



2013

Rules of

2013  
Competition



# RTA/SPL CHALLENGE

The **IASCA** RTA/SPL Challenge is a competition to show how well a sound system performs across all frequency ranges through the sound spectrum, as well as at higher output levels .

The RTA/SPL Challenge has two distinct sections; “RTA”, which is the measurement of the full frequency range and at what level each frequency is being reproduced, and “SPL”, which is the measurement of how many decibels the system is capable of achieving.

The SPL section of the challenge is done with music only; no test tones, sweeps or bass bombs and the measurement is taken using full range sound. Competitors choose music from the Official IASCA Sound Quality Reference CD and play the track for 30 seconds to achieve their highest peak SPL reading, up to a maximum cap of 130 dB.

Once both sections of judging are completed, the scores from the SPL level and the RTA curve of the system are then combined for an overall system performance score, determining the winner.

All judging is done with the Official **IASCA** meter. Both RTA and SPL judging is performed from the driver’s seat of the vehicle, allowing the microphone to emulate the driver’s listening position. The microphone is positioned approximately 26 inches above the base of the seat on a stand, parallel (level) with the ground.

## SPECIFICS OF RTA/SPL Challenge TESTING

All vehicles competing in the RTA/SPL Challenge will be RTA tested at a reference level of 90 decibels, using the pink noise track from the Official IASCA Sound Quality Reference CD. If a system is not able to achieve the 90dB reference level, it will be evaluated at the highest possible decibel level under 90dB that it can achieve.

If, for any reason, the noise floor at an event doesn’t allow for proper RTA testing at the 90dB reference level, the level will be increased in 5dB increments until the testing is able to overcome any excessive noise at the event. If the floor noise is so excessive that it cannot be overcome (greater than 110dB) , the Challenge will be limited to strictly the SPL run only.

In RTA testing, the Judge will operate the meter. The Judge will then show the competitor where the deficiencies are and make recommendations on how to improve.

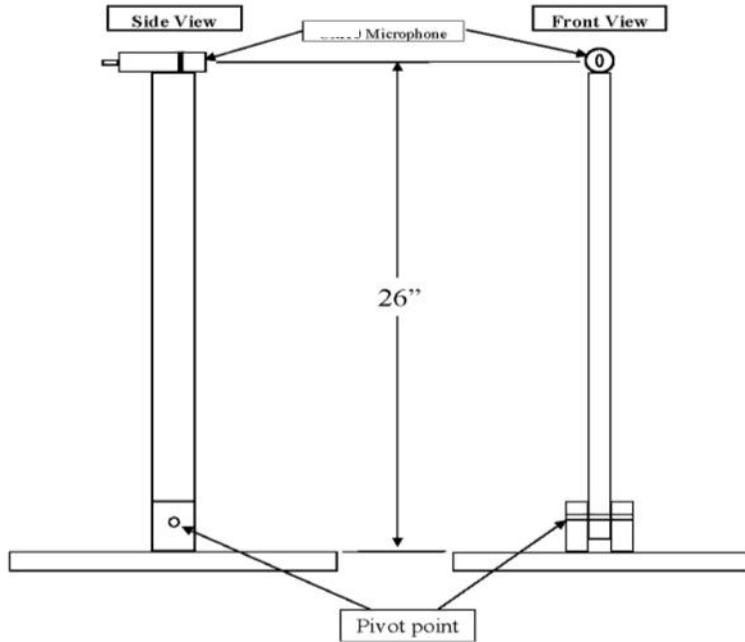
The SPL portion of testing will be measured at a “peak” SPL reading over 30 seconds. The cap is 130 dB; any system achieving a decibel level of 130 dB or greater will score the maximum 30 points.

Competitors do not have to keep their system operating for the full 30 seconds if they choose not to; once the maximum level has been achieved, they may shut the system down so as not to cause damage.

## RTA/SPL Challenge Judging Procedure

- The competitor must be completely prepared for the evaluation once they enter the RTA/SPL Challenge area; **there is no “set up time”** once the vehicle has entered the area. Competitors **may not**, at any time, physically remove, replace or add any components to their sound system, including **but not limited to**, amplifiers, speakers, subwoofers, equalizers, processors, crossovers and source units, once they have entered the RTA/SPL Challenge judging area.
- Once in the judging lane, seat positions must remain as they were **prior to** the vehicle entering the lane (seat travel, seat recliners, etc.) for RTA/SPL testing.
- The Judge will then position the stand with the microphone on the base of the driver’s seat and adjust the microphone to be level with the ground. The stand will position the microphone at *approximately* 26 inches above the base of the seat, simulating the approximate height of the driver’s ears. The competitor may supervise this procedure if they choose to. If the competitor is not happy with the microphone positioning and they wish for it to be adjusted, they may request this once.
- The Judge will then give the competitor the CD to be used for RTA testing. The competitor will then insert it into their CD player and go to the track to be used.
- The Judge will initially set the meter in the SPL mode and ask the competitor to adjust the volume until a reference level of 90dB is achieved.
- Once set, the competitor will set their CD player to repeat the track, exit the vehicle and join the judge at the meter.
- The testing will be performed as stated and the result will be recorded.
- Once RTA testing is completed, competitors have two (2) minutes to make any adjustments to their vehicle **or** system before being measured for SPL. Competitors **must** be ready for SPL judging when the Judge indicates that their two minute preparation time is over.
- Competitors not able to operate their system from outside may sit in the vehicle during SPL judging. If they choose to do so, they must sit in the passenger seat and they **must** wear proper hearing protection. If the system is able to be operated from outside the vehicle, IASCA highly recommends that they do so.
- All vehicle openings and panels (e.g. windows, doors, sunroofs, trunk, hood, hatch, etc.) must be fully closed and remain that way until testing is completed. AT NO POINT during testing is a panel allowed to be opened. Any panel opened (or open) during testing will void the run and the competitor will receive a score of zero (0).
- When ready, the competitor will give the Judge a signal that they are ready to compete. Once the judge receives the signal, they will begin the countdown and inform the competitor with a “5-4-3-2-1” fingers to fist countdown.
- When the Judge points at the competitor, the judging has started and will continue for 30 seconds. At 5 seconds before the end of the testing, the Judge will once again give the competitor a “5-4-3-2-1” fingers to fist countdown, then a “flat hand” wave, signifying the end of the testing .
- Once all testing is completed, the Judge will remove the microphone and stand from the vehicle, retrieve their CD and the competitor must immediately remove their vehicle from the RTA/SPL area.
- The Judges will record the competitor’s score on their score sheet and retain the score sheet for placement.
- In the event of a tie, the tiebreaker will fall back to the competitors’ SQC score. If a tie still remains, it will fall to the competitors’ Tonality score in SQC and from there follow the SQC tiebreaker scoring.

## RTA MICROPHONE STAND



RTA microphone jig - This jig is used to place the ..... J RTA microphone on the driver's seat of the vehicle at the correct height for measurement. The pivot point at the bottom allows the user to adjust the microphone stand so that the ..... is parallel with the ground, emulating the driver's listening position. The jig may be made of any material, although 3/4" MDF wood is ideal; the most important factor to remember when building an RTA jig is that it places the ..... microphone at precisely 26 inches from the top of the jig base. The jig base should be 12" x 12" in size. For the pivot point, any number of items can be used; a dowel, bolt & nut, etc. are all acceptable. The microphone may be fastened to the jig using a clamp or Velcro, as long as the tip of the microphone is not covered.

### RTA Microphone Height

