



Official Competition Manual 2016/2017

Sound Quality Multi Media ESQ ESPL EMMA Racing



the global car lifestyle network
THE GLOBAL CAR LIFESTYLE NETWORK

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Official international EMMA Partners 2016/2017



1 Welcome to the European Mobile Media Association!

1.1 History & preface

Car Audio Competition has its roots in the United States, where the first organisations 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 organisation for the EMMA national car audio associations all over the world and is responsible for the annually organised international Head Judge training, the standardised rulebook and the media used for CarMedia competition.

Its website www.emmanet.com gives access to important information about the sound quality competitions.

The EMMA Sound Pressure League (ESPL), EMMA Sound Quality League (ESQL) and EMMA Racing are also part of the EMMA competition series. With EMMA Racing, a platform is created for tuned cars with mobile media systems to compete on a national and international level with common rules, to find the European Champion not only in sound but also on overall car performance.

In this actual version of the EMMA rulebook, all our experiences gathered over the last years from all National Organisations 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 viewed as an example of the organisations continuing efforts to promote the CarMedia industry.

1.2 EMMA Mission Statement

The mission of the European Mobile Media Association is to provide guidelines for an independent group of national car audio organisations all over the world. It sets rules and regulations by which the Sound Quality, ESPL, ESQL and EMMA Racing 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.

1.3 The Competition Challenge

For EMMA's competitors, the challenge is to build an Audio or Multimedia system that will overcome the problems of 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.

1.4 The Competitive Spirit

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!!

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 Wolf (Netherlands), Werner Rothschof (Austria), Prapasakorn Bhucksasri (Philippines), Per Söder (Sweden), Gennady Litvin (Russia), Antero Kölli (Finland), Somkiat Pookayaporn (Thailand), Chris Körbel, Norbert Tyka, Jan Schleicher, Christian Gärtner and Alex Klett (Germany).

DISCLAIMER

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.

EMMA is a registered trademark

All copies of the official rules, score sheets and other related material, media such as CDs, DVDs, provided audio files like MP3 and AAC, and the use of brand name and logo are to be authorised by the owner of the European Mobile Media Association, Alexander Klett.

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

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2 EMMA Categories & Classes

2.1 SQ Sound Quality

E – Category (Entry)

- Up to 3000 €
- Unlimited

Installation:

Almost no specific installation requirements – No documentation / presentation required.

Restrictions

Limited to Newbies – Competitor has never taken part on an EMMA competition in a higher class as “Experienced” and is not national or international champion.

- No sponsored vehicles
- No judges and professionals
- No modified or self-build active components
- No restrictions of modifications to the Installation

Competitors can compete only one season in E-Category

S - Category (skilled)

- OEM
- Up to 4000 €
- Unlimited

Installation:

Simple specific installation requirements – No documentation / presentation required.

Restrictions:

- No sponsored vehicles
- No judges and professionals
- No modified or self-build active components
- No restrictions of modifications to the Installation except in OEM class

OEM restrictions:

- Only OEM speaker locations are allowed
- No special edited models
- Interior must look 100% original
- The Source Unit might be changed

M - Category (Master)

- **OEM**
- **Up to 5000 €**
- **Unlimited**

Installation:

A few specific installation requirements – A documentation is required.

Restriction:

- No restrictions regarding Installation except in OEM class
- No modified or self-build active components in price limited class

OEM restrictions:

- Only OEM speaker locations are allowed
- No special edited models
- Interior must look 100% original except:
- The Source unit might be changed
- modification of Grills and surfaces is allowed as long as the shape is the same like the OEM

X - Category (Expert)

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

Installation:

Extreme installation is appreciated and beneficial – A detailed documentation / presentation is required.

Restriction:

- The vehicle must not be officially registered
- additional points for design
- The vehicle must be able to drive on its own by a driver sitting in the car
- Bonus points in Limited up to 15, Unlimited up to 100.

2.2 MM Multi Media

S - Category (skilled)

- **Multi Media 2.1**

Installation:

Simple specific installation requirements – No documentation / presentation required.

Restrictions:

- No modified or self-build active components
- No restrictions of modifications to the Installation

M - Category (Master)

- **Multi-Media Master 5.1**

Installation:

A few specific installation requirements – A documentation is required.

No restrictions regarding Installation

X - Category (Expert)

- **Multi-Media X Unlimited**

Installation:

Extreme installation is appreciated and beneficial – A detailed documentation / presentation is required.

Restriction:

- The vehicle must not be officially registered
- additional points for design
- The vehicle must be able to drive on its own by a driver sitting in the car
- No rules for speaker protection/Speaker protection is not necessary
- additional points for design
- Bonus points up to 100.

2.3 ESPL (EMMA Sound Pressure League)

- **ESPL E-Category T- 1 Woofer**
- **ESPL E-Category T- 2 Woofer**
- **ESPL E-Category T- 4 Woofer**
- **ESPL E-Category T- unl**
- **ESPL E-Category R- unl**
- **ESPL E-Category W- unl**
- **ESPL X Unlimited**

2.4 ESQL (EMMA Sound Quality League)

- **ESQL M-Category**
- **ESQL X Unlimited**

2.5 EMMA Racing

- **Racing Stock**

Fully usable car in the interior section – Detailed documentation of tuning mandatory.

- **Racing Custom**

Any modification to the car is allowed. Only the front seats must be usable in a regular way – Detailed documentation of tuning mandatory.

3 EMMA rules – Installation Quality

The installation quality judging criteria are formulated to promote system durability and longevity, as well as logical integration and visual impression.

The installation quality judging will be performed according to this official rulebook by one or two installation judges (depending on category). These judges are specially qualified and trained to work with the rulebook to determine the installation quality.

After the installation quality judging, the competitor will receive a qualified and objective feedback about the quality of installation of the vehicle in regards to the aspects mentioned within this rulebook.

EMMA installation has been broken down into sections that can be judged and evaluated within a understandable level of classification. The judges will not tell you “your vehicle has a good or a bad installation or what points you have earned”. Together with their qualified judgement and the help of the score sheet they will explain exactly the quality of the installation in all relevant details.

The awarded score will be easy to follow for the competitor, if necessary with support from the EMMA Rulebook. Furthermore, the competitor can learn the potential of their own system installation. The judges are allowed to give the contestants tips and hints on how to improve the installation of his/her audio system (without using brand names). This will allow the competitor, a qualified dealer or experienced colleagues in a competition team to help improve the installation and potential use of equipment.

3.1 Installation rules for: SQ E - Category / ESPL E-Category / ESQ-L-M-Category

To be judged	Content	Points
Presentation to the public	Show off the vehicle & installation to the public during the event time Allow spectators to listen to the system Exception: at the event active judges / back office staff's cars can remain closed due to safety reason Will be checked several times a day	10
Cleanliness	Vehicle exterior should be "car-wash-clean", interior should be vacuumed (not perfect but reasonably clean) Car Wash clean y/n passenger compartment vacuumed y/n trunk vacuumed y/n (deduct 2 points per not cleaned area)	6
Main fuse present y/n	Check, if a main fuse is installed into the main power wire within 40cm from any positive battery post and/or before passing any metal panel. (if no, 0 points will be awarded)	10
Speaker protection	Check whether all speakers in the interior compartment's doors and in the foot-room are protected from physical damage. Hidden Speakers like mounted under the dashboard do not need a protection when they cannot be reached with the foot of driver or passenger. One should not be able to touch the membrane with a cylindrical object with a diameter of 3 cm. There should be at least one protective element per speaker. (Deduct 2 points for any speaker not protected, minimum 0). All other speakers do not need protection	5

Are all components securely mounted?	Check all components by physical inspection if fixed y/n Head Unit Other devices Amplifiers Speakers (if n/a, points will be awarded, deduct 2 points per not fixed component, minimum 0)	24
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Total Points	55
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3.2 Installation rules for: SQ & MM S – Category / ESPL-ESQL

To be judged	Content	Points
Presentation to the public	Show off the vehicle & installation to the public during the event time Allow spectators to listen to the system Exception: at the event active judges / back office staff's cars can remain closed due to safety reason Will be checked several times a day	10
Cleanliness	Vehicle exterior should be "car-wash-clean", interior should be vacuumed (not perfect but reasonably clean) Car Wash clean y/n passenger compartment vacuumed y/n trunk vacuumed y/n (deduct 2 points per not cleaned area)	6
Main fuse present y/n	Check, if a main fuse is installed into the main power wire within 40cm from the positive battery post and/or before passing any metal panel. (if no, 0 points will be awarded)	10
Are all components securely mounted?	Check all components by physical inspection if fixed y/n Head Unit Other devices Amplifiers Speakers (if n/a, points will be awarded, deduct 2 points per not fixed component, minimum 0)	24
Add ons		
Are all components fused?	Check, if a fuse is installed for any component belonging to the audio/multi-media system. All these fuses must be visible within three minutes (for all in total, not three minutes for every fuse!!!) Head Unit Other devices Amplifiers (if n/a or not visible, deduct 2 points per not fused component, minimum 0) EMMA Back Office will hand out a form at the registration where all components, wire diameters as well as fuses should be filled in by the competitor in case that no wiring diagram is prepared and available for the judging process	15

Speaker protection	Check whether all speakers in the interior compartment's doors and in the foot-room are protected from physical damage. Hidden Speakers like mounted under the dashboard do not need a protection when they cannot be reached with the foot of driver or passenger. One should not be able to touch the membrane with a cylindrical object with a diameter of 3 cm. There should be at least one protective element per speaker. (deduct 2 points for any speaker not protected, minimum 0). All other speakers do not need protection	5
Is the fuse value appropriate to the wire size?	Check, if any fuse belonging to the audio system is of appropriate size for the wire it is protecting (according to the VW75212 - Dimensionierung von Leitungen und Sicherungen im Kraftfahrzeug): 0,5mm ² - 10 Ampere 1,0mm ² - 15 Ampere 1,5mm ² - 20 Ampere 2,5mm ² - 20 Ampere 4,0mm ² - 30 Ampere 6,0mm ² - 50 Ampere 10mm ² - 60 Ampere 16mm ² - 100 Ampere 25mm ² - 125 Ampere 35mm ² - 175 Ampere 50mm ² - 250 Ampere 70mm ² - 300 Ampere as above, all these fuses must be visible within three minutes (for all in total, not three minutes for every fuse!!!) (if n/a, wrong size or not visible, deduct 2 points per not appropriate fuse, minimum 0)	20
First Optic impression	Check all components if they create the impression of "a finished installation" or "under construction" Head Unit Other devices Amplifiers Speakers / Speaker enclosures (if n/a, points will be awarded, deduct 1 point per "under construction" component, minimum 0)	10
Any interior wires visible?	Check, if any wire of the system installation is visible from the drivers seating position) (deduct 2 points for any visible system wire, minimum 0)	5
Total Points		105

3.3 Installation rules for: SQ & MM M-Category

To be judged	Content	Points
Presentation to the public	Show off the vehicle & installation to the public during the event time Allow spectators to listen to the system Exception: at the event active judges / back office staff's cars can remain closed due to safety reason Will be checked several times a day	10

Cleanliness	Vehicle exterior should be "car-wash-clean", interior should be vacuumed (not perfect but reasonably clean) Car Wash clean y/n passenger compartment vacuumed y/n trunk vacuumed y/n (deduct 2 points per not cleaned area)	6
Main fuse present y/n	Check, if a main-fuse is installed into the main power wire within 40cm from the positive battery post and/or before passing any metal panel. (if no, 0 points will be awarded)	10
Are all components securely mounted?	Check all components by physical inspection if fixed y/n Head Unit Other devices Amplifiers Speakers (if n/a, points will be awarded, deduct 2 points per not fixed component, minimum 0)	24
Are all components fused?	Check, if a fuse is installed for any component belonging to the audio/multi-media system. All these fuses must be visible within three minutes (for all in total, not three minutes for every fuse!!!) Head Unit Other devices Amplifiers (if n/a or not visible, deduct 2 points per not fused component, minimum 0) EMMA Back Office will hand out a form at the registration where all components, wire diameters as well as fuses should be filled in by the competitor in case that no wiring diagram is prepared and available for the judging process	15
Is the fuse value appropriate to the wire size?	Check, if any fuse belonging to the audio system is of appropriate size for the wire it is protecting according to the VW75212 - Dimensionierung von Leitungen und Sicherungen im Kraftfahrzeug: as above, all these fuses must be visible within three minutes (for all in total, not three minutes for every fuse!!!) (if n/a, wrong size or not visible, deduct 2 points per not appropriate fuse, minimum 0)	20
Protection of speakers	Check whether all speakers in the interior compartment's doors and in the foot-room are protected from physical damage. Hidden Speakers like mounted under the dashboard do not need a protection when they cannot be reached with the foot of driver or passenger. One should not be able to touch the membrane with a cylindrical object with a diameter of 3 cm. There should be at least one protective element per speaker. (deduct 2 points for any speaker not protected, minimum 0). All other speakers do not need protection	5
Any interior wires visible?	Check, if any wire of the system installation is visible from the drivers seating position) (deduct 2 points for any visible system wire, minimum 0)	5
Add on System documentation		
	Check for: Wire/Fuse Diagram Documentation (photo-log) of not accessible connections /	10

	components (deduct 1 point per missing element, minimum 0)	
Wires properly terminated?	Check, if all wires are properly terminated - either by physical inspection or by photo log	5
Wire terminations protected y/n	(deduct 1 point per not properly protected wire, minimum 0) Check, if wire terminations are installed in such a way that short cuts are avoided / covered by a non-conductive material in vehicles driving condition (all panels/covers on etc.) and appropriate measures are taken if exposed to moisture (e.g. in the doors) - either by physical inspection or by photo log	10
Wires protected from damage y/n	(deduct 1 point per not properly protected wire, minimum 0) Wires that pass metal (e.g. from engine compartment to interior) should be protected by grommets, rubbers or similar For wires, that are mechanically stressed (e.g. into the door) or that are close to moving parts (e.g. engine-belts) protective sleeving should be used if not installed to OEM's cable trays	5
Craftsmanship	(deduct 1 point per not properly protected wire, minimum 0) Check wire-routing, terminations, installation of components, installation of panels, surface finishes, equal gaps, etc. for the categories: wiring head unit amplifiers speakers other components (deduct 2 points per category where no effort was taken, deduct 1 point per category where poor effort was taken, minimum 0)	10
Total Points		135

3.4 Installation rules for: SQ X Category X Limited

To be judged	Content	Points
Presentation to the public	Show off the vehicle & installation to the public during the event time Allow spectators to listen to the system Exception: at the event active judges / back office staff's cars can remain closed due to safety reason Will be checked several times a day	10
Cleanliness	Vehicle exterior should be "car-wash-clean", interior should be vacuumed (not perfect but reasonably clean) Car Wash clean y/n passenger compartment vacuumed y/n trunk vacuumed y/n (deduct 2 points per not cleaned area)	6
Main fuse present y/n	Check, if a main-fuse is installed into the main power wire within 40cm from the positive battery post and/or before passing any metal panel. (if no, 0 points will be awarded)	10

Are all components securely mounted?	<p>Check all components by physical inspection if fixed y/n</p> <p>Head Unit</p> <p>Other devices</p> <p>Amplifiers</p> <p>Speakers</p> <p>(if n/a, points will be awarded, deduct 2 points per not fixed component, minimum 0)</p>	24
Are all components fused?	<p>Check, if a fuse is installed for any component belonging to the audio/multi-media system. All these fuses must be visible within three minutes (for all in total, not three minutes for every fuse!!!)</p> <p>Head Unit</p> <p>Other devices</p> <p>Amplifiers</p> <p>(if n/a or not visible, deduct 2 points per not fused component, minimum 0)</p> <p>EMMA Back Office will hand out a form at the registration where all components, wire diameters as well as fuses should be filled in by the competitor in case that no wiring diagram is prepared and available for the judging process</p>	15
Is the fuse value appropriate to the wire size?	<p>Check, if any fuse belonging to the audio system is of appropriate size for the wire it is protecting according to the VW75212 - Dimensionierung von Leitungen und Sicherungen im Kraftfahrzeug as above, all these fuses must be visible within three minutes (for all in total, not three minutes for every fuse!!!)</p> <p>(if n/a, wrong size or not visible, deduct 2 points per not appropriate fuse, minimum 0)</p>	20
Protection of speakers	<p>Check whether all speakers in the interior compartment's doors and in the foot-room are protected from physical damage. Hidden Speakers like mounted under the dashboard do not need a protection when they cannot be reached with the foot of driver or passenger. One should not be able to touch the membrane with a cylindrical object with a diameter of 3 cm. There should be at least one protective element per speaker.</p> <p>(deduct 2 points for any speaker not protected, minimum 0). All other speakers do not need protection</p>	5
Any interior wires visible?	<p>Check, if any wire of the system installation is visible from the drivers seating position)</p> <p>(deduct 2 points for any visible system wire, minimum 0)</p>	5
System documentation	<p>Check for:</p> <p>Wire/Fuse Diagram</p> <p>Documentation (photo-log) of not accessible connections / components</p> <p>(deduct 1 point per missing element, minimum 0)</p>	10
Wires properly terminated?	<p>Check, if all wires are properly terminated - either by physical inspection or by photo log</p> <p>(deduct 1 point per not properly protected wire, minimum 0)</p>	5

Wire terminations protected y/n	Check, if wire terminations are installed in such a way that short cuts are avoided / covered by a non-conductive material in vehicles driving condition (all panels/covers on etc.) and appropriate measures are taken if exposed to moisture (e.g. in the doors) - either by physical inspection or by photo log (deduct 1 point per not properly protected wire, minimum 0)	10
Wires protected from damage y/n	Wires that pass metal (e.g. from engine compartment to interior) should be protected by grommets, rubbers or similar For wires, that are mechanically stressed (e.g. into the door) or that are close to moving parts (e.g. engine-belts) protective sleeving should be used if not installed to OEM's cable trays (deduct 1 point per not properly protected wire, minimum 0)	5
Add on		
Craftsmanship	Check wire-routing, terminations, installation of components, installation of panels, surface finishes, equal gaps, etc. for the categories: wiring head unit amplifiers speakers other components (deduct 2 points per element where no effort was taken, deduct 1 point per element where poor effort was taken, minimum 0 => note on the score sheet for what points are deducted)	50
Presentation of system to the judges	7 minute presentation of the system to the judges by owner of vehicle / dedicated presenter (no movie) 1 point will be deducted per 30sec. Over time	10
design of interior	are all components installed to the interior follow a clear design idea y/n (deduct 1 point per element not following the design idea, minimum 0)	5
design of trunk	are all components installed to the trunk follow a clear design idea y/n (deduct 1 point per element not following the design idea, minimum 0)	5
Bonus points	Award bonus points for elements that belong to the installation and - that promote components in an extraordinary way, - attract spectators (no noise accepted!!!), - allow normal use of the vehicle without sacrifice though a system is installed, - that make it a creative system presentation The competitor must submit his requests (max. 20) for bonus points together with his presentation (up to 3 bonus points possible per request - 1 for the idea itself, 1 if average realization, 2 if good realization)	15

Total Points 210

3.5 Installation rules for: SQ & MM X Category X Unlimited /ESPL X Unlimited

To be judged	Content	Points
Presentation to the public	Show off the vehicle & installation to the public during the event time Allow spectators to listen to the system Exception: at the event active judges / back office staff's cars can remain closed due to safety reason Will be checked several times a day	10
Cleanliness	Vehicle exterior should be clean, interior should be clean Car exterior clean y/n passenger compartment clean y/n trunk clean y/n (deduct 2 points per not cleaned area)	6
Main fuse present y/n	Check, if a main-fuse is installed into the main power wire within 40cm from the positive battery post and/or before passing any metal panel. (if no, 0 points will be awarded)	10
Are all components securely mounted?	Check all components by physical inspection if fixed y/n Head Unit Other devices Amplifiers Speakers (if n/a, points will be awarded, deduct 2 points per not fixed component, minimum 0)	24
Are all components fused?	Check, if a fuse is installed for any component belonging to the audio/multi-media system. All these fuses must be visible within three minutes (for all in total, not three minutes for every fuse!!!) Head Unit Other devices Amplifiers (if n/a or not visible, deduct 2 points per not fused component, minimum 0) EMMA Back Office will hand out a form at the registration where all components, wire diameters as well as fuses should be filled in by the competitor in case that no wiring diagram is prepared and available for the judging process	15
Is the fuse value appropriate to the wire size?	Check, if any fuse belonging to the audio system is of appropriate size for the wire it is protecting according to the VW75212 - Dimensionierung von Leitungen und Sicherungen im Kraftfahrzeug as above, all these fuses must be visible within three minutes (for all in total, not three minutes for every fuse!!!) (if n/a, wrong size or not visible, deduct 2 points per not appropriate fuse, minimum 0)	20

Front seats allow intended use y/n	The driver should be able to see out of the windows enough to drive the car in the event. People between 1,60m and 1,90m should have enough arm and leg-room to operate the vehicle - pedals should not be obstructed (deduct 3 points per not-OK-situation)	10
Any interior wires visible?	Check, if any wire of the system installation is visible from the drivers seating position (deduct 2 points for any visible system wire, minimum 0)	5
System documentation	Check for: Wire/Fuse Diagram Documentation (photo-log) of not accessible connections / components (deduct 1 point per missing element, minimum 0)	10
Wires properly terminated?	Check, if all wires are properly terminated - either by physical inspection or by photo log (deduct 1 point per not properly protected wire, minimum 0)	5
Wire terminations protected y/n	Check, if wire terminations are installed in such a way that short cuts are avoided / covered by a non-conductive material in vehicles driving condition (all panels/covers on etc.) and appropriate measures are taken if exposed to moisture (e.g. in the doors) - either by physical inspection or by photo log (deduct 1 point per not properly protected wire, minimum 0)	10
Wires protected from damage y/n	Wires that pass metal (e.g. from engine compartment to interior) should be protected by grommets, rubbers or similar For wires, that are mechanically stressed (e.g. into the door) or that are close to moving parts (e.g. engine-belts) protective sleeving should be used if not installed to OEM's cable trays (deduct 1 point per not properly protected wire, minimum 0)	5
Add on		
Craftsmanship	Check wire-routing, terminations, installation of components, installation of panels, surface finishes, equal gaps, etc. for the categories: wiring head unit amplifiers speakers other components (deduct 2 points per element where no effort was taken, deduct 1 point per element where poor effort was taken, minimum 0 => note on the score sheet for what points are deducted)	50
Presentation of system to the judges	7 minute presentation of the system to the judges by owner of vehicle / dedicated presenter (no movie) 1 point will be deducted per 30sec. Over time	10

design of interior	components installed to the interior follow a clear design idea y/n (deduct 1 point per element not following the design idea, minimum 0)	10
design of trunk	components installed to the trunk follow a clear design idea y/n (deduct 1 point per element not following the design idea, minimum 0)	10
Overall design of the vehicle	To score full points, the car itself and the components installed in it must show a design theme that was followed, throughout the car; inside, outside and to the trunk compartment. It should be immediately clear that the car was designed as a project from beginning, with a clear statement to the judges and the viewers. The kind of design theme is of no matter; but the competitor should be aware that an original looking car is not able to score any points on the areas where no effort for design was taken. (deduct 1 point per element not following the design idea, minimum 0)	10
Bonus points	Award bonus points for elements that belong to the installation and - that promote components in an extraordinary way, - attract spectators (no noise accepted!!!), - allow normal use of the vehicle without sacrifice though a system is installed, - that make it a creative system presentation The competitor must submit his requests (max. 50) for bonus points together with his presentation (up to 3 bonus points possible per request - 1 for the idea itself, 1 if average realization, 2 if good realization)	100

Total Points 320

4 EMMA rules – Sound Quality

4.1 Pre Judging Check

4.1.1 Checking charger connected y/n

- Before the sound quality judging starts, the judges will check if any charger/external power supply is connected and request the competitor to disconnect it.
- It is forbidden to use any power supply except the vehicles battery together with possible installed additional batteries connected to the system during the sound quality judging.
- Besides the battery system no additional sources of energy like solar panels, generators, fuel cells, etc. are allowed during sound judging. They have to be disconnected or put out of operation not charging the battery.
- The judges will document that no charger is connected in the relevant check box on the score sheet.

4.1.2 Verification of reasonable driving position y/n

- 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 with the adjustment of the seat as for the SQ-judging to verify the reasonable driving position. Exceptions are only allowed for people smaller than 1,70m.

- The judges will document the reasonable driving position in the relevant check box on the score sheet.

4.1.3 Channel verification

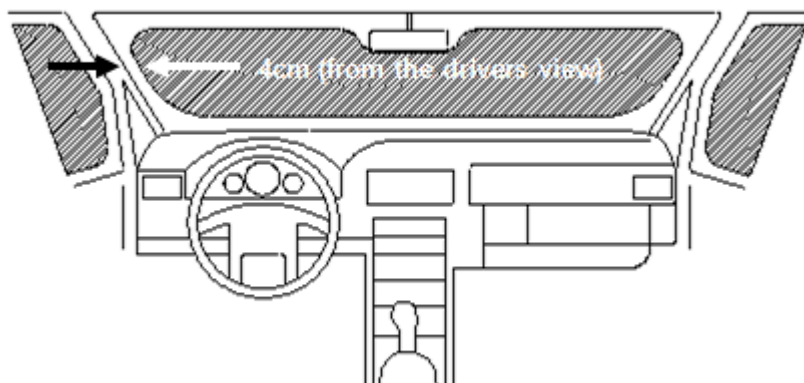
- The positioning track on the official EMMA Sound Quality source will be used. If the system has correct left and right channel integrity, the judges will mark it on the score sheet. If the judges find that channels are reversed they will notify the competitor. The competitor then has the opportunity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

4.1.4 Calibration of volume

- The volume adjustment for the following sections will be done according to the instructions on the track for volume calibration on the official EMMA Sound Quality recording. The competitor will suggest the volume to be listened at by the sound judges. But to protect the judges from too high levels the unweighted slow measurement on pink noise cannot be higher than 80dB
- The digital readout on the display or the angle of the volume control will be noted in the designated box on the score-sheet.
- Furthermore the equipment used for reproducing the EMMA Sound Quality source will be noted on the score sheet.

4.1.5 Visibility restricted

The Sound Quality judge check for restricted view due to installations on dash / pillars / doors The judge will sit in the designated listening position and check if anything of the Audio systems Installation is interfering the view. If necessary a measure perpendicular to the line of sight will be done by the sound judge, from the drivers/judging position. If the installation is restricting the view to the road/sides (not to the car itself) it will be a not Ok-situation. This rule applies to the wind shield and the two front side windows. Triangular windows within the A-Pillar/ front doors will not be considered as long as view through these windows are not higher and/or longer than half the height and length of the side window.



If the view/use is restricted, the Judges deduct 4 Points for each not OK Situation. For restriction in use within the foot-room on Drivers and/or Passengers side 2 points will be deducted. Maximum deduction 10 Points.

THIS RULE DOES NOT APPLY TO EXPERT UNLIMITED!

Check for comfortable seating on both seats, especially foot-room on passengers side

- people between 1,60m and 1,90m should have enough arm and leg-room to operate the vehicle
- pedals should not be obstructed blocked
- the view to the side mirrors should not be blocked (if no passenger side mirror installed, the rear view mirror must allow a full view back) depth (even apparently exceeding the front boundary of the vehicle). This is considered to be ideal as it approximates the experience of listening to a concert or a fine home audio system.

A quick note on sound quality

A good audio system will faithfully reproduce the original recording by offering accurate frequency response and staging. Good frequency response reproduces high tones such as cymbals, the human voices and most instruments, and down to the very low tones from synthesizers and drums. Frequency response includes timbre (the accurate replication of an instrument), linearity (the tonal quality is the same regardless of volume level), and clarity (lack of distortion of the original signal). Good staging offers the illusion of a stage upon which players are located in front and it has a sense of height, width, and depth. Imaging is a sound system's ability to correctly place the instruments on the imaginary stage.

Please note:

EMMA-Sound-Quality-recordings have been produced to best replicate real true sounding music, not digitized to perfection losing the pure essence but to give the most realistic interpretation.

The criteria of the following sections can be judged in Sound Quality – depending on the category. A detailed description of what criteria will be judged can be found in the matrix on the last pages of this rulebook.

Together with the actual EMMA-Sound-Quality-recordings a judge book is developed. The judge book explains exactly what is being judged and how to score. It can be downloaded at www.emmanet.com. The following chapters describe what EMMA is looking for as a general overview

4.2 Imaging Characteristics

4.2.1 Imaging – Position

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

The technical track for staging and imaging will be used to define the five positions. The centre position should be exactly in between the ultimate left and ultimate right, found in judging Staging. Left centre should be exactly in between ultimate left and centre. Right-centre should be exactly in between centre and ultimate right. This means that all positions should be evenly spaced. When the sound is not coming from the position where it should come from, no points will be given for that position.

4.2.2 Imaging – Focus

The focus will be judged for each of the above 5 positions separately using the designated EMMA-Sound-Quality-recording.

The 5 positions have already been determined under the staging section. Now it is determined whether the size of the instruments and voices are correct according to the size of the sound stage.

4.3 Sound Stage and Imaging Characteristics

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 vehicles audio system. These boundaries must be identified in order to judge imaging correctly.

4.3.1 Sound Stage – Distance to sound stage

This is to find out the distance to the point of origin of the sound in regards to the listener's position. Good staging offers the illusion of a stage upon which players are located and it has a sense of height, width, and Sound Stage – width of the sound stage

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 for the listener. 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.

4.3.2 Sound 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 for both listeners. 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.

4.3.3 Sound stage – height

The height of the sound stage defines the apparent 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 is to achieve a "stable" sound at horizon level with a natural sense of vehicle space above that point. Instruments and voices should be originated entirely at that height with no portion of them coming from below the sound stage. Pay particular attention to make sure that the stage height remains stable, from left to right. Some vehicles may exhibit good height in the centre with left and right boundaries dropping lower. This should be taken into account in the scoring. Vocals and instruments should all appear at the same basic height.

4.3.4 Sound Stage – Ambience and Depth

Ambience is a psycho-acoustic phenomenon that can be defined as the perceived space around a sound source. The judges use the dedicated tracks on the official EMMA Sound-Quality-recordings to evaluate the ambience of the reproduction. Stage Depth defines the distance between the closest and the farthest point of the sound stage.

In simple words: If the recording was performed in a big church, the sound system should give you the impression of listening in a church. If the recording was performed in a small room with no reflections, there will be no feeling of ambience.

4.4 Tonal Accuracy

4.4.1 Tonal Accuracy and overall spectral balance

A 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

And the overall Spectral Balance of the entire audible frequency range.

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 judges will concentrate on the lowest notes of large string instruments (bass guitar and stand-up bass, in particular, piano), large drums (big bass drums, kettledrums, timpani) low synthesiser sounds, low pipe organ notes, etc.

The sounds reproduced by the system in this range should be immediately recognisable, realistically weighted, articulate, and free of distortion and overhang. It is vital to recognise 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. Many systems will exhibit some localisation of the low bass towards the rear. The judges should not regard these vehicles as being "behind the listening position" point range. Instead, the judges should deduct 2 points for obvious rear-bass.

Mid-bass (60 Hz – 200 Hz)

The judges will concentrate on the sound produced by the mid-sized drums (kick bass drums, tom-toms, large congas, etc.), the middle range of the bass guitar and stand-up bass, lower notes of the piano and synthesiser, lower male-voice, low tones of horns, trombones, tubas, etc.

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 vehicle 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: the human voice, brass instruments, woodwinds, strings, the upper range of bass guitar, electric and acoustic guitar, synthesisers, piano, smaller drums and other percussion instruments. Voices should sound realistic without uncharacteristic ringing, thin sound, dullness or distortion.

High-Frequencies (3 KHz-inaudibility)

The judges will concentrate on cymbals, triangles, bells, the upper frequencies of the snare drum, rim shots, hand clapping, synthesisers, the upper range of string and woodwind instruments, 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.

This means that the judges listen to the quality of each frequency, not the relative volume. Relative volume is one of the parts that will be judged under Spectral Balance.

4.5 Overall 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).

4.6 Listening Pleasure

Now since the sound quality judges have been listened to the competitors 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.

4.7 Adjustments

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 vehicle electronics/charging system or by the audio system.

Some hint how a system should be set up. 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 RCA-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:

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 an 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 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 vehicle noise (noise induced by the vehicle's charging system or electronics). Noise that is generated by the mechanical/electrical system of the vehicle that is reproduced through the speakers with the audio system turned on and/or off.

Possible noises are:

Alternator whine, ignition noise, PWM-noise created by control boxes, etc.

Engine off test

With the Engine off with the key in the accessory or off position (ignition off) to test for system noises
A noise that is somehow emulated from or by the audio system, the vehicle or the vehicle environment and that is not recorded on the EMMA Sound Quality

Potential noises can be:

Rush, hum, hiss, cracks, floor noise, rattling panels, loud fans, mechanical noise etc.

The following rules apply to judging noise:

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 will result in immediate disqualification and possible suspension, forfeiture of entry fees and possible suspension upon review by the Head Judge Council.
6. If a vehicle 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 (non-existent or unusually weak charging voltage) will result in an automatic maximum deduction for alternator whine (6 points deduction).
8. The source unit's power 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 powers down the entire audio system.
9. Electrical powered vehicles may compete in EMMA competitions and are exempt from rules 8 – 10. 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 vehicle 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 vehicle (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 vehicle's running engine is so loud that noise can't be checked, the maximum amount 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.

4.8 Ergonomics

The audio system must demonstrate a good balance of comfort and vehicle safety during operation. The judges must be able to immediately operate the audio system 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 vehicle operation, is desired.

CD changer units 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 vehicle were 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

Note:

- 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.

5 EMMA rules - Multimedia Sound & Picture Quality

Multimedia is the stage for those competitors who not only love great sound in their car but also the synthesis of visual and acoustic impression in the actual multi-channel formats.

This form of competition was created to meet the increasing interest for mobile Multimedia. The goal for the Multimedia category is to entertain! Multimedia judging is divided in two categories: sound & picture and installation.

5.1 General Rules for Multimedia Judging

The Multimedia sound and picture judging rules were created to separate the Multimedia judging from the regular sound quality judging as this cannot be judged under the same criteria. Careful consideration has been taken into account as not to handicap competitors without a full multi-channel system.

It's up to the competitor to choose the desired position for judging. It must be from a seat that is approved by the national vehicle inspection and normally used to transport people in the car. E.g. a cinema chair in the back of a van, an extra seat without safety belt etc. are not allowed in competition.

The competitor is allowed to cover all windows reducing the level of light in the vehicle, which will enhance the judging of the picture quality. This is permitted for both indoor and outdoor events.

The official DVD software used for Multimedia judging will be announced by EMMA. An official guideline on how to use the actual DVD together with these rules will be available for download. EMMA reserves the right to change the software during the competition season. Should this be the case refer to www.emmanet.com for updated information.

The Multimedia sound judging is divided into 5 categories:

5.2 Sound Stage and Room Quality	Max. 105 points
5.3 Tonal Accuracy and Overall Spectral Balance	Max. 115 points
5.4 Picture Quality & Multimedia Experience	Max. 70 points
5.5 System Handling	Max. 6 points
5.6 Adjustments	Max. -24 points

Max. Total **296 points**

5.1.1 Dolby Digital 5.1 on Stereo systems (2.1)

The official DVD software is encoded in Dolby Digital 5.1. In classes where the judging is done based on a stereo system (no centre, no surround speakers), the competitor must ensure, that the DD 5.1 Signal is down sampled to 2.1. Just switching of the rear system may not be enough because information in the surround channel might be missing. The usage of a centre speaker is forbidden in such category.

5.1.2 Checking charger connected y/n

See SQ chapter "4.1.1 Checking charger connected y/n" for how to check charger.

5.2 Sound Stage and Room Quality

5.2.1 360° Level (0 – 25 points)

360° level refers to how well the system performs regarding the sound level around the listener. When sound sweeps around the listener, the level should not vary as the sound moves. (E.g. when a car is passing by from left to right, or when a train comes from the rear to the front, the level should not change)

5.2.2 360° Movement (0 – 25 points)

360° movement refers to how well the system reproduces the sound positions all around the listener. When sound sweeps around the listener, the movement/panning should be smooth and seamless as the sound moves. (E.g. when an UFO is passing by from left to right, or when a train comes from the rear to the front, the movement of the sound should be smooth and realistic.)

5.2.3 Room quality – Sub bass (0 – 10 points)

Consider the sub-bass ability to “fill up” the room. The sub should be audible and felt in the whole listening room, but not easily localised. It’s quite different to SQ, where the sub idealistic should be positioned only in front of the listening position.

The LFE (Low Frequency Enhancement) integration should also be considered. LFE is a very important part of a Multimedia system. Consider the crossover points from the sub/LFE with regard to the rest of the system (usually around 50 - 100 Hz); there should be no peak or distinct change in level.

High points when sub is clearly audible and felt, but cannot be localised.

5.2.4 Room quality – Front stage (0 – 10 points)

The soundstage relative to the screen and picture is judged here. High points can be earned for a system that has the front stage is aligned with the picture showed on the screen, both horizontal, vertical and in depth.

You should get a feeling of “where you see is where you hear”. Look for the systems quality to reproduce a feeling of reality and being part of the action. Also consider the distance to the front stage, which idealistic should be the same distance as to the screen.

Points are deducted if e.g.

- The screen is located low in centre console and the sound is above dashboard.
- If the centre sound and the screen is not aligned vertically. (The centre is reproduced to the side from the screen)
- If the sound and screen doesn’t align in depth (e.g. sitting in backseat with screen in headrest and sound at the dashboard)
- If the front stage height is not stable.
- Narrow front stage (distance from left to right position, compare to width for SQ)
- Bad lip-sync (sound and picture not in phase)

Note:

- The width of the front stage does not apply to the size of the screen. A small screen is no excuse for a narrow front stage.
- The quality of the picture is not judged under this paragraph.

5.2.5 Room quality – Surround (0 – 10 points)

The system’s ability to reproduce the surround information is important for good room quality. High points can be earned for a system that reproduces a feeling of a big “room” behind the listener. Also consider the distance to the “surround soundstage” (should not be separated from the front stage).

5.2.6 System separation (0 – 25 points)

This could roughly be compared to the imaging characteristics for SQ judging. The information showed on the screen should be clearly defined by the sound system. Look for correct focus and separation between the sound positions. Also consider the left and right separation in the surround.

Note:

It's most important that the front stage separation is clearly defined; a slight lack of separation in the surround sound is acceptable and will not result in a high point deduction.

In the S-class the points are only from 0 to 17 and only for the front system.

5.3 Tonal Accuracy and Overall Spectral Balance

A Multimedia system should reproduce a recording as realistic and authentic 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 to the intentions of the producer as possible. Therefore, EMMA teaches the Multimedia judges to fully understand exactly how the EMMA Multimedia DVD was 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
- Midbass
- Midrange
- High frequencies

and the overall spectral balance of the entire audible frequency range.

Under tonal accuracy, the judges will specifically concentrate on each range, ignoring the spectral balance of the whole spectrum.

Under overall spectral balance, they will evaluate how well the four above sections add together to create a full picture approximating as much as possible the original on the EMMA Multimedia DVD.

5.3.1	0 – 15	Sub-bass
5.3.1	0 – 15	Midbass
5.3.1	0 – 15	Midrange
5.3.1	0 – 15	High frequency

Listen to the systems tonal accuracy from all positions as one (including Surround) and the ability to reproduce the sound in a realistic way. Please remember the material reproduced from a music- or movie-DVD could be excessive depending on the sound mix. Tonal accuracy for a Multimedia system should not necessarily be compared to a SQ system.

For more detailed information about tonal accuracy (for music), please refer to the SQ chapter.

5.3.1 Overall Spectral balance

5.3.2 Overall spectral balance – normal volume (0 – 15 points)

5.3.3 Overall spectral balance – high volume (0 – 15 points)

Listen for the overall spectral balance and tonal accuracy on normal respectively high listening volume. Spectral balance at low volume will not be judged.

If a Multimedia system cannot play loud (e.g. normal volume = loud volume), 10 points will be deducted

For more detailed information about overall spectral balance, please refer to the SQ chapter.

5.3.4 Voice/timbre matching (0 – 25 points)

The voice/timbre matching should not vary depending on the location in the sound system. All the systems sound locations should match; front, centre and surround. E.g. a dark male voice at the left moving to the centre position should not then sound like a boy.

Note:

It's most important that the front stage matching is good; a slight difference in the surround sound is acceptable and will not result in a high point deduction.

In the S-class the points are only from 0 to 17 and only for the front system.

5.4 Picture Quality & Multimedia Experience

The screen used for judging should be pointed out by the competitor before the judging starts (if multiple screens are installed). During judging only one screen is allowed to be turned on!

5.4.1 Details and resolution (0 – 15 points)

Look for the screen's ability to reproduce details and that the resolution makes the picture look realistic. E.g., look especially for small details (a person's hair, snow/rain drops, microbes, details on a wall, etc.) and that you don't see the pixels.

Note:

- A big screen is not always better. The bigger screen demands a higher resolution not to see the pixels.
- No deduction will be made for the wrong aspect ratio (stretched/shrunk picture, e.g. 4:3 on a 16:9 screen). If this is the case, it could be considered under "Multimedia experience".

5.4.2 Contrast and brightness (0 – 15 points)

Look for the screen's ability to reproduce details and information in dark and bright areas. E.g. clouds in the sky, movements in shadows, a car on a dark street etc.

5.4.3 Colour (0 – 15 points)

Look for the screen's ability to reproduce colours. The colours should not be dull or lustreless or excessive. Look especially for "bleeding" colours, often seen where the contrast is high.

5.4.4 Multimedia experience (0 – 25 points)

The overall Multimedia experience is judged here; both sound and picture will be considered. This point could be slightly compared to listening pleasure in SQ.

Focus only on the picture and sound presented by the Multimedia system. Don't take installation issues and gadgets, which will enhance the Multimedia feeling (popcorn machine, moving curtains in front of the screen, etc.) into consideration with this point because the installation judges will judge these.

A good Multimedia system should be able to reproduce the Multimedia experience in such a realistic manner and it should make you feel part of the action, just like a good movie theatre does. Keep in consideration that a lot of movies offer a "larger than life" experience (loud noises, big explosions and bullets flying around your head.)

Points will be awarded for everything that enhances the Multimedia experience. For example:

- Real listening and viewing pleasure
- Good dynamics in the sound
- Real life picture quality
- Convincing LFE sound effects (think of the roar of a dinosaur, the rumbling of an active volcano, a big helicopter flying overhead etc.)

Points will be deducted for anything that makes the experience less enjoyable. For example:

- Bad tonal accuracy and/or spectral balance
- Unrealistic/bad picture quality
- Unrealistic, artificial sounding sound.
- Rattling noises from the car
- Screens which are too small to see enough detail of the movie
- A lack of surround information

5.5 System Handling

5.5.1 System handling

(0 – 6 points)

A Multimedia system could be very complex with lots of units, but the system should be easy to use and control. Full points will be awarded, if the complete system can be controlled by one control unit. 2 points are deducted for each additional control unit or separate button if required. A control unit could be the source unit itself, but also remote control, power button, keyboard, game pad etc. It should be easy for the judge to operate the system during the judging process and leave no doubt or confusion on how to navigate menus, change volume etc. The handling should be made in a relaxed way from the judging position.

Only the controls needed for judging should be considered:

- Volume +/-
- DVD-menu navigation
- Power on/off (including all units used during judging; source unit, amps, screen etc.)

Note:

- If all controls are available on the source unit itself but are located at different places, this will be judged as one (1) control unit. For example a source unit with flip-out touch screen with volume and menu navigation but the power button is a separate button under the screen.
- The remote control unit doesn't necessarily have to be mounted fixed.
- The deduction will be in steps, not only one (1) point for each section.

5.6 Adjustments

Please refer to the **sound quality chapter** for detailed information about the noise test in regards of sound Engine-off testing - switching noise (-6 to 0 points)

5.6.1 Switching noise (-6 to 0 points)

5.6.2 Engine-off testing - System noise (-6 to 0 points)

5.6.3 Engine-on testing (-6 to 0 points)

5.6.4 Picture noise (-6 to 0 points)

Look at the screen for noise, flickering, jamming etc. especially while the engine is running. Look also for Moire-patterns in the static test picture

Note:

No deduction will be noted for the wrong aspect ratio (stretched or shrunken picture e.g. 4:3 on a 16:9 screen)

6 EMMA rules – EMMA Sound Pressure League (ESPL)

The EMMA Sound Pressure League is made for those kinds of competitors who are interested in the maximum level of volume in their cars – not forgetting about a safe installation and a neat looking appearance.

To guarantee similar conditions and fairness to all competitors, the amount of subwoofers will be regulated in the following terms in all categories:

- All the installed and connected woofers will be calculated as shown in the table below.
- It is defined, that one 25cm=10" woofer will be counted as one woofer. Since not all people have 10" woofers installed, the following calculation key will be used.

Number of woofers	Size of woofer		Classification	Circumference (No longer than)
1x	25cm =10"	Equals	1 woofer	78,5cm
1x	30cm = 12"	Equals	2 woofer	94,2cm
3x	20cm = 8"/6"x9"	Equals	2 woofer	62,8cm (per 8")
1x	38cm =15"	Equals	3 woofers	119,3cm
1x	46cm =18"	Equals	4 woofers	144,4cm

- In the case that a subwoofer size is not clear defined by the manufacturer or a different shape is installed, the circumference will be measured (as per drawing) and the woofer will be classified according to the table.



Rules for all categories:

- The audio system can be installed by anyone.
- The vehicle must be registered with a license number. (Except Expert)
- The car must have driver and passenger side seats installed in original condition or similar (sport seats, etc.).
- The maximum voltage is 14,6 Volts with the engine running, or not, measured on the amplifier's power input.
- No modified or self-built active (=power supplied) equipment is allowed (e.g. head unit, line driver, amplifier, active crossover etc.). (Except Expert)
- A maximum of two channels of amplification are allowed per physical installed woofer (two channels bridged to one is counted as one)
- All components of the audio-system have to be installed into the vehicle – trailers etc. are not allowed.

Rules for the T= Trunk classes:

- The subwoofers (including enclosures, ports, etc.) must be installed in the trunk area, with a maximum height not higher than the top of the original rear seat (not headrests!).
- The rear seats must be locked and fixed in upright position (90 degrees or more). The sub box can be fixed up to this position.
- The car must be approximate to the “original” from C-pillar to the front and should look original.
- Panels (door, kick, dash, etc.) are allowed from C-pillar to front.
- The vehicles can be moderately damped (approx. 5mm thick). If polyurethane-foam, concrete, etc. is used, the car has to compete in the appropriate higher class that allows the extra damping.
- The source unit must be installed and fixed properly into the car.

Additional Rule for the R- class:

- The subwoofers (including enclosures, ports, etc.) must be installed in the trunk area (retractable rear seat must be locked in upright position). The enclosure can reach up to the roof of the vehicle.
- The car must be approximate to the “original” from B-pillar to the front and should look original.
- Panels (door, kick, dash, etc.) are allowed from B-pillar to front.

- The vehicles can be moderately damped from B pillar to front (approx. 5mm per thick)
- It can be heavily damped from B pillar to the back like polyurethane-foam, concrete, etc.
- The source unit can be installed properly into the car or out of the car.

Additional Rule for the W- class:

- The subwoofers (including enclosures, ports, etc. must be installed behind the front of the B-Pillar. The enclosure can reach up to the roof of the vehicle.
- All sound producing equipment incl. Power Supply can be installed everywhere, as long as it not effects the normal use of the car.
- The car must be approximate to the “original” from B-pillar to the front and should look original.
- Panels (door, kick, dash, etc.) are allowed from B-pillar to front.
- The vehicles can be moderately damped from B pillar to front (approx. 5mm per thick)
- It can be heavily damped from B pillar to the back like polyurethane-foam, concrete, etc.
- The source unit can be installed properly into the car or out of the car.

Additional Rule for Expert unlimited

- No restrictions, car has not be officially registered
- additional points for design
- car must be able to drive on its own by a driver sitting in the car
- No rules for speaker protection/Speaker protection is not necessary
- Speakers can be installed everywhere inside the vehicle, trailers etc. are not allowed
- Bonus points up to 15 (X-Limited Installation).

6.1 ESPL-Judging

When judging Sound Pressure Level, it is important to have a clear notion what kind of competition this is about. Not only the absolute SPL-number should be the criteria, but also “how” the vehicle is built.

The following procedures and rules must be observed during the ESPL judging:

1. Any installed but not connected speakers will not be taken in consideration. The competitor has to prove that the speakers are not connected to the audio system.
2. Installed Passive membranes do not count as woofers. The competitor has to prove that they are passive.
3. Any number & size of midranges/tweeters are allowed to be installed & connected to the system, but they should NOT sound below 100Hz. Otherwise they will be counted as woofers. The competitor has to prove that they do not produce sounds below 100Hz.
4. The vehicle must be shown to the public after the measurement is finished. The organisers will point out an area for presentation. In that case the cars must be presented to the public for a minimum time of 15 Minutes. If the car is not presented the judge or Event Director will deduct 10 Points.
5. If additional batteries are installed, they have to be properly mounted and fused.
6. The competitor is responsible for their equipment and EMMA takes over no responsibility or guarantees in case of any damage to the sound system, or the car Installation-judging:

Installation judging can be done before or after the measurement process. The competitor guides the judge through the installation of his vehicle. The scoring will be explained immediately to the competitor.

Measurements:

The Event Director or Head Judge decides on the track to be used for measurement from the official ESPL-recording on the day of the event or by lottery, etc.

Only for the National Final and international Finals, the tracks that will be used will be announced in advance and published at www.emmanet.com. The measuring procedure is as follows:

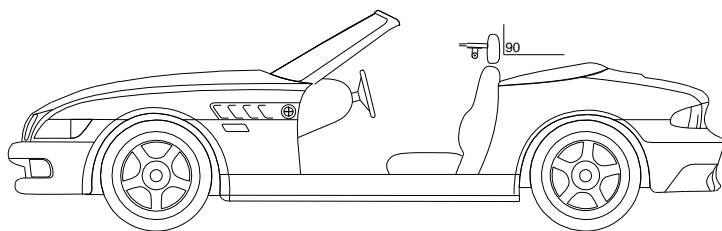
1. The volume is only controlled by the owner or presenter of the competition vehicle
2. The judges will not adjust any volume control, track selection control and head unit power switch.
3. Only the official EMMA ESPL judging CD is to be used for the judging process and the announced track will be played.
4. No additional power supplies are allowed to be connected to the mains during the measurement process or any external power supply.
5. A front system must be installed and play audible music during measurement, if the front system is not audible there will be a 10 point deduction.
6. It is the competitor's decision if they sit inside the car during the judging process. EMMA is not responsible for damages to the health of the competitor but strongly recommends being careful!!!
7. If during measurement the head unit stops/blocks/jumps, the system or a component of the system fails/breaks/fuse blow, etc. the competitor has a second chance to start within 5 minutes for every measurement (open/closed). The same if accidentally another track is used. There is no third chance for any reason.
8. All official ESPL Measurements have to be done with the Measurement Systems licensed by EMMA
9. The EMMA ESPL-CD has to be reproduced by the (car-) audio equipment.
10. In outdoors competition, it is allowed to have the engine running during the measurements.
11. In indoors competitions, no vehicle will be allowed to run the engine during measurements.

Measurement closed:

The first measurement will be with the doors closed – a minimum 30 seconds of music will be played. Within the next 2 minutes a second measurement will follow:

Measurement open:

The second measurement will be done with both front doors completely open – a minimum 30 seconds of music will be played with the same track as in the first measurement.



The microphone/sensor will be placed by an authorised judge and the competitors are not allowed to touch it in anyway, during and between both measurements. The judges must ensure that the microphone height and orientation are absolutely consistent from vehicle to vehicle.

The following guidelines apply for using a microphone

1. The driver's seat must be positioned to a reasonable driving position of the competitor (driver must be able to operate the pedals, steering wheel, gearbox and see the gauges on request of the judge). The backrests of the front seats should be at least in vertical position (90 degrees or more towards the back).
2. The Omni-directional Microphone/Sensor will be mounted at the surface where the head rests, the opening facing backwards. A headrest must be installed, otherwise measurement is not possible.

The sensor will be equipped with a 10cm x 10cm wooden plate underneath the opening to be prepared for frame –headrests. The cable of the microphone/sensor must be routed through the original door opening by the judge. No special devices are allowed. No other equipment than the official measuring equipment, cables etc. are allowed to be used.

6.2 Optional for ESPL

The Event Director can decide, before the competition starts, to have a qualification round and a final round. If the decision is made to have a qualification and a final, two tracks will be elected. The track for the final will not be announced before the final starts.

The Qualification

Installation, measurement open and closed as described above. The results will be added together. The best, four to eight competitors of each class are qualified for the final round.

The Final

The measurement modus is the same but with the 2nd track from the official ESPL CD. The installation points will be carried over from the qualification round.

The number one of the first round will compete against the competitor who finished last in that same round, the second against the seventh, the third against the sixth, and the fourth against the fifth place qualifiers. In the semi-finals the first will compete against the fourth, and the second against the third. The final follows with the two winners of the semi-final against each other.

If something is not covered in these rules, the general guidelines of the official EMMA rulebook are to be used. In each event the Head Judge or the Event Director is the highest court of appeal, and their decision is final.

7 EMMA rules – EMMA Racing

The EMMA Racing concept is based on a competition in which all aspects of car modification (styling, tuning and audio) are judged. It is like a motor sport event, in accordance with the rules and regulations approved by the national authorities in the organising country, and the international rules approved by EMMA.

Each event is run under the EMMA Banner, and the organiser of the competitions will be a licensed EMMA Partner. The judging will be performed by judges that have been approved by either the national or international EMMA organisations.

Where possible by legal authorities /insurances, a slalom course will be held in a secure area designated by the event Organisers. In order to restrict entry by any unauthorised persons the area must be **clearly** marked by a security ribbon or any other form of security – (Stacks of tires etc.). All incidents within this secured area are under the strict jurisdiction of the organiser. All incidents outside the secured area will be the responsibility of the people involved in the particular incident, and the event organiser cannot be held responsible.

The Event Schedule

The registration of the competitors will be done in accordance to the EMMA rules.

The different sections within the competition are as follows:

1. Interior
2. Trunk compartment
3. Tuning Technical
4. Tuning Design
5. Paint Job
6. Sound Quality
7. SPL Measurement
8. Option: Slalom course

Presentation Documentation of modifications

Invisible modifications must be documented by a photo log or according papers from the tuner otherwise no points will be awarded

7.1 Interior

- Idea 0-10 points

The idea can be whatever the competitor likes but it should follow a theme. The highest points will be awarded if the theme is 100% clear.

Craftsmanship

- Dashboard/Doors skin and modification 0-3 Points
- Seats 0-3 points
- Foot-room 0-3 points
- Roof 0-3 points
- Interior light 0-3 points

7.2 Trunk compartment

- Idea 0-10 points

The idea can be whatever the competitor likes but it should follow a theme. The highest points will be awarded if the theme is 100% clear.

Craftsmanship

- modification 0-3 Points
- surfaces 0-3 points
- light 0-3 points
- specials 0-3 points

7.3 Tuning Technical

Any technical modification will be awarded with points according to the effort and the craftsmanship

- Power of engine 0-5 points
- Modification brakes 0-5 points
- Modification clutch 0-5 points
- Modification cooling 0-5 points
- Air Filter/Airflow 0-5 points
- Exhaust system 0-5 points
- Chassis suspension 0-5 points
- Lights 0-5 points

7.4 Tuning Design

- Idea 0-10 points

The idea can be whatever the competitor likes but it should follow a theme. The highest points will be awarded if the theme is 100% clear.

Craftsmanship

- Rims and Tires 0-5 points
- Spoilers, Body kit etc. 0-5 points
- Window modifications 0-5 points
- Others 0-5 points

7.5 Paintjob

- Idea 0-10 points

The idea can be whatever the competitor likes but it should follow a theme. The highest points will be awarded if the theme is 100% clear.

- Airbrush 0-5 points

- Pin striping 0-5 points
- Foliation 0-5 points
- Water transfer printing 0-5 points

A vehicle which has partly modified the painting cannot be awarded with full points in each section.

7.6 SQ

- Staging 0-15 points
- Tonal Accuracy 0-15 points
- Listening pleasure 0-15 points

7.7 SPL

- More than 125 DB yes/no 0-5 points

For each dB below 125 dB 1 point will be deducted. As an example a vehicle system which measures 120 dB will be awarded with 0 points. The measurement will be done with open doors.

7.8 Option: Slalom/Drag Racing

Optionally, the event organizer may offer a slalom race in addition to the previous judging process. The official rules of safety and security will be followed according to the national law of the country. Other race elements may also be included such as drag racing, skill tests etc. If this section is not offered by the organising body, then the judging process will be complete after the ESPL judging. Each competitor is allowed one attempt to drive the course in order to familiarise themselves with it, before the judging begins. The judging will then begin, and the competitor will re-start the course, and attempt to drive it in the shortest possible time. It is also up to the national organisation to do i.e. 3 runs with the best time counted. The competitor will start the course with the engine running, and will finish the course with one axle on either side of the "Stop" line. It is also recommended to use a computer checked time measurement system with photo finish.

Proposal:

The final time in the slalom is the addition of the time taken to complete the course, combined with the total time penalties. The penalties are listed in the table below.

Violations	Penalties	Notes
Deviation from the start		Disqualification
False start or missing the track	+20 sec	
The touching of any restriction device	+3 sec	
Incorrect stop at the finish line (not in-between the axles)	+5 sec	

Points are awarded as following:

Best time: 40 points
2nd best: 37 points
3rd best: 35 points
4th best: 33 points
5th best: 32 points
etc., counted down by ONE point down to zero

The Results and the Prize Ceremony

For the final result to be determined, the sum of points accumulated by each competitor in all categories is combined. The competitor with the largest number of points is the winner. If there is a tie, with more than one competitor holding the largest number of points, then the winner will be the competitor with the highest score in the design category.

It is up to the national organisation to add extra trophies for each section judged. In addition, it is possible to split the competition into separate categories, but only the official announced categories are valid at the international finals.

8 EMMA-rules - EMMA Sound Quality League (ESQL)

ESQL competition was formed by EMMA Philippines and EMMA Thailand to open a competition arena for those who enjoy listening to good sound quality outside their cars and like to entertain themselves and the people that surround them.

The competition consists out of

- Measuring SPL with open doors according to the rules for ESPL
- checking the installation
- And – of course – judging the sound quality outside of the car.

On national events the categories can be divided if required, e.g. as following:

- **M-Category (can be divided by Trunk 2W 4W and T unlimited)**
- **X-Category (can be divided by W and R unl)**

The rules for classification are the same like for ESPL described in the section in the official EMMA rulebook.

8.1 SPL Measurement

SPL competition part is for those who enjoy listening to loud music but not forgetting the safety of both equipment and owner of the car.

The Event director or Head judge will announce which track will be used for the measurement on the competition day. The according tracks can also be announced prior to the event and will then be published at www.emmanet.com. Both front doors of the vehicle must be fully open.

The conditions and the measurement procedure is according to the description in the chapter ESPL measurement.

On outdoor events it might be allowed to run the engine during the measurement procedure but the engine is not allowed to exceed 2000 RPM.

During the measurement only one person is allowed inside the car to operate the system. No others are allowed to physically block the two front doors during the measurement procedure.

In the M-Category categories the limit which will be counted in the SPL measurement is 135 dB. If a competitor's car doesn't reach the 135 dB, 1 point for each missing dB will be deducted from the 135 points to be awarded.

In X-Category the measured SPL value will be counted with 1 Point for each dB

8.2 Installation

- Installation for M-Category is identical with SQ E-Category and ESPL
- Installation for X-Category is identical with SQ S-Category

8.3 Sound Quality

Before starting the judging procedure the competitor has a 5 minutes preparation time to set up the system. During the judging no changes on setups are allowed. The tracks to be used for the SQ judging procedure are the designated tracks for Tonal Accuracy and Spectral Balance of the official EMMA recording.

The Sound Quality Judge(s) will be standing 5 to 15 meters distance from the car on the competitor's decision. If the competitor does not advise the judges to keep a defined distance the distance will automatically be 5 meters. The position of the car is decided by the competitor and must not be necessarily behind the vehicle.

After the judges discovered the Tonal Accuracy and Spectral Balance according to the SQ-rules, the competitor is free to choose a track of his own for the judging of Listening Pleasure and public entertainment.

Also here the competitor has a preparation time of max. 2 minutes to setup the system.

The length of the additional track is limited to 5 minutes unless otherwise announced in advance.

The SQ judges will also score points for public entertainment.

Public entertainment will receive a max. of 6 points, where the competitor can earn a max of:

- 2 points for originality
- 2 points for effects and coordination
- 2 points for overall effort.

Important note:

In case of too loud reproduction of the SQ tracks the judges are allowed to reduce the volume level.

In the event of a tie the following rules are valid:

1. The higher score of Tonal Accuracy and Spectral Balance.
2. The higher score of open Door measurement.
3. The higher score of all SQ scores

4. The higher score of listening pleasure
5. The higher score of public entertainment

9 General competition rules and procedures

9.1 General

For all EMMA authorised events, only this rulebook and the affiliated media to be used.

As a general rule with regard to specific items, when not written and/or addressed specifically in this rulebook and the affiliated judge books, it will be judged illegal until otherwise specified by the EMMA Rules and/or Head Judge Council.

Amendments will be made to these rules, policies, and procedures in accordance with the changing times of our industry. Any Addendum to the Rulebook will be published on the EMMA Homepage – www.emmanet.com - and accompany the actual version of the rulebook replacing or clarifying paragraphs if necessary. In this case, the updated paragraphs written in the latest addendum will be classified as the updated actual version of the rulebook and will be valid from the day of publishing.

The following policies, procedures and rules have been formulated to benefit all competitors, officials and judges at EMMA sanctioned events. Many manufacturers, retailers and fellow competitors established these rules and guidelines through many hours of research for the purpose of fair, unbiased judging standards. Because it is impossible to foresee every circumstance, or combination of circumstances that may arise during an event, it will be up to the discretion of the Head Judge, Event Director and/or the Head Judge Council to address any of these circumstances or concerns when they arise.

The Head Judge or the Event Director at the event will outline the circumstances or concerns (regarding the rulebook) and forward them to the EMMA office for administration and forwarding them to the Head Judge Council for review and measures.

The Head Judge(s) and/or Event Director has to clarify judging discrepancies on the day of the event, while the information is still fresh in everyone's mind and the system can be checked to determine the proper course of action. Discrepancies resolved by the Head judge will be forwarded to the EMMA office.

All communication during an international event will be in the English language. Whether it is in presenting ones car, give/receive feedback, file a written protest, announcements or otherwise.

When necessary, a competitor is allowed to use an interpreter. Using and providing of an interpreter is the sole responsibility of the competitor!

The international Head Judge Council is a (flexible) group of Head Judges & Supervisors that work on the most actual version of the rulebook / judge books take measures if concerns or circumstances are reported and support active judges in international competitions.

It is the highest possible institution for decisions within the EMMA competitions.

These General Rules apply to ALL competitions organised under EMMA rules.

9.2 Registration

1. Any legal person is allowed to participate in EMMA events. This can be a “natural living male or female” person, a group of persons or a legal entity that can act as one. This includes associations, foundations, establishments, companies etc. In no way is only one “natural person” meant. In the rest of the rulebook he, she or they will be called competitor.
2. The vehicle entered in the competition must be (temporarily) registered (except X Class) and allowed to drive.
3. The vehicle entered in the competition must be able to drive into the competition area by its own engine.
4. Regardless of any state or national law requirement, a valid vehicle registration or certificate of title, or a facsimile thereof, must be available on request to verify vehicle ownership.
5. Vehicles must be registered in the competitor’s name or business name or it must be proven that the competitor is the main user of the vehicle on request.
6. The vehicle that is registered to compete must be present at the location of the competition and available to the judging process within the announced times. Otherwise the registration is not valid.
7. Any falsification or misrepresentation of entry registration information regarding participant, vehicle and/or mobile media system, can be cause for immediate disqualification. The individual could be banned from competition for the balance of the competition season by the national organisation or EMMA.
8. The competitor registration form must be filled in completely via the internet in advance or by hand on the competition day with the requested information (certain national organisations might only accept registration over the Internet), such as but not limited to:
 - Complete name
 - (Mobile)Phone- and if possible E-mail address
 - Vehicle information (manufacturer, type, colour, registration number)
 - Category and class in which the vehicle will compete
 - Manufacturers of all installed components
 - Date and location of the event (a registration form must be filled in for each event separately)
9. The registration fee has to be paid in cash to the organising association on the morning of the event before it begins. The fee will depend on the national organisation’s rules. In some cases the competitors will be asked to wire-transfer the money to the account of the organisation in advance of an event to confirm attendance.
10. One competitor can participate and qualify in a maximum of five different formats during one event with the same vehicle:
 - One class in Sound Quality
 - One class in Multimedia
 - One class in ESPL
 - One class in ESQ
 - One class in EMMA Racing
11. A competitor may enter more than one vehicle in one event. Qualification points will be only awarded to the competing vehicle in the category/class it is competing in.

9.3 Conditions of Entry

- 1 Please follow the description under the chapter “Categories and Classes”.
- 2 A competitor must register in the appropriate class according to all active components installed. (Note: If a discrepancy between the value of the car audio system or number of woofers reported during registration is determined after judging has been completed, the competitor may be disqualified. It is up to EMMA to accept or refuse the price for components given by the competitor by a comparison with the EMMA value database at: www.emmanet.com/value. In the case of not accepting the given

- value it is up to the Head Judge/Event Director to dismiss the competitor or to upgrade the car to other categories/classes
- 3 The audio system can be installed by a professional installer (valid for all classes!).
 - 4 The use and installation of equipment produced for mains electric power (e.g. 220 - 240V) is only allowed for other devices.
 - 5 Active judges at an event are allowed to participate with their vehicle but they cannot judge the same category/class.
 - 6 A Head Judge/Event Director is allowed to compete in the event he is in charge of. If this is the case, the legal power for the class he/she competes in is transferred to another qualified (Head) judge.

9.4 On the Competition Day

1. The competitors must be at the registration before the announced time. (e.g. 9.00, the times mentioned are an example and may vary). If he/she has not registered within the next 30 minutes (e.g. until 9:30 h) there will be a deduction of 10 Points written on his/her score sheet (signed by the Head Judge/Event Director). After 60 minutes (e.g. 10.00 h) the competitor will only be allowed to compete if the event director decides so due to a reasonable explanation.
12. All vehicles must drive into the judging area by using their own engine. In case of engine trouble on the way to the event, the organisation has to be informed as soon as possible. The Head Judge or the Event Director can decide in this case whether to deduct points or not (in SQ for engine on testing, in other cases 30 points). The judging area is defined as the designated location for SQ-cars on the event (e.g. hall #5) and for ESPL- & ESQ-cars the locations for installation judging and measurement (might require driving with own engine between installation point and measuring point).
13. After registration, the competition vehicles must be located in the designated areas, instructions from the organisation/staffs have to be followed.
14. The vehicle entering the judging area must be accompanied by the person showing the vehicle and no more than one co-pilot. When a competitor and his/her co-pilot are in the judging area, they must follow all instructions pointed out by the judges, Head Judges and officials of the organisation.
15. Before the beginning of the judging process, the Head Judge will invite judges and competitors to attend to a briefing. If an EMMA event is held over a two day period, the organisers/national organisation decides which classes start on which day.
16. When the judges want to start their work, they will inform the first competitor of the day and the vehicle has to be prepared for judging within five minutes. In case of a time schedule being used – the vehicle has to be ready for judging one hour before the determined time.
17. Before the SQ/MM/ESPL/ESQL-judging starts, the judges will give the judging media to the competitor and allow him max. two minutes to check the settings of the system. It's the competitor's responsibility to assure the proper DSP setting, that all speakers work properly, etc. The system will then be judged under those conditions.
18. If a competitor feels that an equipment malfunction or operator error resulted in a score to be questioned, they have the right to bring this to the attention of the judge (team). It is up to the Head Judges/Event Director if a rejudging will be permitted or not.
19. During all events it is always possible to send out 2 judges per category/class, even if it is stated otherwise in the rulebook. This decision must be announced before the start of the event.
20. The installation is not allowed to be changed between the installation and sound judging (i.e. remove covers, apply damping, remove grilles, etc.). Disregard of this may lead to 0 points in the relevant installation section after reviewing this issue with the Head Judge.
21. On some events, a prestaging can be required.
22. During prestaging, an assigned event official will verify the registration and/or the competitor information section on the score sheet. This includes verifying the registered category and class. If the competitor category and class is questioned, it is the responsibility of the Head judge to determine the appropriate category and/or class for this event only.

23. An official inspection person or the appointed installation judges have the option to inspect each competitor's vehicle to verify the information supplied under vehicle information and the system description any time of the competition.
24. During an inspection procedure, the official performing the inspection reserves the right to require a competitor to disassemble their audio system installation or elements of their vehicle, within reason, in order to verify the competitor's submitted equipment list and/or value of car audio system. Failure to comply with inspection will result in the forfeiture of any and all prizes awarded and disqualification. In all cases, the decision of the Head Judge, the EMMA Supervisors, the Head Judge Council or the EMMA Directors are final.
25. If any damage should occur to the sound system or vehicle during disassembly, it should be immediately reported to the Head Judge.
26. EMMA is not liable for damage or system failure occurring at or during an event.
27. In the case of ties / equal points of competitors in the same class, the following rule is applied for ESPL / ESQ:
 - a. A the competitor with the higher value for measurement closed finishes in front of the other
 - b. If even the measurements closed are equal, the competitor with the higher value for measurement open finishes in front of the otherThe following rule is applied for SQ:
 - a. Higher points in SQ rules over installation
 - b. if even SQ points are equal: the car with the higher points in tonality wins.

9.5 Event Types

9.5.1 Regional event

A regional event can be organised by a retailer, a manufacturer or another accepted association. During this event there must be a minimum of one official Head Judge and one SQ and installation judge team each. Regional events are to qualify for the yearly national Final.

Competitors are more than welcome to pick up the idea of the international community and start in competitions in other EMMA-member countries! With their attendance, an account to earn qualification points is opened in the country they started in.

9.5.2 National events

A national event (e.g. the final) can only be organised by a national member organisation of EMMA, or by EMMA itself. National finals can only be organised with the official permission of the EMMA office. Participants of the national final must have qualified at regional events/international events. It is suggested that the 10 competitors with the highest qualification points gathered over the season will be qualified for the final. The national organisation is allowed to adjust the number of qualifiers for the finals. If international competitors are qualified for the national finals and participate, they can win. But they cannot become national Champion in any other than their home country. During a national event there must be, besides sufficient judges, a complete authorised Head Judge team and an official EMMA Event Director.

9.5.3 International event

International events can only be held with the permission of the EMMA International office. EMMA will work strongly together with the organising National Association and is responsible for delegating the Event Director, Head Judges and the entire judge team.

Participants for an international Championship (e.g. Euro finals) must qualify before and must start in the same category/class they qualified in. A change of vehicle or Category/Class is not possible.

The qualification can be accomplished either by being in 1st place on the Finals of a national organisation or – if the finals are held to close to or after the international Championship – the first competitor of the

national points table will qualify. The maximum amount of competitors per Nation will be announced at latest three months before the international final.

In every case the national organisation must nominate the participants with their data for the international championship 2 weeks before these finals at the latest to allow EMMA the organisation of the event.

It is the responsibility of the national organisation to assure sending only competitors that qualified themselves for the international championship and that they are in the correct class as well as – where required - that the value of the equipment is within the limits according to the EMMA-value-database!

Note for categories in Sound Quality and Multimedia on national or international events:

If there are more than 14 competitors in a class, the national organisation (or on an international event like the Euro finals EMMA - International) can decide to separate this class by splitting the class in 2 groups and have the best 3 of each group judged by a new judge team to determine the places 1-6. As an alternative all cars can be judged by the same team within two days and the best six of this will meet again in a final the following day judged by another team. Places 7, 8, 9 ... will be determined according to the points achieved on the first evaluation.

9.5.4 Qualification points

For the qualification to the national finals, the following points will be awarded to an account for the competitor in conjunction with his competition vehicle and the category/class he was competing in with it.

1st place	10 points
2nd place	8 points
3rd place	6 points
4th place	5 points
5th place	4 points
6th place	3 points
7th place	2 points
8th place	1 point

Qualification points are awarded to a Person-Car-Class combination. If anything in this combination changes, the points are void.

Whenever a competition is labelled as an EMMA International Event, the qualification points earned there will be added only to the competitor's national (home) account as qualification points for the national final. If no account is opened, the national organisation must then open it.

The points awarded in the events will be accumulated and maybe published on the official national EMMA website.

9.5.5 Wildcards

Any EMMA association will receive three wildcards per Year. For any event more than five per season the National EMMA Affiliate will receive one wildcard per each additional event above that five. Only events that have been added to the official international event calendar at www.emmanet.com at latest 14 days prior to the event will be taken into consideration. A maximum of three competitors for one class from one Country can sign up for the Continental finals. Competitors receiving a wildcard must have been competing during the season at least one time in their home country. The amount of wildcards is limited to a maximum of 12 per Nation. It is no longer allowed to qualify for a continental final in another country then the country of origin. Further wildcards can be given to competitors from Nations that have no regular EMMA Sound Off events. EMMA Global must sanction all wildcards.

9.6 Etiquette

1. No other than an EMMA Head Judge/Event Director or authorised official may look at any scores on any score sheet or judge's safety sheet during the competition.
2. Competitors are permitted to see their install score sheets and to receive an explanation of the judges, which will take a maximum time of 5 minutes. The scoring is not to be discussed. The competitor will sign the score sheet after explanation of installation judging.
3. On non-final events, competitors are permitted to see their SQ score sheets and to receive an explanation of the judges, which will take a maximum time of 5 minutes. The scoring is not to be discussed. The competitor will - in this case - sign the score sheet after explanation of SQ judging. On any finals, SQ-scoring will not be explained and competitor is not requested to sign the score sheet.
4. By signing the score sheet, the competitor accepts the scoring and waives all rights to file a protest.
5. Furthermore, the signed score sheet is a contract between EMMA and the competitor that can (in case of a failure) only be changed between the Head Judge and the competitor by signatures with the knowledge and approval (signature) of the Event Director.
6. If a competitor is required to sign a score sheet and refuses to sign it on national or international events, the car will then be locked and the Head Judge will be informed. A small protest form will be available to be handed out by the Head Judge if requested.
7. In general, the competitor has three choices: sign the score sheet (when so required), file a protest or withdraw from the competition. If necessary, the Head Judge will be called and clarify the situation.
8. No competitor or Judge may discuss actual scores of any other vehicle or system with any competitor at any time prior to the trophy presentation.
9. After judging of the vehicle, the competitor must immediately exit the judging area if so required.
10. Any competitor caught cheating during an event will be dismissed from the event. The EMMA office and Head Judge Council may review the incident of cheating (even when the event is over)
11. Repeat offences or cheating can be cause for loss of all, or part of accumulated points that can be earned at EMMA sanctioned events and for a possible disqualification from participation in all future EMMA sanctioned events. In extreme cases the EMMA office will make the name of the cheating competitor public.
12. Abusive language or misconduct on the part of competitors or Judges will not be tolerated and may result in dismissal from the event, as well as forfeiture of event registration fees for compensation.
13. It is the responsibility of the Judges and the competitor to make sure that nobody takes a look at the score sheet other than the competitor himself during explanation. Competitors who try to take a look at another score sheet (or have somebody do that for them) can be punished with 5 points deduction.
14. Anyone interfering with the judging process will get a 5 point deduction, or may be removed from the event at the discretion of the Head Judge/Event Director (this also includes team leaders etc.).
15. Indecent or inappropriate behaviour can lead to the exclusion of the competitor from the competition by the Head Judge/Event Director, in severe cases from all competitions of that year or forever by the national EMMA organisation. In worst cases a competitor can be banned by EMMA headquarters from competing in ANY EMMA competition.
16. During the event all alarm system must be turned off. If the alarm system is triggered and the competitor does not immediately turn the alarm system off, five points will be deducted by the Head Judge.
17. The use of interior horns is absolutely prohibited during EMMA competitions and leads to immediate disqualification of the competitor.
18. The competitors can expect the Judges to:
 - Be polite to the competitors
 - Wear EMMA sanctioned clothing
 - Give a fair and unbiased evaluation to all competitors

- Have undergone proper education to be a Judge
- Give the competitor tips on how to improve the system (exception on final events)
- EMMA Head Judges are not allowed to be part of organizations competing with EMMA.

9.7 Protests and Tear downs

1. Scores are defined as any points that are placed on a score sheet. This includes objective measurements as well as subjective observations. If a competitor feels that a Judge has intentionally or unintentionally given a score that is incorrect or not consistent with intended interpretation of the current rulebook, the competitor can protest the score. In order to prevent trivial protests, the protesting competitor must accompany their protest with a risk of losing 30 points, which will be deducted from the actual score sheet. In the event that the score is deemed incorrect, the deducted points will be returned to the protesting competitor. If the score is deemed to be correct, the protesting competitor will lose the 30 points on their score.
2. A competitor should understand that if a protest is filed that questions a particular Judge's subjective judgement, it could only be resolved by that specific Judge. It has to be verified that he/she is comfortable with the score issued and has a complete understanding of the rules as they are written and interpreted. A subjective judging section score cannot be re-judged nor be re-scored by any other Judge or the Head Judge. If the Head Judge found an incorrect score he will take proper action. In case of re-judging, obvious items in the install-section like loose equipment, wrong fuses, etc. or in the sound/picture section like noise, etc. will not be changed because these may be changed by some competitors prior to the re-judging leading to another picture other than in the original process.
3. A competitor can also doubt the fair play of another competitor. This may include the incorrect value of car audio system woofers and/or competitor category classification, suspected cheating or falsifying competitor information. This protest can result in a tear down or objective/subjective re-test of the protested competitor's vehicle. This challenge can only take place on the day of the event and at the event site. Should a competitor challenge another competitor's vehicle and should the Head Judges/Event Director determine that the tear down or objective/subjective re-test is necessary for verification, the contesting individual must accompany his/her challenge request with 30 points of his/her actual score. Should a violation be discovered in the contested vehicle the 30 points will be returned to the challenger; and appropriate measures will be taken regarding the violation. However, should no violation be discovered, the protesting competitor will lose the 30 points on his/her actual score.
4. Only a competitor in the same class, registered in that event, may request a tear down. Any non-competitor or team leader who protests or attempts to protest on behalf of a registered competitor may, at the Head Judge's or Event Director's discretion, have him/herself and the competitor (team) he/she represents removed from the contest.

9.8 Request Procedure for Protests/Tear downs

1. The competitor should point out any score that he/she feels is incorrect immediately after the judging process (!!!) to the Judges. The Judges will contact the Head Judge or a designated Control Judge. If the Head (Control) Judge is comfortable with reasoning behind the protest (logical analysis of the score) the Head Judge can permit the competitor to file a protest. Without this permission, NO protest can be filed!
2. An official protest must be in writing and will include the appropriate point's deduction by the Head Judge. The competitor should specify what is being protested and include his opinion of what the score should be on the basis of this rulebook. Filing a protest 'because the scoring is too low (e.g. lower as in the last competition attended, etc.) will not be accepted. In case of multiple problems with the scoring, multiple protests need to be filed, each with 30 points deduction. The official protest is lodged with the Head Judge. Only the official protest form has to be used and

must be handed to the Head Judge or Event Director within 30 Minutes of the judging being finished.

3. The Head Judge will discuss the protest with the concerned judge team and the second Head Judge. In case of no solution being found by the two Head Judges, the Event Director will decide about the protest. Event Directors must be actual Judges. If not, an experienced Judge out of the present Judge Team will be asked for his/her decision and the proceedings will be forwarded to the Head Judge Council.
4. The Head Judges/Event Director will make the decision on the protest at the contest. The decision of the Head Judges/Event Director is final; prize giving ceremony will take place.
5. It is the competitor's right to send his/her protest to the EMMA office. The EMMA office will forward the protest to the Head Judge Council. The Council may review the Head Judge's/Event directors' decision but there can be no change of the result in any way.
6. Requests for a tear down must be submitted on the day the class is being judged and a minimum

of 4 hours before the prize giving ceremony begins.

9.9 Procedures and rules for / during the Installation Quality Judging:

1. Active judges are not allowed to adjust or prepare any competition car (except their own if they are competing) during the event.
2. Maintaining a detailed photo log will assist in the inspection process, as well as the system presentation portion of installation judging and in answering many of the installation judge's questions.
3. The process of the installation quality judging starts with the system presentation. It is the registered owner's/main user's responsibility to explain the sound system installation to the judges. If for some reason the owner/main user of the vehicle is not capable of guiding their vehicle through the judgements, a designated presenter may present the vehicle. In a National or European Championship the registered owner/main user must explain his/her car in person; otherwise the judges will award 0 points for system presentation:
4. The competitor will be given 7 minutes to explain his system, his installation, and his ideas and point out any special elements of the vehicle's mobile electronic installation. If a translator is required, the time will be extended to 14 minutes. In this case, the competitor is only allowed to speak in his native language. The only exception is Expert unlimited, where the time will be 15 minutes max. for the presentation (there is no additional time for translation)
5. The judges will politely inform the competitor when the presentation time starts. They will never interrupt the competitor during the presentation time. The judges will politely inform the competitor when the time has expired. Judges are allowed to stop the presentation immediately after the time explained above are up.
6. The competitor will be politely asked if the installation is of the same status like for SQ (no changes allowed). A check-box on the installation sheet will document if so yes or no. Disregard of this may lead to 0 points in the relevant installation section after reviewing this issue with the Head Judge.
7. The competitor should stay close to the vehicle until the judging process is complete. The competitor should not interrupt or disturb the judges unless asked by them to answer a question or to explain a system element.
8. The judges will show the score sheet to the competitor and explain their scoring to the competitor after finishing the judging. This should not take more than 5 minutes. When the time is over and in case of further questions they can refuse the explanation.
9. After the competitor has seen the score sheet and accepted the result, he/she should sign it. Protest has to be made immediately after the explanation of the judges. No protest regarding their scoring is allowed once the score sheet has been signed.
10. Judges should not use force when judging securely mounted components. It depends on what component is being checked according to the weight of it (e.g. a tweeter in the a-pillar doesn't have to be fixed as tightly as a subwoofer to its box in the trunk).
11. The method for fixing doesn't matter as long as the component is properly secured (e.g. could be screwed to a wooden plate or glued as well as welded to a steel plate).
12. Grills or any other protective elements will not be checked for proper fixing.
13. If a head unit with detachable faceplate is installed, it might be that the faceplate/detachable part has some play. If so, the judges will take away this part and check the installation of the remaining unit.
14. External devices: as long as external devices which are able to play the EMMA recordings are turned off or disconnected during the judging process these devices will not be judged. This has to be proven by the competitor. The same rule applies for rear seat entertainment systems.
15. If a component is attached to a factory (original) panel and this panel is not properly fixed, points will be deducted (e.g. tweeter mounted to panel fixed with clips could be a bit loose)
16. Grills or any other protective elements and covers without mounted components will not be checked for proper fixing.

17. Speakers include all sound reproducing devices driven by the source unit or any amplifier. The judges score all speakers even when they are not in use (except factory speaker systems which are
18. Protective bars with less than 3 cm gaps will get no deduction.
19. Grill clothes with high tension but no support underneath is not considered as sufficient protection and will get points deducted.
20. Speakers, which are installed inside enclosures (and are not touchable) or with the baskets on the outside of the enclosure, do not need separate protection.

9.10 General rules for Sound Quality Categories and Classes

Sound Quality competitions are held to determine who has the best sounding car according to the rules in this rulebook. To make sure that the right people compete against each other, categories with an ascending level of difficulty have been created.

The difference between the categories is the amount of judging that will take place. In the “lowest” category only a few elements of the total Installation and Sound-score available will be judged. As the competitor progresses through the categories, more and more elements of the Installation and Sound will be judged. It is up to you, the competitor, to decide in which category to start (it’s possible to change categories up or down, except back to the “lowest” category). With this system the competitor is able to increase his/her knowledge about the mobile media system in the car.

How does the judging work? Both sound and installation are judged by set criteria. There is only one list of judgement criteria, and the higher your experience (and your category), the more criteria will be judged. Following these rules, when a competitor who was competing in a higher category decides to compete in a lower category, he/she will NOT have any advantages against others, because one or more criteria will not be judged in this lower category. In simple words: An expert unlimited car must not necessarily win in any lower category!!!

The categories themselves are divided into classes, depending on the value of the car audio system.

The EMMA Disc 2016/2017 will include additional formats for the use of different Digital devices as a source. By buying the CD the user has the right also to use these files for the competition. On request the competitor must proof that he/she was legally buying the original EMMA CD.

Note: The EMMA tracks are under the copyright of EMMA GmbH and any copy without authorisation is illegal.

Streaming of media is allowed for the judging process. The streaming device has not to be fixed into the vehicle (if not used for operating the tracks) but the device that the judge is operating the streaming device from.

9.11 Money limited classes

In some categories money limited classes are available. The respective national organization is responsible to verify that the competitor starts in the correct category with the help of the EMMA-value-database. The total system price is the sum of all non-binding retail price recommendations of the manufacturers (even if they are used or “old”) and includes all electronic material (the source unit, processors, active crossovers, amplifiers, all speakers etc.).

Please note again: All devices which are used to reproduce Media content for a competition vehicle will be taken into the calculation of the total system value. As soon as the device is necessary to reproduce and adjust the content it will be calculated the same way like all other active components! Storages like hard drives, USB Sticks or SD Cards are not taken into consideration and seen as “passive” components.

All mounting materials (cables, mounting boards, passive crossovers, fuse blocks, batteries, capacitors etc.) are not included into the total sum. It does not matter if a contestant bought the products on a lower price

level or second hand. To provide an equal basis, EMMA is using a database available to all national organisations defining the value of any component.

For the calculation of the correct component value on national and international events, EMMA Europe provides access to the official EMMA Value Database at www.emmanet.com.

If the competitor uses products not within the database, the competitor has to contact his/her national organisation, provide the necessary data and the national organisation will contact EMMA Europe to get the EMMA Value Database updated. If products will be used that are not available on the European Market, the competitor has to prove the retail price. If this is not available an equivalent value of a similar product available in the European Union will be taken as reference.

Equipment used at an international Final has to be written down in detail and sent to EMMA for authentication and verification prior to the event. The EMMA value sheet has to be shown to the Judges at the registration desk.

If a competitor decides to use the factory installed components following values will be added to the total system value:

OEM CD-Tuner € 200
OEM Audio Video unit € 500
OEM front speakers € 250
OEM rear speakers €250
OEM center speakers € 250
OEM subwoofer(s) € 250
OEM amplifier € 500
OEM processing units € 300

If a remote control is installed, that is, one not included with the source unit and the retail price is unknown, it will be calculated at € 50 and adds up together with the rest of the components to the total system value.

9.12 Changing Categories/Classes

A competitor who elects to change class and/or category during the competition season must compete at least once in the new class and/or category within the same season to qualify for invitations to the national final. All qualifications reached before expire with this change. A change of category and or class after the national final disqualifies the competitor from the international Final. It is the duty of the national organisation to ensure the correctness of the participation of their competitors.

If a competitor joins the judge team or begins to work for the car audio industry during the season, he/she is no longer allowed to compete in the lowest SQ-category. If previously started in the above mentioned categories, all qualifications reached before expire from this moment on.

9.13 How Sound Quality/MM judging is performed

The sound quality judging will be performed with the actual, official EMMA-recording by one or two sound judges. These judges are specially trained and qualified to use the EMMA-Sound-Quality-recordings together with the EMMA sound quality rules and the score sheet as a tool to determine the sound-performance of a stereo- or a Multimedia system.

After the sound quality judging, the competitor will receive a qualified and detailed, objective feedback about the acoustical performance of the sound system installed in the competitor's vehicle. EMMA has divided the sound quality part into easy to follow sections that will be judged and evaluated accordingly.

The judges will not tell you “your vehicle sounds good or bad or what points you have earned”, with their evaluation and with the help of the score sheet they will explain exactly how the car sounds with all relevant details.

The awarded score will be easy to follow for the competitor, when necessary with support of the EMMA-judge book. Furthermore, the competitor can learn about the potentials of their sound system. This will allow the competitor, a qualified dealer or an experienced friend to improve the sound system.

Single seat judging

Typically all categories will be judged by “single seat judging”. This means one SQ- judge is sitting on the driver seat position. The competitor is free to choose the "driver position" (e.g. right hand cars on left hand finals).

On national and international competitions, every car will be judged minimum two times, with at least 30 minutes time given to the competitor to change the car in between judgments.

Only on local events mainly for education purpose, it can happen that two judges will sit in the car during judging procedure. The scoring for staging & imaging will be performed from the judge sitting on the drivers seat, the rest can be average. If the competitor has the feeling that the second judge is changing sound significantly, he can request the head judge to evaluate and correct (only in that case).

Since on national and international finals, e.g. Eurofinals, the competitor already qualified during previous events with receiving feedback about his system, no explanation about the sound judging result will be given to the competitor! Only technical malfunctions (e.g. noises) will be explained.

At the ceremony the competitor will receive a copy of all score sheets or an averaged score sheet.

9.14 Procedures and rules for Sound Quality Judging:

1. For sound quality judging, the car has to be in a “ready for driving status” as used on public roads, Windscreen/window covers, and curtain, etc. are not allowed to be used.
2. The competitor will suggest the volume to be listened at by the sound judges. But to protect the judges from too high levels the unweighted slow measurement on pink noise cannot be higher than 80dB.
3. 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 vehicle.
4. During testing and scoring, judges must sit in the front seats of the vehicle facing forward. This applies to all vehicles, including limousines. All competing vehicles must have at least two front seats with the exception of the Multimedia classes. If there are cars with more than two front seats (vans or special vehicles) it is up to the competitor to decide on the seating position for the passenger side judge if applied. If the vehicle is judged by only one Sound Judge (not Multimedia), he has to sit on the driver’s seat. Windows and sunroof need to be closed during judging. Only convertibles can be judged with the roof folded down, when the competitor requests for it and the weather conditions are appropriate.
5. If two judges are applied and the judges disagree on a sound quality score, they may switch seats to establish whether the vehicle presents a different sound from each seat. If the judges agree that the system presents a different sound from each seat, they should arrive at a consensus score for each seat, and then average this.

6. The judge will verify that the competitor is able to operate the gear-stick, 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 score-sheet.
7. If it is not possible for the competitor to operate steering wheel, gear-stick and pedals while seated, the judge will request the competitor to move his seat into a reasonable driving position before starting judging.
8. The competitor is allowed to ask the judge to sit in his/her 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 vehicle (kick panels, mounted under the seats, etc.) by either covering them with the score sheets or by blocking them with their feet.
9. The judge is not allowed to re-adjust the seat without asking the competitor.
10. The judge is not allowed to change his seating position during the judging process.
11. 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. In the event that the running of engines is allowed, judges should adjust the vehicle's ventilation fan to a quiet setting during the listening procedure.
12. Prior to judging, the Head Judge will inform the judges and competitors whether vehicles 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 vehicles 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).
13. On events inside trade fair facilities it can be the case that the start of engine is prohibited. In this case all scores for noises will be zero.
14. 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.).
15. 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.
16. 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.
17. 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 vehicle.
18. If possible/necessary, the sound quality judges are invited to explain their scoring with additional notes/explanations written on the score sheet.
19. In case of an equipment breakdown or vehicle 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 has to be informed by the Judge about the malfunction/breakdown. To do so, the judge will mark on the score sheet "repair time taken"

20. 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 period.
21. Depending on the judging mode, after the competitor has seen the score sheet and accepted the result, he/she should sign it.
22. Should the competitor refuse for any reason the scoring or explanation presented to him/her by the Judges it must be done within this five minute time period. A protest has to be made immediately after the explanation of the Judges (see the corresponding chapter under General Rules). No protest regarding his/her scoring is allowed after signing the score sheet.

10 Official international EMMA Partners 2016/2017



Judging Matrix

10.1 Judging Matrix

Matrix Installation							
		E	S	M	X	X Unl	
	Max. points	55	105	135	210	310	
	Presentation to the public	10	10	10	10	10	
	Cleanliness	6	6	6	6	6	
	Main Fuse present y/n	10	10	10	10	10	
	All components securely mounted	24	24	24	24	24	
	All components fused		15	15	15	15	
	Fuse of appropriate value		20	20	20	20	
	First Optic impression		10				
	Protection of speakers	5	5	5	5		
	Interior wires invisible		5	5	5	5	
	System documentation			10	10	10	
	Wires properly terminated			5	5	5	
	Wire terminations protected			10	10	10	
	Wires protected from damage			5	5	5	
	Craftsmanship			10	50	50	
	Presentation of system to the judges				10	10	
	Design of interior				5	10	
	Design of trunk				5	10	
	Overall design of vehicle					10	
	Bonus points				15	100	
Matrix Sound Quality							
				E	S	M	X
	Max Points			280	315	315	321
	Visibility potentially restricted	-10 points		x	x	x	x/o
	Distance to Sound Stage	15 points		x	x	x	x
	Width of Sound Stage	15 points		x	x	x	x
	Height of Sound Stage	15 points		x	x	x	x
	Ambience and Depth	10 points			x	x	x
	Position	25 points		x	x	x	x
	Focus	25 points			x	x	x
	Sub-Bass	30 points		x	x	x	x
	Mid-Bass	30 points		x	x	x	x
	Midrange	30 points		x	x	x	x
	High Freq.	30 points		x	x	x	x
	Overall spectral balance	30 points		x	x	x	x
	Overall at high Volume	30 points		x	x	x	x
	Listening pleasure	30 points		x	x	x	x
	Switching noise	-6 points		x	x	x	x
	System Noise	-6 points		x	x	x	x
	Engine on test	-6 points		x	x	x	x
	System Handling	6 points					x

Matrix MultiMedia			S	M	X
		Max Points	236	296	396
	Sound stage and room quality				
	360° Level	25 points		X	X
	360° Movement	25 points		X	X
	Room quality – sub	10 points	X	X	X
	Room quality – front stage	10 points	X	X	X
	Room quality – surround	10 points		X	X
	System separation	25 points	X	X	X
	Tonal accuracy and spectral balance				
	Sub-bass	15 points	X	X	X
	Midbass	15 points	X	X	X
	Midrange	15 points	X	X	X
	High frequency	15 points	X	X	X
	Spectral Balance				
	Normal volume	15 points	X	X	X
	High volume	15 points	X	X	X
	Voice/timbre matching	25 points	X	X	X
	Picture Quality				
	Details and resolution	15 points	X	X	X
	Contrast and brightness	15 points	X	X	X
	Colour	15 points	X	X	X
	Multimedia experience	25 points	X	X	X
	System Handling				
	System handling	6 points	X	X	X
	Adjustments				
	Switching noise	- 6 points	X	X	X
	System noise	- 6 points	X	X	X
	Engine on test	- 6 points	X	X	X
	Picture noise	- 6 points	X	X	X
	Bonus	100 points			X

Matrix ESPL		E	X
		55+	210+
	Measurement with open doors		
	Measurement with closed doors		
	Install	55	210
Matrix ESQL		M	X
		376	291+
	Measurement with open doors	135	?
	Sub-Bass	30	30
	Mid-Bass	30	30
	Midrange	30	30
	High Freq.	30	30
	Overall spectral balance	30	30
	Listening pleasure	30	30
	Bonus for enjoyment to public	6	6
	Install	55	105

Matrix EMMA Racing			
		Stock	Custom
	Interior	237	237
	Idea	10	10
	Dashboard door skins	3	3
	Seats	3	3
	Foot Room	3	3
	Roof	3	3
	Interior Light	3	3
	Trunk compartment		
	Idea	10	10
	Modification	3	3
	Surfaces	3	3
	Light	3	3
	Specials	3	3
	Tuning Technical		
	Power of engine	5	5
	Brakes	5	5
	Clutch	5	5
	Cooling	5	5
	Air filter / Air flow	5	5
	Exhaust system	5	5
	Chassis suspension	5	5
	Lights	5	5
	Tuning Design		
	Idea	10	10
	Rims & tires	5	5
	Spoilers, body kit, etc.	5	5
	Window modifications	5	5
	Others	5	5
	Paint Job		
	Idea	10	10
	Air brush	5	5
	Pin Striping	5	5
	Foliation	5	5
	Water transfer printing	5	5
	SQ		
	Staging	15	15
	Tonal accuracy	15	15
	Listening pleasure	15	15
	SPL		
	125dB	5	5
	Slalom (optional)		
	Slalom	40	40

All relevant modifications of this rulebook will always be available for download at www.emmanet.com. The adoptions and modifications published online are valid from the day of publishing which is noted in the link description and the document itself.

Official international EMMA Partners 2016/2017

