The 6416dio Digital I/O Module provides sixteen channels of digital inputs and outputs to and from a Pro64® A-Net® audio network in a single 2U package, using the AES3 format. With exceptional clock performance, the 6416dio meets the needs of digital console and workstation users in a range of applications.

The input and output sections of the 6416dio module can be independently configured to operate within a specified 16-channel A-Net Slot range for maximum versatility. Input and output port assignments for Manual Mode are also independently configurable. Each channel of a 6416dio can be made active on the Pro64 audio network as needed.

The 6416dio supports all valid Pro64 system sample rates, from 44.1/48kHz± to 192kHz±. Regardless of the sample rate of incoming digital audio, no sample rate converters are used, guaranteeing pristine distribution of the digital signal without perceptible latency. The 6416dio can clock to the module's internal clock, the distributed network clock, an AES3 digital input, or an external Word Clock. The selected clock is output locally through Word Clock Out, as well as embedded in the AES3 outputs. If the 6416dio is the Pro64 network Clock Master, the selected clock is also distributed throughout the Pro64 network over A-Net, using Aviom's revolutionary clock dejitter algorithms.

The 6416dio is available with either BNC or DB25 multipin connectors for audio I/O. DB25 connectors for both the Digidesign®/Tascam® and Yamaha® compatible pinouts are provided.

The 6416dio also includes I/O for Aviom's innovative Virtual Data Cables™. The VDCs can be used for simultaneously distributing up to 14 channels of non-audio control data to any device on the Pro64 network. The 6416dio provides VDC connectors for RS-232 or RS-422, as well as GPIO.

The 6416dio is compatible with all Pro64 Series products, allowing sophisticated audio networking systems to be designed, scaled, and expanded as needed.

PRODUCT HIGHLIGHTS

- *16 AES3 digital inputs*

- *16 AES3 digital outputs*

- *Meets or exceeds the AES3 specifications for Input Level, Jitter Tolerance, Common Mode Rejection, and Jitter Gain*

- *Flexible clocking without sample rate converters: 48kHz±, 96kHz±, 192kHz±*

- *External clock via AES3 or Word Clock*

- *Individual channel activation switches*

- *Optional backup DC power*

- *Virtual Data Cable connectivity for GPIO and RS-232/RS-422*

- *Available with DB25 or BNC connectors for audio I/O*

TECHNICAL SPECIFICATIONS

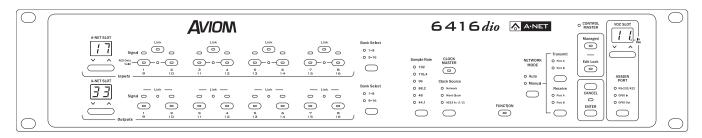| Digital Audio I/O	16 inputs, 16 outputs	AES3
	DB25 version: Digidesign®/Tascam® and Yamaha® compatible pinouts provided	
	BNC version: AES3id format (16 BNCs)	
Clock Sources	Internal or external (via AES3 in or Word Clock)	
	External Word Clock I/O: BNC (x2)	
Word Clock Input	Sensitivity: 0.2 to 5Vp-p	
	Impedance: 75 ohms/70k ohms selectable	
Jitter Attenuation	Well below AES3 Jitter Transfer Function Mask	
Sample Rates	1x: 39.7–52kHz; 2x: 79.4–104kHz; 4x: 158.8–208kHz	24-bit resolution
Latency	Digital input to digital output, through the Pro64 network: <460 µs	
A-Net	2 EtherCon® RJ45 connectors	

A-Net Cable Length	400 feet (120 meters) between devices	
Virtual Data Cables	RS-232/RS-422 DB9 connector; DIP switch configuration	
	GPIO In (x4), Out (x4); terminal block connectors; DIP switch configuration; TTL or isolated	
Power Supply	100–240VAC	50–60Hz, 24W
	Internal switching type; IEC connector	
Backup DC Power Inlet	24VDC, 0.8 amp typical, 1.3 amp max. 4-pin XLR (Pin 1: GND; Pin 4: 24VDC)	
Max. Ambient Temp.	50°C	
Dimensions	2U; 19"w x 8"d x 3.5"h (482.6 x 203 x 88 mm)	
Weight	9 pounds (4.1 kg)	

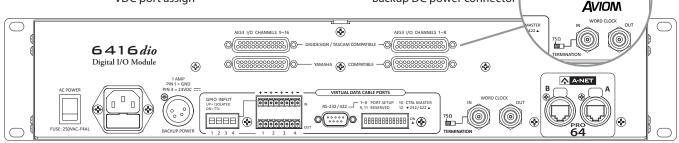*All Aviom products are designed and manufactured in the USA.*
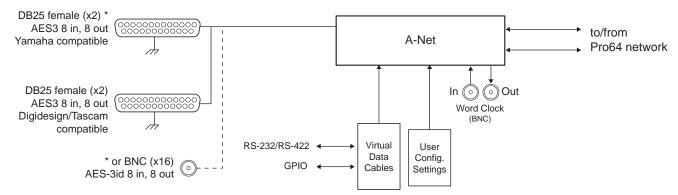
▲ FRONT PANEL FEATURES

- A-Net Slot and mode select
- Signal Present and Data Valid LEDs
- Channel activation buttons with LEDs
- Sample rate and clock source select
- Edit Lock
- VDC port assign

▼ REAR PANEL FEATURES

- DB25 (shown) or BNC AES3 connectors (inset)
- VDC I/O for RS-232/RS-422 and GPIO
- VDC port configuration switches
- Word Clock in and out
- Dual A-Net ports
- Backup DC power connector

6416dio BLOCK DIAGRAM

ARCHITECTURAL SPECIFICATION

The Aviom 6416dio Digital I/O Module shall provide sixteen channels of AES3 digital audio inputs and outputs. It shall provide full-bandwidth audio by employing the Aviom A-Net® audio transmission protocol. It shall operate in sample rates from 39.7kHz to 52kHz, 79.4kHz to 104kHz, and 158.8kHz to 208 kHz.

Input channel features shall include a channel activation button with LED indicator and an AES Data Valid LED. Each pair of channels shall have a lighted stereo link button. Output channel features shall include a channel on/off button with LED indicator. Each pair of channels shall have a stereo link LED indicator.

Network interface controls shall include A-Net transmit/receive mode, A-Net Slot assign, Sample Rate selection, Managed Mode, VDC I/O interface, and Cancel and Enter buttons.

The device shall be able to provide Master Clock or to derive its clock source from the A-Net network, external Word Clock, or AES3 input. BNC connectors shall be supplied on the rear panel for Word Clock Input and Word Clock Output. The device shall supply Word Clock at its Word Clock output.

It shall employ DB25 or BNC connectors for digital AES3 I/O connections. It shall employ Aviom's Virtual Data Cable™ technology with GPIO (terminal blocks x4) with isolated or TTL operation selectable via DIP switch, and RS-232/RS-422 (DB9 connector) configured via DIP switch.

The unit shall be powered from an internal universal power supply (110 to 240VAC) with an AC power receptacle with fuse, and be supplied with a detachable AC cable. The unit shall alternatively be powered by external DC power through a four-pin XLR connector. It shall be UL and CE listed. The unit shall have EtherCon® RJ45 connectors for the A-Net digital signal connections.

Its dimensions shall be 19 inches wide, 8 inches deep, and 2U (3.5") high. Its net weight shall be 9 pounds, and its front panel shall be finished in blue. The unit shall be Aviom Incorporated model 6416dio.