USER MANUAL

Avonic CD500

AV-CD500

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AVONIC

Disclaimer, Contact and CE Marking

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Contact Info

For any questions or suggestions, contact your reseller or local distributor of Avonic.

Visit the Avonic website www.avonic.com to find your local Avonic distributor or to download the most recent version of the documentation.

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CE Marking

The Product has a CE Marking. The CE labels are placed at the bottom of the Product and on the packaging. See the respective figures below:
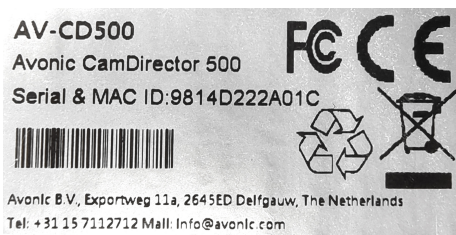

Figure 1: CE Marking (Product)

Figure 2: CE Marking (Packaging)

EU Declaration of Conformity

The Avonic Declaration of Conformity is in accordance with EN ISO/IEC 17050-1 and generated using the ProductIP compliance platform.

Table 1: EU Declaration of Conformity

AVONIC

EC DECLARATION OF CONFORMITY

1. Models No:	AV-CD500
2. Brand Name:	Avonic
3. Product Name:	CamDirector® AI Processing Unit
4. Manufacturer:	Avonic
	Exportweg 11a
	2645ED Delfgauw
	The Netherlands

3. This declaration of conformity is issued under the sole responsibility of the manufacturer

4. The object of the declaration described in point 1 is in conformity with the EMC2014/30/EU

5. Standards	EN 55032: 2015/AC: 2016 Class A
	EN 61000-3-2: 2014
	EN 61000-3-3: 2013
	EN 50130-4: 2011+A1: 2014

6. Signed for and on behalf of Avonic:

Delfgauw, 20th of May, 2021

Martijn van Bodegom,
Product Manager

Important Information

Liability

Avonic will NOT be held responsible for any damage or injury caused by unqualified persons carrying out these tasks, or by not following the instructions in this Manual.

Intended Use and Non-Intended Use

Installation

The following applies to the *installation* of the Product:
- The installation activities described in this Manual should ONLY be executed by experienced technicians.
- The installation activities should NOT be executed by minors, mentally disabled persons or other persons not qualified to perform these tasks.

Operation

The following applies to the *operation* of the Product:
- The operational activities described in this Manual should ONLY be executed by people with enough technical knowledge to perform the activities in a safe manner.
- This Product is specifically developed for video conferencing / streaming via internet by companies, institutes and universities. It is NOT meant for private use in the residential area.
- This Product should ONLY be used indoors.
- This Product is NOT a medical device and should NOT be used as a substitute for professional medical judgment. It is NOT designed or intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment, or prevention of any condition or disease. Please consult your healthcare provider prior to making any decisions related to your health.

Important Precautions

⚠	This Product is NOT intended for use where failure of the device could lead to death, personal injury, or severe environmental damage.
⚠	Be sure that you have COMPLETELY READ and UNDERSTOOD ALL information in this Manual before unpacking, installing and using this Product. Keep the Manual in a safe place for future reference or download it from www.avonic.com.
⚡	Failure to follow the SAFETY NOTES as described in this chapter could result in fire, electric shock, injury, or damage to the Product or other property.
⚡	Power the Product ONLY with the included cable and power adapter. Other adapters may not meet applicable safety standards, and could pose a risk of death or injury when connected.

Symbols Used in This Manual

Symbol	Meaning	Description
⚠	Danger	Not following the instructions associated with this symbol may lead to personal injury and / or serious damage to the Product.
⚡	Electrical Shock	Not following the instructions associated with this symbol may lead to life-threatening situations and / or serious damage to the Product.
⚠	Important	The information associated with this symbol requires special attention.

Symbol	Meaning	Description
	Information	The information associated with symbol refers to a general remark or a reference to other documentation.
	Instruction	This symbol refers to one or more user instructions.
	Recycling	Specific parts of the Product can be re-used.

Acronyms

The following acronyms are used in this Manual:

HD   High Definition

HDMI   High-Definition Multimedia Interface

IP   Internet Protocol

PoE   Power over Ethernet

PTZ   Pan / Tilt / Zoom

SKU   Stock Keeping Unit

Contents

Introduction

Purpose of This Manual

This Manual describes the safety precautions and the instructions for safe unpackaging, installation, operation, maintenance and disposal of the Avonic CD500.

> **i** In this Manual, the Avonic CD500 is referred to as the 'Product'.

What you need to operate the CD500

> ⚠️ Take note that you need the following products to use the CD500:
> 1. 1x AV-CD500
> 2. 1x AV-CD-TRAC1 software license **(separately sold: see Avonic website)**
> 3. 2x AV-CM70-IP cameras **(separately sold: see Avonic website)**
> 4. 1x CAT 6x Ethernet cable **(not provided: use third party cable)**
> 5. 2x PoE CAT 6x cables **(not provided: use third party cable)**

Target Audience

This Manual is developed for installation technicians who install the Product at client sites, and for IT professionals who are responsible for operating the Product.

Document Structure

The Manual is subdivided into the following *Chapters*:

1. Introduction
2. Safety
3. Product Overview
4. Unpacking
5. Mounting and Installation
6. Maintenance
7. Transport and Storage
8. Disposal and Recycling
9. Troubleshooting

Safety

This chapter contains important safety information regarding the unpacking, installation and use of the CD500.

Important Precautions

⚠️	This Product is NOT intended for use where failure of the device could lead to death, personal injury, or severe environmental damage.
⚠️	Be sure that you have COMPLETELY READ and UNDERSTOOD ALL information in this Manual before unpacking, installing and using this Product. Keep the Manual in a safe place for future reference or download it from www.avonic.com.
⚡	Failure to follow the SAFETY NOTES as described in this chapter could result in fire, electric shock, injury, or damage to the Product or other property.
⚡	Power the Product ONLY with the included cable and power adapter. Other adapters may not meet applicable safety standards, and could pose a risk of death or injury when connected.

Intended Use

ℹ️	See section Intended Use and Non-Intended Use on page iv for details.

Handling

⚠️	To prevent the risk of injury, take the following precautions when handling the Product: • Handle the Product with care. It is made of metal, glass, and plastic and has sensitive electronic components inside. • The Product can be damaged if dropped, burned, punctured or crushed, or if it comes into contact with liquid. • Do not pick up and move the Product unit while a tripod is attached. The fitting may break under the weight of the tripod, which may result in injury. • If you suspect any damage to the Product, discontinue its use, as it may cause overheating or injury.

Mounting

⚠️	To prevent the Product from falling down which may cause injuries: • Set up the Product on a hard, stable surface or mount it to a wall. • ONLY use an Avonic mount for mounting to a wall. • Ensure the mounting construction is capable of supporting four times the weight of the Product. (See 'General Specifications > Weight product' in the Product Datasheet for the exact weight.) • Use a safety loop or drop protection that prevents the Product from falling if the mounting construction fails. • During installation, NEVER install a the Product above a person. • Check the installation at least once a year. An improper mounting could cause the unit to fall off, resulting in personal injury.

Ventilation

To prevent the risk of life-threatening injury or damage to the Product or other property, caused by electric shock or fire hazard due to overheating:

- Maintain adequate ventilation by NOT installing or placing the Product unit in a bookcase, built-in cabinet or any other confined space.
- Ensure that curtains or any other material does NOT obstruct the ventilation.

Repair

Take the following precautions if the Product should be repaired:

- Don't open the Product and don't attempt to repair it yourself. Disassembling the Product may damage it or may cause injury to you.
- If this Product is damaged, malfunctioning, or if it comes into contact with liquid, contact Avonic or an Avonic Authorized Service Provider.
- Repairs by service providers other than Avonic or an Avonic Authorized Service Provider may not involve the use of Avonic genuine parts and may affect the safety and functionality of the device. *You can find more information about repairs and service at www.avonic.com*.

Power and Adapter

To prevent the risk of life-threatening injury or damage to the Product or other property, caused by electric shock or fire hazard:

- Power the Product ONLY with the included cable and power adapter. Other adapters may not meet the applicable safety standards. They could pose a risk of death or injury when connected.
- Do NOT use damaged cables.
- Do NOT power the Product in a moist / wet environment.
- Before you power the Product, ensure the cable is fully inserted into the power adapter.
- Plug the power adapter directly into a power outlet.
- Do NOT use the power adapter at a moist / wet location.
- Do NOT connector disconnect the power adapter with wet hands.
- Keep the Product, cable, and power adapter in a dry and well-ventilated area when in use.
- Stop using the power adapter and any cables if any of the following conditions exist:
  - The power adapter plug or prongs are damaged.
  - The cable becomes frayed or otherwise damaged.
  - The power adapter is exposed to excessive moisture, or liquid is spilled into it.
  - The power adapter has been dropped, and its enclosure is damaged.

Atmospheric Conditions

To prevent the risk of injury or damage to the Product or other property caused by a potentially explosive atmosphere:

- Do NOT use the Product in an area with a potentially explosive atmosphere, such as areas where the air contains high levels of flammable chemicals, vapors, or particles (such as grain, dust, or metal powders), may be hazardous.
- Exposing the Product to environments having high concentrations of industrial chemicals, including near evaporating liquified gasses such as helium, may damage or impair the Product functionality.
- Obey all signs and instructions.

Product Overview

The beating heart of the CamDirector®

Avonic's CD500 is the beating heart of the CamDirector® and provides a continuously evolving video platform for Avonic's Pro-AV solutions. The CD500 can process, analyze and transmit video generated by the two PTZ cameras it controls. The one-of-a-kind AutoTracking module uses locally run machine learning algorithms to offer smart video recording.

As a continuously evolving video platform it allows for new high-tech modules to be added. Over-the-air updates and support allow new functionality to be added overnight. Its ease of operation takes away expensive human resources needed to create high-level and engaging content for the audience. With the introduction of the CD500 in the CamDirector®, Avonic ushers in a new era in Pro-AV.

Features

- Process, analyze and transmit video of two PTZ camera's it controls.

- Processes signals of up to 8 cameras

- Analyzes the video input using state of the art AI-algorithms.

- Transmits the video output over IP and/or HDMI.

> ℹ️ The actual features depends on the software licenses activated on the device.

Unpacking

This describes the contents of a complete Product package, and instructions for safe unpacking and (if necessary) Product return.

It is subdivided into the following sections:

1. Package Contents
2. Handling Precautions
3. Unpacking the CD500
4. Return Procedure

Package Contents

The following table contains an overview of the package contents of the Product.

⚠️ To use the CamDirector®, remember that you need also **2x AV-CM70-IP cameras** and **1x AV-CD-TRAC1 software license**! These are separately sold and are **NOT** part of the package contents!

No.	Quantity	Description	Avonic SKU
1	1 pc	CD500	AV-CD500
2	1 pc	CD500 Power Adapter	AV-CD500-PSU
3	2 pc	CD500 Mounting shield	-

Each item is visualized below and referenced by the associated number in the table above:
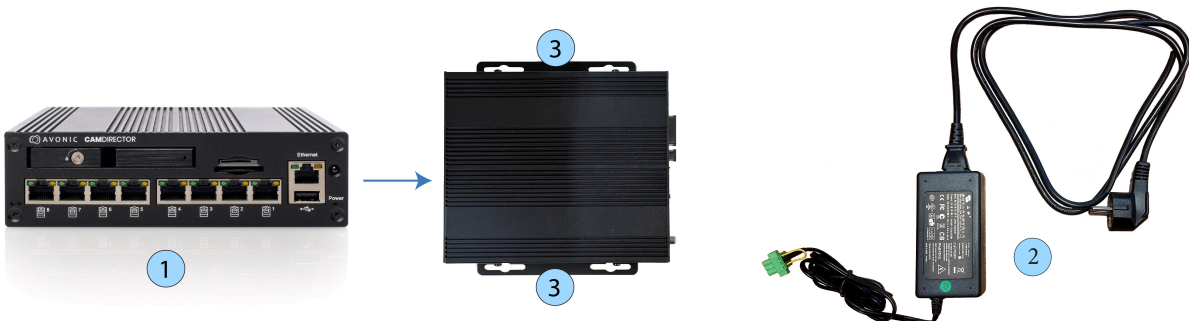
Handling precautions

⚠️
- Be careful with the CD500. The CD500 is made of sensitive electronic components that could be easily damaged. Place the CD500 always on a hard and stable surface! Be sure that this surface could carry the weight of the CD500!
- Be careful with the PSU cable and check the cable regularly.

Unpacking the AV-CD500

Execute the following steps to unpack the camera and associated components:

1. Open the box.
2. Verify that the contents of the box exactly matches the items as described in Package Contents on page 11. If this is NOT the case, contact Avonic and stop here.

   The AV-CD500 should be in its protective foam as follows:

3. Verify that the plastic CD500 bag is sealed. If this is NOT the case, contact Avonic and stop here.
4. Break the seal of the sealed CD500 bag.
5. Take the camera out of the bag. Be sure to follow the Handling precautions on page 11 while doing so.
6. Install the camera following the steps as described in the chapter Mounting on page 8

Return Procedure

If, for any reason, you have to return the CD500 to Avonic. Execute the following steps:

1. Place the CD500 back in its protective foam.
2. Place the CD500 with *all* of its components in the box.
3. Verify that the contents of the box *exactly* matches the items as described in Package Contents.
4. Contact Avonic for the Return Procedure.

Mounting and Installation

To use the CD500 you need two **AV-CM70-IP** camera's. These camera's can be mounted to a wall or tripod. This chapter describes the steps you have to perform to mount and install the cameras in a correct and safe manner. These steps are subdivided into the following groups, each of which is described in a separate section:

1. Mounting on a Wall
2. Connecting the Components to the CD500 and the cameras

> ⚠️ Take the following precautions to prevent the CD500 and its cameras from falling down which may cause injuries:
> - Set up the Product on a hard, stable surface, or mount it to a wall or ceiling.
> - ONLY use an Avonic mount for mounting to a wall or tripod.
> - Ensure the mounting construction is capable of supporting four times the weight of the cameras and/or the Product. (See 'General Specifications > Weight product' in the CD500 and/or CM70-IP Datasheet for the exact weight.)
> - Use a safety loop or drop protection that prevents the Product from falling if the mounting construction fails.
> - During mounting and installation, NEVER install the Product above a person.
> - Check the installation at least once a year. An improper mounting could cause the unit to fall off, resulting in personal injury.

Mounting on a wall

The following accessory (AV-MT220) is separately available if the client wants to mount the both AV-CM70-IP cameras to a wall or tripod. Contact your Avonic reseller or local distributor for purchasing details.

Double Wall Mount (AV-MT220)

SKU white: AV-MT220-W

SKU black: AV-MT220-B

> ℹ️ Visit www.avonic.com to download instructions for mounting the CM70-IP cameras to a wall using the accessory AV-MT220.
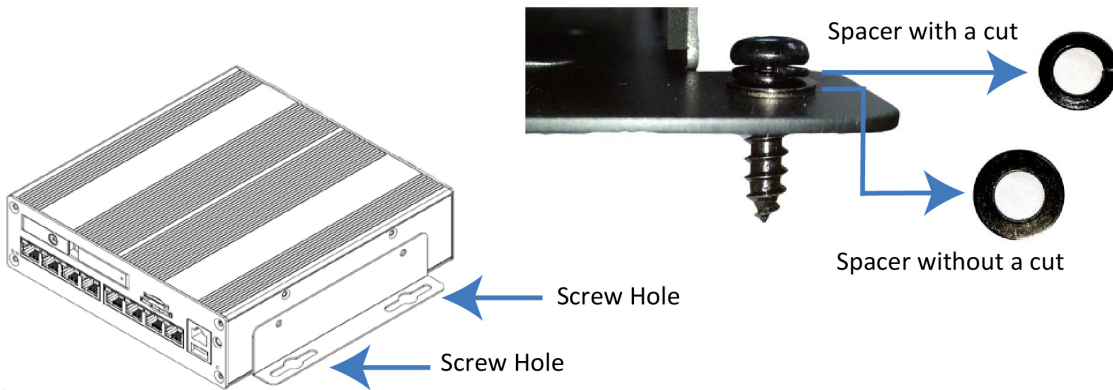
Mounting shields

It is also possible to mount the CD500 using the delivered mounting shields to a wall.

Follow instructions below:

1. The mounting shield is already connected to the right and left side CD500. Use the supplied screws (4) and place for every screw hole 2 spacers. The spacer **with** a cut should be above the spacer **without** a cut.

2. Connect the bottom of the mounting shield to a wall using the screws. See the pictures below.

Spacer with a cut

Spacer without a cut

Screw Hole

Screw Hole

1 screw, 2 spacers   1 screw, 2 spacers

1 screw, 2 spacers   1 screw, 2 spacers

Connecting the components to the CD500

Execute the following steps to connect the components to the CD500:

1. Connect all provided components (see Package Contents) to the ports at the back of the CD500

1. RCA port (Audio Line IN)
2. RCA port (Audio Line OUT)
3. USB3.0 port
4. HDMI 2.0 a/b port
5. RS232 port (for future use)
6. RS485 port (for future use)
7. GPIO Harting, har-flexicon port
8. PSU port (to connect the provided power adapter)

2. Connect both CM70-IP cameras using a CAT6x ethernet cable (**NOT** provided in the package contents) to the ethernet ports at the front of the CD500.

3. Connect a HDMI cable to the HMDI port of the CD500 to see its video output. The figure below shows how to connect all components to the back and front of the CD500.
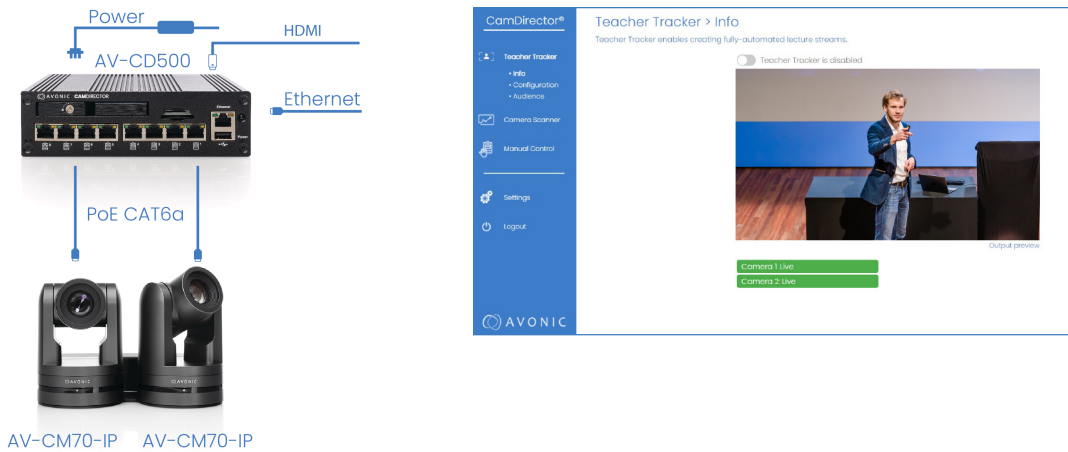
After connecting the provided power adapter and the CAT 6 Ethernet cable, the CD500 will start automatically.

Download User Manuals

You can also download the manuals for the activated modules and follow those instructions for the additional steps necessary to configure the CamDirector®.

Compatible hardware list

The following hardware is compatible with the CD500:

Audio Interfaces

- Focusrite Scarlett 2i2 3rd Gen

- Focusrite Scarlett 4i4 3rd Gen

- Behringer U-Phoria UMC204HD

Maintenance

CD500 and Camera Maintenance

Take the following actions to maintain the CD500 and the AV-CM70-IP cameras:

- If you will not be using the Product and/ or the AV-CM70-IP cameras for a long time, turn off the power switch and disconnect the AC powercord of the AC adaptor to the outlet.
- Use a soft cloth or tissue to clean the camera and Product cover.
- Please use the soft dry cloth to clean the lens. If the camera is very dirty, clean it with diluted neutral detergent.

Do not use any type of solvents, which may damage the surface.

Usage Precautions

Take the following precautions to ensure good image quality:

- Cameras: Do not film extreme bright objects for a prolonged period of time, such as sunlight, light sources, etc.
- Cameras: Do not operate in unstable lighting conditions, otherwise the produced image could be less than optimal.
- CD500 and cameras: Do not operate close to powerful electromagnetic radiation, such as TV or radio transmitters, etc.

Transport and storage

The CD500 must be transported in its original packaging box. Inside the box, it is recommended to wrap the CD500 in the original plastic bag and to place it in the protective foam.

Specific guidelines apply to the environmental temperature and humidity when operating and storing the camera.

See '**Operating humidity**' and '**Storage temperature**' in the provided **Datasheet** for the applicable values.

Disposal and Recycling

In general, the term 'E-Waste' applies to items of all types of electrical and electronic equipment and its parts that have been discarded by the owner as waste without the intention of re-use.

Avonic outsources the disposal and recycling of its E-Waste Product materials to the **Stichting Open**.

> See **https://stichting-open.org/ for more information about the disposal and recycling.**

Troubleshooting

General

1. Turn the CD500 and the CM70-IP cameras off and on again and check if the problem persists.
2. If the problem persists after putting the CD500 and the camera off and on again, restore to the factory default.

Power Issues

If the CD500 power LED is OFF:
1. Check the net power.
2. Check the power supply.

No Image

1. Check the power of the camera and monitor.
2. Check the quality and length of the (HDMI) video cable between the cameras and the CD500.
3. Check if the video specifications of your monitor matches the specifications of the cameras.

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