

TV-A

TV Adapter



Instructions for Use

bernafon[®]
Your hearing • Our passion

Introduction to this booklet

This booklet guides you on how to use and maintain your new TV-A. Please read the booklet carefully, including the Warning section. This will help you to get the most out of your new TV-A.

If you have additional questions about the use of your TV-A, please contact your hearing care professional.

Manufactured under licence from Dolby Laboratories. Dolby and the double-D symbol are registered trademarks of Dolby Laboratories.

Intended use

The TV-A is intended as a wireless transmitter of sound from a TV or from other electronic audio devices to hearing aids.

The TV-A is intended to be used by children (> 36 months) and adults together with their hearing solution.

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Package content

The TV-A box consists of the following elements:



TV-A



Power supply



RCA
cable



TOSLINK
cable



SCART
adapter



















Mini jack
adapter



This booklet

TV-A overview

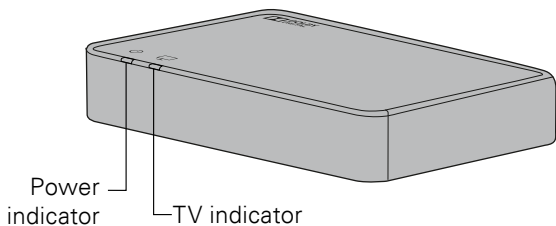
Mode	 Power indicator	 TV indicator
Power on, not paired to any hearing aids		
Pairing complete (steady light 30 secs)		
Power on, not streaming		
RCA inserted and streaming		
TOSLINK inserted and streaming (digital)		
TOSLINK inserted and streaming (invalid signal)*		
Fault condition**		

	No light		Blinking
	Fading		Steady

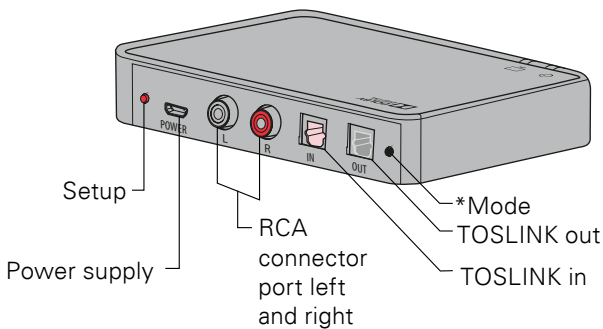
* Try other input connection

** Contact your hearing care professional

Front view



Back view



* Reserved for future use

Installation

Using the TV-A for the first time

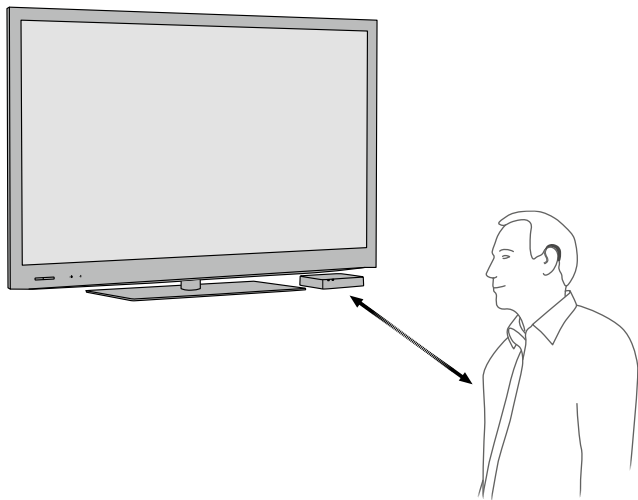
Before you can use your hearing aids with your TV, the TV-A must be connected to a power outlet, connected to the TV and paired with your hearing aids.

This is a step-by-step guide on how to install the TV-A.

All parts needed for the installation are included in the package.

Placing the TV-A

Place the TV-A close to the TV horizontally, with free line of sight to the hearing aids.

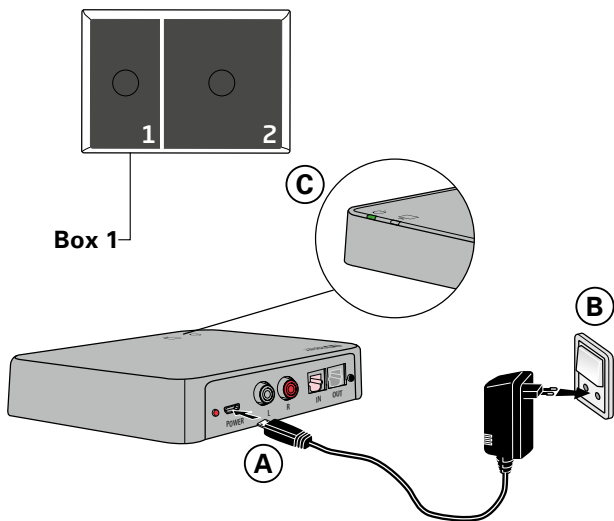


Connecting the TV-A to a power outlet

Start by connecting the TV-A to a power outlet.

Use the power supply from box 1

1. Plug the power cord into the “power” connector on the TV-A (A).
2. Plug the power supply into the mains wall socket (B).
3. Check that the power is turned on (C); after a few seconds both indicators will fade blue to indicate that pairing with your hearing aids is needed. See page 24.



Connecting the TV-A to the TV

You can connect the TV-A to the TV in four different ways.

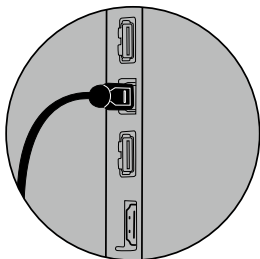
Connection	Page
TOSLINK (either digital stereo PCM or Dolby® Digital*)	16
RCA audio output (L + R)	18
Mini jack output (typically headphone output)	20
SCART audio output (L + R)	22

* Dolby and the double-D symbol are registered trademarks of Dolby Laboratories.

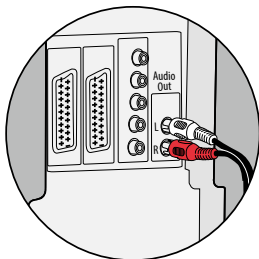
We recommend using TOSLINK.

Please see the following pages for a solution which fits your TV.

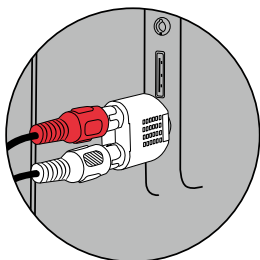
TOSLINK (p. 16)



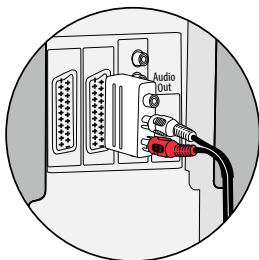
RCA (p. 18)



Mini jack (p. 20)



SCART (p. 22)

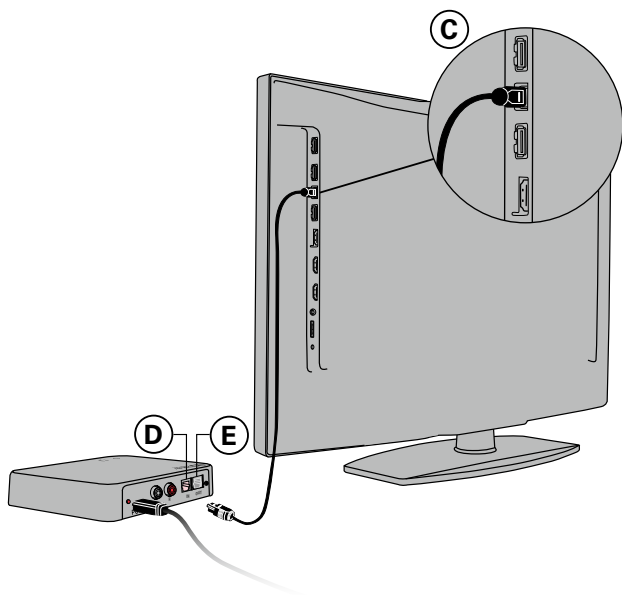
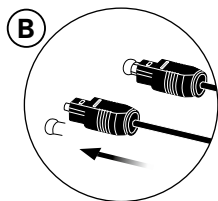
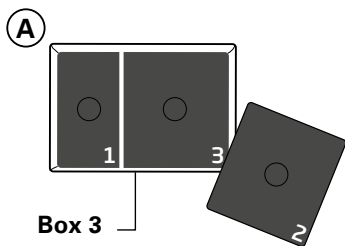


Connecting using TOSLINK

1. Use the TOSLINK cable from box no. 3 (A).
2. Remove the plastic cap from the TOSLINK cable (B).
3. Connect the TOSLINK cable to the TOSLINK output on your TV/home theater system (C).
4. Connect the TOSLINK cable to the pink TOSLINK input (D) on the TV-A.
5. The TOSLINK output (E) may be used to connect other TOSLINK devices such as external Dolby Decoders and surround sound systems.
6. Refer to page 24 for pairing of the TV-A with your hearing aid.



It may be necessary to configure your TV, DVD player or home theater system so that the correct audio output is available on the TOSLINK output.

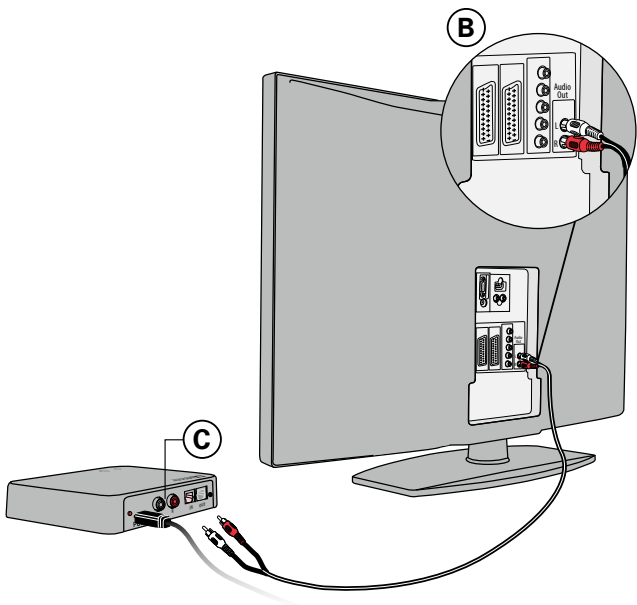
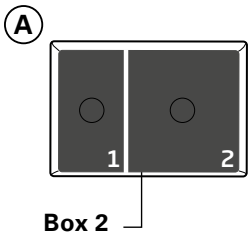


Connecting using RCA

1. Use the RCA cable from box no. 2 (A).
2. Connect the RCA cable to the RCA output on your TV (B) or home theater system. (Typically marked "L – R AUDIO OUT" and found on the TV back or bottom panel.)
3. Connect the RCA cable to the RCA connectors (C) on the back of the TV-A.
4. Refer to page 24 for pairing of hearing aids with the TV-A.

*

It may be necessary to configure your TV so that the correct audio output is available on the RCA output.

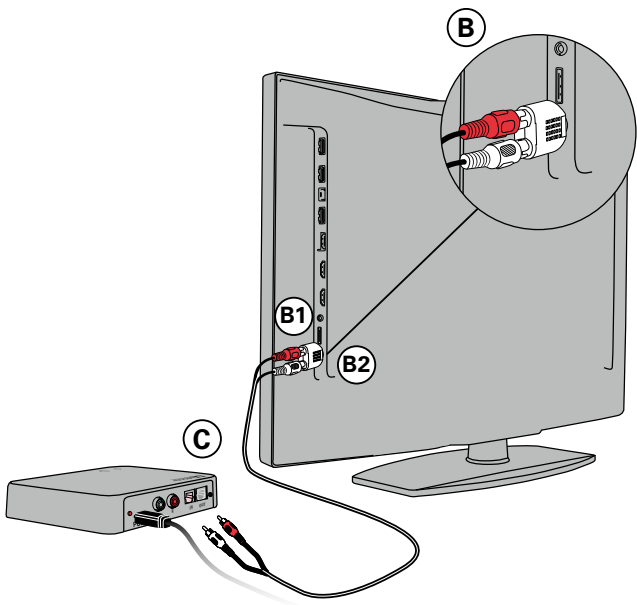
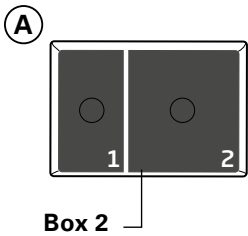


Connecting using mini jack adapter

1. Use the mini jack adapter from box no. 2 (A).
2. Connect the RCA cable to the mini jack adapter (B1).
3. Connect the mini jack to the TV, this is typically the headphone output (B2).
4. Connect the RCA connectors to the TV-A RCA input (C).
5. Refer to page 24 for pairing of the TV-A with your hearing aids.

*

The TV speakers may be muted when connecting to the headphone output, and sound only heard through the hearing aids/TV-A.

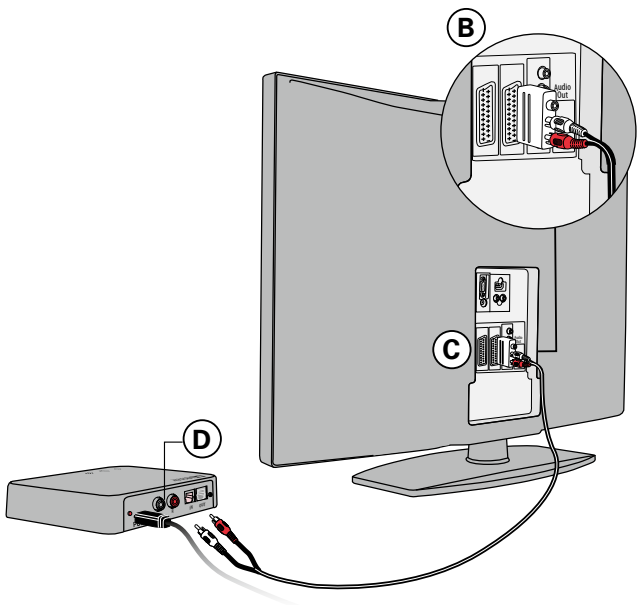
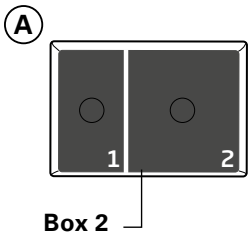


Connecting using SCART

1. Use the SCART adapter from box no. 2 (A).
2. Connect the RCA cable to the red and white terminals on the SCART adapter (B).
3. Connect the SCART adapter to the SCART output on your TV (C).
4. Connect the RCA connectors to the TV-A RCA input (D).
5. Refer to page 24 for pairing of the TV-A with your hearing aids.

*

The audio output on the SCART connector can be dependent on the source selected on the TV. For example, some TVs will only make TV sound available on the SCART output (i.e. not sound from a connected DVD player).



Pairing the TV-A with your hearing aids

Before using the TV-A, it must be paired with your hearing aids.

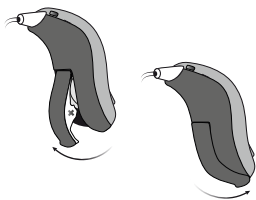
Pairing is only required once, and takes around 20–60 seconds.



This TV-A can be paired to as many hearing aids as you like. All users will be able to hear the same sound. Please see page 38 for more details.

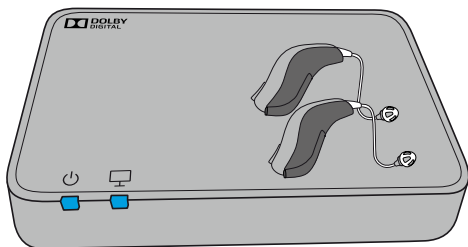
IMPORTANT NOTICE

Please refer to your hearing aid's instructions for use for details on the functionality of your specific hearing aid solution.




Make sure the TV-A is powered on.

Open and close the battery door on both your hearing aids.



Place both hearing aids close to, or on top of the TV-A.

Pairing is completed when the power indicator and the TV indicator are blue for about 30 secs.

TV-A	Description
	Pairing completed

Start TV sound using your hearing aids

Once a TV-A has been paired with your hearing aids, it will be available as a program in your hearing aids. To listen to TV simply press and hold the program switch on your hearing aids to change program.

The program cycle will depend on the programs already available in your hearing aids.

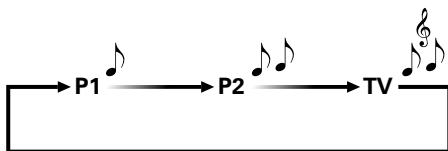
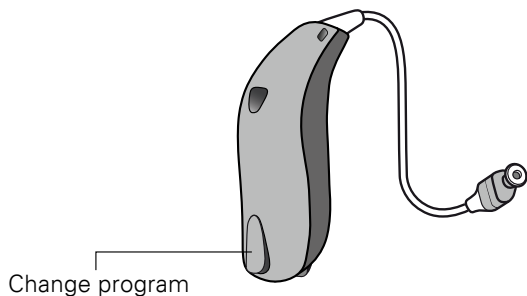
The TV program indicator – which is different from hearing aid program indicators – will be heard once the TV program is selected.

IMPORTANT NOTICE

Please refer to your hearing aid's instructions for use for details on the functionality of your specific hearing aid solution.

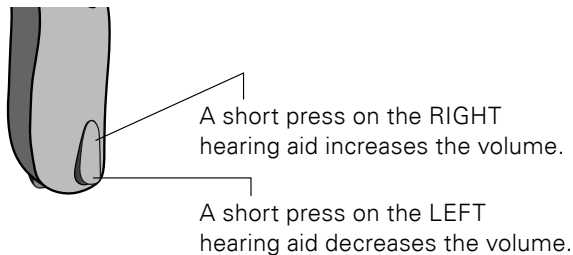
Turn off TV sound using your hearing aids

To stop the sound from the TV simply change to the desired program in your hearing aids.



Volume control using your hearing aids

Use the volume button on your hearing aid to adjust the TV volume level in both hearing aids. Adjust the volume by pressing up or down briefly. Press briefly, repeatedly, for further adjustments.



The TV volume in the hearing aids is normally not affected by volume adjustments from the TV remote control.

IMPORTANT NOTICE

Please refer to your hearing aid's instructions for use for details on the functionality of your specific hearing aid solution.

Start TV sound using the hearing aid remote control

The RC-A remote control is an optional accessory to your wireless hearing aids.

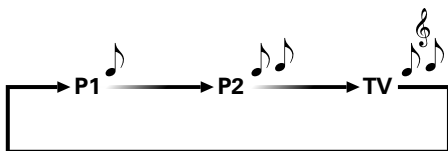
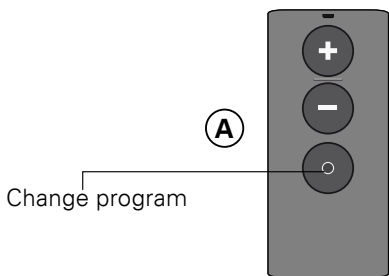
Once a TV-A has been paired to your hearing aids it will be available as a program. To listen to TV simply press the program selector and change program (A).

The program cycle will depend on the programs already available in your hearing aids.

The TV program indicator – which is different from program indicators – will be heard once the TV program is selected.

Turn off TV sound using your remote control

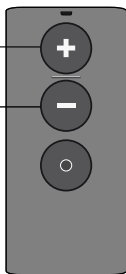
To stop the sound from the TV simply change to the desired program in your hearing aids.



Volume control using your RC-A remote control

Use the volume buttons on your remote to adjust the TV volume level in both hearing aids.

Adjust the volume by pressing up or down briefly. Repeat the brief press for further adjustments.



*

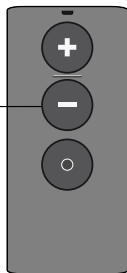
The TV volume in the hearing aids is normally not affected by volume adjustments from the TV remote control.

Mute using your RC-A remote control

While watching TV you can switch off the microphones in your hearing aids, so that only the sound from the TV is heard.

Press and hold the volume down button for approx. 3 seconds until the surrounding sound is muted.

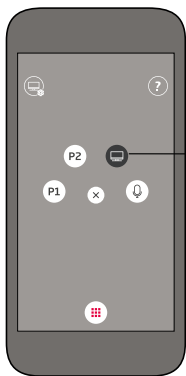
To unmute simply press volume up or down briefly.



The mute and volume functions are optional and can be customized by your hearing care professional.

Start TV sound using the Bernafon EasyControl-A app

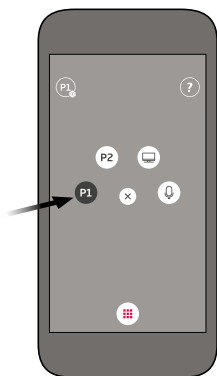
The Bernafon EasyControl-A app is an optional accessory to your wireless hearing aids. The app works with iPhone®, iPad®, iPod touch®, and Android™ devices. iPhone, iPad, and iPod touch are trademarks of Apple Inc., registered in the U.S. and other countries. Android is a trademark of Google Inc.



Once a TV-A has been paired to your hearing aids it will be available as a program in your hearing aids and visible as a source on the Bernafon EasyControl-A app. To listen to TV simply select the TV source from the app.

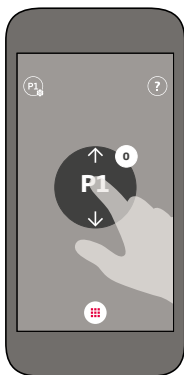
Turn off TV sound using the Bernafon EasyControl-A app

To stop the sound from the TV simply change to the wanted program in your hearing aids.



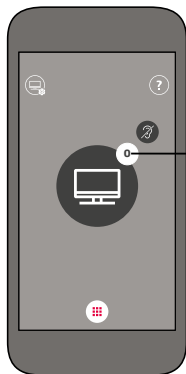
Volume control using the Bernafon EasyControl-A app

Swipe your finger up or down to adjust the volume.



Mute using the Bernafon EasyControl-A app

While watching TV you can switch off the microphones in your hearing aids, so that only the sound from the TV is heard.



Press the volume indicator to mute the surrounding sounds.

To unmute simply press the volume indicator again, or swipe your finger up or down to adjust the volume.

More than one user

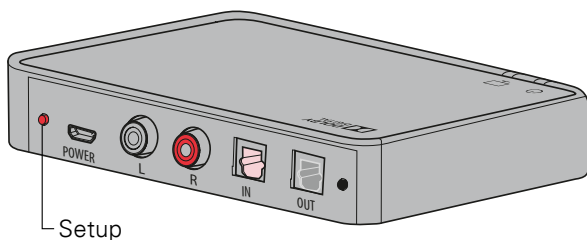
An unlimited number of hearing aid users can listen to the sound from one TV-A.


Pair the hearing aids to the TV-A as described on page 24.

Removing a user/clear pairings

To remove a user from your TV-A perform a system reset and re-pair the required hearing aids.

1. Reset system: press and hold the setup button for more than 5 seconds.
2. Indicators fade blue to indicate no pairings.
3. Re-pair the required instruments (see page 24).



TV-A	Description
	No pairings

Cleaning and maintenance

Use a soft, dry cloth to clean the TV-A.

IMPORTANT NOTICE

The TV-A must never be washed or immersed in water or other liquids.

Warnings

You should familiarize yourself fully with the following general warnings and the entire contents of this booklet before using your TV-A to ensure personal safety and correct use. Consult your hearing care professional if you experience unexpected operations or events with your TV-A.

Choking hazards and risk of swallowing small parts

- Your TV-A and its parts should be kept out of reach of children and anyone who might swallow these items or otherwise cause injury to themselves. If small parts are swallowed, see a doctor immediately.

Warnings

Explosives

- The power source in your TV-A has insufficient energy to cause fire in normal usage conditions. The TV-A has not been tested for compliance with international standards concerning explosive environments. We recommend not to use your TV-A in areas where there is a danger of explosions.

Interference

- Your TV-A has been thoroughly tested for interference according to the most stringent international standards. However, interference between your TV-A and other devices may occur, (e.g. some mobile telephones, citizens band devices and other wireless devices). If this occurs, increase the distance between the TV-A and the interfering device.

Connection to external equipment

- The safety of the use of the TV-A when connected to external equipment (via auxiliary input cable, via USB cable, or directly), is determined by the external equipment. When connected to external equipment plugged into a wall outlet, this equipment must comply with IEC-60065, IEC-60950 or equivalent safety standards.

Technical information

Model name	TVA3
Operating conditions	Temperature: +5°C to +40°C Humidity: 15% to 93%
Storage and transportation conditions	Temperature: -25 °C to +70 °C Humidity: 15% to 93%, non-condensing
Dimensions	124 x 80 x 21 mm; weight 107 g
System features	<ul style="list-style-type: none">• Autopairing: TV-A will automatically pair with hearing aids in pairing mode• AutoStream: TV-A will automatically start streaming audio when a valid audio signal is detected• MultiConnect: TV-A can connect to an unlimited number of hearing aids
Compatibility	The TV-A works with all versions of Bernafon hearing aids with 2.4 GHz radio technology

Input connectors/ format	<ul style="list-style-type: none"> • Mini jack 3.5 mm (L+R) (using included cable and converter) • SCART (L+R) using included converter and RCA cable • RCA (L+R) • TOSLINK Digital Stereo (PCM)/Dolby Digital®
Output	TOSLINK (buffered output of TOSLINK input)
Range	Up to 15 meters (free line of sight from TV-A to hearing aids)
Audio inputs (format)	<ul style="list-style-type: none"> • Stereo analog input (RCA) • Stereo/PCM (TOSLINK) • Dolby Digital® (TOSLINK)
Latency (TV-A input to hearing aid speaker)	<p>Analog: 25 ms</p> <p>Digital: 28 ms</p> <p>Dolby Digital®: 45 ms</p>
Line input sensitivity	6 dB V _{rms} (analog), impedance: 10 K Ω

Audio bandwidth	10 kHz/stereo from input to hearing aids
Dynamic self-adjustment	AGC (analogue inputs) (line in approximation to 0 dB 5 secs)
Status indicators	Power and status LED on front
Colors	Dark gray
Power consumption	Idle, not streaming sound: 0.8 W Streaming sound: 1.5 W
Transceiver:	
Operating frequency	2.402 GHz – 2.480 GHz (ISM Band)
Number of channels	39
Output power	Max. 17.1 dBm EIRP. In compliance with all relevant standards.
Channel bandwidth	1 MHz/2 MHz
Type of modulation	GFSK/2GFSK
ITU designator	F7E

The TV-A contains a radio transceiver using Bluetooth Low Energy (BLE) and a proprietary short range radio technology both working at 2.4 GHz. The 2.4 GHz radio transmitter is weak and always below 17.1 dBm EIRP in total radiated power.

The TV-A complies with international standards concerning electromagnetic compatibility and human exposure.

Due to the limited space available on the TV-A relevant approval markings can be found in this document.

USA and Canada

This device is certified under:

FCC ID: 2ACAHTVA3

IC: 11936A-TVA3

The device complies with Part 15 of the FCC Rules and with Industry Canada's licence-exempt RSSs.

Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This Class B digital apparatus complies with Canadian ICES-003.

Note: 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. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the manufacturer or an experienced radio/TV technician for help.

To comply with FCC RF exposure requirements, the device and the antenna for this device must be installed to ensure a minimum separation distance of 20 cm or more from a person's body. Other operating configurations should be avoided.

International Warranty

Your TV-A is covered by an international limited warranty issued by the manufacturer for a period of 12 months from the date of delivery. This limited warranty covers manufacturing and material defects in the device itself, but not in accessories such as batteries, cables, power supplies, etc. Problems arising from improper/incorrect handling or care, excessive use, accidents, repairs made by an unauthorised party, exposure to corrosive conditions, damage due to foreign objects entering the device or incorrect adjustments are NOT covered by the limited warranty and may void it. The above warranty does not affect any legal rights that you might have under applicable national legislation governing sale of consumer goods. Your hearing care professional may have issued a warranty that goes beyond the clauses of this limited warranty. Please consult him/her for further information.

If you need service

Take your TV-A to your hearing care professional, who may be able to sort out minor problems and adjustments immediately.

Date: _____ Model: _____

Warranty period: _____

Serial no.: _____

Hearing Center

The manufacturer declares that this TV-A is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

Declaration of Conformity is available at the manufacturer.



SBO Hearing A/S
Kongebakken 9
DK-2765 Smørum
Denmark
www.sbohearing.com

Notes

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SBO Hearing A/S
Kongebakken 9
DK-2765 Smørum
Denmark
www.sbohearing.com



Waste from electronic
equipment must be
handled according to local
regulations.



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Your hearing • Our passion