



BOUTIQUE

Compact and Self-Amplified Public Address and Voice Alarm System

User Manual



Revision History

v1.09

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1 About this manual

This user manual will explicitly describe the hardware installation and the software configuration, provides installers and users the necessary information to setup and configure the system.

1.1 Firmware version



1.2 Notice signs

WARNING

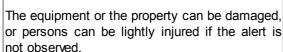
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK,
DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.
NO USER SERVICEABLE PARTS INSIDE, REFER SERVICING
TO QUALIFIED SERVICE PERSONNEL.



** The above warning is located on the back of the unit.

Explanation of Graphical Symbols







To alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

1.3 Safety instructions

- Do not expose the device to extreme temperatures, direct sunlight, humidity, or dust, which could cause fire or electrical shock hazard.
- Keep away water or other liquids from the device. Otherwise fire or electrical shock may result.
- Connect the power cord only to an AC outlet of the type stated in this manual or as marked on the unit. Otherwise fire and electrical shock hazard results.
- When disconnecting the power cord from an AC outlet always grab the plug. Never pull the cord. A damaged power cord is a potential risk of fire and electrical shock hazard.
- Avoid touching power plugs with wet hands. Doing so is a potential electrical shock hazard.
- Take care for correct polarity when operating the device from a DC power source. Reversed polarity may cause damage to the unit or the batteries.
- Avoid placing heavy objects on power cords. A damaged power cord is a fire and electrical shock hazard.
- Do not cut, scratch, bend, twist, pull, or heat the power cord. A damaged power cord is a fire and electrical shock hazard. Ask your ATEÏS dealer for replacement.
- Turn off the unit immediately, remove the power cord from the AC outlet and contact your ATEÏS dealer in any of the following circumstances, if you continue using the device, fire and electrical

shock may result.

- o Smoke, odor, or noise getting out of the unit.
- o Foreign objects or liquids get inside the device.
- The unit has been dropped or the shell is damaged.
- Do not drop or insert metallic objects or flammable materials into the unit as this may result in fire and electrical shock.
- Do not remove the device's cover, as there are exposed parts inside carrying high voltages that
 may cause an electrical shock. Contact your ATEÏS dealer if internal inspection, maintenance or
 repair is necessary.
- Do not try to make any modifications to the device. This is a potential fire and electrical shock hazard.
- Avoid the device's ventilation slots to be blocked. Blocking the ventilation slots is a potential fire hazard.
- To prevent the unit from falling down and causing personal injury and/or property damage, avoid installing or mounting the unit in unstable locations.
- Leave enough space above and below the unit to provide good ventilation of the device. If the airflow is not adequate, the device will heat up inside and may cause a fire.
- Operate the device in an environment with a free-air temperature of between -5°C ~ +55°C (+23°F ~ +131°F).
- Turn off all audio equipment when making any connections to the device, and make sure to use adequate cables.
- Do not use benzene, thinner or chemicals to clean the device. Use only a soft, dry cloth.
- If the device is moved from a cold place (e.g., overnight in a car) to a warmer environment, condensation may form inside the unit, which may affect performance. Allow the device to acclimatize for about one hour before use.

1.4 Related documentation

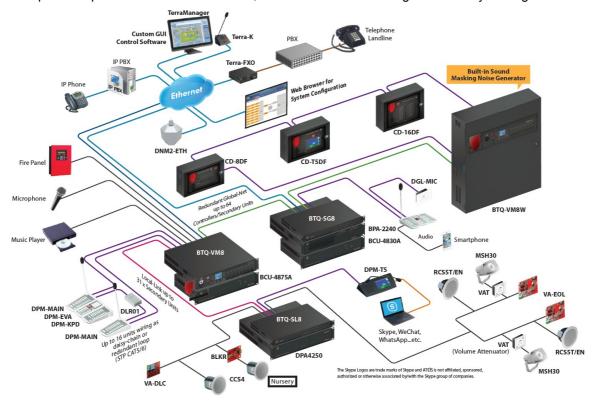
The following related documents are available:

- · BOUTIQUE Quick Start Guide.
- Refer to the product related information on www.ateis.com

2 System overview

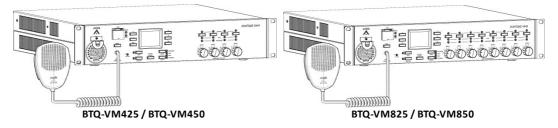
2.1 BOUTIQUE PA/VA system

The BOUTIQUE is an integrated, self-amplified PA/VA system. It has all the essential functionalities to comply with EN-54 and UL2572 requirements including speaker lines monitoring, EVAC microphone capsule and cable surveillance, micro controller watchdog and memory testing etc..



2.2 BTQ-VM4/VM8 - PAVA controller

The BTQ-VM4/8 is an compact public address and voice alarm controller with 250W or 500W high efficiency Class-D amplifier built-in. Varies functions such as system "easy setup" function, providing installer an ease of installation and configuration directly from LCD front panel. The BOUTIQUE system expands from a single controller capable of as little as 4 zones, to a larger networked system of up to 16,384 zones, making the system suitable for a wide variety of applications. The controller features EVAC paging, event and bell scheduler, audio routing, paging with priority management, network redundancy, low cost amplifier switching, amplifier monitor, backup etc. can be configured via web browser.



Components included:

- Fireman microphone and evacuation button
- · Amplifier built-in

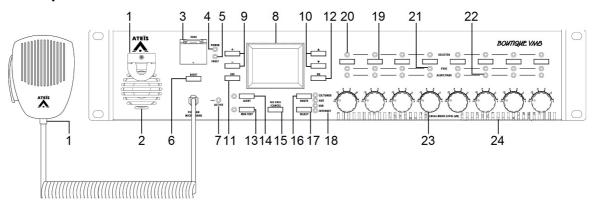
250W or 500W high efficiency Class-D amp built-in and is capable of handling 1000W speaker load per zone and 2000W max. per unit.

 Internal digital message storage with 90 minutes of memory storage and USB interface available.

Supervision

- o Advanced configuration, diagnostics and logging via web browser.
- Enhanced loudspeaker line surveillance (short, open, bad impedance) for speaker zone wiring (A/B).
- Full monitoring of paging microphones and auto backup for external power amplifiers when one of them breaks down.
- o Volume attenuators can be installed on monitored speaker lines without loopback cabling.

2.2.1 Front panel



1. Fireman microphone & U-shape bracket:

A fully monitored microphone is designed for EVAC paging. The paging button supports both press-to-talk and lock-to-talk mode. The talk mode can be set via web browser.

2. Monitoring speaker:

This built-in speaker is to monitor the zone audio including message and BGM. When the faults detected by the system, the system will generate a buzzer sound (tone) as warning.

3. Evacuation button:

Once this button is pushed, the system will enter to emergency state. Its LED will light up and play the EVAC messages.

4. Power LED:

This LED lights up when the controller is powered.

5. Fault LED:

This LED lights up when one or more faults are detected.

6. Reset button:

This button is used to reset the emergency state. The evac message playing will be canceled, and the red evacuation button will light off.

7. Active LED (fireman microphone):

The LED will light up when the fireman microphone is under paging.

8. Touch screen panel:

2.2" color touch panel offers a graphical interface to control, configure and display the status of system.

9. + - button:

Navigate as volume up/down or increase/decrease control.

10. M button:

Navigate as up/down control.

11. ESC button:

Navigate as go back to previous page.

12. OK button:

Navigate as next/save action. See more details about the LCD Front Panel.

13. MSG Test button and LED:

A button to manually play the testing alert message to the selected or pre-defined zones, and a LED will light up as long as the button is pushed.

14. Alert button and LED:

A button to manually play the alert message to selected or pre-defined zones, and a LED will light up as long as the button is pushed.

15. All Call/Cancel button:

A button to select all the zones in the entire BOUTIQUE system or reset the current zone selection.

16. Route button:

A button to manually route the selected music source (CD/Tuner/Aux/USB/Internet) to selected or pre-defined zones.

17. Select button:

A button to manually select the music source (CD/Tuner/Aux/USB/Internet) to be routed.

18. CD/Tuner/Aux/USB/Internet LED:

Four LEDs to indicate which music source is active.

19. Selected zone button:

Select or deselect the zone for manual music routing or message/EVAC paging (CD/Tuner/Aux/USB/Internet/fireman mic/XLR mic).

If none of the zones among controllers and secondary units are selected on the front panel, the system will route to the zones configured by web browser.

20~22. VACIE indicator LED:

There are 4 or 8 rows of 3 LEDs that show real-time mode of the status of zone:

- Selected LED (4 or 8 zones): The blue LED will light up to indicate the selection of zones.
- 21. EVAC LED: The red LED will light up if the zone is in evacuation paging.
- 22. Alert/Page LED: The blue LED will light up if the zone is under paging (except for evacuation paging).

23. Volume control knob (4 or 8 zones):

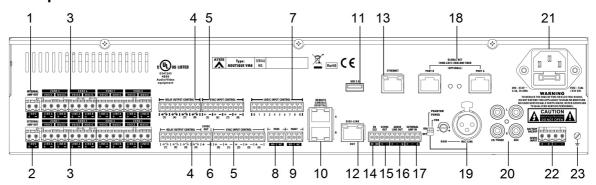
Individual zone rotary knobs to set the volume of BGM.

This knob is for audio source using internal amplifier, normally it's background music.

24. Air inlet holes:

The BTQ-VM4/8 controller has a cooling fan that takes in air from the front panel and exhausts it from the rear panel. Please make sure that these inlet holes are not obstructed.

2.2.2 Rear panel



1. Internal amp output:

The output provides the 100V (EU type)/70V (US type) audio signal of internal power amplifier to the BTQ-SL units.

2. External amp output:

This terminal connects to output of external amplifier.

3. A/B line zone outputs:

The BTQ-VM4 has 4 zones and BTQ-VM8 has 8 zones. Connect the loudspeakers to the zone outputs. Each zone output is consisted of two loudspeaker line outputs. The open, short and bad impedance faults can be detected by system for both speaker lines.

The controller is capable of handling 1000W speaker load per zone, 2000W max. per unit.

4. Relay control output:

There are eight relay outputs on BTQ-VM8 controller and four on BTQ-VM4 controller, they can be programmed as close/open contact to an external device.

5. EVAC input:

There are nine EVAC inputs on BTQ-VM8 and five EVAC inputs on BTQ-VM4. The evac inputs are N.O. (normally open) contact. They can be programmed for <u>phase evacuation</u> and to monitor the external contact.

Each channel supports 3 modes:

- Monitored contact mode: The system can monitor the evac input and detect faults (4 status: on, off, open and short).
- Disable: The cables which connect to evacuation input will not be monitored (faults will not be detected).
- Voltage mode: Trigger the input by a voltage change (OPEN/CLOSE) with an external 24VDC source provided by external devices. The cable is not monitored in this mode.

6. 24 VDC output:

Provide 24VDC (max. 1.3A) power for external devices. Please note the power is shared by the two 24VDC outputs on BTQ-VM4/8 controller and the remote consoles.

7. Logic input:

There are eight logic inputs designed to work with simple contact or button, and the two states

input (open contact, close contact) can be specified to any of those logic input to monitor security devices such as power supply, then those control inputs can put the system into a security mode for power saving purpose.

8/9. Evac & Fault contacts output:

The Evac and Fault output contact will reflect the evacuation status and the general fault status of the BOUTIQUE system.

- 8. EVAC contact: This contact is closed if the system is under EVAC paging.
- 9. Fault contact: This contact is open if a system or major fault is detected.

10. Remote console (RJ45):

The remote port(s) allows the paging consoles or accessories to be connected to BTQ-VM4/8/SG/SL unit. Each remote port on BTQ-VM4/8 controller and BTQ-SL8/SG8 unit can address up to 8 DPM-MAIN remote consoles in daisy-chain or up to 16 units in redundant loop using 2 ports.

- Max. remotes per BTQ-SL8: 8
- Max. remotes per BTQ-VM4/8: 16
- Max. distance between digi-link remote units: 250m (shielded RJ45 connector, STP CAT5/6).

11. USB 2.0 interface:

Connect a USB flash drive for external storage of music/message files and playback (G.711, G.722, G.726, G.727, MP3 and WAV).

12. Digi-Link port (RJ45):

The local digi-link network is used to link the BTQ-VM4/8 controller and BTQ-SL8 secondary units together.

- Max. local-net units: 32
- Max. distance between local-net units: 10m (shielded RJ45 connector, STP CAT5/6).

13. Ethernet connector (RJ45):

Connect the BTQ-VM4/VM8 controller to Ethernet network.

14. RS232:

This port is used to connect to 3rd party device for controlling the BOUTIQUE system.

15. 24VDC out:

Provide 24VDC (max. 1.3A) power for external devices. Please note the power is shared by the two 24VDC outputs on BTQ-VM4/8 controller and the remote consoles.

16. Audio line output:

Connect an external device such as earphone, speaker or recording device etc. to listen and monitor the audio during zone paging.

17. External amp In:

This terminal outputs the balanced 0 dB audio channel to an external power amplifier.

18. Global net link (RJ45 or fiber-optic):

The global network (redundant loops) is used to link the BTQ-VM4/8 controller to the next connected BTQ-VM4/8 or BTQ-SG8 units.

- Max. global-net units: 64
- Max. distance between global-net units: 100m (STP CAT5/6), 2 km (multi mode ber optic)

and 20 km (single mode ber optic).

19. Mic/line input with VOX & gain control knob:

Connect a mic input or line input (with 48VDC phantom power) to this XLR socket with voice-activated (VOX). When the mic is connected and the VOX setting is set as ON, remember to rotate the gain knob and adjust the volume.

20. Music inputs (CD/Tuner):

Connect this two inputs to the BGM sources.

21. Mains power inlet:

Connect the mains power to this socket. If the AC mains and 48VDC are connected at the same time, the BTQ-VM4/VM8 controller will use AC mains first, and switch to DC power if the AC mains is not present.

22. Battery backup:

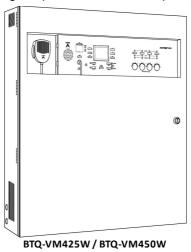
Connect the 48VDC battery charger for battery backup.

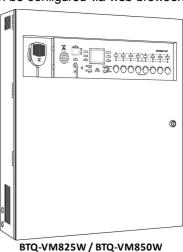
23. Ground (GND) socket.

2.3 BTQ-VM4W/VM8W - wallmount PAVA controller

The BTQ-VM4W/VM8W is a wallmount controller with 250W or 500W Class-D amplifier built-in, integrated battery charging unit for secured battery backup and power sharing. All components contain within one heavy-duty metal housing with a lockable cover.

Varies functions such as system "easy setup" function, providing installer an ease of installation and configuration directly from LCD front panel. The BOUTIQUE system expands from a single controller capable of as little as 4 zones, to a larger networked system of up to 16,384 zones, making the system suitable for a wide variety of applications. The controller features EVAC paging, event and bell scheduler, audio routing, paging with priority management, network redundancy, low cost amplifier switching, amplifier monitor, backup etc. can be configured via web browser.



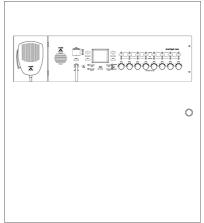


The available models:

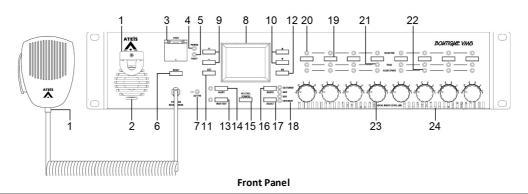
- BTQ-VM425W1 / BTQ-VM825W1
- BTQ-VM825W1 / BTQ-VM850W1
- BTQ-VM425W2 / BTQ-VM825W2
- BTQ-VM825W2 / BTQ-VM850W2

The **W1** indicates as 1 optional amp is included, and **W2** indicates as 2 optional amp are included.

2.3.1 Front panel

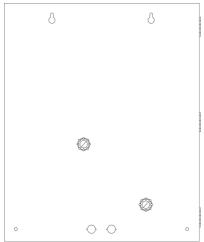


BTQ-VM4W/VM8W housing with a lockable cover

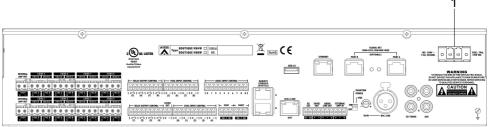


The front panel of BTQ-VM4W/VM8W controller is also identical to BTQ-VM4/VM8 controller, see $\underline{\text{BTQ-VM4/VMW Front Panel}}$.

2.3.2 Rear panel



BTQ-VM4W/VM8W housing with a lockable cover



Rear Panel

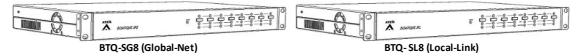
1. Mains power inlet (euroblock connector):

Connect the AC mains power to this euroblock connector. If the AC mains and 48VDC are connected at the same time, the BTQ-VM4W/VM8W controller will use AC mains first, and switch to DC power if the AC mains is not present.

The rest of interface of BTQ-VM4W/VM8W controller is also identical to BTQ-VM4/VM8 controller, see <u>BTQ-VM4/VMW Rear Panel</u>.

2.4 BTQ-SG8/BTQ-SL8 - PAVA secondary global/local unit

To increase the number of zones, EVAC inputs, logic inputs and relay outputs in the system, connect to BTQ-SL8 or BTQ-SG8 secondary unit.



Loudspeaker zones

To increase the number of zones in the system, one or more BTQ-SL8 or BTQ-SG8 secondary units can be connected to the BTQ-VM controller. Each BTQ-SL8/SG8 adds additional 8 zones to the system.

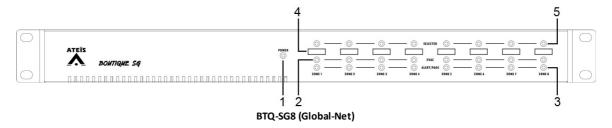
- Support to connect up to 64 x BTQ-VM4/8 controllers or BTQ-SG8 via redundant-global-net.
- Support to connect up to 31 x BTQ-SL8 via digi-link local-net.
- ❖ EVAC inputs and logic inputs

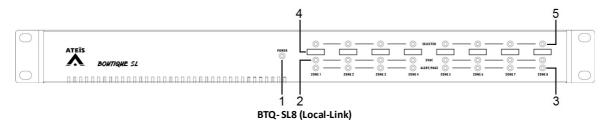
Each secondary unit adds additional 9 EVAC control inputs and 8 logic inputs to the system.

❖ Remote console interfaces

The BTQ-SG8 contains two sockets, and BTQ-SL8 contains one.

2.4.1 Front panel





1. Power LED:

This green LED lights up if the BTQ-SL8/SG8 is connected to the power adapter or 24VDC input battery supply.

2~5. VACIE indicator LED:

There are eight rows of 3 LEDs that show in real-time mode of the status of zone:

- 2. EVAC LED: The red LED lights up if the zone is in evacuation paging.
- 3. Alert/Page LED: The blue LED lights up if the zone is paging (except for evacuation paging).
- 5. Selected LED: The blue LED lights up to indicate the selection of zones.

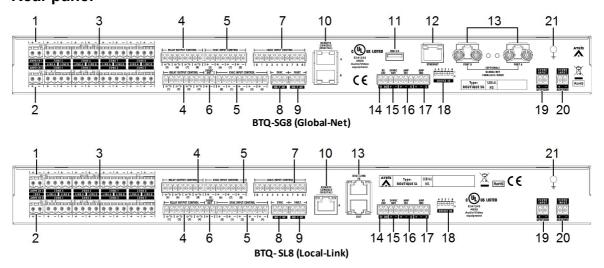
4. Eight zones selection buttons:

Select or deselect the zone for manual music routing or message/EVAC paging (CD/Tuner/Aux/USB/Internet/fireman mic/XLR mic).

If none of the zones among controllers and secondary units are selected on the front panel, the system will route to the zones configured by web browser.

The control keys and LED indicators on the front panel of BTQ-SL8 and BTQ-SG8 is identical.

2.4.2 Rear panel



1/2. AMPO CH1/CH2 output:

The output provides the 100V (EU type)/70V (US type) audio signal from power amplifier, CH1 is for internal amplifier channel, and CH2 is for external amplifier channel.

3. A/B line zone outputs (zone1~zone8):

Connect the loudspeakers to the zone outputs. Each zone output is consisted of two loudspeaker line outputs. The open, short and bad impedance faults can be detected by system for both speaker lines.

The secondary unit is capable of handling 1000W speaker load per zone, 2000W max. per unit.

4. Relay output control:

There are eight relay outputs, and they can be programmed as close/open contact to an external device.

5. EVAC control input:

There are nine EVAC inputs on BTQ-SG8/SL8, they can be programmed for <u>phase evacuation</u> and to monitor the external contact. Each channel supports 3 modes:

- Monitored contact mode: The system can monitor the evac input and detect faults (4 status: on, off, open and short).
- Disable: The cables which connect to evacuation input will not be monitored (faults will not be detected).
- Voltage mode: Trigger the input by a voltage change (OPEN/CLOSE) with an external 24VDC source provided by external devices. The cable is not monitored in this mode.

6. 24 VDC output:

The 24VDC (max. 0.8A) power is shared by the two 24VDC outputs on BTQ-SG8/SL8 and the remote consoles.

If the BTQ-SG8/SL8 is connected to an external 24VDC power supply such as connect to the battery charger, then the max. current will be 1.3A.

7. Logic input control:

There are eight logic inputs designed to work with simple contact or button, that are two states input (open contact, close contact), which can be specified as logic input to monitor security devices such as power supply, and those control input can put the system into a security mode for power saving purpose.

8/9. EVAC & Fault contacts output:

- EVAC contact: This contact is closed if the system is under EVAC paging.
- Fault contact: This contact is open if a system or major fault is detected.

10. Remote console (RJ45):

The remote port allows the paging consoles or accessories to be connected to BTQ-SG8/SL8. The BTQ-SG8 contains two sockets, and BTQ-SL8 contains one.

Each remote port on BTQ-SG8/SL8 unit can address up to 8 DPM-MAIN remote consoles in daisy-chain or up to 16 units in redundant loop using 2 ports (BTQ-SG8 only).

- Max. remotes per BTQ-SG8: 16
- Max. remotes per BTQ-SL8: 8
- Max. distance between remote units: 250m (shielded RJ45 connector, STP CAT5/6).

11. USB 2.0:

Connect a USB flash drive on BTQ-SG8 for external storage of music/message files and playback (G.711, G.722, G.726, G.727, MP3 and WAV).

12. Ethernet connector:

Connect the BTQ-SG8 unit to Ethernet network.

13. Global net link/Digi-link:

• Global net: The global network (redundant loops) is used to link the BTQ-VM4/8 controller to

the next connected BTQ-VM4/8 or BTQ-SG8 units. It supports both RJ45 plug and fiber-optics.

- o Max. global-net units: 64
- Max. distance between global-net units: 100m (STP CAT5/6), 2 km (multi mode ber optic) and 20 km (single mode ber optic).
- Digi-link port (RJ45): The local digi-link network is used to link the BTQ-VM4/8 controller and BTQ-SL8 secondary units together.
 - o Max. local-net units: 32
 - o Max. distance between local-net units: 10m (shielded RJ45 connector, STP CAT5/6).

14. RS232:

This port is used to connect to 3rd party device for controlling the BOUTIQUE system.

15. 24VDC out:

The 24VDC (max. 0.8A) power is shared by the two 24VDC outputs on BTQ-SG8/SL8 and the remote consoles.

If the BTQ-SG8/SL8 is connected to an external 24VDC power supply such as connect to the battery charger, then the max. current will be 1.3A.

16/17. Amp In1/Amp In2:

There are two outputs which can output the balanced 0 dB audio channel to two individual external power amplifiers.

18. Device DIP ID:

When connecting multiple secondary units with BTQ-VM4/8 controller, the device ID can identify the connection among the units.

19. 24VDC input (battery backup):

Connect the 24VDC battery charger for battery backup.

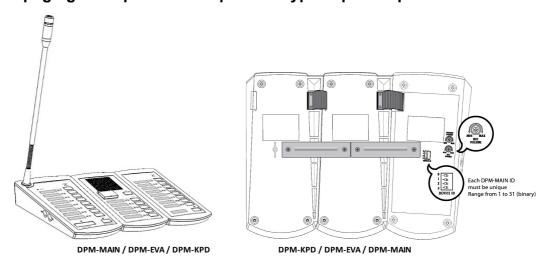
20. 24VDC input:

This input is to connect to the external power transformer.

21. Ground (GND) socket.

2.5 Digital paging console

2.5.1 DPM paging microphone/microphone keypad/speaker pad

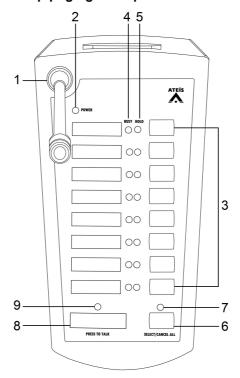


The DPM consists of three units: DPM-MAIN, DPM-EVA and DPM-KPD. The DPM-MAIN is the digital paging console, the DPM-KPD is an expansion keypad used to expand the DPM-MAIN, and the DPM-EVA is a monitoring speaker pad with an EVAC button and 5 programmable buttons.

Each remote port on BTQ-VM/SL/SG can address up to 8 DPM-MAIN remote consoles in daisy-chain or up to 16 units in redundant loop using 2 ports. Each DPM-MAIN can attach one DPM-EVA, and up to 16 DPM-MAIN with DPM-EVA/KPD are linked by the flat cable. The maximum communication cable length is 250M (820 ft.) between the BTQ-VM/SG/SL and DPM, DPM and DPM via STP CAT5/6 cable with shielded RJ45 connector.

The programmable buttons represent a single zone or a group of zones, the buttons can also act as zone paging, event triggering, recording, message routing, message playing button etc. and can be easily configured via web browser.

2.5.1.1 DPM-MAIN - digital redundant loop paging microphone-main



Front panel:

1. Microphone:

The unidirectional condenser gooseneck microphone warrants high quality directive signal pick-up and less interference from the surroundings.

2. Power LED:

The LED will light up in green when the DPM-MAIN is powered.

3. Programmable button:

There are eight programmable buttons for zone paging, event triggering, message routing, message play, level control etc..

4. Busy LED:

The LEDs will light up when the zones are occupied by the other audio sources.

 Green LED: The paging zones are occupied by the other audio sources which have lower priority, and is able to page.

- Continuous blink in green: The selected zones on DPM are under paging now.
- Red LED: The paging zones are occupied by the other audio sources which have higher priority, and is not able to page.

5. Hold LED:

- The LEDs will light up blue when the zones/zone group are selected and allowed to distribute.
- The LEDs will blink once in blue when the event is triggered.

6. All/Release button:

This button is used for select/deselect all zones.

7. All/Release LED:

The LED will light up in blue/light off if all the zones are selected/deselected.

8. Talk button (press-to-talk):

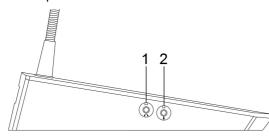
Start paging via press-to-talk mode or lock-to-talk mode. The talk mode can be set via web browser.

9. Talk LED:

- After the Talk button is pressed, this LED will light up to indicate the mic is active and the DPM is able to page.
- The LED will blink when the chime is playing.

If the paging request is granted, zones under paging can still be occupied by other sources with higher priority, and the Busy LED will light up in red.

❖ Side panel:



1. Headphone jack output:

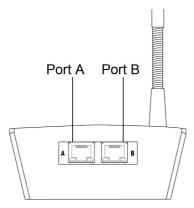
External headphone 3.5mm jack output.

2. Microphone jack input:

External microphone 3.5mm jack input.

When the external microphone is connected, the gooseneck mic on DPM-MAIN will be disable; when external headphone is connected, the loudspeaker on DPM-EVA will also be disable.

❖ Rear panel:



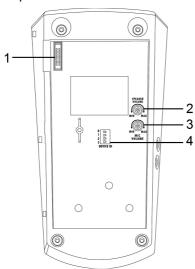
• Remote console sockets:

Connect the DPM-MAIN to BTQ-VM/SL/SG or cascade the next DPM-MAIN, DPM-T5, CD-8DF/16DF/T5DF, DGL-MIC via this redundant RJ45 sockets (A and B port). See the wiring connection from <u>Hardware Installation > DPM</u>.

If the power supply of DPM is insufficient, it needs to be connected to a DLR01 digital loop repeater for expanding the distance to 250M longer. And if the power of DPM units is not enough, connect a 24VDC local power on

DLR01.

❖ Bottom panel:



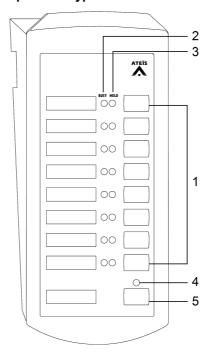
1. IDC connector:

For transmitting power and data to the next DPM-EVA/DPM-SPK unit via flat cable.

- 2. Speaker volume control.
- 3. Mic volume control.
- 4. Device ID:

Set the DIP switch to identify the connection of multiple DPM-MAIN. The DIP switch is followed by the binary code with 4 digit. The ID cannot be repeated, and the range of ID is from 1 to 31. See <u>Device ID</u>.

2.5.1.2 DPM-KPD - additional 8+1 microphone keypad



❖ Front panel:

1. Programmable button:

There are eight programmable buttons for zone paging, event triggering, message routing, message play, level control etc..

2. Busy LED:

The LEDs will light up when the zones are occupied by the other audio sources.

- Green LED: The paging zones are occupied by the other audio sources which have lower priority, and is able to page.
- Continuous blink in green: The selected zones on DPM are under paging now.
- Red LED: The paging zones are occupied by the other audio sources which have higher priority, and is not able to page.

3. Hold LED:

- The LEDs will light up blue when the zones/zone group are selected and allowed to distribute
- The LEDs will blink once in blue when the event is triggered.

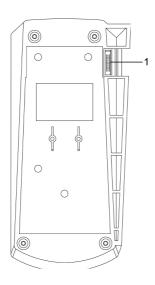
4. All/Release LED:

The LED will light up/off if all the zones are selected/deselected.

5. All/Release button:

This button is used for select/deselect all zones.

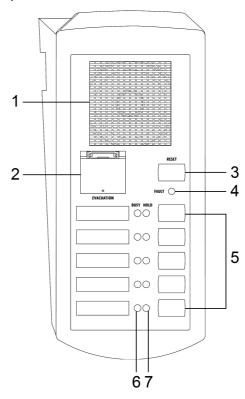
❖ Bottom panel:



1. IDC cable:

The connector is used for transmitting power and data to the next DPM unit via flat cable.

2.5.1.3 DPM-EVA - EVAC unit with speaker and extra buttons



Front panel:

1. Monitoring speaker:

This built-in speaker is to monitor the zone audio including message, BGM and paging. When the faults detected by the system, the system will generate a buzzer sound (tone) as warning.

2. Evacuation button:

Once this button is pushed, the system will enter to emergency state. The red LED will light up and play/route the EVAC messages.

3. Reset button:

This button is used to cancel the EVAC message paging.

4. Fault LED:

The LED will light up when one or more system faults are detected.

5. Programmable button:

There are five programmable buttons for zone paging, event triggering, message routing, message play, level control etc..

6. Busy LED:

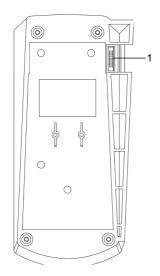
The LEDs will light up when the zones are occupied by the other audio sources.

- Green LED: The paging zones are occupied by the other audio sources which have lower priority, and is able to page.
- Continuous blink in green: The selected zones on DPM are under paging now.
- Red LED: The paging zones are occupied by the other audio sources which have higher priority, and is not able to page.

7. Hold LED:

- The LEDs will light up blue when the zones/zone group are selected and allowed to distribute.
- The LEDs will blink once in blue when the the event is triggered.

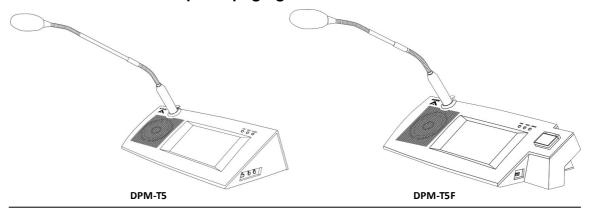
❖ Bottom panel:



1. IDC cable:

The connector is used for transmitting power and data to the next DPM unit via flat cable.

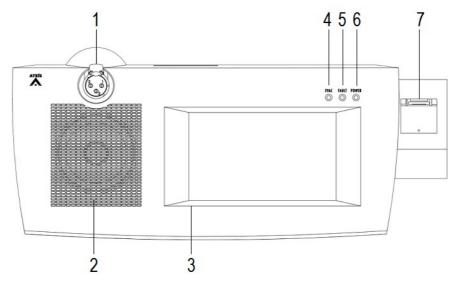
2.5.2 DPM-T5/DPM-T5F touchpanel paging mic



The DPM-T5/DPM-T5F 5" TFT touch screen paging mic console provides call-paging, message broadcasting, event triggering, recording, message routing, message play, level control etc.. Up to 8 DPM-T5/DPM-T5F can be connected to BTQ-SL8, and 16 on BTQ-VM4/VM8/SG8; the wiring can be daisy-chain or in redundant loop. The maximum communication cable length between the controller/ secondary units and paging consoles is 250M (820 ft.) via STP CAT5/6 cable with shielded RJ45 connector.

The DPM-T5/DPM-T5F is equipped with a 3.5mm phone jack mic input and a speaker output for the connection of external headset. Both DPM-T5 and DPM-T5F have a mini-USB port for PC/Laptop connection, making the far-end device using Skype, QQ, WhatsApp etc. be paged to BOUTIQUE system. In addition, the DPM-T5F has an evacuation button. The backlit full colour touch screen panel is designed for user-friendly operation and oers multiple pages for the selection of a zone/a group of zones.

2.5.2.1 Front panel



1. Microphone:

The unidirectional condenser gooseneck microphone warrants high quality directive signal pickup and less interference from the surroundings.

2. Monitoring speaker:

This built-in speaker is to monitor the zone audio including message, BGM and paging. When the faults detected by the system, the system will generate a buzzer sound (tone) as warning.

3. Touch screen panel:

A 5" LCD touch screen, and each pages on the panel can be pre-programmed to zone paging, trigger events etc..



4. EVAC LED:

This LED lights up in red when system is under the evacuation paging.

5. Fault LED:

This LED lights up in yellow when one or more system faults are detected.

6. Power LED:

This LED lights up in green when the DPM-T5/DPM-T5F is powered.

7. Evacuation button (DPM-T5F only):

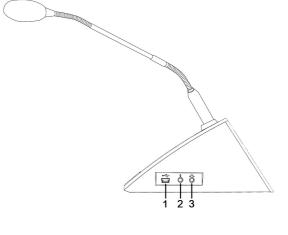
Once this button is pushed, the system will enter to emergency state. The red LED will light up and play/route the EVAC messages.

2.5.2.2 Side & rear panel

1. Mini-USB port:

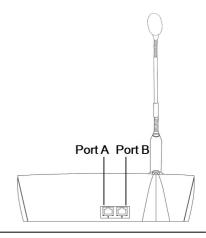
Connect to PC/Laptop for remote conferencing via Skype, WhatsApp etc.. Use the built-in mic and speaker of DPM-T5/DPM-T5F as the mic input and speaker output.

- 2. Microphone (DPM-T5 only):
 - 3.5mm (1/8 inch) phone jack female for external microphone.
- 3. Headphone (DPM-T5 only):
 - 3.5mm (1/8 inch) phone jack female for external headphone.



Remote console sockets:

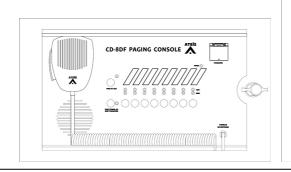
Connect the DPM-T5/DPM-T5F to BTQ-VM/SL/SG or cascade the next DPM-T5/ DPM-T5F. DPM-MAIN. CD-8DF/16DF/ T5DF, DGL-MIC via this RJ45 redundant sockets (A and B port).

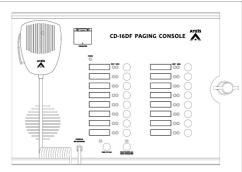




If the power supply of DPM-T5/DPM-T5F is insufficient, it needs to be connected to a DLR01 digital loop repeater for expanding the distance to 250M longer. And if the power of DPM-T5/ DPM-T5F units is not enough, connect a 24VDC local power on DLR01.

2.5.3 CD-8DF/CD-16DF wallmount paging mic



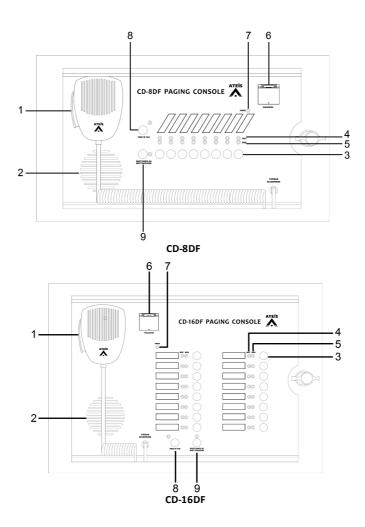


The CD-8DF/CD-16DF is a digital wall-mount paging console. It is designed with an encased IP30 heavy-duty metal box with a lockable cover. The 8/16 programmable zone buttons represent a single zone or a group of zones, the buttons can also act as zone paging, event triggering, recording, message routing, message playing button etc., and can be configured via web browser. In addition, it is equipped with a fireman microphone and an evacuation button.

Up to 8 CD-8DF/CD-16DF can be connected to a remote port of BTQ-VM/SG/SL via daisy-chain and

up to 16 in redundant loop. The maximum communication cable length between the BTQ-VM/SG/SL and remote units is 250M (820 ft.) via STP CAT5/6 cable with shielded RJ45 connector.

2.5.3.1 Front panel



1. Fireman microphone & U-shape bracket:

A fully monitored microphone is designed for EVAC paging. The paging button supports both press-to-talk and lock-to-talk mode. The talk mode can be set via web browser.

2. Monitoring speaker:

This built-in speaker is to monitor the zone audio including message and BGM. When the faults detected by the system, the system will generate a buzzer sound (tone) as warning.

3. Programmable button:

There are 8 (CD-8DF) / 16 (CD-816F) programmable buttons for zone paging, event triggering, message routing, message play, level control etc..

4. Busy LED:

The LEDs will light up when the zones are occupied by the other audio sources.

- Green LED: The paging zones are occupied by the other audio sources which has lower priority, and is able to page.
- Continuous blink in green: The selected zones on CD-8DF/CD-816F are under paging now.
- Red LED: The paging zones are occupied by the other audio sources which has higher priority, and is not able to page.

5. Hold LED:

- The LEDs will light up blue when the zones/zone group are selected and allowed to distribute.
- The LEDs will blink once in blue when the the event is triggered.

6. Evacuation button:

Once this button is pushed, the system will enter to emergency state. The red LED will light up and play/route the EVAC messages.

7. Power LED:

The LED will light up in green when CD-8DF/CD-816F is powered.

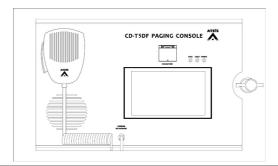
8. Press to talk button & LED:

Start a EVAC paging via press-to-talk mode.

9. Select/cancel all/reset evacuation button & LED:

This button is used for select/deselect all zones. The LED will light up in blue/light off if all the zones are selected/deselected.

2.5.4 CD-T5DF wallmount touchpanel paging mic

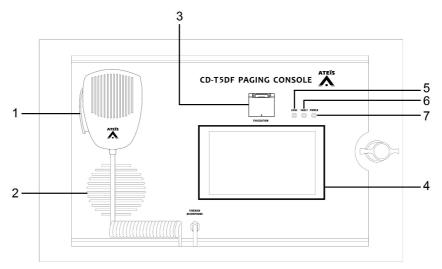


The CD-T5DF wall-mount paging console comes with a LCD touch screen panel, fireman microphone and evacuation button. It is designed with an encased IP30 heavy-duty metal box with a lockable cover. The 5" TFT touch screen panel provides call-paging, message broadcasting, event triggering, recording, message routing, message play, level control etc..

All paging functions and parameters for site operation such as naming zone buttons, zone group buttons, zone paging, pre/post chime settings can be pre-programmed via web browser. Moreover, several user levels with password protection make the CD-T5DF a versatile console that fits well in a commercial shopping centre or an industrial high-security facility.

Up to 8 CD-T5DF can be connected to a remote port of BTQ-VM/SG/SL via daisy-chain and up to 16 in redundant loop. The maximum communication cable length between the BTQ-VM/SG/SL and remote units is 250m (820 ft.) via STP CAT5/6 cable with shielded RJ45 connector.

2.5.4.1 Front panel



1. Fireman microphone & U-shape bracket:

A fully monitored microphone is designed for EVAC paging. The paging button supports both press to talk and lock to talk mode. The talk mode can be set via web browser.

2. Monitoring speaker:

This built-in speaker is to monitor the zone audio including message and BGM. When a fault is detected in the system, it will generate a buzzer sound (tone) as warning.

Evacuation button:

Once this button is pushed, the system will enter to emergency state. The red LED will light up and play/route the EVAC messages.

4. Touch screen panel:

A 5" LCD touch screen, and each pages on the panel can be pre-programmed to zone paging, trigger events etc..

Please read <u>DPM-T5/DPM-T5F/CD-T5DF LCD panel</u> to more details.

5. EVAC LED:

This LED lights up in red when system is under the evacuation paging.

6. Fault LED:

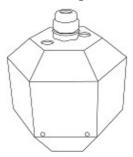
This LED lights up in yellow when one or more system faults are detected.

7. Power LED:

This LED lights up in green when CD-T5DF is powered.

2.6 Accessories

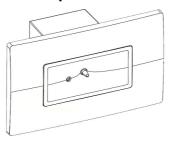
2.6.1 DNM2-ETH digital ambient noise sensing mic, Ethernet



With built-in electronic condenser microphone (omni-directional), the DNM2-ETH enhances the ability to detect the background noise and automatically adjusts the output level of loudspeaker to achieve the optimal intelligibility of sound. The DNM2-ETH is powered by using STP CAT5 cable with a max. distance of up to 100m via Ethernet (PoE).

Click DNM2-ETH installation to see more details.

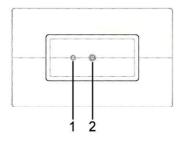
2.6.2 DGL-MIC flush/ceiling mount microphone



With built-in electronic condenser microphone (omni-directional), the DGL-MIC enhances the ability to detect the background noise and automatically adjusts the output level of loudspeaker to achieve the optimal intelligibility of sound. The DGL-MIC is connected to standard RJ45 connector connected to remote console port of BTQ-VM4/VM8, the DGL-MIC can connect with up to 250m via STP CAT5/6 cable with shielded RJ45 connector.



2.6.2.1 DGL-MIC front panel/rear panel



3

1. Power & Status LED:

Light up in green when the DGL-MIC is powered. The LED will flash if the communication with BTQ-VM/ SG/SL does not function.

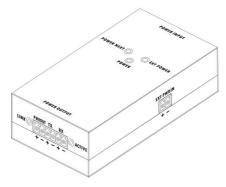
2. Microphone:

The built-in electronic condenser microphone input (omnidirectional) to pick up sound around the microphone.

3. RJ45 connector:

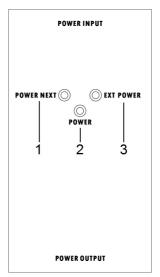
Connect the DGL-MIC to the remote port of BTQ-VM4/VM8/SL8/SG8 or connect it to the remote port of the last DPM-MAIN.

2.6.3 DLR01 - digital loop repeater



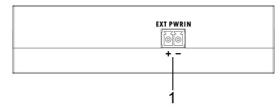
The DLR01 is a digital loop repeater with power injector, it can extend the wiring distances of peripherals such as paging consoles, noise sensing microphones etc. on BOUTIQUE system. If the control signal of remotes in a redundant loop/daisy-chain wiring is not strong enough, the DLR01 can extend the distance of remotes 250m longer. In addition, the DLR01 is equipped with the 24VDC external power input, providing local power to the remotes.

2.6.3.1 Top panel



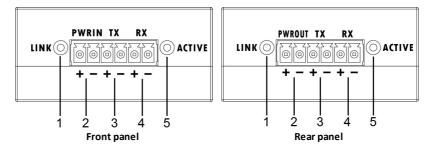
- 1. Power NEXT LED: The 24VDC power output LED.
- 2. Power LED: Light up when the DLR01 is powered.
- 3. EXT power LED: The 24VDC power input LED.

2.6.3.2 Side panel



1. Ext pwrin connector: Connect the 24VDC external power adapter to this input connector.

2.6.3.3 Front & rear panel



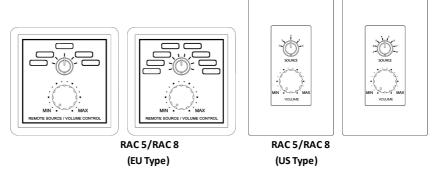
- 1. Link LED: Network LED.
- 2. Pwrin/Pwrout connector: The 24VDC power in/out connector and ground connector.
- 3. TX connector.
- 4. RX connector.
- 5. Active LED: Communication LED.



See <u>DLR01 Connection Diagram</u> for details.

2.6.4 RAC 5/RAC 8 remote controller

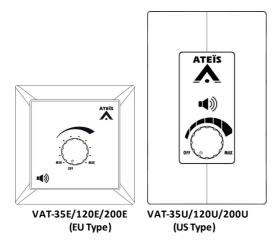
The RAC flush-mount remote can be used to adjust the source settings such as level and parameters remotely. The two types of 5/8 steps knobs on RAC can be programmed via web browser. The RAC 5/8 is available for US and EU type, and powered by 24VDC.





See RAC 5/RAC 8 wiring connection.

2.6.5 VAT volume attenuator



The VAT is a volume attenuator equipped with a 5step attenuation plus a OFF step, it offers precise level control and excellent frequency response to the speaker lines, making it fit in the environment whether in a noisy warehouse or a quiet office.

- The VAT is applicable for 100 volt/70.7 volt application system.
- The VAT fits in both standard US and EU type of flush-mount boxes, and is available in 35W, 120W and 200W options.



See VAT & VA-EOL installation & connection.

2.6.6 VA-DLC dummy load capacitor module



The VA-DLC dummy load capacitor is used for the speaker line surveillance based on impedance measurement. When a number of speakers are installed with long wires, the VA-DLC can provide a reliable monitoring method to detect the open circuit of entire speaker line even the last speaker.

The VA-DLC has a 4-step DIP switch, and each step refers to individual speaker line power load.

See VA-DLC installation & connection.

2.6.7 VA-EOL end of SP-line module for multi-branch/3-wire

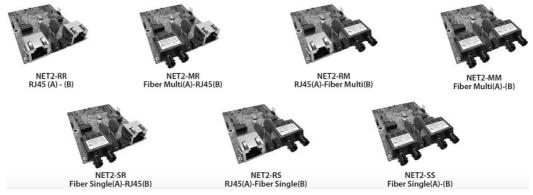


To monitor the long speaker lines, the VA-DLC-100/VA-DLC-70 dummy load capacitor module can be added on the PA/VA system to detect the open and short circuit of entire speaker line even the last speaker. However, for advanced configuration such as install the VAT volume attenuators in the 3 wire speaker line for volume control, the impedance of speaker line is changed after adjusting the volume on VAT volume attenuators. Furthermore, for branching the speaker line wiring, a cut of partial branching may not change the overall impedance that obviously. Therefore, the VA-EOL is the only solution which can adapt the changing impedance and detect open or short circuit for each branch.

By installing the VA-EOL at the end of speaker lines, the system can indicate which speaker line is open or short circuit, helping to save the analysis time. In addition, the installation does not require additional loopback cabling and is powered by BTQ-VM/SG/SL via speaker line without affecting the audio signal.



2.7 Network cards



The ATEÏS BOUTIQUE network is a monitored and ultra-fast audio network, it is capable to simultaneously transmit 64 audio channels (32 bit, 48 kHz sampling rate) of audio and data with low latency < 0.08 ms per node over STP CAT5/6 cable or Fiber-Optic. Up to 64 BTQ-VM4/8 controllers or BTQ-SG8 secondary units can be connected under the ATEÏS BOUTIQUE global network. Thanks to the benefits of ATEÏS redundant network algorithm, the redundant network loop on BTQ-VM/SG units makes sure the system be continually functional when occurs unexpected cable

disconnection.

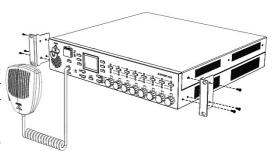
The installation of NET2-RR card (RJ45 to RJ45 port) is suitable with a maximum distance of 100m in global network. For installation with longer distances, the NET2-MR, NET2-RM, NET2-MM, NET2-SR, NET2-RS or NET2-SS are used to extend the distances via fiber-optic for a distance up to 2 km between units (multi-mode) or 20 km (single-mode).

3 Hardware installation & connection

3.1 BTQ-VM/SG/SL mounting

The BTQ-VM4/8 controller is suitable for 19-inch 2U rack-mounting installation. Attach the two rack-ears to the BTQ-VM4/8 using the four M4 x 4x8mm screws. Consider leaving enough ventilation space above and below the unit. Do not mount the controller directly above the heat generating devices like power supplies or power amplifiers.

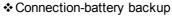
Installing a BTQ-SL8/SG8 secondary unit is similar to installing a BTQ-VM4/VM8 controller, except the secondary units are installed in 19-inch 1U rack-mounting.

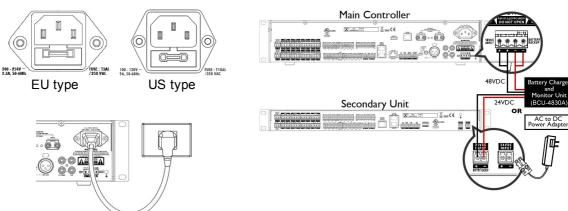


3.1.1 BTQ-VM/SG/SL power supply

The BTQ-VM controller has two types of power supply input, AC mains and 48VDC for battery backup via phoenix euro-block connector, and secondary unit by 24VDC.

Connection-mains power





3.2 BTQ-VM4W/VM8W mounting

This mounting and connection must be carried out in accordance with all applicable standards and regulations by an electrically skilled person.

Danger – Electrical shock! The installation of BTQ-VM4W/VM8W must "only" be operated when the AC power supply is closed.

3.2.1 Locating the BTQ-VM4W/VM8W

1. Locate the BTQ-VM4W/VM8W controller that is near the AC power terminal, and make sure the wattage load of power outlet is **1.2 multiples** from the needs of BTQ-VM4W/VM8W, see the following table.

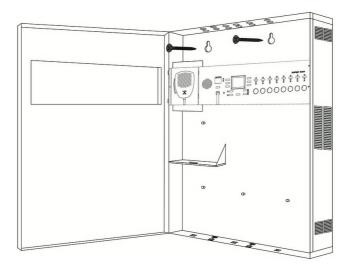
AC power input:	EU type: 220 VAC ~ 240 VAC, 50/60 Hz US type: 100 VAC ~ 120 VAC, 50/60 Hz	
power consumption (AC):	full power	wattage load of power outlet
BTQ-VM425/825W1	W1: 390W	W1: 468W

AC power input:	EU type: 220 VAC ~ 240 VAC, 50/60 Hz US type: 100 VAC ~ 120 VAC, 50/60 Hz	
BTQ-VM425/825W2	W2: 740W	W2: 888W
BTQ-VM450/850W1	W1: 750W	W1: 900W
BTQ-VM450/850W2	W2: 1460W	W2: 1752W

2. Check if the dimension and weight of BTQ-VM4W/VM8W can fit on the wall, see <u>Technical Data > BTQ-VM4W/VM8W</u>. The wall must have sufficient strength to support the entire weight of the BTQ-VM4W/VM8W (including the four 12VDC batteries).

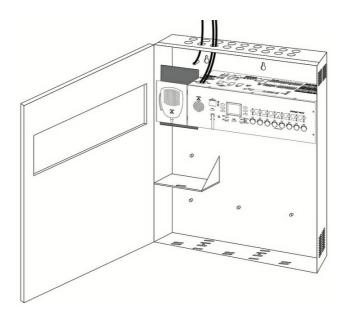
Depending on the used battery capacity and the resulting weight of the batteries, please make sure the drywall have sufficient strength to support the entire weight of this load.

3. Drive the nails into the wall stud for fixing the BTQ-VM4W/VM8W on wall, see the picture as below.

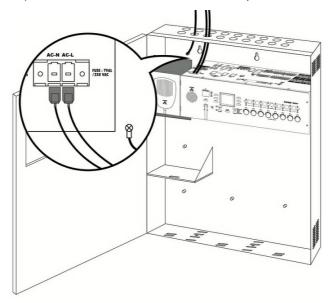


3.2.2 BTQ-VM4W/VM8W wiring

- Observe the position of the necessary cables including L wire, N (Neutral) wire, G (Ground) wire on AC power terminal, and the other signalling cables such as audio cables, Ethernet cables etc., these cables will be connected to the BTQ-VM4W/VM8W through the cable entries of BTQ-VM4W/VM8W.
- 2. Use separate cable entries for the AC main cables (L wire/N wire/G wire), see the picture as below.

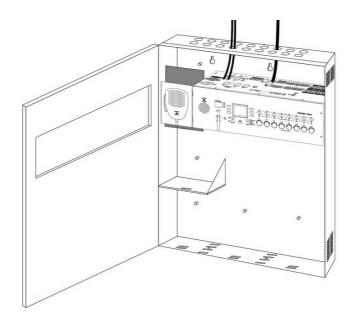


- 3. Make sure that length of L wire/N (Neutral) wire/G (Ground) wire on the AC input terminal is sufficient for the connection of BTQ-VM4W/VM8W.
- 4. Connect the L wire and N (Neutral) wire on the AC input terminal to the AC-L, AC-N power wires of BTQ-VM4W/VM8W (euroblock connector).
- 5. Connect the G (Ground) wire on BTQ-VM4W/VM8W, see the picture as below.



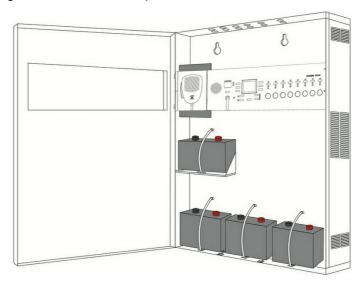
△ Danger – Electrical shock! The wiring of BTQ-VM4W/VM8W must "only" be operated when the AC power supply is closed.

6. Use other cable entries for connecting the rest of essential signalling cables such as audio cables, Ethernet cables etc. to BTQ-VM4W/VM8W, see the picture as below.



3.2.3 Mounting the batteries in BTQ-VM4W/VM8W

1. Mount the four 12Ah batteries (10Ah to 30 Ah) in series inside the BTQ-VM4W/VM8W. And use cable ties for fixing the batteries, see the picture as below.



2. Connect the four 12Ah batteries (10Ah to 30Ah).

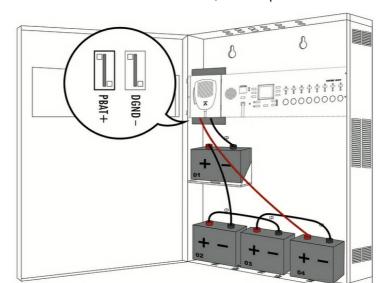
⚠Only connect the four 12VDC batteries of the same voltage, capacity, type, brand and age.

Danger – Electrical shock! The installation and wiring of batteries must "only" be operated when the AC power supply is closed.

Before powered on the BTQ-VM4W/VM8W, please use the electric meter to measure the battery voltage (43.2VDC ~ 60VDC total in normally operated). If the battery voltage is under 40VDC, the BTQ-VM4W/VM8W will stop charging.

The BTQ-VM4W/VM8W has two terminals (PBAT+ / DGND-) for connecting to the batteries.

- 1) Connect the DGND- terminal to the terminal of the first battery.
- 2) Connect the PBAT+ terminal to the + terminal of the last battery.



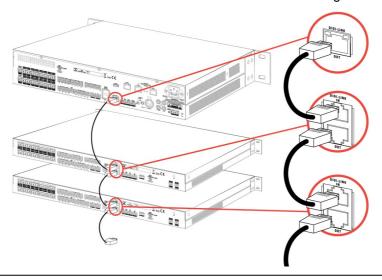
3) Connect the the rest of three batteries in series, see the picture as below.

3.3 ATEIS network (digilink and global-net)

There are two types of ATEÏS network connection.

• Digi-link bus (Local-link)

The BTQ-VM4/8 controller has 1 digi-link port for BTQ-SL8 secondary unit. Use STP CAT5/6 cable with shielded RJ45 connector to connect a BTQ-SL8 secondary unit to BTQ-VM4/8 controller. Up to 31 BTQ-SL8 units can be connected under the local digi-link network.



To identify the connection among the secondary units, each secondary unit has an unique ID. And the ID must be set orderly based on the Digi-link connection. For example, if the ID of BTQ-VM8 controller is 1:1, then the ID of the first connected BTQ-SL8 unit on BTQ-VM8 will be 1:2, and 1:3 for the second BTQ-SL8 unit. See Hardware Configuration-SecondaryUnit-Device ID to know the ID configuration.

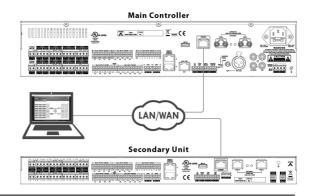
Global-net

Connect the BTQ-VM4/8 controller and SG8 secondary unit together through A, B port via global-net.



3.4 Ethernet (RJ45)

Connect the BTQ-VM4/8 controller and BTQ-SG8 unit to Ethernet by using STP CAT5/6 cable.



3.5 Digital paging console

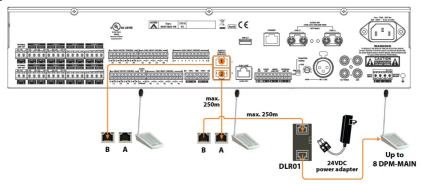
The BTQ-VM4/8 controller and BTQ-SG8 secondary unit has 2 remote connections with RJ45 connectors, and the BTQ-SL8 secondary unit has 1. Each port can address up to 8 DPM-MAIN consoles. The maximum communication cable length is 250M (820 ft.) between the controller/secondary unit and DPM console, DPM and DPM via STP CAT5/6 cable with shielded RJ45 connector, subjects to the power supply is sufficient. Multiple DPM consoles can be wired in a daisy-chain or redundant loop using 2 ports.

Each DPM-MAIN can attach one DPM-EVA, and up to 15 DPM-KPD can link to one DPM-MAIN by flat cable as shown above. If the control signal of DPM units is not strong enough, the DPM needs to connect to DLR01 digital loop repeater for expanding the distance to 250M longer. And if the power of DPM units is not enough, connect a 24VDC local power on DLR01 Digital Loop Repeater, see the picture below.

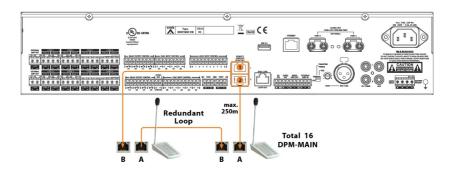
When the power supply and distance is not enough, the DPM-T5, DPM-T5F, CD-8DF, CD-16DF, CD-T5DF is also applicable to connect the DLR01 digital loop repeater.

3.5.1 Redundant loop/daisy-chain wiring

Daisy-chain



Redundant loop



- 1. Connect the [Remote Port 1] on BTQ-VM4/VM8/SG8 to the [Remote Port B] on the first set of DPM-MAIN.
- 2. Connect the [Remote Port A] on the last set of DPM-MAIN to the [Remote Port 2] on BTQ-VM4/VM8/SG8 via redundant loop.

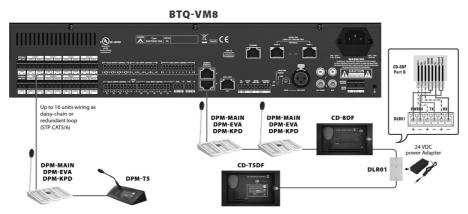
3.5.2 DPM-T5/DPM-T5F/CD-8DF/CD-16DF/CD-T5DF

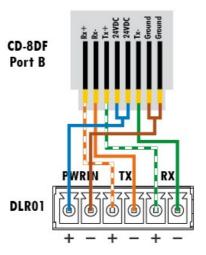
Connection

When connects more than 2 DPM-T5/DPM-T5F/CD-8DF/CD-16DF/CD-T5DF units, they can be wired in a daisy-chain or as a redundant loop. The installation is similar to installing a DPM, see Redundant loop/daisy-chain wiring.

3.6 DLR01

The DLR01 is a digital loop repeater with power injector, it can extend the wiring distances of peripherals such as DPM-MAIN/EVA/KPD, DPM-T5/DPM-T5F, CD-8DF/CD-16DF/CD-T5DF. If the control signal of remotes in a redundant loop/daisy-chain wiring is not strong enough, the DLR01 can extend the distance of remotes 250m longer. In addition, the DLR01 is equipped with the 24VDC external power input, providing local power to the remotes.



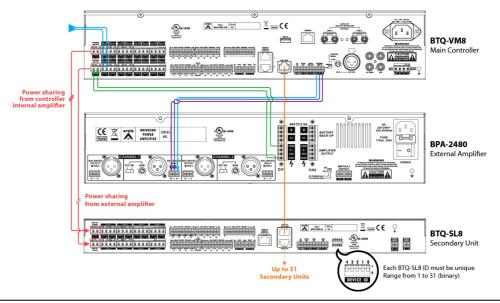


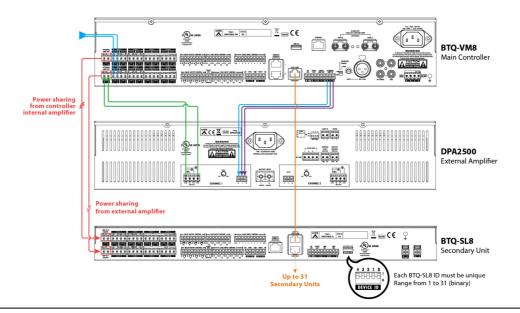
3.7 External power amplifier

The BTQ-VM4/8 controllers have an internal 250W or 500W amplifier built-in. For system power sharing and/or backup, connect a second power amplifier (DPA or BPA) externally.

The BTQ-SL8 secondary unit can share power amplifier from BTQ-VM4/8 controller, secondary units or connect to an external power amplifier.

Both of the controller and secondary unit are capable to handle the power up to 1000W per speaker zone, 2000W per unit.



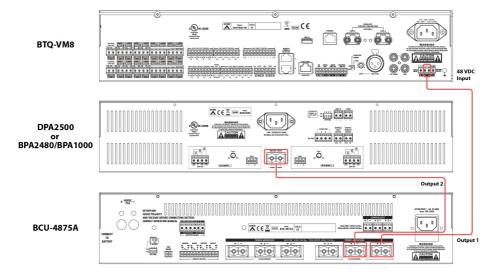


lacktriangledown The internal amplifier of the main controller can also be used as external power amplifier for the secondary unit, see web configuration -> settings -> controllers/secondary units.

3.8 **Battery charger (power sharing)**

For DC battery backup power sharing, connect the battery charger to BTQ-VM4/8 controller and external power amplifier as the picture below.

The example below is using the BCU-4830A/BCU-4875A battery charger and BPA or DPA power amplifier from ATEÏS.

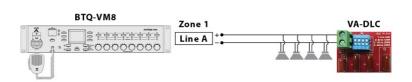


3.9 Loudspeakers

In a case of BTQ-VM8 controller, it has 8 speaker zone outputs (Z1 to Z8). Each zone output consists of 2 redundant loudspeaker lines (line A and line B). Normally, the paging calls and BGM are distributed to a zone over both loudspeaker lines. If one of the loudspeaker lines of a zone fails, it is still possible to distribute the paging calls and BGM to the zone over the remaining loudspeaker line.

3.10 VA-DLC dummy load capacitor module

When a number of speakers are installed with long wires, each sub zone (A/B) requires a dummy load capacitor at the end of speaker line for speaker line surveillance based on impedance measurement.



When more than 2 branching speaker lines are connected to BTQ-VM4/VM8/SG8/SL8, we recommend to install VA-EOL end of line supervision board instead.

See the following how-to to install the VA-DLC.

- 1. The BOUTIQUE system will auto calculate the total speaker line load; therefore, do not connect the wiring between the VA-DLC and BTQ-VM4/VM8/SG8/SL8 at this moment.
- Proceed the Setup Wizard on front LCD panel of BTQ-VM4/8 or web browser, see <u>Setup Wizard > Net Setup > Step 5</u>: <u>Dummy Load Capacitor</u>, and it will automatically calculate the total speaker line load (watt).
- After completed the Step 5 of Setup Wizard, follow the recommended data for the DIP switch of VA-DLC displayed on LCD panel of controller or web browser, and set "ON" position on the corresponding DIP switch of VA-DLC.
- 4. Connect the wiring between the VA-DLC and BTQ-VM4/VM8/SG8/SL8.
- 5. Continue to proceed the Step 6 of Setup Wizard on LCD panel of controller or web browser, see Setup Vizard Net Setup > Step 6: Monitoring to get monitor reference.

To monitor the long speaker lines, the VA-DLC dummy load capacitor can be added on the BOUTIQUE PA/VA system to detect the open and short circuit of entire speaker line even the last speaker. However, for advanced configuration such as installs the VAT volume attenuators in the speaker line for volume control, the impedance of speaker line is changed after the volume attenuators adjustment.

Furthermore, for branching the speaker line wiring, a cut of partial branching may not change the overall impedance that obviously. Therefore, the VA-EOL is the only solution which can adapt the changing impedance and detect each branch by a time-sharing algorithm.

3.11 VA-EOL end of SP-line module for multi-branch/3-wire

3.11.1 VA-EOL branch wiring with VAT

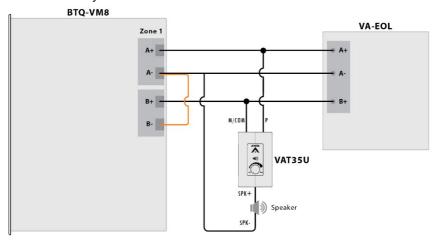


The VAT remote volume attenuator supports 2-wire connection and 3-wire connection, and is compatible with 100V and 70V loudspeaker lines.

❖ VAT 3-wire installation

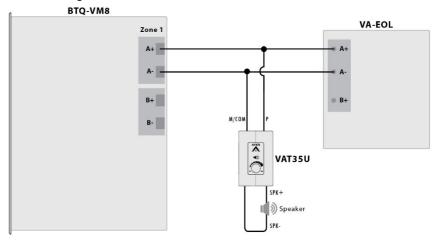
The installation of 3-wire connection on VA-EOL and VAT volume attenuator is capable to increase/decrease the volume of background music remotely during BGM broadcasting, and the

volume will not be attenuated during EVAC message broadcasting. In addition, by installing the VA-EOL at the end of speaker lines, the system can quickly indicate which speaker line is open/short circuit in every branch.



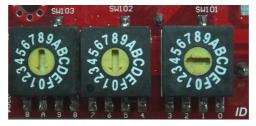
❖ VAT 2-wire installation

The installation of 2-wire connection is capable to increase/decrease the volume of loudspeakers (A/B lines) during BGM broadcasting. However, the volume will be attenuated during EVAC message broadcasting at the same time.



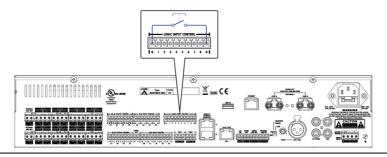
3.11.2 Device ID setting

- The ID setting on VA-EOL board is followed by the hexadecimal code, and the ID setting needs to convert to decimal code on BOUTIQUE web browser.
- Each ID of VA-EOL must be unique.
- · Use the screwdriver to set the ID.



3.12 Logic inputs

The logic control Inputs are designed to work with simple contact or button, see the wiring connection as below.



See the wiring connection between RAC 5/RAC 8 and BTQ-VM4/8 from Hardware installation & connection > RAC 5/RAC 8.

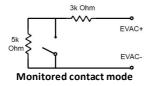
3.13 **EVAC** inputs

The 9 evac inputs on BTQ-VM8/SG8/SL8 and 4 on • Disable: The cables which connect to BTQ-VM4 can let the third party systems to signal the BOUTIQUE system for triggering events, start evac paging or message announcement. The Voltage mode: Trigger the input by a voltage settings of evac inputs requires to be set on web browser.

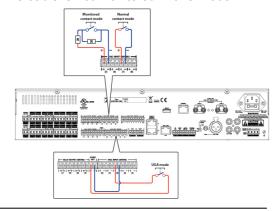
The EVAC inputs have a higher priority than the Logic inputs.

Each channel supports 3 modes:

• Monitored contact mode: The system can monitor the evac input and detect faults (4 status: on, off, open and short).



- evacuation input will not be monitored (faults will not be detected).
- change (OPEN/CLOSE) with an external 24VDC source provided by external devices. The cable is not monitored in this mode.

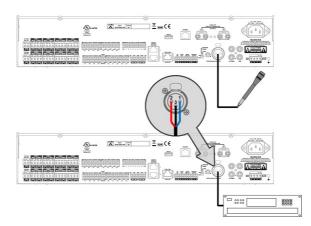


3.14 Mic/Line input with VOX (XLR)

The BTQ-VM4/VM8 controller has 1 Mic/ Line balanced XLR input with voiceactivated (VOX).

When connecting the MIC/Line input, please switch "ON" on [VOX] setting, and adjust the mic volume by the gain knob.

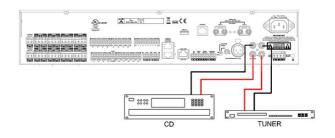
The BTQ-VM4/VM8 also provides 48VDC phantom power for MIC/Line input. If the MIC/Line input requires phantom power supply, set the [Phantom Power] switch in ON position. If the microphone does not applicable for phantom power supply, leave the switch in OFF position.



3.15 BGM inputs (RCA)

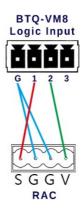
The main controller has 2 BGM inputs. Each BGM input has a double cinch socket which converts stereo to mono. Connect the background music source on these cinch input such as CD player or tuner.

Input	Source	
CD/Tuner	CD or tuner	
AUX	Auxiliary source	

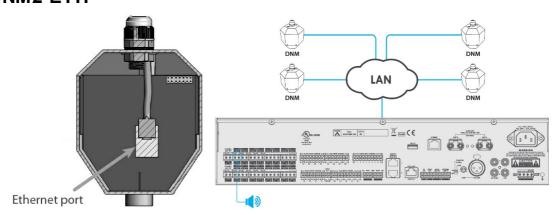


3.16 RAC 5/RAC 8

The RAC 5/RAC 8 is using in analogue connection. Connect the pins of RAC 5/ RAC 8 to the logic input control of BTQ-VM4/8, see the picture on the right.



3.17 DNM2-ETH



Connect the DNM2-ETH device(s) using STP CAT5/6 cable to the network switch via LAN, then the DNM2-ETH device(s) will be discovered by Boutique system automatically and displayed on the web browser.

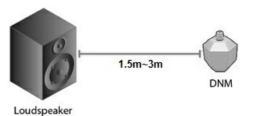
3.17.1 Installation notice

Install the DNM2-ETH to the position in which the DNM2-ETH can detect the background noise and automatically adjust the speaker level. Up to 8 DNM2-ETH devices can connect to each BOUTIQUE local network, and up to 256 DNM2-ETH devices can connect to a BOUTIQUE system (8 DNM2-ETH \times 32 local networks).

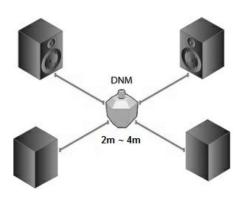
When the loudspeakers are placed in a big area such as railway station hall, loudspeakers are put in different locations, which requires to install multiple DNM2-ETH units for having clear enough sound for each position of the area. Then users need to assign multiple DNM2-ETH units in a DNM group. Please note a DNM group can only be applicable to one BOUTIQUE zone.

The distance between DNM2-ETH and speaker also relies on the power of the amplifier and loudspeaker. If it is a high-power loudspeaker (sound is louder), then the distance should be increased, and vice versa.

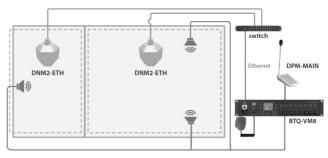
- Examples of installation:
- 1. Install the DNM2-ETH in front of the loudspeaker about 1.5~3 meters.



 Install the loudspeakers by circularity and the distance is not far from the loudspeakers, then the DNM2-ETH can be installed in the center of loudspeakers (eg: a small conference room etc.).



- To avoid the problem that if the DNM2-ETH is installed at a quiet place, and the level of broadcasting is too small for the loud side, users can divide the zone to several area, and one DNM2-ETH for one divided area.
- 4. Also, users can set the gain value based on the loudest noise which is detected by DNM2-ETH, so that every section in the same area can hear the broadcasting clearly.



See <u>DNM2-ETH web configuration</u> to set the Group Rule (maximum/minimum/average) on DNM2-ETH units.

4 Hardware configuration & operation

After completed the hardware connection in the previous chapters, please proceed the hardware configuration. If this is the first system setup, users can easily do the hardware configuration directly from LCD touch panel of BTQ-VM4/8 controller, see <u>Setup Wizard</u>.

More advanced configuration such as DSP parameters adjustment, event and bell scheduler etc.. can be configured by a dedicated ATEÏS web browser, see <u>Configuration</u>.

4.1 BTQ-VM LCD panel

4.1.1 Setup wizard

The LCD touch panel on main controller provides system configuration, control and system status display.

- After completed the hardware wiring, the LCD panel will activate automatically once it is powered.
- Press the touch panel to start the system setup.
 - 1. New Setup (Setup Wizard)
 - 2. Replace (replace the broken main controller with the new one)



4.1.1.1 New setup

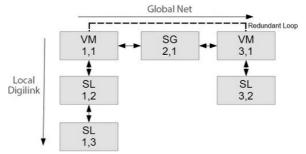
4.1.1.1.1 Step 1: country & language

- Press [] on touch panel to set the country and language.
- Press [Step 2].



4.1.1.1.2 Step 2: number of main and secondary units & ID

Set the number of main controller and secondary unit and its ID in the system. The ID is composed of the number of X, Y. X indicates the global net ID and Y is the local net ID.



Network		
Local Network: *for BTQ-SL8 connection	 Max. digi-link units: 31 Max. cable length: 10m between units (shielded RJ45 connector, STP CAT5/6) 	
Global Network: *for BTQ-VMxx/BTQ-SG8	Max. global net units: 64Max. cable length: 100m between units	

Network	
connection	(STP CAT5/6), multi-mode (2km), single-
	mode (20km) fibre optics

• Set the number of controllers (VM4/VM8/VM8W1/VM8W2) and secondary global units (SG).





- 1. Press [Edit] to change the number of VM4/VM8/VM8W1/VM8W2 and SG units.
- 2. Press [Save] to apply settings.
- Set the ID of BTQ-VM4/VM8/VM8W1/VM8W2 controller and SG unit.





- 1. Select the unit, and press [Edit] to change its ID.
- 2. Press [Save] to apply settings.
- Set the number of secondary local units (SL).





- 1. Select [VM8/SL] block via [button, and press [Edit] to change the number of SL units.
- 2. Press [Save] to apply settings.
- 3. Press [Step3].

4.1.1.1.3 Step 3: number of remotes

• Set the number of DPM8 and DPM-T5 on [VM8/1:1 Port 1].

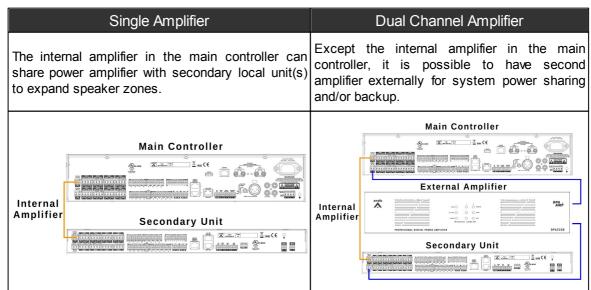




- 1. Press [Edit] to change the number of DPM8 and DPM-T5.
- 2. Press [Save] to apply settings.
- Select [VM8/1:1 Port 2] block via [button, and set the number of DPM8 and DPM-T5 on [VM8/1:1 Port 2].
- Press [Save] to apply settings.
- Press [Step 4].

4.1.1.1.4 Step 4: power amplifier(s) sharing

The power amplifier from internal amplifier of main controller and external amplifier can be shared among the main controllers and secondary local units.



• Set the number of amplifier for CH1 and CH2 in Group 1, the Group 1 indicates the amplifiers in the first local network (the internal amplifier is belonged to CH1).





1. Press [Edit] to change the number of amplifier in Group 1.

- 2. Press [Save] to apply settings.
- Add unit and set unit ID for power amplifier sharing.





- 1. Press [Edit].
- 2. Press [⊕ ⊝] to set ID for the unit, then press [Add]/[Delete] to add or remove the unit for power sharing in the amplifier.
- 3. Repeat #2 to add/delete more units.
- 4. Press [Save] to apply settings.
- Set CH1: Amp 1 wattage.



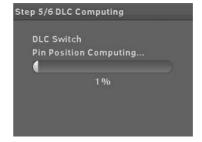


- 1. Press $[\oplus \ominus]$ to change the watt, and [Save] the settings.
- 2. Press [] for the CH1, Amp2 settings, and repeat the same procedure for other amplifier (s) settings.
- 3. Press [Step 5].

4.1.1.1.5 Step 5: dummy load capacitor

• Calculate dummy load capacitance and DIP switch setting.







- 1. Each speaker zone has A/B sub zones. Each sub zone requires a dummy load capacitor in the end of speaker line.
- 2. Set the indicated number to ON position on the DIP switch.
- 3. Press [Next].

4.1.1.1.6 Step 6: monitoring

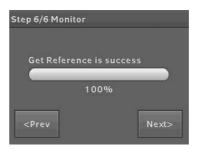
• Set the monitor tolerance of speaker line impedance and power amplifier.





- 1. Press [Next] to apply the preset tolerance, impedance and amplifier gain. Or press [Edit] to change the tolerance of percentage.
- 2. Press [Save] to apply settings.
- · Press [Next] to get monitor reference.





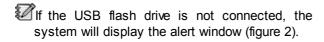
• Press [Ready] and [Activate] to enter the menu window.



4.1.1.2 Replace

When replacing the broken main controller with the new one, proceed the Replace function to configure and synchronize the system with the broken device only.

 If the USB flash drive is connected on BTQ-VM4/ VM8/SG8, click [Yes] to use the config. file from USB to replace (figure 1).



2. If not using the file from USB flash drive, click [Skip] to skip the step.



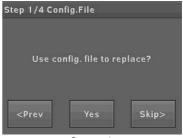


figure 1

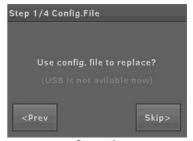
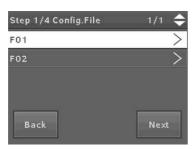
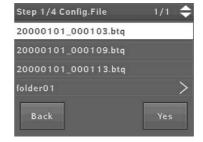


figure 2

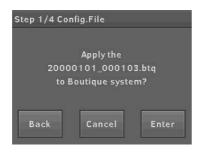
4.1.1.2.1 Step 1: configuration File

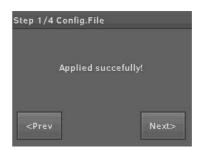
• The files will be automatically appeared on the LCD panel once the USB flash drive is connected to.





- 1. Select the folder, and press [Next] to enter.
- 2. Select the file, and press [Yes].





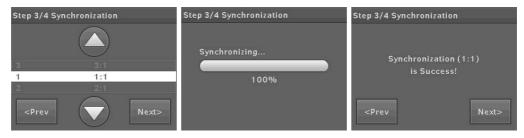
- 1. Press [Enter] to apply the config. file to the system.
- 2. Press [Next].

4.1.1.2.2 Step 2: net ID

- 1. Select the netcard ID of the "new" BTQ-VM4/VM8 controller used to replace the broken one.
- 2. Click [Next] to to apply settings.



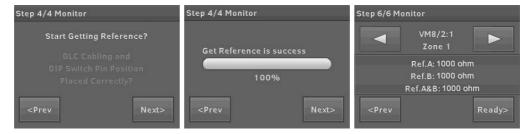
4.1.1.2.3 Step 3: synchronization



- 1. Select the main controller used as the default configuration for synchronization to the broken one.
- 2. Press [Next] to start synchronizing.
- 3. Press [Next] to complete the synchronization.

4.1.1.2.4 Step 4: monitoring

• Get monitor reference.



- 1. Press [Next] to get monitor reference.
- 2. Press [Ready] to enter the menu window.

4.1.2 LCD menu





• Mic/Line:

Adjust the volume or mute/unmute the Mic/Line.



• FMM:

Adjust the volume or mute/unmute the fireman microphone.



• Log List:

Display the content of log list.



• Fault List:

Display the list of fault occurrences.



• Logout:

Click to logout. In case of multi-users with different level, you can logout from the current user session in order to login in an other one.

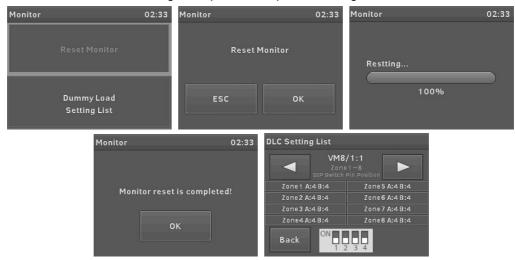
· Login:

Login the LCD display by entering the username and password.



· Monitor Reset:

Click to reset the monitoring of amplifier and speaker line again.



• Lamp Test:

Test the lighting of LED, LCD display, relay output of all the connected controllers and secondary units.

- o LED: Light on/off the LED.
- LCD display: Change the color of display in red
 green > blue > white > black.
- Relay output: Change the relay output channel on LCD display to open/short.

· System Reset:

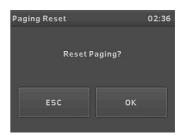
Clean the system fault list, the System Fault LED will light off as well.





· Paging Reset:

Cancel all the paging in the system.



· Setting:

o Language/region/time: Set the language/country/time.



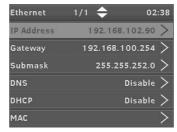




 Logout time: Set the time of auto logout when the BTQ-VM4/8 controller is not operating.



o Ethernet Settings: Set IP address/Gateway/Submask/DNS/DHCP/MAC.

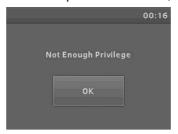


Default Setting	BTQ-VM	BTQ-SG8
IP address	192.168.102.125	192.168.102.124
Subnet Mask	255.255.252.0	255.255.252.0
Gateway	192.168.100.254	192.168.100.254
DNS	0.0.0.0	0.0.0.0

When changing the Ethernet settings, the BOUTIQUE system needs to reboot.

- o Net ID: Set the ID of BTQ-VM4/8 controller through the ATEÏS global-net.
- o Brightness: Set the brightness of LCD display.
- Security mode: Activate the power saving mode on BOUTIQUE system, and let the listed functions (Level 1 & 2 option) on <u>Security mode (power saving)</u> chapter to be activated only.

- o Sync.: Synchronize the configuration on the new unit.
- o Run Wizard: Run the setup wizard again.
- o Info: List the current firmware version of main controller.
- Buzzer: Adjust the volume or mute/unmute the buzzer sound from the built-in speaker of BTQ-VM4/8 controller when a fault is detected.
- o Schedule: Display the scheduler setting configured from ATEÏS web browser.
- Privilege Setting: When accessing the menu settings which you are not authorized, it will display [Not Enough Privilege]. Please logout first, and login with an user level which is qualified for the functions. See the pictures as below,



4.2 DPM-T5/DPM-T5F/CD-T5DF LCD panel

All the zone buttons on the LCD panel of DPM-T5 can be configured via web browser, and used for displaying and operation.

Before operating the DPM-T5, please note the settings of zone buttons such as pre/post-announcement chime, talk mode (lock to talk/press to talk), priority, button name, event function etc. needs to be configured on <u>Configuration > Integration Paging</u> first.



- 1. Button/event key: The buttons represent the following action: a zone, a group of zones, and an event. If a button represents a zone or group or zones, press this button for zone selection; if it represents an event, press this button to trigger the event.
- 2. Page up / Page down
- 3.

 Back to top page
- 4. Press to display the selected zone information.
- 5. Chime: Press the zone buttons first, then press the [Chime] button to play pre/post-announcement before paging, see Chime/Talk page.

- 6. Talk: Press the zone buttons first, then press [Talk] button to paging, see Chime/Talk page.
- 7. Modify zone: Press this button if users wish to add or remove the zone buttons from the current paging, see <u>Modify Zone</u> page.
- 8. Multi function:

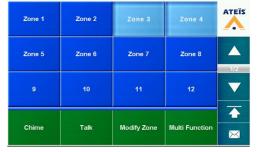


- 1. Monitor: Here you can monitor the paging zones and audio sources of BOUTIQUE from the built-in speaker of DPM-T5, see Monitor page.
- 2. Message: Play the audio messages to the selected zones, see Message page.
- 3. Routing: Here you can audio routing to the selected zones, see Routing page.
- 4. Fault: Display all the faults detected by BOUTIQUE units, see Fault page.
- 5. Setting: Press to enter Setting page.
- 6. Select all zone: Press to select/deselect all the zone buttons.

4.2.1 Button status

The color of zone buttons displayed on the LCD panel will indicate as different status, see as below.

- The zone button is not selected.
- 2. The zone button is selected.

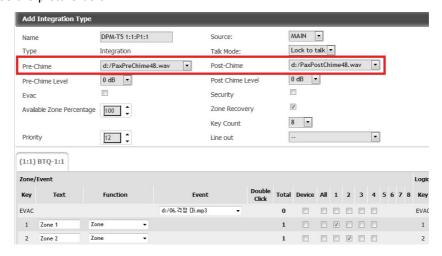


- The priority of this DPM-T5 is lower than other sources, which the unselected zone button selected zone button cannot be paging.
- The priority of this DPM-T5 is higher than other sources, which the unselected zone button can be paging.
- When the unselected zone button / selected zone button is paging or playing the messages from DPM-T5.
- When this unselected button / selected button is an event button on DPM-T5.

4.2.2 Chime/talk

To page to the selected zones with a chime tone, see the steps of Chime Paging example as below.

- 1. First, upload the chime files on web browser > message management.
- 2. Choose the pre-chime file and post-chime file on web browser > Function > Paging (Integration Event). See the picture below.



- 3. Select the zone buttons you wish to paging by DPM-T5.
- 4. Press [Chime] button, and after the pre-announcement chime has ended, you can start paging using the DPM-T5.
- 5. To end the paging, press [Chime] button again. Then a post-announcement chime will be played.



4.2.3 Modify zone

Press [Modify Zone] button if users wish to add or remove the zone buttons from the current paging, see the steps as below.

- 1. Select the zone buttons you wish to add or remove on the LCD panel.
- 2. Press [Modify Zone] button to activate.

4.2.4 Monitor

Monitor the paging zones and audio sources of BOUTIQUE from the built-in speaker of DPM-T5, see the steps as below.

1. Choose a BOUTIQUE unit.



- 2. Choose [Auto] or [Normal] mode.
- Auto: Press [Auto] to automatically monitor the audio source which pages to the selected zones.
- Normal: Press [Normal] button and manually monitor the source which pages to the selected zones.
- 3. Press [Monitor] button to start the Monitor function.
- 4. To cancel the Monitor function, press [Monitor] button again.



4.2.5 Message

Message Playing:

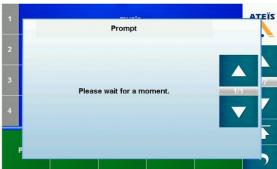
1. Select the message file or a message folder you wish to be played to the zones on [Msg Window] page.



2) Press ## button on the bottom menu and set the count of [message play].



Click [Refresh Message List] to refresh the message list.



3. Switch to [Zone Window] page, and select the zone buttons you wish to be played the message files, see as below.

If users wish to play the messages to all the zones, press [Select All Zone] button.

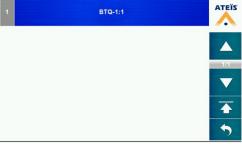
- 4. To preview the audio messages, press [Listen] button.
- 5. Press [Play/Stop] button to start playing messages to zones.
- 6. To cancel this message playing, press [Play/ Stop] button again.

Zone 1	Zone	2	Zo	one 3	Zone 4	ATEÏS
Zone 5	Zone	e 6	Z	one 7	Zone 8	1/2
9	10		11		11 12	
Play	Listen	H		Select A Zone	ll Msg Wir	ndow 5

4.2.6 Routing

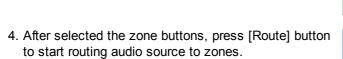
Select a audio input source of BOUTIQUE, and route this audio source to the zones of BOUTIQUE system.

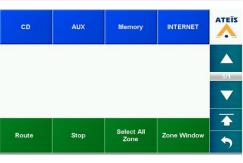
1. Choose a BOUTIQUE unit.



- 2. Select the audio source (CD/AUX/Memory/Internet).
- 3. Press [Zone Window] page, and select the zone buttons you wish to be routing.

If users wish to routing to all the zones, press [Select All Zone] button.







- Press [Route/Modify] button if users wish to add or remove the zone buttons from the current routing, see <u>Modify Zone</u>.
- 6. To cancel this audio routing, press [Stop] button.



4.2.7 Fault

When a fault has detected, this page will show all the fault details.



Press the selected fault, it will show the fault detail.

See <u>Fault Lists</u> to know more about the troubleshooting.



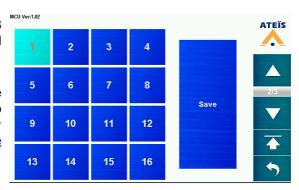
4.2.8 Setting

- Auto: The DPM-T5 will detect whether the external headset or USB is plugged in, and auto switch to headset or USB I/O connection if it's plugged in. If the headset and USB are plugged in DPM-T5 at the same time, the audio I/O connection will switch to USB.
- MIC to SPK: Use the mic and speaker of DPM-T5 as input and output.
- Head to head: Use the external headset.
- USB to USB: Replace the mic and speaker of DPM-T5 by PC/Laptop.
- Mic/speaker volume: The level control of the built-in microphone/speaker of DPM-T5.

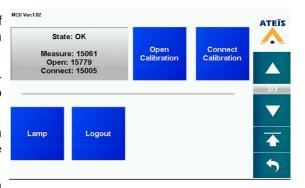


 Set the Remote ID of this DPM-T5. Up to 8 DPM-T5 can be connected to BTQ-SL8, and 16 on BTQ-VM4/VM8/SG8.

Please note the remote ID you set here needs to be the same you set on the web browser, otherwise, the DPM-T5 will display in offline status on web browser > <u>Device Management</u>.



- Mic calibration: To let the detection of gooseneck mic be more accurate, users can proceed this function.
- 1. First, plug out the gooseneck mic from DPM-T5 first, and press [Open Calibration] button to get the [Open] value.
- 2. Then plug in the mic on DPM-T5 again, then press [Connect Calibration] to get the [Connect] value.
- 3. The [Open] and [Connect] value will be used for reference when detects a mic fault (open/short fault).
- Lamp: Press to test the color of LCD panel.
- · Logout: Click to logout.

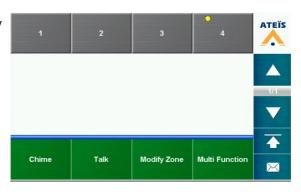


4.2.9 Stack paging

When there are other paging sources with higher priority has occupied the zones which DPM-T5 desires to paging, users can pre-record the paging message and temporarily save it in DPM-T5, then the recorded messages can be played after the paging source with higher priority has ended.

Note: The Stack Paging function requires to enable on BOUTIQUE web browser first, see System Device Management > Add Remote > Stack Paging, see the example of Stack Paging as below.

- Select the zone buttons you wish to paging by DPM-T5.
- 2. Then press [Talk] button to proceed the Stack Paging.



3. Press [Start] to record.

4. Once finished the recording, press [Stop].

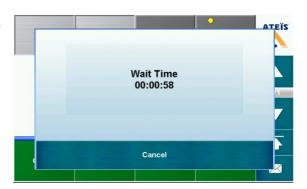
Press [Cancel] to cancel the stack paging and go back to the zone paging page.



- Press [Listen] to use the loudspeaker of DPM-T5 to listen the recorded message users have just recorded.
- 6. Press [Stop Listen] to cancel listening the recorded message. Press [Restart] to record the paging message again.
- 7. Press [Done] button to let this recorded message wait for the stack paging.



- The recorded messages will be waiting for the stack paging and display a countdown timer based on the time you set on web browser.
 - The waiting time can be set from web browser > System > Device Management > Add Remote > Stack Paging > Wait Time.
- If the recorded message does not paging within the waiting time, this stack paging will be automatically canceled, and return to the

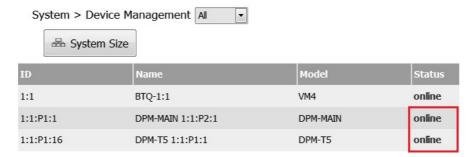


Zone Paging window.

4.3 DPM/DPM-T5 key configuration

The key buttons on DPM-MAIN, DPM-EVA, DPM-KPD and the keys on the LCD panel of DPM-T5 can be configured with various function including zone paging, chime paging, record, preview the recorded file, delete,, level adjustment etc.. Please ow tosee the following steps bel do the key configuration.

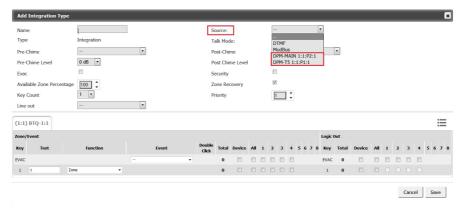
1. Please check if the hardware wiring between the DPM or DPM-T5 and the BTQ-VM4/VM8 controller/BTQ-SG8/SL8 secondary unit is correct, then go to Web Browser > System > Device Management to check if the status of devices is online, see the picture below.



2. Create an [Integration Paging] event on Function > Paging > Add Integration Type.



3. Choose a source type for this integration paging event.



- 4) The following key functions as below can be configured into the DPM and DPM-T5.
- 5) To know about the key functions and other advanced settings of DPM and DPM-T5, see Add integration type for details.

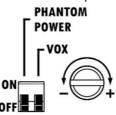
DPM Key Function	Name
1	Zone
2	Event
3	Wave Record
4	Wave Listen
5	Wave Delete
6	Wave Paging
7	Press to Talk
8	Press to Talk with Chime
9	None

DPM-T5 Key Function	Name
1	Zone
2	Event
3	Wave Record
4	Wave Listen
5	Wave Delete
6	Wave Paging
7	Wave Level
8	Press to Talk
9	Press to Talk with Chime
10	None

4.4 **VOX** configuration

The mic/line input with VOX function (voice-activated) is configured using the DIP switches on the rear panel of BTQ-VM4/8 controller.

❖ DIP switch: By default, the DIP switches are in **OFF** position.



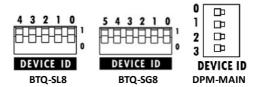
- ❖VOX: When connecting the MIC/Line input, ❖VOX gain knob: When connecting the MIC/ switch "ON" on [VOX] setting, and adjust the volume by the gain knob, see the connection wiring from Mic/line Input with VOX.
- ❖ Phantom power: The BTQ-VM4/8 supports 48VDC phantom power for MIC/Line input. If the MIC/Line input requires phantom power, set the [Phantom Power] switch in "ON" position. If the microphone does not applicable for phantom power supply, leave the switch in "OFF" position.
- Lif the microphone does not applicable for phantom power supply, leave the switch in "OFF" position, otherwise, the mic might burn potentially if it's connected with phantom power.

Line input, set ON position on [VOX] setting, and adjust the mic volume by the gain knob.



Device ID 4.5

The BTQ-SL8, BTQ-SG8 secondary units and DPM-MAIN paging consoles are identified by device ID, which is configured by a DIP switch.



The DIP switch of device ID is followed by the binary code with 5 digit (BTQ-SL8), 6 digit (BTQ-SG8), 4 digit (DPM-MAIN).

The Device ID cannot be repeated. The range of ID can be set as the table on the right.

	DIP switch
BTQ-SL8	1~31
BTQ-SG8	0~63
DPM-MAIN	0~15



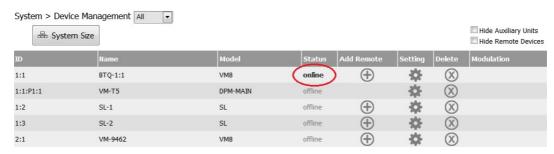
Please set the ID of BTQ-SL8, BTQ-SG8 and DPM-MAIN orderly, starting by the first number.

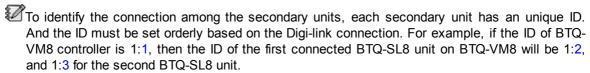
How-to:

1. Set the device ID for BTQ-SL8/SG8 and DPM-MAIN. See the example of BTQ-SL8 as the picture below, the order (4~0) of the device ID is set as 00101 by the binary code. And the ID will be converted by the decimal code as 5, that is to say this device will be identified with the ID number of 5.



- 2. After the ID setting and the rest of the device hardware wiring are completed, go to Web Browser > Device Management > System Size to build a BOUTIQUE system by adding the number of controller/secondary units in the same group based on the hardware wiring.
- 3. Then go to Device Management to check if all the BOUTIQUE units are "online".



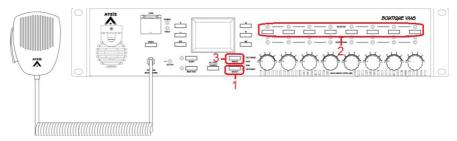


4.6 Route BGM sources to zones

*Route the BGM (background music) sources such as CD, USB, etc. to the selected zone(s).

The music sources need to be set as "Route Key" mode on web browser first, see Paging Mode: CD/AUX.

▶Follow the steps below to route audio source to zones



1. Select the BGM source:

Press [SELECT] button to select the BGM source. The LED will light up in blue and indicate that the BGM source that is selected.

2. Select the zones:

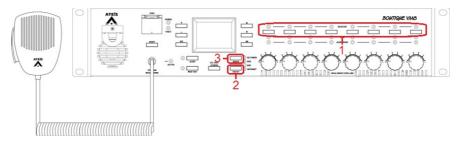
Press the zone button on [Zone Selector], and the BGM will be routed to the selected zones on main controller and/or secondary units. The blue LED will light up if the zone is selected.

3. Start the routing by pressing the [ROUTE] button.

During the BGM routing, the [Zone Select] button(s) can be dynamically added in/removed from the routing.

▶ Cancel a BGM source to a zone

- 1. To cancel the routing for specific zones, press its zone selection button, and its corresponded blue LED will light off.
- 2. Press [SELECT] button and make sure the BGM Source button lights off.
- 3. Press the [ROUTE] button again to cancel the routing.



▶Zone attenuators (volume knobs)

When using a BGM source (CD/AUX/USB etc.) to paging to zones, and the Evacuation option on this source is disable, then users can change the volume of corresponding zones to the desired attenuation level from the front panel of controller. The attenuators offer 6 attenuation positions: 0, -3, -6, -9, -12, -15 dB.

4.7 Messages and microphone calls

Choose to play the four types of messages or do a zone call with the fireman mic on main controller.

- EVAC: Press it to play a EVAC message broadcasting.
- ALERT: Press it to play the alert message to selected or pre-defined zones.
- MSG TEST: Press it to play the testing alert message.
- Fireman mic: Press the fireman mic to start the zone call to selected or pre-defined zones.
- RESET: Press it to reset the emergency state. The evac message playing will be canceled, and the red evacuation button will light off.

4.7.1 EVAC

To start a message playing, it can be done by manual zone selection or with pre-defined zone on web browser.

• Play message to "pre-define zones"

- 1. Press [EVAC] button and the "Paging NOW?" message will be displayed on LCD panel, and press [OK].
- 2. Then the message will be played in the pre-defined zone(s).

• Play message with "manual" zones selection

- 1. First, press the zone buttons to select the zones which you wish the message to be played. The corresponded zone LEDs shall light up in blue.
- 2. Press [EVAC] button and the "Paging NOW?" message will be displayed on LCD panel, and press [OK].
- 3. Then the message will be played in the manually selected zone(s).

Cancel a EVAC message playing

Press [RESET] button and the "Cancel Paging NOW?" message will be displayed on LCD panel, and press [OK] to stop the message playing.

4.7.2 Alert

To start a message playing, it can be done by manual zone selection or with pre-defined zone on web browser.

• Play message to "pre-define zones"

- 1. Press [ALERT] button and the "Paging NOW?" message will be displayed on LCD panel, and press [OK].
- 2. Then the message will be played in the pre-defined zone(s).

• Play message with "manual" zones selection

- 1. First, press the zone buttons to select the zones which you wish the message to be played. The corresponded zone LEDs shall light up in blue.
- 2. Press [ALERT] button and the "Paging NOW?" message will be displayed on LCD panel, and press [OK].
- 3. Then the message will be played in the pre-defined zone(s).

• Cancel a alert message playing

Press [ALERT] or [MSG TEST] button and the "Cancel Paging NOW?" message will be displayed on LCD panel, and press [OK] to stop the message playing.

4.7.3 MSG test

To start a message playing, it can be done by manual zone selection or with pre-defined zone on web browser.

• Play message to "pre-define zones"

- 1. Press [MSG TEST] button and the "Paging NOW?" message will be displayed on LCD panel, and press [OK].
- 2. Then the message will be played in the pre-defined zone(s).

• Play message with "manual" zones selection

- 1. First, press the zone buttons to select the zones which you wish the message to be played. The corresponded zone LEDs shall light up in blue.
- 2. Press [MSG TEST] button and the "Paging NOW?" message will be displayed on LCD panel, and press [OK].
- 3. Then the message will be played in the pre-defined zone(s).

Cancel MSG TEST message playing

Press [ALERT] or [MSG TEST] button and the "Cancel Paging NOW?" message will be displayed on LCD panel, and press [OK] to stop the message playing.

4.7.4 Fireman microphone

To start a fireman microphone paging, it can be done by manual zone selection or with pre-defined zone on web browser.

To learn how to set pre-defined zone selection for fireman microphone, please read Paging Mode: Fireman microphone.

Start a call with pre-define zones

Press the fireman microphone to start calling in the pre-defined zones, the EVAC LEDs with the corresponded zones will light up (see the evac setting of EVAC LED from Singular type paging).



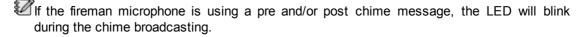
The fireman mic paging can be defined as evac call and general broadcasting via web browser.

Start a call with manual zones selection

- 1. Press the zone buttons for selection. The corresponded LEDs of the selected zone buttons will light up.
- 2. Press the fireman microphone to start calling in the selected zones, the EVAC LEDs with the corresponded zones will light up.

• Stop a fireman microphone call

- 1. Press to talk mode: Release the fireman microphone to stop the fireman mic paging.
- 2. Lock to talk mode: Press the fireman microphone again to release the fireman mic paging.



5 Configuration

More advanced configuration such as volume, PEQ, audio routing, monitor, control, event and bell scheduler and paging with priority management etc.. can be configured by a dedicated web browser.

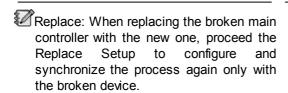
If this is the first web configuration, please update the BOUTIQUE firmware to the latest version.

Go to System > Update > Firmware for more details.

5.1 Web browser

5.1.1 Setup wizard

- 1. Click icon to open the setup window.
- 2. Choose New Setup or Replace.







5.1.1.1 New setup

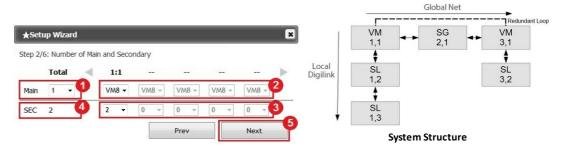
5.1.1.1.1 Step 1: country & language

- 1. Select the drop-down box to choose the country & language.
- 2. Press [Next] to move to [Step 2: number of main and secondary unit] settings.



5.1.1.1.2 Step 2: number of main and secondary unit

❖ Set the number of main controller and secondary unit. Each unit has its own ID in the system.



 Set the number of controller (BTQ-VM4/VM8/VM8W1/VM8W2) and secondary global unit (BTQ-SG8) from [Main] drop-down box. Then the device ID of the main controller/SG unit will be dynamically listed.

- 2. Set the type of connected controller/BTQ-SG8 unit from [VM] drop-down box.
- Set the number of secondary local unit (BTQ-SL8) connected to the main controller/BTQ-SG8 unit.
- 4. Last, the total number of the connected secondary units will be automatically sum up and display next to the [SEC].
- 5. After completed all the settings, click [Next] to move to [Step 3: number of remotes] settings.

5.1.1.1.3 Step 3: number of remotes

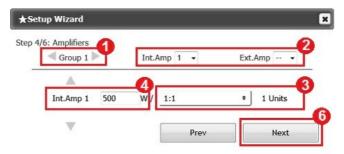
- ❖ Set the number of DPM8 and DPM-T5 for your BOUTIQUE system, the default number of DPM is 1, and DPM-T5 is 0.
- 1. Set the number of DPM8 and DPM-T5 which are connected to the corresponded main controller and secondary units.
- 2. Click [Next] to move to [Step 4: power amplifiers sharing] settings.



5.1.1.1.4 Step 4: power amplifier(s) sharing

❖ Set the group of internal/external power amplifier connected to the BOUTIQUE system.

All the paging calls and BGM can be amplified by internal power amplifier from the main controller and the external power amplifier. The internal amplifier can also share its watt with other secondary unit. An external amplifier can also be connected for spare switching. Therefore, you can define which amplifier in the same group in order to share its watt.



- 1. Fist, select a [Group] of internal/external power amplifier which is connected to the BOUTIQUE system.
- 2. Set the number of amplifier for Intl. and ext. amp in the selected group.
- 3. The setting options will be listed below on the window. Add unit and set unit ID for power amplifier sharing.
- 4. Set the wattage of Intl. Amp 1. Then proceed the same steps to add an Ext. Amp in the selected group if the external amplifier is connected.
- 5. Click [Next] to move to [Step 5: dummy load capacitor] settings.

5.1.1.1.5 Step 5: dummy load capacitor

❖ To calculate dummy load capacitance and DIP switch setting.

If the VA-DLC dummy load capacitor is not connected in the end of speaker line, please ignore

this step, and move to [Step 6: Monitoring] settings.

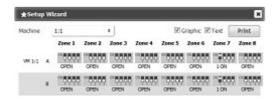


1. Click [Next] to get reference value.





- 1. Each speaker zone has A/B sub zones. We recommend to install a VA-DLC dummy load capacitor in the end of speaker line for each sub zone.
- 2. Set the indicated number to ON position on the DIP switch.
- 3. Click [Next] to move to [Step 6: Monitoring] settings.
- Printing Setting of dummy load capacitance.



1. Tick [Graphic] checkbox and [Text] checkbox to display the DLC setting for printing.

5.1.1.1.6 Step 6: Monitoring

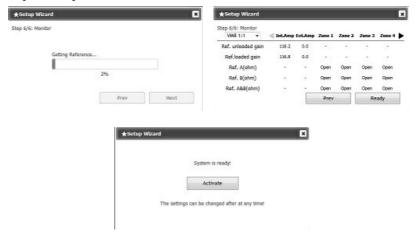
❖ Set the monitor tolerance of speaker line impedance and power amplifier.



- 1. Click [Next] to apply the preset tolerance, impedance and amplifier gain. Or select the drop-down box to change the tolerance of percentage.
- 2. Click [Next] button for next settings.
- Click [Next] to get speaker impedance for reference.



- 1. After the process has completed successfully, click [Next].
- 2. The reference results will be displayed on the window. If the results are correct, then click [Ready] and [Activate] to enter the menu window.



5.1.1.2 Replace

When replacing the broken main controller with the new one, proceed the Replace Setup to be able to configure and synchronize the process again only with the broken device.





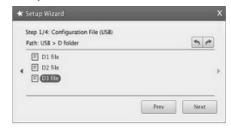
figure 1 figure 2

- 1. Connect the USB flash drive on BTQ-VM4/VM8/SG8, and click [Yes] to use the config. file which downloads from web browser (upload/download_configuration_file) to replace (figure 1).
- If the USB flash drive is not connected, the system will display the alert window (figure 2).
- 2. If not using the file from USB flash drive, click [Skip] to skip the step.

5.1.1.2.1 Step 1: configuration file

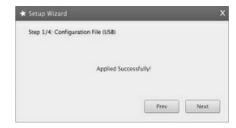
• The files will be automatically appeared on the LCD panel once the USB is connected to.





- 1. Select the folder, and click [Next] to enter.
- 2. Select the file, and click [Next].





- 1. Click [Next] to apply the config. file to the system.
- 2. Click [Next] to move to [Step2: Net ID] settings.

5.1.1.2.2 Step 2: net ID



- 1. Select the netcard ID of the "new" BTQ-VM4/VM8 controller used to replace the broken one.
- 2. Click [Next] to move to [Step 3: synchronization] settings.

5.1.1.2.3 Step 3: synchronization



- 1. Select the main controller used as the default configuration for synchronization to the broken one.
- 2. Click [Next] to start synchronizing.
- 3. Click [Next] to complete the synchronization, and move to [Step 4: monitoring] settings.





5.1.1.2.4 Step 4: monitoring

· Get monitor reference.



- 1. Press [Next] to get speaker impedance for reference.
- 2. Press [Ready] to enter the menu window.

5.1.2 Getting started

Network connection: Connect the BTQ-VM4/VM8/SG8 to network switch via STP CAT5/6 cable
with shielded RJ45 connector. Open the web browser on your PC/Laptop (we recommend Mozilla
Firefox or Google Chrome). Enter the default IP address into the address bar. You can visualize
the webpages of the BOUTIQUE system after connecting.

Default Setting	BTQ-VM	BTQ-SG8
IP address	192.168.102.125	192.168.102.124
Subnet Mask	255.255.252.0	255.255.252.0
Gateway	192.168.100.254	192.168.100.254
DNS	0.0.0.0	0.0.0.0

- IP address: Assign the IP address to the BOUTIQUE device and change the IP address of device, go to Machine > Settings > IP.
- SIP settings: The BOUTIQUE streaming can be done using a SIP Server. To change the IP address of device, go to <u>Machine > Settings > SIP</u>.

5.1.3 User management

To access [User Management] function, click [User Management] button on the top right section. When configures and operates the system via web browser/LCD display panel, you will be requested to login (enter username and password) first, see Login/logout via web browser/LCD display. In this function, you will be able to add new user account, modify account settings and delete account.



- o User ID: Display the account name.
- o Level: Display the authorization level of the user.

The user accounts are created based on the four types of level, see <u>User Level > LCD Panel & Web Browser</u>.

If more than one user level has been created, you will be requested to login if you wish to operate/modify the system settings from the LCD menu of main controller, see <u>LCD Menu</u>.

5.1.3.1 User level

- ❖ The web browser and LCD display can be set by the 4 types of user level.
 - Level 4 (the highest priority)

- Level 3
- Level 2
- Level 1 (the lowest priority)
- ❖ In order to comply to the EN54-16 standard, the user level has been set as described:
 - Level 1 is the lowest level.
 - Level 1 has the authority to control the parameters such as DSP adjustment, read log & fault list etc. on web page.
 - o To enter level 1, a password is needed.
 - Level 2 is defined to be for person having a specific responsibility for safety. Level 2 has all the authority of level 1.
 - o To enter level 2, a password is needed.
 - Level 3 is for specific maintenance operator and trained persons. Level 3 has all the authority of level 2.
 - o To enter level 3, a password is needed.
 - Level 4 is for authorized by the manufacturer to either repair the unit and/or alter its firmware. Level 4 has all the authority of level 3.
 - o To enter level 4, a password is needed.

The user accounts are created based on the four types of level, see <u>User_Level_>_LCD_Panel_</u> & Web Browser.

5.1.3.1.1 LCD panel & web browser

The functions/actions listed on LCD panel and web browser are based on the authority of user Level. Users with the equal or higher level are allowed to operate the function.

LCD panel		
Function	Level	
Mic/Line	1	
Scheduler	1	
Log list	1	
Fault list	1	
Logout	1	
Setting-Info	1	
Monitor Reset	2	
Setting-Language/Region/Time/Logout Time/ Brightness	2	
Paging Reset	3	
System Fault Reset	3	
Paging Reset	3	
Setting-Ethernet/Net ID/Run Wizard/Power Save/ Configuration File	3	
Table Synchronization	3	
FMM	4	
Lamp	4	

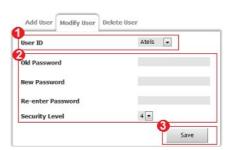
Web browser		
Function	Level	
Info-Fault List/Log Book/About	1	
DSP function	1	
Machine Setting-General/Date/Time/Zone Settings	2	
Message-Management/Playlists	2	
Scheduler	2	
Evac	2	
Paging	2	
Event	2	
Monitor	2	
Device management	3	
Update operation	3	
Skin file operation	3	
Table synchronization	3	
Machine Setting-IP/SIP/RS232 Port/Third Party	3	
Controls/Power Saving	J	
Configuration File	3	
Wizard Setting	3	
User Manager operation	4	

5.1.3.2 Add user

- 1. Enter the User ID and the password.
 - The passwords must contain at least one number or letter, and cannot leave blank on Password field.
 - Letters are case sensitive, and always filled in capital letters.
- 2. Select the Security level.
- 3. Click [Save].
 - After a new user account has been created, you will be asked to login again by entering the account and password.

5.1.3.3 Modify user

- 1. Select the user ID first.
- 2. Modify the password and security level.
- 3. Click [Save].



4 -

ecurity Level

5.1.3.4 Delete user

Select the user ID and click [Save] to delete it.



5.1.3.5 Login/logout

- ❖ When trying to operate the authorized functions such as FMM action, you will be requested to login.
 - · Login from LCD front panel display:
 - 1. Use the arrow keys to select the right letter or number for user ID, and click [OK].
 - 2. Press the arrow key to find "Login". Press OK, this will validate you entry.
 - 3. The LCD display will request you to enter your password, repeat the same procedure to enter the password.
 - Login from ATEÏS web browser:
 - 1. Enter a valid user ID and password.
 - 2. To logout, go to the right top section, and click [Logout].
 - Click if users forget the password, but you need to enter the account first.



5.1.4 Language

The Language selection is on the right top of the webpage. Language includes English, Chinese (Traditional), French, German, Dutch, Russian, Arabic, Finnish, Italian and Vietnamese.



5.1.5 Synchronize icon

The Synchronization icon on the right top section of the webpage indicates whether the system configuration is synchronized or asynchronous.

If the configuration is not synchronized, please see <u>Table Synchronization</u> to proceed Sync Configuration.



5.1.6 Configuration file upload/download

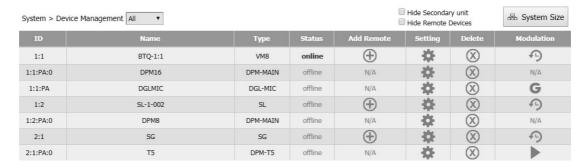
Click icon and then click [Upload] button to load the configuration file from the selected path of PC/Laptop to web browser or click [Upload] button to download the configuration file to the selected path of PC/Laptop.



5.1.7 System

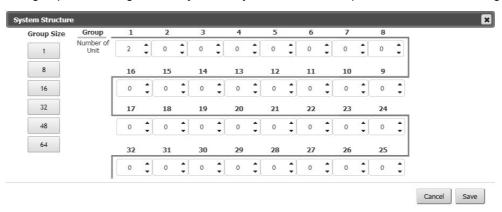
5.1.7.1 Device management

Allow to deploy the BOUTIQUE units, paging consoles, amplifiers and other accessories such as DNM2-ETH, and show their information (status, system structure).



5.1.7.1.1 System size

Allow to quickly build a BOUTIQUE system by adding the number of main controller/secondary units in the same group, the setting can be dynamically modified and adapted to the current setting.



The max. number of group is 64.

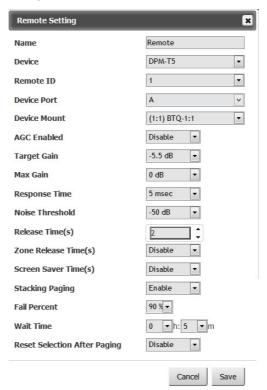
5.1.7.1.2 Hide units

Click the checkbox to proceed the [Hide Secondary Unit] and [Hide Remote Devices] option.

5.1.7.1.3 Add/delete remotes

- ① [Add Remote] button: Add a new remote.
- Delete Remote] button: Delete the selected remotes. An alert window will appeared before proceed the delete action.

5.1.7.1.3.1 Add a DPM-MAIN and DPM-T5



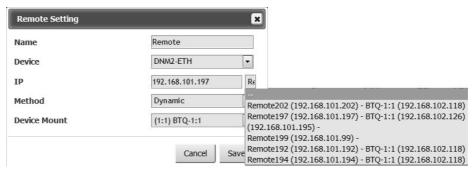
- Name: The name of DPM-MAIN/DPM-T5.
- Device: The type of remote. Choose [DPM-MAIN] or [DPM-T5] here.
 - o If the CD-8DF/CD-16DF is connected on the system, please select [DPM-MAIN] option here.
 - o If the CD-T5F/DPM-T5F is connected on the system, please select [DPM-T5] option here.
- Remote ID: Set the ID number of DPM-MAIN/DPM for a BOUTIQUE system. The max. ID number of remote is 15.
- Device port: Set which remote console port (Port A or Port B) on main controller/secondary unit to connect to this DPM-MAIN/DPM-T5 remotes.
- Device mount: Select which main controller/secondary unit is connected to the DPM-MAIN/DPM-T5.
- AGC enabled: Enable/disable the AGC (Automatic Gain Control) function of microphone, it will effectively reduce the volume if the signal is strong or raises the volume when it's weak. The input signal can be increased/decreased to a target level. You can adjust the gain of the source automatically by setting a target level.
- Target gain: The level will be increased up to target level when audio level is above the threshold value.
- Max gain: The maximum gain of AGC function. This function keeps a natural and dynamic audio.
- Response time: If the audio input level is continually greater than Noise threshold for this period of time, the gain operation will be active.
- Noise threshold: Enable the AGC function when the audio input level is above this value.

▲ Don't set the level too low otherwise it will hear unexpected sounds such as breathing sounds or ambient noise.

• Release time(s): Set the release time when the volume is under the noise threshold of AGC, and the gain decreases to 0 dB.

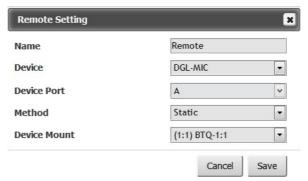
- Zone release time(s): Set the time to auto deselect the zones which are selected on DPM-MAIN/ DPM before paging.
- Screen saver time(s): Set the time to activate the screen saver on DPM-T5.
- Stacking paging: If the selected zones are occupied by the source with higher priority and the user requests a paging, users can pre-record the paging message and temporarily save the message in DPM-T5, then the recorded messages can be played after the paging with higher priority has ended.
 - Fail percent: Set the percentage of the occupied zones to disable the [Stack Paging] function when the selected zones are occupied by the source with higher priority.
 - Wait time: Set the waiting time (countdown timer) of the recorded paging message from [Stack Paging] function. If the stack paging does not play within the [Wait Time], it will be automatically canceled.
- Reset selection after paging: Enable/disable to auto deselect the zones after the paging ends.

5.1.7.1.3.2 Add a DNM2-ETH



- Name: The name of DNM2-ETH.
- Device: The type of remote. Choose [DNM2-ETH] here.
- IP: Select the IP address of this DNM2-ETH from [...] drop-down box.
- · Method:
 - Dynamic: Dynamically increase/decrease the level of speaker based on the background noise during the paging.
 - Static: Detect the background noise in the beginning of paging, and use the fixed gain based on [Over Noise Level] setting to increase/decrease the level of speaker.
- Device mount: Select which main controller/secondary unit is connected to the DNM2-ETH.

5.1.7.1.3.3 Add a DGL-MIC



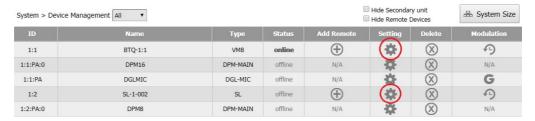
- Name: The name of DGL-MIC.
- Device: The type of remote. Choose [DGL-MIC] here.

- Device port: Set which remote console port (Port A or Port B) on main controller/secondary unit to connect to this DGL-MIC remotes.
- Method:
 - Dynamic: Dynamically increase/decrease the level of speaker based on the background noise during the paging.
 - Static: Detect the background noise when starts paging, and use the fixed gain based on [Over Noise Level] setting to increase/decrease the level of speaker.
- Device mount: Select which main controller/secondary unit is connected to the DGL-MIC.

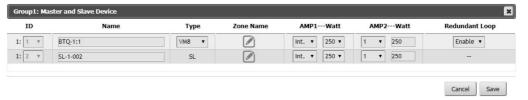
5.1.7.1.4 Setting

The BOUTIQUE system provides a flexible and low-cost switchable amplifier solution, all paging calls and BGM can be defined to be amplified by internal amplifier or the external amplifier. The internal amplifier can also share its power amplifier with other secondary units. Moreover, an external power amplifier can also be connected for backup. Therefore, you can define which amplifier in the same group in order to share its power.

1. Go to System > Device Management > Setting (controller or secondary unit).



2. Click [Setting] button on Device Management to enter the setting window of controller/ secondary unit, see the picture below.



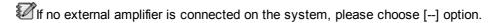
- ID: The ID of BTQ-VM4/VM8/VM8W1/VM8W2/SG8.
- Name: The display name of BTQ-VM4/VM8/VM8W1/VM8W2/SG8/SL8 on web browser.
- Type: Choose the model (BTQ-VM4/VM8/VM8W1/VM8W2/SG8) as the master unit. The BTQ-SL8 model will automatically display if it has been configured on Setup Wizard or [Device Management > System Size].
- Zone name: Click [Edit] button to open the Zone Name window, see the picture below.
 Users can enter the zone name in the empty box, and click Save button to save the changes.
 The zone names will be applied on the log list, fault list, LCD panel of controller.



AMP1---watt: Use internal amplification (int. AMP) from main controller or an external amplifier

(by its ID). The default setting of AMP1 is to use the [int. AMP] on BTQ-VM4/VM8/VM8W1/VM8W2; and the BTQ-SL8 can choose either [int. AMP] or [external AMP]. Then choose the power wattage of controller from 240W/250W/480W/500W options, and set the power wattage of [external AMP] on AMP1 channel.

• AMP2---watt: Choose a ID to identify the connected external amplifier for BTQ-VM4/VM8/VM8W1/VM8W2/SG8/SL8. And set the power wattage of [external AMP] on AMP2 channel.



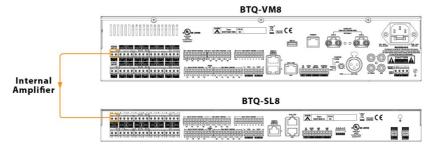
 Redundant loop: Enable this option if DPM remotes are connected to the main controller via redundant loop.

5.1.7.1.4.1 Application1: economic type

- The internal amplifier in the main controller can share power amplifier with secondary local unit(s).
 - Equipment
 - o One BTQ-VM850 main controller unit.
 - o One BTQ-SL8 secondary unit.
 - · Web browser setting

Туре	AMP1	AMP1 Watt	AMP2	AMP2 Watt
VM8 (with built-in amp)	Int.	500		
SL-1	Int.	500	-	-

Connection



5.1.7.1.4.2 Application2: medium scale type

This application is used for multiple zones such as shopping mall or several floors building, which require to use additional amplifier to play the message, chime etc.

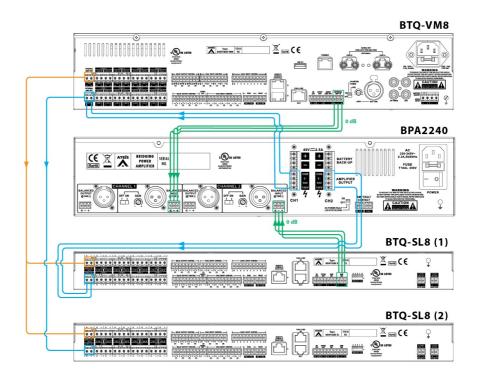
For example, the first amplifier (internal amp of main controller) will be used to play the background music for all the floors, and the external amplifier will be used for general paging for specific floors while the background music by using the internal amplification can be continued to play.

- Equipment
 - o One BTQ-VM850 main controller unit.
 - o Two BTQ-SL8 secondary units.
 - o One external power amplifier.
- · Web browser setting

Туре	AMP1	AMP1 Watt	AMP2	AMP2 Watt
VM8 (with built-in amp)	Int.	500	1	user defined
BTQ-SL8(1)	Int.		2	

Type	AMP1	AMP1 Watt	AMP2	AMP2 Watt
BTQ-SL8(2)	Int.		1	

Connection

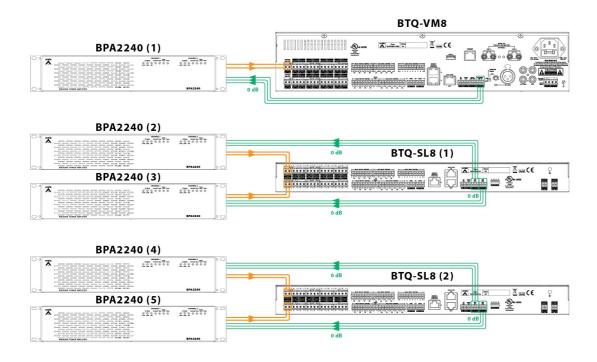


5.1.7.1.4.3 Application3: large scale type

- ❖ This application is used for multiple zones such as airport, railway station which requires mass amplification to play the message, chime in single ground floor. For example as airport, the zone of Terminal 1 requires to connect two amplifiers (internal. amp and external amp), zones of Terminal 2 requires another two amplifiers, and zone of Gate01~030 requires two amplifiers.
 - Equipment
 - o One BTQ-VM850 main controller unit.
 - o Two BTQ-SL8 secondary units.
 - o Five external power amplifiers.
 - Web browser setting

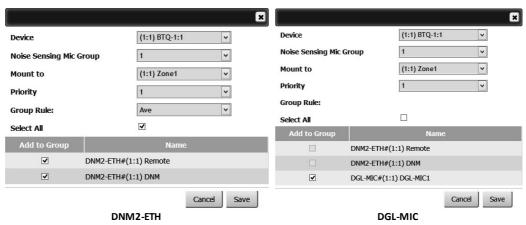
Туре	AMP1	AMP1 Watt	AMP2	AMP2 Watt
VM8 (with built-in amp)	Int1	500	1	user defined
BTQ-SL8(1)	2	user defined	3	user defined
BTQ-SL8(2)	4	user defined	5	user defined

• Connection



5.1.7.1.5 Modulation

5.1.7.1.5.1 DNM2-ETH/DGL-MIC



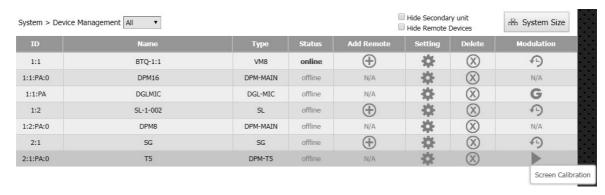
- Device: The main controller/secondary unit which is connected to this DNM2-ETH/DGL-MIC group.
- Noise sensing mic group: Set the group to be edited by it's ID (max. 8 groups).
- Mount to: Set a paging zone to work with a selected noise sensing mic group.
- Priority: If multiple zones are under paging from one source, use the priority to decide which group to detect the background ambient noise and auto adjust the output level. The 1 is the highest priority.
 - o If the priority among the groups is the same, the small number of the group will be in higher priority. For example, the Group '1' has higher priority than Group '2'.
 - The priority basis will be based on first-in, first-served if the priority between multiple groups is the same.

- Group rule: When multiple DNM2-ETH units are installed with different position in the same area, users can use Group Rule to define the detection method of noise ratio.
 - Avg: Calculate the average among the detected gain value of DNM units, and use this gain value to adjust the level of speaker output.
 - o Max:
 - Dynamic: If the DNM2-ETH is a dynamic type, it will use the maximum ANG gain value which has detected among the DNM2-ETH units during paging, and use the gain vale to adjust the level of speaker output.
 - Static: If the DNM2-ETH is a static type, it will use the maximum level of ambient noise which
 has detected by DNM2-ETH units in the beginning of paging, and use the gain vale to adjust
 the level of speaker output.

o Min:

- Dynamic: If the DNM2-ETH is a dynamic type, it will use the minimum ANG gain value which has detected among the DNM2-ETH units during paging, and use the gain vale to adjust the level of speaker output.
- Static: If the DNM2-ETH is a static type, it will use the minimum level of ambient noise which has detected by DNM2-ETH units in the beginning paging, and use the gain vale to adjust the level of speaker output.
- Select all: Click to select all the listed DNM2-ETH units or a DGL-MIC unit.
- Add to group: Tick the checkbox to add the DNM2-ETH/DGL-MIC into the selected group.
- Please note when using the DGL-MIC unit, only "ONE" DGL-MIC can be added to a group.
- Please see <u>DNM2-ETH/DGL-MIC DSP configuration</u> and see how to proceed the DNM2-ETH/DGL-MIC calibration.

5.1.7.1.5.2 DPM-T5 screen calibration



Calibrate the position of the LCD touch screen panel on DPM-T5.

- 1. Click [Screen Calibration] on Modulation grid.
- 2. Then the touch panel of DPM-T5 will display [Runtime calibration, please touch the screen at the center of the ring] message.
- 3. Follow the message instruction and press the rings (dots) at the top-left corner and the bottom-right corner on the panel.

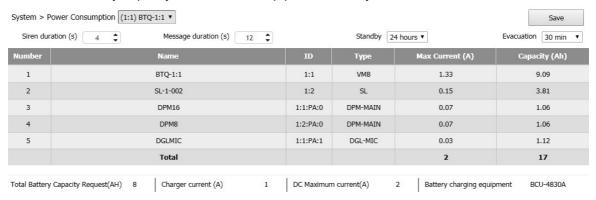
5.1.7.2 Site device list

List the status of all the devices such as BOUTIQUE devices, Terracom devices located in the same LAN. Please go to [Device Management] if attempting to modify the setting.



5.1.7.3 Power consumption

Display the used power consumption of BOUTIQUE local-net system(s) and it gives user the recommend battery capacity for the DC backup power of the system.



- Siren duration (sec.): Set the duration of siren warning sound before distributes the EVAC message.
- Message duration (sec.): Set the duration of the EVAC message.
- Please note the duration of siren sound and EVAC message will affect the DC power requirement for system operation.
- Standby: Set the time duration of standby, the webpage will calculate the the power consumption and recommend capacity of battery.
- Evacuation: Set the time duration of Evacuation, the webpage will calculate the the power consumption and recommend capacity of battery.
- Example: If the system is set as the following table:

When the system enters to emergency state, the siren sound will start buzzing for 5 seconds and silence after, then the EVAC message for emergency evacuation will be played. This evacuation process will continue till it passes 30 minutes.

siren duration	message duration	standby	evacuation
5 seconds	30 seconds	24 hours	30 minutes

- Power consumption (Max Current A): Display the maximum power consumption of the device.
- Power consumption (Capacity Ah): Display the power consumption of the selected local-net system which is under the security mode (Level 1 & Level 2).
- ❖ Power requirement & recommendation

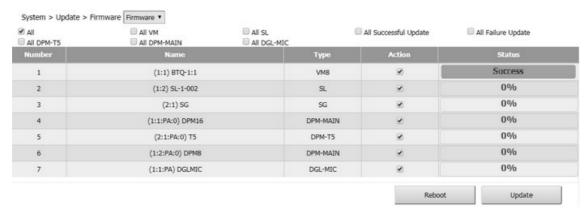
Display the total battery capacity (AH)/charging current (A)/DC max. current (A)/recommended battery charger model which the selected local-net system(s) require.

If the system is not using the BCU-4830A/BCU-4875A battery charger from ATEÏS, please make sure the charger current(A) of battery charger is sufficient.

5.1.7.4 Update

5.1.7.4.1 Firmware

Update the BOUTIQUE firmware to the latest version.



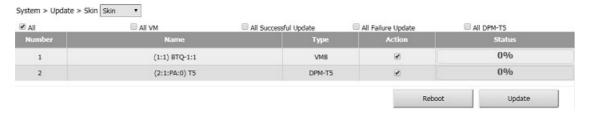
When starting a new project or using a BOUTIQUE unit for the first time,

Follow the steps of [Update] as below:

- 1. Select the model in [Action] checkbox.
- 2. Click [Update] button, and a Update window will pop up.
- 3. Click [Browse File...] button to choose the firmware path specified to the one corresponding to the device.
- 4. Click [Start] to proceed this action.
- 5. At last, click [Reboot] button.
- Remember to click [Reboot] button after updated the firmware, so that it will apply to the BOUTIQUE device.
- The checkboxes on the right top section allows users to filter multiple options and devices (main controller/secondary unit/console/succeeded update/failed update), and will be listed in the table according the filter option.

5.1.7.4.2 Skin

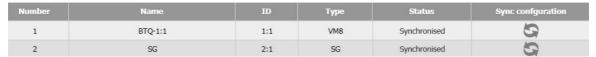
Update the skin of LCD user interface on BTQ-VM4/8 controller and DPM-T5/CD-T5DF to the latest version. The GUI update is similar to a firmware update, see <u>Update > Firmware</u>.



5.1.7.5 Table synchronization

When the configuration on BOUTIQUE devices have been changed, this table will display either Synchronize or Asynchronous on device status.

System > Table Synchronisation



• Asynchronous: If the device setting has been modified, users can click [Sync Configuration] button to let all the devices in this table be synchronized with this machine.

The [@ Table Syn] icon on the right top of the webpage indicates the configuration has synchronized successfully.

5.1.8 Machine

5.1.8.1 Settings

5.1.8.1.1 General

Machine > Settings > General



- Language: Choose the language (English, Traditional Chinese, French, German, Dutch etc.).
- Region: Choose the region.
- FP EVAC button trigger: When proceeding the EVAC paging, Alert paging or MSG test via LCD front panel of BTQ-VM4/VM8, tick the checkbox to display a window of confirmation message on front panel again.

5.1.8.1.2 IP

Machine > Settings > IP



Each BOUTIQUE device is shipped from the factory with a default IP address/Subnet Mask/ Gateway/DNS/MAC. Please reboot the device once the data have changed.

Default Setting	BTQ-VM	BTQ-SG8
IP address	192.168.102.125	192.168.102.124
Subnet Mask	255.255.252.0	255.255.252.0
Gateway	192.168.100.254	192.168.100.254
DNS	0.0.0.0	0.0.0.0

• Enable DHCP/ DNS: Tick the checkbox to enable/disable the Dynamic Host Configuration Protocol and DNS server.

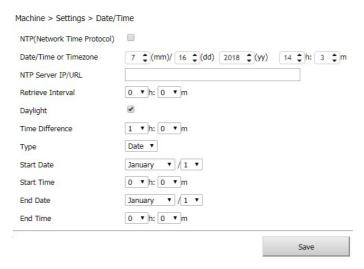
You can also change the IP address or other Ethernet settings from the LCD display of main controller, see <u>LCD Menu</u>.

5.1.8.1.3 SIP



- DTMF reminder: Enable to let the zones which has assigned in the DTMF keys to hear the sound of DTMF tones from PPM-IT5 or IP phone. See how to create DTMF intercom call.
- Auto answer: Set how many call rings before picking up the SIP call (1 ring by default).
- SIP name: The name of SIP caller.
- SIP port: The network port for SIP protocol.
- SIP password: The password for using to connect to the SIP server.
- SIP server IP/URI port: The IP of SIP server. If not using the SIP server, please enter 0.0.0.0 in the blank space.
- RTP port: The network port for RTP protocol for receiving and transmitting audio.
- SIP buffer: The delay time (by second) before the receiving input sources.

5.1.8.1.4 Date/time

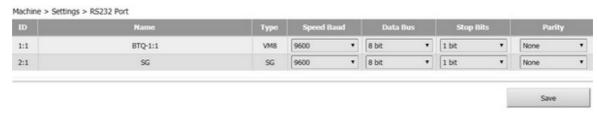


- NTP (Network Time Protocol): Enable the NTP setting. If the NTP is activated, the system date/ time of BOUTIQUE will be synchronized by NTP server.
- Date/time or timezone: Manually set the time and the timezone of your BOUTIQUE devices.

The changes in [System Time] will also affect the Scheduler function on web browser.

- NTP server IP/URL: The IP address of NTP Server.
- Retrieve interval: The time interval which BOUTIQUE unit will update from NTP server.
- Daylight: Enable/disable the Daylight Saving Time function on BOUTIQUE device.
 - o Time difference: Define the time to be an hour/a minute earlier or more.
 - o Type:Choose [Date] or [Week] option to define the period of Daylight Saving Time.
 - o Start Date/End Date: Set the start/end date of Daylight Saving Time.
 - o Start Time/End Time: Set the start/end time of Daylight Saving Time.

5.1.8.1.5 RS232 port



• Speed baud, date bits, stop bits, parity: Set the settings for 3rd party control.

5.1.8.1.6 Third party controls

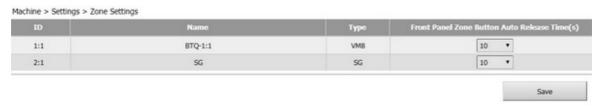
Allow 3rd party devices to control the paging events via RS232, Modbus and Ethernet (UDP).



- RS232 & Modbus serial type:
 - Modbus DTMF: Choose which DTMF code to proceed the zone paging via Modbus, see <u>DTMF</u> paging call via Modbus to set the DTMF codes.
 - Serial control: Enable/disable the 3rd party control from the serial link of BTQ-VM4/VM8 controller. Once enabled, the "Serial Protocol" setting area is required.
 - o Serial protocol: Choose to use which 3rd party protocol (Modbus/RS232 3rd party).
- Ethernet & Mobus type:
 - Net control: Enable/disable the 3rd party control function via UDP/IP or TCP/IP connection.
 Once enabled, the "Net Port" setting is required.
 - Net protocol & port: Choose the 3rd party protocol (Ethernet 3rd party/Modbus) and set the network port.
- IGMP/IGMP IP:

Enable/disable the action of using the IGMP address. When it's enable, please set the fix IGMP IP address, if it's disable, the system will use the random IGMP address during paging.

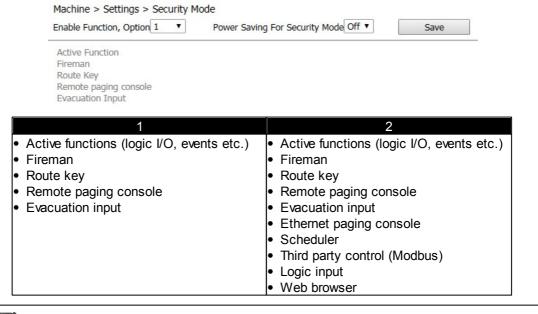
5.1.8.1.7 Zone settings



When manually selected the zone buttons on front panel of main controllers and secondary units for audio routing and playing message. The zone selection will be canceled automatically if it doesn't proceed a paging or routing over [Release time], and the LED selection will light off, too.

5.1.8.1.8 Security mode (power saving)

 Power saving for security mode: Select [ON] mode to activate the system power saving, and let the listed functions as below (Level 1 & 2 option) to be activated only. In other words, if selects [OFF] mode, all the BOUTIQUE functions can be fully operated. • Enable function, option: Choose to operate the security mode which is under [Level 1] or [Level 2] option. The function can be operated under [Level 1] and [Level 2] listed as the table below.



This mode will be automatically canceled if the BOUTIQUE controller is rebooted.

5.1.8.1.9 Power monitor



Allow to monitor the 2 types of power supply of controller (AC mains power and 48VDC battery backup). When the power input is not connected to the controller, a fault will be recognized by system, and the fault LED on front panel of controller will light up, output the warning tone, and record this <u>Power</u> fault on fault list and log book.

5.1.8.1.10 FP speaker



- Mute: Enable/disable to mute the buzzer sound which comes from the built-in speaker of BTQ-VM4/8 controller when a fault is detected.
- Volume (dB): Adjust the volume of the buzzer sound which comes from the built-in speaker of BTQ-VM4/8.

5.1.8.1.11 Backup amp setting



- EVAC using backup (external): Only route the evac sources using the external amplifier (AMP2) when the internal amplifier (AMP1) of controller breaks down.
- BGM using backup (external): Set [Yes] or [No] to only route the BGM sources using the external amplifier (AMP2) when the internal amplifier (AMP1) of controller breaks down.
- Paging using backup (external): Set [Yes] or [No] to only route the paging sources using the external amplifier (AMP2) when the internal amplifier (AMP1) of controller breaks down.

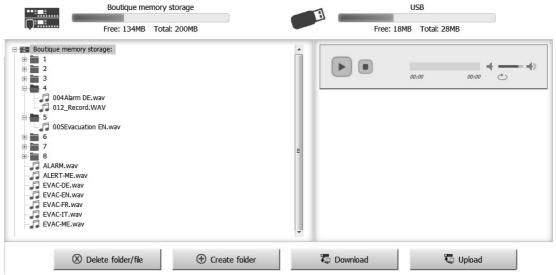
When the option is set [Yes], the output of EVAC/BGM/paging source will become very loud instantly due to the external amplifier (AMP2) does not have attenuator.

5.1.8.2 Message

5.1.8.2.1 Management

Display all the message files stored in the BTQ-VM4/8 controller or USB drive.

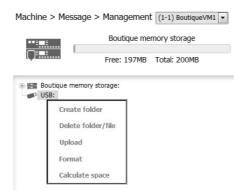
Machine > Message > Management



- BOUTIQUE internal storage memory: The internal storage memory (max. 200 MB) of main controller.
- USB external memory: The USB flash drive (format FAT32) connected to the main controller.
 - Delete folder/file: Select the folder/file on the list, and click this button to delete it.

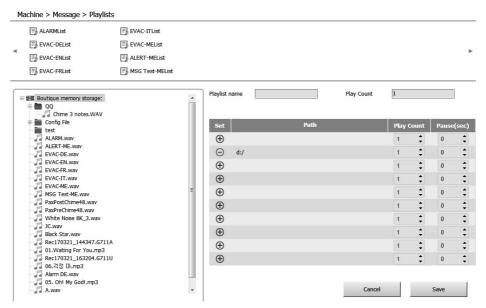
 - \$\frac{1}{2}\$Download: Select the audio file and click this [Download] button to download it.
 - Upload: Upload an audio file under the selected folder.

You can also right click [BOUTIQUE Memory Storage] or [USB] option to create/delete folder and download/upload file, see the picture below.



- Format: Click to format the USB memory/BOUTIQUE internal storage memory.
- Please note all the audio files/folders which are stored under USB memory/BOUTIQUE internal storage memory will be deleted.
- Calculate space: If the USB memory calculated by BOUTIQUE is different from the original USB memory, click this option to recalculate (refresh) the free memory of USB.

5.1.8.2.2 Playlists



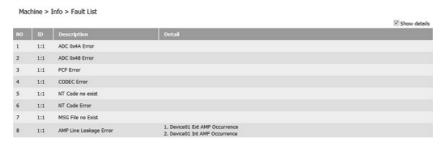
- Playlist name: Enter the name of your playlist.
- Play count: Set the play count of the selected playlist. The range of play count is from 1~65535, 65535 indicates to repeat the the playlist endlessly.
- Pause (sec): Set the pause time for each audio song. If the audio is set as 5 second for a pause, it will pause 5 seconds before playing a next audio file.
- Add file
- ODelete file
- Select the playlist
- Example of creating a playlist

To create a playlist, first, you need to create a new playlist, then select the audio file you want to have it on your list, the list is located on the left side of the window, then click \bigoplus button to

add the audio file in, click Delete button to delete it. And click Save button to complete the

5.1.8.3 Info

5.1.8.3.1 Fault list

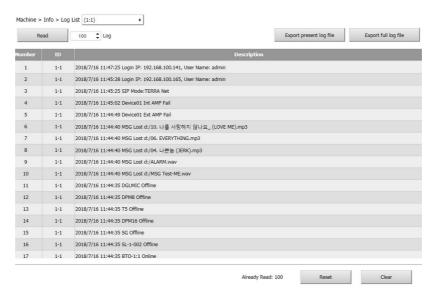


Show details: Enable/disable to show the detailed description of faults.



See <u>Fault Lists</u> and the troubleshooting for details.

5.1.8.3.2 Log book



- Read: Set the range of the log number and click [Read] button to read the logs. Click this button again to read the previous log within the same range. For example, if the range of logs is 100, click [Read] button to read from 1 to 100 logs; click [Read] button again, then the list will show 1~200 logs on the list.
- Already read: List the total logs displayed on the log book.
- Reset: Click this button to reset the log book. The [Already Read] log will also be reset.
- Clear: Click this button to clear the log. The [Already Read] log will remain from the last [Read]
- Export present log file: Export the device logs displayed on current log book to a text file.
- Export full log file: Export all the device logs to a text file.

5.1.8.3.3 About

The BOUTIQUE system is an integrated and highly flexible and scalable PA/VA system. The BOUTIQUE is EN54-16 and UL2572 certified, can be used in installations as small as 4 zones or be networked up to 16,384 A/B zones. The system will supervise speaker lines, amplifiers, and microphones and each installation can be monitored, via IP, remotely anywhere in the world.





.MCU(600MHZ): 0001, FP: 00000001, AudioIO: 10000011, CTLIO_DOWN: 1000011, ZONE_PRI: 00000011, ZONE_SEC: 00000011, NETCARD: 00000001,

Support Device Firmware Version : SL: V1.14 DPM-MAIN: V1.12 DPM-T5: V1.13 DGL_MIC: V1.2

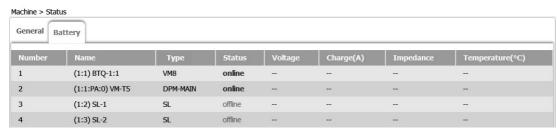
5.1.8.4 Status

Display the general information of BTQ-VM4/VM8/SL8/SG8/DPM devices etc. such as model name, online/offline status, firmware version, AC mains/battery DC power and temperature of audio IO/AMP1/AMP2 on [General] tab.



[General] tab

The [Battery] tab is only applicable to BTQ-VM4W/VM8W device.

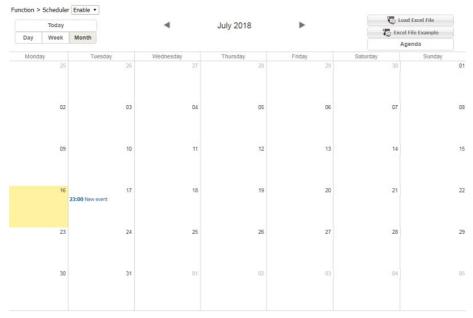


[Battery] tab

5.1.9 Function

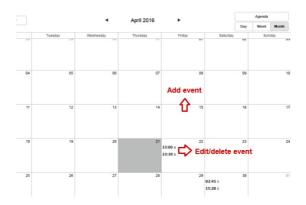
5.1.9.1 Scheduler

The Scheduler allows to schedule the events such as messages playing, commands triggering etc..



- Scheduler enable/disable: Enable or disable the scheduler function.
- Today: Click [Today] button to open Today's scheduling window.
- Day/week/month: Choose from the three types of display window template on scheduler. The default window is Month.
- Load Excel file: Click to load an excel sheet with the listed events you want to create on Scheduler.
- Excel file example: The listed events on the excel sheet must be followed by the order. Click to download the excel file of examples.
- Agenda: Switch to [Agenda] template for editing schedules.

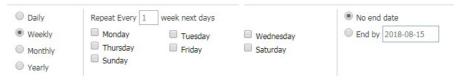
5.1.9.1.1 Add/edit/delete



- Add: Double click the date you wish to add a event, then the Event window will be opened.
- Edit: Double click the event you wish its parameters to be modified.
- Delete: Double click the event you wish to delete first, and click [Delete] button to delete it.



- o Enable: Enable/disable this event.
- o Start date: Click the date to open a calendar window, and select a date to start this schedule
- o Event: Display which event is affiliated to the schedule action, see Event for more details.
- o Description: Memo area.
- ♣ Repeat event: Enable/disable the [Repeat Event] function.
- o Repeat event: The event can be repeatable by daily, monthly, weekly and yearly. The weekly option has days of the week activation options, see the picture below.



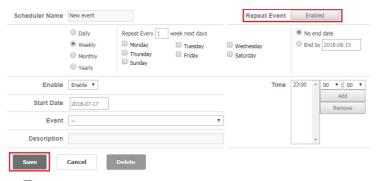
o Time: Add/remove the activation time. The format is HH:MM.

The criteria of the event name and description:

- o Event name: Contain a max. number or letter of 40.
- o Description: Contain a max. number or letter of 100.

5.1.9.1.2 Edit repeated event

Edit the date of the repeated event individually or edit in a whole set. See the steps below:



- 1. First, enable [Repeat event] option on the event window, and click [Save] to save this schedule setting.
- 2. Double click this event on scheduler window again, it will pop-up a message window as the picture below. Here you can choose either to edit a series event or edit in occurrence.



- Edit series: Edit the date of a series repeated event.
- Edit occurrence: Edit the date with the selected event Individually.

5.1.9.2 Logic I/O

Logic inputs are a way to trigger any type of events by external devices.

- Evacuation inputs: The nine evacuation inputs can be used as simple logical inputs as well as monitored logical inputs. There are three monitoring types:
 - 1) Monitored contact mode: The system can monitor the evac input and detect faults (4 status: on, off, open and short).

• Faulty-open circuit: > 2.7 VDC

• Faulty-short circuit: < 0.6 VDC

Inactive voltage: 2 ~ 2.5 VDC

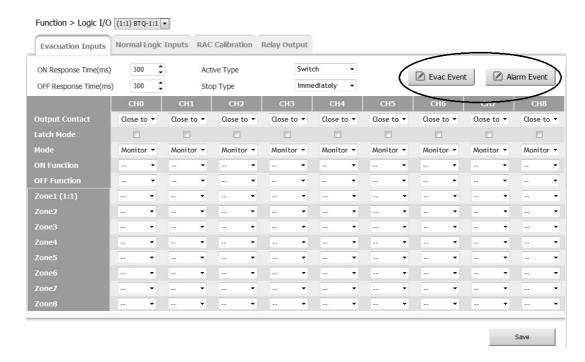
• Active voltage: 1.35 ~ 1.7 VDC

- 2) Disable: The cables which connect to evacuation input will not be monitored (faults will not be detected).
- 3) Voltage mode: Trigger the input by a voltage change (OPEN/CLOSE) with an external 24VDC source provided by external devices. The cable is not monitored in this mode.
- 2. <u>Normal logic inputs</u>: The eight normal logical inputs are simple logical inputs with no monitoring options. Users can use it to trigger the events by connecting to a push button.
- 3. <u>RAC calibration</u>: Or it can connect to RAC 5/RAC 8 device by using the normal logic input, and controls the volume and trigger the events remotely.
- 4. Relay outputs: The 4 relay outputs can be programmed and send a pulse or a static closing/opening to an external device (NO = normally open and NC = normally close).

5.1.9.2.1 Evacuation inputs

The Evacuation inputs allows you to easily designed the phase evacuation or any evacuation scheme. Take the 8 floors building application for example, and each floor indicates as a zone in BTQ-VM4/VM8/SG8/SL8. If the 5th floor is on fire, it will play the evac message for emergency evacuation; and the 4th and 6th floor will play alarm message to alert people.

Click [Evac Event] and [Alarm Event] button on the top right area of Evacuation Inputs window. Its control window will be opened, see as below.

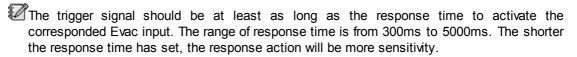


The purpose of [Evacuation Input] configuration is to use 2 different play message events (Evac and Alarm) and to use them with evacuation input in order to create phase evacuation. When using this configuration, users need to create two dedicated play message events (Evac and Alarm).

- Edit Evac Event: Click to edit the Evac message event, see Edit Evac/Alarm Event first.
- Edit Alarm Event: Click to edit the alarm message event, see Edit Evac/Alarm Event first.

There are five EVAC input channels (CH0~CH4) on BTQ-VM4 controller and nine EVAC input channels (CH0~CH8) on BTQ-VM8 controller and BTQ-SG8/SL8 secondary unit.

• ON/OFF response time: Set the response time to avoid triggering the Evac inputs accidentally. When the input voltage is continuously above the range of triggering signal, the event will be triggered by system.



- Active type: Select a type to activate the [ON/OFF Function] of the Evac event/Alarm event.
 - Switch: Start the event which selects from [ON function] drop-down box, and stop the event which selects from [OFF Function] drop-down box.
 - o Trigger: Start the event which selects from [ON Function] drop-down box. To stop the event, trigger the Evac Input Reset event which selects from [OFF function].
- Stop type: Select a type to deactivate the Evac event/Alarm event.
 - o Immediately: The Evac/alarm message playing on Evac event or Alarm event will be stopped immediately.
 - End of single: The Evac/alarm message playing on Evac event or Alarm event will be stopped after the current audio message ends.
 - End of round: The Evac/alarm message playing on Evac event or Alarm event will be stopped after playing this round of the pre-chime, post-chime, and channel 0~channel 8.
- · Output contact:
 - o Close to trigger: The [ON Function] event will be triggered when the evac input is close,

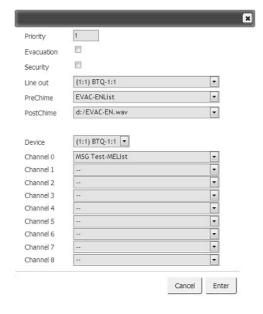
and open to trigger the [OFF Function] event.

- Open to trigger: The [ON Function] event will be triggered when the evac input is open, and close to trigger the [OFF Function] event.
- Latch mode: Set the normal logic input to be in latch mode for this event when connecting to a latching ON-OFF switch button, it requires to input state from Hi to Low to start the event, and input state from Low to Hi to stop the event.
- · Mode: Monitor, Disable (contact without monitor) and Voltage.
 - 1. Monitor: The cables which connect to evacuation input are monitored (4 status: open, short, off, on).
 - 2. Disable: The cables which connect to evacuation input will not be monitored (faults will not be detected).
 - 3. Voltage: Trigger the input by a voltage change with an external 24VDC source provided by external devices. The Voltage mode is an alternative way of using contact. The cable is not monitored in this mode.
- ON/OFF function: Select the event which will be triggered by this Evac input.
- Zone selection (Z1-Z8): Select zones of paging for Evacuation or Alarm event.

5.1.9.2.1.1 Edit evac/alarm event

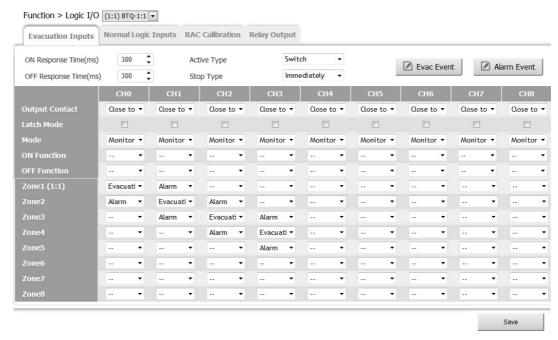
Here you can configure the messages for Evac event and Alarm event. For example, when a building is on fire, this Evac event/Alarm event will play a pre-chime, evac/alert message files (channel0~channel8) and post-chime in order to help evacuation.

- Priority: Set the priority of the event. 1 is the highest, and 99 is the lowest.
- Evacuation: If a triggered event enables the Evacuation option, the system will enter the evacuation mode, see <u>Security/Evacuation option</u> for details.
- Security: Enable this option to let the triggered event still be proceeded under <u>Security mode</u> (power saving).
- Line out: Select a line output channel on which main controller, and output the audio to an external device such as earphone, speaker etc. when triggering this paging event.
- Pre Chime/Post Chime: Activate a pre-chime/postchime when triggering the Evac/Alarm event.
- Channel 0 ~ Channel 8: Choose to play a message file/folder when the corresponded evac input (CH0~CH8) is triggered. The messages will be played by order if multiple evac inputs are triggered.



Application:

After completed the setting of Evac event/Alarm event as above, you need to define which zones of these Evac/Alarm messages will be played. For each evacuation input (CH0 to CH8), select the Evacuation or Alarm event for each zone from the drop-down box. See the picture as below,



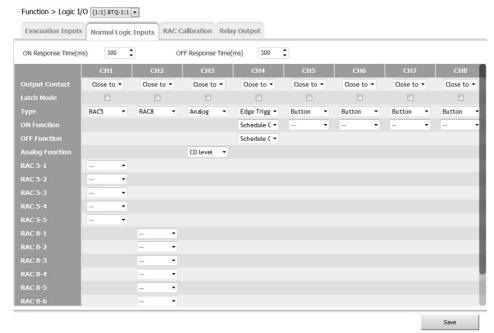
The picture of a phase evacuation configuration will act as follow:

- Evacuation Input 0 (CH0) activated: The Evac message is played in zone1, Alarm message in zone2.
- Evacuation Input 1 (CH1) activated: If CH0 is still activated, the Evac message is played in zone1 and zone2, Alarm message is played in zone3.
- Evacuation Input 2 (CH2) activated: If CH1 and Ch2 are still activated, the Evac message is played in zone1, 2 and 3, Alarm message is played in zone 4.
- Evacuation Input 3 (CH3) activated: If CH1, CH2 and Ch3 are still activated, the Evac message is played in zone1, 2, 3 and 4, Alarm message is played in zone5.

In order to avoid any sensitivity issue like unwanted triggering of input, you can set a response time (from 300ms to 5000ms) on Normal Logic inputs or Evacuation Inputs.

5.1.9.2.2 Normal logic inputs

The Normal Logic Inputs (control Inputs) have been designed to work with simple contact, button or RAC 5/RAC 8. Each logic input channel can be assigned as an event, users needs to create the event before assigning the control function here.



- ON/OFF response time: Set the response time to avoid triggering the Evac inputs accidentally. When the input voltage is continuously above the range of triggering signal, the event will be triggered by system.
- The trigger signal should be at least as long as the response time to activate the corresponded Evac input. The range of response time is from 300ms to 5000ms. The shorter the response time has set, the response action will be more sensitivity.

1. Output contact:

- o Close to trigger: The [ON Function] event will be triggered when the evac input is close, and open to trigger the [OFF Function] event.
- Open to trigger: The [ON Function] event will be triggered when the evac input is open, and close to trigger the [OFF Function] event.
- Latch mode: Set the normal logic input to be in latch mode for this event when connecting to a latching ON-OFF switch button, it requires to input state from Hi to Low to start the event, and input state from Low to Hi to stop the event.

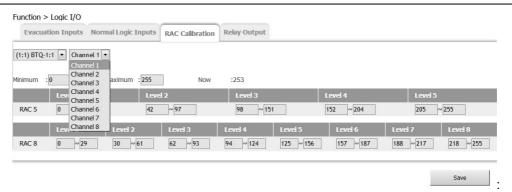
3. Type:

- Button: Trigger the event by a voltage change (Hi/Low). Trigger in Hi and cancel in Low or cancel in Hi and trigger in Low.
- Edge Trigger: Trigger the event by [ON Function] event and cancel it by [OFF Function] event.
- Analog: Control a <u>DSP Element</u> event to adjust the parameter such as level by RAC remote.
- RAC5/RAC8: Control a <u>DSP Element</u> event, which will be triggered to control the event on RAC remote.
- 4. ON/OFF function: Select the event which will be triggered by this logic input.
- 5. Analog function: Choose a <u>DSP Element</u> event, which will be triggered to control the volume on RAC remote by logic input.
- 6. RAC5-1~RAC5-5/RAC8-1~RAC8-8: Choose a <u>DSP Element</u> event, which will be triggered to control the event on RAC remote by logic input.

5.1.9.2.3 RAC calibration

Manually set the calibrated level value of each channel(knob) on RAC 5/RAC 8.

This function is available for BTQ-VM8 controller only due to that it requires to work with the normal logic inputs.



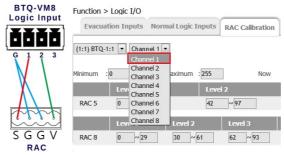
- Select device/channel: Choose which BTQ-VM8 controller and which normal logic input channel (CH1~CH8) will be set for RAC 5/RAC 8.
- Minimum/maximum/now: Set the minimum and maximum value (between 0~255) of each knob on RAC 5/RAC 8, and it will display the current value.
- Level: This Indicates the range of each level of RAC 5/RAC 8. Manually set the minimum and maximum value of each level.
- The level value cannot be set in too close or overlap with other level value. To set the correct values, please see the example picture as below.



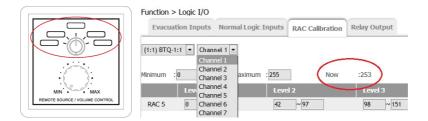
- RAC5: The Level1 (0~41) on Channel 1 does not overlap the Level2 (42~97), and so does other values on on RAC 5.
- RAC8: The Level2 (29~61) on Channel 2 is overlapped the Level3 (60~93), and so does other values on RAC 8, therefore, please adjust the level values again.

❖ How-to:

1. Choose to calibrate the level value on which logic input channel (CH1~CH8) of BTQ-VM8 controller. We use CH1 logic input for example, see the pictures below.



2. To fulfill the accuracy of RAC 5/8 calibration, please rotate the source selector knob on RAC 5/8, and record the current impedance value of every step displayed on [Now].

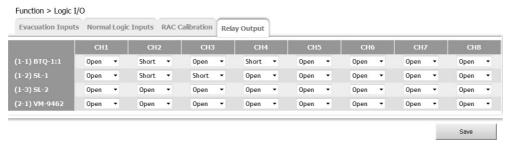


- 3. Then manually set the range of Level1~5/Level1~8 by using the formula (Level1 + Level 2)/2.
 - Example-1: If the current impedance value of 1-step and 2-step on RAC 5 are 25 and 57, then set the Level 1 of RAC 5 as 0~ 41 (25+57/2).
 - Example-2: If the current impedance value of 3-step and 4-step on RAC 5 are 45 and 61, then set the Level 2 of RAC 5 as 42~ 53 (45+61/2).
- Follow Step 3 and calibrate the rest of the level value for Level1~5 (RAC 5) or Level1~8 (RAC 8).

5.1.9.2.4 Relay outputs

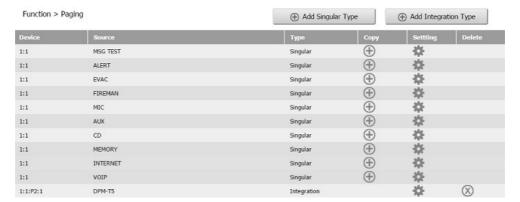
There are 4 logic relay outputs on BTQ-VM4 and 8 on BTQ-VM8/SG8/SL8, these outputs can be programmed to open or close the contact for signaling the external system.

Set the default state (open or close) of logic relay outputs after the BTQ-VM4/VM8/SG8/SL8 is powered.



5.1.9.3 **Paging**

The system will build the default Singular paging events including MSG TEST, ALERT, EVAC, FIREMAN, MIC etc. for the first connected main controller. See the picture below.



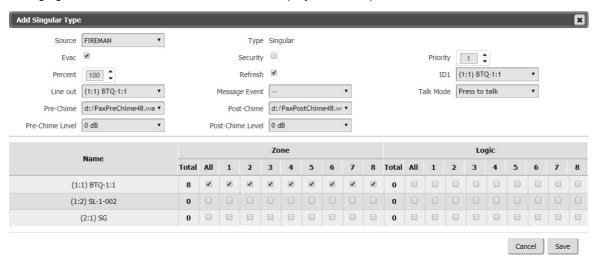
- There are two types of paging events:
 - 1. Integration: An integration paging event is used for multiple codes (keys) for zone selection. Each code can assign the key of the paging consoles such as DPM-MAIN and DPM-T5.
 - 2. Singular: This paging event is similar to the integration paging event except that it "only has

one code (key)".

- ① Copy: When multiple main controllers are connected on the BOUTIQUE system, and require to use different kinds of audio input for paging, click [Copy] button to add (create) a paging source in the same source category (MSG TEST, ALERT, EVAC etc.) for other main controllers.
- Setting: Click it to edit the paging event.

5.1.9.3.1 Add singular type

1. When multiple controllers are connected on the BOUTIQUE system, users can create additional paging sources for main controllers. Click [Add Singular Type] button on the top right area of Paging window, and its control window will displayed as the picture below.



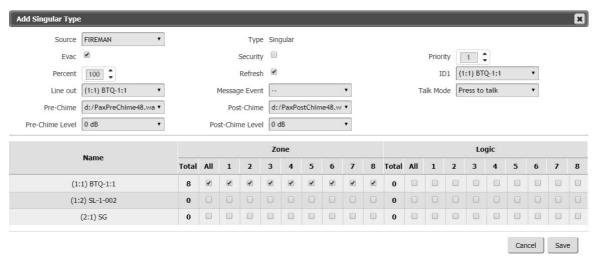
- Source: Choose the paging source of controller.
- Evac/Security: See <u>Security/Evacuation option</u> to learn more about the two options.
- Priority: Set the priority of the event. 99 is the lowest, 1 is the highest. When two paging sources attempt to page to the same zone, the source with higher priority can proceed the paging.
- Percent: This is to determine a paging request which can be allowed or denied by the
 percentage. If the percentage of available zones is greater than the number set at "Percent",
 the paging event will be performed successfully. On the opposite, the paging request will be
 denied.
- The available zones means the selected paging zones are not occupied by other sources or not occupied by other sources with lower priority.
- Refresh: Enable this option to let the paging source takes back the zones from the occupied zones when their paging event has finished.
- ID1: Select which main controller/secondary unit is working with this [Singular Type] paging.
- Line out: Select to use which [Audio Line out] on main controller to monitor the sound by using external device such as earphone, speaker etc. when this paging event is triggered.
- Message event: Select the audio message or a message event. The message event can be created from Message>Playlists.
- Pre-chime/post-chime: Add a chime message at the beginning of a mic/MSG TEST/alert/evac/ fireman paging and also at the end of the call.

- Pre-chime/post chime level: The level of pre-chime/post-chime message.
- Zone: By ticking the pre-defined zones in which the paging call will be made.
 - o All: Select all the zones of main controller and/or secondary unit.
 - 1-8: Allow to select zone 1 to 8 independently from a main controller and/or secondary unit.
- 2. Logic: Select the logic output(s) to be triggered when the corresponded zone is triggered.
- 3. Click [Save] to save the settings, and click [Cancel] to annul the current settings.

5.1.9.3.1.1 MSG TEST/ALERT/EVAC

Configure the paging event of MSG TEST/ALERT/EVAC is identical to a Singular type of paging event, see <u>Add Singular Type</u>.

5.1.9.3.1.2 FIREMAN



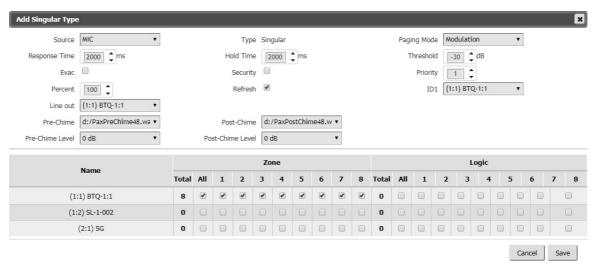
- Talk mode: Select the talk behavior.
 - o Press to talk: Talk only while pushing the microphone button.
 - o Lock to talk: Talk after pushing the microphone button one time and stop talking by pushing the microphone button again.

The fireman microphone have been designed for emergency paging, please double check when changing its priority and security settings. The default talk mode of the fireman microphone is always "Press To Talk". By default, the priority of the fireman microphone is set to 1 (the highest priority) and its security and evacuation options are also ticked here.

The rest of the configuration setting of Fireman mic paging event is also identical to a Singular type of paging event, see <u>Add Singular Type</u>.

5.1.9.3.1.3 MIC

The mic/line input can be used as a direct input for one external microphone and as an additional music input. The input gain can be adjusted by means of the VOX volume control on the rear panel of main controller.



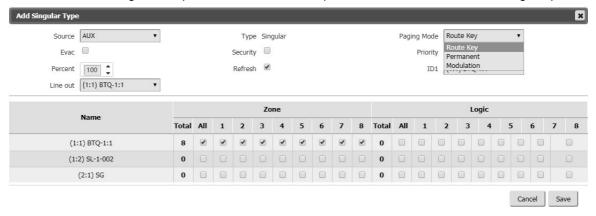
• Paging mode:

- Modulation: The [Modulation] mode is the VOX volume settings, which allows to automatically activate the mic/line input if the level of audio is above the specified threshold.
- Response time: If the level of mic/line input is continuously great than the [Threshold] and is beyond the [Response time], the mic/line input will be routed to pre-defined zones. A correct setting of the response time can avoid false activation of the Mic/Line source (peak signal activation). Its range can be set from 50 ms to 5000 ms.
- Hold time: As opposed to the response time. The time when the level of mic/line input is continuously less than the [Threshold] and lower than the [Response time] before. A correct setting of hold time can avoid inopportune deactivation of the music source (pause in speech). Its range can be set from 50 ms to 5000 ms.
- Threshold (for modulation mode only): When the input volume is greater than the threshold, the mic/line input will be routed to pre-defined zones. If the threshold is set to -10 dB, the activation of Mic/Line source will take place when the level of Mic/Line is over -10dB.

The rest of configuration setting of MIC paging event is also identical to a Singular type of paging event, see Add Singular Type.

5.1.9.3.1.4 CD/AUX

Music sources routing can be performed from the front panel of controller, DPM-T5 and logic input.



· Paging mode:

- Route key: The [Route Key] mode will enable the Music Route function on the front panel of BTQ-VM4/8 and from the DPM-T5 microphone console.
- o Permanent: The [Permanent] mode allows the paging source is always requested for

paging. You can choose this option if the source is background music and keep playing for zones.

 Modulation: The [Modulation] mode is the VOX volume settings, which allows to automatically activate the mic/line input if the level of audio is above the specified threshold.

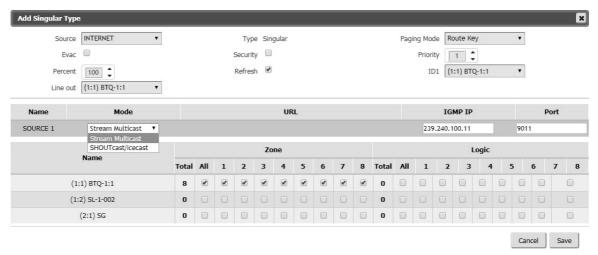
The rest of configuration setting of CD/AUX paging event is also identical to a Singular type of paging event, see <u>Add Singular Type</u>.

5.1.9.3.1.5 MEMORY

Use the digital message from internal memory of main controller and optional external storage USB flash drive to proceed paging. The configuration setting of this paging event is also identical to a Singular type of paging event, see <u>Add Singular Type</u>.

5.1.9.3.1.6 INTERNET

The Internet paging will receive the audio stream and play the streaming source composed in RTP packet (Real-time Transport Protocol).



- Source: The network stream source.
- Mode: Choose a source type (Stream Multicast or SHOUTcast/Icecast) to receive the network streaming source and packet.
 - Stream Multicast: Stream Multicast receives RTP (Real-time Transport Protocol) packet from IGMP IP address. Enter the IGMP IP address and its port. It supports the TERRACOM system or TerraManager to play Internet streaming via Stream Multicast.
 - o SHOUTcast/Icecast: Set the URL of SHOUTcast or Icecast.

It may cause sound quality problem if the received audio from the SHOUTcast/icecast isn't in 48k sampling.

The rest of the configuration setting of INTERNET paging event is also identical to a Singular type of paging event, see Add Singular Type.

5.1.9.3.1.7 VOIP

Support zone paging or intercom via VoIP with standard SIP protocol to TERRACOM device such as PPM-IT5 paging console.

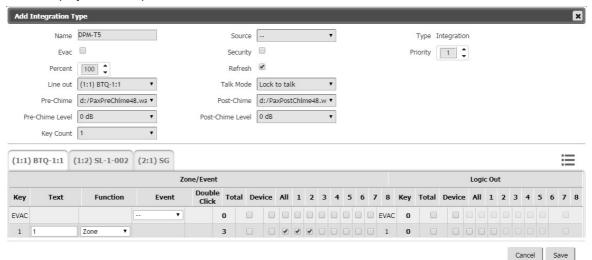


- Source: Select VOIP for VoIP paging configuration.
- Evac/Security: See <u>Security/Evacuation option</u> to learn more about the two options.
- Line out: Select a line output channel on which main controller, and output the audio to an external device such as earphone, speaker etc. when triggering this paging event.
- DTMF: Enable this option to use the DTMF code for zone selection during the intercom.
- DTMF event: Select a [DTMF Integration] event to dynamically add or remove the paging zones on BOUTIQUE system via VoIP.

The rest of the configuration setting of VoIP paging event is also identical to a Singular type of paging event, see <u>Add Singular Type</u>.

5.1.9.3.2 Add integration type

1. Click [Add Integration Type] button on the top right area of Paging window, and its control window will displayed as the picture below.



- Source: Choose a paging source (DPM-MAIN, DPM-T5, Modbus, DTMF) for this integration paging.
 - o DTMF: See how to create <u>DTMF intercom call</u>.
- Post-chime/pre-chime: Add a chime message at the beginning of a DTMF/DPM-T5 paging and also at the end of the call.
- Pre-chime/post chime level: The level of pre-chime/post-chime message.
- Key count: The number of key button. For instance, there are eight keys on DPM-MAIN, and the keys can be individually programmed.
- Talk mode: Select the talk behavior between "Press To Talk" or "Lock To Talk".
 - o Push to talk: Talk only while pushing the microphone button
 - Lock to talk: Talk after pushing the microphone button one time and stop talking by pushing the microphone button again.

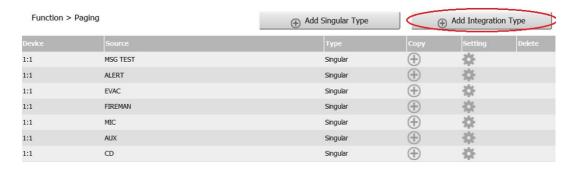
- The fireman microphone is used for emergency paging, please double check when changing priority and security settings, the default talk mode of fireman microphone is always "Push To Talk" mode. And the priority of the fireman microphone is set to 1 (the highest priority) and its security and evacuation options are also ticked here.
- Text: The name of the key. The text can only be displayed when using DPM-T5.
- Function:
 - o Zone: Set this key on DPM-MAIN or DPM-T5 as a zone selection button.
 - o Event: Set this key to trigger an event to the pre-defined zones.
 - Wave record: Set this key to record the audio via DPM-MAIN or DPM-T5 paging console, the recorded file will be stored to the path you set on the <u>Wave Select</u> event.
 - Wave listen: Set this key to preview the wave audio file which has recorded via DPM-MAIN or DPM-T5.
 - Wave delete: Set this key to delete the wave audio file which has recorded via DPM-MAIN or DPM-T5.
 - Wave paging: Set this key to use the recorded wave file to paging to the pre-defined zones.
 - Wave level: Set this key to adjust the level of recorded wave file via DPM-T5, it will auto display the volume bar on LCD panel of DPM-T5.
 - o Jump page: Set this key to create a jumping page button on DPM-T5, this allows to quickly switch to the page.
 - o Press to talk: Set this key to start a paging to pre-defined zones via Press-to-Talk mode.
 - Press to talk with chime: Set this key to start a paging with pre-chime and post-chime to pre-defined zones via Press-to-Talk mode.
 - o None: Disable the key on DPM-MAIN or DPM-T5.
- Double click: Enable to activate the key function by double click on the button of DPM-MAIN and DPM-T5. If not, the key button will use the single click mode by default.
- Zone/Event: Set the pre-defined zones/events of this key. When a call in non pre-defined zone is finished, the pre-defined zone will apply for next paging automatically.
 - Device: Select all the zones of all the connected main controllers and/or secondary units as pre-defined zones.
 - o All: Select all the zones of main controller and/or secondary unit as pre-defined zones.
 - 1-8: Allow to select zone 1 to zone 8 independently from a main controller and/or secondary unit as pre-defined zones.
- 2. Logic out: The logic output will signal the external devices when the corresponding zone is being paged if this checkbox be ticked.
- 3. Click [Save] to save the settings, click [Cancel] to annul the current settings.

The rest of the configuration setting of fireman mic paging event is also identical to a Singular type of paging event, see Add Singular Type.

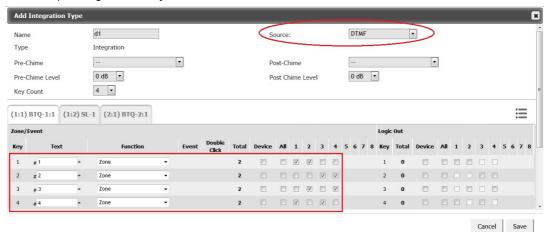
5.1.9.3.2.1 DTMF intercom call

Use the external device such as PPM-IT5 IP console to make the intercom call via VoIP, and select the paging zones by using the DTMF keys.

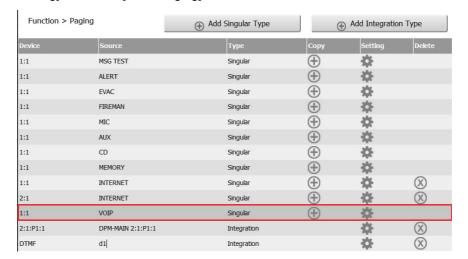
1. First, create an [Integration Type] event.



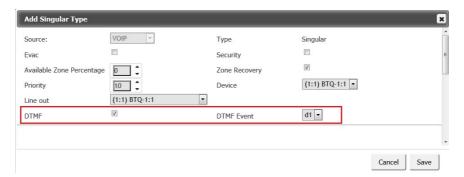
2. Choose [DTMF] on [Source] option, and select the zones which the intercom call will be made by the corresponding DTMF keys.



3. Click [Setting] button on [VoIP Paging] event.



4. Enable [DTMF] option and choose [DTMF Integration] event you have created from drop-down box.



- Select a button which indicates as the BTQ-VM4/VM8 controller on PPM-IT5 console.
- 6. Then press button to call the BTQ-VM4/VM8 controller.



7. Press [DTMF] button.



 Press the DTMF keys, and the intercom call will be called to the zones based on the settings you set on BOUTIQUE web browser (Step 2).



- The instruction of DTMF key
 - 1. Dial = #X*
 - # = start
 - * = end
 - Example:
 - $_{\odot}$ If you would like to paging to Code [2], then dial #2 $\!*$

- o The paging function will be activated right way after finishing dialing.
- 2. Cancel the call = #*
 - Example:
 - o If you would like to cancel the paging, then enter #*
 - o The paging function will be canceled right way after finishing dialing.
- 3. Redial: When dialing the wrong code, simply redial the correct code again after the wrong code.
 - Example: If you dial the Code [3] to the wrong Code [2], you only need to redial the correct code again (2) after the wrong one. The situation might be shown as #2#3*

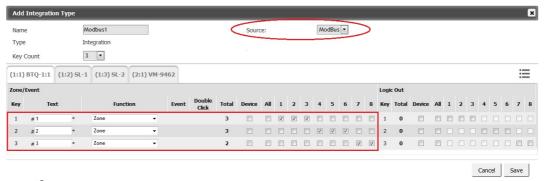
5.1.9.3.2.2 DTMF paging call via Modbus

Proceed the zone paging by using the programmed DTMF keys via ModBus protocol.

1. First, create an [Integration Type] event.



2. Choose [ModBus] on [Source] option, and select the zones which the paging call will be made by the corresponding DTMF keys.



3. Click [Setting] button on [ModBus Paging] event.

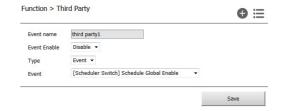


- 4. Go to <u>Machine > Settings > Third Party Controls</u>, and enable the Modbus 3rd party control to control the paging events via DTMF keys.
- The instruction of DTMF key
 - 1. Dial = #X*
 - # = start
 - * = end
 - Example:
 - o If you would like to paging to Code [2], then dial #2*
 - o The paging function will be activated right way after finishing dialing.
 - 2. Cancel the call = #*
 - Example:
 - o If you would like to cancel the paging, then enter #*
 - o The paging function will be canceled right way after finishing dialing.
 - 3. Redial: When dialing the wrong code, simply redial the correct code again after the wrong code
 - Example: If you dial the Code [3] to the wrong Code [2], you only need to redial the correct code again (2) after the wrong one. The situation might be shown as #2#3*

5.1.10 Third party

Allows other device to control the BOUTIQUE system through 3rd party control.

- Event name: The event name is the triggering code for a 3rd party action, this triggering code sent from the 3rd party device must be the same as the [Event Name] here.
- Event enable: Enable/disable the 3rd Party Control action.
- Type: The [Event] type allows other devices to control the BOUTIQUE system via 3rd party.
- Event: Choose an event from the drop-down box and allow the 3rd party device to control this action.



5.1.11 Event

The action of BOUTIQUE is based on the Event philosophy. The event can be started by different type of interface such as logic, schedule, remote and 3rd party.

In the Event management, you can create, manage and control the events including set permanent event like message routing, event sequences, priority etc. The different types of event will be explain in the following chapters.

BOUTIQUE event	Name	Logic trigger	Schedule trigger	DPM/DPM- T5/CDM remote trigger	3rd party trigger
1	Security Mode	√		X	

BOUTIQUE event	Name	Logic trigger	Schedule trigger	DPM/DPM- T5/CDM remote trigger	3rd party trigger
2	Scheduler Switch	V	$\sqrt{}$	√	√
3	Wave Select	Χ	X	\checkmark	X
4	Stop Paging	$\sqrt{}$	$\sqrt{}$	\checkmark	\checkmark
5	Fault Active	$\sqrt{}$	$\sqrt{}$	\checkmark	\checkmark
6	Fault Inactive	$\sqrt{}$	$\sqrt{}$	\checkmark	\checkmark
7	Evac Input Reset	$\sqrt{}$	$\sqrt{}$	\checkmark	\checkmark
8	Logic Out	$\sqrt{}$	$\sqrt{}$	\checkmark	$\sqrt{}$
9	Command String	$\sqrt{}$	$\sqrt{}$	\checkmark	\checkmark
10	Marco	$\sqrt{}$	$\sqrt{}$	\checkmark	\checkmark
11	DSP Element	$\sqrt{}$	$\sqrt{}$	\checkmark	\checkmark
12	Message Routing	$\sqrt{}$	$\sqrt{}$	\checkmark	\checkmark
13	Singular Paging	$\sqrt{}$	$\sqrt{}$	\checkmark	\checkmark
14	Singular Paging On By Zone	$\sqrt{}$	$\sqrt{}$	V	V
15	Singular Paging Off By Zone	√	√ √	√	√

5.1.11.1 Security/evacuation option & zone selection

❖ Security option:

Activate the power saving mode on BOUTIQUE system, and let the listed functions (Level 1 & 2 option) on <u>Security mode (power saving)</u> chapter to be activated only.

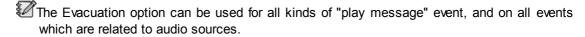
For example, if the Security mode is enabled in a evac/alarm event, this event will continue working even the system is under the power saving mode (sleep mode).



Evacuation option:

If a event with Evacuation option has been triggered, the system will enter the evacuation mode.

- The EVAC LED on the front panel of BTQ-VM4/VM8/SG8/SL8/DPM-T5 will light up.
- Play the evac messages to the pre-defined zones if the zones has chosen to use the evac paging source.
- The volume of the rotary knobs on BTQ-VM4/8 will bypass, and make sure the volume of paging does not attenuate.
- The 3-wire type of speaker lines will bypass, and make sure the the volume set by the VAT volume attenuator does not attenuate.



❖ Zone selection:

All the events which relate to paging have the identical zone setting, this setting informs the BOUTIQUE system that which zones will be distributed audio when proceeds a paging.



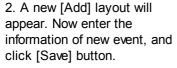
- Device: The device name (main controller or secondary units).
- Zone: Tick the zones checkbox to select them into pre-define zones. As soon as a call in non pre-defined zone is finished, the next call will be automatically rerouted in the pre-defined zone.
 - o All: Select all the zones of main controller and/or secondary unit.
- 1-8: Allow to select zone 1 to 8 independently from a main controller and/or secondary unit.
- Logic out: Select the logic output(s) to be triggered when the pre-define zone is triggered.

LogicOut x LogicOut2 x LogicOut3 x

OPEN

•

5.1.11.2 Add event



3. An new event will be created and displayed as the picture above.



-

-

(1:2) SL-1

1

5.1.11.3 Logic out

BOUTIQUE has 8 output channels that can be configured with 4 modes.



- Event name: The name of this event.
- Mode (cycle is from OPEN to CLOSE):

- o OPEN: The contact output's channel is open when the event is triggered.
- o CLOSE: The contact output's channel is close when the event is triggered.
- TOGGLE: Trigger the event contact output's channel relay switch between open and close.
- o PULSE: The contact is close during the [Close] period then open during [Open] period.
 - Close period (ms): Set the time to close the contact output's channel.
 - Open period (ms): Set the time to open the contact output's channel.
 - Times: The times of OPEN-CLOSE phase.
- Device list & channel: Choose the device target and its channel to perform this logic out event.

5.1.11.4 Command string

Send the commands by RS232/Ethernet to 3rd party device.



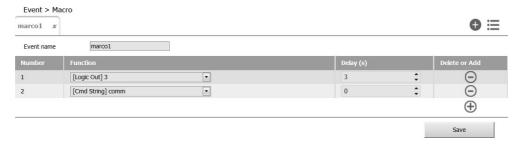
- · Event name: The name of this event.
- String: Set the command strings which the BOUTIQUE will use it to 3rd party device.
 - The BOUTIQUE system accepts to receive the command string in ASCII.
- Interface: Users can send the command string through the network IP or serial port (RS232).
- Mode:
 - o Time interval: The period (ms) of sending the command string to 3rd party device repeatedly.
 - o Time out: The device will stop sending the command string after receiving the answer string from the target.



- Time out: Set the time to resend the command string when not receiving the [+Ans] response.
- Ans: The answer string which sends to BOUTIQUE device when 3rd party device has received the command string.
- Repeat: Set the "repeat time" to resend the command string when not receiving the [+Ans] response.

5.1.11.5 Marco

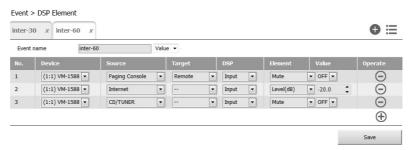
Create a group of action by adding multiple events, and the events will be triggered in order.



- · Event name: The name of this event.
- Function: The event will be triggered in order.
- Delay (second): The delay time between the next upcoming event in this list.

5.1.11.6 DSP element

The [DSP Element] event is used to adjust the DSP parameter such as audio level of input source.



- Value/Step: Choose the adjust mode of this event.
 - Value: Set the parameter to the assigned value such as level control and mute on/mute off.
 - Step: Increase/decrease the DSP parameter by step. When the event is triggered, the value will increase/decrease by step. This mode can be used for the element such as Level(dB) and Overload Threshold(dB).
- Source: The sources include CD/TUNER, AUX, MIC/LINE, Fireman MIC, Message, Paging Console, VOIP, Internet, Internal Amp CH output and External Amp CH Output.
- Target: Choose one of the connected remote as the target. The [Target] grid will be activated when choosing the [Paging Console] option on [Source] grid first.
- DSP: The DSP components include Input/Equalizer/Dynamic, please read <u>DSP Function</u>.
- Element: The elements include Mute, Bypass, Level(dB) and Overload Threshold(dB).

5.1.11.7 Message routing

The [Message Routing] event is used to play the selected message to pre-defined zones.



• Event source: There are two Message (MESSAG 1 and MESSAG 2) in BOUTIQUE system, when the two message source are occupied, user needs to schedule the events separately.

The rest of configuration setting of MIC paging event is also identical to a Singular type of paging event, see Add Singular Type.

5.1.11.8 Scheduler switch

The [Scheduler Switch] event is used to enable/disable the scheduler function of system.

- Event name: The name of this event.
- Scheduler enable/disable: Enable or disable the scheduler function of the system.



5.1.11.9 Security mode

The [Security Mode] event is used to make the system activate/deactivate security mode.

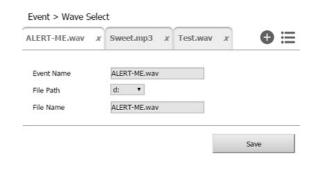
Please refer to Security Options to understand the [Security Mode].

- Event name: The name of this event.
- Security enable/disable: Enable (activate) or disable (deactivate) the security mode when the event triggered.



5.1.11.10 Wave select

- The [Wave Select] event can be used to trigger the [Wave Paging], [Wave record], [Wave Listen], [Wave Delete] functions by the key buttons of DPM-T5 and DPM-MAIN console.
- For example, when assigns a [Wave Record] key function on the [Integration Paging] event of DPM-T5, click this key on the LCD panel of DPM-T5, it will start recording and the message will be stored under the specific file path.



5.1.11.11 Stop paging

The [Stop Paging] event is used to stop all the paging sources or the specific paging source.

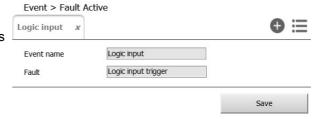
- Event name: The name of this event.
- Stop all source: Tick this option to stop all the paging sources.
- Stop target source: Choose to stop one specific target source.



5.1.11.12 Fault active

The [Fault Active] event allows users to set the customized fault for monitoring purpose. When this event is activated, the custom message of this fault will display on LCD panel, as well as the fault LED will light up, and along with other warning indications such fault reply, record the fault on fault list, and trigger the warning tone.

- Event name: The name of this event.
- Fault: Set the display message when this event is triggered.



5.1.11.13 Fault inactive

The [Fault Inactive] event is used to deactivate the <u>Fault Active</u> event. After deactivate the selected [Fault active] event, the fault LED on front panel will light off, and the fault relay will be switched to non-fault status, and the warning tone will stop output.

- Event name: The name of this event.
- Inactive: Choose a [Fault Active] event you wish to cancel from the drop-down box.

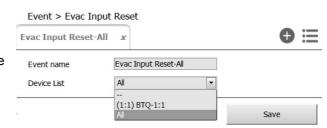


5.1.11.14 Evac input reset

If the [Evac Input Reset] event is activated, it will cancel the [ON Function] event which is under Evacuation inputs > Active type > Trigger mode.



- Event name: The name of this event.
- Device list: Choose to reset all the evac inputs of the BTQ-VM4/VM8/SG8 or all the controllers.
 - o All: All BTQ-VM4/VM8/SG8 units.
 - Controller: The selected BTQ-VM4/ VM8/SG8 unit.
 - -: Indicate none of device or system is selected.



Please note if the [Evac Input Reset] event is activated on a selected BTQ-VM4/8, the evac inputs of the connected BTQ-SL8 will also be reset, too.

5.1.11.15 Singular paging

This event is for paging to pre-defined zones, please refer to Paging for more details.



5.1.11.16 Singular paging on by zone

This event can be used to dynamically add paging zones in Singular Paging event.

For example, If Zone1~Zone2 are set as the pre-defined zones in [Singular Paging] event, users can use [Singular paging on by zone] event to add Zone2~Zone3 when this event is triggered.



5.1.11.17 Singular paging off by zone

This event can be used to dynamically cancel the zones which add on <u>Singular Paging</u> event and <u>Singular paging on by zone</u> event.

For example, if Zone1~Zone4 are [****] set as the pre-defined zones in [Singular Paging] and [Singular paging on by zone] event, users can use [Singular paging off by zone] event to cancel Zone2 and Zone3 when this event is triggered.



5.1.12 Monitor

The BOUTIQUE system has all the essential functions to comply with EN-54 and UL2572 requirements including loudspeaker lines monitoring, EVAC microphone capsule, cable surveillance, and supervision with remote devices.

Make sure the system connection is correct, so that the monitored results will be accurate for further reference.

5.1.12.1 Global settings



- Monitor: Enable/disable the monitoring function on all the connected BTQ-VM4/8 controllers.
- Monitor cycle (s): The interval(sec.) that the connected BOUTIQUE system perform monitoring each time.
- Monitor tone (Hz): Choose the frequency of monitoring tone signal between 18K or 20K Hz.
- 1kHz: Enable the 1K tone for monitoring. If this option is on, a 1K tone signal will be sent to the amplifier for monitoring during the time and period.

We recommend to measure the 1K monitoring when no one is around due to the 1K monitoring will cause high pitch sounds.

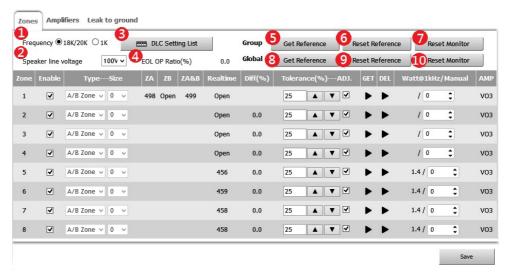
- Time (hh:mm): The time to start the 1K tone monitoring.
- Period (hh:mm): The time interval to monitor the 1K tone.

5.1.12.2 Zones

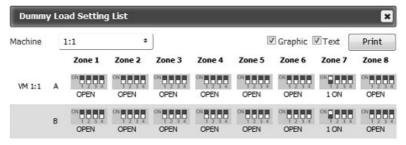
The zone monitoring is based on the impedance measurement. It has three different reference values: Line A, Line B and Line A/B. Reference for Line A and Line B are the individual impedance measurement of speaker lines. Reference Line A/B correspond to the Line A and B in parallel.

- Line A = Za
- Line B = Zb
- Line A/B = 1/((1/Za) + (1/Zb))

5.1.12.2.1 Control



- 1. Frequency (Hz): Choose 18K/20K or 1 K monitoring.
- 2. Speaker line voltage: The 25V/70V/100V audio signal through the amplifier and back to main controller/secondary unit.
- 3. DLC (dummy load calculation) setting list: Set the dummy load setting based on monitoring result listed on [DLC] window.
- 4. EOL OP ratio (%): Display the wattage load of the connected VA-EOL unit and loudspeakers in ratio. If the ratio is reach 100%, it indicates as Over Power (OP).



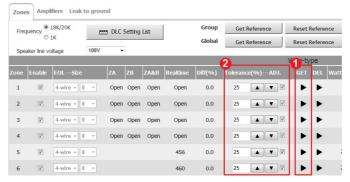
- Group:
 - Get reference: Get the reference of impedance value from the selected BOUTIQUE localnet system (BTQ-VM4/8 and SL8), see the picture below.



- 6. Clear reference: Reset the reference of impedance value from the selected BOUTIQUE local-net system (BTQ-VM4/8 and SL8).
- 7. Reset monitor: Clear the fault state of selected zones on BOUTIQUE local-net system (BTQ-VM4/8 and SL8).
- In the case of zone short-circuit, the main controller/secondary unit will open the internal relay to stop the output of the audio signal to speaker. After the relay is opened, the controller/secondary unit cannot monitor and detect whether the problem is solved or not. Therefore, after this problem has been solved, users needs to reset the monitoring to close the relay to the output audio signal to the speaker and monitor the speaker line

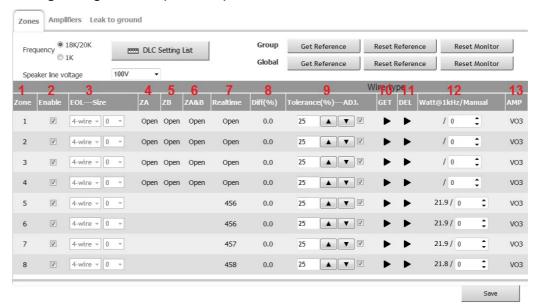
again.

- · Global:
 - 8. Get reference: Get all the reference of impedance value on all the BTQ-VM4/VM8/SG8/SL8 units (global-net).
 - 9. Clear reference: Reset all the reference of impedance value on all the BTQ-VM4/VM8/SG8/SL8 units (global-net).
 - 10.Reset monitor: Clear the fault state of all zones on BTQ-VM4/VM8/SG8/SL8 units (global-net).
- How to setup the monitoring for one zone:
 - 1. Press [GET] button on the selected zone.
 - If the variation of impedance measurement on [Realtime] field is big due to the unstable environment or condition, users can manually define the tolerance value to detect a bad impedance fault. See the picture below.



- How to setup the monitoring for all zones:
 - 1. Press [Global Get reference] to get reference.
 - 2. If the variation of impedance measurement on [Realtime] field is big due to the unstable environment or condition, users can manually define the tolerance value for each zone to detect a bad impedance fault
 - The references should be taken only on zone with the connected speaker lines. Otherwise, the zone will be open.

5.1.12.2.2 Monitoring settings of zone (four-wire)



- 1. Zone: Indicate zone number.
- 2. Enable: Enable/disable the zone monitoring. If the monitoring of a zone is disable, the BOUTIQUE will not detect the faults of that zone.
- 3. EOL---size:
 - Type: Choose 3-wire or 4-wire of VA-EOL hardware installation, see the wiring from <u>VA-EOL branch wiring</u>.
 - Size: The number of VA-EOL board has connected in a zone (max. 16 VA-EOL per zone).
 - Please note this function is currently reserved.
- 4. ZA: The impedance value (ohm) for Line A of one zone.
- 5. ZB: The impedance value (ohm) for Line B of one zone.
- 6. ZA&B: The impedance value (ohm) for Line A and Line B in parallel.
- 7. Realtime: The realtime impedance measurement of Line A and Line B in parallel.
- 8. Diff (%): The difference between Reference A/B and Measure value (ohm) in percentage.
- 9. Tolerance (%)---ADJ.: Define the tolerance of impedance value to detect a bad impedance fault. For instance, if the reference is 1000 ohm and the tolerance is set to 15%, the range of good impedance will be 850 ~ 1150 ohm. If the measured impedance is 1300 ohm, a bad impedance fault will be recognized by the main controller/secondary unit.

 - Synchronized adjustment: If the zones enable this option, their tolerance value will be adjusted synchronously.
- 10.GET.: When the system is constructed, users needs to get the impedance value of the speaker lines for further reference. This value will be utilized to detect faults of zones.
- 11.DEL.: Reset the reference value. This will disable the zone monitoring, but the measured value is still updated.
- 12. Watt@1kHz/manual: Display the watt value when the zones are connected to the loudspeakers or define the value manually.
- 13.AMP: The amplifier source which is connected to one zone (external amplifier, VO3 etc.).

VO3 is channel that only generate the pilot tone in case no amplifier channel is in used.

5.1.12.2.3 Faults

If the impedance of Line A/B becomes abnormal, the main controller/secondary unit will detect and recognize that error, then generate a [Line A/B Error] global fault. There are three kinds of Line A/B Errors listed as below:

• Line A/B open:

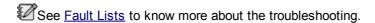
If the value on [Realtime] is greater than 5000 ohm, this fault can be recognized by the main controller/secondary unit. The "OPEN" error will be shown on [Realtime].

• Line A/B short:

The voltage of pin +, - is monitored by the main controller/secondary unit, if the impedance is approximate to zero. This means there is a short-circuit on main controller/secondary unit. The "S.C." error will be shown on [Realtime]. If this fault is detected, the internal relay of a zone will be open to stop output the audio signals to the speaker. Then user needs to click Reset Monitor in order to close the internal relay, resulting in output the audio signal.

• Line A/B bad impedance:

If the value of [Realtime] is greater than [ZA&B] + [Tolerance (%)], or the value of [Realtime] is less than [ZA&B] - [Tolerance (%)], this fault will be recognized by the main controller/secondary unit.



5.1.12.3 Amplifiers

The amplifier monitoring is based on the measurement of amplifier's gain.

5.1.12.3.1 Control & display

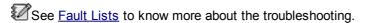


- Reference:
 - o Global:
 - Get reference: Get all the reference of gain value on all the amplifiers.
 - Clear reference: Reset all the reference of gain value on all the amplifiers.
 - Reset monitor: Clear the fault state on all the amplifiers.
 - o Group:
 - Get reference: Get the reference of gain value on the amplifiers of local net.
 - Clear reference: Reset the reference of gain value on the amplifiers of local net.
 - Reset monitor: Clear the fault state on the amplifiers of local net.
- Amplifier: Indicate the internal or external amplifier.
- Enable: Enable/disable the amplifier monitoring. If the monitoring of amplifier is disable, the main controller/secondary unit will not detect the faults of amplifiers.

- Tolerance(%)---ADJ.: Define the value of the tolerance wherein the measured gain of amplifier has to stay before generating a fault state.
 - o Set the tolerance of gain value via arrow up/down button.
 - Synchronized adjustment: If the zones enable this option, their tolerance value will be adjusted synchronously.
- GET: When the system is constructed, users needs to get the gain value for further reference. This value will be utilized to detect faults of zones.
- DEL: Reset the reference value. This will disable the amplifier monitoring, but the measured value is still updated.
- Ref. gain (no load): Display the value of an unloaded reference, which the value is the gain of an amplifier when there is no load to the zone. This value is used to determine if there is a fault of amplifier.
- Ref gain (loaded): Display the value of a full loaded reference, which the value is the gain of an amplifier when there is a full load to the zone. This value is used to determine if there is a fault of amplifier.
- Gain (realtime): Display the measured value of the current gain of an amplifier.

5.1.12.3.2 Faults

- Amplifier gain too high: If the measurement > (Unloaded Reference x (100% + Tolerance%)), the [Amplifier Gain Too High] fault is recognized by the system.
- Amplifier gain too low: If the measurement < (Full Unloaded Reference x (100% Tolerance%)), an [Amplifier Gain Too Low] fault is recognized by the system.
- Amplifier fail: If the measurement < (Unloaded Reference / 10), an fault is recognized by the system.
- Gain rating too low: If the measurement of ref. gain is too low while getting the references, the [Rating Too Low] fault is recognized by the system.



5.1.12.4 Leakage

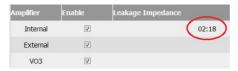


Amplifier: Indicate the internal amplifier/external amplifier/VO3 channel.

Note: The VO3 is channel that only generate the pilot tone in case no amplifier channel is in used.

- Enable: Enable/disable the leakage detection on the corresponded internal/external amplifier/ VO3 channel.
- Leakage impedance (ohm): The impedance between the Line A or Line B port and ground wire causes the current leakage.

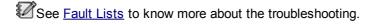
Note: Due to the device component requires to charge, the leakage detection will be mandatory begin in 3 minutes after the device is powered, so that the leakage impedance result will be accurate. You will see a countdown time first as the picture below, and the value of leakage impedance will be shown after 3 minutes. If users do not wish to wait for the result which is displayed after 3 minutes, click [Leakage Test] button to see the instant detection of leakage impedance.



- Enable all: Enable the leakage detection on all the internal/external amplifier amplifiers.
- Fault report threshold: A threshold value for leakage detection. If the measured impedance is lower than this value, a leakage fault is recognized.
- Isolation impedance threshold: If the measured leakage impedance is lower than this
 threshold, a leakage fault is recognized and the relay will be opened, this will result in no
 audio sound and show in fault list.
- Isolation leakage speaker line: By enabling this option, the relay will open to stop audio output if a leakage fault is detected.
- Leakage test: Click this button to start the leakage detection process, the progress status will show on [Leakage impedance] grid.

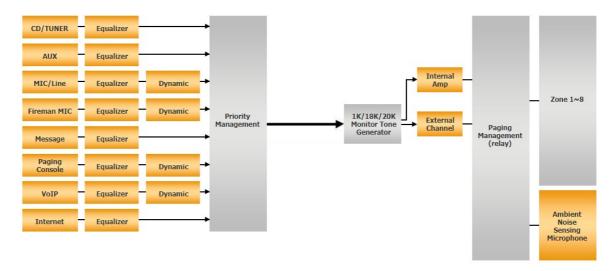
5.1.12.4.1 Faults

- Leakage occurrence: If the leakage impedance is lower the [Fault Report Threshold] which is defined on [Leak to Ground] window, then a [Leakage Occurrence] fault is recognized.
- Leakage open: The measurement of speaker lines has short-circuit fault due to the + speaker line is connected to ground wire, and is connected to ground wire, then a [Leakage Open] fault is recognized.



5.1.13 DSP function

5.1.13.1 DSP Structure

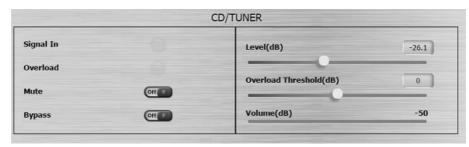


The BOUTIQUE web browser provides a various DSP configuration and adjustment. Click the component button, and the DSP configuration window will pop up.

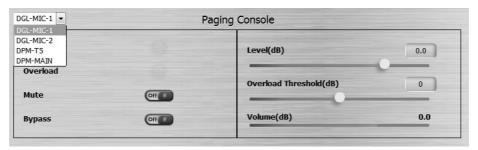
5.1.13.1.1 Source settings

The source settings are used to edit the settings of the audio sources. The sources you can edit are include the CD/Tuner, Aux, Mic/Line, Fireman Mic, Message, Paging Console, VoIP and Internet. The control window of the source settings are identical, see as below.

· Click the source button to enter the setting window.



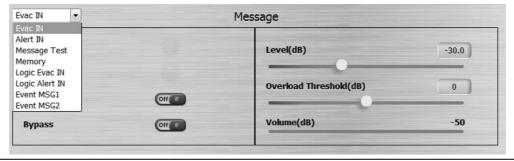
Paging console: The paging console setting window allows to edit the audio settings of each connected paging console (DPM-T5, DPM-MAIN etc.).



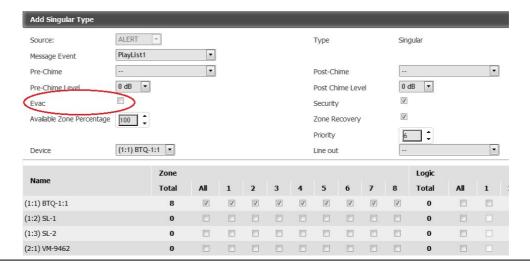
- · Signal in: Indicate if there is audio signal input or not.
- Overload: Indicate the level of the input source is over the Overload Threshold (dB).
- Mute: Mute or unmute the source output, the LED will light in red while the source channel is muted, and light in green while the source channel is activated.
- Bypass: Click to bypass the input signal to the output of source channel.
- Level (dB): Set the gain of the source channel.
- Overload threshold (dB): Set the threshold of the overload (dB).
- Volume (dB): Display the volume of input (source) gain by meter.

5.1.13.1.1.1 Message

Message: The message setting window allows to edit the audio settings of each message source.



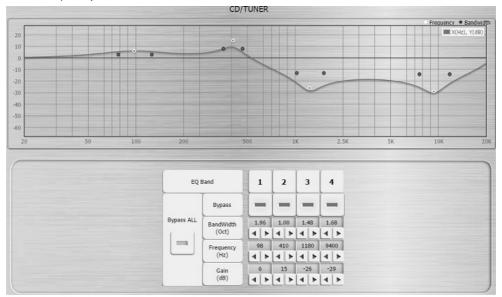
Please note if the Evac option is enable on EVAC In/Alert In/Message Test/Logic Evac In/Logic Alert In/Event MSG 2/Event MSG2 paging events, the DSP audio control on this setting window will be bypassed.



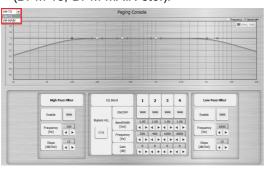
5.1.13.1.2 Compoments

5.1.13.1.2.1 Equalizer

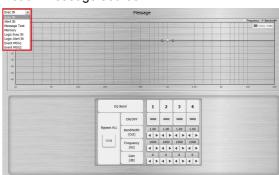
There are 4 bands of Equalizer on the inputs for adding the peaking equalization. Click Equalizer button on each audio source (CD/Tuner, Aux, Mic/Line, Fireman Mic, Message, Paging Console, VoIP and Internet) to open the control window, see as below.



 The [Paging Console > Equalizer] setting window allows to edit the Equalizer settings of each connected paging console (DPM-T5, DPM-MAIN etc.).



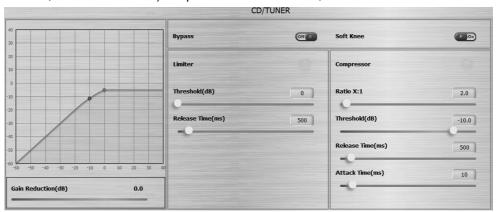
 Message: The [Message > Equalizer] setting window allows to edit the Equalizer settings of each message source.



- Bandwidth (Oct): Set the width around the frequency (Q factor) of the selected frequency band.
- Frequency (Hz): Set the central frequency of a band.
- Gain (dB): Set the EQ gain (attenuate or increase the gain of selected frequency).
- Bypass/bypass all: Bypass the input signal/all the input signal to the output of Equalizer component.

5.1.13.1.2.2 Dynamic

Click Dynamic button on each audio source (CD/Tuner, Aux, Mic/Line, Fireman Mic, Message, Paging Console, VoIP and Internet) to open the control window, see as below.



• The [Paging Console > Dynamic] setting window allows to edit the Dynamic settings of each connected paging console.



 Message: The [Message > Dynamic] setting window allows to edit the Dynamic settings of each message source.



- Bypass: Click [Bypass] button to bypass the input signal to the output of Dynamic component.
- Soft knee: Enable/disable the "Soft Knee" mode. This element controls whether the bend in
 the response curve is a sharp angle or has a rounded edge. A soft knee slowly increases the
 compression ratio as the level increases and eventually reaches the compression ratio set by
 user. A soft knee reduces the audible change from uncompressed to compressed, especially
 for higher ratios where the changeover is more noticeable.

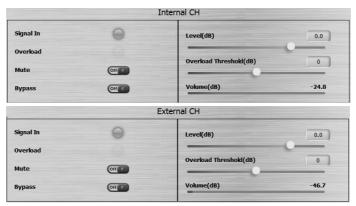


Enable to smoothly increase the audio level to reduce distortion.

- · Limiter:
 - o Threshold (dB): Activate the Limiter function when input level above this threshold.
 - Release time (ms): Set the fade-out time it takes to release the gain reduction (dB).
- · Compressor:
 - o Ratio X:1: Set the compression ratio.
 - o Threshold (dB): Set the level of threshold from where the compressor will start activating.
 - o Release time (ms): The time to stop compressing after the input signal is below the threshold level.
 - Attack time (ms): Set the time it takes to respond to the input signal. The response time
 is the period when the compressor has decreased gain to reach the level that is
 determined by the ratio.
- Graphic: Adjust the threshold level by moving the blue (Compressor) and red (Limiter) cursors.
- Gain reduction (dB): This bar indicates the current amount of gain reduction.

5.1.13.1.2.3 Internal/external CH output

Click the [Internal CH Output]/[External CH Output] button to enter the setting window, see as below.



- Signal in: Indicate the audio is being output or not.
- Overload: Indicate the level of the internal/external CH output is above the [Overload Threshold].
- Mute: Mute or unmute the CH output, the LED will light in red while the internal/external CH output channel is muted, and light in green while the output channel is activated.
- Bypass: Click to bypass the input signal to the output of internal/external CH.
- Level (dB): The output level of the internal/external CH.
- Overload threshold (dB): Set the threshold of the overload (dB).
- Volume (dB): Indicate the meter to show this level of internal/external CH output.

5.1.13.1.2.4 Ambient noise sensing microphone (static & dynamic)

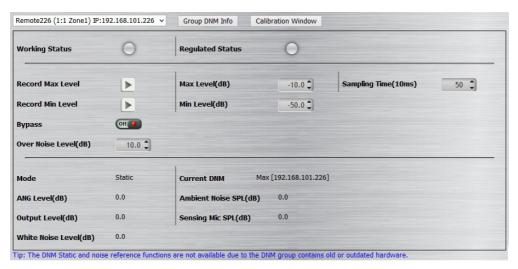
To use the ANS MIC function, please do the following steps first.

1. Add a <u>DNM2-ETH</u> or <u>DGL-MIC</u> device on [Device Management] window.

- 2. Set the noise sensing mic group, priority settings etc. of DNM2-ETH/DGL-MIC on Modulation.
- 3. Then the ANS MIC function on DSP layout will be activated.

Methods:

- <u>Static</u>: Detect the background noise when it is in the beginning of paging, and use the fixed gain based on [Over Noise Level] setting to increase/decrease the level of speaker.
- <u>Dynamic</u>: Dynamically increase/decrease the level of speaker based on the background noise during the paging.

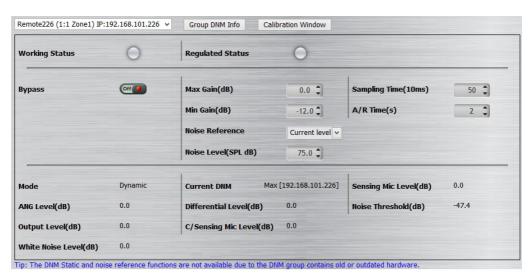


• Group DNM info: Click this button to open the window which displays the information of the DNM2-ETH/DGL-MIC. All the DNM2-ETH/DGL-MIC listed in this window are in the same group.



- Calibration window: Click to open the <u>DNM Calibration</u> window.
- · Working status:
 - Light in green: The selected DNM2-ETH is connected.
 - o Light in yellow: The calibration is in progress.
 - Light in black: The selected DNM2-ETH is disconnected.
 - o Light in purple: The detected level is too small during calibration.
- · Regulated status:
 - Light off: The level (dB) of ambient sounds (ANG level) detected by DNM2-ETH/DGL-MIC is in stable condition and has no change.
 - Light in green: The level (dB) of ambient sounds (ANG level) detected by DNM2-ETH/DGL-MIC has increased.
 - Light in blue: The level (dB) of ambient sounds (ANG level) detected by DNM2-ETH/DGL-MIC has decreased.
 - Light in red if the zone is under paging but DNM2-ETH of the zone is not active due to the following conditions:
 - When multiple zones are under paging, and the priority of the DNM group is lower than the other DNM group.

- The zone is in Evac status.
- A DNM2-ETH slave unit is disconnected. Please click [Group DNM Info] to check for details.
- Record max./min. level: Set max./min. level to limit the level of speaker output is within this level
 range, and avoid the speaker output is too loud or too small. See the how-to from the following
 steps below,
 - 1. First, enable [Bypass] button.
 - 2. Then proceed the paging action for testing purpose (we recommend to use the white noise for testing).
 - 3. Adjust the level of white noise to heard big enough and Click [Max. level] to record the level value, do the same procedure but smallest level for[Min. level]. The recorded level value will be shown on [Max. Level]/[Min. Level].
 - 4. Users can also manually set the [Max. Level]/[Min. Level].
- Bypass: To record the max./min. level which the DNM2-ETH/DGL-MIC can support, you need to enable [Bypass] button first.
- Over noise level (dB): Set how much level should the level of DNM2-ETH/DGL-MIC be above to the background noise.
- Max/min. level (dB): The minimum/maximum gain recorded by DNM2-ETH/DGL-MIC.
- Sampling time: The average time by measuring the level of DNM2-ETH/DGL-MIC, this value smaller will be more sensitive of ambient noise.
- ANG (Auto Noise Gain) level: The level which the DNM2-ETH/DGL-MIC will increase/decrease under paging.
- Output level: Display the output level.
- White noise level: The level which is automatically adjusted in the calibration process.
- Current DNM: Display the method of Group Rule (average/maximum/minimum) configured on DNM2-ETH > Modulation, and the IP address of DNM2-ETH which is currently used.
- Ambient noise SPL: The measurement of background noise level when the [Calibration] button is enabled.
- Sensing mic SPL: The ambient sound level measured by DNM2-ETH/DGL-MIC.



 Group DNM info: If there are multiple DNM2-ETH/DGL-MIC units are added in a group (master DNM2-ETH/DGL-MIC and other slave DNM2-ETH/DGL-MIC ones), click [Group DNM info] to see the info. list of the slave DNM2-ETH/DGL-MIC units.



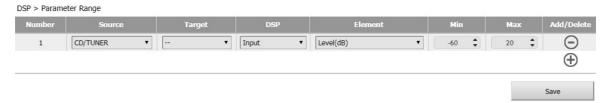
- · Noise reference:
 - o [Current level]: Choose to use the current level which DNM2-ETH has detected for reference.
 - o [Manual]: Manually set the noise level on [Noise Level (SPL dB)] setting for reference.
- A/R time (s): After the ambient noise is detected by DNM2-ETH/DGL-MIC, set the A/R time to define the gain level which will be increased from the current paging level to the level that DNM2-ETH/DGL-MIC has detected..
- Differential level: The difference level between the Output Level and the C/Sensing Mic Level.
- C/Sensing mic level: Display the level which is calculated by dynamic DNM2-ETH/DGL-MIC algorithm.
- Sensing mic level: Display the current level detected by DNM2-ETH/DGL-MIC.
- Noise threshold: If the level of background noise is over/below this [Noise threshold] after the [Calibration] action, the BOUTIQUE system will use this threshold to increase/decrease the output level.

The rest of configuration setting of ANS MIC (dynamic) is also identical to a ANS MIC (static), see ANS MIC > Static.



- Int. (internal amplifier) status/Ext. (external amplifier) status:
 - o Light off: The calibration has not proceeded yet.
 - o Light in green: The calibration succeeded.
 - o Light in red: The calibration failed.
 - o Light in yellow: The calibration is progressing.
- Int. (internal amplifier) error status/et. (external amplifier) error status:
 - o Light in red: The level which the DNM/DGL-MIC has detected is too loud.
 - Light in blue: The level which the DNM/DGL-MIC has detected is too small.
 - Light in black: A DNM/DGL-MIC unit is disconnected under the DNM group. See [Group DNM Info] window for details.
 - Light in purple: Some of the DNM units are unable to work normally due to the detected level is too small. See [Group DNM Info] window for details.
- Calibration: Click to start the calibration process.
- Calibration all: Click to start the calibration for all the listed the DNM2-ETH units.
- Stop calibration: Click to stop the current calibration process.

5.1.13.2 Parameter range



This function allows users to define the parameter range of source including CD/TUNER, AUX, MIC/LINE, Fireman MIC, Message, Paging Console, VoIP, Internet, Internal Amp, External Channel and Ducker.

- Target: Define the target of which message source (EVAC In/Alert In/Message Test/Logic Evac In/Logic Alert In/Event MSG 2/Event MSG2). This option is applicable to [Message] source only.
- DSP: Define which type of DSP (Input/Equalizer/Dynamic) from the drop-down box.
- Element: Define which type of element (Level dB/Overload Threshold dB) from the drop-down box.
- Min/Max: Set the minimum/maximum parameter range.

6 **Maintenance**

Cleaning



Make sure to unplug the main power supply of main controller/secondary unit prior to cleaning.

The panels and chassis can be cleaned with a soft cloth and mild non-abrasive cleaning solution.

Avoid cleaning powders or scrubbing pads, as these will scratch and dull the paint. Do not apply liquid directly to the surface. Dampen the cloth with the cleaning solution and wipe gently.

Dust removal

After used the unit for a long-time, especially in dusty environments, the heat sinks may become clogged with dust. This will interfere with cooling from the air inlets, and lead to higher temperature operation and reduced life.

Dust can be most easily removed by brushing or directing an air jet between the fins of the heat sinks.

❖ User maintenance



User maintenance should be done by qualified personnel only.



A Dangerous mains voltages are present inside the units. Unplug the main power supply before you do any maintenance.

Users can inspect if any broken connectors, ground, cable connections, or loose screws on the outside of main controller/secondary unit.

If any loose parts rattle around on the inside when the main controller/secondary unit is turned over in all directions, please shut down the main controller/secondary unit immediately, as a loose part could lodge in a dangerous place and cause further damage or shock hazard.

❖ Require service

If the main controller/secondary unit isn't working properly, please diagnose the problem from Troubleshooting.

If proper operation cannot be restored, the main controller/secondary unit may require service from ATEÏS Technical Support. This must be examined by qualified technical personnel, to avoid shock hazard or improper repairs. Please contact your ATEÏS dealer or ATEÏS Feedback.

7 Fault lists & troubleshooting

The following table explains the faults and detailed diagnosis displayed in $\underline{\text{Web browser} > \text{Machine} > \text{Info} > \text{Fault List}}$.

If the following troubleshooting cannot help to solve the problem, please <u>contact</u> your dealer to deal with this problem.

Faults	Diagnosis (details)	Version	Troubleshooting
	Internal parts of IC does not function or cause by static electricity.		Reboot device.
FPGA SSI Zone Error	Internal parts of IC does not function or cause by static electricity.	v2.13	Reboot device.
FPGA SSI FP Error	Internal parts of IC does not function or cause by static electricity.	v2.13	Reboot device.
FPGA Code no exist	IC codes do not function or cause by static electricity.	v2.13	Reboot device.
FPGA Code Error	IC codes do not function or cause by static electricity.	v2.13	Reboot device.
FPGA Communication Error	IC communication does not function.	v2.13	Shutdown the device first, and check if the FPGA cable is connected tightly and correctly.
NT Code no exist	IC codes do not function or cause by static electricity.	v2.13	Update firmware again, and reboot the device.
NT Code Error	IC codes do not function or cause by static electricity.	v2.13	Update firmware again, and reboot the device.
NT Communication Error	IC communication does not function.	v2.13	Shutdown the device first, and check if the FPGA cable is connected tightly and correctly.
	Wrong direction: The global-net wiring connection among the connected BTQ-VWSG devices is not correct.		Check if the wiring connection is correct (Port B to Port A) and not loosen.
Ateis Net Port Occurrence	Shutdown: The communication does not function.	v2.13	 Check if the cables are connected tightly and correctly. If the wiring is correct, reboot the devices, and check if the communication of Port B to Port A is normal. Check all the hardware connection again. Unplug and re-connect the Ethernet cables. Reboot the devices. Use CAT5/6 cables and link PORT-A to PORT-B on controller (bypass). Check if this fault is not listed on Web Browser > Machine > Info > Fault List.
Net Blacklist	The communication of the connected devices via global-net does not function.	v2.13	Reboot the broken device.
NT Phy Error	CRC Error/PHY Error/SRate: The global-net wiring connection is not stable.	v2.13	When each step of this troubleshooting is completed, users need to wait 80 seconds, and move on to the next step. 1. Use CAT5/6 cables and link PORT-A to PORT-B on controller (bypass). 2. Check if the wiring between PORT-A to PORT-B is connected tightly and correctly on controller.

Faults	Diagnosis (details)	Version	Troubleshooting
			3. Replace the CAT5/6 cables.
MSG File no Exist	The programmed message files does not exist anymore.	v2.13	 Check if the file is stored in the internal memory (Web Browser > Message Management). If the file is stored in USB drive, please plug in the USB, and check if this file is accessible.
Device Offline	Machine: The connected BTQ-VM/SG/SL is offline. Remote: The connected DPW/DGL-MIC/DNM cannot communicate with the BTQ-VM/SG/SL.	v2.13	 Check if the power supply is present. Check if the wiring of global-net ports on BTQ-VM/SG is connected tightly and correctly and the LEDs on RJ45 connector flashes, too. Check if the digi-link port (local-net) linked to the BTQ-SL8 is connected tightly and correctly, and the LED on RJ45 connector flashes, too. Check if the wiring of remotes is connected tightly and correctly. DNM: Check if the Ethernet port of remote is connected tightly and correctly, and the LEDs on RJ45 connector flashes, too. Check if the connected DNM and BTQ-VM is under the same LAN. Check the Ethernet setting of DNM and BTQ-VM on web browser, they must under the same LAN.
Fireman Error	Audio Line Error/Button Error: The fireman mic does not function.	v2.13	Check if the fireman cable connected to the audio IO board and front panel board is correct and not loosen.
Int. AMP Fault	Over Current	v2.13	Stop all the paging sources, and reboot the device. Decrease the output volume of internal amplifier. Contact your dealer and send it back for repair if the volume is still too small.
Int. AMP Fault	Identify Fault: The internal amp. cannot be identified by system.	v2.13	Check if the cable connected to the audio IO board is correct and not loosen. Reboot the device.
	Watt Setting Not Match HW	v2.16	Check if the wattage setting of internal amp matches the wattage setting of the actual hardware.
AteisNet ID Duplex	A duplicated device ID has been detected on global-net.	v2.13	 Check if there's duplicated net ID among the BTQ-VM/SG. The ID setting of BTQ-VM can be set from front panel. The ID setting of BTQ-SG can be set from the device ID of rear panel.
DIGI-LINK Error	The digi-link connection (localnet) is not stable.	v2.13	Check if the wiring of digi-link ports on BTQ-VM/SL is connected correctly and tightly. Unplug all the connected digi-link ports first, and connect them one by one again, please diagnose which digi-link port on BTQ-SL8 has the connection problem.
Fan Error	The fan does not function.	v2.13	Shutdown the device first, and check if the wiring cables are connected correctly and tightly.
ADC 0x4B Error	IC communication does not	v2.13	Shutdown the device first, and check if the

Faults	Diagnosis (details)	Version	Troubleshooting
	function.		FPGA cables are connected correctly and
			tightly.
ADC 0x4A Error	IC communication does not function.	v2.13	Shutdown the device first, and check if the TTL cables are connected correctly and tightly.
1000 105	IC communication does not	0.40	Shutdown the device first, and check if the
ADC 0x48 Error	function.	v2.13	CTLIO cables are connected correctly and tightly.
ADT Error	IC communication does not function.	v2.13	Shutdown the device first, and check if the FPGA cables are connected correctly and tightly.
PCF Error	IC communication does not function.	v2.13	Shutdown the device first, and check if the CTLIO cables are connected correctly and tightly.
CODEC Error	IC communication does not function.	v2.13	Shutdown the device first, and check if the FPGA cables are connected correctly and tightly.
Int Amp1 Error	IC communication does not function.	v2.13	Shutdown the device first, and check if the AMP
ADC 0x49 Error	IC communication does not function.	v2.13	cables are connected correctly and tightly.
Watchdog Fault	An unexpected device shutdown has been detected.	v2.13	Reboot the device.
AMP Error	Gain Too High Error: The difference of [Ref. gain] and [Measure] is greater than [Tolerance %] on Amplifier window, which unexpectedly causes the output level to be increased. Gain Too Low Error: The difference of [Ref. gain] and [Measure] is less than [Tolerance %] on Amplifier window, which unexpectedly causes the output level to be decreased. Gain Fail: The measurement of amplifier		 If the external amplifier is connected, check the gain value on [Amplifier Gain] has increased. If the output level is under normal condition, click [Get Reference], and increase the percentage value on [Tolerance %]. If the output level is unacceptable, contact your dealer and send it back for repair (when using the internal amplifier of BTQ-VM). Replace a new external amplifier for testing purpose. If the external amplifier is connected, check the gain value on [Amplifier Gain] has decreased. If the output level is under normal condition, click [Get Reference], and increase the percentage value on [Tolerance %]. If the output level is unacceptable, contact your dealer and send it back for repair (when using the internal amplifier of BTQ-VM). Replace a new external amplifier for testing purpose. When using the internal amp of BTQ-VM, repeat the device first, and shock if the AMP repeat the device first, and shock if the AMP repeat the device first, and shock if the AMP repeat the device first, and shock if the AMP repeat the device first, and shock if the AMP repeat the device first, and shock if the AMP repeat the device first, and shock if the AMP repeat the device first, and shock if the AMP repeat the device first, and shock if the AMP repeat the device first, and shock if the AMP repeat the device first, and shock if the AMP repeat the device first, and shock if the AMP repeat the device first, and shock if the AMP repeat the device first, and shock if the AMP repeat the device first and shock if the AMP repeat the device first and shock if the AMP repeat the device first and shock if the AMP repeat the device first and shock if the AMP repeat the device first and shock if the AMP repeat the device first and shock if the AMP repeat the device first and shock if the AMP repeat the device first and shock if the AMP repeat the device first and shock if the AMP repeat the device first and shock
	The measurement of amplifier gain is too low. Gain Rating too Low Error: When clicking [Get Reference], the gain is too low.		reboot the device first, and check if the AMP cables are connected tightly and correctly. 2. When connected to the external amp, check if the wiring of EXTERNAL AMP IN and EXTERNAL AMP OUT is connected correctly and tightly. 3. Check if the power supply of amplifier is present. 4. Check if the value of amplifier gain is too low.
Line A Error	Bad Impedance Error: The measurement of speaker impedance is beyond its tolerance.	v2.13	Check if the wiring of LINE A is connected correctly and tightly. Check if the speaker impedance has changed. If the output level is under normal condition,

Faults	Diagnosis (details)	Versior	Troubleshooting
			click [Get Zone Reference], and increase the
			percentage value on [Tolerance %].
			 If the output level is unacceptable, replace a new speaker for testing purpose.
			Check if the wiring of LINE A is connected.
	Open-Circuit		correctly and tightly.
			2. Replace a new speaker for testing purpose.
			1. Plug out the LINE A speaker lines, and
			proceed [Reset Monitor]. Then wait for 30
			seconds and check if there's [Open-Circuit] fault.
	Short-Circuit		2. If there's [Open-Circuit] fault, please check if
	Short Shount		the speaker lines are short-circuit.
			3. If the speaker lines won't occur [Open-Circuit]
			fault, contact your dealer and send it back for
			repair.
	Leakage:		1. Plug out the LINE A speaker line, and wait for
	The measurement of speaker lines has short-circuit fault due		90 seconds to check if the Leakage fault has cleared out or still exists.
	to the + speaker line is		2. If there's no Leakage fault, check if the +
	connected to ground wire, and -		speaker line is connected to ground wire,
	is connected to ground wire.		and - is connected to ground wire.
	Leakage Open:		1. Plug out the LINE A speaker line, and
	The measurement of speaker		proceed [Reset Monitor]. Then wait for 90
	lines has short-circuit fault due		seconds to check if the Leakage fault has cleared out.
	to the + speaker line is		2. If there's no Leakage fault, check if the +
	connected to ground wire, and - is connected to ground wire.		speaker line is connected to ground wire,
	is connected to ground wire.		and - is connected to ground wire.
			1. Check if the wiring of LINE A is connected
			correctly and tightly. 2. Check if the speaker impedance has
	Bad Impedance Error:		changed.
	The measurement of speaker		3. If the output level is under normal condition,
	impedance is beyond its tolerance.		click [Get Zone Reference], and increase the
	loierance.		percentage value on [Tolerance %].
			4. If the output level is unacceptable, replace a
			new speaker for testing purpose. 1. Check if the wiring of LINE A is connected
	Open-Circuit		correctly and tightly.
			2. Replace a new speaker for testing purpose.
			1. Plug out the LINE A speaker lines, and
			proceed [Reset Monitor]. Then wait for 30 seconds and check if there's [Open-Circuit]
Line B Error		v2.13	fault.
EIIIO D EIIOI	Short-Circuit	V2.10	2. If there's [Open-Circuit] fault, please check if
			the speaker lines are short-circuit.
			3. If the speaker lines won't occur [Open-Circuit]
			fault, contact your dealer and send it back for repair.
	Leakage:		1. Plug out the LINE A speaker line, and wait for
	The measurement of speaker		90 seconds to check if the Leakage fault has
	lines has short-circuit fault due		cleared out or still exists.
	to the + speaker line is		2. If there's no Leakage fault, check if the +
	connected to ground wire, and - speaker line is connected to		speaker line is connected to ground wire, and - speaker line is connected to ground
	ground wire.		wire.
	Leakage Open:		1. Plug out the LINE A speaker line, and
	The measurement of speaker		proceed [Reset Monitor]. Then wait for 90
	lines has short-circuit fault due		seconds to check if the Leakage fault has

Faults	Diagnosis (details)	Version	Troubleshooting
	to the + speaker line is connected to ground wire, and - speaker line is connected to ground wire.		cleared out. 2. If there's no Leakage fault, check if the + speaker line is connected to ground wire, and - speaker line is connected to ground wire.
VO3 Fail	The detection of VO3 signal does not function.	v2.13	Reboot the device first, and check if the VO3 cables are connected correctly and tightly.
	Ext. Amp Occurrence: The + speaker line is connected to ground wire, and - speaker line is connected to ground wire on external amplifier.		 Reboot the device, and wait for 200 seconds. Plug out the EXTERNAL AMP OUT on BTQ-VM rear panel. then wait for 90 seconds and check if there's no Leakage fault. If there's no Leakage fault, check the wiring of External AMP, and see if the line is connected to ground wire.
AMP Line Leakage Error	Int. Amp Occurrence: The + speaker line is connected to ground wire, and - speaker line is connected to ground wire on internal amplifier.	v2.13	 Reboot the device, and wait for 200 seconds. Plug out the INTERNAL AMP OUT on BTQ-VM rear panel. then wait for 90 seconds and check if there's no Leakage fault. If there's no Leakage fault, check the wiring of Internal AMP, and see if the line is connected to ground wire.
	VO3 Occurrence/Ext. Amp Inner Fail/Int. Amp Inner Fail/VO3 Inner Fail: Occur Leakage fault on internal/external amplifier.		Reboot the device, and wait for 200 seconds. Reboot the device, and check the wiring of AMP cables and VO3 cables are connected correctly and tightly.
	Open		1. Check if the wiring of the evac input terminal
Evac Input Error	Short	v2.13	is connected correctly and tightly. 2. If the wiring is correct, disconnect the wiring of evac input terminal, and measure the voltage. If it's not 3.3V, contact your dealer. 3. Check if the wiring of evac inputs is based on Monitored Contact Mode.
	Main		1. Check if the AC mains power input and DC
Power Error	Battery	v2.16	battery input on the rear panel are connected correctly and tightly. 2. Check if the voltage is normal.
User Fault	The user-defined fault has been triggered.	v2.13	The user-defined fault has been triggered.
	Microphone Open Fail		1. Shutdown the remote first, and check if the
	Microphone Short Fail		 MIC cables are connected correctly and tightly. 2. If the mic level of DPM-T5/DPM-T5F is under normal condition, proceed MIC_Calibration action from LCD touch panel of DPM-T5/DPM-T5F.
Remote Error	DNM Deploy Fail	v2.13	Check the firmware version of DNM, it must be v1.0.0.9 or above. Check if multiple BTQ/VM/SG/SL device has assigned the same DNM remote.
	Fireman Open Fail		1. Shutdown the device first, and check if the
	Fireman Short Fail		wiring of the remote FMM cables is connected correctly and tightly. 2. If the mic level of CD-T5DF is under normal condition, proceed MIC Calibration action from LCD touch panel of CD-T5DF.
	DGL-MIC No Setting Group		Assign the DGL-MIC to a group on web browser > Device Management.
	DNM No Setting Group		Assign the DNM to a group on web browser > Device Management.

8 Technical data

8.1 BTQ-VM4/VM8

Electrical

AC power input:	EU type: 220 VAC ~ 240 VAC, 50/60 Hz US type: 100 VAC ~ 120 VAC, 50/60 Hz			
power consumption (AC):	idle	1/2 full power	full power	
BTQ-VM425 / BTQ-VM825 (250W)	24W	195W	365W	
BTQ-VM450 / BTQ-VM850 (500W)	24W	345W	645W	
Idle: pilot tone -36 dB, 1/2 full power: alarm tone				

DC power input:		43 ~ 56	VDC (type: 48V	DC)	
power consumption (DC):	standby mode	idle	1/8 full power	1/2 full power	full power
BTQ-VM425 / BTQ- VM825 (250W)	6.4W	22W	65W	175W	325W
BTQ-VM450 / BTQ- VM850 (500W)	6.4W	22W	95W	310W	580W
ldle: pilot tone -36 dB, 1/8 full power: speech, 1/2 full power: alarm tone					

• Audio characteristics (general)

A/D-D/A bit resolution:	24 Bit
Sampling rate:	48 kHz
Frequency response:	20 Hz - 20 kHz (±1) dB @ 0 dBu
Input gain range:	0 ~ -15 dB (3 dB steps)
SNR:	> 80 dB
THD+N:	< 0.01 % @ 30 dB gain, -24 dBu (1 kHz) in
EIN:	< -80 dBu @ 0 dB gain
Maximum input level (CD/AUX/mic):	17 dBu
Maximum output level (line out):	17 dBu
Crosstalk:	> 90 dB @ 42 dB gain, 0 dBu (10 kHz) in

• Audio characteristics (CD/AUX)

input impedance.	Input impedance:	5K ohm
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• Audio characteristics (MIC)

EIN:	< -112 dBu @ 24 dB gain
Input impedance:	8K ohm
Input gain range:	0 ~ 40 dB (adjust with mic/line gain)
CMRR:	< -80 dB @ 40 dB gain, -40 dBu (1 kHz) in
Phantom power:	48 VDC, 7 mA

• Audio characteristics (EX. AMP/LINE OUT)

Output impedance (balanced):	30 ohm

• Wattage capacity (input)

Speaker load per zone (max.):	1000W @ 70V/100V line
Speaker load per unit (max.):	2000W @ 70V/100V line

• Internal power amplifier

Rated output power:	250W/500W (Class-D)
Frequency response:	50 Hz ~ 20 kHz (±3 dB) @ 0 dBu
THD+N:	< 0.1 % @ 42 dB gain, 0 dBu (1 kHz) in
SNR:	> 90 dB

Network

Max. local-net units:	32
Max. global-net units:	64
Max. digi-link remotes units:	16
Max. distance between local-net units:	10m (shielded RJ45 connector, STP CAT5/6)
Max. distance between global-net units:	100m (STP CAT5/6), 2 km (multi-mode fiber optic) and 20 km (single- mode fiber optic)
Max. distance between digi-link remote units:	250m (shielded RJ45 connector, STP CAT5/6)

Loudspeaker outputs

Number of zones:	4 (BTQ-VM4) or 8 (BTQ-VM8)
Number of loudspeaker lines:	8 or 16, A/B speaker lines per zone

• Relay outputs

Maximum voltage:	100 V
Maximum current:	0.5 A

• EVAC inputs

Voltage mode:	 Maximum voltage: 72 VDC Active voltage: 18 VDC ~ 72 VDC Inactive voltage: < 0.8 VDC
	 Non-isolated analogue interfaces with internal pull-up to +5V by 10k ohm
Contact mode	 Monitored analogue contact thresholds Faulty-open circuit: > 2.7 VDC Inactive voltage: 2 ~ 2.5 VDC Active voltage: 1.35 ~ 1.7 VDC Faulty-short circuit: < 0.6 VDC

Mechanical

Dimensions (W x H x D):	 BTQ-VM425/VM825: 437 x 88 x 396 mm (17.2 x 3.5 x 15.6 inch) BTQ-VM450/VM850: 437 x 88 x 412 mm (17.2 x 3.5 x 16.2 inch)
Weight:	 BTQ-VM425: 10.8 kg (23.8 lbs) BTQ-VM450: 14.1 kg (31.1 lbs) BTQ-VM825: 11.4 kg (25.1 lbs) BTQ-VM850: 14.6 kg (32.1 lbs)
Mounting:	19" 2U rack
Color:	RAL 7016

• Environmental

Operating temperature:	-5 °C ~ +55 °C (+23 °F ~ +131 °F)
Storage temperature:	-40 °C ~ +70 °C (-40 °F ~ +158 °F)
Relative humidity:	20% to 95%
Air pressure:	600 to 1100 hPa
Heat discination:	BTQ-VM425/VM825: 375 BTU/hr
Heat dissipation:	BTQ-VM450/VM850: 495 BTU/hr

• Standard & certification

Europe	Voice Alarm	EN54-16 (in process)
Europe	CE/EMI	EN55032:2015/AC:2016 Class A
Europe	CE/EMC	EN61000-3-2:2014 EN61000-3-3:2013 EN55020:2007/A11:2011
Europe	CE/LVD	EN60065: 2014 (in process)
USA	Mass Notification Systems	UL2572 (pending)
USA	Safety	UL60065 (pending)

8.2 BTQ-VM4W/VM8W

Electrical

Licotrical			
AC power input:	, ,	20 VAC ~ 240 VAC, 50, 00 VAC ~ 120 VAC, 50,	
power consumption (AC):	idle	1/2 full power	full power
BTQ-VM425/825W1 BTQ-VM425/825W2	W1/W2: 24W	W1: 200W W2: 380W	W1: 390W W2: 740W
BTQ-VM450/850W1 BTQ-VM450/850W2	W1/W2: 24W	W1: 380W W2: 740W	W1: 750W W2: 1460W
Idle: pilot tone -36 dB, 1/2 full power: alarm tone			

DC power input:		2	14 ~ 52 VDC		
power consumption (DC):	standby mode	idle	1/8 full power	1/2 full power	full power
BTQ-VM425W1/W2 BTQ-VM825W1/W2	W1/W2: 6.4W	W1/W2: 22W	W1: 46W W2: 86W	W1: 180W W2: 342W	W1: 350W W2: 666W
BTQ-VM450W1/W2 BTQ-VM850W1/W2	W1/W2: 6.4W	W1/W2: 22W	W1: 85W W2: 168W	W1: 342W W2: 666W	W1: 675W W2: 1314W
Idle: pilot tone -36 dB, 1/8 full power: speech, 1/2 full power: alarm tone					

• Integrated battery charger

Charaina	Voltage: 54VDC
Charging:	Charging current: 1.5A
Maximum output current:	30A
Battery capacity (4 x 12V):	10Ah to 30Ah
	Yuasa NPL Series, Power-Sonic GB Series, ABT TM
Recommended brands:	Series, EnerSys VE Series, Eekta BTL Series, Long GB
	Series

• Audio characteristics (general)

A/D-D/A bit resolution:	24 Bit
Sampling rate:	48 kHz

A/D-D/A bit resolution:	24 Bit
Frequency response:	20 Hz - 20 kHz (±1) dB @ 0 dBu
Input gain range:	0 ~ -15 dB (3 dB steps)
SNR:	> 80 dB
THD+N:	< 0.01 % @ 30 dB gain, -24 dBu (1 kHz) in
EIN:	< -80 dBu @ 0 dB gain
Maximum input level (CD/AUX/mic):	17 dBu
Maximum output level (line out):	17 dBu
Crosstalk:	> 90 dB @ 42 dB gain, 0 dBu (10 kHz) in

Audio characteristics (CD/AUX)

Input impedance:	5K ohm
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• Audio characteristics (MIC)

EIN:	< -112 dBu @ 24 dB gain	
Input impedance:	8K ohm	
Input gain range:	0 ~ 40 dB (adjust with mic/line gain)	
CMRR:	< -80 dB @ 40 dB gain, -40 dBu (1 kHz) in	
Phantom power:	48 VDC, 7 mA	

Audio characteristics (EX AMP/LINE OUT)

Output impedance (balanced):	30 ohm
Carpar impodance (Saidinesa).	00 011111

• Wattage capacity (input)

BTQ-VM4/8W1:	1000W per zone/2000W (max.) per unit
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• Internal power amplifier

Rated output power:	250W/500W (Class-D)
Frequency response:	50 Hz ~ 20 kHz (±3 dB) @ 0 dBu
THD+N:	< 0.1 % @ 42 dB gain, 0 dBu (1 kHz) in
SNR:	> 90 dB

Network

Max. local-net units:	32
Max. global-net units:	64
Max. digi-link remotes units:	16
Max. distance between local-net units:	10m (shielded RJ45 connector, STP CAT5/6)
	100m (STP CAT5/6), 2 km (multi-mode fiber optic) and 20 km (single- mode fiber optic)
Max. distance between digi-link remote units:	250m (shielded RJ45 connector, STP CAT5/6)

Loudspeaker outputs

Number of zones:	4 (BTQ-VM4W) or 8 (BTQ-VM8W)
Number of loudspeaker lines:	8 or 16, A/B speaker lines per zone

• Relay outputs

Maximum voltage:	100 V
Maximum current:	0.5 A

• EVAC inputs

Voltage mode:	 Maximum voltage: 72 VDC Active voltage: 18 VDC ~ 72 VDC Inactive voltage: < 0.8 VDC
	 Non-isolated analogue interfaces with internal pull-up to +5V by 10k ohm
Contact mode	 Monitored analogue contact thresholds Faulty-open circuit: > 2.7 VDC Inactive voltage: 2 ~ 2.5 VDC Active voltage: 1.35 ~ 1.7 VDC Faulty-short circuit: < 0.6 VDC

• Mechanical

Dimensions (W x H x D):	• BTQ-VM4W/VM8W: 653 x 735 x 130 mm (25.7 x 28.9
Diffictiono (VV X 11 X D).	x 5.1 inch)
	• BTQ-VM425W1: 19.3 kg (42.5 lbs)
	• BTQ-VM450W1: 20.9 kg (46.1 lbs)
Weight:	• BTQ-VM425W2: 19.6 kg (43.2 lbs)
	• BTQ-VM450W2: 21.2 kg (46.7 lbs)
	• BTQ-VM825W1: 20 kg (44.1 lbs)
	• BTQ-VM850W1: 21.6 kg (47.6 lbs
	• BTQ-VM825W2: 20.3 kg (44.6 lbs)
	• BTQ-VM850W2: 21.9 kg (48.3 lbs)
Mounting:	Wall-mount
Color:	RAL 7016

Environmental

Operating temperature:	-5 °C ~ +55 °C (+23 °F ~ +131 °F)	
Storage temperature:	-40 °C ~ +70 °C (-40 °F ~ +158 °F)	
Relative humidity:	20% to 95%	
Air pressure:	600 to 1100 hPa	
Heat dissipation:	 BTQ-VM425/825W1: 478 BTU/hr BTQ-VM450/850W1: 853 BTU/hr BTQ-VM425/825W2: 819 BTU/hr BTQ-VM450/850W2: 1570 BTU/hr 	

Europe	Voice Alarm	EN54-16 (in process)
Europe	CE/EMI	EN55032:2015/AC:2016 Class A (in process)
Europe	CE/EMC	EN61000-3-2:2014 EN61000-3-3:2013 EN55020:2007/A11:2011 (in process)
Europe	CE/LVD	EN60065: 2014 (in process)
USA	Mass Notification Systems	UL2572 (pending)
USA	Safety	UL60065 (pending)

8.3 BTQ-SG8/BTQ-SL8

• Electrical

DC power input:	21VDC~29VDC	
Power consumption:	 BTQ-SG8: Full power: 15W Standby mode: 4W BTQ-SL8: Full power: 13.5W Standby mode: 3.5W 	
Battery backup power input:	24 VDC	

• Audio characteristics

A/D-D/A bit resolution:	24 Bit
Sampling rate:	48 kHz
Frequency response:	20 Hz ~ 20 kHz (±1 dB) @ 0 dBu
THD+N:	< 0.01 % @ 0 dB gain, 4 dBu (1 kHz) in
EIN:	< -80 dBu @ 0 dB gain
SNR:	> 80 dB
Maximum output level:	17 dBu
Crosstalk:	> 93 dB @ 0 dB gain, 0 dBu (10 kHz) in
Output impedance:	30 ohm

• Wattage capacity (input)

Speaker load per zone (max.):	1000W @ 70V/100V line
Speaker load per unit (max.):	2000W @ 70V/100V line

Network

Max. local-net units (BTQ-SL8):	32 (1 x BTQ-VM4/8 and 31 x BTQ-SL8)
Max. global-net units (BTQ-SG8):	64
Max. digi-link remotes units (BTQ-SG8):	16
Max. digi-link remotes units (BTQ-SL8):	8
Max. distance between BTQ-SL8 local-net units:	10m (STP CAT5/6)
Max. distance between BTQ-SG8 global-net units:	100m (STP CAT5/6), 2 km (multi-mode fiber optic) and 20 km (single- mode fiber optic)
Max. distance between digi-link remote units:	250m (STP CAT5/6)

Loudspeaker outputs

Number of zones:	8
Number of loudspeaker lines:	16 A/B speaker lines for each zone

• EVAC/FAULT outputs

Maximum voltage:	30 V
Maximum current:	1 A

• Relay outputs

Maximum voltage:	100 V
Maximum current:	0.5 A

EVAC inputs

- LVAO Inputs	
Voltage mode:	 Maximum voltage: 72 VDC Active voltage: 18 VDC ~ 72 VDC Inactive voltage: < 0.8 VDC
	 Non-isolated analogue interfaces with internal pull-up to +5V by 10k ohm
Contact mode:	 Monitored analogue contact thresholds Faulty-open circuit: > 2.7 VDC Inactive voltage: 2 ~ 2.5 VDC Active voltage: 1.35 ~ 1.7 VDC Faulty-short circuit: < 0.6 VDC

Mechanical

Dimensions (W x H x D):	437 x 44 x 260 mm (17.2 x 1.7 x 10.2 inch)
Weight:	2.6 kg (5.7 lbs)
Mounting:	19" 1U rack
Color:	RAL 7016

Environmental

Operating temperature:	-5 °C ~ +55 °C (+23 °F ~ +131 °F)
Storage temperature:	-40 °C ~ +70 °C (-40 °F ~ +158 °F)
Relative humidity:	20% to 95%
Air pressure:	600 to 1100 hPa
THEAT dissination.	BTQ-SG8: 51 BTU/hr
	BTQ-SL8: 48 BTU/hr

• Standard & certification

Europe	Voice Alarm	EN54-16 (in process)
Europe	CE/EMI	EN55032:2015/AC:2016 Class A (in process)
Europe	CE/EMC	EN61000-3-2:2014 EN61000-3-3:2013 EN55020:2007/A11:2011 (in process)
Europe	CE/LVD	EN60065: 2014 (in process)
USA	Mass Notification Systems	UL2572 (pending)
USA	Safety	UL60065 (pending)

8.4 Digital paging consoles

8.4.1 **DPM-MAIN**

Electrical

DC power input	21VDC~29VDC
Power consumption	Full power: 5W
	Standby mode: 1W

If the control signal of DPM-MAIN is not strong enough, it needs to connect to DLR01 digital loop repeater for expanding the distance to 250m long. And if the power is not enough, connect a 24VDC local power on DLR01 digital loop repeater.

• Audio characteristics (general)

A/D-D/A bit resolution:	24 Bit
Sampling rate:	48 kHz
Frequency response:	20 Hz ~ 20 kHz (±1 dB) @ 0 dBu
SNR:	> 85 dB
THD+N:	< 0.2 % @ 26 dB gain, -26 dBu (1 kHz) in
Max. speaker SPL:	90 dBA @ 3m
Max. mic SPL:	105 dBA @ 3m
Capsule type:	Electret condenser
Capsule Sensitivity:	-15 dBu/Pa @1 kHz
Capsule directivity:	Uni-directional
Polar pattern:	Cardioid

• Audio characteristics (headset-jack)

Maximum input level:	-3 dBu
Maximum output level:	2.5 dBu
Input gain (fixed):	3 dB
Input impedance:	2k ohm
Output impedance:	25 ohm
Delivering power:	150 mW

Network

Max. remotes per BTQ-SL8:	8
Max. remotes per BTQ-VM/SG8:	16
Max. distance between remote units:	250m (shielded RJ45 connector, STP CAT5/6)

Mechanical

Dimensions (W v H v D):	 DPM-MAIN base: 108 x 46 x 200 mm (4.3 x 1.8 x 7.9 inch) DPM-MAIN with mic: 108 x 319 x 200 mm (4.3 x 12.6 x 7.9 inch) 	
Weight:	0.5 kg (1.1 lbs)	
Color:	RAL 7035	

• Environmental

Operating temperature:	-5 °C ~ +55 °C (+23 °F ~ +131 °F)
Storage temperature:	-40 °C ~ +70 °C (-40 °F ~ +158 °F)
Relative humidity:	20% to 95%
Air pressure:	600 to 1100 hPa
Heat dissipation:	0.87 BTU/hr

Europe	Voice Alarm	EN54-16 (in process)
Europe	CE/EMI	EN55032:2015/AC:2016 Class A (in process)
Europe	CE/EMC	EN61000-3-2:2014 EN61000-3-3:2013 EN55020:2007/A11:2011 (in process)
Europe	CE/LVD	EN60065: 2014 (in process)

	Europe	Voice Alarm	EN54-16 (in process)
	USA	Mass Notification Systems	UL2572 (pending)
ı	USA	Safety	UL60065 (pending)

8.4.2 DPM-EVA/DPM-KPD

• Electrical

DC power input	21VDC~29VDC	
Power consumption	Full power • DPM-EVA: 0.5W • DPM-KPD: 1W	
	Standby mode • DPM-EVA: 0.3W • DPM-KPD: 0.5W	

• Audio characteristics (general)

Additional actions and a second a second and		
A/D-D/A bit resolution:	24 Bit	
Sampling rate:	48 kHz	
Frequency response:	20 Hz ~ 20 kHz (±1 dB) @ 0 dBu	
SNR:	> 85 dB	
THD+N:	< 0.2 % @ 26 dB gain, -26 dBu (1 kHz) in	
Max. speaker SPL:	90 dBA @ 3m	
Max. mic SPL:	105 dBA @ 3m	
Capsule type:	Electret condenser	
Capsule Sensitivity:	-15 dBu/Pa @1 kHz	
Capsule directivity:	Uni-directional	
Polar pattern:	Cardioid	

• Network

Max. DPM-EVA per DPM-MAIN:	1
Max. DPM-KPD per DPM-MAIN:	30
Interconnection:	Flat cable

• Mechanical

Dimensions (W x H x D):	DPM-KPD/DPM-EVA: 96 x 46 x 200 mm (3.8 x 1.8 x 7.9 inch)
Weight (DPM-EVA/DPM-KPD):	0.5 kg (1.1 lbs)
Color:	RAL 7035

• Environmental

Operating temperature:	-5 °C ~ +55 °C (+23 °F ~ +131 °F)	
Storage temperature:	-40 °C ~ +70 °C (-40 °F ~ +158 °F)	
Relative humidity:	20% to 95%	
Air pressure: 600 to 1100 hPa		
Heat dissinction:	DPM-EVA: 0.76 BTU/hr	
Heat dissipation:	DPM-KPD: 0.02 BTU/hr	

Europe	Voice Alarm	EN54-16 (in process)
Europe	CE/EMI	EN55032:2015/AC:2016 Class A (in process)
Europe	CE/EMC	EN61000-3-2:2014 EN61000-3-3:2013 EN55020:2007/A11:2011 (in process)
Europe	CE/LVD	EN60065: 2014 (in process)
USA	Mass Notification Systems	UL2572 (pending)
USA	Safety	UL60065 (pending)

8.4.3 **DPM-T5/DPM-T5F**

Electrical

DC power input	21VDC~29VDC
Power consumption	Full power: 15W
	Standby mode: 1W

• Audio characteristics (general)

A/D-D/A bit resolution:	24 Bit
Sampling rate:	48 kHz
Frequency response:	20 Hz ~ 20 kHz (±1 dB) @ 0 dBu
SNR:	> 85 dB
THD+N:	< 0.2 % @ 26 dB gain, -26 dBu (1 kHz) in
Max. speaker SPL:	90 dBA @ 3m
Max. mic SPL:	105 dBA @ 3m
Capsule type:	Electret condenser
Capsule Sensitivity:	-15 dBu/Pa @1 kHz
Capsule directivity:	Uni-directional
Polar pattern:	Cardioid

• Audio characteristics (headset-jack)

Maximum input level:	-3 dBu
Maximum output level:	2.5 dBu
Input gain (fixed):	3 dB
Input impedance:	2k ohm
Output impedance:	25 ohm
Delivering power:	150 mW

Network

Max. remotes per BTQ-SL8:	8
Max. remotes per BTQ-VM/SG8:	16
Max. distance between remote units:	250m (shielded RJ45 connector, STP CAT5/6)

Mechanical

	• DPM-T5 base: 284 x 80 x 174 mm (11.2 x 3.1 x 6.9
Dimensions (M. v. II. v. D):	inch)
Dimensions (W x H x D):	• DPM-T5F base: 320 x 174 x 170 mm (13 x 6.9 x 6.7 inch)
	· · · /
	• DPM-T5 with mic: 284 x 332 x 174 mm (11.2 x 13 x 6.9

	inch) • DPM-T5F with mic: 320 x 332 x 174 mm (13 x 13 x 6.9 inch)
	 DPM-T5: 1.1 kg (2.4 lbs) DPM-T5F: 1.5 kg (3.3 lbs)
Color:	RAL 7016

Environmental

Operating temperature:	-5 °C ~ +55 °C (+23 °F ~ +131 °F)
Storage temperature:	-40 °C ~ +70 °C (-40 °F ~ +158 °F)
Relative humidity:	20% to 95%
Air pressure:	600 to 1100 hPa
Heat dissipation:	4.3 BTU/hr

• Standard & certification

Europe	Voice Alarm	EN54-16 (in process)
Europe	CE/EMI	EN55032:2015/AC:2016 Class A (in process)
Europe	CE/EMC	EN61000-3-2:2014 EN61000-3-3:2013 EN55020:2007/A11:2011 (in process)
Europe	CE/LVD	EN60065: 2014 (in process)
USA	Mass Notification Systems	UL2572 (pending)
USA	Safety	UL60065 (pending)

8.4.4 CD-8DF/CD-16DF

• Electrical

DC power input:	21VDC~29VDC
Power consumption:	Full power: 5W (CD-8DF) / 6W (CD-16DF)
	Standby mode: 1W (CD-8DF) / 1.5W (CD-16DF)

^{*} If the control signal of CD-8DF/CD-16DF is not strong enough, it needs to connect to DLR01 digital loop repeater for expanding the distance to 250m long. And if the power is not enough, connect a 24VDC local power on DLR01 digital loop repeater.

• Audio characteristics

A/D-D/A bit resolution:	24 Bit
Sampling rate:	48 kHz
Frequency response:	20 Hz ~ 20 kHz (±1 dB) @ 0 dBu
SNR:	> 85 dB
THD+N:	< 0.2 % @ 26 dB gain, -26 dBu (1 kHz) in
Max. speaker SPL:	90 dBA @ 3m
Max. mic SPL:	105 dBA @ 3m

Network

Max. remotes per BTQ-SL8:	8
Max. remotes per BTQ-VM/SG8:	16
Max. distance between remote units:	250m (shielded RJ45 connector, STP CAT5/6)

Mechanical

II IIMAngione IVV V H V I IV.	 CD-8DF: 329 x 187 x 101 mm (13 x 7.4 x 4 inch) CD-16DF: 349 x 241 x 101 mm (13.7 x 9.5 x 4 inch)
	CD-8DF: 3.4 kg (7.5 lbs)CD-16DF: 4.1 kg (9 lbs)
Color:	RAL 7016

Environmental

Operating temperature:	-5 °C ~ +55 °C (+23 °F ~ +131 °F)
Storage temperature:	-40 °C ~ +70 °C (-40 °F ~ +158 °F)
Relative humidity:	20% to 95%
Air pressure:	600 to 1100 hPa
Heat discination:	• CD-8DF: 0.87 BTU/hr
Heat dissipation:	• CD-16DF: 0.89 BTU/hr

• Standard & certification

Europe	Voice Alarm	EN54-16 (in process)
Europe	CE/EMI	EN55032:2015/AC:2016 Class A (in process)
Europe	CE/EMC	EN61000-3-2:2014 EN61000-3-3:2013 EN55020:2007/A11:2011 (in process)
Europe	CE/LVD	EN60065: 2014 (in process)
USA	Mass Notification Systems	UL2572 (pending)
USA	Safety	UL60065 (pending)

8.4.5 CD-T5DF

Electrical

DC power input	21VDC~29VDC
Power consumption	Full power: 15W
	Standby mode: 1W

^{*} If the control signal of CD-T5DF is not strong enough, it needs to connect to DLR01 digital loop repeater for expanding the distance to 250m long. And if the power is not enough, connect a 24VDC local power on DLR01 digital loop repeater.

Audio characteristics

A/D-D/A bit resolution:	24 Bit
Sampling rate:	48 kHz
Frequency response:	20 Hz ~ 20 kHz (±1 dB) @ 0 dBu
SNR:	> 85 dB
THD+N:	< 0.2 % @ 26 dB gain, -26 dBu (1 kHz) in
Max. speaker SPL:	90 dBA @ 3m
Max. mic SPL:	105 dBA @ 3m

Network

Max. remotes per BTQ-SL8:	8
Max. remotes per BTQ-VM/SG8:	16
Max. distance between remote units:	250m (shielded RJ45 connector, STP CAT5/6)

Mechanical

Dimensions (W x H x D):	339 x 208 x 101 mm (13.3 x 8.2 x 4 inch)
Weight:	3.4 kg (7.5 lbs)
Color:	RAL 7016

• Environmental

Operating temperature:	-5 °C ~ +55 °C (+23 °F ~ +131 °F)
Storage temperature:	-40 °C ~ +70 °C (-40 °F ~ +158 °F)
Relative humidity:	20% to 95%
Air pressure:	600 to 1100 hPa
Heat dissipation:	4.3 BTU/hr

• Standard & certification

Europe	Voice Alarm	EN54-16 (in process)
Europe	CE/EMI	EN55032:2015/AC:2016 Class A (in process)
Europe	CE/EMC	EN61000-3-2:2014 EN61000-3-3:2013 EN55020:2007/A11:2011 (in process)
Europe	CE/LVD	EN60065: 2014 (in process)
USA	Mass Notification Systems	UL2572 (pending)
USA	Safety	UL60065 (pending)

8.5 Accessories

8.5.1 DNM2-ETH

Electrical:	Powered by PoE (Conform IEEE 802.3af)			
Ambient noise measurement range:	55 dBA~105 dBA			
Network:	STP CAT5/6 cable via Ethernet port Max. distance length: 100m			
Dimension:	,	 Diameter: 105 mm (4.1 inch) Height: 130 mm (5.1 inch) 		
Weight:	0.13 kg (0.28 lbs)	0.13 kg (0.28 lbs)		
	Operating temperature:	Operating temperature: -5°C ~ +55°C (+23 °F ~ +131 °F)		
	Storage temperature: -40 °C ~ +70 °C (-40 °F ~ +158 °F)			
Environmental:	Relative humidity: 20%~95%			
	Air pressure: 600 to 110	Air pressure: 600 to 1100 hPa		
	Heat dissipation: 20 BTU/hr			
	CE/EMI	EN55032:2015/AC:2016 Class A (in process)		
Certification:	CE/EMC	EN61000-3-2:2014 EN61000-3-3:2013 EN55020:2007/A11:2011 (in process)		
	CE/LVD	EN60065: 2014 (in process)		

8.5.2 **DGL-MIC**

DC power input:	18~30VDC	
Max. power consumption:	2.4W	
Ambient noise measurement range:	55 dBA~105 dBA	
Network:	 STP CAT5/6 cable with shielded RJ45 connector Max. distance length: 250m 	
Dimension (W x H x D):	110 x 70 x 52 mm (4.3 x 2.6 x 2 inch)	
Weight:	0.1 Kg (0.22 lbs)	
	Operating temperature: -5°C ~ +55°C (+23 °F ~ +131 °F)	
	Storage temperature: -40 °C ~ +70 °C (-40 °F ~ +158 °F)	
Environmental:	Relative humidity: 20%~95%	
	Air pressure: 600 to 1100 hPa	
	Heat dissipation: 8 BTU/hr	

8.5.3 DLR01

DC power input:	21~29VDC	
Power consumption:	0.8W	
Network:	250m (STP CAT5/6, shielded e	uro-block connector)
Dimension (W x H x D):	56 x 27 x 102 mm (2.2 x 1.1 x	4 inch)
Weight:	0.2 kg (0.4 lbs)	
Colour:	RAL 7035	
	Operating temperature: -5 °C ~	+55 °C (+23 °F ~ +131 °F)
	Storage temperature: -40 °C ~	+70 °C (-40 °F ~ +158 °F)
Environmental:	Relative humidity: 20%~95%	
	Air pressure: 600 to 1100 hPa	
	Heat dissipation: 2.73 BTU/hr	
	Voice Alarm	EN54-16
		(in process)
	CE/EMI	EN55032:2015/AC:2016 Class A
	JE/EIVII	(in process)
Certification:	CE/EMC	EN61000-3-2:2014
		EN61000-3-3:2013
		EN55020:2007/A11:2011
		(in process)
	CE/LVD	EN60065: 2014 (in process)
	Mass Notification Systems	UL2572 (pending)
	Safety	UL60065 (pending)

8.5.4 VAT-35U

• Electrical

Rated power:	100 volt/70.7 volt line: 40 watts

• Characteristics

Attenuation position @ 100 volt line, volts:	100/70.7/50/35.3/25/OFF
Attenuation per step:	3 dB
Total attenuation:	15 dB
Attenuation positions:	5 plus OFF

Mechanical

Dimensions (H x W x D):	115 x 70 x 51 mm
Weight:	0.57 lbs (0.26kg)

8.5.5 VA-DLC

• Electrical

Voltage:	100V or 70V loudspeaker line
Load:	62W, 125W, 250W, above 250W

DIP switch setting

1 step:	0 to 62W speaker load
2 step:	62 to 125W speaker load
3 step:	125 to 250W speaker load
4 step:	above 250W speaker load

• Mechanical & environmental

Dimensions (H x W x D):	10 x 80 x 60 mm (0.4 x 3.1 x 2.4 inch)
Weight:	0.1 kg (0.22 lbs)
Operating temperature:	-5 °C ~ +55 °C (+23 °F ~ +131 °F)
Storage temperature:	-40 °C ~ +70 °C (-40 °F ~ +158 °F)
Relative humidity:	20% to 95%

• Standard & certification

Europe	Voice Alarm	EN54-16 (in process)
Europe	CE/EMI	EN55032:2015/AC:2016 Class A (in process)
Europe	CE/EMC	EN61000-3-2:2014 EN61000-3-3:2013 EN55020:2007/A11:2011 (in process)
Europe	CE/LVD	EN60065: 2014 (in process)
USA	Mass Notification Systems	UL2572 (pending)
USA	Safety	UL60065 (pending)

8.5.6 VA-EOL

Electrical

Power source:	Supplied from BTQ-VM/SG/SL
Max. power consumption:	0.8W
Voltage:	70V or 100V loudspeaker line

• Mechanical & environmental

Dimensions (H x W x D):	10 x 80 x 60 mm (0.4 x 3.1 x 2.4 inch)
Weight:	0.1 kg (0.22 lbs)
Operating temperature:	-5 °C ~ +55 °C (+23 °F ~ +131 °F)
Storage temperature:	-40 °C ~ +70 °C (-40 °F ~ +158 °F)
Relative humidity:	20% to 95%

Europe	Voice Alarm	EN54-16 (in process)
Europe	CE/EMI	EN55032:2015/AC:2016 Class A (in process)
Europe	CE/EMC	EN61000-3-2:2014

Europe	Voice Alarm	EN54-16 (in process)
		EN61000-3-3:2013 EN55020:2007/A11:2011
		(in process)
Europe	CE/LVD	EN60065: 2014 (in process)
USA	Mass Notification Systems	UL2572 (pending)
USA	Safety	UL60065 (pending)

8.5.7 Network cards

Network

Max. distance between global-net units:	 100m (shielded RJ45 connector, STP CAT5/6) 2 km (multi-mode fiber optic) 20 km (single-mode fiber optic)
Fiber optic:	 Connector type: Straight Tip Fiber size: 62.5/125 um (multi-mode), 9/125 um (single-mode) Center wavelength: 1310 nm (multi-mode/single-mode)

• Mechanical & environmental

Dimension (W x H x D):	63 x 15 x 82 mm (2.5 x 0.6 x 3.2 inch)	
Weight:	0.2 kg (0.4 lbs)	
	Operating temperature: -5°C~ +55°C (+23°F~ +131°F)	
Епигоптептан:	Storage temperature: -40 °C ~ +70 °C (-40 °F ~ +158 °F)	
	Relative humidity: 20%~95%	
	Air pressure: 600 to 1100 hPa	

Europe	Voice Alarm	EN54-16 (in process)
Europe	CE/EMI	EN55032:2015/AC:2016 Class A
Europe	CE/EMC	EN61000-3-2:2014 EN61000-3-3:2013 EN55020:2007/A11:2011
Europe	CE/LVD	EN60065: 2014 (in process)
USA	Mass Notification Systems	UL2572 (pending)
USA	Safety	UL60065 (pending)

9 Contact information

