Nakamichi®

NDS-10B

DSP BLUETOOTH MODULE

· Bluetooth V4.0 version specification, built-in 16Mb flash memory
· Using CSR's latest CVC voice enhancement technology to make noise reduction and echo cancellation.
· Support multiple audio transmission formats such as SBC, MP3, AAC, APT-X
· Built-in 16-bit stereo codec with digital mode conversion SNR up to 95dB
· Shield is used to reduce interference
· RF power level II, high quality audio, long range reception
· RoHS lead-free production process

PRODUCT CONNECTION

1. Connect the cable of the NDS-10B Bluetooth module to the DSP audio device with the external Bluetooth port;
   LED flashing fast: indicates that the Bluetooth module is in normal startup and is not connected.

2. Open the phone Bluetooth, search for the NDS-10B module name "Nakamichi-DSP" and click the link;
   LED light flashes slowly: The Bluetooth module is in a successful connection with the mobile phone. The LED lights do not flash when some mobile phones are connected successfully.

3. After the mobile phone connection is successful, the mobile phone music can be transmitted through Bluetooth transmission, or can be debugged through the mobile phone DSP tuning app.

LED light
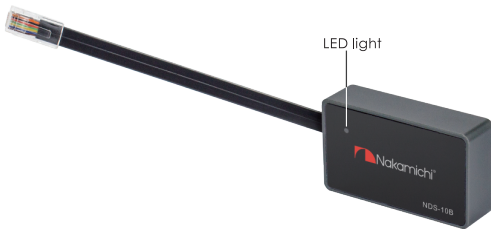
Bluetooth mobile phone connection diagram
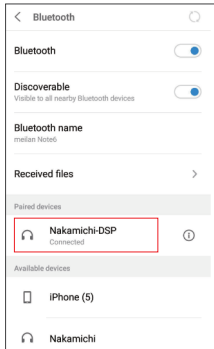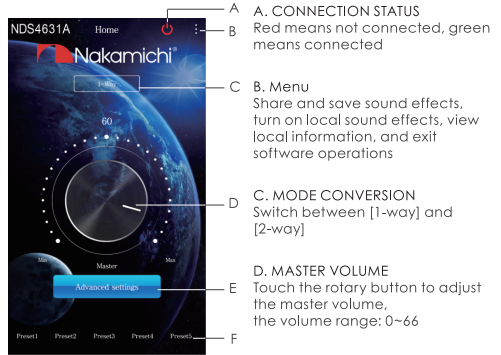
Mobile APP launch interface
（NDS4631A）

MOBILE TUNING APP INSTRUCTIONS

This APP software description uses NDS4631A as a template. For details of other models, please refer to Nakamichi's official website.
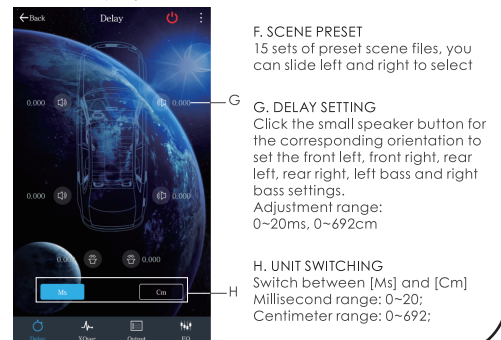
HOME INTERFACE

After the NDS4631A mobile phone software is opened, the preset enters the main interface. Audio file sharing, saving to mobile phone and other operations; can view device and software information, adjust the main volume; select the input source and the type of sound source; encrypt the tuning data; 15 groups of presets Storage and recall of scene files.

A. CONNECTION STATUS
Red means not connected, green means connected

B. Menu
Share and save sound effects, turn on local sound effects, view local information, and exit software operations

C. MODE CONVERSION
Switch between [1-way] and [2-way]

D. MASTER VOLUME
Touch the rotary button to adjust the master volume, the volume range: 0~66

E. ADVANCED SETTINGS
Click [Advanced Settings] to enter the settings of the delay interface, divider interface, channel interface and EQ interface.

F. SCENE PRESET
15 sets of preset scene files, you can slide left and right to select

DELAY INTERFACE

Sound field positioning output channel delay adjustment

G. DELAY SETTING
Click the small speaker button for the corresponding orientation to set the front left, front right, rear left, rear right, left bass and right bass settings.
Adjustment range:
0~20ms, 0~692cm

H. UNIT SWITCHING
Switch between [Ms] and [Cm]
Millisecond range: 0~20;
Centimeter range: 0~692;

XOver INTERFACE

Channel high-low-pass crossover design with high-low-pass independent filter, adjustable: filter type, frequency and Q value (slope)

I. TYPE SELECTION
Choose from Link-Ril, Bessel, Butter-W

J. SLOPE SELECTION
6dB/Oct, 12dB/Oct, 18dB/Oct, 24dB/Oct, 30dB/Oct

K. FREQUENCY RANGE
20Hz ~ 20kHz

OUTPUT INTERFACE

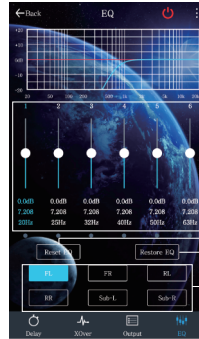Set the output channel volume. Phase and setting high and low pass filters

L. OUTPUT CHANNEL VOLUME
ou can adjust the volume by sliding the slider left and right. The volume range is 0~60. Mute by clicking the speaker button

M. PHASE SETTING
Switch between [0°] and [180°]

N. JOINT SETTING
Click [Link F-LR], [Link R-LR] or [Link SUB-LR], and the selection dialog box will pop up.
F-LR joint adjustment:
CH1 or CH2 can be selected
R-LR joint adjustment:
CH3 or CH4 can be selected
SUB-LR joint adjustment:
CH5 or CH6 can be selected

EQ INTERFACE

Corresponding to the adjustment of the output channel EQ curve (gain, Q value and frequency). Reset equalization, pass-through equalization or recovery equalization operation to set the mode of the equalizer.

O. RESET EQ
Click [Reset EQ] to restore the parameters of the 31-segment equalizer to the original through mode (the equalizer frequency, Q value and gain are restored to the initial value)

P. RESTORE EQ / BYPASS EQ
When the channel is adjusted, the button displays [Bypass EQ]; Click [Bypass EQ] all values (frequency, Q value and gain) will return to the initial value, and the button will display [Restore EQ]; Clicking [Restore EQ] all values (frequency, Q and gain) will restore the value before the pass -through. At this point, the button will display [Bypass EQ]

Q. CHANNEL SELECTION
You can select front left, front right, rear left, rear right, left bass, and right bass for tuning.

R. OUTPUT EQ GAIN SETTING
A total of 31 EQ, left and right sliding screen can be adjusted by EQ
Note: This 31 EQ is the number of EQ segments of NDS4631A, and the number of EQ segments is determined by product.
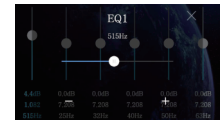
（fig.d）
— EQ Gain
— Q value
— Frequency
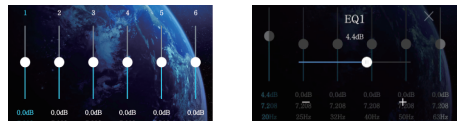
EQ value: Drag the slider up and down to adjust

Gain:
Click the value of the first row of the fig.d, drag the slider bar left and right in the pop-up dialog box to adjust, the adjustment range: -20dB~+20dB

Q value:
Click the value of the second row of the fig.d, and drag the slider to the left and right in the pop-up dialog box to adjust the range: 0.404~28.852

Frequency :
Click the value of the third row of the fig.d, drag the slider bar left and right in the pop-up dialog box to adjust, adjust the range 20Hz~20KHz

PRODUCT SPECIFICATION

Working Frequency Band	2.402-2.480 GHz, ISM Band
Bluetooth	Bluetooth V4.0 Dual Mode
Master Chip	CSR8670
Power Level	Class II
Effective Distance	10m for Empty Area (Typical)
Transmit Power	+4dBm (Typical)
Receiver Sensitivity	-88dB at 0.1% BER (typical)
Frequency Deviation	±10K Hz
Supply Voltage	3.3V
Uint Dimensions	60x35x16mm
Net Mass	Approx. 0.05kg
Box Dimensions	60x22x90mm

WHAT'S IN THE BOX

NDS-10B Bluetooth Module	1pc
User Manual	2pcs (1 Chinese, 1English)