EMMA
european mobile media association

USA Edition

Official Sound Quality Competition Manual 2026

EMMA USA
european mobile media association
www.emmausa.org

The Competitive Spirit

1. Welcome

Car Audio Competition has its roots in the United States, where the first organizations designed competition manuals for Sound Quality events. EMMA was founded to create a level playing field for sound quality competitions in Europe and to unify the different rulebooks that were used all over the continent. EMMA International is the leading organization for the EMMA national car audio associations all over the world and is responsible for the annually organized international Head judge training, the standardized rulebook and the media used for CarMedia competition. It's website www.emmanet.com gives access to important information about the sound quality competitions.

In addition to Sound Quality, the EMMA competition series also includes EMMA Multimedia (MM), EMMA Sound Pressure League (ESPL), EMMA Sound Quality League (ESQL) and EMMA Tuning, catering for all forms of car audio systems.

In this version of the EMMA rulebook, all our experiences gathered over the last 20 years from all National Organizations and the international Competitions have been used to create a rulebook that is fairer and easier for the competitor to understand and follow.
It is also EMMA's sincerest hope that these rules will be recognized as an example of the organizations continuing efforts to promote the CarMedia industry.

The mission of the European Mobile Media Association is to provide guidelines for an independent group of national car audio organizations all over the world. It sets rules and regulations by which the Sound Quality, ESPL, ESQL, Multimedia and EMMA Tuning competitions are held. EMMA's goal is to encourage fair competitions on an equal level throughout all member countries and to promote the growth of these events. The intention is to have an international Championship in the available formats every year.

Furthermore, EMMA encourages both, competitors and installers, to extend their knowledge of the equipment they are using. This then results in a higher standard of quality for the installations and ensures the equipment will perform to its optimum. Ultimately this will result in satisfied competitors and/or customers.

For EMMA's competitors, the challenge is to build an Audio or Multimedia system that will overcome the problems of the vehicle acoustics, reproducing music without noise or distortion and to make the music sound like the "original" and / or a high Sound Pressure Level. Installation quality is also evaluated.

EMMA was established to satisfy the need of competitors to find out "Who is on top in Europe, Asia, Africa, Australia, America or the world".
Today's high performance car audio equipment is capable of delivering sound reproduction so accurately and loud, that it does not sound like reproduction at all. EMMA is concerned that some people may forget that the most important instruments in this listening experience, their ears, have limits. The last thing we want to see is for enthusiasts abusing their ears by listening at extreme volume levels that could render them incapable of hearing the music they love so much!

Good Luck!!

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This rulebook was discussed and written by the EMMA international Head Judges & Supervisors and finalised with the support of Costas Christopoulos (Greece), Ronald van Looij, Reinier & Carel Wolf (Netherlands), Werner Rothschopf (Austria), Prapasakorn Bhucksasri (Philippines), Per Söder (Sweden), Gennady Litvin (Russia), Antero Kölli (Finland), Steffen Schmidt (Denmark), Somkiat Pookayaporn (Thailand), Chris Körbel, Norbert Tyka, Jan Schleicher, Lars Neuper, Rene Krosse, Volker Simmer & Alex Klett (Germany), Francesco Richichi (Italy), Ketil Skjei (Norway), Cristian Martin, Kevin Hall, Horst Starke & Andrew Ackerley (UK).

In any EMMA-sanctioned event, EMMA will not be held responsible, directly or indirectly, for any damage to or loss of competition cars, equipment and other goods.
Furthermore EMMA urges the competitors and the public in general to protect their hearing.

All copies of the official rules, score sheets and other related material, media such as CDs, DVDs, provided digital audio files and the use of brand name and logo are to be authorized by the owner of the European Mobile Media Association.

All relevant Updates, judging details to the Rulebook are published at www.emmanet.com

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2. EMMA Categories & Classes

SQ Sound Quality

E – Category (Entry)

- **Unlimited**

Installation:

- Only basic installation requirements see matrix in the installation rulebook
- No presentation required
- Documentation only for hidden / non-visible components will be required
- System diagram and wiring diagram are required.

Restrictions:

- Limited to newcomers. Competitors must not have competed in EMMA or any other sound quality competition previously.
- No sponsored cars (invoices for all components must be available for proof of purchase upon request)
- No judges, EMMA officials or professionals
- No performance modifications or self-built equipment on signal route. Cosmetic changes are acceptable.
- No restrictions of modifications to the installation besides full dash rebuilds and/or seat rail extensions.
- Competitors can compete for a maximum of two competition years in E-Category however, the champion of the national (and/or international) final must be promoted to a higher category.

S - Category (skilled)

- **OEM**
- **Limited**
- **Unlimited**

Installation:

- Average installation requirements see matrix in the installation rulebook
- No presentation required
- Documentation only for hidden / non-visible components will be required
- System diagram and wiring diagram are required.

Restrictions:

- No sponsored cars or manufacturer vehicles allowed. (invoices for all components must be available for proof of purchase upon request)
- No performance modifications or self-built equipment in the signal route. Cosmetic changes are acceptable
- No metal is allowed to be cut forward of the B-Pillar
- No kick panel drivers are allowed unless they were installed there from the factory
- See sub-category restrictions

S OEM additional restrictions:

- In the Cabin area, only OEM speaker locations and/or grilles available are allowed to be used (for one or more speakers)
- If a higher OEM-trim level as the competitor's car has other/additional speaker locations and/or grilles these can be used too
- No special edited car-models from "tuning companies"; special editions from initial car- manufacturers are acceptable
- Head unit can be changed, or an additional head unit can be installed
- Additional volume control/display can be installed
- Any change that is not related to the car audio system is acceptable

S Limited additional restrictions:

- An additional high frequency driver can be installed in a non-stock location such as an A- pillar up to a maximum of 2" in diameter measured from edge to edge of the driver surround.
- Custom grilles can be used as long as the speaker size remains the same as the factory.

S Unlimited additional restrictions:

- An additional high frequency driver can be installed in a non-stock location such as an A-pillar up to a maximum of 4.5" in diameter measured from edge to edge of the driver surround.
- An additional tweeter up to 1" can be installed in a non-stock location.
- Custom grilles can be used as long as the speaker size remains the same as the factory.
- Dashboard modifications are limited to the size of the OEM grille.

M - Category (Master)

- **Limited**
- **Unlimited**

Installation:

- Moderate installation requirements seethe matrix in the installation manual
- Documentation is required
- System diagram and wiring diagram are required.

Overall restrictions:

- No manufacturer vehicles allowed.
- No seat rail extensions allowed. Vehicle is to be judged from the driving position.
- Dashboards must retain the overall design and shape from the factory however, modifications to allow up to a 6.5" driver can be fabricated onto the dashboard surface or mounted in pods.
- Enlarging of the factory speaker locations are allowed.

M Limited additional restrictions:

- The installation of sealed kick panel enclosures are allowed. The enclosures must not vent to the outside of the vehicle.

M Unlimited additional restrictions:

- The installation of vented kick panel speakers are allowed.

X - Category (Expert)

- **Limited**
- **Unlimited**
- **X2**

Installation:

- Extreme installations will get the most bonus points. See the matrix in the installation manual
- Detailed documentation is required
- Presentation is required
- Additional points for design

Overall restrictions:

- Manufacturer and sponsored vehicles allowed
- The car must be able to drive on its own with a driver sitting in the car
- Full dash rebuilds are allowed and there are no restrictions on the number of drivers or type or their locations
- Competitors are not required to be judged from a driving position

X Limited additional restrictions:

- The car must have 2 seats side by side and can have seat positions no more than 32" measured from the lower portion of the steering wheel to the pivot point of the lumbar (back) portion of the driver's seat
- Installation bonus points are awarded up to 15 points
- A 7 minute verbal presentation is required during the install judging

X Unlimited additional restrictions:

- This is a class for extremely modified vehicles. There are no restrictions on the design of the vehicle however, it must be drivable.
- Installation bonus points are awarded up to 100 points
- A 15 minute verbal presentation is required during the install judging

X2:

- This is a class for 2 seat judging. Anyone in any class can add this as an additional format. The only restriction is that the seats must be in a side by side seating arrangement. 2 judges will evaluate the system from both seats using the standard sound quality scoresheet and each judge's scores will be added together for the total.

4. EMMA rules – Sound Quality

Pre Judging Check

Verification of reasonable driving position y/n

1. Before the sound quality judging starts, the judges will check that the competitor is able to operate the gear-stick, the steering wheel and the pedals from the seating position to be judged from. Exceptions are only allowed for people smaller than 5’5”.
2. The judges will document the reasonable driving position in the relevant check box on the score sheet. **- THIS IS NOT SCORED IN THE X UNLIMITED CATEGORY IN THE USA**

Channel verification

Track 2 & 3 of the official EMMA Sound Quality source will be used. If the system has the correct left and right channel integrity, the judges will mark it on the score sheet. If the judges find that channels are reversed, they will notify the competitor. The competitor then has the opportunity to correct the “problem” within five minutes repair time. If the problem could not be corrected, the competitor will decide if they want the system to be judged.

Calibration of volume

1. The Competitor is responsible for suggesting the correct volume for the sound judgement. The judges will use this volume.
2. Only if the suggested volume is “Too Loud” (more than 80db unweighted slow measurement with pink noise), the judge will take a measurement to set the correct volume.
3. If the volume is too low, it is up to the competitor to continue with the same volume or ask the judge to adjust the volume.
4. The digital readout on the display or the angle of the volume control will be noted in the designated box on the score-sheet.
5. Furthermore, the equipment used for reproducing the EMMA Sound Quality source will be noted on the score sheet.

Imaging Characteristics

Imaging – Position

The sound stage is defined by the left and right boundaries established during the sound stage judging.

The technical tracks 2-6 for positioning and focus will be used to define the five positions. The center position should be exactly in the middle between the ultimate left and ultimate right. Left center should be exactly in the middle between ultimate left and center. Right-center should be exactly in the middle between center and ultimate right. This means that all positions should be evenly spaced. When the sound is not coming from the position where it should appear, a zero will be given for that position. For each correct position of each instrument the judges will score 1 Point.

The human voice is used as the reference location of each position.

The 5 different sounds appear at each position in the following order:

Instrument	Fundamental Frequencies
Bass guitar	20 Hz to 500 Hz
Electric guitar	60 Hz to 1200 Hz
Banjo	160 Hz to 5.5 kHz
Vibraphone	200 Hz to 5 kHz
Triangle	2 kHz to 20 kHz

Imaging – Focus

The focus will be judged using track 4. There are 5 different instruments played. Each instrument will be scored separately.

Focus means correct size of each instrument. The size of each tone should be considered relative to one another. The size of focus will differ from the frequency. Please take care not confuse size with volume. Louder does not mean bigger. Each different sound in each position should be distinct with the correct focus-size. For the correct focus of each instrument the judge will score 5 points.

Sound Stage

The sound stage produced by an audio system can be defined as the perceived space from which the sound originates. Much like the stage in a concert hall is the space from which the sound originates. The term "Imaging" describes a sound system's ability to reproduce the sound of instruments in their correct locations and proportions on the sound stage.

The object of the judging is to define the boundaries of the sound stage created by the car's audio system. These boundaries must be identified in order to judge imaging correctly. We use Track 7 (Moving track) to check the sound stage.

Sound Stage – Distance to sound stage

The designated Moving track is used to find out the distance of where the soundstage begins in relation to the listener's position. The instruments playing in the center of the soundstage and the instrument that is closest to you is the beginning of the soundstage.

Sound – Width

The designated moving track is used to judge stage width. The width of the sound stage defines the distance from the ultimate "left" position to the ultimate "right" position relative to the vehicle. The objective is to create a wide sound stage. Exceptional sound systems will have sound stages that seem to exceed the physical boundaries of the vehicle Interior.
At this point, it is only of interest where the placements of "left" and "right" positions are on the virtual sound stage.

Sound stage – Height

The height of the sound stage defines the perceived height (points of origin of the sound in between the entire width of the sound stage) in relation to horizon level and how consistent this height appears to be during the entire range of frequencies.
The object of the competition is to achieve a “stable” sound at horizon level with a natural sense of the cars’ space above that point. Instruments and voices should be originated entirely at that height with no portion of them coming from below or above the sound stage.
Pay particular attention to make sure that the stage height remains stable, from left to right. Some vehicles may exhibit a good height in the center with left and right boundaries dropping lower. This should be taken into account in the scoring. All instruments should appear at the same height.

Sound Stage – Room Information

Room information or Ambience is a psycho-acoustic phenomenon that can be defined as the perceived space around a sound source. You should be able to define the size of the room.

Room information is scored:

- Left / right,
- Front / rear and
- Floor / ceiling.

1.point	No Room - Flat stage
2.points	Just a little bit of Room - Definitely smaller than the size of the car
3.points	Some Room - About the size of the car
4.points	Good Room size - A little bigger than the size of the car
5.points	Extraordinary Room size - A lot bigger than the size of the car

Tonal Accuracy

Tonal Accuracy and overall spectral balance

Using tracks 8, 9, 10 and 11 the sound system should reproduce a recording as realistically and authentically as possible. If it is a live recording, it should sound just like that, if it is a studio recording, it should sound as close as possible to the intentions of the producer. Therefore, EMMA trains the Sound Quality judges to fully understand exactly how the EMMA Sound Quality recordings have been recorded and what it should sound like. It is a valuable tool that allows the scoring of the tonal accuracy of the four sections that separate the audible frequency range into:

- **Sub-bass**
- **Mid-bass**
- **Midrange**
- **High frequencies**

Under Tonal Accuracy, the judges will concentrate on each range specifically, ignoring the spectral balance of the whole spectrum.
Under overall spectral balance, the judges will evaluate how well the four sections combine together to create a full picture approximating the originality of the EMMA Sound Quality recordings as much as possible.

Sub-Bass (10 Hz – 60 Hz)
The sounds reproduced by the system in this range should be immediately recognizable, realistically weighted, articulate, and free of distortion and overhang. It is vital to recognize the difference between good extension and overhang. Overhang refers to a blurring or exaggeration of the decay time of a sound. Accurate low frequency extension is a desirable trait.

Mid-bass (60 Hz – 200 Hz)
The judges will concentrate on the sound produced by the Voices, Bass, Brass, Tuba, Trombone, French Horn, Trumpet, Woodwinds, Clarinet, Oboe, English Horn, Alto Sax, Bass, Bass Clarinet, Contrabass, Tympani, Bass Violin, Cello, Guitar, Viola, Violin, Harp, Piano, Organ, tambourine, Drums, Floor Tom, Harp.

These should be reproduced smoothly with good articulation and detail. Particular attention should be paid to the attack and the decay of drums and the bass guitar. Because of the small size of the car as a listening environment, problems with resonance, sound peaks and standing waves are common in this range. The best systems control these problems so that they do not interfere with fidelity.

Midrange (200 Hz – 3 KHz)
This range contains the vast majority of musical information in most recordings. The judges will concentrate on: Voices, Bass, Brass, Tuba, Trombone, French Horn, Trumpet, Woodwinds, Flute, Clarinet, Oboe, English Horn, Alto Saxophone, Bass, Strings, Cello, Guitar, Viola, Violin, Harp, Piano, Organ, Piccolo, Bells, Drums, Tambourine, Cymbals, High Hat, Ride, Shaker, Rattle Snake, Tom Tom, Floor Tom, Harp. Voices should sound realistic without uncharacteristic ringing, thin sound, dullness or distortion.

High-Frequencies (3 KHz-inaudibility)
The judges will concentrate on Voices, Woodwinds, Piccolo, Flute, Clarinet, Strings, Violin, Triangle, Brushes, Harp, Piano, Organ, Bells, Tom Tom, Cymbals, High Hat, Ride, Shaker, Rattle Snake, Harp, and the sibilance (tendency to exaggerate "s" or "f", or "t" sounds) in the voice recordings. These should sound accurate, smooth, neither too dull nor too bright and should not exhibit any harshness, thin sound, excessive sibilance or distortion.

Judges listen to the quality of each frequency under tonal accuracy and not the relative volume. Relative volume is one of the parts that will be judged under Spectral Balance.

Overall Spectral Balance

Relative Volume of each frequency is judged under spectral balance. While in the chapter before the four sections sub-bass, mid-bass, midrange and high frequencies were evaluated each individually resulting in separate points – here it is evaluated how they combine together to create a full picture. Depending on how well they are balanced and play together, they will receive results accordingly.

Superior systems will sound effortless and natural with any of the judging tracks. Weaker systems will exhibit distortion, unnatural coloration, dynamic compression, and frequency response errors, which lead to listening fatigue and lend an unnatural sound to the music.
Does the system create the illusion of realistic instruments and voices as you listen to the judging tracks? Is the distribution of energy between the frequency ranges appropriate and natural sounding? Particular attention should be paid to how smoothly the system integrates the different frequency ranges.

The same track of the official EMMA Sound Quality recordings will be played again after a manual adjustment of the volume by the judges of approx. +6dB allowing the sound quality judges to evaluate the ability of the sound system to reproduce the overall spectral balance as described before at a higher volume level. This may also indicate the dynamic abilities of the sound system. At high levels, the judges will listen to the same items described before but also for solid, realistic dynamics. Instruments should have a realistic attack and impact that does not get compressed by distortion (amplifiers clipping or speaker system limitations).

Now since the sound quality judges have been listened to the competitor's sound system for quite a while, they must determine the enjoyment the music generated to the listener and the acoustic impression of the music. There is no special track; listening pleasure reflects the judge's experiences over the entire sound quality judging process.

Noise:

While the SQ judges are actually listening to and operating the audio system, they will judge adjustments for noise and system handling. The judges should briefly note what caused any adjustment to the score in the comments section of the score sheet. A well-executed installation should be free from any noise at all listening levels. Noise is defined as any sound not present on the original EMMA Sound Quality recordings and that has been added by either the cars electronics/charging system or by the audio system.

The head unit should be able to use most of its range before the amplifier is driven into clipping. Again, if the gains are set too low, the head unit won't be able to drive the amplifier to its maximum output level. If the gains are set too high, the amplifier will be driven into clipping at a very low volume level (on the head unit). An amplifier amplifies what it is given. Your signal cables carry the audio signal, and they also carry "noise" in the system due to grounds, internal components, etc. The noise stays the same, but the signal increases with the volume. So, the higher the volume, the higher the audio signal is above the noise level; hence a better signal-to-noise ratio. Now, the amp is still amplifying the noise, but the level of the audio signal is high enough you don't notice the noise floor. A system with an improperly set gain structure will exhibit a hiss or "static" sound at full volume playing the noise track.

Keep in mind that this adjustment does not affect the power output of the amplifier — you're simply setting the amount of input signal needed for optimum sound quality from your system.

There will be the following items checked with Track 12:

Test for switching noises
This test is performed using the designated noise testing track with no change to the volume. Only the source unit's (or designated) power switch is to be used to turn the system on or off. The ignition switch is not to be used. The mechanical „click" of a relay will not be cause deductions.

Potential noises can be:
Turn-on/turn-off noise, switching pops - a popping, thumping or clicking noise that is heard through the system's speakers when the system is powered up by the source unit's on/off switch or switching (continued on next page)

pops - a clicking or popping noise that comes through the speakers when adjustments are made to the audio system's volume or track selection controls. Digital search or stepper noises, which are inherent in some digital volume control designs, are beyond the scope of being corrected by proper installation techniques, but are not considered acceptable and will result in point deduction.

Engine on test
With the Engine running to test noise induced by the car's charging system, mechanical or electronic system that may cause interference that is reproduced through the speakers with the audio system turned on and off.

Possible noises are:
Alternator whine, ignition noise, PWM-noise created by control boxes, etc.

Engine off test
With the Engine off to test for system noises
A noise that is somehow emulated from or by the audio system and that is not recorded on the current official EMMA Media

Potential noises can be:
Rush, hum, hiss, cracks, floor noise, rattling panels, loud fans, mechanical noise etc.
If noises are audible in some listening tracks but not in the dedicated noise track, these tracks can be considered for judging.

1. Each system is listened to using the “Zero Bit Track” on the current official EMMA Media for the absence of noise, if noises are heard during the regular judging, points can also be deducted.
2. The judges must listen for every specific type of noise for which a deduction of points occurs on the score sheet.
3. The judges will determine the audibility of noise from a normal seated listening position.
4. The judges should briefly note what caused any adjustment to the score in the comments section of the score sheet.
5. The charging system must be in proper working order with the alternator producing an increase in DC voltage output while the engine is running. Other than a voltage regulator, the use or existence of any circuit, switch or device designed to affect the operation of the alternator while the engine is running or physically disconnected alternators is prohibited.
6. If a cars test is clean of alternator whine, the judges may request that the charging system be tested. This test will be done at the amplifier's 12 Volt input connections. These must be made accessible within 60 seconds, upon request by the judges.
7. Alternator failures or unusually weak charging voltage will result in an automatic maximum deduction for alternator whine (6 points deduction).
8. A main power switch (could be the source unit's power switch or the ignition switch) must control the turning on and turning off of all audio system components (this does include video systems, video games, cellular communications equipment, navigation systems etc.). In the event that a source unit lacks a conventional power switch, a single external switch can be designated to power up and down the entire audio system. Portable devices are not expected to turn off with the main power switch.
9. Electrically powered cars may compete in EMMA competitions and are exempt from rules 5-7. Deductions can be made for extraneous hums and other noises produced by an EPV’s power plant according to the same guidelines used for alternator whine testing. EPV’s must be self-powered during the judging process.

10. The competitor can request that the system be shut down before starting the car.
11. If the engine won't start (due to drained battery), the competitor will be offered the chance to jump-start his car within 3 minutes. 3 points will be deducted. If the car cannot be jump- started within those 3 minutes, the maximum deduction of 6 points will be made.
12. The judges must carefully determine whether the noise is actually coming from the system itself. Many engines produce whining sounds from various different mechanical actions (turbochargers, alternators spinning etc.). To do this the judges can move their heads closer to the speaker in the car (not to judge the audibility of the noise, but only to establish its origin). If the judges are not sure about the audibility of alternator whine, they should not deduct any points.
13. Whenever a car's running engine is so loud that noise can't be checked, the maximum number of points for 'noise with running engine' will be deducted.
14. If a system is completely quiet during turn on/off test, the judges have the authority to test the system to determine whether all equipment is truly turning on and off. If any of the audio system's electronics do not power down with the source unit's power switch/ designated switch for turn on/off, an automatic 3-point deduction is given. The burden of proof is on the competitor. If a competitor cannot convincingly show that their equipment is turning on and off, the 3-point deduction will be enforced by the Head Judge.

The audio system must demonstrate a good balance of comfort and safety during operation of the car. The judges must be able to operate the audio system with ease from the driver's seat without any confusion. General visibility and accessibility of the above mentioned, relevant user adjustable components from the driver's seat during theoretical operation, is desired. CD changer units, hard drives, USB devices etc. that have been installed in the passenger compartment for convenience are not to be considered and will not be a negative factor in the judge's scoring.

The judges will look for ease of system handling and a minimum of distraction from the road, as if the car was being driven. The system with the closest approximation to these conditions will receive points. The system handling will be judged by turning the audio system power on/off, controlling the volume, track selection or fast forward/rewind controls and visibility/readability of the display only. Shrouds or covers, hiding the controls (e.g., for theft protection) will be removed and will not affect the scoring of system handling.

The judge seated in the driver's seat will operate the audio system and determine the level of difficulty or distraction in reaching the above defined user adjustable components and controls.

The following items will be evaluated:

- **System handling**
- **Visibility**
- **Control**

- If a steering wheel remote control is fitted, it does not need to function in all positions but for sure in the driving straight position.
- If a remote control is installed, it must have in minimum the following functions: volume, track selection, pause/mute or on/off. Furthermore, the buttons should be either labelled or a written instruction how to operate should be provided to the judges.

Procedures and rules for Sound Judging:

- For sound quality judging, the car must be in a “ready for driving status” as used on public roads. Windscreens, window covers, curtains, etc. are not allowed to be used.The vehicle must be judged with all windows raised and a roof covering the entire top of the vehicle.

- The competitor will suggest the volume to be listened at by the sound judges. To protect the judges from too high sound levels, the unweighted slow measurement on pink noise cannot be higher than 80dB.

- Participants may advise the judges about the specific operational features of the system before SQ-judging begins. Depending on format and categories, participants will proceed to a designated area and remain there until judging has been completed or remain with the judge during the evaluation of the car.

- During testing and scoring, judges must sit in the front seat of the car facing forward. This applies to all cars, including limousines. All competing cars must have the OEM number of front seats with the exception of the X Unlimited class. The judge must sit in the driver’s seat with the windows and sunroof closed during judging. Only convertibles can be judged with the roof and window down, when the competitor requests for it and the weather conditions are appropriate.

- The judge will verify that the competitor is able to operate the gearstick, the steering wheel and the pedals. (Note: If there is a very big difference between the height of the competitor (small) and the judge (tall), the judge is not required to judge the sound in the competitor’s reasonable driving position. The other way around, a pillow or similar can be used to adjust the height difference. The reasonable driving position will be certified in a check box on the scoresheet. This rule does not apply to the X Unlimited class in the USA.

- If it is not possible for the competitor to operate steering wheel, gearstick and pedals while seated, the judge will request the competitor to move his seat into a reasonable driving position before starting judging.

- The competitor is allowed to ask the judge to sit in their reasonable (driving) position. The competitor may also point out that the judges must not influence the sound coming from the speaker’s placement in the car (kick panels, mounted under the seats, etc.) by either covering them with the score sheets or by blocking them with their feet.

- The judge is not allowed to re-adjust the seat without asking the competitor.

- The judge is not allowed to change his seating position during the judging process.

- It is the head judges decision whether to allow running engines so that the air conditioning or heating systems can be used during sound quality judging. If the running of engines is allowed, judges should adjust the car's ventilation fan to a quiet setting during the listening procedure.

- Prior to judging, the head judge will inform the judges and competitors whether cars will be judged for sound quality with the engine running or the engine off. This announcement should be made at the competitor's and judges’ meetings. All cars must be judged consistently. It is within the head judges discretion to make exceptions based on extenuating circumstances (extremely loud engines etc.). In some climates this may impose unreasonable fatigue and/or discomfort on judges (very cold or hot weather).

- In events inside trade fair facilities, it can be the case that the start of engine is prohibited. In this case the engine noises will be zero.

- The judge should avoid any actions that could affect the sound performance. (E.g., not to wear hats/ball-caps, avoid chewing gum, turn off cellular phones, pay attention how the scoring board is held, etc.).

- Active judges (on the competition day) are not allowed to prepare any adjustments on a competition car (except their own if they are competing) during the event.

- The judges are allowed to use the “additional tracks” on the official EMMA-Sound-Quality-recording to verify their impressions - judging will be done with the foreseen tracks.

- The judges will not let any visual cue (apparent speaker locations) influence their judgement. Sound quality judges should be "blind” to any equipment in the car.

- If possible/necessary, the sound quality judges are invited to explain their scoring with additional notes/explanations written on the score sheet.

- In case of an equipment breakdown or car malfunction during SQ-judging, the competitor will be allowed 5 minutes to correct or repair any malfunction. Only one attempt (one period of five minutes) to repair is allowed. If the problem occurs again, the scoring will continue under the given circumstances. Furthermore, the head judge must be informed by the judge about the malfunction/ breakdown. To do so, the judge will mark on the score sheet “repair time taken”

- Depending on the judging mode, the judges will show the score sheets together with an explanation about the scoring to the competitor, this will not take more than five minutes. judges can refuse any further comment after this five-minute time.

- Depending on the judging mode, after the competitor has seen the score sheet and accepted the result, they should sign it.

- Should the competitor refuse for any reason the scoring or explanation presented to them by the judges, shall it be done within this five-minute time. A protest must be made immediately after the explanation of the judges (see the corresponding chapter under General Rules). No protest regarding their scoring is allowed after signing the score sheet.

- Should a protest regarding rules or classifications occur at an event, the Head Judge's decision is final. Scores and positions will remain in effect. Any concerns should be taken up with the EMMA USA head office in writing at info@emmausa.org

Notes: