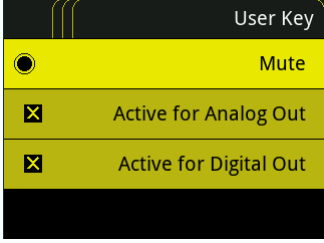
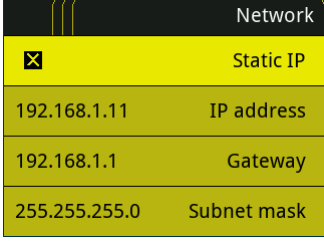
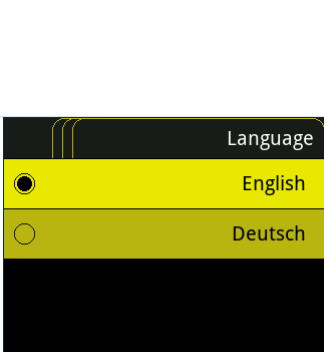
This menu shows various information.

		<p>General information about AoIP and Brooklyn 2 module.</p>
		<p>Network Information about local LAN.</p>
		<p>General information.</p>

5.6.3 Configuration

This menu is used for general configuration.

	<p>Settings: Settings for Analog and Digital amplification.</p> <p>User Key: Setting of function for User button.</p> <p>Network: Entry of IP Address (includes system reset).</p> <p>Language: Change of language</p> <p>Reset to factory default: Reset to factory defaults.</p> <p>Exhibition mode: Exhibition mode (audio meters will simulate a random signal)</p>
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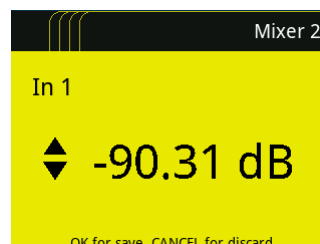
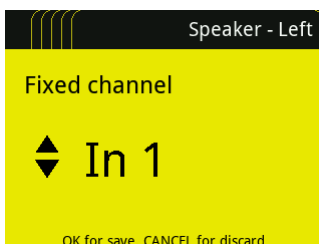
	<p>Set a fixed amplification (0dB) for Analog Out</p> <p>Set a fix amplification (0dB) for Digital Out</p> <p>Dolby 5.1 selection (selection for 6 channels) on Mode button.</p>
	<p>Configuration for button "User".</p> <p>Standard Function "Mute".</p> <p>Sets Analog out to active</p> <p>Sets Digital out to active</p>
	<p>Network configuration for LAN connection:</p> <p>Default is DHCP, equals to Static IP not selected.</p> <p>The field 'IP address', 'Gateway' and 'Subnet mask' are only visible, when 'Static IP' is selected.</p>
	<p>After changing the settings in this menu, the GMS 3164 Dante will automatically perform a re-boot.</p> <p>Sets the language of the unit.</p>

5.6.4 Dialogue

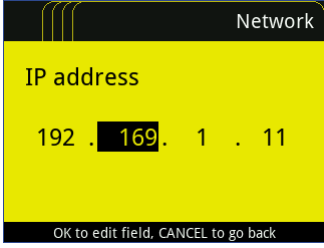
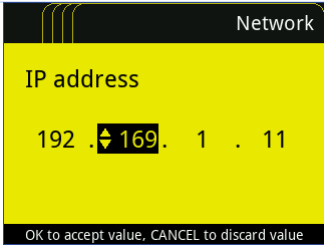
If a value can be set, this happens normally in a separate screen (except for checkboxes and radio buttons).

5.6.4.1 Numeric value

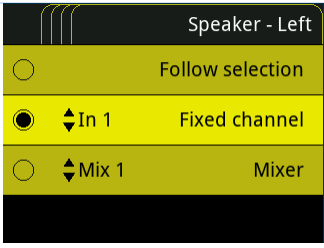
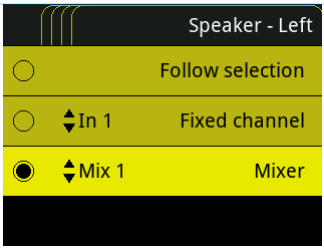

For fixing or take over a value press **Enter**
 By pressing **Back** you may lose the value.



5.6.4.2 IP Address

	<p>Selection: Use the navigation knob to select the field to be changed and then press Enter</p> <p>Accept or reject change: Use the Back button to leave the dialog box without saving. Push Enter to confirm desired value.</p>
	<p>Edit value: Turn the navigation knob to set desired value</p>

5.6.4.3 Radio buttons (1 off n) with value

	<p>Navigate to Mix1 and press Enter</p>
	<p>Select Mix1 by pressing Enter once. Press Enter a second time to change the assigned mixer.</p>
	<p>Select desired signal for Speaker – Left and confirm with Enter.</p>

6 Remote manual

Audio meters can be displayed remotely through a web browser (best performance with Google Chrome). The web browser can also be used for SW updates.

6.1 Open web browser

Make a connection via web browser to the device. IP Address is located in the menu under Network.

Enter the IP address in your web browser.

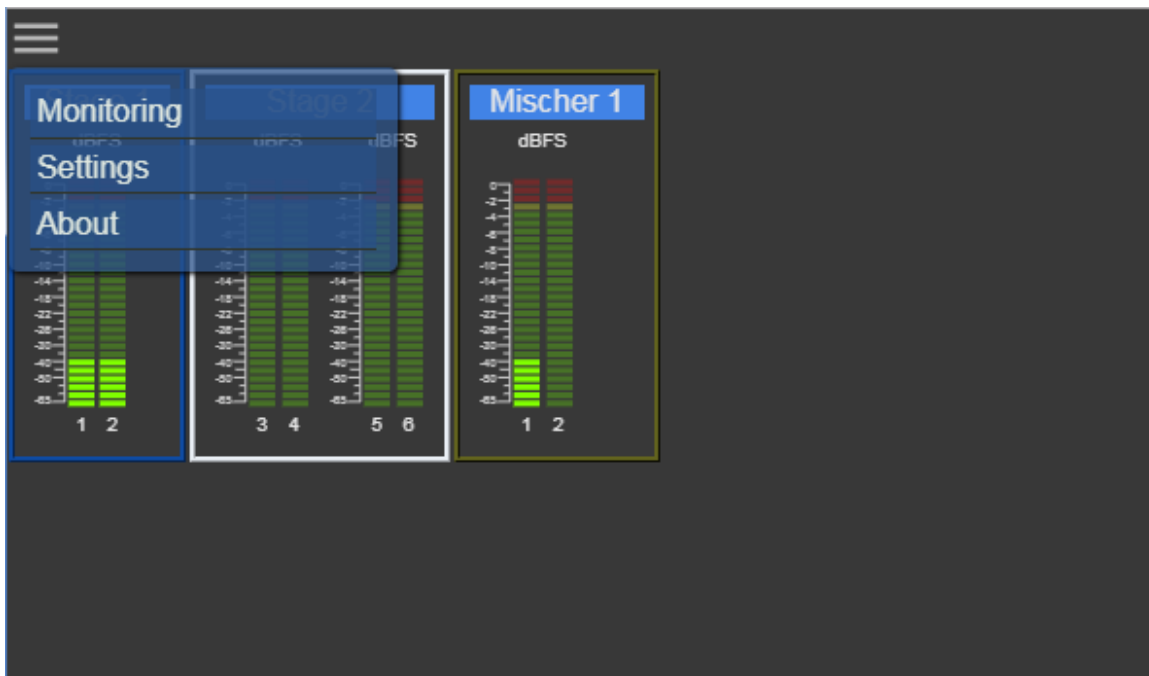


If you are using another web browser to Google Chrome, some functionality may not be useable.

6.2 Remote dialog

The initial screen is always the monitoring view.

By selecting the icon "☰" you can switch between **Monitoring**, **Settings** and **About**.



6.2.1 Monitoring dialog

The view is divided into two parts.

Left part:

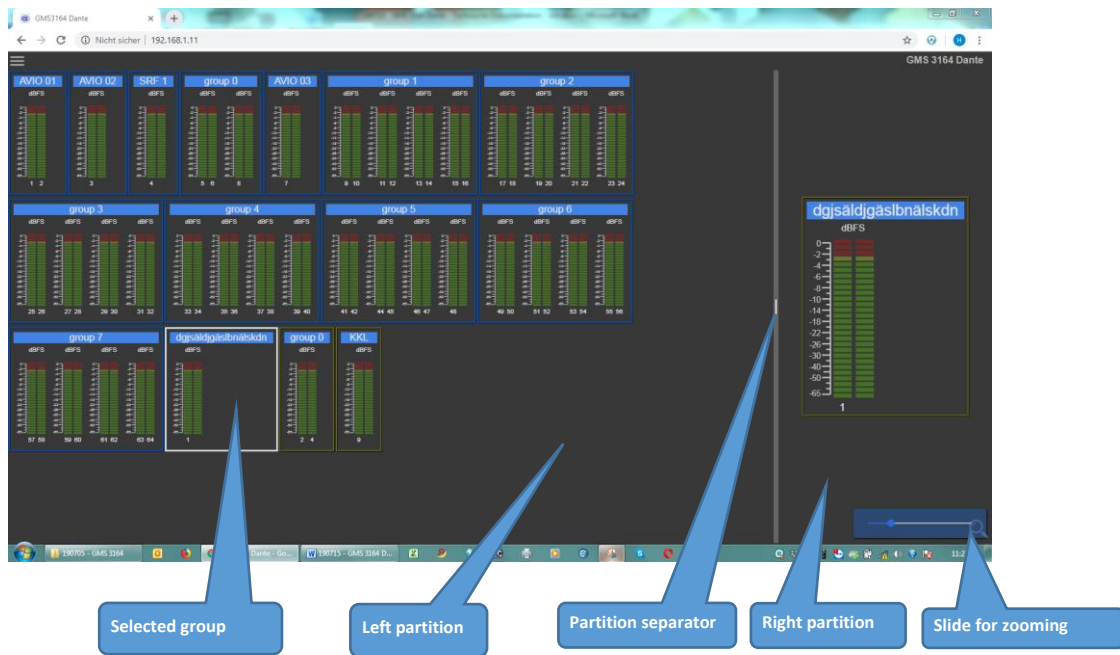
All selected meters are displayed.

All meters with the same group name are displayed within the same group frame.

Right part:

Zoom selected group from the left part.

For the focus group on the right-hand side, one can toggle between live metering or time line metering with the keyboard “t” key



Change the zoom value by using the slide on the right, bottom corner of the screen.

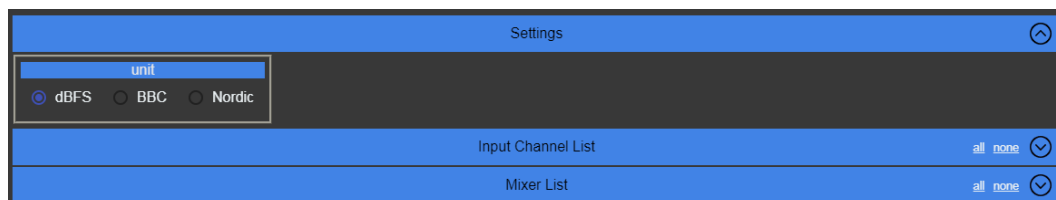
Alternative to the slide, one can press the „z” key on the keyboard and then the cursor key “UP” for greater and “DOWN” for smaller view.

The partition can be changed by moving the separator with the mouse.

6.2.2 Settings dialog

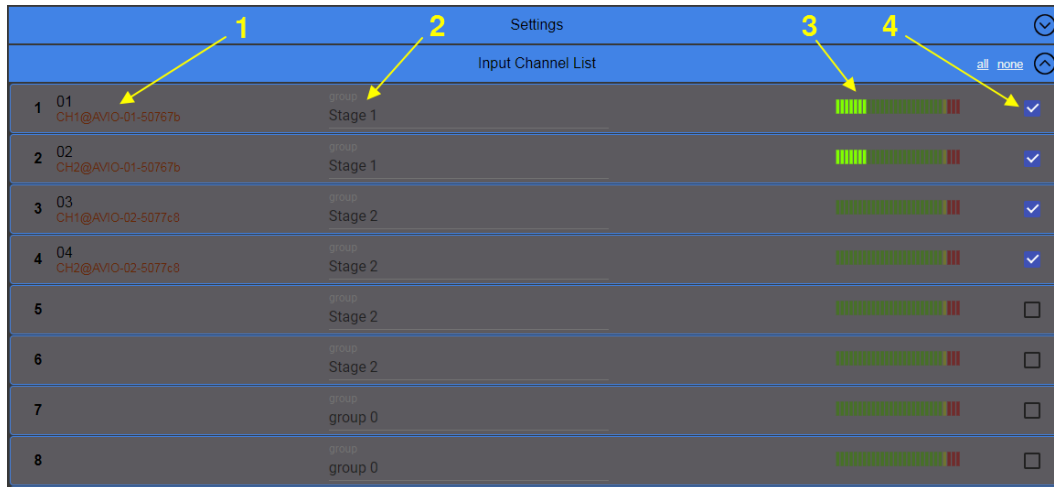
In Settings one can change the monitoring view. This includes the unit of measure of audio meters, selecting channels to be monitored and assigning group names channel clustering.

Creating meter connections with Dante devices must be done on the GMS 3164 Dante device.



6.2.2.1 **Input Channel List**

Configuration of which input channel should be displayed

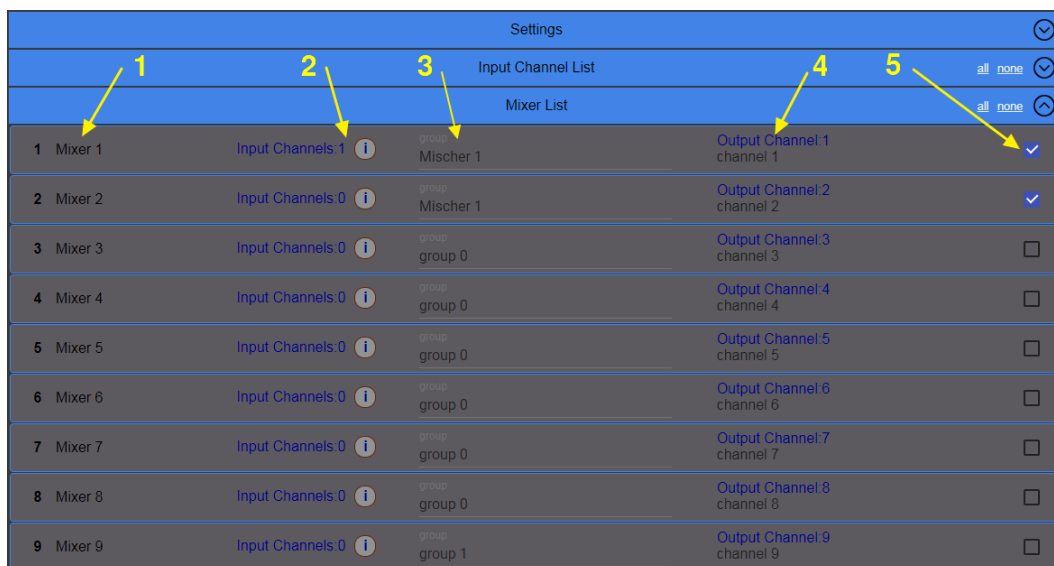


Legend:


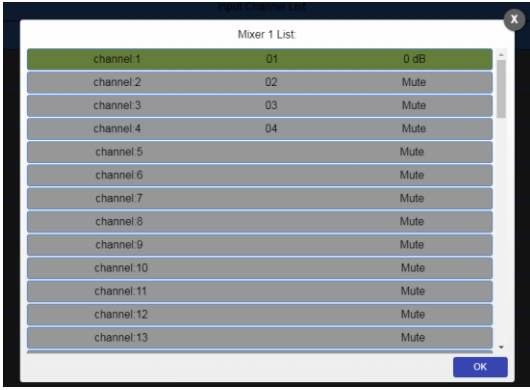
1	Name of the connection: When an input channel is assigned to a meter, the name of the channel is displayed.
2	Group names: All channels with the same name (chosen freely) will be grouped in the same cluster.
3	Level view: Shows actual meter level of the channels
4	On/Off: Turn the channel remote display on or off

6.2.2.2 **Mixer List**

Configuration of which mixer channel should be displayed

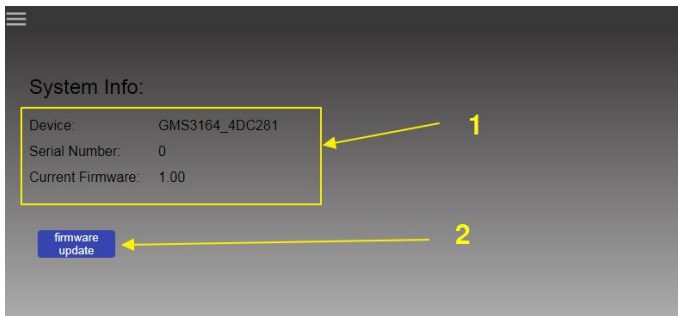


Legend:

1	Name of the mixer
2	<p>Number of input channel, which are summed-up on the mixer</p> <p> displays all the channels on the selected mixer</p> 
3	<p>Group name:</p> <p>All mixers with the same name (chosen freely) will be grouped in the same cluster.</p>
4	Output of the mixer
5	<p>On/Off:</p> <p>Turn the mixer remote display on or off</p>

6.2.3 About Dialog

View of the System information and current Firmware



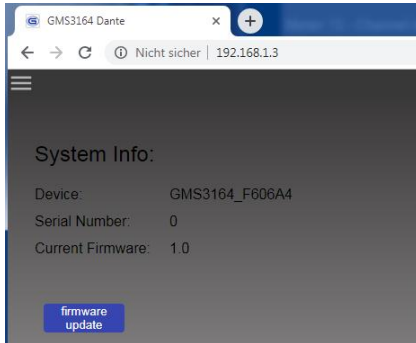
Legend:

1	<p>System Information:</p> <p>Device name</p> <p>serial number</p> <p>SW Version</p>
2	<p>SW Update.</p> <p>Start a Firmware update.</p>

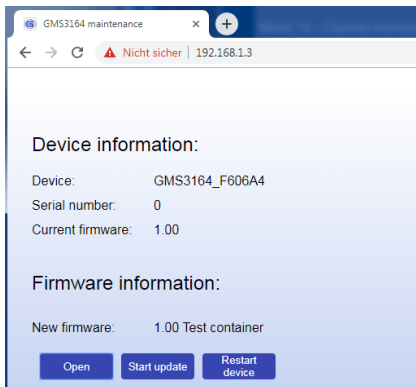
6.3 SW Update

The firmware can be updated through the LAN connection. Individual SW packages can be loaded onto the device (Bootloader, Application, Web pages or a combination), however, normally a complete SW package will be loaded.

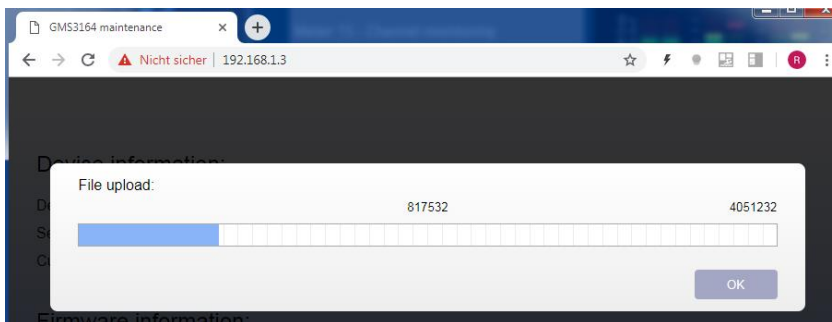
Connect your device via a web browser



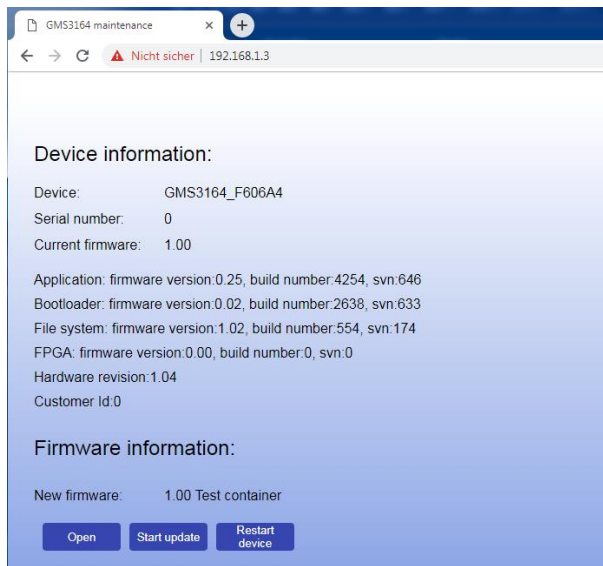
Select 'firmware update' to activate the bootloader of the unit.



Now one can chose a software package for the up-load and start the process.




Once the update is completed, confirmation is given that the update was done successfully and an overview page with the new version of the firmware is displayed.



Please restart your device after a firmware update to activate your GMS 3164 Dante with the new software.

7 Standards and approvals

7.1 CE Declaration



EC Declaration of Conformity

Manufacturer	
Manufacturer	Ghielmetti AG
Address, City	Industriestrasse 6 CH-4562 Biberist
Country	Switzerland
Authorized Representative	Mr. Christoph Liebi
Phone	+41 32 671 13 13

certify and declare under our sole responsibility that the following apparatus

Apparatus	
Description	Audio Monitoring
Manufacturer	Ghielmetti AG
Identification	GMS3164 DANTE
Serial No.	01
Technical documentation	xxxx
Production country	Switzerland
Restrictive use	No

conforms with the essential health and safety requirements of the

Directives		
2014/30/EU	EMC - Directive	December 15 th , 2014
2014/35/EU	Low Voltage - Directive	February 26 th , 2014

based on the following specifications applied:

Electromagnetic compatibility	Basic Standard	Product Standard	
Measurement of Radiation (Emission)	EN 61000-6-3:11	EN 55103-1:13	
Mains terminal interference voltage	EN 61000-6-3:11	Grenzwert B	Test passed
EM Fieldstrength	EN 61000-6-3:11	Grenzwert B	Test passed
Test of immunity (Immission)	EN 61000-6-1:16	EN 55103.2:10	
Immunity to ESD	EN 61000-4-2:95	Criterion A	Test passed
Immunity to fast electric transients Bursts	EN 61000-4-4:14	Criterion A	Test passed

The complete technical documentation is kept at the following address:

Manufacturer	
Manufacturer	Ghielmetti AG
Address, City	Industriestrasse 6 CH-4562 Biberist
Country	Switzerland
Authorised Representative	Mr. Christoph Liebi
Phone	+41 32 671 13 13

CH-4562 Biberist Mai 21st, 2019

Name and position of person binding the manufacturer
or his authorised representative

Ghielmetti AG
Signature

Director Technical Development

7.2 Standards

The GSM **3164 Dante** complies with the following standards:

EN 55103-1:13 (Emission)

EN 55103.2:10 (Immission)

8 Technical data

Speaker	
Number of amplifiers	2
Output	max. 2 W RMS per channel
Volume controller	1
Balance controller	1
Volume at mute	-100 dB @ 1 kHz

headphone	
Number of amplifiers	2
Output	max. 0.1 W RMS pro channel
Volume controller	1 (together with speakers)
Balance controller	1 (together with speakers)
Volume at mute	-100 dB @ 1 kHz
Connection	6.35 mm

AES Output	
Number	1 (XLR male on back panel)
Signal	AES-EBU, symmetric, 110 Ω

Analog Output	
Number	1 (XLR male on back panel)
Signal	Stereo, symmetric, 100 Ω

Network	
Audio (AoIP)	2 x 1 GB Dante (primary and secondary)
Local LAN	1x 100 MB

General Data	
Operation voltage	90 VAC ... 260 VAC, 47 ... 63 Hz
Input	~20 VA
Fuse	1 A
Operation temperature	0 °C ... 45 °C
Storage temperature	-20 °C ... 55 °C
Housing	19" (482.6 mm), 1 RU (44.1 mm), depth 150 mm Housing made of steel, front and back panel made of aluminium
Weight	2.9 kg

