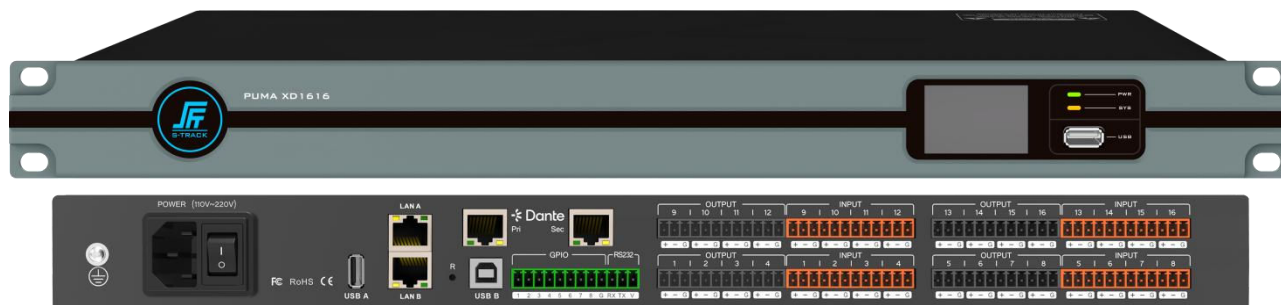# PUMA XD1616
Digital Signal Processor

Product Introduction

This is a powerful and flexible open architecture Digital Signal Processor, the series adopts a new ID design, light vitality and line sense is our design style. The hardware utilizes board-based design, equipped with ADI 40-bit high-speed floating-point DSP chip, high-performance A/D, D/A chip, with the underlying Linux operating system, and advanced DSP processing technology, which gives play to the powerful audio processing capability of ADI chip. The front panel comes with a high-definition color screen, which can display the device name and IP address of this machine to help users quickly connect to the control software.

The control software adopts a new UI design, light vitality and line sense is our design style. The software uses modular, algorithmic modular design, through the open signal flow design, drag-and-drop algorithmic modules, flexible with the functional design, able to freely build algorithmic function modules, free design of the operating logic, mainly used in large-scale conferences, stadiums, multi-purpose halls, command centers, auditoriums, etc. sound reinforcement, to achieve customized services.

128 Dante network audio channels provide high bandwidth, low latency, high compatibility and low cost solution for network audio transmission.

Through our hardware and software R & D capabilities, we provide rich audio algorithms that infinitely increase the degree of freedom and imagination, and these capabilities will be reflected in the continuous upgrading and iteration of the product.

Product Features

➢ Highly integrated, integrating a variety of traditional Analog audio processing equipment in a Digital Signal Processor;

➢ High-performance 40-bit floating-point DSP processor, all-digital processing, fast response to AGC (Automatic Gain Control), ANC (Ambient Noise Compensator), AM (Automatic Mixer), AFC (Acoustic Notch Feedback Controller), AEC (Acoustic Echo Canceler) and other audio processing;

➢ Analog input channels and 16 Analog output channels, very small distortion and ultra-low background noise;

➢ Rich interface expansion;

➢ Humanization, graphical, intuitive and easy-to-operate control software interface;

➢ Comprehensive matrix mixing;

➢ Scene storage is different from the Analog equipment is one of the most practical and significant features, can store many complete scenes, all the scenes can be exported to an external storage device for storage backup, so that the later call at any time.

Functions

✧ Advanced and reliable hardware: Analog Devices high performance DSP Sharc21569 + NXP i.MX ARM processor;

✧ Supports 64×64 Dante network audio channels (AES67 compatible);

✧ Open signal flow design, do whatever you want to do;

✧ Visualized user control interface design, easily meet customer needs;

✧ Built-in USB sound card;

✧ Support any signal real-time monitoring, debugging is no longer blind;

✧ Display IP address & device name, no more worries about not finding the device;

✧ Built-in all the required software, no more lost CD trouble;

✧ Highly optimized DSP, worry-free processing up to 3400 equalization bands;

✧ 4 independent feedback elimination, 2 independent echo cancellation;

- ✧ Open Websocket protocol control, easy cloud platform integration, support for RS232, UDP center control control;

- ✧ Independent dual control network port, easy network backup;

- ✧ Dual Gigabit Ethernet ports, network audio transmission can be redundant backup;

- ✧ Built-in Parametric Equalizer, Graphic Equalizer, FIR High Pass Filter, Band Pass, Expander, Compressor, Noise Gate, Peak Limiter, Priority Ducker, Multifunctional Mixer, Delay, AEC, AFC and so on;

- ✧ Support USB recording and playback function, playback and recording path selectable, recording storage space real-time display;

- ✧ Support audio dynamic level real-time feedback;

- ✧ Support real-time analysis of signal spectrum of each channel.

Specification

Input	
Analog Input Channels	Mic/Line 16
Dante Input channels	64
Input Frequency Response	20Hz～20KHz@+18dBu, ±0.2dB 50Hz～20KHz@+18dBu, ±0.1dB
Input THD+N	@ +18dBu Sensitivity & +8dBu Input < 0.003%
Input Equivalent Input Noise	(Unweighted 20Hz-20kHz) < -125dB
Inputs Crosstalk @1kHz	>110dB typical, 100dB max
Input Dynamic Range	@ +18dBu Sensitivity > 110 dB
Input Common Mode Noise Rejection	@ +18dBu Sensitivity 60dB
Input Impedance (Balanced)	2.4kΩ nominal
Input Sensitivity Range (3dB)	-39dBu ~ +18dBu

Phantom Power	+48V DC, input current max 10mA
Sampling Rate	48KHz
AD/DA Conversion	24-bit

Output

Analog Output Channels	16
Dante Output channels	64
Frequency Response	20Hz-20KHz @ all environments, ±0.2dB
THD+N	0.003%, +18dBu max output level
Outputs Crosstalk @ 1kHz	>100dB typical, 90dB maximum
Output Dynamic Range	>108dB
Output Impedance (Balanced)	100Ω
Output Level Range	18dBu/4dBu

USB

USB A	32bit float
Channels	2×2
Sample rate	48KHz

Others

Display	Displays the device IP address and device name
Noise Floor	-90dBu
Power	35W (Nominal power), 65W (Maximum power)
Power Supply	AC 100V～240V, 50Hz/60Hz

Operating Temperature	0-40℃
Operating Humidity	10%～90%RH, No condensation
Product Weight	2.5kg
Product Dimensions (LWH)	482.4mm×260.5mm×44mm
Package Weight	3.2kg
Package Dimensions (LWH)	590mm×430mm×110mm