

# LINDY®

## CONNECTION PERFECTION

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### AV Converter Switch

*User Manual*

*English*

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No. 38273



[www.lindy.com](http://www.lindy.com)

# User Manual

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## Introduction

Thank you for purchasing the LINDY AV Conversion Switch. Featuring 8 AV inputs which can be converted and scaled to resolutions up to Full HD 1080p to be output via 3 outputs, this Switch is an ideal addition to any meeting or conference room, lecture hall or auditorium. The Switch features configuration and control via RS-232, Telnet, Web GUI and IR making it simple to integrate within automated installations. For added flexibility the Switch can be used with LINDY's range of AV Extenders, to reach remote displays and projectors.

## Package Contents

- AV Conversion Switch
- IR Remote Control with 2 x AAA Alkaline batteries
- IR Extender Cable
- VGA to 3 x RCA (RGB) Adapter cable
- Mounting Brackets
- Multi Country Power Supply with UK, EU, US & AUS adapters +5V DC 3A
- LINDY Quick Install Guide

## Features

- Converts and Scales 8 AV Inputs to resolutions up to Full HD 1080p
- Simultaneous video output via VGA and 2 x HDMI
- Simultaneous audio output via Analogue 3.5mm and Digital Coax
- Supports Analogue Audio Embedding for HDMI Inputs
- Controlled by IR, OSD, RS-232, Telnet and Web GUI

## Specification

- Supports DAC & ADC audio/video signal conversion
  - Video output scaling from 640x480 up to Full HD 1920x1080p 60Hz
  - Scaling types: Overscan, Full, Follow Input, Pan Scan, Letter Box, Under 2 & Under 1
  - Supports Frame Rate Conversion
  - Supports 3D de-interlace, noise reduction and 3D comb filter
  - Controllable via IR, OSD, RS232, Telnet and Web GUI
  - Input Ports:
    - 3 x HDMI + 3.5mm Audio
    - 3 x VGA + 3.5mm Audio
    - Component Video + 2 x RCA Audio
    - Composite Video + 2 x RCA Audio
  - Output Ports:
    - 2 x HDMI
    - VGA
    - 3.5mm Analogue Audio
    - Coaxial digital audio
  - Control Ports:
    - RJ45 – Telnet/IP
    - 9 Way Female – RS232
  - Simultaneous output from HDMI & VGA ports Coaxial and 3.5mm ports
  - EDID & HDCP compatible
  - Operating temperature 0°C – 40°C
  - Storage Temperature -20°C – 60°C
  - Relative humidity: 20 – 90% RH (non condensing)
  - Dimensions: 432 x 183 x 47mm (W x D x H)
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# User Manual

## Installation

To begin using the Switch simply connect your AV source devices to the corresponding input ports of the Switch using standard male/male cable, and then connect the outputs of the Switch to your display equipment again using standard male/male cables as required. The VGA output of the Switch can also be used with Component video display using the supplied VGA/RGB adapter cable. Once all sources and displays have been connected attach the power supply and turn the Switch on using the Power switch on the rear of the unit and then the power button on the front of the unit.

You can now switch between the inputs using the input selections buttons on the front of the unit or by using the corresponding buttons on the supplied IR remote control. To enter the On Screen Display (OSD) press the Menu button and use the + and - buttons to navigate the menus, using the Enter button to make your selections. For further information on the options available via the OSD please refer to the OSD Menu section of this manual.

In addition to the OSD the Switch can also be controlled using its Web GUI or RS-232/Telnet Commands. The required configuration and available commands for this control options are explained later in this manual.

## Overview

### Front



- 1. Power Button and LED:** Press this button to turn the Switch on or to set it to standby mode. **Please Note:** There is a power switch on the rear of the unit which can be used to turn the Switch off completely, the front Power button will only function when the rear switch is set to On.
- 2. IR Receiver Window:** Receives only the IR signal from the supplied remote control
- 3. Input Buttons and LEDs:** Press these buttons to switch directly to the required source. An LED will illuminate to indicate the selected input source.
- 4. Menu:** Press this button to enter the On Screen Display (OSD) menu.
- 5. Plus/Minus (-/+) Buttons:** Press these buttons to navigate down and up in the OSD menu.
- 6. Enter:** Press this button to confirm the selection in the OSD menu. **Please Note:** Press this button simultaneously with the '+' (plus) button to instantly switch the output to XGA resolution or with the '-' (minus) button to instantly switch the output to 720p resolution.

## Rear



1. **IR In:** Connect the supplied IR extender cable to receive the IR signal from the supplied IR remote. Ensure that the IR remote is within the direct line-of-sight of the IR extender.
2. **RS-232:** Connect to a PC/Laptop or RS-232 control system to use RS-232 commands to control the device.
3. **Output:**
  - a) HDMI 1/2: Connect to an HDMI display or AV Receiver for video and/or audio output.
  - b) PC/HD: Connect to a monitor/display for video output. For HD (Component) output, use the supplied D-Sub 9pin to 3 RCA adapter cable for HD resolutions from 480p – 1080p.  
**Please Note:** When the selected HDMI input source signal has HDCP content the VGA/Component output will not display any image.
  - c) COAX: Connect to an amplifier or active speakers for audio output in digital format.  
**Please Note:** When the input audio source signal is in bitstream format and the AUDIO SOURCE setting is set to AUTO in the OSD menu, the coaxial output will pass-through the input audio signal including compatible surround sound formats.
  - d) AUDIO: Connect to an amplifier or active speakers for analogue audio output in stereo format.
4. **Input:**
  - a) HDMI 1/2/3: Connect to HDMI sources such as Blu-ray/DVD player for both video and audio signal conversion.
  - b) PC 1/2/3: Connect to a PC/Laptop source for video signal input with a 15pin VGA cable.
  - c) 3.5mm Mini-jacks: Connect to source's L/R output with 3.5mm mini-jack for audio signal conversion.  
**Please Note:** For HDMI signals you can select in the OSD Menu whether you require audio from the HDMI (AUTO) or from the analogue audio inputs (EXT)
  - d) YCbCr/YPbPr + L/R: Connect to source equipment such as a DVD player for both video and audio signal conversion.
  - e) CV + L/R: Connect to a composite video source such as a video/DVD player for both video and audio signal conversion.
5. **Control:** This port is the link for Telnet or Web GUI controls, connect to an active Ethernet link with an RJ45 terminated cable.
6. **Power:** Switch this power toggle to turn on and activate the device or turn off to shut it down.
7. **DC 5V:** Connect the supplied power adapter to the Switch and plug it into an AC wall outlet.

## RS-232, Telnet & On Screen Display

### RS-232 Settings

Presentation Switch	
PIN	Assignment
1	NC
2	Tx
3	Rx
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC

Remote Control	
PIN	Assignment
1	NC
2	Rx
3	Tx
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC

<b>Baud Rate</b>	19200bps
<b>Data Bit</b>	8
<b>Parity</b>	None
<b>Flow Control</b>	None
<b>Stop Bit</b>	1

### Telnet Settings

Before attempting to use telnet control, please ensure that both the Switch (via the **CONTROL** port) and the PC/Laptop are connected to the same active network.

Open a Command Prompt on your computer type **telnet**, then a space, then the **IP address** of the Switch (default is 192.168.0.1), then another space, then **23** and finally press **Enter**. This will bring up the Telnet interface for the Switch. Type **?** to list all the available commands, please refer to the RS-232 & Telnet Commands section of this manual for a description of each command.

### RS-232 and Telnet Commands

- Commands will be not executed unless followed with a carriage return (0x0D) and LF (Line Feed)
- Commands are not case sensitive.
- Resolutions 0 – 13 are RGB encoded, 14 – 21 are YUV encoded

Command	Description																						
S POWER 0/1	0 = OFF, 1 = ON																						
R POWER	Reports the numeric value of power setting (as above)																						
S SOURCE 1 – 8	1 = HDMI 1, 2 = HDMI 2, 3 = HDMI 3, 4 = YPbPr, 5=CVIDEO, 6 = PC 1, 7 = PC 2, 8 = PC 3																						
R SOURCE	Reports the numeric value of SOURCE setting as above																						
S OUTPUT 0 – 21	<table border="0"> <tr> <td>0=640x480</td> <td>11=1600x1200</td> </tr> <tr> <td>1=800x600</td> <td>12=1920x1080</td> </tr> <tr> <td>2=1024x768</td> <td>13=1920x1200</td> </tr> <tr> <td>3=1280x768</td> <td>14=480p</td> </tr> <tr> <td>4=1360x768</td> <td>15=720p@60</td> </tr> <tr> <td>4=1280x720</td> <td>16=1080i@60</td> </tr> <tr> <td>6=1280x800</td> <td>17=1080p@60</td> </tr> <tr> <td>7=1280x1024</td> <td>18=576p</td> </tr> <tr> <td>8=1440x900</td> <td>19=720p@50</td> </tr> <tr> <td>9=1400x1050</td> <td>20=1080i@50</td> </tr> <tr> <td>10=1680x1050</td> <td>21=1080p@50</td> </tr> </table>	0=640x480	11=1600x1200	1=800x600	12=1920x1080	2=1024x768	13=1920x1200	3=1280x768	14=480p	4=1360x768	15=720p@60	4=1280x720	16=1080i@60	6=1280x800	17=1080p@60	7=1280x1024	18=576p	8=1440x900	19=720p@50	9=1400x1050	20=1080i@50	10=1680x1050	21=1080p@50
0=640x480	11=1600x1200																						
1=800x600	12=1920x1080																						
2=1024x768	13=1920x1200																						
3=1280x768	14=480p																						
4=1360x768	15=720p@60																						
4=1280x720	16=1080i@60																						
6=1280x800	17=1080p@60																						
7=1280x1024	18=576p																						
8=1440x900	19=720p@50																						
9=1400x1050	20=1080i@50																						
10=1680x1050	21=1080p@50																						
R OUTPUT	Reports the numeric value of OUTPUT setting as above																						

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Command	Description
S SIZE 0 – 6	0=OVERSCAN 1=FULL 2=FOLLOW INPUT 3=PAN SCAN 4=LETTER BOX 5=UNDER 2 6=UNDER 1
R SIZE	Reports the numeric value of SIZE setting as above
S INPUT HDCP 0/1	0 = ON, 1 = OFF
R INPUT HDCP	Apple only. Reports the numeric value of HDCP setting as above
S SYNCSHIFT 0/1	0 = ON, 1 = OFF
R SYNCSHIFT	Reports the numeric value of SYNCSHIFT setting as above
S CONTRAST 0 – 60	Set the numeric value for CONTRAST from 0 – 60
R CONTRAST	Reports the numeric value of CONTRAST setting as above
S BRIGHTNESS 0 – 60	Set the numeric value for BRIGHTNESS from 0 – 60
R BRIGHTNESS	Reports the numeric value of BRIGHTNESS setting as above
S HUE 0 – 60	Set the numeric value for HUE from 0 – 60
R HUE	Reports the numeric value of HUE setting as above
S SATURATION 0 – 60	Set the numeric value for SATURATION from 0 – 60
R SATURATION	Reports the numeric value of SATURATION setting as above
S SHARPNESS 0 – 30	Set the numeric value for SHARPNESS from 0 – 30
R SHARPNESS	Reports the numeric value of SHARPNESS setting as above
S NR 0 – 3	0=OFF, 1=LOW, 2=MIDDLE, 3=HIGH
R NR	Reports the numeric value of NOISE REDUCTION setting as above
S AUDIO VOLUME 0 – 100	Set the numeric value for VOLUME from 0 – 100
R AUDIO VOLUME	Reports the numeric value of VOLUME setting as above
S AUDIO DELAY 0 – 3	0=OFF, 1=40ms, 2=110ms, 3=150ms
R AUDIO DELAY	Reports the numeric value of AUDIO DELAY setting as above
S AUDIO MUTE 0/1	0=ON, 1=OFF
R AUDIO MUTE	Reports the numeric value of AUDIO MUTE setting as above
S HDMI AUDIO 0/1	0=AUTO, 1=EXT
R HDMI AUDIO	Reports the numeric value of HDMI AUDIO setting as above
S KEY LOCK 0/1	0=ENABLE, 1=DISABLE
R KEY LOCK	Reports the numeric value of KEY LOCK setting as above
S FREERUNCOLOR 0/1	0=BLACK, 1=BLUE
R FREERUNCOLOR	Reports the numeric value of FREERUNCOLOR setting as above
S RESET 1	Resets the Switch to default values
PORT 0 – 8	0=LAST MEMORY, 1 = HDMI 1, 2 = HDMI 2, 3 = HDMI 3, 4 = YPbPr, 5=CVIDEO, 6 = PC 1, 7 = PC 2, 8 = PC 3
ST	Checks the Firmware version
VOL +	Raises the volume level (VOLUME * IS SET)
VOL -	Lowers the volume level (VOLUME * IS SET)
QUIT	Exit (Telnet Only)

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## OSD Menu

1 <sup>st</sup> Layer	2 <sup>nd</sup> Layer	3 <sup>rd</sup> Layer	4 <sup>th</sup> Layer
DISPLAY	OUTPUT	640X480 60	
		800x600 60	
		1024x768 60	
		1280x768 60	
		1360x768 60	
		1280x720 60	
		1280x800 60	
		1280x1024 60	
		1440x900 60	
		1400x1050 60	
		1680x1050 60	
		1600x1200 60	
		1920x1080 60	
		1920x1200 60	
		<b>1280X720P 60</b>	
		1920X1080I 60	
		1920X1080P 60	
		720X576P 50	
		1280X720P 50	
		1920X1080i 50	
	1920X1080P 50		
	SIZE	OVER SCAN	
		<b>FULL</b>	
		FOLLOW INPUT	
		PAN SCAN	
		LETTER BOX	
		UNDER 2	
		UNDER 1	
	MODE INFO	ON	
		<b>INFO</b>	
	INPUT HDCP (HDMI Only)	OFF	
		<b>ON</b>	
	PC (PC Only)	AUTO SETUP	
H_POSITION			
V_POSITION			
PHASE			
CLOCK			
WXGA/XGA		<b>XGA</b> WXGA	
RESET			
TIMING SHIFT	<b>OFF</b>		
	ON		
COLOR	CONTRAST	0 – 60 (30)	
	BRIGHTNESS	0 – 60 (30)	
	COLOR	R 0 – 1023 (512)	
		G 0 – 1023 (512)	
		B 0 – 1023 (512)	
R OFFSET 0 – 1023 (512)			

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1 <sup>st</sup> Layer	2 <sup>nd</sup> Layer	3 <sup>rd</sup> Layer	4 <sup>th</sup> Layer
COLOR (Continued)	COLOR (Continued)	G OFFSET 0 – 1023 (512)	
		B OFFSET 0 – 1023 (512)	
	HUE	0 – 60	
	SATURATION	0 – 60	
	SHARPNESS	0 – 60	
	NR	<b>OFF</b>	
		LOW	
MIDDLE			
HIGH			
AUDIO	VOLUME	0 – 100 (100)	
	DELAY	<b>OFF</b>	
		40mS	
		110mS	
		150mS	
	SOUND	<b>ON</b>	
		MUTE	
SOURCE (HDMI Only) <sup>1</sup>	<b>AUTO</b>		
	<b>EXT</b>		
SETUP	FACTORY RESET <sup>2</sup>		
	KEYLOCK	<b>OFF</b>	
		ON	
	POWER SAVE	<b>OFF</b>	
		ON	
	IP MODE	<b>DHCP</b>	
		STATIC	
	SET STATIC IP	IP ADDRESS	0.0.0.0 – 255.255.255.255 <sup>3</sup>
		SUBNET MASK	0.0.0.0 – 255.255.255.255 <sup>4</sup>
DEF GATEWAY		0.0.0.0 – 255.255.255.255 <sup>5</sup>	
FREERUN COLOR	BLACK		
	<b>BLUE</b>		
INFORMATION	INPUT		
	OUTPUT		
	REVISION		
	IP ADDRESS		

**Please Note:**

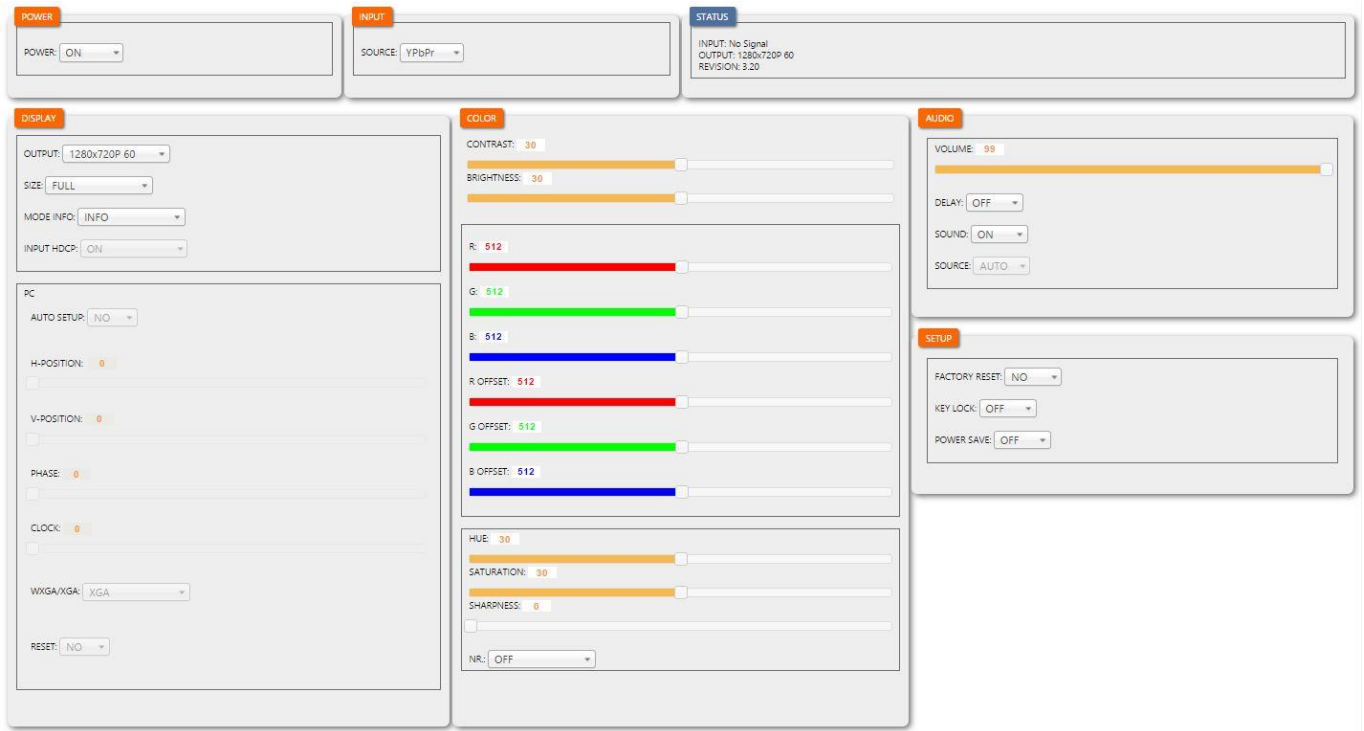
- When AUDIO SOURCE is set to 'AUTO' if the selected HDMI input port is connected to an HDMI source, audio signal of the source will be used; if the selected HDMI input port is connected to a DVI source, audio signal from the 3.5mm socket on top of the selected HDMI input port will be used. When AUDIO SOURCE is set to 'EXT' only the audio signal from the 3.5mm socket on top of the selected HDMI input port will be used..
- The FACTORY RESET option in the OSD menu will only reset part of settings. For a complete reset of the system, please use the reset button on the remote control.
- 192.168.0.1 (Default setting).
- 255.255.255.0 (Default setting).
- 192.168.0.254 (Default setting).
- Items in **Bold** or Brackets are the Factory default settings.



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## Web GUI

On a PC/Laptop that is connected to same active network as the Scaler, open a web browser and type device's IP address (Default is 192.168.0.1) on the web address entry bar. The browser will bring up the control page of the Switch (see below for reference).



From the control page it is possible to make the same adjustments to settings as are available through the OSD, RS-232 and Telnet commands, with the exception of Freerun Color (Background colour used when no Input is available) which cannot be adjusted via the Web GUI.

## Supported Resolutions

### Input Resolutions

Input Resolution	Composite Video	Component Video	PC	HDMI
NTSC/PAL	✓	-	-	-
480/576i	-	✓	-	✓
480/576p	-	✓	-	✓
720p@50/60Hz	-	✓	-	✓
1080i@50/60Hz	-	✓	-	✓
1080p@50/60Hz	-	✓	-	✓
VGA@60/72/75Hz	-	-	✓	✓
SVGA@56/60/72/75Hz	-	-	✓	✓
XGA@60/70/75Hz	-	-	✓	✓
SXGA@60/75Hz	-	-	✓	✓
UXGA@60Hz	-	-	✓	✓
1280x800@60Hz	-	-	✓	✓
1680x1050RB@60Hz	-	-	✓	✓
1920x1080@60Hz	-	-	✓	✓
1920x1200RB@60Hz	-	-	✓	✓

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## Output Resolutions

Output Resolution	PC/HD	HDMI
480/576p	HD	✓
720p@50/60Hz	HD	✓
1080i@50/60Hz	HD	✓
1080p@50/60Hz	HD	✓
VGA@60Hz	✓	✓
SVGA@60Hz	✓	✓
XGA@60Hz	✓	✓
SXGA@60Hz	✓	✓
UXGA@60Hz	✓	✓
1280x768@60Hz	✓	✓
1280x800@60Hz	✓	✓
1360x768@60Hz	✓	✓
1400x1050@60Hz	✓	✓
1440x900@60Hz	✓	✓
1680x1050@60Hz	✓	✓
1920x1200RB@60Hz	✓	✓

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## Legal Information

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### **CE Certification**

This equipment complies with the requirements relating to Electromagnetic Compatibility Standards EN55022/EN55024 and the further standards cited therein. It must be used with shielded cables only. It has been manufactured under the scope of RoHS compliance.

### **CE Konformitätserklärung**

Dieses Produkt entspricht den einschlägigen EMV Richtlinien der EU für IT-Equipment und darf nur zusammen mit abgeschirmten Kabeln verwendet werden.

Diese Geräte wurden unter Berücksichtigung der RoHS Vorgaben hergestellt.

Die formelle Konformitätserklärung können wir Ihnen auf Anforderung zur Verfügung stellen

### **FCC Certification**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

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.

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### **LINDY Herstellergarantie – Hinweis für Kunden in Deutschland**

LINDY gewährt für dieses Produkt über die gesetzliche Regelung in Deutschland hinaus eine zweijährige Herstellergarantie ab Kaufdatum. Die detaillierten Bedingungen dieser Garantie finden Sie auf der LINDY Website aufgelistet bei den AGBs.

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### **Hersteller / Manufacturer (EU):**

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## Legal Information

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### **WEEE (Waste of Electrical and Electronic Equipment), Recycling of Electronic Products**

#### **Europe, United Kingdom**

In 2006 the European Union introduced regulations (WEEE) for the collection and recycling of all waste electrical and electronic equipment. It is no longer allowable to simply throw away electrical and electronic equipment. Instead, these products must enter the recycling process.

Each individual EU member state has implemented the WEEE regulations into national law in slightly different ways. Please follow your national law when you want to dispose of any electrical or electronic products. More details can be obtained from your national WEEE recycling agency.

#### **Germany / Deutschland**

Die Europäische Union hat mit der WEEE Richtlinie Regelungen für die Verschrottung und das Recycling von Elektro- und Elektronikprodukten geschaffen. Diese wurden im Elektro- und Elektronikgerätegesetz – ElektroG in deutsches Recht umgesetzt. Dieses Gesetz verbietet das Entsorgen von entsprechenden, auch alten, Elektro- und Elektronikgeräten über die Hausmülltonne! Diese Geräte müssen den lokalen Sammelsystemen bzw. örtlichen Sammelstellen zugeführt werden! Dort werden sie kostenlos entgegen genommen. Die Kosten für den weiteren Recyclingprozess übernimmt die Gesamtheit der Gerätehersteller.

#### **Batteriehinweis**

Dieses Produkt enthält nicht wiederaufladbare Batterien. Es ist verboten leere Batterien und Akkus im Hausmüll zu entsorgen. Sie können leere Batterien und Altgeräte im Handel oder an den Recyclinghöfen der Kommunen kostenlos abgeben. Alle so gesammelten Batterien und Akkus werden verwertet. So lassen sich wertvolle Rohstoffe wieder zurück gewinnen.

#### **France**

En 2006, l'union Européenne a introduit la nouvelle réglementation (DEEE) pour le recyclage de tout équipement électrique et électronique.

Chaque Etat membre de l' Union Européenne a mis en application la nouvelle réglementation DEEE de manières légèrement différentes. Veuillez suivre le décret d'application correspondant à l'élimination des déchets électriques ou électroniques de votre pays.

#### **Italy**

Nel 2006 l'unione europea ha introdotto regolamentazioni (WEEE) per la raccolta e il riciclo di apparecchi elettrici ed elettronici. Non è più consentito semplicemente gettare queste apparecchiature, devono essere riciclate. Ogni stato membro dell' EU ha tramutato le direttive WEEE in leggi statali in varie misure. Fare riferimento alle leggi del proprio Stato quando si dispone di un apparecchio elettrico o elettronico.

Per ulteriori dettagli fare riferimento alla direttiva WEEE sul riciclaggio del proprio Stato.



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1<sup>st</sup> Edition, February 2016

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