Nakamichi

FDSK730A
User Manual

DIGITAL SOUND PROCESSOR

nakamichicaraudio.com   nakamichi.global   nakamichi.caraudio

PRODUCT FEATURES

- 10 in 12 out high power HI-RES DSP
- Maximum power of the machine: 1300W
- Support high level input gain adjustment
- Supports digital music: mobile OTG playback
- Supports USB lossless music playback
- Supports Bluetooth music playback
- Super wide frequency range: 20Hz-40KHz
- Support silent or reduced volume when reversing
- Supports steering wheel button control

- 2CH low level inputs
- 10CH high level inputs
- 10CH high level outputs
- 12CH low level outputs
- Supports optical fiber and coaxial input
- Supports external LCD controller
- Supports external APTX HD lossless Bluetooth
- Rated power 4x25W+4x50W+2x100W
- Supports bridging 200W and directly pushing the subwoofer

CHARACTERISTICS

General Specifications

Working voltage	DC 9V-16V
Operating temperature	-20℃~+60℃
Maximum current	50A
Standby current	≤5mA
Product size	210x188x48mm
Product weight	Approx. 2.1kg
Bluetooth version	V5.1
Bluetooth music	support
Bluetooth distance	5M
digital input	Coaxial, optic
Input Channel	2CH L- Level, 10CH H-Level
Output Channel	12CH L- Level, 10CH H-Level
Power on control	High level CH1/CH2 or ACC

Technical Parameter

Output Gain	-60 to 6dB, resolution 0.1dB
EQ band	31 Band /12 CH, preset EQ:6 groups
EQ Gain	-12 to +12dB, resolution 0.1dB
Q value range	0.3 to 50dB, resolution 0.1dB
Frequency range	20Hz-40KHz, resolution 1Hz
Delay accuracy	0.01 ms ｜0.34 cm ｜0.13 inch
Turn on delay	0 to 10,000 ms, with a step of 1ms
input range	Low level: 0-8 Vpp; High level: 0-56Vpp
High and low pass type	Butterworth ｜ Bessel ｜ Link-Rill
High and low pass slope	OFF-48dB/Oct, resolution 6dB
Harmonic distortion	≤0.05%
Signal-to-noise ratio	≥98dB

Power amplifier parameters

CH	Rated power 14.4V 4Ω	MAX power 14.4V 4Ω	Bridge power 14.4V 4Ω	4Ω Speaker	2Ω Speaker
CH1-CH4	50W	100W	/	Support	Not supported
CH5-CH8	25W	50W	/	Support	Support
CH9-CH10	100W	200W	200W	Support	Support

Supported formats

1. Supported audio formats: MP2,MP3,WMA,APE,FLAC,AAC,MP4,M4A,WAV,AIF,AIFC

2. Supported audio sampling rate: 8KHz,11.0225KHz,16KHz,22.05KHz,24KHz,32KHz ,44.1KHz,48KHz

3. Supported USB flash drive formats :FAT32 ｜ NFTS ｜ eXFAT

4. Maximum supported capacity of USB flash drives: 256GB

PRODUCT LIST

DSP power amplifier x1	20P DSP cable x1	16P high input cable x1
16P speaker cable x1	OTG connector x2	Computer tuning cable x1
Fuse x2	Installation bracket x2	Instruction Manual x1
screws 4x20mm x2	screws 3x8mm x4	Bluetooth Antenna x1

PRECAUTIONS

Please install it on models with a 12V power supply. If installed in a vehicle with a 24V power supply, it may cause damage to the machine and lead to combustion.

Please install in a well-ventilated location. If installed in a fully enclosed environment, excessively high temperatures may cause the machine to enter a protective state after working for a period of time. The sound can only return to normal after the temperature drops.
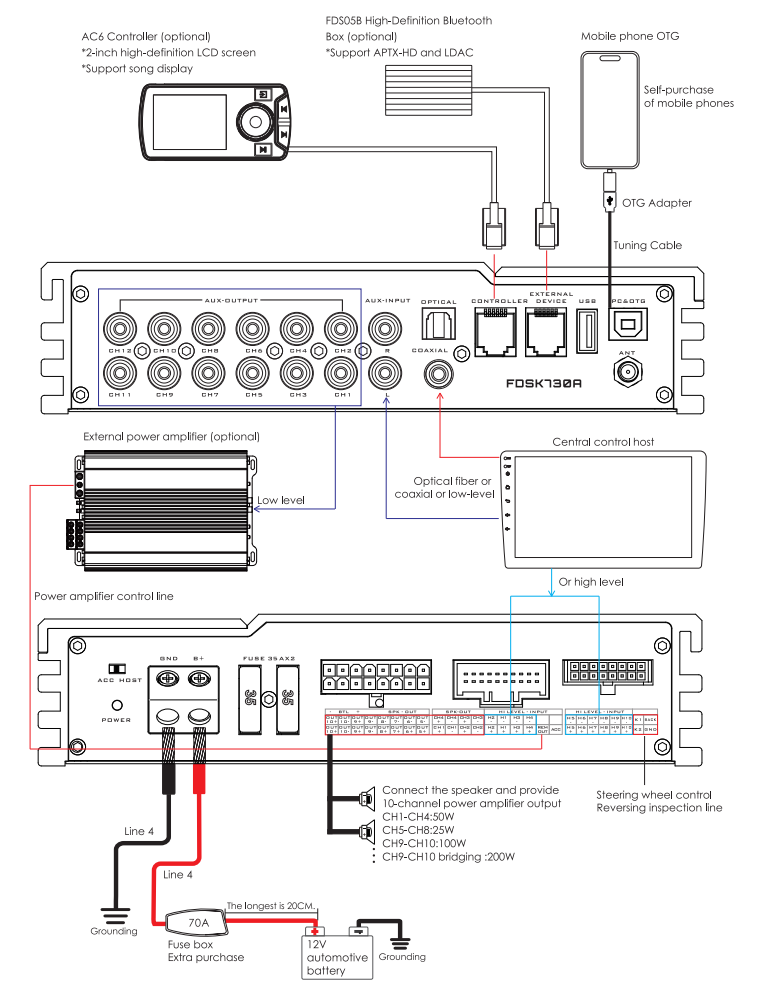
Please have professionals install it. If it is not done by professionals for tuning and installation, when the wiring or Settings are incorrect, it may cause damage to the speaker or the machine.
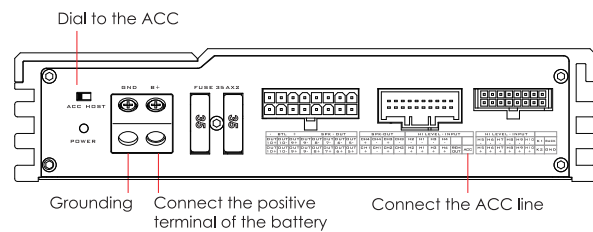
Please ensure that you use wires that match the machine's current. If you use wires that do not match the machine's current or have poor grounding, it may cause the machine to make intermittent sounds It is silent after being played intermittently or for a period of time.
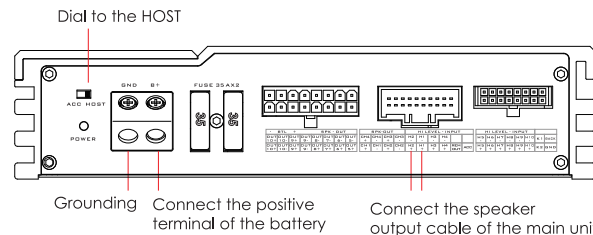
SYSTEM MATCHING DIAGRAM

AC6 Controller (optional)
*2-inch high-definition LCD screen
*Support song display

FDS05B High>Definition Bluetooth Box (optional)
*Support APTX-HD and LDAC

Mobile phone OTG
Self-purchase of mobile phones

OTG Adapter
Tuning Cable

FDSK730A

External power amplifier (optional)
Low level
Optical fiber or coaxial or low-level
Central control host

Power amplifier control line
Or high level

Line 4
Line 4
The longest is 20CM

Connect the speaker and provide 10-channel power amplifier output
CH1-CH4:50W
CH5-CH8:25W
CH9-CH10:100W
CH9-CH10 bridging :200W

Steering wheel control
Reversing inspection line

Grounding
70A
12V automotive battery
Grounding

Fuse box Extra purchase

WIRING DIAGRAM

ACC starts up and turns on (that is, the DSP turns on when the car starts)

Dial to the ACC

Grounding   Connect the positive terminal of the battery   Connect the ACC line

High-level startup (DSP startup when the l host is turned on)

Dial to the HOST

Grounding   Connect the positive terminal of the battery   Connect the speaker output cable of the main unit

The steering wheel control line and the reversing line are connected

Steering wheel control line 1 — K1
Steering wheel control line 2 — K2
Connect the reversing line — BACK
Grounding — GND
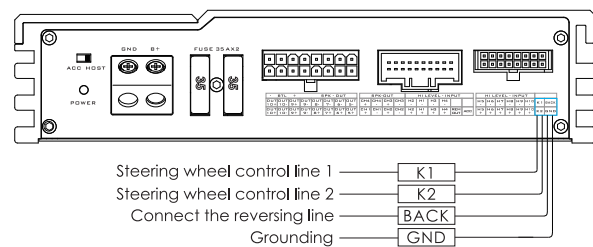
INTERFACE INTRODUCTION

AUX OUTPUT   OPTICAL CONTROLLER   USB
A   D E   PC&OTG
Bluetooth antenna interface
AUX INPUT COAXIAL   EXTERNAL DEVICE

ACC/HOST   REM OUT   "ACC line"
P Q
POWER GND B+   Fuse   SPK OUT   Hi-LEVEL INPUT HI-LEVEL INPUT
Steering wheel control Reversing inspection line
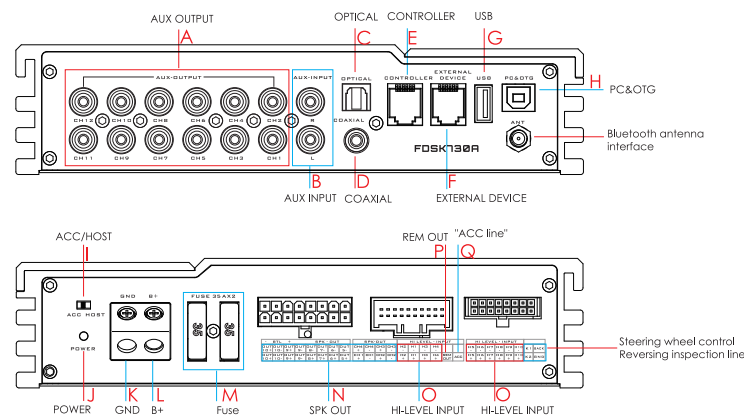
Interface description:

A. AUX OUTPUT: Expandable external amplifier, connected to the RCA input of the amplifier.

B. AUX INPUT: Connect to the L-level output of the host or the RCA output of other playback devices.

C. OPTICAL: Connect the optical fiber output of the host or that of other playback devices.

D. COAXIAL: Connect to the coaxial output of the host or the coaxial output of other playback devices.

E. CONTROLLER: The line controller AC6 supports volume control and song display.

G. USB: USB interface.

F. EXTERNAL DEVICE: Connect to FDS05B, supporting APTX and LDAC high-definition music.

H. PC&OTG: When playing OTG on a mobile phone, an OTG adapter needs to be connected.

I. ACC/HOST: ACC: Turn on the car when it starts. HOST: Boot up when the host is turned on.

J. POWER: Blue light: Powered on. Red light: Entered protection (will be activated after cooling down).

K. GND: Connect to the negative terminal of the power supply. Please use Line 4 and ensure it is well grounded.

L. B+: After passing through the fuse (optional), connect the positive terminal of the battery. Please use Wire 4.

M. FUSE: Fuse. When the fuse blows, please be sure to use a fuse of the same specification.

N. SPK OUT: Connect the speaker.

O. HI-LEVEL INPUT: Connect to the high-level output of the main unit.

P. REM OUT: Connect the REM OUT port of the power amplifier. When the DSP is turned on, the power amplifier is also turned on.

Q. "ACC line": Connect to the car's ACC fuse box.

PHONE APK INSTALLATION

Android Phone APK Installation

Method 1

1. Open phone browser, scan the QR code to enter the download

2. Find the FDSK, select Android for download and installation

Method 2

1. Enter the PC browser,enter nakamichicaraudio.com

2. Click ENQUIRIES-Downloads-DSP software Download

3. Find FDSK,select Android for download and installation

iPhone APK Installation

Open the app store, Search Nakamichi FDSK for download and installation

Installation precautions

1. During the installation process, please turn off the antivirus software

2. Android phone: Download and unzip before installing

3. During the installation process, please click on allow this installation or authorize this installation based on known application risks.

4. Send APK via mobile phone, please send a compressed file, unzip it upon receipt, and then proceed with installation

APP Connection

Before operating the app, turn on your phone's Bluetooth first

1. Open the FDSK APP
2. Select FDSK730A,Click OK
3. Click on the top right corner
4. Turn on Bluetooth on your phone

When connecting for the first time, a pop-up box will appear. Please select 'Allow' If not allowed, Bluetooth cannot be searched.

Unconnected   Connected
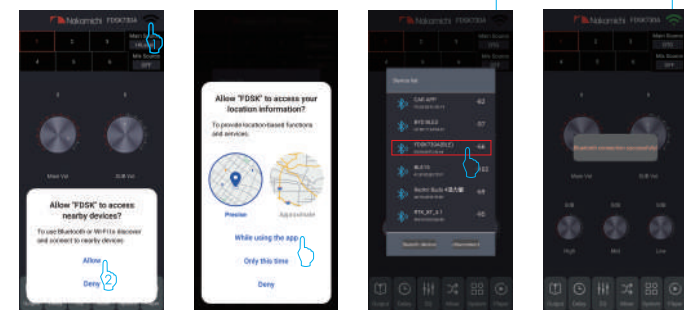
BASIC OPERATIONS

The following operations need to be performed after the APP is installed and connected.

LEARNING OF STEERING WHEEL BUTTONS

1. Click on [System] and select [Control learning]
2. Click on the key function you want to learn on the screen
3. Please press the key you want to operate on the steering wheel within 10 seconds. When the bottom of the key turns yellow, it indicates that the learning is successful

4. For other key learning, repeat the operations in steps 2 and 3
5. After completing all the learning, click [Save Result]When the key learning is incorrect, you need to relearn. Press [Start Again].

Before learning the keys   After learning is successful

After successful learning The background is yellow.
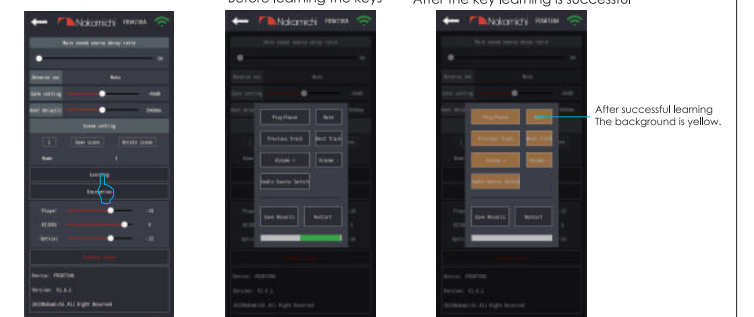
Reversing volume setting
Click [System] and select [Reversing Volume]
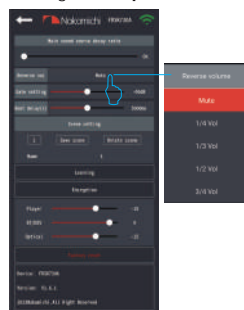
Signal source selection
Click on the main audio source to select the signal source

Low level

phone OTG

USB PLAYBACK

1.When a USB flash drive is inserted, the DSP will jump to USB playback.

2. Click on [Player] to enter the player interface. Click on [Player] to enter the player control interface. When in other states and you need to switch to USB playback, click on the audio source and select [Player].

Select the player   Player interface

- Update the list of tracks
- Random play | Sequential play
- The previous song
- Play/Pause
- The next piece
- Single repeat | All repeat
- Reduce the volume
- Volume up

BLUETOOTH MUSIC PLAYBACK

When playing music via Bluetooth for the first time, pairing is required first

1. Turn on your phone's Bluetooth and search for available devices: FDSK730A.
After successful pairing, when playing Bluetooth music, the DSP will automatically switch to Bluetooth mode.When in other states and you need to switch to Bluetooth mode, click on the audio source and select [Bluetooth/Devices].

2. Click on FDSK730A to pair.

Bluetooth pairing   Select Bluetooth

MOBILE PHONE OTG MUSIC PLAYBACK

Mobile phone OTG: It refers to the process of transmitting mobile phone music to the DSP in a high-fidelity digital format, where the DSP performs hard decoding to achieve high-fidelity lossless audio quality.
1.Connect the OTG cable of your mobile phone and play music
2. Enter the mobile APP, click on the main audio source, and select [OTG]

Wiring Diagram   Choose OTG

Tuning Cable

OTG Adapter

EXTERNAL DEVICE PLAYBACK

1.Connect the FDS05B to the EXTERNAL DEVICE port.
2. Turn on the Bluetooth on your mobile phone and search for available devices: FDS05B.
3. Click FDS05B to pair.
When the FDS05B is connected, the built-in Bluetooth music of the original machine will not be playable.

External device wiring diagram   Select external devices

*The FDS05B adopts a Qualcomm Bluetooth chip and supports APTX HD and LDAC high-definition Bluetooth lossless music.

OPERATION OF MOBILE PHONE APP

Main interface   **Main audio source selection interface**

- Tuning archive
- Main audio source selection
- Selection of remix audio sources
- Bluetooth is connected.
- Main volume adjustment: -60dB to 6dB
- Subwoofer volume adjustment-6dB to 6dB
- Low level
- Treble adjustment: -60dB to 6dB
- Bass adjustment -6dB to 6dB
- Mid-range adjustment -6dB to 6dB
- Mobile phone OTG

Output channel Settings   **Output joint debugging**

- Channel
- Selection of speaker type
- Mute & Turn on the volume
- Current channel gain
- Channel gain adjustment -60dB to 6dB
- Phase adjustment
- When conducting joint debugging, two are in one group
- Set up channel interconnection

EQ Settings

- Return
- Channel selection
- EQ curve
- The high and low pass switching frequencies are set from 20Hz to 40KHz. Selection of high and low pass slopes OFF to 48dB/Oct
- Up and down selection
- Numerical adjustment
- Selection of high and low pass types Butterworth | Bessel | Link-Ril
- Q value adjustment 0.3 to 50
- Gain adjustment -12dB to +12dB

OPERATION OF MOBILE PHONE APP

Delayed interface   **Setting interface**

- Mute 1/4 1/3 1/2 1/4 volume
- Attenuation adjustment of the main sound source
- -60dB to -120dB
- 0 to 10,000 ms
- Delay adjustment 0-25 ms 0-850 cm 0-334.65 inch
- Enter the Fangkong learning interface
- Player volume setting
- Bluetooth volume setting
- Optical fiber volume setting
- Delay unit switching ms | cm | inch

Delayed interface   **Player interface**

- Selected mix Sound channel
- Selection of mixing channels
- Mixing ratio selection
- Main audio source selection
- Selection of remix audio sources
- It indicates that mixing is not supported
- List of songs on a USB flash drive
- Song manipulation

PC TUNING SOFTWARE DOWNLOAD

Solution 1:(Mobile Download)
1. Enter the browser and scan the QR code to enter.
2. Click FDSK series and select PC download.
3. After downloading, send to the computer.

Solution 2:(PC Download)
1. Enter the browser and type nakamichicaraudio.com.
2.Click ENQUIRIES--Downloads--DSP Software Download.
2. Click FDSK series and select PC download.

PC TUNING SOFTWARE INSTALLATION

1. Double-click FDSK to install it
*Files sent via mobile phone need to be unzipped.

PC-FDSK (V5.2.7) .exe

2. Click [Finish], PC tuning software installed successfully.

3. Click [FDSK730A], click [OK] to enter the tuning interface

4. Connect the PC and DSP with a tuning data cable.

Installation precautions:
1. Please turn off the anti-virus software when downloading files or installing software.
2. When you need to extend the tuning data cable, please purchase a good quality one.

BASIC OPERATIONS OF COMPUTER TUNING

All Settings will be restored Restore to the factory Settings

The original password is empty

Firmware upgrade

Enter the modified password

*After setting the password, you need to enter it when reconnecting.

- Save the current debugging data — PC Save
- Bring up the current debugging data — PC Load
- Save the scene file — Save All
- Bring up the scene file — Load All
- Silent when reversing — Mute
- Reduce the volume to 1/4 when reversing — 1/4
- Reduce the volume to 1/3 when reversing — 1/3
- Reduce the volume to 1/2 when reversing — 1/2
- Reduce the volume to 3/4 when reversing — 3/4

COMPUTER TUNING OPERATION

The channel is restored to the factory output Settings

Channel clear output configuration

Main audio source selection interface
Channel gain adjustment

When conducting joint debugging, two are in one group

Mixed audio source selection interface
Gain adjustment of the mixing channel

- Optional channel
- Attenuation ratio
- Optional remix
- Dark grey indicates this communication The channel does not support mixing
- Selected Channel
- Remix has been selected
- Main volume adjustment
- Mute or turn on the volume

Mixing interface   **Delayed interface**

☆ Default output | Clear output | Restore factory Settings: Please operate with caution. Before operation, be sure to make relevant backups (such as tuning data)

COMPUTER TUNING OPERATION

- Channel definition
- Curve graph
- EQ adjustment
- Quick tuning
- preset saving preset loading
- Qualcomm low-pass setting

- Selected channel
- Channel mute | Turn on the volume
- Open and close Channel curve
- The curve has been opened
- Closed curve
- EQ band

- "Qualcomm frequency"
- "Qualcomm slope"
- Reset the EQ to the factory state
- Channel gain adjustment
- Save the preset
- Channel gain value
- Qualcomm type
- Noise gate setting
- Calling preset
- Mute | Turn on the volume
- Phase setting
- Low-pass frequency
- Phase setting
- Low-pass type
- 'EQ Direct'
- Startup delay setting

SIMPLE FAULT HANDLING

When encountering abnormalities, please check if the following phenomena occur and eliminate them. If the abnormality persists, please call for consultation.

No electricity	The fuse has blown	Replace the correct fuse
	Choosing "ACC	HOST" for startup and shutdown is incorrect	1.When ACC is selected, please connect the ACC cable
		2. When "HOST" is selected, connect the high-level input
	Poor contact of the power cord	Reconnect the power cord
The sent APK file or PC tuning file cannot be found	Some channels have been deleted or isolated by antivirus or security software without any sound	1.Find the isolated files
		2. Turn off the antivirus or security software and resend
The APP cannot be installed.	What the mobile phone sends is not a compressed file, Yes. APK file	1. Use a computer to convert fDSk.apk,l to FDSK. apk, compress it and then send it to a mobile phone for installation
		2. Ask the other party to send a compressed file for installation
APP was unable to search for D SP's blue teeth	No selection was allowed during the installation process	Reinstall the APK and select Allow
	Location and access are not allowed	Set the FDS location information to allowed in the mobile phone Settings
		Reinstall the APK and select Allow
The computer cannot be connected to the Internet or the computer tuning often disconnects	Poor USB contact	Please replace it with another USB port
	Software problem	Please uninstall and reinstall
	The software has encountered a BUG.	Please close the software and then reopen it to reconnect
	The system is too old.	Please replace your computer with one running Windows 7 or above
	An Apple computer is used	The system compatibility is poor. Please use a WINDOWS computer
The USB playback has sound but becomes silent or intermittent after playing for a period of time	The purchased data cable is of poor quality	Please change the data cable of a good brand and quality
	The machine enters the protection state when the temperature is too high	Please move the machine to a well-ventilated position or install a fan
	The high-level input does not match	Add a detection resistor to the wire
The Bluetooth music cannot play	The Bluetooth is not connected or disconnected	Reconnect Bluetooth
	Bluetooth is isolated by metal	Remove the metal or change the installation position of the machine
The Bluetooth music is intermittent or silent when it's a little farther away	The Bluetooth antenna is not installed or has fallen off	Install the Bluetooth antenna property
	RCA line interference	Please replace the RCA wire with a good quality one
The bottom noise is relatively large	The noise at the bottom of the main unit is high	Adjust the noise gate value or replace the main unit
The sound of the optical fiber is too soft or intermittent	The output amplitude of the optical fiber is relatively small	Replace it with a high or low level input to the DSP
Some channels have no sound	Some channels come with power amplifiers, and some channels have a large wattage	Set the high-level input gain adjustment