Basic Starting Setups for Supercharger Software

These are all just starting points for you to further adjust and refine for each car, driving style and track. These were developed by our team drivers around the world as a set of basic ESC settings. The different actions the ESC can deliver require you to further tune to your own tastes with the ultimate goal being lowest lap times. We recommend starting with these settings, and adjusting after 10 timed laps, and judge by the lap times if you need to go further in that direction, or the other way. No "extra timing" software is fully automatic for every situation, so experiment with all the options while looking at lap times to find what works best for you.

Starting from scratch:

1) Start with one of the slower FDR's for your track size and motor wind.
2) Start with #14 off and #15 at value 9
3) For the first few runs:

A) The first thing to set is the RPM delay/gearing for the straight. Run the car and adjust #13 to where the boost is kicking in where you want it, and you want to gear it to make sure the car is still digging (accelerating) a the end of the straight. You want it to where it just barely doesn't top out.
B) #14 works together with #13. Adjust it up from zero one value at a time until it's making the Supercharger engage later than it was before – then back it down one value.
C) Start making 10 lap runs and watch lap times. Adjust AMTS and DRRS to the levels that gives best lap times
D) Now you can tune the punch (#15) for the infield. Leave it alone if you've got enough rip already, or try the car one value at a time. This setting has a huge influence on overall motor heat, so monitor temps constantly when going from higher to lower values.
E) At this point, you should be set to go, or fine tune:

Fine tuning tips:

1) Different winds of motors are going to have different tolerance levels for overall boost and punch. It's easy to overboost a 13.5 at the max setting. Too much advance will make the motor slower on the straight and have less torque just like over gearing will. It will also dramatically increase motor heat just like over gearing. Once you've completed the above, you can experiment with more overall boost. You will most likely find a boost level that does NOT make for faster lap times than the next one lower. That's the motor's breaking point for that gear/boost/AMTS level. Back down the boost or the AMTS to the next lower setting.
2) Same process for punch – too much, and the motor will turn into a dog in the infield – back the punch down to a higher setting, or decrease AMTS.
3) For large sweeping tracks where you can actually use a little boost in the infield, experiment with #13 and 14 to find the right values to give you a little kick where you want it, but NOT where you don't want it.

WARNING:
Speed Passion Supercharger software is designed for most brands of stock motors which have low natural timing advance on the motor itself, or allow the user to select a motor advance level less than 10deg. The software works best when the ESC software alone provides all or most of the timing advance for normal running, and extra advance at higher RPMs to increase motor Kv and top speed.
Stock motors with very high natural advance levels (LRP X series, Ballistic, and possibly others) may easily be "over advanced" to an extreme degree, show low speed and power, and be damaged quickly when run with Supercharger software. Check with your motor manufacturer for it's natural advance levels and extra advance suitability before using with Supercharger ESC software.

Basic starting settings for 17.5 motor:
FDR: 6.0-6.5 Md/large tracks. 5.75-6.25 Very large tracks.
(raise FDR further for very high traction carpet, or very tight technical tracks)

1) 1
2) Personal preference
3) Personal preference
4) 8

DRRS works along with the Supercharger boost level setting. Higher DRRS (more punch) is traded for reduced top speed. The bigger and more open your track, the less DRRS you'll want in order to get max top speed on the straight. The shorter and tighter the track, you'll want more DRRS to keep the punch up, but at the expense of top end on the straight.

5) Personal Preference
6) Personal Preference
7) Personal preference – most use 1
8) Personal preference – most use 1
9) 7

Timing advance is a very critical setting that affects all parameters of performance. If a motor is given "too much" advance, it will have poor punch, poor speed, and overheat quickly. When it is given "just right" advance, it will have best top speed, best punch, and will run cool. When it is given "lower than optimal" advance, it will lack punch and top speed, and run cool. The higher the turn of motor, the higher the "just right" advance is. 17.5t in most cases "likes" high advance, while mod motors 8.5t and lower will tolerate decreasingly lower advance levels the lower the turns of motor. The load state of the motor also effects how much advance it "likes". Under heavy load (accelerating hard out of a slow corner) it "likes" lower advance. Running under low load (high RPM down the straight) it "likes" higher advance. This is the basic model for "extra advance" ESCs – allowing higher advance to be shown to the motor during low load and high rpm states.

The AMTS setting is linked to the Supercharger setting in that a "total advance" is shown to the motor when the Supercharger is engaged. That total advance is the sum of the AMTS setting, the physical advance on the motor, and the Supercharger level setting. Again, even though the motor is in the low load and high rpm state where it "likes" high advance, the cumulative total of these three advance settings may be high enough that the top speed is not optimal, and the motor is overheated.
Given the above, if you are not seeing the expected top speed performance, even though it seems like the wrong way, the first thing to do is lower the physical motor advance, or the AMTS setting so that the "just right" overall advance setting will yield top speed.
AMTS is also in effect (combined with physical motor advance) when the Supercharger is not active (low rpm/high load). Generally 17.5 "likes" a total of about 20deg in this state (depending on track surface grip and how tight the track is). But please see the #15 setting for yet another timing advance linked option in the overall chain of maximizing performance for the best understanding.

10) Personal preference
11) Place for future options – this setting does nothing right now.
12) 7

This is the overall Supercharger boost level. As above in the AMTS section, this is a combination of motor, AMTS, and Supercharger settings, so set them as a team for the desired top speed operation, and use #15 along with them to optimize punch.

13) Personal preference/gearing dependent. Most team testers have settled on setting 1, but use the setup procedures guide above to find the best setting for your track size and driving style.
14) Again, personal preference/gearing dependent. Use the setup procedures to find the best setting for your track. Most of the team drivers fall between setting 2 and 4 so far
15) 3

This is the final setting controlling advance before the Supercharger engages. As we've seen above, high AMTS settings may be useful to maximize top speed, but most testers have found a lack of punch when top speed settings are optimized. This setting artificially retards the AMTS setting at high load/low RPM states to help the motor stay cool, and gain back punch from being "over advanced". The higher the setting #, the less advance is being shown to the motor before the Supercharger engages, and therefore the cooler the motor will run, and likely to have more punch as well.

Basic starting settings for 13.5 motor:

FDR: 6.75-7.5 Md/large tracks. 6.25-7.0 Very large tracks.
(raise FDR further for very high traction carpet, or very tight technical tracks)

1) 1
2) Personal preference
3) Personal preference
4) 7

DRRS works along with the Supercharger boost level setting. Higher DRRS (more punch) is traded for reduced top speed. The bigger and more open your track, the less DRRS you'll want in order to get max top speed on the straight. The shorter and tighter the track, you'll want more DRRS to keep the punch up, but at the expense of top end on the straight.

5) Personal Preference
6) Personal Preference
7) Personal preference – most use 1
8) Personal preference – most use 1
9) 6

Timing advance is a very critical setting that affects all parameters of performance. If a motor is given "too much" advance, it will have poor punch, poor speed, and overheat quickly. When it is given "just right" advance, it will have best top speed, best punch, and will run cool. When it is given "lower than optimal" advance, it will lack punch and top speed, and run cool. The higher the turn of motor, the higher the "just right" advance is. 13.5t in most cases "likes" medium/high advance, while mod motors 8.5t and lower will tolerate decreasingly lower advance levels the lower the turns of motor. The load state of the motor also effects how much advance it "likes". Under heavy load (accelerating hard out of a slow corner) it "likes" lower advance. Running under low load (high RPM down the straight) it "likes" higher advance. This is the basic model for "extra advance" ESCs – allowing higher advance to be shown to the motor during low load and high rpm states.

The AMTS setting is linked to the Supercharger setting in that a "total advance" is shown to the motor when the Supercharger is engaged. That total advance is the sum of the AMTS setting, the physical advance on the motor, and the Supercharger level setting. Again, even though the motor is in the low load and high rpm state where it "likes" high advance, the cumulative total of these three advance settings may be high enough that the top speed is not optimal, and the motor is overheated.

Given the above, if you are not seeing the expected top speed performance, even though it seems like the wrong way, the first thing to do is lower the physical motor advance, or the AMTS setting so that the "just right" overall advance setting will yield top speed.

AMTS is also in effect (combined with physical motor advance) when the Supercharger is not active (low rpm/high load). Generally 13.5 "likes" a total of about 15deg in this state (depending on track surface grip and how tight the track is). But please see the #15 setting for yet another timing advance linked option in the overall chain of maximizing performance for the best understanding.

10) Personal preference
11) Place for future options – this setting does nothing right now.
12) 7

This is the overall Supercharger boost level. As above in the AMTS section, this is a combination of motor, AMTS, and Supercharger settings, so set them as a team for the desired top speed operation, and use #15 along with them to optimize punch.

13) Personal preference/gearing dependent. Most team testers have settled on setting 1, but use the setup procedures guide above to find the best setting for your track size and driving style.

14) Again, personal preference/gearing dependent. Use the setup procedures to find the best setting for your track. Most of the team drivers fall between setting 2 and 4 so far
15) 4

This is the final setting controlling advance before the Supercharger engages. As we've seen above, high AMTS settings may be useful to maximize top speed, but most testers have found a lack of punch when top speed settings are optimized. This setting artificially retards the AMTS setting at high load/low RPM states to help the motor stay cool, and gain back punch from being "over advanced". The higher the setting #, the less advance is being shown to the motor before the Supercharger engages, and therefore the cooler the motor will run, and likely to have more punch as well.

Basic starting settings for 10.5 motor:

FDR: 7.75-8.75 Md/large tracks. 7.0-8.0 Very large tracks.
(raise FDR further for very high traction carpet, or very tight technical tracks)

1) 1
2) Personal preference
3) Personal preference
4) 7

DRRS works along with the Supercharger boost level setting. Higher DRRS (more punch) is traded for reduced top speed. The bigger and more open your track, the less DRRS you'll want in order to get max top speed on the straight. The shorter and tighter the track, you'll want more DRRS to keep the punch up, but at the expense of top end on the straight.

5) Personal Preference
6) Personal Preference
7) Personal preference – most use 1
8) Personal preference – most use 1
9) 4

Timing advance is a very critical setting that affects all parameters of performance. If a motor is given "too much" advance, it will have poor punch, poor speed, and overheat quickly. When it is given "just right" advance, it will have best top speed, best punch, and will run cool. When it is given "lower than optimal" advance, it will lack punch and top speed, and run cool. The higher the turn of motor, the higher the "just right" advance is. 10.5t in most cases "likes" medium advance, while mod motors 8.5t and lower will tolerate decreasingly lower advance levels the lower the turns of motor. The load state of the motor also effects how much advance it "likes". Under heavy load (accelerating hard out of a slow corner) it "likes" lower advance. Running under low load (high RPM down the straight) it "likes" higher advance. This is the basic model for "extra advance" ESCs – allowing higher advance to be shown to the motor during low load and high rpm states.

The AMTS setting is linked to the Supercharger setting in that a "total advance" is shown to the motor when the Supercharger is engaged. That total advance is the sum of the AMTS setting, the physical advance on the motor, and the Supercharger level

setting. Again, even though the motor is in the low load and high rpm state where it "likes" high advance, the cumulative total of these three advance settings may be high enough that the top speed is not optimal, and the motor is overheated.

Given the above, if you are not seeing the expected top speed performance, even though it seems like the wrong way, the first thing to do is lower the physical motor advance, or the AMTS setting so that the "just right" overall advance setting will yield top speed.

AMTS is also in effect (combined with physical motor advance) when the Supercharger is not active (low rpm/high load). Generally 10.5 "likes" a total of about 10deg in this state (depending on track surface grip and how tight the track is). But please see the #15 setting for yet another timing advance linked option in the overall chain of maximizing performance for the best understanding.

10) Personal preference
11) Place for future options – this setting does nothing right now.
12) 3

This is the overall Supercharger boost level. As above in the AMTS section, this is a combination of motor, AMTS, and Supercharger settings, so set them as a team for the desired top speed operation, and use #15 along with them to optimize punch.

13) Personal preference/gearing dependent. Most team testers have settled on setting 1, but use the setup procedures guide above to find the best setting for your track size and driving style.
14) Again, personal preference/gearing dependent. Use the setup procedures to find the best setting for your track. Most of the team drivers fall between setting 2 and 4 so far
15) 6

This is the final setting controlling advance before the Supercharger engages. As we've seen above, high AMTS settings may be useful to maximize top speed, but most testers have found a lack of punch when top speed settings are optimized. This setting artificially retards the AMTS setting at high load/low RPM states to help the motor stay cool, and gain back punch from being "over advanced". The higher the setting #, the less advance is being shown to the motor before the Supercharger engages, and therefore the cooler the motor will run, and likely to have more punch as well.