EMMA
european mobile media association

Judgebook
EMMA tuning
2026

www.emmanet.com

Welcome to the European Mobile Media Association

7. Preface

EMMA Tuning is a competition in which all aspects of car modification are judged as follows.

1. Modifications to the performance or appearance of a vehicle (Tuning).
2. Sound Quality (SQ).
3. Sound Pressure Level (SPL).

The competitor that does well in EMMA Tuning will have a vehicle that scores equally well in all three key judgement areas.

Like any other motor sport event, it is run 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.

7.1 Installation

7.1.1 Presentation to the public. (0-5 points)

The competitor should:

- 'Show off' their vehicle & installation to the public during the event time/s.
- Allow spectators to listen to the system.
- Please note: This will be checked several times a day
- If it is an outdoor event and the weather is poor, the car can be closed but system details should still be visible. (E.g. displayed on the dashboard etc.)
- Exception: at the event active judges / back office staff´s cars can remain closed due to safety reasons.

Points will be deducted as appropriate, i.e. commensurate to the time the car is not being shown to the public.

7.1.2 Cleanliness: (0-3 Points)

Cars should be clean and presentable, the Car exterior should be "car-wash-clean" and interior should be vacuumed (not perfect but reasonably clean). The criteria you should check against are as follows:

- Car Wash clean y/n
- Passenger compartment clean y/n
- Dedicated components (e.g. Batteries or fuse holders etc) of the system installed in the engine component and trunk clean y/n
- No items i.e.: clothing, tools, and food wrappers on display?

Deduct 1 points per not cleaned area, Minimum 0 Points

7.1.3 Main fuse(s) present (0 or 5 points)

Check if a 'Main Fuse' has been installed onto the (or each) main power wire within 40cm from any positive battery post and/or before passing any metal panel. This should include all wires from the battery post.
Any permanent wires installed into the car for battery charging even if they are not in use shall also be judged for fusing.

NOTE: If more than one battery is installed, each battery needs a main fuse from its battery post. If batteries are joined to each other within 40cm of each battery post, it will be considered as one big battery.
At this point the fuse rating is not checked.

If any main fuse is not present, 0 points will be awarded

7.1.4 All components fused: (0 – 5 points)

Check, if a fuse is installed on the positive power wire for every component belonging to the audio/multi-media system.
All fuses connected to the components must be visible within three minutes (for all fuses in total, not three minutes for every fuse!!!). The judge should check to ensure the following components are fused:

- Head Unit
- Other devices
- Amplifiers

Deduct 1 points per component that is NOT fused or whose fuse is not visible within the 3 minutes. Minimum 0 Points

NOTE: The fuse rating is not checked at this point.

7.1.4 Fuse Value appropriate to cable size: (0 – 5 points) (Custom Only)

Check every fuse that belongs to the audio system is of an appropriate size for the wire it is protecting (according to the VW75212 - Dimensionierung von Leitungen und Sicherungen im Kraftfahrzeug):
When checking the fuse rating this should be appropriate for the smallest size cable in the circuit used to power the component, Positive or Negative, according to the table below:

NOTE: Fuse rating is based on mm² the AWG sizes are just for reference.

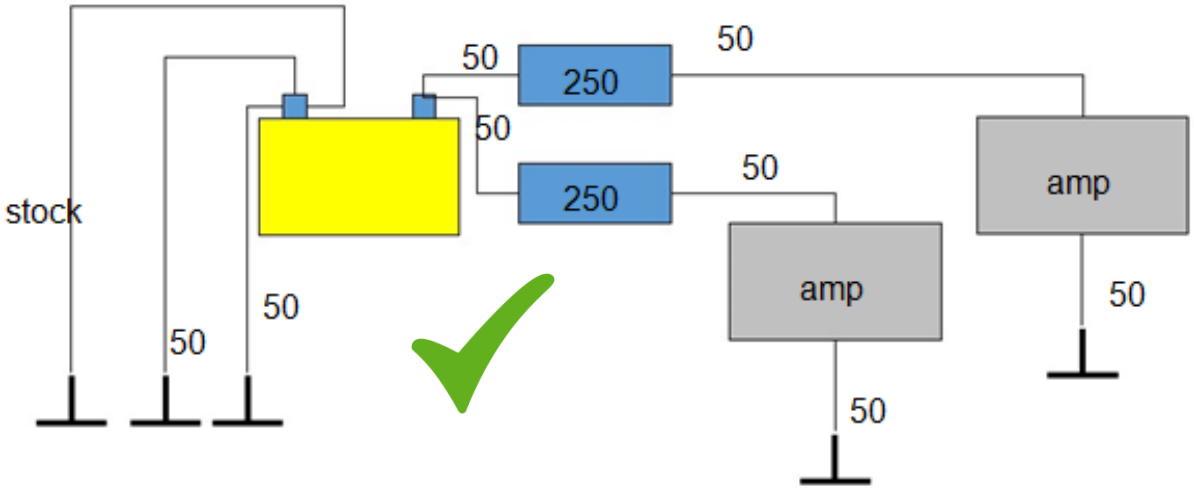
Fuse Size Matrix			
	Cable size	**AWG**	**Fuse Rating**
	0,5mm²	20	10 Ampere
	1,0mm²	17	15 Ampere
	1,5mm²	15	20 Ampere
	2,5mm²	13	20 Ampere
	4,0mm²	11	30 Ampere
	6,0mm²	9	50 Ampere
	10mm²	7	60 Ampere
	16mm²	5	100 Ampere
	25mm²	4	125 Ampere
	35mm²	2	175 Ampere
	50mm²	0	250 Ampere

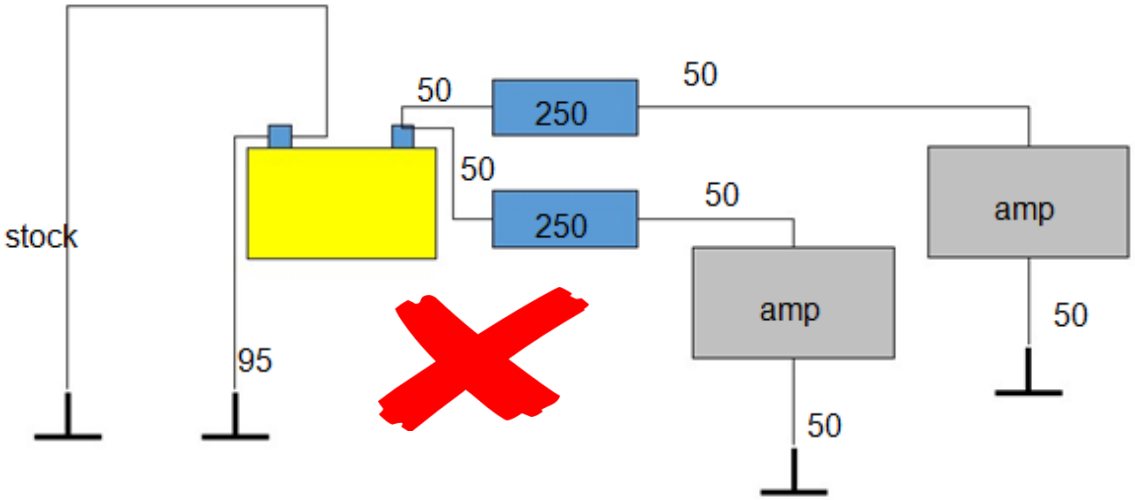
	70mm²	2/0	300 Ampere

Alternatively, wire sizes and fuse ratings can be calculated with the formulas in the "**How to calculate wire sizes**" section below. If the competitor chooses to use a fuse rating for a cable not shown in the standard table above, the calculations must be documented and provided to the judges for checking.

NOTE: All of these fuses should be visible within three minutes, not three minutes per fuse.

Deduce 1 points per incorrectly or NOT fused component, minimum 0 Points





NOTE FOR COMPETITORS:
How to calculate wire sizes

How to check, if the wire size is appropriate (e.g. IF the OEM ground cable is not upgraded):

Calculate wire size:
A = (I x 0,0175 x L x 2) / (fk x U)

A= wire size in sqmm
I = max amperage
0,0175 specific resistance of OFC copper in Ohm x mm2 / m (for CCAW the factor must be 0,0283)
L = cable length (of entire circuit including positive & ground wire) in m
fk = factor of loss, E.g.: 2%, is 0,02
U = voltage

Factor of loss should be no higher than 2%
If the calculated wire size is not available, step up to next available wire size

Important info:
In case CCAW-cable is used, there must be 1,6x more sqmm or it can handle 0,625x the current of OFC-cable. It is assumed that the OEM-ground wire is OFC.

Competitor/installer needs to calculate the appropriate wire sizes for his installation and document it to the judges.

If the calculation is not available for the judges, the published table for wire sizes and fuse values will be used for judging

Formula changed to I do determine capability of a given ofc cable:
I = (A x fk x U) / (0,0175 x L x 2)

Guidance for cars equipped with Intelligent Battery Sensor (IBS) / Smart Charge Alternator / Stop Start Technology.

When a vehicle has a sensor on the OEM Chassis ground wire to the battery, all current must pass through the sensor to maintain a fully functioning Intelligent Battery System. E.g. “Stop/start” technology.

It is up to the competitor to design and install the audio system to the current rulebook.

EMMA is aware of two ways to maintain the function of the (IBS) sensor and comply with the rulebook, (there may be more):

1. Fuse the main power cable for the audio system to the maximum value the OEM Ground wire would allow (using the calculations above).

2. Add an extra (appropriate size) ground wire from the IBS sensor to the chassis or audio system.

If in doubt, please consult your vehicle manufacturer for further advice.

Default Scoring Criteria

Each section is broken down starting with Craftsmanship & Design, 0 – 10 points. For this section points are earned, if nothing has been done then no points can be awarded.
This is the quality of the work that has been done, does it follow the theme of the entire car, and does it make sense? If you like it or not isn't judged, consistency of theme, design, craftsmanship & finish is. Highlight the positives.

Each sub-section is then checked to see what has been done irrespective of the quality of the work completed (Quality has already been judged in the overall craftsmanship). I would suggest judging the sub sections first as this gives a closer look then scoring the craftsmanship and design (something could look fantastic at first glance)

Points are awarded according to the effort of the work completed by the competitor.

0 – no effort
1 – little effort
2 –
3 – Medium effort
4 -
5 – High Effort

(**Remember the quality of the effort, level, creativity of modification, made) & multiple little efforts do not make a High effort

7.2 Interior

7.2.1 Craftsmanship & Design (0-10 points)

The craftsmanship and the quality of the overall design are initially judged.
The consistency of the theme for the entire car is important, and the quality of the work / finish to the modifications are judged here.

7.2.2 Dashboard door skins (0-5 points) (Custom Only)

Check for surface changes, speaker installations, front end / other devices special / hidden features.
This will follow the default scoring criteria.

7.2.3 Seats (0-5 points)

Check for material changes, colour changes, custom stitching, seats from another car, custom framework, what effort was made what level was reached
This will follow the default scoring criteria.

7.2.4 Foot Room (0-5 points) (Custom Only)

Look for any modifications in the foot room location. A front subwoofer / speaker pods, other devices, other devices, retrimmed floor carpet, custom mats, embroidery and pedals
This will follow the default scoring criteria.

7.2.5 Roof (0-5 points)

Look for changes to sun visors or grab handles, a complete re-trim, integrated screens, volt metres or other devices
This will follow the default scoring criteria.

7.2.6 Interior Lighting (0-5 points)

Look for lights under the dash, under the seats, bulbs modified to LED or assorted colour in OEM locations, main clock lighting, Perspex inlays, speaker halos.
This will follow the default scoring criteria.

7.3 Trunk compartment

7.3.1 Craftsmanship & Design (0-10 points)

The craftsmanship and the quality of the overall design are initially judged.
The consistency of the theme for the entire car is important, and the quality of the work / finish to the modifications are judged here.

7.3.2 Surfaces Changes (0-5 points)

What effort has been made to ensure all surfaces in the trunk area are modified or are consistent with the theme
This will follow the default scoring criteria.

7.3.3 Light (0-5 points)

What efforts were made to install additional lighting. Inlays, remote control, motion sensor
This will follow the default scoring criteria.

7.3.4 Features (0-5 points) (Custom Only)

Any additional efforts made not already judged. Integrated tool kit car/system, motorization, smoke machine, amp cooling
This will follow the default scoring criteria.

7.4 Tuning Technical

Modifications to the performance of the engine / theme of the build

7.4.1 Power of engine (0-5 points)

Low effort – E.g. remap
Medium effort – E.g. replacement camshafts with remap, changes to cylinder heads etc.
High effort - A full internal rebuild or complete engine swap can score full points if not available from factory. (can be smaller engine too)

To be awarded points, all modifications must be documented with photos before and after, receipts or dyno otherwise points cannot be awarded.

7.4.2 Brakes (0-5 points)

Low effort - Modification of brake hoses, Painting or change of brake pads and brake discs to fast road / racing spec / grooved / drilled
Medium effort - Change of discs size / change of calliper
High effort - Full brake change (not factory) (larger callipers, discs and pads)

7.4.3 Drive Train (0-5 points) (Custom Only)

Clutch & Gearbox Modifications
Modification of Flywheel (lightening or change from dual mass flywheel to solid)
Modified or full clutch change (larger clutch plate and different clutch pressure cover, ceramic)
Automatic box conversion, 6 speed box conversion
Modification of Differential (change to LSD, change plates, add Cooling…)

All judged by level of effort of the modifications done

7.4.4 Oil and Water Cooling (0-5 points) (Custom Only)

Modifications of cooling to water or oil and associated piping
E.g. Larger radiators, bigger intercoolers, oil coolers or connecting pipework, (e.g. multiple silicone hoses do not = full points)

All judged by level of effort

7.4.5 Air intake System (0-5 points)

Low effort- Performance Air filter change
Medium effort - Performance Air filter change and custom pipework
High effort - Full forced induction through modifications of the bodywork to improve airflow into the air intake.

This will follow the default scoring criteria.

7.4.6 Exhaust system (0-5 points)

Material of exhaust is not judged (no additional points for stainless vs mild steel).

Consider:
Exhaust manifold change (decat/equal length/tubular) Modifications to downpipes, heat wrap, centre boxes and back box.
Low effort - Back box or decat
Medium effort - Modifications to system or catalytic converter (decat, sports cat, larger cat, back box, mid box)
Change of every part of the OEM exhaust system with an off the shelf system aftermarket part
High effort - Full custom/ modified system, e.g. additional back boxes / relocated pipework / custom manifold etc.

This will follow the default scoring criteria.

7.4.7 Chassis suspension (0-5 points)

Look out for Lowering springs , shock absorber changes , bushes , control arms
Adjustable and fully adjustable coilovers or Air suspension / Hydraulics
Suspension lines and control systems for the suspension
Also look out for modifications to chassis to fit lower / taller suspension

This will follow the default scoring criteria.

7.5 Exterior

7.5.1 Craftsmanship & Design (0-10 points)

The craftsmanship and the quality of the overall design (the flow) of the exterior of the car are judged. The consistency of the theme for the car is important.

The craftsmanship and the quality of the overall design are initially judged.
The consistency of the theme for the entire car is important.

The higher the quality / finish the higher the points

7.5.2 Rims & Tires (0-5 points)

Look out for rim size changes , tire width/tread changes (stretched or bulged / slicks to off road) to follow the theme
Rim / tire size increase / decrease (to follow the theme)

Change of color , custom logos , custom caps (center &/or air valve)

This will follow the default scoring criteria.

7.5.3 Spoilers & Body Work (0-10 points) (Custom Only)

body kits, smoothing, de locked / handled, lambo doors all exterior modifications & fabrications
This will follow the default scoring criteria.

7.5.4 Windows & Glass (0-5 points)

check for window tints, etching, stickers, strengthened, lightened.
This will follow the default scoring criteria.

7.5.6 Lights (0-5 points)

Any lighting added or modified to the exterior of the car, transplants, LED conversion, tinted Undercar lighting.
This will follow the default scoring criteria.

7.6 Body Work Finish

7.6.1 EOM Paint - Show and Shine (Stock + only)

This is looking at the exterior paint finish.
1 Points will be deducted per panel per item for paint blemished and defects as follows

- Stone chips
- Panel fades
- Scratches / Dents

Additional points can be deducted for cars that are not correctly prepared to show and shine standards.

7.6.2 Craftsmanship & Design (0-10 points) (Custom Only)

The quality of the paint finish is judged.
It is too tough to state a standard paint job regardless of how good it is, cannot score full points!

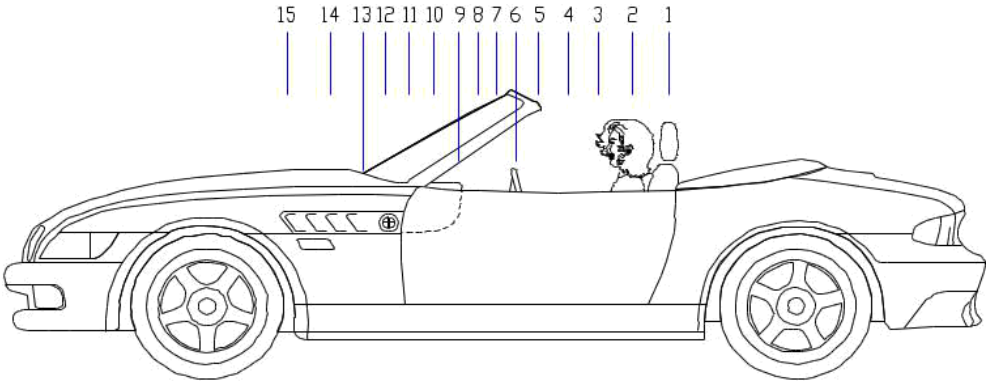
Unless it's immaculate and 20 years old for example as that's impressive, a newish car in good paint condition is not impressive, a complete colour change / additional pearl to follow the theme will score highly

7.6.3 Special features (0-10 points) (Custom Only)

Extras to the paint finish can be scored here. Check for stickers, pin striping, water transfer, carbon fibre parts. Flip / candy's etc

7.7 Sound Quality

This whole section is a miniature version of the Sound Quality judgement and will follow the same numbering. The same procedure is followed, but scoring is slightly different as explained below. A good car can score full points for Sound quality in this section:



4.3 Sound Stage

4.3.1 Distance to soundstage (0-5 points)

Using the SQ judge book procedure, convert the score as follows:

13-15 points = 5 points
11-12 points = 4 points
9-10 points = 3 points
7-8 points = 2 points
0-6 points = 1 point

4.3.2 Stage width (0-5 points)

Using the SQ judge book procedure, convert the score as follows:
13-15 points = 5 points
11-12 points = 4 points
9-10 points = 3 points
7-8 points = 2 points

0-6 points = 1 point

4.3.3 Stage height (2-5 points)

Using the SQ judge book procedure, convert the score as follows:
13-15 points = 5 points
11-12 points = 4 points
9-10 points = 3 points
7-8 points = 2 points

4.4 Tonal Accuracy

Sub bass (0-5 points)
Mid-bass (0-5 points)
Midrange (0-5 points)
High frequency (0-5 points)

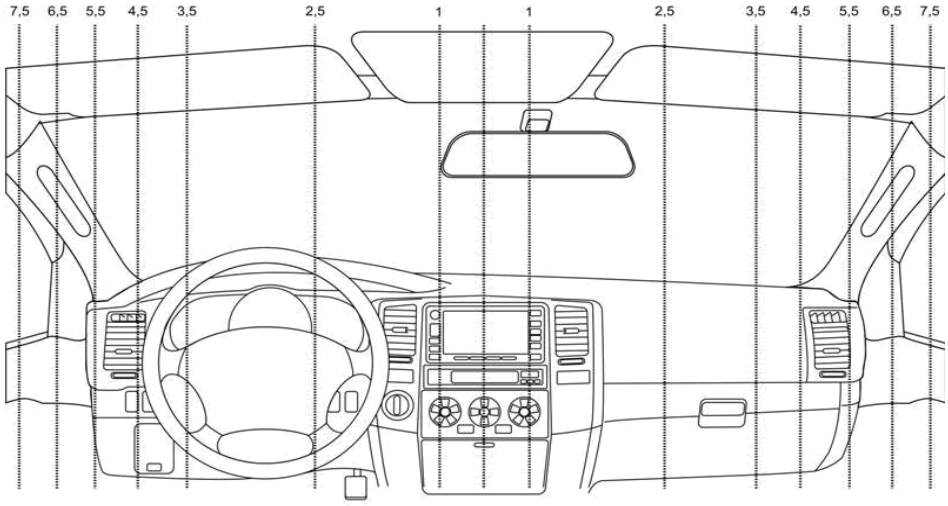
Tonal accuracy is scored using the SQ judge procedure below, converting the scores as follows:

24-26 points
Everything is there in very good proportion, but just not good enough
= 5 points

21-23 points
Almost everything is there in good proportion, but something is obviously missing.
= 4 points

18-20 points
Sounds correct, but there are missing things or does not give much music feeling
= 3 points

15-17 points
Sounds nice but some tracks sound nicer than others
= 2 points



0-14 points
Sounds acceptable, nothing annoying but not so clear
= 1 point

Standard SQ Judge Procedure

Judge Tonal Accuracy by using tracks 13, 14, 15 and 16

GENERAL THINGS ABOUT RECORDINGS

Track 13: Ocean Drive

Instruments:

Grand Piano, 6 & 7-string acoustic guitars, female voices, deep toms, hi-hat, wood block, cymbals, bass drum, different shakers, wooden agogo, electric guitar, bass trombone (processed), ocean drum

The track begins with an atmospheric introduction that gradually establishes the musical environment. In a properly adjusted system, the opening elements should appear clearly defined while maintaining a smooth and natural tonal balance.

As the arrangement develops, the rhythm section forms a solid low-frequency foundation (0:18). The bass line extends into the lower registers and should be reproduced with precision and control. Judges should pay particular attention to the articulation of bass notes and the relationship between bass and percussion elements. In a well-balanced system, these components remain clearly separated without excessive resonance or masking of midrange detail.

From 0:40 the female voices are introduced, which blend in with the instruments without taking a central focus.

Supporting instruments are distributed across the stereo field, contributing to the perceived width and depth of the soundstage. Subtle ambient cues and reverberation help create a sense of space, allowing judges to evaluate the stability of the stereo image and the natural layering of musical elements.

Overall, this track provides a valuable reference for assessing low-frequency integration, spatial imaging, and the overall balance of a competition sound system.

Track 14: One Fine Day

Instruments:

Hang Drum (handpan), male & female voices and choir, Ride Cymbals, African djembe, electric guitars, acoustic guitar, electric bass, double bass, Udu drums (big and small), triangle, cabasa, cajon, piano,

Wooden tongue drum (processed as sound effect)

“One Fine Day (Competition Edit)” is a carefully produced modern studio recording created to demonstrate several key aspects of sound quality reproduction in a competition audio system. The mix combines a clearly recorded lead vocal with a well-balanced instrumental arrangement, creating a mix that allows judges to evaluate tonal accuracy, imaging stability, and overall musical coherence.

The track is an excerpt from the longer composition and begins with a relaxed intro where the instruments are gradually introduced. Absolute instrument separation and background silence form an ideal stage for evaluating overall spectral balance and noise floor.

The lead vocalist enters at 0:29 and becomes the central focus of the recording. The voice should appear firmly centered in the soundstage and positioned slightly forward relative to the accompanying instruments. Its natural timbre and subtle dynamic details make it particularly useful for assessing midrange accuracy and vocal realism. A correctly tuned system will reproduce the voice with warmth, clarity, and controlled stability, while maintaining a stable center image. Behind the lead singer, the background choir spreads across the stage from mid-left to mid-right, with individual voices remaining distinguishable.

Around 0:39, the rhythm section develops further as bass and percussion elements are introduced. The bass line forms a solid low-frequency foundation while maintaining clear separation from the other instruments. In a well-balanced system, the bass should sound tight and controlled, without boominess or masking of midrange information.

Throughout the track, supporting instruments are distributed across the stereo field, Ambient cues and subtle reverberation contribute to the perception of space and realism.

Overall, this track offers a balanced reference for judging vocal accuracy, spatial presentation, dynamics, and the overall musical integration of a competition sound system

Track 15: Coming Back to You

Instruments:

Drums, timbales, male & female voices and choir, electric bass, trumpets, tenor sax, alto sax, trombone, div. electric guitars, div fx Guitars, wah guitar, acoustic guitar, guiro, congas, cabasa,

Hammond Organ, Bubble organ, Piano

“Coming Back to You” features a prominent lead vocal supported by a carefully arranged instrumental accompaniment.

The track begins with a relatively intimate musical introduction by the singer in a deep voice. The opening sequence should appear clean and natural, with no noticeable coloration or exaggerated frequency ranges.

The voice should appear clearly centered in the soundstage and positioned slightly forward relative to the accompanying instruments. The background singers appear left and right next to the singer. The choir is in the background. Judges should pay close attention to the natural character of the vocal timbre, including subtle articulation and breath details. A well-tuned system will reproduce the voice with clarity and warmth while maintaining controlled sibilance and a stable center image.

The supporting instruments provide harmonic structure and rhythmic support while remaining well separated from the vocals. Bass and percussion elements should form a controlled low-frequency foundation without masking the midrange. Instruments positioned across the stereo field contribute to the perception of stage width and spatial depth.

Overall, this track provides a useful reference for evaluating vocal reproduction and midrange accuracy.

Track 16: Should Have Done it Like This

Instruments:

male & female voices, Drums, tambourine, cowbell, handclaps, different electric guitars, acoustic guitar, electric bass, Hammond organ, trumpets, tenor sax, alto sax, trombone

The song has a steady rhythmic foundation with dynamic bass, allowing listeners to evaluate low-frequency performance and kick-drum impact.

The track opens with the deep singer's voice soon joined by electric guitas and the female voice. As additional synth layers and percussion are introduced, the mix becomes denser, which helps reveal how well an audio system maintains instrument separation and detail without sounding compressed or muddy. High-quality systems should reproduce these layers clearly while preserving the balance between bass, midrange, and treble.

The vocal performance remains central throughout the song. This makes the track effective for judging midrange accuracy and vocal presence, as the lead vocalist should sound natural, well-defined, and stable within the stereo image. During the chorus sections (2:03), the arrangement expands with brighter synths and stronger dynamics, offering a good test for

soundstage width and high-frequency clarity. From 2:23 the trumpet (left center) and guitar solo (right center) should stay clearly separate from the other instruments.

Because the song maintains high energy while introducing subtle changes in arrangement and intensity, it allows listeners to evaluate how well a system handles dynamic range and transient response

Tonal accuracy (0 - 20 points)

Sub-bass - 10 to 60 Hz (0 - 5 points)

Instruments: Double Brass, Tuba, Trombone, French Horn, Woodwinds, Electric Bass, Bass Clarinet, Contrabass, , Bass Violin, Cello, Harp, Big Drums, Piano, Organ, Viola, Harp

Mid bass - 60 to 200 Hz (0 - 5 points)

Instruments: Voices, Bass, Brass, Tuba, Trombone, French Horn, Trumpet, Woodwinds, Clarinet, Oboe, English Horn, Alto Sax, Bass, Bass Clarinet, Contrabass, Tympani, Bass Violin, Cello, Guitar, Viola, Violin, Harp, Piano, Organ, tambourine, Drums, Floor Tom, Harp

Midrange - 200 to 3000 Hz (0 - 5 points)

Instruments : Voices, Bass, Brass, Tuba, Trombone, French Horn, Trumpet, Woodwinds, Flute, Clarinet, Oboe, English Horn, Alto Saxophone, Bass, Strings, Cello, Guitar, Viola, Violin, Harp, Piano, Organ, Piccolo, Bells, Drums, Tambourine, Cymbals, High Hat, Ride, Shaker, Rattle Snake, Tom Tom, Floor Tom, Harp

High Frequencies - 3000 Hz to inaudibility (0 - 5 points)

Instruments: Voices, Woodwinds, Piccolo, Flute, Clarinet, Strings, Violin, Triangle, Brushes, Harp, Piano, Organ, Bells, Tom Tom, Cymbals, High Hat, Ride, Shaker, Rattle Snake, Harp

Use the following scoring guide to score Sub-Bass, Mid-Bass, Midrange, Highs, & Overall Spectral Balance.

A **29 to 30 points. 98% to 99%** Joyful, amazing, wonderful, shuddering, unbelievable tuneful, substantial, sexy, full of emotion
Life Like - Completely Natural & Clear, Generate full feelings, emotions, shuddering, warm, inviting, relaxing sound, Voices/instruments breath, with space around them,99% Harmonically & Musical,
All details are there, All Instrument tones are 100% Distinct & Separate, The s,x,f,c sound perfect,
The hardware disappears; nothing comes between you & the music, completely effortless sound
Full of endless Energy & Dynamics, All tones start & stop with great precision & energy.
Perfect Instrument Size, Real Vocals in full body with flesh and blood

B **27 to 28 points. 95% to 97%** it feels extremely close to, but just a little bit less than the above
Very Close to Completely Natural & Clear, Generate almost full feeling, shuddering, Extremely close to the above, Almost 99% Harmony & Musicality
Almost all details are there, All Instrument tones are almost 100% Distinct & Separate, The s,x,f,c sound almost perfect
The hardware almost disappears, Almost Effortless,
Almost full of Energy & Dynamics, Almost all tones start & stop with great precision & energy. Very close to Perfect Instrument size, Real vocals with almost full body

C **24 to 26 points. 90% to 94%** Everything is there in very good proportion, but just not good enough
A great deal of Naturalness & Clarity, generate a lot of feelings, no shuddering, a lot of space & atmosphere, but not enough, a great deal of Harmony & Musicality.
Most of the details are there, Most tones are very Distinct & Separate, The s,x,f,c sounds a little bit thicker or thinner than normal,
Wide open window to the sound, the hardware adds tiny coloration, little effort in a few tones,
A great deal of Energy & Dynamics, Most tones starts & stop with great precision & energy,
A little smaller or bigger Instrument size, Close to real vocals with close to full body

D **21 to 23 points. 85% to 89%.** Almost everything is there in good proportion, but something is obviously missing, or is too much.
Fair Naturalness & Clarity, Generate fair feelings, Space is medium or little larger than normal, Fair Harmony & / or Musicality
A few details are missing, Most tones are almost very Distinct & Separate, The s,x,f,c sound thicker or thinner than normal
Almost open window to the sound, the hardware adds little color, Little Effort in a lot of tones.
Fair Energy & Dynamics, Some tones start & stop with great precision & energy
Fairly smaller or bigger instrument size, Close to real vocals with little less body.

E **18 to 20 points. 80% to 84%** Sounds correct, but there are missing things or does not give much music feeling
Little Naturalness & Clarity, Generate little feelings, little space & atmosphere, little Harmony & / or Musicality,
A few details are there, a lot of tones are very Distinct & Separate, the s, x,f,c sound a lot thicker or thinner than normal.
A couple of tones behind a curtain, colorations more obvious, Fair Effort in a few tones, Little Energy & / or Dynamics, only a couple of tones start & stop with great precision & energy.
A few Instruments smaller or bigger size, Good vocals with half size body.

F **15 to 17 points. 75% to 79%** Sounds nice but some tracks sound nicer than others.
Only some tones Natural & / or Clear, Generate feeling only in a few tones, Space & atmosphere only in some notes & / or instruments, Harmony & / or M in a few tones
Details only in few tones, a lot of tones are almost very Distinct & Separate, the s,x,f,c sound a little blur or whistling.
Some tones behind a curtain, colorations quite obvious, Fair Effort in a lot of tones
Energy & / or Dynamics in only a few tones, Acceptable transients.
A lot of Instruments smaller or bigger size, good vocals with very small or very big body.

G **12 to 14 points. 70% to 74%** Sounds acceptable, nothing annoying but not so clear.
Not Natural but clean, generate feeling only in little tones, too much space, Harmony & / or M musicality in little tones,
Very little details, A few tones are Distinct & / or Separate, the s,x,f,c sound blur or whistling.
A lot of tones behind a curtain, many colorations, a lot of effort in a few tones
Energy & / or Dynamics only in a couple of tones, acceptable transients only in a specific range.
Quite smaller or bigger Instrument size, Acceptable vocals with no body.

H **9 to 11 points. 50% to 69%** Sounds acceptable, almost nothing annoying
Not Natural but almost clean, no Feelings, no Space, or enormous Space, Almost No Harmony & / or Musicality
Almost no details, Little tones are Distinct & / or Separate, The s,x,f,c sound blur or whistling a lot.
The curtain is quite obvious, A lot of effort in a lot of tones,
Almost no Energy & / or Dynamics, Poor transients.
Half or Double size Instruments, almost acceptable vocals with no body.

I **5 to 8 points. 30% to 49%** Sounds annoying in only some tones or tunes
Not Natural, some tones clean, some opposite feelings, Space & Atmosphere not easy to detect, No Harmony & / or Musicality
Hard to detect details, Almost no Distinction & / or Separation, the s,x,f,c sound harsh,
The curtain is heavy, Big effort in a few tones,
No Energy or Dynamics, Very poor transients,
Very big differences in instrument size, poor vocals with no or enormous body

K **1 to 4 points. 1% to 29%** Sounds annoying in almost all tunes and tracks
Not Natural, bad feelings, Space not detectable, No Harmony & / or Musicality
No details, No distinction & separation, Hard to listen to,
The curtain is very thick & heavy, Big effort in a lot of tones,
No Energy & Dynamics, No transients,
Cannot detect instrument size, Cannot detect vocal size.

L **0 points. No Sound 0%**

Additional hints:

Mistakes or miss-adjustments in the crossover area should result to lower score on both e.g. Midrange and High Frequency sections
Never score 0 if there is a sound, and avoid going lower than (5 to 8) unless it is absolutely necessary.

4.6 Listening pleasure

It‘s the pleasure and joy that music can generate to the listeners.

Considering all musical tracks, score the following:

Naturalness	0 or 1 point
Harmony &Musicality	0 or 1 point
Atmosphere & Emotions	0 or 1 point
Clarity	0 or 1 point
Effortless sound	0 or 1 point
Dynamics & Energy	0 or 1 point
Distinction & Separation	0 or 1 point
Body of Voice & Instruments	0 or 1 point
Transparency	0 or 1 point
Details	0 or 1 point

How to score:

0 points for no No or little Naturalness
1 points for Fair or perfect Naturalness

7.8 SPL Measurement

The SPL measurement will be done with both front doors completely open. An average of 30 seconds of music will be played used to gain the score. This will be scored depending upon the class you are competing in.

7.8.1 Stock+ 0-35 Points

135 dB MAX with 1 point for every dB over 100db

7.8.2 Custom Trunk 0-40 Points

140 dB MAX with 1 point for every dB over 100db

7.8.3 Custom Unlimited 0-45 Points

145 dB MAX with 1 point for every dB over 100db

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.

Notes:

EMMA is powered by: