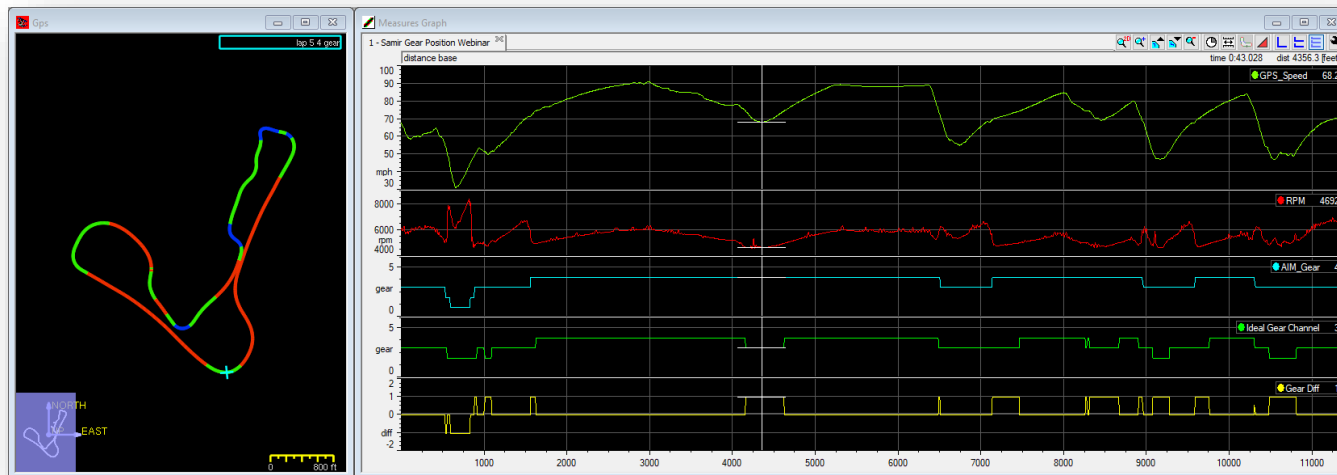




Co-Host
Samir Abid
Your Data Driven

Webinar Series

Bringing Data Support and Training to You

Remove All Gear Selection Doubts
The Gear Ratio Map!

2020 Webinar #50

www.aimsports.com



YouTube

1.800.718.9090

September 17th, 2020

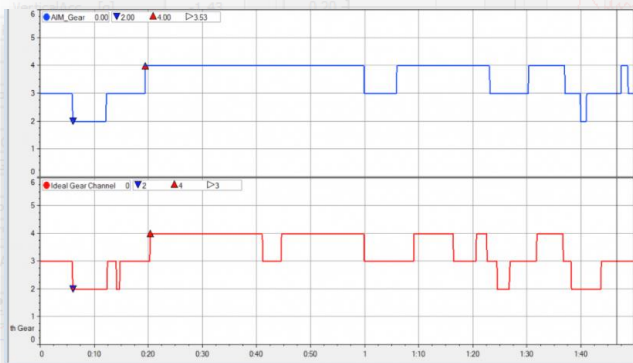
Samir Abid

Your Data Driven
hello@yourdatadriven.com



YourDataDriven

- Samir Abid is the founder of Your Data Driven and a Chartered Professional Motorsports and Automotive Engineer from the UK
- He developed suspension systems for several OEMs and racing teams (including Aston Martin, Jaguar, and Multimatic)
- Spent the last ten years working with Olympic and professional level sports teams, and is also a keen club racer



www.aimsports.com



YouTube

Samir Abid

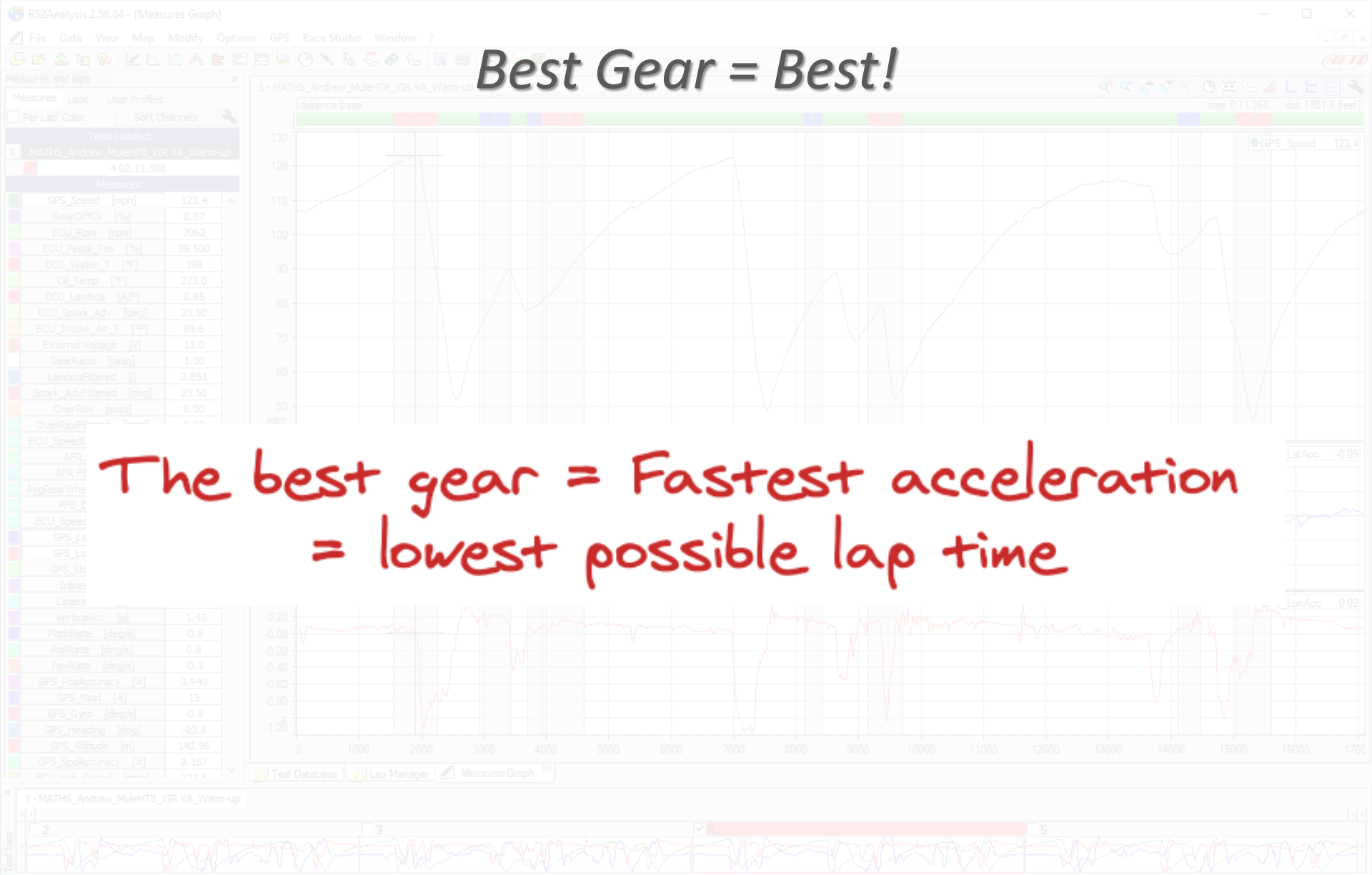
Your Data Driven





"Is that a 3rd or 4th gear corner?"
"When are you changing up?"
"What is the best RPM to change gear?"

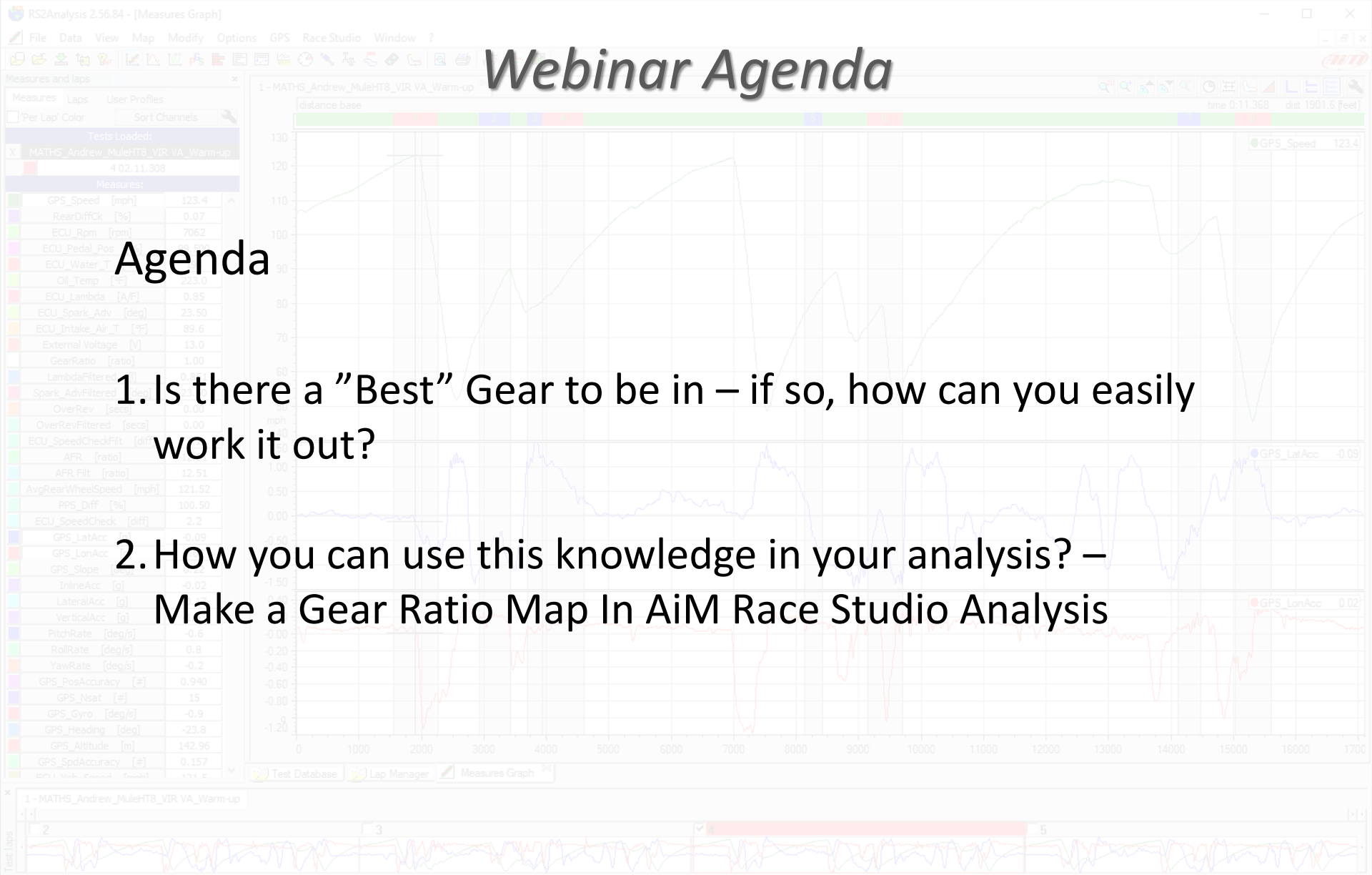


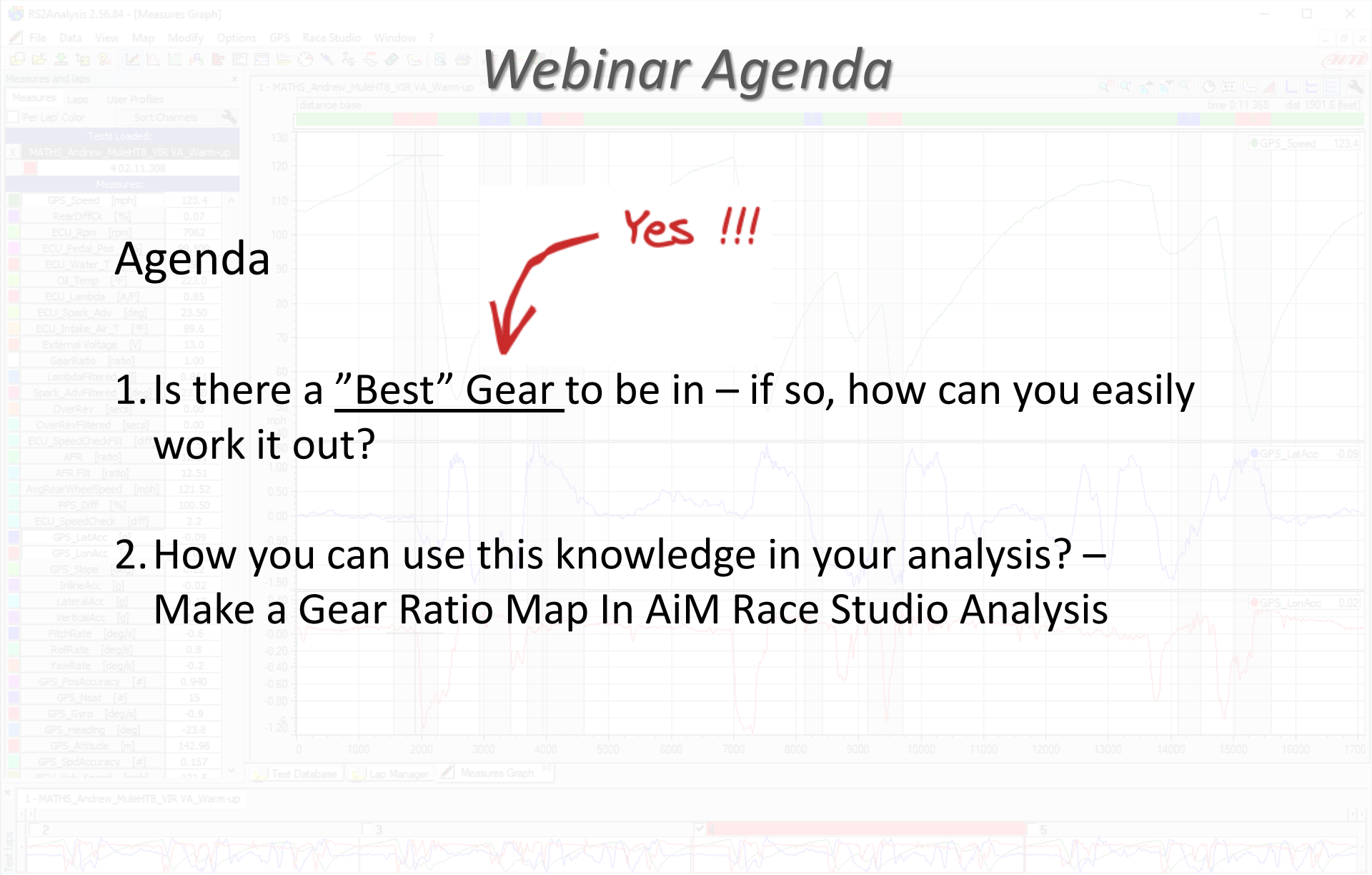


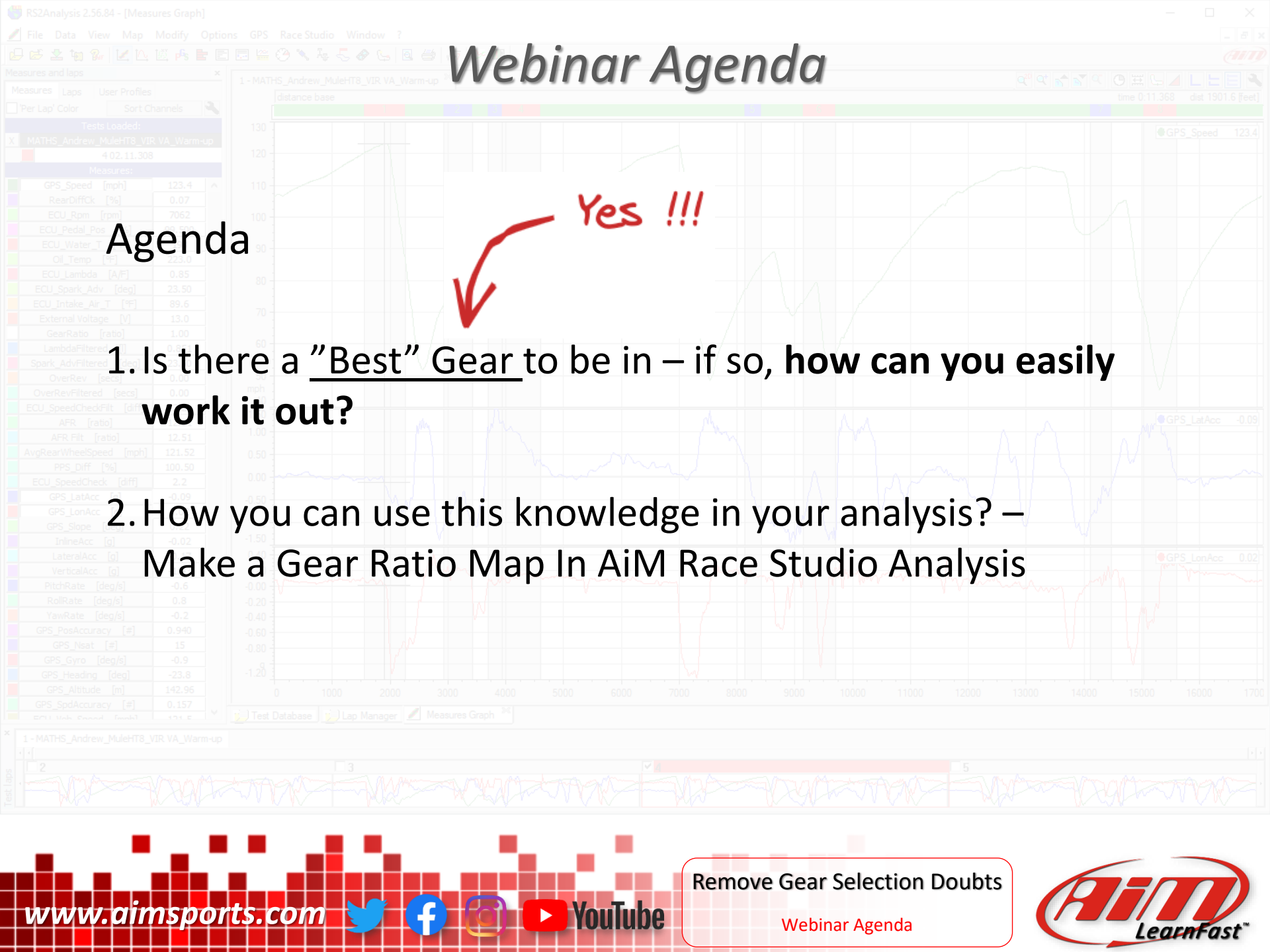
The best gear = Fastest acceleration
= lowest possible lap time



Know the best gear
to be in all around the lap







Webinar Agenda

Agenda

1. Is there a "Best" Gear to be in – if so, **how can you easily work it out?**
2. How you can use this knowledge in your analysis? –
Make a Gear Ratio Map In AiM Race Studio Analysis

Your Racing Car Data

Measures and Laps

Measures Laps User Profiles

Per Lap Color Sort Channels

Tests Loaded:

MATHS_Andrew_MuleHT8_VIR_VA_Warm-up

4 02:11.308

Measures:

GPS_Speed [mph]	123.4
RearDiffCk [%]	0.07
ECU_Rpm [rpm]	7062
ECU_Pedal_Pos [%]	99.500
ECU_Water_T [°F]	198
Oil_Temp [°F]	223.0
ECU_AmbTemp [°F]	130.0
ECU_AmbHum [%]	1.00
ECU_AmbPres [psi]	0.851
External_Voltage [V]	13.0
GearRatio [ratio]	1.00
LambdaFiltered []	0.851
Spark_AdvFiltered [deg]	23.50
OverRev [secs]	0.00
OverRevFiltered [secs]	0.00
ECU_SpeedCheckFilt [diff]	2.2
AFR [ratio]	12.51
AFR_Filt [ratio]	12.51
AvgRearWheelSpeed [mph]	121.52
RPS_Diff [%]	100.50
ECU_SpeedCheck [diff]	2.2
GPS_LatAcc [g]	-0.09
GPS_LonAcc [g]	0.02
GPS_Slope [deg]	0.22
InLineAcc [g]	-0.02
LateralAcc [g]	-0.17
VerticalAcc [g]	-1.43
PitchRate [deg/s]	-0.6
RollRate [deg/s]	0.8
YawRate [deg/s]	-0.2
GPS_PosAccuracy [ft]	0.940
GPS_Neat [ft]	15
GPS_Gyro [deg/s]	-0.9
GPS_Heading [deg]	-23.8
GPS_Altitude [ft]	1500
GPS_SpeedAccuracy [ft]	1500

3x Car Data:

Inputs: Your Racing Car Data

Gearing	Ratio
Final Drive	3.9
1st	3.136
2nd	1.888
3rd	1.33
4th	1
5th	0.814

Tyre Size	185	/	60	R	14
-----------	-----	---	----	---	----

Use: ☒ ft lb ☐ Nm

RPM	Torque ft lbs	Torque Nm
500	10	
1000	30	
1500	50	
2000	75	
2500	100	
3000	115	
3500	124	
4000	135	
4500	140	
5000	140	
5500	133	
6000	122	
6500	110	
7000	100	
7500	90	
8000	80	

<https://www.yourdatadriven.com/best-gear-change-rpm-guide-to-optimum-gear-shift-points-in-a-racing-car/>

OR ... Search Google: "Best gear change rpm"

Torque at Wheel in Each Gear

Measures and Laps

Measures Laps User Profiles

Per Lap Color Sort Channels

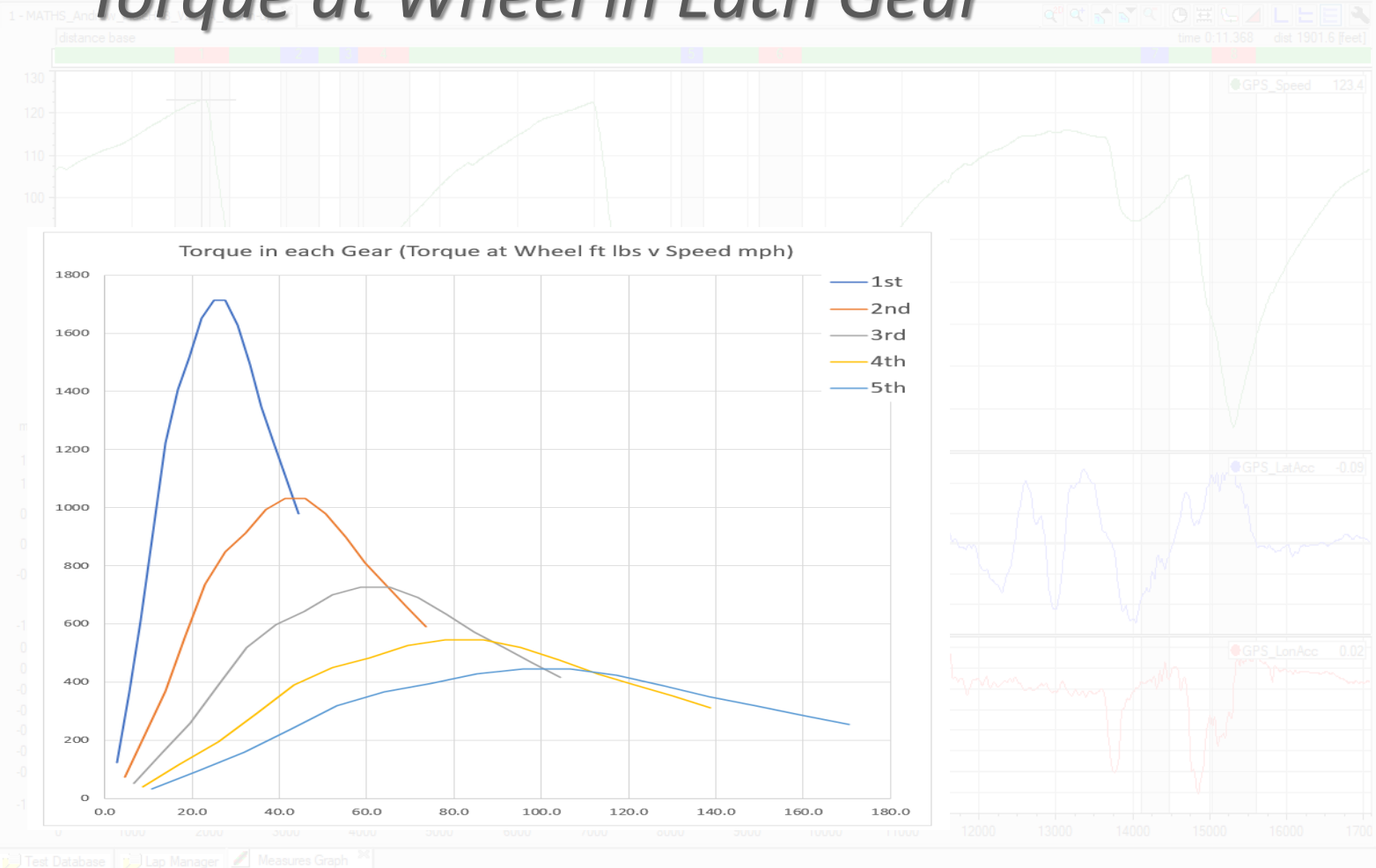
Tests Loaded:

MATHS_Andrew_MuleHT8_VIR_VA_Warm-up

4 02:11.308

Measures:

GPS_Speed [mph]	123.4
RearDiffCk [%]	0.07
ECU_Rpm [rpm]	7062
ECU_Pedal_Pos [%]	99.500
ECU_Water_T [°F]	198
Oil_Temp [°F]	223.0
ECU_Lambda [A/F]	0.85
ECU_Spark_Adv [deg]	23.50
ECU_Intake_Air_T [°F]	89.6
External_Voltage [V]	13.0
GearRatio [ratio]	1.00
LambdaFiltered []	0.851
Spark_AdvFiltered [deg]	23.50
OverRev [secs]	0.00
OverRevFiltered [secs]	0.00
ECU_SpeedCheckFilt [diff]	2.2
AFR [ratio]	12.51
AFR_Filt [ratio]	12.51
AvgRearWheelSpeed [mph]	121.52
RPS_Diff [%]	100.50
ECU_SpeedCheck [diff]	2.2
GPS_LatAcc [g]	-0.09
GPS_LonAcc [g]	0.02
GPS_Slope [deg]	0.22
InlineAcc [g]	-0.02
LateralAcc [g]	-0.17
VerticalAcc [g]	-1.43
PitchRate [deg/s]	-0.6
RollRate [deg/s]	0.8
YawRate [deg/s]	-0.2
GPS_PosAccuracy [°]	0.940
GPS_Neat [°]	15
GPS_Gyro [deg/s]	-0.9
GPS_Heading [deg]	-23.8
GPS_Altitude [m]	142.96
GPS_SpdAccuracy [°]	0.157
GPS_Heading [deg]	-23.8



Change Gear at Intersections

Measures and Laps

Measures Laps User Profiles

Per Lap Color Sort Channels

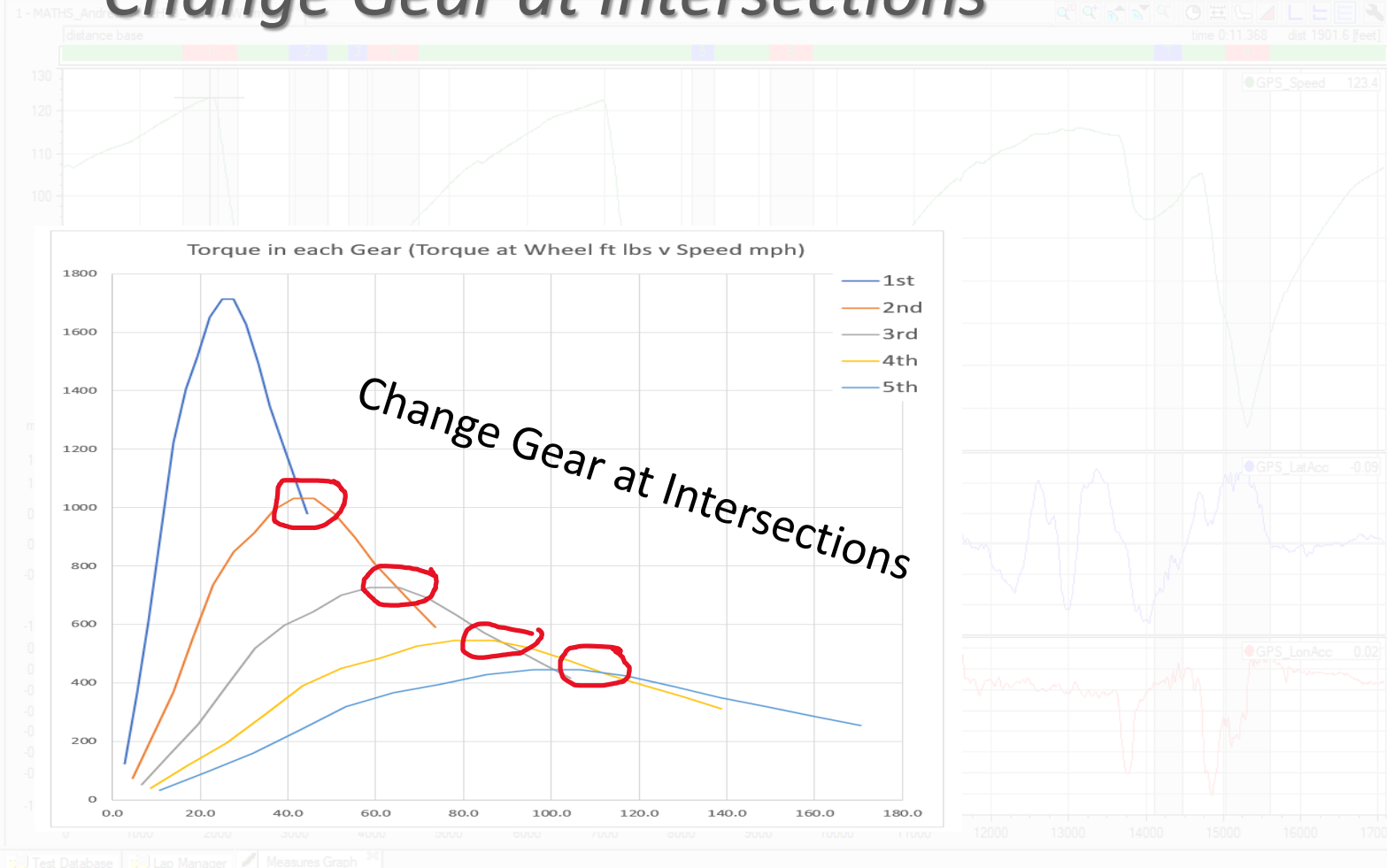
Tests Loaded:

MATHS_Andrew_MuleHT8_VIR_VA_Warm-up

4 02:11.308

Measures:

GPS_Speed [mph]	123.4
RearDiffCk [%]	0.07
ECU_Rpm [rpm]	7062
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ECU_Water_T [°F]	198
Oil_Temp [°F]	223.0
ECU_Lambda [A/F]	0.85
ECU_Spark_Adv [deg]	23.50
ECU_Intake_Air_T [°F]	89.6
External_Voltage [V]	13.0
GearRatio [ratio]	1.00
LambdaFiltered [I]	0.851
Spark_AdvFiltered [deg]	23.50
OverRev [secs]	0.00
OverRevFiltered [secs]	0.00
ECU_SpeedCheckFilt [diff]	2.2
AFR [ratio]	12.51
AFR_Filt [ratio]	12.51
AvgRearWheelSpeed [mph]	121.52
RPS_Diff [%]	100.50
ECU_SpeedCheck [diff]	2.2
GPS_LatAcc [g]	-0.09
GPS_LonAcc [g]	0.02
GPS_Slope [deg]	0.22
InLineAcc [g]	-0.02
LateralAcc [g]	-0.17
VerticalAcc [g]	-1.43
PitchRate [deg/s]	-0.6
RollRate [deg/s]	0.8
YawRate [deg/s]	-0.2
GPS_PosAccuracy [ft]	0.940
GPS_Neat [ft]	15
GPS_Gyro [deg/s]	-0.9
GPS_Heading [deg]	-23.8
GPS_Altitude [m]	142.96
GPS_SpdAccuracy [ft]	0.157
GPS_Heading [deg]	-23.8



Measures and Laps

Measures Laps User Profiles

Per Lap Color Sort Channels

Tests Loaded:

MATHS_Andrew_MuleHT8_VIR_VA_Warm-up

4 02:11.308

Measures:

GPS_Speed [mph]	123.4
RearDiff [°]	0.07
ECU_Fuel [g]	198
ECU_Water [°F]	223.0
Oil_Temp [°F]	223.0
ECU_Lambda [A/F]	0.85
ECU_Spark_Adv [deg]	23.50
ECU_Intake_Air_T [°F]	89.6
External Voltage [V]	13.0
GearRatio [ratio]	1.00
LambdaFiltered [°]	0.851
Spark_AdvFiltered [deg]	23.50
OverRev [secs]	0.00
OverRevFiltered [secs]	0.00
ECU_SpeedCheckFilt [diff]	2.2
AFR [ratio]	12.51
AFR_Filt [ratio]	12.51
AvgRearWheelSpeed [mph]	121.52
RPS_Diff [°]	100.50
ECU_SpeedCheck [diff]	2.2
GPS_LatAcc [g]	-0.09
GPS_LonAcc [g]	0.02
GPS_Slope [deg]	0.22
InlineAcc [g]	-0.02
LateralAcc [g]	-0.17
VerticalAcc [g]	-1.43
PitchRate [deg/s]	-0.6
RollRate [deg/s]	0.8
YawRate [deg/s]	-0.2
GPS_PosAccuracy [°]	0.940
GPS_Neat [°]	15
GPS_Gyro [deg/s]	-0.9
GPS_Heading [deg]	-23.8
GPS_Altitude [m]	142.96
GPS_SpdAccuracy [°]	0.157
GPS_Heading [deg]	171.0

Test Database Test 1

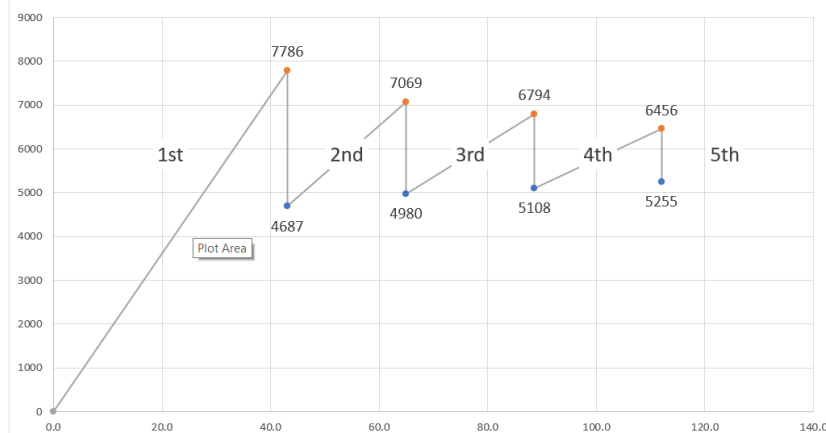
Result:

Calculated Optimum Shift Points

Optimum Gear Shift Points

	Gear	RPM		Speed (mph)	
		Min	Max	Min	Max
RPM TABLE	1st	-	7786	-	43.1
	2nd	4687	7069	43.1	64.9
	3rd	4980	6794	64.9	88.6
	4th	5108	6456	88.6	112.0
	5th	5255	-	112.0	-

Gear Shift Chart (Revs v Speed mph)



Remove Gear Selection Doubts

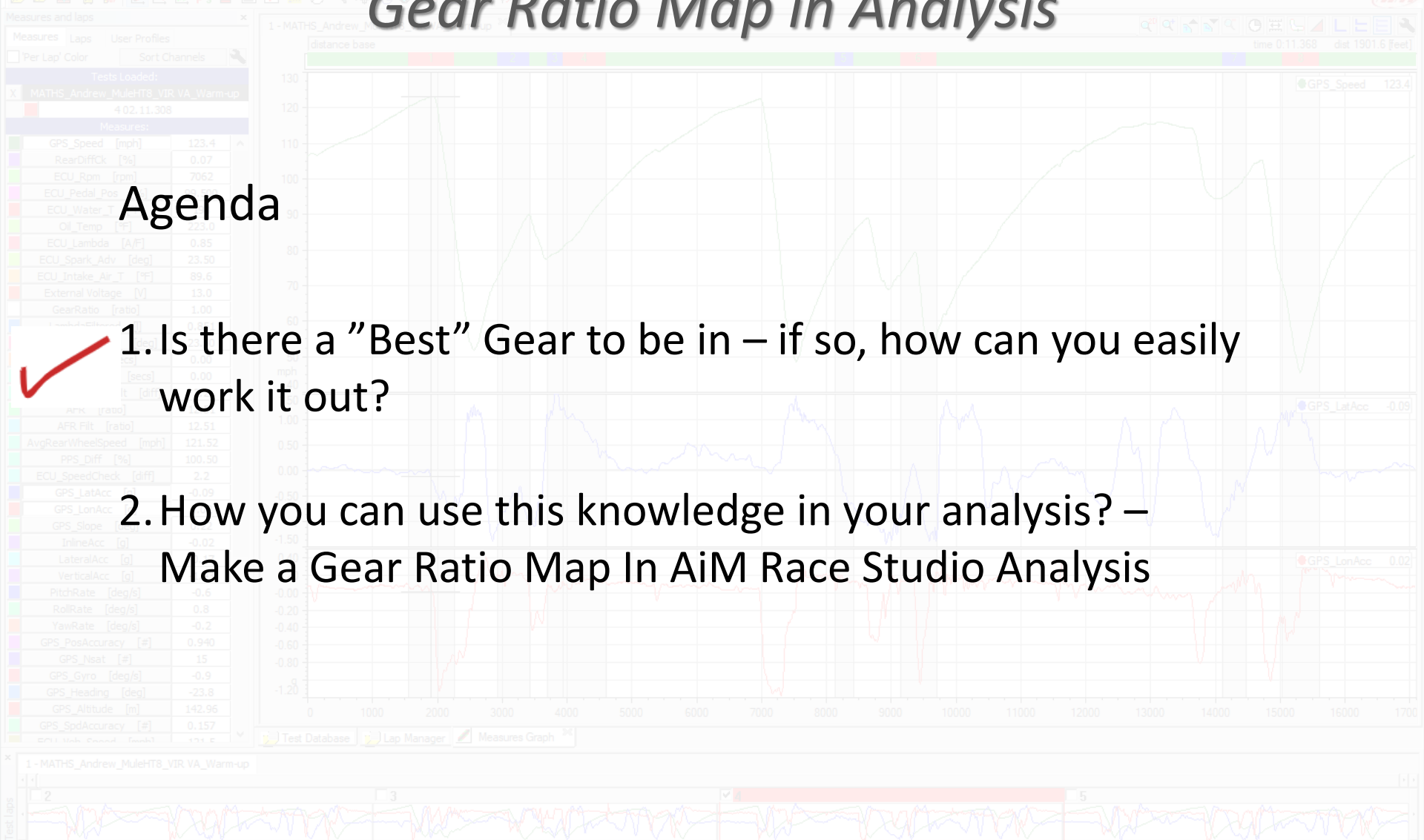
Calculated Optimum Shift Points

Gear Ratio Map in Analysis

Agenda

✓ 1. Is there a "Best" Gear to be in – if so, how can you easily work it out?

2. How you can use this knowledge in your analysis? –
Make a Gear Ratio Map In AiM Race Studio Analysis



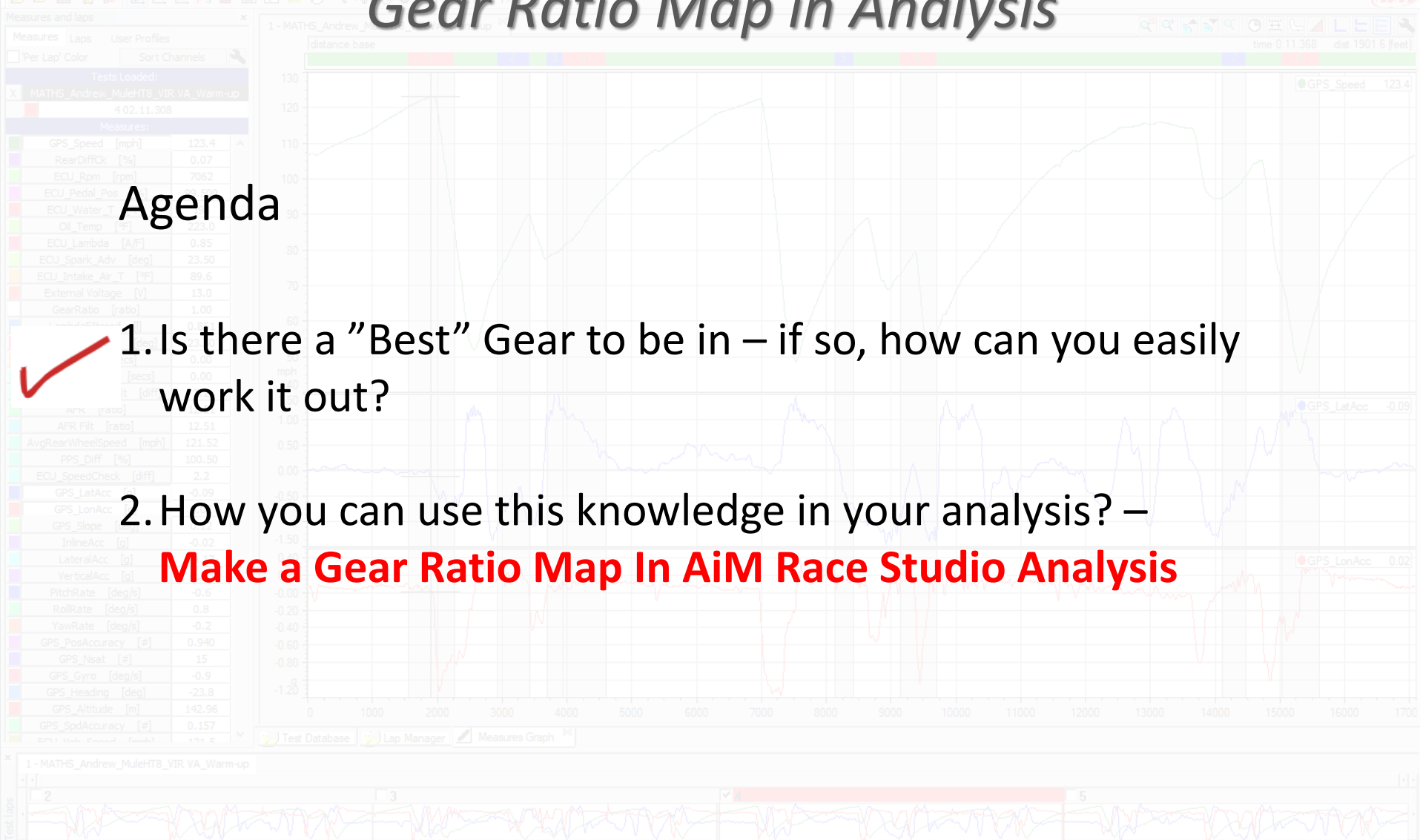
Gear Ratio Map in Analysis

Agenda

✓ 1. Is there a "Best" Gear to be in – if so, how can you easily work it out?

2. How you can use this knowledge in your analysis? –

Make a Gear Ratio Map In AiM Race Studio Analysis



Best Gear for Given Speed

Measures and Laps

Measures Laps User Profiles

Per Lap Color Sort Channels

Tests Loaded:

MATHS_Andrew_MuleHT8_VIR_VA_Warm-up

4 02:11.308

Measures:

GPS_Speed [mph]	123.4
RearDiffCk [%]	0.07
ECU_Rpm [rpm]	7062
ECU_Pedal_Pos [%]	99.500
ECU_Water_T [°F]	
Oil_Temp [°F]	
ECU_Lambda [A/F]	0.85
ECU_Spark_Adv [deg]	23.50
ECU_Intake_Air_T [°F]	89.6
External_Voltage [V]	13.0
GearRatio [ratio]	1.00
LambdaFiltered []	0.851
Spark_AdvFiltered [deg]	23.50
OverRev [secs]	0.00
OverRevFiltered [secs]	0.00
ECU_SpeedCheckFilt [diff]	2.2
AFR [ratio]	12.51
AFR_Filt [ratio]	12.51
AvgRearWheelSpeed [mph]	121.52
RPS_Diff [%]	100.50
ECU_SpeedCheck [diff]	2.2
GPS_LatAcc [g]	-0.09
GPS_LonAcc [g]	0.02
GPS_Slope [deg]	0.22
InlineAcc [g]	-0.02
LateralAcc [g]	-0.17
VerticalAcc [g]	-1.43
PitchRate [deg/s]	-0.6
RollRate [deg/s]	0.8
YawRate [deg/s]	-0.2
GPS_PosAccuracy [ft]	0.940
GPS_Healt [ft]	15
GPS_Gyro [deg/s]	-0.9
GPS_Heading [deg]	-23.8
GPS_Altitude [m]	142.96
GPS_SpdAccuracy [ft]	0.157

Best Gear For Given Speed:

Gear	Speed (mph)	
	Min	Max
1st	-	28.1
2nd	28.1	52.0
3rd	52.0	74.8
4th	74.8	

1 - MATHS_Andrew_MuleHT8_VIR_VA_Warm-up



Best Gear for Given Speed

Best Gear For Given Speed:

Gear	Speed (mph)	
	Min	Max
1st	-	28.1
2nd	28.1	52.0
3rd	52.0	74.8
4th	74.8	

Measures and Laps

Measures Laps User Profiles

Per Lap Color Sort Channels

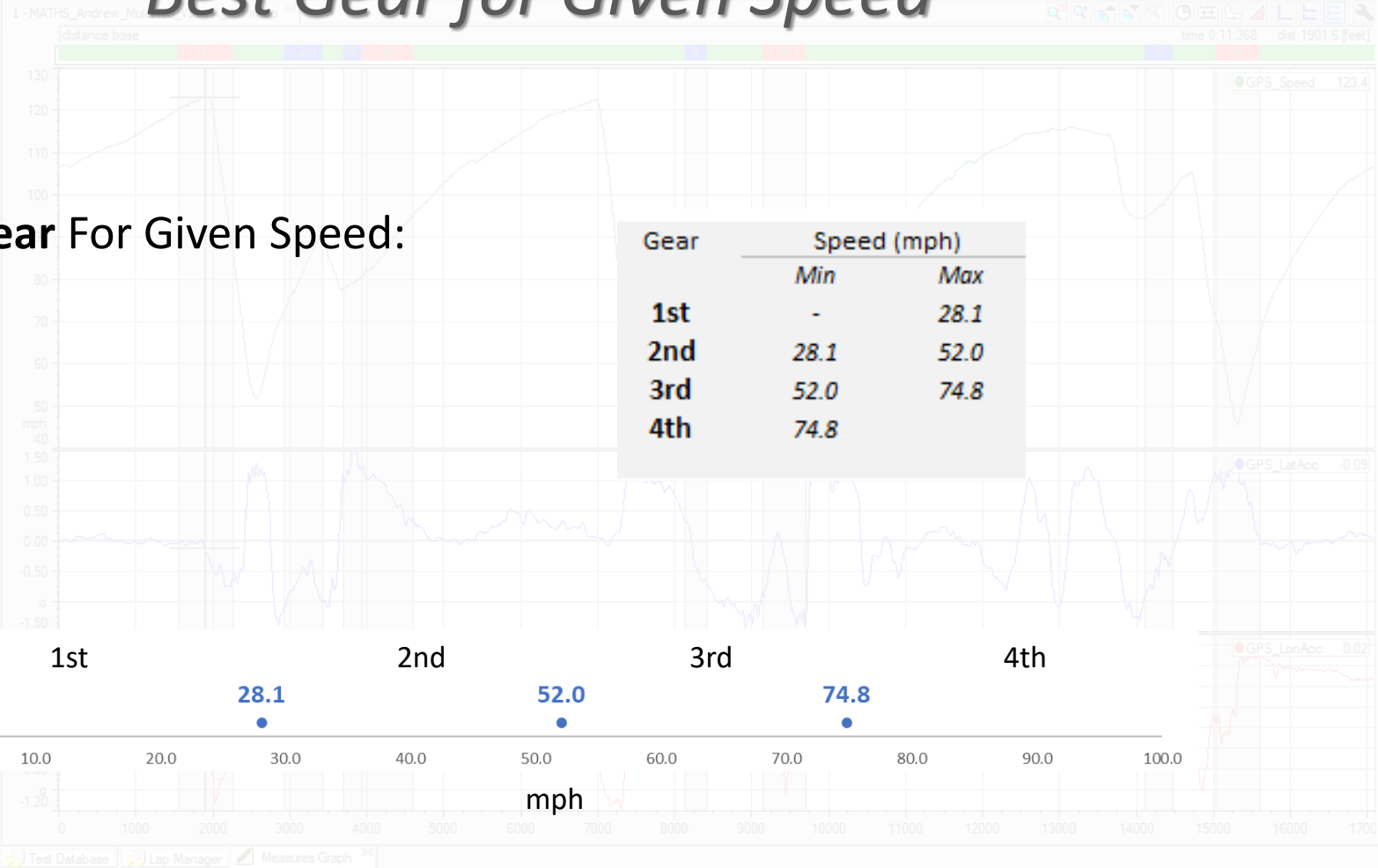
Tests Loaded:

MATHS_Andrew_MuleHT8_VIR_VA_Warm-up

4 02:11.308

Measures:

GPS_Speed [mph]	123.4
RearDiffCk [%]	0.07
ECU_Rpm [rpm]	7062
ECU_Pedal_Pos [%]	99.500
ECU_Water_T [°F]	
Oil_Temp [°F]	
ECU_Lambda [A/F]	0.85
ECU_Spark_Adv [deg]	23.50
ECU_Intake_Air_T [°F]	89.6
External_Voltage [V]	13.0
GearRatio [ratio]	1.00
LambdaFiltered []	0.851
Spark_AdvFiltered [deg]	23.50
OverRev [secs]	0.00
OverRevFiltered [secs]	0.00
ECU_SpeedCheckFilt [diff]	2.2
AFR [ratio]	12.51
AFR_Filt [ratio]	12.51
AvgRearWheelSpeed [mph]	121.52
RPS_Diff [%]	100.50
ECU_SpeedCheck [diff]	2.2
GPS_LatAcc [g]	-0.09
GPS_LonAcc [g]	0.02
GPS_Slope [deg]	0.22
InlineAcc [g]	-0.07
LateralAcc [g]	
VerticalAcc [g]	
PitchRate [deg/s]	
RollRate [deg/s]	
YawRate [deg/s]	
GPS_PosAccuracy [ft]	
GPS_Neat [ft]	
GPS_Gyro [deg/s]	-0.9
GPS_Heading [deg]	-23.8
GPS_Altitude [m]	142.96
GPS_SpdAccuracy [ft]	0.157
GPS_Heading [deg]	





Best Gear For Given Speed:

Gear	Speed (mph)	
	Min	Max
1st	-	28.1
2nd	28.1	52.0
3rd	52.0	74.8
4th	74.8	

Best Gear for Given Speed

Measures and Laps

Measures Laps User Profiles

Per Lap Color Sort Channels

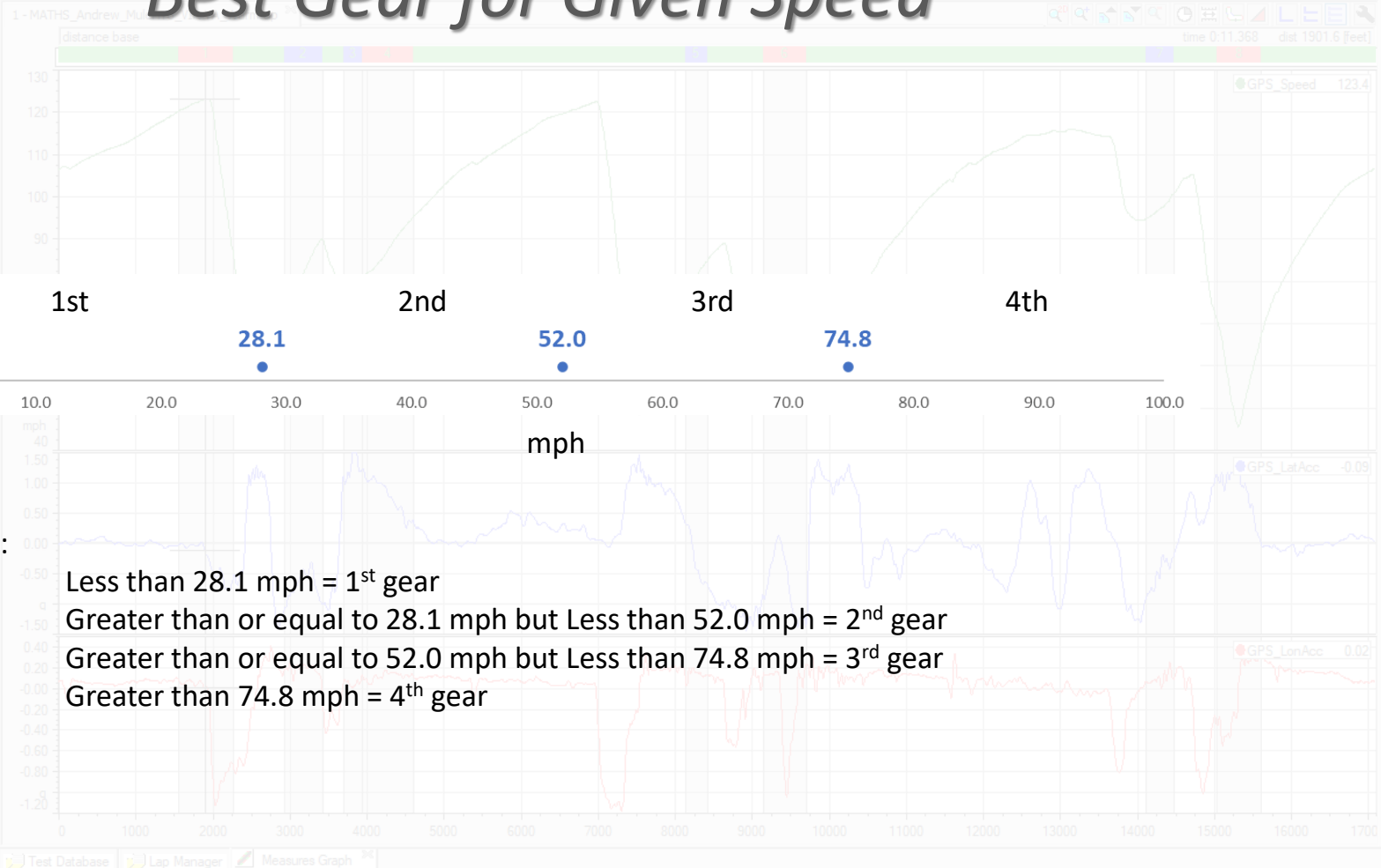
Tests Loaded:

MATHS_Andrew_MuleHT8_VIR_VA_Warm-up

4 02.11.308

Measures:

GPS_Speed [mph]	123.4
RearDiffCk [%]	0.07
ECU_Rpm [rpm]	7062
ECU_Pedal_Pos [%]	99.500
ECU_Water_T [°F]	198
Oil_Temp [°F]	223.0
ECU_Lambda [A/F]	n/a
ECU_Spark_Adv [deg]	
ECU_Intake_Air_T [°F]	
External_Voltage [V]	
GearRatio [ratio]	
LambdaFiltered [I]	
Spark_AdvFiltered [deg]	
OverRev [secs]	
OverRevFiltered [secs]	0.00
ECU_SpeedCheckFilt [diff]	2.2
AFR [ratio]	12.51
AFR_Filt [ratio]	12.51
AvgRearWheelSpeed [mph]	121.52
RPS_Diff [%]	
ECU_SpeedCheck [diff]	
GPS_LatAcc [g]	-0.09
GPS_LonAcc [g]	0.02
GPS_Slope [deg]	0.22
InlineAcc [g]	-0.02
LateralAcc [g]	-0.17
VerticalAcc [g]	-1.43
PitchRate [deg/s]	-0.6
RollRate [deg/s]	0.8
YawRate [deg/s]	-0.2
GPS_PosAccuracy [°]	0.940
GPS_Healt [°]	15
GPS_Gyro [deg/s]	-0.9
GPS_Heading [deg]	-23.8
GPS_Altitude [m]	142.96
GPS_SpdAccuracy [°]	0.157
GPS_Heading [deg]	171.0



If Speed:

Less than 28.1 mph = 1st gear

Greater than or equal to 28.1 mph but Less than 52.0 mph = 2nd gear

Greater than or equal to 52.0 mph but Less than 74.8 mph = 3rd gear

Greater than 74.8 mph = 4th gear

Ideal Gear AiM Math Channel

Measures and Laps		
Measures		
Tests Loaded:		
MATHS_Andrew_MuleHT8_VIR_VA_Warm-up		
4 02:11.308		
Measures:		
GPS_Speed [mph]	123.4	
RearDiffCk [%]	0.07	
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ECU_Pedal_Pos [%]	99.500	
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Oil_Temp [°F]	223.0	
ECU_Lambda [A/F]	n/a	
ECU_Spark_Adv [deg]		
ECU_Intake_Air_T [°F]		
External_Voltage [V]		
GearRatio [ratio]		
LambdaFiltered [I]		
Spark_AdvFiltered [deg]		
OverRev [secs]		
OverRevFiltered [secs]	0.00	
ECU_SpeedCheck [diff]	2.2	
AFR [ratio]	12.51	
AFR_Filt [ratio]	12.51	
AvgRearWheelSpeed [mph]	121.52	
RPS_Diff [%]		
ECU_SpeedCheck [diff]		
GPS_LatAcc [g]	-0.09	
GPS_LonAcc [g]	0.02	
GPS_Slope [deg]	0.22	
InLineAcc [g]	-0.02	
LateralAcc [g]	-0.17	
VerticalAcc [g]	-1.43	
PitchRate [deg/s]	-0.6	
RollRate [deg/s]	0.8	
YawRate [deg/s]	-0.2	
GPS_PosAccuracy [ft]	0.940	
GPS_Healt [ft]	15	
GPS_Gyro [deg/s]	-0.9	
GPS_Heading [deg]	-23.8	
GPS_Altitude [m]	142.96	
GPS_SpdAccuracy [ft]	0.157	
GPS_Veh_Speed [mph]	123.4	

If Speed:

Less than 28.1 mph = 1st gear

Greater than or equal to 28.1 mph but Less than 52.0 mph = 2nd gear

Greater than or equal to 52.0 mph but Less than 74.8 mph = 3rd gear

Greater than 74.8 mph = 4th gear

IF(LT(GPS_Speed,28.1),1,IF(LT(GPS_Speed,52),2,IF(LT(GPS_Speed,74.8),3,4)))

AiM Math Channel

Ideal Gear AiM Math Channel

Measures	Laps	User Profiles
☐ Per Lap Color		Sort Channels
Tests Loaded:		
MATHS_Andrew_MuleHT8_VIR_VA_Warm-up		
4 02:11.308		
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Oil_Temp [°F]	223.0	
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ECU_Spark_Adv [deg]		
ECU_Intake_Air_T [°F]		
External_Voltage [V]		
GearRatio [ratio]		
LambdaFiltered [I]		
Spark_AdvFiltered [deg]		
OverRev [secs]		
OverRevFiltered [secs]	0.00	
ECU_SpeedCheck [diff]	2.2	
AFR [ratio]	12.51	
AFR_Filt [ratio]	12.51	
AvgRearWheelSpeed [mph]	121.52	
RPS_Diff [%]		
ECU_SpeedCheck [diff]		
GPS_LatAcc [g]	-0.09	
GPS_LonAcc [g]	0.02	
GPS_Slope [deg]	0.22	
InlineAcc [g]	-0.02	
LateralAcc [g]	-0.17	
VerticalAcc [g]	-1.43	
PitchRate [deg/s]	-0.6	
RollRate [deg/s]	0.8	
YawRate [deg/s]	-0.2	
GPS_PosAccuracy [ft]	0.940	
GPS_Heading [deg]	-23.8	
GPS_Altitude [m]	142.9	
GPS_SpeedAccuracy [ft]	0.157	

If Speed:

Less than 28.1 mph = 1st gear

Greater than or equal to 28.1 mph but Less than 52.0 mph = 2nd gear

Greater than or equal to 52.0 mph but Less than 74.8 mph = 3rd gear

Greater than 74.8 mph = 4th gear

$$\text{IF}(\text{LT}(\text{GPS_Speed}, 28.1), 1, \text{IF}(\text{LT}(\text{GPS_Speed}, 52), 2, \text{IF}(\text{LT}(\text{GPS_Speed}, 74.8), 3, 4)))$$

AiM Math Channel

Ideal Gear AiM Math Channel

Measures	Laps	User Profiles
☐ Per Lap Color		Sort Channels
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ECU_Pedal_Pos [%]	99.500	
ECU_Water_T [°F]	198	
Oil_Temp [°F]	223.0	
ECU_Lambda [A/F]	n/a	
ECU_Spark_Adv [deg]		
ECU_Intake_Air_T [°F]		
External_Voltage [V]		
GearRatio [ratio]		
LambdaFiltered [I]		
Spark_AdvFiltered [deg]		
OverRev [secs]		
OverRevFiltered [secs]	0.00	
ECU_SpeedCheck [diff]	2.2	
AFR [ratio]	12.51	
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AvgRearWheelSpeed [mph]	121.52	
RPS_Diff [%]		
ECU_SpeedCheck [diff]		
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GPS_LonAcc [g]	0.02	
GPS_Slope [deg]	0.22	
InlineAcc [g]	-0.02	
LateralAcc [g]	-0.17	
VerticalAcc [g]	-1.43	
PitchRate [deg/s]	-0.6	
RollRate [deg/s]	0.8	
YawRate [deg/s]	-0.2	
GPS_PosAccuracy [ft]	0.940	
GPS_Heading [deg]	-9.9	
GPS_Heading [deg]	-23.8	
GPS_Altitude [m]	142.96	
GPS_SpeedAccuracy [ft]	0.157	
GPS_SpeedAccuracy [ft]	1.71 E	

If Speed:

Less than 28.1 mph = 1st gear

Greater than or equal to 28.1 mph but Less than 52.0 mph = 2nd gear

Greater than or equal to 52.0 mph but Less than 74.8 mph = 3rd gear

Greater than 74.8 mph = 4th gear

$$\text{IF}(\text{LT}(\text{GPS_Speed}, 28.1), 1, \text{IF}(\text{LT}(\text{GPS_Speed}, 52), 2, \text{IF}(\text{LT}(\text{GPS_Speed}, 74.8), 3, 4)))$$

AiM Math Channel

Ideal Gear AiM Math Channel

Measures	Laps	User Profiles
☐ Per Lap Color		Sort Channels
Tests Loaded:		
MATHS_Andrew_MuleHT8_VIR_VA_Warm-up		
4 02:11.308		
Measures:		
GPS_Speed [mph]	123.4	
RearDiffCk [%]	0.07	
ECU_Rpm [rpm]	7062	
ECU_Pedal_Pos [%]	99.500	
ECU_Water_T [°F]	198	
Oil_Temp [°F]	223.0	
ECU_Lambda [A/F]	n/a	
ECU_Spark_Adv [deg]		
ECU_Intake_Air_T [°F]		
External_Voltage [V]		
GearRatio [ratio]		
LambdaFiltered [I]		
Spark_AdvFiltered [deg]		
OverRev [secs]		
OverRevFiltered [secs]	0.00	
ECU_SpeedCheck [diff]	2.2	
AFR [ratio]	12.51	
AFR_Filt [ratio]	12.51	
AvgRearWheelSpeed [mph]	121.52	
RPS_Diff [%]		
ECU_SpeedCheck [diff]		
GPS_LatAcc [g]	-0.09	
GPS_LonAcc [g]	0.02	
GPS_Slope [deg]	0.22	
InlineAcc [g]	-0.02	
LateralAcc [g]	-0.17	
VerticalAcc [g]	-1.43	
PitchRate [deg/s]	-0.6	
RollRate [deg/s]	0.8	
YawRate [deg/s]	-0.2	
GPS_PosAccuracy [ft]	0.940	
GPS_Heading [deg]	-23.8	
GPS_Altitude [m]	142.9	
GPS_SpeedAccuracy [ft]	0.157	
GPS_Heading [deg]	171.5	

If Speed:

Less than 28.1 mph = 1st gear

Greater than or equal to 28.1 mph but Less than 52.0 mph = 2nd gear

Greater than or equal to 52.0 mph but Less than 74.8 mph = 3rd gear

Greater than 74.8 mph = 4th gear

$$\text{IF}(\text{LT}(\text{GPS_Speed}, 28.1), 1, \text{IF}(\text{LT}(\text{GPS_Speed}, 52), 2, \text{IF}(\text{LT}(\text{GPS_Speed}, 74.8), 3, 4)))$$

AiM Math Channel

Ideal Gear AiM Math Channel

Measures	Laps	User Profiles
☐ Per Lap Color		Sort Channels
Tests Loaded:		
MATHS_Andrew_MuleHT8_VIR_VA_Warm-up		
4 02:11.308		
Measures:		
GPS_Speed [mph]	123.4	
RearDiffCk [%]	0.07	
ECU_Rpm [rpm]	7062	
ECU_Pedal_Pos [%]	99.500	
ECU_Water_T [°F]	198	
Oil_Temp [°F]	223.0	
ECU_Lambda [A/F]	n/a	
ECU_Spark_Adv [deg]		
ECU_Intake_Air_T [°F]		
External_Voltage [V]		
GearRatio [ratio]		
LambdaFiltered [I]		
Spark_AdvFiltered [deg]		
OverRev [secs]		
OverRevFiltered [secs]	0.00	
ECU_SpeedCheck [diff]	2.2	
AFR [ratio]	12.51	
AFR_Flt [ratio]	12.51	
AvgRearWheelSpeed [mph]	121.52	
RPS_Diff [%]		
ECU_SpeedCheck [diff]		
GPS_LatAcc [g]	-0.09	
GPS_LonAcc [g]	0.02	
GPS_Slope [deg]	0.22	
InlineAcc [g]	-0.02	
LateralAcc [g]	-0.17	
VerticalAcc [g]	-1.43	
PitchRate [deg/s]	-0.6	
RollRate [deg/s]	0.8	
YawRate [deg/s]	-0.2	
GPS_PosAccuracy [ft]	0.940	
GPS_Healt [ft]	15	
GPS_Gyro [deg/s]	-0.9	
GPS_Heading [deg]	-23.8	
GPS_Altitude [m]	142.94	
GPS_SpdAccuracy [ft]	0.157	
GPS_Veh_Correl [ft/s]	1.71	

If Speed:

Less than 28.1 mph = 1st gear

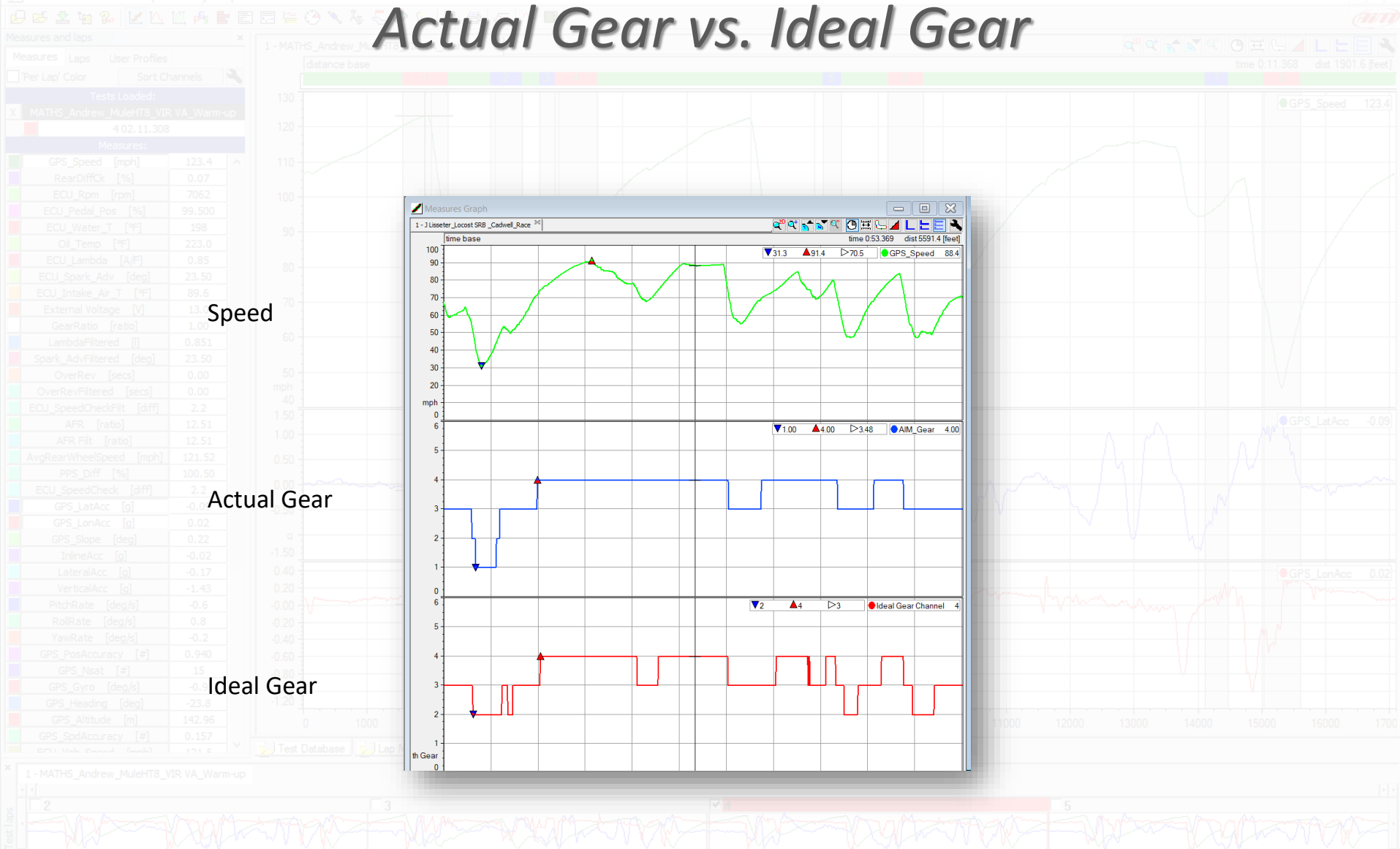
Greater than or equal to 28.1 mph but Less than 52.0 mph = 2nd gear

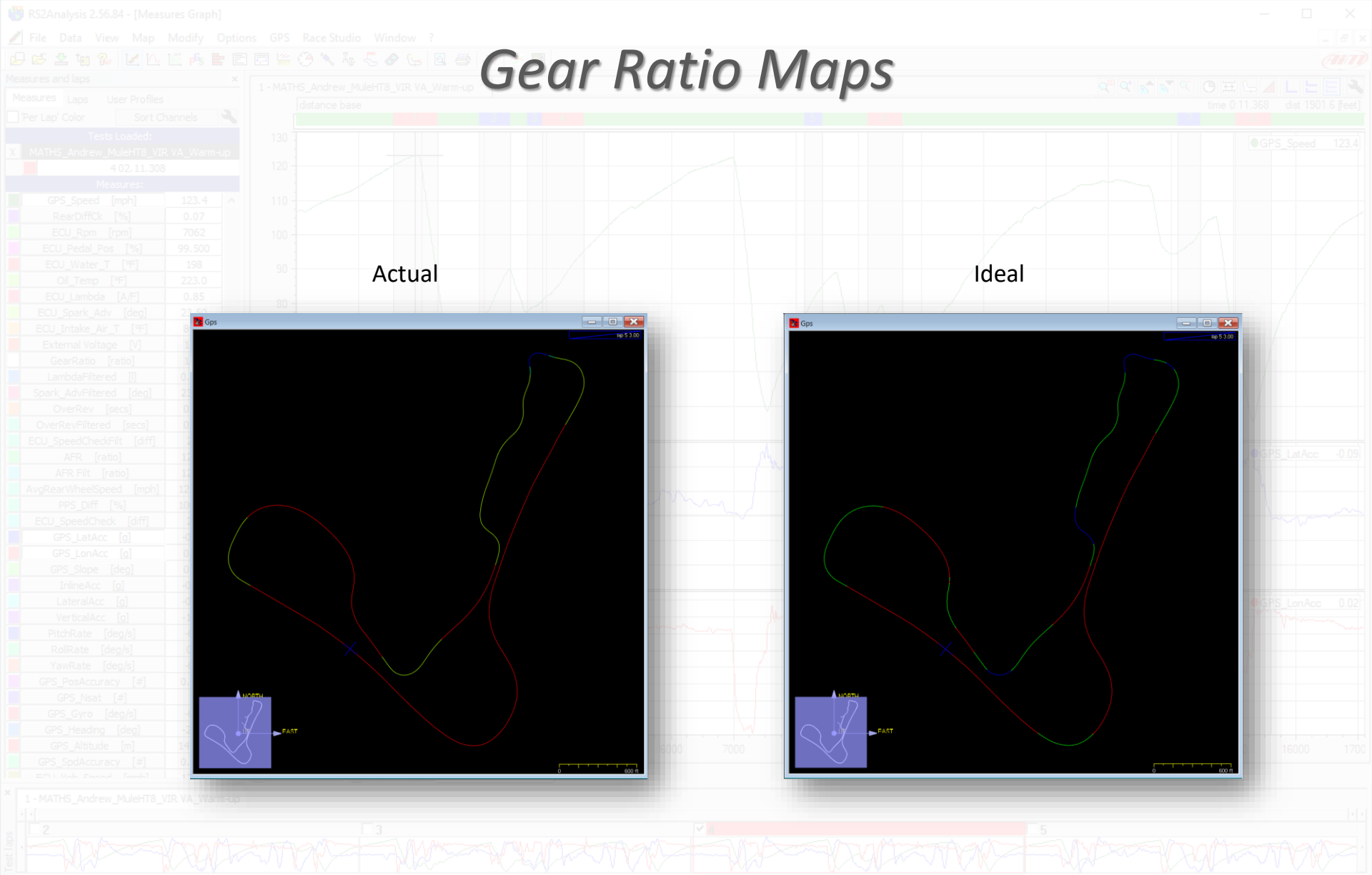
Greater than or equal to 52.0 mph but Less than 74.8 mph = 3rd gear

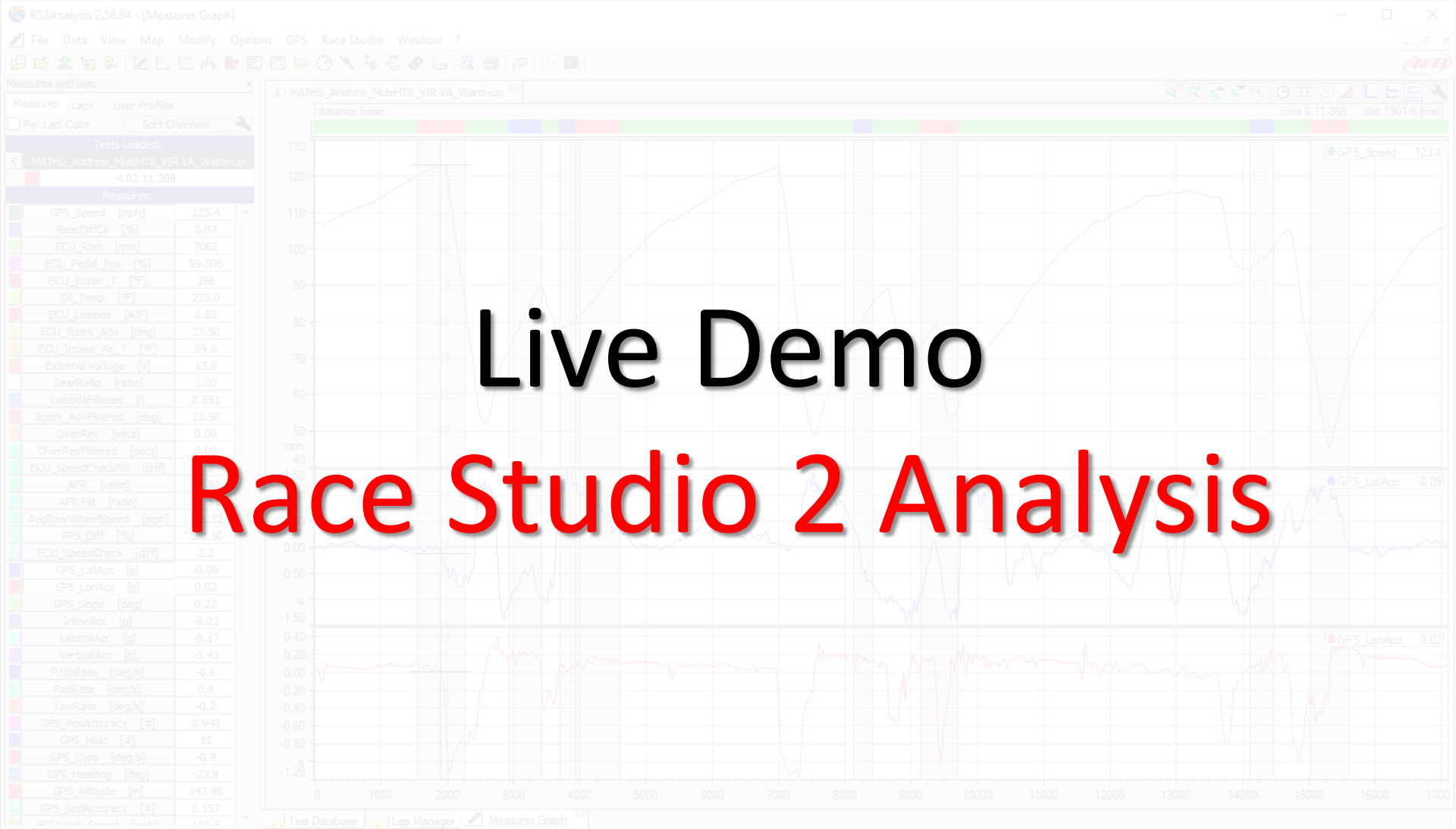
Greater than 74.8 mph = 4th gear

IF(LT(GPS_Speed,28.1),1,IF(LT(GPS_Speed,52),2,IF(LT(GPS_Speed,74.8),3,4)))

AiM Math Channel







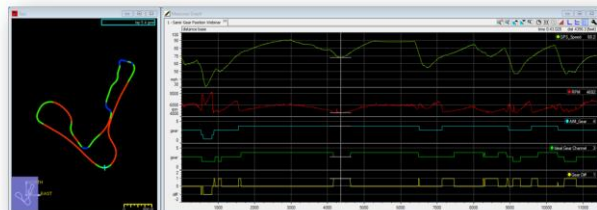
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Race Studio 2 Analysis

LearnFast™ E-Training Video

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- Race Studio 3 Basic Configuration - Part 2
- **I Have Downloaded my Data, Now What - Part 1*
- **I Have Downloaded my Data, Now What - Part 2*
- GPS Lap Insert
- Data Views
- Measure Units
- Sort Channels
- Test Properties
- Per Lap Color
- Export Tests
- Channel Reports
- Setting Time
- Track Mapping
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Additional Materials

LearnFast™ E-Training Video



RS2Analysis 2.56.84 - [Measures Graph]

File Data View Map Modify Options GPS RaceStudio Window ?

Measures and Laps

Measures Laps User Profiles

Per Lap Color Sort Channels

Tests Loaded:

MATHS_Andrew_MuleHT8_VIR_VA_Warm-up

130

4 02:11.3

Measures:

GPS_Speed [km/h]		
RearDiffCk [rpm]	7062	100
ECU_Rpm [rpm]	99.500	
ECU_Pedal_Pos [%]		
ECU_Water_T [°F]		
Oil_Temp [°F]	0.85	
ECU_Lambda [A/F]		
ECU_Spark_Adv [deg]		
ECU_Intake_Air_T [°F]		
External_Voltage [V]	13.0	
GearRatio [ratio]	1.00	
LambdaFiltered []	0.851	60
Spark_AdvFiltered [deg]	23.50	

1 - MATHS_Andrew_MuleHT8_VIR_VA_Warm-up

distance base

time 0:11.368 dist 1301.6 feet

123.4

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Next Webinar

Tuesday Sept 22nd, 2020

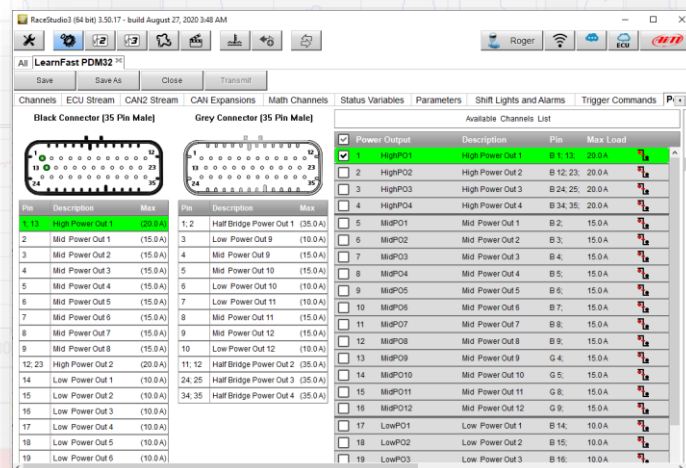
10:00am Pac / 1:00pm East



Co-Host
Fabrizio Rizzi
AiM Sportline - Italy



Introducing the AiM Sports PDM
More Than a Power Distribution Module



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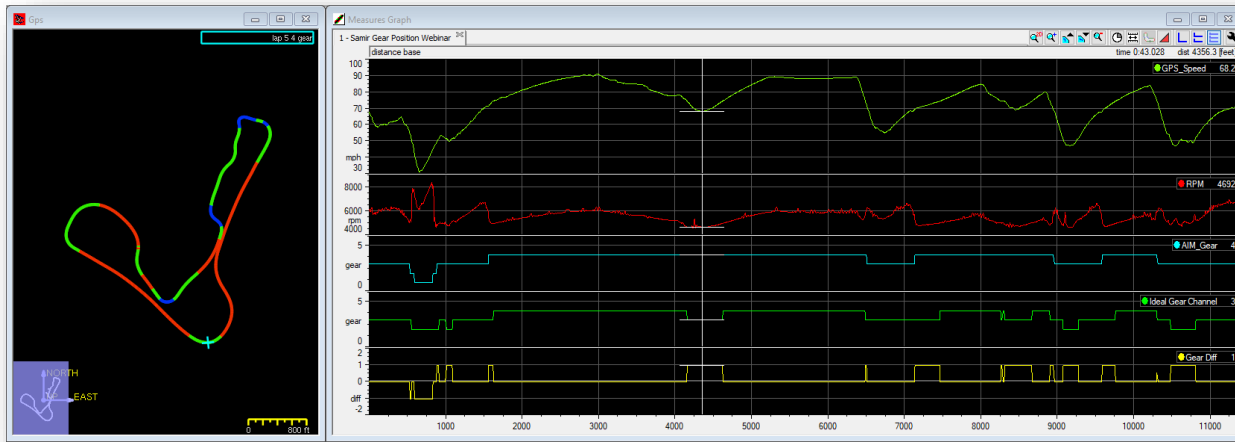


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Next Webinar Topic

Introducing the AiM Sports PDM





YourDataDriven

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