nT15BX09/DCT-9

ersal Digital/Analog Audio Converter

Operation Manual

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SAFETY PRECAUTIONS

Please read all instructions before attempting to unpack, install or operate this equipment and before connecting the power supply.

Please keep the following in mind as you unpack and install this equipment:

- Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.

- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.

- Never spill liquid of any kind on or into this product.

- Never push an object of any kind into this product through any openings or empty slots in the unit, as you may damage parts inside the unit.

- Do not attach the power supply cabling to building surfaces.

- Use only the supplied power supply unit (PSU). Do not use the PSU if it is damaged.

- Do not allow anything to rest on the power cabling or allow any weight to be placed upon it or any person walk on it.

- To protect the unit from overheating, do not block any vents or openings in the unit housing that provide ventilation and allow for sufficient space for air to circulate around the unit.

REVISION HISTORY

VERSION NO.	DATE DD/MM/YY	SUMMARY OF CHANGE
V1	13/07/09	Preliminary Release
VR2	19/01/11	Audio Specification
VR3	02/08/11	Intro w/o Model No.
VR4	10/11/11	Updated Format
VS5	22/02/13	Updated format/diagrams

CONTENTS

1. INTRODUCTION

The Universal Digital/Analog Audio Converter allows users to convert Optical, Coaxial and Analog audio signals. The unit can convert between analog and digital formats and vice versa and can output simultaneously to all outputs (depending on the audio format) allowing it to act as an audio distributor.

2. APPLICATIONS

- Analog audio to digital audio signal conversion (ADC)
- Digital audio to analog audio signal conversion (DAC)
- Simultaneous digital and analog audio output
- Digital coaxial to TOSLINK optical and TOSLINK optical to coaxial conversion

3. PACKAGE CONTENTS

- Universal Digital/Analog Audio Converter
- 5 V/1 A Power Adaptor
- Operation Manual

4. SYSTEM REQUIREMENTS

Audio source equipment such as CD/DVD Player with connection cable(s) and AV receiver or similar for audio output.

5. FEATURES

- Integrated digital interpolator filter and Digital-to-Analog Converter (DAC)
- Integrated Analog-to-Digital Converter (ADC)
- Supports sampling rates of 32, 44.1, 48 or 96 kHz
- Provides electromagnetic-noise-free transmission
- Easy to install and operate
- Compact and elegant design

6. OPERATION CONTROLS AND FUNCTIONS

6.1 Top Panel

UNIVERSAL
DIGITAL / ANALOG
AUDIO CONVERTER

POWER   L/R COAX OPTICAL
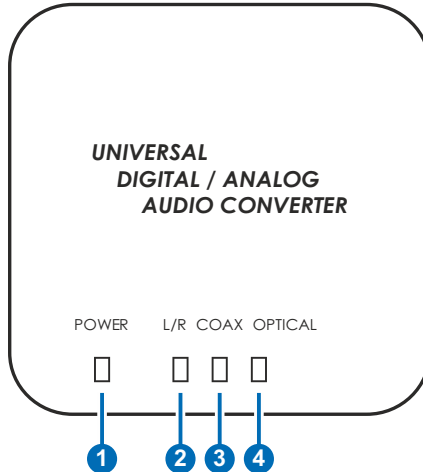
1 POWER LED Indicator
The LED will illuminate in green when the power is connected and in red when switched off.

2 L/R IN LED Indicator
Will illuminate in blue when the unit is switched to the analog L/R input.
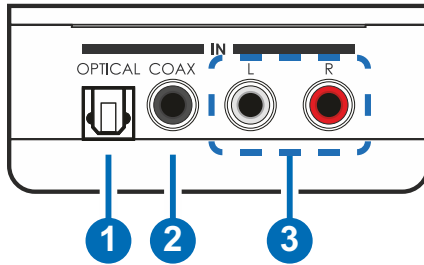
3 COAX IN LED Indicator
Will illuminate in blue when the unit is switched to the coaxial input.

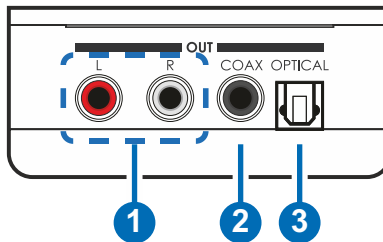**4** OPTICAL IN LED Indicator
Will illuminate in blue when the unit is switched to the optical input.

6.2 Right Panel

1 OPTICAL IN
Connect to the audio source's optical output.

2 COAX IN
Connect to the audio source's coaxial output.

3 L/R IN
Connect to the analog audio source with an stereo RCA cable.

6.3 Left Panel

1 L/R OUT
Connect to a compatible audio equipment, such as a TV or amplifier with an stereo RCA cable.

2 COAX OUT
Connect to an audio system's coaxial input.

3 OPTICAL OUT
Connect to an audio system's optical input.

6.4 Rear Panel
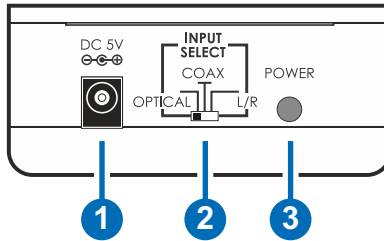
1 DC 5V

Connect the 5 V/1 A DC power supply to the unit and plug the adaptor into an AC wall outlet.

2 INPUT SELECT
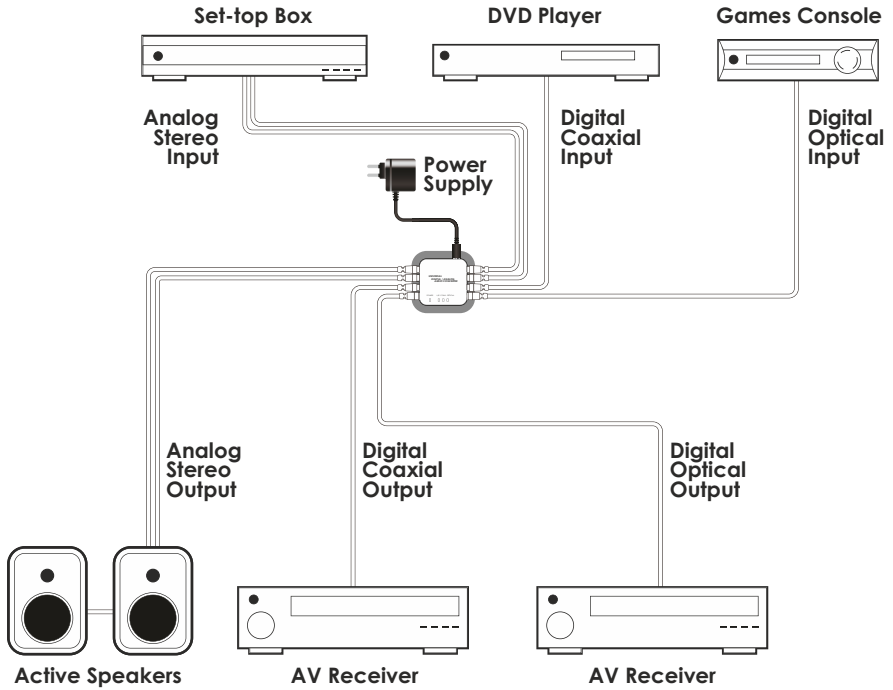
Selects the current audio source, either optical, coaxial or L/R (Analog).

3 POWER

Push the button to turn the unit on or off.

7. CONNECTION DIAGRAM

Set-top Box

DVD Player

Games Console

Analog Stereo Input

Digital Coaxial Input

Digital Optical Input

Power Supply

Analog Stereo Output

Digital Coaxial Output

Digital Optical Output

Active Speakers

AV Receiver

AV Receiver

8. SPECIFICATIONS

Input Ports	1×Optical, 1×Coaxial, 1×Analog Stereo (L/R)
Input Format	TOSLINK, S/PDIF & LPCM 2CH
Sample Rates	32/44.1/48/96 kHz
Output Ports	1×Optical, 1×Coaxial, 1×Analog Stereo (L/R)
L/R Input Impedance	47KΩ
L/R Output Impedance	600Ω
ESD Protection	Human body model: ±10 kV (air-gap discharge) ±6 kV (contact discharge)
Power Supply	5 V/1 A DC (US/EU standard, CE/FCC/UL certified)
Dimensions	97 mm (W)×85 mm (D)×35 mm (H)
Weight	120 g
Chassis Material	Plastic
Silkscreen Color	White
Operating Temperature	0 °C~40 °C / 32 °F~104 °F
Storage Temperature	−20 °C~60 °C / −4 °F~140 °F
Relative Humidity	20~90 % RH (non-condensing)
Power Consumption	1 W

Audio Specifications:

Input	Output			
Reference Level/Freq	Interface	Reference Level	T.H.D+N	Signal to Noise
L/R 2Vrms/1 kHz	L/R	1 Vrms±0.05	0.01%	> 90dB
	COAX	0 dB~-0.35dB	0.01%	> 90dB
	OPTICAL	0 dB~-0.35dB	0.01%	> 90dB
COAX 0dBFS/1 kHz	L/R	1 Vrms±0.05	0.01%	> 90dB
	COAX	0 dB±0.05	0.01%	> 90dB
	OPTICAL	0 dB±0.05	0.01%	> 90dB
OPTICAL 0dBFS/1 kHz	L/R	1 Vrms±0.05	0.01%	> 90dB
	COAX	0 dB±0.05	0.01%	> 90dB
	OPTICAL	0 dB±0.05	0.01%	> 90dB

Comparison between Input and Output Audio Format:

Input Interface	Output Interface	Output Format	Note
L/R Analog 2CH	L/R	Analog 2CH	
	COAX	LPCM 2CH (48 kHz)	
	OPTICAL	LPCM 2CH (48 kHz)	
OPTICAL	L/R	Analog 2CH	Odd sound may appear when the input is of Dolby/DTS format
	COAX	LPCM 2CH/Dolby/DTS	Bypass
	OPTICAL	LPCM 2CH/Dolby/DTS	Bypass
COAX	L/R	Analog 2CH	Odd sound may appear when the input is of Dolby/DTS format
	COAX	LPCM 2CH/Dolby/DTS	Bypass
	OPTICAL	LPCM 2CH/Dolby/DTS	Bypass

9. ACRONYMS

ACRONYM	COMPLETE TERM
Ω	Ohm
ADC	Analog to Digital Converter
COAX	Coaxial
DAC	Digital to Analog Converter
RCA	Audio Connector (Radio Corporation of America)
S/PDIF	Sony/Philips Digital Interconnect Format
TOSLINK	Toshiba Link