



## Product Description

Designed to extend the low frequency response and increase the headroom of Tannoy VNET full range loudspeakers, the Tannoy VNET15 HL is a compact, versatile horn loaded system with leading edge digital signal processing, network control and dual channel Class D amplifier technologies; all fully integrated to create a versatile networkable sound reinforcement subwoofer. Delivering maximum low frequency impact from a smaller cabinet, the tight and punchy sound adds significant depth, scale and presence to a wide variety of sound reinforcement installations.

The compact dimensions and robust birch plywood enclosure construction ensures application flexibility in static or mobile installs, as well as durability in constant use. The VNET15 HL uses one high efficiency 380mm (15.00") drive unit with a 76mm (3.00") voice coil. Horn loading ensures delivery of high sound pressure levels, with extremely low distortion and power compression, while maintaining a uniform frequency response throughout its dynamic range.

The modular approach of amplifiers, processing, monitoring and driver enables acoustic optimisation for the subwoofer to perform as a unified whole. The intuitive setup software, integrated processing, tuning control, performance diagnostics and protection produces an easy to install and exceptionally high performance networkable loudspeaker. VNET™ supports free network topology so cabinets can be arranged in a daisy chain, linked in a star configuration or in any combination of both. Implementation of the network between nodes is via high quality rugged Neutrik Ethercon connectors, which are compatible with standard RJ45 plugs, and CAT5 cable. Each speaker has a unique address for auto-location on the network.

System commissioning and ongoing venue network control, incorporating real time diagnostics of electronics and drive unit, are all managed by the exclusive VNET™ software package. Supplied with each unit, this intuitive Windows tool controls all of the critical install, commissioning and performance monitoring functions. A standard wireless LAN-to-serial bridge can also be used to communicate with the network, allowing communication with the network from a laptop on 802.11b

Finished in black or white paint, the compact dimensions of the cabinet enable the VNET15 HL to be used, without being obtrusive, in applications as diverse as live sound reinforcement, theme pubs and nightclubs, theatre front of house and effects, movie theatres and cinemas, side fill in large scale music reinforcement, theme parks and leisure venues, sports and multi-use stadiums, audio visual, high quality public address and houses of worship.

The VNET15 BP comes complete with recessed carrying handles for ease of transportation and 10mm flying points provide a quick and secure flying. A blanking plate covers a recess for the optional VTH pole mount.

## VNET™ Network

An RS485 interface is used for the serial data, with a twisted pair to send and receive information to a high number of nodes over very long distances. Operating a shared bus system, so that a single computer can control any node on that bus, also means that status information can be gathered from any of the devices. The RS-485 differential signal is very robust, while its noise immunity and long-distance capability ensure it is one of the most popular communications methods used in industry.

Only data to control setup functions and ongoing system diagnostics is carried over the network. As each VNET™ loudspeaker controls its own DSP functions any unforeseen problem would be isolated to only that particular node and audio will still be delivered.

Speakers are automatically identified on the network software set up screen with factory default names. The name can be edited to reflect their actual location on the network, with physical location confirmation by selecting the 'Flash' function to activate an LED mounted on the front of the loudspeaker.

The loudspeakers are fully calibrated at the factory, avoiding the need to input the correct speaker management settings or any dynamics at the point of install.

## Applications

- Extended bass for VNET full range loudspeakers
- Live sound reinforcement
- High quality public address
- Theme pubs and nightclubs
- Theatre front of house and effects
- Movie theatre and cinema
- Side fill in large-scale music reinforcement
- Theme parks and leisure venues
- Sports and multi-use stadiums
- Audio visual
- Houses of worship

Tannoy United Kingdom  
Tannoy North America  
Tannoy Deutschland  
Tannoy France

T: 00 44 (0) 1236 420199  
T: 00 1 (519) 745 1158  
T: 00 49 (180) 1111 881  
T: 00 33 (0)1 7036 7473

E: enquiries@tannoy.com  
E: inquiries@tannoyna.com  
E: anfragen@tannoy.com  
E: ventes@tannoy.com



# VNET15 HL

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## TECHNICAL SPECIFICATIONS

<b>System</b>	<b>VNET15 HL</b>	
<b>System Type</b>	Subwoofer - Horn loaded	
<b>Frequency Response (-2dB) <sup>(1)</sup></b>	60Hz - 300Hz	
<b>Frequency Range (-10dB) <sup>(1)</sup></b>	48Hz - 400Hz	
<b>Rated Maximum SPL <sup>(2)</sup></b>		
Average	130dB	
Peak	136dB	
<b>Driver Complement</b>	380mm (15.00") bass unit	
<b>Crossover (DSP Generated)</b>	Variable low pass filter	
<b>Distortion</b>		
<b>10% Full Power (17.9V)</b>	2nd Harmonic	3rd Harmonic
40Hz	1.98%	2.01%
100Hz	3.58%	1.46%
<b>1% Full Power (5.6V)</b>	2nd Harmonic	3rd Harmonic
40Hz	1.17%	2.55%
100Hz	3.75%	1.17%
<b>PSU Specifications</b>		
<b>Input Connector</b>	Locking Neutrik Powercon	
<b>Voltage Selection</b>	Automatic (115 / 230V, 45 - 65Hz)	
<b>Type</b>	High current, high frequency switch mode	
<b>Efficiency</b>	>90% typical	
<b>Input voltage</b>	100v / 115v / 230v nominal +/-10%	
<b>Mains fuse</b>	External	
<b>Fuse type</b>	T10AT	
<b>Other features</b>	Automatic soft start	

**Notes:**

- (1) Average over stated bandwidth. Measured at 1 metre on axis.
- (2) Unweighted pink noise input, measured at 1 metre in an anechoic chamber

A full range of measurements, performance data, CLF and Ease™ Data can be downloaded from [www.tannoy.com](http://www.tannoy.com)

Full independent verification of published specifications carried out by NWA Labs, California can also be obtained from the downloads section of [www.tannoy.com](http://www.tannoy.com)

Tannoy operates a policy of continuous research and development. The introduction of new materials or manufacturing methods will always equal or exceed the published specifications, which Tannoy reserves the right to alter without prior notice. Please verify the latest specifications when dealing with critical applications.

<b>Construction</b>			
<b>Enclosure</b>	170 litre internally braced 18mm (0.71") birch plywood		
<b>Finish</b>	Textured black or white paint with custom colours on request Powder coated steel grille - reticulated foam behind		
<b>Connectors</b>	1 x female XLR (input) 1 x male XLR (link) 1 x RJ45 (network in) 1x RJ45 (network link) 1 x Neutrik Powercon		
<b>Controls &amp; Indicators</b>	LED on front of cabinet, behind grille, as wink indicator for locating and assigning to network Power LED (Blue) Signal LED (Green) Limit LED (Red) User DSP - defeat switch Power switch		
<b>Fittings</b>	8 x M10 Flying inserts 2 x Pull back points 2 x recessed carrying handles Blanking plate for optional VTH pole mount		
<b>Dimensions (H x W x D)</b>	578 x 555 x 650mm 22.76 x 21.85 x 25.59"		
<b>Weight</b>	44kg 96.8lb		
<b>Electronics</b>			
<b>Efficiency</b>	>85% typically		
<b>Damping Factor</b>	120 ref 8 Ohms		
<b>Distortion</b>	<0.05% @ 1kHz-3dB output (22kHz bandwidth)		
<b>Input Impedance</b>	5.6 kOhms unbalanced 11.2 kOhms balanced		
<b>Output Power (Programme)</b>	800W		
<b>Input Sensitivity</b>	1.4V (+5.5dBu)		
<b>System Type</b>	Dual channel Class D (Bridged)		

### Ordering Information

PART NUMBER	MODEL NAME	COLOUR	PACKED QUANTITY
8001 3700	VNET15 HL	Black	1
8001 3701	VNET15 HL	White	1

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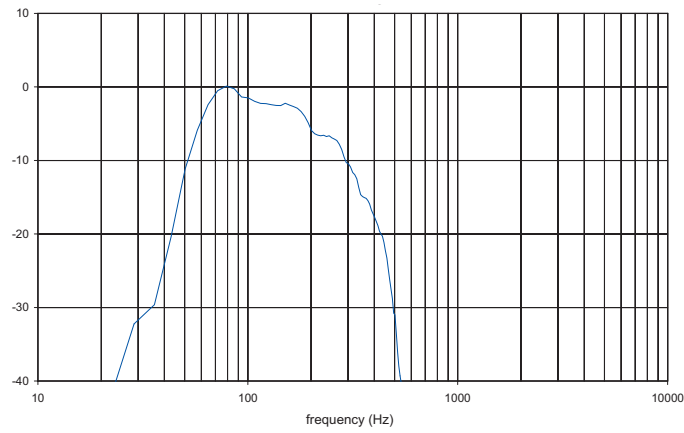
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E: [anfragen@tannoy.com](mailto:anfragen@tannoy.com)  
E: [ventes@tannoy.com](mailto:ventes@tannoy.com)

[tannoy.com](http://tannoy.com)



## PERFORMANCE MEASUREMENTS

1m on-axis frequency response



ANECHOIC  
FREQUENCY  
RESPONSE

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Tannoy France

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T: 00 1 (519) 745 1158  
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E: anfragen@tannoy.com  
E: ventes@tannoy.com

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# VNET15 HL

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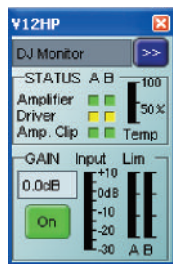
## VNET™ SOFTWARE

### VNET™ SOFTWARE

The loudspeakers are fully calibrated at the factory, avoiding the need to input the correct speaker management settings or dynamics at the point of install. This frees the installer to concentrate instead on room measurement and system optimisation. System commissioning and ongoing venue network control, incorporating real time diagnostics of electronics and drive unit, are all managed by the exclusive VNET™ software package. Supplied with each unit, this intuitive Windows tool controls all of the critical install, commissioning and performance monitoring functions. A standard wireless LAN-to-serial bridge can be used to communicate with the network, allowing the commissioning engineer to sit in the auditorium communicating from a laptop on 802.11b

### MONITORING & TELEMETRY FUNCTIONS

During normal operation the speakers on the network will appear as minimised panels in the form of a status monitor icon (Monicon) on the computer screen. These are laid out to reflect the physical layout of the speakers within the venue so that the user can monitor system status and component condition at a glance. The minimised panels can be expanded to reveal highly detailed information in real time:



- Input clip indicator
- Two output limiter bar graph meter
- Heat sink temperature bar graph meter
- Amplifier clip indicators (HF & LF on full range units)
- Transducer Failure Indicators (HF & LF on full range units)
- Amplifier protect status indicator

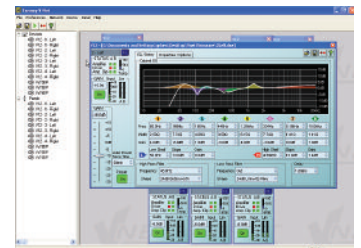
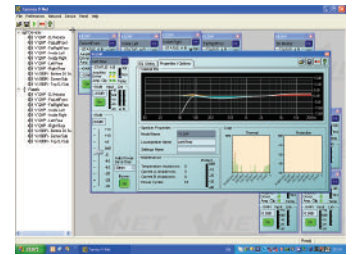
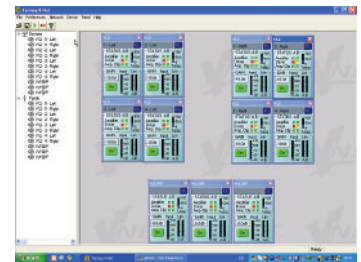
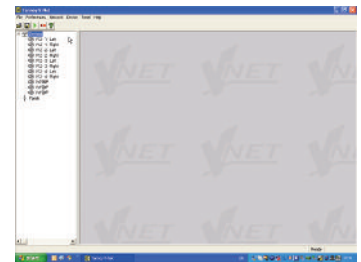
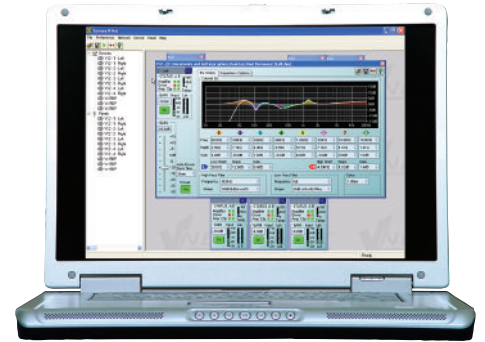
### VNET™ Software Features

The on-screen control panel for each device in the network has a properties tab consisting of the following:

- Model Name is factory set with product model name
- Network Handle (read only) is a numerical value set at the time of manufacture to uniquely identify the device on the network
- Device Name is the specific user defined name, such as 'Stage.Left' or 'Delay 1'
- Firmware Version (read only) is a numerical value of firmware version running in the device
- Configuration Name is the 12 character name the user can define to describe the current settings (such as 'Live Mode')
- Current 'Voice' profile indication (read only) is a numerical value indicating the current speaker 'voicing' profile (the factory set equalization, crossover, & dynamics functions)
- Software file loader in VNET™ allows a future modification to the software to be uploaded, such as a 'voicing' change or revised control software with new features
- Record of any temperature or current shutdowns
- Record of the number of power cycles
- Rolling four day bar graphs recording amplifier temperature and any dynamics applied

### Signal Processing

- Gain Section: input gain fader with edit box (-30 to +15dB in 0.2dB steps)
- Input Mute: On, Off
- High-Pass Filter section: frequency spin / edit box and shape drop-down box
- Low-Pass Filter Section: frequency spin / edit box and shape drop-down box
- Equaliser Section: high resolution input EQ curve display
- Low Shelf Band: frequency spin / edit box, slope spin / edit box and boost-cut / edit box
- High Shelf Band: frequency spin / edit box, slope spin / edit box and boost-cut / edit box
- Parametric EQ Bands (x 8): frequency spin / edit box, slope spin / edit box and boost-cut / edit box
- Delay Section: delay spin / edit box (up to 180ms)



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T: 00 33 (0)1 7036 7473

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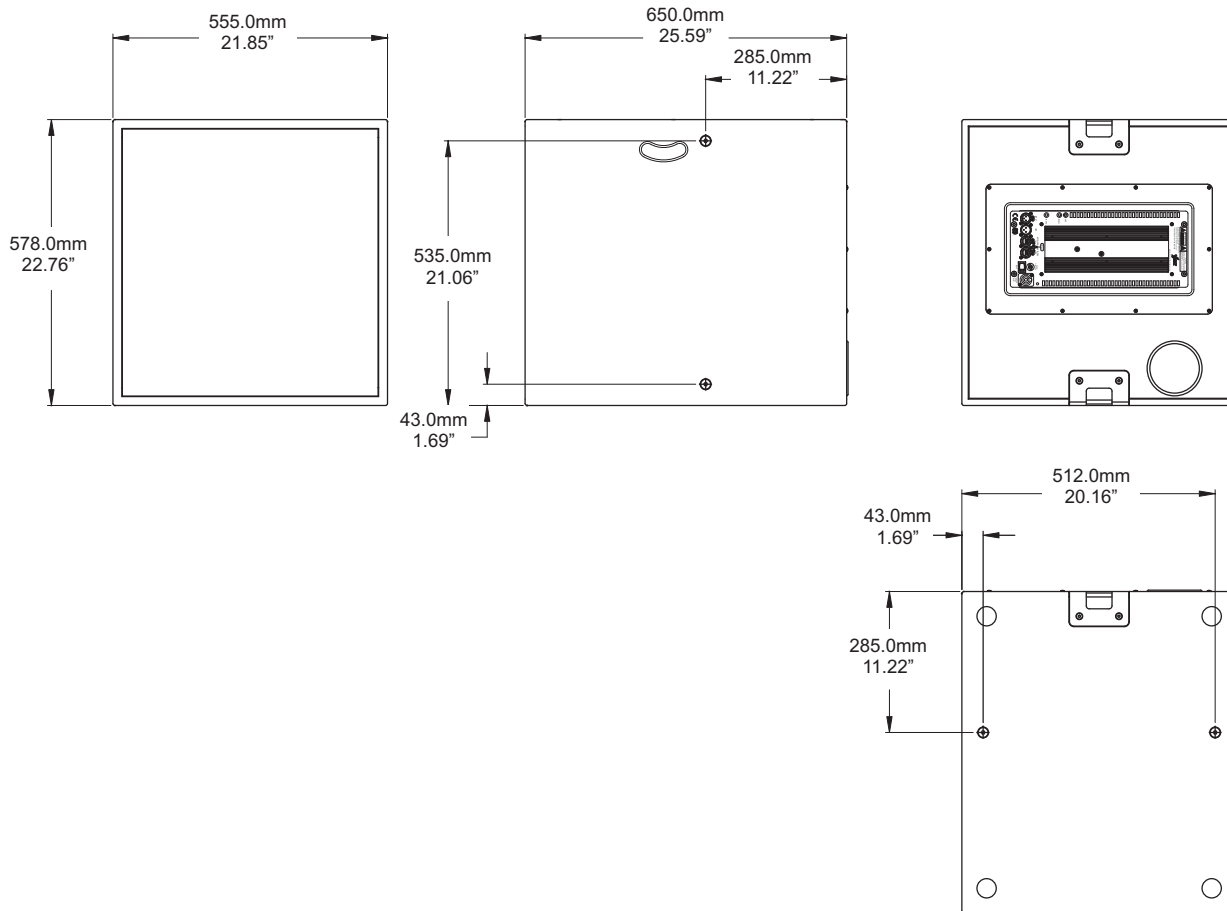
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# VNET15 HL

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## DIMENSIONAL SKETCHES



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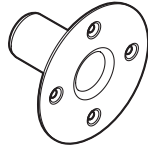
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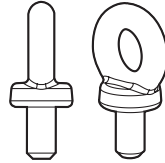
# VNET15 HL

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## MOUNTING OPTIONS DIMENSIONAL SKETCHES



VTH



VEB

### Ordering Information

PART NUMBER	MODEL NAME	COLOUR	PACKED QUANTITY
8001 2820	VEB	-	1
8001 2860	VTH	Black	1
8001 2870	VTH	White	1

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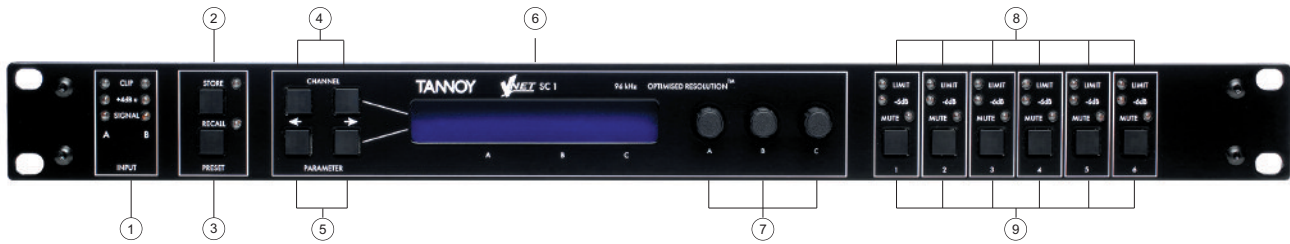
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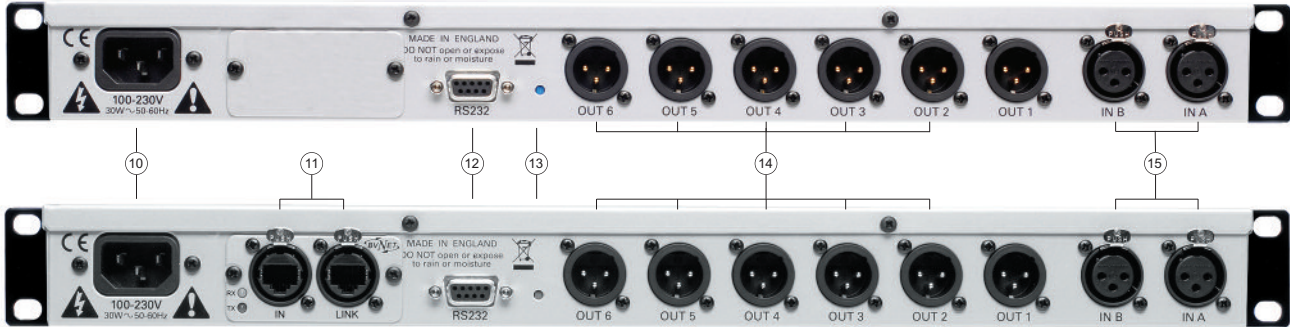
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## VNET SC1 CONTROLLER



### VNET SC1 Controller



### VNET SC1 Controller (network enabled)

#### Front Panel

- ① **INPUT SIGNAL INDICATORS**  
A set of three pairs of LEDs indicate signal present, +4dBu and input clip for each channel.
- ② **STORE BUTTON**  
The unit has 45 preset locations.
- ③ **RECALL BUTTON**  
To recall a preset, press the recall button and use parameter knob A to select the required preset.
- ④ **CHANNEL SELECT BUTTONS**  
The currently selected input or output channel is shown in the top left corner of the display. Pressing the channel select buttons scrolls through the available inputs and outputs.
- ⑤ **EDIT PARAMETER SELECT BUTTON**  
The name of the edit parameter page is displayed in the bottom left portion of the LCD.
- ⑥ **DISPLAY SCREEN**  
Preset, channel, parameter and status information is shown on the 2x 24-character text display. In most screens the currently selected channel is displayed being the upper line and the edit parameter on the lower line.
- ⑦ **PARAMETER EDIT ENCODERS**  
Three velocity sensitive parameter knobs are used to adjust parameters shown on the display. Up to three parameters at a time are displayed on the screen.
- ⑧ **LIMITER INDICATOR**  
Two LEDs are provided for each output channel.
- ⑨ **MUTE BUTTONS**  
Each output has a mute button and associated mute status LED.

#### Rear Panel

- ⑩ **POWER INLET**  
The processor has a switch mode power supply that is capable of operating with a nominal mains voltage of 85V to 240V, 50/60Hz without re-configuration.
- ⑪ **VNET™ NETWORK PORTS**  
The network enabled VNET SC1 controller features two network ports for connection to any VNET™ system.
- ⑫ **COMMUNICATIONS PORT CONNECTOR**  
Tannoy VNET SC1 processors may be controlled entirely from a PC running VNET™ software using this RS232 serial port connector. This port is also used for updating the firmware in the unit.
- ⑬ **SECURE MODE SWITCH**  
A momentary button is fitted behind the rear panel, between the output XLRs and the RS232 port. When activated, this will disable all the front panel controls so they cannot affect the signal path, making the unit secure against tampering.
- ⑭ **AUDIO OUTPUT CONNECTORS**  
The processed outputs are impedance balanced.
- ⑮ **AUDIO INPUT CONNECTORS**  
All audio connections are fully balanced.

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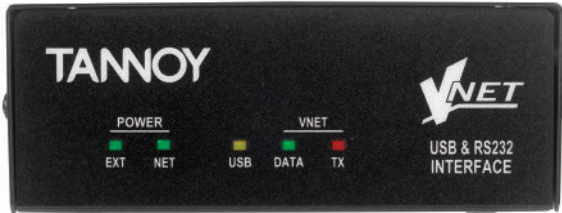
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## OPTIONAL VNET™ USB AND RS232 INTERFACE

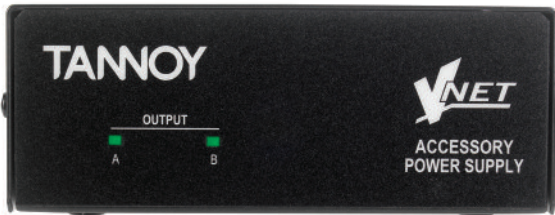
The rack-mountable VNET™ interface allows for communication between a VNET™ network and computer.

If communicating with a non-networked SC1 direct communication via the PC & SC1 can be made with a standard serial lead, or USB-RS232 cable.



## OPTIONAL VNET™ ACCESSORY POWER SUPPLY

The PSU is only required when communication with a VNET™ network is by RS232.



## OPTIONAL RACK MOUNT KIT

This 1U bracket allows you to rack mount up to three VNET™ interface accessories in a standard 19" equipment rack.



## Ordering Information

PART NUMBER	MODEL NAME	BAFFLE / GRILLE COLOUR	PACKED QUANTITY	PACKED WEIGHT
8001 4450	VNET™ USB / RS 232 Interface	Black	1	0.75 (1.65lb)
8001 4460	VNET™ Power Supply Interface	Black	1	0.75 (1.65lb)
8001 4470	VNET™ Interface 1U rack mount kit	Black	1	0.75 (1.65lb)

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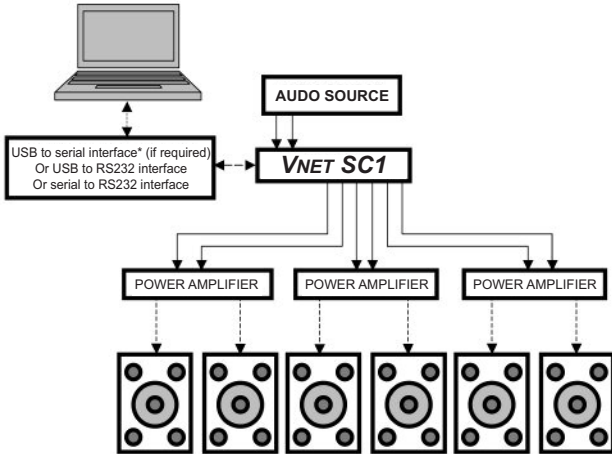
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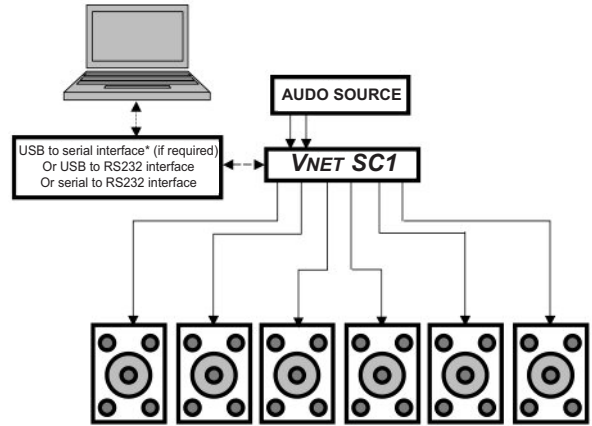
## OPERATION AND SYSTEM CONFIGURATION OPTIONS

### Connecting the VNET SC1

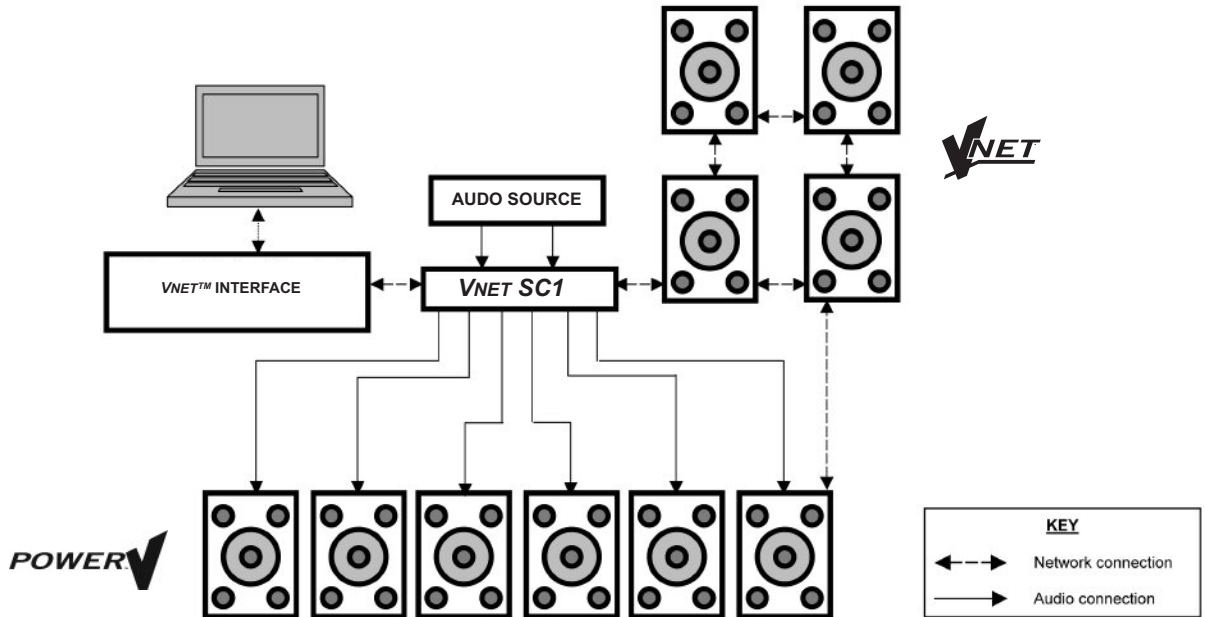
**Example 1:** Using a Tannoy VNET SC1 with a passive loudspeaker system (e.g. Tannoy V-Series™)



**Example 2:** Using a Tannoy VNET SC1 with a powered loudspeaker system (e.g. Tannoy PowerV™)



**Example 3:** Using a network enabled VNET SC1 to combine an existing Tannoy VNET™ system with another loudspeaker system (e.g. Tannoy PowerV)



\* USB to Serial interface allows networking of multiple VNET™ speakers or SC1 controllers



## Architectural specifications

The bass loudspeaker shall consist of a 380mm (15.00") low frequency transducer, driven by an integrated dual channel (bridged) Class D amplifier through a DSP generated variable low pass filter, mounted within a horn loaded enclosure. Performance of the loudspeaker shall meet or exceed the following criteria: Frequency response measured at 1 metre on axis with swept sine wave shall be 60Hz - 300Hz (+/-2dB). Rated SPL shall be 130dB (average) and 136dB (peak) on axis at 1 metre. The enclosure shall be an optimally tuned 170 litre horn loaded enclosure of 18mm (0.71") birch plywood construction finished in a wear resistant textured black paint.

Connectors shall be 1 x female XLR (input), 1 x male XLR (link), 1 x RJ45 (network in), 1 x RJ45 (network link) and 1 x Neutrik Powercon. The speaker shall be fitted with the following controls and indicators: Blue LED behind front grille (for location and assigning of speaker on network), blue power LED, green signal LED, red limit LED, User DSP / DSP defeat switch and a power switch. The enclosure shall be fitted with 8 x integral M10 inserts for flying hardware and 2 x pull back points. There shall be 2 recessed carry handles and blanking plate for an optional pole mount adaptor.

The enclosure shall not exceed the following dimensions: 578 x 555 x 650mm or 22.76 x 21.85 x 25.59 " (H x W x D).

The Tannoy bass loudspeaker shall be the... VNET15 HL

