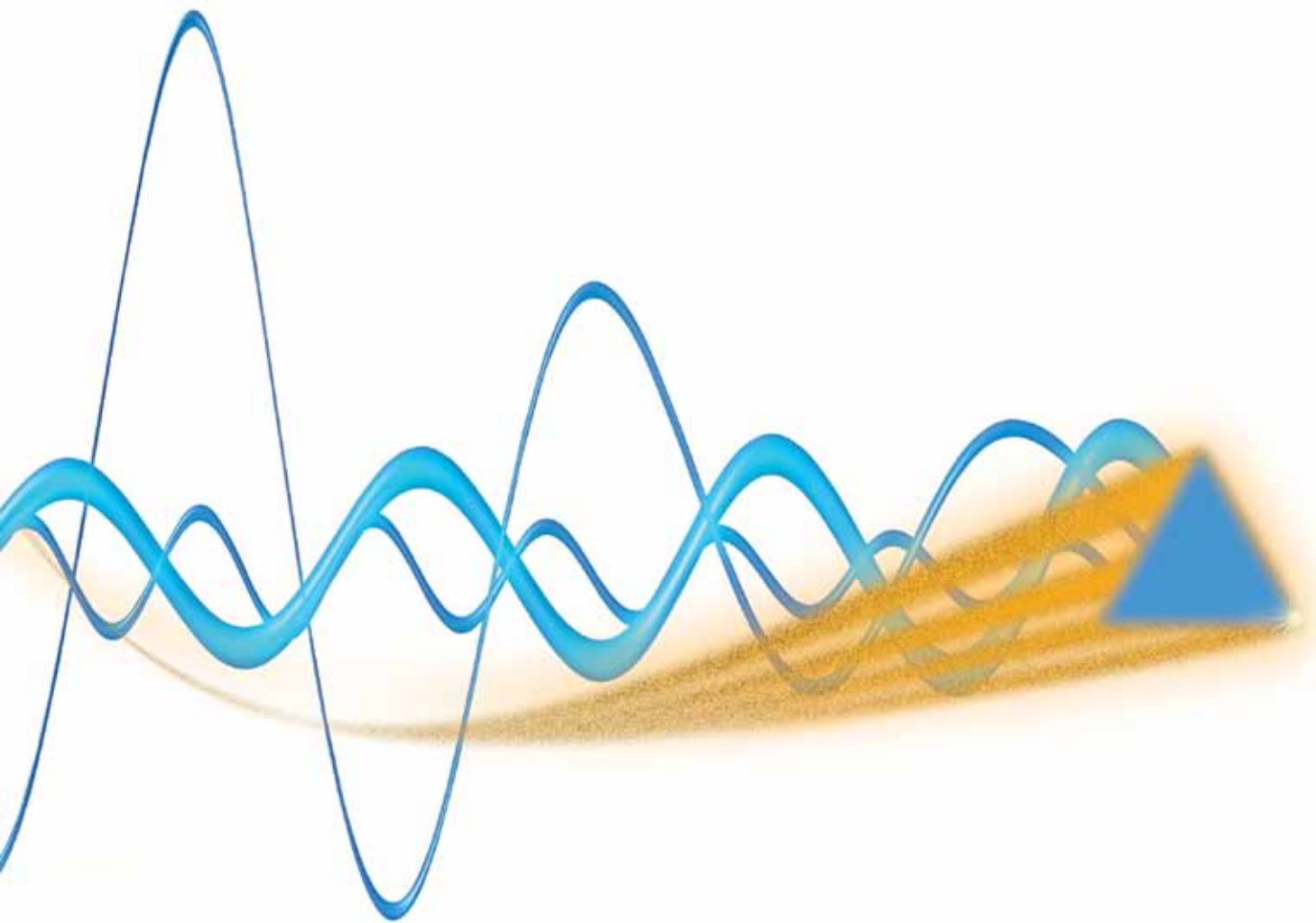


Voice Evacuation

combined data sheets



voice evacuation



Research has proven that in an emergency people will react without confusion or panic if they receive a clear, intelligible message. Bells and sounders only give a warning, they do not indicate the nature of the emergency. Phased evacuation using clear, easily understood, pre-recorded, messages ensures that even untrained personnel are evacuated speedily and efficiently.

VIGIL *Evas*

Voice alarm/evacuation technology has been born from the public address industry and past regrettable disasters most are familiar with.

A voice alarm is, however, not simply a public address system connected to the fire alarm panel, it is much more. A voice alarm system has to work when needed during an emergency and is, therefore, fully monitored at all times. A combination of clear pre-recorded messages and live announcements (to selected areas) enable a controlled and gradual or 'phased' evacuation.

Each voice alarm system is designed and built specifically for each project - no two systems are identical. Activated automatically by the fire alarm panel during an emergency, the system will, typically, evacuate areas in immediate danger and alert others.

Used on a daily basis for public address, timed spot announcements for advertising or general information and background music, the voice alarm system is not just for use during emergencies.

A Baldwin Boxall voice evacuation system is renowned for its reliability and quality of build.

Benefits of voice alarm

- Phased evacuation
- Multi-lingual digital messaging
- Selectable pre-recorded messages
- Microphone priority handling
- Induction loop
- Public information announcements
- Advertisement injection
- Background music for ambience
- Broadcast of opening/closing times



VOICE ALARM BVRD2M ROUTER

VIGIL *Evas*

The BVRD2M DSP-controlled router is well-established and has been installed in many prestigious sites Worldwide.

FEATURES:

- DSP control.
- Eight electronically balanced inputs. Inputs one and two are configurable with 'all call' processor bypass and are normally reserved for fire microphone(s). All inputs have both independent priority and level settings.
- Up to fifteen priority levels are available. If two concurrent routes are set at the same priority they will be treated on a 'first come first served' basis. Priorities are changeable.
- Three band parametric plus bass and treble equalisation on all inputs (with limiter/compressor), enhancing the intelligibility of the system.
- 'All call' failsafe emergency message generator (twenty second EPROM).
- Seven electronically balanced audio outputs with ten band parametric equalisation and audio delay of up to one second.
- Fully monitored surveillance at either 30Hz or 20kHz (faults are recorded in the history log). All inputs, outputs and DSP messages can be aurally monitored through a loudspeaker on the front panel.
- Built-in realtime clock enables detailed logging and reporting, including detected faults. Indicates time, date, month and year. Also used for night time volume reduction, timed message trigger and to control external inputs. The history log can be accessed via the USB2 port on the front panel.
- Six flash stored (57 second) messages with independent level, surveillance and timing. (For longer, non-critical messages, up to three can be combined.) Settings and messages are changeable (password protected) via the USB2 port.
- Nine selectable chimes / pre-announcement tones of up to eight seconds in length.
- Expandable with BVRD2S (slave router) and CANBUS modules.

- Up to 126 EVAS routers can be networked using fibre or copper to produce a truly sophisticated digital VA network.
- Message synchronisation, even on a decentralised system.
- Ambient noise sensing.
- Amplifier changeover (one in ten).
- Two RS485 ports for networking, microphones, etc.
- Zone grouping and barring on BVRD voice alarm controller.

HARDWARE FACILITIES:

Audio:

- 8 x electronically balanced line -20dB audio inputs (inputs 1 and 2 with processor bypass).
- 'All call' failsafe emergency message generator (20 second EPROM) in the event of DSP failure.
- 7 x electronically balanced 0dBm audio outputs.
- 2 x opto-coupled sounder circuit programmable inputs from the fire detection system.
- 6 x analogue voltage sensing inputs for monitored input access, ambient noise sensors, remote volume controls.
- 3 x contact inputs for unmonitored zone access or PTT.

Control Outputs:

- 6 x NPN collector outputs 40V @ 100mA for busy, etc.
- 1 x volt free relay changeover contact for common fault.

Serial Ports:

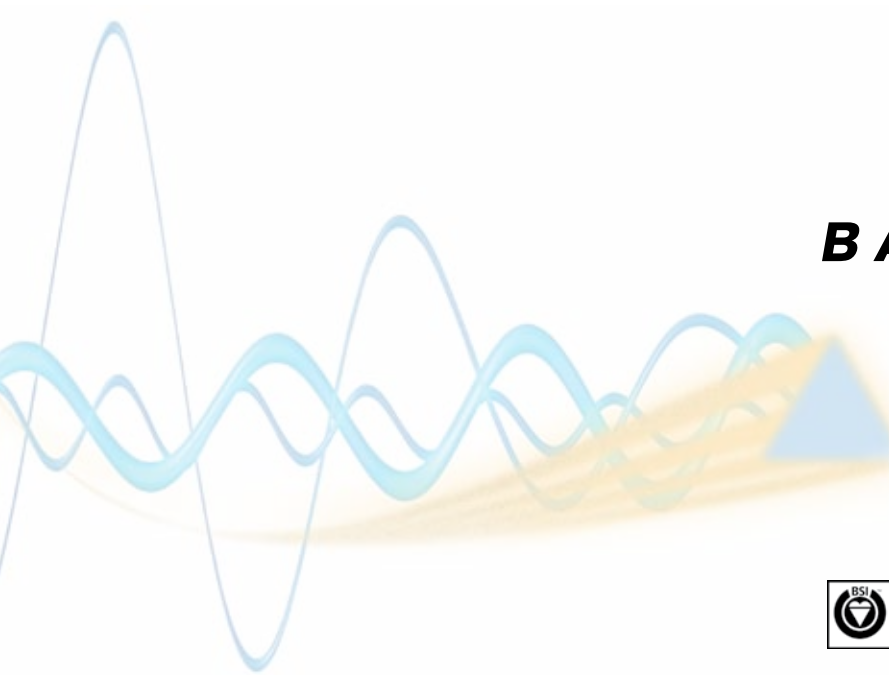
- 2 x RS485 half-duplex ports for communicating to control microphones, fire detection systems, network control, fault reporting.
- 1 x front panel USB2 port to configure the system, fault diagnostics, fault reporting, message download, etc.

BVRD2M SPECIFICATION:

Audio input and output processing using DSP analogue devices ADSP2116 operating at 100MHz.

AUDIO INPUTS	
Input sensitivity	80mV (-20dB) to 3V (+12dB)
Frequency response	-3 dB @ 30Hz and 20kHz
Signal to noise ratio	Better than 70dB
Phantom power	12V
Three band parametric equalisation	
Frequency	50Hz, 63Hz 80Hz, 100Hz, 125Hz, 160Hz, 200Hz, 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz, 6.3kHz, 8kHz, 10kHz, 12.5kHz, 16kHz
Bandwidth	0.05oct, 0.1oct, 0.2oct, 0.33oct, 0.5oct, 0.66oct, 1oct & 2oct
Lift and cut	± 12dB in 1dB steps
Low filter	
Frequency	250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.2kHz, 1.6kHz, 2kHz, 2.5kHz
Slope	3dB/oct & 6dB/oct
Lift and cut	± 12dB in 1dB steps
High filter	
Frequency	500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz
Lift and cut	± 12dB in 1dB steps
High pass filter	
Frequency	100Hz, 150Hz, 200Hz, 250Hz, 300Hz
Slope	18dB/oct, 12dB/oct, 6dB/oct
Compressor	
Ratio	1.4:1, 2:1, 4:1, 8:1 & limiter
Attack	0-99mS
Release	0-999mS
Messages flash PROM	
Storage medium flash PROM (non-volatile)	57 seconds
Frequency response	-3dB @ 50Hz & 18kHz
Signal to noise ratio	Better than 65dB

AUDIO OUTPUTS	
Nominal output level	0.775V (0dB)
Max output level	1.5V (+6dBm) @ 400 ohms source = 400 ohms
Frequency response	-3dB @ 30Hz & 20kHz
Output to noise ratio	Better than -85dB
Ten band parametric equalisation	
Frequency	50Hz, 63Hz 80Hz, 100Hz, 125Hz, 160Hz, 200Hz, 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz, 6.3kHz, 8kHz, 10kHz, 12.5kHz, 16kHz
Bandwidth	0.05oct, 0.1oct, 0.2oct, 0.33oct, 0.5oct, 0.66oct, 1oct & 2oct
Lift and cut	± 12dB in 1dB steps
Low filter	
Frequency	250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz
Slope	3dB/oct & 6dB/oct
Lift and cut	± 12dB in 1dB steps
High filter	
Frequency	500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz
Lift and cut	± 12dB in 1dB steps
Audio delay	
Selectable from 0 to 1 second	
Front panel	
Monitor speaker to listen to inputs or outputs	
Common fault indicator, sounder and fault accept button	
LCD display 40x2 characters, backlit. Rotary encoder to ease configuration, setting levels, entering text, etc.	
POWER	
DC requirements	22V-35V @ 500mA



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VOICE ALARM BVRD2M4 ROUTER



The BVRD2M4 is the latest addition to the VIGIL EVAS range of DSP-controlled routers. It is a four-zone voice alarm router, suitable for smaller installations and networked decentralised systems.

FEATURES:

- DSP control.
- Possible to monitor up to four dual (A&B) circuits.
- Four electronically balanced inputs. Input one is configurable with 'all call' processor bypass and is normally used for the fire microphone in voice alarm systems. All inputs have both independent priority and level settings, allowing for dual mode; emergency and normal page.
- Up to fifteen priority levels are available. If two concurrent routes are set at the same priority they will be treated on a 'first come first served' basis. Priorities are changeable.
- Three band parametric plus bass and treble equalisation on all inputs (with limiter/compressor), enhancing the intelligibility of the system.
- Four audio electronically balanced (OdBM) outputs with ten band parametric equalisation and audio delay of up to one second.
- Fully monitored surveillance at either 30Hz or 20kHz (faults are recorded in the history log).
- Built-in realtime clock enables detailed logging and reporting, including detected faults. Indicates time, date, month and year. Also used for night time volume reduction, timed message trigger and to control external inputs. The history log can be accessed via the USB2 port on the front panel.
- Six flash stored (57 second) messages with independent level, surveillance and timing. Settings and messages are changeable (password protected) via the USB2 port.
- Nine selectable chimes / pre-announcement tones of up to eight seconds in length.
- Up to 126 EVAS routers can be networked using fibre or copper to produce a truly sophisticated VA network.
- Message synchronisation, even on a decentralised system.

- Ambient noise sensing (using optional ambient noise sensing microphones).
- Amplifier changeover for up to three zones (using optional relay board, product code BVRD2M4ACO).
- Two RS485 ports for networking, microphones, etc.
- Zone grouping and barring on BVRD voice alarm controller.

HARDWARE FACILITIES:

Audio:

- 4 x electronically balanced line -20dB audio inputs (input 1 with processor bypass).
- 'All call' failsafe emergency evacuate message embedded in main processor in the event of DSP failure.
- 4 x electronically balanced OdBM audio outputs.
- 4 x opto-coupled sounder circuit programmable inputs from the fire detection system.
- 8 x analogue voltage sensing inputs for monitored input access, ambient noise sensors, remote volume controls.
- 8 x surveillance inputs for monitoring 100V loudspeaker lines (using BEL1 modules).

Control Outputs:

- 8 x NPN collector outputs 40V @ 100mA for busy, etc.
- 1 x volt free relay changeover contact for common fault.

Serial Ports:

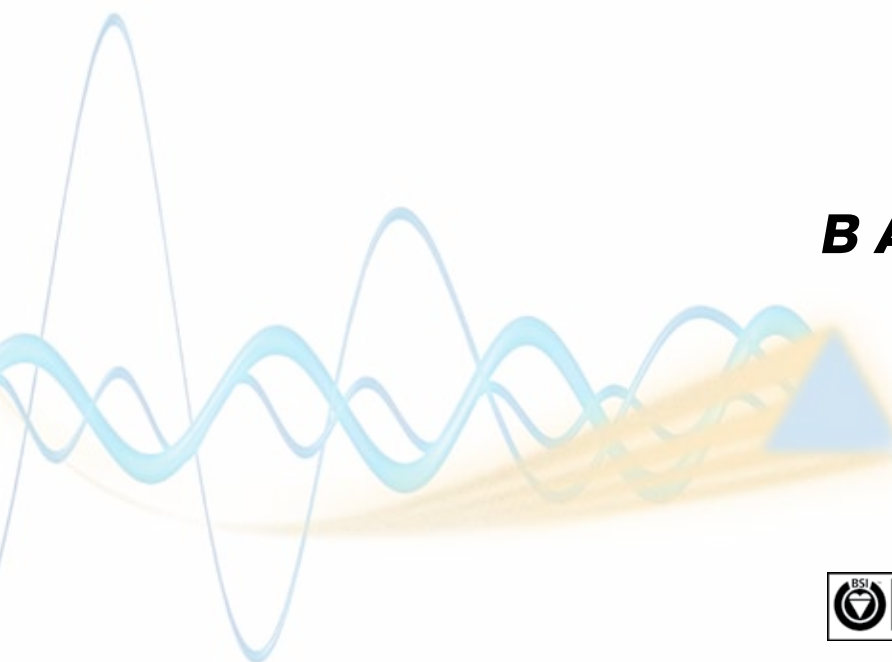
- 2 x RS485 half-duplex ports for communicating to control microphones, fire detection systems, network control, fault reporting.
- 1 x front panel USB2 port to configure the system, fault diagnostics, fault reporting, message download, etc.

BVRD2M4 SPECIFICATION:

Audio input and output processing using DSP analogue devices ADSP2116 operating at 100MHz.

AUDIO INPUTS	
Input sensitivity	80mV (-20dB) to 3V (+12dB)
Frequency response	-3 dB @ 30Hz and 20kHz
Signal to noise ratio	Better than 70dB
Three band parametric equalisation	
Frequency	50Hz, 63Hz 80Hz, 100Hz, 125Hz, 160Hz, 200Hz, 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz, 6.3kHz, 8kHz, 10kHz, 12.5kHz, 16kHz
Bandwidth	0.05oct, 0.1oct, 0.2oct, 0.33oct, 0.5oct, 0.66oct, 1oct & 2oct
Lift and cut	± 12dB in 1dB steps
Low filter	
Frequency	250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.2kHz, 1.6kHz, 2kHz, 2.5kHz
Slope	3dB/oct & 6dB/oct
Lift and cut	± 12dB in 1dB steps
High filter	
Frequency	500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz
Lift and cut	± 12dB in 1dB steps
High pass filter	
Frequency	100Hz, 150Hz, 200Hz, 250Hz, 300Hz
Slope	18dB/oct, 12dB/oct, 6dB/oct
Compressor	
Ratio	1.4:1, 2:1, 4:1, 8:1 & limiter
Attack	0-99mS
Release	0-999mS
Messages flash PROM	
Storage medium flash PROM (non-volatile) 57 seconds	
Frequency response	-3dB @ 50Hz & 18kHz
Signal to noise ratio	Better than 65dB

AUDIO OUTPUTS	
Nominal output level	0.775V (0dB)
Max output level	1.5V (+6dBm) @ 400 ohms source = 400 ohms
Frequency response	-3dB @ 30Hz & 20kHz
Output to noise ratio	Better than -85dB
Ten band parametric equalisation	
Frequency	50Hz, 63Hz 80Hz, 100Hz, 125Hz, 160Hz, 200Hz, 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz, 6.3kHz, 8kHz, 10kHz, 12.5kHz, 16kHz
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Slope	3dB/oct & 6dB/oct
Lift and cut	± 12dB in 1dB steps
High filter	
Frequency	500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz
Lift and cut	± 12dB in 1dB steps
Audio delay	
Selectable from 0 to 1 second	
FRONT PANEL	
10 x LED fault indicators	
1 x common fault indicator	
Sounder and fault accept button	
POWER	
DC requirements	22V-35V @ 500mA



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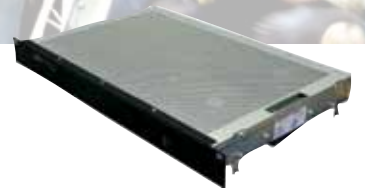
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VOICE ALARM SLAVE ROUTERS



VIGIL *Evas*

VIGIL EVAS slave units enable expansion of the EVAS BVRD2M DSP-controlled router. There are currently two models in the range:

BVRD2S • BVRD2SLT

FEATURES:

- Adding a BVRD2S to a BVRD2M increases the number of inputs available by twelve, the number of outputs by sixteen and adds another twelve messages.
- Adding a BVRD2SLT to a BVRD2M increases the number of inputs available by six, the number of outputs by eight and adds another six messages.
- Up to five slave units can be added to each BVRD2M master - enabling a maximum total of 68 inputs, 87 outputs and 30 messages.
- The slave units mount directly on top of the master unit.
- To minimise rack wiring, the power and communications between master and slave units are through an internal data link.
- All connections are made to the BVRD2S using RJ45 connectors.
- The 'bypass all call enable' switch can be used to prevent an 'all call' message from being broadcast to the selected outputs. This is often used if one of the outputs is being used as a local monitor.
- The BVRD2SLT can be upgraded to a BVRD2S simply by adding a DSP-control card and removing blanking plates - providing a solution for future system expansion.

SYSTEM DESIGN:

System design is part of our commitment to provide a complete service from the initial planning stage through installation to after-sales technical support.

Our extensive range of standard products has been designed to accommodate most installation requirements. However our experienced design team often cater for projects that require bespoke solutions.

If you require any assistance with our products, or help with system design, please contact sales@baldwinboxall.co.uk.

THE VIGIL2 RANGE:

Products in the VIGIL2 range of voice alarm products include:

- BVRD2M DSP-controlled router.
- BVRD2M4 DSP-controlled router.
- BVSMMP switch mode power supply.
- BVSMPLT switch mode power supply (half BVSMMP).
- BV440M, BV220, BV120D & BV050Q D-class amplifiers.
- BVRD8, BVRD16, BVRD24, BVRD32, BVRD40, BVRD48, BVRD56 & BVRD64 voice alarm control microphones.
- Unitouch touchscreen paging station.

SLAVE ROUTERS SPECIFICATION:

	BVRD2S	BVRD2SLT
Electronically balanced line audio inputs (-20dB)	12	6
Electronically balanced audio outputs (OdBM)	16	8
Flash stored messages	12	6



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VOICE ALARM VIGIL2 AMPLIFIERS

VIGIL 2



Our range of Class D power amplifiers are proven and robust. Three different power amplifiers are available in the range:

BV225 - 225 Watt

BV125D - 2 x 125 Watt

BV050Q - 4 x 50 Watt

FEATURES:

- Designed for quick and simple connection and configuration.
- Class D rated output power is attainable using a 22V battery supply.
- Sleep mode - automatically reducing the standby requirements to 50mA per amplifier when operating on batteries.
- Audio inputs are presented on separate RJ45 connectors; each connector provides a balanced audio input and ground.
- Protected against overload conditions (ie short circuits) by means of a voltage controlled attenuator (VCA); ensuring continual safe operation without creating unnecessary distortion.
- Over temperature protection is also provided. Should the amplifier temperature exceed 90°C the VCA attenuates the input signal to a safe level and illuminates a warning LED. If the system is under surveillance (a requirement of BS5839-8:2008) a fault condition will be indicated due to the gain reduction.
- 24V DC inputs are presented on two-way crimp connected sockets.

BVMF MAINFRAME:

Three amplifier modules (or two amplifiers and one BVSMP power supply) may be mounted in one BVMF mainframe.

BV225:

- 225W class D power amplifier with a single 500mV balanced line audio input and 100V line output.
- Can either be used as an independent amplifier module, can be one of two amplifiers wired as an A/B dual circuit using a single input signal or can be paralleled with other BV225 units to enable higher power outputs.
- BV225 units are easily paralleled via RJ45 connectors.

BV125D:

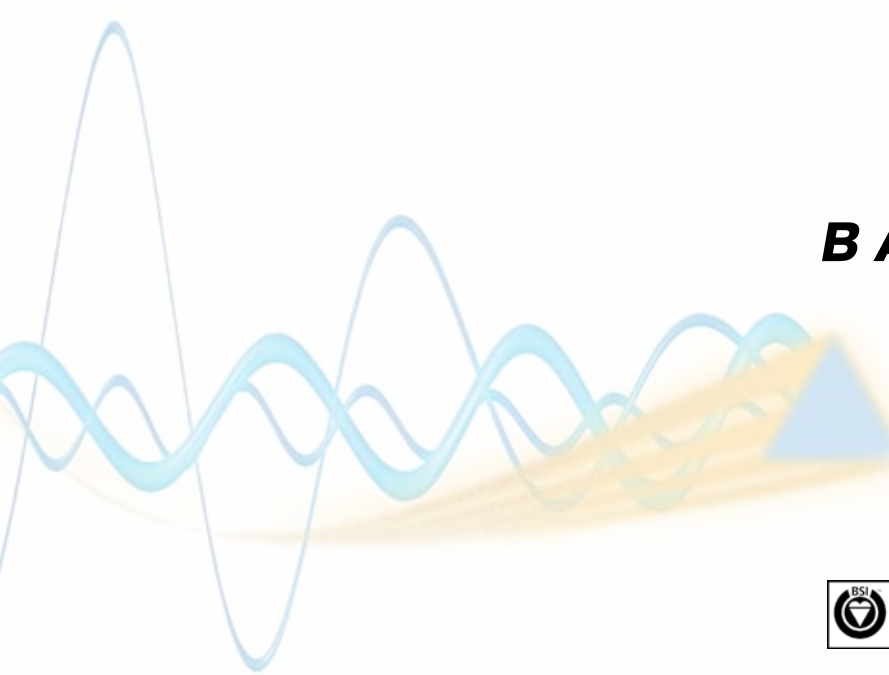
- Contains two independent 125W class D power amplifiers, each with a single balanced line audio input and 125W 100V line output.
- Can either be used as two independent amplifier modules or two amplifiers wired as an A/B dual circuit using a single input signal.

BV050Q:

- Contains four independent 50W class D power amplifiers, each with a single balanced line audio input and 50W 100V line output.
- Can either be used as four independent amplifier modules or four amplifiers wired as an A/B dual circuit using a single input signal.
- Channel gain may be individually set using the potentiometers on the board behind the front panel.

VIGIL2 AMPLIFIER SPECIFICATION:

	BV225	BV125D (value per amplifier)	BV050Q (value per amplifier)
Rated output power less than 0.2% THD	225W @ 44.5 ohms	125W @ 80 ohms	50W @ 200 ohms
Typical output power less than 1% THD	260W @ 38.6 ohm	160W @ 62.5 ohms	65W @ 153.8 ohms
Output regulation	better than 1.5dB	better than 2dB	better than 2dB
Output voltages obtainable	50 & 100V		
Frequency response (-3dB)	35Hz-20kHz	35Hz-20kHz	35Hz-20kHz
Input sensitivity and impedance	500mV @ 40K ohms balanced		
Input common mode rejection ratio	(50Hz-20kHz) Better than 40dB: typically 60dB		
Output noise reference to rated output	Better than 85dB		Better than 80dB
Cross talk between amplifiers @ 1kHz	N/A	Better than 70dB	
Supply voltage	22-35V DC		
Supply current			
Sleep mode 26V (battery supply)	50mA		
Quiescent 30V (mains supply)	160mA		
Rated output power	10A		
Output stage protection			
Thermal	Output stage above 90°C		
Load	Excessive output stage current		
Action	Reduces input to safe level using low distortion VCA		
Front panel indicators per amplifier			
Supply (green)	DC supply connected		
Active (green)			Amplifier is active, not in sleep mode
Temp alert (yellow)			Output stage above 90°C
Overload (yellow)	Protection circuit operating		
100% (yellow)	100V output voltage		
10% (green)	10V output voltage		
Terminations			
Loudspeaker line output	3-way cage clamp	2 x 3-way cage clamp	2 x 6-way cage clamp
Balanced line inputs	RJ45 connectors		
DC supply input	2 pin crimp connectors		



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VOICE ALARM POWER SUPPLIES

VIGIL 2



Both units in the range employ 'switch mode' techniques to improve efficiency and reduce unwanted heat dissipation and weight. There are currently two models in the range:

BVSMP • BVSMPLT

FEATURES:

- The BVSMP has two individually protected outputs at 24V; the BVSMPLT has one.
- Each BVSMP will drive either two BV220, two BV120D, two BV050Q or one BV440M.
- Each BVSMPLT will drive one BV220, one BV120D or one BV050Q.
- Provide independent power converters with current and over-voltage protection circuits.
- Continual monitoring of the charger and all DC outputs ensures reliability.
- Standby batteries are continually 'float charged' by the unit. Ensuring that, in the event of mains failure, power is maintained.
- Built-in deep battery discharge cut off, preventing total discharge that can destroy the standby batteries in the event of AC power failure for long periods.
- A protected output is provided to power a mixer or auxiliary circuits.
- In the event of a fault condition an internal relay releases, providing a changeover contact. A fault will be indicated on the EVAS router.
- The constant voltage charger is set for the recommended float charge. Should the battery fall below this level the BVSMP will charge at a constant rate of three Amps, progressively reducing once the battery has achieved its nominal float level.
- Outputs, together with a volt-free (fault changeover) contact, are provided by a nine-way crimp connector plug and socket.
- Several chargers may be paralleled when used for larger systems. (Paralleled BVSMPs must be synchronised).

Front panel indicators:

- AC supply healthy.
- Fuse failure.
- Charger failure.
- Battery voltage high.
- Battery voltage low.
- OK.

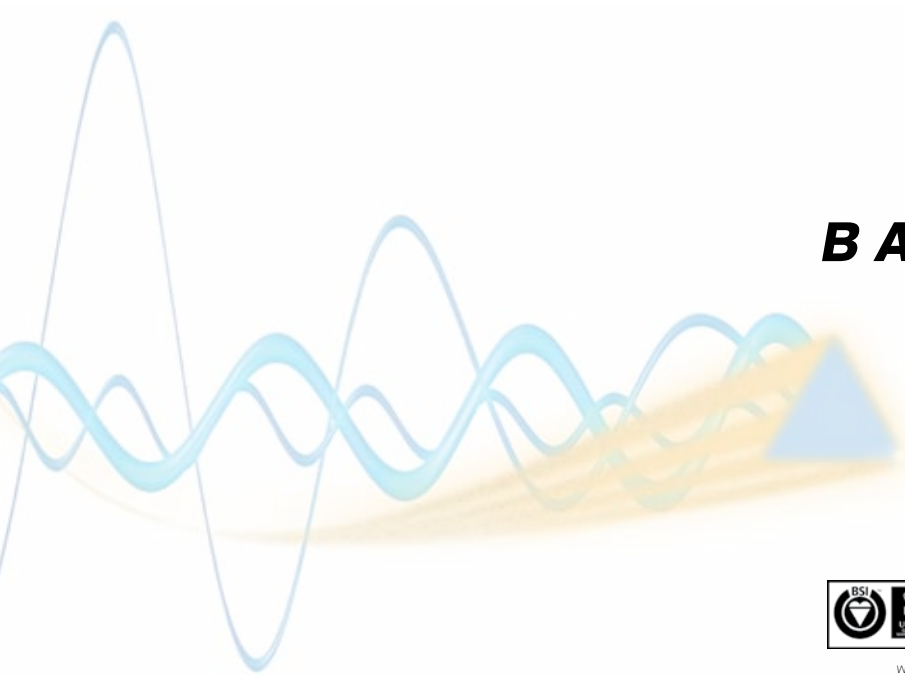
(lamp test switch for the above indicators).

BATTERIES:

- We recommend (and supply) high-quality lead acid batteries. They are sealed, valve regulated and maintenance free. As standard our batteries are available rated at 15, 40, 60, 75, 90, 110 and 125 Ampere hours. Larger standby systems can be provided and will be designed and calculated by our engineers. It is important that all voice alarm batteries comply with BS5839 or EN60849. The batteries activate when the mains has failed under emergency conditions.

POWER SUPPLIES SPECIFICATION:

	BVSMP	BVSMPSLT
AC supply input voltage	200V-250V 50-60Hz	
Maximum power consumption	700VA	350VA
Maximum in-rush current @ 230V	18A	9A
DC output 1 to amplifier 1	31V @ 12A	
DC output 2 to amplifier 2	31V @ 12A	n/a
DC output 3 to auxiliary mixers, etc	31V @ 2A	31V @ 1A
Battery charger output		
Voltage @ 20°C	27.1V	
Temperature compensation	-66mV/C	
Maximum current	3A	
Battery low fault voltage	21V	
Battery high fault voltage	29V	
Battery deep discharge cut off voltage	16V	
Volt-free fault relay output contacts	100V @ 1A maximum	
Fuse protection		
AC supply (5 x 20mm)	2 x 3.15A(T)	1 x 3.15A(T)
Battery (automotive blade)	2 x 20A	1 x 20A
Charger input (self-resettable)	6A	
Charger output(self-resettable)	4A	
Auxiliary output (self-resettable)	2 x 1.1A	1 x 1.1A
Front panel indicators		
AC supply	AC supply 'on'	
OK	No fault	
Fuse	Fuse fault	
Charger	Charger fault	
High	Battery voltage high fault	
Low	Battery voltage low fault	
Terminations		
AC supply input	IEC 6A filtered connector	
24V battery input	3-pin screw terminated connector	
DC outputs & fault relay contacts	9-pin crimp terminated connector	



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VOICE ALARM VIGIL ECLIPSE2M

VIGIL Eclipse2M



VIGIL ECLIPSE2M is a wall-mountable, voice evacuation/public address system. The unit houses one BVRD2M4 DSP-controlled router, power supply and your choice of amplifier. Fully networkable, ECLIPSE2M provides the solution for many applications.

FEATURES:

- Stand-alone system, complete with battery backup, in one housing (IP30 rated).
- Choice of amplifiers:
 - BV120D dual 120 Watt - enabling one dual circuit zone (or two, single circuit, zones).
 - BV050Q quad 50 Watt - enabling two zones with dual circuits (or four, single-circuit, zones; or three with reserve).
- Up to 126 units can be networked. (Digital networking facilities provided by BVRDNET2M4, factory fit option - please refer to separate leaflet.)
- Ideal for decentralised networking or tenant systems.
- Four electronically balanced inputs. Input one is configurable with 'all call' processor bypass and is normally used for the fire microphone in voice alarm systems. All inputs have both independent priority and level settings, allowing for dual mode; emergency and normal page.
- Up to fifteen priority levels are available. If two concurrent routes are set at the same priority they will be treated on a 'first come first served' basis. Priorities are changeable.
- Three band parametric plus bass and treble equalisation on all inputs (with limiter/compressor), enhancing the intelligibility of the system.
- Four audio electronically balanced (OdBM) outputs with ten band parametric equalisation and audio delay of up to one second.
- Fully monitored surveillance at either 30Hz or 20kHz (faults are recorded in the history log).
- Built-in realtime clock enables detailed logging and reporting, including detected faults. Indicates time, date, month and year. Also used for night time volume reduction, timed message trigger and to control external inputs. The history log can be accessed via the USB2 port on the front panel.
- Up to six flash stored (57 second) messages (four supplied as standard) with independent level, surveillance and timing. Settings and messages are changeable (password protected) via the USB2 port.
- 'All call' failsafe emergency evacuate message embedded in main processor in the event of DSP failure.
- Nine selectable chimes / pre-announcement tones of up to eight seconds in length.
- Message synchronisation, even on a decentralised system.
- Ambient noise sensing (using optional ambient noise sensing microphones).
- Two RS485 ports for networking, microphones, etc.
- Four opto-coupled sounder circuit programmable inputs from the fire detection system.
- Eight surveillance inputs for monitoring 100V loudspeaker lines (using BEL1 modules).

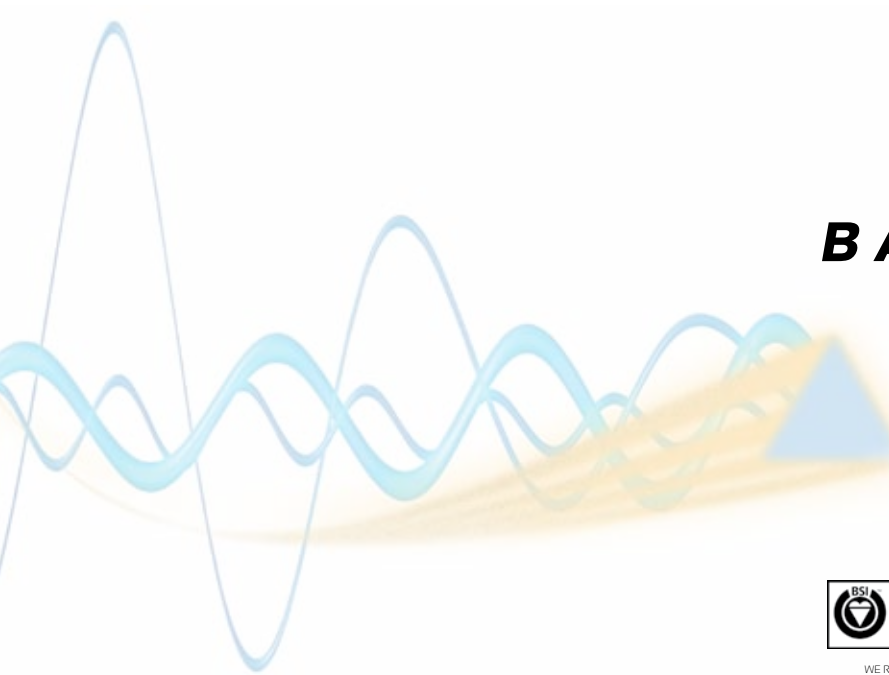
ECLIPSE2M SPECIFICATION:

Audio input and output processing using DSP analogue devices ADSP2116 operating at 100MHz.

AUDIO INPUTS	
Input sensitivity	80mV (-20dB) to 3V (+12dB)
Frequency response	-3 dB @ 30Hz and 20kHz
Signal to noise ratio	Better than 70dB
Three band parametric equalisation	
Frequency	50Hz, 63Hz 80Hz, 100Hz, 125Hz, 160Hz, 200Hz, 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz, 6.3kHz, 8kHz, 10kHz, 12.5kHz, 16kHz
Bandwidth	0.05oct, 0.1oct, 0.2oct, 0.33oct, 0.5oct, 0.66oct, 1oct & 2oct
Lift and cut	± 12dB in 1dB steps
Low filter	
Frequency	250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.2kHz, 1.6kHz, 2kHz, 2.5kHz
Slope	3dB/oct & 6dB/oct
Lift and cut	± 12dB in 1dB steps
High filter	
Frequency	500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz
Lift and cut	± 12dB in 1dB steps
High pass filter	
Frequency	100Hz, 150Hz, 200Hz, 250Hz, 300Hz
Slope	18dB/oct, 12dB/oct, 6dB/oct
Compressor	
Ratio	1.4:1, 2:1, 4:1, 8:1 & limiter
Attack	0-99mS
Release	0-999mS
Messages flash PROM	
Storage medium flash PROM (non-volatile) 57 seconds	
Frequency response	-3dB @ 50Hz & 18kHz
Signal to noise ratio	Better than 65dB

AUDIO OUTPUTS	
Nominal output level	0.775V (0dB)
Max output level	1.5V (+6dBm) @ 400 ohms source = 400 ohms
Frequency response	-3dB @ 30Hz & 20kHz
Output to noise ratio	Better than -85dB
Ten band parametric equalisation	
Frequency	50Hz, 63Hz 80Hz, 100Hz, 125Hz, 160Hz, 200Hz, 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz, 6.3kHz, 8kHz, 10kHz, 12.5kHz, 16kHz
Bandwidth	0.05oct, 0.1oct, 0.2oct, 0.33oct, 0.5oct, 0.66oct, 1oct & 2oct
Lift and cut	± 12dB in 1dB steps
Low filter	
Frequency	250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz
Slope	3dB/oct & 6dB/oct
Lift and cut	± 12dB in 1dB steps
High filter	
Frequency	500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz
Lift and cut	± 12dB in 1dB steps
Audio delay	
Selectable from 0 to 1 second	
POWER	
230V AC 700V/A	
VIGIL ECLIPSE2M requires a direct non-switchable power supply. Preferably via a class D circuit breaker.	
DIMENSIONS	
475mm W x 777mm H x 130mm D	

NB: Amplifier, power supply, batteries & BELs need to be ordered separately.



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VOICE ALARM DSP NETWORKING

VIGIL *Evas*



The BVRDNET provides a digital networking solution for the VIGIL EVAS DSP-controlled voice alarm routers (BVRD2M and BVRD2M4). Products in the range:

BVRDNET

BVRDNET2M4

BVRDCIF

BVRDFIF

FEATURES:

- Connected in a loop configuration
- Minimises cabling requirements.
- Continues to function in the event of cabling damage at a single location.
- The network can be copper, fibre or a combination of both.
- Two RS485 and up to fourteen concurrent audio channels.
- Network status indicators.
- Fully monitored.
- Optional system reset feature.
- Up to 126 systems can be digitally networked.

BVRDNET & BVRDNET2M4

- The BVRDNET controller is a factory fitted option for the BVRD2M (BVRDNET2M4 for the BVRD2M4).
- Configured from the router's control menu.
- Connector for optional system reset feature (two-pin) header.
- Connector for clockwise network cable (CAT5 patch lead).
- Connector for anti-clockwise network cable (CAT5 patch lead).
- Slow speed option providing six concurrent audio channels with two RS485 channels.
- Fast speed option providing fourteen concurrent audio channels with two RS485 channels.
- Audio bandwidth is 30Hz-20kHz.

BVRDCIF

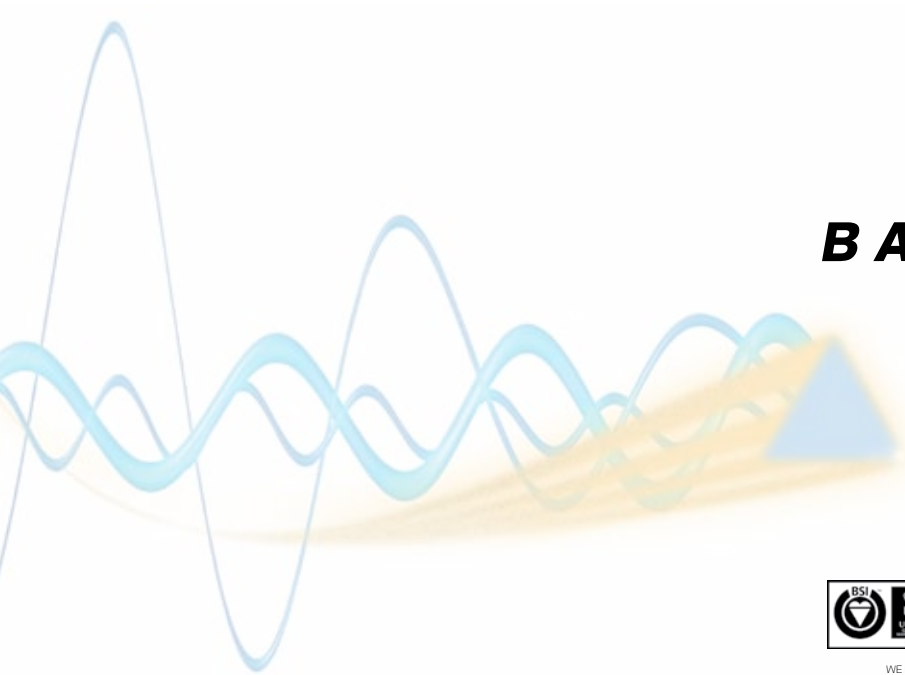
- The BVRDCIF is a DIN rail mounted connection to copper network sections. (Two BVRDCIF required per BVRDNET/2M4).
- CAT5 patch lead connection to BVRDNET/2M4 clockwise or anti-clockwise connector.
- LED to indicate valid data reception.
- Screw terminals for two transmit conductors and two receive conductors (preferably twisted pair).
- Screw terminal for ground.
- Typical maximum distance of 300m at slow speed and 200m at fast speed. (Greater distances possible with some cable types.)

BVRDFIF

- The BVRDFIF is a DIN rail mounted connection to fibre network sections. (Two BVRDFIF required per BVRDNET/2M4).
- CAT5 patch lead connection to BVRDNET/2M4 clockwise or anti-clockwise connector.
- LED to indicate valid data reception.
- ST transmit connector and ST receiver connector for multimode fibre (62.5/125 cable).
- Screw terminal for ground.
- Typical maximum distance of 3km at slow or fast speed.

SYSTEM DESIGN

- For assistance with system networking and design please contact: sales@baldwinboxall.co.uk.



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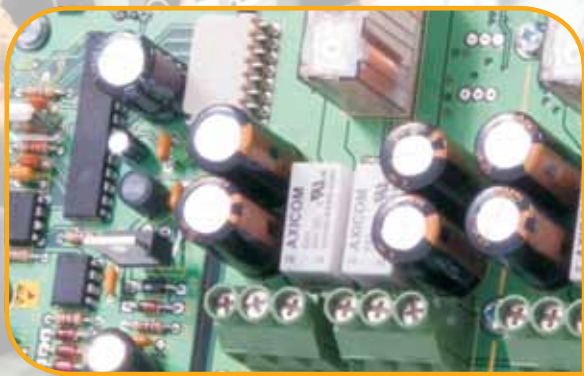
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VOICE ALARM DC LINE MONITOR

VIGIL 2



The DC line monitor isolator units are CANBUS modules for the VIGIL2 voice alarm system, consisting of two components:

BVRDADIM • BVRDADIS

FEATURES:

- Enables dual loudspeaker circuits to connect to a single amplifier.
- Each BVRDADIS unit provides both A&B circuits for two amplifiers.
- Up to 10 spurs per loudspeaker line.
- The BVRDADIM master unit connects to the BVRD2M router.
- Up to five BVRDADIS can be connected to one BVRDADIM.
- Fitting five BVRDADIS enables broadcast and monitoring for up to twenty loudspeaker circuits.
- The modules plug directly together.
- Utilises DC line monitoring techniques, therefore BEL1 end of line monitoring is not required. (Please refer to 'system requirements'.)
- Failure of either the A or B circuit from one amplifier will not effect the other circuit.
- In the event of an amplifier failure, reserve amplifiers will automatically operate.
- With five BVRDADIS fitted, a one-in-ten amplifier changeover ratio is enabled.
- Reduces rack size and cost for large voice alarm systems
- Earth leakage protection.

SYSTEM REQUIREMENTS:

- Maximum of 225W load per loudspeaker line.
- Each loudspeaker requires a capacitor (refer to table below). We recommend that you take advice from your loudspeaker supplier.
- Each end-of-line loudspeaker requires a 10K 2W (at 1% tolerance) resistor fitted across the line. (Available in packs of ten - product code BVRDADCR.)

Speaker Wattage	Capacitor requirement
6 Watts	1 μ f 250V DC
15 Watts	2.2 μ f 250V DC
30 Watts	4.7 μ f 250V DC
60 Watts	10 μ f 250V DC

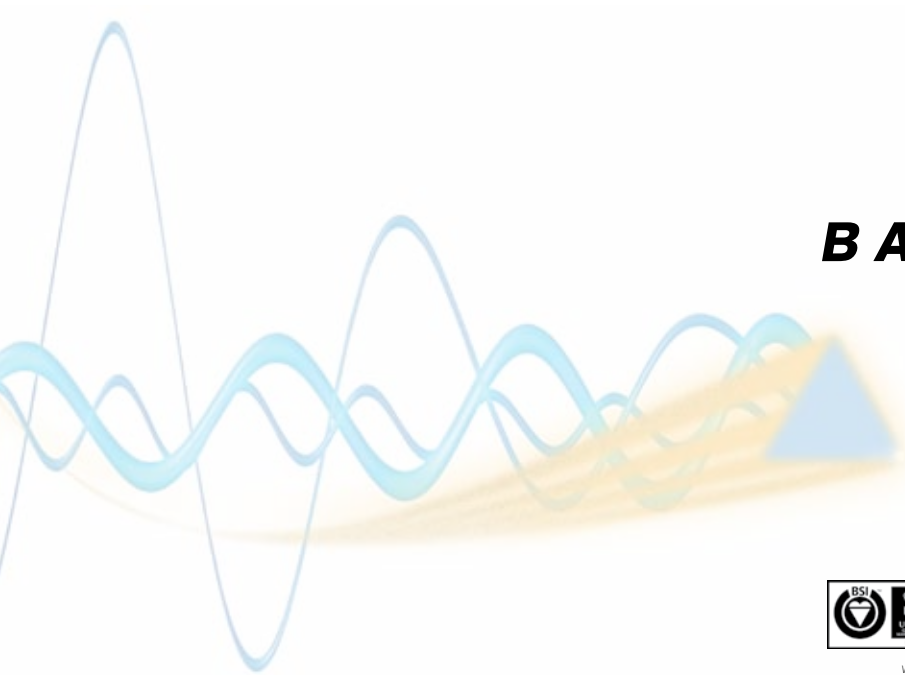
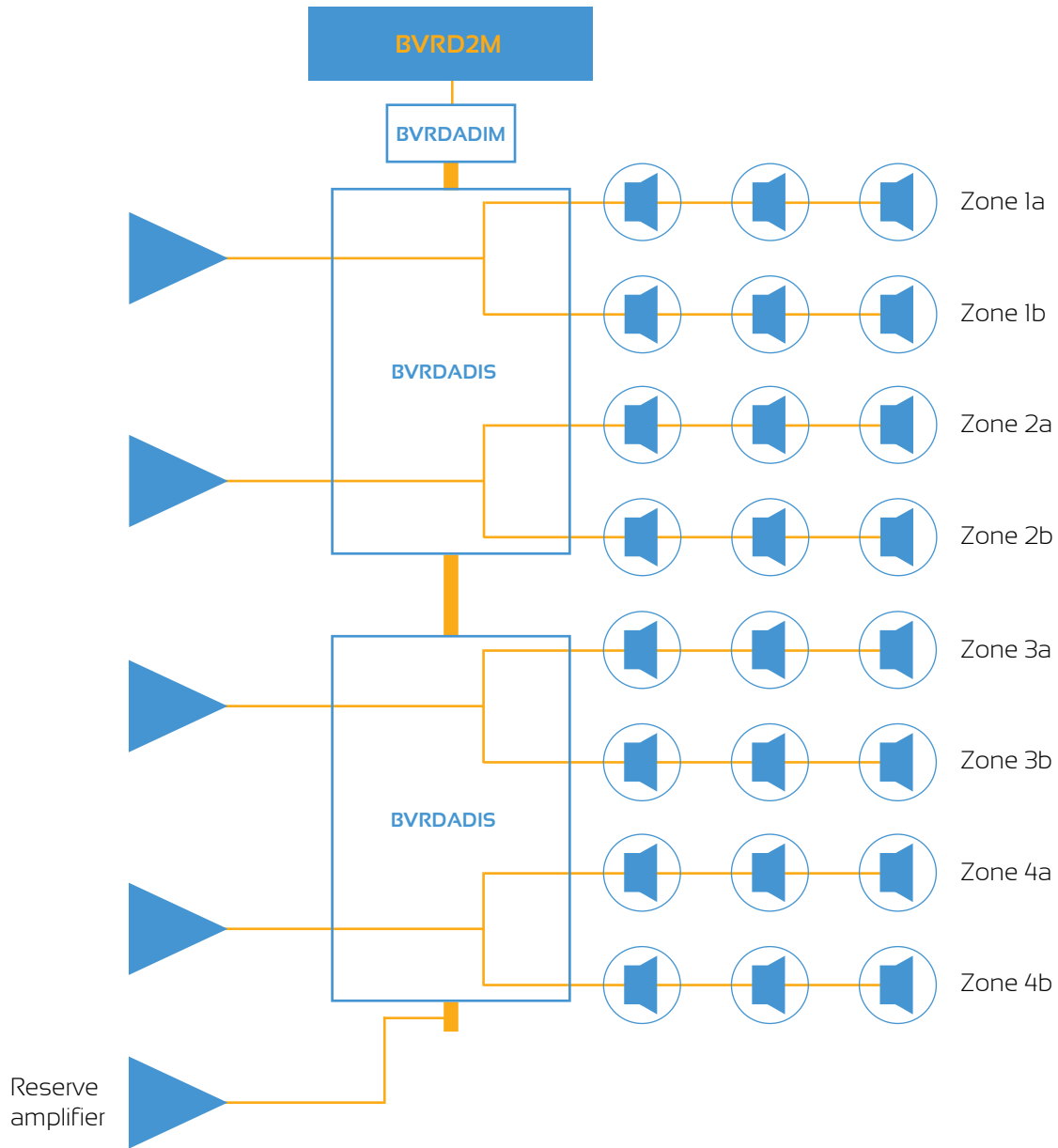
SYSTEM DESIGN:

System design is part of our commitment to provide a complete service from the initial planning stage through installation to after-sales technical support.

Our extensive range of standard products has been designed to accommodate most installation requirements. However our experienced design team often cater for projects that require bespoke solutions.

If you require any assistance with our products, or help with system design, please contact sales@baldwinboxall.co.uk.

TYPICAL APPLICATION:



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VOICE ALARM MONITORING

VIGIL 2



All critical signal paths of a voice evacuation system must be fully monitored - from the fire officer's microphone, through the amplifiers to the end of the loudspeaker lines. Also, any faults detected with the power supply, internal battery charger and backup batteries must be reported and acted upon. VIGIL2 monitoring products available:

BEL1 • BELIIP • BELIO • BVRDACO • BVRDNCO • BVRDADC • BVRDADIM/S • BVLAM

BEL1 - END OF LINE:

- Two versions are available:
 - BEL1 - standard.
 - BELIIP - IP65 rated.
- An active unit which is installed on each loudspeaker circuit.
- Up to four BEL1 units can be placed on one speaker run (see diagram over page). All internal DIL switches must be set correctly.
- Monitors the critical signal path of speaker lines for open, short circuit and earth faults.
- Fault warnings are displayed on the voice alarm rack.
- Each BEL1 unit uses approximately three Watts of power. This needs to be noted when designing a system.

BVRDADC - DC LINE MONITOR:

- DIN rail mounted CANBUS module with screw terminals for connections to amplifiers and loudspeaker lines.
- 11 x amplifier surveillance (10 with automatic amplifier changeover).
- Monitors the integrity of loudspeaker lines by measuring a small DC current. (Each end of line loudspeaker requires a 10K 2W (at 1% tolerance) resistor. Each loudspeaker requires a capacitor - refer to *BVRDADIM/S DC Line Monitor sales leaflet* for details.)
- Monitors for earth faults.
- Fault warnings are displayed on the voice alarm rack.

BELIO - END OF LINE:

- DIN rail mounted, the BELIO is the equivalent of ten BEL1 units.
- Loudspeaker lines terminate at the BELIO.
- Monitors the critical signal path of speaker lines for open, short circuit and earth faults.
- Fault warnings are displayed on the voice alarm rack.
- Typically, the BELIO is used to ease the upgrading of an existing voice evacuation system, where loudspeaker lines are wired in a loop back to the rack.
- Each BEL1 unit uses approximately three Watts of power. This needs to be noted when designing a system.

BVRDACO & BVRDNCO - AMPLIFIER/LINE MONITOR:

- DIN rail mounted CANBUS module.
- 10 x BEL1 line surveillance with earth leakage fault detection.
- 11 x amplifier surveillance (10 with automatic amplifier changeover - BVRADCO only).
- 1 x RS485 half-duplex port for communicating to control microphones, fire detection systems, network control, fault reporting.
- Fault warnings are displayed on the voice alarm rack.

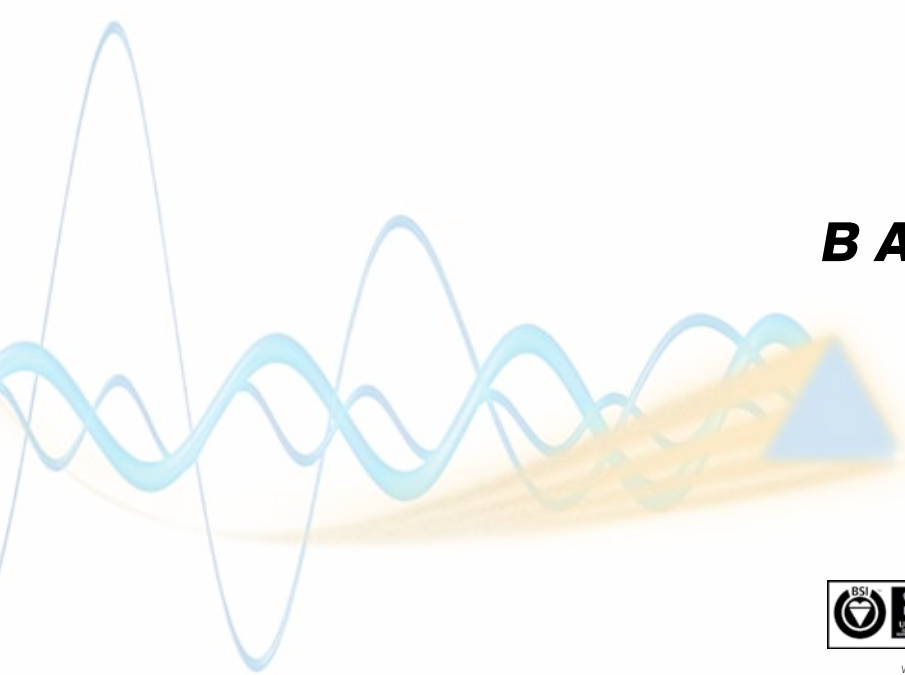
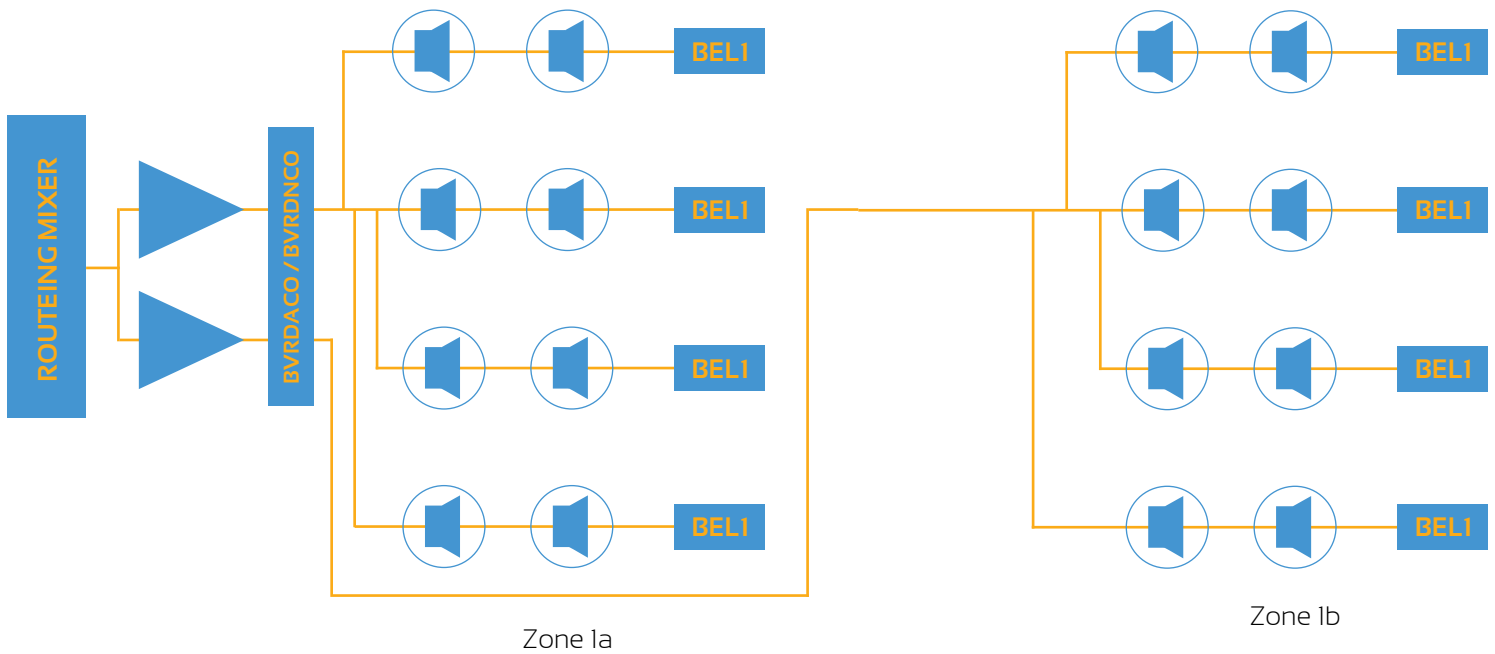
BVRDADIM & BVRDADIS:

- Enables dual loudspeaker circuits to be connected to a single amplifier. (Refer to *separate leaflet* for full details.)

BVLAM - IMPEDANCE MONITOR:

- Rack-mountable unit (1U high). Two units can be mounted across one rack 'shelf'.
- Provides eight loudspeaker zone selection from one amplifier.
- On receipt of a signal from an input (ie zone selecting microphone) the BVLAM triggers the amplifier to output to the selected zone.
- An internal relay enables zone switching.
- The BVLAM provides constant impedance monitoring on each of the eight loudspeaker circuits when not selected.
- LEDs are used to indicate a drop (or increase) in impedance - set at either 20% or 40% by DIL switches.
- Access faults on any of the zones from the microphone are indicated by LEDs on the BVLAM.
- Additional LED indicators are provided to show 'system healthy' and 'supply healthy'.

TYPICAL BELI CIRCUIT COMPRISING OF FOUR SPURS:



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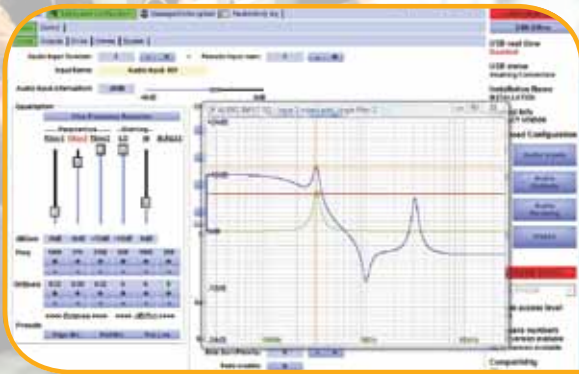
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VOICE ALARM CONFIGURATOR

VIGIL *Evas*

The VIGIL EVAS configurator program provides the ability to modify settings on the BVRD2M/4 routers via a laptop computer. Additionally, the front panel of the BVRD2M has a LCD 40x2 character display with rotary encoder - providing an alternative option for configuration of the system.

FEATURES:

- The configurator software takes the user through step-by-step with easy to understand pages.
- Three different user interfaces - simple, basic, advanced.
- Configuration of any of the EVAS routers on a networked system is possible from one EVAS unit (data only, not message). This feature saves valuable engineering time.
- The adjustments that can be made to the BVRD2M/4 system are many and include:

Volume levels.

EQ.

Input settings (attenuations, chime selection, etc).

Output settings (priorities, attenuations, etc).

Digital voice announcements (DVA), eg timings.

Chimes, eg timings.

Processor bypass settings, eg attenuations, priority, etc.

Opto coupled inputs, eg fire panel interface, DVAs, routing, etc.

Analogue/contact inputs, eg closed contact routing.

VOX settings.

Ambient noise sensing.

Amplifier surveillance.

RS485 and network channels. (For BVRDNET network controller please see separate datasheet).

FUNCTIONS:

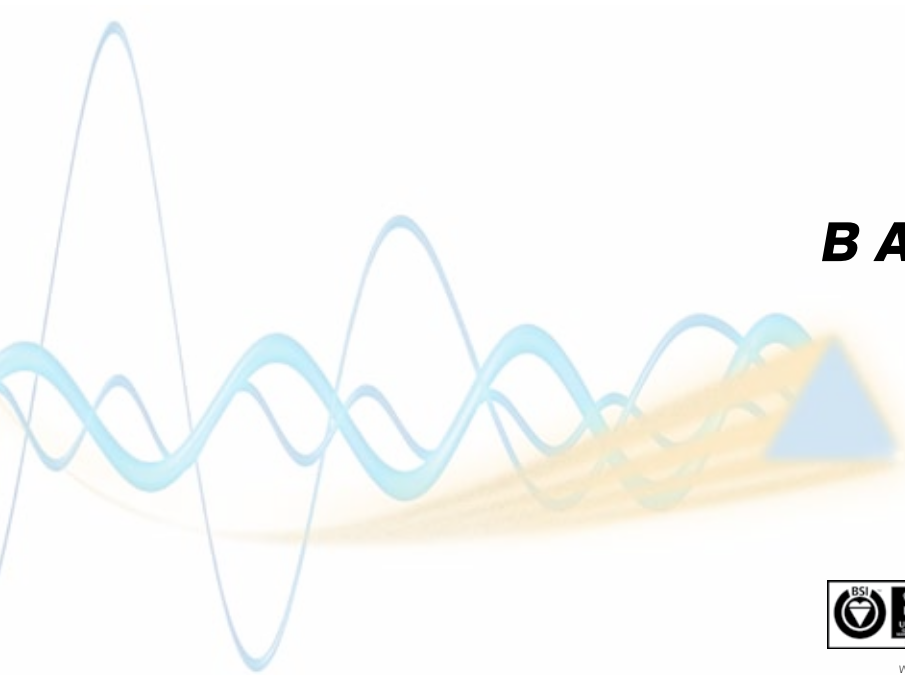
- Load messages.
- Change accessibility codes.
- Fault logging with time and date stamp.
- Create your own configuration settings without being connected to the BVRD2M/4.
- Download configuration settings to store for future use.
- Upload new/modified configuration settings.
- Ability to program any BVRD2M/4 on a network from any one of the BVRD2M/4s within the system

Each Baldwin Boxall rack system that contains a BVRD2M or BVRD2M4 will be supplied with a copy of this software and the system's default settings will be saved as standard.

THE VIGIL2 RANGE:

Products in the VIGIL2 range of voice alarm products include:

- BVRD2M DSP-controlled router.
- BVRD2M4 DSP-controlled router.
- BVRD2S slave unit for BVRD2M/4.
- BVRD2SLT slave unit for BVRD2M/4 (half BVRD2S).
- BVSMPL switch mode power supply.
- BVSMPLT switch mode power supply (half BVSMPL).
- BV440M, BV220, BV120D & BV050Q D-class amplifiers.
- BVRD range of voice alarm control microphones.
- Unitouch touchscreen paging station.



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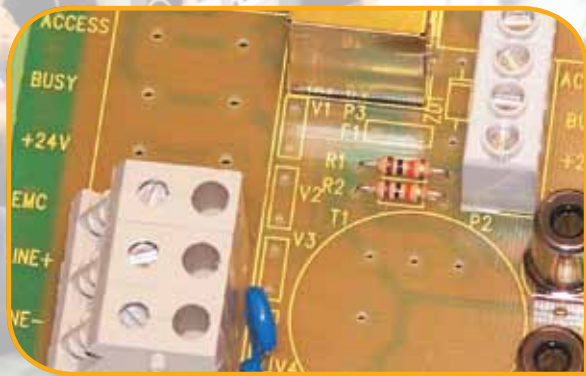
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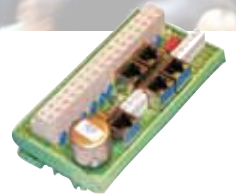


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VOICE ALARM CANBUS & OTHER MODULES

VIGIL Evas



VIGIL EVAS voice evacuation systems provide the solution for many projects, regardless of size, layout or type. The CANBUS modules, which contribute to this flexibility, are listed below:

BVRDACO:

- Amplifier/line monitor.
- 10 x BEL1 line surveillance with earth leakage fault detection.
- 11 x amplifier surveillance (10 with automatic amplifier changeover).
- 1 x RS485 half-duplex port for communicating to control microphones, fire detection systems, network control, fault reporting.

BVRDNCO:

- As BVRDACO without auto-changeover.

BVRDCI:

- 16 x analogue voltage sensing inputs for monitored and unmonitored input access, ambient noise sensors, remote volume controls, etc.
- 4 x volt free changeover relay contacts for busy, etc.
- 8 x NPN open collector outputs 40V @ 100mA.
- 1 x RS485 half-duplex port for communicating to control microphones, fire detection systems, network control, fault reporting.

BVRDFPI:

- Fire panel interface.
- 24 x opto-coupled inputs from fire detection system.
- 1 x common fault volt-free changeover relay contacts.
- 1 x RS485 half-duplex port for communicating to control microphones, fire detection systems, network control, fault reporting.

BVRDADC:

- DC line monitor.

BVRDADIM & BVRDADIS:

- Enables dual loudspeaker circuits to connect to a single amplifier.
- Each BVRDADIS unit provides both A&B circuits for two amplifiers.
- Up to 10 spurs per loudspeaker line.
- The BVRDADIM master unit connects to the BVRD2M router.
- Up to five BVRDADIS can be connected to one BVRDADIM.
- Fitting five BVRDADIS enables broadcast and monitoring for up to twenty loudspeaker circuits. (The modules plug directly together.)
- Utilises DC line monitoring techniques, therefore BEL1 end of line monitoring is not required. (Please refer to 'system requirements'.)
- Failure of either the A or B circuit from one amplifier will not effect the other circuit.
- In the event of an amplifier failure, reserve amplifiers will automatically operate.
- With five BVRDADIS fitted, a one-in-ten amplifier changeover ratio is enabled.
- Earth leakage protection.

System requirements (BVRDADIM/S):

- Maximum of 225W load per loudspeaker line.
- Each loudspeaker requires a 2.2 μ f 250V DC capacitor fitted. Please request from your loudspeaker supplier.
- Each end-of-line loudspeaker requires a 10K 2W (at 1% tolerance) resistor fitted across the line. (Supplied free of charge on request.)

BVRDIF1:

- Auxiliary/music input interface.
- 2 x phono inputs and terminals for line input.

BVRDIF1T:

- BVRDIF1 with isolation transformer fitted.

BVRDIF2:

- Microphone input interface.
- Terminals for standard microphone input (not data), including busy, access, +24V, etc.

BVRDIF2NET:

- BVRDIF2 for networked racks.

BVRDIF3:

- Data microphone input interface.

BVRDIF3NET:

- BVRDIF3 for networked racks.

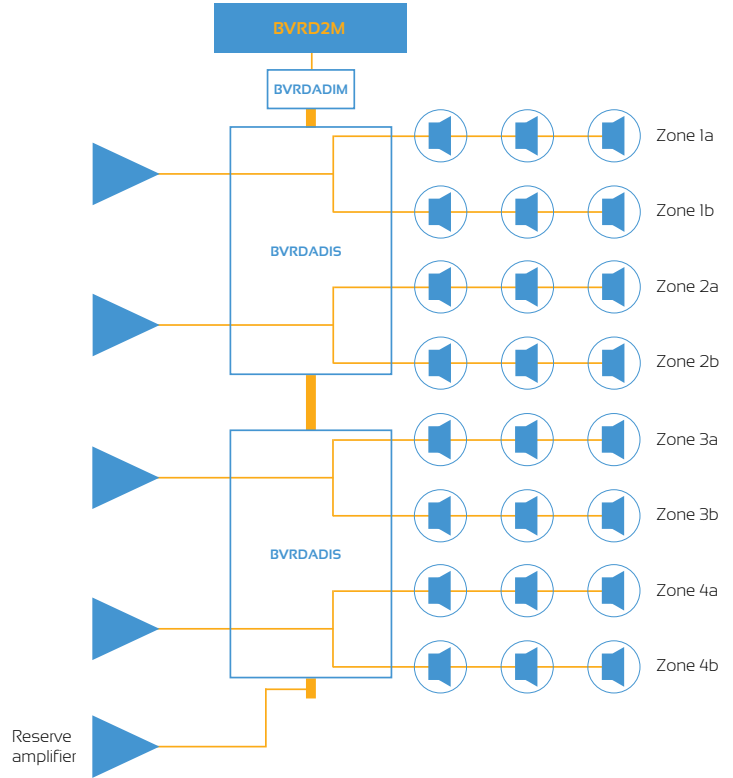
BVRDIF4:

- VIGIL2 amplifier input interface.
- Converts RJ45 to terminals (8).

BVRDP5:

- RJ45 five-way patch board.
- Links data and/or audio racks when adjacent to each other.

BVRDADIM & BVRDADIS - TYPICAL APPLICATION



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VOICE ALARM BRITISH STANDARDS

VIGIL 2

VIGIL2 has been designed and built to meet relevant British Standards. One of these is BS5839-8:2008: Fire detection and fire alarm systems for buildings - code of practice for the design, installation, commissioning and maintenance of voice alarm systems. Below are some disciplines we would like to point out to you:

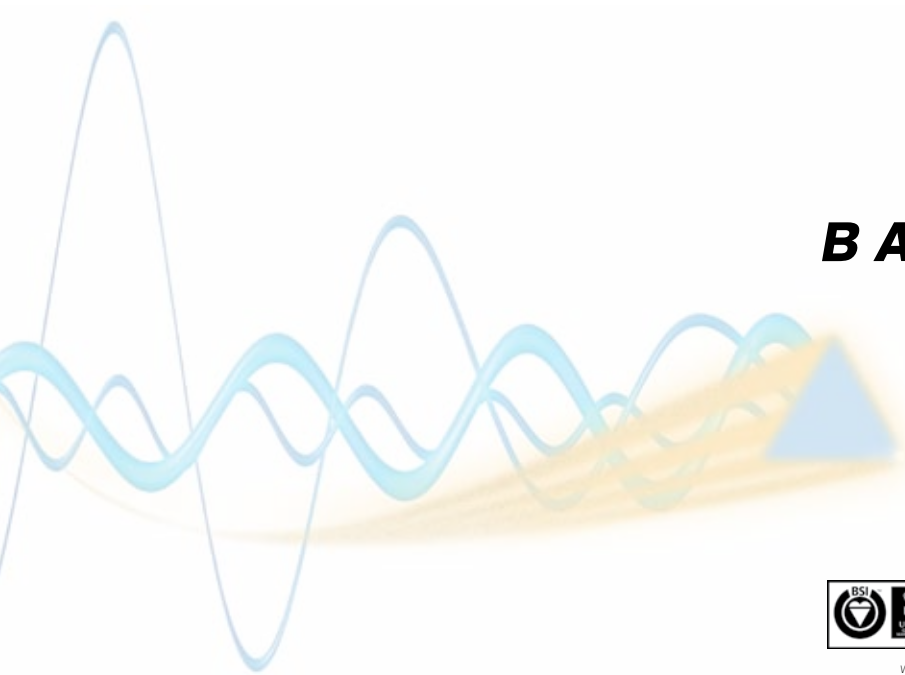
FEATURES:

- At least two interleaved loudspeaker circuits are required in a building. If the building contains an open area greater than 4,000m² OR if the building is designed to accommodate more than 500 members of the public, dual circuits should be used. This achieves suitable coverage should one of the circuits become short or open circuit.
- Cabling for dual circuits must not be contained in one single sheath.
- Where a processor-controlled system is used the following points must be followed:
 - Any system configuration data should have restricted access.
 - Do not use rotary discs (ie computer hard disc) or any other media moving parts.
 - Any processor must be monitored eg 'watchdog'.
 - The network between sub-systems must be monitored in accordance with requirements (12.1)
- The monitoring of the system should include the following:
 - Normal power.
 - Standby power.
 - Battery chargers.
 - Fuses and protective devices.
 - Critical signal paths (see 'definition').
 - Emergency messages.
 - Loudspeaker circuits.
 - Standby amplifiers.
 - Select wires on a multi-zone emergency microphone.
 - All links between a decentralised system.
- Detection of missing modules or amplifiers within the critical signal path.
- Automatic level controllers must be monitored and should failsafe to a pre-determined level, not mute.
- The system should latch the input condition from the fire panel ensuring that if a link is broken the alarm broadcast continues. Reset is achieved by a separate signal from the fire panel.
- After reset the system should be capable of producing a general evacuate broadcast within 30 seconds.
- The fire alarm interface and VACIE must be separated by no greater than 10m, unless duplicate circuits are employed.
- Any fault should be indicated or announced within 100 seconds.
- Reserve amplifiers, if used, must be kept powered up and continuously monitored.
- Standby battery supplies to have capacity for 24 hours quiescent operation followed by 30 minutes all zones evacuate alarm message broadcast.
- 120 minute enhanced fire resisting cables to be used in unsprinklered buildings having a phased evacuation, or buildings over 30m high or where the risk assessment demands.

Definition of 'critical signal paths':

- All components and interconnections between every fire alarm broadcast initiation point and the input terminals on, or within, each loudspeaker enclosure.

NB: This leaflet is a brief summary and our interpretation. Please refer to the official BS5839-8:2008 document for full details.



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