

VIPEDIA-12



Product Description

- Pro-Sound quality
- Two RJ45 Ethernet IP ports
- 12 analogue audio inputs
- 12 dual A&B analogue audio outputs
- 20dB outputs for intelligent speakers
- Advanced energy management
- 30 minutes of monitored messages
- Hardware bypass microphone ports
- GPIO : 12 inputs and 12 outputs
- Link up to four VIPEDIA-12s to provide a 48 by 48 routing matrix
- Dual redundant routing capability
- EN54-16 compliant

Optional Modules

- NETWORK = Two fibre IP ports plus two RJ45 Ethernet IP ports. Two versions provide a total of 16 or 48 input and output audio channels respectively
- MIX-DSP = Pro-Sound audio mixing
- 2 channels of IP Audio I/O as standard; and up to 48 channels with a NETWORK Module

The VIPEDIA-12 provides 12 analogue audio inputs and 12 outputs, together with two Ethernet IP ports and ASL Intellevac audio networking, all in a 1U unit. Up to four VIPEDIA-12 routers can be linked to provide routing from any or all of their inputs to their outputs in a 48 by 48 matrix, while connecting pairs of VIPEDIA-12s enables dual redundant 'A&B' VA systems to be constructed¹. The 20dB output level enabled intelligent speaker systems to be driven directly.

The audio inputs provide direct RJ45 connections to ASL MPS and EMS microphones, while two of the inputs provide

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all-call hardware bypass operation even if the DSP or CPU has failed. Advanced energy management includes the removal of power from paging microphones during out of office periods and automatically powering down unused functions. The full analogue and digital audio signal path is of Pro-Sound quality with powerful audio functions, including dynamic input processing and individually adjustable digital output delay and parametric equalisation, while the optional MIX-DSP module adds channel mixing functions.

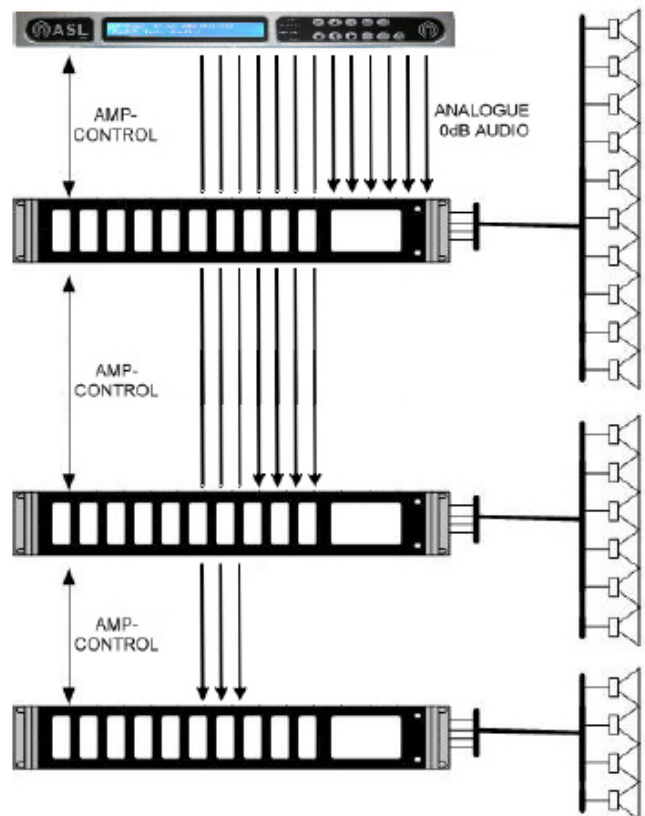
There are 12 selectable GPIO digital / analogue contact inputs, 12 digital outputs, and two relay outputs built in, while BMB01 Remote I/O units can be used to provide additional interfaces. ASL Sample and Hold ANS sensors can be used on analogue contact inputs, while the analogue audio inputs provide Dynamic Ambient Noise Sensor (DANS) connections for up to four sensors². If the MIX-DSP option module is fitted then up to twelve DANS Sensors can be used.

The optional NETWORK modules provide two more RJ45 Ethernet ports, plus two fibre IP ports, and enable both direct fibre IP connection to other VIPEDIA-12 routers in remote locations, and Ethernet connections to local V1000 Voice Alarm Amplifier mainframes within the same equipment rack. These modules also allow the VIPEDIA to act as an IP RS485 terminal server for third party equipment control, which is useful in applications such as Information System display driving.

Implementation options

Analogue Audio Routing Outputs

Use of the standard analogue audio outputs enables integration of the VIPEDIA-12 with ASL V400, X400, or V1000 100V Amplifier Mainframes, or with any other analogue audio amplification equipment including low impedance Pro-Sound amplifiers.



Standard Analogue Audio Amplifier Wiring

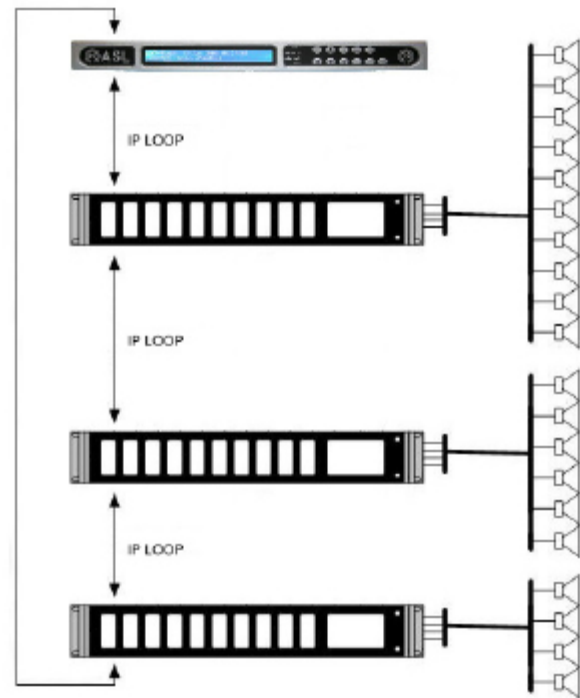
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Direct Digital Amplifier Connection

The RJ45 Ethernet IP interfaces of the optional NETWORK modules enable direct digital drive of the ASL V1000 Amplifier Mainframe using the module's two RJ45 Ethernet ports. This enables a VIPEDIA IP Audio Router to be connected via a single RJ45 patch lead loop connection to up to thirty-two V1000 Voice Alarm mainframes, with up to three hundred and twenty amplifiers, and providing up to sixteen simultaneous broadcasts.

The daisy-chain loop rack wiring connection:

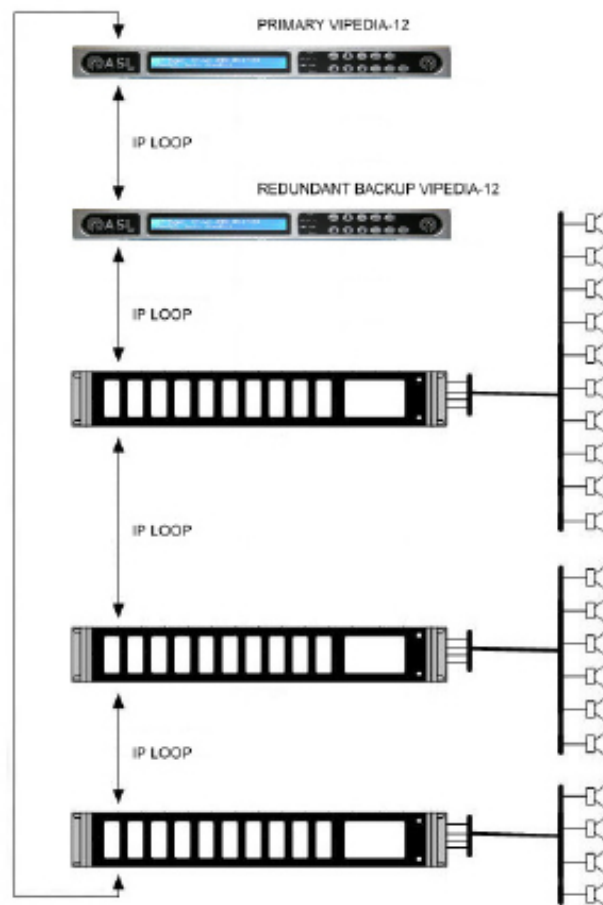
- Simplifies the system wiring
- Reduces rack wiring cost
- Reduces the number of audio routers required
- Provides wiring redundancy
- Gives the option of dual redundant routers



Direct Digital IP Amplifier Wiring

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As well as reducing cost and improving the reliability of rack wiring with a single VIPEDIA-12, the IP amplifier network enables a dual redundant pair of VIPEDIA-12 audio routers to be linked in a redundant IP loop together with the amplifier mainframes. If either of the VIPEDIA-12 routers fails then the other can continue to provide the full system functionality.



Direct Digital IP Amplifier Wiring, with Dual Redundant VIPEDIA-12 Routers

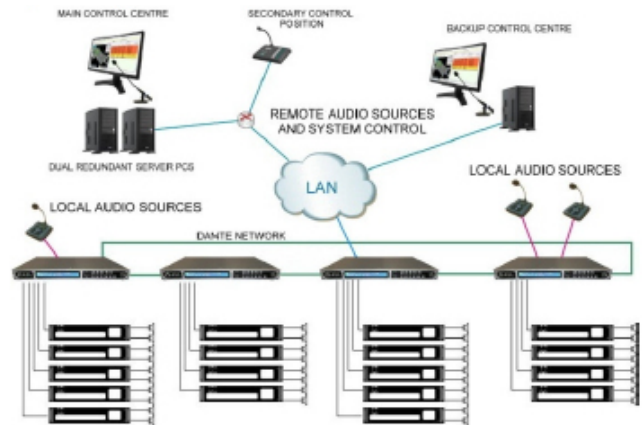
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Distributed IP Networking

As well as local rack IP wiring, the VIPEDIA-12 can be IP networked to provide a large audio matrix across a site, or across a region or country. This functionality is available in the standard unit, with two channels of ASL PMC IP Audio I/O which is intended for use with a single control centre, or in long line PA applications.

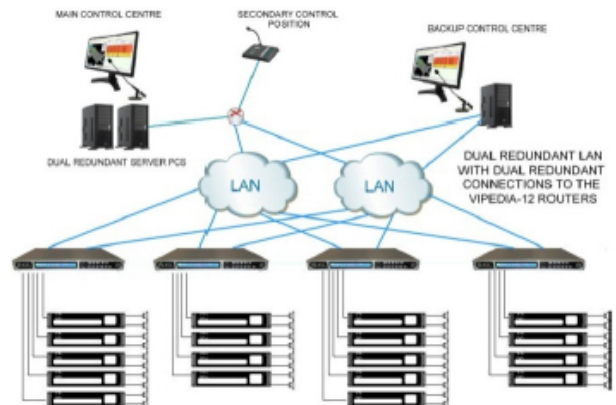
Adding a NETWORK16 module provides sixteen channels of IP Audio I/O shared between the two RJ45 Ethernet ports and the two fibre IP ports. Adding a NETWORK48 module provides sixteen channels of IP audio I/O on the two local rack RJ45 Ethernet ports, plus another thirty two channels of IP audio I/O on the two remote connection fibre IP ports. Both NETWORK modules therefore expand the system functionality to enable large site matrices to be constructed over IP, as well as providing for IP amplifier connection locally.

The VIPEDIA-12 IP connections can be used to connect to third party IP infrastructure, or the fibre interfaces can be connected as a stand-alone EN54 Voice Alarm fibre ring network. IP networked systems can be used either with or without an overall supervisory control system such as ASL's iVENCs.



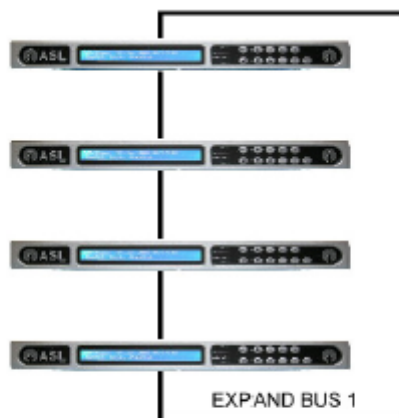
IP Fibre Ring Networking plus PA Workstations

The multiple IP connectivity of the NETWORK module also enables the VIPEDIA-12 to be connected to IP networks using dual redundant LAN connections.



Dual Redundant LAN IP Networking

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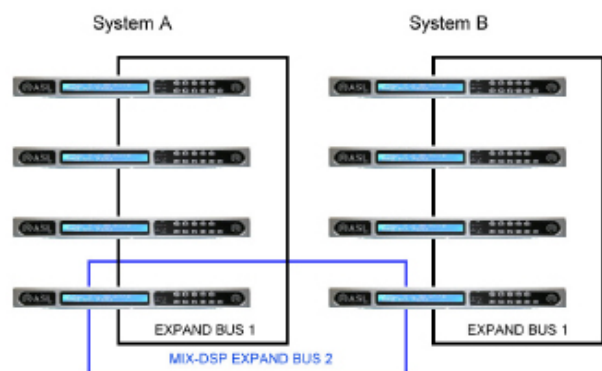
DBB High Speed Digital Bus - 48*48 Router
(Routers only shown,
each VIPEDIA will drive a bank of amplifiers)

DBB High Speed Digital Audio Routing Bus

The built-in DBB High Speed Digital Audio Routing Bus and Ethernet ports link two, three, or four VIPEDIA-12 Audio Routers together, to be seamlessly integrated into a single larger routing matrix. All analogue audio inputs, ANS sensors and other signals which are connected to any one of the VIPEDIA-12 units are available to the whole combined routing system.

The MIX-DSP Module adds a second pair of Expand Bus ports, which enables dual redundant A and B VIPEDIA Router Systems to be constructed.

Together with the IP Interfacing options provided by the VIPEDIA-12 the DBB expansion bus enables one standard routing product to satisfy all demands for both small and very large routing requirements. Thus the simplest single site Voice Alarm system or the most sophisticated stadium PA and Voice Alarm systems can be constructed using the VIPEDIA-12.



DBB High Speed Digital Bus – A&B 48*48 Router
(Routers only shown,
each VIPEDIA will drive a bank of amplifiers)

VIPEDIA-12

General

Power Supply Inputs

Dual 18 to 32V DC
Dual Redundant Power Input Connectors
Dual Redundant and Internal Power Supplies

Current Consumption (max)

2.0A @ 24V DC supply
Plus Audio Input / Mic Ports Peripheral Power Load

Front Panel

LCD Display and Buttons
All EN54-16 Mandatory Controls and Indicators
Fault Reporting & Status Display

Monitored DVA Storage

10 Minutes
Emergency Message and User Chime Storage

uSD Card Expanded DVA Storage

Passenger Information Fragmented Message Storage

Fault Log

200 Events

Real Time Clock

Built In (Synchronised using NMEA0183 RMC GPS Message
or with the ASL iVENCs Control System and a NTP server)

RJ45 Connector Breakouts

Break Out Adaptors Used

BOA01

General Purpose Break Out / Quad Audio Input

Optional Module Summary

NETWORK16 Module

16 channels of IP audio I/O
Dual RJ45 Ethernet ports
Dual Fibre ports
'Audio' Input port RS485 terminal server capability

NETWORK48 Module

48 channels of IP audio I/O
Dual RJ45 Ethernet ports (16 channels)
Dual Fibre ports (32 channels)
'Audio' Input port RS485 terminal server capability

MIX-DSP Module

40 x 16 input mixers
VIPEDIA-12 expansion unit connectivity
Dual redundancy capability
Dynamic ANS capability on all Audio Inputs

VIPEDIA-12

Communication Interfaces

IP Network Connectivity

Standard VIPEDIA

2 100baseT Ethernet RJ45 Ports

NETWORK Modules

2 RJ45 Ports and 2 Mini-GBIC Ports
Support Spanning Tree Redundant Networking
Enable Stand Alone Fibre VA Ring Networking
Enable Direct Drive Digital IP amplifier connectiond

ASL iVENCs Control System Integration

VIPA
Event and Fault List
Fault Acknowledgement and Clearing

Third Party Control System Integration

SDK & SNMP
SNMP V2c Fault and Status Reporting

Third Party Peripheral Integration

MODBUS over IP
Event and Fault List, and Control

Front Panel USB OTG Port

1 DVA Download & Laptop Configuration Port

Rear Panel USB A' Port

1 USB Peripheral Connection Port (Not Yet Available)

RS232 Host Port

1 Legacy Control & PC/DVA Port
GPS Clock Synchronisation using NMEA0183 Protocol

RS485 Expansion Port

1 Supports up to 9 BMB01 Remote I/O Expansion Units

AMP-CONTROL (Audio-CAN) Port

1 Supports up to 64 ASL Amplifier Mainframes
Provides Amplifier 100V Output Listen In Feature

ASL Intellevac Network

Via Intellevac BOA

IP Audio Inputs and Outputs

Audio I/O Channels – IP

Simultaneous IP Audio Matrix Inputs and Outputs

Standard VIPEDIA

2 in, 2 out

With NETWORK16 Module

16 in, 16 out

With NETWORK48 Module

48 in, 48 out total

IP Audio Protocol

Standard

ASL PMC

With NETWORK Option Module

PMC, SIP & G7.11
Input = IP Telephone Compatibility
Output = IP Audio Recorder Compatibility

IP Direct Drive Digital Amplifier Connection

Max. No. of V1000 Voice Alarm mainframes

32 (Requires V1000 amplifiers with IP Interface)

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Max. No. of amplifiers

320

Max. No. of different simultaneous broadcasts.

16

High Speed Digital Expansion Bus

DBB Expand Bus Ports**Standard VIPEDIA**

2 ports (Looped In and Out)

With MIX-DSP Module

4 ports (Two In and Out pairs)

Audio Routing Expansion**Standard VIPEDIA**

Up to Four Linked Routers

Up to a 48*48 A & B output Audio Router

With MIX-DSP Module

A and B Routers

Up to a 48*48 A & B Dual Redundant Audio Router

General Purpose I/O Interfaces

Combined digital and analogue contact inputs

12

PA routing / fault inputs / ANS inputs / SCADA status inputs

Opto-isolated digital / 0V referenced analogue

Digital contact outputs

12 open collector

PA zone busy / fault outputs / SCADA control outputs

BMB01 Remote I/O Unit RS485 Interfaces

1 Connectivity for up to six BMB01 remote I/O units

Flexible logic and timing unit

AND/OR/NAND/NOR/etc

Relays (With N/O, C/O, N/C connections)

2 Configurable Operation

High Priority VA Fault / Low Priority Fault / Voice Alarm

Status

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Green Power Efficiency Features

Internal power reduction capability

Internal Power Rails
Internal Power Supply Voltages dynamically controlled
Voltages reduced in response to low power load
Voice Alarm Battery operation power reduction

Microphone power shutdown capability

All 12 Input Ports
Voice Alarm Battery operation power reduction
Night time / out of hours power reduction

Noise Control Features

Sample and Hold Ambient Noise Sensors

ANS
Connection Using Analogue GPIO Ports

Dynamic Ambient Noise Sensors

DANS
Connection Using Analogue Audio Input Ports

Standard VIPEDIA

Up to 4 DANS Sensors
Each Sensor uses one Audio Input and Output Channel

MIX-DSP Module

Up to 12 DANS Sensors
Each Sensor uses one Audio Input Channel
All 12 Analogue Audio Output Channels still available

Night Volume Control

On all inputs and outputs

Maintenance Support

Front Panel LCD Display and Buttons

EN54 Access Level Control
Fault Reporting & Status Display
Initial System Setup Parameters
Audio Monitoring
Routing and I/O status display
Built-In Audio test tones
Fault Buzzer
Fault Acknowledgement and Clearing

Built-In Audio Test Tones

Front Panel Control
Sine wave (20 Hz to 20 kHz)
Pink noise
White noise
Speech shaped noise

Front Panel USB OTG Port

DVA Message Download
Laptop Configuration Port
Event Log Download

Rear Panel uSD Card

DVA Message Storage
Event and Fault Log Download
Software Update

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Standards

EMC

EN55103-1: 1996 / EN55103-2: 1996 / EN50121-4: 2000 /
ENV50204:1994 / EN50130-4:1996 / EN 61000-6-3:2001

Voice Alarm

BS EN 54-16 / ISO7240-16 / BS5839 Pt 8 / PrEN50849 /
ISO7240-19 / BS7827

Audio Performance

Audio - General

Digital Audio I/O

24 bits 48 kHz

Internal and Expansion Bus

32 bits floating point

THD Input to Output

<0.01% @1 kHz

Crosstalk

>70 dB @1 kHz

Residual Noise

<90 dBu (A)

Frequency Response

20Hz to 20kHz +/- 0.5dB

Metering Points

32

Audio Input Channels - Analogue

Input Sensitivity

0 / -20 / -40 / -60 dBu

Input Overload

+20 dB

Input Trim

+10 to -90 dB (1 dB steps)

Mute

Click free

Surveillance Tone Detection

Frequency Range

20 Hz-30 Hz

Level

-64 to 0 dB

Switchable High-Pass Filter

20 - 500 Hz / 12 dB/oct

4 band parametric EQ / Gate / Compressor / Peak Limiter

All with settable parameters & on/off bypass switch

Chime Generator

OFF / 1-note / 2-note / 3-note / Custom

Custom Chime uses user downloaded wav file

Audio Output Channels - Analogue

Nominal Output Level

0 dBu

VIPEDIA-12

Maximum Output Level

+20 dBu
Provides Intelligent Speaker (Intellevox) Output Drive

Output Impedance

200 W

Mixing

Up to 16 simultaneous input sources
With MIX-DSP Module

Master Level

+10 to -90 dB (1 dB steps)

Night Volume Control

All outputs

Output Mute

Click free

Delay

1 ms – 1000 ms (1ms steps)

10 band parametric EQ

With settable parameters & on/off bypass switch

Hard Limiter

2 - 20 dBu

LF Surveillance Tone Generator

30 Hz / 10 to -60 dBu

HF Surveillance Tone Generator

20 kHz / 10 to -60 dBu

Intellevox Surveillance Tone

23 kHz / 10 to -60 dBu

Ambient Noise Sensing Gain Adjustment

-40 to 0 dB

Induction Loop EQ Support

All outputs

Environmental

Temperature Range

Storage

-20°C to +55°C

Operating

-10°C to +55°C

Humidity Range

0% to 95% non-condensing

Ingress Protection

IP30

Dimensions and Weight

Dimensions

42mm (H) x 436mm (W) x 260mm (D)
(Excluding handles)
1U height, 19" rack mount

Weight

3.75 kg

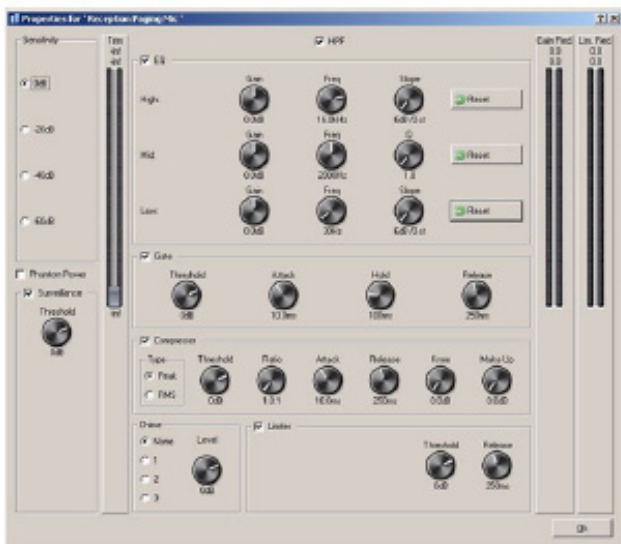
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REAR PANEL AND CONNECTIONS



Configuration Tool

The VIPEDIA-12 Configuration Tool Software allows setup of all of the unit's parameters from a Graphical User Interface. When connected to a VIPEDIA-12 for live commissioning this GUI includes appropriate displays of live data, such as audio input and output signal level bargraphs.



Audio Input Configuration screen

Product Part Numbers

VIPEDIA-12

Pro Sound IP Audio Voice Alarm Router

Option Part Number Suffixes

-NETWORK16

NETWORK16 Module fitted

-NETWORK48

NETWORK48 Module fitted

-DSP

MIX-DSP Module fitted

BOA01

General Purpose RJ45 Break Out Adaptor



Audio Output Configuration screen