



Owner's Manual For The

Marquis

Center Channel System



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Thank you for selecting a Legacy Loudspeaker System. These hand-crafted instruments will provide you with many years of listening enjoyment. Please take a few moments to read this brief manual to insure maximum benefit from your speaker system.

Limited Ten Year Warranty

Legacy Audio, Inc. extends to the original owner coverage of defects in materials and workmanship for a period of 90 days from the date of purchase. To extend this warranty to 10 years, please fill out the enclosed warranty card and return to Legacy Audio.

This warranty does not include a) damage in shipment, b) damage caused by accidental or intentional misuse or abuse, c) units not registered with Legacy Audio, d) damage resulting from unauthorized modifications or repairs. Liability is limited to the repair or replacement, at our option, of any defective component and shall not include property or consequential damages which may result from the failure of this product.

Customer Record

Model No. _____

Serial No. _____

Date of Purchase ____ / ____ / ____

Owner _____

Street Address _____

City _____ State _____ Zip _____

The Cabinetry

Beneath the surface of Marquis' elegant exterior lies rigid MDF construction. Interlocking joinery maximizes the strength of the cabinet parts. Polyester fiberfill is selected for internal damping.

Each cabinet is impeccably finished on the front surface with select veneers. The exquisite finish is hand-rubbed several times to assure a patina at home with the most elegant decor.

Our Commitment

A great deal of forethought, love and satisfaction is instilled in each piece of Legacy workmanship. We take pride in getting to know many of our customers on a first name basis.

Your purchase of this product is backed by the renowned "Legacy Satisfaction Guarantee". We continue to stand behind it with a solid ten year warranty, more than twice the industry standard.



Unpacking

Your new speaker system has been very carefully packaged to insure that it travels to you safely. The Marquis is protected by a OSB outer crate. Molded foam packing caps are used to protect the elegant cabinetry, and a plastic liner is provided as waterproofing. Removeable wood slats are provided to keep the Marquis from shifting during shipping

Please save this packing for future transportation. If crates become damaged or misplaced, new ones can be purchased from Legacy Audio.

Connections

At the rear of each of your loudspeaker you will find a terminal plate.

Connect each channel of your amplifier to a loudspeaker via the five-way gold binding posts provided. Dual banana plugs, bare wire or gold plated spade lugs are recommended means of termination.

Be sure that you observe polarity when making the connections. The positive (+) terminal (red) of the amplifier should be connected to the positive terminal of the loudspeaker. The negative (-) terminal (black) of the amplifier should be connected to the negative terminal of the loudspeaker.

Speaker Placement

To allow more flexibility in seating arrangements, your Legacy loudspeaker is designed for broad lateral coverage. Optimal listener position is actually about 5 to 15 degrees off of the axis normal to the loudspeaker baffle (approximately 4-5' off the floor).

Your Legacy speaker is optimized for a flat response in the far field.

Placing the loudspeaker or the listener near a room boundary will generally increase low frequency impact. You may also wish to reduce low frequency output with your preamp's bass tone control.

Why do I need a center channel?

More than 70% of midrange information and virtually all speech is steered to center in film soundtracks. The center channel speaker is unquestionably the most important speaker in a multi-channel setup.

This exceptional transducer represents the state of the art in home theater performance. Designed to integrate seamlessly with the Legacy Whisper and FOCUS speaker system, the Marquis center speaker can also upgrade other high quality systems.

Designer's Note from Bill Dudleston

How many times have you missed a critical line of film dialogue over muffled or tinny sounding TV speakers? Have you ever found yourself cranking up the volume to an aggravating level just to avoid missing the plot?

High school geometry taught us that a location in free space can be specified by the coordinates of a single point and that two such points can describe a line. Adding a third point allows us to define an entire plane, while adding fourth and fifth points opens the possibilities to multiple planes.

Likewise, the localization advantages of discrete 5.1 multichannel audio become obvious. Adding a center channel speaker to a system will result in improved clarity, stable dialogue and a natural sense of depth. Central images retain their position even with extreme listener positions.

Why is Marquis the best center channel you can buy?

As a matter of fact, most center speakers just don't size up. The wavelength at 200 Hz is a full order of magnitude greater than it is at 2000 Hz, yet many center speaker designs offer no additional piston area at the lower midrange frequencies. The Marquis center channel triples the effective radiating diameter over this frequency range thus increasing the radiating surface by nearly an order of magnitude. This provides more natural, richer and fuller sounding vocals and assures that a cello will never be confused with a violin.

While it is known that center channel speakers are typically placed above video monitors, most center channel speakers are not truly optimized for this placement. They can exhibit ragged frequency response characteristics at listener positions due to misdirected polar patterns (lobing error). Designed to be placed above a video monitor, the vertical polar pattern of the Marquis is optimized to tilt gently downward, uniformly covering the seated listeners. By utilizing a centrally placed midrange driver, the horizontal comb filtering effects common in other center speakers can also be minimized.



Specifications

Marquis is a shielded four way design employing special dual 15" low mass composite pulp cones in an open air configuration. The 7" Hexacone KEVLAR® midrange, housed in a separate PVC subenclosure, articulates up to 3000 Hz and hands off to the 1.25" silk dome in a specially designed acoustic lens. A horizontally mounted ribbon driver with a dual pole piece provides the finesse to render delicate high frequencies with precision.

Dimensions: 39-7/8" W x 19-3/4" H x 7" D

Crossover Frequencies (Hz): 300, 3k, 10k

Frequency Response: 69-25 kHz +/-3 dB

Sensitivity: 90 dB

Impedance: 4 ohms

Weight: 65 lbs

Hook-up Cables

The ideal conductor would have negligible resistance, inductance and capacitance. The table below shows how a few actual speaker cables measure up.

Cable	Ω s/ft	pF/ft	μ H/ft
12 ga.	0.0033	24	0.21
14 ga.	0.0048	17	0.13
16 ga.	0.0079	16	0.18
18 ga.	0.0128	28	0.21

Capacitance is considered insignificant in each cable because its effect is well out of the audio bandwidth; inductance can be decreased (at the expense of increased capacitance) by keeping the conductor pair closely spaced.

How long would a cable have to be before inductance effects would impinge on the audio spectrum? Approximately 300 feet of 12 gauge would be required to establish a corner frequency of 20 kHz with an 8 ohm loudspeaker. As you see, inductance is not a problem for most of us.

What about phase shift due to frequency dependent travel times down the speaker cable? Measurements show that 100 Hz waves will be delayed about 20 billionths of a second behind 10 kHz waves when traveling to the end of a 10 foot speaker cable. Since the cilia of the ear requires 25,000 times longer than this just to transmit phase information, phase shifting is obviously not the primary concern when considering speaker cables.

What about resistance? Finally we are getting somewhere. Resistance is the controlling factor of the amplifier/loudspeaker interface.

Excessive resistance can cause major shifts of speaker crossover frequencies. The lower the impedance of the loudspeaker, the greater the effects of series resistance. A run of 20 feet of 18 gauge can cause up to 10% deviations of crossover center frequencies. That same 20 feet can undamp your damping factor and reduce your systems' output by one-half decibel.

The best way to approximate the ideal would be to keep loudspeaker leads as short as is practical.

Our recommendation is the Legacy Transmission Line Cable. Transmission Line is available in ready made 10 ft. runs or custom lengths are available as well.

The Amplifier

Ideally the loudspeaker would be among the first components selected when assembling a playback system. This would allow the user to choose an amplifier capable of delivering adequate amounts of current into the frequency dependent load presented by the loudspeaker. However, when upgrading a system, audiophiles may find themselves matching their new loudspeakers to their existing amplification. For this reason, extensive measures have been taken to ensure that each Legacy speaker system represents a smooth, non-reactive load to virtually any amplifier.

Often there is much confusion regarding amplification and loudness levels. It should be understood that the role of the amplifier goes beyond that of driving loudspeakers to a given sound pressure level. The amplifier should be able to CONTROL the loudspeakers across the entire music spectrum. This means that parameters such as damping factor (values greater than 60 are acceptable) and dynamic headroom should not be overlooked when comparing amplifiers.

How much power will your new speakers need? That ultimately depends on your listening environment and musical tastes. As little as five watts per channel should drive them to a level satisfactory for background music. A typical 45 watt per channel receiver may fill a room with the compressed mid-band energy of “heavy metal,” but seem to lack weight or control with classical recordings. Some audiophiles feel that 200 watts per channel is the bare minimum to avoid audible clipping distortion when reproducing music at “live” playback levels. Your Legacy speakers are designed to take advantage of “high-powered” amplifiers, so don’t be afraid to put them through their paces.

How much is too much power? Rarely is a drive unit damaged by large doses of music power. More often than not the villain is amplifier clipping distortion. Even through decades of refinement, loudspeakers are still notoriously inefficient transducers, requiring huge amounts of power to recreate the impact of the live performance. Typically less than 1% of electrical power is converted into acoustic output. For example, an omni-directional transducer with an anechoic sensitivity of 90 dB @ 1w/1m has a full space efficiency of only 0.63%. When an amplifier is unable to fulfill your loudspeakers demands, a damaging harmonic spike may be leaked to the high frequency drivers.

Another important point regarding loudness is that the dB scale is a logarithmic one. This means that a 150 Watt amplifier will potentially sound only twice as loud as a 15 Watt amplifier.

If all of this discussion of power and loudness seems a bit abstract, consider the example to the left.

The average acoustical power developed by a person speaking in a conversational tone corresponds to a mere 0.00001 Watts. The power that would be developed by the entire population of the city of New York speaking at once would barely illuminate a single 100 Watt light bulb.

