

# audiotec

## OWNER'S MANUAL

### AT-48DSP



**4CH IN-8CH OUT DIGITAL SIGNAL PROCESSOR**

# Digital Signal Processor Features

- 4-channel input, 8-channel output
- Remote for preset recall and level control
- DSP software support: PC
- Speaker signal sensing,summing & delay
- Toslink input(optical input)
- 31 band equalizer per channel
- Wireless connection and audio streaming

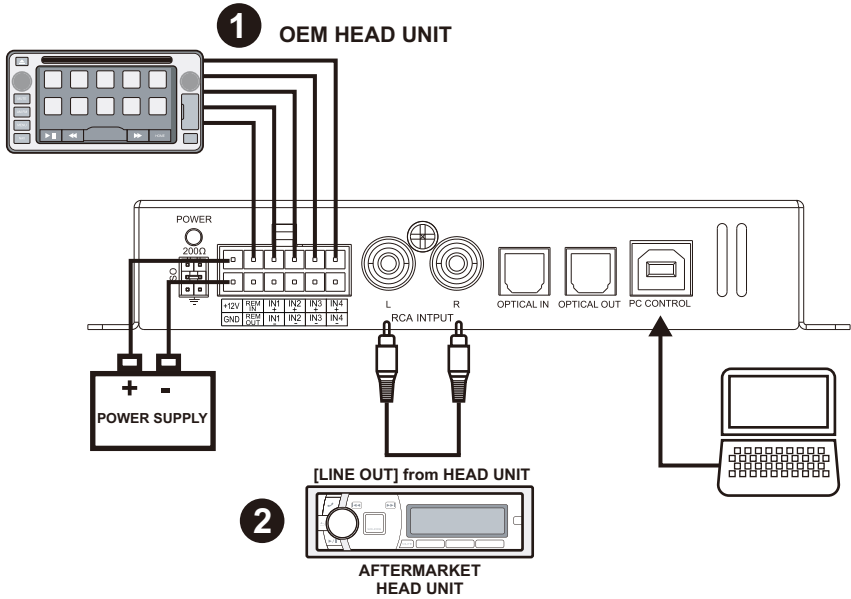
# Digital Signal Processor Features

## SPECIFICATIONS

Model	AT-48DSP
Voltage Range	5.3V-16.5V
Input Channel	4 channels high level 2 channels low level Optical fiber input Bluetooth input
Output Channel	8-channel low-level output
Low Level Output Voltage	≥3V
High Level Input Impedence	≤33Ω (Automatic selection of input impedance)
RCA Input Impedence	≥10K
Low Level Output Impedence	<50Ω
RCA Input S/N	≥105dBA
High Level Input S/N	≥100dBA
RCA Input T.H.D	0.01%
High Level Input T.H.D	0.02%
REM OUT Output Current	>100mA
RCA Input Sensitivity	66/1.4V—60/2.8V
High level input Sensitivity	66/5V-10V—60/10V-20V
EQ(variable)	31 bands
Dimensions(W x H x D)	156.5 x 87 x 26.5mm 6.2 x 3.4 x 1.0"

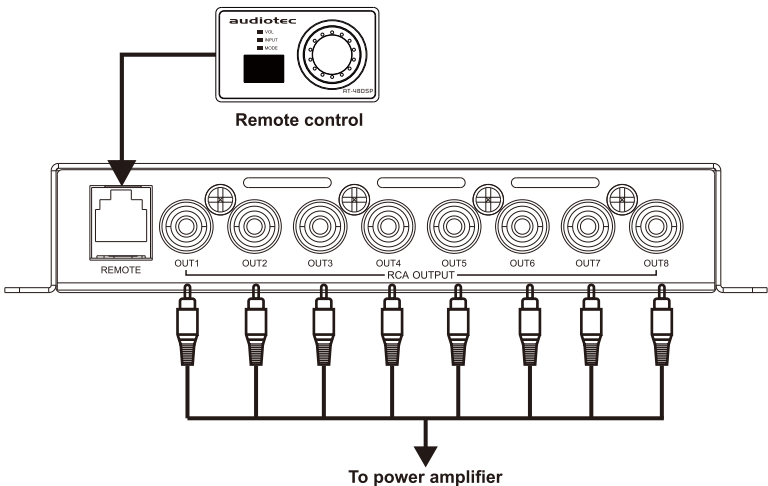
All features are subject to change in the continuing effort to improve the products without notice.

# INPUT CONNECTIONS

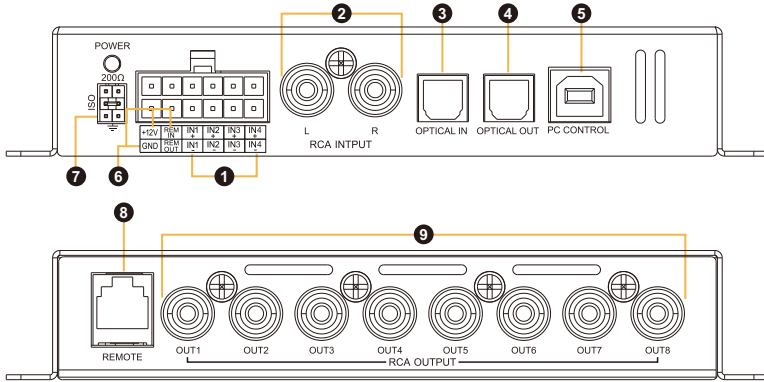


- 1.High level input(Typically OEM radio)
- 2.Low level input(Typically aftermarket radio or processor)

# OUTPUT CONNECTIONS



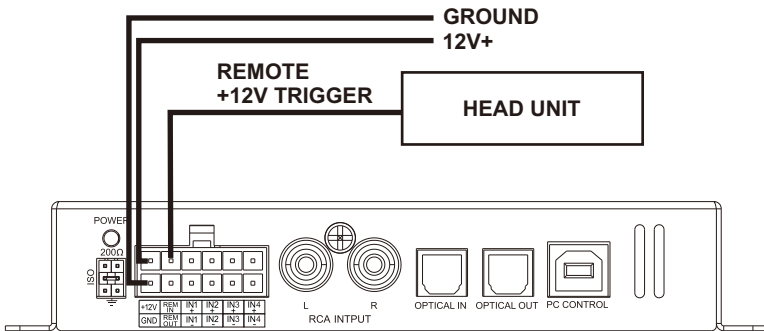
## CONNECTOR DESCRIPTION



1. Speaker level inputs
2. RCA analog line level inputs
3. Optical digital inputs
4. Optical digital outs
5. PC control

6. +12V power, ground, Remote in/out connector
7. Ground isolation jumpers
8. Remote control connector
9. RCA analog line level outputs

## POWER CONNECTIONS



### REMOTE TURN ON/SPK DC SENSE

The AT-68DSP has two options, a 12v remote input and speaker DC sense option

#### REMOTE INPUT OPTION:

The head unit has a +12V trigger output that is connected to the AT-68DSP remote input terminal. When the head unit is turned on, it will turn on the AT-68DSP. The remote out connection of the AT-68DSP may be used to daisy-chain to additional units or amplifier, turning them on as well.

#### SPEAKER SIGNAL SENSE OPTION

Alternatively, the signal sense feature can be used to turn on the AT-68DSP when a speaker level input signal is detected at IN1/IN2 then the connection to the AT-48DSP's remote input terminal is not required.

An in-line fuse holder with a 3A fuse should be fitted in the +12V line.

#### WIRED REMOTE:

Channels 7-8 are the default sub channels for the remote sub volume control.

## DSP SOFTWARE DOWNLOAD



### WINDOWS SOFTWARE DOWNLOAD:

<https://www.mercanelektronik.com.tr/urunler/audiotec-9050/dijital-sinyal-islemciler-dsp-168830/detay/563557/at48dsp>

Works with Windows XP/Vista /WIN7/WIN8/WIN11 operating systems

Once the software is downloaded, double-click the installation file

Follow instructions on the screen until your software installation is complete.

### WINDOWS INSTALLATION:

- Double click the AT-48DSP icon to open the software and the main screen will appear as shown below.
- Once the unit is connected to your computer via the included USB cable the computer will find the new device once the AT-48DSP is powered on and will automatically install the device on your computer.
- Once the device installation is complete the software and the hardware settings will automatically sync.

Once installed you will be able to use the DSP software on your device.



# DESKTOP/WINDOWS SOFTWARE INTERFACE

AT-48DSP software Windows software is divided into 5 sections:

**Section 1** - Input type:high level,AUX,Bluetooth and optical

**Section 2** - Select crossover types

**Section 3** - EQ settings for each output

**Section 4** - Adjust delay settings

**Section 5** - Output channel configuration and mixer settings:The input signal gain of output channels (CH1-CH8) can be adjusted from this page.This page can be used to sum input channel by adjusting input channel levels.



# DESKTOP/WINDOWS SOFTWARE INTERFACE

## Section 1:



### MIX

Directing the input source channels to the corresponding RCA output channels.

This screen will allow you to do 2 things:

- 1) Route the inputs to which outputs you prefer
- 2) Adjust the level of each input to its output

The output level will be defaulted to 100 and can be changed other value between to 0~100 manually.



### EQ

Each channel output has a 31-Band Parametric Equalizer.

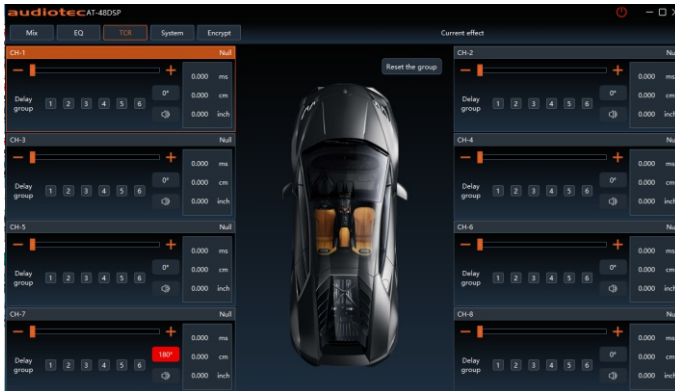
To adjust simply drag the slide to adjust the equalizer frequency points; when the mouse is moved to the left and right of the small red box, press and drag left and right to adjust the equalizer Q. All parameters are displayed simultaneously adjust the current real-time equalizer is also updated value EQ parameters in the editing area.



## TCR - TIME CORRECTION

Configure time alignment for all 8 RCA output channels individually, or group them using the Delay Group function.

The delay can be adjusted in milliseconds (ms), centimeters (cm), or inches (in) - depending on your preferred unit of measurement.



## System

### Memory Setting

You can save different system settings using six available Presets.

1) Save a preset:

- Press the Save button
- Select the Preset # of your wish to save to
- Enter a name for your preset
- Press the Save button again to confirm

2) Load a preset:

- Press the Call button
- Choose the preset you want to activate
- The selected preset will be loaded
- The currently active sound effect will be displayed in the upper right corner of the screen

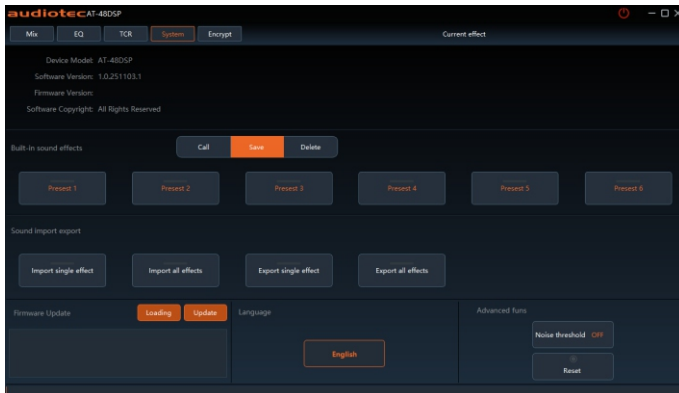
Sound effect import/export

Preset sound settings can be exported and imported either individually or all at once. This allows for easy sharing, backup, or transfer between devices.

Firmware Update

Future firmware updates can be installed via this section. For optimal performance, always download the latest firmware from our official

website: <https://www.mercanelektronik.com.tr/urunler/audiotec-9050/dijital-sinyal-islemciler-dsp-168830/detay/563557/at48dsp>





# DESKTOP/WINDOWS SOFTWARE INTERFACE

## Encrypt

All settings can be encrypted by kicking the button on the top left and a window box will be prompted for a password setting.

After setting a password, all user settings have been encrypted and can't be changed before decrypted.



The data has been encrypted!

## Decrypt

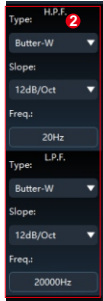
Pressing the Decrypt button on top left will prompt a window box for decrypting the password set before.



The data has been encrypted!

# DESKTOP/WINDOWS SOFTWARE INTERFACE

## Section 2:



### TYPE

Set the shape of your crossover

- Bessel: Slow smooth roll off
- Lin\_Ril: Linkwitz-Riley-Steep roll off, 6dB down at filter cutoff frequency
- Butter\_W: Butterworth - Flat and balanced roll off, 3dB down at filter cutoff frequency

### FREQ

- Set the frequency points for each crossover
- Frequency Range: 20 Hz - 20,000 Hz

### SLOPE

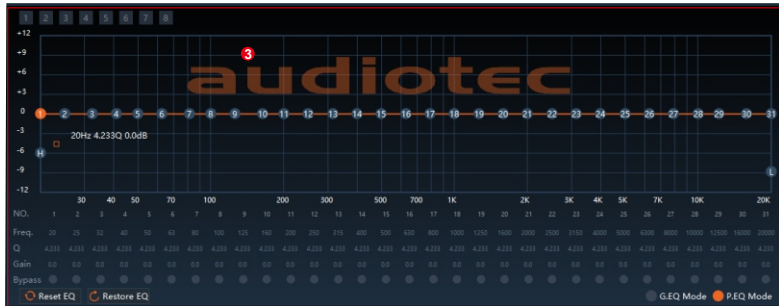
- This is where you can set the slope for each crossover point
  - Slope Options: 6 dB, 12 dB, 18 dB, 24 dB, 30 dB, 36 dB, 42 dB, and 48 dB per octave
- See below for the crossover points selected for CH1



Repeat these instructions for each of the 8 output channels

# DESKTOP/WINDOWS SOFTWARE INTERFACE

## Section 3:



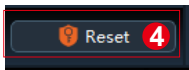
### EQUALIZER

This section you can fine tune each output channel to achieve the user's desired preference  
THE AT-48DSP FEATURES 31 BANDS OF ADJUSTMENT

Each band allows you to adjust the following:

- Frequency
  - Q - How wide or narrow the adjustment should be
    - Narrow Q will affect only the selected frequency
    - Wide Q will affect the output of nearby frequencies
- dB: Decide how much to cut or boost the selected frequency

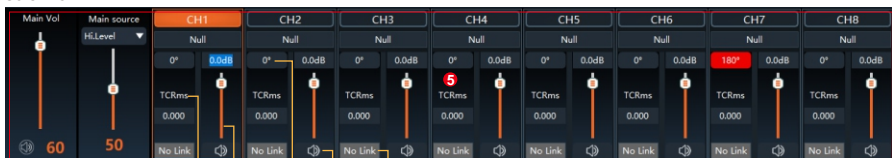
## Section 4:



### RESET

Pressing the button Reset will reset the specified channel type to Bypass(Default)

## Section 5:



### 1.OUTPUT LEVEL

• Here you can set the output level for each of the 8 output channels

### 2.PHASE

• Here you can set each output channel at 0 or 180 degrees

### 3.MUTE

• Select which of the 8 output channels you would like to mute

### 4.TIME DELAY

This is where you can add delay on a speaker to allow the sound to hit both of the listener's ears at the same time to improve imaging.

Determining Distance

- If the listener is in the DRIVER side
- The PASSENGER side speaker (CH2) could be at 0"
- The DRIVER side speaker (CH1) could be set to 10" which is the DIFFERENCE in distance between the two speakers to the listeners ear. (Do NOT enter in the actual distance for each speaker to the ear, only the difference in length).

### 5.ADJUST VOLUME CONTROLS FOR ALL LINKED CHANNELS

Click the icon for the channels you want to link and adjust their VR control simultaneously by sliding one VR control.

## REMOTE OPERATION

**NOTE: Channels 7-8 are the default sub channels for the remote sub volume control**

- HOME SCREEN:**
- Rotate knob to adjust volume
  - Short push knob to mute/unmute
  - Long push knob to enter menu

- MENU SCREEN**
- Select input - AUX, High Level, Optical, Bluetooth
  - Adjust Subwoofer Volume
  - Adjust LED color
  - Memory [User Preset]

## WARRANTY

### AT-48DSP DIGITAL SOUND PROCESSOR WARRANTY

This product has a 2 year warranty from the date of purchase for defects in material or workmanship.

### WHAT IS NOT COVERED UNDER WARRANTY

- Damage due to improper installation
- Damage caused by exposure to moisture, excessive heat, chemical cleaners and/or UV radiation
- Damage through negligence, misuse, accident or abuse. (Repeated returns for the same damage may be abuse)
- Product damaged in accident and/or due to criminal activity
- Subsequent damage to other components
- Any cost or expense related to the removal or re-installation of product
- Products with tampered, missing, altered or defaced serial numbers/labels
- Freight damage
- The cost of shipping product Mercan Elektronik
- Return shipping on non defective items
- Any product not purchased from an authorized Mercan Elektronik dealer

### SERVICE/RETURNS

Some states do not allow the exclusion or limitation of incidental or consequential damages. The above limitations or exclusions may not apply to you. This warranty gives you specific rights, you may have other rights which vary from state to state. incurred in shipment or due to improper packaging materials used by the purchaser.

If warranty service is required, a return authorization number is required to return the product . Warranty shipments to are the responsibility of the purchaser. Pack the product carefully in the original carton if possible Mercan Elektronik will not be responsible for damages incurred in shipment or due to improper packaging materials used by the purchaser.

If determined to be within warranty your product will be repaired or replaced at the discretion Mercan Elektronik.

Please consult with your local authorized dealer if you experience issues with your unit. Do not attempt to return your amplifier directly to us without first calling for a Return Authorization number. Units received without an accompanying Return Authorization number will be processed more slowly. Additionally, you must include a copy of your purchase receipt from an authorized dealer for consideration of in-warranty service, otherwise repair charges will apply. Units received without a receipt will be held for up to 30 days allowing us time to contact you and obtain a copy of the receipt. After 30 days all units will be returned to you unrepai red.