



SDX4.1
5 WAY CROSSOVER
Owner's Manual

English

PACKAGE CONTENTS

1 Crossover SDX4.1

1 Owner's Manual

1 Promotional Sticker

Dear customer,

Congratulations on acquiring your SounDigital!
You've just purchased a product of high quality and technology.
The SounDigital products are developed to assure maximum efficiency and reliability to your sound system.

Electronic Crossover SDX4.1

The crossover SDX4.1 was developed to perform frequency adjustments in sound systems through active electronic filters. These filters provide an improvement both in the quality and in the efficiency of the sound system, resulting in a better performance of the speakers.

Important info:

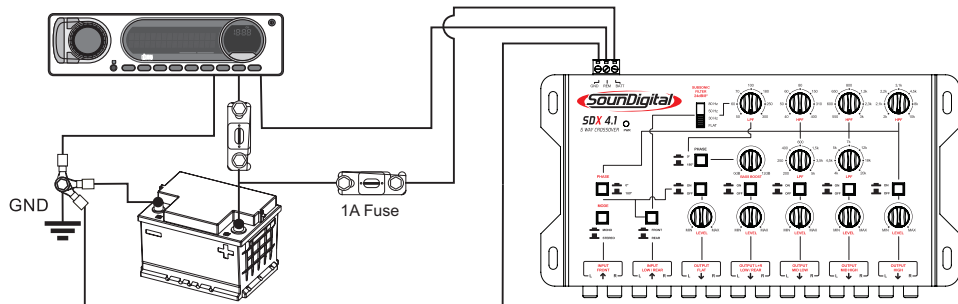
- ▶ Read this manual and follow its instructions and info carefully. It contains extremely important information to have your amplifier working properly. If you feel the need to contact our Tech Support, you can reach our technicians through the e-mail info@sounddigitalusa.com.
- ▶ We recommend the use of Soundigital original accessories for a better performance. The amplifiers, RCA cables and voltmeters offered by Soundigital follow the same quality standards as our crossovers, assuring an excellent quality and high power sound system to our customers.

- ▶ To prevent injuries to the user or damage to the amplifier, read all the safety instructions written on this manual;
- ▶ If you're insecure about the installation of this equipment, get in touch with our tech support or with a professional specialized in car audio installation;
- ▶ Before proceeding with the installation of any electric equipment in your vehicle, unplug the negative (-) terminal of the battery to avoid fires, injuries or damages.
- ▶ Use your sound system safely. The continuous exposure to sound pressure over 85 dB may cause irreversible hearing damage.
- ▶ The location of installation is very important. Please install your SDX4.1 in a solid location with little vibration. It is not recommended to install it directly on subwoofer boxes
- ▶ Use shielded RCA cables to avoid the chance of getting any noise in your sound system
- ▶ Install and wrap the cables properly, away from any sharp parts of the chassis. Make sure to install the RCA cables separate from power cable, speaker cable or any electric equipment such as fuel injection centrals, for example.

SDX4.1 Power Connections

At least 1.5mm² (15 AWG) cable is needed for the power connections of the positive (+) and negative (GND) of your Crossover SDX4.1. For the remote (REM), a 0.5mm² (20 AWG) minimum is needed.

The positive cable should be connected to the the positive (+) of the battery through a 1 ampere fuse installed close to the battery. The negative (GND) cable should be connected to the negative (-) of the battery or to the ground spot closest to the amplifier, in order to avoid unwanted noises on your sound system.



The remote (REM) cable should be connected to the remote output of the CD/DVD player.

All of the connections be it power or RCA, must be done with the equipment off.

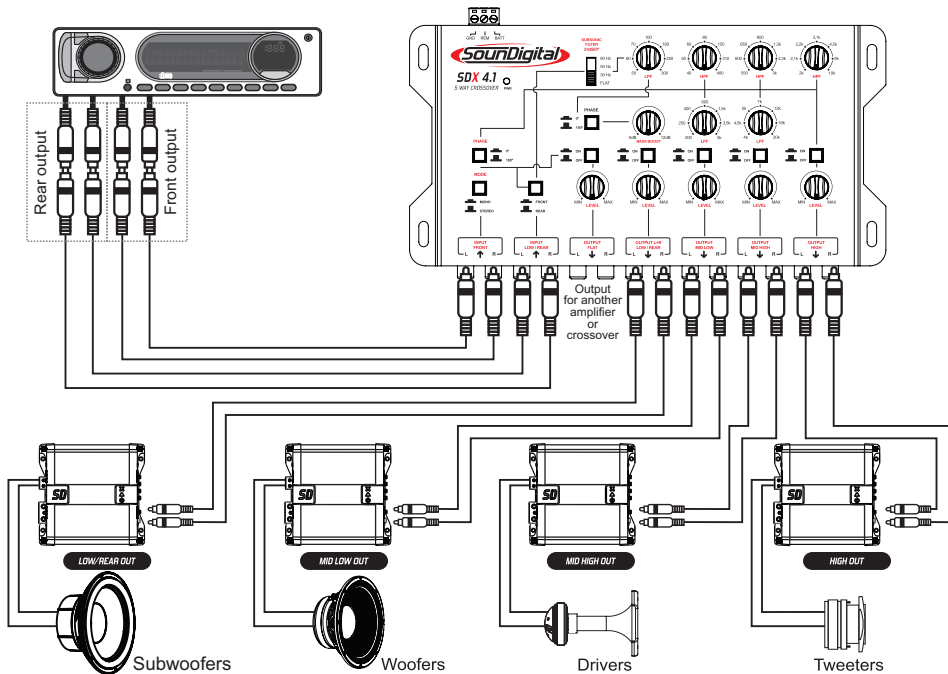
The SDX4.1 has an exclusive delay system, which keeps the internal circuitry energized for up to 10 seconds after shut off avoiding pop noises.

TECHNICAL SPECIFICATIONS OF SDX4.1

- ▶ 5 way stereo analogic crossover;
- ▶ 1 Flat Output / 4 Variable Outputs;
- ▶ 12dB/oct filters;
- ▶ Level adjustments in all of the outputs;
- ▶ 24dB/oct subsonic filter in the Low/Rear output;
- ▶ Mute switch key in all of the outputs;
- ▶ 0/180° phase adjustment in the Mid low / Mid High / High outputs;
- ▶ 0/180° phase adjustment in the Low/Rear output;
- ▶ Front/rear input selection in the Low output;
- ▶ Bass boost adjustment in the Low output
- ▶ Frequency response (-1dB) 10Hz to 100kHz;
- ▶ Input impedance: 10K Ohms;
- ▶ Output impedance: 100 Ohms
- ▶ Current draw: 250mA
- ▶ Power input: 10V to 16V DC;
- ▶ Protection system: Polarity inversion;
- ▶ Channel separation: > 80dB;
- ▶ Harmonic distortion (THD): <0.02%;
- ▶ Max input level: 4V RMS;
- ▶ Max output level: 8.5V RMS;
- ▶ Weight: 1.8 lb;
- ▶ The mono/stereo switch key adds up the Front L and R input channels.

- Flat Output:** Infinite-level adjustment at 0dB;
On/Off mute switch key.
- Low Output:** Flat 30/50/80 Hz 24dB/oct subsonic HPF selectable by switch key;
50 Hz to 300 Hz variable 12db/oct LPF;
0/180° phase adjustment made by switch key.
45Hz, 0 to +12dB bass boost adjustment;
Infinite-level adjustment at 0dB;
On/Off mute switch key.
- Mid Low Output:** Front/Low input signal selection by switch key;
50 Hz to 400 Hz variable 12dB/oct HPF;
30 Hz to 5 kHz variable 12db/oct LPF;
Infinite-level adjustment at 0dB;
On/Off mute switch key.
- Mid High Output:** 550 Hz to 3 kHz variable 12dB/oct HPF;
4 kHz to 20 kHz variable 12db/oct LPF;
Infinite-level adjustment at 0dB;
- High Output:** 2 kHz to 10 kHz variable 12dB/oct HPF;
Infinite-level adjustment at 0dB;
On/Off mute switch key.

SDX4.1 AUDIO INPUT AND OUTPUT CONNECTION SCHEMATICS



The SDX4.1 crossover aims to divide and direct the musical signal according to each audio frequency range, sending this signal to the amplifiers and consequently to the loudspeakers. The correct frequency division guarantees the sound system a higher performance, since each type of loudspeaker works at different frequency ranges, in which they perform best. In addition, the loudspeaker, by working only with suitable frequencies, gets the most protection avoiding accidental damage. When in doubt about the appropriate frequency cuts, always consult the loudspeaker manufacturer.

The SDX4.1 has two audio inputs called Front In and Low /Rear In. The Front In input is responsible for receiving audio signal and sending it to the Flat, Mid Low, Mid High, and High outputs. The Front In signal can also be directed to the Low channel through the switch key located just above the Low /Rear input; the Low /Rear input is used exclusively to send audio to the Low output. This input can be connected to the Rear or Sub outputs of the car radio if it is available in the device used. Connection to the Low /Rear input is not mandatory, and the Low output may also receive audio through the Front In. The Front /Rear switch is responsible for this switching.

In the Front In, we also have 2 (two) adjustment switch keys, a mono /stereo switch key and another Phase switch key. The mono /stereo switch key is used to mix (add) the input channels L and R into a mono signal that is sent to the outputs. In the stereo position, the stereo channels L and R are separated from the output channels. The Phase switch effects a 180° phase rotation on the audio signal from the Front In input, sending the Mid Low, Mid High and High outputs. This rotation is important in cases where you have another sound system connected to the Flat output of the SDX4.1.

By performing the phase rotation 0/180° we can avoid phase cancellations from one system to the other, having an add effect of the sound pressure. This feature is useful when you are linking multiple vehicles to play the same musical program.

Flat Output: The flat output has a level adjust, it dials the signal level on the audio output. Besides the level adjust, it has an On/Off switch key, enabling it to turn off the signal on the audio output without changing the level setting. This output receives signal from the front in and can be utilized on system's external connection, sending signal to another vehicle, for example.

Low Output: the low output can receive audio signal either from the front in and from Low/Rear input, toggling the input by the Front/Rear switch key. After the signal origin for the Low channel is selected, there are the following adjustments: Subsonic Filter, 24dB/oct, LPF, phase key, bass boost adjusts, level adjust and On/Off key.

- ▶ **Subsonic Filter 24dB/oct:** Selects between the following Cutoffs: Flat, 30,50 or 80Hz;
- ▶ **LPF:** Low Pass Filter of 12dB/oct with variable adjust from 50Hz up to 300Hz;
- ▶ **Phase key:** Rotates the Signal's Phase of the Low output, 0° and 180°;
- ▶ **Bass Boost:** Variable adjust for bass enhancement from 0 to 12dB;
- ▶ **Level Adjust:** Adjusts the level of the audio signal of the utilized way;
- ▶ **On/Off switch key:** Turns off the signal from the way, without changing the level setting.

- ▶ **Mid Low Output:** This way receives signal from the Front in audio input, the following settings are possible: HPF, LPF, Level Adjust e On/Off key.
- ▶ **HPF:** High Pass Filters, of 12dB/oct, with variable adjustment from 40Hz up to 400Hz;
- ▶ **LPF:** Low Pass Filter, of 12dB/oct with variable adjust from 200Hz up to 5 kHz;
- ▶ **Level Adjust:** Adjusts the level of the audio signal of the utilized way;
- ▶ **On/Off switch key:** Turns off the signal from the way, without changing the level setting.

Mid High Output : The Mid High Output receives audio signal through the Front In, the following settings are possible in this way: HPF, LPF, Level adjustment and On / Off switch (mute).

- ▶ HPF: High pass filter of 12dB/oct, with variable adjustment between 550Hz and 3kHz;
- ▶ LPF: Low pass filter of 12dB/oct with variable adjustment between 4 kHz e 20kHz;
- ▶ Level Adjustment: Adjusts the audio signal level of the used way;
- ▶ On/Off Switchkey: Lets you turn off the audio signal of the way, without changing its Level.

High Output: The High Output receives audio signal through the Front In, the following settings are possible in this way: HPF, LPF, Level adjustment and On / Off switch (mute). This way doesn't have LPF, having returns up to 100kHz.

- ▶ HPF (High pass filter): Of 12dB/oct, with variable adjustment up to 100kHz;
- ▶ Level Adjustment: Adjusts the audio signal level of the used way;
- ▶ On/Off Switch key: Lets you turn off the audio signal the way, without changing the Level.

AJUSTING THE HP AND LP FILTERS:

High pass filter: blocks frequencies below the set value with attenuation of 12 dB/oct;

Low pass filter: blocks frequencies above the set value with attenuation of 12dB/oct.

From the experience of our technical consultants who assist in adjusting the sound systems of our customers, we created a guide with some suggestions for signal cuts and signal ways of use in SDX4.1. However, we advise that for better information on the ideal cut-off frequencies for your sound system, refer to the manufacturer of your speakers and audio equipment. Suggestions therefore are not rule and may change according to each system and customer desire, but serve as a reference in case of doubt.

	Via a ser utilizada	Frequência HPF	Frequência LPF
Subwoofer	Low	Flat ou 30Hz	60Hz
Subwoofer Pro	Low	50 Hz	150 Hz
Woofer Pancadão 12" 15"	Mid low	70 Hz	300 Hz
Woofer MG 10" 12"	Mid low	150Hz	1000Hz
Mid-Range 6" 8"	Mid low	300Hz	2000Hz
Driver Fenólico 1"	Mid	1KHz	5KHz
Driver Fenólico 2"	Mid	800Hz	4KHz
Driver Titânio 1"	Mid ou High	2KHz	20KHz
Driver Titânio 2"	Mid ou High	1.5KHz	20KHz
Super Tweeter	High	8KHz	N/A

Problema	Solução
Não liga, LED azul não acende.	Verifique se conector de alimentação está bem encaixado. Verifique com o auxílio de um multímetro se existe tensão de tensão de 12V nos terminais do conector. Verifique o aterramento do terminal GND.
Áudio Distorcido	Ajuste o potenciômetro de Level para a via a ser utilizada.
Sem Som	Verifique se os ajustes de level das saídas não estão na posição 0. Ajuste o potenciômetro até o nível desejado de áudio. Verifique as chaves On/Off.
Ruídos ou chiados no som	Utilize cabos RCA blindados de boa qualidade e o mais curto possível. Tome cuidado para não passar os cabos de sinal (RCA) próximos aos de alimentação, saída, módulos de injeção eletrônica, ignição e chave de partida. Faça sempre um bom aterramento do tipo em estrela, com todos os cabos GND partindo do mesmo ponto.

Caso o problema persista, encaminhe o produto até uma assistência autorizada SounDigital ou contate nosso suporte técnico via telefone ou e-mail suporte@soundigital.com.br. A rede de assistência técnicas pode ser consultada em nosso site www.soundigital.com ou pelo fone (51) 3042.9001.

LIMITED WARRANTY

SounDigital warrants the original purchaser that this product shall be free of defects in materials and workmanship for a period of twelve (12) months from the original date of purchase. Some countries have extended warranty in case the product is installed by an authorized dealer. This warranty is not transferrable and applies only to the original customer from an authorized SounDigital dealer.

- Defect or problem caused by misuse of the product;
- Incorrect installation or non-conformity with the Manual;
- Maintenance made by unauthorized personnel;
- Alteration or removal of the seal/serial number;
- Exposure to adverse conditions (weather, humidity, etc);
- Damage caused by fall, impact or natural depreciation, caused by transport and/or handling, risks, or smashings;
- Product was purchased more than 12 months ago.

- Component or material with manufacturing defects;
- Workmanship/service needed to repair the equipment;
- If you need service on your SounDigital amplifier, send it to SounDigital's Amplifier Repair Center through an authorized SounDigital dealer (must be accompanied by proof of purchase);
- Any extra information you can get by contacting us at the e-mail address: info@soundigitalusa.com;
- In case of manufacturing defect or bad quality of raw material the max compensation will be the replacement of the product, not allowing any kind of compensation payment;
- New modifications/iterations on a product don't obligate the manufacturer to modify products formerly produced.

