

Reference Quality Dante Audio Interface

# PLANET 22C

## User's Guide



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**[www.esi-audio.com](http://www.esi-audio.com)**

## 1. Introduction

planet 22c is an extremely compact interface box that provides 2 analog input and 2 analog output channels at pristine reference audio quality in a Dante IP audio network.

The lightweight and sturdy I/O solution is equipped with ultra high quality 24-bit / 96kHz analog-to-digital and digital-to-analog converters. Supporting balanced line audio signals with home (-10dBV) and professional (+4dBu) signal levels, it works as an ideal interface wherever high quality audio is needed within the Dante network.

This makes planet 22c ideal to interface any analog equipment such as a traditional mixer, studio monitors or PA speakers, synthesizers or other electronic instruments and much more with the Dante world. The linear frequency response and excellent audio quality even makes planet 22c ideal for audio measurement purposes.

One of the best features is that it can be powered not only via the included 12V DC power adapter but also directly from the Ethernet cable as a PoE (Power over Ethernet) device. This is perfect when using it in a remote location.

It can also be integrated into a modern music studio when using the optional Dante Virtual Soundcard (DVS) software for PC or Mac which makes it compatible with any modern DAW.

## 2. Hardware

The front and rear panel of the planet 22c hardware has these main features:



1. **balanced left channel 1/4" TRS input** with two LEDs indicating an active signal and a possible signal peak level.
2. **balanced right channel 1/4" TRS input** with two LEDs indicating an active signal and a possible signal peak level.
3. **balanced left channel 1/4" TRS output** with LED indicating an active signal.
4. **balanced right channel 1/4" TRS output** with LED indicating an active signal.
5. **RJ45 network connector** to connect planet 22c to the Dante network with embedded network status LEDs.
6. **12V DC power connector** that connects to the included DC power supply. If planet 22c is not powered via the network cable (PoE operation), a power supply must be connected here.
7. **power LED** that shows if planet 22c is operating.
8. **signal level switch for the output signals** that allows you to define if the output level is set to a reference voltage of -10dBV (common for home and HiFi audio equipment) or +4dBu (common for professional studio equipment).

9. **signal level switch for the input signals** that allows you to define if the input level is set to a reference voltage of -10dBV (common for home and HiFi audio equipment) or +4dBu (common for professional studio equipment).

### 3. Connection / Usage

Before using planet 22c, you need to decide if you use the included 12V DC power supply or if you can provide power via the network cable (PoE). For PoE operation either a PoE switch that supplies power via the network cable or a so-called PoE injector is in between network cables is required.

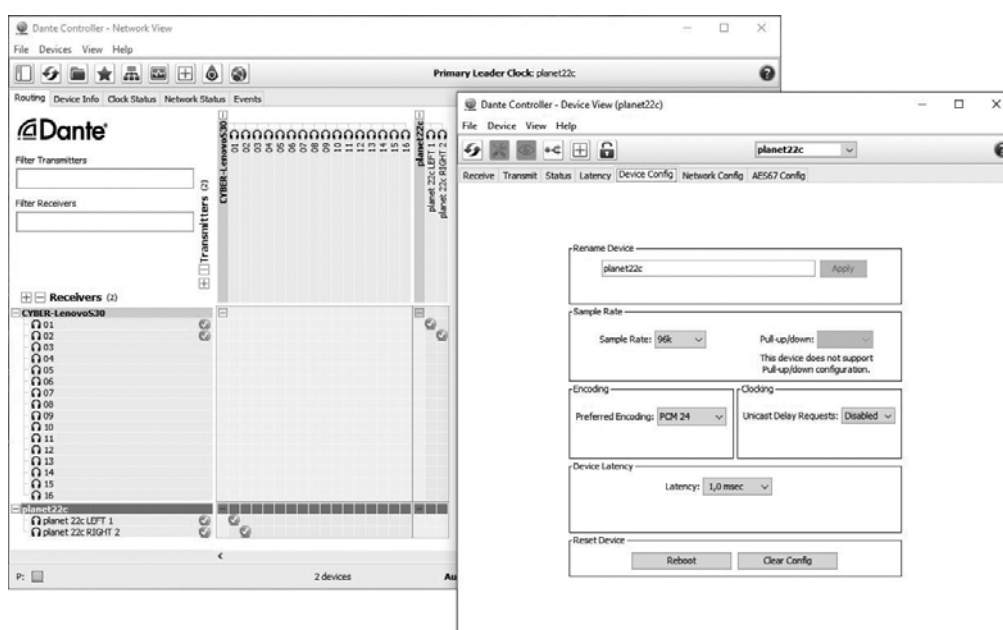
planet 22c can convert analog audio signals to a digital signal on the Dante network. A typical usage would be the output of a microphone preamp or an analog mixing desk or a synthesizer or any other device. Verify the signal levels your audio device works with, adjust the input signal level switch accordingly and connect the audio cables. Within the Dante network these signals then can be routed to any destination, i.e. to a digital mixing console or the DVS software.

planet 22c can also convert digital signals from the Dante network to analog audio signals. A typical usage would be to send signals to a pair of studio monitors or to a power amplifier. Double check the input level of your audio device and adjust the output signal level switch accordingly when you connect the audio cables. From the Dante network these signals can be sent from any source, i.e. from a digital mixing console or a computer using the DVS software.

Both operations (converting analog to digital and converting digital to analog) can be performed simultaneously.

### 4. Dante Controller software

The Dante Controller software is a free software from Audinate for Mac and PC that allows you to configure the routing of audio signals between all devices on the Dante network. It automatically detects any Dante compatible device and provides options to label channels and change the routing with a few simple clicks.



The software is available for download via the Audinate website [www.audinate.com](http://www.audinate.com).

## 5. Specifications

### Analog Inputs

- ADC: BurrBrown PCM1804DB 24-bit Stereo
- Connector: 2x 6.3mm / 1/4" fully balanced TRS
- Maximum Input Level: +6dBV (-10dBV setting)  
+20dBu (+4dBu setting)
- Impedance: 10 kOhm
- THD+N: -107dB A-weighted (@-3dBFS, -10dBV setting)  
-105dB A-weighted (@-3dBFS, +4dBu setting)
- S/N: 110dB A-weighted
- Dynamic Range: 110dB A-weighted
- Frequency Response: 20Hz to 20kHz +/- 0.1dB
- Crosstalk: -110dB (20Hz to 20kHz)
- Signal LED: > -58dBFS shows green,  
0dBFS shows red

### Analog Outputs

- DAC: BurrBrown PCM1796DB 24-bit Stereo
- Connector: 2x 6.3mm / 1/4" fully balanced TRS
- Maximum Output Level: +6dBV (-10dBV setting)  
+20dBu (+4dBu setting)
- Impedance: 110 Ohm
- THD+N: -110dB A-weighted (@-3dBFS, -10dBV setting)  
-108dB A-weighted (@-3dBFS, +4dBu setting)
- S/N: 120dB A-weighted
- Dynamic Range: 120dB A-weighted
- Frequency Response: 20Hz to 20kHz +/- 0.05dB
- Crosstalk: -116dB (20Hz to 20kHz)
- Signal LED: > -48dBFS shows green

### Power Specifications

- PoE: IEEE802.3af compliant  
Input Voltage: 36V to 57V  
Maximum Output Power: 12W
- Power Consumption: 3.5W (Typical), +12V DC

### General

- Dimensions: around 10.5cm x 11cm x 2.5cm
- Weight: around 236g

## 6. General Information

### Trademarks

ESI, planet and planet 22c are trademarks of ESI Audiotechnik GmbH. Dante and Audinate are legal trademarks of Audinate Pty Ltd., other product and brand names are trademarks or registered trademarks of their respective companies.

### The FCC and CE Regulation Warning

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Caution: Any changes or modifications in construction of this device with are not expressly approved by the party responsible for compliance, could void the user's authority to operate equipment.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. If necessary, consult an experienced radio/television technician for additional suggestions.

### Correspondence

For technical support inquiries, contact your nearest dealer, local distributor or ESI support online at [www.esi-audio.com](http://www.esi-audio.com). Please also check our extensive Knowledge Base with Frequently Asked Questions, installation videos and technical details about our products in the support section of our website.

### Disclaimer

All features and specifications subject to change without notice.

Parts of this manual are continually being updated. Please check our web site [www.esi-audio.com](http://www.esi-audio.com) occasionally for the most recent update information.

