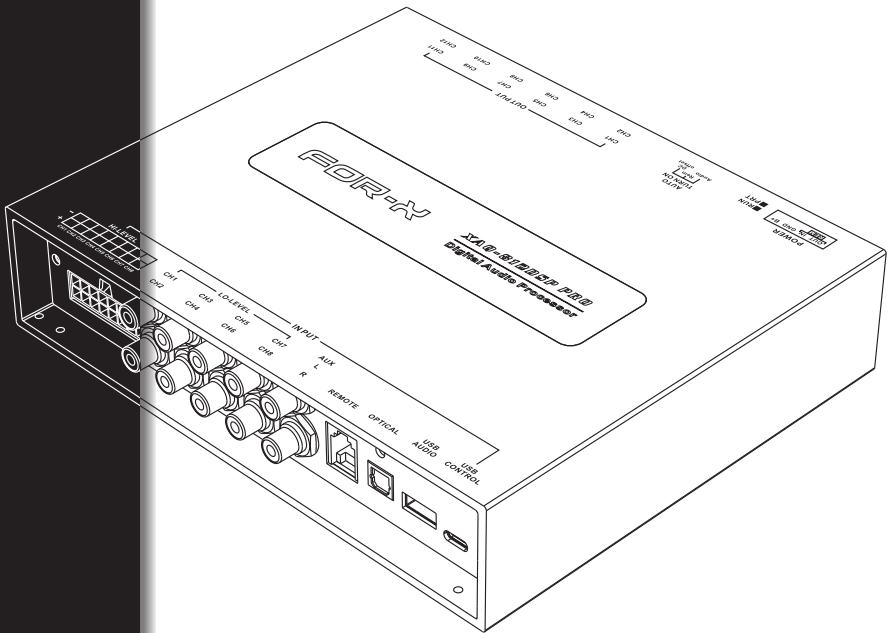# FOR-X

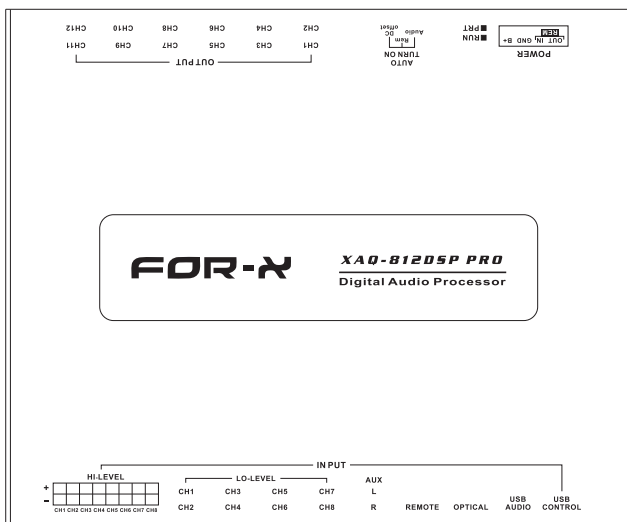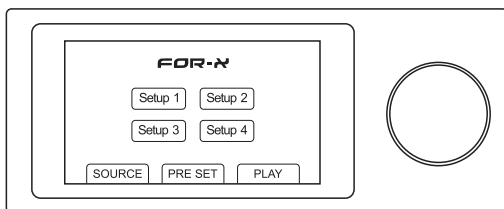## XAQ8-6.70DSP
(DSP WITH CLASS AB AMPLIFIER)

XAQ-812DSP PRO

OWNERS MANUAL

FEATURES

- Global Hi-Fi level components:ADAU1452 as main DSP chip and high grade AD,DA chip.

- Built-in Bluetooth module. It has Bluetooth connectivity to play audio from your smart phone, tablet, or PC. Support Bluetooth 5.0 and downward compatible to 2.0

- U disk lossless audio playing function:WAV/WMA/APE/FLAC/MP3.

- Powerful graphic intelligent PC software.

- Full function remote control with LCD high resolution touch screen:
  Bluetooth and U disk songs' names display;
  Grouped file folders for selecting specific song;
  Main volume, group volume,mute, source selection, storage mode selection, USB flash disk / Bluetooth audio previous and next song control.

FOR-X

| Setup 1 | Setup 2 |
| Setup 3 | Setup 4 |

| SOURCE | PRE SET | PLAY |

CH12 CH10 CH8 CH6 CH4 CH2
CH11 CH9 CH7 CH5 CH3 CH1
OUTPUT

Audio DC offset
Run
AUTO TURN ON

PRT
RUN

POWER
OUT IN GND B+
RES

FOR-X   XAQ-812DSP PRO
Digital Audio Processor

IN PUT

HI-LEVEL   LO-LEVEL   AUX
+   CH1   CH3   CH5   CH7   L
- CH1 CH2 CH3 CH4 CH5 CH6 CH7 CH8   CH2   CH4   CH6   CH8   R   REMOTE   OPTICAL   USB   USB
                                                                            AUDIO   CONTROL

PLEASE READ BEFORE USING THIS EQUIPMENT

1、 Before using the product, please read all safety matters. After finishing reading, please keep this manual for future reference.

2、 To reduce the risk of injury, please keep the product under strict regulation when there are children nearby.

3、 The power supply type of the product must conform to the operating instructions or that marked on the product.

4、 Please make sure you follow the labeling and requirements to connect the device, or else it may cause malfunction.

5、 When the machine is not in use for long period, please turn it off and shut down the power supply. This can prevent the dangers such as fire due accidence from the machine.

6、 Careful maintenance. Keep any metal things such as hairpin or iron nails from falling through the vent holes into the inside of the product.

7、 The product is not allowed to expose to rain or moisture environment. Also objects such as vases, tea cups that filled with liquid are not allowed to put on the product.

8、 Please keep it away from the damp, high temperature, dusty or corrosive environment.

9、 Pay attention to maintain good ventilation. Don't put things such as newspaper or cloth into the vent hole to obstruct the ventilation. When installing the machine makes sure the vent hole is at least 10cm distance away from other objects.

10、 Under the following situations, please entrust a qualified maintenance personnel to repair：

   10.1、 Debris or liquid already fall into the inside of machine.

   10.2、 The product has been caught in the rain.

   10.3、 The product cannot function normally or shows a significant change in the operation.

   10.4、 Products have fallen bad or have serious damage to the appearance.

11、 If there is any abnormal noise or smell in the use of the product, please stop running the machine immediately. Consult a dealer or repair center and ask for a check.

12、 When the situation doesn't belong to description of the user's maintenance guide, please don't try to fix it yourself, and don't open the enclosure. The qualified maintenance personnel shall be entrusted to carry out the repairs.

MAIN FEATURES

Input signal	RCA, High-level, Optical, Bluetooth, U disk signal input
Output signal	XAQ-812DSP PRO：12 Channel RCA audio signal output XAQ8-6.70DSP：6 Loudspeaker Output, 2 RCA Output
Equalizer	Type: Graphic Equalization and Parametric Equalization Filter: 20Hz ~ 20 KHz, increments 1Hz Q value: 0.1 ~ 20 adjustable Gain: - 12.0dB ~ + 25.0dB, increments 0.1dB
Crossover	10 or 31 EQs per channel are optional and adjustable respectively Types of filters: Butterworth, Linkwitz Filter frequency range: 20Hz ~ 20 KHz, increments 1Hz Filter Slope: 6dB/Oct to 48dB/Oct
Phase control	0 °/ 180 °
Delay	0.0 ~ 25.0 ms, 0 ~ 850 cm, 0 ~ 334 inches
Preset	4 Presets data can be stored in the equipment.
Remote control	wireless remote control; wire control

FOR-X

XAQ-812DSP PRO PRODUCT FUNCTIONS INTRODUCTION
connection panels – description
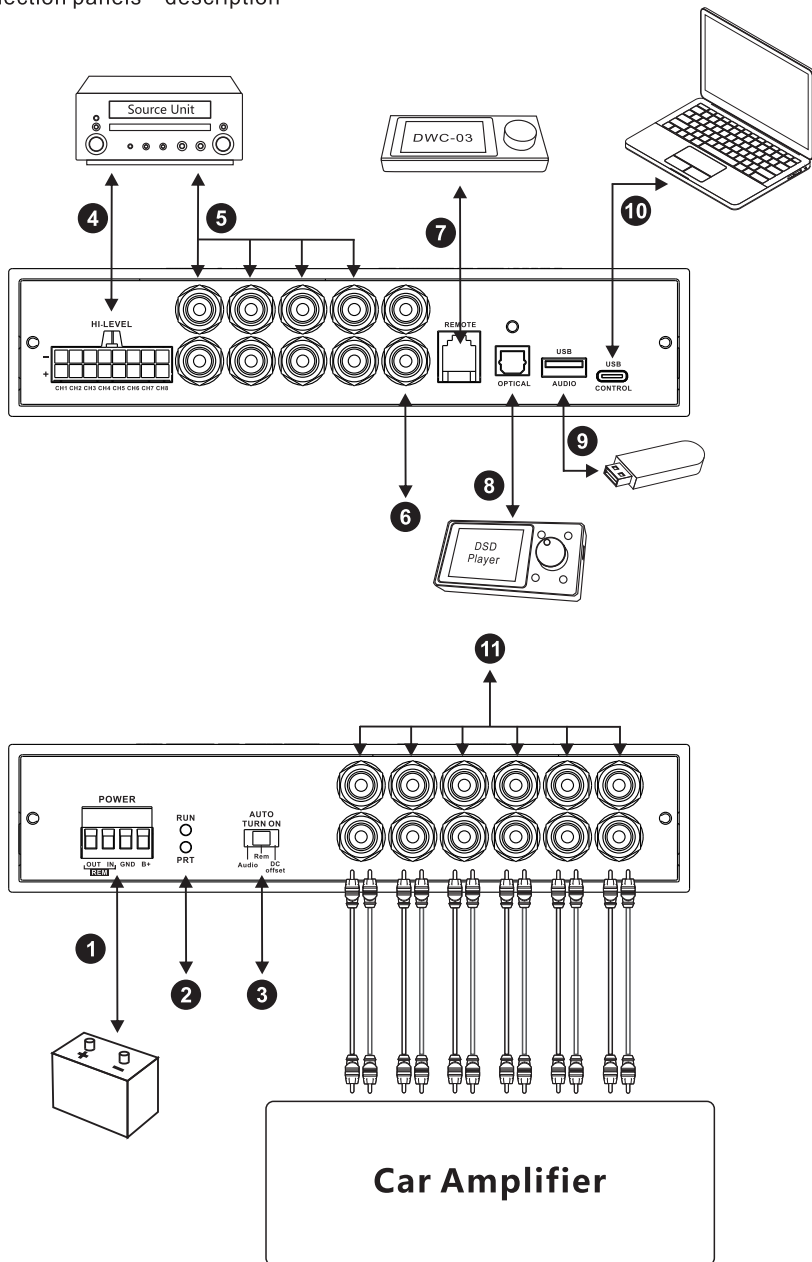
XAQ8-6.70DSP
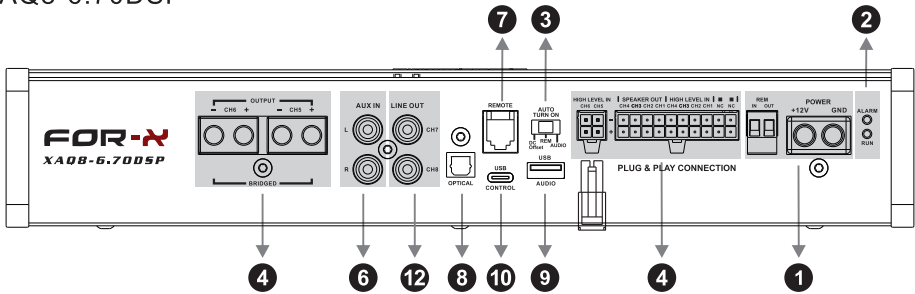
INTRODUCTION OF PRODUCT INTERFACE FUNCTION

① POWER

+12V: Used to connect the positive terminal 12V car battery. In order to ensure adequate power supply for the processor, special cable should be used to connect directly to the positive pole of the battery, and the fuse should be connected in series within 20 centimeters from the positive pole of the battery.

B+: Used to connect the positive terminal 12V car battery. In order to ensure adequate power supply for the processor, special cable should be used to connect directly to the positive pole of the battery, and the fuse should be connected in series within 20 centimeters from the positive pole of the battery.

GND: Used to connect amplifier grounding cable. The power supply grounding cable need to be firmly connected to the frame of the vehicle or other places with good conductivity. Please use the cable with same specifications as the power supply cable and connect to frame of the vehicle near the installation position of the processor.

Rem In: Connect it to the ACC control output Signal. The product will switch on/off automatically with vehicle ACC signal on/off.

Rem Out: It provides separate REMOTE signal output to other amplifiers to control other amplifiers switch turn on/off.

Note: The starting signal of the external power amplifier must be taken from the Rem Out terminal of this equipment.

② Working Status Indicator

RUN LED: Working status indicator.When the processor finishes self-checking and go into proper working status, Blue led will illuminate.

PRT/ALARM LED: Protection status indicator. When this indicator flashes, it indicates that the product is in abnormal working state and there'll be no output signal.

③ Auto Turn on/off control model options

For auto turn on/off mode, it offers three options: DC OFFSET/REM/AUDIO.
REM: When switched to Rem, the remote control output terminal of the OEM source unit is connected to the REM terminal of the processor, which is the preferred starting method.

DC Offset: If the OEM source unit has no REM signal output, you can choose DC OFFSET mode.DC OFFSET can turn on/off processor by detecting the 6V DC Offset from the OEM source unit terminal.

Audio: This mode controls the power switch by detecting audio signals from the source unit. When using this mode, please pay attention to the volume settings of the source unit. If the volume of the source unit is too low, the processor may fail to turn on.

④ High Level Signal Input Terminal

The XAQ-812DSP PRO features 8 high level signal inputs to connect amplified signal cables coming from the main analog source.
This XAQ8-6.70DSP supports Plug and Play operation mode, which can be used without destroying the original vehicle line; supports up to 6-ch high-level signal input. When the original vehicle has six-way signal output, the six-way signal can be simultaneously input through external CH5/6 mode, and the amplified signal will be output after processing by internal DSP.

⑤ Low level Signal Input Terminal

The XAQ-812DSP PRO features 8 low level signal inputs to connect low-level output (PRE OUT) coming from the main analog source.

⑥ AUX Auxiliary Source Signal Input Terminal

This equipment features an auxiliary stereo signal input to connect an external source, mp3 player or other audio sources.

⑦ External Wired Controller Port

The XAQ DSP products supports the remote control of wireless remote controller, and also supports the control of wired controller. By using our special wired controller DWC-03, you can operate XAQ DSP products through the controller to select the sound source, preset mode; adjust total volume, auxiliary volume; mutes, switch between the previous and the next song from Bluetooth/U disk.

⑧ Optical Stereo Digital Signal Input port

Switching processor audio source to optical input can play stereo digital signal output from vehicle CD or external sound source. Optical sampling rate supports 24 Bit/96 KHz

⑨ External U-disk port

It can read music files from U disk, support five formats of audio files of APE/FLAC/WAV/WMA/MP3. If the U-disk failed to read, please format U disk into FAT32. External U disk can support up to 128G.

⑩ USB External Computer Control

Using the standard accessory of Type-C data cable, XAQ DSP products can be connected to PC and controlled and tuned by special PC software. The interface conforms to the standard interface of USB3.0 and backwards compatible.

⑪ Low level signal output terminal

12 Channel Low-level analog signal output. Connection for RCA cables dedicated to the system amplifiers.
Note: The XAQ DSP products has built-in Bluetooth signal receiving function, can play lossless music by Bluetooth.

⑫ Low level signal output terminal

DSP amplifier features low level output function to connect with external amplifier.

INSTALLATION

1.Turn the amplifier upside down.

2.Use eight screws from the standard accessories to install four fixtures on the amplifier (Fig. 1). According to the actual installation position of the amplifier, you can flexibly select vertical (installation 1) or horizontal (installation 2) fixtures to install on the amplifier.

3. Use four black screws from the standard accessories to fix the amplifier to the installation position.

(Fig. 1)

installation 2   installation 2

installation 1   installation 1
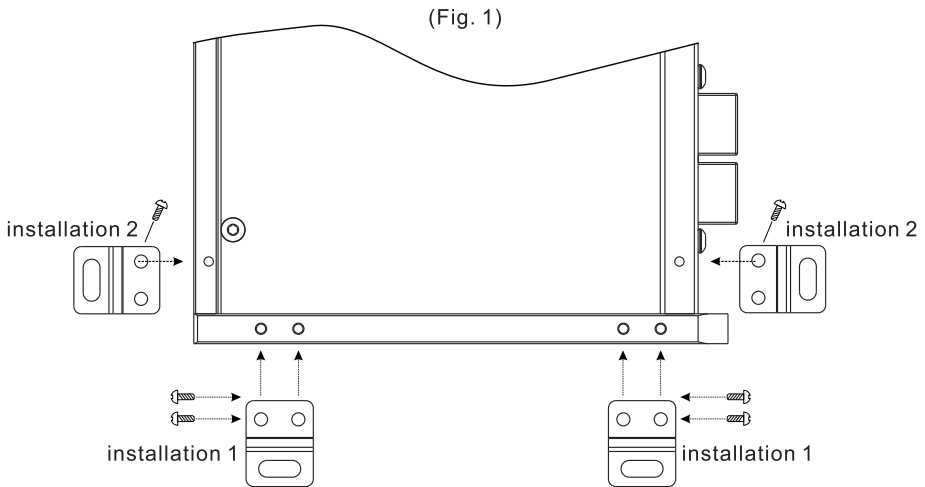
CONNECTING THE AMPLIFIER

● Please prepare sufficiently to layout car space before installation. We recommend having the installation done by an authorized FOR-X dealer.

● Amplifier requires large electric current consumption when working at full power. Please use good insulated power cable to endure long-term use with high electric current.

● The 12 volt power cable must be connected with a fuse in near 45cm(18")of Battery + terminal.

● Please use car audio RCA cables to connect source unit and amplifier. Make sure the RCA jack must not touch the vehicle body. Power cables and signals cables should be layout separately on two sides of the vehicle. All cables should keep away from equipment such as automobile ignition coil and vehicle computer.

● Don't expose any cable out of your vehicle. Please take care insulated cables to avoid damaged when cables pass through metal, Rubber and plastic etc. Do not pull the cable too tight during installation.

● The amplifier must be mounted securely at a solid, Dry and low vibration surface in the trunk or passenger area. Fix the amplifier in an open air area to insure proper heat dissipation.

● When installing the unit, Be careful to avoid perforations on gas tank, Drake lines, fuel lines, hydraulic lines or electrical wiring etc.

XAQ8-6.70DSP Connection Diagram

Minimum Load 2 Ohm

Bass signal output, connection for RCA cables to the external amplifiers

The REM of the external amplifiers must be controlled by the REM output of the XAQ8-6.70DSP

FOR-X
XAQ8-6.70DSP

OUTPUT
CH6 + CH5

BRIDGED

AUX IN   LINE OUT

L   CH7

R   CH8

OPTICAL

REMOTE

AUTO TURN ON

DC REM
Offset   AUDIO

USB
CONTROL

USB

AUDIO

HIGH LEVEL IN
CH6 CH5

SPEAKER OUT
CH4 CH3 CH2 CH1

HIGH LEVEL IN
CH4 CH3 CH2 CH1

REM
NC   NC   IN   OUT

POWER
+12V   GND

ALARM
RUN

PLUG & PLAY CONNECTION

Connect to CH5/6 output of OEM source unit

Source Unit

Dedicated harness connect to OEM source unit

Dedicated harness connect to OEM speaker output terminal

PC Software Instructions

This function is only used by manufacturers and distributors.

Important Instructions for Software Installation

1. Software is run in Microsoft® Windows® system.。

   Configuration requirement for PC:

   Operating system: WindowsXP, Windows7, Windows8, Windows10

   CPU: 1.6GHz or higher

   Memory card: 1GB or higher

   Hard disk: 512MB or more space

   PC resolution: 1280*768 or higher

2. Before connecting XAQ8-6.70DSP or XAQ-812DSP PRO to PC, please install XAQ

   DSP products PC software first.

Software Interface Introductions

Open FOR-X DSP TOOL PC software to enter into the software operation interface. As shown in the picture below, the main functions of the software interface include channel filter selection, sound source selection, EQ, delay, phase, input configuration (mixing), EQ preview, etc.
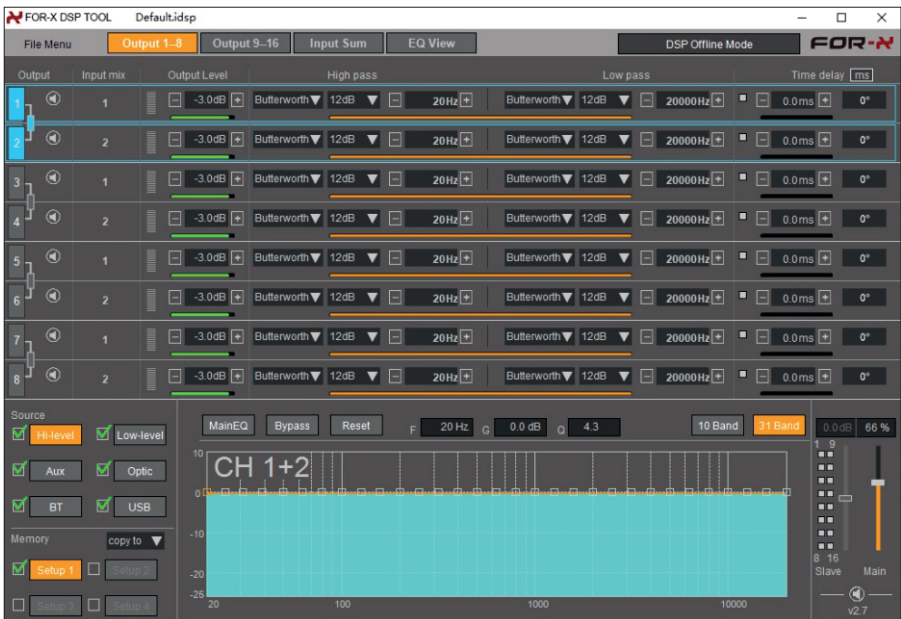
XAQ-812DSP PRO Technical Parameter Indicators

Power source

Working voltage ·· DC 8.2-16V

REM input voltage ··· 9-16V

REM output voltage ·· DC12.8V (0.5A)

Signal Processing

THD @1KHz, 1V Rated power output ··· 0.02%

Band width @-3dB ··· 10 ~ 22KHz

Signal-to-noise ratio @ A weighted, high level input ·· 97dB

Signal-to-noise ratio @ A weighted, low level input ··· 96dB

Signal-to-noise ratio @ A weighted, AUX input ·· 95dB

Signal-to-noise ratio @ A weighted, Optical input ··· 99dB

Channel Separation @ 1 kHz ··· 80 dB

Input sensitivity (low level) ·· 0.12V - 3V

Input sensitivity (high level) ··· 0.4V - 10V

Input impedance (low level) ·· 22KΩ

Input impedance (high level) ··· 360Ω

Maximum output level (RMS) @ 0.1% THD ··· 2V

Input/output

Low level input ··· Up to 8channel

High level input ·· Up to 8channel

Auxiliary input ·· Stereo

Optical Input ·· Stereo(96kHz/24bit)

Bluetooth input ·· Stereo

Low level output ··· Up to 12 channel

Filter mode and slope

Filter type ··· Full/High pass/Low pass/Band pass

Linkwitz/Butterworth ····································· 6/12/18/24/30/36/42/48 dB

Phase control ··· 0° / 180°

Dimension

Length x Width x Height ··· 165 mmx 198 mmx 43mm

XAQ8-6.70DSP Technical Parameter Indicators

Power source
Working voltage .... DC 8.2 -16V
Idling current 0.98A
Standby current .... <5.6mA
REM input voltage .... 8.2 - 16V
REM output voltage DC12.0V (0.5A)

Signal Processing
THD @1kHz, 1V Rated power output 0.02%
Band width @-3dB .... 20 - 20KHz
Signal-to-noise ratio @ A weighted .... >95dB
Channel Separation @ 1 kHz .... >60dB
Input sensitivity (low level) .... 2mV - 2V
Input sensitivity (high level) .... 8mV - 10V
Input impedance .... low level:22KΩ / high level:36Ω
Maximum output level (RMS) @ 0.1% THD 3.5V

Input/output
Low level input .... 2 channel
High level input .... Up to 6 channe
Bluetooth/optical/AUX/USB signal input .... Stereo
Low level (PRE) output .... Up to 2 channe
4Ohm(stereo) power @1% THD .... 6 x 80 Wrms
2Ohm(stereo) power @1% THD .... 2 x 125 Wrms(CH5/6 channel)
4Ohm(bridged) power @1% THD .... 1 x 250 Wrms(CH5/6 channel)

Crossover
Filter type .... Full/High pass/Low pass/Band pass

Filter mode and slope
Linkwitz .... 12/18/24/30/36/42/48 dB
Butterworth .... 6/12/18/24/30/36/42/48 dB
Input/output crossover .... 10 - 20KHz,increments 1Hz
Phase adjustment .... 0° / 180°

Dimension
Length x Width x Height .... 320 x 143 x 56mm