

IC-TAG LAP COUNTER TECHNICAL GUIDE

Easy to use Lap Counter !

By Team dNaNo & Mini-Z Development

In October, 2008, Kyosho's IC-Tag Lap Counter (Home Edition) finally went on sale!



Any racer of Mini-Z or dNano would like to find out where he ranks among other racers. To find out where his position is, it would be best to compare his speed with the other competitors. But to go out to a public circuit to test skills may be a bit too challenging for some.

Just right for those situation, the IC-Tag Lap-Counter will time and record your lap speed at the luxury of staying at home. Kindly refer to the following for details:(Japanese)

<http://www.dnano.jp/products/lapcounter.html>

This IC-Tag Lap Counter is simple to install and to operate.

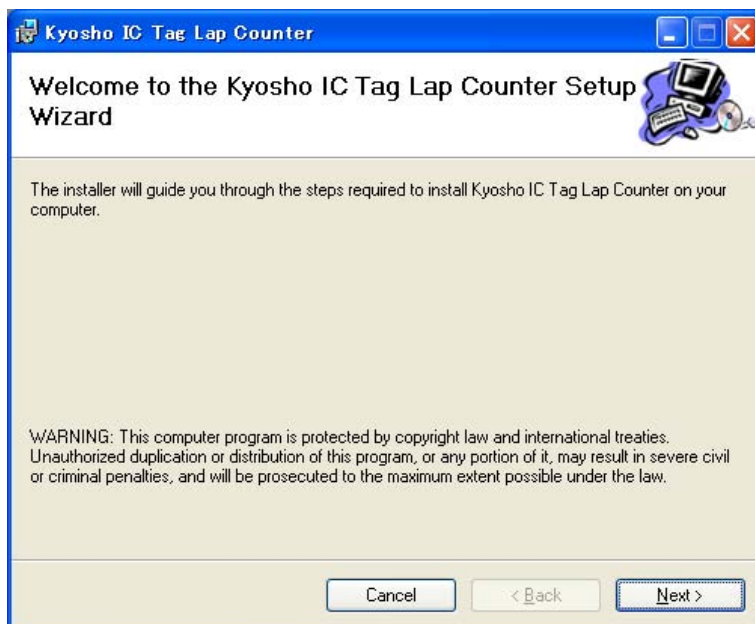
1. Place it under the mat of the circuit



2. Connect to a PC (USB)



3. Install the software.



4. By following the 3-step instruction of the program, it can be install with ease.

For details of the installation, kindly refer to the 6 pages of PDF file

http://www.kyosho.com/jpn/support/instructionmanual/dnano/pdf/IC_Tag_Lap_Counter_HE_Manual_EN.pdf

If you own dNaNo or Mini-Z with the IC Tag, this is definitely something that you wish to have.

However, this IC-Tag Lap Counter has some weaknesses and there are locations where the reception could be unstable. When installing, it is advisable to avoid the places and objects which could obstruct the reception.

This Technical Guide will advise on the troubleshooting methods.

Q&A ON RECORDING

Can't record! Unstable Recording! What to do!

When the recording is unstable and cannot record properly, check the following:

Q. Is the power cord (of Lap Counter) coiled, bound, or in a cord-reel?



A. When the power cord is coiled, bound or in reel, noise is likely to occur. Always have the cord stretched. If cord-reel is being used, pull out the entire cord.

Q. Are there other electric appliances close by?

A. There could be some variance in the cord of the electric appliance, but there will always be some noise being produced. Avoid having any other cords near the Lap Counter power cord.



Q. Is the Lap Counter connected to a multiple-outlet extension cord?



A. Although multiple-outlet extension cord is very useful, there will be noise when other appliances are also connected. If it is necessary to use an extension cord, unplug all the other appliances and only have the Lap Counter plugged. Also, keep all other appliances unplugged from the power source.

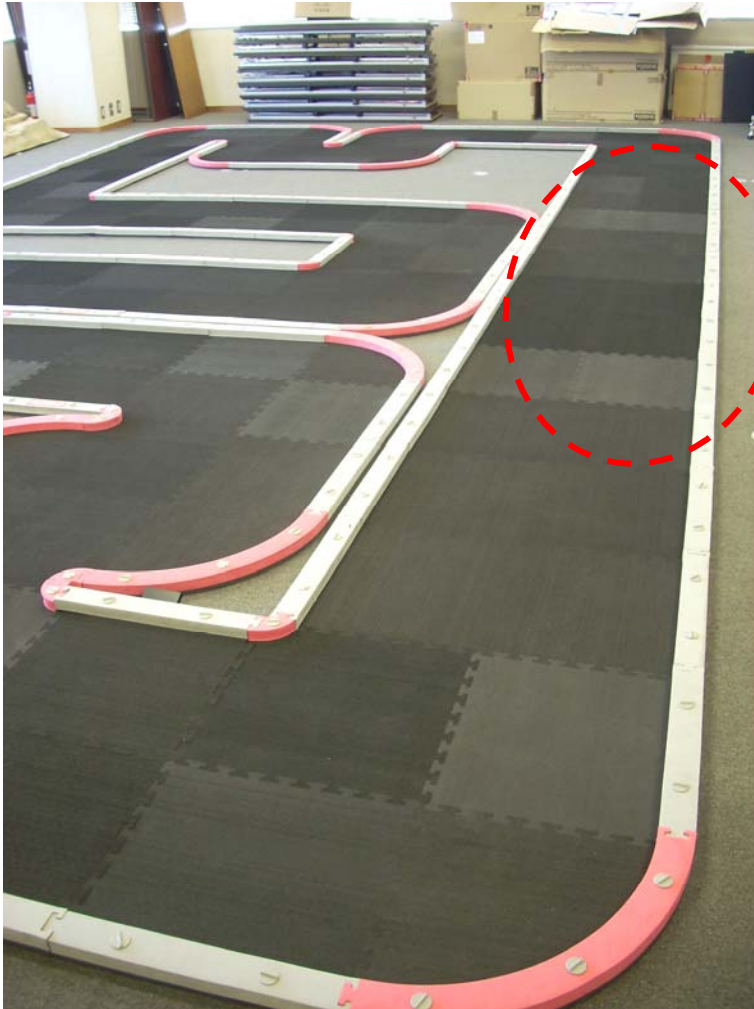
Q. Is the computer connected to external speaker?

A. Speakers greatly create noise and static electricity. If it is necessary that the speakers are connected, refer to [Measures against Noise/Earth] for detailed information. If the situation does not improve after various measures, there could be other reasons other than those mentioned above.

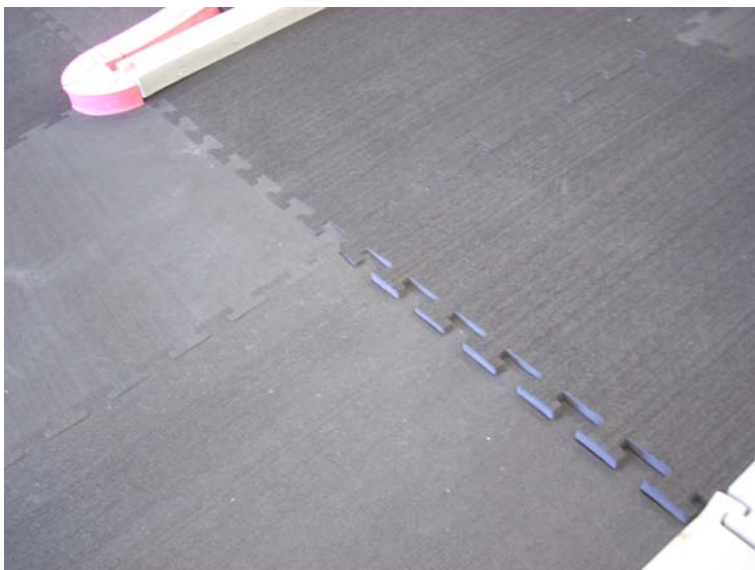
Q. Would there be a difference as to where the Lap Counter is installed on the circuit?

A. Avoid following areas of the circuit:

1. The sensitivity of the receptor decreases when it is placed in the middle of straight course.



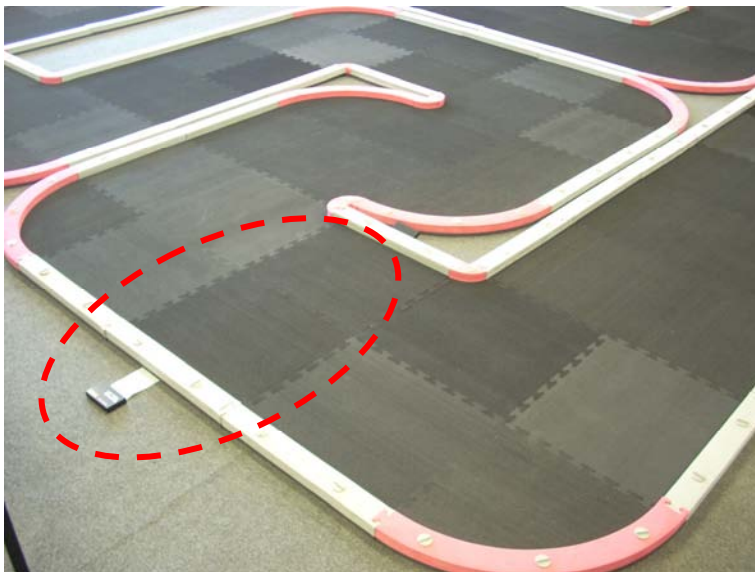
2. Area with gap or where crashes occur frequently usually lift the chassis and disable proper capturing of signals.



3. On a concrete floor, avoid places where there are 20cm and larger metallic surface.



Place the receptor on area, as shown on the picture.



Within the perimeter of about 20cm of the receptor, there should be no metallic object.

Place the receptor on the circuit where the speed will be reduced (such as at a position near a pin-curve).

Even if after all these conditions were tried, problem still exists, check the sensitivity of the lap counter.

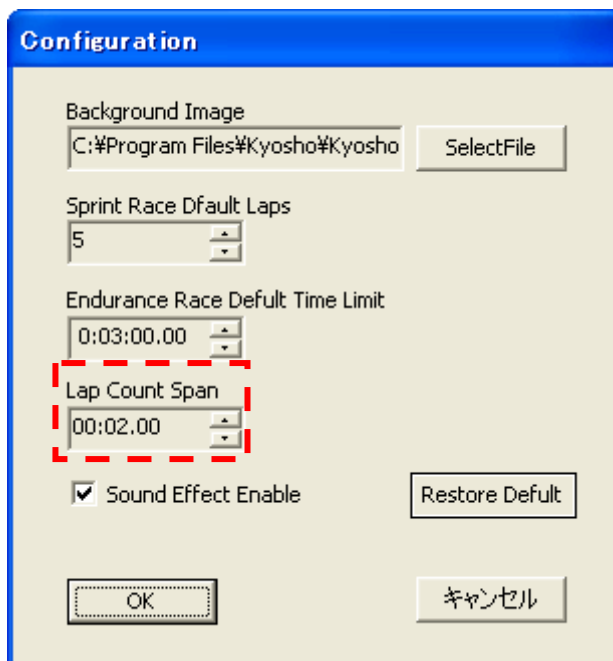
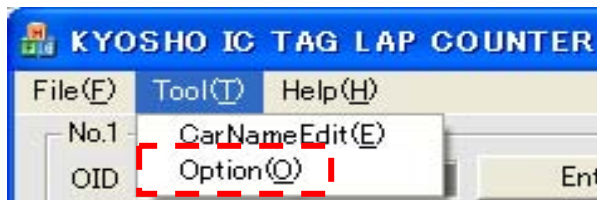
SIMPLE CHECK ON THE LAP COUNTER

1. Run to the CI-Tag Lap Counter



-Install the software from the CD-Rom enclosed with the IC-Tag Lap Counter.

2. When the program is installed, open and click [Tool] [Option] and set the [Lap Count Span] to 2 seconds. Refer to the picture.



3. From the main menu, select [Free Run] and click [Start]



4. Then, when dNano or Mini-Z (equipped with the IC Tag) is placed above the receptor, there will be a beeping sound to confirm the chassis is registered and measured.



5. Check the column under "Hit".

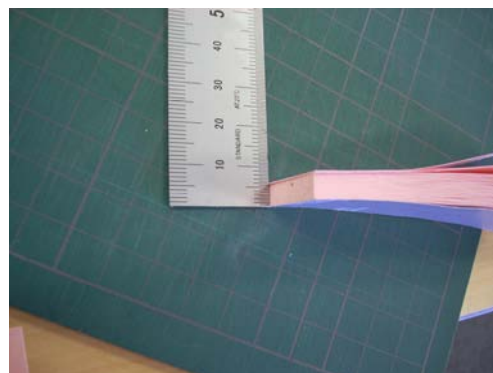
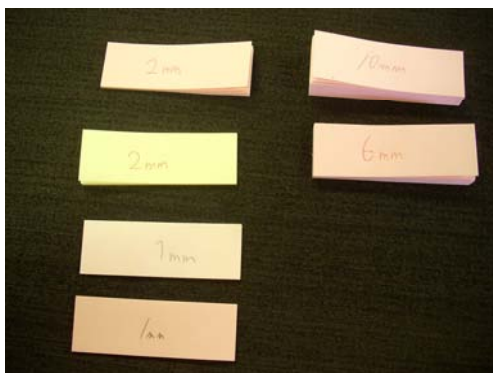
-The maximum "Hit" is 296.

-If the Hit rate is showing 150 or less, it means the receptor is not catching well the signal from the chassis. There is a possibility of a noise obstruction. (Refer to **METHODS TO REDUCE NOISE/EARTH**)

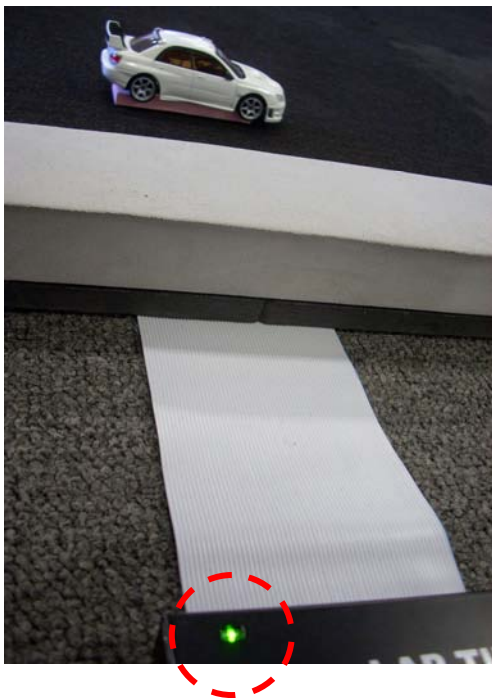
No.1
OID 10000063 [Green Box] Exit
Name
Lamborghini Murcielago LP640 P-Yellow
Laps Total Best Lap
7 00:35.41 [3]00:04.42 Clear
Table:
Laps Time Hit
7 00:02.00 296
6 00:02.00 295
5 00:02.00 296
4 00:02.00 294
3 00:02.00 296

Even if the Hit rate is between 150 to 296, it is not measuring properly, or if it remains unstable, try the following procedure:

1. Ready some pads of various thicknesses, which will be used to lift the chassis. Prepare pads (post-it, etc.) with thickness of 1mm, 2mm, 6mm and 10mm.



2. Firstly, have the 6mm pad right above the receptor and place the chassis on the pad and continue to increase the thickness until the green LED light on the receptor turns on.



3. The Hit rate should decrease to lower than 150.

If the pad is more than 7mm thick when the light turns on and the Hit rate is below 150, this is a normal condition.

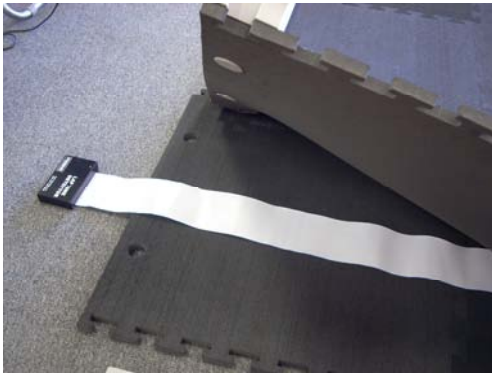
If the light turns on when the thickness of the pad is less than 7mm, further checking is required. Refer to **Methods to Reduce Noise/Earth** and increase the reception.

METHODS TO REDUCE NOISE/EARTH

Clear the Noise, Control the Earth and Improve Reception

A. Raise the receptor

If the circuit mats are of polyurethane, place another mat under the receptor and distance it from the floor.



B. Cover the receptor with Vinyl Tape



Use vinyl tape to cover the underside of the receptor to further cut-off direct contact with the floor.



- In doing so, ensure that both ends of the receptor are well covered-up by the vinyl tape.
- For carpet circuits, just by having the vinyl tape on the base of the carpet should improve reception.



C. Ferrite Core

Usage of ferrite core on power, USB and other cables may help improve reception. Rather than just having the cable through the ferrite core, it would be more effective to wind once around.

(The ferrite core shown on the picture is TDK ZCAT2032-0930.)

Note:

Just by having the ferrite core may not necessarily improve reception. The reception can be influenced by location, hardware such as PC, etc. Depending on where the ferrite core is placed, it could, in fact, decrease Hit rate.



D. Battery power (if the PC is a laptop or notebook type)

For portable PC, try switching from AC power to battery power and find out if the Hit rate improves.

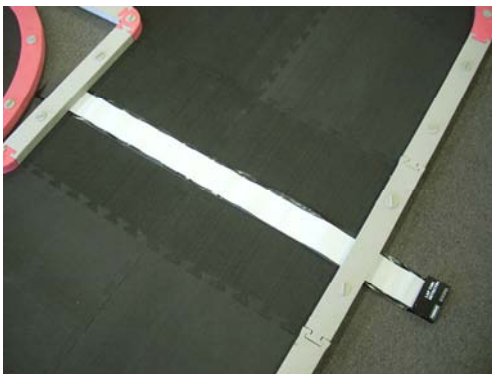
E. Receptor on the circuit

If the Hit rate still does not improve, try placing the receptor directly onto the circuit mat.

1. Use plastic folders. Open the flap by cutting the bound edge



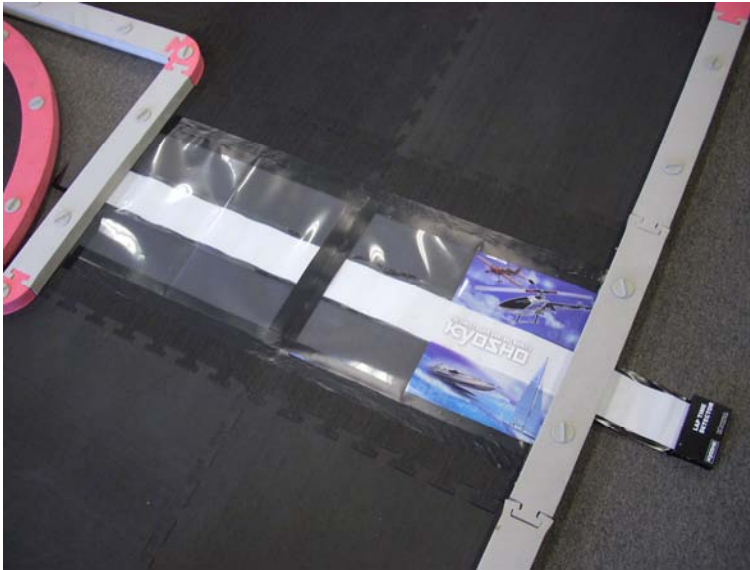
2. Place the receptor directly on the mat from wall to wall of the circuit. It may be better to stick vinyl tape on the underside of the receptor.



3. Cover the receptor with the plastic folders. Have the edges of the plastic under the walls of the circuit.



4. Tape the plastic to the circuit.



Miscellaneous

Decreased drive control over the receptor area

This receptor is releasing 13.56MHz radio wave. Depending on the environment, the frequency could double to 27.12MHz due to reflected waves. This could cause disruptions in driving control. Under such condition, avoid using crystals which are in sequence, for example, when do not use 3 and 4.

LET'S TRY GYMKHANA AT HOME

Once when the receptor is fixed, try Gymkhana at home.

Gymkhana is a time trial game of running through various points, marked by cones or other marks.

Space Required:

4mX3m space would be sufficient

Items to ready

1. Kyosho IC Tag Lap Counter - Home Edition
2. dNano or Mini-Z with IC tag.
3. Targets (cones, cans, plastic bottles, etc.) 5 to 7 pieces
4. 2 plastic folders
5. Adhesive tape

It is suggested that when using cans it would be better to fix them onto floor with adhesive tape and for plastic bottles, partially fill with water or sand to stabilize.

Caution:

When using adhesive tapes on floor, the adhesive may be left on the floor. It is advisable to use adhesive tapes that come off easily.

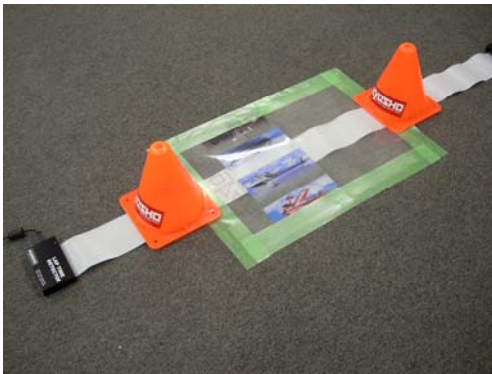
Set-up :

1. Place a target at the preferable position on the floor.



2. Then place the receptor on the floor and cover it with plastic folder.

3. On both ends, put cones, plastic bottles, etc. as gate.



Let's Driving:

Map the route. Start from the gate and slalom for the shortest and fastest course to return back to the gate. If played by a group, race for the best time.

