IN PROCESS
EN54
16

BTQ-VM4 / BTQ-VM8

PAVA Controller

The BTQ-VM4/8 is a compact PAVA controller that offers 4 and 8 monitored speaker zones respectively. The controller is integrated with250W or 500W high efficiency Class-D amplifier built-in and maximum 2000W external amplifier for back up per unit. Furthermore, the controller is capable of handing 1000W load per zone. Each controller can cascade with up to 31 BTQ-SL8 secondary local units via local digi-link and be networkable with up to 64 BTQ-VM4/8 or BTQ-SG8 secondary global unit via global-net. This will then extend as little as 4 monitored A/B speaker zones to a large networked system of up to 16,384 zones. The BTQ-SL8 is linked to the BTQ-VM4/8 via STP CAT5/6 cable with metal shielded RJ45 connector (max. length 10m between units); and the BTQ-SG8 is linked to the controller via CAT5/6 cable (max. length 100m between units), multi-mode (2 km) and single-mode (20 km) fibre optics or even longer distance upon request.

The BTQ-VM4 has 5 monitored EVAC inputs and 4 relay control outputs, while the BTQ-VM8 has 9 monitored EVAC inputs, 8 logic control inputs and 8 relay control outputs, which can be individually programmed for specific message/input routing to all or selected channels. Moreover, the controller has 10 audio sources including two music inputs, one mic/line input, one USB input, SIP call in, one fireman microphone and two digital paging and control interfaces. Each digital paging interface provides 2CH audio inputs to simultaneously transmit bi-directional data communication in digital format. The two digital interfaces can connect up to 16 paging console or remote units for each, and be wired in a daisy chain or redundant loop. The Mic/Line input features VOX function (Voice Activation) and each input is fitted with volume controls and equalizers.

APPLICATION EXAMPLE
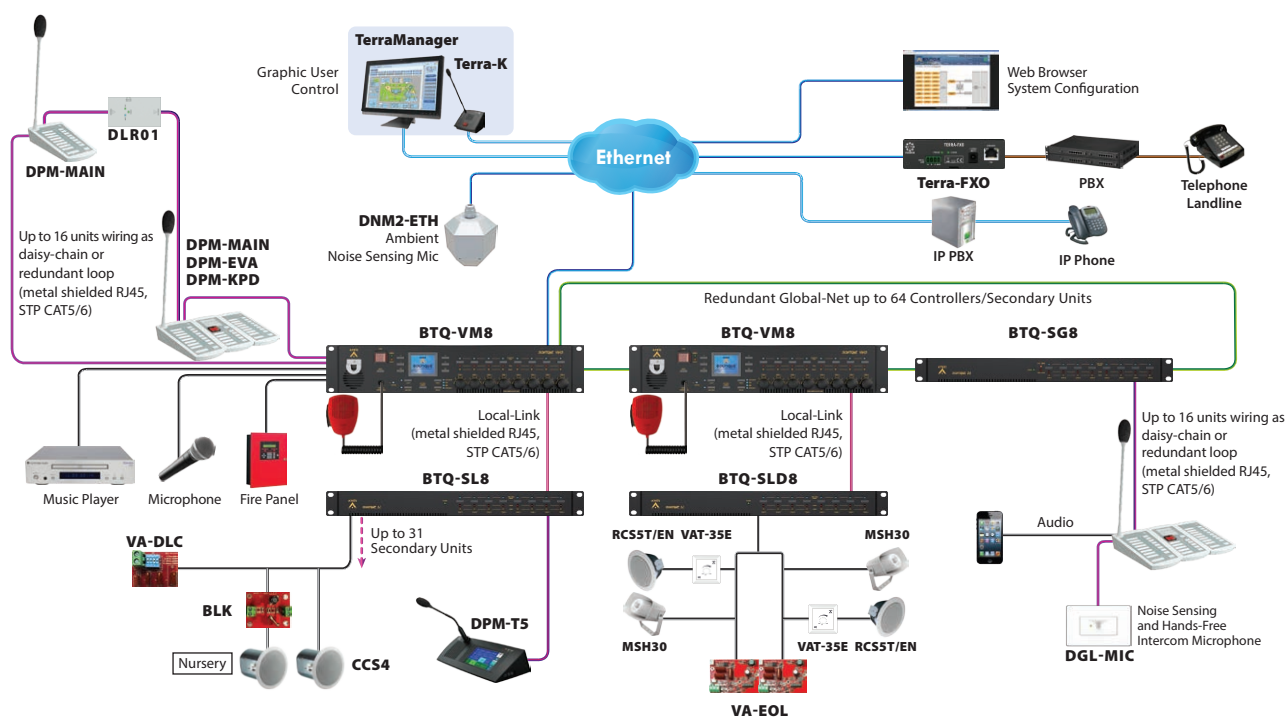
BTQ-VM4 / BTQ-VM8

PAVA Controller

In accordance with EN 54-16 requirement, all BOUTIQUE system including paging microphones and loudspeaker lines provides full monitoring and fault reports. The system can easily setup and replacement from the LCD panel of BTQ-VM4/8, the advanced settings can be accessed by web browser such as volume, PEQ, audio routing, monitor and control, event and bell scheduler, paging with priority management (1~99 priority level) etc.. Furthermore, the BOUTIQUE system has full digital audio matrix and internal message storage for up to 90 minutes, optional USB interface to play G.711, G.722, G.726, G.727, MP3 and WAV files.

In addition, multiple volume attenuators can be installed on a monitored speaker lines without the need for a loopback cable. For branching speaker lines using the VA-EOL module, please order the "EOL driver" version of BTQ unit such as BTQ-VMD/SGD/SLD controller/secondary unit, in order to provide more power to drive the VA-EOL module.

FEATURES

- Extremely low power consumption during standby mode (7W)
- Background music and voice announcement can be distributed to different group of zones by using the built-in amp and external amp
- Internal digital message storage with 200MB* of audio file (MP3/ WAV/ G.722) capacity and USB interface available.
- IP based music streaming and paging over LAN/WAN
- Easy integration with Terracom and IP-PBX via SIP protocol
- Internet radio receiver built-in
- Low cost switching amplifier architecture
- Third party control via RS232 or Ethernet
- Optional Sound Masking module - reduce the intelligibility of human speech for protecting private speech privacy

BTQ-VM4 Rear Panel

BTQ-VM8 Rear Panel

CERTIFICATIONS AND APPROVALS

Europe	Voice Alarm	EN 54-16 (In process)
Europe	CE/EMI	EN 55032
Europe	CE/EMC	EN 61000-3-2 EN 61000-3-3 EN 55020
Europe	CE/LVD	EN 60065
USA	Safety	UL 60065 (In process)

CONTROLS AND INDICATORS

■ Front (4/8 zones type)

- 2.2" full colour touch screen LCD display
- 1 evacuation button
- Reset/route/select button
- Monitoring speaker
- 4/8 zone selected buttons and LEDs
- 4/8 zone EVAC LEDs
- 4/8 zone alert/page LEDs
- BGM source status LEDs (CD/TUNER, AUX, USB, INTERNET)
- 4/8 zone volume control knobs
- 1 all-call and all-call cancel button
- Status LED (power/fault/fireman MIC active/alert/MSG testing)

■ Back

- 2 DIP switches for VOX and phantom power
- 2 global-net port LEDs

INTERCONNECTIONS

■ Front

- Fireman microphone

■ Back (4/8 zones type)

- AC power cord socket
- 48 VDC backup power input
- 5/9 monitored EVAC inputs
- 4/8 speaker zone(A/B) outputs
- 4/8 relay control outputs
- 8 monitored logic control inputs (BTQ-VM8)
- 1 fault and 1 EVAC relay output
- 2 digital interfaces for paging console and remotes
- 1 MIC/LINE XLR 3-pin phoenix input and 2 RCA stereo input
- 1 audio line output
- 1 external amp input
- 1 set of digilink loop port (BTQ-VM4/8 to BTQ-SL8 link)
- 1 set of global-net port (optional)
- 1 Ethernet port
- 1 USB 2.0 for configuration backup and message/music file
- 1 internal amp output (EU type: 100V, US type: 70V)
- 1 external amp output
- 24 VDC output
- RS232 for third party control

ELECTRICAL

- AC power input: 100 VAC ~ 240 VAC, 50/60 Hz
- Power consumption (AC)

model	idle	1/2 full power	full power
BTQ-VM425 BTQ-VM825	24VA	195VA	360VA
BTQ-VM450 BTQ-VM850	24VA	345VA	645VA

Idle: pilot tone -36dB, 1/2 full power: alarm tone

- DC power input: 43 VDC ~ 56 VDC
- Power consumption (DC)

model	standby mode	idle	1/8 full power	1/2 full power	full power
BTQ-VM425 BTQ-VM825	6.4W	22W	65W	175W	325W
BTQ-VM450 BTQ-VM850	6.4W	22W	95W	310W	580W

Idle: pilot tone -36dB, 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
- SNR: > 80 dB
- THD+N: < 0.02 % @ 30 dB gain, -24 dBu (1 kHz) in
- EIN: < -86 dBra @ 0 dB gain
- Maximum input level (CD/AUX/mic): 17 dBu
- Maximum output level (line out): 17 dBu
- Crosstalk: > 70 dB @ 42 dB gain, 0 dBu (10 kHz) in

AUDIO CHARACTERISTICS (CD/AUX)

- Input impedance: 5k ohm

AUDIO CHARACTERISTICS (MIC)

- EIN: < -112 dBra @ 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

- 1000W per zone/2000W (max.) per unit

INTERNAL POWER AMPLIFIER

- Rated output power: 250W/500W (Class-D)
- Frequency response: 50 Hz ~ 18 kHz (±3 dB) @ 0 dBu
- THD+N: < 0.1 % @ 42 dB gain, 0 dBu (1 kHz) in
- SNR: > 90 dB

LOUDSPEAKER OUTPUTS

- Number of zones: 4 or 8
- Number of loudspeaker lines: 8 or 16, A/B speaker lines per zone

model	rated loaded capacitance
BTQ-VM425 BTQ-VM825	120 nf (100V); 240 nf (70V)
BTQ-VM450 BTQ-VM850	240 nf (100V); 470 nf (70V)

RELAY OUTPUTS

- Maximum voltage: 100 VDC
- Maximum current: 0.5A

NETWORK

- Max. local-net units: 32
- Max. distance between local-net units: 10m (metal shielded RJ45 connector, STP CAT5/6)
- Max. global-net units: 64
- Max. distance between global-net units: 100m (CAT5/6), 2 km (multi mode fiber optic) and 20 km (single mode fiber optic)
- Max. remotes units
  - Daisy-chain wiring:
    - 16 DPM sets (DPM-MAIN + EVA + KPD) for each remote port
    - 32 DPM sets (DPM-MAIN + EVA + KPD) for 2 remote ports
  - Redundant loop: 16 DPM sets (DPM-MAIN + EVA + KPD)
- Max. DPM sets (MAIN + EVA + KPD)
  - Max. 16 DPM sets
    - 1 DPM-MAIN attaches 1 DPM-EVA and 14 DPM-KPD
    - 1 DPM-MAIN attaches 15 DPM-KPD
  - Max. 128 keys for each DPM set
  - Connection via flat cable
- Max. communication distance between BTQ-VM and remote unit: 250m (shielded RJ45 connector, STP CAT5/6)

  * The distance of cable length will directly affect the quantity and power requirement of remote unit.

  1. The longer the cable is, the less power the BTQ-VM can supply to the remote units.

  2. The more the remote units has cascaded in daisy-chain/redundant loop, the less power the BTQ-VM can supply to the remote units.

  For example, if the cable length between the BTQ-VM and DPM-MAIN is within 250m, the DPM-MAIN can be powered by BTQ-VM. If the cable length is beyond 250m, please connect the DLR01 digital loop repeater and PSU65-27 27VDC power adapter, ensuring the control signal and power supply of DPM-MAIN units are enough. To know the max. distance between BTQ-VM and DPM-MAIN unit(s) and the max. BOUTIQUE user manual for details.

EVAC INPUTS

- Voltage mode
  - Maximum voltage: 72 VDC
  - Active voltage: 18 VDC ~ 72 VDC
  - Inactive voltage: < 0.8 VDC
- Contact mode
  - Non-isolated analogue interfaces with internal pull-up to +5V by 10k ohm
  - 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: 8.8 kg (19.4 lbs)
  - BTQ-VM450: 9.9 kg (21.8 lbs)
  - BTQ-VM825: 9.3 kg (20.5 lbs)
  - BTQ-VM850: 10.4 kg (23 lbs)
- Mounting: 19'' 2U rack
- Colour: RAL 7016

ENVIRONMENTAL

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

BTQ-VM4 / BTQ-VM8

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Ordering Information

Model No.	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Description of Model
BTQ-VM	EOL Driver	Number of Zone	250W/500W	Wall Mount/Rack Mount	Global Net Card	Region	PAVA Controller
BTQ-SG		8	N/A	N/A		N/A	PAVA Secondary Global Unit
BTQ-SL					N/A		PAVA Secondary Local Unit

EOL Driver

BTQ-VM	BTQ-SG	BTQ-SL			
✔	✔	✔			None
✔	✔	✔	D		EOL Driver

Number of Zone

✔	–	–	4		4 Zone
✔	✔	✔	8		8 Zone

250W / 500W

✔	–	–	25		250W
✔	–	–	50		500W

Wall Mount or Rack Mount

✔	–	–	None		Rack Mount Type
✔	–	–	W1		Wall Mount Type(Amp x 1)
✔	–	–	W2		Wall Mount Type(Amp x 2)

Global Net Card

✔	✔	–			None
✔	✔	–	RR		RJ45(A)-(B)
✔	✔	–	MR		Fiber Multi Mode(A)-RJ45(B)
✔	✔	–	SR		Fiber Single Mode(A)-RJ45(B)
✔	✔	–	RM		RJ45(A)-Fiber Multi Mode(B)
✔	✔	–	RS		RJ45(A)-Fiber Single Mode(B)
✔	✔	–	MM		Fiber Multi Mode(A)-(B)
✔	✔	–	SS		Fiber Single Mode(A)-(B)

Region

✔	–	–			220~240 Vac,+48VDC Power,Amp Out 100V
✔	–	–	D		-48VDC Power Only, Amp Out 100V (for BTQ-VM 250W AMP only, N/A for BTQ-VMW1/VMW2)
✔	–	–	U		100~120 Vac,+48VDC Power,Amp Out 70V
✔	–	–	T		100~120 Vac,+48VDC Power,Amp Out 100V

Network Card

NET2-RR	Netcard,RJ45(A)-(B),excl Ass'y Pillar
NET2-MR	Netcard,Fiber Multi(A)-RJ45(B),excl Ass'y Pillar
NET2-SR	Netcard,Fiber Single(A)-RJ45(B),excl Ass'y Pillar
NET2-RM	Netcard,RJ45(A)-Fiber Multi(B),excl Ass'y Pillar
NET2-RS	Netcard,RJ45(A)-Fiber Single(B),excl Ass'y Pillar
NET2-MM	Netcard,Fiber Multi(A)-(B),excl Ass'y Pillar
NET2-SS	Netcard,Fiber Single(A)-(B),excl Ass'y Pillar

Copper Pillar

CP-PILLAR 15	Copper pillar 15 mm x 50
CP-PILLAR 35	Copper pillar 35 mm x 50

Note
When purchasing the network card, please note the copper pillar is not shipped with the network card, please order copper pillar if necessary.

* To assemble the netcard to BTQ-VM, the copper pillar 35 mm x 2pcs are needed.

* To assemble the netcard to BTQ-SG8, the copper pillar 15 mm x 2pcs are needed.