



## Owner's Guide

*i520.4B*

**THANK YOU AND CONGRATULATIONS**

Thank you for your decision to purchase a iON Series mobile amplifier! Our Amplifiers are the result of extensive engineering, testing, and bullet proof construction. Their versatility enables compatibility with optional signal and audio processors. These high quality MOSFET amplifiers may be configured to allow maximum flexibility in designing different types of speaker systems.

**DIGITAL CLASS D FULL RANGE AMPLIFIERS**

The iON Series are high quality MOSFET amplifiers that are capable of running a system full range, or they may be selected only to power subwoofers. It is important that you closely follow the wiring instructions contained in this Owner's Manual so that you get the most from your iON Series mobile amplifier.

**CAUTION**

Some of our amplifiers are capable of producing a sound pressure level that can cause permanent damage to your hearing system. High sound pressure levels combined with long time listening can give permanent damage to your hearing system. Choose a listening level that is comfortable for your ear. To establish a safe level: Start your volume control at a low setting. Slowly increase the volume until you can hear the music comfortably and clearly, without any distortion. Sudden sound shocks are dangerous.

iON amplifiers adopt the optimum class D performance, reliability, and footprint of our classic Class D platform. Once regarded as, class Ds stable performance rivals traditional full range applications. iON is signal inputs, power/ground, and speaker connections are located on the leading edge of the chassis for an easy, appealing install. All pre-amp & crossover options are conveniently located on the top surface, making adjustment after installation possible. What you might not notice are advances to the digital circuitry, including increased power supply & output stages, & low tolerance surface-mount components. Look for complimentary 4ch, 5ch, & class D monoblocks for any application.

## **i520.4B**

- Compact 5 3/8" Wide Chassis Design for Installation Versatility
- MOSFET Power Supply w/ Audiophile Grade IRTM Transistors
- Military Grade SMT PCB Maintains Dynamic Performance
- 2-ohm Stereo & 4-ohm Bridged Full Range Operation
- Hybrid Aluminum Alloy Heatsink for Optimum Dissipation
- Bluetooth V4.0 Wireless Device Connectivity, 30ft Range
- Wirelessly Stream Your Own Media & Internet Radio via A2DP
- Mini Bluetooth Antenna Built-in, 36" Extension Cable Included
- 250mV-6V High Level or Low Level RCA Input
- Quick Disconnect RCA/High Level Wire Harness
- Thru-Pass Output for Auxiliary Amplifier Integration
- Direct Connect 8ga. Power and Speaker Wire Outputs
- Direct Short, Thermal, & Overload Circuits Protect Amplifier
- Variable 12dB High Pass & Low Pass Crossovers
- 18dB Bass Boost Increases Low Octave Harmonics
- 100w x 4 @ 4-ohm Stereo
- 130w x 4 @ 2-ohm Stereo
- 260w x 2 @ 4-ohm Bridged
- 520w MAX Power
- 50-500Hz Variable 12dB High Pass Crossover(Ch. 1 & 2)
- Optional 100Hz Low Pass Crossover(Ch. 3 & 4)
- 0-18dB Variable 45Hz Bass Boost(CH. 3 & 4)
- Dimensions: 5.375"w x 1.875"h x 8"

Installation of iON Series mobile amplifiers requires detailed knowledge of electronics wiring and proper speaker impedance. We strongly recommend installation by an authorized dealer. This Owner's Manual only provides general installation and operation instructions. If you have any reservations about your installation skills, please contact your local dealer for assistance.

### **PREPARING FOR INSTALLATION**

**NOTE:** *The tools listed below may be required for basic installation*

- An electric drill with bits
- Philips head and standard screwdrivers
- Wire strippers
- Crimping tool
- VOM (electronic volt ohm meter)
- Heat shrink tubing and gun
- Soldering iron

### **INSTALLATION PRECAUTIONS**

**NOTE:** *Proceed only if you are qualified installer otherwise, let your dealer do it. Always wear protective eyewear when using tools.*

- Turn off all stereo and other electrical devices before you begin.
- Disconnect the negative(-) lead from your vehicles battery.
- Locate all fuel lines, brake lines, oil lines, and electrical cables when planning the install.
- Make sure there is at least 2-inches (5 cm) around the air vents on the amplifier.
- When connecting ground points, make sure all paint is carefully scrapped away from
  - \* The auto body and contact is made with bare metal.
- Use a utility knife to trim away fabric from hole locations before drilling or cutting.
- When running power cables through sheet metal, be sure to use grommets to properly insulate the metal edges from the wire insulation.
- If possible, use tubing through grommets.

### **MOUNTING THE AMPLIFIER**

To keep your iON Series amplifier running at top performance, choosing the proper location is of utmost importance. For this reason the amplifier should be mounted in a location which will allow air to circulate freely. A clearance of at least 2-inches (5 cm) to all sides of the amplifier is necessary not only for proper cooling, but also for gaining access to the inputs and other variable controls. Be sure that the power and signal cable connections can enter and leave the amplifier in a straight line to avoid the risk of kinked wires causing a malfunction.

**MOUNTING LOCATION**

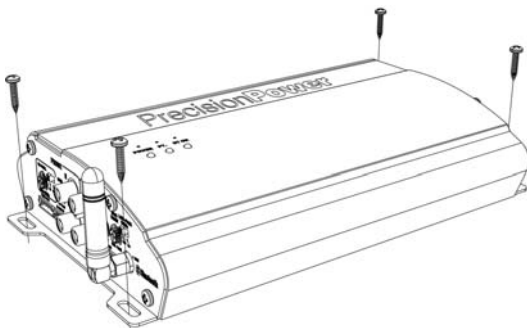
Your iON Series amplifier comes with mounting feet that need to be attached to the amplifier prior to installation. Once the feet are in place, use the amplifier as a template and mark the four screw locations. Use caution to make sure there are no objects behind the installation surface that may become damaged during drilling. The amplifier should be protected from exposure to moisture and direct sunlight. The best places to mount your amplifier are: The floor of the trunk, under the driver's seat, or on the back of the rear seat. For alternate installation locations.

**WARNING**

We recommend you to do a careful planning before you start to install this equipment. Choose a location for the amplifier which will allow plenty of air to circulate. Do NOT mount the amplifier upside down under the hat rack. In the amplifier case there are double mounting holes to make the installation job easier. The screws supplied in the plastic bag are self drilling when used with an electric screwdriver.

If the surface where you intend to mount the amplifier isn't big enough you can mount the amplifier on a separate fiber board or similar. This will also isolate the amplifier chassis from ground.

**NOTE!** Before you start drilling, make sure that there are no fuel or brake lines or wiring looms behind where you intend to drill.



**BLUETOOTH**

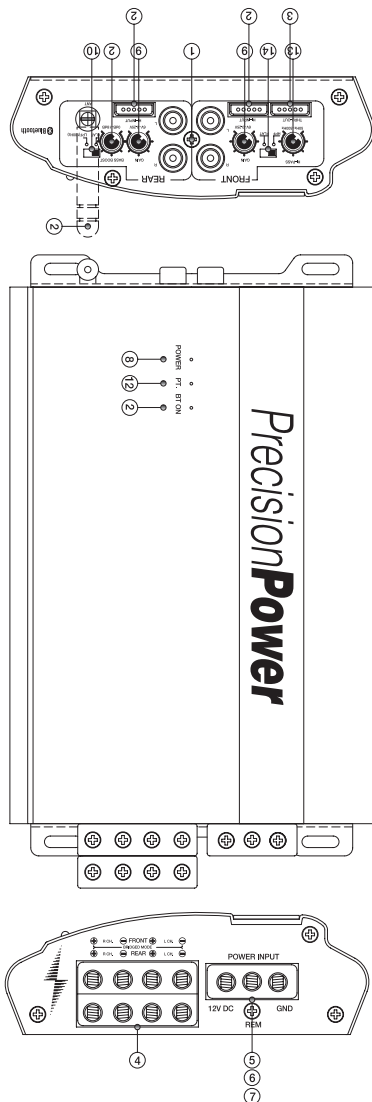
Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth enabled devices, such as mobile devices, computers, printers, and other digital home appliances.

**HOW TO BLUETOOTH PAIRING THE CELL PHONE**

- Activate Bluetooth on your cell phone.
- Search for Bluetooth devices around you in the Bluetooth window.
- After a while, you will search the "iON" in the Bluetooth window of your cell phone. If "iON" don't search, after placing the position of the vehicle key to OFF, try again in ACC after a while
- Touch the "iON".  
Wait a minute and it will be connected with Mini Amplifier of i520B.
- Play music from your cell phone.
- Never operate cell phone while the vehicle driving.

**NOTICES FOR USING BLUETOOTH**

- To avoid problems when connecting your device to another device, place the devices close to each other.
- Ensure that your device and the other Bluetooth device are within the Bluetooth connection range(10m). The distance may vary depending on the environment the devices are used in.
- Ensure that there are no obstacles between the headset and a connected device, including human bodies, walls, corners, or fences.
- Do not touch the Bluetooth antenna of a connected device.
- Bluetooth uses the same frequency as some industrial, scientific, medical, and low power products and interference may occur when making connections near these types of products.
- Some devices, especially those that are not tested or approved by the Bluetooth SIG, may be incompatible with the headset.
- Do not use the Bluetooth feature for illegal purposes (for example, pirating copies of files or illegally tapping communications for commercial purposes).



### 1. LINE IN (RCA)

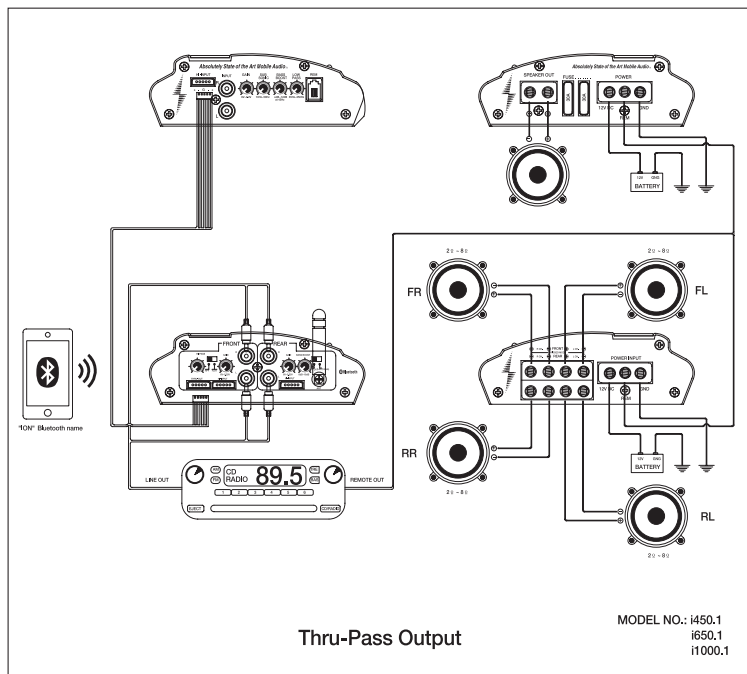
The RCA style input jacks are for use with source units that have RCA line level outputs. A source unit with a minimum of 250mV is required for proper operation. However, this input will accept levels up to 6Vrms.

### 2. High Level Input

If you are installing by using a high level, you do not need to connect to the remote. To hear a better sound quality, you must connect the high level ground wire to the head-unit ground.

### 3. Thru-Out

The LINE OUT allows you to build multiple amplifiers systems without having to use splitter cords to distribute the signal. Now it is simply a matter of bringing one set of RCAs into the fist amplifier, then using the line out RCA jacks as the feed to the next amplifier.



**4. SPEAKER Terminals**

As shown in the wiring diagrams, be sure to observe speaker polarity through the system and speaker impedance. This specially tooled terminal is designed to accommodate p to 10 gauge speaker wire.

**5. +BATT (Power Input Connection)**

This terminal is the main power input for the amplifier and must be connected directly to the positive (+) terminal of the car battery.

**6. Remote (Remote Input Connection)**

All iON Series amplifiers can be turned on by applying 12 volts to this terminal. This can be found on the rear of the source unit in the form of an electric antenna output, or a remote output. If this is not available you can wire to the ACC position on the key. An 18 gauge wire is sufficient to run the REMOTE.

**7. GND (Ground Input Connection)**

A good quality ground is required for your iON Series amplifier to operate at peak performance. A short length of cable the same gauge as your power cable should be used to attached the ground terminal directly to the chassis of the vehicle.

**8. Power Indicator**

The GREEN when the power is on.

**9. Gain adjustment control**

The input level can be adjusted with this control. Turn it in the clockwise direction when the output level of the car audio unit seems low

**10. Low pass Filter**

iON amplifier has an internal Switch able low pass filter. It can be set 100Hz.

**11. Bass boost level control**

Turn this control to boost the frequencies around 45Hz to a maximum of 18dB.

**12. Protection Indicator**

When the PROTECTOR is activated, the indicator lights in red. When the PROTECTOR is activated refer to the Troubleshooting Guide.

**13. High pass Filter**

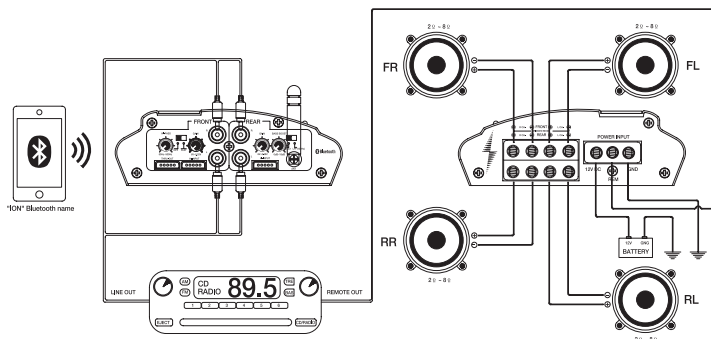
iON amplifier has an internal variable High pass filter. It can be set from 50 up to 500 Hz. It also has that can be set from 500 up to 5KHz.

**14. High pass on/off selector switch**

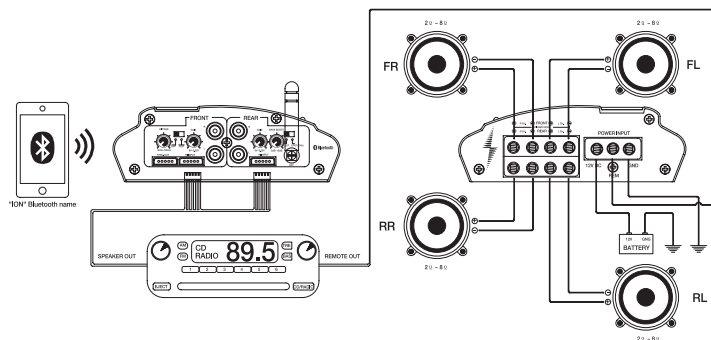
When the switch is in the ON position, the filter is set to High-pass. it is activated High pass potentiometer control.

**15. FUSE**

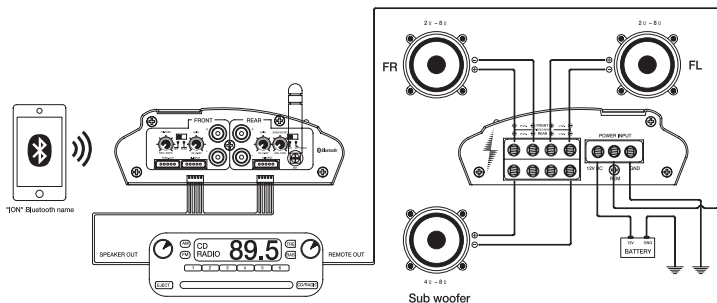
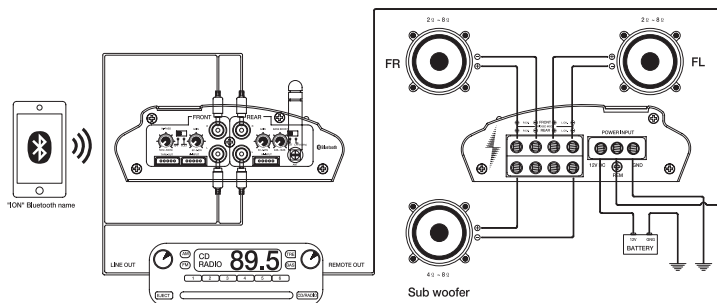
For convenience all iON Series amplifiers utilize common automotive ATC type fuses. For continued protection in the event that a fuse blows, replace the fuse only with the same value.

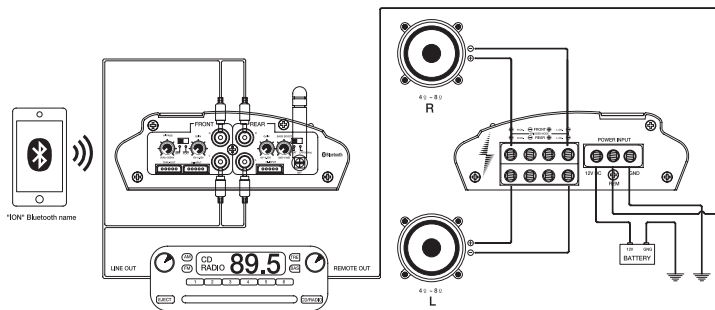


**Low Level RCA Input 4-ch. Stereo Mode (2 Ω-8 Ω)**

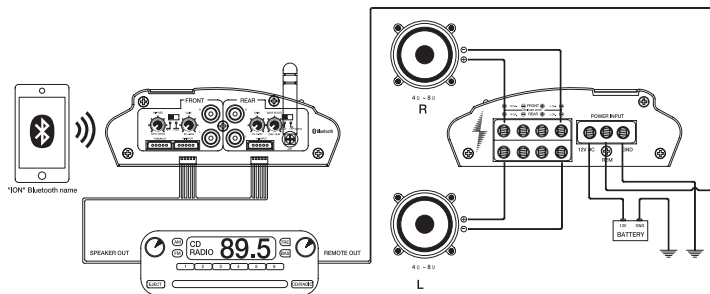


**High/Speaker Level Input 4-ch. Stereo Mode (2 Ω-8 Ω)**





Low Level RCA Input Bridged Mode (4 Ω-8 Ω)



High/Speaker Level Input Bridged Mode (4 Ω-8 Ω)

These amplifiers are designed to work within a 10 to 16.8 volt DC range. Before any wires are connected, the vehicles electrical system should be checked for correct voltage supply with the help of a voltmeter.

First, check the voltage at the battery with the ignition in the OFF position. The voltmeter should read not less than 12V. If your vehicles electrical system is not up to these specifications, we recommend having it checked by an auto electrician before any further installation. Once the vehicle is checked, make certain the correct cable size is used. We recommend using as large a gauge cable as possible, use the Power Cable Selection Chart to calculate the correct power wire size for your application.

### **Power**

This amplifier should be wired directly to the vehicle battery using the appropriate size cable. Start at the vehicle battery and run the power cable through to the amplifier. Avoid running the power cable over engine components and near heater cores. The use of an online fuse or circuit breaker is a must ; this will prevent the risk of a potential fire caused by a short in your power cable. Connect the fuse holder or circuit breaker as close to the battery positive (+) terminal as possible (no farther than 18" from the battery). This fuse or circuit breaker should be no greater than the sum of the fuses found on the chassis of your amplifier (also see specifications chart). You may now connect the cable to the battery, but remember to leave the fuse out or circuit breaker "off" until all other cable connections are made.

### **Ground**

When grounding your amplifier, locate a metal area close to the amplifier that is good source of ground (preferably the floor pan). Once again, investigate the area you wish to use for electrical wires, vacuum lines, and brake or fuel lines. Use either a wire brush or sandpaper to eliminate unwanted paint for better contact of the ground. Secure the ground cable to the body using a bolt, star washer and nut. Spread silicon over the weld and bare metal to prevent rust and possible water leaks.

Now it's time to connect the power and ground cable to the amplifier. Cut both cables to length. Strip off 1/2 -inch (12mm) of the insulation so that the bare wire will go all the way in the terminal block on the side panel of the amplifier, seating it firmly so no bare wire is exposed. Use a Philips (cross) type screwdriver to loosen the + BATT and the GND connections on the amplifier. Insert the ground first, and then the + 12V and please make sure that you place them into the correctly marked terminals. Then tighten the screws down securely.

### **Remote**

This terminal must be connected to a switched +12V source. Typically, remote turn-on leads are provided at the source unit that will turn on and off the amplifier in correspondence with the source.

If the source unit does not have a remote turn-on lead, then a switched +12V supply must be used, like the ACC, +12v.

**LIMITED 90-DAY CONSUMER WARRANTY**

**LIMITED TWO-YEAR CONSUMER WARRANTY WITH PURCHASE AND INSTALLATION BY A PRECISIONPOWER AUTHORIZED DEALER**

Precisionpower promises to the original purchaser, to repair or replace this product with a new or refurbished unit (at Precisionpower's sole and absolute discretion) should it prove to be defective in workmanship or material under normal use, for a period of \*two-years from the date of purchase from the Precisionpower authorized dealer, PROVIDED the product was purchased and installed by a Precisionpower authorized dealer. During this \*two-year period, there will be no charge for product repair or replacement, PROVIDED the unit is returned to Precisionpower, return shipping pre-paid, along with the required proof of installation, the bill of sale or other dated proof of purchase, and the consumer's contact information.

If the unit is installed by anyone other than a Precisionpower authorized dealer, the warranty period will be 90-days from the date of purchase. This warranty is non-transferable and does not apply to any unit that has been modified or used in a manner contrary to its intended purpose, and does not cover damage to the unit caused by installation or removal of the unit. During this 90-day period, there will be no charge for the repair or replacement PROVIDED the unit is returned to Precisionpower, return shipping prepaid, along with the bill of sale or other dated proof of purchase and the consumer's contact information.

This warranty is void if the product has been damaged by accident or unreasonable use, neglect, improper service or other causes not arising out of defects in materials or construction. This warranty does not cover the elimination of externally generated static or noise, or the correction of antenna problems or weak reception, damage to speakers, accessories, electrical systems, cosmetic damage or damage due to negligence, misuse, failure to follow operating instructions, accidental spills or customer applied cleaners, damage due to environmental causes such as floods, airborne fallout, chemicals, salt, hail, lightning or extreme temperatures, damage due to accidents, road hazards, fire, theft, loss or vandalism, damage due to improper connection to equipment of another manufacturer, modification of existing equipment, or Product which has been opened or tampered for any reason. Units which are found to be damaged by abuse resulting in thermally damaged voice coils are not covered by this warranty but may be replaced at the absolute and sole discretion of Precisionpower. Unit must be returned to Precisionpower, postage pre-paid, with bill of sale or other dated proof of purchase bearing the following information: consumer's name, telephone number, and address, authorized dealer's name and address, and product description. Please contact Precisionpower warranty office at 800-724-1377 or [repairs@precisionpower.com](mailto:repairs@precisionpower.com) to obtain a Return Authorization number prior to shipping the product.

Note: This warranty does not cover labor costs for the removal and reinstallation of the unit. IN ORDER FOR THE TWO-YEAR WARRANTY TO BE VALID, YOUR UNIT MUST BE SHIPPED WITH PROOF OF INSTALLATION BY A PRECISIONPOWER AUTHORIZED DEALER. ALL UNITS RECEIVED BY PRECISIONPOWER FOR WARRANTY REPAIR WITHOUT PROOF OF PRECISIONPOWER AUTHORIZED DEALER INSTALLATION AND PURCHASE WILL BE COVERED BY THE LIMITED 1 YEAR WARRANTY.

BY PURCHASING THIS PRODUCT, ALL WARRANTIES INCLUDING BUT NOT LIMITED TO EXPRESS WARRANTY, IMPLIED WARRANTY, WARRANTY OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE, AND WARRANTY OF NON-INFRINGEMENT OF INTELLECTUAL PROPERTY ARE EXPRESSLY EXCLUDED TO THE MAXIMUM EXTENT ALLOWED BY LAW, AND PRECISIONPOWER NEITHER ASSUMES NOR AUTHORIZES ANY PERSON TO ASSUME FOR IT ANY LIABILITY IN CONNECTION WITH THE SALE OF THE PRODUCT. PRECISIONPOWER HAS ABSOLUTELY NO LIABILITY FOR ANY AND ALL ACTS OF THIRD PARTIES INCLUDING ITS AUTHORIZED DEALERS OR INSTALLERS. BY PURCHASING THIS PRODUCT, THE CONSUMER AGREES AND CONSENTS THAT ALL DISPUTES BETWEEN THE CONSUMER AND PRECISIONPOWER SHALL BE RESOLVED IN ACCORDANCE WITH CALIFORNIA LAWS IN LOS ANGELES COUNTY, CALIFORNIA.

Some states do not allow limitation on how long an implied warranty lasts. In such states, the limitation or exclusions of this Limited Warranty may not apply. Some states do not allow the exclusion or limitation of incidental or consequential damages. In such states, the exclusion or limitation of this Limited Warranty may not apply to you. This Limited Warranty gives you specific legal rights, and you may have other rights which vary from state to state.

