



MERIDIAN

Jaguar XJ Ultimate

Meridian in-car audio



The Meridian Audio System for the Jaguar XJ Ultimate

For 35 years, Meridian has designed and manufactured audio systems with the same meticulous attention to detail as any artisan crafting a musical instrument.

From the very beginning, Meridian has created audio systems that combine innovative technology with the most natural and fundamental of approaches: referencing the qualities of their music reproduction to the sound of the original musical performance.

Specifically developed for the XJ Ultimate, and marking a new partnership for Jaguar, the Meridian Surround Sound System employs the latest technological developments to offer music reproduction that is second to none. The Meridian Surround Sound System delivers exceptional, distortion-free sound, with DSP-tuned performance providing crystal-clear highs and full, deep bass.

The 20-loudspeaker system, with 15 channels of amplification, features Meridian's unique digital sound processing technology that allows every person travelling in the XJ Ultimate to enjoy a musical experience that places them at the heart of the music. Meridian achieves this through its Trifield technology, which creates an all-enveloping

soundfield that makes each listener feel that the music is exclusively focused upon them.

Meanwhile, Meridian Cabin Correction and Dynamic Volume Control precisely and effortlessly minimise resonances and monitor extraneous noise levels, allowing the audio to be unobtrusively maintained at a constant volume in order for it to be perfectly heard whatever the circumstances.

System Sources

- AM, FM, DAB, DAB+ & DMB radio
- Analogue & digital TV
- HD & Sirius Satellite Radio in North America
- iPod, USB, Bluetooth support – AAC, MP3 and WMA connection via USB
- USB audio & video playback
- 3.5mm analogue auxiliary input
- CD & DVD playback
- Bluetooth interface & audio streaming
- Virtual CD changer stores up to 10 CDs on hard drive
- Hard disc-based navigation system
- Rear Seat entertainment system with 'Whitefire' infra-red headphones. Panel accepts USB and analogue in
- 'Dual view' option: Touchscreen interface displays TV/DVD images to front passenger while driver can view the navigation screen
- Additional Whitefire headphones allows passenger to select a second audio source
- Fully-integrated pair of 3rd generation iPads® with wireless keyboards

System Highlights

Meridian's highly specified audio system, designed specifically for the Jaguar XJ Ultimate – the 15-channel, 20-speaker, Meridian Surround Sound System

High output, distortion-free sound with full frequency range

Deep bass extension and clear, clean highs

Stable, full stereo imaging from any position in the vehicle

Maintains maximum digital audio detail from all sources

Automatic volume compensation for changes in ambient noise levels

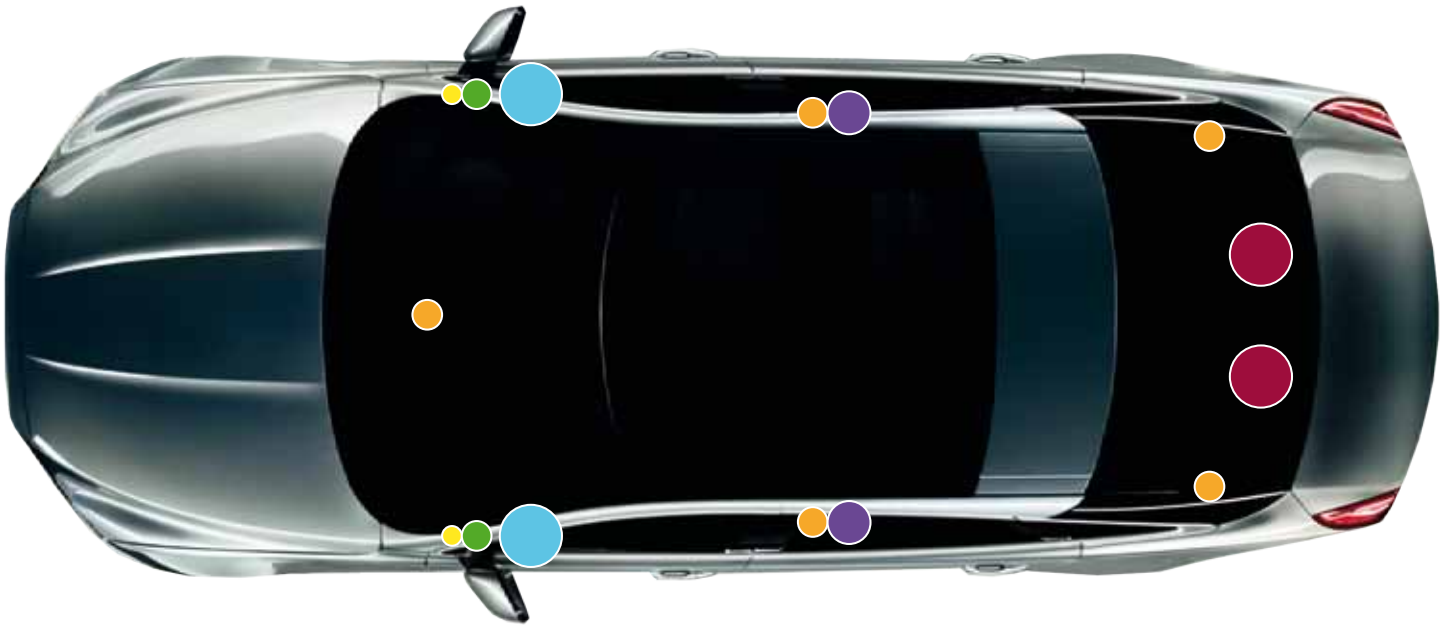
Smooth, full frequency range sound, tuned to cabin acoustics

Meridian Audio Limited

www.meridian-audio.com

Jaguar XJ Ultimate

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- 15 channels of stereo and surround
- 20 loudspeakers, optimally positioned around the vehicle interior
- 825W, 0.2% THD amplification

- Tweeter 25mm
- Midrange 100mm
- Coaxial Midrange 100mm/Tweeter 25mm

- Bass 168mm
- Bass 200mm
- Subwoofer 200mm

Rear Seat Entertainment Package

The XJ Ultimate is fitted as standard with Jaguar's Rear Seat Entertainment package that includes two 8in high-resolution screens mounted on the back of the front seat headrests.

The screens can display a number of sources, including the DVD player, digital TV tuner or an external media player that can be connected via the Rear Media Interface, which offers USB and RCA connections. Sound can be provided through supplied wireless headphones, allowing each passenger to enjoy separate entertainment sources.

The entire rear seat environment, including the entertainment, is managed by a wireless controller housed in the centre console. This controller also allows passengers to alter their individual climate zones along with seat heating and cooling functions.

As a final touch, the XJ Ultimate provides a pair of third-generation iPads®, with wireless keyboards. Housed in specially-designed leather-trimmed docks in the rear of the front seats, they are hidden behind roller doors that are also finished in tailored leather.

The iPads are charged automatically whenever the ignition is on. Also included in the cabinets are wireless keyboards to allow the tablets to be used without removing them from their docks if required.





Meridian DSP Technology

Traditional loudspeaker systems rely on relatively high-powered amplifiers driving a passive crossover, dividing high and low frequencies to feed the appropriate speakers. This approach wastes a great deal of energy as heat; the audio quality is compromised as components are built for power-handling and not for quality; and the crossover characteristics are difficult to optimise.

Meridian takes a very different approach, based on years of experience with DSP technology. Power-efficient active DSP crossovers are individually tailored to each loudspeaker, for maximum efficiency, creating crossover characteristics impossible to produce in the traditional way, delivering the performance of conventional speakers eight times the physical volume.

Meridian DSP technology provides multiple benefits, including delivering clean and clear distortion-free sound at all levels, and providing significant performance enhancement with smoother frequency response, faster transients and deeper bass.

Trifield

In most audio systems, and especially in-car, the sound is optimised for one listening position – listeners in other seating positions find the sound unbalanced. In addition, the stereo image is often pulled into the loudspeakers. The common solution is to add a centre speaker fed with a mix of left and right channels – but this simply reduces the stereo width and does not solve the problem.

Meridian's exclusive Trifield process delivers a full, wide and enveloping soundfield with listener-position independence, giving all vehicle occupants a full, stable stereo experience wherever they are seated. The sound comes from around the listener, instead of being pulled into the loudspeakers.

Meridian Digital Dither Shaping

Modern digital audio systems take in many different sources that must be digitally converted into a common format to maintain the best possible sound. If poorly carried out, this conversion and subsequent processing can result in the loss of important musical detail. Such loss is particularly noticeable in quiet passages, where subtlety can be hidden by noise and even ruined by distortion.

With Meridian Digital Dither Shaping, however, digital signal changes are made smooth and seamless throughout the system, maintaining maximum detail and ensuring maximum quality from all sources. Meridian Digital Dither Shaping is employed whenever a digital process is performed.

Meridian Cabin Correction

The common approach to overcoming problems with difficult acoustic spaces – such as vehicle cabins, which suffer resonances, particular at low frequencies – is simply to use more power. However, this makes the listening experience even worse, creating a “boomy” effect.

Meridian DSP provides the true solution. Derived from Meridian's ground-breaking

Room Correction technology, Meridian Cabin Correction is based on a precise acoustic analysis of the car interior. The cabin is a defined, fixed environment and is thus ideal for this approach.

Using digital signal processing, Meridian Cabin Correction identifies resonances and constructs precise digital filters to smooth out any deficiencies. It's a gentle yet accurate technique that balances the reverberation time at critical frequencies.

Meridian Cabin Correction delivers smoother, more natural sound and improved imaging. It minimises ‘muddiness’ and maximises definition and timing accuracy, adding clarity and definition to every instrument.

Dynamic Volume Control

The interior noise level in a vehicle can vary dramatically. Different road surfaces and speeds, the weather, and the opening of windows or a sun-roof, for example, can dramatically affect the ambient noise level and thus impact listening enjoyment. It's all too easy for the music to be drowned out or suddenly to become too loud.

Dynamic Volume Control solves this problem elegantly and effectively, by measuring the cabin noise level and adjusting the system volume to compensate for changes. Adjustments are made slowly for smooth, unnoticeable operation.

As a result, music maintains a consistent volume despite changes in ambient noise and vehicle occupants always hear audio clearly whatever the driving environment.

Loudspeakers

Drivers were specifically designed and developed by Meridian engineers in collaboration with Jaguar's suppliers. Materials were selected for low mass but also for their stability, with extensive use of advanced mineral-filled composites. The overall driver and enclosure parameters were designed to minimise the requirement for compensation and filtering in the electronics, for a smooth, natural performance, with full, tight bass and clear high frequency (HF) response.

Tweeter

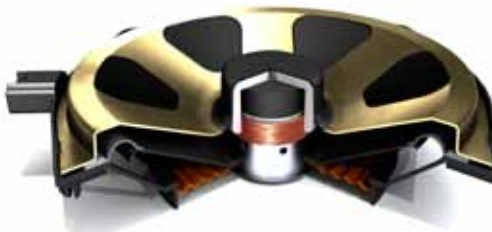
- Ultra-light aluminium alloy dome for maximum efficiency and extended HF response
- Low moving-mass design for superb transient handling and negligible distortion
- Powerful neodymium magnet assembly for maximum efficiency and linearity, and minimum weight

Midrange & Bass

- Mica-filled polypropylene cones for stiffness and damping
- Low moving-mass design for superb transient handling and negligible distortion
- Powerful neodymium magnet assemblies for maximum efficiency and linearity, and minimum weight
- Tight, dynamic and precise sound, with deep bass and excellent midrange reproduction

Above right & below: the five types of loudspeaker driver used in the Jaguar XJ Ultimate (not to scale). Top to bottom: 25mm HF, 100/25mm coaxial, 165mm LF, 200mm LF.

Below: cutaway of the 200mm subwoofer assembly.



Jaguar XJ Ultimate Outline Specifications

25mm Tweeter

Nominal Impedance:	4Ω
Power Handling RMS:	25W
Power Handling Max:	50W
Sensitivity (1W/1m):	88 dB ± 2dB
Resonance Frequency:	1.4 kHz
Operating Freq Bandwidth:	3 kHz – 20 kHz
THD @ 10W:	< 1%

100mm Midrange

Nominal Impedance:	2Ω
Power Handling RMS:	70W
Power Handling Max:	100W
Sensitivity (1W/1m):	87 dB ± 2dB
Resonance Frequency:	115 Hz
Operating Freq Bandwidth:	200 Hz – 5 kHz
THD @ 10W:	< 2%
Linear Excursion:	± 2mm

165mm Bass

Nominal Impedance:	2Ω
Power Handling RMS:	70W
Power Handling Max:	100W
Sensitivity (1W/1m):	89 dB ± 2dB
Resonance Frequency:	60 Hz
Operating Freq Bandwidth:	60 Hz – 3 kHz
THD @ 10W:	< 2%
Linear Excursion:	± 3mm

200mm Bass

Nominal impedance:	2Ω
Power handling RMS:	70W
Power handling Max:	100W
Sensitivity (1W/1m):	88dB
Resonance frequency:	50Hz
Operating Freq Bandwidth:	30 – 500Hz
THD @ 10W:	< 2%
Linear excursion:	± 7mm

200mm Subwoofer

Nominal Impedance:	2 x 2Ω
Power Handling RMS:	2 x 70W
Power Handling Max:	2 x 100W
Sensitivity (1W/1m):	88 dB ± 2dB
Resonance Frequency:	50 Hz
Operating Freq Bandwidth:	30 Hz – 100 Hz
THD @ 10W:	< 2%
Linear Excursion:	± 10mm

Amplification

Type:	Class D with feedback.
Channels:	15.
Power Rating (0.2% THD):	825W