



DSEQ505BT

INSTALLATION / OWNER'S MANUAL

Wireless Smart EQ Processor



FCC ID : GJW-SBT504

IC ID : 4038A-SBT504



Preparation

Please read the entire manual before installation.

It is highly recommended that your Smart EQ be installed by a professional installer or an authorized dealer due to the highly technical nature of this product.

Before Installing

- Disconnect the negative battery terminal (consult a qualified technician for instructions if necessary).
- Avoid subjecting Smart EQ to dust, dirt, excessive vibrations, or high temperature (i.e. direct sunlight).
- Use extreme caution when drilling holes to avoid damaging fuel lines or existing vehicle wiring.

Mounting Location

- To function properly, Smart EQ has to be installed between the head unit and the amplifier.
- It is recommended to install Smart EQ near the amplifier to minimize interference and facilitate the installation.
- Do not install the Smart EQ where it may be exposed to moisture.



TYPICAL MOUNTING METHOD

Connection Descriptions

Power Wire (+12V)

- Disconnect the negative battery terminal before processing. Consult a qualified technician if necessary.
- Plan out the wire routing before cutting any wires to length. Begin by routing the power wire from the battery to Smart EQ. The power wire can be pigtailed from the amplifier.
- Always use a grommet when running wires through the firewall or any metal openings. Avoid running the power wire near the existing vehicle wiring to prevent noises from entering the audio system.
- Use extreme caution when drilling holes to avoid damaging fuel lines or existing vehicle wiring.

Ground Wire (GND)

- Choose an unpainted section of metal or vehicle chassis and clean the section of any dirt or grease before installing the ground connection.
- The Smart EQ can share the grounding point with the amplifier.

ACC Wire (+12V)

- ACC wire has to be connected to the accessory line of vehicle.

Remote Turn-on Wire (REM)

- The remote turn-on wire connects to the remote turn-on terminal on the amplifier. This is used to turn the amplifier on when a signal is detected by Smart EQ.

Input/Output

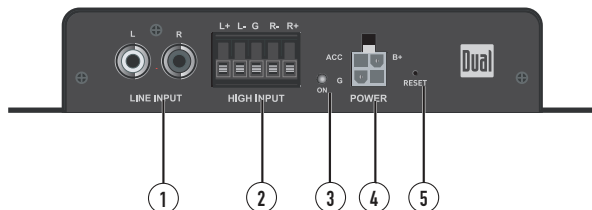
- The Smart EQ's input connects to the head unit's low level (RCA) or high level (speaker wire) outputs.
- Because the low level input (RCA) delivers the best performance, always connect to Smart EQ via RCA when possible. Only use the high level input when low level input is unavailable (i.e. interfacing with factory head units).
- Smart EQ's output (RCA) connects to the amplifier's low level input (RCA).

CAUTION

- Do not use both low and high level inputs. Connect Smart EQ to only one input source at a time.
- Keep the low level input away from any power wires to avoid engine-induced noise.
- Never run any wires underneath or outside the vehicle.

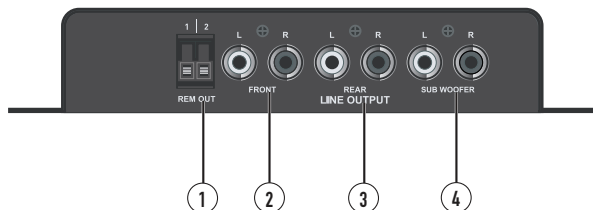
Inputs/Output Panel Description

INPUT



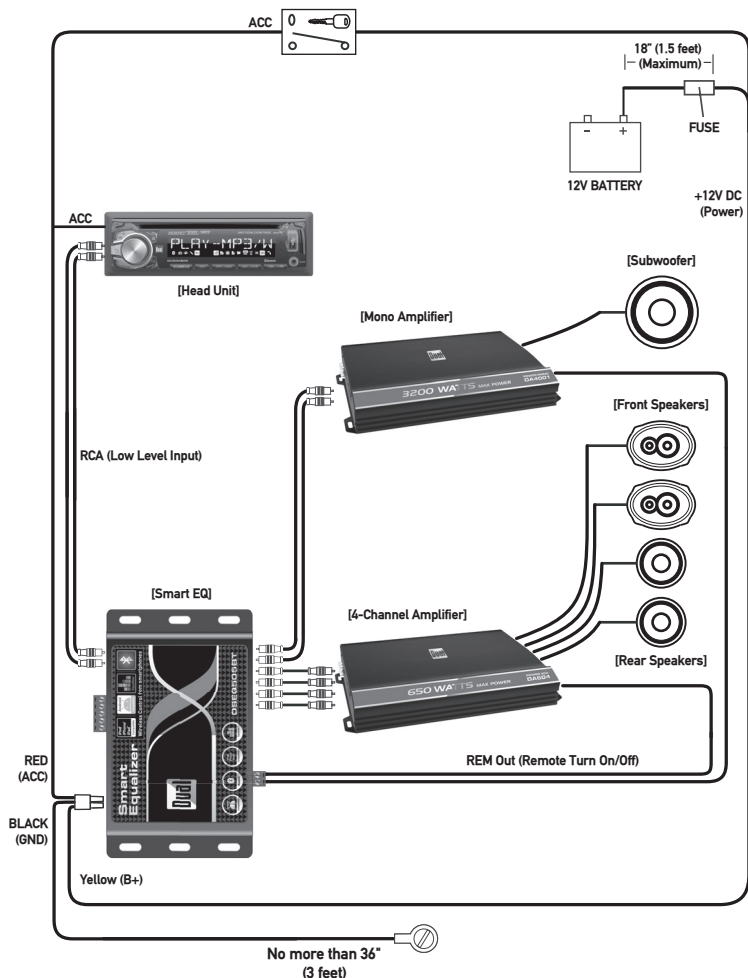
- | | |
|--------------------------------|--------------------------|
| 1 Low Level Input (RCA) | 3 Power LED |
| 2 High Level Input | 4 Power Connector |
| | 5 Reset |

OUTPUT



- | | |
|--------------------------------|--------------------------------|
| 1 REM Out for Amplifier | 3 Line Output Rear |
| 2 Line Output Front | 4 Line Output Subwoofer |

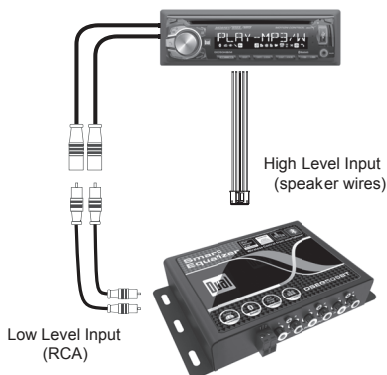
Typical Wire Routing



Input Connections

The input source for Smart EQ can be the head unit, via RCA or high level inputs, or a paired and connected Bluetooth media device.

Note: The default setting for the input source is the head unit. To change the source, use the Smart EQ app on your mobile device (see 'Using Application' section on page 8).

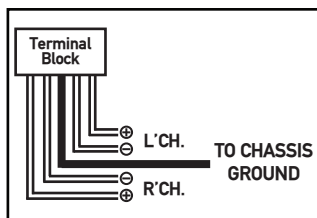


Low Level Input (RCA)

- Low level input (RCA) is preferred for the best performance. A typical trunk-mount installation requires a 17-20 foot RCA cable. Using a twisted pair construction RCA cable will minimize noise.

High Level Input (head unit speaker wires)

- High level input should be used only when RCA outputs are not available on the head unit. To use the high level input, connect the head unit speaker output to Smart EQ's high level input connector as shown.



Note: Ground wire is used for voltage mismatch between the source unit and the amplifiers. If there is engine noise when using high level input without ground, connect the ground, and vice versa.

Note: Do not connect both low and high level inputs at the same time.

Output Connections

Amplifier Connection

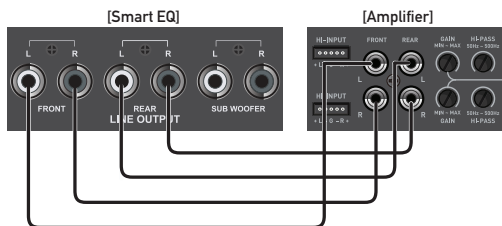
- Remote Turn-on/off

The remote output (REM OUT) of Smart EQ has to connect to the remote input (REM IN) terminal of an amplifier as below. When connected, this signal controls the power to the amplifier and turns it on if an audio signal is detected by Smart EQ.



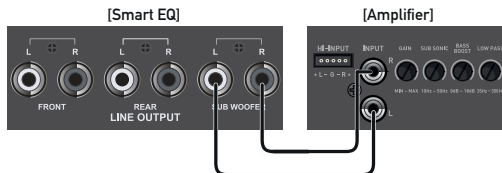
- Line Output (RCA)

The RCA Front/Rear line output should connect to a multi-channel amplifier that controls your full range speakers in the vehicle.



- Subwoofer Output

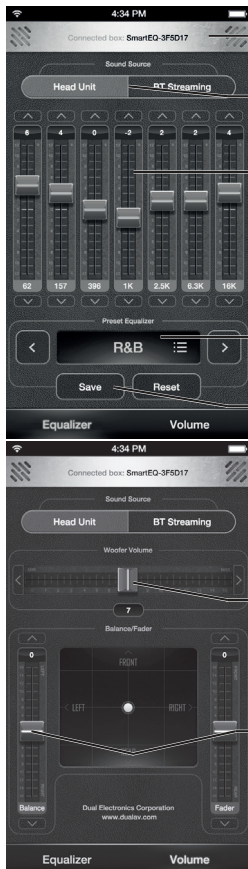
The subwoofer output should connect to a 2-ch/Mono amplifier that controls your subwoofer.



Using Application

• Smart EQ App

All of Smart EQ's settings and configurations can be accessed and controlled by Smart EQ app (available on iTunes App Store and Google Play Store) on a Bluetooth enabled iOS/Android device.



When the unit is paired and connected, it will show the name of the Smart EQ.

Select the input source by selecting either the Head Unit or Bluetooth Streaming button.

To control the 7-band EQ, slide the EQ frequency bars up and down.

To select a pre-defined EQ setting including the saved settings, press the right side of pre-defined EQ or scroll using the left/right arrow.

To make a personal EQ setting, slide and adjust the EQ bars, then the custom EQ setting will be displayed as 'Temporary'. Press the 'Save' button to save the customized EQ setting. To make a personal EQ setting, slide and adjust the EQ bars, and the EQ setting will be displayed as 'Temporary'. Press the 'Save' button to save the personalized EQ setting.

To control the Subwoofer Volume, slide the corresponding bar left and right.

To control Balance/Fader, slide the corresponding slide bar up and down.

Note: To control the Smart EQ Master Volume, use the volume control buttons on the head unit or your iOS/Android device connected to Smart EQ via Bluetooth.

Using Application

Bluetooth Pairing

Connect Smart EQ to Bluetooth enabled iOS/Android device in order to control Smart EQ.

• Pairing the Smart EQ with Your Device

Pairing is the process of connecting two devices over Bluetooth and allowing them to communicate. You will need to go through the pairing process with each device you use with Smart EQ.

Note: If your device requires a passcode to connect during the pairing process, use '1234'.

Please note that Smart EQ can only be actively connected to ONE device at a time. To connect Smart EQ to a new device, the first device's Bluetooth function must be turned off or be out of range of the Bluetooth signal. The Smart EQ will always remember the last connected device. When Smart EQ is turned on, it will first attempt to reconnect to the last connected device before attempting to connect to a new device.

• Pairing Smart EQ with iOS Devices

Note: These instructions were written using iOS 8.1 and may differ depending on the version of iOS on the device.

- 1) Go to Settings → Bluetooth
- 2) Turn Bluetooth on. The iOS device will automatically begin looking for Smart EQ.
- 3) Start the vehicle or set the key in ACC position. Smart EQ's Power LED will turn on (red).
- 4) On the 'Other Devices' section of iOS Bluetooth settings, Smart EQ will appear as 'SmartEQ-xxxxxx' (the last 6 digits are Bluetooth ID and will vary from device to device).
- 5) Tap on 'SmartEQ-xxxxxx' from the list of 'Other Devices' to connect.
If passcode is required, enter '1234'.
- 6) Once connected, 'SmartEQ-xxxxxx' will move to the list of 'My Devices' and will show status as 'Connected'.

• Pairing Smart EQ with Android Devices

Note: These instructions were written using Samsung Galaxy Note 3 and Android 4.4.2 and may vary depending on the device and Android version.

- 1) Enter the device's Bluetooth setting (Menu → Settings → Connections tab → Bluetooth) and make sure that Bluetooth is turned on.
- 2) If 'SmartEQ-xxxxxx' doesn't show up on 'Available devices', press 'Scan' on the bottom of the screen and Smart EQ will appear on the list as 'SmartEQ-xxxxxx'.
- 3) Tap 'SmartEQ-xxxxxx' to connect. Enter passcode (1234) if necessary.
- 4) 'SmartEQ-xxxxxx' will now be seen on the 'Paired devices'.

Troubleshooting

Problem	Cause	Action
Unit will not turn on (Power LED is off)	+12V wire not connected or incorrect voltage.	Check connections for proper voltage (11~16V DC)
	GND wire not connected	Check connection to ground
	ACC wire not connected.	Check connection to ACC line.
Power LED is on solid red, but there is no sound	REM OUT wire not connected.	Check the REM connection between Smart EQ and the amplifier.
	Audio out wire not connected.	Check audio out connection between Smart EQ and the amplifier.
Engine noise	Bad ground connection	Make sure Smart EQ and the amplifier are grounded to clean bare metal surface.
	Signal ground loop or RFI (radio frequency interference)	For the low level input (RCA), check the connections on RCA plugs and make sure the connection is solid. For the high level input, if the input ground pin is connected, disconnect the pin. If the input ground pin is not connected, connect the pin.
	Radiated noise from power cables	When routing wires, keep the 12V cables (power/remote turn-on) away from the audio signal cables (low/high level) as far as possible
Distorted audio output	Incorrect input signal type or input level too high	Check connections and reduce/adjust the input level
Low audio output	Incorrect input signal type or input level too low	Check connections and increase/adjust the input level

Specifications

Dimensions (HxWxD)

- 1.2" (31mm) x 7" (177mm) x 4.1" (103.4mm)

Power

- 14.4V DC (10V-16V)

Bluetooth

- A2DP, AVRCP and SPP support
- Bluetooth 2.1+ EDR
- iOS and Android support
- Range : up to 30 feet (10 meters)

Audio input

- Low level : 1V-4V RMS
- High level : up to 10V RMS
- Frequency Response : 20Hz-20kHz

Audio output

- Line output impedance : 200 ohm
- THD (total harmonic distortion) : <0.05% @ 1kHz, 1V RMS
- SNR (signal-to-noise ratio) : >80dB @ a-weighted
- Channel separation : >70dB @ 1kHz

Compliance

ICC Compliance

This Class [B] digital apparatus complies with Canadian ICES-003.

FCC Compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause un-desired operation.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notes: This equipment has been tested and found to comply with the limits for a Class B digital de-vice, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is con-nected.
- Consult the dealer or an experienced radio/TV technician for help.

One-Year Limited Warranty

This warranty gives you specific legal rights. You may also have other rights which vary from state to state.

Dual Electronics Corp. warrants this product to the original purchaser to be free from defects in material and workmanship for a period of one year from the date of the original purchase.

Dual Electronics Corp. agrees, at our option, during the warranty period, to repair any defect in material or workmanship or to furnish an equal new, renewed or comparable product (whichever is deemed necessary) in exchange without charges, subject to verification of the defect or malfunction and proof of the date of purchase. Subsequent replacement products are warranted for the balance of the original warranty period.

Who is covered? This warranty is extended to the original retail purchaser for products purchased from an authorized Dual dealer and used in the U.S.A.

What is covered? This warranty covers all defects in material and workmanship in this product. The following are not covered: software, installation/removal costs, damage resulting from accident, misuse, abuse, neglect, product modification, improper installation, incorrect line voltage, unauthorized repair or failure to follow instructions supplied with the product, or damage occurring during return shipment of the product. Specific license conditions and copyright notices for the software can be found via www.dualav.com.

What to do?

1. Before you call for service, check the troubleshooting guide in your owner's manual. A slight adjustment of any custom controls may save you a service call.
2. If you require service during the warranty period, you must carefully pack the product (preferably in the original package) and ship it by prepaid transportation with a copy of the original receipt from the retailer to an authorized service center.
3. Please describe your problem in writing and include your name, a return UPS shipping address (P.O. Box not acceptable), and a daytime phone number with your shipment.
4. For more information and for the location of the nearest authorized service center please contact us by one of the following methods:
 - Call us toll-free at 1-866-382-5476 (Monday-Friday, 9AM-5PM, EST)
 - E-mail us at cs@dualav.com

Exclusion of Certain Damages: This warranty is exclusive and in lieu of any and all other warranties, expressed or implied, including without limitation the implied warranties of merchantability and fitness for a particular purpose and any obligation, liability, right, claim or remedy in contract or tort, whether or not arising from the company's negligence, actual or imputed. No person or representative is authorized to assume for the company any other liability in connection with the sale of this product. In no event shall the company be liable for indirect, incidental or consequential damages.



Notes



Details and specifications mentioned in this document may be updated and subject to change without notice. To access the latest document, please check the product website.

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